EXTERIOR RENOVATIONS
FOR
MISSOURI DEPARTMENT OF TRANSPORTATION
DISTRICT TWO- MACON, MISSOURI

CDG ENGINEERS
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St. Louis, Missouri 63139
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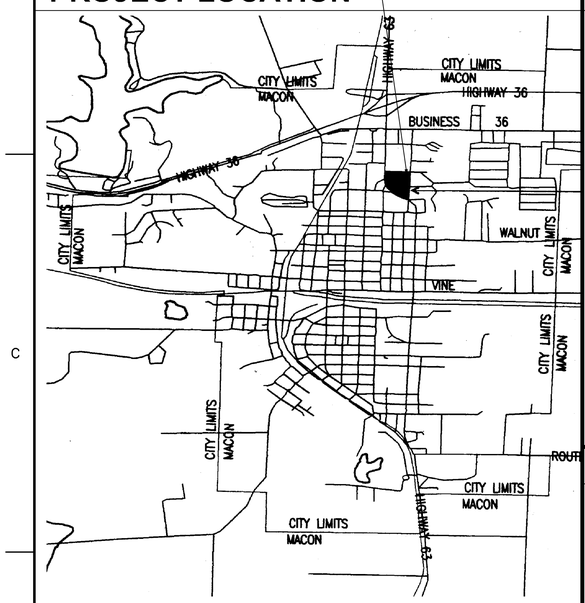
PROJECT LOCATION



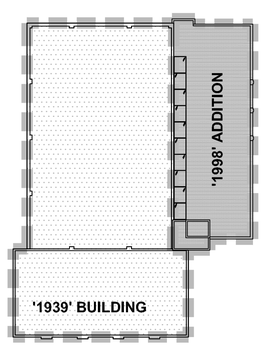
PROJECT ADDRESS
902 NORTH MISSOURI
MACON, MISSOURI

VICINITY MAP
(NOT TO SCALE)

LEGEND

- X — CONSTRUCTION NOTE
- X — REVISION
- X / XX-1 — DETAIL NUMBER / DRAWING NUMBER
- X / XX — SECTION NUMBER / SECTION SHEET
- EXTERIOR ELEVATION MARK: X / AX — ELEVATION NUMBER / SHEET NUMBER
- ENLARGED PLAN MARK: X / AX — DETAIL NUMBER / SHEET NUMBER

BUILDING KEY



GENERAL CONDITIONS

1. THESE DRAWINGS ARE PROVIDED FOR BIDDING AND GENERAL CONSTRUCTION. CONTRACTORS SHALL VERIFY EXISTING CONDITIONS AT TIME OF BIDDING AND NOTIFY OWNER'S REPRESENTATIVE IMMEDIATELY WHEN DISCREPANCIES ARE DISCOVERED.
2. ALL CONSTRUCTION DEBRIS MUST BE DISPOSED OF BY THIS CONTRACTOR.
3. ANY PERMITS REQUIRED TO START AND COMPLETE THIS PROJECT SHALL BE OBTAINED AND PAID FOR BY THIS CONTRACTOR.
4. WORK SHALL CONFORM TO ALL STATE AND LOCAL APPLICABLE BUILDING CODES, REGULATIONS AND ORDINANCES HAVING JURISDICTION.
5. COORDINATE DEMO WORK IN NEW CONSTRUCTION. MAKE SURE THAT DEMOLITION ITEMS ARE REPLACED OR COVERED IN THE NEW WORK.
6. CONTRACTOR SHALL MAINTAIN A SET OF CURRENT RECORD DRAWINGS ON SITE AT ALL TIMES.
7. BRICKWORK & CONCRETE PATCHWORK LOCATION INDICATED ON THE ELEVATIONS ARE GIVEN AS A GENERAL GUIDE ONLY. ALL BRICK WORK & CONCRETE SURFACE DEFECTS SUSCEPTIBLE TO WATER DAMAGE OR CORROSION ARE TO BE PATCHED AND/ REPAIRED SO AS TO PROVIDE A UNIFORM SURFACE, SEAL AGAINST FURTHER WATER INTRUSION. CONSULT ARCHITECT AT ANY QUESTIONABLE AREAS. IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO VERIFY ALL LOCATIONS & QUANTITIES BEFORE INITIATING THE CONTRACT. NO INTERIOR TUCKPOINT IS INCLUDED IN CONTRACT.
8. ALL EXISTING SURFACES INDICATED TO REMAIN AS EXISTING FINISHED SURFACES OR SUBSTRATES OF NEW FINISHES ARE TO BE REPAIRED TO ORIGINAL CONDITIONS IF DAMAGED BY WORK PERFORMED UNDER THIS CONTRACT, AT NO EXTRA COST TO OWNER.
9. MINIMAL LAY DOWN AREA IS AVAILABLE ADJACENT TO THE BUILDING: COORDINATE SPACE REQUIREMENTS AND LOCATION FOR CONSTRUCTION STAGING/PARKING WITH MODOT.
10. THIS CONTRACTOR SHALL MAINTAIN A SCHEDULE AS AGREED TO WITH THE CLIENT. CONTRACTOR TO PROVIDE DETAILED CONSTRUCTION SCHEDULE AT THE TIME OF BIDDING.
11. ALL DISTURBED GRASS AREAS OR PLANTER BEDS AND VEGETATION AROUND THE BUILDING SHALL BE RETURNED TO THEIR ORIGINAL CONDITION BY THIS CONTRACTOR. DEPRESSIONS CAUSED BY WORK UNDER THIS CONTRACT SHALL BE FILLED WITH TOP SOIL AND HAVE NEW BLUEGRASS SOD INSTALLED.
12. ANY GLASS THAT IS BROKEN BY WORK UNDER THIS CONTRACT SHALL BE REPLACED TO MATCH THE EXISTING BY THIS CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER. THIS CONTRACTOR SHALL DOCUMENT ANY BROKEN GLASS BEFORE STARTING WORK AND REPORT ANY BROKEN GLASS FOUND TO THE OWNER.
13. CONTRACTOR TO REFER TO BUILDING KEY FOR DEFINITION OF THE '1939 BUILDING' AND THE '1998 ADDITION' AS REFEREED TO IN THE SET OF DRAWINGS.

PLANS AND ELEVATIONS BASED ON DRAWINGS FROM MoDOT; DIMENSIONS AND OPENING LOCATIONS ARE DEEMED TO BE APPROXIMATE. DO NOT SCALE DRAWINGS. FIELD VERIFY DIMENSIONS AND OPENING SIZES.

DRAWING LIST

DRAWING NUMBER	DRAWING DESCRIPTION	REV	DATE
GENERAL DRAWINGS			
G001	TITLE SHEET	0	7/24/09
ARCHITECTURAL DRAWINGS			
A101	ROOF PLAN	0	7/24/09
A201	NORTH & SOUTH ELEVATIONS– JOINT & CAULK REPAIR	0	7/24/09
A202	EAST & WEST ELEVATIONS – JOINT & CAULK REPAIR	0	7/24/09
A203	NORTH & SOUTH ELEVATIONS– MASONRY REPAIRS	0	7/24/09
A204	EAST & WEST ELEVATION – MASONRY REPAIR	0	7/24/09
A501	NEW WORK DETAILS	0	7/24/09
A502	NEW WORK DETAILS	0	7/24/09
A701	SPECIFICATIONS	0	7/24/09
A702	SPECIFICATIONS	0	7/24/09
A703	SPECIFICATIONS	0	7/24/09

DESIGN TEAM

CDG ENGINEERS

ARCHITECTURAL
DAN SCHNEFKE
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314–446–3509
SCHNEFKE@CDGENGINEERS.COM

ISSUED FOR BIDDING

REV.	DATE	DESCRIPTION	APPROVED
0	7/24/09	ISSUED FOR BIDDING	GEB

DRAWN BY DLS
CHECKED BY DLS
SCALE AS SHOWN
DATE 7/24/09

TITLE PAGE
EXTERIOR RENOVATIONS
MISSOURI DEPARTMENT OF TRANSPORTATION
DISTRICT TWO- MACON, MISSOURI

PROJECT NO. 08070
DRAWING NO. G001

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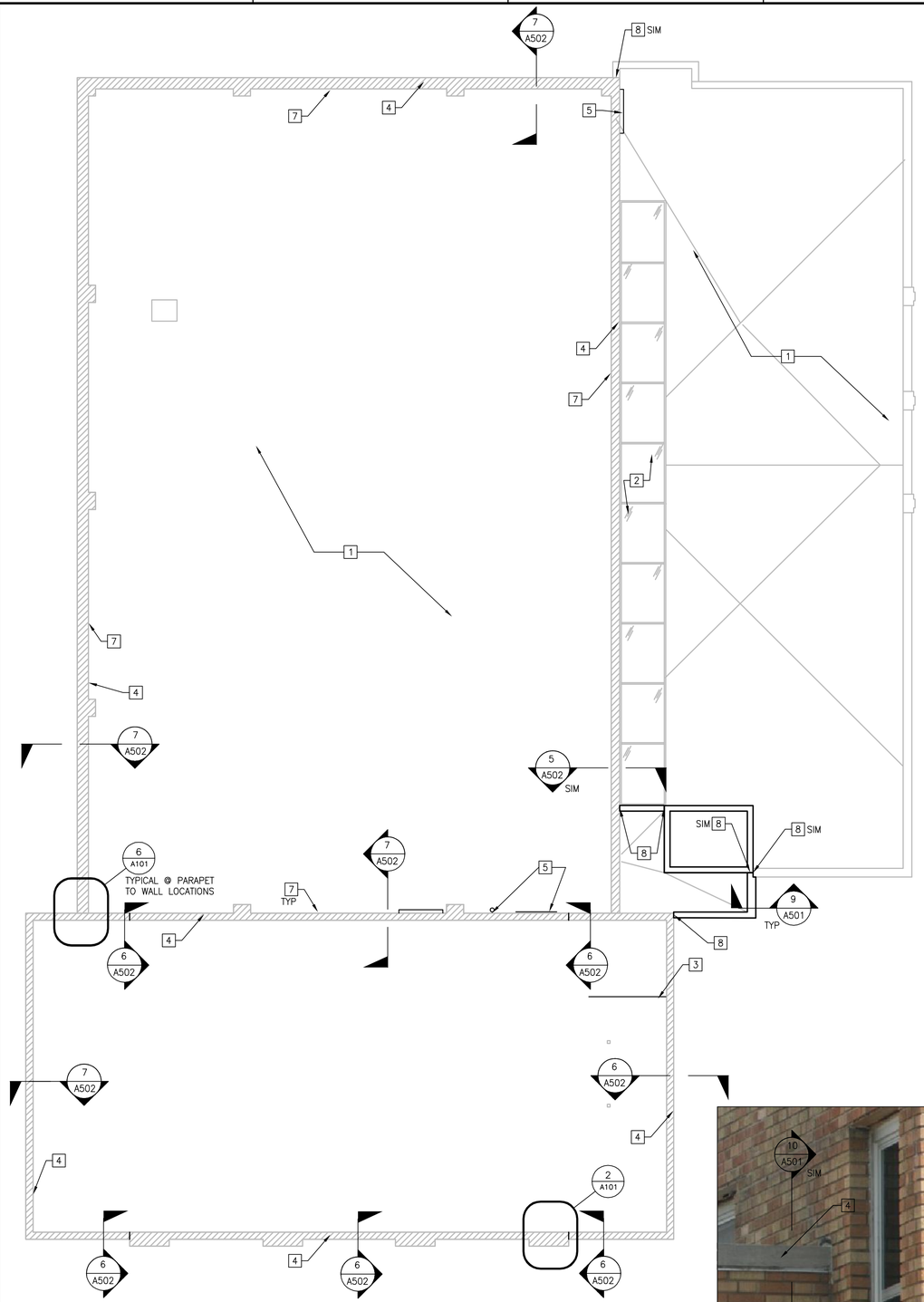

ROOF PLAN
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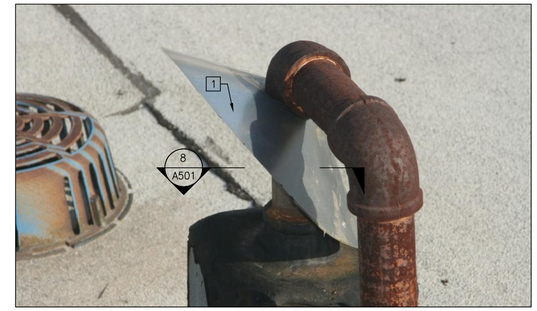

PITCH POCKET RAIN CAP @ PIPE (5 / A101)
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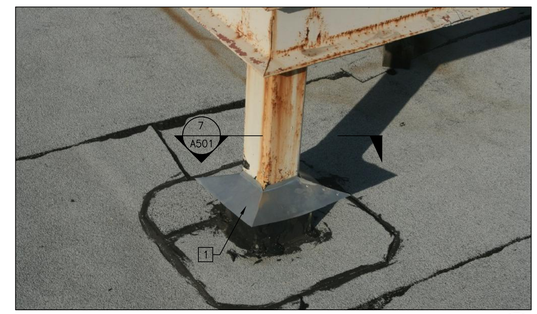
SCALE ON 11x17: NTS



PITCH POCKET RAIN CAP @ RTU (4 / A101)
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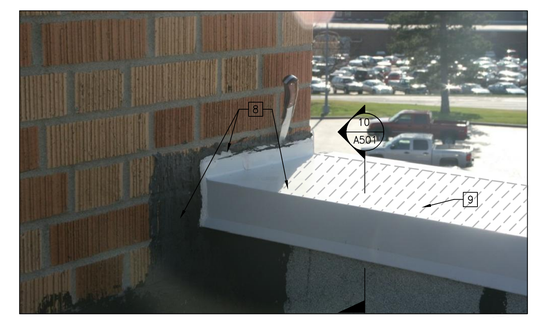
SCALE ON 11x17: NTS

HVAC WALL PENETRATION (3 / A101)
SCALE:NTS
SCALE ON 11x17: NTS



EDGE OF PARAPET (1 / A101)
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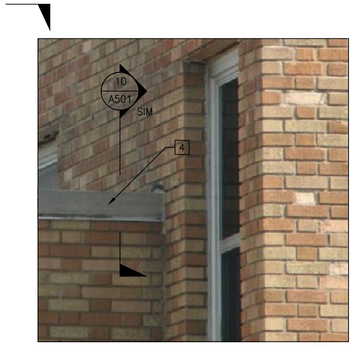
SCALE ON 11x17: NTS



EDGE OF PARAPET (6 / A101)
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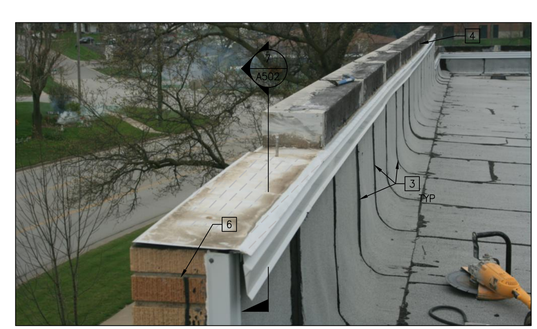
SCALE ON 11x17: NTS



PARAPET LAP SEAMS (2 / A101)
SCALE:NTS
SCALE ON 11x17: NTS

GENERAL NOTES:

1. CONTRACTOR SHALL FIELD VERIFY ALL CONDITIONS. CONTACT ARCHITECT IF DISCREPANCIES ARE NOTICED.
2. NO WORK TO BE PERFORMED ON ROOF, ROOF DRAINS, ROOF PENETRATIONS, SKYLIGHTS, ROOF TOP UNITS, UNLESS NOTED OTHERWISE. PROTECT ROOF WHEN MATERIALS ARE STORED ON EXISTING ROOF. PROTECT ROOF FROM DAMAGE DURING ALL EXTERIOR RENOVATION WORK.
3. CONTRACTOR TO VERIFY LOCATION AND QUANTITY OF ALL WALL PENETRATION LOCATIONS PRIOR TO BIDDING. ALL CAULKED WALL PENETRATIONS SHALL BE REMOVED AND REPLACED; MECHANICALLY CLEAN BOTH SURFACES PER THE MANUFACTURES WRITTEN INSTRUCTIONS; INSTALL NEW CAULK AT ALL POINTS OF PENETRATION (FOR ENTIRE BUILDING).
4. PROTECT ALL EXISTING SURFACES DURING DEMOLITION. REPAIR ANY DAMAGED SURFACES DUE TO CONSTRUCTION.

KEYED NOTES:

1. CONTRACTOR TO REMOVE ALL EXISTING PITCH POCKET RAIN CAPS AT ALL RTU SUPPORTS AND PIPE PENETRATION LOCATIONS, REFER TO IMAGE 4 AND 5 ON THIS SHEET. MECHANICALLY CLEAN THE SURFACES IN PREPARATION FOR NEW WORK. PROVIDE PITCH POCKET RAIN CAPS/HATS AT ALL LOCATIONS TYPICAL. VERIFY ALL LOCATIONS AND QUANTITY. REFER TO DETAIL 7/A501 & 8/A501.
2. EXISTING SKYLIGHT– NO WORK
3. PATCH AND RESEAL ROOF LAP SEAM, SHOWN IN APPROXIMATE LOCATION. COAT PREVIOUSLY REPAIRED SEAMS WITH ALUMINIZED COATING. CONTRACTOR TO FIELD VERIFY EXACT LOCATIONS AND QUANTITY.
4. CONTRACTOR TO REMOVE EXISTING PRECAST COPING STONE AND REINSTALL (SHOWN HATCHED). MECHANICALLY CLEAN EXISTING COPING STONE TO REMOVE ALL ADHERED MATERIALS; CLEAN TOP OF EXISTING MASONRY WALL OF AL LOOSE DEBRIS; REMOVE EXISTING THRU WALL FLASHING UNDER STONE COPING. IMAGE 2 ON THIS SHEET FOR NEW WORK.
5. REMOVE ALL CAULK FROM WALL PENETRATIONS SURFACES; MECHANICALLY CLEAN BOTH SURFACES PER THE MANUFACTURES WRITTEN INSTRUCTIONS; INSTALL NEW CAULK AT ALL POINTS OF PENETRATION (FOR ENTIRE BUILDING). REFER TO IMAGE 3 THIS SHEET.
6. AT COPING END CONDITIONS, CONTRACTOR TO TURN END OF FLASHING DOWN AND SEAL ALL SEAMS.
7. INSPECT, PATCH AND SEAL ALL PARAPET LAP SEAMS, AS REQUIRED. COAT ALL PREVIOUSLY COATED AND NEWLY REPAIRED SEAMS WITH ALUMINIZED COATING. CONTRACTOR TO VERIFY QUANTITY.
8. REMOVE CAULK FROM COPING AND BRICK, INSTALL NEW COUNTERFLASHING SIMILAR TO DETAIL 9/A501; FIELD VERIFY CONNECTION MODIFICATIONS.

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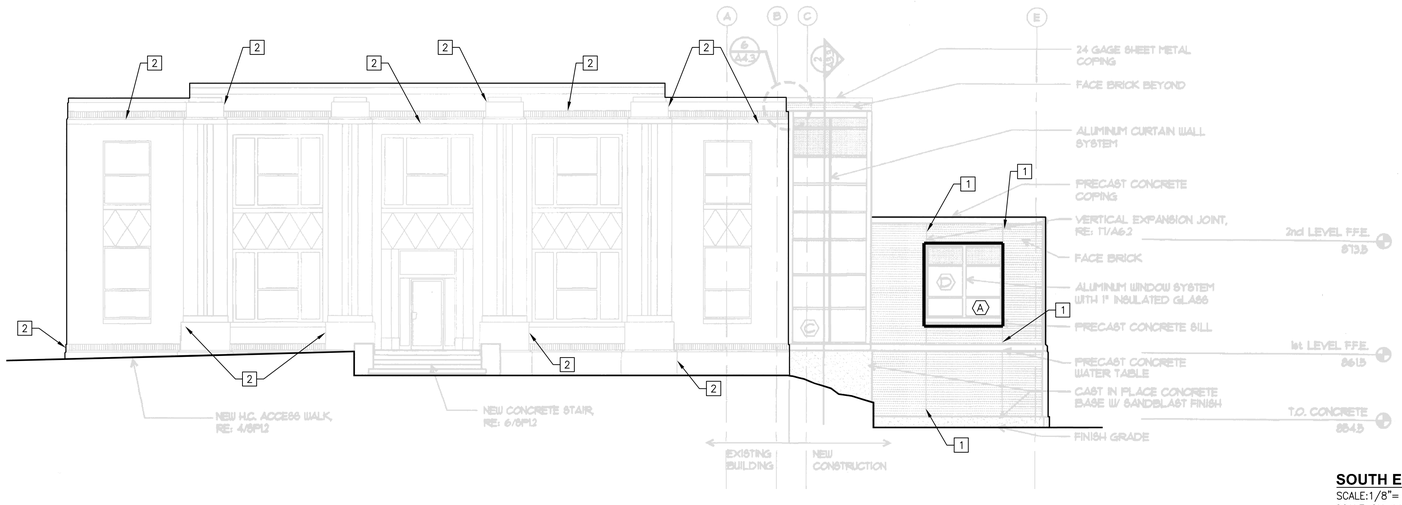
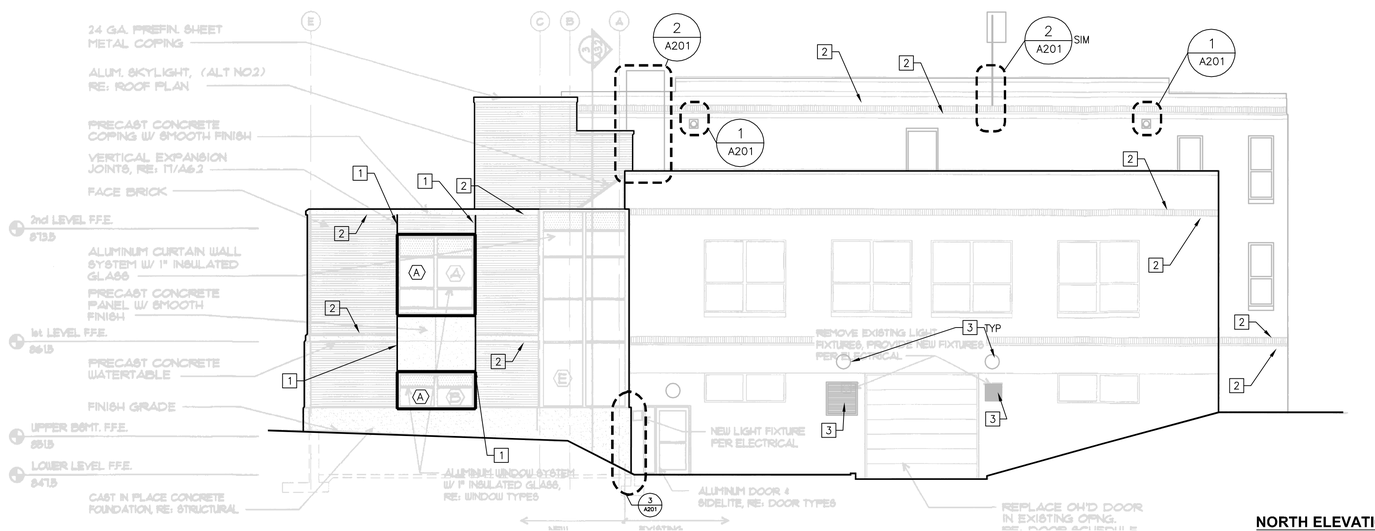
ROOF PLAN
EXTERIOR RENOVATIONS
MISSOURI DEPARTMENT OF TRANSPORTATION
DISTRICT TWO- MACON, MISSOURI

PROJECT NO. 08070
DRAWING NO. A101



SOUTH ELEVATION

SCALE:1/8"= 1'-0"
SCALE ON 11x17: 1/16"=1'-0"



NORTH ELEVATION

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

WALL JOINT DETAIL (3 / A201)

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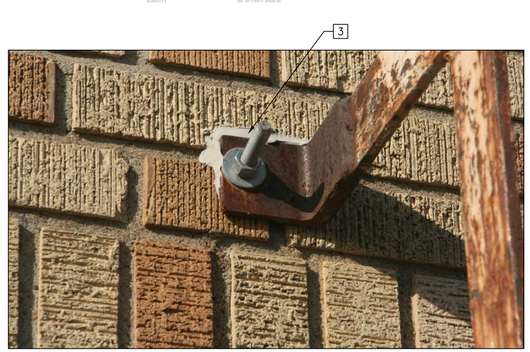
SCALE ON 11x17: NTS



WALL PENETRATION DETAIL (2 / A202)

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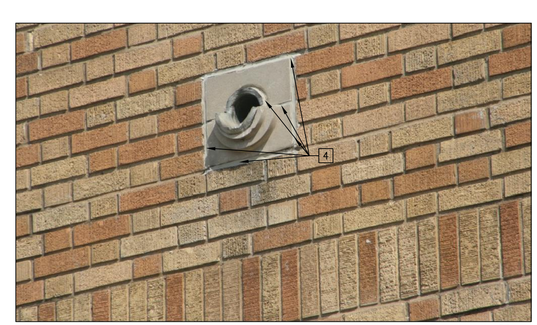

SCUPPER DETAIL (1 / A201)

SCALE:NTS
SCALE ON 11x17: NTS

GENERAL NOTES:

1. JOINT REPAIR/CAULKING WORK DESCRIBED UNDER KEYED NOTES 2 & 3 ARE TYPICAL FOR ALL CAULKED CONSTRUCTION JOINTS AND MISCELLANEOUS PENETRATIONS ON THE ENTIRE BUILDING. THIS CONTRACTOR SHALL VERIFY THE TOTAL QUANTITY/LENGTH OF EXISTING CAULKED JOINTS ON THE BUILDING PRIOR TO BIDDING.
2. FOR ALL WINDOW REPAIRS REFER TO ELEVATIONS (MARKED WITH A WINDOW TAG) FOR WINDOW LOCATIONS AND "WORK INSTRUCTIONS" BELOW FOR THE TYPE OF WINDOW REPAIRS.

WORK INSTRUCTIONS FOR WINDOW REPAIRS:

WINDOW TYPE 'A' (A)

1. REMOVE PERIMETER CAULK BETWEEN WINDOW FRAME AND MASONRY (HEAD AND JAMB). REMOVE BACKER ROD. CLEAN WINDOW FRAME AND SURROUNDING MASONRY OF ALL EXISTING CAULK AND DIRT OR OTHER MATERIALS THAT MAY CAUSE POOR ADHESION OF THE NEW CAULKING.
2. WHERE A GAP EXISTS BETWEEN THE WINDOW HEAD FRAME AND THE LINTEL ABOVE, INSTALL A METAL ANGLE TO CLOSE THE GAP. SEE DETAIL 5/A501.
3. SOLVENT CLEAN WINDOW FRAME TO RECEIVE NEW CAULKING.
4. RE-CAULK WINDOW HEAD AND JAMB. PROVIDE BACKER ROD WHERE REQUIRED.
5. REMOVE ALL EXTERIOR GLAZING GASKETS.
6. SOLVENT CLEAN GLASS AND FRAME TO RECEIVE NEW CAULKING.
7. INSTALL NEW EXTERIOR GLAZING GASKETS. COMPRESS GASKETS IN LONGITUDINAL DIRECTION WHEN INSTALLING. DO NOT STRETCH GASKETS DURING INSTALLATION, GASKETS SHALL BE MITERED AT THE CORNERS AND SHALL MEET FLUSH AND TIGHT.
8. CAULK/SEAL GASKET TO GLASS AND SEAL ALL CORNERS WHERE GASKETS WERE MITERED. SEE DETAIL 4/A501.

WINDOW TYPE 'C' (C)

1. REMOVAL ALL PERIMETER CAULKING AND BACKER ROD AT HEAD JAMB AND SILL.
2. CLEAN CONCRETE AND WINDOW FRAME OF ALL EXISTING CAULK AND DIRT.
3. REMOVE GLAZING COMPOUND OR STOPS AS REQUIRED TO REMOVE ALL BROKEN GLASS PANES. INSTALL NEW GLASS PANES TO MATCH EXISTING AND REINSTALL GLAZING COMPOUND OR STOPS FOR A WATERTIGHT INSTALLATION.
4. ALL DAMAGED GLAZING COMPOUND SHOULD BE REMOVED AND HAVE NEW GLAZING COMPOUND INSTALLED.
5. RECAULK/SEAL PERIMETER OF WINDOW UTILIZING BACKER RODS WHERE REQUIRED.

KEYED NOTES:

1. REMOVE ALL CAULK FROM BOTH SURFACES; MECHANICALLY CLEAN BOTH SURFACES PER CAULK MANUFACTURERS WRITTEN INSTRUCTIONS; INSTALL NEW BACKER ROD AND CAULK AT ALL VERTICAL EXPANSION JOINTS (TYPICAL FOR ENTIRE BUILDING).
2. REMOVE ALL CAULK FROM ALL JOINTS BETWEEN MASONRY AND PRECAST/STONE DETAILS AND WATER TABLES CLEAN BOTH SURFACES MECHANICALLY PER THE MANUFACTURERS WRITTEN RECOMMENDATIONS; INSTALL NEW BACKER ROD AND CAULK (TYPICAL FOR THE ENTIRE BUILDING).
3. REMOVE ALL CAULK FROM BOTH SURFACES AT ALL WALL PENETRATIONS INCLUDING BUT NOT LIMITED TO WALL SCONCES, MECHANICAL DUCT WORK, LOUVERS, SURFACE MOUNTED EQUIPMENT; MECHANICALLY AND CHEMICALLY CLEAN BOTH SURFACES PER THE MANUFACTURES WRITTEN INSTRUCTIONS; CAULK ALL POINTS OF PENETRATION (FOR ENTIRE BUILDING).
4. EXISTING SCUPPER, REFER TO IMAGE 1 ON THIS SHEET A201. REMOVE ALL CAULK FROM BOTH SURFACES. CHIP AND SCRAPE AWAY ALL LOOSE CONCRETE AND REPAIR AS NEEDED. PROVIDE 3/8" MAX BUTT JOINT BETWEEN THE CONCRETE AND THE FACE BRICK. MECHANICALLY AND CHEMICALLY CLEAN PER MANUFACTURER'S WRITTEN RECOMMENDATIONS. INSTALL NEW BACKER ROD AND CAULK. TYPICAL CONDITION AT ELEVATOR TOWER. REFER TO IMAGE 1/A202.

FOR WINDOW AND CONSTRUCTION JOINT REPAIRS

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0	7/24/09	ISSUED FOR BIDDING	GEB

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NORTH & SOUTH ELEVATIONS- JOINT & CAULK REPAIR
EXTERIOR RENOVATIONS
MISSOURI DEPARTMENT OF TRANSPORTATION
DISTRICT TWO- MACON, MISSOURI

PROJECT NO. 08070
DRAWING NO. A201

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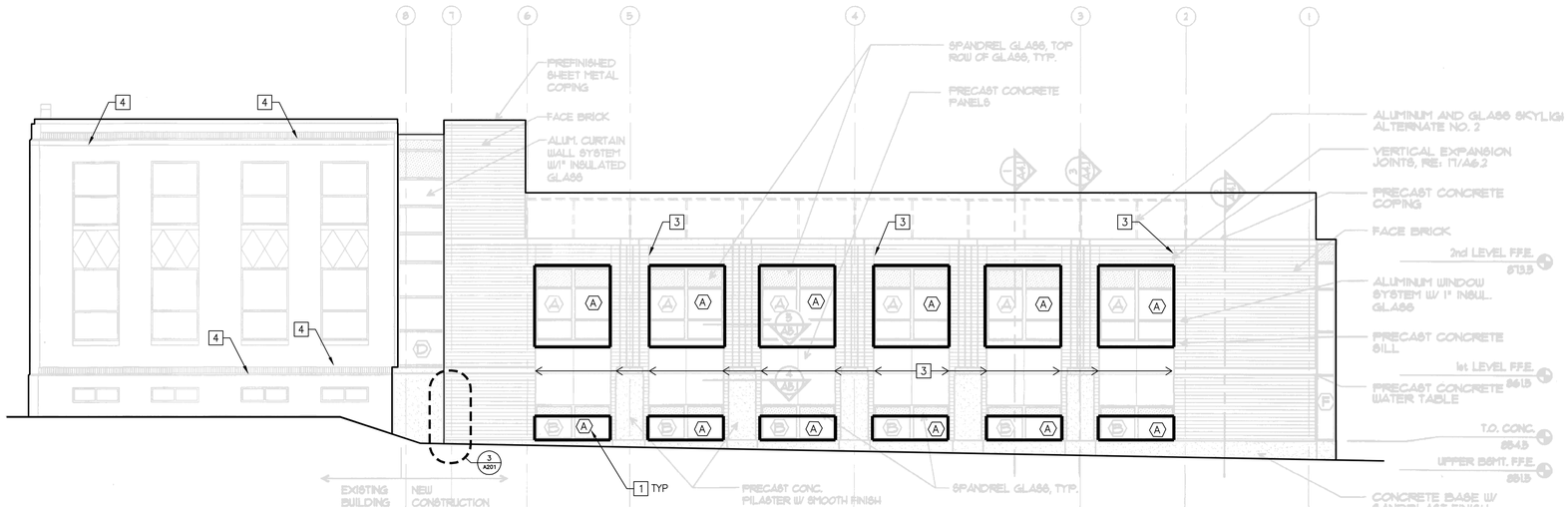

EAST ELEVATION

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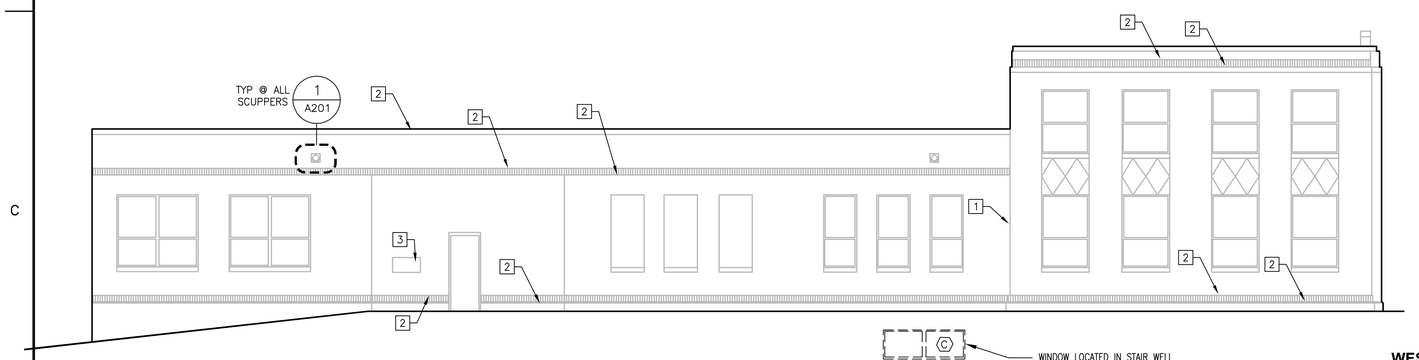

WEST ELEVATION

SCALE:1/8"= 1'-0"
SCALE ON 11x17: 1/16"=1'-0"

GENERAL NOTES:

1. JOINT REPAIR/CAULKING WORK DESCRIBED UNDER KEYED NOTES 2 & 3 ARE TYPICAL FOR ALL CAULKED CONSTRUCTION JOINTS AND MISCELLANEOUS PENETRATIONS ON THE ENTIRE BUILDING. THIS CONTRACTOR SHALL VERIFY THE TOTAL QUANTITY/LENGTH OF EXISTING CAULKED JOINTS ON THE BUILDING PRIOR TO BIDDING.

2. FOR ALL WINDOW REPAIRS REFER TO ELEVATIONS (MARKED WITH A WINDOW TAG) FOR WINDOW LOCATIONS AND "WORK INSTRUCTIONS" BELOW FOR THE TYPE OF WINDOW REPAIRS.

WORK INSTRUCTIONS FOR WINDOW REPAIRS:

WINDOW TYPE 'A' (A)

1. REMOVE PERIMETER CAULK BETWEEN WINDOW FRAME AND MASONRY (HEAD AND JAMB). REMOVE BACKER ROD. CLEAN WINDOW FRAME AND SURROUNDING MASONRY OF ALL EXISTING CAULK AND DIRT OR OTHER MATERIALS THAT MAY CAUSE POOR ADHESION OF THE NEW CAULKING.
2. WHERE A GAP EXISTS BETWEEN THE WINDOW HEAD FRAME AND THE LINTEL ABOVE, INSTALL A METAL ANGLE TO CLOSE THE GAP. SEE DETAIL 5/A501.
3. SOLVENT CLEAN WINDOW FRAME TO RECEIVE NEW CAULKING.
4. RE-CAULK WINDOW HEAD AND JAMB. PROVIDE BACKER ROD WHERE REQUIRED.
5. REMOVE ALL EXTERIOR GLAZING GASKETS.
6. SOLVENT CLEAN GLASS AND FRAME TO RECEIVE NEW CAULKING.
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8. CAULK/SEAL GASKET TO GLASS AND SEAL ALL CORNERS WHERE GASKETS WERE MITERED. SEE DETAIL 4/A501.

WINDOW TYPE 'C' (C)

1. REMOVAL ALL PERIMETER CAULKING AND BACKER ROD AT HEAD JAMB AND SILL.
2. CLEAN CONCRETE AND WINDOW FRAME OF ALL EXISTING CAULK AND DIRT.
3. REMOVE GLAZING COMPOUND OR STOPS AS REQUIRED TO REMOVE ALL BROKEN GLASS PANES. INSTALL NEW GLASS PANES TO MATCH EXISTING AND REINSTALL GLAZING COMPOUND OR STOPS FOR A WATERTIGHT INSTALLATION.
4. ALL DAMAGED GLAZING COMPOUND SHOULD BE REMOVED AND HAVE NEW GLAZING COMPOUND INSTALLED.
5. RECAULK/SEAL PERIMETER OF WINDOW UTILIZING BACKER RODS WHERE REQUIRED.

KEYED NOTES:

1. REMOVE ALL CAULK FROM BOTH SURFACES; MECHANICALLY CLEAN BOTH SURFACES PER CAULK MANUFACTURERS WRITTEN INSTRUCTIONS; INSTALL NEW BACKER ROD AND CAULK AT ALL VERTICAL EXPANSION JOINTS (TYPICAL FOR ENTIRE BUILDING).
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3. REMOVE ALL CAULK FROM BOTH SURFACES AT ALL WALL PENETRATIONS INCLUDING BUT NOT LIMITED TO WALL SCONCES, MECHANICAL DUCT WORK, LOUVERS, SURFACE MOUNTED EQUIPMENT; MECHANICALLY AND CHEMICALLY CLEAN BOTH SURFACES PER THE MANUFACTURES WRITTEN INSTRUCTIONS; CAULK ALL POINTS OF PENETRATION (FOR ENTIRE BUILDING).
4. EXISTING SCUPPER, REFER TO IMAGE 1 ON THIS SHEET A201. REMOVE ALL CAULK FROM BOTH SURFACES. CHIP AND SCRAPE AWAY ALL LOOSE CONCRETE AND REPAIR AS NEEDED. PROVIDE 3/8" MAX BUTT JOINT BETWEEN THE CONCRETE AND THE FACE BRICK. MECHANICALLY AND CHEMICALLY CLEAN PER MANUFACTURER'S WRITTEN RECOMMENDATIONS. INSTALL NEW BACKER ROD AND CAULK. TYPICAL CONDITION AT ELEVATOR TOWER. REFER TO IMAGE 1/A202.

FOR WINDOW AND CONSTRUCTION JOINT REPAIRS

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EAST & WEST ELEVATIONS - JOINT & CAULK REPAIR
EXTERIOR RENOVATIONS
MISSOURI DEPARTMENT OF TRANSPORTATION
DISTRICT TWO- MACON, MISSOURI

PROJECT NO. 08070
DRAWING NO. A202

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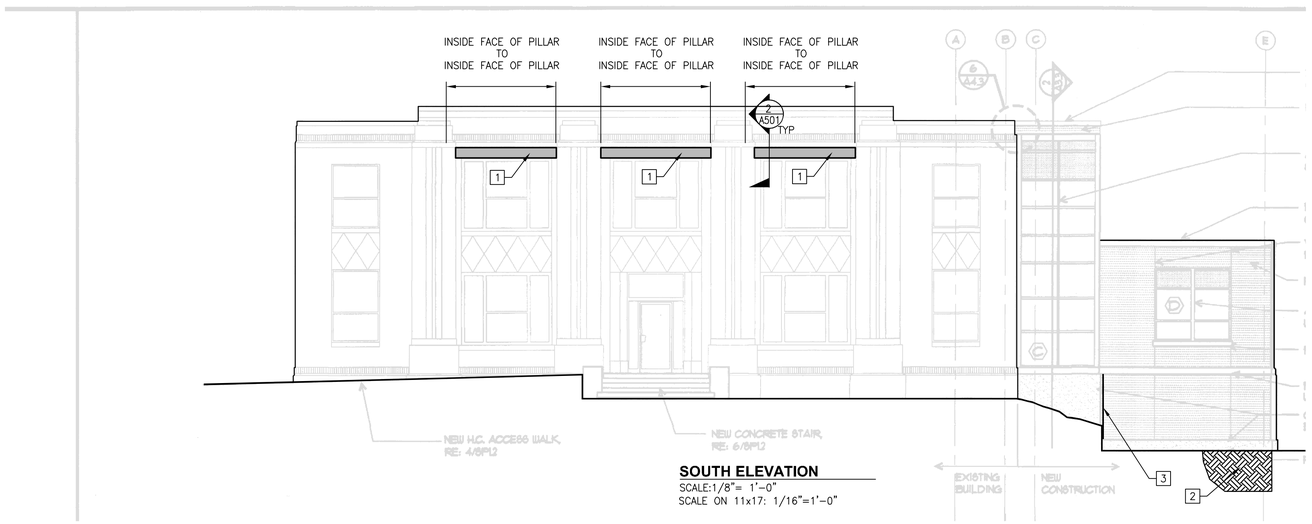

SOUTH ELEVATION
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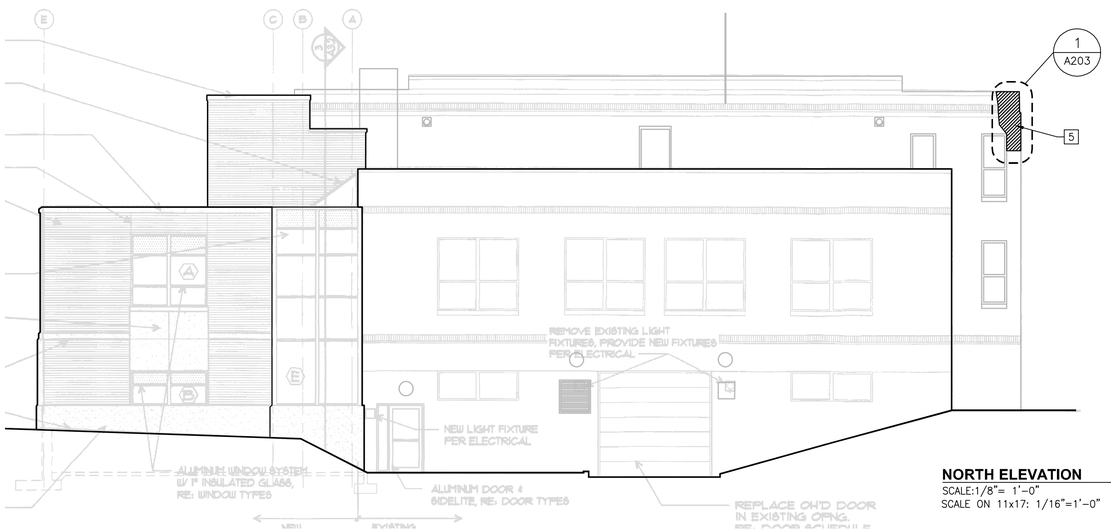
SCALE ON 11x17: 1/16"=1'-0"



NORTH ELEVATION
SCALE:1/8"= 1'-0"
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CORNER DETAIL 1 A203
SCALE:NTS
SCALE ON 11x17: NTS

GENERAL NOTES:

1. CONTRACTOR TO SEAL ALL MASONRY SURFACES OF THE '1939' BUILDING. WITH PROSOCO SURE KLEAN WEATHER SEAL H40. INSTALL PER MANUFACTURER RECOMMENDATIONS.
2. CONTRACTOR TO USE "SAW TOOTH" MASONRY JOINTS AT ALL LOCATIONS OF BRICK REPAIR, UNLESS NOTED OTHERWISE.
3. ALL MASONRY TOOLING TO BE CONVEX UNLESS NOTED OTHERWISE. REFER TO 3/A502.
7. ALL MASONRY VENEER AND STONE TO BE CLEANED PER SPECIFICATIONS.

KEYED NOTES:

1. REMOVE BRICK VENEER, CLEAN AND PREPARE SURFACE FOR NEW WORK. REFER TO DETAIL 2/A501
2. EXCAVATE AREA TO TOP OF FOOTING (APPROXIMATE AREA SHOWN HATCHED); REMOVE WATER PROOFING FROM FOUNDATION; POINT ALL VERTICAL JOINTS IN MASONRY FOUNDATION WHERE MORTAR IS MISSING; PREPARE SURFACE FOR NEW WORK. INSTALL NEW FOUNDATION DRAIN SYSTEM AND WATER PROOFING; BACK FILL SEED AND STRAW ALL DISTURBED AREAS. REFER TO DETAIL 2/A205
3. REMOVE GROUT FROM EXISTING JOINTS. MECHANICALLY CLEAN TO PREPARE SURFACE FOR NEW WORK. INSTALL BACKER ROD AND GROUT JOINT SLID WITH EPOXY GROUT; COVER JOINTS WITH WATER PROOFING.
4. CONTRACTOR TO REMOVE EXISTING MASONRY SILLS AND REPLACE WITH NEW PRECAST MASONRY SILLS.
5. REMOVE AND RE-INSTALL WYTHE OF FACE BRICK LOCATED AT THE NORTHWEST UPPER CORNER OF THE '1939 BUILDING' TO BE PLUMB AND FLUSH WITH EXISTING MASONRY. USE TYPE 'N' MORTAR, AND REFER TO SPECIFICATIONS FOR MASONRY TYPE AND MASONRY ANCHORS. EXISTING WATER TABLE TO BE REPLACED.

FOR MASONRY REPAIRS

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NORTH & SOUTH ELEVATIONS- MASONRY REPAIRS
EXTERIOR RENOVATIONS
MISSOURI DEPARTMENT OF TRANSPORTATION
DISTRICT TWO- MACON, MISSOURI

PROJECT NO. 08070
DRAWING NO. A203

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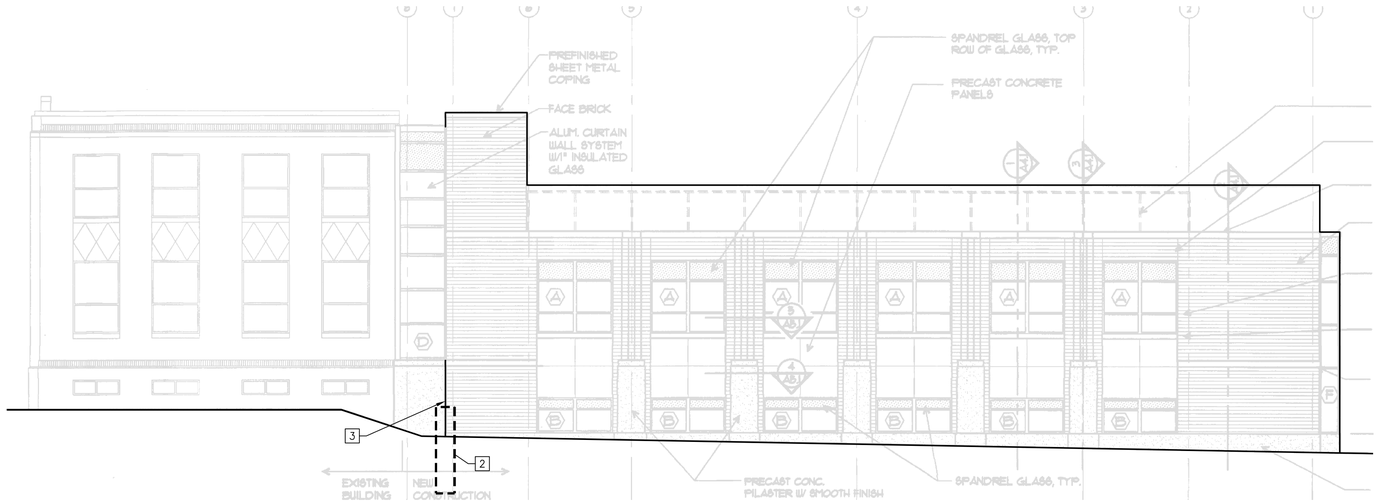

EAST ELEVATION

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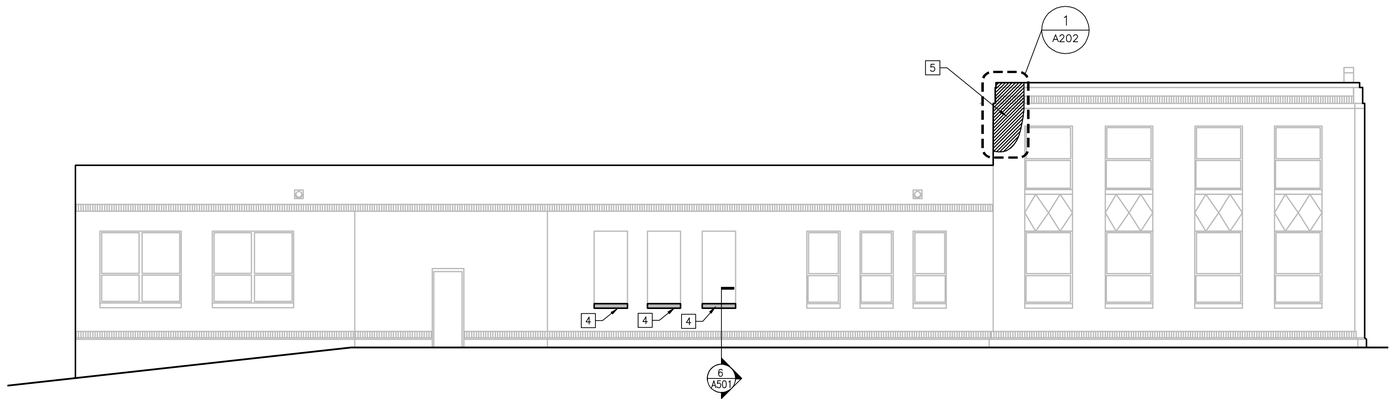
SCALE ON 11x17: 1/16"=1'-0"



WEST ELEVATION

SCALE:1/8"= 1'-0"
SCALE ON 11x17: 1/16"=1'-0"

GENERAL NOTES:

1. CONTRACTOR TO SEAL ALL MASONRY SURFACES OF THE '1939' BUILDING. WITH PROSOCO SURE KLEAN WEATHER SEAL H40. INSTALL PER MANUFACTURER RECOMMENDATIONS.
2. CONTRACTOR TO USE "SAW TOOTH" MASONRY JOINTS AT ALL LOCATIONS OF BRICK REPAIR, UNLESS NOTED OTHERWISE.
3. ALL MASONRY TOOLING TO BE CONVEX UNLESS NOTED OTHERWISE. REFER TO 3/A502.
7. ALL MASONRY VENEER AND STONE TO BE CLEANED PER SPECIFICATIONS.

KEYED NOTES:

1. REMOVE BRICK VENEER, CLEAN AND PREPARE SURFACE FOR NEW WORK. REFER TO DETAIL 2/A501
2. EXCAVATE AREA TO TOP OF FOOTING (APPROXIMATE AREA SHOWN HATCHED); REMOVE WATER PROOFING FROM FOUNDATION; POINT ALL VERTICAL JOINTS IN MASONRY FOUNDATION WHERE MORTAR IS MISSING; PREPARE SURFACE FOR NEW WORK. INSTALL NEW FOUNDATION DRAIN SYSTEM AND WATER PROOFING; BACK FILL SEED AND STRAW ALL DISTURBED AREAS. REFER TO DETAIL 2/A205
3. REMOVE GROUT FROM EXISTING JOINTS; REPAIR CONCRETE TO ALAIGN WITH ADJACENT SURFACES; MECHANICALLY CLEAN TO PREPARE SURFACE FOR NEW WORK. INSTALL BACKER ROD AND GROUT JOINT SOLID WITH EPOXY GROUT; COVER JOINTS WITH WATER PROOFING.
4. CONTRACTOR TO REMOVE EXISTING MASONRY SILLS AND REPLACE WITH NEW PRECAST MASONRY SILLS.
5. REMOVE AND RE-INSTALL WYTHE OF FACE BRICK LOCATED AT THE NORTHWEST UPPER CORNER OF THE '1939 BUILDING' TO BE PLUMB AND FLUSH WITH EXISTING MASONRY. USE TYPE 'N' MORTAR, AND REFER TO SPECIFICATIONS FOR MASONRY TYPE AND MASONRY ANCHORS. EXISTING WATER TABLE TO BE REPLACED.

FOR MASONRY REPAIRS

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EAST & WEST ELEVATION - MASONRY REPAIR
EXTERIOR RENOVATIONS
MISSOURI DEPARTMENT OF TRANSPORTATION
DISTRICT TWO- MACON, MISSOURI

PROJECT NO. 08070
DRAWING NO. A204

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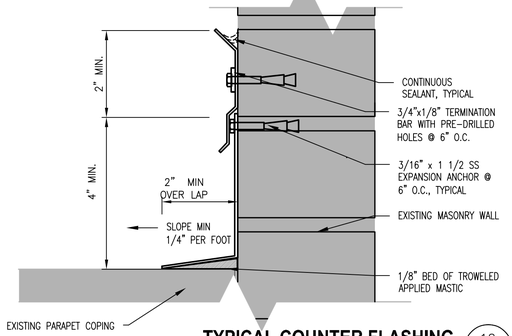

TYPICAL COUNTER FLASHING (12 / A501)

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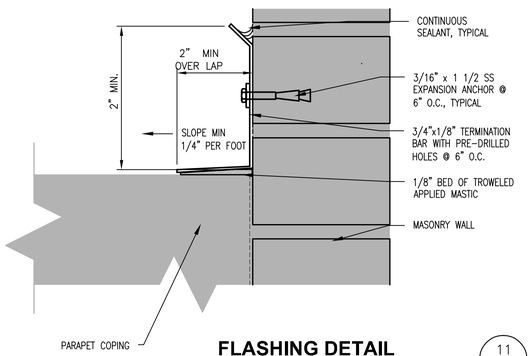

FLASHING DETAIL (11 / A501)

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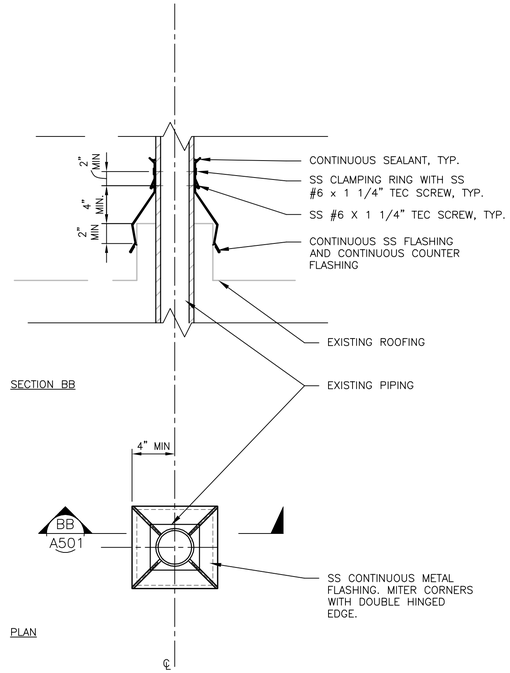

DETAIL @ PIPE PENETRATION (8 / A501)

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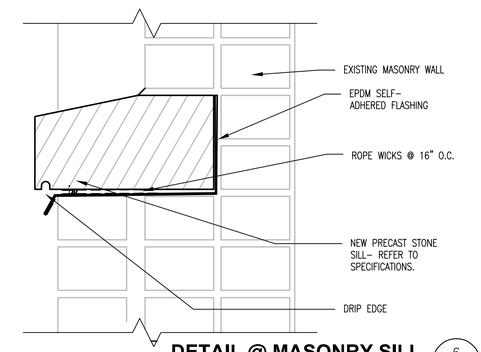
SCALE ON 11x17: 3/4"=1'-0"



DETAIL @ MASONRY SILL (6 / A501)

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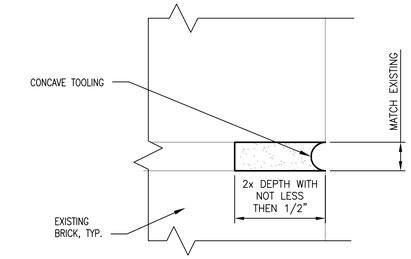

TYPICAL MORTAR JOINT (3 / A501)

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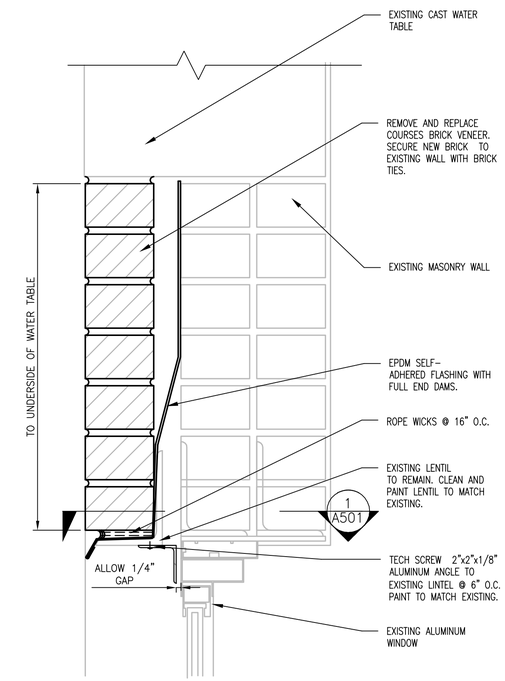

DETAIL @ WINDOW HEAD (2 / A501)

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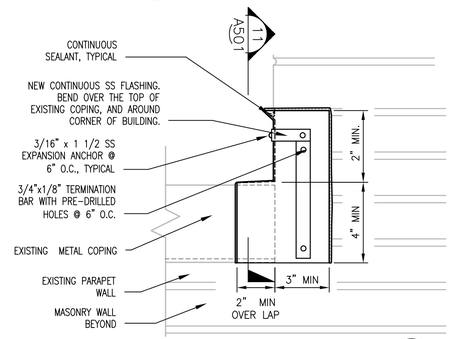

PARAPET TO WALL DETAIL (10 / A501)

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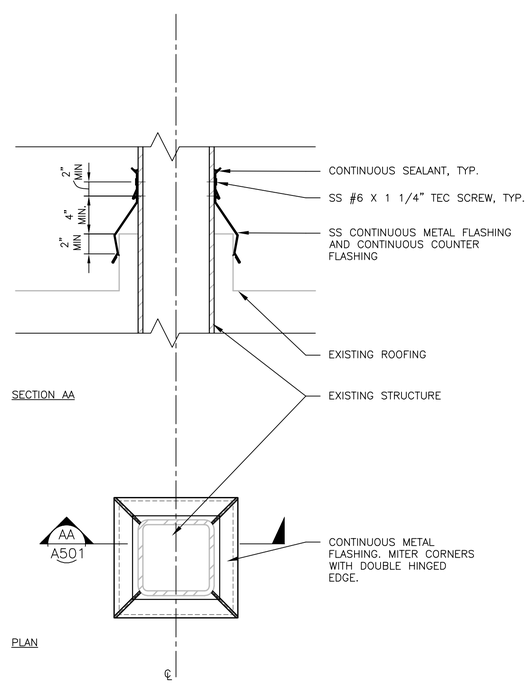

DETAIL @ RTU SUPPORT (7 / A501)

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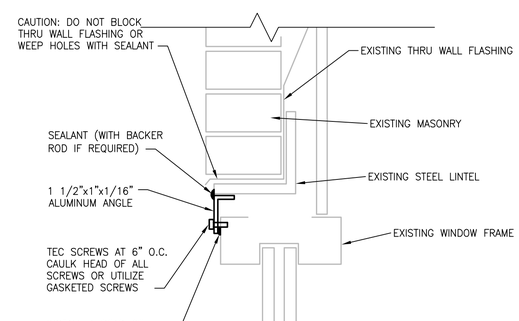

DETAIL @ HEAD (5 / A501)

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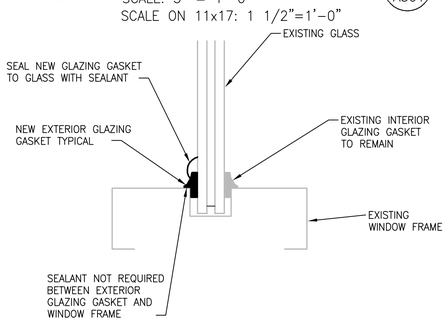

GASKET SEAL DETAIL (4 / A501)

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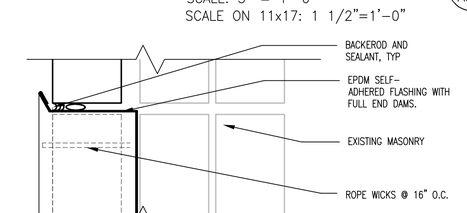

SECTION @ WINDOW HEAD (1 / A501)

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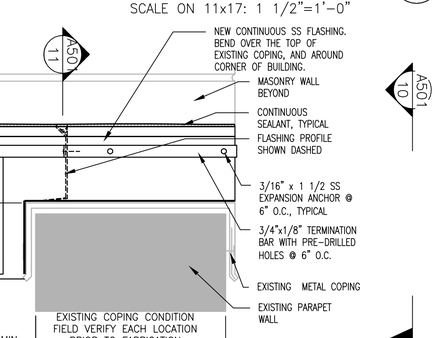

PARAPET TO WALL DETAIL (9 / A501)

SCALE: 3" = 1'-0"
SCALE ON 11x17: 1 1/2"=1'-0"

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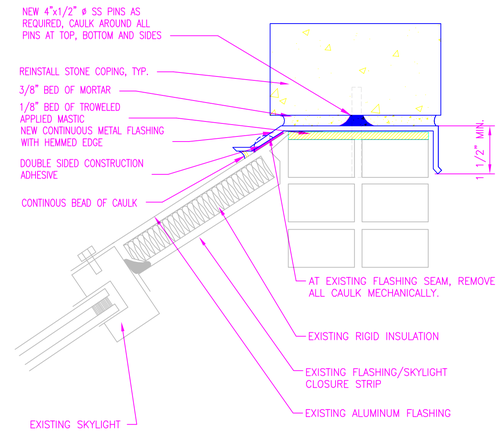
DISTRICT TWO- MACON, MISSOURI

PROJECT NO. 08070
DRAWING NO. A501



COPING STONE REPAIR @ SKYLIGHT (5 / A502)
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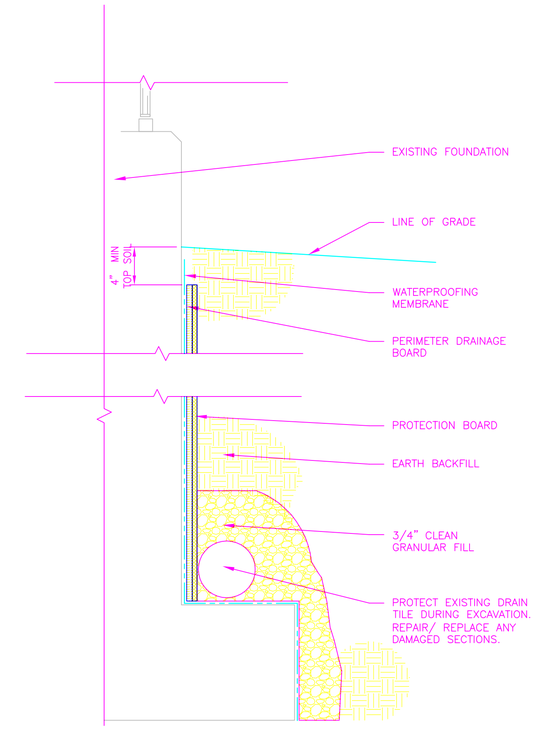
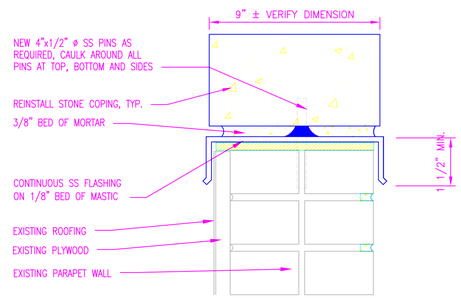


NOTE:
REMOVE EXISTING PROTECTION BOARD MEMBRANE. MECHANICALLY AND CHEMICALLY CLEAN THE FOUNDATION, AND PREP SURFACE, PER THE NEW PROTECTION MEMBRANES MANU-FACTURER'S RECOMMENDATIONS.

DRAINAGE DETAIL @ FOUNDATION (2 / A502)
SCALE: 1 1/2" = 1'-0"
SCALE ON 11x17: 3/4" = 1'-0"



COPING STONE REPAIR (7 / A502)
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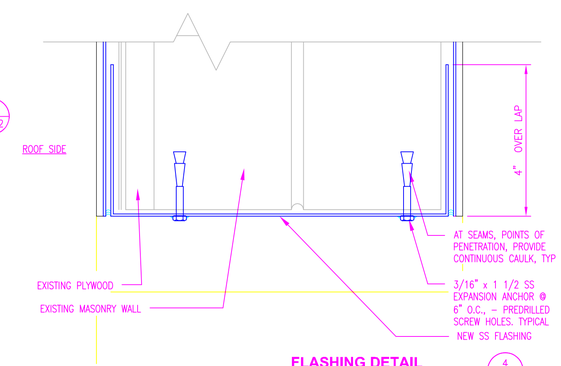

FLASHING DETAIL (4 / A502)
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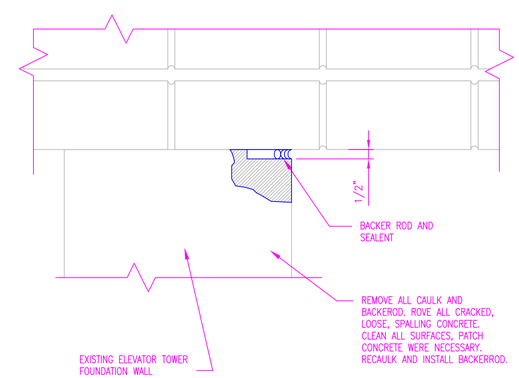

JOINT DETAIL @ ELEVATOR TOWER (1 / A502)
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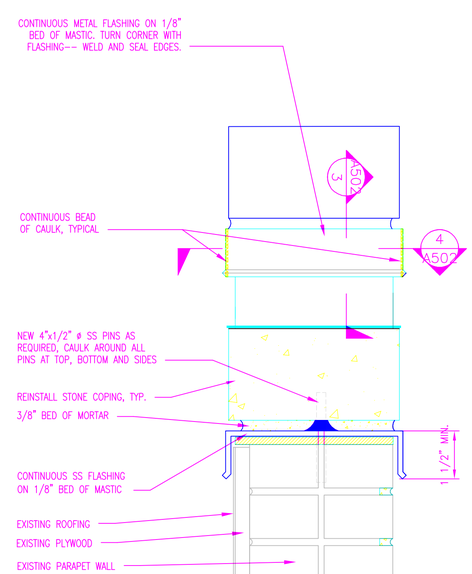

COPING STONE REPAIR (6 / A502)
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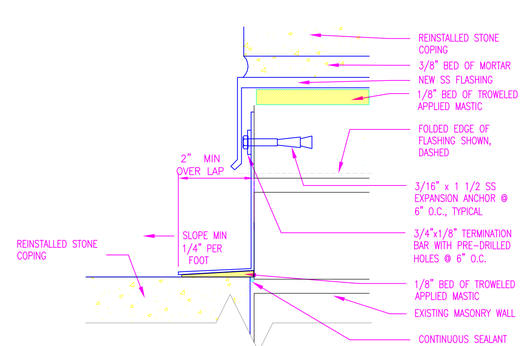

FLASHING DETAIL (3 / A502)
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DISTRICT TWO- MACON, MISSOURI

PROJECT NO. 08070
DRAWING NO. A502

TABLE OF CONTENTS

SECTION 024119 – SELECTIVE DEMOLITION
SECTION 034500 – PRECAST ARCHITECTURAL CONCRETE
SECTION 040120 – MAINTENANCE OF UNIT MASONRY
SECTION 071326 – SELF ADHERING SHEET WATERPROOFING
SECTION 072500 – WEATHER BARRIERS
SECTION 079200 – JOINT SEALANTS

SECTION 024119 – SELECTIVE STRUCTURE DEMOLITION

PART 1 – GENERAL

1.1 SUMMARY

A. SECTION INCLUDES:

1. DEMOLITION AND REMOVAL OF SELECTED SITE ELEMENTS.
2. SALVAGE OF EXISTING ITEMS TO BE REUSED OR RECYCLED.

1.2 DEFINITIONS

A. REMOVE: DETACH ITEMS FROM EXISTING CONSTRUCTION AND LEGALLY DISPOSE OF THEM OFF-SITE UNLESS INDICATED TO BE REMOVED AND SALVAGED OR REMOVED AND REINSTALLED.

B. REMOVE AND REINSTALL: DETACH ITEMS FROM EXISTING CONSTRUCTION, PREPARE FOR REUSE, AND REINSTALL WHERE INDICATED.

C. EXISTING TO REMAIN: EXISTING ITEMS OF CONSTRUCTION THAT ARE NOT TO BE PERMANENTLY REMOVED AND THAT ARE NOT OTHERWISE INDICATED TO BE REMOVED, REMOVED AND SALVAGED, OR REMOVED AND REINSTALLED.

1.3 INFORMATIONAL SUBMITTALS

A. PREDEMOLITION PHOTOGRAPHS OR VIDEO: SUBMIT BEFORE WORK BEGINS.

1.4 FIELD CONDITIONS

A. OWNER WILL OCCUPY PORTIONS OF BUILDING IMMEDIATELY ADJACENT TO SELECTIVE DEMOLITION AREA. CONDUCT SELECTIVE DEMOLITION SO OWNER'S OPERATIONS WILL NOT BE DISRUPTED.

B. CONDITIONS EXISTING AT TIME OF INSPECTION FOR BIDDING PURPOSE WILL BE MAINTAINED BY OWNER AS FAR AS PRACTICAL.

C. NOTIFY ARCHITECT OF DISCREPANCIES BETWEEN EXISTING CONDITIONS AND DRAWINGS BEFORE PROCEEDING WITH SELECTIVE DEMOLITION.

D. HAZARDOUS MATERIALS: IT IS NOT EXPECTED THAT HAZARDOUS MATERIALS WILL BE ENCOUNTERED IN THE WORK.

1. IF SUSPECTED HAZARDOUS MATERIALS ARE ENCOUNTERED, DO NOT DISTURB; IMMEDIATELY NOTIFY ARCHITECT AND OWNER. HAZARDOUS MATERIALS WILL BE REMOVED BY OWNER UNDER A SEPARATE CONTRACT.

E. STORAGE OR SALE OF REMOVED ITEMS OR MATERIALS ON-SITE IS NOT PERMITTED.

F. UTILITY SERVICE: MAINTAIN EXISTING UTILITIES INDICATED TO REMAIN IN SERVICE AND PROTECT THEM AGAINST DAMAGE DURING SELECTIVE DEMOLITION OPERATIONS.

1. MAINTAIN FIRE-PROTECTION FACILITIES IN SERVICE DURING SELECTIVE DEMOLITION OPERATIONS.

1.5 WARRANTY

A. EXISTING WARRANTIES: REMOVE, REPLACE, PATCH, AND REPAIR MATERIALS AND SURFACES CUT OR DAMAGED DURING SELECTIVE DEMOLITION, BY METHODS AND WITH MATERIALS SO AS NOT TO VOID EXISTING WARRANTIES.

PART 2 – PRODUCTS

2.1 PEFORMANCE REQUIREMENTS

A. REGULATORY REQUIREMENTS: COMPLY WITH GOVERNING EPA NOTIFICATION REGULATIONS BEFORE BEGINNING SELECTIVE DEMOLITION. COMPLY WITH HAULING AND DISPOSAL REGULATIONS OF AUTHORITIES HAVING JURISDICTION.

B. STANDARDS: COMPLY WITH ANSI/ASSE A10.6 AND NFPA 241.

PART 3 – EXECUTION

3.1 EXAMINATION

A. SURVEY EXISTING CONDITIONS AND CORRELATE WITH REQUIREMENTS INDICATED TO DETERMINE EXTENT OF SELECTIVE DEMOLITION REQUIRED.

B. SURVEY OF EXISTING CONDITIONS: RECORD EXISTING CONDITIONS BY USE OF PRECONSTRUCTION PHOTOGRAPHS.

3.2 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

A. EXISTING SERVICES/SYSTEMS TO REMAIN: MAINTAIN SERVICES/SYSTEMS INDICATED TO REMAIN AND PROTECT THEM AGAINST DAMAGE.

3.3 PREPARATION

A. SITE ACCESS AND TEMPORARY CONTROLS: CONDUCT SELECTIVE DEMOLITION AND DEBRIS-REMOVAL OPERATIONS TO ENSURE MINIMUM INTERFERENCE WITH ROADS, STREETS, WALKS, WALKWAYS, AND OTHER ADJACENT OCCUPIED AND USED FACILITIES.

1. COMPLY WITH REQUIREMENTS FOR ACCESS AND PROTECTION SPECIFIED IN DIVISION 01 SECTION "TEMPORARY FACILITIES AND CONTROLS."

B. TEMPORARY FACILITIES: PROVIDE TEMPORARY BARRICADES AND OTHER PROTECTION REQUIRED TO PREVENT INJURY TO PEOPLE AND DAMAGE TO ADJACENT BUILDINGS AND FACILITIES TO REMAIN.

C. TEMPORARY SHORING: PROVIDE AND MAINTAIN SHORING, BRACING, AND STRUCTURAL SUPPORTS AS REQUIRED TO PRESERVE STABILITY AND PREVENT MOVEMENT, SETTLEMENT, OR COLLAPSE OF CONSTRUCTION AND FINISHES TO REMAIN, AND TO PREVENT UNEXPECTED OR UNCONTROLLED MOVEMENT OR COLLAPSE OF CONSTRUCTION BEING DEMOLISHED.

3.4 SELECTIVE DEMOLITION, GENERAL

A. GENERAL: DEMOLISH AND REMOVE EXISTING CONSTRUCTION ONLY TO THE EXTENT REQUIRED BY NEW CONSTRUCTION AND AS INDICATED. USE METHODS REQUIRED TO COMPLETE THE WORK WITHIN LIMITATIONS OF GOVERNING REGULATIONS.

B. REUSE OF BUILDING ELEMENTS: PROJECT HAS BEEN DESIGNED TO RESULT IN END-OF-PROJECT RATES FOR REUSE OF BUILDING ELEMENTS AS FOLLOWS. DO NOT DEMOLISH BUILDING ELEMENTS BEYOND WHAT IS INDICATED ON DRAWINGS WITHOUT ARCHITECT'S APPROVAL.

C. REMOVED AND REINSTALLED ITEMS:

1. CLEAN AND REPAIR ITEMS TO FUNCTIONAL CONDITION ADEQUATE FOR INTENDED REUSE.
2. PACK OR CRATE ITEMS AFTER CLEANING AND REPAIRING. IDENTIFY CONTENTS OF CONTAINERS.
3. PROTECT ITEMS FROM DAMAGE DURING TRANSPORT AND STORAGE.
4. REINSTALL ITEMS IN LOCATIONS INDICATED. COMPLY WITH INSTALLATION REQUIREMENTS FOR NEW MATERIALS AND EQUIPMENT. PROVIDE CONNECTIONS, SUPPORTS, AND MISCELLANEOUS MATERIALS NECESSARY TO MAKE ITEM FUNCTIONAL FOR USE INDICATED.

D. EXISTING ITEMS TO REMAIN: PROTECT CONSTRUCTION INDICATED TO REMAIN AGAINST DAMAGE AND SOILING DURING SELECTIVE DEMOLITION. WHEN PERMITTED BY ARCHITECT, ITEMS MAY BE REMOVED TO A SUITABLE, PROTECTED STORAGE LOCATION DURING SELECTIVE DEMOLITION AND CLEANED AND REINSTALLED IN THEIR ORIGINAL LOCATIONS AFTER SELECTIVE DEMOLITION OPERATIONS ARE COMPLETE.

3.5 DISPOSAL OF DEMOLISHED MATERIALS

A. GENERAL: EXCEPT FOR ITEMS OR MATERIALS INDICATED TO BE REUSED, SALVAGED, REINSTALLED, OR OTHERWISE INDICATED TO REMAIN OWNER'S PROPERTY, REMOVE DEMOLISHED MATERIALS FROM PROJECT SITE AND LEGALLY DISPOSE OF THEM IN AN EPA-APPROVED LANDFILL.

1. DO NOT ALLOW DEMOLISHED MATERIALS TO ACCUMULATE ON-SITE.
2. REMOVE AND TRANSPORT DEBRIS IN A MANNER THAT WILL PREVENT SPILLAGE ON ADJACENT SURFACES AND AREAS.
3. REMOVE DEBRIS FROM ELEVATED PORTIONS OF BUILDING BY CHUTE, HOIST, OR OTHER DEVICE THAT WILL CONVEY DEBRIS TO GRADE LEVEL IN A CONTROLLED DESCENT.

B. BURNING: DO NOT BURN DEMOLISHED MATERIALS.

C. DISPOSAL: TRANSPORT DEMOLISHED MATERIALS OFF OWNER'S PROPERTY AND LEGALLY DISPOSE OF THEM.

3.6 CLEANING

A. CLEAN ADJACENT STRUCTURES AND IMPROVEMENTS OF DUST, DIRT, AND DEBRIS CAUSED BY SELECTIVE DEMOLITION OPERATIONS. RETURN ADJACENT AREAS TO CONDITION EXISTING BEFORE SELECTIVE DEMOLITION OPERATIONS BEGAN.

END OF SECTION 024119

SECTION 034500 – PRECAST ARCHITECTURAL CONCRETE

PART 1 – GENERAL

1.1 SUMMARY

A. THIS SECTION INCLUDES THE FOLLOWING:

1. ARCHITECTURAL PRECAST CONCRETE CLADDING UNITS.

1.2 DEFINITION

A. DESIGN REFERENCE SAMPLE: SAMPLE OF APPROVED ARCHITECTURAL PRECAST CONCRETE COLOR, FINISH AND TEXTURE, PREAPPROVED BY ARCHITECT.

1.3 SUBMITTALS

A. PRODUCT DATA: FOR EACH TYPE OF PRODUCT INDICATED.

B. DESIGN MIXTURES: FOR EACH PRECAST CONCRETE MIXTURE. INCLUDE COMPRESSIVE STRENGTH AND WATER-ABSORPTION TESTS.

C. SHOP DRAWINGS: DETAIL FABRICATION AND INSTALLATION OF ARCHITECTURAL PRECAST CONCRETE UNITS. INDICATE LOCATIONS, PLANS, ELEVATIONS, DIMENSIONS, SHAPES, AND CROSS SECTIONS OF EACH UNIT. INDICATE JOINTS, REVEALS, AND EXTENT AND LOCATION OF EACH SURFACE FINISH. INDICATE DETAILS AT BUILDING CORNERS.

1.4 QUALITY ASSURANCE

A. FABRICATOR QUALIFICATIONS: A FIRM THAT ASSUMES RESPONSIBILITY FOR ENGINEERING ARCHITECTURAL PRECAST CONCRETE UNITS TO COMPLY WITH PERFORMANCE REQUIREMENTS. THIS RESPONSIBILITY INCLUDES PREPARATION OF SHOP DRAWINGS AND COMPREHENSIVE ENGINEERING ANALYSIS BY A QUALIFIED PROFESSIONAL ENGINEER.

B. DESIGN STANDARDS: COMPLY WITH ACI 318 (ACI 318M) AND DESIGN RECOMMENDATIONS OF PCI MNL 120, "PCI DESIGN HANDBOOK – PRECAST AND PRESTRESSED CONCRETE," APPLICABLE TO TYPES OF ARCHITECTURAL PRECAST CONCRETE UNITS INDICATED.

C. QUALITY-CONTROL STANDARD: FOR MANUFACTURING PROCEDURES AND TESTING REQUIREMENTS, QUALITY-CONTROL RECOMMENDATIONS, AND DIMENSIONAL TOLERANCES FOR TYPES OF UNITS REQUIRED, COMPLY WITH PCI MNL 117, "MANUAL FOR QUALITY CONTROL FOR PLANTS AND PRODUCTION OF ARCHITECTURAL PRECAST CONCRETE PRODUCTS."

PART 2 – PRODUCTS

2.1 REINFORCING MATERIALS

A. RECYCLED CONTENT OF STEEL PRODUCTS: PROVIDE PRODUCTS WITH AN AVERAGE RECYCLED CONTENT OF STEEL PRODUCTS SO POSTCONSUMER RECYCLED CONTENT PLUS ONE-HALF OF PRECONSUMER RECYCLED CONTENT IS NOT LESS THAN 50 PERCENT.

B. REINFORCING BARS: ASTM A 615/A 615M, GRADE 60, DEFORMED.

2.2 CONCRETE MATERIALS

A. PORTLAND CEMENT: ASTM C 150, TYPE I OR TYPE III, GRAY, UNLESS OTHERWISE INDICATED.

1. FOR SURFACES EXPOSED TO VIEW IN FINISHED STRUCTURE, MIX GRAY WITH WHITE CEMENT, OF SAME TYPE, BRAND, AND MILL SOURCE.

B. SUPPLEMENTARY CEMENTITIOUS MATERIALS:

1. FLY ASH: ASTM C 618, CLASS C OR F, WITH MAXIMUM LOSS ON IGNITION OF 3 PERCENT.
2. METAKAOLIN ADMIXTURE: ASTM C 618, CLASS N.
3. SILICA FUME ADMIXTURE: ASTM C 1240, WITH OPTIONAL CHEMICAL AND PHYSICAL REQUIREMENT.
4. GROUND GRANULATED BLAST-FURNACE SLAG: ASTM C 989, GRADE 100 OR 120.

C. NORMAL-WEIGHT AGGREGATES: EXCEPT AS MODIFIED BY PCI MNL 117, ASTM C 33, WITH COARSE AGGREGATES COMPLYING WITH CLASS 5S. STOCKPILE FINE AND COARSE AGGREGATES FOR EACH TYPE OF EXPOSED FINISH FROM A SINGLE SOURCE (PIT OR QUARRY) FOR PROJECT.

1. FACE-MIXTURE-COARSE AGGREGATES: SELECTED, HARD, AND DURABLE; FREE OF MATERIAL THAT REACTS WITH CEMENT OR CAUSES STAINING; TO MATCH SELECTED FINISH SAMPLE.
2. FACE-MIXTURE-FINE AGGREGATES: SELECTED, NATURAL OR MANUFACTURED SAND OF SAME MATERIAL AS COARSE AGGREGATE, UNLESS OTHERWISE APPROVED BY ARCHITECT.

D. COLORING ADMIXTURE: ASTM C 979, SYNTHETIC OR NATURAL MINERAL-OXIDE PIGMENTS OR COLORED WATER-REDUCING ADMIXTURES, TEMPERATURE STABLE, AND NONFADING.

E. AIR-ENTRAINING ADMIXTURE: ASTM C 260, CERTIFIED BY MANUFACTURER TO BE COMPATIBLE WITH OTHER REQUIRED ADMIXTURES.

F. CHEMICAL ADMIXTURES: CERTIFIED BY MANUFACTURER TO BE COMPATIBLE WITH OTHER ADMIXTURES AND TO NOT CONTAIN CALCIUM CHLORIDE, OR MORE THAN 0.15 PERCENT CHLORIDE IONS OR OTHER SALTS BY WEIGHT OF ADMIXTURE.

2.3 GROUT MATERIALS

A. SAND-CEMENT GROUT: PORTLAND CEMENT, ASTM C 150, TYPE I, AND CLEAN, NATURAL SAND, ASTM C 144 OR ASTM C 404. MIX AT RATIO OF 1 PART CEMENT TO 2-1/2 PARTS SAND, BY VOLUME, WITH MINIMUM WATER REQUIRED FOR PLACEMENT AND HYDRATION.

B. NONMETALLIC, NONSHRINK GROUT: PREMIXED, NONMETALLIC, NONCORROSIVE, NONSTAINING GROUT CONTAINING SELECTED SILICA SANDS, PORTLAND CEMENT, SHRINKAGE-COMPENSATING AGENTS, PLASTICIZING AND WATER-REDUCING AGENTS, COMPLYING WITH ASTM C 1107, GRADE A FOR DRYPACK AND GRADES B AND C FOR FLOWABLE GROUT AND OF CONSISTENCY SUITABLE FOR APPLICATION WITHIN A 30-MINUTE WORKING TIME.

C. EPOXY-RESIN GROUT: TWO-COMPONENT, MINERAL-FILLED EPOXY RESIN; ASTM C 881/C 881M, OF TYPE, GRADE, AND CLASS TO SUIT REQUIREMENTS.

2.4 CONCRETE MIXTURES

A. PREPARE DESIGN MIXTURES FOR EACH TYPE OF PRECAST CONCRETE REQUIRED.

1. LIMIT USE OF FLY ASH AND SILICA FUME TO 20 PERCENT OF PORTLAND CEMENT BY WEIGHT; LIMIT METAKAOLIN AND SILICA FUME TO 10 PERCENT OF PORTLAND CEMENT BY WEIGHT.

B. DESIGN MIXTURES MAY BE PREPARED BY A QUALIFIED INDEPENDENT TESTING AGENCY OR BY QUALIFIED PRECAST PLANT PERSONNEL AT ARCHITECTURAL PRECAST CONCRETE FABRICATOR'S OPTION.

C. LIMIT WATER-SOLUBLE CHLORIDE IONS TO MAXIMUM PERCENTAGE BY WEIGHT OF CEMENT PERMITTED BY ACI 318 (ACI 318M) OR PCI MNL 117 WHEN TESTED ACCORDING TO ASTM C 1218/C 1218M.

D. NORMAL-WEIGHT CONCRETE MIXTURES: PROPORTION MIXTURES BY EITHER LABORATORY TRIAL BATCH OR FIELD TEST DATA METHODS ACCORDING TO ACI 211.1, WITH MATERIALS TO BE USED ON PROJECT, TO PROVIDE NORMAL-WEIGHT CONCRETE WITH THE FOLLOWING PROPERTIES:

1. COMPRESSIVE STRENGTH (28 DAYS): 5000 PSI (34.5 MPA) MINIMUM.

E. WATER ABSORPTION: 6 PERCENT BY WEIGHT OR 14 PERCENT BY VOLUME, TESTED ACCORDING TO PCI MNL 117.

F. ADD AIR-ENTRAINING ADMIXTURE AT MANUFACTURER'S PRESCRIBED RATE TO RESULT IN CONCRETE AT POINT OF PLACEMENT HAVING AN AIR CONTENT COMPLYING WITH PCI MNL 117.

G. WHEN INCLUDED IN DESIGN MIXTURES, ADD OTHER ADMIXTURES TO CONCRETE MIXTURES ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS.

2.5 FABRICATION

A. REINFORCE ARCHITECTURAL PRECAST CONCRETE UNITS TO RESIST HANDLING, TRANSPORTATION, AND ERECTION STRESSES.

B. COMPLY WITH REQUIREMENTS IN PCI MNL 117 AND REQUIREMENTS IN THIS SECTION FOR MEASURING, MIXING, TRANSPORTING, AND PLACING CONCRETE. AFTER CONCRETE BATCHING, NO ADDITIONAL WATER MAY BE ADDED.

C. PLACE FACE MIXTURE TO A MINIMUM THICKNESS AFTER CONSOLIDATION OF THE GREATER OF 1 INCH (25 MM) OR 1.5 TIMES THE MAXIMUM AGGREGATE SIZE, BUT NOT LESS THAN THE MINIMUM REINFORCING COVER SPECIFIED.

D. PLACE CONCRETE IN A CONTINUOUS OPERATION TO PREVENT SEAMS OR PLANES OF WEAKNESS FROM FORMING IN PRECAST CONCRETE UNITS.

E. THOROUGHLY CONSOLIDATE PLACED CONCRETE BY INTERNAL AND EXTERNAL VIBRATION WITHOUT DISLOCATING OR DAMAGING REINFORCEMENT AND BUILT-IN ITEMS, AND MINIMIZE POUR LINES, HONEYCOMBING, OR ENTRAPPED AIR ON SURFACES. USE EQUIPMENT AND PROCEDURES COMPLYING WITH PCI MNL 117.

F. COMPLY WITH PCI MNL 117 FOR HOT- AND COLD-WEATHER CONCRETE PLACEMENT.

G. CURE CONCRETE, ACCORDING TO REQUIREMENTS IN PCI MNL 117, BY MOISTURE RETENTION WITHOUT HEAT OR BY ACCELERATED HEAT CURING USING LOW-PRESSURE LIVE STEAM OR RADIANT HEAT AND MOISTURE. CURE UNITS UNTIL COMPRESSIVE STRENGTH IS HIGH ENOUGH TO ENSURE THAT STRIPPING DOES NOT HAVE AN EFFECT ON PERFORMANCE OR APPEARANCE OF FINAL PRODUCT.

H. DISCARD AND REPLACE ARCHITECTURAL PRECAST CONCRETE UNITS THAT DO NOT COMPLY WITH REQUIREMENTS, INCLUDING STRUCTURAL, MANUFACTURING TOLERANCE, AND APPEARANCE, UNLESS REPAIRS MEET REQUIREMENTS IN PCI MNL 117 AND ARCHITECT'S APPROVAL.

2.6 FABRICATION TOLERANCES

A. FABRICATE ARCHITECTURAL PRECAST CONCRETE UNITS STRAIGHT AND TRUE TO SIZE AND SHAPE WITH EXPOSED EDGES AND CORNERS PRECISE AND TRUE SO EACH FINISHED PANEL COMPLIES WITH PCI MNL 117 PRODUCT TOLERANCES AS WELL AS POSITION TOLERANCES FOR CAST-IN ITEMS.

2.7 FINISHES

A. PANEL FACES SHALL BE FREE OF JOINT MARKS, GRAIN, AND OTHER OBVIOUS DEFECTS.

1. SAND-EMBEDMENT FINISH: USE SELECTED STONES PLACED IN A SAND BED IN BOTTOM OF MOLD, WITH SAND REMOVED AFTER CURING.

B. FINISH EXPOSED TOP, BOTTOM AND BACK SURFACES OF ARCHITECTURAL PRECAST CONCRETE UNITS TO MATCH FACE-SURFACE FINISH. EXPOSED FINISH TO MATCH EXISTING PRECAST STONE.

2.8 SOURCE QUALITY CONTROL

A. QUALITY-CONTROL TESTING: TEST AND INSPECT PRECAST CONCRETE ACCORDING TO PCI MNL 117 REQUIREMENTS. IF USING SELF-CONSOLIDATING CONCRETE, ALSO TEST AND INSPECT ACCORDING TO PCI TR-6, "INTERIM GUIDELINES FOR THE USE OF SELF-CONSOLIDATING CONCRETE IN PRECAST/PRESTRESSED CONCRETE INSTITUTE MEMBER PLANTS."

PART 3 – EXECUTION

3.1 INSTALLATION

A. ERECT ARCHITECTURAL PRECAST CONCRETE LEVEL, PLUMB, AND SQUARE WITHIN SPECIFIED ALLOWABLE TOLERANCES. PROVIDE TEMPORARY SUPPORTS AND BRACING AS REQUIRED TO MAINTAIN POSITION, STABILITY, AND ALIGNMENT AS UNITS ARE BEING PERMANENTLY CONNECTED.

B. CONNECT ARCHITECTURAL PRECAST CONCRETE UNITS IN POSITION BY BOLTING, WELDING, GROUTING, OR AS OTHERWISE INDICATED ON SHOP DRAWINGS. REMOVE TEMPORARY SHIMS, WEDGES, AND SPACERS AS SOON AS PRACTICAL AFTER CONNECTING AND GROUTING ARE COMPLETED.

C. GROUTING CONNECTIONS: GROUT CONNECTIONS WHERE REQUIRED OR INDICATED. RETAIN GROUT IN PLACE UNTIL HARD ENOUGH TO SUPPORT ITSELF. PACK SPACES WITH STIFF GROUT MATERIAL, TAMPING UNTIL VOIDS ARE COMPLETELY FILLED. PLACE GROUT TO FINISH SMOOTH, LEVEL, AND PLUMB WITH ADJACENT CONCRETE SURFACES. KEEP GROUTED JOINTS DAMP FOR NOT LESS THAN 24 HOURS AFTER INITIAL SET. PROMPTLY REMOVE GROUT MATERIAL FROM EXPOSED SURFACES BEFORE IT AFFECTS FINISHES OR HARDENS.

3.2 CLEANING

A. CLEAN SURFACES OF PRECAST CONCRETE UNITS EXPOSED TO VIEW.

B. CLEAN MORTAR, AND OTHER DELETERIOUS MATERIAL FROM CONCRETE SURFACES AND ADJACENT MATERIALS IMMEDIATELY.

C. CLEAN EXPOSED SURFACES OF PRECAST CONCRETE UNITS AFTER ERECTION AND COMPLETION OF JOINT TREATMENT TO REMOVE WELD MARKS, OTHER MARKINGS, DIRT, AND STAINS.

1. PERFORM CLEANING PROCEDURES, IF NECESSARY, ACCORDING TO PRECAST CONCRETE FABRICATOR'S RECOMMENDATIONS. CLEAN SOILED PRECAST CONCRETE SURFACES WITH DETERGENT AND WATER, USING STIFF FIBER BRUSHES AND SPONGES, AND RINSE WITH CLEAN WATER. PROTECT OTHER WORK FROM STAINING OR DAMAGE DUE TO CLEANING OPERATIONS.
2. DO NOT USE CLEANING MATERIALS OR PROCESSES THAT COULD CHANGE THE APPEARANCE OF EXPOSED CONCRETE FINISHES OR DAMAGE ADJACENT MATERIALS.

END OF SECTION 034500

SECTION 040120 – MAINTENANCE OF UNIT MASONRY

PART 1 – GENERAL

1.1 SUMMARY

A. SECTION INCLUDES MAINTENANCE OF UNIT MASONRY CONSISTING OF BRICK CLAY MASONRY RESTORATION AND CLEANING AS FOLLOWS:

1. REPAIRING UNIT MASONRY, INCLUDING REPLACING UNITS.
2. REPOINTING JOINTS.
3. PRELIMINARY CLEANING, INCLUDING REMOVING PLANT GROWTH.
4. CLEANING EXPOSED UNIT MASONRY SURFACES.

1.2 UNIT PRICES

A. WORK OF THIS SECTION IS AFFECTED BY UNIT PRICES SPECIFIED IN DIVISION 01 SECTION "UNIT PRICES."

1.3 DEFINITIONS

A. LOW-PRESSURE SPRAY: 100 TO 400 PSI; 4 TO 6 GPM.

B. MEDIUM-PRESSURE SPRAY: 400 TO 800 PSI; 4 TO 6 GPM.

1.4 SUBMITTALS

A. PRODUCT DATA: FOR EACH TYPE OF PRODUCT INDICATED.

B. SAMPLES: FOR EACH EXPOSED PRODUCT AND FOR EACH COLOR AND TEXTURE SPECIFIED.

1.5 QUALITY ASSURANCE

A. RESTORATION SPECIALIST QUALIFICATIONS: ENGAGE AN EXPERIENCED MASONRY RESTORATION AND CLEANING FIRM TO PERFORM WORK OF THIS SECTION. FIRM SHALL HAVE COMPLETED WORK SIMILAR IN MATERIAL, DESIGN, AND EXTENT TO THAT INDICATED FOR THIS PROJECT WITH A RECORD OF SUCCESSFUL IN-SERVICE PERFORMANCE. EXPERIENCE INSTALLING STANDARD UNIT MASONRY IS NOT SUFFICIENT EXPERIENCE FOR MASONRY RESTORATION WORK.

1. AT CONTRACTOR'S OPTION, WORK MAY BE DIVIDED BETWEEN TWO SPECIALIST FIRMS: ONE FOR CLEANING WORK AND ONE FOR REPAIR WORK.
2. FIELD SUPERVISION: RESTORATION SPECIALIST FIRMS SHALL MAINTAIN EXPERIENCED FULL-TIME SUPERVISORS ON PROJECT SITE DURING TIMES THAT CLAY MASONRY RESTORATION AND CLEANING WORK IS IN PROGRESS.
3. RESTORATION WORKER QUALIFICATIONS: PERSONS WHO ARE EXPERIENCED IN RESTORATION WORK OF TYPES THEY WILL BE PERFORMING.

B. MOCKUPS: PREPARE MOCKUPS OF RESTORATION AND CLEANING TO DEMONSTRATE AESTHETIC EFFECTS AND SET QUALITY STANDARDS FOR MATERIALS AND EXECUTION AND FOR FABRICATION AND INSTALLATION.

1. REPOINTING: RAKE OUT JOINTS IN 2 SEPARATE AREAS [, EACH APPROXIMATELY 36 INCHES HIGH BY 48 INCHES WIDE] [AS INDICATED] <INSERT DIMENSIONS> FOR EACH TYPE OF REPOINTING REQUIRED AND REPOINT ONE OF THE AREAS.
2. CLEANING: CLEAN AN AREA [APPROXIMATELY 25 SQ. FT.] [AS INDICATED] <INSERT DIMENSION> FOR EACH TYPE OF MASONRY AND SURFACE CONDITION.

PART 2 – PRODUCTS

2.1 MASONRY MATERIALS

A. FACE BRICK: PROVIDE CLOVE CERAMICS "CAMEO BLEND WIRETEX" OR APPROVED EQUAL WHERE REQUIRED TO COMPLETE MASONRY RESTORATION WORK.

2.2 MORTAR MATERIALS

A. PORTLAND CEMENT: ASTM C 150, TYPE I OR TYPE II, GRAY WHERE REQUIRED FOR COLOR MATCHING OF EXPOSED MORTAR.

1. PROVIDE CEMENT CONTAINING NOT MORE THAN 0.60 PERCENT TOTAL ALKALI WHEN TESTED ACCORDING TO ASTM C 114.

B. HYDRATED LIME: ASTM C 207, TYPE S.

C. MORTAR SAND: ASTM C 144 UNLESS OTHERWISE INDICATED.

1. COLOR: PROVIDE NATURAL SAND OR GROUND MARBLE, GRANITE, OR OTHER SOUND STONE OF COLOR NECESSARY TO PRODUCE REQUIRED MORTAR COLOR.
2. FOR POINTING MORTAR, PROVIDE SAND WITH ROUNDED EDGES.
3. MATCH SIZE, TEXTURE, AND GRADATION OF EXISTING MORTAR SAND AS CLOSELY AS POSSIBLE. BLEND SEVERAL SANDS IF NECESSARY TO ACHIEVE SUITABLE MATCH.

D. MORTAR PIGMENTS: NATURAL AND SYNTHETIC IRON OXIDES, COMPOUNDED FOR MORTAR MIXES. USE ONLY PIGMENTS WITH A RECORD OF SATISFACTORY PERFORMANCE IN MASONRY MORTARS.

E. WATER: POTABLE.

2.3 CLEANING MATERIALS

A. WATER: POTABLE.

B. HOT WATER: WATER HEATED TO A TEMPERATURE OF 140 TO 160 DEG F.

C. JOB-MIXED DETERGENT SOLUTION: SOLUTION PREPARED BY MIXING 2 CUPS OF TETRASODIUM POLYPHOSPHATE, 1/2 CUP OF LAUNDRY DETERGENT, AND 20 QUARTS OF HOT WATER FOR EVERY 5 GAL. OF SOLUTION REQUIRED.

D. JOB-MIXED MOLD, MILDEW, AND ALGAE REMOVER: SOLUTION PREPARED BY MIXING 2 CUPS OF TETRASODIUM POLYPHOSPHATE, 5 QUARTS OF 5 PERCENT SODIUM HYPOCHLORITE (BLEACH), AND 15 QUARTS OF HOT WATER FOR EVERY 5 GAL. OF SOLUTION REQUIRED.

E. NONACIDIC LIQUID CLEANER: MANUFACTURER'S STANDARD MILDLY ALKALINE LIQUID CLEANER FORMULATED FOR REMOVING MOLD, MILDEW, AND OTHER ORGANIC SOILING FROM ORDINARY BUILDING MATERIALS, INCLUDING POLISHED STONE, BRICK, ALUMINUM, PLASTICS, AND WOOD.

1. PRODUCTS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:
   a. DOMINION RESTORATION PRODUCTS, INC.; BIO-CLEANSE.
   b. DUMOND CHEMICALS, INC.; SAFE N' EASY ARCHITECTURAL CLEANER/RESTORER.
   c. PROSOCO; ENVIRO KLEAN 2010 ALL SURFACE CLEANER.

2.4 ACCESSORY MATERIALS

A. STONE COPING PINS: PROVIDE TYPE 304 STAINLESS STEEL PINS, SIZE AND LENGTH TO MATCH EXISTING PINS.

B. MASONRY ANCHORS: PROVIDE DUR-O-WALL DA513S STAINLESS STEEL REPLACEMENT BRICK ANCHORS.

C. STEEL ANGLES: PROVIDE STEEL ANGLES IN SIZES SHOWN ON DRAWING; STEEL SHAPES TO CONFORM WITH ASTM A36/A36M

D. SETTING BUTTONS: RESILIENT PLASTIC BUTTONS, NONSTAINING TO MASONRY, SIZED TO SUIT JOINT THICKNESSES AND BED DEPTHS OF MASONRY UNITS WITHOUT INTRUDING INTO REQUIRED DEPTHS OF POINTING MATERIALS.

2.5 MORTAR MIXES

A. MEASUREMENT AND MIXING: MEASURE CEMENTITIOUS MATERIALS AND SAND IN A DRY CONDITION BY VOLUME OR EQUIVALENT WEIGHT. DO NOT MEASURE BY SHOVEL; USE KNOWN MEASURE. MIX MATERIALS IN A CLEAN, MECHANICAL BATCH MIXER.

1. MIXING POINTING MORTAR: THOROUGHLY MIX CEMENTITIOUS MATERIALS AND SAND TOGETHER BEFORE ADDING ANY WATER. THEN MIX AGAIN ADDING ONLY ENOUGH WATER TO PRODUCE A DAMP, UNWORKABLE MIX THAT WILL RETAIN ITS FORM WHEN PRESSED INTO A BALL. MAINTAIN MORTAR IN THIS DAMPENED CONDITION FOR 15 TO 30 MINUTES. ADD REMAINING WATER IN SMALL PORTIONS UNTIL MORTAR REACHES DESIRED CONSISTENCY. USE MORTAR WITHIN ONE HOUR OF FINAL MIXING; DO NOT RETEMPER OR USE PARTIALLY HARDENED MATERIAL.

B. DO NOT USE ADMIXTURES IN MORTAR UNLESS OTHERWISE INDICATED.

C. MORTAR PROPORTIONS: MIX MORTAR MATERIALS IN THE FOLLOWING PROPORTIONS:

1. POINTING MORTAR FOR BRICK: 1 PART PORTLAND CEMENT, 2 PARTS LIME, AND 6 PARTS SAND.
2. REBUILDING (SETTING) MORTAR: COMPLY WITH ASTM C 270, PROPORTION SPECIFICATION, TYPE N UNLESS OTHERWISE INDICATED; WITH CEMENTITIOUS MATERIAL LIMITED TO PORTLAND CEMENT AND LIME.

2.6 CHEMICAL CLEANING SOLUTIONS

A. DILUTE CHEMICAL CLEANERS WITH WATER TO PRODUCE SOLUTIONS NOT EXCEEDING CONCENTRATION RECOMMENDED BY CHEMICAL-CLEANER MANUFACTURER.

PART 3 – EXECUTION

3.1 PROTECTION

A. PROTECT PERSONS, MOTOR VEHICLES, SURROUNDING SURFACES OF BUILDING BEING RESTORED, BUILDING SITE, PLANTS, AND SURROUNDING BUILDINGS FROM HARM RESULTING FROM MASONRY RESTORATION WORK.

B. COMPLY WITH CHEMICAL-CLEANER MANUFACTURER'S WRITTEN INSTRUCTIONS FOR PROTECTING BUILDING AND OTHER SURFACES AGAINST DAMAGE FROM EXPOSURE TO ITS PRODUCTS. PREVENT CHEMICAL-CLEANING SOLUTIONS FROM COMING INTO CONTACT WITH PEOPLE, MOTOR VEHICLES, LANDSCAPING, BUILDINGS, AND OTHER SURFACES THAT COULD BE HARMED BY SUCH CONTACT.

1. COVER ADJACENT SURFACES WITH MATERIALS THAT ARE PROVEN TO RESIST CHEMICAL CLEANERS USED UNLESS CHEMICAL CLEANERS BEING USED WILL NOT DAMAGE ADJACENT SURFACES. USE MATERIALS THAT CONTAIN ONLY WATERPROOF, UV-RESISTANT ADHESIVES. APPLY MASKING AGENTS TO COMPLY WITH MANUFACTURER'S WRITTEN INSTRUCTIONS. WHEN NO LONGER NEEDED, PROMPTLY REMOVE MASKING TO PREVENT ADHESIVE STAINING.
2. KEEP WALL WET BELOW AREA BEING CLEANED TO PREVENT STREAKING FROM RUNOFF.

3.2 BRICK REMOVAL AND REPLACEMENT

A. AT LOCATIONS INDICATED, REMOVE BRICKS THAT ARE DAMAGED, SPALLED, DETERIORATED OR PREVIOUSLY FACE REPAIRED. CAREFULLY DEMOLISH OR REMOVE ENTIRE UNITS FROM JOINT TO JOINT, WITHOUT DAMAGING SURROUNDING MASONRY, IN A MANNER THAT PERMITS REPLACEMENT WITH FULL-SIZE UNITS.

B. SUPPORT AND PROTECT REMAINING MASONRY THAT SURROUNDS REMOVAL AREA. MAINTAIN FLASHING, REINFORCEMENT, LINTELS, AND ADJOINING CONSTRUCTION IN AN UNDAMAGED CONDITION.

C. NOTIFY ARCHITECT OF UNFORESEEN DETRIMENTAL CONDITIONS INCLUDING VOIDS, CRACKS, BULGES, AND LOOSE UNITS IN EXISTING MASONRY BACKUP, ROTTED WOOD, RUSTED METAL, AND OTHER DETERIORATED ITEMS.

D. REMOVE IN AN UNDAMAGED CONDITION AS MANY WHOLE BRICKS AS POSSIBLE.

1. REMOVE MORTAR, LOOSE PARTICLES, AND SOIL FROM BRICK BY CLEANING WITH HAND CHISELS, BRUSHES, AND WATER.
2. REMOVE SEALANTS BY CUTTING CLOSE TO BRICK WITH UTILITY KNIFE AND CLEANING WITH SOLVENTS.

E. CLEAN BRICKS SURROUNDING REMOVAL AREAS BY REMOVING MORTAR, DUST, AND LOOSE PARTICLES IN PREPARATION FOR REPLACEMENT.

F. REPLACE REMOVED DAMAGED BRICK WITH OTHER REMOVED BRICK IN GOOD QUALITY, WHERE POSSIBLE, OR WITH NEW BRICK MATCHING EXISTING BRICK, INCLUDING SIZE. DO NOT USE BROKEN UNITS UNLESS THEY CAN BE CUT TO USABLE SIZE.

G. INSTALL REPLACEMENT BRICK INTO BONDING AND COURSING PATTERN OF EXISTING BRICK. IF CUTTING IS REQUIRED, USE A MOTOR-DRIVEN SAW DESIGNED TO CUT MASONRY WITH CLEAN, SHARP, UNCHIPPED EDGES.

1. MAINTAIN JOINT WIDTH FOR REPLACEMENT UNITS TO MATCH EXISTING JOINTS.
2. USE SETTING BUTTONS OR SHIMS TO SET UNITS ACCURATELY SPACED WITH UNIFORM JOINTS.

H. LAY REPLACEMENT BRICK WITH COMPLETELY FILLED BED, HEAD, AND COLLAR JOINTS. BUTTER ENDS WITH SUFFICIENT MORTAR TO FILL HEAD JOINTS AND SHOVE INTO PLACE. WET BOTH REPLACEMENT AND SURROUNDING BRICKS THAT HAVE ASTM C 67 INITIAL RATES OF ABSORPTION (SUCTION) OF MORE THAN 30 G/30 SQ. IN. PER MIN.. USE WETTING METHODS THAT ENSURE THAT UNITS ARE NEARLY SATURATED BUT SURFACE IS DRY WHEN LAID.

1. TOOL EXPOSED MORTAR JOINTS IN REPAIRED AREAS WITH CONCAVE WEATHER JOINT.
2. RAKE OUT MORTAR USED FOR LAYING BRICK BEFORE MORTAR SETS AND POINT NEW MORTAR JOINTS IN REPAIRED AREA TO COMPLY WITH REQUIREMENTS FOR REPOINTING EXISTING MASONRY, AND AT SAME TIME AS REPOINTING OF SURROUNDING AREA.
3. WHEN MORTAR IS SUFFICIENTLY HARD TO SUPPORT UNITS, REMOVE SHIMS AND OTHER DEVICES INTERFERING WITH POINTING OF JOINTS.

3.3 CLEANING MASONRY, GENERAL

A. PROCEED WITH CLEANING IN AN ORDERLY MANNER; WORK FROM TOP TO BOTTOM OF EACH SCAFFOLD WIDTH AND FROM ONE END OF EACH ELEVATION TO THE OTHER. ENSURE THAT DIRTY RESIDUES AND RINSE WATER WILL NOT WASH OVER CLEANED, DRY SURFACES.

B. USE ONLY THOSE CLEANING METHODS INDICATED FOR EACH MASONRY MATERIAL AND LOCATION.

1. DO NOT USE WIRE BRUSHES OR BRUSHES THAT ARE NOT RESISTANT TO CHEMICAL CLEANER BEING USED. DO NOT USE PLASTIC-BRISTLE BRUSHES IF NATURAL-FIBER BRUSHES WILL RESIST CHEMICAL CLEANER BEING USED.
2. USE SPRAY EQUIPMENT THAT PROVIDES CONTROLLED APPLICATION AT VOLUME AND PRESSURE INDICATED, MEASURED AT SPRAY TIP. ADJUST PRESSURE AND VOLUME TO ENSURE THAT CLEANING METHODS DO NOT DAMAGE MASONRY.
   a. EQUIP UNITS WITH PRESSURE GAGES.
3. FOR CHEMICAL-CLEANER SPRAY APPLICATION, USE LOW-PRESSURE TANK OR CHEMICAL PUMP SUITABLE FOR CHEMICAL CLEANER INDICATED, EQUIPPED WITH CONE-SHAPED SPRAY TIP.
4. FOR WATER-SPRAY APPLICATION, USE FAN-SHAPED SPRAY TIP THAT DISPERSES WATER AT AN ANGLE OF 25 TO 50 DEGREES.
5. FOR HEATED WATER-SPRAY APPLICATION, USE EQUIPMENT CAPABLE OF MAINTAINING TEMPERATURE BETWEEN 140 AND 160 DEG F AT FLOW RATES INDICATED.

ISSUED FOR BIDDING

REV.	DATE	DESCRIPTION	APPROVED
0	7/24/09	ISSUED FOR BIDDING	GEB

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DATE: 7/24/09

SPECIFICATIONS
EXTERIOR RENOVATIONS
MISSOURI DEPARTMENT OF TRANSPORTATION
DISTRICT TWO- MACON, MISSOURI

PROJECT NO. 08070
DRAWING NO. A701

C. PERFORM EACH CLEANING METHOD INDICATED IN A MANNER THAT RESULTS IN UNIFORM COVERAGE OF ALL SURFACES, INCLUDING CORNERS, MOLDINGS, AND INTERSTICES, AND THAT PRODUCES AN EVEN EFFECT WITHOUT STREAKING OR DAMAGING MASONRY SURFACES.

D. WATER-SPRAY APPLICATION METHOD: UNLESS OTHERWISE INDICATED, HOLD SPRAY NOZZLE AT LEAST 6 INCHES FROM SURFACE OF MASONRY AND APPLY WATER IN HORIZONTAL BACK AND FORTH SWEEPING MOTION, OVERLAPPING PREVIOUS STROKES TO PRODUCE UNIFORM COVERAGE.

E. CHEMICAL-CLEANER APPLICATION METHODS: APPLY CHEMICAL CLEANERS TO MASONRY SURFACES TO COMPLY WITH CHEMICAL-CLEANER MANUFACTURER'S WRITTEN INSTRUCTIONS; USE BRUSH OR SPRAY APPLICATION. DO NOT SPRAY APPLY AT PRESSURES EXCEEDING 50 PSI. DO NOT ALLOW CHEMICALS TO REMAIN ON SURFACE FOR PERIODS LONGER THAN THOSE INDICATED OR RECOMMENDED BY MANUFACTURER.

F. RINSE OFF CHEMICAL RESIDUE AND SOIL BY WORKING UPWARD FROM BOTTOM TO TOP OF EACH TREATED AREA AT EACH STAGE OR SCAFFOLD SETTING. PERIODICALLY DURING EACH RINSE, TEST PH OF RINSE WATER RUNNING OFF OF CLEANED AREA TO DETERMINE THAT CHEMICAL CLEANER IS COMPLETELY REMOVED.

1. APPLY NEUTRALIZING AGENT AND REPEAT RINSE IF NECESSARY TO PRODUCE TESTED PH OF BETWEEN 6.7 AND 7.5.

3.4 PRELIMINARY CLEANING

A. REMOVING PLANT GROWTH: COMPLETELY REMOVE VISIBLE PLANT, MOSS, AND SHRUB GROWTH FROM MASONRY SURFACES. CAREFULLY REMOVE PLANTS, CREEPERS, AND VEGETATION BY CUTTING AT ROOTS AND ALLOWING TO DRY AS LONG AS POSSIBLE BEFORE REMOVAL. REMOVE LOOSE SOIL AND DEBRIS FROM OPEN MASONRY JOINTS TO WHATEVER DEPTH THEY OCCUR.

B. PRELIMINARY CLEANING: BEFORE BEGINNING GENERAL CLEANING, REMOVE EXTRANEOUS SUBSTANCES THAT ARE RESISTANT TO CLEANING METHODS BEING USED. EXTRANEOUS SUBSTANCES INCLUDE PAINT, CALKING, ASPHALT, AND TAR.

1. CAREFULLY REMOVE HEAVY ACCUMULATIONS OF MATERIAL FROM SURFACE OF MASONRY WITH A SHARP CHISEL. DO NOT SCRATCH OR CHIP MASONRY SURFACE.

3.5 CLEANING MASONRY

A. DETERGENT CLEANING:

1. WET MASONRY WITH COLD WATER APPLIED BY LOW-PRESSURE SPRAY.
2. SCRUB MASONRY WITH DETERGENT SOLUTION USING MEDIUM-SOFT BRUSHES UNTIL SOIL IS THOROUGHLY DISLODGED AND CAN BE REMOVED BY RINSING. USE SMALL BRUSHES TO REMOVE SOIL FROM MORTAR JOINTS AND CREVICES. DIP BRUSH IN SOLUTION OFTEN TO ENSURE THAT ADEQUATE FRESH DETERGENT IS USED AND THAT MASONRY SURFACE REMAINS WET.
3. RINSE WITH COLD WATER APPLIED BY LOW-PRESSURE SPRAY TO REMOVE DETERGENT SOLUTION AND SOIL.
4. REPEAT CLEANING PROCEDURE ABOVE WHERE REQUIRED TO PRODUCE CLEANING EFFECT ESTABLISHED BY MOCKUP.

B. MOLD, MILDEW, AND ALGAE REMOVAL:

1. WET MASONRY WITH COLD WATER APPLIED BY LOW-PRESSURE SPRAY.
2. APPLY MOLD, MILDEW, AND ALGAE REMOVER BY BRUSH OR LOW-PRESSURE SPRAY.
3. SCRUB MASONRY WITH MEDIUM-SOFT BRUSHES UNTIL MOLD, MILDEW, AND ALGAE ARE THOROUGHLY DISLODGED AND CAN BE REMOVED BY RINSING. USE SMALL BRUSHES FOR MORTAR JOINTS AND CREVICES. DIP BRUSH IN MOLD, MILDEW, AND ALGAE REMOVER OFTEN TO ENSURE THAT ADEQUATE FRESH CLEANER IS USED AND THAT MASONRY SURFACE REMAINS WET.
4. RINSE WITH COLD WATER APPLIED BY LOW-PRESSURE SPRAY TO REMOVE MOLD, MILDEW, AND ALGAE REMOVER AND SOIL.
5. REPEAT CLEANING PROCEDURE ABOVE WHERE REQUIRED TO PRODUCE CLEANING EFFECT ESTABLISHED BY MOCKUP.

C. NONACIDIC GEL CHEMICAL CLEANING:

1. WET MASONRY WITH COLD WATER APPLIED BY LOW-PRESSURE SPRAY.
2. APPLY NONACIDIC GEL CLEANER IN 1/8-INCH THICKNESS BY BRUSH, WORKING INTO JOINTS AND CREVICES. APPLY QUICKLY AND DO NOT BRUSH OUT EXCESSIVELY SO AREA WILL BE UNIFORMLY COVERED WITH FRESH CLEANER AND DWELL TIME WILL BE UNIFORM THROUGHOUT AREA BEING CLEANED.
3. LET CLEANER REMAIN ON SURFACE FOR PERIOD INDICATED BELOW:
   a. AS RECOMMENDED BY CHEMICAL-CLEANER MANUFACTURER.
   b. AS ESTABLISHED BY MOCKUP.
4. REMOVE BULK OF NONACIDIC GEL CLEANER BY SQUEEGEEING INTO CONTAINERS FOR DISPOSAL.
5. RINSE WITH COLD WATER APPLIED BY LOW-PRESSURE SPRAY TO REMOVE CHEMICALS AND SOIL.
6. REPEAT CLEANING PROCEDURE ABOVE WHERE REQUIRED TO PRODUCE CLEANING EFFECT ESTABLISHED BY MOCKUP. DO NOT REPEAT MORE THAN ONCE.

D. NONACIDIC LIQUID CHEMICAL CLEANING:

1. WET MASONRY WITH COLD WATER APPLIED BY LOW-PRESSURE SPRAY.
2. APPLY CLEANER TO MASONRY[IN TWO APPLICATIONS] BY BRUSH[OR LOW-PRESSURE SPRAY]. LET CLEANER REMAIN ON SURFACE FOR PERIOD INDICATED BELOW:
   a. AS RECOMMENDED BY CHEMICAL-CLEANER MANUFACTURER.
   b. AS ESTABLISHED BY MOCKUP.
3. RINSE WITH COLD WATER APPLIED BY LOW-PRESSURE SPRAY TO REMOVE CHEMICALS AND SOIL.
4. REPEAT CLEANING PROCEDURE ABOVE WHERE REQUIRED TO PRODUCE CLEANING EFFECT ESTABLISHED BY MOCKUP. DO NOT REPEAT MORE THAN ONCE.

3.6 REPOINTING MASONRY

A. RAKE OUT AND REPOINT JOINTS TO THE FOLLOWING EXTENT:

1. ALL JOINTS IN AREAS INDICATED.
2. JOINTS WHERE MORTAR IS MISSING OR WHERE THEY CONTAIN HOLES.
3. CRACKED JOINTS WHERE CRACKS CAN BE PENETRATED AT LEAST 1/4 INCH BY A KNIFE BLADE 0.027 INCH THICK.
4. CRACKED JOINTS WHERE CRACKS ARE 1/8 INCH OR MORE IN WIDTH AND OF ANY DEPTH.
5. JOINTS WHERE THEY SOUND HOLLOW WHEN TAPPED BY METAL OBJECT.
6. JOINTS WHERE THEY ARE WORN BACK 1/4 INCH OR MORE FROM SURFACE.
7. JOINTS WHERE THEY ARE DETERIORATED TO POINT THAT MORTAR CAN BE EASILY REMOVED BY HAND, WITHOUT TOOLS.
8. JOINTS WHERE THEY HAVE BEEN FILLED WITH SUBSTANCES OTHER THAN MORTAR.
9. JOINTS INDICATED AS SEALANT-FILLED JOINTS.

B. DO NOT RAKE OUT AND REPOINT JOINTS WHERE NOT REQUIRED.

C. RAKE OUT JOINTS AS FOLLOWS, ACCORDING TO PROCEDURES DEMONSTRATED IN APPROVED MOCKUP:

1. REMOVE MORTAR FROM JOINTS TO DEPTH OF 2 TIMES JOINT WIDTH, BUT NOT LESS THAN 1/2 INCH OR NOT LESS THAN THAT REQUIRED TO EXPOSE SOUND, UNWEATHERED MORTAR.
2. REMOVE MORTAR FROM MASONRY SURFACES WITHIN RAKED-OUT JOINTS TO PROVIDE REVEALS WITH SQUARE BACKS AND TO EXPOSE MASONRY FOR CONTACT WITH POINTING MORTAR. BRUSH, VACUUM, OR FLUSH JOINTS TO REMOVE DIRT AND LOOSE DEBRIS.
3. DO NOT SPALL EDGES OF MASONRY UNITS OR WIDEN JOINTS. REPLACE OR PATCH DAMAGED MASONRY UNITS AS DIRECTED BY ARCHITECT.
   a. CUT OUT CENTER OF MORTAR BED JOINTS USING

PART 2 - PRODUCTS

2.1 MODIFIED BITUMINOUS SHEET WATERPROOFING

A. MODIFIED BITUMINOUS SHEET: NOT LESS THAN 60-MIL- THICK, SELF-ADHERING SHEET CONSISTING OF 56 MILS OF RUBBERIZED ASPHALT LAMINATED TO A 4-MIL- THICK, POLYETHYLENE FILM WITH RELEASE LINER ON ADHESIVE SIDE.

1. PRODUCTS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE ONE OF THE FOLLOWING:
   a. CARLISLE COATINGS & WATERPROOFING INC.; CCW MIRADRI 860/861.
   b. MEADOWS, W. R., INC.; SEALTIGHT MEL-ROL.
   c. TAMKO ROOFING PRODUCTS, INC.; TW-60.
2. PHYSICAL PROPERTIES:
   a. TENSILE STRENGTH: 250 PSI MINIMUM; ASTM D 412, DIE C, MODIFIED.
   b. ULTIMATE ELONGATION: 300 PERCENT MINIMUM; ASTM D 412, DIE C, MODIFIED.
   c. LOW-TEMPERATURE FLEXIBILITY: PASS AT MINUS 20 DEG F; ASTM D 1970.
   d. CRACK CYCLING: UNAFFECTED AFTER 100 CYCLES OF 1/8-INCH MOVEMENT; ASTM C 836.
   e. PUNCTURE RESISTANCE: 40 LBF MINIMUM; ASTM E 154.
   f. HYDROSTATIC-HEAD RESISTANCE: 150 FEET MINIMUM; ASTM D 5385.
   g. WATER ABSORPTION: 0.15 PERCENT WEIGHT-GAIN MAXIMUM AFTER 48-HOUR IMMERSION AT 70 DEG F; ASTM D 570.
   h. VAPOR PERMEANCE: 0.05 PERMS; ASTM E 96, WATER METHOD.

1.2 AUXILIARY MATERIALS

A. GENERAL: FURNISH AUXILIARY MATERIALS RECOMMENDED BY WATERPROOFING MANUFACTURER FOR INTENDED USE AND COMPATIBLE WITH SHEET WATERPROOFING.

1. FURNISH LIQUID-TYPE AUXILIARY MATERIALS THAT COMPLY WITH VOC LIMITS OF AUTHORITIES HAVING JURISDICTION.

B. PRIMER: LIQUID WATERBORNE PRIMER RECOMMENDED FOR SUBSTRATE BY MANUFACTURER OF SHEET WATERPROOFING MATERIAL.

C. SURFACE CONDITIONER: LIQUID, WATERBORNE SURFACE CONDITIONER RECOMMENDED FOR SUBSTRATE BY MANUFACTURER OF SHEET WATERPROOFING MATERIAL.

D. SUBSTRATE PATCHING MEMBRANE: LOW-VISCOSITY, TWO-COMPONENT, ASPHALT-MODIFIED COATING.

E. SHEET STRIPS: SELF-ADHERING, RUBBERIZED-ASPHALT SHEET STRIPS OF SAME MATERIAL AND THICKNESS AS SHEET WATERPROOFING.

F. MASTIC, ADHESIVES, AND TAPE: LIQUID MASTIC AND ADHESIVES, AND ADHESIVE TAPES RECOMMENDED BY WATERPROOFING MANUFACTURER.

G. METAL TERMINATION BARS: ALUMINUM BARS, APPROXIMATELY 1 BY 1/8 INCH THICK, PREDRILLED AT 9-INCH CENTERS.

H. PROTECTION COURSE: FAN FOLDED, WITH A CORE OF EXTRUDED-POLYSTYRENE BOARD INSULATION FACED ONE SIDE WITH PLASTIC FILM, NOMINAL THICKNESS 1/4 INCH, WITH COMPRESSIVE STRENGTH OF NOT LESS THAN 8 PSI PER ASTM D 1621, AND MAXIMUM WATER ABSORPTION BY VOLUME OF 0.6 PERCENT PER ASTM C 272.

1.3 MOLDED-SHEET DRAINAGE PANELS

A. NONWOVEN-GEOTEXTILE-FACED, MOLDED-SHEET DRAINAGE PANEL: MANUFACTURED COMPOSITE SUBSURFACE DRAINAGE PANELS CONSISTING OF A NONWOVEN, NEEDLE-PUNCHED GEOTEXTILE FACING WITH AN APPARENT OPENING SIZE NOT EXCEEDING NO. 70 SIEVE LAMINATED TO ONE SIDE WITH OR WITHOUT A POLYMERIC FILM BONDED TO THE OTHER SIDE OF A STUDDED, NONBIODEGRADABLE, MOLDED-PLASTIC-SHEET DRAINAGE CORE, WITH A VERTICAL FLOW RATE OF 9 TO 15 GPM PER FT..

PART 2 - EXECUTION

2.1 SURFACE PREPARATION

A. CLEAN, PREPARE, AND TREAT SUBSTRATES ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS. PROVIDE CLEAN, DUST-FREE, AND DRY SUBSTRATES FOR WATERPROOFING APPLICATION.

B. MASK OFF ADJOINING SURFACES NOT RECEIVING WATERPROOFING TO PREVENT SPILLAGE AND OVERSPRAY AFFECTING OTHER CONSTRUCTION.

C. REMOVE GREASE, OIL, BITUMEN, FORM-RELEASE AGENTS, PAINTS, CURING COMPOUNDS, AND OTHER PENETRATING CONTAMINANTS OR FILM-FORMING COATINGS FROM CONCRETE.

D. REMOVE FINS, RIDGES, MORTAR, AND OTHER PROJECTIONS AND FILL HONEYCOMB, AGGREGATE POCKETS, HOLES, AND OTHER VOIDS.

E. PREPARE, FILL, PRIME, AND TREAT JOINTS AND CRACKS IN SUBSTRATES. REMOVE DUST AND DIRT FROM JOINTS AND CRACKS ACCORDING TO ASTM D 4258.

F. CORNERS: PREPARE, PRIME, AND TREAT INSIDE AND OUTSIDE CORNERS ACCORDING TO ASTM D 6135.

G. PREPARE, TREAT, AND SEAL VERTICAL AND HORIZONTAL SURFACES AT TERMINATIONS AND PENETRATIONS THROUGH WATERPROOFING AND AT DRAINS AND PROTRUSIONS ACCORDING TO ASTM D 6135.

2.2 APPLICATION

A. INSTALL MODIFIED BITUMINOUS SHEETS ACCORDING TO WATERPROOFING MANUFACTURER'S WRITTEN INSTRUCTIONS AND ACCORDING TO RECOMMENDATIONS IN ASTM D 6135.

B. APPLY AND FIRMLY ADHERE SHEETS OVER AREA TO RECEIVE WATERPROOFING. ACCURATELY ALIGN SHEETS AND MAINTAIN UNIFORM 2-1/2-INCH- MINIMUM LAP WIDTHS AND END LAPS. OVERLAP AND SEAL SEAMS AND STAGGER END LAPS TO ENSURE WATERTIGHT INSTALLATION.

C. HORIZONTAL APPLICATION: APPLY SHEETS FROM LOW POINT TO HIGH POINT OF DECKS TO ENSURE THAT SIDE LAPS SHED WATER.

D. APPLY CONTINUOUS SHEETS OVER SHEET STRIPS BRIDGING SUBSTRATE CRACKS, CONSTRUCTION, AND CONTRACTION JOINTS.

E. SEAL EXPOSED EDGES OF SHEETS AT TERMINATIONS NOT CONCEALED BY METAL COUNTERFLASHINGS OR ENDING IN REGLETS WITH MASTIC.

F. INSTALL SHEET WATERPROOFING AND AUXILIARY MATERIALS TO TIE INTO ADJACENT WATERPROOFING.

G. REPAIR TEARS, VOIDS, AND LAPPED SEAMS IN WATERPROOFING NOT COMPLYING WITH REQUIREMENTS. SLIT AND FLATTEN FISHMOUTHS AND BLISTERS. PATCH WITH SHEET WATERPROOFING EXTENDING 6 INCHES BEYOND REPAIRED AREAS IN ALL DIRECTIONS.

H. INSTALL PROTECTION COURSE WITH BUTTED JOINTS OVER WATERPROOFING MEMBRANE IMMEDIATELY.

I. CORRECT DEFICIENCIES IN OR REMOVE SHEET WATERPROOFING THAT DOES NOT COMPLY WITH REQUIREMENTS; REPAIR SUBSTRATES, REAPPLY WATERPROOFING, AND REPAIR SHEET FLASHINGS.

2.3 MOLDED-SHEET DRAINAGE PANEL INSTALLATION

A. PLACE AND SECURE MOLDED-SHEET DRAINAGE PANELS, WITH GEOTEXTILE FACING AWAY FROM WALL OR DECK SUBSTRATE, ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS. USE ADHESIVES THAT DO NOT PENETRATE WATERPROOFING. LAP EDGES AND ENDS OF GEOTEXTILE TO MAINTAIN CONTINUITY. PROTECT INSTALLED MOLDED-SHEET DRAINAGE PANELS DURING SUBSEQUENT CONSTRUCTION.

1. FOR VERTICAL APPLICATIONS, INSTALL PROTECTION COURSE BEFORE INSTALLING DRAINAGE PANELS.

2.4 PROTECTION AND CLEANING

A. DO NOT PERMIT FOOT OR VEHICULAR TRAFFIC ON UNPROTECTED MEMBRANE.

B. PROTECT WATERPROOFING FROM DAMAGE AND WEAR DURING REMAINDER OF CONSTRUCTION PERIOD.

C. PROTECT INSTALLED INSULATION DRAINAGE PANELS FROM DAMAGE DUE TO UV LIGHT, HARMFUL WEATHER EXPOSURES, PHYSICAL ABUSE, AND OTHER CAUSES. PROVIDE TEMPORARY COVERINGS WHERE INSULATION WILL BE SUBJECT TO ABUSE AND CANNOT BE CONCEALED AND PROTECTED BY PERMANENT CONSTRUCTION IMMEDIATELY AFTER INSTALLATION.

D. CLEAN SPILLAGE AND SOILING FROM ADJACENT CONSTRUCTION USING CLEANING AGENTS AND PROCEDURES RECOMMENDED BY MANUFACTURER OF AFFECTED CONSTRUCTION.

END OF SECTION 071326

SECTION 072500 - WEATHER BARRIERS

PART 1 - GENERAL

1.1 SUMMARY

A. SECTION INCLUDES:

1. FLEXIBLE FLASHING.

1.2 ACTION SUBMITTALS

A. PRODUCT DATA: FOR EACH TYPE OF PRODUCT.

1.3 INFORMATIONAL SUBMITTALS

A. EVALUATION REPORTS: FOR FLEXIBLE FLASHING, FROM ICC-ES.

PART 2 - PRODUCTS

2.1 FLEXIBLE FLASHING

A. FLEXIBLE FLASHING: SELF-ADHESIVE BUTYL RUBBER COMPOUND, BONDED TO A HIGH-DENSITY POLYETHYLENE FILM, ALUMINUM FOIL, OR SPUNBONDED POLYOLEFIN TO PRODUCE AN OVERALL THICKNESS OF NOT LESS THAN 0.025 INCH.

1. PRODUCTS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:
   a. DUPONT (E. I. DU PONT DE NEMOURS AND COMPANY); DUPONT FLASHING TAPE.
   b. GRACE CONSTRUCTION PRODUCTS, A UNIT OF W. R. GRACE & CO. - CONN.; VYCOR BUTYL SELF ADHERED FLASHING.
   c. CARLISLE COATINGS & WATERPROOFING; CCW-705-TWF THRU-WALL FLASHING.

PART 3 - EXECUTION

3.1 FLEXIBLE FLASHING INSTALLATION

A. APPLY FLEXIBLE FLASHING WHERE INDICATED TO COMPLY WITH MANUFACTURER'S WRITTEN INSTRUCTIONS.

1. LAP SEAMS AND JUNCTURES WITH OTHER MATERIALS AT LEAST 4 INCHES EXCEPT THAT AT FLASHING FLANGES OF OTHER CONSTRUCTION, LAPS NEED NOT EXCEED FLANGE WIDTH.
2. LAP FLASHING OVER WATER-RESISTIVE BARRIER AT BOTTOM AND SIDES OF OPENINGS.
3. LAP WATER-RESISTIVE BARRIER OVER FLASHING AT HEADS OF OPENINGS.

END OF SECTION 072500

SECTION 076200 - SHEET METAL FLASHING AND TRIM

PART 1 - GENERAL

1.1 SUMMARY

A. SECTION INCLUDES:

1. MANUFACTURED REGLETS AND COUNTERFLASHING.
2. FORMED WALL SHEET METAL FABRICATIONS.

1.2 SUBMITTALS

A. PRODUCT DATA: FOR EACH TYPE OF PRODUCT INDICATED.

B. SHOP DRAWINGS: SHOW INSTALLATION LAYOUTS OF SHEET METAL FLASHING AND TRIM, INCLUDING PLANS, ELEVATIONS, EXPANSION-JOINT LOCATIONS, AND KEYED DETAILS. DISTINGUISH BETWEEN SHOP- AND FIELD-ASSEMBLED WORK.

1. INCLUDE DETAILS FOR FORMING, JOINING, SUPPORTING, AND SECURING SHEET METAL FLASHING AND TRIM, INCLUDING PATTERN OF SEAMS, TERMINATION POINTS, FIXED POINTS, EXPANSION JOINTS, EXPANSION-JOINT COVERS, EDGE CONDITIONS, SPECIAL CONDITIONS, AND CONNECTIONS TO ADJOINING WORK.

C. SAMPLES: FOR EACH EXPOSED PRODUCT AND FOR EACH FINISH SPECIFIED.

D. MAINTENANCE DATA.

1.3 QUALITY ASSURANCE

A. SHEET METAL FLASHING AND TRIM STANDARD: COMPLY WITH SMACNA'S "ARCHITECTURAL SHEET METAL MANUAL" UNLESS MORE STRINGENT REQUIREMENTS ARE SPECIFIED OR SHOWN ON DRAWINGS.

PART 2 - PRODUCTS

2.1 SHEET METALS

A. GENERAL: PROTECT MECHANICAL AND OTHER FINISHES ON EXPOSED SURFACES FROM DAMAGE BY APPLYING A STRIPPABLE, TEMPORARY PROTECTIVE FILM BEFORE SHIPPING.

B. ALUMINUM SHEET: ASTM B 209, ALLOY AS STANDARD WITH MANUFACTURER FOR FINISH REQUIRED, WITH TEMPER AS REQUIRED TO SUIT FORMING OPERATIONS AND PERFORMANCE REQUIRED.

1. AS-MILLED FINISH: ONE-SIDE BRIGHT MILL FINISH.
2. ALCLAD FINISH: METALLURGICALLY BONDED SURFACING TO BOTH SIDES, FORMING A COMPOSITE ALUMINUM SHEET WITH REFLECTIVE LUSTER.
3. CLEAR ANODIC FINISH, COIL COATED: AAMA 611, AA-M12C22A41, CLASS I, 0.018 MM OR THICKER.
4. EXPOSED COIL-COATED FINISHES:
   a. TWO-COAT FLUOROPOLYMER: AAMA 620. FLUOROPOLYMER FINISH CONTAINING NOT LESS THAN 70 PERCENT PVDF RESIN BY WEIGHT IN COLOR COAT.
   b. THREE-COAT FLUOROPOLYMER: AAMA 620. FLUOROPOLYMER FINISH CONTAINING NOT LESS THAN 70 PERCENT PVDF RESIN BY WEIGHT IN BOTH COLOR COAT AND CLEAR TOPCOAT.
   c. SILICONIZED POLYESTER: EPOXY PRIMER AND SILICONE-MODIFIED, POLYESTER-ENAMEL TOPCOAT.

C. STAINLESS-STEEL SHEET: ASTM A 240/A 240M OR ASTM A 666, TYPE 304, DEAD SOFT, FULLY ANNEALED; [2D (DULL, COLD ROLLED)] [2B (BRIGHT, COLD ROLLED)] [3 (COARSE, POLISHED DIRECTIONAL SATIN)] [4 (POLISHED DIRECTIONAL SATIN)] FINISH.

2.2 UNDERLAYMENT MATERIALS

A. POLYETHYLENE SHEET: 6-MIL- THICK POLYETHYLENE SHEET COMPLYING WITH ASTM D 4397.

B. SELF-ADHERING, HIGH-TEMPERATURE SHEET: MINIMUM 30 TO 40 MILS THICK, CONSISTING OF SLIP-RESISTING POLYETHYLENE-FILM TOP SURFACE LAMINATED TO LAYER OF BUTYL OR SBS-MODIFIED ASPHALT ADHESIVE, WITH RELEASE-PAPER BACKING; COLD APPLIED. PROVIDE PRIMER WHEN RECOMMENDED BY UNDERLAYMENT MANUFACTURER.

1. THERMAL STABILITY: ASTM D 1970; STABLE AFTER TESTING AT 240 DEG F.
2. LOW-TEMPERATURE FLEXIBILITY: ASTM D 1970; PASSES AFTER TESTING AT MINUS 20 DEG F.

C. SLIP SHEET: BUILDING PAPER, 3-LB/100 SQ. FT. MINIMUM, ROSIN SIZED.

2.3 MISCELLANEOUS MATERIALS

A. GENERAL: PROVIDE MATERIALS AND TYPES OF FASTENERS, SOLDER, WELDING RODS, PROTECTIVE COATINGS, SEPARATORS, SEALANTS, AND OTHER MISCELLANEOUS ITEMS AS REQUIRED FOR COMPLETE SHEET METAL FLASHING AND TRIM INSTALLATION AND RECOMMENDED BY MANUFACTURER OF PRIMARY SHEET METAL OR MANUFACTURED ITEM UNLESS OTHERWISE INDICATED.

B. FASTENERS: WOOD SCREWS, ANNULAR THREADED NAILS, SELF-TAPPING SCREWS, SELF-LOCKING RIVETS AND BOLTS, AND OTHER SUITABLE FASTENERS DESIGNED TO WITHSTAND DESIGN LOADS AND RECOMMENDED BY MANUFACTURER OF PRIMARY SHEET METAL OR MANUFACTURED ITEM.

1. GENERAL: BLIND FASTENERS OR SELF-DRILLING SCREWS, GASKETED, WITH HEX-WASHER HEAD.
   a. EXPOSED FASTENERS: HEADS MATCHING COLOR OF SHEET METAL USING PLASTIC CAPS OR FACTORY-APPLIED COATING.
   b. BLIND FASTENERS: HIGH-STRENGTH ALUMINUM OR STAINLESS-STEEL RIVETS SUITABLE FOR METAL BEING FASTENED.
   c. SPIKES AND FERRULES: SAME MATERIAL AS GUTTER; WITH SPIKE WITH FERRULE MATCHING INTERNAL GUTTER WIDTH.
2. FASTENERS FOR ALUMINUM SHEET: ALUMINUM OR SERIES 300 STAINLESS STEEL.
3. FASTENERS FOR STAINLESS-STEEL SHEET: SERIES 300 STAINLESS STEEL.

C. SOLDER:

1. FOR STAINLESS STEEL: ASTM B 32, GRADE SN60, WITH AN ACID FLUX OF TYPE RECOMMENDED BY STAINLESS-STEEL SHEET MANUFACTURER.
2. FOR ZINC-COATED (GALVANIZED) STEEL: ASTM B 32, GRADE SN50, 50 PERCENT TIN AND 50 PERCENT LEAD OR GRADE SN60, 60 PERCENT TIN AND 40 PERCENT LEAD.

D. SEALANT TAPE: PRESSURE-SENSITIVE, 100 PERCENT SOLIDS, GRAY POLYISOBUTYLENE COMPOUND SEALANT TAPE WITH RELEASE-PAPER BACKING. PROVIDE PERMANENTLY ELASTIC, NONSAG, NONTOXIC, NONSTAINING TAPE 1/2 INCH WIDE AND 1/8 INCH THICK.

E. ELASTOMERIC SEALANT: ASTM C 920, ELASTOMERIC POLYMER SEALANT; LOW MODULUS; OF TYPE, GRADE, CLASS, AND USE CLASSIFICATIONS REQUIRED TO SEAL JOINTS IN SHEET METAL FLASHING AND TRIM AND REMAIN WATERTIGHT.

F. BUTYL SEALANT: ASTM C 1311, SINGLE-COMPONENT, SOLVENT-RELEASE BUTYL RUBBER SEALANT; POLYISOBUTYLENE PLASTICIZED; HEAVY BODIED FOR HOOKED-TYPE EXPANSION JOINTS WITH LIMITED MOVEMENT.

G. EPOXY SEAM SEALER: TWO-PART, NONCORROSIVE, ALUMINUM SEAM-CEMENTING COMPOUND, RECOMMENDED BY ALUMINUM MANUFACTURER FOR EXTERIOR NONMOVING JOINTS, INCLUDING RIVETED JOINTS.

H. BITUMINOUS COATING: COLD-APPLIED ASPHALT EMULSION COMPLYING WITH ASTM D 1187.

2.4 REGLETS

A. REGLETS: UNITS OF TYPE, MATERIAL, AND PROFILE INDICATED, FORMED TO PROVIDE SECURE INTERLOCKING OF SEPARATE REGLET AND COUNTERFLASHING PIECES, AND COMPATIBLE WITH FLASHING INDICATED WITH FACTORY-MITERED AND -WELDED CORNERS AND JUNCTIONS.

1. MATERIAL: GALVANIZED STEEL, 0.022 INCH THICK.
2. FINISH: MILL.

2.5 FABRICATION, GENERAL

A. GENERAL: CUSTOM FABRICATE SHEET METAL FLASHING AND TRIM TO COMPLY WITH RECOMMENDATIONS IN SMACNA'S "ARCHITECTURAL SHEET METAL MANUAL" THAT APPLY TO DESIGN, DIMENSIONS, GEOMETRY, METAL THICKNESS, AND OTHER CHARACTERISTICS OF ITEM INDICATED. FABRICATE ITEMS AT THE SHOP TO GREATEST EXTENT POSSIBLE.

1. OBTAIN FIELD MEASUREMENTS FOR ACCURATE FIT BEFORE SHOP FABRICATION.
2. FORM SHEET METAL FLASHING AND TRIM WITHOUT EXCESSIVE OIL CANNING, BUCKLING, AND TOOL MARKS AND TRUE TO LINE AND LEVELS INDICATED, WITH EXPOSED EDGES FOLDED BACK TO FORM HEMS.
3. CONCEAL FASTENERS AND EXPANSION PROVISIONS WHERE POSSIBLE. EXPOSED FASTENERS ARE NOT ALLOWED ON FACES EXPOSED TO VIEW.

B. SEALED JOINTS: FORM NONEXPANSION BUT MOVABLE JOINTS IN METAL TO ACCOMMODATE ELASTOMERIC SEALANT.

C. EXPANSION PROVISIONS: WHERE LAPPED EXPANSION PROVISIONS CANNOT BE USED, FORM EXPANSION JOINTS OF INTERMESHING HOOKED FLANGES, NOT LESS THAN 1 INCH DEEP, FILLED WITH BUTYL SEALANT CONCEALED WITHIN JOINTS.

D. FABRICATE CLEATS AND ATTACHMENT DEVICES FROM SAME MATERIAL AS ACCESSORY BEING ANCHORED OR FROM COMPATIBLE, NONCORROSIVE METAL.

E. SEAMS: FABRICATE NONMOVING SEAMS WITH FLAT-LOCK SEAMS. TIN EDGES TO BE SEAMED, FORM SEAMS, AND SOLDER.

F. SEAMS: FABRICATE NONMOVING SEAMS WITH FLAT-LOCK SEAMS. FORM SEAMS AND SEAL WITH ELASTOMERIC SEALANT UNLESS OTHERWISE RECOMMENDED BY SEALANT MANUFACTURER FOR INTENDED USE.[RIVET JOINTS WHERE NECESSARY FOR STRENGTH.]

G. SEAMS FOR ALUMINUM: FABRICATE NONMOVING SEAMS WITH FLAT-LOCK SEAMS. FORM SEAMS AND SEAL WITH EPOXY SEAM SEALER.[RIVET JOINTS WHERE NECESSARY FOR STRENGTH.]

2.6 SHEET METAL FABRICATIONS

A. BASE FLASHING: FABRICATE FROM THE FOLLOWING MATERIALS:

1. ALUMINUM: 0.040 INCH THICK.
2. STAINLESS STEEL: 0.019 INCH THICK.
3. GALVANIZED STEEL: 0.028 INCH THICK.

B. COUNTERFLASHING AND FLASHING RECEIVERS: FABRICATE FROM THE FOLLOWING MATERIALS:

1. ALUMINUM: 0.032 INCH THICK.
2. STAINLESS STEEL: 0.019 INCH THICK.
3. GALVANIZED STEEL: 0.022 INCH THICK.

C. ROOF-PENETRATION FLASHING: FABRICATE FROM THE FOLLOWING MATERIALS:

1. STAINLESS STEEL: [0.019 INCH] <INSERT THICKNESS> THICK.
2. GALVANIZED STEEL: [0.028 INCH] <INSERT THICKNESS> THICK.

D. APRON, STEP, CRICKET, AND BACKER FLASHING: FABRICATE FROM THE FOLLOWING MATERIALS:

1. ALUMINUM: [0.032 INCH] <INSERT THICKNESS> THICK.
2. STAINLESS STEEL: [0.016 INCH] <INSERT THICKNESS> THICK.
3. GALVANIZED STEEL: [0.022 INCH] <INSERT THICKNESS> THICK.

2.7 WALL SHEET METAL FABRICATIONS

A. THROUGH-WALL FLASHING: FABRICATE CONTINUOUS FLASHINGS IN MINIMUM 96-INCH- LONG, BUT NOT EXCEEDING 12-FOOT- LONG, SECTIONS, UNDER COPINGS, AT SHELF ANGLES, AND WHERE INDICATED. FABRICATE DISCONTINUOUS LINTEL, SILL, AND SIMILAR FLASHINGS TO EXTEND 6 INCHES BEYOND EACH SIDE OF WALL OPENINGS. FORM WITH 2-INCH- HIGH, END DAMS WHERE FLASHING IS DISCONTINUOUS. FABRICATE FROM THE FOLLOWING MATERIALS:

1. STAINLESS STEEL: 0.016 INCH THICK.

PART 3 - EXECUTION

3.1 UNDERLAYMENT INSTALLATION

A. POLYETHYLENE SHEET: INSTALL POLYETHYLENE SHEET WITH ADHESIVE FOR ANCHORAGE. APPLY IN SHINGLE FASHION TO SHED WATER, WITH LAPPED AND TAPED JOINTS OF NOT LESS THAN 2 INCHES.

B. SELF-ADHERING SHEET UNDERLAYMENT: INSTALL SELF-ADHERING SHEET UNDERLAYMENT, WRINKLE FREE. COMPLY WITH TEMPERATURE RESTRICTIONS OF UNDERLAYMENT MANUFACTURER FOR INSTALLATION; USE PRIMER RATHER THAN NAILS FOR INSTALLING UNDERLAYMENT AT LOW TEMPERATURES. APPLY IN SHINGLE FASHION TO SHED WATER, WITH END LAPS OF NOT LESS THAN 6 INCHES STAGGERED 24 INCHES BETWEEN COURSES. OVERLAP SIDE EDGES NOT LESS THAN 3-1/2 INCHES. ROLL LAPS WITH ROLLER. COVER UNDERLAYMENT WITHIN 14 DAYS.

3.2 INSTALLATION, GENERAL

A. GENERAL: ANCHOR SHEET METAL FLASHING AND TRIM AND OTHER COMPONENTS OF THE WORK SECURELY IN PLACE, WITH PROVISIONS FOR THERMAL AND STRUCTURAL MOVEMENT SO THAT COMPLETED SHEET METAL FLASHING AND TRIM SHALL NOT RATTLE, LEAK, OR LOOSEN, AND SHALL REMAIN WATERTIGHT. USE FASTENERS, SOLDER, WELDING RODS, PROTECTIVE COATINGS, SEPARATORS, SEALANTS, AND OTHER MISCELLANEOUS ITEMS AS REQUIRED TO COMPLETE SHEET METAL FLASHING AND TRIM SYSTEM.

1. INSTALL SHEET METAL FLASHING AND TRIM TRUE TO LINE AND LEVELS INDICATED. PROVIDE UNIFORM, NEAT SEAMS WITH MINIMUM EXPOSURE OF SOLDER, WELDS, AND SEALANT.
2. INSTALL SHEET METAL FLASHING AND TRIM TO FIT SUBSTRATES AND TO RESULT IN WATERTIGHT PERFORMANCE. VERIFY SHAPES AND DIMENSIONS OF SURFACES TO BE COVERED BEFORE FABRICATING SHEET METAL.
3. SPACE CLEATS NOT MORE THAN 12 INCHES APART. ANCHOR EACH CLEAT WITH TWO FASTENERS. BEND TABS OVER FASTENERS.
4. INSTALL EXPOSED SHEET METAL FLASHING AND TRIM WITHOUT EXCESSIVE OIL CANNING, BUCKLING, AND TOOL MARKS.
5. INSTALL SEALANT TAPE WHERE INDICATED.
6. TORCH CUTTING OF SHEET METAL FLASHING AND TRIM IS NOT PERMITTED.

B. METAL PROTECTION: WHERE DISSIMILAR METALS WILL CONTACT EACH OTHER OR CORROSIVE SUBSTRATES, PROTECT AGAINST GALVANIC ACTION BY PAINTING CONTACT SURFACES WITH BITUMINOUS COATING OR BY OTHER PERMANENT SEPARATION AS RECOMMENDED BY SMACNA.

1. COAT BACK SIDE OF UNCOATED ALUMINUM AND STAINLESS-STEEL SHEET METAL FLASHING AND TRIM WITH BITUMINOUS COATING WHERE FLASHING AND TRIM WILL CONTACT WOOD, FERROUS METAL, OR CEMENTITIOUS CONSTRUCTION.
2. UNDERLAYMENT: WHERE INSTALLING METAL FLASHING DIRECTLY ON CEMENTITIOUS OR WOOD SUBSTRATES, INSTALL A COURSE OF FELT UNDERLAYMENT AND COVER WITH A SLIP SHEET OR INSTALL A COURSE OF POLYETHYLENE SHEET.

C. EXPANSION PROVISIONS: PROVIDE FOR THERMAL EXPANSION OF EXPOSED FLASHING AND TRIM. SPACE MOVEMENT JOINTS AT A MAXIMUM OF 10 FEET WITH NO JOINTS ALLOWED WITHIN 24 INCHES OF CORNER OR INTERSECTION. WHERE LAPPED EXPANSION PROVISIONS CANNOT BE USED OR WOULD NOT BE SUFFICIENTLY WATERTIGHT, FORM EXPANSION JOINTS OF INTERMESHING HOOKED FLANGES, NOT LESS THAN 1 INCH DEEP, FILLED WITH SEALANT CONCEALED WITHIN JOINTS.

D. FASTENER SIZES: USE FASTENERS OF SIZES THAT WILL PENETRATE WOOD SHEATHING NOT LESS THAN 1-1/4 INCHES FOR NAILS AND NOT LESS THAN 3/4 INCH FOR WOOD SCREWS.

E. SEAL JOINTS AS SHOWN AND AS REQUIRED FOR WATERTIGHT CONSTRUCTION.

F. SOLDERED JOINTS: CLEAN SURFACES TO BE SOLDERED, REMOVING OILS AND FOREIGN MATTER. PRE-TIN EDGES OF SHEETS TO BE SOLDERED TO A WIDTH OF 1-1/2 INCHES, EXCEPT REDUCE PRE-TINNING WHERE PRE-TINNED SURFACE WOULD SHOW IN COMPLETED WORK.

1. DO NOT SOLDER METALLIC-COATED STEEL AND ALUMINUM SHEET.
2. DO NOT USE TORCHES FOR SOLDERING. HEAT SURFACES TO RECEIVE SOLDER AND FLOW SOLDER INTO JOINT. FILL JOINT COMPLETELY. COMPLETELY REMOVE FLUX AND SPATTER FROM EXPOSED SURFACES.
3. STAINLESS-STEEL SOLDERING: TIN EDGES OF UNCOATED SHEETS USING SOLDER RECOMMENDED FOR STAINLESS STEEL AND ACID FLUX. PROMPTLY REMOVE ACID FLUX RESIDUE FROM METAL AFTER TINNING AND SOLDERING. COMPLY WITH SOLDER MANUFACTURER'S RECOMMENDED METHODS FOR CLEANING AND NEUTRALIZATION.

G. RIVETS: RIVET JOINTS IN UNCOATED ALUMINUM WHERE INDICATED AND WHERE NECESSARY FOR STRENGTH.

3.3 ROOF FLASHING INSTALLATION

A. GENERAL: INSTALL SHEET METAL FLASHING AND TRIM TO COMPLY WITH PERFORMANCE REQUIREMENTS[, SHEET METAL MANUFACTURER'S WRITTEN INSTALLATION INSTRUCTIONS,] AND SMACNA'S "ARCHITECTURAL SHEET METAL MANUAL." PROVIDE CONCEALED FASTENERS WHERE POSSIBLE, SET UNITS TRUE TO LINE, AND LEVEL AS INDICATED. INSTALL WORK WITH LAPS, JOINTS, AND SEAMS THAT WILL BE PERMANENTLY WATERTIGHT AND WEATHER RESISTANT.

B. COPINGS: ANCHOR TO RESIST UPLIFT AND OUTWARD FORCES ACCORDING TO RECOMMENDATIONS IN SMACNA'S "ARCHITECTURAL SHEET METAL MANUAL" AND AS INDICATED.

1. INTERLOCK EXTERIOR BOTTOM EDGE OF COPING WITH CONTINUOUS CLEAT ANCHORED TO SUBSTRATE AT 24-INCH CENTERS.
2. ANCHOR INTERIOR LEG OF COPING WITH WASHERS AND SCREW FASTENERS THROUGH SLOTTED HOLES AT 24-INCH CENTERS.

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SPECIFICATIONS
EXTERIOR RENOVATIONS
MISSOURI DEPARTMENT OF TRANSPORTATION
DISTRICT TWO- MACON, MISSOURI

PROJECT NO. 08070
DRAWING NO. A702

A. PIPE OR POST COUNTERFLASHING: INSTALL COUNTERFLASHING UMBRELLA WITH CLOSE-FITTING COLLAR WITH TOP EDGE FLARED FOR ELASTOMERIC SEALANT, EXTENDING A MINIMUM OF 4 INCHES OVER BASE FLASHING. INSTALL STAINLESS-STEEL DRAW BAND AND TIGHTEN.

B. COUNTERFLASHING: COORDINATE INSTALLATION OF COUNTERFLASHING WITH INSTALLATION OF BASE FLASHING. INSERT COUNTERFLASHING IN REGLETS OR RECEIVERS AND FIT TIGHTLY TO BASE FLASHING. EXTEND COUNTERFLASHING 4 INCHES OVER BASE FLASHING. LAP COUNTERFLASHING JOINTS A MINIMUM OF 4 INCHES AND BED WITH SEALANT.

C. ROOF-PENETRATION FLASHING: COORDINATE INSTALLATION OF ROOF-PENETRATION FLASHING WITH INSTALLATION OF ROOFING AND OTHER ITEMS PENETRATING ROOF. SEAL WITH ELASTOMERIC SEALANT AND CLAMP FLASHING TO PIPES THAT PENETRATE ROOF.

3.4 WALL FLASHING INSTALLATION

A. GENERAL: INSTALL SHEET METAL WALL FLASHING TO INTERCEPT AND EXCLUDE PENETRATING MOISTURE ACCORDING TO SMACNA RECOMMENDATIONS AND AS INDICATED. COORDINATE INSTALLATION OF WALL FLASHING WITH INSTALLATION OF WALL-OPENING COMPONENTS SUCH AS WINDOWS, DOORS, AND LOUVERS.

3.5 CLEANING AND PROTECTION

A. CLEAN EXPOSED METAL SURFACES OF SUBSTANCES THAT INTERFERE WITH UNIFORM OXIDATION AND WEATHERING.

B. CLEAN AND NEUTRALIZE FLUX MATERIALS. CLEAN OFF EXCESS SOLDER AND SEALANTS.

C. REMOVE TEMPORARY PROTECTIVE COVERINGS AND STRIPPABLE FILMS AS SHEET METAL FLASHING AND TRIM ARE INSTALLED UNLESS OTHERWISE INDICATED IN MANUFACTURER'S WRITTEN INSTALLATION INSTRUCTIONS.

END OF SECTION 076200

SECTION 079200 – JOINT SEALANTS

PART 1 – GENERAL

1.1 SUMMARY

A. SECTION INCLUDES:

1. SILICONE JOINT SEALANTS.

1.2 SUBMITTALS

A. PRODUCT DATA: FOR EACH JOINT-SEALANT PRODUCT INDICATED.

B. SAMPLES: FOR EACH KIND AND COLOR OF JOINT SEALANT REQUIRED.

C. JOINT-SEALANT SCHEDULE: INCLUDE THE FOLLOWING INFORMATION:

1. JOINT-SEALANT APPLICATION, JOINT LOCATION, AND DESIGNATION.

2. JOINT-SEALANT MANUFACTURER AND PRODUCT NAME.

3. JOINT-SEALANT FORMULATION.

4. JOINT-SEALANT COLOR.

D. PRODUCT TEST REPORTS.

E. PRECONSTRUCTION COMPATIBILITY AND ADHESION TEST REPORTS.

1.3 QUALITY ASSURANCE

A. TESTING AGENCY QUALIFICATIONS: QUALIFIED ACCORDING TO ASTM C 1021 TO CONDUCT THE TESTING INDICATED.

1.4 WARRANTY

A. SPECIAL INSTALLER'S WARRANTY: MANUFACTURER'S STANDARD FORM IN WHICH INSTALLER AGREES TO REPAIR OR REPLACE JOINT SEALANTS THAT DO NOT COMPLY WITH PERFORMANCE AND OTHER REQUIREMENTS SPECIFIED IN THIS SECTION WITHIN SPECIFIED WARRANTY PERIOD.

1. WARRANTY PERIOD: TWO YEARS FROM DATE OF SUBSTANTIAL COMPLETION.

PART 2 – PRODUCTS

2.1 MATERIALS, GENERAL

A. VOC CONTENT OF INTERIOR SEALANTS: PROVIDE SEALANTS AND SEALANT PRIMERS FOR USE INSIDE THE WEATHERPROOFING SYSTEM THAT COMPLY WITH THE FOLLOWING LIMITS FOR VOC CONTENT WHEN CALCULATED ACCORDING TO 40 CFR 59, PART 59, SUBPART D (EPA METHOD 24):

1. ARCHITECTURAL SEALANTS: 250 G/L.

2. SEALANT PRIMERS FOR NONPOROUS SUBSTRATES: 250 G/L.

3. SEALANT PRIMERS FOR POROUS SUBSTRATES: 775 G/L.

2.2 SILICONE JOINT SEALANTS

A. NEUTRAL-CURING SILICONE JOINT SEALANT: ASTM C 920.

1. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:

a. DOW CORNING CORPORATION.

b. GE ADVANCED MATERIALS – SILICONES.

c. TREMCO INCORPORATED.

2. TYPE: SINGLE COMPONENT (S).

3. GRADE: NONSAG (NS).

4. CLASS: 50.

5. USES RELATED TO EXPOSURE: TRAFFIC (T).

2.3 JOINT SEALANT BACKING

A. CYLINDRICAL SEALANT BACKINGS: ASTM C 1330, [TYPE C (CLOSED-CELL MATERIAL WITH A SURFACE SKIN)] [TYPE O (OPEN-CELL MATERIAL)] [TYPE B (BICELLULAR MATERIAL WITH A SURFACE SKIN)] [OR ANY OF THE PRECEDING TYPES, AS APPROVED IN WRITING BY JOINT-SEALANT MANUFACTURER FOR JOINT APPLICATION INDICATED], AND OF SIZE AND DENSITY TO CONTROL SEALANT DEPTH AND OTHERWISE CONTRIBUTE TO PRODUCING OPTIMUM SEALANT PERFORMANCE.

B. BOND-BREAKER TAPE: POLYETHYLENE TAPE OR OTHER PLASTIC TAPE RECOMMENDED BY SEALANT MANUFACTURER.

2.4 MISCELLANEOUS MATERIALS

A. PRIMER: MATERIAL RECOMMENDED BY JOINT-SEALANT MANUFACTURER WHERE REQUIRED FOR ADHESION OF SEALANT TO JOINT SUBSTRATES INDICATED, AS DETERMINED FROM PRECONSTRUCTION JOINT-SEALANT-SUBSTRATE TESTS AND FIELD TESTS.

B. CLEANERS FOR NONPOROUS SURFACES: CHEMICAL CLEANERS ACCEPTABLE TO MANUFACTURERS OF SEALANTS AND SEALANT BACKING MATERIALS.

C. MASKING TAPE: NONSTAINING, NONABSORBENT MATERIAL COMPATIBLE WITH JOINT SEALANTS AND SURFACES ADJACENT TO JOINTS.

PART 3 – EXECUTION

3.1 PREPARATION

A. SURFACE CLEANING OF JOINTS: CLEAN OUT JOINTS IMMEDIATELY BEFORE INSTALLING JOINT SEALANTS TO COMPLY WITH JOINT-SEALANT MANUFACTURER'S WRITTEN INSTRUCTIONS.

1. REMOVE LAITANCE AND FORM-RELEASE AGENTS FROM CONCRETE.

2. CLEAN NONPOROUS JOINT SUBSTRATE SURFACES WITH CHEMICAL CLEANERS OR OTHER MEANS THAT DO NOT STAIN, HARM SUBSTRATES, OR LEAVE RESIDUES CAPABLE OF INTERFERING WITH ADHESION OF JOINT SEALANTS.

B. JOINT PRIMING: PRIME JOINT SUBSTRATES WHERE RECOMMENDED BY JOINT-SEALANT MANUFACTURER OR AS INDICATED BY PRECONSTRUCTION JOINT-SEALANT-SUBSTRATE TESTS OR PRIOR EXPERIENCE. APPLY PRIMER TO COMPLY WITH JOINT-SEALANT MANUFACTURER'S WRITTEN INSTRUCTIONS. CONFINE PRIMERS TO AREAS OF JOINT-SEALANT BOND; DO NOT ALLOW SPILLAGE OR MIGRATION ONTO ADJOINING SURFACES.

C. MASKING TAPE: USE MASKING TAPE WHERE REQUIRED TO PREVENT CONTACT OF SEALANT OR PRIMER WITH ADJOINING SURFACES THAT OTHERWISE WOULD BE PERMANENTLY STAINED OR DAMAGED BY SUCH CONTACT OR BY CLEANING METHODS REQUIRED TO REMOVE SEALANT SMEARS. REMOVE TAPE IMMEDIATELY AFTER TOOLING WITHOUT DISTURBING JOINT SEAL.

3.2 INSTALLATION

A. SEALANT INSTALLATION STANDARD: COMPLY WITH RECOMMENDATIONS IN ASTM C 1193 FOR USE OF JOINT SEALANTS AS APPLICABLE TO MATERIALS, APPLICATIONS, AND CONDITIONS INDICATED.

B. INSTALL SEALANT BACKINGS OF KIND INDICATED TO SUPPORT SEALANTS DURING APPLICATION AND AT POSITION REQUIRED TO PRODUCE CROSS-SECTIONAL SHAPES AND DEPTHS OF INSTALLED SEALANTS RELATIVE TO JOINT WIDTHS THAT ALLOW OPTIMUM SEALANT MOVEMENT CAPABILITY.

1. DO NOT LEAVE GAPS BETWEEN ENDS OF SEALANT BACKINGS.

2. DO NOT STRETCH, TWIST, PUNCTURE, OR TEAR SEALANT BACKINGS.

3. REMOVE ABSORBENT SEALANT BACKINGS THAT HAVE BECOME WET BEFORE SEALANT APPLICATION AND REPLACE THEM WITH DRY MATERIALS.

C. INSTALL BOND-BREAKER TAPE BEHIND SEALANTS WHERE SEALANT BACKINGS ARE NOT USED BETWEEN SEALANTS AND BACKS OF JOINTS.

D. INSTALL SEALANTS USING PROVEN TECHNIQUES THAT COMPLY WITH THE FOLLOWING AND AT THE SAME TIME BACKINGS ARE INSTALLED:

1. PLACE SEALANTS SO THEY DIRECTLY CONTACT AND FULLY WET JOINT SUBSTRATES.

2. COMPLETELY FILL RECESSES IN EACH JOINT CONFIGURATION.

3. PRODUCE UNIFORM, CROSS-SECTIONAL SHAPES AND DEPTHS RELATIVE TO JOINT WIDTHS THAT ALLOW OPTIMUM SEALANT MOVEMENT CAPABILITY.

E. TOOLING OF NONSAG SEALANTS: IMMEDIATELY AFTER SEALANT APPLICATION AND BEFORE SKINNING OR CURING BEGINS, TOOL SEALANTS ACCORDING TO REQUIREMENTS SPECIFIED IN SUBPARAGRAPHS BELOW TO FORM SMOOTH, UNIFORM BEADS OF CONFIGURATION INDICATED; TO ELIMINATE AIR POCKETS; AND TO ENSURE CONTACT AND ADHESION OF SEALANT WITH SIDES OF JOINT.

1. REMOVE EXCESS SEALANT FROM SURFACES ADJACENT TO JOINTS.

2. USE TOOLING AGENTS THAT ARE APPROVED IN WRITING BY SEALANT MANUFACTURER AND THAT DO NOT DISCOLOR SEALANTS OR ADJACENT SURFACES.

3. PROVIDE CONCAVE JOINT PROFILE PER FIGURE 8A IN ASTM C 1193, UNLESS OTHERWISE INDICATED.

F. CLEAN OFF EXCESS SEALANT OR SEALANT SMEARS ADJACENT TO JOINTS AS THE WORK PROGRESSES BY METHODS AND WITH CLEANING MATERIALS APPROVED IN WRITING BY MANUFACTURERS OF JOINT SEALANTS AND OF PRODUCTS IN WHICH JOINTS OCCUR.

END OF SECTION 079200

END OF SPECIFICATIONS

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PROJECT NO. 08070

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