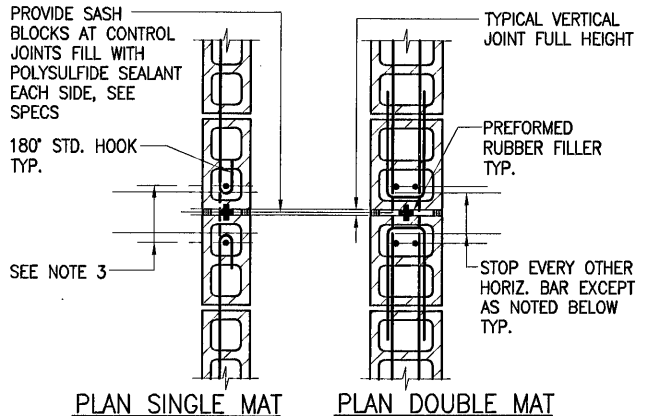


LINTEL REINFORCING	
WIDTH	REINF.
< 5'-0"	2-#5
5'-0" - 7'-0"	2-#6
7'-0" - 10'-0"	2-#7

- NOTES:
- Extend jamb bars full height of wall when width of opening is more than 4'-0".
  - Typical tension lap splice per schedule 5/S4.4

**MASONRY WALL OPENINGS AND DETAILS**

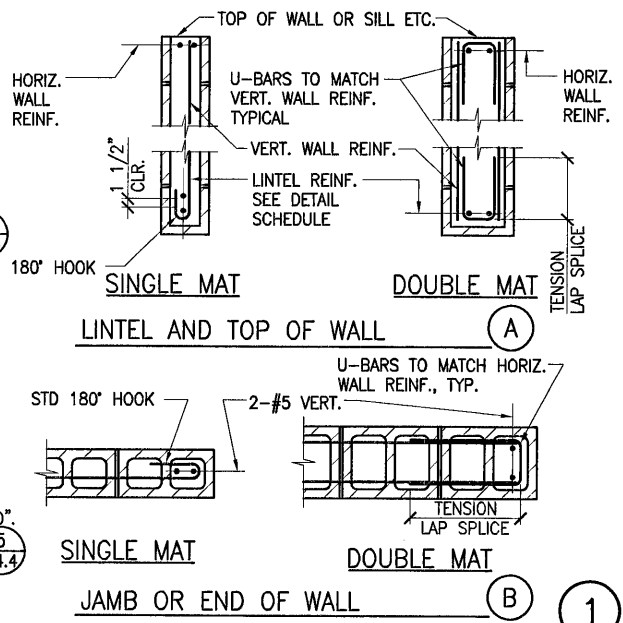
NO SCALE



- NOTES:
- Contractor shall obtain architect's approval of joint locations, which shall not exceed 24'-0" oc.
  - Horizontal reinf. at floor lines, roof lines, and lintel reinf. shall be continuous through joint.
  - Provide vertical wall reinf. each side of joint, #5 bars min.

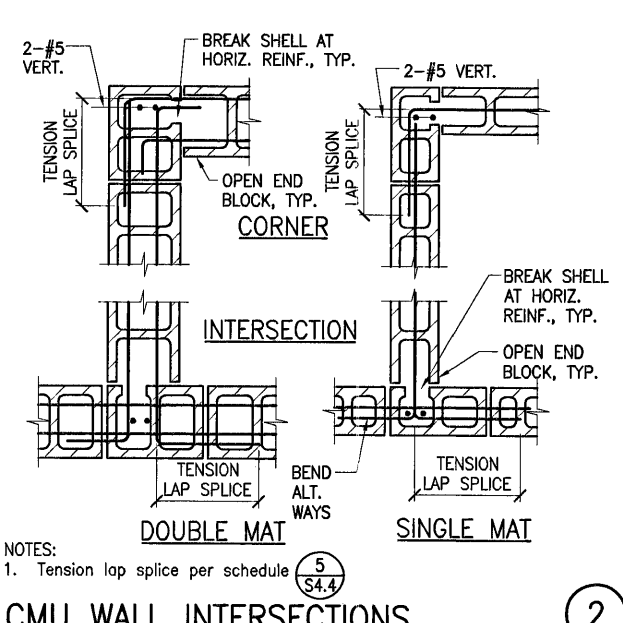
**PLAN DETAIL - CMU WALL CONTROL JOINT**

NO SCALE



**1**

CM003-ibc



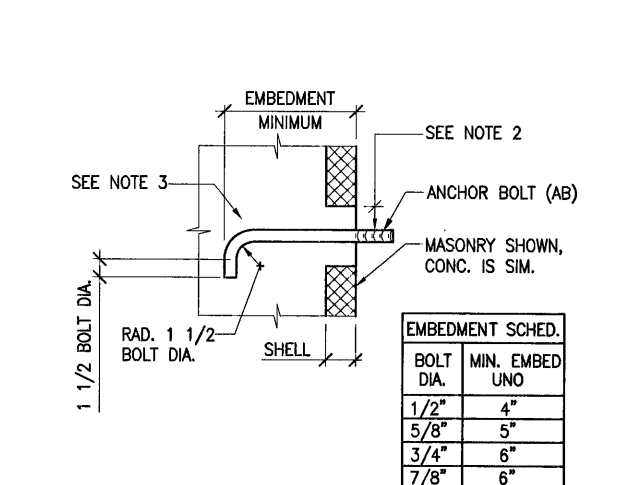
**2**

CM006-ibc

**CMU WALL INTERSECTIONS**

NO SCALE

- NOTES:
- Tension lap splice per schedule 5/S4.4



**4**

**ANCHOR BOLT EMBEDMENT-CMU**

NO SCALE

**BEARING PLATE AT TOP OF INTERIOR CMU WALL**

NO SCALE

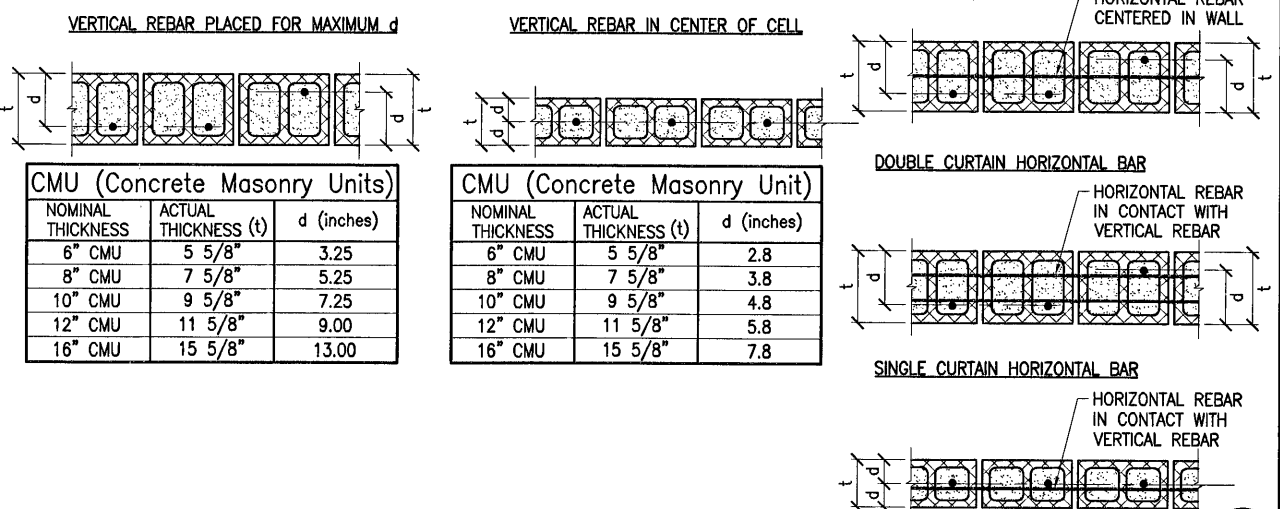
**Reinforcing Steel (for Concrete and Masonry)**

- All reinforcing steel shall be detailed and placed in accordance with the 'Building Code Requirements for Reinforced Concrete' (ACI 318-02) and the 'Manual of Standard Practice for Reinforced Concrete Construction' by CRSI and WCRSI as modified by the project drawings and specifications.
- Deformed reinforcing bars shall conform to the requirements of ASTM A615 grade 60 and ASTM A706 grade 60 for deformed weldable bars, with the following exceptions in which grade 40 bars may be used, unless noted otherwise in the drawings:
  - Reinforcing in non-structural concrete which includes the slab on grade.
- Welding of reinforcing is permitted only where shown on the drawings or when approved by the Structural Engineer. Welding of reinforcing bars shall be with low hydrogen electrodes in accordance with the Recommended Practices for Welding Reinforcing Steel, Etc., American Welding Society, AWS D1.4 and 2003 IBC Section 1907.
- All reinforcing bar bends shall be made cold.
- Lap splices shall be made only where shown on the structural drawings.
- Reinforcing dowels between footings and walls or columns shall be the same number, size, spacing and grade as the specified vertical reinforcing, u.n.o.
- All reinforcing bars shall be marked so their identification can be made when the final in-place inspection occurs.
- Welded wire fabric shall conform to ASTM A185.
- Minimum lap of welded wire fabric shall be 6 inches or one full mesh and one half, whichever is greater.

**6**

**PLAN DETAIL FOR REBAR PLACEMENT IN CMU**

NO SCALE



CMU (Concrete Masonry Units)		
NOMINAL THICKNESS	ACTUAL THICKNESS (t)	d (inches)
6" CMU	5 5/8"	3.25
8" CMU	7 5/8"	5.25
10" CMU	9 5/8"	7.25
12" CMU	11 5/8"	9.00
16" CMU	15 5/8"	13.00

CMU (Concrete Masonry Unit)		
NOMINAL THICKNESS	ACTUAL THICKNESS (t)	d (inches)
6" CMU	5 5/8"	2.8
8" CMU	7 5/8"	3.8
10" CMU	9 5/8"	4.8
12" CMU	11 5/8"	5.8
16" CMU	15 5/8"	7.8

**Masonry**

- The masonry units shall conform to ASTM C90 and IBC Standard C90-99a.
- Mortar and grout shall comply with the provisions of Section 2103 of the IBC
- Mortar mix shall conform to requirements for IBC Table 2103.7 (1), Type S, and project specifications.
- Grout shall be coarse grout. Use sufficient water for grout to flow into all joints of the masonry without segregation.
- Cement - see notes under 'CONCRETE' for requirements and type of cement.
- The design strength f'm shall be 1500 psi unless noted otherwise in the drawings. The f'm shall be verified by the prism method (IBC Section 2105.3).

The minimum required 28-day compressive strengths for grout, mortar, and block shall be as follows:

Masonry Design Strength	
f'm =	1500 psi
Grout	2000 psi
Mortar	1800 psi
Type	Type S
Block(*)	2000 psi

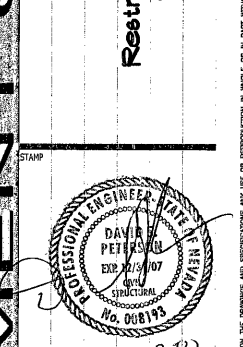
\* Minimum compressive strength at 28-days on the net area. Note: These strengths are minimum requirements only. If greater strengths are required to reach the required f'm for the combined system, these greater strengths shall be used.

- Mortar and grout mix designs shall be submitted to the Structural Engineer for review. All mix designs shall be designed by a qualified testing laboratory and be wet stamped by a Civil Engineer licensed in the State of Nevada.
- Testing data by a qualified testing laboratory for the masonry block shall be submitted to the Structural Engineer for review.
- All masonry shall be solid grouted unless noted otherwise on the drawings.
- Refer to architectural drawings for surface and height of units, laying pattern and joint type.
- Grout lift provisions shall be in accordance with ACI 530-02 Masonry Standards S-23 Section 3.5.
- Reinforcing bars shall be ASTM A615, grade 60, unless noted otherwise. See notes under 'reinforcing steel' for additional requirements.
- Placement of reinforcing bars shall conform to ACI 530-02 Masonry standards S-22 Section 3.4. A minimum of 1/2 inch grout between the main reinforcing and masonry units shall be provided.
- Minimum dimensions of grout spaces and cells shall be in accordance with ACI 530.1, S-24, Table 7. All cells shall be in vertical alignment and footing dowels shall align with cells containing vertical reinforcing steel.
- Unless noted otherwise all vertical reinforcing shall have a minimum tension lap splice per schedule 5/S4.4. When two bars occur in one cell, the splice shall be increased per schedule 5/S4.4.
- All horizontal reinforcing shall have a minimum lap splice per schedule 5/S4.4, stagger all horizontal rebar splices.
- Coring openings in grouted masonry is not permitted.
- No pipes or electrical conduit shall pass through masonry lintels unless specifically detailed.
- Mechanical pipes and electrical conduits which pass through masonry walls do not require sleeves, unless otherwise indicated in the project specifications, mechanical and/or electrical drawings. If sleeves are required, install sleeves before grouting. Do not cut any reinforcing which may interfere with sleeve placement. Notify the Structural Engineer in advance of conditions not shown on the structural drawings.



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**DEPARTMENT OF PUBLIC WORKS**  
Lorenzi Park Renovation  
Phase 1  
Restroom/Concession/Storage Building  
MASONRY TYPICAL DETAILS  
AND NOTES



OWNER: CITY OF LAS VEGAS  
DEPARTMENT OF PUBLIC WORKS  
ARCHITECTURAL SERVICES

400 EAST STEWART AVENUE LAS VEGAS, NEVADA 89101 PHONE: (702) 228-6535 FAX: (702) 384-4846 TDD: (702) 386-8100
DRAWN: JFA/IE
FILE: RCS-443
DATE: June 2007
SCALE: AS SHOWN
DWG NO: 01.15341.01
CLV DWG NO: 65019-47

**RCS-S4.3**

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