PART 0 DESIGN STANDARDS

0.01 GENERAL DESIGN GUIDELINES

A. In the absence of other information, the methods and recommendations of the National Concrete Masonry Association (NCMA), Brick Institute of America (BIA), and Rocky Mountain Masonry Institute (RMMI) shall be followed.

B. Refer to other Division 4 standards for other structural engineering design guidelines.

C. Inspections by others do not relieve the A/E of contract requirements.

0.02 MORTAR

A. Review structural requirements with Engineer to verify acceptability. In general, specify the weakest mortar that will meet project requirements.

0.03 MASONRY GROUT

A. A/E shall review engineered unit masonry after the first course is laid, and review grouting locations for reinforcing placement (dowels) prior to placement of the first lift of grout

B. Specify whether the first course of masonry is required to have a full mortar bed.

C. Maximum grout lifts shall be determined by the Structural Engineer.

D. High-lift grouting (over 4'-0" per lift) shall not be designed without cleanouts at the bottom of each grouting lift. Temporary cleanouts must not be visible in finished construction.

0.04 COLD AND HOT WEATHER REQUIREMENTS

A. Specify cold and hot weather requirements.

PART 1 GENERAL No standards

PART 2 PRODUCTS

2.01 MATERIALS

A. General

1. Admixtures such as air-entraining and antifreeze compounds are strictly prohibited.
2. Calcium chloride is prohibited.

B. Mortar

1. Portland cement
2. Hydrated lime
3. Pigmented mortar is prohibited without prior approval of the DPS Project Manager.

C. Mortar accessories

1. Mortar control (such as Mortar Net or equivalent)
2. Weeps: Louvered or plastic cellular venting type at head joints
   a) Tube weeps, open head joints, wicks, and nylon weeps are prohibited.

D. Grout

1. Specify grout strength per ASTM 28-day strength.
2. Specify grout mix design appropriate for high- or low-lift grouting, as designed by the Structural Engineer.
3. Grout aggregate shall not exceed ⅜" in diameter.

E. Inserts and anchors: Stainless steel

1. Plastic inserts and anchors are prohibited.

F. Ventilators: 10'-0" maximum vertical interval (or centerline of wall 11 feet to 20 feet tall)

2.02 MORTAR MIXES

A. Pre-mixed mortar, factory blended to design specification and delivered to jobsite in packages labeled with mortar design, is preferred over job-mixed mortar.

PART 3 EXECUTION

3.01 MORTAR MIXING

A. For job-mixed mortar, measurements for site batching of mortar shall be taken with calibrated measuring instruments. "Shovel" portions will not be accepted.

B. Blend mortar in a mechanical mixer.

C. Retempering is not permitted.

3.02 MORTAR AND GROUT INSTALLATION

A. Mortar control is mandatory for cavity wall construction.

B. See other Division 4 standards for mortar and grout installation.

3.03 FIELD QUALITY CONTROL

A. Contractor shall work with the Owner to schedule Owner's masonry inspections and testing.

B. Mortar: Contractor shall perform mortar testing necessary to assure compliance with the Contract Documents. Such testing shall be at the Contractor's expense. Test results shall be distributed to Architect and Owner.

C. Grout: Owner will provide for testing and inspection of masonry grout and grouting for Owner's information at Owner's expense.

1. Quality control testing for low-lift grouting will be performed during construction for each 25 cubic feet of grout or 2,500 square feet of wall area, which ever comes first.
2. Quality control testing for high-lift grouting will be performed during construction for each grout pour.
3. Contractor will be provided with Owner's testing information and may use test information as a part of Contractor's qualtiy control. However, Owner does not represent that the frequency or type of testing is adequate to assure compliance with contract requirements. Contractor shall provide additional testing needed to assure contract compliance, at Contractor's expense.
4. Additional tests or re-tests required for quality control shall be at Contractor's expense.

END OF SECTION 04110