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Agenda

Landmarks Preservation Commission Planning and Development Services Department

Date: March 12, 2025
Time: 5:30 p.m.
Location: Hybrid (see below)

Staff

Reuben McKnight, Historic Preservation Officer
Susan Johnson, Historic Preservation Coordinator
Mary Crabtree, Administrative Assistant

INFORMATION ABOUT HYBRID MEETINGS

This meeting will be conducted both in-person and virtually. The meeting will occur in the Tacoma Municipal Building at 747 Market St., Room 243, and can also be attended at <https://zoom.us/j/89120046605> or by dialing +1 (253) 215-8782 and entering the meeting ID 891 2004 6605 when prompted. Microphones will be muted and cameras turned off for all attendees during the meeting, except for the Commissioners and presenters.

- | 1. ACKNOWLEDGEMENT OF INDIGENOUS LANDS | PAGE # | TIME |
|-----------------------------------------------|---------------|-------------|
| 2. ROLL CALL | | |
| 3. PUBLIC COMMENT | | |

Written comments are accepted on agenda items via e-mail and must be submitted by 12:00 p.m. on the meeting day. Please e-mail your comments to landmarks@cityoftacoma.org, put in the subject line "LPC Meeting 03/12/25", and clearly indicate which agenda item(s) you are addressing.

4. CONSENT AGENDA

- A. Excusal of Absences
- B. Approval of Minutes: N/A
- C. Administrative Review: N/A

5. BOARD BRIEFINGS

A. Stadium High School <i>Exterior masonry repairs</i>	Brian Rich	3	15 m
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6. BOARD BUSINESS/COMMUNICATION ITEMS

A. Equity Committee updates	Commission	2	5 m
B. Events & Activities	Staff	2	5 m

7. CHAIR COMMENTS

This agenda is for public notice purposes only. Complete applications are posted online at www.cityoftacoma.org/lpc-agenda.



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¿Necesitas información en español? 한국어로 정보가 필요하십니까? Cần thông tin bằng tiếng Việt? Нужна информация на русском?
ត្រូវការព័ត៌មានជាភាសាខ្មែរ? ☎ Contact **TacomaFIRST 311** at **(253) 591-5000**



STAFF REPORT

March 12, 2025

BOARD BRIEFING

AGENDA ITEM 5A: Stadium High School (111 North E St.)

Brian Rich, Richaven Architecture

BACKGROUND

Although the building's initial construction began in 1891, it was stalled in 1893 and sat unfinished for years. The original design, as a hotel, shifted to that of a public high school, completed in 1906. The Philadelphia firm of Hewitt and Hewitt did the original design. One of Tacoma's best known architects, Frederick Heath, oversaw the adaptive reuse and completion. Located at 111 North E Street, Stadium High School was listed to the Tacoma Historic Register on January 2, 1975. It is also listed on the National and Washington State historic registers as part of the Stadium-Seminary Historic District (1977). The Tacoma Register listing does not include the Stadium Bowl.

Tacoma Public Schools (TPS) is actively using and maintaining the building and site, with plans to perform exterior envelope repairs starting this summer. A Request for Proposals will be going live on March 13. This work follows up on an exterior condition assessment completed in November 2023. This will be a briefing to the Commission on the status of the project, further details on the existing conditions, and the anticipated repair scope and treatments.

More information, including a linked Condition Assessment report, is located here: [Supplemental-SHS-Condition-Assessment-2023.pdf](#) Due to the size of the document, it is not included as a hardcopy in the packet.

ACTION REQUESTED

This is an informational briefing only; no action is requested.

BOARD BUSINESS/COMMUNICATION ITEMS

AGENDA ITEM 6A: Diversity, Equity and Inclusion Committee

Commissioners

This is a standing agenda item for updates and discussion related to the activities of the Equity Committee.

AGENDA ITEM 6B: Events and Activities Update

Staff

1. March is Womens History Month. This is not a comprehensive list, but some of the events around town include:
 - a. Tacoma Public Library's "Up and Atom STEAM Days," Womens History Scavenger Hunts, and much more. <https://www.tacomalibrary.org/womens-history-month/>
 - b. Washington State History Museum's Free Third Thursday will present Home Front / War Front: Fly for Freedom, a new multimedia performance from Living Voices. This production highlights the little-known stories and contributions of working women in the World War II aeronautics industry through a unique blend of theater and archival film. It amplifies the experiences of Black women through the Rosie the Riveters who built planes in Boeing's factories, the Women Airforce Service Pilots (WASPs), the Tuskegee Airmen, and the Double Victory campaign. March 20, 5:30-7pm. Free with advance registration. [Home Front / War Front: Fly for Freedom - Washington State Historical Society](#)
2. Washington State Historical Society will host the Washington State Annual History Awards on April 26. [2025 Washington State Annual History Awards - Washington State Historical Society](#)
3. The Job Carr Cabin Museum is accepting applications for vendors/booths at the Old Town Craft and Music Fest, scheduled for May 17th, 11am – 3pm. <https://www.jobcarmuseum.org/events>



STADIUM HIGH SCHOOL EXTERIOR MASONRY RESTORATION PHASE 1 PROJECT

BUILDING OWNER:
TACOMA PUBLIC SCHOOLS

PROPERTY NAME:
STADIUM HIGH SCHOOL

PROJECT SITE ADDRESS:
1115 E 6TH ST
TACOMA, WA 98403

PARCEL #: 201004010

LEGAL DESCRIPTION:
NEW TACOMA L1 THRU 8 B 3108, L1 THRU 10 B 3109
TODAY FORN "E" 21' AT 2ND ST VAC PER ORD 2046 &
23RD NULTI AND TOWN FOR STADIUM WAY, SEE
ORD 534 & VAC ALLEY VAC PER ORD 212

LOT AREA:
15,582 SQUARE FEET

BUILDING YEAR:
1981 (TOWER) 2004 (RENOVATION)

SUB-GRID AREA:
14,600 SQUARE FEET

ZONING:
COMMERCIAL - EDUCATION

CURRENT USE:
EDUCATION - HIGH SCHOOL

PROJECT DESCRIPTION:

THIS IS THE FIRST PHASE OF THE EXTERIOR RESTORATION WORK TO BE COMPLETED ON THE EXTERIOR STADIUM HIGH SCHOOL. THE NEW WORK OF THIS PHASE INCLUDES EXISTING BRICK, STONE, AND TERRAZZO MASONRY AND EXISTING GUTTERS AND INTERNAL DOWNSPOUTS.

BASE BID MASONRY WORK INCLUDES REMOVAL OF LOOSE DEBRIS, AND MASONRY ELEMENTS. MAINTAIN PROPER WATER DRAINAGE, AND INVESTIGATE THE CONDITION OF THE EXISTING MASONRY EXISTING, REPAIRS INCLUDE COURTYARD AND EXTERIOR TERRAZZO, MOUNTAIN PATCH TO MAINTAIN WATER DRAINAGE AWAY FROM BUILDING, AND TEMPORARY SHEET METAL FLASHING.

BASE BID GUTTER AND INTERNAL DOWNSPOUT WORK INCLUDES CLEANING, REPAIRS AND DRAINAGE CAMERA SCOPING TO INVESTIGATE BLOCKAGE ISSUES AND LOCATION OF INTERNAL DRAIN PIPES. IDENTIFY REPAIR SOLUTIONS. BASE BID GUTTER REPAIRS INCLUDES REPAIR OF EXISTING SOLDERED COPPER JOINTS.

ALTERNATE WORK REQUIREMENTS:

1. INVESTIGATE AREAS OF APPARENT DETERIORATION AT ALL EXTERIOR MASONRY ELEMENTS, INCLUDING (BUT NOT LIMITED TO) BRICK, TERRAZZO, STONE, AND NATURAL STONE. PREPARE, EVALUATE, AND TEST TO DETERMINE MASONRY ELEMENTS AND FRAGMENTS THAT ARE LOOSE, DETACHED, OR MOVE WITH HAND PRESSURE.
2. ALL ELEMENTS AND FRAGMENTS THAT ARE LOOSE, DETACHED, OR MOVE WITH HAND PRESSURE SHALL BE REPAIRED. DETACHED OR LOOSE ELEMENTS SHALL BE REPAIRED TO THE CONTRACT DOCUMENTS.
3. REMOVE ANY LOOSE BRICKS USING MODERATE HAND PRESSURE AND PROVING WITH SMALL HAND TOOLS.
4. WHERE LOOSE BRICKS ARE AT RISK OF FALLING, REMOVE MASONRY BRICKS AND PROVIDE TEMPORARY REPAIR AS INDICATED.
5. WHERE MASONRY BRICKS ARE LOOSE BUT TOO LARGE TO SAFELY REMOVE, EVALUATE AND ANCHOR AS NECESSARY TO PREVENT FALLING. REPAIR TO PREVENT WATER INTRUSION AS INDICATED.

PROJECT ALTERNATES: (SEE SECTION 01 23 00 ALTERNATES)

ADD ALTERNATE 1: HOT WATER WASHING

ADD ALTERNATE 2: MASONRY REPORTING

ADD ALTERNATE 3: BUILDING CLEANING

ADD ALTERNATE 4: COURTYARD PAVEMENT RESTORATION

ADD ALTERNATE 5: GUTTER EXPANSION JOINTS

ADD ALTERNATE 6: DEWATER

DESIGN TEAM

OWNER'S REPRESENTATIVE:
PARAMETRIX
2223 SOUTH UNION AVENUE
TACOMA, WA 98409
(253) 606-9378

CONTACT: DOUG WEBER
EMAIL: DOUGWE@PARAMETRIX.COM

CONTACT: HEATHER HUCKLANDER
EMAIL: HUCKLANDER@PARAMETRIX.COM

HISTORIC ARCHITECT:
RICHAVEN ARCHITECTURE & PRESERVATION
9000 3RD AVE NW
SEATTLE, WA 98117
(206) 900-9868

CONTACT: BRIAN RICH
EMAIL: BRIANR@RICHAVEN.COM

CONTACT: ANNA GOLD
EMAIL: ANNA@RICHAVEN.COM

ARCHITECTURAL ABBREVIATIONS

A	AND	GA	GAUGE	PROJ	PROJECT
ANGLE	ANGLE	GALV	GALVANIZED	PAL	PARALLEL STRAND LUMBER
AT	AT	GB	GRAB BAR	PSE	POUNCE
BY	BY	GEN	GENERAL CONTRACTOR	PSI	POUNTS PER SQUARE INCH
CEILING	CEILING	GL	GLENE	PTR	PATCH
CEILING	CEILING	GLB	GULFMANATED BEAM	PVB	PRESSURE VACUUM BREAKER
AB	ABOVE	GMP	GALVANIZED MESH PIPE	QT	QUARTY TILE
ABV	ABOVE	GR	GRASS	QTY	QUANTITY
ABN	ABOVE	GRT	GRADE	RAAD	RADIALLY
AC	ACROSS	GRD	GROUNDED	REB	RESILIENT BASE
ADJ	ADJACENT	GRO	GROUNDED	RECP	REFLECTING CEILING PLAN
ADU	ADULT USE ONLY	GRP	GROUNDED	RD	ROOF DRAIN
AF	ABOVE FINISHED FLOOR	GWB	GYP/SPH WALL BOARD	RECON	RECONNECT
AFB	ABOVE FINISHED FLOOR	H	HAND	RLWY	RAILWAY
AFD	ABOVE FINISHED FLOOR	HA	HANDRAIL	REC'D	RECEIVED
AL	ALUMINUM	HB	HOSE BIB	REF	REFERENCE
ALUM	ALUMINUM	HBM	HOLLOW CLAY MASONRY UNIT	REFC	REFLECTOR
ALT	ALTERNATE	HDM	HARDWARE	REFR	REFRIGERATOR
ALUM	ALUMINUM	HDM	HARDWARE	RFRM	REFRIGERANT
ANG	ANGLE	HDM	HARDWARE	RELOC	RELOCATE
ANG	ANGLE	HDM	HARDWARE	REMA	REMOVE AND REPLACE
APP	APPROXIMATE	HDM	HARDWARE	REPL	REPLACE
APR	APPROXIMATE	HDM	HARDWARE	RESD	RELOCATED
APR	APPROXIMATE	HDM	HARDWARE	RET	RETIRED
AVENUE	AVENUE	HDM	HARDWARE	RES	RESILIENT
BA	BATH	HDM	HARDWARE	RES	RESILIENT
BA	BATH	HDM	HARDWARE	RES	RESILIENT
BA	BATH	HDM	HARDWARE	RES	RESILIENT
BA	BATH	HDM	HARDWARE	RES	RESILIENT

GENERAL NOTES

1. BUILDING IS A LANDMARK LISTED ON THE CITY OF TACOMA REGISTER OF HISTORIC PLACES AS WELL AS THE STATE AND NATIONAL REGISTER OF HISTORIC PROPERTIES. WORK SHALL COMPLY WITH THE SECRETARY OF THE INTERIOR STANDARDS FOR THE TREATMENT OF HISTORIC PROPERTIES.
2. MATERIALS, ASSEMBLIES AND NOTED ITEMS ARE NEW UNLESS OTHERWISE NOTED.
3. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS, NOTIFY THE ARCHITECT OF ANY CONDITIONS UNACCEPTABLE WITH THE INTENT OF THE DRAWINGS PRIOR TO STARTING WORK.
4. NO TRAFFIC OF ANY KIND (TRUCKS, FORKIFTS, ROOM LIFTS, ETC.) IS PERMITTED IN THE COURSE OF THIS PROJECT. EXISTING POOL BELOW PLAZA DECK.
5. MAINTAIN PROTECTED ACCESS AND EGRESS TO BUILDING AT ALL ENTRANCES AND EXITS.

STANDARDS AND REGULATIONS:

1. ALL WORK SHALL COMPLY TO APPLICABLE CODES AND LOCAL BUILDING REQUIREMENTS, WHICH INCLUDE THE MOST CURRENT EDITION OF THE INTERNATIONAL BUILDING CODE (IBC).
2. CONTRACTOR SHALL PERFORM ALL WORK IN CONFORMANCE WITH APPLICABLE BUILDING CODES, REGULATIONS, ORDINANCES, UTILITY PROVIDER REQUIREMENTS, AND SIMILAR STANDARDS.
3. CONTRACTOR SHALL OBTAIN ALL REQUIRED INSPECTIONS OF THE WORK. CONTRACTOR SHALL REGULARLY UPDATE OWNER AND ARCHITECT REGARDING THE STATUS OF INSPECTIONS.
4. CONTRACTOR SHALL COORDINATE WORK WITH APPLICABLE UTILITY PROVIDERS.

ADMINISTRATION OF THE WORK:

1. CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE MEANS, METHODS, AND SEQUENCES OF CONSTRUCTION AND DEMOLITION AT THE SITE.
2. CONTRACTOR SHALL MAINTAIN SECURITY OF THE BUILDINGS ON SITE. CONTRACTOR SHALL BECOME RESPONSIBLE AND COMPLY WITH OWNER'S PROCEDURES FOR MAINTAINING A SECURE SITE AND BUILDING.
3. CONTRACTOR SHALL OBTAIN ALL REQUIRED INSPECTIONS ON THE SITE AT ALL TIMES.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING COORDINATION EFFORTS OF ALL SUBCONTRACTORS TO SUB NEW WORK.
5. EACH INSTALLER SHALL EXAMINE ALL SUBSTITUTIONS AND/OR SITE CONDITIONS WHICH AFFECT THE QUALITY OF EACH PRODUCT TO BE INSTALLED. IF ANY CONDITIONS EXIST WHICH WILL AFFECT THE QUALITY OF THE QUALITY OF THE INSTALLATION, THE INSTALLER SHALL IMMEDIATELY NOTIFY THE CONTRACTOR. INSTALLATION SHALL NOT PROCEED UNTIL THE SUBSTITUTIONS OR CONDITIONS ARE CORRECTED. INSTALLATION SHALL BE SUBJECT TO ACCEPTANCE OF THE CONDITIONS.
6. CONTRACTOR SHALL COORDINATE WORK WITH APPLICABLE UTILITY PROVIDERS.
7. CONTRACTOR SHALL COORDINATE WORK WITH APPLICABLE UTILITY PROVIDERS.

USE OF CONTRACT DOCUMENTS:

1. DO NOT SCALE DRAWINGS. ONLY WRITTEN DIMENSIONS OR KEYED NOTES SHALL BE USED. CONTACT ARCHITECT BY CLARIFICATION OR ADDITIONAL INFORMATION.
2. VERIFY DIMENSIONS ON DRAWINGS. USE ONLY DIMENSIONS AND NOTES TO CLARIFY OR TO STARTING OR CONTINUING WORK. NOTIFY ARCHITECT OF ANY DIMENSIONAL DISCREPANCIES WITH THE INTENT OF THE CONTRACT DOCUMENTS.
3. THE DRAWINGS ARE SO MUCH AS IN CONFLICT WITH THE INTENT OF THE CONTRACT DOCUMENTS, THE INTENT SHALL PREVAIL.
4. FINISHED SURFACE OF FINISH SHALL ALIGN WITH ADJACENT EXISTING SURFACE UNLESS OTHERWISE NOTED.

DEFERRED SUBMITTALS:

THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING EXISTING FIELD CONDITIONS AND OBTAINING DEFERRED SUBMITTALS.

WHERE REQUIRED, DOCUMENTS FOR DEFERRED SUBMITTALS SHALL BE SUBMITTED TO THE REGISTERED DESIGN PROFESSIONAL RESPONSIBLE WHO SHALL REVIEW THEM AND FORWARD THEM TO THE BUILDING DEPARTMENT WITH A NOTATION INDICATING THAT THE DEFERRED SUBMITTALS ITEMS SHALL NOT BE INSTALLED UNTIL THE DEFERRED SUBMITTALS DOCUMENTS HAVE BEEN APPROVED BY THE BUILDING DEPARTMENT.

SELECTIVE DEMOLITION NOTES:

1. SEE SECTION 02 41 19 FOR DEFINITIONS OF TERMS ON THE DRAWINGS. INCLUDING DEMOLITION, DEMOUNTING, DEMONSTRATION, REMOVAL AND SALVAGE. COORDINATE WITH OWNER AND ARCHITECT FOR MATERIALS TO BE SALVAGED TO BE RETURNED TO THE BUILDING DEPARTMENT WITH A NOTATION SPECIFYING THE DEMOLITION METHOD TO BE USED.
2. CONTRACTOR IS RESPONSIBLE FOR REVIEW OF THE HAZARDOUS MATERIALS ASSAY REPORT AND ARCHITECTURAL AND MECHANICAL DRAWINGS AND SPECIFICATIONS FOR CUTTING AND PATCHING WORK.
3. DEMONSTRATION OR DEMOUNTING OF MATERIALS IN THE FIELD BUT NOT SPECIFIED IN THE PLAN SHALL BE OFFERED TO THE OWNER FOR SALVAGE BEFORE DEMOLITION. MATERIALS NOT IDENTIFIED FOR DEMOLITION SHALL BE DEMOLISHED AS USUAL.
4. NOT LIMITED TO: FURNITURE, ETC.
5. COORDINATE WITH OWNER AND FREE OF DEBRIS, VEGETATED AND PAVED SURFACES THAT ARE DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED TO THE ORIGINAL CONDITION AS THE RESULT OF THE DEMOLITION WORK.
6. PATCH AND REPAIR ALL EXISTING SURFACES AFFECTED BY DEMOLITION WORK TO MATCH ADJACENT MATERIALS, FINISH, TEXTURES, AND COLORS.

WMEC / ENERGY REQUIREMENTS:

PROJECT SCOPE ENCOMPASSES THE FOLLOWING NO BUILDING ENVELOPE UPGRADES FOR ENERGY PERFORMANCE:

APPLICABLE CODES AND REGULATIONS:

2021 INTERNATIONAL EXISTING BUILDING CODE (IEBC)
2021 WASHINGTON STATE AMENDMENTS
+ CITY OF TACOMA AMENDMENTS
2021 THE SECRETARY OF THE INTERIOR'S STANDARDS FOR THE TREATMENT OF HISTORIC PROPERTIES

BASE CALCULATIONS

ELEVATION + WINDOW COLUMN + # (LEFT TO RIGHT)

EXAMPLE: C-14/VC-5 = COURTYARD-WEST COLUMN 5

BASE LEGEND

LIMITS OF BASE BID SCOPE OF WORK

EXISTING TO REMAIN

EXISTING TO BE REMOVED OR DEMOLISHED

HATCH LEGEND

NO TRAFFIC

COMMON BREAK

FACE BREAK

LOAD-BEARING MASONRY

PATCHING COMPOUND

RESTORATION MORTAR

ADD ALTERNATES AND DEMONSTRATION AREAS

DEMONTATION AREAS

ADD ALT. 1

ADD ALT. 2

ADD ALT. 3

ADD ALT. 4

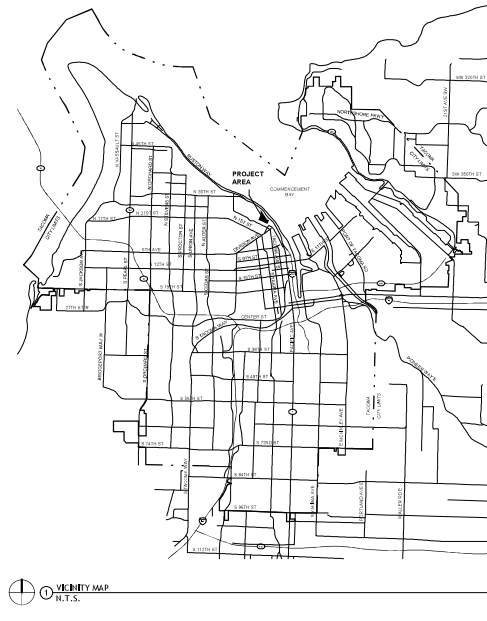
ADD ALT. 5

DEFINITIONS:

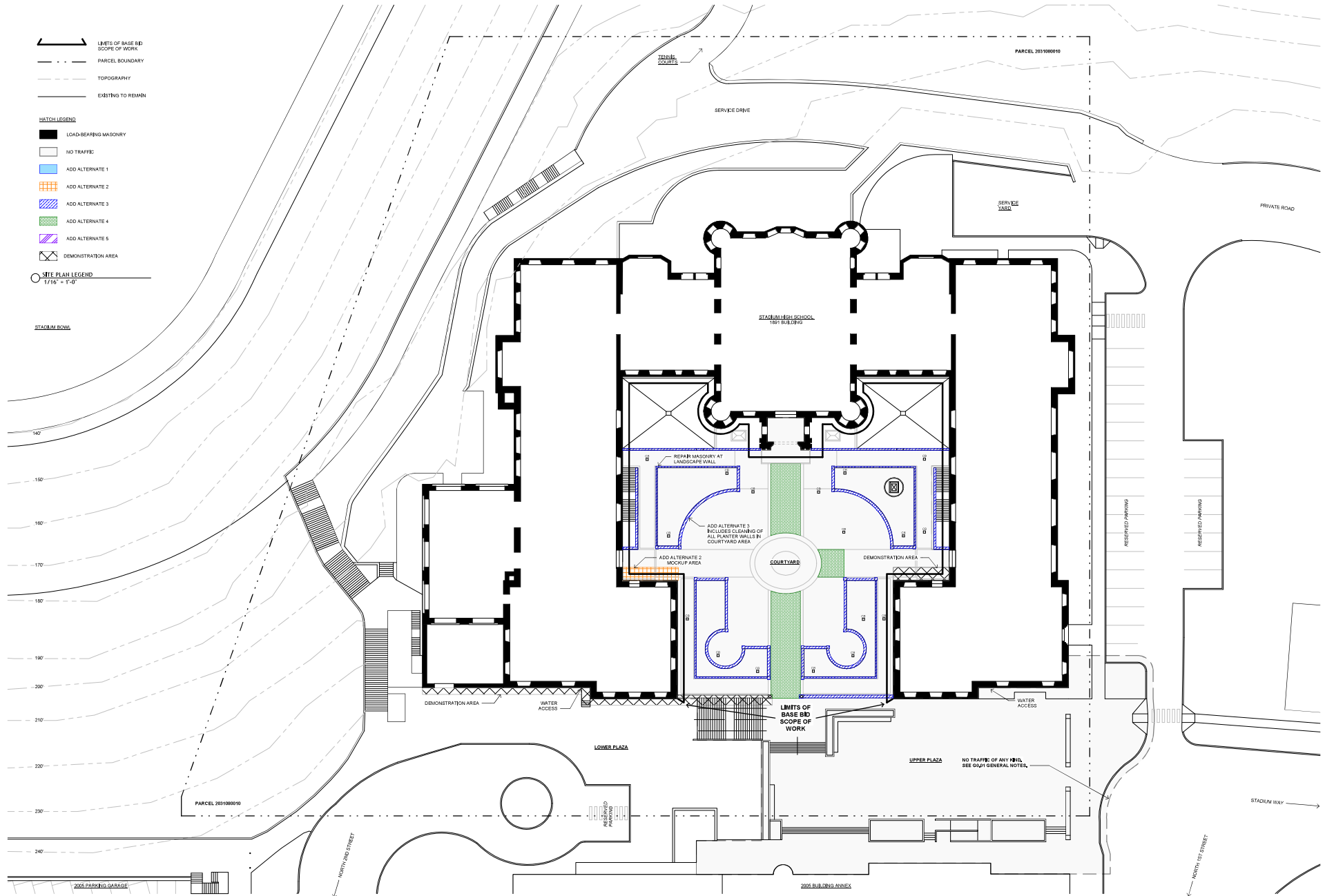
1. "ALIGN" AS USED IN THESE DOCUMENTS SHALL MEAN TO ACCURATELY LOCATE FINISH FINISH IN THE SAME PLANE AND/OR TO INSTALL NEW CONSTRUCTION ACCORDANT TO EXISTING CONSTRUCTION WITHOUT ANY VISIBLE JOINTS OR SURFACE DISCONTINUITIES.
2. "ADJUSTABLE" AS USED IN THESE DOCUMENTS SHALL MEAN THAT THE CONDITION IS NOT ADJUSTABLE WITHOUT APPROVAL OF THE ARCHITECT. CLEAR "ADJUSTABLE" SHALL BE USED IN THESE DOCUMENTS SHALL MEAN THAT THE CONDITION IS ADJUSTABLE BUT MAY NOT VARY TO A DIMENSION OR QUANTITY GREATER THAN THAT SHOWN WITHOUT APPROVAL OF THE ARCHITECT.
3. "MINIMUM OR MAXIMUM" AS USED IN THESE DOCUMENTS SHALL MEAN THAT THE CONDITION IS ADJUSTABLE BUT MAY NOT VARY TO A DIMENSION OR QUANTITY LESS THAN THAT SHOWN WITHOUT APPROVAL OF THE ARCHITECT.
4. "REMOVE AS USUAL" IN THESE DOCUMENTS SHALL MEAN THAT THE CONDITION OR DEMONSTRATION IS THE SAME OR REPRESENTATIVE FOR SIMILAR CONDITIONS THROUGHOUT.
5. "REMOVE AS USUAL" IN THESE DOCUMENTS SHALL MEAN THAT THE CONDITION OR DEMONSTRATION IS THE SAME OR REPRESENTATIVE FOR SIMILAR CONDITIONS THROUGHOUT.
6. "REMOVE AS USUAL" IN THESE DOCUMENTS SHALL MEAN THAT THE CONDITION OR DEMONSTRATION IS THE SAME OR REPRESENTATIVE FOR SIMILAR CONDITIONS THROUGHOUT.
7. "REMOVE AS USUAL" IN THESE DOCUMENTS SHALL MEAN THAT THE CONDITION OR DEMONSTRATION IS THE SAME OR REPRESENTATIVE FOR SIMILAR CONDITIONS THROUGHOUT.

SHEET INDEX

GENERAL	
GO.01	COVER PAGE AND GENERAL INFORMATION
GO.02	SITE PLAN
ARCHITECTURAL	
AE.01	COURTYARD ELEVATIONS-EAST AND WEST
AE.02	COURTYARD ELEVATIONS-SOUTH AND NORTH
AE.03	BALANCED EXTERIOR ELEVATION
AE.04	MASONRY RESTORATION DETAILS
AE.05	COURTYARD REFERENCE MAP
AE.06	COURTYARD REFERENCE MATRIX



GO.01



- LIMITS OF BASE BID SCOPE OF WORK
- - - PARCEL BOUNDARY
- - - TOPOGRAPHY
- EXISTING TO REMAIN

- HATCH LEGEND**
- LOAD-BEARING MASONRY
 - NO TRAFFIC
 - ADD ALTERNATE 1
 - ADD ALTERNATE 2
 - ADD ALTERNATE 3
 - ADD ALTERNATE 4
 - ADD ALTERNATE 5
 - ⊠ DEMONSTRATION AREA

SITE PLAN LEGEND
1/16" = 1'-0"

STADIUM BOWL

140'

150'

160'

170'

180'

190'

200'

210'

220'

230'

240'

111 NORTH E STREET
2006 PARKING GARAGE
2006 BULIDING ANNEX
2006 SERVICE YARD
PRIVATE ROAD
STADIUM WAY
RESERVED PARKING
RESERVED PARKING
WATER ACCESS
WATER ACCESS
NO TRAFFIC OF ANY VEH.
SEE G041 GENERAL NOTES.

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CONSULTANTS	SCALE	DATE	NAME

DRAWN BY: AG
CHECKED BY: BDR

STADIUM HIGH SCHOOL EXTERIOR MASONRY RESTORATION PHASE 1 PROJECT
111 NORTH E STREET
TACOMA, WA 98403

SITE PLAN AND HISTORIC BUILDING @ COURTYARD LEVEL
FEBRUARY 26, 2025
SCALE: 1/16" = 1'-0" PRINT THIS DRAWING IN COLOR ONLY

G0.02



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**STADIUM HIGH SCHOOL
EXTERIOR MASONRY RESTORATION PHASE 1**

DATE: FEBRUARY 24, 2025

111 NORTH E STREET
TACOMA, WA 98403

REV# DATE NAME

PRINT THIS
DRAWING IN
COLOR ONLY

SHEET CONTENTS

**COURTYARD
ELEVATIONS
EAST AND
WEST**

SCALE
1/8" = 1'-0"

BRJ/VAG

SHEET NUMBER:

AE.01



BCA CALLOUTS

ELEVATION + WINDOW/COLUMN + # (LEFT TO RIGHT)

EXAMPLE: CY-W C5 + COURTYARD-WEST COLUMN 5

BASE LEGEND

- Solid black line: LIMITS OF BASE AND SCOPE OF WORK
- Dashed line: EXISTING TO REMAIN
- Dotted line: EXISTING TO BE REMOVED OR DEMOLISHED

MATCH LEGEND

- No pattern: NO TRAFFIC
- Diagonal lines: COMMON BRICK
- Horizontal lines: FACE BRICK
- Black: LOAD-BEARING MASONRY
- Stippled: PATCHING COMPOUND
- Grid pattern: RESTORATION MORTAR

ADD ALTERNATES AND DEMONSTRATION AREAS

- Blue hatched: ADD ALT. 1
- Orange hatched: ADD ALT. 2
- Green hatched: ADD ALT. 3
- Purple hatched: ADD ALT. 4
- Light blue hatched: ADD ALT. 5

SYMBOL LEGEND

1/4" = 1'-0"

1 EAST COURTYARD ELEVATION
SCALE: 1/8" = 1'-0"



2 WEST COURTYARD ELEVATION & SECTION
SCALE: 1/8" = 1'-0"



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**STADIUM HIGH SCHOOL
EXTERIOR MASONRY RESTORATION PHASE 1**

DATE
FEBRUARY 24, 2025

111 NORTH E STREET
TACOMA, WA 98403

REV # DATE NAME

PRINT THIS
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SHEET CONTENTS

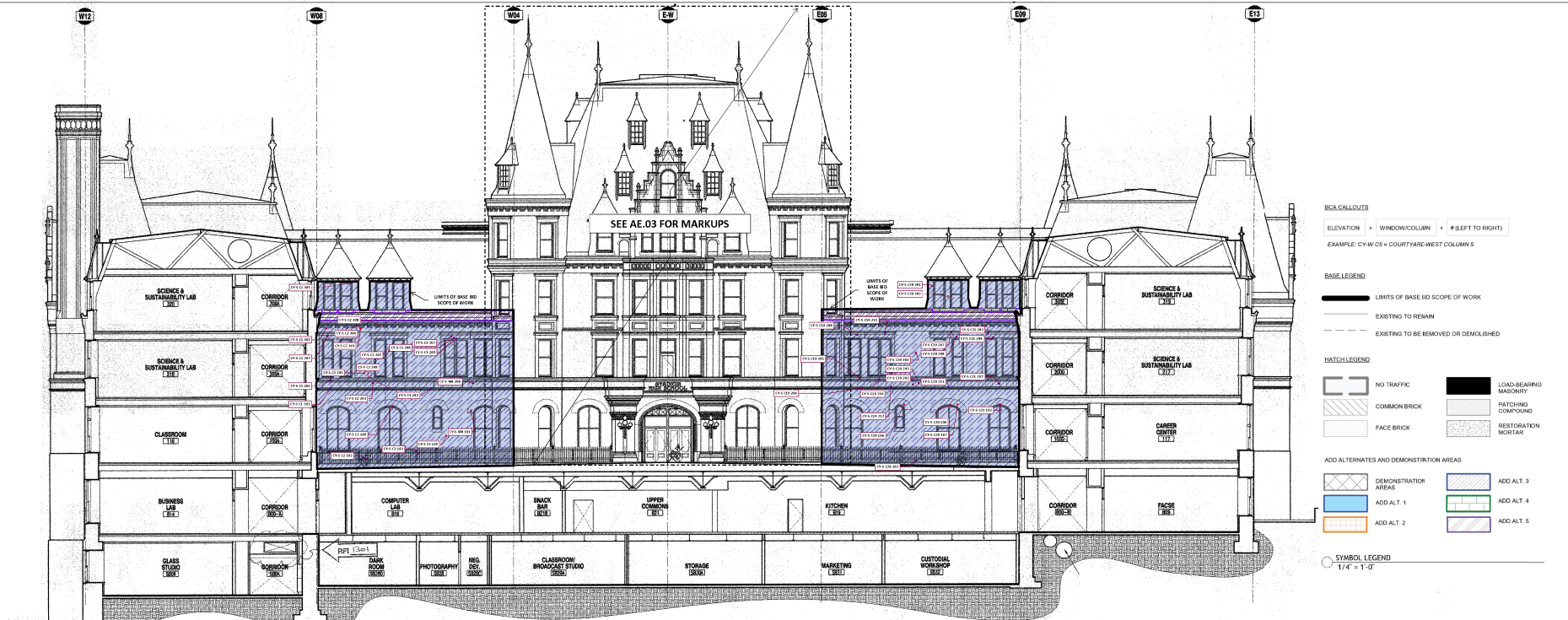
**COURTYARD
ELEVATIONS
SOUTH AND
NORTH**

SCALE
1/8" = 1'-0"

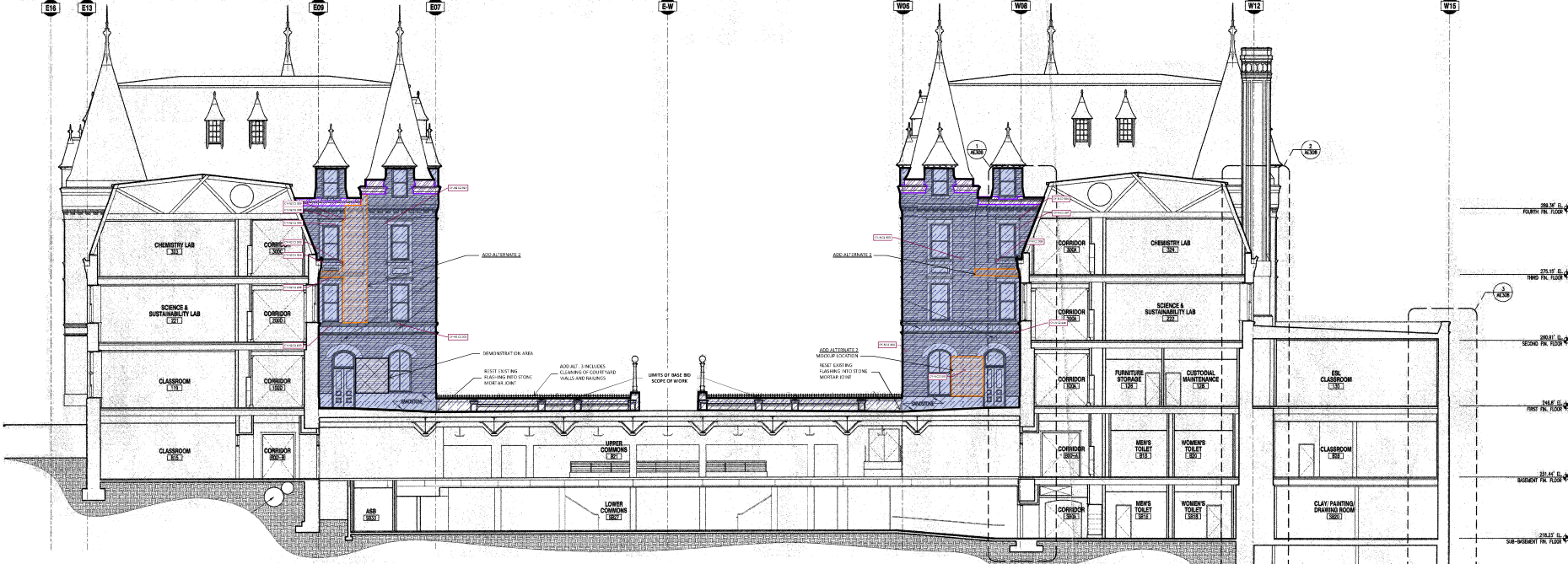
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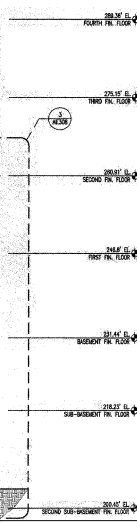
AE.02



1 BUILDING SECTION
SCALE: 1/8" = 1'-0"



2 BUILDING SECTION
SCALE: 1/8" = 1'-0"





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DATE
FEBRUARY 24, 2025

**STADIUM HIGH SCHOOL
EXTERIOR MASONRY RESTORATION PHASE 1**

111 NORTH E STREET
TACOMA, WA 98403

REV# DATE NAME

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SHEET CONTENTS

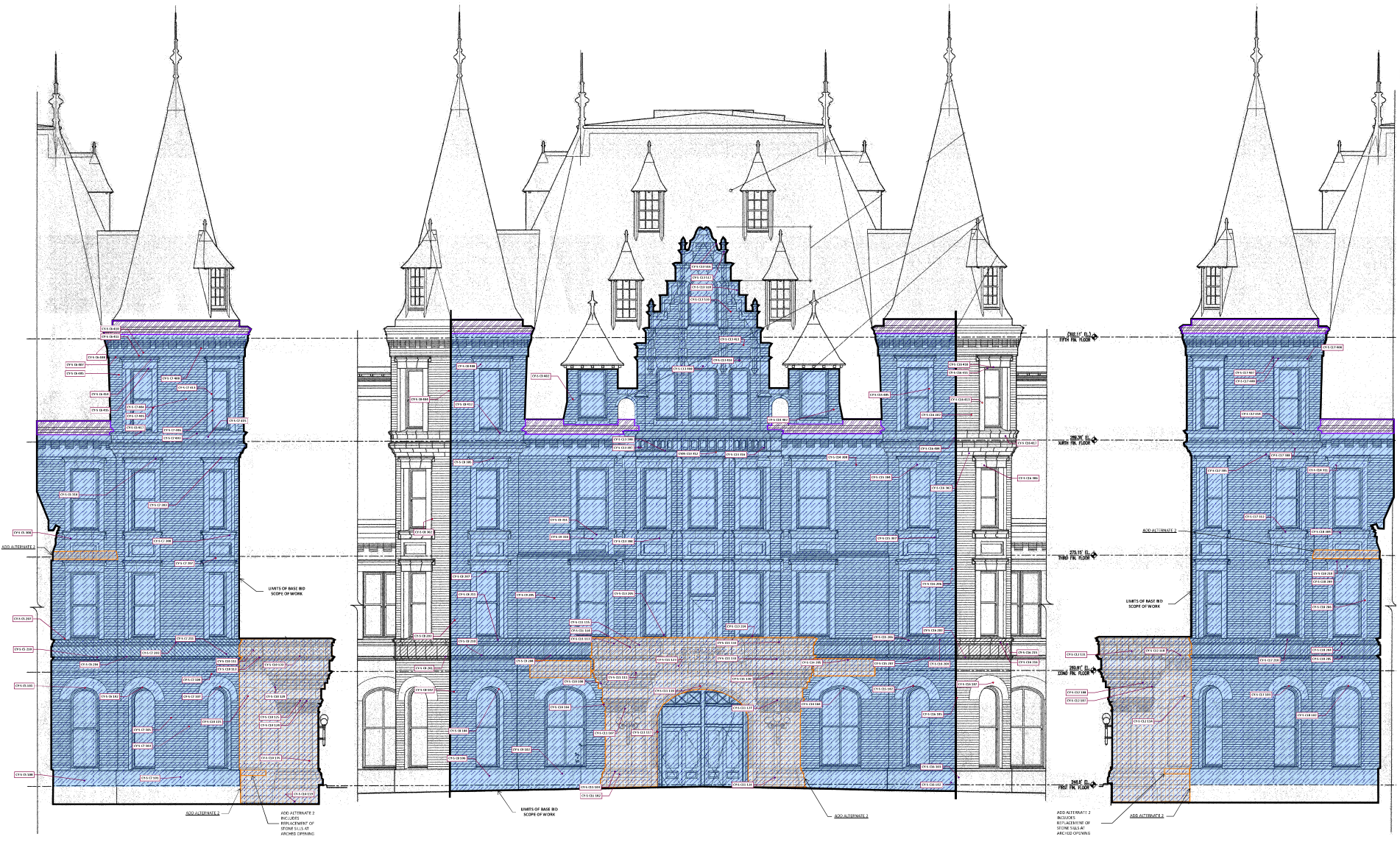
**ENLARGED
EXTERIOR
ELEVATION
SOUTH +
CENTRAL
TOWER
WEST & EAST
ELEVATION**

SCALE
1/4" = 1'-0"

BRJ/VAG

SHEET NUMBER:

AE.03



1B ENLARGED PARTIAL WEST ELEVATION - CENTRAL TOWER
SCALE: 1/4" = 1'-0"

2B ENLARGED SOUTH ELEVATION - CENTRAL TOWER
SCALE: 1/4" = 1'-0"

6B ENLARGED PARTIAL EAST ELEVATION - CENTRAL TOWER
SCALE: 1/4" = 1'-0"

REA CALLOUTS

ELEVATION + WINDOW/COLUMN + # (LEFT TO RIGHT)

EXAMPLE: CY-W-C5 - COURTYARD WEST COLUMN 5

BASIC LEGEND

— LIMITS OF BASE BID SCOPE OF WORK

— EXISTING TO REMAIN

- - - EXISTING TO BE REMOVED OR DEMOLISHED

ADD ALTERNATES AND DEMONSTRATION AREAS

□ DEMONSTRATION AREAS

□ ADD ALT. 1

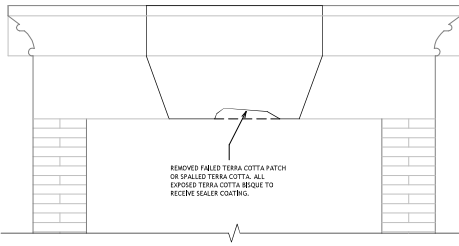
□ ADD ALT. 2

□ ADD ALT. 3

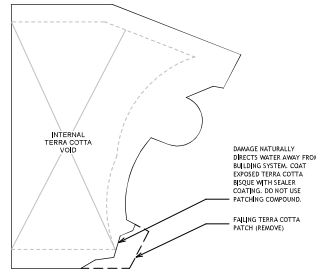
□ ADD ALT. 4

□ ADD ALT. 5

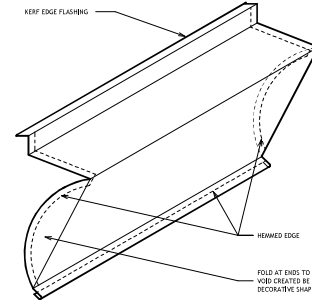
SYMBOL LEGEND
1/4" = 1'-0"



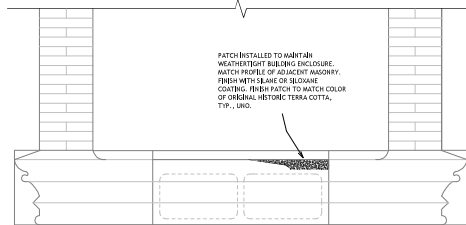
1 MINOR TERRA COTTA DAMAGE
1 1/2" = 1'-0"



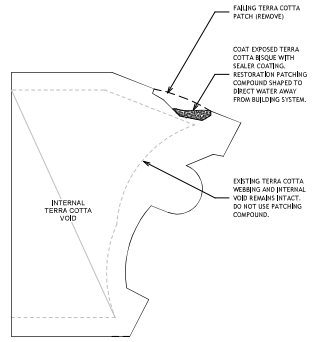
2 MINOR TERRA COTTA PATCH - SECTION
6" = 1'-0"



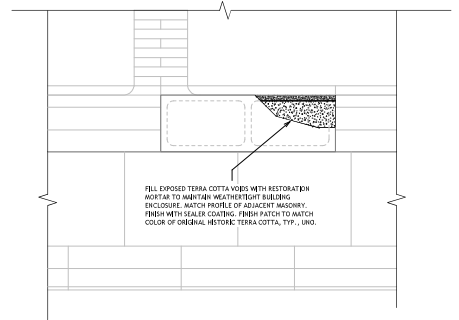
3 TEMPORARY FLASHING REPAIR - ISOMETRIC
3" = 1'-0"



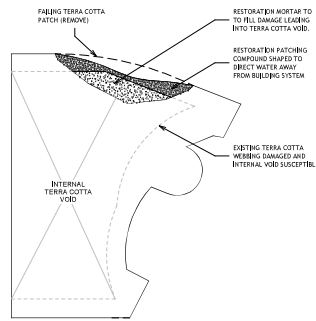
4 INTERMEDIATE TERRA COTTA PATCH
1 1/2" = 1'-0"



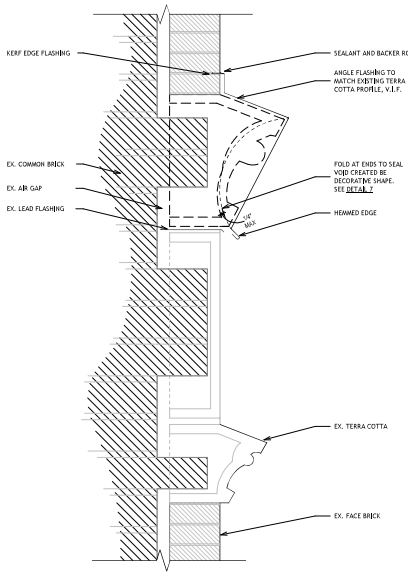
5 INTERMEDIATE TERRA COTTA PATCH - SECTION
6" = 1'-0"



6 MAJOR TERRA COTTA PATCH - ELEVATION
1 1/2" = 1'-0"



7 MAJOR TERRA COTTA PATCH - SECTION
6" = 1'-0"



8 TEMPORARY FLASHING REPAIR FOR TERRA COTTA UNIT REMOVAL
3" = 1'-0"

BASE LEGEND

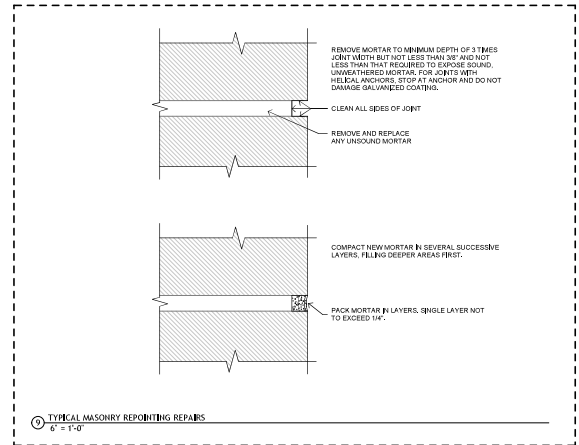
- LIMITS OF BASE BID SCOPE OF WORK
- - - EXISTING TO REMAIN
- - - - EXISTING TO BE REMOVED OR DEVOLISHED

MATCH LEGEND

- [Pattern] COMMON BRICK
- [Pattern] FACE BRICK
- [Pattern] PATCHING COMPOUND
- [Pattern] RESTORATION MORTAR

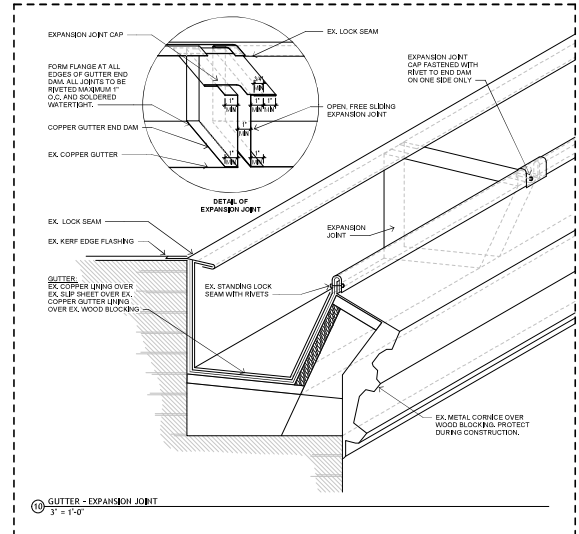
DETAIL LEGEND
1/4" = 1'-0"

ADD ALTERNATE 2: MASONRY REPOINTING



9 TYPICAL MASONRY REPOINTING REPAIRS
6" = 1'-0"

ADD ALTERNATE 3: GUTTER EXPANSION JOINTS



10 GUTTER - EXPANSION JOINT
3" = 1'-0"



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CONSULTANTS: RICHAVEN ARCHITECTURE & PRESERVATION

DATE: 02/24/2025

DRAWN BY: AG
CHECKED BY: BDR

STADIUM HIGH SCHOOL
EXTERIOR MASONRY RESTORATION PHASE 1 PROJECT

DATE: FEBRUARY 24, 2025

MASONRY RESTORATION DETAILS

SCALE: AS INDICATED

PRINT THIS DRAWING IN COLOR ONLY

AE.04



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DATE
FEBRUARY 24, 2025

STADIUM HIGH SCHOOL
EXTERIOR MASONRY RESTORATION PHASE 1

111 NORTH E STREET
TACOMA, WA 98403

REV.# DATE NAME

PRINT THIS
DRAWING IN
COLOR ONLY

SHEET CONTENTS

COURTYARD
DEFICIENCY
MATRIX -
EAST, WEST,
AND NORTH

SHEET NUMBER:

AE.05

Tacoma Public Schools - Stadium High School
Deficiency Matrix
Courtyard - East

Item #	Material & Deficiency	Condition	Code	Detail Photo *	Qty.	Units	Overall Condition	Feature Priority	Treatment Priority
CY-E C8 103	Brick_Displacement	Vertical	Vrt	TPS SHS CY-E C8 103.jpg	3	SF	4	5	20
CY-E C8 106	Brick_Repair	Patch Failed	PF	TPS SHS CY-E C8 106.jpg	6	SI	3	5	15
CY-E C8 205	Brick_Repair	Patch Failed	PF	TPS SHS CY-E C8 205.jpg	8	SI	4	5	20
CY-E C9 205	Brick_Repair	Patch Failed	PF	TPS SHS CY-E C9 202.jpg	6	SI	3	5	15
CY-E C9 211	Brick_Repair	Patch Failed	PF	TPS SHS CY-E C9 204.jpg	3	SI	4	5	20
CY-E C7 206	Brick_Spall	Missing	M	TPS SHS CY-E C7 203.jpg	2	SI	3	5	15
CY-E C1 105	Brick_SurfLoss	Face Spalled	Fce	TPS SHS CY-E C1 102.jpg	0.25	SF	4	5	20
CY-E C5 102	Brick_SurfLoss	Face Spalled	Fce	TPS SHS CY-E C5 102.jpg	4	SF	4	5	20
CY-E C2 101	Stone_Spall	Missing	M	TPS SHS CY-E C2 101.jpg	1	SF	3	5	15
CY-E C4 101	Stone_Spall	Missing	M	TPS SHS CY-E C4 101.jpg	6	SI	3	5	15
CY-E C1 112	Stone_SurfLoss	Delamination	Dim	TPS SHS CY-E C1 105.jpg	0.5	SF	4	5	20
CY-E W1 304	TerraCotta_Displacement	Displacement - Vertical	Vrt	TPS SHS CY-E W1 302.jpg	1	Units	5	5	25
CY-E C2 201	TerraCotta_Displacement	Displacement - Vertical	Vrt	TPS SHS CY-E C2 201.jpg	1	Units	3	5	15
CY-E C2 302	TerraCotta_Displacement	Displacement - Vertical	Vrt	TPS SHS CY-E C2 302.jpg	3	Units	5	5	25
CY-E C5 303	TerraCotta_Repair	Patch Sound	P	TPS SHS CY-E C5 301.jpg	5	SI	3	5	15
CY-E C9 201	TerraCotta_Repair	Patch Failed	PF	TPS SHS CY-E C9 201.jpg	6	SI	3	5	15
CY-E C10 302	TerraCotta_Repair	Patch Failed	PF	TPS SHS CY-E C10 302.jpg	5	SI	4	5	20
CY-E C13 203	TerraCotta_Repair	Patch Sound	P	TPS SHS CY-E C13 201.jpg	3	SI	3	5	15
CY-E C1 108	TerraCotta_Spall	Bonded	B	TPS SHS CY-E C1 104.jpg	0.8	SI	4	5	20
CY-E C1 202	TerraCotta_Spall	Missing	M	TPS SHS CY-E C1 201.jpg	5	SI	4	5	20
CY-E C9 302	TerraCotta_Spall	Missing	M	TPS SHS CY-E C9 301.jpg	2	SI	3	5	15
CY-E C10 203	TerraCotta_Spall	Missing	M	TPS SHS CY-E C10 201.jpg	0.5	SI	5	5	25
CY-E C11 205	TerraCotta_Spall	Missing	M	TPS SHS CY-E C11 204.jpg	6	SI	5	5	25
CY-E C11 306	TerraCotta_Spall	Missing	M	TPS SHS CY-E C11 304.jpg	8	SI	3	5	15
CY-E C12 302	TerraCotta_Spall	Missing	M	TPS SHS CY-E C12 301.jpg	6	SI	3	5	15
CY-E W1 208	TerraCotta_SurfLoss	Delamination	Dim	TPS SHS CY-E W1 203.jpg	0.5	SF	5	5	25

*SEE EXTERIOR CONDITION ASSESSMENT FOR DETAIL PHOTOS

Tacoma Public Schools - Stadium High School
Deficiency Matrix
Courtyard - West

Item #	Material & Deficiency	Condition	Code	Detail Photo *	Qty.	Units	Overall Condition	Feature Priority	Treatment Priority
CY-W C3 203	Brick_Repair	Patch Failed	PF	TPS SHS CY-W C3 201.jpg	10	SI	5	5	25
CY-W C8 303	Brick_Repair	Patch Sound	P	TPS SHS CY-W C8 301.jpg	5	SI	2	5	10
CY-W C1 107	Brick_SurfLoss	Chipped	Chp	TPS SHS CY-W C1 103.jpg	±2	FT	2	5	10
CY-W C1 111	Brick_SurfLoss	Chipped	Chp	TPS SHS CY-W C1 104.jpg	±2	FT	2	5	10
CY-W C8 307	Brick_SurfLoss	Chipped	Chp	TPS SHS CY-W C8 301.jpg	±2	FT	3	5	15
CY-W C8 302	Brick_SurfLoss	Chipped	Chp	TPS SHS CY-W C8 301.jpg	±5	SF	4	5	20
CY-W C9 102	Brick_SurfLoss	Chipped	Chp	TPS SHS CY-W C8 101.jpg	0.25	SF	3	5	15
CY-W C9 308	Brick_SurfLoss	Chipped	Chp	TPS SHS CY-W C8 302.jpg	0.25	SF	3	5	15
CY-W C1 207	TerraCotta_Repair	Replacement	Rpl	TPS SHS CY-W C1 201.jpg	20	SI	2	5	10
CY-W C1 208	TerraCotta_Repair	Patch Sound	P	TPS SHS CY-W C1 201.jpg	15	SI	5	5	25
CY-W C2 203	TerraCotta_Repair	Patch Failed	PF	TPS SHS CY-W C2 201.jpg	5	SI	4	5	20
CY-W C2 210	TerraCotta_Repair	Patch Failed	PF	TPS SHS CY-W C2 202.jpg	8	SI	4	5	20
CY-W C3 206	TerraCotta_Repair	Patch Sound	P	TPS SHS CY-W C3 202.jpg	6	SI	3	5	15
CY-W C4 206	TerraCotta_Repair	Patch Sound	P	TPS SHS CY-W C4 202.jpg	1.5	SI	3	5	15
CY-W C4 212	TerraCotta_Repair	Patch Failed	PF	TPS SHS CY-W C4 304.jpg	12	SI	5	5	25
CY-W C5 204	TerraCotta_Repair	Replacement	Rpl	TPS SHS CY-W C5 201.jpg	12	SI	2	5	10
CY-W C5 208	TerraCotta_Repair	Patch Failed	PF	TPS SHS CY-W C5 203.jpg	15	SI	5	5	25
CY-W C5 210	TerraCotta_Repair	Patch Failed	PF	TPS SHS CY-W C5 203.jpg	10	SI	5	5	25
CY-W C5 213	TerraCotta_Repair	Patch Failed	PF	TPS SHS CY-W C5 204.jpg	10	SI	5	5	25
CY-W C5 214	TerraCotta_Repair	Patch Failed	PF	TPS SHS CY-W C5 204.jpg	8	SI	5	5	25
CY-W C6 212	TerraCotta_Repair	Patch Failed	PF	TPS SHS CY-W C6 203.jpg	6	SI	4	5	20
CY-W C7 219	TerraCotta_Repair	Patch Failed	PF	TPS SHS CY-W C7 204.jpg	4	SI	5	5	25
CY-W C7 220	TerraCotta_Repair	Patch Failed	PF	TPS SHS CY-W C7 204.jpg	10	SI	5	5	25
CY-W C7 221	TerraCotta_Repair	Patch Failed	PF	TPS SHS CY-W C7 204.jpg	10	SI	5	5	25
CY-W C8 203	TerraCotta_Repair	Patch Failed	PF	TPS SHS CY-W C8 201.jpg	4	SI	4	5	20
CY-W C9 203	TerraCotta_Repair	Patch Failed	PF	TPS SHS CY-W C9 201.jpg	4	SI	4	5	20
CY-W C9 213	TerraCotta_Repair	Replacement	Rpl	TPS SHS CY-W C8 203.jpg	200	SI	2	5	10
CY-W C10 301	TerraCotta_Repair	Replacement	Rpl	TPS SHS CY-W C10 301.jpg	150	SI	2	5	10
CY-W C10 314	TerraCotta_Repair	Patch Sound	P	TPS SHS CY-W C10 303.jpg	10	SI	2	5	10
CY-W C1 205	TerraCotta_SurfLoss	Chipped	Chp	TPS SHS CY-W C1 201.jpg	±5	FT	3	5	15
CY-W C1 206	TerraCotta_SurfLoss	Chipped	Chp	TPS SHS CY-W C1 201.jpg	±5	FT	3	5	15
CY-W C3 205	TerraCotta_SurfLoss	Chipped	Chp	TPS SHS CY-W C3 202.jpg	±5	FT	3	5	15
CY-W C4 210	TerraCotta_SurfLoss	Chipped	Chp	TPS SHS CY-W C4 303.jpg	0.25	FT	4	5	20
CY-W C4 211	TerraCotta_SurfLoss	Chipped	Chp	TPS SHS CY-W C4 304.jpg	0.5	FT	4	5	20
CY-W C7 216	TerraCotta_SurfLoss	Chipped	Chp	TPS SHS CY-W C7 203.jpg	0.25	FT	3	5	15
CY-W C9 302	TerraCotta_SurfLoss	Chipped	Chp	TPS SHS CY-W C9 301.jpg	0.25	FT	4	5	20
CY-W C9 207	TerraCotta_SurfLoss	Chipped	Chp	TPS SHS CY-W C8 202.jpg	0.25	SF	4	5	20
CY-W C10 202	TerraCotta_SurfLoss	Chipped	Chp	TPS SHS CY-W C10 201.jpg	0.5	SF	5	5	25
CY-W C10 203	TerraCotta_SurfLoss	Chipped	Chp	TPS SHS CY-W C10 201.jpg	0.25	SF	5	5	25
CY-W C10 313	TerraCotta_SurfLoss	Chipped	Chp	TPS SHS CY-W C10 303.jpg	0.25	SF	3	5	15

*SEE EXTERIOR CONDITION ASSESSMENT FOR DETAIL PHOTOS

Tacoma Public Schools - Stadium High School
Deficiency Matrix
Courtyard - North

Item #	Material & Deficiency	Condition	Code	Detail Photo *	Qty.	Units	Overall Condition	Feature Priority	Treatment Priority
CY-N2 C1 309	Brick_Displacement	Horizontal and Vertical	HV	TPS SHS CY-N2 C1 303.jpg	2	SF	5	5	25
CY-N2 C2 313	Brick_Displacement	Horizontal and Vertical	HV	TPS SHS CY-N2 C2 303.jpg	4	SF	5	5	25
CY-N C1 104	Brick_SurfLoss	Face Spalled	Fce	TPS SHS CY-N C1 102.jpg	0.5	SF	3	5	15
CY-N C2 105	Brick_SurfLoss	Face Spalled	Fce	TPS SHS CY-N C2 102.jpg	0.25	SF	3	5	15
CY-N C2 307	Brick_SurfLoss	Face Spalled	Fce	TPS SHS CY-N C2 302.jpg	0.5	SF	4	5	20
CY-N C1 303	Brick_Unsecured	Loose	L	TPS SHS CY-N C1 302.jpg	2	SF	5	5	25
CY-N C2 111	TerraCotta_Spall	Hazardous	Haz	TPS SHS CY-N C2 104.jpg	0.5	SF	4	5	20
CY-N C2 304	TerraCotta_Spall	Hazardous	Haz	TPS SHS CY-N C2 301.jpg	8	SI	5	5	25
CY-N C2 308	TerraCotta_Spall	Hazardous	Haz	TPS SHS CY-N C2 303.jpg	0.5	SF	5	5	25
CY-N2 C1 103	TerraCotta_Spall	Hazardous	Haz	TPS SHS CY-N2 C1 103.jpg	1.5	SF	5	5	25
CY-N2 C1 208	TerraCotta_Spall	Hazardous	Haz	TPS SHS CY-N2 C1 204.jpg	3	SF	5	5	25
CY-N2 C1 303	TerraCotta_Spall	Hazardous	Haz	TPS SHS CY-N2 C1 301.jpg	1	SF	5	5	25
CY-N2 C1 308	TerraCotta_Spall	Missing	M	TPS SHS CY-N2 C1 303.jpg	0.5	SF	5	5	25
CY-N2 C1 318	TerraCotta_Spall	Bonded	B	TPS SHS CY-N2 C1 308.jpg	6	SI	6	5	30
CY-N2 C2 202	TerraCotta_Spall	Bonded	B	TPS SHS CY-N2 C2 201.jpg	2	FT	4	5	20
CY-N2 C1 306	TerraCotta_SurfLoss	Delamination	Dim	TPS SHS CY-N2 C1 303.jpg	2.5	SF	5	5	25

*SEE EXTERIOR CONDITION ASSESSMENT FOR DETAIL PHOTOS

BCA CALLOUTS

ELEVATION + WINDOW/COLUMN + # (LEFT TO RIGHT)

EXAMPLE: CY-W C5 - COURTYARD WEST COLUMN 5

BASE LEGEND

LIMITS OF BASE BID SCOPE OF WORK
EXISTING TO REMAIN
EXISTING TO BE REMOVED OR DEMOLISHED

ADD ALTERNATES AND DEMONSTRATION AREAS

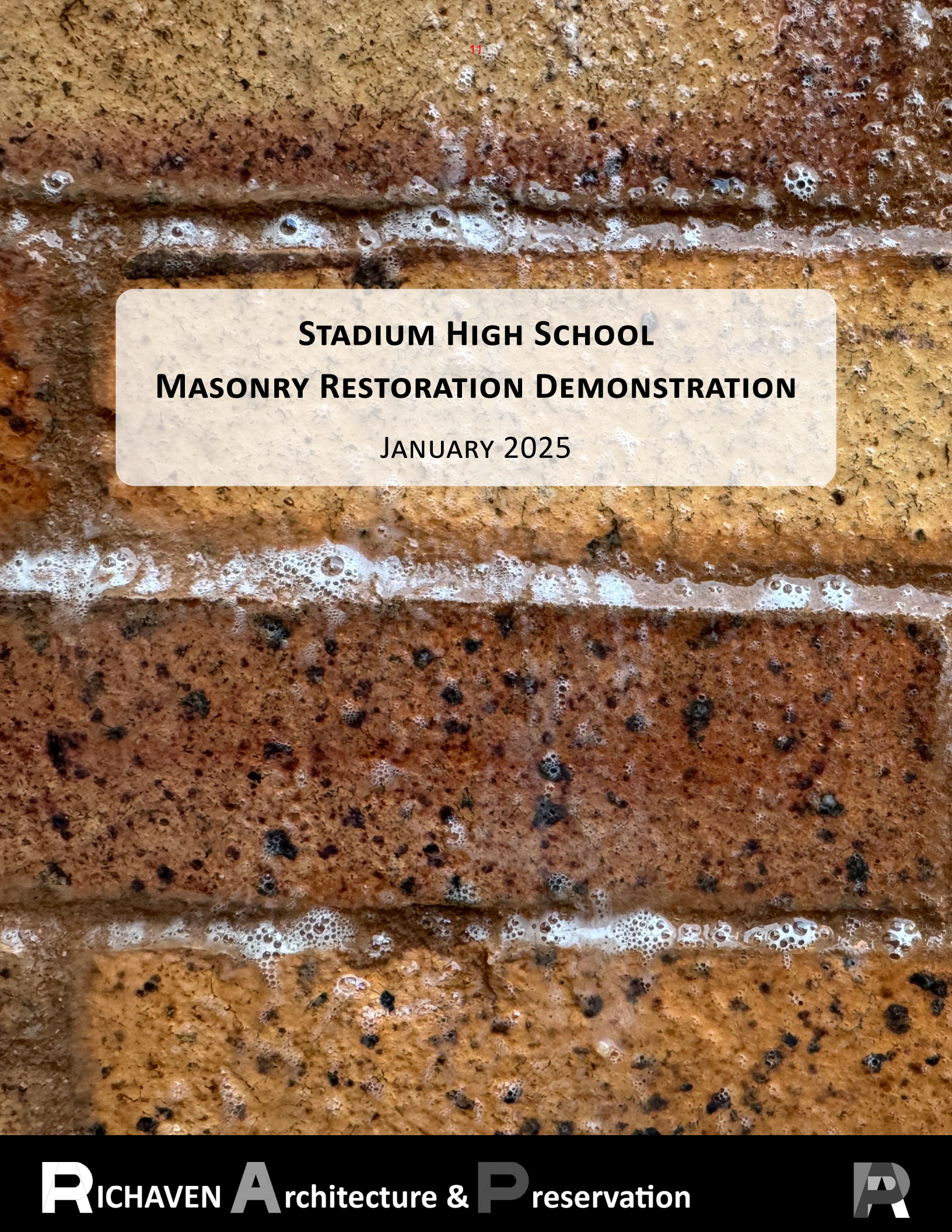
DEM ONSTRATION AREAS
ADD ALT. 1
ADD ALT. 2
ADD ALT. 3
ADD ALT. 4
ADD ALT. 5

SYMBOL LEGEND
1/4" = 1'-0"

BRUNIAQ

SHEET NUMBER:

AE.05



**STADIUM HIGH SCHOOL
MASONRY RESTORATION DEMONSTRATION**

JANUARY 2025

EXECUTIVE SUMMARY

PROJECT DESCRIPTION

Tacoma Public Schools is in the planning process of a masonry restoration project at the courtyard of Stadium High School, a Tacoma landmark listed on the Washington State and National Register of Historic Properties. In preparation for this project at Stadium High School, Richaven Architecture & Preservation worked in collaboration with Parametrix, Warfield Masonry, and Finishing Touch Masonry to conduct a Masonry Restoration Demonstration.

This Demonstration took place in the East corner of the Courtyard and focused on the three primary masonry systems at Stadium High School, including Wilkeson Sandstone, Brick, and Terra Cotta. The purpose of the Masonry Restoration Demonstration was to test a variety of restoration mortar manufacturers, as well as a number of other repair techniques, at an inconspicuous area in Stadium High School's Courtyard.

SUMMARY OF FINDINGS

The following report provides details into the multi-step process of the Masonry Restoration Demonstration at Stadium High School. Details of the project include the Scope, Schedule, Team, Mortar Materials and Manufacturers, as well as a daily summary of each of the seven (7) site visits performed by Richaven. Finally, a preliminary, microscopic look into the installed restoration mortars provide key insight into the mix design and possible deleterious materials.

As a part of the repair techniques undertaken, there were three major discoveries in the sample area that will need further consideration in the future. First, upon closer inspection, lead flashing has been installed along the terra cotta belt course. Second, as the terra cotta piece was removed, it was discovered that it too has a mortar color that is distinctly different than both the brick and stone mortars. And finally, helical anchor ties have been installed in the brick mortar joints at somewhat unpredictable patterns. There are also signs of helical anchors in the terra cotta joints.

RECOMMENDATIONS

As is discussed in more detail at the end of this report, this Demonstration helped to inform the mortar material selection, historic repointing and cleaning protocol considerations, and even led to some discoveries not uncommon in a historic building of this age (1891). Further investigation into the terra cotta mortar is recommended to find a suitable replacement mortar for future masonry restoration work, similar to the brick and stone process outline herein. Restoration repair techniques will continue to be developed to better fit the scope of each particular project, and to keep Tacoma Public Schools best interests in mind.

This Masonry Restoration Demonstration was crucial in better understanding the existing conditions at Stadium High School and assist Tacoma Public Schools in continuing their stewardship of the local, state, and national landmark.



PROJECT DETAILS

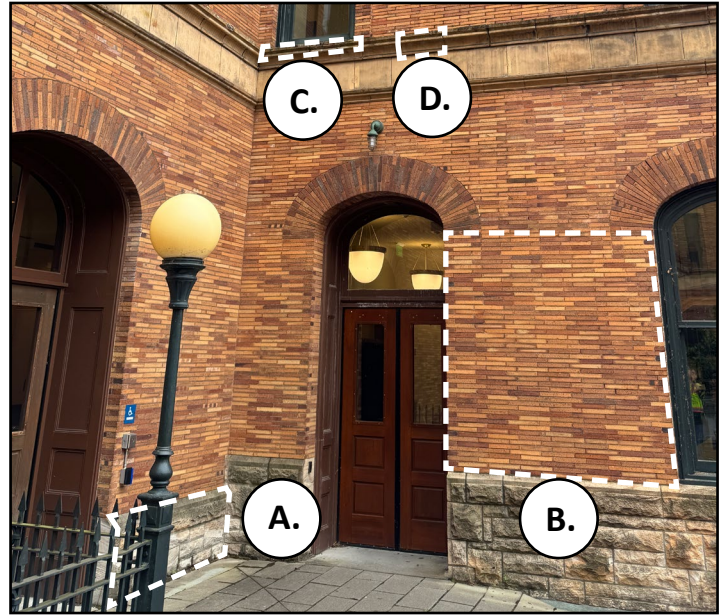
SCOPE

There were four (4) key parts to the scope of this work...

- A. Wilkeson Sandstone Repointing (15 sq ft)
- B. Brick Repointing (50 sq ft)
- C. Terra Cotta Patch (one unit with existing failing patch)
- D. Terra Cotta Removal & Temporary Flashing (one unit)

SCHEDULE

To minimize disruptions to Tacoma Public School’s students and staff, the scope of work was intended to take place during Winter Break (December 23, 2024 - January 3, 2025). Work was completed on January 20, 2025, with the understanding that the color of the mortar samples is still to be evaluated at a later date.



A. Stone Repointing Area (15 sq ft), B. Brick Repointing Area (50 sq ft), C. Terra Cotta Patch Area, D. Terra Cotta Removal - Full Unit

JANUARY 2025 - Weekdays				
MON	TUE	WED	THU	FRI
DEC. 30 Joint removal (FTM) Site Visit #1 (RAP)	DEC. 31 Scaffold assembly (WM) Site Visit #2 (RAP)	1 NEW YEAR'S DAY	2 Terra cotta removal & patching (FTM) Site Visit #3 (RAP)	3 Terra cotta removal, patching, & repointing (FTM) Site Visit #4 (RAP)
6 Patching & repointing (FTM) Site Visit #5 (RAP)	7 Final repointing (FTM) Site Visit #6 (RAP)	8 Scaffold disassembly and site cleanup (WM)	9	10
13	14	15	16	17
20 Mortar cleaning (FTM) Site Visit #7 (RAP)	21 <i>Mortar color to be re-evaluated later in year.</i>	22	23	24
27	28	29	30	31

The calendar to the left illustrates the recorded schedule, and includes brief work summaries on each day.

Winter conditions typically present challenges to the mortar installation and curing process. Many working days were cold and rainy, but temperatures stayed hovered around 40 - 45°F. January 20, 2025, the day of the final mortar cleaning, was the only working day where the outside temperature was recorded below freezing.

TEAM DIRECTORY

Parametrix:

Doug Wisner, Project Manager
Rebecca Kunselman, Senior Project Coordinator

Richaven Architecture & Preservation (RAP):

Brian Rich, Principal
Anna Gold, Historic Designer

Warfield Masonry (WM):

Ben Warfield, CEO

Finishing Touch Masonry (FTM):

Jon Sherin, Owner
Tim Hester, General Foreman

KEY

 On-site at Stadium High School



PROJECT DETAILS

MORTAR MATERIALS

To assist Tacoma Public Schools in narrowing down an appropriate restoration mortar for Stadium High School, a sampling of manufacturers were selected to proceed with color matching and installation process. More information on the specific products and manufacturers can be found in the Table below.

Three (3) restoration mortar manufacturers and one (1) local mortar manufacturer were used as a part of this work. Each mortar was color matched, prepared, sampled, cleaned, and rinsed to be able to best compare the mortar characteristics to the original mortar used at Stadium High School.

Due to the abbreviated nature of this demonstration, the mortar did not have sufficient curing time to evaluate the coloring, and this will need to be conducted at a later date.



Mortar samples on-site prior to being cleaned and rinsed concurrent with the masonry. Two samples were prepared for each mortar type; only one sample was cleaned.

RESTORATION MATERIAL MANUFACTURERS	
Manufacturer/Product	Location/Contact
CATHEDRAL STONE PRODUCTS <u>Product(s):</u> Jahn M110 JO - Type O Mortar <ul style="list-style-type: none"> Stone: PPM-205 Brick: 44172 	Honover, Maryland <u>Contact:</u> Jennifer Salandanan jennifer@cathedralstone.com (410) 782-3010
EDISON COATINGS <u>Product(s):</u> Spec Joint 46 - Type O, Fine <ul style="list-style-type: none"> Stone: #14115, Batch/Lab# S.32174 Brick: #14116, Batch/Lab# S.32175 Terra Cotta Patch: Custom SYSTEM 45 	Plainville, Connecticut <u>Contact:</u> Heidi Kuczek hkuczek@edisoncoatings.com (860) 351-2156
SPEC MIX <u>Product(s):</u> <ul style="list-style-type: none"> Spec Mix Tuckpoint Mortar - Type O, White Basalite #1 Sand Pigment: SM620 Tangerine 	Eagan, Minnesota <u>Contact:</u> <i>Product formulated by Tim Hester (FTM)</i>
US HERITAGE GROUP (USHG) <u>Product(s):</u> Lime Putty Mortar with added bag of cement <ul style="list-style-type: none"> Stone: USHG#24-175-A (3 samples each - Base, Light, Dark) Brick: USHG#24-175-B (3 samples each - Base, Light, Dark) 	Franklin Park, Illinois <u>Contact:</u> Jim Lemanski lemanski@usheritage.com (773) 286-2100



SITE VISIT #1

TIME: 8:00 AM

DATE: December 30, 2024

ATTENDEES: Rick (FTM), Brian Rich, Anna Gold (RAP)

OBSERVATIONS

Stone joints removed at Sample Area B.
Lead flashing discovered in terra cotta belt course.

DISCUSSION POINTS

Strike repointed joints using wood dowel method.
Saturate masonry prior to repointing.



SITE VISIT #2

TIME: 9:20 AM

DATE: December 31, 2024

ATTENDEES: Tim, Bubba (WM), Anna Gold (RAP)

OBSERVATIONS

Brick joints fully removed at Sample Area B.
Helical anchors discovered at Sample Area B.
Scaffold partially erected. Wood blocking at footings. No protection beneath steel ladder.



SITE VISIT #3**TIME:** 8:00 AM**DATE:** January 2, 2024**ATTENDEES:** Rick (FTM), Brian Rich, Anna Gold (RAP)**OBSERVATIONS**

Failed mortar patch at window sill unit is in process of being removed.

Full terra cotta unit is in the process of being removed. Reported to be quite difficult.

DISCUSSION POINTS

Decision to remove full terra cotta unit that has existing crack at its base.

**SITE VISIT #4****TIME:** 1:30 PM**DATE:** January 3, 2025**ATTENDEES:** Rebecca (Parametrix), Brian Rich, Anna Gold (RAP)**OBSERVATIONS**

Brick masonry has not been saturated prior to repointing. Some mortar repointing at brick.

Gray mortar installed to divide mortar sample areas.

Terra cotta unit removed from belt course, wood shims installed in its absence.

Terra cotta mortar observed to be different than both brick and stone mortars.

Terra cotta patching at window sill. Rainy conditions impacted the compound's ability to set.

Some scaffolding cross-bracing not fully fastened into place.



SITE VISIT #5**TIME:** 9:30 AM**DATE:** January 6, 2024**ATTENDEES:** Rick, Anthony (FTM), Anna Gold (RAP)**OBSERVATIONS**

Terra cotta patch being re-installed at window sill unit.
 Brick masonry has not been saturated prior to repointing.
 Striking mortar at Sample Area B using metal tool.

DISCUSSION POINTS

Not enough restoration mortar to equally divide Sample Area B. Spec Mix mortar to make up difference.

**SITE VISIT #6****TIME:** 1:30 PM**DATE:** January 7, 2025**ATTENDEES:** Rebecca (Parametrix), Brian Rich, Anna Gold (RAP)**OBSERVATIONS**

Mortar samples installed at stone Sample Area A.
 Site work has splashed onto paneling on door entry jambs. To be clean prior to completion of work.
 Terra cotta patch has been reinstalled at the window sill. The wash has been tooled to correspond with existing surface grooves.
 Some restoration mortar exhibiting salt crystallization at Sample Area A.



SITE VISIT #7

TIME: 8:00 AM

DATE: January 20, 2025

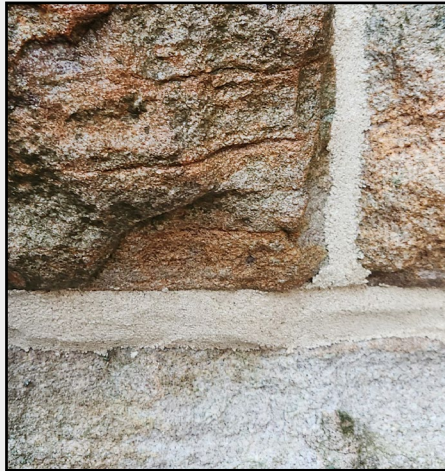
ATTENDEES: Anthony, Caleb (FTM), Brian Rich, Anna Gold (RAP)

OBSERVATIONS

Masonry cleaning at Sample Area A using Prosoco Sure Klean Vana Trol.



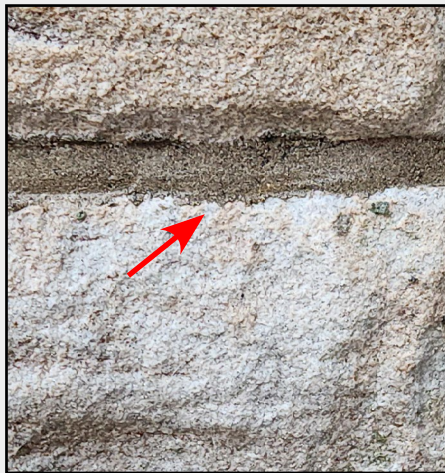
8:15 AM Low-pressure, water rinse using spray nozzle.



8:25 AM Vana Trol application using natural bristle brush. Approximately 22 minute dwell time.

The aggregate on this restoration mortar has not been exposed during the observed cleaning process. This gives the sample a smoother appearance.

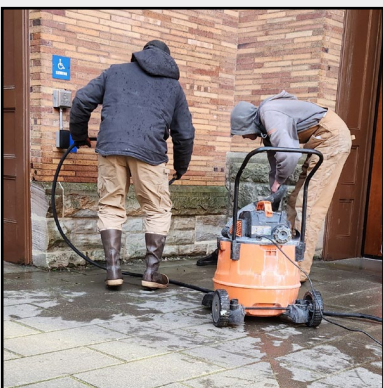
Some mortar joints extend past the plane of the stone face instead of being recessed. This will direct water toward the stone instead of using the intended path through the mortar.



Although this is the recommended restoration mortar, further color matching and aggregate sizing needs to be explored.



Cathedral Stone mortar uses a white sand aggregate, which does not match the historic stone mortar characteristics. Some mortar is visible on the face of the Wilkeson Sandstone.



8:57 AM Low-pressure, water rinse using spray nozzle.



SITE VISIT #7

OBSERVATIONS

Masonry cleaning at Sample Area B using Prosoco Sure Klean Vana Trol.

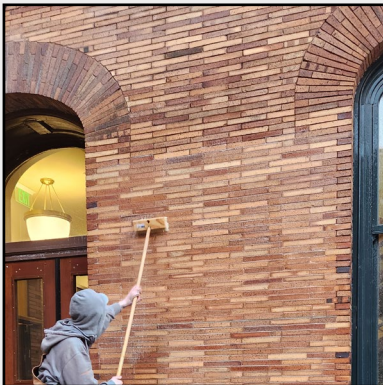
The use of a 4000 psi pressure washer brought to site was prohibited without a pressure gauge.

A hose and spray nozzle was used instead.

Outside temperature being between 25 - 28°F made for difficult working conditions with running water.



8:15 AM Low-pressure, water rinse using spray nozzle.



8:20 AM Vana Trol application using natural bristle brush. Approximately 20 minute dwell time.

The historic mortar is visible in the recessed joint on the left, in comparison to the restoration mortar on the right. The excess mortar on the brick face has not been fully removed.

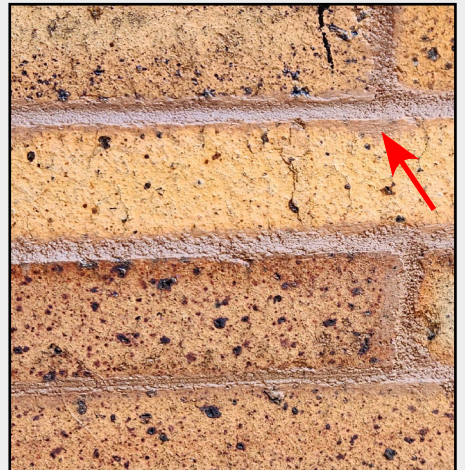
The excess mortar on the brick face has not been fully removed. Further development of a masonry cleaning protocol is recommended.



8:40 AM Low-pressure, water rinse using spray nozzle.



Excess mortar visible on the face of the brick at both the restoration mortar installed on the left and the dividing gray mortar (unknown product) on the right.



Some excess mortar on the face of the brick and textural differences the striking of the joints. The top horizontal row appears smoother than the bottom two rows.



SITE VISIT #7

AREA C: TERRA COTTA PATCH

Although full replacement of terra cotta units is the long-term goal, patching compounds will be considered for future work to assure water will be directed away from the building system.



BEFORE This terra cotta window sill piece has been repaired in the past using a two-layer system. In this photo, the first layer of the failed patches at the surface have been removed, revealing an extensive area of gray-colored patching compound used previously to repair the unit.



AFTER This is the second patch installed at the demonstration unit, the first was not able to properly cure due to rainy conditions. The patching compound has been both shaped and the surface raked to mimic the existing surface grooves.
Note: This level of workmanship is not anticipated for the temporary patching repairs for Summer of 2025.

Patching Compound:

According to the Product Data Sheet, "Edison **Custom SYSTEM 45** products are two-component, latex-modified, cementitious compounds used to produce highly durable and compatible aesthetic repairs to masonry and concrete. They may also be used as stone-like finishes on a variety of other substrates."



See (2) above images for shaped patch and restoration mortar mimicking the ornate profile of the belt course. Brick restoration mortar was installed at the joints, but further investigation of the historic terra cotta mortar is recommended.

SITE VISIT #7 *continued***AREA D: TERRA COTTA REMOVAL & TEMPORARY WEATHERPROOFING**

Until an appropriate replacement piece is installed, a piece of beige sheet metal is bent to replicate the surrounding masonry on the belt course. This temporary flashing is to prevent rainwater from being driven into the wall system



Due to the curved nature of the upper piece of terra cotta on the belt course, there is a small gap created at the sheet metal.

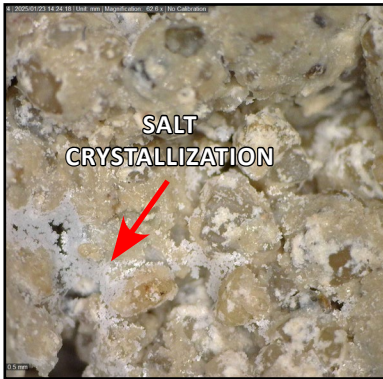
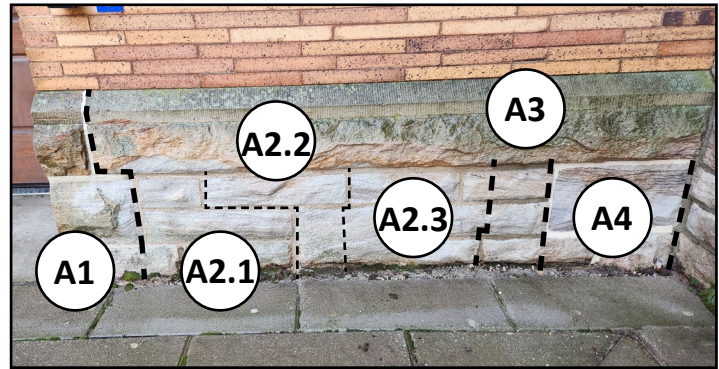
AREA A - STONE MORTAR

MICROSCOPIC MORTAR PHOTOS

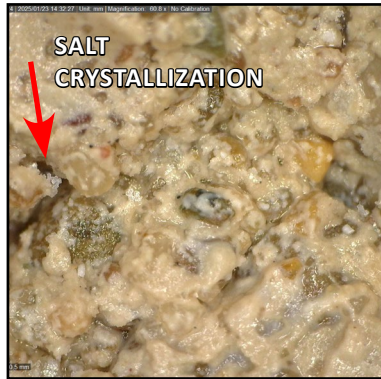
After receiving the cleaned mortar samples, the samples were left to dry for (3) days before observing the characteristics of the mortar at a closer level. Microscopic images were taken off-site to assess the cream, aggregate, mixture consistency, and any noted deficiencies, such as cracks or visible salt crystallization.

In general, cleaning procedures should be modified to allow for consistent aggregate exposure. The formation of salt crystals will continue to be monitored. Mortar color will be examined at a later date as the mixtures dry.

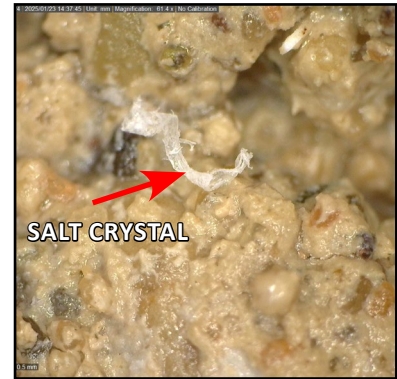
AREA A - MORTAR INSTALLATION MAP



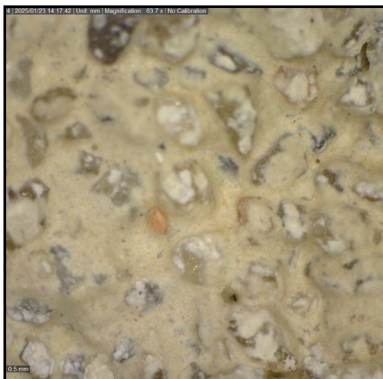
A2.1 - USHG (BASE)
Sample appears dry and not easily workable. All USHG stone mortars share this characteristic as well as visible salt crystallization.



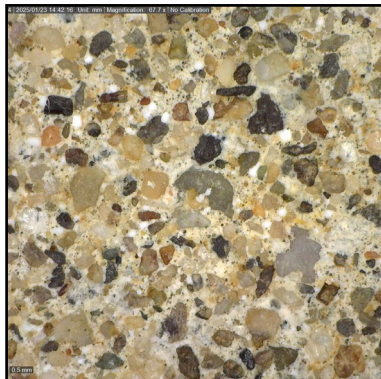
A2.2 - USHG (LIGHT)
Aggregate very difficult to see through mortar cream. The variety of aggregate colors is visible.



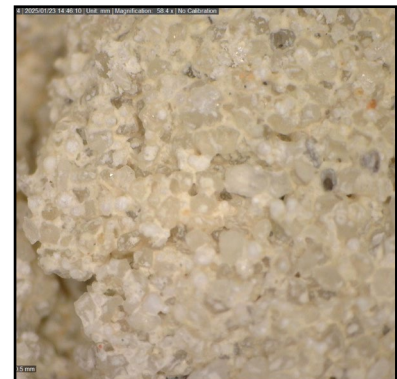
A2.3 - USHG (DARK)
Similar to the other USHG stone mortars, this sample has a very thick, chunky consistency.



A1 - EDISON
Aggregate very difficult to see through mortar cream. Shrinkage cracks throughout.



A3 - SPEC MIX*
Wide variety of aggregate sizing and colors. Color needs further adjustment, it is notably darker.
**Note: This sample was prepared on December 11, 2024*



A4 - CATHEDRAL STONE
As the lightest-colored sample, the use of white sand in this mortar does not match the historic mortar's characteristics.

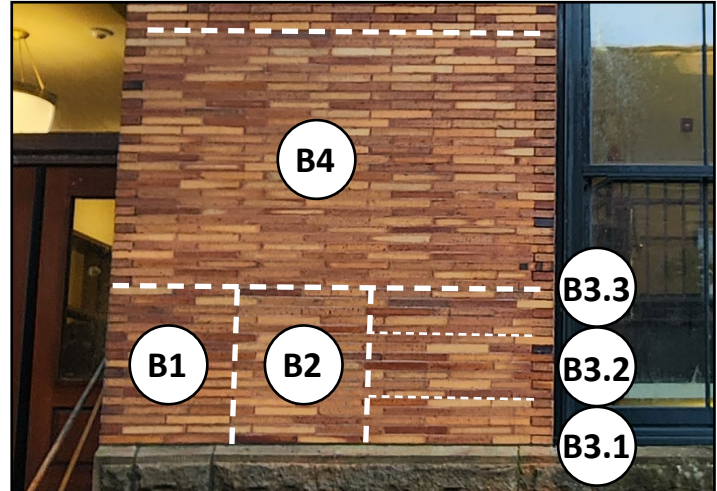


AREA B - BRICK MORTAR

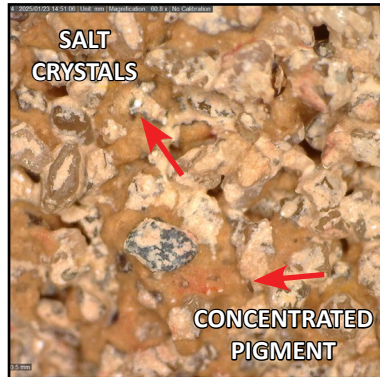
After receiving the cleaned mortar samples, the samples were left to dry for (3) days before observing the characteristics of the mortar at a closer level. Microscopic images were taken off-site to assess the cream, aggregate, mixture consistency, and any noted deficiencies, such as cracks or visible salt crystallization.

In general, cleaning procedures should be modified to allow for consistent aggregate exposure. The formation of salt crystals will continue to be monitored. Mortar color will be examined at a later date as the mixtures dry.

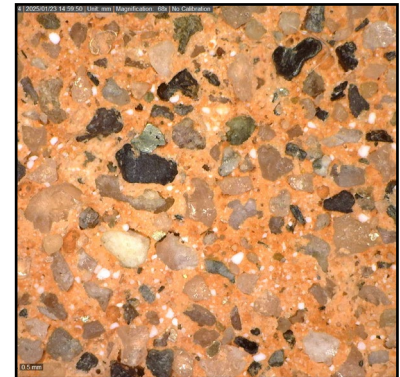
MICROSCOPIC MORTAR PHOTOS
AREA B - MORTAR INSTALLATION MAP



B1 - CATHEDRAL STONE
Aggregate very difficult to see through mortar cream. Shrinkage cracks throughout.



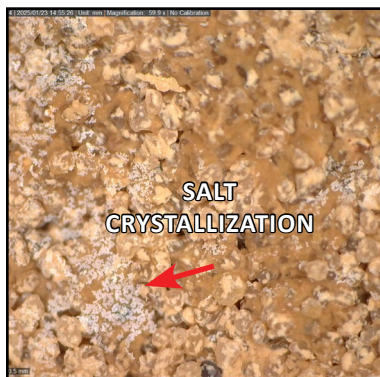
B2 - EDISON
Mortar cream visible on surface of aggregate. Salt grains present. Consistent aggregate sizes in a variety of colors. Spots of red concentrated pigment.



B4 - SPEC MIX*
Wide variety of aggregate sizing and colors. Mortar cream is consistently recessed from surface.
**Note: This sample was prepared on December 11, 2024*



B3.1 - USHG (BASE)
Mortar cream visible on surface of aggregate. Consistent aggregate sizes in a variety of colors. Consistent aggregate sizes in a variety of light colors.



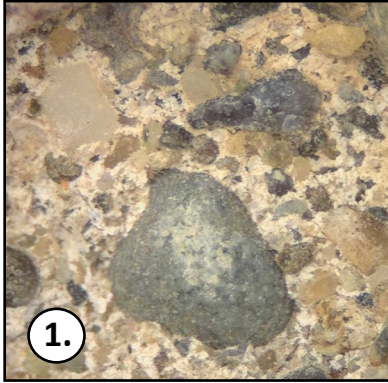
B3.2 - USHG (LIGHT)
Mortar cream visible on surface of aggregate. Salt crystals are forming in some areas.



B3.3 - USHG (DARK)
Salt crystals visible in many areas of the sample. Translucent characteristics of the aggregate



RECOMMENDATIONS



STONE MORTAR

- Spec Mix (Sample A3) provided the best matching aggregate color, as the local manufacturer uses local sand, similar to the original construction.
- Further improvements can be made to introduce sizing variety to the aggregate, as well as lighten the overall color of the matrix.



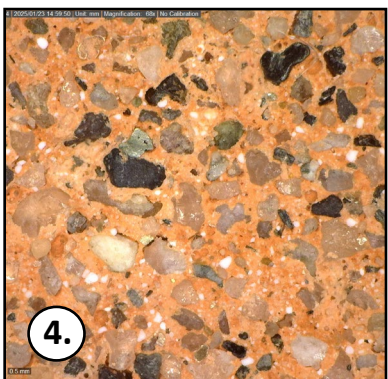
BRICK MORTAR

- Spec Mix (Sample 4B) provided the closest mortar match to the historic brick mortar in both the matrix coloring and aggregate characteristics. This was achieved using a white mortar mix using local sand, iron oxide pigment, as well as additional sand.
- Further improvements can be made to fully incorporating pigments into the mixture and avoiding visible striations of pigment.



TERRA COTTA MORTAR

- Further investigation is recommended as a result of discovering a different mortar used at the terra cotta leads, including Mortar Testing & Analysis and Color Matching.



REPOINTING HISTORIC MORTAR

- Take more care to fully saturating masonry prior to repointing.
- Power saws and unmonitored pressure washers are not to be used.
- Historic repointing methods included striking joints using a wood dowel to better expose the aggregate.

PATCHING TERRA COTTA UNIT

- Using a patching compound will likely be a part of future repairs, however, for temporary repairs a lesser degree of workmanship is anticipated.

TEMPORARY FLASHING AT REMOVED MASONRY UNIT

- Develop temporary sheet metal flashing to better cover void created by unit removal.

FINAL MASONRY CLEANING

- Further development of a detailed masonry cleaning protocol at stone, brick, and terra cotta should be considered. Cleaning Protocol can assist in creating a procedural approach to the various types of soiling found on the building.

BEST MATCH - SPEC MIX

1. Historic Stone Mortar, 2. Restoration Mortar Sample (Spec Mix - Sample A3), 3. Historic Brick Mortar, 4. Restoration Mortar Sample (Spec Mix - Sample B4)

