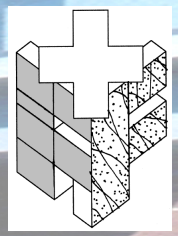
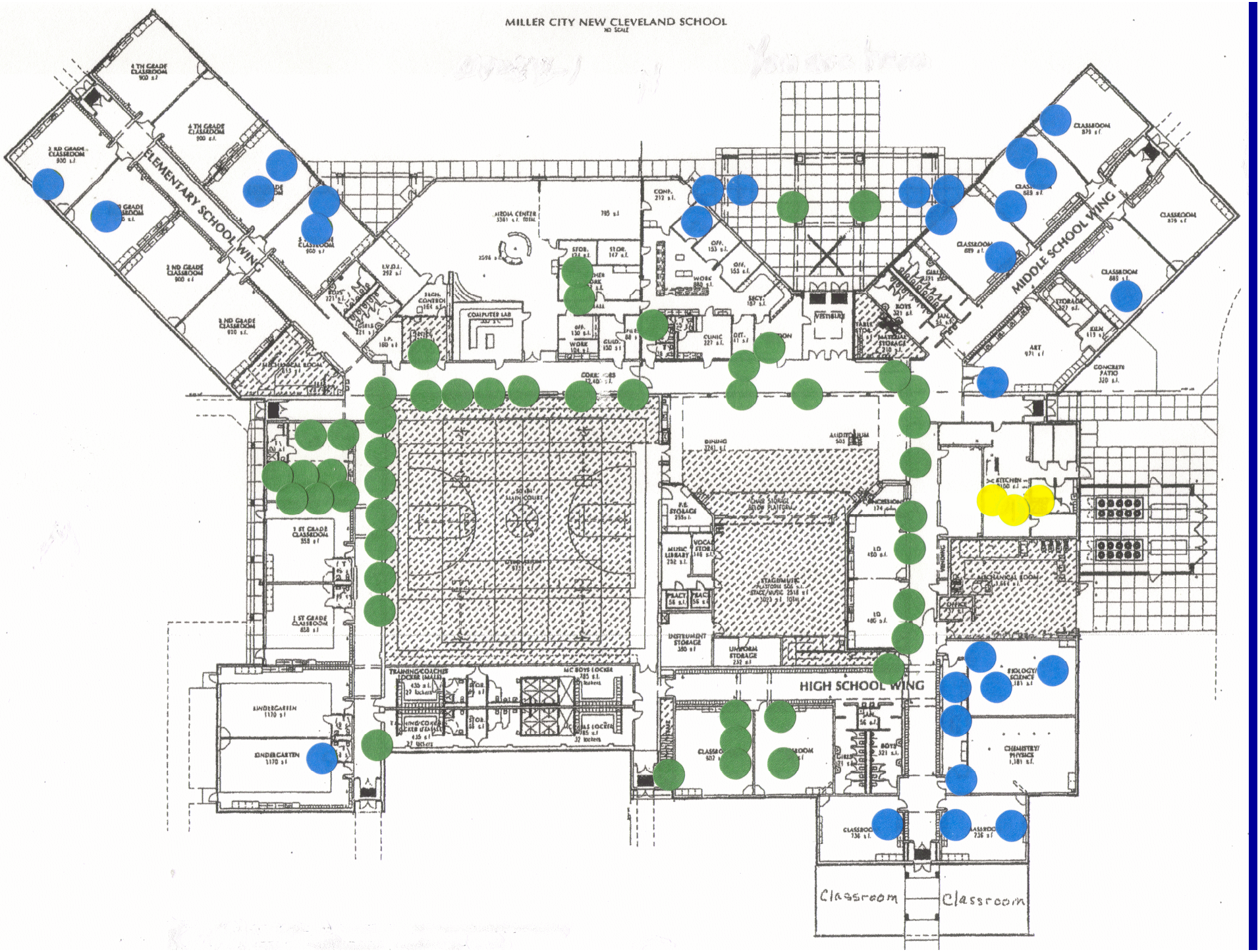
Attaining a High Performance Enclosure

by

Michael D. Lewis AIA NCARB FASTM MEng
Facade Forensics, Inc. Cincinnati, Ohio




MILLER CITY NEW CLEVELAND SCHOOL
NO SCALE
ELEMENTARY SCHOOL WING
MIDDLE SCHOOL WING
HIGH SCHOOL WING
4 TH GRADE CLASSROOM 900 s.f.
4 TH GRADE CLASSROOM 900 s.f.
3 RD GRADE CLASSROOM 900 s.f.
2 ND GRADE CLASSROOM 900 s.f.
2 ND GRADE CLASSROOM 900 s.f.
MECHANICAL ROOM
MEDIA CENTER 5361 s.f. TOTAL
COMPUTER LAB
CLASSROOM 879 s.f.
CLASSROOM 889 s.f.
CLASSROOM 889 s.f.
CLASSROOM 836 s.f.
CLASSROOM 885 s.f.
STORAGE 297 s.f.
KILN 119 s.f.
ART 971 s.f.
CONCRETE PATIO 320 s.f.
BOYS 321 s.f.
GIRLS 321 s.f.
MATERIAL STORAGE 210 s.f.
VESTIBULE
CLINIC 227 s.f.
OFF. 153 s.f.
OFF. 153 s.f.
WORK 180 s.f.
STOR. 147 s.f.
STOR. 124 s.f.
CONF. 212 s.f.
785 s.f.
2596 s.f.
LIBRARY 292 s.f.
BOYS 721 s.f.
GIRLS 721 s.f.
I.P. 160 s.f.
DRAMA CONTROL 164 s.f.
SHELVES 221 s.f.
OFF. 130 s.f.
WORK 184 s.f.
GUID. 150 s.f.
SECY. 157 s.f.
CORR. 1289 s.f.
DINING 1741 s.f.
AUDITORIUM 503
KITCHEN 2100 s.f.
CONCESSION 174 s.f.
P.E. STORAGE 2356 s.f.
MUSIC LIBRARY 252 s.f.
VOCAL STOR. 148 s.f.
CHOIR SINGING RISER PLATFORM
STAGE/MUSIC 2516 s.f.
STAGE/MUSIC AUDITORIUM 506 s.f.
PRACT. 58 s.f.
PRACT. 56 s.f.
LD 480 s.f.
LD 480 s.f.
INSTRUMENT STORAGE 380 s.f.
UNIFORM STORAGE 232 s.f.
MECHANICAL ROOM 1,664 s.f.
OFFICE 237 s.f.
2 ST GRADE CLASSROOM 858 s.f.
1 ST GRADE CLASSROOM 858 s.f.
KINDERGARTEN 1170 s.f.
KINDERGARTEN 1170 s.f.
TRAINING/COACHES LOCKER (MALE) 435 s.f. 27 lockers
TRAINING/COACHES LOCKER (FEMALE) 435 s.f. 27 lockers
STOR. 84 s.f.
STOR. 84 s.f.
MC BOYS LOCKER 785 s.f. 49 lockers
MC GIRLS LOCKER 785 s.f. 49 lockers
CLASSROOM 602 s.f.
CLASSROOM 602 s.f.
BOYS 321 s.f.
56 s.f.
BIOLOGY/ SCIENCE 1,181 s.f.
CHEMISTRY/ PHYSICS 1,181 s.f.
CLASSROOM 736 s.f.
CLASSROOM 736 s.f.
Classroom
Classroom


CLEARANCE 8'-6"

1.04 PERFORMANCE REQUIREMENTS

A. General: Provide installed roofing membrane and base flashings that remain watertight; do not permit the passage of water; and resist specified uplift pressures, thermally induced movement, and exposure to weather without failure.

B. Material Compatibility: Provide roofing materials that are compatible with one another under conditions of service and application required, as demonstrated by roofing membrane manufacturer based on testing and field experience.

C. Roofing System Design: Provide a membrane roofing system that is identical to systems that have been successfully tested by a qualified testing and inspecting agency to resist uplift pressure calculated according to ASCE 7.
   1. Refer to Drawings for basic wind speeds.

1.05 SUBMITTALS

A. Product Data: Submit product data to substantiate that the products being installed are the same as or equal to that specified. Where products are identical to that specified, product data shall still be submitted so that it can be established that the roofing subcontractor has clear understanding as to what was specified.

E. Thermal Movements: Provide aluminum-framed systems that allow for thermal movements resulting from the following maximum change (range) in ambient and surface temperatures. Base engineering calculation on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.

1. Temperature Change (Range): 120 deg F (67 deg C), ambient; 180 deg F (100 deg C), material surfaces.

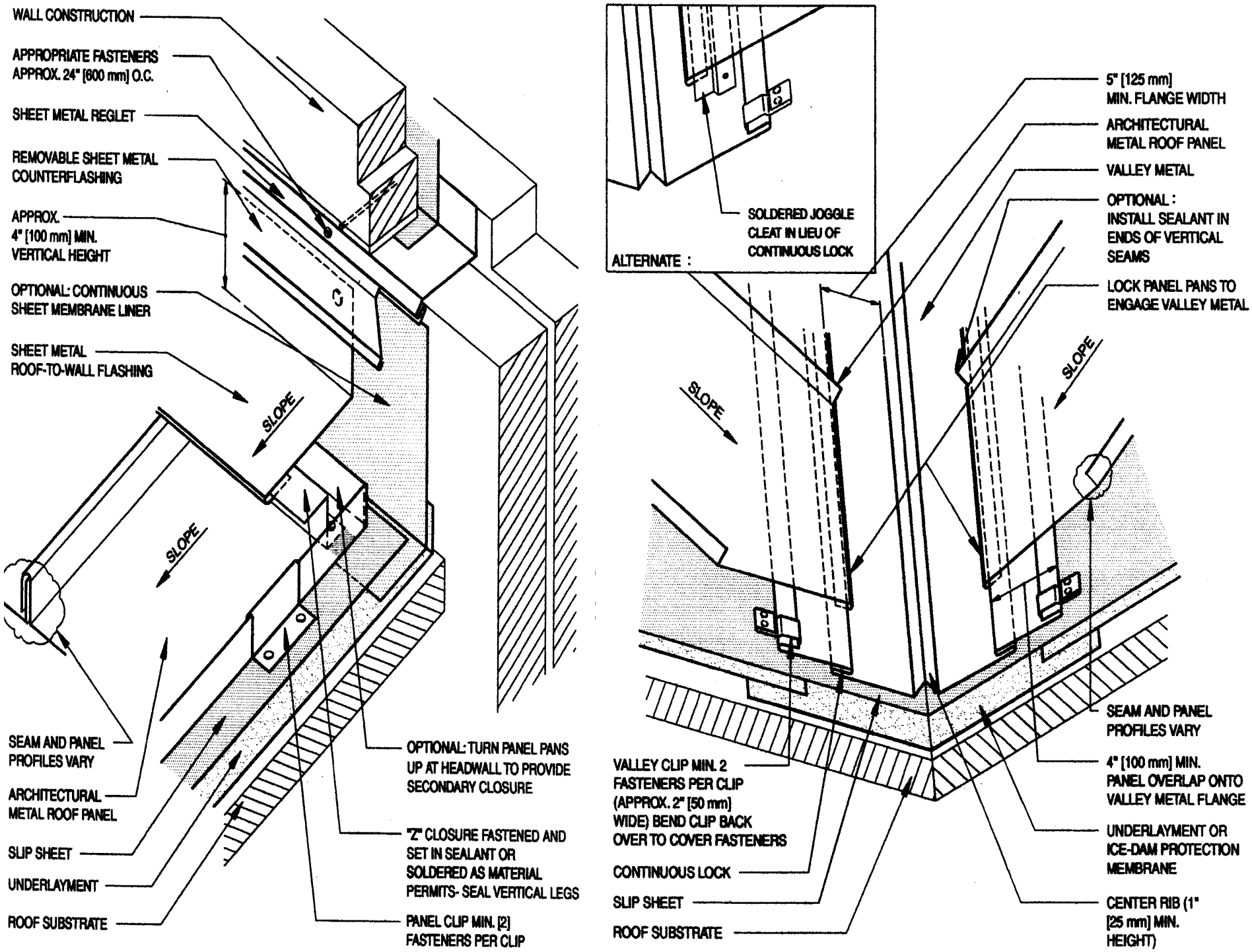
F. Air Infiltration: Provide aluminum-framed systems with maximum air leakage through fixed glazing and framing areas of 0.06 cfm/sq. ft. (0.03 L/s per sq. m) of fixed wall area when tested according to ASTM E 283 at a minimum static-air-pressure difference of 1.57 lbf/sq. ft. (75 Pa).

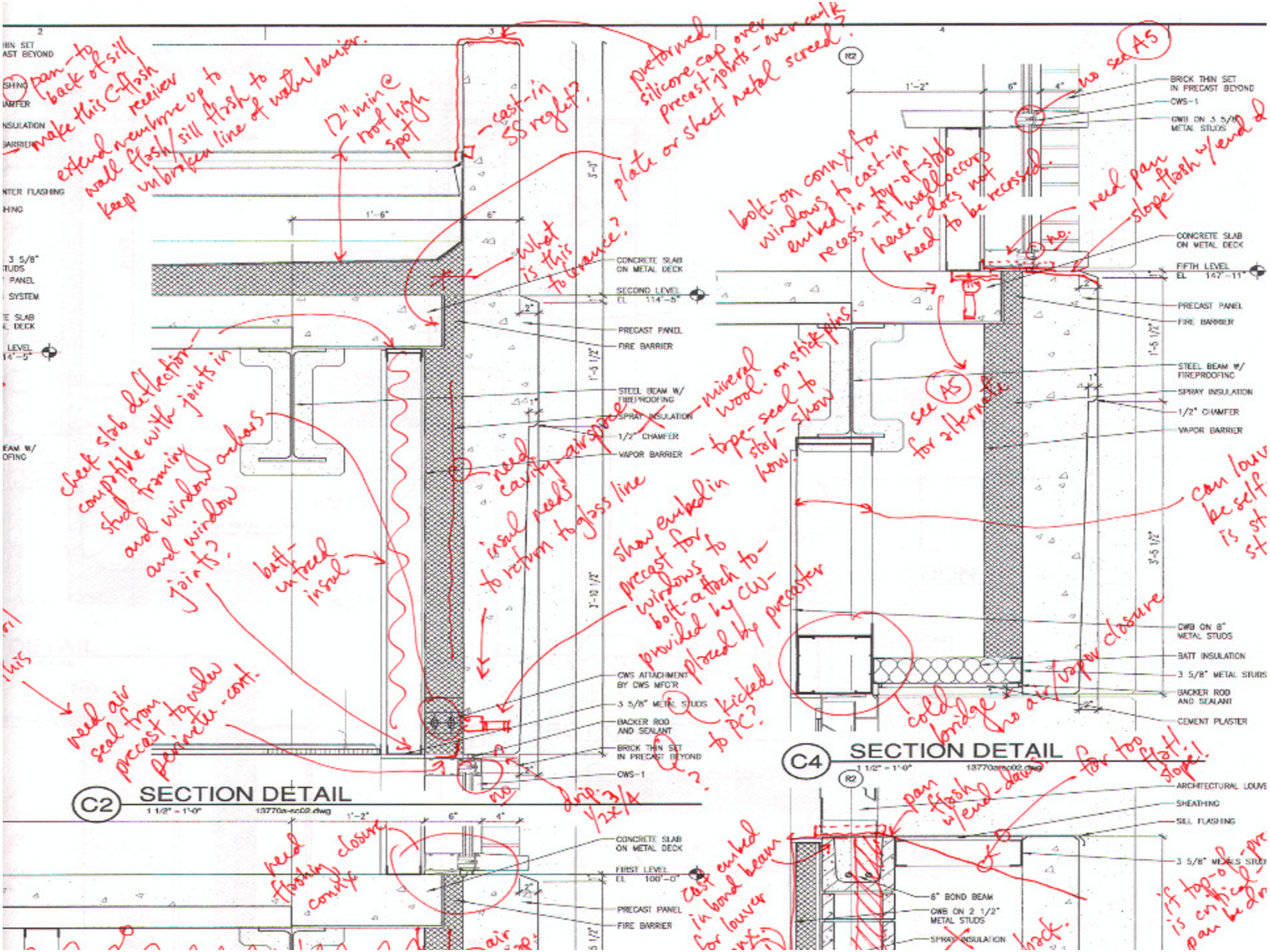
G. Water Penetration Under Static Pressure: Provide aluminum-framed systems that do not evidence water penetration through fixed glazing and framing areas when tested according to ASTM E 331 at a minimum static-air-pressure difference of 20 percent of positive wind-load design pressure, but not less than 6.24 lbf/sq. ft. (300 Pa).

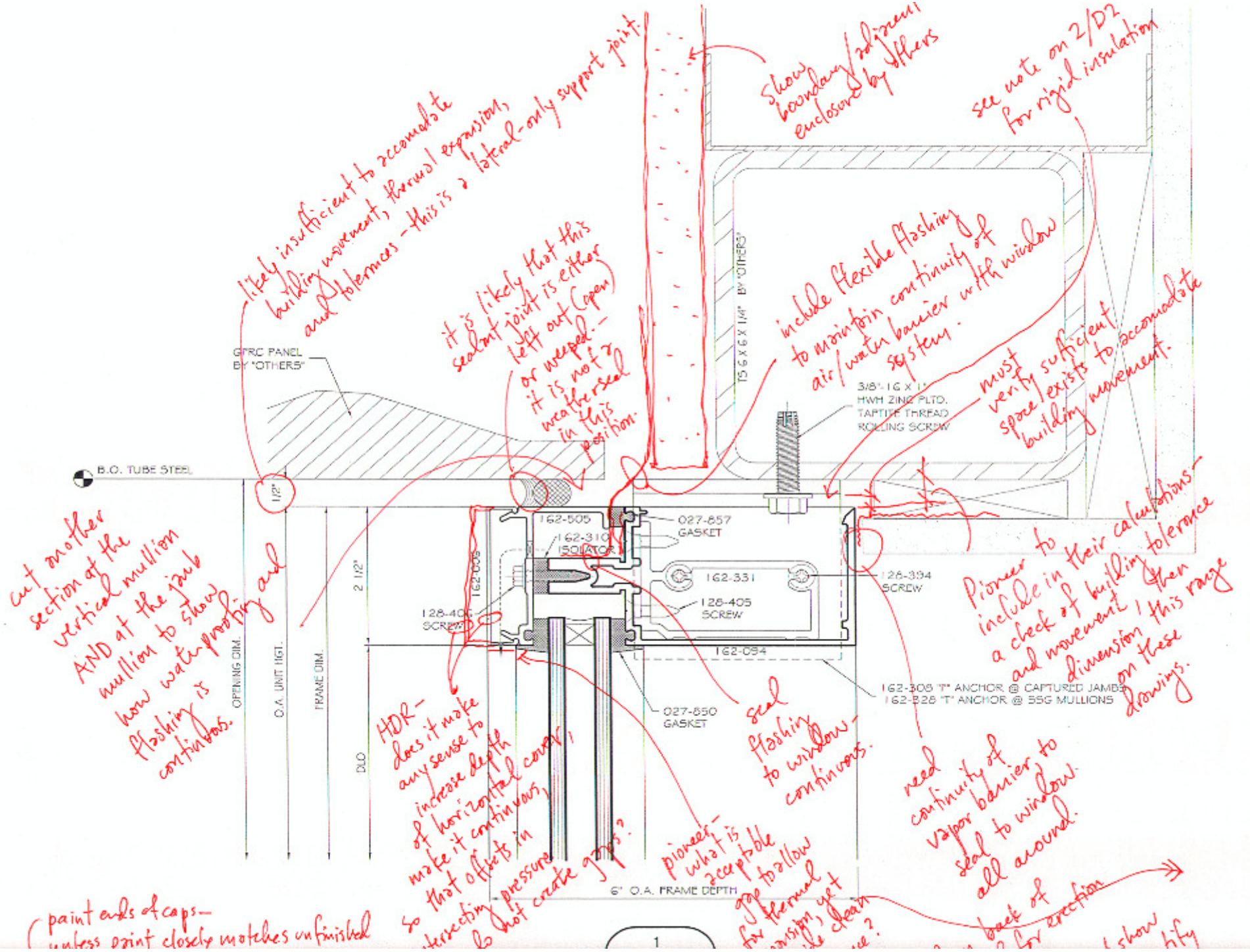
1. Maximum Water Leakage: According to AAMA 501.1. Water controlled by flashing and gutters that is drained to exterior and cannot damage adjacent materials or finishes is not considered water leakage.

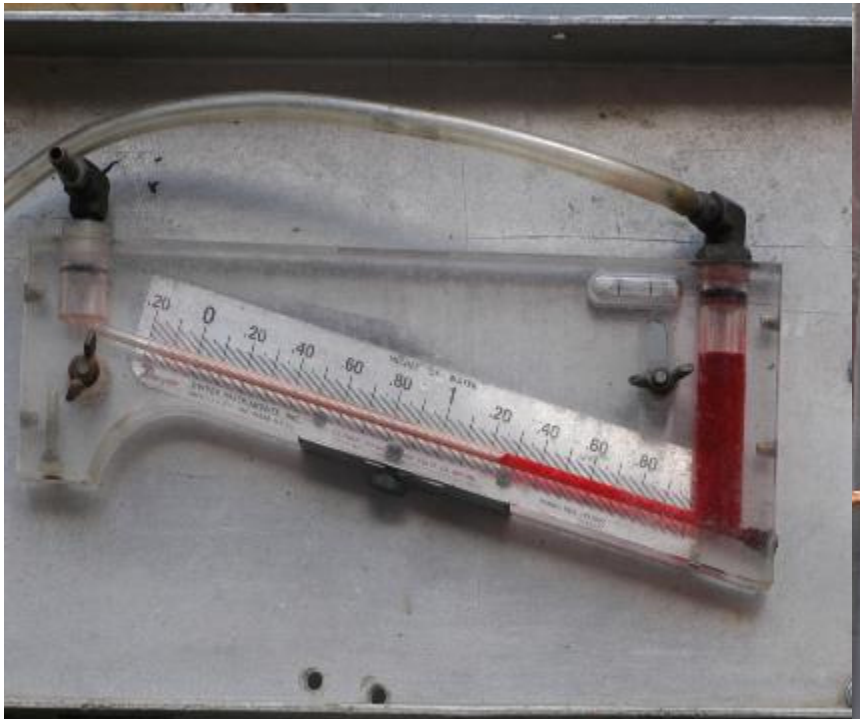
H. Condensation Resistance: Provide aluminum-framed systems with fixed glazing and framing areas having condensation-resistance factor (CRF) of not less than 53 when tested according to AAMA 1503.

I. Average Thermal Conductance: Provide aluminum-framed systems with fixed glazing and framing areas having average U-factor of not more than 0.69 Btu/sq. ft. x h x deg F (3.92 W/sq. m x K) when tested according to AAMA 1503.


WALL CONSTRUCTION
APPROPRIATE FASTENERS APPROX. 24" [600 mm] O.C.
SHEET METAL REGLET
REMOVABLE SHEET METAL COUNTERFLASHING
APPROX. 4" [100 mm] MIN. VERTICAL HEIGHT
OPTIONAL: CONTINUOUS SHEET MEMBRANE LINER
SHEET METAL ROOF-TO-WALL FLASHING
SLOPE
SLOPE
SEAM AND PANEL PROFILES VARY
ARCHITECTURAL METAL ROOF PANEL
SLIP SHEET
UNDERLAYMENT
ROOF SUBSTRATE
OPTIONAL: TURN PANEL PANS UP AT HEADWALL TO PROVIDE SECONDARY CLOSURE
"Z" CLOSURE FASTENED AND SET IN SEALANT OR SOLDERED AS MATERIAL PERMITS- SEAL VERTICAL LEGS
PANEL CLIP MIN. [2] FASTENERS PER CLIP
ALTERNATE :
SOLDERED JOGGLE CLEAT IN LIEU OF CONTINUOUS LOCK
5" [125 mm] MIN. FLANGE WIDTH
ARCHITECTURAL METAL ROOF PANEL
VALLEY METAL
OPTIONAL : INSTALL SEALANT IN ENDS OF VERTICAL SEAMS
LOCK PANEL PANS TO ENGAGE VALLEY METAL
SLOPE
SLOPE
VALLEY CLIP MIN. 2 FASTENERS PER CLIP (APPROX. 2" [50 mm] WIDE) BEND CLIP BACK OVER TO COVER FASTENERS
CONTINUOUS LOCK
SLIP SHEET
ROOF SUBSTRATE
SEAM AND PANEL PROFILES VARY
4" [100 mm] MIN. PANEL OVERLAP ONTO VALLEY METAL FLANGE
UNDERLAYMENT OR ICE-DAM PROTECTION MEMBRANE
CENTER RIB (1" [25 mm] MIN. HEIGHT)

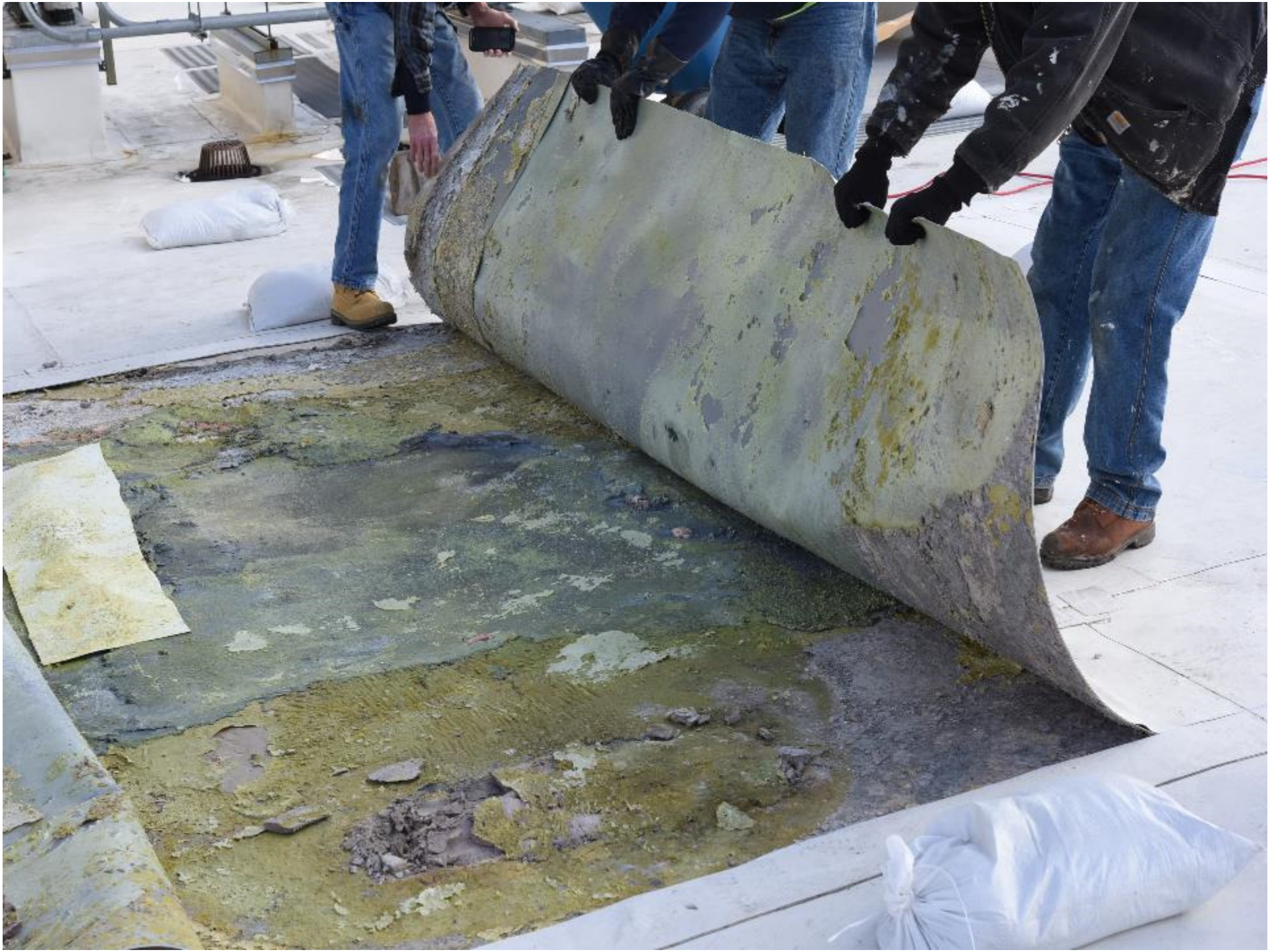

C2 SECTION DETAIL
1 1/2" = 1'-0"
C4 SECTION DETAIL
1 1/2" = 1'-0"
CONCRETE SLAB ON METAL DECK
SECOND LEVEL EL 114'-5"
PRECAST PANEL
FIRE BARRIER
STEEL BEAM W/ FIREPROOFING
SPRAY INSULATION
1/2" CHAMFER
VAPOR BARRIER
CWS ATTACHMENT BY CWS MFG'R
3 5/8" METAL STUDS
BACKER ROD AND SEALANT
BRICK THIN SET IN PRECAST BEYOND
CWS-1
FIRST LEVEL EL 100'-0"
FIFTH LEVEL EL 147'-11"
GWB ON 3 5/8" METAL STUDS
GWB ON 8" METAL STUDS
BATT INSULATION
CEMENT PLASTER
8" BOND BEAM
GWB ON 2 1/2" METAL STUDS
ARCHITECTURAL LOUVE
SHEATHING
SILL FLASHING


likely insufficient to accomodate building movement, thermal expansions, and tolerances - this is a lateral-only support joint.
show boundary/adjacent enclosure by others
see note on 2/D2 for rigid insulation
it is likely that this sealant joint is either left out (open) or weeped - it is not a weatherseal in this position.
include flexible flashing to maintain continuity of air/water barrier with window system.
must verify sufficient space exists to accomodate building movement.
GFRC PANEL BY "OTHERS"
15.6 X 6 X 1/4" BY "OTHERS"
3/8"-16 X 1" HWH ZINC PLTD. TAPTITE THREAD ROLLING SCREW
B.O. TUBE STEEL
1/2"
OPENING DIM.
O.A. UNIT HGT.
FRAME DIM.
DLO
2 1/2"
162-505
027-857 GASKET
162-310 ISOLATOR
162-005
162-331
128-394 SCREW
128-405 SCREW
128-405 SCREW
162-094
162-308 "T" ANCHOR @ CAPTURED JAMBS
162-328 "T" ANCHOR @ SSG MULLIONS
027-850 GASKET
6" O.A. FRAME DEPTH
cut another section at the vertical mullion AND at the jamb mullion to show how waterproofing and flashing is continuous.
HDR - does it make any sense to increase depth of horizontal cover, make it continuous, so that offsets in intersecting pressure do not create gaps?
pioneer - what is acceptable gap allow for thermal movement, yet be clean?
seal flashing to window - continuous.
Pioneer to include in their calculations a check of building tolerance and movement & then dimension this range on these drawings.
need continuity of vapor barrier to seal to window all around.
paint ends of caps - unless paint closely matches unfinished
1


20
0
20
40
60
80
1
20
40
60
80


SCFM
80
70
60
50
40
30
20
10
2
SCFM
80
70
60
50
40
30
20
10
OMEGA


PSI




CAUTION
EXHAUST FAN
EF-1-2
1ST FLOOR
DECONTAMINATION AREA
CAUTION

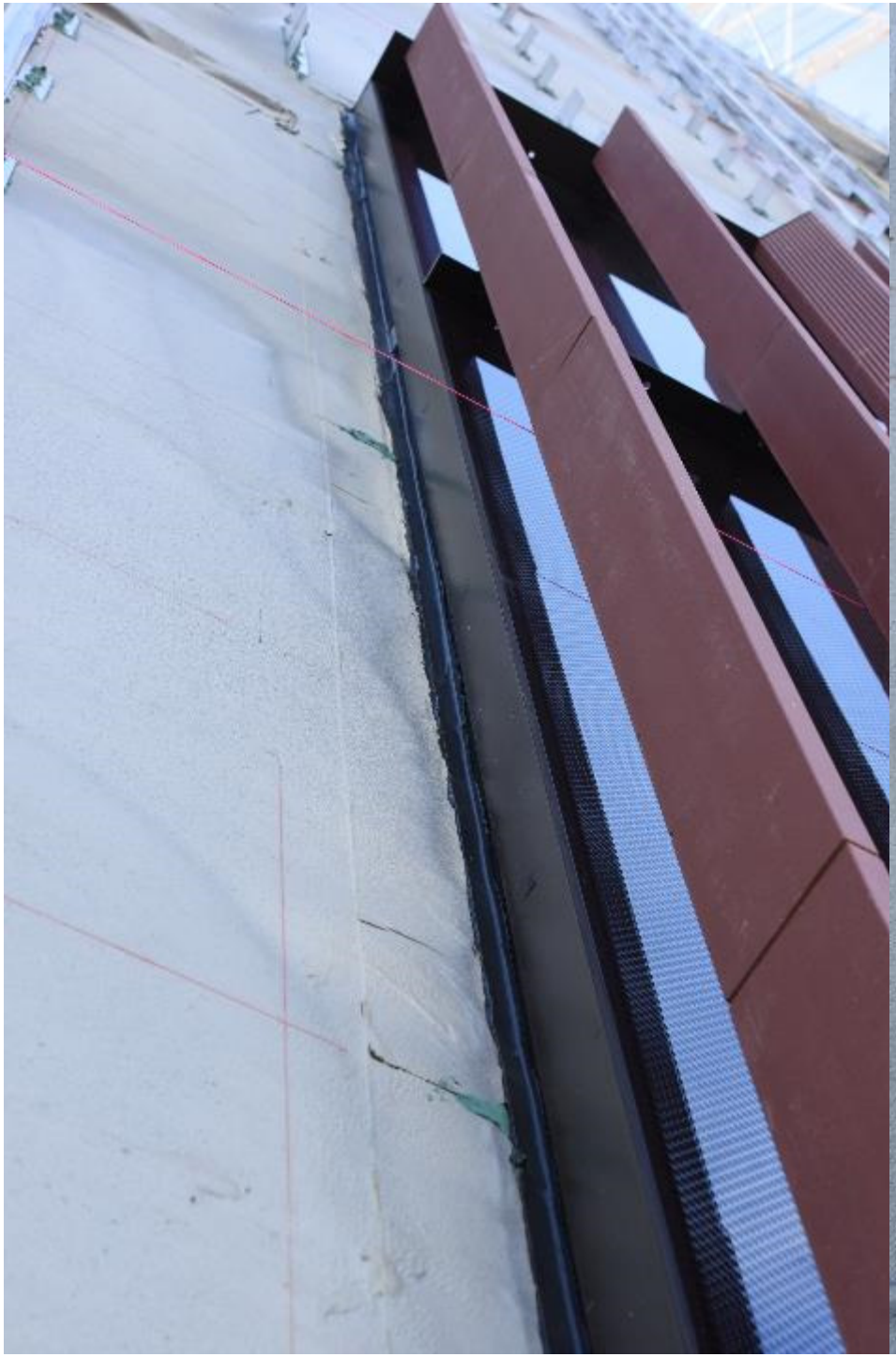

Tyvek
Tyvek



IPCO
FLASHING
MASTIC


Tyvek
COMMERCIALWRAP
DUPONT
Tyvek
COMMERCIA
DuPont
Tyvek
Tape


Blue Skin

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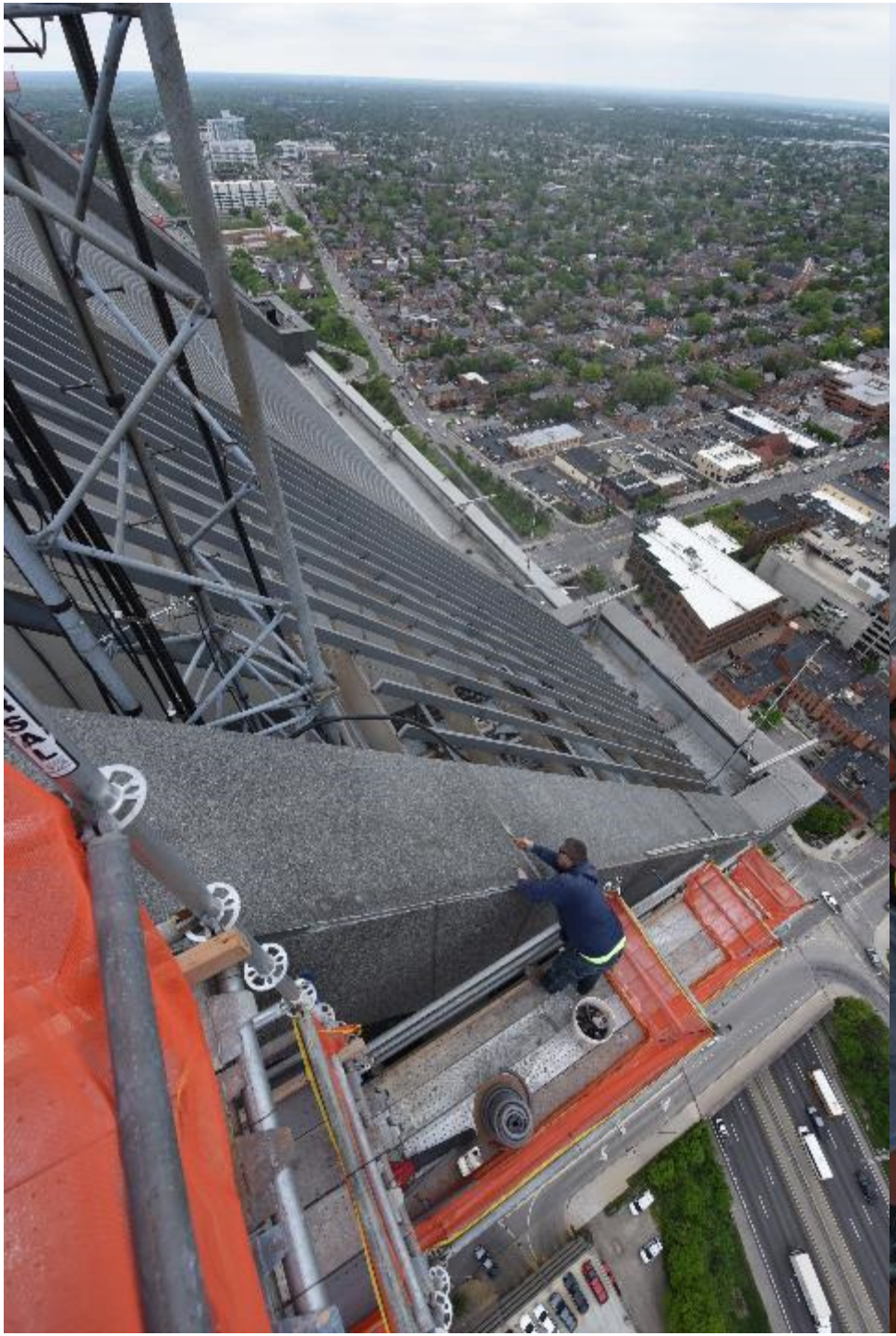
RST INDIANA




thank you
facade forensics