HIGH PERFORMANCE MASONRY CAVITY WALL
8" CMU W/ BRICK VENEER - 3" RIGID INSULATION

- 2" RIGID INSULATION OPTION (SEE A-12 FOR THERMAL PERFORMANCE)
- 3" MINERAL WOOL INSULATION OPTION (SEE A-12 FOR THERMAL PERFORMANCE)

HIGH PERFORMANCE QUALITIES

- ARCHITECTURAL
- STRUCTURAL
- ENERGY
- FIRE
- SOUND
- MOISTURE
- AIR

FOR ADDITIONAL INFORMATION ON HIGH PERFORMANCE QUALITIES OF MASONRY CAVITY WALLS, SEE "MASS BENEFITS"

NOTES:
1) A NOMINAL WALL ASSEMBLY THICKNESS OF 1'-4" IS SHOWN FOR MODULARITY, BUT THE DETAILS CAN BE MODIFIED TO ACCOMMODATE USER DESIRED VARIATIONS IN OVERALL WALL THICKNESS AS WELL AS VARIATIONS IN INSULATION AND AIR SPACE THICKNESS (A 1" MINIMUM AIR SPACE IS MANDATED BY CODE). SEE A-12 FOR THERMAL PERFORMANCE OPTIONS.

DRAWING INDEX:

1) A-1.0 COVER SHEET
2) A-1.1 GENERIC BUILDING ISOMETRIC
3) A-2 WALL SECTION
4) A-3.1 BASE DETAIL W/ VENEER ABOVE GRADE
5) A-3.2 BASE DETAIL W/ VENEER BELOW GRADE
6) A-4.1 SHORT SPAN MASONRY LINTEL FOR RECEPTOR STYLE WINDOWS
7) A-4.2 SHORT SPAN STEEL LINTEL FOR RECEPTOR STYLE WINDOWS
8) A-4.3 SHORT SPAN PRE-CAST LINTEL FOR RECEPTOR STYLE WINDOWS
9) A-4.4 SHORT SPAN MASONRY LINTEL FOR STRAP STYLE WINDOWS
10) A-4.5 SHORT SPAN STEEL LINTEL FOR STRAP STYLE WINDOWS
11) A-4.6 SHORT SPAN PRE-CAST LINTEL FOR STRAP STYLE WINDOWS
12) A-5.1 SHORT SPAN MASONRY LINTEL FOR DOOR OPENING
13) A-5.2 SHORT SPAN STEEL LINTEL FOR DOOR OPENING
14) A-5.3 SHORT SPAN PRE-CAST LINTEL FOR DOOR OPENING
15) A-6.1 LONG SPAN MASONRY LINTEL FOR WINDOW OPENING
16) A-6.2 LONG SPAN MASONRY LINTEL FOR OPENING WITH MULTIPLE PEDESTRIAN DOORS
17) A-6.3 LONG SPAN MASONRY LINTEL FOR OVERHEAD DOOR OPENING
18) A-7 JAMB DETAILS & FLASHING DETAIL
19) A-8.1 STONE/PRECAST SILL FOR RECEPTOR STYLE WINDOWS
20) A-8.2 STONE/PRECAST SILL FOR STRAP STYLE WINDOWS
21) A-9 CONTROL/EXPANSION JOINT DETAILS
22) A-10.1 BRICK VENEER EXPANSION JOINT LOCATIONS
23) A-10.2 BRICK VENEER EXPANSION JOINT LOCATIONS
24) A-11.1 STONE/PRECAST COPING PARAPET DETAIL
25) A-11.2 METAL COPING PARAPET DETAIL
26) A-12 "CONTROL LAYER" INFORMATION
27) A-13.1 BRICK LEDGER FOR CMU BACK-UP DETAIL
28) A-13.2 BRICK LEDGER DETAIL ENLARGED
29) A-14.1 UPPER WALL / LOW ROOF DETAIL (REFERRED)
30) A-14.2 UPPER WALL / LOW ROOF DETAIL (OPTIONAL)
31) A-14.3 UPPER WALL / LOW ROOF ENLARGED DETAIL
GENERIC BUILDING

NOT TO SCALE

(SEE M.I.M. SINGLE WYTHE DETAILS FOR
CMU CONTROL JOINT LOCATION CRITERIA)
ALTERNATE:
DCMU VENEER

SEE "CMU VENEER DETAILS" FOR ADDITIONAL INFORMATION
http://www.mim-onlne.org/
/uploaded/media_items/
cmu-veneer-details.original.pdf
ISOMETRIC VIEW

NOTES
1) CMU BELOW GRADE SHALL BE MEDIUM OR NORMAL WEIGHT.
2) FOR ADDITIONAL INFORMATION ON BASE FLASHING, SEE M.I.M. FAQ #22

SECTION VIEW

BASE DETAIL W/ VENEER ABOVE GRADE
(PREFERRED BASE DETAIL)

ALTERNATE: 3" MINERAL WOOL INSULATION

3" MINERAL WOOL INSULATION W/ INSULATION CUP

BELOW GRADE INSULATION

2" RIGID INSULATION

2 1/4" x 1 1/8" CONT. TERMINATION BAR W/ SEALANT

STRIKE MORTAR JOINTS FLUSH ON OUTER FACE OF CMU

Cavity wall insulation, notch at termination bar

4" BRICK (CLAY) VENEER

TOOL MORTAR JOINTS TO A CONCAVE PROFILE

LADDER TYPE HORIZONTAL JOINT REINF. @ 16" O.C. W/ ADJUSTABLE VENEER ANCHORS

8" CMU BACK-UP

FLEXIBLE MEMBRANE FLASHING (NOTE 2)

DRAINAGE MESH

WEEPS @ MAX. 32" O.C.

FIN. FLOOR LINE

FINISH GRADE BELOW TOP OF FLOOR SLAB

4" CMU (100% SOLID)

FILL COLLAR JOINTS SOLID BELOW FLASHING

GROUT CMU SOLID BELOW GRADE

DAMP PROOFING/WATERPROOFING

BARRIER MASONRY ANCHORS @ 18" O.C. (LOCATE IN HEAD JOINTS)

4" CMU (32" O.C. ADJUSTABLE VENEER ANCHORS)

CONCRETE SLAB

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ISOMETRIC VIEW

SECTION VIEW

NOTES:
1) CMU BELOW GRADE SHALL BE MEDIUM OR NORMAL WEIGHT.
2) SPECIAL CARE IN BRICK SELECTION MUST BE EXERCISED WHEN PLACING BRICK BELOW GRADE.
3) FOR ADDITIONAL INFORMATION ON BASE FLASHING, SEE MIM FAQ #22


FINISH GRADE BELOW TOP OF FLOOR SLAB
FILL BRICK CORES AND COLLAR JOINTS SOLID BELOW FLASHING
GROUT CMU SOLID BELOW GRADE
4" CMU (100% SOLID)
DAMPPROOFING/WATERPROOFING
BELOW GRADE INSULATION
8" CMU
3" MINERAL WOOL INSULATION/W/INSULATION CLIP

FINISH FLOOR LINE

BASE DETAIL W/ VENEER BELOW GRADE

ALTERNATE: 3" MINERAL WOOL INSULATION
NOTE: MASONRY LINTEL MAY BE PREFABRICATED OR FIELD ASSEMBLED

LADDER TYPE HORIZONTAL JOINT REINF @ 12" O.C.
W/ADJUSTABLE VENEER ANCHORS

8" CMU BACK-UP

1 1/4" x 1/8" CONT. TERMINATION BAR W/ SEALANT

LINTEL UNIT
(W/ REINF. PER STRUCTURAL DESIGN)
GROUTED SOLID

SEALANT (BOTH SIDES)
W/ BACKER ROD/BOND BREAKER

RECEPTOR FRAMING
THERMALLY BROKEN ALUM. WINDOW FRAME

SECTION VIEW

CAVITY WALL INSULATION, NOTCH AT TERMINATION BAR
4" BRICK (CLAY)
VENEER

FLEXIBLE MEMBRANE FLASHING W/ END DAMS
2X6 FIRE RETARDANT TREATED WOOD NAILER

HIGH DENSITY MINERAL WOOL, TIGHT TO LINTEL

DRAINAGE MESH

WEEPS @ MAX. 32" O.C.

TWO-PIECE FLASHING (SEE DETAIL 60, SHEET A-7)

GALVANIZED STEEL ANGLE ("LOOSE") LINTEL

SHORT SPAN MASONRY LINTEL FOR RECEPTOR STYLE WINDOWS
(PREFERRED LINTEL DETAIL)

3A
A-1

NOTE:
UNPROTECTED ALUMINUM DOOR AND WINDOW FRAMES CAN INTERACT WITH CEMENT-BASED MATERIALS AND INCUR DAMAGE. SEE PCA "MASONRY TODAY" VOLUME II, NO. 1 FOR RECOMMENDATIONS.

www.cement.org/masonry/cc-al_frames.asp
NOTE:
UNPROTECTED ALUMINUM DOOR AND WINDOW FRAMES CAN INTERACT WITH CEMENT-BASED MATERIALS AND INOCURE DAMAGE. SEE PCA "MASONRY TODAY" VOLUME II, NO. 1 FOR RECOMMENDATIONS.
www.cement.org/masonry/cc_al_frames.asp

SECTION VIEW

CAVITY WALL INSULATION, NOTCH AT TERMINATION BAR

4" BRICK (CLAY)

FLEXIBLE MEMBRANE FLASHING W/ END DAMS

HIGH DENSITY MINERAL WOOL, TIGHT TO LINTEL

2x6 FIRE RETARDANT
TREATED WOOD NAILER

DRAINAGE MESH

WEEPS @ MAX. 32" O.C.

TWO-PIECE FLASHING (SEE DETAIL 60, SHEET A-7)

GALVANIZED STEEL ANGLE ("LOOSE") LINTEL

8" CMU BACK-UP

1 1/4" x 1/8" CONT.
TERMINATION BAR
W/ SEALANT

PRECAST CONCRETE LINTEL

SEALANT (BOTH SIDES)
W/ BACKER ROD/BOND BREAKER

RECEPTOR FRAMING

THERMALLY BROKEN
ALUM. WINDOW FRAME

LADDER TYPE HORIZONTAL
J OINT REINF. @ 16" O.C.
W/ADJUSTABLE VENEER ANCHORS

1'-4" (NOM.)

SHORT SPAN PRE-CAST LINTEL
FOR RECEPTOR STYLE WINDOWS

3C
A-1

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NOTE: MASONRY Lintel may be prefabricated or field assembled.

NOTE: UNPROTECTED ALUMINUM DOOR AND WINDOW FRAMES CAN INTERACT WITH CEMENT-BASED MATERIALS AND INCUR DAMAGE. SEE PCA "MASONRY TODAY" VOLUME II, NO. 1 FOR RECOMMENDATIONS.

www.cemani.org/masonry/cc-al_frames.asp

SECTION VIEW

- CAVITY WALL INSULATION, NOTCH AT TERMINATION BAR
- 4" BRICK (CLAY) VENEER
- FLEXIBLE MEMBRANE FLASHING W/ END DAMS
- DRAINAGE MESH
- 28 Ga. MILL GALVANIZED METAL L-SHAPED FLASHING SUPPORT
- MINERAL WOOL INSULANT TIGHT TO Lintel
- WEEPS @ MAX. 32" O.C.
- TWO-PIECE FLASHING (SEE DETAIL 60, SHEET A-7)
- GALVANIZED STEEL ANGLE (LOOSE) Lintel
- SEALANT (BOTH SIDES) W/ BACKER ROD/BOND BREAKER

ISOMETRIC VIEW

SHORT SPAN MASONRY Lintel FOR STRAP STYLE WINDOWS

3D A-1

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NOTE: MASONRY LINTEL MAY BE PREFABRICATED OR FIELD ASSEMBLED

4A
A-1

SHORT SPAN MASONRY LINTEL FOR DOOR OPENING
(PREFERRED DOOR HEAD DETAIL)

NOTE: LADDER TYPE HORIZONTAL JOINT REINFORCED @ 16" O.C.
W/ADJUSTABLE VENEER ANCHORS

1 1/4" x 1/8" CONT. TERMINATION BAR W/ SEALANT

8" CMU BACK-UP

LINTEL UNIT (W/ REINFORCED STRUCTURAL DESIGN) GROUTED SOLID

SECTION VIEW

1"-4" (NOM.)

4" BRICK (CLAY) VENEER

CAVITY WALL INSULATION, NOTCH AT TERMINATION BAR

FLEXIBLE MEMBRANE Flashing W/ END DAMS

28 Ga. MILL GALVANIZED METAL "L"-SHAPED FLASHING SUPPORT

DRAINAGE MESH

MINERAL WOOL INSUL. TIGHT TO LINTEL

WEEPS @ MAX. 32" O.C.

TWO-PIECE FLASHING (SEE DETAIL RD. SHEET A-7)

GALVANIZED STEEL DOUBLE ANGLE ("LOOSE") LINTEL

SEALANT (BOTH SIDES) W/ BACKER ROD/BOND BREAKER

GROUT FILLED DOOR FRAME
NOTES:
1) FOR ADDITIONAL INFORMATION ON THE 
REINFORCED BRICK LINTEL DEPICTED IN THIS 
DETAIL, SEE DETAIL 9B ON SHEET A-10.
2) UNPROTECTED ALUMINUM DOOR 
AND WINDOW FRAMES CAN INTERACT WITH 
CEMENT-BASED MATERIALS AND INCUR DAMAGE. 
SEE PCA "MASONRY TODAY" VOLUME II, 
No. 1 FOR RECOMMENDATIONS.
www.cement.org/masonry/cc_al_frames.asp
3) TO ACHIEVE SOLID GROUTING DO NOT USE JAMB 
UNITS. USE OPEN BOTTOM UNITS OR FLANGE 
UNITS WITH HEAD JOINTS GROUTED SOLID.

SECTION VIEW

ISOMETRIC VIEW

LONG SPAN MASONRY LINTEL FOR WINDOW OPENING
NOTES:
1) FOR ADDITIONAL INFORMATION ON THE
REINFORCED BRICK LINTEL DEPICTED IN THIS
DETAIL, SEE DETAIL 9B ON SHEET A-10.
2) UNPROTECTED ALUMINUM DOOR
AND WINDOW FRAMES CAN INTERACT WITH
CEMENT-BASED MATERIALS AND INURE DAMAGE.
SEE PCA "MASONRY TODAY" VOLUME II,
NO. 1 FOR RECOMMENDATIONS.
3) TO ACHIEVE SOLID GROUTING DO NOT USE JAMB
UNITS. USE OPEN BOTTOM UNITS OR FLANGE
UNITS W/ HEAD JOINTS GROUTED SOLID.

1 1/4" x 1/8" CONT.
TERMINATION BAR
W/ SEALANT

LADDER TYPE HORIZONTAL
JOINT KENF. 1/4" O.C.
W/ADJUSTABLE VENEER
ANCHORS

5" CMU BACK-UP

GROUT SOLID (IN ONE
LIFT) TOTAL NUMBER OF
COURSES REQUIRED PER
STRUCTURAL DESIGN (2
COURSES DEPICTED IN
THIS DETAIL)(SEE NOTE #3)

LINTEL UNIT
(W/ REINF. PER
STRUCTURAL DESIGN)

2B GA. MILL GALVANIZED
METAL "L"-SHAPED
FLASHING SUPPORT

SEALANT (BOTH SIDES)
W/ BACKER ROD/
BOND BREAKER

GROUT FILLED DOOR
FRAME

SECTION VIEW

4" BRICK (CLAY) VENEER

CAVITY WALL INSULATION,
NOTCH AT TERMINATION BAR

FLEXIBLE MEMBRANE
FLASHING W/ END DAMS

DRAINAGE MESH

STAINLESS STEEL
HORIZONTAL JOINT
REINFORCEMENT (PER
STRUCTURAL DESIGN)
(SEE DETAIL 9D,
SHEET A-10.2)

MINERAL WOOL INSUL.
TIGHT TO LINTEL

KEEPS @ MAX. 32" O.C.

TWO-PIECE
FLASHING (SEE
DETAIL 8D, SHEET A-7)

GALVANIZED STEEL
DOUBLE ANGLE
("LOOSE") LINTEL

ISOMETRIC VIEW

LONG SPAN MASONRY LINTEL FOR
OPENING WITH MULTIPLE PEDESTRIAN DOORS.

SE ****
1) FOR ADDITIONAL INFORMATION ON THE REINFORCED BRICK UNI TLENT DEPICTED IN THIS DETAIL, SEE DETAIL 9B ON SHEET A-10.

2) UNPROTECTED ALUMINUM DOOR AND WINDOW FRAMES CAN INTERACT WITH CEMENT-BASED MATERIALS AND INCUR DAMAGE. SEE PCA "MASONRY TODAY" VOLUME II, NO. 1 FOR RECOMMENDATIONS. www.cement.org/masonry/cc_al_frames.asp

3) TO ACHIEVE SOLID GROUTING DO NOT USE JAMB UNITS. USE OPEN BOTTOM UNITS OR FLANGE UNITS W/ HEAD JOINTS GROUTED SOLID.
NOTES:
1) UNPROTECTED ALUMINUM DOOR AND WINDOW FRAMES CAN INTERACT WITH CEMENT-BASED MATERIALS AND INCREASE DAMAGE. SEE PCA "MASONRY TODAY" VOLUME II, NO. 1 FOR RECOMMENDATIONS.
www.cement.org/masonry/cc_el_frames.asp
2) BRICK ANCHORS SHALL BE PRESENT WITHIN 12" OF JAMB ENDS

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NOTES TO DESIGN PROFESSIONAL:
1) DETAIL "8A" WILL ACHIEVE UP TO A 4 HOUR FIRE RATING. DETAIL "8B" WILL ACHIEVE UP TO A 2 HOUR FIRE RATING.
2) IT IS USUALLY NOT NECESSARY TO INSTALL VERTICAL REBAR IN BOTH OF THE CELLS ADJACENT TO THE CONTROL JOINT. IT IS EVEN POSSIBLE THAT DOING SO CAN INTERFERE WITH THE FUNCTION OF THE CONTROL JOINT. HOWEVER, FOR WALLS RESISTING IN-PLANE SHEAR, SUCH REINFORCEMENT MAY BE REQUIRED DUE TO SEISMIC PRESCRIPTIVE REQUIREMENTS AND/OR STRUCTURAL LOADING.
3) THERE IS USUALLY NO NEED FOR BRICK EXPANSION JOINTS TO ALIGN DIRECTLY WITH CONTROL JOINT LOCATIONS IN THE CMU BACK-UP.
4) SEE M.I.M. SINGLE WYTHE DETAILS FOR CMU CONTROL JOINT LOCATION CRITERIA.

8D  
BRICK EXPANSION JOINT (EJ)  
A-1

8A  
CMU BACK-UP CONTROL JOINT - "MICHIGAN TYPE"  
A-1

8C  
MASONRY CONTROL JOINT @ CONTINUOUS BOND BEAM DETAIL  
A-1 (PER STRUCTURAL REQUIREMENTS)

8B  
CMU BACK-UP CONTROL JOINT - "GASKET TYPE"  
A-1

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**NOTES:**

1) TYPICALLY EXPANSION JOINTS HAVE BEEN LOCATED AT OR VERY CLOSE TO THE SIDES OF OPENINGS. HOWEVER IT IS PREFERRED FOR EXPANSION JOINTS TO BE LOCATED AWAY FROM THE EDGES OF THE OPENINGS. DETAILS 9A & 9D ILLUSTRATE THE APPLICATION OF THIS APPROACH.

2) SEE AIA TEK NOTE 18A AND "BRICK EXPANSION JOINTS AND WALL OPENINGS" (BY J. GREGG BORCHELT, PE) (PUBLISHED IN "THE STORY POLE" JULY/AUG. 2007 VOL. 38 NO. 4) FOR ADDITIONAL GUIDANCE ON LOCATING EXPANSION JOINTS. ADD HYPERLINK HERE

3) SEE M.I.M. SINGLE WTME DETAILS FOR CMU CONTROL JOINT LOCATION CRITERIA.

**9A—NO SLIP PLANE — PREFERRED METHOD**

**9B—ONE (1) SLIP PLANE TRADITIONAL METHOD**

**9C — TWO (2) SLIP PLANES TRADITIONAL METHOD**

**BRICK VENEER EXPANSION — JOINT LOCATION**

FOR OPENINGS 8" OR LESS WITH LOOSE STEEL LINTEL

**NOTE:**

SEE SHEET A-10.2 FOR DEFINITIONS

**NOTES:**

1/2" JOINTS:

- A) WITHOUT OPENING 25' MAX. (NOT SHOWN)
- B) WITH OPENING 20' MAX. SYMMETRICALLY PLACED

3/8" JOINTS:

- C) WITHOUT OPENING 20' MAX. (NOT SHOWN)
- D) WITH OPENING 15' MAX. SYMMETRICALLY PLACED

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9D - BRICK MASONRY EXPANSION JOINT LOCATION - PREFERRED METHOD

FOR OPENINGS OF ANY SIZE W/ A REINFORCED BRICK MASONRY UNTIL

NOTES:
1) TYPICALLY EXPANSION JOINTS HAVE BEEN LOCATED AT OR VERY CLOSE TO THE SIDES OF OPENINGS. HOWEVER, IT IS PREFERRED FOR EXPANSION JOINTS TO BE LOCATED AWAY FROM THE EDGES OF THE OPENINGS. DETAILS 9A & 9D ILLUSTRATE THE APPLICATION OF THIS APPROACH.

2) SEE BIA TEK NOTE 18A AND "BRICK EXPANSION JOINTS AND WALL OPENINGS" (BY J. GREGG BORMELT, PE) (PUBLISHED IN "THE STORY POLE" JUNE/July, 2007 VOL. 38 NO. 4) FOR ADDITIONAL GUIDANCE ON LOCATING EXPANSION JOINTS.

3) SEE M.L.M. SINGLE WT THE DETAILS FOR CMU CONTROL JOINT LOCATION CRITERIA.

9E - BRICK VENEER EXPANSION JOINT LOCATION - TRADITIONAL METHOD

FOR OPENINGS GREATER THAN 8'

NOTES:

1/2" JOINTS:
A) WITHOUT OPENING 25' MAX. (NOT SHOWN)
B) WITH OPENING 20' MAX. SYMMETRICALLY PLACED

3/8" JOINTS:
C) WITHOUT OPENING 20' MAX. (NOT SHOWN)
D) WITH OPENING 15' MAX. SYMMETRICALLY PLACED

DEFINITIONS:

S_e = SPACING BETWEEN EXPANSION JOINTS, IN. (MM)
W_j = WIDTH OF EXPANSION JOINT, TYPICALLY THE MORTAR JOINT WIDTH, IN. (MM)
C_j = PERCENT EXTENSIBILITY OF EXPANSION JOINT MATERIAL

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**CONTROL LAYER** INFORMATION

1) THERMAL CONTROL LAYER:

A) THERMAL PROPERTIES FOR WALLS ABOVE GRADE FOR EACH INSULATION OPTION:

<table>
<thead>
<tr>
<th>Insulation Type</th>
<th>Rci</th>
<th>Rasmberley</th>
</tr>
</thead>
<tbody>
<tr>
<td>3&quot; Rigid Insulation</td>
<td>15.0</td>
<td>18.41</td>
</tr>
<tr>
<td>2&quot; Rigid Insulation</td>
<td>10.0</td>
<td>13.41</td>
</tr>
<tr>
<td>3&quot; Wool Insulation</td>
<td>12.9</td>
<td>16.31</td>
</tr>
</tbody>
</table>

B) ASHRE 90.1-2013 PRESCRIPTIVE COMPLIANCE REQUIREMENTS FOR MASS WALLS FOR CLIMATE ZONES 5, 6, & 7; AND COMPLIANT INSULATION OPTIONS:

<table>
<thead>
<tr>
<th>Zone</th>
<th>Continuous Insulation Method (Rci Minimum)</th>
<th>Umax Method (Umax of Entire Wall Assembly)</th>
<th>Compliant Insulation Options</th>
<th>Wall Below Grade Insulation Min. R-Value</th>
<th>Unheated Slab Insulation Min. R-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>Rci ≥ 11.4</td>
<td>Uassembly ≤ 0.090</td>
<td>3&quot; Rigid (Rmin, Umax)</td>
<td>R-7.5 c.i.</td>
<td>R-15 FOR 24&quot;</td>
</tr>
<tr>
<td>6</td>
<td>Rci ≥ 13.3</td>
<td>Uassembly ≤ 0.080</td>
<td>3&quot; Rigid (Rmin, Umax)</td>
<td>R-10 c.i.</td>
<td>R-20 FOR 24&quot;</td>
</tr>
<tr>
<td>7</td>
<td>Rci ≥ 15.2</td>
<td>Uassembly ≤ 0.071</td>
<td>3&quot; Rigid (Umax)</td>
<td>R-15 c.i.</td>
<td>R-20 FOR 24&quot;</td>
</tr>
</tbody>
</table>

*Michigan ranges from Zone 5 in the South to Zone 7 in the North

C) In order to use the prescriptive provisions of referenced energy code, wall openings are limited to a maximum 40% of gross wall area, and skylights are limited to a maximum 5% of the gross roof area.

2) AIR CONTROL LAYER:

A) The Air Control Layer is often referred to as an "Air Barrier" (system). Several products and options (such as liquid or membrane applied proprietary systems) are available, with differing levels of cost and complexity.

B) This set of details reflects an air barrier system achieved with specific masonry detailing/ construction and non-proprietary coatings described in Note C below.

C) The following non-proprietary coatings are considered to meet an air leakage of less than 0.04 CFM/SQ. FT @ 75 Pa. (see NCMA TEK 6-14A for additional information).

1) Prescriptive Compliance:
   - Fully grouted CMU
   - CMU wall with one application of block filler and two applications of a paint or sealer coating
   - CMU wall with a Portland cement-sand parget, stucco or plaster with a minimum thickness of 1/2".

2) By Laboratory Testing:
   - 12" CMU sealed with at least (2) coats of commercial-grade latex paint
   - 8" CMU coated with a single coat of high quality latex paint
   - 8" CMU coated with a single coat of masonry block filler

3) MOISTURE CONTROL LAYER:

A) This drainage wall assembly inherently provides maximum protection against water penetration. Unlike many other wall systems, a separate weather resistive barrier is unnecessary.

4) VAPOR CONTROL LAYER:

A) Based on multiple dew point analyses for climate zone 5 (including indoor humidity conditions varying from non-humidified to high humidity), the dew point in this cavity wall system occurs only in the wet zone. Therefore a vapor control layer is not necessary. Careful consideration should be given before including a vapor retarder.
SECTION VIEW

4" BRICK (CLAY) VENEER

DRAINAGE MATERIAL

28 Ga. MILL GALVANIZED METAL "L-SHAPED" FLASHING SUPPORT

FLEXIBLE MEMBRANE FLASHING

WEEPS @ MAX. 32" O.C.

MIN.

1-1/2" MIN. LAP

MIN. 1/4" THICK COMpressive FILLER

GALVANIZED STEEL SHELF ANGLE

11B

BRICK LEDGER DETAIL ENLARGED

A-13
NOTES:
1) "LOW SLOPE" ROOFS ARE DEFINED AS ROOFS WITH A SLOPE LESS THAN OR EQUAL TO 3:12 (14 DEGREES)
2) THE THERMAL CONTROL LAYER IN THIS DETAIL IS NOT CONTINUOUS.
3) THIS DETAIL UTILIZES A 12" CMU SUPPORT WALL, WHICH IS PREFERRED AS IT AVOIDS 16" UNITS, WHICH ARE MORE COSTLY AND MORE DIFFICULT TO LAY.

ISOMETRIC VIEW

SECTION VIEW

UPPER WALL / LOW ROOF DETAIL
A-14.1 (PREFERRED UPPER WALL/LOW ROOF DETAIL)
NOTES:
1) "LOW SLOPE" ROOFS ARE DEFINED AS ROOFS WITH A SLOPE LESS THAN OR EQUAL TO 3:12 (14 DEGREES)
2) THE THERMAL CONTROL LAYER IN THIS DETAIL IS NOT CONTINUOUS.
3) THE 16" UNITS SHOWN IN THIS OPTIONAL DETAIL ARE MORE COSTLY AND MORE DIFFICULT TO LAY COMPARED TO DETAIL A-14.1

ISOMETRIC VIEW

SECTION VIEW

16" CMU
NOTES:
1) THE THERMAL CONTROL LAYER IN THIS DETAIL IS NOT CONTINUOUS.

FLASHING LEGEND

MASONRY PRIMARY FLASHING

MASONRY SECONDARY FLASHING

ROOFING FLASHING/COMPONENTS

FOR COMPLETE AIR BARRIER TRANSITION, SOLID GROUT THIS CMU (SEE SHEET A-12 FOR ADDITIONAL INFORMATION)

1 1/4" x 1/8" CONTINUOUS TERMINATION BAR W/ 1/4" DIA. X 1 1/4" DRIVE ANCHORS @ 16" O.C. (MIN.)

FULLY ADHERED MEMBRANE FLASHING - LAP OVER METAL MASONRY FLASHING

4" BRICK (CLAY) VENEER

FULLY ADHERED SECONDARY MEMBRANE FLASHING - LAP UNDER METAL MASONRY FLASHING

6" MIN. 4" MIN.

WEEPS @ MAX. 32" O.C.

28 Ga. STAINLESS STEEL FLASHING W/ RECEIVER TO ACCEPT COUNTER FLASHING, HORIZ. LAP 4" (MIN.) W/ NON-SKINNING BUTYL SEALANT (BY MASON CONTRACTOR)

7/8" 2" MIN.

4"

FASTENER

COMPATIBLE METAL COUNTER FLASHING, HEMMED, WITH Dripp, LAP 4" (MIN.) W/ NON-SKINNING BUTYL SEALANT (BY ROOFING CONTRACTOR)

1 1/4" x 1/8" CONTINUOUS TERMINATION BAR W/ REMOVABLE FASTENERS @ 16" O.C. MAX (BY ROOFING CONTRACTOR)

ROOF MEMBRANE (BY ROOFING CONTRACTOR)

UPPER WALL / LOW ROOF DETAIL ENLARGED

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