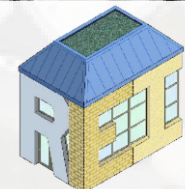




# James J. Peters VA Medical Center Chapel Façade Investigation and Probe

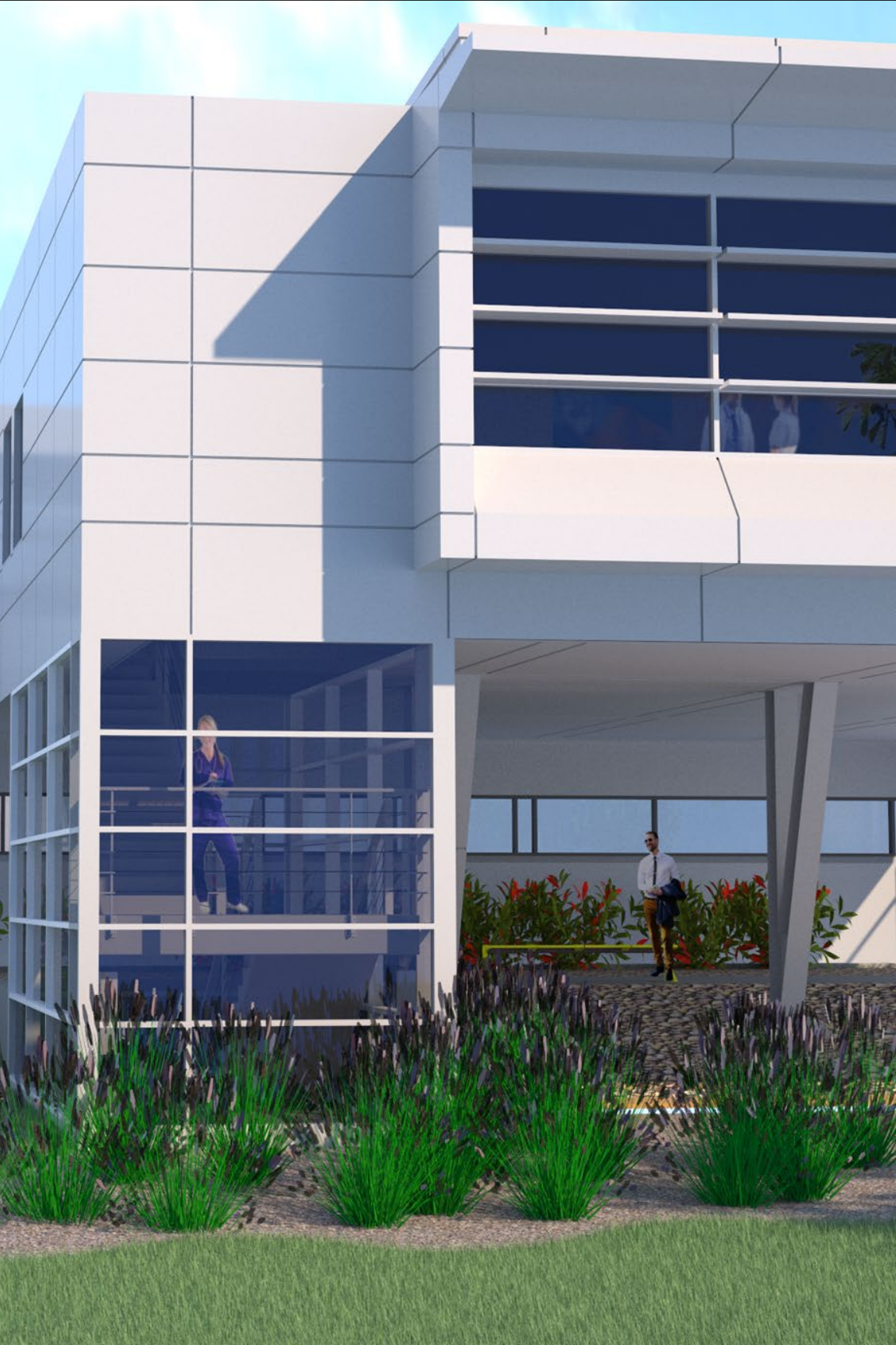
Solicitation No. 36C24223R0057

A/E Services by Mimar JM Murphy Architects & Engineers, LLC  
and specialty SME consultant Restoration Engineering Inc.





# Chapel Façade Investigation and Probe Team



## MIMAR

**JM Murphy Architects, Engineers & Constr. Mgrs., LLC**

- Certified as a SDVOSB
- Team consist of **registered architects, forensic and restoration specialist, specialized facility assessment experts,** and engineers
- **Working with the VAMC for over 8 yrs.**
- **Extensive experience with Historic Building Repair & Restoration**
- **All-Encompassing portfolio of building restoration, waterproofing, roof repair, and building envelop projects**
- **Has been on site previously at the James J. Peters VA Medical Center in Bronx, NY**

## Restoration Engineering, Inc.

**Role:** Sub, Forensic Building Envelope, Historic Restoration



- Founded in 2002 by Jeffrey Hugney, P.E.
- Specializes in the restoration of exterior building components and moisture through building envelopes
- Exp. with Façade and Roofing Investigations, Water tests and Moisture Surveys.
- Exp. with Historic Preservation – Masonry Structures and windows.
- Exp. With several property management firms in Virginia, Maryland, Delaware, and the District of Columbia



# DESIGN TEAM KEY PERSONNEL



**Kal I. Bhatti, AIA, NCARB**  
*Principal – in - Charge*

- B. Arch 1978 | M. Arch Urban Design 1987 | University Of New Mexico
- CE: Harvard School of Design, 1998
- **25** years managing the design of city/state and government facilities
- Over **24** years experience serving the **federal agencies including the VAMC**



**Tony Tso, AIA, LEED AP**  
*Project Manager*

- **35** Yrs. Exp.
- **Exp. in forensic investigation for facilities of diverse scales**
- Exp. with city/ state and government facilities
  - MD DGS Department of Public Works Building
  - Keating Federal Building, Rochester, NY
  - Ronald Reagan Building and International Trade Center, Washington, DC



**Jeffrey M. Hugney, PE**  
*Forensic Engineer*

- BS in Civil Engineering (specializing in Structural Engineering)
- 35 Years Exp.; 19 with REI
- Licensed PE
- Certified Infrared Thermographer – Building Science.



**Timothy Cork, PE**  
*Forensic Engineer*

- MS / 2013 / Structural Engineering
- BS / 2012 / Civil Engineering (Structural Concentration)
- Over 10 yrs. of experience
- Attended (2022) “Retrofit Anchoring of Masonry and Stone Facades” seminar.





# QUESTIONS

**1.**

- a. Have you handled similar probe projects?**
- b. How would you proceed with a probe when you cannot see past the brick wall?**

**2.**

**What would your firm do if after a probe was made, you incurred a beam or support structure?**

**3.**

**a. What is your experience in waterproofing an older façade?**

**b. As this building is very old, how would you analyze the strength of the old waterproofing membrane (or other layers beyond the brick) and use that knowledge to instruct a contractor to fix this façade?**



**QUESTION 1a.**

---

**Have you handled  
similar probe projects?**

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# YES

Over **08** years of experience with:

Waterproofing, Investigation of Building Envelopes,  
Probing, Building Façade Improvements, and Historic  
Restoration.



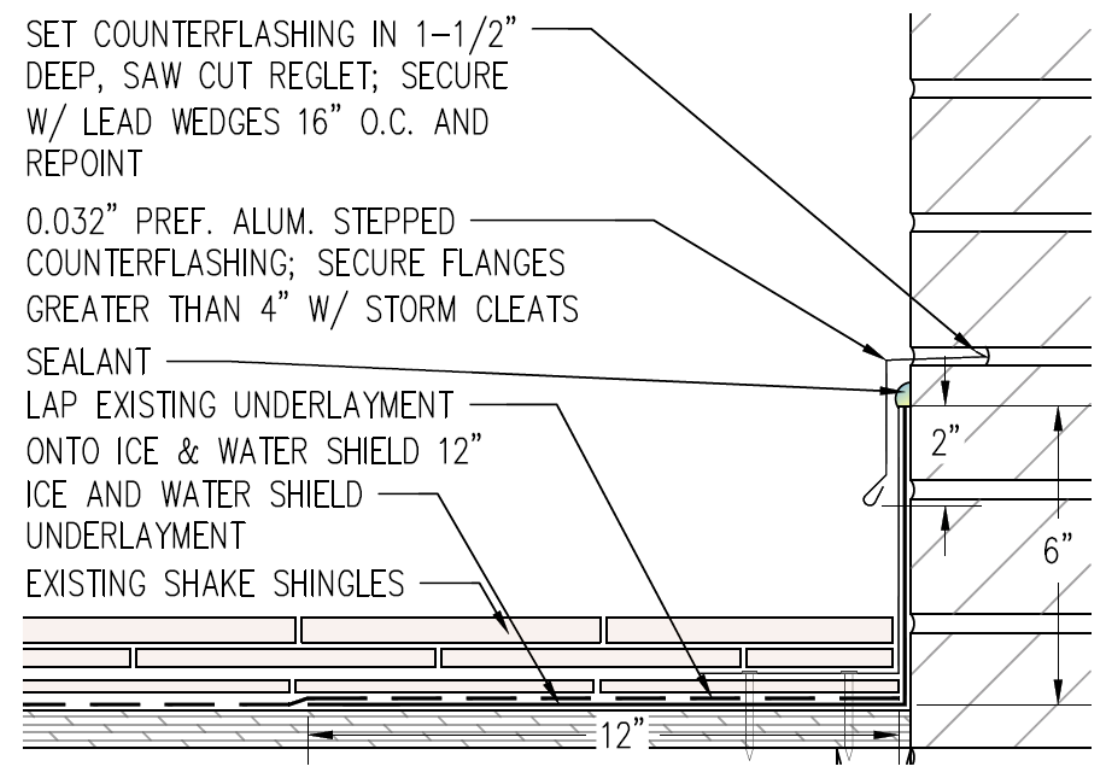


### Adelphi Mill Historic Site, Hyattsville, MD

Chimney Masonry and Leak Repair

- Originally built in 1796 by the Scholfield Brothers.
- Reportedly the oldest surviving mill in the Washington area.
- 2.5 story building with a rustic stone facade, brick masonry chimney, single pane windows, and solid wood doors.
- It is now used as an event space that can be rented by the public.





3 CHIMNEY STEP FLASHING DETAIL  
A-5.1 3" = 1'-0"

### Adelphi Mill Historic Site, Hyattsville, MD

#### Chimney Masonry and Leak Repair

- The mill is currently experiencing leaks at the chimney.
- Performed an extensive investigation of the existing waterproofing system including water testing at the chimney.
- Prepared specifications to repoint the chimney with historically correct lime based mortar.
- Prepared designs for new chimney flashings, including copper base flashings, counterflashings, and a chimney cap flashing.





### Pentagon RSAC Interstitial Space , Arlington, VA

#### Waterproofing Repairs

- Performed investigation.
- Prepared a report identifying existing conditions and outlined a basis of design for repairs.
- Prepared drawings and technical specifications for waterproofing replacement including new hot-applied rubberized asphalt waterproofing system in the Mall Terrace moat.
- Project included removal and reinstallation of limestone wall panels to install new through-wall flashing
- Performed Contract Administration Services during construction.







Pentagon RSAC Interstitial Space, Arlington, VA

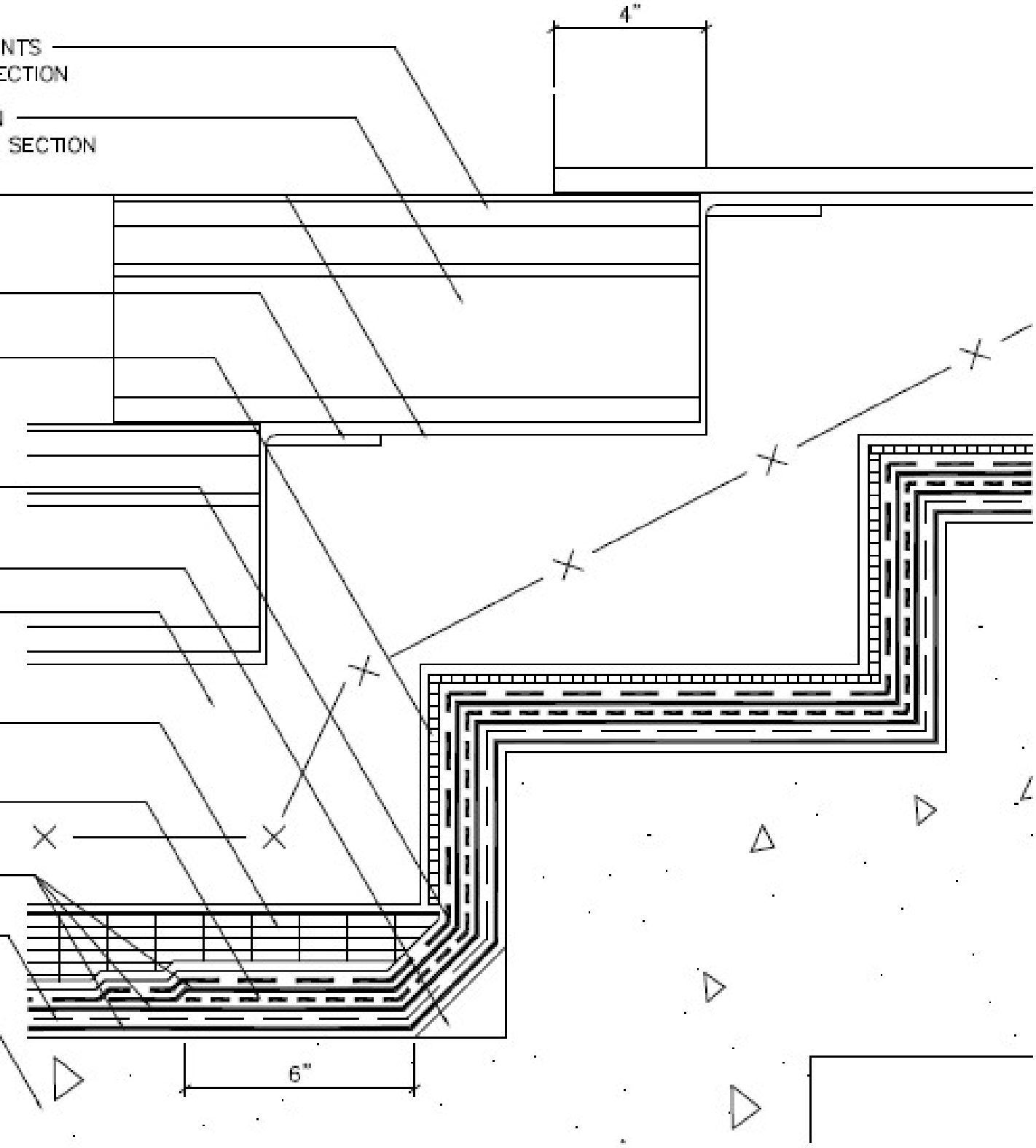


- 20 OZ COPPER RECEIVER; SOLDER ALL JOINTS WATERTIGHT; FASTEN W/NAILINS, 2 PER SECTION
- 20 OZ COPPER COUNTERFLASHING; FASTEN W/SCREWS W/NEOPRENE WASHERS, 2 PER SECTION
- REMOVE AND REPLACE CONCRETE TOPPING AT STAIRS TO INSTALL NEW WATERPROOFING; REINFORCE W/WWF
- CAST NEW STEEL STAIR NOSINGS INTO EDGE OF NEW CONCRETE TOPPING
- 6" WIDE STRIP OF DRAINAGE BOARD CONT. FROM TOP OF STEPS TO MOAT FLOOR; SPACE STRIPS 24" O.C. ACROSS STEPS

- SEPARATOR/PROTECTION SHEET SET IN HOT-APPLIED RUBBERIZED ASPHALT
- CONCRETE CANT
- REMOVE AND REPLACE CONCRETE TOPPING AT MOAT FLOOR TO INSTALL NEW WATERPROOFING; REINFORCE W/WWF
- 2" EXTRUDED POLYSTYRENE INSULATION BOARD W/BOTTOM DRAINAGE CHANNELS
- UNCURED NEOPRENE SHEET SET IN HOT-APPLIED RUBBERIZED ASPHALT
- HOT-APPLIED RUBBERIZED ASPHALT MEMBRANE
- POLYESTER SHEET
- EXISTING STRUCTURAL CONCRETE DECK

**IMPORTANT NOTE:** PITCH STAIR TREADS SLIGHTLY TO ENSURE NO PONDING WATER ON STAIRS.

**NOTE:** BASEFLASHING BEYOND EXTENDS TO UNDERSIDE OF LIMESTONE COPING AT SOUTH SIDE OF STAIRS AND 4" ABOVE TOPPING (STEPPED AS SHOWN ON THIS DETAIL) AT NORTH SIDE.



STAIRS AT MOAT FLOOR DETAIL 11

SCALE: 3"=1'-0"

AF-03/AT-05





### St. Augustine Catholic Church, Washington, DC

#### Historic Steeple Restoration

- Originally built in 1893.
- Likely one of the earliest examples of reinforced concrete structures constructed in Washington, D.C.
- The steeple rises several story levels above the two-story church, and includes structural wood framing, reinforced concrete, brick and stone masonry.
- The church remains an active Catholic Church, though the steeples are not accessible to the public.







### St. Augustine Catholic Church, Washington, DC

#### Historic Steeple Restoration

- The steeple was experiencing deterioration of the reinforced concrete, brick and stone masonry, and wood framing, due to prolonged moisture intrusion.
- Performed an extensive investigation of the existing steeple to identify extent of deterioration and water damage.
- Prepared specifications to repoint the stone mortar joints and reform steeple finials with specialty restoration mortar.
- Prepared designs for stone and brick masonry repointing and stitching repairs, reinforced concrete repairs, and traffic coatings.



**QUESTION 1b.**

How would you proceed with a probe when you cannot see past the brick wall?

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Discuss w/Building Personnel and observe location where leaks show inside the building

Review available Construction Drawings

Visually inspect:

- the gable end wall coping and base flashings (not visible in photo)
- the masonry mortar joints and brick units themselves
- Flat roof membrane, base flashing, expansion joint flashing, counterflashing and railing post flashings
- Parapet coping end dam
- Window, door opening

Infra red moisture survey masonry wall /flat roofing

Test cut (Probe):

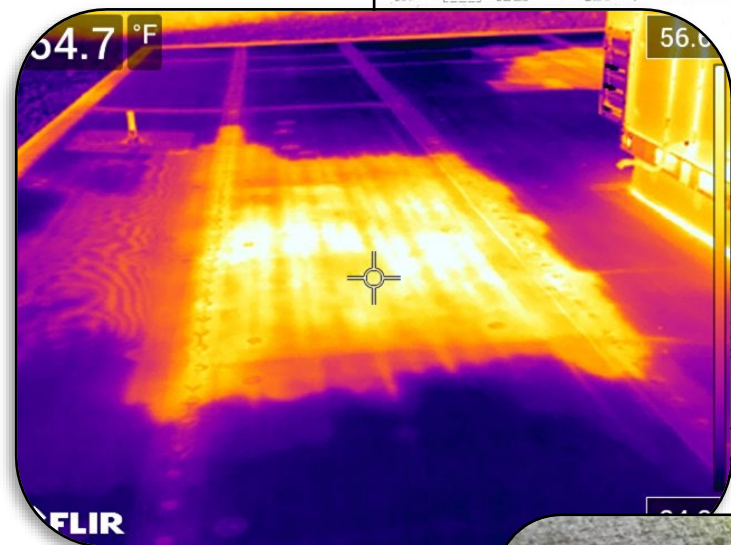
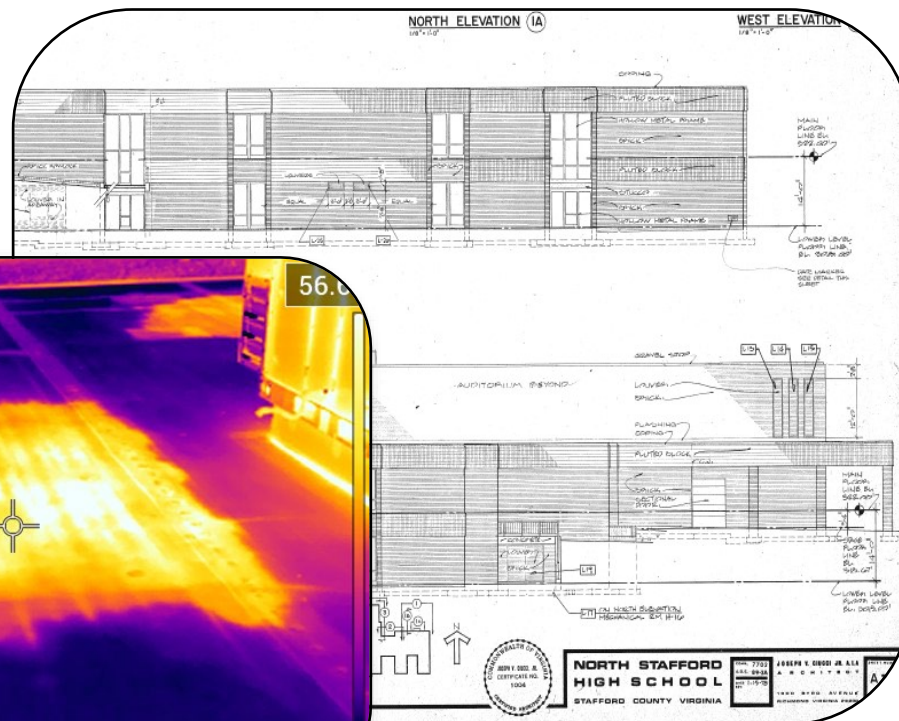
- Gable end wall coping
- Gable end wall roof/base flashing
- Brick masonry above counterflashing
- Flat roof membrane
- Interior wall location
- Interior ceiling location

Water test

- Flat roofing/Railing penetrations
- Base flashings
- Counterflashings
- Coping tie-in to masonry wall
- Door flashings
- Brick masonry (ASTM C 1601-08)
- Brick masonry Rilem Tubes
- Round window
- Gable base flashings
- Gable copings



# INVESTIGATION METHODOLOGY



Acquire and Review available construction drawings.

Interview maintenance personnel for pertinent maintenance history and extent of unsatisfactory conditions.

Perform a detailed visual inspection of the existing roofing system.

Perform a non-destructive infrared moisture survey.

Observe investigative test cuts to understand existing construction.

Field measure existing building components to verify dimensions.

Perform water tests to identify sources of leaks.



**QUESTION 2.**

---

What would your firm do if after a probe was made, you encounter a beam or support structure?

---





### QUESTION 3.

---

a. What is your experience in waterproofing an older façade?

---

b. As this building is very old, how would you analyze the strength of the old waterproofing membrane (or other layers beyond the brick) and use that knowledge to instruct a contractor to fix this façade?





# Experience with Older structures

## Historic Structures for:

- The City of Alexandria
- The City of Fredericksburg
- The City of Annapolis
- The Department of Defense
- The U.S. National Archives and Records Administration



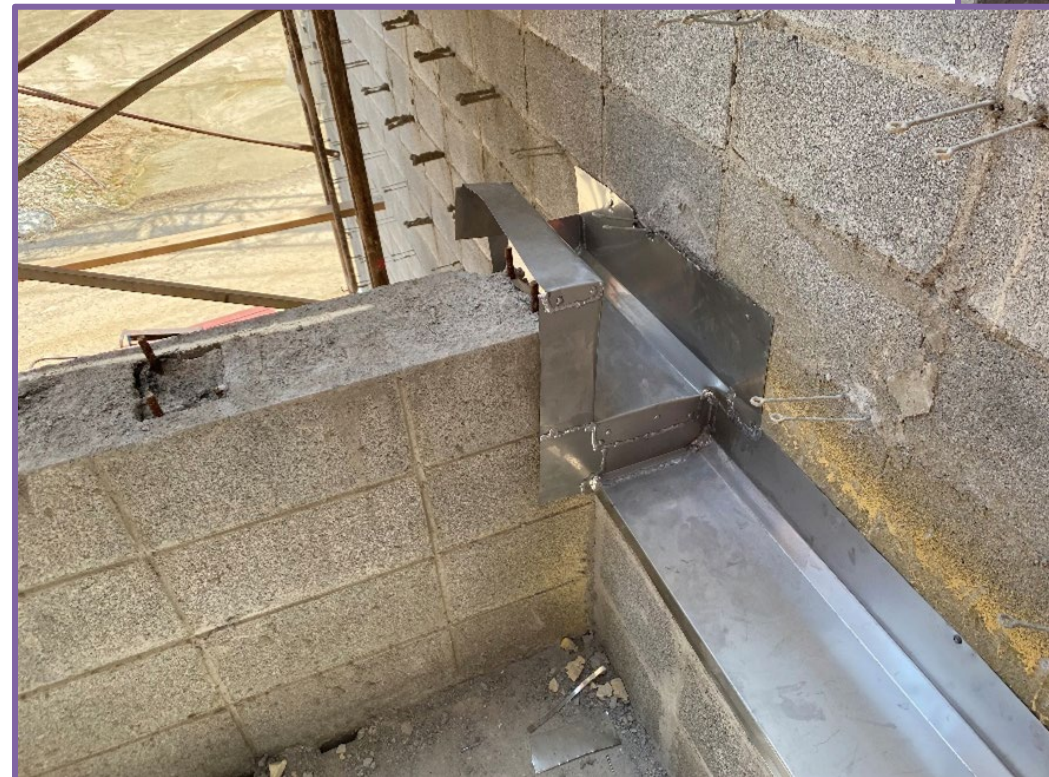
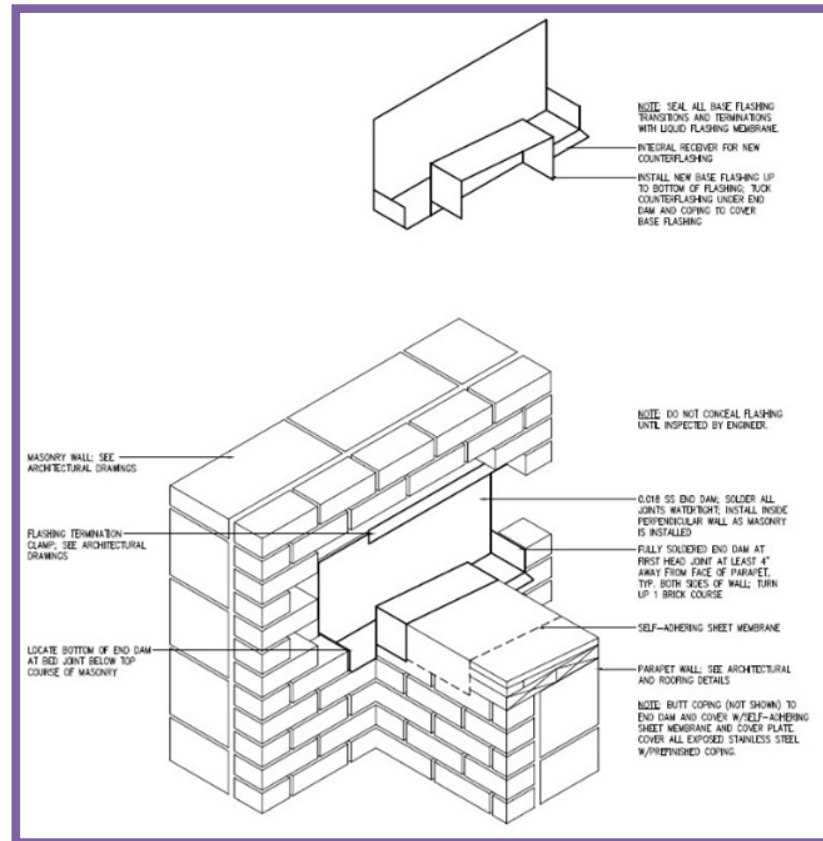


# Experience with Older structures





# WHY CHOOSE US?



- We have extensive experience providing building envelope consulting services to eliminate leaks into buildings.
  - We solve issues in both Historic and Modern Structures.
  - Our engineers are experienced investigating existing conditions, performing water tests, identifying leak sources and preparing designs to satisfy the customers requests
- We are renowned for our extremely thorough and detailed construction documents, completed in a timely manner within the schedule established by the Client.
- We provide high quality building envelope solutions within the budget limitations established by our Client.

