Notes:

1) This set of details call for the use of an integral water repellant (added to both the units and the mortar) and a post-cleaning field-applied water repellant (which requires periodic re-application). These water repellent materials shall come from a single manufacturer and/or otherwise be verified as compatible with one another.

2) Joint tooling should be performed only when the mortar is “thumbprint hard”. This is especially important for mortar containing integral water repellants.

3) This set of details shows wall construction primarily at hollow cells. Where vertical reinforcement occurs, the pan flashing, drainage material and insulation is omitted. For visualization, see the photograph on sheet A-3 of the pan flashing at the base of a partially reinforced wall.
NOTE: TOP OF CONCRETE SLAB TO BE ABOVE PAN FLASHING SYSTEM

2 BASE DETAIL A-2

REINFORCED CELL PICTURE
NOTES:
1) CONTINUE PANT FLASHING SYSTEM A MINIMUM OF ONE CELL BEYOND BOTH JAMB EDGES OF THE OPENING.
2) UNPROTECTED ALUMINUM DOOR AND WINDOW FRAMES CAN INTERACT WITH CEMENT-BASED MATERIALS AND INCREASE CORROSION. SEE PCA "MASONRY TODAY" VOLUME II, NO. 1 FOR RECOMMENDATIONS (www.cement.org/masonry/cc_al_frames.asp)

8" CMU
LADDER-TYPE HORIZONTAL JOINT REINFORCEMENT SPACED @ 16" O.C.
PAN FLASHING SYSTEM
BOND BEAM UNIT (W/ REINF. PER STRUCTURAL DESIGN) GROUTED SOLID
INSULATION (LOOSE FILL OR INSERTS)
DRAINAGE MATERIAL
NOTE: MASONRY UNTIL MAY BE PRECAST OR FIELD ASSEMBLED

3A MASONRY LINTEL (PREFERRED)

8" CMU
LADDER-TYPE HORIZONTAL JOINT REINFORCEMENT SPACED @ 16" O.C.
PAN FLASHING SYSTEM
GALVANIZED DOUBLE ANGLE STEEL LINTEL
INSULATION (LOOSE FILL OR INSERTS)
DRAINAGE MATERIAL
GROUT CORES AND HEAD JOINTS SOLID

3B DOUBLE ANGLE STEEL LINTEL

3C PRECAST CONCRETE LINTEL

SHORT SPAN LINTELS

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MASONRY INSTITUTE OF MICHIGAN, INC.
GENERIC WALL DESIGN – 8" SINGLE WyTHE CMU

IN CHARGE: M.W.F.
DRAWN: M.W.F.
APPROVED: M.W.F.
DATE: 05/09/2011
TITLE: SHORT SPAN LINTEL
DETAILS: A-1
SHEET A-4
NOTE: MULTIPLE PIECE SILLS MAY REQUIRE MASONRY ANCHORS IN THE HEAD JOINTS

CONCRETE MASONRY SILL UNIT

FLEXIBLE MEMBRANE FLASHING

TURN UP FLEXIBLE MEMBRANE FLASHING AS END DAMS (BEYOND)

4" CMU (SOLID)

1" MIN.

LADDER-TYPE HORIZONTAL JOINT REINFORCEMENT SPACED @ 16" O.C.

8" CMU

MASONRY SILL

5A

METAL SILL

HEMED DRIP

SEALANT

LADDER-TYPE HORIZONTAL JOINT REINFORCEMENT SPACED @ 16" O.C.

8" CMU

WINDOW FRAME

SILL DETAILS

PRECAST OR STONE SILL

FLEXIBLE MEMBRANE FLASHING

TURN UP FLEXIBLE MEMBRANE FLASHING AS END DAMS (BEYOND)

4" CMU (SOLID)

1" MIN.

LADDER-TYPE HORIZONTAL JOINT REINFORCEMENT SPACED @ 16" O.C.

8" CMU

WINDOW FRAME

METAL SILL

5C

A-1

A-1

A-1

A-6
NOTE: THIS DETAIL PERTAINS TO STEEL LINTELS W/ FLANGE WIDTHS OF 5 1/4" TO 5 1/2". FOR NARROW FLANGE WIDTHS, SEE DETAIL 6A. FOR FLANGE WIDTHS GREATER THAN 5 1/2" THE METAL DRAIN EDGE LIKELY WILL NEED TO BE OMITTED.

(CMU NOT SHOWN FOR CLARITY)

FLEXIBLE MEMBRANE FLASHING, FULLY ADHERED

RECEIVER COMPONENT OF TWO-PIECE FLEXIBLE ANCHOR MECHANICALLY FASTENED THROUGH FULLY ADHERED MEMBRANE FLASHING ON EXTERIOR FACE

METAL DRAIN w/ HEMMED EDGE

SEALANT

ANCHOR (SHOWN ON THIS SIDE ONLY FOR CLARITY)

RECEIVER COMPONENT ON INTERIOR FACE MECHANICALLY FASTENED OR WELDED

1 1/2" MINIMUM LAP

METAL DRAIN w/ HEMMED EDGE

SEALANT

ENLARGED FLASHING DETAIL AT WIDE FLANGE STEEL LINTELS

6B A-5

ENLARGED FLASHING DETAIL AT NARROW FLANGE STEEL LINTELS

6A A-5

ENLARGED TWO-PIECE FLASHING DETAIL

6C A-5

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EXTEND ROOFING MEMBRANE TO EXTERIOR, UNDERSIDE OF THE SHEET METAL COPING

8" SMOOTH FACE CMU

SEALANT

8" CMU

NOTE: AT JOINT BEARING LOCATIONS ONLY, MOVE PAN FLASHING AND DRAINAGE MATERIAL UP ONE COURSE AS SHOWN

PAN FLASHING SYSTEM

8" BOND BEAM (W/ REINF.)

LADDER-TYPE HORIZONTAL JOINT RENFORCEMENT SPACED @ 15" O.C.

INTEGRAL WATER REPELLENT (IN CMU AND MORTAR) AND A POST-CLEANING FIELD-APPLIED WATER REPELLENT

TOOL MORTAR JOINT TO A CONCAVE PROFILE

SLOPING SHEET METAL COPING CAP WITH CONT. CLEAT, EA. SIDE

WOOD NAHLER WITH ANCHOR BOLTS

GROUT CORES SOLID AT ANCHOR BOLTS AND VERTICAL REINFORCEMENT, OTHERWISE INCLUDE INSULATION

VERTICAL REINFORCEMENT

DRAINAGE MATERIAL

INSULATION (LOOSE FILL OR INSERTS)

7 PARAPET DETAIL

A-2
NOTE: 8" BEARING IS SHOWN AND IS TYPICAL, BUT SHOULD BE INCREASED IF NECESSARY BASED ON STRUCTURAL BEARING CALCULATIONS.

NOTE: EVEN FOR FIELD ASSEMBLED MASONRY LINTELS, DO NOT OVERLAP/INTERLOCK THE LINTEL REINFORCING WITH THE WALL REINFORCING.

STEEL REINFORCEMENT IN SOLID GROUTED CELLS

CONTROL JOINT (BACKER ROD AND SEALANT)

PREFORMED CONTROL JOINT GASKET (SEE SHEET A-9)

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

MASONRY LINTEL (MAY BE PRE-CAST OR FIELD ASSEMBLED)

SLIP PLANE (BACKER ROD & SEALANT)

GROUT SOLID UNDER LINTEL BEARING AS REQUIRED

#15 FELT (BOND BREAKER)

BACKER ROD AND SEALANT ON BED JOINT ON ALL THREE EXPOSED FACES

JAMB OPENING FACE

ELEVATION VIEW

ISOMETRIC VIEW

SLIP PLANE/CONTROL JOINT @ LONG SPAN MASONRY LINTELS

A-10 (SPANS OF APPROXIMATELY 12' UP TO 20')
PLAN OF LINTEL/BEARING PLATE

NOTE: 8" BEARING IS SHOWN AND IS TYPICAL, BUT SHOULD BE INCREASED IF NEEDED BASED ON STRUCTURAL BEARING CALCULATIONS.

BEARING PLATE
BOTTOM FLANGE (AND WEB) OF LINTEL BEAM
SLOTTED HOLES IN BEAM FLANGES

LINTEL PLATE
"J" ANCHORS W/ THREADED PROJECTIONS, DO NOT FULLY TIGHTEN NUTS TO ALLOW FOR IN-PLANE MOVEMENT

NOTES:
1) DO NOT WELD STEEL BEAM PLATE LINTEL TO BEARING PLATE (TYPICAL BOTH SIDES).
2) STEEL BEAM TO HAVE SLOTS ON BOTTOM FLANGES TO ALLOW FOR IN-PLANE MOVEMENT.

ELEVATION VIEW
SLIP PLANE/CONTROL JOINT @ LONG SPAN STEEL LINTELS

ISOMETRIC VIEW
STEEL BEARING PLATE WITH "J" ANCHORS (THREADED ON PROJECTION ABOVE BEARING PLATE)
BACKER ROD AND SEALANT ON BED JOINT ON ALL THREE EXPOSED FACES
FACE SHELL AND GROUT NOT SHOWN TO REVEAL BEARING PLATE AND ANCHORS

JAMB OPENING FACE

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ELEVATION VIEW

REINFORCED MASONRY OPENINGS & ASSOCIATED CONTROL JOINT DESIGN
(SPANS UP TO APPROXIMATELY 12")

NOTES:

1) TRADITIONALLY, CONTROL JOINTS HAVE TYPICALLY BEEN LOCATED AT OR VERY CLOSE TO THE SIDES OF OPENINGS. HOWEVER IT IS THE MWM'S PREFERENCE FOR CONTROL JOINTS TO BE LOCATED AWAY FROM THE EDGE OF OPENINGS AND TO ADD REINFORCEMENT AROUND THE OPENINGS.

2) FOR BEST PERFORMANCE, THE VERTICAL REINFORCEMENT SHOULD BE PREFERABLY PLACED IN THE CELL IMMEDIATELY ADJACENT TO THE OPENING. HOWEVER, IF THIS CELL IS CONGESTED, THE VERTICAL REINFORCEMENT MAY BE PLACED IN THE 2ND CELL FROM THE OPENING.

3) ON LONG SPAN OPENINGS IT IS RECOMMENDED TO GROUT BOTH THE 1ST AND 2ND CELLS FROM THE OPENING TO PROVIDE ADDITIONAL RESISTANCE FOR ATTACHING THE DOOR OR WINDOW FRAME.

4) FOR CONTROL JOINT DETAILS SEE SHEET A-9.

CMU's AND FLASHING NOT SHOWN FOR CLARITY

LADDER JOINT REINFORCEMENT IN MORTAR JOINT BELOW SILT FROM CONTROL JOINT TO CONTROL JOINT

MAX. CONTROL JOINT SPACING (TYPICALLY 20'-30')

CONTROL JOINT (LOCATED AWAY FROM EDGE OF WALL OPENINGS (NOTE #4)

SHORT SPAN MASONRY LINTEL (SEE DETAIL 3A ON SHEET A-9)

LONG SPAN MASONRY LINTEL (SEE DETAIL 4A ON SHEET A-9)

VERTICAL REINFORCEMENT IN SOLID GROUTED CELLS REQUIRED ON BOTH SIDES OF OPENINGS (SEE NOTE #2 & #3)

SHORT SPAN OPENING

LONG SPAN OPENING

ISOMETRIC VIEW