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. Post spacing is measured from centerline to centerline of foundation element. For this Index, posts and foundation elements have been designed for 20 ft. spacings. Use post spacings less than 20 feet only at changes in horizontal alignment, wall terminations or to accommodate steep grades.
4. See "Perimeter Wall Data Tables" in the plans for project requirements.
5. Field verify the locations of all overhead and underground utilities shown in the Wall Control Drawings.

PRECAST OPTION NOTES:

WALL NOTES:
A. Walls may consist of either a single height panel or two stacked panels. Minimum panel height is 4'-3''.
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 = 5500 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 Spreads Footings:
   i. 2,500 psi for horizontally cast panels and precast spread footings.
   ii. 2,000 psi for vertically cast panels or when lift-up form tables are used for horizontally cast panels.
D. REINFORCING STEEL:
A. Concrete Cover: 1/2'' unless otherwise noted.
B. In addition to the requirements of Specification Section 415, tie post and pile slippage at the following locations as a minimum:
   i. Post Slippage - Tie at all four corner bars and at every third interior bar intersection.
   ii. Pile Slippage - Tie to the main vertical reinforcing at alternate intersections.
   iii. Precast Slippage - Tie where joint reinforcing is placed to the main vertical reinforcing at alternate intersections.
8. REINFORCEMENT:
A. Neoprene Pads for Collar or Pedestal Bearing Points and between stacked panels may be either Plain Pads or Fiber Reinforced Pads, with a durometer hardness between Grade 50 and Grade 80 in accordance with Specification Section 932-2.
9. CASTING TOLERANCES:
A. Overall Height & Width: +/- 1/8''
B. Thickness: +/- 1/16''
C. Plane of side mold: +/- 1/16''
D. Openings: +/- 1/8''
E. Out of Square: 1/16'' 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
10. PILING:
A. Construct Auger Cast Piling in accordance with the Plane and Specification Section 455.

MASONRY OPTION NOTES (CONT.):
D. All cells with horizontal or vertical reinforcing bars must be fully grouted
E. Use reinforcing bar positioners to maintain vertical and horizontal bar placement.
F. Fully grout first three courses of the wall.
G. 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''
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 A 36 smooth round bars hot-dip galvanized in accordance with Specification Section 962. Install Dowel Load Transfer Devices in accordance with Specification Section 230.
J. For spread footings, 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 1 T-180. 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 C404 or Specification Section 901 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 manufacturers shelf life.
C. Store masonry accessories and reinforcing to prevent corrosion and accumulation of dirt and oil.
D. 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.
E. 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.
F. Comply with Hot Weather Requirements in ACI 530.1.

GENERAL WALL ELEVATION:
(Precast Option with Single Height Panel Shown, Others Similar)
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°.

ELEVATION STEP AT TOP OF WALL
(Precast Panel Cap not Shown)

ELEVATION STEP AT BOTTOM OF WALL
(Precast Panel Cap not Shown)

TYPICAL PLAN
* Nominal embedment (not including tolerances)
**PRECAST OPTION - TYPICAL PANEL DETAILS**

**SECTION F-F**

- **Texture Front Face**
- **1/8 Chamfer (Typ.)**
- **Horizontal Steel ~ #4 Bars @ 7 1/2 (As=0.32 in²/ft.) (Typ.)**

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

- **Typ. Both Ends**
- **R= 1/8"**
- **Perimeter Walls**

**SECTION G-G**

- **Vertical Steel ~ #4 Bars @ 10" (As=0.24 in²/ft.) (Typ.)**
- **Panel Height (H) 0.207 L**

**TYPICAL PANEL ELEVATION**

- **Horizontal Steel ~ #4 Bars @ 7 1/2 (As=0.32 in²/ft.) (Typ.)**

**NOTE:** At the Contractor's Option, Smooth or Deformed Welded Wire Reinforcement may be used (equal area).

**STANDARD PICK UP POINTS FOR PANELS**

(Panels shall be rotated about long axis only)

**Panel Length (L)**

- 0.207 L
- 0.586 L
- 0.207 L
TYPICAL POST SECTION
(H Section)

SECTION H-H
(H Section - Above Collar)

LOW CLEARANCE OPTION

NOTES:
1. See Shop Drawing for Post Lengths.

PRECAST OPTION - STANDARD POST DETAILS

BAR BENDING DETAILS

TABLE 1

<table>
<thead>
<tr>
<th>Wind Speed (MPH)</th>
<th>Pile Length</th>
<th>Bars P1</th>
<th>Bars S1</th>
</tr>
</thead>
<tbody>
<tr>
<td>110</td>
<td>11'-6&quot;</td>
<td>#5</td>
<td>#4</td>
</tr>
<tr>
<td>130</td>
<td>13'-6&quot;</td>
<td>#3</td>
<td>#4</td>
</tr>
<tr>
<td>150</td>
<td>15'-6&quot;</td>
<td>#1</td>
<td>#4</td>
</tr>
</tbody>
</table>

BAR P1
Bar Length = 2'-3"  
All bar dimensions in bending diagrams are out-to-out.
All bars not shown in the bending diagrams are straight.
**PERIMETER WALLS**

**STANDARD POST PLACEMENT IN AUGER CAST PILE**
(Standard Post Shown, 45° and 90° Corner Posts Similar)

**LOW CLEARANCE OPTION**

**TYPICAL POST**

---

**SECTION H-H**

(Reinforcing not Shown for Clarity)

- Top of Precast Collar, Elev. A
- Top of Auger Cast Pile
- Bars S1 (Typ.)
- 6 ~ #8 Bars Spaced Equally Around
- 30° Ø Auger Cast Pile

**SECTION I-I**

(Typical Post Option)

- Top of Precast Collar, Elev. A
- Top of Auger Cast Pile
- Bars A
- Bars P2
- 30° Ø Auger Cast Pile

**SECTION J-J**

(Low Clearance Option)

- Top of Precast Collar, Elev. A
- Top of Auger Cast Pile
- Bars S1
- 6 ~ #8 Bars Spaced Equally Around
- 30° Ø Auger Cast Pile

---

**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.

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**BAR BENDING DETAIL**

**BAR S1**

Bar Length = 6'-9"
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.

SPECIAL POST FOR 90° CORNERS

SECTION H-H

BAR BENDING DETAILS

SECTION 1-1

SPECIAL POSTS FOR 45° CORNERS

PRECAST OPTION - SPECIAL CORNER POSTS

PERIMETER WALLS
**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 F1 &amp; F2</td>
<td>T-Footing Width</td>
</tr>
<tr>
<td>110</td>
<td>#5</td>
<td>2'-0&quot;</td>
</tr>
<tr>
<td>150</td>
<td>#5</td>
<td>1'-8&quot;</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**

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**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.
**SECTION K-K**
**TYPICAL WALL SECTION WITH T-FOOTING**

- Bars F1 Paired with Bars F1 (Typ.)
- #4 Bars at 1'-4" (Typ.)
- #5 Bars at 1'-0" (Max.)
- 4" Cover (Typ.)
- 3" Cover (Typ.)
- Top of Footing
- Joint & Dowel Load Transfer Device Shown
- 1" Ø Dowel Load Transfer Devices (See Typical Sections for details)
- 1/2" Preformed Expansion Joint & Dowel Load Transfer Device Shown

**REINFORCING AT PILASTER WITH EXPANSION JOINT**
(Step Shown, without Step Similar)
(T-Footing Shown, Trench Footing Similar)

Notes:
1. For location of Sections K-K and L-L see Sheet 9.
2. Provide and Install 1/2" Preformed Expansion Joints with 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.

**SECTION L-L**
**PILASTER SECTION WITH T-FOOTING**

- Bars F2 Spaced @ SV (Typ.) (Alternating)
- #5 Bars @ 1'-0" (Max.)
- 4" Cover (Typ.)
- 3" Cover (Typ.)
- Top of Footing
- Joint Filler
- Approved metal or fiber cap
- Slope Mortar Cap to Drain
- Bars V1 Paired with Bars F2 (Typ.)
- Solid 8"x4"x16" block (Typ.)
- 8" (Max.)
- 1'-0" (Max.) (Top & Bottom)
- 4" Cover (Typ.)
- 3" Cover (Typ.)
- Top of Footing
- Joint & Dowel Load Transfer Device Shown
- 1" Ø Dowel Load Transfer Devices (See Typical Sections for details)
- 1/2" Preformed Expansion Joint & Dowel Load Transfer Device Shown

**SECTION K-K**
**TYPICAL WALL SECTION WITH TRENCH FOOTING**

- Bars F1 Paired with Bars F1 (Typ.)
- #4 Bars at 1'-4" (Typ.)
- #5 Bars at 1'-0" (Max.)
- 4" Cover (Typ.)
- 3" Cover (Typ.)
- Top of Footing
- Joint & Dowel Load Transfer Device Shown
- 1" Ø Dowel Load Transfer Devices (See Typical Sections for details)
- 1/2" Preformed Expansion Joint & Dowel Load Transfer Device Shown

**SECTION L-L**
**TYPICAL PILASTER SECTION WITH TRENCH FOOTING**

- Bars V1 Paired with Bars F2 (Typ.)
- #5 Bars @ 1'-0" (Max.)
- 4" Cover (Typ.)
- 3" Cover (Typ.)
- Top of Footing
- Joint Filler
- Approved metal or fiber cap
- Slope Mortar Cap to Drain
- Bars V1 Paired with Bars F2 (Typ.)
- Solid 8"x4"x16" block (Typ.)
- 8" (Max.)
- 1'-0" (Max.) (Top & Bottom)
- 4" Cover (Typ.)
- 3" Cover (Typ.)
- Top of Footing
- Joint & Dowel Load Transfer Device Shown
- 1" Ø Dowel Load Transfer Devices (See Typical Sections for details)
- 1/2" Preformed Expansion Joint & Dowel Load Transfer Device Shown

**NOTES:**
1. For location of Sections K-K and L-L see Sheet 9.
2. Provide and Install 1/2" Preformed Expansion Joints with 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.

**EXPANSION JOINT DETAILS**

1. For location of Sections K-K and L-L see Sheet 9.
2. Provide and Install 1/2" Preformed Expansion Joints with 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.
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