

# MONTANA FISH, WILDLIFE & PARKS

## Fort Owen East Barracks Preservation

### Stevensville, Montana

#### Issued for Bid

#### April 14, 2022

Project #22-08



East Elevation



West Elevation



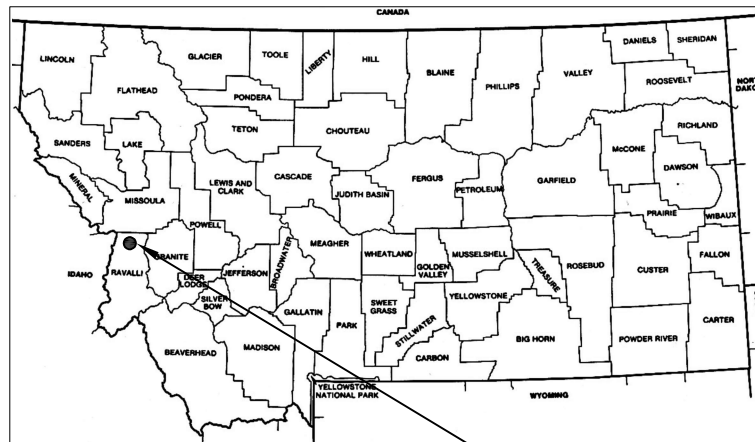
North Elevation



South Elevation

### GENERAL PROJECT NOTES

1. THE FORT OWEN STATE PARK IS LISTED INDIVIDUALLY IN THE NATIONAL REGISTER OF HISTORIC PLACES. THE GENERAL CONTRACTOR SHALL FOLLOW THE SECRETARY OF THE INTERIOR'S STANDARDS FOR PRESERVATION FOR ALL WORK PERFORMED ON THE EAST BARRACKS. THE INTENT IS TO SAVE AS MUCH ORIGINAL ADOBE AND MORTAR AS POSSIBLE, WHILE STABILIZING THE BUILDING AND PREVENTING WATER INTRUSION.
2. THE GENERAL CONTRACTOR SHALL COORDINATE ALL DIGGING ON SITE WITH MONTANA FISH WILDLIFE & PARK'S ARCHAEOLOGIST & CONSULTANT.
3. THE GENERAL CONTRACTOR SHALL PROVIDE TEMPORARY STRUCTURAL BRACING AND/OR SHORING AS REQUIRED TO SUPPORT THE WORK AND PROTECT THE BUILDING.
4. THE GENERAL CONTRACTOR SHALL PROTECT ALL SURFACES TO REMAIN.
5. ALL WORK UNDER THIS CONTRACT SHALL COMPLY WITH ALL APPLICABLE CODES, ORDINANCES, AND REGULATIONS, INCLUDING BUT NOT LIMITED TO, THE 2018 INTERNATIONAL EXISTING BUILDING CODE - CHAPTER 3 FOR REPAIRS.
6. DO NOT SCALE THE DRAWINGS. VERIFY ALL DIMENSIONS IN THE FIELD. CONTACT THE ARCHITECT FOR FURTHER CLARIFICATION.
7. THE GENERAL CONTRACTOR AND ALL SUB-CONTRACTORS SHALL VERIFY ALL EXISTING CONDITIONS PRIOR TO THE START OF CONSTRUCTION. NOTIFY THE ARCHITECT IMMEDIATELY OF ANY INCONSISTENCIES OR DISCREPANCIES IN THE DRAWINGS AND/OR SPECIFICATIONS.
8. ALL WORK SHOWN ON THESE DRAWINGS IS NEW UNLESS OTHERWISE INDICATED.
9. ALL MATERIALS SHOWN ON THESE DRAWINGS ARE EXISTING UNLESS OTHERWISE INDICATED.
10. SEE SHEET 3 FOR TERMINOLOGY AND DEFINITIONS SPECIFIC TO THIS PROJECT.
11. THIS PROJECT IS BEING BID WITH THREE ALTERNATE BIDS IN ADDITION TO THE BASE BID:
  - A. ALT. NO. 1: REMOVE CONCRETE APRON AND PROVIDE REPLICA ADOBE FACES ALONG LENGTH OF EAST WALL. SEE DETAILS 1 & 2, SHEET 7.
  - B. ALT. NO. 2: REPLACE DETERIORATED ADOBE AT BASE OF INTERIOR WALLS IN ROOM #100 & #103. SEE DETAILS 1 & 2, SHEET 7.
  - C. ALT. NO. 3: PROVIDE NEW LOW-SLOPED RAMP AT ENTRY. SEE DETAILS 2 & 5, SHEET 10.



**1** LOCATION MAP  
Not to Scale

Project Location



**2** VICINITY MAP  
Not to Scale



MONTANA FISH, WILDLIFE AND PARKS  
DESIGN AND CONSTRUCTION

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<https://fwp.mt.gov/aboutfwp/design-and-construction>

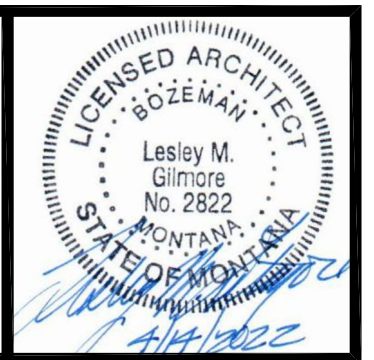


Gilmore Franzen Consulting LLC  
180 N. Low Bench Road  
Gallatin Gateway, MT 59730  
406-600-0464



### DRAWING LIST

- |                                   |                                      |
|-----------------------------------|--------------------------------------|
| 1.....COVER                       | 6.....WEST, NORTH & SOUTH ELEVATIONS |
| 2.....SITE PLAN                   | 7.....DETAILS - ALTERNATES NO. 1 & 2 |
| 3.....TERMINOLOGY & CROSS SECTION | 8.....DETAILS                        |
| 4.....FLOOR PLAN                  | 9.....DETAILS                        |
| 5.....EAST ELEVATION              | 10.....DETAILS AND ALTERNATE NO. 3   |



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**MONTANA FISH,  
WILDLIFE & PARKS**

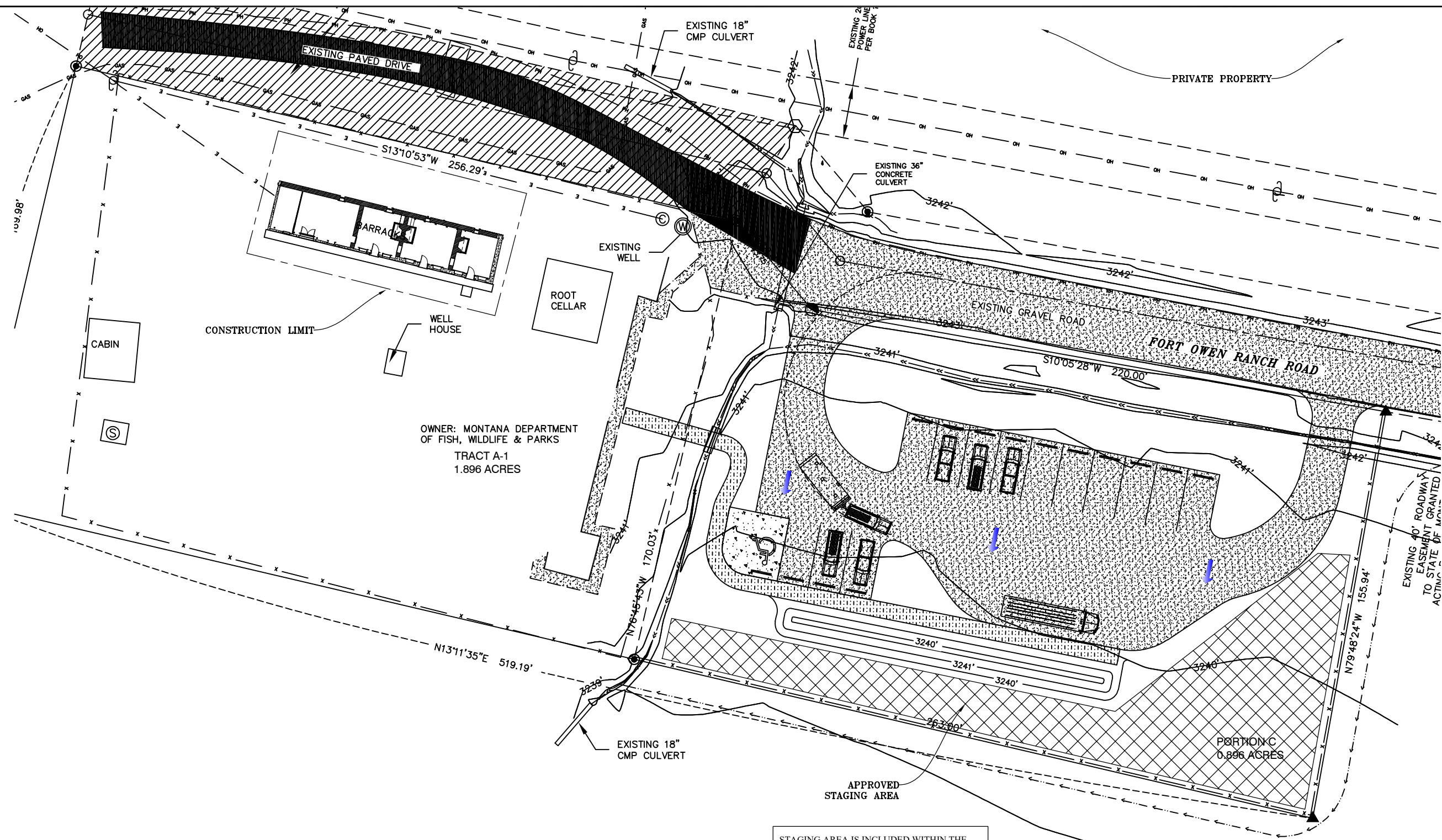
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## Fort Owen East Barracks Preservation

### Cover Sheet

## Project #22-08

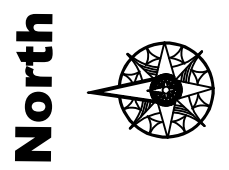
SHEET: 1  
of 10



- GENERAL CONSTRUCTION NOTES:
1. See other sheets in this set for additional information.
  2. See Sheet 3 for Terminology and Building Cross-Section.
  3. The goal of this project is to preserve and stabilize the east facade. Rough edges and unlevel coursing will remain.
  4. See Specifications Section 045000 for sequencing of work.
  5. The adobe are approximately 18" x 8" x 3 1/2" to 4" tall. The mortar joints range from 1" to 1 1/2" wide.
  6. Repoint mortar joints at the east wall adobe and concrete block walls, as indicated on Sheets 5 & 6. See Detail 1/9.
  7. Treat all exposed wood of doors and windows with FPL linseed oil coating.

1 SITE PLAN

Scale: 1"=40'-0"



STAGING AREA IS INCLUDED WITHIN THE BOUNDARY OF THE NATIONAL REGISTER OF HISTORIC PLACES SITE. CONTRACTOR SHALL:

1. COORDINATE LOCATION FOR USE IN THE STAGING AREA WITH MONTANA FISH WILDLIFE & PARKS.
2. PROTECT THE SITE FROM HARM SO THAT THE SITE AT THE END OF THE PROJECT IS THE SAME AS AT THE START.

NOTE: THE DRAWING SCALES ARE ONLY APPLICABLE WHEN THE SHEET IS PRINTED ON 11" X 17" PAPER.

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Fort Owen East Barracks Preservation  
Site Plan 167

04/14/2022

Preservation Architect:  
Gilmore Franzen Consulting LLC  
180 North Low Bench Road  
Gallatin Gateway, MT 59730

SHEET: 2 of 10



TERMINOLOGY USED THROUGHOUT THE BID DOCUMENTS:  
SEE ALSO ANNOTATED DRAWING & PHOTO ON THIS SHEET.

DEFINITIONS:

1. ADOBE: SUN-DRIED, EARTHEN BRICK.
2. APRON: CONCRETE POURED UP NEXT TO THE BASE OF AN ERODED HISTORIC ADOBE WALL. ALSO CALLED A COLLAR OR CONTRA PARED.
3. BASAL: AT THE BASE (BOTTOM) OF THE WALL.
4. BOARD & BATTEN: NARROW STRIP OF WOOD (ACTING AS A JOINT COVER) OVER WIDER BOARDS, ALL OF WHICH ARE ORIENTED ALONG THE DIRECTION OF THE ROOF SLOPE.
5. CEMENTITIOUS: COMPRISED OF CEMENT AND CAPABLE OF SETTING LIKE CEMENT.
6. JAMB: WOODEN SIDE MOUNTINGS AROUND WINDOWS AND DOORS.
7. LINTEL: BEAM OR LOG OVER AN OPENING SUCH AS A DOOR OR WINDOW.
8. PARGING: THIN COATING OF A CEMENTITIOUS MATERIAL, TYPICALLY APPLIED TO VERTICAL SURFACE OF MASONRY. THICKNESS VARIES FROM  $\frac{1}{8}$ " -  $\frac{3}{4}$ ".
9. PRESERVATION: THE ACT OR PROCESS OF APPLYING MEASURES NECESSARY TO SUSTAIN THE EXISTING FORM, INTEGRITY, AND MATERIALS OF AN EXISTING PROPERTY. WORK, INCLUDING PRELIMINARY MEASURES TO PROTECT AND STABILIZE THE PROPERTY, GENERALLY FOCUSES ON THE ONGOING MAINTENANCE AND REPAIR OF HISTORIC MATERIALS AND FEATURES RATHER THAN EXTENSIVE REPLACEMENT AND NEW CONSTRUCTION.
10. PROVIDE: FURNISH & INSTALL.
11. SLURRY: NEARLY LIQUID-APPLIED CEMENTITIOUS COATING THINNER THAN PARGING.
12. TYPICAL: APPLIED TO EVERY INSTANCE OF A DEPICTION OF THE COMPONENT REFERRED TO, SUCH AS A NOTE DIRECTED TOWARD A WINDOW; THE TYPICAL NOTE THUS APPLIES TO ALL WINDOWS.
13. VIGA: A LOG OR BEAM USED AS A PRINCIPAL SUPPORT IN A ROOF SYSTEM (OR MADE TO LOOK LIKE SUPPORT).
14. WASH: CEMENTITIOUS COATING OVER A HORIZONTAL SURFACE, SLOPED TO DRAIN.
15. WINDOWSILL: HORIZONTAL MEMBER AT THE BOTTOM OF A WINDOW OPENING.
16. WYTHE: EACH CONTINUOUS VERTICAL SECTION OF A WALL ONE MASONRY UNIT IN THICKNESS.

GENERAL CONSTRUCTION NOTES:

1. See other sheets in this set for additional information.
2. See Sheet 3 for Terminology and Building Cross-Section.
3. The goal of this project is to preserve and stabilize the east facade. Rough edges and unlevel coursing will remain.
4. See Specifications Section 045000 for sequencing of work.
5. The adobe are approximately 18" x 8" x  $3\frac{1}{2}$ " to 4" tall. The mortar joints range from 1" to  $1\frac{1}{2}$ " wide.
6. Repoint mortar joints at the east wall adobe and concrete block walls, as indicated on Sheets 5 & 6. See Detail 1/9.
7. Treat all exposed wood of doors and windows with FPL linseed oil coating.

EXTENT OF PURPORTED FOUNDATIONS & FOOTINGS AT SOUTH AND NORTH WALLS ARE BASED UPON 1993 CONSTRUCTION DRAWINGS BY JIM McDONALD.

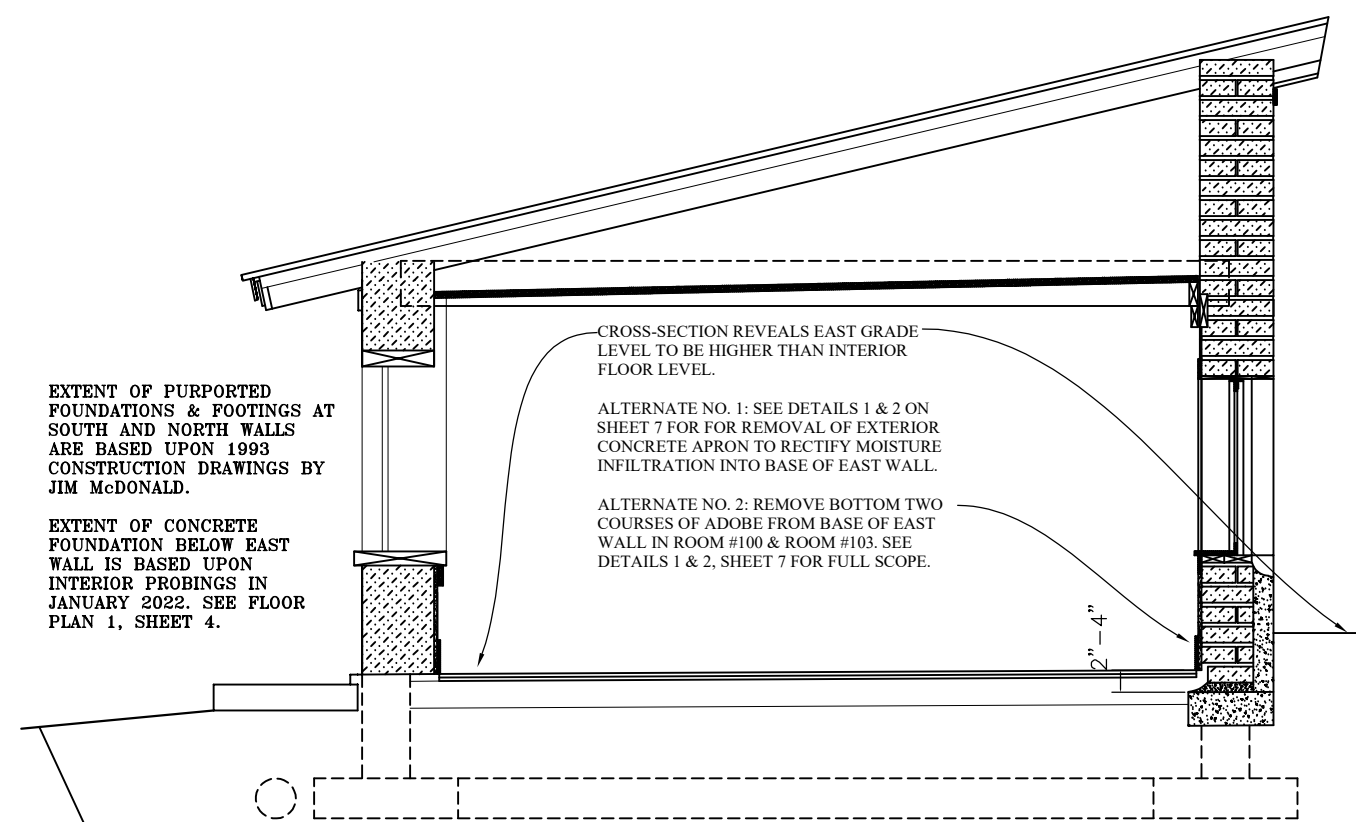
EXTENT OF CONCRETE FOUNDATION BELOW EAST WALL IS BASED UPON INTERIOR PROBINGS IN JANUARY 2022. SEE FLOOR PLAN 1, SHEET 4.

CROSS-SECTION REVEALS EAST GRADE LEVEL TO BE HIGHER THAN INTERIOR FLOOR LEVEL.

ALTERNATE NO. 1: SEE DETAILS 1 & 2 ON SHEET 7 FOR FOR REMOVAL OF EXTERIOR CONCRETE APRON TO RECTIFY MOISTURE INFILTRATION INTO BASE OF EAST WALL.

ALTERNATE NO. 2: REMOVE BOTTOM TWO COURSES OF ADOBE FROM BASE OF EAST WALL IN ROOM #100 & ROOM #103. SEE DETAILS 1 & 2, SHEET 7 FOR FULL SCOPE.

2" - 4"



1 CROSS SECTION  
Scale: 1/4" = 1'-0"

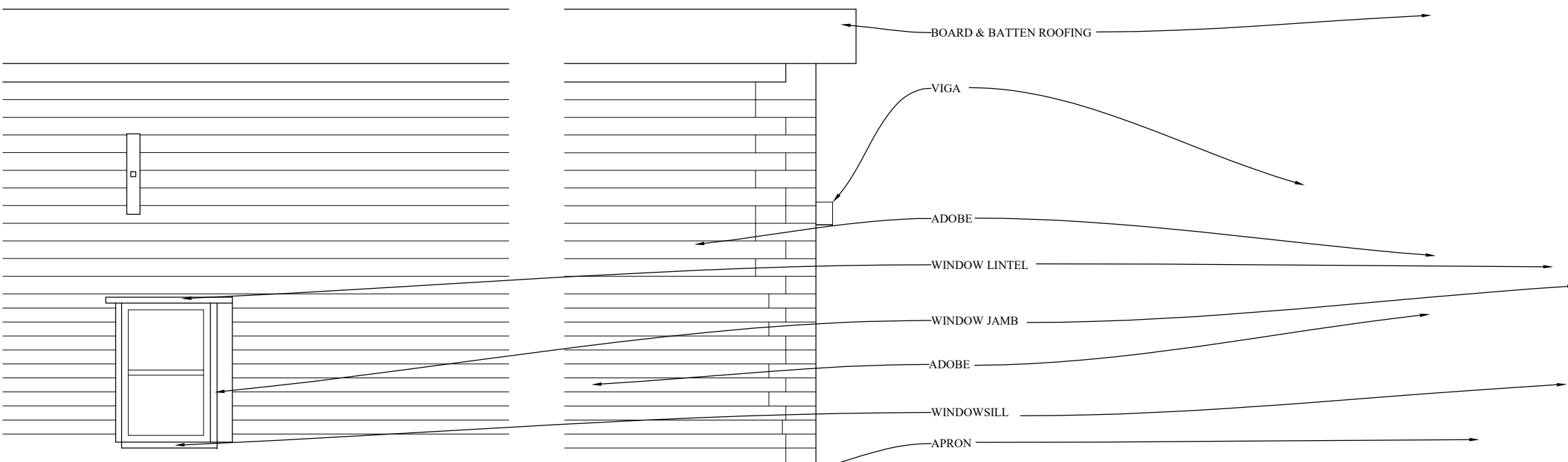


NOTE: THE DRAWING SCALES ARE ONLY APPLICABLE WHEN THE SHEET IS PRINTED ON 11" X 17" PAPER.



BATTEN  
BOARD

4 ROOFING PHOTO  
Not to Scale



2 EAST ELEVATION  
Not to Scale

3 EAST ELEVATION PHOTOGRAPH  
Not to Scale

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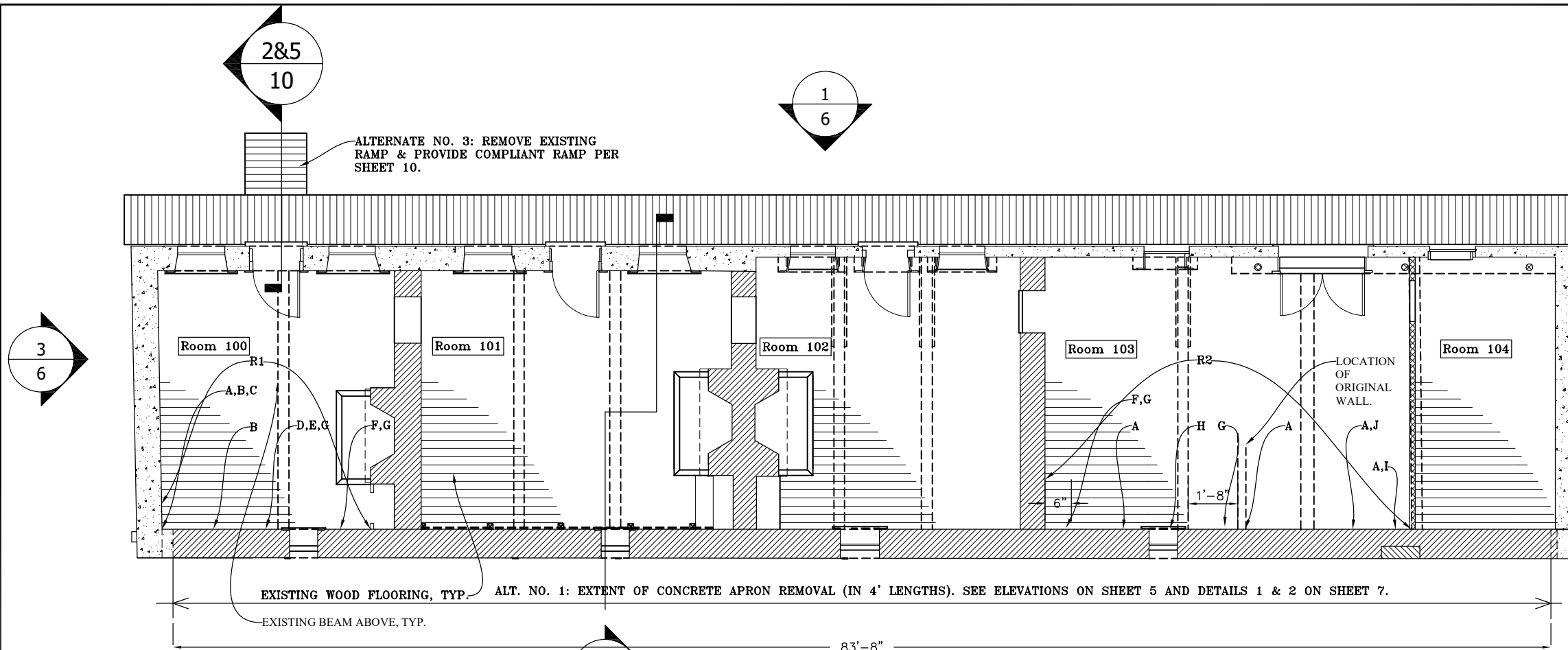


Fort Owen East Barracks Preservation  
Terminolo & Cross Section

04/14/2022

Preservation Architect:  
Gilmore Franzen Consulting LLC  
180 North Low Bench Road  
Gallatin Gateway, MT 59730

SHEET: 3 of 10



- FIELD & CONDITION NOTES**  
(13 JAN. 2022):
- A. Hard, presumed concrete horizontal surface at base of adobe wall, 2"-4" below finish flooring.
  - B. Adobe quite wet and penetrable 3"-3½" with awl.
  - C. Vertical 1" x 5" wood furring strip behind plaster. Moisture content at base 14.4%.
  - D. Vertical 1" x 6½" wood furring strip behind plaster. Moisture content at base 24.3%.
  - E. Adobe behind the plaster has too many voids to measure awl penetration.
  - F. Awl penetrates 2" into the adobe at base of wall.
  - G. No evidence of concrete horizontal surface where probed down to 9" depth, for length of wall indicated with dimension.
  - H. Poured concrete at base of interior wall up to top of where baseboard was, when extant. See 3/Sheet 4.
  - I. Wet and crumbly adobe brick at base of wall. See 2/Sheet 4.
  - J. 3-4 "new" adobe brick above bottom course of wall. See 2/Sheet 4.

- GENERAL CONSTRUCTION NOTES:**
1. See other sheets in this set for additional information.
  2. See Sheet 3 for Terminology and Building Cross-Section.
  3. The goal of this project is to preserve and stabilize the east facade. Rough edges and unlevel coursing will remain.
  4. See Specifications Section 045000 for sequencing of work.
  5. The adobe are approximately 18" x 8" x 3½" to 4" tall. The mortar joints range from 1" to 1½" wide.
  6. Repoint mortar joints at the east wall adobe and concrete block walls, as indicated on Sheets 5 & 6. See Detail 1/9.
  7. Treat all exposed wood of doors and windows with FPL linseed oil coating.

- ALTERNATE NO. 2 REPAIR NOTES:**
- R1. FOR FULL LENGTH OF WALL IN ROOM SHOWN: REMOVE EXISTING WOOD BASEBOARD & SET ASIDE FOR REINSTALLATION. SAWCUT NON-ORIGINAL PLASTER 4" ABOVE TOP OF BASEBOARD AND DISCARD. REMOVE DETERIORATED ADOBE FROM INNER WYTHE AT BOTTOM TWO COURSES OF WALL. PROVIDE REPLICA ADOBE FACES FOR REQUIRED DEPTH. PATCH PLASTER TO BLEND WITH EXISTING, PAINT, AND REINSTALL BASEBOARD.
  - R2. FOR FULL LENGTH OF WALL IN ROOM SHOWN: REMOVE DETERIORATED ADOBE FROM INNER WYTHE AT BOTTOM TWO COURSES OF WALL. PROVIDE REPLICA ADOBE FACES FOR REQUIRED DEPTH.

**1 FLOOR PLAN**  
Scale: 1/8" = 1'-0"  
0 1' 2' 5' 10'



**2 ROOM #103 - East Wall**  
Not to Scale



**3 ROOM #103 - East Wall**  
Not to Scale

NOTE: THE DRAWING SCALES ARE ONLY APPLICABLE WHEN THE SHEET IS PRINTED ON 11" X 17" PAPER.

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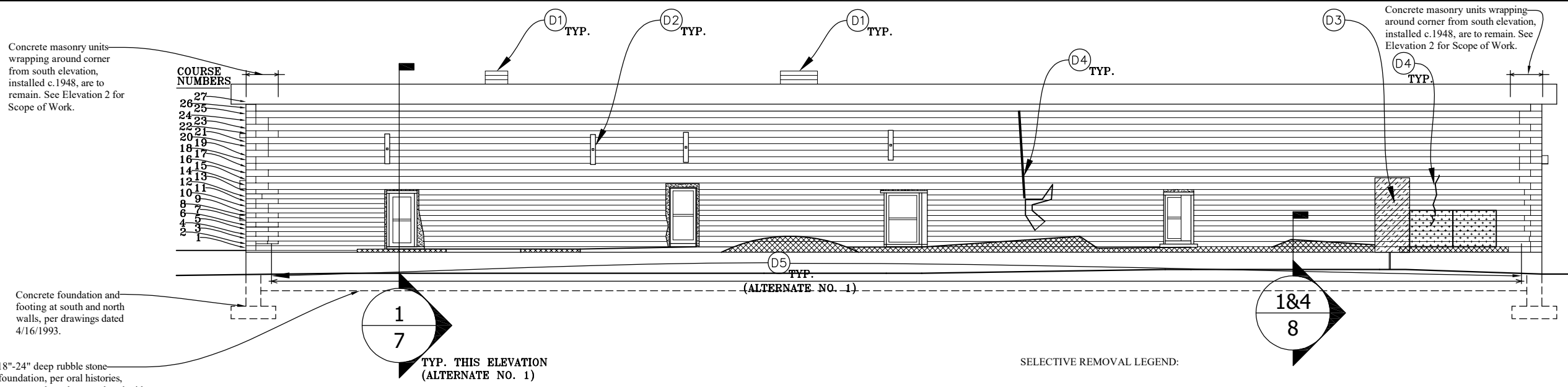
**Fort Owen East Barracks Preservation**  
**Floor Plan**

04/14/2022

Preservation Architect:  
Gilmore Franzen Consulting LLC  
180 North Low Bench Road  
Gallatin Gateway, MT 59730

SHEET: **4** of **10**





Concrete masonry units wrapping around corner from south elevation, installed c.1948, are to remain. See Elevation 2 for Scope of Work.

Concrete foundation and footing at south and north walls, per drawings dated 4/16/1993.

18"-24" deep rubble stone foundation, per oral histories, appears to have been replaced with poured concrete. This might have been poured from the inside of the building.



Photo of Representative Wall Area South End of East Wall

# EAST ELEVATION - SELECTIVE DEMOLITION

Scale: 1/8" = 1'-0"  
0 1' 2' 5' 10'

### SELECTIVE REMOVAL LEGEND:

- REMOVE & SALVAGE ADOBE FOR REBUILDING AT ABANDONED OPENING
- REMOVE CEMENTITIOUS INFILL AROUND WINDOW OPENING
- REMOVE CEMENTITIOUS PARING ABOVE LINE OF CONCRETE APRON
- REMOVE CEMENTITIOUS SLURRY (THIN COATING)

- #### GENERAL CONSTRUCTION NOTES:
- See other sheets in this set for additional information.
  - See Sheet 3 for Terminology and Building Cross-Section.
  - The goal of this project is to preserve and stabilize the east facade. Rough edges and unlevel coursing will remain.
  - See Specifications Section 045000 for sequencing of work.
  - The adobe are approximately 18" x 8" x 3 1/2" to 4" tall. The mortar joints range from 1" to 1 1/2" wide.
  - Repoint mortar joints at the east wall adobe and concrete block walls, as indicated on Sheets 5 & 6. See Detail 1/9.
  - Treat all exposed wood of doors and windows with FPL linseed oil coating.

- #### ITEMIZED SELECTIVE DEMOLITION NOTES:
- D1. REMOVE LOOSE AND DELAMINATING CONCRETE WASH AT TOP CHIMNEY.
  - D2. EXISTING STEEL TIE (TO INTERIOR BEAM) TO REMAIN. DO NOT DISTURB.
  - D3. DOCUMENT COURSING OF HISTORIC ADOBE PATCH. REMOVE OUTER WYTHE AND SALVAGE FOR REUSE.
  - D4. REMOVE PORTLAND CEMENT FROM CRACK.
  - D5. ALT. NO. 1: REMOVE CONCRETE APRON IN 4'-LONG SECTIONS, USING WOOD CRIBBING TO SUPPORT ADOBE WALL ABOVE. REVEAL THE ORIGINAL ADOBE, TAKING CARE TO RETAIN AS MUCH ADOBE AS POSSIBLE.

- #### ITEMIZED REPAIR NOTES:
- R1. PREPARE AND REPAINT EXPOSED SURFACES OF STEEL PLATE.
  - R2. REPAIR ADOBE FACES WHERE INDICATED WITH HATCH. SEE LEGEND.
  - R3. REBUILD ABANDONED WINDOW OPENING WITH SALVAGED ADOBE, REPLACING 8 ADOBE WITH LONGER ADOBE UNITS WHERE CEMENTITIOUS PATCHES HAVE BEEN REMOVED.
  - R4. PROVIDE SHEET METAL CHASE COVER OVER ENTIRE CHIMNEY TOP. SEE 3/9.
  - R5. TREAT EXPOSED WOOD AT WINDOW WITH FPL LINSEED OIL FORMULA.
  - R6. PACK ALL JOINTS BETWEEN EXISTING WOOD WINDOW FRAME AND ADOBE WITH OAKUM.
  - R7. PROVIDE REPLICA ADOBE FACES WHERE CEMENTITIOUS PARING AND CRUMBLING ADOBE REMOVED ABOVE APRON, PER 1 & 4, SHEET 8.
  - R8. ALT. NO. 1: REBUILD FACE OF WALL WITH REPLICA ADOBE FACE PER 2/7. PROVIDE SUBGRADE DRAIN PIPE TO DAYLIGHT NEAR IRRIGATION DITCH.
  - R9. REMOVE FLASHING AND ROOFING BATTENS AT UPSLOPE SIDE OF CHIMNEY BASE. PROVIDE ALUM. BASE FLASHING WITH END DAMS AT REINSTALLED BATTENS.
  - R10. REMOVE PAINTED PATCH. PATCH WITH ADOBE MIX & SCORE JOINTS. SEE PHOTO 5, SHEET 9.
  - R11. PROVIDE WOOD SILL EXTENSION TO BE FLUSH WITH ADOBE. TREAT WITH FPL FORMULA.
  - R12. SPOT REPOINT 25% OF MORTAR JOINTS OF THIS UNHATCHED WALL AREA.
  - R13. SPOT REPOINT 50% OF MORTAR JOINTS OF THIS UNHATCHED AREA.
  - R14. REMOVE CONCRETE PATCHES RANGING IN SIZE FROM 2 s.i. to 76 s.i. IF JOINT IS >2" WIDE, FILL WITH OAKUM FIRST. REPOINT OR PATCH PER 4/9. SEE PHOTO 5, SHEET 8.
  - R15. REMOVE APPROX. 100 CONCRETE PATCHES, SOME OF WHICH ARE IN MORTAR JOINTS. PATCH WITH ADOBE MORTAR PER DETAIL 4, SHEET 9.

NOTE: THE DRAWING SCALES ARE ONLY APPLICABLE WHEN THE SHEET IS PRINTED ON 11" X 17" PAPER.

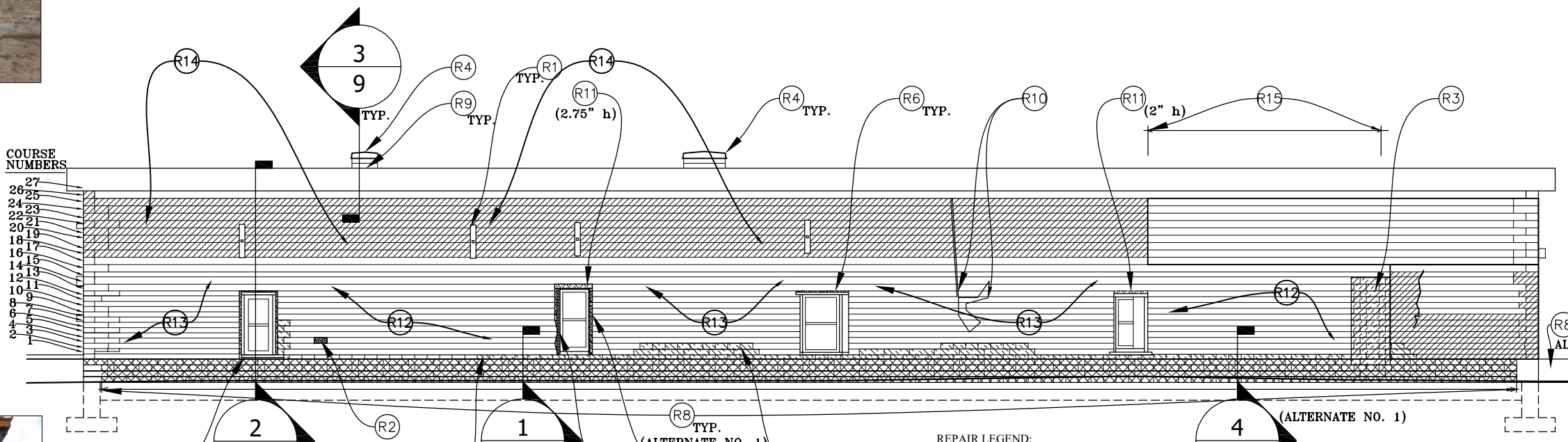


Photo of Representative Wall Area North End of East Wall

# EAST ELEVATION - REPAIRS

Scale: 1/8" = 1'-0"  
0 1' 2' 5' 10'

### REPAIR LEGEND:

- PROVIDE LAYERED ADOBE PATCH, <4" DEEP PER DETAIL 4, SHEET 9. NOTE R2.
- PROVIDE FACE (2"-4" DEEP) REPAIR PER DETAILS 1 & 4 SHEET 8. NOTE R7, ABOVE APRON.
- PROVIDE WOOD HEADER OR JAMB, AS SHOWN.
- CLEAN OUT WINDOW JOINT, THEN FILL WITH OAKUM
- REMOVE ANY CONCRETE & REPOINT MORTAR JOINT.
- ALT. NO. 1: WHERE CONCRETE APRON REMOVED, PROVIDE REPLICA ADOBE.

SEE SHEET 7 FOR ALTERNATE NO. 1 SCOPE OF WORK FOR APRON REMOVAL. THE ABOVE ELEVATION SHOWS THE APRON REMOVAL AND ADOBE REPLACEMENT FROM ALTERNATE NO. 1.

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Fort Owen East Barracks Preservation  
East Elevations

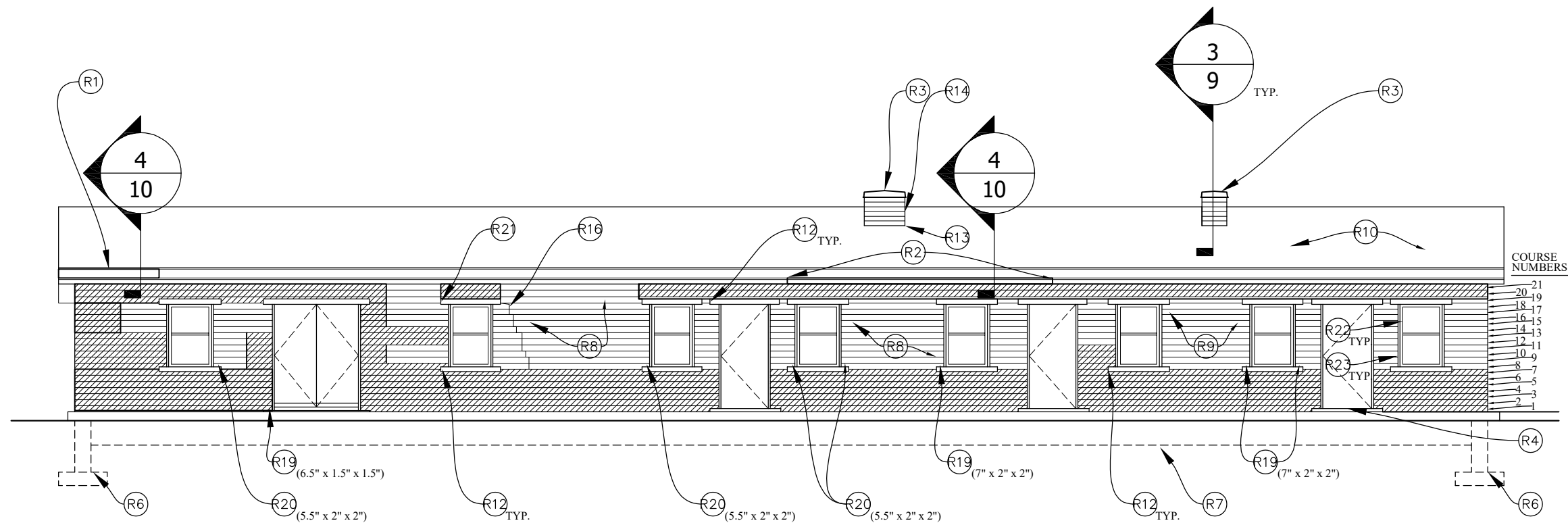
04/14/2022

Preservation Architect:  
Gilmore Franzen Consulting LLC  
180 North Low Bench Road  
Gallatin Gateway, MT 59730

SHEET: 5 of 10

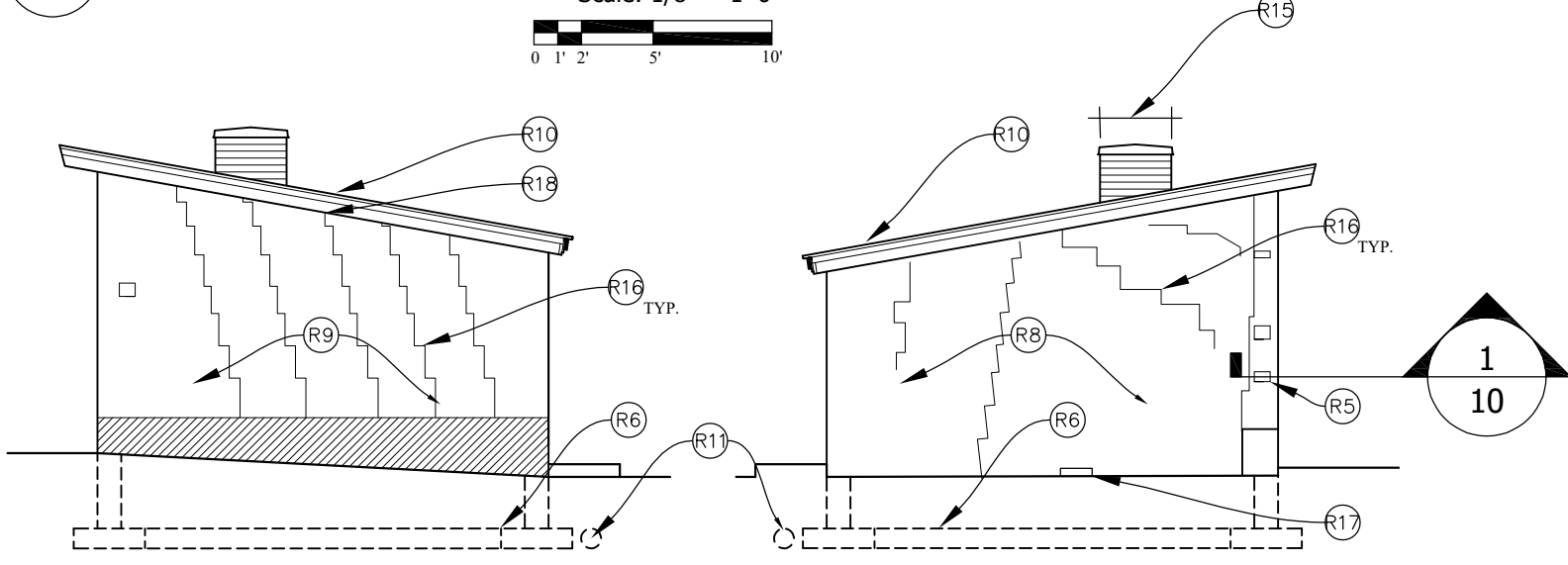
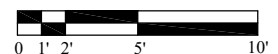
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  - Repoint mortar joints at the east wall adobe and concrete block walls, as indicated on Sheets 5 & 6. See Detail 1/9.
  - Treat all exposed wood of doors and windows with FPL linseed oil coating.

- ITEMIZED REPAIR NOTES:**
- PROVIDE MID-FASCIA WHERE SHOWN MISSING.
  - REMOVE EXISTING ROTTING FASCIA AND PROVIDE MATCHING WOOD LOWER FASCIA BOARD.
  - PROVIDE SHEET METAL CHASE COVER OVER ENTIRE CHIMNEYCAP.
  - ALTERNATE SCOPE OF WORK TO REPLACE RAMP. SEE 2&5/10.
  - REPLACE WOOD VIGA.
  - CONCRETE FOUNDATION & FOOTING ALONG SOUTH & NORTH WALLS, PER 4/16/1993 DRAWING BY JIM McDONALD. FOUNDATION & FOOTINGS EXTENDED TO WALL CORNERS.
  - POSSIBLE LOCATION OF 3'-WIDE, 18"-DEEP COBBLE OR CONCRETE FOUNDATION.
  - EXISTING CONCRETE BLOCK WALL. REPOINT 20% OF MORTAR JOINTS OF THIS UNHATCHED WALL AREA.
  - EXISTING CONCRETE BLOCK WALL. REPOINT 50% OF MORTAR JOINTS IN THIS UNHATCHED WALL AREA.
  - EXISTING WOOD BOARD-AND-BATTEN ROOF AND FASCIA. NO WORK REQUIRED UNLESS NOTED OTHERWISE.
  - POSSIBLE EXISTING FRENCH DRAIN TILE, AS REPORTED IN 1976 McDONALD REPORT.
  - REPOINT JOINTS ADJACENT TO ALL LINTELS AND SILLS BETWEEN WOOD AND CMU.
  - SEAL OPEN MITER JOINT OF COUNTER FLASHING.
  - SEAL PINHOLE IN SEALANT JOINT ALONG TOP OF COUNTER FLASHING.
  - REMOVE SEALANT AT TOP COUNTER FLASHING. ALSO REMOVE CONCRETE MORTAR TO FACE OF CONCRETE BLOCK AS REQUIRED TO HAVE ROOM FOR SEALANT. PROVIDE BACKER ROD AND SEALANT ALONG LENGTH OF JOINT.
  - REPOINT THE CRACK, TYP.
  - PROVIDE BRICK VENT IN EXISTING OPENING, RESIZING AS REQUIRED FOR OPTIMAL FIT. SPECIFICATIONS:  
GREENHECK BVE 16 1/2" w x 4 3/4" h x 4" d.  
EXTRUDED ALUMINUM WITH KYNAR FINISH TO MATCH THE BLOCK.  
16X18 MESH ALUMINUM SCREEN WITH MILL FINISH.
  - MORTAR IN THE UPPERMOST JOINTS BETWEEN THE ROOF BEAMS IS TO REMAIN IN PLACE.
  - PROVIDE CMU FACE INFILL (SIZE). SEE PHOTOS AT 4/6.
  - REMOVE CMU & REINSTALL AFTER SHAPING TO FIT (SIZE). SEE PHOTOS AT 4/6.
  - PATCH WITH OAKUM (AS BACKER ROD) AND MORTAR.
  - TREAT EXPOSED WOOD AT WINDOW WITH FPL LINSEED OIL FORMULA.
  - PACK ALL JOINTS BETWEEN EXISTING WOOD WINDOW FRAME AND CONCRETE BLOCK WITH OAKUM.



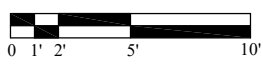
**1 WEST ELEVATION - REPAIRS**

Scale: 1/8" = 1'-0"



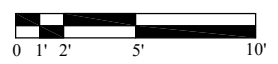
**2 NORTH ELEV. - REPAIRS**

Scale: 1/8" = 1'-0"



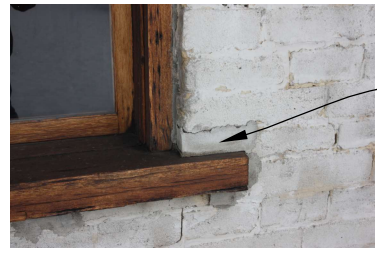
**3 SOUTH ELEV. - REPAIRS**

Scale: 1/8" = 1'-0"



**4 JAMB PHOTOS**

Not to Scale



**NOTE:**

- THE WALLS OF THESE THREE ELEVATIONS WERE RECONSTRUCTED WITH ADOBE-SIZED CONCRETE MASONRY UNITS (CMU) THAT ARE TO REMAIN.
- THESE WALLS HAVE REMNANTS OF PRIOR COATINGS THAT ARE TO REMAIN IN SITU AND LEFT TO DELAMINATE.

**LEGEND:**  
FULLY HATCHED AREAS ARE TO BE REPOINTED 100% (WHICH INCLUDES REMOVAL OF HARD MORTAR, WHERE EXTANT). THIS IS IN ADDITION TO THE 20% AND 50% REPOINTING AREAS PER NOTES R8 AND R9. SEE DETAIL 1/SHEET 9.

**NOTE:** THE DRAWING SCALES ARE ONLY APPLICABLE WHEN THE SHEET IS PRINTED ON 11" X 17" PAPER.

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**Fort Owen East Barracks Preservation**  
West, North and South Elevations

04/14/2022

Preservation Architect:  
Gilmore Franzen Consulting LLC  
180 North Low Bench Road  
Gallatin Gateway, MT 59730

**SHEET: 6 of 10**



THE WORK IN ALTERNATES NO. 1 & 2 INCLUDES THE FOLLOWING REQUIREMENTS:

1. CONTRACTOR SHALL ASSUME THE DEPTH & THICKNESS OF THE CONCRETE ARE AS SHOWN IN ESTIMATION.
2. CONTRACTOR SHALL ASSUME THE DEPTH & THICKNESS OF THE ADOBE WALL BEHIND THE CONCRETE ARE AS SHOWN.
3. THE FOUNDATION OF THE ADOBE WALL IS SURMISED TO BE AS SHOWN: POURED CONCRETE (LIKELY POURED FROM THE INTERIOR OF THE BUILDING), CIRCA 1970s.
4. DIGGING ALONG THIS EXTERIOR WALL WILL REQUIRE ARCHAEOLOGICAL OVERSIGHT. THIS AREA DOES NOT APPEAR TO HAVE BEEN THE SUBJECT OF PRIOR DOCUMENTED ARCHAEOLOGICAL EXPLORATION.
5. MT FISH WILDLIFE & PARKS WILL PROVIDE THE ARCHAEOLOGICAL OVERSIGHT. CONTRACTOR WILL COORDINATE WITH CONSULTANT AND BE PREPARED TO STOP WORK TEMPORARILY TO ALLOW STUDY.

EXPLANATION OF ALTERNATE BIDS:

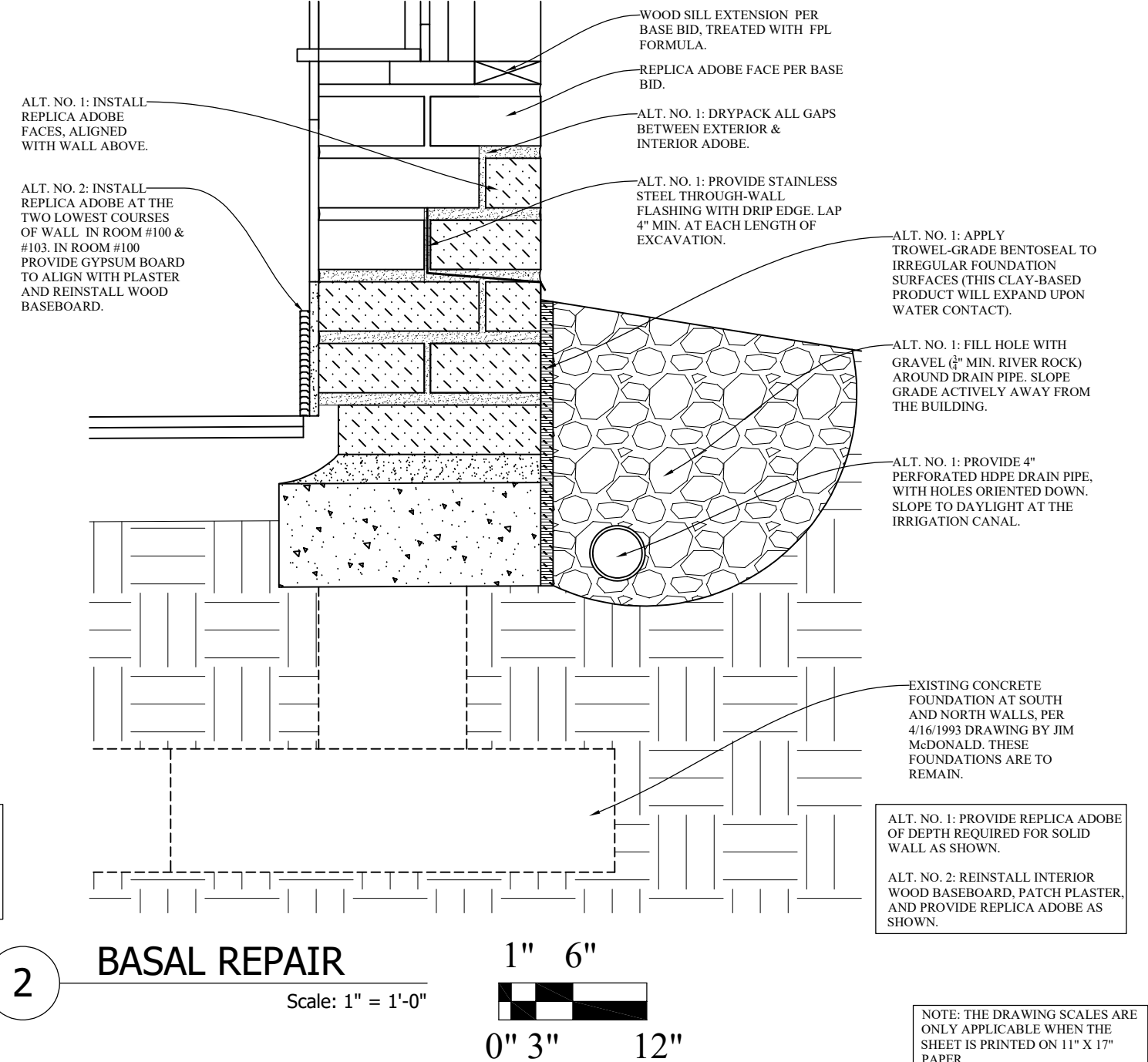
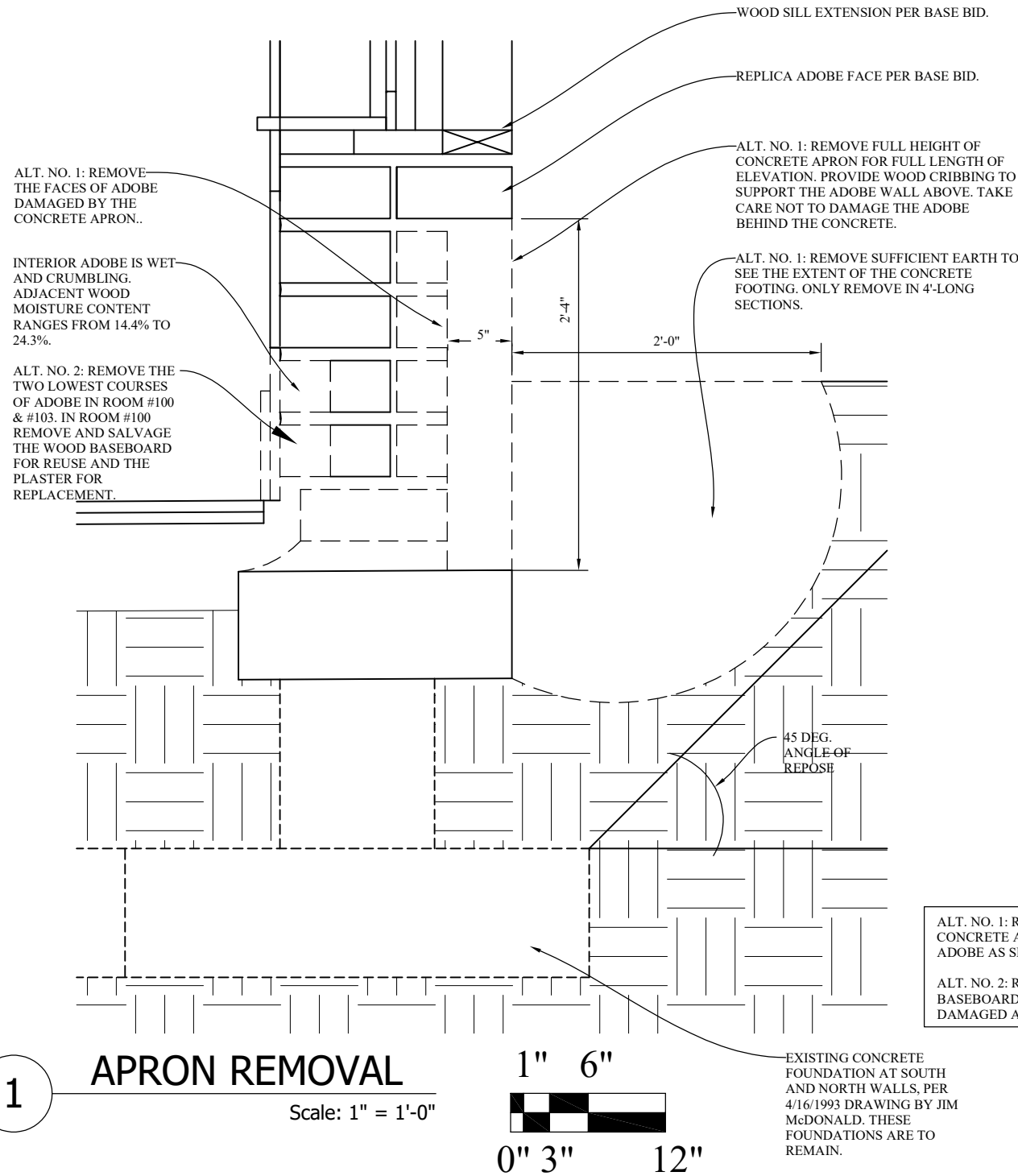
1. BASE BID INCLUDES FABRICATION OF ALL ADOBE REQUIRED FOR ALL REPLACEMENT AND REPAIRS, WHETHER IN BASE BID OR ALTERNATE SCOPE OF WORK.
2. BASE BID INCLUDES REMOVAL OF PARGING ABOVE CONCRETE APRON AND REPLACEMENT OF ASSOCIATED DETERIORATED ADOBE WITH REPLICA ADOBE FACES.
3. ALTERNATE NO. 1: FULL APRON REMOVAL AND BASAL REPAIR.
4. ALTERNATE NO. 2: REPLACEMENT OF INTERIOR FACES OF ADOBE IN TWO SELECT ROOMS.
5. ALTERNATE NO. 3: REPLACEMENT OF EXTERIOR RAMP.

RATIONALE OF THE WORK:

1. THE CONCRETE IS TRAPPING MOISTURE IN THE ORIGINAL ADOBE WALL.
2. THE EXTERIOR GRADE LEVEL IS HIGHER THAN THE INTERIOR FLOOR LEVEL. THIS HAS CAUSED THE ADOBE AT THE BASE OF THE WALL IN ROOMS #100 & 103 TO DISINTEGRATE, LEAVING CLAY FINES ON THE FLOOR.
3. SEE SPECIFICATIONS FOR APRON REMOVAL METHOD DEVISED BY CORNERSTONES COMMUNITY PARTNERSHIP OF SANTA FE.

GENERAL CONSTRUCTION NOTES:

1. See other sheets in this set for additional information.
2. See Sheet 3 for Terminology and Building Cross-Section.
3. The goal of this project is to preserve and stabilize the east facade. Rough edges and unlevel coursing will remain.
4. See Specifications Section 045000 for sequencing of work.
5. The adobe are approximately 18" x 8" x 3 1/2" to 4" tall. The mortar joints range from 1" to 1 1/4" wide.
6. Repoint mortar joints at the east wall adobe and concrete block walls, as indicated on Sheets 5 & 6. See Detail 1/9.
7. Treat all exposed wood of doors and windows with FPL linseed oil coating.



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**MONTANA FISH,  
 WILDLIFE & PARKS**

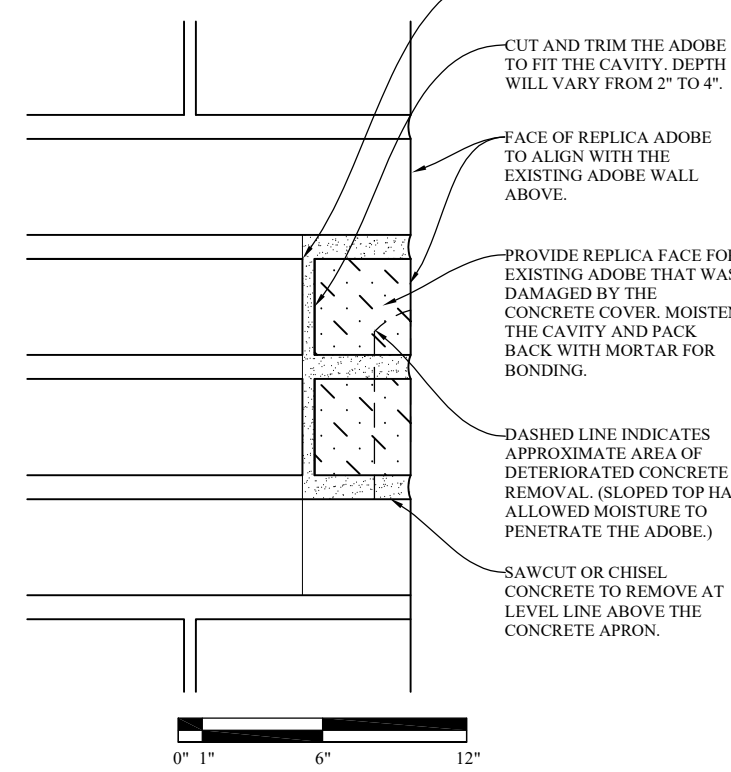
Fort Owen East Barracks Preservation  
 Details - Alternate No. 1 & 2

04/14/2022

Preservation Architect:  
 Gilmore Franzen Consulting LLC  
 180 North Low Bench Road  
 Gallatin Gateway, MT 59730

SHEET: 7 of 10

THIS REPAIR APPLIES TO THE FEW COURSES OF ADOBE ABOVE THE CONCRETE APRON, AS SHOWN ON THE ELEVATIONS. MUCH OF THE ADOBE HERE IS COVERED WITH CONCRETE PARGING WHICH IS DELAMINATING & ALLOWING WATER INTO THE WALL.



**1** REFACE DETAIL  
Scale: 1-1/2" = 1'-0"



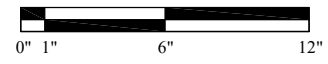
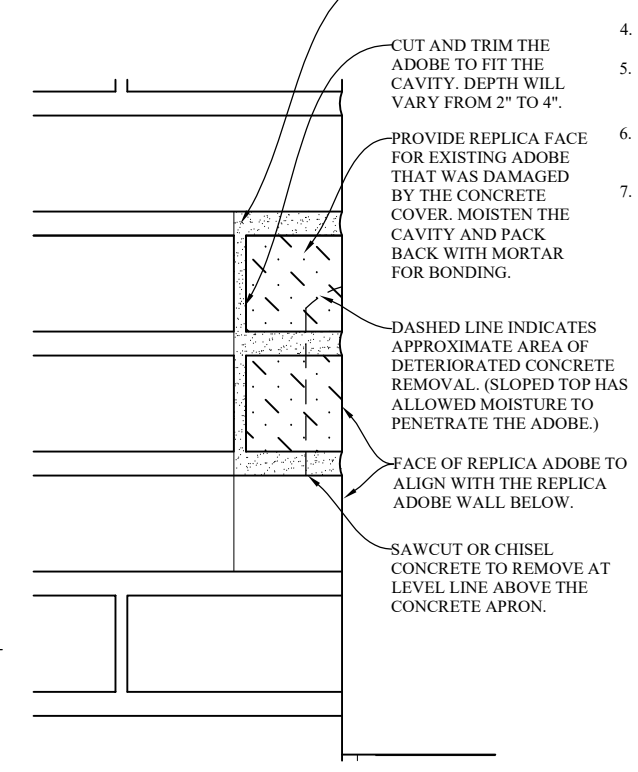
REMOVE CONCRETE PARGING TO TOP OF CONCRETE APRON, TAKING CARE TO LIMIT DAMAGE TO ADOBE BEHIND IT.

LINE ALONG TOP OF CONCRETE APRON. REMOVE CONCRETE PARGING ABOVE THE APRON. SEE SHEET 7 FOR ALTERNATE NO. 1 WORK AT THE CONCRETE APRON BELOW THIS LINE.



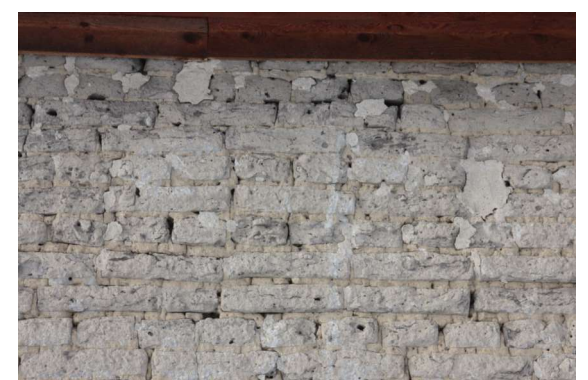
**2** WALL BASE PHOTO  
Not to Scale

**3** WALL BASE PHOTO  
Not to Scale



**4** ADOBE FACE REPLACEMENT  
Scale: 1-1/2" = 1'-0"  
THIS REPAIR APPLIES IF ALTERNATE NO. 1 IS INCLUDED IN THE SCOPE OF WORK.

- GENERAL CONSTRUCTION NOTES:
1. See other sheets in this set for additional information.
  2. See Sheet 3 for Terminology and Building Cross-Section.
  3. The goal of this project is to preserve and stabilize the east facade. Rough edges and unlevel coursing will remain.
  4. See Specifications Section 045000 for sequencing of work.
  5. The adobe are approximately 18" x 8" x 3 1/2" to 4" tall. The mortar joints range from 1" to 1 1/4" wide.
  6. Repoint mortar joints at the east wall adobe and concrete block walls, as indicated on Sheets 5 & 6. See Detail 1/9.
  7. Treat all exposed wood of doors and windows with FPL linseed oil coating.



**5** CONCRETE PATCHES  
Not to Scale  
THIS PHOTO SHOWS REPRESENTATIVE CONCRETE PATCHES AND MORTAR SCHEDULED FOR REMOVAL ON SHEET 5.



**6** CONCRETE FILL  
Not to Scale  
THIS PHOTO SHOWS PAINTED CONCRETE FILL SCHEDULED FOR REMOVAL PER NOTE R10 ON SHEET 5.

NOTE: THE DRAWING SCALES ARE ONLY APPLICABLE WHEN THE SHEET IS PRINTED ON 11" X 17" PAPER.

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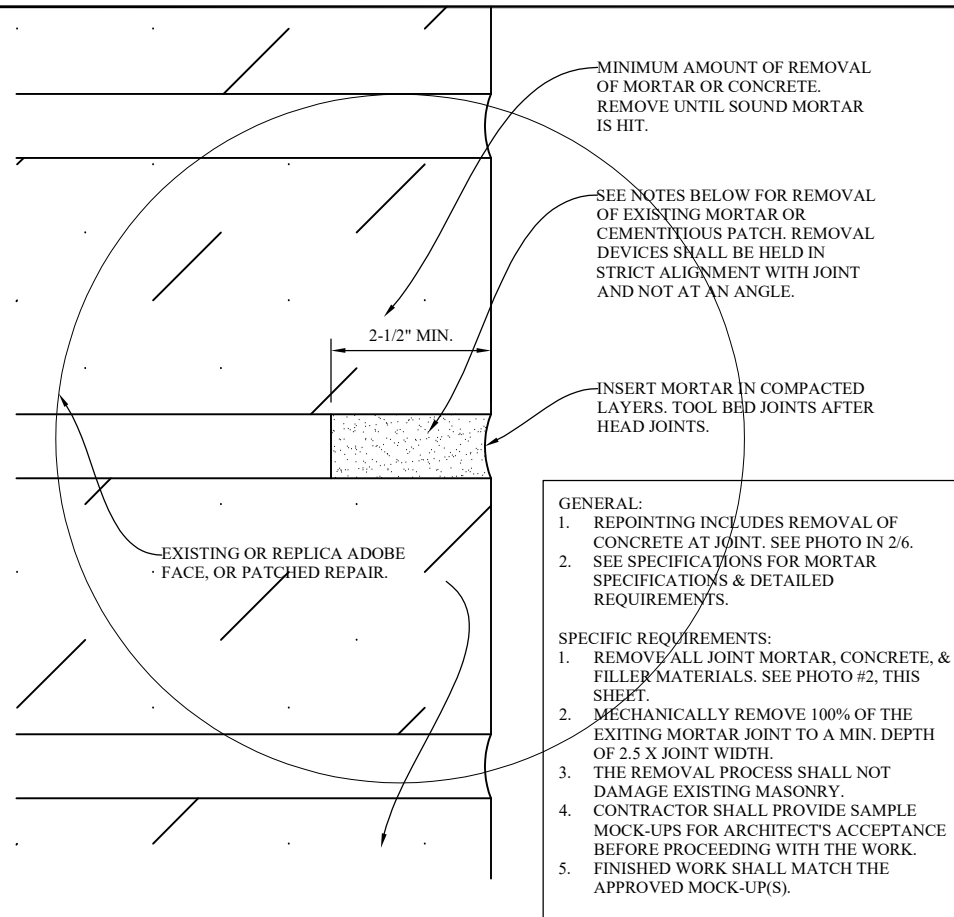
Fort Owen East Barracks Preservation  
Details 173

04/14/2022

Preservation Architect:  
Gilmore Franzen Consulting LLC  
180 North Low Bench Road  
Gallatin Gateway, MT 59730

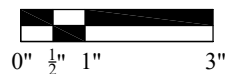
SHEET: 8 of 10





1 TYP. REPOINTING DETAIL

Scale: 3" = 1'-0"



MORTAR FOR EAST BARRACKS' ADOBE WALL (OF EAST ELEVATION):

1. THE MORTAR IS OF THE SAME MATERIAL & COLOR AS THE ADOBE.
2. THE ORIGINAL JOINT PROFILE IS UNKNOWN, SO ASCERTAINED TO BE OF A SLIGHT CONCAVITY AS SHOWN.
3. THE POINTING MORTAR IS THE SAME AS THE BEDDING MORTAR.

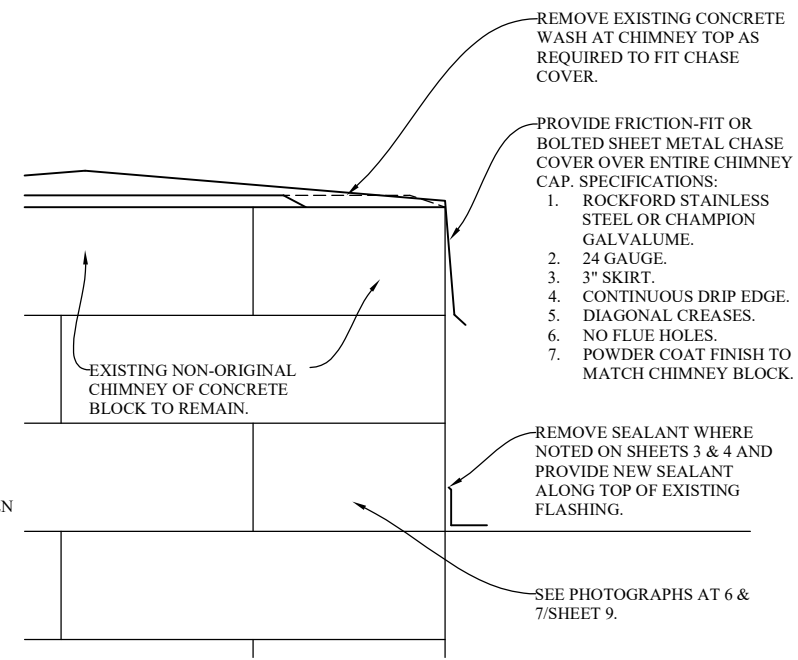
MORTAR FOR EAST BARRACKS' CONCRETE BLOCK WALLS (AT SOUTH, WEST, & NORTH FACADES):

1. THE MORTAR IS OF THE SAME MATERIAL & COLOR AS THE CONCRETE BLOCK.
2. THE ORIGINAL JOINT PROFILE IS UNKNOWN, SO ASCERTAINED TO BE OF A SLIGHT CONCAVITY AS SHOWN.



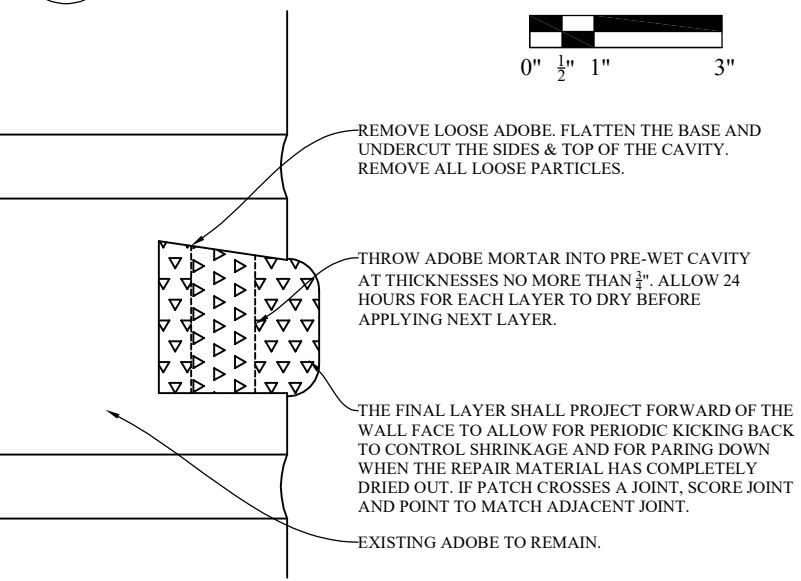
2 MORTAR JOINTS

Not to Scale



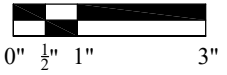
3 CHIMNEY CHASE COVER

Scale: 1-1/2" = 1'-0"



4 REPAIR DETAIL-SMALL

Scale: 3" = 1'-0"



5 CONCRETE PATCH REMOVAL

Not to Scale



6 TYPICAL CHIMNEY

Not to Scale



7 BASE FLASHING

Not to Scale

NOTE: THE DRAWING SCALES ARE ONLY APPLICABLE WHEN THE SHEET IS PRINTED ON 11" X 17" PAPER.

- GENERAL CONSTRUCTION NOTES:
1. See other sheets in this set for additional information.
  2. See Sheet 3 for Terminology and Building Cross-Section.
  3. The goal of this project is to preserve and stabilize the east facade. Rough edges and unlevel coursing will remain.
  4. See Specifications Section 045000 for sequencing of work.
  5. The adobe are approximately 18" x 8" x 3 1/2" to 4" tall. The mortar joints range from 1" to 1 1/4" wide.
  6. Repoint mortar joints at the east wall adobe and concrete block walls, as indicated on Sheets 5 & 6. See Detail 1/9.
  7. Treat all exposed wood of doors and windows with FPL linseed oil coating.

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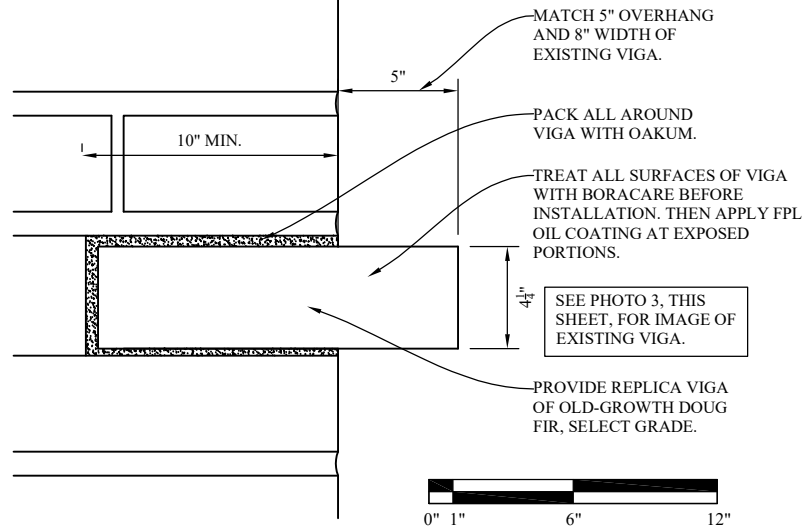
MONTANA FISH, WILDLIFE & PARKS

Fort Owen East Barracks Preservation  
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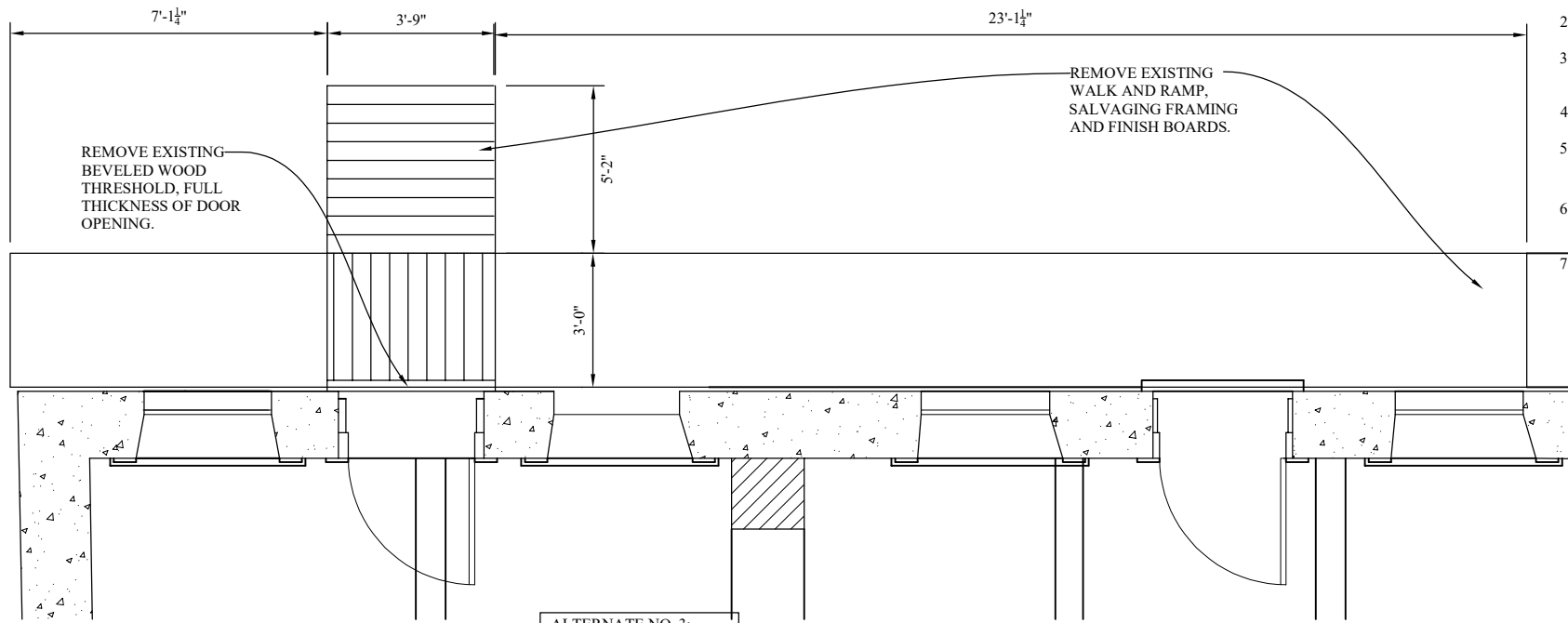
04/14/2022

Preservation Architect:  
 Gilmore Franzen Consulting LLC  
 180 North Low Bench Road  
 Gallatin Gateway, MT 59730

SHEET: 9 of 10



**1** **REPLICA VIGA**  
Scale: 1-1/2" = 1'-0"



**2** **RAMP DEMOLITION**  
Scale: 1/4" = 1'-0"

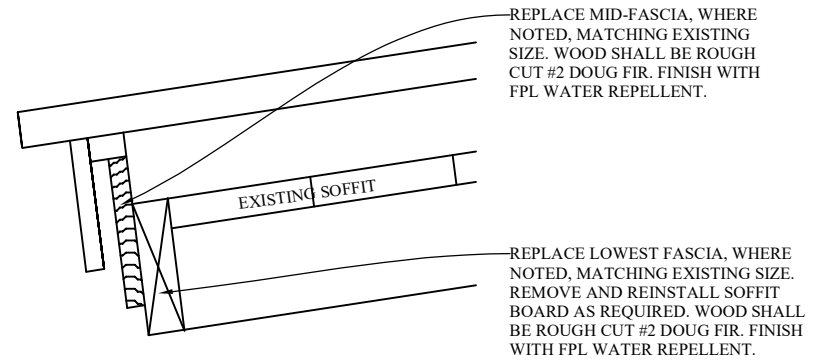
- GENERAL CONSTRUCTION NOTES:**
1. See other sheets in this set for additional information.
  2. See Sheet 3 for Terminology and Building Cross-Section.
  3. The goal of this project is to preserve and stabilize the east facade. Rough edges and unlevel coursing will remain.
  4. See Specifications Section 045000 for sequencing of work.
  5. The adobe are approximately 18" x 8" x 3 1/4" to 4" tall. The mortar joints range from 1" to 1 1/2" wide.
  6. Repoint mortar joints at the east wall adobe and concrete block walls, as indicated on Sheets 5 & 6. See Detail 1/9.
  7. Treat all exposed wood of doors and windows with FPL linseed oil coating.

NOTE: CONTRACTOR SHALL AVOID GROUND DISTURBANCE WHILE IN THE PROCESS OF REPLACING THE RAMP.

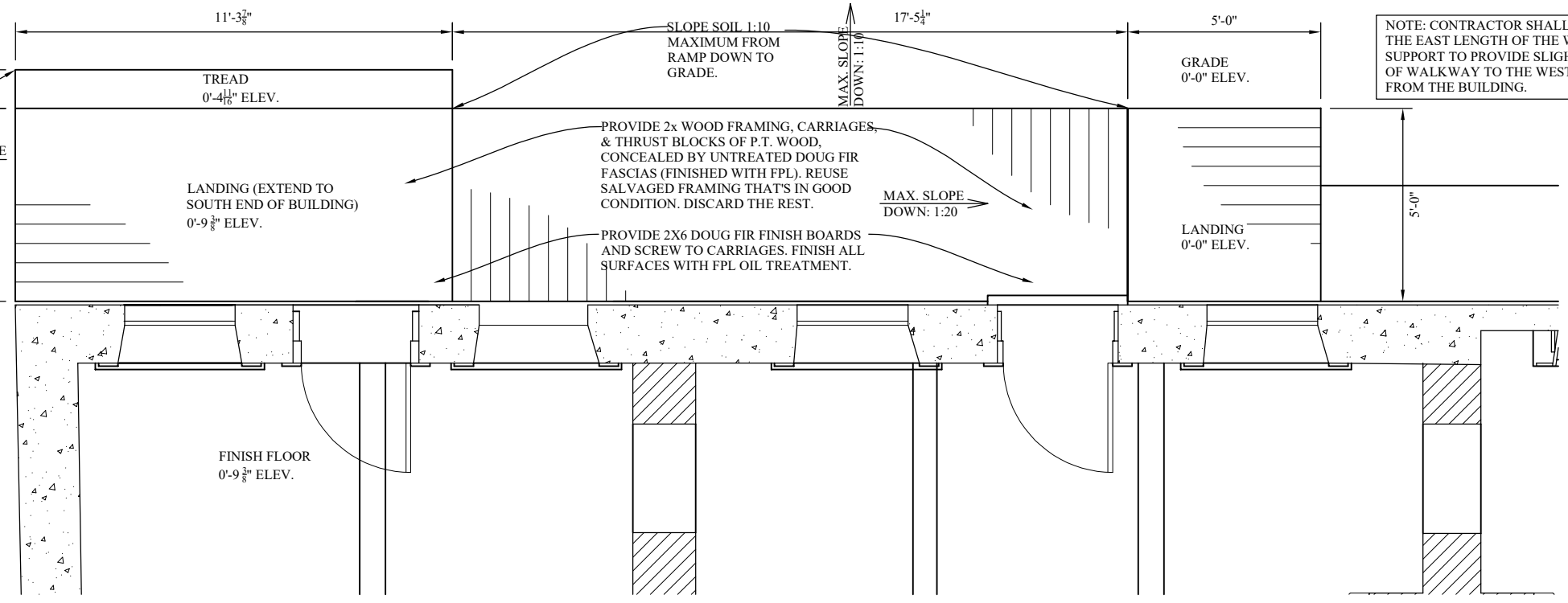


**3** **VIGA PHOTO**  
Not to Scale

REMOVE EXISTING VIGA FOR FULL DEPTH OF ITS PENETRATION INTO THE CMU WALL. CLEAN OUT THE CAVITY. HAND OVER VIGA TO MFWP.



**4** **FASCIA REPLACEMENT**  
Scale: 1-1/2" = 1'-0"



**5** **RAMP REPLACEMENT - PLAN**  
Scale: 1/4" = 1'-0"

NOTE: CONTRACTOR SHALL SHIM UP THE EAST LENGTH OF THE WALKWAY SUPPORT TO PROVIDE SLIGHT SLOPE OF WALKWAY TO THE WEST, AWAY FROM THE BUILDING.

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Fort Owen East Barracks Preservation  
Details & Alternate No. 3

04/14/2022

Preservation Architect:  
Gilmore Franzen Consulting LLC  
180 North Low Bench Road  
Gallatin Gateway, MT 59730

SHEET: 10 of 10