ADDENDUM NO. 4

Issue date 06-12-25

Project:
Fort Coombs Armory
and Convention Center Renovations
Phase 2
Apalachicola, Franklin County, Florida

Issued by:
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File 24324 Bid Addenda

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This Addendum forms a part of and modifies the Contract Document Drawings dated April 11, 2025, by reference below and any prior addenda. This addendum consists of full size drawings sheets and the narrative. Revised sheets are listed below and enumerated in the enclosures and attachments. Please notify the Architect promptly if any information is missing or requires further clarification.

DRAWINGS:

ITEM A4-1.0 **DELETE ENTIRELY:** PLUMBING DRAWING P1.0 PLUMBING PLAN

ADD: PLUMBING DRAWING P1.0 PLUMBING PLAN – DATED 6-12-25

PLUMBING FIXTURE SCHEDULE

.

End of Addenda

Issued by Gilchrist Ross Crowe Architects:

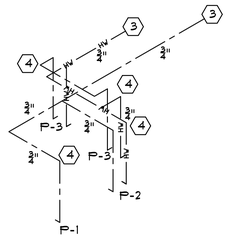
Connor Ross, AIA

ENCLOSURES AND ATTACHMENTS:

DRAWING: P1.0 PLUMBING PLAN dated 6-12-25

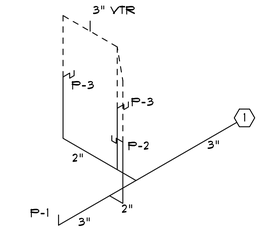
PLUMBING LEGEND

SYMBOL	
⊖—	ELBOW DOWN
○—	ELBOW UP
—○—	TEE UP
—⊖—	TEE DOWN
—▷—	CHANGE IN PIPE SIZE
———	SANITARY PIPE
— — —	DOMESTIC COLD WATER
········	HOT WATER
———	VENT PIPING



DOMESTIC WATER RISER

SCALE: NTS



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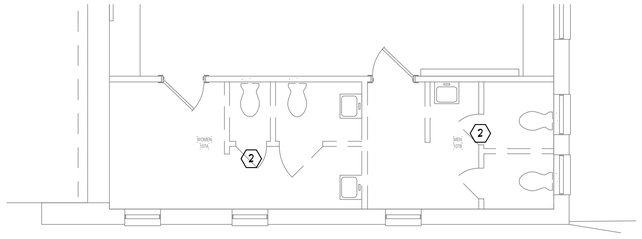


PLUMBING DEMO PLAN

SCALE: 1/4" = 1'0"

PLUMBING FIXTURE SCHEDULE

FIXTURE NO.	FIXTURE	DESCRIPTION	C.W.	H.W.	WASTE
P-1	TANK TYPE WATER CLOSET	PROFLO PFJRC310RWH TWO PIECE ELONGATED TOILET. PROVIDE SEAT	1/2"		3"
P-2	ADA WALL HUNG SINK	ZURN Z5340 WAL HUNG LAV WITH A KOHLER K-23472-4K FAUCET MATT BLACK PROVIDE WALL HANGER KOHLER K-2032 PROVIDE AND INSTALL UNIVERSAL THERMOSTATIC MIXING VAVLE SET AT 110 DEGREE F OR PER LOCAL CODE.	1/2"	1/2"	2"
HA	WATER HAMMER ARRESTOR	SIOUX CHIEF MINIRESTER, COPPER, 250 PSI WORKING PRESSURE NSF LISTED	3/4"	3/4"	

△1

PLUMBING NOTES:

1.1 DESCRIPTION:

A. THE NON-TECHNICAL SPECIFICATIONS AND GENERAL CONDITIONS OF THESE SPECIFICATIONS ARE APPLICABLE IN FULL HERETO.

B. INCLUDE ALL EQUIPMENT, MATERIAL AND LABOR REQUIRED FOR COMPLETE AND OPERATING PLUMBING SYSTEMS. DUE TO THE SMALL SCALE OF THE FLOOR PLANS AND DIAGRAMMATIC RISER DIAGRAMS, SOME ITEMS INVOLVED MAY NOT BE INCLUDED.

1.2 WORK INCLUDED:

A. WORK WILL INCLUDE, BUT NOT BE LIMITED TO THE FOLLOWING SYSTEMS COMPLETE WITH ALL REQUIRED ACCESSORIES:

1. A SYSTEM OF SANITARY SOIL, WASTE AND VENT PIPING.
2. A SYSTEM OF DOMESTIC HOT AND COLD WATER PIPING.
3. PLUMBING FIXTURES, EQUIPMENT, ACCESSORIES, TRIM AS SPECIFIED HEREIN.
4. WATER SERVICE TO EACH FIXTURE REQUIRING SUCH SERVICE.
5. SANITARY BUILDING DRAINS AND FIXTURE BRANCHES FROM EACH FIXTURE REQUIRING SUCH SERVICE.
6. PIPING INCIDENTAL TO HEATING AND AIR CONDITIONING WORK TO THE EXTENT HEREIN SPECIFIED.

1 .3 LAWS AND CODES:

A. THE CONTRACTOR SHALL INSTALL ALL WORK IN STRICT COMPLIANCE WITH ALL APPLICABLE CODES AND BE INCLUSIVE OF ALL STATE, AND LOCAL CODES. ALL PROVISIONS OF THIS SECTION APPLY TO ALL PLUMBING WORK.

B. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS, FEES AND CHARGES REQUIRED INCIDENTAL TO THE WORK INVOLVED THAT MAY BE NECESSARY FOR FULLY COMPLETING THE WORK.

C. THE CONTRACTOR SHALL MAKE ALL NECESSARY TESTS REQUIRED BY LOCAL AUTHORITIES, LEGAL REGULATIONS AND RETURN TO THE ENGINEER ANY CERTIFICATE OF APPROVAL ISSUED FOR ALL PLUMBING WORK SIGNED BY THE INSPECTING ADMINISTRATIVE
AUTHORITY IN CHARGE OF EACH PARTICULAR PART OF THE WORK.

1.4 QUALIFICATIONS:

A. THE CONTRACTOR SHALL BE A LICENSED PLUMBER CERTIFIED BY THE STATE.

1.5 DRAWINGS:

A. IN THE INTEREST OF CLEARNESS, THE WORK IS NOT ALWAYS SHOWN TO SCALE OR EXACT LOCATION. CHECK ALL MEASUREMENTS, LOCATION OF PIPE, DUCTS AND EQUIPMENT WITH THE DETAIL ARCHITECTURAL, STRUCTURAL AND ELECTRICAL DRAWINGS, AND LAY OUT WORK SO AS TO FIT IN WITH CEILING GRIDS, LIGHTING AND OTHER PARTS. WHERE DOUBT ARISES AS TO THE MEANING OF THE PLANS AND SPECIFICATIONS, OBTAIN THE ENGINEER'S DECISION BEFORE PROCEEDING WITH PARTS AFFECTED OTHERWISE ASSUME LIABILITY FOR DAMAGE TO OTHER WORK AND FOR MAKING NECESSARY CORRECTIONS TO WORK IN QUESTION.

1.6 CHANGES AND CONFLICTS:

A. IF DURING CONSTRUCTION DESIRABLE OR NECESSARY CHANGES BECOME APPARENT, ADVISE THE ENGINEER AND SECURE HIS DECISION IN WRITING. OTHERWISE, MAKE NO DEVIATION FROM THE SYSTEM AS DETAILED.

1.7 GUARANTEE AND SERVICE:

A. THE CONTRACTOR SHALL GUARANTEE ALL PIPING, EQUIPMENT, FIXTURES AND RELATED MATERIALS FOR A PERIOD OF ONE (1) YEAR FROM DATE OF ACCEPTANCE AGAINST DEFECTS DUE TO FAULTY WORKMANSHIP OR MATERIALS. SUCH DEFECTS WILL BE CORRECTED PROMPTLY AFTER NOTIFICATIONS BY THE ENGINEER AND AT THE CONTRACTOR'S EXPENSE WITH NO COST TO THE OWNER.

B. THE CONTRACTOR SHALL ALSO FURNISH WITHOUT CHARGE, ANY REASONABLE SERVICE IN MAKING MINOR ADJUSTMENTS TO FIXTURES AND EQUIPMENT FOR THE SAME PERIOD, BUT THIS SERVICE WILL NOT INCLUDE THE REPLACEMENT OF PARTS DAMAGED BY MALICIOUSNESS OR VANDALISM AFTER ACCEPTANCE BY THE OWNER, OR CLEARING OF OBSTRUCTION FROM SEWERS CAUSED BY OTHER THAN DEFECTS IN THE LINE.

C. THE CONTRACTOR SHALL PUT ALL ITEMS INSTALLED UNDER THIS DIVISION INTO OPERATION AND WILL INSTRUCT THE OWNER'S MAINTENANCE PERSONNEL IN ALL POINTS REQUIRING SERVICE AND MAINTENANCE.

1.8 SUBMITTAL DATA:

A. WITHIN 30 DAYS AFTER AWARD OF CONTRACT, SUBMIT FOR APPROVAL A COMPLETE SCHEDULE OF MATERIAL AND EQUIPMENT PROPOSED. PARTIAL LISTS WILL NOT BE CONSIDERED. INCLUDE CATALOG DATA, SCHEDULED CAPACITIES, ETC., WHERE SUBSTITUTIONS ARE PROPOSED. FOLLOW PROCEDURES SET FORTH IN THE GENERAL CONDITIONS.

B. UPON REQUEST, SUBMIT SHOP DRAWINGS SHOWING PROPOSED ARRANGEMENT OF EQUIPMENT, PIPING, FLOOR DRAINS, POWER REQUIREMENTS AND CONTROLS. IN ANY CASE, SUBMIT DETAIL LAYOUTS OF POTENTIAL CONFLICTS AT PLUMBING DROPS, EQUIPMENT ROOMS, TIGHT CEILINGS, ETC.

1.9 EXISTING CONDITIONS:

A. THE CONTRACTOR SHALL VISIT THE SITE AND BECOME ACQUAINTED WITH ALL JOB CONDITIONS. NO CONSIDERATIONS WILL BE GIVEN AFTER BID OPENING FOR ALLEGED MISUNDERSTANDING REGARDING UTILITY CONNECTIONS, PERMITS, FEES, ETC.

B. THE DRAWINGS INDICATE SYSTEMS WHICH ARE LOCATED IN EXISTING PARTITIONS AND BEHIND WALLS. THE CONTRACTOR SHALL LOCATE AND VERIFY ALL PIPING CONNECTIONS AND INCLUDE IN HIS BID CONTINGENCIES FOR THE RELOCATION OF SUCH SYSTEMS IF CONNECTIONS CAN NOT BE MADE AS SHOWN ON THE DRAWINGS.

C. THE CONTRACTOR IS REQUIRED TO CONNECT TO EXISTING PLUMBING SYSTEMS FOR THE CONSTRUCTION OF THIS PROJECT AND IS REQUIRED TO KEEP DISRUPTION OF THE EXISTING SYSTEMS TO A MINIMUM. SCHEDULE CONNECTION TO EXISTING SYSTEMS IN ADVANCE AND ADVISE THE OWNER TO THE LENGTH OF TIME SUCH SYSTEMS WILL NOT BE IN OPERATION. THE CONTRACTOR SHALL MAKE CONNECTIONS AFTER HOURS OR ON WEEKENDS IF REQUESTED BY THE OWNER. NO CONSIDERATIONS WILL BE GIVEN AFTER BID OPENING FOR ALLEGED MISUNDERSTANDING REGARDING UTILITY CONNECTIONS, PERMITS, FEES, ETC.

1.10 PHASING:

A. INTERRUPT EXISTING SERVICES ONLY AT TIMES APPROVED BY THE OWNER. HOLD INTERRUPTIONS TO THE MINIMUM IN DURATION AND FREQUENCY.

1.11 AS-BUILT DRAWINGS:

A. OMIT

1.12 MANUALS:

A. FURNISH FIVE (5) COPIES OF MAINTENANCE INSTRUCTIONS, OPERATING INSTRUCTIONS AND PARTS LISTS FOR ALL FIXTURES AND EQUIPMENT BOUND INTO FIVE (5) MANUALS, LOOSE SHEETS WILL NOT BE ACCEPTED. ONE MANUAL WILL BE SUBMITTED TO THE ENGINEER COMPLETE, PRIOR TO FINAL INSPECTION AND FINAL PAYMENT. THE REMAINING FOUR (4) MANUALS WILL BE SUBMITTED TO THE ENGINEER.

1.13 COORDINATION OF WORK WITH OTHER TRADES:

A. THE CONTRACTOR SHALL LAYOUT AND PROCEED WITH THIS WORK SO THAT THIS WORK WILL BE EXECUTED IN HARMONY WITH ALL OTHER CONTRACTS PERTAINING TO THIS PROJECT.

B. ALL ELECTRICAL POWER WIRING REQUIRED FOR INSTALLATION OF EQUIPMENT UNDER THIS SECTION IS SPECIFIED UNDER ELECTRICAL DIVISION. PLUMBING CONTRACTOR SHALL FURNISH AND INSTALL ALL CONTROLS, AND CONTROL WIRING AS SPECIFIED OR REQUIRED TO PROPERLY COMPLETE THE INSTALLATION. CONTROL CONDUIT IS SPECIFIED UNDER ELECTRICAL DIVISION TO THE EXTENT SHOWN ON ELECTRICAL DRAWINGS ALL OTHER CONTROL CONDUIT SHALL BE PROVIDED UNDER THIS SECTION OF WORK. ALL ELECTRICAL WORK PERFORMED UNDER THIS SECTION SHALL MEET REQUIREMENTS SET FORTH IN THE ELECTRICAL DIVISION.

C. PIPE SLEEVES - FIT ALL PIPES PASSING THROUGH MASONRY AND JOB CAST CONCRETE CONSTRUCTION WITH SLEEVES. SLEEVES SHALL BE CUT FLUSH WITH EACH SURFACE, 1/2" LARGER IN DIAMETER THAN THE PASSING PIPE OR COVER, BUILT-IN AS WORK PROGRESSES. SLEEVES THROUGH JOISTS AND BEAMS SHALL BE OF GALVANIZED STEEL PIPE OTHER SLEEVES SHALL BE OF 16 GAUGE GALVANIZED IRON. MAKE SPACE BETWEEN FLOOR SLEEVES AND PASSING PIPES WATERTIGHT BY CAULKING WITH FIREPROOF PACKING AND PLASTIC WATERPROOF CAULKING COMPOUND.

D. ACCESS PANELS AND DOORS:

1. FURNISH TO GENERAL CONTRACTOR FOR INSTALLATION WHEREVER REQUIRED FOR ACCESS TO VALVES, AIR VENTS OR SIMILAR DEVICES. DOORS SHALL BE SUITABLE FOR WALL FINISH INVOLVED, 12" X 16" UNLESS OTHERWISE INDICATED, FIRE RATED WHERE FIRE WALLS ARE PENETRATED, MILCOR, PHILIP CAREY, ZURN OR OTHER APPROVED EQUAL.
2. WHERE DEVICE OCCURS ABOVE A LIFT-OUT ACOUSTICAL CEILING PANEL, IDENTIFY THE PANEL WITH A 3/4" #8 ROUND HEAD SELF-THREADING SCREW, SCREWED INTO PANEL WITH ONLY THE HEAD SHOWING. BEFORE INSERTING, PAINT HEAD OF SCREW WITH APPROPRIATE COLOR AS SPECIFIED UNDER PIPE IDENTIFICATION AND COLOR CODING.

E. CUTTING AND PATCHING:

1. OPENINGS ARE TO BE LAID OUT AND BUILT-IN FURNISH DETAILED LAYOUT DRAWINGS TO OTHER TRADES IN ADVANCE OF THEIR WORK. PIPING WITHIN OR BEHIND WALLS MUST BE INSTALLED BEFORE WALL IS ERECTED. OTHERWISE WALLS, ETC., AFFECTED MUST BE REWORKED BY TRADE WHICH ERECTED SAME AT EXPENSE OF THE CONTRACTOR CHASING AND CUTTING OF NEW WORK WILL NOT BE ACCEPTED.
2. CUTOUTS IN COUNTERTOPS SHALL BE MADE BY MILLWORK CONTRACTOR UPON RECEIPT OF PROPER TEMPLATES. OPENINGS IN EXISTING WALLS SHALL BE MADE BY TRADE REQUIRING SAME, WITH REPAIRING AND PATCHING REQUIRED THEREBY DONE BY THE RESPECTIVE TRADE WHOSE WORK IS DAMAGED.

F. PAINTING AND FINISHING:

1. CLEAN AND PAINT WITH TWO COATS OF ENAMEL ALL EXPOSED FERROUS METAL PARTS OF MECHANICAL EQUIPMENT LOCATED IN MACHINERY ROOMS, ABOVE CEILINGS. ETC. (INCLUDE BLACK STEEL PIPE, UNCOATED CAST IRON PIPE, HANGERS, BRACKETS, ETC.).
2. PAINTING OF SURFACES IN FINISHED AREAS IS SPECIFIED UNDER SECTION "PAINTING". WHERE FACTORY FINISHED ITEMS ARE MARRED OR SCRATCHED, REPLACE THE ITEM, OR UPON APPROVAL, REFINISH OR TOUCHUP AS REQUIRED TO BRING TO A LIKE-NEW CONDITION.

G. CONNECTIONS FOR EQUIPMENT FURNISHED BY OTHERS:

1. THE PLUMBING CONTRACTOR SHALL PROVIDE FLOOR DRAINS REQUIRED FOR THIS EQUIPMENT AS SCHEDULED ON THE DRAWINGS.
2. ALL REQUIRED WATER SUPPLY LINES WILL BE EXTENDED TO WITHIN 2'-0" OF EQUIPMENT LOCATIONS AND TERMINATED WITH A GATE VALVE. FINAL CONNECTIONS TO EQUIPMENT WILL BE MADE BY THE PLUMBING CONTRACTOR AND COORDINATED WITH THE GENERAL CONTRACTOR AND OWNER.

1.14 MISCELLANEOUS REQUIREMENTS:

A. MATERIALS AND EQUIPMENT - NEW AND OF BEST QUALITY IN EVERY RESPECT. PIPE AND FITTINGS SHALL CONFORM TO THE ASTM STANDARD DESIGNATED FOR PIPE OF EACH MATERIAL. EQUIPMENT SHALL BE ESSENTIALLY THE STANDARD PRODUCT OF THE MANUFACTURER AND UL APPROVED WHERE COMMERCIALLY AVAILABLE. WHERE TWO OR MORE UNITS OF THE SAME CLASS OF EQUIPMENT ARE REQUIRED, THESE UNITS SHALL BE PRODUCTS OF A SINGLE MANUFACTURER HOWEVER, THE COMPONENT PARTS OF EACH UNIT NEED NOT BE.

B. WORKMANSHIP - FIRST CLASS AND IN ACCORDANCE WITH BEST PRACTICE. PIPE SHALL BE CUT CLEAN, PROPERLY REAMED, THREADED OR SOLDERED, ERECTED PLUMB AND SECURE. MAKE CHANGES IN PIPE SIZE WITH REDUCING FITTINGS WITHOUT THE USE OF BUSHINGS. WORK SHALL BE EXECUTED BY EXPERIENCED MECHANICS AND SHALL PRESENT A NEAT APPEARANCE. INSTALL EQUIPMENT IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

C. AT ALL STAGES OF INSTALLATION, PROTECT PIPE OPENINGS, FIXTURES AND EQUIPMENT AGAINST THE ENTRANCE OF FOREIGN MATERIALS, AND FROM DAMAGE BY THE ELEMENTS, MORTAR, PAINT, ETC.

D. FACTORY FINISHES - MANUFACTURER'S STANDARD UNLESS OTHERWISE STATED. SUBMIT COLOR CARDS FOR SELECTION WHERE CHOICE EXISTS.

E. EXPANSION - PROVIDE FOR EXPANSION AND CONTRACTION OF ALL PIPING AND MAKE PROPER PROVISIONS SO THAT EXCESSIVE STRAIN WILL NOT OCCUR ON PIPING OR OTHER PARTS.

F. SAFETY PROVISIONS - PROVIDE COVERS OR GUARDS ON ALL HOT, MOVING AND PROJECTING ITEMS WHICH COULD BE A HAZARD TO OCCUPANTS OF THE BUILDING OR TO SERVICE PERSONNEL.

G. CLEANING AND ADJUSTING - UPON COMPLETION OF WORK, CLEAR ALL DRAINS, TRAPS, FIXTURES, DUCTS AND PIPE. ADJUST ALL VALVES, PACK STUFFING BOXES, REMOVE RUBBISH AND LEAVE WORK IN CLEAN AND OPERATING CONDITION.

H. ESCUTCHEONS - WHERE PIPES PASS THROUGH FLOORS, WALLS AND CEILINGS, PROVIDE PRESSED CHROME-PLATED BRASS OR STEEL PLATES SECURELY FASTENED IN PLACE.

PART 3- EXECUTION

3.1 SANITARY PIPING:

A. SCOPE - PROVIDE A SYSTEM OF SOIL, WASTE AND VENT PIPING CONNECTING ALL PLUMBING FIXTURES, EQUIPMENT, ETC., TO THE BUILDING DRAIN SYSTEM, WITH CONSOLIDATED VENT CONNECTIONS EXTENDING THROUGH THE BUILDING ROOF, ALL AS SHOWN ON THE DRAWINGS.

B. FREEZE PROTECT ALL EXPOSED SANITARY PIPING.

C. LAYING OUT WORK - VENTS FROM ANY FIXTURE, WHEN CONNECTED TO VENT LINE SERVING OTHER FIXTURES, SHALL BE EXECUTED AT LEAST SIX (6) INCHES ABOVE FLOOD LEVEL RIM OF HIGHEST OF SUCH FIXTURES TO PREVENT USE OF VENT LINES AS A WASTE. MAKE CHANGES IN DIRECTION BY APPROPRIATE USE OF 45 DEGREE YS, 1/2" YS, OR LONG SWEEP 1/4, 1/6, 1/8 OR 1/16 BENDS. SANITARY TS OR SHORT 1/4 BENDS MAY BE USED ON VERTICAL STACKS OR DRAINAGE LINES WHERE CHANGE IN DIRECTION OF FLOW IS FROM HORIZONTAL TO VERTICAL EXCEPT THAT LONG-TURN TY'S SHALL BE USED WHEN TWO FIXTURES ARE INSTALLED BACK TO BACK WITH COMMON DRAIN. STRAIGHT TS, ELLS AND CROSSES MAY BE USED ON VENT LINES. MAKE NO CHANGE IN DIRECTION OF FLOW GREATER THAN 90 DEGREES. WHERE DIFFERENT SIZES OF DRAINAGE PIPES OR FITTINGS ARE CONNECTED, USE STANDARD INCREASERS AND REDUCERS OF PROPER SIZE. DO NOT REDUCE SIZE OF DRAINAGE PIPING IN DIRECTION OF FLOW. DRILLING AND TAPPING OF HOUSE DRAINS, SOIL, WASTE OR VENT PIPES, AND USE OF SADDLE HUBS AND BANDS ARE PROHIBITED.

D. DO NOT BEGIN WORK UNTIL ELEVATION OF FINAL CONNECTION POINT IS VERIFIED AND GRADING OF ENTIRE SYSTEM CAN BE DETERMINED.

E. HANGERS - SUPPORT PIPE ADJACENT TO EACH FITTING AND ON CENTERS NOT EXCEEDING FIVE FEET WITH HANGERS AS SPECIFIED HEREINAFTER. RIGIDLY SUPPORT BASE OF VERTICAL RUNS WITH SOLID MASONRY OR CONCRETE.

F. IN ADDITION, PROVIDE ADEQUATE SWAY BRACING TO STABILIZE ALL COMPONENTS OF THE SYSTEM. PROVIDE SPECIAL SUPPORT FOR FIXTURE ARMS, CLOSET BENDS, ETC.

G. GRADING - UNIFORM AND NOT LESS THAN 1/8" PER FOOT FOR PIPE 4" AND OVER, AND NOT LESS THAN 1/4" PER FOOT FOR 2" AND 3" PIPING.

H. WASTE ARMS - PVC DWV OR IPS BRASS PIPE TYPICAL IPS BRASS PIPE AT URINALS.

I. TEST FITTINGS - NOT SHOWN ON THE DRAWINGS: PROVIDE WHERE REQUIRED FOR PARTIAL TESTS.

J. PIPING TO BE CAST IRON OR PVC - DWV IN ACCORDANCE WITH FPC 2020 7TH EDITION.

3.3 WATER PIPING:

A. SCOPE - CONNECT TO UTILITIES AS SHOWN ON THE DRAWINGS AND COORDINATE WITH THE OWNER.

B. GENERAL WORKMANSHIP - CUT ACCURATELY TO MEASUREMENTS ESTABLISHED AT SITE AND WORK INTO PLACE WITHOUT SPRINGING OR FORCING, PROPERLY CLEARING ALL OPENINGS, FINISHED CEILINGS, ETC. ROUTE THROUGH PREVIOUSLY BUILT-IN SLEEVES AND AVOID EXCESSIVE CUTTING OR OTHER WEAKENING OF THE STRUCTURE. REAM ALL PIPE TO REMOVE BURRS. MAKE CHANGES IN DIRECTION AND SIZE WITH FITTINGS. CAP OR PLUG OPEN PIPE ENDS DURING INSTALLATION TO KEEP OUT FOREIGN MATERIAL. MAKE CONNECTIONS CAREFULLY TO INSURE UNRESTRICTED FLOW, ELIMINATE AIR POCKETS AND TO PERMIT COMPLETE DRAINAGE OF THE SYSTEMS. FREEZE PROTECT ALL EXPOSED WATER PIPING.

C. GRADING - GRADE PIPE UPWARD FROM SOURCE TO FACILITATE DRAINAGE AND AIR RELIEF. WHERE LOW POINTS ARE REQUIRED BECAUSE OF LONG RUNS OR WHERE SECTIONS MAY BE VALVED OFF, PROVIDE WITH 3/4" GLOBE VALVE AND HOSE NIPPLE FOR DRAINAGE AT LOW POINT. MAKE ALL CONNECTIONS TO RISERS AND FIXTURES FROM TOP OF MAINS.

D. NIPPLES - OF SAME MATERIAL AS PIPE IN WHICH THEY ARE INSTALLED PROVIDE EXTRA STRONG WHEN UNTHREADED PORTION IS LESS THAN 1" LONG.

E. PIPING TO BE COPPER OR CPVC.

3.4 WATER PIPING SPECIALTIES:

A. UNIONS - 150 LB. RATED CAST BRASS GROUND-JOINT TYPE IN COPPER PIPE, GALVANIZED MALLEABLE IRON IN WROUGHT IRON OR GALVANIZED PIPE.

B. PROVIDE IN ALL SIZES OR THREADED PIPE. AND IN SWEAT JOINTED PIPE OVER 1", SO AS TO FACILITATE EASY REPAIRS. IN SUCH LINES INSTALL ADJACENT TO WATER HEATERS, PUMPS, TANKS, ETC., INTO WHICH PIPING IS TERMINATED AND ON AT LEAST ONE SIDE OF VALVES, COCKS. STRAINERS, ETC., AND OTHER DEVICES WHICH OCCUR IN PIPING RUNS.

C. PROVIDE DIELECTRIC UNIONS BETWEEN FERROUS AND NON-FERROUS PIPING (INCLUDING PIPING AND WATER HEATER STUBS WHERE DIFFERENT).

D. VALVES - PROVIDE WHERE SHOWN AND/OR SPECIFIED, INCLUDING ALL FIXTURES OR EQUIPMENT NOT FURNISHED WITH STOPS. ALL VALVES OF EACH TYPE SHALL BE THE PRODUCT OF ONE MANUFACTURER, STOCKHAM UNITS AS INDICATED BELOW, OR EQUALS BY CRANE OR WALWORTH. ALL VALVES SHALL BE RATED 200 LB. WWP.

E. BALL VALVES 2" AND SMALLER - S-207 BR CAST BRONZE FOR THREADED PIPE.

F. SHOCK ABSORBERS - CERTIFIED BY PLUMBING AND DRAINAGE INSTITUTE STANDARD PDI-WH201. PROVIDE WHERE INDICATED.

G. WALL HYDRANTS (TYPICAL) - SEE FIXTURE SCHEDULE. FURNISH VACUUM BREAKER ON EACH HYDRANT.

H. YARD HYDRANTS (TYPICAL) - NON-FREEZE 3/4" CHROMIUM PLATED BRONZE HOSE BIBB WITH LOOSE KEY, WADE W-8620 WITH INTEGRAL BACKFLOW PREVENTER OR APPROVED EQUAL. FURNISH VACUUM BREAKER ON EACH HYDRANT. INSTALL FLUSH WITH FINISH GRADE. SEE DRAWINGS FOR LOCATION.

I. PRESSURE REDUCING VALVES - WATTS/MUESCO SERIES I 15 AS SIZED ON DRAWING, FURNISH WITH WATTS NO. 77S OR 77F "Y" TYPE STRAINER, CRANE OR STOCKHAM.

J. THERMOMETERS - "ANY ANGLE" TYPE WITH 9 INCH SCALE AND SUITABLE TEMPERATURE RANGE, AS MANUFACTURED BY TRERICE TYPE BX. THERMOMETERS SHALL BE MERCURY ACTUATED WITH PHENOL CONDENSATE WITH ALUMINUM OR BRASS CASES AND 6" SOCKET WITH EXTENSION NECK. LOCATE SO AS TO BE CONVENIENT FOR READING. EQUAL PRODUCT BY WESKLER, MARSH OR MAXWELL MOORE WILL BE ACCEPTED.

K. PRESSURE GAGES - BOURDON TUBE TYPE, AS MANUFACTURED BY TRERICE NO. 600 COMPLETE WITH CAST ALUMINUM CASE, NO. 872 VIBRATION OR PULSATION SNUBBER AND NO. 735 NEEDLE VALVE. GAGE DIALS SHALL BE NOT LESS THAN 4-1/2" AND CASES SHALL BE OF ALUMINUM ALLOY. FURNISH WITH SUITABLE PRESSURE RANGES FOR EACH APPLICATION. EQUAL PRODUCTS BY WESKIER, MARSH OR ASHCROFT WILL BE ACCEPTED.
AN 1/8"

L. VACUUM BREAKER - WATTS NO. 36A , CRANE OR STOCKHAM.

M. HOT WATER PIPING TO INSULATED PER FLORIDA PLUMBING CODE.

3.5 PIPE HANGERS AND SUPPORTS: PER FT FO

A. SPACING - INSTALL SUPPORTS AS REQUIRED TO PREVENT SAGS, BENDS OR VIBRATION IN ANY CASE PROVIDE WITHIN SIX INCHES OF ELBOWS AND VALVES, AT ENDS OF BRANCHES OVER FIVE FEET, AND ON CENTERS NOT EXCEEDING THE FOLLOWING:

1. COPPER TUBING - UP TO 1". 6 FEET: OVER 1", 8 FEET
2. STEEL PIPE - UP TO 1-1/4", 8 FEET: 1-1/2" AND 2", 10 FEET: 2" THROUGH 3-1/2", 12 FEET OVER 3-1/2", 16 FEET
3. CAST IRON PIPE - REFER TO SANITARY PIPING

B. EQUAL PRODUCTS - EQUIVALENT DEVICES BY GRINNELL. ELSEN. STOCKHAM OR CRANE WILL BE ACCEPTED.

C. HANGER RODS - OF MILD STEEL, THREADED AS REQUIRED. USE NOT SMALLER THAN 3/8" RODS FOR PIPE 2" AND UNDER, 1/2" RODS FOR PIPES 2-1/2" THROUGH 6", BUT GENERALLY AS STANDARD FOR THE HANGER SELECTED. SUPPORT RODS WITH THREADED INSERTS, EXPANSION SHIELDS OR BEAM CLAMPS.

D. AT TYPICAL SUSPENDED HORIZONTAL PIPE - ADJUSTABLE CLEVIS OR SPLIT-RING TYPE, EQUAL TO FEE & MASON 239 OR 215.

E. WHERE IN CONTACT WITH COPPER PIPE - SAME AS ABOVE EXCEPT HANGERS COPPER PLATED.

F. VERTICAL PIPING ALONG WALL - FEE & MASON #241 RISER CLAMPS AT FLOORS AND #336 STAND-OFF BRACKETS TOGGLE BOLTED TO WALL. PLACE UNDER HUBS OR COUPLINGS WHERE AT ALL POSSIBLE. GRINNELL OR WATTS.

G. ON INSULATED LINES - SIZE HANGER LOOPS TO FIT OVER INSULATION, AND PROVIDE 12" LONG, 22 GAUGE GALVANIZED SHEET METAL HALF-ROUND SADDLES TO PROTECT INSULATION.

H. SUPPORTS FOR WATER SUPPLY PIPING IN SPACES BEHIND PLUMBING FIXTURES - ABS BRACKETS AND U-BOLTS. SECURE THE TWO-PIECE BRACKETS TO CAST IRON STACKS. U-BOLTS SHALL BE SIZED TO BEAR ON THE PIPE. BRACKETS SHALL BE P & M BRACKET CO., OR EQUAL.

I. AT HORIZONTAL PIPING ALONG WALL - FEE & MASON #146 I-HOOKS.

3.7 FIXTURE SUPPORTS AND CONNECTIONS:

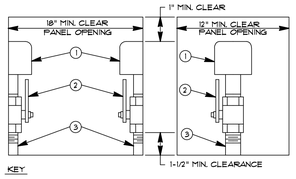
A. GENERAL - ALL FIXTURES INCLUDING LAVATORIES, URINALS, WATER CLOSETS, ELECTRIC WATER COOLERS, ETC., MUST BE SECURELY FASTENED TO THE WALLS OR FLOOR.

B. WALL MOUNTED FIXTURES - SUPPORT ALL WALL MOUNTED FIXTURES WITH 3/16" THICK X 3-1/2" HIGH PLATES FULL LENGTH OF FIXTURE, MOUNTED BEHIND WALL. WHERE FIXTURES ARE BACK TO BACK ON A SOLID WALL, MOUNT WITH BOLTS FROM FIXTURE HANGER TO FIXTURE HANGER. DO NOT USE TOGGLE BOLTS OR EXPANSION BOLTS EXCEPT AS NOTED. WHERE FIXTURES ARE MOUNTED ON SOLID WALLS FINISHED BOTH SIDES, INSTALL FIXTURE WITH PLATED TOGGLE BOLTS. WHERE FIXTURES ARE MOUNTED ON WELDED STUDS, EMPLOY 3/16" STEEL HANGER PLATES PLACED ON WALL BEFORE LATHING. PLATES SHALL BE 16" X 8" MINIMUM SIZE, AND SHALL HAVE WELDED-ON BOLT STUDS. WHERE FIXTURES ARE MOUNTED ON WOOD OR LIGHT GAUGE STEEL STUDS, EMPLOY PRESSURE TREATED BLOCKING OF 2 X 10 NOMINAL SIZE WELL SECURED INTO STUD LINE WITH NON-CORROSIVE FASTENERS. FIT BEHIND STUD FLANGES, USING ESPECIALLY PLACED STUDS AS REQUIRED.

C. FLOOR CONNECTIONS - PROVIDE FLOOR FLANGES, SCREWED OR CAULKED TO DRAINAGE PIPE. BOLT THE CONNECTION AND MAKE TIGHT TO FIXTURE WITH SETTING RING OR POLYETHYLENE GASKET FLANGE.

D. WASTE ARMS TO FIXTURES - AS SPECIFIED HEREINBEFORE. WHERE COPPER OR BRASS PIPE IS SPECIFIED, ALL JOINTS DOWNSTREAM FROM TRAP SHALL HAVE SOLDERED JOINTS.

E. STERILIZATION - THE COMPLETED SUPPLY LINE SHALL BE STERILIZED AS REQUIRED BY STATE LAW BEFORE ACCEPTANCE FOR DOMESTIC OPERATION.



KEY

① WATER HAMMER ARRESTOR

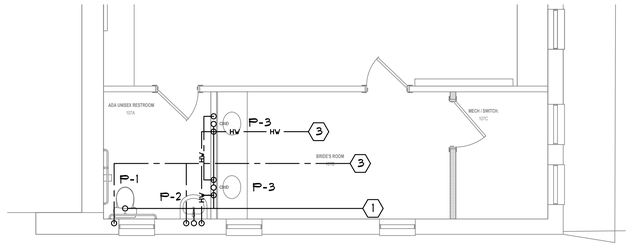
② BALL VALVE, SAME NOMINAL SIZE AS PIPE BRANCH IN CHASE. OPENING IN BALL VALVE TO MATCH PIPE I.D.

③ PIPE SAME SIZE AS BRANCH IN CHASE TO WHICH IT IS ATTACHED.

NOTE: PROVIDE REDUCER IF REQUIRED BETWEEN VALVE AND WATER HAMMER ARRESTOR.

TYPICAL WATER HAMMER PANEL INSTALLATION

SINGLE AND DOUBLE APPLICATION
N.T.S.



PLUMBING PLAN

SCALE: 1/4" = 1'0"

KEYNOTES:

1. CONNECT TO EXISTING SANITARY SEWER LINE IN THIS AREA. FIELD VERIFY EXACT LOCATION AND ROUTING.
2. DEMO SANITARY SEWER PIPING IN THIS AREA BACK TO MAIN PIPING COMING TO BUILDING. UP STREAM PIPING TO REMAIN.
3. CONNECT TO EXISTING DOMESTIC WATER PIPING IN THIS AREA. FIELD VERIFY EXACT LOCATION AND ROUTING.
4. PROVIDE WATER HAMMER, REFER TO DETAIL.

Consultants:

WINTON ENGINEERING, PA
ROBIN WINTON, PE
2207 WOODBINE DR
TALLAHASSEE, FL 32309
850 567-2019
FL # 56206

ROBIN WINTON, STATE OF FLORIDA, PROFESSIONAL ENGINEER. LICENSE NO. 56206. THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY ROBIN WINTON ON THE DATE INDICATED HERE. PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

PHASE:	DRAWN BY:	REVIEWED BY	DATE:
50% CONSTR DOCUMENTS			
100% CONSTR DOCUMENTS			
CONTRACT DOCUMENTS			
PERMIT DOCUMENTS			
△1 ADDENDUM #4	RPW	RPW	6/12/25

Renovations - Phase 2
For
Fort Coombs Armory and Convention Center

APALACHICOLA, FL

GRC Project Number 24324

architecture
interior design
planning

gilchrist ross crowe architects

SIGNATURE

413 ALL SAINTS STREET TALLAHASSEE, FLORIDA 32301
(850) 222-8100 www.architects-gca.com

ARCHITECTURAL
DRAWING NAME
PLUMBING PLAN

SHEET
P1.0

ADDENDUM NO. 3

Issue date 06-11-25

Project:
Fort Coombs Armory
and Convention Center Renovations
Phase 2
Apalachicola, Franklin County, Florida

Issued by:
GRC
413 All Saints Street
Tallahassee, FL 32301 ph: 850-222-8100
GRC Project Number 24324
File 24324 Bid Addenda

Distribution to:
Bidders
Kimberly Raffield, Franklin County
Erin Griffith, Franklin County

This Addendum forms a part of and modifies the Contract Document Drawings dated April 11, 2025, by reference below and any prior addenda. This addendum consists of full size drawings sheets and the narrative. Revised sheets are listed below and enumerated in the enclosures and attachments. Please notify the Architect promptly if any information is missing or requires further clarification.

CLARIFICATIONS:

ITEM A3-1.0 **Question:** Drawing A2.1, at the corridor 108 new drywall ceiling, it looks like a 4'x 4' finish grid is to be installed. What is the desired or specified grid or reveal material (we don't see in the specifications)?
Clarification: See specification section 092900-2, Paragraph 2.3 F Expansion Control Joint

ITEM A3-2.0 **Question:** Some of the sashes look like they may be repaired in place in lieu of removing them and repairing in a shop. Is this acceptable ?
Clarification: No shop repairs

ITEM A3-3.0 **Question:** How are the reconstructed wood window sashes to be handled in conjunction with the requirements of the Florida product approval codes for exterior building components ?
Clarification: Repair per the drawing notes.

DRAWINGS:

ITEM A3-4.0 **DELETE ENTIRELY:** ELECTRICAL DRAWING E1.1 FIRST FLOOR PLAN- ELECTRICAL

ADD: ELECTRICAL DRAWING E1.1 FIRST FLOOR PLAN – ELECTRICAL DATED 6-10-25

.

End of Addenda

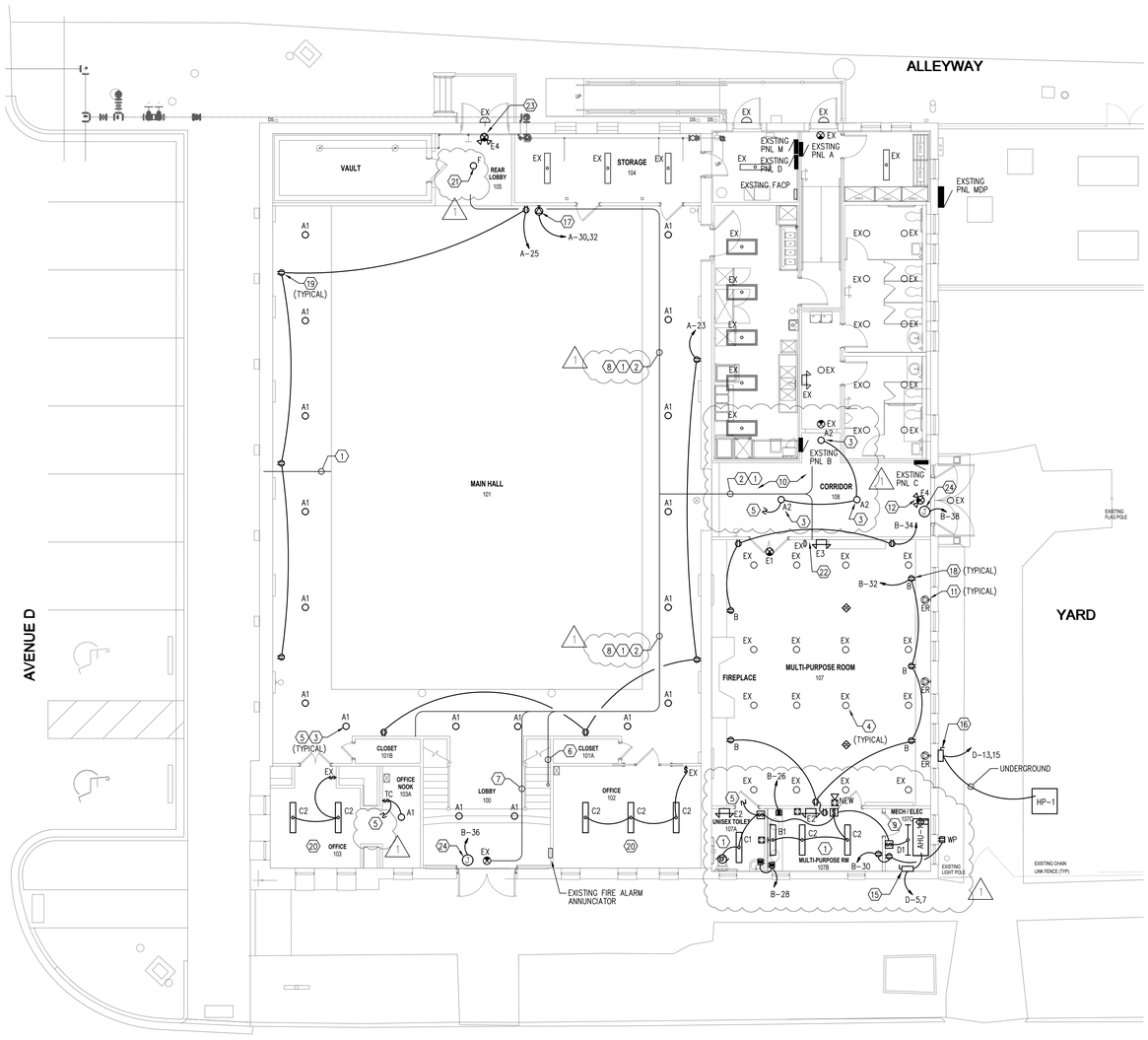
Issued by Gilchrist Ross Crowe Architects:

_____

Connor Ross, AIA

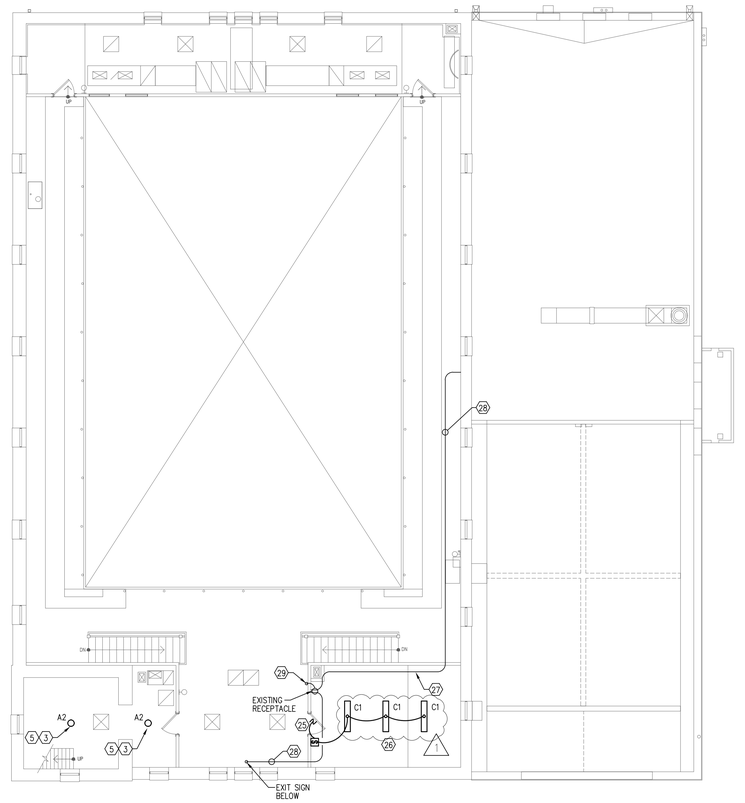
ENCLOSURES AND ATTACHMENTS:

DRAWING: E1.1 FIRST FLOOR PLAN – ELECTRICAL dated 6-10-25



First Floor Plan - Electrical

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



Second Floor Plan - Electrical

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

GENERAL NOTES:

1. PROVIDE POWER PACKS AS REQUIRED FOR OCCUPANCY SENSORS.
2. ALL WALL MOUNTED OCCUPANCY SENSORS ARE MANUAL ON/AUTOMATIC OFF.
3. PROVIDE ALL LOW VOLTAGE CONTROL CABLING FOR LIGHTING, PLENUM RATED.
4. PROVIDE SEPARATE NEUTRAL FOR EACH 120V BRANCH CIRCUIT.
5. ALL NEW WIRING AND RACEWAYS TO BE CONCEALED IN BUILDING FINISHES, EXCEPT AS NOTED OTHERWISE.

WORK NOTES:

1. REMOVE ABANDONED EMT RACEWAY, INCLUDING BOXES, STRAPS, SUPPORTS, ETC.
2. REMOVE ABANDONED LOW-VOLTAGE CABLING, INCLUDING STRAPS AND SUPPORTS. VERIFY CABLES ARE INACTIVE PRIOR TO REMOVAL. RELOCATE ACTIVE RACEWAY AND CABLING TO CONCEAL ABOVE CEILING.
3. REPLACE EXISTING LIGHT FIXTURE.
4. EXISTING PENDANT FIXTURES, TO REMAIN.
5. RE-CONNECT TO EXISTING LIGHTING CIRCUIT AND CONTROLS SERVING THIS AREA.
6. REMOVE EXISTING WIRING/RACEWAY SERVING RECEPTACLE; TO BE RE-INSTALLED CONCEALED.
7. REMOVE EXISTING WIRING/RACEWAY SERVING EXIT SIGN; TO BE RE-INSTALLED CONCEALED.
8. REMOVE/RE-INSTALL GALLERY RISER/FLOORBOARDS AS REQUIRED TO CONCEAL WIRING.
9. EXPOSED CONDUIT (EMT) ALLOWED WITHIN THIS ROOM. INSTALL ANY HORIZONTAL RACEWAY HIGH ON WALL.
10. REMOVE ANY EXPOSED WIRING/RACEWAY AT CEILING, RE-INSTALL CONCEALED.
11. REMOVE EXISTING OUTLET SERVING EXISTING WINDOW UNIT; REMOVE ALL ASSOCIATED EXPOSED RACEWAY AND WIRING BACK TO PANEL. (TYPICAL OF 3)
12. PROVIDE NEW CEILING-MOUNTED EXIT SIGN.
13. -NOTE NOT USED-
14. -NOTE NOT USED-
15. AHU: PROVIDE NEW 60A/2P 240V N.F. NEMA-1 SAFETY SWITCH, WITH 3/4" C.-2 #8, #10 GND, TO PANEL.
16. HEAT PUMP: PROVIDE NEW 30A/2P 240V N.F. NEMA-3R SAFETY SWITCH, WITH 3/4" C.-2 #6, #10 GND, TO PANEL.
17. PROVIDE NEW 50A 125/250V CALIFORNIA STYLE RECEPTACLE WITH 3/4" C.-3 #6, #10 GND, TO PANEL.
18. MOUNT RECEPTACLE IN BENCH FRONT AND CONCEAL CONDUIT INSIDE BENCH.
19. ALL NEW RECEPTACLES IN MAIN HALL ARE TO BE SURFACE-MOUNTED LOW AT BASEBOARD; ALL HORIZONTAL WIRING TO BE INSTALLED CONCEALED IN CRAWLSPACE. (TYPICAL)
20. REPLACE EXISTING SURFACE-MOUNTED FIXTURES WITH NEW LINEAR PENDANTS; RE-CONNECT TO EXISTING CIRCUIT, CONCEAL ALL WIRING.
21. REPLACE EXISTING FIXTURE WITH NEW SURFACE DOWNLIGHT.
22. REMOVE ABANDONED WIRING AND RECESS ALL ACTIVE EXISTING WIRING AND DEVICES IN WALL (TYPICAL FOR ALL WIRING AND DEVICES ON THIS WALL).
23. REPLACE EXISTING EXIT SIGN WITH NEW EXIT/EMERGENCY COMBO FIXTURE.
24. PROVIDE CONNECTION TO AUTOMATIC DOOR OPERATOR. ROUGH-IN FOR CONTROLS, AS REQUIRED.
25. RE-CONNECT TO EXISTING LIGHTING CIRCUIT SERVING THIS AREA.
26. REPLACE EXISTING SURFACE-MOUNTED FIXTURES WITH NEW LINEAR PENDANTS; PROVIDE NEW CONTROLS AS INDICATED, CONCEAL ALL WIRING.
27. EXPOSED EMT RACEWAY ALLOWED IN THIS ROOM. INSTALL HORIZONTAL CONDUIT HIGH ON WALL.
28. REMOVE/RE-INSTALL GALLERY FLOORBOARDS AS REQUIRED TO CONCEAL WIRING.
29. REMOVE ABANDONED EMT RACEWAY, INCLUDING BOXES, STRAPS, SUPPORTS, ETC.

EXISTING PANEL: D

MAIN: 200 M.L.O.
SERVICE: 120/240V, 3-PHASE, 4-WIRE (B-PHASE HIGH-LEG)
LOCATION: SEE PLAN
RATING: 22,000 AIC
TYPE: NEMA-1, SURFACE

NOTE: PANEL IS EXISTING (SQ-D NQ); ALL LOADS SHOWN ARE EXISTING UNLESS INDICATED AS NEW.

CKT	DESCRIPTION	BKR	P	LOAD	KVA A	KVA B	KVA C	LOAD	BKR	P	DESCRIPTION	CKT
1	AH-2	60	2	5.90	7.40			1.50	20 GFI	1	ICE MACHINE	2
3				5.90		5.90		0.72	20	1	SPACE	4
5	AHU-1 *	30	2	3.10			4.10	1.00	20 GFI	1	REACH-IN FREEZER	6
7				3.10	4.10			1.00	20 GFI	1	REACH-IN REFRIG	8
9	AH-3	60	2	5.90		5.90					SPACE	10
11				5.90			5.90				SPACE	12
13	HP-1 *	30	2	2.00	2.72			0.72	20	1	REC-CORR, EQ YARD	14
15				2.00		2.00					SPACE	16
17	WATER HEATER	30	2	2.25			2.43	0.18	20	1	REC-RESTRM	18
19				2.25	2.97			0.72	20	1	REC-OFFICE	20
21	SPACE					0.00					SPACE	22
23	LTS-CORR,STG,EQUIP RM	20	1	0.80			1.16	0.36	20	1	REC-EQ MEZZ	24
25	LTS-RESTRMS	20	1	1.00	1.18			0.18	20	1	REC-RESTRM	26
27	SPACE					0.00					SPACE	28
29	LTS-EXTERIOR	20	1	0.50			0.50				SPACE	30
31	LTS-MECH MEZZ	20	1	0.50	2.30			1.80	20	2	HOT FOOD TABLE	32
33	SPACE					1.80		1.80				34
35	FOOD TRANSP CAB	20	1	1.80			5.16	3.36	40	3	CONV. OVEN	36
37	REC-KITCHEN	20	1	1.80	5.16			3.36				38
39	SPACE					3.36		3.36				40
41	MICROWAVE	20	1	1.50			2.22	0.72	20	1	REC-KITCHEN	42
					25.83	18.96	21.47					

TOTAL CONNECTED LOAD: 66.26 KVA 159.7 AMPS

* - INDICATES NEW LOAD; PROVIDE NEW BREAKER

PANEL: A

MAIN: 200 M.L.O.
SERVICE: 120/240V, 3-PHASE, 4-WIRE (B-PHASE HIGH-LEG)
LOCATION: SEE PLAN
RATING: 22,000 AIC
TYPE: NEMA-1, RECESSED

NOTE: PANEL IS EXISTING (SQ-D NQ); ALL LOADS SHOWN ARE EXISTING UNLESS INDICATED AS NEW.

CKT	DESCRIPTION	BKR	P	LOAD	KVA A	KVA B	KVA C	LOAD	BKR	P	DESCRIPTION	CKT
1	EXISTING LOAD	20	1	1.00	2.00			1.00	20	1	EXISTING LOAD	2
3	EXISTING LOAD	30	2	2.00		2.00					SPACE	4
5				2.00			3.00	1.00	20	1	EXISTING LOAD	6
7	EXISTING LOAD	20	2	1.00	3.00			2.00	30	2	EXISTING LOAD	8
9				1.00		3.00		2.00			SPACE	10
11	EXISTING LOAD	20	1	1.00			2.00	1.00	20	1	EXISTING LOAD	12
13	EXISTING LOAD	20	1	1.00	2.00			1.00	20	1	EXISTING LOAD	14
15	SPACE					0.00					SPACE	16
17	EXISTING LOAD	15	1	1.00			2.00	1.00	20	1	EXISTING LOAD	18
19	EXISTING LOAD	20	1	1.00	2.00			1.00	60	2	EXISTING LOAD - SHED	20
21	SPACE					1.00		1.00				22
23	REC-101 UPPER WALK *	20	1	0.54			1.54	1.00	20	1	EXISTING LOAD	24
25	REC-101 UPPER WALK *	20	1	0.90	1.90			1.00	20	1	EXISTING LOAD	26
27	SPARE	20	1			0.00					SPACE	28
29	REC-107 *	20	1	0.90			5.10	4.20	50	2	REC-101 *	30
31	SPARE	20	1		4.20			4.20				32
33	SPARE	20	1			0.00					SPACE	34
35	SPARE	20	1				0.00				SPACE	36
37	SPARE	30	1		0.00						SPACE	38
39	SPARE	30	1			0.00					SPACE	40
41	SPARE	30	1				0.00				SPACE	42
					15.10	6.00	13.64					

TOTAL CONNECTED LOAD: 34.74 KVA 83.7 AMPS

* - INDICATES NEW LOAD; PROVIDE NEW BREAKER

EXISTING PANEL: B

MAIN: 100A MLO
SERVICE: 120/240V, 1-PHASE, 3-WIRE
LOCATION: SEE PLAN
RATING: 22,000 AIC
TYPE: NEMA-1, RECESSED

NOTE: PANEL IS EXISTING (SQ-D NQ); ALL LOADS SHOWN ARE EXISTING EXCEPT WHERE INDICATED AS NEW.

CKT	DESCRIPTION	BKR	P	LOAD	KVA A	KVA B	LOAD	BKR	P	DESCRIPTION	CKT
1	LTS-EMERGENCY	20	1	0.20	2.20		2.00	30	1	LTS-DRILL	2
3	LTS/REC - SUPPLY	20	1	0.50		2.50	2.00	30	1	LTS-DRILL	4
5	LTS-BALCONY	20	1	0.50	2.50		2.00	30	1	LTS-TARGET	6
7	HEATER	20	1	1.00		2.00	1.00	20	1	ENTRY HALL/STAIRS	8
9	LTS-BALCONY	20	1	0.50	1.50		1.00	20	1	OFFICE	10
11	SPARE	50	2			1.00	1.00	20	1	OFFICE REC	12
13					0.20		0.20	20	1	LTS-EMERGENCY	14
15	OFFICE	20	1	0.72		0.72		30	2	SPARE	16
17	RESTRM LTS	20	1	0.50	0.50						18
19	EXISTING LOAD	20	1	0.50		1.00	0.50	20	1	EXISTING LOAD	20
21	EXISTING LOAD	20	1	0.50	1.00		0.50	20	1	EXISTING LOAD	22
23	EXISTING LOAD	20	1	0.50		1.00	0.50	20	1	EXISTING LOAD	24
25	EXISTING LOAD	20	1	0.50	0.68		0.18	20	1	REC-MULTIPURP 107B *	26
27	SPARE	20	1			0.36	0.36	20	1	REC-MULTIPURP 107B *	28
29	SPARE	20	1		0.54		0.54	20	1	REC-RESTRMMECH1*	30
31	SPARE	20	1			1.08	1.08	20	1	REC-MULTIPURP 107 *	32
33	SPARE	20	1		0.54		0.54	20	1	REC-MULTIPURP 107 *	34
35	SPARE	20	1			0.50	0.50	20	1	AUTODOOR - MAIN *	36
37	SPARE	20	1		0.50		0.50	20	1	AUTODOOR - SIDE *	38
39	SPARE	20	1			0.00				SPACE	40
41	SPARE	20	1		0.00					SPACE	42
					10.16	10.16					

TOTAL CONNECTED LOAD (KVA): 20.32 KVA 84.7 AMPS

* - INDICATES NEW LOAD; PROVIDE NEW BREAKER

NORTH

Consultants:
APPLIED RESEARCH AND DESIGN, INC.
2623 S. BLAIR STONE ROAD
TALLAHASSEE, FL 32301
FL CA#8948
JAMES M. LAMB, PE#52688
Tel: (850) 668-6324 -- E-mail: jlamb@ard-eng.com
ARD PROJECT #4023

PHASE:	DRAWN BY:	REVIEWED BY:	DATE:
DESIGN DEVELOPMENT	MRC	JML	07-08-24
100% CONSTR DOCUMENTS	MRC	JML	09-08-24
1 ADDENDUM NO. 3	MRC	JML	06-10-25
CONTRACT DOCUMENTS			
PERMIT DOCUMENTS			

Fort Coombs Armory and Convention Center
Renovations - Phase 2

APALACHICOLA, FL
GRC Project Number 24324

architecture
interior design
planning
gilchrist ross crowe
architects
413 ALL SAINTS STREET TALLAHASSEE, FLORIDA 32301
(850) 222-8100 www.architects-gca.com

SIGNATURE

ELECTRICAL
DRAWING NAME
First Floor Plan - Electrical

SHEET
E1.1

ADDENDUM NO. 2

Issue date 05-30-25

Project:
Fort Coombs Armory
and Convention Center Renovations
Phase 2
Franklin County, Florida

Issued by:

GRC
413 All Saints Street
Tallahassee, FL 32301 ph: 850-222-8100
GRC 24326 CA/Bid
Project Number 24324

Franklin County, FL

Distribution to:
Kimberly Raffield, Franklin County
Erin Griffith, Franklin County

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IN THE SPECIFICATIONS:

ITEM A1-1.0 DELETE: Specification 001116 INVITATION TO BID DATED 4-11-25

ADD: Specification 001116 INVITATION TO BID DATED 5-30-25

The Bid Date is extended two (2) weeks to June 17, 2025. Read aloud June 18, 2025

.

End of Addenda

Issued by Gilchrist Ross Crowe Architects:

_____
Connor Ross, AIA

ENCLOSURES AND ATTACHMENTS:

SPECIFCATIONS
0001116 – INVITATION TO BID_5-30-25

ADDENDUM NO. TWO (2)

SECTION 001116 - INVITATION TO BID

Proposals are requested from **QUALIFIED GENERAL CONTRACTORS** by Franklin County Board of County Commissioners, hereinafter referred to as OWNER, for the construction of:

Ft. Coombs Armory and Convention Center Renovations – Phase 2

Sealed Bid proposals will be received by Franklin County, Apalachicola, Florida until 4:30 p.m. EST on **JUNE 17, 2025** at the Clerk of Courts Office, Franklin County Courthouse, 33 Market Street, Suite 203, Apalachicola, Florida 32320-2317, and will be opened and read aloud on **JUNE 18, 2025**, at the regularly scheduled County Commission meeting which begins at 9:00 a.m. at 34 Forbes Street, Apalachicola, Florida.

Proposals received after the designated time will not be considered.

BID DOCUMENTS: Drawings, Project Manual and Technical Specifications will be available for download from GRC.

A PRE-BID Conference was held on-site, May 13, 2025, at 10:00 AM EST. Bidding contractors are expected to visit the site. The Fort Coombs Armory is located at 66 4th Street, Apalachicola, Florida 32320.

Proposals must be accompanied by a Bid Bond (certified checks are not acceptable) made payable to Franklin County in an amount equal to five percent (5%) of the Bid Amount (Base Bid and Alternate Bid Amounts). No bid may be withdrawn for a period of sixty (60) days after the scheduled closing time for the receipt of bids.

The Contract, if awarded, will be on a lump sum basis. A Surety Bond for the full amount of the Contract Price covering faithful performance of the Contract and the payment of all obligations arising there under will be required.

No oral, electronic, telephonic, or written modifications of the proposal will be considered.

Franklin County reserves the right to reject any or all Bids, waive technicalities or formalities as is necessary to best serve the interest of Franklin County.

END OF SECTION 001116

ADDENDUM NO. 1

Issue date 05-29-25

Project:
Fort Coombs Armory
and Convention Center Renovations
Franklin County, Florida

Issued by:

413 All Saints Street
Tallahassee, FL 32301 ph: 850-222-8100
GRC 24326 CA/Bid
Project Number 24324

Florida State University

Distribution to:
Kimberly Raffield, Franklin County
Erin Griffith, Franklin County

This Addendum forms a part of and modifies the Contract Document Drawings dated April 11, 2025, by reference below and any prior addenda. This addendum consists of full size drawings sheets and the narrative. Revised sheets are listed below and enumerated in the enclosures and attachments. Please notify the Architect promptly if any information is missing or requires further clarification.

IN THE SPECIFICATIONS:

ITEM A1-1.0 Refer Specification 075416 Ketone Ethylene Ester (KEE) Roofing noted changes:

075416 Ketone Ethylene Ester (KEE) Roofing Rev 5-29-25

A1-1.1 Add Paragraph 075416-3 paragraph 2.2 Ketone Ethylene Ester (KEE) Roofing

2.2B Alternate manufacturers

1. SOPREMA Sentinal KEE 150 felt back
2. Sarnafil G410-60 Feltback Energy smart

ITEM A1-2.0 Replace Specification 095500 WOOD FLOORING RESTORATION:

095500 WOOD FLOORING RESTORATION Rev 5-29-25

A1-2.1 Add specified scope.

Part 1 Paragraph 1.2 Scope

1. Removal of exterior finish systems at areas of wood restoration or repair
2. Installation of wood repair compound materials
3. Sanding, staining and refinishing existing flooring.

ITEM A1-3.0 Add Specification 095500 Sheet Metal Flashing and Trim:

095500 Sheet Metal Flashing and Trim issued 5-29-25

A1-3.1 Add specified scope.

Part 1 Paragraph 1.2 Scope

1. Removal of exterior finish systems at areas of wood restoration or repair
2. Installation of wood repair compound materials
3. Sanding, staining and refinishing existing flooring.

IN THE DRAWINGS:

ITEM A1-4.0 Refer to drawing A1.1 First Floor Plan - Renovation for noted changes:

A 1.1 First Floor Plan - renovation, Revision 1 dated 5-29-25

A1-4.1 Add wood floor restoration notes

ITEM A1-5.0 Refer to drawing D1.3 Roof Floor Plan - Demolition for noted changes:

D 1.3 Roof Plan - Demolition, Revision 1 dated 5-29-25

A1-5.1 Revise clouded notes

ITEM A1-6.0 Refer to drawing A1.3 Roof Floor Plan - Renovation for noted changes:

A 1.3 Roof Plan - Renovation, Revision 1 dated 5-29-25

A1-6.1 Revise Detail 5 / A1.3 -Revision adds step flashing at gable end parapets

ITEM A1-7.0 Refer to the following structural drawings for wind-loading requirements:

S S101 Structural Notes, Issue date 5-29-25

S111 Roof Wind Diagrams, Issue date 5-29-25

A1-7.1 Add wind-loading requirements for roof and window anchorage

ITEM A1-8.0 Refer to drawing RFI 2 for noted responses

ITEM A1-9.0 Refer to drawing Shaffield RFI for noted responses

ITEM A1-10.0 Refer to drawing D1.2 Second Floor Plan and include the following change:

A1-10.1 Delete note D6 from the tower as this window is not in the scope.

End of Addenda

Issued by Gilchrist Ross Crowe Architects:

_____

Connor Ross, AIA

ENCLOSURES AND ATTACHMENTS:

SPECIFCATIONS
075416 Ketone Ethylene Ester (KEE) Roofing Rev 5-30-25
095500 WOOD FLOORING RESTORATION Rev 5-30-25
095500 Sheet Metal Flashing and Trim issued 5-29-25

DRAWINGS
A 1.1 First Floor Plan - renovation, Revision 1 dated 5-29-25
D 1.3 Roof Plan - Demolition, Revision 1 dated 5-29-25
A 1.3 Roof Plan - Renovation, Revision 1 dated 5-29-25
S S101 Structural Notes, Issue date 5-29-25
S111 Roof Wind Diagrams, Issue date 5-29-25

RFI
Southland Contracting RFI 2
Shaffiled RFI

SECTION 075416 – KETONE ETHYLENE ESTER (KEE) ROOFING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Adhered ketone ethylene ester (KEE) roofing system.
2. Mechanically fastened, ketone ethylene ester (KEE) roofing system.
3. Substrate board.
4. Roof insulation.
5. Cover board.
6. Walkways.

1.2 PREINSTALLATION MEETINGS

A. Preliminary Roofing Conference: Conduct conference at [**Project site**] <**Insert location**>.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. For insulation and roof system component fasteners, include copy of FM Approvals' RoofNav listing.

B. Shop Drawings: Include plans, elevations, sections, details, and attachments to other work, including the following:

1. Layout and thickness of insulation.
2. Base flashings and membrane terminations.
3. Flashing details at penetrations.
4. Tapered insulation, including slopes.
5. Roof plan showing orientation of steel roof deck and orientation of roof membrane, fastening spacings, and patterns for mechanically fastened roofing system.
6. Insulation fastening patterns for corner, perimeter, and field-of-roof locations.
7. Tie-in with air barrier.

C. Samples: For the following products:

1. Roof membrane and flashing, of color required.
2. Aggregate surfacing material in gradation[**and color**] required.
3. Roof paver[**, full sized,**] in each color and texture required.
4. Walkway pads or rolls, of color required.

D. Wind Uplift Resistance Submittal: For roofing system, indicating compliance with wind uplift performance requirements.

1.4 INFORMATIONAL SUBMITTALS

A. Manufacturer Certificates:

1. Performance Requirement Certificate: Signed by roof membrane manufacturer, certifying that roofing system complies with requirements specified in "Performance Requirements" Article.

a. Submit evidence of compliance with performance requirements.

2. Special Warranty Certificate: Signed by roof membrane manufacturer, certifying that all materials supplied under this Section are acceptable for special warranty.

B. Product Test Reports: For roof membrane and insulation, for tests performed by a qualified testing agency, indicating compliance with specified requirements.

C. Research reports.

D. Field Test Reports:

1. Concrete internal relative humidity test reports.
2. Fastener-pullout test results and manufacturer's revised requirements for fastener patterns.

E. Field quality-control reports.

F. Sample warranties.

1.5 CLOSEOUT SUBMITTALS

A. Maintenance data.

B. Certified statement from existing roof membrane manufacturer stating that existing roof warranty has not been affected by Work performed under this Section.

1.6 QUALITY ASSURANCE

A. Installer Qualifications: A qualified firm that is approved, authorized, or licensed by roofing system manufacturer to install manufacturer's product and that is eligible to receive manufacturer's special warranty.

1.7 WARRANTY

A. Special Warranty: Manufacturer agrees to repair or replace components of roofing system that fail in materials or workmanship within specified warranty period.

1. Warranty Period: [**20**] years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Accelerated Weathering: Roof membrane shall withstand 2000 hours of exposure when tested according to ASTM G 152, ASTM G 154, or ASTM G 155.

B. Impact Resistance: Roof membrane shall resist impact damage when tested according to ASTM D 3746 or ASTM D 4272/D 4272M, or the "Resistance to Foot Traffic Test" in FM Approvals 4470.

C. Wind Uplift Resistance: Design roofing system to resist the wind uplift pressures based on the Florida Building code when tested according to FM Approvals 4474, UL 580, or UL 1897:

D. FM Approvals' RoofNav Listing: Roof membrane, base flashings, and component materials shall comply with requirements in FM Approvals 4450 or FM Approvals 4470 as part of a roofing system, and shall be listed in FM Approvals' RoofNav for Class 1 or noncombustible construction, as applicable. Identify materials with FM Approvals Certification markings.

1. Fire/Windstorm Classification: [**Class 1A-60**] [**Class 1A-75**] [**Class 1A-90**] [**Class 1A-105**] [**Class 1A-120**] <**Insert class**>.
2. Hail-Resistance Rating: [**MH**] [**SH**].

E. Exterior Fire-Test Exposure: ASTM E 108 or UL 790, [**Class A**] [**Class B**] [**Class C**]; for application and roof slopes indicated; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

F. Fire-Resistance Ratings: Comply with fire-resistance-rated assembly designs indicated. Identify products with appropriate markings of applicable testing agency.

2.2 KETONE ETHYLENE ESTER (KEE) ROOFING

A. KEE Sheet: ASTM D 6754/D 6754M, fabric reinforced Rhino Bond. **Basis of design**

1. Siplast - Parasolo KEE Fleece -back
2. Thickness: [**60 mils (1.5 mm), nominal**.
3. Weight .386lb/ft2
4. Exposed Face Color: [**White**].
5. Product Approval: FL 30935 R3 HVHZ System C2 W-7 with (-90) uplift

B. Alternate Manufacturers: The following manufacturers are approved for the project providing all roofing products meet the basis of design specifications.

1. SOPREMA Sentinal KEE 150 felt back
2. Sarnafil G410-60 Feltback Energy smart
3. IB PVC Singl-Ply ChemGuard FB-60

2.3 AUXILIARY ROOFING MATERIALS

A. General: Auxiliary materials recommended by roofing system manufacturer with the use of and compatible with other roofing components.

1. Adhesives and Sealants: Comply with VOC limits of authorities having jurisdiction.

B. Sheet Flashing: Manufacturer's standard sheet flashing of same material, type, reinforcement, thickness, and color as KEE sheet.

C. Prefabricated Pipe Flashings: As recommended by roof membrane manufacturer.

D. Bonding Adhesive: Manufacturer's standard[**, water based**].

E. Slip Sheet: ASTM D 2178/D 2178M, Type IV, glass fiber, asphalt-impregnated felt.

F. Slip Sheet: Manufacturer's standard, of thickness required for application.

G. Metal Termination Bars: Manufacturer's standard, predrilled stainless steel or aluminum bars, approximately 1 by 1/8 inch (25 by 3 mm) thick; with anchors.

H. Fasteners: Factory-coated steel fasteners and metal or plastic plates complying with corrosion-resistance provisions in FM Approvals 4470, designed for fastening roofing components to substrate, and acceptable to roofing system manufacturer.

I. Miscellaneous Accessories: Provide pourable sealers, preformed cone and vent sheet flashings, preformed inside and outside corner sheet flashings, T-joint covers, lap sealants, termination reglets, and other accessories.

2.4 ROOF INSULATION

A. Polyisocyanurate Board Insulation: ASTM C 1289, [**Type II, Class 1, Grade 2**] [**Type II, Class 2, Grade 2**], felt or glass-fiber mat facer on both major surfaces.

1. Atlas AC Foam III
2. Size: [**48 by 48 inches (1219 by 1219 mm)**] [**48 by 96 inches (1219 by 2438 mm)**].
3. Thickness:

a. Base Layer: [**1-1/2 inches (38.1 mm)**]

B. Tapered Insulation: Provide factory-tapered insulation boards.

1. Material: [**Match roof insulation**].
2. Minimum Thickness: 1/4 inch (6.35 mm).
3. Slope:

a. Roof Field: [**1/4 inch per foot (1:48)**] unless otherwise indicated on Drawings.
b. Saddles and Crickets: [**1/2 inch per foot (1:24)**] unless otherwise indicated on Drawings.

2.5 INSULATION ACCESSORIES

A. Fasteners: Factory-coated steel fasteners and metal or plastic plates complying with corrosion-resistance provisions in FM Approvals 4470, designed for fastening roof insulation[**and cover boards**] to substrate, and acceptable to roofing system manufacturer.

B. Insulation Adhesive: Insulation manufacturer's recommended adhesive formulated to attach roof insulation to substrate or to another insulation layer as follows:

1. Modified asphaltic, asbestos-free, cold-applied adhesive.
2. Bead-applied, low-rise, one-component or multicomponent urethane adhesive.
3. Full-spread, spray-applied, low-rise, two-component urethane adhesive.

2.6 ASPHALT MATERIALS

A. Roofing Asphalt: [**ASTM D 312/D 312M, Type III or Type IV**] [**ASTM D 6152/D 6152M, SEBS modified**].

B. Asphalt Primer: ASTM D 41/D 41M.

2.7 WALKWAYS

A. Flexible Walkways: Factory-formed, nonporous, heavy-duty, slip-resisting, surface-textured walkway [**pads**] [**or**] [**rolls**], approximately 3/16 inch (5 mm) thick and acceptable to roofing system manufacturer.

1. Size: Approximately 36 by 60 inches (914 by 1524 mm).
2. Color: Contrasting with roof membrane.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements and other conditions affecting performance of the Work.

1. Verify that minimum concrete drying period recommended by roofing system manufacturer has passed.
2. Verify that concrete substrate is visibly dry and free of moisture, and that minimum concrete internal relative humidity is not more than [**75**] <**Insert number**> percent, or as recommended by roofing system manufacturer, when tested according to ASTM F 2170.

   a. Test Frequency: One test probe per each [**1000 sq. ft. (93 sq. m)**] <**Insert area**>, or portion thereof,of roof deck, with no fewer than three test probes.
   b. Submit test reports within 24 hours of performing tests.

3. Verify that concrete-curing compounds that will impair adhesion of roofing components to roof deck have been removed.

4. Verify that joints in precast concrete roof decks have been grouted flush with top of concrete.

3.2 PREPARATION

A. Perform fastener-pullout tests according to roof system manufacturer's written instructions.

1. Submit test result within 24 hours of performing tests.

a. Include manufacturer's requirements for any revision to previously submitted fastener patterns required to achieve specified wind uplift requirements.

3.3 ROOFING INSTALLATION, GENERAL

A. Install roofing system according to roofing system manufacturer's written instructions, FM Approvals' RoofNav assembly requirements, and FM Global Property Loss Prevention Data Sheet 1-29.

B. Complete terminations and base flashings and provide temporary seals to prevent water from entering completed sections of roofing system at the end of workday or when rain is forecast. Remove and discard temporary seals before beginning work on adjoining roofing.

C. Install roof membrane and auxiliary materials to tie in to existing roofing to maintain weathertightness of transition[**and to not void warranty for existing roofing system**].

D. Coordinate installation and transition of roofing system component serving as an air barrier with air barrier specified under [**Section 072713 "Modified Bituminous Sheet Air Barriers."**] [**Section 072715 "Nonbituminous Self-Adhering Sheet Air Barriers."**] [**Section 072726 "Fluid-Applied Membrane Air Barriers."**]

3.4 INSULATION INSTALLATION

A. Coordinate installing roofing system components so insulation is not exposed to precipitation or left exposed at the end of the workday.

B. Comply with roofing system and insulation manufacturer's written instructions for installing roof insulation.

C. Installation Over Metal Decking:

1. Install base layer of insulation with [**joints staggered not less than 24 inches (610 mm) in adjacent rows**] [**end joints staggered not less than 12 inches (305 mm) in adjacent rows**] [**and with long joints continuous at right angle to flutes of decking**].

a. Locate end joints over crests of decking.
b. Where installing composite and noncomposite insulation in two or more layers, install noncomposite board insulation for bottom layer and intermediate layers, if applicable, and install composite board insulation for top layer.

c. Trim insulation neatly to fit around penetrations and projections, and to fit tight to intersecting sloping roof decks.
d. Make joints between adjacent insulation boards not more than 1/4 inch (6 mm) in width.
e. At internal roof drains, slope insulation to create a square drain sump with each side equal to the diameter of the drain bowl plus 24 inches (610 mm).

1) Trim insulation so that water flow is unrestricted.

f. Fill gaps exceeding 1/4 inch (6 mm) with insulation.
g. Cut and fit insulation within 1/4 inch (6 mm) of nailers, projections, and penetrations.
h. Loosely lay base layer of insulation units over substrate.
i. Mechanically attach base layer of insulation[**and substrate board**] using mechanical fasteners specifically designed and sized for fastening specified board-type roof insulation to metal decks.

1) Fasten insulation according to requirements in FM Approvals' RoofNav for specified Windstorm Resistance Classification.
2) Fasten insulation to resist specified uplift pressure at corners, perimeter, and field of roof.

2. Install upper layers of insulation[**and tapered insulation**] with joints of each layer offset not less than 12 inches (305 mm) from previous layer of insulation.

a. Staggered end joints within each layer not less than 24 inches (610 mm) in adjacent rows.
b. Install with long joints continuous and with end joints staggered not less than 12 inches (305 mm) in adjacent rows.
c. Trim insulation neatly to fit around penetrations and projections, and to fit tight to intersecting sloping roof decks.
d. Make joints between adjacent insulation boards not more than 1/4 inch (6 mm) in width.
e. At internal roof drains, slope insulation to create a square drain sump with each side equal to the diameter of the drain bowl plus 24 inches (610 mm).
f. Trim insulation so that water flow is unrestricted.
g. Fill gaps exceeding 1/4 inch (6 mm) with insulation.
h. Cut and fit insulation within 1/4 inch (6 mm) of nailers, projections, and penetrations.
i. Loosely lay each layer of insulation units over substrate.
j. Adhere each layer of insulation to substrate using adhesive according to FM Approvals' RoofNav assembly requirements and FM Global Property Loss Prevention Data Sheet 1-29 for specified Windstorm Resistance Classification, as follows:

1) Set each layer of insulation in a solid mopping of hot roofing asphalt, applied within plus or minus 25 deg F (14 deg C) of equiviscous temperature.
2) Set each layer of insulation in ribbons of bead-applied insulation adhesive, firmly pressing and maintaining insulation in place.

3) Set each layer of insulation in a uniform coverage of full-spread insulation adhesive, firmly pressing and maintaining insulation in place.

D. Installation Over [**Wood**] [**Wood Panel**] Decking:

1. Mechanically fasten slip sheet to roof deck using mechanical fasteners specifically designed and sized for fastening slip sheet to [**wood**] [**wood panel**] decks.

   a. Fasten slip sheet according to requirements in FM Approvals' RoofNav for specified Windstorm Resistance Classification.
   b. Fasten slip sheet to resist specified uplift pressure at corners, perimeter, and field of roof.

2. Install base layer of insulation with [**joints staggered not less than 24 inches (610 mm) in adjacent rows**] [**end joints staggered not less than 12 inches (305 mm) in adjacent rows**].

   a. Where installing composite and noncomposite insulation in two or more layers, install noncomposite board insulation for bottom layer and intermediate layers, if applicable, and install composite board insulation for top layer.
   b. Trim insulation neatly to fit around penetrations and projections, and to fit tight to intersecting sloping roof decks.
   c. Make joints between adjacent insulation boards not more than 1/4 inch (6 mm) in width.
   d. At internal roof drains, slope insulation to create a square drain sump with each side equal to the diameter of the drain bowl plus 24 inches (610 mm).

      1) Trim insulation so that water flow is unrestricted.

   e. Fill gaps exceeding 1/4 inch (6 mm) with insulation.
   f. Cut and fit insulation within 1/4 inch (6 mm) of nailers, projections, and penetrations.
   g. Loosely lay base layer of insulation units over substrate.
   h. Mechanically attach base layer of insulation[**and substrate board**] using mechanical fasteners specifically designed and sized for fastening specified board-type roof insulation to [**wood**] [**wood panel**] decks.

      1) Fasten insulation according to requirements in FM Approvals' RoofNav for specified Windstorm Resistance Classification.
      2) Fasten insulation to resist specified uplift pressure at corners, perimeter, and field of roof.

3. Install upper layers of insulation[**and tapered insulation**] with joints of each layer offset not less than 12 inches (305 mm) from previous layer of insulation.

   a. Staggered end joints within each layer not less than 24 inches (610 mm) in adjacent rows.
   b. Install with long joints continuous and with end joints staggered not less than 12 inches (305 mm) in adjacent rows.
   c. Trim insulation neatly to fit around penetrations and projections, and to fit tight to intersecting sloping roof decks.

d. Make joints between adjacent insulation boards not more than 1/4 inch (6 mm) in width.
e. At internal roof drains, slope insulation to create a square drain sump with each side equal to the diameter of the drain bowl plus 24 inches (610 mm).

1) Trim insulation so that water flow is unrestricted.

f. Fill gaps exceeding 1/4 inch (6 mm) with insulation.
g. Cut and fit insulation within 1/4 inch (6 mm) of nailers, projections, and penetrations.
h. Loosely lay each layer of insulation units over substrate.
i. Adhere each layer of insulation to substrate using adhesive according to FM Approvals' RoofNav assembly requirements and FM Global Property Loss Prevention Data Sheet 1-29 for specified Windstorm Resistance Classification, as follows:

1) Set each layer of insulation in a solid mopping of hot roofing asphalt, applied within plus or minus 25 deg F (14 deg C) of equiviscous temperature.
2) Set each layer of insulation in ribbons of bead-applied insulation adhesive, firmly pressing and maintaining insulation in place.
3) Set each layer of insulation in a uniform coverage of full-spread insulation adhesive, firmly pressing and maintaining insulation in place.

3.5 INSTALLATION OF COVER BOARDS

A. Install cover boards over insulation with long joints in continuous straight lines with end joints staggered between rows. Offset joints of insulation below a minimum of 6 inches (150 mm) in each direction.

1. Trim cover board neatly to fit around penetrations and projections, and to fit tight to intersecting sloping roof decks.
2. At internal roof drains, conform to slope of drain sump.

a. Trim cover board so that water flow is unrestricted.

3. Cut and fit cover board tight to nailers, projections, and penetrations.
4. Adhere cover board to substrate using adhesive according to FM Approvals' RoofNav assembly requirements and FM Global Property Loss Prevention Data Sheet 1-29 for specified Windstorm Resistance Classification, as follows:

a. Set cover board in a solid mopping of hot roofing asphalt, applied within plus or minus 25 deg F (14 deg C) of equiviscous temperature.
b. Set cover board in ribbons of bead-applied insulation adhesive, firmly pressing and maintaining insulation in place.
c. Set cover board in a uniform coverage of full-spread insulation adhesive, firmly pressing and maintaining insulation in place.

B. Install slip sheet over cover board and immediately beneath roof membrane.

3.6 ADHERED ROOFING INSTALLATION

A. Adhere roof membrane over area to receive roofing according to roofing system manufacturer's written instructions. Unroll roof membrane and allow to relax before installing.

B. Start installation of roofing in presence of roofing system manufacturer's technical personnel[**and Owner's testing and inspection agency**].

C. Accurately align roof membrane, and maintain uniform side and end laps of minimum dimensions required by manufacturer. Stagger end laps.

D. Bonding Adhesive: Apply to substrate and underside of roof membrane at rate required by manufacturer, and allow to partially dry before installing roof membrane. Do not apply to splice area of roof membrane.

E. Fabric-Backed Roof Membrane Adhesive: Apply to substrate at rate required by manufacturer, and install fabric-backed roof membrane.

F. In addition to adhering, mechanically fasten roof membrane securely at terminations, penetrations, and perimeter of roofing.

G. Apply roof membrane with side laps shingled with slope of roof deck where possible.

H. Seams: Clean seam areas, overlap roofing, and hot-air weld side and end laps of roof membrane and sheet flashings to ensure a watertight seam installation.

1. Test lap edges with probe to verify seam weld continuity. Apply lap sealant to seal cut edges of roof membrane and sheet flashings.
2. Verify field strength of seams a minimum of twice daily, and repair seam sample areas.
3. Repair tears, voids, and lapped seams in roof membrane that do not comply with requirements.

I. Spread sealant bed over deck-drain flange at roof drains, and securely seal roof membrane in place with clamping ring.

3.7 MECHANICALLY FASTENED ROOFING INSTALLATION

A. Mechanically fasten roof membrane over area to receive roofing according to roofing system manufacturer's written instructions.

B. Unroll roof membrane and allow to relax before installing.

C. For in-splice attachment, install roof membrane with long dimension perpendicular to steel roof deck flutes.

D. Start installation of roofing in presence of roofing system manufacturer's technical personnel[**and Owner's testing and inspection agency**].

E. Accurately align roof membrane, and maintain uniform side and end laps of minimum dimensions required by manufacturer. Stagger end laps.

F. Mechanically fasten or adhere roof membrane securely at terminations, penetrations, and perimeter of roofing.

G. Apply roof membrane with side laps shingled with slope of roof deck where possible.

H. In-Seam Attachment: Secure one edge of KEE sheet using fastening plates or metal battens centered within seam, and mechanically fasten KEE sheet to roof deck.

I. Seams: Clean seam areas, overlap roof membrane, and hot-air weld side and end laps of roof membrane and sheet flashings to ensure a watertight seam installation.

1. Test lap edges with probe to verify seam weld continuity.
2. Apply lap sealant to seal cut edges of roof membrane and sheet flashings.
3. Verify field strength of seams a minimum of twice daily, and repair seam sample areas.
4. Repair tears, voids, and lapped seams in roof membrane that do not comply with requirements.

J. Spread sealant bed over deck-drain flange at roof drains, and securely seal roof membrane in place with clamping ring.

3.8 LOOSELY LAID AND BALLASTED ROOFING INSTALLATION

A. Loosely lay roof membrane over area to receive roofing according to roofing system manufacturer's written instructions.

B. Unroll roof membrane and allow to relax before installing.

C. Comply with requirements in SPRI RP-4 for [**System 1**] [**System 2**] [**System 3**].

D. Start installation of roofing in presence of roofing system manufacturer's technical personnel[**and Owner's testing and inspection agency**].

E. Accurately align roof membrane, without stretching, and maintain uniform side and end laps of minimum dimensions required by manufacturer. Stagger end laps.

F. Mechanically fasten or adhere perimeter of roofing according to requirements in SPRI RP-4.

G. [**Mechanically fasten**] [**or**] [**adhere**] roof membrane at corners, perimeters, and transitions according to requirements in SPRI RP-4.

1. At corners and perimeters, omit aggregate ballast leaving roof membrane exposed.
2. At corners and perimeters, adhere a second layer of roof membrane.

H. Apply roof membrane with side laps shingled with slope of deck where possible.

I. Seams: Clean seam areas, overlap roof membrane, and hot-air weld side and end laps of roof membrane and sheet flashings to ensure a watertight seam installation.

1. Test lap edges with probe to verify seam weld continuity.
2. Apply lap sealant to seal cut edges of roof membrane and sheet flashings.

3. Verify field strength of seams a minimum of twice daily, and repair seam sample areas.
4. Repair tears, voids, and lapped seams in roof membrane that do not comply with requirements.

J. Spread sealant bed over deck-drain flange at roof drains, and securely seal roof membrane in place with clamping ring.

K. Install protection mat over roof membrane, overlapping a minimum of 6 inches (150 mm). Install an additional protection mat layer at projections, pipes, vents, and drains, overlapping a minimum of 12 inches (300 mm).

L. Aggregate Ballast: Apply uniformly over roof membrane at the rate required by roofing system manufacturer, but not less than the following, spreading with care to minimize possibility of damage to roofing system. Lay ballast as roof membrane is installed, leaving roofing ballasted at the end of the workday.

1. Ballast Weight: Size 4 aggregate, 10 lb/sq. ft. (50 kg/sq. m).
2. Ballast Weight: Size 2 aggregate, 13 lb/sq. ft. (65 kg/sq. m), at corners and perimeter; Size 4 aggregate, 10 lb/sq. ft. (50 kg/sq. m), elsewhere.
3. Ballast Weight: Size 2 aggregate, 13 lb/sq. ft. (65 kg/sq. m).
4. Ballast Weight: Size 3 aggregate, <**Insert weight**>, at corners, <**Insert weight**> at perimeter, and <**Insert weight**>, elsewhere.

M. Roof-Paver Ballast: Install [**lightweight**] [**heavyweight**] roof-paver ballast according to manufacturer's written instructions.

N. Roof-Paver and Aggregate Ballast: Install heavyweight roof pavers according to manufacturer's written instructions on roof corners and perimeter.

1. Install Size 4 aggregate ballast elsewhere on roof membrane at a minimum rate of 10 lb/sq. ft. (50 kg/sq. m).
2. Install Size 2 aggregate ballast elsewhere on roof membrane at a minimum rate of 13 lb/sq. ft. (65 kg/sq. m).

3.9 BASE FLASHING INSTALLATION

A. Install sheet flashings and preformed flashing accessories, and adhere to substrates according to roofing system manufacturer's written instructions.

B. Apply bonding adhesive to substrate and underside of sheet flashing at required rate, and allow to partially dry. Do not apply to seam area of flashing.

C. Flash penetrations and field-formed inside and outside corners with cured or uncured sheet flashing.

D. Clean seam areas, overlap, and firmly roll sheet flashings into the adhesive. Hot-air weld side and end laps to ensure a watertight seam installation.

E. Terminate and seal top of sheet flashings and mechanically anchor to substrate through termination bars.

3.10 WALKWAY INSTALLATION

A. Flexible Walkways: Install walkway products according to manufacturer's written instructions.

1. Install flexible walkways at the following locations:

   a. Perimeter of each rooftop unit.
   b. Between each rooftop unit location, creating a continuous path connecting rooftop unit locations.
   c. Between each roof hatch and each rooftop unit location or path connecting rooftop unit locations.
   d. Top and bottom of each roof access ladder.
   e. Between each roof access ladder and each rooftop unit location or path connecting rooftop unit locations.
   f. Locations indicated on Drawings.
   g. As required by roof membrane manufacturer's warranty requirements.

2. Provide 6-inch (76-mm) clearance between adjoining pads.
3. Heat weld to substrate or adhere walkway products to substrate with compatible adhesive according to roofing system manufacturer's written instructions.

B. Roof-Paver Walkways: Install walkway roof pavers according to manufacturer's written instructions.

1. Install roof paver walkways at the following locations:

   a. Perimeter of each rooftop unit.
   b. Between each rooftop unit location, creating a continuous path connecting rooftop unit locations.
   c. Between each roof hatch and each rooftop unit location or path connecting rooftop unit locations.
   d. Top and bottom of each roof access ladder.
   e. Between each roof access ladder and each rooftop unit location or path connecting rooftop unit locations.
   f. Locations indicated on Drawings.
   g. As required by roof membrane manufacturer's warranty requirements.

2. Provide 3 inches (75 mm) of space between adjacent roof pavers.

3.11 PROTECTING AND CLEANING

A. Protect roofing system from damage and wear during remainder of construction period. When remaining construction does not affect or endanger roofing, inspect roofing system for deterioration and damage, describing its nature and extent in a written report, with copies to Architect and Owner.

B. Correct deficiencies in or remove roofing system that does not comply with requirements, repair substrates, and repair or reinstall roofing system to a condition free of damage and deterioration at time of Substantial Completion and according to warranty requirements.

C. Clean overspray and spillage from adjacent construction using cleaning agents and procedures recommended by manufacturer of affected construction.

END OF SECTION 075416

SECTION 076200 - SHEET METAL FLASHING AND TRIM

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Manufactured reglets [**with counterflashing**].
2. Formed roof-drainage sheet metal fabrications.
3. Formed low-slope roof sheet metal fabrications.

1.2 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at [**Project site**] .

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Shop Drawings: For sheet metal flashing and trim.

1. Include plans, elevations, sections, and attachment details.
2. Distinguish between shop- and field-assembled work.
3. Include identification of finish for each item.
4. Include pattern of seams and details of termination points, expansion joints and expansion-joint covers, direction of expansion, roof-penetration flashing, and connections to adjoining work.

C. Samples: For each exposed product and for each color and texture specified.

1.4 INFORMATIONAL SUBMITTALS

A. Product certificates.

B. Product test reports.

C. Sample warranty.

1.5 CLOSEOUT SUBMITTALS

A. Maintenance data.

1.6 QUALITY ASSURANCE

A. Fabricator Qualifications: Employs skilled workers who custom fabricate sheet metal flashing and trim similar to that required for this Project and whose products have a record of successful in-service performance.

1. For copings and roof edge flashings that are SPRI ES-1 tested, shop shall be listed as able to fabricate required details as tested and approved.

B. Mockups: Build mockups to verify selections made under Sample submittals to demonstrate aesthetic effects and to set quality standards for fabrication and installation.

1. Build mockup of typical roof coping, including [[**fascia**] [**fascia trim**] [**apron flashing**] , approximately [**10 feet (3.0 m**.

1.7 WARRANTY

A. Special Warranty on Finishes: Manufacturer agrees to repair finish or replace sheet metal flashing and trim that shows evidence of deterioration of factory-applied finishes within specified warranty period.

1. Finish Warranty Period: [**20**] years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. General: Sheet metal flashing and trim assemblies shall withstand wind loads, structural movement, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Completed sheet metal flashing and trim shall not rattle, leak, or loosen, and shall remain watertight.

B. Sheet Metal Standard for Flashing and Trim: Comply with [**NRCA's "The NRCA Roofing Manual"**] [**and**] [**SMACNA's "Architectural Sheet Metal Manual"**] requirements for dimensions and profiles shown unless more stringent requirements are indicated.

C. SPRI Wind Design Standard: Manufacture and install [**copings**] [**roof edge flashings**] tested according to SPRI ES-1 and capable of resisting the following design pressure:

1. Design Pressure: [**As indicated on Drawings**] .

D. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes.

1. Temperature Change: [**120 deg F (67 deg C), ambient; 180 deg F (100 deg C), material surfaces**] .

2.2 SHEET METALS

A. General: Protect mechanical and other finishes on exposed surfaces from damage by applying strippable, temporary protective film before shipping.

B. Aluminum Sheet: ASTM B 209 (ASTM B 209M), alloy as standard with manufacturer for finish required, with temper as required to suit forming operations and performance required.
   1. Color Anodic Finish, Coil Coated: AAMA 611, AA-M12C22A42/A44, Class I, 0.018 mm or thicker.
      a. Use at expose fascia and trim
      b. Color: [**Match Existing**].
   2. Exposed Coil-Coated Finish:
      a. Two-Coat Fluoropolymer: AAMA 2605. Fluoropolymer finish containing not less than 70 percent PVDF resin by weight in color coat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
   3. Color: [**Match Existing**] .

2.3 UNDERLAYMENT MATERIALS

A. Self-Adhering, High-Temperature Sheet: Minimum 30 mils (0.76 mm) thick, consisting of a slip-resistant polyethylene- or polypropylene-film top surface laminated to a layer of butyl- or SBS-modified asphalt adhesive, with release-paper backing; specifically designed to withstand high metal temperatures beneath metal roofing. Provide primer according to written recommendations of underlayment manufacturer.
   1. Thermal Stability: ASTM D 1970; stable after testing at 240 deg F (116 deg C) or higher.
   2. Low-Temperature Flexibility: ASTM D 1970; passes after testing at minus 20 deg F (29 deg C) or lower.

B. Slip Sheet: Rosin-sized building paper, 3 lb/100 sq. ft. (0.16 kg/sq. m)minimum.

2.4 MISCELLANEOUS MATERIALS

A. General: Provide materials and types of fasteners, solder, protective coatings, sealants, and other miscellaneous items as required for complete sheet metal flashing and trim installation and as 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. Provide metal-backed EPDM or PVC sealing washers under heads of exposed fasteners bearing on weather side of metal.
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.

C. Sealant Tape: Pressure-sensitive, 100 percent solids, polyisobutylene compound sealant tape with release-paper backing. Provide permanently elastic, nonsag, nontoxic, nonstaining tape 1/2 inch (13 mm) wide and 1/8 inch (3 mm) thick.

D. Elastomeric Sealant: ASTM C 920, elastomeric [**polyurethane**] [**polysulfide**] [**silicone**] polymer sealant; of type, grade, class, and use classifications required to seal joints in sheet metal flashing and trim and remain watertight.

E. Butyl Sealant: ASTM C 1311, single-component, solvent-release butyl rubber sealant; polyisobutylene plasticized; heavy bodied for hooked-type expansion joints with limited movement.

F. Epoxy Seam Sealer: Two-part, noncorrosive, aluminum seam-cementing compound, recommended by aluminum manufacturer for exterior nonmoving joints, including riveted joints.

G. Bituminous Coating: Cold-applied asphalt emulsion according to ASTM D 1187.

H. Asphalt Roofing Cement: ASTM D 4586, asbestos free, of consistency required for application.

2.5 MANUFACTURED REGLETS

A. Reglets: Units of type, material, and profile required, formed to provide secure interlocking of separate reglet and counterflashing pieces, and compatible with flashing indicated [with interlocking counterflashing on exterior face, of same metal as reglet].
1. Material: [Aluminum, 0.024 inch (0.61 mm) thick]
2. Finish: [Mill]

2.6 FABRICATION, GENERAL

A. General: Custom fabricate sheet metal flashing and trim to comply with details shown and recommendations in cited sheet metal standard that apply to design, dimensions, geometry, metal thickness, and other characteristics of item required. Fabricate sheet metal flashing and trim in shop to greatest extent possible.

1. Obtain field measurements for accurate fit before shop fabrication.
2. Form sheet metal flashing and trim to fit substrates without excessive oil canning, buckling, and tool marks; true to line, levels, and slopes; and with exposed edges folded back to form hems.
3. Conceal fasteners and expansion provisions where possible. Do not use exposed fasteners on faces exposed to view.

B. Expansion Provisions: Form metal for thermal expansion of exposed flashing and trim.

1. Form expansion joints of intermeshing hooked flanges, not less than 1 inch (25 mm) deep, filled with butyl sealant concealed within joints.
2. Use lapped expansion joints only where indicated on Drawings.

C. Sealant Joints: Where movable, nonexpansion-type joints are required, form metal to provide for proper installation of elastomeric sealant according to cited sheet metal standard.

D. Fabricate cleats and attachment devices from same material as accessory being anchored or from compatible, noncorrosive metal.

E. Fabricate cleats and attachment devices of sizes as recommended by cited sheet metal standard for application, but not less than thickness of metal being secured.

F. Seams: Fabricate nonmoving seams with flat-lock seams. Tin edges to be seamed, form seams, and solder.

G. 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.**]

H. Seams for Aluminum: Fabricate nonmoving seams with flat-lock seams. Form seams and seal with epoxy seam sealer.[**Rivet joints where necessary for strength.**]

2.7 ROOF-DRAINAGE SHEET METAL FABRICATIONS

A. Parapet Scuppers: Fabricate scuppers to dimensions required, with closure flange trim to exterior, 4-inch- (100-mm-) wide wall flanges to interior, and base extending 4 inches (100 mm) beyond cant or tapered strip into field of roof. Fabricate from the following materials:
1. Aluminum: [**0.040 inch (0.81 mm)**] thick.

B. Conductor Heads: Fabricate conductor heads with flanged back and stiffened top edge and of dimensions and shape required, complete with outlet tubes. Fabricate from the following materials:
1. Aluminum: [**0.040 inch (0.81 mm)**].

C. Splash Pans: Fabricate to dimensions and shape required and from the following materials:
1. Aluminum: [**0.040 inch (1.02 mm)**] thick.

2.8 LOW-SLOPE ROOF SHEET METAL FABRICATIONS

A. Copings: Fabricate in minimum 96-inch- (2400-mm-) long, but not exceeding 12-foot- (3.6-m-) long, sections. Fabricate joint plates of same thickness as copings. Furnish with continuous cleats to support edge of external leg and interior leg. Miter corners, [**fasten and seal**] [**solder or weld**] watertight.[**Shop fabricate interior and exterior corners.**]

1. Fabricate from the Following Materials:
   a. Aluminum-Zinc Alloy-Coated Steel: [**0.040 inch (1.02 mm)**] color to match wall panels

B. Base Flashing: [**Shop fabricate interior and exterior corners.**] Fabricate from the following materials:

1. Copper: [**20 oz./sq. ft. (0.68 mm thick weight (thickness)**>.
2. Aluminum: [**0.040 inch (1.02 mm)**] thick.

C. Counterflashing[**and Flashing Receivers**]: Fabricate from the following materials:

1. Copper: [**16 oz./sq. ft. (0.55 mm thick)**] <**Insert weight (thickness)**>.
2. Aluminum: [**0.032 inch (0.81 mm)**] <**Insert dimension**> thick.

D. Roof-Penetration Flashing: Fabricate from the following materials:
1. Aluminum-Zinc Alloy-Coated Steel: [**0.028 inch (0.71 mm)**] <.

E. Roof-Drain Flashing: Fabricate from the following materials:

1. Copper: [**12 oz./sq. ft. (0.41 mm thick)**] <**Insert weight (thickness)**>.

PART 3 - EXECUTION

3.1 UNDERLAYMENT INSTALLATION

A. Self-Adhering Sheet Underlayment: Install self-adhering sheet underlayment, wrinkle free. Prime substrate if recommended by underlayment manufacturer. Comply with temperature restrictions of underlayment manufacturer for installation; use primer for installing underlayment at low temperatures. Apply in shingle fashion to shed water, with end laps of not less than 6 inches (150 mm) staggered 24 inches (600 mm) between courses. Overlap side edges not less than 3-1/2 inches (90 mm). Roll laps and edges 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. Use fasteners, solder, 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, levels, and slopes. 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 (300 mm) apart. Attach each cleat with at least two fasteners. Bend tabs over fasteners.
4. Install exposed sheet metal flashing and trim with limited oil canning, and free of buckling and tool marks.
5. Torch cutting of sheet metal flashing and trim is not permitted.

B. Metal Protection: Where dissimilar metals contact each other, or where metal contacts pressure-treated wood or other corrosive substrates, protect against galvanic action or corrosion by painting contact surfaces with bituminous coating or by other permanent separation as recommended by sheet metal manufacturer or cited sheet metal standard.

1. Coat concealed side of [**uncoated-aluminum**] [**and**] [**stainless-steel**] sheet metal flashing and trim with bituminous coating where flashing and trim contact wood, ferrous metal, or cementitious construction.
2. Underlayment: Where installing sheet metal flashing and trim directly on cementitious or wood substrates, install underlayment and cover with slip sheet.

C. Expansion Provisions: Provide for thermal expansion of exposed flashing and trim. Space movement joints at maximum of [**10 feet (3 m)**] <**Insert dimension**> with no joints within 24 inches (600 mm) of corner or intersection.

1. Form expansion joints of intermeshing hooked flanges, not less than 1 inch (25 mm) deep, filled with sealant concealed within joints.
2. Use lapped expansion joints only where indicated on Drawings.

D. Fasteners: Use fastener sizes that penetrate [**wood blocking or sheathing not less than 1-1/4 inches (32 mm) for nails and not less than 3/4 inch (19 mm) for wood screws**] [**substrate not less than recommended by fastener manufacturer to achieve maximum pull-out resistance**] .

E. Conceal fasteners and expansion provisions where possible in exposed work and locate to minimize possibility of leakage. Cover and seal fasteners and anchors as required for a tight installation.

F. Seal joints as required for watertight construction. Prepare joints and apply sealants to comply with requirements in Section 079200 "Joint Sealants."

G. Rivets: Rivet joints in uncoated aluminum where necessary for strength.

3.3 ROOF-DRAINAGE SYSTEM INSTALLATION

A. General: Install sheet metal roof-drainage items to produce complete roof-drainage system according to cited sheet metal standard unless otherwise indicated. Coordinate installation of roof perimeter flashing with installation of roof-drainage system.

B. Splash Pans: Install where downspouts discharge on [**low-slope roofs**] <**Insert surface**>. Set in asphalt roofing cement or elastomeric sealant compatible with the substrate.

C. Parapet Scuppers: Continuously support scupper, set to correct elevation, and seal flanges to interior wall face, over cants or tapered edge strips, and under roofing membrane.

D. Conductor Heads: Anchor securely to wall, with elevation of conductor head rim at minimum of 1 inch (25 mm) below [**scupper**] [**or**] [**gutter**] discharge.

3.4 ROOF FLASHING INSTALLATION

A. General: Install sheet metal flashing and trim to comply with performance requirements[**, sheet metal manufacturer's written installation instructions,**] and cited sheet metal standard. Provide concealed fasteners where possible, and set units true to line, levels, and slopes. Install work with laps, joints, and seams that are permanently watertight and weather resistant.

B. Copings: Anchor to resist uplift and outward forces according to recommendations in cited sheet metal standard unless otherwise indicated.

C. Pipe or Post Counterflashing: Install counterflashing umbrella with close-fitting collar with top edge flared for elastomeric sealant, extending minimum of 4 inches (100 mm) over base flashing. Install stainless-steel draw band and tighten.

D. 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 (100 mm) over base flashing. Lap counterflashing joints minimum of 4 inches (100 mm).

E. Roof-Penetration Flashing: Coordinate installation of roof-penetration flashing with installation of roofing and other items penetrating roof. Seal with [**elastomeric**] [**butyl**] sealant and clamp flashing to pipes that penetrate roof.

3.5 WALL FLASHING INSTALLATION

A. General: Install sheet metal wall flashing to intercept and exclude penetrating moisture according to cited sheet metal standard unless otherwise indicated. Coordinate installation of wall flashing with installation of wall-opening components such as windows, doors, and louvers.

3.6 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.

C. Clean off excess sealants.

D. 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 095500 – WOOD FLOORING RESTORATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS:

A. Drawings and general provisions of Contract, including Division 01 General Requirements apply to this Specification.

1.2. SCOPE:

A. Removal of exterior finish systems at areas of wood restoration or repair
B. Installation of wood repair compound materials
C. Sanding, staining and refinishing of existing flooring.

1.3 QUALITY ASSURANCE:

A. Material supplier shall be a firm established in the industry.

B. Flooring contractor shall be a company with a minimum of three (3) years continuous experience in the athletic flooring field. A list of at least three completed projects of similar magnitude and complexity where this work has been performed shall be submitted all with submittals/proposals. For each completed project owner references including contact information of a person with direct knowledge of the work shall be included.

Manufacturers wishing to gain prior approval shall request, in writing, the owner's qualification criteria.

1.4 SUBMITTALS:

A. Submit three copies of manufacturer's product data.

B. Maintenance Literature: Three copies of MFMA Care and Maintenance of wood floors.

D. Certification: Manufacturer shall provide certification that all materials meet grade, quality and treatment if applicable.

1.5 DELIVERY, STORAGE AND HANDLING:

Materials shall not be delivered to the jobsite until all masonry, painting, plastering, tile work, work is complete. Where other trades are involved, all overhead mechanical work, lighting, backstops, and scoreboards shall be installed. Room temperature shall be 55-80 degrees and a consistent relative humidity maintained.

1.6 JOB CONDITIONS/SEQUENCE:

A. Do not commence work until requirements listed in the previous paragraph are obtained.

B. Permanent heat, light, and ventilation shall be operating and maintained during and following installation.

PART 2 - PRODUCTS

2.1 MANUFACTURERS: The following manufacturers' products have been used to establish minimum standards for materials, workmanship and function:

1. Pre stain sealer Minwax or approved equal.
2. H&C - Aqua-Pro Pro Coat Acrylic Urethane Wood finish
3. Clear protect 2-part Polyurethane Clear Coating
4. Fiddes USA – Premier HPX Floor Water Based Polyurethane
5. Advantage top Notch satin 2-component Water Borne Wood Floor Finish

2.2 Equal products from other manufacturers may be used in the work provided such products have been approved, by the Architect of record, not less than ten (10) days prior to scheduled bid opening.

2.3 Materials:

A. SEALER/CONDITIONER: Acrylic Water-Based Urethanes
B. FLOOR STAIN: Water based stained compatible with floor finish
C. FLOOR FINISH: Water-Based Urethanes

1) Physical Characteristics:
2) Gloss Level: Satin
3) Solids: 33 +/- 2%
4) VOC: Does not exceed 300 grams per liter (3.8 pounds per gallon)

PART 3 - EXECUTION

3.1 FLOOR INSPECTION:

A. Inspect existing subfloor floor for proper dryness and tolerance and report any discrepancies to the owner's representative in writing. It is the intent of the owner to make necessary repairs where deficient materials are discovered. Any floor repair will be approved by the owner's representative prior to performance of the work. Additional cost associated with this floor repair shall be addressed with the flooring contractor via a Change Order using "unit cost" provided on the original bid form proposal.

B. All floor repairs must be performed and complete prior to the refinishing of the maple flooring.

3.2 REFINISHING - Make sure floor is free of moisture.

A.
I. Scrape and hand-sand corners and other areas not reached by machine.
J. Clean floor to remove all dust and debris prior to sealing wood. Floor shall be smooth and free of shiners.

3.3 **Removal of Finishes:**

1. **Sweep floors clean.**
2. **Strip all wood surface to bare wood, taking care not to damage sound wood and profiles by the application of stripping paste or by the use of a heat gun or plate.**
3. **Remove all tape and gum with a putty knife or scraper**
4. **Sand with heavy, power driven type sander. Use dust accumulator on machine.**
5. **Sand with No. 40 or 36 grit sandpaper if boards are uneven heights. First pass shall be on a diagonal angle to the direction of the floor.**
6. **Make sure floor is sanded smooth and level before sanding with medium grit (50 or 60 grit) sandpaper. This cut and all subsequent cuts shall be sanded in the direction of the grain of the floor.**
7. **Sand edges with No. 60 or 80 grit spinner paper.**
8. **Sand entire floor with No. 80 grit sandpaper.**
9. **Disk sand entire floor with No. 100 disk paper.**
10. **Repair or replace all defective work at no additional cost to the owner.**
11. **Remove stripper and finishes as directed by manufacturer.**
12. **Dispose of debris in accordance with approved methods.**
13. **Wash all surfaces with recommended neutralizing agents to remove any foreign particle, dust and chemical**
14. **Sand bare wood to remove all loose fibers, paint, compounds. Remove all sawdust and dirt.**

3.4 Wood Floor Repair; Preservation and Sealing of seams and joints. Repair of wood checking" due to wear.

1. **Remove all decayed soft and dmaged wood, to sound bright unaffected material and replace with in-kind.**
2. **Check area of removal to determine the complete elimination of decayed material. The remaining wood should be even color without discoloration.**
3. **Pre-treat bare and sanded wood thoroughly with low viscosity epoxy coupling/bonding agent.**
4. **Allow coupling agent to penetrate wood surface for a minimum of 10 minutes and maximum of 30 minutes, or as recommended by the manufacturer. Avoid applying in direct sunlight**
5. **Remove any excess bonding agent with absorbing paper 8. Apply epoxy repair compound over epoxy bonding agent while still tacky.**
6. **Epoxy compound shall have optimal contact with wood**
7. **Fill joints full, even and smooth in one application**
8. **Allow full cure time as specified by manufacturer before application of paint or varnish.**
9. **13. After curing, sand surface even and smooth. Transitions and irregularities between wood and epoxy shall not be visible after standing**

FINISHING:

A. Apply two coats of floor sealer.

C. Apply First Coat of Floor Finish with a light weight T-bar applicator going with the grain. Do Not Puddle Finish

H. Apply Second Coat of Floor Finish (Arena 300) with lightweight T-bar applicator going with the grain. Do Not Puddle finish.

I. Let Floor dry approximately 2 hours to tack free. Then allow at least 4 hours but not more than 16 hours after tack free before recoating

J. Apply Third & Final Coat of Floor Finish (Arena 300).

K. Close doors and windows, turn off vent fans and Air Conditioning to avoid excess and direct air while coating.

3.4 PERIMETER MOLDING:

A. Install wood base (where missing) at all walls with adhesive.

3.5 CLEAN UP:

A. Remove all sanding dust from job site.

B. Clean and dust off doors and base trim before finish coats are applied.

END OF SECTION

TO: GRC Architects; cross@architects-gca.com

FROM: Southland Contracting, Inc.

REFERENCE: Fort Coombs Armory & Convention Center Renovations – Phase II; GRC PROJECT #: 24324

RFI #2

Below are the questions for this RFI which are all specific to the roofing scope of the project as well as an approval request for an approved alternate manufacturer for roofing material –

1. Sheet Metal Flashing and Trim (Flashing, Coping, etc.) – Specification Section 076200 "Sheet Metal Flashing and Trim", referenced in Roofing Specification does not appear in Specification Manual. Please provide. GRC: REFER TO SPEC SECTION 075416, ADDENDA 1
2. Shingle Roof Area, Rake Wall Flashing – Detail provided for Rake Wall Flashing on shingle roof is 3: A1.3. This Detail is the PVC Wall Flashing Detail. Please provide Rake Wall Flashing Detail for Shingle Roof Area. GRC: REFER TO ADDENDA 1 FOR CLARIFICATION
3. Shingle Roof Area, Wall Cap Flashing – Demo Plan (D1.3) East Wall: Existing Alum. Cap Flashing to Remain – Please Confirm. North Wall (Shingle Area and Low Slope Area): Existing Cap Flashing to Remain – Please Confirm. South Wall (Shingle Roof Area and Low Slope Roof Area) – Demo Cap Flashing, Use New – Please Confirm and Provide Cap Flashing Detail including Metal Type/Thickness, as well as wall width. GRC: REFER TO ADDENDA 1 FOR CLARIFICATION
4. Clarification: Demo Plan D1.3 states Existing Low Slope Roofing Membrane to Remain, East Wall and Center West Wall (Shingle Roof/Low Slope Roof Intersection). Detail for this Condition is 2: A3.1. Is this Low Slope Roofing Membrane to remain in gutter, and are the metal flashings shown on exterior of wall existing and to also remain in place? GRC: REFER TO ADDENDA 1 FOR CLARIFICATION

Sincerely,

Jason A. Bullock, V.P.

Southland Contracting, Inc

jason@southlandcontracting.com

Connor

To: All Bidders
Subject: RE: Ft Coombs Project - Apalachicola

Addenda item A1.9.0 Shaffield RFI

From: Don Horne <dhorne@shaffieldbuilding.com>
Sent: Thursday, May 29, 2025 9:50 AM
To: Connor <CRoss@architects-gca.com>; John Jackson <jjackson@architects-gca.com>
Subject: Ft Coombs Project - Apalachicola

Good Morning John and Connor,

We have the following questions regarding the Ft Coombs Bid:

1. Drawing D1.1 detail reference D6 at the wood windows ... having revied the site and exiting conditions, it looks like there are wood windows that are in need of repair but are not designated D6.
   Are they to be included for rebuilding or just the ones designated D6 ?

GRC: The scope of windows is correctly shown on D1.1 and Sheets A3.2 and A3.3. Sheet D1.2 note D6 at tower is incorrect and added to Addenda 1

2. A1.1 and M1.0 ... wood bench and duct work ... having removed the access panel in the bench, it looks like the ductwork will not fit in the bench without reconstructing the wood support framing. Please confirm this is the intent ?

GRC: The intent is to modify the bench as needed to install the daywork. This modification is a means and methods issue and not specifically addressed in the drawings.

3. A2.1, D2.1 and LS 1.1, regarding the Meeting room ... the photograph on LS 1.1 shows what appears to be acoustic ceiling. A2.1 shows a different ceiling (maybe newer photograph ?) Please confirm ?

GRC: There is not ceiling scope in the meeting room. The ceiling was replaced in the last project. The photo with the APC ceiling is old.

4. Where the new door is installed from the corridor to the meeting room, what is the detail required at the flooring infill in the doorway where the existing wall is to be removed ?

GRC: The flooring to be patched where the old wall is deleted. Install the patch as you would a threshold.

5. One of our wood window carpentry subcontractors has suggested that cypress , in his opinion, is not the best wood for rebuilding the window sashes. Is the requirement firm or will you entertain other wood products ?

GRC: We are open to review alternative wood species if it is moisture and insect resistant.

6. There are existing round wood louvers on the exterior of the building that appear to need repairs. These louvers do not appear to be in the drawings. Are they excluded or should they be included for rebuilding ?

GRC: The round louvers for now are to remain. We can address replacing them, if require, once work begins.

7. The balcony wood flooring is in much worse shape than the first floor. To what extent should the damaged or missing wood be replaced ? Will the balcony remain off limits to the public, after this phase II restoration ?

GRC: The mezzanine is closed to pubic due to insuficnet exiting. As such, there is no floorings scope in this project.

Thank you in advance for your reply,

Don Horne, LEED AP BD+C

Shaffield Building Specialties, Inc.

1515-2 Henway Court
Tallahassee, Florida 32303

cell phone # 850-528-6560
email dhorne@shaffieldbuilding.com

Proud Member of

GENERAL ROOFING NOTES:

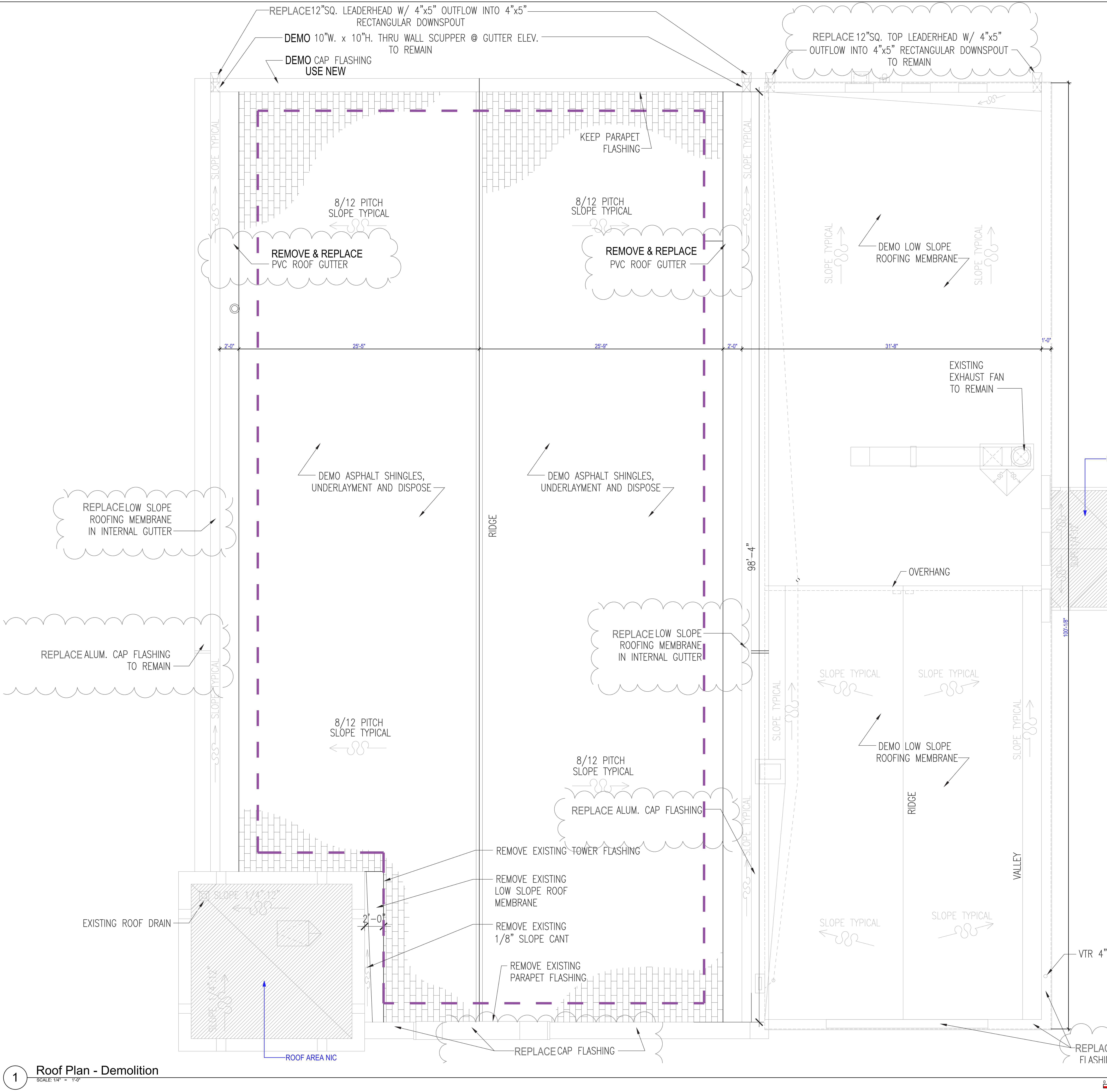
1.) DEMO ROOFING MEMBRANE AND INSTALL TEMPORARY ROOF MEMBRANE

2.) TEMP ROOF MEMBRANE SHALL BE 40 MIL SELF ADHESIVE MODIFIED BITUMIN MEMBRANE

3.) REMOVE METAL WALL FLAHSING AND PREPARE WALL FOR NEW

4.) REMOVE METAL CAP FLASHING AND INSTALL TEMP ROOF MEMBRANE

5.) DISPOSE OF ALL MATERIALS IN APPROVED DUMPING SITE



1 Roof Plan - Demolition
SCALE: 1/4" = 1'-0"

NORTH

D8 DEMOLISH EXISTING ROOF SHINGLES, REPLACE DAMAGED SHEATHING

D9 DEMOLISH EXISTING PVC GUTTER LINER, REPLACE DAMAGED SHEATHING

D10 DEMOLISH EXISTING PVC ROOFING AND INSULATION, REPLACE DAMAGED SHEATHING

Consultants:

Seal:

PHASE:	DRAWN BY:	REVIEWED BY	DATE:
50% CONSTR DOCUMENTS	MK	CR	07-08-24
100% CONSTR DOCUMENTS	MK	CR	11-1-24
CONTRACT DOCUMENTS	JE	CR	04-11-25
PERMIT DOCUMENTS			
ADDENDA 1	CR	CR	5-29-25

Fort Coombs Armory and Convention Center Renovations - Phase 2

APALACHICOLA, FL
GRC Project Number 24324

architecture
interior design
planning
gilchrist ross crowe architects

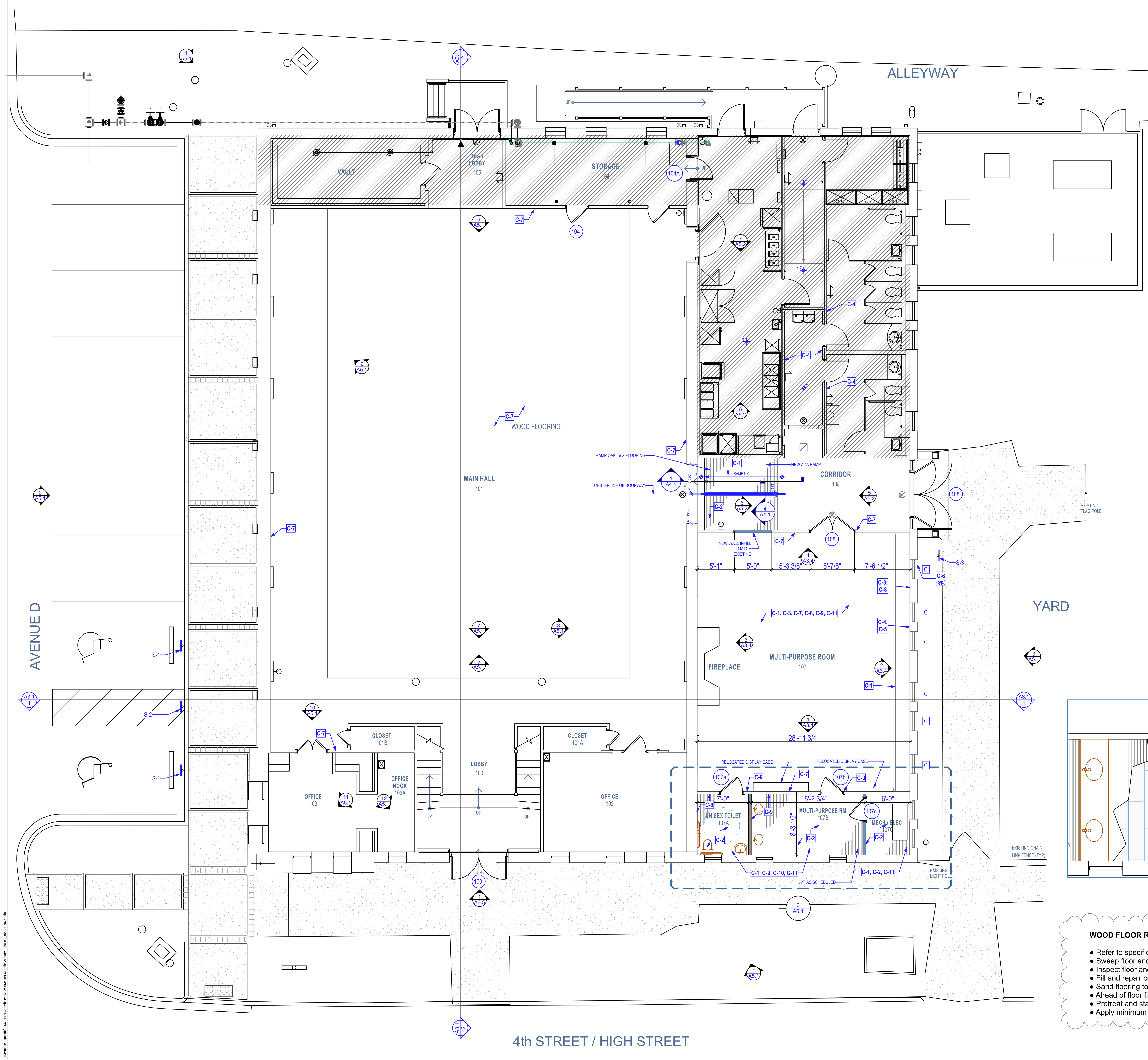
413 ALL SAINTS STREET TALLAHASSEE, FLORIDA 32301
(850) 222-8100 www.architects-gca.com

SIGNATURE

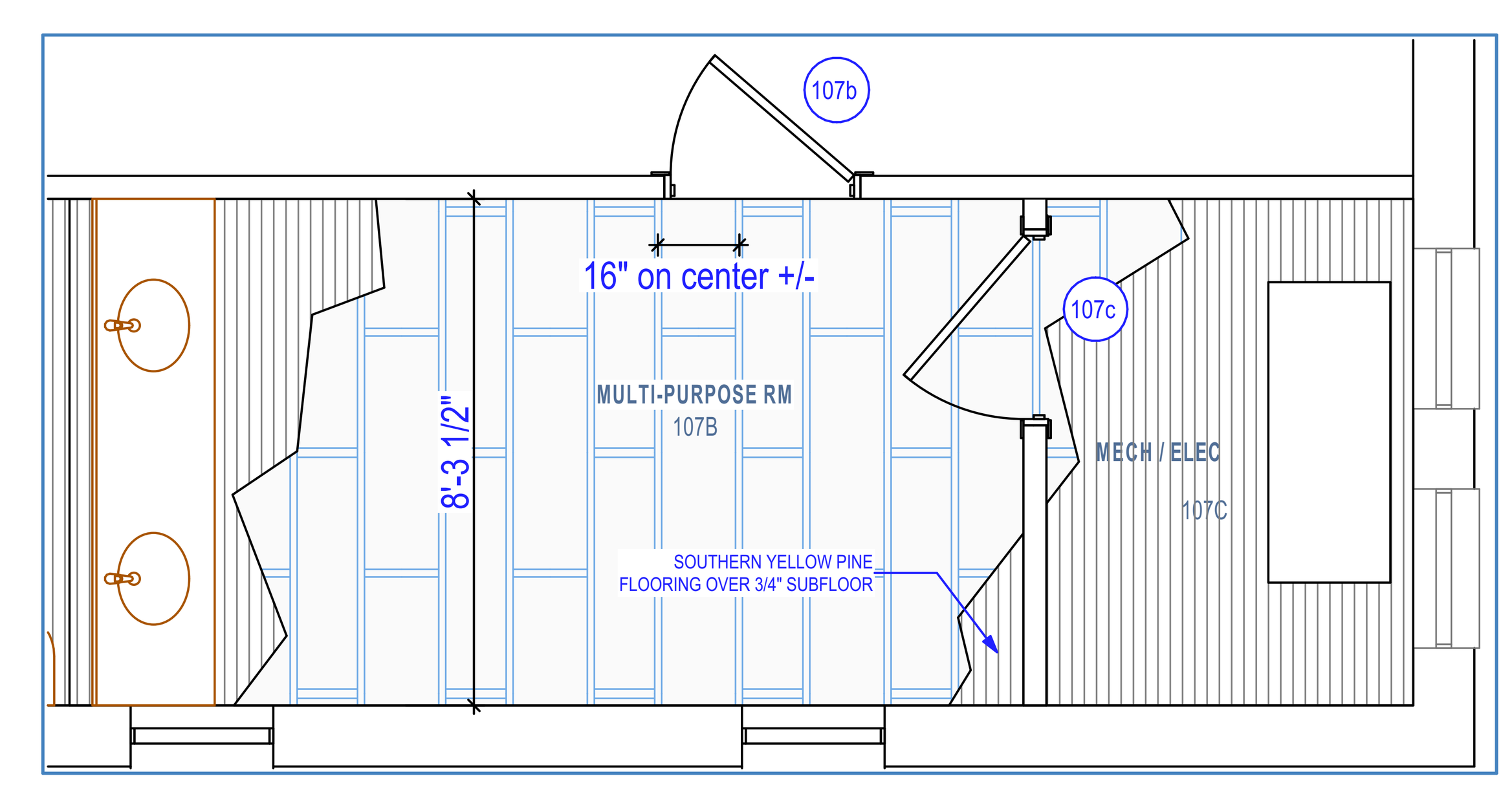
ARCHITECTURAL
DRAWING NAME
Roof Plan - Demolition

SHEET
D1.3

NOTE: PAINTER TO PAINT SPRINKLER PIPING, TYPICAL



1 First Floor Plan Renovation
SCALE: 3/16" = 1'-0"



6 Flooring / Sub-Floor Detail
SCALE: 3/8" = 1'-0"

WOOD FLOOR RESTORATION

- Refer to specification Section 095500 Wood Floor Restoration.
- Sweep floor and remove floor sealers to bare wood.
- Inspect floor and remove and replace damage flooring with similar tight grain boards.
- Fill and repair cracked boards with epoxy as specified.
- Sand flooring to consistent bare wood.
- Ahead of floor finishing, provide mockup of stained and finished floor.
- Pretreat and stain wood flooring after receiving an approved mockup.
- Apply minimum two coats of sealer as specified.

NORTH

Architectural Key Notes

C1	Modify bench seat and install HVAC duct & diffusers.
C2	Install 3/4" plywood + subfloor, insulation, and LVT
C3	Install wall insulation, geoboard, wood trim
C4	Clean and Paint existing Grey wainscot
C5	Install suspended gypboard ceiling and trim
C6	Install refurbish windows with new casings and restore sills - Paint as noted
C7	Refinish wood flooring and base
C8	Clean / seal existing STAINED WOOD wainscot, trim, stair railing, coffer ceiling
C9	Install new wood trim, Paint as noted
C10	Install new light fixtures
C11	Prep and paint walls, ceilings, and trim
C12	New self-adhered underlayment, Shingles and flashings
C13	Install KEE Gutter Liner and flashings. Extend beneath shingles
C14	New Kee Roof, Insulation and flashings

EXTERIOR SCOPE

C15	Clean building with low pressure washer, remove all loose material, patch stucco and Paint
C16	Refinish existing Doors as indicated
C17	Base Bid -Re-furbish main doors. Add Altenate replace

Consultants:

Seal:

PHASE:	DRAWN BY:	REVIEWED BY	DATE:
50% CONSTR DOCUMENTS	MK	CR	07-08-24
100% CONSTR DOCUMENTS	MK	CR	11-1-24
CONTRACT DOCUMENTS	JE	CR	04-11-25
PERMIT DOCUMENTS			
ADDENDA 1	JE		05-29-2025

Fort Coombs Armory and Convention Center Renovations - Phase 2

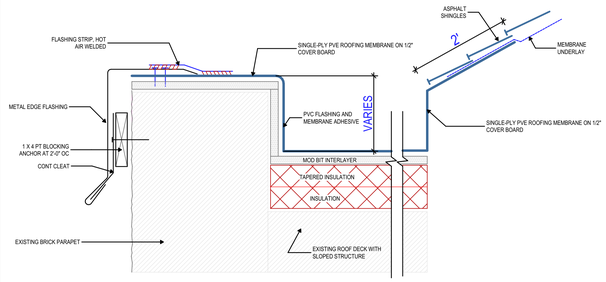
APALACHICOLA, FL
GRC Project Number 24324

architecture interior design planning
gilchrist ross crowe architects
413 ALL SAINTS STREET TALLAHASSEE, FLORIDA 32301
(850) 222-8100 www.architects-gca.com

SIGNATURE

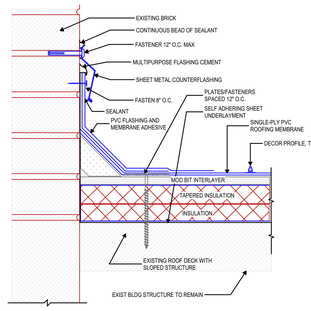
ARCHITECTURAL
DRAWING NAME
First Floor Plan - Renovation

SHEET
A1.1



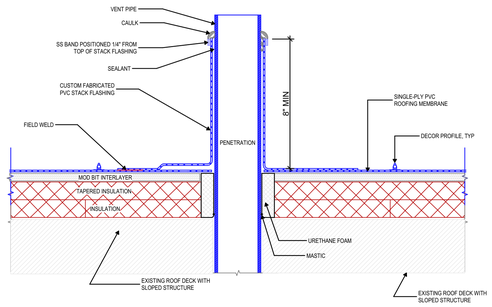
2 PVC & Metal Coping Parapet Detail

SCALE: 3" = 1'-0"



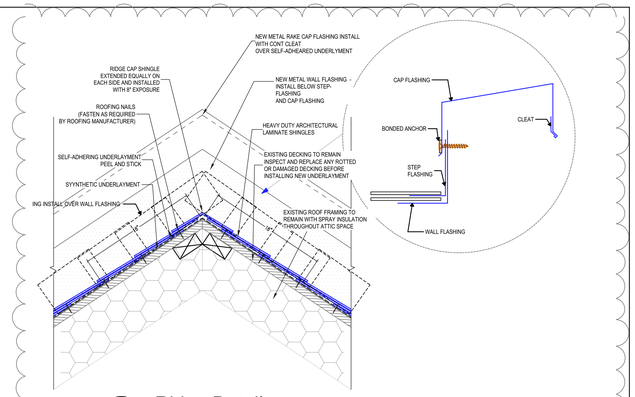
3 PVC Wall Flashing Detail

SCALE: 3" = 1'-0"



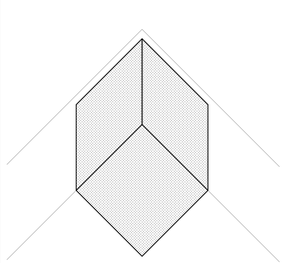
4 PVC VTR Detail

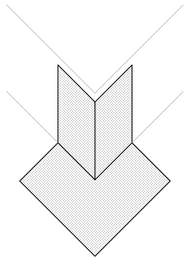
SCALE: 3" = 1'-0"



5 Ridge Detail

SCALE: 3" = 1'-0"

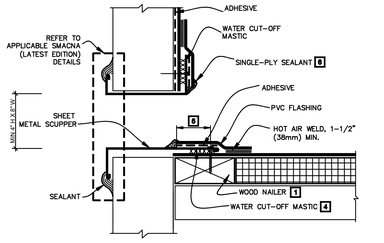




PREMOLDED PVC INSIDE CORNER **PREMOLDED PVC OUTSIDE CORNER**

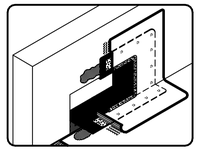
6 Typical PVC Corner Flashing

SCALE: 1:5.11



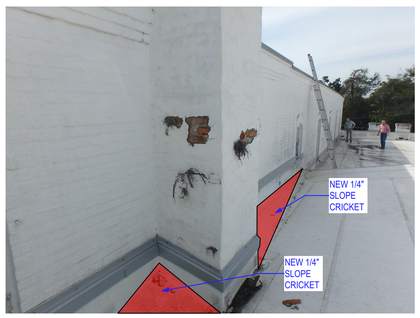
NOTES:

1. WOOD NAILERS ARE INSTALLED ONLY AT SCUPPERS TO SECURE METAL SLEEVE AND MUST EXTEND PAST THE WIDTH OF METAL SLEEVE FLANGE.
2. INSTALL WALL FLASHING PRIOR TO SCUPPER INSTALLATION.
3. METAL SCUPPER BOX MUST HAVE CONTINUOUS FLANGES WITH ROUNDED CORNERS, SOLDER ALL SCUPPER SEAMS WATER-TIGHT.
4. WATER CUT-OFF MASTIC UNDER SCUPPER FLANGE MUST BE UNDER CONSTANT COMPRESSION.
5. SCUPPER FLANGES MUST BE TOTALLY COVERED BY NON-REINFORCED PVC FLASHING WITH MINIMUM 2" (51mm) COVERAGE PAST NAIL HEAD.
6. UNIVERSAL SINGLE-PLY SEALANT IS REQUIRED AT FLASHING EDGES ON SCUPPER EDGE.



7 Typical PVC Thru Wall Scupper Detail

NOT TO SCALE



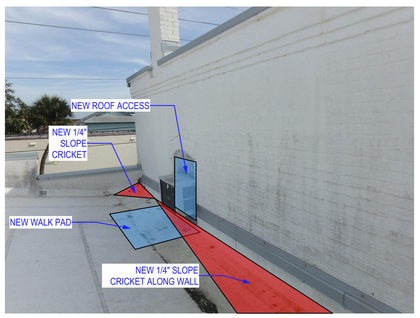
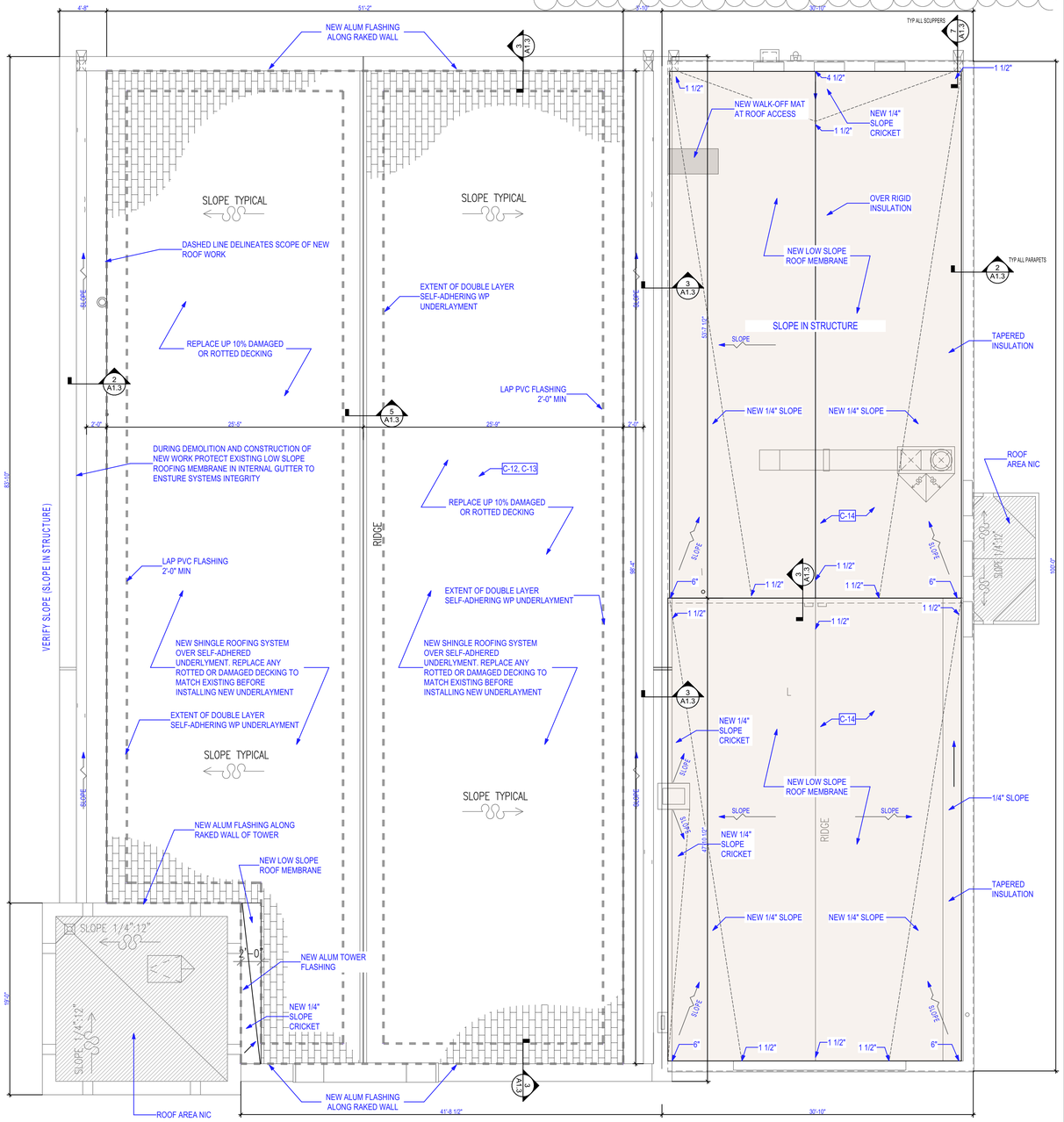


TABLE 1c: WOOD DECKS - NEW CONSTRUCTION, REROOF (TEAR-OFF) OR RECOVER
SYSTEM TYPE C-2: INDUCTION WELDED ROOF COVER

System No.	Deck (Note 1)	Insulation Layer (Note 3, Note 13)	Attachment		Roof Cover (Note 15B)	MDP (psf)
			Fasteners (Note 11)	Density		
W-6.	Min. 19/32-inch (new) or min. 15/32-inch (existing) APA rated plywood or 1-inch wood plank; 2 ft span; 8d ring shank nails, 6" o.c.	(Optional) One or more layers, any combination (Tread Safe = min. 2-inch thick insulation)	Parafast XHD and Parafast RB PVC XHD Plate or Parafast Tread Safe Plate	24 x 32-inch grid	Parasolo PVC Smooth induction welded with RhinoBond magnetic induction welding tool, per manufacturer's published instructions.	-60.0
W-7.	Min. 19/32-inch plywood over nominal No. 2 wood trusses spaced max. 24-inch o.c.; 8d ring shank nails, 3" o.c.	(Optional) One or more layers, any combination (Tread Safe = min. 2" thick insulation)	Parafast HD (min. 1-inch embedment) and Parafast RB PVC XHD Plate or Parafast Tread Safe Plate through to wood supports	9-inch o.c. along wood supports, 24-inch o.c.	Parasolo PVC Smooth or Parasolo PVC KEE Smooth induction welded using RhinoBond Installation Tool	-90.0
W-8.	Min. 19/32-inch plywood over nominal No. 2 wood trusses spaced max. 24-inch o.c.; 8d ring shank nails, 3" o.c.	One or more layers, any combination, min. 1-inch (Tread Safe = min. 2" thick insulation)	Parafast HD (min. 1.4-inch embedment) and Parafast RB PVC XHD Plate or Parafast Tread Safe Plate through to wood supports	9-inch o.c. along wood supports, 24-inch o.c.	Parasolo PVC Smooth or Parasolo PVC KEE Smooth induction welded using RhinoBond Installation Tool	-105.0

FL PRODUCT APPROVAL



1 Roof Plan - Renovation

SCALE: 3/16" = 1'-0"

NORTH

Architectural Key Notes

C1	Modify bench seat and install HVAC duct & diffusers.
C2	Install 3/4" plywood + subfloor, insulation, and LVT
C3	Install wall insulation, geoboard, wood trim
C4	Clean and Paint existing Grey wainscot
C5	Install suspended gypboard ceiling and trim
C6	Install refurbish windows with new casings and restore sills - Paint as noted
C7	Refinish wood flooring and base
C8	Clean / seal existing STAINED WOOD wainscot, trim, stair railing, coffer ceiling
C9	Install new wood trim, Paint as noted
C10	Install new light fixtures
C11	Prep and paint walls, ceilings, and trim
C12	New self-adhered underlayment, Shingles and flashings
C13	Install KEE Gutter Liner and flashings. Extend beneath shingles
C14	New Kee Roof, Insulation and flashings

EXTERIOR SCOPE

C15	Clean building with low pressure washer, remove all loose material, patch stucco and Paint
C16	Refinish existing Doors as indicated Base Bid -Re-furbish main doors. Add Altenate
C17	replace

Consultants:

Seal:

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100% CONSTR DOCUMENTS	MK	CR	11-1-24
CONTRACT DOCUMENTS	JE	CR	04-11-25
PERMIT DOCUMENTS			
ADDENDA 1	CR	CR	5-29-25

Fort Coombs Armory and Convention Center
Renovations - Phase 2

APALACHICOLA, FL
GRC Project Number 24324

architecture interior design planning
gilchrist ross crowe architects
SIGNATURE
413 ALL SAINTS STREET TALLAHASSEE, FLORIDA 32301
(850) 222-8100 www.architects-gca.com

ARCHITECTURAL DRAWING NAME
Roof Plan - Renovation

SHEET
A1.3

Wednesday, May 28, 2025
I:\Projects - Specific\24324 Fort Coombs Phase 2\BIM\Fort Coombs Armory - Phase 2_R25.2.rvt

STRUCTURAL NOTES

GENERAL NOTES

GN-1 The governing Code for this Project is the Florida Building Code, 8th Edition (2023). This Code prescribes which edition of each referenced standard applies to this Project.

GN-2 To the best of our knowledge, the Structural Drawings and Specifications comply with the applicable requirements of the governing Building Code.

GN-3 Construction is to comply with the requirements of the governing Building Code and all other applicable Federal, State, and Local Codes, Standards, Regulations and Laws.

GENERAL NOTES - CONTRACTOR REQUIREMENTS

GN-4 Contractor refers to the General Contractor, Construction Manager, or the organization that is assigned to have overall responsibility and supervision of the Project.

GN-5 The Contractor shall be solely responsible for, and have control over, the means, methods, supervision, techniques, sequences, procedures of construction, quality, and correctness of the work. The Contractor is solely responsible for jobsite safety including all OSHA requirements.

GN-6 The Contractor shall coordinate all Contract Documents with field conditions and dimensions and Project Shop Drawings prior to construction. Do not scale drawings; use only printed dimensions. Report any discrepancies in writing to the Architect prior to proceeding with work. Do not change size or location of structural members without written instructions from the Structural Engineer of Record.

GN-7 Contractors who discover discrepancies, omissions or variations in the Contract Documents during bidding shall immediately notify the Architect. The Architect will resolve the condition and issue a written clarification.

GN-8 The Contractor shall protect adjacent property, his own work and the public from harm. The Contractor is advised to document the condition of adjacent property with a photographic survey and other documentation, including crack monitoring, prior to and during construction.

GENERAL NOTES - DRAWINGS

GN-9 The Structural drawings shall be used in conjunction with the architectural drawings and all other drawings and documents, including shop drawings prepared by equipment suppliers and delegated engineers.

GN-10 Openings shown on Structural Drawings are only pictorial. See the Architectural for complete information such as slab depressions, slopes, curbs, finishes, and opening locations in structural members as required by MEP systems and architectural elements.

GN-11 See Architectural drawings for waterproofing details and requirements.

GENERAL NOTES - DESIGN LOADS

GN-12 Design Superimposed Loads:

OCCUPANCY	LIVE LOAD	DEAD LOAD	CONCENTRATED LOAD
Roof	20 psf	10 psf	

GN-13 Design Rain Loads: N/A

GN-14 Design Wind Loads:

Governing Code	FBC 8th Edition (2023) / ASCE 7-22
Building Risk Category	III
Ultimate Wind Speed	Vult = 142 mph
Allowable Stress Design Wind Speed	Vasd = 110 mph
Mean Roof Height	33 feet
Directionality Factor	Kd = 0.85
Gust-Effect Factor	G = 0.85
Exposure	B
Internal Pressure Coefficient	GCpi = +/-0.18
Project is not in the wind-borne debris region.	

SHOP DRAWINGS AND OTHER SUBMITTALS

SD-1 Refer to the applicable Plan Specifications or Project Specifications for technical content requirements. Incomplete submittals will be returned without review.

SD-2 Submit specific components, such as columns, footings, etc., in a single package. Submit similar floors together.

SD-3 On first submittal, clearly flag and cloud all differences from the Contract Documents. On resubmittals, flag and cloud all changes and additions to previous submittal; only clouded items will be reviewed.

SD-4 Submittals for special structural, load-bearing items that are required by Codes or Standards to resist forces must be prepared by, or under the direct supervision of, a Delegated Engineer. Examples include Structural Cold-Formed Steel Framing, and Exterior Enclosure Systems.

SD-5 A Delegated Engineer is defined as a Florida Licensed Engineer who specializes in and undertakes the design of Structural Components or Structural Systems included in a specific submittal prepared for this Project and is an employee or officer of, or consultant to, the Contractor, Subcontractor, Fabricator, or Erector responsible for the submittal. The Delegated Engineer shall sign, seal and date the submittal, including calculations and drawings. See Plan Specifications or Project Specifications for more specific criteria.

SD-6 The Trade Contractor is responsible for confirming and correlating dimensions at the job sites, for tolerances, clearances, quantities, fabrication processes and techniques of construction, coordination of the work with other trades and full compliance with the Contract Documents.

SD-7 The Contractor shall review and approve submittals, including substitution requests and shop drawings, and shall sign and date each drawing prior to submitting to the Architect. This approval is to confirm that the submittal is complete, complies with the submittal requirements and is coordinated with field dimensions, other trades, erection sequencing and constructability. Submittals not reviewed by the Contractor will be returned without review.

SD-8 Bliss & Nyitray (BNI) reviews submittals to confirm that the submittal is in general conformance with the design concept presented in the Contract Documents. Quantities and dimensions are not checked. Notations on submittals do not authorize changes to the contract sum. Checking of the submittal by BNI shall not relieve the Contractor of responsibility for deviations from the Contract Documents and from errors or omissions in the submittal.

SD-9 BNI's review of Delegated Engineer submittals is limited to verifying that the specified structural submittal has been furnished, signed and sealed by the Delegated Engineer and that the Delegated Engineer has understood the design intent and used the specified structural criteria. No detailed check of calculations is made. The Delegated Engineer is solely responsible for his/her design, including but not limited to the accuracy of his/her calculations and compliance with the applicable codes and standards.

BLISS & NYITRAY, INC.
STRUCTURAL ENGINEERS
Certificate of Authorization No. 674
www.bnieengineers.com
BNI Project No. 24T19

CHRISTOPHER S. CHILDERS LICENSE NO. 50812 STATE OF FLORIDA PROFESSIONAL ENGINEER

This item has been digitally signed and sealed by Christopher S. Childers, PE on 5/28/2025. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

Christopher S. Childers, P.E. Fla. Reg. No. 50812

TO THE BEST OF MY KNOWLEDGE, THE PLANS AND SPECIFICATIONS COMPLY WITH THE APPLICABLE MINIMUM BUILDING CODES.

Design Consultants:

Structural
Bliss & Nyitray Inc
227 N. Bronough Street, Ste. 7300
Tallahassee, FL 32301
(850) 222-4454

PHASE:	DRAWN BY:	REVIEWED BY:	DATE
50% CONSTR DOCUMENTS			
100% CONSTR DOCUMENTS	TLC	CSC	5/29/2025
CONTRACT DOCUMENTS			
PERMIT DOCUMENTS			
REV 1 ADDENDUM NO1			5/29/2025
REV			
REV			

Fort Coombs Armory and Convention Center Renovations - Phase 2

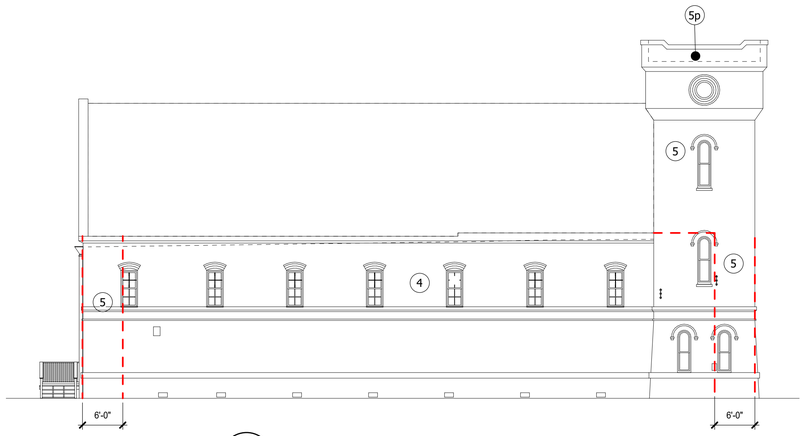
APALACHICOLA, FL
GRC Project Number 34324

architecture
interior design
planning
gilchrist ross crowe
architects
SIGNATURE

413 ALL SAINTS STREET TALLAHASSEE, FLORIDA 32301
(850) 222-8100 FAX (850) 681-9149 www.architects-gca.com

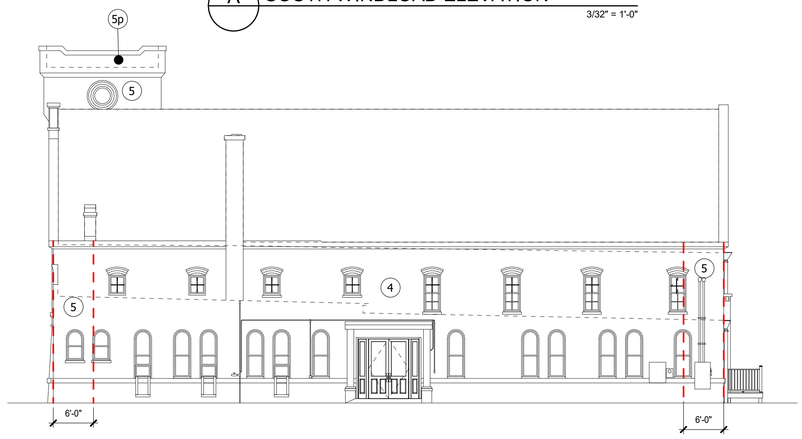
DRAWING NAME
STRUCTURAL NOTES

SHEET
S101
1



A SOUTH WINDLOAD ELEVATION

3/32" = 1'-0"



B NORTH WINDLOAD ELEVATION

3/32" = 1'-0"

WIND PRESSURE NOTES

1. Numbers on this sheet are the components and cladding gross allowable pressures perpendicular to the surface (in P.S.F.) based on tributary area. Multiply service pressures by 1.67 to obtain W pressures for factored loads using strength design (ASCE 7-22 2.3).
2. Pressures are derived from ASCE 7-22.
3. Directionality factor Kd = .85
4. Negative pressures act away from surface, positive pressures act toward surface.
5. Dimensions shown on the skewed or radial elevations are measured parallel to surface.

WIND PRESSURE LEGEND

(#) Denotes wind pressure zone

Denotes wind load separation

SLOPED ROOF WIND PRESSURES (PSF)

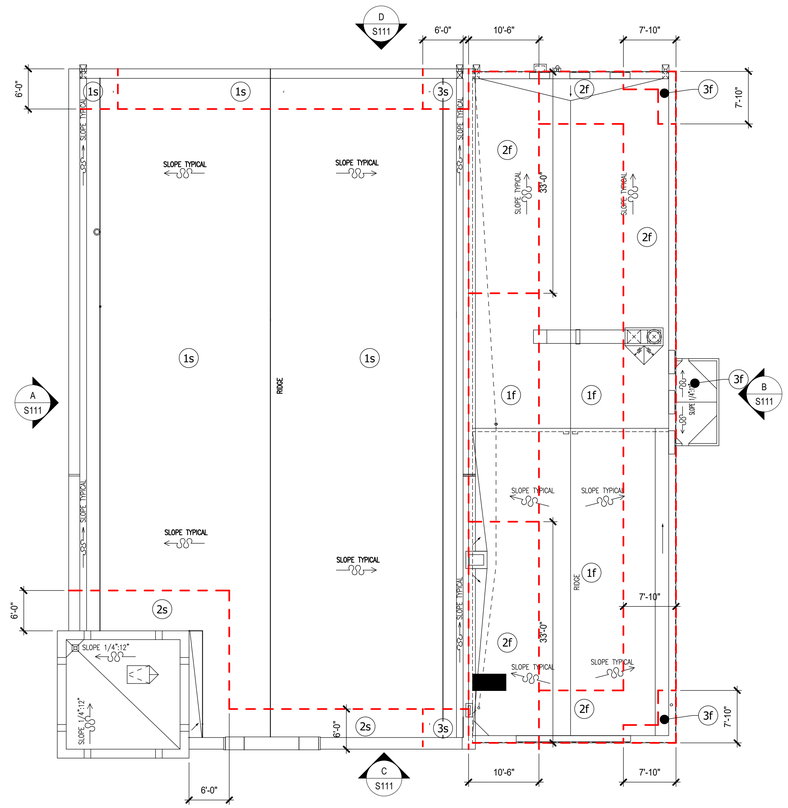
ZONES	TRIBUTARY AREA (SF)			
	10	100	500	1000
1f	-50/+13	-39/+10	-31/+10	-31/+10
2f	-65/+13	-51/+10	-42/+10	-42/+10
3f	-89/+13	-61/+10	-42/+10	-42/+10

FLAT ROOF WIND PRESSURES (PSF)

ZONES	TRIBUTARY AREA (SF)			
	10	100	200	500
1f	-44/+24	-22/+17	-22/+15	-22/+15
2f	-48/+24	-31/+17	-26/+15	-26/+15
3f	-59/+24	-34/+17	-26/+15	-26/+15

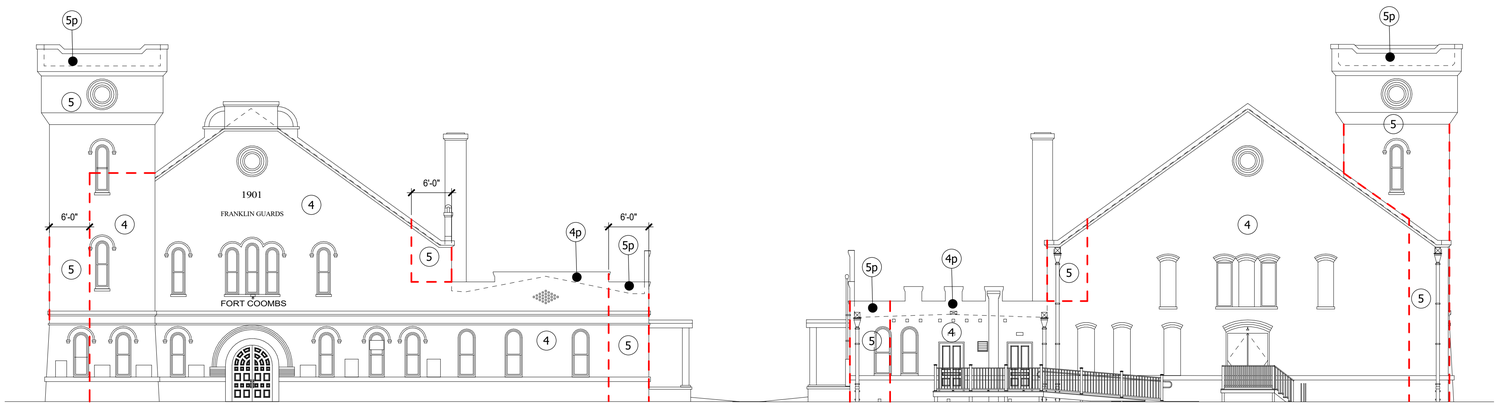
WALL WIND PRESSURES (PSF)

ZONE	TRIBUTARY AREA (SF)			
	10	100	200	500
4	-28/+26	-24/+22	-23/+21	-22/+19
5	-35/+26	-27/+22	-25/+21	-22/+19



ROOF WINDLOAD PLAN

3/32" = 1'-0"



C EAST WINDLOAD ELEVATION

3/32" = 1'-0"

D WEST WINDLOAD ELEVATION

3/32" = 1'-0"

BLISS & NYITRAY, INC.
STRUCTURAL ENGINEERS
Certificate of Authorization No. 674
www.bnieengineers.com
BNI Project No. 24T19

CHRISTOPHER S. CHILDERS LICENSE NO. 50812 STATE OF FLORIDA PROFESSIONAL ENGINEER

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REV 1 ADDENDUM NO1			5/29/2025
REV			
REV			

Fort Coombs Armory and Convention Center Renovations - Phase 2

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architecture
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(850) 222-8100 FAX (850) 681-9149 www.architects-gca.com

SIGNATURE

DRAWING NAME
ROOF WIND DIAGRAM

SHEET
S111
1

STRUCTURAL NOTES

GENERAL NOTES

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GENERAL NOTES - DESIGN LOADS

GN-12 Design Superimposed Loads:

OCCUPANCY	LIVE LOAD	DEAD LOAD	CONCENTRATED LOAD
Roof	20 psf	10 psf	

GN-13 Design Rain Loads: N/A

GN-14 Design Wind Loads:

Governing Code	FBC 8th Edition (2023) / ASCE 7-22
Building Risk Category	III
Ultimate Wind Speed	Vult = 142 mph
Allowable Stress Design Wind Speed	Vasd = 110 mph
Mean Roof Height	33 feet
Directionality Factor	Kd = 0.85
Gust-Effect Factor	G = 0.85
Exposure	B
Internal Pressure Coefficient	GCpi = +/-0.18
Project is not in the wind-borne debris region.	

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SD-7 The Contractor shall review and approve submittals, including substitution requests and shop drawings, and shall sign and date each drawing prior to submitting to the Architect. This approval is to confirm that the submittal is complete, complies with the submittal requirements and is coordinated with field dimensions, other trades, erection sequencing and constructability. Submittals not reviewed by the Contractor will be returned without review.

SD-8 Bliss & Nyitray (BNI) reviews submittals to confirm that the submittal is in general conformance with the design concept presented in the Contract Documents. Quantities and dimensions are not checked. Notations on submittals do not authorize changes to the contract sum. Checking of the submittal by BNI shall not relieve the Contractor of responsibility for deviations from the Contract Documents and from errors or omissions in the submittal.

SD-9 BNI's review of Delegated Engineer submittals is limited to verifying that the specified structural submittal has been furnished, signed and sealed by the Delegated Engineer and that the Delegated Engineer has understood the design intent and used the specified structural criteria. No detailed check of calculations is made. The Delegated Engineer is solely responsible for his/her design, including but not limited to the accuracy of his/her calculations and compliance with the applicable codes and standards.

BLISS & NYITRAY, INC.
STRUCTURAL ENGINEERS
Certificate of Authorization No. 674
www.bnieengineers.com
BNI Project No. 24T19

Christopher S. Childers, P.E. Fla. Reg. No. 50812

TO THE BEST OF MY KNOWLEDGE, THE PLANS AND SPECIFICATIONS COMPLY WITH THE APPLICABLE MINIMUM BUILDING CODES.

Design Consultants:

Structural
Bliss & Nyitray Inc
227 N. Bronough Street, Ste. 7300
Tallahassee, FL 32301
(850) 222-4454

PHASE:	DRAWN BY:	REVIEWED BY:	DATE
50% CONSTR DOCUMENTS			
100% CONSTR DOCUMENTS	TLC	CSC	5/29/2025
CONTRACT DOCUMENTS			
PERMIT DOCUMENTS			
REV 1 ADDENDUM NO1			5/29/2025
REV			
REV			

Fort Coombs Armory and Convention Center Renovations - Phase 2

APALACHICOLA, FL
GRC Project Number 34324

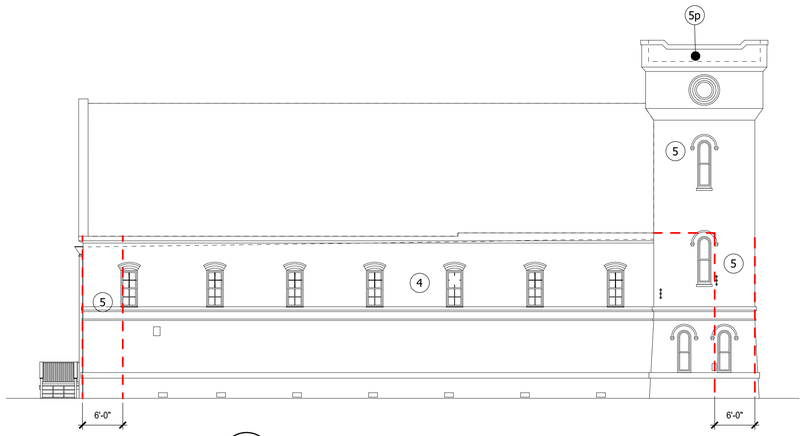
architecture
interior design
planning
gilchrist ross crowe
architects

413 ALL SAINTS STREET TALLAHASSEE, FLORIDA 32301
(850) 222-8100 FAX (850) 681-9149 www.architects-gca.com

SIGNATURE

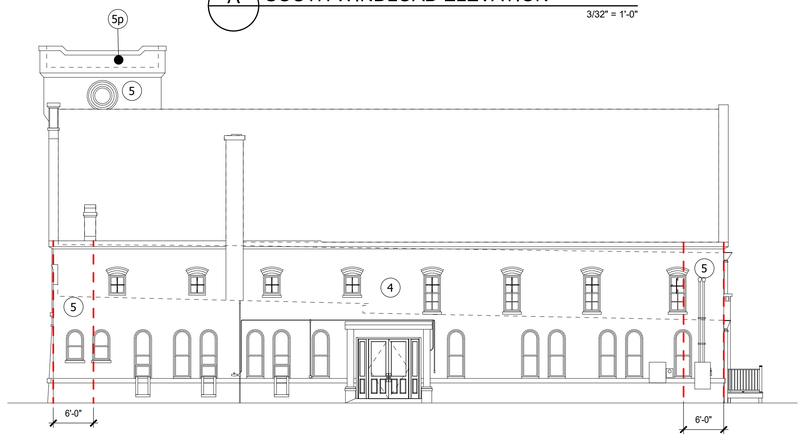
DRAWING NAME
STRUCTURAL NOTES

SHEET
S101
1



A SOUTH WINDLOAD ELEVATION

3/32" = 1'-0"



B NORTH WINDLOAD ELEVATION

3/32" = 1'-0"

WIND PRESSURE NOTES

1. Numbers on this sheet are the components and cladding gross allowable pressures perpendicular to the surface (in P.S.F.) based on tributary area. Multiply service pressures by 1.67 to obtain W pressures for factored loads using strength design (ASCE 7-22 2.3).
2. Pressures are derived from ASCE 7-22.
3. Directionality factor Kd = .85
4. Negative pressures act away from surface, positive pressures act toward surface.
5. Dimensions shown on the skewed or radial elevations are measured parallel to surface.

WIND PRESSURE LEGEND

(#) Denotes wind pressure zone

Denotes wind load separation

SLOPED ROOF WIND PRESSURES (PSF)

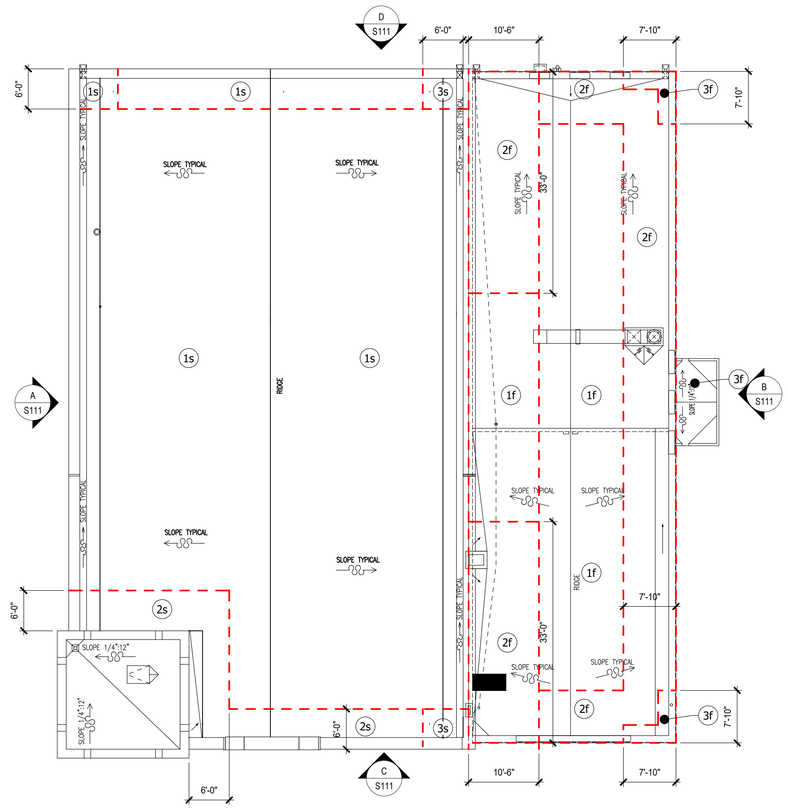
ZONES	TRIBUTARY AREA (SF)			
	10	100	500	1000
1f	-50/+13	-39/+10	-31/+10	-31/+10
2f	-65/+13	-51/+10	-42/+10	-42/+10
3f	-89/+13	-61/+10	-42/+10	-42/+10

FLAT ROOF WIND PRESSURES (PSF)

ZONES	TRIBUTARY AREA (SF)			
	10	100	200	500
1f	-44/+24	-22/+17	-22/+15	-22/+15
2f	-48/+24	-31/+17	-26/+15	-26/+15
3f	-59/+24	-34/+17	-26/+15	-26/+15

WALL WIND PRESSURES (PSF)

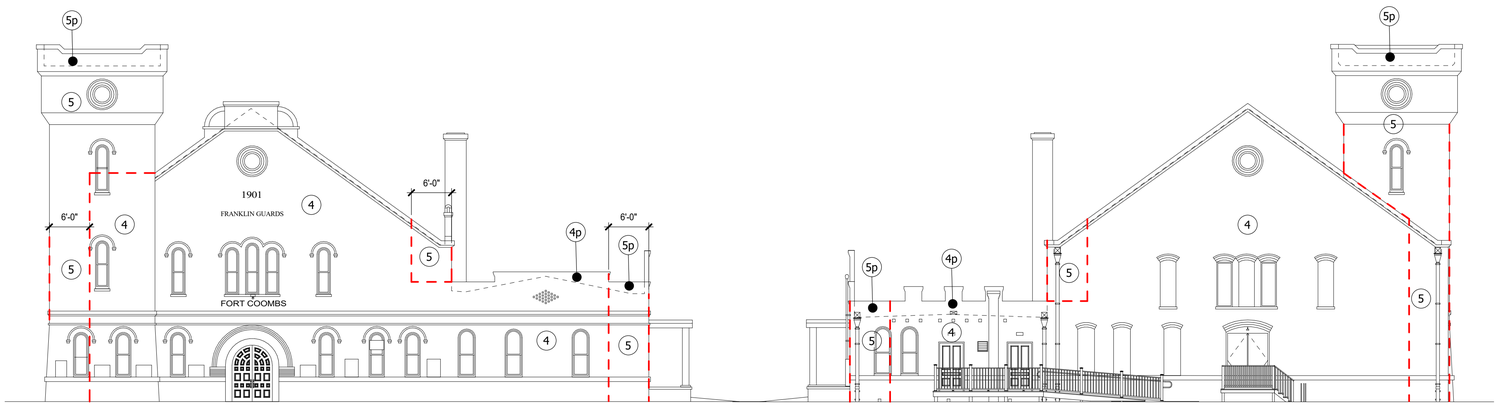
ZONE	TRIBUTARY AREA (SF)			
	10	100	200	500
4	-28/+26	-24/+22	-23/+21	-22/+19
5	-35/+26	-27/+22	-25/+21	-22/+19



ROOF WINDLOAD PLAN

3/32" = 1'-0"

NORTH



C EAST WINDLOAD ELEVATION

3/32" = 1'-0"

D WEST WINDLOAD ELEVATION

3/32" = 1'-0"

BLISS & NYITRAY, INC.
STRUCTURAL ENGINEERS
Certificate of Authorization No. 674
www.bnieengineers.com
BNI Project No. 24T19

Christopher S. Childers, P.E. Fla. Reg. No. 50812

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CONTRACT DOCUMENTS			
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REV			
REV			

Fort Coombs Armory and Convention Center Renovations - Phase 2

APALACHICOLA, FL
GRC Project Number 34324

architecture
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413 ALL SAINTS STREET TALLAHASSEE, FLORIDA 32301
(850) 222-8100 FAX (850) 681-9149 www.architects-gca.com

SIGNATURE

DRAWING NAME
ROOF WIND DIAGRAM

SHEET
S111
1

100% COMPLETE CONTRACT DOCUMENTS

FORT COOMBS ARMORY RENOVATIONS PHASE II

PREPARED BY

GILCHRIST ROSS CROWE ARCHITECTS

GRC PROJECT NO. 24324

APRIL 11, 2025

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SECTION 001116 - INVITATION TO BID

Proposals are requested from **QUALIFIED GENERAL CONTRACTORS** by Franklin County Board of County Commissioners, hereinafter referred to as OWNER, for the construction of:

Ft. Coombs Armory and Convention Center Renovations – Phase 2

Sealed Bid proposals will be received by Franklin County, Apalachicola, Florida until 4:30 p.m. EST on **June 3, 2025** at the Clerk of Courts Office, Franklin County Courthouse, 33 Market Street, Suite 203, Apalachicola, Florida 32320-2317, and will be opened and read aloud on **June 4, 2025**, at the regularly scheduled County Commission meeting which begins at 9:00 a.m. at 34 Forbes Street, Apalachicola, Florida.

Proposals received after the designated time will not be considered.

BID DOCUMENTS: Drawings, Project Manual and Technical Specifications will be available for download from "The Blueprint Shop" Plan Room website: www.theblueprintshop.com.

A PRE-BID Conference will be held on-site, May 13, 2025, at 10:00 AM EST. Bidding contractors are expected to visit the site. The Fort Coombs Armory is located at 66 4th Street, Apalachicola, Florida 32320.

Proposals must be accompanied by a Bid Bond (certified checks are not acceptable) made payable to Franklin County in an amount equal to five percent (5%) of the Bid Amount (Base Bid and Alternate Bid Amounts). No bid may be withdrawn for a period of sixty (60) days after the scheduled closing time for the receipt of bids.

The Contract, if awarded, will be on a lump sum basis. A Surety Bond for the full amount of the Contract Price covering faithful performance of the Contract and the payment of all obligations arising there under will be required.

No oral, electronic, telephonic, or written modifications of the proposal will be considered.

Franklin County reserves the right to reject any or all Bids, waive technicalities or formalities as is necessary to best serve the interest of Franklin County.

END OF SECTION 001116

DOCUMENT 002213 - SUPPLEMENTARY INSTRUCTIONS TO BIDDERS

1.1 INSTRUCTIONS TO BIDDERS

A. Instructions to Bidders for Project consist of the following:

1. AIA Document A701, "Instructions to Bidders**,"** a copy of which is bound in this Project Manual.
2. The following Supplementary Instructions to Bidders that modify and add to the requirements of the Instructions to Bidders.

1.2 SUPPLEMENTARY INSTRUCTIONS TO BIDDERS, GENERAL

A. The following supplements modify AIA Document A701, "Instructions to Bidders." Where a portion of the Instructions to Bidders is modified or deleted by these Supplementary Instructions to Bidders, unaltered portions of the Instructions to Bidders shall remain in effect.

1.3 ARTICLE 1 - DEFINITIONS

A. ADD: Definitions as follows:

1.10 Owner: Franklin County, a political subdivision of the State of Florida
33 Market Street, Suite 203
Apalachicola, Florida 32320-2317

1.11 Corporate/Bidder: Any individual, firm, partnership, or corporation entering into an agreement to perform the work herein specified.

1.12 Architect: The firm of Gilcrest Ross Crowe (GRC) Architects, 413 All Saints Street, Tallahassee, Florida 32301, Tel. Number, 850-222-8100, acting directly or through a duly authorized staff representative Architect/Engineer means Architect.

1.13 Agreement: "Agreement" shall mean the document entitled "Form of Agreement Between Owner and Contractor for Construction."

1.14 Contract: "Contract" shall mean the Contract Documents as defined and listed in the Agreement.

1.15 Project Representative: An authorized representative of the Architect or Owner assigned to inspect any of the materials, workmanship, or completed work entering into the project.

1.16 Surety: The corporate body which is bound with, and for the Contractor, who is primarily liable and which guarantees the faithful performance of the Contract.

1.17 Proposal: The approved forms on which the Bidder has submitted his proposal for the work contemplated.

1.18 Drawings: The drawings or reproductions thereof pertaining to the work to be performed and which have been prepared under the supervision of the Architect/Engineer.

1.19 Specifications: Notice to Bidders, Instructions to Bidders and Supplementary Instructions to Bidders, Proposal, General Conditions and Supplementary General Conditions, Detailed Technical Specifications, and other such documents.

1.20 Addenda and Interpretations: No interpretation of the meaning of the plans, specifications, or other pre-bid documents will be made to any bidder orally. Every request for such interpretation should be addressed, in writing via email, to GRC Architects, cross@architects-gca.com . To be given consideration it must be received at least five (5) calendar days prior to the date fixed for the opening of bids. Any and all interpretations and any supplemental instructions will be in the form of written addenda to the specifications which, if issued, will be transmitted to all prospective bidders (at the respective addresses furnished for such purposes) not later than three (3) days prior to the date fixed for the opening of bids. Thereafter, the only Addendum will be to withdraw the request for bids or to postpone the date for the receipt of Bids. Failure to any bidder to receive such addendum or interpretation shall not relieve such bidder from any obligations under his bid as submitted. All addenda so issued shall become part of the contract Documents

1.4 ARTICLE 2 - BIDDER'S REPRESENTATIONS

A. ADD Section 2.1.3.1:

2.1.3.1 - The Bidder has investigated all required fees, permits, and regulatory requirements of authorities having jurisdiction and has properly included in the submitted bid the cost of such fees, permits, and requirements not otherwise indicated as provided by Owner.

B. ADD Section 2.1.5:

2.1.5 - The Bidder is a properly licensed Contractor according to the laws and regulations of the State of Florida and meets qualifications indicated in the Procurement and Contracting Documents.

C. ADD Section 2.1.6:

2.1.6 - The Bidder has incorporated into the Bid adequate sums for work performed by installers whose qualifications meet those indicated in the Procurement and Contracting Documents.

D. ADD Section 2.1.7:

2.1.7 - Familiarity with Laws:

a. The Bidder is required to be familiar with all Federal, State and Local Laws, Ordinances, Rules and regulations that in any manner affect the work. Ignorance on the part of the Bidder will in no way relieve him from responsibility.

E. ADD Section 2.1.8

2.1.8 Contractor Representation for Contract:

a. The Bidder shall include in the Bid, as a mandatory requirement, full time supervision (Superintendent) for the project contract awarded.

F. ADD Section 2.1.9

2.1.9 Construction Time, Construction Schedule and Liquidated Damages:

a. General

1) This project consists of several project elements which are defined throughout the Contract Documents. The Contractor shall be required to comply with the general intent of the phasing, scheduling and duration of the project as outlined in the Contract Documents or as otherwise approved by submittals allowed by the documents.

b. Construction Time

1) The work shall be completed within the time established or as otherwise approved or actual damages in the amounts specified hereafter shall be assessed.

2) Substantial Completion is to be achieved no later than 180 calendar days from the Notice To Proceed date.

c. Construction Schedule

1) The Contractor shall prepare and submit a detailed schedule for his operations within the general limits and phasing restrictions included in the Contract Documents. This schedule will be reviewed with the Owner, the Architect, and the Contractor to establish the final approved schedule as it relates to this provision.

2) The Contractor shall utilize a network diagram constructed in accordance with the CRITICAL PATH METHOD.

d. Liquidated Damages

1) Liquidated damages shall apply for each calendar day following the agreed upon scheduled date of Substantial Completion.

2) For this project, the rates per calendar day for liquidated damages shall be **$100.00** per calendar day.

e. Impact Fees:

All impact fees, tap fees, connection charges, meter installation charges, fire main charges, systems charges, etc. if required, will be paid by the General Contractor.

f. Building Permits:

The Contractor shall obtain and pay for any and all required construction permits.

1.5 ARTICLE 3 - BIDDING DOCUMENTS

1.6 3.01 Article 3 "Bidding Documents" DELETE Paragraph 3.1.1. ADD the following new Paragraph 3.1.1: Drawings, Project Manual and Technical Specifications will be available for download from "The Blueprint Shop" Plan Room website: www.theblueprintshop.com.

3.02 Article 3 "Bidding Documents, DELETE Paragraph 3.1.2.

3.03 3.04 Article 3 "ADDENDA" Paragraph 3.4.1. ADD the following sentence, "Addenda may be transmitted by email, and other methods as deemed necessary by the Architect. Bidders are responsible for confirmation of receipt of all Addenda prior to Bid and shall be acknowledged on the Bid form.

1.7 ARTICLE 4 - BIDDING PROCEDURES

A. 4.1 - Preparation of Bids:

1. ADD Section 4.1.1.1:

a. 4.1.1.1 - Printable electronic Bid Forms and related documents are available from the Architect.

2. 4.01 Article 4 "BIDDING PROCEDURES," Paragraph 4.4 ADD the following:

a. Telegraphic or facsimile Modification: Modification of Bids by email of facsimile methods shall not be permitted.

b. Bid Withdrawal: Bids may be withdrawn by an authorized representative of the Bidder prior to the time fixed for opening. No email or facsimile Bid withdrawals prior to or after Bid opening will be accepted. Bid withdrawals must be done in person by an authorized representative of the Bidder. Negligence on the part of the Bidder in preparing the Bid confers no right for this withdrawal of the Bid after it has been opened.

c. Bid Guarantee: Bids shall be accompanied by a Bid guarantee of not less than five (5) percent of the amount of the Bid (Base Bid values), which shall be a Bid Bond made payable to the Owner. Bid Bond shall be submitted with the understanding that it shall guarantee that the Bidder will not withdraw his Bid for a period of sixty (60) days after the scheduled closing time for the receipt of Bids; that if his Bid is accepted, he will enter into a written contract with the Owner in accordance with the form of agreement included as a part of the Contract Documents, and that the required Performance Bond and Material Payment Bond will be given; and that in the event of the withdrawal of said Bond within said period, or failure to enter into said Agreement and give said Bonds within ten (10) days after he has received notice of acceptance of his Bid, the Bidder shall be liable to the Owner for the full amount of the Bid guarantee as representing the damage to the Owner on account of the default of the Bidder in any particular hereof. The Bid Bonds will be returned to all except the lowest two Bidders after the formal opening of Bids. The remaining Bid Bonds will be returned to the two lowest Bidders after the Owner and the accepted Bidder have executed the Agreement and the Performance Bond and Labor and Material Payment Bond have been approved by the Owner. If the required Agreement and bonds have not been executed within sixty (60) days after the date of the opening of the Bids, then the Bid Bond or any Bidder will be returned upon his request, provided he has not been notified of the acceptance of his Bid prior to the date of such request.

Notice: The Bid Bond shall be submitted on A.I.A. Document A310 1970.

The Bid Bond must be signed by a Florida Licensed Resident Agent who holds a current Power of Attorney from the Surety Company issuing the Bond.

3. ADD Section 4.1.10:

a. 4.1.10 - Bids shall include sales and use taxes.

B. 4.3 - Submission of Bids:

1. ADD Section 4.3.1.2:

a. 4.3.1.2 - Include Bidder's Contractor License Number applicable in Project jurisdiction on the face of the sealed bid envelope.

C. 4.4 - Modification or Withdrawal of Bids:

1. ADD the following sections to 4.4.2:

a. 4.4.2.1 - Such modifications to or withdrawal of a bid may only be made by persons authorized to act on behalf of the Bidder. Authorized persons are those so identified in the Bidder's corporate bylaws, specifically empowered by the Bidder's charter or similar legally binding document acceptable to Owner, or by a power of attorney, signed and dated, describing the scope and limitations of the power of

attorney. Make such documentation available to Owner at the time of seeking modifications or withdrawal of the Bid.

b. 4.4.2.2 - Owner will consider modifications to a bid written on the sealed bid envelope by authorized persons when such modifications comply with the following: the modification is indicated by a percent or stated amount to be added to or deducted from the Bid; the amount of the Bid itself is not made known by the modification; a signature of the authorized person, along with the time and date of the modification, accompanies the modification. Completion of an unsealed bid form, awaiting final figures from the Bidder, does not require power of attorney due to the evidenced authorization of the Bidder implied by the circumstance of the completion and delivery of the Bid.

D. 4.5 - Break-Out Pricing Bid Supplement:

1. ADD Section 4.5:

a. 4.5 - Provide detailed cost breakdowns on forms provided by the Architect no later than two business days following Architect's request.

E. 4.6 - Subcontractors, Suppliers, and Manufacturers List Bid Supplement:

1. ADD Section 4.6:

a. 4.6 - Provide list of major subcontractors, suppliers, and manufacturers furnishing or installing products on forms provided in a separate envelope to accompany the Bid. Include those subcontractors, suppliers, and manufacturers providing work totaling three percent or more of the Bid amount. The Bidder shall not change subcontractors, suppliers, and manufacturers from those submitted without written approval by the Architect and Owner.

1.8 ARTICLE 5 - CONSIDERATION OF BIDS

A. 5.2 - Rejection of Bids:

1. ADD Section 5.2.1:

a. 5.2.1 - Owner reserves the right to reject a bid based on Owner's and Architect's evaluation of qualification information submitted following opening of bids. Owner's evaluation of the Bidder's qualifications will include: status of licensure and record of compliance with licensing requirements, record of quality of completed work, record of Project completion and ability to complete, record of financial management including financial resources available to complete Project and record of timely payment of obligations, record of Project site management including compliance with requirements of authorities having jurisdiction, record of and number of current claims and disputes and the status of their resolution, and qualifications of the Bidder's proposed Project staff and proposed subcontractors.

1.9 ARTICLE 6 - POSTBID INFORMATION

A. 6.1 - Contractor's Qualification Statement:

1. ADD Section 6.1.1:

a. 6.1.1 - Submit Contractor's Qualification Statement no later than two business days following Architect's request.

B. 6.3 - Submittals:

1. ADD Section 6.3.1.4:

a. 6.3.1.4 - Submit information requested in Sections 6.3.1.1, 6.3.1.2, and 6.3.1.3 no later than two business days following Architect's request.

C. 6.3.4 – Submittals:

1. Article 6 “Post Bid” information, REVISE paragraph 6.3.4 to read as follows:

a. "Persons and entities proposed by the Bidder and to whom the Owner and Architect have made no reasonable objection must be used on the Work for which they were proposed and shall not be changed. The Bidder shall be solely liable, and shall hold the Architect and the Owner harmless from, any liability arising from any such change."

1.10 ARTICLE 7 - PERFORMANCE BOND AND PAYMENT BOND

A. 7.1 - Bond Requirements:

1. ADD Section 7.1.1.1:

a. 7.1.1.1 - Both a Performance Bond and a Payment Bond will be required, each in an amount equal to 100 percent of the Contract Sum.

B. 7.2 - Time of Delivery and Form of Bonds:

1. DELETE the first sentence of Section 7.2.1 and insert the following:

a. The Bidder shall deliver the required bonds to Owner no later than 10 days after the date of Notice of Intent to Award and no later than the date of execution of the Contract, whichever occurs first. Owner may deem the failure of the Bidder to deliver required bonds within the period of time allowed a default.

2. DELETE Section 7.2.3 and insert the following:

a. 7.2.3 - Bonds shall be executed and be in force on the date of the execution of the Contract.

1.11 ARTICLE 8 – ENUMERATION O FTHE PROPOSED CONTRACT DOCUMENTS

A. The form of Agreement between Owner and Contractor shall be AIA Document A101 – 2017 edition with amendments incorporated by the Owners General Counsel as to approved legal form and content, as required by the Owner.

B. DELETE: E203-2013 Exhibit

1.12 ARTICLE 9 - EXECUTION OF THE CONTRACT

A. ADD Article 9:

1. 9.1.1 - Subsequent to the Notice of Intent to Award, and within 10 days after the prescribed Form of Agreement is presented to the Awardee for signature, the Awardee shall execute and deliver the Agreement to Owner through Architect, in such number of counterparts as Owner may require.

2. 9.1.2 - Owner may deem as a default the failure of the Awardee to execute the Contract and to supply the required bonds when the Agreement is presented for signature within the period of time allowed.

3. 9.1.3 - Unless otherwise indicated in the Procurement and Contracting Documents or the executed Agreement, the date of commencement of the Work shall be the date of the executed Agreement.

4. 9.1.4 - In the event of a default, Owner may declare the amount of the Bid security advertise for bids.

END OF DOCUMENT 002213

SECTION 004213 - BID PROPOSAL / BID FORM

PART 1 PROPOSAL FORM:

1.0 INSTRUCTIONS:

A. One envelope submitted by Bidder shall contain the proposal prepared on the Contractor's letterhead and shall be identified as:

Sealed Bid Proposal

Fort Coombs Armory and Convention Center Renovations
Phase 2

Bids due by 4:30 PM, June 3, 2025, at the Clerk of Courts Office, Franklin County Courthouse

Bid Opening: June 4, 2025, at the Franklin County Commission Meeting

B. The second envelope submitted by Bidder shall contain:

List of subcontractors, addresses and telephone numbers (see Bid Form), Form shall be filled out completely on the Contractor's letterhead.

The bid security with power of attorney as specified; AIA Form A310 Bid Bond.

C. If the Contractor is an individual, the Bid Proposal shall be signed with his manual signature and shall include the signature of two (2) witnesses.

D. If the Contractor is a firm or company owned by an individual, the Bid Proposal shall be executed in the name of the firm or company by the manual signature of the Owner and shall include the signature of two (2) witnesses.

E. If the Contractor is a partnership, the Bid Proposal shall be executed in the name of the partnership by the manual signature of a partner or partners and shall include the signatures of two (2) witnesses. If the Contractor is a corporation, the Bid Proposal shall be executed in the name of the corporation and shall bear the corporate seal. It may be signed for the corporation by an officer of the corporation. The signature of such officer signing shall be attested by the secretary.

BID FORM

FORT COOMBS RENOVATIONS ARMORY/CONVENTION CENTER RENOVATIONS
Phase 2

DATE: _____

2.0 Having carefully examined the Specifications entitled Fort Coombs Renovations Armory/Convention Center and the Drawings similarly entitled and listed in Section 000115 Enumeration of Drawings, all dated November 1, 2024 and Addendum (a) No.(s)_____, as well as the premises and conditions affecting the work, the undersigned proposes to furnish all services, labor and material called for by them for the construction of the above referenced project in accordance with said documents for the sum of:

BASE BID – New Multipurpose Room and Roof, Renovate Corridors, Windows, Floors and Running Trim
- includes selective demolition, new multipurpose room, associated MEP an fire sprinkler assemblies, new roof, windows, refinish wood floors, repair front doors, new paint and new wood construction within designated area. See Historic Removal and Dismantling section 024296 and Historic Wood Repair section 060312

The sum of _____Dollars ($_____)
which the sum is hereinafter called the "Base Bid".

The undersigned further proposes that should any of the following Alternates be accepted and incorporated into the Contract, the Contract will be altered as follows:

ADD Alternate One (1) – Provide NEW Front Door
- includes selective demolition and new wood door and frame construction as delineated on sheet A3.5, including hardware as noted.

ADD The sum of _____Dollars ($_____)

3.0 The undersigned agrees that this Proposal may not be revoked or withdrawn after the time set for the opening of Bids, but shall remain open for acceptance for a period of sixty (60) days following such time.

4.0 In case of notification in writing by mail, email, or delivery of the acceptance of this Proposal within sixty (60) days after the time set for opening of Bids, the undersigned agrees to execute within ten (10) consecutive calendar days, a Contract (AIA Standard Form of Agreement between Contractor and Owner where the Basis of Payment is a stipulated sum) for the above stated compensation and at the same time to furnish and deliver to the Owner, the **Form of Performance and Payment Bond**, each in an amount equal to 100% of the Contract Sum.

5.0 The undersigned agrees to commence actual physical work on the site with an adequate forces and equipment within ten (10) days of a date to be specified in a written order from the Architect, and to achieve Substantial Completion of all work no later than **270** Calendar days from the Date of Commencement. The Contractor shall achieve Final Completion within 30 calendar days after Substantial Completion.

6.0 In accordance with Section 002113 **Instructions to Bidders**, attached hereto is the **Bid Bond** in the amount of: (Certified checks not acceptable). _____Dollars ($_____),
Bond Co. Name_____

Being not less than 5% of the Base Bid. The undersigned agrees that the above stated amount is the proper measure of Liquidated Damages which the Owner will sustain by the failure of the undersigned to execute the Contract and to furnish the Performance Bond and Payment Bond in case this Proposal is accepted and further agrees to the following:

The conditions of this Bid Bond obligation are such that if the bid of the Contractor herein be accepted and said Contractor within ten (10) consecutive calendar days after written notice being given of such acceptance, shall enter into a written contract with the Owner and furnish a contract surety bond in the amount equal to one-hundred percent (100%) of the contract sum, satisfactory to the Owner, then his obligation shall be void; otherwise, the sum herein stated shall be due and payable to the Owner and the "Surety" herein agrees to pay said sum in good and lawful money of the United States of America, as liquidated damages for failure thereto of said Contractor.

ALL BIDDERS MUST PROPERLY EXECUTE THE FOLLOWING IN ORDER FOR THEIR BID TO BE CONSIDERED:

CORPORATION:

_____(Seal)
Principal (Bidder)

By:_____(Seal)
President or Vice President

ATTEST:

_____
Secretary (Or Assit. Secretary)

(Affix Corporate Seal)

PARTNERSHIP:

_____(Seal)
Principal (Bidder)

Signature:

(1)
Co-Partner or General Partner
Signature:

(2)
Co-Partner or General Partner

WITNESSED BY:

(1)

(1)

(2)

(2)_____

INDIVIDUAL OR FIRM TRADING AS:

_____
(Bidder)

(If Partnership, list names and addresses of each partner below. If Joint-Venture, use Principal in this space for additional bidder).

_____(Seal)
Signature: Individual or Owner

Witness:

Witness:

List the names, addresses and telephone numbers of the following subcontractors:

CATEGORY	NAME	ADDRESS	TELE NO.
METALS (RAILING)			
FINISH CARPENTRY			
PAINTER			
MECHANICAL			
ELECTRICAL			
FIRE ALARM			
ROOFING			
WINDOWS			

END OF SECTION 004213

SECTION 007000 - GENERAL CONDITIONS OF THE CONTRACT

1. GENERAL

1.1 Inclusion by Reference of A.I.A. Documents:

1.1.1 The General Conditions of the Contract for Construction, A.I.A. Document A201, dated 2017, is hereby specifically made a part of these documents, except as amended by Section 007300, Supplementary General Conditions.

END OF SECTION 007000

SECTION 007300 - SUPPLEMENTARY GENERAL CONDITIONS

(Note: Referred to in Sections of this Project Manual as Supplementary General Conditions or Supplementary Conditions.)

1. SCOPE

The following supplements modify, change, delete or add to the "General Conditions of the Contract for Construction" A.I.A. document A201, 2017 Edition. Those portions of this document which remain unaltered by these supplements shall remain in effect as published.

ARTICLE 1: GENERAL PROVISIONS

1.1 BASIC DEFINITIONS

1.1.1 THE CONTRACT DOCUMENTS

1.1.1.1

(New) Construction Documents describe the intent of the work in scope, layout and general detail. They are not intended, nor do they always describe or show every detail, every piece of wood, steel, flashing, concrete, masonry, pipe, duct, wiring, or other building materials, substrate, or all accessories, access hatches, inspection plates, blocking, bridging, framing, supports, ledgers, or braces necessary for the purpose of executing the work or making all parts fit; or properly function as intended. It is understood that such items are a necessary part of this work and must be provided in the proper location by the contractor, even though they might not be discovered as necessary until other parts of an assembly are constructed, and submittals have been reviewed.

1.1.7.1 (New) The term “Instruments of Service” shall mean and shall include all project drawings and the Project Manual including all Non-Technical and Technical Specifications.

1.2 CORRELATION AND INTENT OF THE CONTRACT DOCUMENTS

1.2.4 (New) The Contract Documents are complementary, and what is required by one shall be as binding as if required by all; performance by the Contractor shall be required to the full extent of the Contract Documents, including the Supplementary General Conditions, so as to produce the intended results.

1.2.5 (New) If any information shown or specified in the Contract Documents is vague, incomplete, or inaccurate, it shall be brought to the attention of the Architect. However, it shall then be provided by the Contractor as a complete and properly functioning system, assembly or product, as required or recommended by applicable industry standards or other applicable standards including, but not limited to, quality, size, length, thickness, texture and location, so that the finished system, assembly or product, properly functions for its intended use.

1.2.6 (New) If any information is shown on the Drawings, but not on the Schedules including, but not limited to, rooms, doors and windows, they shall be provided complete with necessary finish, hardware or accessories per other similar conditions in the building. Refer to Architect for clarification.

1.2.7 (New) If any information in the Contract Documents refers to locations, sizes or shapes of material or equipment "as shown" or "see drawings for location" or other references, and the information is incomplete, inaccurate, or not shown or specified, the Contractor shall provide as per industry standards and as recommended by the manufacturer. (Contact Architect for clarification before proceeding.)

1.2.8 (New) When the Specification Sections refer to the following "Manufacturers: Subject to compliance with requirements, provide products by one of the following:", or similar references to manufacturers or specific product, the Contractor shall review all the existing conditions and the substrate that this product or assembly will connect with or be affected by.

The Contractor shall provide only products that are intended by the manufacturer or industry standards to be used in the building with the adjoining substrate, building temperatures, and any other conditions that do not adversely affect its performance.

1.4 INTERPRETATION

1.4.1 (New) In case of discrepancy in the Contract documents concerning details, elevations, plans, dimensions, materials, quality and/or quantity, the Contractor shall provide the more costly, the better quality, and the greater quantity unless otherwise distinguished in writing by the Architect. (Contact Architect for clarification before proceeding.)

1.7 (Delete) Digital Data Use and Transmission.

1.8 (Delete) Building Information Models Use and Reliance

ARTICLE 3: CONTRACTOR

3.2 REVIEW OF CONTRACT DOCUMENTS AND FIELD CONDITIONS BY CONTRACTOR

3.2.1.1 (New) The Contractor shall very carefully study and compare all the Contract Documents with themselves and with each other including, but not limited to Civil, Architectural, Structural, Electrical, Mechanical, Plumbing, and Specifications. This study and comparison of the Contract Documents shall start before, and continue throughout, the entire construction process. Also, before any work proceeds on any sections in the Project Manual, or any overall unit of work shown on the Drawings, the Contractor shall completely review this work in its entirety, to determine if any conflicts exist, so that they may be corrected.

3.2.1.2 (New) All requirements in Section 002210 - Instructions to Bidders, are included in the Contract. Once the project is awarded to the Contractor, the words "Bidder" and Sub-bidder" shall be changed to Contractor and Sub-contractor.

3.2.6

3.2.9 (New) The Contractor shall provide necessary adjustments, modifications, or replacements of impellers, pulleys, sheaves, belts, wiring, motors or other parts in order for equipment, systems, materials, etc. to function as intended and as recommended by manufacturer.

3.2.10 (New) The Contractor shall provide additional required grading, shaping, swales, rip-rap or other methods to redirect or eliminate ponding water, soil erosion or other detrimental site conditions.

3.3 SUPERVISION AND CONSTRUCTION PROCEDURES

3.3.4 (New) The Contractor shall require that all Subcontractors have a competent supervisor on the Project whenever their work is being performed.

3.3.5 (New) The Contractor shall give reasonable notice to the Architect when his presence is required for special consultations, examinations or decisions, and shall cooperate with the Architect to arrange such.

3.4 LABOR AND MATERIALS

3.4.4 (New) The Contractor shall be solely responsible for compliance with the Department of Labor Safety and Health Regulations for Construction promulgated under the Occupational Safety and Health act of 1970 (PL 91-596) and under Section 107 of the Contract Work Hours and Safety Standard Act (PL 91-54) and latest amendments.

3.4.5 (New) The Contractor shall be solely responsible for compliance with the labor laws of the State of Florida and with all other applicable ordinances and legal requirements by State or local authorities.

3.5 WARRANTY

3.5.1 (New) The warranty period shall be twelve (12) months from Substantial Completion unless extended in other sections of the Specifications. Refer to individual specification sections for warranty periods required beyond 12 months.

3.6 TAXES

3.6.1 (New) The Contractor shall pay Social Security and Unemployment taxes, and all other taxes as imposed by Federal, state or local government authorities, and shall certify to the Owner that this has been done before final payment is made to the Contractor.

3.18 INDEMNIFICATION

3.18.3 (New) The Contractor covenants to defend, indemnify and save harmless the Owner and the Architect from and against all losses and all claims, demands, payments, suits, actions, recoveries and judgments of every nature and description suffered or sustained by the Owner or Architect or brought against the Owner or Architect or by any one or more of same, by reason of any act or omission of the said Contractor, the Contractor's agents or employees, in any manner relating to the execution of the work or in guarding the same. This covenant shall continue during the period of construction and shall continue after satisfactory completion of the work and acceptance by the Owner and until expiration of the Statute of Limitations or the warranty period, whichever is longer. The Contractor further agrees to compensate the Owner and Architect for any time spent or expenses incurred by the Owner and Architect in defense of any such claim.

3.18.4

(New) None of the foregoing provisions shall deprive either the Owner or the Architect of any action, right or remedy otherwise available to them at common law.

The provisions of Article 3.18 shall apply to the extent permitted by law.

ARTICLE 4: ARCHITECT

4.2 ADMINISTRATION OF THE CONTRACT

4.2.7 Delete the word "approve."

4.2.15 (New) The Architect is not required to act as arbitrator or mediator in either a formal or informal way for any dispute between the Contractor and any of his employees or sub-contractors.

ARTICLE 6: CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

6.2 MUTUAL RESPONSIBILITY

6.2.3 (Delete)

Article 7: CHANGES IN THE WORK

7.1 CHANGES

7.1.4 (New) Provisions for establishing changes in the contract cost, both add and deduct, including the Contractor's overhead and profit are hereby set forth, allowing for cost changes only to the contract sum and thereby changing the scope of the construction contract:

(A) Work being accomplished by the Contractor's own forces, those not being included within the submittal of subcontractors and material suppliers, Contractor shall add or deduct fifteen percent (15%) to his actual net costs for the combined overhead and profit.

(B) Work accomplished by subcontractors, those included within the submitted listing, respective subcontractor shall add or deduct fifteen percent (15%) to actual cost for overhead and profit. General Contractor shall add or deduct ten percent (10%) above the subcontractor's cost for his overhead and profit.

(C) General Contractor may add a maximum of one percent (1%) to the total costs to allow for bond cost (if applicable). No bond costs will be allowed sub-contractors.

(D) The Contractor, sub-contractors and material suppliers shall certify that all charges and costs for material suppliers and/or shall certify that all charges and costs for material and labor for changes in the work are correct and accurate as stated. Such certification shall be subject to audit.

ARTICLE 8: TIME

8.3 DELAYS AND EXTENSIONS OF TIME

8.3.3 (Delete)

8.3.3 (New) This paragraph 8.3 does not exclude the recovery of damages to the Owner under any other provisions of the Contract Documents.

8.4 (New) LIQUIDATED DAMAGES

8.4.1 (New) It is hereby understood and mutually agreed by and between Contractor and Owner, that the contract time as indicated in the Contract Documents constitutes a reasonable time period in which to complete the work and achieve a state of substantial completion for the project. Execution of the construction contract shall constitute acknowledgement and agreement to the above.

8.4.2 (New) If the Contractor should fail, for reasons other than as enumerated in Paragraph 8.3.l and subsequently determined as nonjustifiable by the Architect, to complete the project to the state of substantial completion as determined by the Architect by the stipulated time, then the Contractor shall hereby agree, as a condition of this contract, to pay to the Owner amounts as specified in the Contract Documents, not as a penalty, but as liquidated damages for such breach of contract, for each calendar day that the Contractor shall be in default after stipulated date.

8.4.3 (New) The amount per calendar day is arbitrarily fixed and agreed upon by and between Contractor and Owner, because of impracticality and difficulty in ascertaining actual damages Owner would sustain and said amounts are agreed to as adequate cover of damages which Owner would sustain by reason of inconvenience, loss of use or monies, or other non-specified hardships.

8.4.4 (New) Permitting the Contractor to continue and finish the work or any part of the work after the time fixed for its completion or after date to which time for completion may have been extended, shall in no way constitute a waiver on the part of the Owner of any of his rights under the contract.

ARTICLE 9: PAYMENTS AND COMPLETION

9.3 APPLICATIONS FOR PAYMENT

9.3.1 (Add) The Contractor's Form of Application and Certificate for Payment shall be A.I.A. Document G702 and G703 Continuation Sheet.

9.4 CERTIFICATES FOR PAYMENT

9.4.3 (New) An amount equal to ten percent (10%) of all labor and material incorporated into the project shall be retained on a monthly basis from each application for payment, and shall accrue until such time as the project has undergone final inspection and has been accepted in its totality by the Owner, at which time such retainage shall be fully released in the form of a Final Certificate for Payment and be subject also to the conditions as described below. Percentage retainages by the Owner with respect to the General Contractor and by the General Contractor with respect to subcontractors are means entirely for the purpose of assuring satisfactory completion of the project, and any discovered manipulation of retainages for any other purposes, such as credit device, shall be an improper use of retained monies and considered a breach of the contract.

9.8 SUBSTANTIAL COMPLETION

9.8.1 (Add) See Section 017700 – Closeout Procedures, for detailed information and requirements. Section 017700 takes precedence over any conflicts with Section 9.8 of the A.I.A. Document A201- 2077 General Conditions of the Contract for Construction.

ARTICLE 10: PROTECTION OF PERSONS AND PROPERTY

10.2 SAFETY OF PERSONS AND PROPERTY

10.2.9 (New) If whole or any part of work is suspended, Contractor shall cover, secure, and protect all parts of this work that might be injured from any cause.

Article 11: INSURANCE AND BONDS should be amended as follows:

11.1.1 Should be amended to read:

4. Claims for damages insured by usual personal injury liability coverage which are sustained (1) by any person as a result of an offense directly or indirectly related to the employment of such person by the Contractor or (2) by any other person.

8. General liability claims to be covered specifically under comprehensive general liability, contractual liability, and products and completed operations liability policies.

11.1.2.1 Minimum limits of liability to be provided by the General Contractor shall be as follows:

a) Workers' compensation insurance in accordance with the laws of the State of Florida for all employees of the contractor. If any work is subcontracted, the contractor shall require the subcontractor to provide Worker's Compensation insurance for the subcontractor's employees, unless these employees are covered under the Contractor's insurance. Also, contractor shall carry employer's liability insurance in a minimum limit of $200,000.00.

b) General Liability Bodily Injury Insurance in the amount of $500,000.00 for any one person and $1,000,000.00 for any one occurrence.

c) General Liability Property Damage Insurance in the amount of $500,000.00 single limit per person and/or per occurrence.

d) Personal Injury Liability in the amount of $500,000.00 per claimant, $1,000,000.00 per occurrence and an annual aggregate limit of $2,000,000.00.

e) If any of the project is subcontracted, Contractors' Protection Liability Insurance limits of $500,000.00 Bodily Injury per person, $1,000,000.00 per occurrence and $500,000.00 single limit for property damage.

f) Automobile Liability Bodily Injury Insurance (covering owned, hired and all classes of non-owned vehicles) of $500,000.00 for any one person and $1,000,000.00 for any one occurrence.

g) Automobile Liability Property damage Insurance (covering owned, hired and all classes of non-owned vehicles) of $500,000.00 single limit.

11.1.3 The insurance required by Subparagraph 11.1.1 shall include contractual liability insurance applicable to the Contractor's obligations under Paragraph 3.18.

11.1.5 Certificates of Insurance acceptable to the Owner and naming the owner as an additional insured, shall be filed with the Owner prior to commencement of the work. These Certificates shall contain a provision that coverages afforded under the policies will not be cancelled until at least thirty days prior written notice has been given to the Owner. These Certificates shall state whether the liability coverage is written on an occurrence or claims-made basis and if on a claims-made basis, shall specify the total claims (paid and reserved) against the policy.

11.1.6 Certificates of Insurance shall be filed by the Contractor with the Owner and Architect prior to commencement of any work on the proposed project.

11.2 OWNER'S LIABILITY INSURANCE

(Delete) "The Owner shall be responsible for purchasing and maintaining the Owner's usual liability insurance".

11.2.1 (New) Shall read as follows:

The Contractor shall furnish the Owner with an Owner's Protective Liability Insurance policy in the same limits of coverage as those in the Contractor's Liability Insurance Policy. The original of this policy shall be delivered to the Owner.

11.3 PROPERTY INSURANCE

11.3.1.5 Delete current Paragraph in its entirety and add the following paragraph:

The Owner shall have the power to adjust and settle any loss with the insurers unless one of the parties in the interest shall object, in writing, within five (5) working days after the occurrence of loss to the Owner's exercise of this power.

11.3.1.6 If the Owner finds it necessary to occupy or use a portion or portions of the work prior to Substantial Completion thereof, such occupancy or use shall not commence prior to a time mutually agreed to by the Owner and Contractor and to which the insurance company or companies providing the property insurance have consented by endorsement to the policy or policies. This insurance shall not be cancelled or lapsed on account of such partial occupancy or use. Consent of the Contractor and of the insurance company or companies to such occupancy or use shall not be unreasonably withheld.

11.3.11 Paragraph to be added.

All insurance policies written in connection with this contract shall be by an admitted insurer and licensed to write insurance in the State of Florida.

11.3.12 SUMMARY of minimum coverages and limits which the General Contractor must have in full force and effect prior to commencement of the work.

General Contractors Insurance
The insurance required shall be written for not less than the following limits, or greater if required by law. Annual aggregates will only be accepted in multiples of the "Per

Occurrence" limits.

COVERAGES		LIMITS
1.	Worker's Compensation	
	State of Florida	Statutory
	Applicable Federal	Statutory
	Employer's Liability	$200,000.00
2.	Comprehensive General Liability (including premises-operations; products completed operations, broad form property damage).	
	Bodily Injury	
	Per claimant:	$500,000.00
	Per occurrence:	$1,000,000.00
	Personal Injury	
	Per claimant:	$500,000.00
	Per occurrence:	$1,000,000.00
	Annual Aggregate:	$2,000,000.00
	Property Damage	
	Per claimant as per occurrence:	$500,000.00 (single limit)

Property damage liability will provide X, C, or U coverage as applicable.

The owner shall be named as additional insured on the Comprehensive General Liability policy.

3. Owner's and Contractor's Protective Liability. (This is a separate policy issued in the name of the Owner and delivered to the owner prior to the beginning of any contracted work.)

	Bodily Injury	
	Per claimant:	$500,000.00
	Per occurrence:	$1,000,000.00
	Annual Aggregate:	$2,000,000.00

Property Damage

Per claimant as per occurrence:	$500,000.00 (single limit)

Property damage liability will provide X, C, or U coverage as applicable.

The owner shall be named as additional insured on the Comprehensive General Liability policy.

4. Contractual Liability. (The contractual coverage must specify that it covers the Hold Harmless agreement which is a part of this contract).

Bodily injury

Per claimant:	$500,000.00
Per occurrence:	$1,000,000.00

Property Damage

Per claimant as per occurrence:	$500,000.00 (single limit)

Personal Injury

Per claimant:	$500,000.00
Per occurrence:	$1,000,000.00
Annual Aggregate:	$2,000,000.00

5. Comprehensive Automobile Liability (covering owned, hired and all classes of non-owned vehicles).

Bodily Injury

Per claimant:	$500,000.00
Per occurrence:	$1,000,000.00

Property Damage

Per claimant as per occurrence:	$500,000.00 (single limit)

ARTICLE 13: MISCELLANEOUS PROVISIONS

15.4 ARBITRATION

15.4.1 (Delete)

15.4.1.1 (Delete)

15.4.2 (Delete)

15.4.3 (Delete)

15.4.4 CONSOLIDATION OR JOINDER

15.4.4.1 (Delete)

15.4.4.2 (Delete)

15.4.4.3 (Delete)

END OF SECTION 007300

Division 01 – General Requirements

SECTION 011000 – SUMMARY OF WORK

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Project information.
2. Work covered by Contract Documents.
3. Access to site.
4. Coordination with occupants.
5. Work restrictions.
6. Specification and Drawing conventions.
7. Miscellaneous provisions.

1.3 DRAWINGS

CS	Cover sheet
A0.1	General scope of work
AS1.0	Site Plan
LS1.1	First Floor Life Safety Plan
LS1.2	Second floor Life safety Plan
D1.1	First floor Plan – Demolition
D1.2	Second Floor Plan – Demolition
D1.3	Roof Plan – Demolition
D2.1	First Floor Reflected Ceiling plan - Demolition
D3.1	Building Section - Demolition
A1.1	First floor Plan – Renovation
A1.2	Second Floor Plan – Renovation
A1.3	Roof Plan – Renovation
A2.1	First Floor Reflected Ceiling plan - Renovation
A2.2	Second Floor Reflected Ceiling plan - Renovation
A3.1	Building Section – Renovation
A3.2	North elevation
A3.3	South Elevation
A3.4	Elevations – Multi-purpose Room/ Mechanical Room
A3.5	Elevation – Front Door Scope of Work
A4.1	Details
A5.1	Photos
A5.2	Photos
A6.1	Enlarged First Floor Plans

A7.1	Finish Schedule
A8.1	Door and Window Details
M1.0	Mechanical Plan
P1.0	Plumbing Plan
E0.1	Electrical Legend notes & Schedule
E1.1	First Floor Plan - Electrical

1.4 PROJECT INFORMATION

A. Project Identification: **PHASE TWO RENOVATIONS**.

1. Project Location: **Apalachicola Florida**.

B. Owner: **Franklin County**.

1. Owner's Representative: **Kimberly Raffield**.

C. Architect: **Gilchrist Ross Crowe Architects**.

D. Architect's Consultants: Architect has retained the following design professionals who have prepared designated portions of the Contract Documents:

1. **Applied Research and Design, Inc.**

1.5 WORK COVERED BY CONTRACT DOCUMENTS

A. The Work of Project is defined by the Contract Documents and consists of the following:

1. Ft. Coombs provides community space for the surrounding community. The project includes the renovation of the existing multi-purpose room to install a new ADA compliant toilet room, small multi-purpose room and associated Mechanical, Electrical, Plumbing and Fire Sprinkler systems.

2. The project includes renovations of the existing corridor hallway and ramp, installing a new ADA compliant ramp, trim work and doorway to the multi-purpose room.

3. The project includes renovations of the existing exterior windows, interior running wood trim, and wood doors in the Main Hall and offices on the first and second levels.

4. The project includes demolition, repairs and installation of new shingle and membrane roof systems.

5. The project includes re-finishing the existing wood floors in the main hall, corridors and offices, new glass globes to be installed on the existing lighting fixtures and new electrical outlets in the main hall.

6. The project includes renovations of the main entrance doors. Base Bid is to REPAIR the doors and an ADD alternate to provide NEW doors.

7. The project includes the painting of the interior, other interior improvements and other Work indicated in the Contract Documents.

8. The project includes the cleaning and painting of the exterior brick façade.

B. Type of Contract:

1. Project will be constructed under a single prime contract.

1.6 FUTURE WORK

A. The Contract Documents include requirements that will allow Owner to carry out future work following completion of this Project; provide for the following future work:

1. New Communications and Data.

2. Site Renovations

1.7 ACCESS TO SITE

A. General: Contractor shall have full use of Project site for construction operations during construction period. Contractor's use of Project site is limited only by Owner's right to perform work or to retain other contractors on portions of Project.

B. Use of Site: Limit use of Project site to areas within the Contract limits indicated. Do not disturb portions of Project site beyond areas in which the Work is indicated.
1. Driveways, Walkways and Entrances: Keep driveways, loading areas, alleyway and entrances serving premises clear and available to emergency vehicles at all times. Do not use these areas for parking or for storage of materials.
a. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.

C. Condition of Existing Building: Maintain portions of existing building affected by construction operations in a weathertight condition throughout construction period. Repair damage caused by construction operations.

D. Condition of Existing Grounds: Maintain portions of existing grounds, landscaping, and hardscaping affected by construction operations throughout construction period. Repair damage caused by construction operations.

1.8 COORDINATION WITH OCCUPANTS

A. Owner Limited Occupancy of Completed Areas of Construction: Owner reserves the right to occupy and to place and install equipment in completed portions of the Work, prior to Substantial Completion of the Work, provided such occupancy does not interfere with completion of the Work. Such placement of equipment and limited occupancy shall not constitute acceptance of the total Work.

1. Architect will prepare a Certificate of Substantial Completion for each specific portion of the Work to be occupied prior to Owner acceptance of the completed Work.
2. Obtain a Certificate of Occupancy from authorities having jurisdiction before limited Owner occupancy.

1.9 WORK RESTRICTIONS

A. Work Restrictions, General: Comply with restrictions on construction operations.

1. Comply with limitations on the use of public streets and with other requirements of authorities having jurisdiction.

B. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after providing temporary utility services according to requirements indicated:

1. Notify [**Owner**] not less than [**two**] days in advance of proposed utility interruptions.
2. Obtain [**Owner's**] written permission before proceeding with utility interruptions.

C. Noise, Vibration, and Odors: Coordinate operations that may result in high levels of noise and vibration, odors, or other disruption to Owner occupancy with Owner.

1. Notify [**Owner**] not less than [**two**] days in advance of proposed disruptive operations.
2. Obtain [**Owner's**] written permission before proceeding with disruptive operations.

D. Restricted Substances: Use of tobacco products and other controlled substances [**within the existing building**] is not permitted.

E. Employee Screening: Comply with Owner's requirements for [**drug**] [**and**] [**background**] screening of Contractor personnel working on Project site.

1. Maintain list of approved screened personnel with Owner's representative.

1.10 SPECIFICATION AND DRAWING CONVENTIONS

A. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:

1. Imperative mood and streamlined language are generally used in the Specifications. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.
2. Specification requirements are to be performed by Contractor unless specifically stated otherwise.

B. Division 01 General Requirements: Requirements of Sections in Division 01 apply to the Work of all Sections in the Specifications.

C. Drawing Coordination: Requirements for materials and products identified on Drawings are described in detail in the Specifications. One or more of the following are used on Drawings to identify materials and products:

1. Terminology: Materials and products are identified by the typical generic terms used in the individual Specifications Sections.
2. Abbreviations: Materials and products are identified by abbreviations [**published as part of the U.S. National CAD Standard**] [**and**] [**scheduled on Drawings**].
3. Keynoting: Materials and products are identified by reference keynotes referencing Specification Section numbers found in this Project Manual.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 011000

SECTION 012300 - ALTERNATES

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for alternates.

1.2 DEFINITIONS

A. Alternate: An amount proposed by bidders and stated on the Bid Form for certain work defined in the bidding requirements that may be added to or deducted from the base bid amount if the Owner decides to accept a corresponding change either in the amount of construction to be completed or in the products, materials, equipment, systems, or installation methods described in the Contract Documents.

1. Alternates described in this Section are part of the Work only if enumerated in the Agreement.
2. The cost or credit for each alternate is the net addition to or deduction from the Contract Sum to incorporate alternates into the Work. No other adjustments are made to the Contract Sum.

1.3 PROCEDURES

A. Coordination: Revise or adjust affected adjacent work as necessary to completely integrate work of the alternate into Project.

1. Include as part of each alternate, miscellaneous devices, accessory objects, and similar items incidental to or required for a complete installation whether or not indicated as part of alternate.

B. Execute accepted alternates under the same conditions as other work of the Contract.

C. Schedule: A schedule of alternates is included at the end of this Section. Specification Sections referenced in schedule contain requirements for materials necessary to achieve the work described under each alternate.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 SCHEDULE OF ALTERNATES

A. Alternate No One: Replace the Historic Front Doors.

1. Base Bid: Refer to Sheet A3.5 Detail 2

Restore existing Historic front pair of Doors. Work includes structural strengthening, replacing damaged molding, stripping paint to bare wood, new paint and hardware as schedule.

Coordinate the restoration work with the new Auto Door Operator header as detailed.

2. Add Alternate: Refer to Sheet A3.5 Detail 4

Fabricate a new pair of doors matching the profiles of the Historic door. Work includes new mahogany stile & rails, wood panels, custom trim & extrusions and hardware as schedule. The existing wood frame to be reused.

Coordinate the new door with the new Auto Door Operator header as detailed.

END OF SECTION 012300

SECTION 012500 - SUBSTITUTION PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements for substitutions.

B. Related Requirements:
   1. Section 012300 "Alternates" for products selected under an alternate.

1.3 DEFINITIONS

A. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Contractor.

   1. Substitutions for Cause: Changes proposed by Contractor that are required due to changed Project conditions, such as unavailability of product, regulatory changes, or unavailability of required warranty terms.
   2. Substitutions for Convenience: Changes proposed by Contractor or Owner that are not required in order to meet other Project requirements but may offer advantage to Contractor or Owner.

1.4 ACTION SUBMITTALS

A. Substitution Requests: Submit three copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.

   1. Substitution Request Form: Use facsimile of form provided in Project Manual.
   2. Documentation: Show compliance with requirements for substitutions and the following, as applicable:

      a. Statement indicating why specified product or fabrication or installation method cannot be provided, if applicable.
      b. Coordination of information, including a list of changes or revisions needed to other parts of the Work and to construction performed by Owner and separate contractors that will be necessary to accommodate proposed substitution.
      c. Detailed comparison of significant qualities of proposed substitutions with those of the Work specified. Include annotated copy of applicable Specification Section. Significant qualities may include attributes, such as performance, weight, size,

durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified.

d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
e. Samples, where applicable or requested.
f. Certificates and qualification data, where applicable or requested.
g. List of similar installations for completed projects, with project names and addresses as well as names and addresses of architects and owners.
h. Material test reports from a qualified testing agency, indicating and interpreting test results for compliance with requirements indicated.
i. Detailed comparison of Contractor's construction schedule using proposed substitutions with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating date of receipt of purchase order, lack of availability, or delays in delivery.
j. Cost information, including a proposal of change, if any, in the Contract Sum.
k. Contractor's certification that proposed substitution complies with requirements in the Contract Documents, except as indicated in substitution request, is compatible with related materials and is appropriate for applications indicated.
l. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.

3. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within [**five**] days of receipt of a request for substitution. Architect will notify Contracto of acceptance or rejection of proposed substitution within [**10**] days of receipt of request, or [**three**] days of receipt of additional information or documentation, whichever is later.

    a. Forms of Acceptance: Change Order or Architect's Supplemental Instructions for minor changes in the Work.
    b. Use product specified if Architect does not issue a decision on use of a proposed substitution within time allocated.

1.5 QUALITY ASSURANCE

A. Compatibility of Substitutions: Investigate and document compatibility of proposed substitution with related products and materials. Engage a qualified testing agency to perform compatibility tests recommended by manufacturers.

1.6 PROCEDURES

A. Coordination: Revise or adjust affected work as necessary to integrate work of the approved substitutions.

1.7 SUBSTITUTIONS

A. Substitutions for Cause: Submit requests for substitution immediately on discovery of need for change, but not later than [**15**] days prior to time required for preparation and review of related submittals.

1. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:

a. Requested substitution is consistent with the Contract Documents and will produce indicated results.
b. Substitution request is fully documented and properly submitted.
c. Requested substitution will not adversely affect Contractor's construction schedule.
d. Requested substitution has received necessary approvals of authorities having jurisdiction.
e. Requested substitution is compatible with other portions of the Work.
f. Requested substitution has been coordinated with other portions of the Work.
g. Requested substitution provides specified warranty.
h. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

B. Substitutions for Convenience: Not allowed.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012500

SECTION 012600 - CONTRACT MODIFICATION PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements for handling and processing Contract modifications.

B. Related Requirements:

1. Section 012500 "Substitution Procedures" for administrative procedures for handling requests for substitutions made after the Contract award.

1.3 MINOR CHANGES IN THE WORK

A. Architect will issue supplemental instructions authorizing minor changes in the Work, not involving adjustment to the Contract Sum or the Contract Time, on [**AIA Document G710**].

1.4 PROPOSAL REQUESTS

A. Owner-Initiated Proposal Requests: [**Architect**] will issue a detailed description of proposed changes in the Work that may require adjustment to the Contract Sum or the Contract Time. If necessary, the description will include supplemental or revised Drawings and Specifications.

1. Work Change Proposal Requests issued by [**Architect**] are not instructions either to stop work in progress or to execute the proposed change.
2. Within [**20 days, when not otherwise specified,**] after receipt of Proposal Request, submit a quotation estimating cost adjustments to the Contract Sum and the Contract Time necessary to execute the change.

    a. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
    b. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
    c. Include costs of labor and supervision directly attributable to the change.
    d. Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.

B. Contractor-Initiated Proposals: If latent or changed conditions require modifications to the Contract, Contractor may initiate a claim by submitting a request for a change to [**Architect**].

1. Include a statement outlining reasons for the change and the effect of the change on the Work. Provide a complete description of the proposed change. Indicate the effect of the proposed change on the Contract Sum and the Contract Time.
2. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
3. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
4. Include costs of labor and supervision directly attributable to the change.
5. Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
6. Comply with requirements in Section 012500 "Substitution Procedures" if the proposed change requires substitution of one product or system for product or system specified.

1.5 CHANGE ORDER PROCEDURES

A. On Owner's approval of a Work Change Proposal Request, [**Architect**] will issue a Change Order for signatures of Owner and Contractor on [**AIA Document G701**].

1.6 CONSTRUCTION CHANGE DIRECTIVE

A. Construction Change Directive: [**Architect**] may issue a Construction Change Directive on [**AIA Document G714**]. Construction Change Directive instructs Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order.

1. Construction Change Directive contains a complete description of change in the Work. It also designates method to be followed to determine change in the Contract Sum or the Contract Time.

B. Documentation: Maintain detailed records on a time and material basis of work required by the Construction Change Directive.

1. After completion of change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012600

SECTION 012900 - PAYMENT PROCEDURESGENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements necessary to prepare and process Applications for Payment.

B. Related Requirements:
   1. Section 012600 "Contract Modification Procedures" for administrative procedures for handling changes to the Contract.

1.3 SCHEDULE OF VALUES

A. Coordination: Coordinate preparation of the schedule of values with preparation of Contractor's construction schedule.

   1. Coordinate line items in the schedule of values with items required to be indicated as separate activities in Contractor's construction schedule.
   2. Submit the schedule of values to Architect at earliest possible date, but no later than [**seven**] days before the date scheduled for submittal of initial Applications for Payment.
   3. Sub-schedules for Phased Work: Where the Work is separated into phases requiring separately phased payments, provide subschedules showing values coordinated with each phase of payment.

B. Format and Content: Use Project Manual table of contents as a guide to establish line items for the schedule of values. Provide at least one line item for each Specification Section.

   1. Identification: Include the following Project identification on the schedule of values:

      a. Project name and location.
      b. Name of Architect.
      c. Architect's Project number.
      d. Contractor's name and address.
      e. Date of submittal.

   2. Arrange schedule of values consistent with format of [**AIA Document G703**] .
   3. Arrange the schedule of values in tabular form, with separate columns to indicate the following for each item listed:

      a. Related Specification Section or Division.
      b. Description of the Work.
      c. Name of subcontractor.

d. Name of manufacturer or fabricator.
e. Name of supplier.
f. Change Orders (numbers) that affect value.
g. Dollar value of the following, as a percentage of the Contract Sum to nearest one-hundredth percent, adjusted to total 100 percent. Round dollar amounts to whole dollars, with total equal to Contract Sum.

1) Labor.
2) Materials.
3) Equipment.

4. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Provide multiple line items for principal subcontract amounts in excess of [**five** percent of the Contract Sum.
5. Provide a separate line item in the schedule of values for each part of the Work where Applications for Payment may include materials or equipment purchased or fabricated and stored, but not yet installed.

a. Differentiate between items stored on-site and items stored off-site.

6. Purchase Contracts: Provide a separate line item in the schedule of values for each purchase contract. Show line-item value of purchase contract. Indicate Owner payments or deposits, if any, and balance to be paid by Contractor.
7. Overhead Costs: Include total cost and proportionate share of general overhead and profit for each line item.
8. Overhead Costs: Show cost of temporary facilities and other major cost items that are not direct cost of actual work-in-place as separate line items.
9. Closeout Costs. Include separate line items under Contractor and principal subcontracts for Project closeout requirements in an amount totaling [**five**] <**Insert number**> percent of the Contract Sum and subcontract amount.
10. Schedule of Values Revisions: Revise the schedule of values when Change Orders or Construction Change Directives result in a change in the Contract Sum. Include at least one separate line item for each Change Order and Construction Change Directive.

1.4 APPLICATIONS FOR PAYMENT

A. Each Application for Payment following the initial Application for Payment shall be consistent with previous applications and payments as certified by Architect and paid for by Owner.

B. Payment Application Times: The date for each progress payment is indicated in the Agreement between Owner and Contractor. The period of construction work covered by each Application for Payment is the period indicated in the Agreement.

C. Payment Application Times: Submit Application for Payment to Architect by the 25th day of the month. The period covered by each Application for Payment is one month, ending on the [**last day of the month**] .

1. Submit draft copy of Application for Payment [**seven**] <**Insert number**> days prior to due date for review by Architect.

D. Application for Payment Forms: Use [**AIA Document G702 and AIA Document G703**] [as form for Applications for Payment.

1. Other Application for Payment forms proposed by the Contractor shall be acceptable to [**Architect**] [**Construction Manager**] and Owner. Submit forms for approval with initial submittal of schedule of values.

E. Application Preparation: Complete every entry on form. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor. [**Architect**] will return incomplete applications without action.

1. Entries shall match data on the schedule of values and Contractor's construction schedule. Use updated schedules if revisions were made.
2. Include amounts for work completed following previous Application for Payment, whether or not payment has been received. Include only amounts for work completed at time of Application for Payment.
3. Include amounts of Change Orders and Construction Change Directives issued before last day of construction period covered by application.
4. Indicate separate amounts for work being carried out under Owner-requested project acceleration.

F. Stored Materials: Include in Application for Payment amounts applied for materials or equipment purchased or fabricated and stored, but not yet installed. Differentiate between items stored on-site and items stored off-site.

1. Provide certificate of insurance, evidence of transfer of title to Owner, and consent of surety to payment for stored materials.
2. Provide supporting documentation that verifies amount requested, such as paid invoices. Match amount requested with amounts indicated on documentation; do not include overhead and profit on stored materials.
3. Provide summary documentation for stored materials indicating the following:

    a. Value of materials previously stored and remaining stored as of date of previous Applications for Payment.
    b. Value of previously stored materials put in place after date of previous Application for Payment and on or before date of current Application for Payment.
    c. Value of materials stored since date of previous Application for Payment and remaining stored as of date of current Application for Payment.

G. Transmittal: Submit signed and notarized original copies of each Application for Payment to [**Architect**] by a method ensuring receipt[**within 24 hours**]. One copy shall include waivers of lien and similar attachments if required.

1. Transmit each copy with a transmittal form listing attachments and recording appropriate information about application.

H. Waivers of Mechanic's Lien: With each Application for Payment, submit waivers of mechanic's lien from [**entities lawfully entitled to file a mechanic's lien arising out of the Contract and related to the Work covered by the payment**] [**subcontractors, sub-subcontractors, and suppliers for construction period covered by the previous application**].

1. Submit partial waivers on each item for amount requested in previous application, after deduction for retainage, on each item.
2. When an application shows completion of an item, submit conditional final or full waivers.
3. Owner reserves the right to designate which entities involved in the Work must submit waivers.
4. Submit final Application for Payment with or preceded by conditional final waivers from every entity involved with performance of the Work covered by the application who is lawfully entitled to a lien.
5. Waiver Forms: Submit executed waivers of lien on forms acceptable to Owner.

I. Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of first Application for Payment include the following:

1. List of subcontractors.
2. Schedule of values.
3. Contractor's construction schedule (preliminary if not final).
4. List of Contractor's staff assignments.
5. List of Contractor's principal consultants.
6. Copies of building permits.
7. Copies of authorizations and licenses from authorities having jurisdiction for performance of the Work.
8. Initial progress report.
9. Report of preconstruction conference.
10. Certificates of insurance and insurance policies.
11. Performance and payment bonds.
12. Data needed to acquire Owner's insurance.

J. Application for Payment at Substantial Completion: After Architect issues the Certificate of Substantial Completion, submit an Application for Payment showing 100 percent completion for portion of the Work claimed as substantially complete.

1. Include documentation supporting claim that the Work is substantially complete and a statement showing an accounting of changes to the Contract Sum.
2. This application shall reflect Certificate(s) of Substantial Completion issued previously for Owner occupancy of designated portions of the Work.

K. Final Payment Application: After completing Project closeout requirements, submit final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited, to the following:

1. Evidence of completion of Project closeout requirements.
2. Insurance certificates for products and completed operations where required and proof that taxes, fees, and similar obligations were paid.
3. Updated final statement, accounting for final changes to the Contract Sum.
4. AIA Document G706.
5. AIA Document G706A.
6. AIA Document G707.
7. Evidence that claims have been settled.

8. Final meter readings for utilities, a measured record of stored fuel, and similar data as of date of Substantial Completion or when Owner took possession of and assumed responsibility for corresponding elements of the Work.
9. Final liquidated damages settlement statement.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012900

SECTION 013233 - PHOTOGRAPHIC DOCUMENTATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements for the following:

1. Preconstruction photographs.
2. Periodic construction photographs.
3. Final completion construction photographs.

B. Related Requirements:

1. Section 017700 "Closeout Procedures" for submitting photographic documentation as Project Record Documents at Project closeout.
2. Section 024119 "Selective Demolition" for photographic documentation before selective demolition operations commence.

1.3 INFORMATIONAL SUBMITTALS

A. Key Plan: Submit key plan of Project site and building with notation of vantage points marked for location and direction of each [**photograph**]. Indicate elevation or story of construction. Include same information as corresponding photographic documentation.

B. Digital Photographs: Submit image files within [**three**] days of taking photographs.

1. Submit photos [**on CD-ROM or thumb-drive**] or [**by uploading to web-based project software site**]. Include copy of key plan indicating each photograph's location and direction.
2. Identification: Provide the following information with each image description [**in file metadata tag**] [**in web-based project software site**]:

a. Name of Project.
b. Name and contact information for photographer.
c. Name of Architect .
d. Name of Contractor.
e. Date photograph was taken.
f. Description of location, vantage point, and direction.
g. Unique sequential identifier keyed to accompanying key plan.

C. Printed Photographs: Submit [**one**] sets of prints of each photographic view at closeouts.

1. Format: 8-by-10-inch (203-by-254-mm) smooth-surface matte prints on single-weight, paper; enclosed back to back in clear plastic sleeves punched for three-ring binder. Include copy of key plan indicating each photograph's location and direction. Provide one binder for each set of prints.
2. Identification: On back of each print, label with the following information:

    a. Name of Project.
    b. Name and contact information for photographer.
    c. Name of Architect.
    d. Name of Contractor.
    e. Date photograph was taken if not date stamped by camera.
    f. Description of vantage point, indicating location, direction (by compass point), and elevation or story of construction.
    g. Unique sequential identifier keyed to accompanying key plan.

1.4 FORMATS AND MEDIA

A. Digital Photographs: Provide color images in JPG format, produced by a digital camera with minimum sensor size of [**12**] megapixels, and at an image resolution of not less than [**3200 by 2400**] pixels. Use flash in low light levels or backlit conditions.

B. Digital Images: Submit digital media as originally recorded in the digital camera, without alteration, manipulation, editing, or modifications using image-editing software.

1.5 CONSTRUCTION PHOTOGRAPHS

A. Photographer: Engage a qualified photographer to take construction photographs.

B. General: Take photographs with maximum depth of field and in focus.

1. Maintain key plan with each set of construction photographs that identifies each photographic location.

C. Preconstruction Photographs: Before [**commencement of demolition**], take photographs of Project site and surrounding properties, including existing items to remain during construction, from different vantage points, as directed by [**Architect**].
1. Take [**10**] photographs to show existing conditions adjacent to property before starting the Work.
2. Take additional photographs as required to record settlement or cracking of adjacent structures, pavements, and improvements.

D. Periodic Construction Photographs: Take [**5**] photographs [**weekly**] [**coinciding with the cutoff date associated with each Application for Payment**]. Select vantage points to show status of construction and progress since last photographs were taken.

E. Final Completion Construction Photographs: Take [**20**] photographs after date of Substantial Completion for submission as Project Record Documents. [**Architect**] will inform photographer of desired vantage points.

F. Additional Photographs: Architect[may request photographs in addition to periodic photographs specified. Additional photographs will be paid for by Change Order and are not included in the Contract Sum[**or in the allowance for construction photographs**].

1. Three days' notice will be given, where feasible.
2. In emergency situations, take additional photographs within 24 hours of request.
3. Circumstances that could require additional photographs include, but are not limited to, the following:

    a. Special events planned at Project site.
    b. Immediate follow-up when on-site events result in construction damage or losses.
    c. Photographs to be taken at fabrication locations away from Project site. These photographs are not subject to unit prices or unit-cost allowances.
    d. Substantial Completion of a major phase or component of the Work.
    e. Extra record photographs at time of final acceptance.
    f. Owner's request for special publicity photographs.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 013233

SECTION 013300 - SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Submittal schedule requirements.
2. Administrative and procedural requirements for submittals.

B. Related Requirements:

1. Section 012900 "Payment Procedures" for submitting Applications for Payment and the schedule of values.
2. Section 013233 "Photographic Documentation" for submitting preconstruction photographs, periodic construction photographs, and final completion construction photographs.
3. Section 017700 "Closeout Procedures" for submitting closeout submittals and maintenance material submittals.
4. Section 017839 "Project Record Documents" for submitting record Drawings, record Specifications, and record Product Data.

1.3 SUBMITTAL FORMATS

A. Submittal Information: Include the following information in each submittal:

1. Project name.
2. Date.
3. Name of Architect.
4. Name of Contractor.
5. Name of firm or entity that prepared submittal.
6. Names of subcontractor, manufacturer, and supplier.
7. Unique submittal number, including revision identifier. Include Specification Section number with sequential alphanumeric identifier; and alphanumeric suffix for resubmittals.
8. Submittal purpose and description.
9. Number and title of Specification Section, with paragraph number and generic name for each of multiple items.
10. Location(s) where product is to be installed, as appropriate.
11. Signature of transmitter.

B. Deviations and Additional Information: On each submittal, clearly indicate deviations from requirements in the Contract Documents, including minor variations and limitations; include relevant additional information and revisions, on previous submittals.

C. Paper Submittals:

1. Place a permanent label or title block on each submittal item for identification; include name of firm or entity that prepared submittal.
2. Action Submittals: Submit [**three**] paper copies of each submittal unless otherwise indicated. Architect will return [**two**] copies.
3. Informational Submittals: Submit [**two**] <**Insert number**> paper copies of each submittal unless otherwise indicated. Architect[**and Construction Manager**] will not return copies.

D. PDF Submittals: Prepare submittals as PDF package, incorporating complete information into each PDF file. Name PDF file with submittal number. Prepare submittals as PDF files, or other format indicated by Project software website.

1.4 SUBMITTAL PROCEDURES

A. Architect's Digital Data Files: Electronic digital data files of the Contract Drawings may be provided by Architect for Contractor's use in preparing submittals.

B. Contractor/Vendors Use of A/E Drawings: Electronic copies of CAD Drawings of the Contract Drawings will not be provided by Architect for Contractor's use in preparing submittals, unless otherwise agreed to by the A/E and at the expense of the Contractor and upon signed release on the Contractor’s letterhead as drafted below.

(letter heading) RELEASE OF LIABILITY FOR USE OF A/E’S CAD FILES

Project: (complete)

Electronic file copies of *(complete architect or engineer firm name)* drawings being provided *to (complete contractor name)* do not represent the project’s Contract Documents. They are being provided as information only to assist the in preparation of documents unrelated to the project for construction.

The CAD or BIM files are instruments of service produced by *(complete architect or engineer firm name)*. The recipient of the electronic files acknowledges they are copyrighted material. Any copies thereof, including electronic media are the property of *(complete architect or engineer firm name)*. There use, representation or reproduction in whole or in partiality, in actual form or content by any entity that possesses them for any purpose except by consent of *(complete architect or engineer firm name)* is prohibited. This copyright notification on the drawings shall be true as if directly placed on each page or sheet on this document and shall not be removed from these documents.

The undersigned, as the authorized representative of *(complete contractor name* shall not hold *(complete architect or engineer firm name)* responsible for the accuracy of information provided in any electronic files.

_____
date

_____
signed

_____
print name

_____
print organization/contractor
1. .

C. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.

1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
2. Submit all submittal items required for each Specification Section concurrently unless partial submittals for portions of the Work are indicated on approved submittal schedule.
3. Submit action submittals and informational submittals required by the same Specification Section as separate packages under separate transmittals.

D. Processing Time: Allow time for submittal review, including time for resubmittals, as follows. Time for review shall commence on [**Architect's**] receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.

1. Initial Review: Allow [**10**] days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. [**Architect**] will advise Contractor when a submittal being processed must be delayed for coordination.
2. Resubmittal Review: Allow [**5**] days for review of each resubmittal.

3. Concurrent Consultant Review: Where the Contract Documents indicate that submittals may be transmitted simultaneously to Architect and to Architect's consultants, allow [**10**] days for review of each submittal. Submittal will be returned to [**Architect**] before being returned to Contractor.

E. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.
1. Note date and content of revision in label or title block and clearly indicate extent of revision.
2. Resubmit submittals until they are marked with approval notation from Architect's action stamp.

F. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.

G. Use for Construction: Retain complete copies of submittals on Project site. Use only final action submittals that are marked with approval notation from Architect's action stamp.

1.5 SUBMITTAL REQUIREMENTS

A. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.

1. If information must be specially prepared for submittal because standard published data are unsuitable for use, submit as Shop Drawings, not as Product Data.
2. Mark each copy of each submittal to show which products and options are applicable.
3. Include the following information, as applicable:

    a. Manufacturer's catalog cuts.
    b. Manufacturer's product specifications.
    c. Standard color charts.
    d. Statement of compliance with specified referenced standards.
    e. Testing by recognized testing agency.

4. For equipment, include the following in addition to the above, as applicable:

    a. Wiring diagrams that show factory-installed wiring.
    b. Printed performance curves.
    c. Operational range diagrams.
    d. Clearances required to other construction, if not indicated on accompanying Shop Drawings.

B. Shop Drawings: Prepare Project-specific information, drawn accurately to scale.

1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:

    a. Identification of products.
    b. Schedules.
    c. Compliance with specified standards.
    d. Notation of coordination requirements.
    e. Notation of dimensions established by field measurement.
    f. Relationship and attachment to adjoining construction clearly indicated.
    g. Seal and signature of professional engineer if specified.

2. Paper Sheet Size: Except for templates, patterns, and similar full-size Drawings, submit Shop Drawings on sheets at least [**8-1/2 by 11 inches**, **but no larger than 30 by 42 inches** .

    a. [**Two**] opaque (bond) copies of each submittal. Architect will return [**one**]

3. BIM Incorporation: [**Develop and incorporate**] Shop Drawing files into BIM established for Project.

C. Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other materials.

1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.

2. Identification: Permanently attach label on unexposed side of Samples that includes the following:

    a. Project name and submittal number.
    b. Generic description of Sample.
    c. Product name and name of manufacturer.

3. Email Transmittal: Provide PDF transmittal. Include digital image file illustrating Sample characteristics, and identification information for record.
4. Paper Transmittal: Include paper transmittal including complete submittal information indicated.
5. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.

6. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.

    a. Number of Samples: Submit [**two**] sets of Samples. Architect[will retain [**one**] Sample sets; remainder will be returned.

D. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, contact information of architects and owners, and other information specified.

E. Certificates:

1. Certificates and Certifications Submittals: Submit a statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity. Provide a notarized signature where indicated.
2. Installer Certificates: Submit written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.
3. Manufacturer Certificates: Submit written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.
4. Material Certificates: Submit written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.
5. Product Certificates: Submit written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.
6. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of Welding Procedure Specification and Procedure Qualification Record on AWS forms. Include names of firms and personnel certified.

F. Test and Research Reports:

1. Compatibility Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.
2. Field Test Reports: Submit written reports indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.
3. Material Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.
4. Product Test Reports: Submit written reports indicating that current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.
5. Research Reports: Submit written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project. Include the following information:

a. Name of evaluation organization.
b. Date of evaluation.
c. Time period when report is in effect.
d. Product and manufacturers' names.
e. Description of product.
f. Test procedures and results.
g. Limitations of use.

1.6 CONTRACTOR'S REVIEW

A. Action Submittals and Informational Submittals: Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Architect .

B. Contractor's Approval: Indicate Contractor's approval for each submittal with [**a uniform approval stamp**]. Include name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

1. Architect will not review submittals received from Contractor that do not have Contractor's review and approval.

1.7 ARCHITECT'S REVIEW

A. Action Submittals: Architect will review each submittal, indicate corrections or revisions required[**, and return it**].

1. PDF Submittals: Architect will indicate, via markup on each submittal, the appropriate action.

2. Paper Submittals: Architect will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action[**.**]

B. Partial submittals prepared for a portion of the Work will be reviewed when use of partial submittals has received prior approval from Architect.

C. Incomplete submittals are unacceptable, will be considered nonresponsive, and will be returned for resubmittal without review.

D. Architect will [**discard**] submittals received from sources other than Contractor.

E. Submittals not required by the Contract Documents will be returned by Architect without action.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 013300

SECTION 013320 – STATE OF FLORIDA PRODUCT APPROVAL SYSTEM

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for submitting documentation to the Building Code Adminstrator for the project in accordnace with Florida Statute 553.842.

B. Related Sections include the following:

1. Division 1 Section "Submittal Requirements" for submitting traditional product information and shop drawings to the Architect for review.

1.4 SUBMITTAL PROCEDURES

A. General: FSU's Building Code Adminstrator is responsible for implementing this process and will initiate a submittal and review process at the time the building permit is issued.

B. Coordination: Coordinate and processing of approval numbers with the various trade contractors under the management of the Construction Manager.

C. Product Approval Specification Sheet: Refer to pages PRODUCT APPROVAL SPECIFICATION SHEET that follow this section.

END OF SECTION 013320

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SECTION 015000 - TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes requirements for temporary utilities, support facilities, and security and protection facilities.

B. Related Requirements:

1. Section 011000 "Summary" for work restrictions and limitations on utility interruptions.

1.3 UTILITIES

A. Sewer Service: Not Applicable.

B. Water Service: Use of existing service is permitted at no cost to Contractor.

C. Electric Power Service: Use of existing power is permitted at no cost to Contractor.

PART 2 - PRODUCTS

2.1 TEMPORARY FACILITIES

A. Portable Toilet Facility. Each contractor shall rent, secure and maintain a portable toilet unit from a licensed specialty vendor that regularly serves construction sites.

2.2 EQUIPMENT

A. Fire Extinguishers: Portable, UL rated; with class and extinguishing agent as required by locations and classes of fire exposures.

PART 3 - EXECUTION

3.1 TEMPORARY FACILITIES, GENERAL

A. Conservation: Coordinate construction and use of temporary facilities with consideration given to conservation of energy, water, and materials. Coordinate use of temporary utilities to minimize waste.

3.2 INSTALLATION, GENERAL

A. Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required by progress of the Work.

1. Locate facilities to limit site disturbance as specified in Section 011000 "Summary."

B. Provide each facility ready for use when needed to avoid delay. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

3.3 SUPPORT FACILITIES INSTALLATION

A. Provide temporary directional signs for construction personnel and visitors. Maintain and touch up signs so they are legible at all times

B. Waste Disposal Facilities: Comply with requirements specified in Section 017419 "Construction Waste Management and Disposal."

C. Waste Disposal Facilities: Provide waste-collection containers in sizes adequate to handle waste from construction operations. Comply with requirements of authorities having jurisdiction.

D. Lifts and Hoists: Provide facilities necessary for hoisting materials and personnel.

1. Truck cranes and similar devices used for hoisting materials are considered "tools and equipment" and not temporary facilities.

3.4 SECURITY AND PROTECTION FACILITIES INSTALLATION

A. Protection of Existing Facilities: Protect existing vegetation, equipment, structures, utilities, and other improvements at Project site and on adjacent properties, except those indicated to be removed or altered. **Repair damage to existing facilities.**

1. Where access to adjacent properties is required in order to affect protection of existing facilities, obtain written permission from Owner’s Representative.

B. Tree and Plant Protection: Install temporary fencing located as indicated or outside the drip line of trees to protect vegetation from damage from construction operations. Protect tree root systems from damage, flooding, and erosion.

C. Site Enclosure Fence: Before construction operations begin, furnish and install site enclosure fence in a manner that will prevent people from easily entering site except by entrance gates.

1. Extent of Fence: As required to enclose entire Project site or portion determined sufficient to accommodate construction operations.

D. Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.

E. Temporary Egress: Maintain temporary egress from existing occupied facilities as indicated and as required by authorities having jurisdiction.

3.5 OPERATION, TERMINATION, AND REMOVAL

A. Supervision: Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.

B. Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.

1. Materials and facilities that constitute temporary facilities are property of Contractor. Owner reserves right to take possession of Project identification signs.

END OF SECTION 015000

SECTION 017300 - EXECUTION

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes general administrative and procedural requirements governing execution of the Work including, but not limited to, the following:

1. Construction layout.
2. Field engineering and surveying.
3. Installation of the Work.
4. Cutting and patching.
5. Progress cleaning.
6. Starting and adjusting.
7. Protection of installed construction.

B. Related Requirements:

1. Section 011000 "Summary" for limits on use of Project site.
2. Section 013300 "Submittal Procedures" for submitting surveys.
3. Section 017700 "Closeout Procedures" for submitting final property survey with Project Record Documents, recording of Owner-accepted deviations from indicated lines and levels, replacing defective work, and final cleaning.
4. Section 024119 "Selective Demolition" for demolition and removal of selected portions of the building.

1.3 DEFINITIONS

A. Cutting: Removal of in-place construction necessary to permit installation or performance of subsequent work.

B. Patching: Fitting and repair work required to restore construction to original conditions after installation of subsequent work.

1.4 INFORMATIONAL SUBMITTALS

A. Cutting and Patching Plan: Submit plan describing procedures at least [**10**] <**Insert number**> days prior to the time cutting and patching will be performed. Include the following information:

1. Extent: Describe reason for and extent of each occurrence of cutting and patching.

2. Changes to In-Place Construction: Describe anticipated results. Include changes to structural elements and operating components as well as changes in building appearance and other significant visual elements.
3. Dates: Indicate when cutting and patching will be performed.
4. Utilities and Mechanical and Electrical Systems: List services and systems that cutting and patching procedures will disturb or affect. List services and systems that will be relocated and those that will be temporarily out of service. Indicate length of time permanent services and systems will be disrupted.

B. Landfill Receipts: Submit copy of receipts issued by a landfill facility, licensed to accept hazardous materials, for hazardous waste disposal.

1.5 QUALITY ASSURANCE

A. Cutting and Patching: Comply with requirements for and limitations on cutting and patching of construction elements.

1. Structural Elements: When cutting and patching structural elements, notify Architect of locations and details of cutting and await directions from Architect before proceeding. Shore, brace, and support structural elements during cutting and patching. Do not cut and patch structural elements in a manner that could change their load-carrying capacity or increase deflection.
2. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety.[**Operational elements include the following:**]

    a. Primary operational systems and equipment.
    b. Fire-suppression systems.
    c. Plumbing piping systems.
    d. Mechanical systems piping and ducts.
    e. Communication systems.
    f. Electrical wiring systems.

3. Other Construction Elements: Do not cut and patch other construction elements or components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety.

    a. Water, moisture, or vapor barriers.
    b. Membranes and flashings.
    c. Equipment supports.
    d. Piping, ductwork, vessels, and equipment.

4. Visual Elements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch exposed construction in a manner that would, in Architect's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.

PART 2 - PRODUCTS

2.1 MATERIALS

A. General: Comply with requirements specified in other Sections.

1. For projects requiring compliance with sustainable design and construction practices and procedures, use products for patching that comply with sustainable design requirements.

B. In-Place Materials: Use materials for patching identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.

1. If identical materials are unavailable or cannot be used, use materials that, when installed, will provide a match acceptable to Architect for the visual and functional performance of in-place materials.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Existing Conditions: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning sitework, investigate and verify the existence and location of underground utilities,[**mechanical and electrical systems,**] and other construction affecting the Work.

1. Before construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, and water-service piping; underground electrical services; and other utilities.
2. Furnish location data for work related to Project that must be performed by public utilities serving Project site.

B. Examination and Acceptance of Conditions: Before proceeding with each component of the Work, examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.

1. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.
2. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
3. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.

C. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

3.2 PREPARATION

A. Existing Utility Information: Furnish information to [**Owner**] that is necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility appurtenances located in or affected by construction. Coordinate with authorities having jurisdiction.

B. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

C. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.

D. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents caused by differing field conditions outside the control of Contractor, submit a request for information to Architect according to requirements in Section 013100 "Project Management and Coordination."

3.3 INSTALLATION

A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.

1. Make vertical work plumb and make horizontal work level.
2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
3. Conceal pipes, ducts, and wiring in finished areas unless otherwise indicated.
4. Maintain minimum headroom clearance of [**96 inches (2440 mm)**] <**Insert dimension**> in occupied spaces and [**90 inches (2300 mm)**] <**Insert dimension**> in unoccupied spaces.

B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.

C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.

D. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.

E. Sequence the Work and allow adequate clearances to accommodate movement of construction items on site and placement in permanent locations.

F. Tools and Equipment: Where possible, select tools or equipment that minimize production of excessive noise levels.

G. Templates: Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed. Check Shop Drawings of other portions of the Work to

confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.

H. Attachment: Provide blocking and attachment plates and anchors and fasteners of adequate size and number to securely anchor each component in place, accurately located and aligned with other portions of the Work. Where size and type of attachments are not indicated, verify size and type required for load conditions.

1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Architect.
2. Allow for building movement, including thermal expansion and contraction.
3. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.

I. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections together to form hairline joints.

J. Repair or remove and replace damaged, defective, or nonconforming Work.

1. Comply with Section 017700 "Closeout Procedures" for repairing or removing and replacing defective Work.

3.4 CUTTING AND PATCHING

A. Cutting and Patching, General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.

1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.

B. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during installation or cutting and patching operations, by methods and with materials so as not to void existing warranties.

C. Temporary Support: Provide temporary support of work to be cut.

D. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.

E. Adjacent Occupied Areas: Where interference with use of adjoining areas or interruption of free passage to adjoining areas is unavoidable, coordinate cutting and patching according to requirements in Section 011000 "Summary."

F. Existing Utility Services and Mechanical/Electrical Systems: Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to [**minimize**] interruption to occupied areas.

G. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.

1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots neatly to minimum size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
3. [**Concrete**] [**and**] [**Masonry**]: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
4. Excavating and Backfilling: Comply with requirements in applicable Sections where required by cutting and patching operations.
5. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
6. Proceed with patching after construction operations requiring cutting are complete.

H. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other work. Patch with durable seams that are as invisible as practicable. Provide materials and comply with installation requirements specified in other Sections, where applicable.

1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate physical integrity of installation.
2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will minimize evidence of patching and refinishing.

    a. Clean piping, conduit, and similar features before applying paint or other finishing materials.
    b. Restore damaged pipe covering to its original condition.

3. Floors and Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove in-place floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.

    a. Where patching occurs in a painted surface, prepare substrate and apply primer and intermediate paint coats appropriate for substrate over the patch, and apply final paint coat over entire unbroken surface containing the patch. Provide additional coats until patch blends with adjacent surfaces.

4. Ceilings: Patch, repair, or rehang in-place ceilings as necessary to provide an even-plane surface of uniform appearance.
5. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition and ensures thermal and moisture integrity of building enclosure.

I. Cleaning: Clean areas and spaces where cutting and patching are performed. Remove paint, mortar, oils, putty, and similar materials from adjacent finished surfaces.

3.5 PROGRESS CLEANING

A. General: Clean Project site and work areas daily, including common areas. Enforce requirements strictly. Dispose of materials lawfully.

1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
2. Do not hold waste materials more than seven days during normal weather or three days if the temperature is expected to rise above 80 deg F (27 deg C).
3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.

    a. Use containers intended for holding waste materials of type to be stored.

4. Coordinate progress cleaning for joint-use areas where Contractor and other contractors are working concurrently.

B. Site: Maintain Project site free of waste materials and debris.

C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.

1. Remove liquid spills promptly.
2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.

D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.

E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.

F. Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.

G. Waste Disposal: Do not bury or burn waste materials on-site. Do not wash waste materials down sewers or into waterways. Comply with waste disposal requirements in [**Section 017419 "Construction Waste Management and Disposal."**]

H. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.

I. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.

J. Limiting Exposures: Supervise construction operations to ensure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

3.6 STARTING AND ADJUSTING

A. Coordinate startup and adjusting of equipment and operating components with requirements in Section 019113 "General Commissioning Requirements."

B. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.

C. Adjust equipment for proper operation. Adjust operating components for proper operation without binding.

D. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

E. Manufacturer's Field Service: Comply with qualification requirements in Section 014000 "Quality Requirements."

3.7 PROTECTION OF INSTALLED CONSTRUCTION

A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.

B. Protection of Existing Items: Provide protection and ensure that existing items to remain undisturbed by construction are maintained in condition that existed at commencement of the Work.

C. Comply with manufacturer's written instructions for temperature and relative humidity.

END OF SECTION 017300

SECTION 017419 - CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements for the following:
   1. Recycling nonhazardous [**demolition**] [**and**] [**construction**] waste.
   2. Disposing of nonhazardous [**demolition**] [**and**] [**construction**] waste.

1.3 DEFINITIONS

A. Construction Waste: Building, structure, and site improvement materials and other solid waste resulting from construction, remodeling, renovation, or repair operations. Construction waste includes packaging.

B. Demolition Waste: Building, structure, and site improvement materials resulting from demolition operations.

C. Disposal: Removal of demolition or construction waste and subsequent salvage, sale, recycling, or deposit in landfill, incinerator acceptable to authorities having jurisdiction, or designated spoil areas on Owner’s property.

1.4 MATERIALS OWNERSHIP

A. Unless otherwise indicated, demolition and construction waste becomes property of Contractor.

B. Historic items, relics, antiques, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, and other items of interest or value to Owner that may be uncovered during demolition remain the property of Owner.

   1. Carefully salvage in a manner to prevent damage and promptly return to Owner.

1.5 INFORMATIONAL SUBMITTALS

A. Records of Donations: Indicate receipt and acceptance of salvageable waste donated to individuals and organizations. Indicate whether organization is tax exempt.

B. Records of Sales: Indicate receipt and acceptance of salvageable waste sold to individuals and organizations. Indicate whether organization is tax exempt.

C. Recycling and Processing Facility Records: Indicate receipt and acceptance of recyclable waste by recycling and processing facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.

D. Landfill and Incinerator Disposal Records: Indicate receipt and acceptance of waste by landfills and incinerator facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.

1.6 QUALITY ASSURANCE

A. Waste Management Coordinator Qualifications: Experienced firm, or individual employed and assigned by General Contractor, with a record of successful waste management coordination of projects with similar requirements.

B. Regulatory Requirements: Comply with transportation and disposal regulations of authorities having jurisdiction.

1.7 WASTE MANAGEMENT PLAN

A. General: Develop a waste management plan according to requirements in this Section. Plan shall consist of waste identification, waste reduction work plan, and cost/revenue analysis. Indicate quantities by weight or volume, but use same units of measure throughout waste management plan.

B. Cost/Revenue Analysis: Indicate total cost of waste disposal as if there were no waste management plan and net additional cost or net savings resulting from implementing waste management plan.

1. Total quantity of waste.
2. Estimated cost of disposal (cost per unit). Include transportation and tipping fees and cost of collection containers and handling for each type of waste.
3. Total cost of disposal (with no waste management).
4. Revenue from salvaged materials.
5. Revenue from recycled materials.
6. Savings in transportation and tipping fees by donating materials.
7. Savings in transportation and tipping fees that are avoided.
8. Handling and transportation costs. Include cost of collection containers for each type of waste.
9. Net additional cost or net savings from waste management plan.

PART 2 - PRODUCTS

2.1 RECYCLING RECEIVERS AND PROCESSORS

A. Subject to compliance with requirements, available recycling receivers and processors include, but are not limited to, the following:

1. Waste Pro.

2.2 PERFORMANCE REQUIREMENTS

A. General: Achieve end-of-Project rates for salvage/recycling of [**50**] [**75**] <**Insert number**> percent by weight of total nonhazardous solid waste generated by the Work. Practice efficient waste management in the use of materials in the course of the Work. Use all reasonable means to divert construction and demolition waste from landfills and incinerators. Facilitate recycling and salvage of materials[**.**][**, including the following:**]

1. Demolition Waste:

    a. Asphalt paving.
    b. Concrete.
    c. Concrete reinforcing steel.
    d. Brick.
    e. Wood studs.
    f. Wood joists.
    g. Wood paneling.
    h. Wood trim.
    i. Rough hardware.
    j. Insulation.
    k. Gypsum board.
    l. Acoustical tile and panels.
    m. Carpet.
    n. Equipment.
    o. Cabinets.
    p. Supports and hangers.
    q. Electrical conduit.
    r. Copper wiring.
    s. Lighting fixtures.
    t. Lamps.
    u. Ballasts.
    v. Electrical devices.

2. Construction Waste:

    a. Masonry and CMU.
    b. Lumber.
    c. Wood sheet materials.
    d. Wood trim.
    e. Metals.
    f. Insulation.
    g. Carpet and pad.
    h. Gypsum board.
    i. Piping.
    j. Electrical conduit.

PART 3 - EXECUTION

3.1 PLAN IMPLEMENTATION

A. General: Implement approved waste management plan. Provide handling, containers, storage, signage, transportation, and other items as required to implement waste management plan during the entire duration of the Contract.

1. Comply with operation, termination, and removal requirements in Section 015000 "Temporary Facilities and Controls."

B. Site Access and Temporary Controls: Conduct waste management operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.

1. Designate and label specific areas on Project site necessary for separating materials that are to be salvaged and recycled.
2. Comply with Section 015000 "Temporary Facilities and Controls" for controlling dust and dirt, environmental protection, and noise control.

C. Waste Management in Historic Zones or Areas: Transportation equipment and other materials shall be of sizes that clear surfaces within historic spaces, areas, rooms, and openings, by [**12 inches (300 mm)**] .

3.2 RECYCLING [**DEMOLITION**] [**AND**] [**CONSTRUCTION**] WASTE, GENERAL

A. General: Recycle paper and beverage containers used by on-site workers.

B. Preparation of Waste: Prepare and maintain recyclable waste materials according to recycling or reuse facility requirements. Maintain materials free of dirt, adhesives, solvents, petroleum contamination, and other substances deleterious to the recycling process.

C. Procedures: Separate recyclable waste from other waste materials, trash, and debris. Separate recyclable waste by type at Project site to the maximum extent practical according to approved construction waste management plan.
1. Store components off the ground and protect from the weather.
2. Remove recyclable waste from Owner's property and transport to recycling receiver or processor as often as required to prevent overfilling bins.

3.3 RECYCLING DEMOLITION WASTE

A. Asphalt Paving: Break up and transport paving to asphalt-recycling facility.

B. Concrete: Remove reinforcement and other metals from concrete and sort with other metals.
1. Crush concrete and screen to comply with requirements in Section 312000 "Earth Moving" for use as satisfactory soil for fill or subbase.

C. Wood Materials: Sort and stack members according to size, type, and length. Separate lumber, engineered wood products, panel products, and treated wood materials.

D. Metals: Separate metals by type.

1. Structural Steel: Stack members according to size, type of member, and length.
2. Remove and dispose of bolts, nuts, washers, and other rough hardware.

E. Gypsum Board: Stack large clean pieces on wood pallets or in container and store in a dry location. Remove edge trim and sort with other metals. Remove and dispose of fasteners.

F. Acoustical Ceiling Panels and Tile: Stack large clean pieces on wood pallets and store in a dry location.

G. Metal Suspension System: Separate metal members, including trim and other metals from acoustical panels and tile, and sort with other metals.

H. Carpet[**and Pad**]: Roll large pieces tightly after removing debris, trash, adhesive, and tack strips.

1. Store clean, dry carpet[**and pad**] in a closed container or trailer provided by carpet reclamation agency or carpet recycler.

I. Piping: Reduce piping to straight lengths and store by material and size. Separate supports, hangers, valves, sprinklers, and other components by material and size.

J. Conduit: Reduce conduit to straight lengths and store by material and size.

K. Lamps: Separate lamps by type and store according to requirements in 40 CFR 273.

3.4 RECYCLING CONSTRUCTION WASTE

A. Packaging:

1. Cardboard and Boxes: Break down packaging into flat sheets. Bundle and store in a dry location.
2. Polystyrene Packaging: Separate and bag materials.
3. Pallets: As much as possible, require deliveries using pallets to remove pallets from Project site. For pallets that remain on-site, break down pallets into component wood pieces and comply with requirements for recycling wood.
4. Crates: Break down crates into component wood pieces and comply with requirements for recycling wood.

B. Wood Materials:

1. Clean Cut-Offs of Lumber: Grind or chip into small pieces.
2. Clean Sawdust: Bag sawdust that does not contain painted or treated wood.

a. Comply with requirements in Section 329300 "Plants" for use of clean sawdust as organic mulch.

C. Gypsum Board: Stack large clean pieces on wood pallets or in container and store in a dry location.

1. Clean Gypsum Board: Grind scraps of clean gypsum board using small mobile chipper or hammer mill. Screen out paper after grinding.

    a. Comply with requirements in Section 329300 "Plants" for use of clean ground gypsum board as inorganic soil amendment.

D. Paint: Seal containers and store by type.

3.5 DISPOSAL OF WASTE

A. General: Except for items or materials to be salvaged or recycled, remove waste materials from Project site and legally dispose of them in a landfill or incinerator acceptable to authorities having jurisdiction.

1. Except as otherwise specified, do not allow waste materials that are to be disposed of accumulate on-site.
2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.

B. General: Except for items or materials to be salvaged or recycled, remove waste materials and legally dispose of at designated spoil areas on Owner’s property.

END OF SECTION 017419

SECTION 017700 - CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:

1. Substantial Completion procedures.
2. Final completion procedures.
3. Warranties.
4. Final cleaning.
5. Repair of the Work.

B. Related Requirements:
1. Section 017839 "Project Record Documents" for submitting Record Drawings, Record Specifications, and Record Product Data.

1.3 ACTION SUBMITTALS

A. Contractor's List of Incomplete Items: Initial submittal at Substantial Completion.

B. Certified List of Incomplete Items: Final submittal at final completion.

1.4 CLOSEOUT SUBMITTALS

A. Certificates of Release: From authorities having jurisdiction.

B. Certificate of Insurance: For continuing coverage.

C. Field Report: For pest control inspection.

1.5 MAINTENANCE MATERIAL SUBMITTALS

A. Schedule of Maintenance Material Items: For maintenance material submittal items specified in other Sections.

1.6 SUBSTANTIAL COMPLETION PROCEDURES

A. Contractor's List of Incomplete Items: Prepare and submit a list of items to be completed and corrected (Contractor's punch list), indicating the value of each item on the list and reasons why the Work is incomplete.

B. Submittals Prior to Substantial Completion: Complete the following a minimum of [**5**] days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.

1. Certificates of Release: Obtain and submit releases from authorities having jurisdiction permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
2. Submit closeout submittals specified in other Division 01 Sections, including project record documents, operation and maintenance manuals, damage or settlement surveys, property surveys, and similar final record information.
3. Submit closeout submittals specified in individual Sections, including specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
4. Submit maintenance material submittals specified in individual Sections, including tools, spare parts, extra materials, and similar items, and deliver to location designated by [**Architect**]. Label with manufacturer's name and model number.

5. Submit testing, adjusting, and balancing records.

C. Procedures Prior to Substantial Completion: Complete the following a minimum of [**5**] days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.

1. Advise Owner of pending insurance changeover requirements.
2. Make final changeover of permanent locks and deliver keys to Owner. Advise Owner's personnel of changeover in security provisions.
3. Complete startup and testing of systems and equipment.
4. Perform preventive maintenance on equipment used prior to Substantial Completion.
5. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems. Submit demonstration and training video recordings specified in Section 017900 "Demonstration and Training."
6. Advise Owner of changeover in utility services.
7. Participate with Owner in conducting inspection and walkthrough with local emergency responders.
8. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
9. Complete final cleaning requirements.
10. Touch up paint and otherwise repair and restore marred exposed finishes to eliminate visual defects.

D. Inspection: Submit a written request for inspection to determine Substantial Completion a minimum of [**5**] days prior to date the Work will be completed and ready for final inspection and tests. On receipt of request, Architect [**and Construction Manager**] will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either

on Contractor's list or additional items identified by Architect, that must be completed or corrected before certificate will be issued.

1. Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
2. Results of completed inspection will form the basis of requirements for final completion.

1.7 FINAL COMPLETION PROCEDURES

A. Submittals Prior to Final Completion: Before requesting final inspection for determining final completion, complete the following:

1. Submit a final Application for Payment according to Section 012900 "Payment Procedures."
2. Certified List of Incomplete Items: Submit certified copy of Architect's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Architect. Certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
3. Certificate of Insurance: Submit evidence of final, continuing insurance coverage complying with insurance requirements.
4. Submit pest-control final inspection report.
5. Submit final completion photographic documentation.

B. Inspection: Submit a written request for final inspection to determine acceptance a minimum of 10 days prior to date the work will be completed and ready for final inspection and tests. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.

1.8 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

A. Organization of List: Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction.

1.9 SUBMITTAL OF PROJECT WARRANTIES

A. Time of Submittal: Submit written warranties on request of Architect for designated portions of the Work where warranties are indicated to commence on dates other than date of Substantial Completion, or when delay in submittal of warranties might limit Owner's rights under warranty.

B. Partial Occupancy: Submit properly executed warranties within [**5**] days of completion of designated portions of the Work that are completed and occupied or used by Owner during construction period by separate agreement with Contractor.

C. Organize warranty documents into an orderly sequence based on the table of contents of Project Manual.

D. Warranty Electronic File: Provide warranties and bonds in PDF format. Assemble complete warranty and bond submittal package into a single electronic PDF file with bookmarks enabling navigation to each item. Provide bookmarked table of contents at beginning of document.

1. Submit [**on digital media acceptable to Architect**]

E. Provide additional copies of each warranty to include in operation and maintenance manuals.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

1. Use cleaning products that comply with Green Seal's GS-37, or if GS-37 is not applicable, use products that comply with the California Code of Regulations maximum allowable VOC levels.

PART 3 - EXECUTION

3.1 FINAL CLEANING

A. General: Perform final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.

B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.

1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a designated portion of Project:

a. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
c. Rake grounds that are not planted, mulched, or paved to a smooth, even-textured surface.
d. Remove tools, construction equipment, machinery, and surplus material from Project site.

e. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials. Polish mirrors and glass, taking care not to scratch surfaces.
f. Remove labels that are not permanent.
g. Wipe surfaces of mechanical and electrical equipment**,** and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.
h. Clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from water exposure.
i. Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills.

j. Clean luminaires, lamps, globes, and reflectors to function with full efficiency.
k. Leave Project clean and ready for occupancy.

C. Pest Control: Comply with pest control requirements in Section 015000 "Temporary Facilities and Controls." Prepare written report.

3.2 REPAIR OF THE WORK

A. Complete repair and restoration operations before requesting inspection for determination of Substantial Completion.

B. Repair, or remove and replace, defective construction. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment. Where damaged or worn items cannot be repaired or restored, provide replacements. Remove and replace operating components that cannot be repaired. Restore damaged construction and permanent facilities used during construction to specified condition.
1. Touch up and otherwise repair and restore marred or exposed finishes and surfaces. Replace finishes and surfaces that that already show evidence of repair or restoration.

2. Replace parts subject to operating conditions during construction that may impede operation or reduce longevity.
3. Replace burned-out bulbs, bulbs noticeably dimmed by hours of use, and defective and noisy starters in fluorescent and mercury vapor fixtures to comply with requirements for new fixtures.

END OF SECTION 017700

Division 02 – Sitework

SECTION 024119 - SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Demolition and removal of selected components of building.
2. Salvage of existing items to be reused or recycled.

B. Related Requirements:

1. Section 011000 "Summary" for restrictions on use of the premises, Owner-occupancy requirements, and phasing requirements.

1.3 DEFINITIONS

A. Remove: Detach items from existing construction and dispose of them off-site unless indicated to be salvaged or reinstalled.

B. Remove and Salvage: Detach items from existing construction, in a manner to prevent damage, and [**store**].

C. Remove and Reinstall: Detach items from existing construction, in a manner to prevent damage, prepare for reuse, and reinstall where indicated.

D. Existing to Remain: Leave existing items that are not to be removed and that are not otherwise indicated to be salvaged or reinstalled.

E. Dismantle: To remove by disassembling or detaching an item from a surface, using gentle methods and equipment to prevent damage to the item and surfaces; disposing of items unless indicated to be salvaged or reinstalled.

1.4 MATERIALS OWNERSHIP

A. Unless otherwise indicated, demolition waste becomes property of Contractor.

B. Historic items, relics, antiques, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, and other items of interest or value to Owner that may be uncovered during demolition remain the property of Owner.

1. Carefully salvage in a manner to prevent damage and promptly return to Owner.

1.5 INFORMATIONAL SUBMITTALS

A. Schedule of Selective Demolition Activities: Indicate the following:

1. Detailed sequence of selective demolition and removal work, with starting and ending dates for each activity. Ensure Owner's [**building manager's**] [**and**] [**other tenants'**] on-site operations are uninterrupted.
2. Interruption of utility services. Indicate how long utility services will be interrupted.
3. Coordination for shutoff, capping, and continuation of utility services.
4. Use of stairs.
5. Coordination of Owner's continuing occupancy of portions of existing building and of Owner's partial occupancy of completed Work.

B. Predemolition Photographs or Video: Show existing conditions of adjoining construction, including finish surfaces, that might be misconstrued as damage caused by demolition operations. Comply with Section 013233 "Photographic Documentation." Submit before Work begins.

1.6 FIELD CONDITIONS

A. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.

B. Notify Architect of discrepancies between existing conditions and Drawings before proceeding with selective demolition.

C. 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.

D. Hazardous Materials: Present in buildings and structures to be selectively demolished. A report on the presence of hazardous materials is included ion Volume 1 of these specifications. Examine report to become aware of locations where hazardous materials are present.

1. Hazardous material remediation is specified elsewhere in the Contract Documents.
2. Do not disturb hazardous materials or items suspected of containing hazardous materials except under procedures specified elsewhere in the Contract Documents.

E. Historic Areas: Demolition and hauling equipment and other materials shall be of sizes that clear surfaces within historic spaces, areas, rooms, and openings, including temporary protection, by [**12 inches (300 mm)**] or more.

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.

1.7 COORDINATION

A. Arrange selective demolition schedule so as not to interfere with Owner's operations.

PART 2 - PRODUCTS

2.1 PERFORMANCE 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 ASSE A10.6 and NFPA 241.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that utilities have been disconnected and capped before starting selective demolition operations.

B. Review Project Record Documents of existing construction or other existing condition and hazardous material information provided by Owner. Owner does not guarantee that existing conditions are same as those indicated in Project Record Documents.

C. Verify that hazardous materials have been remediated before proceeding with building demolition operations.

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 PROTECTION

A. Temporary Protection: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.

1. Provide protection to ensure safe passage of people around selective demolition area and to and from occupied portions of building.
2. Provide temporary weather protection, during interval between selective demolition of existing construction on exterior surfaces and new construction, to prevent water leakage and damage to structure and interior areas.

3. Protect walls, ceilings, floors, and other existing finish work that are to remain or that are exposed during selective demolition operations.
4. Cover and protect furniture, furnishings, and equipment that have not been removed.

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 and as follows:

1. Proceed with selective demolition systematically, from higher to lower level. Complete selective demolition operations above each floor or tier before disturbing supporting members on the next lower level.
2. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping. Temporarily cover openings to remain.
3. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
4. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain portable fire-suppression devices during flame-cutting operations.
5. Remove decayed, vermin-infested, or otherwise dangerous or unsuitable materials and promptly dispose of off-site.
6. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
7. Dispose of demolished items and materials promptly.[**Comply with requirements in Section 017419 "Construction Waste Management and Disposal."**]

B. 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.

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 SELECTIVE DEMOLITION PROCEDURES FOR SPECIFIC MATERIALS

A. Concrete: Demolish in sections. Cut concrete full depth at junctures with construction to remain and at regular intervals using power-driven saw, and then remove concrete between saw cuts.

B. Masonry: Demolish in small sections. Cut masonry at junctures with construction to remain, using power-driven saw, and then remove masonry between saw cuts.

3.6 DISPOSAL OF DEMOLISHED MATERIALS

A. Remove demolition waste materials from Project site [**and dispose of them in an EPA-approved construction and demolition waste landfill acceptable to authorities having jurisdiction.**] [**and recycle or dispose of them according to Section 017419 "Construction Waste Management and Disposal."**]

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.

3.7 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

Division 03 - Concrete

SECTION 033000 - CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Design Mixtures: For each concrete mixture. Submit alternate design mixtures when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments.

1.3 FIELD CONDITIONS

A. Cold-Weather Placement: Comply with ACI 306.1 and as follows. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures.

1. When average high and low temperature is expected to fall below 40 deg F (4.4 deg C) for three successive days, maintain delivered concrete mixture temperature within the temperature range required by ACI 301 (ACI 301M).

B. Hot-Weather Placement: Comply with ACI 301 (ACI 301M) and ACI 305.1 (ACI 305.1M), and as follows:

1. Maintain concrete temperature below 90 deg F (32 deg C) at time of placement. Chilled mixing water or chopped ice may be used to control temperature, provided water equivalent of ice is calculated to total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor's option.

PART 2 - PRODUCTS

2.1 CONCRETE, GENERAL

A. ACI Publications: Comply with the following unless modified by requirements in the Contract Documents:

1. ACI 301 (ACI 301M).

2.2 FORM-FACING MATERIALS

A. Smooth-Formed Finished Concrete: Form-facing panels that provide continuous, true, and smooth concrete surfaces. Furnish in largest practicable sizes to minimize number of joints.

1. Plywood, metal, or other approved panel materials.

B. Rough-Formed Finished Concrete: Plywood, lumber, metal, or another approved material. Provide lumber dressed on at least two edges and one side for tight fit.

2.3 STEEL REINFORCEMENT

A. Reinforcing Bars: ASTM A 615/A 615M, Grade 60 (Grade 420), deformed.

2.4 REINFORCEMENT ACCESSORIES

A. Joint Dowel Bars: ASTM A 615/A 615M, Grade 60 (Grade 420), plain-steel bars, cut true to length with ends square and free of burrs.

B. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars and welded-wire reinforcement in place. Manufacture bar supports from steel wire, plastic, or precast concrete according to CRSI's "Manual of Standard Practice," of greater compressive strength than concrete and as follows:

2.5 CONCRETE MATERIALS

A. Source Limitations: Obtain each type or class of cementitious material of the same brand from the same manufacturer's plant, obtain aggregate from single source, and obtain admixtures from single source from single manufacturer.

B. Cementitious Materials:

1. Portland Cement: ASTM C 150/C 150M [**Type I/II**] [**gray**]
2. Fly Ash: ASTM C 618 [**Class F or C**].
3. Slag Cement: ASTM C 989/C 989M, Grade 100 or 120.
4. Blended Hydraulic Cement: ASTM C 595/C 595M, [**Type IS, portland blast-furnace slag**] [**Type IP, portland-pozzolan**] [**Type IL, portland-limestone**] [**Type IT, ternary blended**] cement.
5. Silica Fume: ASTM C 1240, amorphous silica.

C. Normal-Weight Aggregates: ASTM C 33/C 33M, [**Class 3S**] [**Class 3M**] [**Class 1N**] < coarse aggregate or better, graded. Provide aggregates from a single source[**with documented service record data of at least 10 years' satisfactory service in similar applications and service conditions using similar aggregates and cementitious materials**].

1. Maximum Coarse-Aggregate Size: [**3/4 inch (19 mm)**] nominal.
2. Fine Aggregate: Free of materials with deleterious reactivity to alkali in cement.

D. Air-Entraining Admixture: ASTM C 260/C 260M.

E. Water: ASTM C 94/C 94M[**and potable**].

2.6 VAPOR RETARDERS

A. Sheet Vapor Retarder: Polyethylene sheet, ASTM D 4397, not less than 10 mils (0.25 mm) thick.

2.7 CURING MATERIALS

A. Evaporation Retarder: Waterborne, monomolecular film forming, manufactured for application to fresh concrete.

B. Water: Potable.

C. Clear, Waterborne, Membrane-Forming Curing Compound: ASTM C 309, Type 1, Class B, dissipating.

2.8 REPAIR MATERIALS

A. Repair Underlayment: Cement-based, polymer-modified, self-leveling product that can be applied in thicknesses from 1/8 inch (3.2 mm) and that can be feathered at edges to match adjacent floor elevations.

1. Cement Binder: ASTM C 150/C 150M, portland cement or hydraulic or blended hydraulic cement as defined in ASTM C 219.
2. Primer: Product of underlayment manufacturer recommended for substrate, conditions, and application.
3. Aggregate: Well-graded, washed gravel, 1/8 to 1/4 inch (3.2 to 6 mm) or coarse sand as recommended by underlayment manufacturer.
4. Compressive Strength: Not less than [**4100 psi (29 MPa)**] at 28 days when tested according to ASTM C 109/C 109M.

2.9 CONCRETE MIXTURES, GENERAL

A. Prepare design mixtures for each type and strength of concrete, proportioned on the basis of laboratory trial mixture or field test data, or both, according to ACI 301 (ACI 301M).

1. Use a qualified independent testing agency for preparing and reporting proposed mixture designs based on laboratory trial mixtures.

B. Admixtures: Use admixtures according to manufacturer's written instructions.

1. Use [**water-reducing**] [**high-range water-reducing**] admixture in concrete, as required, for placement and workability.
2. Use water-reducing and -retarding admixture when required by high temperatures, low humidity, or other adverse placement conditions.

3. Use water-reducing admixture in pumped concrete, concrete for heavy-use industrial slabs and parking structure slabs, concrete required to be watertight, and concrete with a w/c ratio below 0.50.
4. Use corrosion-inhibiting admixture in concrete mixtures where indicated.

C. Slabs-on-Grade: Normal-weight concrete.

1. Minimum Compressive Strength: [**3000 psi (20.7 MPa)**] at 28 days.
2. Maximum W/C Ratio: [**0.45**] .
3. Slump Limit: [**5 inches (125 mm)**] **before adding high-range water-reducing admixture or plasticizing admixture**] plus or minus 1 inch (25 mm).

D. Concrete Toppings: Normal-weight concrete.

1. Minimum Compressive Strength: [**3000 psi (20.7 MPa)**] [**As indicated**] at 28 days.

2.10 CONCRETE MIXING

A. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete according to ASTM C 94/C 94M[**and ASTM C 1116/C 1116M**], and furnish batch ticket information.

1. When air temperature is between 85 and 90 deg F (30 and 32 deg C), reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F (32 deg C), reduce mixing and delivery time to 60 minutes.

B. Project-Site Mixing: Measure, batch, and mix concrete materials and concrete according to ASTM C 94/C 94M. Mix concrete materials in appropriate drum-type batch machine mixer.

1. For mixer capacity of 1 cu. yd. (0.76 cu. m) or smaller, continue mixing at least 1-1/2 minutes, but not more than 5 minutes after ingredients are in mixer, before any part of batch is released.
2. For mixer capacity larger than 1 cu. yd. (0.76 cu. m), increase mixing time by 15 seconds for each additional 1 cu. yd. (0.76 cu. m).

PART 3 - EXECUTION

3.1 FORMWORK INSTALLATION

A. Construct formwork so concrete members and structures are of size, shape, alignment, elevation, and position indicated, within tolerance limits of ACI 117 (ACI 117M).

B. Set edge forms, bulkheads, and intermediate screed strips for slabs to achieve required elevations and slopes in finished concrete surfaces. Provide and secure units to support screed strips; use strike-off templates or compacting-type screeds.

3.2 VAPOR-RETARDER INSTALLATION

A. Sheet Vapor Retarders: Place, protect, and repair sheet vapor retarder according to ASTM E 1643 and manufacturer's written instructions.

1. Lap joints 6 inches (150 mm) and seal with manufacturer's recommended tape.

3.3 JOINTS

A. General: Construct joints true to line with faces perpendicular to surface plane of concrete.

B. Construction Joints: Install so strength and appearance of concrete are not impaired, at locations indicated or as approved by Architect.

1. Place joints perpendicular to main reinforcement. Continue reinforcement across construction joints unless otherwise indicated. Do not continue reinforcement through sides of strip placements of floors and slabs.
2. Form keyed joints as indicated. Embed keys at least 1-1/2 inches (38 mm) into concrete.
3. Locate joints for beams, slabs, joists, and girders in the middle third of spans. Offset joints in girders a minimum distance of twice the beam width from a beam-girder intersection.
4. Locate horizontal joints in walls and columns at underside of floors, slabs, beams, and girders and at the top of footings or floor slabs.
5. Space vertical joints in walls [**as indicated**] <**Insert spacing**>. Locate joints beside piers integral with walls, near corners, and in concealed locations where possible.
6. Use a bonding agent at locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.
7. Use epoxy-bonding adhesive at locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.

C. Doweled Joints: Install dowel bars and support assemblies at joints where indicated. Lubricate or asphalt coat one-half of dowel length to prevent concrete bonding to one side of joint.

3.4 FINISHING FLOORS AND SLABS

A. General: Comply with ACI 302.1R recommendations for screeding, restraightening, and finishing operations for concrete surfaces. Do not wet concrete surfaces.

B. Trowel and Fine-Broom Finish: Apply a first trowel finish to surfaces [**indicated**] [**where ceramic or quarry tile is to be installed by either thickset or thinset method**]. While concrete is still plastic, slightly scarify surface with a fine broom.

1. Comply with flatness and levelness tolerances for trowel-finished floor surfaces.

3.5 MISCELLANEOUS CONCRETE ITEM INSTALLATION

A. Filling In: Fill in holes and openings left in concrete structures after work of other trades is in place unless otherwise indicated. Mix, place, and cure concrete, as specified, to blend with in-

place construction. Provide other miscellaneous concrete filling indicated or required to complete the Work.

3.6 CONCRETE PROTECTING AND CURING

A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 306.1 for cold-weather protection and ACI 305.1 (ACI 305.1M) for hot-weather protection during curing.

B. Cure concrete according to ACI 308.1, by one or a combination of the following methods:

1. Moisture Curing: Keep surfaces continuously moist for not less than seven days with the following materials:

   a. Water.
   b. Continuous water-fog spray.
   c. Absorptive cover, water saturated, and kept continuously wet. Cover concrete surfaces and edges with 12-inch (300-mm) lap over adjacent absorptive covers.

2. Curing Compound: Apply uniformly in continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Maintain continuity of coating and repair damage during curing period.

   a. Removal: After curing period has elapsed, remove curing compound without damaging concrete surfaces by method recommended by curing compound manufacturer [**unless manufacturer certifies curing compound does not interfere with bonding of floor covering used on Project**].

3. Curing and Sealing Compound: Apply uniformly to floors and slabs indicated in a continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Repeat process 24 hours later and apply a second coat. Maintain continuity of coating and repair damage during curing period.

3.7 CONCRETE SURFACE REPAIRS

A. Defective Concrete: Repair and patch defective areas when approved by Architect. Remove and replace concrete that cannot be repaired and patched to Architect's approval.

B. Patching Mortar: Mix dry-pack patching mortar, consisting of 1 part portland cement to 2-1/2 parts fine aggregate passing a No. 16 (1.18-mm) sieve, using only enough water for handling and placing.

END OF SECTION 033000

Division 05 – Metals

SECTION 055000 - METAL FABRICATIONS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:
   1. Steel framing and supports for mechanical and electrical equipment.
   2. Decorative rail

1.3 ACTION SUBMITTALS

A. Shop Drawings: Show fabrication and installation details. [**Include plans, elevations, sections, and details of metal fabrications and their connections. Show anchorage and accessory items.**]
   1. Provide Shop Drawings for the following:
      a. Decorative rail

1.4 FIELD CONDITIONS

A. Field Measurements: Verify actual locations of walls and other construction contiguous with metal fabrications by field measurements before fabrication.

PART 2 - PRODUCTS

2.1 METALS

A. Metal Surfaces, General: Provide materials with smooth, flat surfaces unless otherwise indicated. For metal fabrications exposed to view in the completed Work, provide materials without seam marks, roller marks, rolled trade names, or blemishes.

B. Steel Plates, Shapes, and Bars: ASTM A 36/A 36M.

C. Stainless-Steel Sheet, Strip, and Plate: ASTM A 240/A 240M or ASTM A 666, [**Type 304**].

D. Stainless-Steel Bars and Shapes: ASTM A 276, [**Type 304**].

E. Rolled-Steel Floor Plate: ASTM A 786/A 786M, rolled from plate complying with ASTM A 36/A 36M or ASTM A 283/A 283M, Grade C or D.

F. Rolled-Stainless-Steel Floor Plate: ASTM A 793.

G. Steel Tubing: ASTM A 500/A 500M, cold-formed steel tubing.

H. Steel Pipe: ASTM A 53/A 53M, Standard Weight (Schedule 40) unless otherwise indicated.

I. Bronze Extrusions: ASTM B 455, Alloy UNS No. C38500 (extruded architectural bronze).

J. Bronze Castings: ASTM B 584, Alloy UNS No. C83600 (leaded red brass) or No. C84400 (leaded semired brass).

2.2 MANUFACTURERS

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

1. Copper-Alloy Ornamental Railings:
   a. Architectural Metal Works.
   b. Blum, Julius & Co., Inc. basis of design
   c. Braun, J. G., Company; a division of the Wagner Companies.
   d. CraneVeyor Corp.
   e. Lavi Industries.
   f. Livers Bronze Co.
   g. Newman Brothers, Inc.
   h. Platers Polishing Company; a division of Rippel Architectural Metals.
   i. Tri Tech, Inc.
   j. Wagner, R & B, Inc.; a division of the Wagner Companies.
   k. Wylie Systems.
   l. Zephyr Southwest Ornamental, LLC.

2.3 FASTENERS

A. General: Unless otherwise indicated, provide [**Type 304**] stainless-steel fasteners for exterior use and zinc-plated fasteners with coating complying with ASTM B 633 or ASTM F 1941 (ASTM F 1941M), Class Fe/Zn 5, at exterior walls. Select fasteners for type, grade, and class required.

1. Provide stainless-steel fasteners for fastening aluminum.
2. Provide stainless-steel fasteners for fastening stainless steel.
3. Provide stainless-steel fasteners for fastening nickel silver.
4. Provide bronze fasteners for fastening bronze.

B. Steel Bolts and Nuts: Regular hexagon-head bolts, ASTM A 307, Grade A (ASTM F 568M, Property Class 4.6); with hex nuts, ASTM A 563 (ASTM A 563M); and, where indicated, flat washers.

C. Steel Bolts and Nuts: Regular hexagon-head bolts, ASTM A 325, Type 3 (ASTM A 325M, Type 3); with hex nuts, ASTM A 563, Grade C3 (ASTM A 563M, Class 8S3); and, where indicated, flat washers.

D. Stainless-Steel Bolts and Nuts: Regular hexagon-head annealed stainless-steel bolts, ASTM F 593 (ASTM F 738M); with hex nuts, ASTM F 594 (ASTM F 836M); and, where indicated, flat washers; Alloy [**Group 1 (A1)**] [**Group 2 (A4)**].

E. Anchor Bolts: ASTM F 1554, Grade 36, of dimensions indicated; with nuts, ASTM A 563 (ASTM A 563M); and, where indicated, flat washers.

1. Hot-dip galvanize or provide mechanically deposited, zinc coating where item being fastened is indicated to be galvanized.

F. Anchors, General: Anchors capable of sustaining, without failure, a load equal to six times the load imposed when installed in unit masonry and four times the load imposed when installed in concrete, as determined by testing according to ASTM E 488/E 488M, conducted by a qualified independent testing agency.

G. Post-Installed Anchors: [**Torque-controlled expansion anchors**] [**or**] [**chemical anchors**].

1. Material for Interior Locations: Carbon-steel components zinc plated to comply with ASTM B 633 or ASTM F 1941 (ASTM F 1941M), Class Fe/Zn 5, unless otherwise indicated.
2. Material for Exterior Locations and Where Stainless Steel Is Indicated: Alloy [**Group 1 (A1)**] [**Group 2 (A4)**] stainless-steel bolts, ASTM F 593 (ASTM F 738M), and nuts, ASTM F 594 (ASTM F 836M).

2.4 MISCELLANEOUS MATERIALS

A. Universal Shop Primer: Fast-curing, lead- and chromate-free, universal modified-alkyd primer complying with MPI#79 and compatible with topcoat.

1. Use primer containing pigments that make it easily distinguishable from zinc-rich primer.

B. Water-Based Primer: Emulsion type, anticorrosive primer for mildly corrosive environments that is resistant to flash rusting when applied to cleaned steel, complying with MPI#107 and compatible with topcoat.

C. Epoxy Zinc-Rich Primer: Complying with MPI#20 and compatible with topcoat.

D. Shop Primer for Galvanized Steel: Primer formulated for exterior use over zinc-coated metal and compatible with finish paint systems indicated.

E. Galvanizing Repair Paint: High-zinc-dust-content paint complying with SSPC-Paint 20 and compatible with paints specified to be used over it.

F. Nonshrink, Nonmetallic Grout: Factory-packaged, nonstaining, noncorrosive, nongaseous grout complying with ASTM C 1107/C 1107M. Provide grout specifically recommended by manufacturer for interior and exterior applications.

2.5 FABRICATION, GENERAL

A. Shop Assembly: Preassemble items in the shop to greatest extent possible. Disassemble units only as necessary for shipping and handling limitations. Use connections that maintain structural value of joined pieces. Clearly mark units for reassembly and coordinated installation.

B. Cut, drill, and punch metals cleanly and accurately. Remove burrs and ease edges to a radius of approximately 1/32 inch (1 mm) unless otherwise indicated. Remove sharp or rough areas on exposed surfaces.

C. Form bent-metal corners to smallest radius possible without causing grain separation or otherwise impairing work.

D. Form exposed work with accurate angles and surfaces and straight edges.

E. Weld corners and seams continuously to comply with the following:

1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
2. Obtain fusion without undercut or overlap.
3. Remove welding flux immediately.
4. At exposed connections, finish exposed welds and surfaces smooth and blended so no roughness shows after finishing [**and contour of welded surface matches that of adjacent surface**].

2.6 STEEL HAND AND GUARD RAILS

A. General: Metal Surfaces, General: Provide materials with smooth surfaces, without seam marks, roller marks, rolled trade names, stains, discolorations, or blemishes.

B. Guard rail:
1. Decorative top rail – # 4534 top rail as indicated on the drawing
2. Lambs Tongue – bronze as indicated on the drawing
3. Posts – # 131 Bronze Post 1 ½” x 1 ½ x ¼’
4. Picket and rail cap support – ¼” x 1 ¼” bar stock
5. Bottom rail – 1 ½” x ¼’ bar stock
6. Pickets #130 Bronze picket
7. Base plate #269 Bronze (custom fit at ramp slope)
8. Anchor bolts stainless 3/8 x 4 ½’ lags

2.7 STEEL WELD PLATES AND ANGLES

A. Provide steel weld plates and angles not specified in other Sections, for items supported from concrete construction as needed to complete the Work. Provide each unit with no fewer than two integrally welded steel strap anchors for embedding in concrete.

2.8 FINISHES, GENERAL

A. Finish metal fabrications after assembly.

B. Finish exposed surfaces to remove tool and die marks and stretch lines, and to blend into surrounding surface.

2.9 STEEL AND IRON FINISHES

A. Galvanizing: Hot-dip galvanize items as indicated to comply with ASTM A 153/A 153M for steel and iron hardware and with ASTM A 123/A 123M for other steel and iron products.

1. Do not quench or apply post galvanizing treatments that might interfere with paint adhesion.

B. Preparation for Shop Priming Galvanized Items: After galvanizing, thoroughly clean railings of grease, dirt, oil, flux, and other foreign matter, and treat with metallic phosphate process.

C. Shop prime iron and steel items [**not indicated to be galvanized**] unless they are to be embedded in concrete, sprayed-on fireproofing, or masonry, or unless otherwise indicated.

D. Preparation for Shop Priming: Prepare surfaces to comply with [**SSPC-SP 3, "Power Tool Cleaning."**]

E. Shop Priming: Apply shop primer to comply with SSPC-PA 1, "Paint Application Specification No. 1: Shop, Field, and Maintenance Painting of Steel," for shop painting.

1. Stripe paint corners, crevices, bolts, welds, and sharp edges.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Cutting, Fitting, and Placement: Perform cutting, drilling, and fitting required for installing metal fabrications. Set metal fabrications accurately in location, alignment, and elevation; with edges and surfaces level, plumb, true, and free of rack; and measured from established lines and levels.

B. Fit exposed connections accurately together to form hairline joints. Weld connections that are not to be left as exposed joints but cannot be shop welded because of shipping size limitations. Do not weld, cut, or abrade surfaces of exterior units that have been hot-dip galvanized after fabrication and are for bolted or screwed field connections.

C. Field Welding: Comply with the following requirements:

1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
2. Obtain fusion without undercut or overlap.
3. Remove welding flux immediately.
4. At exposed connections, finish exposed welds and surfaces smooth and blended so no roughness shows after finishing and contour of welded surface matches that of adjacent surface.

3.2 ADJUSTING AND CLEANING

A. Touchup Painting: Immediately after erection, clean field welds, bolted connections, and abraded areas. Paint uncoated and abraded areas with the same material as used for shop painting to comply with SSPC-PA 1 for touching up shop-painted surfaces.

1. Apply by brush or spray to provide a minimum 2.0-mil (0.05-mm) dry film thickness.

B. Touchup Painting: Cleaning and touchup painting of field welds, bolted connections, and abraded areas of shop paint are specified in [**Section 099113 "Exterior Painting."**] [**Section 099123 "Interior Painting."**]

C. Galvanized Surfaces: Clean field welds, bolted connections, and abraded areas and repair galvanizing to comply with ASTM A 780/A 780M.

END OF SECTION 055000

Division 06 – Wood, Plastics, and Composites

SECTION 060312 - HISTORIC WOOD REPAIR

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes historic treatment of wood in the form of repairing wood features as follows:

1. Repairing/replacing window sash frame and trim.
2. Replacing wood **[Tongue and groove paneling] [and] [trim].**
3. Repairing, refinishing, and cleaning.

1.3 ACTION SUBMITTALS

A. Shop Drawings:

1. Include plans, showing locations and extent of repair and replacement work, with enlarged details of replacement parts indicating materials, profiles, joinery, reinforcing, method of splicing or attaching wood members to other surfaces, accessory items, and finishes.
2. Include field-verified dimensions and the following:

    a. Full-size shapes and profiles with complete dimensions for replacement components and their jointing, showing relationship of existing components to new components.

B. Samples for Initial Selection: For each type of exposed wood and finish.

1. Identify wood species, cut, and other features.

C. Samples for Verification: For the following products in manufacturer's standard sizes unless otherwise indicated, finished as required for use in the Work:

1. Replacement Wood: 12-inch- (300-mm-) long, full-size molding sections with applied finish.

2. Repaired Wood: Prepare Samples using existing wood removed from site, repaired, and prepared for refinishing.
3. Refinished Wood: Prepare Samples using existing wood removed from site, repaired, and refinished.

1.4 QUALITY ASSURANCE

A. Mockups: Prepare mockups of historic treatment repair processes to demonstrate aesthetic effects and to set quality standards for materials and execution, and for fabrication and installation. Prepare mockups so they are as inconspicuous as practicable.

1. Locate mockups [**on existing surfaces where directed by Architect**].
2. Wood trim Repair: Prepare an approximately [**72-inch (2000-mm)**] length of trim to serve as mockup to demonstrate samples of each type of wood repair.
3. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
4. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Pack, deliver, and store products in suitable packs, heavy-duty cartons, or wooden crates; surround with sufficient packing material to ensure that products will not be deformed, broken, or otherwise damaged.

B. Until installed, store products inside a well-ventilated area and protect from weather, moisture, soiling, abrasion, extreme temperatures, and humidity, and where environmental conditions comply with manufacturer's requirements.

PART 2 - PRODUCTS

2.1 HISTORIC WOOD REPAIR, GENERAL

A. Quality Standard: Comply with applicable requirements in Section 12, "Historic Restoration Work," and related requirements in AWI/AWMAC/WI's "Architectural Woodwork Standards" for construction, finishes, grade rules, and other requirements unless otherwise indicated.

2.2 REPLICATED WOOD ITEMS

A. Replicated Wood [window sash & trim Tongue and Groove Paneling and Trim] : Custom-fabricated replacement wood units and components.
1. Wood Species: [**Match species of existing wood**] .
2. Wood Member and Trim Profiles: Match profiles and detail of existing.

2.3 WOOD-REPLACEMENT MATERIALS

A. Wood, General: Clear fine-grained lumber; kiln dried to a moisture content of 6 to 12 percent at time of fabrication; free of visible finger joints, blue stain, knots, pitch pockets, and surface checks larger than 1/32 inch (0.8 mm) deep by 2 inches (51 mm) wide.

1. Species [**Match species of each existing type of wood component or assembly**]. unless otherwise indicated.

B. Interior Trim: [**Match existing species**] [.

2.4 WOOD-REPAIR MATERIALS

A. Source Limitations: Obtain wood consolidate and wood-patching compound from single source from single manufacturer.

B. Wood-Patching Compound: Two-part, epoxy-resin, wood-patching compound; knife-grade formulation as recommended in writing by manufacturer for type of wood repair indicated, tooling time required for the detail of work, and site conditions. Compound shall be designed for filling voids in damaged wood materials that have deteriorated due to weathering and decay. Compound shall be capable of filling deep holes and spreading to featheredge.
1. **Basis of design:** WoodEpox , Abatton - Structural 2-Part Epoxy Adhesive for Filling and Replacing Wood.

2.5 MISCELLANEOUS MATERIALS

A. Borate Preservative Treatment: Inorganic, borate-based solution, with disodium octaborate tetrahydrate as the primary ingredient; manufactured for preserving weathered and decayed wood from further damage caused by fungi and wood-boring insects; complying with AWPA P5; containing no boric acid.

1. Basis of Design: Bora-Care with Mold-Care - treats and prevents mold on wood surfaces

B. Cleaning Materials:

1. Detergent Solution: Solution prepared by mixing 2 cups (0.5 L) of tetrasodium pyrophosphate (TSPP), 1/2 cup (125 mL) of laundry detergent that contains no ammonia, 5 quarts (5 L) of 5 percent sodium hypochlorite bleach, and 15 quarts (15 L) of warm water for each 5 gal. (20 L) of solution required.
2. Mildewcide: Commercial, proprietary mildewcide or a solution prepared by mixing 1/3 cup (80 mL) of household detergent that contains no ammonia, 1 quart (1 L) of 5 percent sodium hypochlorite bleach, and 3 quarts (3 L) of warm water.

C. Adhesives: Wood adhesives with minimum 15- to 45-minute cure at 70 deg F (21 deg C), in gunnable and liquid formulations as recommended in writing by adhesive manufacturer for each type of repair and exposure condition.

D. Fasteners: Use fastener metals that are noncorrosive and compatible with each material joined.

1. Match existing fasteners in material and type of fastener unless otherwise indicated.
2. Use concealed fasteners for interconnecting wood components.
3. For exposed fasteners, counter-sink and fill flush with adjacent surfaces.

PART 3 - EXECUTION

3.1 PREPARATION

A. Protect adjacent materials from damage by historic wood repair.

B. Clean wood of mildew, algae, moss, plant material, loose paint, grease, dirt, and other debris by scrubbing with bristle brush or sponge and detergent solution. Scrub mildewed areas with mildewcide. After cleaning, rinse thoroughly with fresh water. Allow to dry before repairing or painting.

C. Condition replacement wood members and replacement units to prevailing conditions at installation areas before installing.

3.2 HISTORIC WOOD REPAIR, GENERAL

A. Historic Treatment Appearance Standard: Completed work is to have a uniform appearance as viewed by Architect from [**10 feet (3 m)**] away for interior work and from [**20 feet6 m**] away for exterior work.

B. General: In treating historic items, disturb them as minimally as possible and as follows:

1. Stabilize and repair wood to reestablish structural integrity and weather resistance while maintaining the existing form of each item.
2. Remove coatings and apply borate preservative treatment before repair. Remove coatings according to Section 090391 "Historic Treatment of Plain Painting" unless otherwise indicated.
3. Repair items in place where possible.
4. Install temporary protective measures to protect wood-treatment work that is indicated to be completed later.
5. Refinish historic wood according to Section 090391 "Historic Treatment of Plain Painting" unless otherwise indicated.

C. Mechanical Abrasion: Where mechanical abrasion is needed for the work, use only the gentlest mechanical methods, such as scraping and natural-fiber bristle brushing, that will not abrade wood substrate, reducing clarity of detail. Do not use abrasive methods, such as sanding, wire brushing, or power tools, except as indicated as part of the historic treatment program and as approved by Architect.

D. Repair Wood: Match existing materials and features, retaining as much original material as possible to perform repairs.

1. Unless otherwise indicated, repair wood by consolidating, patching, splicing, or otherwise reinforcing wood with new wood matching existing wood or with salvaged, sound, original wood.
2. Where indicated, repair wood by limited replacement matching existing material.

E. Replace Wood: Where indicated, duplicate and replace units with units made from salvaged, sound, original wood or with new wood matching existing wood. Use surviving prototypes to create patterns for duplicate replacements.

1. Do not use substitute materials unless otherwise indicated.
2. Compatible substitute materials may be used.

F. Identify removed items with numbering system corresponding to item locations, to ensure reinstallation in same location. Key items to Drawings showing location of each removed unit. Permanently label units in a location that will be concealed after reinstallation.

3.3 WOOD PATCH-TYPE REPAIR

A. General: Patch wood that exhibits depressions, holes, or similar voids, and that has limited amounts of rotted or decayed wood.

1. Verify that surfaces are sufficiently clean and free of paint residue prior to patching.
2. Treat wood with wood consolidant prior to application of patching compound. Coat wood surfaces by brushing, applying multiple coats until wood is saturated and refuses to absorb more. Allow treatment to harden before filling void with patching compound.
3. Remove rotted or decayed wood down to sound wood.

B. Apply borate preservative treatment to accessible surfaces either before applying wood consolidant or after removing rotted or decayed wood. Apply treatment liberally by brush to joints, edges, and ends; top, sides, and bottom. Allow treatment to dry.

C. Apply wood-patching compound to fill depressions, nicks, cracks, and other voids created by removed or missing wood.

1. Prime patch area with application of wood consolidate or manufacturer's recommended primer.
2. Mix only as much patching compound as can be applied according to manufacturer's written instructions.
3. Apply patching compound in layers as recommended in writing by manufacturer until the void is completely filled.
4. Sand patch surface smooth and flush with adjacent wood, without voids in patch material, and matching contour of wood member.
5. Clean spilled compound from adjacent materials immediately.

3.4 WOOD-REPLACEMENT REPAIR

A. General: Replace parts of or entire wood items at locations [**indicated on Drawings**]

1. Remove surface-attached items from wood surface before performing wood-replacement repairs unless otherwise indicated.
2. Verify that surfaces are sufficiently clean and free of paint residue prior to repair.
3. Remove broken, rotted, and decayed wood down to sound wood.
4. Custom fabricate new wood to replace missing wood; either replace entire wood member or splice new wood part into existing member.

5. Secure new wood using finger joints, multiple dowels, or splines with adhesive and nailing to ensure maximum structural integrity at each splice. Use only concealed fasteners. Fill nail holes and patch surface to match surrounding sound wood.

B. Apply borate preservative treatment to accessible surfaces after replacements are made. Apply treatment liberally by brush to joints, edges, and ends; top, sides, and bottom.

C. Repair remaining depressions, holes, or similar voids with patch-type repairs.

D. Clean spilled materials from adjacent surfaces immediately.

E. Reinstall items removed for repair into original locations.

3.5 FIELD QUALITY CONTROL

A. Manufacturers Field Service: Engage wood-repair-material manufacturers' factory-authorized service representatives for consultation and Project-site inspection, and provide on-site assistance when requested by Architect.

3.6 ADJUSTMENT

A. Adjust existing and replacement operating items, hardware, and accessories for a tight fit at contact points and for smooth operation and tight closure. Lubricate hardware and moving parts.

3.7 CLEANING AND PROTECTION

A. Protect wood surfaces from contact with contaminating substances resulting from construction operations. Monitor wood surfaces adjacent to and below exterior concrete and masonry during construction for presence of dirt, scum, alkaline deposits, stains, or other contaminants. If contaminating substances contact wood surfaces, remove contaminants immediately.

B. Clean exposed surfaces immediately after historic wood repair. Avoid damage to coatings and finishes. Remove excess sealants, patching materials, dirt, and other substances.

3.8 HISTORIC WOOD-REPAIR/REPLACE SCHEDULE

A. Main Hall & Meeting room
1. First floor: running cornices trim front and back soffit of upper balcony.
2. Second floor: running cornice trim above windows.
3. Windows as indicated.
4. Window casing as indicated.
5. Conference room running trim.

B. Restoration summary
1. Removal of Existing Paint and Refinish: prepare for refinishing, and refinishing historic wood.

C. Running Trim [**Base**] [**and**] [**crown moldings**].

1. General: Repair or replace existing wood using indicated treatments [**on-site**].
2. Finishing: See interior painting 099123.

END OF SECTION 060312

SECTION 061000 - ROUGH CARPENTRY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Framing with dimension lumber.
2. Wood blocking and nailers.
3. Wood sleepers.
4. Plywood panels

PART 2 - PRODUCTS

2.1 WOOD PRODUCTS, GENERAL

A. Lumber: DOC PS 20 and applicable rules of grading agencies indicated. If no grading agency is indicated, comply with the applicable rules of any rules-writing agency certified by the ALSC Board of Review. Grade lumber by an agency certified by the ALSC Board of Review to inspect and grade lumber under the rules indicated.

B. Maximum Moisture Content of Lumber: [**19 percent**] unless otherwise indicated.

2.2 WOOD-PRESERVATIVE-TREATED LUMBER

A. Preservative Treatment by Pressure Process: AWPA U1; Use Category UC2[**for interior construction not in contact with ground, Use Category UC3b for exterior construction not in contact with ground, and Use Category UC4a for items in contact with ground**].

1. Preservative Chemicals: Acceptable to authorities having jurisdiction and containing no arsenic or chromium.[**Do not use inorganic boron (SBX) for sill plates.**]

B. Kiln-dry lumber after treatment to a maximum moisture content of 19 percent. Do not use material that is warped or that does not comply with requirements for untreated material.

C. Mark lumber with treatment quality mark of an inspection agency approved by the ALSC Board of Review.

D. Application: Treat [**all rough carpentry unless otherwise indicated**

1. Wood cants, nailers, curbs, equipment support bases, blocking, stripping, and similar members in connection with roofing, flashing, vapor barriers, and waterproofing.
2. Wood sills, sleepers, blocking, [**furring,**] [**stripping,**] and similar concealed members in contact with masonry or concrete.
3. Wood framing and furring attached directly to the interior of below-grade exterior masonry or concrete walls.
4. Wood framing members that are less than 18 inches (460 mm) above the ground in crawlspaces or unexcavated areas.
5. Wood floor plates that are installed over concrete slabs-on-grade.

2.3 DIMENSION LUMBER FRAMING

A. Non-Load-Bearing Interior Partitions: [**Construction or No. 2**] grade.

1. Application: [**All interior partitions**].
2. Species:
   a. Southern pine or mixed southern pine; SPIB.

2.4 MISCELLANEOUS LUMBER

A. General: Provide miscellaneous lumber indicated and lumber for support or attachment of other construction, including the following:

1. Blocking.
2. Nailers.
3. Rooftop equipment bases and support curbs.
4. Cants.
5. Furring.
6. Grounds.
7. Utility shelving.

B. Concealed Boards: [**19**] percent maximum moisture content and [**any of**]the following species and grades:

1. Mixed southern pine or southern pine; No. [**2**] [**3**] grade; SPIB.

C. For blocking not used for attachment of other construction, Utility, Stud, or No. 3 grade lumber of any species may be used provided that it is cut and selected to eliminate defects that will interfere with its attachment and purpose.

D. For blocking and nailers used for attachment of other construction, select and cut lumber to eliminate knots and other defects that will interfere with attachment of other work.

E. For furring strips for installing plywood or hardboard paneling, select boards with no knots capable of producing bent-over nails and damage to paneling.

2.5 PLYWOOD PANELS

A. Floor sheathing: APA 24oc exposure 1three-quarter (3/4”) tongue and grove select structural plywood panels.

B. Underlayment: ¾” OSB or as required to match adjacent. Install perpendicular to floor sheathing.

C. Equipment Backing Panels: Plywood, DOC PS 1, [**Exterior, A-C**] in thickness indicated or, if not indicated, not less than [**3/4-inch (19-mm)**] nominal thickness.

2.6 FASTENERS

A. General: Fasteners shall be of size and type indicated and shall comply with requirements specified in this article for material and manufacture.

1. Where rough carpentry is exposed to weather, in ground contact, pressure-preservative treated, or in area of high relative humidity, provide fasteners[**with hot-dip zinc coating complying with ASTM A 153/A 153M**] [**of Type 304 stainless steel**].

B. Nails, Brads, and Staples: ASTM F 1667.

C. Power-Driven Fasteners: Fastener systems with an evaluation report acceptable to authorities having jurisdiction, based on ICC-ES AC70.

D. Post-Installed Anchors: Fastener systems with an evaluation report acceptable to authorities having jurisdiction, based on [**ICC-ES AC01**] [**ICC-ES AC58**] [**ICC-ES AC193**] [**or**] [**ICC-ES AC308**] as appropriate for the substrate.

1. Material: Carbon-steel components, zinc plated to comply with ASTM B 633, Class Fe/Zn 5.
2. Material: Stainless steel with bolts and nuts complying with ASTM F 593 and ASTM F 594, Alloy Group 1 or 2 (ASTM F 738M and ASTM F 836M, Grade A1 or A4).

2.7 METAL FRAMING ANCHORS

A. Allowable design loads, as published by manufacturer, shall meet or exceed those [**indicated**] [**of basis-of-design products**] [**of products of manufacturers listed**]. Manufacturer's published values shall be determined from empirical data or by rational engineering analysis and demonstrated by comprehensive testing performed by a qualified independent testing agency. Framing anchors shall be punched for fasteners adequate to withstand same loads as framing anchors.

B. Galvanized-Steel Sheet: Hot-dip, zinc-coated steel sheet complying with ASTM A 653/A 653M, G60 (Z180) coating designation.

1. Use for interior locations unless otherwise indicated.

C. Hot-Dip, Heavy-Galvanized Steel Sheet: ASTM A 653/A 653M; structural steel (SS), high-strength low-alloy steel Type A (HSLAS Type A), or high-strength low-alloy steel Type B (HSLAS Type B); G185 (Z550) coating designation; and not less than 0.036 inch (0.9 mm) thick.

1. Use for wood-preservative-treated lumber and where indicated.

2.8 MISCELLANEOUS MATERIALS

A. Adhesives for Gluing [**Furring**] [**and**] [**Sleepers**] to Concrete or Masonry: Formulation complying with ASTM D 3498 that is approved for use indicated by adhesive manufacturer.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Framing Standard: Comply with AF&PA's WCD 1, "Details for Conventional Wood Frame Construction," unless otherwise indicated.

B. Framing with Engineered Wood Products: Install engineered wood products to comply with manufacturer's written instructions.

C. Set rough carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit rough carpentry accurately to other construction. Locate [**furring,**]nailers, blocking, [**grounds,**]and similar supports to comply with requirements for attaching other construction.

D. Install plywood panels by fastening to framing**.**

E. Provide blocking and framing as indicated and as required to support facing materials, fixtures, specialty items, and trim.

1. Provide metal clips for fastening gypsum board or lath at corners and intersections where framing or blocking does not provide a surface for fastening edges of panels. Space clips not more than 16 inches (406 mm) o.c.

F. Securely attach rough carpentry work to substrate by anchoring and fastening as indicated, complying with the following:

1. Table 2304.9.1, "Fastening Schedule," in ICC's International Building Code (IBC).

G. Use steel common nails unless otherwise indicated. Select fasteners of size that will not fully penetrate members where opposite side will be exposed to view or will receive finish materials. Make tight connections between members. Install fasteners without splitting wood. Drive nails snug but do not countersink nail heads unless otherwise indicated.

H. For exposed work, arrange fasteners in straight rows parallel with edges of members, with fasteners evenly spaced, and with adjacent rows staggered.

1. Use finishing nails unless otherwise indicated. Countersink nail heads and fill holes with wood filler.
2. Use common nails unless otherwise indicated. Drive nails snug but do not countersink nail heads.

3.2 WOOD BLOCKING, AND NAILER INSTALLATION

A. Install where indicated and where required for attaching other work. Form to shapes indicated and cut as required for true line and level of attached work. Coordinate locations with other work involved.

B. Attach items to substrates to support applied loading. Recess bolts and nuts flush with surfaces unless otherwise indicated.

3.3 WOOD FURRING INSTALLATION

A. Install level and plumb with closure strips at edges and openings. Shim with wood as required for tolerance of finish work.

B. Furring to Receive Plywood or Hardboard Paneling: Install 1-by-3-inch nominal- (19-by-63-mm actual-) size furring [**horizontally**] [**and**] [**vertically**] at [**24 inches (610 mm)**] [**600 mm**] o.c.

C. Furring to Receive [**Gypsum Board**] [**Plaster Lath**]: Install 1-by-2-inch nominal- (19-by-38-mm actual-) size furring vertically at [**16 inches (406 mm)**] [**400 mm**] o.c.

END OF SECTION 061000

SECTION 062023 - INTERIOR FINISH CARPENTRY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. T&G Pine flooring (match existing)
2. T&G oak flooring (ramp)
3. T&G Pine wainscot base and trim
4. Interior trim.

B. Related Requirements:

1. Section 060312 "Historic Wood Repair" for repair and replace of historic wood work.
2. Section 061000 "Rough Carpentry" for furring, blocking, and other carpentry work not exposed to view [**and for framing exposed to view**].
3. Section 099123 "Interior Painting" for priming and back priming of interior finish carpentry.

1.3 DELIVERY, STORAGE, AND HANDLING

A. Stack lumber, plywood, and other panels flat with spacers between each bundle to provide air circulation.

1. Protect materials from weather by covering with waterproof sheeting, securely anchored.
2. Provide for air circulation around stacks and under coverings.

1.4 FIELD CONDITIONS

A. Do not install finish carpentry materials that are wet, moisture damaged, or mold damaged.

1. Indications that materials are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
2. Indications that materials are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

A. Lumber: DOC PS 20 and applicable rules of grading agencies indicated. If no grading agency is indicated, comply with applicable rules of any rules-writing agency certified by the American Lumber Standard Committee's (ALSC) Board of Review. Grade lumber by an agency certified by the ALSC's Board of Review to inspect and grade lumber under the rules indicated.

2.2 T&G FLOORING

A. Pine tongue and groove flooring:
   1. Sheathing underlayment – ¾” T&G plywood
   2. Slip sheet – rosin paper
   3. Flooring - clear pine flooring random length
   4. Hard wood nosing and trim as indicated on the drawings

B. Oak tongue and groove flooring:
   1. Sheathing underlayment – ¾” T&G plywood
   2. Slip sheet – rosin paper
   3. Flooring - clear red oak flooring random length
   4. Hard wood nosing and trim as indicated on the drawings

2.3 INTERIOR TRIM

A. Moldings for Opaque Finish (Painted Finish): Made to patterns included in MMPA's "WM/Series Softwood Molding Patterns."

   1. Finger Jointing: [**Not allowed**].
   2. Base Pattern: Base WM 618 9/16” x 5 ¼”
   3. Casing pattern: WM444 11/16” x 3 ¼’
   4. Chair rail & back and WM 281 11/16” x 1 1/8” back band over WM 913 3/8” x 2 ¼” Trim
   5. Small crown WM 49 9/16” x 3 5/8” with back band see drawings
   6. Large crown WM 45 9/16” x 5 ¼” with back band and skirt see drawings.
   7. Decorative quoin – match existing

B. Board Paneling: Interior wood-board paneling complying with MMPA WM 9.

   1. Softwood paneling: MMPA WM 4, P grade. Species 3 ¼” yellow piano B or better T%G boards.
      a. Maximum Moisture Content: 15 percent with at least 85 percent of shipment at 12 percent or less.
   2. Pattern: [**V-joint, tongue and groove, matching original**].

2.4 MISCELLANEOUS MATERIALS

A. Fasteners for Interior Finish Carpentry: Nails, screws, and other anchoring devices of type, size, material, and finish required for application indicated to provide secure attachment, concealed where possible.

B. Multipurpose Construction Adhesive: Formulation, complying with ASTM D 3498, that is recommended for indicated use by adhesive manufacturer.

2.5 FABRICATION

A. Back out or kerf backs of the following members, except those with ends exposed in finished work:

1. Interior standing and running trim, except shoe and crown molds.
2. Wood-board paneling.

B. Ease edges of lumber less than 1 inch (25 mm) in nominal thickness to 1/16-inch (1.5-mm) radius and edges of lumber 1 inch (25 mm) or more in nominal thickness to 1/8-inch (3-mm) radius.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

B. Examine finish carpentry materials before installation. Reject materials that are wet, moisture damaged, and mold damaged.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Clean substrates of projections and substances detrimental to application.

B. Before installing interior finish carpentry, condition materials to average prevailing humidity in installation areas for a minimum of 24 hours[**unless longer conditioning is recommended by manufacturer**].

3.3 INSTALLATION, GENERAL

A. Do not use materials that are unsound; warped; improperly treated or finished; inadequately seasoned; too small to fabricate with proper jointing arrangements; or with defective surfaces, sizes, or patterns.

B. Install interior finish carpentry level, plumb, true, and aligned with adjacent materials.

1. Use concealed shims where necessary for alignment.
2. Scribe and cut interior finish carpentry to fit adjoining work. Refinish and seal cuts as recommended by manufacturer.
3. Where face fastening is unavoidable, countersink fasteners, fill surface flush, and sand unless otherwise indicated.
4. Install to tolerance of 1/8 inch in 96 inches (3 mm in 2438 mm) for level and plumb. Install adjoining interior finish carpentry with 1/32-inch (0.8-mm) maximum offset for flush installation and 1/16-inch (1.5-mm) maximum offset for reveal installation.
5. Coordinate interior finish carpentry with materials and systems in or adjacent to it. Provide cutouts for mechanical and electrical items that penetrate interior finish carpentry.

3.4 FLOORING INSTALLATION

A. Install random length flooring using pieces from lengths of lumber available.

1. Do not use pieces less than 24 inches (610 mm) long, except where necessary.
2. Stagger joints in adjacent and related standing and running trim.
3. [**Cope**] [**Miter**] at returns, miter at outside corners, and cope at inside corners to produce tight-fitting joints with full-surface contact throughout length of joint.
4. Fasten to prevent movement or warping.
5. Blind nail flooring using ss nails at 8” OC
6. Countersink heads on exposed carpentry work and fill holes.

3.5 STANDING AND RUNNING TRIM INSTALLATION

A. Install trim with minimum number of joints as is practical, using full-length pieces from maximum lengths of lumber available.

1. Do not use pieces less than 24 inches (610 mm) long, except where necessary.
2. Stagger joints in adjacent and related standing and running trim.
3. [**Cope**] [**Miter**] at returns, miter at outside corners, and cope at inside corners to produce tight-fitting joints with full-surface contact throughout length of joint.
4. Use scarf joints for end-to-end joints.
5. Plane backs of casings to provide uniform thickness across joints where necessary for alignment.
6. Fasten to prevent movement or warping.
7. Countersink fastener heads on exposed carpentry work and fill holes.

3.6 ADJUSTING

A. Replace interior finish carpentry that is damaged or does not comply with requirements.

1. Interior finish carpentry may be repaired or refinished if work complies with requirements and shows no evidence of repair or refinishing.

B. Adjust joinery for uniform appearance.

3.7 CLEANING

A. Clean interior finish carpentry on exposed and semiexposed surfaces.

B. Restore damaged or soiled areas and touch up factory-applied finishes if any.

3.8 PROTECTION

A. Protect installed products from damage from weather and other causes during construction.

B. Remove and replace finish carpentry materials that are wet, moisture damaged, and mold damaged.

1. Indications that materials are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
2. Indications that materials are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

END OF SECTION 062023

SECTION 064113 - WOOD-VENEER-FACED ARCHITECTURAL CABINETS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Wood-veneer-faced architectural cabinets.
2. Wood furring, blocking, shims, and hanging strips for installing architectural cabinets that are not concealed within other construction.
3. Shop finishing of architectural cabinets.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Include data for fire-retardant treatment from chemical-treatment manufacturer and certification by treating plant that treated materials comply with requirements.

B. Shop Drawings: For architectural cabinets.

1. Include plans, elevations, sections, and attachment details.

C. Samples: For each exposed product and for each color and finish specified.

1.3 QUALITY ASSURANCE

A. Manufacturer's Qualifications: Employs skilled workers who custom fabricate products similar to those required for this Project and whose products have a record of successful in-service performance.

B. Installer Qualifications: [**Manufacturer of products**]

PART 2 - PRODUCTS

2.1 CABINETS, GENERAL

A. Quality Standard: Unless otherwise indicated, comply with the Architectural Woodwork Standards for grades of architectural cabinets indicated for construction, finishes, installation, and other requirements.

1. Provide] [**WI**] certification program indicating that woodwork [**and installation**] complies with requirements of grades specified.

2.2 WOOD CABINETS FOR TRANSPARENT FINISH

A. Architectural Woodwork Standards Grade: [**Custom**].

B. Type of Construction: [**Face frame**].

C. Door and Drawer-Front Style: [**Reveal overlay**].

D. Wood for Exposed Surfaces:[**As indicated on Drawings.**]

1. Species: [**White birch**] .
2. Cut: [**Plain sliced/plain sawn**].
3. Grain Direction: [**Vertically for drawer fronts, doors, and fixed panels**]
4. Matching of Veneer Leaves: [**Random**] match.
5. Veneer Matching within Panel Face: [**Center-balance**] match.

2.3 WOOD MATERIALS

A. Wood Products: Provide materials that comply with requirements of referenced quality standard for each type of architectural cabinet and quality grade specified unless otherwise indicated.

1. Do not use plain-sawn softwood lumber with exposed, flat surfaces more than 3 inches (75 mm) wide.
2. Wood Moisture Content: [**5 to 10**] [**8 to 13**] [**4 to 9**] percent.

B. Composite Wood and Agrifiber Products: Provide materials that comply with requirements of referenced quality standard for each type of architectural cabinet and quality grade specified unless otherwise indicated.

1. MDF: ANSI A208.2, [**Grade 130**] .
2. Particleboard: ANSI A208.1, [**Grade M-2-Exterior Glue**].

3. Softwood Plywood: DOC PS 1[**, medium-density overlay**].
4. Veneer-Faced Panel Products (Hardwood Plywood): HPVA HP-1.
5. Thermoset Decorative Panels: Particleboard or MDF finished with thermally fused, melamine-impregnated decorative paper and complying with requirements of NEMA LD 3, Grade VGL, for Test Methods 3.3, 3.4, 3.6, 3.8, and 3.10.

2.4 CABINET HARDWARE AND ACCESSORIES

A. General: Provide cabinet hardware and accessory materials associated with architectural cabinets

B. Hardware Basis of design: as noted below:
1. Door hinges: Blum - Full overlay soft close 95 degree - BH71B9550
2. Silencers: manufactures standard adhesive mounted silencer
3. Drawer slides: 22” side mount heavy duty slide - Knap and Vogt KV 8815.
4. Door handles - Amerock, Vaile 3-3/4 Inch Center to Center Arch Cabinet Pull, Model: BP53003ORB, Satin Nichol.

C. Exposed Hardware Finishes: For exposed hardware, provide finish that complies with BHMA A156.18 for BHMA finish number indicated.
   1. Satin Chromium Plated: BHMA 626 for brass or bronze base; BHMA 652 for steel base.
   2. Satin Stainless Steel: BHMA 630.

D. For concealed hardware, provide manufacturer's standard finish that complies with product class requirements in BHMA A156.9.

2.5 MISCELLANEOUS MATERIALS

A. Furring, Blocking, Shims, and Hanging Strips: [**Softwood or hardwood lumber**] [**Fire-retardant-treated softwood lumber**], kiln-dried to less than 15 percent moisture content.

B. Anchors: Select material, type, size, and finish required for each substrate for secure anchorage. Provide metal expansion sleeves or expansion bolts for post-installed anchors. Use nonferrous-metal or hot-dip galvanized anchors and inserts at inside face of exterior walls and at floors.

2.6 FABRICATION

A. Sand fire-retardant-treated wood lightly to remove raised grain on exposed surfaces before fabrication.

B. Complete fabrication, including assembly and hardware application, to maximum extent possible before shipment to Project site. Disassemble components only as necessary for shipment and installation. Where necessary for fitting at site, provide ample allowance for scribing, trimming, and fitting.

C. Shop-cut openings to maximum extent possible to receive hardware, appliances, electrical work, and similar items. Locate openings accurately and use templates or roughing-in diagrams to produce accurately sized and shaped openings. Sand edges of cutouts to remove splinters and burrs.

2.7 SHOP FINISHING

A. General: Finish architectural cabinets at manufacturer's shop as specified in this Section. Defer only final touchup, cleaning, and polishing until after installation.

B. General: Shop finish transparent-finished architectural cabinets at manufacturer's shop as specified in this Section. See Section 099123 "Interior Painting" for field finishing of opaque-finished architectural cabinets.

C. General: Drawings indicate items that are required to be shop finished. Finish these items at manufacturer's shop as specified in this Section.

D. Preparation for Finishing: Comply with referenced quality standard for sanding, filling countersunk fasteners, sealing concealed surfaces, and similar preparations for finishing architectural cabinets, as applicable to each unit of work.

E. Transparent Finish:

1. Architectural Woodwork Standards Grade: [**Custom**] .
2. Finish: System - [**12, water-based polyurethane**] l
3. Wash Coat for Closed-Grain Woods: Apply wash-coat sealer to cabinets made from closed-grain wood before staining and finishing.
4. Staining: [**Match approved sample for color.**

PART 3 - EXECUTION

3.1 INSTALLATION

A. Before installation, condition cabinets to humidity conditions in installation areas for not less than 72 hours.

B. Architectural Woodwork Standards Grade: Install cabinets to comply with quality standard grade of item to be installed.

C. Anchor cabinets to anchors or blocking built in or directly attached to substrates. Secure with countersunk, concealed fasteners and blind nailing. Use fine finishing nails[**or finishing screws**] for exposed fastening, countersunk and filled flush with cabinet surface.

1. For shop-finished items, use filler matching finish of items being installed.

D. Install cabinets level, plumb, and true in line to a tolerance of 1/8 inch in 96 inches (3 mm in 2400 mm)using concealed shims.

1. Scribe and cut cabinets to fit adjoining work, refinish cut surfaces, and repair damaged finish at cuts.
2. Install cabinets without distortion so doors and drawers fit openings and are accurately aligned. Adjust hardware to center doors and drawers in openings and to provide unencumbered operation. Complete installation of hardware and accessory items as indicated.
3. Maintain veneer sequence matching of cabinets with transparent finish.
4. Fasten wall cabinets through back, near top and bottom, and at ends not more than 16 inches (400 mm) o.c. with [**No. 10 wafer-head screws sized for not less than 1-1/2-inch (38-mm) penetration into wood framing, blocking, or hanging strips**] .

E. Shop Finishes: Touch up finishing after installation of architectural cabinets. Fill nail holes with matching filler.

3.2 FIELD QUALITY CONTROL

A. Inspections: Provide inspection of installed Work through [**WI's Certified Compliance Program**] certifying that woodwork, including installation, complies with requirements of the Architectural Woodwork Standards for the specified grade.

1. Inspection entity shall prepare and submit report of inspection.

END OF SECTION 064113

SECTION 066116 – SOLID SURFACEING FABRICATIONS

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes: Provide solid surfacing fabrications including but not limited to following:

1. Solid surface counter tops cove backsplashes.

B. Related Sections: Following description of work is included for reference only and shall not be presumed complete:

1. Section 064113 Wood-veneer-faced architectural Cabinets.

1.02 REFERENCES

A. Definitions:

1. Solid Surface: Non-porous, homogeneous material maintaining the same composition throughout the part with a composition of acrylic polymer, aluminum trihydrate filler and pigment.

B. Reference Standards:

1.	ANSI/NPA A208.2-09	- Medium Density Fiberboard (MDF) For Interior Applications
2.	ASTM C920-14a	- Standard Specification for Elastomeric Joint Sealants
3.	UL 723 Characteristics of	- Standard for Test for Surface Burning Building Materials

1.03 ADMINISTRATIVE REQUIREMENTS

Preinstallation Meetings: Arrange preinstallation meeting 1 week prior to commencing work with all parties associated with trade as designated in Contract Documents or as requested by Architect.

1.04 SUBMITTALS

A. Product Data: Indicate Product description including solid surface sheets, sinks, bowls and illustrating full range of standard colors, fabrication information and compliance with specified performance requirements. Submit Product data with resistance to list of chemicals.

B. Shop Drawings: Submit Shop Drawings for work of this Section. Indicate plans, sections, dimensions, component sizes, edge details, thermosetting requirements, fabrication details, attachment provisions, sizes of furring, blocking, including concealed blocking and coordination requirements with adjacent work. Show locations and sizes of cutouts and holes for plumbing fixtures and other items installed in solid surface.

C. Samples: Submit samples in accordance with Section 01 30 00. Submit minimum 6" x 6" samples. Cut sample and seam together for representation of inconspicuous seam. Indicate full range of color and pattern variation. Approved samples will be retained as standards for work.

1.05 QUALITY ASSURANCE

A. Qualifications:

1. Installers: Provide work of this Section executed by competent installers with minimum 5-years experience in the application of Products, systems and assemblies specified and with approval and training of the Product manufacturers.

1.06 DELIVERY, STORAGE AND HANDLING

A. Delivery and Acceptance Requirements: Deliver no components to Project site until areas are ready for installation.

B. Storage and Handling Requirements:

1. Store components indoors prior to installation.
2. Handle materials to prevent damage to finished surfaces.

1.07 WARRANTY

A. Manufacturer Warranty: Provide manufacturer’s standard warranty for material only for period of 10 years against defects and/or deficiencies in accordance with General Conditions of the Contract. Promptly correct any defects or deficiencies which become apparent within warranty period, to satisfaction of Architect and at no expense to Owner.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Manufacturer List: Products of following manufacturers are acceptable subject to conformance to requirements of Drawings, Schedules and Specifications:

1. Corian® by DuPont; www.corian.com
2. Wilsonart Contract; www.wilsonartcontract.com

B. Substitution Limitations: This Specification is based on Wilson Art Products. Comparable Products from manufacturers listed herein will be accepted provided they meet requirements of this Specification.

2.02 MATERIALS

A. Performance/Design Criteria:

	Property	Requirement (min or max)	Test Procedure
1.	Solid Surface Based Products:		
a.	Tensile Strength	6000 psi min	ASTM D638
b.	Tensile Modulus	1.5 x 10^6 psi min	STM D638
c.	Tensile Elongation	0.4% min.	ASTM D638
d.	Flexural Strength	10000 psi min	ASTM D790
e.	Microbial Resistance	Highly resistant to mold growth	UL 2824
f.	Flammability		ASTM E84, NFPA 255 & UL
g.	Flame Spread	<25	<25
h.	Smoke Developed	<25	<25
i.	Class	A	NFPA 101®, Life Safety Code

B. Solid Surface Material:

C. Non-porous, homogeneous material maintaining the same composition throughout the part with a composition of acrylic polymer, aluminum trihydrate filler and pigment; not coated, laminated or of composite construction; meeting following criteria:

D. Flammability: Class 1 and A when tested to UL 723.

E. Adhesive for Bonding to Other Products: One component silicone to ASTM C920.

F. Sealant: A standard mildew-resistant, recognized silicone color matched sealant or clear silicone sealants.

2.03 COMPONENTS

A. Lavatory Tops with Integral Bowls: Molded countertop of solid polymer material [complete with integrally molded bowl of solid polymer material; edge details as

indicated on Drawings. Provide with backsplash [and end splashes] as shown on Drawings.

B. Fabrication:

1. Fabricate components in shop to greatest extent practical to sizes and shapes indicated, in accordance with approved Shop Drawings and solid polymer manufacturer requirements. Form joints between components using manufacturer's standard joint adhesive without conspicuous joints. Provide factory cutouts for plumbing fittings and bath accessories as indicated on Drawings.
2. Where indicated, thermoform corners and edges or other objects to shapes and sizes indicated on Drawings, prior to seaming and joining. Cut components larger than finished dimensions and sand edges to remove nicks and scratches. Heat entire component uniformly prior to forming.
3. Ensure no blistering, whitening and cracking of components during forming.
4. Fabricate backsplashes from solid surfacing material with optional radius cove where counter and backsplashes meet as indicated on Drawings.
5. Fabricate joints between components using manufacturer's standard joint adhesive. Ensure joints are inconspicuous in appearance and without voids. Attach 50 mm (2") wide reinforcing strip of solid polymer material under each joint. Reinforcing strip of solid polymer material is not required when using Joint Adhesive 2.0.
6. Provide holes and cutouts for plumbing and bath accessories as indicated on Drawings.
7. Rout and finish component edges to a smooth, uniform finish. Rout cutouts, then sand edges smooth. Repair or reject defective or inaccurate work.
   a. Semi-gloss, with a 60° gloss rating of 25 - 50.

8. Fabrication Tolerances:

   a. Variation in Component Size: +/-1/8".
   b. Location of Openings: +/-1/8" from indicated location.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Verification of Conditions:

1. Examine substrates and conditions, with fabricator present for compliance with requirements for installation tolerances and other conditions affecting performance of work. Proceed with installation only after unsatisfactory conditions have been corrected.
2. Verify actual site dimensions and location of adjacent materials prior to commencing work.

3. Examine cabinets upon which counter tops are to be installed. Verify cabinets are level to within 1/8" in 10' - 0".
4. Notify Architect in writing of any conditions which would be detrimental to installation.

B. Evaluation and Assessment: Commencement of work implies acceptance of previously completed work.

3.02 INSTALLATION

A. Install components plumb, level, rigid, scribed to adjacent finishes in accordance with reviewed Shop Drawings and Product installation details.

B. Fabricate field joints using manufacturer's recommended adhesive, with joints being inconspicuous in finished work. Exposed joints/seams are not permitted. Keep components and hands clean when making joints. Reinforce field joints as specified herein. Cut and finish component edges with clean, sharp returns.

C. Route radii and contours to template. Anchor securely to base component or other supports. Align adjacent components and form seams to comply with manufacturer’s written recommendations using adhesive in color to match work. Carefully dress joints smooth, remove surface scratches and clean entire surface.

D. Install countertops with no more than 1/8" sag, bow or other variation from a straight line.

E. Provide backsplashes and endsplashes as indicated on Drawings. Adhere to countertops using a standard color-coordinated silicone sealant. Adhere applied sidesplashes to countertops using a standard color-matched silicone sealant. Provide coved backsplashes and sidesplashes at walls and adjacent millwork. Fabricate radius cove at intersection of counters with backsplashes to dimensions shown on reviewed Shop Drawings. Adhere to countertops using manufacturer’s standard color-coordinated joint adhesive.

F. Keep components and hands clean during installation. Remove adhesives, sealants and other stains. Ensure components are clean on date of Substantial Completion of the Work.

G. Coordinate connections of plumbing fixtures, and make plumbing connections to sinks.

3.03 REPAIR

A. Repair minor imperfections and cracked seams and replace areas of severely damaged surfaces in accordance with manufacturer’s “Technical Bulletins”.

3.04 SITE QUALITY CONTROL

A. Non-Conforming Work: Replace damaged work which cannot be satisfactorily repaired, restored or cleaned, to satisfaction of Architect at no cost to Owner.

3.05 CLEANING

A. Remove excess adhesive and sealant from visible surfaces.

B. Clean surfaces in accordance with manufacturer's "Care and Maintenance Instructions".

3.06 PROTECTION

A. Provide protective coverings to prevent physical damage or staining following installation for duration of Project.

B. Protect surfaces from damage until date of Substantial Completion of the Work.

END OF SECTION

Division 07 – Thermal and Moisture Protection

SECTION 072100 - THERMAL INSULATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:
   1. Glass-fiber blanket.

1.3 DELIVERY, STORAGE, AND HANDLING

A. Protect insulation materials from physical damage and from deterioration due to moisture, soiling, and other sources. Store inside and in a dry location. Comply with manufacturer's written instructions for handling, storing, and protecting during installation.

PART 2 - PRODUCTS

2.1 GLASS-FIBER BLANKET

A. Glass-Fiber Blanket, Unfaced : ASTM C 665, Type I; with maximum flame-spread and smoke-developed indexes of 25 and 50, respectively, per ASTM E 84; passing ASTM E 136 for combustion characteristics.

2.2 INSULATION FASTENERS

A. Adhesively Attached, Spindle-Type Anchors: Plate welded to projecting spindle; capable of holding insulation of specified thickness securely in position with self-locking washer in place.
   1. Plate: Perforated, galvanized carbon-steel sheet, 0.030 inch (0.762 mm) thick by 2 inches (50 mm) square.

B. Insulation-Retaining Washers: Self-locking washers formed from 0.016-inch- (0.41-mm-) thick galvanized-steel sheet, with beveled edge for increased stiffness, sized as required to hold insulation securely in place, but not less than 1-1/2 inches (38 mm) square or in diameter.
   1. Protect ends with capped self-locking washers incorporating a spring steel insert to ensure permanent retention of cap in the following locations:

C. Anchor Adhesive: Product with demonstrated capability to bond insulation anchors securely to substrates without damaging insulation, fasteners, or substrates.

2.3 ACCESSORIES

A. Insulation for Miscellaneous Voids:

1. Glass-Fiber Insulation: ASTM C 764, Type II, loose fill; with maximum flame-spread and smoke-developed indexes of 5, per ASTM E 84.
2. Spray Polyurethane Foam Insulation: ASTM C 1029, Type II, closed cell, with maximum flame-spread and smoke-developed indexes of 75 and 450, respectively, per ASTM E 84.

B. Adhesive for Bonding Insulation: Product compatible with insulation and air and water barrier materials, and with demonstrated capability to bond insulation securely to substrates without damaging insulation and substrates.

PART 3 - EXECUTION

3.1 PREPARATION

A. Clean substrates of substances that are harmful to insulation, including removing projections capable of puncturing insulation or vapor retarders, or that interfere with insulation attachment.

3.2 INSTALLATION, GENERAL

A. Comply with insulation manufacturer's written instructions applicable to products and applications.

B. Install insulation that is undamaged, dry, and unsoiled and that has not been left exposed to ice, rain, or snow at any time.

C. Extend insulation to envelop entire area to be insulated. Fit tightly around obstructions and fill voids with insulation. Remove projections that interfere with placement.

D. Provide sizes to fit applications and selected from manufacturer's standard thicknesses, widths, and lengths. Apply single layer of insulation units unless multiple layers are otherwise shown or required to make up total thickness or to achieve R-value.

3.3 INSTALLATION OF INSULATION IN FRAMED CONSTRUCTION

A. Blanket Insulation: Install in cavities formed by framing members according to the following requirements:

1. Use insulation widths and lengths that fill the cavities formed by framing members. If more than one length is required to fill the cavities, provide lengths that will produce a snug fit between ends.
2. Place insulation in cavities formed by framing members to produce a friction fit between edges of insulation and adjoining framing members.
3. Maintain 3-inch (76-mm) clearance of insulation around recessed lighting fixtures not rated for or protected from contact with insulation.

4. For wood-framed construction, install blankets according to ASTM C 1320 and as follows:

    a. With faced blankets having stapling flanges, lap blanket flange over flange of adjacent blanket to maintain continuity of vapor retarder once finish material is installed over it.

B. Miscellaneous Voids: Install insulation in miscellaneous voids and cavity spaces where required to prevent gaps in insulation using the following materials:

1. Glass-Fiber Insulation: Compact to approximately 40 percent of normal maximum volume equaling a density of approximately 2.5 lb/cu. ft. (40 kg/cu. m).
2. Spray Polyurethane Insulation: Apply according to manufacturer's written instructions.

C. Loose-Fill Insulation: Apply according to ASTM C 1015 and manufacturer's written instructions. Level horizontal applications to uniform thickness as indicated, lightly settle to uniform density, but do not compact excessively.

1. For cellulosic-fiber loose-fill insulation, comply with CIMA's Bulletin #2, "Standard Practice for Installing Cellulose Insulation."

3.4 PROTECTION

A. Protect installed insulation from damage due to harmful weather exposures, physical abuse, and other causes. Provide temporary coverings or enclosures where insulation is subject to abuse and cannot be concealed and protected by permanent construction immediately after installation.

END OF SECTION 072100

SECTION 073113 - ASPHALT SHINGLES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Asphalt shingles.
2. Underlayment.
3. Metal flashing and trim.

B. Related Requirements:

1. Section 075416 "Keton Ethylene Ester (KEE) for drainage sheet

1.2 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at [**Project site**].

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Samples: For each exposed product and for each color and texture specified.

1.4 INFORMATIONAL SUBMITTALS

A. Product test reports.

B. Evaluation reports.

C. Sample warranty.

1.5 CLOSEOUT SUBMITTALS

A. Maintenance data.

1.6 QUALITY ASSURANCE

A. Installer Qualifications: An authorized representative who is trained and approved by the manufacturer.

1.7 WARRANTY

A. Manufacturer's Warranty: Manufacturer agrees to repair or replace asphalt shingles that fail within specified warranty period.

1. Material Warranty Period: [**30**] [years from date of Substantial Completion, prorated, with first **three** years nonprorated.
2. Wind-Speed Warranty Period: Asphalt shingles will resist blow-off or damage caused by wind speeds of up to [**130 mph (58 m/s)**] for [**three**] years from date of Substantial Completion.
3. Algae-Resistance Warranty Period: Asphalt shingles will not discolor for [**three**] years from date of Substantial Completion.
4. Workmanship Warranty Period: [**three**] years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Exterior Fire-Test Exposure: Provide asphalt shingles and related roofing materials identical to those of assemblies tested for Class A fire resistance according to ASTM E 108 or UL 790 by Underwriters Laboratories, Inc. or another testing and inspecting agency acceptable to authorities having jurisdiction. Identify products with appropriate markings of applicable testing agency.

2.2 GLASS-FIBER-REINFORCED ASPHALT SHINGLES

A. Laminated-Strip Asphalt Shingles: ASTM D 3462/D 3462M, laminated, multi-ply overlay construction, glass-fiber reinforced, mineral-granule surfaced, and self-sealing.
1. Butt Edge: [**straight**] cut.
2. Strip Size: [**Manufacturer's standard**].
3. Algae Resistance: Granules resist algae discoloration.
4. Impact Resistance: UL 2218, Class 4.
5. Color and Blends:
    a. Owens Corning Oakridge – color Williamsburg Slate
    b. GAF Timberline HDZ – color Appalachian Sky
    c. Tampco Heritage - Color Shadow Grey

B. Hip and Ridge Shingles: [**Manufacturer's standard units to match asphalt shingles**] [**Site-fabricated units cut from asphalt-shingle strips. Trim each side of lapped portion of unit to taper approximately 1 inch (25 mm)**].

2.3 UNDERLAYMENT MATERIALS

A. Self-Adhering Sheet Underlayment, High Temperature: Minimum of 40-mil- (1.0-mm-) thick; with slip-resisting, polymer-film-reinforced or glass-reinforced top surface laminated to layer of butyl or SBS-modified asphalt adhesive; with release backing; cold applied; and evaluated and documented to be suitable for use for intended purpose under applicable codes by a testing and

inspecting agency acceptable to authorities having jurisdiction.[**Provide primer for adjoining concrete or masonry surfaces to receive underlayment.**]

1. Thermal Stability: Stable after testing at 240 deg F (116 deg C) according to ASTM D 1970/D 1970M.
2. Low-Temperature Flexibility: Passes after testing at minus 20 deg F (29 deg C) according to ASTM D 1970/D 1970M.

2.4 ACCESSORIES

A. Asphalt Roofing Cement: ASTM D 4586, Type II, asbestos free.

B. Roofing Nails: ASTM F 1667; aluminum, stainless-steel, copper, or hot-dip galvanized-steel wire shingle nails, minimum 0.120-inch- (3-mm-) diameter, sharp-pointed, with a minimum 3/8-inch- (9.5-mm-) diameter flat head and of sufficient length to penetrate 3/4 inch (19 mm) into solid wood decking or extend at least 1/8 inch (3 mm) through OSB or plywood sheathing.

1. Shank: [**Barbed**] [**Smooth**].
2. Where nails are in contact with metal flashing, use nails made from same metal as flashing.

C. Felt-Underlayment Nails: Aluminum, stainless-steel, or hot-dip galvanized-steel wire with low-profile capped heads or disc caps, 1-inch (25-mm) minimum diameter.

D. Synthetic-Underlayment Fasteners: As recommended in writing by synthetic-underlayment manufacturer for application indicated.

2.5 METAL FLASHING AND TRIM

A. General: Comply with requirements in Section 076200 "Sheet Metal Flashing and Trim."

1. Sheet Metal [**Anodized aluminum**] [**Aluminum, mill finished**].

B. Fabricate sheet metal flashing and trim to comply with recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to design, dimensions, metal, and other characteristics of the item.

PART 3 - EXECUTION

3.1 UNDERLAYMENT INSTALLATION

A. General: Comply with underlayment manufacturer's written installation instructions applicable to products and applications indicated unless more stringent requirements apply.

B. Self-Adhering Sheet Underlayment: Install, wrinkle free, on roof deck. Comply with low-temperature installation restrictions of underlayment manufacturer if applicable. Install lapped in direction that sheds water. Lap sides not less than 3-1/2 inches (89 mm). Lap ends not less than 6 inches (150 mm) staggered 24 inches (600 mm) between courses. Roll laps with roller. Cover underlayment within seven days.

1. Prime concrete and masonry surfaces to receive self-adhering sheet underlayment.

3.2 METAL FLASHING INSTALLATION

A. General: Install metal flashings and other sheet metal to comply with requirements in Section 076200 "Sheet Metal Flashing and Trim."

1. Install metal flashings according to recommendations in ARMA's "Residential Asphalt Roofing Manual" and NRCA's "NRCA Guidelines for Asphalt Shingle Roof Systems."

3.3 ASPHALT-SHINGLE INSTALLATION

A. General: Install asphalt shingles according to manufacturer's written instructions, recommendations in ARMA's "Residential Asphalt Roofing Manual," and recommendations in NRCA's "NRCA Guidelines for Asphalt Shingle Roof Systems."

B. Coordinate starter with KEE roofing used at gutter. Ensure KEE roofing extend 18” up roof and past the starter shingle.

C. Install starter strip along lowest roof edge, consisting of an asphalt-shingle strip [**with tabs removed**] [**at least 7 inches (175 mm) wide**] with self-sealing strip face up at roof edge.

D. Install first and remaining courses of asphalt shingles stair-stepping diagonally across roof deck with manufacturer's recommended offset pattern at succeeding courses, maintaining uniform exposure.

E. Install first and remaining courses of asphalt shingles stair-stepping diagonally across roof deck with [**manufacturer's recommended**] offset pattern at succeeding courses, maintaining uniform exposure.

F. Install asphalt shingles by single-strip column or racking method, maintaining uniform exposure. Install full-length first course followed by cut second course, repeating alternating pattern in succeeding courses.

G. Fasten asphalt-shingle strips with a minimum of [**six**] roofing nails located according to manufacturer's written instructions.

1. Where roof slope exceeds 21:12, seal asphalt shingles with asphalt roofing cement spots[**after fastening with additional roofing nails**].
2. Where roof slope is less than 4:12, seal asphalt shingles with asphalt roofing cement spots.
3. When ambient temperature during installation is below [**50 deg F (10 deg C)**] <**Insert temperature**>, seal asphalt shingles with asphalt roofing cement spots.

H. Woven Valleys: Extend succeeding asphalt-shingle courses from both sides of valley [**12 inches (300 mm)**] <**Insert dimension**> beyond center of valley, weaving intersecting shingle-strip courses over each other. Use one-piece shingle strips without joints in valley.

1. Do not nail asphalt shingles within 6 inches (150 mm) of valley center.

I. Closed-Cut Valleys: Extend asphalt-shingle strips from one side of valley [**12 inches (300 mm)**] <**Insert dimension**> beyond center of valley. Use one-piece shingle strips without joints in valley. Fasten with extra nail in upper end of shingle. Install asphalt-shingle courses from other side of valley and cut back to a straight line 2 inches (50 mm) short of valley centerline. Trim upper concealed corners of cut-back shingle strips.

1. Do not nail asphalt shingles within 6 inches (150 mm) of valley center.
2. Set trimmed, concealed-corner asphalt shingles in a 3-inch- (75-mm-) wide bed of asphalt roofing cement.

J. Open Valleys: Cut and fit asphalt shingles at open valleys, trimming upper concealed corners of shingle strips. [**Maintain uniform width of exposed open valley**] [**Widen exposed portion of open valley 1/8 inch in 12 inches (1:96)**] from highest to lowest point.

1. Set valley edge of asphalt shingles in a 3-inch- (75-mm-) wide bed of asphalt roofing cement.
2. Do not nail asphalt shingles to metal open-valley flashings.

K. Ridge Vents: Install continuous ridge vents over asphalt shingles according to manufacturer's written instructions. Fasten with roofing nails of sufficient length to penetrate sheathing.

L. Hip and Ridge Shingles: Maintain same exposure of cap shingles as roofing shingle exposure. Lap cap shingles at ridges to shed water away from direction of prevailing winds. Fasten with roofing nails of sufficient length to penetrate sheathing.

1. Fasten ridge cap asphalt shingles to cover ridge vent without obstructing airflow.

END OF SECTION 073113

SECTION 075416 – KETONE ETHYLENE ESTER (KEE) ROOFING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Adhered ketone ethylene ester (KEE) roofing system.
2. Mechanically fastened, ketone ethylene ester (KEE) roofing system.
3. Substrate board.
4. Roof insulation.
5. Cover board.
6. Walkways.

1.2 PREINSTALLATION MEETINGS

A. Preliminary Roofing Conference: Conduct conference at [**Project site**] <**Insert location**>.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. For insulation and roof system component fasteners, include copy of FM Approvals' RoofNav listing.

B. Shop Drawings: Include plans, elevations, sections, details, and attachments to other work, including the following:

1. Layout and thickness of insulation.
2. Base flashings and membrane terminations.
3. Flashing details at penetrations.
4. Tapered insulation, including slopes.
5. Roof plan showing orientation of steel roof deck and orientation of roof membrane, fastening spacings, and patterns for mechanically fastened roofing system.
6. Insulation fastening patterns for corner, perimeter, and field-of-roof locations.
7. Tie-in with air barrier.

C. Samples: For the following products:

1. Roof membrane and flashing, of color required.
2. Aggregate surfacing material in gradation[**and color**] required.
3. Roof paver[**, full sized,**] in each color and texture required.
4. Walkway pads or rolls, of color required.

D. Wind Uplift Resistance Submittal: For roofing system, indicating compliance with wind uplift performance requirements.

1.4 INFORMATIONAL SUBMITTALS

A. Manufacturer Certificates:

1. Performance Requirement Certificate: Signed by roof membrane manufacturer, certifying that roofing system complies with requirements specified in "Performance Requirements" Article.

    a. Submit evidence of compliance with performance requirements.

2. Special Warranty Certificate: Signed by roof membrane manufacturer, certifying that all materials supplied under this Section are acceptable for special warranty.

B. Product Test Reports: For roof membrane and insulation, for tests performed by a qualified testing agency, indicating compliance with specified requirements.

C. Research reports.

D. Field Test Reports:

1. Concrete internal relative humidity test reports.
2. Fastener-pullout test results and manufacturer's revised requirements for fastener patterns.

E. Field quality-control reports.

F. Sample warranties.

1.5 CLOSEOUT SUBMITTALS

A. Maintenance data.

B. Certified statement from existing roof membrane manufacturer stating that existing roof warranty has not been affected by Work performed under this Section.

1.6 QUALITY ASSURANCE

A. Installer Qualifications: A qualified firm that is approved, authorized, or licensed by roofing system manufacturer to install manufacturer's product and that is eligible to receive manufacturer's special warranty.

1.7 WARRANTY

A. Special Warranty: Manufacturer agrees to repair or replace components of roofing system that fail in materials or workmanship within specified warranty period.

1. Warranty Period: [**20**] years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Accelerated Weathering: Roof membrane shall withstand 2000 hours of exposure when tested according to ASTM G 152, ASTM G 154, or ASTM G 155.

B. Impact Resistance: Roof membrane shall resist impact damage when tested according to ASTM D 3746 or ASTM D 4272/D 4272M, or the "Resistance to Foot Traffic Test" in FM Approvals 4470.

C. Wind Uplift Resistance: Design roofing system to resist the wind uplift pressures based on the Florida Building code when tested according to FM Approvals 4474, UL 580, or UL 1897:

D. FM Approvals' RoofNav Listing: Roof membrane, base flashings, and component materials shall comply with requirements in FM Approvals 4450 or FM Approvals 4470 as part of a roofing system, and shall be listed in FM Approvals' RoofNav for Class 1 or noncombustible construction, as applicable. Identify materials with FM Approvals Certification markings.

1. Fire/Windstorm Classification: [**Class 1A-60**] [**Class 1A-75**] [**Class 1A-90**] [**Class 1A-105**] [**Class 1A-120**] <**Insert class**>.
2. Hail-Resistance Rating: [**MH**] [**SH**].

E. Exterior Fire-Test Exposure: ASTM E 108 or UL 790, [**Class A**] [**Class B**] [**Class C**]; for application and roof slopes indicated; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

F. Fire-Resistance Ratings: Comply with fire-resistance-rated assembly designs indicated. Identify products with appropriate markings of applicable testing agency.

2.2 KETONE ETHYLENE ESTER (KEE) ROOFING

A. KEE Sheet: ASTM D 6754/D 6754M, fabric reinforced Rhino Bond.

1. Siplast - Parasolo KEE Fleece -back
2. Thickness: [**60 mils (1.5 mm), nominal**.
3. Weight .386lb/ft2
4. Exposed Face Color: [**White**].
5. Product Approval: FL 30935 R3 HVHZ System C2 W-7 with (-90) uplift

2.3 AUXILIARY ROOFING MATERIALS

A. General: Auxiliary materials recommended by roofing system manufacturer for intended use and compatible with other roofing components.

1. Adhesives and Sealants: Comply with VOC limits of authorities having jurisdiction.

B. Sheet Flashing: Manufacturer's standard sheet flashing of same material, type, reinforcement, thickness, and color as KEE sheet.

C. Prefabricated Pipe Flashings: As recommended by roof membrane manufacturer.

D. Bonding Adhesive: Manufacturer's standard[**, water based**].

E. Slip Sheet: ASTM D 2178/D 2178M, Type IV, glass fiber, asphalt-impregnated felt.

F. Slip Sheet: Manufacturer's standard, of thickness required for application.

G. Metal Termination Bars: Manufacturer's standard, predrilled stainless steel or aluminum bars, approximately 1 by 1/8 inch (25 by 3 mm) thick; with anchors.

H. Fasteners: Factory-coated steel fasteners and metal or plastic plates complying with corrosion-resistance provisions in FM Approvals 4470, designed for fastening roofing components to substrate, and acceptable to roofing system manufacturer.

I. Miscellaneous Accessories: Provide pourable sealers, preformed cone and vent sheet flashings, preformed inside and outside corner sheet flashings, T-joint covers, lap sealants, termination reglets, and other accessories.

2.4 ROOF INSULATION

A. Polyisocyanurate Board Insulation: ASTM C 1289, [**Type II, Class 1, Grade 2**] [**Type II, Class 2, Grade 2**], felt or glass-fiber mat facer on both major surfaces.

1. Atlas AC Foam III
2. Size: [**48 by 48 inches (1219 by 1219 mm)**] [**48 by 96 inches (1219 by 2438 mm)**].
3. Thickness:

    a. Base Layer: [**1-1/2 inches (38.1 mm)**]

B. Tapered Insulation: Provide factory-tapered insulation boards.

1. Material: [**Match roof insulation**].
2. Minimum Thickness: 1/4 inch (6.35 mm).
3. Slope:

    a. Roof Field: [**1/4 inch per foot (1:48)**] unless otherwise indicated on Drawings.
    b. Saddles and Crickets: [**1/2 inch per foot (1:24)**] unless otherwise indicated on Drawings.

2.5 INSULATION ACCESSORIES

A. Fasteners: Factory-coated steel fasteners and metal or plastic plates complying with corrosion-resistance provisions in FM Approvals 4470, designed for fastening roof insulation[**and cover boards**] to substrate, and acceptable to roofing system manufacturer.

B. Insulation Adhesive: Insulation manufacturer's recommended adhesive formulated to attach roof insulation to substrate or to another insulation layer as follows:

1. Modified asphaltic, asbestos-free, cold-applied adhesive.

2. Bead-applied, low-rise, one-component or multicomponent urethane adhesive.
3. Full-spread, spray-applied, low-rise, two-component urethane adhesive.

2.6 ASPHALT MATERIALS

A. Roofing Asphalt: [**ASTM D 312/D 312M, Type III or Type IV**] [**ASTM D 6152/D 6152M, SEBS modified**].

B. Asphalt Primer: ASTM D 41/D 41M.

2.7 WALKWAYS

A. Flexible Walkways: Factory-formed, nonporous, heavy-duty, slip-resisting, surface-textured walkway [**pads**] [**or**] [**rolls**], approximately 3/16 inch (5 mm) thick and acceptable to roofing system manufacturer.

1. Size: Approximately 36 by 60 inches (914 by 1524 mm).
2. Color: Contrasting with roof membrane.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements and other conditions affecting performance of the Work.

1. Verify that minimum concrete drying period recommended by roofing system manufacturer has passed.
2. Verify that concrete substrate is visibly dry and free of moisture, and that minimum concrete internal relative humidity is not more than [**75**] <**Insert number**> percent, or as recommended by roofing system manufacturer, when tested according to ASTM F 2170.

    a. Test Frequency: One test probe per each [**1000 sq. ft. (93 sq. m)**] <**Insert area**>, or portion thereof,of roof deck, with no fewer than three test probes.
    b. Submit test reports within 24 hours of performing tests.

3. Verify that concrete-curing compounds that will impair adhesion of roofing components to roof deck have been removed.
4. Verify that joints in precast concrete roof decks have been grouted flush with top of concrete.

3.2 PREPARATION

A. Perform fastener-pullout tests according to roof system manufacturer's written instructions.

1. Submit test result within 24 hours of performing tests.

a. Include manufacturer's requirements for any revision to previously submitted fastener patterns required to achieve specified wind uplift requirements.

3.3 ROOFING INSTALLATION, GENERAL

A. Install roofing system according to roofing system manufacturer's written instructions, FM Approvals' RoofNav assembly requirements, and FM Global Property Loss Prevention Data Sheet 1-29.

B. Complete terminations and base flashings and provide temporary seals to prevent water from entering completed sections of roofing system at the end of workday or when rain is forecast. Remove and discard temporary seals before beginning work on adjoining roofing.

C. Install roof membrane and auxiliary materials to tie in to existing roofing to maintain weathertightness of transition[**and to not void warranty for existing roofing system**].

D. Coordinate installation and transition of roofing system component serving as an air barrier with air barrier specified under [**Section 072713 "Modified Bituminous Sheet Air Barriers."**] [**Section 072715 "Nonbituminous Self-Adhering Sheet Air Barriers."**] [**Section 072726 "Fluid-Applied Membrane Air Barriers."**]

3.4 INSULATION INSTALLATION

A. Coordinate installing roofing system components so insulation is not exposed to precipitation or left exposed at the end of the workday.

B. Comply with roofing system and insulation manufacturer's written instructions for installing roof insulation.

C. Installation Over Metal Decking:

1. Install base layer of insulation with [**joints staggered not less than 24 inches (610 mm) in adjacent rows**] [**end joints staggered not less than 12 inches (305 mm) in adjacent rows**] [**and with long joints continuous at right angle to flutes of decking**].

    a. Locate end joints over crests of decking.
    b. Where installing composite and noncomposite insulation in two or more layers, install noncomposite board insulation for bottom layer and intermediate layers, if applicable, and install composite board insulation for top layer.
    c. Trim insulation neatly to fit around penetrations and projections, and to fit tight to intersecting sloping roof decks.
    d. Make joints between adjacent insulation boards not more than 1/4 inch (6 mm) in width.
    e. At internal roof drains, slope insulation to create a square drain sump with each side equal to the diameter of the drain bowl plus 24 inches (610 mm).

        1) Trim insulation so that water flow is unrestricted.

    f. Fill gaps exceeding 1/4 inch (6 mm) with insulation.

g. Cut and fit insulation within 1/4 inch (6 mm) of nailers, projections, and penetrations.
h. Loosely lay base layer of insulation units over substrate.
i. Mechanically attach base layer of insulation[**and substrate board**] using mechanical fasteners specifically designed and sized for fastening specified board-type roof insulation to metal decks.

1) Fasten insulation according to requirements in FM Approvals' RoofNav for specified Windstorm Resistance Classification.
2) Fasten insulation to resist specified uplift pressure at corners, perimeter, and field of roof.

2. Install upper layers of insulation[**and tapered insulation**] with joints of each layer offset not less than 12 inches (305 mm) from previous layer of insulation.

a. Staggered end joints within each layer not less than 24 inches (610 mm) in adjacent rows.
b. Install with long joints continuous and with end joints staggered not less than 12 inches (305 mm) in adjacent rows.
c. Trim insulation neatly to fit around penetrations and projections, and to fit tight to intersecting sloping roof decks.
d. Make joints between adjacent insulation boards not more than 1/4 inch (6 mm) in width.
e. At internal roof drains, slope insulation to create a square drain sump with each side equal to the diameter of the drain bowl plus 24 inches (610 mm).
f. Trim insulation so that water flow is unrestricted.
g. Fill gaps exceeding 1/4 inch (6 mm) with insulation.
h. Cut and fit insulation within 1/4 inch (6 mm) of nailers, projections, and penetrations.
i. Loosely lay each layer of insulation units over substrate.
j. Adhere each layer of insulation to substrate using adhesive according to FM Approvals' RoofNav assembly requirements and FM Global Property Loss Prevention Data Sheet 1-29 for specified Windstorm Resistance Classification, as follows:

1) Set each layer of insulation in a solid mopping of hot roofing asphalt, applied within plus or minus 25 deg F (14 deg C) of equiviscous temperature.
2) Set each layer of insulation in ribbons of bead-applied insulation adhesive, firmly pressing and maintaining insulation in place.
3) Set each layer of insulation in a uniform coverage of full-spread insulation adhesive, firmly pressing and maintaining insulation in place.

D. Installation Over [**Wood**] [**Wood Panel**] Decking:

1. Mechanically fasten slip sheet to roof deck using mechanical fasteners specifically designed and sized for fastening slip sheet to [**wood**] [**wood panel**] decks.

a. Fasten slip sheet according to requirements in FM Approvals' RoofNav for specified Windstorm Resistance Classification.

b. Fasten slip sheet to resist specified uplift pressure at corners, perimeter, and field of roof.

2. Install base layer of insulation with [**joints staggered not less than 24 inches (610 mm) in adjacent rows**] [**end joints staggered not less than 12 inches (305 mm) in adjacent rows**].

a. Where installing composite and noncomposite insulation in two or more layers, install noncomposite board insulation for bottom layer and intermediate layers, if applicable, and install composite board insulation for top layer.
b. Trim insulation neatly to fit around penetrations and projections, and to fit tight to intersecting sloping roof decks.
c. Make joints between adjacent insulation boards not more than 1/4 inch (6 mm) in width.
d. At internal roof drains, slope insulation to create a square drain sump with each side equal to the diameter of the drain bowl plus 24 inches (610 mm).

1) Trim insulation so that water flow is unrestricted.

e. Fill gaps exceeding 1/4 inch (6 mm) with insulation.
f. Cut and fit insulation within 1/4 inch (6 mm) of nailers, projections, and penetrations.
g. Loosely lay base layer of insulation units over substrate.
h. Mechanically attach base layer of insulation[**and substrate board**] using mechanical fasteners specifically designed and sized for fastening specified board-type roof insulation to [**wood**] [**wood panel**] decks.

1) Fasten insulation according to requirements in FM Approvals' RoofNav for specified Windstorm Resistance Classification.
2) Fasten insulation to resist specified uplift pressure at corners, perimeter, and field of roof.

3. Install upper layers of insulation[**and tapered insulation**] with joints of each layer offset not less than 12 inches (305 mm) from previous layer of insulation.

a. Staggered end joints within each layer not less than 24 inches (610 mm) in adjacent rows.
b. Install with long joints continuous and with end joints staggered not less than 12 inches (305 mm) in adjacent rows.
c. Trim insulation neatly to fit around penetrations and projections, and to fit tight to intersecting sloping roof decks.
d. Make joints between adjacent insulation boards not more than 1/4 inch (6 mm) in width.
e. At internal roof drains, slope insulation to create a square drain sump with each side equal to the diameter of the drain bowl plus 24 inches (610 mm).

1) Trim insulation so that water flow is unrestricted.

f. Fill gaps exceeding 1/4 inch (6 mm) with insulation.
g. Cut and fit insulation within 1/4 inch (6 mm) of nailers, projections, and penetrations.

h. Loosely lay each layer of insulation units over substrate.
i. Adhere each layer of insulation to substrate using adhesive according to FM Approvals' RoofNav assembly requirements and FM Global Property Loss Prevention Data Sheet 1-29 for specified Windstorm Resistance Classification, as follows:

1) Set each layer of insulation in a solid mopping of hot roofing asphalt, applied within plus or minus 25 deg F (14 deg C) of equiviscous temperature.
2) Set each layer of insulation in ribbons of bead-applied insulation adhesive, firmly pressing and maintaining insulation in place.
3) Set each layer of insulation in a uniform coverage of full-spread insulation adhesive, firmly pressing and maintaining insulation in place.

3.5 INSTALLATION OF COVER BOARDS

A. Install cover boards over insulation with long joints in continuous straight lines with end joints staggered between rows. Offset joints of insulation below a minimum of 6 inches (150 mm) in each direction.

1. Trim cover board neatly to fit around penetrations and projections, and to fit tight to intersecting sloping roof decks.
2. At internal roof drains, conform to slope of drain sump.

a. Trim cover board so that water flow is unrestricted.

3. Cut and fit cover board tight to nailers, projections, and penetrations.
4. Adhere cover board to substrate using adhesive according to FM Approvals' RoofNav assembly requirements and FM Global Property Loss Prevention Data Sheet 1-29 for specified Windstorm Resistance Classification, as follows:

a. Set cover board in a solid mopping of hot roofing asphalt, applied within plus or minus 25 deg F (14 deg C) of equiviscous temperature.
b. Set cover board in ribbons of bead-applied insulation adhesive, firmly pressing and maintaining insulation in place.
c. Set cover board in a uniform coverage of full-spread insulation adhesive, firmly pressing and maintaining insulation in place.

B. Install slip sheet over cover board and immediately beneath roof membrane.

3.6 ADHERED ROOFING INSTALLATION

A. Adhere roof membrane over area to receive roofing according to roofing system manufacturer's written instructions. Unroll roof membrane and allow to relax before installing.

B. Start installation of roofing in presence of roofing system manufacturer's technical personnel[**and Owner's testing and inspection agency**].

C. Accurately align roof membrane, and maintain uniform side and end laps of minimum dimensions required by manufacturer. Stagger end laps.

D. Bonding Adhesive: Apply to substrate and underside of roof membrane at rate required by manufacturer, and allow to partially dry before installing roof membrane. Do not apply to splice area of roof membrane.

E. Fabric-Backed Roof Membrane Adhesive: Apply to substrate at rate required by manufacturer, and install fabric-backed roof membrane.

F. In addition to adhering, mechanically fasten roof membrane securely at terminations, penetrations, and perimeter of roofing.

G. Apply roof membrane with side laps shingled with slope of roof deck where possible.

H. Seams: Clean seam areas, overlap roofing, and hot-air weld side and end laps of roof membrane and sheet flashings to ensure a watertight seam installation.

1. Test lap edges with probe to verify seam weld continuity. Apply lap sealant to seal cut edges of roof membrane and sheet flashings.
2. Verify field strength of seams a minimum of twice daily, and repair seam sample areas.
3. Repair tears, voids, and lapped seams in roof membrane that do not comply with requirements.

I. Spread sealant bed over deck-drain flange at roof drains, and securely seal roof membrane in place with clamping ring.

3.7 MECHANICALLY FASTENED ROOFING INSTALLATION

A. Mechanically fasten roof membrane over area to receive roofing according to roofing system manufacturer's written instructions.

B. Unroll roof membrane and allow to relax before installing.

C. For in-splice attachment, install roof membrane with long dimension perpendicular to steel roof deck flutes.

D. Start installation of roofing in presence of roofing system manufacturer's technical personnel[**and Owner's testing and inspection agency**].

E. Accurately align roof membrane, and maintain uniform side and end laps of minimum dimensions required by manufacturer. Stagger end laps.

F. Mechanically fasten or adhere roof membrane securely at terminations, penetrations, and perimeter of roofing.

G. Apply roof membrane with side laps shingled with slope of roof deck where possible.

H. In-Seam Attachment: Secure one edge of KEE sheet using fastening plates or metal battens centered within seam, and mechanically fasten KEE sheet to roof deck.

I. Seams: Clean seam areas, overlap roof membrane, and hot-air weld side and end laps of roof membrane and sheet flashings to ensure a watertight seam installation.

1. Test lap edges with probe to verify seam weld continuity.
2. Apply lap sealant to seal cut edges of roof membrane and sheet flashings.
3. Verify field strength of seams a minimum of twice daily, and repair seam sample areas.
4. Repair tears, voids, and lapped seams in roof membrane that do not comply with requirements.

J. Spread sealant bed over deck-drain flange at roof drains, and securely seal roof membrane in place with clamping ring.

3.8 LOOSELY LAID AND BALLASTED ROOFING INSTALLATION

A. Loosely lay roof membrane over area to receive roofing according to roofing system manufacturer's written instructions.

B. Unroll roof membrane and allow to relax before installing.

C. Comply with requirements in SPRI RP-4 for [**System 1**] [**System 2**] [**System 3**].

D. Start installation of roofing in presence of roofing system manufacturer's technical personnel[**and Owner's testing and inspection agency**].

E. Accurately align roof membrane, without stretching, and maintain uniform side and end laps of minimum dimensions required by manufacturer. Stagger end laps.

F. Mechanically fasten or adhere perimeter of roofing according to requirements in SPRI RP-4.

G. [**Mechanically fasten**] [**or**] [**adhere**] roof membrane at corners, perimeters, and transitions according to requirements in SPRI RP-4.

1. At corners and perimeters, omit aggregate ballast leaving roof membrane exposed.
2. At corners and perimeters, adhere a second layer of roof membrane.

H. Apply roof membrane with side laps shingled with slope of deck where possible.

I. Seams: Clean seam areas, overlap roof membrane, and hot-air weld side and end laps of roof membrane and sheet flashings to ensure a watertight seam installation.

1. Test lap edges with probe to verify seam weld continuity.
2. Apply lap sealant to seal cut edges of roof membrane and sheet flashings.
3. Verify field strength of seams a minimum of twice daily, and repair seam sample areas.
4. Repair tears, voids, and lapped seams in roof membrane that do not comply with requirements.

J. Spread sealant bed over deck-drain flange at roof drains, and securely seal roof membrane in place with clamping ring.

K. Install protection mat over roof membrane, overlapping a minimum of 6 inches (150 mm). Install an additional protection mat layer at projections, pipes, vents, and drains, overlapping a minimum of 12 inches (300 mm).

L. Aggregate Ballast: Apply uniformly over roof membrane at the rate required by roofing system manufacturer, but not less than the following, spreading with care to minimize possibility of damage to roofing system. Lay ballast as roof membrane is installed, leaving roofing ballasted at the end of the workday.

1. Ballast Weight: Size 4 aggregate, 10 lb/sq. ft. (50 kg/sq. m).
2. Ballast Weight: Size 2 aggregate, 13 lb/sq. ft. (65 kg/sq. m), at corners and perimeter; Size 4 aggregate, 10 lb/sq. ft. (50 kg/sq. m), elsewhere.
3. Ballast Weight: Size 2 aggregate, 13 lb/sq. ft. (65 kg/sq. m).
4. Ballast Weight: Size 3 aggregate, <**Insert weight**>, at corners, <**Insert weight**> at perimeter, and <**Insert weight**>, elsewhere.

M. Roof-Paver Ballast: Install [**lightweight**] [**heavyweight**] roof-paver ballast according to manufacturer's written instructions.

N. Roof-Paver and Aggregate Ballast: Install heavyweight roof pavers according to manufacturer's written instructions on roof corners and perimeter.

1. Install Size 4 aggregate ballast elsewhere on roof membrane at a minimum rate of 10 lb/sq. ft. (50 kg/sq. m).
2. Install Size 2 aggregate ballast elsewhere on roof membrane at a minimum rate of 13 lb/sq. ft. (65 kg/sq. m).

3.9 BASE FLASHING INSTALLATION

A. Install sheet flashings and preformed flashing accessories, and adhere to substrates according to roofing system manufacturer's written instructions.

B. Apply bonding adhesive to substrate and underside of sheet flashing at required rate, and allow to partially dry. Do not apply to seam area of flashing.

C. Flash penetrations and field-formed inside and outside corners with cured or uncured sheet flashing.

D. Clean seam areas, overlap, and firmly roll sheet flashings into the adhesive. Hot-air weld side and end laps to ensure a watertight seam installation.

E. Terminate and seal top of sheet flashings and mechanically anchor to substrate through termination bars.

3.10 WALKWAY INSTALLATION

A. Flexible Walkways: Install walkway products according to manufacturer's written instructions.

1. Install flexible walkways at the following locations:

a. Perimeter of each rooftop unit.
b. Between each rooftop unit location, creating a continuous path connecting rooftop unit locations.
c. Between each roof hatch and each rooftop unit location or path connecting rooftop unit locations.
d. Top and bottom of each roof access ladder.
e. Between each roof access ladder and each rooftop unit location or path connecting rooftop unit locations.
f. Locations indicated on Drawings.
g. As required by roof membrane manufacturer's warranty requirements.

2. Provide 6-inch (76-mm) clearance between adjoining pads.
3. Heat weld to substrate or adhere walkway products to substrate with compatible adhesive according to roofing system manufacturer's written instructions.

B. Roof-Paver Walkways: Install walkway roof pavers according to manufacturer's written instructions.

1. Install roof paver walkways at the following locations:

a. Perimeter of each rooftop unit.
b. Between each rooftop unit location, creating a continuous path connecting rooftop unit locations.
c. Between each roof hatch and each rooftop unit location or path connecting rooftop unit locations.
d. Top and bottom of each roof access ladder.
e. Between each roof access ladder and each rooftop unit location or path connecting rooftop unit locations.
f. Locations indicated on Drawings.
g. As required by roof membrane manufacturer's warranty requirements.

2. Provide 3 inches (75 mm) of space between adjacent roof pavers.

3.11 PROTECTING AND CLEANING

A. Protect roofing system from damage and wear during remainder of construction period. When remaining construction does not affect or endanger roofing, inspect roofing system for deterioration and damage, describing its nature and extent in a written report, with copies to Architect and Owner.

B. Correct deficiencies in or remove roofing system that does not comply with requirements, repair substrates, and repair or reinstall roofing system to a condition free of damage and deterioration at time of Substantial Completion and according to warranty requirements.

C. Clean overspray and spillage from adjacent construction using cleaning agents and procedures recommended by manufacturer of affected construction.

END OF SECTION 075416

SECTION 079200 - JOINT SEALANTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Silicone joint sealants.
2. Urethane joint sealants.
3. Latex joint sealants.

1.3 ACTION SUBMITTALS

A. Product Data: For each joint-sealant product.

1.4 INFORMATIONAL SUBMITTALS

A. Qualification Data: For qualified testing agency.

B. Sample Warranties: For special warranties.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: An authorized representative who is trained and approved by manufacturer.

B. Mockups: Install sealant in mockups of assemblies specified in other Sections that are indicated to receive joint sealants specified in this Section. Use materials and installation methods specified in this Section.

1.6 FIELD CONDITIONS

A. Do not proceed with installation of joint sealants under the following conditions:

1. When ambient and substrate temperature conditions are outside limits permitted by joint-sealant manufacturer [**or are below 40 deg F (5 deg C)**].
2. When joint substrates are wet.

3. Where joint widths are less than those allowed by joint-sealant manufacturer for applications indicated.
4. Where contaminants capable of interfering with adhesion have not yet been removed from joint substrates.

1.7 WARRANTY

A. Special Installer's Warranty: 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 JOINT SEALANTS, GENERAL

A. Compatibility: Provide joint sealants, backings, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by joint-sealant manufacturer, based on testing and field experience.

B. Colors of Exposed Joint Sealants: [**As selected by Architect from manufacturer's full range**].

2.2 NONSTAINING SILICONE JOINT SEALANTS

A. Nonstaining Joint Sealants: No staining of substrates when tested according to ASTM C 1248 [ES-1]:

B. Silicone, Nonstaining, S, NS, 100/50, NT: Nonstaining, single-component, nonsag, plus 100 percent and minus 50 percent movement capability, nontraffic-use, neutral-curing silicone joint sealant; ASTM C 920, Type S, Grade NS, Class 100/50, Use NT.

1. Dow Corning 790 , basis of design

C. Single-Component Mildew-Resistant Acid-Curing Silicone Sealant [ES-2]:

1. Available Products:

a. Dow Corning Corporation; 786 Mildew Resistant.
b. GE Silicones; Sanitary SCS1700.
c. Tremco; Tremsil 200.

2. Type and Grade: S (single component) and NS (nonsag).
3. Class: 25.
4. Use Related to Exposure: NT (nontraffic).
5. Uses Related to Joint Substrates: G, A, and, as applicable to joint substrates indicated, O.

D.

2.3 URETHANE JOINT SEALANTS

A. Urethane, S, NS, 25, T, NT: Single-component, nonsag, plus 25 percent and minus 25 percent movement capability, traffic- and nontraffic-use, urethane joint sealant; ASTM C 920, Type S, Grade NS, Class 25, Uses T and NT. [ES-3]:

1. Vulkem 116 basis of design

B. Acrylic Latex: Acrylic latex or siliconized acrylic latex, ASTM C 834, Type OP, Grade NF. [LS-1]:

1. Pecora AC-20 Basis of design

2.4 JOINT-SEALANT BACKING

A. Sealant Backing Material, General: Nonstaining; compatible with joint substrates, sealants, primers, and other joint fillers; and approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.

B. Cylindrical Sealant Backings: ASTM C 1330, [**Type C (closed-cell material with a surface skin)**] and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance.

C. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint-filler materials or joint surfaces at back of joint. Provide self-adhesive tape where applicable.

2.5 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, free of oily residues or other substances capable of staining or harming joint substrates and adjacent nonporous surfaces in any way, and formulated to promote optimum adhesion of sealants to joint substrates.

C. Masking Tape: Nonstaining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine joints indicated to receive joint sealants, with Installer present, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting performance of the Work.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions and the following requirements:

1. Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant, including dust, paints (except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer), old joint sealants, oil, grease, waterproofing, water repellents, water, surface dirt, and frost.
2. Clean porous joint substrate surfaces by brushing, grinding, mechanical abrading, or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealants. Remove loose particles remaining after cleaning operations above by vacuuming or blowing out joints with oil-free compressed air.
3. Remove laitance and form-release agents from concrete.
4. 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.

3.3 INSTALLATION OF JOINT SEALANTS

A. General: Comply with joint-sealant manufacturer's written installation instructions for products and applications indicated, unless more stringent requirements apply.

B. Sealant Installation Standard: Comply with recommendations in ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.

C. 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.

D. Install bond-breaker tape behind sealants where sealant backings are not used between sealants and backs of joints.

E. 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.

F. 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.

3.4 FIELD QUALITY CONTROL

1. Inspect tested joints and report on the following:

a. Whether sealants filled joint cavities and are free of voids.
b. Whether sealant dimensions and configurations comply with specified requirements.
c. Whether sealants in joints connected to pulled-out portion failed to adhere to joint substrates or tore cohesively. Include data on pull distance used to test each kind of product and joint substrate. Compare these results to determine if adhesion complies with sealant manufacturer's field-adhesion hand-pull test criteria.

3.5 CLEANING

A. 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.

3.6 PROTECTION

A. Protect joint sealants during and after curing period from contact with contaminating substances and from damage resulting from construction operations or other causes so sealants are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out, remove, and repair damaged or deteriorated joint sealants immediately so installations with repaired areas are indistinguishable from original work.

3.7 JOINT-SEALANT SCHEDULE

A. Joint-Sealant Application: Exterior perimeter joints between masonry and frames of doors, windows, and louvers.

1. Joint Sealant: ES-1.
2. Joint-Sealant Color: As selected by Architect from manufacturer's full range.

B. Joint-Sealant Application: Vertical control and expansion joints on exposed interior surfaces of exterior walls.

1. Joint Sealant: ES-3.
2. Joint-Sealant Color: As selected by Architect from manufacturer's full range.

C. Joint-Sealant Application: Interior perimeter joints of exterior openings.

1. Joint Sealant: ES-1
2. Joint-Sealant Color: As selected by Architect from manufacturer's full range.

D. Joint-Sealant Application: Interior joints between plumbing fixtures and adjoining walls, floors, and counters.

1. Joint Sealant: ES-2 Single-component mildew-resistant silicone sealant.
2. Joint-Sealant Color: As selected by Architect from manufacturer's full range.

E. Joint-Sealant Application: Perimeter joints between interior wall surfaces and frames of interior doors, windows, and elevator entrances.

1. Joint Sealant: LS-1.
2. Joint-Sealant Color: As selected by Architect from manufacturer's full range.

END OF SECTION 079200

Division 08 - Openings

SECTION 081433 - STILE AND RAIL WOOD DOORS

Revise this Section by deleting and inserting text to meet Project-specific requirements.

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Interior stile and rail wood doors.
   2. [**Finishing**] stile and rail wood doors.
   3. Fitting stile and rail wood door frames and machining for hardware.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Shop Drawings: For stile and rail wood doors. Indicate location, size, and hand of each door; elevation of each kind of door; construction details not covered in Product Data; and other pertinent data.

C. Samples: Represent typical range of color and grain for each species of veneer and solid lumber required.[**Finish Sample with same materials proposed for factory-finished doors.**]

1.3 INFORMATIONAL SUBMITTALS

A. Quality Standard Compliance Certificates: [**AWI Quality Certification**] [**WI Certified Compliance**] Program certificates.

PART 2 - PRODUCTS

2.1 INTERIOR STILE AND RAIL WOOD DOORS

A. Interior Stile and Rail Wood Doors: Interior [**custom**] doors complying with [**the AWI's, AWMAC's, and WI's "Architectural Woodwork Standards,"**] [**WDMA I.S.6A, "Industry Standard for Architectural Stile and Rail Doors,"**] and with other requirements specified.
   1. Grade: [**Custom**].
   2. Finish: [**Transparent**]
   3. Wood Species and Cut for Transparent Finish: [**Idaho white, lodgepole, ponderosa, or sugar pine, plain sawed/sliced**]
   4. Door Construction for Transparent Finish:

      a. Stile and Rail Construction: Clear lumber; may be edge glued for width.
      b. Stile and Rail Construction: Veneered, structural composite lumber[**or veneered, edge- and end-glued clear lumber**].

c. Raised-Panel Construction: Clear lumber; edge glued for width.
d. Raised-Panel Construction: Edge-glued, clear lumber; glued to both sides of a wood-based panel product.
e. Raised-Panel Construction: Veneered, wood-based panel product with mitered, raised rims made from matching clear lumber.

5. Raised-Panel Thickness: [**Manufacturer's standard, but not less than 1-1/8 inches (29 mm)**] .

B. Interior Stile and Rail Wood Door frames with other requirements specified.
1. Finish and Grade: [**Transparent and Premium or Select**].
2. Wood Species: [**Idaho white, lodgepole, ponderosa, or sugar pine**]

2.2 STILE AND RAIL WOOD DOOR FABRICATION

A. Fabricate stile and rail wood doors in sizes indicated for field fitting.

B. Factory fit doors to suit frame-opening sizes indicated, with the following uniform clearances and bevels unless otherwise indicated:

1. Clearances: Provide 1/8 inch (3 mm) at heads, jambs, and between pairs of doors. Provide 1/2 inch (13 mm) from bottom of door to top of decorative floor finish or covering. Where threshold is shown or scheduled, provide not more than 3/8 inch (10 mm) from bottom of door to top of threshold.

a. Comply with NFPA 80 for fire-rated doors.

2. Bevel non-fire-rated doors 1/8 inch in 2 inches (3-1/2 degrees) at lock and hinge edges.

C. Factory machine doors for hardware that is not surface applied.

2.3 FINISHING

A. Finish wood doors at [**factory**] [**woodworking shop**] that are indicated to receive transparent finish.

B. Transparent Finish:

1. Grade: [**Custom**].
2. Finish: AWI's, AWMAC's, and WI's "Architectural Woodwork Standards" [**System 9, UV curable, acrylated epoxy, polyester, or urethane**] [**System 10, UV curable, water based**] [**or**] [**System 11, catalyzed polyurethane**] .
3. Staining: [**As selected by Architect from manufacturer's full range**] [
4. Effect: [**Open-grain finish**] **produced by applying an additional finish coat to partially fill the wood pores**].
5. Sheen: [**Satin**]

PART 3 - EXECUTION

3.1 INSTALLATION

A. Hardware: For installation, see [**Section 087100 "Door Hardware."**] [**Section 087111 "Door Hardware)."**]

B. Installation Instructions: Install doors to comply with manufacturer's written instructions and referenced quality standard.Retain "Job-Fitted Doors" Paragraph below if all doors are not factory fitted.

C. Job-Fitted Doors: Align and fit doors in frames with uniform clearances and bevels as indicated below; do not trim stiles and rails in excess of limits set by manufacturer or permitted with fire-rated doors. Machine doors for hardware. Seal edges of doors, edges of cutouts, and mortises after fitting and machining.

1. Clearances: Provide 1/8 inch (3 mm) at heads, jambs, and between pairs of doors. Provide [**3/4 inch (13 mm)**] from bottom of door to top of decorative floor finish or covering unless otherwise indicated. Where threshold is shown or scheduled, provide [**1/4 inch (6 mm)**] [**3/8 inch (10 mm)**] from bottom of door to top of threshold unless otherwise indicated.

    a. Comply with NFPA 80 for fire-rated doors.

2. Bevel non-fire-rated doors 1/8 inch in 2 inches (3-1/2 degrees) at lock and hinge edges.

D. Factory-Fitted Doors: Align in frames for uniform clearance at each edge.

END OF SECTION 081433

SECTION 087110 - DOOR HARDWARE

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:

1. Commercial door hardware.
2. Cylinders for doors specified in other Sections.

B. Related Sections include the following:
1. Division 8 Section "Power Door Operators" for operators and switch stations at accessible entrances.
2. Division 16 Sections for electrical connections including conduit and wiring for automatic door operators and security card access. Refer to Wiring Diagrams in Section 08711A.

1.2 SUBMITTALS

A. Product Data: For each product indicated.

B. Shop Drawings: Include details of electrified door hardware and wiring diagrams.

C. Samples: For each exposed finish.

D. Door Hardware Schedule: Organized into door hardware sets indicating type, style, function, size, label, hand, manufacturer, fasteners, location, and finish of each door hardware item. Include description of each electrified door hardware function, including sequence of operation.

E. Keying Schedule: Detail Owner's final keying instructions for locks.

F. Product certificates.

1.3 QUALITY ASSURANCE

A. Supplier Qualifications: Person who is or employs a qualified DHI Architectural Hardware Consultant.

B. Source Limitations: Obtain electrified door hardware from same manufacturer as mechanical door hardware, unless otherwise indicated. Manufacturers that are listed to perform electrical modifications, by a testing and inspecting agency acceptable to authorities having jurisdiction, are acceptable.

C. Keying Conference: Conduct conference at Project site with Fort Coombs staff. Incorporate keying conference decisions into final keying schedule.

D. Keys: Deliver keys to Fort Coombs Project Manager.

E. Templates: Obtain and distribute templates for doors, frames, and other work specified to be factory prepared for installing door hardware.

F. Standards: Comply with BHMA A156 series standards, Grade 1, unless Grade 2 is indicated.

G. Certified Products: Provide door hardware that is listed in BHMA directory of certified products.

1.4 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of door hardware that fail in materials or workmanship within warranty period.
   1. Warranty Period for Manual Closers: **10** years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MATERIALS

A. SCREWS AND FASTENERS: Provide all necessary screws, bolts and fasteners of suitable size and type to anchor the hardware properly.. Fasteners are to match the finish and the base metal of the applied item. Provide the manufactures standard and recommended fasteners to template. Furnish fasteners where required with expansion shields, toggle bolts, and other anchors designated by the Architect according to the hardware requirements. All door closers and exit devices applied to labeled wood doors shall be thru-bolted. Thresholds are to be secured with machine screws and set with an adjustable sill anchor. All hardware applied to exterior doors shall be of non-ferrous material matching the finish of the hardware specified for interior openings or as specified in 3.06 of this section.

B. HINGES: Provide hinges as specified in 3.06 of this section. Furnish five-knuckle, heavy duty, button tip, full mortise template type hinges with non-rising loose pins at exterior doors, interior openings with exit devices and high frequency openings. Provide five-knuckle, standard duty, button tip, full mortise template hinges with non-rising loose pins at all other interior openings. At exterior locations and reverse bevel openings provide with non-removable pins. Furnish 1 hinge for every 30 inches in door height or fraction thereof with a minimum of 2 hinges per leaf. For doors up to 36 inches in width provide hinges 4.5 inches in height; for doors over 36 inches and up to 48 inches in width provide hinges 5.0 inches in height. The width of the hinges are to be sufficient to clear all trim and allow the door to swing 180 deg. Exterior doors and secured reverse bevel doors are to be furnished with non-removable pins or security stud. Use ball bearing steel hinges on labeled door openings and non-ferrous hinges on exterior doors or doors located in high humidity areas.

   Available manufacturers: Subject to compliance with requirements, and complete assembly testing for the Florida Building Code windload requirements, manufacturers offering products that may be incorporated into the work include the following:
   IVES, HAGER, STANLEY,

STRAP HINGES: provide heavy duty strap hinge with black powder coated finish and stainless hardware. Provide with the following attributes:
Manufacturer: Rockwood
Finish: Strap & Pintle = Powder-Coated Black,
Pintle Pin & Bearings = Zinc-Plated Black
Dimensions: 3/16" x 2½" x 16"
Mounting Plate Dimensions: 6" x 2¾" {1" offset}
Material: Steel, Pintle Pin. Available with the disc, non-template.
Hinge Support Strength: Rated up to 250 lbs. per hinge.
Accessory: Rockwood Decorative Back Plate

C. FLUSH BOLTS: Provide flush bolts of the type listed in 3.06 of this section. Manual flush bolts are to have a length that will position the lever at no more than 6 feet above the finished floor. Automatic flush bolts are to be applied at labeled pairs of doors. Furnish a Dust Proof Strike at each set of flush bolts specified.

Available manufacturers: Subject to compliance with requirements, and complete assembly testing for the Florida Building Code windload requirements, manufacturers offering products that may be incorporated into the work include the following:

IVES, ROCKWOOD

E. LOCKS: Provide locks of the type and function listed in 3.06 of this section. Provide heavy-duty commercial locks that exceed ANSI A156.13, Series 1000, Grade 1 and have been cycle tested to 6,000,000 cycles. Provide certification of cycle testing by independent lab testing organization with complete documentation. Provide lock body that can be rehanded on site without disassembling the lock case. High strength steel alloy cylinder retainer and a replaceable breakaway spindle preventing damage to lever trim and internal lock case components as standard. Trim is to be applied by threaded bushing with no exposed screws. The latchbolt is to be a 2-piece anti-friction stainless steel mechanism, with ¾ inch throw. Deadbolts are to have a 1-inch throw. Provide manufacturers standard wrought box strike for each latchset, with curved lip extended to protect the frame.

Available manufacturers: Subject to compliance with requirements, and complete assembly testing for the Florida Building Code windload requirements, manufacturers offering products that may be incorporated into the work include the following:

CORBIN\RUSSWIN
SCHLAGE
SARGENT

F. DOOR CLOSERS: Furnish door closers of the type listed in 3.06 of this section. Closers are to meet ANSI A156.4 Grade 1. Door closers shall not have pressure relief valves (PRV's), these valves are not acceptable. Provide closers with regular arm, parallel arm or top jamb mount as required to keep corridors clear and for proper installation. Provide all brackets, arms and plates as necessary for complete installation. Size closers according to the manufacturer's recommendations for the size and location of the door. Where multi-sized closers are required size closers to the proper setting at the factory. Provide adjustable units complying with ANSI A117.1 provisions for door opening force and delayed action closing.

Available manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the work include the following:

LCN	1460
DOM	SC80
YALE	3501
CORBIN\RUSSWIN	DC3200
NORTON	8501
RIXSON	M2220
SARGENT	1431

G. PROTECTIVE PLATES: Furnish kick plates as specified in 3.06 of this section. For the width of the plates furnish 2 inches less the door width on the push side of the door for single doors and 1 inch less the door width on the pull side and on the push side of pairs of doors. Bevel three edges and provide in 0.05 in thickness. Acceptable Manufacturers:

IVES
ROCKWOOD

H. DOOR TRIM: Furnish push plates, door pulls, wall stops and floor stops as specified in 3.06 of this section. Provide with fasteners as required for proper installation. Acceptable Manufacturers:

IVES
ROCKWOOD

K. THRESHOLDS AND WEATHER-STRIPPING: Furnish in the type listed in 3.06 of this section. Use vinyl or silicone inserts in face of stop at exterior doors. Verify threshold requirements with drawings and sill conditions for proper application. For exterior doors provide a threshold anchor channel assembly that sets firmly into the concrete and secures the threshold. Provide an abrasive, skid and corrosion resistant threshold at all exterior locations. For weather-strip provide at the jambs and head of the frame. On pairs of doors provide an overlapping astragal with a seal running the full height of the door or two split astragals at the meeting stile to seal doors that require independent operation.

Available manufacturers: Subject to compliance with requirements, and complete assembly testing for the Florida Building Code windload requirements, manufacturers offering products that may be incorporated into the work include the following:

NGP
ZERO
HAGER
PEMKO

L. SILENCERS: Furnish silencers at all interior openings. Provide 3 ea. at single doors and 2 ea. at paired openings. Acceptable Manufacturers:

IVES

HAGER

2.2 FINISHES

A. Unless otherwise indicated, provide:

HINGES, EXTERIOR	641 (US10A)
HINGES, INTERIOR	641
LOCKSETS	641
EXIT DEVICES	641
CLOSERS	641
DOOR TRIM	641
PROTECTION PLATES	641
THRESHOLDS	AL

2.3 CYLINDERS, KEYING, AND STRIKES

A. Cylinders: Tumbler type, constructed from brass or bronze, stainless steel, or nickel silver.

1. Manufacturers:
   a. Corbin Russwin Architectural Hardware; Div. of Yale Security Inc. (CR).

2. Number of Pins: Russwin 70-07H, Seven pin, proprietary keyway.
3. Permanent Cores: Manufacturer's standard; finish face to match lockset; removable cores.

B. Keying System: Factory-registered keying system; great-grand master key system.

1. Keys: Provide nickel-silver keys permanently inscribed with a visual key control number and "PROPERTY OF F.S.U. DO NOT DUPLICATE" notation. In addition to one extra blank key for each lock, provide four change keys, ten masters, ten grand masters and ten great-grand master keys.
   a. Furnish visual key control system only. Stamp Visual Key Control on cylinders only.
   b. Stamp change keys with bitting numbers.
   c. Stamp keyway section on each key.
   d. Furnish one key bitting list for Owner.

C. Strikes: Manufacturer's standard strike with strike box for each latch or lock bolt, with curved lip extended to protect frame, finished to match door hardware set.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Examine doors and frames for compliance with requirements for installation tolerances, labeled fire door assembly construction, wall and floor construction, and other conditions affecting performance. Examine roughing-in for electrical power systems to verify actual locations of wiring connections before electrified door hardware installation.

B. Steel Door and Frame Preparation: Comply with DHI A115 series. Drill and tap doors and frames for surface-applied hardware according to SDI 107.

C. Wood Door Preparation: Comply with DHI A115-W series.

D. Mounting Heights: Comply with the following requirements, unless otherwise indicated:

1. Standard Steel Doors and Frames: DHI's "Recommended Locations for Architectural Hardware for Standard Steel Doors and Frames."
2. Custom Steel Doors and Frames: DHI's "Recommended Locations for Builders' Hardware for Custom Steel Doors and Frames."
3. Wood Doors: DHI WDHS.3, "Recommended Locations for Architectural Hardware for Wood Flush Doors."

E. Adjust and reinforce attachment substrates as necessary for proper installation and operation. Drill and countersink units that are not factory prepared for anchorage fasteners. Space fasteners and anchors according to industry standards.

1. Boxed Power Supplies: Locate power supplies as indicated or, if not indicated, above accessible ceilings. Verify location with Architect.

a. Configuration: Provide the least number of power supplies required to adequately serve doors with electrified door hardware.

2. Thresholds: Set thresholds for exterior and acoustical doors in full bed of sealant complying with requirements specified in Division 7 Section "Joint Sealants."

F. Adjust door control devices to compensate for final operation of heating and ventilating equipment and to comply with accessibility requirements.
1. Door Closers: Adjust sweep period so that from an open position of 70 degrees, the door will take at least three seconds to move to a point 3 inches (75 mm) from the latch, measured to the leading edge of the door.

END OF SECTION 087110

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SCHEDULE

Hardware set #1 - 100 (PAIR WOOD FRONT CIRCLE HEAD DOORS)

6	EA	16” STRAP HINGE WITH PLATE INSIDE	ROCKWOOD		BLACK
2*	EA	PANIC HARDWARE	9927NL X 996 NL	641	VON
2	EA	CYLINDER	AS REQUIRED	641	COR
2	EA	AUTO DOOR OPERATOR WITH REMOTE CAPABILITY	POWER SWING	641	Besam
2	EA	REMOTES FOR OPERATOR			
2	EA	KICK PLATE	8” X 2” LDW	641	ROC
1	EA	THRESHOLD	950V LAR	AL	NGP
2	EA	WALL PLATE SWITCH (INSIDE)	7910-956	641	Besam
2	EA	ESCUTCHEON	7910-972-4		Besam
1	EA	INTERFACE BOX	JB7	GRY	Besam
1	EA	DOOR POSITION SWITCH	BY SEIMENS	641	LOC
1	SET	WEATHER-STRIPPING	135 NDBK		
1	EA		WIRING DIAGRAM		VON
1	EA	DOOR SWEEP	118 NDKB	BRN	NGP
1	EA	POWER SUPPLY	PS873-2		
6	EA	SILENCER	608	GRY	ROC

*Install two bottom & top latching surface mounted vertical rod exit devices with cylinder dogging to allow use of Auto Door Operator.

Hardware Set #2 - 107 (Pair Entrance)

6	EA	HINGE	BB1279 4 ½” x 4 ½”	641	HAG
1	SET	AUTO FLUSH BOLT	1945	641	COR
1	EA	DUST PROOF STRIKE	570	641	ROC
1	EA	ENTRANCE LOCK	CLX 3351 X AZ	613	COR
1	EA	CYLINDER	AS REQUIRED	641	COR
1	EA	COORDINATOR	1672	641	ROC
2	EA	SURFACE CLOSER	DC3210 A4	641	COR
2	EA	KICK PLATE	8" X 1" LDW	641	ROC
1	EA	THRESHOLD	513 LAR	AL	NGP
6	EA	SILENCER	608	GRY	ROC
2	EA	FLOOR STOP	470	641	ROC

Hardware Set #3 - 107a (Public toilet)

3	EA	HINGE	BB1279 4 ½” x 4 ½”	641	HAG
1	EA	PRIVACY SET	CLX3320 X AZ	613	COR
1	EA	SURFACE CLOSER	DC3210 A4	641	COR
1	EA	KICK PLATE	8" X 2" LDW	641	ROC
3	EA	SILENCER	608	GRY	ROC
1	EA	FLOOR STOP	470	641	ROC

Hardware Set #4 - 107B (Entrance)

3	EA	HINGE	BB1279 4 ½” x 4 ½”	641	HAG
1	EA	OFFICE LOCK	CLX3351 X AZ	613	COR
1	EA	CYLINDER	AS REQUIRED	641	COR
1	EA	SURFACE CLOSER	DC3210 A4	641	COR
1	EA	KICK PLATE	8" X 2" LDW	641	ROC
1	EA	WALL STOP	409	641	ROC
3	EA	SILENCER	608	GRY	ROC
1	EA	FLOOR STOP	470	641	ROC

Hardware Set #5 - 107B 104 (SG/Storage)

3	EA	HINGE	BB1279 4 ½” x 4 ½”	641	HAG
1	EA	STORAGE LOCK	CLX3355 X AZ	613	COR
1	EA	CYLINDER	AS REQUIRED	641	COR
3	EA	SILENCER	608	GRY	ROC
1	EA	WALL STOP	409	641	ROC
1	EA	SURFACE CLOSER	DC3210 A4	641	COR

SECTION 088001 - GENERAL GLAZING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes glazing for the following products and applications, including those specified in other Sections where glazing requirements are specified by reference to this Section:
   1. Historic Glazing for restored windows.

1.3 SUBMITTALS

A. Product Data: For each glass product and glazing material indicated.

1.4 QUALITY ASSURANCE

A. Source Limitations for Clear Glass: Obtain clear float glass from one primary-glass manufacturer.

B. Source Limitations for Glazing Accessories: Obtain glazing accessories from one source for each product and installation method indicated.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Protect glazing materials according to manufacturer's written instructions and as needed to prevent damage to glass and glazing materials from condensation, temperature changes, direct exposure to sun, or other causes.

B. For insulating-glass units that will be exposed to substantial altitude changes, comply with insulating-glass manufacturer's written recommendations for venting and sealing to avoid hermetic seal ruptures.

1.6 PROJECT CONDITIONS

A. Environmental Limitations: Do not proceed with glazing when ambient and substrate temperature conditions are outside limits permitted by glazing material manufacturers and when glazing channel substrates are wet from rain, frost, condensation, or other causes.

   1. Do not install liquid glazing sealants when ambient and substrate temperature conditions are outside limits permitted by glazing sealant manufacturer or below 40 deg F (4.4 deg C).

PART 2 - PRODUCTS

2.1 PRODUCTS AND MANUFACTURERS

A. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the products indicated in schedules at the end of Part 3.

2.2 Tempered: door and window glass

A. Fully Tempered Float Glass: ASTM C 1048, Kind FT (fully tempered), Condition A (uncoated) unless otherwise indicated, Type I, Class 1 (clear) or Class 2 (tinted) as indicated, Quality-Q3.

1. Fabrication Process: By horizontal (roller-hearth) process with roll-wave distortion parallel to bottom edge of glass as installed unless otherwise indicated.

2.3 ELASTOMERIC GLAZING SEALANTS

A. General: Provide products of type indicated, complying with the following requirements:

1. Compatibility: Select glazing sealants that are compatible with one another and with other materials they will contact, including glass products, seals of insulating-glass units, and glazing channel substrates, under conditions of service and application, as demonstrated by sealant manufacturer based on testing and field experience.
2. Suitability: Comply with sealant and glass manufacturers' written instructions for selecting glazing sealants suitable for applications indicated and for conditions existing at time of installation.
3. Colors of Exposed Glazing Sealants: As selected by Architect from manufacturer's full range for this characteristic.

B. Elastomeric Glazing Sealant Standard: Comply with ASTM C 920 and other requirements indicated for each liquid-applied.

2.4 MISCELLANEOUS GLAZING MATERIALS

A. General: Provide products of material, size, and shape complying with referenced glazing standard, requirements of manufacturers of glass and other glazing materials for application indicated, and with a proven record of compatibility with surfaces contacted in installation.

B. Cleaners, Primers, and Sealers: Types recommended by sealant or gasket manufacturer.

C. Setting Blocks: Elastomeric material with a Shore A durometer hardness of 85, plus or minus 5.

D. Spacers: Elastomeric blocks or continuous extrusions with a Shore A durometer hardness required by glass manufacturer to maintain glass lites in place for installation indicated.

E. Edge Blocks: Elastomeric material of hardness needed to limit glass lateral movement (side walking).

F. Cylindrical Glazing Sealant Backing: ASTM C 1330, Type O (open-cell material), of size and density to control glazing sealant depth and otherwise produce optimum glazing sealant performance.

G. Perimeter Insulation for Fire-Resistive Glazing: Identical to product used in test assembly to obtain fire-resistance rating.

2.5 FABRICATION OF GLASS AND OTHER GLAZING PRODUCTS

A. Fabricate glass and other glazing products in sizes required to glaze openings indicated for Project, with edge and face clearances, edge and surface conditions, and bite complying with written instructions of product manufacturer and referenced glazing standard, to comply with system performance requirements.

B. Clean-cut or flat-grind vertical edges of butt-glazed monolithic lites in a manner that produces square edges with slight kerfs at junctions with indoor and outdoor faces.

C. Grind smooth and polish exposed glass edges.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine framing glazing, with Installer present, for compliance with the following:

1. Manufacturing and installation tolerances, including those for size, squareness, and offsets at corners.
2. Presence and functioning of weep system.
3. Minimum required face or edge clearances.
4. Effective sealing between joints of glass-framing members.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Clean glazing channels and other framing members receiving glass immediately before glazing. Remove coatings not firmly bonded to substrates.

3.3 GLAZING, GENERAL

A. Comply with combined written instructions of manufacturers of glass, sealants, gaskets, and other glazing materials, unless more stringent requirements are indicated, including those in referenced glazing publications.

B. Glazing channel dimensions, as indicated on Drawings, provide necessary bite on glass, minimum edge and face clearances, and adequate sealant thicknesses, with reasonable tolerances. Adjust as required by Project conditions during installation.

C. Protect glass edges from damage during handling and installation. Remove damaged glass from Project site and legally dispose of off Project site. Damaged glass is glass with edge damage or other imperfections that, when installed, could weaken glass and impair performance and appearance.

D. Apply primers to joint surfaces where required for adhesion of sealants, as determined by preconstruction sealant-substrate testing.

E. Install setting blocks in sill rabbets, sized and located to comply with referenced glazing publications, unless otherwise required by glass manufacturer. Set blocks in thin course of compatible sealant suitable for heel bead.

F. Do not exceed edge pressures stipulated by glass manufacturers for installing glass lites.

G. Set glass lites in each series with uniform pattern, draw, bow, and similar characteristics.

3.4 SEALANT GLAZING (WET)

A. Install continuous spacers, or spacers combined with cylindrical sealant backing, between glass lites and glazing stops to maintain glass face clearances and to prevent sealant from extruding into glass channel and blocking weep systems until sealants cure. Secure spacers or spacers and backings in place and in position to control depth of installed sealant relative to edge clearance for optimum sealant performance.

B. Tool exposed surfaces of sealants to provide a substantial wash away from glass.

3.5 PROTECTION AND CLEANING

A. Protect exterior glass from damage immediately after installation by attaching crossed streamers to framing held away from glass. Do not apply markers to glass surface. Remove nonpermanent labels, and clean surfaces.

B. Protect glass from contact with contaminating substances resulting from construction operations, including weld splatter. If, despite such protection, contaminating substances do come into contact with glass, remove them immediately as recommended by glass manufacturer.

C. Examine glass surfaces adjacent to or below exterior concrete and other masonry surfaces at frequent intervals during construction, but not less than once a month, for build-up of dirt, scum, alkaline deposits, or stains; remove as recommended by glass manufacturer.

D. Remove and replace glass that is broken, chipped, cracked, abraded, or damaged in any way, including natural causes, accidents, and vandalism, during construction period.

E. Wash glass on both exposed surfaces in each area of Project not more than four days before date scheduled for inspections that establish date of Substantial Completion. Wash glass as recommended by glass manufacturer.

END OF SECTION 088001

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Division 09 - Finishes

SECTION 092900 - GYPSUM BOARD

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Interior gypsum board.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Samples for Initial Selection: For each type of [**trim accessory**] [**and**] [**textured finish**] indicated.

1.4 QUALITY ASSURANCE

A. Mockups: Build mockups of at least 100 sq. ft. (9 sq. m) in surface area to demonstrate aesthetic effects and to set quality standards for materials and execution.

1. Build mockups for the following:
   a. Acoustical gypsum board installation and finish.
2. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.5 DELIVERY, STORAGE AND HANDLING

A. Store materials inside under cover and keep them dry and protected against weather, condensation, direct sunlight, construction traffic, and other potential causes of damage. Stack panels flat and supported on risers on a flat platform to prevent sagging.

1.6 FIELD CONDITIONS

A. Environmental Limitations: Comply with ASTM C 840 requirements or gypsum board manufacturer's written instructions, whichever are more stringent.

B. Do not install paper-faced gypsum panels until installation areas are enclosed and conditioned.

PART 2 - PRODUCTS

2.1 GYPSUM BOARD, GENERAL

A. Size: Provide maximum lengths and widths available that will minimize joints in each area and that correspond with support system indicated.

2.2 INTERIOR GYPSUM BOARD

A. Gypsum Wallboard: ASTM C 1396/C 1396M.
   1. Thickness: 5/8" inch (12.7 mm).
   2. Long Edges: [**Tapered**].

B. Skim-Coated Gypsum Board: ASTM C 1396/C 1396M. Manufactured with a factory-applied skim coat.
   1. Core: [**5/8 inch (15.9 mm),**].
   2. Long Edges: Tapered.

2.3 TRIM ACCESSORIES

A. Interior Trim: ASTM C 1047.

   1. Material: [**Galvanized or aluminum-coated steel sheet, rolled zinc, plastic, or paper-faced galvanized-steel sheet**].
   2. Shapes:

      a. Cornerbead.
      b. Bullnose bead.
      c. LC-Bead: J-shaped; exposed long flange receives joint compound.
      d. L-Bead: L-shaped; exposed long flange receives joint compound.
      e. U-Bead: J-shaped; exposed short flange does not receive joint compound.
      f. Expansion (control) joint.

2.4 JOINT TREATMENT MATERIALS

A. General: Comply with ASTM C 475/C 475M.

B. Joint Tape:

   1. Interior Gypsum Board: Paper.

C. Joint Compound for Interior Gypsum Board: For each coat, use formulation that is compatible with other compounds applied on previous or for successive coats.

   1. Prefilling: At open joints, [**rounded or beveled panel edges,**] and damaged surface areas, use setting-type taping compound.
   2. Embedding and First Coat: For embedding tape and first coat on joints, fasteners, and trim flanges, use [**setting-type taping**] compound.

a. Use setting-type compound for installing paper-faced metal trim accessories.

3. Fill Coat: For second coat, use [**setting-type, all-purpose**] compound.
4. Finish Coat: For third coat, use] [**drying-type, all-purpose**] compound.

2.5 AUXILIARY MATERIALS

A. General: Provide auxiliary materials that comply with referenced installation standards and manufacturer's written instructions.

B. Laminating Adhesive: Adhesive or joint compound recommended for directly adhering gypsum panels to continuous substrate.

C. Steel Drill Screws: ASTM C 1002 unless otherwise indicated.

1. Use screws complying with ASTM C 954 for fastening panels to steel members from 0.033 to 0.112 inch (0.84 to 2.84 mm) thick.
2. For fastening cementitious backer units, use screws of type and size recommended by panel manufacturer.

D. Acoustical Sealant: Manufacturer's standard nonsag, paintable, nonstaining latex sealant complying with ASTM C 834. Product effectively reduces airborne sound transmission through perimeter joints and openings in building construction as demonstrated by testing representative assemblies according to ASTM E 90.

E. Thermal Insulation: As specified in Section 072100 "Thermal Insulation."

F. Vapor Retarder: As specified in Section 072600 "Vapor Retarders."

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas and substrates including welded hollow-metal frames and support framing, with Installer present, for compliance with requirements and other conditions affecting performance of the Work.

B. Examine panels before installation. Reject panels that are wet, moisture damaged, and mold damaged.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 APPLYING AND FINISHING PANELS, GENERAL

A. Comply with ASTM C 840.

B. Install ceiling panels across framing to minimize the number of abutting end joints and to avoid abutting end joints in central area of each ceiling. Stagger abutting end joints of adjacent panels not less than one framing member.

C. Install panels with face side out. Butt panels together for a light contact at edges and ends with not more than 1/16 inch (1.5 mm) of open space between panels. Do not force into place.

D. Locate edge and end joints over supports, except in ceiling applications where intermediate supports or gypsum board back-blocking is provided behind end joints. Do not place tapered edges against cut edges or ends. Stagger vertical joints on opposite sides of partitions. Do not make joints other than control joints at corners of framed openings.

E. Form control and expansion joints with space between edges of adjoining gypsum panels.

F. Cover both faces of support framing with gypsum panels in concealed spaces (above ceilings, etc.), except in chases braced internally.

1. Unless concealed application is indicated or required for sound, fire, air, or smoke ratings, coverage may be accomplished with scraps of not less than 8 sq. ft. (0.7 sq. m) in area.
2. Fit gypsum panels around ducts, pipes, and conduits.
3. Where partitions intersect structural members projecting below underside of floor/roof slabs and decks, cut gypsum panels to fit profile formed by structural members; allow 1/4- to 3/8-inch- (6.4- to 9.5-mm-) wide joints to install sealant.

G. Wood Framing: Install gypsum panels over wood framing, with floating internal corner construction. Do not attach gypsum panels across the flat grain of wide-dimension lumber, including floor joists and headers. Float gypsum panels over these members or provide control joints to counteract wood shrinkage.

3.3 APPLYING INTERIOR GYPSUM BOARD

A. Install interior gypsum board in the following locations:

1. Wallboard Type: [**Vertical surfaces unless otherwise indicated**].

B. Single-Layer Application:

1. On ceilings, apply gypsum panels before wall/partition board application to greatest extent possible and at right angles to framing unless otherwise indicated.
2. On partitions/walls, apply gypsum panels [**horizontally (perpendicular to framing)**] unless otherwise indicated or required by fire-resistance-rated assembly, and minimize end joints.

C. Interior Trim: Install in the following locations:

1. Control Joints – install as indicted.

2. Cornerbead: Use at outside corners [**unless otherwise indicated**].
3. LC-Bead: Use [**at exposed panel edges**] .

4. L-Bead: Use [**where indicated**] .
5. Curved-Edge Cornerbead: Use at curved openings.

3.4 FINISHING GYPSUM BOARD

A. General: Treat gypsum board joints, interior angles, edge trim, control joints, penetrations, fastener heads, surface defects, and elsewhere as required to prepare gypsum board surfaces for decoration. Promptly remove residual joint compound from adjacent surfaces.

B. Prefill open joints[**, rounded or beveled edges,**] and damaged surface areas.

C. Apply joint tape over gypsum board joints, except for trim products specifically indicated as not intended to receive tape.

D. Gypsum Board Finish Levels: Finish panels to levels indicated below and according to ASTM C 840:

1. Level 3: Ceiling areas, concealed areas, and where indicated.
2. Level 4: [**At panel surfaces that will be exposed to view unless otherwise indicated**].

3.5 PROTECTION

A. Protect adjacent surfaces from drywall compound and promptly remove from floors and other non-drywall surfaces. Repair surfaces stained, marred, or otherwise damaged during drywall application.

B. Protect installed products from damage from weather, condensation, direct sunlight, construction, and other causes during remainder of the construction period.

C. Remove and replace panels that are wet, moisture damaged, and mold damaged.

1. Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
2. Indications that panels are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

END OF SECTION 092900

PART 1 - GENERAL

1.1 RELATED DOCUMENTS:

A. Drawings and general provisions of Contract, including Division 01 General Requirements apply to this Specification.

1.2. SCOPE: Sanding and refinishing of existing flooring.

1.3 QUALITY ASSURANCE:

A. Material supplier shall be a firm established in the industry.

B. Flooring contractor shall be a company with a minimum of three (3) years continuous experience in the athletic flooring field. A list of at least three completed projects of similar magnitude and complexity where this work has been performed shall be submitted all with submittals/proposals. For each completed project owner references including contact information of a person with direct knowledge of the work shall be included.

Manufacturers wishing to gain prior approval shall request, in writing, the owner's qualification criteria.

1.4 SUBMITTALS:

A. Submit three copies of manufacturer's product data.

B. Maintenance Literature: Three copies of MFMA Care and Maintenance of wood floors.

D. Certification: Manufacturer shall provide certification that all materials meet grade, quality and treatment if applicable.

1.5 DELIVERY, STORAGE AND HANDLING:

Materials shall not be delivered to the jobsite until all masonry, painting, plastering, tile work, work is complete. Where other trades are involved, all overhead mechanical work, lighting, backstops, and scoreboards shall be installed. Room temperature shall be 55-80 degrees and a consistent relative humidity maintained.

1.6 JOB CONDITIONS/SEQUENCE:

A. Do not commence work until requirements listed in the previous paragraph are obtained.

B. Permanent heat, light, and ventilation shall be operating and maintained during and following installation.

C. After floors are finished, area is to be locked by School representative to allow time for curing of the finish. Owner shall protect finished floor until inspection and acceptance.

PART 2 - PRODUCTS

2.1 MANUFACTURERS: The following manufacturers' products have been used to establish minimum standards for materials, workmanship and function:

1. H&C - Aqua-Pro Pro Coat Acrylic Urethane Wood finish
2. Clear protect 2-part Polyurethane Clear Coating
3. Fiddes USA – Premier HPX Floor Water Based Polyurethane
4. Advantage top Notch satin 2-component Water Borne Wood Floor Finish

2.2 Equal products from other manufacturers may be used in the work provided such products have been approved, by the Architect of record, not less than ten (10) days prior to scheduled bid opening.

2.3 Materials:

A. FLOOR SEALER: Acrylic Water-Based Urethanes

B. FLOOR FINISH: Water-Based Urethanes

1) Physical Characteristics:
2) Gloss Level: Satin
3) Solids: 33 +/- 2%
4) VOC: Does not exceed 300 grams per liter (3.8 pounds per gallon)

PART 3 - EXECUTION

3.1 FLOOR INSPECTION:

A. Inspect existing subfloor floor for proper dryness and tolerance and report any discrepancies to the owner's representative in writing. It is the intent of the owner to make necessary repairs where deficient materials are discovered. Any floor repair will be approved by the owner's representative prior to performance of the work. Additional cost associated with this floor repair shall be addressed with the flooring contractor via a Change Order using "unit cost" provided on the original bid form proposal.

B. All floor repairs must be performed and complete prior to the refinishing of the maple flooring.

3.2 REFINISHING - Make sure floor is free of moisture.

A. Sweep floors clean.
B. Remove all tape and gum with a putty knife or scraper
C. Sand with heavy, power driven type sander. Use dust accumulator on machine.
D. Sand with No. 40 or 36 grit sandpaper if boards are uneven heights. First pass shall be on a diagonal angle to the direction of the floor.
E. Make sure floor is sanded smooth and level before sanding with medium grit (50 or 60 grit) sandpaper. This cut and all subsequent cuts shall be sanded in the direction of the grain of the floor.

F. Sand edges with No. 60 or 80 grit spinner paper.

G. Sand entire floor with No. 80 grit sandpaper.
H. Disk sand entire floor with No. 100 disk paper.
I. Scrape and hand-sand corners and other areas not reached by machine.
J. Clean floor to remove all dust and debris prior to sealing wood. Floor shall be smooth and free of shiners.

3.3 FINISHING:

A. Apply two coats of floor sealer.

C. Apply First Coat of Floor Finish with a light weight T-bar applicator going with the grain. Do Not Puddle Finish

H. Apply Second Coat of Floor Finish (Arena 300) with lightweight T-bar applicator going with the grain. Do Not Puddle finish.

I. Let Floor dry approximately 2 hours to tack free. Then allow at least 4 hours but not more than 16 hours after tack free before recoating

J. Apply Third & Final Coat of Floor Finish (Arena 300).

K. Close doors and windows, turn off vent fans and Air Conditioning to avoid excess and direct air while coating.

3.4 PERIMETER MOLDING:

A. Install wood base (where missing) at all walls with adhesive.

3.5 CLEAN UP:

A. Remove all sanding dust from job site.

B. Clean and dust off doors and base trim before finish coats are applied.

END OF SECTION

SECTION 096519 - RESILIENT FLOORING AND ACCESSORIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes the following:
   a. Luxury Vinyl tile LVT

1.3 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Samples for Initial Selection: For each type of product indicated.

C. Samples for Verification: Full-size units of each color and pattern of resilient floor tile required.

   a. Resilient Accessories: Manufacturer's standard-size Samples, but not less than 12 inches (300 mm) long, of each resilient product color and pattern required.

1.4 QUALITY ASSURANCE

A. Fire-Test-Response Characteristics: Provide products identical to those tested for fire-exposure behavior per test method indicated by a testing and inspecting agency acceptable to authorities having jurisdiction.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Store resilient products and installation materials in dry spaces protected from the weather, with ambient temperatures maintained within range recommended by manufacturer, but not less than 50 deg F (10 deg C) or more than 90 deg F (32 deg C). Store tiles on flat surfaces.

1.6 PROJECT CONDITIONS

A. Maintain temperatures within range recommended by manufacturer, but not less than 70 deg F (21 deg C)or more than 95 deg F (35 deg C), in spaces to receive floor tile during the following time periods:

   a. 48 hours before installation.

b. During installation.
c. 48 hours after installation.

B. After post installation period, maintain temperatures within range recommended by manufacturer, but not less than 55 deg F (13 deg C) or more than 95 deg F (35 deg C).

C. Close spaces to traffic during floor covering installation.

D. Close spaces to traffic for 48 hours after floor covering installation.

E. Install resilient products after other finishing operations, including painting, have been completed.

1.7 EXTRA MATERIALS –

A. Furnish extra materials described below that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

a. Floor Tile: Furnish 1 box for every 50 boxes or fraction thereof, of each type, color, and pattern of floor tile installed.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the products listed in other Part 2 articles.

2.2 COLORS AND PATTERNS

A. Colors and Patterns: As selected by Architect from manufacturer's full range to match existing.

2.3 Luxury Vinyl tile LVT -1

A. Location as indicated: ASTM F 1700.
a. Mohawk, Inc. Basis of Design
b. **Premium Wood CO194 color 123 Western Wood 7.72” x 51.97” LVT**

B. Class: 3 type B

C. Wearing Surface: 20 mil commercial wear layer, M-Force™ Ultra Enhanced Urethane for stain resistance and soft, surface absorbing sound.

D. Thickness: 2.5mm

E. Adhesive: Manufactures standard

F. Installation: Full spread

G. Size: as scheduled.

H. Fire-Test-Response Characteristics:
   a. Critical Radiant Flux Classification: Class I, not less than 0.45 W/sq. cm per ASTM E 648.
   b. Smoke density: ASTM E662 Part a – less than 450

2.4 INSTALLATION MATERIALS

A. Trowelable Leveling and Patching Compounds: Latex-modified, portland cement based or blended hydraulic cement based formulation provided or approved by resilient product manufacturer for applications indicated.

B. Adhesives: Water-resistant type recommended by manufacturer to suit resilient products and substrate conditions indicated.

   a. Use adhesives that comply with the following limits for VOC content when calculated according to 40 CFR 59, Subpart D (EPA Method 24):

      a. VCT and Asphalt Tile Adhesives: 50 g/L.

PART 3 - EXECUTION

3.1 PREPARATION

A. Prepare substrates according to manufacturer's written recommendations to ensure adhesion of resilient products. Remove shoe mold and prepare concrete for new flooring.

B. Concrete Substrates: Prepare according to ASTM F 710.

   a. Verify that substrates are dry and free of curing compounds, sealers, and hardeners.

C. Remove substrate coatings and other substances that are incompatible with adhesives and that contain soap, wax, oil, or silicone, using mechanical methods recommended by manufacturer. Do not use solvents.

D. Use trowelable leveling and patching compound to fill cracks, holes, and depressions in substrates.

E. Move resilient products and installation materials into spaces where they will be installed at least 48 hours in advance of installation.

   a. Do not install resilient products until they are same temperature as space where they are to be installed.

F. Sweep and vacuum clean substrates to be covered by resilient products immediately before installation. After cleaning, examine substrates for moisture, alkaline salts, carbonation, and dust. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 TILE INSTALLATION

A. Match tiles for color and pattern by selecting tiles from cartons in the same sequence as manufactured and packaged, if so numbered. Discard broken, cracked, chipped, or deformed tiles.

   a. Lay tiles in pattern of colors and sizes indicated.

B. Scribe, cut, and fit tiles to butt neatly and tightly to vertical surfaces and permanent fixtures including built-in furniture, cabinets, pipes, outlets, edgings, door frames, thresholds, and nosings.

C. Extend tiles into toe spaces, door reveals, closets, and similar openings.

D. Adhere tiles to flooring substrates using a full spread of adhesive applied to substrate to produce a completed installation without open cracks, voids, raising and puckering at joints, telegraphing of adhesive spreader marks, and other surface imperfections.

E. Install new shoe molding and paint entire base assemble matching wall color.

3.3 CLEANING PROTECTION

A. Perform the following operations immediately after completing resilient product installation:

   a. Remove adhesive and other blemishes from exposed surfaces.
   b. Sweep and vacuum surfaces thoroughly.
   c. Damp-mop surfaces to remove marks and soil.

      a. Do not wash surfaces until after time period recommended by manufacturer.

B. Protect resilient products from mars, marks, indentations, and other damage from construction operations and placement of equipment and fixtures during remainder of construction period. Use protection methods recommended in writing by manufacturer.

   a. Apply protective floor polish to horizontal surfaces that are free from soil, visible adhesive, and surface blemishes if recommended in writing by manufacturer.

      a. Use commercially available product acceptable to manufacturer.
      b. Coordinate selection of floor polish with Owner's maintenance service.

   b. Cover products installed on horizontal surfaces with undyed, untreated building paper until Substantial Completion.
   c. Do not move heavy and sharp objects directly over surfaces. Place hardboard or plywood panels over flooring and under objects while they are being moved. Slide or roll objects over panels without moving panels.

END OF SECTION 096519

SECTION 099113 - EXTERIOR PAINTING

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes surface preparation and the application of paint systems on [**exterior substrates.**] [**the following exterior substrates:**]
   1. Concrete
   2. Steel and iron.
   3. Galvanized metal.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product. Include preparation requirements and application instructions.
   1. Indicate VOC content.

B. Product List: Cross-reference to paint system and locations of application areas. Use same designations indicated on Drawings and in schedules. Include color designations.

1.4 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

   1. Paint: [**5**] percent, but not less than [**2 gal. (3.8 L)**] of each material and color applied.

1.5 QUALITY ASSURANCE

A. Mockups: Apply mockups of each paint system indicated and each color and finish selected to verify preliminary selections made under Sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.

   1. Architect will select one surface to represent surfaces and conditions for application of each paint system.

      a. Vertical and Horizontal Surfaces: Provide samples of at least 100 sq. ft. (9 sq. m).

   2. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Store materials not in use in tightly covered containers in well-ventilated areas with ambient temperatures continuously maintained at not less than 45 deg F (7 deg C).

1. Maintain containers in clean condition, free of foreign materials and residue.
2. Remove rags and waste from storage areas daily.

1.7 FIELD CONDITIONS

A. Apply paints only when temperature of surfaces to be painted and ambient air temperatures are between 50 and 95 deg F (10 and 35 deg C).

B. Do not apply paints in snow, rain, fog, or mist; when relative humidity exceeds 85 percent; at temperatures less than 5 deg F (3 deg C) above the dew point; or to damp or wet surfaces.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Products: Subject to compliance with requirements, [**provide one of the products**] listed in the Exterior Painting Schedule for the paint category indicated.
1. Benjamin Moore
2. PPG Paints
3. Sherwin Williams
4. Pratt and lambert

2.2 PAINT, GENERAL

A. MPI Standards: Products shall comply with MPI standards indicated and shall be listed in its "MPI Approved Products Lists."

B. Material Compatibility:

1. Materials for use within each paint system shall be compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
2. For each coat in a paint system, products shall be recommended in writing by topcoat manufacturers for use in paint system and on substrate indicated.

C. Colors: [**As selected by Architect from manufacturer's full range**]

1. [**Ten**] percent of surface area will be painted with deep tones.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.

B. Verify suitability of substrates, including surface conditions and compatibility, with existing finishes and primers.

C. Proceed with coating application only after unsatisfactory conditions have been corrected.

1. Application of coating indicates acceptance of surfaces and conditions.

3.2 PREPARATION

A. Comply with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual" applicable to substrates and paint systems indicated.

B. Remove hardware, covers, plates, and similar items already in place that are removable and are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.

1. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection.

C. Clean substrates of substances that could impair bond of paints, including dust, dirt, oil, grease, and incompatible paints and encapsulants.

1. Remove incompatible primers and reprime substrate with compatible primers or apply tie coat as required to produce paint systems indicated.

D. Steel Substrates: Remove rust, loose mill scale, and shop primer if any. Clean using methods recommended in writing by paint manufacturer[**.**] [**but not less than the following:**]
1. SSPC-SP 3.

E. Shop-Primed Steel Substrates: Clean field welds, bolted connections, and areas where shop paint is abraded. Paint exposed areas with the same material as used for shop priming to comply with SSPC-PA 1 for touching up shop-primed surfaces.

F. Galvanized-Metal Substrates: Remove grease and oil residue from galvanized sheet metal by mechanical methods to produce clean, lightly etched surfaces that promote adhesion of subsequently applied paints.

G. Aluminum Substrates: Remove loose surface oxidation.

3.3 APPLICATION

A. Apply paints according to manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual."

1. Use applicators and techniques suited for paint and substrate indicated.
2. Paint surfaces behind movable items same as similar exposed surfaces. Before final installation, paint surfaces behind permanently fixed items with prime coat only.
3. Paint both sides and edges of exterior doors and entire exposed surface of exterior door frames.
4. Paint entire exposed surface of window frames and sashes.
5. Do not paint over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.
6. Primers specified in painting schedules may be omitted on items that are factory primed or factory finished if acceptable to topcoat manufacturers.

B. Tint undercoats same color as topcoat, but tint each undercoat a lighter shade to facilitate identification of each coat if multiple coats of same material are to be applied. Provide sufficient difference in shade of undercoats to distinguish each separate coat.

C. If undercoats or other conditions show through topcoat, apply additional coats until cured film has a uniform paint finish, color, and appearance.

D. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.

3.4 FIELD QUALITY CONTROL

A. Dry Film Thickness Testing: Owner may engage the services of a qualified testing and inspecting agency to inspect and test paint for dry film thickness.

1. Contractor shall touch up and restore painted surfaces damaged by testing.
2. If test results show that dry film thickness of applied paint does not comply with paint manufacturer's written recommendations, Contractor shall pay for testing and apply additional coats as needed to provide dry film thickness that complies with paint manufacturer's written recommendations.

3.5 CLEANING AND PROTECTION

A. At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.

B. After completing paint application, clean spattered surfaces. Remove spattered paints by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.

C. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.

D. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

3.6 EXTERIOR PAINTING SCHEDULE

A. Concrete Substrates, Nontraffic Surfaces:

1. Latex System [**MPI EXT 3.1A**] [**MPI EXT 3.1K**]:

a. Prime Coat: Primer, alkali resistant, water based[**, MPI #3**].
1) PPG acrylic primer

b. Prime Coat: Latex, exterior, matching topcoat.
c. Intermediate Coat: Latex, exterior, matching topcoat.
d. Topcoat: Latex, exterior, flat (MPI Gloss Level 1)[**,**

e. Topcoat: Latex, exterior, low sheen (MPI Gloss Level 3-4)[**, MPI #15**].
1) PPG Speedhide Exterior 100% acrylic

B. Concrete Masonry Substrates:

1. Latex System[**MPI EXT 4.1A**]:

a. Prime Coat: Latex, exterior, matching topcoat.
b. Intermediate Coat: Latex, exterior, matching topcoat.
c. Topcoat: Latex, exterior, flat (MPI Gloss Level 1)[**, MPI #10**].
1) PPG acrylic primer

d. Topcoat: Latex, exterior, low sheen (MPI Gloss Level 3-4)[**, MPI #15**].
1) PPG Speedhide Exterior 100% acrylic

C. Steel and Iron Substrates:

1. Alkyd System [**MPI EXT 5.1D**] [**MPI EXT 5.1Q**]:

a. Prime Coat: Primer, alkyd, anticorrosive, for metal[**, MPI #79**].

1) Basis of design: PPG PPG Multiprime 4160

b. Prime Coat: Shop primer specified in Section where substrate is specified.
c. Intermediate Coat: Exterior, alkyd enamel, matching topcoat. PPG HPC Rust Preventative Alkyd 4308-0100
d. Topcoat: Alkyd, exterior, gloss (MPI Gloss Level 6)[**, MPI #9**]. PPG HPC Rust Preventative Alkyd 4308-0100

1) Basis of design: PPG Fast dry 35

D. Galvanized-Metal Substrates:

1. Alkyd System[**MPI EXT 5.3B**]:

a. Prime Coat: Primer, galvanized, [**, MPI #26**]. PPG Pitt Tech Plus DTM Primer 90-912

b. Basis of design: PPG Seal Grip Universal Primer.

c. Intermediate Coat: Exterior, alkyd enamel, matching topcoat. PPG HPC Rust Preventative Alkyd 4308-0100

d. Topcoat: Alkyd, exterior, gloss (MPI Gloss Level 6)[**, MPI #9**]. PPG HPC Rust Preventative Alkyd 4308-0100
   1) Basis of design: PPG Fast dry 35

END OF SECTION 099113

SECTION 099123 - INTERIOR PAINTING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes surface preparation and the application of paint systems on [**interior substrates.**] [**the following interior substrates:**]

1. Concrete.
2. Steel and iron.
3. Galvanized metal.
4. Aluminum (not anodized or otherwise coated).
5. Wood.
6. Gypsum board.
7. Plaster.
8. Sprinkler Piping

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product. Include preparation requirements and application instructions.

1. Include Printout of current "MPI Approved Products List" for each product category specified, with the proposed product highlighted.
2. Indicate VOC content.

1.4 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials[**, from the same product run,**] that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Paint: [**5**] percent, but not less than [**1 gal. (3.8 L)**] of each material and color applied.

1.5 QUALITY ASSURANCE

A. Mockups: Apply mockups of each paint system indicated and each color and finish selected to verify preliminary selections made under Sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.

1. Architect will select one surface to represent surfaces and conditions for application of each paint system.

    a. Vertical and Horizontal Surfaces: Provide samples of at least 100 sq. ft. (9 sq. m).

2. Final approval of color selections will be based on mockups.

    a. If preliminary color selections are not approved, apply additional mockups of additional colors selected by Architect at no added cost to Owner.

3. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
4. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Store materials not in use in tightly covered containers in well-ventilated areas with ambient temperatures continuously maintained at not less than 45 deg F (7 deg C).

1. Maintain containers in clean condition, free of foreign materials and residue.
2. Remove rags and waste from storage areas daily.

1.7 FIELD CONDITIONS

A. Apply paints only when temperature of surfaces to be painted and ambient air temperatures are between 50 and 95 deg F (10 and 35 deg C).

B. Do not apply paints when relative humidity exceeds 85 percent; at temperatures less than 5 deg F (3 deg C) above the dew point; or to damp or wet surfaces.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Products: Subject to compliance with requirements, [**provide product**] [**provide one of the products**] listed in the Interior Painting Schedule for the paint category indicated.
1. PPG Paints
2. Sherwin-Williams
3. Benjamin Moore
4. Valspar

2.2 PAINT, GENERAL

A. MPI Standards: Products shall comply with MPI standards indicated and shall be listed in its "MPI Approved Products Lists."

B. Material Compatibility:

1. Materials for use within each paint system shall be compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
2. For each coat in a paint system, products shall be recommended in writing by topcoat manufacturers for use in paint system and on substrate indicated.

C. Colors: [**As selected by Architect from manufacturer's full range**]

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.

B. Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:
1. Fiber-Cement Board: 12 percent.
2. Masonry (Clay and CMUs): 12 percent.
3. Wood: 15 percent.
4. Gypsum Board: 12 percent.

C. Gypsum Board Substrates: Verify that finishing compound is sanded smooth.

D. Verify suitability of substrates, including surface conditions and compatibility, with existing finishes and primers.

E. Proceed with coating application only after unsatisfactory conditions have been corrected.

1. Application of coating indicates acceptance of surfaces and conditions.

3.2 PREPARATION

A. Comply with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual" applicable to substrates and paint systems indicated.

B. Remove hardware, covers, plates, and similar items already in place that are removable and are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.

1. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection if any.

C. Clean substrates of substances that could impair bond of paints, including dust, dirt, oil, grease, and incompatible paints and encapsulants.

1. Remove incompatible primers and reprime substrate with compatible primers or apply tie coat as required to produce paint systems indicated.

D. Steel Substrates: Remove rust, loose mill scale, and shop primer, if any. Clean using methods recommended in writing by paint manufacturer[**.**] [**but not less than the following:**]
   1. SSPC-SP 3.

E. Shop-Primed Steel Substrates: Clean field welds, bolted connections, and areas where shop paint is abraded. Paint exposed areas with the same material as used for shop priming to comply with SSPC-PA 1 for touching up shop-primed surfaces.

F. Galvanized-Metal Substrates: Remove grease and oil residue from galvanized sheet metal by mechanical methods to produce clean, lightly etched surfaces that promote adhesion of subsequently applied paints.

G. Aluminum Substrates: Remove loose surface oxidation.

H. Wood Substrates:

1. Scrape and clean knots, and apply coat of knot sealer before applying primer.
2. Sand surfaces that will be exposed to view, and dust off.
3. Prime edges, ends, faces, undersides, and backsides of wood.
4. After priming, fill holes and imperfections in the finish surfaces with putty or plastic wood filler. Sand smooth when dried.

3.3 APPLICATION

A. Apply paints according to manufacturer's written instructions and to recommendations in "MPI Manual."

1. Use applicators and techniques suited for paint and substrate indicated.
2. Paint surfaces behind movable equipment and furniture same as similar exposed surfaces. Before final installation, paint surfaces behind permanently fixed equipment or furniture with prime coat only.
3. Paint front and backsides of access panels, removable or hinged covers, and similar hinged items to match exposed surfaces.
4. Do not paint over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.
5. Primers specified in painting schedules may be omitted on items that are factory primed or factory finished if acceptable to topcoat manufacturers.

B. Tint each undercoat a lighter shade to facilitate identification of each coat if multiple coats of same material are to be applied. Tint undercoats to match color of topcoat, but provide sufficient difference in shade of undercoats to distinguish each separate coat.

C. If undercoats or other conditions show through topcoat, apply additional coats until cured film has a uniform paint finish, color, and appearance.

D. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.

E. Painting Fire Suppression, Plumbing, HVAC, Electrical, Communication, and Electronic Safety and Security Work:

1. Paint the following work where exposed in occupied spaces:

a. Equipment, including panelboards.
b. Uninsulated metal piping.
c. Pipe hangers and supports.
d. Metal conduit.
e. Duct, equipment, and pipe insulation having cotton or canvas insulation covering or other paintable jacket material.
f. Other items as indicated.

3.4 CLEANING AND PROTECTION

A. At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.

B. After completing paint application, clean spattered surfaces. Remove spattered paints by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.

C. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.

D. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

3.5 INTERIOR PAINTING SCHEDULE

A. Steel Substrates:

1. Water-Based Light-Industrial Coating System:

a. Prime Coat: Primer, rust-inhibitive, water based.

1) PPG Paints; Pitt-Tech 90-712 Series.
2) PPG Paints; Pitt-Tech Plus 4020 PF.

b. Intermediate Coat: Matching topcoat.

c. Topcoat: Interior, water-based, light-industrial coating, gloss (Gloss Level 6).

1) PPG Paints; Advantage 900 909-10 Series.
2) PPG Paints; Pitt-Tech Plus 90-1310 Series.

2. Water-Based Alkyd System:

a. Prime Coat: Alkyd quick-dry primer for metal.

1) PPG Paints; Multi-Purpose 4160 Series.

b. Prime Coat: Alkyd anti-corrosive primer.

1) PPG Paints; 7-Line 7-852 Series.
2) PPG Paints; Multi-Purpose 4160 Series.

c. Prime Coat: Shop primer specified in Section where substrate is specified.
d. Intermediate Coat: Matching topcoat.

e. Topcoat: Water-based alkyd, gloss (Gloss Levels 6 and 7).

1) PPG Paints; Speedhide 6-1610XI Series.

B. Galvanized-Metal Substrates:

1. Alkyd over Water-Based Galvanized Primer System:

a. Prime Coat: Water-based galvanized primer.

1) PPG Paints; Pitt-Tech Plus 4020 PF.

a. Intermediate Coat: Matching topcoat.
b. Topcoat: Interior, alkyd, eggshell (Gloss Level 3).

c. Topcoat: Interior alkyd, gloss (Gloss Levels 6 and 7).

1) PPG Paints; Glyptex 4139-10 Series.

C. Aluminum (Not Anodized or Otherwise Coated) Substrates:

1. Alkyd System:

a. Prime Coat: Primer, Quick-dry primer for aluminum.

1) PPG Paints; Multi-Purpose 4160 Series.

b. Intermediate Coat: Matching topcoat.
c. Topcoat: Interior, alkyd, eggshell (Gloss Level 3).

1) PPG Paints; Glyptex 39-10 Series.

d. Topcoat: Interior alkyd, semi-gloss (Gloss Level 5).

1) PPG Paints; Glyptex 439-10 Series.

e. Topcoat: Interior alkyd, gloss (Gloss Levels 6 and 7).

1) PPG Paints; Glyptex 4139-10 Series.

D. Exposed Wood Framing:

1. Water-Based Alkyd System:

a. Prime Coat: Interior alkyd primer sealer.

1) PPG Paints; Seal Grip 17-941NF.

b. Intermediate Coat: Matching topcoat.

c. Topcoat: Water-based alkyd, semi-gloss (Gloss Level 5).

1) PPG Paints; Speedhide 6-1510XI Series.

E. Finish Carpentry: [**Wood trim**] [**Doors**] [**Windows**] [**and**] [**Wood board paneling**].

1. Water-Based Alkyd System:

a. Prime Coat: Interior latex primer for wood.

1) PPG Paints; Seal Grip 17-921XI Series.

b. Intermediate Coat: Matching topcoat.

c. Topcoat: Water-based alkyd, semi-gloss (Gloss Level 5).

1) PPG Paints; Speedhide 6-1510XI Series.

F. Architectural Woodwork: [**Wood paneling**] [**and**] [**casework**].

1. Water-Based Alkyd System:

a. Prime Coat: Interior latex primer for wood.

1) PPG Paints; Seal Grip 17-921XI Series.

b. Intermediate Coat: Matching topcoat.

c. Topcoat: Water-based alkyd, gloss (Gloss Levels 6 and 7).

1) PPG Paints; Speedhide 6-1610XI Series.

G. Plastic Substrates:

1. High-Performance Architectural Latex System:

a. Prime Coat: Water-based bonding primer.

1) PPG Paints; Seal Grip 17-921XI Series.

b. Prime Coat: Solvent-based bonding primer.

1) PPG Paints; Seal Grip 17-941NF.

c. Intermediate Coat: Matching topcoat.

d. Topcoat: Interior latex, high-performance architectural coating, semi-gloss (Gloss Level 5).

1) PPG Paints; Pure Performance 9-510XI Series.
2) PPG Paints; Manor Hall 82-3510 Series.
3) PPG Paints; Advantage 900 919-10 Series.

H. [**Gypsum Board**] Substrates:

1. High-Performance Architectural Latex System:

a. Prime Coat: Interior latex primer sealer.

1) PPG Paints; Speedhide 6-2.
2) PPG Paints; Speedhide Zero 6-4900XI.
3) PPG Paints; Pure Performance 9-900.

b. Intermediate Coat: Matching topcoat.

c. Topcoat: Interior latex, high-performance architectural coating, eggshell (Gloss Level 3).

1) PPG Paints; Manor Hall 82-3410 Series.

I. Acoustic Panels and Tiles:

1. High-Performance Architectural Latex System:

a. Prime Coat: Matching topcoat.
b. Intermediate Coat: Matching topcoat.
c. Topcoat: Interior, latex, high-performance architectural coating, low sheen (Gloss

d. Topcoat: Interior latex, high-performance architectural coating, eggshell (Gloss Level 3).

1) PPG Paints; Manor Hall 82-3410 Series.

END OF SECTION 099123

Division 10 - Specialties

SECTION 102800 - TOILET AND BATH ACCESSORIES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Public-use washroom accessories.
2. Cut Glass Mirrors

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.

1.3 CLOSEOUT SUBMITTALS

A. Maintenance data.

1.4 WARRANTY

A. Manufacturer's Special Warranty for Mirrors: Manufacturer agrees to repair or replace mirrors that fail in materials or workmanship within specified warranty period.

1. Warranty Period: [**5**] years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

2.2 PUBLIC-USE WASHROOM ACCESSORIES

A. Toilet Tissue (Roll) Dispenser - Owner provided contractor installed

B. Liquid-Soap Dispenser - Owner provided contractor installed

C. Grab Bar <
1. Material: Stainless steel, 0.05 inch (1.3 mm) thick.

a. Finish: Smooth, No. 4 finish (satin)

2. Outside Diameter: [**1-1/2 inches (38 mm)**].
3. Configuration and Length: [**As indicated on Drawings**]

D. Cut glass Mirrors

E. Mirror Unit – custom cut ¼" plate glass mirror. Refer to the drawings

F. Coat Hook: double robe hook satin stainless

PART 3 - EXECUTION

3.1 INSTALLATION

A. Refer to toilet accessory schedule on the drawings.

B. Install accessories according to manufacturers' written instructions, using fasteners appropriate to substrate indicated and recommended by unit manufacturer. Install units level, plumb, and firmly anchored in locations and at heights indicated.

C. Grab Bars: Install to withstand a downward load of at least 250 lbf (1112 N), when tested

D. MIRRORS – mechanically anchor as follows:
   1. Install stainless steel frame mirrors using manufacturer supplied concealed hanging bracket that locks onto top and bottom of frame by tamper-proof set screws.
   2. Custom large format mirrors – Install with aluminum J-mold frame and mirror adhesive.
      a. Bottom and side J-mold to be ¼" standard alumni J-mold. Top to be ¼" deep J-molding. Basis of design CRL – Satin anodized aluminum D636A and D645A.
      b. Adhesive to be PL520 mirror adhesive as manufactured by Loctite. Install side molding after mirror is hung with construction adhesive.

END OF SECTION 102800

SECTION 102801 - TOILET AND BATH ACCESSORIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes the following:

1. Toilet and bath accessories.

1.3 SUBMITTALS

A. Product Data: Include construction details, material descriptions and thicknesses, dimensions, profiles, fastening and mounting methods, specified options, and finishes for each type of accessory specified.

B. Setting Drawings: For cutouts required in other work; include templates, substrate preparation instructions, and directions for preparing cutouts and installing anchoring devices.

C. Product Schedule: Indicating types, quantities, sizes, and installation locations by room of each accessory required. Use designations indicated in the Toilet and Bath Accessory Schedule and room designations indicated on Drawings in product schedule.

D. Maintenance Data: For accessories to include in maintenance manuals specified in Division 1. Provide lists of replacement parts and service recommendations.

1.4 QUALITY ASSURANCE

A. Source Limitations: Provide products of same manufacturer for each type of accessory unit and for units exposed to view in same areas, unless otherwise approved by Architect.

B. Product Options: Accessory requirements, including those for materials, finishes, dimensions, capacities, and performance, are established by specific products indicated in the Toilet and Bath Accessory Schedule.
1. Other manufacturers' products with equal characteristics may be considered. See Division 1 Section "Substitutions."
2. Do not modify aesthetic effects, as judged solely by Architect, except with Architect's approval. Where modifications are proposed, submit comprehensive explanatory data to Architect for review.

1.5 COORDINATION

A. Coordinate accessory locations with other work to prevent interference with clearances required for access by disabled persons, proper installation, adjustment, operation, cleaning, and servicing of accessories.

B. Deliver inserts and anchoring devices set into concrete or masonry as required to prevent delaying the Work.

1.6 WARRANTY

A. General Warranty: Special warranty specified in this Article shall not deprive Owner of other rights Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by Contractor under requirements of the Contract Documents.

B. Manufacturer's Mirror Warranty: Written warranty, executed by mirror manufacturer agreeing to replace mirrors that develop visible silver spoilage defects within minimum warranty period indicated.

1. Minimum Warranty Period: 15 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering accessories that may be incorporated into the Work include, but are not limited to, the following:

1. Toilet and Bath Accessories:

a. A & J Washroom Accessories, Inc.
b. American Specialties, Inc.
c. Bobrick Washroom Equipment, Inc.
d. Bradley Corporation.
e. General Accessory Manufacturing Co. (GAMCO).
f. McKinney/Parker Washroom Accessories Corp.
g. Georgia-Pacific LLC
h. Deb USA, Inc.

B. Products: Subject to compliance with requirements, provide products indicated for each designation in the Toilet and Bath Accessory Schedule on the Drawings.

2.2 MATERIALS

A. Stainless Steel: ASTM A 666, Type 304, with No. 4 finish (satin), in 0.0312-inch (0.8-mm) minimum nominal thickness, unless otherwise indicated.

B. Sheet Steel: ASTM A 366/A 366M, cold rolled, commercial quality, 0.0359-inch (0.9-mm) minimum nominal thickness; surface preparation and metal pretreatment as required for applied finish.

C. Galvanized Steel Sheet: ASTM A 653/A 653M, G60 (Z180).

D. Chromium Plating: ASTM B 456, Service Condition Number SC 2 (moderate service), nickel plus chromium electrodeposited on base metal.

E. Mirror Glass: ASTM C 1036, Type I, Class 1, Quality q2, nominal 6.0 mm thick, with silvering, electroplated copper coating, and protective organic coating complying with FS DD-M-411.

F. Galvanized Steel Mounting Devices: ASTM A 153/A 153M, hot-dip galvanized after fabrication.

G. Fasteners: Screws, bolts, and other devices of same material as accessory unit, tamper and theft resistant when exposed, and of galvanized steel when concealed.

2.3 FABRICATION

A. General: Names or labels are not permitted on exposed faces of accessories. On interior surface not exposed to view or on back surface of each accessory, provide printed, waterproof label or stamped nameplate indicating manufacturer's name and product model number.

B. Surface-Mounted Toilet Accessories: Unless otherwise indicated, fabricate units with tight seams and joints, and exposed edges rolled. Hang doors and access panels with continuous stainless-steel hinge. Provide concealed anchorage where possible.

C. Framed Glass-Mirror Units: Fabricate frames for glass-mirror units to accommodate glass edge protection material. Provide mirror backing and support system that permits rigid, tamper-resistant glass installation and prevents moisture accumulation.

1. Provide galvanized steel backing sheet, not less than 0.034 inch (0.85 mm) and full mirror size, with nonabsorptive filler material. Corrugated cardboard is not an acceptable filler material.

D. Mirror-Unit Hangers: Provide mirror-unit mounting system that permits rigid, tamper- and theft-resistant installation, as follows:

1. One-piece, galvanized steel, wall-hanger device with spring-action locking mechanism to hold mirror unit in position with no exposed screws or bolts.
2. Heavy-duty wall brackets of galvanized steel, equipped with concealed locking devices requiring a special tool to remove.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install accessories according to manufacturers' written instructions, using fasteners appropriate to substrate indicated and recommended by unit manufacturer. Install units level, plumb, and firmly anchored in locations and at heights indicated.

B. Secure mirrors to walls in concealed, tamper-resistant manner with special hangers, toggle bolts, or screws. Set units level, plumb, and square at locations indicated, according to manufacturer's written instructions for substrate indicated.

C. Install grab bars to withstand a downward load of at least 250 lbf (1112 N), when tested according to method in ASTM F 446.

3.2 ADJUSTING AND CLEANING

A. Adjust accessories for unencumbered, smooth operation and verify that mechanisms function properly. Replace damaged or defective items.

B. Remove temporary labels and protective coatings.

C. Clean and polish exposed surfaces according to manufacturer's written recommendations.

3.3 TOILET AND BATH ACCESSORY SCHEDULE

A. Refer to Drawings.

END OF SECTION 102801

SECTION 104416 - FIRE EXTINGUISHERS AND ACCESSORIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes the following:

1. Fire extinguishers.

1.3 SUBMITTALS

A. General: Submit the following according to the Conditions of the Contract and Division 1 Specification Sections.

B. Product data for cabinets include rough-in dimensions, details showing mounting methods, relationships of box and trim to surrounding construction, door hardware, cabinet type and materials, trim style, door construction, panel style, and materials.

C. Samples for initial selection purposes in the form of manufacturer's color charts consisting of actual units or sections of units showing full range of colors, textures, and patterns available for each type of cabinet finish indicated or exposed to view.

D. Samples for verification purposes in full-size units of each type of cabinet finish indicated, and in sets for each color, texture, and pattern specified, showing the full range of variations.

1.4 QUALITY ASSURANCE

A. Single-Source Responsibility: Obtain extinguishers and cabinets from one source from a single manufacturer.

B. Coordination: Verify that cabinets are sized to accommodate type and capacity of extinguishers indicated and provided by Owner under separate Contract.

C. UL-Listed Products: Fire extinguishers shall be UL listed with UL listing mark for type, rating, and classification of extinguisher.

D. FM-Listed Products: Fire extinguishers approved by Factory Mutual Research Corporation for type, rating, and classification of extinguisher with FM marking.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated in the Work include, but are not limited to, the following:

B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   1. J.L. Industries.
   2. Larsen's Manufacturing Co.

2.2 FIRE EXTINGUISHERS

A. General: Provide fire extinguishers for locations indicated, in colors and finishes selected by Architect from manufacturer's standard, that comply with authorities having jurisdiction.

B. Multipurpose Dry Chemical Type: UL-rated 2-A:10:B:C, 5-lb nominal capacity, in enameled steel container.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine walls and partitions for thickness and framing for cabinets to verify cabinet depth and mounting prior to cabinet installation.

B. Do not proceed until unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Follow manufacturer's printed instructions for installation.

B. Install in locations and at mounting heights indicated or, if not indicated, at heights to comply with applicable regulations of governing authorities.

   2. Fasten mounting brackets to structure, square and plumb.

END OF SECTION 104416

Division 12 – Furnishings

SECTION 123661 – SOLID SURFACING COUNTERTOPS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Solid surfacing counter tops.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Include data for fire-retardant treatment from chemical-treatment manufacturer and certification by treating plant that treated materials comply with requirements.

B. Shop Drawings:
1. Submit fully dimensioned shop drawings showing countertop layouts, joinery, terminating conditions, substrate construction, cutouts and holes.
2. Show plumbing installation provisions. Include elevations, section details, and large scale details.

C. Samples: For each exposed product and for each color and texture specified.

D. Mock-Ups: Install at Project using acceptable products and manufacturer approved installation methods. Obtain Architect’s acceptance of color, pattern, finish, fabrication, and installation standards.

1.3 INFORMATIONAL SUBMITTALS

A. Qualification Data: For [**manufacturer**] [**and**] [**Installer**].

B. Research reports.

C. Field quality control reports.

1.4 QUALITY ASSURANCE

A. Manufacturer's Qualifications: Employs skilled workers who custom fabricate products similar to those required for this Project and whose products have a record of successful in-service performance.
1. Fabricator Qualifications: Minimum of three years documented experience in fabricating solid surfacing countertops similar in scope and complexity to this project.
2. Installer Qualifications: Minimum of three years documented installation experience for projects similar in scope and complexity to this Project, and currently certified by the manufacturer as an acceptable installer. [Installer shall be the fabricator].

PART 2 - PRODUCTS

A. SOLID SURFACE ARCHITECTURAL COUNTERTOP
   1. Basis of Design: Wilsonart LLC. Acceptable Product: “Wilsonart Solid Surface.”
   2. Composition: Acrylic resins, fire-retardant mineral fillers, and proprietary coloring agents.
      a. Through-the-body color for full thickness of sheet material.
   3. C. Material Thickness: 1/2 inch, nominal.

B. D. Conformance Standards:
   1. UL 2818:
   2. E. Physical Characteristics:
   3. Tensile Strength: [3400 psi] [6800 psi]; ASTM D 638.
   4. Tensile Modulus: [1.4 x 106 psi] [1.5 x 106 psi]; ASTM D 638.
   5. Tensile Elongation: 0.4 percent minimum; ASTM D 638.
   6. Flexural Strength: [6,800 psi] [10,400 psi]; ASTM D 790.
   7. Flexural Modulus: [1.13 x 106 psi] [1.73 x 106 psi]; ASTM D 790.
   8. Thermal Expansion Coefficient: 1.37 x 105 in./in.oF; ASTM D 696.
   9. Hardness (Barcol Impressor): 60; ASTM D 2583.
   10. Impact Resistance: [69 in.] [144 in.] drop with no fracture; NEMA LD-3, Method
   11. Wear and Cleanability: Pass; ANSI Z 124.3.
   12. Fungi Resistance: Pass; ASTM G 21.
   13. Bacterial Resistance: Pass; ASTM G 22.
   14. Boiling Water Resistance: No effect; NEMA LD-3, Method 3.5.
   15. High Temperature Resistance: No effect; NEMA LD-3, Method 3.6.
   16. Weatherability: Delta E less than 5; ASTM G 155.
   17. Moisture Absorption: Less than 0.25 percent; ASTM D 570, long term.

C. Colors, Patterns, and Finishes: Provide materials and products that result in colors and textures complying with the following requirements:
   1. Match Architect's sample.

2.2 MISCELLANEOUS MATERIALS

A. Anchors: Select material, type, size, and finish required for each substrate for secure anchorage..

B. Adhesive for Bonding Plastic Laminate: [**Unpigmented contact cement**].
   1. Joint Adhesive: Methacrylate-based adhesive for chemically bonding solid surfacing seams. Color complementary to solid surfacing sheet material.
   2. Gold certified and complies with SCAQMD Rule 1168.
   3. Product: “Wilsonart Hard Surface Adhesive.”

C. B. Elastomeric Sealant: Mildew-resistant silicone sealant for filling gaps between countertops and terminating substrates in wet environment applications. Complies with ASTM C 920, Type S (single component), Grade NS (nonsag).
   1. Product: Acceptable to countertop manufacturer.

D. Color: [Complementary to solid surfacing color Selected from sealant manufacturer’s standard offerings.

E. Siliconized Acrylic Sealant: Siliconized acrylic latex sealant. For general applications to fill gaps between countertops and at terminating substrates. Complies with ASTM C 834, Type OP, Grade NF, and SCAQMD Rule 1168.
   1. Product: ”Wilsonart Color Matched Caulk”.
   2. Color: [Complementary to solid surfacing color] [Clear] [Selected from sealant manufacturer’s standard offerings].

F. Construction Adhesive: Countertop manufacturer’s recommended silicone-based construction adhesive for backsplashes, end splashes, and other applications according to manufacturer’s published fabrication instructions.

   1. Adhesive for Bonding Edges: Hot-melt adhesive [**or adhesive specified above for faces**].

2.3 FABRICATION

A. Complete fabrication, including assembly and hardware application, to maximum extent possible before shipment to Project site. Disassemble components only as necessary for shipment and installation. Where necessary for fitting at site, provide ample allowance for scribing, trimming, and fitting.

B. Shop-cut openings to maximum extent possible to receive hardware, appliances, electrical work, and similar items. Locate openings accurately and use templates or roughing-in diagrams to produce accurately sized and shaped openings. Sand edges of cutouts to remove splinters and burrs.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Before installation, condition cabinets to humidity conditions in installation areas for not less than 72 hours. Install solid surfacing components plumb, level, and true according to approved shop drawings and manufacturer’s published installation instructions. Use woodworking and specialized fabrication tools acceptable to manufacturer.

B. Form joint seams with specified seam adhesive. Seams to be inconspicuous in completed work. Seams in locations shown on approved shop drawings and acceptable to manufacturer. Promptly remove excess adhesive.

C. Provide minimum 1/2 inch radius for countertop inside corners.

D. Fill gaps between countertop and terminating substrates with specified silicone sealant.

E. Rout sink cutouts to manufacturer’s template. Adhere solid surface cast sink units to countertops with specified adhesive.

F. Install backsplashes and end splashes where indicated on Drawings. Adhere to countertops with specified construction adhesive.

3.2 FIELD QUALITY CONTROL

A. Cleaning and protection Clean solid surfacing components according to manufacturer's published maintenance instructions. Completely remove excess adhesives and sealants from finished surfaces.

B. Protect completed work from damage during remainder of construction period.

C. Inspections: Provide inspection of installed Work certifying that woodwork, including installation, complies with requirements of the Architectural Woodwork Standards for the specified grade.

END OF SECTION 123661

Division 31 – Earthwork

SECTION 313116 - TERMITE CONTROL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Soil treatment.
2. Wood treatment.

B. Related Requirements:

1. Section 061000 "Rough Carpentry" for wood preservative treatment by pressure process.

1.3 INFORMATIONAL SUBMITTALS

A. Qualification Data: For qualified Installer.

B. Product Certificates: For each type of termite control product.

C. Soil Treatment Application Report: After application of termiticide is completed, submit report for Owner's records and include the following:

1. Date and time of application.
2. Moisture content of soil before application.
3. Termiticide brand name and manufacturer.
4. Quantity of undiluted termiticide used.
5. Dilutions, methods, volumes used, and rates of application.
6. Areas of application.
7. Water source for application.

D. Wood Treatment Application Report: After application of termiticide is completed, submit report for Owner's records and include the following:

1. Date and time of application.
2. Termiticide brand name and manufacturer.
3. Quantity of undiluted termiticide used.
4. Dilutions, methods, volumes used, and rates of application.
5. Areas of application.

E. Sample Warranties: For special warranties.

1.4 QUALITY ASSURANCE

A. Installer Qualifications: A specialist who is licensed according to regulations of authorities having jurisdiction to apply termite control treatment and products in jurisdiction where Project is located[**and who employs workers trained and approved by manufacturer to install manufacturer's products**] [**and who is accredited by manufacturer**].

1.5 FIELD CONDITIONS

A. Soil Treatment:

1. Environmental Limitations: To ensure penetration, do not treat soil that is water saturated or frozen. Do not treat soil while precipitation is occurring. Comply with requirements of the EPA-Registered Label and requirements of authorities having jurisdiction.
2. Related Work: Coordinate soil treatment application with excavating, filling, grading, and concreting operations. Treat soil under footings, grade beams, and ground-supported slabs before construction.

1.6 WARRANTY

A. Soil Treatment Special Warranty: Manufacturer's standard form, signed by Applicator and Contractor, certifying that termite control work consisting of applied soil termiticide treatment will prevent infestation of subterranean termites[**, including Formosan termites (Coptotermes formosanus)**] <**Insert requirement**>. If subterranean termite activity or damage is discovered during warranty period, re-treat soil and repair or replace damage caused by termite infestation.

1. Warranty Period: [**Five**] years from date of Substantial Completion.

B. Wood Treatment Special Warranty: Manufacturer's standard form, signed by Applicator and Contractor, certifying that termite control work consisting of applied wood termiticide treatment will prevent infestation of subterranean termites[**, including Formosan termites (Coptotermes formosanus)**] <**Insert requirement**>. If subterranean termite damage is discovered during warranty period, repair or replace damage caused by termite infestation and treat replacement wood.

1. Warranty Period: [**12**] years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Source Limitations: Obtain termite control products from single source[**from single manufacturer**].

2.2 SOIL TREATMENT

A. Termiticide: EPA-Registered termiticide acceptable to authorities having jurisdiction, in an aqueous solution formulated to prevent termite infestation.
   1. Service Life of Treatment: Soil treatment termiticide that is effective for not less than [**five**] years against infestation of subterranean termites.

2.3 WOOD TREATMENT

A. Borate: EPA-Registered borate termiticide acceptable to authorities having jurisdiction, in an aqueous solution for spray application and a gel solution for pressure injection, formulated to prevent termite infestation in wood.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Applicator present, for compliance with requirements for[**moisture content of soil per termiticide label,**] interfaces with earthwork, slab and foundation work, landscaping, utility installation, and other conditions affecting performance of termite control.

B. Proceed with application only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. General: Prepare work areas according to the requirements of authorities having jurisdiction and according to manufacturer's written instructions before beginning application and installation of termite control treatment(s). Remove extraneous sources of wood cellulose and other edible materials, such as wood debris, tree stumps and roots, stakes, formwork, and construction waste wood from soil within and around foundations.

B. Soil Treatment Preparation: Remove foreign matter and impermeable soil materials that could decrease treatment effectiveness on areas to be treated. Loosen, rake, and level soil to be treated, except previously compacted areas under slabs and footings. Termiticides may be applied before placing compacted fill under slabs if recommended in writing by termiticide manufacturer.

   1. Fit filling hose connected to water source at the site with a backflow preventer, according to requirements of authorities having jurisdiction.

3.3 APPLYING SOIL TREATMENT

A. Application: Mix soil treatment termiticide solution to a uniform consistency. Distribute treatment uniformly. Apply treatment at the product's EPA-Registered Label volume and rate for maximum specified concentration of termiticide to the following so that a continuous

horizontal and vertical termiticidal barrier or treated zone is established around and under building construction.

1. Slabs-on-Grade and Basement Slabs: Under ground-supported slab construction, including footings, building slabs, and attached slabs as an overall treatment. Treat soil materials before concrete footings and slabs are placed.
2. Foundations: Soil adjacent to and along the entire inside perimeter of foundation walls; along both sides of interior partition walls; around plumbing pipes and electric conduit penetrating the slab; around interior column footers, piers, and chimney bases; and along the entire outside perimeter, from grade to bottom of footing.
3. Crawlspaces: Soil under and adjacent to foundations. Treat adjacent areas, including around entrance platform, porches, and equipment bases. Apply overall treatment only where attached concrete platform and porches are on fill or ground.
4. Masonry: Treat voids.
5. Penetrations: At expansion joints, control joints, and areas where slabs and below-grade walls will be penetrated.

B. Post warning signs in areas of application.

C. Reapply soil treatment solution to areas disturbed by subsequent excavation, grading, landscaping, or other construction activities following application.

3.4 APPLYING WOOD TREATMENT

A. Wood Treatment: Apply wood treatment after framing, sheathing, and exterior weather protection is completed but before electrical and mechanical systems are installed.

B. Application: Mix borate wood treatment solution to a uniform consistency. Apply treatment at the product's EPA-Registered Label volume and rate for the maximum borate concentration allowed for each specific use so that wood framing, sheathing, siding, and structural members subject to infestation receive treatment.[**Apply treatment to the height of 8 feet (244 mm) above grade**] <**Insert requirement**>.

1. Framing and Sheathing: Apply termiticide solution by spray to bare wood and with complete coverage.
2. Heavy Wood Members: For wood greater than 4 inches (100 mm) thick, inject termiticide gel solution under pressure into holes of size and spacing required by manufacturer for treatment.
3. Exterior Uncoated Wood Trim and Siding: Apply termiticide solution to bare wood only when forecasted weather conditions indicate no precipitation or fog before application of seal coat. After 48 hours, verify that surface is sufficiently dry for seal coat and apply seal coat of [**paint**] <**Insert coating**> as specified in [**Section 099113 "Exterior Painting."**] <**Insert Section title**>.

3.5 PROTECTION

A. Avoid disturbance of treated soil after application. Keep off treated areas until completely dry.

B. Protect termiticide solution dispersed in treated soils and fills from being diluted by exposure to water spillage or weather until ground-supported slabs are installed. Use waterproof barrier according to EPA-Registered Label instructions.

3.6 MAINTENANCE SERVICE

A. Maintenance Service: Beginning at Substantial Completion, maintenance service shall include [**12**] months' full maintenance by[**skilled employees of termite-control-treatment Installer**] Include [**semiannual**] maintenance as required for proper performance according to the product's EPA-Registered Label and manufacturer's written instructions. Parts and supplies shall be manufacturer's authorized replacement parts and supplies.

END OF SECTION 313116

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