

# DAYTONA BEACH, FLORIDA

## MUNICIPAL STADIUM WINDOW REPLACEMENT

3917 LPGA BLVD.  
DAYTONA BEACH, FL 32124

# GRAEF

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# AA26002643

CLIENT:

DAYTONA BEACH, FLORIDA

PROJECT TITLE:

MUNICIPAL STADIUM WINDOW REPLACEMENT

3917 LPGA BLVD.  
DAYTONA BEACH, FL 32124

ISSUE:

PROJECT INFORMATION:

PROJECT NUMBER: 20184117

DATE: 09/14/2018

DRAWN BY: MCM

CHECKED BY: TE

APPROVED BY: JS

SCALE: AS NOTED

SHEET TITLE:

TITLE SHEET

SHEET NUMBER:

# G-001

### SHEET INDEX

#### TITLE SHEET

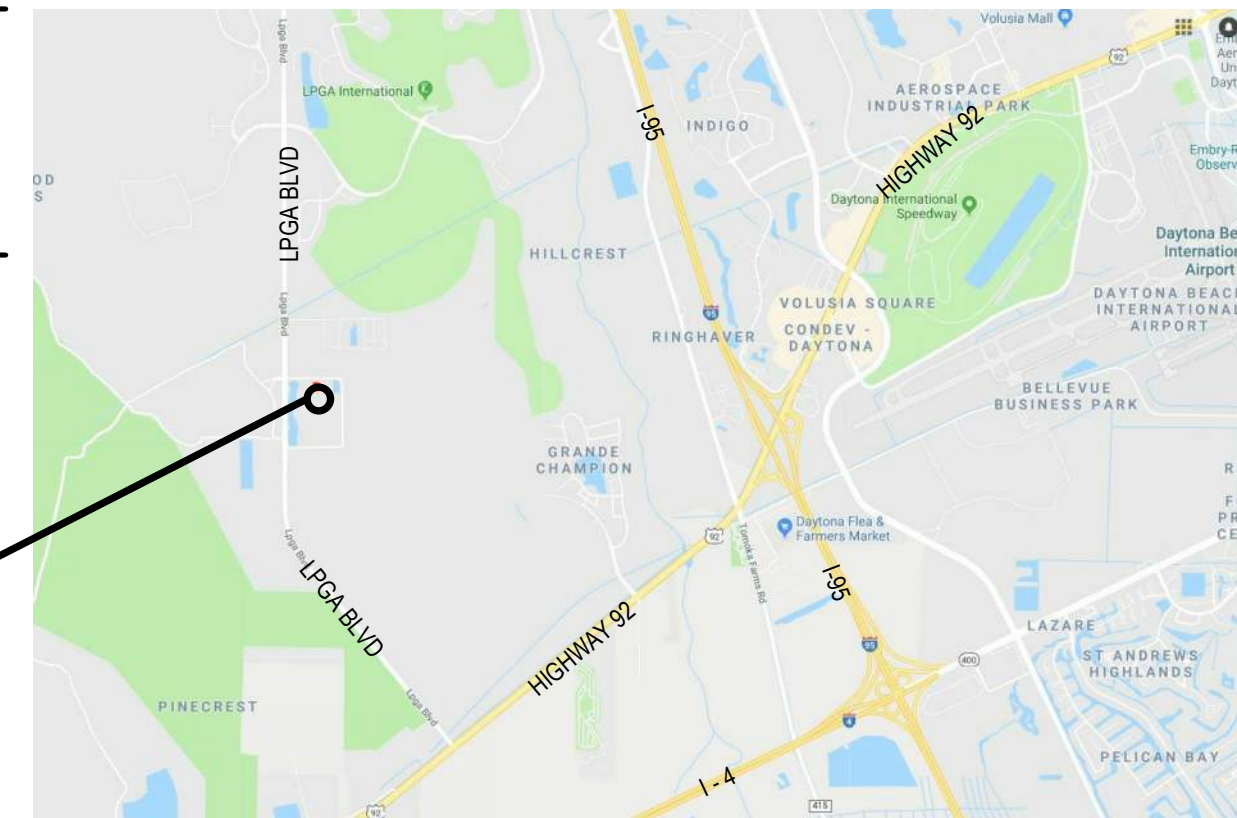
G-001 TITLE SHEET

#### ARCHITECTURAL

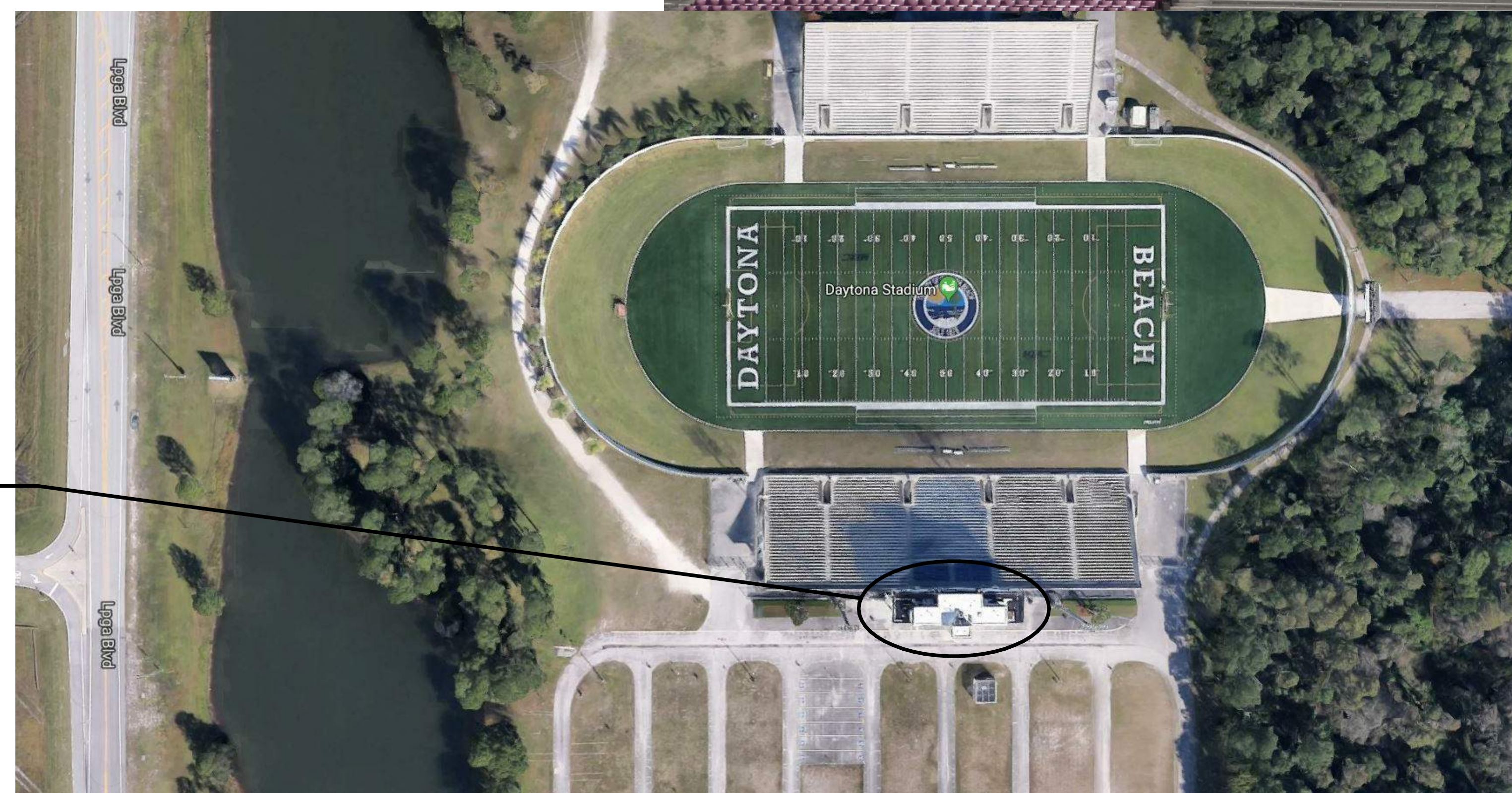
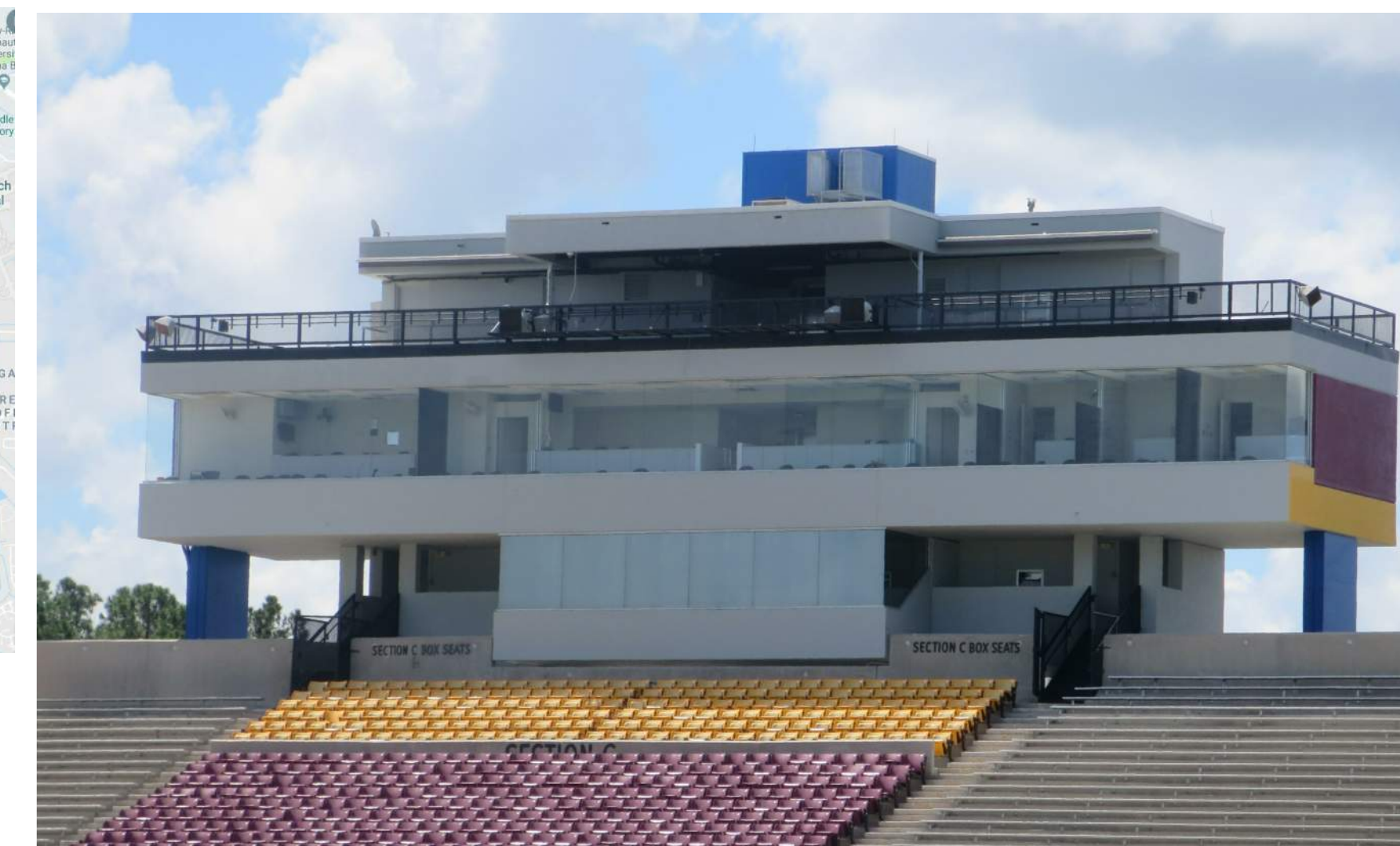
- A-101 PRIVATE BOX FLOOR PLAN / ELEVATION
- A-102 PRESS BOX PLAN AND ELEVATIONS
- A-103 SECTION AND DETAILS
- A-901 SPECIFICATIONS

#### EXISTING PROJECT CONDITIONS

INFORMATION PERTAINING TO EXISTING PROJECT CONDITIONS, SUCH AS LOCATIONS OF ARCHITECTURAL AND STRUCTURAL BUILDING COMPONENTS, MECHANICAL AND ELECTRICAL EQUIPMENT, PIPING, DUCTWORK, ROUGHINS AND OTHER MISCELLANEOUS CONSTRUCTION, APPEARS ON PROJECT DRAWINGS. THIS INFORMATION IS BASED ON AVAILABLE RECORDS AS WELL AS INFORMATION COLLECTED WITH REASONABLE CARE AT THE PROJECT SITE. CONTRACTORS SHALL BE SOLELY RESPONSIBLE FOR VERIFYING DIMENSIONS AND RELATED INFORMATION AT THE PROJECT SITE PRIOR TO PROCURING ANY MATERIALS, PRODUCTS OR EQUIPMENT TO PERFORM THEIR WORK.

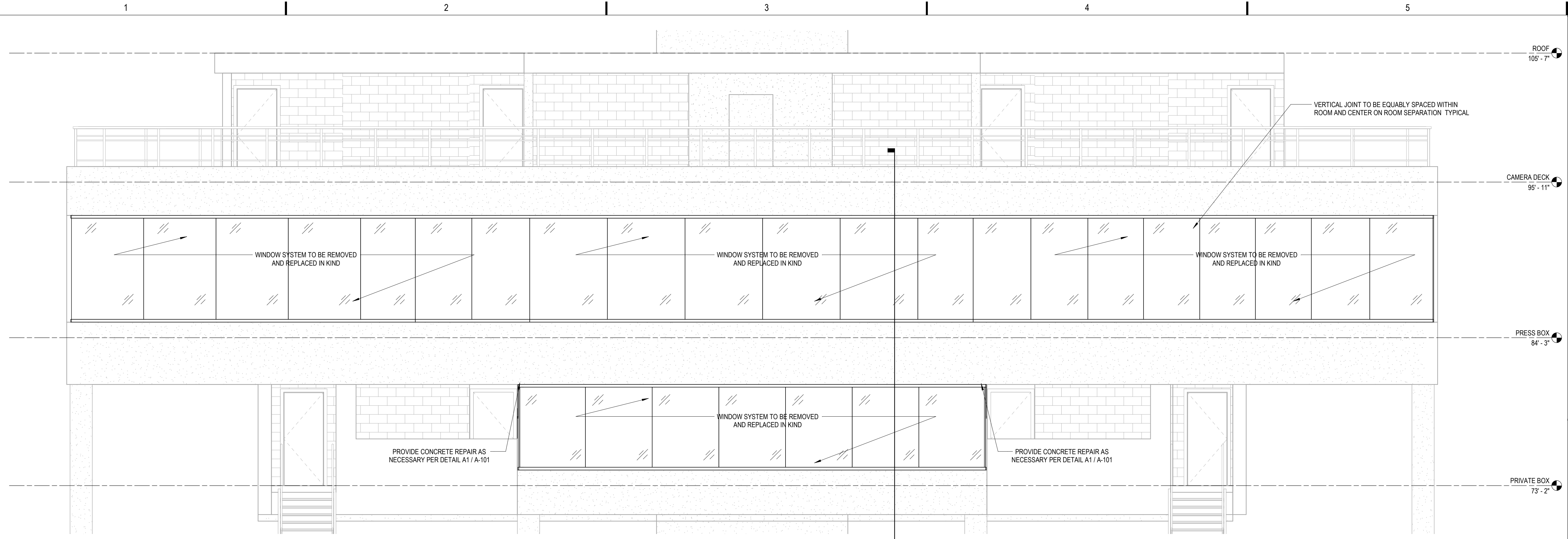


LOCATION MAP

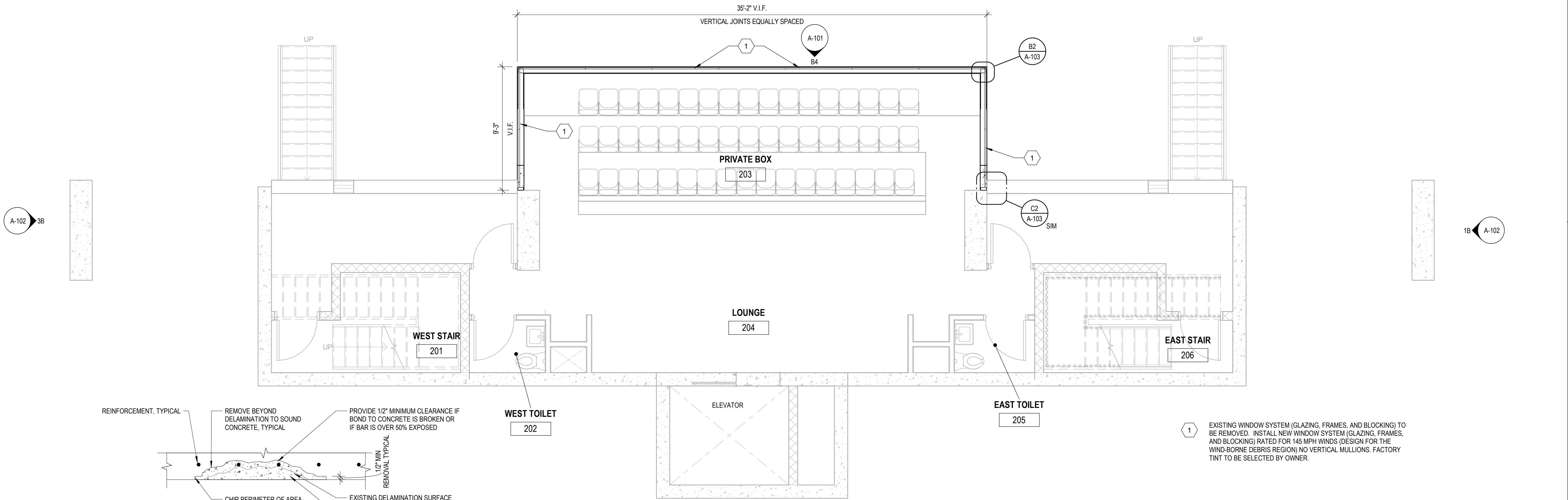


LIST OF ABBREVIATIONS	
AC - ACOUSTIC	HM - HOLLOW METAL
ACT - ACOUSTICAL TILE CEILING	MP - METAL PANEL
AFF - ABOVE FINISHED FLOOR	MTL - METAL
ALUM - ALUMINUM	NP - NAPKIN DISPOSAL
BO - BOTTOM OF	OC - ON CENTER
BRG - BEARING	PT - PAINT
CARP - CARPET	PF - PREFINISHED
CMU - CONCRETE MASONRY UNIT	RD - ROOF DRAIN
CONC - CONCRETE	RTU - ROOF TOP UNIT
CJ - CONTROL JOINT	S&V - STAIN AND VARNISH
CO - CLEAN OUT	SCHD - SCHEDULE
CT - CERAMIC TILE	SD - SOAP DISPENSER
EPX - EPOXY	STL - STEEL
EQ - EQUAL	TD - TOWEL DISPENSER
ES - EXPOSED STRUCTURE	TO - TOP OF
EXIST - EXISTING	TOE - TOP OF EXISTING
FD - FLOOR DRAIN	TP - TOILET PAPER
FE - FIRE EXTINGUISHER	V - VARNISH
FEC - FIRE EXTINGUISHER CABINET	VB - VINYL BASE
FV - FIELD VERIFY	VCT - VINYL COMPOSITE TILE
GA - GAUGE	VFGT - VINYL FACED GYPSUM TILE
GB - GYPSUM BOARD	WD - WOOD
GL - GLASS	WND - WINDOW
	WR - WASTE RECEPTACLE

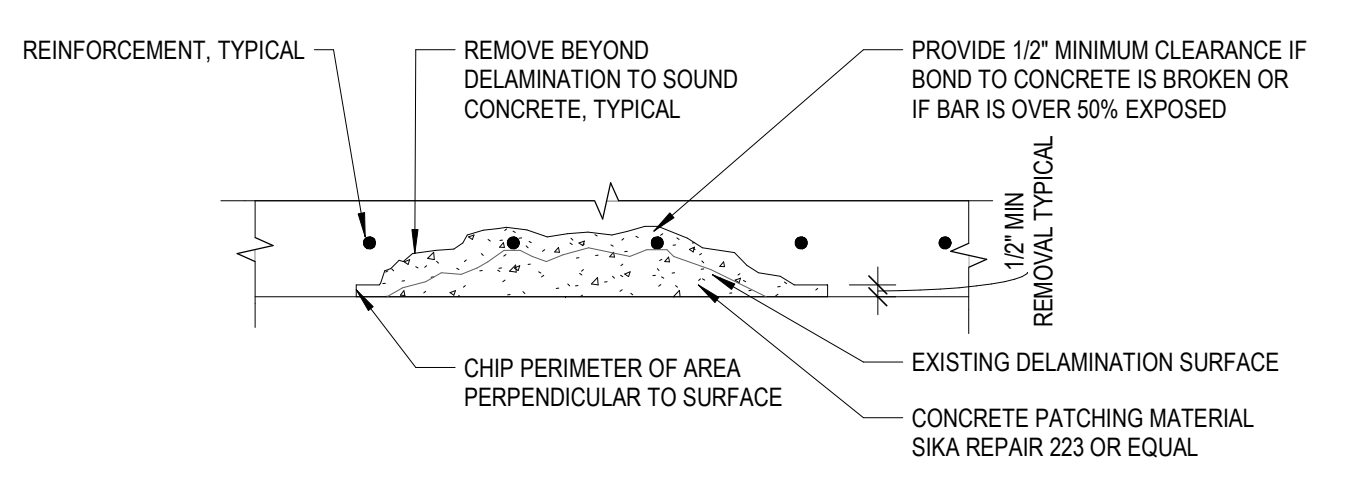
SYMBOLS LEGEND			
LINE	MATERIAL	REFERENCE	
— BEYOND	ALUMINUM	NORTH INDICATOR	BREAK LINE
BATT INSULATION	BRICK	DETAIL VIEW INDICATOR	SPAN DIRECTION INDICATOR
— CENTER GRID	CONCRETE	ELEVATION VIEW INDICATOR	OPENING (FLOOR, ROOF OR WALL)
- - - DEMOLITION	CONCRETE MASONRY BLOCK	SECTION VIEW INDICATOR	ELEVATION INDICATOR
— EXISTING (HALFTONE)	EARTH	VIEW INDICATOR	KEYED NOTE INDICATOR
- - - HIDDEN	GRAVEL	GRID INDICATOR	WALL TYPE INDICATOR
- · - · MATCHLINE	DRY WALL GROUT	EXISTING GRID INDICATOR	REVISION CLOUD
— NEW (CUT)	WOOD		REVISION INDICATOR
— NEW (PROJECTION)	STEEL		



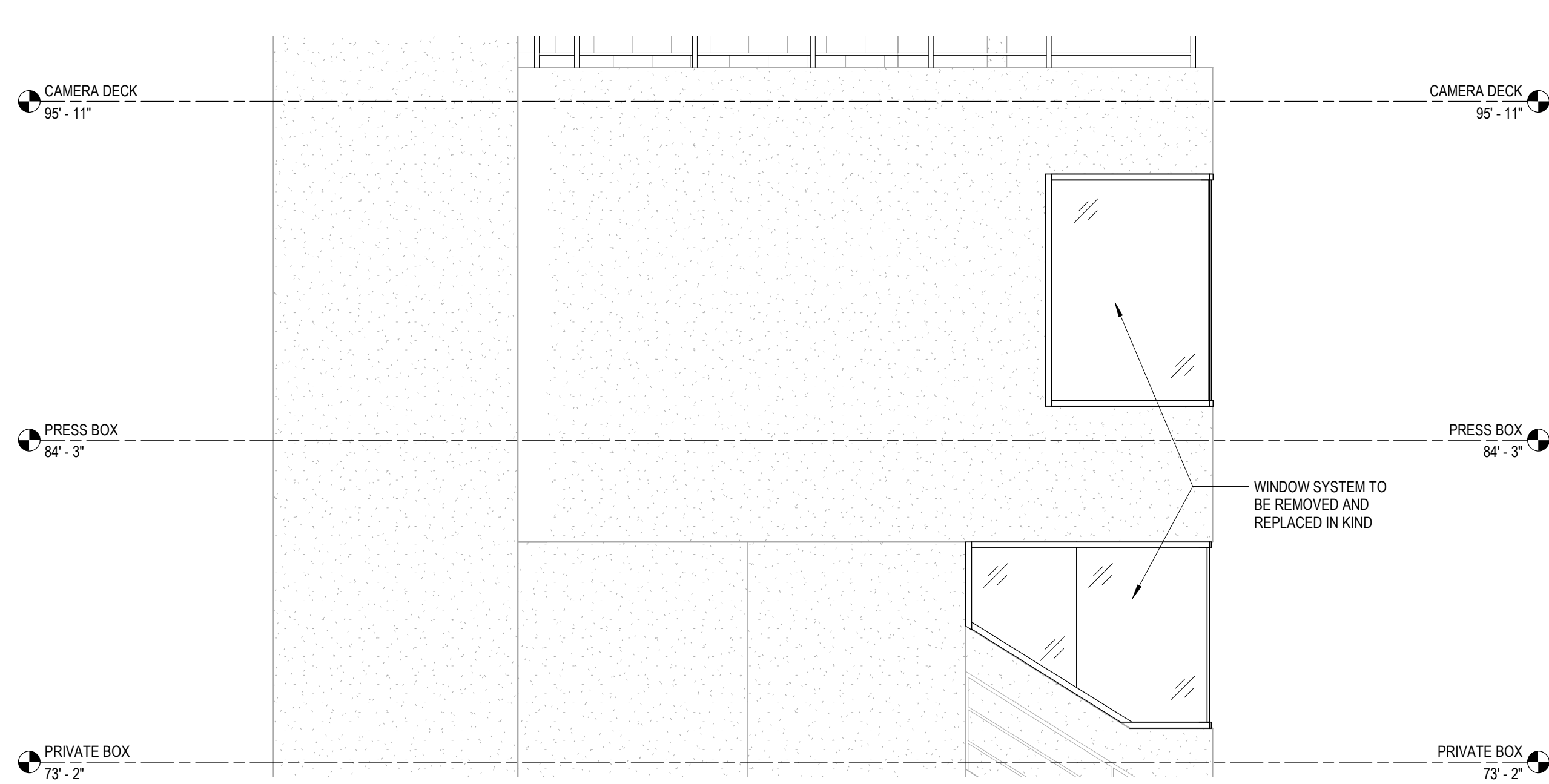
**B4** NORTH ELEVATION  
1/4" = 1'-0"



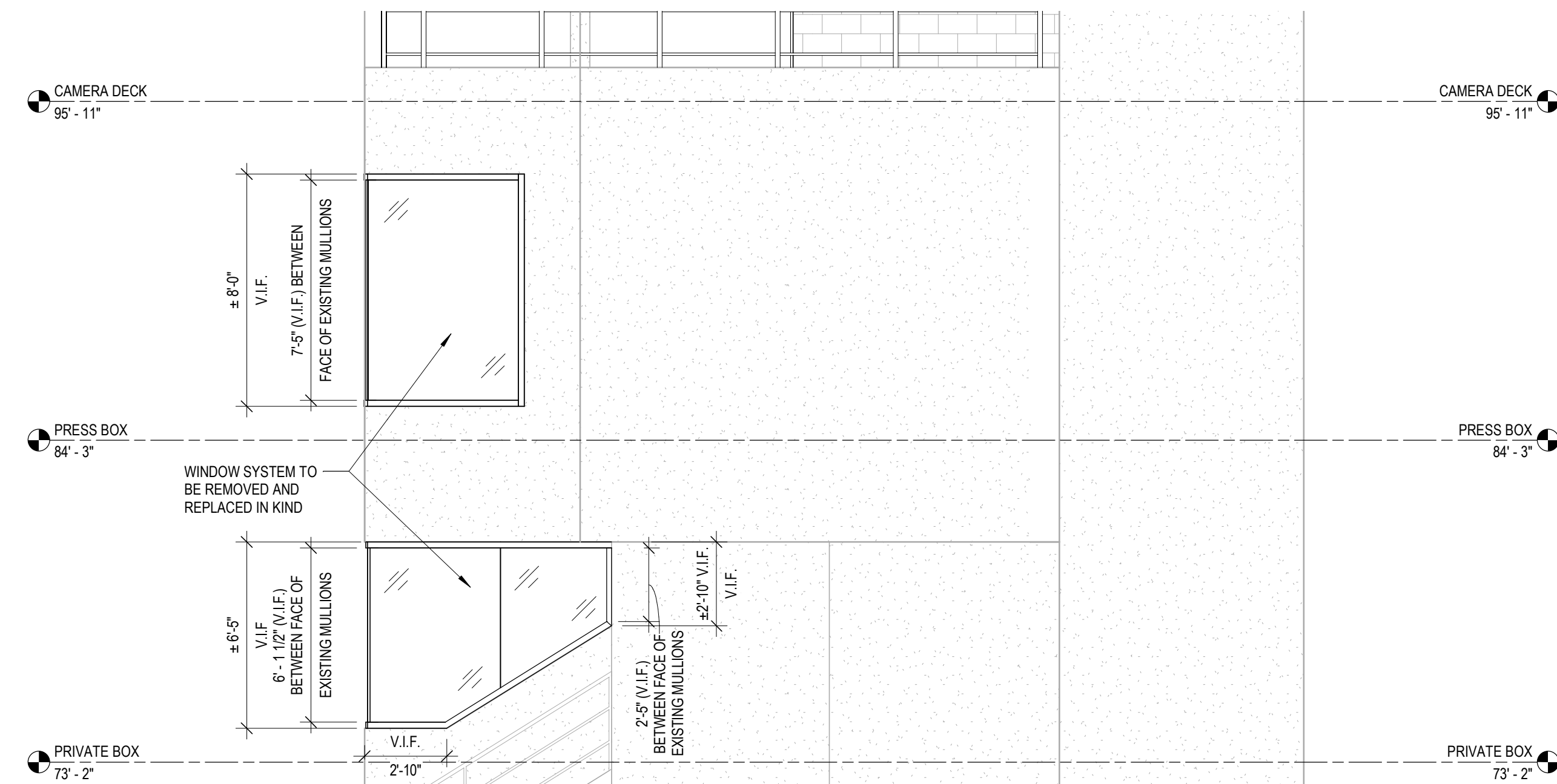
**A4** PRIVATE BOX  
1/4" = 1'-0"



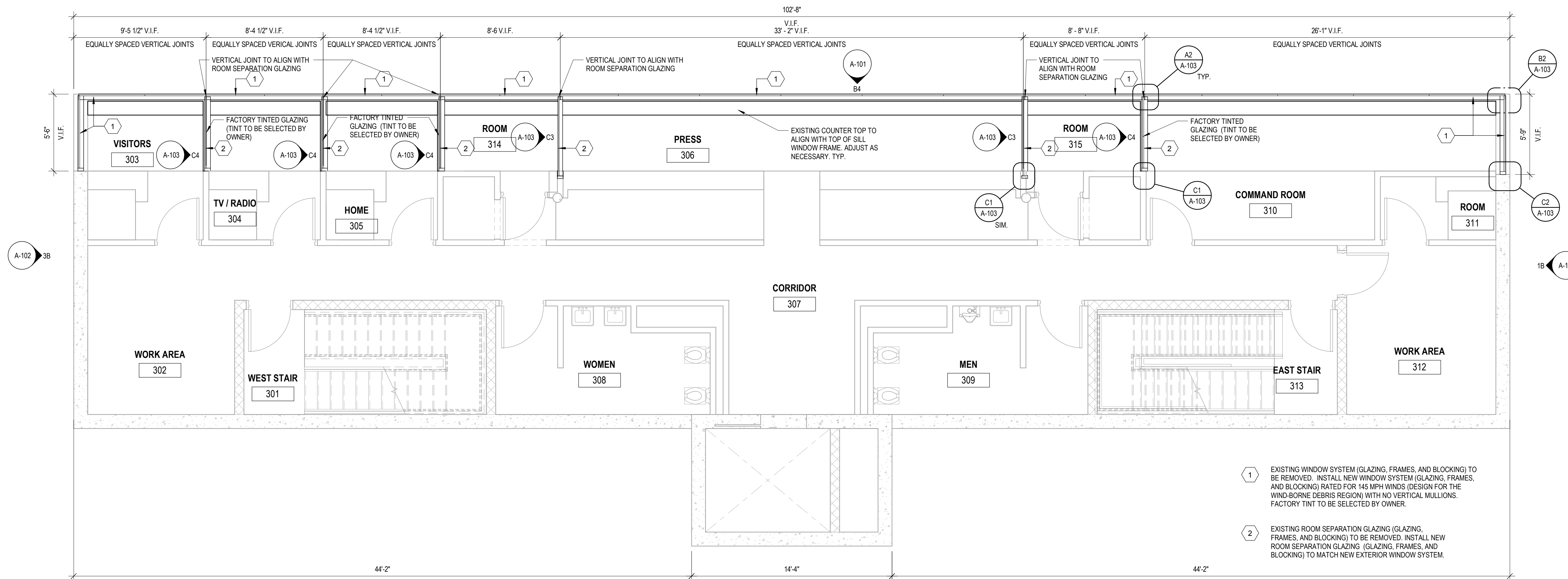
**A1** CONCRETE REPAIR DETAIL  
1 1/2" = 1'-0"



**1B EAST ELEVATION**  
1/4" = 1'-0"

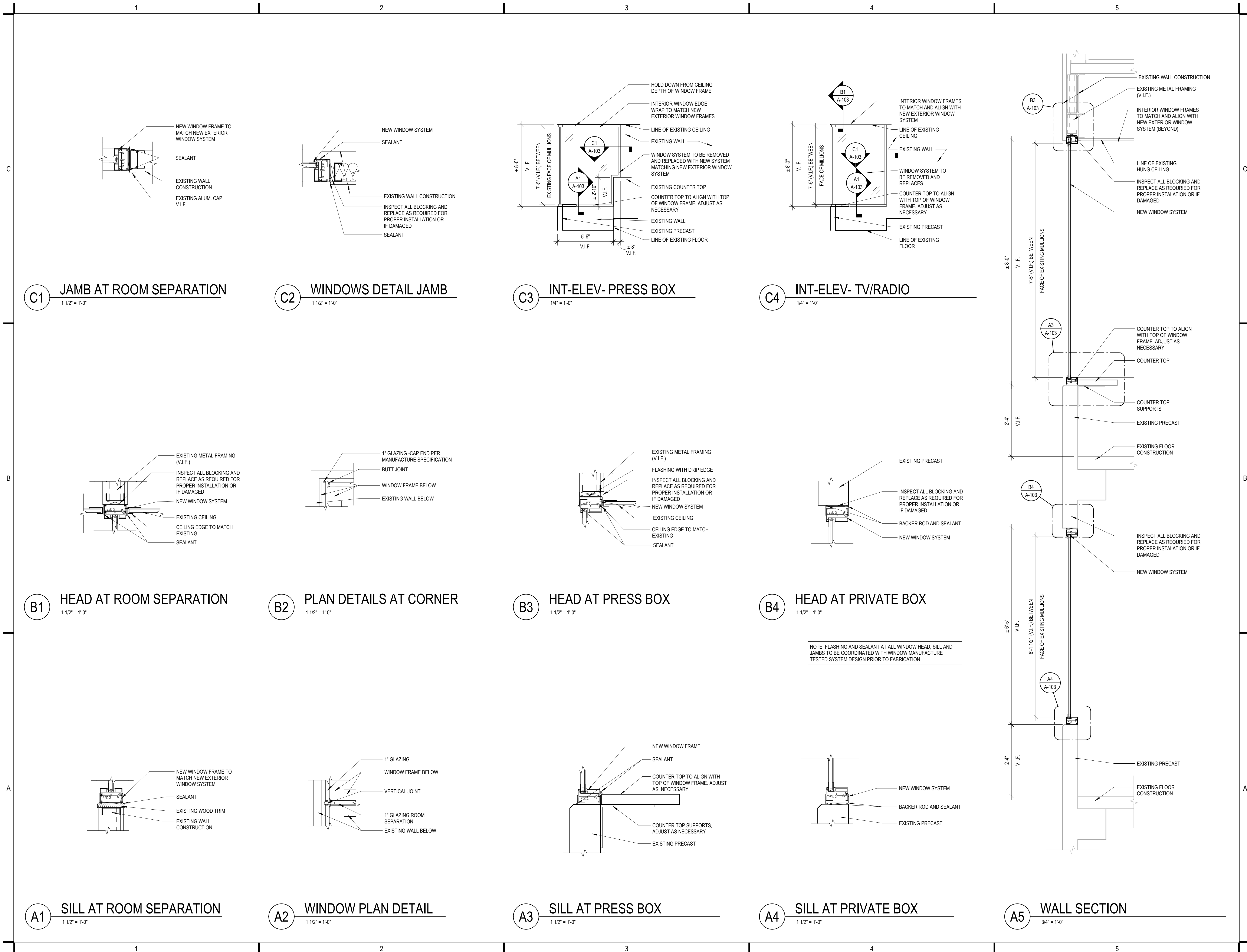


**3B WEST ELEVATION**  
1/4" = 1'-0"



**3A PRESS BOX**  
1/4" = 1'-0"

- 1 EXISTING WINDOW SYSTEM (GLAZING, FRAMES, AND BLOCKING) TO BE REMOVED. INSTALL NEW WINDOW SYSTEM (GLAZING, FRAMES, AND BLOCKING) RATED FOR 145 MPH WINDS (DESIGN FOR THE WIND-BORNE DEBRIS REGION) WITH NO VERTICAL MULLIONS. FACTORY TINT TO BE SELECTED BY OWNER.
- 2 EXISTING ROOM SEPARATION GLAZING (GLAZING, FRAMES, AND BLOCKING) TO BE REMOVED. INSTALL NEW ROOM SEPARATION GLAZING (GLAZING, FRAMES, AND BLOCKING) TO MATCH NEW EXTERIOR WINDOW SYSTEM.



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SECTION 07 90 00  
JOINT PROTECTION  
PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

- 1. Exterior joint sealants.
- 2. Interior joint sealants.
- 3. Oversized joint backing.

B. Related Sections:

- 1. Applicable provisions of General Conditions shall govern all work under this Section.
- 2. Section 08 51 13 - Aluminum Windows: Sealant for aluminum framed window perimeter.

1.2 REFERENCES

A. ASTM International (ASTM):

- 1. ASTM C834 - Standard Specification for Latex Sealants.
- 2. ASTM C919 - Standard Practice for Use of Sealants in Acoustical Applications.
- 3. ASTM C920 - Standard Specification for Elastomeric Joint Sealants.
- 4. ASTM C1193 - Standard Guide for Use of Joint Sealants.
- 5. ASTM C1248 - Standard Test Method for Staining of Porous Substrate by Joint Sealants.
- 6. ASTM C1472 - Standard Guide for Calculating Movement and Other Effects when Establishing Joint Sealant Width.
- 7. ASTM D1056 - Standard Specification for Flexible Cellular Materials-Sponge or Expanded Rubber.
- 8. ASTM D1667 - Standard Specification for Flexible Cellular Materials-Vinyl Chloride Polymers and Copolymers (Closed-Cell Foam).

1.3 PERFORMANCE REQUIREMENTS

- A. Provide elastomeric joint sealants that establish and maintain watertight and airtight continuous joint seals without staining or deteriorating joint substrates.
- B. Provide joint sealants for interior applications that establish and maintain watertight and airtight continuous joint seals without staining or deteriorating joint substrates.

1.4 SUBMITTALS

- A. General Conditions: Submittal procedures.
- B. Products Data: Submit data indicating sealant chemical characteristics, performance criteria, substrate preparation, limitations, and color availability.
- C. Compatibility and Adhesion Test Reports: From sealant manufacturer indicating the following:
  - 1. Materials forming joint substrates and joint-sealant backings have been tested for compatibility and adhesion with joint sealants.
  - 2. Interpretation of test results and written recommendations for primers and substrate preparation needed for adhesion.
- D. Product Test Reports: From a qualified testing agency indicating sealants comply with requirements, based on comprehensive testing of current product formulations.
- E. Warranty: Include coverage for installed sealants and accessories failing to achieve airtight seal or a watertight seal, exhibit loss of adhesion or cohesion, and sealants which do not cure.

1.5 QUALITY ASSURANCE

- A. Installer Qualifications: An experienced installer who has specialized in installing joint sealants similar in material, design, and extent to those indicated for this Project and whose work has resulted in joint-sealant installations with a record of successful in-service performance.
- B. Source Limitations: Obtain each type of joint sealant through one source from a single manufacturer.

1.6 COORDINATION

- A. General Conditions: Coordination and project conditions.
- B. Coordinate Work with sections referencing this section.

PART 2 - PRODUCTS

2.1 JOINT SEALERS - EXTERIOR

- A. JSE-1: Single component, polyurethane sealant. ASTM C920, Type S, Grade NS, Class 25, Use NT, A, G, O and M; Federal Specification TT-S-00230, Class A, Type II, with joint movement capability of 25 percent for the following vertical exterior applications:
  - 1. Metal frame perimeters to concrete or masonry.
  - 2. Coping joints and coping to facade joints.
- B. JSE-2: Single component, silicone sealant. ASTM C920, Type S, Grade NS, Class 50 minimum, Use NT, A, O, G and M; Federal Specification TT-S-00230C, Class A, Type II, with joint movement capability of 50 percent for the following vertical exterior applications:
  - 1. Metal frame perimeters to concrete or masonry.
  - 2. Sheet metal flashings.

2.2 ACCESSORIES

- A. Primer: Non-staining type, recommended by sealant manufacturer to suit application.
- B. Sealants and Sealant Primers: Maximum volatile organic compound content in accordance with SCAQM Rule 1168.
- C. Joint Backing: Round foam rod compatible with sealant. ASTM D1056, sponge or expanded rubber; oversized 30 to 50 percent larger than joint width.
- D. Bond Breaker: Pressure sensitive tape recommended by sealant manufacturer to suit application.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. General Conditions: Coordination and project conditions.
- B. Verify substrate surfaces and joint openings are ready to receive work.
- C. Verify joint backing and release tapes are compatible with sealant.

3.2 PREPARATION

- A. Remove loose materials and foreign matter impairing adhesion of sealant.
- B. Clean and prime joints.
- C. Perform preparation in accordance with ASTM C1193.
- D. Protect elements surrounding Work of this section from damage or disfiguration.

3.3 INSTALLATION

- A. Perform installation in accordance with ASTM C1193.
- B. Perform acoustical sealant application work in accordance with ASTM C919.
- C. Measure joint dimensions and size joint backers to achieve width-to-depth ratio, neck dimension, and surface bond area as recommended by manufacturer.
- D. Install sealant free of air pockets, foreign embedded matter, ridges, and sags.
- E. Apply sealant within recommended application temperature ranges. Consult manufacturer when sealant cannot be applied within these temperature ranges.
- F. Tool joints concave.

3.4 CLEANING

- A. General Conditions: Final cleaning.
- B. Clean adjacent soiled surfaces.

3.5 PROTECTION OF INSTALLED CONSTRUCTION

- A. General Conditions: Protecting installed construction.
- B. Protect sealants until cured.

END OF SECTION

SECTION 08 51 13  
ALUMINUM WINDOWS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

- 1. Extruded aluminum windows.
- 2. Factory glazing including infill panels.

B. Related Requirements:

- 1. Section 07 90 00 - Joint Protection: Perimeter sealant and back-up materials.
- 2. Section 08 80 00 - Glazing.

1.2 REFERENCE STANDARDS

- A. Aluminum Association (AA):
  - 1. AA DAF-45 - Designation System for Aluminum Finishes.
- B. American Architectural Manufacturers Association (AAMA):
  - 1. AAMA 101 - Voluntary Performance Specification for Windows, Skylights and Glass Doors.
  - 2. AAMA 501 - Methods of Test for Exterior Walls.
  - 3. AAMA 503 - Voluntary Specification for Field Testing of Metal Storefronts, Curtain Wall and Sloped Glazing Systems.
  - 4. AAMA 611 - Voluntary Specification for Anodized Architectural Aluminum.
  - 5. AAMA 1503 - Voluntary Test Method for Thermal Transmittance and Condensation Resistance of Windows, Doors and Glazed Wall Sections.
  - 6. AAMA 2603 - Voluntary Specification, Performance Requirements and Test Procedures for Pigmented Organic Coatings on Aluminum Extrusions and Panels.
  - 7. AAMA 2604 - Voluntary specification, Performance Requirements and Test Procedures for High Performance Organic Coatings on Aluminum Extrusions and Panels.
  - 8. AAMA 2605 - Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels.
- C. American Society of Civil Engineers (ASCE):
  - 1. ASCE 7 - Minimum Design Loads for Buildings and Other Structures.
  - 2. ASCE / SEI 7 - Wind Speed 145 mph.

D. ASTM International (ASTM):

- 1. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.
- 2. ASTM E283 - Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen.
- 3. ASTM E331 - Standard Test Method for Water Penetration of Exterior Windows, Curtain Walls, and Doors By Uniform Static Air Pressure Difference.
- 4. ASTM E1105 - Standard Test Method for Field Determination of Water Penetration of Installed Exterior Windows, Curtain Walls, and Doors by Uniform or Cyclic Static Air Pressure Difference.
- 5. ASTM E1886 - Standard Test Method for Performance of Exterior Windows, Curtain Walls, Doors, and Impact Protective Systems Impacted by Missile(s) and Exposed to Cyclic Pressure Differentials.
- 6. ASTM E1996 - Standard Specification for Performance of Exterior Windows, Curtain Walls, Doors and Impact Protective Systems Impacted by Windborne Debris in Hurricanes.

E. Florida Building Code:

- 1. Rule 9N-3.

F. Glass Association of North America (GANA):

- 1. GANA - Glazing Manual.
- 2. GANA Glass Informational Bulletin GANA 01-300 - Proper Procedure for Cleaning Architectural Glass Products.
- 3. GANA Glass Informational Bulletin GANA TD-02-0402 - Heat Treated Glass Surfaces are Different.

1.3 PRE-INSTALLATION MEETINGS

- A. General Conditions: Pre-installation meeting.
- B. Convene minimum one (1) week prior to commencing work of this section.

1.4 SUBMITTALS

- A. General Conditions: Requirements for submittals.
- B. Product Data: Submit component dimensions, anchorage and fasteners, glass, internal drainage, and typical details.
- C. Shop Drawings: Indicate opening dimensions, framed opening tolerances, affected related Work, and installation requirements.
- D. Samples: Submit two 12 x 12 inches in size illustrating window frame section, mullion section, frame, factory finished aluminum surfaces, and glazing materials.
- E. Manufacturer's Certificates: Certify product performance ratings by independent third party such as AAMA, CAWM, or NFRC as meeting or exceeding performance criteria tests.

1.5 QUALITY ASSURANCE

- A. Perform Work in accordance with the following:
  - 1. Aluminum Windows: Fabricate window assemblies in accordance with AAMA 101 for types of windows required.
  - 2. Insulated Glass: Fabricate insulated glass units in accordance with GANA Glazing Manual.

1.6 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing commercial aluminum windows with minimum three years documented experience.
- B. Installer: Company specializing in installation of commercial aluminum windows with minimum three years documented experience.

1.7 DELIVERY, STORAGE, AND PROTECTION

- A. Requirements for transporting, handling, storing, and protecting products.
- B. Protect factory finished aluminum surfaces with wrapping. Do not use adhesive papers or sprayed coatings that bond when exposed to sunlight or weather.

1.8 WARRANTY

- A. Requirements for warranties.
- B. Furnish five (5) year manufacturer warranty for insulated glass units from seal failure, interpane dusting or misting, and replacement of same.
- C. Warranty: Include coverage for degradation of color finish.

PART 2 - PRODUCTS

2.1 ALUMINUM WINDOWS

- A. Preferred Manufacturer:
  - 1. Faour Glass Technologies, 5119 West Knox Street, Tampa, Florida 33634; Telephone: (800) 929-4691; Fax: (813) 886-6400.
  - 2. Product: Frameless Window Wall System: SLIMPACT® Frameless Impact Window Wall.
  - 3. Substitutions permitted with owner and architects approval.
- B. Product Description: Aluminum windows thermally broken with interior portion of frame insulated from exterior portion, flush applied glass stops of screw fastener type, sash, glass and glazing, operating hardware.
  - a. Glazing: Interior and Exterior.
  - C. Window Configuration: Conform with AAMA 101 Designations for windows required for Project; F-fixed non-operable, sash.
  - D. Performance / Design Criteria:
    - 1. Wind-Borne Debris Loads: Design and size glass to withstand the following loads:
      - a. Glass Greater than 30ft above grade : ASTM E1886 and ASTM E1996; small missile impact test.
      - 2. Thermal Performance:
        - a. Comply with ICC IECC for climate zone in which project is located. Measure in accordance with AAMA 1503.
        - 3. Water Leakage: None, when measured in accordance with ASTM E331 with test pressure difference as defined by AAMA 101.

2.2 COMPONENTS

- A. Extruded Aluminum: ASTM B221; 6063 alloy, T5 temper.
- B. Insulating Glass: Sealed double pane units conforming with requirements in Section 08 80 00 - Glazing.

2.3 FABRICATION

- A. Fabricate components with minimum clearances and shim spacing around perimeter of assembly, yet enabling installation and dynamic movement of perimeter seal.
- B. Accurately fit and secure joints and corners. Make joints flush, hairline, and weatherproof.
- C. Prepare components to receive anchor devices. Fabricate anchors.
- D. Arrange fasteners and attachments to ensure concealment from view.
- E. Prepare components with internal reinforcement for operating hardware.
- F. Permit internal drainage weep holes and channels to migrate moisture to exterior. Furnish internal drainage of glazing spaces to exterior through weep holes.

2.4 FINISHES

- A. Finish Coatings: Conform to AAMA 2603; AAMA 2604 or 2605; AAMA 611.
- B. Exterior Surfaces: Clear anodized finish.
- C. Interior Surfaces: Clear anodized finish.
- D. Clear Anodized Aluminum Surfaces: AA-M12C2A41 non-specular as fabricated mechanical finish, medium matte chemical finish, and Architectural Class I 0.7 mils (0.018 mm) clear anodized coating.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. General Conditions: Requirements for installation examination.
- B. Verify wall openings and adjoining air and vapor seal materials are ready to receive Work of this section.

3.2 INSTALLATION

- A. Attach window frame and shims to perimeter opening to accommodate construction tolerances and other irregularities.
- B. Align window plumb and level, free of warp or twist. Maintain dimensional tolerances and alignment with adjacent Work.
- C. Install sill and countertop.
- D. Install thermal isolation where components penetrate or disrupt building insulation. Pack fibrous insulation in shim spaces at perimeter of assembly to maintain continuity of thermal barrier.
- E. Coordinate attachment and seal of perimeter air barrier and vapor retarder materials.

3.3 TOLERANCES

- A. General Conditions: Tolerances.
- B. Maximum Variation from Level or Plumb: 1/16 inches every 3 ft non-cumulative or 1/8 inches per 10 ft, whichever is less.

3.4 FIELD QUALITY CONTROL

- A. General Conditions: Requirements for inspecting, testing.
- B. Inspection to monitor quality of installation and glazing.
- C. Test to AAMA 502 or 503; ASTM E1105; AAMA 501.

3.5 ADJUSTING

- A. General Conditions: Requirements for starting and adjusting.
- B. Adjust hardware for smooth operation and secure weathertight closure.

3.6 CLEANING

- A. General Conditions: Requirements for cleaning.
- B. Remove protective material from factory finished aluminum surfaces.
- C. Wash surfaces by method recommended and acceptable to sealant and window manufacturer; rinse and wipe surfaces clean.
- D. Remove excess sealant by moderate use of mineral spirits or other solvent acceptable to sealant and window manufacturer.

END OF SECTION

SECTION 08 80 00  
GLAZING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

- 1. Glass glazing for metal frames.
- 2. Plastic film for existing glazing.
- 3. Glass glazing materials and installation requirements are included in this section for other sections referencing this section.

B. Related Sections:

- 1. General Conditions - Shall govern all work under this Section.
- 2. Section 07 90 00 - Joint Protection: Sealant and back-up material other than glazing sealants.
- 3. Section 08 51 13 - Aluminum Windows: Glazed windows.

1.2 REFERENCES

- A. American Architectural Manufacturers Association (AAMA):
  - 1. AAMA 1503 - Voluntary Test Method for Thermal Transmittance and Condensation Resistance of Windows, Doors and Glazed Wall Sections.
- B. American National Standards Institute (ANSI):
  - 1. ANSI Z97.1 - Safety Glazing Materials Used in Buildings Safety.
- C. American Society of Civil Engineers (ASCE):
  - 1. ASCE 7 - Minimum Design Loads for Buildings and Other Structures.
- D. ASTM International (ASTM):
  - 1. ASTM C509 - Standard Specification for Elastomeric Cellular Prefomed Gasket and Sealing Material.
  - 2. ASTM C864 - Standard Specification for Dense Elastomeric Compression Seal Gaskets, Setting Blocks, and Spacers.
  - 3. ASTM C920 - Standard Specification for Elastomeric Joint Sealants.
  - 4. ASTM C1048 - Standard Specification for Heat-Treated Flat Glass-Kind HS, Kind FT Coated and Uncoated Glass.
  - 5. ASTM C1172 - Standard Specification for Laminated Architectural Flat Glass.
  - 6. ASTM C1193 - Standard Guide for Use of Joint Sealants.
  - 7. ASTM E119 - Standard Test Methods for Fire Tests of Building Construction and Materials.
  - 8. ASTM E1300 - Standard Practice for Determining Load Resistance of Glass in Buildings.
  - 9. ASTM E1425 - Standard Practice for Determining the Acoustical Performance of Windows, Doors, Skylight, and Glazed Wall Systems.
  - 10. ASTM E2190 - Standard Specification for Insulating Glass Unit Performance and Evaluation.
  - 11. ASTM E1886 - Standard Test Method for Performance of Exterior Windows, Curtain Walls, Doors, and Impact Protective Systems Impacted by Missile(s) and Exposed to Cyclic Pressure Differentials.
  - 12. ASTM E1996 - Standard Specification for Performance of Exterior Windows, Curtain Walls, Doors and Impact Protective Systems Impacted by Wind-borne Debris in Hurricanes.
- E. Consumer Products Safety Commission (CPSC):
  - 1. CPSC 16 CFR 1201 - Safety Standard for Architectural Glazing.
- F. Glass Association of North America (GANA):
  - 1. GANA - Sealant Manual.
  - 2. GANA - Glazing Manual.
  - 3. GANA - Laminated Glass Design Guide.
- G. National Fenestration Rating Council Incorporated (NFRC):
  - 1. NFRC 100 - Procedures for Determining Fenestration Product U-Factors.
  - 2. NFRC 200 - Procedure for Determining Fenestration Product Solar Heat Gain Coefficient and Visible Transmittance at Normal Incidence.
  - 3. NFRC 300 - Test Method for Determining the Solar Optical Properties of Glazing Materials and Systems.

1.3 PERFORMANCE REQUIREMENTS

- A. Structural Design: Design in accordance with applicable State of Florida code for most critical combination of wind, seismic, and dead loads.
- B. Wind Loads: Design and size glass to withstand positive and negative wind loads acting normal to plane of wall, including increased loads at building corners.
  - 1. Design Wind Load: As calculated in accordance with applicable code and ASCE 7 with 145 mph basic wind speed.
  - C. Wind-Borne Debris Loads: Design and size glass to withstand the following loads:
    - 1. Glass Greater than 30 feet above Grade: ASTM E1886 and ASTM E1996, small missile impact test.
- D. Product Description: Aluminum windows thermally broken with interior portion of frame insulated from exterior portion, flush applied glass stops of screw fastener type, sash, glass and glazing, operating hardware.
  - a. Glazing: Interior and Exterior.
  - E. Interior Glass Deflection: Maximum differential deflection for two adjacent unsupported edges when 50 plf force is applied to one panel at any point up to 42 inches above finished floor less than thickness of glass.
  - F. Thermal and Solar Optical Performance: Measured or calculated in accordance with the following:
    - 1. Maximum U-Values: Comply with ICC IECC for climate zone in which project is located. Measure in accordance with AAMA 1503.
    - 2. Maximum SHGC: Comply with ICC IECC for climate zone in which project is located. Measure in accordance with NFRC 200.
    - 3. Solar Optical Properties: NFRC 300.

1.4 SUBMITTALS

- A. General Conditions : Submittal procedures.
- B. Shop Drawings: Signed and sealed by Professional Engineer, Licensed in the State of Florida
  - 1. Indicate sizes, layout, thicknesses, and loading conditions for glass.
- C. Product Data:
  - 1. Glass and Plastic: Provide structural, physical, and thermal and solar optical performance characteristics, size limitations, special handling or installation requirements.
  - 2. Glazing Sealants, Compounds and Accessories: Provide chemical, functional, and environmental characteristics, limitations, special application requirements. Identify available colors where exposed.
- D. Design Data: Signed and sealed by Professional Engineer, licensed in the State of Florida.
  - 1. Submit design calculations for glass thicknesses.
- E. Samples:
  - 1. Glass and Plastic: Submit two samples 12 inch x 12 inch in size, illustrating each glass and plastic unit, and design.
  - 2. Glazing Materials: Submit 4 inch long bead of glazing sealant and gaskets, color as selected.
- F. Manufacturer's Certificate: Certify sealed insulating environmental glass, meets or exceeds specified requirements.
- G. Installer's Certificate: Certify glass furnished without identification label is installed in accordance with Construction Documents and applicable State of Florida code.

1.5 QUALITY ASSURANCE

- A. Perform Work in accordance with GANA Glazing Manual, GANA Sealant Manual, and GANA Laminated Glass Design Guide for glazing installation methods.

1.6 QUALIFICATIONS

- A. Installer: Company specializing in performing Work of this section with minimum five years documented experience and approved by manufacturer.
- B. Design glass under direct supervision of Professional Engineer experienced in design of this Work and licensed in State of Florida.

1.7 WARRANTY

- A. General Conditions: Product warranties and product bonds.
- B. Furnish five year warranty to include coverage for sealed glass units from seal failure, interpane dusting or misting, and replacement of same.
- C. Furnish five year warranty to include coverage for delamination of laminated glass and replacement of same.
- D. Furnish five year warranty to include coverage for delamination of spandrel glass coating and replacement of same.

PART 2 - PRODUCTS

2.1 FLOAT GLASS MATERIALS

- A. Heat Strengthened Glass: ASTM C1048, Type 1 transparent flat, Quality Q3, Kind HS heat strengthened, Condition A uncoated, float glass.
  - 1. Furnish heat strengthened glass where heat strengthened glass cannot meet specified performance requirements.
- B. Tempered Glass: ASTM C1048, Type 1 transparent flat, Quality Q3, Kind FT fully tempered, Condition A uncoated, float glass with horizontal tempering.
  - 1. Furnish tempered glass where heat strengthened glass cannot meet specified performance requirements.

2.2 FLOAT GLASS PRODUCTS

- A. Clear Glass: Annealed, Heat strengthened and Tempered float glass as specified; Class 1 clear.
  - 1. Clear annealed glass (FG-CA)
  - 2. Clear heat strengthened glass (FG-CH)
  - 3. Clear tempered glass (FG-CT)
  - 4. Minimum Thickness: 1/4 inch unless otherwise indicated.
- B. Tinted Glass: Float glass as specified; tinted.
  - 1. As selected by Owner.

2.3 INSULATING GLASS PRODUCTS

- A. Insulating Glass: ASTM E2190 certified by Insulating Glass Certification Council and Insulating Glass Manufacturers Alliance; with silicone sealant edge seal; purge interpane space with dry air.
  - 1. Total Unit Thickness: 1 inch unless otherwise indicated.
  - 2. Insulating Glass Unit Edge Seal Construction: Aluminum, thermally broken, bent and spot welded corners.
  - 3. Insulating Glass Unit Edge Seal Material: Black color.

2.4 GLAZING SEALANTS

- A. Elastomeric Glazing Sealants: Materials compatible with adjacent materials including glass, laminated glass core, insulating glass seals, and glazing channels.

2.5 GLAZING ACCESSORIES

- A. Setting Blocks: Elastomeric material recommended by glass manufacturer, 80 to 90 Shore A durometer hardness, length of 0.1 inch for each square foot of glazing or minimum 4 inch x width of glazing rabbet space minus 1/16 inch x height to suit glazing method and pane weight and area.
- B. Spacer Shims: Elastomeric material recommended by glass manufacturer, 50 to 60 Shore A durometer hardness, minimum 3 inch long x one half the height of glazing stop x thickness to suit application, self adhesive on one face.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Coordination and project conditions.
- B. Verify openings for glazing are correctly sized and within acceptable tolerance.
- C. Verify surfaces of glazing channels or recesses are clean, free of obstructions impeding moisture movement, weeps are clear, and ready to receive glazing.

3.2 PREPARATION

- A. Clean contact surfaces with solvent and wipe dry.
- B. Seal porous glazing channels or recesses with substrate compatible primer or sealer.
- C. Prime surfaces scheduled to receive sealant.

3.3 INSTALLATION

- A. Perform installation in accordance with GANA Glazing Manual.
  - 1. Glazing Sealants: Comply with ASTM C1193.

3.4 MANUFACTURER'S FIELD SERVICES

- A. Monitor and report installation procedures, and unacceptable conditions.

3.5 CLEANING

- A. Final cleaning.
- B. Remove glazing materials from finish