

University of South Carolina



Neurological Hospital & Rehabilitation Center

EFCO / Wausau bid coordination package

The delivery strategy

Wausau manufactures the unitized curtain wall, and EFCO the stick curtain wall and entrances, proposed for the USC enclosure.

Curtain wall

Unitized + stick

Systems manufacturers

Wausau · EFCO

Delivery model

Design assist → operations

Installation

Installation proceeds floor by floor, each level released as a complete workfront.

Supply chain

Fabrication, shipping and receiving follow the installation sequence.

Complete enclosure

Glazing, cladding and screening share coordinated interfaces.

Unitized: factory work, field setting

The delivery advantage comes from moving repeated assembly operations into a controlled factory process.

	Stick curtain wall	Unitized curtain wall
Assembly	Framing and glazing at the workfront	Factory-assembled and glazed units
Field work	Multiple operations in each zone	Panel setting, joints and perimeters
Delivery	Components distributed to the floor	Protected units in erection sequence
Quality	Field assembly and seal checks	Factory checks plus field interfaces

Field-labor benchmark: 30–50% fewer installation hours. Calendar duration remains a separate schedule calculation.

What releases a floor

Floor release conditions for installation.



Floor starts, crew resources and overlap are established with the GC.

Factory to workfront

Material route from factory to workfront.

01 FACTORY RELEASE

Built for the project.

Fabrication & inspection

Project-specific cutting, assembly, glazing and quality release.

Packing by workfront

Protected units and components identified by floor and installation zone.

02 SUPPLY ROUTE

Manufacturer to site

Factory release → Protected freight → Staging

Units and components travel packed by floor and zone, tracked to booked arrivals.

Receiving

Condition checks on arrival before release to the workfront.

Booked delivery to the workfront →

03 SITE RELEASE

Delivered to the workfront.

Staging & booked arrivals

Protected storage and deliveries matched to floor releases.

Receiving & installation

Condition checks, handling access and a ready workfront.

Shipping origins, lead times, transit and release dates follow the selected manufacturers and the GC schedule.

Manufacturer technical basis

1CG proposed systems for the USC enclosure.

Systems proposed

Three + railing

Manufacturers

Wausau · EFCO · Q-railing

Glass basis

Viracon VNE1-63

Performance

Published structural, air, water, thermal, acoustic and safety criteria from Wausau and EFCO establish the basis.

Appearance

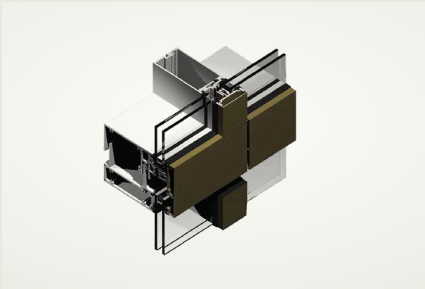
Sightlines, glass and spandrel relationships, finishes and samples carry through the enclosure.

Deliverability

Project-specific fabrication, shipping, receiving and installation follow the manufacturer delivery sequence.

The proposed systems

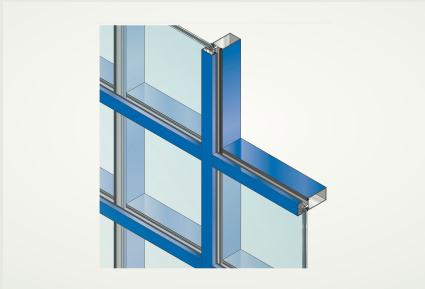
Wausau and EFCO systems that carry the enclosure proposal.



Wausau · INvision 10250i-HRX

Unitized curtain wall

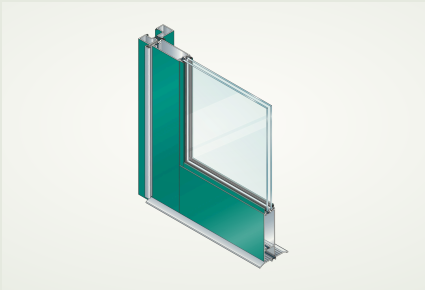
10-1/4" frame depth · 2-1/2" face · HRX polyamide barrier, 24–32 mm · factory glazed · 0.06 cfm/ft² air at 6.24 psf · 15 psf static and dynamic water



EFCO · System 5600

Stick curtain wall

2-1/4" pressure wall · 5", 6" or 7" frame depth · screw spline or shear block · glazing up to 1-5/16" · < 0.06 cfm/ft² air · 15 psf water



EFCO · D302 / D502

ThermaStile entrance doors

2" thermally isolated door · 3-1/2" medium or 5" wide stile · welded corners · < 0.3 cfm/ft² air, single door

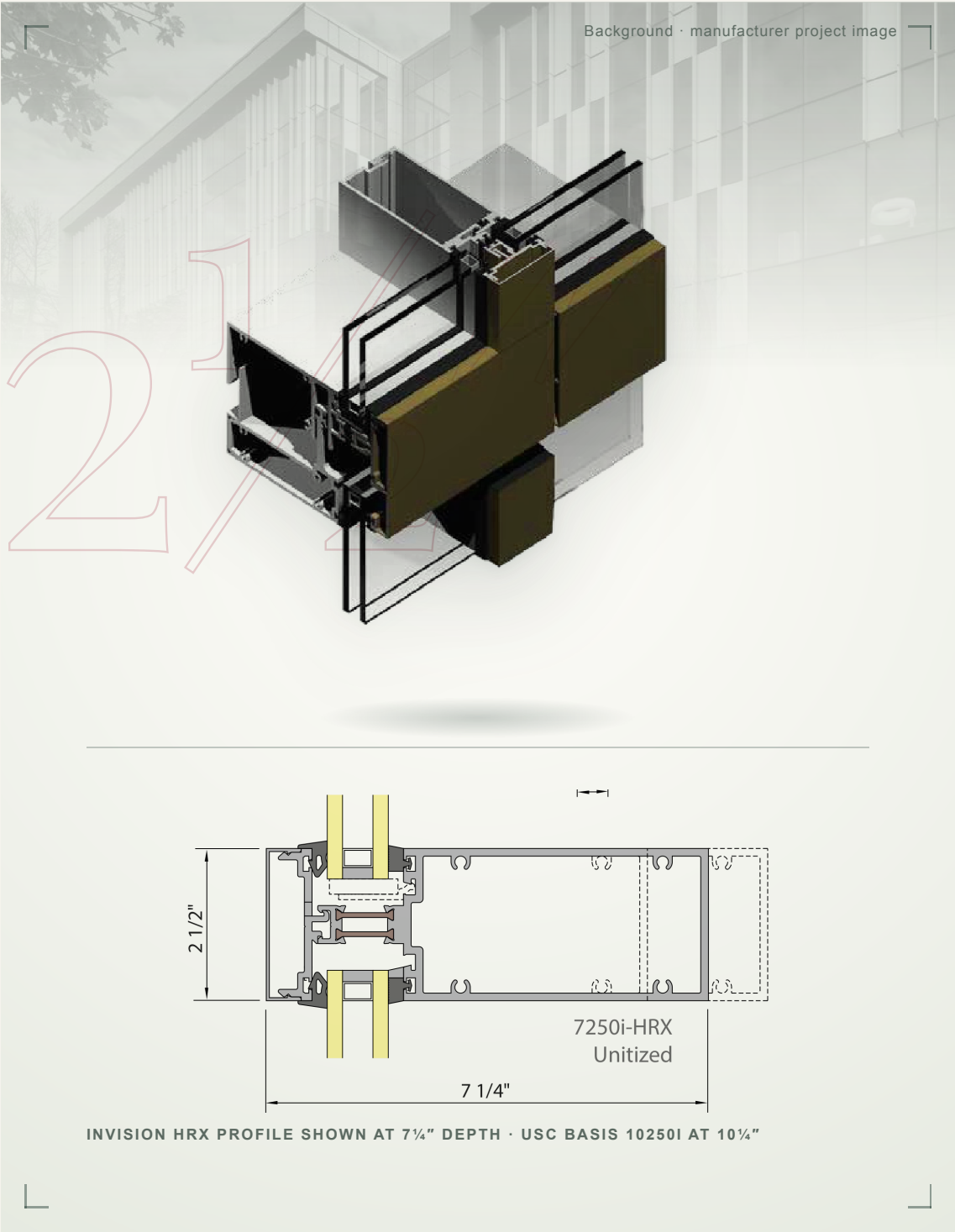


Q-railing · Railing

Railing system

Railing by Q-railing. System selection and product data to follow.

Manufacturer technical basis · Published dimensions, configurations and performance. Performance depends on glass selection; project values follow manufacturer testing and engineering.



INvision 10250i-HRX

10250 10¼" frame depth **i** continuous polyamide barrier **HRX** 2½" face · 24–32 mm barrier

Factory-glazed unitized curtain wall

2½" FACE WIDTH		10¼" FRAME DEPTH		15 PSF WATER, STATIC + DYNAMIC	
AIR 0.06 cfm/ft² at 6.24 psf		WATER 15 psf static + dynamic		NFRC U-FACTOR 0.29–0.63 BTU/hr·ft²·°F	
		CRFF 73–77 frame		STC 31–39 sound transmission	
				OITC 25–33 outdoor–indoor	

THERMAL BARRIER

HR

HRX

24–32 mm polyamide barrier

HR 15–19 mm

HRX 24–32 mm

0 35 mm

ALSO IN THE SYSTEM

 **CLEARSTORY SUN SHADES**
Exterior shading option

 **JACK-BOLT ANCHOR**
Three-way adjustable

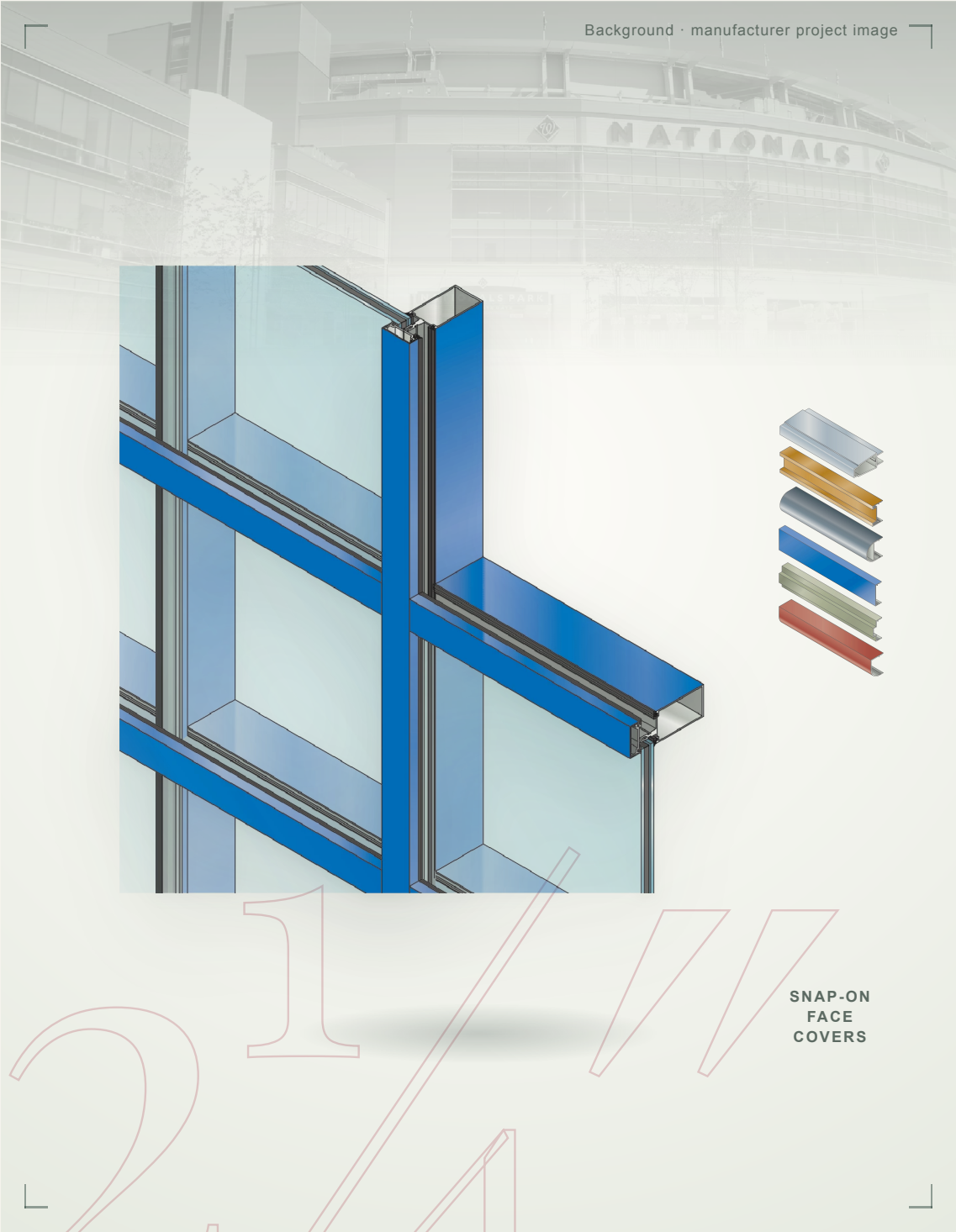
AT USC

Levels 05–08

Unitized vision + spandrel

HRX basis · 24–32 mm barrier

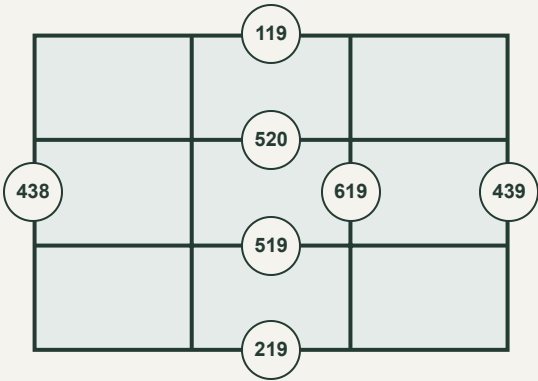
INvision family results; test results may vary. Project performance follows Wausau testing and engineering.



System 5600

2 1/4" pressure-glazed stick curtain wall

2 1/4" FACE WIDTH		5 · 6 · 7" FRAME DEPTHS		1-5/16" MAXIMUM GLAZING	
AIR < 0.06 cfm/ft² ASTM E283	WATER 15 psf ASTM E331	U-FACTOR 0.37-0.58 NFRC 100/200	CRF 67 AAMA 1503	STC 33-46 ASTM E90 & E413	OITC 29-38 ASTM E90 & E413
					

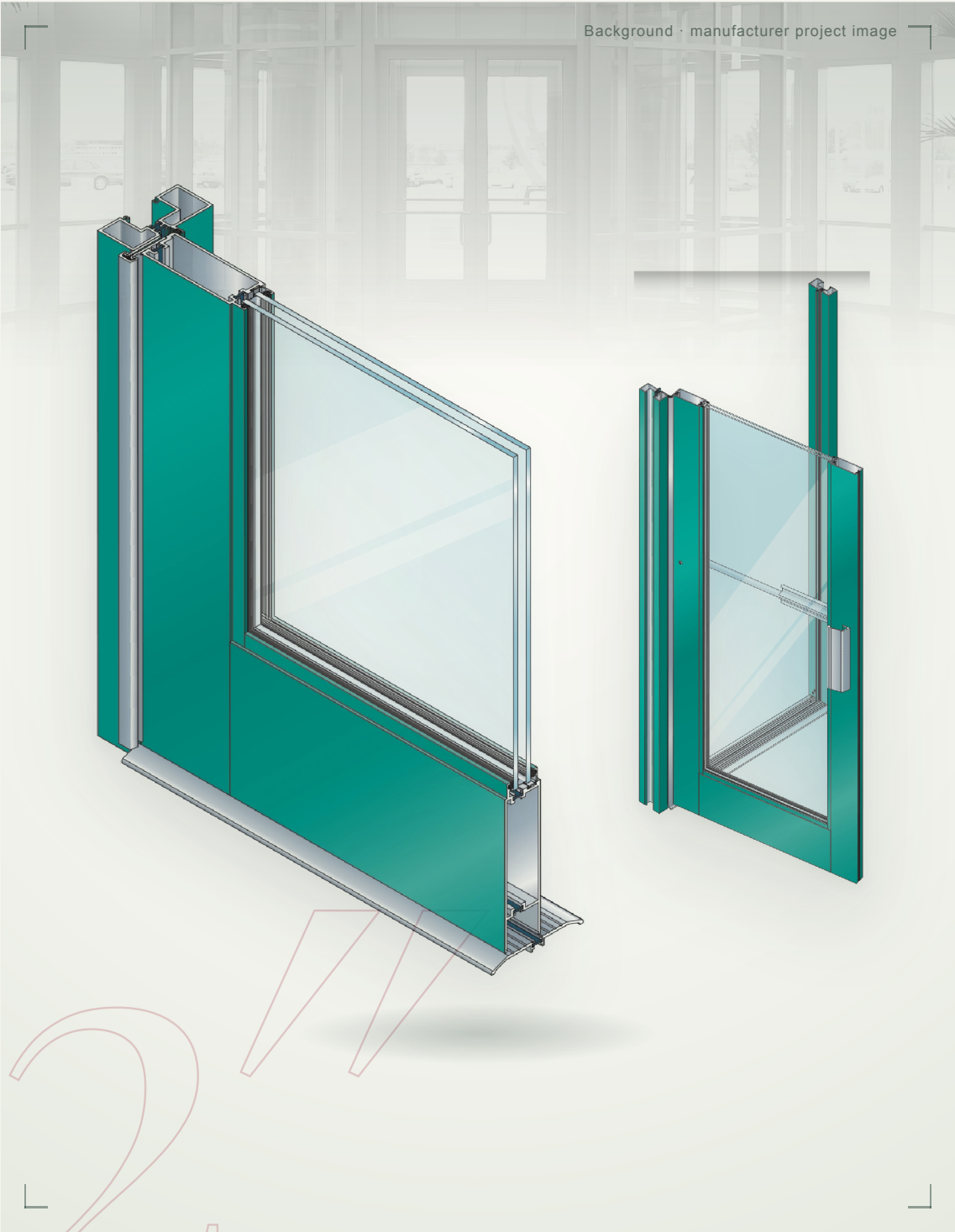


CENTER-TONGUE FRAMING
GLAZING ADAPTORS



AT USC Level 01 lobby Level 04 office Outside or inside glazed

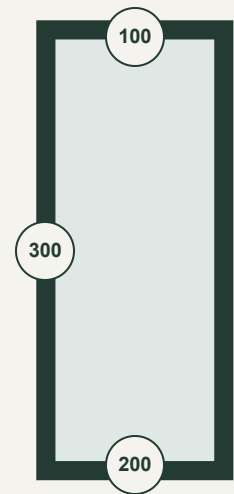
Aluminum pressure plate values; performance depends on glass selection. Structural load per EFCO project engineering.



D302 / D502 ThermaStile

2" ThermaStile swing entrance doors

2" DOOR DEPTH	3½" · 5" MEDIUM · WIDE STILE	Welded PLUG-WELDED CORNERS
AIR, SINGLE DOOR < 0.3 cfm/ft² ASTM E283	AIR, D302 PAIR < 0.6 cfm/ft² ASTM E283	CRF, D502 SINGLE 46 AAMA 1503

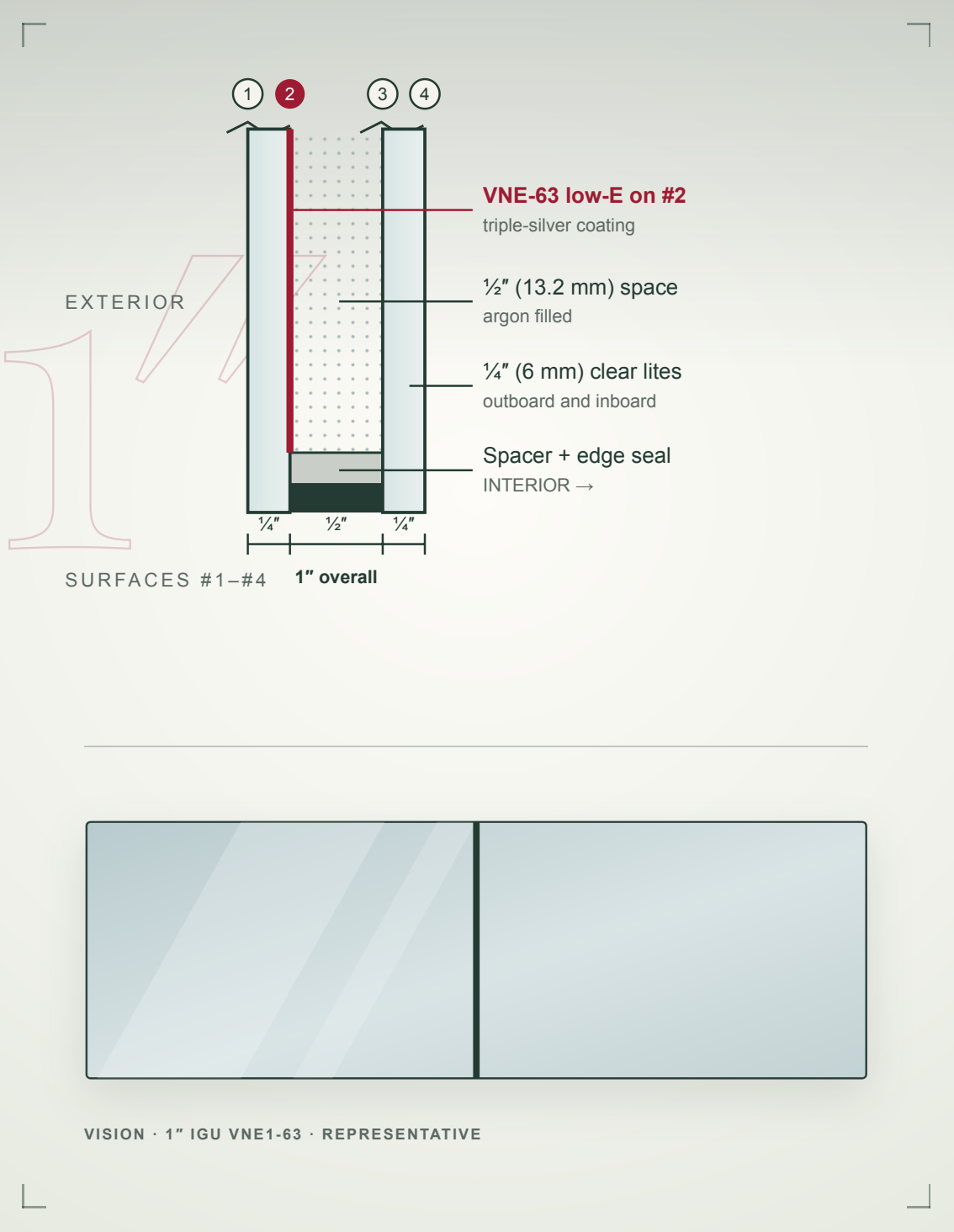


DOOR DETAILS

- STILE **Medium 3½"** Wide 5"
- GLAZING **1" IGU · Viracon VNE1-63**
- HARDWARE **Most major locks** **Panic devices** **Rixson HD pivots** **Continuous hinges**
- Overhead or floor closers

AT USC Level 01 lobby entrances

EFCO lists water, STC and OITC as N/A and U-factor by request. Performance depends on glass selection.



VIRACON System coordination

VNE1-63

Triple-silver low-E · 1" insulating glass

1" OVERALL UNIT	60% VISIBLE LIGHT	0.28 SHGC
VISIBLE LIGHT 60% transmittance	REFLECTANCE 10% exterior visible	U, WINTER 0.25 NFRC · center of glass
0 100	0 100	0 1
U, SUMMER 0.21 NFRC · center of glass	SHGC 0.28 solar heat gain	SHADING COEFF. 0.32 SC
0 1	0 1	0 1

GLASS TYPE Vision Spandrel Silkscreen 60% visible light

Triple-silver VNE-63 low-E on surface #2 of a 1" argon-filled unit: high visible light with a neutral, low-reflectance exterior.

MAKE-UP 1/4" clear VNE-63 on #2 1/2" argon 1/4" clear

GLAZED INTO Wausau 10250i-HRX EFCO 5600 D302 / D502 doors

AT USC Vision · all systems Spandrel · V952 Warm Gray Silkscreen · V1093

Viracon published data, center of glass, 1" overall. Swatches are representative; approve physical samples.

ACM: columns, soffits & overhangs

The cladding scope presents ACM columns, soffits and overhangs as one coordinated package.



Aragonite Metallic finish reference

ACM applications

Column wraps, soffits, overhangs and selected base zones carry the cladding package.

Finish direction

Aragonite Metallic establishes the metallic finish reference for coordinated joints and samples.

Panel approach

Lukabond ACM supports a clean panel language across the enclosure and coordinates with the glazing package.

Bid basis · Division 07 and Division 08 presented as one enclosure package.

Perforated aluminum garage screening

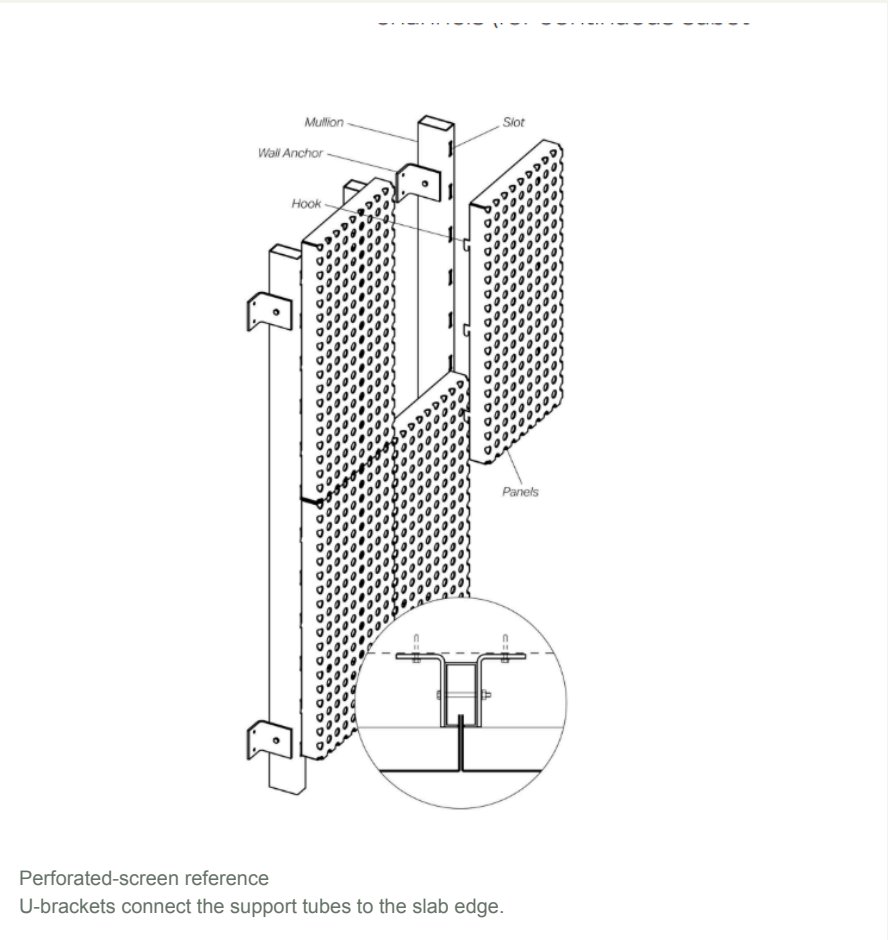
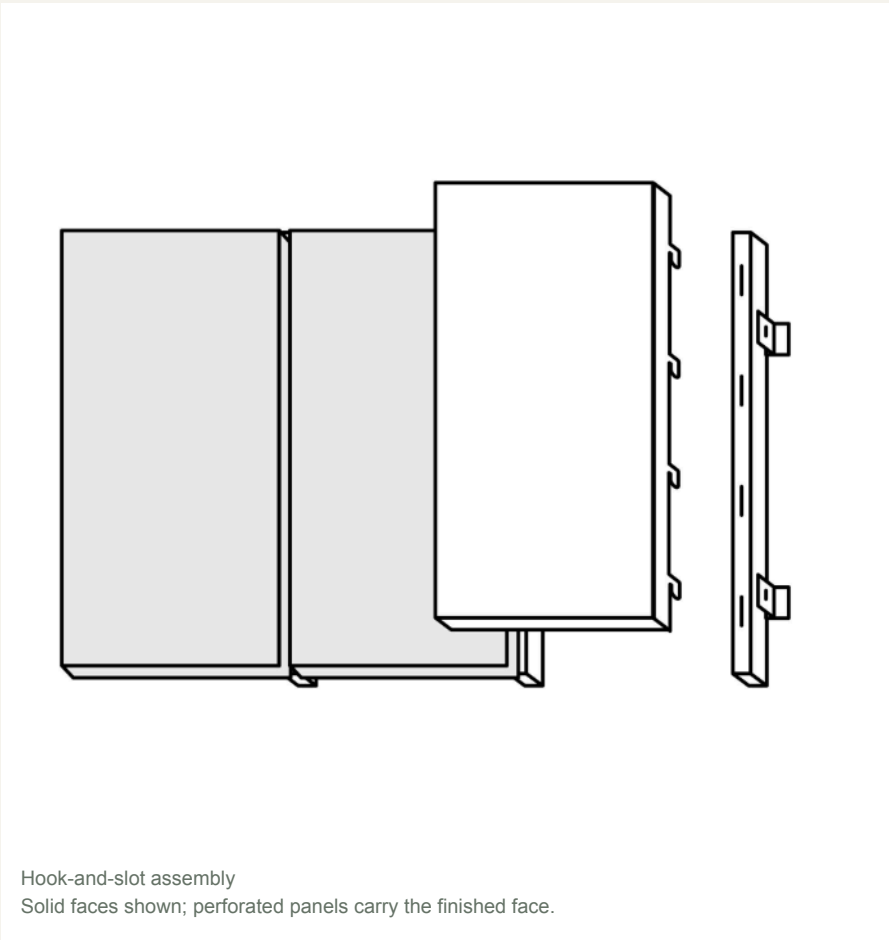
Perforated aluminum panels hook into slotted support tubes behind the finished face.

1/8"
3003 aluminum plate

≤ 40%
open area

3'-6"
maximum panel width

Powder coated
both panel faces + support tubes



- Concealed support**
Rear hooks seat into slotted tubes behind the panel face.
- Slab-edge connection**
U-brackets receive the tubes and attach to the slab face.
Tubes remain uncapped. No stiffeners are included in this bid basis.

Bid basis: concealed hooks, slotted tubes and U-brackets carry the perforated aluminum screen. Screen fabricator to be confirmed.

One package across Divisions 7 + 8

A coordinated 1CG enclosure package across Divisions 07 and 08.

07

Cladding

ACM, opaque panels and garage screening.

08

Glazing

Curtain wall, entrances, feature glass and windscreen.

Shared interfaces

Substrates, anchors, movement and weathering.

Shared delivery

Package identification, floor releases and access.

Shared completion

Inspections, closure and handover records.

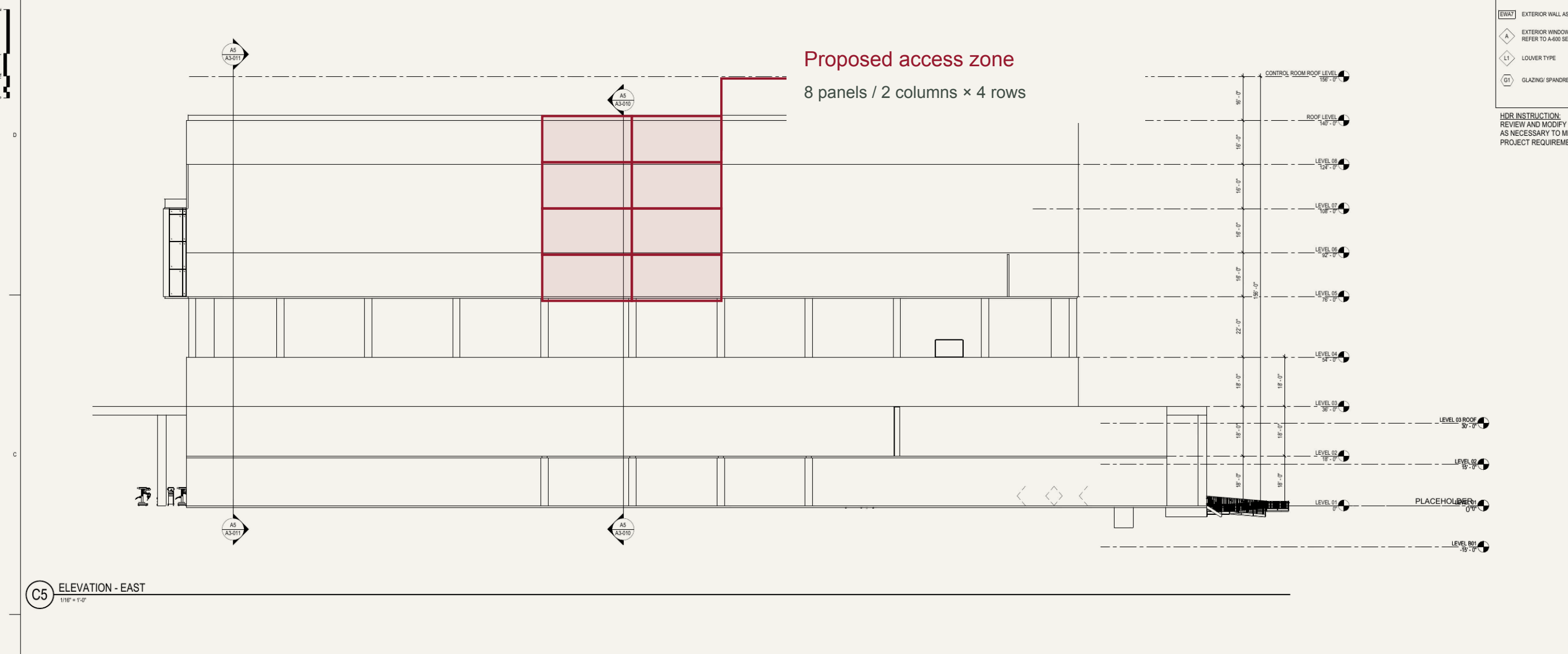
Where each system sits

System locations from the public entrance to the roofline.

Roof / cornice	Glazing extension, support and weathering
Levels 05–08	Unitized vision and spandrel glazing
Level 04	Mechanical louvers and office curtain wall
Levels 02–03	Glazing and opaque base transitions
Level 01	Lobby curtain wall and entrances
Parking garage	Perforated aluminum screen and tower interfaces

East elevation: system relationships

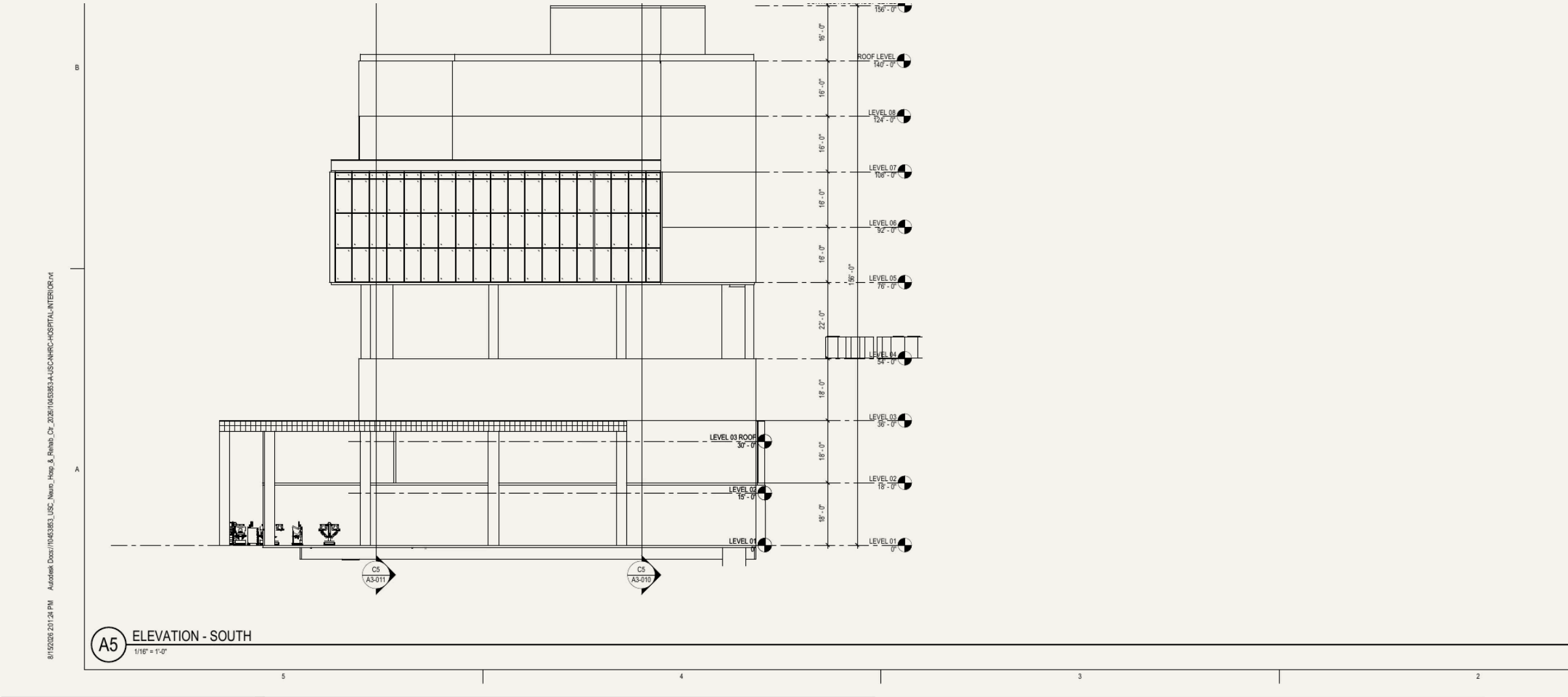
The long east face carries the repeating unitized bays, and the proposed construction access zone sits within them.



A2-001 · East elevation extract · Proposed access zone · 8 panels / 2 columns × 4 rows

South elevation: system relationships

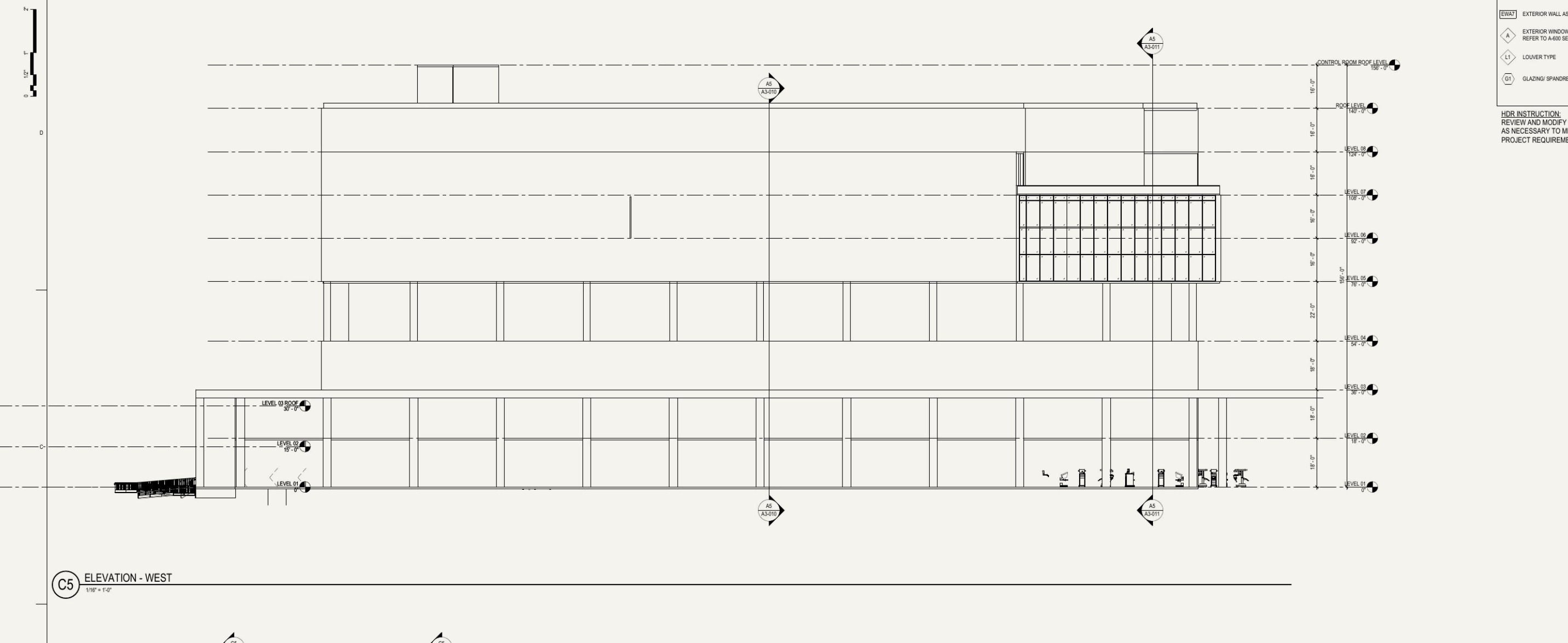
The south face steps from the upper enclosure down to the base, with the glazed grid at the mid-levels.



A2-001 · South elevation extract · Full east/south sheet opens in the canvas

West elevation: system relationships

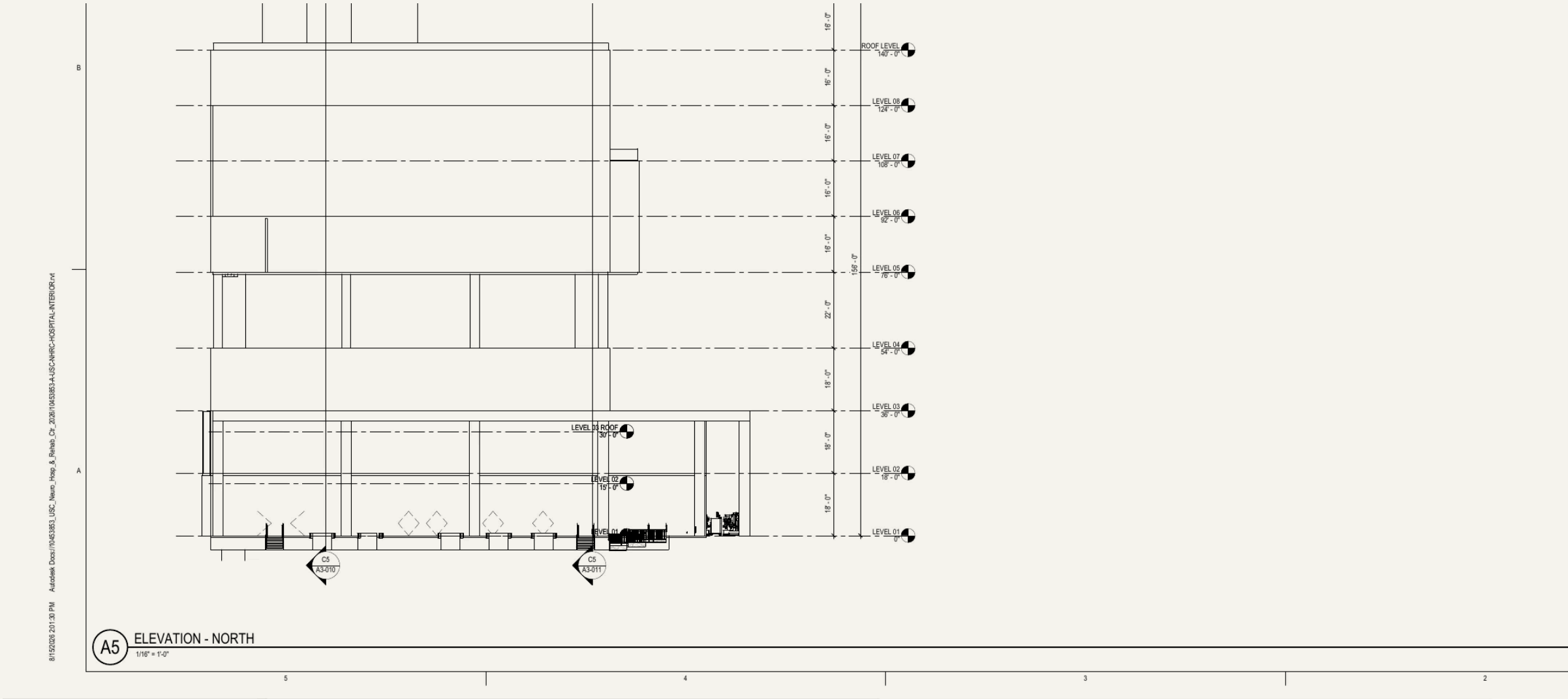
The west face runs the full length of the building, with the upper glazed grid set above a continuous base.



A2-002 · West elevation extract · Full west/north sheet opens in the canvas

North elevation: system relationships

The north end is the narrowest face, stacking each enclosure type from base to roofline in a single bay width.



Lobby glazing & entrances

A full-height glazed perimeter supports the public arrival experience.

Schematic design intent

Three sides

Full-height curtain wall at the lobby

Assembly

Curtain wall, entrances and their perimeter closures.

Principal interface

Thresholds, base cladding and adjacent waterproofing.

Installation consideration

Glass dimensions, handling access and the entrance completion sequence.

Level 04: louvers meet glazing

Mechanical and office spaces create a distinct transition within the enclosure.

Level 04

Two uses

Mechanical louvers + office curtain wall

Assembly

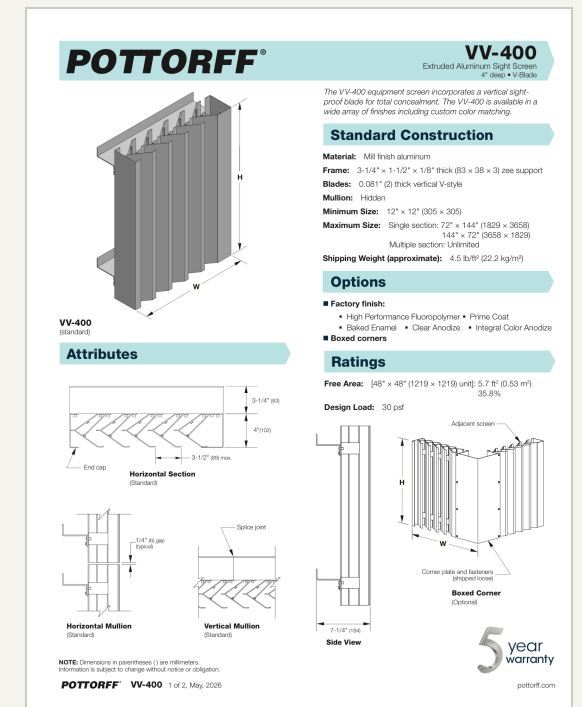
Louvered mechanical enclosure and full-height glazing at the office end.

Principal interface

Shared supports, head/sill weathering and service access.

Installation consideration

Louver readiness and adjoining curtain-wall releases.



Pottorff VV-400 extruded aluminum sight screen —
reference datasheet, May 2026

Upper floors: repeatable unitized panels

Vision glass and spandrel areas form a coordinated family of factory-assembled units.

Levels 05–08

Unitized

Wausau INvision 10250i-HRX · module layout
pending proposal drawings

Assembly

Vision and spandrel modules developed around the architecture.

Principal interface

Slab anchors, stack joints, corners and perimeter seals.

Installation consideration

Panel size, packed dimensions, lifting and replacement access.

Four details shape the system

The first manufacturer detail review centers on these project interfaces.

Projected panel

Panel geometry, support and the adjacent glazing edge.

Sunshade

Projection, integrated support, movement and drainage.

Curtain-wall fin

Fin profile, attachment, tolerances and imposed loads.

Parapet / cornice

Roof weathering, glazing extension and maintenance access.

Aquarium feature glazing

A dedicated installation scope with its own glass, steel and handling requirements.

Feature glass

Mid-iron

Final glass makeup and appearance remain part of the system review

Support

Intermediate steel by others; attachment and tolerances coordinated with the glazing.

Installation

Panel weight, lifting route, access and sequence determine the allowance.

VE alternate

Switchable glass evaluated separately; wiring by others.

Feature-glazing duration is established separately from the floor allowances.

Windscreen / glass handrail

The assembly above the aquarium is coordinated separately from the feature glazing below.

Above the aquarium

Separate scope

Glass, support and roof interface

Assembly

Glass makeup and supports follow the final guard and wind requirements.

Principal interface

Anchorage, roof waterproofing, drainage and movement.

Installation consideration

Handling, installation order and future maintenance access.

Five interfaces, one enclosure

Dependable enclosure interfaces across trades.

Interface	Coordination focus
Slab edge	Anchor loads, survey, tolerances and movement
Fire barrier	Applicable tested assembly and defined trade boundary
Perimeter seals	Compatible materials, joint geometry and inspection access
Louvers / cladding	Supports, drainage and adjacent air/water barriers
Roof / base	Weathering transitions and maintainable terminations

Access stays in the installation plan

Temporary openings and final closure are carried through the same release sequence.



The Phase 2 interface and temporary protection remain part of GC coordination.

Design assist, with continuity

Over 50 years of combined experience: Tony Dangelo and Tim Harwell remain involved through design assist and the transition to operations.

Tony Dangelo

Design-assist manager · 30 years of experience

System development

Project details, product review and constructability.

Tim Harwell

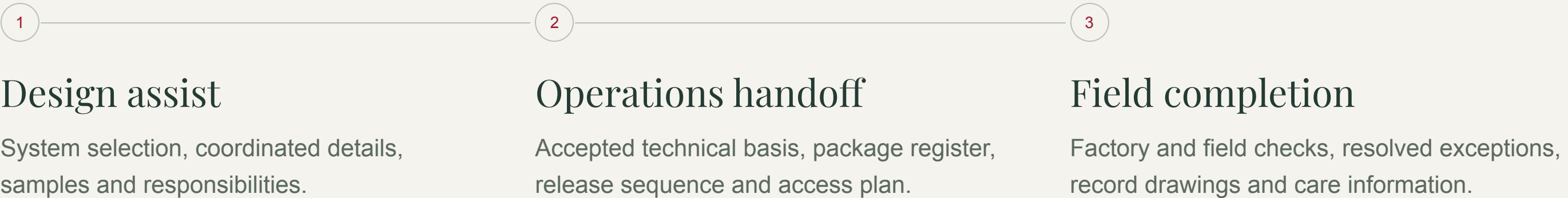
Design-assist team · 20 years of experience

Delivery coordination

Material releases, installation sequence and operational handoff.

The decisions travel with the work

Decisions carried from design assist into operations.



One record connects design intent, installation and closeout.

The next review: four decisions

The enclosure advances through a focused set of technical and delivery outcomes.

System + glass

INvision 10250i-HRX on a Viracon VNE1-63 1" IGU, with V952 Warm Gray spandrel and V1093 silkscreen; exterior and interior aluminum finishes close out the appearance basis.

Special-scope boundaries

Aquarium steel/wiring, windscreen, garage screen and ACM extents.

Priority details

Projected panel, fin, sunshade and parapet interfaces.

Schedule + supply

Validated floor allowances, manufacturer lead times and the delivery sequence.

Design-assist decisions form the release basis for fabrication and installation.

University of South Carolina

One enclosure. One coordinated delivery.

A dependable plan from design assist through installation.

USC Neurological Hospital & Rehabilitation Center