MASONRY Institute of Michigan

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"

DRAWING INDEX:

NOTES:

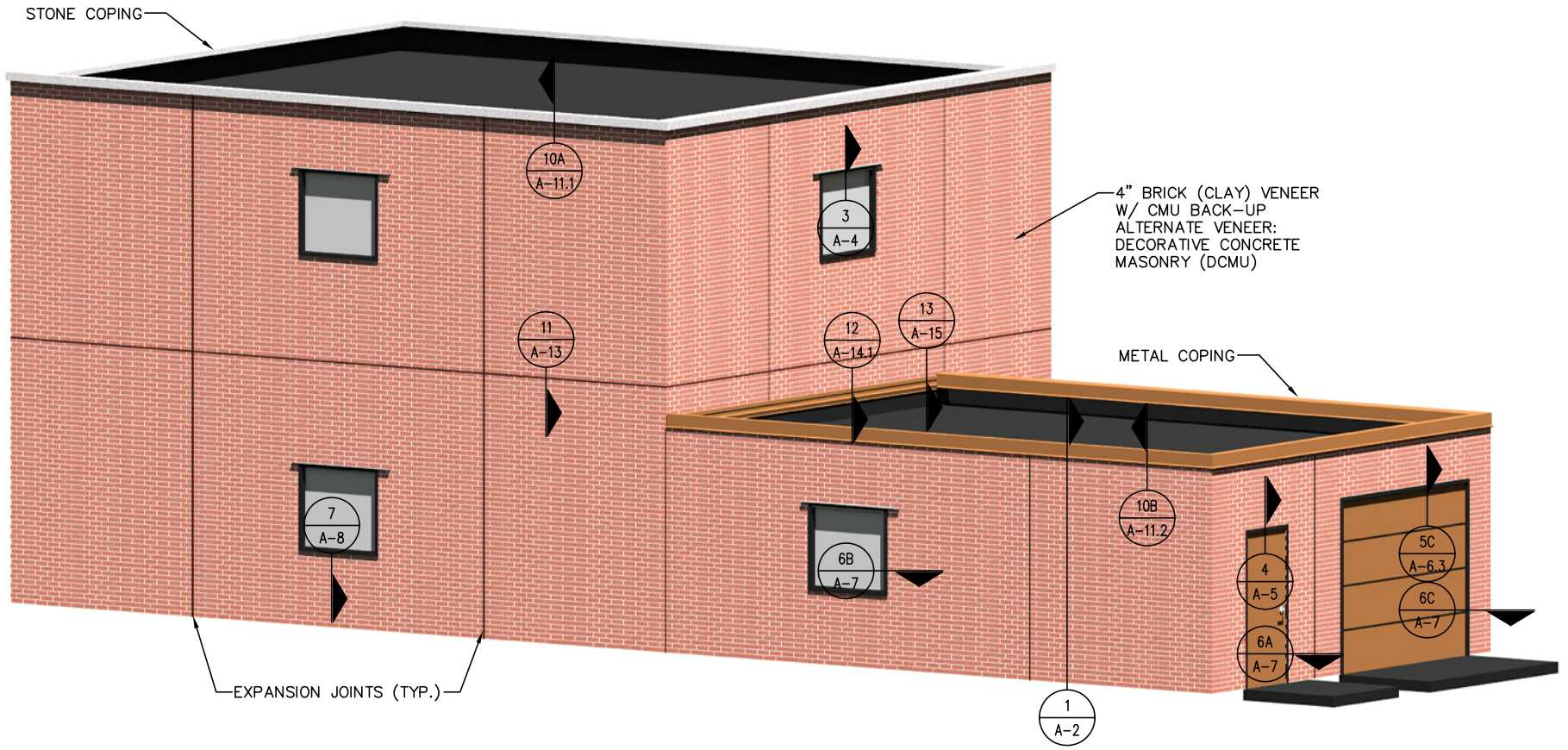
1) A NOMINAL WALL ASSEMBLY THICKNESS OF 1'-4" IS SHOWN FOR MODULARITY, BUT THE DETAILS CAN BE MODIFIED TO ACCOMMODATE USER DESIRED VARIATIONS IN OVERALL WALL THICKNESS AS WELL AS VARIATIONS IN INSULATION AND AIR SPACE THICKNESS (A 1" MINIMUM AIR SPACE IS MANDATED BY CODE). SEE A-12 FOR THERMAL PERFORMANCE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

DAILEY ENGINEERING, INC.
8485 STEPHENSON ROAD
ONSTED, MI 49265
PH. # (517) 467-9000

MASONRY Institute of Michigan

DETAIL SET CW.8 (CAVITY WALL)

IN CHARGE:	MIM
DRAWN:	M.W.F.
APPROVED:	T.A.D.
DATE:	08/08/2019
TITLE:	COVER SHEET
SHEET:	A-1.0



GENERIC BUILDING

NOT TO SCALE

(SEE M.I.M. SINGLE WYTHE DETAILS FOR CMU CONTROL JOINT LOCATION CRITERIA)

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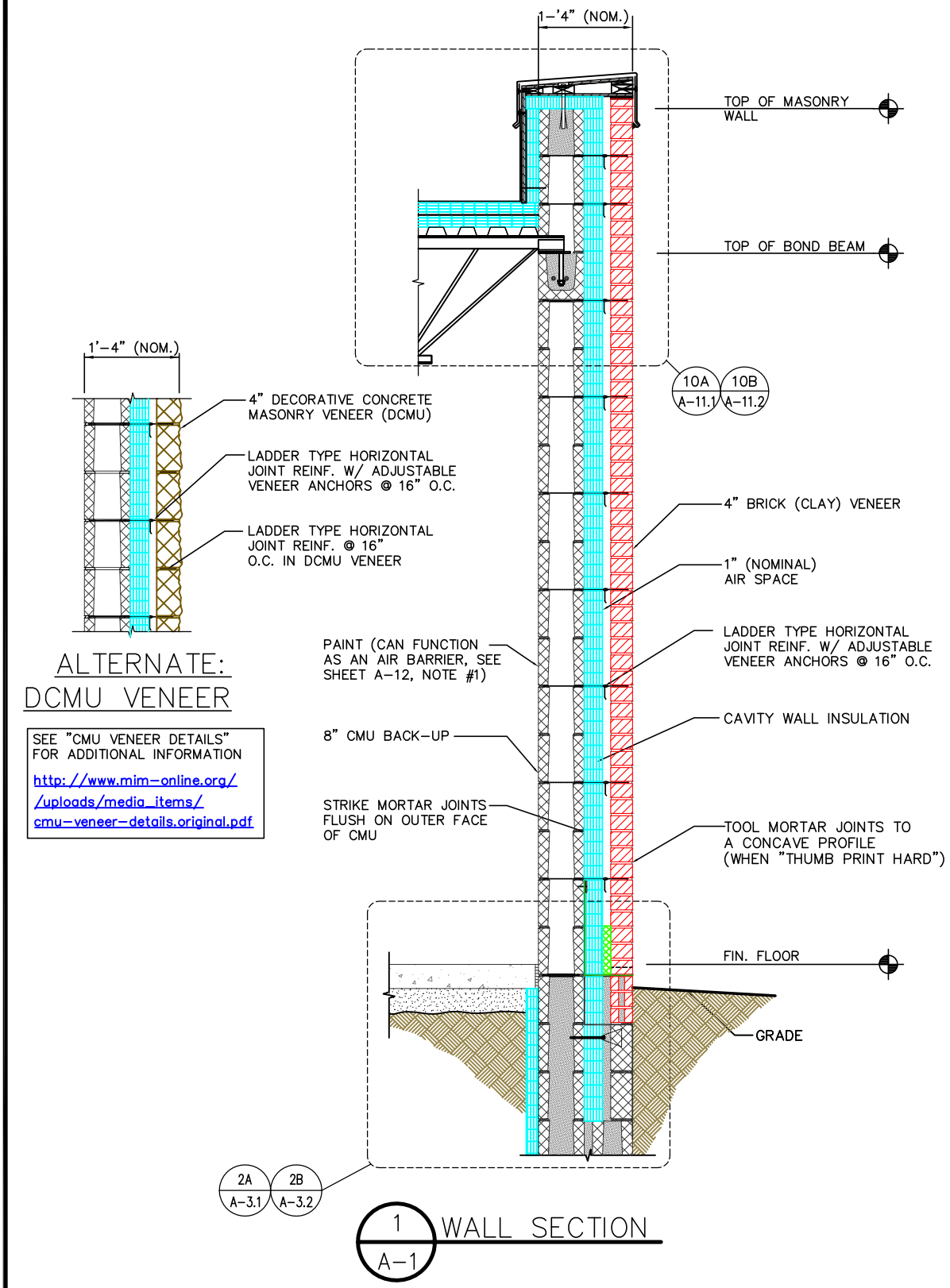
MASONRY Institute of Michigan

DETAIL SET CW.8 (CAVITY WALL)

IN CHARGE:	MIM
DRAWN:	M.W.F.
APPROVED:	T.A.D.
DATE:	08/08/2019
TITLE:	GENERIC BUILDING ISOMETRIC
SHEET:	A-1.1



ALTERNATE: DCMU VENEER

SEE "CMU VENEER DETAILS" FOR ADDITIONAL INFORMATION
http://www.mim-online.org/uploads/media_items/cmu-veneer-details.original.pdf

1 / A-1 WALL SECTION

SHEET:	A-2
TITLE:	WALL SECTION
DATE:	08/08/2019
APPROVED:	T.A.D.
DRAWN:	M.W.F.
IN CHARGE:	MIM

MASONRY Institute of Michigan

DETAIL SET CW.8 (CAVITY WALL)

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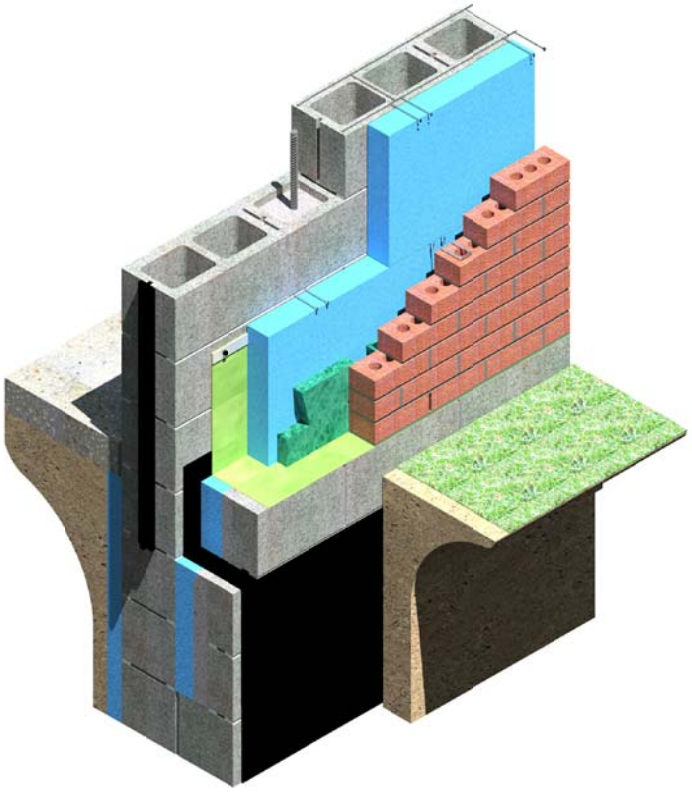
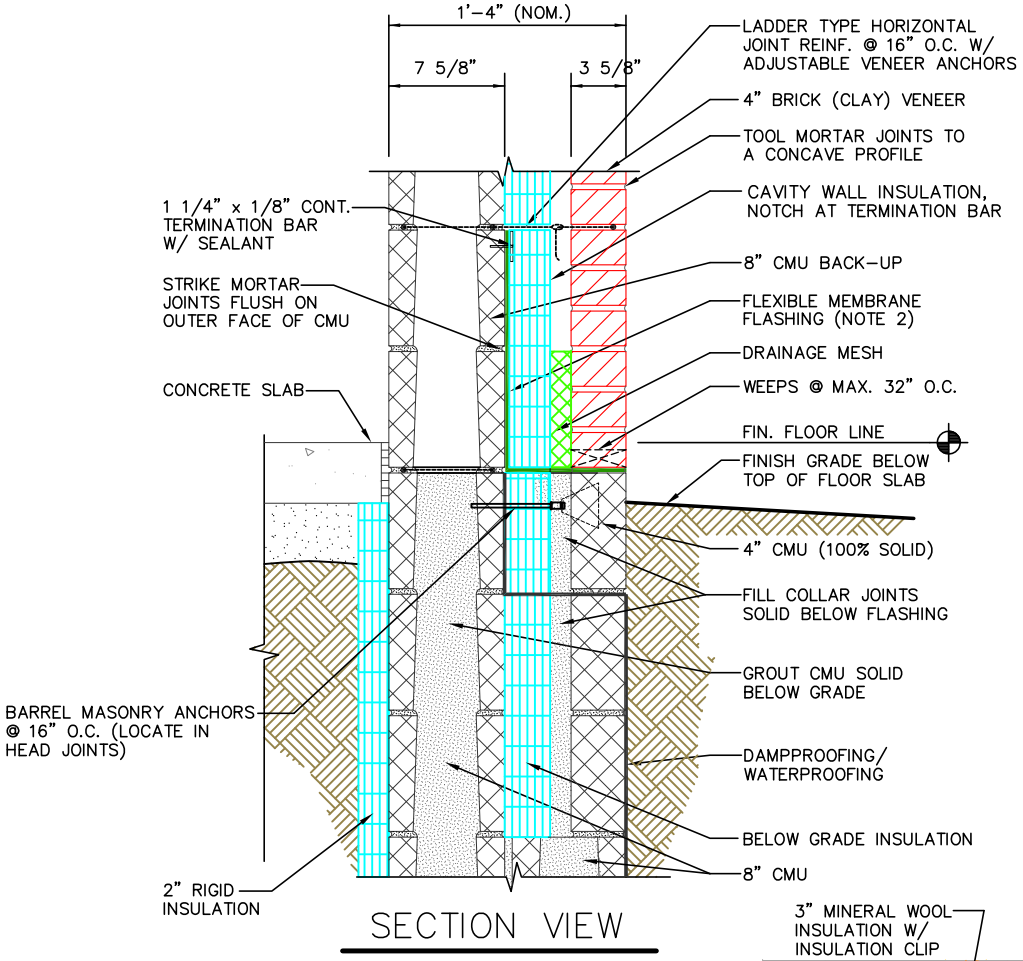
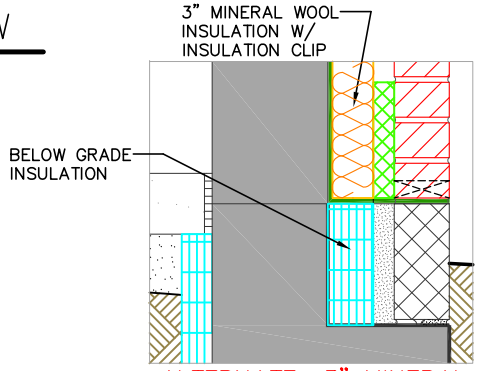
PH. # (517) 467-9000



ISOMETRIC VIEW



SECTION VIEW



ALTERNATE: 3" MINERAL WOOL INSULATION

NOTES
1) CMU BELOW GRADE SHALL BE MEDIUM OR NORMAL WEIGHT.

2) FOR ADDITIONAL INFORMATION ON BASE FLASHING, SEE M.I.M. FAQ #22
https://www.masonryinfo.org/architects/frequently-asked-questions/in-commercial-construction-how-should-the-horizontal-leg-of-flashing-at-the-base-of-the-wall-be-terminated-when-the-masonry-veneer-extends-below-grade/

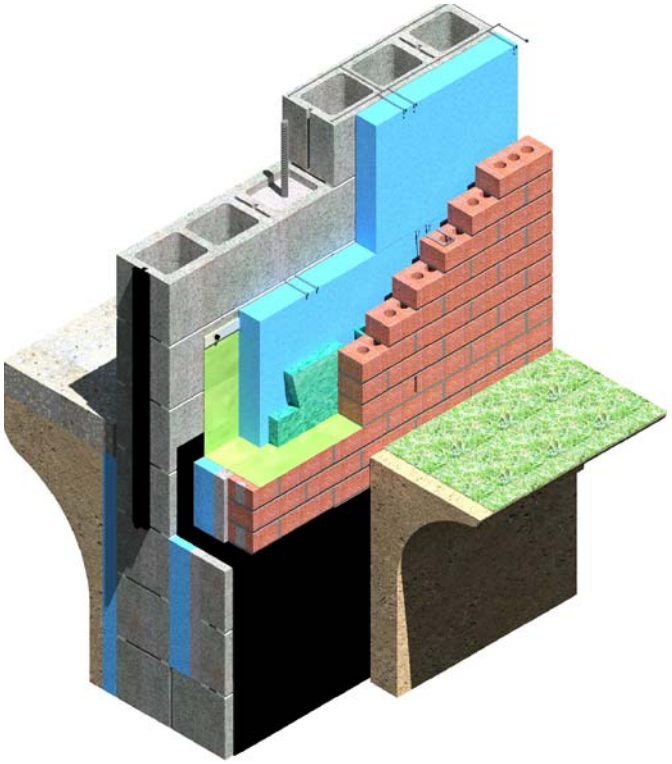
2A / A-2 BASE DETAIL W/ VENEER ABOVE GRADE (PREFERRED BASE DETAIL)

DAILEY ENGINEERING, INC.
8485 STEPHENSON ROAD
ONSTED, MI 49265
PH. # (517) 467-9000

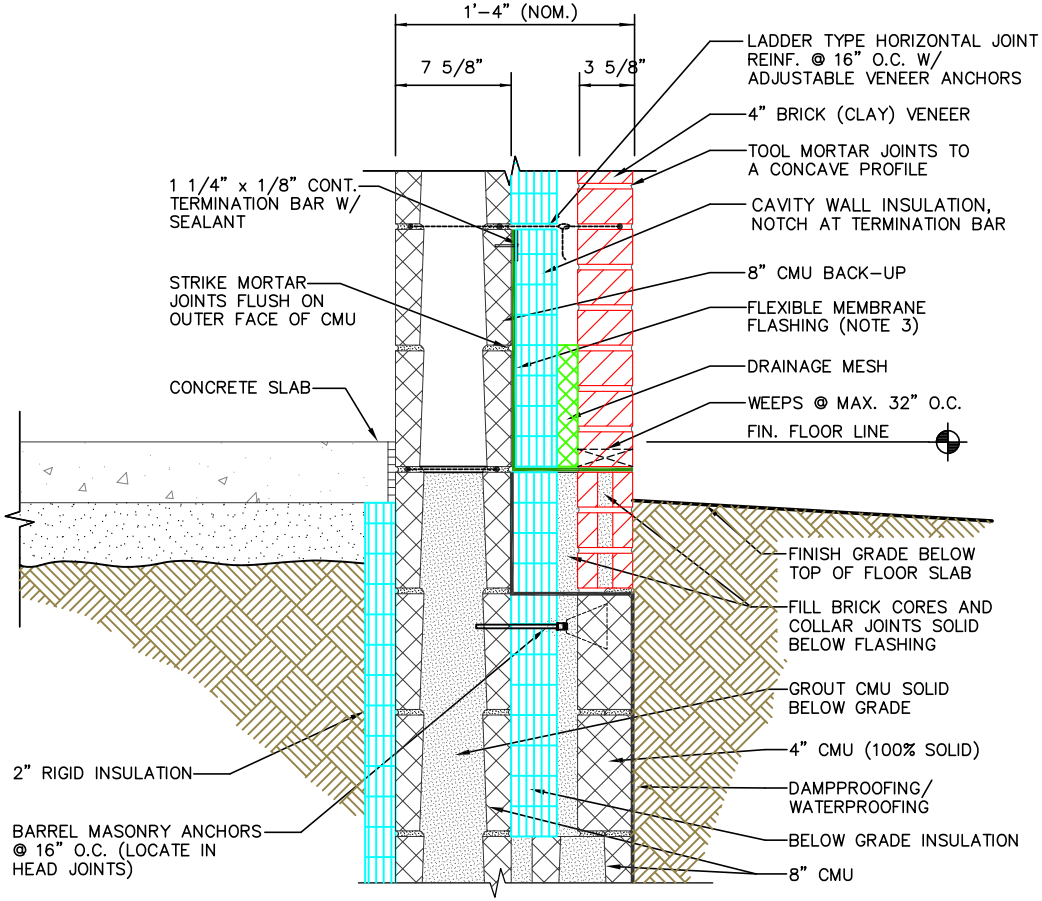
MASONRY Institute of Michigan

DETAIL SET CW.8 (CAVITY WALL)

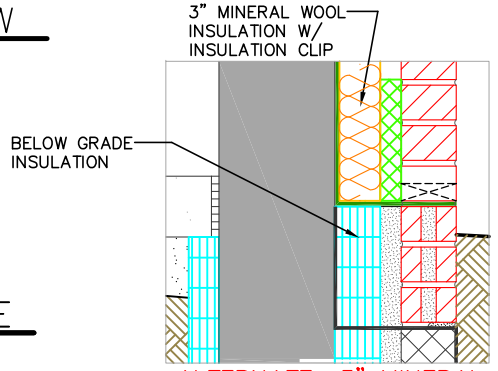
IN CHARGE:	MIM
DRAWN:	M.W.F.
APPROVED:	T.A.D.
DATE:	08/08/2019
TITLE:	BASE DETAIL W/ VENEER ABOVE GRADE
SHEET:	A-3.1



ISOMETRIC VIEW



SECTION VIEW



ALTERNATE: 3" MINERAL WOOL INSULATION

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 M.I.M. FAQ #22
https://www.masonryinfo.org/architects/frequently-asked-questions/in-commercial-construction-how-should-the-horizontal-leg-of-flashing-at-the-base-of-the-wall-be-terminated-when-the-masonry-veneer-extends-below-grade/

2B / A-2 BASE DETAIL W/ VENEER BELOW GRADE

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ONSTED, MI 49265
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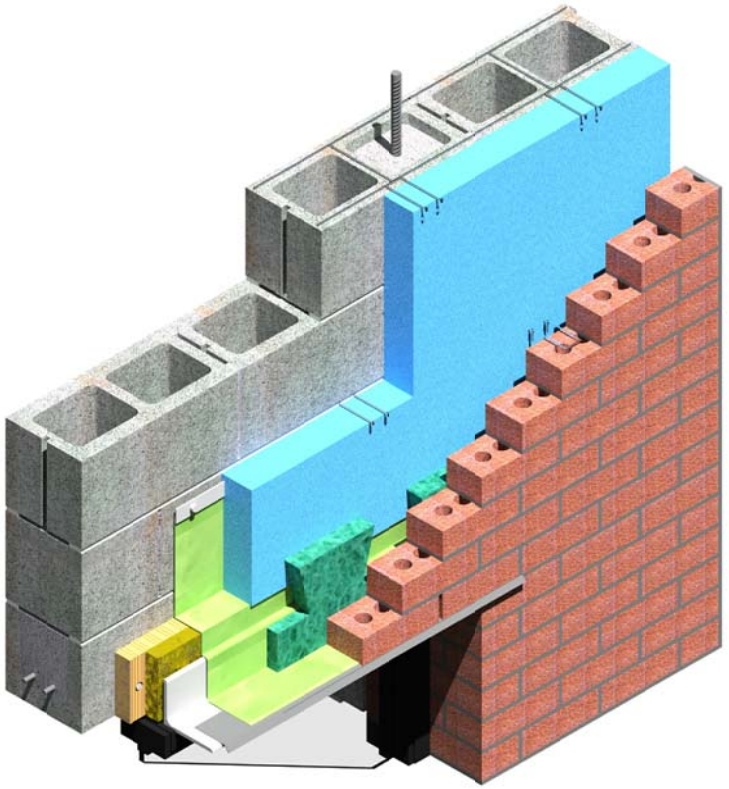
DETAIL SET CW.8 (CAVITY WALL)

IN CHARGE:	MIM
DRAWN:	M.W.F.
APPROVED:	T.A.D.
DATE:	08/08/2019
TITLE:	BASE DETAIL W/ VENEER BELOW GRADE
SHEET:	A-3.2

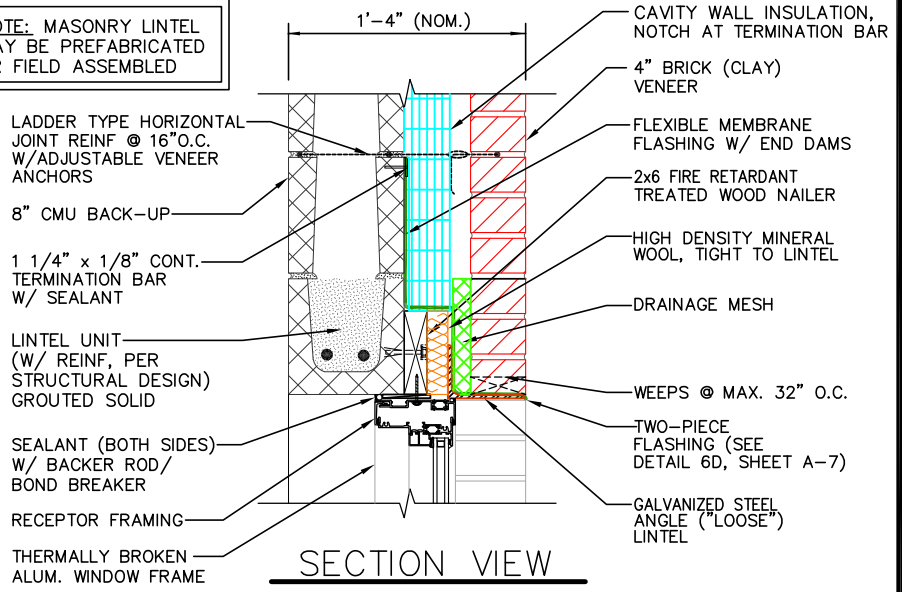
NOTE:

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



ISOMETRIC VIEW

NOTE: MASONRY LINTEL MAY BE PREFABRICATED OR FIELD ASSEMBLED



SECTION VIEW

3A / A–1

SHORT SPAN MASONRY LINTEL FOR RECEPTOR STYLE WINDOWS

(PREFERRED LINTEL DETAIL)

DAILEY ENGINEERING, INC.
8485 STEPHENSON ROAD
ONSTED, MI 49265
PH. # (517) 467-9000

MASONRY Institute of Michigan

DETAIL SET CW.8 (CAVITY WALL)

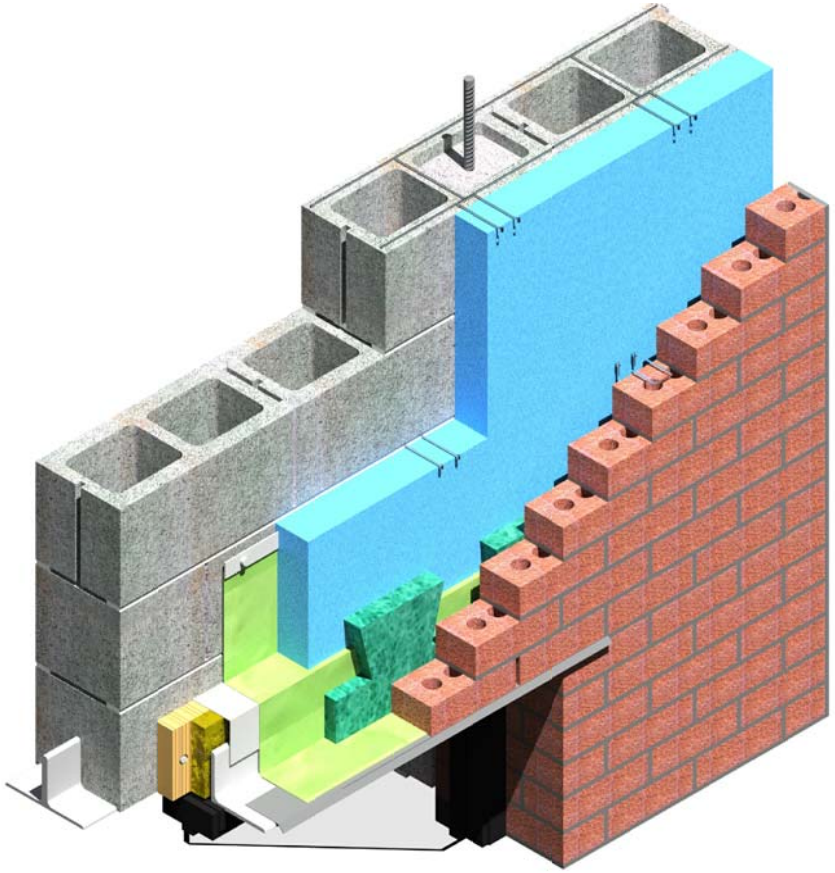
IN CHARGE:	MIM
DRAWN:	M.W.F.
APPROVED:	T.A.D.
DATE:	08/08/2019

TITLE: SHORT SPAN MASONRY LINTEL FOR RECEPTOR STYLE WINDOWS

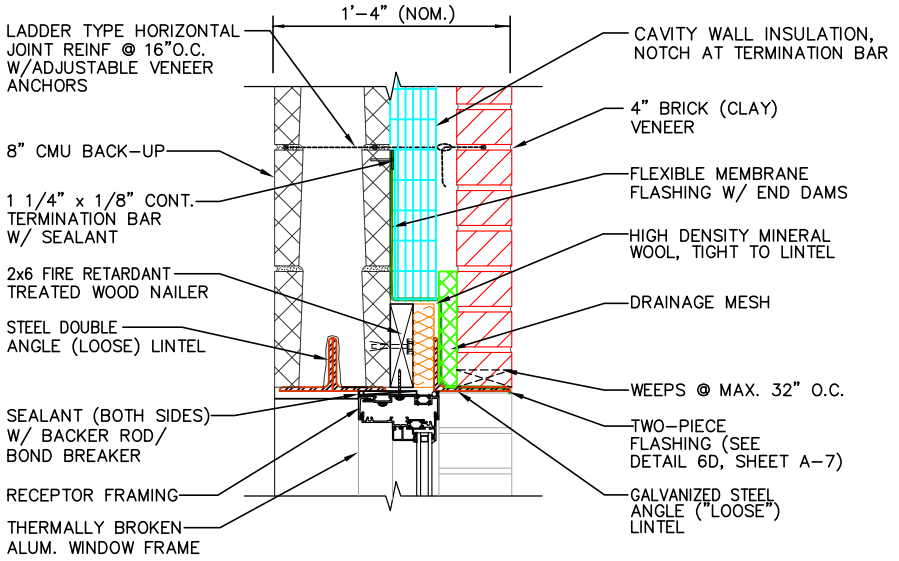
SHEET: A–4.1

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



ISOMETRIC VIEW



SECTION VIEW

3B / A–1

SHORT SPAN STEEL LINTEL FOR RECEPTOR STYLE WINDOWS

DAILEY ENGINEERING, INC.
8485 STEPHENSON ROAD
ONSTED, MI 49265
PH. # (517) 467-9000

MASONRY Institute of Michigan

DETAIL SET CW.8 (CAVITY WALL)

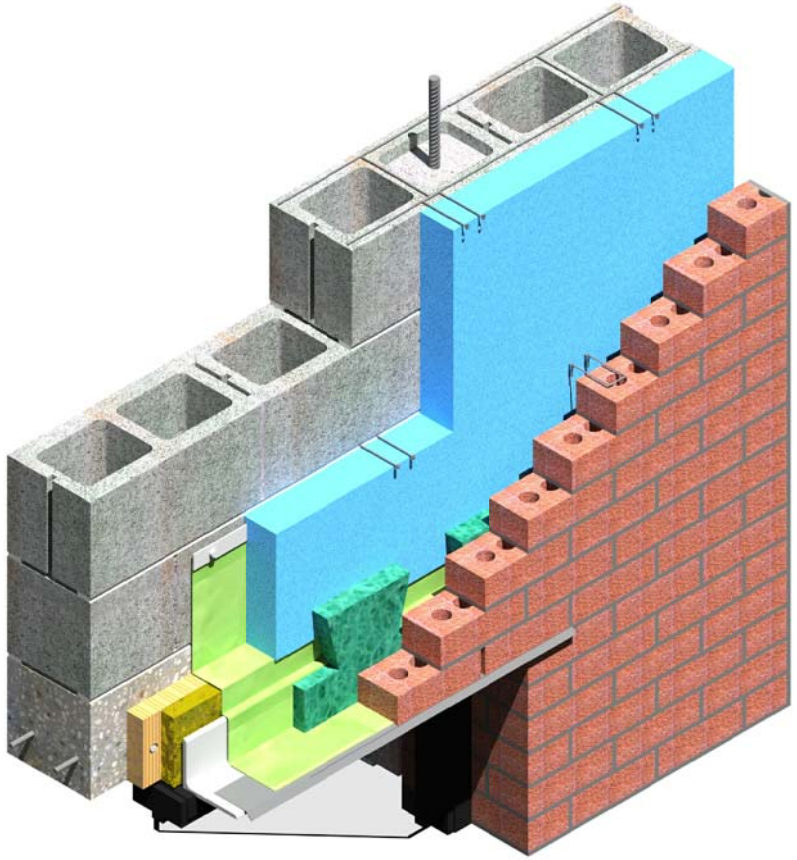
IN CHARGE:	MIM
DRAWN:	M.W.F.
APPROVED:	T.A.D.
DATE:	08/08/2019

TITLE: SHORT SPAN STEEL LINTEL FOR RECEPTOR STYLE WINDOWS

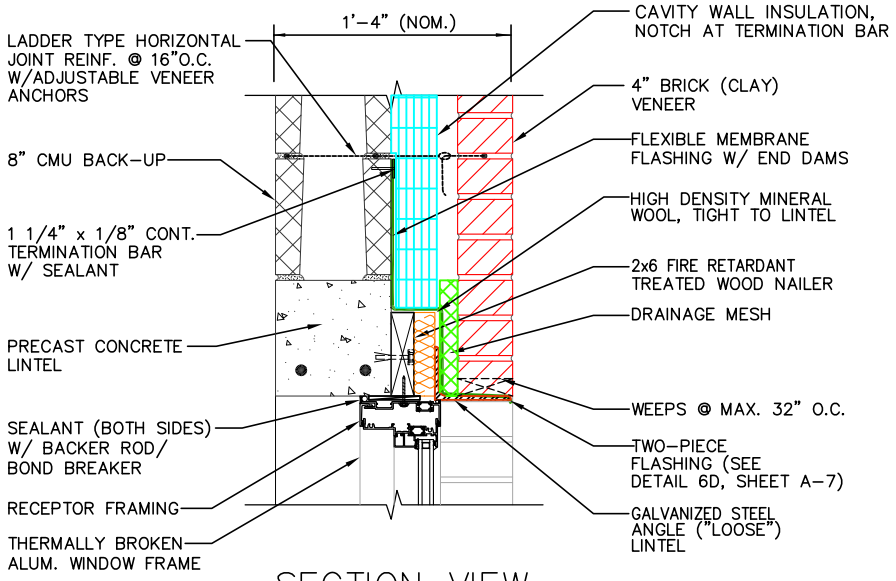
SHEET: A–4.2

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



ISOMETRIC VIEW



SECTION VIEW

3C / A–1

SHORT SPAN PRE–CAST LINTEL FOR RECEPTOR STYLE WINDOWS

DAILEY ENGINEERING, INC.
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ONSTED, MI 49265
PH. # (517) 467–9000

MASONRY Institute of Michigan

DETAIL SET CW.8 (CAVITY WALL)

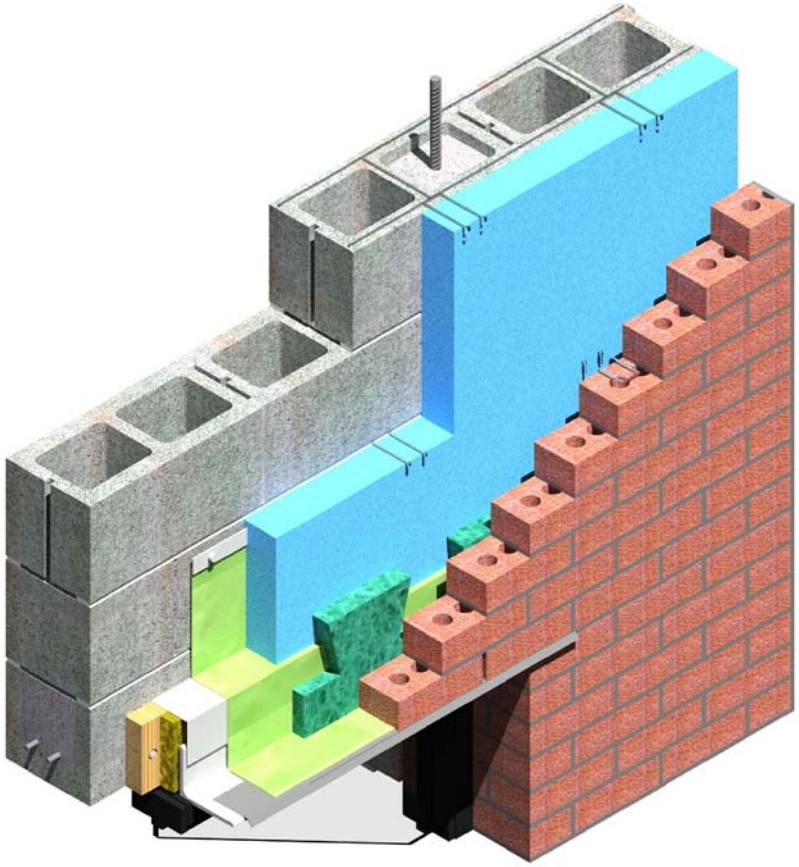
IN CHARGE:	MIM
DRAWN:	M.W.F.
APPROVED:	T.A.D.
DATE:	08/08/2019

TITLE: SHORT SPAN PRE–CAST LINTEL FOR RECEPTOR STYLE WINDOWS

SHEET: A–4.3

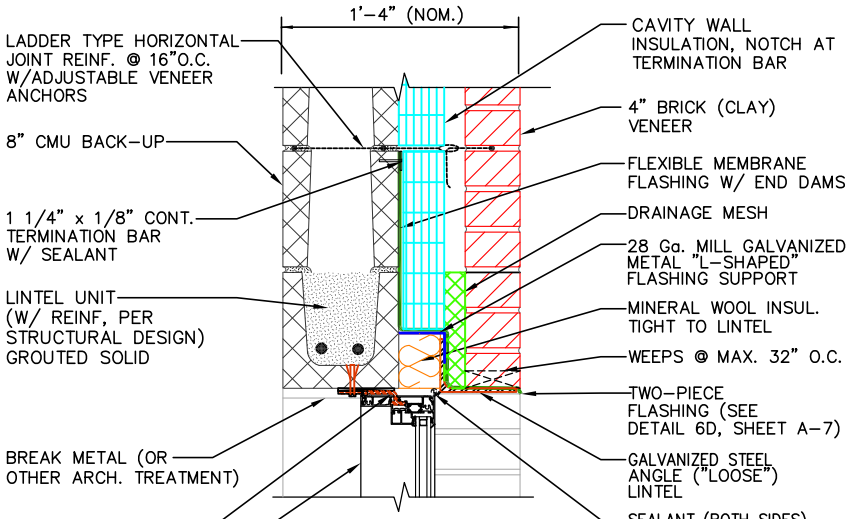
NOTE:

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



ISOMETRIC VIEW

NOTE: MASONRY LINTEL MAY BE PREFABRICATED OR FIELD ASSEMBLED



SECTION VIEW

3D / A-1 SHORT SPAN MASONRY LINTEL FOR STRAP STYLE WINDOWS

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8485 STEPHENSON ROAD
ONSTED, MI 49265
PH. # (517) 467-9000

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DETAIL SET CW.8 (CAVITY WALL)

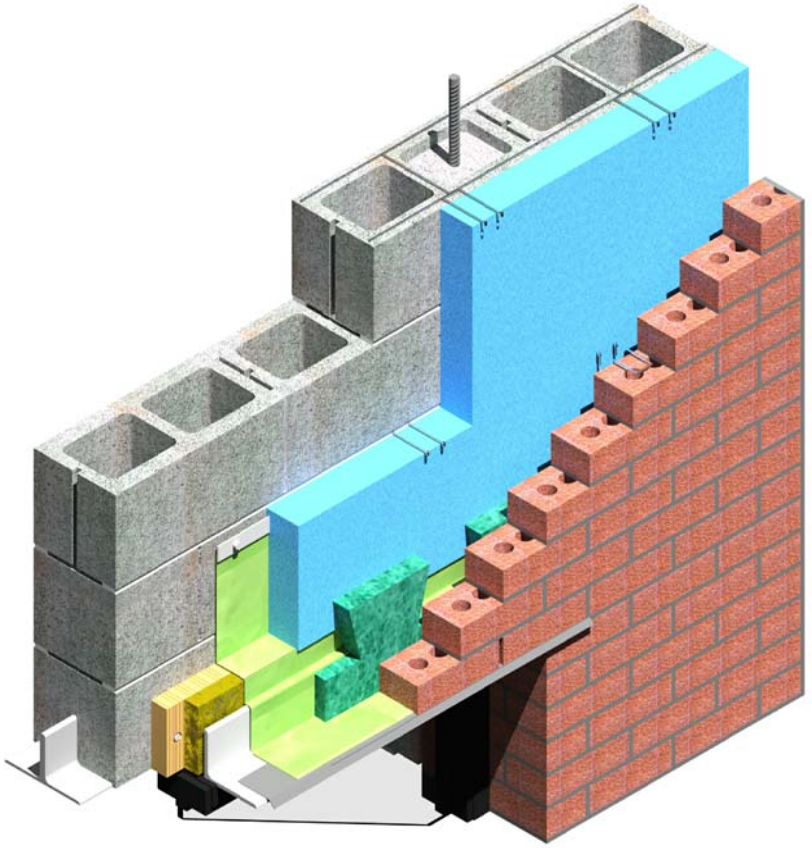
IN CHARGE:	MIM
DRAWN:	M.W.F.
APPROVED:	T.A.D.
DATE:	08/08/2019

TITLE: SHORT SPAN MASONRY LINTEL FOR STRAP STYLE WINDOWS

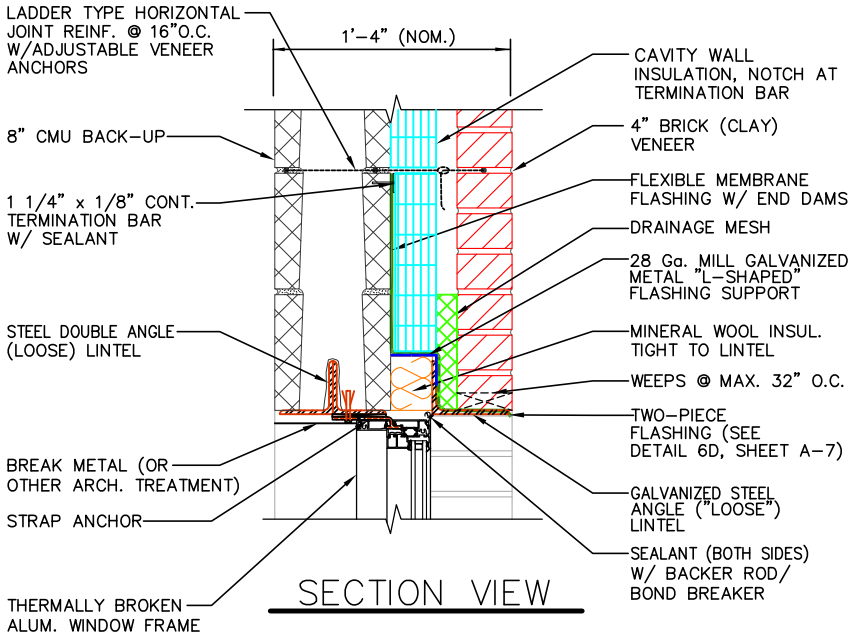
SHEET: A-4.4

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



ISOMETRIC VIEW



SECTION VIEW

3E / A-1 SHORT SPAN STEEL LINTEL FOR STRAP STYLE WINDOWS

DAILEY ENGINEERING, INC.
8485 STEPHENSON ROAD
ONSTED, MI 49265
PH. # (517) 467-9000

MASONRY Institute of Michigan

DETAIL SET CW.8 (CAVITY WALL)

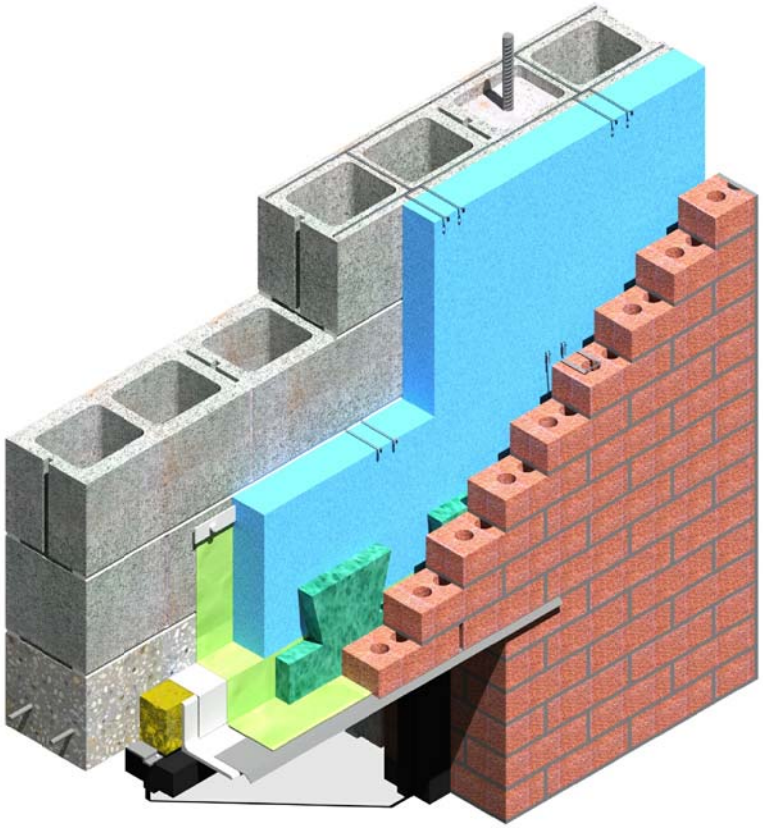
IN CHARGE:	MIM
DRAWN:	M.W.F.
APPROVED:	T.A.D.
DATE:	08/08/2019

TITLE: SHORT SPAN STEEL LINTEL FOR STRAP STYLE WINDOWS

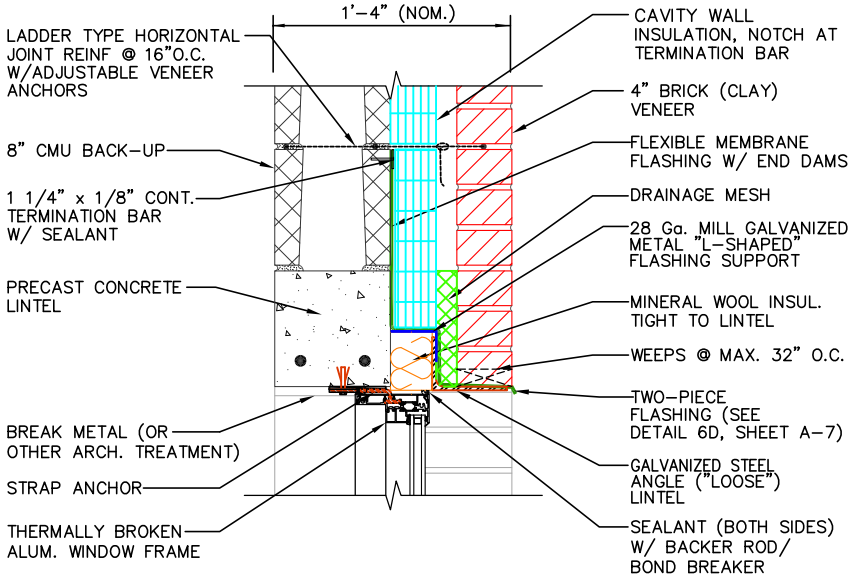
SHEET: A-4.5

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



ISOMETRIC VIEW



SECTION VIEW

3F / A-1 SHORT SPAN PRE-CAST LINTEL FOR STRAP STYLE WINDOWS

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8485 STEPHENSON ROAD
ONSTED, MI 49265
PH. # (517) 467-9000

MASONRY Institute of Michigan

DETAIL SET CW.8 (CAVITY WALL)

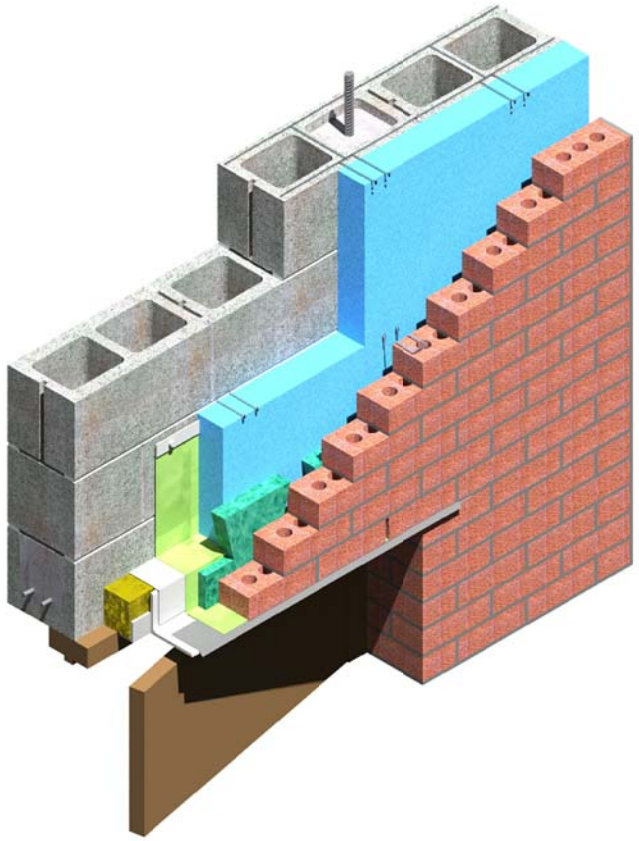
IN CHARGE:	MIM
DRAWN:	M.W.F.
APPROVED:	T.A.D.
DATE:	08/08/2019

TITLE: SHORT SPAN PRE-CAST LINTEL FOR STRAP STYLE WINDOWS

SHEET: A-4.6

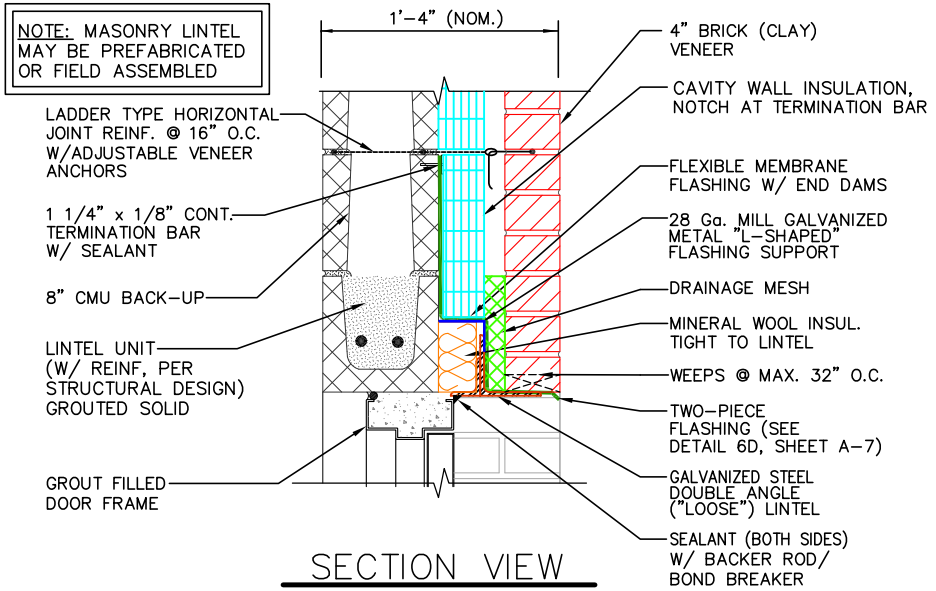
NOTE:

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



ISOMETRIC VIEW

NOTE: MASONRY LINTEL MAY BE PREFABRICATED OR FIELD ASSEMBLED



SECTION VIEW

4A / A–1 SHORT SPAN MASONRY LINTEL FOR DOOR OPENING (PREFERRED DOOR HEAD DETAIL)

DAILEY ENGINEERING, INC.
8485 STEPHENSON ROAD
ONSTED, MI 49265
PH. # (517) 467-9000

MASONRY Institute of Michigan

DETAIL SET CW.8 (CAVITY WALL)

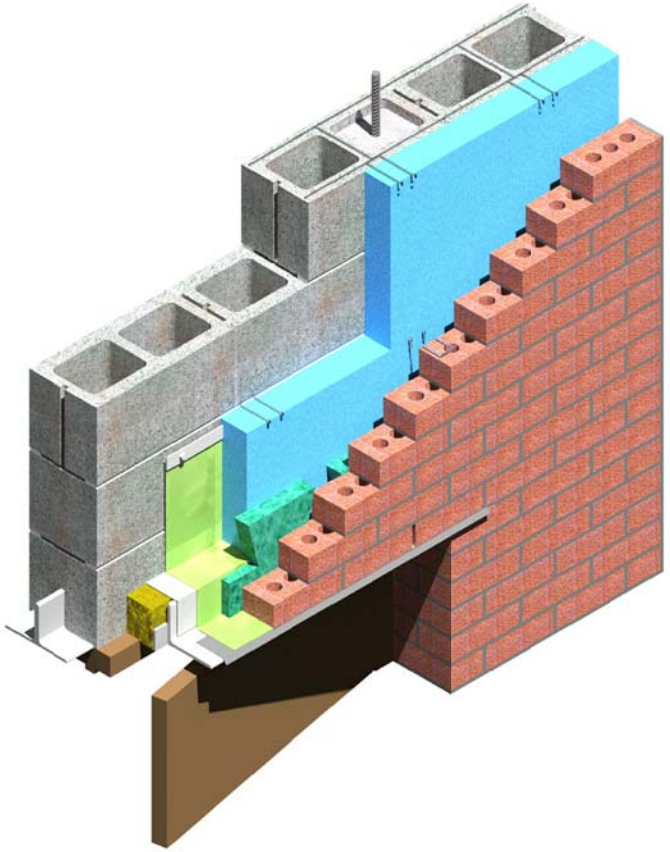
IN CHARGE:	MIM
DRAWN:	M.W.F.
APPROVED:	T.A.D.
DATE:	08/08/2019

TITLE: SHORT SPAN MASONRY LINTEL FOR DOOR OPENING

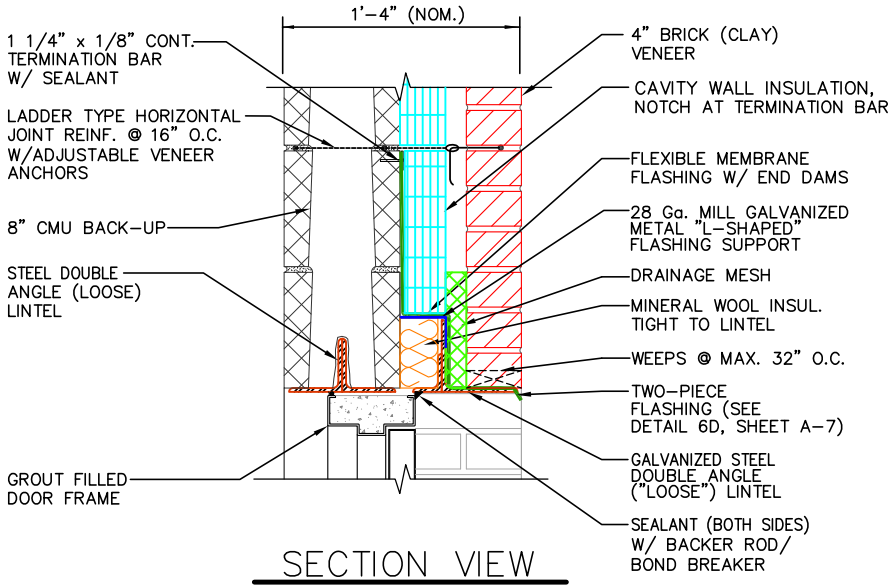
SHEET: A–5.1

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



ISOMETRIC VIEW



SECTION VIEW

4B / A–1 SHORT SPAN STEEL LINTEL FOR DOOR OPENING

DAILEY ENGINEERING, INC.
8485 STEPHENSON ROAD
ONSTED, MI 49265
PH. # (517) 467-9000

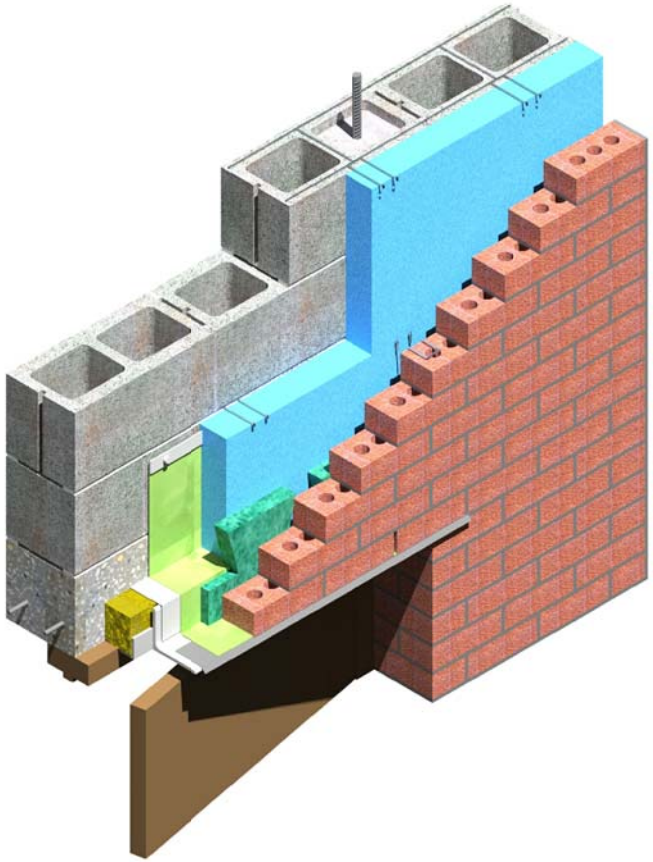
MASONRY Institute of Michigan

DETAIL SET CW.8 (CAVITY WALL)

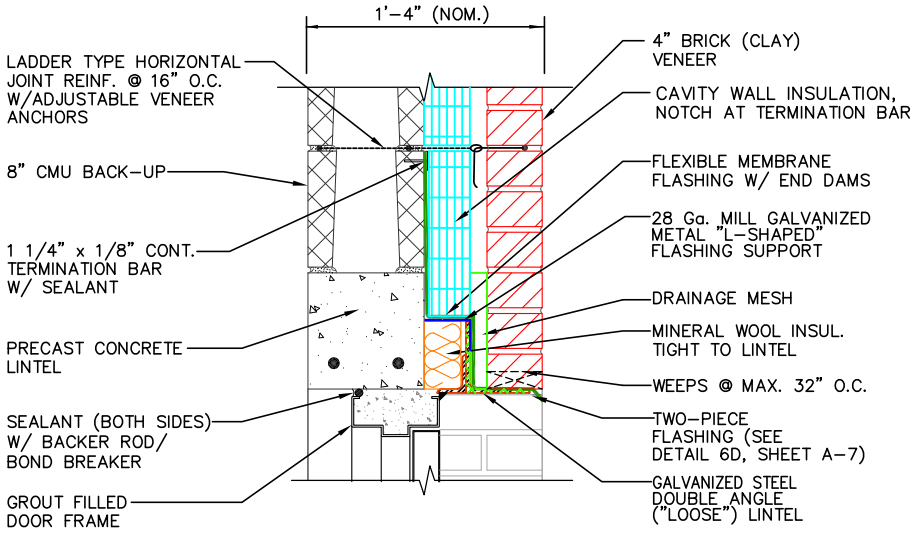
IN CHARGE:	MIM
DRAWN:	M.W.F.
APPROVED:	T.A.D.
DATE:	08/08/2019
TITLE:	SHORT SPAN STEEL LINTEL FOR DOOR OPENING
SHEET:	A–5.2

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



ISOMETRIC VIEW



SECTION VIEW

4C / A–1

SHORT SPAN PRE–CAST LINTEL FOR DOOR OPENING

DAILEY ENGINEERING, INC.
8485 STEPHENSON ROAD
ONSTED, MI 49265
PH. # (517) 467–9000

MASONRY Institute of Michigan

DETAIL SET CW.8 (CAVITY WALL)

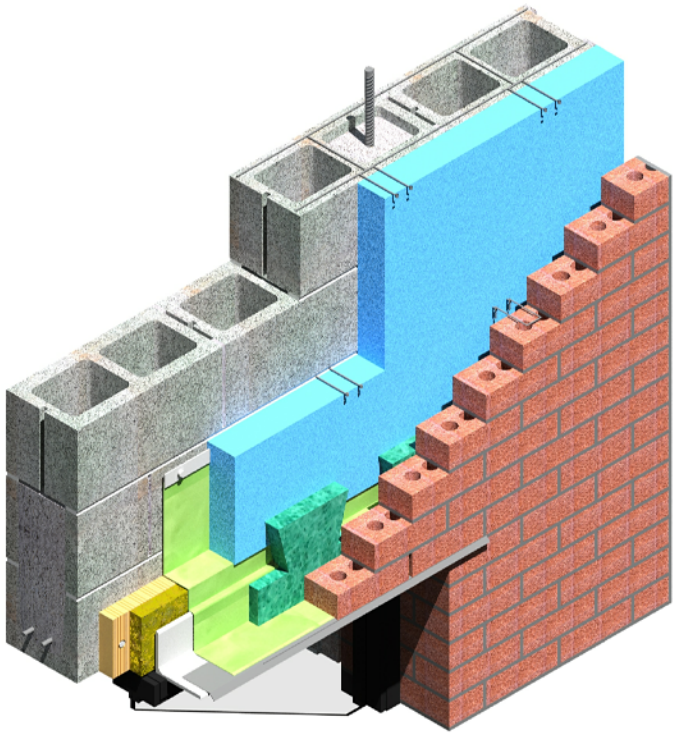
IN CHARGE:	MIM
DRAWN:	M.W.F.
APPROVED:	T.A.D.
DATE:	08/08/2019
TITLE:	SHORT SPAN PRE–CAST LINTEL FOR DOOR OPENING
SHEET:	A–5.3

NOTES:

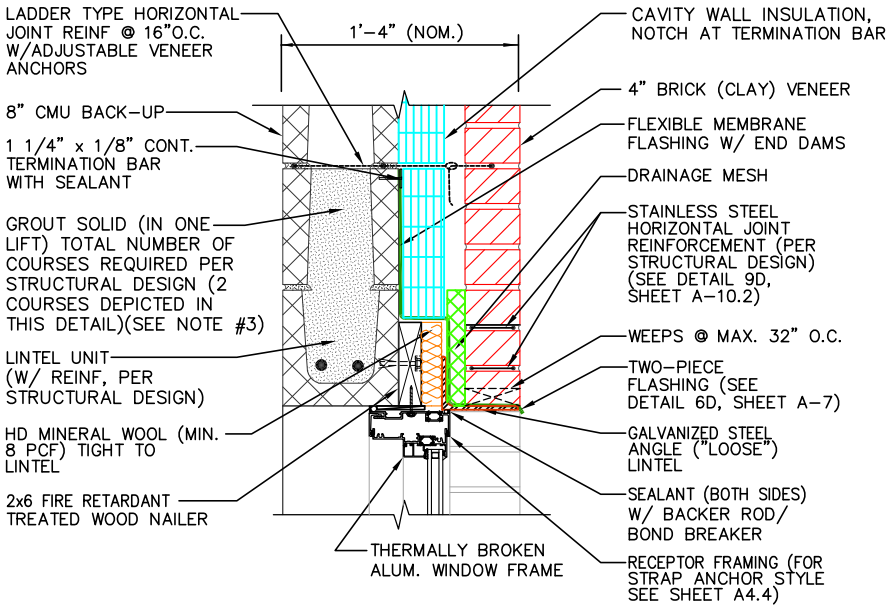
1) FOR ADDITIONAL INFORMATION ON THE REINFORCED BRICK LINTEL DEPICTED IN THIS DETAIL, SEE DETAIL 9B ON SHEET A-10.

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 W/ HEAD JOINTS GROUTED SOLID.



ISOMETRIC VIEW



SECTION VIEW

5A / A-1 LONG SPAN MASONRY LINTEL FOR WINDOW OPENING

DAILEY ENGINEERING, INC.
8485 STEPHENSON ROAD
ONSTED, MI 49265
PH. # (517) 467-9000

MASONRY Institute of Michigan

DETAIL SET CW.8 (CAVITY WALL)

IN CHARGE:	MIM
DRAWN:	M.W.F.
APPROVED:	T.A.D.
DATE:	08/08/2019

TITLE: LONG SPAN MASONRY LINTEL FOR WINDOW OPENING

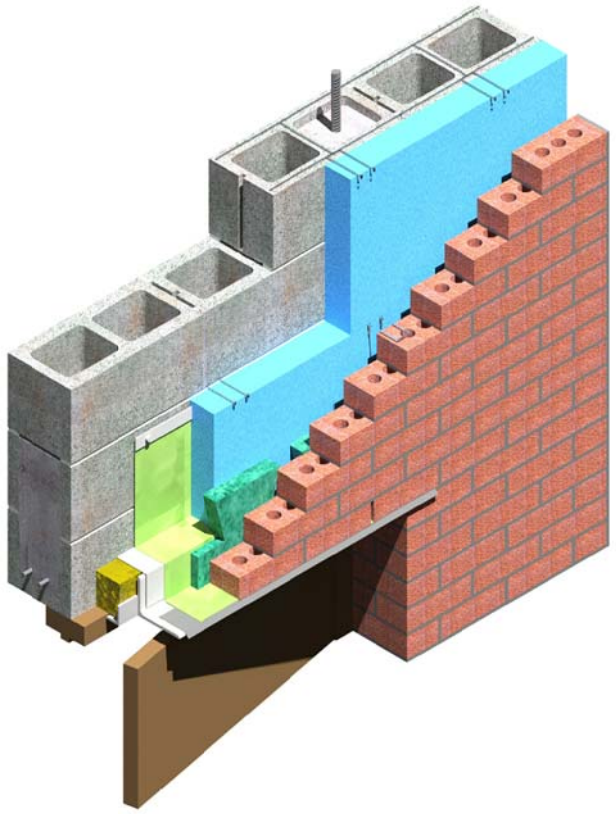
SHEET: A-6.1

NOTES:

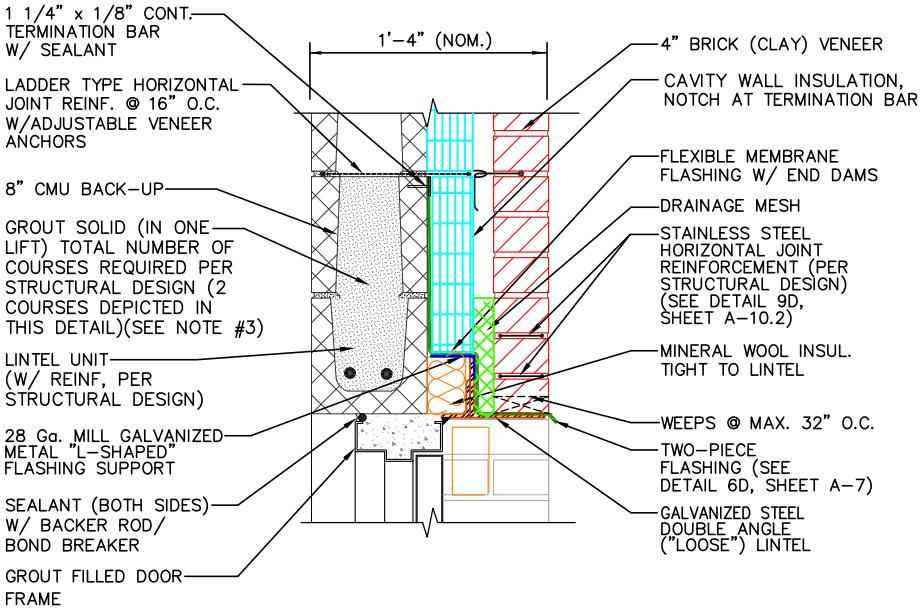
1) FOR ADDITIONAL INFORMATION ON THE REINFORCED BRICK LINTEL DEPICTED IN THIS DETAIL, SEE DETAIL 9B ON SHEET A–10.

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 W/ HEAD JOINTS GROUTED SOLID.



ISOMETRIC VIEW



SECTION VIEW

5B / A–1

LONG SPAN MASONRY LINTEL FOR OPENING WITH MULTIPLE PEDESTRIAN DOORS

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8485 STEPHENSON ROAD
ONSTED, MI 49265
PH. # (517) 467–9000

MASONRY Institute of Michigan

DETAIL SET CW.8 (CAVITY WALL)

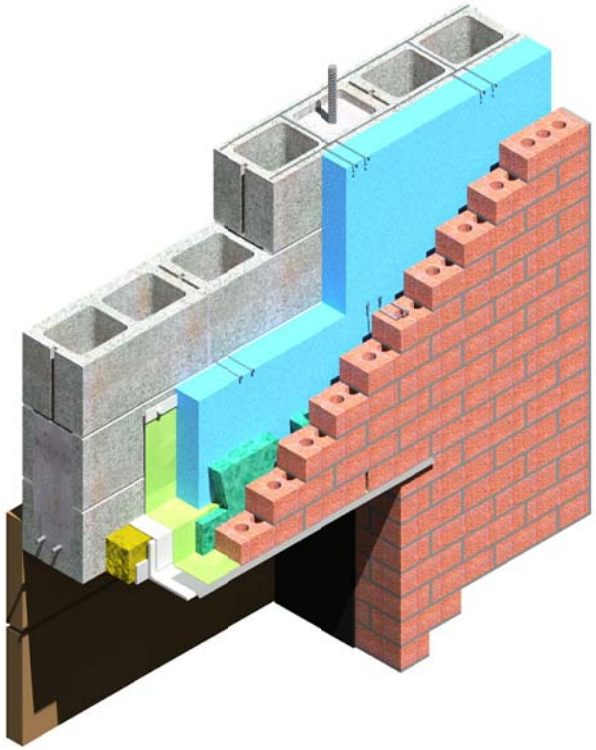
IN CHARGE:	MIM
DRAWN:	M.W.F.
APPROVED:	T.A.D.
DATE:	08/08/2019
TITLE:	LONG SPAN MASONRY LINTEL FOR OPENING W/ MULTIPLE PEDESTRIAN DOORS
SHEET:	A–6.2

NOTES:

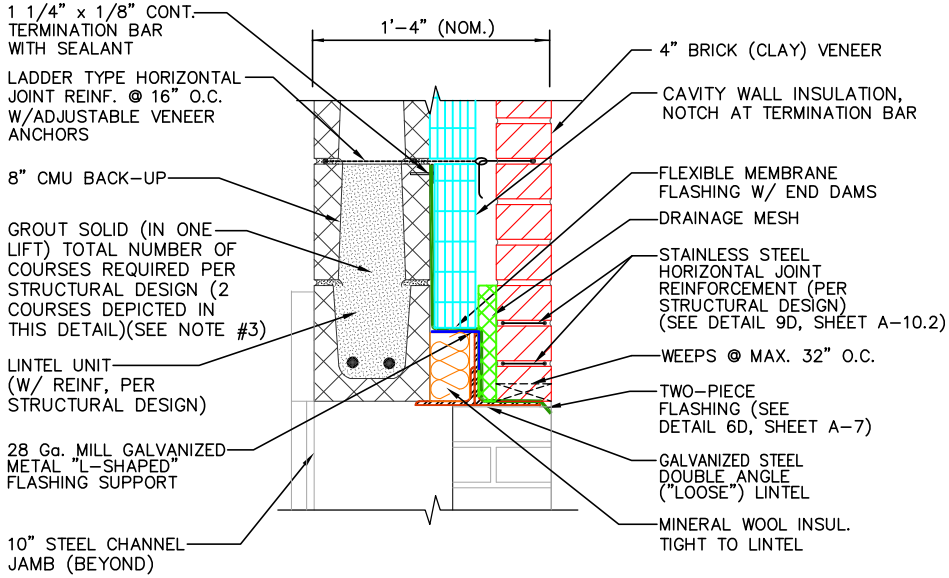
1) FOR ADDITIONAL INFORMATION ON THE REINFORCED BRICK LINTEL DEPICTED IN THIS DETAIL, SEE DETAIL 9B ON SHEET A-10.

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 W/ HEAD JOINTS GROUTED SOLID.



ISOMETRIC VIEW



SECTION VIEW

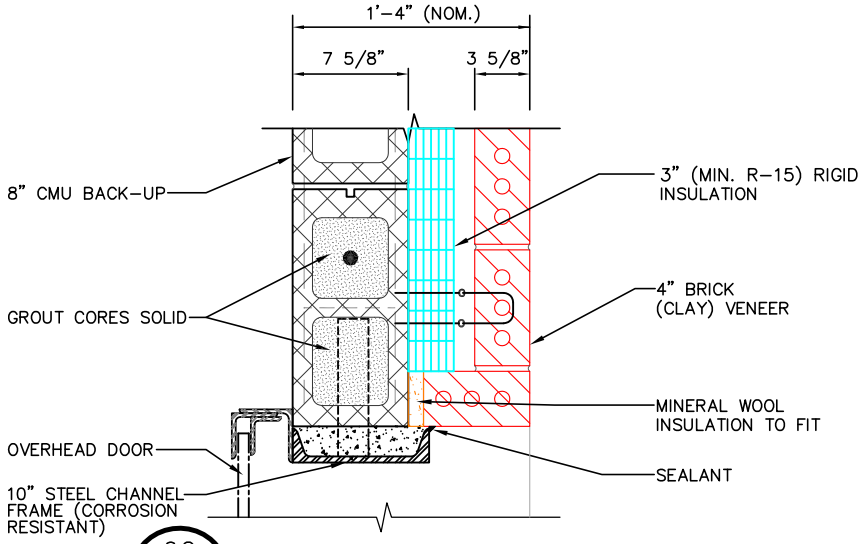
5C / A-1 LONG SPAN MASONRY LINTEL FOR OVERHEAD DOOR OPENING

DAILEY ENGINEERING, INC.
8485 STEPHENSON ROAD
ONSTED, MI 49265
PH. # (517) 467-9000

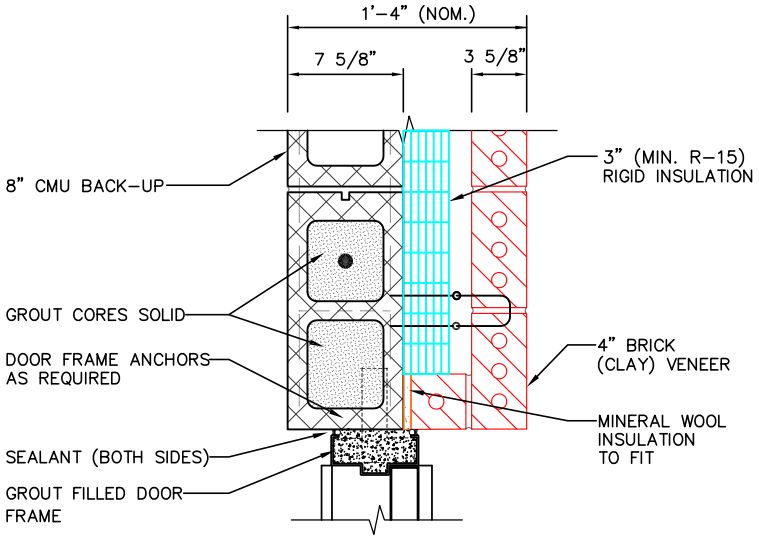
MASONRY Institute of Michigan

DETAIL SET CW.8 (CAVITY WALL)

IN CHARGE:	MIM
DRAWN:	M.W.F.
APPROVED:	T.A.D.
DATE:	08/08/2019
TITLE:	LONG SPAN MASONRY LINTEL FOR OVERHEAD DOOR OPENING
SHEET:	A-6.3



6C / A-1 OVERHEAD DOOR JAMB DETAIL

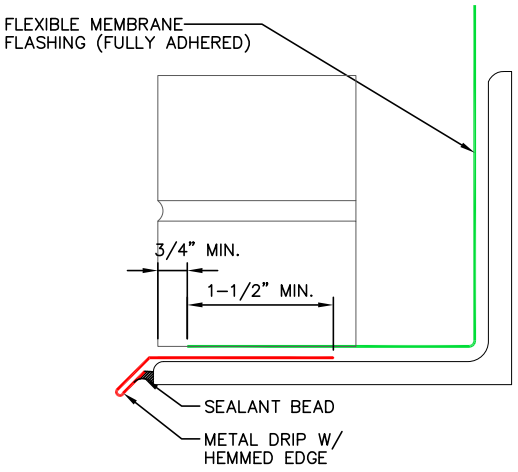


6A / A-1 PEDESTRIAN DOOR JAMB DETAIL

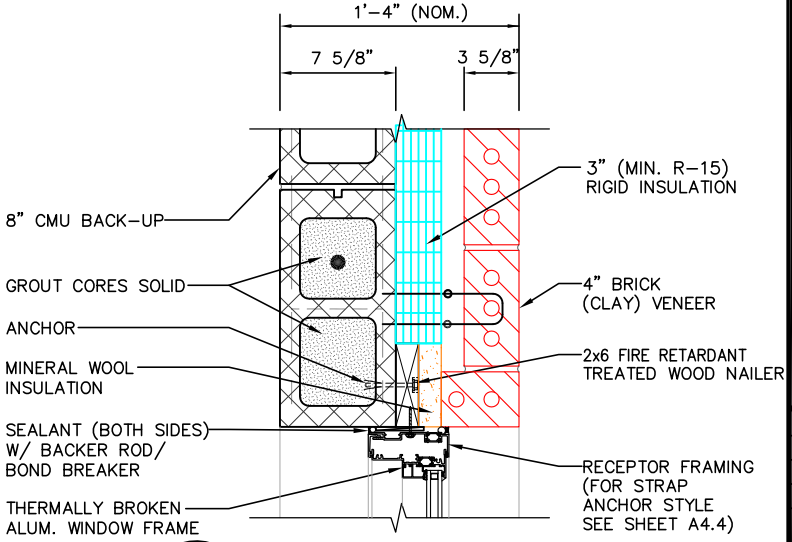
NOTES:

1) 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

2) BRICK ANCHORS SHALL BE PRESENT WITHIN 12" OF JAMB ENDS



6D TWO PIECE FLASHING DETAIL
A-4, A-5, & A-6



6B / A-1 WINDOW JAMB DETAIL (USING RECEPTOR)

DAILEY ENGINEERING, INC.
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PH. # (517) 467-9000

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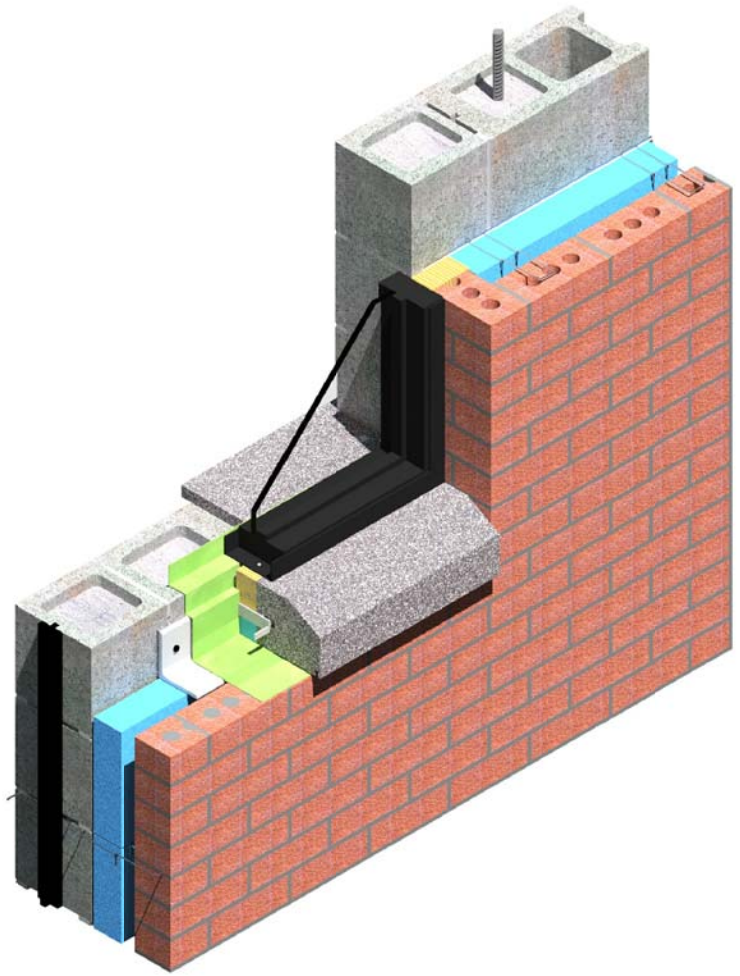
DETAIL SET CW.8 (CAVITY WALL)

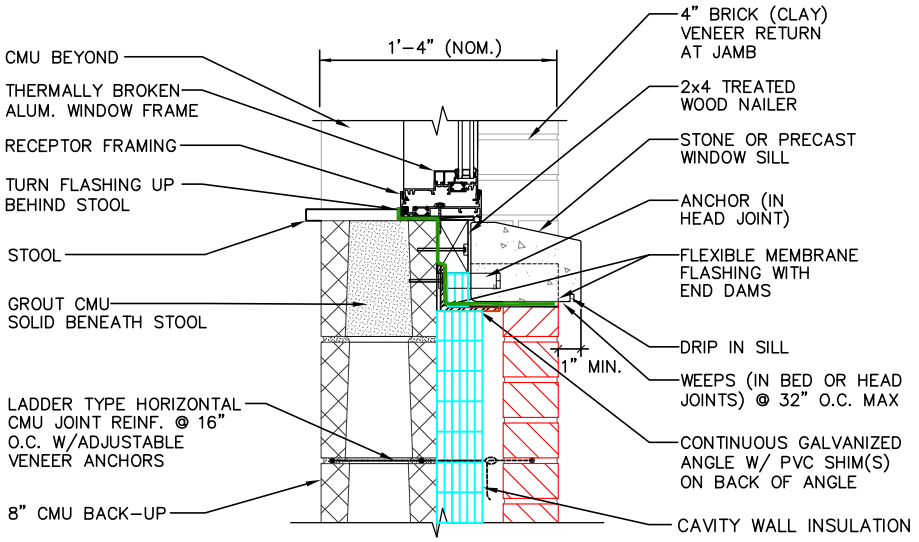
IN CHARGE:	MIM
DRAWN:	M.W.F.
APPROVED:	T.A.D.
DATE:	08/08/2019

TITLE: JAMB DETAILS & FLASHING DETAIL

SHEET: A-7



ISOMETRIC VIEW



SECTION VIEW

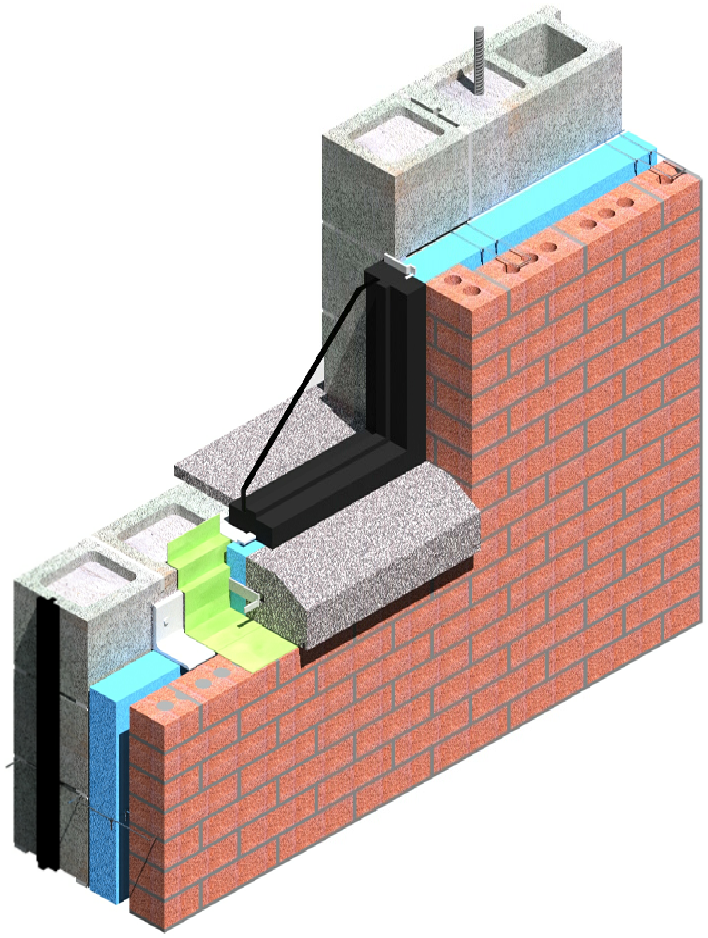
7A / A-1 STONE/PRECAST SILL FOR RECEPTOR STYLE WINDOWS

DAILEY ENGINEERING, INC.
8485 STEPHENSON ROAD
ONSTED, MI 49265
PH. # (517) 467-9000

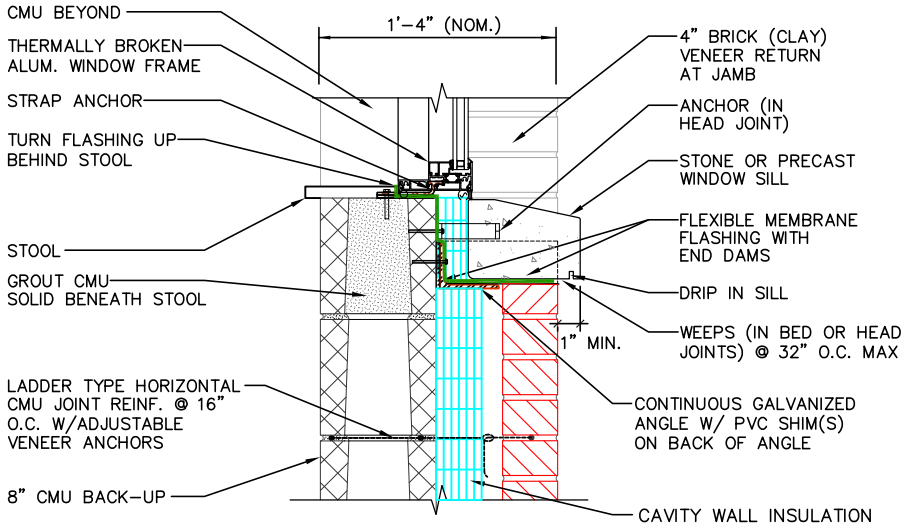
MASONRY Institute of Michigan

DETAIL SET CW.8 (CAVITY WALL)

IN CHARGE:	MIM
DRAWN:	M.W.F.
APPROVED:	T.A.D.
DATE:	08/08/2019
TITLE:	STONE/PRECAST SILL FOR RECEPTOR STYLE WINDOWS
SHEET:	A-8.1



ISOMETRIC VIEW



SECTION VIEW

7B / A-1

STONE/PRECAST SILL FOR STRAP STYLE WINDOWS

DAILEY ENGINEERING, INC.
8485 STEPHENSON ROAD
ONSTED, MI 49265
PH. # (517) 467-9000

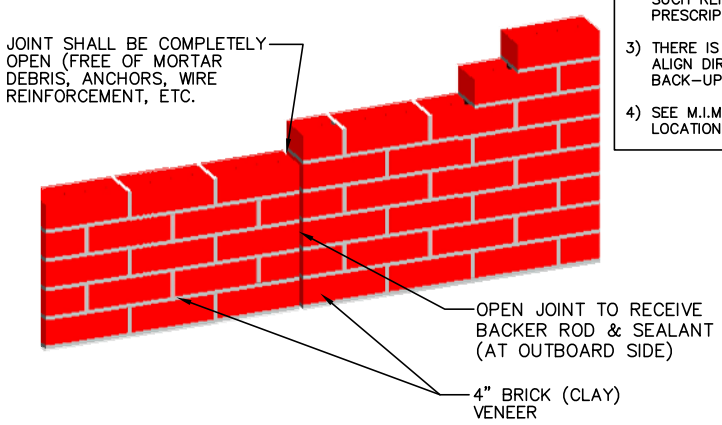
MASONRY Institute of Michigan

DETAIL SET CW.8 (CAVITY WALL)

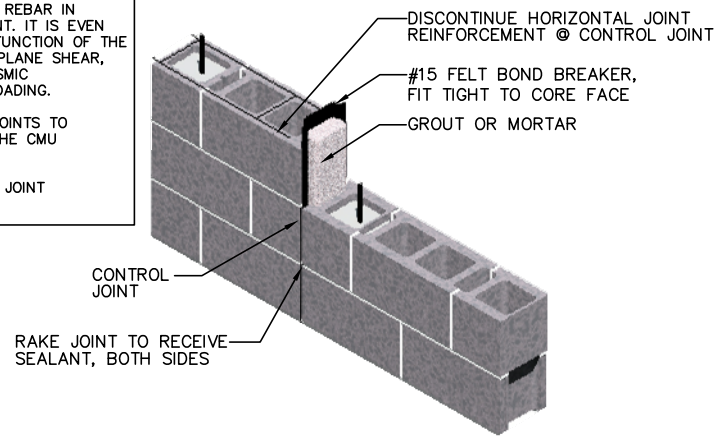
IN CHARGE:	MIM
DRAWN:	M.W.F.
APPROVED:	T.A.D.
DATE:	08/08/2019
TITLE:	STONE/PRECAST SILL FOR STRAP STYLE WINDOWS
SHEET:	A-8.2

NOTES TO DESIGN PROFESSIONAL:

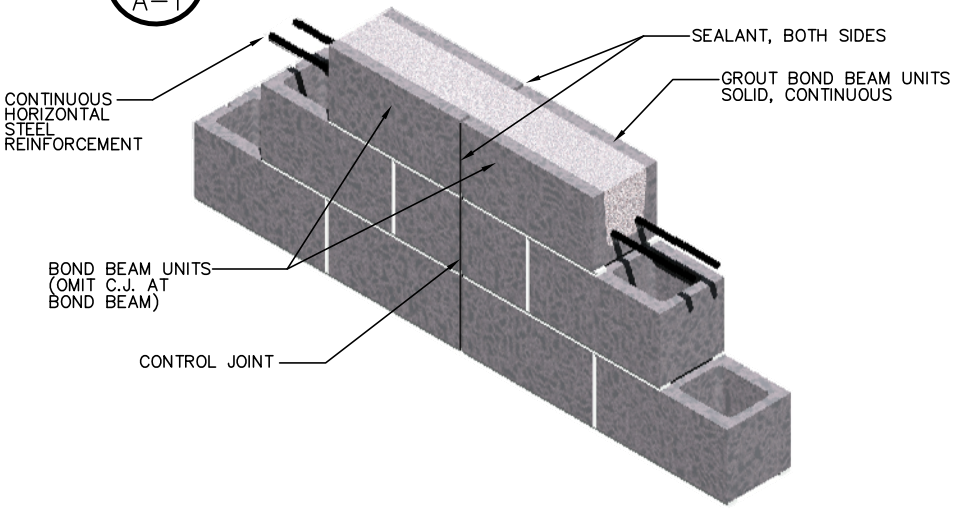
1) DETAIL "8A" WILL ACHEIVE UP TO A 4 HOUR FIRE RATING, DETAIL "8B" WILL ACHEIVE UP TO A 2 HOUR FIRE RATING.
2) IT IS USUALLY NOT NECESSARY TO INSTALL VERTICAL REBAR IN BOTH OF THE CELLS ADJACENT TO THE CONTROL JOINT. IT IS EVEN POSSIBLE THAT DOING SO CAN INTERFERE WITH THE FUNCTION OF THE CONTROL JOINT. 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.



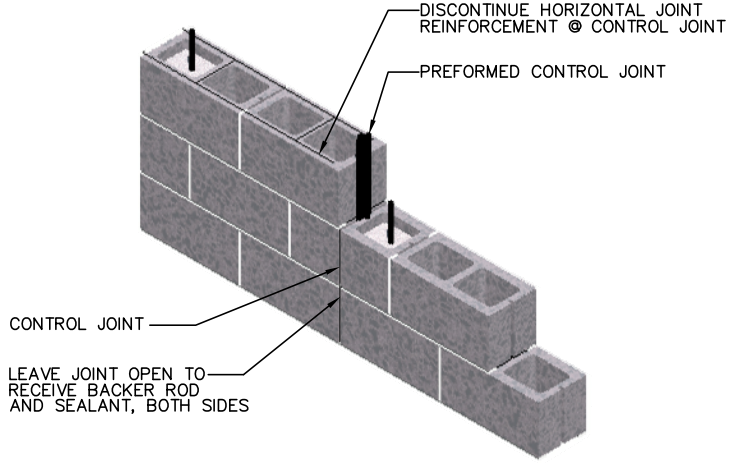
8D / A-1 BRICK EXPANSION JOINT (EJ)



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



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



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

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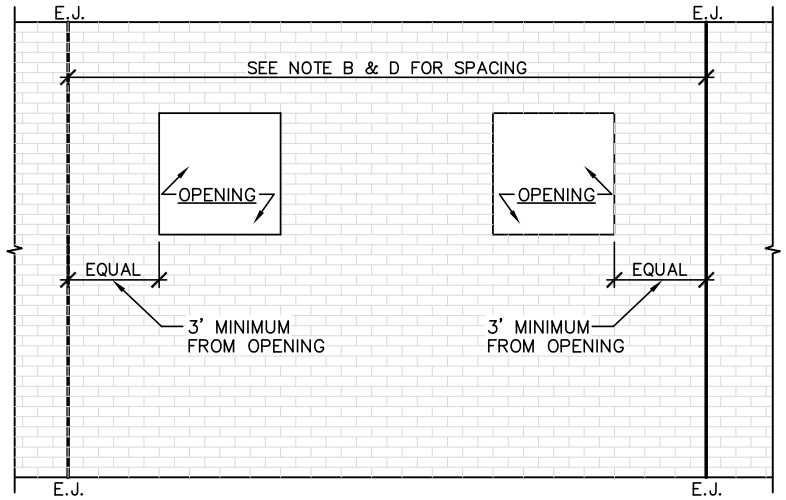
DETAIL SET CW.8 (CAVITY WALL)

IN CHARGE:	MIM
DRAWN:	M.W.F.
APPROVED:	T.A.D.
DATE:	08/08/2019

TITLE: CONTROL/EXPANSION JOINT DETAILS

SHEET: A-9



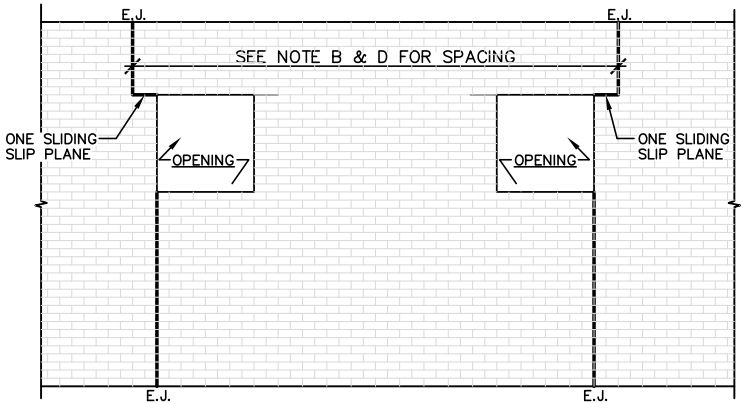
9A–NO SLIP PLANE – PREFERRED METHOD

NOTES:

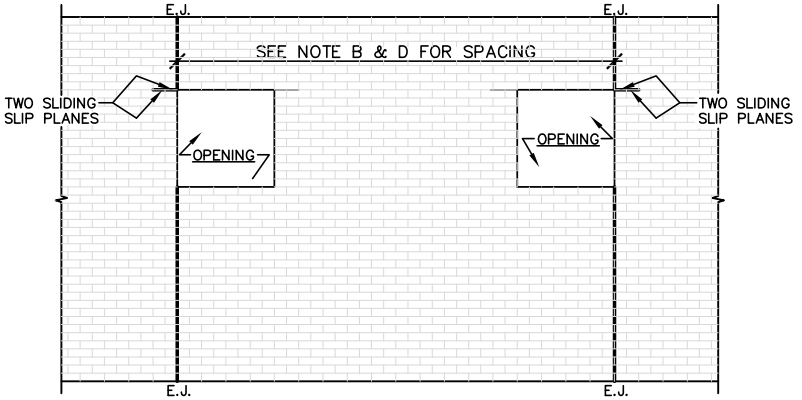
1) TYPICALLY EXPANSION JOINTS HAVE BEEN LOCATED AT OR VERY CLOSE TO THE SIDES OF OPENINGS. HOWEVER IT IS PREFERRED FOR EXPANSION JOINTS TO BE LOCATED AWAY FROM THE EDGES OF THE OPENINGS. DETAILS 9A & 9D ILLUSTRATES THE APPLICATION OF THIS APPROACH.

2) SEE BIA 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 WYTHE DETAILS FOR CMU CONTROL JOINT LOCATION CRITERIA.



9B–ONE (1) SLIP PLANE
TRADITIONAL METHOD



9C – TWO (2) SLIP PLANES
TRADITIONAL METHOD

9 / A–10 BRICK VENEER EXPANSION – JOINT LOCATION
FOR OPENINGS 8' OR LESS WITH LOOSE STEEL LINTEL

NOTE:
SEE SHEET A–10.2
FOR DEFINITIONS

NOTES:

$$s_e = \frac{w_j e_j}{0.09}$$

1/2" JOINTS:	3/8" JOINTS:
A) WITHOUT OPENING 25' MAX. (NOT SHOWN)	C) WITHOUT OPENING 20' MAX. (NOT SHOWN)
B) WITH OPENING 20' MAX. SYMMETRICALLY PLACED	D) WITH OPENING 15' MAX. SYMMETRICALLY PLACED

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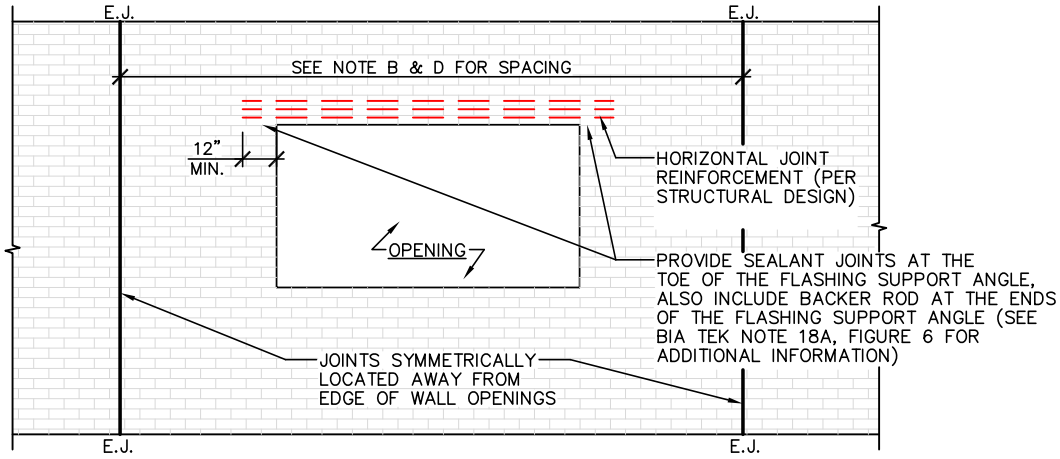
PH. # (517) 467-9000

MASONRY Institute of Michigan

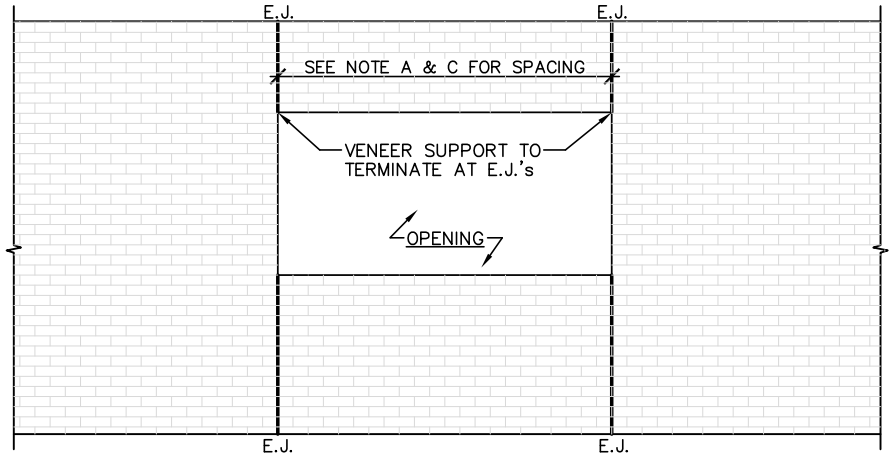
DETAIL SET CW.8 (CAVITY WALL)

IN CHARGE:	MIM
DRAWN:	M.W.F.
APPROVED:	T.A.D.
DATE:	08/08/2019
TITLE:	BRICK VENEER EXPANSION JOINT LOCATIONS
SHEET:	A–10.1



9D – BRICK MASONRY EXPANSION JOINT LOCATION – PREFERRED METHOD

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



9E – BRICK VENEER EXPANSION JOINT LOCATION – TRADITIONAL METHOD

FOR OPENINGS GREATER THAN 8'

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 ILLUSTRATES THE APPLICATION OF THIS APPROACH.

2) SEE BIA 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 WYTHE DETAILS FOR CMU CONTROL JOINT LOCATION CRITERIA.

DEFINITIONS:

S_e = SPACING BETWEEN EXPANSION JOINTS, IN. (MM)

w_j = WIDTH OF EXPANSION JOINT, TYPICALLY THE MORTAR JOINT WIDTH, IN. (MM)

e_j = PERCENT EXTENSIBILITY OF EXPANSION JOINT MATERIAL

NOTES: $s_e = \frac{w_j e_j}{0.09}$	1/2" JOINTS:	3/8" JOINTS:
	A) WITHOUT OPENING 25' MAX. (NOT SHOWN)	C) WITHOUT OPENING 20' MAX. (NOT SHOWN)
	B) WITH OPENING 20' MAX. SYMMETRICALLY PLACED	D) WITH OPENING 15' MAX. SYMMETRICALLY PLACED

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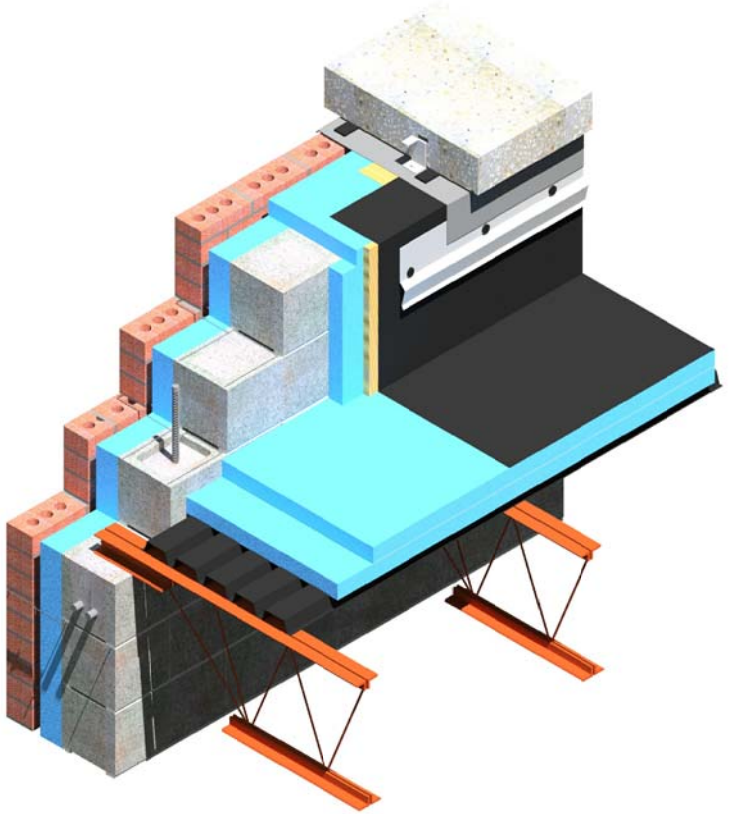
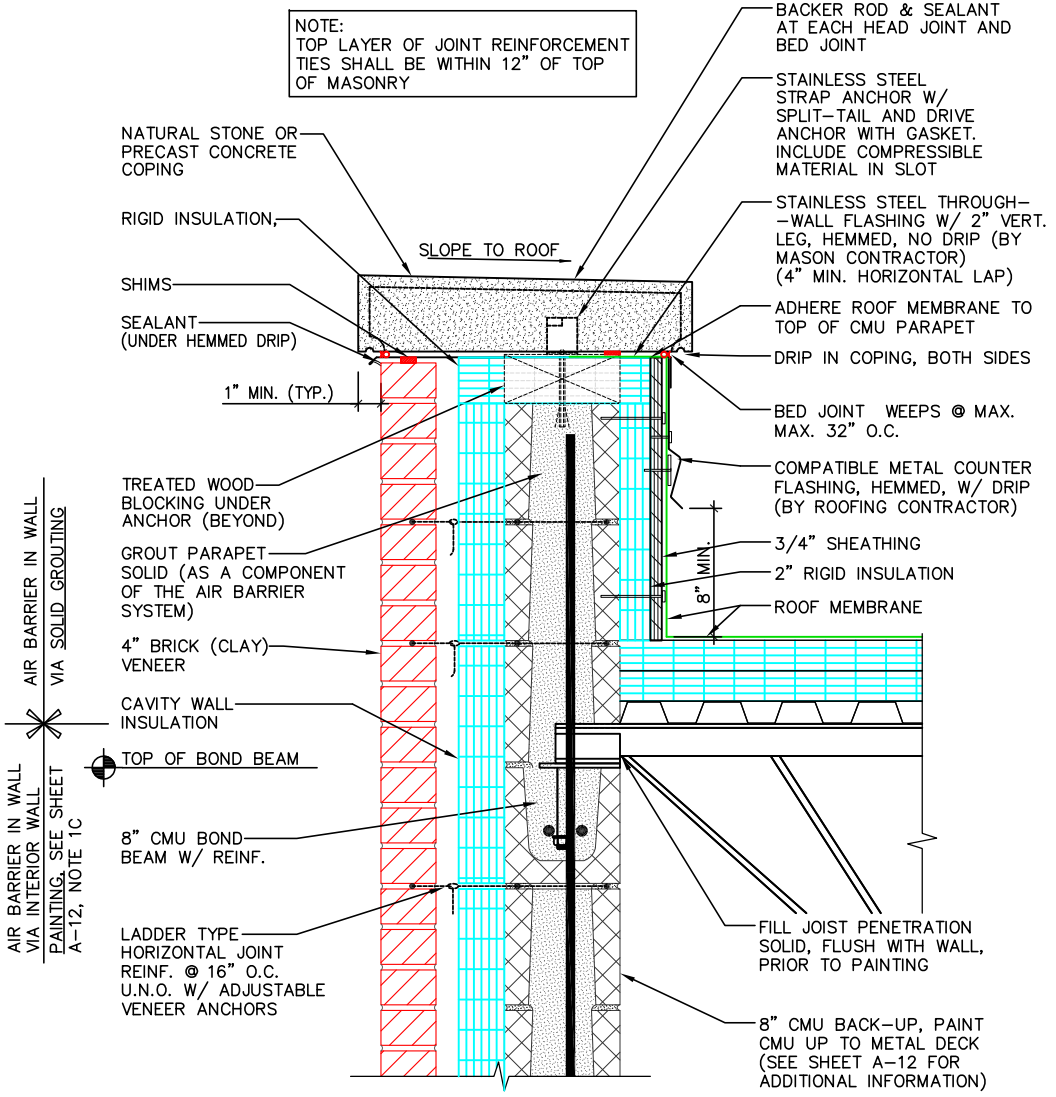
MASONRY Institute of Michigan

DETAIL SET CW.8 (CAVITY WALL)

IN CHARGE:	MIM
DRAWN:	M.W.F.
APPROVED:	T.A.D.
DATE:	08/08/2019
TITLE:	BRICK VENEER EXPANSION JOINT LOCATIONS
SHEET:	A–10.2



ISOMETRIC VIEW



SECTION VIEW

10A / A-2 STONE / PRECAST COPING PARAPET DETAIL (DRY SET)

DAILEY ENGINEERING, INC.
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PH. # (517) 467-9000

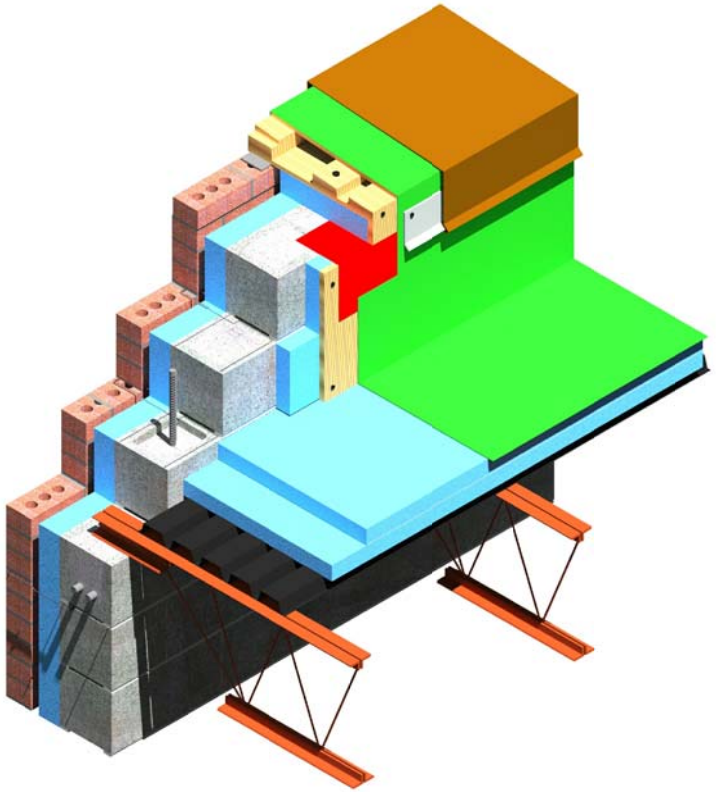
MASONRY Institute of Michigan

DETAIL SET CW.8 (CAVITY WALL)

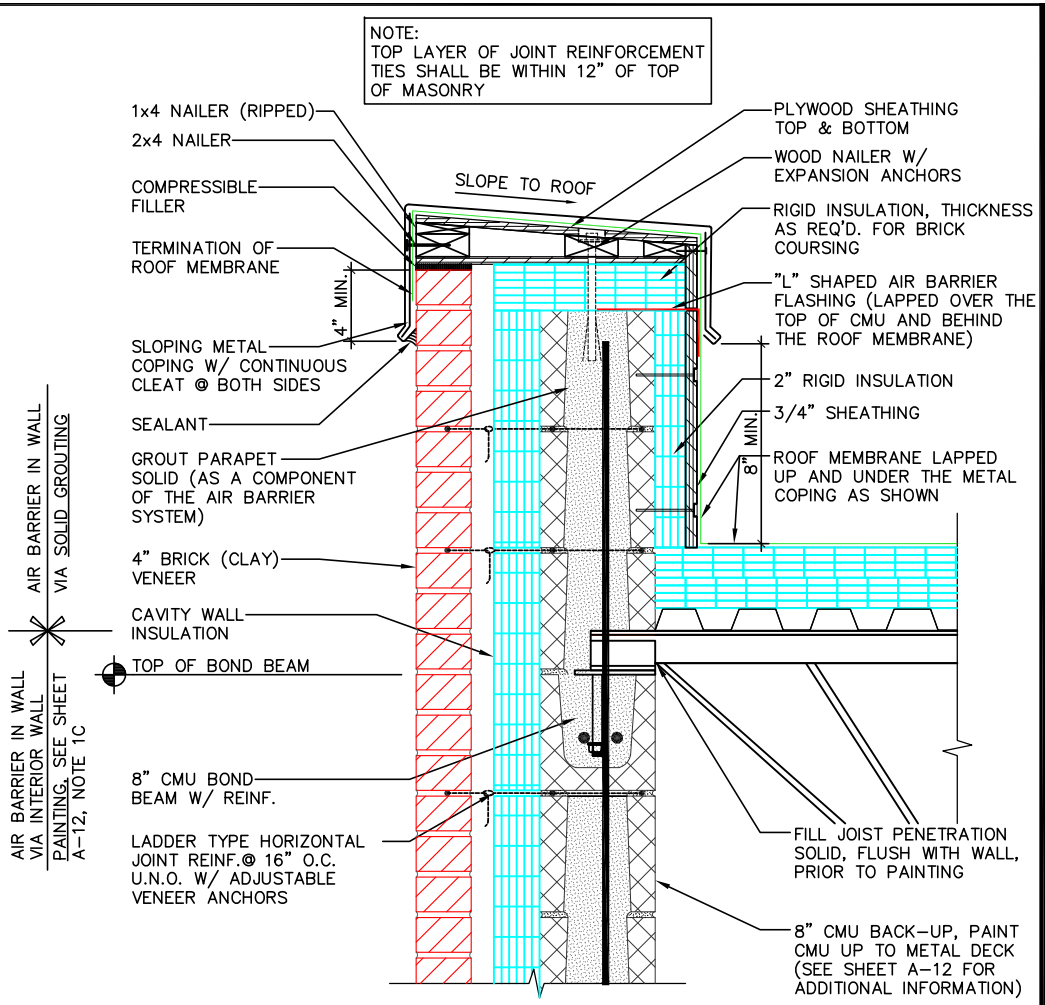
IN CHARGE:	MIM
DRAWN:	M.W.F.
APPROVED:	T.A.D.
DATE:	08/08/2019

TITLE: STONE/PRE-CAST COPING PARAPET DETAIL

SHEET: A-11.1



ISOMETRIC VIEW



SECTION VIEW

10B / A-2 METAL COPING PARAPET DETAIL

DAILEY ENGINEERING, INC.
8485 STEPHENSON ROAD
ONSTED, MI 49265
PH. # (517) 467-9000

MASONRY Institute of Michigan

DETAIL SET CW.8 (CAVITY WALL)

IN CHARGE:	MIM
DRAWN:	M.W.F.
APPROVED:	T.A.D.
DATE:	08/08/2019
TITLE:	METAL COPING PARAPET DETAIL
SHEET:	A-11.2

"CONTROL LAYER" INFORMATION

1) THERMAL CONTROL LAYER:

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

3" RIGID INSULATION		2" RIGID INSULATION		3" WOOL INSULATION	
Rci	= 15.0	Rci	= 10.0	Rci	= 12.9
Rassembly	= 18.41	Rassembly	= 13.41	Rassembly	= 16.31
Uassembly	= 0.0543	Uassembly	= 0.0764	Uassembly	= 0.0613

CALCULATED R AND U VALUES ARE FOR CLAY BRICK AND CMU BLOCK WALLS.

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

	WALLS ABOVE GRADE			WALLS BELOW GRADE	FLOOR SLABS
ZONE	CONTINUOUS INSULATION METHOD (Rci MINIMUM)	Umax METHOD (Umax OF ENTIRE WALL ASSEMBLY)	COMPLIANT INSULATION OPTIONS	WALL BELOW GRADE INSULATION MIN. R–VALUE	UNHEATED SLAB INSULATION MIN. R–VALUE
5	Rci ≥ 11.4	Uassembly ≤ 0.090	3" RIGID (Rmin, Umax) 2" RIGID (Umax) 3" WOOL (Rmin, Umax)	R–7.5. c.i.	R–15 FOR 24"
6	Rci ≥ 13.3	Uassembly ≤ 0.080	3" RIGID (Rmin, Umax) 2" RIGID (Umax) 3" WOOL (Umax)	R–10 c.i.	R–20 FOR 24"
7	Rci ≥ 15.2	Uassembly ≤ 0.071	3" RIGID (Umax) 3" WOOL (Umax)	R–15 c.i.	R–20 FOR 24"

• 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 REFERED 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 THE 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 PARGE, 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. UNLINE 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.

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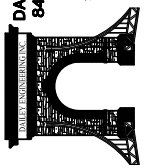
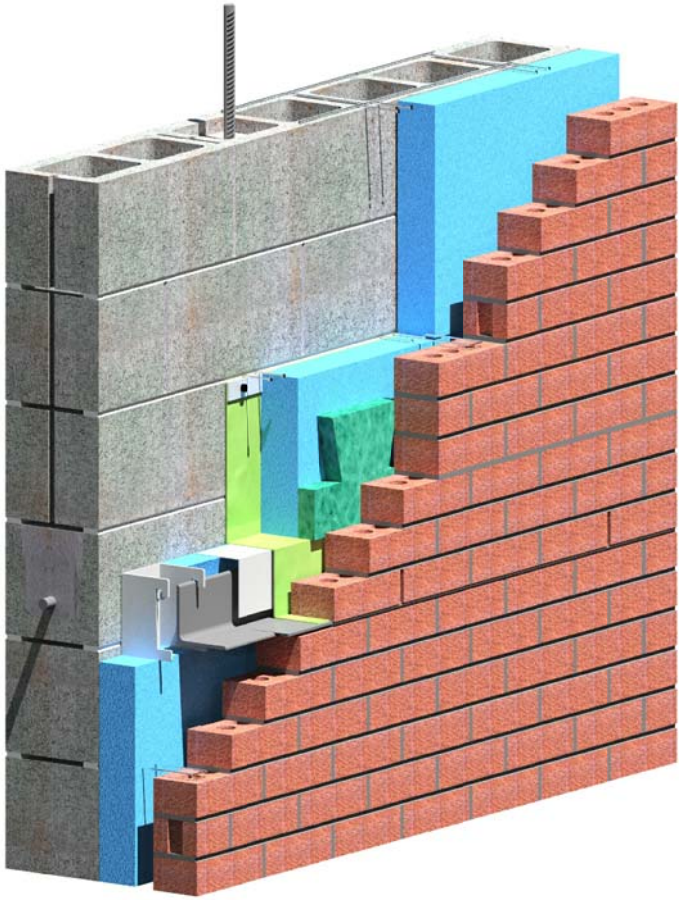


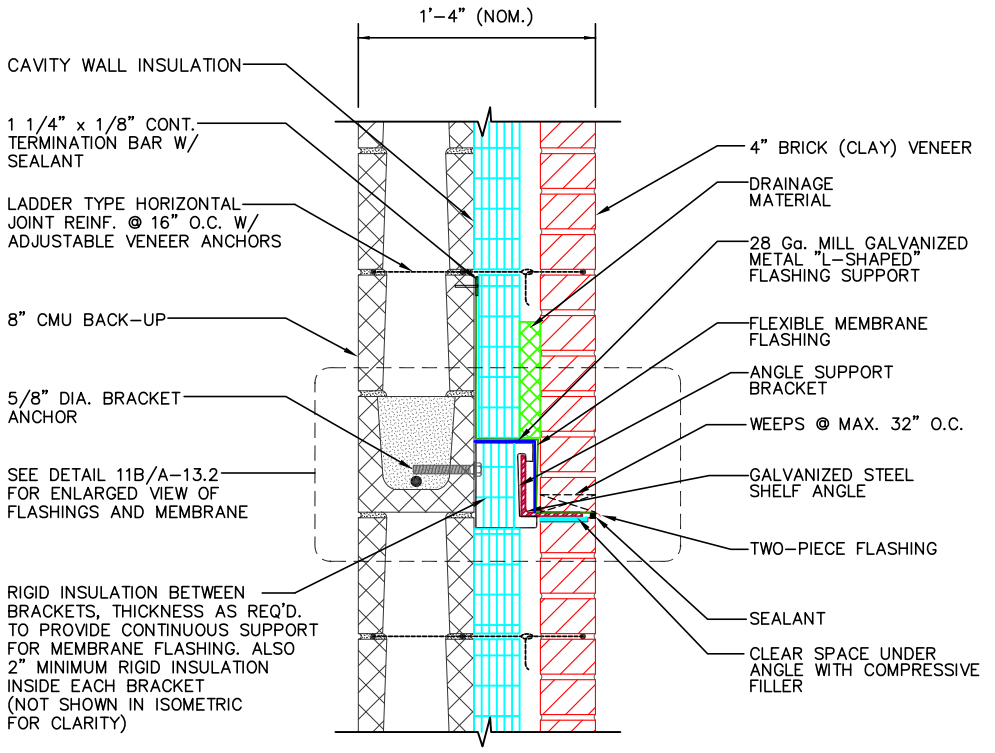
MASONRY Institute of Michigan

DETAIL SET CW.8 (CAVITY WALL)

IN CHARGE:	MIM
DRAWN:	M.W.F.
APPROVED:	T.A.D.
DATE:	08/08/2019
TITLE:	"CONTROL LAYER" INFORMATION
SHEET:	A–12



ISOMETRIC VIEW



SECTION VIEW

11A / A-13

BRICK LEDGER DETAILS FOR CMU BACK-UP DETAIL

DAILEY ENGINEERING, INC.
8485 STEPHENSON ROAD
ONSTED, MI 49265
PH. # (517) 467-9000

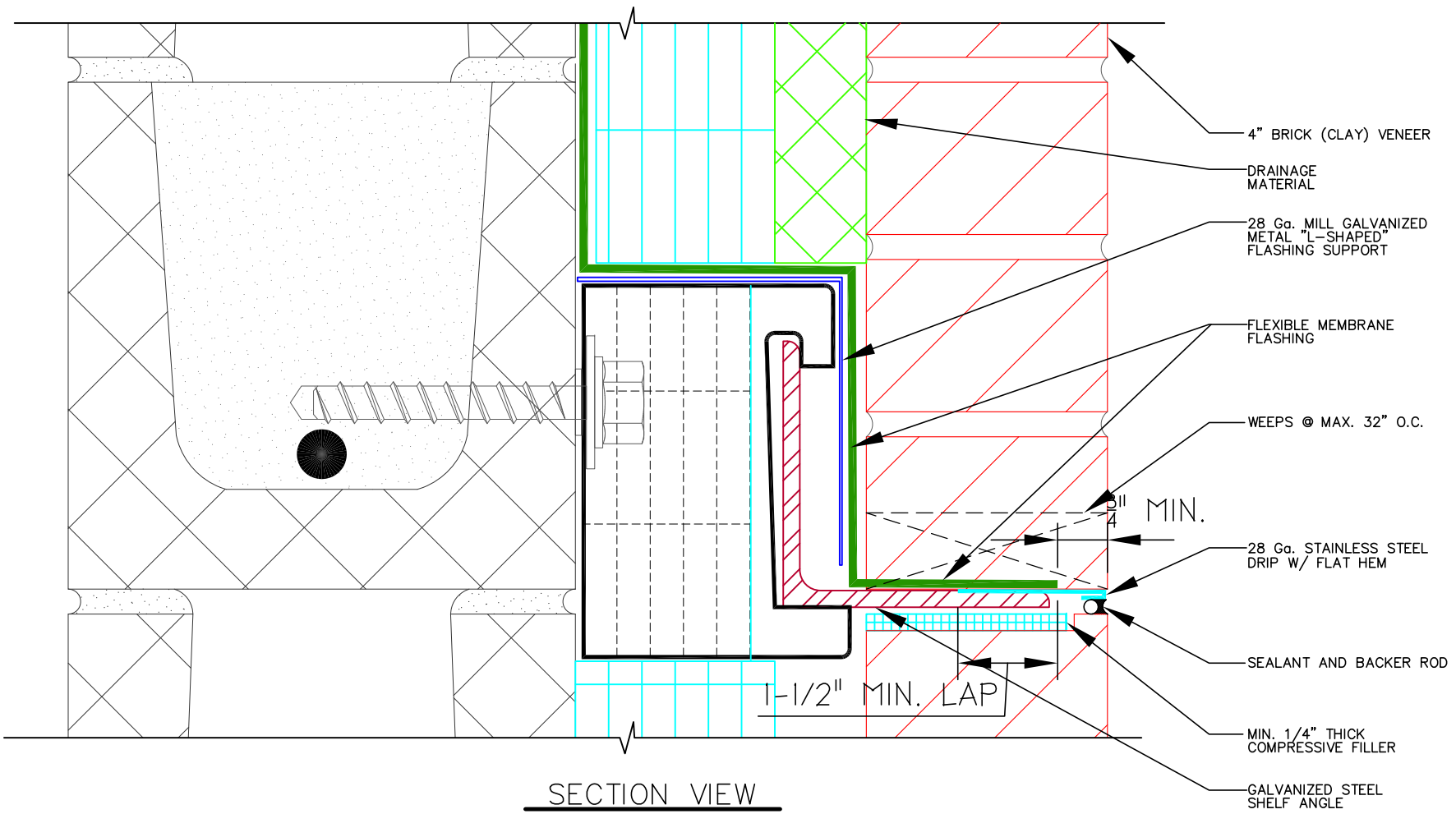
11 MASONRY Institute of Michigan

DETAIL SET CW.8 (CAVITY WALL)

IN CHARGE:	MIM
DRAWN:	M.W.F.
APPROVED:	T.A.D.
DATE:	08/08/2019

TITLE: BRICK LEDGER FOR CMU BACK-UP DETAIL

SHEET: A-13.1



SECTION VIEW

11B / A-13 BRICK LEDGER DETAIL ENLARGED

DAILEY ENGINEERING, INC.
8485 STEPHENSON ROAD
ONSTED, MI 49265
PH. # (517) 467-9000

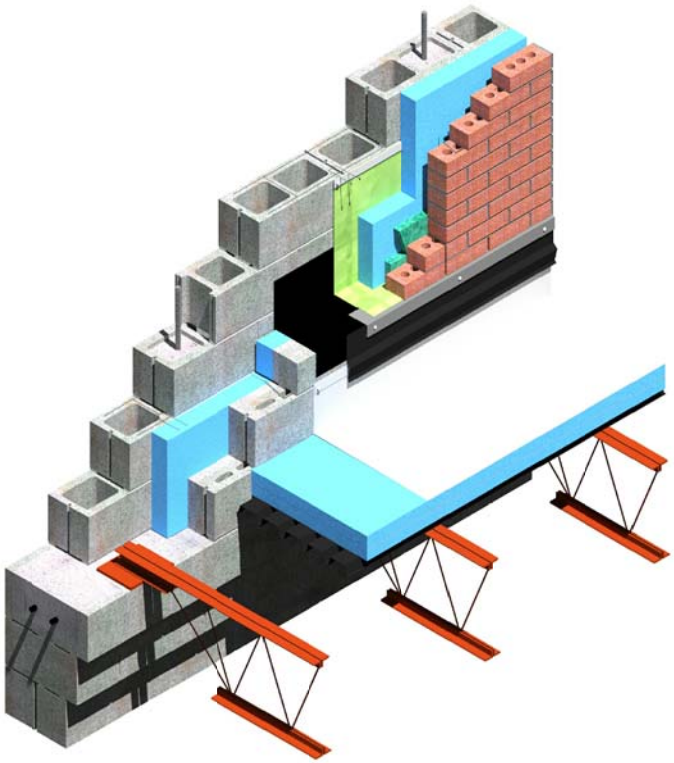
11 MASONRY Institute of Michigan

DETAIL SET CW.8 (CAVITY WALL)

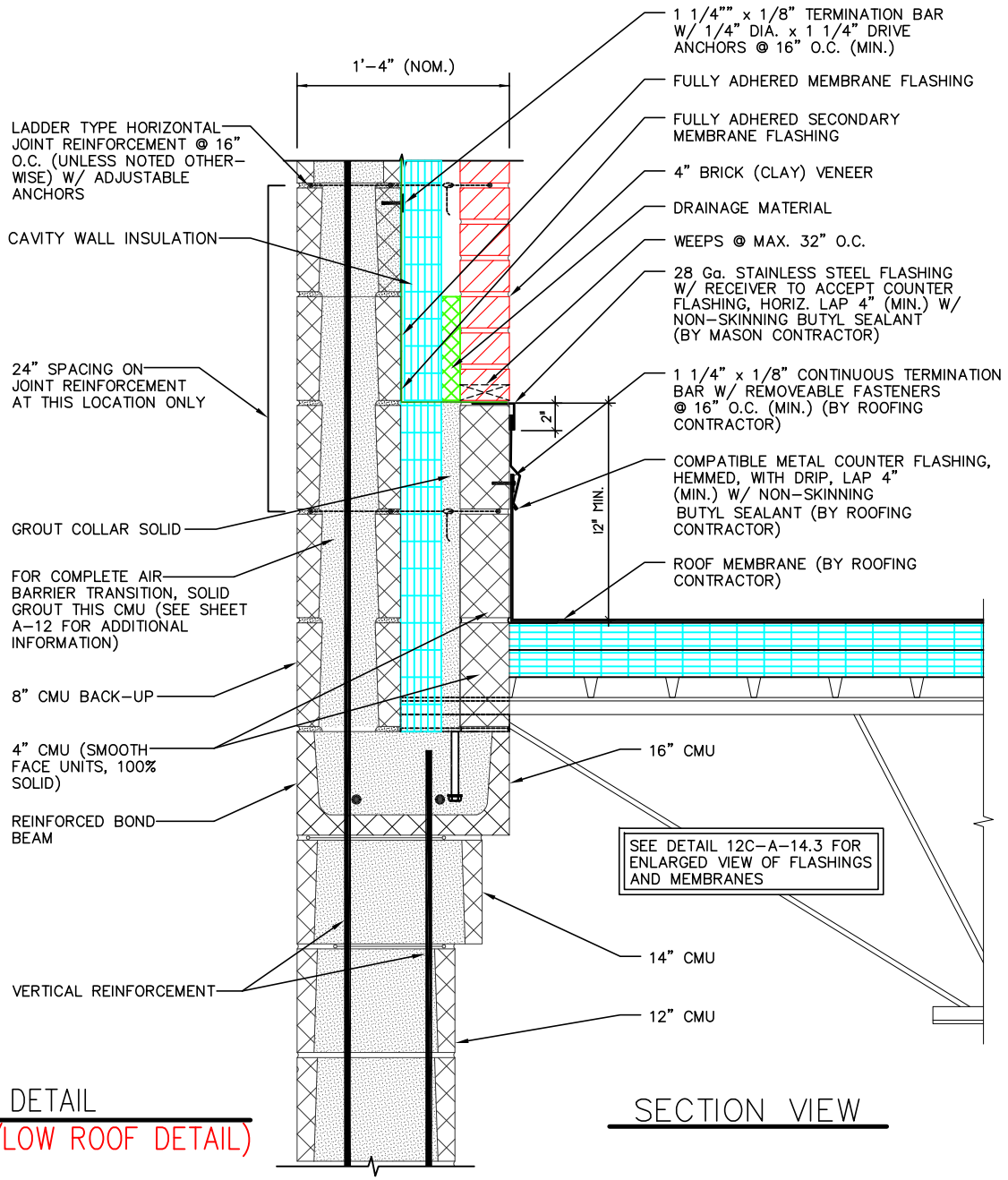
IN CHARGE:	MIM
DRAWN:	M.W.F.
APPROVED:	T.A.D.
DATE:	08/08/2019
TITLE:	BRICK LEDGER DETAIL ENLARGED
SHEET:	A-13.2

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

12A / A-14.1 UPPER WALL / LOW ROOF DETAIL (PREFERRED UPPER WALL/LOW ROOF DETAIL)

DAILEY ENGINEERING, INC.
8485 STEPHENSON ROAD
ONSTED, MI 49265
PH. # (517) 467-9000

MASONRY Institute of Michigan

DETAIL SET CW.8 (CAVITY WALL)

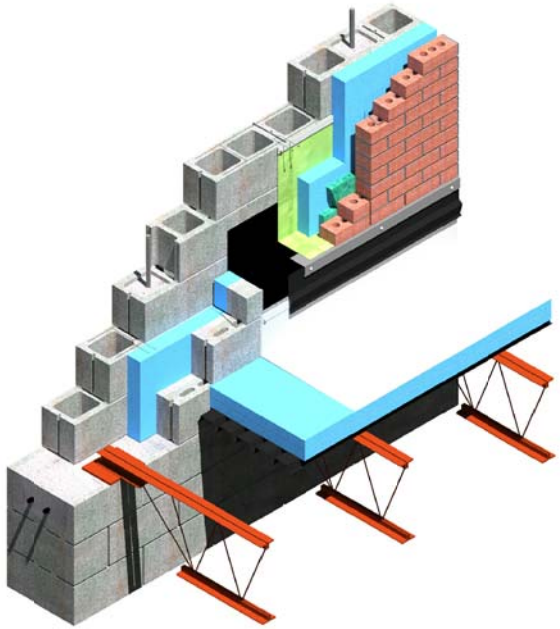
IN CHARGE:	MIM
DRAWN:	M.W.F.
APPROVED:	T.A.D.
DATE:	08/08/2019

TITLE: UPPER WALL / LOW ROOF DETAIL (PREFERRED)

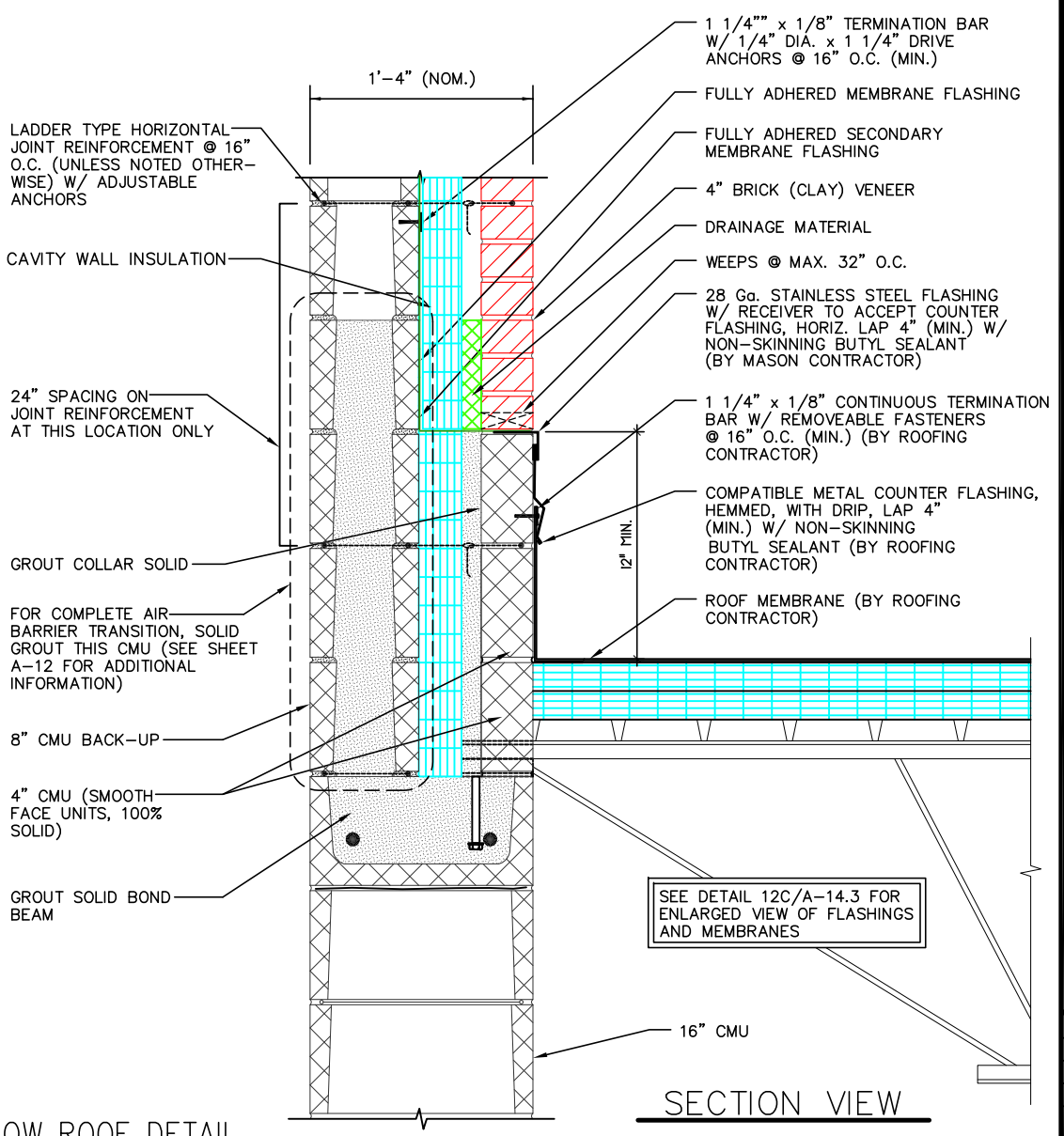
SHEET: A-14.1

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

12B / A–14.1 UPPER WALL / LOW ROOF DETAIL (OPTIONAL)

DAILEY ENGINEERING, INC.
8485 STEPHENSON ROAD
ONSTED, MI 49265
PH. # (517) 467–9000

MASONRY Institute of Michigan

DETAIL SET CW.8 (CAVITY WALL)

IN CHARGE:	MIM
DRAWN:	M.W.F.
APPROVED:	T.A.D.
DATE:	08/08/2019

TITLE: UPPER WALL / LOW ROOF DETAIL (OPTIONAL)

SHEET: A–14.2

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

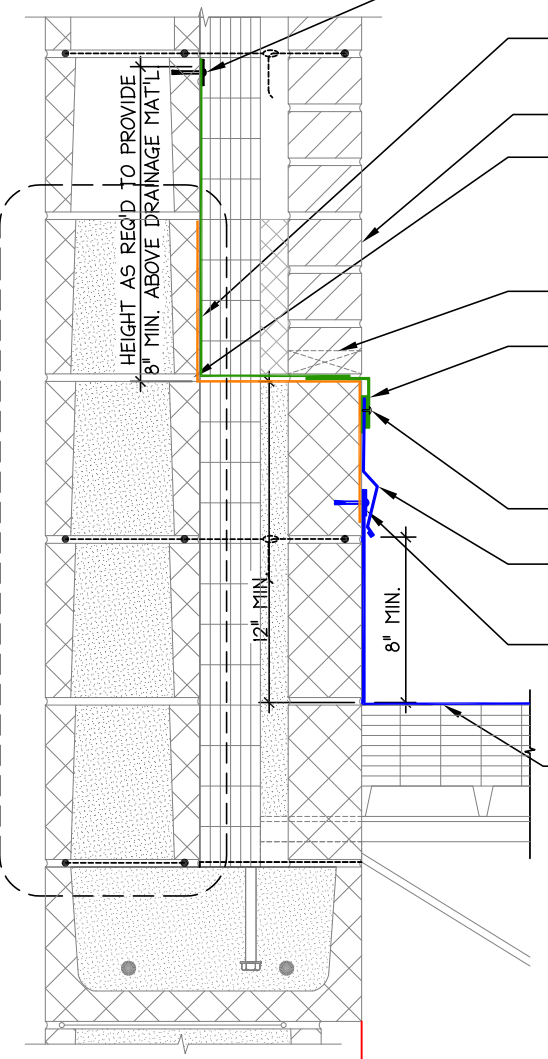
FLASHING LEGEND

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)
4" — 2" MIN.

FASTENER

COMPATIBLE METAL COUNTER FLASHING, HEMMED, WITH DRIP, 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)

12C / A-14.2 UPPER WALL / LOW ROOF DETAIL ENLARGED

DAILEY ENGINEERING, INC.
8485 STEPHENSON ROAD
ONSTED, MI 49265
PH. # (517) 467-9000

MASONRY Institute of Michigan

DETAIL SET CW.8 (CAVITY WALL)

IN CHARGE:	MIM
DRAWN:	M.W.F.
APPROVED:	T.A.D.
DATE:	08/08/2019

TITLE: UPPER WALL / LOW ROOF DETAIL ENLARGED

SHEET: A-14.3