ADDENDUM

ADDENDUM NO: 03

PROJECT: Ball State University North Residential Neighborhood Phase #2

PROJECT NO: 17001 DATE: February 26th, 2019 BY: Jeff Olson

This Addendum is issued in accordance with the provisions of “The General Conditions of the Contract for Construction,” Article 1, “Contract Documents” and becomes a part of the Contract Documents as provided therein. This Addendum includes:

Addendum Pages:
1. ADD3-1 thru 3-9
2. Ross & Baruzzini Mechanical, Electrical, Plumbing & Fire Protection Addendum #3
3. 02/14/2019 Pre-Bid Meeting Minutes
4. 02/14/2019 Pre-Bid Meeting Sign-In Sheet
5. Bidder Request For Information Log

GENERAL NOTIFICATIONS & INFORMATION

Pre-Bid Meeting Minutes
A. See Attached Pre-Bid Meeting minutes and Sign In Sheet.

PART 1 – BIDDING AND CONTRACT DOCUMENTS:

1.01 SECTION 00 43 00 – BID FORM SUPPLEMENTS
Remove existing section 01 23 00 and replace with attached specification Section 01 23 00 “BID FORM SUPPLEMENTS” in the Project Manual.

PART 2 – SPECIFICATIONS:

2.01 SECTION 01 10 00 – SUMMARY
Section 1.05 CONTRACTS; Paragraph B.
1. Replace Paragraph B with the following:
   B. Work shall be completed as follows:
   1. Anticipated start of Owner Hazardous Material Removal at Carmichael Hall shall be May 13, 2019 and continue to June 14, 2019.
   2. Anticipated start of exterior site demolition and mobilization shall be June 10, 2019.
   5. The Work shall be Substantially Complete on April 23, 2021.

2.02 SECTION 01 23 00 – ALTERNATES
Remove existing section 01 23 00 and replace with attached specification Section 01 23 00 “Alternates” in the Project Manual.

2.03 SECTION 01 45 10 – MOCKUPS
Remove existing section 01 45 10 and replace with new Section 01 45 10 “Mockups” in the Project Manual.

2.04 SECTION 05 50 00 – METAL FABRICATIONS
Insert Item 1.02.A.11 as follows:
“11. Custom stainless steel fire pit and control pedestal.”
Modify Paragraph 2.03.A. as follows:
“A. Stainless-Steel Sheet, Strip, and Plate: ASTM A 240/A 240M or ASTM A 666, Type 304, unless noted otherwise on Drawings.”

2.05 SECTION 05 51 00 – METAL STAIRS
Modify Item 1.06.D.2.a. as follows:
“a. Concealed Stairs: Guard Rails in Non-Public Spaces: Type 1.”
Delete Paragraph 2.05.C.

2.06 SECTION 05 52 13 – STAINLESS STEEL PIPE AND TUBE RAILINGS
Delete Section 05 52 13 “Stainless Steel Pipe and Tube Railings” from the Project Manual.

2.07 SECTION 05 73 00 – DECORATIVE METAL RAILINGS
Insert Item 2.02.A.1.j. and k. as follows:
“j. Tuttle Railings, a division of Dant Clayton.
k. AGS Stainless, Inc.”
Delete Article 3.06 in its entirety.

2.08 SECTION 06 40 00 INTERIOR ARCHITECTURAL WOODWORK
Remove existing section 06 40 00 and replace with new Section 06 40 00 “Interior Architectural Woodwork” in the Project Manual.

2.09 SECTION 06 42 16 – FLUSH WOOD PANELING
Modify Paragraph 2.02.B. as follows:
“B. Wood Species and Cut: White oak, rift-cut stained to match Architect’s sample
Delete Item 2.02.F.1. and insert the following:
“1. Thickness: ½ inch.”

2.10 SECTION 06 61 16 – SOLID SURFACING SHOWER SURROUND AND BASE
Add Item 2.01.A.4. as follows:
Modify Item 2.02.E.3. as follows:
“3. Low Corner Shelf: Owner provided, Contractor installed.”

2.11 SECTION 07 21 00 – THERMAL INSULATION
Modify Paragraph 2.09.A. as follows:
“A. Basis of Design: Armatherm Z-Girt or Smart Ci GreenGirt or approved equivalent.”

2.12 SECTION 07 21 19 – SPRAY FOAM INSULATION
Delete Paragraphs 3.05.B. and 3.05.C.

2.13 SECTION 07 27 13 – MODIFIED BITUMINOUS SHEET AIR BARRIERS
Add Item 2.3.A.1.e. as follows:
“e. Dorken, Delta-Vent SA.”

2.14 SECTION 07 42 13 – FORMED METAL WALL PANELS
Add Item 2.02.B.1.i. as follows:
“i. Dimensional Metals, Inc.”
Delete Item 2.03.D.1 and insert the following:
“1. Fasteners for Wall Panels: Self-drilling or self-tapping stainless steel screws, with a stainless-steel cap head and EPDM or neoprene sealing washer.”

2.15 SECTION 07 53 23 – POLYVINYL-CHLORIDE (PVC) ROOFING
Delete Paragraph 2.05.B. in its entirety.
Delete Paragraph 2.05.C. in its entirety.

2.16 SECTION 07 72 00 – ROOF ACCESSORIES
Delete Item 1.02.A.2.
Add Item 2.03.E.6. as follows:
“6. Provide thermally broken construction.”
Delete Article 2.04 in its entirety.
Delete Paragraph 3.02.F. in its entirety.

2.17 SECTION 08 12 16 – INTERIOR ALUMINUM DOORS AND FRAMES
Delete this section in its entirety from the Project Manual.

2.18 SECTION 08 44 13 – GLAZED ALUMINUM CURTAIN WALLS
Insert Item 2.02.A.5 as follows:
“5. Tubelite, Inc.”

A. Replace 2.01-K with the following:

“Attachments to primary structure: Attachments to primary structure shall accommodate deflections of structural support points. Provide dead load and lateral load only connections as indicated on the structural drawings. Attachment details must accommodate standard ACI and AISC tolerances for structural framing. Provide allowance for the following deflections of the primary structure:
2.19 **SECTION 08 51 13 – ALUMINUM WINDOWS**

Delete Paragraph 2.04.A.

Delete Paragraph 2.08.B. and insert the following:

"B. High-Performance Organic Finish: Two-coat fluoropolymer finish complying with AAMA 2605 and containing not less than 70 percent PVDF resin by weight in both color coat and clear topcoat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.

1. MP 3: Custom color, Alpolic Mica OPT Platinum.
2. Alternate: Clear Anodized, AAMA 611, AA-M12C22A41, Class I, 0.018 mm or thicker.”

2.20 **SECTION 08 80 00 – GLAZING**

Delete Article 2.06 in its entirety.

Modify Paragraph 2.13.A. to read "Glass Type E: Clear, fully tempered float glass."

Delete paragraph 2.13.B in its entirety and add the following:

"B. Glass Type: GL1: Clear, float glass, backpainted.

1. Thickness: ¼ inch minimum.
2. Color: Glass backpainted white.
3. Application: Reception Desk."

Modify Paragraph 2.14.A. to read “Glass Type A: Low-e coated, tempered, clear insulating glass.”

Modify Paragraph 2.14.B. to read “Glass Type B: Ceramic-coated, insulating vision glass”

Add Item 2.14.B.12 as follows:

“12. Low-e Coating: Pyrolytic or sputtered on second surface.”

Delete Paragraph 2.14.C. in its entirety and insert the following:

"C. Glass Type C: Low-e coated, clear insulating glass.

1. Basis of Design: Vitro, Solarban 70XL
2. Overall Unit Thickness: 1 inch (25 mm).
3. Thickness of Each Glass Lite: 6.0 mm.
4. Outdoor Lite: Annealed float glass.
5. Interspace Content: Air.
6. Indoor Lite: Annealed float glass.
7. Low-E Coating: Pyrolytic or sputtered on second surface."
8. Visible Light Transmittance: 64 percent minimum.
9. Winter Nighttime U-Factor: 0.28 maximum.
10. Summer Daytime U-Factor: 0.24 maximum.
11. Solar Heat Gain Coefficient: 0.27 maximum.
12. Provide safety glazing labeling.

2.21 SECTION 08 88 13 – FIRE RESISTIVE ASSEMBLIES
Delete existing section 08 88 13 "Fire Resistive Glazing" and replace with new Section 08 88 13 "Fire Resistive Assemblies" in the Project Manual

2.22 SECTION 09 51 13 – ACOUSTICAL PANEL CEILINGS
Modify Paragraph 2.06.G. as follows:
"G. Hold Down Clips: Where required to meet required fire resistance rating indication on Drawings, provide manufacturer’s standard hold-down clips spaced 24 inches (610 mm) o.c. on all cross tees. Provide at the following locations:
1. Corridor to AHD Office 185 and HD Office 186.
2. Corridor to Laundry 284."

2.23 SECTION 09 54 26 – WOOD SLAT CEILINGS
Add Paragraph 2.05.E. as follows:
"E. Basis-of-Design Product: Subject to compliance with requirements, provide Armstrong, Silhouette or comparable product by listed manufacturers.
1. Narrow-Face, Capped, Double-Web, Steel Suspension System: Main and cross runners roll formed from cold-rolled steel sheet; prepainted, electrolytically zinc coated, or hot-dip galvanized according to ASTM A 653/A 653M, not less than G30 (Z90) coating designation; with prefinished 9/16-inch- (15-mm-) wide metal caps on flanges.
   b. Type: 9/16 inch exposed tee system.
   c. End Condition of Cross Runners: butt-edge type.
   d. Face Design: Flat, flush.
   e. Cap Material: Steel cold-rolled sheet.
   f. Cap Finish: Painted in color as selected from manufacturer's full range."

2.24 SECTION 09 65 19 – RESILIENT TILE FLOORING
Delete this section in its entirety from the Project Manual.

2.25 SECTION 09 91 23 – INTERIOR PAINTING
Delete Article 2.04 in its entirety.

2.26 SECTION 09 93 00 – STAINING AND TRANSPARENT FINISHING
Delete Article 2.03 in its entirety.
2.27 SECTION 09 96 00 – HIGH-PERFORMANCE COATINGS
Insert Paragraph 3.07.F. as follows:

"F. Gypsum Board Substrates: HDP acrylic polymer system
   1. Basis of Design: Tnemec, Enduratone, Series 1029:
      a. Primer: 1 coat
         1) Tnemec, Series 51
      b. Finish: 2 coats
         1) Tnemec, Enduratone Series 1029, Semi-gloss."

2.28 SECTION 10 22 38 – OPERABLE PANEL PARTITIONS
Delete Paragraph 2.03.B. in its entirety.
Add Item 2.05.A.3. as follows:

“3. Double track and single track configurations as indicated on Drawings.”
Delete Item 2.05.B.1.

2.29 SECTION 10 31 00 – PRE-MANUFACTURED ELECTRIC FIREPLACE
Insert new Section 10 31 00 “Pre-manufactured Electric Fireplace” to the Project Manual.

2.30 SECTION 10 57 36 – CLOSET DOORS
Insert Item 2.01.A.3. and 4. as follows:

“3. Southwest Furniture Company for wood closet doors.
4. Hettich America, L.P. for closet tracks.”

2.31 SECTION 11 52 13 – PROJECTION SCREENS
Insert new Section 11 52 13 “Projection Screens” to the Project Manual.

2.32 SECTION 31 64 10 – AGGREGATE PIERS
A. Replace 1.09-H with the following:

   “Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 1 Section “Project Management and Coordination.” Building Structural Engineer of Record, Aggregate Pier Design Engineer, General Contractor, Aggregate Pier Installer and Testing Agencies shall be present.”

PART 3 – DRAWINGS:

3.01 ED301 – ELECTRICAL NEW WORK PLANS AND SCHEDULE
A. Contractor shall complete all work associated with the installation of the new transformer “T1” and new panelboard “A” within the tunnel prior to 5/6/2019. Contractor shall move existing site lighting and tunnel lighting circuits to new panelboard “A” by the same date. After the main electrical service is shut down, this panel will be used for temporary power during the asbestos abatement work.
3.02 EXISTING BUILDING DRAWING
   A. Add sheet “CU101 – SITE UTILITY PLAN” to existing building drawings.

3.03 S201 – FIRST FLOOR SLAB ON GRADE AND FRAMING PLAN – UNITS A & B
   A. Replace with attached updated sheet.

3.04 S203 - FIRST FLOOR SLAB ON GRADE AND FRAMING PLAN – UNITS D & E
   A. Replace with attached updated sheet.

3.05 S211 – ROOF FRAMING PLAN – UNIT C
   A. Replace with attached updated sheet.

3.06 S225 – PENTHOUSE FLOOR/ROOF FRAMING PLAN – UNITS A & B
   A. Roof anchor locations are shown on drawing A280 in Addendum #1. Provide Embed plate EP11 at all roof anchors.

3.07 S226 – PENTHOUSE FLOOR/ROOF FRAMING PLAN – UNITS D & E
   A. Roof anchor locations are shown on drawing A282 in Addendum #1. Provide Embed plate EP11 at all roof anchors.

3.08 S230 – PENTHOUSE ROOF FRAMING PLAN – UNITS A & B
   A. Roof anchor locations are shown on drawing A280 in Addendum #1. Provide steel shown in 6/S520 at all roof anchors.

3.09 S231 – PENTHOUSE ROOF FRAMING PLAN – UNITS D & E
   A. Roof anchor locations are shown on drawing A282 in Addendum #1. Provide steel shown in 6/S520 at all roof anchors.

3.10 S502 – STRUCTURAL STEEL COLUMN DETAILS
   A. In detail 9, increase BP8 thickness to 1 ½”.

3.11 S521 – ROOF FRAMING SECTIONS AND DETAILS
   A. Replace with attached updated sheet.

3.12 A107 – Overall Roof Plan
   A. Add Roof Abbreviations and General Roof Notes to sheet.

3.13 A206 – ENLARGED SECOND FLOOR PLAN – UNIT C
   A. Add “Plan Note #20 – PROVIDE 3 5/8” METAL STUDS, OWNER WILL PROVIDE SOLID SURFACE WALL PANELS AND WASHER BOXES; CONTRACTOR TO MAKE PLUMBING, ELECTRICAL & TELECOM CONNECTIONS. COORDINATE WITH OWNER.” to “LAUNDRY 284” and “LAUNDRY 288.”

3.14 A256 – ENLARGED SECOND FLOOR REFLECTED CEILING PLAN
   A. Revise layout of operable wall and associated bulkhead in “MAKERSPACE 286.”

3.15 A281 – ENLARGED ROOF PLAN – UNIT C
A. Add “Section Marker 2/A437” and “Section Marker 3/A437” to the Roof Plan.

3.16 A303 – ENLARGED BUILDING ELEVATIONS
A. Update window types on “1/A303 – ENLARGED BUILDING ELEVATION.”

3.17 A304 – ENLARGED BUILDING ELEVATIONS
A. Update window type on “4/A304 – ENLARGED BUILDING ELEVATION.”

3.18 A305 – ENLARGED BUILDING ELEVATIONS
A. Update window type on “3/A305 – ENLARGED BUILDING ELEVATION.”

3.19 A406 – WALL SECTIONS
A. Update “4/A406 – WALL SECTION” and “9/A406 – WALL SECTION.”

3.20 A410 – WALL SECTIONS
A. Add “6/A410 – BUILDING MOCK UP PLAN VIEW” AND “7/A410 – BUILDING MOCK UP ELEVATION” to sheet

3.21 A412 – INTERIOR WALL SECTIONS
A. Replace sheet with attached updated sheet.

3.22 A434 – WALL SECTION DETAILS
A. Update Keynotes on “9/A434 – SECTION DETAIL” and “10/A434 – SECTION DETAIL” and “11/A434 – SECTION DETAIL.”

3.23 A435 – WALL SECTION DETAILS
A. Replace sheet with attached updated sheet.

3.24 A436 – WALL SECTION DETAILS
A. Update keynote on “8/A436 – SECTION DETAIL.”

3.25 A437 – WALL SECTION DETAILS
A. Add “2/A437 – ENLARGED WALL SECTION” and “3/A437 – ENLARGED WALL SECTION” to sheet.

3.26 A463C – VERTICAL CIRCULATION – STAIR C
A. Add bulkhead using ceiling type “CL3” below floor level landing at 2nd, 3rd, 4th, and 5th floors as shown on sheet to conceal mechanical equipment.

3.27 A467C – VERTICAL CIRCULATION – STAIR H
A. Add bulkhead using ceiling type “CL3” below floor level landing at 2nd, 3rd, 4th, and 5th floors as shown on sheet to conceal mechanical equipment.

3.28 A501 – DOOR SCHEDULE
A. Replace sheet with attached updated sheet.

3.29 A502 – DOOR SCHEDULE
A. Replace sheet with attached updated sheet.
3.30 **A506 – DOOR AND FRAME ELEVATIONS**
A. Replace sheet with attached updated sheet.

3.31 **A507 – DOOR AND FRAME ELEVATIONS**
A. Replace sheet with attached updated sheet.

3.32 **A601 – INTERIOR ELEVATIONS AND DETAILS**
A. Add “CASEWORK SCHEDULE – TALL STORAGE” to sheet.

3.33 **A604 – INTERIOR ELEVATIONS AND DETAILS**
A. Add “CASEWORK SCHEDULE – TALL STORAGE” and “5/A604 – MAIL ROOM – NORTH ELEVATION” to sheet.

3.34 **A902 – ENLARGED GROUND FLOOR EQUIPMENT PLAN – UNIT C**
A. Add 2 tall storage cabinets and “ELEVATION MARKER 5/A604” to “MAIL & PACKAGES 182A.”

3.35 **A906 – ENLARGED SECOND FLOOR EQUIPMENT PLAN – UNIT C**
A. Revise layout of operable wall and associated bulkhead in “MAKERSPACE 286” and add “OP3” to SPECIALTY EQUIPMENT SCHEDULE.

3.36 **Keynote List**
A. Add Keynote “07 42 13-G  PRE-FINISHED METAL COPING” to list.
B. Add Keynote “08 51 13-A  ALUMINUM WINDOW SYSTEM” to list.
C. Add Keynote “08 88 13-A  FIRE RATED HOLLOW METAL DOOR AND FRAME ASSEMBLY. SEE SCHEDULE AND LIFE SAFETY PLANS” to list.

**Attachments**

**Drawings**

**Full Specification Sections**
00 43 00  BID FORM SUPPLEMENTS
01 23 00  ALTERNATES
01 45 10  MOCKUPS
06 40 00  INTERIOR ARCHITECTURAL WOODWORK
08 88 13  FIRE-RESISTANT GLAZING ASSEMBLIES
10 31 00  PRE-MANUFACTURED ELECTRIC FIREPLACE
11 52 13  PROJECTION SCREENS

**END OF ADDENDUM NO. 3**
ADDENDUM #3 – MECHANICAL, ELECTRICAL, PLUMBING & FIRE PROTECTION
BY: ROSS & BARUZZINI

E000, ELECTRICAL SYMBOLS AND ABBREVIATIONS
Additional Electrical Items: Add note 6 to read, “Five (5) additional wireless access points (WAP) and relocation of five (5) WAP after completion of testing. The contractor shall include the Owner in determining the quantity and final locations.

E250, ELECTRICAL LOWER LEVEL POWER PLAN – UNIT B
Plan Note 5: Revise to read, “Not used”.

E250, ELECTRICAL LOWER LEVEL POWER PLAN – UNIT B
AHU Rm 002: Provide one dedicated 20A-1p circuit, from panel ‘BL1’, to temperature control panel.

E250, ELECTRICAL LOWER LEVEL POWER PLAN – UNIT B
Thermal Utilities Rm 006: Provide one dedicated 20A-1p circuit, from panel ‘BL1’, to temperature control panel.

E250, ELECTRICAL LOWER LEVEL POWER PLAN – UNIT B
Thermal Utilities Rm 006: Provide one dedicated 20A-1p circuit, from panel ‘BL1’, to Glycol Makeup Unit (GMU-1).

E251, ELECTRICAL GROUND LEVEL POWER PLAN – UNIT A&B
Electrical Room 156E: Provide one dedicated 20A-1p circuit, from panel ‘GL1’, to temperature control panel.

E251, ELECTRICAL GROUND LEVEL POWER PLAN – UNIT A&B
Provide two additional smoke damper connections in Corridor 137C.

E252, ELECTRICAL GROUND LEVEL POWER PLAN – UNIT C
Electrical Room 191E: Provide one dedicated 20A-1p circuit, from panel ‘GL7’, to temperature control panel.

E253, ELECTRICAL GROUND LEVEL POWER PLAN – UNIT D&E
Electrical Room 117E: Provide one dedicated 20A-1p circuit, from panel ‘GL4’ to temperature control panel.

E255, ELECTRICAL SECOND FLOOR POWER PLAN – UNIT A & B

E256, ELECTRICAL SECOND LEVEL POWER PLAN – UNIT C
Rm 286 Maker Space: In the east Group Study area, relocate receptacle and associated plan note #14 to the north wall. Center on the wall above USB receptacle.

E257, ELECTRICAL SECOND FLOOR POWER PLAN – UNIT D&E

E261, ELECTRICAL THIRD FLOOR POWER PLAN – UNIT A & B

E263, ELECTRICAL THIRD FLOOR POWER PLAN – UNIT D&E

E271, ELECTRICAL FIFTH FLOOR POWER PLAN – UNIT A& B

E272, ELECTRICAL FIFTH FLOOR POWER PLAN – UNIT D& E

E275, ELECTRICAL PENTHOUSE POWER PLAN
DOAS-1 and DOAS-2: Provide one dedicated 20A-1p, 120v connection the each unit’s heat wheel. Utilize 20A-1p circuit breaker in panels ‘PL1’ and ‘PL4’.

E601, ELECTRICAL SCHEDULES
Luminaire Schedule - Type L7: Replace the three manufacturers listed with the following: VISA LIGHTING VOILA SERIES; BEULUX VT03 SERIES; STONE LIGHTING BB424 SERIES.

Luminaire Schedule – Type L8: Replace the three manufacturers listed with the following: VISA LIGHTING VOILA SERIES; BEULUX VT03 SERIES; STONE LIGHTING BB424 SERIES.

T206, ELECTRICAL SECOND LEVEL SYSTEMS PLAN – UNIT C
Rm 286 Maker Space: In the east Group Study area, relocate telecom outlet and associated plan note #6 on the east wall to the north.

P100, PLUMBING UNDERGROUND – UNIT A & B
Revise waste pipe in chase.

P101, PLUMBING UNDERGROUND – UNIT C
Revise subsoil drain piping.

P102, PLUMBING UNDERGROUND – UNIT D & E
Revise connection note.

P200, PLUMBING LOWER LEVEL PLAN
Revise Waste and water piping riser diagrams.
Add vent piping for water heaters.

P201, PLUMBING GROUND FLOOR PLAN UNIT A & B
Revise plumbing riser diagram.
Revise storm drain pipe
Add vent piping for water heaters.

P202, PLUMBING GROUND FLOOR PLAN– UNIT C
Revise connection note.
P301, PLUMBING ENLARGE PLANS
Revise waste and water riser diagrams.

P601, PLUMBING SCHEDULES
Plumbing fixture schedule
1. BT-1 change fixture to Bradley WS-1X-HN-EF-SB30-TS-SHV-MODIFIED SHOWER ARM WITH ½” MALE CONNECTION.
2. SH-1 change fixture to Bradley WS-1X-EF-SHV-MODIFIED ½” MALE CONNECTION FOR ALTERED SHOWER HEAD.
3. SH-2 change fixture to Bradley WS-1X-HN-EF-SB-SHV-MODIFIED ½” MALE CONNECTION FOR ALTERNATE SHOWERHEAD.

FP301, FIRE PROTECTION DETAILS & SCHEDULES
FIRE PUMP SCHEDULE FP-1 PROVIDE SOFT START ON FP CONTROLLER.

Fire Protection Drawings
The fire hose valves in the stairwells shall be installed on the intermediate landings, not on the main landings.

GENERAL MECHANICAL:
The following sheets have been reissued:
M403 MECHANICAL AIRSIDE SCHEMATICS WEST
M404 MECHANICAL AIRSIDE SCHEMATICS WEST
M602 MECHANICAL SCHEDULES

Addendum 1 issued the following note, delete this note. No automatic flow control valves are to be furnished for the valance units:
FROM: If the heat exchanger alternate is accepted (Alternate #11), contractor shall provide automatic flow control valves for balancing to all valance units. The automatic flow control valves will replace the manual balancing valves for these units.
TO: Deleted.

Addendum 1 issued changes to Unit B and Unit D stairwell fan coils. Unless noted otherwise here, all changes shall be as described in Addendum 1, with the following modifications shown in the sketches and described here. Furnish and install one R-6 grille to be mounted underneath each fan coil (48x24”). Grille must have a removable face to double as access for the fan coil unit. Furnish and install one S-7 grille with insulated supply duct to the front face of the architectural provided bulkhead. No return duct is required. Mount FCUs under 2nd floor landing, 3rd floor landing, and 5th floor landing. The 3D view is unit B, looking southwest. All changes shall apply to units B and D unless noted otherwise:
Add “f” and revise to read: Grundfos

SECTION 23 21 13 – PAGE 3 2.1.A.6
Add “g” and revise to read: Grundfos

SECTION 23 57 00 – PAGE 2 2.1.A.1
Add “g” and revise to read: Grundfos

SECTION 23 73 15 – PAGE 5 2.6.A.1
Concrete inertia bases are not required, Revise note to read:
FROM: Mount fan and motor on an internal, fully welded, rigid structural steel base. Base shall be free floating at four corners on housed spring vibration isolators, minimum 2-inch static deflection, with seismic snubbers. Vibration isolators shall be Mason Industries Model SLF or equal. The fan base shall be fitted with necessary rebar and bottom skin for concrete inertia base. The concrete shall be installed at the factory. The available fill space provided in the base shall allow for enough fill weight to equal or exceed 1.5 times the weight of the rotating mass. Concrete inertia bases are only required for plenum fans.
TO: Mount fan and motor on an internal, fully welded, rigid structural steel base. Base shall be free floating at four corners on housed spring vibration isolators, minimum 2-inch static deflection, with seismic snubbers. Vibration isolators shall be Mason Industries Model SLF or equal.

M200, MECHANICAL LOWER LEVEL HVAC PLAN
The return duct and grilles for FCU-4 currently show as stopping in the MDF room (005). Extend one return grille into the UPS room (003).

The DOAS supply air/outside air riser terminates in the Maintenance Shop (008). This duct shall receive a horizontal fire damper in the ground floor slab where the air shaft terminates. The general notes require that all fire dampers have an access door, provide door on duct under ground floor slab.

The DOAS supply air/outside air duct and exhaust air duct passes through the Plumbing and Domestic Water room (007). There are 3 instances of these ducts crossing the south wall of this room that require fire dampers.

Add KHEF-1 in Breakroom 012, mount over range and connect to duct as shown on M200.

Add general note for all duct to apply to this level only:
ALL DUCT, GRILLES, AND REGISTERS SHALL BE MOUNTED AT LEAST 8’0” AFF.

M201, 3 TYPICAL GROUND FLOOR DORM ROOM SECTION
Add note pointing to condensate line: ROUTE DRAIN IN WALL. COORDINATE WITH OTHER TRADES TO ENSURE ACOUSTIC SEPARATION IS MAINTAINED.

Add note pointing to the supply and exhaust ducts passing through the corridor walls:
ALL DUCT PENETRATIONS INTO A DORM ROOM SHALL HAVE A 12" LONG 0.06" THICK STEEL SLEEVE. THE SLEEVE SHALL BE SECURED TO BOTH SIDES OF THE WALL AND ALL FOUR SIDES OF THE SLEEVE WITH 1.5" X 0.06"
RETAINING ANGLES. THE ANNULAR SPACE BETWEEN THE SLEEVE AND THE WALL OPENING SHALL BE FILLED WITH ROCKWOOL BATTING ON ALL SIDES.

**M201, MECHANICAL GROUND FLOOR HVAC PLAN - UNIT B**

In the Custodial / Storage room (158C) and Electrical room (156E) add a manual balancing damper after each exhaust grille. Contractor shall note that this is typical of all 5 levels for both the east wing and west wing.

Add dryer exhaust duct as shown in the sketches below. Dryer exhaust duct shall be constructed of galvanized steel and be a minimum of 0.016 inches thick. Do not use sheet metal screws that penetrate into the duct. Use \( r/D = 1.5 \) elbows in all cases. At wall termination, add a manufacturer's standard wall cap with a backdraft device. Color of termination shall be by architect.

**M202, MECHANICAL GROUND FLOOR HVAC PLAN – UNIT C**

Delete note 1 near stair B1.

**M222, TYPICAL UPPER FLOOR DORM CORRIDOR SECTION**

Add note pointing to the supply and exhaust ducts passing through the corridor walls:

ALL DUCT PENETRATIONS INTO A DORM ROOM SHALL HAVE A 12" LONG 0.06" THICK STEEL SLEEVE. THE SLEEVE SHALL BE SECURED TO BOTH SIDES OF THE WALL AND ALL FOUR SIDES OF THE SLEEVE WITH 1.5" X 0.06" RETAINING ANGLES. THE ANNULAR SPACE BETWEEN THE SLEEVE AND THE WALL OPENING SHALL BE FILLED WITH ROCKWOOL BATTING ON ALL SIDES.

**M225, MECHANICAL PENTHOUSE PLAN – WEST & MECHANICAL PENTHOUSE PLAN – EAST**

Revise drawing as shown in sketch and add note 2 to read: DUCT SECTIONS INDICATED SHALL BE INTERNALLY LINED WITH PERFORATED WALL PER SPECIFICATION. EXTEND LINING DOWN THROUGH SHAFT TO EXTEND AFTER THE FIRST TAP (5TH FLOOR CEILING). NOTE THAT DIMENSIONS INDICATED ARE INSIDE CLEAR DIMENSIONS.
Add a note pointing to all 4 duct openings for each DOAS unit: RECTANGULAR BELL MOUTH OPENING.

**M250, MECHANICAL LOWER LEVEL PIPING PLAN**
The chilled water lines travelling from the Thermal Utilities Room (006) toward AHU-1 shall be 5". This applies to the CWS and CWR lines.

Add a typical note that applies to the entire sheet: ALL PIPING AND VALVES SHALL BE MOUNTED AT LEAST 8'0" AFF.

Add a typical note that applies to the entire sheet: WHERE THERMOSTATS ARE NOT INDICATED ON THIS SHEET FAN COILS SHALL HAVE DDC THERMOSTAT LOCATED IN THE RETURN. UNIT HEATERS SHALL HAVE INTEGRAL DDC THERMOSTAT, FACTORY MOUNTED AND WIRED.

**M251, MECHANICAL GROUND FLOOR PIPING PLAN – UNIT B**
Add a thermostat, to be wall mounted. Place on north wall of room 164.
Add a thermostat, to be wall mounted. Place on south wall of room 163. Position as far east as possible.
FCU-2A shall have a return mounted DDC thermostat.

**M253, MECHANICAL GROUND FLOOR PIPING PLAN – UNIT D**
FCU-2E shall have a return mounted DDC thermostat.

**M256, MECHANICAL SECOND FLOOR PIPING PLAN – UNIT C**
In Tutoring room (286A) contractor shall furnish and install a vandal proof stainless steel blank plate thermostat.

**M261, MECHANICAL THIRD FLOOR PIPING PLAN – UNIT A, M263, MECHANICAL THIRD FLOOR PIPING PLAN – UNIT E**
The RCP-4 near the open stairwell shall have a DDC wall mounted thermostat. Locate on corner of wall where pipe riser is, out of direct winter sun. This is typical of 2 locations. The RCPs on the floors directly above shall share this thermostat (fourth and fifth floor RCP-4 in same location). Furnish and install a vandal proof stainless steel blank plate.

**M310, ENLARGED MECHANICAL ROOM PLAN**
Pipes shall be upsized to 4" as shown in sketch below (this is consistent with the sizing shown on the waterside schematics):
M401, CHILLED WATER SCHEMATIC
The chilled water supply and return lines heading toward Unit C shall be relabeled as 5” lines (typical of 4 instances).

Revise the following note (typical of 5 instances):
FROM: “VALVES AND FLANGES FOR HX SHALL BE INSTALLED AS PART OF BASE BID”
TO: “ISOLATION VALVES AND FLANGES SHALL BE INSTALLED AS PART OF BASE BID”.

M402, CHILLED WATER SCHEMATIC - ALT
The chilled water supply and return lines heading toward Unit C shall be relabeled as 5” lines (typical of 4 instances).

**M501, PLATE AND FRAME HEAT EXCHANGER PIPING DIAGRAM**
Add the following notes:
FOR THE DOMESTIC WATER PREHEAT HEAT EXCHANGER ALL DOMESTIC WATER PIPING CONNECTIONS SHALL BE AS PER P302.

FOR THE DOMESTIC WATER PREHEAT HEAT EXCHANGER VALVE V-1 SHALL BECOME A STANDARD CONTROL VALVE INSTEAD OF A SPECIALIZED CONTROL VALVE (SEE 23 09 00).

FOR THE DOMESTIC WATER PREHEAT HEAT EXCHANGER: PLANT SUPPLY AND RETURN SHALL BE BUILDING HHWS & R.

**M501, 9-VALANCE UNIT COIL CONNECTION DETAIL**
Add the following note concerning the flex connections:
FLEXIBLE CONNECTORS SHALL BE THREADED. PUSH-STEM OR COMPRESSION FITTINGS WILL NOT BE ALLOWED.

**M502, MECHANICAL DETAILS**
Add a mechanical detail 11: “IN-LINE PUMP DETAIL”. Detail shall include in-line pump with the following accessories and field notes:
IN-LINE PUMP, ORIENT PUMP AND MOTOR PER MFGR INSTRUCTIONS. INCLUDE SHUT OFF VALVES FOR INLET AND OUTLET (SEE SPEC FOR TYPE). FURNISH AND INSTALL SPRING CHECK VALVE ON DISCHARGE. FURNISH AND INSTALL ONE COMMON PRESSURE GAUGE WITH TUBING CONNECTING TO THE UPSTREAM AND DOWNSTREAM SIDES OF THE PUMP (WITH ISOLATION VALVES ON EACH LEG). ADD BALANCE VALVE WHERE REQUIRED BY OTHER COIL CONNECTION DIAGRAMS.

**M502, 4-BASE MOUNTED END SUCTION PUMP DETAIL**
Add the following note:
IF THE ALTERNATE FOR VICTAULIC PIPING IS TAKEN, THE PUMP DROPS MAY BE VICTAULIC AS WELL.

Add the following note:
SUCTION DIFFUSER SHALL BE EQV. TO METRAFLEX SDFL90. SUCTION DIFFUSER SHALL BE A COMBINATION FLEX AND L.R. ELBOW CONNECTION INTO PUMP INLET. CARBON STEEL, 300 SERIES SS CORRUGATED HOSE & BRAID WITH VANES DESIGNED TO REDUCE PUMP PRESSURE DROP.

**M503, 4-DOAS CHILLED WATER COIL CONNECTION, M503, 5-DOAS PREHEAT COIL CONNECTION**
The automatic flow control valves shown in the bypass connected to the 3-way valve shall be set to 25 GPM each.

**M601, AIR DEVICE SCHEDULE**
Revise “NECK SIZE (IN)” for R-7 to read: 22x22

Add for tag S-6:
Model: H400S-1
Type: Sidewall
Notes: Note 1
Add for tag S-7:
Model: Model: H400S-1
Type: Sidewall

M601, UNIT HEATER SCHEDULE
Add note for unit heater schedule:
ALL UNIT HEATERS TO HAVE FACTORY MOUNTED DDC THERMOSTAT.

M601, MECHANICAL EXPANSION TANK SCHEDULE
MET-2 and MET-3 are part of the heat exchanger alternate (Alt #11).

Change the following schedule parameters for MET-3:
Model: NLAP-600
Diameter: 30”
Capacity: 158 gallons
Volume: 158 gallons

M601, FAN SCHEDULE
Revise SF-1 schedule to read:
MFR.: GREENHECK
MODEL: SQ-130-VG
TYPE: IN-LINE
LOCATION: THERMAL UTILITIES ROOM
SERVICE: BOILER COMBUSTION AIR
DRIVE: DIRECT
AIRFLOW: 1400 CFM
ESP: 1.2”
SOUND: 14
AMPS: 10.6
HP: 3/4
VOLTS: 120V
PHASE: 1
NOTES: 2,4,5,6

M701, DEDICATED OUTDOOR AIR SYSTEM (DOAS) SEQUENCE OF OPERATIONS:
Modify the sequence of operations to add the following:
WHEN ALL SPACES IN THE LOWER LEVEL INDICATE “UNOCCUPIED” THE MOTORIZED DAMPERS ON THE
OUTDOOR AIR AND EXHAUST DUCTS SERVING THE LOWER LEVEL SHALL CLOSE.

Add the following sequence note:
SUPPLY AND EXHAUST FANS SHALL MODULATE SPEED TO SATISFY DUCT STATIC PRESSURE SENSORS. STATIC
PRESSURE SENSORS SHALL BE LOCATED ON BOTH THE NORTH AND SOUTH RISERS FOR BOTH OUTDOOR AIR
AND EXHAUST AIR DUCTS. LOCATE ON THE GROUND FLOOR (IN RISER DUCT IN SHAFT). SETPOINT SHALL BE
DETERMINED BY T.A.B. TO KEEP THE MOST REMOTE AIR TERMINAL WITH 0.20” OF INLET STATIC PRESSURE (TO
ENSURE PROPER AIRFLOW THROUGH THE CONSTANT AIR REGULATOR). VFD SHALL MODULATE TO
MAINTAIN THE LOWEST DPT AT THIS SETPOINT.
M704
Add domestic water monitoring notes on this page to read:
DIV. 23 SHALL FURNISH AND INSTALL DDC SENSORS TO MONITOR THE PRESSURE WHERE SHOWN ON THE PLUMBING DRAWINGS. SENSORS ARE USE FOR MONITORING AND ALARM ONLY. CONTROL OF DOMESTIC FLOW (PRESSURE) BY DIV 022. FURNISH AND INSTALL PETES PORTS TO ALLOW FOR SIMULTANEOUS MONITORING. THIS SHALL APPLY TO BOTH DCW AND DHW.

Add domestic water preheat sequence:
DIV. 023 SHALL FURNISH AND INSTALL BTU METERS (PER SPECIFICATION) ON THE CAMPUS DOMESTIC WATER SUPPLY TO THE DOMESTIC HOT WATER. FURNISH AND INSTALL THERMOWELL TEMPERATURE SENSORS AND FLOW METERS TO FEED INTO BTU METER. THE CONTROL VALVE (INSTALLED ON THE HHWR SIDE OF HX) SHALL MODULATE TO MAINTAIN DOMESTIC WATER RETURN TEMPERATURE (TEMPERATURE OUT OF HX) AT 100F. THE VALVE SHALL CLOSE IF THE HHW BOILER IS PROVIDING HEAT INSTEAD OF THE GEOTHERMAL SYSTEM. THE VALVE SHALL MODULATE CLOSED VIA TRIM AND RESPOND LOGIC TO MAINTAIN HHW PUMP SPEED TO 95%. THIS LOGIC SHALL OVERRIDE THE VALVE POSITION ONLY WHEN BOTH HHW PUMPS ARE RUNNING AND PUMP SPEEDS ARE OVER 95%. THE FOLLOWING POINTS SHALL BE MONITORED AND ALARMED FROM THE FRONT END: TEMPERATURE – DOMESTIC COLD WATER (INLET TO HX). TEMPERATURE, DOMESTIC WATER (OUTLET OF HX).

M704, HEATING HOT WATER SYSTEM CONTROLS DIAGRAM.
Add VFD by HWP-1 and HWP-2. Contractor shall furnish, mount and wire.

M705, CENTRALIZED EXHAUST FAN (EF-X) CONTROLS DIAGRAM
Add the following notes to this sequence, under the paragraph "FOR ALL FANS THAT SERVE CONTINUOUSLY OPERATING EQUIPMENT (CENTRALIZED CUSTODIANS EXHUAUST STACK)":
THIS SEQUENCE APPLIES TO THE FOLLOWING FAN TAG NUMBERS: EF-1C AND EF-2C.

Add the following notes at the end of sequence:
A DUCT STATIC DIFFERENTIAL PRESSURE SENSOR SHALL BE INSTALLED IN EACH DUCT SYSTEM. LOCATE DPT IN HORIZONTAL DUCT ENTERING RISER TO ENSURE FUTURE ACCESS. MOUNT EACH SENSOR ON THE GROUND FLOOR.

M705, CHILLED WATER SYSTEM CONTROLS DIAGRAM.
Add VFD by CWP-1 and CWP-2. Contractor shall furnish, mount and wire.

M911, FAN COIL UNIT PIPING RISER ISOMETRIC – 2
Add a chilled water riser to be routed in the same wall as the heating hot water. Size riser at 1” for supply and return until above the 2nd fan coil. For the remaining two fan coils, this line shall be reduced to 3/4” supply and return. All branch connections shall be 3/4”.
North Residential Neighborhood Phase 2  
Ball State University  
BSU Project No. 2017-021.01 NW2  
02-14-2019

I. Project Team
   A. Owner’s Representative(s):
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      June Sanders BSU Purchasing, 765-285-1532, email: jasanders3@bsu.edu
   B. Architect Representative(s):
      Jeff Olson CSO, 317-848-7800, email: jolson@csoinc.net
      Sean Bright Champlin Architecture, 317-917-4474, email: sean.bright@thinkchamplin.com

II. Contract Documents:
   A. Availability of Contract Documents.
   1. Contract documents are available through Ball State Purchasing. Contact June Sanders.
   B. Interpretation of Contract Documents.
   1. All questions, clarifications or interpretations of contract documents shall be emailed to Jeff Olson. All responses will be included in an addenda.
   2. The last day for RFI’s is 2/26/2019.
   C. Addenda.
   1. The last addenda will be issued on or before 2/28/2019.
   D. Substitutions.
   1. Substitutions must be received prior to bidding. BSU will not entertain substitutions after bids.

III. Bidding Procedures.
   A. Bidding Date: 03-05-2019 @ 2:30pm
      Location: Ball State University Alumni Center
               Assembly Hall
               2800 W Bethel Ave,
               Muncie, Indiana 47306
   B. Bidding Form and Other Documents.
      1. Indiana Form 96 (Revised 2013).
         a. Fill out Part II., Section I. Experience Questionnaire
         b. Fill out Part II., Section II. Plan and Equipment Questionnaire.
         c. Attach Part II., Section III. Contractor’s Financial Statement.
         d. Fill out Part II., Section IV. Contractors Non – Collusion Affidavit
         e. Fill out Part II., Section V. Oath and Affirmation
      2. Bid Form Supplements, Document 00 43 00
         Appendix A.
         1. Acknowledgment of Receipt of Addenda.
         Appendix B. Alternatives
         Appendix C. Unit Prices
         Appendix D. Principal Subcontractors
         Appendix E. Supplementary General Construction Information
         Appendix F. Supplementary Mechanical Information
         Appendix G. Supplementary Electrical Information
         Appendix H. Supplementary Telecommunications Information
      3. Representations and Certifications, Document 00 45 00
         Appendix 1. Nondiscrimination Compliance Statement
         Appendix 2. Contractor’s Certification of Self-Performance
         Appendix 3. Contractors Certification of Authorized Employment
         Appendix 4. Drug Testing Plan
         Appendix 5. Contractor’s Certification of Training Program Compliance
         Appendix 6. Contractor’s Certification of Pre-Qualification
         Appendix 7. Bidder’s Check List
      4. MBE/WBE/Veteran Participation Plan, Document 00 45 39
IV. Scope of Project.
   A. Summary of Work.
      1. Jeff Olson provided a full verbal summary of the work for the Residence Hall.
      2. Sean Bright provided a full verbal summary of the work for the Carmichael demolition.
      3. Kelly called bidders attention to the envelope commissioning that is required for this project. This services will be contracted and provided by the Owner, but detailed coordination with the construction team and scheduling is required. Reference the project manual for more details.
   B. Project Schedule.
      1. Owner contracted abatement activities are scheduled from May 13-June 14, 2019
      2. Site mobilization can begin as early as June 10th, 2019, which is the last week of abatement activities inside Carmichael. This can include items like perimeter fencing, curb cuts, stone access roads, crane pads, etc.
      3. Project completion dates are April 23, 2021 for substantial completion and May 7, 2021 for punch list and commissioning completion.
      4. Reference project manual for complete schedule.
   C. Access to Project Area.
      1. The logistics plan was reviewed in detail. Reference project manual.
   D. Coordination with Other Projects.
      1. Reference section 01 10 00 Summary in the project manual for concurrent work and work under separate contracts.
   E. Coordination with Owner Occupancy
   F. Liquidated Damages
      1. There are liquidated damages on this project. Please review the project manual for limits.

V. Questions.

VI. Tour of Project Site.
   A. All meeting attendees were invited to tour the existing Carmichael building to review existing conditions.

End
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<td>Heather Dilley</td>
<td>F. A. Winterm</td>
<td>(317)359-5411</td>
<td><a href="mailto:heather.dilley@fausthel.com">heather.dilley@fausthel.com</a></td>
</tr>
<tr>
<td>Zachary Allen</td>
<td>Revescent Inc.</td>
<td>(317)225-3160</td>
<td><a href="mailto:zack@revescentinc.com">zack@revescentinc.com</a></td>
</tr>
<tr>
<td>No</td>
<td>Description</td>
<td>Question</td>
<td>Answer</td>
</tr>
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</tr>
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<td>1</td>
<td>Doors 180A-1, 180A-2, 280-1 &amp; 280-2</td>
<td>Are all doors listed in the spec?</td>
<td>Yes, 180A-1, 180A-2, 280-1, and 280-2 have been updated in the door schedule. Please refer to sheets A502, A503, and A506. See spec section 08 88 13.</td>
</tr>
<tr>
<td>2</td>
<td>For the most part all frame elevations</td>
<td>Are all frame elevations correct?</td>
<td>Yes, the general contractor is to include the costs for material testing as indicated in the specifications.</td>
</tr>
<tr>
<td>3</td>
<td>There is an electric projection screen (PS1) listed on the Equipment Schedule</td>
<td>Is the equipment correct?</td>
<td>Yes, the general contractor is to include the costs for Builders Risk.</td>
</tr>
<tr>
<td>4</td>
<td>There is an electric projection screen (PS1) listed on the Equipment Schedule with a specification 11 30 01</td>
<td>Are there any errors in the specification?</td>
<td>The model will be used for above ceiling coordination. Mechanical, Electrical, Plumbing and Fire Protection will need to be coordinated with the ceiling location as well as the structural members.</td>
</tr>
<tr>
<td>5</td>
<td>Please confirm the general contractor is to include the costs for material testing.</td>
<td>Is the information correct?</td>
<td>The stainless steel fire pit and control pedestal are custom fabrications. See sheet LA502 for details.</td>
</tr>
<tr>
<td>6</td>
<td>Please confirm the general contractor is to include costs for Builders Risk.</td>
<td>Is the information correct?</td>
<td>The stainless steel fire pit and control pedestal are custom fabrications. See sheet LA502 for details.</td>
</tr>
<tr>
<td>7</td>
<td>Please provide a list matrix showing which trades that need to provide BIM.</td>
<td>Are all trades listed?</td>
<td>The stainless steel fire pit and control pedestal are custom fabrications. See sheet LA502 for details.</td>
</tr>
<tr>
<td>8</td>
<td>Please see the attached substitution request for metal wall panels.</td>
<td>Are all requests accepted?</td>
<td>We are not accepting this substitution request.</td>
</tr>
<tr>
<td>9</td>
<td>Please see the attached substitution request for Shower Surrounds</td>
<td>Are all requests accepted?</td>
<td>We are not accepting this substitution request for alternate.</td>
</tr>
<tr>
<td>10</td>
<td>Item 725 Solid Surface Shower Corner Shelf is shown to be provided by owner. Are these typically furnished with the solid surface shower enclosure?</td>
<td>Is the information correct?</td>
<td>This is to be a custom solid surface shelf provided by the owner and installed by the contractor.</td>
</tr>
<tr>
<td>11</td>
<td>Does not appear there are any roof drains/gutters at high penthouse roof.</td>
<td>Are there any roof drains/gutters?</td>
<td>This is to be a custom solid surface shelf provided by the owner and installed by the contractor.</td>
</tr>
<tr>
<td>12</td>
<td>Please identify which wall sections apply to the exterior walls above low roof areas in Unit C. (i.e. North wall of fitness)</td>
<td>Are all wall sections identified?</td>
<td>This is to be a custom solid surface shelf provided by the owner and installed by the contractor.</td>
</tr>
<tr>
<td>13</td>
<td>Are both CL 1 &amp; CL7 supposed to be based off Armstrong #1713 or is one of them supposed to be based off USG #5186 19?</td>
<td>Are all specifications correct?</td>
<td>CL1 and CL7 are both based off of Armstrong #1713. The difference is CL7 uses Armstrong's Single Coating location like the other make-ups do. There seems to be an error in glass makeups, types.</td>
</tr>
<tr>
<td>14</td>
<td>Are hold down clips (acoustical ceilings) required anywhere, specs just indicated where indicated?</td>
<td>Are all hold down clips required?</td>
<td>Hold down clips are required in the corridor leading to &quot;AHD Office 185&quot; &amp; &quot;HD Office 166&quot; as well as the corridor leading to &quot;Laundry 284&quot;.</td>
</tr>
<tr>
<td>15</td>
<td>Are we to use Woodwork's Grille Tegular #662812 with a 15/16&quot; grid per the specs or #662808 with a 9/16&quot; grid per the drawings?</td>
<td>Are all specifications correct?</td>
<td>A 9/16&quot; grid is to be used with the Woodwork's Grille Tegular #662812 per the drawings.</td>
</tr>
<tr>
<td>16</td>
<td>Are the rift cut wood panels (CL8) supposed to be 1/2&quot; per the drawings or 1/4&quot; per spec section 0642167?</td>
<td>Are all specifications correct?</td>
<td>CL8 is to be 1/2&quot; per the drawings.</td>
</tr>
<tr>
<td>17</td>
<td>Can a CL2 drywall grid ceiling be used in the place of a CL3 metal stud ceiling?</td>
<td>Are all specifications correct?</td>
<td>Yes, CL2 can be used in place of CL3 where applicable.</td>
</tr>
<tr>
<td>18</td>
<td>Sheet LA502 details a stainless steel fire pit. Is there a manufacturer/model number for the fire pit and control pedestal?</td>
<td>Are all specifications correct?</td>
<td>The stainless steel fire pit and control pedestal are custom fabrications. See sheet LA502 for details.</td>
</tr>
<tr>
<td>19</td>
<td>Please provide additional details regarding the size and components for the masonry mock up specified in section 01 45 00 Mockups. Current reference to 8/A301 does not exist.</td>
<td>Are all specifications correct?</td>
<td>Sheet LA502 is correct and details 1/A411 and 3/A411 have been updated to call out WD1 in lieu of WD3.</td>
</tr>
<tr>
<td>20</td>
<td>There is a spec section for shelving and clothes rods, however there are none shown on the drawings. Please advise.</td>
<td>Are all specifications correct?</td>
<td>Shelving and clothing rods are to be provided in every student room closet and apartment closet.</td>
</tr>
<tr>
<td>21</td>
<td>For S100 - for the basis of bidding, what should the undercoat assumption be?</td>
<td>Are all specifications correct?</td>
<td>Undercutting of unsuitable soils encountered in basement excavation will be considered &quot;Additional Excavation&quot; as defined in spec section 31 20 00 sections. 1.03-G.1., 3.04-B.3.08-B.</td>
</tr>
<tr>
<td>22</td>
<td>Referencing the Glass Schedule listed on A508 in upper corner. ...what is the difference between types A &amp; C and what are the differences between B &amp; D? Each of these seem to be the same, respectively. Please clarify.</td>
<td>Are all specifications correct?</td>
<td>In the Glass Schedule, Type A is tempered while Type C is not. Type D has been removed from the schedule since there is no longer spandrel glazing in the project.</td>
</tr>
<tr>
<td>23</td>
<td>Please provide which glass make up is in the spec with each glass type on A506 glass schedule. The spec seems to be missing a type with regards to the insulated glass. Please advise.</td>
<td>Are all specifications correct?</td>
<td>In the Glass Schedule, Type D that refers to the insulated spandrel glazing has been removed.</td>
</tr>
<tr>
<td>24</td>
<td>Section 08 60 00, 2.14, B, basis of design calls for isolabran 70N as basis but does not list the new coating location like the other make-ups do. There seems to be an error in glass makeups, types. Please clarify.</td>
<td>Are all specifications correct?</td>
<td>The specifications indicate low-e on the 2nd surface.</td>
</tr>
<tr>
<td>25</td>
<td>It looks to me like it's fixture L10 on circuit 2L7-23z, but the numbers are so close together, and the background hatch makes it touch hard to read.</td>
<td>Are all specifications correct?</td>
<td>Fixture type L10 is connected to 2L7-23, switch leg 'z'.</td>
</tr>
<tr>
<td>26</td>
<td>The specs call for our dimensional lumber is to be supplied within 100 mile radius of the project site except for treated materials. Does this include fire treated materials or is this just for standard treated?</td>
<td>Are all specifications correct?</td>
<td>4 100 mile radius &quot;requirements&quot; are based on the contractors need to achieve the points dictated by the contract documents. This will specifically relate to points required on the building product disclosure and optimization credits of LEED v4. Not all products listed as 100 miles are a strict requirement but a suggestion of materials that could be located within 100 miles. (This category is broken down into 3 requirements.) The contractor will need to review 01 81 13 Sustainable design requirements and read the LEED v4 reference guide for building design and construction section on those credits to decide what credit options they plan to achieve. This will dictate those requirements.</td>
</tr>
<tr>
<td>27</td>
<td>Note 9 on enlarged roof drawings A280 and A281 states 'Roof Walkway Pad - See Specifications'. The specifications include two types of roof walkways. Flexible walkways are described in section 07 5419 PVC Roofing, and metal planking walkways are described in section 07 7200 Roof Accessories. Which of these types of walkways are intended to be identified by Notes 9 on the roof drawings?</td>
<td>Are all specifications correct?</td>
<td>Metal planking walkways have been removed from spec section 07 72 00.</td>
</tr>
<tr>
<td>28</td>
<td>Per C102 - are the McKinley Avenue improvements already in place or will this work be performed during the construction period?</td>
<td>Are all specifications correct?</td>
<td>The McKinley Avenue improvements are already in place.</td>
</tr>
<tr>
<td>29</td>
<td>Where is the structural soil required and is the contractor responsible for this work?</td>
<td>Are all specifications correct?</td>
<td>Refer to spec section 31 25 50.</td>
</tr>
</tbody>
</table>
31 Will the Owner be responsible for permanent seeding? No. The Owner will provide and install all final plantings, including seeding.

32 Will the Owner be responsible for installing any sleeves in sidewalks for any future irrigation work? No future irrigation is anticipated.

33 If the Owner is not responsible for installing any sleeves in sidewalks for any future irrigation work? No, a spec. section will not be provided. The fire pit is a custom fabrication. Refer to section 05 50 00.

34 How many RAP load tests are required to be performed? 1 test minimum. Additional tests determined necessary by Aggregate Pier Designer to substantiate design. Refer to Spec 31 64 10 sections 1.08-G and 1.08-C.

35 What is the rubbed finish level required for the site terrace and lawn wall? Yes, please provide snow melt system at the loading dock.

36 Where is the site terrace and lawn wall? The base bid is to furnish the fire pit complete. The alternate is not to include the above ground portion of the fire pit but all other below grade work is to be completed for future installation of fire pit.

37 Is the Spec 31 64 10 series does not specify a material. Does SC1 fall under spec section 07 18 00 Traffic Coatings? This is mostly in mechanical rooms and stair. SC1 falls under spec. section 03 35 00. Refer to addendum #2. The contractor is to remove asphalt to the top of the tunnel.

38 The SC1 on A800 series does not specify a material. Does SC1 fall under spec section 07 18 00 Traffic Coatings? This is mostly in mechanical rooms and stair. SC1 falls under spec. section 03 35 00.

39 What is the rubbed finish level required for the site terrace and lawn wall? Yes, please provide snow melt system at the loading dock.

40 What size trim is needed for WD1? Please use 1X hardwood trim stained to match doors.

41 Are we to use Woodwork Channeled Planks #59001C per the specs or #5900C per the drawings? Use Woodwork Channeled Planks #59001C per the specs.

42 What is the rubbed finish level required for the site terrace and lawn wall? Yes, please provide snow melt system at the loading dock.

43 What is the rubbed finish level required for the site terrace and lawn wall? Yes, please provide snow melt system at the loading dock.

44 What size trim is needed for WD1? Please use 1X hardwood trim stained to match doors.

45 What is the rubbed finish level required for the site terrace and lawn wall? Yes, please provide snow melt system at the loading dock.

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60 What is the rubbed finish level required for the site terrace and lawn wall? Yes, please provide snow melt system at the loading dock.

61 What is the rubbed finish level required for the site terrace and lawn wall? Please adhere to LOD 300 for BIM.

62 What is the rubbed finish level required for the site terrace and lawn wall? Please adhere to LOD 300 for BIM.

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100 What is the rubbed finish level required for the site terrace and lawn wall? Please adhere to LOD 300 for BIM.
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<th>RFI's to Date</th>
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</table>
DOCUMENT 00 43 00
BID FORM SUPPLEMENTS (BID-LD)

This form must be submitted with the Bid along with additional copies as requested in the Project Manual.

To: Ball State University Board of Trustees
Ball State University
Muncie, IN 47306

Project: North Residential Neighborhood Phase 2

BSU Project No. BSU 2017-021.01 NW2

Date: March 5, 2019

Submitted by: (Bidder - please print the full name of your Proprietorship, Partnership, or Corporation
(full address)

In accordance with Document 00 21 14 - Instructions to Bidders (AIA A701) and Document 00 22 13 - Supplementary Instructions to Bidders (BSU A701), we include the Bid Form Supplements Appendices listed below. The information provided shall be considered an integral part of the Bid Form.

These Appendices are as follows:

Appendix A Receipt of Addenda/Project Completion and Liquidated Damages: If applicable, acknowledge receipt of all Addenda and fill in or acknowledge Completion time/Project Schedule, and acknowledge liquidated damages statement.

Appendix B Alternatives: When used, include the Cost variation to the Bid Price applicable to the Work described in the Contract Documents.

Appendix C Unit Prices: When used, include a listing of unit prices specifically requested by the Contract Documents.

Appendix D Principal Subcontractors: When used, include the names of all Primary Subcontractors and the portions of the Work they will perform.

Appendix E Supplementary General Construction Information: When used, list the requested Supplementary General Construction Information.

Appendix F Supplementary Mechanical Information: When used, list the requested Supplementary Mechanical Information.

Appendix G Supplementary Electrical Information: When used, list the requested Supplementary Electrical Information.

Appendix H Supplementary Telecommunication Information: When used, list the requested Supplementary Telecommunication Information.
SUBMITTAL SCHEDULE OF APPENDICES

a. All bidders shall submit with their Bid the following Appendices:
   APPENDIX A – Receipt of Addenda/Project Completion/Liquidated Damages
   APPENDIX B – Alternatives
   APPENDIX C – Unit Prices
   APPENDIX D – Principal Subcontractors

b. The Low bidder, and the second and third bidders if requested, shall execute and submit to the Owner
   the remaining SUBCONTRACTOR AND MATERIAL QUESTIONNAIRES.

   Submit to the Owner: Finance Office, 2000 West University Avenue, Muncie, Indiana, 47306; the
   following appendices within forty-eight (48) hours after date and time for receiving bids:

   APPENDIX E – Supplementary General Construction Information
   APPENDIX F – Supplementary Mechanical Information
   APPENDIX G – Supplementary Electrical Information
   APPENDIX H – Supplementary Telecommunication Information

BID FORM SUPPLEMENTS SIGNATURE(S)

(Bidder - please print the full name of your Proprietorship, Partnership, or Corporation)

________________________________________
(Authorized signing officer)

________________________________________
(Title of Person Signing)

ACKNOWLEDGEMENT

STATE OF _____________________________ ss: _____________________________ (seal)
COUNTY OF _____________________________

______________________________ being duly sworn, deposes and says
that he/she is
______________________________ of the above _____________________________ and that the
(Title) _____________________________ (Name of Organization)

statements contained in the foregoing Bid Form Supplements are true and correct.

Subscribed and sworn to before me this _____________ day of _____________, ____________.

______________________________
Notary Public

My Commission Expires: _____________________________

County of Residence: _____________________________

Ball State University Document 00 43 00 – BID FORM SUPPLEMENTS (BID-LD)
Only project specific modifications approved by Ball State University, Facilities Planning & Management shall be made to this Document.

Document Origination Date: June 1, 2009
Document Revision Date: December 21, 2018
APPENDIX A - RECEIPT OF ADDENDA/PROJECT COMPLETION

1. ADDENDA

The Bidder acknowledges receipt of the following Addenda:

<table>
<thead>
<tr>
<th>Addendum No.</th>
<th>Dated</th>
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<tr>
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</table>

2. PROJECT COMPLETION

If this Bid is accepted, we will:

Commence on site work and mobilization on June 10, 2019 which will identified in a written Notice to Proceed to be issued by Architect and Substantially Complete the Work by April 23, 2021.

3. LIQUIDATED DAMAGES

The Bidder has read Paragraph 2, Appendix A, Bid Form Supplements, Document 00 43 00 and understands the Contract Documents requirements for project schedule and provisions for liquidated damages as set forth in the Agreement Form Supplements (Document 00 54 00), Section 4.5 of Article 4.

(Initialed by signing officer)
APPENDIX B - ALTERNATIVES

The following amounts shall be added to or deducted from the Base Bid Sum. Refer to Section 01 23 00 - Alternates: Schedule of Alternates.

Alternate No. 1

SNOWMELT SYSTEM

(Add) (Deduct) $ ______________________

Alternate No. 2

SOUTH COURTYARD

(Add) (Deduct) $ ______________________

Alternate No. 3

FIRE PIT & FIRE CONTROL PEDESTAL

(Add) (Deduct) $ ______________________

Alternate No. 4

ALUMINUM-FRAMED ENTRANCES & STOREFRONTS/
GLAZED ALUMINUM CURTAIN WALL FINISHES

(Add) (Deduct) $ ______________________

Alternate No. 5

GREEN ROOF ASSEMBLY – UNIT C

(Add) (Deduct) $ ______________________

Alternate No. 6a

ADDITION OF TEMPERATURE CONTROLS “A”.

(Add) (Deduct) $ ______________________

Alternate No. 6b

ADDITION OF TEMPERATURE CONTROLS “B”.

(Add) (Deduct) $ ______________________
Alternate No. 6c

ADDITION OF TEMPERATURE CONTROLS “C”.

(Add) (Deduct) $ ________________

Alternate No. 7

SECURITY SPRINKLER HEADS

(Add) (Deduct) $ ________________

Alternate No. 8

PIPING CONNECTIONS

(Add) (Deduct) $ ________________

Alternate No. 9

LANDSCAPE FURNITURE

(Add) (Deduct) $ ________________

Alternate No. 10

WATERPROOFING – EXISTING UTILITY TUNNEL

(Add) (Deduct) $ ________________

Alternate No. 11

HEAT EXCHANGERS

(Add) (Deduct) $ ________________

Alternate No. 12

SOLID SURFACE SHOWER SURROUND AND BASE MANUFACTURER – INPRO, ENDURANT SHOWER SYSTEM.

(Add) (Deduct) $ ________________

Alternate No. 13

MOISTURE AND MOLD RESISTANT GYPSUM BOARD

(Add) (Deduct) $ ________________
Alternate No. 14

ALUMINUM-FRAMED ENTRANCES & STOREFRONT, GLAZED ALUMINUM CURTAIN WALLS, ALUMINUM WINDOWS AND REVOLVING DOOR ENTRANCE FINISHES

(Add) (Deduct) $ ____________________
APPENDIX C - UNIT PRICES

The following are Unit Prices for specific portions of the Work as listed, and are applicable to authorized variations from the Contract Documents. Refer to Section [01 20 00 – Price and Payment Procedures] [01 22 00 – Unit Prices]: Unit Price Schedule.

<table>
<thead>
<tr>
<th>ITEM OF WORK</th>
<th>UNIT OF MEASUREMENT</th>
<th>UNIT VALUE</th>
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<tbody>
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## APPENDIX D - PRINCIPAL SUBCONTRACTORS

A. The following Work will be performed (or provided) by subcontractors and their performance of the Work will be coordinated by us:

B. The Bidder will make no changes to this list after submission, without a written request by the bidder and approval by the Owner.

C. Provide additional copies of this page as needed for a complete listing.

D. Indicate YES/NO if Subcontractor is required to be pre-qualified (contract value greater than $300,000). If yes, indicate certification expiration date.

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APPENDIX E – SUPPLEMENTARY GENERAL CONSTRUCTION INFORMATION

A. The following Work will be performed (or provided) by subcontractors and their performance of the Work will be coordinated by us:

B. We submit the following list of manufacturers (or fabricators) of materials, applications, and specialties. All such materials, appliances, and specialties to be of such characteristics, design and construction will meet the requirements of the Construction Documents. The Bidder will make no changes to this list after submission, without a written request by the bidder and approval by the Owner.

C. Provide additional copies of this page as needed for a complete listing.

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APPENDIX F - SUPPLEMENTARY MECHANICAL INFORMATION

A. The following Work will be performed (or provided) by subcontractors and their performance of the Work will be coordinated by us:

B. We submit the following list of manufacturers (or fabricators) of materials, applications, and specialties. All such materials, appliances, and specialties to be of such characteristics, design and construction will meet the requirements of the Construction Documents. The Bidder will make no changes to this list after submission, without a written request by the bidder and approval by the Owner.

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### APPENDIX G – SUPPLEMENTARY ELECTRICAL INFORMATION

A. The following Work will be performed (or provided) by subcontractors and their performance of the Work will be coordinated by us:

B. We submit the following list of manufacturers (or fabricators) of materials, applications, and specialties. All such materials, appliances, and specialties to be of such characteristics, design and construction will meet the requirements of the Construction Documents. The Bidder will make no changes to this list after submission, without a written request by the bidder and approval by the Owner.

C. Provide additional copies of this page as needed for a complete listing.

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APPENDIX H – SUPPLEMENTARY TELECOMMUNICATION INFORMATION

A. The following Work will be performed (or provided) by subcontractors and their performance of the Work will be coordinated by us:

B. We submit the following list of manufactures (or fabricators) of materials, applications, and specialties. All such materials, appliances, and specialties to be of such characteristics, design and construction will meet the requirements of the Construction Documents. The Bidder will make no changes to this list after submission, without a written request by the bidder and approval by the Owner.

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SYSTEM END OF SECTION
SECTION 01 23 00 - ALTERNATES

PART 1 - GENERAL

1.01 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.

1.02 SUMMARY

A. Section includes administrative and procedural requirements for alternates.

1.03 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 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 alternate into the Work. No other adjustments are made to the Contract Sum.

1.04 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. Notification: Immediately following award of the Contract, notify each party involved, in writing, of the status of each alternate. Indicate if alternates have been accepted, rejected, or deferred for later consideration. Include a complete description of negotiated revisions to alternates.

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

D. 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

3.01 SCHEDULE OF ALTERNATES

A. ALTERNATE NO. 1: SNOWMELT SYSTEM

1. Base Bid is to provide pavement as indicated on the drawings and specifications without the Snowmelt System assembly.
2. Alternate is to provide snowmelt system in locations indicated on drawings. Extent of Snowmelt System shown SHEET LA100, NOTE P15; SHEET LA500, DETAIL 20 and as specified.

B. ALTERNATE NO. 2: SOUTH COURTYARD

1. Base Bid is to provide scope as indicated in Contract Documents and Specification shown on SHEETS C101, C104, C603, LA drawings and specifications.
2. Alternate is to provide scope as indicated in “SOUTH COURTYARD ALTERNATE” on SHEET C102.

C. ALTERNATE NO. 3: FIRE PIT & FIRE CONTROL PEDESTAL

1. Base Bid is to provide Fire Pit, gas and related utilities as indicated on the drawings and as specified with pedestal Contract Documents. Scope includes all materials and labor associated with connecting, installing and coordinating the entire fire pit system and assembly as indicated on SHEET LA100, NOTE F5; DETAILS ON SHEET LA502; SHEET E001. The furniture indicated in DETAIL 3 on SHEET LA502 is not included in ALTERNATE #3.
2. Alternate is to provide all underground utilities associated with the operation of the fire pit, utilities associated with the fire pit control pedestal and electronic connection related to the master switch, capped and installed with an lockable exterior access panel. The Fire Pit Control Pedestal above ground and the above ground Fire Pit assembly. The fire Concrete, matching adjacent assembly shall be installed flush with the top of adjacent concrete in lieu of the fire pit, formed separately for future removal. Concrete pier and related utilities associated with the fire pit control pedestal shall also be installed.

D. ALTERNATE NO. 4: ALUMINUM-FRAMED ENTRANCES & STOREFRONTS/GLAZED ALUMINUM CURTAIN WALL FINISHES

1. Base Bid is to provide the High –Performance Organic Finish : 3-coat fluoropolymer finish system applied to the aluminum-framed entrances and storefront systems, as well as the aluminum curtain wall systems in the custom metallic color as specified and indicated in bid documents.
2. Alternate is to provide Annodized Aluminum Finish applied to the aluminum-framed entrances and storefront systems, as well as the aluminum curtain wall systems in lieu of the High –Performance Organic Finish : 3-coat fluoropolymer finish system in the custom metallic color.

E. ALTERNATE NO. 5: GREEN ROOF ASSEMBLY – UNIT C

1. Base Bid is a PVC 60 mil. adhered roofing system on Unit C as indicated on drawings and specifications.
2. Alternate is to provide the scope of work associated with the Green Roofing System indicated in Drawings 2 and 3 on SHEET A281 as well as Specification Section 077273 and related bid documents.

F. ALTERNATE NO. 6A: ADDITION OF TEMPERATURE CONTROLS “A”

1. Base Bid: No temperature controls
2. Alternate: Add temperature controls by Automated Logic installed by the local branch office only as indicated in Division 23 Section "INSTRUMENTAL AND CONTROL FOR HVAC." Temperature controls shall not be included in the Contractor's Base Bid.

G. ALTERNATE NO. 6B: ADDITION OF TEMPERATURE CONTROLS “B”

1. Base Bid: No temperature controls
2. Alternate: Add temperature controls by Johnson Controls installed by the local branch office only as indicated in Division 23 Section "INSTRUMENTAL AND CONTROL FOR HVAC." Temperature controls shall not be included in the Contractor's Base Bid.

H. ALTERNATE NO. 6C: ADDITION OF TEMPERATURE CONTROLS “C”

1. Base Bid: No temperature controls
2. Alternate: Add temperature controls by by Trane Corporation installed by the local branch office only as indicated in Division 23 Section "INSTRUMENTAL AND CONTROL FOR HVAC." Temperature controls shall not be included in the Contractor's Base Bid.

I. ALTERNATE NO. 7: SECURITY SPRINKLER HEADS

1. Base Bid is to provide concealed, pendant-type sprinkler heads at student room floors (2-5) as indicated in drawings and specifications.
2. Alternate is to provide Tyco Raven security-type sprinkler heads as indicated in specification and drawings.

J. ALTERNATE NO. 8: PIPING CONNECTIONS

1. Base bid is to furnish and install brazed / welded hydronic piping connections as indicated in the drawings.
2. Alternate bid is to furnish and install grooved mechanical couplings, as manufactured by Victaulic.

K. ALTERNATE NO. 9: LANDSCAPE FURNITURE

1. Base bid is to furnish and install all landscape furniture indicated in NOTES F2, F3, F4 and the furniture identified on NOTE F5 on SHEET LA100.
2. Alternate Bid is to remove the scope associated with the materials and installation of the furniture items identified above in the base bid.
L. ALTERNATE NO. 10: WATERPROOFING – EXISTING UTILITY TUNNEL

1. Base Bid is furnish the new asphalt and concrete pavement over the existing tunnel as shown and indicated on the drawings and specifications without the waterproofing as shown on SHEET LA100 and DETAIL 8 on SHEET LA500. Extents of Alternate is indicated and notes on SHEET LA100.

2. Alternate Bid is to include the waterproofing as shown and identified as indicated in the items identified in the above Base Bid.

M. ALTERNATE NO. 11: HEAT EXCHANGERS

1. Base Bid is to provide direct connections from the campus hot and chilled water lines as shown in schematic on Sheet M401.

2. Alternate Bid is to provide plate and frame heat exchangers to separate the campus hot and chilled water lines from the building hot and chilled water lines. Install equipment and piping as shown on Sheet M402.

N. ALTERNATE NO. 12: SOLID SURFACE SHOWER SURROUND AND BASE MANUFACTURER

1. Base Bid is to provide Tower Industries Meridian Solid Surface solid surface shower surround and base as indicated in the SPECIFICATION SECTION 06 61 13 and Bid Documents.

2. Alternate Bid is to provide solid surface shower surround and base by “Inpro, Endurant Shower Systems”, meeting specified requirements outlined in SPECIFICATION SECTION 06 61 16 – SOLID SURFACING SHOWN SURROUND AND BASE and Bid Documents. System is to comply with all ADA requirements and meet all dimensional criteria indicated in drawings.

O. ALTERNATE NO. 13: MOISTURE AND MOLD RESISTANT GYPSUM BOARD

1. Base Bid is to provide drywall as indicated in the Bid Documents.

2. Alternate Bid is to provide “MOISTURE AND MOLD RESISTANT GYPSUM BOARD” as indication in Specification Section 09 29 00 – GYPSUM BOARD in place of “INTERIOR GYPSUM BOARD”. Fire rating must be maintained in all areas indicated. Scope includes installation and all materials including all associated accessories.

P. ALTERNATE NO. 14: ALUMINUM-FRAMED ENTRANCES & STOREFRONT, GLAZED ALUMINUM CURTAIN WALLS & ALUMINUM WINDOW FINISHES

1. Base Bid is to provide “High-Performance Organic Finish: Two-coat fluoropolymer finish”, custom color as indicated in Specification Sections 08 41 13 ALUMINUM-FRAMED ENTRANCES AND STOREFRONTS, 08 42 33 REVOLVING DOOR ENTRANCES,

2. Alternate Bid is to provide “Clear Anodized, AAMA 611, AA-M12C22A41, Class I, 0.018 mm or thicker” aluminum finish in lieu of the High-Performance Organic Finish: Two-coat fluoropolymer finish, custom color as indicated in the specification.
SECTION 01 45 10 – MOCKUPS

PART 1 - GENERAL

1.01 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.

1.02 SUMMARY

A. This section specifies procedural requirements for mock-ups at the project site. Mock-ups are required to amplify, expand and coordinate verification of information contained in the Contract Documents.

1.03 DEFINITIONS

A. Mockups: Full-size physical assemblies that are constructed on-site. Mockups are constructed to verify selections made under Sample submittals; to demonstrate aesthetic effects and, where indicated, qualities of materials and execution; to review coordination, testing, or operation; to show interface between dissimilar materials; and to demonstrate compliance with specified installation tolerances. Mockups are not Samples. Unless otherwise indicated, approved mockups establish the standard by which the Work will be judged.

1. Integrated Exterior Mockups: Mockups of the exterior envelope erected separately from the building but on Project site, consisting of multiple products, assemblies, and subassemblies.

2. Room Mockups: Mockups of typical interior spaces complete with wall, floor, and ceiling finishes, doors, windows, millwork, casework, specialties, furnishings and equipment, and lighting.

1.04 SUBMITTAL PROCEDURES

A. Transmittals: Prepare and submit transmittals that include the following:

1. Date of issue.
2. Project title and Architect’s project number.
3. Name, address, and telephone number of Contractor.
4. Description of the Mockup.
5. Space for Contractor Stamp and Architect Stamp.

1.05 QUALITY ASSURANCE

A. General: Specific requirements for individual units of work are specified in the applicable specification section.

1. Preparation: Where possible, provide mock-ups that are physically identical with the proposed work; provide full scale, fully fabricated mock-ups cured and finished in the manner specified.

B. Exterior Mockups: Full-size physical assemblies that are constructed on-site. Mockups are constructed to verify selections made under Sample submittals; to demonstrate aesthetic effects and, where indicated, qualities of materials and execution; to review
coordination, testing, or operation; to show interface between dissimilar materials; and to demonstrate compliance with specified installation tolerances. Mockups are not Samples. Unless otherwise indicated, approved mockups establish the standard by which the Work will be judged. Before installing portions of the Work requiring mockups, build mockups for each form of construction and finish required to comply with the following requirements, using materials indicated for the completed Work.

1. Build mockups in location and of size indicated or, if not indicated, as directed by Architect.
2. Notify Architect seven days in advance of dates and times when mockups will be constructed.
3. Employ supervisory personnel who will oversee mockup construction. Employ workers that will be employed during the construction at Project.
4. Demonstrate the proposed range of aesthetic effects and workmanship.
5. Obtain Architect's approval of mockups before starting work, fabrication, or construction.
   a. Allow seven days for initial review and each re-review of each mockup.
   b. Review and approve the wall prior to the masonry veneer installation, including the flashing, sill flashing, fluid applied vapor barrier, and overall quality.
   c. Review of masonry installation including mortar, sealants, weeps, coursing and overall construction.
6. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.
   a. Accepted mockups will remain as part of the Work. Rejected mockups to be removed and re-installed for final approval by Architect.
7. If mock-up is not part of final construction, demolish and remove mockups when directed unless otherwise indicated.
8. Exterior Wall Mockup: Full Scale, exterior wall mock-up consisting of 6’-8” (3’-4” each leg) wide by 6’-4” tall (minimum) section of building including limestone watertable, brick masonry, CMU back-up, flashing, air barrier, insulation, etc. as indicative of complete exterior wall system. Reference Drawings for extent of mock-up. Exterior mockup can be constructed as part of final wall system.

C. Room Mockups: Construct typical interior student room mockup incorporating required materials and assemblies, finished according to requirements, complete with wall, floor, and ceiling finishes, doors, windows, millwork, casework, specialties, furnishings and equipment, and lighting. Location of student room mockup to be determined by Owner. Provide required lighting and additional lighting where required to enable Architect to evaluate quality of the Work.

1. Student Room Mock-up: Full scale in place mock-up of student room at the following intervals:
   a. Framing and MEP rough-in including all HVAC and electrical. MEP systems may not be connected or fully functional.
   b. White box
   c. Finished room
   d. Furnished
2. Student bathroom Mock-up: Full scale in place mock-up of student bathroom at the following intervals:
   a. Framing and MEP rough-in
   b. White box
   c. Finished room

D. This Room Mockup will set the standard for all the student rooms in the building.

1.06 COORDINATION

A. Coordinate the preparation of mock-ups with the performance of the work. Coordinate each separate mock-up with other mock-ups and related activities such as fabrication, delivery, and similar activities that require sequential activity.

1. Prepare each mock-up sufficiently in advance of the scheduled performance of related work and other applicable activities.
2. Allow sufficient time so that the installation will not be delayed as a result of the time required to properly review mock-ups, including time for modification, if necessary.

PART 2 - PRODUCTS

2.01 CONSTRUCTION OF MOCK-UPS:

A. Mockups: Before installing portions of the Work requiring mockups, provide mockups for each form of construction and finish required to comply with the following requirements, using materials indicated for the completed Work:

1. Build mockups in location and of size indicated or, if not indicated, as directed by Architect.
2. Notify Architect seven days in advance of dates and times when mockups will be constructed.
3. Demonstrate the proposed range of aesthetic effects and workmanship.
4. Obtain Architect's approval of mockups before starting work, fabrication, or construction.
5. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.
6. If mock-up is not part of final construction, demolish and remove mockups when directed, unless otherwise indicated.

2.02 SCHEDULE OF MOCK-UPS - SEPARATELY CONSTRUCTED ON SITE:

A. Schedule of Mock-Ups: Prepare mock-ups for the following building elements as scheduled below, or, if not scheduled, as required in individual specification sections.

1. Masonry Wall in accordance with Division 4 Section "Masonry Assemblies" and as indicated on detail 8/A301.
PART 3 - EXECUTION

3.01 CONTRACTOR’S REVIEW

A. Review each mockup check for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Architect.

1. Action Stamp: Stamp each such transmittal with a uniform, self explanatory action stamp.

B. Send transmittal to Architect indicating that mock-up is ready for review.

1. Number of Copies: Submit 3 copies of each mockup transmittal, unless otherwise indicated. Architect will return one copy with reply and retain one returned copy as a Project Record Document.

C. Action Submittals: Architect will review each mockup.

1. Action Stamp: Architect will stamp each mockup transmittal with an action stamp and will mark stamp appropriately to indicate action taken, selected from Approved, Approved as Noted, Revise and Resubmit or Rejected.

3.02 MOCKUP REMOVAL & MAINTENANCE

A. Maintenance: Maintain mockups in good condition until removal. Protect from damage caused by freezing temperatures and similar elements.

B. Removal: If not part of final construction, remove each mockup 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 mockup location.

END OF SECTION
SECTION 06 40 00 - INTERIOR ARCHITECTURAL WOODWORK

ADDENDUM NO 3

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SUMMARY

A. This Section includes the following:

1. Reception desk.
2. Solid surface window stools.
3. Plastic laminate shelving and clothes rods.
4. Plastic laminate lavatory apron.
5. Hardware.

1.03 REFERENCES


1.04 DEFINITIONS

A. Interior architectural woodwork includes wood furring, blocking, shims, and hanging strips for installing woodwork items unless concealed within other construction before woodwork installation.

1.05 ACTION SUBMITTALS

A. Product Data: For each type of product indicated, including cabinet hardware and accessories handrail brackets and finishing materials and processes.

B. Product Data: For panel products high-pressure decorative laminate adhesive for bonding plastic laminate solid-surfacing material fire-retardant-treated materials cabinet hardware and accessories handrail brackets and finishing materials and processes.

1. Include data for fire-retardant treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements.

C. LEED Submittals:

1. Product Data: For recycled content, indicating postconsumer and preconsumer recycled content and cost.
2. Environmental Product Declaration: For each product.
3. Health Product Declaration: For each product.
4. Sourcing of Raw Materials: Corporate sustainability report for each manufacturer.
6. Laboratory Test Reports: For adhesives, indicating compliance with requirements for low-emitting materials.
7. Laboratory Test Reports: For composite wood products, indicating compliance with requirements for low-emitting materials.

D. Shop Drawings: Show location of each item, dimensioned plans and elevations, large-scale details, attachment devices, and other components.

1. Show locations and sizes of furring, blocking, and hanging strips, including concealed blocking and reinforcement specified in other Sections.
2. Show locations and sizes of cutouts and holes for plumbing fixtures and other items installed in architectural woodwork.

E. Samples for Initial Selection:

1. Shop-applied transparent finishes.
2. Shop-applied opaque finishes.

F. Samples for Verification:

1. Lumber with or for transparent finish, not less than 5 inches (125 mm) wide by 24 inches (600 mm) long, for each species and cut, finished on 1 side and 1 edge.
2. Veneer-faced panel products with or for transparent finish, 12 by 24 inches (300 by 600 mm), for each species and cut. Include at least one face-veneer seam and finish as specified.
3. Plastic laminates, 8 by 10 inches (200 by 250 mm), for each type, color, pattern, and surface finish, with 1 sample applied to core material and specified edge material applied to 1 edge.
4. Solid-surfacing materials, 6 inches (150 mm) square.
5. Exposed cabinet hardware and accessories, one unit for each type and finish.

G. Product Certificates: Signed by manufacturers of woodwork certifying that products furnished comply with requirements.

1.06 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer.
B. Product Certificates: For each type of product, signed by product manufacturer.

1.07 QUALITY ASSURANCE

A. Fabricator Qualifications: A firm experienced in producing architectural woodwork similar to that indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
B. Installer Qualifications: A firm experienced in installing architectural woodwork similar to that indicated for this Project and with a record of successful in-service performance.
C. Source Limitations: Engage a qualified woodworking firm to assume undivided responsibility for production of interior architectural woodwork with sequence-matched wood veneers and transparent-finished wood doors that are required to be of same species as woodwork.

D. Quality Standard: Unless otherwise indicated, comply with AWI's "Architectural Woodwork Standards" for grades of interior architectural woodwork indicated for construction, finishes, installation, and other requirements.

E. Fire-Test-Response Characteristics: Where fire-retardant materials or products are indicated, provide materials and products with specified fire-test-response characteristics as determined by testing identical products per test method indicated by UL, ITS, or another testing and inspecting agency acceptable to authorities having jurisdiction. Identify with appropriate markings of applicable testing and inspecting agency in the form of separable paper label or, where required by authorities having jurisdiction, imprint on surfaces of materials that will be concealed from view after installation.

1.08 DELIVERY, STORAGE, AND HANDLING

A. Do not deliver woodwork until painting and similar operations that could damage woodwork have been completed in installation areas. If woodwork must be stored in other than installation areas, store only in areas where environmental conditions comply with requirements specified in "Project Conditions" Article.

1.09 PROJECT CONDITIONS

A. Environmental Limitations: Do not deliver or install woodwork until building is enclosed, wet work is complete, and HVAC system is operating and maintaining temperature and relative humidity at occupancy levels during the remainder of the construction period.

B. Field Measurements: Where woodwork is indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication, and indicate measurements on Shop Drawings. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

1.10 COORDINATION

A. Coordinate sizes and locations of framing, blocking, furring, reinforcements, and other related units of Work specified in other Sections to ensure that interior architectural woodwork can be supported and installed as indicated.

PART 2 - PRODUCTS

2.01 PERFORMANCE REQUIREMENTS

A. Fire-Rated Frames: Complying with NFPA 80 and listed and labeled by a qualified testing agency acceptable to authorities having jurisdiction for fire-protection ratings indicated on Drawings, based on testing at positive pressure according to NFPA 252 or UL 10C.

1. Smoke- and Draft-Control Assemblies: Listed and labeled for smoke and draft control by a qualified testing agency acceptable to authorities having jurisdiction, based on testing according to UL 1784 and installed in compliance with NFPA 105.
B. Fire-Rated, Borrowed-Lite Assemblies: Complying with NFPA 80 and listed and labeled by a qualified testing agency acceptable to authorities having jurisdiction, for fire-protection ratings indicated, based on testing according to NFPA 257 or UL 9.

2.02 ARCHITECTURAL WOODWORK, GENERAL

A. Quality Standard: Unless otherwise indicated, comply with the Architectural Woodwork Standards for grades of interior architectural woodwork indicated for construction, finishes, installation, and other requirements.

B. Regional Materials: Wood products shall be manufactured within 100 miles (160 km) of Project site from materials that have been extracted, harvested, or recovered, as well as manufactured, within 100 miles (160 km) of Project site.

C. Certified Wood: Wood products shall be certified as "FSC Pure" or "FSC Mixed Credit" according to FSC STD-01-001 and FSC STD-40-004.

2.03 MATERIALS

A. Wood Species and Cut for Transparent Finish: Rift cut White Oak.

B. Wood Species for Opaque Finish: Any closed-grain hardwood.

C. Wood Products: Comply with the following:

3. Particleboard: ANSI A208.1, Grade M-2, made with binder containing no urea formaldehyde.
4. Particleboard: Straw-based particleboard complying with requirements in ANSI A208.1, Grade M-2, except for density.
5. Softwood Plywood: DOC PS 1, Medium Density Overlay.

D. Thermoset Decorative Panels: Particleboard or medium-density fiberboard finished with thermally fused, melamine-impregnated decorative paper complying with LMA SAT-1.

1. Provide PVC or polyester edge banding complying with LMA EDG-1 on components with exposed or semiexposed edges.

E. Linoleum Tack Surface: "Bulletin Board"; Forbo.

F. High-Pressure Decorative Laminate: NEMA LD 3, grades as indicated or, if not indicated, as required by woodwork quality standard.

1. Design Criteria: Drawings indicate plastic laminate based on a specific manufacturer's product. Another manufacturer's plastic laminate of a similar and equivalent nature will be acceptable when, in the Architect's sole judgment, differences do not detract from the design concept or intended performance.
2. Manufacturer: Subject to compliance with requirements, provide high-pressure decorative laminates by one of the following:
G. Edgebanding for Plastic Laminate: Rigid PVC extrusions, through color with satin finish, 3 mm thick at doors and drawer fronts, 1 mm thick elsewhere.

1. Color: Custom color matching laminate in color, pattern, and finish as selected by Architect from among minimum 60 colors.


1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   a. Corian; Du Pont Polymers.
   b. Surell; Formica Corporation.
   c. Gibraltar; Wilsonart International; Div. of Premark International, Inc.

I. Colors and Patterns: Provide colors and patterns indicated in Finish Schedule on Drawings.

2.04 FIRE-RETARDANT-TREATED MATERIALS

A. General: Where indicated, use materials impregnated with fire-retardant chemical formulations indicated by a pressure process or other means complying with requirements in this Article, that are acceptable to authorities having jurisdiction, and with fire-test-response characteristics specified.

1. Do not use treated materials that do not comply with requirements of referenced woodworking standard or that are warped, discolored, or otherwise defective.
2. Use fire-retardant-treatment formulations that do not bleed through or otherwise adversely affect finishes. Do not use colorants to distinguish treated materials from untreated materials.
3. Identify fire-retardant-treated materials with appropriate classification marking of UL, U.S. Testing, Timber Products Inspection, or another testing and inspecting agency acceptable to authorities having jurisdiction.

B. Fire-Retardant-Treated Lumber and Plywood by Pressure Process: Comply with performance requirements of AWPA C20 (lumber) and AWPA C27 (plywood). Use the following treatment type:

2. Interior Type A: Low-hygroscopic formulation.
3. Mill lumber before treatment and implement special procedures during treatment and drying processes that prevent lumber from warping and developing discolorations from drying sticks or other causes, marring, and other defects affecting appearance of treated woodwork.

C. Fire-Retardant Particleboard: Panels complying with the following requirements, made from softwood particles and fire-retardant chemicals mixed together at time of panel
manufacture to achieve flame-spread index of 25 or less and smoke-developed index of 25 or less per ASTM E 84.

1. For panels 3/4 inch (19 mm) thick and less, comply with ANSI A208.1 for Grade M-2 except for the following minimum properties: modulus of rupture, 1600 psi (11 MPa); modulus of elasticity, 300,000 psi (2070 MPa); internal bond, 80 psi (550 kPa); and screw-holding capacity on face and edge, 250 and 225 lbf (1100 and 1000 N), respectively.

2. Product: Subject to compliance with requirements, provide "Duraflake FR" by Willamette Industries, Inc.

D. Fire-Retardant Fiberboard: Medium-density fiberboard panels complying with ANSI A208.2, made from softwood fibers, synthetic resins, and fire-retardant chemicals mixed together at time of panel manufacture to achieve flame-spread index of 25 or less and smoke-developed index of 200 or less per ASTM E 84.

1. Product: Subject to compliance with requirements, provide "Medite FR" by SierraPine Ltd.; Medite Div.

2.05 MISCELLANEOUS MATERIALS

A. Furring, Blocking, Shims, and Hanging Strips: 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 nonferrous-metal or hot-dip galvanized anchors and inserts on inside face of exterior walls and elsewhere as required for corrosion resistance. Provide toothed-steel or lead expansion sleeves for drilled-in-place anchors.

C. Adhesives, General: Adhesives shall not contain urea formaldehyde.

D. VOC Limits for Installation Adhesives: Installation adhesives shall comply with the following limits for VOC content when calculated according to 40 CFR 59, Subpart D (EPA Method 24):

1. Wood Glues: 30 g/L.
2. Multipurpose Construction Adhesives: 70 g/L.
3. Contact Adhesive: 250 g/L.

E. Adhesive for Bonding Plastic Laminate: Unpigmented contact cement.

1. Adhesive for Bonding Edges: Hot-melt adhesive or adhesive specified above for faces.

2.06 FABRICATION, GENERAL

A. Interior Woodwork Grade: Unless otherwise indicated, provide Premium-grade interior woodwork complying with referenced quality standard.

B. Wood Moisture Content: Comply with requirements of referenced quality standard for wood moisture content in relation to ambient relative humidity during fabrication and in installation areas.
C. Sand fire-retardant-treated wood lightly to remove raised grain on exposed surfaces before fabrication.

D. Fabricate woodwork to dimensions, profiles, and details indicated. Ease edges to radius indicated for the following:

1. Corners of Cabinets and Edges of Solid-Wood (Lumber) Members 3/4 Inch (19 mm) Thick or Less: 1/16 inch (1.5 mm).
2. Edges of Rails and Similar Members More Than 3/4 Inch (19 mm) Thick: 1/8 inch (3 mm).
3. Corners of Cabinets and Edges of Solid-Wood (Lumber) Members and Rails: 1/16 inch (1.5 mm).

E. Complete fabrication, including assembly, finishing, 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.

F. Shop-cut openings to maximum extent possible to receive hardware, appliances, plumbing fixtures, 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.

1. Seal edges of openings in countertops with a coat of varnish.

2.07 RECEPTION DESK

A. Grade: Premium.

B. Wood Species and Cut for Transparent Finish: Rift Cut, White Oak.

1. Grain Matching: Run and match grain horizontally for drawer fronts, doors, and fixed panels.

C. Semiexposed Surfaces: Provide surface materials indicated below:

1. Surfaces Other Than Drawer Bodies: Compatible species to that indicated for exposed surfaces, stained to match.
2. Drawer Sides and Backs: Solid-hardwood lumber, stained to match species indicated for exposed surfaces.
3. Drawer Bottoms: Hardwood plywood, same species as for exposed surfaces.

D. Solid Surfacing Material: Fabricate interior solid surface in sizes and shapes required to comply with requirements indicated, including details on Drawings and final shop drawings.

1. Fabricate tops in one piece unless otherwise indicated. Comply with solid-surfacing-material manufacturer’s written recommendations for adhesives, sealers, fabrication, and finishing.

   a. Layout: Layout joints to minimize joints.
2.08 LAVATORY APRON PANEL, HARDWARE AND ACCESSORIES

A. Grade: Premium.

B. Laminate Cladding for Exposed Surfaces: High-pressure decorative laminate complying with the following requirements:
   1. Horizontal Surfaces Other Than Tops: Grade HGS.
   2. Vertical Surfaces: Grade VGS.

C. Colors, Patterns, and Finishes: Provide materials and products that result in colors and textures of exposed laminate surfaces complying with the following requirements:
   1. As indicated by laminate manufacturer's designations.

D. Hardware Standard: Comply with BHMA A156.9 for items indicated by referencing BHMA numbers or items referenced to this standard.

E. Vanity Supports: Aluminum, ADA compliant vanity brackets.
   1. Basis of Design: Rakks EHV-Vanity supports (EH-1818-LV) or approved equivalent.
   2. Size: 18 inches by 21 inches by ½ inch.
   3. Finish: Manufacturer’s standard finish for concealed hardware. As selected by Architect for exposed hardware.

2.09 PLASTIC-LAMINATE CLOSET SHELVING AND CLOTHES RODS

A. Shelving: 3/4-inch plastic laminate shelving with clothes rods.

B. Grade: Premium.

C. Laminate Cladding for Exposed Surfaces: High-pressure decorative laminate complying with the following requirements:
   1. Horizontal Surfaces: HGS.
   2. Vertical Surfaces: VGS.
   3. Edges: VGS.
   4. Shelf Cleats: 3/4-inch plastic laminate by-5-1/2-inch with 1-1/2-inch diameter slot for rod support.

D. Clothes Rods: 1-1/2-inch-diameter aluminum tubes.

E. Clothes Rods: 1-inch diameter chromium-plated steel tubing x .080-inch wall thickness.

F. Application: Provide in every student room closet.

2.10 SOLID SURFACING WINDOW STOOLS

A. Window Stools: ½ inch solid surface with one inch built up edge.

   1. Edge Treatment: Eased edges.
   2. Size: Provide size that provides minimum number of joints. Location of joints to be approved by Architect.
3. Color: White, as approved by Architect.
4. Tolerance: To be installed level. No lippage will be accepted at joints.
5. Location: As indicated on Drawings.

2.11 SHOP FINISHING

A. Grade: Provide finishes of same grades as items to be finished.

B. General: Finish architectural woodwork at fabrication shop as specified in this Section. Defer only final touchup, cleaning, and polishing until after installation.

C. General: Shop finish transparent-finished interior architectural woodwork at fabrication shop as specified in this Section. Refer to Division 09 painting Sections for finishing opaque-finished architectural woodwork.

D. General: Drawings indicate items that are required to be shop finished. Finish such items at fabrication shop as specified in this Section. Refer to Division 09 painting Sections for finishing architectural woodwork not indicated to be shop finished.

E. Shop Priming: Shop apply the prime coat including backpriming, if any, for transparent-finished items specified to be field finished. Refer to Division 09 painting Sections for material and application requirements.

F. Preparation for Finishing: Comply with referenced quality standard for sanding, filling countersunk fasteners, sealing concealed surfaces, and similar preparations for finishing architectural woodwork, as applicable to each unit of work.

1. Backpriming: Apply one coat of sealer or primer, compatible with finish coats, to concealed surfaces of woodwork. Apply two coats to back of paneling and to end-grain surfaces. Concealed surfaces of plastic-laminate-clad woodwork do not require backpriming when surfaced with plastic laminate, backing paper, or thermoset decorative panels.

G. Transparent Finish:

1. Grade: Premium.
2. AWI Finish System: Catalyzed polyurethane.
4. Wash Coat for Stained Finish: Apply wash-coat sealer to woodwork made from closed-grain wood before staining and finishing.
5. Open Finish for Open-Grain Woods: Do not apply filler to open-grain woods.
6. Filled Finish for Open-Grain Woods: After staining (if any), apply paste wood filler to open-grain woods and wipe off excess. Tint filler to match stained wood.
   a. Apply wash-coat sealer after staining and before filling.
7. Sheen: Satin, 31-45 gloss units measured on 60-degree gloss meter per ASTM D 523.
PART 3 - EXECUTION

3.01 PREPARATION

A. Before installation, condition woodwork to average prevailing humidity conditions in installation areas.

B. Before installing architectural woodwork, examine shop-fabricated work for completion and complete work as required, including removal of packing and backpriming.

3.02 INSTALLATION

A. Grade: Install woodwork to comply with requirements for the same grade specified in Part 2 for fabrication of type of woodwork involved.

B. Assemble woodwork and complete fabrication at Project site to comply with requirements for fabrication in Part 2, to extent that it was not completed in the shop.

C. Install woodwork level, plumb, true, and straight. Shim as required with concealed shims. Install level and plumb (including tops) to a tolerance of 1/8 inch in 96 inches (3 mm in 2400 mm).

D. Scribe and cut woodwork to fit adjoining work, refinish cut surfaces, and repair damaged finish at cuts.

E. Fire-Retardant-Treated Wood: Handle, store, and install fire-retardant-treated wood to comply with chemical treatment manufacturer's written instructions, including those for adhesives used to install woodwork.

F. Anchor woodwork to anchors or blocking built in or directly attached to substrates. Secure with countersunk, concealed fasteners and blind nailing as required for complete installation. Use fine finishing nails for exposed fastening, countersunk and filled flush with woodwork and matching final finish if transparent finish is indicated.

G. Lavatory Apron: Anchor securely through back of apron panel.

1. Align adjacent solid-surfacing-material apron panels. Carefully dress joints smooth, remove surface scratches, and clean entire surface.
2. Install apron panels with no more than 1/8 inch in 96-inch (3 mm in 2400-mm) sag, bow, or other variation from a straight line.

H. Touch up finishing work specified in this Section after installation of woodwork. Fill nail holes with matching filler where exposed.

I. Refer to Division 09 Sections for final finishing of installed architectural woodwork not indicated to be shop finished.

3.03 ADJUSTING AND CLEANING

A. Repair damaged and defective woodwork, where possible, to eliminate functional and visual defects; where not possible to repair, replace woodwork. Adjust joinery for uniform appearance.

B. Clean, lubricate, and adjust hardware.
C. Clean woodwork on exposed and semiexposed surfaces. Touch up shop-applied finishes to restore damaged or soiled areas.

END OF SECTION
SECTION 08 88 13 - FIRE-RESISTANT GLAZING ASSEMBLIES

ADDENDUM NO. 3

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SUMMARY

A. Section Includes:

1. Fire-resistance-rated glazing in rated doors, 90 minute.
2. Fire-resistance-rated doors and door frames, 90 minute.

B. Related Sections:

1. Refer to Division 08 Section “Hollow Metal Doors and Frames” for fire rated doors and frames not fully glazed.
2. Refer to Division 08 Section “Door Hardware” for door hardware.

1.03 DEFINITIONS

A. Glass Manufacturers: Firms that produce primary glass, fabricated glass, or both, as defined in referenced glazing publications.

B. Glass Thicknesses: Indicated by thickness designations in millimeters according to ASTM C 1036.

1.04 COORDINATION

A. Coordinate glazing channel dimensions to provide necessary bite on glass, minimum edge and face clearances, and adequate sealant thicknesses, with reasonable tolerances.

1.05 ACTION SUBMITTALS

A. Product Data: For each type of product.


B. Shop Drawings:

1. Include plans, elevations and details of product showing component dimensions; framed opening requirements, dimensions, tolerances, and attachment to structure.

C. LEED Submittals:

1. Product Data: For sealants, indicating VOC content.
2. Laboratory Test Reports: For sealants, indicating compliance with requirements for low-emitting materials.

D. Glass Samples: For each type of glass product; 12 inches (300 mm) square.

E. Glazing Schedule: List glass types and thicknesses for each size opening and location. Use same designations indicated on Drawings.

1.06 INFORMATIONAL SUBMITTALS

A. Qualification Data: For installers and glass testing agency.

B. Product Certificates: For each type of glass and glazing product, from manufacturer.

1. Certificates of compliance from glass and glazing materials manufacturers attesting that glass and glazing materials furnished for project comply with requirements.

a. Separate certification will not be required for glazing materials bearing manufacturer’s permanent label designating type and thickness of glass, provided labels represent a quality control program involving a recognized certification agency or independent testing laboratory acceptable to authority having jurisdiction.

C. Sample Warranties: For special warranties.

1.07 QUALITY ASSURANCE

A. Installer Qualifications: A qualified installer who employs glass installers for this Project who are certified under the National Glass Association's Certified Glass Installer Program.

B. Fire-Rated Assemblies: Assemblies complying with NFPA 80 that are classified and labeled by UL, for fire ratings indicated, based on testing according to NFPA 252. Assemblies must be factory-welded or come complete with factory-installed mechanical joints and must not require job site fabrication.

C. Listings and Labels - Fire Rated Assemblies: Under current follow-up service by Underwriters Laboratories® maintaining a current listing or certification. Label assemblies according to limits of manufacturer's listing.

1.08 DELIVERY, STORAGE, AND HANDLING

A. Protect glazing materials according to manufacturer's written instructions. Prevent damage to glass and glazing materials from condensation, temperature changes, direct exposure to sun, or other causes.

1.09 FIELD CONDITIONS

A. Environmental Limitations: Do not deliver or install fire-resistant glazing until spaces are enclosed and weathertight and temporary HVAC system is operating and maintaining ambient temperature conditions at occupancy levels during the remainder of the construction period.
B. Obtain field measurements prior to fabrication of frame units. If field measurements will not be available in a timely manner coordinate planned measurements with the work of other sections.

1. Note whether field or planned dimensions were used in the creation of the shop drawings.

C. Coordinate the work of this section with others effected including but not limited to: other interior components and door hardware beyond that provided by this section.

1.10 WARRANTY

A. Manufacturer's Special Warranty on Laminated Glass: Manufacturer agrees to replace laminated-glass units that deteriorate within specified warranty period. Deterioration of laminated glass is defined as defects developed from normal use that are not attributed to glass breakage or to maintaining and cleaning laminated glass contrary to manufacturer's written instructions. Defects include edge separation, delamination materially obstructing vision through glass, and blemishes exceeding those allowed by referenced laminated-glass standard.

1. Warranty Period: 5 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Source Limitations for Glass: Obtain from single source from single manufacturer for each glass type.

B. Source Limitations for Glazing Accessories: Obtain from single source from single manufacturer for each product and installation method.

2.02 PERFORMANCE REQUIREMENTS

A. General: Installed glazing systems shall withstand normal thermal movement and impact loads (where applicable) without failure, including loss or glass breakage attributable to the following: defective manufacture, fabrication, or installation; deterioration of glazing materials; or other defects in construction.

B. Fire Rating Requirements:

1. Duration—Opening Applications in fire partitions or area separation walls and corridors where opening protection is specified: Capable of providing 90 minute rating.

C. Delegated design: For the performance requirements listed below requiring structural design provide data, calculations and drawings signed and sealed by an engineer licensed in the state [province] where the project is located.

D. Regulatory Requirements: Comply with provisions of the following:

1. Where indicated to comply with accessibility requirements, comply with Americans with Disabilities Act (ADA), "Accessibility Guidelines for Buildings and Facili-
ties (ADAAG)," ANSI A117.1, FED-STD-795, "Uniform Federal Accessibility Standards," as follows:

a. Handles, Pulls, Latches, Locks, and other Operating Devices: Shape that is easy to grasp with one hand and does not require tight grasping, tight pinching, or twisting of the wrist.
b. Door Closers: Comply with the following maximum opening-force requirements indicated:

1) Accessible doors no more than 5 lbf (22.2 N) push or pull force
2) Fire Doors: Minimum opening force allowable by authorities having jurisdiction

2. Compliance with this standard requires auto openers to be added to the opening due to the weight of the doors. Coordinate the addition of auto-openers with the Division 8 section “Door Hardware” or other section containing these devices. Verify that the Authority Having Jurisdiction is using NFPA 101 and/or IBC and which edition dates of both as a requirement for the facility. NFPA 101: Comply with the following for means of egress doors:

a. Latches, Locks, and Exit Devices: Not more than 15 lbf (67 N) to release the latch. Locks shall not require the use of a key, tool, or special knowledge for operation.
b. Door Closers: Not more than 30 lbf (133 N) to set door in motion and not more than 15 lbf (67 N) to open door to minimum required width.

3. IBC 2012 Chapter 10 Means of Egress: Comply with the following for means of egress doors:

a. Latches, Locks, and Exit Devices: Not more than 15 lbf (67 N) to release the latch. Locks shall not require the use of a key, tool, or special knowledge for operation.
b. Door Closers: Not more than 30 lbf (133 N) to set door in motion and not more than 15 lbf (67 N) to open door to minimum required width.

2.03 GLASS PRODUCTS, GENERAL

A. Glazing Publications: Comply with published recommendations of glass product manufacturers and organization below unless more stringent requirements are indicated. Refer to these publications for glazing terms not otherwise defined in this Section or in referenced standards.


B. Safety Glazing Labeling: Permanently mark glazing with certification label of the Safety Glazing Certification Council. Label shall indicate manufacturer's name, type of glass, glass thickness, and safety glazing standard with which glass complies.

2.04 GLASS PRODUCTS

A. Ultraclear Float Glass: ASTM C1036, Type I, Quality-Q3, Class I (clear), with visible light transmission not less than 91 percent.
B. Ultraclear Laminated Glass: ASTM C 1172. Use materials that have a proven record of no tendency to bubble, discolor, or lose physical and mechanical properties after fabrication and installation.

1. Construction: Laminate glass with polyvinyl butyral interlayer unless fire-protection or fire-resistance rating is based on another product.
2. Interlayer Thickness: Provide thickness as needed to comply with requirements.
3. Interlayer Color: Clear unless otherwise indicated.

2.05 FIRE-RESISTANCE-RATED GLAZING

A. Fire-Resistance-Rated Glazing: Listed and labeled by a testing agency acceptable to authorities having jurisdiction, for fire-resistance ratings indicated, based on testing according to ASTM E 119 or UL 263.

B. Fire-Resistance-Rated Glazing Labeling: Permanently mark fire-resistance-rated glazing with certification label of a testing agency acceptable to authorities having jurisdiction. Label shall indicate manufacturer's name, test standard, that the glazing is approved for use in walls, and the fire-resistance rating in minutes.

C. Ultraclear Laminated Glass with Intumescent Interlayers for 90 Minute Rating: Laminated glass made from multiple plies of uncoated, ultraclear float glass; with intumescent interlayers; and complying with 16 CFR 1201, Category II.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   a. AGC Glass Company North America, Inc.
   b. Pilkington North America.
   c. SAFTI FIRST Fire Rated Glazing Solutions.
   d. Technical Glass Products.
   e. Vetrotech Saint-Gobain.

2. Basis of Design: TGP Pyrostop, 90 minute with TGP Doors/Frames Heat Barrier Series or SaftiFirst, SuperLite IIXL with GPX Builders Series Doors/Frames.
3. Thickness: 1-17/16 inches
4. Weight: 17.61 lbs/sq.ft.
6. Impact Safety Rating: CPSC 16 CFR 1201 Cat. 1 and II.
7. Dimensions: Must meet max. clear view area of 4,952 sq. in., measuring at least 124 in. on the long side.
8. Visible Light Transmission: Must meet 0.898 with ultraclear glazing.
9. Sound Transmission Rating: Must provide a minimum of STC 44 rating in 1-1/2 inch standard profile.

D. Logo: Each piece of fire-rated glazing shall be labeled with a permanent logo including name of product, manufacturer, testing laboratory (UL® only), fire rating period, safety glazing standards, and date of manufacture.

E. Performance: Glass must be rated to stop fire from either direction and must meet all testing requirements including the required hose-stream test (where fire-rating exceeds 20 minutes).
2.06 GLAZING ACCESSORIES

A. Provide glazing gaskets, glazing sealants, glazing tapes, setting blocks, spacers, edge blocks, and other glazing accessories that are compatible with glazing products and each other and are approved by testing agencies that listed and labeled fire-resistant glazing products with which products are used for applications and fire-protection ratings indicated.

B. Glazing Sealants for Fire-Rated Glazing Products: Neutral-curing silicone glazing sealant complying with ASTM C 920, Type S, Grade NS, Class 50, Use NT. Comply with sealant and glass manufacturers' written instructions for selecting glazing sealants suitable for applications indicated.

1. Sealants shall have a VOC content of 250 g/L or less.
2. Sealants shall comply with the testing and product requirements of the California.
3. Colors of Exposed Glazing Sealants: As selected by Architect from manufacturer's full range.

C. Back-Bedding Mastic Glazing Tapes: Preformed, butyl-based, 100 percent solids elastomeric tape; nonstaining and nonmigrating in contact with nonporous surfaces; with or without spacer rod as recommended in writing by tape and glass manufacturers for application indicated; and complying with ASTM C 1281 and AAMA 800 for products indicated below:

1. AAMA 804.3 tape, where indicated.
2. AAMA 806.3 tape, for glazing applications in which tape is subject to continuous pressure.
3. AAMA 807.3 tape, for glazing applications in which tape is not subject to continuous pressure.

D. Expanded Cellular Glazing Tapes: Closed-cell, PVC foam tapes; factory coated with adhesive on both surfaces; and complying with AAMA 800 for the following types:

1. AAMA 810.1, Type 1, for glazing applications in which tape acts as the primary sealant.
2. AAMA 810.1, Type 2, for glazing applications in which tape is used in combination with a full bead of liquid sealant.

2.07 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. 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.

C. Perimeter Insulation for Fire-Resistive Glazing: Product that is approved by testing agency that listed and labeled fire-resistant glazing product with which it is used for application and fire-protection rating indicated.
2.08 FABRICATION OF GLAZING UNITS

A. Fabricate glazing units in sizes required to fit 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 publications, to comply with system performance requirements.

2.09 FIRE-RESISTANT GLAZED DOORS

A. Construction: Narrow-profile, roll-formed steel architectural grade specialty fire doors. Conventional break-shape type hollow metal steel fire-rated doors will not be considered an acceptable substitute for the Fireframes Designer Series doors specified in this section as they do not conform to the project design intent and/or aesthetic and quality standards.

1. Knock down frames are not permitted.

B. Steel Framing System including 90-minute rated doors, 90-minute rated windows.

1. Frame: Steel profiled formed tubing.
2. Fasteners: As recommended by manufacturer
4. Glazing Compounds:
   a. FireLite®: Approved closed cell PVC tape. Glaze FireLite® panels that exceed 1,393 sq. inches for 90-minute ratings with “Kerafix 2000” glazing tape supplied by manufacturer.

2.10 FIRE-RESISTANT STEEL FRAMES

A. Steel Framing System including 90-minute rated doors, 90-minute rated windows.

1. Frame: Steel profiled formed tubing, narrow profile.
2. Fasteners: As recommended by manufacturer

B. Furnish frame assemblies pre-welded.

1. When necessary, splice frames too large for shop fabrication or shipping or to fit in available building openings.
2. Fit with suitable fasteners.
3. Knock-down frames are not permitted

2.11 FABRICATION

A. Furnish frame assemblies pre-welded.

1. When necessary, splice frames too large for shop fabrication or shipping or to fit in available building openings.
2. Fit with suitable fasteners.
3. Knock-down frames are not permitted
B. Field glaze door and frame assemblies.

C. Factory prepare steel door assemblies and install all hardware.

D. Fabrication Dimensions: Fabricate to fire-rated field dimensions.

E. Obtain approved shop drawings prior to fabrication.

2.12 DOOR HARDWARE

A. Furnish hardware with 90 minute fire door by the manufacturer.

B. Select hardware from door manufacturer's standard recommended and approved hardware groups as specified in Division 8 Section “Door Hardware”.

2.13 FINISHES, GENERAL

A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

B. Finish frames after assembly.

C. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable. Noticeable variations in the same piece are not acceptable.

2.14 POWDERCOAT FINISHES

A. Finish after fabrication.

B. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable. Noticeable variations in the same piece are not acceptable.

C. Interior and Exterior Steel Finishes (Note: this finish is suitable for exterior exposed portions of the wall systems, including extruded aluminum covers).

1. Powder-Coat Finish: Polyester Super Durable powder coating which meets AAMA 2604 for chalking and fading. Apply manufacturer's standard powder coating finish system applied to factory-assembled frames before shipping, complying with manufacturer's recommended instructions for surface preparation including pretreatment, application, and minimum dry film thickness.


3. Acceptable Manufacturers:
   a. Tiger Drylac

PART 3 - EXECUTION

3.01 EXAMINATION

A. Examine framing, glazing channels, and stops, with Installer present, for compliance with manufacturing and installation tolerances, including those for size, squareness, and offsets at corners, and for compliance with minimum required face and edge clearances.

B. Provide openings plumb, square and within allowable tolerances.
1. Provide 3/8 inch shim space at all walls

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 PREPARATION

A. Clean glazing channels and other framing members receiving glass immediately before glazing. Remove coatings not firmly bonded to substrates.

B. Examine glazing units to locate fire side and protected side. Label or mark units as needed so that fire side and protected side are readily identifiable. Do not use materials that leave visible marks in the completed work.

3.03 GLAZING, GENERAL

A. Use methods approved by testing agencies that listed and labeled fire-resistant glazing products.

B. 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.

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 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. Provide spacers for glass lites where length plus width is larger than 50 inches (1270 mm).

1. Locate spacers directly opposite each other on both inside and outside faces of glass. Install correct size and spacing to preserve required face clearances unless gaskets and glazing tapes are used that have demonstrated ability to maintain required face clearances and to comply with system performance requirements.

2. Provide 1/8-inch (3-mm) minimum bite of spacers on glass and use thickness equal to sealant width. With glazing tape, use thickness slightly less than final compressed thickness of tape.

H. Provide edge blocking where indicated or needed to prevent glass lites from moving sideways in glazing channel, as recommended in writing by glass manufacturer and according to requirements in referenced glazing publications.

I. Set glass lites with proper orientation so that coatings face fire side or protected side as specified.
J. Where wedge-shaped gaskets are driven into one side of channel to pressurize sealant or gasket on opposite side, provide adequate anchorage so gasket cannot walk out when installation is subjected to movement.

K. Square cut wedge-shaped gaskets at corners and install gaskets in a manner recommended by gasket manufacturer to prevent corners from pulling away; seal corner joints and butt joints with sealant recommended by gasket manufacturer.

3.04 TAPE GLAZING

A. Position tapes on fixed stops so that, when compressed by glass, their exposed edges are flush with or protrude slightly above sightline of stops.

B. Install tapes continuously, but not necessarily in one continuous length. Do not stretch tapes to make them fit opening.

C. Cover vertical framing joints by applying tapes to heads and sills first and then to jambs. Cover horizontal framing joints by applying tapes to jambs and then to heads and sills.

D. Place joints in tapes at corners of opening with adjoining lengths butted together, not lapped. Seal joints in tapes with compatible sealant approved by tape manufacturer.

E. Do not remove release paper from tape until right before each glazing unit is installed.

F. Apply heel bead of elastomeric sealant.

G. Center glass lites in openings on setting blocks and press firmly against tape by inserting dense compression gaskets formed and installed to lock in place against faces of removable stops. Start gasket applications at corners and work toward centers of openings.

H. Apply cap bead of elastomeric sealant over exposed edge of tape.

3.05 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. 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. Force sealants into glazing channels to eliminate voids and to ensure complete wetting or bond of sealant to glass and channel surfaces.

C. Tool exposed surfaces of sealants to provide a substantial washaway from glass.

3.06 DOOR AND FRAME INSTALLATION

A. Refer to manufacturer's Installation Manual

3.07 CLEANING AND PROTECTION

A. Immediately after installation, remove nonpermanent labels and clean surfaces.

B. Protect glass from contact with contaminating substances resulting from construction operations. Examine glass surfaces adjacent to or below exterior concrete and other ma-
sonry surfaces at frequent intervals during construction, but not less than once a month, for buildup of dirt, scum, alkaline deposits, or stains.

1. If, despite such protection, contaminating substances do come into contact with glass, remove substances immediately as recommended in writing by glass manufacturer.

C. Remove and replace glass that is damaged during construction period.

D. 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 in writing by glass manufacturer.

END OF SECTION
PART 1 - GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SUMMARY

A. Section includes

1. Pre-manufactured, electric fireplace.

1.03 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for electric fireplace.
2. Include rated capacities, operating characteristics, electrical characteristics, and furnished specialties and accessories.

B. Shop Drawings:

1. Include plans, elevations, sections, and attachment details.
2. Include details of equipment assemblies. Indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.
3. Include diagrams for power, signal, and control wiring.

C. Samples for Initial Selection: For each type of exposed finish.

1. Ember Rock Sets: Submit colors available for selection.

D. Product Schedule: For electric fireplace. Use same designations indicated on Drawings.

1.04 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer.

B. Sample Warranty: For manufacturer’s warranty.

1.05 CLOSEOUT SUBMITTALS

A. Maintenance Data: For manufactured electric fireplace to include in maintenance manuals.

B. Operation and Maintenance Data: For manufactured electric fireplace to include in operation and maintenance manuals.
1.06 QUALITY ASSURANCE

A. Manufacturer Qualifications: Minimum 5 year experience manufacturing similar products.
B. Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by manufacturer.
C. Welding Qualifications: Qualify procedures and personnel according to AWS D1.3, "Structural Welding Code - Sheet Steel."

1.07 DELIVERY, STORAGE, AND HANDLING

A. Delivery of all products shall be scheduled so as to allow for prompt installation immediately following delivery. All materials shall be fully protected from damage from other trades as well as damage from inclement weather and other unforeseen job site hazards.
B. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's recommended limits.

1.08 WARRANTY

A. Manufacturer's Warranty: Manufacturer and Installer agree to repair or replace components of manufactured electric fireplace that fail(s) in materials or workmanship within specified warranty period.
   1. Warranty Period: 5 year(s) from date of Substantial Completion.

PART 2 - PRODUCTS

2.01 PRODUCT APPROVALS

A. Fireplace products shall comply with all local building codes and regulations. In addition, products must have the following approvals and meet the following specifications:
   1. UL 127/UL-CS610 standards
   2. WHI 764-12354

2.02 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   1. Napoleon Fireplaces.
   2. Majestic Products.
   3. Dimplex North America.
B. Basis-of-Design Product: Subject to compliance with requirements, provide Napoleon Alluravision 60 Slimline NEFL60CHS Linear Electric Fireplace or approved comparable product.

2.03 SYSTEM DESCRIPTION

A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
2.04 ELECTRIC FIREPLACE

A. Indicated electric fireplace with required accessories as stated within the drawings and specifications.
   1. The framing dimensions are as follows: width 62-9/16 inches, height 17-5/16 inches, and depth 5-13/16 inches.
   2. Cam-lock damper required.

B. Electric Fireplace: Charcoal powder finish; embers and pan burner; tempered glass panel.
   1. Style: Linear.
   2. Heater Output: 5,000 BTU (1500 W).
   5. Provide forced air blower kit, on/off with wall switch.
   6. Trim Kits, Brushed Stainless.

2.05 ACCESSORIES

A. Adjustable heat.

B. High density LED lights.

C. Controls:
   1. Wall Switches.
   2. Wall Mounted Controls.

D. Circulating Fans: Manufacturer's standard circulating fan compatible with specified fireplace

E. Remote control.

PART 3 - EXECUTION

3.01 EXAMINATION

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

B. Examine roughing-in for manufactured electric fireplace piping to verify actual locations of piping connections before equipment installation.

C. Prepare written report, endorsed by Installer, listing conditions detrimental to performance.

D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 PREPARATION

A. When finishing the wall around the fireplace, it is critical that the wall covering be fastened properly. It is acceptable to pre-drill holes and use self-tapping screws which may be used to fasten a backer for tile, marble, etc. Screws being installed through non-combustible board should be self-tapping type with a maximum length of 2 inches. Wall covering fasteners, such
as screws or nails, are not permitted in some locations. Do not drill or install longer screws which may penetrate into the lower cover panel area as this may damage internal components.

B. Only non-combustible materials may be used over the face of the appliance.
   
   1. Acceptable Products: DUROCK (non-combustible material) may be tied in to the entire perimeter of the fireplace for durability/

C. Minimum of cement board (this non-combustible panel is ULC listed as a wall shield/floor protector) and fasten to the entire perimeter framing.

D. Use fiberglass (mesh) tape for all joints in area of the fireplace.

E. Use Yellow joint mud (contains high amounts of glue) – two coats, finishing with one coat of green topping mud, sand and prep for painting.

F. If not using a surround, a metal “L” Trim may be used to finish perimeter of cement board.

G. A full single sheet of non-combustible board (no joints) above the unit is recommended.
   
   1. Attach the non-combustible board to framing only and not directly to the unit to allow for expansion and contraction during normal operation.

H. Wall Surface will be flush with the face of the fireplace (Fireplace and wall to be covered with Non-Combustibles, such as tile), or the Framing will be flush with the face of the fireplace (Flat Wall appearance).

I. Note: Do not drive excessively long screws into the face of the unit as internal parts may be damaged.

3.03 INSTALLATION

A. Comply with NECA 1.

B. Install in accordance with manufacturer’s instructions, ANSI Z21.44 and the requirements of authorities having jurisdiction.

C. Wiring Method: Install cables in raceways and cable trays except within consoles, cabinets, desks, and counters. Conceal raceway and cables except in unfinished spaces.
   
   1. Install plenum cable in environmental air spaces, including plenum ceilings.
   2. Comply with requirements for cable trays specified in Division 26 Section "Cable Trays for Electrical Systems."
   3. Comply with requirements for raceways and boxes specified in Division 26 Section "Raceways and Boxes for Electrical Systems."

D. Wiring within Enclosures: Bundle, lace, and train conductors to terminal points with no excess and without exceeding manufacturer’s limitations on bending radii. Install lacing bars and distribution spools.

E. Do not begin installation until substrates have been properly prepared.
3.04 PREPARATION
   A. Clean surfaces thoroughly prior to installation.
   B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.05 INSTALLATION
   A. Install in accordance with manufacturer's instructions and requirements of authorities having jurisdiction.
   B. Use manufacturer's guidelines for minimum clearances to combustibles, walls, and finishes.
   C. Anchor all components firmly in position for long life under hard use.
   D. Upon completion of installation, visually inspect all exposed surfaces. Touch up scratches and abrasions with touch up paint recommended by the manufacturer; make imperfections invisible to the unaided eye from a distance of 5 feet (1.5 m).

3.06 PROTECTION
   A. Protect installed products until completion of project.
   B. Touch-up, repair or replace damaged products before Substantial Completion.

3.07 ADJUSTING
   A. Adjust hardware and moving parts to function smoothly, and lubricate as recommended by manufacturer.

END OF SECTION
PART 1 - GENERAL

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

1.02 SUMMARY
   A. Section Includes:
      1. Electrically operated, front-projection screens and controls.

1.03 DEFINITIONS
   A. Gain: Ratio of light reflected from screen material to that reflected perpendicularly from a magnesium carbonate surface as determined per SMPTE RP 94.
   B. Half-Gain Angle: The angle, measured from the axis of the screen surface to the most central position on a perpendicular plane through the horizontal centerline of the screen where the gain is half of the peak gain.

1.04 ACTION SUBMITTALS
   A. Product Data: For each type of product.
   B. Shop Drawings: Show layouts and types of front-projection screens. Include the following:
      1. Drop lengths.
      2. Location of seams in viewing surfaces.
      3. Location of screen centerline relative to ends of screen case.
      4. Anchorage details, including connection to supporting structure for suspended units.
      5. Details of juncture of exposed surfaces with adjacent finishes.
      6. Location of wiring connections for electrically operated units.
      7. Wiring diagrams for electrically operated units.
      8. Accessories.
   C. Samples for Initial Selection: For finishes of surface-mounted screen cases.

1.05 CLOSEOUT SUBMITTALS
   A. Maintenance Data: For front-projection screens to include in maintenance manuals.

1.06 DELIVERY, STORAGE, AND HANDLING
   A. Environmental Limitations: Do not deliver or install front-projection screens until spaces are enclosed and weathertight, wet work in spaces is complete and dry, and temporary HVAC system is operating and maintaining ambient temperature and humidity conditions at occupancy levels during the remainder of the construction period.
1.07 COORDINATION

A. Coordinate layout and installation of front-projection screens with adjacent construction, including ceiling suspension systems, light fixtures, HVAC equipment, fire-suppression system, and partitions.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Source Limitations for Projection Screens: Obtain front-projection screens from single manufacturer. Obtain accessories, including necessary mounting hardware, from screen manufacturer.

2.02 ELECTRICALLY OPERATED, FRONT-PROJECTION SCREENS

A. General: Manufacturer's standard units consisting of case, screen, motor, controls, mounting accessories, and other components necessary for a complete installation. Provide units that are listed and labeled as an assembly by UL or another testing and inspecting agency acceptable to authorities having jurisdiction.

1. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

2. Controls: Remote, key-operated, three-position control switch installed in recessed device box with flush cover plate matching other electrical device cover plates in room where switch is installed.

   a. Provide one control switch for each screen.
   b. Provide power supply for low-voltage systems if required.
   c. Provide video interface control for connecting to projector. Projector provides signal to raise or lower screen.

3. Motor in Roller: Instant-reversing motor of size and capacity recommended by screen manufacturer; with permanently lubricated ball bearings, automatic thermal-overload protection, preset limit switches to automatically stop screen in up and down positions, and positive-stop action to prevent coasting. Mount motor inside roller with vibration isolators to reduce noise transmission.

4. Screen Mounting: Top edge securely anchored to rigid metal roller and bottom edge formed into a pocket holding a 3/8-inch- (9.5-mm-) diameter metal rod with ends of rod protected by plastic caps.

   a. Roller for motor in roller is supported by vibration- and noise-absorbing supports.

5. Tab Tensioning: Provide units that have a durable low-stretch cord, such as braided polyester, on each side of screen that is connected to edge of screen by tabs to pull screen flat horizontally.

B. Suspended, Electrically Operated Screens with Automatic Ceiling Closure, with Motor-in Roller, and with Tab Tensioning: Units designed and fabricated for suspended mounting; with bottom of case composed of two panels, fully enclosing screen, motor, and wiring; one panel hinged and designed to open and close automatically when screen is lowered and fully raised, the other removable or openable for access to interior of case.
1. **Products**: Subject to compliance with requirements, provide one of the following:
   a. Da-Lite Screen Company; Tensioned Advantage Deluxe Electrol.
   b. Draper Inc; Access/Series V.
   c. Stewart Filmscreen Corporation; ABT Trap Door ElectriScreen.

2. **Provide metal or metal-lined wiring compartment.**

3. **Screen Case**: Made from metal and fire-retardant materials.

4. **Provide screen case with trim flange to receive ceiling finish.**

5. **Finish** on Exposed Surfaces and Automatic Closure: Prime painted.

### 2.03 FRONT-PROJECTION SCREEN MATERIAL

A. **Matte-White Viewing Surface**: Peak gain of not less than 0.9, and gain of not less than 0.8 at an angle of 50 degrees from the axis of the screen surface.

   1. **Products**: Subject to compliance with requirements, provide one of the following:
      a. BEI Audio-Visual Products; Matte White.
      b. Bretford, Inc; Matte White.
      c. Da-Lite Screen Company; Matte White.
      d. Draper Inc; Matte White.
      e. Stewart Filmscreen Corporation; Snomatte 100.

B. **Material**: Vinyl-coated, glass-fiber fabric.

C. **Mildew-Resistance Rating**: Zero or 1 when tested according to ASTM G 21.

D. **Flame Resistance**: Passes NFPA 701.

E. **Flame-Spread Index**: Not greater than 75 when tested according to ASTM E 84.

F. **Seams**: Where length of screen indicated exceeds maximum length produced without seams in material specified, provide screen with horizontal seam placed as follows:
   1. At top of screen at juncture between extra drop length and viewing surface.

G. **Seamless Construction**: Provide screens, in sizes indicated, without seams.

H. **Edge Treatment**: Without black masking borders.

I. **Size of Viewing Surface**: As indicated on Drawings.

J. **Provide extra drop length** of dimensions and at locations indicated.
   1. **Color**: Same as viewing surface.
PART 3 - EXECUTION

3.01 INSTALLATION

A. Install front-projection screens at locations indicated to comply with screen manufacturer's written instructions.

B. Install front-projection screens with screen cases in position and in relation to adjoining construction indicated. Securely anchor to supporting substrate in a manner that produces a smoothly operating screen with vertical edges plumb and viewing surface flat when screen is lowered.

1. Install low-voltage controls according to NFPA 70 and complying with manufacturer's written instructions.
   a. Wiring Method: Install wiring in raceway except in accessible ceiling spaces and in gypsum board partitions where unenclosed wiring method may be used. Use UL-listed plenum cable in environmental air spaces, including plenum ceilings. Conceal raceway and cables except in unfinished spaces.

2. Test electrically operated units to verify that screen controls, limit switches, closures, and other operating components are in optimum functioning condition.

3.02 FRONT-PROJECTION SCREEN SCHEDULE

A. Electrically Operated, Front-Projection Screen Type: Ceiling mounted with automatic ceiling closure, tab tensioned, metal encased.

2. Screen Surface: Matte white.
3. Size of Viewing Surface: As indicated on Drawings.
4. Extra Drop Length: As needed at top of screen for bottom of screen to be 48 inches above floor.

END OF SECTION
FIRST FLOOR SOG AND FRAMING PLAN - UNIT E

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

1. PLACE ONE STORY AT A TIME
2. PROVIDE HEADERS PER SCHEDULE FOR ALL DOORS, WINDOWS, ETC.
3. PLACE ONE STORY 8" CONCRETE SHEAR WALL UNSHORED
4. PLACE ONE STORY 2" SLAB RECESS
5. PLACE ONE STORY 2'-0" SLAB ON GRADE
6. PLACE ONE STORY 1'-0" FRAMING
7. PROVIDE 5" THICK SLAB REINFORCED WITH SYNTHETIC FIBERS
8. INDICATES ROOF ANCHOR RAIL
9. SEE DRAWING S335 FOR TYPICAL COMPOSITE SLAB DETAILS.
10. INDICATES COLUMN BUILT UP STUD COLUMN. SEE DRAWING S590
11. SEE DRAWING S501 FOR TYPICAL STRUCTURAL STEEL COLUMN SCHEDULE, DESIGN INFORMATION AND LOADING CRITERIA.
12. SEE DRAWING S510 FOR TYPICAL FLOOR FRAMING DETAILS.
13. INDICATES COLUMN INDICATES COLUMN BELOW ONLY.
14. PROVIDE HEADERS PER SCHEDULE FOR ALL DOORS, WINDOWS, ETC.
15. SEE MEP DRAWINGS FOR CONCRETE EQUIPMENT PAD EXACT LOCATION, SCHEDULE, DESIGN INFORMATION AND LOADING CRITERIA.
16. SEE ARCHITECTURAL AND MEP DRAWINGS FOR EXTENT.
17. PROVIDE 5" THICK SLAB REINFORCED WITH SYNTHETIC FIBERS

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These drawings indicate the general scope of the project in terms of architectural design concept, the dimensions of the building, the major architectural elements and the type of structural, mechanical and electrical systems. The drawings do not necessarily indicate or describe all work required for full performance and completion of the requirements of the Contract.

On the basis of the general scope indicated or described, the trade contractors shall furnish all items required for the proper execution and completion of the work.
A. Coordinate the work of each trade with the work of other trades.

Applicable codes, ordinances, rules, regulations and standards

C. All dimensions are from centerline of structure, finish face of wall, face of masonry, or face of existing.

G. Refer to plumbing plans for location of floor drains. Location shall be coordinated with other trades prior to

I. All concrete masonry units (CMU) that do not lay out in full or half 4" in size exposed to view.

J. The non-rated walls to allow for deflection.

M. Door and frame numbers correspond to room numbers. Where

A100-1). See A500 series drawings for doors schedule and details.

N. All door frames shall be located 4" off finish walls or 4" off

Contractor shall coordinate construction or installation of all expansion joint.

P. All slab-on-grade control joints to be cleaned and caulked prior

Q. See reflected ceiling plans for bulkhead locations and details.

S. See A900 series drawings for equipment schedule and plans. Provide

required for all surface mounted items.

W. Apply sealant at all countertops and black splashes at juncture

X. All doors must be installed with at least the minimum maneuvering

clearance at the door approach per the most current Americans

Y. At load bearing structural stud locations, use division 05 stud type.

WALL TYPES FOR STUD SIZE. REFER TO STRUCTURAL DRAWINGS FOR LOAD

1 CONCRETE RAMP TO LOADING DOCK. SEE SHEET A480. 2 CONCRETE STAIR. SEE SHEET A480. 3 LIMESTONE BENCH. 4 MOP SINK, SEE PLUMBING DRAWINGS. 5 WATER COOLER WITH BOTTLE FILLER. SEE PLUMBING DRAWINGS.
REFLECTED CEILING PLAN NOTES

1. SCALE: 1/8" = 1'-0"
2. ISSUE DATE: DRAWN BY CHECKED BY 02/04/19 Author Checker
3. DRAWING TITLE: REFLECTED CEILING PLAN - SECOND FLOOR UNIT C
4. PROJECT NUMBER: BSU 2017-021.01 NW2
5. DRAWING NUMBER: 1

REFLECTED CEILING PLAN - SECOND FLOOR UNIT C

SCOPE DRAWINGS:
These drawings indicate the general scope of the project of structural, mechanical and electrical systems. The drawings do not necessarily indicate or describe all requirements of the Contract. On the basis of the general scope indicated or described, proper execution and completion of the work.

RéVISIONS:
3 ADDENDUM #3 02/26/2019

Education Meeting
Housekeeping
Laundry
Music
Storage
Tutoring Room
Unit C
Unit D
Unit E
Unit A
Unit B

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**ROOF ACCESS LADDER MOUNTING DETAIL**

**ENLARGED ROOF DETAIL**

**ROOF HATCH SECTION**

**ENLARGED ROOF DETAIL**

**ROOF HATCH SECTION**

**ENLARGED ROOF DETAIL**

**ROOF HATCH SECTION**

**ALTERATE #5 - GREEN ROOF**

**ALTERATE #5 - GREEN ROOF SECTION**

**ENLARGED ROOF PLAN - UNIT C**

---

**ALUMINUM ROOF ACCESS LADDER.** Coordinate blocking requirements with MTL. PANEL MFR.

1. **ALL WORK SHALL BE IN ACCORDANCE WITH THE BEST QUALITY STANDARDS OF**

2. **CONTRACT DOCUMENTS CONSIST OF BOTH THE PROJECT MANUAL AND**

   - **T/ BLOCKING**
   
   - **COMPRESSABLE FILLER STRIP**
   
   - **4' - 6"**
   
   - **75.00°**
   
   - **EL:**
   
   - **27' - 11 1/2"**
   
   - **4 7/8"**
   
   - **EQUIPMENT**
   
   - **70' - 6"**
   
   - **1' - 0"**
   
   - **8" ±**
   
   - **2 1/4"**
   
   - **1 1/8"**

---

**GENERAL ROOF NOTES**

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---

**1. ALL WORK SHALL BE IN ACCORDANCE WITH THE BEST QUALITY STANDARDS OF**

**T/ BLOCKING**

**2. CONTRACT DOCUMENTS CONSIST OF BOTH THE PROJECT MANUAL AND**

**T/ STEEL**

**3. ENLARGED FOR CLARITY. PROVIDE ADDITIONAL ITEMS AS REQUIRED TO**

**4. STORE VOLATILE OR FLAMMABLE LIQUIDS IN UL LISTED FIRE CABINETS.**

**5. NOTCH ALL INSULATION AS REQUIRED TO ACCOMMODATE SURFACE MOUNTED**

**6. ROOF INSULATION SADDLES AND CRICKETS ARE DIAGRAMMATIC.**

**7. CONTRACTOR SHALL FURNISH NECESSARY TEMPORARY PROTECTION FROM**

**8. ROOF HATCH SECTION**

**9. PROVIDE SELF ADHERING VAPOR RETARDER BETWEEN**

**10. THERMALLY BROKEN ROOF ACCESS HATCH, BASIS OF DESIGN**

**11. FULLY ADHERED PVC MEMBRANE ROOFING ON 1/2" RECOVER**

**12. ROOF INSULATION CRICKET, TYPICAL**

**13. 3 1/2" PER FOOT SLOPE ROOF INSULATION CRICKET, TYPICAL**

**14. 7" EXPANSION JOINT COVER, BALCO BRBS-2-CSE OR APPROVED EQUIVALENT**

**15. THERMALLY BROKEN ROOF HATCH, BASIS OF DESIGN**

**16. 2 STANDARD ROOF DRAIN AND OVERFLOW DRAIN. FLASH PER**

**17. BALL STATE UNIVERSITY**

**18. 1701 WEST MCKINLEY AVENUE, MUNCIE, IN 47306**

---

**ENLARGED ROOF PLAN - UNIT C**

---

**ROOF HATCH SECTION**

**ROOF HATCH SECTION**

**ROOF HATCH SECTION**

---

**ALTERNATE #5 - GREEN ROOF**

**ALTERNATE #5 - GREEN ROOF SECTION**

---

**ROOF PLAN NOTES**

- **T/ BLOCKING**

- **COMPRESSABLE FILLER STRIP**

- **4' - 6"**

- **75.00°**

- **EL:**

- **27' - 11 1/2"**

- **4 7/8"**

- **EQUIPMENT**

- **70' - 6"**

- **1' - 0"**

- **8" ±**

- **2 1/4"**

- **1 1/8"**
## GLASS SCHEDULE

### SILL

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### DOOR SCHEDULE - 1ST FLOOR

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### GENERAL DOOR NOTES

1. THESE GENERAL NOTES APPLY TO THE DOOR SCHEDULE.
2. DOOR AND FRAME NUMBERS CORRESPOND TO RESPECTIVE ROOM DETAIL.
3. VERTICAL FRAMING MEMBERS AT ALL DOOR FRAMES SHAL L EXTEND TO STRUCTURE ABOVE.
4. UNDERCUT ALL DOORS AS REQUIRED BY FINAL FINISH.
5. PROVIDE CONTINUOUS SEALANT BETWEEN HOLLOW METAL FRAME SURROUNDING CONSTRUCTION UNLESS NOTED OTHERWISE.
6. COORDINATE THROAT OPENINGS WITH WALL WIDTH FOR A LL WRAP NER ACKNOWLEDGMENT.
7. DISCREPANCIES TO THE FABRICATION OF DOORS AND FRAMES. BRING DISCREPANCIES TO THE GENERAL CONTRACTOR FOR RESOLUTION.
<table>
<thead>
<tr>
<th>Door Schedule - 2nd Floor</th>
<th>Glass Schedule</th>
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<tr>
<td><strong>Size</strong></td>
<td><strong>Detail</strong></td>
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<tr>
<td>2R1 SGL 3' - 0&quot; 7' - 0&quot; 1 3/4&quot; WD ST D1 - HM PT F1 - H2 J2 - 20 MIN</td>
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<tr>
<td>249B DBL 2' - 1&quot; 7' - 0&quot; 3/4&quot; MDF LAM D1 - - - -- - - - - - - -250B DBL 2' - 1&quot; 7' - 0&quot; 3/4&quot; MDF LAM D1 - - - -- - - - - - - -</td>
<td></td>
</tr>
<tr>
<td>251 SGL 3' - 0&quot; 7' - 0&quot; 1 3/4&quot; WD ST D1 - HM PT F1 - H2 J2 - 20 MIN</td>
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<tr>
<td>2R2 SGL 3' - 0&quot; 7' - 0&quot; 1 3/4&quot; WD ST D1 - HM PT F1 - H2 J2 - 20 MIN</td>
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<td>258F SGL 3' - 0&quot; 7' - 0&quot; 1 3/4&quot; WD ST D1 - HM PT F1 - H1 J1 - - - 2</td>
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<tr>
<td>261A DBL 2' - 1&quot; 7' - 0&quot; 3/4&quot; MDF LAM D1 - - - -- - - - - - - -261B DBL 2' - 1&quot; 7' - 0&quot; 3/4&quot; MDF LAM D1 - - - -- - - - - - - -</td>
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<tr>
<td>202A DBL 2' - 1&quot; 7' - 0&quot; 3/4&quot; MDF LAM D1 - - - -- - - - - - - -202B DBL 2' - 1&quot; 7' - 0&quot; 3/4&quot; MDF LAM D1 - - - -- - - - - - - -</td>
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<td>203A DBL 2' - 1&quot; 7' - 0&quot; 3/4&quot; MDF LAM D1 - - - -- - - - - - - -203B DBL 2' - 1&quot; 7' - 0&quot; 3/4&quot; MDF LAM D1 - - - -- - - - - - - -</td>
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<td>272 SGL 3' - 0&quot; 7' - 0&quot; 1 3/4&quot; WD ST D1 - HM PT F1 - H2 J2 - 20 MIN</td>
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<td>2R6C SGL 3' - 0&quot; 7' - 0&quot; 1 3/4&quot; FRP POLY D1 - FG PT F1 - H2 J2 - - - 5</td>
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<td>266A DBL 2' - 1&quot; 7' - 0&quot; 3/4&quot; MDF LAM D1 - - - -- - - - - - - -266B DBL 2' - 1&quot; 7' - 0&quot; 3/4&quot; MDF LAM D1 - - - -- - - - - - - -</td>
<td></td>
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</table>

**Abbreviations Legend**

- A: Adds a suffix to the model number of the door.
- B: Adds a suffix to the model number of the door.
- S: Suffix for single doors.
- D: Suffix for double doors.
- F: Suffix for frame doors.

**General Door Notes**

- Q: Provide silencers on all door frames.
- R: See structural drawings for requirements for masonry and steel lintels. Provide structural steel lintels at openings around frames.
- S: Verify all existing conditions and dimensions in the field prior to...
DOOR ELEVATIONS

FRAME ELEVATIONS

WINDOW ELEVATIONS

GENERAL DOOR NOTES
A. THESE GENERAL NOTES APPLY TO THE DOOR SCHEDULE.
B. DOOR AND FRAME NUMBERS CORRESPOND TO RESPECTIVE ROOM NUMBERS.
C. PROVIDE SILENCERS ON ALL DOOR FRAMES.
D. UNDERCUT ALL DOORS AS REQUIRED BY FINAL FINISH.
E. PROVIDE CONTINUOUS SEALANT BETWEEN HOLLOW METAL FRAME AND SURROUNDING CONSTRUCTION UNLESS NOTED OTHERWISE.
F. PROVIDE CONTINUOUS SEALANT BETWEEN INTERIOR AND EXTERIOR FINISH PLAN UNLESS NOTED OTHERWISE.

OVERVIEW OF GLASS SCHEDULE:

A. 1" THICK TEMPERED, LOW E, INSULATING GLAZING WITH 2 PANES 1/4" GLASS AND 8" AIRSPACE.
B. 1/2" AIRSPACE WITH CERAMIC FRIT ON 3RD SURFACE.
C. AL = ALUMINUM
AN = ANODIZED
BL = BORROWED LITE
FG = FIBERGLASS
FRP = FIBERGLASS REINFORCED POLYMER
GHM = GALVANNEALED
GR = GRANITE
HG = HONEYCOMB
HI = HARDWOOD
IP = INDOOR PAPER
LS = LAMINATED
LSI = LAMINATED SELF-INSULATING
LP = LOW E
LPS = LOW E, SELF-INSULATING
M = MASONRY
MI = MEDALLION
ML = MULLION
MS = MARBLE
MT = MUMPS TEXAS
RO = RUBBER OR GUM
SS = STAINLESS STEEL
ST = STEEL
WD = WOOD

90M = 90 MINUTE ASSEMBLY RATING

* = SEE REMARKS COLUMN FOR NOTES
### Casework Schedule - Tall Storage

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<tr>
<th>Type</th>
<th>Mark</th>
<th>Description</th>
<th>Spec. Number</th>
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<td>TS1</td>
<td>Tall Storage - 2 Door W/ Adjustable Shelves</td>
<td>12 32 16</td>
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<td>25181</td>
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### Casework Schedule - Base

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<td>B1</td>
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### Casework Schedule - Wall

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<td>W2</td>
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<td>12 32 16</td>
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<td>Wall Casework - 2 Door</td>
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### Casework Schedule - Open Front

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<td>B16</td>
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<td>12 CUBBIES</td>
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### Notes

- For finishes please see A600.
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<td>AP4 RANGE</td>
<td>FRIGIDAIRE FFEF3048L S</td>
<td>OWNER</td>
<td>CONTRACTOR</td>
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<tr>
<td>AP5 UNDER CABINET MICROWAVE</td>
<td>FRIGIDAIRE FFMV164L S</td>
<td>OWNER</td>
<td>CONTRACTOR</td>
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<tr>
<td>AP6 OVERHEAD RANGE HOOD</td>
<td>FRIGIDAIRE FHWC3040MS</td>
<td>OWNER</td>
<td>CONTRACTOR</td>
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<tr>
<td>AP7 ICE MACHINE</td>
<td>MANITOWOC RNF - 1100 WITH D-570 STORAGE BIN</td>
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<tr>
<td>AP8 SNACK VENDING MACHINE</td>
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<tr>
<td>AP9 BEVERAGE VENDING MACHINE</td>
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<tr>
<td>AV1 60&quot; DISPLAY TELEVISION</td>
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<td>OWNER</td>
<td>CONTRACTOR</td>
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<tr>
<td>CG1 STAINLESS STEEL SURFACE MOUNTED CORNER GUARD</td>
<td>10 2 6 00 SEE SPECS - 90° (1 1/2&quot; X 1 1/2&quot; )</td>
<td>CONTRACTOR</td>
<td>CONTRACTOR</td>
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<tr>
<td>CG2 STAINLESS STEEL SURFACE MOUNTED CORNER GUARD</td>
<td>10 2 6 00 SEE SPECS - 150° FLEXIBLE CORNER GUARD (1 1/2&quot; x 1 1/2&quot; )</td>
<td>CONTRACTOR</td>
<td>CONTRACTOR</td>
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</tr>
<tr>
<td>CG3 SOLID WOOD SURFACE MOUNTED CORNER GUARD</td>
<td>10 26 00 SEE SPECS - 90° (1 1/2&quot; X 1 1/2&quot; )</td>
<td>CONTRACTOR</td>
<td>CONTRACTOR</td>
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<tr>
<td>CH1 1,500 LB CHAIN HOIST AND TROLLEY</td>
<td>14 60 00 SEE SPECS -</td>
<td>CONTRACTOR</td>
<td>CONTRACTOR</td>
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<tr>
<td>FE FIRE EXTINGUISHER CABINET</td>
<td>10 44 13 ACTIVAR COSMOPOLITAN 1037 STAINLESS STEEL, 3&quot; ROLLED TRIM</td>
<td>CONTRACTOR</td>
<td>CONTRACTOR</td>
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<tr>
<td>FP1 ELECTRIC FIREPLACE</td>
<td>10 31 00 ALLURAVISION 60 SLIMELINE NEFL60CHS</td>
<td>CONTRACTOR</td>
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<tr>
<td>MB1 KEYED MAIL CABINET</td>
<td>10 55 00 SEE SPECS - 10X51 (510 INDIVIDUAL MAIL BOXES) SEE ELEVATION.</td>
<td>CONTRACTOR</td>
<td>CONTRACTOR</td>
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<td>MB2 58 EXPRESS PACKAGE LOCKERS</td>
<td>10 55 00 SEE SPECS -</td>
<td>CONTRACTOR</td>
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<tr>
<td>MB3 MAIL COLLECTION BOX</td>
<td>10 55 00 SEE SPECS -</td>
<td>CONTRACTOR</td>
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<tr>
<td>OP1 OPERABLE PARTITION</td>
<td>10 22 38 HUFCOR 642 PAIRED ACOUSTICAL PARTITIONS</td>
<td>CONTRACTOR</td>
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<tr>
<td>OP2 OPERABLE PARTITION</td>
<td>10 22 38 HUFCOR SINGLE MARKERBOARD PARTIONS CENTER PIVOT.</td>
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<tr>
<td>OP3 OPERABLE PARTITION</td>
<td>10 22 38 HUFCOR SINGLE MARKERBOARD PARTIONS CENTER PIVOT.</td>
<td>CONTRACTOR</td>
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</tr>
<tr>
<td>PS1 ELECTRIC PROJECTION SCREEN</td>
<td>11 52 13 DRAPER, INC. PREMIER -</td>
<td>CONTRACTOR</td>
<td>CONTRACTOR</td>
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</tr>
<tr>
<td>SL1 ALUMINUM SHIPS LADDER</td>
<td>05 50 00 O'KEEFFE'S 523 ALUMINUM 75 DEGREE</td>
<td>CONTRACTOR</td>
<td>CONTRACTOR</td>
<td></td>
</tr>
<tr>
<td>VD1 MARKER BOARD W3' x H 6'</td>
<td>10-11-00 SEE SPECS SEE SPECS -</td>
<td>CONTRACTOR</td>
<td>CONTRACTOR</td>
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</tr>
</tbody>
</table>
DORM & CORRIDOR VENTILATION AIR:
- 580 CFM
- 330 CFM
- 395 CFM
- 340 CFM
- 395 CFM
- 455 CFM
- 260 CFM

LOWER LEVEL MAKEUP AIR
- 415 CFM

DORM BATHROOM EXHAUST:
- 600 CFM (AVERAGE)

KITCHENETTE EXHAUST:
- 1230 CFM (INTERMITTENT, TYP. 5 FLOORS)

CUSTODIAL EXHAUST:
- 100 CFM

ELECTRICAL EXHAUST:
- 100 CFM

EF-1C IN-LINE EF

DOAS-1 (WEST WING)

EF-8 IN-LINE EF

CUSTODIAL EXHAUST:
- 100 CFM

ELECTRICAL EXHAUST:
- 100 CFM

TELECOM EXHAUST:
- 0 CFM

ELECTRICAL EXHAUST:
- 100 CFM

UTILITY SPACE EXHAUST:
- 415 CFM

These drawings indicate the general scope of the project in terms of architectural design concept, the dimensions of the building, the major architectural elements and the type of structural, mechanical and electrical systems. The drawings do not necessarily indicate or describe all work required for full performance and completion of the requirements of the Contract. On the basis of the general scope indicated or described, the trade contractors shall furnish all items required for the proper execution and completion of the work.

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NORTH RESIDENCE HALL
NORTH RESIDENTIAL NEIGHBORHOOD PHASE #2

1 WEST WING AIRFLOW SCHEMATIC
NEW CONSTRUCTION DETAIL - DEMOLITION
1/8" = 1'-0"

BYPASS VALVE
SERVICE IN EXISTING TUNNEL
EX 4" BYPASS
AND PIPE
EX 4"

EXISTING 4" VALVE TO
TO VALVE AS NOTED.

HAUL AWAY. CAP WATER
SHALL REMOVE RPZ AND
1/2" TO EXTERIOR BRINE TANK.

1" FROM BRINE TANK. SEE
SPECIFICATIONS

EX 4" SHUTOFF
10"ST FOR CONTINUATION
SEE CIVIL DRAWINGS

MAINTENANCE SUPERVISOR OFFICE

EX 4"

PROVIDE LINK SEAL
3/4"

FOR CONTINUATION
SEE CIVIL DRAWINGS

FL = 95.50

EXISTING 8" COLD WATER MAIN
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