2640 Fountain View Drive, Houston, Texas 77057 | 713.260.0600 | David A. Northern, Sr., **President & CEO**
Houston Housing Authority Board of Commissioners: LaRence Snowden, *Chair* | Kristy M. Kirkendoll, *Vice Chair*
Dr. Max Miller, Jr. | Stephanie Ballard | Andrea Hillard Cooksey | Kris Thomas | Guillermo "Will" Hernandez

The Houston Housing Authority ("HHA"), has issued this Amendment No. 1 to IFB 22-10 Exterior Repairs of Bellerive Senior Living Building for the purposes of incorporating the following documents into this solicitation:

1. Exhibit B Exterior Wall Condition Assessment Report; and,

2. Exhibit C Exterior Wall and Window Repair Project Bellerive Senior Living.

All other terms and conditions shall remain the same.

Kevin M. Coleman
2022.02.25 10:41:35 -06'00'

Kevin M. Coleman, MS, C.P.M.
Procurement Manager,
Houston Housing Authority

PRICE CONSULTING, INC.
211 HIGHLAND CROSS ROAD • SUITE 220 • HOUSTON, TEXAS 77073
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EXTERIOR WALL CONDITION ASSESSMENT REPORT
OF
HOUSTON HOUSING AUTHORITY
BELLERIVE SENIOR LIVING APARTMENT BUILDING
7225 BELLERIVE DRIVE
HOUSTON, TEXAS

FOR
HOUSTON HOUSING AUTHORITY
HOUSTON, TEXAS

PREPARED BY
PRICE CONSULTING, INC.
211 HIGHLAND CROSS ROAD SUITE 220
HOUSTON, TEXAS 77073
TEXAS REGISTERED ENGINEERING FIRM F-3814

PCI PROJECT NO. 11955.21
DECEMBER 16, 2021

TX PE Firm F-3814
12/16//2021

EXTERIOR WALL CONDITION ASSESSMENT

CLIENT: HOUSTON HOUSING AUTHORITY

DATE: DECEMBER 16, 2021

PROJECT: EXTERIOR WALL CONDITION ASSESSMENT
BELLERIVE SENIOR LIVING APARTMENT BUILDING
7225 BELLERIVE DRIVE
HOUSTON, TEXAS

PCI PROJECT NO. 11955.21

Price Consulting, Inc. (PCI) is pleased to submit this report of our condition assessment of the exterior walls of the Houston Housing Authority – Bellerive Senior Living Apartment Building located at 7225 Bellerive Drive in Houston, Texas. This report contains our understanding of the project background information, scope of services, findings, and recommendations. The purpose of our assessment was to document existing conditions and construction and provide recommendations for corrective actions, repairs, and/or replacement of building exterior wall components and systems on the building.

EXECUTIVE SUMMARY

Bellerive Senior Living Apartment Building is located at 7225 Bellerive Drive in Houston, Texas. The facility was reportedly constructed in 1975. The exterior walls of the original facility are constructed with metal stud-framed walls with exterior gypsum sheathing and bituminous dampproofing, and brick masonry veneer. Windows consist of a combination of aluminum-framed fixed and awning windows installed in punched openings and traditional aluminum-framed storefront window and door systems installed in punched openings at main entry and common area. Entrances included aluminum-framed and steel-framed hollow metal doors. In 2008, renovations were reportedly performed to the subject building which included applying a fluid-applied coating over the exterior brick veneer and various sealant repairs. Miscellaneous repairs are assumed to have been made to facility since 2008 renovation.

Based on the conditions observed, PCI recommends the following: replace sealants in joints between adjacent brick veneer; replace sealants at perimeters of windows, louvers and doors, and at penetrations; replace sealants between window frames and insulated glass units; wet seal aluminum-framed storefront windows; replace sealants over fastener heads in window frames at operable windows; repair/replace weather-seal gaskets at operable windows; install weeps above grade at base of brick veneer; replace cracked/damaged brick units; and repair cracks in brick veneer.

EXTERIOR WALL CONDITION ASSESSMENT

SCOPE OF SERVICES

PCI performed a visual survey of the facility on November 12th and November 15th, 2021 to document the types and conditions of the materials used in the construction of the exterior walls of the subject building and identify items that require maintenance, repair, and/or replacement. In addition, on November 12th, 17th, and 18th, 2021, PCI performed water spray testing of select windows. PCI has prepared a written report summarizing our findings, conclusions, and recommendations.

PROJECT INFORMATION

Bellerive Senior Living Apartment Building is located at 7225 Bellerive Drive in Houston, Texas. The facility was reportedly constructed in 1975. The exterior walls of the original facility are constructed with metal stud-framed walls with exterior gypsum sheathing and bituminous dampproofing, and brick masonry veneer. Windows consist of a combination of aluminum-framed fixed and awning windows installed in punched openings and traditional aluminum-framed storefront window and door systems installed in punched openings at main entry and common area. Entrances included aluminum-framed and steel-framed hollow metal doors. In 2008 renovations were reportedly performed to the subject building which included applying a fluid-applied coating over the exterior brick veneer and various sealant repairs. Miscellaneous repairs are assumed to have been made to facility since 2008 renovation.

OBSERVATIONS

PCI accessed exterior of the building via a manlift and walked the exterior and interior of the building to document existing conditions. Based on observations gathered, we noted the following:

- Corners of operable window sashes were misaligned at various locations (Photograph 10).
- Sealant was disbonded (adhesive failure) at edges of insulated glass units and frames of windows (Photographs 11, 12, 13, 14, and 15)
- Sealants were typically missing and/or deteriorated as exhibited by surface crazing or cohesive failure (internal separation of sealant) at various locations (Photographs 13, 14, 15, 16, 17, 18, 19, 20, 24, and 25).

- Apparent polyurethane sealants were utilized to set glazing and installed in joints between insulated glass units and window frames at various locations (Photographs 15, 16, 17, 18, 19, and 20).

- Sealants at perimeters of windows were disbonded or exhibited adhesive failure (separation of sealant from substrate) at various locations (Photographs 21, 22, 23, 24, 25, and 26).

- Voids were observed in structural sealant between insulated glass units and window frames at various locations (Photographs 27 and 28)

- Sealants were deteriorated or exhibited cohesive failure in joints between adjacent brick units at various locations (Photographs 29, 30, 31, and 32).

- Sealants were typically deteriorated as exhibited by both adhesive and cohesive failures at pipes penetrating walls. In addition, sealant had not been applied between pipes and PVC sleeves at various locations (Photographs 33 and 34).

- Step cracks and vertically oriented cracks were observed in brick veneer at various locations (Photographs 35, 36, 37, 38, 39, and 40)

- Sections of plastic shims had been screwed into window frame apparently to retain glazing lite in frame at one location adjacent to main entry (Photographs 41 and 42).

- No weeps were observed (either non-existent or were located below grade) at base of brick veneer at various locations (Photographs 43 and 44).

- A bulge in brick veneer was observed at level 3 on East elevation of North wing (Photograph 45).

- Deteriorated sealant was observed at fastener heads within openings in frame sashes (Photographs 46 and 47).

- Voids were observed in weather-seal gaskets in operable windows at various locations (Photograph 48).

- Voids were observed between abutting glazing gaskets at entry storefront windows.

CONCLUSIONS AND RECOMMENDATIONS

Our conclusions and recommendations are based on observations gathered during the survey and our experiences with structures of similar age and type of construction. Based on our observations, the existing conditions appeared to be due to either premature failure, advanced weathering, normal weathering, lack of maintenance, improper materials or poor installation. Sources of water infiltration observed during water spray testing was found to occur at joints between window framing and brick veneer, joints between window frames and PTAC units, and/or sealant/gasket between glass and window frame, PCI recommends a comprehensive renovation/restoration program to include the following:

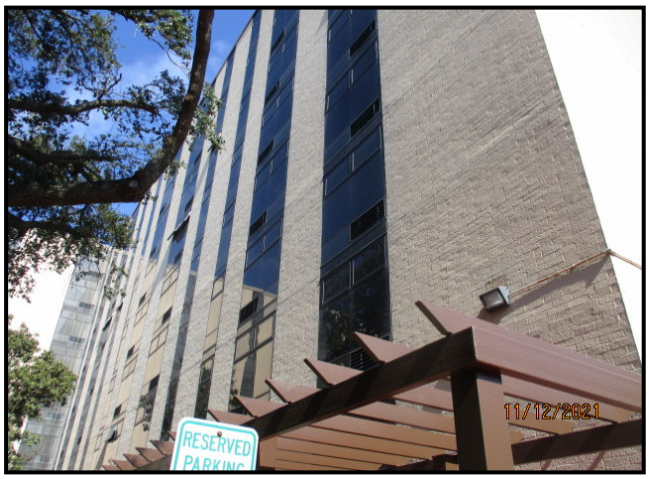
- Repair corner joints in window sashes;
- Replace sealants between window frames and insulated glass units and between mulled window frames;
- Remove and reset insulated glass units in window frames at various locations;
- Replace sealants in joints at perimeter of window frames and wall openings;
- Replace sealants in joints between window frames and PTAC units;
- Replace sealants in joints between adjacent brick units;
- Replace/install sealants at penetrations through brick veneer;
- Route and seal cracks in brick veneer;
- Repair bulge in brick veneer (install renovation masonry anchors);
- Install weeps at bases of walls at through wall flashing locations;
- Replace sealants over fastener heads in windows at operable vent openings;
- Repair/replace weather-seal gaskets at operable vents.
- Wet seal (apply sealant between glass and aluminum frame) storefront windows.

APPENDIX

Photographs: 1 through 74

Water Spray Test Elevation Drawing

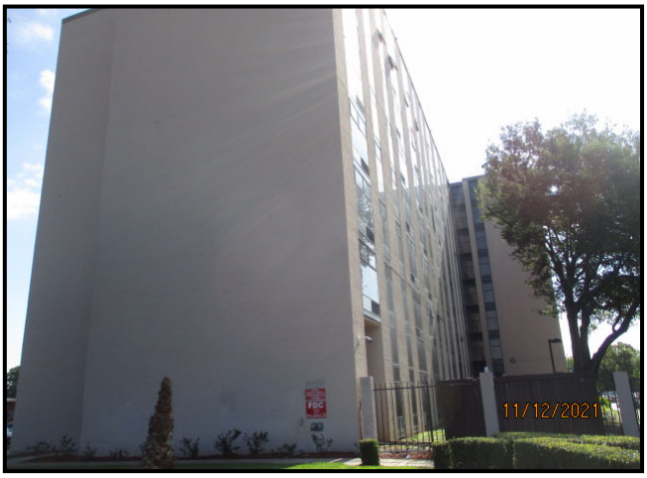
HHA: BELLERIVE SENIOR LIVING APARTMENTS
HOUSTON, TEXAS



1. WEST ELEVATION, SOUTH WING

2. SOUTH ELEVATION, CENTRAL CONNECTOR

3. WEST ELEVATION, CENTRAL CONNECTOR



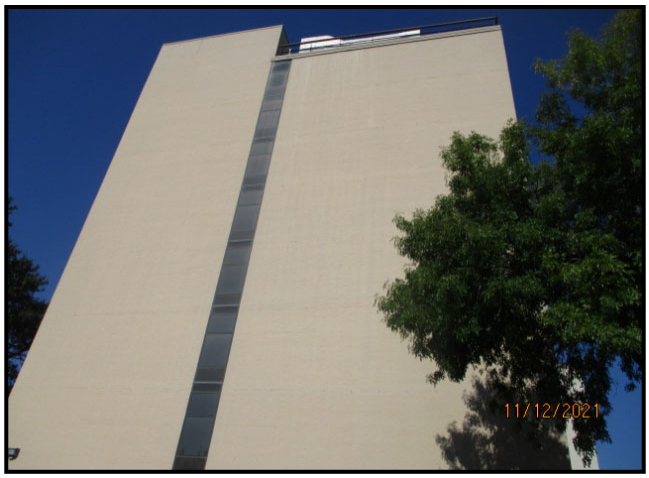
4. NORTH AND SOUTH ELEVATION, NORTH WING

5. EAST ELEVATION, NORTH WING

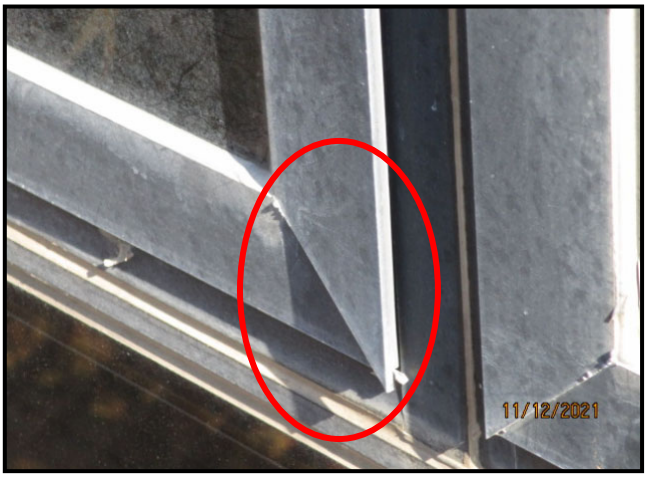
6. NORTH ELEVATION, CENTRAL CONNECTOR

7. EAST AND SOUTH ELEVATION, CENTRAL CONNECTOR

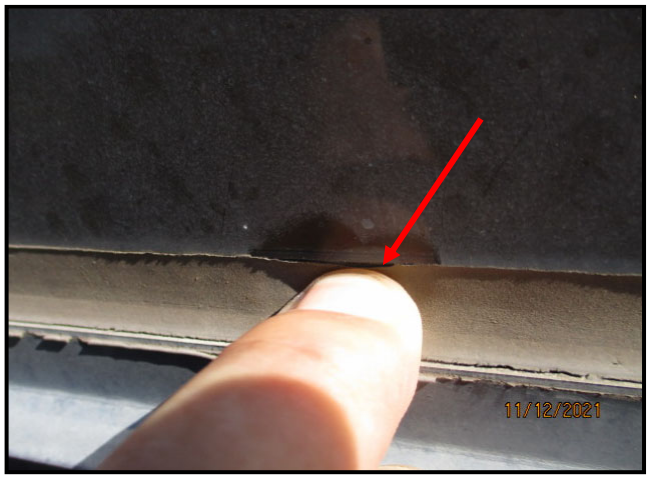
8. EAST ELEVATION, SOUTH WING



9. SOUTH ELEVATION, SOIUTH WING

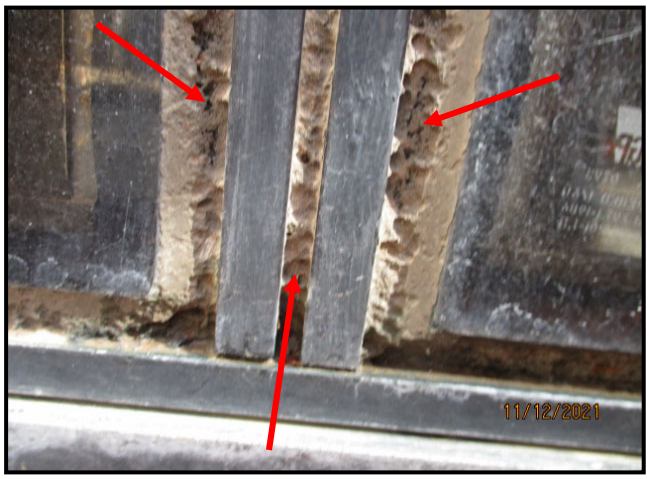


10. MISALIGNED CORNER AT WINDOW SASH

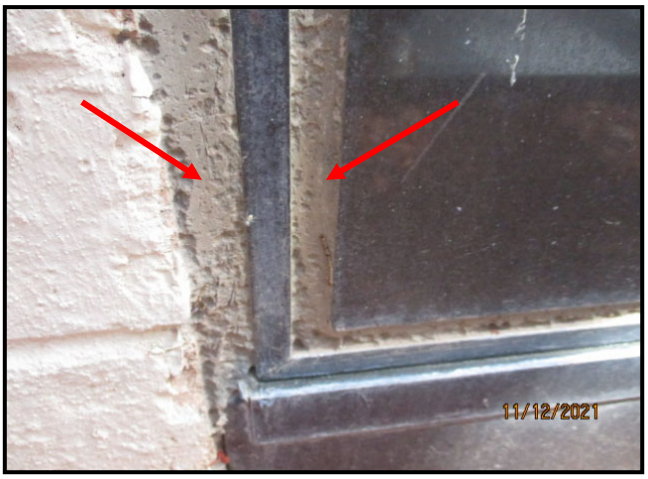


11. DISBONDED SEALANT AT EDGE OF WINDOW INSULATED GLASS UNIT

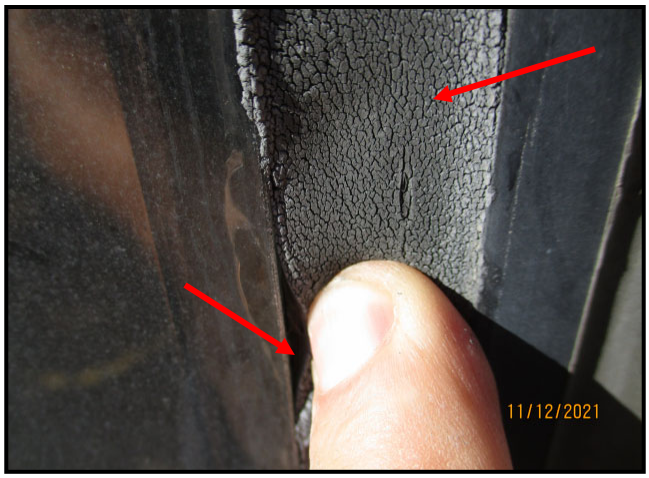
12. DISBONDED SEALANT AT MULLED WINDOW FRAME



13. DETERIORATED SEALANT BETWEEN WINDOW FRAME, AND BETWEEN INSULATED GLASS UNIT AND FRAME



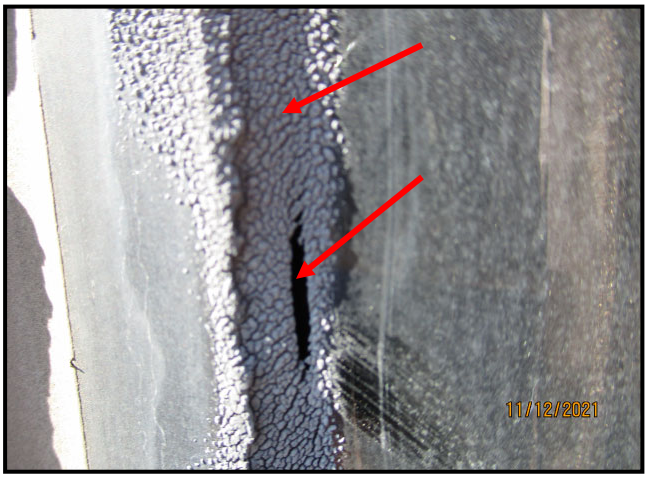
14. DETERIORATED SEALANT AT WINDOW PERIMETER, AND BETWEEN INSULATED GLASS UNIT AND FRAME



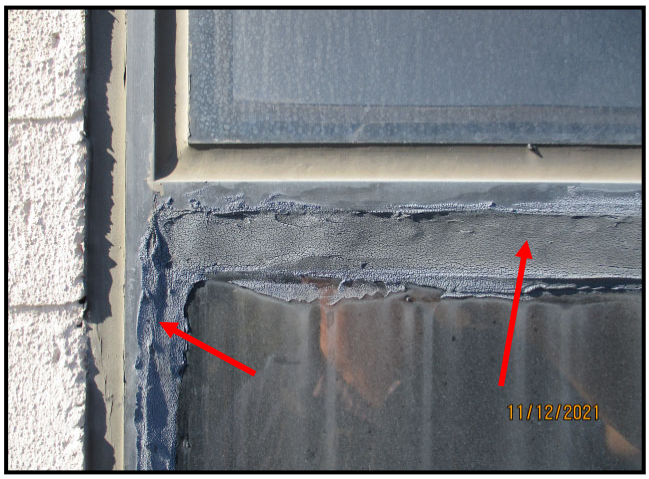
15. DISBONDED/DETERIORATED SEALANT AT EDGE OF WINDOW GLAZING

16. DISBONDED/DETERIORATED SEALANT AT EDGE OF WINDOW GLAZING

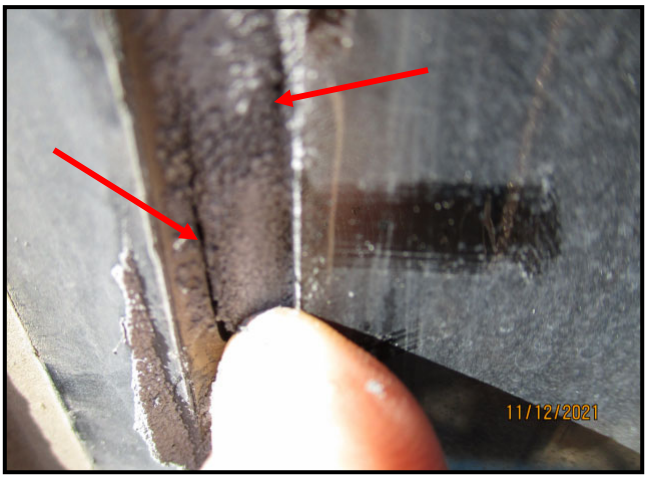
17. DETERIORATED SEALANT AT WINDOW GLAZING



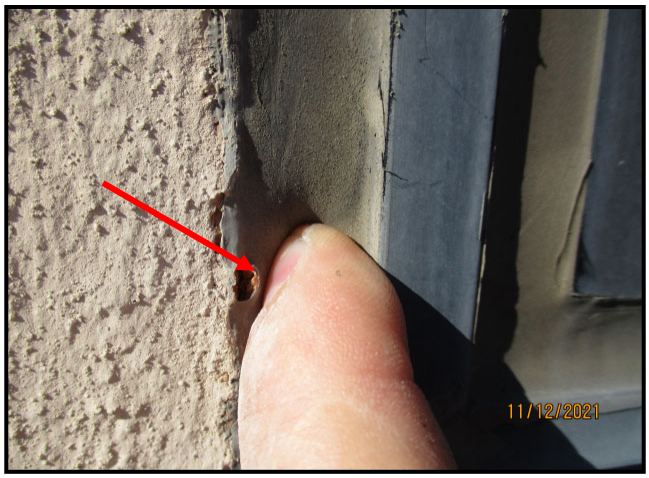
18. DETERIORATED SEALANT AT WINDOW GLAZING



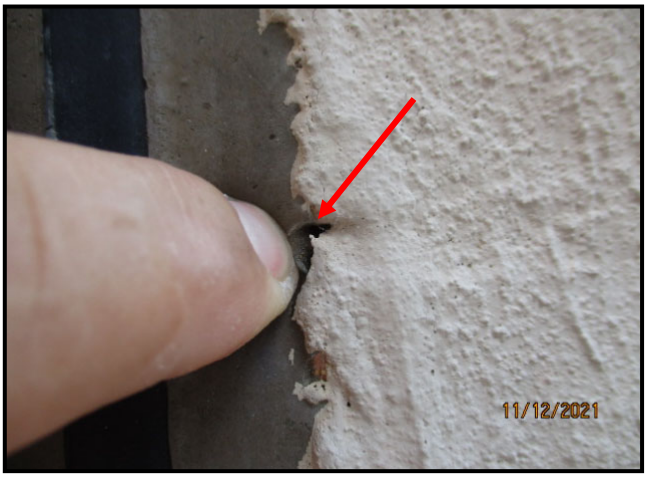
19. DETERIORATED SEALANT AT WINDOW GLAZING



20. DISBONDED SEALANT AT WINDOW GLAZING

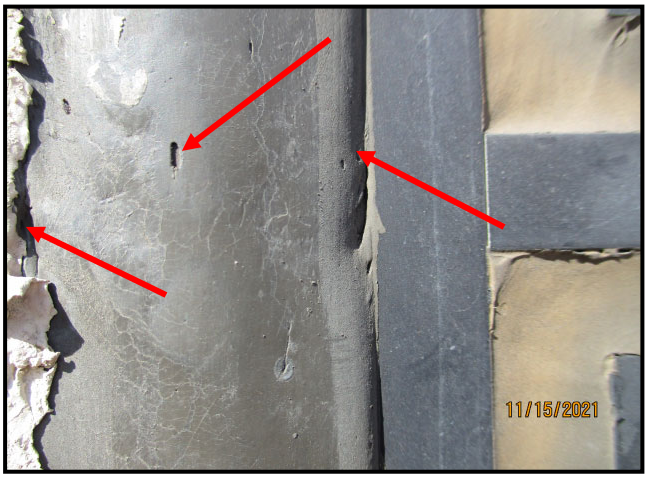


21. DISBONDED SEALANT AT WINDOW PERIMETER



22. DISBONDED SEALANT AT WINDOW PERIMETER

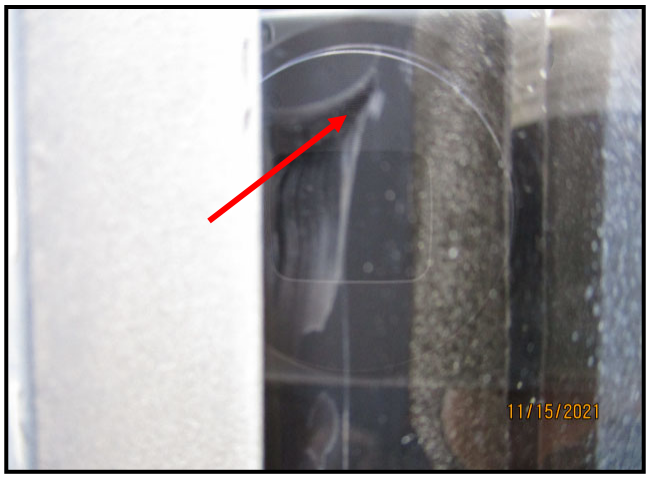
23. DISBONDED SEALANT AT WINDOW PERIMETER



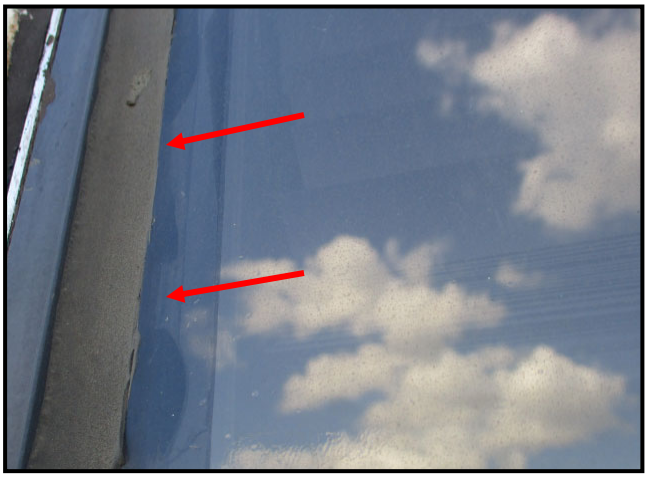
24. DISBONDED AND DETERIORATED SEALANT AT WINDOW PERIMETER

25. DISBONDED AND DETERIORATED SEALANT AT WINDOW PERIMETER

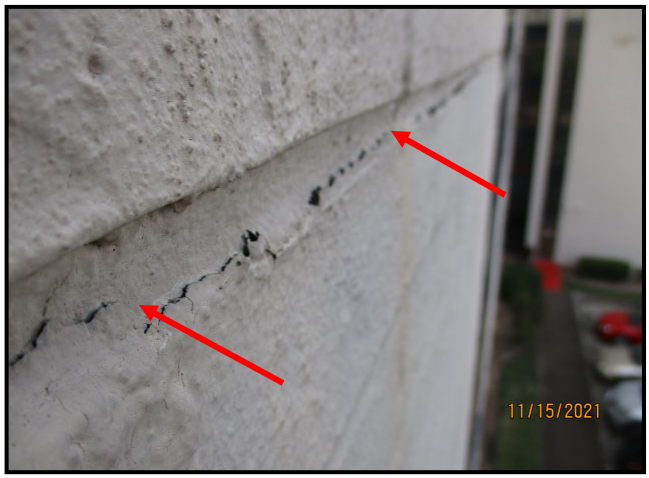
26. DISBONDED SEALANT AT WINDOW PERIMETER



27. VOID IN BED OF STRUCTURAL SEALANT BEHIND WINDOW INSULATED GLASS UNIT



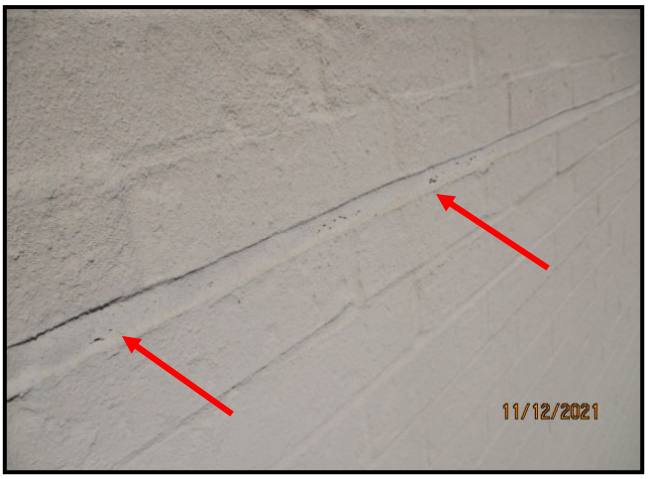
28. VOID IN BED OF STRUCTURAL SEALANT BEHIND WINDOW INSULATED GLASS UNIT



29. DETERIORATED SEALANT IN HORIZONTAL JOINT BETWEEN ADJACENT BRICK UNITS

30. DETERIORATED SEALANT IN HORIZONTAL JOINT BETWEEN ADJACENT BRICK UNITS

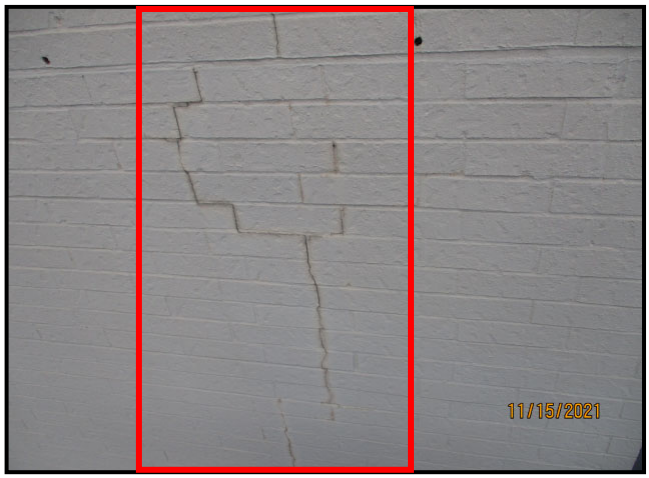
31. DETERIORATED SEALANT IN HORIZONTAL JOINT BETWEEN ADJACENT BRICK UNITS



32. DETERIORATED SEALANT IN HORIZONTAL JOINT BETWEEN ADJACENT BRICK UNITS

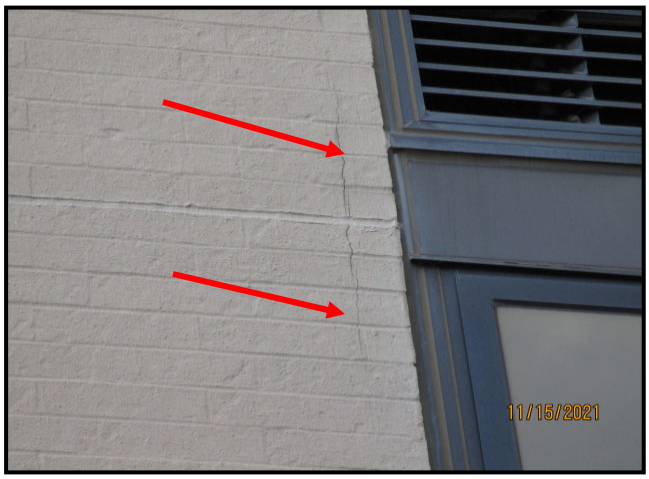
33. DETERIORATED SEALANT BETWEEN WALL PENETRATION AND BRICK UNITS

34. DETERIORATED SEALANT BETWEEN WALL PENETRATION AND BRICK UNITS; NO SEALANT BETWEEN PIPES AND PVC SLEEVE



35. STEP CRACK IN BRICK

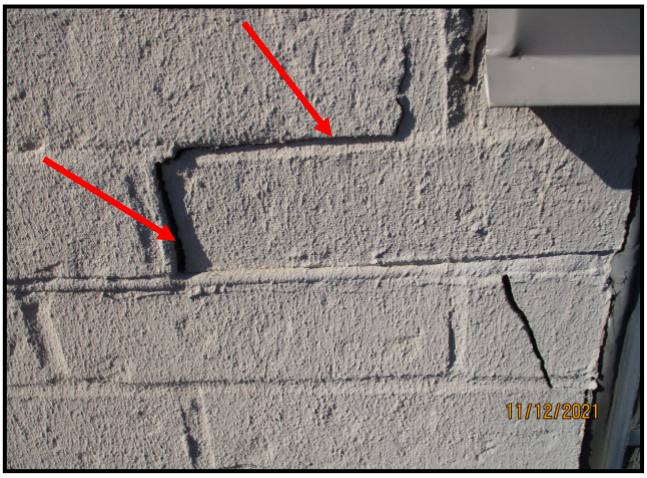
36. STEP CRACK IN BRICK



37. VERTICAL CRACK IN BRICK

38. VERTICAL CRACK IN BRICK

39. VERTICAL CRACKS IN BRICK



40. STEP CRACK IN BRICK

41. GLASS APPARENTLY RETAINED WITH SECTION OF PLASTIC SHIM

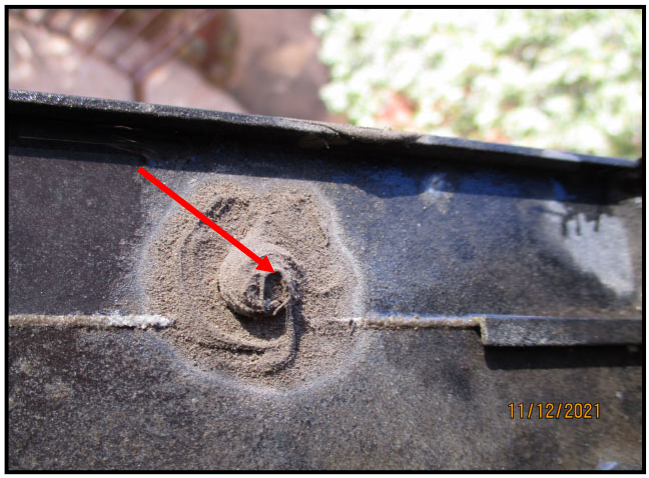
42. GLASS APPARENTLY RETAINED WITH SECTION OF PLASTIC SHIM

43. NO VISIBLE WEEPS AT BASE OF BRICK VENEER

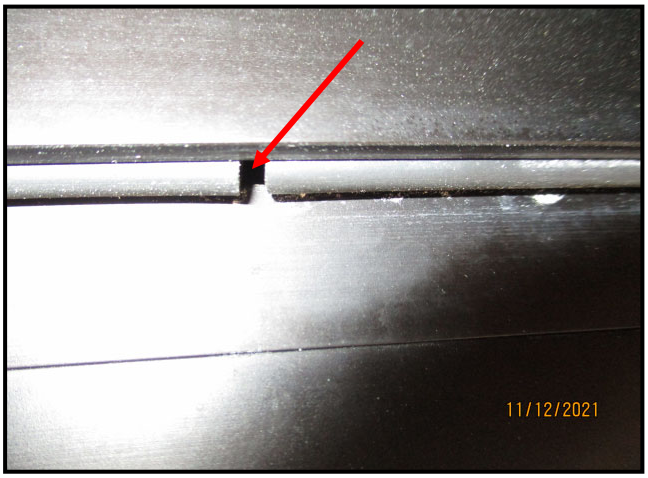
44. NO VISIBLE WEEPS AT BASE OF BRICK VENEER

45. BULGE IN BRICK VENEER

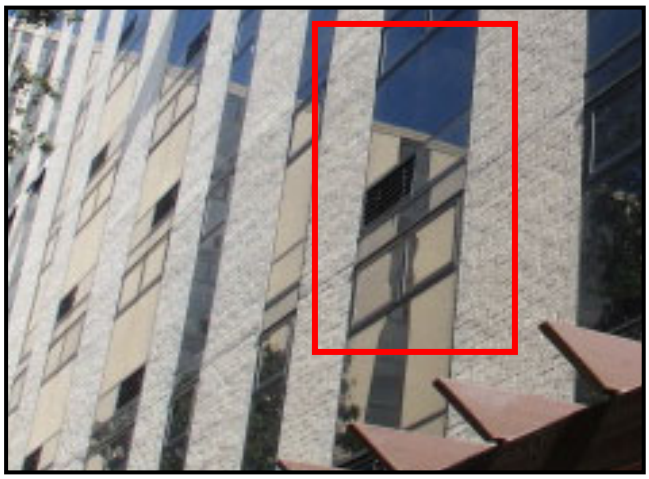
46. DETERIORATED SEALANT AROUND FASTENER IN WINDOW FRAME



47. DETERIORATED SEALANT AROUND FASTENER IN WINDOW FRAME



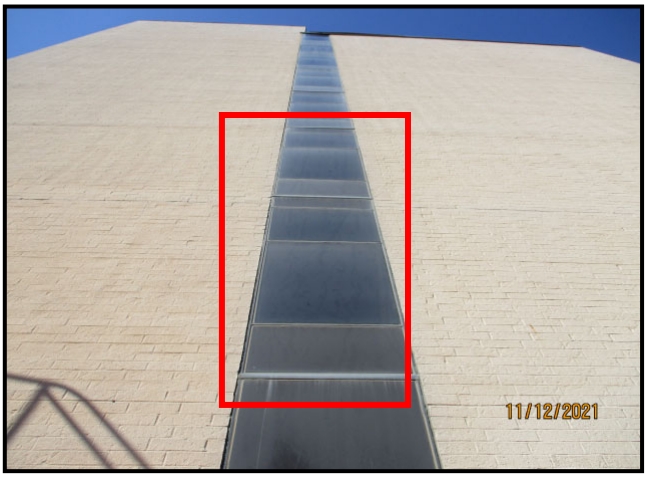
48. VOID IN WEATHER-SEAL GASKET OF OPERABLE WINDOW



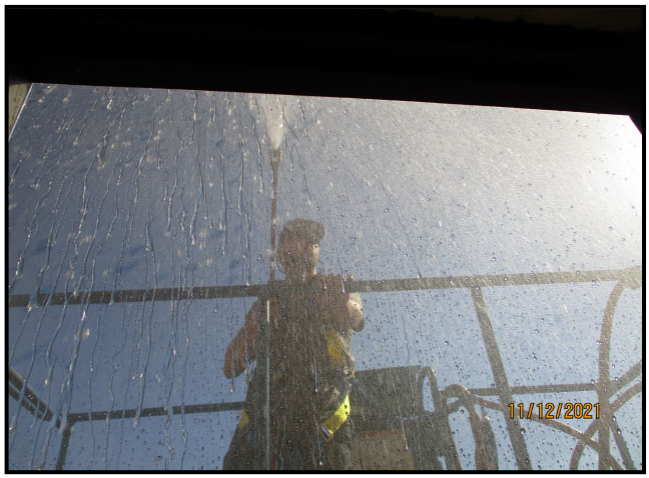
49. SPECIMEN 1.01: EXTERIOR VIEW OF WINDOW

50. SPECIMEN 1.01: VIEW OF PCI PERSONNEL PERFORMING WATER SPRAY TESTING AT PERIMETER OF WINDOW

51. SPECIMEN 1.01: VIEW OF PCI PERSONNEL PERFORMING WATER SPRAY TESTING AT PERIMETER OF WINDOW



52. SPECIMEN 1.02: EXTERIOR VIEW OF WINDOW



53. SPECIMEN 1.02: VIEW OF PCI PERSONNEL PERFORMING WATER SPRAY TESTING AT PERIMETER OF WINDOW

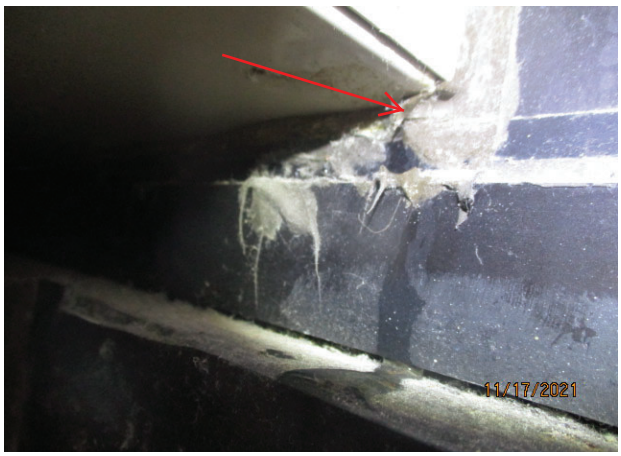
54. SPECIMEN 1.02: VIEW OF PCI PERSONNEL PERFORMING WATER SPRAY TESTING AT PERIMETER OF WINDOW

55. SPECIMEN 2.01: VIEW OF PCI PERSONNEL PERFORMING WATER SPRAY TESTING AT PERIMETER OF WINDOW

56. SPECIMEN 2.01: WATER INFILTRATION RIGHT SIDE OF WINDOW

57. SPECIMEN 2.01: WATER INFILTRATION OUTSIDE FRAME OF VERTICAL MULLION

58. SPECIMEN 2.02: VIEW OF PCI PERSONNEL PERFORMING WATER SPRAY TESTING AT PERIMETER OF WINDOW



59. SPECIMEN 2.02: WATER INFILTRATION BETWEEN WINDOW FRAME AND PTAC UNIT

60. SPECIMEN 2.02: WATER INFILTRATION BETWEEN WINDOW FRAME AND PTAC UNIT

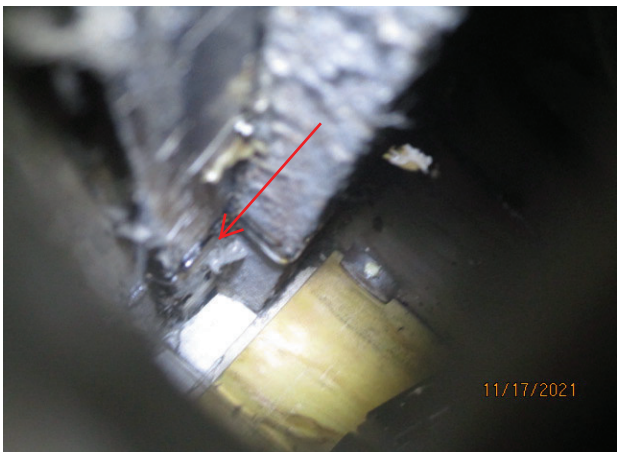
61. SPECIMEN 2.02: WATER INFILTRATION AT BOTTOM CORNER OF OPERABLE WINDOW SASH

62. SPECIMEN 2.02: WATER INFILTRATION AT BOTTOM CORNER OF OPERABLE WINDOW SASH

63. SPECIMEN 2.03: VIEW OF PCI PERSONNEL PERFORMING WATER SPRAY TESTING AT PERIMETER OF WINDOW

64. SPECIMEN 2.03: WATER INFILTRATION BETWEEN WINDOW FRAME AND PTAC UNIT

65. SPECIMEN 2.04: VIEW OF PCI PERSONNEL PERFORMING WATER SPRAY TESTING AT PERIMETER OF WINDOW



66. SPECIMEN 2.04: WATER INFILTRATION BETWEEN WINDOW FRAME AND PTAC UNIT

67. SPECIMEN 2.05: VIEW OF PCI PERSONNEL PERFORMING WATER SPRAY TESTING AT PERIMETER OF WINDOW

68. SPECIMEN 3.01: VIEW OF PCI PERSONNEL PERFORMING WATER SPRAY TESTING AT PERIMETER OF WINDOW

69. SPECIMEN 3.01: WATER INFILTRATION AT LEFT VERTICAL MULLION

70. SPECIMEN 3.02: VIEW OF PCI PERSONNEL PERFORMING WATER SPRAY TESTING AT PERIMETER OF WINDOW

71. SPECIMEN 3.03: VIEW OF PCI PERSONNEL PERFORMING WATER SPRAY TESTING AT PERIMETER OF WINDOW

72. SPECIMEN 3.03: WATER INFILTRATION BETWEEN WINDOW FRAME AND PTAC UNIT

73. SPECIMEN 3.03: WATER INFILTRATION BETWEEN WINDOW FRAME AND PTAC UNIT

74. SPECIMEN 3.03: WATER INFILTRATION BETWEEN WINDOW FRAME AND GLASS

PRICE CONSULTING, INC.
211 HIGHLAND CROSS DRIVE • SUITE 220 • HOUSTON, TEXAS 77073
PHONE: (281) 209-1724 • FAX: (281) 209-2724 • TOLL FREE (800) 966-6088

EXTERIOR WALL AND WINDOW REPAIR PROJECT
BELLERIVE SENIOR LIVING
7225 BELLERIVE DRIVE
HOUSTON, TEXAS

PREPARED FOR
HOUSTON HOUSING AUTHORITY
2640 FOUNTAIN VIEW
HOUSTON, TEXAS 77057

HOUSTON HOUSING AUTHORITY

PREPARED BY
PRICE CONSULTING, INC.
211 HIGHLAND CROSS DRIVE
HOUSTON, TEXAS 77073
TEXAS REGISTERED ENGINEERING FIRM NO. F-3814

PRICE CONSULTING, INC.

PCI PROJECT NUMBER 11955.21
FEBRUARY 18, 2022
00 01 01 - 1

DOCUMENT 00 01 02

PROJECT DIRECTORY

PROJECT:

EXTERIOR WALL AND WINDOW REPAIR PROJECT
Bellerive Senior Living
7225 Bellerive Drive
Houston, Texas

OWNER:

Houston Housing Authority
2640 Fountain View
Houston, Texas 77057

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DOCUMENT 00 01 10

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SUPPLEMENTAL INFORMATION TO BIDDERS

PART ONE - GENERAL

1.01 GENERAL:

A. The following data is presented for informative purposes only. The construction components listed were encountered by Price Consulting, Inc. personnel and may not be representative of the entire area. Contractor is responsible for verifying all field conditions that may impact both the bid or the proposed manufacturer's requirements.

B. A plan will be provided depicting proposed laydown and staging areas for performance of the work.

1.02 CONSTRUCTION SUMMARY:

The wall construction observed consists of the following:

A. Elastomeric coating over brick veneer with concave raked mortar joints, airspace, weather barrier, over concrete structural back-up wall.

B. Glazed aluminum-framed windows, storefront doors and hollow metal doors, sealed to brick veneer.

PART TWO - PRODUCTS

Not Used.

PART THREE - EXECUTION

Not Used.

END OF DOCUMENT 00 22 13

SECTION 01 00 00

GENERAL REQUIREMENTS

PART ONE - GENERAL

This Section governs the entire Work. Refer to Construction Documents for additional scope of work.

1.01 MATERIALS AND WORKMANSHIP:

A. Use materials that are:
   1. New and of high quality suited to the use intended.
   2. Suitable for the function intended.
   3. Corresponding in quality to related materials in the absence of a complete Specification.
   4. Of good appearance where exposed to view.
   5. Of one manufacturer or source for the same specific purpose, with uniform appearance and physical properties.
   6. Plainly marked, and delivered to the site in their original unopened containers when the nature of the materials is suitable for containers.

B. Follow supplier's instructions for the uses, limitations, and installation of his products. When full instructions do not accompany the products, request them before proceeding.

C. Perform high quality professional workmanship. Join materials to uniform, accurate fit so they meet with straight lines, free of smears or overlaps.

D. Install materials appropriately level, plumb, and at accurate right angles or flush with adjoining materials. Attach materials that will not fail until materials joined are broken or permanently deformed.

1.02 MISCELLANEOUS DUTIES:

A. Layout: Establish and maintain bench marks, and all other grades, lines, and levels necessary for the Work. Report errors or inconsistencies before commencing work. Confirm proper placement of the construction on the Site after all lines are staked out.

B. Verify existing conditions and their compatibility to the Construction Documents. Variations must be brought to the attention of Engineer before proceeding.

C. Not-in-Contract Work: Arrange to accommodate. When information is inadequate, request further instructions before proceeding.

D. Access Facilities: Provide safe, reasonably convenient access facilities to the Work for the Owner and authorized inspectors and observers.

1.03 REPLACEMENT MATERIAL:

A. For Owner's Future Use: If any specific amounts are called for in the individual sections, provide the specified amounts. If none are specified and a surplus is left, request instructions from Owner before discarding surplus.

B. The testing laboratory shall be approved by owner and paid for by Contractor for testing requirements as noted in individual specification sections.

END OF SECTION 01 00 00

SECTION 01 07 50

DEFINITIONS

PART ONE - GENERAL

1.01 SECTION INCLUDES:

A. Definitions for construction terminology not otherwise defined in Contract Documents.
B. Definitions for special terminology used for this Project.

1.02 ABANDONED - (NO LONGER NECESSARY OR IN USE):

A. "Remove" items so noted, or later defined, as an all inclusive responsibility within this contract. Pay for all work in connection with removal of these items, including municipal, disposal, utility, and service charges. Dispose of all "Excess".

1.03 ADDITION - (TO ADD TO AND BE INCORPORATED) ALSO TO "ADD":

A. Work supplementary to that indicated to accomplish that which is required by the Contract Documents. To bring to a new condition; to extend, fasten, patch, and match to that which is existing.

1.04 DEFECTIVE - (NOT ACCEPTABLE):

A. Refer to Conditions of the Contract, that which does not conform to the Contract Documents. As it applies to "Salvage", in addition to the above, shall mean "unsuitable".

1.05 EXCESS - (NOT REQUIRED):

A. More quantity than required to conform to the Contract Documents and not desired by the Owner. Debris shall be considered "Excess" and not be used as fill or be buried on this site. Remove "Excess" from the site and legally dispose of. "Excess" "Suitable" "Salvage" shall be property of Contractor unless otherwise specified.

1.06 EXISTING - (PRESENTLY THERE):

A. Also may be noted "original". Present conditions and assumed locations, if known, as of the Date of Contract Documents.

1.07 NEW - (TO BE INCORPORATED) NOT EXISTING:

A. Refer to various specification sections for requirements of Work to be incorporated.

1.08 REINSTALL - (TO INCORPORATE AS WAS ONCE DONE):

A. "Remove" and "salvage" existing from its location, if it does exist. "Restore", "Renovate", or "Remodel" and "Reinstall: in its existing location. Reincorporate and "re-work" the original work to the extent required by the Contract Documents.
B. If the "Existing" item, so indicated, is missing, defective, or unsuitable as "Existing", then "Reconstruct" only that portion with "New" products and incorporate as was original. Syn. Replace.

1.09 RELOCATE - ("REINSTALL" IN A NEW LOCATION):

A. "Reinstall" in a new location as indicated on Drawings.

1.10 REMAIN - (TO LEAVE WHERE IT IS EXISTING):

A. The final location of an item in its "existing" position, however, this shall not mandate the fact that this item will not move during this contract, specifically in order to "Preserve" or "Rework".

1.11 REMOVE - (TO TAKE FROM EXISTING LOCATION):

A. Work required to extract a portion or whole by one or a combination of methods and moved to a new location.
   1. "Abandoned": Remove items by dismantling, excavation, extraction, or demolition, if acceptable.
   2. Salvage: Remove by disassembly. "Relocate".
   3. Products: Where a specific portion of component of an assembly or whole is to be removed, take all precautions to prevent damage, defacement, and displacement to the "existing" to remain (i.e., mortar, bricks, and finishes).

1.12 RENOVATE - (TO REPAIR AND MAKE NEW):

A. The process required to bring an item to a present new standard of condition required by the Contract Documents (e.g., to "rework" "existing" "suitable" "salvage" "products" and perform "new" work and "additions" required). (Syn. rehabilitate, recondition, repair.)

1.13 REPLACE - (TO TAKE THE PLACE OF):

A. "Remove" "existing" unserviceable product and provide "new" product in place of unserviceable product.

1.14 REUSE - (TO USE AS ONCE WAS):

A. The use of "suitable" "salvage" for incorporation or re-incorporation in the Work. "Remove", "Relocate", and "Reinstall" as required for "Reuse".

1.15 SALVAGE - (TO BECOME ABANDONED):

A. "Remove", protect, "preserve" incomplete material condition as found "existing". Also to "Save". Determine suitability for incorporation in this Contract. Store at a location mutually agreed upon. Dispose of all "Excess".

1.16 UNKNOWN - (NOT SHOWN ON DRAWINGS):

A. Products beneath surfaces indicated by drawings and encountered during the Work. Immediately support, shore, and protect. Immediately notify the Consultant and authority having jurisdiction. Allow free access for inspection. "Preserve" in proper condition until the Consultant determines definition and interpretation of Work. Take such measures as required for protection, reinforcement, or adjustment.

PART TWO - PRODUCTS

Not Used.

PART THREE - EXECUTION

Not Used.

END OF SECTION 01 07 50

SECTION 01 11 00

SUMMARY OF WORK

PART ONE - GENERAL

1.01 SECTION INCLUDES:

A. Miscellaneous repairs and renovations on the exterior walls and windows of the Bellerive Senior Living facility located at 7225 Bellerive Drive in Houston, Texas. Work includes, but not limited to, the following:
   1. Repair corners of window operable sashes (assume 50 corners).
   2. Replace backer rod and sealant between insulated glass units and window frames and between adjacent mulled window frames.
   3. Replace backer rod and sealant at perimeters of windows, louvers, and door frames.
   4. Replace backer rod and sealant between adjacent brick units at control joints in masonry and penetrations in masonry.
   5. Route and apply sealant at cracks in brick masonry (assume 200 LF).
   6. Repair “bulges” in brick masonry at designated locations (assume 30 SF).
   7. Install weeps in masonry head joints at base of wall, above doors, and other through wall flashing locations.
   8. Replace sealant over fastener heads at operable window sash frames.
   9. Repair/replace weather-seal gaskets at window sashes (assume 100 LF new weather-seal gaskets).
   10. Apply bond breaker tape and sealant between glass and storefront frames (“wet seal”).
   11. Remove and reinstall existing insulated glass units at various locations (assume 20 insulated glass units).
   12. Provide specified manufacturer and contractor warranties.

1.02 WEATHER PROTECTION:

A. Contractor shall have at the work site, a sufficient amount of moisture proof coverings to provide quick temporary protection to exposed walls or open building in the event of a rapid change in the weather.

1.03 CONTRACTOR'S USE OF PREMISES:

A. Contractor to procure and post all permits required by the City of Houston for scope of work being performed if required.
B. Confine operations at site to areas permitted by law, ordinances, permits and to limits of Contract as shown on Contract Documents.
C. Do not unreasonably encumber site with materials or equipment.
D. Assume full responsibility for protection and safekeeping of products stored on premises.
E. Move stored products which interfere with operations of Owner.

F. Obtain and pay for use of additional storage or work areas needed for operations.
G. Coordinate use of premises under direction of Owner's Representative.
H. Use of Site for Work and Storage:
   1. Restrict Work to areas indicated on Drawings.
   2. Store materials off site except for minor amounts of material which may be stored at designated staging area as approved by Owner.
   3. Access site in areas approved by Owner.
   4. Restrict parking to specific areas as approved by Owner.
   5. Restrict debris removal to Owner-approved area of building site.
   6. Do not allow construction traffic on existing roof membrane except as absolutely necessary to perform new work. Provide protection over existing roof membrane at traffic and work areas.
I. Maintenance of Access and Operations:
   1. Do not perform operations that would interrupt or delay Owner's daily operations.
   2. Maintain access to existing building, facilities, parking, streets, and walkways; especially fire lanes.
   3. Schedule demolition and renovation operations with Owner in such a manner as to allow Owner operations to continue with minimum interruption.
   4. During period of construction, do not obstruct exit ways of Owner-occupied areas in any manner.
J. Maintenance of Existing Services:
   1. Do not disrupt existing utility services to existing building.
   2. Maintain environmental control in existing building, especially temperature, humidity, and dust control.
K. Building Access:
   1. Access to construction areas shall be by way of exterior ladder, suspended swing stages, and/or scaffolding on the face of the building or as designated by Owner.
   2. Contractor will not have access to building interior except as pre-arranged with Owner.

1.04 OWNER OCCUPANCY:

A. Tenants will occupy premises and units during entire period of construction. Cooperate with Owner's Representative in all construction operations to minimize conflict and to facilitate Owner usage. Access to interior of units will be provided upon prior scheduled notice.
B. Contractor shall conduct his operations so as to ensure least inconvenience to Owner's operations.
C. Contractor shall take precautions to avoid excessive noise or vibration that would disturb Owner's operations. When directed by Owner, Contractor shall perform certain operations at designated time in order to minimize disturbance to Owner's operations.
D. Contractor shall take all necessary precautions to assure a watertight condition in the operation portion of the building during construction.
E. Refer to Section 01 35 16 for provisions on security, special sequence of Work, maintenance of access and operations, maintenance of existing utilities and services, and building access restrictions.

PART TWO - PRODUCTS

Not Used.

PART THREE - EXECUTION

Not Used.

END OF SECTION 01 11 00

SECTION 01 31 19

PROJECT MEETINGS

PART ONE - GENERAL

1.01 PRE-CONSTRUCTION MEETING:

A. A Pre-construction Meeting will be held at the site at a time to be designated by Owner.

B. Representatives of Contractor, including project superintendent, foreman, and any subcontractors, shall meet with Owner or his appointed representative.

1.02 AGENDA FOR PRE-CONSTRUCTION MEETING

A. Meet with Owner and Engineer/Consultant at project site or other designated locations at such intervals as directed by Owner to maintain an optimum degree of communications between all interested parties, including selected subcontractors and suppliers, at such times as their interests may be involved.

B. Attendance:
   1. Owner's Representative.
   2. Engineer/Consultant's Representative.
   3. Contractor.
   4. Subcontractors.

C. Sign-in list for attendees including names, contact information, and company name.

D. Contract Review:
   1. Project communications and problem resolution.

E. Job Site Conditions and Requirements:
   1. Services (temporary):
      a. Water.
      b. Power.
      c. Sanitary facilities.
      d. Parking areas.
   2. Site Access and Restrictions:
      a. Set-up areas, material storage, and handling.
      b. Protection of buildings, grounds, and building interior.
   3. Working Area and Preparation:
      a. Review work flow and schedule.
      b. Preparation work.
      c. Protection of existing building.

F. Technical Sections:
   1. Function of project personnel.
   2. Material storage.
   3. Coordination of work.
   4. System review.
   5. Manufacturer inspections.

G. Safety and Security - Review Contractor responsibilities, and establish Owner monitoring procedures.

1.03 AGENDA FOR PROJECT MEETING

A. Attendance:
   1. Owner Representative.
   2. Consultant/Engineer.
   3. Contractor.
   4. Subcontractors.
B. Sign-in list for attendees, including names, contact information, and company name.
C. Project Review:
   1. Problem resolution.
   2. Project communication.
   3. Review projected work flow and schedule.
   4. Progress payment processing.
D. Job Site Conditions:
   1. Review set-up area, material storage, and handling.
   2. Review work to date against schedule.
   3. Review quality of work to-date.

PART TWO - PRODUCTS

Not Used.

PART THREE - EXECUTION

Not Used.

END OF SECTION 01 31 19

SECTION 01 33 00

SUBMITTAL PROCEDURES

PART ONE - GENERAL

1.01 SECTION INCLUDES:

A. Submittals required by Specification Sections and as listed in attached List of Submittals.

1.02 REQUIRED SUBMITTALS:

A. Copy of the Contractor's executed insurance certificate.
B. Copy of the Contractor's executed payment and performance bonds.
C. Shop drawings of details.
D. Manufacturer’s product data sheets and Safety Data Sheets (SDS) on each material proposed for usage.
E. Sample of warranties that are to be issued upon project completion.
F. Detailed project schedule showing work phasing and proposed daily progress schedule.
G. Permits, notices, and approvals of governing bodies or agencies.

1.03 SHOP DRAWINGS:

A. Prepare shop drawings for those details that are proposed for the project. Indicate on a plan/elevation, the proposed location of detail presented on shop drawing.
B. Indicate joints, types, and locations of fasteners, shapes, sizes, expansion joints, special conditions, and installation procedures for each flashing condition. Note critical dimensions, gauge, and finish of sheet metal for each flashing condition.
C. Submit shop drawings showing layout, joining, profiles, and anchorages of fabricated work, including flashings and trim.

1.04 PRODUCT DATA:

A. Submit manufacturer's catalog sheets, brochures, diagrams, schedules, performance charts, illustrations, and other standard descriptive data for each material proposed for use in construction of roof assembly and related flashings and components.
    1. Clearly mark each copy to identify pertinent materials, products, or models.
    2. Show dimensions and clearances required.
    3. Show performance characteristics and capacities.
    4. Indicate the Specification Section that applies to each submittal.

1.05 SAMPLES:

A. Physical examples to illustrate materials, equipment, and workmanship; and to establish standards by which completed Work is judged, if requested.

1.06 CONTRACTOR RESPONSIBILITIES:

A. Review shop drawings, product data, and samples prior to submission. Initial, sign, or stamp, certifying the Contractor's review of the submittal.
B. Verify:
   1. Field measurements.
   2. Field construction criteria.
   3. Catalog numbers and similar data.
C. Coordinate each submittal with requirements of Work and of Contract Documents.
D. Contractor's responsibility for errors and omissions in submittals is not relieved by Engineer/Consultant review of submittals.
E. Contractor's responsibility for deviations in submittals from requirements of Contract Documents is not relieved by the Engineer/Consultant's review of submittals, unless Engineer/Consultant gives written acceptance of specific deviations.
F. Notify Engineer/Consultant, in writing at time of submission, of deviations in submittals from requirements of Contract Documents.
G. Do not begin work which requires submittals until return of submittals with Engineer/Consultant's stamp and initials or signature indicating review and indication to proceed as noted. Work performed prior to submission and approval of submittals may be subject for rejection.

1.07 SUBMISSION REQUIREMENTS:

A. Schedule submissions to the Engineer/Consultant after Contract award.
B. Submit electronic copy of submittals.
C. Submit one of each sample requested.
D. Accompany submittals with transmittal letter containing:
   1. Date.
   2. Project title and number.
   3. Contractor's name and address.
   4. The number of each submittal.
E. Provide each set of submittals bound together with a Cover and Table of Contents.

1.08 RE-SUBMISSION REQUIREMENTS:

A. Product Data and Samples: Submit new data and samples as required for initial submittal.
B. Shop Drawings:
   1. Revise initial drawings as required and re-submit as specified for initial submittal.
   2. Indicate on drawings any changes which have been made other than those requested by Owner.

1.09 DISTRIBUTION OF SUBMITTALS AFTER REVIEW:

A. Engineer/Consultant will retain copy of approved submittals.
B. Engineer/Consultant will forward copy of approved submittals to Owner.
C. Engineer/Consultant will return copy of approved submittals to Contractor.
D. Contractor shall distribute approved submittals as required for construction, including Contractor's file, jobsite file, subcontractors, suppliers, and fabricators.

1.10 LIST OF SUBMITTALS:

SECTION 01 33 00 - SUBMITTAL PROCEDURES

- Submittals - send electronically.
- Samples - 2 of each.

SECTION 01 70 00 - EXECUTION AND CLOSEOUT REQUIREMENTS

- Warranties and Bonds.
- Evidence of Payment and Release of Liens.

SECTION 02 07 20 - MINOR DEMOLITION AND RENOVATION WORK

- Product Data and SDS.
- Samples of all fasteners proposed for use.

SECTION 04 01 40 - MASONRY RESTORATION AND CLEANING

- Product Data and SDS.
- Samples.
- Mortar mix ratios.
- Replacement brick samples.
- Mortar samples.

SECTION 07 92 00 - JOINT SEALANTS

- Product Data and SDS.
- Samples, if requested.
- Color Chart.
- Sample Warranty.

SECTION 08 80 00 - GLASS AND GLAZING

- Product Data and SDS.
- Samples, if requested.
- Color Chart.
- Sample Warranty.

SECTION 09 91 00 - EXTERIOR PAINTING

- Product Data.
- Color Samples.

PART TWO - PRODUCTS

Not Used.

PART THREE - EXECUTION

Not Used.

END OF SECTION 01 33 00

SECTION 01 35 16

ALTERATION PROJECT PROCEDURES

PART ONE - GENERAL

1.01 DESCRIPTION:

A. Summary: The procedures and administrative requirements of this Section apply to all of the following Sections of the Specification which are involved in alterations to the existing building.

B. Extent Notes: Cut into or partially remove portions of the existing building as necessary to make way for new construction. Include such work as:
   1. Cutting, moving, or removal of items shown to be cut, moved, or removed.
   2. Cutting, moving, or removal of items not shown to be cut, moved, or removed, but which must be cut, moved, or removed to allow new work to proceed. Work or items which are to remain in the finished work shall be patched or reinstalled after their cutting, moving, or removal, and their joints and finishes made to match adjacent or similar work.
   3. Removal of existing surface finishes as needed to install new work and finishes.
   4. Removal of abandoned items and removal of items serving no useful purpose, such as abandoned piping.
   5. Repair or removal of dangerous or unsanitary conditions resulting from alterations work.

1.02 SCHEDULING AND ACCESS:

A. Work Sequence: Contractor shall submit detailed project plan with work sequence and phasing schedule.

B. Security:
   1. Be solely responsible for job site security.
   2. Protect completed work and stored items from vandalism and theft.
   3. Contact Owner for access to all security areas.

C. Maintenance of Access and Operations:
   1. During period of construction, Owner will continue to occupy the building and perform normal activities in existing building. Maintain proper and safe access to Owner-occupied areas at all times.
   2. Schedule demolition and remodeling operations with Owner in such a manner as to allow Owner operations to continue with minimum interruption.
   3. During period of construction, do not obstruct existing exit ways of Owner-occupied areas in any manner.

D. Maintenance of Existing Services:
   1. Maintain environmental control in existing building, especially temperature, humidity, and dust control.
   2. Provide temporary lines and connections as required to maintain existing mechanical and electrical services in building.

3. Equipment handling shall be limited to Owner-approved hours.
4. Notify Owner a minimum of forty-eight hours prior to each required interruption of mechanical or electrical service in building. Such interruptions shall be only at such times and for lengths of time as approved by Owner. In no event shall interruption occur without prior approval of Owner.

E. Temporary Barricades:
1. Provide and erect barricades as necessary to protect ground personnel, employees, passersby, etc., from hazards resulting from the Work during construction operation.
2. Prevent public access to construction activities, equipment, and storage areas.

F. Building Access:
1. Contractor will limit access to building interior except:
   a. To install temporary enclosures, protections, and equipment.
   b. For designated work at interior locations.
   c. For project or medical emergency.
2. Access to roof areas shall be by way of contractor-provided exterior ladder or interior access way as pre-approved by Owner for construction personnel.

1.03 ALTERATIONS, CUTTING, AND PROTECTION:

A. Extent:
1. Perform cutting and removal of work so as not to cut or remove more than is necessary and so as not to damage adjacent work.
2. Conduct work in such a manner as to minimize noise and to minimize accumulation and spread of dirt and dust.
3. Perform cutting for openings with carborundum saw with approved dust arrestor.

B. Securement of Openings: Protect all openings made in existing building with barricades to prevent accidents to Owner's and Contractor's personnel. If required by Owner, provide a workman at ground level inside the building at all times during the tear-off operations and when the work is being performed. It will be the responsibility of this individual to alert personnel in the area of the work being performed overhead, to watch for falling debris, and to broom clean the area each day of any dirt that may result from the work operations.

C. Responsibility and Assignment of Trades:
1. Contractor shall assign the work of moving, removal, cutting, patching, and repair to trades under his supervision so as to cause the least damage to each type of work encountered, and so as to return the building as much as possible to the appearance of new work.
2. Patching of finish materials shall be assigned to mechanics skilled in the work of the finish trade involved.

D. Protection:
1. Protect remaining finishes, equipment, and adjacent work from damage caused by cutting, moving, removal, and patching operations. Protect surfaces which will remain a part of the finished work.

2. Cover existing walls and floors where necessary to prevent damage from construction operations.
3. During demolition, cutting, and construction, provide positive dust control by wetting dusty debris and by completely sealing openings to Owner-occupied areas with temporary seals so as to prevent spread of dust and dirt to interior areas.
4. After materials are installed, properly protect Work until final acceptance.
5. Repair any damage resulting from construction operations without cost to Owner.
6. Provide continuous security at openings cut into existing exterior walls and roofs during non-working hours. Prevent unauthorized entry into the existing facility through areas demolished or accessed as part of the Work.

E. Debris:
1. Remove debris from the site daily. Removed material becomes property of the Contractor. Load removed material directly on trucks for removal from site. Dispose of removed material legally. Do not allow debris to enter sewers.
2. Do not allow material accumulations to endanger structure.
3. Cover and secure material accumulations as necessary to prevent the material from spreading over the rooftop or becoming airborne.
4. Submit material storage and disposal plan for review prior to job start.

1.04 PATCHING, EXTENDING, AND MATCHING:

A. Patch and extend existing work using skilled mechanics who are capable of matching the existing quality of workmanship. The quality of patched or extended work shall not be less than that which exists.
B. In areas where any portion of an existing finished surface is damaged, lifted, stained, or otherwise made or found to be imperfect, patch or replace the imperfect portion of the surface with matching material.
C. Provide adequate support or substrate for patching of finishes.
D. Quality:
1. In the Sections of the product and execution of Specifications which follow these General Requirements, no concerted attempt has been made to describe each of the various existing products that must be used to patch, match, extend, or replace existing work. Obtain all such products in time to complete the Work on schedule. Such products shall be provided in quality which is in no way inferior to the existing products.
2. The quality of the products that exist in the building, as apparent during pre-bid site visits, shall serve as the Specification requirement for strength, appearance, and other characteristics.

E. Transitions:
1. Where new work abuts or finishes flush with existing work, make the transition as smooth and workmanlike as possible. Patched work shall match existing adjacent work in texture and appearance so as to make the patch or transition invisible to the eye at a distance of no closer than 3 feet (1m).

2. Where masonry or other finished surface is cut in such a way that a smooth transition with new work is not possible, terminate the existing surface in a neat fashion along a straight line at a natural line of division and provide trim appropriate to the finished surface.

F. Restore existing work that is damaged during construction to a condition equal to its condition at the time of the start of the Work, and to satisfaction of Owner.

1.05 REPAIR:

A. Replace work damaged in the course of alterations, except at areas approved by Owner for repair.
B. Where full removal of extensive amounts of almost-suitable work would be needed to replace damaged portions, then filling, straightening, and similar repair techniques, followed by finishing, will be permitted.
C. If the repaired work is not brought up to the standard for new work, Owner will direct that it be cut out and replaced with new work.

PART TWO - PRODUCTS

Not Used.

PART THREE - EXECUTION

Not Used.

END OF SECTION 01 35 16

SECTION 01 43 00

QUALITY REQUIREMENTS

PART ONE - GENERAL

1.01 SECTION INCLUDES:

A. General Quality Control.
B. Manufacturers' Field Services.

1.02 QUALITY CONTROL, GENERAL:

A. Maintain quality control over suppliers, manufacturers, products, services, site conditions, and workmanship to produce work of specified quality.
B. Contractor shall be approved by manufacturer to perform the work for the specified guarantee period. Contractor shall have completed previous projects utilizing same materials and provide same warranty as specified herein.
C. Examine each phase of Work and have defective conditions corrected before starting subsequent operations which would cover, or are dependent upon, work in question.
D. Where visual examination is not sufficient, use instruments with qualified operators to examine work.
E. Utilize Owner's testing laboratory when services are necessary to assist Contractor in evaluating quality.

1.03 WORKMANSHIP:

A. Comply with industry standards, except when more restrictive tolerances or specified requirements indicate more rigid standards or more precise workmanship.
B. Utilize qualified personnel who have experience with the specified materials to produce workmanship of specified quality.
C. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, and racking.
D. Provide finishes to match accepted samples.

1.04 MANUFACTURER'S FIELD SERVICES:

A. When specified in respective Specification Section, require manufacturer to provide qualified personnel to observe field conditions, conditions of surfaces and installation, quality of workmanship, and to make appropriate recommendations.
B. Notify manufacturer's representative a minimum of two weeks prior to date of final inspection.

PART TWO - PRODUCTS

Not Used.

PART THREE - EXECUTION

Not Used.

END OF SECTION 01 43 00

SECTION 01 43 39

MOCK-UPS

PART ONE - GENERAL

1.01 DESCRIPTION:

A. Preparation of mock-ups representing typical repairs for review and approval.

1.02 QUALITY ASSURANCE:

A. Contractor to prepare mock-ups utilizing materials proposed for the finished product and to simulate the desired appearance of the finished product.
B. Construct mock-ups at locations on the building for review.
C. Mock-ups shall be of appropriate size to depict finishes and connections.
D. Materials, finishes, thickness, attachments, dimensions, and profiles shall be as specified herein and as shown within the project.
E. Owner or Owner's Representative reserves the right to require any modifications deemed necessary. No requests for extra costs will be entertained unless an upgrade of the original design is involved.
F. Mock-ups shall constitute standard of acceptance for remaining work.

1.03 SCHEDULE OF MOCK-UPS:

A. Typical glass-to-window "wet seal".
B. Typical backer rod and sealant at perimeter of window
C. Typical sealant in masonry control joint.
D. Typical masonry crack repair.

PART TWO - PRODUCTS

Not Used.

PART THREE - EXECUTION

Not Used.

END OF SECTION 01 43 39

SECTION 01 50 00

TEMPORARY FACILITIES AND CONTROLS

PART ONE - GENERAL

1.01 SANITARY FACILITIES:

A. Provide adequate temporary chemical toilets at time Work is commenced.
B. Maintain facilities in compliance with applicable health laws and regulations. Keep clean and unobtrusive.
C. Upon completion of Work, remove these facilities and all traces thereof.

1.02 STORAGE OF MATERIALS:

A. Provide suitable non-combustible, watertight coverings for storage of materials subject to damage by weather. Covering shall be of sufficient size to hold materials required on site at one time. Pallets shall be raised at least 6-inches (150mm) above ground, on heavy joists or sleepers.
B. If temporary storage sheds are used, locate storage areas where directed, maintain in good condition, and remove storage sheds when so directed. Locate storage areas of combustible construction a minimum of 30 feet (10m) from existing building.
C. Store materials off site as necessary due to space limitations on the subject site.
D. Cover and protect materials subject to damage by weather, including during transit.
E. Do not use building as storage facility.
F. Provide additional storage at no cost to Owner in the event that additional storage area is required beyond that provided at project site.
G. Stored materials shall be available for inspection by Owner.
H. Store flammable and volatile liquids in sealed containers located a minimum of 20 feet from existing buildings.
I. Transport flammable or volatile liquids in, and use from, U.L. listed safety cans.
J. Remove flammable of volatile liquids away from building at the end of each day.
K. Deliver material and equipment in manufacturer's original packaging with all tags and labels intact and legible. Handle and store material and equipment in such a manner as to avoid damage. Liquid products shall be delivered sealed, in original containers.
L. Maintain products liable to degrade as a result of being frozen above 40 degrees Fahrenheit (4 degrees Celsius) in heated storage.
M. Remove from site and/or secure material during times of inclement weather.

1.03 TEMPORARY WATER:

A. Contractor will arrange service and pay for water service required for building purpose.
B. Provide hoses for conveyance. Provide necessary temporary piping and fixtures.

1.04 TEMPORARY ELECTRICAL ENERGY:

A. Contractor will arrange and pay for electricity required for building purposes.

B. Provide necessary temporary wiring (in conduit if requested by Owner), extensions, and temporary lighting devices.

1.05 TEMPORARY LADDERS, SCAFFOLDS, HOISTS:

A. Furnish and maintain temporary ramps, scaffolds, swing stage, hoists, or chutes as required for proper execution of Work.
B. Such apparatus, equipment, and construction shall meet requirements of applicable federal, state, and local safety and labor laws.

1.06 GUARDRAILS, BARRICADES, AND TEMPORARY COVERINGS:

A. Provide barricades as required to protect natural resources, site improvements, existing property, adjacent property, and passers-by.
B. Where pedestrian traffic is through or adjacent to work areas, provide necessary guardrails and barricades to protect pedestrians and to prevent pedestrian access to Work areas.
C. Provide overhead protection for all building entrances and exits when work is performed above or adjacent to the subject exit/entrance.
D. Provide temporary 6-foot (2m) chainlink fence around setup areas.

1.07 PROTECTION:

A. Maintain bench marks, monuments, and other reference points. If disturbed or destroyed, replace as directed.
B. Protect existing adjacent streets, sidewalks, curbs, buildings, roofs, and property including trees, lawns, and plants.
C. Refer to Section 01 35 16 for protection requirements of existing building.

1.08 TEMPORARY AIR FILTRATION:

A. During construction, place charcoal filters over the air handler intake ducts to prevent odors from entering the facilities conditioned spaces.

1.10 EMPLOYEE CONTROL:

A. Do not allow construction employees to enter Owner-occupied areas. Maintain construction traffic in designated access routes.

1.11 PARKING FACILITIES:

A. On-site parking is limited and may not be available for contractor’s use.

1.12 CLEANING DURING CONSTRUCTION:

A. Oversee cleaning and ensure that building and grounds are maintained free from accumulations of waste materials and rubbish.
B. Sprinkle dusty debris with very fine water mist to control accumulation of dust. Do not use water in quantity so as to puddle.
C. At not less than every day during progress of work, clean up work areas and access areas and dispose of waste materials, rubbish, and debris.

D. At Contractor's option, on-site dump containers may be used for collection of waste materials, rubbish, and debris. Locate containers a minimum of 30 feet (10m) away from building entrances at a location acceptable to Owner. If used, remove containers when filled.
E. Do not allow waste materials, rubbish, and debris to accumulate and become an unsightly or dangerous condition.
F. Remove waste materials, rubbish, and debris from site and legally dispose of at public or private dumping areas off Owner's property.
G. Keep streets and access to site free of rubbish and debris.
H. Lower waste materials in a controlled manner with as few handlings as possible. Do not drop or throw materials from heights.
I. Secure roof access at all times.

1.13 LEAK (WATER) DAMAGE CONTROL:

A. In the event of rain during construction operations, immediately inspect interior of building for leaks.
B. Coordinate with Owner for access to building.
C. Continue to inspect building on a regular basis until rain ceases.
D. If leaks are discovered during rains, immediately cover and protect equipment with fire retardant sheeting in the area of the leak. Immediately notify Owner of leak condition.
E. Perform emergency repairs to stop leaks.
F. Take necessary precautions to protect the existing building finishes from damage. Repair all new areas of damage caused by the negligence of Contractor, at Contractor's expense. Owner's On-site Representative shall determine damage caused by Contractor negligence.

1.14 PERMITS:

A. Obtain and pay for required local and state permits, licenses, and registrations. Work may be subject to ordinances, laws, codes, and regulations.
B. Prior to bidding, notify Owner and Engineer/Consultant of any violation, omission, or questions of compliance. Required corrections to Specifications will be made via Addenda prior to receipt of Bids.
C. Be responsible for full compliance and bear cost of additional work not specified that may be required by authorities having jurisdiction.

1.15 REGULATORY REQUIREMENTS:

A. International Building Code (IBC), latest edition; as amended by the City of Houston.
B. Occupation Safety and Health Administration (OSHA) requirements, as applicable.
C. United States Environmental Protection Agency (EPA) requirements, as applicable.
D. Adhere to limitations, cautions, and regulatory standards referenced by the manufacturer of each material provided.

PART TWO - PRODUCTS

Not Used.

PART THREE - EXECUTION

Not Used.

END OF SECTION 01 50 00

SECTION 01 60 00

PRODUCT REQUIREMENTS

PART ONE - GENERAL

1.01 SECTION INCLUDES:

A. Material and Equipment Incorporated Into Work:
   1. Conform to applicable specifications and standards.
   2. Comply with size, make, type, and quality specified, or as specifically approved in writing by Owner.
   3. Manufactured and Fabricated Products:
      a. Design, fabricate and assemble in accordance with recognized industry standards.
      b. Manufacture like parts of duplicate units to standard sizes and gauges, to be interchangeable.
      c. Two or more items of same kind shall be identical, by same manufacturer.
      d. Products suitable for service conditions.
      e. Adhere to equipment capacities, sizes, and dimensions shown or specified unless variations are specifically approved in writing.

B. Do not use material or equipment for purposes other than that for which it is designed or is specified.

1.02 REUSE OF EXISTING MATERIAL:

A. Except as specifically indicated or specified, materials and equipment removed from existing structure shall not be used in completed Work.

B. For material and equipment specifically indicated or specified to be reused in Work:
   1. Use special care in removal, handling, storage, and reinstallation to assure proper function in completed Work.
   2. Arrange for transportation, storage, and handling of products which require off-site storage, restoration, or renovation. Pay costs for such work.

1.03 MANUFACTURER'S INSTRUCTIONS:

A. When Contract Documents require that installation of work shall comply with manufacturer's printed instructions, obtain and distribute copy of such instructions to parties involved in installation, including copy to Engineer/Consultant.
   1. Maintain one set of complete instructions at jobsite during installation and until completion.
   2. Submit copy to Engineer/Consultant with appropriate Product Data submittal.
   3. Engineer/Consultant will forward copy to Owner.

B. Handle, install, connect, clean, condition, and adjust products in strict accordance with such instructions and in conformity with specified requirements.
   1. Should job conditions or specified requirements conflict with manufacturer's instructions, consult with Engineer/Consultant for further instructions.
   2. Do not proceed with work without clear instructions.

C. Perform Work in accordance with manufacturer's instructions. Do not omit preparatory steps or installation procedures unless specifically modified or exempted by Contract Documents.

1.04 TRANSPORTATION AND HANDLING:

A. Arrange deliveries of products in accordance with construction schedules. Coordinate to avoid conflict with work and conditions at site.
   1. Deliver products in undamaged condition, in manufacturer's original containers or packaging, with identifying labels intact and legible.
   2. Immediately on delivery, inspect shipments to assure compliance with requirements of Contract Documents and approved submittals, and that products are properly protected and undamaged.

B. Provide equipment and personnel to handle products by methods to prevent soiling or damage to products or packaging.

1.05 SUBSTITUTIONS AND PRODUCT OPTIONS:

A. Contractor's Options:
   1. For products specified only by reference standard, select any product meeting that standard, by any manufacturer.
   2. For products specified by naming several products or manufacturers, select any product and manufacturer named.
   3. Products specified by naming only one product and manufacturer shall be interpreted as mandatory work requirement. For products other than the named product, substitution will be considered only as per conditions of contract.

B. Contractor's Representation: Request for substitution constitutes a representation that Contractor:
   1. Has investigated proposed product and determined that it is equal to or superior in all respects to that specified.
   2. Will provide same warranties for substitution as for product specified.
   3. Will coordinate installation of accepted substitution into Work and make such other changes as may be required for Work to be complete in all respects.
   4. Waives all claims for additional costs, under his responsibility, related to substitution which subsequently becomes apparent.

C. Substitutions will be not be considered if:
   1. They are indicated or implied on Shop Drawings or Product Data submittals without formal request submitted in accordance with this Section.
   2. They are submitted after time limit specified above.
   3. Acceptance will require substantial revision of Contract Documents.

D. Owner’s decision shall be final.

PART TWO - PRODUCTS

Not Used.

PART THREE - EXECUTION

Not Used.

END OF SECTION 01 60 00

SECTION 01 70 00

EXECUTION AND CLOSEOUT REQUIREMENTS

PART ONE - GENERAL

1.01 GENERAL:

A. Comply with requirements stated in Conditions of the Contract and in Specifications for administrative procedures in closing out the Work.

1.02 SUBSTANTIAL COMPLETION:

A. Contractor: Shall notify Engineer/Consultant that Project is substantially complete and schedule time for inspection.
B. Engineer/Consultant/Consultant will make an inspection after notification.
C. Should Engineer/Consultant consider Work not complete:
   1. He will immediately notify Contractor, in writing, stating reasons.
   2. Contractor shall complete Work and send second written notice to Engineer/Consultant certifying Project is substantially complete.
   3. Engineer/Consultant will reinspect Work.

1.03 FINAL INSPECTION:

A. Contractor shall submit written certification that:
   1. Contract Documents have been reviewed.
   2. Project has been inspected for compliance with Contract Documents.
   3. Work has been completed in accordance with Contract Documents.
   4. Project is complete and ready for final inspection.
B. Engineer/Consultant will make final inspection after notification from Contractor.
C. Should Engineer/Consultant consider Work complete in accordance with requirements of Contract Documents, he will request Contractor to make Project Closeout submittals.
D. Should Engineer/Consultant consider Work not complete:
   1. He will notify Contractor in writing, issuing inspection list to Contractor with noted items requiring further consideration.
   2. Contractor shall take immediate steps to remedy the stated deficiencies and submit initialed inspection list together with photographic documentation of before and after corrective action to Engineer/Consultant certifying Work is complete.
   3. Engineer/Consultant will reinspect Work.

1.04 CLOSE-OUT SUBMITTALS:

A. Evidence of compliance with requirements of governing authorities.
B. Warranties and Bonds: Refer to requirements of this Section.
C. Evidence of Payment and Release of Liens: Refer to requirements of General and Supplementary Conditions.
D. Consent of Surety.
E. As-built Drawings if requested.

1.05 WARRANTY/GUARANTEE:

A. Submit original and duplicate copies of both Contractor's Warranty and Manufacturer's Guarantee to Engineer/Consultant for review. After review, Engineer/Consultant will forward Warranty and Guarantee to Owner. Engineer/Consultant shall approve final pay application (retainage) upon receipt of both Contractor's Warranty and Manufacturer's Guarantee.

1.06 EVIDENCE OF PAYMENTS AND RELEASE OF LIENS:

A. Final Release and Waiver of Liens:
   1. Contractor's Waiver of Liens.
   2. Separate waivers of liens for subcontractors, suppliers, and others with lien rights against property of Owner, together with complete list of those parties.
B. All submittals shall be notarized and sealed before delivery to Engineer/Consultant.

1.07 FINAL ADJUSTMENT OF ACCOUNTS:

A. Submit final statement of accounting to Engineer/Consultant.
B. Statement shall reflect all adjustments.
   1. Original Contract Sum.
   2. Additions and Deductions resulting from:
      a. Previous Change Orders.
      b. Deductions for uncorrected Work.
      c. Deductions for Reinspection Payments.
   3. Total Contract Sum, as adjusted.
   4. Previous payments.
   5. Sum remaining due.
C. Engineer/Consultant will prepare final Change Order, reflecting approved adjustments to Contract Sum not previously made by Change Orders.

1.08 FINAL APPLICATION FOR PAYMENT:

A. Submit final application in accordance with requirements of General Conditions.
B. Owner and Engineer/Consultant shall review all data supplied for conformance with Contract Documents. When approved, Owner will accept the Work, release Contractor (except as to conditions of the Performance Bond, any legal rights of Owner, required guarantees, and correction of Faulty Work after final Payment), and make final payment to Contractor.
C. Final payment will not be approved or released until receipt of proper close-out documents.

PART TWO - PRODUCTS

2.01 OWNER'S MANUAL AND TOOLS:

A. Provide Owner's Manuals at time of substantial completion, bound and identified with lettering imprinted on face of binder, "Owner's Manual" which shall consist of the following:
   1. Complete description of each item of equipment and apparatus furnished and installed including ratings, capacities, and characteristics.
   2. Manufacturer's printed instructions describing operation, servicing, maintenance, and repair of each item of equipment and apparatus.
   3. Typewritten record of all tests made of materials, equipment, and systems. All such records shall state the date tests were conducted, the names of all persons making and witnessing the tests, and shall cite any unusual conditions relevant to the tests.

B. Owner's Manual shall be furnished in electronically, and shall have been approved by the Engineer/Consultant for content and format prior to final preparation.

C. Provide and deliver to Engineer/Consultant, for delivery to Owner, all special tools required for maintenance of equipment and apparatus.

D. Complete all cleaning operations required by Section 01 74 00 – Cleaning and Waste Management, and other Sections of the Technical Specifications.

E. Deliver to Owner, with a copy of Delivery Certificate to Engineer/Consultant, all replacement materials required by all Sections of these Specifications.

F. Provide the following prior to project closeout:
   1. Consent of Surety.
   2. Contractor's Affidavit of Release of Liens.
   3. Contractor's Affidavit of Payments of Debts and Claims.
   4. Contractor's Guarantee.
   5. Certificate of Substantial Completion.
   6. Subcontractor and Supplier Contact List.
   7. Contractor and Subcontractor Warranties.
   8. Approved Permit Drawings and As-built Drawings.

PART THREE - EXECUTION

3.01 TERMINAL INSPECTION:

A. Immediately prior to expiration of the warranty period, Contractor shall make an inspection of the Work in the company of Engineer/Consultant and Owner. Engineer/Consultant and Owner shall be given not less than five days notice prior to anticipated date of terminal inspection.

B. Where any portion of the Work has proven to be defective and requires replacement, repair, or adjustment, Contractor shall immediately provide materials and labor necessary to remedy such defective Work and shall execute such Work without delay until completed to the satisfaction of Engineer/Consultant and Owner, even though the date of completion of the corrective work may extend beyond the expiration date of the guarantee period. Maintenance during warranty period is to be done by Contractor at his expense.

END OF SECTION 01 70 00

SECTION 01 74 00

CLEANING AND WASTE MANAGEMENT

PART ONE - GENERAL

1.01 GENERAL:

A. Maintain premises free from accumulations of waste, debris, and rubbish caused by construction operations.

B. At completion of Work, remove waste materials, rubbish, tools, equipment, machinery, and surplus materials. Clean all sight-exposed surfaces. Leave project clean and ready for occupancy.

1.02 REQUIREMENTS OF REGULATORY AGENCIES:

A. Codes and Standards: Applicable federal, state, and local codes and regulations relative to environmental safety regulations.

B. Hazards Controls: Store volatile waste in covered metal containers and remove from premises daily. Prevent accumulation of wastes which create hazardous conditions.

C. Pollution Control: Conduct clean-up and disposal operations to comply with local ordinances and anti-pollution laws.

1. Burning or burying of rubbish and waste materials on the project site is prohibited.
2. Disposal of volatile fluid wastes (such as mineral spirits, oil, or paint thinner) in storm or sanitary sewer systems or into streams or waterways is prohibited.

PART TWO - PRODUCTS

2.01 CLEANING MATERIALS:

A. Use only cleaning materials recommended by manufacturer of surface to be cleaned.

B. Use cleaning materials only on surfaces recommended by cleaning material manufacturer.

PART THREE - EXECUTION

3.01 DURING CONSTRUCTION:

A. Keep work area and all occupied property in neat and orderly condition at all times. Oversee cleaning and ensure that building and grounds are maintained free from accumulations of waste materials and rubbish. Sprinkle dusty debris with very fine water mist to control accumulation of dust. Do not use water in quantity so as to puddle. Do not allow waste and other materials such as rubbish, debris, wrappers, etc., to accumulate and become unsightly or hazardous. Promptly remove equipment and excess materials as they become no longer needed for the progress of the work. At not less than every day during progress of work, clean up work and access areas and dispose of waste materials, rubbish, and debris. Legally dispose of waste materials, rubbish, and debris at public or private dumping areas off Owner's property. At the completion of work, restore work area to its original condition. Lower waste materials in a controlled manner with as few handlings as possible; do not drop or throw materials from heights. Keep street and access to site free of rubbish and debris.

B. Contractor shall be responsible for damage to or destruction of property of any sort resulting from the work or caused by defective work, or the use of unsatisfactory materials or workmanship.

C. Contractor shall be responsible for the preservation of all private property, trees, fences, etc., along the adjacent street, right-of-way, etc., and shall use every precaution necessary to prevent damage or injury thereto. Use suitable precautions to prevent damage to pipes, conduits, and other structures.

D. If damage to any structures, utilities, or other improvement occurs by reason of Contractor's operations even though special precautions have been employed, Contractor shall be entirely responsible for such damage and shall make all repairs as required to the satisfaction of Owner.

E. Do not injure, destroy, or trim landscaping without authorization by Owner. Landscaping damage will be replaced by Contractor with new stock or with other stock satisfactory to Owner at the expense of Contractor.

3.02 FINAL CLEANING:

A. Employ skilled workmen for final cleaning.

B. Remove grease, mastics, adhesives, dust, dirt, stains, labels, fingerprints, and other foreign materials from sight-exposed interior and exterior surfaces.

C. Repair, patch, and touch-up marred surfaces to match adjacent finishes.

D. Broom clean paved surfaces; rake clean other surfaces of grounds.

E. Clean stairwell, elevators, and loading dock areas utilized for Work.

F. Prior to final completion or Owner occupancy, conduct an inspection of sight-exposed interior and exterior surfaces and all work areas to verify that entire Work area is clean.

G. Restore building finishes, pavements, walks, landscaping, or other components and/or materials at the site to its original condition prior to start of Work.

END OF SECTION 01 74 00

SECTION 02 07 20

MINOR DEMOLITION AND RENOVATION WORK

PART ONE - GENERAL

1.01 SECTION INCLUDES:

A. Route cracks in masonry wall.
B. Replace damaged brick units at designated locations.
C. Perform other miscellaneous and incidental work required to complete exterior wall repairs as specified and to obtain specified manufacturer's warranty.

1.02 RELATED SECTIONS:

A. 04 01 40 - Masonry Restoration and Cleaning.
B. 07 92 00 - Joint Sealants.
C. 09 91 00 - Painting.

1.03 REFERENCES:

A. American Society for Testing and Materials (ASTM).
B. Corps of Engineers (CRD).

1.04 PROJECT CONDITIONS:

A. Environmental Requirements:
   1. Do not remove sealants or weather barrier materials in inclement weather or when rain is predicted with 30 percent possibility or greater.
   2. When ambient temperature is below 60 degrees Fahrenheit (15 degrees Celsius), expose only enough temperature sensitive materials required within four hour period.
   3. Do not expose materials to constant temperature in excess of 180 degrees Fahrenheit (82 degrees Celsius).
B. Emergency Equipment: Maintain on-site adequate materials necessary to apply emergency temporary weather protection of incomplete work area in event of sudden storms or inclement weather.
C. Smoking is prohibited on roof areas, in existing building, and Owner's property except at designated locations.

1.05 SEQUENCING AND SCHEDULING:

A. Sequence demolition and renovation with sequence of new work to maintain facility in dry, watertight condition on daily basis.
B. Coordinate work so that no more existing items are removed in one day than can be replaced with new materials in same day.
C. Coordinate work with Owner's operational requirements.
D. Coordinate demolition work and removal sealants to maintain facility in dry, watertight condition on a daily basis.

1.06 WARRANTY:

A. Provide Contractor's warranty covering defects in installed materials and workmanship for period of two years from date of final acceptance.

PART TWO - PRODUCTS

2.01 MATERIALS:

A. Fasteners:
   1. Wood Substrate:
      a. Securement of metal flanged items such as flashing pans, metal edge/fascia, cleats, etc., shall be nails, No. 11 gauge, double hot-dipped galvanized, ASTM A153, steel or stainless steel wire with 3/8-inch (9mm) diameter head and ring shank fasteners for anchoring flanges of sheet metal fabrications shall be of sufficient length to achieve a minimum 1-1/4-inch embedment into solid wood substrate such as "R-103-A Stormguard Asphalt and Fiberglass Shingle Nail" by Maze Nails (800/435-5949).
      b. Securement of exposed items to wood substrate shall be No. 14 stainless steel screw with stainless steel washer and integral rubber seal; length required to provide 1-inch (25mm) penetration minimum into substrate.
      c. Fasteners for securing roofing materials to wood substrate shall be a hardened stainless steel nail with a 1-inch (25mm) diameter round head and ring shank; length to provide 1-inch (25mm) penetration into substrate, as manufactured by Simplex Nail Co.
   2. Concrete Substrate:
      a. Fasteners for securing sheet metal items to concrete substrate shall be a pre-assembled drive anchor with a coated steel or steel alloy drive screw, a lead/zinc alloy expansion anchor body (1/4-inch (6mm) diameter, 1-1/2-inch [38mm] length) and a stainless steel washer with integral rubber seal (1-1/8-inch diameter) such as "Zamac Hammer-Screw" as manufactured by Powers Fasteners, Inc., or “Coated Drive Pin Fastener” by Firestone Specialty Products.
   3. Steel Substrate:
      a. Fasteners for securing sheet metal to steel substrate shall be self-tapping No. 14, 1-1/2-inch long stainless steel screw with stainless steel washer and bonded integral rubber seal.
   4. Masonry Substrate:
      a. Fasteners for securing to masonry shall be 1/4-inch diameter, 2-3/4-inch long coated screw with hex head such as "Tapcon" by ITW Buildex.

B. Weeps:
   1. Cell Weep: Polypropylene honeycomb cell weep to match mortar color and size of head joint such as “CellVent” by Mortar Net Solutions.

C. Self-adhering Membrane:
   1. Self-adhering rubberized asphalt sheet suitable for high temperature application such as “Blueskin SA” by Henry Company or "Vycor Plus Self-adhering Flashing" by Grace Construction Products.

PART THREE - EXECUTION

3.01 EXAMINATION:

A. Examine existing building to determine existing physical conditions that affect work on walls.
B. Verify that required barricades and other protective measures are in place.

3.02 PREPARATION:

A. Take measures to maintain watertight conditions during term of Contract.
B. Protect adjacent surfaces.

3.03 MINOR DEMOLITION OPERATIONS:

A. Execute demolition in careful and orderly manner with least possible disturbance or damage to adjoining surfaces and structure.
B. Avoid excessive vibrations in demolition procedures that would be transmitted through existing structure and finish materials.
C. Remove mortar from head joint of masonry above windows, maximum 24-inches on center, and minimum 2 weeps per wall opening.
D. Damaged Brick Removal:
    1. Remove mortar between damaged brick and adjoining material taking care not to damage adjacent material and/or underlying substrates.
    2. Remove existing damaged brick.
    3. Provide protective method around work area.

3.04 MINOR RENOVATION WORK:

A. Prepare substrates in accordance with manufacturer's recommendations.
B. Cell Weep Vent:
    1. Install new weep material in head joints above windows.
    2. Secure weeps in head joint with mortar.
C. Operable Window Sash Weather-stripping:
    1. Seal corners and joints of weather-stripping at operable window sashes.
    2. Replace damaged weather-stripping as necessary.

3.06 CLEANING:

A. Materials, equipment, and debris resulting from demolition operations shall become property of Contractor. Remove and dispose of demolition debris in accordance with applicable city, state, and federal laws at authorized disposal site.

END OF SECTION 02 07 20

SECTION 04 01 40

MASONRY RESTORATION AND CLEANING

PART ONE - GENERAL

1.01 SECTION INCLUDES:

A. Repairing/replacing loose, damaged, undersized, and/or cracked masonry.
B. Tuckpointing cracked, missing, and deteriorated mortar joints in brick masonry.
C. Cleaning existing masonry surfaces.
D. Performing miscellaneous repairs.

1.02 RELATED SECTIONS:

A. 02 07 20 - Minor Demolition and Renovation Work.
B. 07 62 00 - Sheet Metal Flashing and Trim.
C. 07 92 00 - Joint Sealants.

1.03 REFERENCES:

A. American Society for Testing and Materials (ASTM).

1.04 SUBMITTALS:

A. Provide Submittals in accordance with Section 01 33 00 - Submittal Procedures.
B. Product Data: Submit manufacturer's technical data for each product, including recommendations for product application, installation, and use.
C. Samples: Provide on-site in-place sample or "mock-up", minimum 2 feet by 2 feet (600mm by 600m) in dimension, depicting cleaned brick masonry surface, mortar crack repairs, mortar tuck point repairs, cracked brick repair, and application of clear sealer.
D. Quality Control Submittals: Submit test reports and certifications substantiating that products comply with requirements.
E. Submit manufacturer's written Safety Data Sheet (SDS) for each material used in this Section.
F. Submit sample of brick unit to be used for replacement units. Sample to show dimension, color, texture, and appearance.
G. Submit samples of repair mortar showing color, texture, profile, and appearance.
H. Submit proposed mortar mix ratios.

1.05 QUALITY ASSURANCE:

A. Installation Qualifications: Work must be performed by a firm having not less than five years successful experience in comparable restoration projects and employing personnel skilled in comparable restoration processes and operations.
B. Collect samples of existing mortar and brick and submit to repair material manufacturer for analysis and color matching.

C. Field-Construction Mock-ups: Prior to start of general masonry restoration, prepare the following sample panels and sample areas on building where directed by Engineer/Consultant. Obtain acceptance of visual qualities before proceeding with the work. Retain acceptable panels in undisturbed condition, suitably marked, during restoration as a standard for judging completed work.
   1. Crack Repair: Prepare a sample area for each type of crack repair required for brick. Repair shall demonstrate methods and quality of workmanship expected for crack repair.
   2. Patching: Prepare on-building sample of each type of brick and masonry construction to be patched. Patching and mold shall demonstrate methods and quality of workmanship expected of repair work.
   3. Repointing: Prepare two separate sample areas of approximately 5' high by 5' wide for each type of repointing required, one for demonstrating methods and quality of workmanship expected in removal of mortar from joints and the other for demonstrating quality of materials and workmanship expected in pointing mortar joints. Sample areas shall be located in an inconspicuous yet readily accessible place.

D. Patching, Repointing, and Coating Work: The samples of each type of repair work shall be done in an area that will be exposed to the same weathering conditions as the building. Allow samples to cure at least three days before obtaining acceptance of color, texture and detailing match. Samples shall be viewed from an approved distance.

1.06 DELIVERY, STORAGE, AND HANDLING:

A. Deliver materials to site in manufacturer's original unopened containers and packaging, bearing labels including manufacturer's name, product name, type of material, batch number, date of manufacture, shelf life, and instructions for use.
B. Carefully pack, handle, and ship brick units and accessories strapped together in suitable packs or pallets or in heavy cartons. Unload and handle to prevent damage.
C. Protect restoration materials during storage and construction from wetting by rain, snow, or ground water and from staining or intermixture with earth or other types of materials.
D. Protect grout, mortar, and other materials from exposure to moisture and temperature. Store in dry location or in waterproof containers. Keep containers tightly closed and away from open flames. Protect liquid components from freezing. Comply with manufacturer's recommendations for minimum and maximum temperature requirements for storage and installation.
E. Remove damaged, deteriorated, or out-of-date material from site.

1.07 PROJECT CONDITIONS:

A. Protect persons, motor vehicles, and surfaces around surfaces being restored, building site, and surrounding buildings from contamination, soiling, and damage resulting from masonry work.
B. Prevent chemical solutions from coming into contact with pedestrians, motor vehicles, landscaping, adjacent buildings, and other surfaces which could be damaged by contact.

C. Do not clean surfaces during winds of sufficient force to spread cleaning solutions to unprotected surfaces.
D. Dispose of runoff from cleaning operations by legal means and in manner to prevent soil erosion, undermining of paving and foundations, damage to landscaping, and water penetration into building interiors.
E. Furnish and erect temporary protection covers over pedestrian walkways and at points of entrance and exit for persons and for vehicles which must remain in operation during course of restoration work.
F. Work surfaces only when air temperatures are 40 degrees Fahrenheit (4 degrees Celsius) and above and will remain so at least seven days after restoration work and until surfaces have dried out.
G. Do not repair or install mortar joints or perform repairs unless air temperatures are between 40 degrees Fahrenheit (4 degrees Celsius) and 80 degrees Fahrenheit (27 degrees Celsius) and will remain so for forty-eight hours minimum after repair.
H. Prevent grout or mortar used in repair work from staining face of surrounding masonry and other surfaces. Remove grout and mortar in contact with exposed masonry and other surfaces immediately.
I. Protect sills, ledges, and projections from mortar droppings.

1.08 SEQUENCING AND SCHEDULING:

A. Perform masonry restoration work in following sequence.
   1. Rake out and remove existing mortar from joints to be repointed.
   2. Repair loose or broken brick units.
   3. Route out and seal cracks to be repaired.
   4. Clean existing brick surfaces.
   5. Apply elastomeric coating at repair area to match existing coating.

1.09 WARRANTY:

A. Provide contractor's warranty for a period of two years for labor and material to reinstall any work not performing as intended.

PART TWO - PRODUCTS

2.01 NEW BRICK:

A. New brick to match existing brick dimensions, type, and texture.

2.02 MORTAR MATERIALS:

A. Portland Cement:
   1. ASTM C 150, Type I.
   2. Provide nonstaining Portland cement complying with staining requirement of ASTM C 91 for not more than 0.03 percent water soluble alkali for brickwork and other masonry.
B. Hydrated Lime: ASTM C 207, Type S.
C. Aggregate For Mortar: ASTM C 144.

D. Colored Mortar Aggregate:
   1. Natural or manufactured sand aggregate, hand selected to produce mortar color matching the existing mortar color.
   2. Provide sand with rounded edges for pointing mortar.
   3. Match size, texture, and gradation of existing mortar as closely as possible.
E. Colored Mortar Pigment:
   1. Natural and synthetic iron oxides and chromium oxides, compounded for use in mortar mixes.
   2. Use only pigments with record of satisfactory performance in masonry mortars.
F. Water: Clean, free of oil, acids, alkalis, and organic matter.

2.03 REPOINTING MORTAR MATERIALS:

A. Repointing mortar shall be a pre-mixed, pre-colored, custom-matched cement-lime based mixture formulated to comply with the requirements of ASTM C-270 Type N mortar such as "Spec-Joint 46" by Edison Coatings or "Jahn M110 Historic Pointing Mortar" by Cathedral Brick.

2.04 CLEANING MATERIALS AND EQUIPMENT:

A. Water for Cleaning: Clean, potable, free of oils, acids, alkalis, salts, and organic matter.
B. Warm Water: Heat water to temperature of 140 degrees Fahrenheit to 180 degrees Fahrenheit (60 degrees Celsius to 82 degrees Celsius).
C. Brushes: Fiber bristle only.
D. Cleaning Products:
   1. “EnviroKlean SafRestorer” by ProSoCo, inc.
   2. “Sure Klean Light Duty Restoration Cleaner”, ProSoCo, Inc.
   3. Or approved equal.

2.05 ELASTOMERIC COATING:

A. Acceptable Manufacturers for Coating: Coating to match existing manufacturer, material, and color:
B. Strippable Masking: Temporary coating designed for application to glass, unpainted metal, and polished brick to protect from cleaning materials and mortar such as “Sure Klean Strippable Masking”, by ProSoCo.

2.08 MORTAR MIXES:

A. Measurement and Mixing:
   1. Measure cementitious and aggregate materials in dry condition by volume or equivalent weight.
   2. Do not measure by shovel; use known measure.
   3. Mix materials in clean mechanical batch mixer.
B. Mixing Repair Mortar:
   1. Thoroughly mix cementitious and aggregate materials together before adding water.
   2. Mix again adding only enough water to produce damp, unworkable mix which will retain its form when pressed into ball.

3. Maintain mortar in this dampened condition for one to two hours.
4. Add remaining water in small portions until mortar of desired consistency is reached.
5. Use mortar within thirty minutes of final mixing.
6. Do not retemper or use partially hardened material. Discard unused material when initial set begins.

C. Admixtures: Do not use admixtures in mortar.
D. Mortar Proportions,
   1. Repair Mortar for Brick; Type N: One part Portland cement, one part lime, and four and one-half to six parts mortar aggregate.
   2. Pointing Mortar for Brick: One part Portland cement, two parts lime, and six parts mortar aggregate.
E. Colored Mortar:
   1. Produce mortar of color required with selected ingredients.
   2. Do not adjust proportions without Consultant's acceptance.
F. Color Pigmented Mortar: Do not exceed pigment-to-cement ratio of 1-to-10 by weight.
G. Admixtures: Do not use admixtures in mortar.

PART THREE - EXECUTION

3.01 PREPARATION:

A. Comply with recommendations of chemical cleaner manufacturers for protecting building surfaces and for installation procedures.
B. Protect glass, metal components, brick, wood, and concrete from contact with acidic chemical cleaners or mortar by covering them with liquid strippable masking agent or polyethylene film and waterproof masking tape. Apply masking agent in accordance with manufacturer's recommendations. Do not apply liquid masking agent to painted or porous surfaces.
C. Protect metal from contact with alkali chemical cleaners by covering metal with either liquid strippable masking agent or polyethylene film and waterproof masking tape.

3.02 CLEANING EXISTING MASONRY:

A. Determine method of cleaning based upon adjoining materials, site conditions, and manufacturer's requirements.
B. Use power washing or hand method to clean substrate and open pores.
C. Verify surfaces to be restored are clean, free of efflorescence, stains, mildew, grime, dirt, tar, oil, grease, or other foreign matter and discoloration detrimental to application.
D. Cleaning:
   1. Proceed with cleaning in an orderly manner; work from top to bottom and from one end of each elevation to the other.

2. Determine method of cleaning based upon adjoining materials, site conditions, and manufacturer's requirements.
3. Use power washing or hand method which will clean substrate but not damage material.
4. Verify surfaces to receive coatings or sealer are clean, free of efflorescence, stains, mildew, grime, dirt, tar, oil, grease, or other foreign matter and/or discoloration detrimental to application.
5. Perform each cleaning method indicated in a manner which results in uniform coverage of all surfaces, including corners, moldings, interstices and which produces an even effect without streaking or damage to masonry surfaces.
6. Rinse off chemical residue and soil by working upwards from bottom to top of each treated area.

E. Water Cleaning Methods:
1. Spray Applications: Spray-apply water to brick surfaces to comply with requirements indicated for location, purpose, water temperature, pressure, volume, and equipment. Unless otherwise indicated, hold spray nozzle not less than 6-inches (150mm) from surface of masonry and apply water from side to side in overlapping bands to produce uniform coverage and an even effect.
2. Low Pressure Spray: 100 to 400 psi; three to six gallons per minute.
3. Medium Pressure Spray: 400 to 800 psi; three to six gallons per minute.
4. High Pressure Spray: 800 to 1200 psi; three to six gallons per minute.
5. Steam Wash: Apply steam to brick surfaces at pressures not exceeding 80 psi. Hold nozzle no less than 6-inches (150mm) from surface of masonry and apply steam from side to side or in direction of tooling in overlapping bands to produce uniform coverage and an even effect.

F. Chemical Cleaner Application Methods:
1. Apply chemical cleaners to brick surfaces to comply with chemical manufacturer's recommendations using brush or spray application methods, at Contractor's option, unless otherwise indicated. Do not allow chemicals to remain on surface for periods longer than that indicated or recommended by manufacturer.
2. Spray Application: Apply to pressures not exceeding 50 psi, unless otherwise indicated.
3. Reapplication of Chemical Cleaners: Do not apply chemical cleaners to same masonry surfaces more than twice. If additional cleaning is required, use steam wash.

3.03 CRACK REPAIR:

A. Inspect existing mortar joints for cracked, defective, open, and/or deteriorated mortar.
B. Rake out cracked, loose, or deteriorated mortar from joints to depths equal to 2-1/2 times their widths, but not less than 1-inch (25mm), nor less than that required to expose sound, unweathered mortar.
C. Remove mortar from surfaces within raked-out joints to provide reveals with square backs and to expose substrates for contact with new mortar or new sealant. Brush, vacuum, or flush joints to remove dirt and loose debris.

D. Do not spall edges of brick units or widen joints.
E. Replace brick units which are loose, damaged, broken, or spalled.
F. Cut out old mortar by hand with chisel and mallet.
G. Power operated rotary hand saws and grinders will be permitted but only on specific written acceptance of Consultant based on submission by Contractor of satisfactory quality control program and demonstrated ability of operators to use tools without damage to masonry. Quality control program shall include provisions for supervising performance and preventing damage due to worker failure.
H. Fill prepared step cracked joints with joint backing and sealant in accordance with Section 07 92 00 – Joint Sealants. "Dust" wet sealant with matching color sand or crushed masonry fines to match adjacent surfaces.

3.04 REPOINTING EXISTING MASONRY:

A. Joint Raking:
   1. Rake out mortar from joints to depths equal to 2-1/2 times their widths but not less than 1-inch (25mm) nor less than that required to expose sound, unweathered mortar.
   2. Remove mortar from brick surfaces within raked-out joints to provide reveals with square backs and to expose brick and clean sound mortar for contact with pointing mortar. Brush, vacuum, or flush joints to remove dirt and loose debris.
   3. Do not spall edges of brick units or widen joints. Replace brick units that become damaged.
   4. Cut out old mortar by hand with chisel and mallet.
   5. Power operated rotary hand saws and grinders will be permitted but only on specific written acceptance of Consultant based on submission by Contractor of satisfactory quality control program and demonstrated ability of operators to use tools without damage to masonry. Quality control program shall include provisions for supervising performance and preventing damage due to worker failure.

B. Joint Pointing:
   1. Rinse joint surfaces with water to remove dust and mortar particles. Time application of rinsing so that, at time of pointing, excess water has evaporated or run off and joint surfaces are dry and able to receive mortar application.
   2. Apply first layer of pointing mortar to areas where existing mortar was removed to depths greater than surrounding areas. Apply in layers not greater than 3/8-inch (9mm) until uniform depth is formed. Compact each layer thoroughly and allow to become thumbprint-hard before applying next layer.
   3. After joints have been filled to uniform depth, place remaining pointing mortar in three layers with each of first and second layers filling approximately 2/5 of joint depth and third layer the remaining 1/5. Fully compact each layer and allow to become thumbprint hard before applying next layer. Take care not to spread mortar over edges onto exposed masonry surfaces or to featheredge mortar.
   4. When mortar is thumbprint hard, tool joints to match original appearance of joints. Remove excess mortar from edge of joint by brushing.
   5. Cure mortar by maintaining in damp condition for not less than seventy-two hours.

6. Where repointing work precedes cleaning of existing brick, allow mortar to harden not less than thirty days before beginning cleaning work.
7. Where mortar joints have step cracked due to lack of control joints and where sealant is applied over these cracks, cut mortar joint to depth of 1-inch (25mm) deep and fill with silicone sealant.

3.05 FINAL CLEANING:

A. Thoroughly clean exposed brick surfaces of excess mortar, sealant, and foreign matter using stiff nylon or bristle brushes and clean water, spray applied at low pressure.
B. Use of metal scrapers or brushes will not be permitted.
C. Use of acid or alkali cleaning agents will not be permitted.

3.06 APPLICATION OF ELASTOMERIC COATING AT REPAIR:

A. Clean surfaces, repair delaminated or unsound surfaces, and repair cracks with sealant and patching compound in accordance with coating manufacturer's written recommendations.
B. Remove all loose particles, loose or delaminated paint, oil, grease, laitance, efflorescence, mold, mildew, and other foreign material. Substrate shall be dry.
C. Primer application is required if substrate is chalky after cleaning and proper surface preparation.
    1. When surface temperatures exceed 95 degrees Fahrenheit, clear sealer may be successfully applied by cooling the surface with a water mist before applying the repellent. Mist the surface lightly with clear water - do not saturate. Allow surface to dry until surface is once again absorbent (appears dry) and immediately apply sealer.
D. Elastomeric Coating Application:
    1. Prime Coats:
        a. Before application of finish coats, apply prime coat in a thin spray or roll coat to surface to be coated.
        b. Recoat primed and sealed substrates where there is evidence of suction spots or unsealed areas in first coat to assure a finish coat with no burn-through or other defects due to insufficient sealing.
    2. Apply textured detail coat over crack repairs and concrete repairs in areas to receive acrylic coating. Allow detail coat to dry before applying base and finish coats.
    3. Apply coating by brush, roller, airless spray, or other application method in accordance with coating manufacturer's directions. Use brushes best suited for type of material being applied. Use rollers as recommended by manufacturer for material and texture required.
    4. Do not apply coating over sealant joints.
    5. Apply coating system with a <u>minimum</u> of two coats or more if required to prevent bleed through of substrate color. Apply additional coats when topcoats or other conditions show through final coat until cured film is of uniform finish, color, and appearance. Apply finish in pinhole free, continuous membrane.

6. Minimum Coating Thickness:
   a. Number of coats and finished coating film thickness required is same regardless of application method.
   b. Do not apply succeeding coats until previous coat has cured as recommended by coating manufacturer.
   c. Apply each material no thinner than manufacturer's recommended spreading rate.
   d. Provide total dry film thickness of entire coating system as required by manufacturer unless otherwise indicated.
7. Brush Applications:
   a. Brush-out and work brush coats onto surfaces in an even film.
   b. Eliminate cloudiness, spotting, pin holes, laps, brush marks, runs, sags, ropiness, or other surface imperfections.
8. Roller Applications: On porous substrates, backroll to eliminate pinholing. Do not dry roll.
9. Match approved samples for color, texture, and coverage.
   a. Remove masking over sealant joints immediately after completion of coating work.

3.06 ADJUSTING AND CLEANING:

A. Correct damage to other work by cleaning, repairing or replacing as directed by Owner. Leave work in an undamaged condition.
B. Clean spattered surfaces. Remove overspray materials by proper methods of washing and scraping, using care not to damage finished surfaces.
C. Remove discarded materials, rubbish, cans, and rags resulting from work from project site.

END OF SECTION 04 01 40

SECTION 07 92 00

JOINT SEALANTS

PART ONE - GENERAL

1.01 SECTION INCLUDES:

A. Sealant application to masonry control joints, perimeters of window, door, and louvers, window wet sealing, sealants at penetrations, and additional sealant application as required.

1.02 RELATED SECTIONS:

A. 02 07 20 - Minor Demolition and Renovation Work.
B. 08 80 00 - Glass and Glazing.

1.03 REFERENCES:

A. American Society for Testing and Materials (ASTM).
B. Federal Specifications (FS).

1.04 SUBMITTALS:

A. Product Data: Submit manufacturer's product data, joint preparation and installation instructions, and color charts for each product required.
B. Submit manufacturer's certification that products meet specified requirements and are appropriate for project applications.
C. Samples for Initial Selection Purposes: Submit manufacturer's standard bead samples consisting of strips of actual products showing full range of colors available for each product exposed to view.

1.05 QUALITY ASSURANCE:

A. Product Labels: Include manufacturer's name, type of sealant, and color on labels of containers.
B. Single Source Responsibility for Joint Sealer Materials:
   1. Obtain joint sealer materials from single manufacturer for each different product required.
   2. Provide primers, joint sealers, joint fillers, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by testing and field experience as supplied and warranted by one manufacturer.
   3. Provide joint sealers that have been produced and installed to establish and maintain watertight and airtight continuous seals.
C. Installer Qualifications: Installer having not less than five years successful experience in comparable projects and employing personnel skilled in operations required for project.

D. Field Sample: Upon directions of Owner, prepare 12-inch (300mm) samples in presence of Owner demonstrating removal and cleaning process and application of sealant.
E. Use test methods standard with manufacturer to determine if priming and other specific joint preparation techniques are required to obtain rapid, optimum adhesion of joint sealers to joint substrates under environmental conditions that will exist during actual installation.
F. Installer to perform field adhesion in peel testing using hand pull method. Perform a minimum of one test on every type of substrate and joint condition.
    1. Test Method: Test joint sealers by hand pull method described below:
        a. Install joint sealants in 4 feet joint lengths using same materials and methods for joint preparation and joint sealant installation required for complete work. Allow sealants to cure fully before testing.
        b. Make knife cuts as follows: A horizontal cut from one side of joint to the other followed by two vertical cuts approximately 2-inches (50mm) long at side of joint and meeting horizontal cut at top of 2-inch (50mm) cuts. Place a mark 1-inch (25mm) from top of 2-inch (50mm) piece.
        c. Use fingers to grasp 2-inch (50mm) piece of sealant just above 1-inch (25mm) mark; pull firmly down at a 90 degree angle or more while holding a ruler along side of sealant. Pull sealant out of joint to the distance recommended by sealant manufacturer for testing adhesive capability, but not less than that equaling specified maximum movement capability in extension; hold this position for ten seconds.
    2. Report whether or not sealant in joint connected to pulled-out portion failed to adhere to joint substrates or tore cohesively. Include data on pull distance used to test each type of product and joint substrate.
    3. Evaluation of Field Test Results: Sealants not evidencing adhesive failure from testing, in absence of other indications of non-compliance with requirements, will be considered satisfactory. Do not use sealants which fail to adhere to joint substrate during testing.
    4. Repair test cut areas immediately after completion of testing work.
    5. Notify in advance and conduct adhesion testing in presence of Consultant.

1.06 DELIVERY, STORAGE, AND HANDLING:

A. Deliver materials in original containers with seals unbroken and labels intact.
B. Store materials in a single lockable area of project site.
C. Protect materials from extreme temperatures and exposure. Store in accordance with manufacturer's recommendations.

1.07 PROJECT CONDITIONS:

A. Environment: Comply with sealant manufacturer's recommended minimum and maximum installation temperatures and other weather protection.

1.08 SEQUENCING AND SCHEDULING:

A. Do not remove more sealant than can be replaced in same day.

1.09 WARRANTY:

A. Manufacturer's Warranty: Provide manufacturer's standard warranty for type of sealant specified.
B. Contractor's Warranty: Provide written warranty against leakage and defects in workmanship for a period of two years from date of final acceptance by Owner.

PART TWO - PRODUCTS

2.01 SEALANT:

A. Sealant:
   1. Type A: Medium/Low modulus silicone sealant for sealing metal-to-metal surface (i.e. metal edge, cover plates) such as “Sikasil WS-290” or “Sikasil WS-295” by Sika Corp., “795 Silicone Building Sealant” or “790 Silicone Building Sealant” by Dow Corning, or “GE Silpruf 2000” by Momentive; color to match finish of metal.
   2. Type B: One component polyurethane sealant such as "Sikaflex 1a" by Sika Corp. or “Sonolastic NP1” by BASF, color to match finish of metal.
   3. Type C: Closed-cell foam tape: Two-sided pressure sensitive acrylic foam tape for bonding glass panels to window frame such as CRL “Structural Glazing Spacer Tape”.

2.02 RELATED MATERIALS:

A. Cleaner: Noncorrosive, nonstaining type, compatible with joint forming materials as recommended by sealant manufacturer.
B. Backer Rod:
   1. Closed cell non-gassing polyethylene foam rod, over-sized 30 to 50 percent for joint size, compatible with sealant, sized and shaped to provide proper compression upon insertion in accordance with manufacturer's recommendations.
   2. Acceptable Products:
      a. “Sonolastic Soft Backer-Rod” by BASF.
      b. “SofRod” by Namaco.
      c. Or approved equal products.
C. Bond Breaker Tape: Pressure sensitive adhesive polyethylene strip recommended by sealant manufacturer to suit application.
D. Primer: Nonstaining type as recommended by sealant manufacturer to suit application.
E. Masking Tape: Nonstaining, nonabsorbent type compatible with sealant and surfaces adjacent to joints.

2.03 MIXING:

A. Mix multi-component products as directed by manufacturer.

PART THREE - EXECUTION

3.01 PREPARATION:

A. Removing Existing Sealants/Materials:
   1. Cut out and remove existing sealants, backer rods, bond breaker tapes, and other loose materials to depth as required by sealant manufacturer or to 1/2-inch (13mm) minimum.
   2. Remove foreign matter from joint substrates which could interfere with adhesion of joint sealant. Remove dust, oil, grease, waterproofing, water repellent, surface dirt, and paints, except for permanent protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer.
   3. Remove debris from jobsite.

B. Cleaning:
   1. Clean joints receiving sealant and adjacent surfaces in manner not to damage existing materials. Perform cleaning of joints the same day sealant is to be installed in cleaned joint.
   2. Remove dust and debris by blowing clean with high pressure air.
   3. Wipe nonporous surfaces clean with toluene or xylene and clean cloths.

C. Priming:
   1. Prime joint substrates where indicated or where recommended by sealant manufacturer based upon preconstruction sealant substrate tests or prior experience.
   2. Apply primer to comply with joint sealer manufacturer's recommendations. Apply primer to surfaces the same day sealant is to be installed onto primed surfaces.
   3. Confine primers to area of joint sealer bond. Do not allow spillage or migration onto adjoining surfaces.

D. Masking: Mask areas adjacent to joints to prevent sealant contact with surfaces which would be permanently stained or damaged by sealant or by cleaning methods required to remove excess sealant.

3.02 APPLICATION:

A. Joint Backing:
   1. To achieve required joint depths, restrict depth of joints by use of joint backer rod.
   2. Provide joint width-to-depth ratio equal to approximately 2:1 where practical.
   3. Provide joint depth equal to 1/4-inch minimum or 1/2-inch maximum.
   4. Punctured or torn backer rod shall be removed and replace with new backer rod.
   5. Wet or damp backer rod shall be removed and replaced with new backer rod.
   6. Provide minimum sealant joint width of 1/4-inch to all substrates.
   7. Provide 1/4-inch minimum adhesion on all sealant joint and wet seal joint substrates
   8. Size backer rod to allow for 30 percent minimum compression of the backer rod when installed.
   9. Where installation of proper size backer rod is not feasible due to insufficient clearance or depth, install bond breaker tape in joint.
   10. Three-sided adhesion of sealant is not permitted.

B. Sealant:
   1. Install sealants by proven techniques that result in sealants directly contacting and fully wetting joint substrates.
   2. Apply sealant in uniform continuous bead without gaps or air pockets, following manufacturer's instructions for each specific type of sealant.
   3. Provide uniform cross-sectional shapes and depths relative to joint widths which allow optimum sealant movement capability.
   4. Provide minimum sealant thickness of 1/4-inch.
   5. Provide minimum sealant adhesion to substrate of 1/4-inch.
   6. Provide for minimum width-to-thickness ratio of 2:1.

C. Tooling:
   1. Tool joints to required configuration in accordance with manufacturer's recommendations.
   2. Sealant Tape:
      a. Provide continuous uniform bed of sealant tape on horizontal bearing surfaces. Butt adjacent sections end-to-end.
      b. Prior to mating surfaces, remove backing paper from the installed tape.
      c. Firmly press or clamp assembly upon removal of backing paper.
   3. Tooling Non-sag Sealants:
      a. Immediately after sealant application and prior to time skinning or curing begins, tool sealants to form smooth, uniform beads of configuration required.
      b. Eliminate air pockets and ensure contact and adhesion of sealant with sides of joint.
      c. Remove excess sealant from surfaces adjacent to joint.
      d. Do not use tooling agents which discolor sealants or adjacent surfaces or are not approved by manufacturer.
      e. Remove masking immediately after tooling without disturbing joint sealant.

D. Wet Sealing:
   1. Tool or strike fillet-shaped joints to a sharp chisel profile with a light pressure to spread the material against each shoulder. Finished appearance should be smooth, straight, and even. Rough, unevenly tooled sealant finishes with non-linear edges will not be acceptable.
   2. Mask and tool as noted above.
   3. Extend sealant onto each glass and metal surface not less than ¼-inch and not more than ½-inch.
   4. Complete tooling in one continuous stroke within ten minutes of sealant application and before a surface-skin forms. Do not use soaps, oils and/or alcohol as tooling aids. Such materials should not be allowed on work site.
   5. Remove masking immediately after tooling without disturbing joint sealant.

3.03 ADJUSTING:

A. If damage or deterioration occurs, cut out and remove damaged or deteriorated joint sealants immediately and reseal joints with new materials to produce joint sealer installations with repaired areas indistinguishable from original work.

3.04 CLEANING:

A. Remove excess sealant from adjacent surfaces immediately after contact with xylene or toluene.
B. Remove debris and containers from jobsite.

3.05 PROTECTION:

A. Protect joint sealants during and after curing period from contact with contaminating substances or from damage resulting from construction operations or other causes so that they are without deterioration or damage at time of Substantial Completion.

3.06 SCHEDULE:

A. Sealant A:
   1. Metal-to-metal joints.
   2. Masonry joints/cracks.
   3. Window, door, and louver perimeters.
   4. Wall penetrations.
   5. Structural glazing of insulated glass units.
   6. Wet sealing storefront windows.
B. Sealant B:
   1. Sealant work in conjunction with concealed locations.
C. Sealant C:
   1. Spacer backer tape for glazing / re-glazing structurally glazed insulated glass units.

END OF SECTION 07 92 00

SECTION 08 80 00

GLASS AND GLAZING

PART ONE - GENERAL

1.01 SECTION INCLUDES:
A. Replacement glass for broken windows.
B. Glazing compounds and accessories.

1.02 RELATED SECTIONS:
A. 07 92 00 - Joint Sealants.

1.03 REFERENCES:
A. American National Standard for Glazing Material (ANSI).
B. American Society for Testing and Materials (ASTM).
C. Glass Association of North America (GANA).

1.04 QUALITY ASSURANCE:
A. Glazing Standards: Comply with recommendations of Glass Association of North America (GANA) "Glazing Manual" and "Sealant Manual" except where more stringent requirements are indicated. Refer to those publications for definitions of glass and glazing terms not otherwise defined in this Section or other referenced standards.
B. Installation Qualifications: Work must be performed by a firm having not less than five years successful experience in comparable masonry restoration projects and employing personnel skilled in the restoration processes and operations indicated.
C. Single Source Responsibility: Provide materials obtained from one source for each type of glass and glazing indicated.

1.05 SUBMITTALS:
A. Product Data: Submit manufacturer's technical data for each glazing material product required, including installation and maintenance instructions.
B. Submit 12-inch square samples of each type of glass indicated.
C. Glazing contractor will obtain compatibility and adhesion test reports from the sealant manufacturer, indicating that glazing materials were tested for compatibility and adhesion with glazing sealant, as well as other glazing materials including insulating units.
D. Provide submittals in accordance with Section 01 33 00 – Submittal Procedures.

1.06 DELIVERY, STORAGE, AND HANDLING:
A. Protect glazing materials during delivery, storage, and handling to comply with manufacturer's directions and as required to prevent damage to glazing materials.
B. Exercise exceptional care to prevent edge damage to glass, and damage/deterioration to coating on glass.

1.07 PROJECT CONDITIONS:

A. Environmental Conditions: Do not proceed with glazing when ambient and substrate temperature conditions are outside the limits permitted by glazing material manufacturer or when joint substrates are wet due to rain, frost, condensation, or other causes. Install glazing sealants only when temperatures are in the middle third of manufacturer's recommended installation temperature range. Install liquid sealant at ambient and substrate temperatures above 40 degrees Fahrenheit (4 degrees Celsius).

B. Field Measurements: When the construction schedule permits, verify field measurements with drawing dimensions prior to fabrication of glass products.

1.08 WARRANTY:

A. Provide a written 10-year limited warranty from the date of manufacture for insulating glass. Warranty covers deterioration due to normal conditions of use and not to handling, installing, protecting, and maintaining practices contrary to the glass manufacturer's published instructions.

B. Contractor shall provide a 2-year limited warranty for labor and materials required for replacement of glazing from seal failure, interpane dusting or misting, and workmanship defects.

PART TWO - PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS:

A. Available Manufacturers:
   1. Vitro Architectural Glass: www.vitroglazing.com (previously PPG) (basis of design).
   2. Guardian Industries: www.guardian.com.
   3. Viracon: www.viracon.com.
   4. Or approved equal.

2.02 MATERIALS:

A. General: Comply with recommendations of sealant and glass manufacturers for selection of glazing sealants which have performance characteristics suitable for applications indicated and conditions at time of installation.

B. Compatibility: Select sealants with proven compatibility with surfaces contacted in the installation and under service conditions indicated, as demonstrated by testing and field experience.

C. Sealed Insulating Glass Units: Types as indicted below.
   1. Durability: Certified by and independent testing agency to comply with ASTM E 2190.
   2. Edge Spacers: Aluminum, desiccant filled.
   3. Edge Seal: Dual sealed with a primary seal of polyisobutylene (PIB), or thermoplastic spacer (TPS) and a secondary seal of silicone sealant.
   4. Purge interpane space with dry hermetic air.

2.03 GLAZING TYPES (glass color and thickness to match existing):

A. Type GL1 – Sealed Insulating Glass Unit, Vision Glazing:
   1. Application: All exterior glazing for windows.
   2. Basis of Design: PPG Industries, Solarban 70 XL.
   3. Outboard Lite: Float glass, 1/4-inch (6mm) thick, minimum.
      a. Tint: Solarbronze (or to match existing).
      b. Coating: Solarban 70 XL Low-E type, on #2 surface.
   4. Inboard Lite: Float glass, 1/4-inch (6mm) thick, minimum.
      a. Tint: Clear.
   5. Total Thickness: 1-inch.
   6. Visible Light Transmittance: 40 percent.
   7. Winter Nighttime U-Value: 0.28.
   8. Solar Heat Gain Coefficient: 0.21.
   9. Glazing Method: Gasket glazing.

B. Type GL2 – Sealed Insulating Glass Unit, Tempered Vision Glazing:
   1. Application: All exterior glazing for windows.
   2. Basis of Design: PPG Industries, Solarban 70 XL.
   3. Outboard Lite: Float glass, 1/4-inch (6mm) thick tempered, minimum.
      a. Tint: Solarbronze (or to match existing).
      b. Coating: Solarban 70 XL Low-E type, on #2 surface.
   4. Inboard Lite: Float glass, 1/4-inch (6mm) thick tempered, minimum.
      a. Tint: Clear.
      b. Solid ceramic enamel frit, color: Lava Bronze (or to match existing), on #4 surface of inboard lite.
   5. Total Thickness: 1-inch.
   6. Visible Light Transmittance: 40 percent.
   7. Winter Nighttime U-Value: 0.28.
   8. Solar Heat Gain Coefficient: 0.21.
   9. Glazing Method: Gasket and/or wet glazing.

2.04 EXTERIOR GLAZING ASSEMBLIES:

A. Structural Design Criteria: Select type and thickness to withstand dead loads and wind loads acting normal to plane of glass at design pressures calculated in accordance with ASCE 7 - 16.
   1. Use the procedure specified in ASTM E 1300 to determine glass type and thickness.
   2. Limit glass deflection to 1/175 or flexure limit of glass, whichever is less, with full recovery of glazing materials.
   3. Thicknesses listed are minimum.

PART THREE - EXECUTION

3.01 PREPARATION:

A. Clean window gaskets and other framing members and glass immediately before glazing. Remove coatings that are not firmly bonded to substrates. Remove lacquer from metal surfaces where elastomeric sealants are indicated for use.

3.02 GENERAL:

A. Comply with combined printed recommendations of manufacturers of sealants, gaskets, and other glazing materials except where more stringent requirements are indicated, including those of referenced glazing standards.

3.03 GLAZING:

A. Force sealants into glazing areas to eliminate voids and to ensure complete "wetting" or bond of sealant to glass and gasket surfaces.
B. Tool exposed surfaces of sealants to provide a substantial "wash" away from glass.
C. Seal porous glazing channels or recesses with substrate compatible primer or sealer.
D. Prime surfaces scheduled to receive sealant.
E. Install sealant in accordance with ASTM C 1193 and GANA sealant manual.
F. Install sealant in accordance with manufacturer’s instructions.
G. Structural Glazing:
    1. Install structural backer tape to aluminum frame set back minimum 1/4-inch in from interior edge of frame.
    2. Mask interior surface of glass at same plane as interior of aluminum frame.
    3. Apply sealant Type “A” between glass and frame on interior, tooling flush with aluminum frame.
    4. Apply backer rod and sealant Type “A” between insulated glass units on exterior of glazing.

3.05 PROTECTION AND CLEANING:

A. Protect glass from contact with contaminating substances resulting from vertical wall coating operations. If, despite such protection, contaminating substances do come into contact with glass, remove immediately by method recommended by material manufacturer.
B. Remove and replace glass which is broken, chipped, cracked, abraded, or damaged in any other way during construction period, including natural causes, accidents, and vandalism.
C. Wash glass not more than four days prior to date scheduled for inspections intended to establish date of substantial completion in each area of project. Wash glass by method recommended by glass manufacturer.

END OF SECTION 08 80 00

SECTION 09 91 00

PAINTING

PART ONE - GENERAL

1.01 SECTION INCLUDES:

A. Preparing and painting wall penetrations.
B. Preparing and painting existing sheet metal accessories.

1.02 RELATED SECTIONS:

A. 07 92 00 - Joint Sealants.

1.03 DESCRIPTION OF WORK:

A. Painting existing steel door and frame and wall penetrations.
B. Touch-up painting miscellaneous sheet metal items.
C. "Paint" as used herein means all coating systems materials, including primers, emulsions, enamels, stains, sealers, fillers, and other applied materials whether used as prime, intermediate, or finish coats.
D. Unless otherwise indicated, metal surfaces of anodized aluminum, stainless steel, chromium plate, copper, bronze, and similar finished materials will not require finish painting.

1.04 SUBMITTALS:

A. Color Samples: Prior to beginning work, submit samples for Owners Representative review of color and texture only. Provide a listing of material and application for each coat of each finish sample. Sample to match existing paint color and texture.
   1. On 12-inch (300mm) section of siding, provide two samples of each color and material with texture to simulate actual conditions. Resubmit samples as requested by Engineer/Consultant until acceptable sheen, color, and texture is achieved.
   2. Final acceptance of colors will be from samples applied on the job.

1.05 QUALITY ASSURANCE:

A. Product Labels: Include manufacturer's name, type of paint, stock number, color, and label analysis on label of containers.
B. Provide primers and other undercoat paint produced by same manufacturer as finish coats. Use only thinners approved by paint manufacturer, and use only within recommended limits.
C. Match existing color or as approved by Owner.
D. Review with Owner's Representative, items shop primed by others to determine compatibility of total coatings system for various substrates. Upon request from other trades, furnish information or characteristics of finish materials provided for use to ensure compatible prime coats are used.

1.06 DELIVERY, STORAGE, AND HANDLING:

A. Deliver materials in original containers with seals unbroken and labels intact.
B. Store rags, paint, and solvents in closed metal containers located in designated area.
C. Comply with applicable health and fire regulations.

1.07 WARRANTY:

A. Provide Owner a written warranty which shall warrant all paint work to be free of defects in materials and workmanship for two years after date of final acceptance.

PART TWO - PRODUCTS

2.01 MANUFACTURERS:

A. Except as otherwise specified, materials shall be products of the following manufacturers:
   1. ICI Paints (Devoe).
   2. Sherwin-Williams Company (SW).
B. Materials selected for coating systems for each type surface shall be product of a single manufacturer unless otherwise specified.

2.02 MATERIALS:

A. Select products from Material List below. Select primary products of a single manufacturer for each coating or paint system, unless otherwise specified.
B. Match existing color as approved by Owner's Representative.
C. Omit primer coat for primed or previously painted surfaces.
D. Paint Material List
   1. Ferrous Metal:
      a. Urethane: Two finish coats over primer
         1) Primer:
            a) SW - Kem Bond HS Universal Metal Primer," B50AZ8.
            b) ICI - "Devran 203" epoxy primer.
         2) Finish Coats:
            a) SW - "Industrial Urethane Alkyd Enamel," B54-150.
            b) ICI - "Devthane Alphatic Urethane".

PART THREE - EXECUTION

3.01 PREPARATION OF SURFACES:

A. Do not apply finishing materials to surfaces that are not physically tight and in first class condition. Remove all foreign matter, corrosion, rough spots, prime coat paint runs, etc., and clean surfaces of dirt, rust, grease, etc. Wire brush miscellaneous steel and iron surfaces and, if necessary, sand smooth metal surfaces to have an enameled finish.

B. If surfaces are not in suitable condition for painting and finishing and cannot be put in such condition by customary preparatory methods, promptly notify Owner's Representative or assume responsibility for and rectify any resulting unsatisfactory finish.
C. The proper preparation of surfaces to be finished will be strictly enforced. Remove defects and refinish wherever finished surfaces show defects due to improper preparation, workmanship, etc.

3.02 WORKMANSHIP:

A. Perform work with skilled mechanics. Spread materials evenly, flowing on without runs, lap marks, or other defects. Color undercoats of paint to match final coat closely. Allow each coat to dry thoroughly before applying succeeding coat. Match approved samples of colors and finishes. If specified number of coats do not result in proper hiding and build up, an additional coat or coats will be required at no additional cost to Owner. There shall be no spray painting in the building unless approved in writing by Owner's Representative.
B. Provide adequate illumination for painting and finishing. Do not perform painting or finishing in dusty areas or in spaces not heated to 60 degrees Fahrenheit (15.6 degrees Celsius). Perform work only when inclement weather conditions are conducive to product application and cure.
C. Sand enameled and varnished surfaces lightly between coats. Carefully wipe off sanding dust before recoating. Use sandpaper of such fineness as will not leave scratches that succeeding coat of finishing material will not obliterate.
D. Reduce paint and finishing materials, if necessary, for proper application with thinner of type and in quantities not in excess of paint and finishing materials properly stirred during application. If specified number of coats of paint or varnish do not result in proper hiding or build up due to excess thinning or improper application, an additional coat or coats will be required at no cost to Owner.

3.03 PROTECTION AND CLEANING:

A. Protect work of other trades against injury or damage during and because of painting and finishing operations. Replace any material or surfaces damaged, or restore, if such is possible, to original condition.
B. Furnish and lay drop cloths in areas where painting and finishing is being done. Protect floors and other surfaces from dripping materials. Where it becomes necessary to remove temporary coverings protecting material in place in order to proceed with work, replace or provide other satisfactory means of protection.
C. Promptly clean off spots of paint, oil, and stains from walls, bricks, hardware, and other surfaces. Do not allow them to accumulate, dry, or harden. Upon completion of the work, check finished surfaces, clean off previously undetected spots and stains used in painting and finishing from the building, and leave entire building in clean condition insofar as painting and finishing work is concerned.

D. Store paints, varnishes, oils, thinners, and other flammable materials outside building, if possible. When necessary to store inside, only store in covered containers in area designated by owner. Remove oily rags and waste from building at end of each day's work. Keep fire hazard to minimum.

END OF SECTION 09 91 00

EXTERIOR WALL AND WINDOW REPAIR PROJECT

for

BELLERIVE SENIOR LIVING COMPLEX
7225 BELLERIVE DRIVE
HOUSTON, TX 77028

PREPARED FOR

HOUSTON
HOUSING AUTHORITY
Transforming Lives & Communities

HOUSTON HOUSING AUTHORITY
2640 FOUNTAIN VIEW DR., #400
HOUSTON, TX 77057

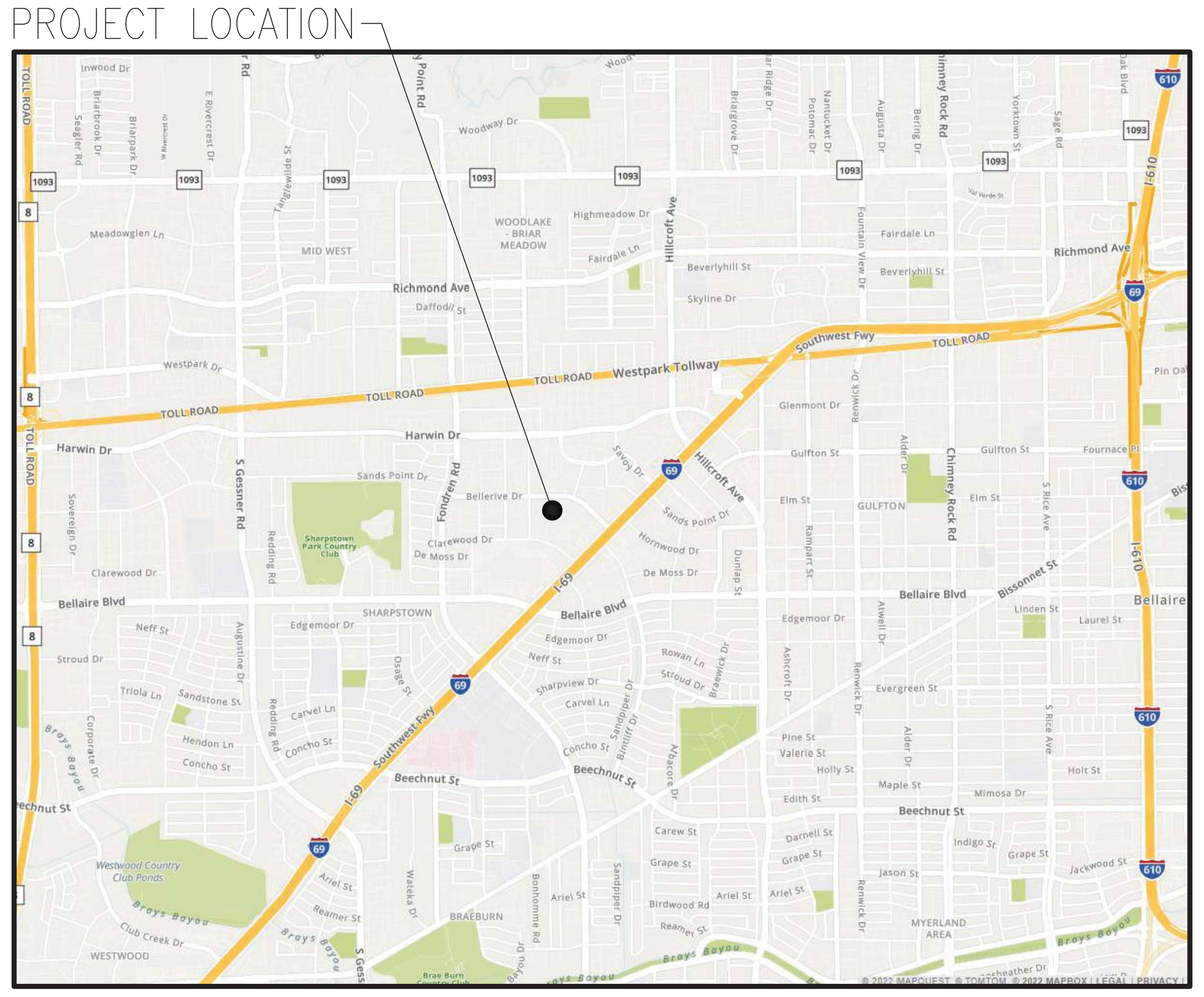
PREPARED BY

PRICE
CONSULTING,
INC.

TX P.E. FIRM # F-3814
PRICE CONSULTING, INCORPORATED
211 HIGHLAND CROSS, SUITE 220
HOUSTON, TEXAS 77073
(281) 209-1724

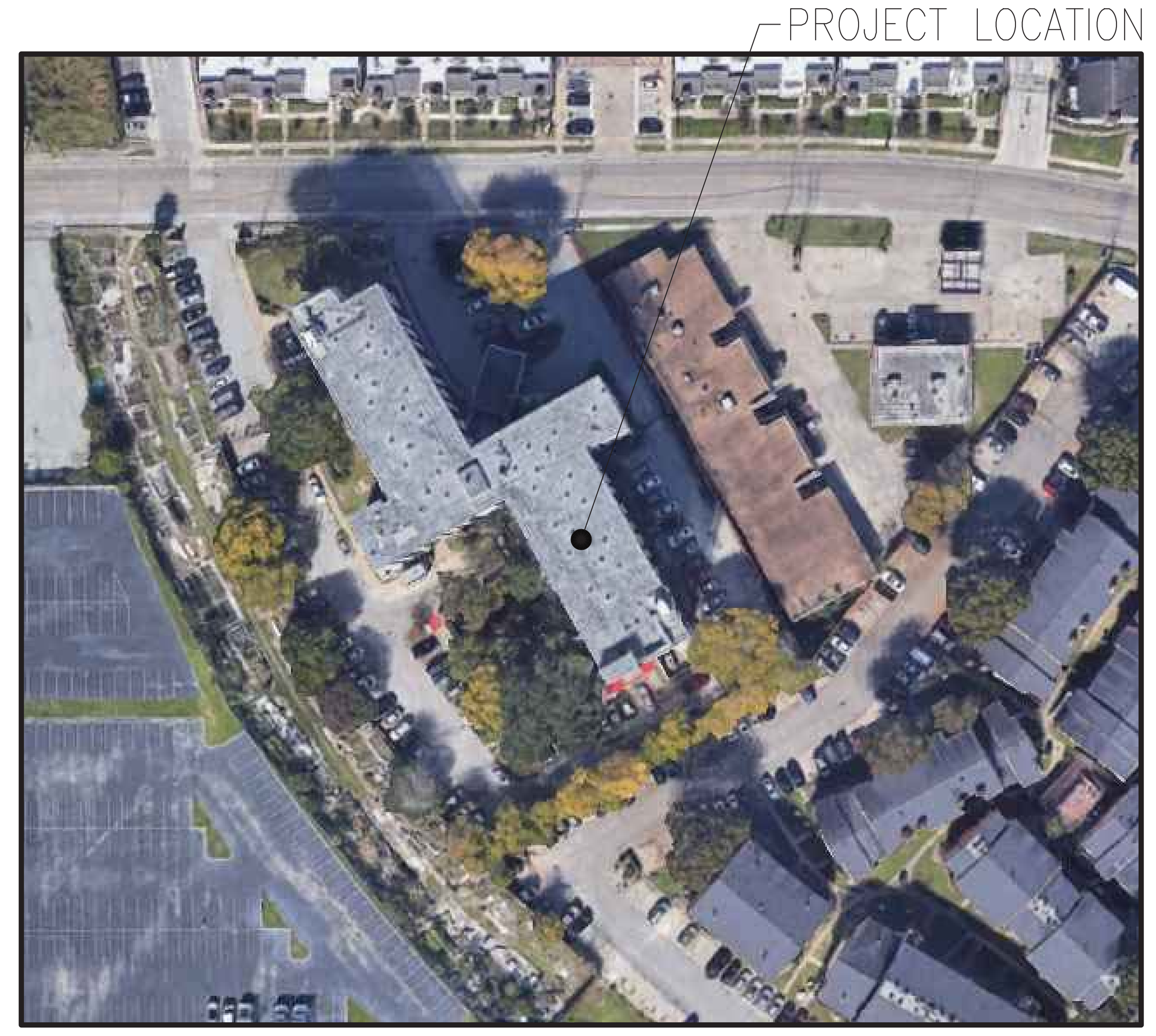
PROJECT LOCATION MAP

PROJECT LOCATION



PROJECT SITE PLAN

PROJECT LOCATION



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R3.01 SOUTH ELEVATION: E WING
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R5.00 DETAILS

Job Number
11955.21
Drawn by
EG
Checked by
KAS
Date
02/21/22
CD
Revised

STATE OF TEXAS
KARL A. SCHAACK
70234
REGISTERED
PROFESSIONAL ENGINEER
F-3814 2/21/22

BELLERIVE SENIOR LIVING COMPLEX
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TX P.E. FIRM # F-3814

COVER
SHEET

R1.00

GENERAL NOTES:

1. THESE DRAWINGS ACCOMPANY SPECIFICATIONS AND DOCUMENTS THAT COMPRISE A PROJECT MANUAL.
2. ALL DIMENSIONS, QUANTITY, AND LOCATIONS PRESENTED IN THESE DRAWINGS SHALL BE FIELD VERIFIED.
3. TYPICAL DETAIL DESIGNATION: 1 (DETAIL NUMBER) / RP1 (SHEET NUMBER)
4. UNLESS INDICATED BY THE TERM "EXISTING", ITEMS PRESENTED ON DRAWINGS ARE CONSIDERED TO BE NEW AND FURNISHED BY CONTRACTOR.

REPAIR NOTES:

a. REPAIR CORNER JOINTS OF OPERABLE WINDOW SASHES.
b. REPLACE BACKER ROD AND SEALANT BETWEEN INSULATED GLASS UNITS AND WINDOW FRAMES AND BETWEEN ADJACENT MULLED WINDOW FRAMES.
c. REPLACE BACKER ROD AND SEALANT AT PERIMETERS OF WINDOW, LOUVER, AND DOOR FRAMES.
d. REPLACE BACKER ROD AND SEALANT BETWEEN ADJACENT BRICK UNITS AT CONTROL JOINTS IN MASONRY AND AT PENETRATIONS IN MASONRY.
e. ROUTE AND APPLY SEALANT AT CRACKS IN BRICK MASONRY.
f. REPAIR "BULGES" IN BRICK MASONRY AT DESIGNATED LOCATIONS.
g. INSTALL WEEPS IN MASONRY HEAD JOINTS AT BASE OF WALL, ABOVE DOORS AND OTHER THROUGH-WALL FLASHING LOCATIONS.
h. REPLACE SEALANT OVER FASTENER HEADS AT OPERABLE WINDOW SASH FRAMES.
i. REPAIR/REPLACE WEATHER-SEAL GASKETS AT WINDOW SASHES.
j. APPLY BOND BREAKER TAPE AND SEALANT BETWEEN GLASS AND STOREFRONT FRAMES (WET SEAL).
k. REMOVE AND REINSTALL EXISTING INSULATED GLASS UNITS AT VARIOUS LOCATIONS.

CONSTRUCTION NOTES:

1. PROVIDE SPECIFIED MANUFACTURER AND CONTRACTOR WARRANTIES.
2. LAYDOWN/STORAGE AREA SHALL BE APPROVED BY OWNER.
3. COORDINATE WORK WITH OWNER TO MINIMIZE DISRUPTIONS IN DAILY OPERATIONS.
4. SITE SHALL BE CLEARED OF MATERIALS AND EQUIPMENT, AND EQUIPMENT PROPERLY STORED AND SECURED ON A DAILY BASIS.
5. PROTECT BUILDING EXTERIOR AND GROUNDS INCLUDING SURFACES, GRASS, PLANTS, TREES, SHRUBS, AND OTHER LANDSCAPING, AND RETURN THE SITE AND ANY DAMAGED ITEMS TO ORIGINAL OR BETTER CONDITION. ANY SURFACES STAINED, MARRED, OR OTHERWISE DAMAGED BY THE WORK SHALL BE RETURNED TO ORIGINAL OR BETTER CONDITION AND MATCH ADJACENT SURFACES.
6. MOVE OR PROTECT OWNER'S/TENANT'S AUTOMOBILES, LAWN FURNITURE, ETC. WITHIN WORK AREA PRIOR TO COMMENCING WORK IN THAT AREA.

LEGEND

- SHEET METAL
- BRICK WALL
- FIXED WINDOW
- OPERABLE WINDOW
- LOUVER
- DOOR

Job Number
11955.21
Drawn by
EG
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KAS
Date
02/21/22
CD
Revised

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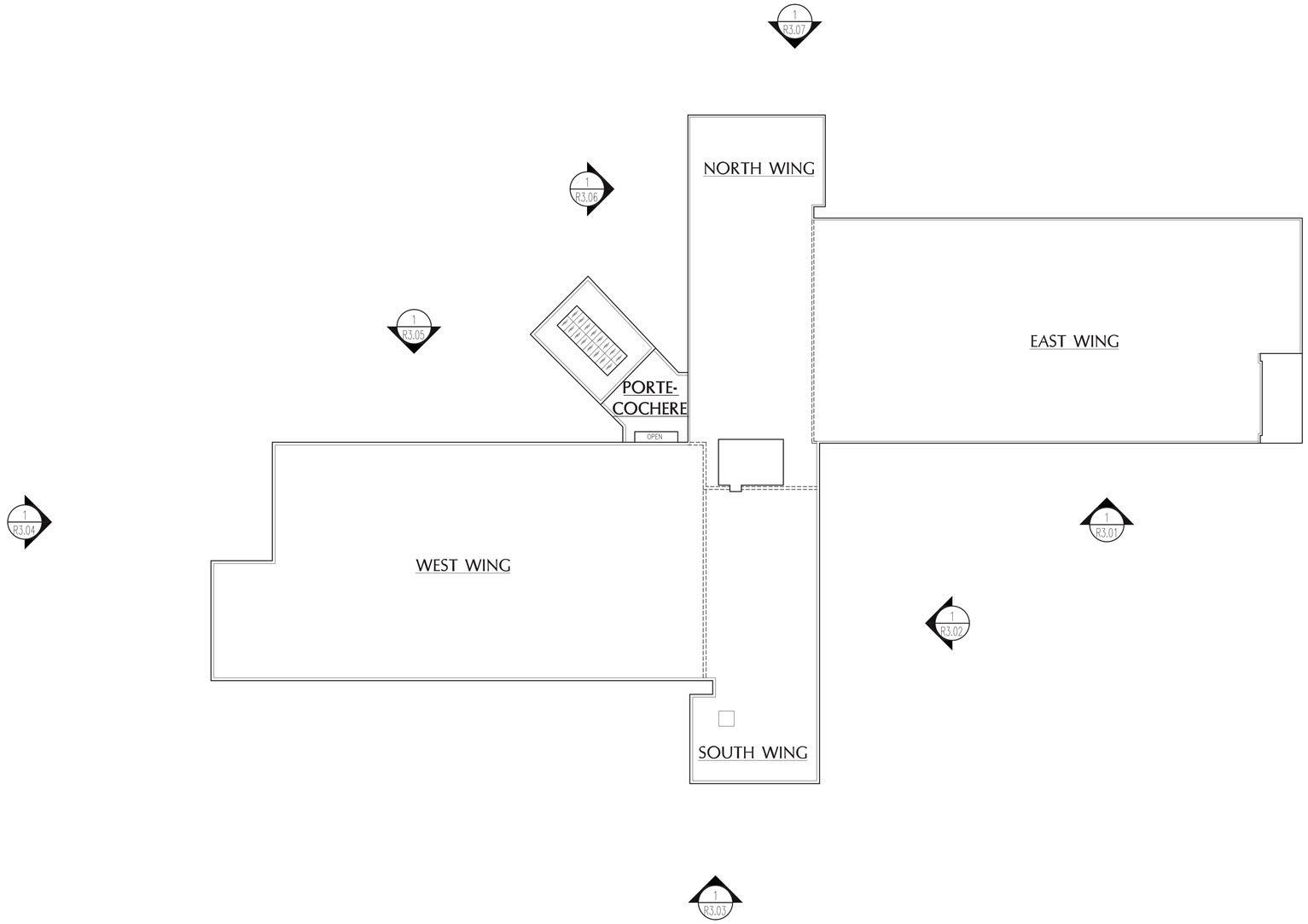
GENERAL NOTES

R1.01



PLAN NORTH

TRUE NORTH

LEGEND

OD OVERFLOW DRAIN	WALL DRAIN
ROOF DRAIN	SUMPED DRAIN
PLUMBING VENT	HEAT EXHAUST
POWER VENT	CURBED HEAT EXHAUST
CURBED VENT STACK	GRAVITY VENT
TURBINE VENT	GRAVITY VENT
CURBED TURBINE VENT	MOISTURE RELIEF VENT
ROUND PENETRATION	GOOSENECK PENETRATION
ABANDONED PENETRATION	PIPE BOX
PIPING ON HANGERS	EXPANSION JOINT
PIPING ON WOOD BLOCKING	ROOF-TO-WALL EXPANSION JOINT
PIPING ON SUPPORTS	METAL EDGE
PARAPET	DOWNSPOUT AND GUTTER
—CD— CONDENSATION DRAIN LINE	—MS— MECHANICAL SCREEN
— E — ELECTRICAL CONDUIT	— W — CHILL / HOT WATER
— G — GAS LINE	AT LP AIR TERMINAL / THROUGH-ROOF CONNECTION
PITCH PAN	
DUCT PENETRATION	CURBED DUCT PENETRATION
EQUIPMENT CURB	DUCT WITH DUCT SUPPORT
VENT / INTAKE	THROUGH-WALL SCUPPER
SCUPPER WITH COLLECTOR HEAD	THROUGH-EDGE SCUPPER
EQUIPMENT ON SUPPORTS	EQUIPMENT ON SLEEPERS
EQUIPMENT ON PITCH PANS	EQUIPMENT ON CURBS
SMOKE HATCH	ROOF HATCH
SATELLITE DISH	SKYLIGHT
ROOF-MOUNTED LADDER	STRUCTURAL SKYLIGHT
CAGED LADDER	STRUCTURAL SKYLIGHT
WALL-MOUNTED LADDER	CHIMNEY
WALKPAD	ROUND GOOSENECK
SPLASHBLOCK	SQUARE GOOSENECK
WALL THICKNESS INDICATOR	RISE-WALL
WALL HEIGHT INDICATOR	SLOPE DIRECTION OF SLOPE
DOOR ACCESS	RIDGE / VALLEY
LIGHT	GUY WIRE ANCHOR
SHINGLE ROOF	TILE ROOF
ANTENNA	METAL ROOF
A2 AREA IDENTIFICATION	COLUMN
X CORE LOCATION	SUSPECTED WET AREA
L LEAK LOCATION	TB TIE-BACK
XX INFRARED I.D.	XX PROBE LOCATION

1 R2.00 OVERALL BUILDING PLAN: RESIDENCE BUILDING

SCALE: 1/8"= 1'-0" (24"X36")

Job Number
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OVERALL BUILDING PLAN

R2.00

REPAIR NOTES:

(a) REPAIR CORNER JOINTS OF OPERABLE WINDOW SASHES.

(b) REPLACE BACKER ROD AND SEALANT BETWEEN INSULATED GLASS UNITS AND WINDOW FRAMES AND BETWEEN ADJACENT MULLED WINDOW FRAMES.

(c) REPLACE BACKER ROD AND SEALANT AT PERIMETERS OF WINDOW, LOUVER, AND DOOR FRAMES.

(d) REPLACE BACKER ROD AND SEALANT BETWEEN ADJACENT BRICK UNITS AT CONTROL JOINTS IN MASONRY AND AT PENETRATIONS IN MASONRY.

(e) ROUTE AND APPLY SEALANT AT CRACKS IN BRICK MASONRY.

(f) REPAIR "BULGES" IN BRICK MASONRY AT DESIGNATED LOCATIONS.

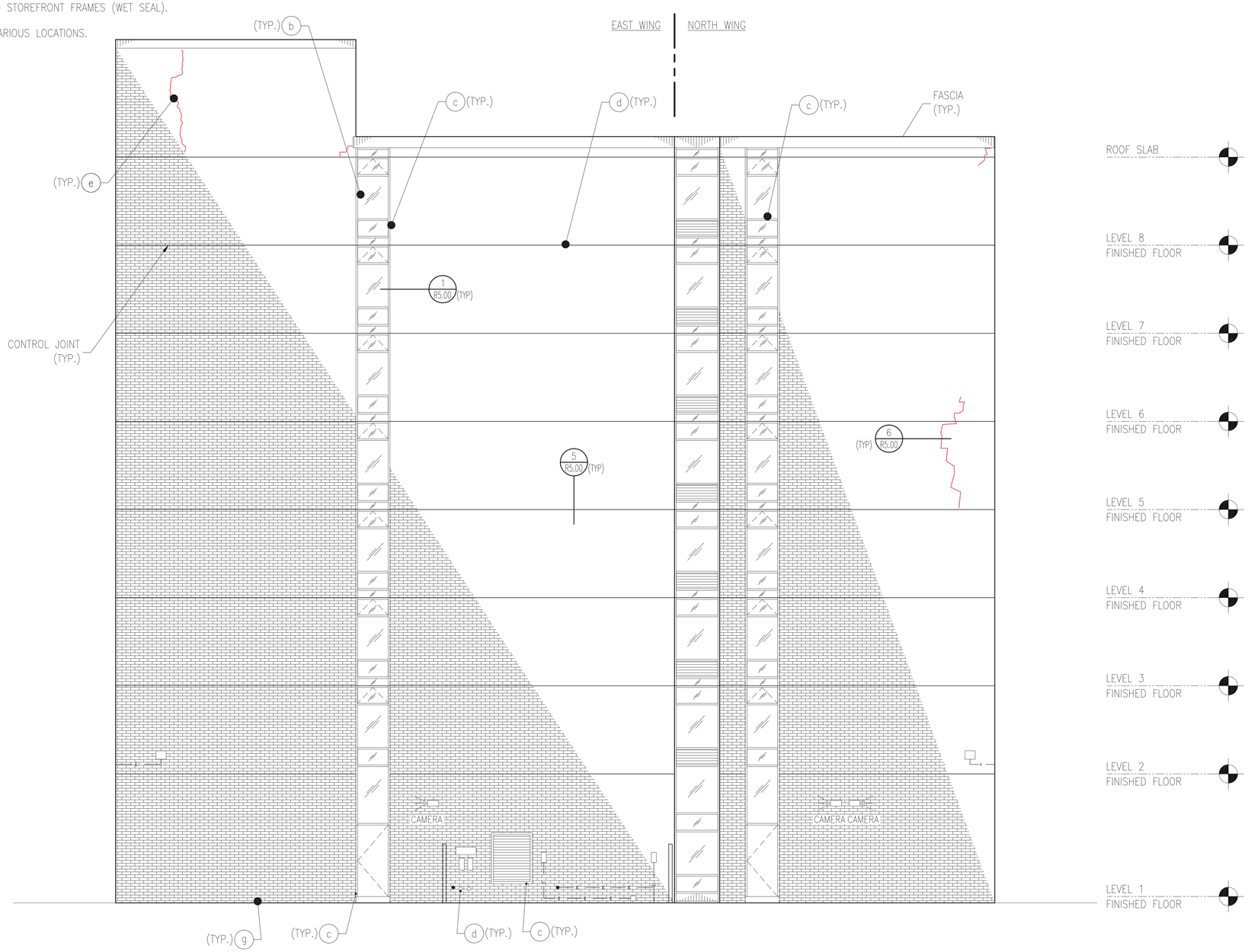
(g) INSTALL WEEPS IN MASONRY HEAD JOINTS AT BASE OF WALL, ABOVE DOORS AND OTHER THROUGH-WALL FLASHING LOCATIONS.

(h) REPLACE SEALANT OVER FASTENER HEADS AT OPERABLE WINDOW SASH FRAMES.

(i) REPAIR/REPLACE WEATHER-SEAL GASKETS AT WINDOW SASHES.

(j) APPLY BOND BREAKER TAPE AND SEALANT BETWEEN GLASS AND STOREFRONT FRAMES (WET SEAL).

(k) REMOVE AND REINSTALL EXISTING INSULATED GLASS UNITS AT VARIOUS LOCATIONS.



1 R3.00 EAST ELEVATION: EAST WING AND NORTH WING

SCALE: NOT TO SCALE(11"X17"); 3/16"=1'-0"(24"X36")

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ELEVATION

R3.00

REPAIR NOTES:

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(j) APPLY BOND BREAKER TAPE AND SEALANT BETWEEN GLASS AND STOREFRONT FRAMES (WET SEAL).

(k) REMOVE AND REINSTALL EXISTING INSULATED GLASS UNITS AT VARIOUS LOCATIONS.

1 / R3.01 SOUTH ELEVATION: EAST WING

SCALE: NOT TO SCALE(11"X17"); 3/16"=1'-0"(24"X36")

Job Number
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ELEVATION

R3.01

REPAIR NOTES:

(a) REPAIR CORNER JOINTS OF OPERABLE WINDOW SASHES.

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(c) REPLACE BACKER ROD AND SEALANT AT PERIMETERS OF WINDOW, LOUVER, AND DOOR FRAMES.

(d) REPLACE BACKER ROD AND SEALANT BETWEEN ADJACENT BRICK UNITS AT CONTROL JOINTS IN MASONRY AND AT PENETRATIONS IN MASONRY.

(e) ROUTE AND APPLY SEALANT AT CRACKS IN BRICK MASONRY.

(f) REPAIR "BULGES" IN BRICK MASONRY AT DESIGNATED LOCATIONS.

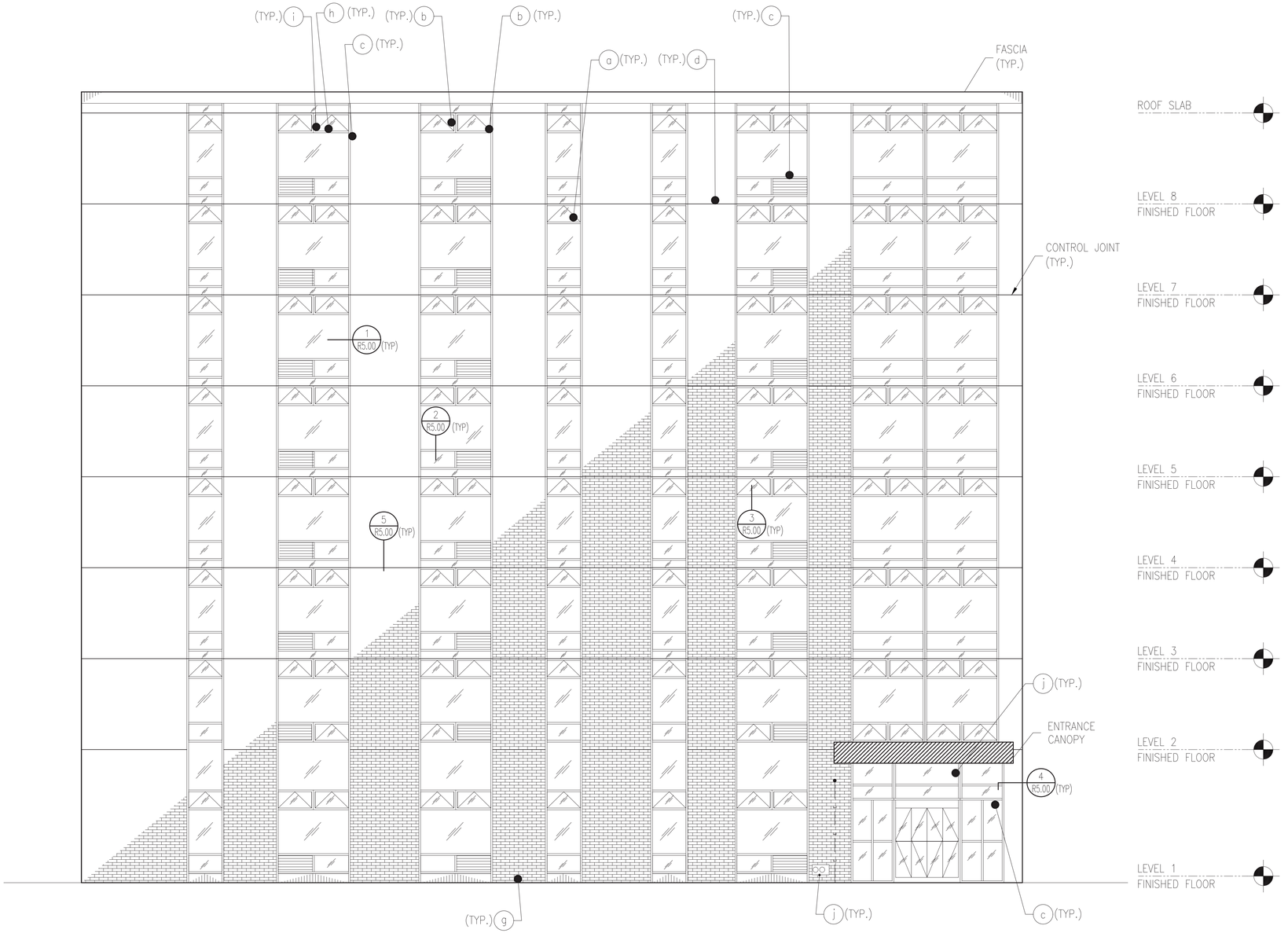
(g) INSTALL WEEPS IN MASONRY HEAD JOINTS AT BASE OF WALL, ABOVE DOORS AND OTHER THROUGH-WALL FLASHING LOCATIONS.

(h) REPLACE SEALANT OVER FASTENER HEADS AT OPERABLE WINDOW SASH FRAMES.

(i) REPAIR/REPLACE WEATHER-SEAL GASKETS AT WINDOW SASHES.

(j) APPLY BOND BREAKER TAPE AND SEALANT BETWEEN GLASS AND STOREFRONT FRAMES (WET SEAL).

(k) REMOVE AND REINSTALL EXISTING INSULATED GLASS UNITS AT VARIOUS LOCATIONS.



1 R3.02 EAST ELEVATION: SOUTH WING

SCALE: NOT TO SCALE(11"X17"); 3/16"=1'-0"(24"X36")

Job Number
11955.21
Drawn by
EG
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KAS
Date
02/21/22
CD

Revised

STATE OF TEXAS
KARL A. SCHAACK
70234
REGISTERED
PROFESSIONAL ENGINEER
F-3814 2/21/22

BELLERIVE SENIOR LIVING COMPLEX
EXTERIOR WALL AND WINDOW REPAIR
7225 BELLERIVE DR, HOUSTON, TX 77036

PRICE CONSULTING, INC.
PRICE CONSULTING, INC.
211 HIGHLAND CROSS, SUITE 220
HOUSTON, TEXAS 77073
PHONE: (281)209-1724
FAX: (281)209-2724
PCI PROJECT NO.: 11955.21
TX P.E. FIRM # F-3814

ELEVATION

R3.02

REPAIR NOTES:

(a) REPAIR CORNER JOINTS OF OPERABLE WINDOW SASHES.

(b) REPLACE BACKER ROD AND SEALANT BETWEEN INSULATED GLASS UNITS AND WINDOW FRAMES AND BETWEEN ADJACENT MULLED WINDOW FRAMES.

(c) REPLACE BACKER ROD AND SEALANT AT PERIMETERS OF WINDOW, LOUVER, AND DOOR FRAMES.

(d) REPLACE BACKER ROD AND SEALANT BETWEEN ADJACENT BRICK UNITS AT CONTROL JOINTS IN MASONRY AND AT PENETRATIONS IN MASONRY.

(e) ROUTE AND APPLY SEALANT AT CRACKS IN BRICK MASONRY.

(f) REPAIR "BULGES" IN BRICK MASONRY AT DESIGNATED LOCATIONS.

(g) INSTALL WEEPS IN MASONRY HEAD JOINTS AT BASE OF WALL, ABOVE DOORS AND OTHER THROUGH-WALL FLASHING LOCATIONS.

(h) REPLACE SEALANT OVER FASTENER HEADS AT OPERABLE WINDOW SASH FRAMES.

(i) REPAIR/REPLACE WEATHER-SEAL GASKETS AT WINDOW SASHES.

(j) APPLY BOND BREAKER TAPE AND SEALANT BETWEEN GLASS AND STOREFRONT FRAMES (WET SEAL).

(k) REMOVE AND REINSTALL EXISTING INSULATED GLASS UNITS AT VARIOUS LOCATIONS.

1 R3.03 SOUTH ELEVATION: WEST WING AND SOUTH WING

SCALE: NOT TO SCALE(11"X17"); 3/16"=1'-0"(24"X36")

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TX P.E. FIRM # F-3814

ELEVATION

R3.03

REPAIR NOTES:

(a) REPAIR CORNER JOINTS OF OPERABLE WINDOW SASHES.

(b) REPLACE BACKER ROD AND SEALANT BETWEEN INSULATED GLASS UNITS AND WINDOW FRAMES AND BETWEEN ADJACENT MULLED WINDOW FRAMES.

(c) REPLACE BACKER ROD AND SEALANT AT PERIMETERS OF WINDOW, LOUVER, AND DOOR FRAMES.

(d) REPLACE BACKER ROD AND SEALANT BETWEEN ADJACENT BRICK UNITS AT CONTROL JOINTS IN MASONRY AND AT PENETRATIONS IN MASONRY.

(e) ROUTE AND APPLY SEALANT AT CRACKS IN BRICK MASONRY.

(f) REPAIR "BULGES" IN BRICK MASONRY AT DESIGNATED LOCATIONS.

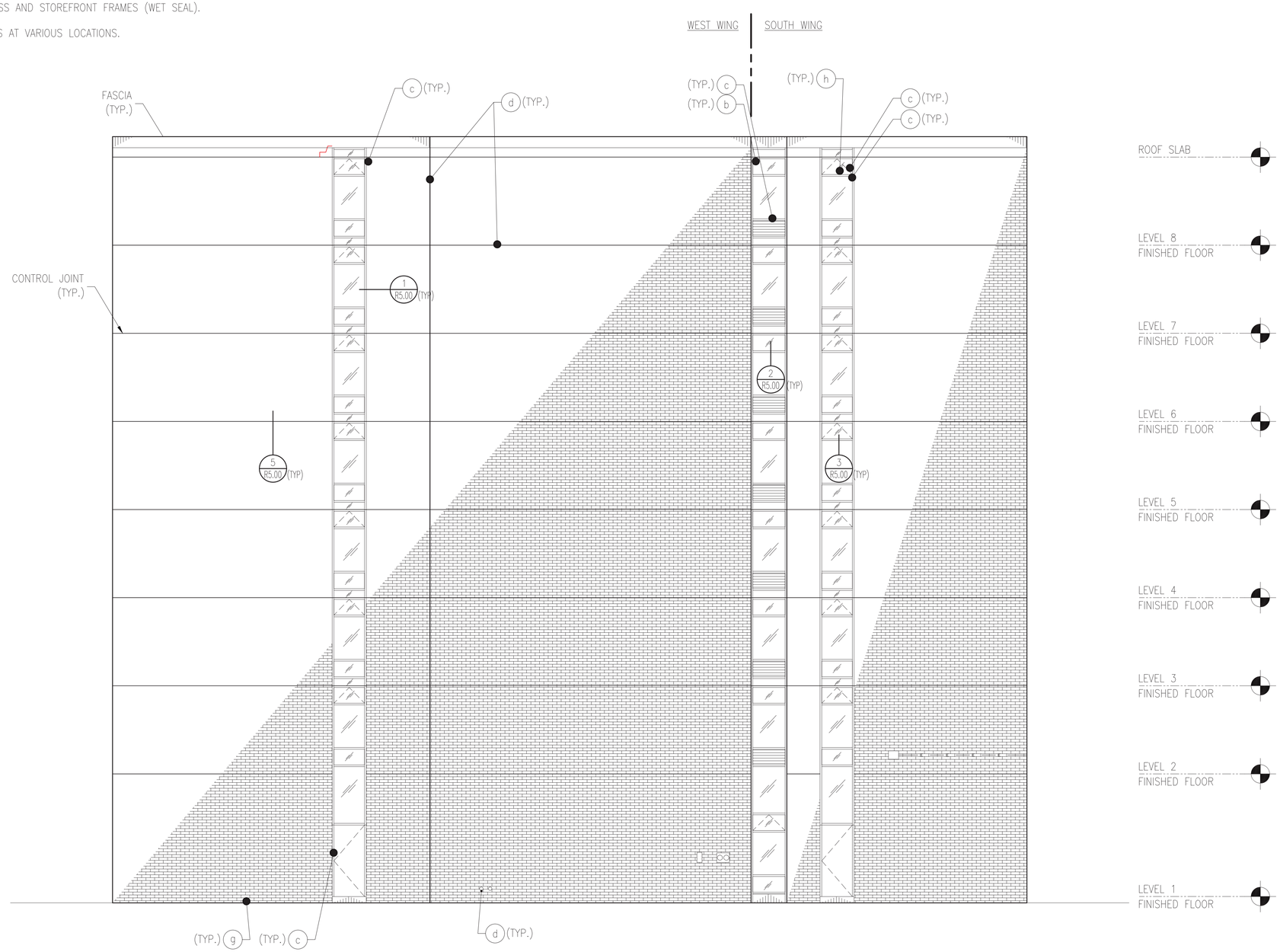
(g) INSTALL WEEPS IN MASONRY HEAD JOINTS AT BASE OF WALL, ABOVE DOORS AND OTHER THROUGH-WALL FLASHING LOCATIONS.

(h) REPLACE SEALANT OVER FASTENER HEADS AT OPERABLE WINDOW SASH FRAMES.

(i) REPAIR/REPLACE WEATHER-SEAL GASKETS AT WINDOW SASHES.

(j) APPLY BOND BREAKER TAPE AND SEALANT BETWEEN GLASS AND STOREFRONT FRAMES (WET SEAL).

(k) REMOVE AND REINSTALL EXISTING INSULATED GLASS UNITS AT VARIOUS LOCATIONS.



1 R3.04 WEST ELEVATION: WEST WING AND SOUTH WING

SCALE: NOT TO SCALE(11"X17"); 3/16"=1'-0"(24"X36")

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ELEVATION

R3.04

REPAIR NOTES:

(a) REPAIR CORNER JOINTS OF OPERABLE WINDOW SASHES.

(b) REPLACE BACKER ROD AND SEALANT BETWEEN INSULATED GLASS UNITS AND WINDOW FRAMES AND BETWEEN ADJACENT MULLED WINDOW FRAMES.

(c) REPLACE BACKER ROD AND SEALANT AT PERIMETERS OF WINDOW, LOUVER, AND DOOR FRAMES.

(d) REPLACE BACKER ROD AND SEALANT BETWEEN ADJACENT BRICK UNITS AT CONTROL JOINTS IN MASONRY AND AT PENETRATIONS IN MASONRY.

(e) ROUTE AND APPLY SEALANT AT CRACKS IN BRICK MASONRY.

(f) REPAIR "BULGES" IN BRICK MASONRY AT DESIGNATED LOCATIONS.

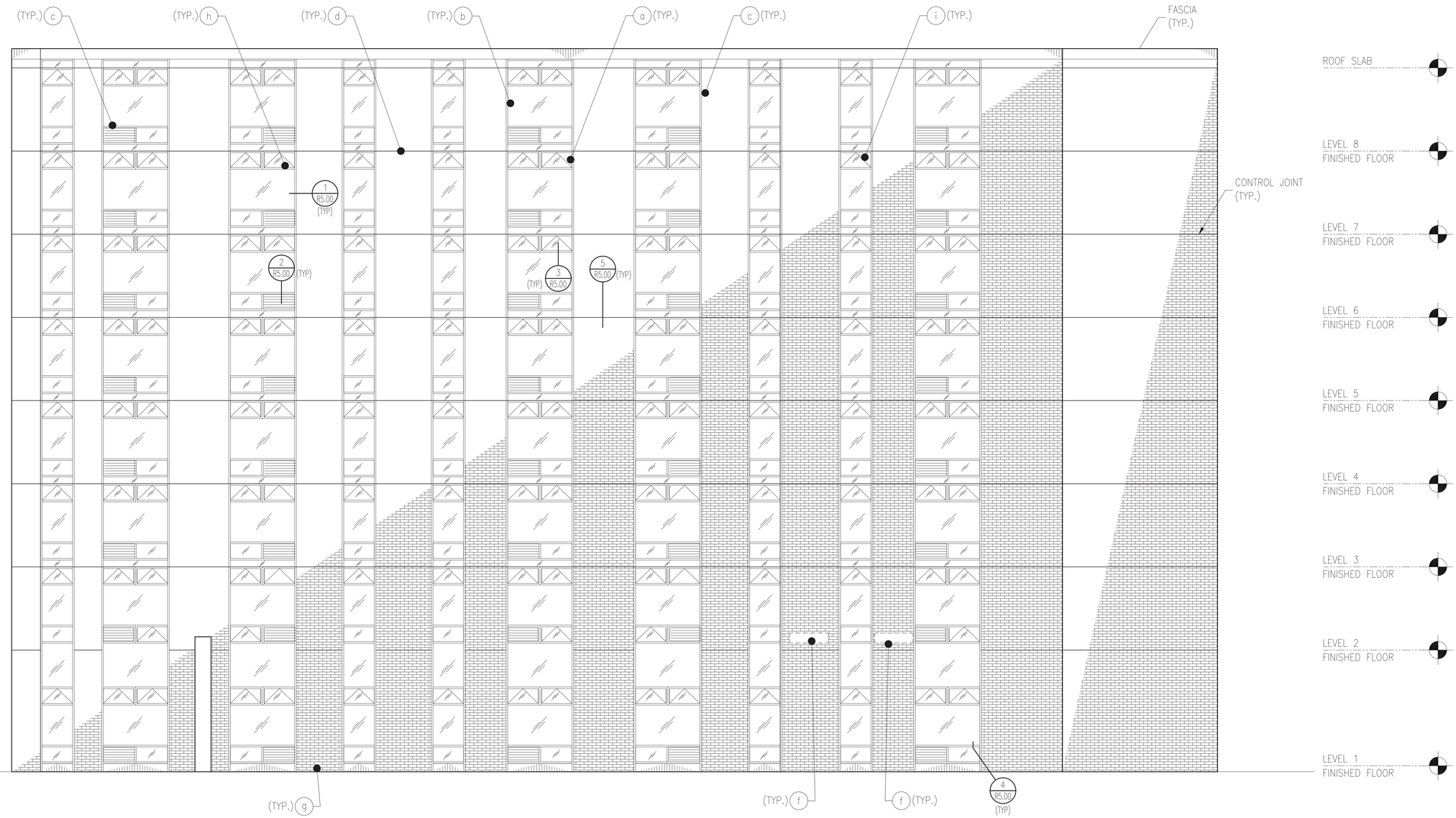
(g) INSTALL WEEPS IN MASONRY HEAD JOINTS AT BASE OF WALL, ABOVE DOORS AND OTHER THROUGH-WALL FLASHING LOCATIONS.

(h) REPLACE SEALANT OVER FASTENER HEADS AT OPERABLE WINDOW SASH FRAMES.

(i) REPAIR/REPLACE WEATHER-SEAL GASKETS AT WINDOW SASHES.

(j) APPLY BOND BREAKER TAPE AND SEALANT BETWEEN GLASS AND STOREFRONT FRAMES (WET SEAL).

(k) REMOVE AND REINSTALL EXISTING INSULATED GLASS UNITS AT VARIOUS LOCATIONS.



1 R3.05 NORTH ELEVATION: WEST WING

SCALE: NOT TO SCALE(11"X17"); 3/16"=1'-0"(24"X36")

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ELEVATION

R3.05

REPAIR NOTES:

(a) REPAIR CORNER JOINTS OF OPERABLE WINDOW SASHES.

(b) REPLACE BACKER ROD AND SEALANT BETWEEN INSULATED GLASS UNITS AND WINDOW FRAMES AND BETWEEN ADJACENT MULLED WINDOW FRAMES.

(c) REPLACE BACKER ROD AND SEALANT AT PERIMETERS OF WINDOW, LOUVER, AND DOOR FRAMES.

(d) REPLACE BACKER ROD AND SEALANT BETWEEN ADJACENT BRICK UNITS AT CONTROL JOINTS IN MASONRY AND AT PENETRATIONS IN MASONRY.

(e) ROUTE AND APPLY SEALANT AT CRACKS IN BRICK MASONRY.

(f) REPAIR "BULGES" IN BRICK MASONRY AT DESIGNATED LOCATIONS.

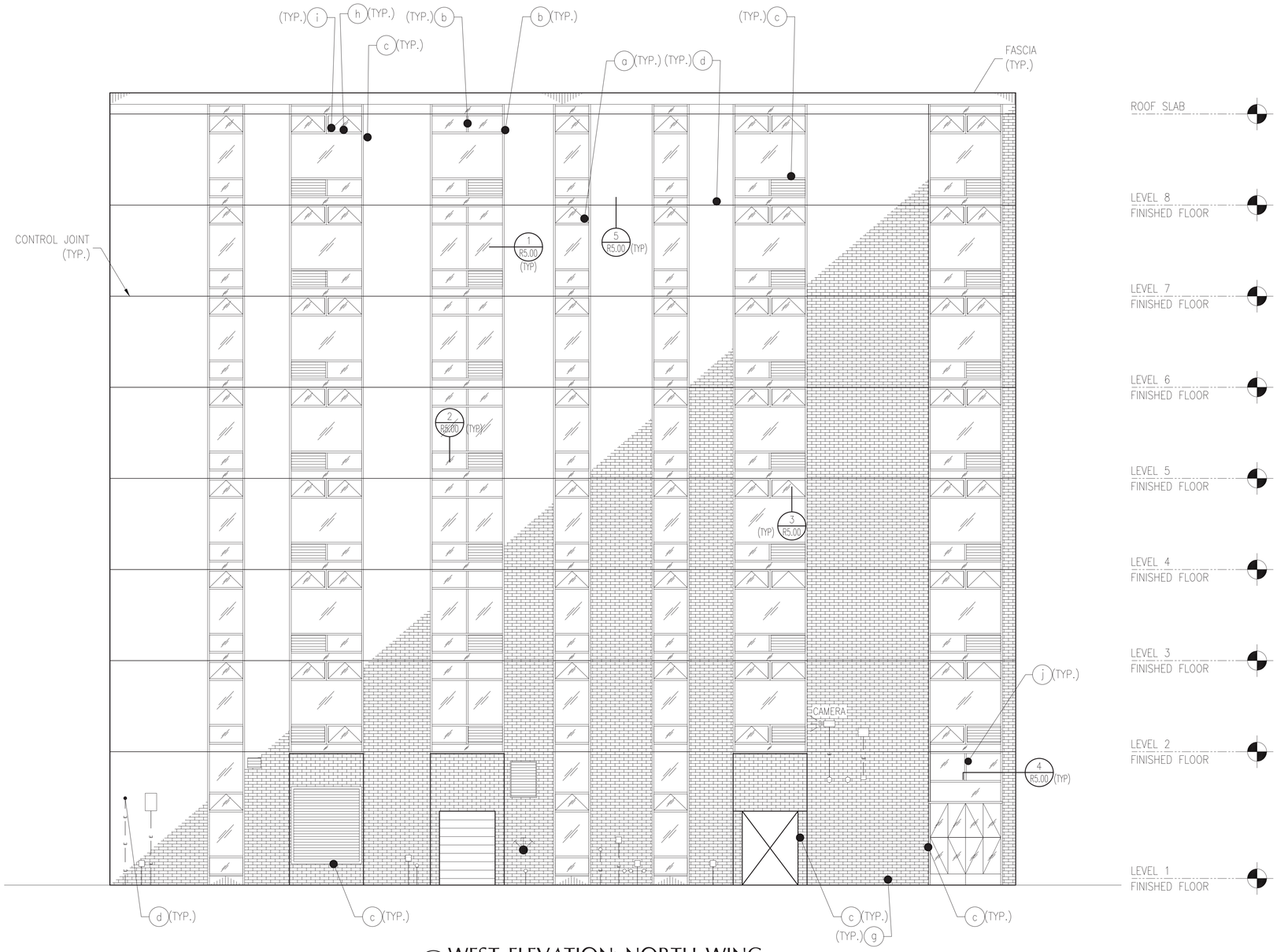
(g) INSTALL WEEPS IN MASONRY HEAD JOINTS AT BASE OF WALL, ABOVE DOORS AND OTHER THROUGH-WALL FLASHING LOCATIONS.

(h) REPLACE SEALANT OVER FASTENER HEADS AT OPERABLE WINDOW SASH FRAMES.

(i) REPAIR/REPLACE WEATHER-SEAL GASKETS AT WINDOW SASHES.

(j) APPLY BOND BREAKER TAPE AND SEALANT BETWEEN GLASS AND STOREFRONT FRAMES (WET SEAL).

(k) REMOVE AND REINSTALL EXISTING INSULATED GLASS UNITS AT VARIOUS LOCATIONS.



1 / R3.06 WEST ELEVATION: NORTH WING

SCALE: NOT TO SCALE(11"X17"); 3/16"=1'-0"(24"X36")

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TX P.E. FIRM # F-3814

ELEVATION

R3.06

REPAIR NOTES:

(a) REPAIR CORNER JOINTS OF OPERABLE WINDOW SASHES.

(b) REPLACE BACKER ROD AND SEALANT BETWEEN INSULATED GLASS UNITS AND WINDOW FRAMES AND BETWEEN ADJACENT MULLED WINDOW FRAMES.

(c) REPLACE BACKER ROD AND SEALANT AT PERIMETERS OF WINDOW, LOUVER, AND DOOR FRAMES.

(d) REPLACE BACKER ROD AND SEALANT BETWEEN ADJACENT BRICK UNITS AT CONTROL JOINTS IN MASONRY AND AT PENETRATIONS IN MASONRY.

(e) ROUTE AND APPLY SEALANT AT CRACKS IN BRICK MASONRY.

(f) REPAIR "BULGES" IN BRICK MASONRY AT DESIGNATED LOCATIONS.

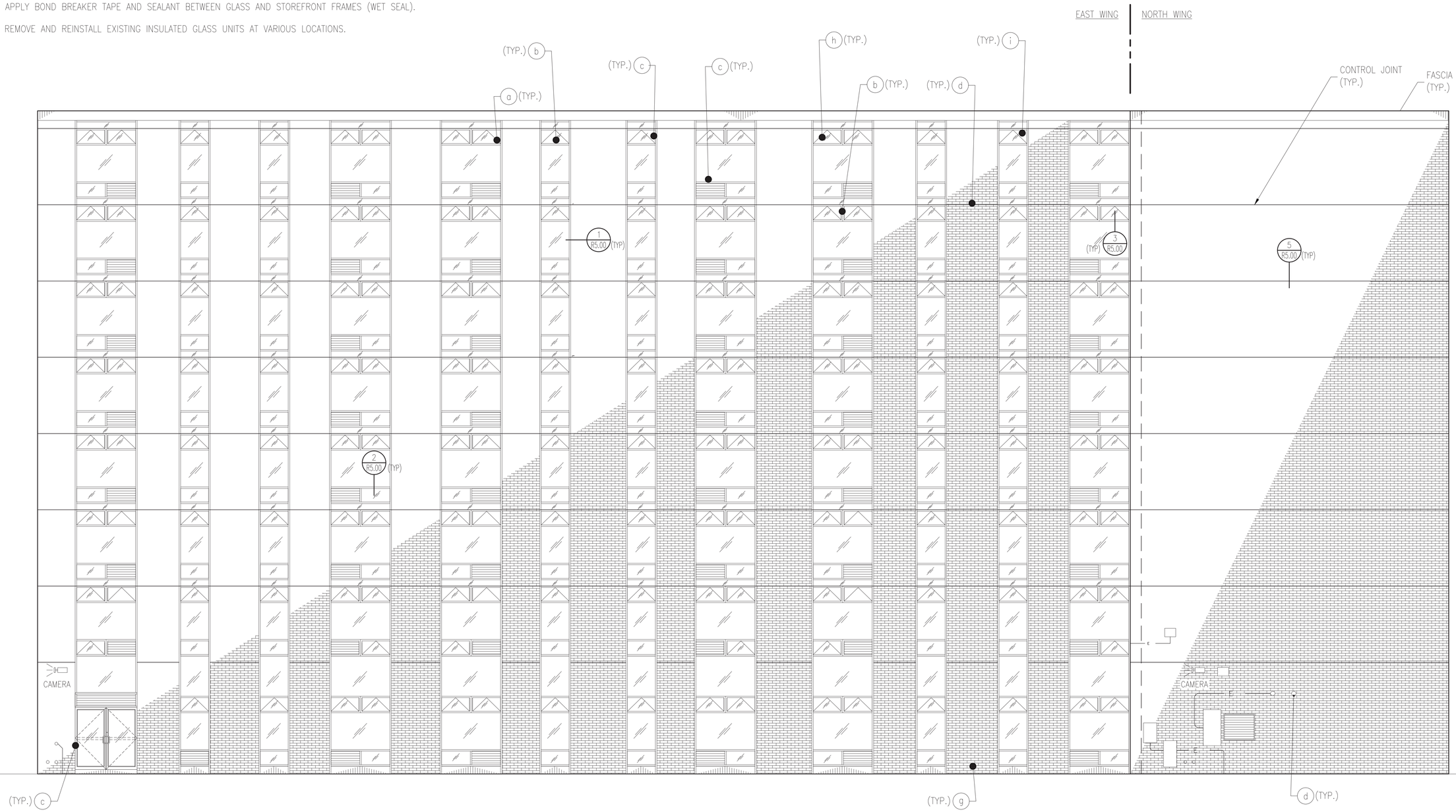
(g) INSTALL WEEPS IN MASONRY HEAD JOINTS AT BASE OF WALL, ABOVE DOORS AND OTHER THROUGH-WALL FLASHING LOCATIONS.

(h) REPLACE SEALANT OVER FASTENER HEADS AT OPERABLE WINDOW SASH FRAMES.

(i) REPAIR/REPLACE WEATHER-SEAL GASKETS AT WINDOW SASHES.

(j) APPLY BOND BREAKER TAPE AND SEALANT BETWEEN GLASS AND STOREFRONT FRAMES (WET SEAL).

(k) REMOVE AND REINSTALL EXISTING INSULATED GLASS UNITS AT VARIOUS LOCATIONS.



1 R3.07 NORTH ELEVATION: EAST WING AND NORTH WING

SCALE: NOT TO SCALE(11"X17"); 3/16"=1'-0"(24"X36")

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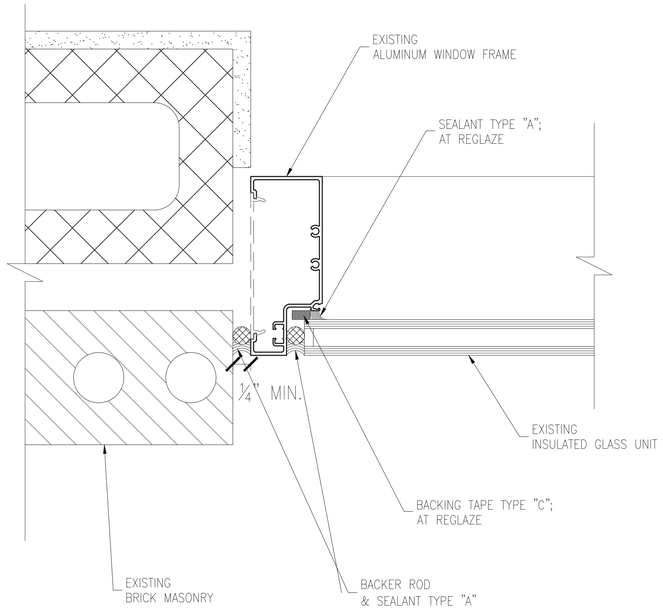
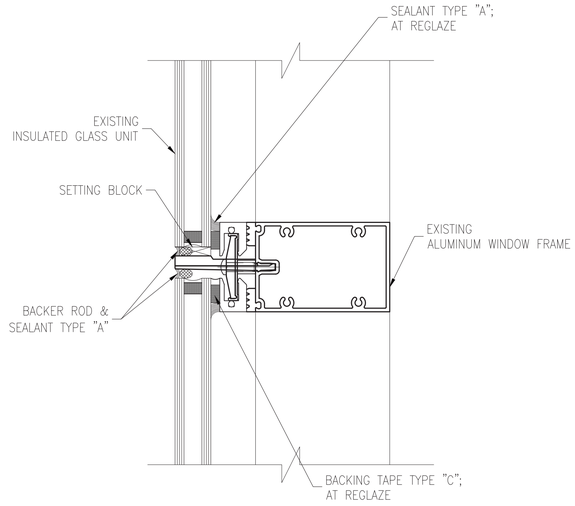
ELEVATION

R3.07



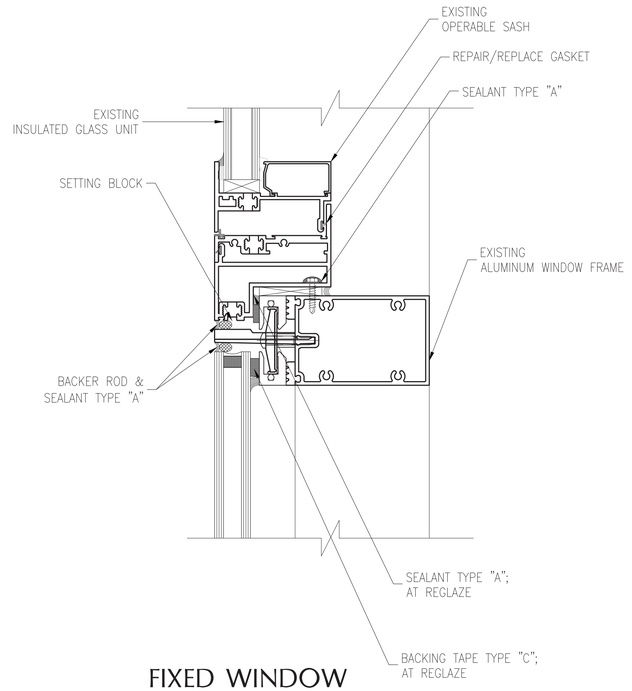
1 R5.00 FIXED WINDOW JAMB

SCALE: NOT TO SCALE(11"X17"); NOT TO SCALE(24"X36")



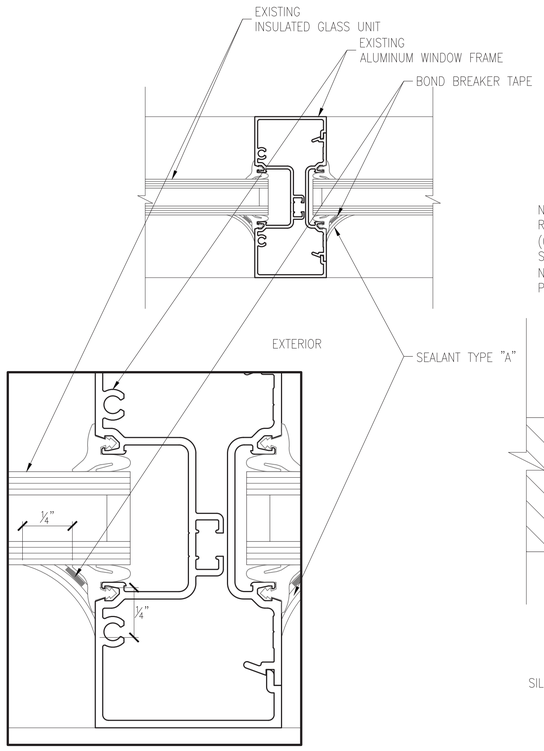
2 R5.00 FIXED WINDOW INTERMEDIATE MULLION

SCALE: NOT TO SCALE(11"X17"); NOT TO SCALE(24"X36")



3 R5.00 FIXED WINDOW BELOW OPERABLE SASH

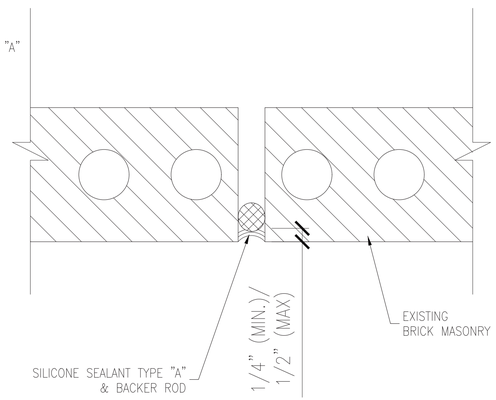
SCALE: NOT TO SCALE(11"X17"); NOT TO SCALE(24"X36")



4 R5.00 STOREFRONT WINDOW INTERMEDIATE MULLION

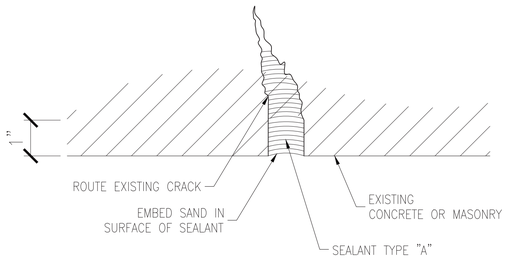
SCALE: NOT TO SCALE(11"X17"); NOT TO SCALE(24"X36")

NOTE:
REMOVE EXISTING SEALANT & BACKER ROD; CLEAN (GRIND) SURFACES OF BRICK TO RECEIVE NEW SEALANT. WIPE CLEAN & PRIME SURFACES. INSTALL NEW BACKER ROD & SEALANT W/ TOOLED CONCAVE PROFILE.



5 R5.00 MASONRY CONTROL JOINT

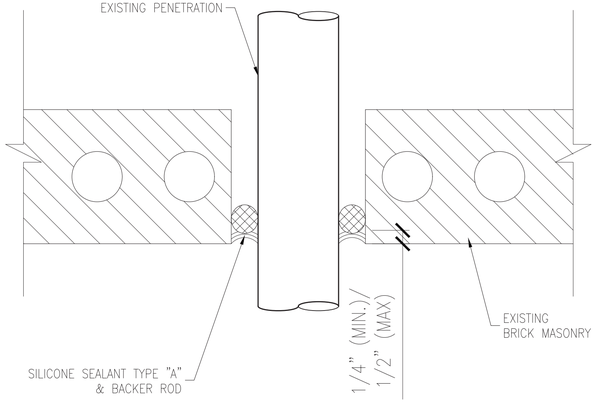
SCALE: NOT TO SCALE(11"X17"); NOT TO SCALE(24"X36")



6 R5.00 MASONRY CRACK REPAIR

SCALE: NOT TO SCALE(11"X17"); NOT TO SCALE(24"X36")

NOTE:
REMOVE EXISTING SEALANT & BACKER ROD; CLEAN (GRIND) SURFACES OF BRICK TO RECEIVE NEW SEALANT. WIPE CLEAN & PRIME SURFACES. INSTALL NEW BACKER ROD & SEALANT W/ TOOLED CONCAVE PROFILE.



7 R5.00 PENETRATION

SCALE: NOT TO SCALE(11"X17"); NOT TO SCALE(24"X36")

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DETAILS

R5.00