ISSUE: Certificate of Appropriateness for alterations

APPLICANT: Ronald Southwick

LOCATION: Old and Historic District
913 South Alfred Street

ZONE: RM / Townhouse Zone

STAFF RECOMMENDATION

Staff recommends **approval** of the Certificate of Appropriateness for alterations, with the condition that the applicant comply with the comments noted by Alexandria Archaeology:

1. *The applicant/developer shall call Alexandria Archaeology immediately (703.746.4399) if any buried structural remains (wall foundations, wells, privies, cisterns, etc.) or concentrations of artifacts are discovered during development. Work must cease in the area of the discovery until a City archaeologist comes to the site and records the finds.*
2. *The applicant shall not allow any metal detection and/or artifact collection to be conducted on the property, unless authorized by Alexandria Archaeology. Failure to comply shall result in project delays.*

GENERAL NOTES TO THE APPLICANT

1. APPEAL OF DECISION: In accordance with the Zoning Ordinance, if the Board of Architectural Review denies or approves an application in whole or in part, the applicant or opponent may appeal the Board's decision to City Council on or before 14 days after the decision of the Board.

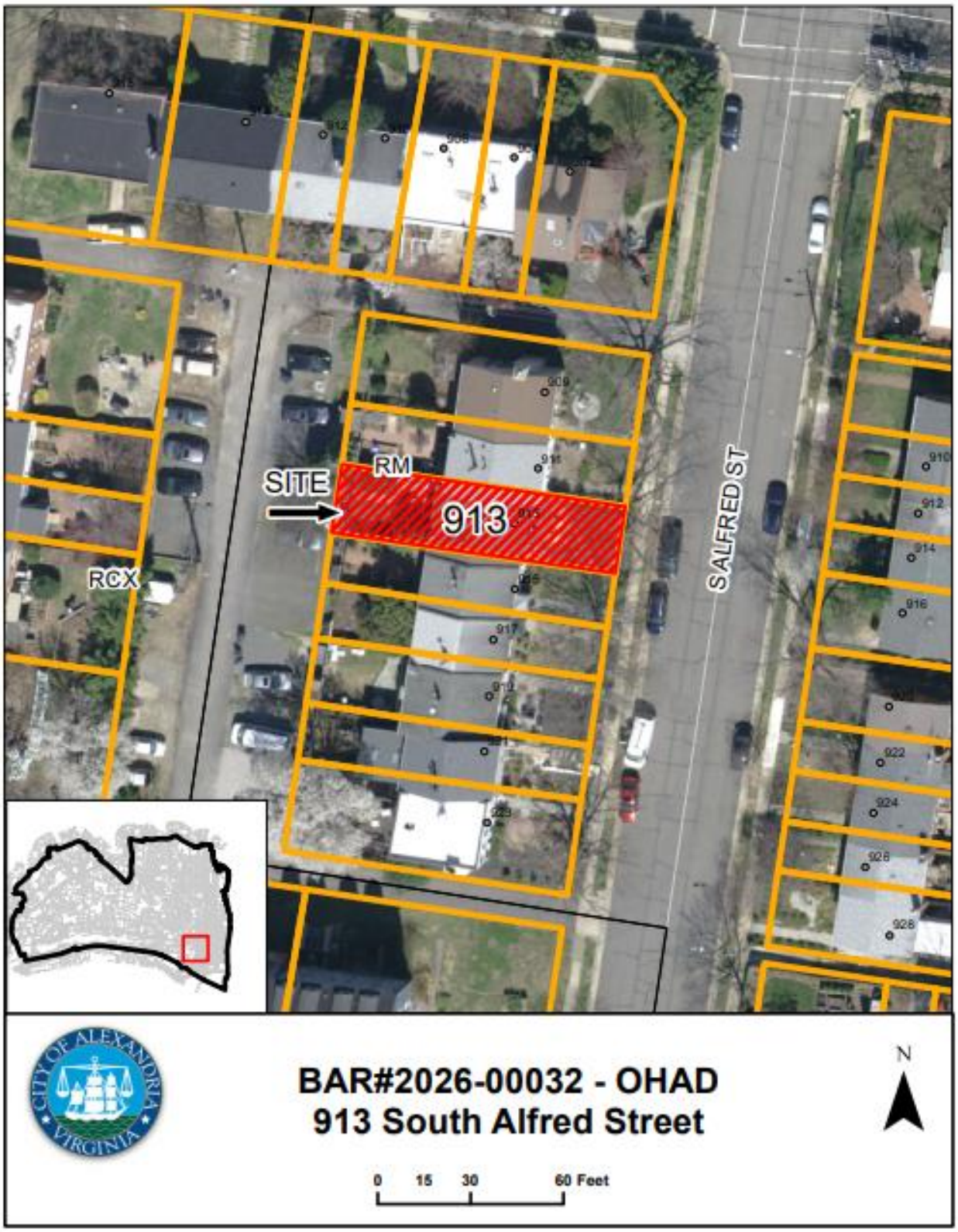
2. COMPLIANCE WITH BAR POLICIES: All materials must comply with the BAR's adopted policies unless otherwise specifically approved.

3. BUILDING PERMITS: Most projects approved by the Board of Architectural Review require the issuance of one or more construction permits by Department of Code Administration (including signs). The applicant is responsible for obtaining all necessary construction permits after receiving Board of Architectural Review approval. Contact Code Administration, 703-746-4200 for further information.

4. ISSUANCE OF CERTIFICATES OF APPROPRIATENESS AND PERMITS TO DEMOLISH: Applicants must obtain a copy of the Certificate of Appropriateness or Permit to Demolish PRIOR to applying for a building permit. Contact BAR Staff, City Hall, 703-746-3833, or preservation@alexandriava.gov for further information.

5. EXPIRATION OF APPROVALS NOTE: In accordance with Sections 10-106(B), 10-206(B) and 10-307 of the Zoning Ordinance, any Board of Architectural Review approval will expire 12 months from the date of issuance if the work is not commenced and diligently and substantially pursued by the end of that 12-month period.

6. HISTORIC PROPERTY TAX CREDITS: Applicants performing extensive, certified rehabilitations of historic properties may separately be eligible for state and/or federal tax credits. Consult with the Virginia Department of Historic Resources (VDHR) prior to initiating any work to determine whether the proposed project may qualify for such credits.


SITE
RM
913
RCX
SALFRED ST
BAR#2026-00032 - OHAD
913 South Alfred Street
N
0 15 30 60 Feet

I. APPLICANT'S PROPOSAL

The applicant requests a Certificate of Appropriateness for alterations to construct a rear deck addition and convert a rear window into a patio door.

Site context
The building is one of eight adjoined townhomes. The front (east) elevation faces South Alfred Street, and the rear (west) elevation faces a public alley. The proposed alterations will only be visible from the alley (Figure 1). Additionally, due to the location of the rear yard fence, only the patio door and the railing of the proposed deck will be visible. The deck posts, floor, and stairs will not be visible from the public right-of-way. The materials of the non-visible deck elements are thus not under the purview of the Board and are not discussed in this report.

Figure 1. View of rear elevation from the public alley.

II. HISTORY

The two-story brick-clad cinderblock rowhouse at 910 South Alfred Street was originally part of an apartment complex constructed in the **1940s**. In 1977, the Board approved the conversion of the four connected apartment buildings (then known as 911, 915, 919 & 932 South Alfred Street) to eight single family rowhomes (now known as 909, 911, 913, 915, 917, 919, 921 and 923 South Alfred Street). Architectural embellishments were added to the fronts of all eight units and the exteriors of several of the units were painted while openings at the rear were altered, allowing each unit to read and function as a separate two story rowhouse. The work was completed in **1978**.

Previous BAR Approvals
July 20, 1977: Alterations to 911, 915, 919, and 923 South Alfred Street

III. ANALYSIS

The applicant requests a Certificate of Appropriateness for alterations to construct a rear deck addition (Figure 2). The new deck will be 4-5 feet above grade and will have black aluminum railings. Additionally, an existing window will be converted into a sliding patio door. The patio door will be a Loewen aluminum-clad wood door. The amount of existing window and wall being removed is less than 25 square feet, so a Permit to Demolish is not required.

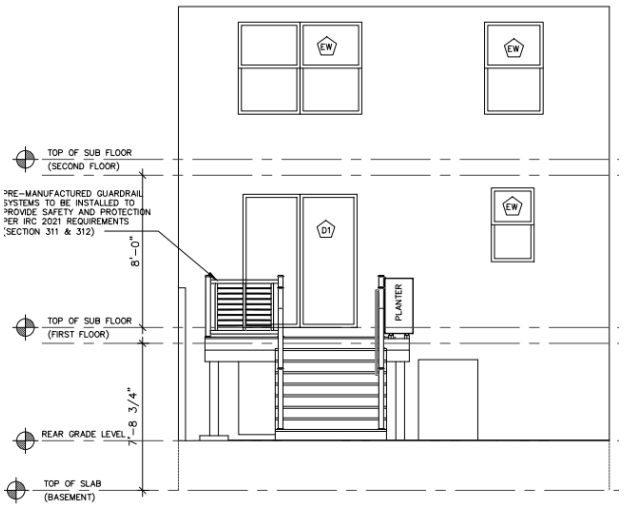


Figure 2. Proposed rear elevation.

Several of the adjoining townhomes on the same block have undergone significant alterations on the rear elevation. For example, in 1981, the BAR approved a rear deck at 923 South Alfred Street. In 2004, the BAR approved a two-story addition at the rear of 921 South Alfred Street. In 2007, the BAR approved a rear metal deck with a spiral staircase at 919 South Alfred Street.

According to the *Design Guidelines*, "…railings should have a design that is appropriate to the architectural style of the structure and be made of materials such as wood, cast iron, precast concrete, or stone". Additionally, "rails should be minimal in appearance".

The proposed deck railing is simple in design and the aluminum material is appropriate for this Later building. The design is also consistent with other rear decks that have been approved by the BAR on this block in the past. Additionally, the view of the rear of the house is partially blocked by the fence, making the deck minimally visible. Lastly, the proposed conversion of a window into a sliding patio door will not detract from any historically significant features on the house, and the proposed door's material is appropriate. In the opinion of staff, the proposed alterations are sympathetic to the architectural style of the building.

Therefore, staff recommends **approval** of the Certificate of Appropriateness for alterations, with the condition that the applicant comply with the comments noted by Alexandria Archaeology.

STAFF
Brendan Harris, Historic Preservation Planner, Planning & Zoning
Tony LaColla, AICP, Land Use + Preservation Division Chief, Planning & Zoning

IV. CITY DEPARTMENT COMMENTS

Legend: C- code requirement R- recommendation S- suggestion F- finding

Zoning
C-1 Proposed new rear deck with comply with Zoning.

C-2 Deck cannot reduce open space below the 35% of the lot area requirement of the RM Zone.

F-1 Deck cannot count towards the open space requirement.

Code Administration
A building permit is required.

Transportation and Environmental Services
R-1 The building permit must be approved and issued prior to the issuance of any permit for demolition, if a separate demolition permit is required. (T&ES)

R-2 Applicant shall be responsible for repairs to the adjacent city right-of-way if damaged during construction activity. (T&ES)

R-3 No permanent structure may be constructed over any existing private and/or public utility easements. It is the responsibility of the applicant to identify any and all existing easements on the plan. (T&ES)

F-1 After review of the information provided, an approved grading plan is not required at this time. Please note that if any changes are made to the plan it is suggested that T&ES be included in the review. (T&ES)

F-2 If the alley adjacent to the parcel is to be used at any point of the construction process, the following will be required:
For a Public Alley - The applicant shall contact T&ES, Construction Permitting & Inspections at (703) 746-4035 to discuss any permits and accommodation requirements that will be required.
For a Private Alley - The applicant must provide proof, in the form of an affidavit at a minimum, from owner of the alley granting permission of use. (T&ES)

C-1 The applicant shall comply with the City of Alexandria's Solid Waste Control, Title 5, Chapter 1, which sets forth the requirements for the recycling of materials (Sec. 5-1-99). (T&ES)

C-2 The applicant shall comply with the City of Alexandria's Noise Control Code, Title 11, Chapter 5, which sets the maximum permissible noise level as measured at the property line. (T&ES)

C-3 Roof, surface and sub-surface drains be connected to the public storm sewer system, if available, by continuous underground pipe. Where storm sewer is not available applicant must provide a design to mitigate impact of stormwater drainage onto adjacent properties and to the satisfaction of the Director of Transportation & Environmental Services. (Sec.5-6-224) (T&ES)

C-4 All secondary utilities serving this site shall be placed underground. (Sec. 5-3-3) (T&ES)

C-5 Any work within the right-of-way requires a separate permit from T&ES. (Sec. 5-2) (T&ES)

C-6 All improvements to the city right-of-way such as curbing, sidewalk, driveway aprons, etc. must be city standard design. (Sec. 5-2-1) (T&ES)

Alexandria Archaeology

F-1 According to historic maps and aerial photographs, the property at 913 S. Alfred St. was vacant land until the mid-twentieth century when the present dwelling was built. The property has the potential to have archaeological deposits that related to the mid-twentieth century development of Alexandria.

C-1 The statements below marked with an asterisk "*" shall appear in the General Notes of all site plans and on all site plan sheets that involve demolition or ground disturbance (including Basement/Foundation Plans, Demolition, Erosion and Sediment Control, Grading, Landscaping, Utilities, and Sheeting and Shoring) so that on-site contractors are aware of the requirements:

a. *The applicant/developer shall call Alexandria Archaeology immediately (703.746.4399) if any buried structural remains (wall foundations, wells, privies, cisterns, etc.) or concentrations of artifacts are discovered during development. Work must cease in the area of the discovery until a City archaeologist comes to the site and records the finds.
b. * The applicant shall not allow any metal detection and/or artifact collection to be conducted on the property, unless authorized by Alexandria Archaeology. Failure to comply shall result in project delays.

V. ATTACHMENTS

1 – Application Materials
- Completed application
- Plans
- Material specifications
- Scaled survey plat if applicable
- Photographs

2 – Supplemental Materials
- Public comment
- HOA approval if applicable
- Easement approval if applicable
- Any other supporting documentation

BAR CASE# _____
(OFFICE USE ONLY)

ADDRESS OF PROJECT: 913 S Alfred St

DISTRICT: ■ **Old & Historic Alexandria** ☐ **Parker – Gray** ☐ **100 Year Old Building**

TAX MAP AND PARCEL: 80.03-04-10 **ZONING:** RM

APPLICATION FOR: *(Please check all that apply)*

■ CERTIFICATE OF APPROPRIATENESS

☐ PERMIT TO MOVE, REMOVE, ENCAPSULATE OR DEMOLISH
(Required if more than 25 square feet of a structure is to be demolished/impacted)

☐ WAIVER OF VISION CLEARANCE REQUIREMENT and/or YARD REQUIREMENTS IN A VISION CLEARANCE AREA (Section 7-802, Alexandria 1992 Zoning Ordinance)

☐ WAIVER OF ROOFTOP HVAC SCREENING REQUIREMENT
(Section 6-403(B)(3), Alexandria 1992 Zoning Ordinance)

Applicant: ■ Property Owner ☐ Business *(Please provide business name & contact person)*

Name: Ronald Southwick

Address: [redacted]

City:

Phone:

Authorized Agent *(if applicable)*: ☐ Attorney ☐ Architect ☐ _____

Name: _____ Phone: _____

E-mail: _____

Legal Property Owner:

Name: Ronald Southwick

Address: [redacted]

City:

Phone:

BAR CASE# _____

(OFFICE USE ONLY)

NATURE OF PROPOSED WORK: *Please check all that apply*

- [x] NEW CONSTRUCTION
- [x] EXTERIOR ALTERATION: *Please check all that apply.*
  - [ ] awning
  - [ ] fence, gate or garden wall
  - [ ] HVAC equipment
  - [ ] shutters
  - [x] doors
  - [ ] windows
  - [ ] siding
  - [ ] shed
  - [ ] lighting
  - [ ] pergola/trellis
  - [ ] painting unpainted masonry
  - [x] other deck, railings, basement stair reconfiguration
- [ ] ADDITION
- [ ] DEMOLITION/ENCAPSULATION
- [ ] SIGNAGE

DESCRIPTION OF PROPOSED WORK: *Please describe the proposed work in detail (Additional pages may be attached).*

Request for Certificate of Appropriateness for rear deck addition with associated alterations at 913 S Alfred St, a 1970s townhouse.

Scope of work includes:

New deck at main level — Approximately 4-5 feet above grade, constructed with TimberTech Advanced PVC decking and Trex

Select powder-coated black aluminum railings with vertical balusters. Wood stairs from deck to rear yard.

Window-to-door conversion — Removal of existing window and wall section below sill (less than 25 sq ft) to install a sliding patio door

with black exterior finish. Door provides access from interior to new deck.

Basement stair reconfiguration — Existing concrete stairs running parallel to rear elevation will be removed and replaced with new

concrete stairs oriented perpendicular to the house, extending straight into the rear yard. This accommodates the new deck.

SUBMITTAL REQUIREMENTS:

☐ Check this box if there is a homeowner's association for this property. If so, you must attach a copy of the letter approving the project.

Items listed below comprise the **minimum supporting materials** for BAR applications. Staff may request additional information during application review. Please refer to the relevant section of the *Design Guidelines* for further information on appropriate treatments.

Applicants must use the checklist below to ensure the application is complete. Include all information and material that are necessary to thoroughly describe the project. Incomplete applications will delay the docketing of the application for review. Pre-application meetings are required for all proposed additions. All applicants are encouraged to meet with staff prior to submission of a completed application.

Demolition/Encapsulation : *All applicants requesting 25 square feet or more of demolition/encapsulation must complete this section. Check N/A if an item in this section does not apply to your project.*

	N/A	
☐	☒	Survey plat showing the extent of the proposed demolition/encapsulation.
☐	☒	Existing elevation drawings clearly showing all elements proposed for demolition/encapsulation.
☐	☒	Clear and labeled photographs of all elevations of the building if the entire structure is proposed to be demolished.
☐	☒	Description of the reason for demolition/encapsulation.
☐	☒	Description of the alternatives to demolition/encapsulation and why such alternatives are not considered feasible.

BAR CASE# _____

(OFFICE USE ONLY)

Additions & New Construction: *Drawings must be to scale and should not exceed 11" x 17" unless approved by staff. Check N/A if an item in this section does not apply to your project.*

N/A

- ☐ ■ Scaled survey plat showing dimensions of lot and location of existing building and other structures on the lot, location of proposed structure or addition, dimensions of existing structure(s), proposed addition or new construction, and all exterior, ground and roof mounted equipment.
- ☐ ■ FAR & Open Space calculation form.
- ☐ ☐ Clear and labeled photographs of the site, surrounding properties and existing structures, if applicable.
- ☐ ☐ Existing elevations must be scaled and include dimensions.
- ☐ ☐ Proposed elevations must be scaled and include dimensions. Include the relationship to adjacent structures in plan and elevations.
- ☐ ☐ Materials and colors to be used must be specified and delineated on the drawings. Actual samples may be provided or required.
- ☐ ☐ Manufacturer's specifications for materials to include, but not limited to: roofing, siding, windows, doors, lighting, fencing, HVAC equipment and walls.
- ☐ ■ For development site plan projects, a model showing mass relationships to adjacent properties and structures.

Signs & Awnings: *One sign per building under one square foot does not require BAR approval unless illuminated. All other signs including window signs require BAR approval. Check N/A if an item in this section does not apply to your project.*

N/A

- ☐ ■ Linear feet of building: Front:_____ Secondary front (if corner lot):_____.
- ☐ ■ Square feet of existing signs to remain:_____.
- ☐ ■ Photograph of building showing existing conditions.
- ☐ ■ Dimensioned drawings of proposed sign identifying materials, color, lettering style and text.
- ☐ ■ Location of sign (show exact location on building including the height above sidewalk).
- ☐ ■ Means of attachment (drawing or manufacturer's cut sheet of bracket if applicable).
- ☐ ■ Description of lighting (if applicable). Include manufacturer's cut sheet for any new lighting fixtures and information detailing how it will be attached to the building's facade.

Alterations: *Check N/A if an item in this section does not apply to your project.*

N/A

- ☐ ☐ Clear and labeled photographs of the site, especially the area being impacted by the alterations, all sides of the building and any pertinent details.
- ☐ ☐ Manufacturer's specifications for materials to include, but not limited to: roofing, siding, windows, doors, lighting, fencing, HVAC equipment and walls.
- ☐ ☐ Drawings accurately representing the changes to the proposed structure, including materials and overall dimensions. Drawings must be to scale.
- ☐ ■ An official survey plat showing the proposed locations of HVAC units, fences, and sheds.
- ☐ ■ Historic elevations or photographs should accompany any request to return a structure to an earlier appearance.

BAR CASE# _____

(OFFICE USE ONLY)

ALL APPLICATIONS: *Please read and check that you have read and understand the following items:*

☒ I understand that after reviewing the proposed alterations, BAR staff will invoice the appropriate filing fee in APEX. The application will not be processed until the fee is paid online.

☒ I understand the notice requirements and will return a copy of the three respective notice forms to BAR staff at least five days prior to the hearing. If I am unsure to whom I should send notice I will contact Planning and Zoning staff for assistance in identifying adjacent parcels.

☒ I, the applicant, or an authorized representative will be present at the public hearing.

☒ I understand that any revisions to this initial application submission (including applications deferred for restudy) must be accompanied by the BAR Supplemental form and revised materials.

The undersigned hereby attests that all of the information herein provided including the site plan, building elevations, prospective drawings of the project, and written descriptive information are true, correct and accurate. The undersigned further understands that, should such information be found incorrect, any action taken by the Board based on such information may be invalidated. The undersigned also hereby grants the City of Alexandria permission to post placard notice as required by Article XI, Division A, Section 11-301(B) of the 1992 Alexandria City Zoning Ordinance, on the property which is the subject of this application. The undersigned also hereby authorizes the City staff and members of the BAR to inspect this site as necessary in the course of research and evaluating the application. The applicant, if other than the property owner, also attests that he/she has obtained permission from the property owner to make this application.

APPLICANT OR AUTHORIZED AGENT:

Signature: Ronald L Southwick

Printed Name: Ronald L Southwick

Date: 2/8/2026

OWNERSHIP AND DISCLOSURE STATEMENT
Use additional sheets if necessary

1. Applicant. State the name, address and percent of ownership of any person or entity owning an interest in the applicant, unless the entity is a corporation or partnership, in which case identify each owner of more than three percent. The term ownership interest shall include any legal or equitable interest held at the time of the application in the real property which is the subject of the application.

Name	Address	Percent of Ownership
1. Ronald L Southwick	[redacted]	50
2. Alison M Southwick		50
3.		

2. Property. State the name, address and percent of ownership of any person or entity owning an interest in the property located at 913 S Alfred Street (address), unless the entity is a corporation or partnership, in which case identify each owner of more than three percent. The term ownership interest shall include any legal or equitable interest held at the time of the application in the real property which is the subject of the application.

Name	Address	Percent of Ownership
1. Ronald L Southwick	[redacted]	50
2. Alison M Southwick		50
3.		

3. Business or Financial Relationships. Each person or entity listed above (1 and 2), with an ownership interest in the applicant or in the subject property is required to disclose **any** business or financial relationship, as defined by Section 11-350 of the Zoning Ordinance, existing at the time of this application, or within the12-month period prior to the submission of this application with any member of the Alexandria City Council, Planning Commission, Board of Zoning Appeals or either Boards of Architectural Review.

Name of person or entity	Relationship as defined by Section 11-350 of the Zoning Ordinance	Member of the Approving Body (i.e. City Council, Planning Commission, etc.)
1. Southwick	None	None
2. Southwick	None	None
3. Southwick	None	None

NOTE: Business or financial relationships of the type described in Sec. 11-350 that arise after the filing of this application and before each public hearing must be disclosed prior to the public hearings.

As the applicant or the applicant's authorized agent, I hereby attest to the best of my ability that the information provided above is true and correct.

2/8/26	Ronald L Southwick	Ronald L Southwick
Date	Printed Name	Signature

CLIENT : RONALD LOUIS SOUTHWICK

PROJECT : 913 S ALFRED ST, ALEXANDRIA VA 22314

STRUCTURAL NOTES

GENERAL STRUCTURAL:

BUILDING CODES:

INTERNATIONAL RESIDENTIAL CODE (IRC)-2021 AND
VIRGINIA RESIDENTIAL CODE (VRC) 2021.

DESIGN LOADS

GRAVITY LOAD

ROOF LIVE LOAD	= 30 PSF
ROOF DEAD LOAD	= 17 PSF
FLOOR DEAD LOAD	= 10 PSF
FLOOR LIVE LOAD	= 40 PSF
ALLOWABLE DEFLECTION FACTOR FOR	
FLOORS & DECKS:	
LIVE LOAD	= L/360
TOTAL LOAD	= L/240
ROOF	
LIVE LOAD	= L/360
TOTAL LOAD	= L/240

WIND LOAD

BASIC WIND SPEED	= 115 MPH
EXPOSURE	= B
ENCLOSURE CLASSIFICATION	= ENCLOSED

SEISMIC LOAD
SEISMIC DESIGN CATEGORY PER THE PROVISION OF R301.2

CONCRETE

ALL CONCRETE FOR FOOTINGS, SHALL ATTAIN A MINIMUM 28-DAY ULTIMATE COMPRESSIVE STRENGTH AS FOLLOWS:
FOOTINGS : 3,000 PSI

ALL CONCRETE EXPOSED TO THE WEATHER AND SUBJECT TO FREEZING AND THAWING DURING CONSTRUCTION SHALL BE AIR ENTRAINED, THE TOTAL AIR CONTENT (PERCENT BY VOLUME OF CONCRETE) SHALL NOT BE LESS THAN 5 PERCENT (5%) OR MORE THAN 7 PERCENT (7%)

ALL FORMWORK AND PLACING OF CONCRETE SHALL BE PLUMB, LEVEL, AND SQUARE. THE STRUCTURAL ENGINEER SHALL REVIEW AND APPROVE ANY PROPOSED FORMWORK DESIGN DIFFERENT FROM INDUSTRY STANDARD PRACTICES.

EXTERIOR SLAB AREAS SHALL BE BROOM FINISHED, UNLESS OTHERWISE SPECIFIED BY THE ARCHITECT. THE STROKES SHALL MAINTAIN THE SAME DIRECTION AT ADJACENT SURFACES. NO RIPPLES, BUMPS, OR ANY OTHER IRREGULARITIES WILL BE ACCEPTABLE

FOUNDATIONS & FOUNDATION WALLS

STRUCTURAL CONCRETE FOOTINGS ARE DESIGNED FOR SPECIFIC ALLOWABLE SOIL BEARING PRESSURES AS INDICATED ON THE DRAWINGS. CONCRETE FOOTINGS SHALL NOT BE POURED UNTIL THE ALLOWABLE SOIL BEARING PRESSURES ARE VERIFIED BY A QUALIFIED GEOTECHNICAL ENGINEER OR BUILDING INSPECTOR.

MINIMUM SOIL BEARING SHALL BE 1,500 PSF; OR AS SPECIFIED IN THE GEOTECHNICAL REPORT WITH A MINIMUM 30" FROST DEPTH OR TO BEARING SOIL WHICHEVER IS GREATER

SPREAD FOOTINGS SHALL EXTEND MINIMUM 1'-0" INTO UNDISTURBED SOIL, OR SHALL BE FOUNDED IN GRANULAR FILL. FOOTINGS SHALL EXTEND MINIMUM 30" FROST DEPTH (OR 30" WHERE ALLOWED /APPLICABLE PER COUNTY /CITY REQUIREMENTS) BELOW THE EXTERIOR FINISH GRADE. FINAL FOOTING ELEVATIONS TO BE VERIFIED BY THE GEOTECHNICAL ENGINEER. ELEVATIONS AT THE TOP OF FOOTINGS SHALL NOT BE HIGHER THAN THOSE INDICATED ON THE CIVIL, ARCHITECTURAL OR STRUCTURAL DRAWINGS.

STRUCTURAL LUMBER

STRUCTURAL LUMBER SHALL BE IN ACCORDANCE WITH THE NATIONAL DESIGN SPECIFICATIONS FOR WOOD CONSTRUCTION (NDS) 2021 EDITION, PUBLISHED BY THE NATIONAL FOREST PRODUCTS ASSOCIATION. ALL STRUCTURAL FRAME MEMBERS SHALL BE ONE OF THE FOLLOWING MINIMUM VALUES. UNLESS OTHERWISE NOTED:

SPF #1/#2

Fb	BENDING	: 875 psi
Ft	TENSION (parallel to grain)	: 450 psi
Fv	SHEAR (parallel to grain)	: 135 psi
Fc⊥	COMPRESSION (perpendicular to grain)	: 425 psi
Fc∥	COMPRESSION (parallel to grain)	: 1,150 psi
E	MODULUS OF ELASTICITY	: 1,400,000 psi
Emin.	MODULUS OF ELASTICITY	: 510,000 psi

SOUTHERN PINE #2 (SIZE CLASSIFICATIONS 2" TO 4" WIDE)

Fb	BENDING	: 1,500 psi
Ft	TENSION (parallel to grain)	: 825 psi
Fv	SHEAR (parallel to grain)	: 175 psi
Fc⊥	COMPRESSION (perpendicular to grain)	: 565 psi
Fc∥	COMPRESSION (parallel to grain)	: 1,650 psi
E	MODULUS OF ELASTICITY	: 1,600,000 psi
Emin.	MODULUS OF ELASTICITY	: 580,000 psi

SOUTHERN PINE #2 (SIZE CLASSIFICATION 5" TO 6" WIDE)

Fb	BENDING	: 1,000 psi
Ft	TENSION (parallel to grain)	: 600 psi
Fv	SHEAR (parallel to grain)	: 175 psi
Fc⊥	COMPRESSION (perpendicular to grain)	: 565 psi
Fc∥	COMPRESSION (parallel to grain)	: 1,400 psi
E	MODULUS OF ELASTICITY	: 1,400,000 psi
Emin.	MODULUS OF ELASTICITY	: 510,000 psi

PARALLAM PSL (BEAM) WET USE ONLY

GRADE = 1.8E

Fb	BENDING	: 2,400 psi
Ft	BENDING	: 1,995 psi
Fv	SHEAR (parallel to grain)	: 190 psi
Fc⊥	COMPRESSION (perpendicular to grain)	: 545 psi
Fc∥	COMPRESSION (parallel to grain)	: 2,500 psi
E	MODULUS OF ELASTICITY	: 1,800,000 psi
Emin.	MODULUS OF ELASTICITY	: 914,880 psi

DRAWING INDEX	
SHEET NO.	DESCRIPTION
A000	STRUCTURAL NOTES & INDEX
A001	EXISTING PLAN, ELEVATION & NEW PLAN, ELEVATION W/ SECTION
S001	DECK FOUNDATION, FRAMING PLAN & SECTION DETAILS

NOTES :
1. DESIGN BASED ON:-
   f'c = FOR ALL EXCEPT @ SLAB = 3000 PSI @ 28 DAYS.
   Fy = 60,000 PSI MIN. (FOR REBAR)
2. REFER ARCH. DWGS. FOR DIMENSIONS.
3. FOOTING SIZE CALCULATED FOR MINIMUM 1500 PSF SOIL BEARING CAPACITY.
4. PROVIDE 30" FROST DEPTH WHERE REQUIRED
5. PROVIDE 3" MINIMUM CLEAR COVER TO REINFORCEMENT IN FOOTING.
6. PROVIDE 1/2"ø ANCHOR BOLTS WITH PLATE WASHERS @ 48" O.C. (MAX.) U.N.O WITH MINIMUM BOLT EMBEDMENT OF 7", WITH A MINIMUM OF TWO ANCHOR BOLTS PER SECTION OF SILL PLATE AND SHALL BE PLACED WITHIN 12" FROM END OF EACH SILL PLATE SECTION PER IRC-2021 SECTION 403.1.6
7. 16" MIN. SPLICING LENGTH TO BE PROVIDED FOR REBAR UNLESS OTHERWISE NOTED
8. FLOOR JOIST LAYOUT SHOWN IN THE FRAMING PLAN IS ONLY FOR GUIDANCE & SHALL NOT BE USED AS SHOP. DWGS. SUPPLIER TO ENSURE THE UNOBSTRUCTED PLUMBING, HVAC OPENING & HEADROOM CLEARANCE.
9. ALL MULTI JACKS/ STUDS TO BE GLUED AND NAILED WITH 2 ROWS OF 12d NAILS @ 12" O.C. STAGGERED (TYPICAL)

FOOTING LEGEND:-

FOOTING SCHEDULE:-	
F24	24"x24"x12" CONCRETE FOOTING W/ (2) #4 REBAR EACH WAY
F48	48"x48"x15" CONCRETE FOOTING W/ (4) #4 REBAR EACH WAY

WV SERVICES, CORP.
"YOUR PARTNER TO SUCCESS ON YOUR PROJECTS"
8609 westwood Center Drive, suite 110 PMB 1066, Tysons Corner VA 22182
W: wvservices.net
E-mail: info@wvservices.net
Ph.: 703-595-4812

DATE: NOVEMBER, 2025

SCALE: AS A NOTE

PROJECT:
913 S ALFRED ST, ALEXANDRIA VA 22314

CLIENT:
RONALD LOUIS SOUTHWICK

SEAL:

DRAWN BY: J. FLORES

CHECKED BY: M. VILLATORO

ISSUE DATE:

No.	Date	Issue / Revision

TITLE:
STRUCTURAL NOTES & INDEX

SHEET:
A000

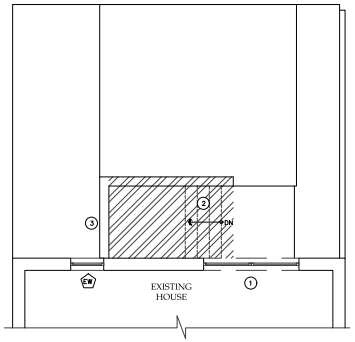
KEYNOTES:-

1 – EXISTING WINDOW TO BECOME DOOR

2 – EXISTING WALL AND STEPS TO DEMO

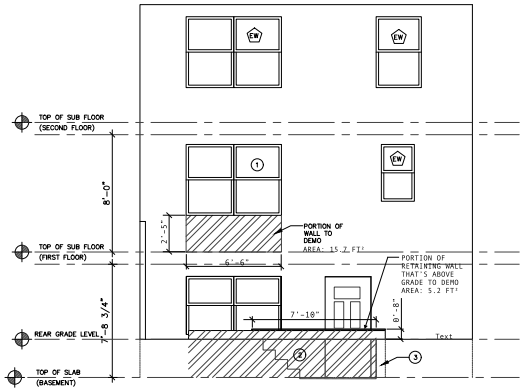
3 – EXISTING WALL TO REMAIN

EW – EXISTING WINDOW TO REMAIN



EXISTING/DEMO PARTIAL FIRST FLOOR PLAN

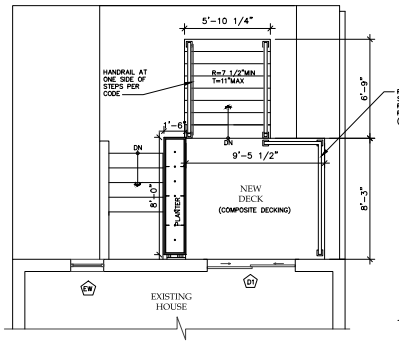
SCALE: 1/4" = 1'-0"



EXISTING/DEMO REAR ELEVATION

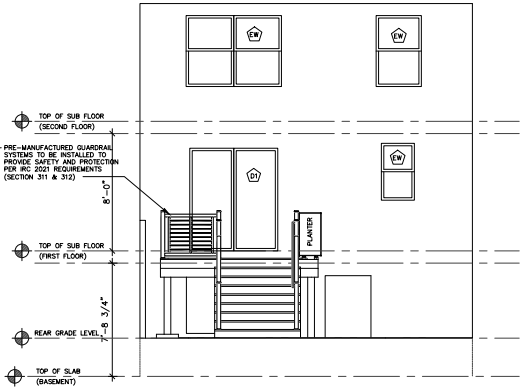
SCALE: 1/4" = 1'-0"

EXTERIOR DOORS SCHEDULE			
DOOR	TYPE	SIZE	MAX. U-FACTOR
D1	DOUBLE SLIDING EXTERIOR DOOR – TEMPERED GLASS	6'-0" x 7'-0"	0.30



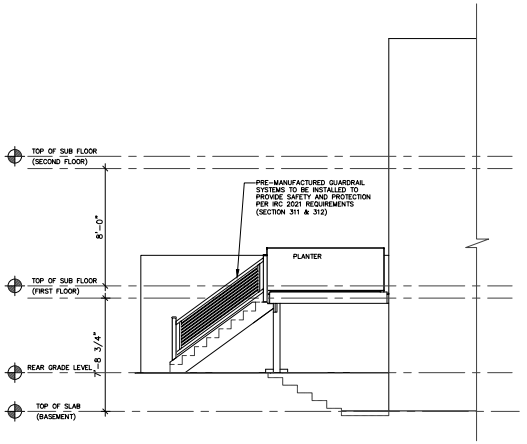
PROPOSED PARTIAL FIRST FLOOR PLAN

SCALE: 1/4" = 1'-0"



PROPOSED REAR ELEVATION

SCALE: 1/4" = 1'-0"



PROPOSED PARTIAL LEFT SIDE ELEVATION

SCALE: 1/4" = 1'-0"

WV SERVICES, CORP.
"YOUR PARTNER TO SUCCESS ON YOUR PROJECTS"
8609 westwood Center Drive, suite 110 PMB 1086, Tyson Corner VA 221882
W: wvservices.net
E-mail: info@wvservices.net
Ph.: 703-995-4812

DATE: NOVEMBER, 2025

SCALE: AS A NOTE

PROJECT:
913 S ALFRED ST, ALEXANDRIA VA 22314

CLIENT:
RONALD LOUIS SOUTHWICK

SEAL:

DRAWN BY: J. FLORES

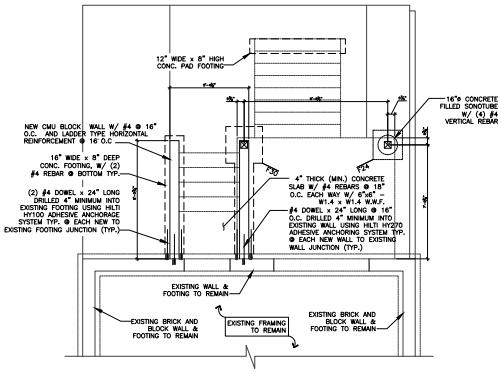
CHECKED BY: W. VILLATORO

ISSUE DATE:

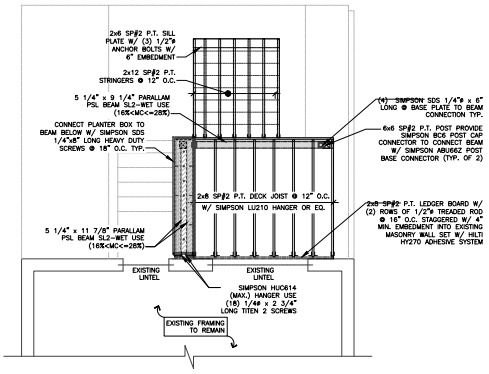
No.	Date	Issue / Revision

TITLE:
EXISTING AND PROPOSED PLANS

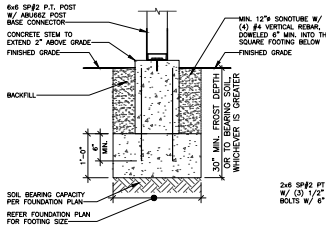
SHEET:
A001



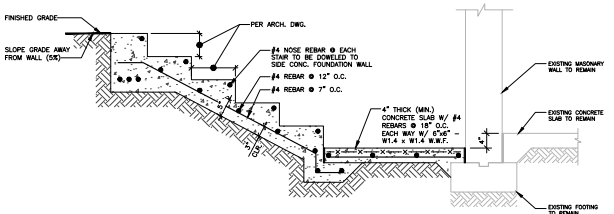
PROPOSED DECK FOUNDATION PLAN
SCALE: 1/4" = 1'-0"



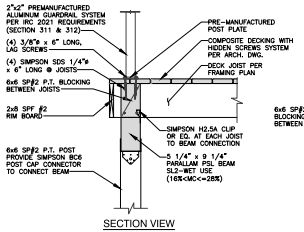
PROPOSED DECK FLOOR FRAMING PLAN
SCALE: 1/4" = 1'-0"



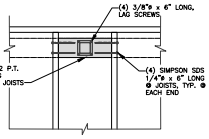
1 DETAIL @ DECK POST FOOTING
SCALE: 3/4" = 1'-0"



3 AREA WAY DETAIL
SCALE: 3/4" = 1'-0"

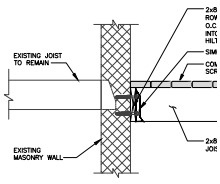


SECTION VIEW

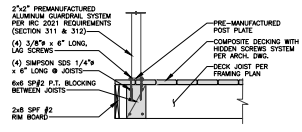


PLAN VIEW

4 BEAM & JOIST CONNECTION DETAIL
SCALE: 3/4" = 1'-0"

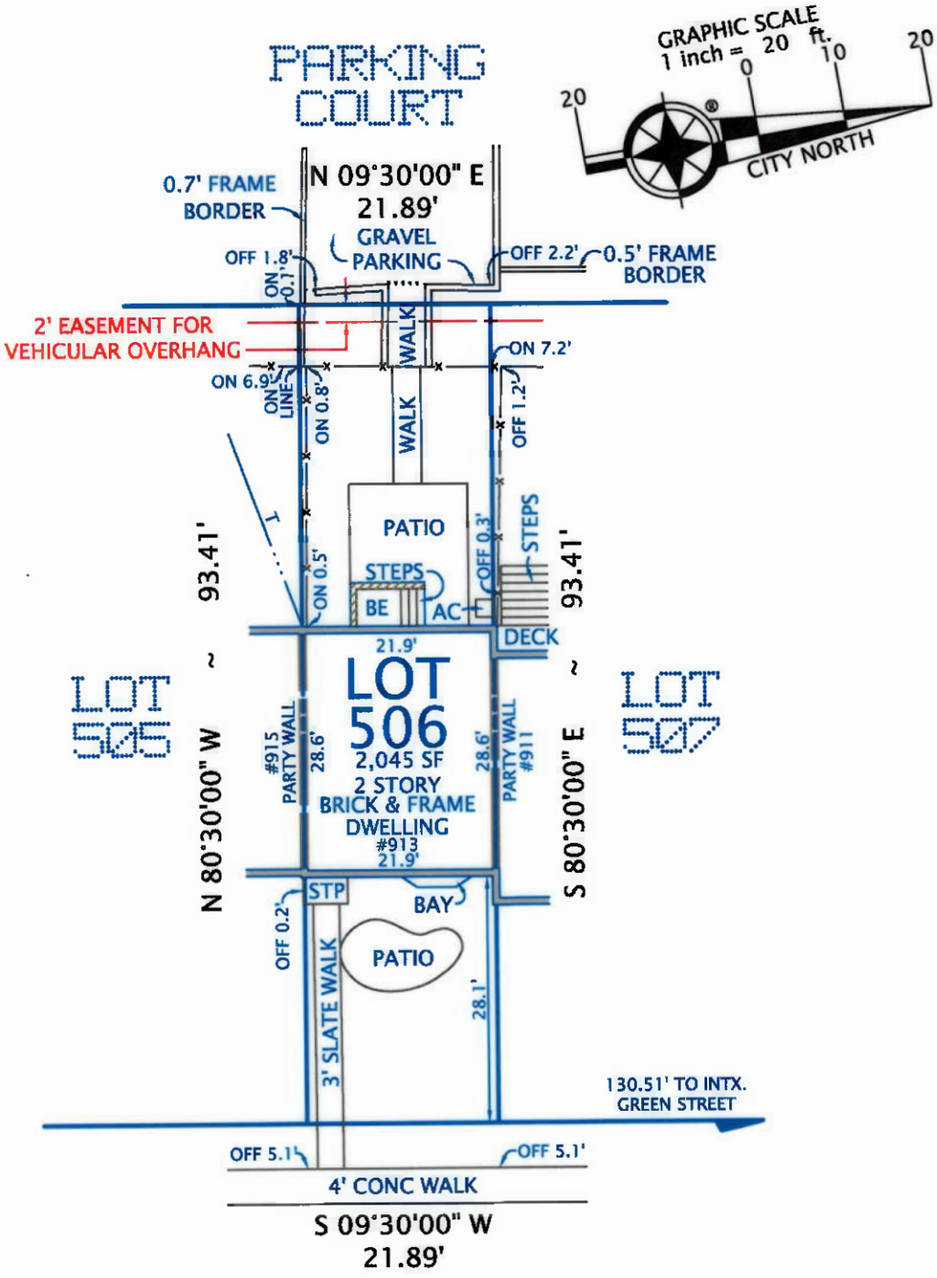


5 DETAIL @ TENSION TIE CO
SCALE: 3/4" = 1'-0"



7 GUARD POST TO JOIST CONNECTION
SCALE: 1" = 1'-0"

NOTES: 1. FENCES ARE FRAME.
2. ELECTRIC SERVICE IS UNDERGROUND.



SOUTH ALFRED STREET

66.08' R/W

PLAT

SHOWING HOUSE LOCATION ON
LOT 506, BLOCK 4
OF A PLAT OF RESUBDIVISION OF
LOTS 4 THRU 8

HUNTING CREEK HOMES

(DEED BOOK 886, PAGE 44)

CITY OF ALEXANDRIA, VIRGINIA

SCALE: 1" = 20' OCTOBER 19, 2018

I HEREBY CERTIFY THAT THE POSITIONS OF ALL THE EXISTING IMPROVEMENTS HAVE BEEN CAREFULLY ESTABLISHED BY A CURRENT FIELD SURVEY AND UNLESS SHOWN THERE ARE NO VISIBLE ENCROACHMENTS AS OF THIS DATE:

COMMONWEALTH OF VIRGINIA
10/19/2018
GEORGE M. O'QUINN
LICENSE NO. 2069
LAND SURVEYOR

George M. O'Quinn

Ordered by:

MONUMENT TITLE COMPANY, INC.
700 S Washington Street
Suite 216
Alexandria, Virginia 22314
Phone: (703) 548-8666
Fax: (703) 548-8667

THIS PLAT IS SUBJECT TO RESTRICTIONS OF RECORD.

A TITLE REPORT WAS NOT FURNISHED.

NO CORNER MARKERS SET.

DOMINION Surveyors Inc.
8808-H PEAR TREE VILLAGE COURT
ALEXANDRIA, VIRGINIA 22309
703-619-6555
FAX: 703-799-6412

CASE NAME: YOUNG ~ SOUTHWICK
CASE NO: 18-462M
#181009020

Technical Guide J

Sliding Patio & French Doors

Product Features

Styles
Operating/Fixed (XO or OX), Operating/Fixed/Operating (XOX), Fixed/Operating/Operating/Fixed (OXXO), Sliding Patio and French Patio options. See your Authorized Loewen Dealer for the full range of configurations.

Standard Features

- Natural Douglas Fir interior (no visible finger joints)
- 4 9/16" (116 mm) and 6 9/16" (166 mm) jamb construction
- LowE insulated tempered glazing
- 2 1/4" (58 mm) thick sliding panels
- Interior/exterior signature handle in linen, bronze with thumb latch
- Extruded aluminum cladding in a variety of standard colors, primed wood or clear Fir exterior
- Extruded aluminum-frame insect screen with high transparency mesh option

Hardware
Multiple hardware type and finish choices are available. See the Hardware in section A for more information.

Glazing
LowE Double, LowE Triple and StormForce™. StormForce™ is not available on all products.

Simulated Divided Lites (SDL)
Ogee Profile – 3/4" (19 mm), 1 1/8" (30 mm), 2" (51 mm)

Putty Profile – 5/8" (16 mm), 7/8" (22 mm), 1 1/8" (30 mm), 2" (51 mm)

Square Profile (interior only) – 3/4" (19 mm), 7/8" (22 mm), 1 1/8" (30 mm), 2" (51 mm)

Casing
Wood: 2" (51 mm) Brickmould, 3 1/2" (89 mm) Flat, 5 1/2" (139 mm) Flat, Adams and Williamsburg.

Metal Clad: 2" (51 mm) Brickmould, 3 1/2" (89 mm) Flat, 2" clad frame extension, Nose & Cove, Adams, Williamsburg and Contemporary.

Metal Clad Color Spectrum
All Palette colors, including anodized finishes. Available in Cyprium Collection.

Patio

LEGEND: ● Standard ○ Optional

HARDWARE STYLES	Patio	French Patio
Multi-point Handle	●	●
Botticelli	●	●
Fontana	●	●
Volo	●	●
Flush Handle	●	●

VARIABLES	Patio	French Patio
Function:		
Use for Egress	●	●
Available with Screen	●	●
Multi-point Hardware	●	●
Durability:		
Clear Douglas Fir Exterior Finish	○	○
Clear Mahogany Exterior Finish	○	○
Primed Exterior Finish	○	○
Performance:		
LowE Double	●	●
LowE Triple	○	○
StormForce™	○	○
Appearance:		
SDL	○	○
Vertical Grain Fir Panel	●	●

Specifications

Standards
Most units have been tested by an independent laboratory for air and water infiltration, structural performance and thermal performance.

Panel & Frame
Manufactured from Coastal Douglas Fir kiln-dried lumber with frame construction designed for 4 9/16" (116 mm) and 6 9/16" (166 mm) jamb. All wood exterior components are factory primed unless specified as clear exterior. Minor scratches or abrasions in the wood surface or primer are not considered defects.

Alternate Species
The entire Loewen product line is also available in optional Mahogany.

Preservative Treated
All wood parts are dipped in approved preservative.

Door Panels
Opening panel is equipped with two sets of adjustable ball bearing tandem rollers. Sash is 2 1/4" (57 mm) thick for extra strength and durability.

Glazing
With countless glazing configurations and LowE coating options, we ensure that you can choose the perfect blend of protection and comfort.

Insulating Glass
Double or triple insulating tempered glass configuration, with 1/2" (13 mm) airspace.

LowE Systems
LowE best describes the benefits of the product that incorporates glazing coatings and Argon gas. LowE systems help reduce heating and cooling costs, providing superior energy efficiency.

Simulated Divided Lites (SDL)
Standard SDL complete with airspace grilles. Grille bars are permanently applied to the interior and exterior.

Sidelites
Sidelites consist of a patio door panel and frame to match patio door. Supplied as a single unit with brickmould or nailing flange, or can be attached to patio door.

Metal Cladding
Heavy duty exterior metal cladding comprised of extruded aluminum is available in a variety of Palette colors, including anodized finishes. Interior of door can be natural wood, unfinished or primed. Metal clad units are supplied ready-to-install complete with integral metal nailing flange.

Sill Track
Extruded metal sill with stainless steel cap over operating track for ease of operation and long-lasting performance. A dual sill block system with double drainage holes keep water out of the interior trough.

Hardware
Anti-lift security feature is standard. Security foot lock is optional. Multi-point locking hardware, complete with brass handle set and escutcheon is available. The locking hardware is also available in several optional finishes.
Stainless steel rollers are optional.

Weatherstrip
The combination of multiple weatherstrips ensure maximum protection against air and water infiltration.

Screen
Wood extruded units are available with extruded aluminum screen frame in bronze or white, with anti-glare fiberglass screen cloth. Screen frame color is matched to exterior color on metal clad units. Screen is equipped with adjustable rollers on top and bottom to assure ease of operation and accurate fitting. Stainless steel components available.

Visit the Loewen Photo Gallery online at www.loewen.com for a large collection of Loewen product and elevation photography.
Numerous custom window configuration opportunities exist – please contact your Authorized Loewen Dealer.
Specifications and technical information are subject to change without notice. Imperial and metric measurements are converted accurately. However, in some cases, industry standards cause a 1 mm variance. (Example: 3/4" is shown as 19 mm for all glass measurements.) Cad Download: www.loewen.com/architect | Installation Instructions: www.loewen.com

Patio Door And Transom
2 Wide Door Sizes

Width

Rough Opening	Frame	Visible Glass	59 13/16 [1519]	71 5/8 [1819]	95 1/4 [2419]
			59 1/16 [1500]	70 7/8 [1800]	94 1/2 [2400]
			24 1/8 [612]	30 [762]	41 13/16 [1062]
			TRANSOM		
16 1/2 [419]	15 3/4 [400]	10 1/2 [266]	WPT2* 1504	WPT2* 1804	WPT2* 2404
24 3/8 [619]	23 5/8 [600]	18 3/8 [466]	WPT2* 1506	WPT2* 1806	WPT2* 2406
			DOOR		
80 1/8 [2035]	79 1/2 [2020]	70 1/2 [1790]	WP2 1520	WP2 1820	WP2 2420
81 7/8 [2080]	81 5/16 [2065]	72 1/4 [1835]	WP2 1568	WP2 1868	WP2 2468
83 1/4 [2115]	82 11/16 [2100]	73 5/8 [1870]	WP2 1521	WP2 1821	WP2 2421
86 9/16 [2199]	86 [2184]	76 15/16 [1954]	WP2 1570	WP2 1870	WP2 2470
95 1/16 [2415]	94 1/2 [2400]	85 7/16 [2170]	WP2 1524	WP2 1824	WP2 2424
98 [2489]	97 3/8 [2474]	88 3/8 [2244]	WP2 1580	WP2 1880	WP2 2480

Height

Product Code

Glass Size = Visible Glass + 15/16" (24 mm)

Standard sizes Shown. Additional sizes may be available. Custom sizes can be ordered.

Note:
- SDL/Grille patterns are dependent on SDL/Grille type and window size. Please verify SDL/Grille patterns before confirming your order.
- O = Fixed, X = Operating
- Transom units.

Patio Door And Transom
4 Wide Door Sizes

Width

Rough Opening	Frame	Visible Glass	117 5/8 [2987]	141 1/4 [3587]	188 7/16 [4787]
			116 7/8 [2968]	140 1/2 [3568]	187 11/16 [4768]
			24 1/8 [612]	30 [762]	41 13/16 [1062]
			TRANSOM		
16 1/2 [419]	15 3/4 [400]	10 1/2 [266]	WPT4* 3004	WPT4* 3604	WPT4* 4804
24 3/8 [619]	23 5/8 [600]	18 3/8 [466]	WPT4* 3006	WPT4* 3606	WPT4* 4806
			DOOR		
80 1/8 [2035]	79 1/2 [2020]	70 1/2 [1790]	WP4 3020	WP4 3620	WP4 4820
81 7/8 [2080]	81 5/16 [2065]	72 1/4 [1835]	WP4 3068	WP4 3668	WP4 4868
83 1/4 [2115]	82 11/16 [2100]	73 5/8 [1870]	WP4 3021	WP4 3621	WP4 4821
86 9/16 [2199]	86 [2184]	76 15/16 [1954]	WP4 3070	WP4 3670	WP4 4870
95 1/16 [2415]	94 1/2 [2400]	85 7/16 [2170]	WP4 3024	WP4 3624	WP4 4824
98 [2489]	97 3/8 [2474]	88 3/8 [2244]	WP4 3080	WP4 3680	WP4 4880

Height

Product Code

Glass Size = Visible Glass + 15/16" (24 mm)

Standard sizes Shown. Additional sizes may be available. Custom sizes can be ordered.

Note:
- SDL/Grille patterns are dependent on SDL/Grille type and window size. Please verify SDL/Grille patterns before confirming your order.
- O = Fixed, X = Operating
- Transom units.

Patio Door And Transom
Fixed Sidelite Door Sizes

Width

Rough Opening	Frame	Visible Glass	32 1/4 [819]	38 1/8 [969]	49 15/16 [1269]
			31 1/2 [800]	37 3/8 [950]	49 3/16 [1250]
			24 1/8 [612]	30 [762]	41 13/16 [1062]
			TRANSOM		
16 1/2 [419]	15 3/4 [400]	10 1/2 [266]	WPT1* 7504	WPT1* 0904	WPT1* 1204
24 3/8 [619]	23 5/8 [600]	18 3/8 [466]	WPT1* 7506	WPT1* 0906	WPT1* 1206
			DOOR		
80 1/8 [2035]	79 1/2 [2020]	70 1/2 [1790]	WP1 7520	WP1 0920	WP1 1220
81 7/8 [2080]	81 5/16 [2065]	72 1/4 [1835]	WP1 7568	WP1 0968	WP1 1268
83 1/4 [2115]	82 11/16 [2100]	73 5/8 [1870]	WP1 7521	WP1 0921	WP1 1221
86 9/16 [2199]	86 [2184]	76 15/16 [1954]	WP1 7570	WP1 0970	WP1 1270
95 1/16 [2415]	94 1/2 [2400]	85 7/16 [2170]	WP1 7524	WP1 0924	WP1 1224
98 [2489]	97 3/8 [2474]	88 3/8 [2244]	WP1 7580	WP1 0980	WP1 1280

Height

Product Code

Glass Size = Visible Glass + 15/16" (24 mm)

Standard sizes Shown. Additional sizes may be available. Custom sizes can be ordered.

Note:
- SDL/Grille patterns are dependent on SDL/Grille type and window size. Please verify SDL/Grille patterns before confirming your order.
- Transom units.

Patio Door And Transom
3 Wide Door Sizes

Width

Rough Opening	Frame	Visible Glass	117 5/8 [2987]	141 1/4 [3587]	160 13/16 [4085]	172 11/16 [4386]
			116 7/8 [2968]	140 1/2 [3568]	160 1/16 [4066]	171 15/16 [4367]
			24 1/8 - 54 3/16 - 24 1/8 [612 - 1376 - 612]	30 - 66 - 30 [762 - 1676 - 762]	41 13/16 - 61 15/16 - 41 13/16 [1062 - 1574 - 1062]	41 13/16 - 73 13/16 - 41 13/16 [1062 - 1875 - 1062]
			TRANSOM			
16 1/2 [419]	15 3/4 [400]	10 1/2 [266]	WPT3* 3004	WPT3* 3604	WPT3* 4104	WPT3* 4404
24 3/8 [619]	23 5/8 [600]	18 3/8 [466]	WPT3* 3006	WPT3* 3606	WPT3* 4106	WPT3* 4406
			DOOR			
80 1/8 [2035]	79 1/2 [2020]	70 1/2 [1790]	WP3 3020	WP3 3620	WP3 4120	WP3 4420
81 7/8 [2080]	81 5/16 [2065]	72 1/4 [1835]	WP3 3068	WP3 3668	WP3 4168	WP3 4468
83 1/4 [2115]	82 11/16 [2100]	73 5/8 [1870]	WP3 3021	WP3 3621	WP3 4121	WP3 4421
86 9/16 [2199]	86 [2184]	76 15/16 [1954]	WP3 3070	WP3 3670	WP3 4170	WP3 4470
95 1/16 [2415]	94 1/2 [2400]	85 7/16 [2170]	WP3 3024	WP3 3624	WP3 4124	WP3 4424
98 [2489]	97 3/8 [2474]	88 3/8" 2244	WP3 3080	WP3 3680	WP3 4180	WP3 4480

Height

Product Code

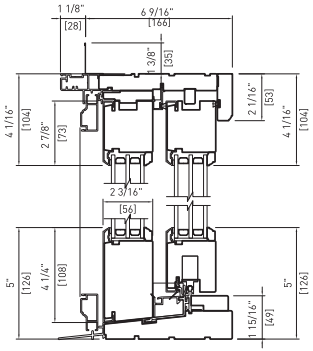
Glass Size = Visible Glass + 15/16" (24 mm)

Standard sizes Shown. Additional sizes may be available. Custom sizes can be ordered.

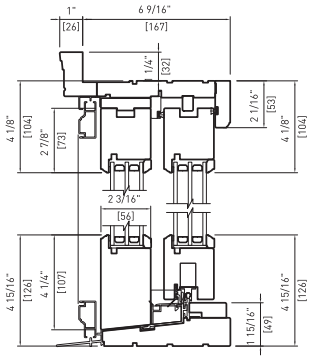
Note:
- SDL/Grille patterns are dependent on SDL/Grille type and window size. Please verify SDL/Grille patterns before confirming your order.
- O = Fixed, X = Operating
- Transom units.

Patio Door Detail

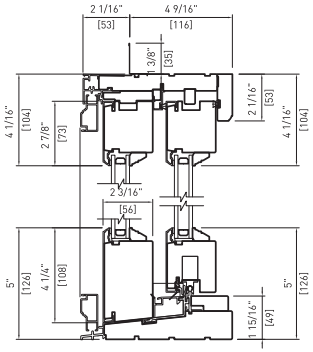
Head & Sill Detail



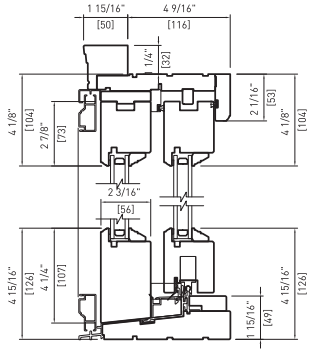
METAL CLAD TRIPLE
6 9/16" (166 mm)



WOOD EXTERIOR TRIPLE
6 9/16" (166 mm)
2" BRICKMOULD



METAL CLAD DOUBLE
4 9/16" (116 mm)

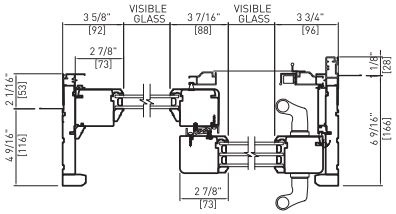


WOOD EXTERIOR DOUBLE
4 9/16" (116 mm)
2" BRICKMOULD

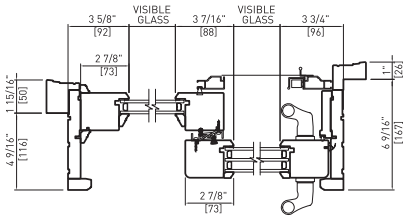
Note: • Other jamb widths available.
• All dimensions to have +/- 1/16" (2mm) tolerance.

Patio Door Detail

Plan View

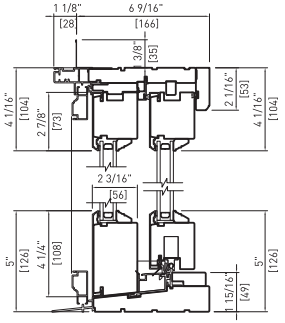


METAL CLAD DOUBLE/TRIPLE
4 9/16" (116 mm)/6 9/16" (166mm)

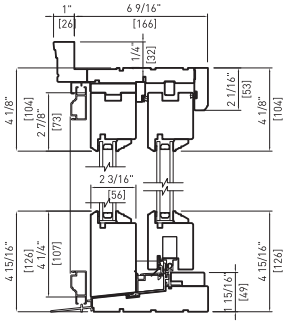


WOOD EXTERIOR DOUBLE/TRIPLE
4 9/16" (116 mm)/6 9/16" (166mm)
2" BRICKMOULD

Head & Sill Detail



METAL CLAD DOUBLE
6 9/16" (166 mm)

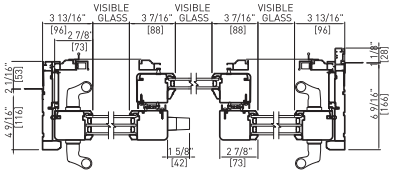


WOOD EXTERIOR DOUBLE
6 9/16" (166 mm)
2" BRICKMOULD

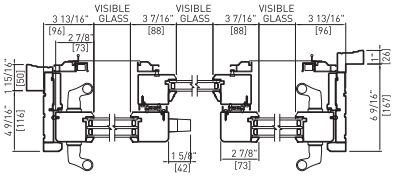
Note: • Other jamb widths available.
• All dimensions to have +/- 1/16" (2mm) tolerance.

Patio Door Detail

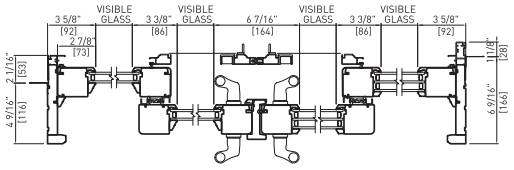
Plan View



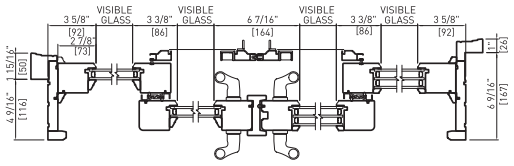
METAL CLAD TRIPLE/DOUBLE/TRIPLE
THREE PANEL
4 9/16" (116 mm)/6 9/16" (166 mm)



WOOD EXTERIOR TRIPLE/DOUBLE/TRIPLE
THREE PANEL
4 9/16" (116 mm)/6 9/16" (166 mm)
2" BRICKMOULD



METAL CLAD DOUBLE/DOUBLE/TRIPLE/TRIPLE
FOUR PANEL
4 9/16" (116 mm)/6 9/16" (166 mm)

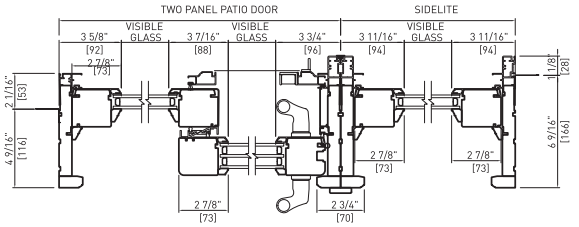


WOOD EXTERIOR DOUBLE/DOUBLE/TRIPLE/TRIPLE
FOUR PANEL
4 9/16" (116 mm)/6 9/16" (166 mm)
2" BRICKMOULD

Note: • Other jamb widths available.
• All dimensions to have +/- 1/16" (2mm) tolerance.

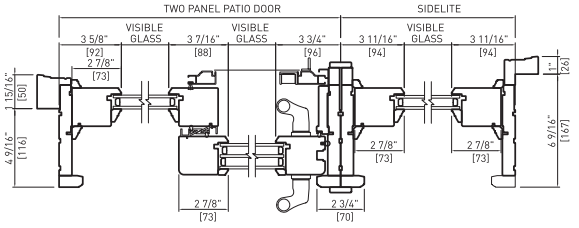
Patio Door Sidelite Detail

Plan View



METAL CLAD WP2 DOUBLE/TRIPLE
4 9/16" (116 mm)

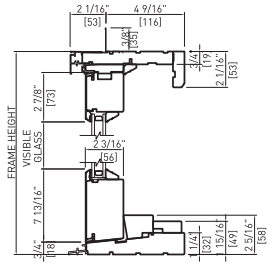
METAL CLAD WP1 (SIDELITE) DOUBLE
6 9/16" (166 mm)



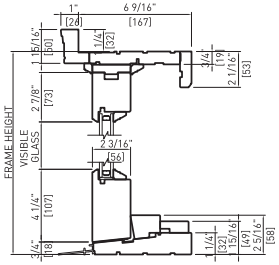
WOOD EXTERIOR WP2 DOUBLE/TRIPLE
4 9/16" (116 mm)

WOOD EXTERIOR WP1 (SIDELITE) DOUBLE
6 9/16" (166 mm)

Head & Sill Detail



METAL CLAD DOUBLE
4 9/16" (116 mm)

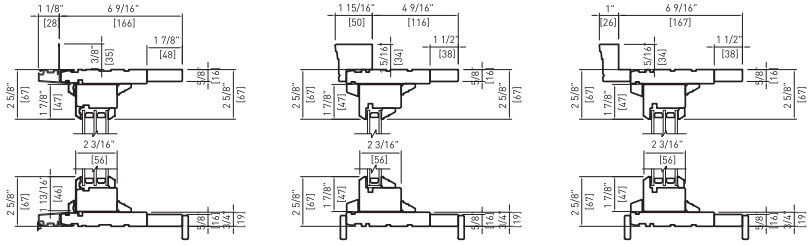


WOOD EXTERIOR DOUBLE
6 9/16" (166 mm)
2" BRICKMOULD

Note: • Other jamb widths available.
• All dimensions to have +/- 1/16" (2mm) tolerance.

Patio Door Transom Detail

Head & Sill Detail

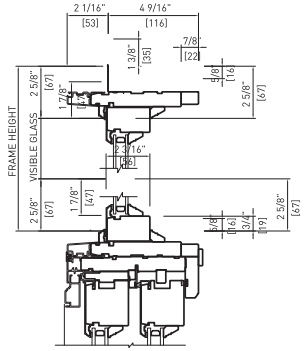


METAL CLAD TRIPLE
6 9/16" (166 mm)

WOOD EXTERIOR DOUBLE
4 9/16" (116 mm)
2" BRICKMOULD

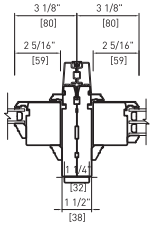
WOOD EXTERIOR TRIPLE
6 9/16" (166 mm)
2" BRICKMOULD

Head & Sill Detail

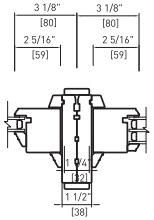


METAL CLAD DOUBLE
4 9/16" (116 mm)

Plan View



METAL CLAD DOUBLE/TRIPLE

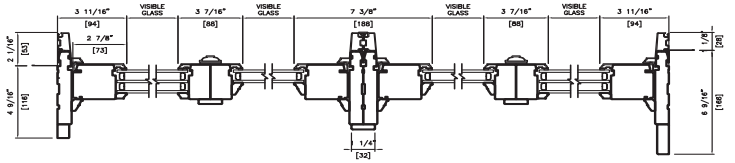


WOOD EXTERIOR DOUBLE/TRIPLE

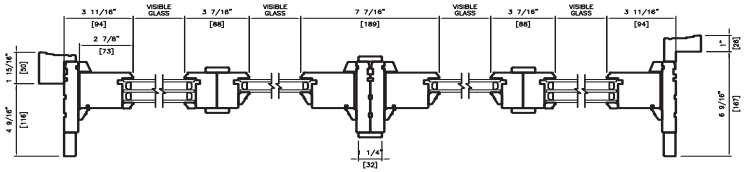
Note: • Other jamb widths available.
• All dimensions to have +/- 1/16" (2mm) tolerance.

Patio Door Transom Detail

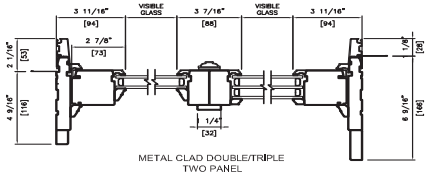
Plan View



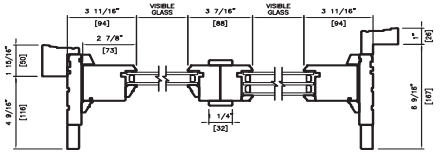
METAL CLAD TRIPLE/DOUBLE/DOUBLE/TRIPLE
FOUR PANEL
4 9/16" (116mm)/6 9/16" (166mm)



WOOD EXTERIOR TRIPLE/DOUBLE/DOUBLE/TRIPLE
FOUR PANEL
4 9/16" (116mm)/6 9/16" (166mm)
2" BRICKMOULD



METAL CLAD DOUBLE/TRIPLE
TWO PANEL
4 9/16" (116mm)/6 9/16" (166mm)



WOOD EXTERIOR DOUBLE/TRIPLE
TWO PANEL
4 9/16" (116mm)/6 9/16" (166mm)
2" BRICKMOULD

Note: • Other jamb widths available.
• All dimensions to have +/- 1/16" (2mm) tolerance.

French Patio Door And Transom
2 Wide Door Sizes

Width

Rough Opening	Frame	Visible Glass	59 13/16 [1519]	71 5/8 [1819]	95 1/4 [2419]
			59 1/16 [1500]	70 7/8 [1800]	94 1/2 [2400]
			21 13/16 [538]	27 1/16 [688]	38 7/8 [988]
			TRANSOM		
16 1/2 [419]	15 3/4 [400]	10 1/2 [266]	FPT2* 1504	FPT2* 1804	FPT2* 2404
24 3/8 [619]	23 5/8 [600]	18 3/8 [466]	FPT2* 1506	FPT2* 1806	FPT2* 2406
			DOOR		
80 1/8 [2035]	79 1/2 [2020]	64 [1626]	FP2 1520	FP2 1820	FP2 2420
81 7/8 [2080]	81 5/16 [2065]	65 13/16 [1671]	FP2 1568	FP2 1868	FP2 2468
83 1/4 [2115]	82 11/16 [2100]	67 3/16 [1706]	FP2 1521	FP2 1821	FP2 2421
86 9/16 [2199]	86 [2184]	70 1/2 [1790]	FP2 1570	FP2 1870	FP2 2470
95 1/16 [2415]	94 1/2 [2400]	79 [2006]	FP2 1524	FP2 1824	FP2 2424
98 [2489]	97 3/8 [2474]	81 7/8 [2080]	FP2 1580	FP2 1880	FP2 2480
106 7/8 [2715]	106 5/16 [2700]	90 13/16 [2306]	FP2 1527	FP2 1827	FP2 2427

Height

Product Code

Glass Size = Visible Glass + 15/16" (24 mm)

Standard sizes Shown. Additional sizes may be available. Custom sizes can be ordered.

Note:
- SDL/Grille patterns are dependent on SDL/Grille type and window size. Please verify SDL/Grille patterns before confirming your order.
- O = Fixed, X = Operating
- Transom units.

French Patio Door And Transom
4 Wide Door Sizes

Width

Rough Opening	Frame	Visible Glass	117 5/8 [2987]	141 1/4 [3587]	188 7/16 [4787]
			116 7/8 [2968]	140 1/2 [3568]	187 11/16 [4768]
			21 13/16 [538]	27 1/16 [688]	38 7/8 [988]
			TRANSOM		
16 1/2 [419]	15 3/4 [400]	10 1/2 [266]	FPT4* 3004	FPT4* 3604	FPT4* 4804
24 3/8 [619]	23 5/8 [600]	18 3/8 [466]	FPT4* 3006	FPT4* 3606	FPT4* 4806
			DOOR		
80 1/8 [2035]	79 1/2 [2020]	64 [1626]	FP4 3020	FP4 3620	FP4 4820
81 7/8 [2080]	81 5/16 [2065]	65 13/16 [1671]	FP4 3068	FP4 3668	FP4 4868
83 1/4 [2115]	82 11/16 [2100]	67 3/16 [1706]	FP4 3021	FP4 3621	FP4 4821
86 9/16 [2199]	86 [2184]	70 1/2 [1790]	FP4 3070	FP4 3670	FP4 4870
95 1/16 [2415]	94 1/2 [2400]	79 [2006]	FP4 3024	FP4 3624	FP4 4824
98 [2489]	97 3/8 [2474]	81 7/8 [2080]	FP4 3080	FP4 3680	FP4 4880
106 7/8 [2715]	106 5/16 [2700]	90 13/16 [2306]	FP4 3027	FP4 3627	FP4 4827

Height

Product Code

Glass Size = Visible Glass + 15/16" (24 mm)

Standard sizes Shown. Additional sizes may be available. Custom sizes can be ordered.

Note:
- SDL/Grille patterns are dependent on SDL/Grille type and window size. Please verify SDL/Grille patterns before confirming your order.
- O = Fixed, X = Operating
- Transom units.

French Patio Door And Transom
Fixed Sidelite Door Sizes

Width

Rough Opening	Frame	Visible Glass	32 1/4 [819]	38 1/8 [969]	49 15/16 [1269]
			31 1/2 [800]	37 3/8 [950]	49 3/16 [1250]
			21 13/16 [538]	27 1/16 [688]	38 7/8 [988]
			TRANSOM		
16 1/2 [419]	15 3/4 [400]	10 1/2 [266]	FPT1* 7504	FPT1* 0904	FPT1* 1204
24 3/8 [619]	23 5/8 [600]	18 3/8 [466]	FPT1* 7506	FPT1* 0906	FPT1* 1206
			DOOR		
80 1/8 [2035]	79 1/2 [2020]	64 [1626]	FP1 7520	FP1 0920	FP1 1220
81 7/8 [2080]	81 5/16 [2065]	65 13/16 [1671]	FP1 7568	FP1 0968	FP1 1268
83 1/4 [2115]	82 11/16 [2100]	67 3/16 [1706]	FP1 7521	FP1 0921	FP1 1221
86 9/16 [2199]	86 [2184]	70 1/2 [1790]	FP1 7570	FP1 0970	FP1 1270
95 1/16 [2415]	94 1/2 [2400]	79 [2006]	FP1 7524	FP1 0924	FP1 1224
98 [2489]	97 3/8 [2474]	81 7/8 [2080]	FP1 7580	FP1 0980	FP1 1280
106 7/8 [2715]	106 5/16 [2700]	90 13/16 [2306]	FP1 7527	FP1 0927	FP1 1227

Height

Product Code

Glass Size = Visible Glass + 15/16" (24 mm)

Standard sizes Shown. Additional sizes may be available. Custom sizes can be ordered.

Note:
- SDL/Grille patterns are dependent on SDL/Grille type and window size. Please verify SDL/Grille patterns before confirming your order.
- Transom units.

French Patio Door And Transom
3 Wide Door Sizes

Width

Rough Opening	Frame	Visible Glass	117 5/8 [2987]	141 1/4 [3587]	160 13/16 [4085]	172 11/16 [4386]
			116 7/8 [2968]	140 1/2 [3568]	160 1/16 [4066]	171 15/16 [4367]
			21 3/16 - 51 1/4 - 21 3/16 [538 - 1302 - 538]	27 1/16 - 63 1/16 - 27 1/16 [688 - 1602 - 688]	38 7/8 - 59 1/16 - 38 7/8 [988 - 1500 - 988]	38 7/8 - 70 7/8 - 38 7/8 [988 - 1801 - 988]
			TRANSOM			
16 1/2 [419]	15 3/4 [400]	10 1/2 [266]	FPT3* 3004	FPT3* 3604	FPT3* 4104	FPT3* 4404
24 3/8 [619]	23 5/8 [600]	18 3/8 [466]	FPT3* 3006	FPT3* 3606	FPT3* 4106	FPT3* 4406
			DOOR			
80 1/8 [2035]	79 1/2 [2020]	64 [1626]	FP3 3020	FP3 3620	FP3 4120	FP3 4420
81 7/8 [2080]	81 5/16 [2065]	65 13/1 [1671]	FP3 3068	FP3 3668	FP3 4168	FP3 4468
83 1/4 [2115]	82 11/16 [2100]	67 3/16 [1706]	FP3 3021	FP3 3621	FP3 4121	FP3 4421
86 9/16 [2199]	86 [2184]	70 1/2 [1790]	FP3 3070	FP3 3670	FP3 4170	FP3 4470
95 1/16 [2415]	94 1/2 [2400]	79 [2006]	FP3 3024	FP3 3624	FP3 4124	FP3 4424
98 [2489]	97 3/8 [2474]	81 7/8 [2080]	FP3 3080	FP3 3680	FP3 4180	FP3 4480

Height

Product Code

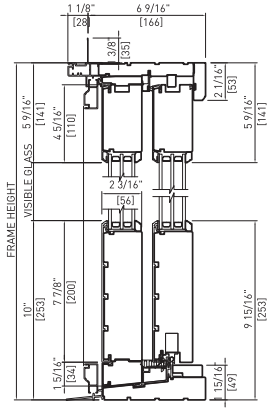
Glass Size = Visible Glass + 15/16" (24 mm)

Standard sizes Shown. Additional sizes may be available. Custom sizes can be ordered.

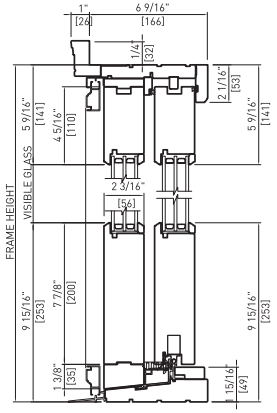
Note:
- SDL/Grille patterns are dependent on SDL/Grille type and window size. Please verify SDL/Grille patterns before confirming your order.
- O = Fixed, X = Operating
- Transom units.

French Patio Door Detail

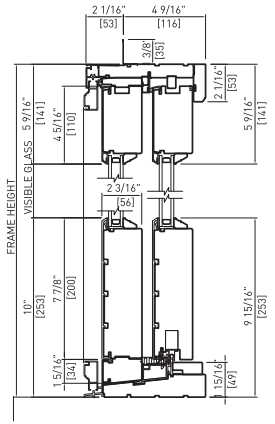
Head & Sill Detail



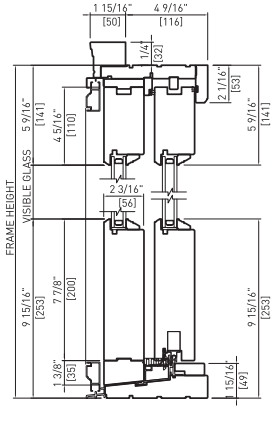
METAL CLAD TRIPLE
6 9/16" (166 mm)



WOOD EXTERIOR TRIPLE
6 9/16" (166 mm)
2" BRICKMOULD



METAL CLAD TRIPLE
4 9/16" (116 mm)

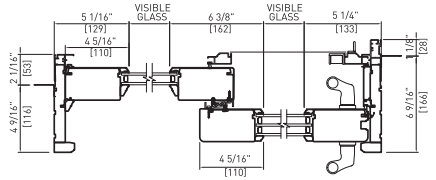


WOOD EXTERIOR TRIPLE
4 9/16" (116 mm)
2" BRICKMOULD

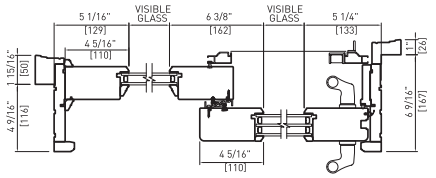
Note: • Other jamb widths available.
• All dimensions to have +/- 1/16" (2mm) tolerance.

French Patio Door Detail

Plan View

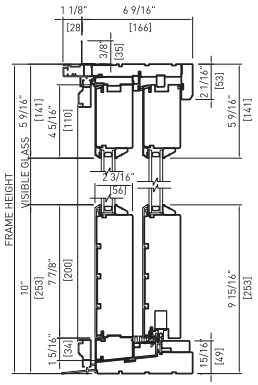


METAL CLAD DOUBLE/TRIPLE
4 9/16" (116 mm)/6 9/16" (166 mm)

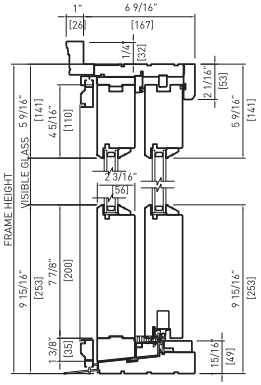


WOOD EXTERIOR DOUBLE/TRIPLE
4 9/16" (116 mm)/6 9/16" (166 mm)
2" BRICKMOULD

Head & Sill Detail



METAL CLAD DOUBLE
6 9/16" (166 mm)

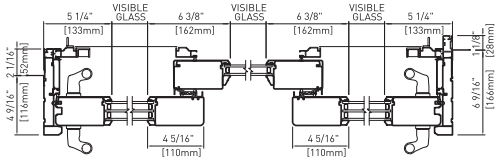


WOOD EXTERIOR DOUBLE
6 9/16" (166 mm)
2" BRICKMOULD

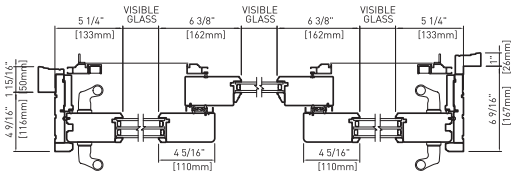
Note: • Other jamb widths available.
• All dimensions to have +/- 1/16" (2mm) tolerance.

French Patio Door Detail

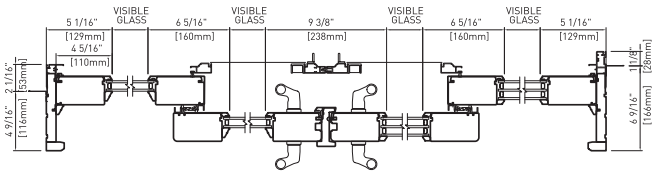
Plan View



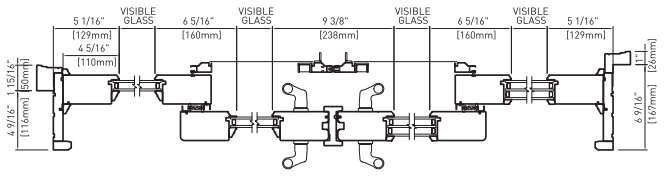
METAL CLAD TRIPLE/DOUBLE/TRIPLE
THREE PANEL
4 9/16" (116 mm)/6 9/16" (166 mm)



WOOD EXTERIOR TRIPLE/DOUBLE/TRIPLE
THREE PANEL
4 9/16" (116 mm)/6 9/16" (166 mm)
2" BRICKMOULD



METAL CLAD DOUBLE/DOUBLE/TRIPLE/TRIPLE
FOUR PANEL
4 9/16" (116 mm)/6 9/16" (166 mm)

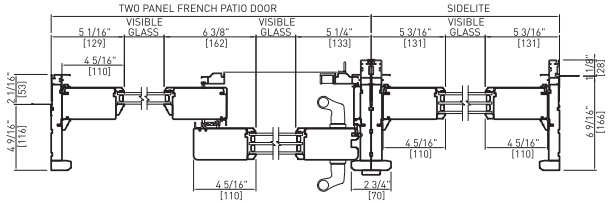


WOOD EXTERIOR DOUBLE/DOUBLE/TRIPLE/TRIPLE
FOUR PANEL
4 9/16" (116 mm)/6 9/16" (166 mm)
2" BRICKMOULD

Note: • Other jamb widths available.
• All dimensions to have +/- 1/16" (2mm) tolerance.

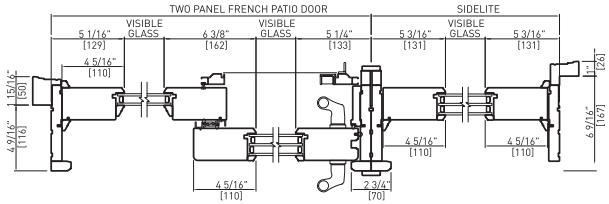
French Patio Door Sidelite Detail

Plan View



METAL CLAD FP2 DOUBLE/TRIPLE
4 9/16" (116 mm)

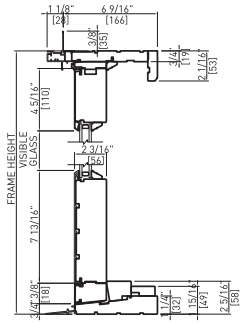
METAL CLAD FP1 (SIDELITE) TRIPLE
6 9/16" (166 mm)



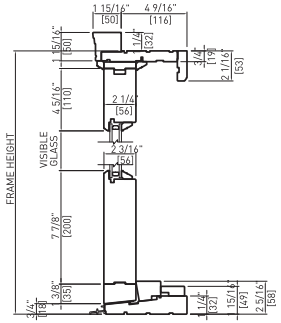
WOOD EXTERIOR FP2 DOUBLE/TRIPLE
4 9/16" (116 mm)

WOOD EXTERIOR FP1 (SIDELITE) TRIPLE
6 9/16" (166 mm)

Head & Sill Detail



METAL CLAD DOUBLE
6 9/16" (166 mm)

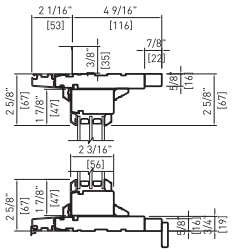


WOOD EXTERIOR DOUBLE
6 9/16" (166 mm)
2" BRICKMOULD

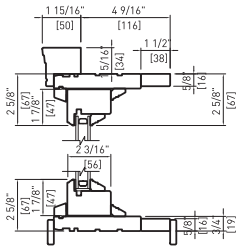
Note: • Other jamb widths available.
• All dimensions to have +/- 1/16" (2mm) tolerance.

French Patio Door Transom Detail

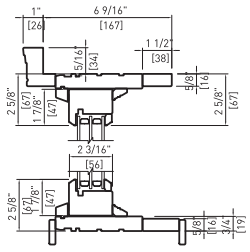
Head & Sill Detail



METAL CLAD TRIPLE
4 9/16" (116 mm)

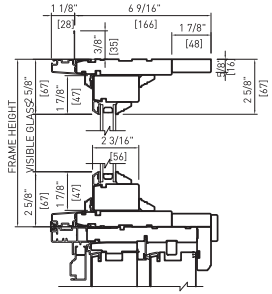


WOOD EXTERIOR DOUBLE
4 9/16" (116 mm)
2" BRICKMOULD



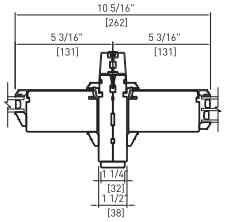
WOOD EXTERIOR TRIPLE
6 9/16" (166 mm)
2" BRICKMOULD

Head & Sill Detail

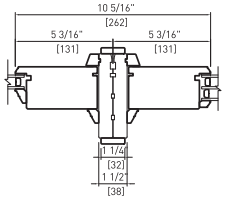


METAL CLAD DOUBLE
6 9/16" (166 mm)

Plan View



METAL CLAD
DOUBLE/TRIPLE

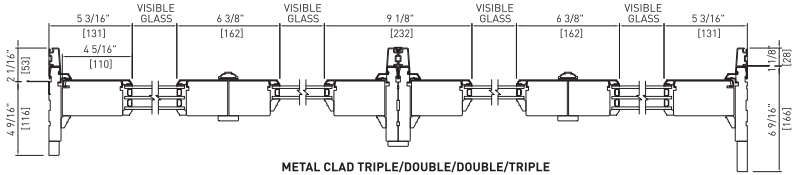


WOOD EXTERIOR DOUBLE/TRIPLE

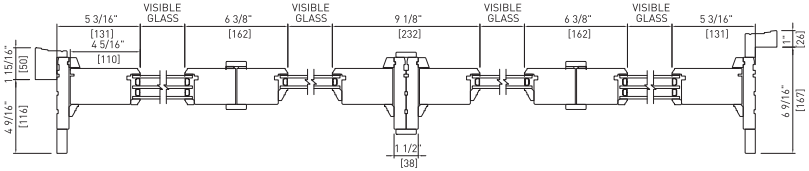
Note: • Other jamb widths available.
• All dimensions to have +/- 1/16" (2mm) tolerance.

French Patio Door Transom Detail

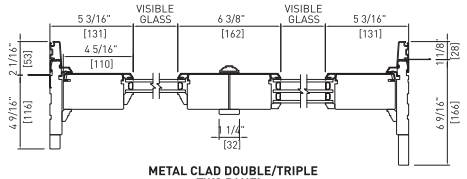
Plan View



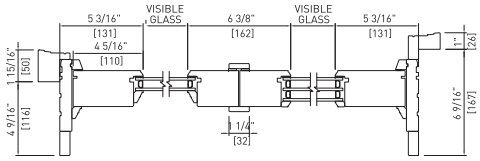
METAL CLAD TRIPLE/DOUBLE/DOUBLE/TRIPLE
FOUR PANEL
4 9/16" (116 mm)/6 9/16" (166 mm)



WOOD EXTERIOR TRIPLE/DOUBLE/DOUBLE/TRIPLE
FOUR PANEL
4 9/16" (116 mm)/6 9/16" (166 mm)
2" BRICKMOULD



METAL CLAD DOUBLE/TRIPLE
TWO PANEL
4 9/16" (116 mm)/6 9/16" (166 mm)



WOOD EXTERIOR DOUBLE/TRIPLE
TWO PANEL
4 9/16" (116 mm)/6 9/16" (166 mm)
2" BRICKMOULD

Note: • Other jamb widths available.
• All dimensions to have +/- 1/16" (2mm) tolerance.


913

Listing and Technical Evaluation Report™

A Duly Authenticated Report from an Approved Agency

Report No: 2405-104

Issue Date: October 10, 2025

Revision Date: October 10, 2025

Subject to Renewal: January 1, 2027

Trex® Company, Inc. – Trex Select™ Aluminum Railing

Trade Secret Report Holder:

Trex® Company, Inc.

Phone: 800-289-8739 Website: www.trex.com

CSI Designations:

DIVISION: 05 00 00 - METALS

Section: 05 52 00 - Metal Railings

Section: 05 73 00 - Decorative Metal Railings

1 Innovative Product Evaluated[1]

1.1 Trex Select Aluminum Rail

2 Product Description and Materials

2.1 The innovative product evaluated in this report is shown in **Figure 1** and is described in **Table 1**. Approved Posts for use with this innovative product are provided in **Table 2**.

Figure 1. Trex Select Aluminum Rail

Table 1. Approved Railing System

Product	Description	Maximum Allowable Dimensions	Railing Assembly Infill	Railing Assembly Total Dimensions		Application
				Heights	Lengths	
Trex Select Aluminum Rail	Aluminum Railing Assembly	42" Height and 96" Span Between Posts	0.75" x 0.75" x 0.040" Aluminum Balusters	36" and 42"	72" and 96"	Horizontal
SI: 1 in = 25.4 mm						

Table 2. Approved Posts for use with the Trex Select Aluminum Rail System

Product	Approved Railing System	Maximum Railing Height	Post Cross-Section Dimensions	Base Plate Dimensions	Maximum Allowable Post Spacing
Trex® Select™ Aluminum Post	Trex Select Aluminum Rail	42" Height	2.5" x 2.5" x 0.085"	4.0" x 4.0" x 0.35"	96" Between Posts
Trex® Signature® Post		42" Height	2.5" x 2.5" x 0.13"	4.0" x 4.0" x 0.50"	96" Between Posts
SI: 1 in = 25.4 mm					

2.1.1 Trex Select Aluminum Rail is a guardrail system consisting of extruded aluminum posts, rails, square balusters, and brackets.

2.1.2 Trex Select Aluminum Post and the pre-assembled rail/baluster panel are available in charcoal black and burnished bronze powder-coat.

2.1.2.1 Trex Select Aluminum Post is attached to the Aluminum Base Plate with stainless fasteners.

2.1.2.2 Trex Select Aluminum Posts are available in two options: with and without pre-installed brackets.

2.1.2.3 Vertical balusters of the pre-assembled 6' panel are approximately 3.70" apart, and vertical balusters for the pre-assembled 8' panel are approximately 3.75" apart.

2.1.3 Trex Select Aluminum Rail is available in two heights, 36" and 42", and two length configurations:

2.1.3.1 6' configuration (**Figure 2**)

2.1.3.2 8' configuration (**Figure 3**)

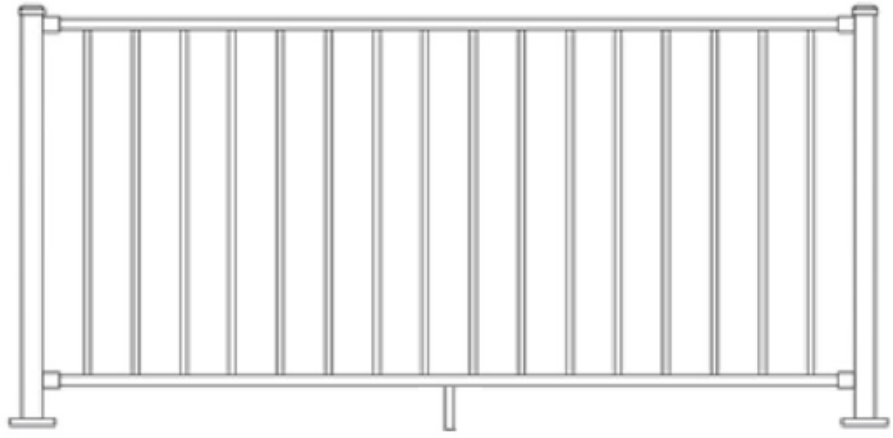


Figure 2. 6' Trex Select Aluminum Rail

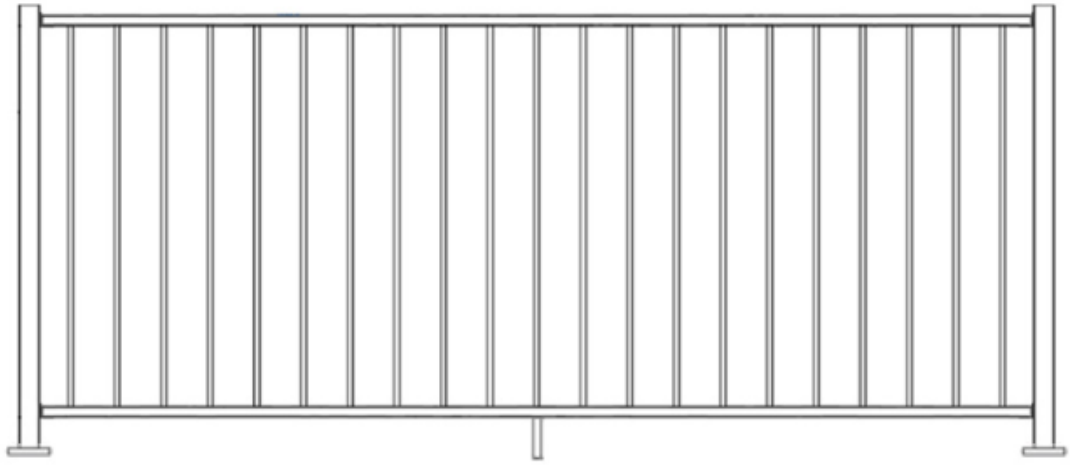


Figure 3. 8' Trex Select Aluminum Rail

2.1.4 Trex Select Aluminum Rail component profiles are shown in **Figure 4** and **Figure 5**, and are described in **Table 3**.

2.1.4.1 *Note:* The dimensions shown are in inches and the drawings are not to scale.

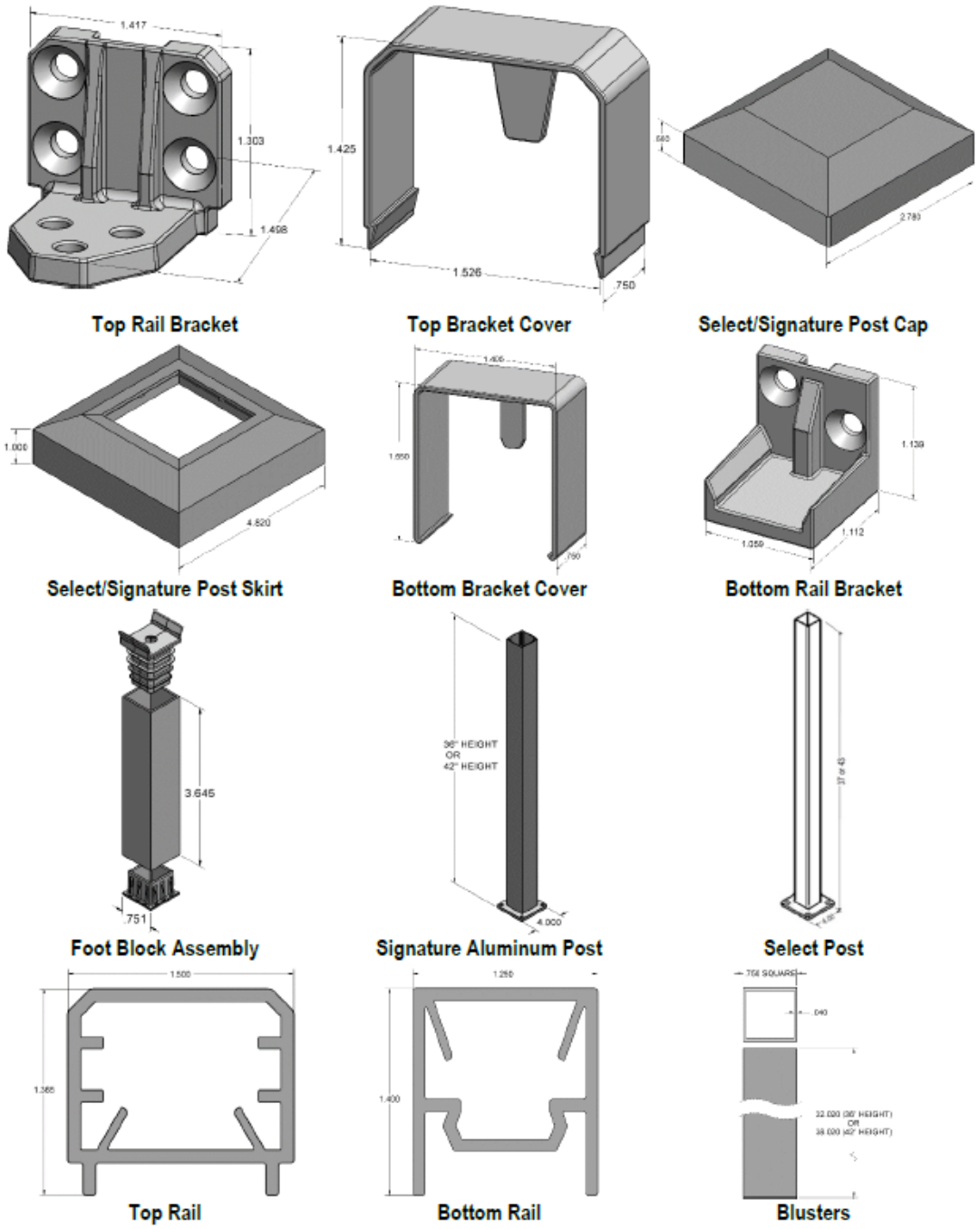


Figure 4. Trex Select Aluminum Railing Components

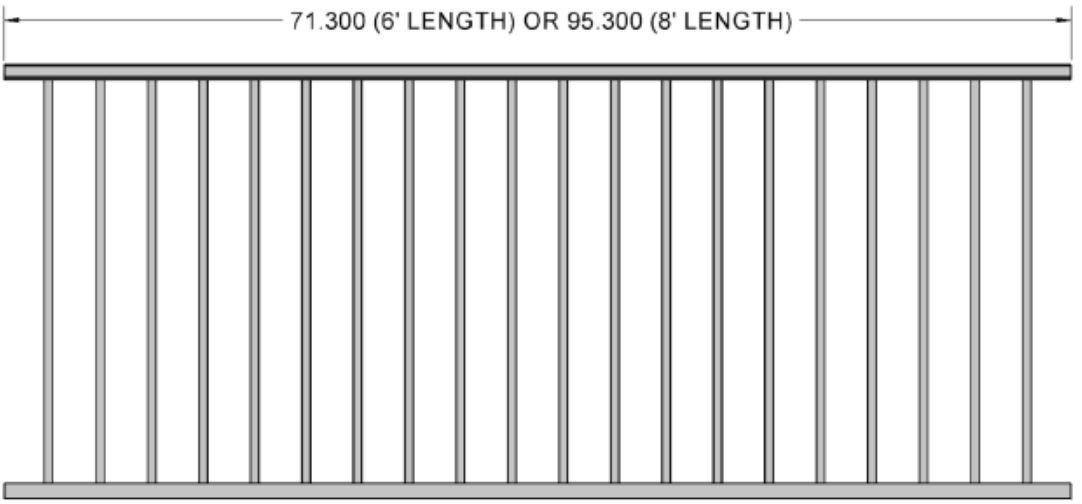


Figure 5. Trex Select Aluminum Railing Horizontal Panel

2.1.5 Details regarding the components of Trex Select Aluminum Rail are provided in **Table 3**.

Table 3. Component Details of Trex Select Aluminum Rail

Component	Overall Dimensions	Individual Component	Component Dimensions	Description	Material
Horizontal Panel					
Horizontal Panel	33" x 0.75" x 71" 33" x 0.75" x 95" 39" x 0.75" x 71" 39" x 0.75" x 95"	Top Rail	1.5" X 1.4" x 0.085"	Pre-assembled Top and Bottom Rails with Balusters	Powder Coated Aluminum 6063-T6
		Bottom Rail	1.3" X 1.4" x 0.085"	71" Panel has 15 Square Balusters Positioned 3.70" Maximum Clearance Between Them	
		Square Baluster	0.75" x 0.75" x 0.040" (32" or 38" Length)	95" Panel has 20 Square Balusters Positioned 3.75" Maximum Clearance Between Them	
Trex Select Aluminum Post with Base Plate					
Trex Select Aluminum 2.5" Post with Base Plate	4" x 4" x 37 1/2" 4" x 4" x 43 1/2"	2.5" Post (Corner); 2.5" Post (Line); 2.5" Post (End); 2.5" Post (No Brackets)	2.5" x 2.5" x 0.085"	Post is Pre-assembled to Base Plate with Four 0.370" Diameter Holes with Centers Located Approximately 1" from Each Edge and Approximately 2" Apart On-Center	Powder Coated Aluminum 6063-T6
		2.5" Stainless Screw	2.5" x 5/16" #12	Four Screws are Used to Assemble Post to Base Plate	300 Series Stainless Steel

Table 3. Component Details of Trex Select Aluminum Rail

Component	Overall Dimensions	Individual Component	Component Dimensions	Description	Material
Trex Select Aluminum 2.5" Post with Base Plate Continued	4" x 4" x 37½" 4" x 4" x 43½" Continued	4" Base Plate	4.0" x 4.0" x 0.35"	Aluminum Base Plate has Four 0.406" Diameter Mounting Bolt Holes Located Approximately 0.75" from Edge and 3.25" Apart On-Center	Powder Coated Aluminum 6061-T5
		2.5" Post Cap	2.8" x 2.8" x 0.5"	Cap is Installed on Top of Post	Powder Coated Zamak 3 or Aluminum A380/A383/ADC12
		2.5" Post Skirt	4.8" x 4.8" x 1"	Skirt is Installed Around Base Plate	Powder Coated Zamak 3
Trex Signature Post with Base Plate					
Trex Signature Post with Base Plate	4" x 4" x 37" 4" x 4" x 43"	2.5" Post	2.5" x 2.5" x 0.13"	Post is Welded to Base Plate	Powder Coated Aluminum 6063-T6
		4" Base Plate	4.0" x 4.0" x 0.5"	Aluminum Base Plate Has Four 0.406" Diameter Holes with Centers Located Approximately 0.375" from Each Edge and Approximately 3.25" Apart On-Center	
		2.5" Post Cap	2.8" x 2.8" x 0.5"	Cap is Installed on Top of Post	Powder Coated Zamak 3 or Aluminum A380/A383/ADC12
		2.5" Post Skirt	4.8" x 4.8" x 1"	Skirt is Installed Around Base Plate	Powder Coated Zamak 3

2.2 As needed, review material properties for design in **Section 6** and the regulatory evaluation in **Section 8**.

3 Definitions[2]

3.1 New Materials[3] are defined as building materials, equipment, appliances, systems, or methods of construction, not provided for by prescriptive and/or legislatively adopted regulations, known as alternative materials.[4] The design strength and permissible stresses shall be established by tests[5] and/or engineering analysis.[6]

3.2 Duly authenticated reports[7] and research reports[8] are test reports and related engineering evaluations that are written by an approved agency[9] and/or an approved source.[10]

3.2.1 These reports utilize intellectual property and/or trade secrets to create public domain material properties for commercial end-use.

3.2.1.1 This report protects confidential Intellectual Property and trade secretes under the regulation, 18.US.Code.90, also known as Defend Trade Secrets Act of 2016 (DTSA).[11]

3.3 An approved agency is *"approved"* when it is ANAB ISO/IEC 17065 accredited. DrJ Engineering, LLC (DrJ) is accredited and listed in the ANAB directory.

3.4 An approved source is *"approved"* when a professional engineer (i.e., Registered Design Professional, hereinafter RDP) is properly licensed to transact engineering commerce. The regulatory authority governing approved sources is the state legislature via its professional engineering regulations.[12]

3.5 Testing and/or inspections conducted for this duly authenticated report were performed by an ISO/IEC 17025 accredited testing laboratory, an ISO/IEC 17020 accredited inspection body, and/or a licensed RDP.

3.5.1 The Center for Building Innovation (CBI) is ANAB[13] ISO/IEC 17025 and ISO/IEC 17020 accredited.

3.6 The regulatory authority shall enforce[14] the specific provisions of each legislatively adopted regulation. If there is a non-conformance, the specific regulatory section and language of the non-conformance shall be provided in writing[15] stating the nonconformance and the path to its cure.

3.7 The regulatory authority shall accept duly authenticated reports from an approved agency and/or an approved source with respect to the quality and manner of use of new materials or assemblies as provided for in regulations regarding the use of alternative materials, designs, or methods of construction.[16]

3.8 ANAB is an International Accreditation Forum (IAF) Multilateral Recognition Arrangement (MLA) signatory. Therefore, recognition of certificates and validation statements issued by conformity assessment bodies accredited by all other signatories of the IAF MLA with the appropriate scope shall be approved.[17] Thus, all ANAB ISO/IEC 17065 duly authenticated reports are approval equivalent,[18] and can be used in any country that is an MLA signatory found at this link: https://iaf.nu/en/recognised-abs/

3.9 Approval equity is a fundamental commercial and legal principle.[19]

4 Applicable Local, State, and Federal Approvals; Standards; Regulations[20]

4.1 *Local, State, and Federal*

4.1.1 Approved in all local jurisdictions pursuant to ISO/IEC 17065 duly authenticated report use, which includes, but is not limited to, the following featured local jurisdictions: Austin, Baltimore, Broward County, Chicago, Clark County, Dade County, Dallas, Detroit, Denver, DuPage County, Fort Worth, Houston, Kansas City, King County, Knoxville, Las Vegas, Los Angeles City, Los Angeles County, Miami, Nashville, New York City, Omaha, Philadelphia, Phoenix, Portland, San Antonio, San Diego, San Jose, San Francisco, Seattle, Sioux Falls, South Holland, Texas Department of Insurance, and Wichita.[21]

4.1.2 Approved in all state jurisdictions pursuant to ISO/IEC 17065 duly authenticated report use, which includes, but is not limited to, the following featured states: California, Florida, New Jersey, Oregon, New York, Texas, Washington, and Wisconsin.[22]

4.1.3 Approved by the Code of Federal Regulations Manufactured Home Construction: Pursuant to Title 24, Subtitle B, Chapter XX, Part 3282.14[23] and Part 3280[24] pursuant to the use of ISO/IEC 17065 duly authenticated reports.

4.1.4 Approved means complying with the requirements of local, state, or federal legislation.

4.2 *Standards*

4.2.1 *ASCE/SEI 7: Minimum Design Loads and Associated Criteria for Buildings and Other Structures*

4.2.2 *ASTM E935: Standard Test Methods for Performance of Permanent Metal Railing Systems and Rails for Buildings*

4.2.3 *ASTM E985: Standard Specification for Permanent Metal Railing Systems and Rails for Buildings*

4.3 *Regulations*

4.3.1 *IBC – 18, 21, 24: International Building Code®*

4.3.2 *IRC – 18, 21, 24: International Residential Code®*

5 Listed[25]

5.1 Equipment, materials, products, or services included in a List published by a nationally recognized testing laboratory (i.e., CBI), an approved agency (i.e., CBI and DrJ), and/or and approved source (i.e., DrJ), or other organization(s) concerned with product evaluation (i.e., DrJ), that maintains periodic inspection (i.e., CBI) of production of listed equipment or materials, and whose listing states either that the equipment or material meets nationally recognized standards or has been tested and found suitable for use in a specified manner.

6 Tabulated Properties Generated from Nationally Recognized Standards

6.1 *General*

6.1.1 Trex Select Aluminum Railings are used as guardrail systems where a guardrail height of 36" or 42" is required in accordance with IBC Section 1015.2, IBC Section 1015.3 and IRC Section R321.1.[26]

6.2 *Structural Performance*

6.2.1 Trex Select Aluminum Rails were tested and met the structural requirements of IRC Section R301.5 and IBC Section 1607.9 for use in one and two-family dwellings. See **Table 4** for assessment of Trex Select Aluminum Rail.

6.2.1.1 Design loads are applicable when using Trex Select Aluminum Post or Trex Signature Post with the Trex Select Aluminum Rail system.

Table 4. Allowable Design Loads for Trex Select Aluminum Railing

Load Type	Regulatory Source	Design Service-Level Live Load
Infill Load	IBC Section 1607.9.1.2 IRC Table R301.5	50 lb[1]
Concentrate Load (Vertical and Horizontal)	IBC Section 1607.9.1.1 IRC Table R301.5	200 lb

SI: 1 lbf = 4.448 N, 1 plf = 14.6 N/m

1. Load applied over square area of one (1) square foot in accordance with ASTM E935 Section 10.4 and ASCE 7 Section 4.5.1.2, as specified in IBC Section 1607.9.1.2 and IRC Table R301.5.

6.3 Where the application falls outside of the performance evaluation, conditions of use, and/or installation requirements set forth herein, alternative techniques shall be permitted in accordance with accepted engineering practice and experience. This includes but is not limited to the following areas of engineering: mechanics or materials, structural, building science, and fire science.

7 Certified Performance[27]

7.1 All construction methods shall conform to accepted engineering practices to ensure durable, livable, and safe construction and shall demonstrate acceptable workmanship reflecting journeyman quality of work of the various trades.[28]

7.2 The strength and rigidity of the component parts and/or the integrated structure shall be determined by engineering analysis or by suitable load tests to simulate the actual loads and conditions of application that occur.[29]

8 Regulatory Evaluation and Accepted Engineering Practice

8.1 Trex Select Aluminum Rail complies with the following legislatively adopted regulations and/or accepted engineering practice for the following reasons:

8.1.1 Structural performance in accordance with IRC Section R301.5 and IBC Section 1607.9 for one and two-family dwellings.

8.2 Any building code, regulation and/or accepted engineering evaluations (i.e., research reports, duly authenticated reports, etc.) that are conducted for this Listing were performed by DrJ, which is an ISO/IEC 17065 accredited certification body and a professional engineering company operated by RDP or approved sources. DrJ is qualified[30] to practice product and regulatory compliance services within its scope of accreditation and engineering expertise,[31] respectively.

8.3 Engineering evaluations are conducted with DrJ's ANAB accredited ICS code scope of expertise, which is also its areas of professional engineering competence.

8.4 Any regulation specific issues not addressed in this section are outside the scope of this report.

9 Installation

9.1 Installation shall comply with the approved construction documents, the manufacturer installation instructions, this report, and the applicable building code.

9.2 In the event of a conflict between the manufacturer installation instructions and this report, contact the manufacturer for counsel on the proper installation method.

9.3 *Installation Procedure*

9.3.1 Trex Select Aluminum Post or Trex Signature Post shall be installed in accordance with **Figure 6** or **Figure 7**.

9.3.1.1 Material shall be nominal 2 x 8 Pressure-Preservative-Treated (PPT) Southern Pine (SP) with a specific gravity of 0.55.

9.3.1.2 Fasteners shall be #10 x 3" PPT compatible wood screws (36 screws per post location).

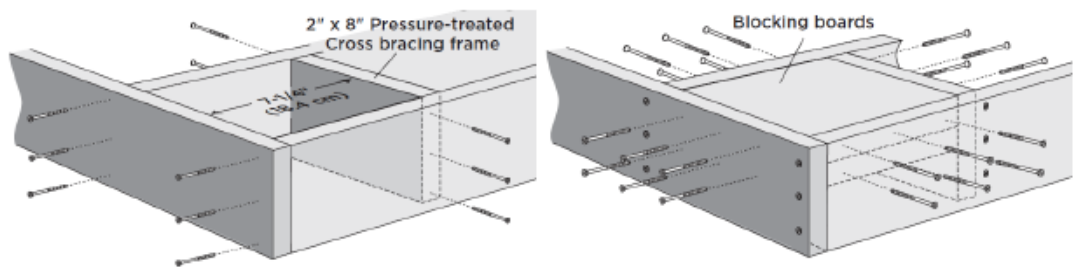


Figure 6. Corner Post Blocking – Post - Wood Installation

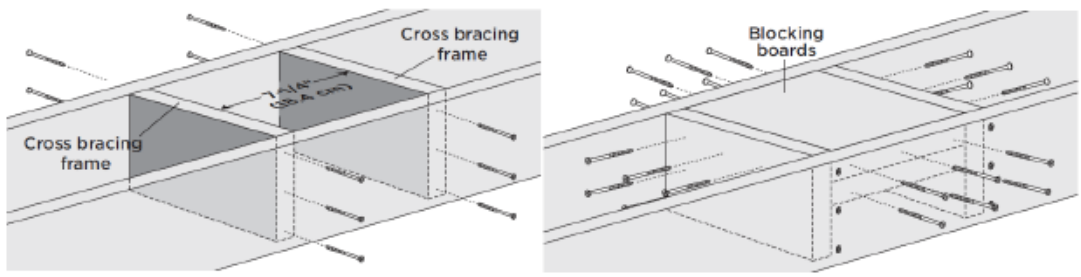


Figure 7. In-line Post Blocking – Post - Wood Installation

9.3.2 The fastening schedule per component is presented in **Table 5**.

Table 5. Fastening Schedule for Trex Select Aluminum Rail

Component	Connection	Details
Trex Select Aluminum Post	Post to Substructure	Wood: Four 3/8" x 6" Stainless Steel Hex-Cap Bolts, Stainless Steel Washers, with Stainless Steel T-nuts Installed into Bottom of Wood Blocking
Trex Signature Post	Upper Bracket	Attach to Aluminum Posts Using Four #10 x 3/4" Self-Drilling Screws
Rail Brackets	Lower Bracket	Attach to Aluminum Posts Using Two #10 x 3/4" Self-Drilling Screws
Horizontal Panel	Panel to Brackets	Attach to Upper Brackets Using Three #10 x 3/4" Self-Drilling Screws
Foot Block Insert	Foot Block Insert to Panel	Attach to Center of Bottom Rail Using One #10 x 3/4" Screw

9.3.3 *Installation of Trex Select Aluminum Rail Horizontal Panel:*

9.3.3.1 Installation of Trex Select Aluminum Rail shall be installed on Trex Signature®, Transcend Lineage®, Transcend®, Select®, Enhance® decking, or decking with equivalent properties.

9.3.3.2 Trex Select Aluminum Rails shall be installed according to Trex Installation Instructions (See manufacturing installation guide for details).

10 Substantiating Data

10.1 Testing has been performed under the supervision of a professional engineer and/or under the requirements of ISO/IEC 17025 as follows:

10.1.1 ASTM E935 test reports from approved sources:

10.1.1.1 Infill load tests

10.1.1.2 Concentrated load tests

10.2 Information contained herein may include the result of testing and/or data analysis by sources that are approved agencies, approved sources, and/or an RDP. Accuracy of external test data and resulting analysis is relied upon.

10.3 Where applicable, testing and/or engineering analysis are based upon provisions that have been codified into law through state or local adoption of regulations and standards. The developers of these regulations and standards are responsible for the reliability of published content. DrJ's engineering practice may use a regulation-adopted provision as the control. A regulation-endorsed control versus a simulation of the conditions of application to occur establishes a new material as being equivalent to the regulatory provision in terms of quality, strength, effectiveness, fire resistance, durability, and safety.

10.4 The accuracy of the provisions provided herein may be reliant upon the published properties of raw materials, which are defined by the grade mark, grade stamp, mill certificate, or duly authenticated reports from approved agencies and/or approved sources provided by the supplier. These are presumed to be minimum properties and relied upon to be accurate. The reliability of DrJ's engineering practice, as contained in this duly authenticated report, may be dependent upon published design properties by others.

10.5 *Testing and Engineering Analysis*

10.5.1 The strength, rigidity, and/or general performance of component parts and/or the integrated structure are determined by suitable tests that simulate the actual conditions of application that occur and/or by accepted engineering practice and experience.[32]

10.6 Where additional condition of use and/or regulatory compliance information is required, please search for Trex Select Aluminum Rail on the DrJ Certification website.

11 Findings

11.1 As outlined in **Section 6**, Trex Select Aluminum Rail has performance characteristics that were tested and/or meet applicable regulations. In addition, they are suitable for use pursuant to its specified purpose.

11.2 When used and installed in accordance with this duly authenticated report and the manufacturer installation instructions, Trex Select Aluminum Rail system, supported by either the Trex Select Aluminum Post or the Trex Signature Post, shall be approved for the following applications:

11.2.1 Use as a guardrail system where a guardrail height of 36" or 42" is allowed in accordance with IBC Section 1015.2, IBC Section 1015.3, and IRC Section R321.[33]

11.3 Unless exempt by state statute, when the Trex Select Aluminum Rail system is to be used as a structural and/or building envelope component in the design of a specific building, the design shall be performed by an RDP.

11.4 Any application specific issues not addressed herein can be engineered by an RDP. Assistance with engineering is available from Trex Company, Inc.

11.5 IBC Section 104.2.3[34] (IRC Section R104.2.2[35] and IFC Section 104.2.3[36] are similar) in pertinent part state:

> **104.2.3 Alternative Materials, Design and Methods of Construction and Equipment.** The provisions of this code are not intended to prevent the installation of any material or to prohibit any design or method of construction not specifically prescribed by this code, provided that any such alternative is not specifically prohibited by this code and has been approved.

11.6 **Approved:**[37] Building regulations require that the building official shall accept duly authenticated reports.[38]

11.6.1 An approved agency is *"approved"* when it is ANAB ISO/IEC 17065 accredited.

11.6.2 An approved source is *"approved"* when an RDP is properly licensed to transact engineering commerce.

11.6.3 Federal law, Title 18 US Code Section 242, requires that, where the alternative product, material, service, design, assembly, and/or method of construction is not approved, the building official shall respond in writing, stating the reasons why the alternative was not approved. Denial without written reason deprives a protected right to free and fair competition in the marketplace.

11.7 DrJ is a licensed engineering company, employs licensed RDPs and is an ANAB Accredited Product Certification Body – Accreditation #1131.

11.8 Through the IAF Multilateral Arrangement (MLA), this duly authenticated report can be used to obtain product approval in any jurisdiction or country because all ANAB ISO/IEC 17065 duly authenticated reports are equivalent.[39]

12 Conditions of Use

12.1 Material properties shall not fall outside the boundaries defined in **Section 6**.

12.2 As defined in **Section 6**, where material and/or engineering mechanics properties are created for load resisting design purposes, the resistance to the applied load shall not exceed the ability of the defined properties to resist those loads using the principles of accepted engineering practice.

12.3 Trex Select Aluminum Railings have only been evaluated for live loads for use as guards. Other loadings are outside of the scope of this report.

12.4 Attachment of Trex Select Aluminum Rails or Trex Signature Posts to decking other than Trex Signature, Trex Transcend Lineage, Trex Transcend, Trex Select, or Trex Enhance decking is outside of the scope of this report.

12.4.1 *Exception:* Decking with equivalent compressive strength is permitted.

12.5 Application compliant for IRC and one and two-family dwellings per the IBC.

12.6 The compatibility of the fasteners and all other metallic parts listed in this report with the supporting structure is outside of the scope of this report.

12.7 This report does not cover the compatibility of fasteners and metallic components with the support structure.

12.7.1 This includes treated wood products.

12.8 Shims are not required to prevent direct contact between the post base plate and supporting structure. Shims are permitted between the post base plate and supporting structure where necessary to plumb the posts.

12.9 When required by adopted legislation and enforced by the building official, also known as the Authority Having Jurisdiction (AHJ) in which the project is to be constructed:

12.9.1 Any calculations incorporated into the construction documents shall conform to accepted engineering practice and, when prepared by an approved source, shall be approved when signed and sealed.

12.9.2 This report and the installation instructions shall be submitted at the time of permit application.

12.9.3 This innovative product has an internal quality control program and a third-party quality assurance program.

12.9.4 At a minimum, this innovative product shall be installed per **Section 9**.

12.9.5 The review of this report by the AHJ shall comply with IBC Section 104.2.3.2 and IBC Section 105.3.1.

12.9.6 This innovative product has an internal quality control program and a third party quality assurance program in accordance with IBC Section 104.7.2, IBC Section 110.4, IBC Section 1703, IRC Section R104.7.2, and IRC Section R109.2.

12.9.7 The application of this innovative product in the context of this report is dependent upon the accuracy of the construction documents, implementation of installation instructions, inspection as required by IBC Section 110.3, IRC Section R109.2, and any other regulatory requirements that may apply.

12.10 The approval of this report by the AHJ shall comply with IBC Section 1707.1, where legislation states in part, *"the building official shall make, or cause to be made, the necessary tests and investigations; or the building official shall accept duly authenticated reports from approved agencies in respect to the quality and manner of use of new materials or assemblies as provided for in Section 104.2.3"*, all of IBC Section 104, and IBC Section 105.3.

12.11 Design loads shall be determined in accordance with the regulations adopted by the jurisdiction in which the project is to be constructed and/or by the building designer (i.e., owner or RDP).

12.12 The actual design, suitability, and use of this report for any particular building, is the responsibility of the owner or the authorized agent of the owner.

13 Identification

13.1 Trex Select Aluminum Rail, as listed in **Section 1.1**, is identified by a label on the board or packaging material bearing the manufacturer name, product name, this report number, and other information to confirm code compliance.

13.2 Additional technical information can be found at www.trex.com.

14 Review Schedule

14.1 This report is subject to periodic review and revision. For the latest version, visit www.drjcertification.org.

14.2 For information on the status of this report, please contact DrJ Certification.

Notes

1 For more information, visit drjcertification.org or call us at 608-310-6748.

2 Capitalized terms and responsibilities are defined pursuant to the applicable building code, applicable reference standards, the latest edition of TPI 1, the NDS, AISI S202, US professional engineering law, Canadian building code, Canada professional engineering law, Qualtim External Appendix A: Definitions/Commentary, Qualtim External Appendix B: Project/Deliverables, Qualtim External Appendix C: Intellectual Property and Trade Secrets, definitions created within Design Drawings and/or definitions within Reference Sheets. Beyond this, terms not defined shall have ordinarily accepted meanings as the context implies. Words used in the present tense include the future; words stated in the masculine gender include the feminine and neuter; the singular number includes the plural and the plural, the singular.

3 https://up.codes/viewer/mississippi/ibc-2024/chapter/17/special-inspections-and-tests#1702

4 Alternative Materials, Design and Methods of Construction and Equipment: The provisions of any regulation code are not intended to prevent the installation of any material or to prohibit any design or method of construction not specifically prescribed by a regulation. Please review https://www.justice.gov/atr/mission and https://up.codes/viewer/mississippi/ibc-2024/chapter/1/scope-and-administration#104.2.3

5 https://up.codes/viewer/mississippi/ibc-2024/chapter/17/special-inspections-and-tests#1706.2:~:text=the%20design%20strengths%20and%20permissible%20stresses%20shall%20be%20established%20by%20tests

6 The design strengths and permissible stresses of any structural material shall conform to the specifications and methods of design of accepted engineering practice. https://up.codes/viewer/mississippi/ibc-2024/chapter/17/special-inspections-and-tests#1706.1:~:text=Conformance%20to%20Standards-,The%20design%20strengths%20and%20permissible%20stresses,-of%20any%20structural

7 https://up.codes/viewer/mississippi/ibc-2024/chapter/17/special-inspections-and-tests#1707.1:~:text=the%20building%20official%20shall%20make%2C%20or%20cause%20to%20be%20made%2C%20the%20necessary%20tests%20and%20investigations%3B%20or%20the%20building%20official%20shall%20accept%20duly%20authenticated%20reports%20from%20approved%20agencies%20in%20respect%20to%20the%20quality%20and%20manner%20of%20use%20of%20new%20materials%20or%20assemblies%20as%20provided%20for%20in%20Section%20104.2.3.

8 https://up.codes/viewer/mississippi/ibc-2024/chapter/17/special-inspections-and-tests#1703.4.2

9 https://up.codes/viewer/mississippi/ibc-2024/chapter/2/definitions#approved_agency

10 https://up.codes/viewer/mississippi/ibc-2024/chapter/2/definitions#approved_source

11 https://www.law.cornell.edu/uscode/text/18/1832 (b) Any organization that commits any offense described in subsection (a) shall be fined not more than the greater of $5,000,000 or 3 times the value of the stolen trade secret to the organization, including expenses for research and design and other costs of reproducing the trade secret that the organization has thereby avoided. The federal government and each state have a public records act. To follow DTSA and comply state public records and trade secret legislation requires approval through ANAB ISO/IEC 17065 accredited certification bodies or approved sources. For more information, please review this website: Intellectual Property and Trade Secrets.

12 https://www.nspe.org/resources/issues-and-advocacy/professional-policies-and-position-statements/regulation-professional AND https://apassociation.org/list-of-engineering-boards-in-each-state-archive/

13 https://www.cbitest.com/accreditation/

14 https://up.codes/viewer/mississippi/ibc-2024/chapter/1/scope-and-administration#104.1:~:text=directed%20to%20enforce%20the%20provisions%20of%20this%20code

15 https://up.codes/viewer/mississippi/ibc-2024/chapter/1/scope-and-administration#104.2.3 AND https://up.codes/viewer/mississippi/ibc-2024/chapter/1/scope-and-administration#105.3.1

16 https://up.codes/viewer/mississippi/ibc-2024/chapter/17/special-inspections-and-tests#1707.1

17 https://iaf.nu/en/about-iaf-mla/#:~:text=Once%20an%20accreditation%20body%20is%20a%20signatory%20of%20the%20IAF%20MLA%2C%20it%20is%20required%20to%20recognise%20certificates%20and%20validation%20and%20verification%20statements%20issued%20by%20conformity%20assessment%20bodies%20accredited%20by%20all%20other%20signatories%20of%20the%20IAF%20MLA%2C%20with%20the%20appropriate%20scope

18 True for all ANAB accredited product evaluation agencies and all International Trade Agreements.

19 https://www.justice.gov/crt/deprivation-rights-under-color-law AND https://www.justice.gov/atr/mission

20 Unless otherwise noted, the links referenced herein use un-amended versions of the 2024 International Code Council (ICC) 2024 International Code Council (ICC) model codes as foundation references. Mississippi versions of the IBC 2024 and the IRC 2024 are un-amended. This material, product, design, service and/or method of construction also complies with the 2000-2012 versions of the referenced codes and the standards referenced therein. As pertinent to this technical and code compliance evaluation, CBI and/or DrJ staff have reviewed any state or local regulatory amendments to assure this report is in compliance.

21 See Adoptions by Publisher for the latest adoption of a non-amended or amended model code by the local jurisdiction. https://up.codes/codes/general

22 See Adoptions by Publisher for the latest adoption of a non-amended or amended model code by state. https://up.codes/codes/general

23 https://www.ecfr.gov/current/title-24/subtitle-B/chapter-XX/part-3282/subpart-A/section-3282.14

24 https://www.ecfr.gov/current/title-24/subtitle-B/chapter-XX/part-3280

25 https://www.ecfr.gov/current/title-24/subtitle-B/chapter-XX/part-3280#p-3280.2(Listed%20or%20certified); https://up.codes/viewer/mississippi/ibc-2024/chapter/2/definitions#listed AND https://up.codes/viewer/mississippi/ibc-2024/chapter/2/definitions#labeled

26 2021 IRC Section R312.1

27 https://up.codes/viewer/mississippi/ibc-2024/chapter/17/special-inspections-and-tests#1703.4

28 https://www.ecfr.gov/current/title-24/subtitle-B/chapter-XX/part-3280#:~:text=All%20construction%20methods%20shall%20be%20in%20conformance%20with%20accepted%20engineering%20practices%20to%20insure%20durable%2C%20livable%2C%20and%20safe%20housing%20and%20shall%20demonstrate%20acceptable%20workmanship%20reflecting%20journeyman%20quality%20of%20work%20of%20the%20various%20trades

29 https://www.ecfr.gov/current/title-24/subtitle-B/chapter-XX/part-3280#:~:text=The%20strength%20and%20rigidity%20of%20the%20component%20parts%20and/or%20the%20integrated%20structure%20shall%20be%20determined%20by%20engineering%20analysis%20or%20by%20suitable%20load%20tests%20to%20simulate%20the%20actual%20loads%20and%20conditions%20of%20application%20that%20occur

[30] Qualification is performed by a legislatively defined Accreditation Body. ANSI National Accreditation Board (ANAB) is the largest independent accreditation body in North America and provides services in more than 75 countries. DrJ is an ANAB accredited product certification body.

[31] https://anabpd.ansi.org/Accreditation/product-certification/AllDirectoryDetails?prgID=1&orgID=2125&statusID=4#:~:text=Bill%20Payment%20Date-,Accredited%20Scopes,-13%20ENVIRONMENT.%20HEALTH

[32] See Code of Federal Regulations (CFR) Title 24 Subtitle B Chapter XX Part 3280 for definition: https://www.ecfr.gov/current/title-24/subtitle-B/chapter-XX/part-3280

[33] 2021 IRC Section R312

[34] 2021 IBC Section 104.11

[35] 2021 IRC Section R104.11

[36] 2018: https://up.codes/viewer/wyoming/ifc-2018/chapter/1/scope-and-administration#104.9 AND 2021: https://up.codes/viewer/wyoming/ibc-2021/chapter/1/scope-and-administration#104.11

[37] Approved is an adjective that modifies the noun after it. For example, Approved Agency means that the Agency is accepted officially as being suitable in a particular situation. This example conforms to IBC/IRC/IFC Section 201.4 (https://up.codes/viewer/mississippi/ibc-2024/chapter/2/definitions#201.4) where the building code authorizes sentences to have an ordinarily accepted meaning such as the context implies.

[38] https://up.codes/viewer/mississippi/ibc-2024/chapter/17/special-inspections-and-tests#1707.1

[39] Multilateral approval is true for all ANAB accredited product evaluation agencies and all International Trade Agreements.