

# *Structural Glass Systems*

Stackwall™/Vision Vue®  
Walls and Canopies

Finwall™



**Oldcastle Glass®**

*Where glass becomes architecture™*

**The Hawaii  
Convention Center**

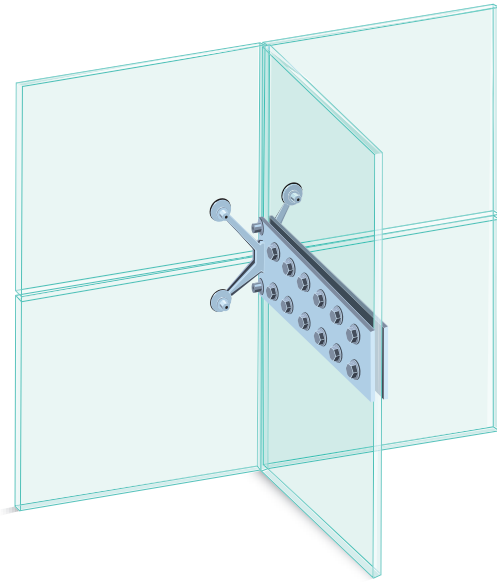
Honolulu, Hawaii  
Architect: Wimberly Allison  
Tong & Goo

Structural Glass Systems



**Oldcastle Glass®**

*Where glass becomes architecture™*



**S**tackwall™/Vision Vue®, an Oldcastle Glass® exclusive, and Finwall™ are structural wall systems with glass panels comprising the facade and vertical glass mullions to structurally resist wind load and seismic forces. With Stackwall™, there are no visual obstructions for a seemingly floating glass facade.

## Stackwall™/Vision Vue Applications

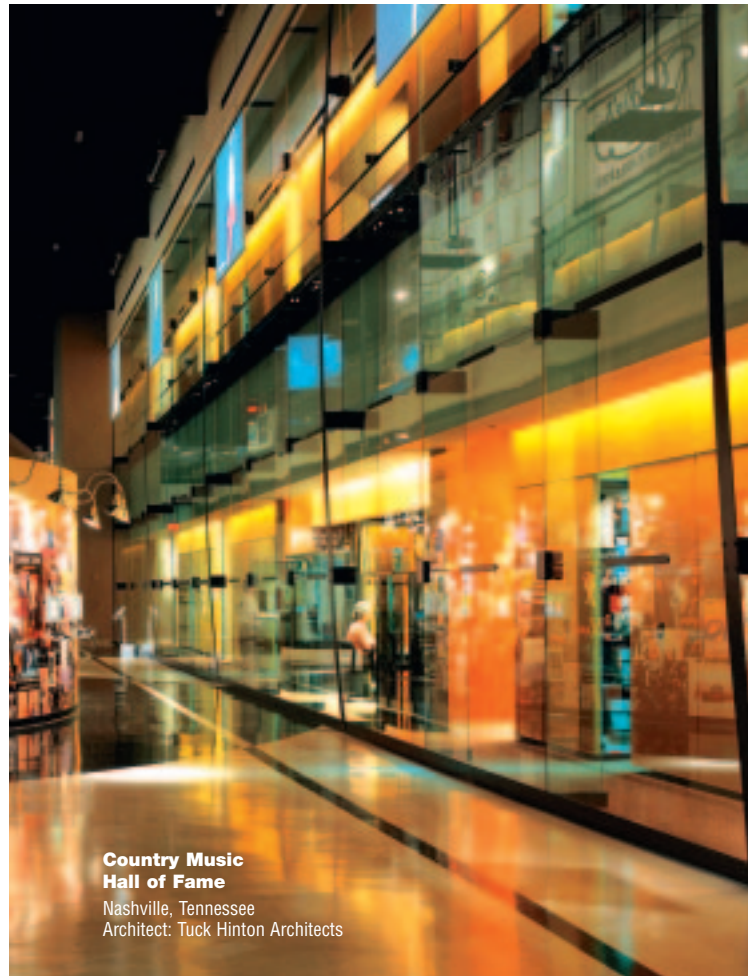
*Stackwall™ has a wide range of custom applications including:*

### Monumental Entrances

- Malls
- Museums
- Hotels
- Airports
- Office Buildings
- Hospitals

### Building Facades

- Grandstands
- Storefronts
- Structural Glass Canopies



**Country Music  
Hall of Fame**  
Nashville, Tennessee  
Architect: Tuck Hinton Architects

# Stackwall™/Vision Vue® Glass Walls and Canopies

## Specifications

### Part 1. General

#### Summary

Section Includes:  
glass, glazing and connections for the structural glazing system, in accordance with the contract documents. Oldcastle Architectural Systems' Stackwall™/Vision Vue® Wall Systems will be the basis of design for this application.

#### Related Sections:

Section 07900—Sealants: Sealants for glazing  
Section 08800—Glass and Glazing

#### Quality Assurance

##### System Sole Source Responsibility:

Glazing Material and System Design: Glass, glazing, system design and accessories are the sole responsibilities of the structural glass wall provider.

##### Installation Sole Source Responsibility:

Provide installation by glazing contractor acceptable to glass wall system supplier.

1. The installer of the structural glass system is responsible for supplying and erecting the complete structural glazing system, coordinating and maintaining tolerances, between the structure and glazing system, with individual suppliers and manufacturers, and the installation of the glazing system.

#### Safety Glass

Where safety glass is indicated or required by authorities having jurisdiction, provide the types of products that comply with ANSI Z97.1 and 16 CFR 1201 Category II.

#### System Description

##### Design Requirements

1. Design windload: \_\_\_\_\_ PSF positive and negative
2. Seismic zone
3. Live load deflection of supporting structure (if any)

##### Structural glazing system:

1. Fittings are designed to give a (single-point fixed) or (flush) appearance to the outward surface of the glazing system. Attachment fittings to be "spider" type (see pages 9-13) or conventional patch system assemblies (see page 21).
2. The design of the structural fittings is the sole responsibility of Oldcastle.
3. All connection members are to be designed to prevent high-stress concentration at the hole positions and must cope with:
  - a. negative and positive wind loading
  - b. seismic loads
  - c. thermal movement
  - d. construction tolerances
  - e. live load and dead load movements
4. All connection assemblies for the glass facade must be designed to incorporate a durable, flexible disc/pads, to accommodate hole sizes in fixing members, which allow for thermal movement and glass manufacturing tolerances.

#### Submittals

Submit the following in accordance with Section 08960:

1. Shop drawings: shop drawings shall clearly indicate material and methods, indicate coordination with other trades, and bear the signed approval of the glazing system manufacturer and the glazing system installer, as well as the stamp of a licensed professional engineer registered in the State of \_\_\_\_\_.
2. Product data: material description and installation instructions for tapes, compounds, gaskets and other materials.
3. Samples: submit samples of glass and glazing materials required for the project. Samples of glass shall be 12" x 12"; samples of sealants or gaskets shall be 12" long. Submit samples of fixing hardware assemblies, complete with the glass, bolt and accessories.
4. Calculations: submit calculations proving the structural glazing system's performance and compliance with specified loads, with the stamp of a licensed professional engineer registered in the State of \_\_\_\_\_.

(continued on back)

## Stackwall™/Vision Vue® Glass Walls and Canopies

### Specifications (continued)

5. Test reports: submit test reports from an independent laboratory certifying that the structural glass system assemblies proposed for use have been tested. The assemblies must be similar in the type, material and design shown on the architect's drawings, utilizing (flush countersunk) or (countersunk, external disc), bolted attachments through the glass, or conventional patch system assemblies. If test reports are not available, proposed assemblies will be tested. All costs for testing will be borne by the glass system manufacturer.

#### Warranty

##### Manufacturer Warranty

1. Provide a five-year warranty for the design and materials supplied by the system provider. Provide written requirements for notification of the manufacturer and terms for maintaining warranty provisions.

##### Installer Warranty

1. Warrant the installation for a period of five years for installation and repairs of failures. Provide written requirements for notification of the installer and terms for maintaining warranty provisions. Do not contradict the requirements of the contract documents.

2. The warranties submitted under this section shall not deprive the owner of other rights or remedies that the owner may have under other provisions of the contract documents and the laws of governing jurisdictions, and are in addition to and run concurrently with other warranties made by the contractor under requirements of the contract documents.

#### Part 2. Products

##### Materials

##### Structural Glass (Wall) (Canopy) System

The system will be designed to have custom attachment plates and fasteners whereby the facade glass will fasten to the structural support

system as depicted in the architectural drawings. The basis of this specification is the Stackwall™/Vision Vue® wall system as engineered and manufactured by Oldcastle.

##### Glass

All glass must be fully tempered (monolithic), (laminated) (insulating) glass. Overall thickness of the facade glass is to be determined by the structural glass wall system provider in accordance with specifications and drawings. Laminated glass is to be produced using laid-in-place interlayer bonded via an autoclave heat and pressure process. Minimum interlayer thickness is to be 0.060". (Poured or cast resin laminates will not be permitted.)

All glass must be horizontally tempered, eliminating tong marks. All edges will be ground flat with a frosted appearance unless otherwise noted. All edgework, holes and notches in the tempered glass panels will be completed before tempering and will comply with the requirements stated below:

1. ASTM C1036 Standard Specification for Flat Glass
2. ASTM C1048 Standard Specification For Heat-Treated Flat Glass
3. ASTM C1172 Standard Specification for Laminated Architectural Flat Glass
4. Safety glazing requirements as defined in ANSI Z97.1 and CPSC 16CFR1201
5. Glass strength:
  - a. Wind Loading
    - Vertical—1/1,000
    - Sloped—1/1,000
  - b. Thermal stress
    - Design factor, 2.5 (8/1,000)
  - c. Deflection
    - Deflection must be limited to prevent disengagement from framing members and to ensure conditions well within the criteria defined above.

(continued on next page)



# Stackwall™ Vision Vue® Glass Walls and Canopies

## Specifications (continued)

### Finishes

All exposed surfaces will be free of scratches and other serious blemishes.

Rail, channel and pan cover finishes will be (Select one of the following):

- For extruded aluminum, an Architectural Class II clear anodic coating conforming with Aluminum Association standards.
- An Architectural Class I color anodic coating, conforming with Aluminum Association standards. Color: black.
- An Architectural Class I color anodic coating, conforming with Aluminum Association standards. Color: dark bronze.
- A fluoropolymer paint coating conforming with the requirements of AAMA605.2.

Color will be (Specify):

- Stainless Steel clad using an alloy 304 finished as follows (specify one):  
polish or satin.
- Brass/Bronze clad finished (samples required) as follows (specify one):  
polish or satin.

### Fittings

1. Conventional patch system assemblies are for walls only. (See finishes section from this guide specification.) "Spider" type attachment fittings are for walls and canopies, and are predominately manufactured from Stainless Steel Grade 316. (Select type of fittings(s) from this section.)

2. The subcontractor will demonstrate to the architect's satisfaction that the stresses induced in the glass by these fittings are compatible with the strength of the glass and the needs of the performance section of this specification.

3. The finish of all fittings will be as called for on the architect's drawings.

4. Attachment plates shall be designed to the architect's specification. The design shall be shown by the subcontractor to be compatible with the performance specification in all respects.

4.1 Attachment plates shall provide a tolerance capability which will cope with the full range of movements shown on top right:

- a. Thermal movements occurring as a result of differential coefficients of thermal

expansion within the range specified.

The components used within the system will noiselessly withstand all thermal movements without any buckling, distortion, cracking, failure of joint seals or undue stress on the glass or fixing assemblies.

- b. Deflection of edge beams due to loading applied after the erection of the cladding to the magnitude specified.
- c. Maximum side sway of the structure due to wind load occurring to the magnitude specified or seismic movement to the degree specified.
- d. Deflection due to self-weight of the structural glass system.
- e. Inward and outward movements due to the design wind loads specified.

5. Exterior countersunk discs, flush countersunk bolts and articulated swivel bolts will be machine finished; socket head bolt will be with hexagonal shank, stainless steel grade 316, or conventional patch system assemblies (for walls).

6. Bushings will be UV-resistant nylon.

7. Gaskets will be fully vulcanized fiber, neoprene or precured silicone.

### Part 3. Execution

#### Examination

Examine surfaces receiving the work. Verify dimensions of in-place and subsequent construction. Follow the recommendations of GANA (Glass Association of North America) as to inspection procedures. Do not begin work until unsatisfactory conditions have been corrected. Installation of work will constitute acceptance of the related construction.

#### Preparation

Preinstallation review: the representatives of the glass system provider, the architectural exposed-structural-steel fabricator and erector, the sealant manufacturer, the glazing installer, the architect's representative and the owner's representative shall review the glazing procedure and schedule, including the method of delivering and handling

(continued on back)

## Stackwall™/Vision Vue® Glass Walls and Canopies

### Specifications (continued)

glass, and installing glazing materials. The chemical compatibility of all glazing materials and framing sealants with each other and with like materials used in glass fabrication will be established.

#### Installation of Glass

1. Install in accordance with the glass system provider's requirements and the shop drawings.
2. Employ only experienced glaziers who have had previous experience with the materials and systems being applied. Use tools and equipment recommended by the manufacturer.
3. Plate-to-plate joints of glass are to be sealed with silicone sealant. Joint dimensions will be designed to be compatible with sealant properties and live load movement of the structure.
4. Bolt torque: torque bolts to torques specified on shop drawings using a calibrated tool. Lock torque bolts into position to prevent back-off. Reset calibrations regularly to ensure an accurate torque.
5. Clean glazing connectors receiving glazing materials of deleterious substances that might impair the work. Remove protective coatings that might fail in adhesion or interfere with the bonding of materials of deleterious substances that might impair the work. Remove protective coatings that might fail in adhesion or interfere with bond of sealants. Comply with the manufacturer's instructions for final wiping of surfaces immediately before the application of primer and glazing sealants. Wipe metal surfaces with an appropriate cleaning agent.
6. Inspect each unit of glass immediately before installation. Glass that has significant impact damage at edges, scratches, abrasion of faces

or any other evidence of damage will not be installed.

7. Sealants: prime surfaces are to receive glazing sealants where required, in accordance with the manufacturer's recommendations, using recommended primers.
8. Locate setting blocks, if required by the drawings, at the quarter points of the sill, but no closer than 6 inches to corners of the glass. Use blocks of proper sizes to support the glass in accordance with the manufacturer's recommendations.
9. Provide spacers to separate the glass from attachment plates.
10. Set the glass in a manner that produces the greatest possible degree of uniformity in appearance. Face all glass which has a dissimilar face with matching faces in the same direction.
11. Use masking tape or other suitable protection to limit the coverage of glazing materials on the surfaces intended for sealants.
12. Tool the exposed surfaces of glazing materials.
13. Clean excess sealant from the glass and support members immediately after the application, using solvents or cleaners recommended by the manufacturers.

#### Curing, Protection and Cleaning

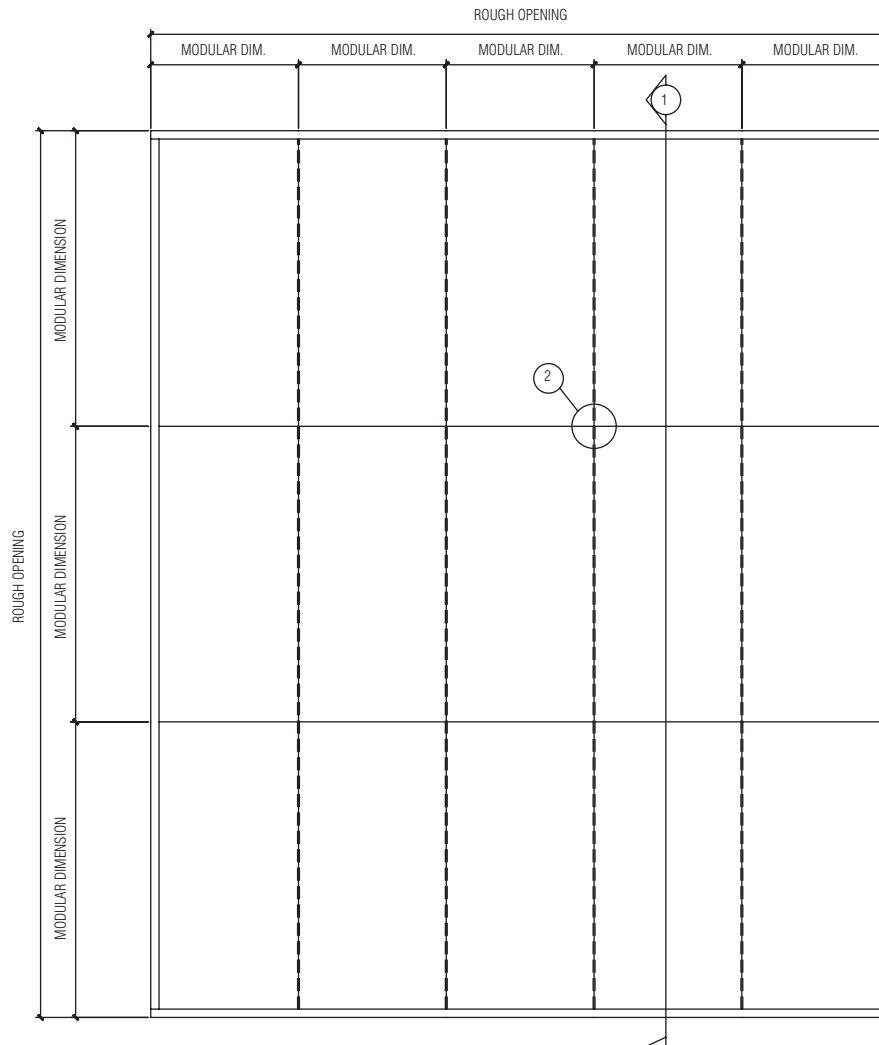
1. Cure sealants in accordance with the manufacturer's instructions to attain maximum durability and adhesion to glass.
2. Clean all surfaces after the installation, leaving all in a clean and workmanlike manner.
3. Final cleaning and protection after installation are the responsibilities of others.



# Stackwall™/Vision Vue® Glass Walls and Canopies: Sample Elevations

**To select what type of wall best fits  
your needs, follow these instructions:**

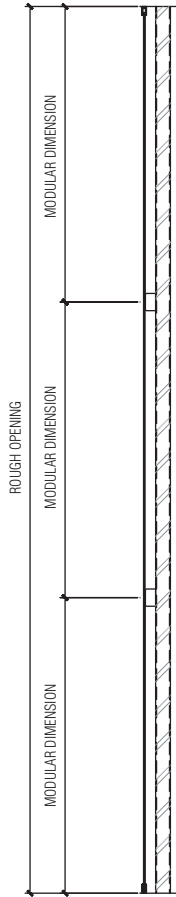
1. Select your support condition (see page 8).
2. Select the look you want:
  - A. Spider attachments (see pages 9-13).
  - B. Patch system assemblies (see page 21).



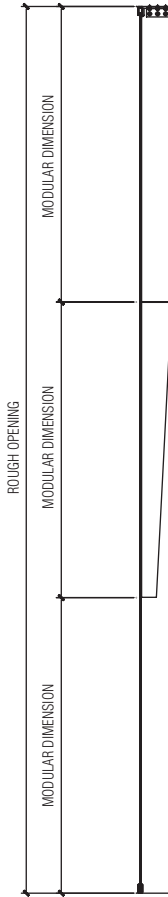


# Stackwall™/Vision Vue® Glass Walls and Canopies: Facade Support-Condition Options

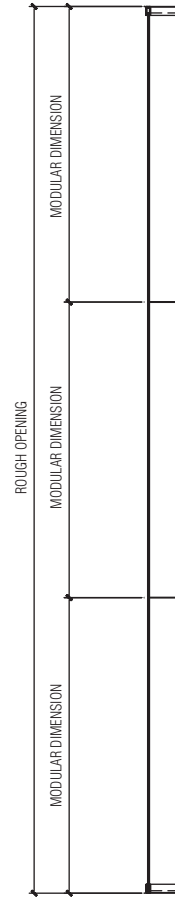
What support condition does your project require?



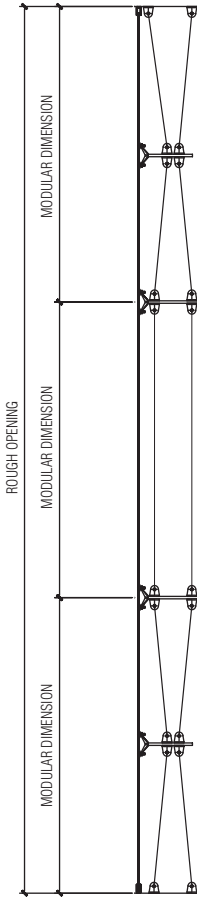
STRUCTURAL STEEL  
(SEE FITTING OPTIONS)



CANTILEVERED GLASS FINs  
(SEE FITTING OPTIONS)



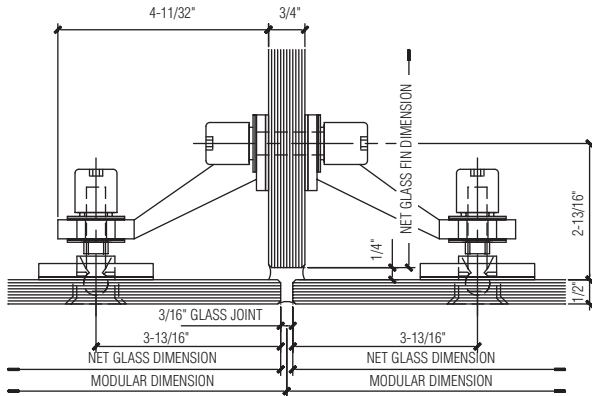
FULL HEIGHT GLASS FINs  
(SEE FITTING OPTIONS)



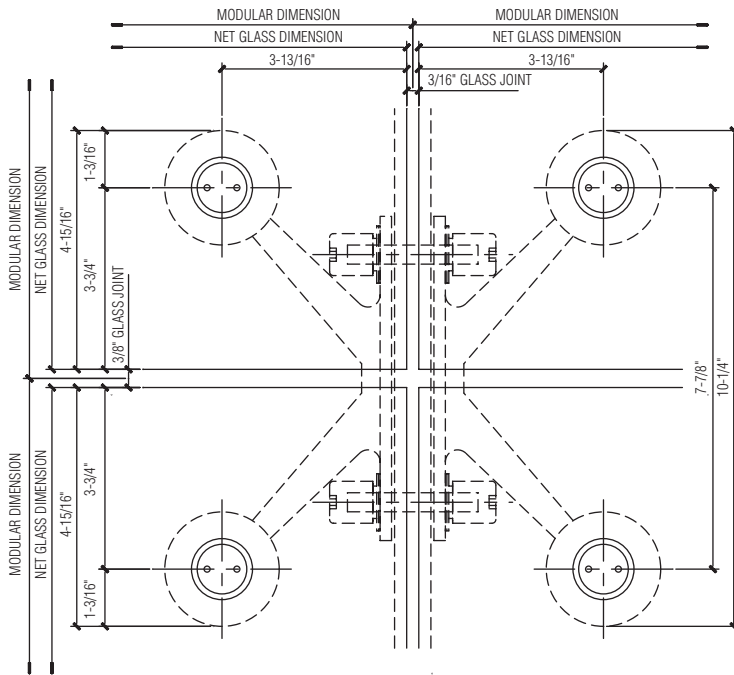
TRUSS SYSTEM  
(SEE FITTING OPTIONS)



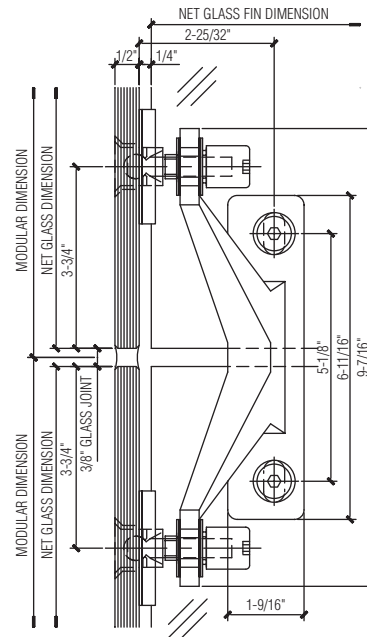
# Stainless Steel Fitting: OG-445/4



TOP VIEW



FRONT VIEW



SIDE VIEW

**FOR USE IN THESE SUPPORT CONDITIONS:**

(See page 8.)

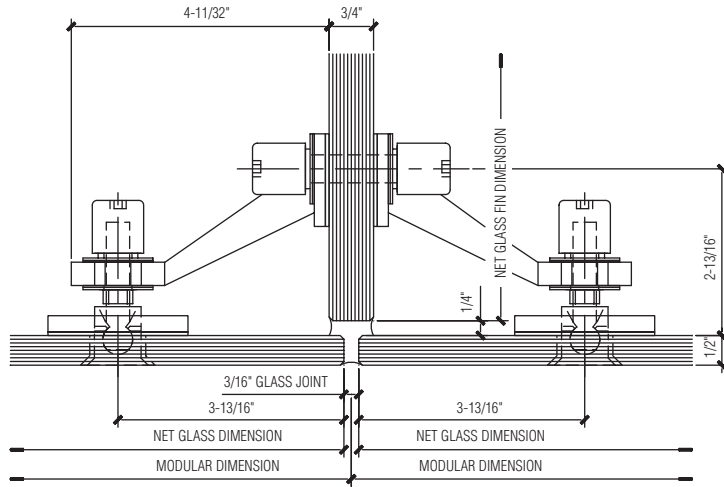
- STRUCTURAL STEEL
- CANTILEVERED GLASS FINIS
- FULL-HEIGHT GLASS FINIS

- Attaches to a glass mullion or a steel tab bracket
- Suitable for canopy applications
- Available with laminated glass
- Contact Oldcastle Glass® for insulating glass applications

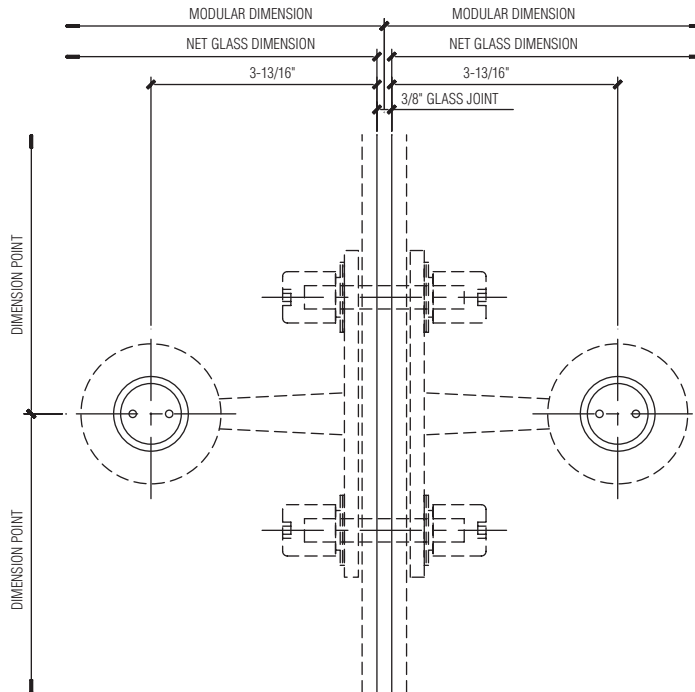
**Note:** Drawings not to scale.  
All dimensions for reference only. Actual values based on project design and conditions.



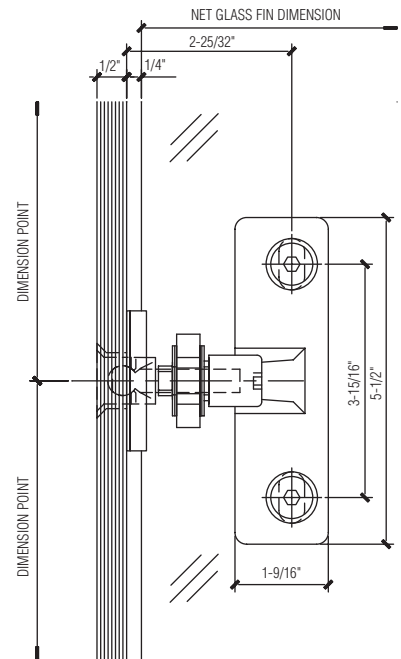
# Stainless Steel Fitting: OG-445/2



TOP VIEW



FRONT VIEW



SIDE VIEW

**FOR USE IN THESE SUPPORT CONDITIONS:**  
(See page 8.)

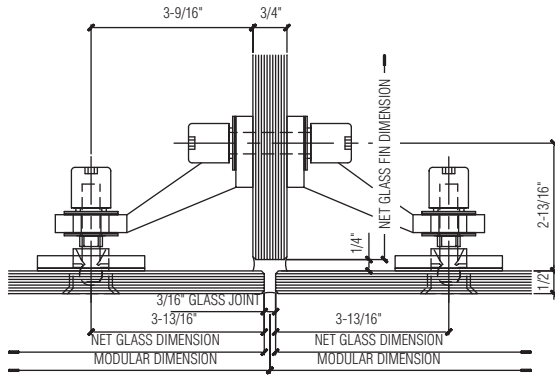
STRUCTURAL STEEL  
CANTILEVERED GLASS FIN  
FULL-HEIGHT GLASS FIN

- Attaches to a glass mullion or a steel tab bracket
- Suitable for canopy applications
- Available with laminated glass
- Contact Oldcastle Glass® for insulating glass applications

**Note:** Drawings not to scale.  
All dimensions for reference only. Actual values based on project design and conditions.



# Stainless Steel Fitting: OG-445/2x2



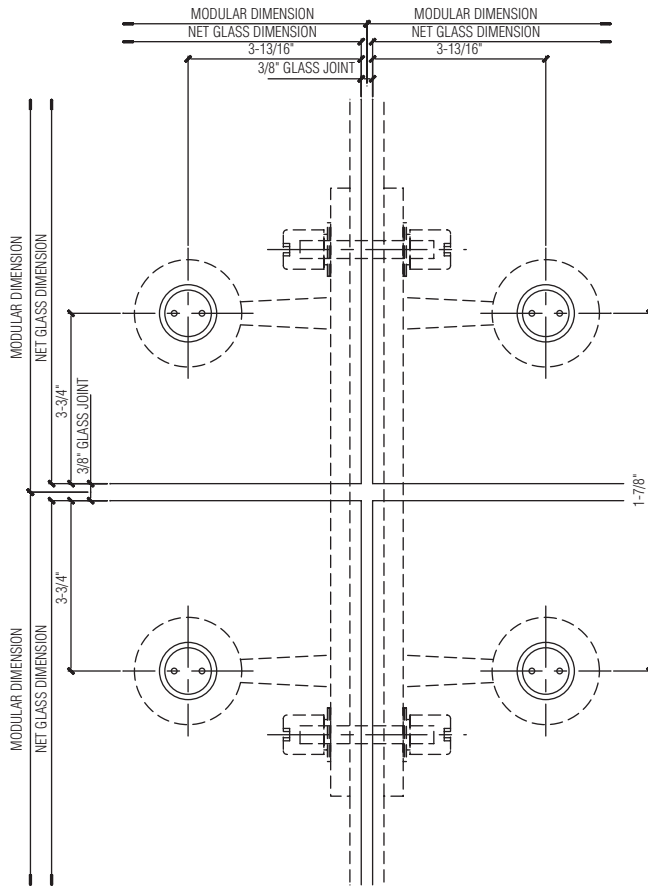
TOP VIEW

**FOR USE IN THESE SUPPORT CONDITIONS:**  
(See page 8.)

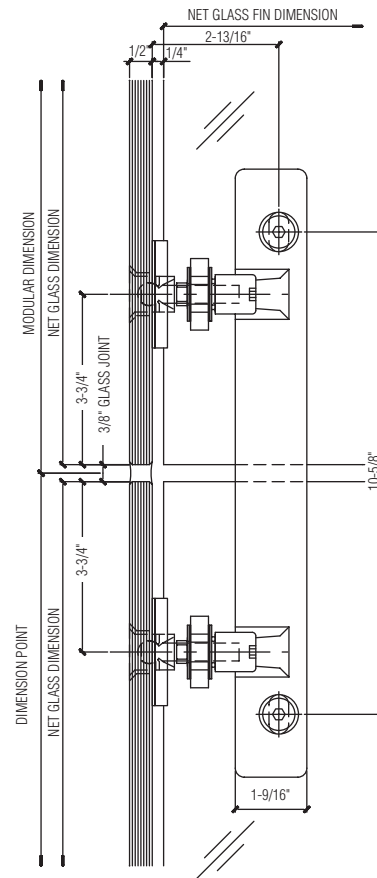
STRUCTURAL STEEL  
CANTILEVERED GLASS FINIS  
FULL-HEIGHT GLASS FINIS

- Attaches to a glass mullion or a steel tab bracket
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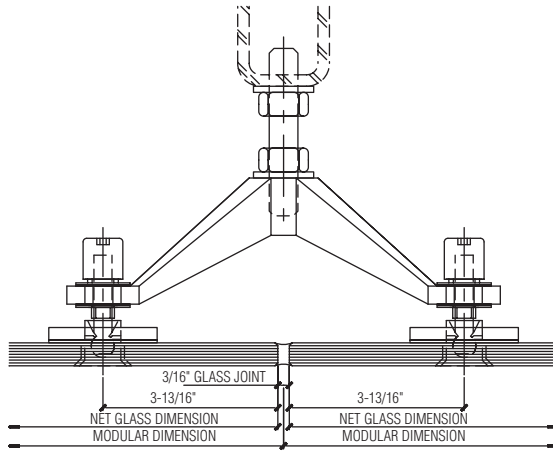
FRONT VIEW



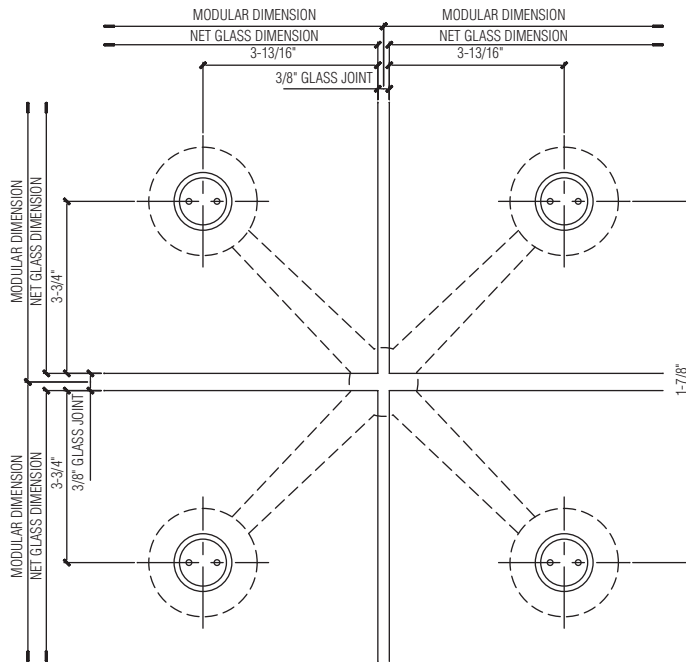
SIDE VIEW



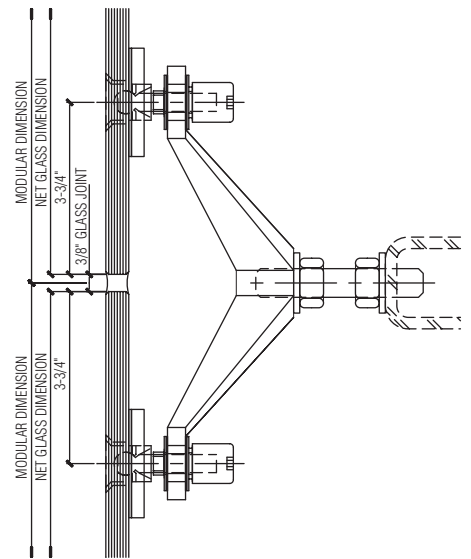
# Stainless Steel Fitting: OG-446/4



TOP VIEW



FRONT VIEW



SIDE VIEW

**FOR USE IN THESE SUPPORT CONDITIONS:**  
 (See page 8.)

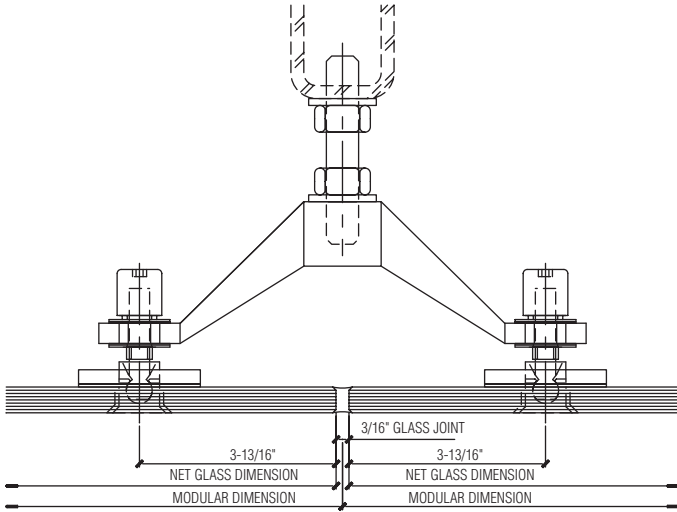
STRUCTURAL STEEL TRUSS SYSTEM

- Attaches to steel rod coupling on tension truss or steel supports
- Suitable for canopy applications
- Available with laminated glass
- Contact Oldcastle Glass® for insulating glass applications

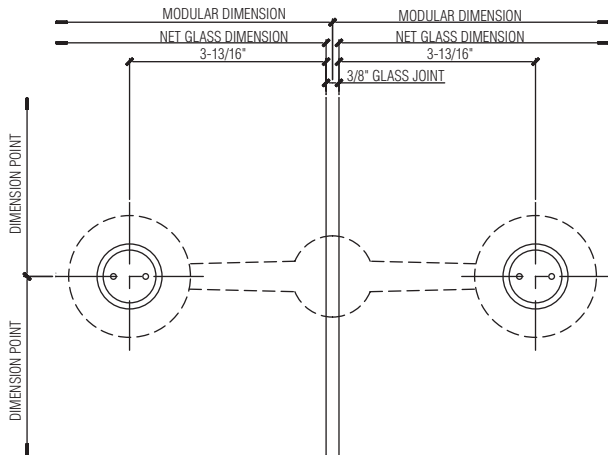
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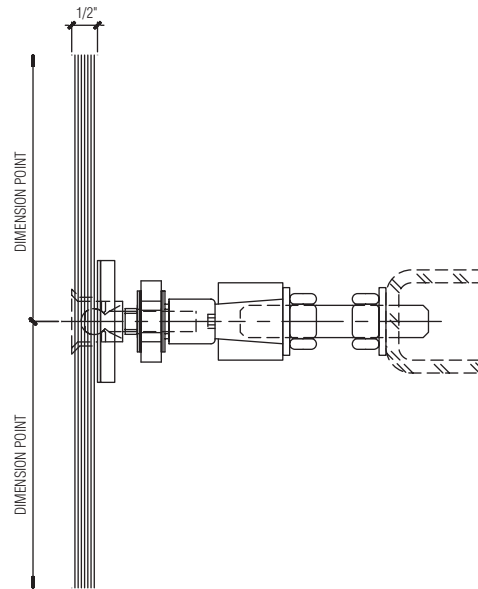
# Stainless Steel Fitting: OG-446/2



TOP VIEW



FRONT VIEW



SIDE VIEW

**FOR USE IN THESE SUPPORT CONDITIONS:**

*(See page 8.)*

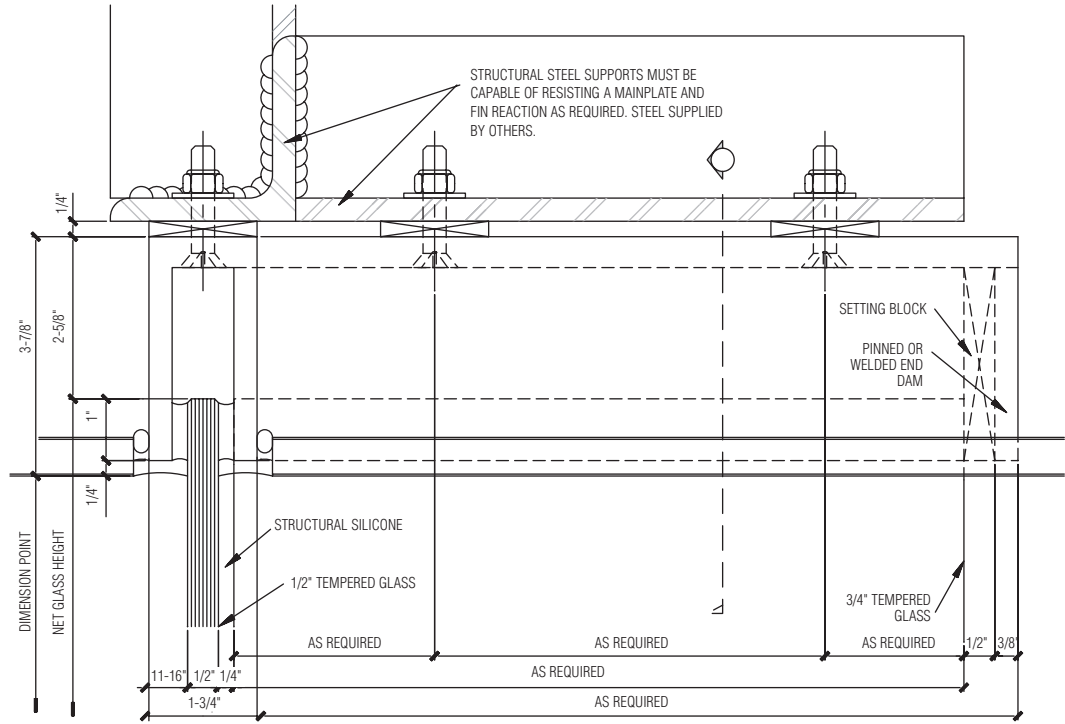
STRUCTURAL STEEL  
TRUSS SYSTEM

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- Suitable for canopy applications
- Available with laminated glass
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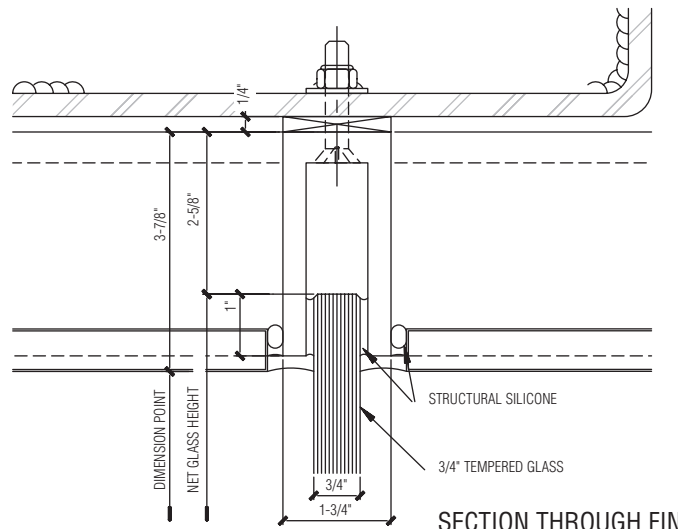
**Note:** Drawings not to scale.  
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## Fin Connections: Fin in Shoe



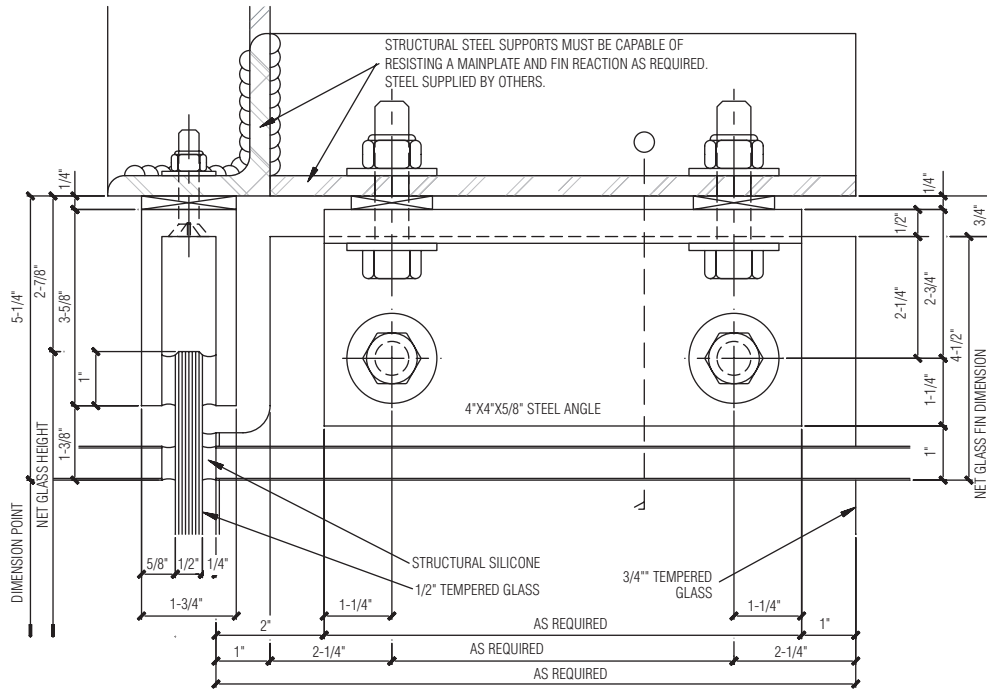
SECTION THROUGH FACADE



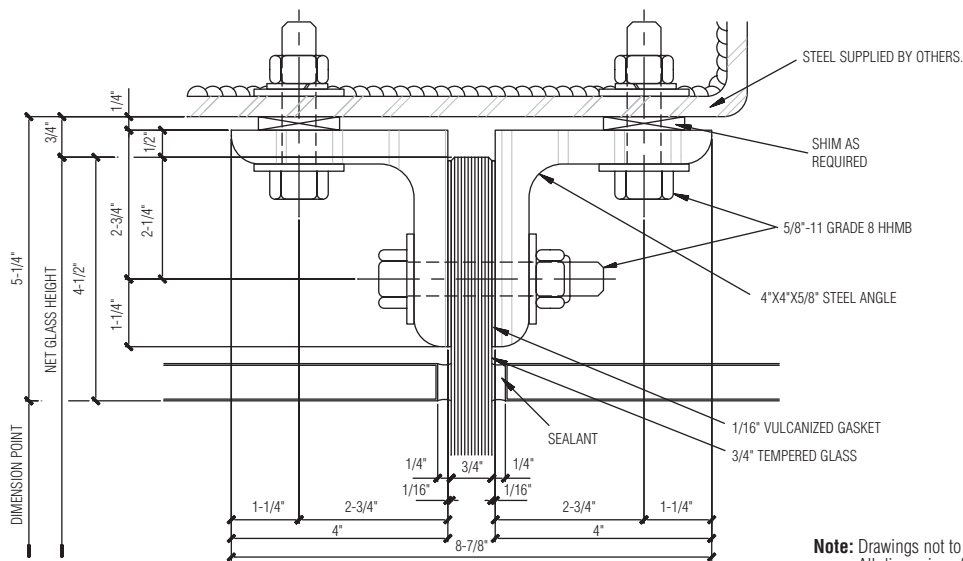
SECTION THROUGH FIN

**Note:** Drawings not to scale.  
All dimensions for reference only. Actual values based on project design and conditions.

# Fin Connections: Cantilevered Fin



SECTION THROUGH FACADE



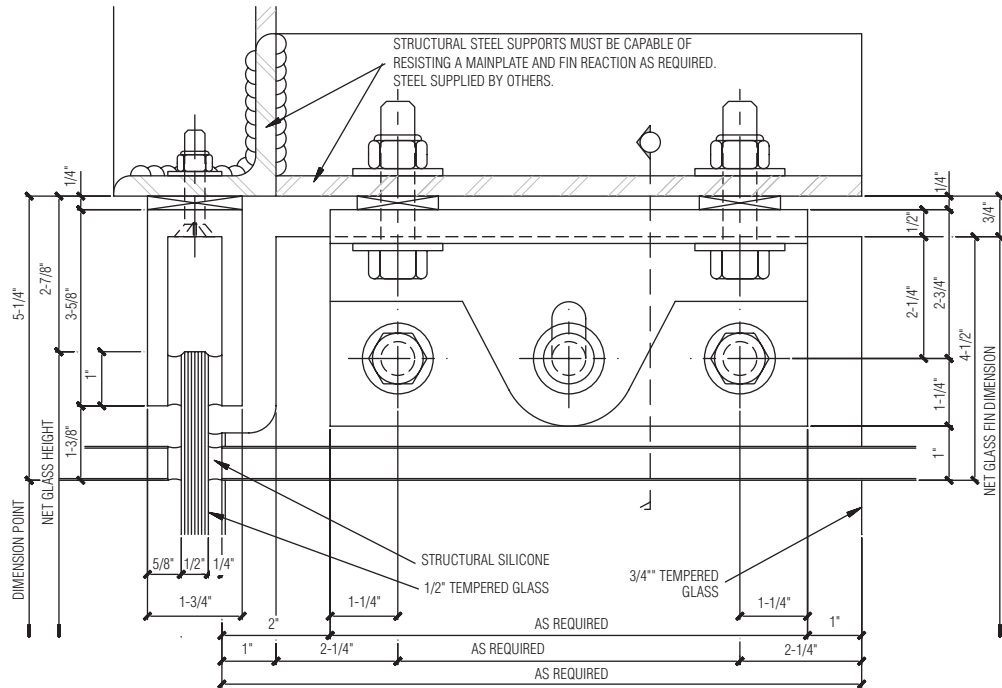
SECTION THROUGH FIN

**Note:** Drawings not to scale.  
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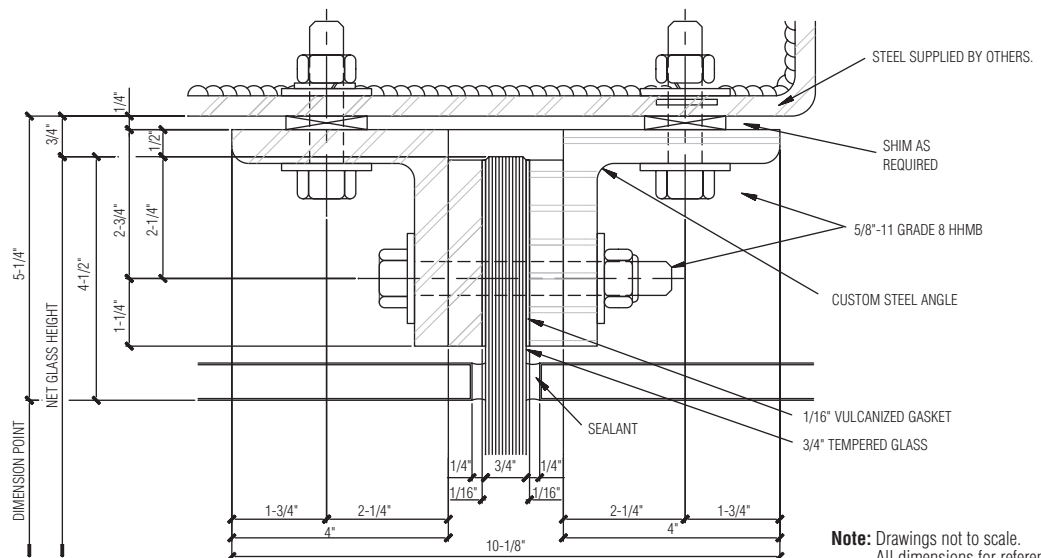




## Fin Connections: Suspension Fin



SECTION THROUGH FACADE

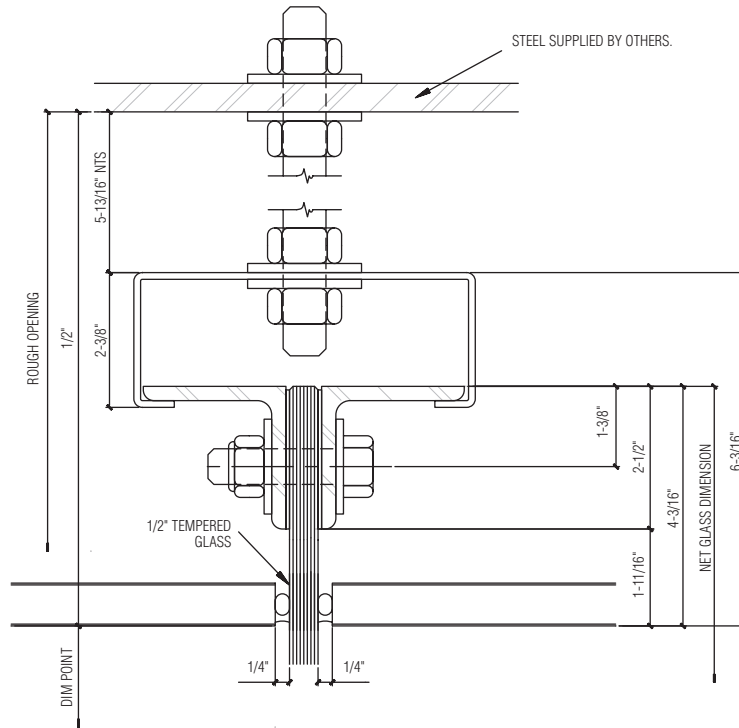


**Note:** Drawings not to scale. All dimensions for reference only. Actual values based on project design and conditions.

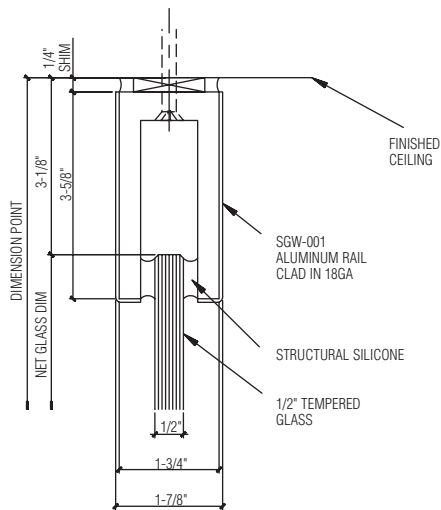
SECTION THROUGH FIN



# Head Conditions: Glass in Shoe and Suspension Hanger



FACADE SUSPENSION SECTION VIEW

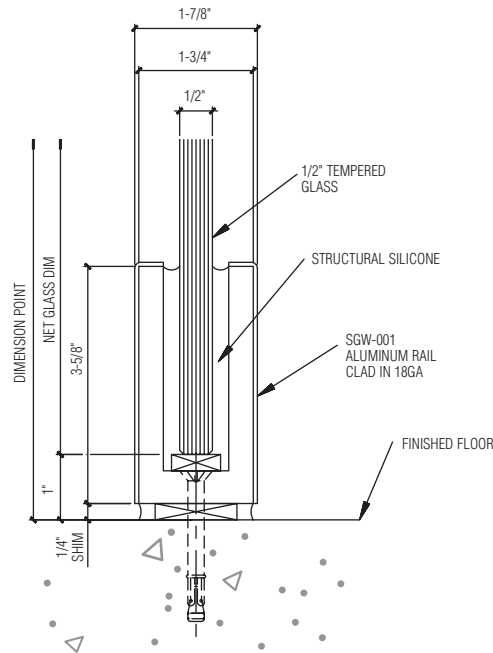


STACK FACADE SECTION VIEW AT HEAD

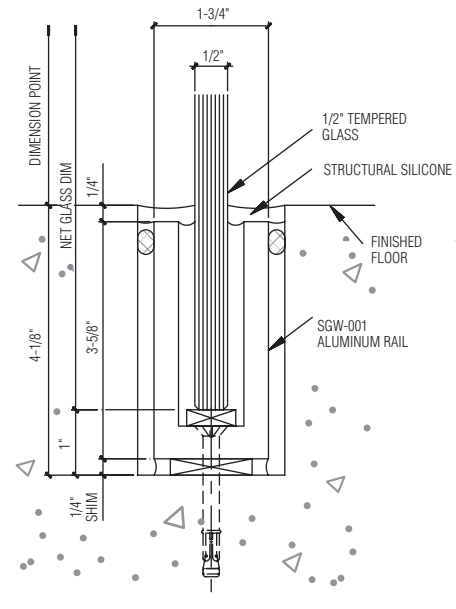
**Note:** Drawings not to scale. All dimensions for reference only. Actual values based on project design and conditions.



## Sill Conditions: Exposed Sill and Embedded Sill



EXPOSED SILL



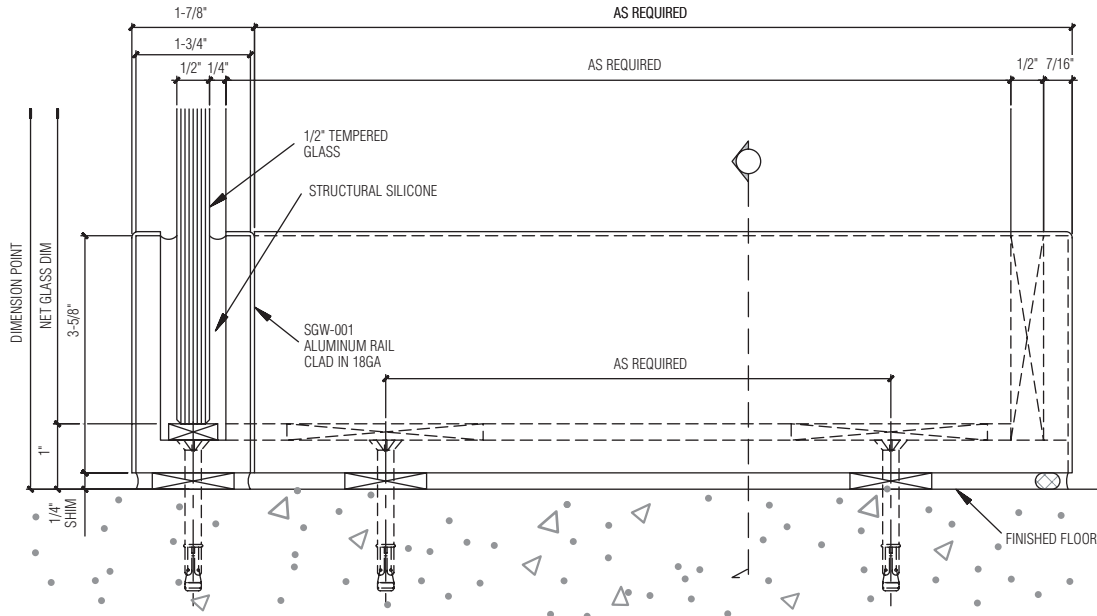
SILL CAN BE EMBEDDED TO ANY DEPTH REQUIRED

EMBEDDED SILL

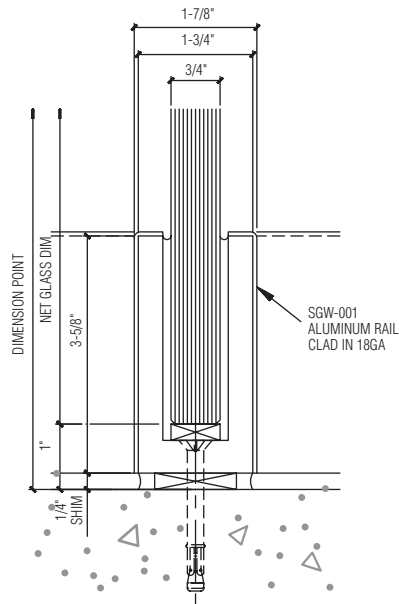
**Note:** Drawings not to scale.  
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*Sill Conditions: Exposed Sill with Fin*



SECTION THROUGH FACADE

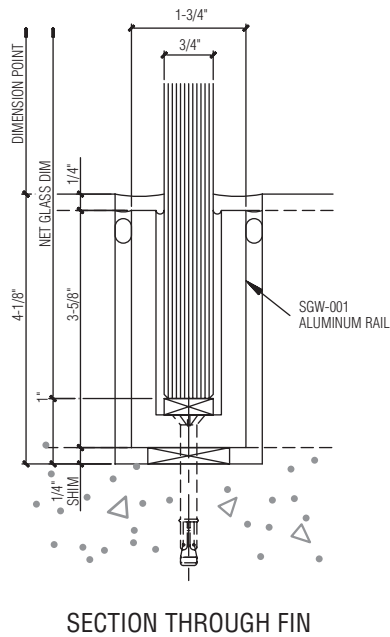
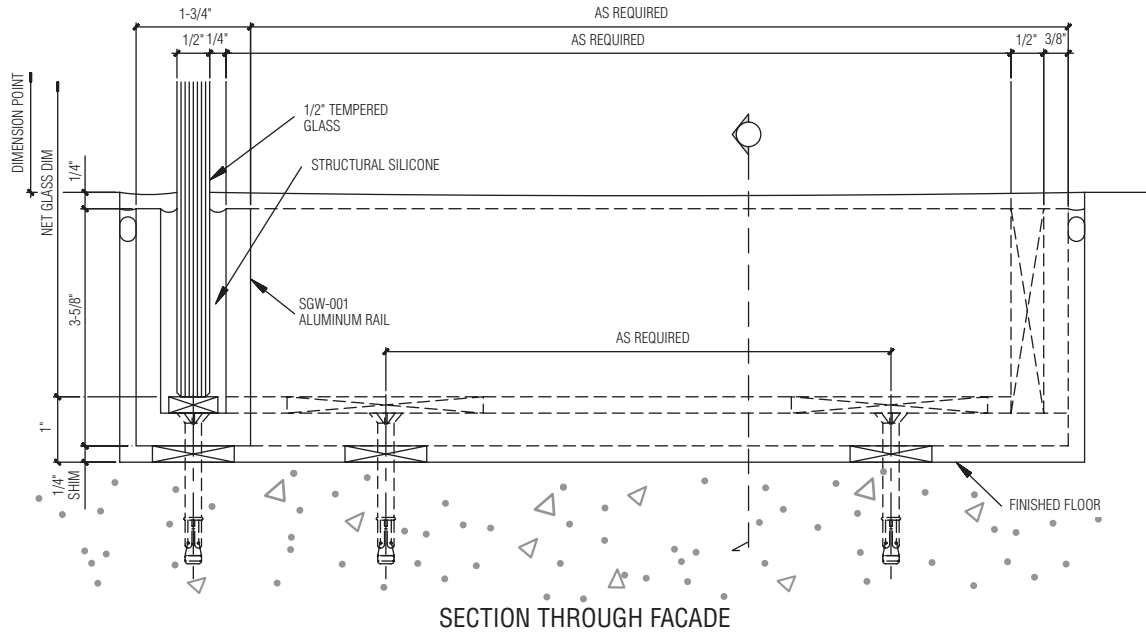


SECTION THROUGH FIN

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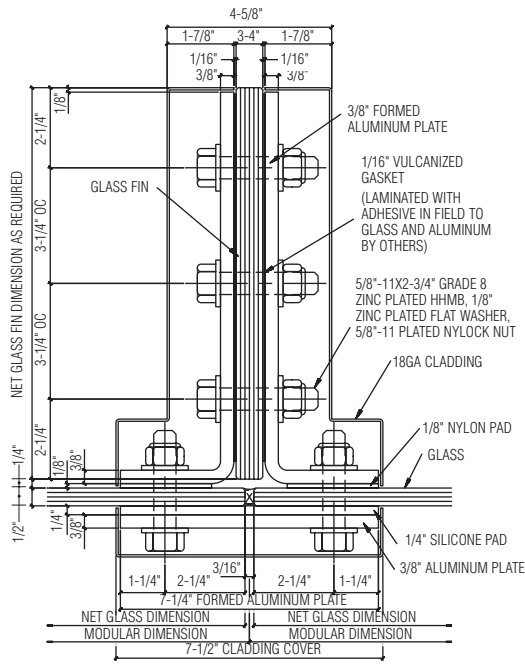
## Sill Conditions: Embedded Sill with Fin



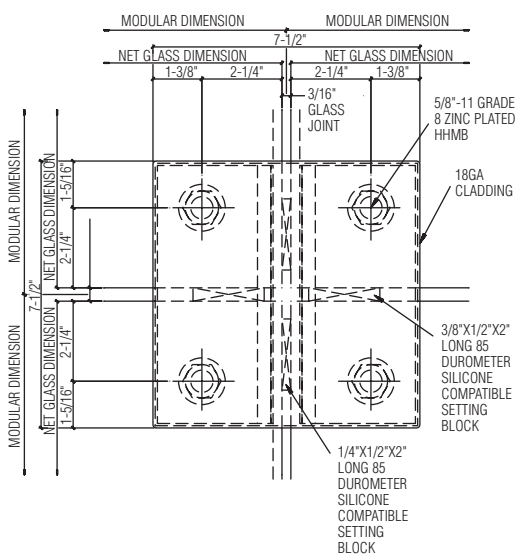
**Note:** Drawings not to scale.  
All dimensions for reference  
only. Actual values based on  
project design and conditions.



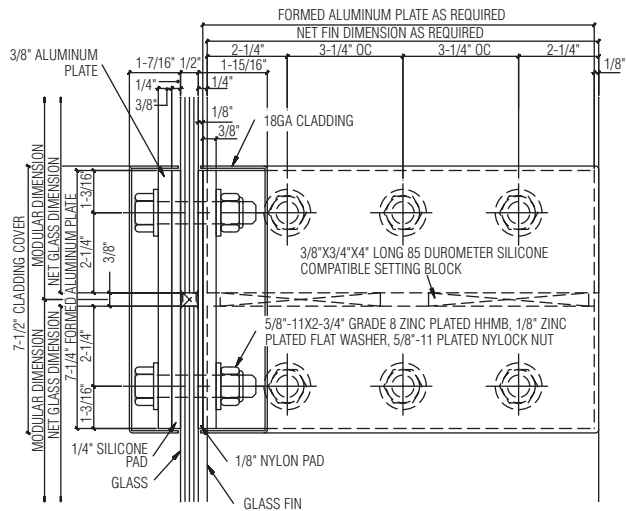
# Splice Plates with Cover Pans



TOP VIEW



FRONT VIEW



SIDE VIEW

**FOR USE IN THESE SUPPORT CONDITIONS:**  
(See page 8.)

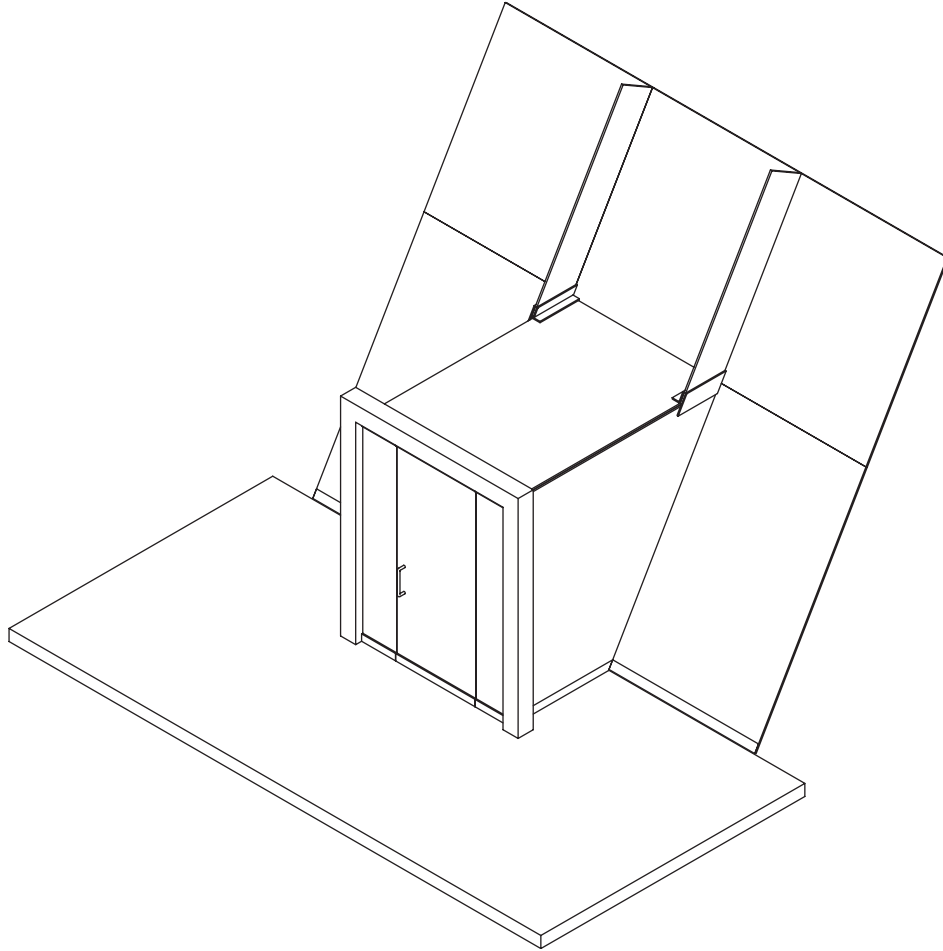
STRUCTURAL STEEL  
CANTILEVERED GLASS FINS  
FULL-HEIGHT GLASS FINS

- Attaches to a glass mullion or a steel tab bracket
- Available with laminated glass
- Contact Oldcastle Glass® for insulating glass applications

**Note:** Drawings not to scale.  
All dimensions for reference only. Actual values based on project design and conditions.

## *Custom Options: Contact Sheet*

For all custom concepts, please call 1-866-OLDCASTLE(653-2278)  
or log on to [www.oldcastleglass.com](http://www.oldcastleglass.com).



# Finwall™ System

## Specifications

### Part 1. General

#### Description of Work

1. Complete structural glazing system: tempered monolithic, laminated or insulating glass main plates; glass stiffeners; glass entrance doors (where applicable); metal framing for doors (where applicable); metal support members for perimeter of system; metal fasteners and sealants.
2. Labor and equipment, and services necessary to install all the work of this section as shown on the approved shop drawings, as specified, and as required by job conditions.

#### Related Work Specified Elsewhere

1. Structural steel
2. Perimeter caulking
3. Curtain wall systems

#### Quality Assurance and Performance

1. General - The manufacturer will design and fabricate the Finwall™ or IG Finwall™ in accordance with the manufacturer's established practices and as shown on the approved shop drawings.
2. Installation must be performed by an installation company approved by Oldcastle and in accordance with Oldcastle's erection and glazing instructions.
3. Structural performance: a test report will be submitted that provides the basis for the structural calculations. For earthquake-prone areas, the Finwall™ system will be designed to allow for lateral racking for seismic requirements. Test reports by an independent testing laboratory, which show results of tests of structural performance, in accordance with ASTM E330, that have been made for substantially identical system, will be submitted, as required by architect.
4. There will be no uncontrollable air or water infiltration through the assembly when tested in accordance with ASTM E331.
5. System will provide for live loads imposed by the operation of doors. Doors will comply with applicable handicap and fire codes.

6. System will be floor loaded and will not be suspended from the structure above.

#### Submittals

1. Submit shop drawings including elevation drawings, sections and details at no less than a 1/4" scale, showing glass types and thicknesses, metal types and thicknesses, joining details, anchorage fastening and sealing methods, metal finishes, door hardware, glazing sealants, setting blocks, shims and spacers.
2. Submit substantiating engineering calculations and test reports by state-licensed engineer.
3. Submit samples as requested
  - a. Glazing materials
  - b. Metal components and finishes

#### Warranty

1. Provide a two-year warranty, cosigned by manufacturer and the installer.
2. Warranty: cover the complete system for failure to meet specified requirements, including materials and installation costs. Insulating glass units will be warranted for a period of five years.

### Part 2. Products

#### Manufacturer

The structural glass wall system will be Finwall™, as manufactured by Oldcastle Glass®.

#### Main Plate Insulating Glass

Will be constructed using fully tempered glass in accordance with ASTM C1048. The thickness of the glass lites for the insulating units will be either 3/8" or 1/4" thick. Glass or coating color will be selected by the architect. The insulating glass will be dual sealed with polyisobutylene primary seal and a silicone secondary seal with an aluminum spacer. The insulating glass unit will be certified by the IGCC to a Class CBA rating.

*Monolithic or Laminated glass may also be used; see Glass section on page 4.*

*(continued on back)*



## Finwall™ System

### Specifications (continued)

#### Finishes

All exposed surfaces will be free of scratches and other serious blemishes.

Rail, channel and pan cover finishes will be (Select one of the following):

- For extruded aluminum, an Architectural Class II clear anodic coating conforming with Aluminum Association standards.
- An Architectural Class I color anodic coating, conforming with Aluminum Association standards. Color: black.
- An Architectural Class I color anodic coating, conforming with Aluminum Association standards. Color: dark bronze.
- A fluoropolymer paint coating conforming with the requirements of AAMA605.2.

Color will be (Specify):

- Stainless Steel clad using an alloy 304 finished as follows (specify one):  
polish or satin.
- Brass/Bronze clad finished (samples required) as follows (specify one):  
polish or satin.

#### Stabilizers

Will be 3/4" fully tempered glass in accordance with ASTM C1048. Stabilizer end blocks will be designed so that the shear load is not transferred through the insulating glass main plate.

#### Perimeter Glazing Channels

Will be 6063-T5 aluminum alloy meeting ASTM B221, matching the profile on the approved shop drawings; size is as required by the insulating glass thickness and glazing requirements.

#### Sealants

Structural glazing joints must be glazed with an approved structural glazing sealant, such as GE Ultraglaze 4000, Dow Corning 795 or 995.

Perimeter weather seal will be a silicone weather seal product, such as GE Silglaze or Dow Corning 790.

#### Setting Blocks

Will be silicone-compatible material, as shown on shop drawings.

### Part 3. Execution

#### Inspection

Verify that the openings are of the correct size and that adjacent materials are plumb and level.

#### Preglazing Conference

Verify the glazing sequence and protection of the completed work.

#### Installation

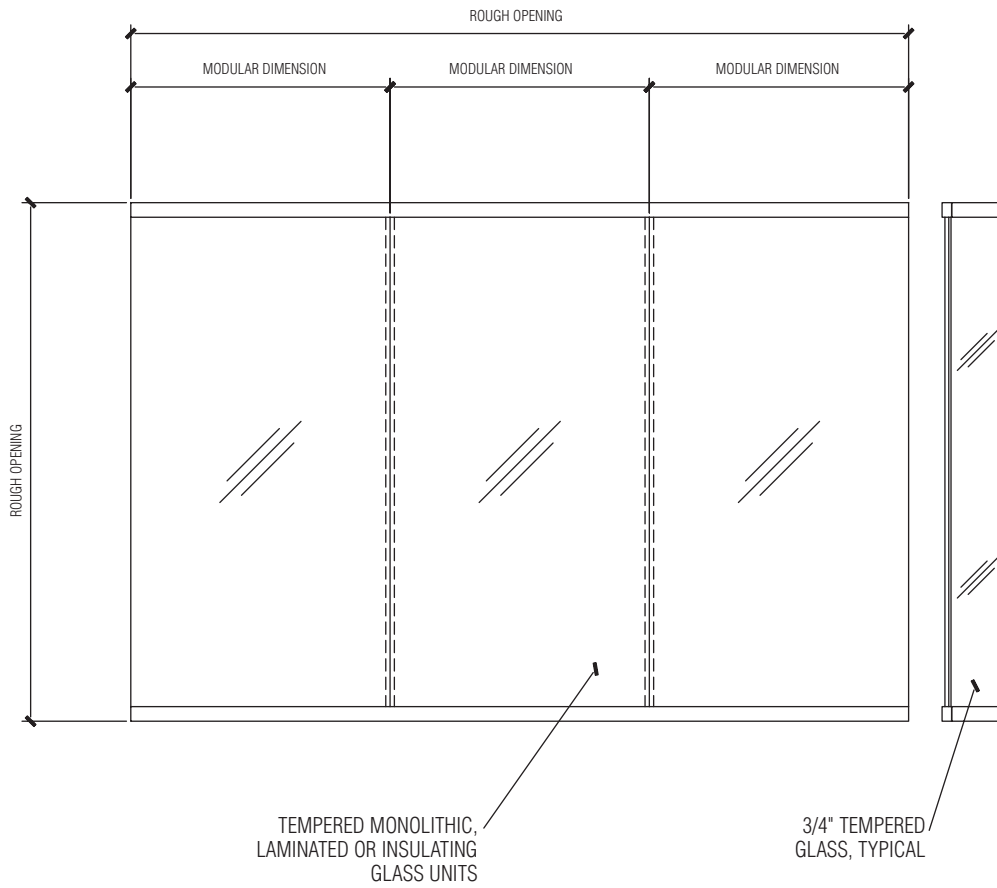
Install Finwall™ and related work using experienced work crews, as specified, as detailed on the approved shop drawings, and in accordance with Finwall™ erection and glazing instructions provided by Oldcastle Glass®. Finwall™ will be installed plumb, level, square and true, securely anchored in place, with all joints neatly siliconed smooth.

#### Protection

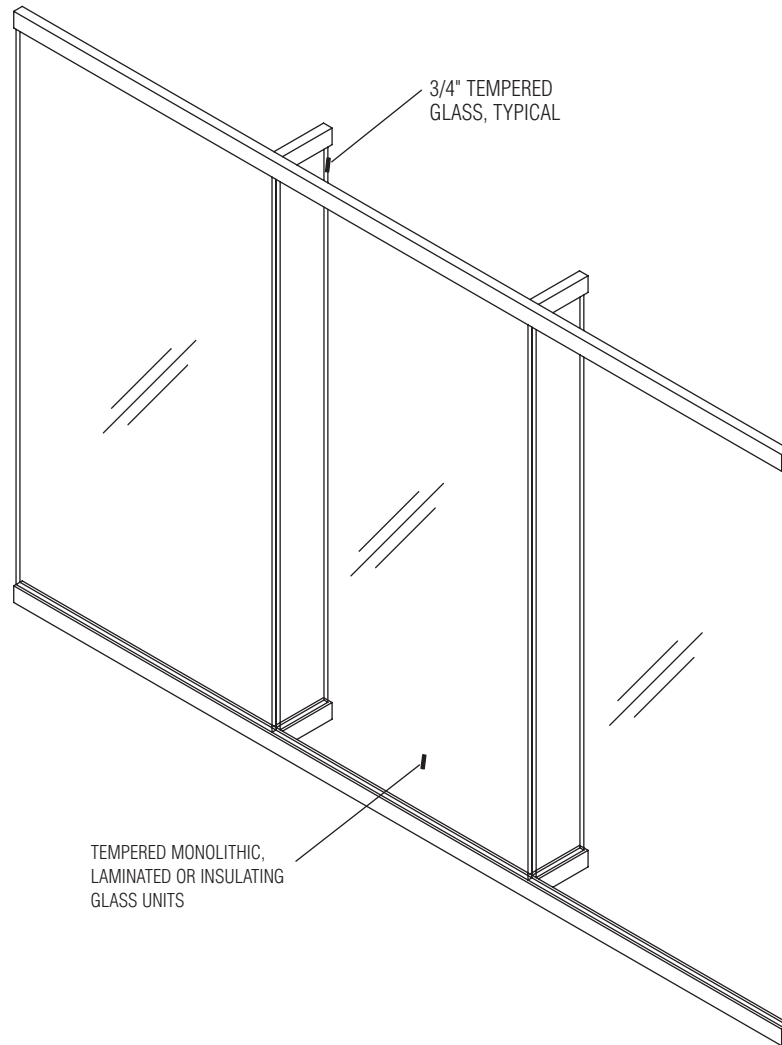
Finwall™ installation will be protected from damage during construction in accordance with provisions of the contract and the general contractor's instructions. Protecting devices will be removed upon completion of the project and the glass will be cleaned to the satisfaction of the architect. Final cleaning is done by others.



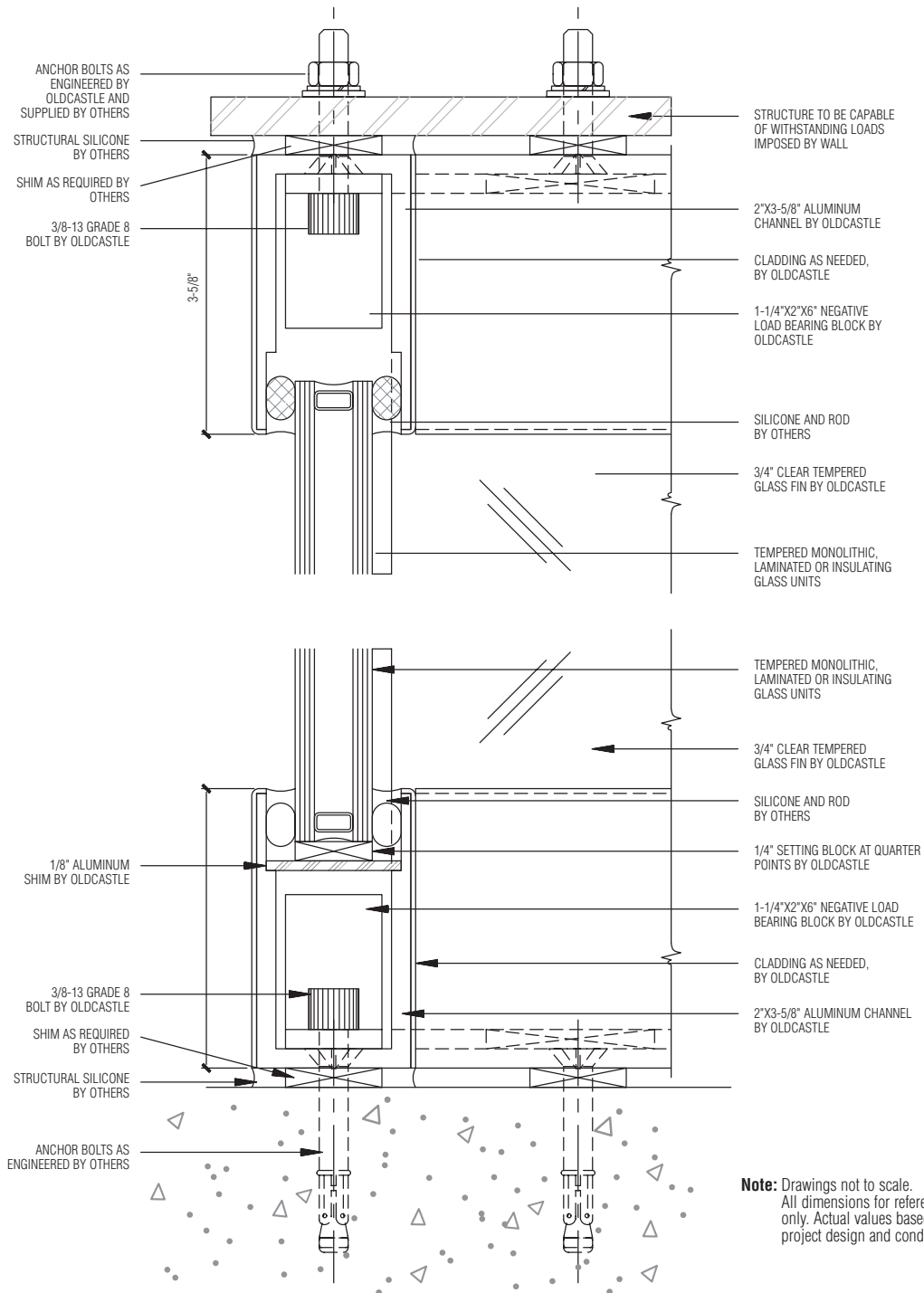
# Finwall™ System: Sample Elevations



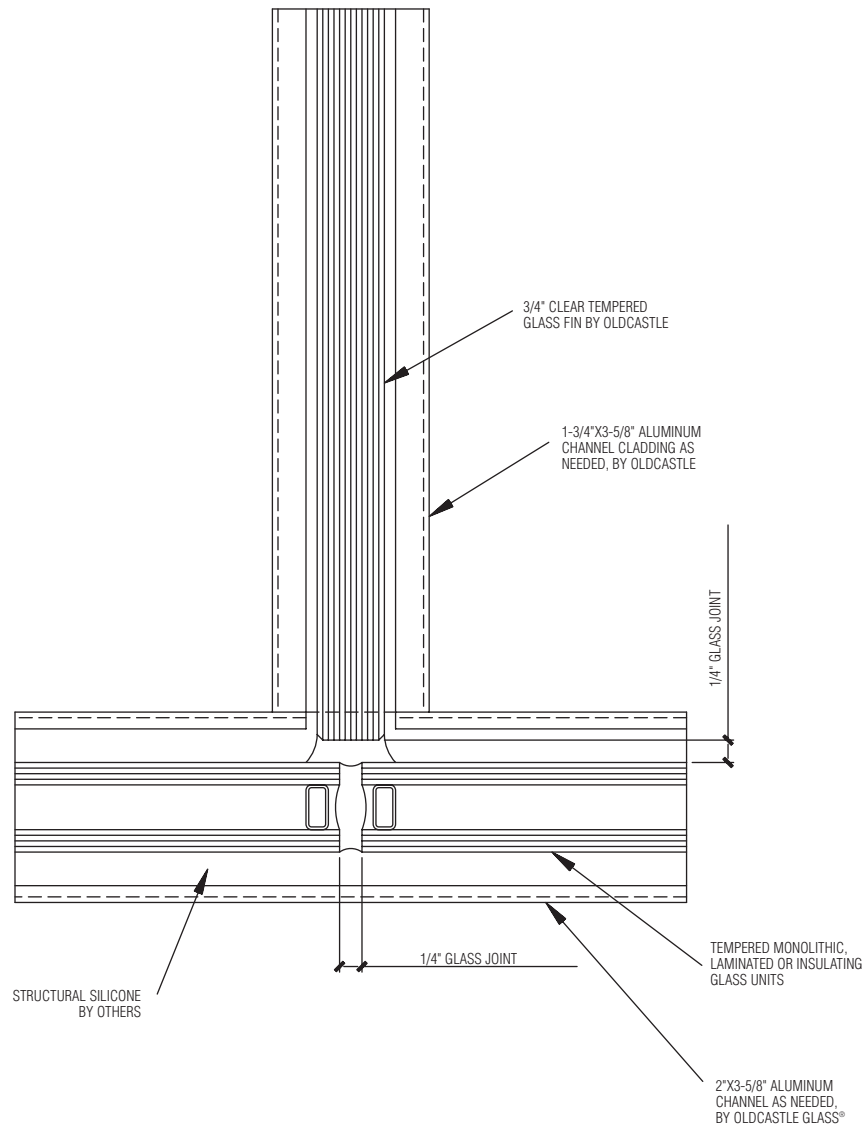
## *Finwall™ System: Isometric View*



# Finwall™ System: Head and Sill Details



## Finwall™ System: Fin Detail

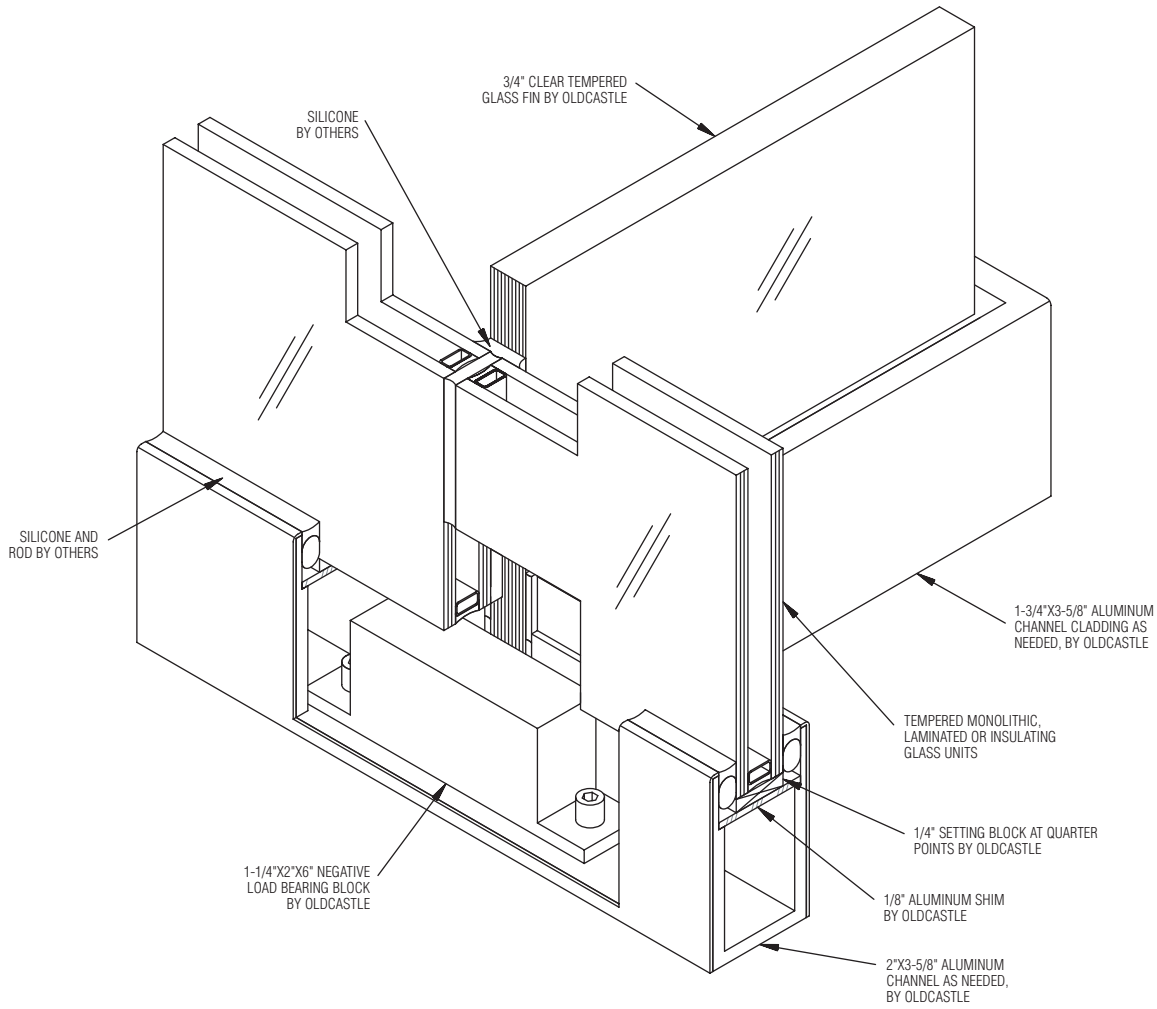


**Note:** Drawings not to scale.  
All dimensions for reference only. Actual values based on project design and conditions.

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# Finwall™ System: Isometric Detail



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All dimensions for reference only. Actual values based on project design and conditions.

