

APPLICATION

CERTIFICATE of APPROPRIATENESS-or-DESIGN APPROVAL-or-EXEMPTION

Deliver or mail to: Environment Department Boston City Hall, Rm 709 Boston, MA 02201

For Office Use Only	
APPLICATION #	
RECEIVED	
FEE	
HEARING DATE	

DO NOT RETURN THIS FORM BY FAX OR EMAIL

DO NOT STAMP THIS BOX

I. PROPERTY ADDRESS	
NAME of BUSINESS/PROPERTY	
The names, telephone numbers, postal and e-mail addresses requested below Environment Department personnel cannot be responsible for illegible, incompared to the control of the control o	will be used for all subsequent communications relating to this application.
II. APPLICANT	
	RELATIONSHIP TO PROPERTY
MAILING ADDRESS	ZIP
PHONE	EMAIL
PROPERTY OWNER	CONTACT NAME
MAILING ADDRESS	ZIP
PHONE	EMAIL
ARCHITECT	CONTACT NAME
MAILING ADDRESS	ZIP
PHONE	EMAIL
CONTRACTOR	
MAILING ADDRESS	ZIP
PHONE	EMAIL

III. DESCRIPTION OF PROPOSED WORK

A BRIEF OUTLINE OF THE PROPOSED WORK *MUST* BE GIVEN IN THE SPACE PROVIDED BELOW, OR THE APPLICATION WILL *NOT* BE ACCEPTED. This description provides the basis for the official notice and subsequent decision, and it must clearly represent the entirety of the project. Additional pages may be attached, if necessary, to provide more detailed information.

tage TWO of two. Application for Certificate of	Appropriateness-or-Design Approvation-Exemption REVISED JOE 14
REQUIRED DOCUMENTATION: Please in carefully for details.	nclude all required documentation with this application; review instructions
ESTIMATED COST OF PROPOSED WOR	K:
IV. DULY AUTHORIZED SIGNATURES	
The facts set forth above in this application a	and accompanying documents are a true statement made under penalty of perjur
APPLICANT	OWNER*
	*(If building is a condominium or cooperative, the chairman must sign.)
PRINT Embarc Studio LLC, by Dartagn	an Brown PRINT Dartagnan Brown, for 237 Marlborough Street, LL
Environment Department personnel cannot be resonated in the cannot be reson	
	WITHOUT SIGNATURES, FEES AND REQUIRED DOCUMENTATION. The Please refer to the detailed application instructions for deadlines, fee existing to your proposal.
COMPLETED APPLICATION I	FORM
APPLICATION FEE (Check or r Instructions)	money order made payable to City of Boston; see fee schedule in
	rief description must be included on the front page; additional pages of thed. Applications that only note "see attached" will not be accepted.)
PHOTOS OF EXISTING COND	ITIONS
DRAWINGS AND SPECIFICATinstructions)	ΓΙΟΝS AS REQUIRED (See "documentation requirements" in

237 MARLBOROUGH STREET

BOSTON, MA 02116

BACK BAY ARCHITECTURAL COMMISSION

FEBRUARY 14, 2017

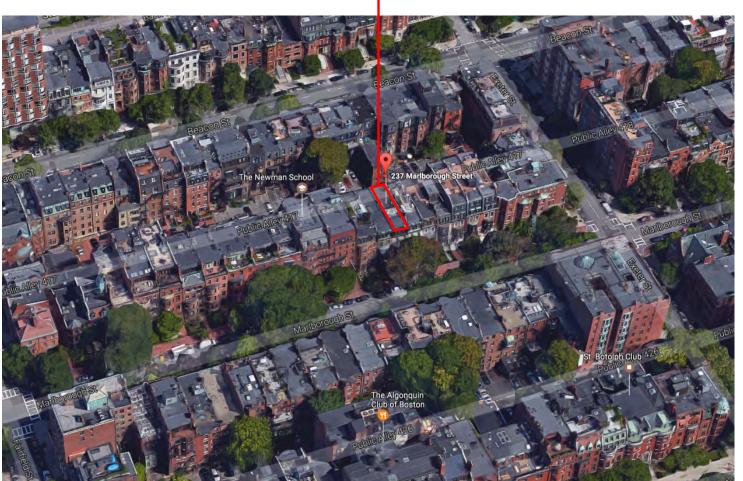


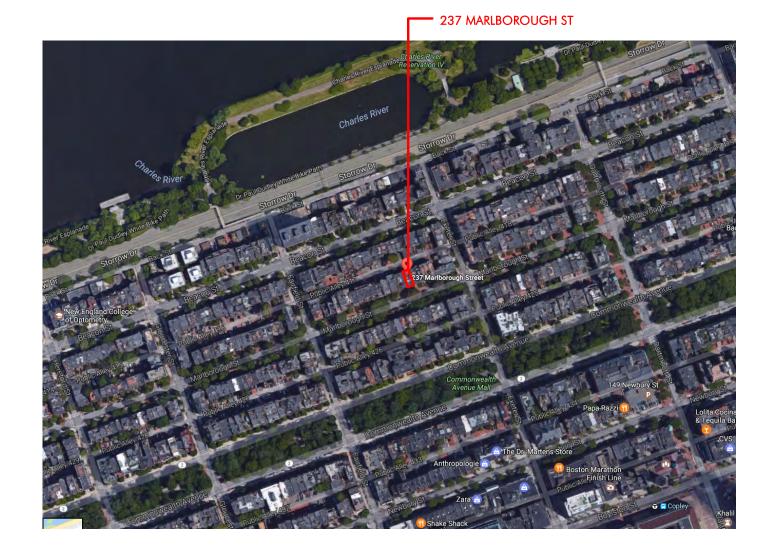
SHEET LIST

-) COVER
- 1 SITE LOCATION
- 2 NEIGHBORHOOD CONTEXT
- 3 MARLBOROUGH ST FRONT ELEVATIONS
- 4 EXISTING CONDITIONS
- 5 EXISTING CONDITIONS
- 6 EXISTING ROOF PHOTOS
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- 13 PROPOSED PENTHOUSE AND ROOF DECK DETAILS



237 MARLBOROUGH ST







SITE LOCATION 237 MARLBOROUGH STREET BOSTON, MA 02116



MARLBOROUGH STREET FACING EAST



MARLBOROUGH STREET FACING WEST



237 MARLBOROUGH STREET



NEIGHBORHOOD CONTEXT 237 MARLBOROUGH STREET BOSTON, MA 02116



EMBARC

MARLBOROUGH ST - FRONT ELEVATIONS

237 MARLBOROUGH STREET

BOSTON, MA 02116

EMBARC

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MARLBOROUGH STREET ENTRY WALK

MARLBOROUGH STREET BAY WINDOW

MARLBOROUGH STREET ENTRY WALK



EXISTING CONDITIONS237 MARLBOROUGH STREET
BOSTON, MA 02116

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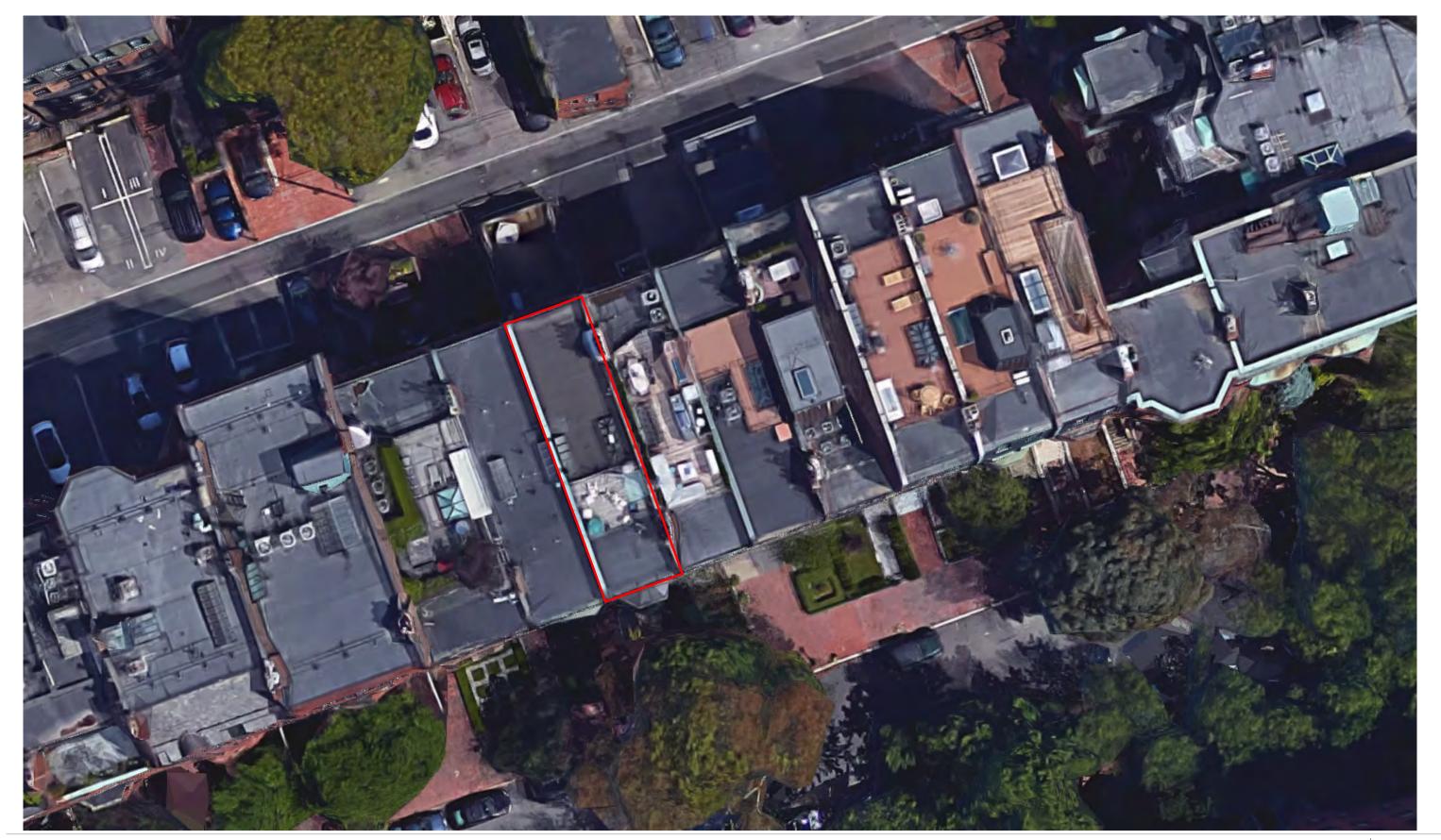
MARLBOROUGH STREET FACADE



MARLBOROUGH STREET ENTRY WALK



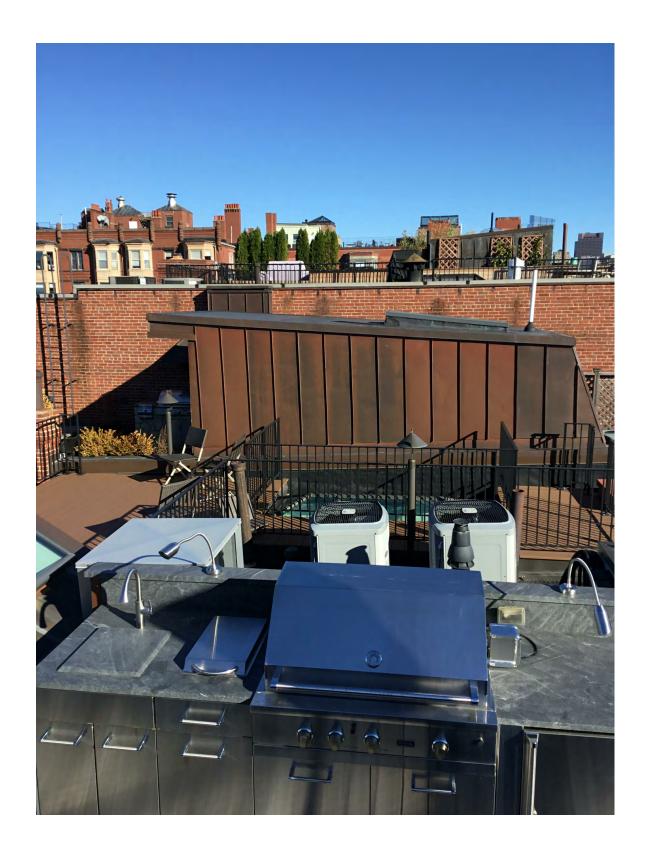
EXISTING CONDITIONS 237 MARLBOROUGH STREET BOSTON, MA 02116

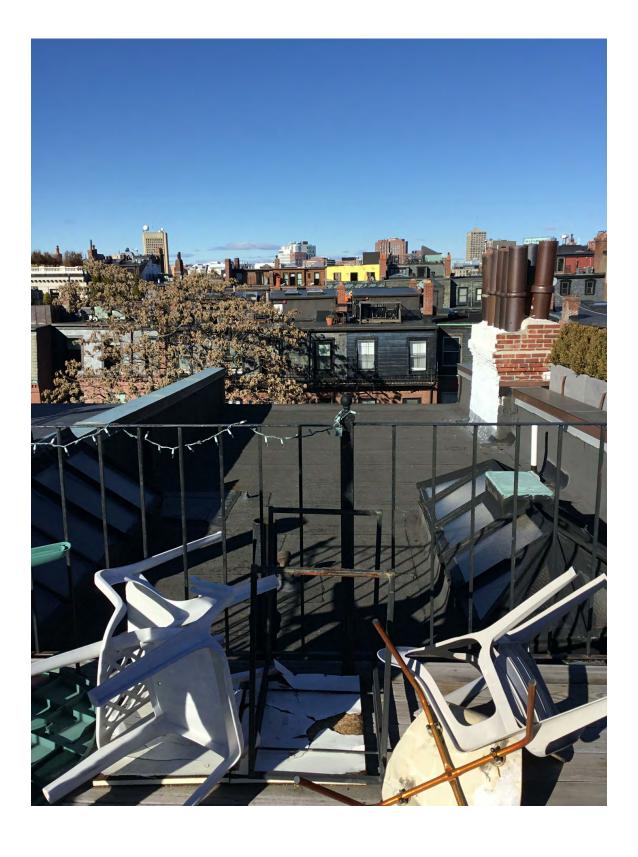




EXISTING ROOF PHOTOS 237 MARLBOROUGH STREET BOSTON, MA 02116

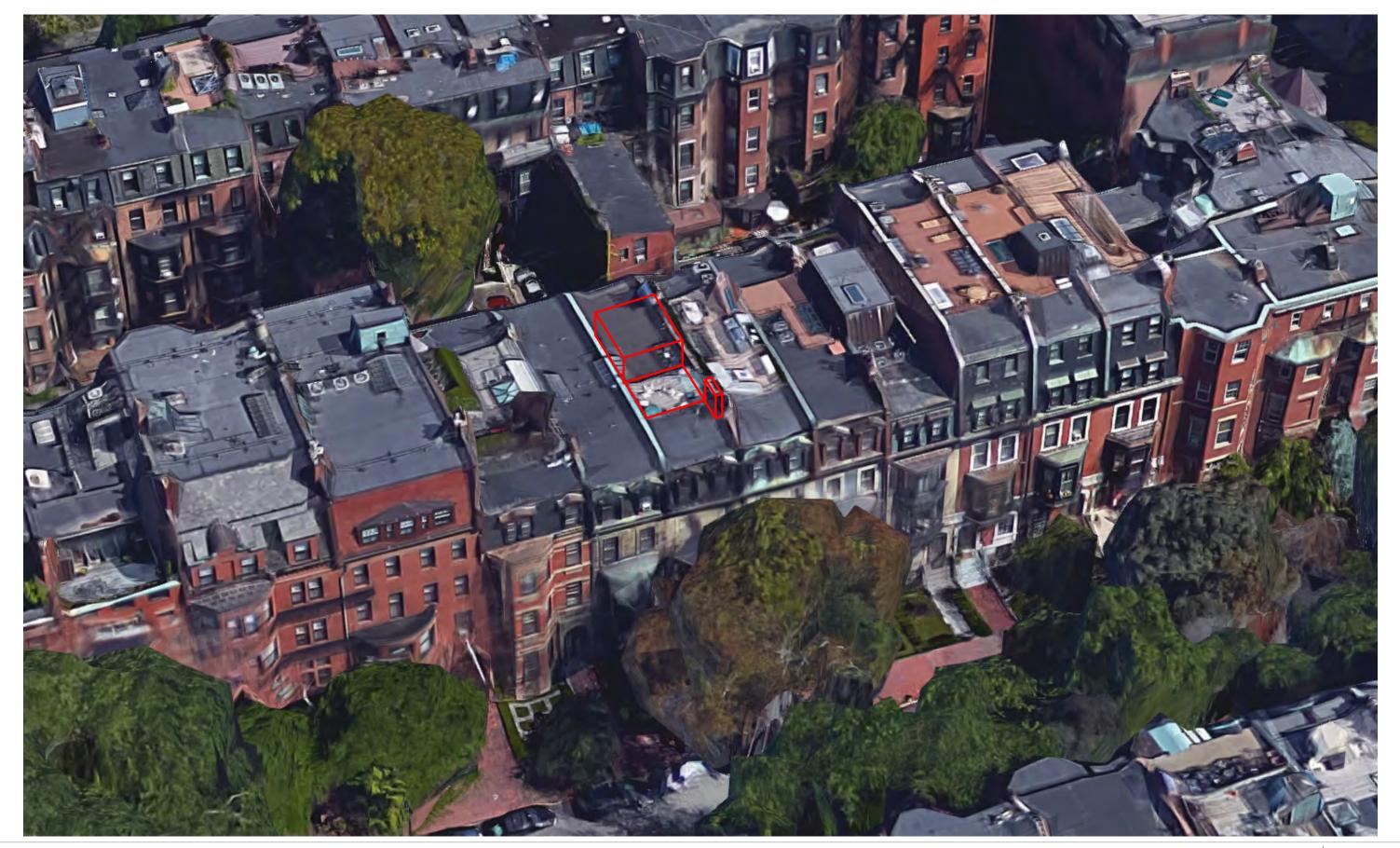
EMBARC







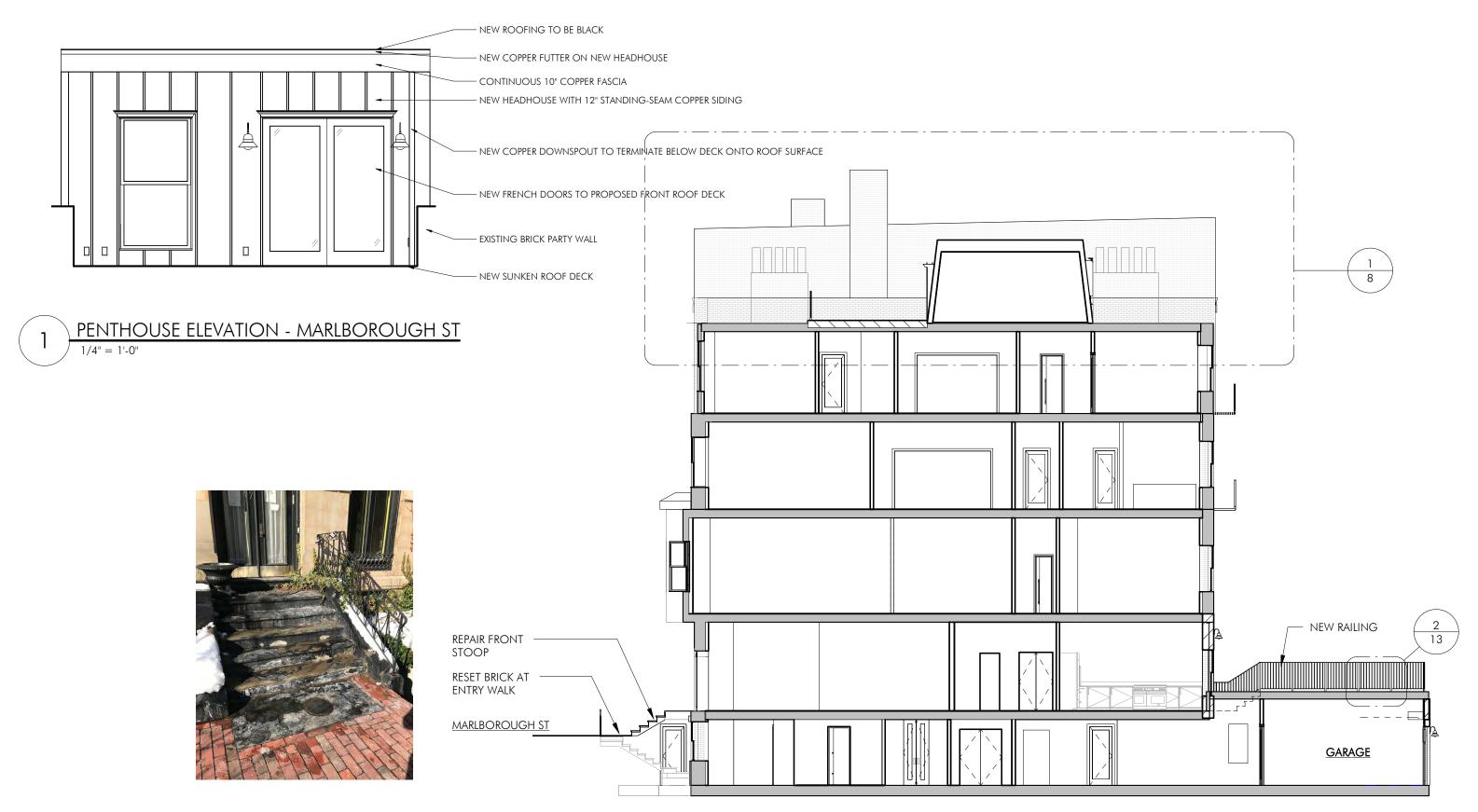
ADDITIONAL ROOF PICTURES 237 MARLBOROUGH STREET BOSTON, MA 02116





ROOF AERIAL 237 MARLBOROUGH STREET BOSTON, MA 02116

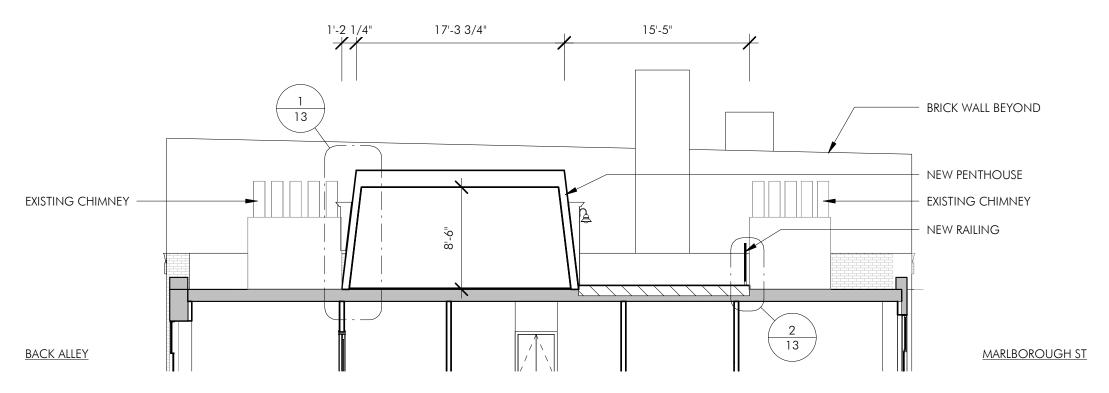
6B



As indicated

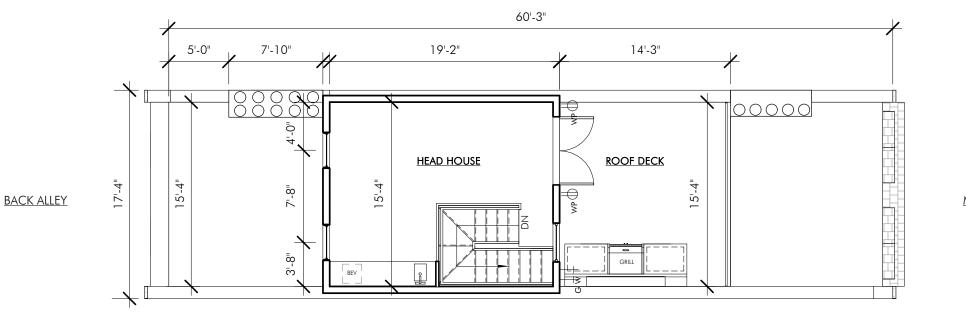


PROPOSED ELEVATION AND SECTION 237 MARLBOROUGH STREET BOSTON, MA 02116



PENTHOUSE SECTION

1/8" = 1'-0"



MARLBOROUGH ST

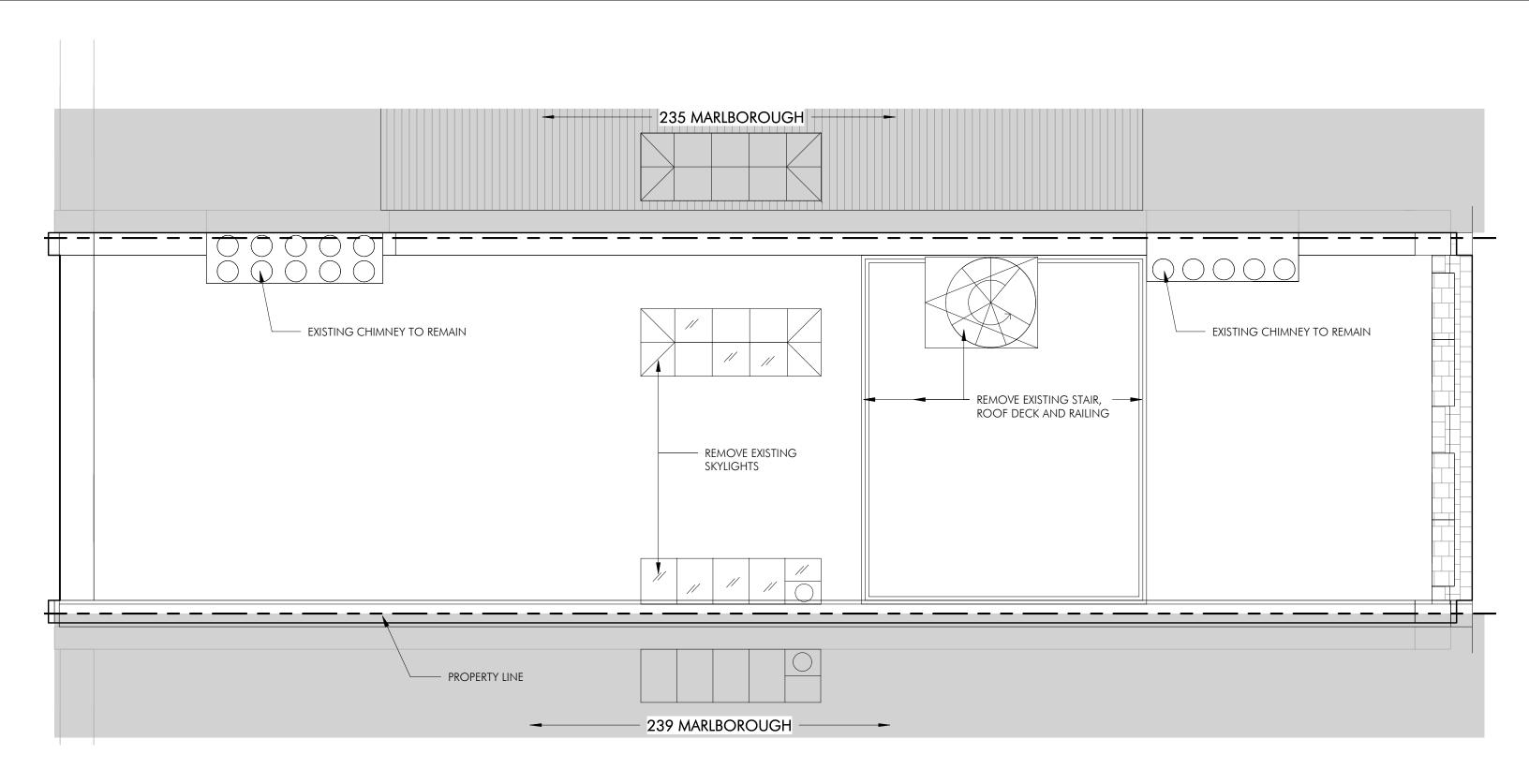
PENTHOUSE PLAN

1/8" = 1'-0"

PROPOSED PENTHOUSE AND ROOF DECK 237 MARLBOROUGH STREET BOSTON, MA 02116

EMBARC

EMBARC





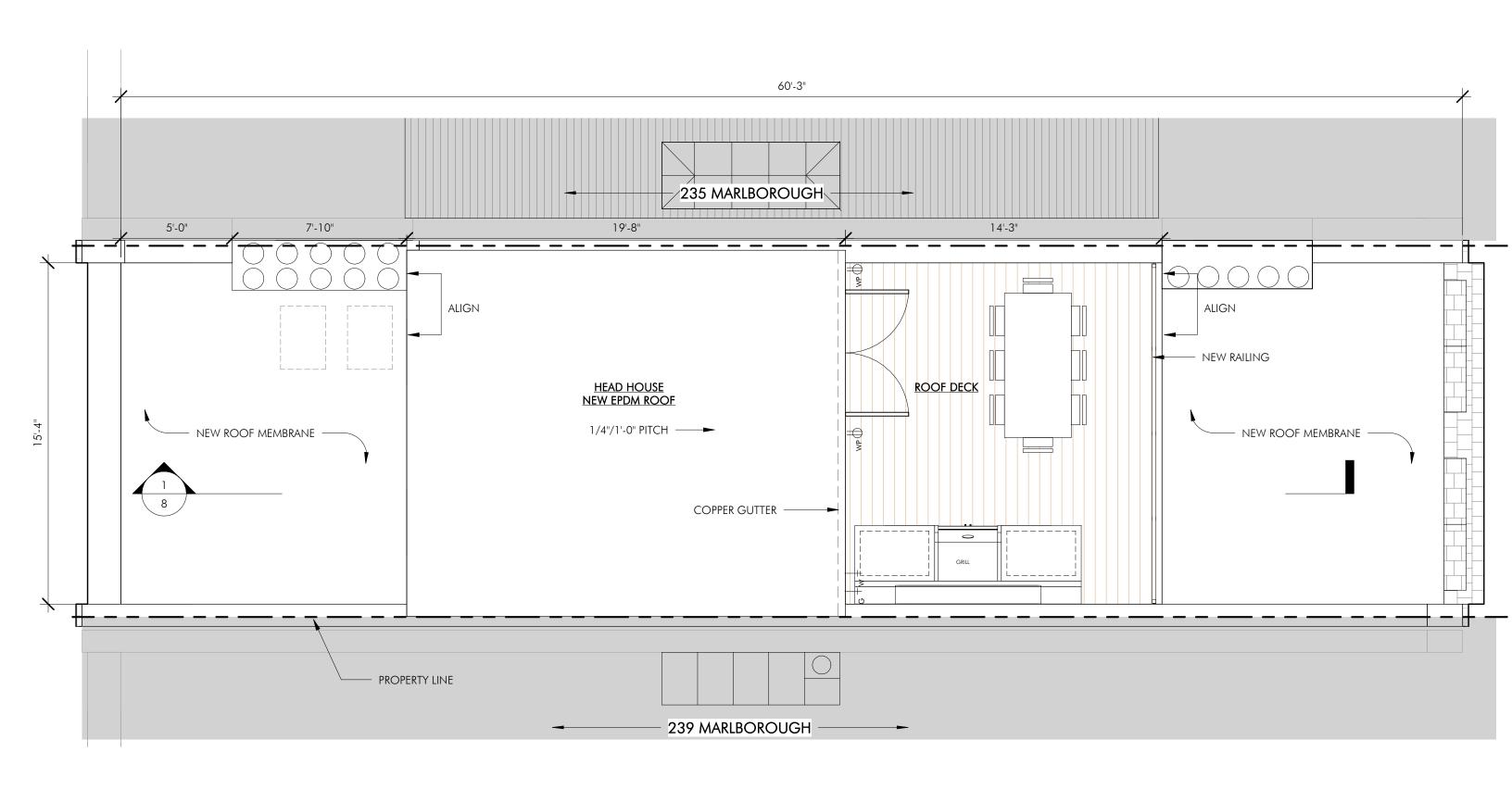
EXISTING ROOF PLAN
237 MARLBOROUGH STREET
BOSTON, MA 02116

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EMBARC

1/4" = 1'-0"

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1/4" = 1'-0"

PROPOSED ROOF PLAN 237 MARLBOROUGH STREET BOSTON, MA 02116



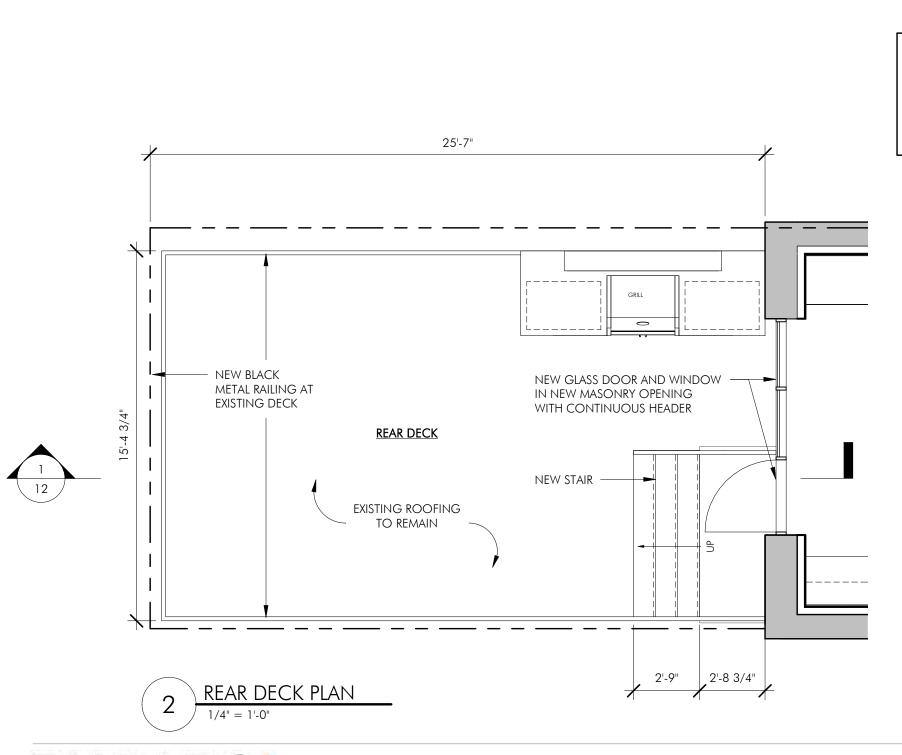
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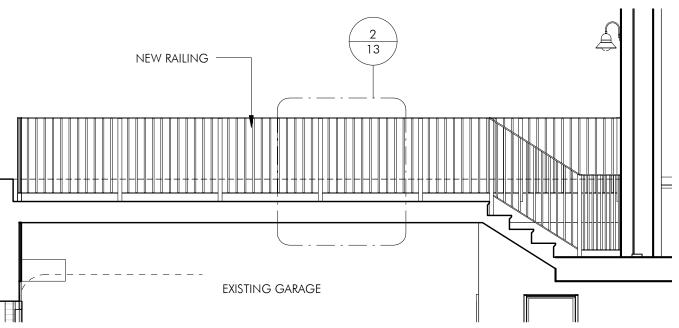
BUILDING ELEVATIONS - PUBLIC ALLEY 417 237 MARLBOROUGH STREET

Author

FEBRUARY 14, 2017

BOSTON, MA 02116





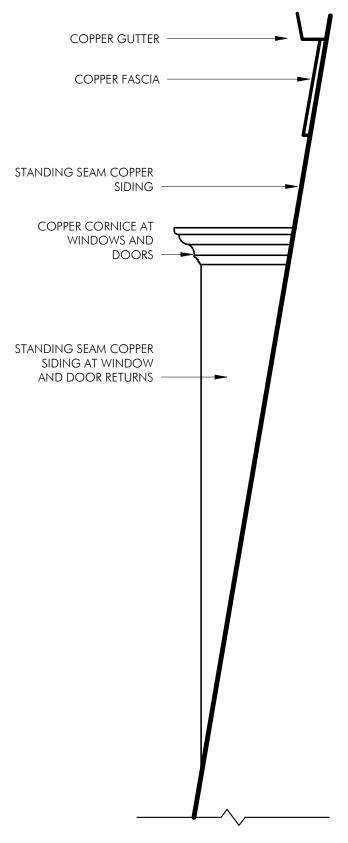
REAR DECK SECTION

1/4" = 1'-0"

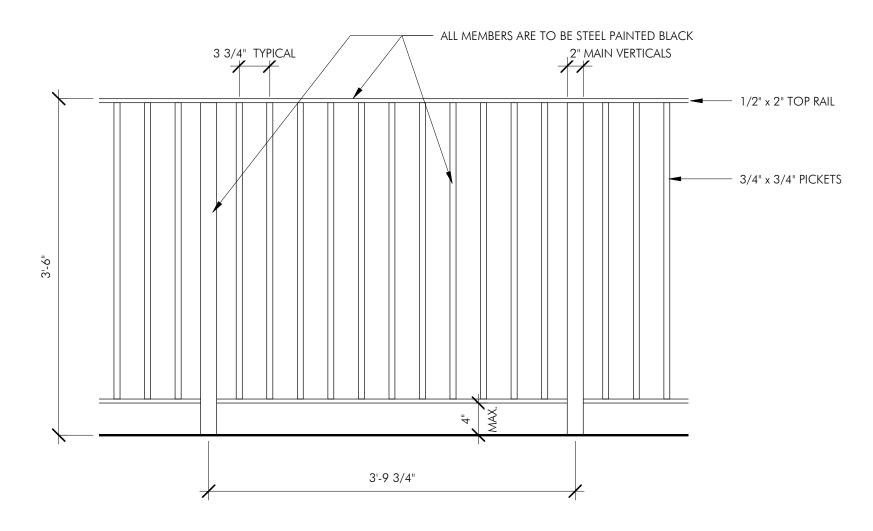
1/4" = 1'-0"

PROPOSED REAR DECK 237 MARLBOROUGH STREET BOSTON, MA 02116

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2 RAILING DETAIL

1" = 1'-0"

1" = 1'-0"



PROPOSED PENTHOUSE AND ROOF DECK DETAILS

237 MARLBOROUGH STREET
BOSTON, MA 02116

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Author

237 MARLBOROUGH STREET PROPOSED FRONT DOOR HARDWARE

Building Entry Hardware Specification

Baldwin - Atlanta Entrance Trim - Model #: 6570.003 - Lifetime Polished Brass



Brownstone Window Specifications

For

237 Marlborough Street

Boston, Massachusetts

08 50 00 - WINDOWS:

Scope:

- 1. Install new "1 over 1" all wood windows as indicated on the plans and elevations.
- 2. Provide full shops drawings for BBAC. Review and approval by Architect and BBAC prior to ordering.

Products:

- 1. Marvin Window.
 - a) Ultimate Series, wood interior wood exterior window
 - b) 6.1mm Laminated exterior glass
 - c) 3mm interior glass
 - d) STC rating 34
 - e) Exterior wood painted black
 - f) Jamb liners white
 - g) Interior wood primed for paint
 - h) Hardware white
 - i) Exterior full screens

Installation:

- Windows to be installed in existing openings completely wrapped with self-adhered membrane flashing and tied in to exterior air barrier
- 2. Perimeter of window to be sealed with air barrier sealant between frame and rough opening
- 3. Level and square all windows to ensure proper operation.



PROPOSED MASONRY RESTORATION – 237 Marlborough St

- 1. Demolition and remove steel fire escapes.
- 2. Demolition and remove any loose or damaged brick on front facades.
- 3. Cut out all mortar joints $\frac{1}{2}$ to $\frac{3}{4}$ " deep.
- 4. Repoint 100% of brick masonry to match existing type and color of mortar.
- 5. Demolition and remove any loose and damaged areas on all window sills and lintels.
- 6. Patch all window sills and lintels with weldobond and comproset to match existing.
- 7. Where needed, Apply afterwash product and apply 2 coats of masonry sealer.

AFTERWASH PRODUCT: Sure Klean 600 by Prosoco

- o General purpose concentrated acidic cleaner for brick and masonry surfaces
- o Dissolves mortar smears that are made during repointing
- o Leaves masonry clean and uniform with NO acidic burning or streaking

BROWNSTONE WORK METHODOLOGY

- Original brownstone appearance to be recreated by using mimic-repair mortar used especially to revive spalled surfaces to their original appearance.
- Original elements to be recreated by applying mortar in 1-2" lifts, overbuilding the mortar by 1/4" followed by shaving down to initial shape.
- Two coats of Tammscoat historic landmark approved paint to be applied in 24-48 hours.

16139SECTION 09 24 23 - PORTLAND CEMENT STUCCO

PART 1 GENERAL

1.1 SUMMARY

A. Materials and installation of exterior stucco wall covering backed with air/moisture barrier and Weather Resistive Barrier on CMU.

1.2 **RELATED SECTIONS**

A. Section 04 20 00 Unit Masonry

B. Section 08 50 00 Windows

1.3 REFERENCED DOCUMENTS

A. ASTM Standards:

C 897 Standard Specification for Aggregate for Job-Mixed Portland

Cement-Based Plasters

C 926 Standard Specification for Application of Portland Cement-Based

Plaster

C 1063 Standard Specification for Installation of Lathing and Furring for

Portland Cement Plaster

B. ICC ES (International Code Council Evaluation Service)

AC 11 Acceptance Criteria for Cementitious Exterior Wall Coatings
 AC 212 Acceptance Criteria for Water-resistive Coatings used as Water-

resistive Barriers over Exterior Sheathing

3. ICC ESR 1233 StoGuard with Gold Coat, StoGuard with EmeraldCoat, and

StoGuard VaporSeal Water-Resistive Barriers, and StoEnergy Guard

ICC ESR 2323 StoPowerwall and StoPowerwall NExT Stucco Systems

C. South Coast Air Quality Management District (SCAQMD)

Rule 1113 (2007) Architectural Coatings

D. Sto Corp.

Addendum to Sto Stucco Specifications

E. US EPA (United Stated Environmental Protection Agency)

40 CFR Part 59 (Code of Federal Regulations Title 40 Part 59 – National Volatile

Organic Compound Emission Standards for Consumer and

Commercial Products)

1.4 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 building code requirements.
- 3. Refer to applicable ICC ESR for wind load limitations that may apply.

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 protect exposed elements and to direct water to the exterior, including, above window and door heads, beneath window and door sills, at floor lines, 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 and/or dynamic hygrothermal modeling 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 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. Provide StoGuard Air/Moisture Barrier over sheathing, concrete and masonry.
 - e. At through wall expansion joints and at joints formed with back-to-back casing beads, back joints with StoGuard Transition Membrane. Refer to Sto Guide Details at www.stocorp.com.
 - f. Seal stucco terminations and accessory butt joints with appropriate sealant. Seal all penetrations through the stucco wall assembly with appropriate sealant, or backer rod and sealant, as dictated by joint type.

C. Grade Condition

- Do not specify 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. Limit foam thickness to a maximum of 4 inches (102 mm). 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 to minimize maintenance burden. Refer to Sto Guide Details at www.stocorp.com

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 Guide Details at www.stocorp.com

E. Joints and Accessories

- 1. Provide two piece expansion joints in the stucco assembly 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 at or 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 StoGuard Transition Membrane.
- 3. Provide one piece expansion joints at through wall penetrations, for example, above and below doors or windows.
- 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. Avoid the use of channel reveal accessories which can interfere with proper drainage and proper stress relief.
- 7. Provide appropriate sealant at stucco terminations and at stucco accessory butt joints.
- 8. Indicate location of joints, accessories and accessory type on architectural drawings.

F. Fire Protection

- 1. Noncombustible Type Construction: provide full width firestops at floor lines, typically 4 pcf (64 kg/m³) semi-rigid mineral wool, where metal framing runs continuously past floor line and provide minimum ¾ inch (19 mm) uniform stucco thickness.
- 2. Fire Resistance Rated Non-load Bearing Wall Assembly: provide 7/8 inch (22 mm) uniform stucco thickness. Refer to Sto Guide Details for a one hour rated non-load bearing fire-resistive rated wall assembly.

G. Solid Substrates (concrete and CMU)

1. Provide surface plane tolerance not to exceed ¼ inch in 10 feet (6 mm in 3.0 m).

- 2. Concrete Masonry provide open texture concrete masonry units with flush joints.
- 3. Do not install air/moisture barrier materials over efflorescence, weak surface conditions, painted, coated, non-absorbent, salt-contaminated, or any concrete or CMU substrate where adhesion is in question. Proof test adhesion to prepared poured-in-place or pre-cast concrete surfaces and impose a regimen of quality control tests to verify adhesion throughout the project.
- H. Stucco Thickness (does not include primer or textured finish coat)
 - 1. Application to Metal Plaster Bases: stucco thickness shall be uniforrm ³/₄ inch or 7/8 inch (19 or 22 mm). Stucco thickness shall not exceed 7/8 inch (22 mm).
 - 2. Stucco shall be applied in 2 coats, scratch and brown coat, to achieve the prescribed thickness.
 - 3. Thickness shall be uniform throughout the wall area.

1.5 **PERFORMANCE REQUIREMENTS**

- A. Air/Moisture Barrier
 - 1. Compliant with ICC ES Acceptance Criteria AC 212 (ICC ESR 1233)
 - 2. Material Air Leakage Resistance, ASTM E 2178: less than 0.02 L/s·m² at 75 Pa (0.004 cfm/ft² at 1.57 psf)
 - 3. Assembly Air Leakage Resistance, ASTM E 2357: less than 0.2 L/s·m² (0.04 cfm/ft² at 1.57 psf)
 - 4. Water Vapor Permeance, ASTM E 96, Method B: greater than 10 perms [573 ng/(Pa·s·m²)]
 - 5. Surface Burning, ASTM E 84: Flame Spread less than 25, Smoke Developed less than 450, Class A Building Material
 - 6. Tensile Adhesion, ASTM C 297:
 - a. Gypsum Sheathing, exceeds strength of substrate
 - b. Plywood, > 85 psi (590 kPa)
 - c. $OSB_{1} > 30 \text{ psi } (206 \text{ kPa})$
 - 7. VOC, calculation:
 - a. Less than 100 g/L
 - b. Compliant with US EPA 40 CFR 59 for waterproofing/sealer
 - c. Compliant with South Coast AQMD Rule 1113 for waterproofing/sealer

B. Stucco Base

- Stucco scratch and brown coat material in compliance with ASTM C 926 and manufactured or listed by Sto Corp.
- C. Primers

- 1. Alkaline Resistant Primer for freshly placed (minimum 4 day old) stucco surfaces:
 - a. Resistant to alkaline surfaces with pH of 13 or less
 - b. Surface Burning, ASTM E 84: Flame Spread less than 25, Smoke Developed less than 450, Class A building material
 - c. VOC: less than 50 g/L, compliant with South Coast AQMD Rule 1113 for architectural coatings

D. Finishes

- 1. Lotus-Effect Technology Finish (Stolit Lotusan)
 - Super-hydrophobic textured finish with Lotus-Effect Technology
 - b. Accelerated Weathering, ASTM G 154: 2500 hours, no blistering, checking cracking, crazing, or other deleterious effects
 - c. Water Vapor Permeability, ASTM E 96, Method B: > 30 perms [(1172 ng/(Pa·s·m²)]
 - d. Surface Burning, ASTM E 84: Flame Spread less than 25, Smoke Developed less than 450, Class A building material
 - e. VOC: less then 50 g/L, compliant with South Coast AQMD Rule 1113 for architectural coatings

1.6 **SUBMITTALS**

- A. Manufacturer's specifications, details, installation instructions and product data
- B. Manufacturer's code compliance report for air barrier and water-resistive barrier
- C. Manufacturer's code compliance report for stucco where ICC listed one coat stucco is used
- D. EPS board manufacturer's certificate of compliance with ASTM E 2430-05
- E. Manufacturer's NFPA 285 assembly report or ICC ESR indicating compliance of air/moisture barrier with requirements of NFPA 285 for use on Types I, II, III, and IV construction
- F. Manufacturer's standard warranty
- G. Samples for approval as directed by architect or owner
- H. Fastener manufacturer's pull-out or withdrawal capacity testing for frame and solid substrates
- Prepare and submit project-specific details.

1.7 QUALITY ASSURANCE

A. Manufacturer requirements

- 1. Stucco and air barrier products manufacturer for a minimum of twenty (20) years.
- Stucco finish products and air barrier products manufactured under ISO 9001:2008
 Quality System and 14001:2004 Environmental Management 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. Listed by an approved agency. Label insulation board with information required by Sto, the approved listing agency, and the applicable building code.

D. Testing

1. Construct 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, ASTM E 331 and ASTM 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.

1.8 **DELIVERY, STORAGE AND HANDLING**

- A. Deliver all materials in their original sealed containers bearing manufacturer's name and identification of product.
- B. Protect EPS insulation materials from prolonged UV exposure, keep away from sources of heat, sparks, flame, flammable or volatile materials. Store on a clean, flat surface, off the ground in a dry area.
- C. Protect coatings (pail products) from freezing and temperatures in excess of 90°F (32° C). Store away from direct sunlight.

- D. Protect portland cement based materials (bag products) from moisture and humidity. Store under cover off the ground in a dry location.
- E. Handle all products as directed on labeling.

1.9 **PROJECT/SITE CONDITIONS**

- A. Maintain ambient and surface temperatures above 40°F (4°C) during application and for 24 hours after set of stucco, and after application of air/moisture barrier and finish materials.
- B. Provide supplementary heat for installation in temperatures less than 40°F (4°C) such that material 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. Do not install stucco if ambient temperatures are expected to rise above 100°F (38°C) within a 24 hour period.
- D. Provide protection of surrounding areas and adjacent surfaces from application of materials.

1.10 COORDINATION/SCHEDULING

- A. Protect sheathing from climatic conditions to prevent weather damage until the installation of the air/moisture barrier.
- B. Install diverter flashings wherever water can enter the wall assembly to direct water to the exterior.
- C. Coordinate installation of foundation waterproofing, roofing membrane, windows, doors and other wall penetrations to provide a continuous air barrier and continuous moisture protection. Provide protection of rough openings before installing windows, doors, and other penetrations through the wall and provide sill flashing. Coordinate installation of air/moisture barrier components with window and door installation to provide weather proofing of the structure and to prevent moisture infiltration and excess air infiltration.
- D. Install window and door head flashing immediately after windows and doors are installed.
- E. Protect air/moisture barrier with stucco cladding within 180 days of installation.
- F. 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.
- G. Sequence interior work such as drywall installation prior to stucco installation to prevent stud distortion (and potential cracking) of the stucco.

- H. 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.
- I. Install copings and sealant immediately after installation of the stucco and when finish coatings are dry.
- Attach penetrations through stucco to structural support and provide air tight and water tight seals at penetrations.

1.11 WARRANTY

A. Provide manufacturer's standard warranty.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Air/Moisture Barrier, Portland Cement Stucco, Stucco Primers, and Stucco Finishes
 - Sto Corp., 3800 Camp Creek Parkway, Building 1400, Suite 120. Atlanta, GA 30331

2.2 AIR/MOISTURE BARRIER

- A. StoGuard-- fluid applied air/moisture barrier for concrete, and concrete masonry substrates consisting of multiple compatible components:
 - 1. Sto Gold Fill -- ready mixed acrylic based flexible joint treatment for rough opening protection, joint treatment of wall sheathing, CMU crack repair, and detail component for shiplap connections with flashing, weep screed, and similar ship lap details.
 - 2. Sto EmeraldCoat -- ready mixed flexible waterproof coating for wall sheathing, concrete and CMU wall surfaces
 - 3. StoGuard Mesh-- nominal 4.2 oz/yd² (142 g/m²), self-adhesive, flexible, symmetrical, interlaced glass fiber mesh, with alkaline resistant coating for compatibility with Sto materials, used with Sto Gold Fill to reinforce rough openings, inside and outside corners, sheathing joints, and detail component for shiplap connections with flashing, weep screed, and similar ship lap details
 - 4. StoGuard Fabric nonwoven cloth reinforcement used with Sto EmeraldCoat for rough opening protection, joint treatment of wall sheathing, and detail component for shiplap connections with flashing, weep screed, and similar ship lap details
 - 5. StoGuard RediCorner a preformed fabric piece used in the corners of rough openings in tandem with StoGuard Fabric for quicker installation
 - 6. StoGuard Tape self adhering rubberized asphalt tape for rough opening protection in wood or metal frame construction
 - 7. StoGuard Primer primer for use with StoGuard Tape

- 8. StoGuard Transition Membrane flexible air barrier membrane for continuity at transitions: sheathing to foundation, dissimilar materials (CMU to frame wall), wall to balcony floor slab or ceiling, flashing shingle lap transitions, floor line deflection joints, masonry control joints, and through wall joints in masonry or frame construction.
- 9. StoGuard RapidSeal one component quick drying waterproof air barrier material for rough opening protection, sheathing joints (with StoGuard Mesh), CMU crack repair, and for sealing fish mouths, wrinkles, seams, gaps, holes, or other voids in StoGuard air barrier materials
- 10. StoGuard RapidFill one component rapid drying gun-applied joint treatment for sheathing. Also used at static transition joints or seams in construction and to seal fish mouths, wrinkles, seams, gaps, holes, or other voids in StoGuard air barrier materials. Also used as a detail component for shiplap connections to flashing, weep screed, and similar ship lap details

2.3 WATER-RESISTIVE BARRIER

A. Minimum No. 15 asphalt saturated felt complying with ASTM D 226, Type 1, or one layer of Grade D kraft building paper, or paper-backed stucco lath conforming to 2.04.

2.4 **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

2.5 MECHANICAL FASTENERS

- A. Non-corroding fasteners in compliance with AISI \$200 2007 and ASTM C 1513:
 - 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) and three thread 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.
- B. Tie Wire 18 gauge galvanized and annealed low-carbon steel in compliance with ASTM A 641 with Class I coating.

2.6 ACCESSORIES

- 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.

2.7 JOB MIXED INGREDIENTS

- A. Water: clean and potable.
- B. Sand: in compliance with ASTM C 897 or ASTM C 144, for use with one coat and ASTM C 926 stucco concentrates

2.8 STUCCO

A. 108 StoPowerwall Scratch & Brown: portland cement-based stucco concentrate in compliance with ASTM C 926.

2.9 FOAM TRIM AND BUILD-OUTS

- A. Adhesive and Base Coat
 - 1. Sto BTS Xtra light weight one component polymer modified cement-based extra high build base coat material
- B. Foam Insulation Board for Trim
 - 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 ASTM E 2430 (Note: minimum required thickness is 1 inch [25 mm] and maximum allowable thickness is typically 4 inches [102 mm] for noncombustible type construction unless thicker dimensions are approved by the code official).

C. Reinforcing Mesh

- 1. Sto Mesh--nominal 4.5 oz./yd² (153 g/m²), symmetrical, interlaced open-weave glass fiber mesh treated with alkaline resistant coating for compatibility with Sto materials (achieves Standard Impact Classification over foam insulation board).
- 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 foam backwrapping and aesthetic detailing).

2.10 CRACK DEFENSE

- A. Base Coat
 - Sto BTS Xtra light weight one component polymer modified cement-based extra high build base coat material
- B. Reinforcing Mesh

1. Sto Mesh – nominal 4.5 oz./yd² (153 g/m²), symmetrical, interlaced open-weave glass fiber mesh made with alkaline resistant coating for compatibility with Sto materials

2.11 PRIMER

A. Sto Hot Prime – acrylic based primer/sealer for freshly placed (minimum 4 day old) and high pH stucco surfaces.

2.12 FINISH COAT

A. Stolit Lotusan Finish – integrally colored, factory blended textured Lotus-Effect Technology wall finish with graded marble aggregate

2.13 **MIXING**

A. StoGuard

- 1. Sto Gold Fill mix with a clean, rust-free electric drill and paddle to a uniform consistency. Do not thin, or dilute with water.
- 2. Sto EmeraldCoat mix with a clean, rust-free electric drill and paddle to a uniform consistency. Do not thin, or dilute with water.

B. StoPowerwal Stucco

- Refer to mix instructions on packaging. USE ONLY THE AMOUNT OF WATER NECESSARY FOR A WORKABLE MIX. Use of excess water is detrimental to performance.
- C. Adhesive and Base Coats for Sto Armor Guard and Foam Build-outs:
 - 1. Refer to applicable Sto Product Bulletin for selected adhesive/base coat material(s).
- D. Primer--mix with a clean, rust-free high speed mixer to a uniform consistency.
- E. Finish--mix with a clean, rust-free high speed mixer to a uniform consistency. A small amount of water (up to 12 ounces [0.4 L]) may be added to adjust workability. Limit addition of water to amount needed to achieve the finish texture.
- F. Mix only as much material as can readily be used.
- G. Do not add lime, anti-freeze compounds, or other additives to any of the materials.

PART 3 EXECUTION

3.1 ACCEPTABLE INSTALLERS

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

3.2 **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. Crack measure crack width and record location of cracks.
- 4. Damage and deterioration.
- 5. Moisture damage record any areas of moisture damage.
- B. Report deviations from the requirements of project specifications or other conditions that might adversely affect the air/moisture barrier or stucco installation to the General Contractor. Do not proceed with air/moisture barrier or stucco installation until deviations are corrected.

3.3 SURFACE PREPARATION

- A. Concrete and Concrete Masonry (CMU)
 - 1. Remove surface contamination such as oil, grease, dust, dirt, algae, mildew, salts, paint or coatings. Correct weak surface conditions such as laitance. Use chemical cleaners such as TSP (trisodium phosphate) detergent to remove oil and grease and rinse with potable water. Use chemical cleaners to remove efflorescence or other surface contamination in accordance with manufacturer's written instructions. Use mechanical methods such as waterblasting, sandblasting, and wire brushing to remove weak surface conditions.
 - 2. Repair cracks up to 1/8 inch (3 mm) wide by raking with a sharp tool to remove loose, friable material and blow clean with oil-free compressed air. Apply joint treatment material over crack, embed reinforcement (where applicable), and smooth joint treatment material with a trowel, drywall or putty knife to cover the reinforcement.
 - 3. Remove projecting fins, ridges, and mortar by mechanical means.
 - 4. Fill honeycombs, aggregate pockets, holes and other voids with Sto patching material.
 - 5. Where the surface is excessively "rough" or out of plane, skim coat the wall surface with Sto base coat material to provide a smooth, level surface.

3.4 AIR/MOISTURE BARRIER INSTALLATION

A. Transition Detailing with StoGuard Transition Membrane

At floor line deflection joints up to 1 inch (25 mm) wide, stucco expansion joints formed with back-to-back casing beads, and static joints and transitions such as: sheathing to foundation, dissimilar materials (i.e., CMU to frame wall), flashing shingle-lap transitions, and wall to balcony floor slab or ceiling:

- 1. Apply waterproof coating (Sto EmeraldCoat) liberally to properly prepared surfaces with brush, roller, or spray.
- 2. Place pre-cut lengths of StoGuard Transition Membrane centered over the transition in the wet coating. At changes in plane crease the membrane and similarly place the

- membrane material in the wet coating. At floor line deflection joints achieve a slightly concave profile (recessed into the joint) of the membrane.
- 3. Immediately top coat the membrane with additional coating and apply pressure with brush or roller to fully embed the membrane in the coating and achieve a smooth and wrinkle-free surface without gaps or voids.
- 4. Apply coating liberally along all top horizontal edges on walls and along all edges on balcony floor slabs to fully seal the edges.
- 5. Overlap minimum 2 inches (51 mm) at ends and adhere lap seams together with coating. Shingle lap vertical seams and vertical to horizontal intersections with minimum 2 inch (51 mm) overlap.

At movement joints up to 1 inch (25 mm) wide with up to + 50% movement such as masonry control joints, and through wall joints in masonry or frame construction:

- 1. Insert backer rod sized to friction fit in the joint (diameter 25% greater than joint width).
- 2. Recess the backer rod ½ inch (13 mm).
- 3. Apply the waterproof coating liberally to properly prepared surfaces with brush, roller, or spray along the outer surface on each side of the joint (not in the joint).
- 4. Immediately place the membrane by looping it into the joint against the backer rod surface to provide slack.
- 5. Embed the membrane in the wet coating along the outer surface on the sides of the joint by top coating with additional coating material and applying pressure with a brush or roller.

For all applications, after the membrane installation is complete and the waterproof coating is dry:

- Apply a final liberal coat of the waterproof coating to all top horizontal edges on walls
 to ensure waterproofing integrity. Similarly apply coating at all edges on balcony floor
 slabs.
- 7. Inspect the installed membrane for fish mouths, wrinkles, gaps, holes or other deficiencies. Correct fish mouths or wrinkles by cutting, then embedding the area with additional coating applied under and over the membrane.
- 8. Seal gaps, holes, and complex geometries at three dimensional corners with StoGuard RapidFill or StoGuard RapidSeal.
- B. Transition Detailing with StoGuard RapidFill

At flashing shingle laps, and through wall penetrations such as pipes, electrical boxes, and scupper penetrations:

1. Flashing leg or penetration flange must be seated flat against the wall surface without gaps. Apply StoGuard RapidFill liberally with a caulking gun in a zig-zag pattern across the flashing leg or flange/wall surface seam and spread to a thickness that covers the flange and fastener penetrations and directs water away from the wall.

- Extend application minimum 1 inch (25 mm) onto both surfaces (flashing leg/flange and wall surface).
- 2. At through wall penetrations without flanges ensure the penetrating element (i.e., pipe or scupper) is fitted snug against abutting wall surfaces. Apply a fillet bead with a caulking gun around the penetration and tool against both surfaces (penetration and wall surface) to create a bead profile that directs water away from the penetration. Extend application minimum 1 inch (25 mm) onto both surfaces.

C. Rough Opening Protection

1. StoGuard RapidSeal: apply a generous bead of StoGuard RapidSeal with a caulking gun in a zig-zag pattern along the inside and outside surface of the rough opening. Spread with a 6 inch (152 mm) wide plastic drywall knife all the way around the opening (refer to Sto Details 20.20R and 21.20R)

D. Air/Moisture Barrier Coating Installation

1. CMU Surfaces:

- a. Repair static cracks up to 1/2 inch (13 mm) wide with StoGuard RapidFill. Rake the crack with a sharp tool to remove loose or friable material and blow clean with oil-free compressed air. Apply the crack filler with a trowel or putty knife over the crack and tool the surface smooth. (*Note: For moving cracks or cracks larger than ½ inch [13mm]), consult with a structural engineer for repair method).* Protect repair from weather until dry.
- b. Liberally apply two coats of Sto EmeraldCoat to the surface with a ¾ inch nap roller or spray equipment to a minimum wet thickness of 10 30 mils each, depending on surface condition. Additional coats may be necessary to provide a void and pinhole free surface. Protect from weather until dry.

E. Air /Moisture Barrier Connections and Shingle Laps

- 1. Coordinate installation of connecting air barrier components with other trades to provide a continuous air tight membrane.
- 2. Coordinate installation of flashing and other moisture protection components with other trades to achieve complete moisture protection such that water is directed to the exterior, not into the wall assembly, and drained to the exterior at sources of leaks (windows, doors and similar penetrations through the wall assembly).
- 3. Splice-in head flashings above windows, doors, floor lines, roof/sidewall step flashing, and similar locations with StoGuard detail component to achieve shingle lap of the air/moisture barrier such that water is directed to the exterior.

3.5 SHEET WATER-RESISTIVE BARRIER INSTALLATION

A. Install in compliance with the applicable building code requirements for building paper. Lap paper over foundation weep screed attachment flange, floor line flashing, and window/door head flashings. Refer to Sto Guide Details at www.stocorp.com

3.6 STUCCO 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 diminish strength and resistance to cracking. Under these conditions 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 fastener attachments with stucco. Moist cure stucco minimum 48 hours for optimum strength gain and resistance to cracking. Allow final stucco application to completely dry (28 days) before applying primer or finish (except in the case of Sto Hot Prime which can be applied 48 hours after completing moist cure of stucco). 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 as described below:

A. Installation over StoGuard with Paper or Felt WRB

- 1. Weep Screed Installation
 - a. Install foundation weep screed at the base of the wall securely to solid substrate or 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 nosing minimum 4 inches (100 mm) above earth grade, 2 inches (51 mm) above finished grade (paved surfaces, for example). Lap waterproof air barrier, sheet water-resistive barrier, and drainage mat over the weep screed attachment flange.
- 2. Casing Bead and Two Piece Expansion Joint Installation
 - a. 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 building expansion joints, thru-wall joints in concrete or CMU, 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 full accessory pieces where possible and avoid small pieces. Seal adjoining pieces by embedding ends in sealant. Abut horizontal into vertical joint accessories (except where horizontal movement joints exist that prevent continuous vertical runs of accessories). Attach at no more than 7 inches (178 mm) into solid substrate/framing with appropriate fasteners.
- 3. Lath Installation
 - a. Diamond Mesh Metal Lath conform to ASTM C 1063

- i. General install metal lath with the long dimension at right angles to structural framing (horizontally on solid substrates). Terminate lath at expansion joints. Do not install continuously at 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 into solid substrates or 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.

4. One Piece Expansion Joint Installation

a. Install one piece expansion joints at through wall penetrations, for example, above and below doors and windows. Install one piece expansion joints at every 144 ft² (13 m²). Wire tie one piece expansion joints to lath at no more than 7 inches (178 mm) on center. Seal adjoining pieces by embedding ends in sealant. Make certain lath is DISCONTINUOUS at or beneath joints.

5. Inside and Outside Corners

a. Install corner lath at inside corners and corner bead at outside corners over lath. Attach through lath into solid substrate or framing at no more than 7 inches (178 mm) on center with appropriate fasteners.

6. Stucco Installation

- a. Scratch Coat: apply stucco with sufficient pressure to key into and embed the metal lath. Apply sufficient material, 3/8 or ½ inch (9 or 12 mm), 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 uniform throughout the wall area and shall be either 3/4 inch or 7/8 inch (19 or 22 mm), and shall not exceed 7/8 inch (22 mm).
- 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. 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.

B. Foam Trim and 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 (B4).
- 2. Install foam build-outs directly over hardened stucco with foam trim adhesive. 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 and trim or tool excess adhesive from ends and edges of foam trim for a smooth void-free connection to the stucco substrate.
- 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 foam trim base coat 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 cementious 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. Alternatively, If Armor Guard is used apply Armor Guard with its reinforcing mesh continuously from the stucco wall surface over foam build-outs (refer to 3.07 C).

C. Crack Defense

1. Apply base coat over the moist cured stucco (and foam build-outs if not already reinforced with mesh) with appropriate spray equipment or a stainless steel trowel to a uniform thickness of approximately [inch (3 mm). Work horizontally or vertically in strips of 40 inches (1016mm), and immediately embed the mesh into the wet base coat by troweling from the center to the edge of the mesh. Overlap mesh not less than 2-½ inches (64 mm) at mesh seams and at overlaps of detail mesh. Feather seams and edges. Avoid wrinkles in the mesh. The mesh must be fully embedded so that no mesh color shows through the base coat when it is dry. Re-skim with additional base coat if mesh color is visible. Do not install base coat or mesh over joints or accessories in the stucco wall assembly.

D. Primer Installation

1. Sto Hot Prime – Moist cure stucco for a minimum of 48 hours. Allow stucco to dry an additional 48 hours, then apply primer evenly with brush, roller or proper spray equipment over the clean, dry stucco and foam build-outs, and allow to dry. Final age of primed stucco application must be minimum 7 days before application of finish.

E. Finish Installation

- 1. Apply finish to minimum 28 day old stucco or primed stucco and foam build-outs, or apply when pH of stucco surface is less than 10. If Sto Hot Prime is used as the primer the primed stucco/foam build-out surfaces need only be minimum 7 days old. 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.
 - Float "R" (rilled or swirl 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 sealant joints. 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.
 - h. Do not install finish over high pH (\geq 10) stucco surfaces or surfaces that have not been fully cured.

3.7 **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.
- D. Provide sealant and backer material at stucco terminations and at fixture penetrations through the stucco to protect against air, water and insect infiltration. Provide weeps at floor lines, window and door heads, and other areas to conduct water to the exterior.

3.8 CLEANING, REPAIR AND MAINTENANCE

- A. Clean and maintain the stucco finish for a fresh appearance and to prevent water entry into and behind the stucco. Repair cracks, impact damage, spalls or delamination promptly.
- B. Maintain adjacent components of construction such as sealants, windows, doors, and flashing, to prevent water entry into the wall assembly.
- C. Refer to Sto reStore Repair and Maintenance Guide (<u>reStore Program</u>) for detailed information on stucco restoration cleaning, repairs, recoating, resurfacing and refinishing, or re-cladding.

End of Section