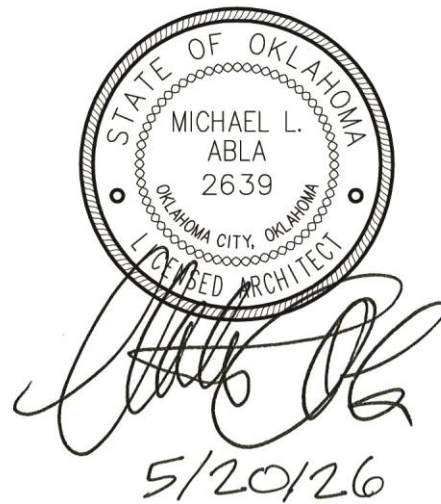


**MOORE PUBLIC SCHOOLS -
WESTMOORE HIGH SCHOOL
ENTRY UPGRADES**

Moore Public Schools - Moore, Oklahoma
AGP - Moore, Oklahoma

ADDENDUM NO. 2

May 22, 2026



This addendum applicable to work designated herein, shall be understood to be an Addendum, and as such shall be included in the Contract Agreement.

Receipt of this Addendum shall be acknowledged by the Construction Management Firm notifying this office in writing, and by any applicable subcontractor to the CM.

This addendum consists of two (2) pages with attachments of thirty (30) 8.5" x 11" pages and one (1) 24" x 36" sheets.

A. Drawings:

General / Civil / Structural

No changes.

Architectural

1. Sheet A201, Detail 2 – West Elevation: clarification – cast iron downspouts are to be provided by plumber. Coordinate with Roofing Subcontractor concerning installation at roofing, soffit, brackets, and exterior connection points. Provide watertight installation.
2. Sheet A601, Detail 2, Color Schedule: at color #18, omit reference to solid surface window sills. Window sills shall be provided as noted in individual details (i.e. detail 9A306 – painted solid wood).
3. Sheet A602, Detail 1 – Door Schedule / Detail 2 – Glazing Schedule / Detail – 5 Door Frame Elevations: to achieve fire rating requirements, revise aluminum doors and frames system as per attached sections at Doors 15, 16, & 17 and Windows "C" at Room #10. Refer to attachments.

4. Sheet A701, Details 1, 2, 3, 4, & 5 – Millwork Base Cabinet and Counter Sections: provide 4" RUBBER BASE at all millwork cabinets, counters, etc. in lieu of "wood base" and "4" vinyl base" as noted.

Mechanical, Electrical, Plumbing, and Technology

No changes.

B. Specifications:

1. Section 084123 – Fire Rated Aluminum Framed Entrances and Storefronts: add section in its entirety.
2. Section 084123a – Fire Rated Narrow Profile Steel Doors: add section in its entirety.
3. Section 088813 – Fire Rated Glass: add section in its entirety.

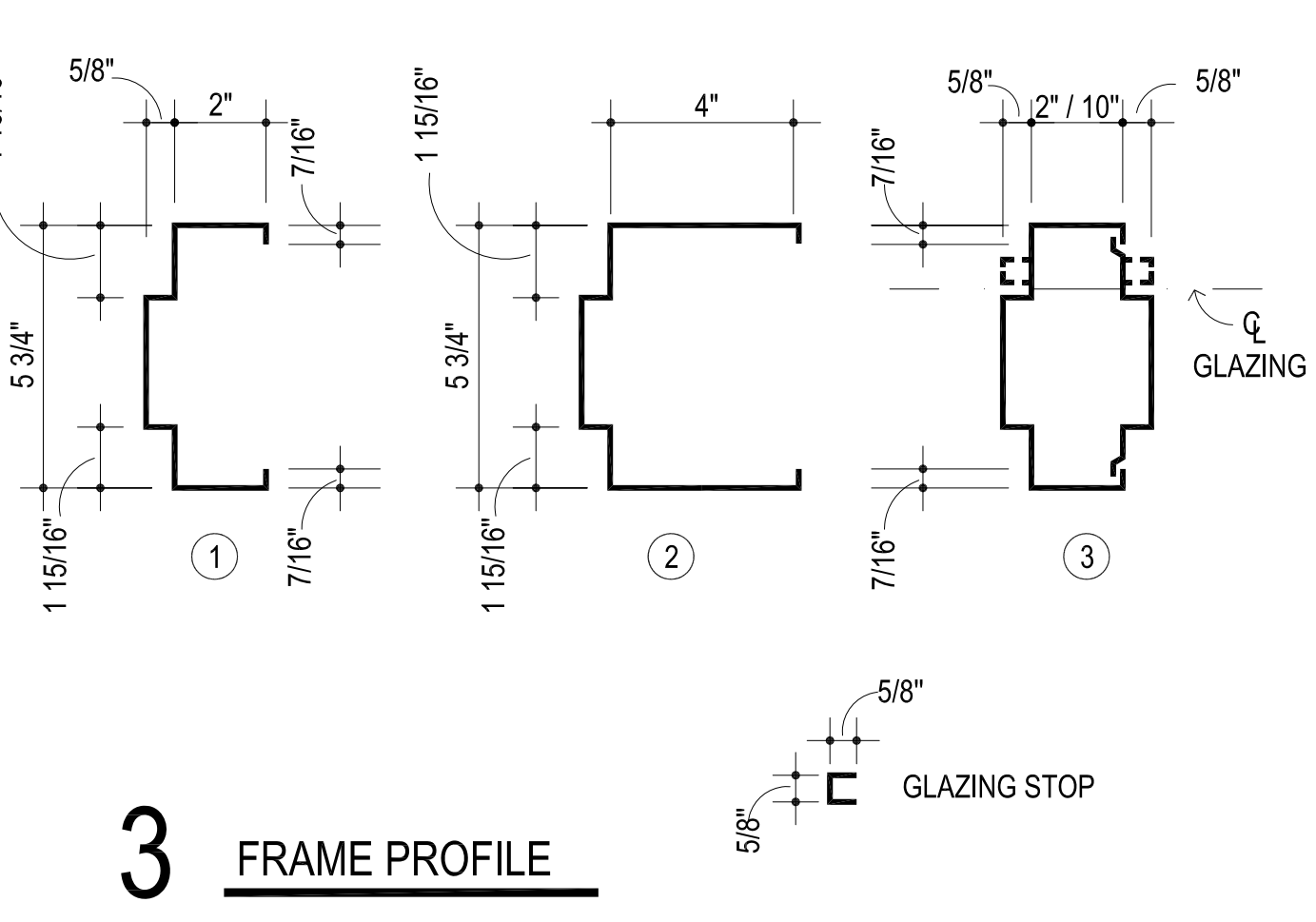
END OF ADDENDUM NO. 2

DOOR NO.	LOCATION		DOOR ELEV.	DOOR MATL.	DOOR SIZE			FRAME ELEV.	DOOR DETAILS				REMARKS	HDMR. SET NO.
	FROM	TO			WIDTH	HEIGHT	TH'K		HEAD	SILL	JAMB	JAMB		
1	1	EXT.	C	ALUM.	PR. 3'-0"	7'-0"	1 3/4"	B	29A501	15A501	30A501	30A501	DOORS 1, 2 & 3 ARE IN ONE FRAME	1
2	1	EXT.	C	ALUM.	PR. 3'-0"	7'-0"	1 3/4"	B	29A501	15A501	30A501	30A501		1
3	1	EXT.	C	ALUM.	PR. 3'-0"	7'-0"	1 3/4"	B	29A501	15A501	30A501	30A501		1
4	29	EXT.	A	H.M.	3'-0"			A	1A501	15A501	8A501	8A501		7
5	22	A	WD.	3'-0"				A	2A501	16A501	9A501	9A501		10
6	26	EXT.	B	H.M.	PR. 3'-0"			A	1A501	15A501	8A501	8A501		8
7	2	1	C	ALUM.	PR. 3'-0"			B	17A501	16A501	30A501	30A501	DOORS 7, 8 & 9 ARE IN ONE FRAME	4
8	2	1	C	ALUM.	PR. 3'-0"			B	17A501	16A501	30A501	30A501		4
9	2	1	C	ALUM.	PR. 3'-0"			B	17A501	16A501	30A501	30A501		4
10	3	1	C	ALUM.	PR. 3'-0"			A	2A501	16A501	9A501	9A501	20 MIN. DOOR & FRAME	2
11	34	21	A	WD.	3'-0"			A	2A501	16A501	9A501	9A501		6
12	3	19	A	WD.	3'-0"			A	2A501	16A501	9A501	9A501		9
13	3	2	C	ALUM.	PR. 3'-0"			C	13A501, SIM.	13A501	13A501	13A501	20 MIN. DOOR & FRAME	2
14	3	2	C	ALUM.	PR. 3'-0"			C	13A501, SIM.	13A501	13A501	13A501	20 MIN. DOOR & FRAME	2
15	EXIST	2	C	ALUM.	PR. 3'-0"			D	2A501	16A501	9A501	9A501	DOORS 15, 16 & 17 ARE IN ONE FRAME	11
16	EXIST	2	C	ALUM.	PR. 3'-0"			D	2A501	16A501	9A501	9A501		11
17	EXIST	2	C	ALUM.	PR. 3'-0"			D	2A501	16A501	9A501	9A501	90 MIN. DOORS & FRAMES	11
18	EXIST	10	A	H.M.	3'-0"			A	16A501				90 MIN. DOORS & FRAMES	6
19	11	10	WD.	3'-0"					16A501				20 MIN. DOOR & FRAME	6
20	EXIST	11	WD.	3'-0"					23A501				90 MIN. DOORS & FRAMES	12
21	11	12							16A501				20 MIN. DOOR & FRAME	6
22	11	9							16A501				20 MIN. DOOR & FRAME	6
23	11	13							16A501				20 MIN. DOOR & FRAME	6
24	11	14							16A501				20 MIN. DOOR & FRAME	6
25	11	7							16A501				20 MIN. DOOR & FRAME	9
26	11	15							16A501				20 MIN. DOOR & FRAME	6
27	11	6							16A501				20 MIN. DOOR & FRAME	9
28	11	16							16A501				20 MIN. DOOR & FRAME	6
29	11	5							16A501				20 MIN. DOOR & FRAME	9
30	11	4							16A501				20 MIN. DOOR & FRAME	9
31	11	20							16A501				20 MIN. DOOR & FRAME	6
32	34	22							16A501				20 MIN. DOOR & FRAME	6
33	22	33							16A501				20 MIN. DOOR & FRAME	3
34	22	32							16A501				20 MIN. DOOR & FRAME	6
35	22	31							16A501				20 MIN. DOOR & FRAME	6
36	22	30	A						16A501				20 MIN. DOOR & FRAME	6
37	22	23	B						16A501				20 MIN. DOOR & FRAME	10
38	22	24	B						16A501				20 MIN. DOOR & FRAME	10
39	22	25	A						16A501				20 MIN. DOOR & FRAME	9
40	22	27	A						16A501				20 MIN. DOOR & FRAME	3
41	22	28	B						16A501				20 MIN. DOOR & FRAME	3
42	CHS	22	B	WD.	2'-0"	7'-0"	1 3/4"	A	2A501	16A501	9A501	9A501	20 MIN. DOOR & FRAME	5

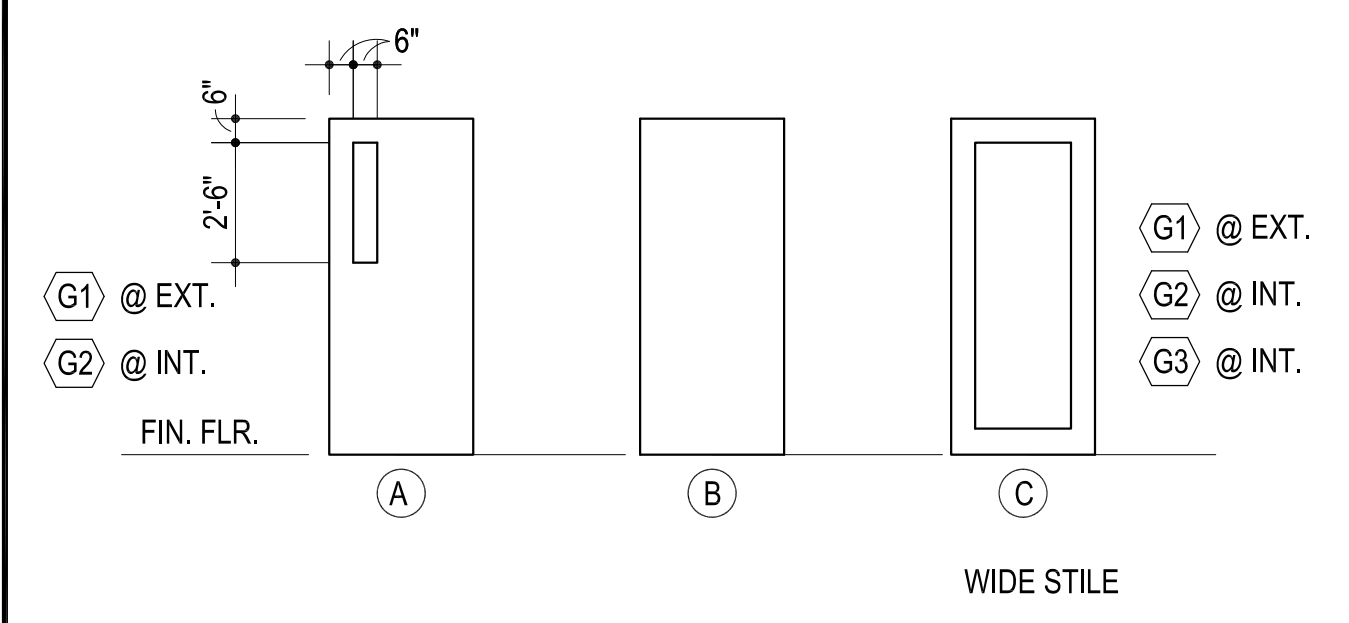
1 DOOR SCHEDULE

- G1 7/8" NOM. TEMPERED INSULATING GLASS
- G2 1/4" CLEAR TEMPERED GLASS
- G3 2 HOUR FIRE RATED GLASS - RE: NEW FIRE RATED SYSTEM
- G4 1/4" IMPACT RESISTANT GLASS
- G5 7/8" IMPACT RESISTANT INSULATING GLASS

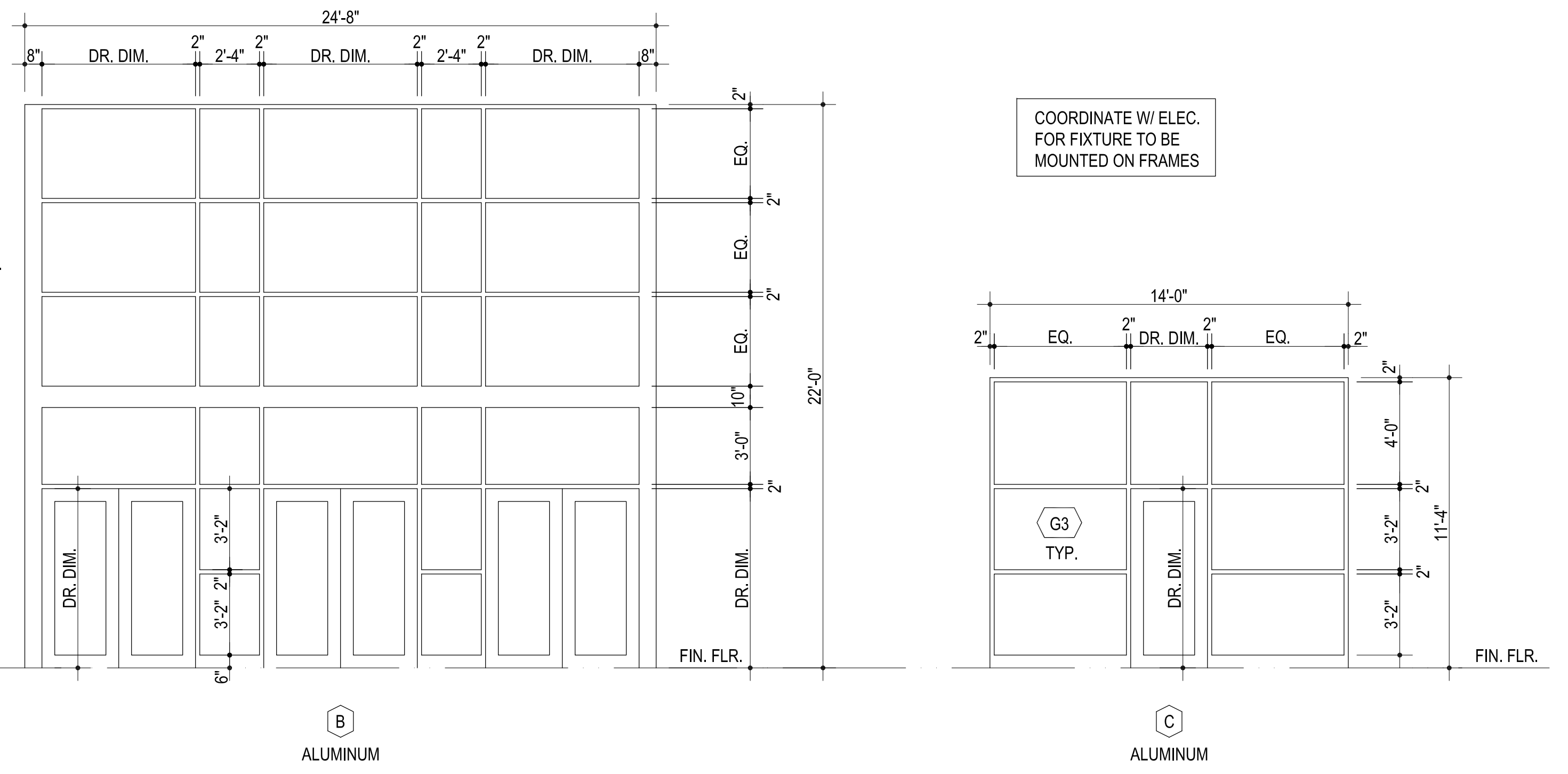
2 GLAZING SCHEDULE



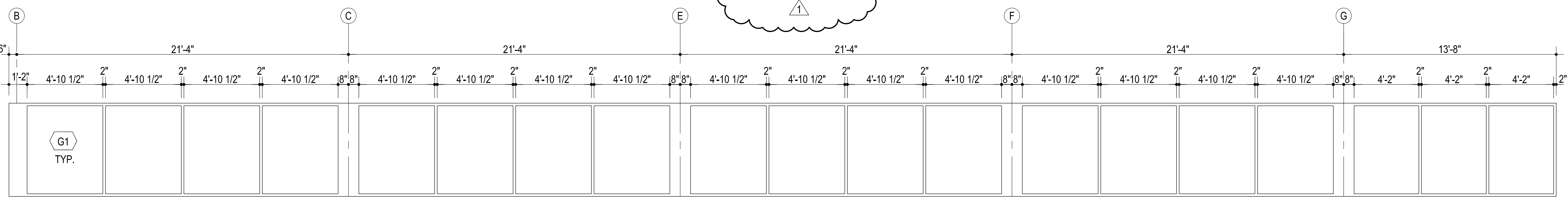
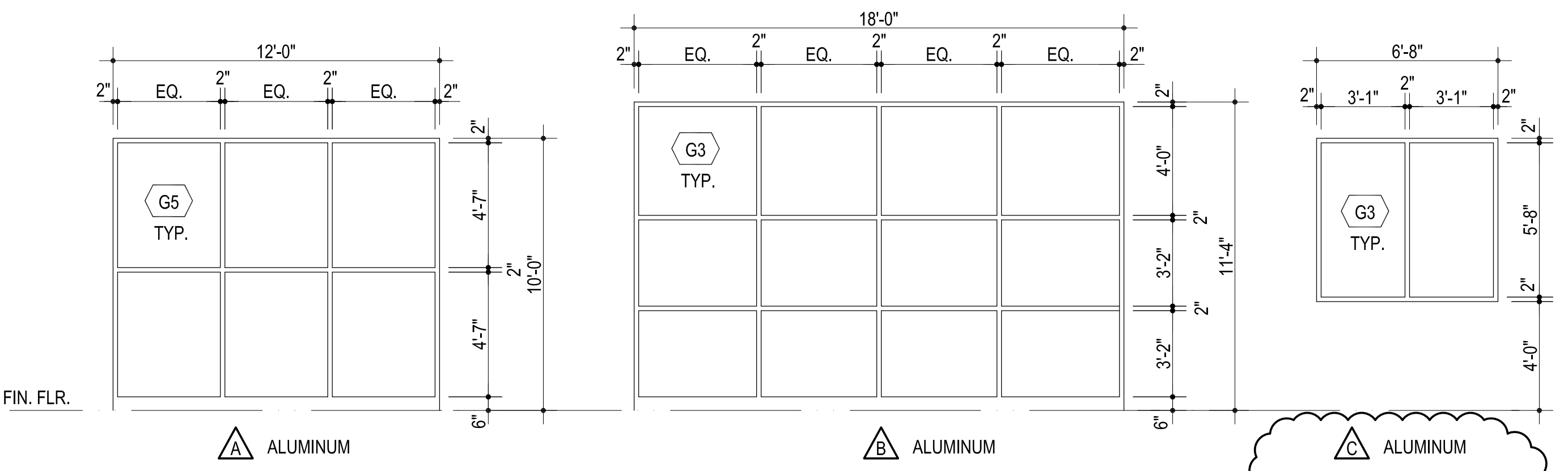
3 FRAME PROFILE



4 DOOR ELEVATIONS



5 DOOR FRAME ELEVATIONS



6 WINDOW FRAME ELEVATIONS



CG	drawn by
MA	checked by
AUGUST 2025	date
revisions	
1	ADDENDUM #2



DIVISION 8 - DOORS AND WINDOWS

084123 - FIRE RATED ALUMINUM FRAMED ENTRANCES AND STOREFRONTS

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes:

1. Fire rated glazing and framing systems for installation as sidelights, windows, and transoms or wall sections in interior openings.

B. Related Sections:

1. Section 05500 "Metal Fabrications:" Steel attachment members inserts and anchors
2. Section 07840 "Firestopping:" Firestops between work of this section and other fire resistive assemblies.
3. Section 07900 - "Joint Sealants" for sealants to the extent not specified in this Section.
4. Section 08100 - "Metal Doors and Frames" for fire-rated doors.
5. Section 08400 - "Aluminum Entrance and Storefronts" for entrance systems.
6. Section 08700 "Door Hardware:" Door hardware other than that provided by the work of this section
7. Section 08800 - "Glazing" for fire-rated doors.

1.2 REFERENCES

A. American Architectural Manufacturers Association (AAMA)

1. AAMA 2603-2002 Voluntary Specification, Performance Requirements and Test Procedures for Pigmented Organic Coatings on Aluminum Extrusions and Panels.
2. AAMA 2604 -2005 Voluntary Specification, Performance Requirements and Test Procedures for High Performance Organic Coatings on Aluminum Extrusions and Panels.
3. AAMA 2605 -2005 Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels.

B. American Society for Testing and Materials (ASTM):

1. Fire safety related:
 - a. ASTM E119: Methods for Fire Tests of Building Construction and Materials.
2. Material related
 - a. ASTM A 1008/A 1008M - Standard Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength, Low Alloy, and High-Strength Low-Alloy with Improved Formability, Solution Hardened, and Bake Hardenable; 2007.

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- b. ASTM A 1011/A 1011M - Standard Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy and High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength; 2006b.
- C. American Welding Society (AWS)
 - 1. AWS D1.3 - Structural Welding Code - Sheet Steel; 2007
- D. Builders Hardware Manufacturers Association, Inc.
 - 1. BHMA A156 - American National Standards for door hardware; 2006 (ANSI/BHMA A156).
- E. National Fire Protection Association (NFPA):
 - 1. NFPA 80: Fire Doors and Windows.
 - 2. NFPA 252: Fire Tests of Door Assemblies
 - 3. NFPA 257: Fire Test of Window Assemblies
- F. Underwriters Laboratories, Inc. (UL):
 - 1. UL 9: Fire Tests of Window Assemblies.
 - 1. UL 10 B: Fire Tests of Door Assemblies
 - 2. UL 10 C: Positive Pressure Fire Tests of Window & Door Assemblies
 - 3. UL 263: Fire tests of Building Construction and Materials
 - 4. UL-752 Ratings of Bullet-Resistant Materials
- G. American National Standards Institute (ANSI):
 - 1. ANSI Z97.1: Standard for Safety Glazing Materials Used in Buildings
- H. Consumer Product Safety Commission (CPSC):
 - 1. CPSC 16 CFR 1201: Safety Standard for Architectural Glazing Materials
- I. American Society of Civil Engineers (ASCE)
 - 1. ASCE 7 - Minimum Design Loads for Buildings and Other Structures; 2005

1.3 DEFINITIONS

- A. Manufacturer: A firm that produces primary glass, fabricated glass or framing as defined in referenced glazing publications.

1.4 SUBMITTALS

- A. Submit in accordance with Special Conditions.
- B. Product Data:
 - 1. Technical Information: Submit latest edition of manufacturer's product data providing product descriptions, technical data, Underwriters Laboratories, Inc. listings and installation instructions.

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084123 - FIRE RATED ALUMINUM FRAMED ENTRANCES AND STOREFRONTS

- C. Shop Drawings:
 - 1. Include plans, elevations and details of product showing component dimensions; framing opening requirements, dimensions, tolerances, and attachment to structure
- D. Sustainable Requirements:
 - 1. Living Building Challenge Compliance: Compliant
 - a. I-13 Red List Declaration
 - 2. Environmental Product Declaration (EPD)
 - a. Fireframes Aluminum Series with Pilkington Pyrostop [Monolithic Glass] [IGU]
- E. Samples. For following products:
 - 1. Glass sample-as provided by manufacturer
 - 2. Sample of frame
 - 3. Verification of sample of selected finish
- F. Glazing Schedule: Use same designations indicated on drawings for glazed openings in preparing a schedule listing glass types and thicknesses for each size opening and location.
- G. Warranties: Submit manufacturer's warranty.
- H. Certificates of compliance from glass and glazing materials manufacturers attesting that glass and glazing materials furnished for project comply with requirements.
 - 1. Separate certification will not be required for glazing materials bearing manufacturer's permanent label designating type and thickness of glass, provided labels represent a quality control program involving a recognized certification agency or independent testing laboratory acceptable to authority having jurisdiction.

1.5 QUALITY ASSURANCE

- A. Testing Agency Qualifications: Qualifications according to
 - 1. International Accreditation Service for a Type A Third-Party Inspection Body (Field Services ICC-ES Third-Party Inspections Standard Operating Procedures, 00-BL-S0400 and S0401)
 - 2. International Accreditation Service for Testing Body-Building Materials and Systems
 - a. Fire Testing
 - 1) ASTM Standards E 119
 - 2) CPSC Standards 16 CFR 1201
 - 3) NFPA Standards 252, 257
 - 4) UL Standards 9, 10B, 10C, 1784, UL Subject

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- 5) BS 476; Part 22: 1987
- 6) EN 1634-1
- 7) CAN/ULC Standards S101, S104, S106
- B. Fire-Rated Window Assemblies: Assemblies complying with NFPA 80 that are classified and labeled by UL, for fire ratings indicated, based on testing according to NFPA 257 and UL 9.
- C. Fire-Rated Wall Assemblies: Assemblies complying with ASTM E119 that are classified and labeled by UL, for fire ratings indicated, based on testing in accordance with UL 263, ASTM E119.
- D. Listings and Labels - Fire Rated Assemblies: Under current follow-up service by Underwriters Laboratories® maintaining a current listing or certification. Label assemblies in accordance with limits of manufacturer's listing.

1.6 DELIVERY, STORAGE AND HANDLING

- A. Deliver, store and handle under provisions specified by manufacturer.

1.7 PROJECT CONDITIONS

- A. Obtain field measurements prior to fabrication of frame units. If field measurements will not be available in a timely manner coordinate planned measurements with the work of other sections.
 - 1. Note whether field or planned dimensions were used in the creation of the shop drawings.
- B. Coordinate the work of this section with others effected including but not limited to: other interior and components and door hardware beyond that provided by this section.

1.8 WARRANTY

- A. Provide the Pilkington Pyrostop® and Fireframes® standard five-year manufacturer warranty.

PART 2 - PRODUCTS

2.1 MANUFACTURERS - (ACCEPTABLE MANUFACTURERS/PRODUCTS)

- A. Manufacturer Glazing Material: "Pilkington Pyrostop®" fire-rated glazing as manufactured by the Pilkington Group and distributed by Technical Glass Products, 8107

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Bracken Place SE, Snoqualmie, WA 98065 phone
(800.426.0279) e-mail tgp.sales@allegion.com, web site
<http://www.fireglass.com>

- B. Frame System: "Fireframes® Aluminum Series" fire-rated frame system as manufactured and supplied by Technical Glass Products, 8107 Bracken Place SE, Snoqualmie, WA 98065 phone (800.426.0279) e-mail tgp.sales@allegion.com, web site <http://www.fireglass.com>
- C. Substitutions: Substitutions for Glazing Material and Frame System as approved by Architect prior to bidding.

2.2 PERFORMANCE REQUIREMENTS

- A. System Description:
 - 1. Steel fire-rated glazed wall and/or window system, dual aluminum cover cap format
 - a. Face widths available:
 - 1) 2"
 - 2) Custom extruded aluminum cover caps
 - 3) Custom stainless steel cover caps
 - b. Duration - Windows Capable of providing a fire rating for 120 minutes.
 - c. Duration - Walls: Capable of providing a fire rating for 120 minutes.
- B. Structural Performance
 - 1. Design and size the system to withstand structural forces placed upon it without damage or permanent set when tested in accordance with ASTM E330 using load 1.5 times the design wind loads and of 10 seconds in duration.
 - 2. Positive wind load: not applicable.
 - 3. Negative wind Load: not applicable.
 - 4. Member deflection: Limit deflection of the edge of the glass normal to the plane of the glass to flexure limit of glass.
 - 5. Live load deflection of the construction above these windows to which they are likely connected is limited to 3/16" or less.

2.3 MATERIALS - GLASS

- A. Fire Rated Glazing: Composed of multiple sheets of Pilkington Optiwhite™ high visible light transmission glass laminated with an intumescent interlayer.

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B. Impact Safety Resistance: ANSI Z97.1 and CPSC 16CFR1201 (Cat. I and II).

C. Properties Interior Glazing

Fire-Rating	45 minute	60 minute		120 minute
Manufacturer's designation	45-200	60-101	60-201	120-106
Glazing type	single	single	single	IGU
Nominal Thickness	3/4" (19mm)	7/8" (23mm)	1-1/16" (27mm)	2-1/4" (57mm)
Weight in lbs/sf	9.2	10.85	12.5	22.9
Daylight Transmission	86	87%	86%	75%
Sound Transmission Coefficient	40dB	41dB	44dB	46dB

D. Properties for Interior Glazing When Exposed to Natural Light

Fire-Rating	45 minute		60 minute		120 minute
Manufacturer's designation	45-200	45-260 45-360	60-201	60-261 60-361*	120-262 120-362*
Glazing type	single	IGU	single	IGU	IGU
Nominal Thickness	3/4" (19mm)	1-5/16" (33mm)	1-1/16" (27mm)	1-5/8" (41mm)	2-3/8" (60mm) [with 14 mm spacer, or 2-1/8" (54 mm) with 8 mm spacer]
Weight in lbs/sf	9.2	12.5	12.5	15.8	22.1
Daylight Transmission	86	77 59-71	86%	77% 59-70%	74% 33-68%
Sound Transmission Coefficient	40dB	40dB	44dB	44dB	46dB

* Low-E product.

DIVISION 8 - DOORS AND WINDOWS

084123 - FIRE RATED ALUMINUM FRAMED ENTRANCES AND STOREFRONTS

- E. Reference Chart E: PVB inner layer installed toward exterior.
- F. Logo: Each piece of fire-rated glazing shall be labeled with a permanent logo including name of product, manufacture, testing laboratory (UL), fire rating period, safety glazing standards, and date of manufacture.
- G. Glazing Accessories: Manufacturer's standard compression gaskets, standoff, spacers, setting blocks and other accessories necessary for a complete installation.

2.4 MATERIALS -ALUMINUM FRAMES

- A. Fireframes® Aluminum Series 120 min.
 - 1. Steel Frame - The steel framing members are made of two halves, nom. 1.9 in. wide (48.3 mm) with a nom. minimum depth of 1.38 in. (35 mm) with lengths cut according to glazing size.
 - 2. Aluminum Trim - Supplied with the steel framing members. Nom. 2 in. (50.8 mm) wide with a nom. depth of 1.54 in. (39 mm) with lengths cut according to glazing size.
 - 3. Stainless Steel Standoffs - Supplied with the steel framing members. Nom 5/16 in. (8 mm) diameter with a nom. minimum depth of 1 1/8 in. (28 mm) with depth adjusted to match Pilkington Pyrostop® Panel thickness.
 - 4. Stainless Steel Moment and Connecting Braces: - Supplied with the steel framing members. Nom 3/8 in. (10 mm) thick with a nom. minimum depth of 1 1/8 in. (28 mm) with depth adjusted to match Pilkington Pyrostop® Panel thickness.
 - 5. Framing Member Fasteners - Supplied with the steel framing members. Screws are M6 x16mm Button Head Socket Cap Screws for frame assembly and #6 x 1" Pan Head Sheet Metal Screws for door installation.
 - 6. Glazing Gasket supplied with the steel framing members. Nom. 3/4 in. (19 mm) x 3/16 (4.5 mm) black applied to the steel framing members to cushion and seal the glazing material when installed.
- B. Aluminum: Alloy and temper recommended by manufacturer for type of use and finish indicated.
 - 1. Extruded Bars, Rods, Shapes, and Tubes: ASTM B 221 (ASTM B 221M).
- C. Steel Reinforcement: With manufacturer's standard corrosion-resistant primer complying with SSPC-PS Guide No. 12.00 applied immediately after surface preparation and pretreatment. Select surface

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preparation methods according to recommendations in SSPC-SP COM and prepare surfaces according to applicable SSPC standard.

1. Structural Shapes, Plates, and Bars:
ASTM A 36/A 36M Standard Specification for Carbon Structural Steel
 2. Cold-Rolled Sheet and Strip: ASTM A1008/A1008M Standard Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, Required Hardness, Solution Hardened, and Bake Hardenable
 3. Hot-Rolled Sheet and Strip: ASTM A1011/A1011M Standard Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength
- D. Fasteners and Accessories: Manufacturer's standard corrosion-resistant, nonstaining, nonbleeding fasteners and accessories compatible with adjacent materials.
1. Where fasteners are subject to loosening or turn out from thermal and structural movements, or vibration, use self-locking devices.
 2. Reinforce members as required to receive fastener threads.

2.5 ACCESSORIES

- A. Fasteners: Use fasteners fabricated from Type 304 or Type 316 stainless steel.
- B. Glazing Gaskets:
 1. ASTM C 864 (extruded EPDM rubber that provides for silicone adhesion) or ASTM C1115 Standard Specification for Dense Elastomeric Silicone Rubber Gaskets and Accessories (extruded silicone).
- C. Intumescent Tape: As supplied by frame manufacturer.
- D. Setting Blocks: $\frac{1}{4}$ " Calcium silicate.
- E. Perimeter Anchors: Steel.
- F. Silicone Sealant: One-Part Low Modulus, neutral cure High Movement-Capable Sealant: Type S; Grade NS; Class 25 with additional movement capability of 100 percent in extension and 50 percent in compression; Use (Exposure) NT; Uses (Substrates) M, G, A, and O as applicable. (Use-O joint substrates include: Metal factory-coated with a high-performance coating; galvanized steel; ceramic tile.)
 1. Available Products:

DIVISION 8 - DOORS AND WINDOWS

084123 - FIRE RATED ALUMINUM FRAMED ENTRANCES AND STOREFRONTS

- a. Momentive
 - b. Tremco
 - c. Dow
- G. Intumescent Caulk: Single component, latex-based, intumescent caulk designed to stop passage of fire, smoke, and fumes through fire-rated separations; permanently flexible after cure; will not support mold growth; flame spread/smoke developed 10/10.
- 1. Available Products:
 - a. 3M CP 25WB+

2.6 SLAG-WOOL-FIBER/ROCK-WOOL-FIBER INSULATION

- A. Available Manufacturers:
- 1. Fibrex Insulations Inc.
 - 2. Owens Corning
 - 3. Thermafiber.
 - 4. Rockwool
- B. Unfaced, Slag-Wool-Fiber/Rock-Wool-Fiber Board Insulation: ASTM C 612, maximum flame-spread and smoke-developed indexes of 15 and 0, respectively; passing ASTM E 136 for combustion characteristics; and of the following nominal density and thermal resistivity:
- 1. Nominal density of 4 lb/cu. ft. (64 kg/cu. m), Types IA and IB, thermal resistivity of 4 deg F x h x sq. ft./Btu x in. at 75 deg F (27.7 K x m/W at 24 deg C).
 - 2. Fiber Color: Regular color, unless otherwise indicated.

2.7 FABRICATION

- A. Obtain reviewed shop drawings prior to fabrication.
- B. Fabrication Dimensions: Fabricate fire-rated assembly to field dimensions or guaranteed openings.
- C. Factory prepared, fire-rated steel door assemblies by TGP to be prehung, prefinished with hardware preinstalled for field mounting.
- D. Field glaze door and frame assemblies.

2.8 FINISHES, GENERAL

- A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
- B. Finish frames after assembly.

DIVISION 8 - DOORS AND WINDOWS

084123 - FIRE RATED ALUMINUM FRAMED ENTRANCES AND STOREFRONTS

- C. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable. Noticeable variations in the same piece are not acceptable.
- D. Provide STANDARD CLEAR ANODIZED FINISH.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Site Verification of Conditions: Verify substrate conditions (which have been previously installed under other sections) are acceptable for product installation in accordance with manufacturer's instructions. Verify openings are sized to receive curtain wall system and sill plate is level in accordance with manufacturer's acceptable tolerances.
- B. Notify Architect of any conditions which jeopardize the integrity of the proposed fire wall / door system.
- C. Do not proceed until such conditions are corrected.

3.2 INSTALLATION

- A. See Fireframes Aluminum Series Installation Manual

3.3 REPAIR AND TOUCH UP

- A. Anodized Finishes
 1. Protect the anodized finish from harsh chemicals such as concrete/mortar or muriatic acid/brick wash. If reasonable care is taken during handling and high and low pH chemicals can be avoided, repair and/or touch-up of an anodize finish will not be needed.
 2. Some rub marks on an anodized surface can be removed with a mild abrasive pad such as a Scotch-Brite pad prior to touch up painting.
 3. Touch-up paint should be used even more sparingly over anodize. Only the visible raw aluminum in the scratch or gouge should be touched up with a matching paint.
- B. Remove and replace glass that is broken, chipped, cracked, abraded, or damaged.

3.4 PROTECTION AND CLEANING

- A. Protect glass from damage immediately after installation by attaching crossed streamers to framing held away from glass. Do not apply markers to glass surface. Remove nonpermanent labels, and clean surfaces.

DIVISION 8 - DOORS AND WINDOWS

084123 - FIRE RATED ALUMINUM FRAMED ENTRANCES AND STOREFRONTS

1. Do not clean with astringent cleaners. Use a clean "grit free" cloth and a small amount of mild soap and water or mild detergent.
2. Do not use any of the following:
 - a. Steam jets
 - b. Abrasives
 - c. Strong acidic or alkaline detergents, or surface-reactive agents.
 - d. Detergents not recommended in writing by the manufacturer.
 - e. Do not use any detergent above 77 degrees F
 - f. Organic solvents including but not limited to those containing ester, ketones, alcohols, aromatic compounds, glycol ether, or halogenated hydrocarbons.
 - g. Metal or hard parts of cleaning equipment must not touch the glass surface.
- B. Protect glass from contact with contaminating substances resulting from construction operations, including weld splatter. If, despite such protection, contaminating substances do come into contact with glass, remove them immediately as recommended by glass manufacturer.
- C. Wash glass on both exposed surfaces in each area of Project not more than four days before date scheduled for inspections that establish date of Substantial Completion. Wash glass as recommended by glass manufacturer.

END OF SECTION

DIVISION 8 - DOORS AND WINDOWS

084123a - FIRE RATED NARROW PROFILE STEEL DOORS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

Fire rated door and framing systems for installation of vision lights in fire rated doors in interior openings.

B. Related Sections include the following:

1. Section 08700 "Door Hardware:" Door hardware other than that provided by the work of this section

1.2 REFERENCES

A. American Architectural Manufacturers Association (AAMA)

1. AAMA 501.1-2005: Standard Test Method for Water Penetration of Windows, Curtain Walls, and Doors Using Dynamic Pressure
2. AAMA 501.2-2003: Quality Assurance and Diagnostic Water Leakage Field Check of Installed Storefronts, Curtain Walls, and Sloped Glazing Systems
3. AAMA 501.5-2005: Test Method for Thermal Cycling of Exterior Walls
4. AAMA 1503-1998: Voluntary Test Method for Thermal Transmittance and Condensation Resistance of Windows, Doors and Glazed Wall Sections
5. AAMA 2603-2002 - Voluntary Specification, Performance Requirements and Test Procedures for Pigmented Organic Coatings on Aluminum Extrusions and Panels.
6. AAMA 2604-2005 - Voluntary Specification, Performance Requirements and Test Procedures for High Performance Organic Coatings on Aluminum Extrusions and Panels.
AAMA 2605-2005 - Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels.

B. American Society for Testing and Materials (ASTM):

1. Material related
 - a. ASTM A 1008/A 1008M - Standard Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength, Low Alloy, and High-Strength Low-Alloy with Improved Formability, Solution Hardened, and Bake Hardenable; 2007.
 - b. ASTM A 1011/A 1011M - Standard Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy and High-

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Strength Low-Alloy with Improved Formability, and Ultra-High Strength; 2006b.

2. Sound related:
 - a. ASTM E 90-04: Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements
 - b. ASTM E 413-04: Standard Classification for Rating Sound Insulation
- C. American Welding Society (AWS)
 1. AWS D1.3 - Structural Welding Code - Sheet Steel; 2007
- D. Builders Hardware Manufacturers Association, Inc.
 1. BHMA A156 - American National Standards for door hardware; 2006 (ANSI/BHMA A156).
- E. National Fire Protection Association (NFPA):
 1. NFPA 80: Standard for Fire Doors and Fire Windows.
 2. NFPA 252: Standard Methods of Fire Tests of Door Assemblies.
 3. NFPA 257: Standard on Fire Test for Window and Glass Block Assemblies.
- F. Underwriters Laboratories, Inc. (UL):
 1. UL 9: Fire Tests of Window Assemblies.
 2. UL 10B: Fire Tests of Door Assemblies.
 3. UL 10C: Positive Pressure Fire Tests of Door Assemblies.
- G. American National Standards Institute (ANSI):
 1. ANSI Z97.1: Standard for Safety Glazing Materials Used in Buildings.
- H. Consumer Product Safety Commission (CPSC):
 1. CPSC 16 CFR 1201 Categories I and II: Safety Standard for Architectural Glazing Materials.
- I. American Society of Civil Engineers (ASCE)
 1. ASCE 7 - Minimum Design Loads for Buildings and Other Structures; 2005

1.3 DEFINITIONS

- A. Manufacturer: A firm that produces primary glass, fabricated glass or framing as defined in referenced glazing publications.

1.4 SUBMITTALS

- A. Submit in accordance with Section <Insert Section #>.
- B. Product Data:
 1. Technical Information: Submit latest edition of manufacturer's product data providing product

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descriptions, technical data, Underwriters Laboratories, Inc. listings and installation instructions.

- C. Shop Drawings:
 - 1. Include plans, elevations and details of product showing component dimensions; framed opening requirements, dimensions, tolerances, and attachment to structure.
- D. Sustainable Requirements:
 - 1. Living Building Challenge Compliance: Compliant, Fireframes Designer Series with Pilkington Pyrostop [Monolithic Glass] [IGU]
 - a. I-13 Red List Declaration
 - 2. Environmental Product Declaration (EPD)
 - a. Fireframes Designer Series with Pilkington Pyrostop [Monolithic Glass] [IGU]
- E. Hardware schedule: list of manufacturer supplied hardware and verification of cylinder size complying with Section 08700.
- F. Samples: For following products:
 - 1. Glass sample-as provided by manufacturer
 - 2. Sample of frame
 - 3. Verification of sample of selected finish
- G. Glazing Schedule: Use same designations indicated on drawings for glazed openings in preparing a schedule listing glass types and thicknesses for each size opening and location.
- H. Warranties: Submit manufacturer's warranty.
- I. Certificates of compliance from glass and glazing materials manufacturers attesting that glass and glazing materials furnished for project comply with requirements.
 - 1. Separate certification will not be required for glazing materials bearing manufacturer's permanent label designating type and thickness of glass, provided labels represent a quality control program involving a recognized certification agency or independent testing laboratory acceptable to authority having jurisdiction.

1.5 QUALITY ASSURANCE

- A. Testing Agency Qualifications: Qualified according to
 - 1. International Accreditation Service for a Type A Third-Party Inspection Body (Field Services ICC-ES

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Third-Party Inspections Standard Operating Procedures, 00-BL-S0400 and S0401)

2. International Accreditation Service for Testing Body-Building Materials and Systems
 - a. Fire Testing
 - 1) ASTM Standard E 119
 - 2) CPSC Standard 16 CFR 1201
 - 3) NFPA Standards 252, 257
 - 4) UL Standards 9, 10B, 10C, 1784, UL Subject 63
 - 5) BS 476; Part 22: 1987
 - 6) EN 1634-1
 - 7) CAN/ULC Standards S101, S104, S106
 - B. Installer Qualifications: An experienced installer who has completed glazing similar in material, design, and extent to that indicated for this Project; whose work has resulted in glass installations with a record of successful in-service performance; and who employs glass installers for this Project who are certified under the National Glass Association Glazier Certification Program as Level 2 (Senior Glaziers) or Level 3 (Master Glaziers).
 - C. Installer Qualifications: An experienced installer who has completed glazing similar in material, design, and extent to that indicated for Project and whose work has resulted in construction with a record of successful in-service performance.
 - D. Source Limitations for Glazing Accessories: Obtain framing system, glazing and glazing accessories from one source for each product and installation method indicated.
 - E. Fire-Rated Door Assemblies: Assemblies complying with NFPA 80 that are classified and labeled by UL, for fire ratings indicated, based on testing according to NFPA 252. Assemblies must be factory-welded or come complete with factory-installed mechanical joints and must not require job site fabrication.
 - F. Fire-Rated Window Assemblies: Assemblies complying with NFPA 80 that are classified and labeled by UL, for fire ratings indicated, based on testing according to NFPA 257. Assemblies must be factory-welded or come complete with factory-installed mechanical joints and must not require job site fabrication.
 - G. Listings and Labels - Fire Rated Assemblies: Under current follow-up service by Underwriters Laboratories® maintaining a current listing or certification. Label assemblies accordance with limits of manufacturer's listing.

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- H. Regulatory Requirements: Comply with provisions of the following:
1. Where indicated to comply with accessibility requirements, comply with [**Americans with Disabilities Act (ADA)**, "**Accessibility Guidelines for Buildings and Facilities (ADAAG)**,"] [**ANSI A117.1**,] [**FED-STD-795**, "**Uniform Federal Accessibility Standards**,"] as follows:
 - a. Handles, Pulls, Latches, Locks, and other Operating Devices: Shape that is easy to grasp with one hand and does not require tight grasping, tight pinching, or twisting of the wrist.
 - b. Door Closers: Comply with the following maximum opening-force requirements indicated:
 - 1) Accessible doors no more than 5 lbf (22.2 N) push or pull force
 - 2) Fire Doors: Minimum opening force allowable by authorities having jurisdiction
 2. Compliance with this standard requires auto openers to be added to the opening due to the weight of the doors. Coordinate the addition of auto-openers with the Division 8 section "Door Hardware" or other section containing these devices. Verify that the Authority Having Jurisdiction is using NFPA 101 and/or IBC and which edition dates of both as a requirement for the facility. NFPA 101: Comply with the following for means of egress doors:
 - a. Latches, Locks, and Exit Devices: Not more than 15 lbf (67 N) to release the latch. Locks shall not require the use of a key, tool, or special knowledge for operation.
 - b. Door Closers: Not more than 30 lbf (133 N) to set door in motion and not more than 15 lbf (67 N) to open door to minimum required width.
 3. IBC 2012 Chapter 10 Means of Egress: Comply with the following for means of egress doors:
 - a. Latches, Locks, and Exit Devices: Not more than 15 lbf (67 N) to release the latch. Locks shall not require the use of a key, tool, or special knowledge for operation.
 - b. Door Closers: Not more than 30 lbf (133 N) to set door in motion and not more than 15 lbf (67 N) to open door to minimum required width.

1.6 DELIVERY, STORAGE AND HANDLING

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- A. Deliver, store and handle under provisions specified by manufacturer.

1.7 PROJECT CONDITIONS

- A. Obtain field measurements prior to fabrication of frame units. If field measurements will not be available in a timely manner coordinate planned measurements with the work of other sections.
 - 1. Note whether field or planned dimensions were used in the creation of the shop drawings.
- B. Coordinate the work of this section with others effected including but not limited to: other interior and/or exterior envelope components and door hardware beyond that provided by this section

1.8 WARRANTY

- A. Provide the Fireframes® Designer Series standard five-year manufacturer warranty.

PART 2 - PRODUCTS

2.1 MANUFACTURERS - FIRE RATED DOOR ASSEMBLY

- A. Glass Material: Pilkington Pyrostop® fire-rated glazing as fabricated and distributed by Technical Glass Products, 8107 Bracken Place SE, Snoqualmie, WA 98065 phone (800.426.0279) e-mail tgp.sales@allegion.com, web site <http://www.fireglass.com>.
- B. Frame System: refer Section 084123.
- C. Substitutions: Substitutions for Glazing Material and Frame System permitted as approved by Architect prior to bidding.

2.2 PERFORMANCE REQUIREMENTS

- A. Fire Rating Requirements
 - 1. Duration -- Doors: Capable of providing a fire rating for 90 minutes.
 - a. When glazed with Pilkington Pyrostop (90 minutes) glazing products, doors meet the maximum transmitted temperature rise of not more than 450 degrees Fahrenheit (250 degrees Celsius) at the end of 30 minutes of the standard fire test exposure.

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2. Duration-- Window Assembly: Capable of providing a fire rating for [20] [45] [60] [90] minutes.
 3. Duration--Opening Applications in fire partitions or area separation walls and corridors where opening protection is specified: Capable of providing 90 minute rating.
- B. Design Requirements:
1. Dimensions - Door and Framing:
 - a. Door framing face dimension: 1 15/16-inch.
 - b. Depth of door framing: 1 15/16-inch.
 - c. Door style face dimension: 3 1/8-inch.
 - d. Door cross rail (if applicable) face: 3 9/16-inch.
 - e. Depth of stile, header, sill and cross rail: 1 15/16-inch
 2. Dimensions - refer Door Schedule.
 3. Construction: Narrow-profile, roll-formed steel architectural grade specialty fire doors. Conventional break-shape type hollow metal steel fire-rated doors will not be considered an acceptable substitute for the Fireframes Designer Series doors specified in this section as they do not conform to the project design intent and/or aesthetic and quality standards.
 - a. Knock down frames are not permitted.
- C. Structural Performance
1. Design and size the system to withstand structural forces placed upon it without damage or permanent set when tested in accordance with ASTM E330 using load 1.5 times the design wind loads and of 10 seconds in duration.
 2. Positive wind load: not applicable.
 3. Negative wind Load: not applicable.
 4. Member deflection: refer to Section 084123.
 5. Accommodate movement between storefront and adjoining systems
- D. Air infiltration: Provide systems that allow a maximum air leakage through fixed glazed openings of 0.06 cfm/sq. ft. of area when tested per ASTM E 283 at a static air differential of [1.57] [6.24] lbf/sq ft
- E. Water Penetration
1. Under Static pressure, provide systems that do not show uncontrolled water leakage when tested according to ASTM E 331 under static pressure equal to 20 percent of positive wind-load design pressure, but not less than 6.24 lbf/sq. ft.

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2. Under Dynamic pressure, provide systems that do not show uncontrolled water leakage when tested according to AAMA 501.1 under static pressure equal to 20 percent of positive wind-load design pressure, but not less than 6.24 lbf/sq. ft.

2.3 MATERIALS - GLASS

- A. Fire Rated Glazing: ASTM C 1036 and ASTM C 1048; refer Section 088812.

2.4 MATERIALS - STEEL FRAMES AND DOORS

- A. Steel Framing System including [20] [45] [60] [90]-minute rated doors, [20] [45] [60] [90]-minute rated windows.
 1. Frame: refer to Section 084123.
 2. Fasteners: As recommended by manufacturer.
 3. Glazing Accessories: calcium silicate setting blocks.
 4. Glazing Compounds:
 - a. Pilkington Pyrostop®: Approved [closed cell PVC tape], [Fibrefrax], or [pure silicone sealant]. Glaze FireLite® panels that exceed 1,393 sq. inches for 90-minute ratings with "Kerafix 2000" glazing tape supplied by manufacturer.
 - 1) When glazed with Pilkington Pyrostop (60-90 minutes) glazing products, doors meet the maximum transmitted temperature rise of not more than 450 degrees Fahrenheit (250 degrees Celsius) at the end of 30 minutes of the standard fire test exposure.

2.5 FABRICATION

- A. Furnish frame assemblies pre-welded.
 1. When necessary, splice frames too large for shop fabrication or shipping or to fit in available building openings.
 2. Fit with suitable fasteners.
 3. Knock-down frames are not permitted
- B. Furnish interior frame assemblies "K-D" (or welded upon request).
 1. When necessary, splice frames too large for shop fabrication or shipping or to fit in available building openings.
 2. Fit with suitable fasteners.
 3. Knock-down door perimeter frames are not permitted
- C. Field glaze door and frame assemblies.

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- D. Factory prepare steel door assemblies and install all hardware.
- E. Fabrication Dimensions: Fabricate to fire-rated field dimensions.
- F. Obtain approved shop drawings prior to fabrication.

2.6 FINISHES, GENERAL

- A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
- B. Finish frames after assembly.
- C. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable. Noticeable variations in the same piece are not acceptable.

2.7 DOOR HARDWARE

- A. Select hardware from door manufacturer's standard recommended and approved hardware groups as specified in Division 8 Section 08700 - Door Hardware.

2.8 ACCESSORY MATERIALS

- A. Bituminous Paint (where applicable): Cold-applied, asphalt-mastic paint complying with SSPC-Paint 12 requirements except containing no asbestos; formulated for 30-mil thickness per coat.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates and members to which the work of this section attaches or adjoins prior to frame installation.
- B. Provide openings plumb, square and within allowable tolerances.
 - 1. Provide 3/8 inch shim space at all walls
- C. Notify Architect of any conditions which jeopardize the integrity of the proposed fire wall / door system.
- D. Do not proceed until such conditions are corrected.

3.2 INSTALLATION

- A. See Fireframes Designer Series Installation Manual

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3.3 REPAIR AND TOUCH UP

- A. Limited to minor repair of small scratches. Use only manufacturer's recommended products.
 - 1. Such repairs shall match original finish for quality or material and view.
- B. Remove and replace glass that is broken, chipped, cracked, abraded, or damaged.

3.4 ADJUSTING

- A. Adjust door function and hardware for smooth operation. Coordinate with other hardware suppliers for function and use of any other attached hardware.

3.5 PROTECTION AND CLEANING

- A. Protect glass from damage immediately after installation by attaching crossed streamers to framing held away from glass. Do not apply markers to glass surface. Remove nonpermanent labels, and clean surfaces.
 - 1. Do not clean with astringent cleaners. Use a clean "grit free" cloth and a small amount of mild soap and water or mild detergent.
 - 2. Do not use any of the following:
 - a. Steam jets
 - b. Abrasives
 - c. Strong acidic or alkaline detergents, or surface-reactive agents
 - d. Detergents not recommended in writing by the manufacturer
 - e. Do not use any detergent above 77 degrees F
 - f. Organic solvents including but not limited to those containing ester, ketones, alcohols, aromatic compounds, glycol ether, or halogenated hydrocarbons.
 - g. Metal or hard parts of cleaning equipment must not touch the glass surface
- B. Protect glass from contact with contaminating substances resulting from construction operations, including weld splatter. If, despite such protection, contaminating substances do come into contact with glass, remove them immediately as recommended by glass manufacturer.

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- C. Wash glass on both exposed surfaces in each area of Project not more than four days before date scheduled for inspections that establish date of Substantial Completion. Wash glass as recommended by glass manufacturer.

END OF SECTION

DIVISION 8 - DOORS AND WINDOWS

088813 - FIRE RATED GLASS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Fire-rated glazing materials installed as vision lights in fire-rated doors.
 - 2. Fire-rated glazing materials installed as sidelites, transoms, etc. in fire-rated frames and [wall applications].
- B. Related Sections include the following:
 - 1. Section 08 11 00 "Metal Doors and Frames" for vision panels in interior doors and interior vision panel (borrowed lites) frames.
 - 2. Section 08 14 16 "Flush Wood Doors" for vision panels in interior doors.
 - 3. [Section 09 21 00 "Gypsum Board Assemblies" for gypsum board and metal stud framed area separation partition walls.]

1.2 REFERENCES

- A. American Society for Testing and Materials (ASTM):
 - 1. ASTM E 119: Fire Tests of Building Construction and Materials.
- B. American National Standards Institute (ANSI):
 - 1. ANSI Z97.1: Standard for Safety Glazing Materials Used in Buildings
- C. Consumer Product Safety Commission (CPSC):
 - 1. CPSC 16 CFR 1201: Safety Standard for Architectural Glazing Materials
- D. Glass Association of North America (GANA):
 - 1. GANA - Glazing Manual.
 - 2. FGMA - Sealant Manual.
- E. National Fire Protection Association (NFPA):
 - 1. NFPA 80: Fire Doors and Windows.
- F. Underwriters Laboratories, Inc. (UL):
 - 1. UL 263: Fire tests of Building Construction and Materials

1.3 PERFORMANCE REQUIREMENTS

- A. Fire-rated, clear and wireless glazing material for use in locations such as doors, sidelites, transoms, borrowed lites, and wall applications with fire rating requirements ranging from 45 minutes to 2 hours with required hose

DIVISION 8 - DOORS AND WINDOWS

088813 - FIRE RATED GLASS

stream test; for use in interior and exterior applications.

- B. Provides protection by reducing the radiant and conductive heat transfer

1.4 SUBMITTALS

- A. Comply with requirements of the Special Conditions.
- B. Product data: Submit manufacturer's technical data for each glazing material required, including installation and maintenance instructions.
- C. Certificates of compliance from glass and glazing materials manufacturers attesting that glass and glazing materials furnished for project comply with requirements. Separate certification will not be required for glazing materials bearing manufacturer's permanent label designating type and thickness of glass, provided labels represent a quality control program involving a recognized certification agency or independent testing laboratory acceptable to authority having jurisdiction.
- D. Product Test Listings: From UL indicating fire-rated glass complies with requirements, based on comprehensive testing of current product.
- E. Samples: Submit, for verification purposes, approx. 8-inch by 10-inch sample for each type of glass indicated.

1.5 QUALITY ASSURANCE

- A. Glazing Standards: FGMA Glazing Manual and Sealant Manual.
- B. Fire Resistance Rated Glass: Each lite shall bear permanent, nonremovable label of UL certifying it for use in tested and rated fire resistive assemblies.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle materials under provisions of the manufacturer.
- B. Deliver materials to specified destination in manufacturer or distributor's packaging, undamaged, complete with installation instructions.
- C. Pilkington Pyrostop® must not be exposed outside the range -40 degrees F to 120 degrees F (-40 degree C to +50 degrees C) during storage and transportation.
- D. Store off ground, under cover, protected from weather and construction activities.
- E. Do not expose the non-PVB side of glass to UV light.

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F. Store sheets of glass vertically. DO NOT lean.

1.7 WARRANTY

A. Provide manufacturer's limited warranty.

PART 2 - PRODUCTS

2.1 FIRE-RATED GLAZING MATERIALS

A. Manufacturer: Pilkington Pyrostop® as manufactured by the Pilkington Group and distributed by Technical Glass Products, 8107 Bracken Place SE, Snoqualmie, WA 98065, voice (800.426.0279), e-mail tgp.sales@allegion.com, Web site www.fireglass.com.

B. Composition: Composed of multiple sheets of "Optiwhite" high visible light transmission glass laminated with an intumescent interlayer. [Most configurations are available with a translucent interlayer for added obscurity and privacy.]

C. Properties:

1. Thickness: For Interior Use: [3/4", #45-200], [7/8", #60-101], [1-1/16" #60-201], [1-7/16, #90-102], [2-1/8", #120-104] [2-1/4", #120-106] [2-13/16", #120-401].

1. Weight: Varies with thickness (approximate range 9 to 22 lbs./sq. ft.).

2. Approximate Visible Transmission: Varies with thickness (approximate range 88 to 75 percent).

3. Fire-rating: Up to 2 hours.

4. Impact Safety Resistance: ANSI Z97.1 and CPSC 16CFR1201 (Cat. I and II).

5. STC Rating: Up to 46 dB.

6. Exterior Grade: PVB layer on exterior surface.

D. Permanently label each piece of Pilkington Pyrostop® with the appropriate marking.

E. Fire Rating - 60 Minutes and Greater: Fire rating classified and labeled by UL for fire rating scheduled at opening locations on drawings, when tested in accordance with ASTM E 119 and UL 263.

F. Substitutions: substitutions as approved by Architect prior to bidding.

2.2 GLAZING COMPOUND FOR FIRE-RATED GLAZING MATERIALS

A. Glazing Tape: Closed cell polyvinyl chloride foam, coiled on release paper over adhesive on two sides, maximum water

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absorption by volume of 2 percent, designed for compression of 25 percent to effect an air and vapor seal.

- B. Silicone Sealant: One-part neutral curing silicone, medium modulus sealant, Type S; Grade NS; Class 25 with additional movement capability of 50 percent in both extension and compression (total 100 percent); Use (Exposure) NT; Uses (Substrates) G, A, and O as applicable. Available Products:
 - 1. Dow Corning 795 - Dow Corning Corp.
 - 2. Silglaze-II 2800 - General Electric Co.
 - 3. Spectrem 2 - Tremco Inc.
- C. Setting Blocks: Hardwood or calcium silicate; glass width by 4 inches by 3/16 inch thick.
- D. Spacers: Neoprene or other resilient blocks of 40 to 50 Shore A durometer hardness, adhesive-backed on one face only, tested for compatibility with specified glazing compound.
- E. Cleaners, Primers, and Sealers: Type recommended by manufacturer of glass and gaskets.

2.3 FABRICATION

- A. Fabricate glass and other glazing products in sizes required to glaze openings indicated for Project, with edge and face clearances, edge and surface conditions, and bite complying with recommendations of product manufacturer and referenced glazing standard as required to comply with system performance requirements.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine glass framing, with glazier present, for compliance with the following:
 - 1. Manufacturing and installation tolerances, including those for size, squareness, offsets at corners.
 - 2. Minimum required face or edge clearances.
 - 3. Observable edge damage or face imperfections.
- B. Do not proceed with glazing until unsatisfactory conditions have been corrected.
- C. Clean glazing channels and other framing members receiving glass immediately before glazing. Remove coatings that are not firmly bonded to substrates.

3.2 INSTALLATION (GLAZING)

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- A. Comply with referenced GANA standards and instructions of manufacturers of glass, glazing sealants, and glazing compounds.
- B. Protect glass from edge damage during handling and installation. Inspect glass during installation and discard pieces with edge damage that could affect glass performance.
- C. Cut glazing tape to length and set against permanent stops, flush with sight lines to fit openings exactly, with stretch allowance during installation.
- D. Place setting blocks located at quarter points of glass with edge block no more than 6-inches from corners.
- E. Glaze vertically into labeled fire-rated metal frames or partition walls with the same fire rating as glass and push against tape for full contact at perimeter of pane or unit.
- F. Place glazing tape on free perimeter of glazing in same manner described above.
- G. Do not remove protective edge tape.
- H. Install removable stop and secure without displacement of tape.
- I. Do not pressure glaze.
- J. Glaze exterior openings with PVB layer toward the exterior of the building.
- K. Knife trim protruding tape.
- L. Apply cap bead of silicone sealant along void between the stop and the glazing, to uniform line, with bevel to form watershed away from glass. Tool or wipe sealant surface smooth.
- M. Provide minimum 3/16 inch edge clearance.
- N. Install in vision panels in fire-rated doors to requirements of NFPA 80.
- O. Install so that appropriate UL and Pilkington Pyrostop® markings remain permanently visible.

3.3 PROTECTION AND CLEANING

- A. Protect glass from contact with contaminating substances resulting from construction operations. Remove any such substances by method approved by glass manufacturer. Wash glass on both faces not more than four days prior to date scheduled for inspections intended to establish date of substantial completion. Wash glass by method recommended by glass manufacturer.

NOTE: SEE GLAZING SCHEDULE ON FOLLOWING TWO PAGES

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3.4 GLAZING SCHEDULE

A. Interior Use:

Fir e Rat ing	Manufac turer Designa tion	Suppl y Form	Thicknes s	Weight Approx.	U- Val ue	Dayl ight Tran s. Appr ox. (%)	STC Ratin g Appro x. (dB)	Assembl y	Max. Exposed Area	Max. Width Of Exposed Glazing (In.)	o r =	Max. Height Of Exposed Glazing (In.)
45 min .	45-200	Singl e Glazi ng	3/4" (19 mm)	9.22 lb / ft ² (45.00 kg / m ²)	.86	86	40	Other than doors Door	4,500 in ² (2.90 m ²) 3,736 in ² (2.41 m ²)	95-1/4" (2.42 m) 41-5/8" (1.06 m)		95-1/4" (2.42 m) 89-3/4" (2.28 m)
60 min .	60-101	Singl e Glazi ng	7/8" (23 mm)	10.86 lb / ft ² (53.00 kg / m ²)	.83	87	41	Other than doors Door	5,616 in ² (3.62 m ²) 4,222 in ² (2.72 m ²)	96" (2.44 m) 41-7/8" (1.06 m)		96" (2.44 m) 100-13/16" (2.56 m)
60 min .	60-201	Singl e Glazi ng	1-1/16" (27 mm)	12.90 lb / ft ² (63.00 kg / m ²)	.83	86	44	Other than doors Door	7,442 in ² (4.80 m ²)	96" (2.44 m) 41-7/8" (1.06 m)		118-1/8" (3.00 m) 100-13/16" (2.56 m)

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088813 - FIRE RATED GLASS

									4,222 in ² (2.72 m ²)			
90 min .	90-102	Singl e Glazi ng	1-7/16" (37 mm)	17.61 lb / ft ² (86.00 kg / m ²)	.74	84	45	Other than doors Door	3,724 in ² (2.40 m ²) 4,222 in ² (2.72 m ²)	96" (2.44 m) 41-7/8" (1.06 m)		96" (2.44 m) 100-13/16" (2.56 m)
2 hr.	120-104	I.G. Units	2-1/8" (54 mm) [with 8 mm spacer, or 2- 3/8" (60 mm) with 14 mm spacer]	21.71 lb / ft ² (106.00 kg / m ²)	.44	75	46	Other than doors	3,730 in ² (2.41 m ²)	111" (2.81 m)		111" (2.81 m)
2 hr.	120-106	I.G. Units	2-1/4" (57 mm)	22.94 lb / ft ² (112.00 kg / m ²)	.42	75	46	Other than doors	3,730 in ² (2.41 m ²)	111" (2.81 m)		111" (2.81 m)
2 hr.	120-401	I.G. Units	2-13/16" (72 mm)	30.72 lb / ft ² (150.00	.46	73	45	Firefra mes ClearFl	2,372 in ² (1.53	47-1/4" (1.20 m)		50-3/8" (1.28 m)

DIVISION 8 - DOORS AND WINDOWS

088813 - FIRE RATED GLASS

				kg / m ²)				oor® System	m ²)			
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END OF SECTION