



HISTORIC DISTRICT BOARD OF REVIEW

Application for Certificate of Appropriateness

This form and the information on the Submittal Criteria Checklist must be completed before the Board can consider the approval of any exterior change affecting any property visible from a public right-of way. Please print or type information. Changes that become necessary following this approval must apply for and receive a new COA before execution of the change.

For Office Use Only:

File No.:	☐ Posting Sign Made:
☐ Approved:	☐ Posting Sign Issued:
☐ Continued:	☐ After-the-Fact Application:
☐ Withdrawn:	☐ Denied:

Applicants are strongly urged to meet with Staff prior to completing this application. A pre-application meeting is required for all new construction including additions and accessory buildings. Contact Ellen Harris at 912.651.1482 or harrise@thempc.org; or Leah Michalak at 912.651.1453 or michalakl@themcp.org to schedule an appointment.

Contact Information:

Applicant Mailing Address:

Name: John Clegg / Barnard Architects
 Address: 220 East Hall St
 City: Savannah State GA Zip 31401
 Phone: 912 232 0173 Fax — E-Mail Address john@barnardarchitects.com

Property Owner Mailing Address:

Name: Teresa & Jake Jacobson
 Address: 225 East Huntingdon
 City: Savannah State GA Zip 31401
 Phone: 912 236 6080 Fax — E-Mail Address t.scottjacobson@comcast.net

Property Information of Proposed Work:

Address: 225 East Huntingdon
 PIN (Property Identification Number): 2-0044-01-001 Zoning: RIP-A

Historic Easements or Covenants: ☐ Historic Savannah Foundation ☐ Bee Hive Foundation ☐ None

SCOPE OF WORK: Check (✓) all that apply.

STAFF REVIEW:	BOARD REVIEW:
☐ Color Change	☐ Sign
☐ Roof Repair	☐ Rehabilitation/Alteration
☐ Awning	☐ Fence
☐ Stucco Repair/Repointing	☐ Demolition
☐ Shutters	☐ Relocation / Moving a Building
☐ Existing Windows, Doors	☒ New Construction
☐ Other	☒ Addition

For the proposed scope of work, reference the Submittal Criteria checklist (pages 4-8) to ensure all required supplemental documentation is submitted.

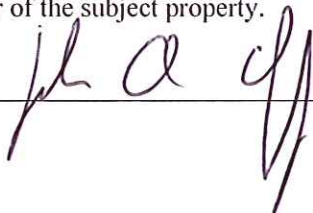
Describe the proposed work in detail and how the project meets the Visual Compatibility Criteria and Design Standards in Section 8-3030 (revised 7/12/12), Historic District, of the City of Savannah Zoning Ordinance. This ordinance can be accessed at www.thempc.org. Additional pages may be attached.

See attachment

Public Notice for Board Meeting: The petitioner is responsible for posting the signs provided, advertising the public meeting at least fifteen (15) days in advance of the meeting. Continued petitions shall remain posted and the new hearing date shall be added to the sign no later than fifteen (15) days prior to the meeting date. Failure to do so may result in the petition being continued until the next meeting. If the sign is stolen or damaged, the petitioner must replace it immediately. Refer to Section 8-3030, Subsection (h) Public Notice of the Historic District Ordinance for specific posting requirements.

I have read and understand all the above information. I hereby certify that I am the owner or authorized agent for the legal owner of the subject property.

Signature: _____



Date: _____

8/21/13

Scope of Work

for

New Carriage House & New Rear Porch

225 East Huntingdon Street

General

1. This project was presented to the SPR on August 8, 2013. The need for approval from the Zoning Board of Appeals is noted below.
2. Per 8-3025: 75% max building coverage is permitted. The new carriage house and new porch will increase the lot coverage from 42% to 52%.

New Carriage House

1. The existing one story garage at the rear of the property is proposed to be removed. The existing garage door (and ramp) faces Lincoln Street, creating a dangerous situation for traffic and a trip hazard for pedestrians.
2. The new two story carriage house is proposed to be finished with stucco siding (to match the existing house) and asphalt shingle roofing (to match the existing house).
3. The carriage house is proposed to be located on the rear property line to maximize the courtyard, which would be only 25' between the carriage house and the new rear porch. Such will require approval from the Zoning Board of Appeals.

Zoning Board of Appeals

1. The carriage house is proposed to be located on the rear property line (at the lane) and located on the east property line (at Lincoln Street) which is where the existing garage is located. Both of these conditions require approval from the Zoning Board of Appeals.
2. Locating the carriage house on the east property line violates, what has been described as, a flaw in the zoning ordinance which requires a setback for the main building (and was not intended to be applied to secondary buildings at the rear of the property).
3. Locating the carriage house on the rear property line will cause the roof eave to overlap the lane 12". However, the eave will be 18' above the lane, (not a hazard to traffic) and such overlap already exists at adjacent carriage houses.
4. Also, locating the carriage house on the rear property line will not increase the effective lane width to 25' (typically required by city engineering to accommodate a car turning into a garage). The existing lane is 22.6' wide. To facilitate entry into the garage, the garage door is shown as being 10' wide.
5. If the ZBA does not allow the carriage house to be located at the rear property line, then the building will be shifted to the north 2.4'.

New Rear Porch

1. The proposed, two story porch would include traditional details such as columns and railings by HB&G, and louvers by New Horizon (products that have been previously approved by the review board).
2. The columns and trim would be painted to match the trim at the house (off-white) and the louvers would be dark green to match the existing doors at the house.



Looking South on Lincoln



Looking North on Lincoln



Looking East on Lane

Colors

All color references are based on Sherwin Williams:

Soft Yellow
(Stucco Siding)



Off- White
(Trim)



Dark Green
(Shutters/Doors)



Light Brown
(Stucco Piers)



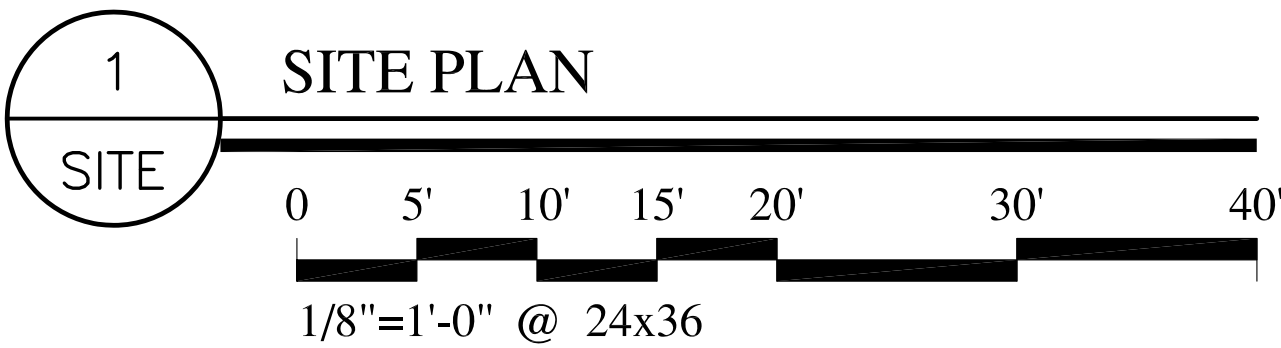
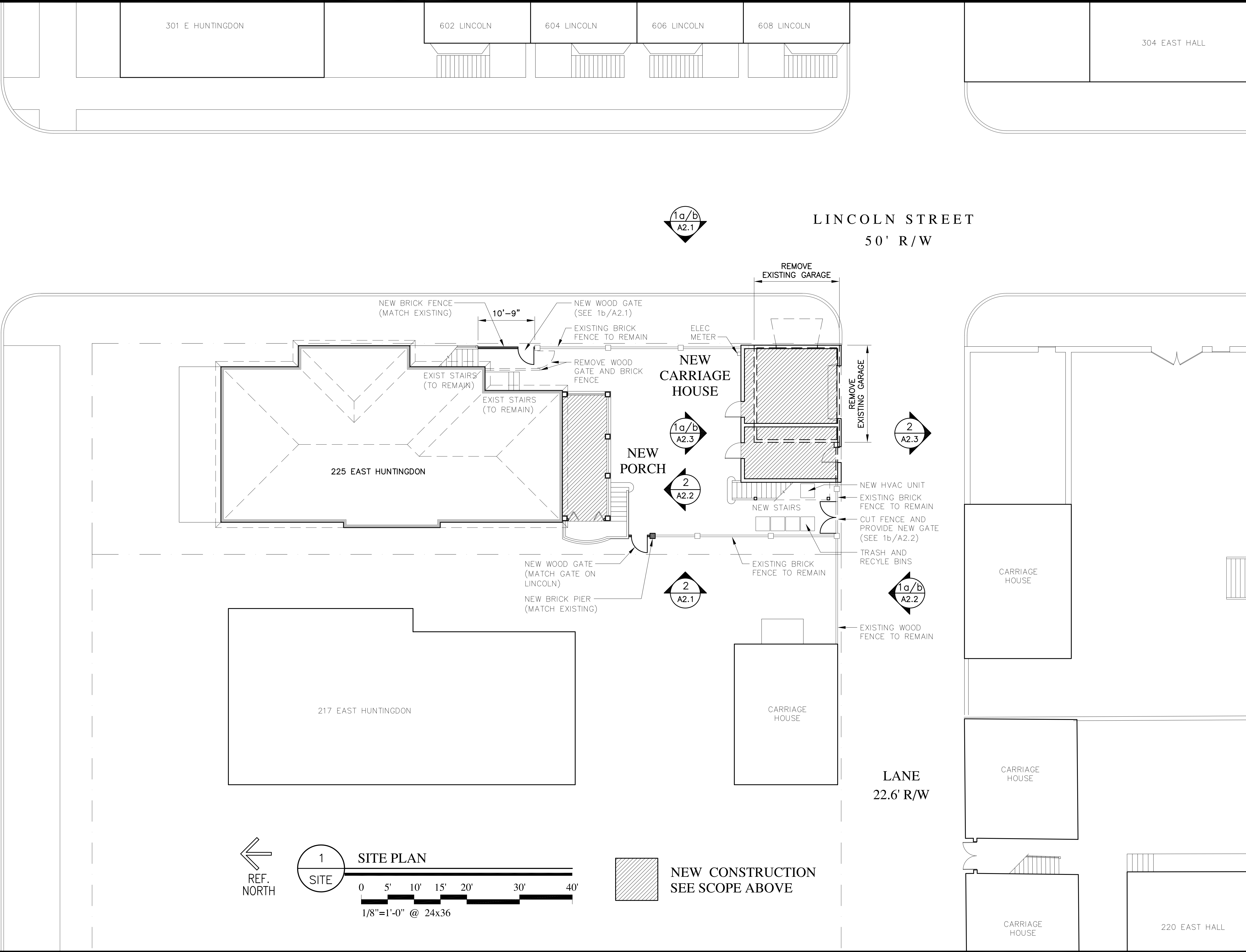


**Existing Carriage House at rear of 220 East Hall Street
(example of recessed stucco)**

End

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EAST HUNTINGDON STREET
75' R/W



NEW CONSTRUCTION
SEE SCOPE ABOVE

JACOBSON RESIDENCE
NEW CARRIAGE HOUSE
225 E HUNTINGDON STREET
SAVANNAH, GEORGIA

REVISION / DATE BY
9/18/13 JAC

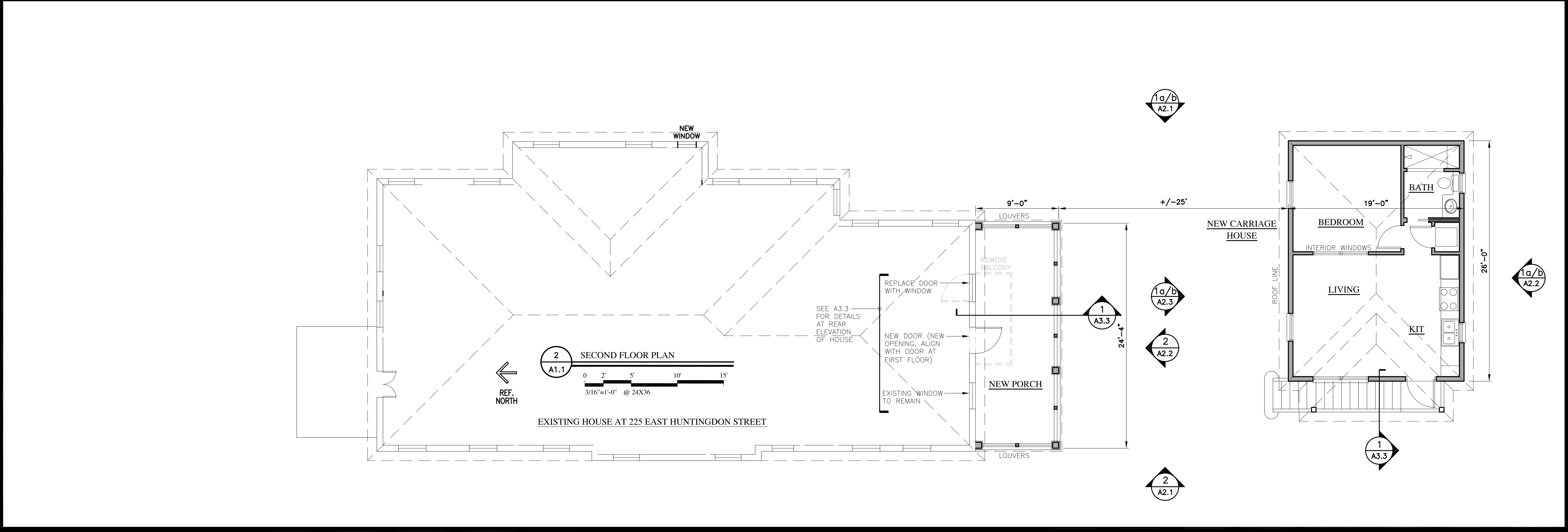
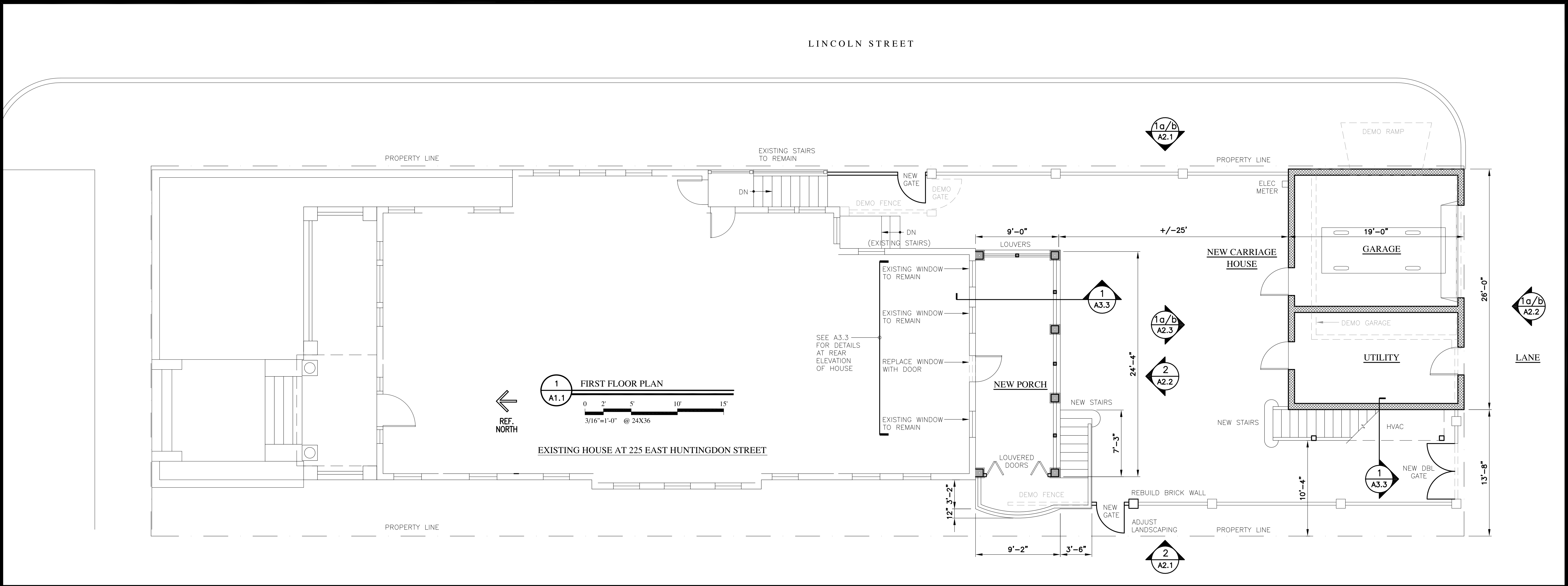
SHEET NO.:
SITE
- OF -

L. SCOTT BARNARD & ASSOCIATES, AIA
ARCHITECTURE, PLANNING, LANDSCAPE, INTERIORS, HISTORIC
220 EAST HALL STREET SAVANNAH, GA 31401 (912) 232-6173
ASSOCIATES: ROBERT J. PORTMAN & JOHN A. CLEGG

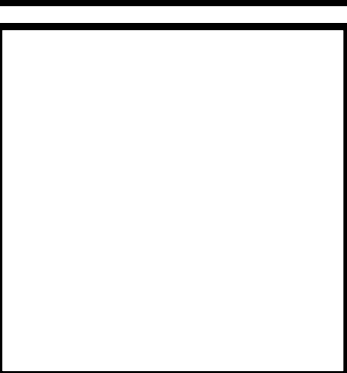
1 SITE PLAN

NOT FOR CONSTRUCTION

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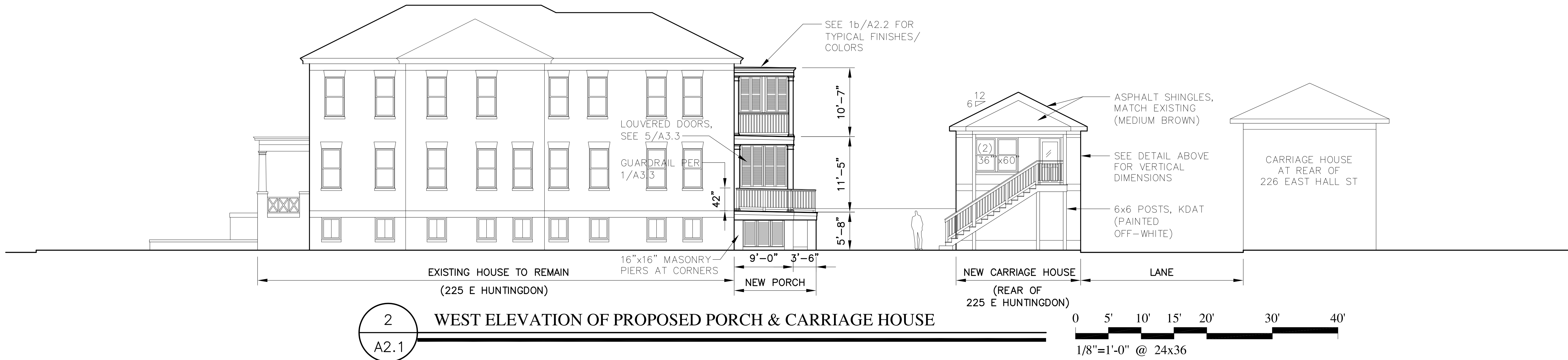
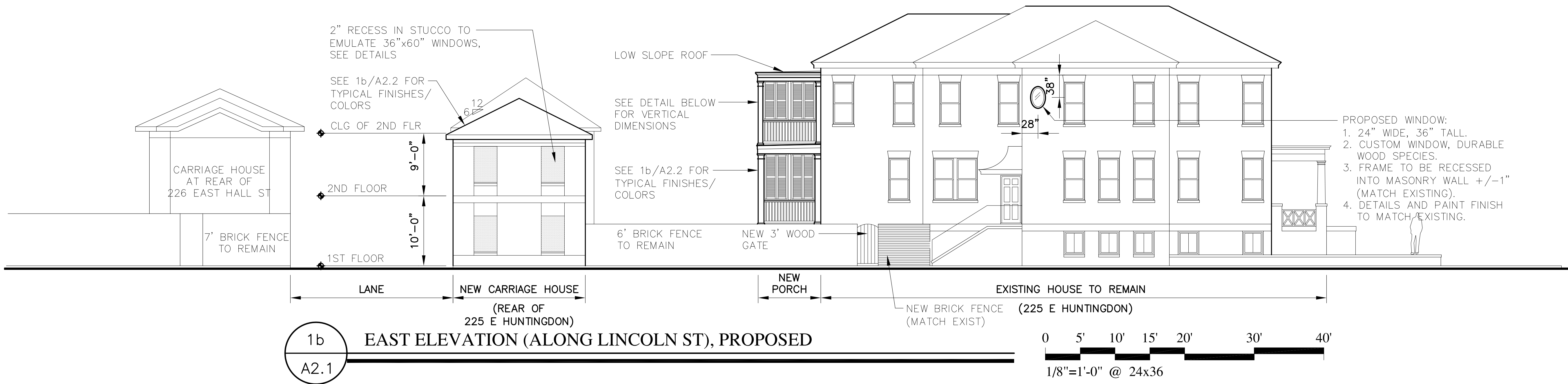
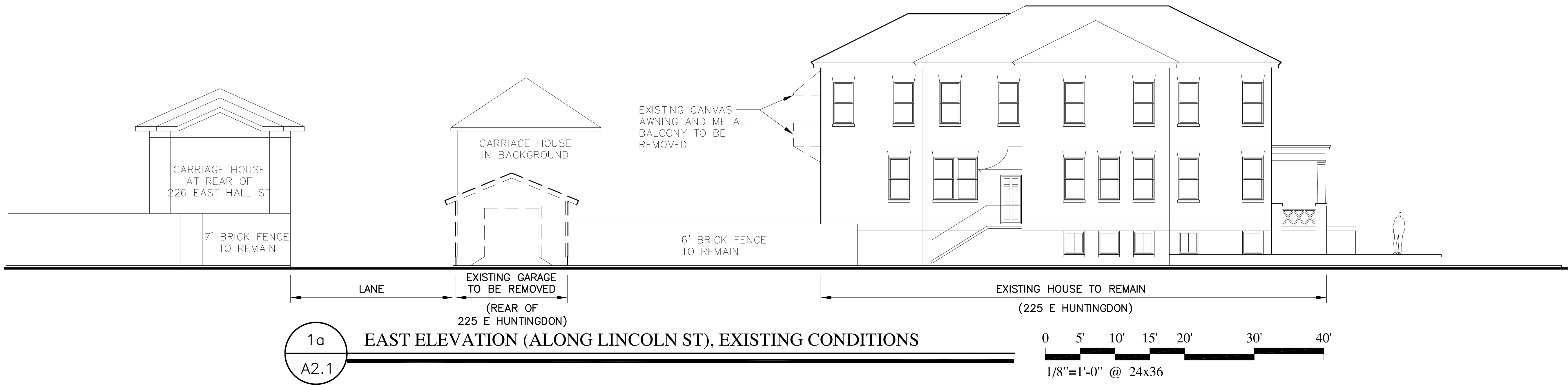


JACOBSON RESIDENCE NEW CARRIAGE HOUSE 225 E HUNTINGDON STREET SAVANNAH, GEORGIA			FLOOR PLANS
REVISION / DATE	BY		
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A1.1
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JACOBSON RESIDENCE
NEW CARRIAGE HOUSE
225 E HUNTINGDON STREET
SAVANNAH, GEORGIA

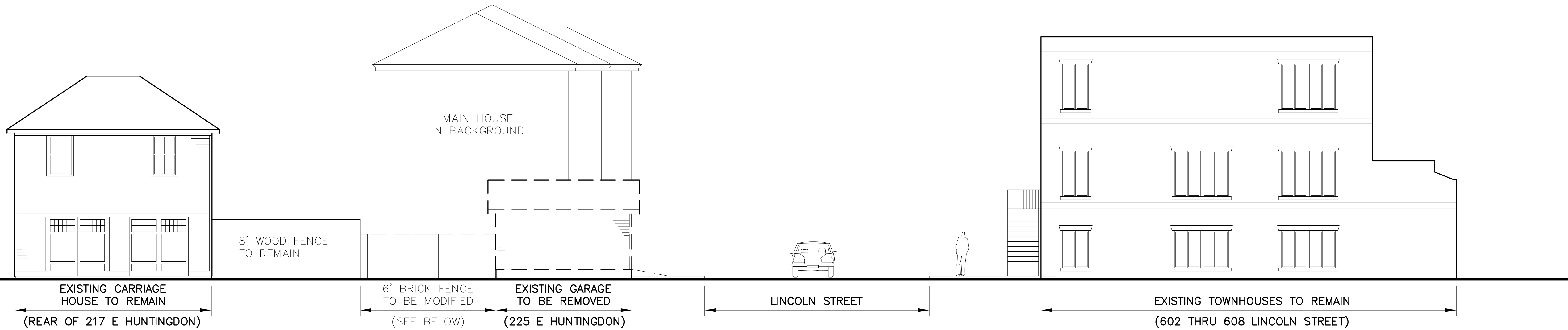
ELEVATIONS

REVISION	DATE	BY
1	9/18/13	JAC

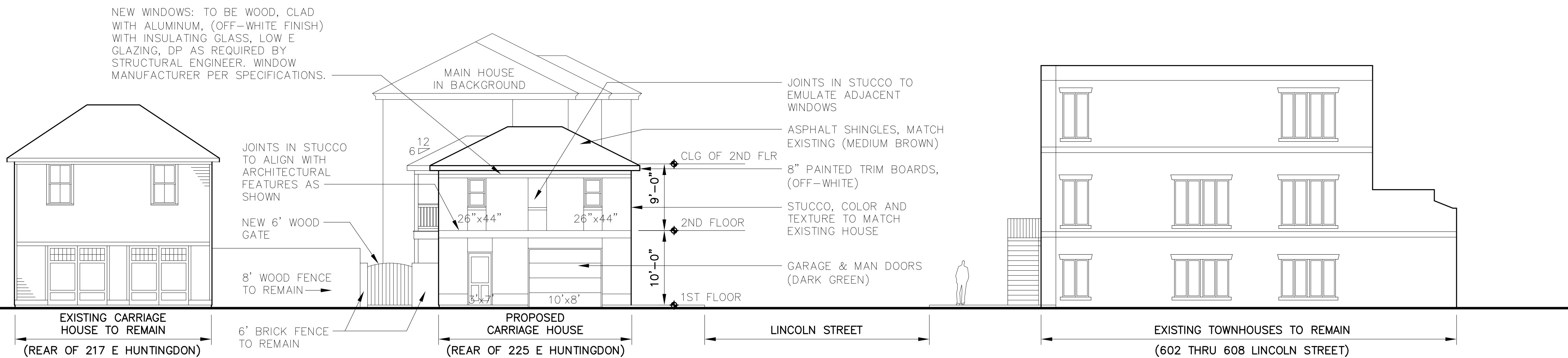
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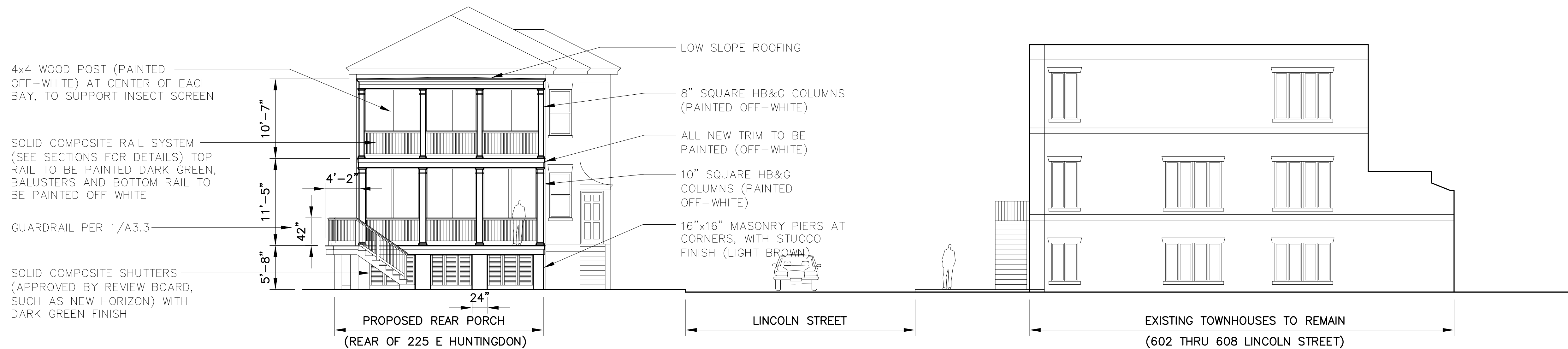
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1a SOUTH ELEVATION (ALONG THE LANE), EXISTING CONDITIONS
A2.2

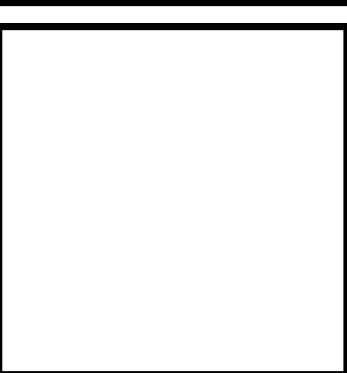


1b SOUTH ELEVATION (ALONG THE LANE), PROPOSED CARRIAGE HOUSE
A2.2



2 SOUTH ELEVATION OF PROPOSED PORCH
A2.2

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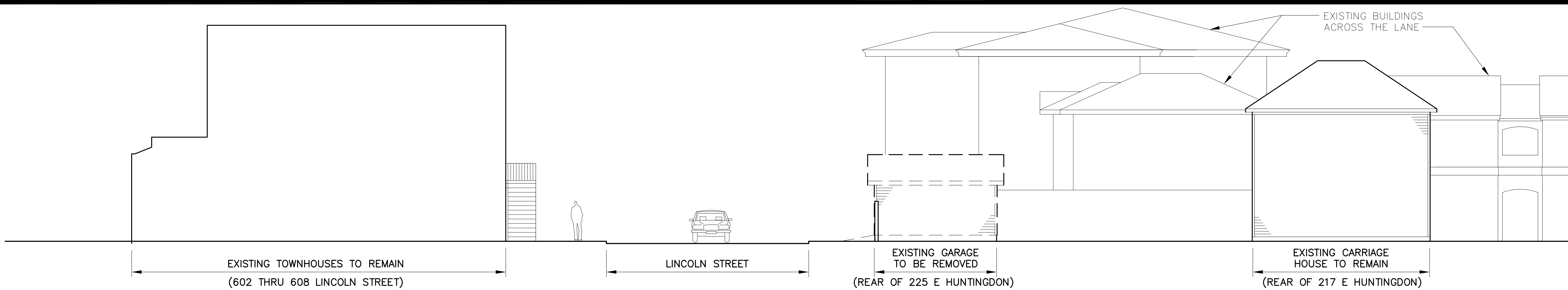


JACOBSON RESIDENCE NEW CARRIAGE HOUSE 225 E HUNTINGDON STREET SAVANNAH, GEORGIA	ELEVATIONS
REVISION / DATE	BY
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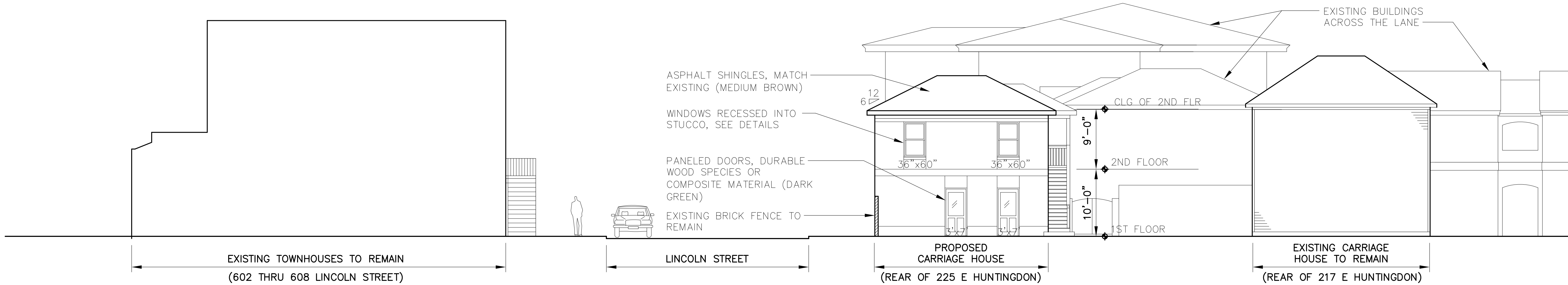
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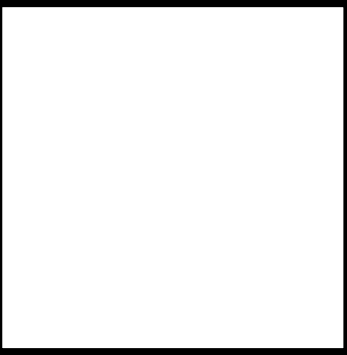
NORTH ELEVATION OF EXISTING GARAGE

0 5' 10' 15' 20' 30' 40'
1/8"=1'-0" @ 24x36



NORTH ELEVATION OF PROPOSED CARRIAGE HOUSE

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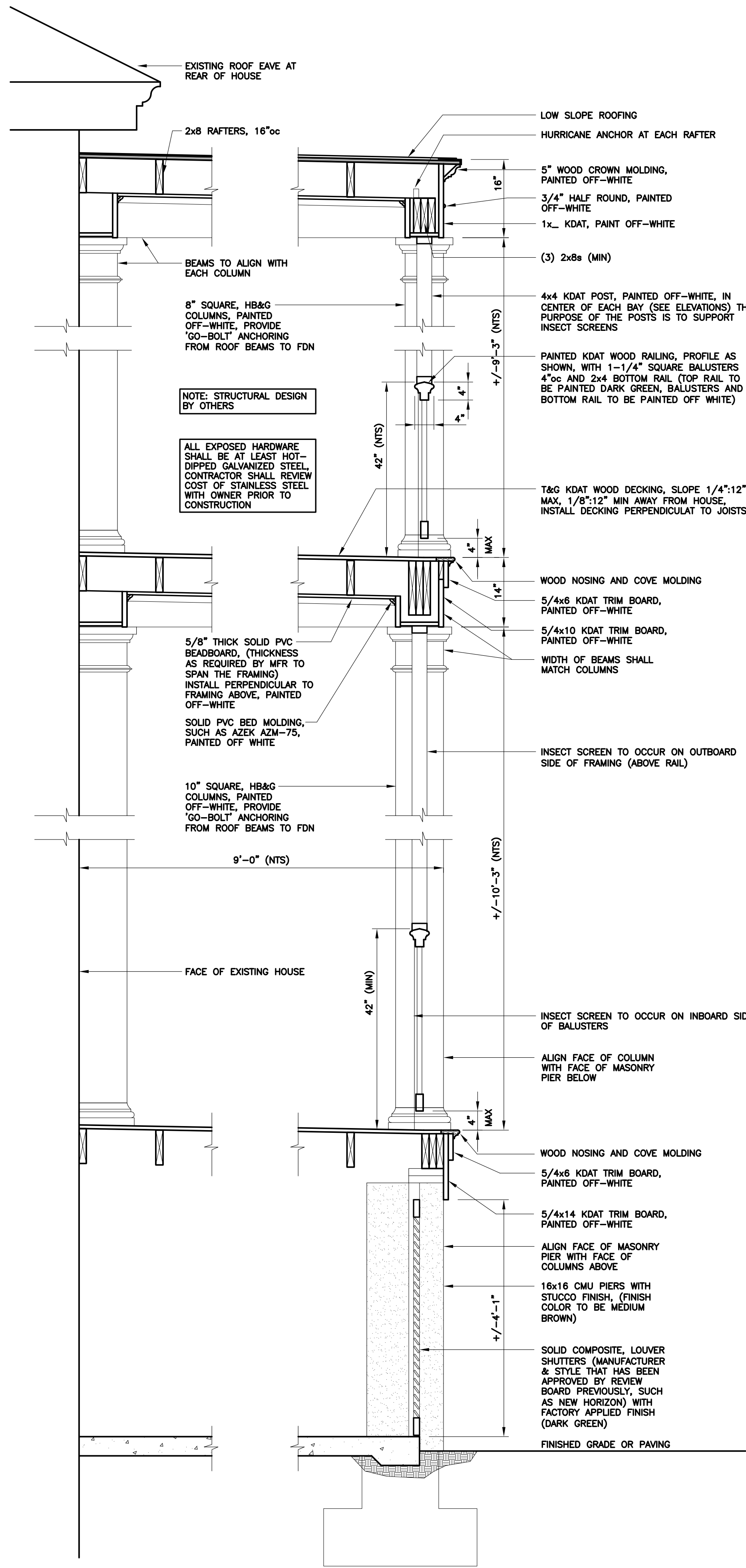
ELEVATIONS

REVISION	DATE	BY
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A2.3
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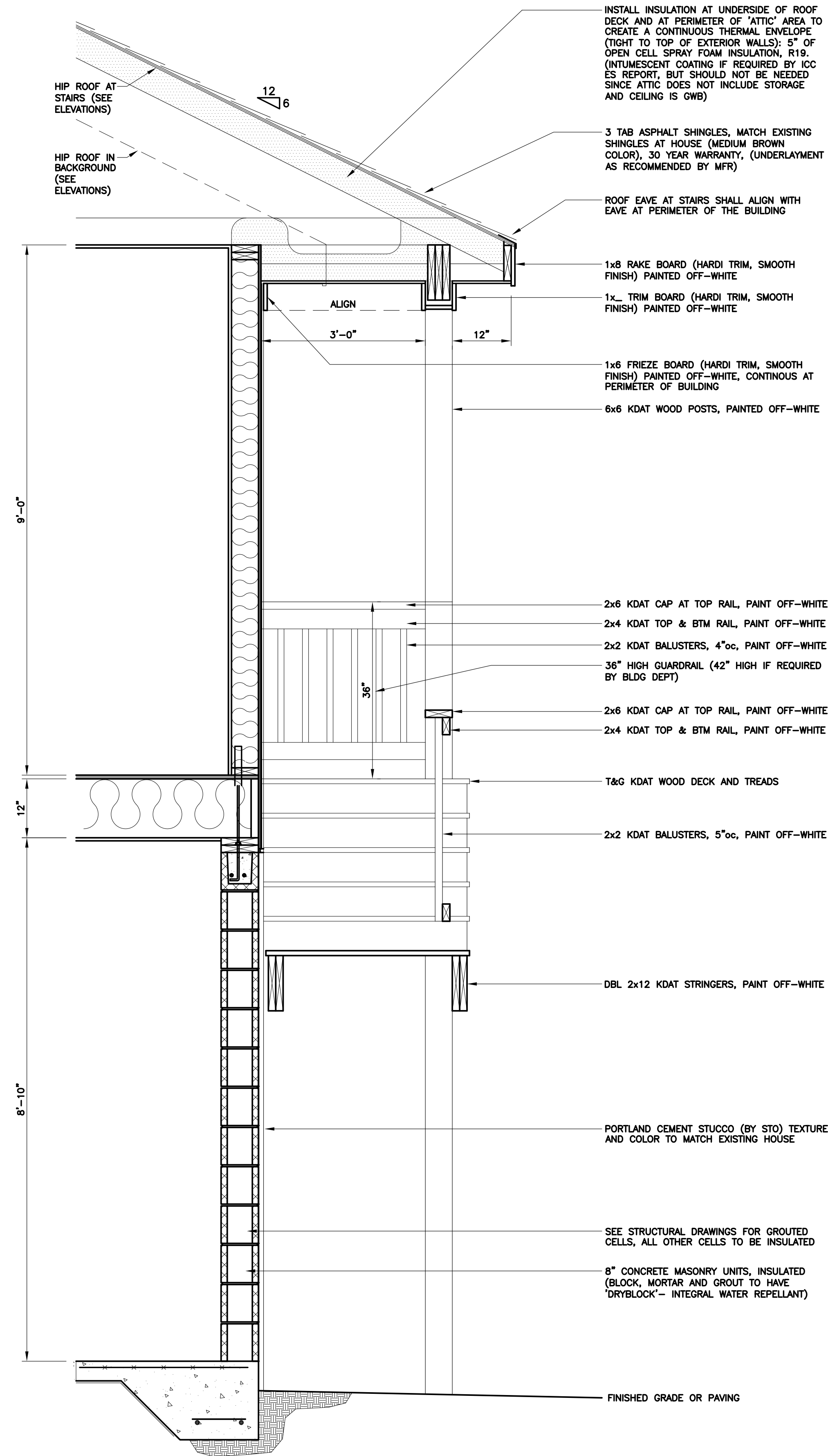


1

A3.1

SECTION THRU PROPOSED REAR PORCH

SCALE: 3/4" = 1'-0"

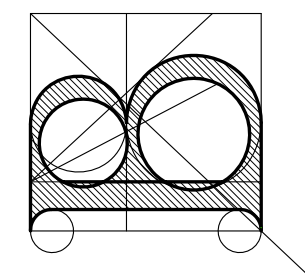


2

A3.1

SECTION THRU PROPOSED CARRIAGE HOUSE

SCALE: 3/4" = 1'-0"



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SECTIONS

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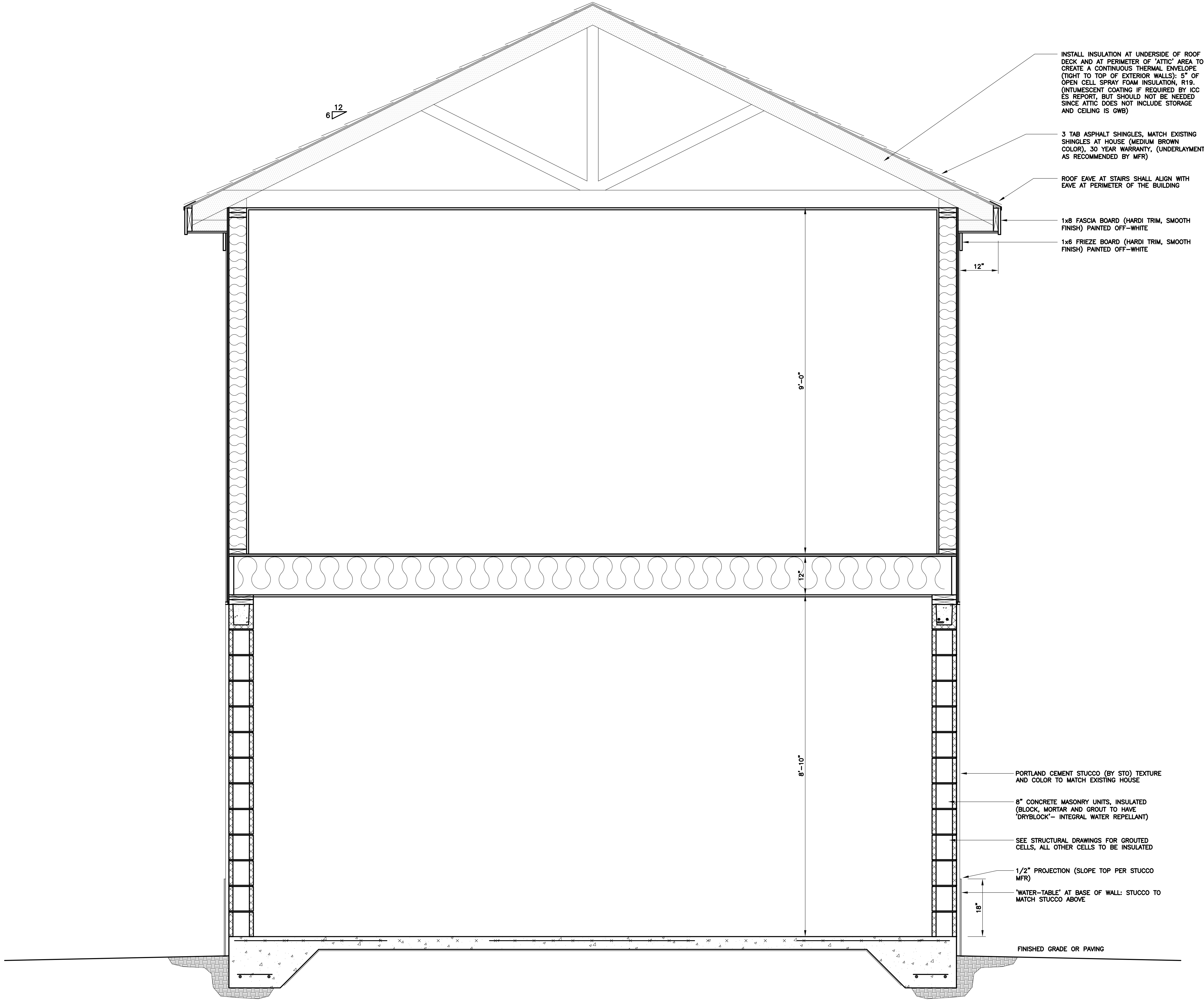
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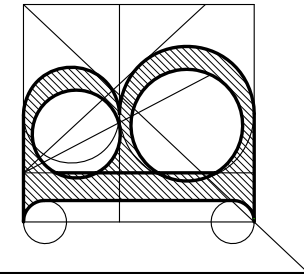
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1
A3.2

SECTION THRU PROPOSED CARRIAGE HOUSE

SCALE: 3/4" = 1'-0"



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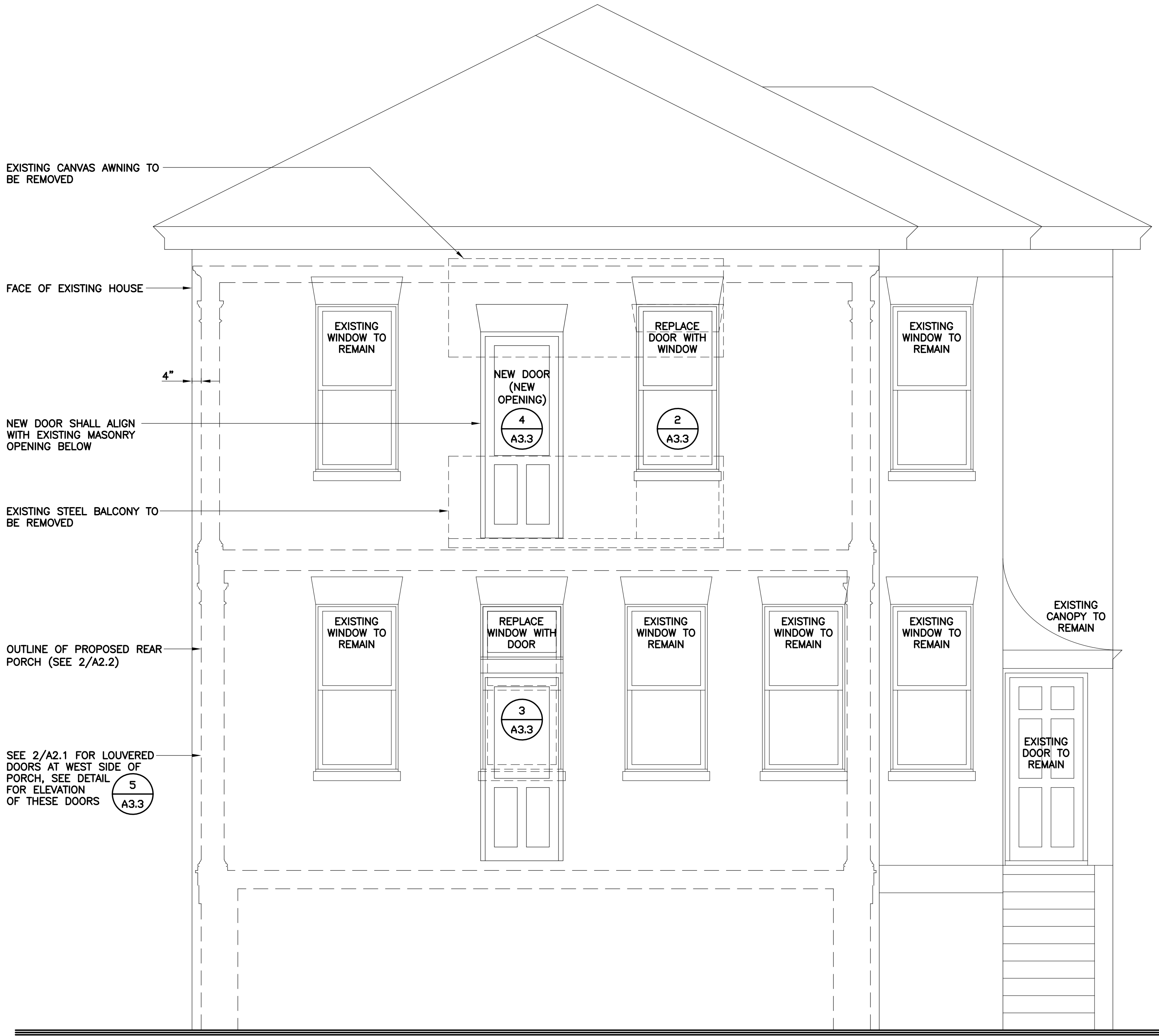
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A3.2

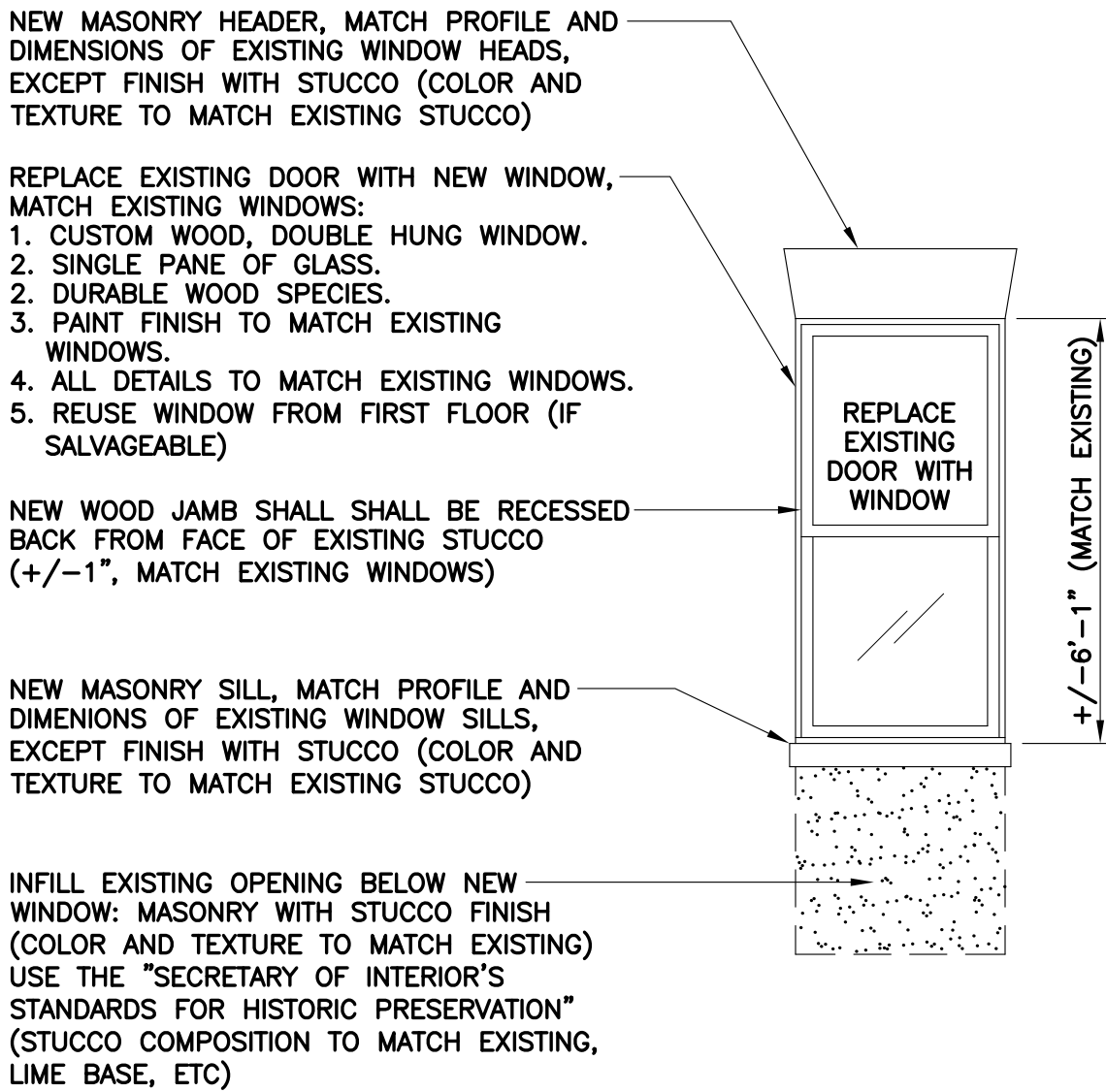
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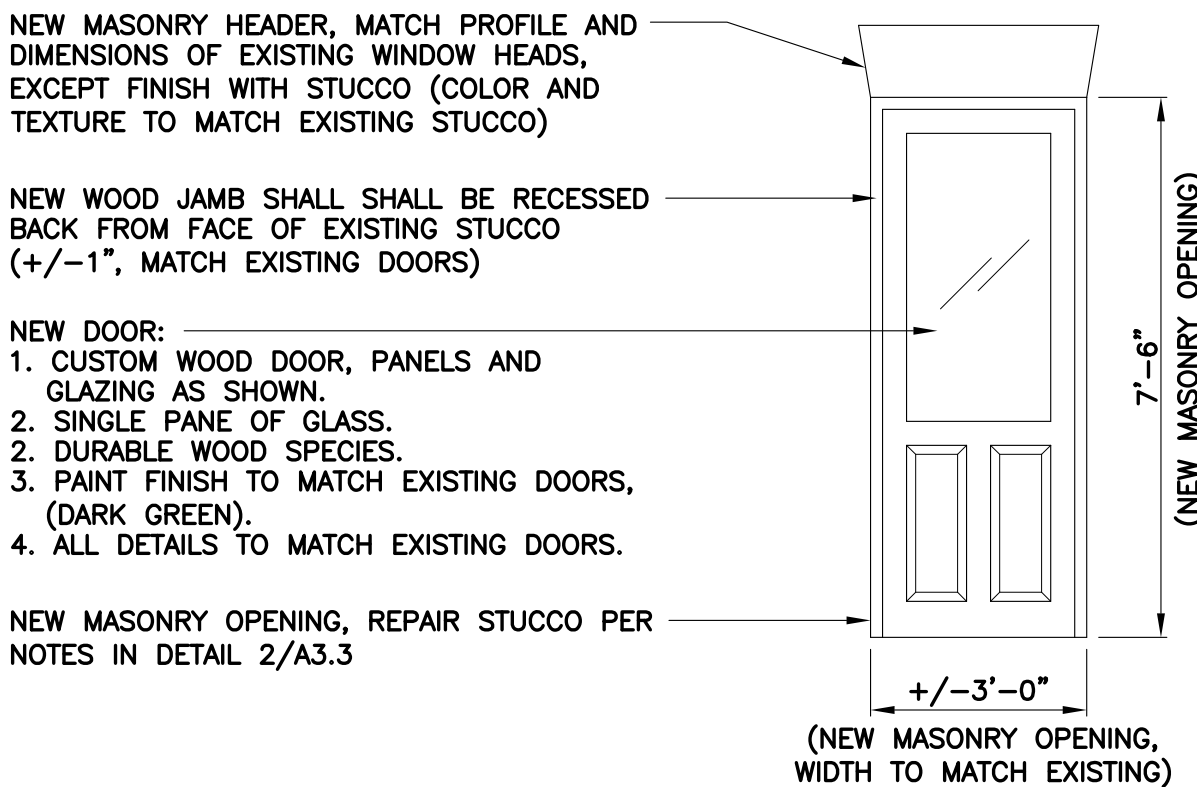
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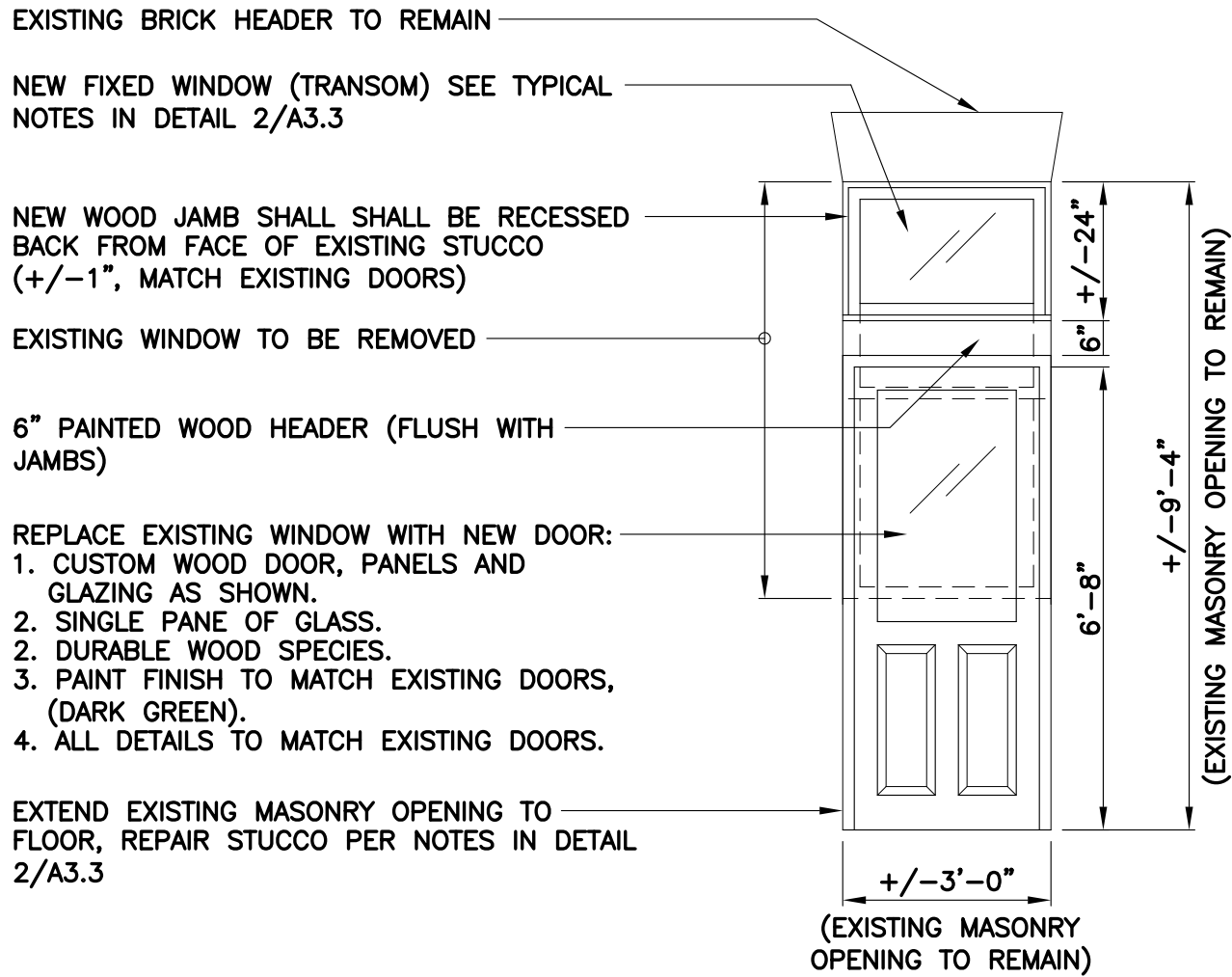
1 ELEVATION AT REAR OF EXISTING HOUSE
A3.3 SCALE: 3/8" =1'-0"



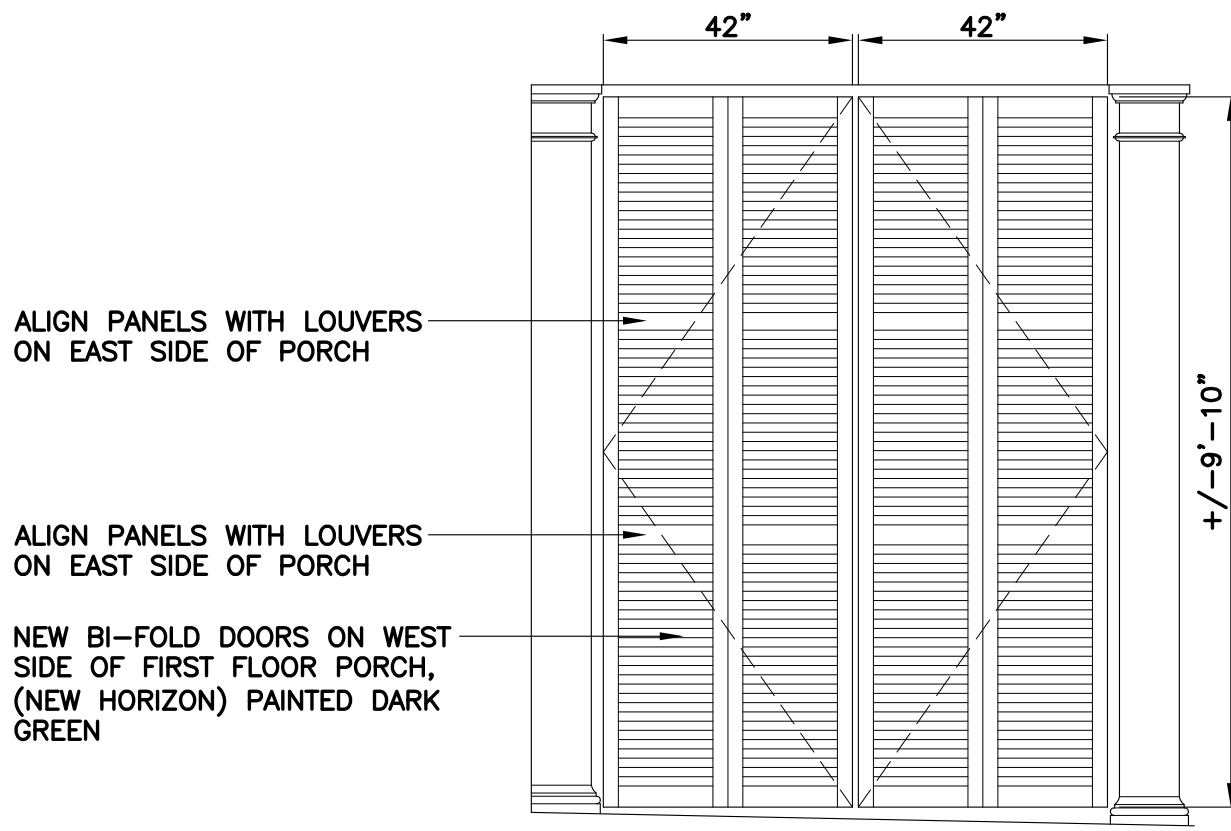
2 REPLACE DOOR WITH WINDOW
A3.3 SCALE: 3/8" =1'-0"



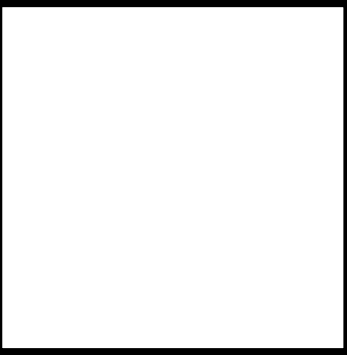
4 NEW DOOR (NEW OPENING)
A3.3 SCALE: 3/8" =1'-0"



3 REPLACE WINDOW WITH DOOR
A3.3 SCALE: 3/8" =1'-0"

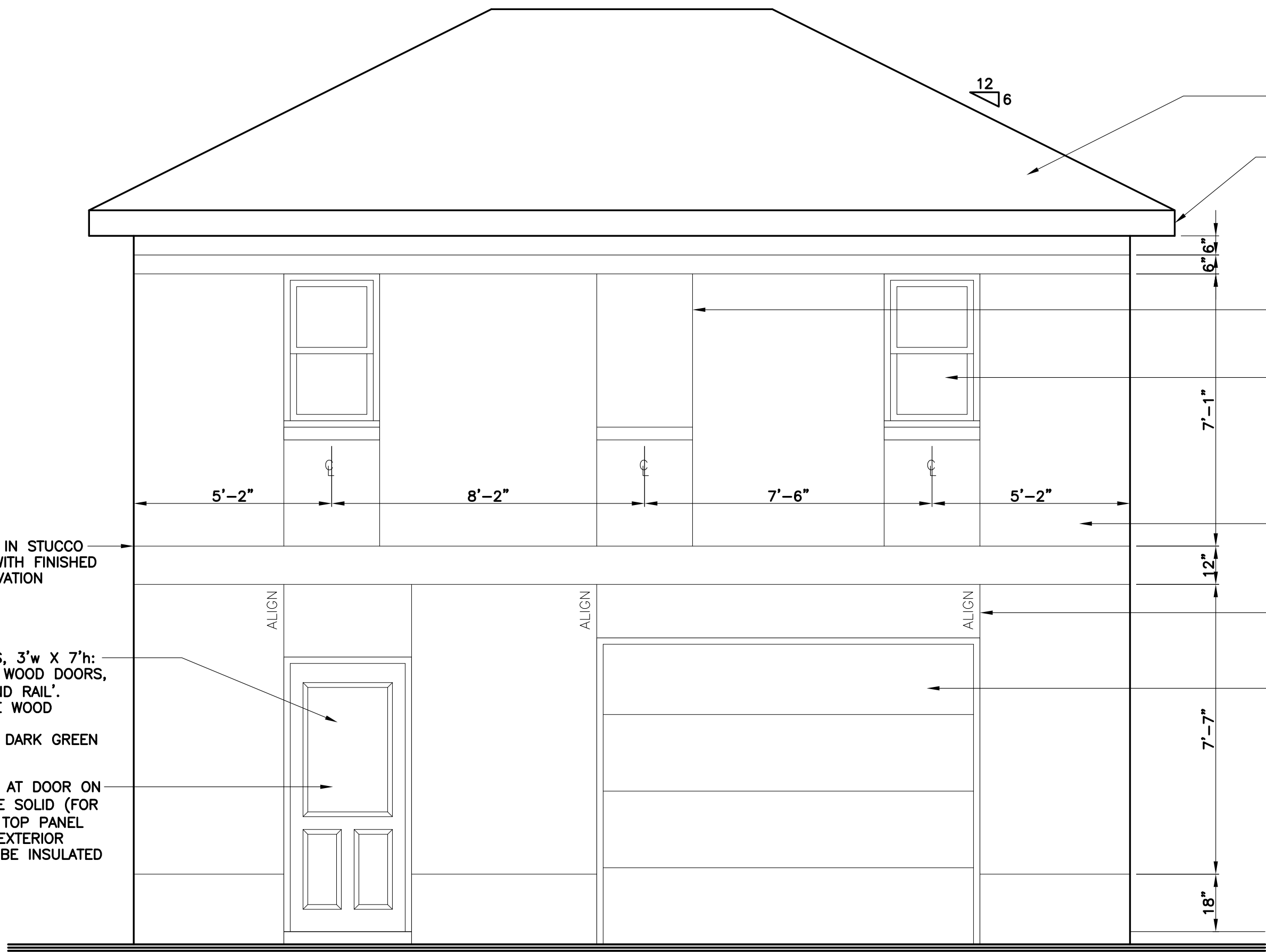


5 NEW LOUVERED DOOR
A3.3 SCALE: 3/8" =1'-0"



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ASPHALT SHINGLES, MATCH EXISTING (MEDIUM BROWN)
SEE 2/A3.1 FOR EAVE ASSEMBLY, PAINTED OFF-WHITE

JOINTS IN STUCCO TO EMULATE ADJACENT WINDOWS
NEW WINDOWS (SEE A2.1-A2.3 FOR SIZES):
1. WOOD CLAD WITH ALUMINUM.
2. INSULATING GLASS, LOW E GLAZING, DP AS REQUIRED BY STRUCTURAL ENGINEER.
3. MARVIN "CLAD ULTIMATE DOUBLE HUNG" WITH OFF-WHITE EXTERIOR FINISH ("COCONUT CREAM")

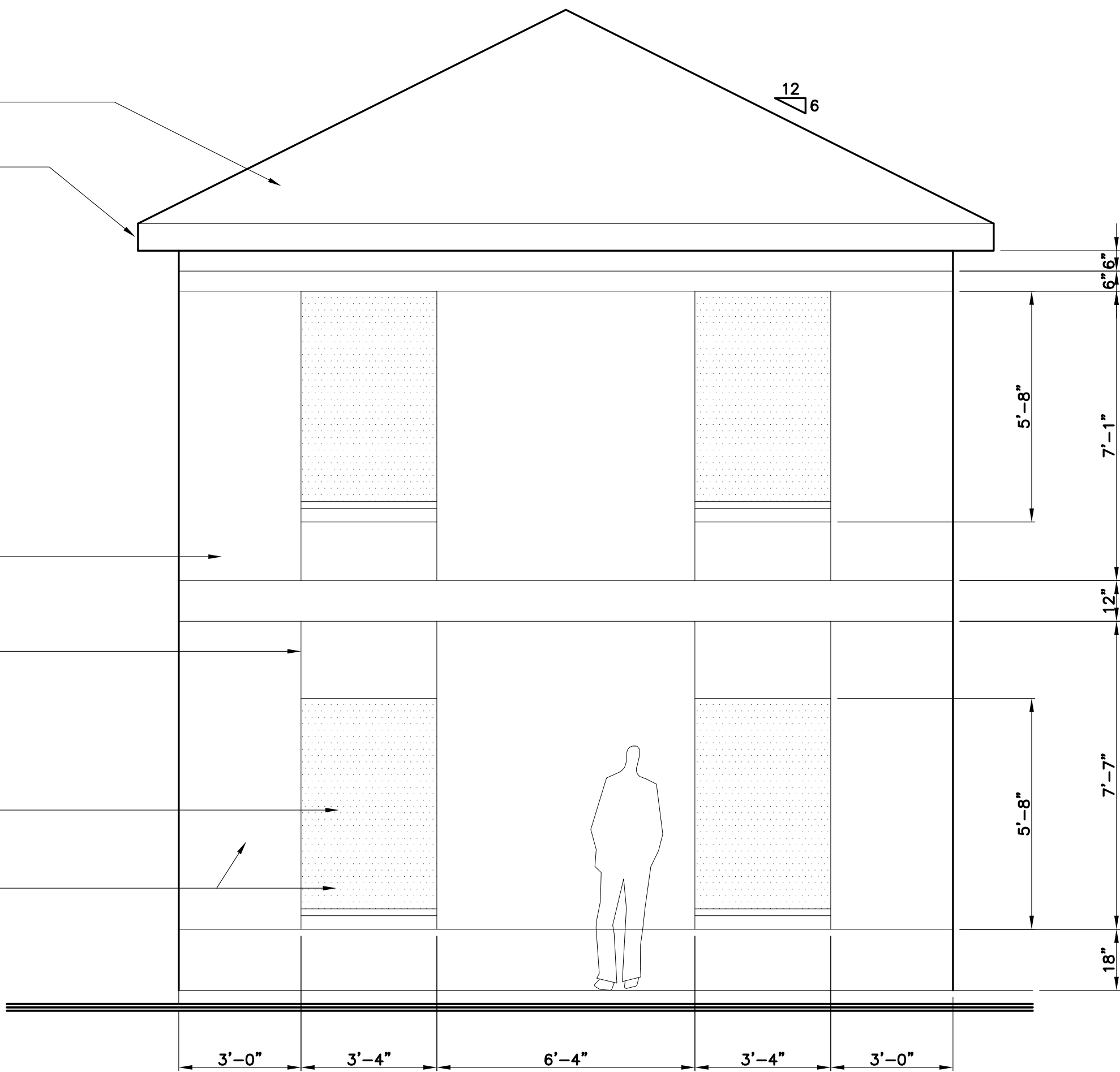
STUCCO, COLOR AND TEXTURE TO MATCH EXISTING HOUSE

JOINTS IN STUCCO TO ALIGN WITH ARCHITECTURAL FEATURES AS SHOWN

GARAGE DOOR, 10'w X 8'h, FLAT METAL PANELS (NOT EMBOSSED) WITH DARK GREEN PAINT FINISH

2" RECESS IN STUCCO, SIZE TO EMULATE 36"x60" WINDOWS ON OTHER ELEVATIONS, SEE DETAIL 6/A4.1

COLOR AND TEXTURE OF STUCCO AT RECESS TO MATCH STUCCO FINISH



1

SOUTH ELEVATION (ALONG THE LANE), PROPOSED CARRIAGE HOUSE

A3.4

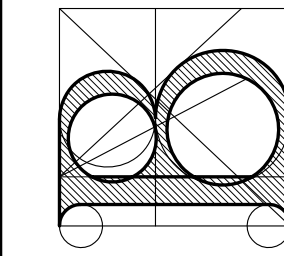
SCALE: 3/8" =1'-0"

2

EAST ELEVATION (ALONG LINCOLN ST), PROPOSED CARRIAGE HOUSE

A3.4

SCALE: 3/8" =1'-0"



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EXTERIOR DETAILS

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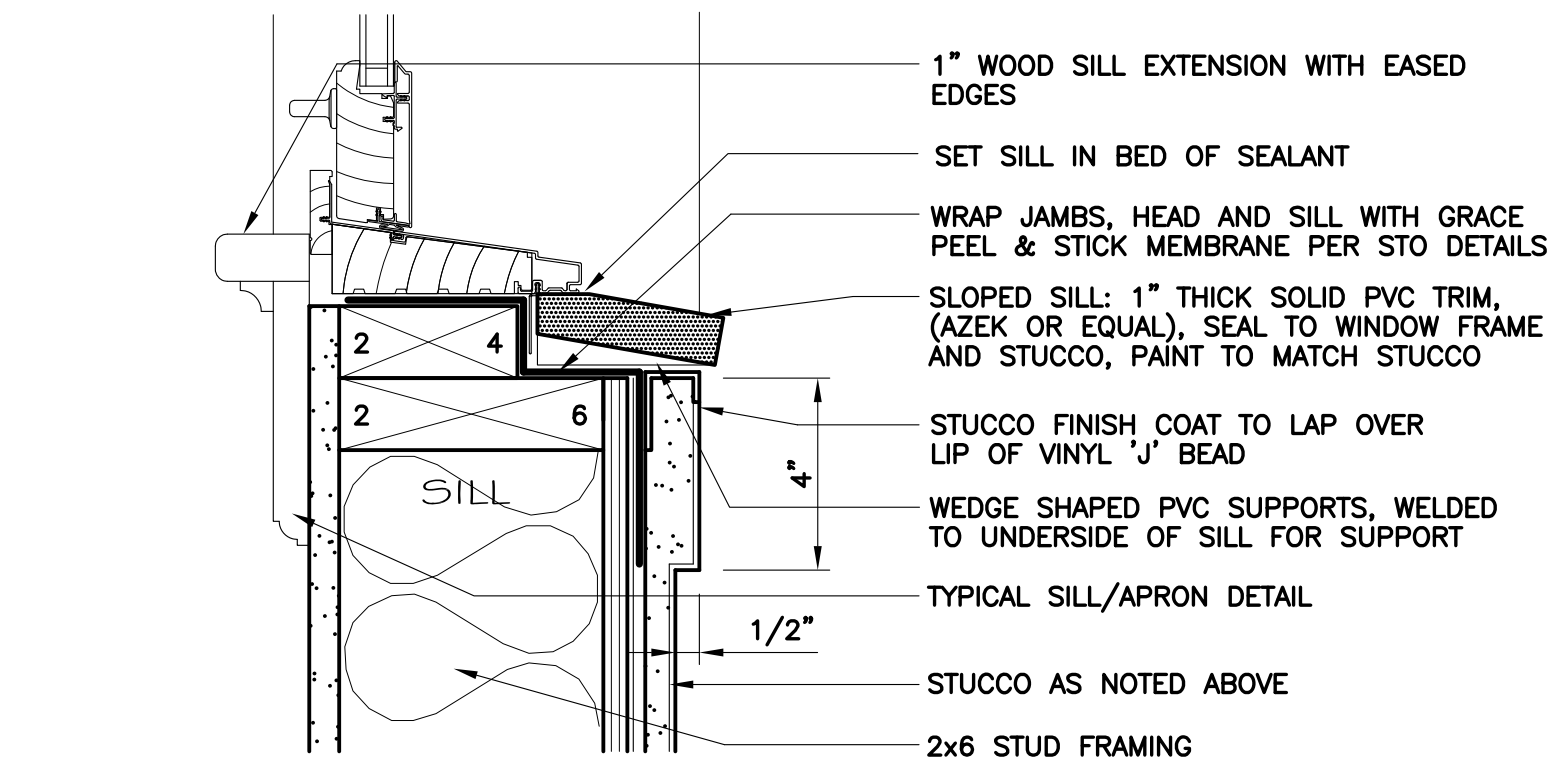
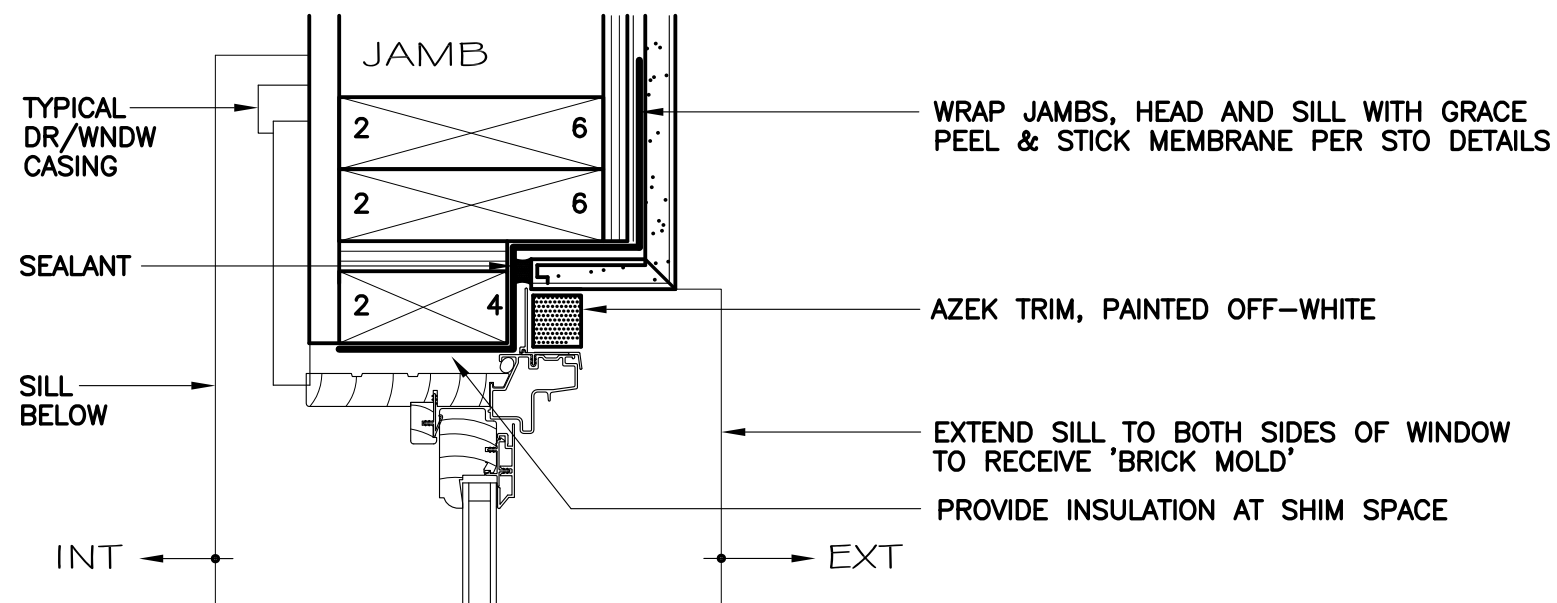
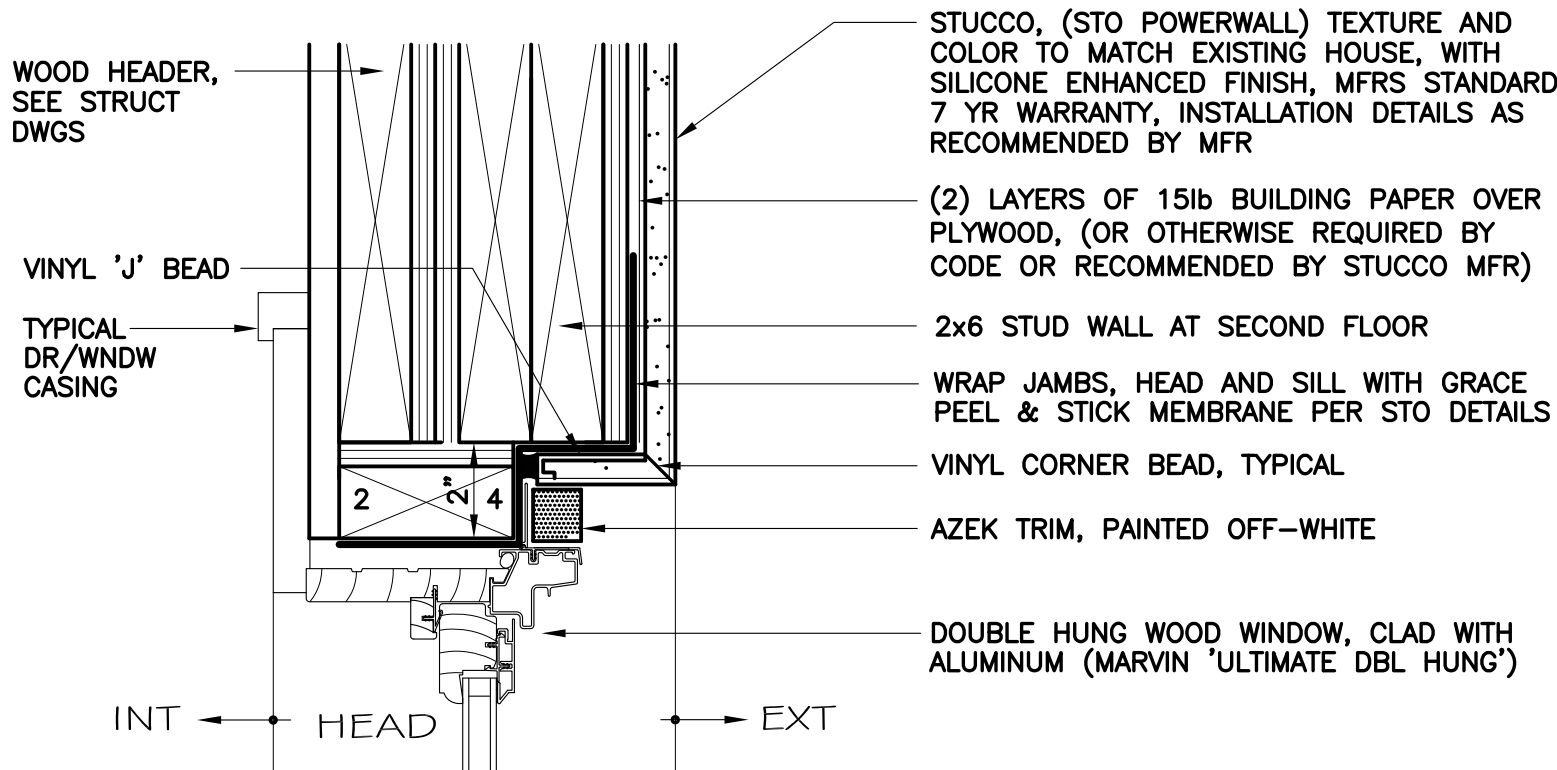
SHEET NO.:

A3.4

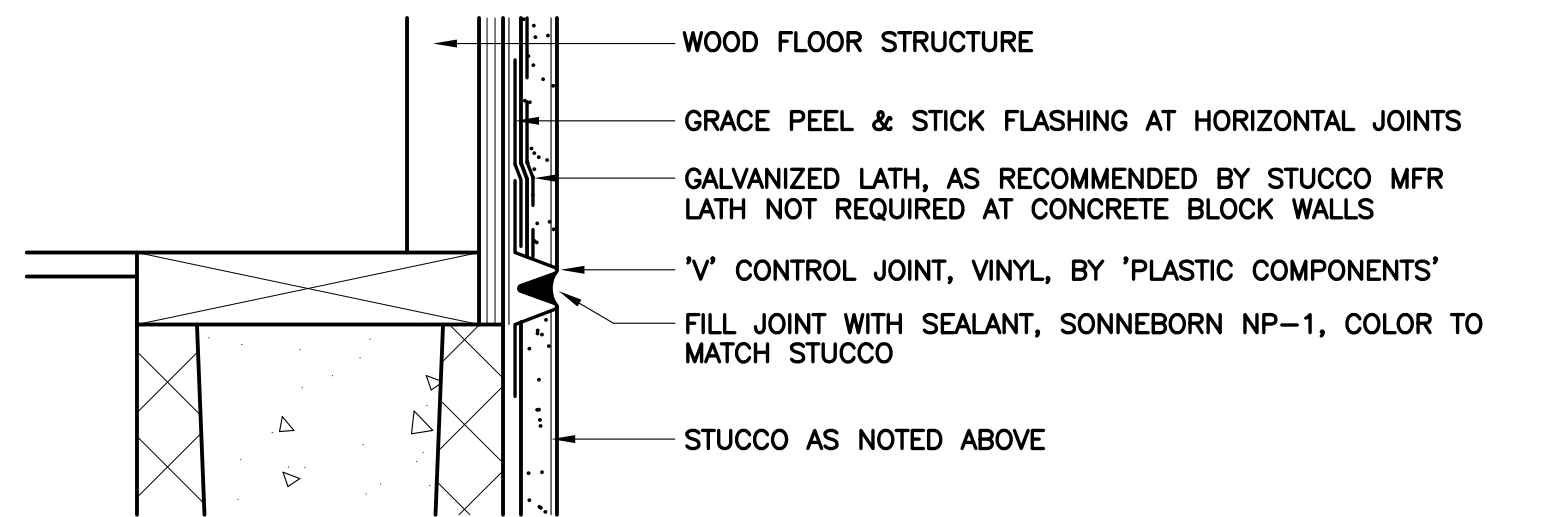
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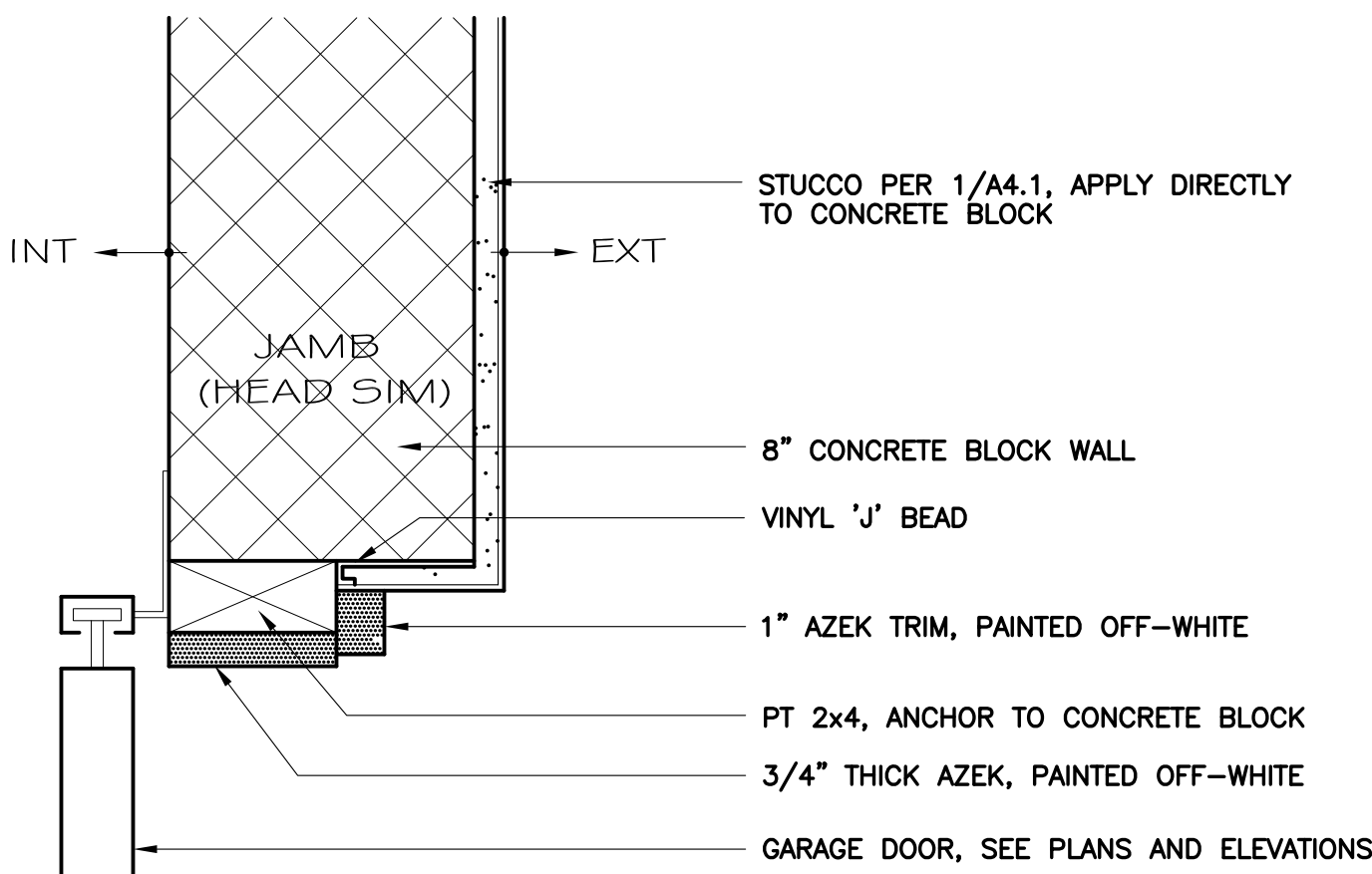


1 TYPICAL WINDOW DETAILS (CARRIAGE HOUSE)
A4.1 SCALE: 3" = 1'-0"

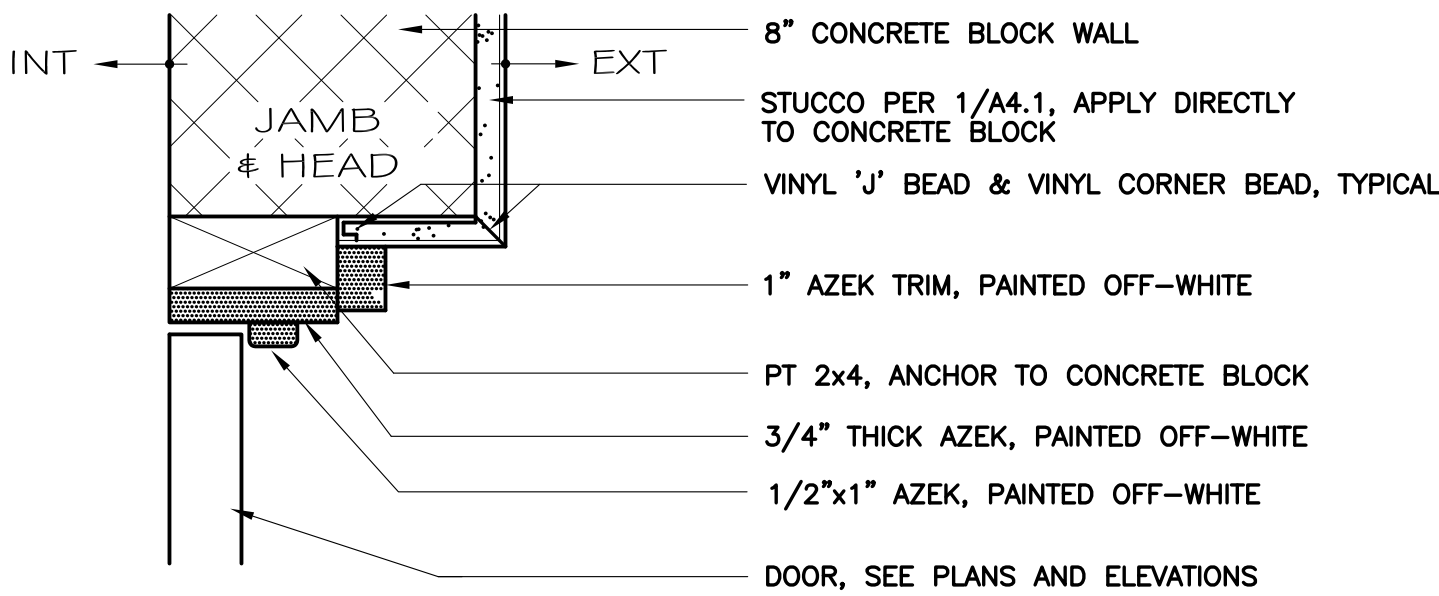


2 EXPANSION JOINT AT STUCCO
A4.1 SCALE: 3" = 1'-0"

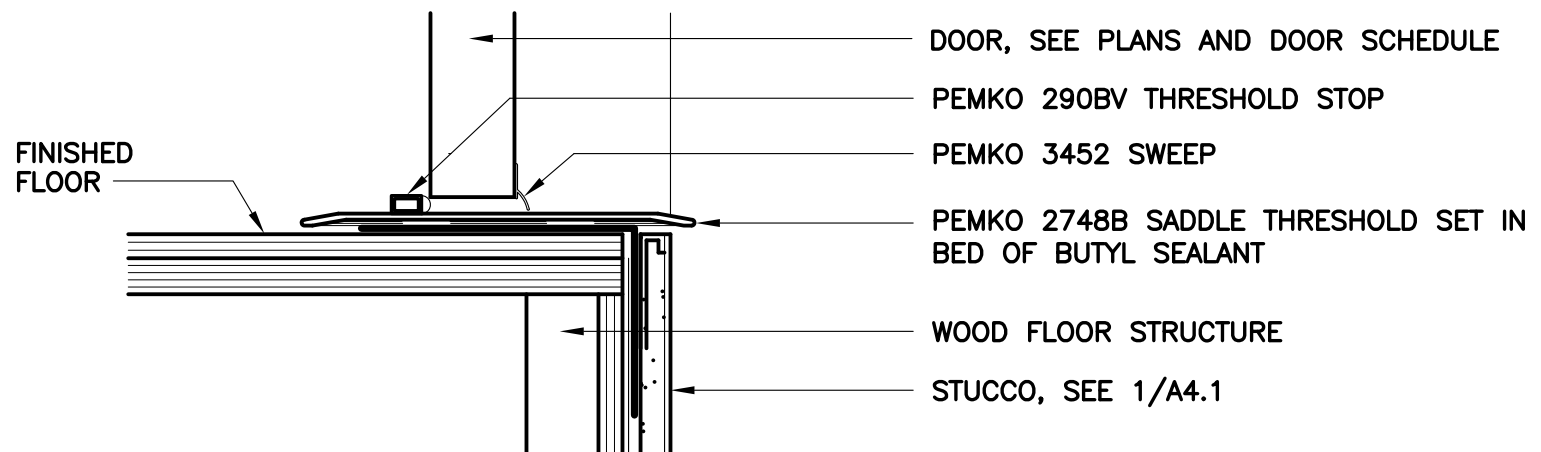
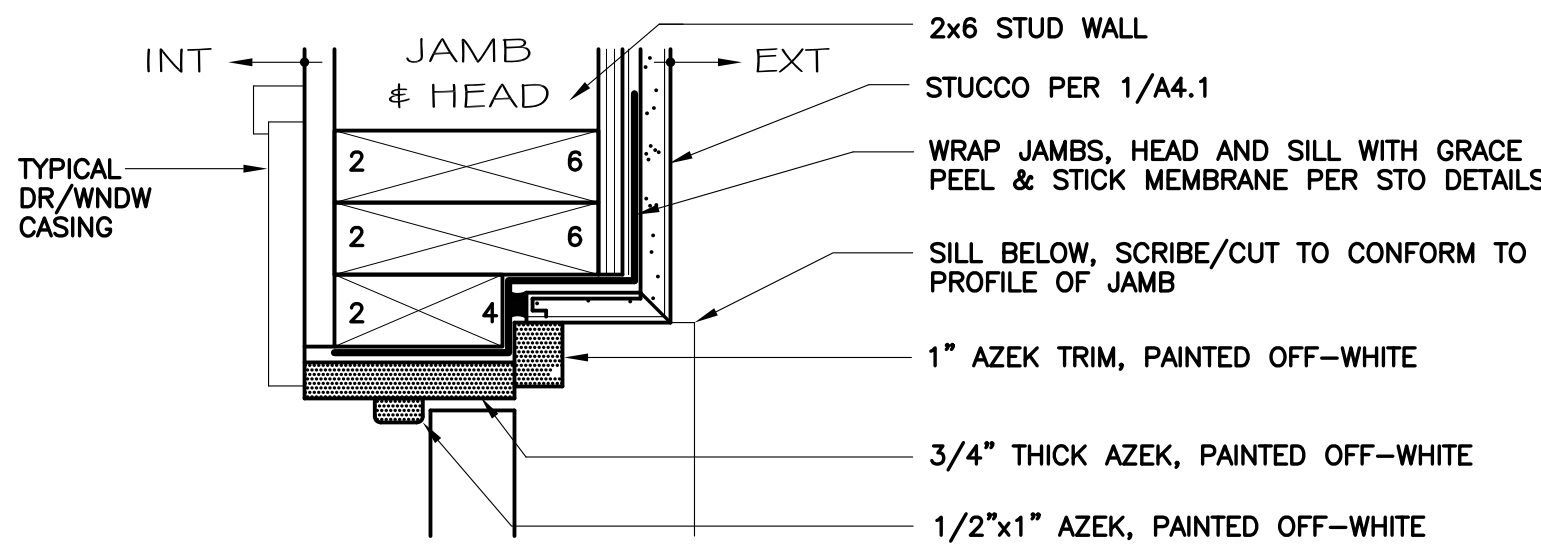
(ALL STUCCO PRODUCTS AVAILABLE AT CONTRACTOR'S DEPOT, 234-9219)



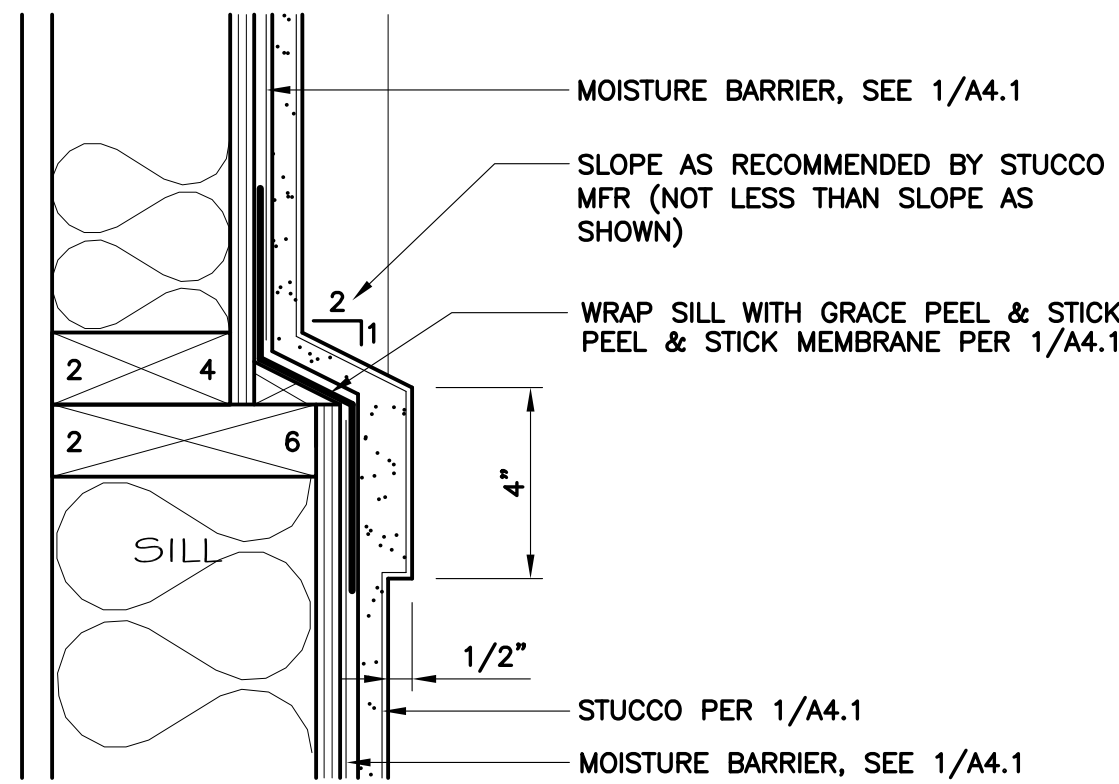
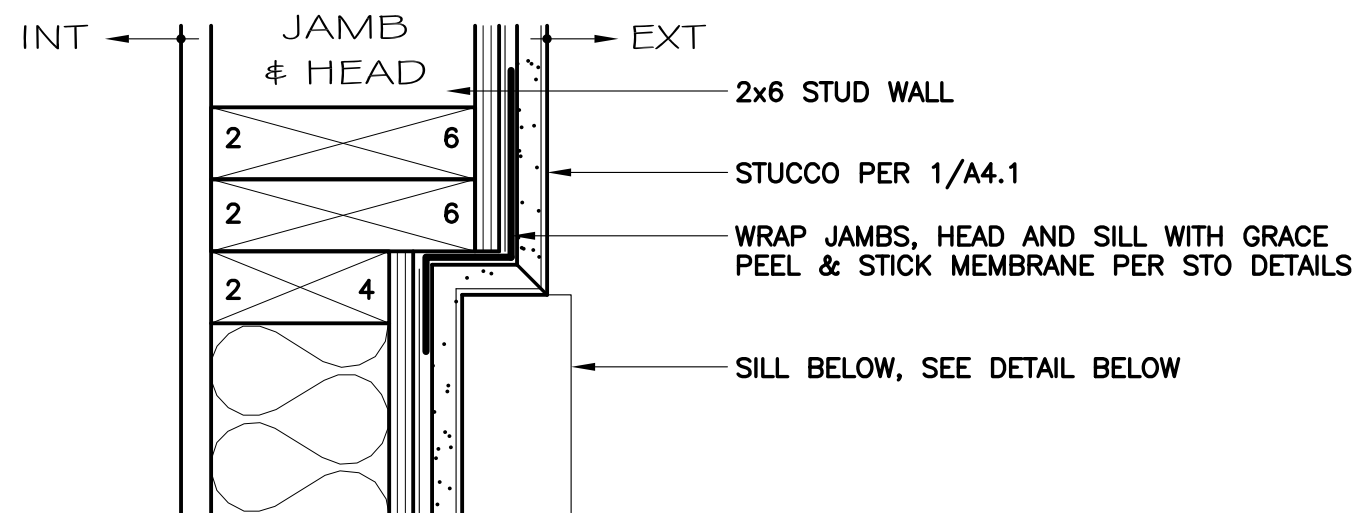
3 GARAGE DOOR (CARRIAGE HOUSE)
A4.1 SCALE: 3" = 1'-0"



4 EXTERIOR DOORS, FIRST FLOOR (CARRIAGE HOUSE)
A4.1 SCALE: 3" = 1'-0"



5 APARTMENT ENTRY DOOR
A4.1 SCALE: 3" = 1'-0"



6 2" RECESS IN STUCCO (LINCOLN STREET)
A4.1 SCALE: 3" = 1'-0"

L. SCOTT BARNARD & ASSOCIATES, AIA
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220 EAST HALL STREET SAVANNAH, GA 31401 (912) 232-6173
ASSOCIATES: ROBERT J. PORTMAN & JOHN A. CLEGG

JACOBSON RESIDENCE
NEW CARRIAGE HOUSE
225 E HUNTINGDON STREET
SAVANNAH, GEORGIA

DOOR & WNDW DETS

REVISION	DATE	BY
1	9/18/13	JAC

SHEET NO.:
A4.1
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NOT FOR CONSTRUCTION

CLASSIC™ COLLECTION

VALUE

series



America's Favorite Garage Doors®



Model T40L, Long Traditional Panel with Optional Brilliance® Collection Marquise Window Design



clopay.com

VALUE series

Improve your home's appearance with a Clopay Value Series garage door. Available in 24 or 25 gauge steel with a durable 2" steel frame construction, Value Series models are designed for beautiful, long-lasting performance. Choose from multiple panel styles, many color options and a wide range of decorative window options to create a door that fits your budget and enhances your home's curb appeal.

1-LAYER CONSTRUCTION

Heavy 24 or 25 gauge steel construction ensures durability, security and classic style at an affordable price.

- Tongue-and-groove/shiplap section joints help seal out wind, rain and snow.
- Replaceable bottom weatherseal in a rust-proof aluminum retainer helps prevent elements from entering garage.
- Patented Safe-T-Bracket® helps prevent serious injury that could occur if the bottom bracket were removed with the garage door closed and under tension.
- Nylon rollers are smooth and quiet.
- Galvanized steel hinges are durable, reliable and secure.
- Inside/outside step plates and grip handles make doors easy and safe to manually operate.



**Tongue-and-Groove
Section Joints**

24
GAUGE
STEEL

T40S short panel
T40L long panel
T40F flush panel

25
GAUGE
STEEL

T50S short panel
T50L long panel
70B ribbed panel

**Shiplap
Section Joints**

24
GAUGE
STEEL

94 short panel

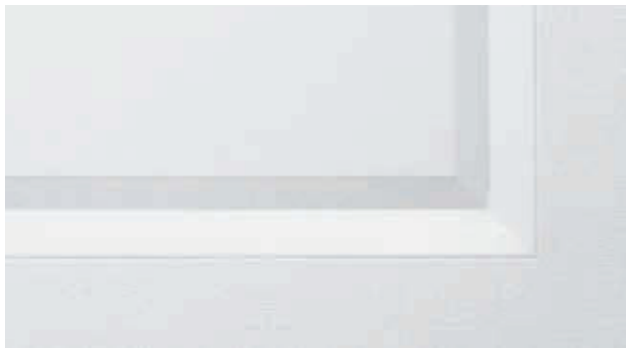
25
GAUGE
STEEL

73 short panel
76 long panel



*Model T50S, Short Traditional Panel
with Optional Colonial 509 Window Design*

DETAIL



Deep panel edging and natural embossed woodgrain texture improve appearance close-up and from the curb.

*Doors range from 6' to 16' high and 6' to 20' wide. Consult your Clopay dealer for size options.
WindCode® doors available to meet most regional wind load requirements.
Consult your local dealer for specific information.*

STYLE



Traditional Short

Complements homes with traditional styling. Models T40S, T50S, 94 and 73.



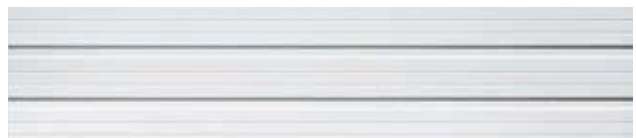
Traditional Long

Ideal for ranch style homes. Models T40L, T50L and 76.



Flush

Perfect for contemporary and some transitional style homes. Model T40F.



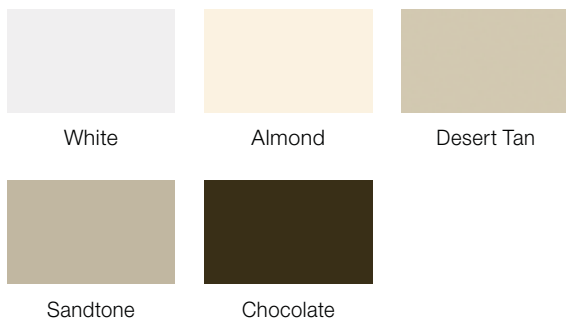
Ribbed

Good option for transitional style homes or utility structures. Model 70B.



Model 94, Short Traditional Panel

COLORS



- Exterior steel on standard color doors has a natural woodgrain texture.
- Doors can be painted to match the home's exterior using a high-quality latex exterior paint. Do not use oil-based paint.

Due to the printing process, colors may vary.

RUST-PREVENTION SYSTEM



Steel skins are protected through a tough, layered coating system, including a hot-dipped galvanized layer, a protective metal oxide pretreatment, and a baked-on primer and top coat.

STEP PLATE/LIFT HANDLE



Color-matched exterior step plate/lift handles are durable, attractive and allow for safe opening and closing of your door.



Model 73, Short Traditional Panel Design

WARRANTIES

PAINT SYSTEM	PAINT SYSTEM	PAINT SYSTEM
LIMITED LIFE WARRANTY	LIMITED 15YR WARRANTY	LIMITED 10YR WARRANTY
Models T40, 94	Models T50, 73, 76	Model 70B

WINDOWS	HARDWARE
LIMITED 10YR WARRANTY	LIMITED 3YR WARRANTY
All Models	All Models



Model 70B, Ribbed Panel

A FOCUS ON *green*



Clopay is committed to designing, manufacturing and distributing garage doors that enhance the beauty, safety and value of your home while minimizing the impact on the environment.

The Value Series helps conserve natural resources by providing a durable, reliable, low-maintenance door. Steel doors and hardware are impervious to moisture and will not rot, warp, crack or fade, and the steel used in Clopay's doors is made from over 75% recycled content.

All Clopay doors are made in the U.S., minimizing shipping, damage and handling. For more details on Clopay's green practices, visit our website at clopaydoor.com/cgreen.aspx

FREE SHIP TO STORE[†] OR HOME[™]. NOW AVAILABLE ON OVER 400,000 ITEMS.



More saving.
More doing.™

Your Store:
East Savannah #170 [\(Change\)](#)

[Tool & Truck Rental](#) | [Get It Installed](#) | [For the Pros](#) | [Gift Cards](#) | [Help](#)

Shop By
Department

Search All

What can we help you find?

Project: How-To

[Sign In](#) or [Register Your Account](#)



GAF 25-Year Royal Sovereign Golden Cedar SG 3-Tab Shingles

Model # 0202350 Store SKU # 515026

\$25.95 / bundle

This item qualifies for a bulk price discount if you purchase at least **48** units. The adjusted price will display in the Cart.

Store Only

Buy Online, Pick Up In Store Today

[Check Store Inventory](#)

PRODUCT OVERVIEW

Royal sovereign shingles combine a simple, timeless beauty with gaf's advanced protection technology. Some people think all strip shingles look pretty much alike. Not so. At gaf, we've gone to great pains to make royal sovereign the most beautiful strip shingle you can install. But don't just take our word for it. Gaf asked an independent research firm to survey homeowners about whose 3-tab shingles they preferred. The result: more homeowners preferred the look of royal sovereign shingles to the other leading brands. And the #1 reason cited by homeowners. Royal sovereign's color blends.

Info & Guides

Instructions / Assembly

You will need Adobe® Acrobat® Reader to view PDF documents. [Download](#) a free copy from the Adobe Web site.

- Homeowner favorite: in a recent blind comparison test, more homeowners preferred the look of royal sovereign to any other strip shingle
- Proven quality: over 10 billion royal sovereign shingles have been installed in north america enough to circle the earth 12 times if they were laid end to end
- Advanced protection technology: minimizes the use of precious natural resources while providing superior protection for your home
- Looks great: color lock ceramic firing process (similar to fine china) maintains true color longer
- Stays in place: passes the industry's two toughest wind tests: astm's 110 mph and 150 mph wind tests
- Trusted for over 50 years: royal sovereign is the most-preferred fiberglass 3-tab shingle in its class among contractors and builders—for over a half-century
- MFG Model # : 0202350
- MFG Part # : 0202350

SPECIFICATIONS

Assembled Depth (in.)	12 in	Assembled Height (in.)	2 in
Assembled Width (in.)	36 in	Attic ventilation required	Yes
Color Family	Browns / Tans	Color/Finish	Golden Cedar
Commercial / Residential	Residential	Coverage Area (sq. ft.)	33.3 ft²
ENERGY STAR Certified	No	Impact Resistant	No
Manufacturer Warranty	25 Year Limited Warranty	Material	Asphalt



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Building 1400, Suite 120
Atlanta, GA 30331
Phone: 404-346-3666
Fax: 404-346-7422
www.stocorp.com

Sto Specification S103

StoPowerwall™ Stucco: Fiber Reinforced Portland Cement Stucco for Concrete, Masonry and Frame Construction

Section 09220 – Portland Cement Plaster/Stucco

This specification is intended for use by the design/construction professional and any user of Sto products to assist in developing project specifications and to provide guidance on the application of StoPowerwall™ Stucco to sound supporting construction. StoPowerwall Stucco consists of a portland cement plaster that serves as a base for any Sto acrylic or silicone enhanced finish. StoPowerwall Stucco functions as a decorative and protective exterior wall covering. As with any exterior wall covering the proper integration of other components of construction, in particular, the use of flashing to direct water to the exterior, is essential. Efflorescence is a normal occurrence in portland cement based products and can affect final appearance of finish products installed over stucco. Some degree of cracking is normal in portland cement stucco and should be expected. Cracking is generally not caused by a material defect in the stucco and can be minimized by following sound construction practice such as the proper installation of lath, the use of properly graded sand, the proper incorporation of stress relief joints, moist curing of the stucco after it has been applied, and proper sequencing of construction to avoid stresses on the stucco. This specification provides a guideline for the use and specification of StoPowerwall Stucco. Specific wall assemblies incorporating StoPowerwall Stucco are also listed in code compliance reports available on request from Sto Corp. or from ICC Evaluation Services, Inc. Notes in Italics, such as this one, are explanatory and intended to guide the design professional/specifier and user in the proper selection and use of materials. This specification should be modified where necessary to accommodate individual project conditions.

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Materials and installation of exterior stucco wall covering.

1.02 RELATED SECTIONS *(add/delete, depending on specific project requirements):*

- A. Section 03300: Cast-In-Place concrete
- B. Section 04200: Unit Masonry
- C. Section 06115: Sheathing
- D. Section 07190: Vapor Barriers
- E. Section 07500: Membrane Roofing
- F. Section 07270: Air Barriers
- G. Section 07620: Sheet Metal Flashing and Trim
- H. Section 07920: Sealants and Caulking
- I. Section 08400: Exterior Entrance Doors
- J. Section 08500: Exterior Windows
- K. Section 09260: Gypsum Board Systems

1.03 REFERENCED DOCUMENTS *(add/delete depending on specific project requirements)*

- A. ASTM Standards:

1. A 641 Standard Specification for Zinc-Coated (Galvanized) Carbon Steel Wire
 2. A 653 Specification for Sheet Steel Zinc coated (Galvanized) by the Hot-Dip Process, Commercial Quality
 3. B 69 Specification for Roller Zinc
 4. C 144 Specification for Aggregate for Masonry Mortar
 5. C 578 Specification for Preformed, Cellular Polystyrene Thermal Insulation
 6. C 847 Standard Specification for Metal Lath
 7. C 897 Standard Specification for Aggregate for Job-Mixed Portland Cement-Based Plasters
 8. C 1032 Standard Specification for Woven Wire Plaster Base
 9. C 1063 Standard Specification for Installation of Lathing and Furring for Portland Cement Plaster
 10. C 1177 Specification for Glass Mat Gypsum for Use as Sheathing
 11. C 1396 Specification for Gypsum Board
 12. D 226 Standard Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing
 13. D 1784 Specification for Rigid Poly (Vinyl Chloride) (PVC) Compounds and Chlorinated Poly (Vinyl Chloride) (CPVC) Compounds
 14. E 84 Test Method for Surface Burning Characteristics of Building Materials
 15. E 119 Method for Fire Tests of Building Construction and Materials
 16. E136 Behavior of Materials in Vertical Tube Furnace at 750°C
 17. E 283 Test Method for Determining Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen
 18. E 330 Test Method for Structural Performance of Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference
 19. E 331 Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference
 20. E 2430 Standard Specification for Expanded Polystyrene ("EPS") Thermal Insulation Boards For Use in Exterior Insulation and Finish Systems ("EIFS").
 21. G 155 Standard Practice for Operating Light-Exposure Apparatus (Xenon-Arc Type) With and Without Water for Exposure of Nonmetallic Materials
- B. APA Engineered Wood Association
1. E 30 Residential and Commercial Construction Guide
- C. EIMA (EIFS Industry Members Association)
1. EIMA Guideline Specification for Expanded Polystyrene (EPS) Insulation Board
- D. Gypsum Association
1. GA-253 Application of Gypsum Sheathing
- E. ICBO ES (International Conference of Building Officials Evaluation Service)
1. AC 11 Acceptance Criteria for Cementitious Exterior Wall Coatings

1.04 DESIGN REQUIREMENTS

- A. Structural (wind and axial loads)
1. Design for maximum allowable deflection, normal to the plane of the wall, of L/360



2. Design for wind load in conformance with code requirements. Consult applicable code compliance report.
- B. Moisture Control
1. Prevent the accumulation of water into or behind the stucco, either by condensation or leakage into the wall construction, in the design and detailing of the wall assembly.
 - a. Provide corrosion resistant flashing to direct water to the exterior where it is likely to penetrate components in the wall assembly, including, above window and door heads, beneath window and door sills, at roof/wall intersections, decks, abutments of lower walls with higher walls, above projecting features, and at the base of the wall.
 - b. Air Leakage Prevention—prevent excess air leakage in the design and detailing of the wall assembly. Provide continuity between air barrier components in the wall assembly.
 - c. Vapor Diffusion and Condensation-- perform a dew point analysis of the wall assembly to determine the potential for accumulation of moisture in the wall assembly as a result of water vapor diffusion and condensation. Adjust insulation thickness and/or other wall assembly components accordingly to minimize the risk of condensation. Avoid the use of vapor retarders on the interior side of the wall in warm, humid climates.
 - d. On framed wall construction provide a code compliant moisture barrier over sheathing. Note: Building codes vary with respect to the type moisture barrier required and the number of layers. (see note below)
 - e. Protect sills of rough openings with barrier membrane. Where casing bead is used back-to-back at expansion joints, back joints with barrier membrane. Refer to Sto details.

Note: The IBC and IRC require minimum 2 layers of Grade D building paper over wood-based sheathing behind stucco. See IBC Section 2510.6 (2006 Ed.) or IRC Section R703.2 (2006 Ed.). StoGuard™ with Sto EmeraldCoat® and StoGuard™ with Sto Gold Coat® are recognized by ICC-ES as acceptable alternates to code compliant water-resistive barriers, see ICC-ES Evaluation Report ESR-1233.

- C. Grade Condition
1. Do not specify the stucco for use below grade or on surfaces subject to continuous or intermittent water immersion or hydrostatic pressure. Provide minimum 4 inch (100 mm) clearance above earth grade, minimum 2 inch (51 mm) clearance above finished grade (pavers/sidewalk). Provide increased clearance in freeze/thaw climate zones.
- D. Sloped surfaces, including Foam Trim and Projecting Architectural Features attached to stucco.
1. Avoid the use of stucco on build-outs or weather exposed sloped and horizontal surfaces (refer to 2 and 3 below).
 2. Build out trim and projecting architectural features from the stucco wall surface with code compliant EPS foam. All foam trim and projecting architectural features must have a minimum 1:2 [27°] slope along their top surface. All foam horizontal reveals must have a minimum 1:2 [27°] slope along their bottom surface. Increase slope for northern climates to prevent accumulation of ice/snow and water on surface. Where trim/feature or bottom surface of reveal projects more than 2 inches (51 mm) from the face of the wall plane, protect the top surface with waterproof base coat. Avoid the use of trim and features that exceed the maximum allowable thickness of EPS permitted by code (typically 4 inches [100 mm]) unless approved by the code official. Periodic inspections and increased maintenance may be required to maintain surface

integrity of finishes on weather exposed sloped surfaces. Limit projecting features to easily accessible areas and limit total area to facilitate maintenance and minimize maintenance burden. Refer to Sto details.

3. Do not use EPS foam on weather exposed projecting ledges, sills, or other projecting features unless supported by framing or other structural support and protected with metal coping or flashing. Refer to Sto details.

E. Joints

1. Provide two piece expansion joints in the stucco system where building movement is anticipated: at joints in the substrate or supporting construction, where the system is to be installed over dissimilar construction or substrates, at changes in building height, at floor lines, at columns and cantilevered areas.
2. Provide one piece expansion joints every 144 ft² (13 m²)*. Cut and wire tie lath to the expansion joint accessory so lath is discontinuous beneath the accessory. Do not exceed length to width ratio of 2-1/2:1 in expansion joint layout and do not exceed more than 18 feet (5.5 m) in any direction without an expansion joint. Where casing bead is used back-to-back as the expansion joint, back the joint with barrier membrane.

**Note: the requirement for a one piece expansion joint every 144 ft² (13 m²) may be waived in the following cases: 1. when two-piece expansion joints exist every 144 ft² (13 m²), and 2. on solid substrates without metal lath such as cast-in-place concrete and concrete masonry units provided joints in the supporting construction exist at appropriate intervals and they are reflected in the stucco. In such cases joint spacing in the stucco shall not exceed 250 ft² (23 m²).*

3. Provide one piece expansion joints at through wall penetrations, for example, above and below doors or windows.

Note: the requirement for one piece expansion joints at through wall penetrations may be waived in the following case: when another type of expansion joint is provided in lieu of the one piece expansion joint, for example, back-to-back casing beads.

4. Provide minimum 3/8 inch (9 mm) wide joints where the system abuts windows, doors and other through wall penetrations.
5. Provide appropriate accessories at stucco terminations and joints.
6. Provide appropriate sealant at stucco terminations.
7. Indicate location of joints, accessories and accessory type on architectural drawings.

F. Fire Protection

1. Do not use foam trim in excess of 4 inches (100 mm) thick unless approved by the code official on buildings of noncombustible construction.
2. Refer to the applicable code compliance report for other limitations and fire-resistive assemblies that may apply.

G. Solid Substrates

1. Provide surface plane tolerance not to exceed ¼ inch in 10 feet (6 mm in 3.0 m).
2. Concrete—prevent the use of form oil, curing compounds or other bond breakers that inhibit bond to the surface or provide for their removal.
3. Concrete Masonry—provide open texture concrete masonry units with flush joints.

H. Stucco Thickness: General

1. Direct Application to Concrete or Concrete Masonry:
 - a. Stucco thickness shall not exceed ½ inch (13 mm) applied in one or two coats.
 - b. Stucco thickness shall not exceed 5/8-inch (16 mm) applied in three coats.
2. Application to Metal Plaster Bases:
 - a. Galvanized diamond mesh metal lath:
 - i. 1.75 lb/yd² (1 kg/m²): stucco thickness shall be ½ inch (13 mm) applied in one or two coats.
 - ii. Minimum 2.5 lb/yd² (1.4 kg/m²): stucco thickness shall be ½ to 7/8 inch (13 to 22 mm). ½ inch (13 mm) thickness shall be applied in one or two coats. Thicknesses in excess of ½ inch up to 7/8 inch (13 up to 22 mm) shall be applied in two coats.
 - b. Woven wire fabric lath: stucco thickness shall be ½ inch (13 mm) applied in one or two coats
3. Thickness shall be uniform throughout the wall area.

I. Stucco Thickness: Specific

See ICC-ES Evaluation Reports ESR-2323 for minimum required thickness and construction of listed wind resistant and fire-resistive assemblies.

Note: Other ICC-ES Evaluation Report numbers may apply depending on the project location. If reports other than ICC-ES ESR-2323 apply, the applicable report number will be printed on the StoPowerwall bag. All ICC-ES Evaluation Reports for Sto products are available on-line at www.stocorp.com.

1.05 PERFORMANCE REQUIREMENTS

A. StoPowerwall Stucco

TEST	METHOD	CRITERIA	RESULT
Accelerated Weathering	ASTM G 26	2000 hours	No chalking, cracking, checking, crazing, or erosion
Combustibility	ASTM E 136	Non-combustible Material	Pass
Freeze-Thaw	ICC-ES AC 11	10 cycles	No cracking, checking or crazing
Surface Burning	ASTM E 84	Flame spread of less than 25, Smoke Developed of less than 450	Flame Spread: < 5 Smoke Developed: < 10
Fire Resistance	ASTM E 119	One hour fire resistive rating	Pass, refer to ICC-ES ESR 2323 for listed assemblies.
Wind Loads	ASTM E 330	Allowable and ultimate design pressures	Pass, refer to ICC-ES ESR 2323 for listed assemblies.

**Note: refer to the appropriate Sto Technical Bulletin for performance data on Sto finishes for use over StoPowerwall Stucco*



Note: Other ICC-ES Evaluation Report numbers may apply depending on the project location. If reports other than ICC-ES ESR-2323 apply, the applicable report number will be printed on the StoPowerwall bag. All ICC-ES Evaluation Reports for Sto products are available on-line at www.stocorp.com.

1.06 SUBMITTALS

- A. Manufacturer's specifications, details, installation instructions and product data.
- B. Manufacturer's code compliance report.
- C. Manufacturer's standard warranty.
- D. Samples for approval as directed by architect or owner.
- E. EPS board manufacturer's certificate of compliance with ASTM E 2430-05, *Standard Specification for Expanded Polystyrene ("EPS") Thermal Insulation Boards For Use in Exterior Insulation and Finish Systems ("EIFS")*.
- F. Prepare and submit project-specific details (when required by contract documents).

1.07 QUALITY ASSURANCE

- A. Manufacturer requirements
 - 1. Stucco products manufacturer for a minimum of twenty (20) years.
 - 2. Stucco finish products manufactured under ISO 9001:2000 Quality System.
- B. Contractor requirements
 - 1. Licensed, insured and engaged in application of portland cement stucco for a minimum of three (3) years.
 - 2. Knowledgeable in the proper use and handling of Sto materials.
 - 3. Employ skilled mechanics who are experienced and knowledgeable in portland cement stucco application, and familiar with the requirements of the specified work.
 - 4. Successful completion of minimum of three (3) projects of similar size and complexity to the specified project.
 - 5. Provide the proper equipment, manpower and supervision on the job site to install the system in compliance with Sto's published specifications and details and the project plans and specifications.
- C. Insulation board manufacturer requirements
 - 1. Recognized by Sto as capable of producing insulation board to meet system requirements, and hold a valid licensing agreement with Sto.
 - 2. Listed by an approved agency. Label insulation board with information required by Sto, the approved listing agency, and the applicable building code.
- D. Mock-up Testing (*for projects of sufficient size or complexity*)
 - 1. Construct full-scale mock-up of typical stucco/window wall assembly with specified tools and materials and test air and water infiltration and structural performance in accordance with ASTM E 283, E 331 and E 330, respectively, through independent laboratory. Mock-up shall comply with requirements of project specifications. Where mock-up is tested at job site maintain approved mock-up at site as reference

standard. If tested off-site accurately record construction detailing and sequencing of approved mock-up for replication during construction.

E. Inspections

1. Provide independent third party inspection where required by code or contract documents.
2. Conduct inspections in accordance with code requirements and contract documents.

1.08 DELIVERY, STORAGE AND HANDLING

- A. Deliver all materials in their original sealed containers bearing manufacturer's name and identification of product.
- B. Protect coatings (pail products) from freezing and temperatures in excess of 90°F (32° C). Store away from direct sunlight.
- C. Protect Portland cement based materials (bag products) from moisture and humidity. Store under cover off the ground in a dry location.

1.09 PROJECT/SITE CONDITIONS

(Weather conditions affect application, drying time and curing requirements. Hot or dry conditions limit working time and accelerate drying and may require adjustments in application, scheduling and curing to achieve desired results; cool or damp conditions extend working time and retard drying and may require added measures of protection against wind, dust, dirt, rain and freezing.)

- A. Maintain ambient and surface temperatures above 40°F (4°C) during application and for 24 hours after set of stucco.
- B. Provide supplementary heat for installation in temperatures less than 40°F (4°C) such that temperatures are maintained as in 1.09A. Prevent concentration of heat on uncured stucco and vent fumes and other products of combustion to the outside to prevent contact with stucco.
- C. Prevent uneven or excessive evaporation of moisture from stucco during hot, dry or windy weather. For installation under any of these conditions provide special measures to properly moist cure the stucco.
- D. Provide protection of surrounding areas and adjacent surfaces from application of materials.

1.10 COORDINATION/SCHEDULING

(The work in this section requires close coordination with related sections and trades. Sequence work to provide protection of construction materials from weather deterioration)

- A. Provide minimum 28 day cure of concrete and concrete masonry units before the installation of stucco.
- B. For load bearing concrete masonry and stud wall assemblies, commence the stucco installation after completion of all floor, roof construction and other construction that imposes dead loads on the walls to prevent excessive deflection (and potential cracking) of the stucco.



- C. Sequence interior work such as drywall installation prior to stucco installation to prevent stud distortion and potential cracking of the stucco.
- D. Provide site grading such that the stucco terminates above earth grade minimum 4 inches (100 mm) and above finished grade (pavers/sidewalk) minimum 2 inches (51 mm). Provide increased clearance in freeze/thaw climate zones.
- E. Provide protection of rough openings before installing windows, doors, and other penetrations through the wall and provide sill flashing. Coordinate installation of moisture barrier with window and door installation to provide weather proofing of the structure and to prevent moisture infiltration and excess air infiltration.
- F. Install window and door head flashing immediately after windows and doors are installed.
- G. Install diverter flashings wherever water can enter the wall assembly to direct water to the exterior.
- H. Install copings and sealant immediately after installation of the stucco and when finish coatings are dry.
- I. Attach penetrations through stucco into structural support and provide water tight seal at penetrations.

1.11 WARRANTY

- A. Provide manufacturer's standard warranty.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Sto Corp.
- B. Provide stucco, primer and finish from single source manufacturer.

2.02 SURFACE PREPARATION *(optional component, depending on substrate condition)*

- A. Sto Bonding Agent and Admixture--copolymer bonding agent for brush or roller application to prepared CMU surfaces.

2.03 MOISTURE BARRIER *(supplied by others)*

- A. Minimum No. 15 vapor permeable asphalt saturated felt in compliance with ASTM D 226, Grade D or equal.

Note: The IBC and IRC require minimum 2 layers of Grade D building paper over wood-based sheathing behind stucco. See IBC Section 2510.6 (2006 Ed.) or IRC Section R703.2 (2006 Ed.). StoGuard with Sto EmeraldCoat and StoGuard with Sto Gold Coat are recognized by ICC-ES as acceptable alternates to code compliant water-resistive barriers, see ICC-ES Evaluation Report ESR-1233.

2.04 LATH *(supplied by others; select one depending on type construction and refer to applicable code report for specific assemblies listed with woven wire fabric and 1.75 lb/yd² (1 kg/m²) metal lath.)*

- A. Minimum 2.5 lb./yd² (1.4 kg/m²) self-furred galvanized steel diamond mesh metal lath in compliance with ASTM C 847 (recommended for residential and commercial construction).
- B. Minimum No. 20 gauge 1 inch (25 mm) self-furred galvanized steel woven wire fabric in compliance with ASTM C 1032, or minimum 1.75 lb./yd² [1 kg/m²] galvanized steel diamond mesh metal lath in compliance with ASTM C 847 (recommended for residential [one and two family dwellings] and light commercial construction).

(Note: metal lath is susceptible to corrosion in coastal environments. Provide weather protection to prevent moisture entry into wall construction as outlined in Design Requirements Section 1.04B).

2.05 MECHANICAL FASTENERS *(supplied by others)*

- A. Appropriate non-corroding fasteners, depending on the type framing or substrate:
 - 1. Wood Framing—minimum 11 gauge, 7/16 inch (11 mm) diameter head galvanized roofing nails with minimum ¾ inch (19mm) penetration into studs or minimum #8 Type S wafer head fully threaded corrosion resistant screws with minimum ¾ inch (19 mm) penetration into studs.
 - 2. Steel Framing—minimum #8 Type S or S-12 wafer head fully threaded corrosion resistant screws with minimum 3/8 inch (10 mm) penetration into studs.
 - 3. Concrete or Masonry—minimum # 8 wafer head fully threaded corrosion resistant screws for masonry with minimum 1 inch (25 mm) penetration into substrate.

Note: pull-out or withdrawal capacity of the selected fastener must be verified with respect to anticipated wind load, desired safety factor and building code requirements. Consult applicable code compliance report for specific assemblies and fastening schedules.

- B. Tie Wire—18 gauge galvanized and annealed low-carbon steel in compliance with ASTM A 641 with Class I coating.

2.06 ACCESSORIES *(supplied by others, select one type)*

- A. Weep screed, casing bead, corner bead, corner lath, expansion and control joint accessories. All accessories shall meet the requirements of ASTM C 1063 and its referenced documents:
 - 1. PVC plastic in compliance with ASTM D 1784, cell classification 13244C.
 - 2. Zinc in compliance with ASTM B 69.
 - 3. Galvanized metal in compliance with ASTM A 653 with G60 coating.
- B. All accessories shall have perforated or expanded flanges and shall be designed with grounds for the specified thickness of stucco.

(Note: metal accessories are susceptible to corrosion in coastal environments. Consider the use of zinc alloy or PVC accessories in these environments. Metal corner beads with solid metal noses are susceptible to corrosion in exposed exterior applications. Consider the use of several layers of woven-wire mesh in lieu of corner bead and completely encase the metal in stucco).

2.07 JOB MIXED INGREDIENTS

- A. Water—clean and potable.
- B. Clean, well graded sand free of deleterious materials in compliance with ASTM C 897 or ASTM C144.



- C. Stucco Admixture (optional, used to provide StoPowerwall Stucco Polymer Modified)
 - 1. Sto Bonding Agent and Admixture—copolymer admixture for StoPowerwall Stucco.

2.08 STUCCO (*select one*)

- A. StoPowerwall Stucco — factory proportioned, fiber reinforced portland cement based stucco for trowel or pump application, field mixed with graded sand and water.
- B. StoPowerwall Stucco Polymer Modified — polymer modified, factory proportioned, fiber reinforced portland cement based stucco, field mixed with graded sand, water and Sto Bonding Agent and Admixture.

2.09 FOAM BUILD-OUTS

- A. Adhesive
 - 1. Sto BTS® *Plus*—one component, polymer modified, cement based high build adhesive.
- B. Insulation Board
 - 1. Sto EPS Insulation Board--nominal 1.0 lb/ft³ (16 kg/m³) Expanded Polystyrene (EPS) Insulation Board in compliance with ASTM C 578 Type I requirements, and EIMA Guideline Specification for Expanded Polystyrene (EPS) Insulation Board. (Note: minimum required thickness is 1 inch [25 mm] and maximum allowable thickness is typically 4 inches [100 mm] for noncombustible type construction unless thicker dimensions are approved by the code official).
- C. Reinforcing Mesh (*select one*):
 - 1. Sto Mesh--nominal 4.5 oz./yd² (153 g/m²), symmetrical, interlaced open-weave glass fiber fabric treated with alkaline resistant coating for compatibility with Sto materials (achieves Standard Impact Classification).
 - 2. Sto Detail Mesh--nominal 4.2 oz./yd² (143 g/m²), flexible, symmetrical, interlaced open-weave glass fiber fabric treated with alkaline resistant coating for compatibility with Sto materials (used for standard EIFS backwrapping and aesthetic detailing).
- D. Base Coats (*select one or both for foam build-outs*):
 - 1. Sto BTS® *Plus*—one-component polymer modified cement based high build base coat with less than 33 percent portland cement content by weight and capable of achieving minimum 1/16 inch (1.6 mm) thickness in one pass.
 - 2. Sto Flexyl—fiber reinforced acrylic based waterproof base coat mixed with portland cement (for use as a waterproof base coat to waterproof foundations, parapets, splash areas, trim and other projecting architectural features).

2.10 PRIMER (*select one*)

- A. Sto Primer Sand—acrylic based tinted primer.
- B. Sto Hot Prime®—acrylic based primer/sealer for high pH surfaces.

(Note: priming is recommended to provide uniform substrate absorption and finish color, to improve adhesion and water resistance, and to retard efflorescence). Sto Hot Prime may be applied 48 hours after completing the brown coat. Sto Primer Sand requires 28 days curing of brown coat before application.

2.11 FINISH COAT *(select one from among the Sto textured wall finish products)*

- A. Sto elastomeric or silicone enhanced elastomeric textured wall finish
- B. Sto acrylic or silicone enhanced acrylic textured wall finish.

(Note: see appropriate Sto Product Bulletin for detailed information on finishes. Elastomeric textured wall finishes are recommended to provide best performance over cracks that may occur in stucco).

2.12 MIXING *(for stucco, select either B or C)*

- A. Sto Bonding Agent and Admixture—no mixing required when used as a bonding agent. Use at full strength. Shake sealed container before use to a homogeneous consistency. Sto Bonding Agent and Admixture may be used as an admixture in the stucco mixture. When used in this way, dilute 1 part Sto Bonding Agent and Admixture to 3 parts clean water used as part of the mixing water for the stucco.
- B. StoPowerwall Stucco - mix 200 lbs. (90 kg) of sand to an 80 lb (36 kg) bag of StoPowerwall Stucco and approximately 4 gallons (15 L) of clean water in a paddle type mortar mixer. Add ½ to 2/3 of the required water, ½ of the sand, and one bag of StoPowerwall Stucco in a paddle type mortar mixer. Then add the rest of the sand and sufficient water to achieve a uniform mix of workable consistency. Mix for 3—5 minutes after all materials are in the mixer. Stucco material can be retempered once in the first hour after mixing. Avoid retempering after the first hour and discard material older than 1.5 hours. Keep mix ratio consistent from batch to batch and mix each batch separately. Use only the amount of water necessary for a workable mix. Use of excess water is detrimental to performance.
- C. StoPowerwall Stucco Polymer Modified – Dilute Sto Bonding Agent and Admixture with 3 parts water to one part Sto Bonding Agent and Admixture by volume by adding clean, potable water to a clean mixing pail and mixing with a high speed electric drill mixer. Follow normal mix ratio and procedures for mixing StoPowerwall Stucco (2.12B), except use diluted Sto Bonding Agent and Admixture in lieu of water.
- D. Adhesive and Base Coats for Foam Build-outs: (select either a or b)
 - a. Sto BTS Plus --mix ratio with water: 5-6.5 quarts (4.7-6.2 L) of water per 47 pound (21.3 kg) bag of Sto-BTS Plus. Mix ½ bag at a time by pouring 2.5-3.25 quarts (1.4-1.9L) of clean potable water into a clean mixing pail. Add approximately ½ bag of Sto BTS-Plus, mix to a uniform consistency and allow to set for approximately 5 minutes. Adjust mix if necessary with additional Sto BTS Plus or water and remix to a uniform trowel consistency. Avoid retempering. Keep mix ratio consistent. Do not exceed maximum amount of water in mix ratio.
 - b. Sto Flexyl--mix ratio with Portland cement: 1:1 ratio by weight. Pour Sto Flexyl into a clean mixing pail. Add Portland cement, mix to a uniform consistency and allow to set for approximately five minutes. Adjust mix if necessary with additional Sto Flexyl and remix to a uniform trowel consistency. Avoid retempering. Keep mix ratio consistent.



- E. Primer--mix with a clean, rust-free high speed mixer to a uniform consistency.
- F. Finish--mix with a clean, rust-free high speed mixer to a uniform consistency. A small amount of water may be added to adjust workability. Limit addition of water to amount needed to achieve the finish texture.
- G. Mix only as much material as can readily be used.
- H. Do not use anti-freeze compounds or other additives.

PART 3 EXECUTION

3.01 ACCEPTABLE INSTALLERS

- A. Pre-qualify under Quality Assurance requirements of this specification (section 1.07.B).

3.02 EXAMINATION

- A. Inspect surfaces for:
 - 1. Contamination—algae, chalkiness, dirt, dust, efflorescence, form oil, fungus, grease, laitance, mildew or other foreign substances.
 - 2. Surface absorption and chalkiness.
 - 3. Cracks—measure crack width and record location of cracks.
 - 4. Damage and deterioration.
 - 5. Moisture damage—record any areas of moisture damage.
- B. Inspect sheathing application for compliance with applicable requirement:
 - 1. Exterior Gypsum Sheathing—GA-253
 - 2. Glass Mat Faced Gypsum Sheathing—refer to manufacturer's instructions.
 - 3. Exterior Grade and Exposure 1 wood based sheathing—APA Engineered Wood Association E 30.

Note: wood-based sheathing must be gapped 1/8 inch (3mm) at edge and end joints to prevent cracking in the stucco.

- C. Report deviations from the requirements of project specifications or other conditions that might adversely affect the stucco installation to the General Contractor.

3.03 SURFACE PREPARATION

- A. Concrete (Cast-in-Place)
 - 1. Provide a surface that is slightly scarified, water absorbent, straight and true to line and plane. Remove form ties and trim projecting concrete so it is even with the plane of the wall. Remove form release agents by washing with a trisodium phosphate detergent and rinsing with clean water. Establish surface profile by sandblasting, waterblasting, wire brushing, chipping or other appropriate means. Remove all dust, dirt, grease, laitance or other bond inhibiting material. Pre-moisten absorbent surfaces with water prior to placement of stucco.
- B. Concrete Masonry Units

1. Remove projecting joint mortar so it is even with the plane of the wall. Remove surface contaminants such as efflorescence, existing paint or any other bond inhibiting material by sandblasting, waterblasting, wire brushing, chipping or other appropriate means. Pre-moisten the surface with water just prior to placement of stucco, or apply one uniform coat of bonding agent by brush or roller.

(Note: bonding agent is recommended over CMU surfaces to minimize the risk of mortar joints telegraphing through the finished wall surface. For A and B above, where bond inhibiting material cannot be removed, where concrete or masonry surface irregularities are such that more than 1/2 inch (13 mm) of stucco must be applied, or where the surface is too dense or non-absorbent to receive the stucco, install furred or self-furred lath as in 3.04 B1—B6).

- C. Gypsum Sheathing in compliance with ASTM C1396, Glass Mat Faced Gypsum Sheathing in compliance with ASTM C 1177, and Exterior or Exposure 1 wood-based sheathing (plywood and OSB [Oriented Strand Board]):

1. Verify installation of sheathing in compliance with applicable requirement.
2. Protect the substrate with a moisture barrier as required by the applicable code and install lath and accessories as in 3.04 B1—B6.

(Note: wood-based sheathing must be gapped 1/8 inch (3mm) at edge and end joints to prevent cracking in the stucco).

3.04 INSTALLATION

Apply the stucco in discrete panels without interruption to avoid cold joints and differences in appearance. Abut wet stucco to set stucco at natural or architectural breaks in the wall such as expansion joints, pilasters, terminations, or changes in plane. Hot or dry conditions accelerate drying and moisture loss from stucco which can affect strength and resistance to cracking. Adjustments in the application, scheduling and curing of stucco to prevent rapid loss of moisture are necessary to achieve a satisfactory stucco installation. Cold temperatures retard drying and strength gain and adjustments may have to be made in the application, scheduling and curing of stucco to prevent damage from frost and other trades. Do not install stucco during extremely hot, dry and/or windy conditions. Do not install stucco during freezing conditions or on frozen substrates. Do not install stucco onto grounds of accessories. Completely embed lath and flanges of accessories and completely cover attachments with stucco. Moist cure stucco minimum 48 hours for optimum strength gain and resistance to cracking. Allow final stucco application to completely dry before applying primer or finish. The finished installation must be true, plumb and square. Should stucco get into control or expansion joints, remove the stucco from within the joint before the stucco sets.

After satisfactory inspection of surfaces and correction of any deviations from specification requirements commence the stucco installation in accordance with A or B below.

- A. Installation over cast-in-place concrete or concrete masonry units:

(Note: concrete and concrete masonry units require minimum 28 day cure before the installation of stucco. The requirement for an expansion joint every 144 ft² (13 m²) may be waived on solid substrates without metal lath such as cast-in-place concrete and concrete masonry units provided joints in the supporting construction exist at appropriate intervals and they are reflected in the stucco. In such cases joint spacing in the stucco shall not exceed 250 ft² (23 m²).

1. Install foundation weep screed at the base of the wall.
2. Install casing beads at stucco terminations—doors, windows and other through wall penetrations. Install two piece expansion joints (or back-to-back casing beads) at joints in the supporting construction, building expansion joints, where the stucco is to

be installed over dissimilar construction or substrates, at changes in building height, at floor lines, columns, and cantilevered areas. Install one piece expansion joints at corners of windows, doors and similar through wall penetrations, and every 250 ft² (23 m²). Install corner bead at outside corners and corner lath at inside corners. Install full accessory pieces where possible and avoid small pieces. Seal adjoining pieces by embedding ends in sealant. Abut horizontal into vertical joint accessories. Attach at no more than 7 inches (178 mm) on center into concrete/masonry with appropriate fasteners.

3. Pre-moisten concrete masonry units and absorbent concrete prior to the placement of stucco (unless bonding agent has been applied to the CMU surface).
4. Scratch Coat: apply the stucco with sufficient pressure to ensure intimate contact with the substrate and complete coverage to an approximate thickness of 1/4 inch (6 mm). Score the stucco upon completion of each panel in preparation for a second coat. Score horizontally.
5. Brown Coat: as soon as the first coat is firm enough to receive the second coat without damage, apply the second coat. Alternatively, moist cure the first coat up to 48 hours and dampen the scratched surface with water immediately before applying the second coat. Apply the second coat with sufficient pressure to ensure intimate contact with the first coat to an approximate thickness of 1/8 or 1/4 inch (3 or 6 mm) and as needed to bring the stucco to the desired thickness. Use a rod or straight edge to bring the surface to a true, even plane. Fill depressions in plane with stucco. Final thickness of stucco shall not exceed 1/2 inch (13 mm).
6. After the stucco has lost sufficient moisture so that the surface sheen has disappeared, float the surface lightly with a darby or wood float to densify the surface and to provide a smooth, even surface. Float before the stucco becomes so rigid that it cannot be moved beneath the float.
7. Moist cure after the stucco has set by lightly fogging the surface for at least 48 hours. Fog as frequently as required during the 48 hour period to prevent loss of moisture from the stucco. Avoid eroding the stucco surface with excess moisture. If relative humidity exceeds 75% the frequency of moist-curing can be diminished.

*(*Note: for one coat installation of stucco follow the procedure described above, except apply the stucco in one coat up to 1/2 inch (13 mm) thickness, and eliminate scoring and the application of brown coat).*

B. Installation over frame construction with sheathing:

1. Weep Screed Installation
 - a. Install foundation weep screed at the base of the wall securely to framing with the appropriate fastener. Locate foundation weep screed so that it overlaps the joint between the foundation and framing by a minimum of 1 inch (25 mm). Locate the foundation weep screed minimum 4 inches (100 mm) above earth grade, 2 inches (51 mm) above finished grade (paved surfaces, for example).
2. Weather Protection
 - a. Protect sills of rough openings with barrier membrane.
 - b. Apply moisture barrier in compliance with the applicable building code. Wrap paper into rough opening and lap over barrier membrane at jambs. Lap paper over foundation weep screed attachment flange and window/door head flashings. Refer to Sto Details.

(Note: code requirements for weather protection vary. Always consult the applicable code and the manufacturer's code compliance report. Typically building paper in compliance with the code is attached directly to sheathing and lapped shingle style, upper courses over lower courses, by minimum 2 inches (51 mm), with vertical laps of minimum 6 inches (150 mm). Courses are staggered

so that vertical joints do not align. The IBC and IRC require two layers of building paper over wood-based sheathing. If paper-backed lath is used, the water resistant backing serves as the weather protection or as one of the two layers of paper required over wood-based sheathing. Care must be taken to prevent tears in the paper and to limit penetrations to only those required for attachment. Flashing must be in place and properly integrated with the moisture barrier at sills, above windows and doors, decks and at roof/wall intersections such that water is directed to the exterior).

3. Casing Bead and Expansion Joint Installation
 - a. Install casing beads at stucco terminations—doors, windows and other through wall penetrations. Install expansion joints (or back-to-back casing beads) at building expansion joints, where the stucco is to be installed over dissimilar construction or substrates, at changes in building height, at floor lines, columns, and cantilevered areas. Install one piece expansion joints at corners of windows, doors, and similar through wall penetrations, and every 144 ft² (13 m²). Install full accessory pieces where possible and avoid small pieces. Seal adjoining pieces by embedding ends in sealant. Abut horizontal into vertical joint accessories. Attach at no more than 7 inches (178 mm) into framing with appropriate fasteners.

Note: refer to architectural drawings for joint locations and accessory type. Moisture protection must be continuous behind joints and accessories.

4. Lath Installation
 - a. Diamond Mesh Metal Lath
 - i. General--install metal lath with the long dimension at right angles to structural framing. Terminate lath at expansion joints. Do not install continuously beneath joints.
 - ii. Seams/Overlaps--overlap side seams minimum 1/2 inch (13 mm) and end seams minimum 1 inch (25 mm). Stagger end seams. Overlap casing beads and expansion joints minimum 1 inch (25 mm) over narrow wing accessories, minimum 2 inches (51 mm) over expanded flange accessories. Do not install lath continuously beneath expansion joints.
 - iii. Attachment--fasten securely through sheathing into structural framing at 7 inches (178 mm) on center maximum vertically and 16 inches (406 mm) on center horizontally*. Wire tie at no more than 9 inches (225 mm) on center at side laps, accessory overlaps, and where end laps occur between supports.
 - b. Woven wire fabric lath—follow installation as for metal lath except overlap all seams by one mesh minimum.
 - c. Paper-backed lath—follow installation as for metal lath. Lap lath over lath, not paper to lath overlap. For horizontal overlaps the paper backing must lap shingle style behind the lath to lath overlap.

*(*Note: the type fastener selected, its layout and pullout or withdrawal value from the supporting construction must be verified and approved by the project engineer/architect with respect to design wind load and local building code requirements).*

5. One Piece Expansion Joint Installation
 - a. Install one piece expansion joints over lath at through wall penetrations, for example, above and below doors or windows (unless another type of expansion joint is already provided at these locations or one piece expansion joints are already provided as in 3.04 B3a). Install one piece expansion joints over lath every 144 ft² (13 m²) (unless already provided as in 3.04 B3a.). Wire tie one piece expansion joints to lath at no more than 7 inches (178 mm) on center. Make certain lath is discontinuous beneath joints.
6. Inside and Outside Corners

- a. Install corner lath at inside corners and corner bead at outside corners over lath. Attach through lath into framing at no more than 7 inches (178 mm) on center with appropriate fasteners.
7. Stucco Installation*
 - a. Scratch Coat: apply stucco with sufficient pressure to key into and embed the metal lath. Apply sufficient material, 3/8—1/2 inch (9—13mm), to cover the metal lath and to permit scoring the surface. Score the stucco upon completion of each panel in preparation for a second coat. Score horizontally.
 - b. Brown Coat: as soon as the first coat is firm enough to receive the second coat without damage, apply the second coat. Alternatively, moist cure the first coat up to 48 hours and dampen the scratched surface with water immediately before applying the second coat. Apply the second coat with sufficient pressure to ensure intimate contact with the first coat and as needed to bring the stucco to a uniform thickness that matches the grounds of the accessories. Use a rod or straight edge to bring the surface to a true, even plane. Fill depressions in plane with stucco. Final thickness of stucco shall be minimum 1/2 inch (13 mm), maximum 7/8 inch (22 mm). Refer to 1.04H.
 - c. After the stucco has become slightly firm float the surface lightly with a darby or wood float to densify the surface and to provide a smooth, even surface.

(Note: The proper time to float is when the wood float no longer sticks to the surface of the stucco).

- d. Moist cure after the stucco has set by lightly fogging for at least 48 hours. Fog as frequently as required during the 48 hour period to prevent loss of moisture from the stucco. Avoid eroding the stucco surface with excess moisture. If relative humidity exceeds 75% the frequency of moist curing can be diminished.

*(*Note: for one coat installation of stucco follow the procedure described above, except apply the stucco in one coat to 1/2 inch (13 mm) thickness and omit scoring and application of a brown coat).*

C. Foam Build-Outs

1. Where foam build-outs terminate at a dissimilar material such as a window, door or other non-stucco surface, backwrap the foam build-out by installing detail mesh onto the terminating edge of the stucco. Embed the mesh in the foam adhesive. Allow the mesh to dangle until the backwrapping procedure is completed (C4).
2. Install foam build-outs directly over hardened stucco with cementitious EIFS adhesive (see 2.09.D). Apply adhesive with the appropriate size notched trowel to the back of the insulation board and immediately place build-out in the proper location on the wall. Press firmly into place.
3. After the adhesive has cured sufficiently to hold the build-out firmly in place, rasp the entire foam surface smooth.
4. Complete the backwrapping procedure by applying the cementitious EIFS base coat (see 2.09.D) to the exposed edges of the foam build-out and minimum 2-1/2 inches (64 mm) onto the face. Pull the backwrap mesh around the foam build-out and fully embed it into the base coat. Use a corner trowel for neat straight corners.
5. Apply the cementitious base coat to the foam build-out and approximately 3 inches (76 mm) onto the adjacent stucco surfaces to an approximate thickness of 1/8 inch (3 mm). Immediately embed the reinforcing mesh in the wet base coat. Trowel from the center to the edges of the mesh to avoid wrinkles and remove excess base coat. Overlap mesh seams minimum 2-1/2 inches (64 mm). Overlap mesh onto adjacent stucco wall surfaces minimum 2-1/2 inches (64 mm) at terminations of the foam build-out and feather onto the stucco wall surface.

(Note: do not install foam build-outs over joints in the stucco wall assembly. Terminate foam build-outs and backwrap in accordance with instructions above).

- D. Primer Installation
 - 1. Sto Hot Prime—Moist cure stucco for a minimum of 48 hours. Apply primer evenly with brush, roller or proper spray equipment over the clean, dry stucco and foam build-outs, and allow to dry before applying finish.
 - 2. Sto Primer Sand—Moist cure stucco for a minimum of 48 hours. Wait until stucco is 28 days old or the pH level of the surface is below 10 before applying primer and allow to dry before applying finish.

- E. Finish Installation
 - 1. Apply finish to primed stucco and foam build-outs when dry. Apply finish by spraying or troweling with a stainless steel trowel, depending on the finish specified. Follow these general rules for application of finish:
 - a. Avoid application in direct sunlight.
 - b. Apply finish in a continuous application, and work a wet edge towards the unfinished wall area. Work to an architectural break in the wall before stopping to avoid cold joints.
 - c. Weather conditions affect application and drying time. Hot or dry conditions limit working time and accelerate drying. Adjustments in the scheduling of work may be required to achieve desired results; cool or damp conditions extend working time and retard drying and may require added measures of protection against wind, dust, dirt, rain and freezing. Adjust work schedule and provide protection.
 - d. Float "R" (rilled texture) finishes with a plastic float to achieve their rilled texture.
 - e. Do not install separate batches of finish side-by-side.
 - f. Do not apply finish into or over joints or accessories. Apply finish to outside face of wall only.
 - g. Do not apply finish over irregular or unprepared surfaces, or surfaces not in compliance with the requirements of the project specifications.

3.05 PROTECTION

- A. Provide protection of installed materials from water infiltration into or behind them.
- B. Provide protection of installed stucco from dust, dirt, precipitation, and freezing.
- C. Provide protection of installed primer and finish from dust, dirt, precipitation, freezing and continuous high humidity until fully dry.

ATTENTION

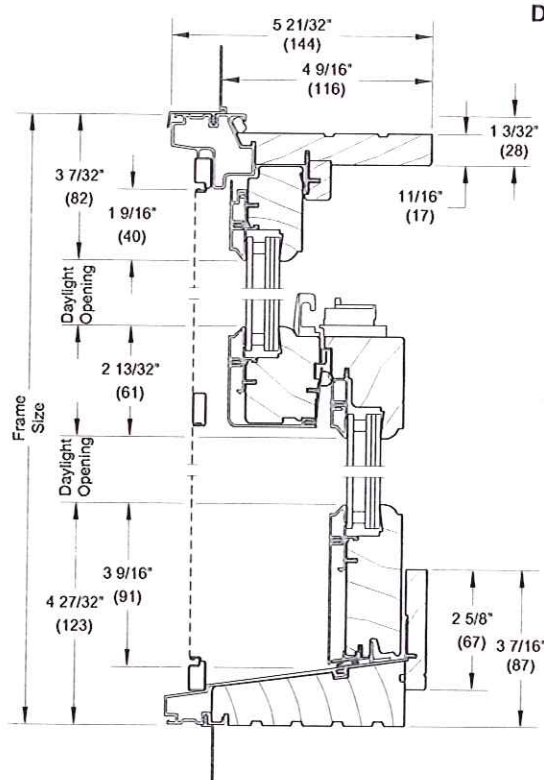
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fullest, most current information on proper application, clean-up, mixing and other specifications and warranties, cautions and disclaimers, please refer to the Sto Corp. website, www.stocorp.com.

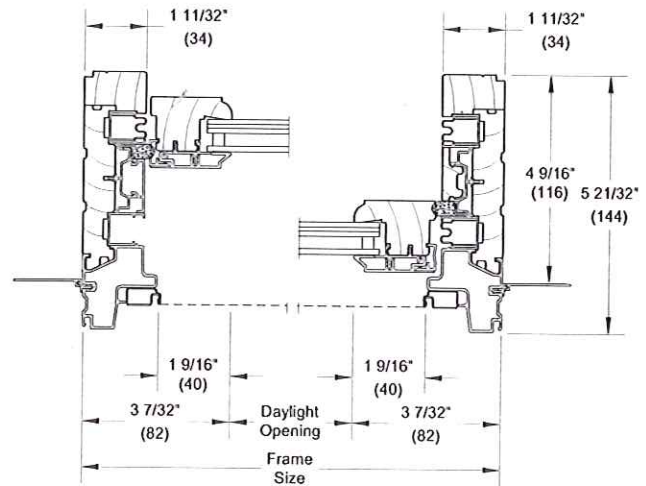
Section Details: Operating Impact Zone 3

Scale: 3" = 1' 0"

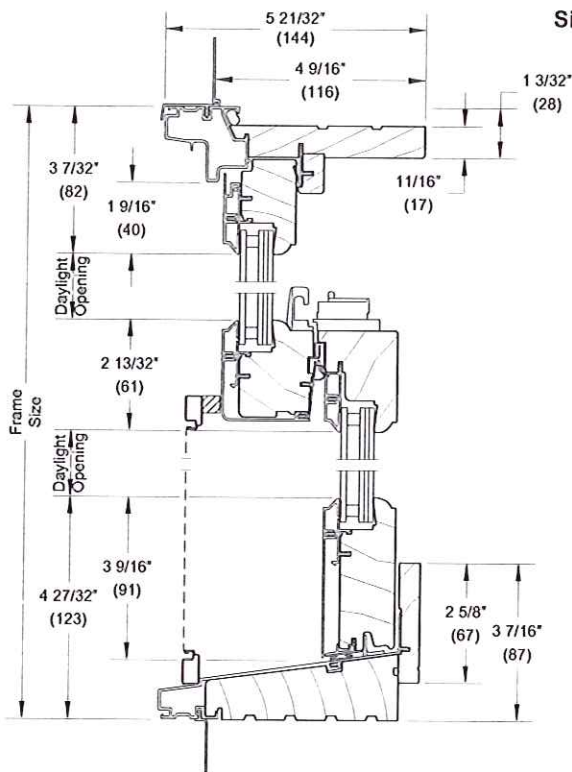


Head Jamb and Sill

Double Hung

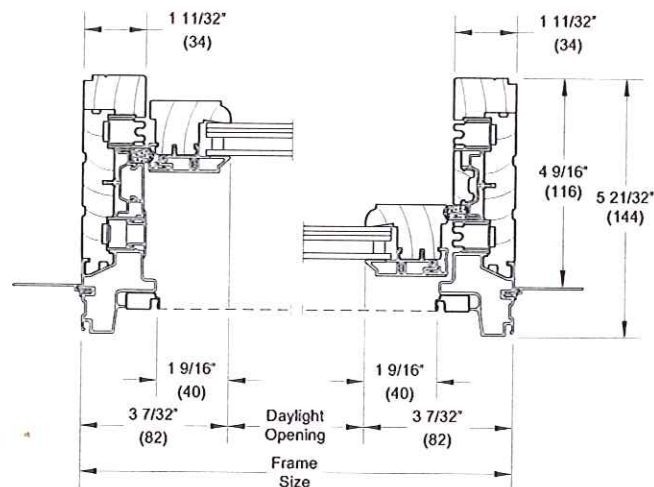


Jambs



Head Jamb and Sill

Single Hung



Jambs

Impact Zone 3 - Minimum and Maximum Guidelines, Certified Sizes and Ratings

IZ3 Minimum and Maximum Rough Opening Guidelines - Operable Units													
Unit Type		Width		x	Height		Width		x	Height		Max Glass	
		in	mm	x	in	mm	in	mm	x	in	mm	Sq. Feet	Sq. Meters
CUDH	Storm Plus IZ3	22 3/8	(568)	x	24 7/8	(632)	46 3/8	(1178)	x	96 3/8	(2448)	7 9/16	0.701

IZ3 Certified Sizes and Ratings									
Unit Type	Frame Height			Frame Width					
	CN	In	mm	CN	In	mm	CN	In	mm
				32	37 3/8	(949)	40	45 3/8	(1153)
CUDH	26	60 3/8	(1534)	LC-PG55-H			LC-PG55-H		
	34	76 3/8	(1940)	LC-PG55-H			N/A		

Impact Glazing Zone 3 (IZ3):
Frame:

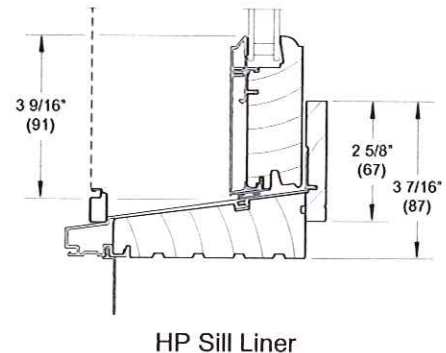
- Sealant added at sill liner
- Sill brackets added for bottom sash retention
- Screws through the jamb liner to reinforce the frame

Sash:

- Top check rail has different profile for interlock
- Bottom check rail has profile for interlock
- Painted stainless steel stamped interlock for top sash for sash retention
- Mil finish stainless steel stamped interlock for bottom sash retention
- End plate with over molded stainless steel tilt latch blade
- Long cladding clip screws through it at check rail to reinforce stiles
- Stainless steel tilt pins for sash retention
- Different check rail cladding connector profile for interlock
- Keeper insert to keep lock from disengaging during impact

Glazing:

- PVC tube in check rail to reinforce check rail and to protect tilt cord from sealant
- Backfilled with Dow 995 silicone sealant
- Interior glass used is laminated with a PVB inner layer
- Exterior glass is standard annealed. All CUDH operator sizes certified are OK with annealed glass. Optional tempered glass is available
- Simulated Divided Lites are available on IZ3 products
- Grilles Between the Glass are not available in IZ3 unit



SECTION 08 52 13

ALUMINUM CLAD WOOD ULTIMATE DOUBLE HUNG STORM PLUS IZ3 WINDOW

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Aluminum clad wood ultimate double hung window complete with hardware, glazing, weather strip, insect screen, removable grille, simulated divided lite, jamb extension, combination storm/screen, and standard or specified anchors, trim, attachments, and accessories.

1.2 RELATED SECTIONS

- A. Section 01 33 23—Submittal Procedures: Shop Drawings, Product Data, and Samples
- B. Section 01 62 00—Product Options
- C. Section 01 65 00—Product Delivery
- D. Section 01 66 00—Storage and Handling Requirements
- E. Section 01 71 00—Examination and Preparation
- F. Section 01 73 00—Execution
- G. Section 01 74 00—Cleaning and Waste Management
- H. Section 01 76 00—Protecting Installed Construction
- I. Section 06 22 00—Millwork: Wood trim other than furnished by window manufacturer
- J. Section 07 92 00—Joint Sealants: Sill sealant and perimeter caulking
- K. Section 09 90 00—Paints and Coatings: Paint or stain other than factory applied finish

1.3 REFERENCES

- A. American Society for Testing and Materials (ASTM):
 - 1. E 283: Standard Test Method for Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors.
 - 2. E 330: Standard Test Method for Structural Performance of Exterior Windows, Curtains Walls, and Doors by Uniform Static Air Pressure Difference.
 - 3. E 547: Standard Test Method for Water Penetration of Exterior Windows, Curtain Walls, and Doors by Cyclic Static Air Pressure Differential.
 - 4. E 774: Specification for Sealed Insulated Glass Units.
 - 5. C 1036: Standard Specification for Flat Glass.
 - 6. E 1996: Standard Specification for Performance of Exterior Windows, Curtain Walls, Doors and Storm Shutters Impacted by Windborne Debris in Hurricanes
 - 7. E 1886 –Standard Test Method for Performance of Exterior Windows, Curtain Walls, Doors, and Storm Shutters Impacted by Missile (s) and Exposed to Cyclic Pressure Differentials
- B. WDMA I.S.4: Industry Standard for Water Repellent Preservative Treatment for Millwork.
- C. American Architectural Manufacturers Association / Window and Door Manufacturers Association (ANSI/AAMA / WDMA): AAMA / WDMA/CSA 101/I.S.2/A440-05 Standard/Specification for windows, doors and unit skylights and AAMA/WDMA/CSA 101/I.S.2/A440-08 North American Fenestration Standard/Specification for windows, doors and Skylights.
- D. Window and Door Manufacturers Association (WDMA): 101 / I.S.2 WDMA Hallmark Certification Program.
- E. Sealed Insulating Glass Manufacturers Association / Insulating Glass Certification Council (SIGMA / IGCC).
- F. American Architectural Manufacturers Association (AAMA): 2605: Voluntary Specification for High Performance Organic Coatings on Architectural Extrusions and Panels.
- G. National Fenestration Rating Council (NFRC): 101: Procedure for Determining Fenestration Product Thermal Properties.

1.4 SYSTEM DESCRIPTION

- A. Design and Performance Requirements:
 - 1. Window units shall be designed to comply with ASTM E 1996 Wind Zone 3 Missile Level D Rating +55/-65 psf.

2. Air leakage shall not exceed the following when tested at 1.57 psf according to ASTM E 283: ≤ 0.30 cfm per square foot of frame.
3. No water penetration when tested at the following pressure according to ASTM E 547: 8.25 psf.
4. Assembly shall withstand a positive or negative uniform static air pressure difference of +82.5 / -97.5 psf without damage when tested according to ASTM E 330.
5. Impact and Cycling per ASTM E 1996 and E 1886 with passing results for Missile Level D and Pressure Cycling of +55/-65 Psf.

1.5 SUBMITTALS

- A. Shop Drawings: Submit shop drawings under provisions of Section 01 33 23.
- B. Product Data: Submit catalog data under provisions of Section 01 33 23.
- C. Samples:
 1. Submit corner section under provisions of Section 01 33 23.
 2. Include glazing system, quality of construction, and specified finish.
- D. Quality Control Submittals: Certificates: Submit manufacture's certifications indicating compliance with specified performance and design requirements under provisions of Section 01 33 23.

1.6 QUALITY ASSURANCE

- A. Regulatory Requirements: Emergency Egress or Rescue: Comply with requirements for sleeping units of [IBC International Building Code] [BOCA Basic Building Code] [Southern Building Code] [Uniform Building Code] [_____].

1.7 DELIVERY

- A. Comply with provisions of Section 01 65 00.
- B. Deliver in original packaging and protect from weather.

1.8 STORAGE AND HANDLING

- A. Prime or seal wood surfaces, including surface to be concealed by wall construction, if more than thirty (30) days will expire between delivery and installation.
- B. Store window units in an upright position in a clean and dry storage area above ground and protect from weather under provisions of Section 01 66 00.

1.9 WARRANTY

- A. Windows shall be warranted to be free from defects in manufacturing, materials, and workmanship for a period of ten (10) years from purchase date.
- B. Insulating glass shall be warranted against visible obstruction through the glass caused by a failure of the insulating glass air seal for a period of twenty (20) years from the date of original purchase.

PART 2 PRODUCTS

2.1 MANUFACTURED UNITS

- A. Description: Clad Ultimate Double Hung StormPlus IZ3 (and related transom and Picture units) as manufactured by Marvin Windows and Doors, Warroad, Minnesota.

2.2 FRAME DESCRIPTION

- A. Interior: Clear pine or finger jointed core with clear pine veneer; clear white oak or finger jointed core with clear white oak veneer; clear cherry or finger jointed core with clear cherry veneer; clear mahogany or finger jointed core with clear mahogany veneer; clear vertical grain Douglas fir or finger jointed core with clear vertical grain Douglas fir veneer. Finger jointed (clear) sill.
 1. Kiln dried to a moisture content no greater than twelve (12) percent at the time of fabrication.
 2. Water repellent preservative treated in accordance with WDMA I.S.4.
- B. Frame thickness: 1 1/16 inch (17 mm) head jamb, 1 11/32 inch (34 mm) composite side jamb, 1 7/16 inches (37 mm) sill, 8 degree bevel.
- C. Frame width: 4 9/16 inches (116 mm).
- D. Exterior extruded aluminum clad 0.050 inch (1.3 mm) thick.

2.3 SASH DESCRIPTION

- A. Clear pine; white oak; cherry; mahogany; vertical grain Douglas fir.

1. Kiln dried to a moisture content no greater than twelve (12) percent at the time of fabrication.
2. Water repellent preservative treated in accordance with WDMA I.S.4.
- B. Composite sash thickness: 1-9/16 inches (40 mm) for operating units, 1-7/8 inches (48 mm) for stationary units. Corners slot and tenoned.
- C. Sash exterior extruded aluminum clad 0.045 inch (1.1 mm) thick. Operable sash tilt to interior for cleaning or removal.

2.4 GLAZING

- A. Operating, Picture, Transom: Select quality insulating glass comprised of tempered exterior, desiccant filled metal spacer, and laminated interior. Glass quality complying with ASTM C 1036-91. Insulated glass SIGMA.IGCC certifies to performance level CBA when tested in accordance with ASTM E 774
- B. Glazing method: Insulated glass (Altitude adjusted).
- C. Glass type: Clear; Bronze; Gray; Green; LoE² 272[®] with or without Argon; LoE³ 366[®] with or without Argon; Obscure.
- D. Glazing seal: Silicone bedding on interior; acrylic foam adhesive tape on exterior.

2.5 FINISH

- A. Exterior: Fluoropolymer modified acrylic topcoat applied over fluoropolymer primer. Meets or exceeds AAMA 2605 requirements.
 1. Standard Color: Stone White; Bahama Brown; Bronze; Pebble Gray; Evergreen.
2. Select Color: Sierra White; Coconut Cream; French Vanilla; Cashmere; Desert Beige; Cumulus Gray; Cadet Gray; Ebony; Arctic White; Cascade Blue; Cobalt Blue; Hampton Sage; Sherwood Green; Wineberry; Custom color – contact your Marvin representative.
- B. Interior: Treated bare wood; Latex prime coat, white – available for pine wood species only.
- C. Painted Interior Finish: Optional factory applied water based acrylic paint over compatible primer. Available on Pine products only. Color – White

2.6 HARDWARE

- A. Balance system: Coil spring block and tackle with nylon cord and fiber filled nylon clutch.
- B. Jamb carrier: Vinyl extrusion with wood and aluminum inserts. Color: Beige.
- C. Lock: High pressure zinc die-cast cam lock and keeper.
1. Finish: Phosphate coated and electrostatically painted Satin Taupe; White; Bronze; Brass; Antique Brass; Satin Chrome; Satin Nickel; Oil Rubbed Bronze.
- D. Four interior stainless steel storm brackets per unit. Two located below checkrail and two located at bottom rail to sill location.

2.7 WEATHER STRIP

- A. Operating units: Continuous, leaf weather strip at head jamb parting stop; dual durometer bulb at check rail; foam bulb type dual durometer weather strip on vertical sash edge; dual durometer bulb weather-strip at bottom rail. Color: Beige.
Stationary units: Continuous, bulb weather strip at perimeter of sash, concealed slotted bulb weather strip on exterior of sash, pile weather strip on interior of blind stop, dual durometer bulb weather strip at bottom rail. Color: Beige.

2.8 JAMB EXTENSION

- A. Factory installed jamb extension for wall thickness indicated or required.
- B. Finish: Match interior finish.

2.9 INSECT SCREENS

- A. Factory installed half screen, full screen. Half screen covers bottom sash opening.
- B. Screen cloth, 18 by 16 mesh: Charcoal fiberglass; Charcoal aluminum wire; Black aluminum wire; Bright aluminum wire; Bright bronze wire.
- C. Aluminum frame finish:
 1. Standard Color: Stone White; Bahama Brown; Bronze; Pebble Gray; Evergreen.
2. Select Color: Sierra White; Coconut Cream; French Vanilla; Cashmere; Desert Beige; Cumulus Gray; Cadet Gray; Ebony; Arctic White; Cascade Blue; Cobalt Blue; Hampton Sage; Sherwood Green; Wineberry; Custom color – contact your Marvin representative.
- D. Optional Magnum screen – extruded aluminum surround with Charcoal HI-transparency fiberglass mesh.

2.10 COMBINATION STORM SASH AND SCREEN

- A. Frame: Exterior extruded aluminum 0.045 inch (1.1 mm) thick.
- B. Finish: Fluoropolymer modified acrylic topcoat applied over fluoropolymer primer. Meets or exceeds AAMA 2605 requirements.
 - 1. Standard color: Stone White; Bahama Brown; Bronze; Evergreen; Pebble Gray; Arctic White.
- C. Hardware: Spring loaded locking pins to hold movable storm panel in position. Heavy metal clips to lock upper and lower storm panels together.
- D. Weather strip: Dual durometer weather strip on center cross rail seals against operating panel in closed position.
- E. Storm panel: Select quality glass in aluminum frame.
 - 1. Frame finish: Standard color: Stone White; Bahama Brown; Bronze; Evergreen; Pebble Gray.
- F. Insect screen panel: Screen cloth, 18 by 16 mesh: Charcoal fiberglass; Charcoal aluminum wire; Black aluminum wire; Bright aluminum wire; Bright bronze wire.
 - 1. Aluminum frame finish: Bronze; White.

2.11 REMOVABLE GRILLES

- A. 3/4 by 15/32 inch (19 mm by 12 mm); 1-1/8 by 15/32 inch (29 mm by 12 mm); Pine only.
 - 1. Pattern: Rectangular; Custom lite layout.
 - 2. Finish: Match interior sash finish.

2.12 SIMULATED DIVIDED LITES (SDL)

- A. 5/8 inch (16mm) wide; 7/8 inch (22 mm) wide; 1-1/8 inch (29 mm) wide; (with internal spacer bars).
 - 1. Exterior muntins: 0.055 inch (1.4 mm) thick extruded aluminum.
 - 2. Interior muntins: Pine; white oak; cherry; mahogany; vertical grain Douglas fir. Muntins adhered to glass with double coated acrylic foam tape.
 - 3. Pattern: Rectangular; Custom lite layout.
 - 4. Finish: Match sash finish.

2.13 GRILLES-BETWEEN-THE-GLASS (GBG)

- A. Exterior Colors: Stone White, Arctic White, Bronze, Pebble Gray, Bahama Brown, Cashmere, Ebony, Evergreen, Sherwood Green, Sierra White, French Vanilla, Coconut Cream, Wineberry. (The exterior GBG color is designed to best match the Marvin clad colors when used with LoE glass. The use of different types of glazing may alter the exterior GBG color appearance)
- B. Interior Colors: White is the default color. Optional Colors: Bronze, Pebble Gray, Sierra White.

2.14 ACCESSORIES AND TRIM

- A. Installation Accessories:
 - 1. Factory installed vinyl nailing fin/drip cap.
 - 2. Installation brackets: 6-3/8 inches (162 mm); 9-3/8 inches (238 mm); 15-3/8 inches (390 mm).
 - 3. Masonry brackets: 6 inch (152 mm); 10 inch (254 mm).
- B. Aluminum Extrusions:
 - 1. Profile: Brick mould casing; Flat casing; Frame expander; Jamb extender; Simulated thick sill adapter; Mullion cover; Mullion expander; as indicated on drawings.
 - 2. Finish: Fluoropolymer modified acrylic topcoat applied over primer. Meets or exceeds AAMA 2605 requirements.
 - a. Standard Color: Stone White; Bahama Brown; Bronze; Pebble Gray; Evergreen.
 - b. Select Color: Sierra White; Coconut Cream; French Vanilla; Cashmere; Desert Beige; Cumulus Gray; Cadet Gray; Ebony; Arctic White; Cascade Blue; Cobalt Blue; Hampton Sage; Sherwood Green; Wineberry; Custom color – contact your Marvin representative.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verification of Conditions: Before Installation, verify openings are plumb, square, and of proper dimension as required in Section 01 71 00. Report frame defects or unsuitable conditions to the General Contractor before proceeding.
- B. Acceptance of Conditions: Beginning of installation confirms acceptance of existing conditions.

3.2 INSTALLATION

- A. Comply with Section 01 73 00.
- B. Assemble and install window unit according to manufacturer's instructions and reviewed shop drawings.
- C. Install sealant and related backing materials at perimeter of unit or assembly in accordance with Section 07 92 00 Joint Sealants. Do not use expansive foam sealant.
- D. Install accessory items as required.

3.3 CLEANING

- A. Remove visible labels and adhesive residue from glass according to manufacture's instructions.
- B. Leave windows and glass in a clean condition. Final cleaning as required in Section 01 74 00.

3.4 PROTECTING INSTALLED CONSTRUCTION

- A. Comply with Section 01 76 00.
- B. Protect windows from damage by chemicals, solvents, paint, or other construction operations that may cause damage.

END OF SECTION

WINDOW AND DOOR LIMITED WARRANTY



Built around you.®

This Limited Warranty applies to Marvin® windows and patio doors purchased on or after the Effective Date from an authorized Marvin dealer, and extends to the owner of the structure in which the products are originally installed. This Limited Warranty is fully transferable. This Limited Warranty is applicable only to product installed in the U.S.A. and Canada. For information on warranties available in other countries, please contact Marvin at the address or phone number below.

GLASS COMPONENTS

Glass warranties apply to factory-installed glass or Marvin-supplied glass installed by Marvin-authorized service personnel. Clear insulating glass with stainless steel spacers is warranted against seal failure caused by manufacturing defects and resulting in visible obstruction through the glass for twenty (20) years from the original date of purchase. Non-tempered glass is warranted against stress cracks caused by manufacturing defects for ten (10) years from the original date of purchase. All other glass and glass features are provided with the same warranties, limitations, and exclusions Marvin receives from its supplier; contact Marvin for further details.

EXTERIOR CLADDING FINISH

Except as provided below, Marvin's standard exterior cladding finish is warranted against manufacturing defects resulting in chalk, fade, and loss of adhesion (peel), per the American Architectural Manufacturer's Association's (AAMA) Specification 2605-11 Sections 8.4 and 8.9, for twenty (20) years from the original date of purchase. Anodized finishes and other specialty exterior finishes are warranted to be free from manufacturing defects for five (5) years, from the original date of purchase.

Standard exterior cladding finish installed in coastal environments (within one (1) mile of a sea coast or other salt water source) is warranted against manufacturing defects resulting in abnormal deterioration caused by corrosion and/or loss of adhesion for ten (10) years from the original date of purchase. "Abnormal deterioration" means damage to the finish (such as peeling, flaking, or blistering) beyond what is normal for an ocean coastline environment. Anodized or other specialty finishes are not warranted in coastal environments.

NON-GLASS COMPONENTS

Hardware and other non-glass components are warranted to be free from manufacturing defects for ten (10) years from the original date of purchase. Stainless steel hardware, hardware with physical vapor deposition ("PVD"), and other specifically-designated "coastal" hardware finishes (collectively "Coastal Hardware") installed in coastal environments are warranted to be free from manufacturing defects that result in abnormal deterioration of the finish for a period of 10 years from the original date of purchase. Other hardware finishes are not warranted in coastal environments. Electric operators and other motorized accessories are provided with the same warranties, limitations, and exclusions Marvin receives from its supplier; contact Marvin for further details.

INTERIOR FINISH

Factory-applied interior finish is warranted to be free from Finish Defects for a period of five (5) years from the original date of purchase. Finish Defects include cracking, peeling, checking, delamination, blistering, flaking, excessive chalking and, in the case of painted interior finish, fading or change in color (per ASTM D2244), under normal interior environmental conditions. The color of wood changes, typically darkening over time, and is not a defect. The application of stains and/or clear finish does not prevent this natural process. Color change may be more noticeable in woods treated with a clear coat or light colored stain. The appearance of a raised grain or other natural variation in the wood grain may be enhanced by the interior finish and is not a defect. Interior finish is applied prior to assembly and is not intended to cover joinery seams. Products with factory-applied primer only are not covered under this provision. Factory-applied primer must be painted in accordance with Marvin's finishing instructions within 90 days of installation.

EXCLUSIVE REMEDY

This Limited Warranty is made as of the original date of product purchase and is not a warranty of future performance. If a covered defect is reported during the term of the applicable warranty notice period, and otherwise in accordance with the terms of the Limited Warranty, Marvin will, at its option, repair or replace the product or component, or refund the price paid for the defective product or component. Removal, installation, finishing, refinishing, and disposal costs and services are not included. Marvin will endeavor to supply original replacement parts; however, replacement parts may differ from the original parts. Replacement parts, including upgrades, are warranted for the remainder of the original product warranty.

EXCLUSIONS

Damage, defects, or problems resulting from causes outside Marvin's control are excluded from coverage under the Limited Warranty. Such causes include, without limitation:

Installation, Maintenance, and Acts of God

- installation not in conformance with Marvin's installation instructions and applicable building codes
- improper or non-standard field finishing
- non-standard installation, such as non-vertical or sloped glazing, upside down, or out-of square
- installation or use in applications exceeding design standards
- field mulls; field finishes
- insulating glass installed above 5000 feet without capillary tubes (except as specifically provided in the Marvin Limited Warranty High Altitude Supplement)
- installation or use near pools, saunas, hot tubs, or other high-humidity environments

- failure to follow Marvin's care and maintenance instructions
- failure to properly treat, seal, and maintain exposed wood
- use of brick wash, razor blades or other inappropriate cleaners or chemicals
- misuse, abuse, modification, alteration, accident, negligence
- shifting or settling of the structure in which the product is installed
- extreme weather events, extreme or unusual atmospheric conditions
- normal wear and tear; normal discoloration or fading of finishes
- variation in wood color, texture, and grain
- glass imperfections consistent with ASTM or other industry standards, which do not affect structural integrity
- war, insurrection, civil unrest, terrorism, or Acts of God

Warp

Bow, twist, and warp shall not be considered defects unless in excess of ¼" in the plane of the door. Doors 8' or higher ordered without multi-point hardware are not performance-certified and are not warranted against bow, twist, or warp. Action on claims for bow, twist, or warp may be deferred at Marvin's option for a period not to exceed (12) months after installation to permit the door in question to acclimate to temperature and humidity conditions.

Moisture Management

Products installed in wall systems that do not allow for proper moisture management, such as exterior insulation and finish systems (EIFS) or "synthetic stucco" without effective engineered drainage systems, are not covered under the Limited Warranty.

Thermal Efficiency

Marvin does not warrant the amount or percentage of argon or other inert gas present in insulating glass at any time after manufacture. Inert gas dissipates over time, and may be ineffective in products manufactured with capillary tubes. Thermal efficiencies vary with the application of the product. Marvin does not warrant a specific level of thermal efficiency will be maintained by inert gas, low emissivity coatings, or other product features.

Condensation

Condensation is not a product defect, but the result of excess humidity. Condensation, frost, or mold, mildew, or fungus on product surfaces is not covered by the Limited Warranty.

Corrosion

Except as expressly provided in this Limited Warranty, finish failure or corrosion of aluminum cladding, anodized and other specialty finishes, hardware, or other components due to environmental conditions such as air pollutants, acid rain, salt, sand, chemicals, or other corrosive substances is not covered by the Limited Warranty. The environment within one mile of an ocean coastline or other salt water source can be extremely corrosive; some finish deterioration is normal in these environments. Follow Marvin's care and maintenance instructions, available at www.marvin.com/care.

Screens

Screens are not designed to, and will not prevent falls.

Window Opening Control Devices

Window Opening Control Devices (WOCDs) are not a substitute for careful supervision of children. WOCDs must be tested at least monthly. Follow all safety information and instructions provided with WOCDs. This information is also available online at www.marvin.com/wocd-safetyinformation.

DISCLAIMERS, LIMITATIONS, AND ADDITIONAL TERMS AND CONDITIONS

Disclaimers

This Limited Warranty is the only warranty, written or oral, express or implied, provided by Marvin. No dealer, employee, or agent of Marvin, nor any third party, may create or assume any other liability, obligation, or responsibility on behalf of Marvin. ALL IMPLIED WARRANTIES, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. Any implied warranty which cannot be disclaimed under applicable law will be limited in duration to the shortest permissible term and, in any event, will not exceed the term of the applicable express limited warranty; the requirements for presenting any claim so affected will be as provided in this Limited Warranty. Any product or component not specifically subject to this Limited Warranty or another written Marvin product warranty is provided AS IS and without warranty. This Limited Warranty gives you specific legal rights and you may also have other rights, which may vary from state to state. THIS WARRANTY IS NOT A WARRANTY OF FUTURE PERFORMANCE OR A STATEMENT OF THE USEFUL LIFE OF ANY MARVIN PRODUCT, BUT ONLY A WARRANTY TO REPAIR, REPLACE, OR REFUND.

Limitations

IN NO EVENT WILL MARVIN BE LIABLE FOR CONSEQUENTIAL OR INCIDENTAL DAMAGES. IN NO EVENT WILL MARVIN'S LIABILITY EXCEED THE PRICE PAID FOR THE AFFECTED PRODUCT OR COMPONENT. The limitations of warranty and liability set forth herein shall survive and apply, even if the exclusive remedy set forth in this Limited Warranty is found to have failed of its essential purpose.

Certifications and Ratings

Many standard Marvin products are labeled with the Window & Door Manufacturers Association (WDMA) Hallmark Certification. WDMA Certification is based on the performance of a single sample of the product at the time of manufacture. Many standard Marvin products are labeled with National Fenestration Rating Council (NFRC) ratings. NFRC ratings are based on a combination of computer simulations and physical testing of product samples. Certifications and ratings typically apply to single products only; however certain factory-mulled or combined product configurations may also be certified. Performance of individual products may vary and will change over time, depending upon the conditions of use. WDMA certifications and NFRC ratings are not performance warranties. For details on Hallmark Certification, go to www.WDMA.com. For details on NFRC Energy Performance ratings, go to www.NFRC.org.

Suitability

Determining the suitability and compliance with local or other applicable building codes or standards, of all building components, including the use of any Marvin product, and the design and installation of any flashing or sealing system, is the responsibility of the buyer, user, architect, contractor, installer, and/or other construction professional. Marvin will not be liable for any problem or damage relating to inappropriate or faulty building design or construction, maintenance, installation, or selection of products. Windows and doors are only one element of a structure; Marvin does not warrant that third party certification of a building or project to any specific standard will be achieved through the use of any Marvin product.

No Waiver

Marvin may, in its discretion, extend benefits beyond what is covered under this Limited Warranty. Any such extension shall apply only to the specific instance in which it is granted, and shall not constitute a waiver of Marvin's right to strictly enforce the exclusions, disclaimers, and limitations set forth in this Limited Warranty in any or all other circumstances.

Warranty Claims

All warranty claims must be made within sixty (60) days of the appearance of the defect. To make a warranty claim, contact your local Marvin dealer or distributor. If you do not know the name of your local dealer or distributor, use the "Where to Buy" feature at www.marvin.com, or call 800-533-6898 to locate the one nearest you. If, after five days, your dealer or distributor has not responded, send a written request to Marvin Windows and Doors, PO Box 100, Warroad, MN 56763, Attn: Warranty Department. Include the following information: your name, address, and telephone number, the date you purchased your product, the name of the dealer or distributor from whom you purchased your product, a description of product, order number, specific definition of problem or defect, actions you have taken and contacts you have made with your local dealer or distributor. Once we've received your letter, we will respond to your claim promptly.