ADDENDUM NO. 2

April 12, 2022

RIVER VALLEY HIGH, MIDDLE, & ELEMENTARY SCHOOLS ADDITIONS & RENOVATIONS
15480 Three Oaks Road
Three Oaks, MI, 49128

TO: ALL BIDDERS OF RECORD

This Addendum forms a part of and modifies the Bidding Requirements, Contract Forms, Contract Conditions, the Specifications, and the Drawings dated March 22, 2022, by Cordogan Clark & Associates. Acknowledge receipt of the Addendum in the space provided on the Bid Form. Failure to do so may subject the Bidder to disqualification.

This Addendum consists of Pages ADD 2-1 through ADD 2-3, RFI Log and Cordogan Clark Addendum No. 2, dated April 12, 2022, consisting of 6 pages, Revised Drawings: C1.1, C2, A2.1C, A3.1B, A4.1, A4.1D, A4.2, A9.0, M2.1A, M2.1B, M2.1C, M2.2A, M2.2B, M2.2C, M4.0, E1.1A, E1.1C, E1.1D, E2.1B, E2.2, E4.2, E4.3, E4.4, and E4.5

A. SPECIFICATION SECTION 01 12 00 – Multiple Contract Summary Section

3. Part 3.03 Bid Categories

   B. Bid Category No. 2 – Sitework

   Add the following Clarification:

   1. Provide all excavation, backfilling, compacting as required for all footings, foundations, stoops, concrete slab on grade including required imported and exported materials as required.

C. Bid Category No. 3 – Concrete.

Add the following Clarification:

1. Refer to Specification Section 055000 Metal Fabrications, assigned to Bid Category No. 5. Part 1.1 B includes furnishing “loose steel lintels” and other embed items. Bid Category No. 4 Masonry shall install all loose lintels and bearing plates in Masonry Work and Bid Category No. 3 Concrete shall install required embedded items in Concrete Work.

D. Bid Category No. 4 – Masonry.

Add the following Clarification:

1. Refer to Clarification No. 3, issued in Addendum No. 1. Revise to read Install all Lintels, and bearing plates furnished by Bid Category No. 5, including Lintels for MEP and CMU walls including all welded and loose lintels.

2. Refer to Specification Section 055000 Metal Fabrications, assigned to Bid Category No. 5. Part 1.1 B includes furnishing “loose steel lintels” and other embed items. Bid Category No. 4 Masonry shall install all loose lintels and bearing plates in Masonry Work and Bid Category No. 3 Concrete shall install required embedded items in Concrete Work.

E. Bid Category No. 5 – Structural & Miscellaneous Steel.

Add the following Clarification:

1. Provide Refer to Specification Section 055000 Metal Fabrications, assigned to Bid Category No. 5. Part 1.1 B includes furnishing “loose steel lintels” and other embed items. Bid Category No. 4 Masonry shall install all loose lintels and bearing plates in Masonry Work and Bid Category No. 3 Concrete shall install required embedded items in Concrete Work.

J. Bid Category No. 10 – Mechanical

Add the following Clarification:

1. Mechanical Contractors shall not use the general project dumpster/rubbish containers for removal and disposal of existing RTU’s, Unit Ventilators and Other “large” HVAC equipment during demolition work. General Mechanical construction debris will be permitted in general dumpster/rubbish containers.

N. **Bid Category No. 13. Asphalt Paving** was added in Addendum No. 1.

B. RFI LOG AND SUBSTITUTION REQUESTS

Refer to the attached RFI Log, dated April 12, 2022.

Refer to the attached approved product Substitution Request Form 00 12 10.

River Valley School District - School Consolidation

Pre-Bid RFI Log
Date - 4/12/2022
CC=Cordogan Clark TSC=The Skillman Corp.

RFI #	Company Submitting RFI	Date Received	RFI Description	RFI Response
1	Hunter-Prell	3/23/2022	Fire Suppression Specs. 211313-14 3.2 A. Connect sprinkler piping to building's interior water-distribution piping. Will the site contractor bring the water supply for fire sys tem into building in riser room 12" AFF?	TSC: Bid Category No. 2 Sitework will bring the water supply to within 5' of the building. Bid Category No. 10 Mechanical will connect and bring water service into the building and provide supply line for Fire Suppression connection and piping.
2	Hunter-Prell	3/23/2022	Fire Suppression specs. 211313-19 3.15 C. Standard-pressure, wet-pipe sprinkler system, NPS and smaller Number 3. Thin wall or Schedule 10 black-steel pipe On the fire plan FP2.1D Note number 2 Line piping to be schedul e 40. Which statement is correct? Can line pipe be sch. 10?	CC: Line pipe shall be schedule 40.
3	Hunter-Prell	3/23/2022	3) Fire suppression plan FP2.1D Keynote 3: Provide and install Fire Protection Riser sized to fully sprinkler th e High School and include (4) Fire Protection zone assemblies in the riser (3) zones assemb lies shall be used for future projects. What consists of "Zone assemblies"?	CC:Fire protection zone assemblies shall include a water pressure gauge, 2" main drain valve, check valve, and water flow switch.
4	S.A.Mormon	3/25/2022	081416 Flush Wood Doors and/or A9.0 Door Schedule - There is no mention in the Specifications if Factory Glazing is required for Wood Doors with Lites. If Factory Glazing is required – A9.0 Door Schedule notes “I-GL1-T” at Door Types D5 and D6. This glass type does not appear in 08800 Glazing Specifications. If factory glazing is required for Wood Doors with Lites please clarify specific glass required.	CC: Glazing type I-GL1-T refers to Monolithic ""B. Glass Type: Clear fully tempered float glass. 1. Minimum Thickness: 6 mm. 2. Safety glazing required."" "
5	S.A.Mormon	3/25/2022	081113 Hollow Metal Doors and Frames and/or A9.0 Door Schedule - A9.0 Door Schedule list numerous Hollow Metal Doors as Type D1. Door Elevations show Type D1 Doors to be Exterior Doors. Specifications call for Exterior Hollow Metal Doors to be 16 Gauge Curries 777 Trio-E Series (fairly expensive doors) while Interior Hollow Metal Doors are specified as 18 Gauge Curries 707 (typical “standard” hollow metal door). The only Exterior Hollow Metal Door is Opening E2. Should the other Eight Hollow Metal Doors indicated to be Type D1 actually be Type D4 Interior Door?	CC: REVISE ALL INTERIOR HM DOORS TO TYPE D4
6	S.A.Mormon	3/25/2022	081113 Hollow Metal Doors and Frames and/or A9.0 Door Schedule - A9.0 Door Schedule - Openings D103A, D118, D124, D129 and D129A are indicated on the Door Schedule to have a 2 Hour Fire-Rating (these are also the only Openings indicated to have a fire-rating). Due to the 2 Hour Rating are these Hollow Metal Doors/Frames required to be “E119” Fire Rated Systems (Note: extremely expensive with extended lead-times)?	CC: REFER TO 081113 1.4.C, 2.3.C.1.a, & 2.4.E FOR FIRE DOOR REQUIREMENTS. DOORS ASSEMBLIES LOCATED IN A 2HR WALL REQUIRE 1 1/2 HR RATING AND ""SHALL BE TESTED IN ACCORDANCE WITH NFPA 525 OR UL10C"""
7	Balfrey & Johnston, Inc.	3/28/2022	Request approval to bid Navien’s Wall Hung Condensing Water Heater as an equal to the water heater with tank specified (refer to 3/28 Email).	CC: Rejected
8	Pearson	3/29/2022	What bid category will 07 4213.23 “Composite Metal Panels” be assigned? They are currently in the site package?	TSC: Composite Metal Panels will be assigned to Bid Category No. 1 General Trades. Refer to Addendum No. 1.
9	Pearson	3/29/2022	Section 01 72 00 Field Engineering ?	TSC: Bid Category No. 1 General Trades shall provide and maintain Reference Points (benchmarks & control points) and provide Certified Survey at completion of foundation walls and other major improvements for ALL Contractors to utilize for their respective "Work Layout-Section 01 72 50". Refer to Section 01 72 00 Field Engineering, Part 3.04.
10	Pearson	3/29/2022	Will 10% retention remain as part of the contract along with the additional scheduled items such as closeout that essentially increases retention to an amount >10%. Is 5% acceptable?	TSC: No. Ten (10%) Retainage is part of the agreement. There are provisions including in the General Conditions affording Contractors the opportunity to request reduction in retainage.
11	Pearson	3/29/2022	The elevations noted on the civil drawings differ from those noted in the subsurface investigation.	CC: The elevations shown on the Civils should be used. They are shown per the Topographic Survey which uses 2 different NAVD88 datum benchmarks, and are consistent with the GIS contours.
12	Pearson	3/29/2022	Is the removal and reinstallation of fencing required for Alternate #4 the responsibility of the site package as defined buy cutting and patching?	TSC: The removal and replacement of existing fencing for access to perform Alternate No. 4 work shall be provided by Bid Category No. 13 Asphalt Paving.
13	Pearson	3/29/2022	What bid category will be responsible for asphalt patching and line striping?	TSC: Refer to Addendum No. 1, new Bid Category No. 13 Asphalt Paving.
14	Pearson	3/29/2022	Please verify who is responsible for the basketball hoops noted in the Activity Area on sheet C-2. It states “by others”	TSC: The Owner will provide the basketball hoops.
15	Pearson	3/29/2022	What category will be responsible for the black vinyl fence noted on sheet c-2?	TSC: Bid Category No. 1 General Trades shall provide the black vinyl chain link fence and gates as shown on sheet C-2.
16	Herman & Goetz	4/1/2022	Drawing sheet E4.2- Is there a panel/breaker schedule for the new 1600 amp switchgear in room D144?	CC: To be issued via addendum 01. The board will be relocated.
17	Herman & Goetz	4/1/2022	Drawing sheet E4.2- Is the existing 3000 amp switchboard being replaced (room B-43A)? Detail 1A & 1B show different breaker/switch counts.	CC: To be clarified via Addendum 01.

18	Herman & Goetz	4/1/2022	Drawing sheet E4.2- Detail 1B shows new panels E & F. Are these replacing existing panels? Detail 1A show these as existing 400 amp panels and detail 1B show them as new 600 amp panels. Also new panel F is shown to be in room B16. We cannot locate B16. Panel schedules would be helpful too. Please clarify.	CC: Both panels will be partially replaced. One 400-amp tub will remain on the existing feeder; one 400-amp tub will be refed with a new 400-amp feeder and will receive new interior and cover.
19	Herman & Goetz	4/1/2022	Drawing sheet E4.3- Can you confirm that the new panel PP0 in room D144 is being fed from existing gear in room B-43A as shown on the drawings? There are no spare switches in the existing gear.	CC: To be clarified via Addendum 01.
20	Herman & Goetz	4/1/2022	Drawing sheet E4.3- Does panel PP0 need to be GE brand as shown on the drawing?	CC: G.E. or Square D.
21	Herman & Goetz	4/1/2022	In regards to the Lift Station mentioned at the walkthrough. We have not been able to find where it is located or where it is supposed to be fed from. Please confirm if there is one.	CC: REFER TO C-5 WEST OF PLAYGROUND AND C-11 FOR SANITARY LIFT STATION PLAN.
22	Herman & Goetz	4/1/2022	Drawing sheet E1.1D - There is no circuiting shown for the lighting in the new addition. Can you confirm which panel will feed that lighting? Panel LP-0 in that area does not show any lighting circuits on the panel schedule.	CC:
23	Herman & Goetz	4/1/2022	Drawing sheet E4.2 – Can you provide the location of the new utility pad mount transformer and pad mount CT cabinet? Drawing shows us tying into the existing utility transformer on the opposite side of the building from the new addition. Is it expected to run through the building or underground around the outside of the building?	CC: To be clarified via Addendum 01.
24	Pearson	4/1/2022	What trade is responsible for fire separation of the work and temporary egress plans. Will these requirements be paid for by allowance or more specifically detailed if desired to be included in the base bid by bid categories?	TSC: Bid Category No. 1 General Trades shalll provide maintain and remove required construction separations for construction phasing. Allow for six (6) 1 hour construction separations including provisions for temporary frame and doors.
25	Pearson	4/1/2022	What deciphers Between 2022 and 2023 for the work summer work scheduled in phase 2 noted in light blue ?	TSC: Refer to Guideline Schedule.
26	Pearson	4/1/2022	Please clarify if section 08 88 00 is required by both General Trades Package 1 and Aluminum Package 6? If so please clarify the separation between these packages.	TSC: Refer to Addendum No. 1
27	Pearson	4/1/2022	Please clarify section 01 53 10 Fences, Quantities are given in this section to provide 500’ of two different types of fencing, The site logistics plans shows the temp fencing desired for site layout. Please verify if we bid temp fencing per the site logistics plan or as quantified in the specification section.	TSC: Refer to Addendum No. 1. Revise Section 01 53 10 - Fences, Part 2.01, A. (Allow for 1,000 Lineal Feet). Part 3.01 Installation, D. revise to one (1) 20' wide gate and two (2) 4' wide man gates.
28	Pearson	4/1/2022	Field Engineering Services, section 01 72 00. Work described in this section seems very broad along with describing work that is either stated will be provided by the owner, “property lines” or has previously been performed by the civil engineer, or not applicable to this construction project, “anchor bolt survey”. Can you clarify the specific work to be provided by this section along with how the costs for replacing established control points if damaged?	TSC: Refer to Section 01 72 00 Field Engineering, Part 3.04. The Owner will identify existing benchmark, control points and property corners. Bid Category No. 1 General Trades shall provide the required work as outlined in 3.04 B., C., and D. Include cost to reestablish Control Points and Bench Marks two (2) times.
29	ASI Signage Innovations	4/1/2022	Can you confirm there is only a need for dimensional lettering at River Valley Elementary School? Additionally, the lines directing to the lettering on drawing A5.1D are off. Please confirm RIVER VALLEY is to be 18" and ELEMENTARY SCHOOL is to be 8". Also please confirm font.	CC: YES ONLY DIMENSIONAL LETTERING. CONFIMED 18" RIVER VALLEY, 8" ELEMENTARY. ALSO PLEASE NOTE LINE UNDER ELEMENTARY. FONT TO BE CHOSEN BY OWNER THROUGH SHOP DRAWINGS FROM MFG. STANDARD FONTS.
30	MWG	4/4/2022	Is bid package #1 or #6 to provide the glass for the hollow metal frames?	TSC: Glazing for Hollow Metal Frames shall be provided by Bid Category No. 6 Aluminum Glass and Glazing, specified in Section 08 80 00-Glazing. Bid Category No. 1 General Trades shall provide Glazing for Hollow Metal Doors, specified in Section 08 11 13-Hollow Metal Doors and Frames, Part 1.2, A. 4. Light frames and glazing in hollow metal doors.
31	MWG	4/4/2022	Are the wood doors factory glazed?	CC:FACTORY GLAZING IS NOT REQUIRED.
32	KMI	4/5/2022	Multiple locations. Example sheets, M1.1A and A1.1A. The mechanical sheets show removal of electric finned tube at 6 locations. The architectural sheets do not show any work associated with them. Will wall patching or painting be required at removed finned tubes? If so, which bid package will be responsible for this work?	CC:YES PATCHING AND PAINTING WILL BE REQUIRED. TSC: Depending on the existing wall type and condition, scope of required patching, prepping and painting will be required by respective Bid Category, ie: exisitng CMU wall patching by Bid Category No. 4 Masonry and Painting by Bid Category No. 8.
33	KMI	4/5/2022	Reference sheet A1.1B. Math Room B114. Only a portion of the ceiling is shown to be removed. This entire ceiling should be removed to facilitate duct demo. It is not clear why only a portion of the ceiling is being removed in this room, when the adjacent rooms B117 and B119 have full removal and have the same amount of above ceiling demo required.	TSC: Bid Category No. 1 General Trades shall remove the entire existing ceiling system, Bid Category No. 11 shall remove and/or suspend existing lights and reinstall lights and Bid Category No. 8 Interior Finishes shall provide a new ceiling system.

34	KMI	4/5/2022	Reference sheet M1.1C. media center/tech lab area. There is an existing ceiling AHU that is to be removed. The plan, Note 3, calls for the louver to be removed. Nothing is mentioned about patching the opening. The architectural demo sheet A1.1C does not have any notes about this. How should this opening be patched and what bid package is responsible?	CC: DMEO NOTED 4/A1.4, INFILL NOTED 1/A5.1C. REFER TO DETAIL 8/A6.6. TSC: Refer to sheet A6.6 for "typical" details for patching conditions in existing wall assemblies. Scope for patching shall be as assigned as required for new assembly and condition.
35	KMI	4/5/2022	The new mechanical design incorporates many new duct penetrations through existing walls. I do not see a structural drawing showing these penetrations. Please confirm which duct openings will require lintels and which bid category will be responsible for providing and installing the lintels.	CC: REFER TO MASONRY UNIT NOTE #16 S1.1 FOR LINTEL REQUIREMENTS. TSC: Lintels are provided by Bid Category No. 5 Structural & Miscellaneous Steel.
36	KMI	4/5/2022	I would like to request a more thorough explanation of the delineations between the base bid mechanical work and the Alternate No. 1 mechanical work. For example, sheet M2.1A, science lab A133. a. Our understanding of base bid: remove existing UV and replace. Add new roof intake hood and duct. b. Our understanding of the Alternate No.1: Remove existing UV, patch wall. Add new RTU and duct system. Omit the new UV, intake hood, and duct shown.	CC: Typical base bid is to remove and replace the existing unit vent, louver, and install the relief hood with associated ductwork. Alternate 1 shall remove the existing UV and patch the wall. Install the new RTU and associated duct system. Omit the new UV, relief hood and its associated ductwork.
37	KMI	4/5/2022	Reference sheets M1.1A and M2.1A. Room A100. Please clarify the intent of the base bid versus the alternate. The demo plan shows the UVs to be removed. The new work shows only an RTU system to be installed, but then shows a Note 1, indicating it is part of the alternate. What will the base bid scope of work be? No work in this room? Or should the RTU be the base bid?	CC:RTU IS BASE BID FOR ROOM A100.
38	Pearson	4/6/2022	RFI #35 response issued with addendum 1 states lintels are to be supplied by bid package 5 Structural Steel: Item #3 of the masonry clarification under Bid Pack 4 state lintels are supplied by the mason. Please clarify,	TSC: Refer to Bid Category Clarifications issued in Addendum No. 2.
39	Pearson	4/6/2022	Does the supply of lintels include the W8 x 24 lintels shown at openings on sheet S2.1D or just the LX type of lintel?	TSC: Refer to Bid Category Clarifications issued in Addendum No. 2.
40	Pearson	4/6/2022	Can you confirm if the W8 x 24 lintels are loose laid or set on a bearing plate and welded. It is a requirement of the steel contractor to engineer all connections per the general notes? Are the LX type lintels loose laid?	CC: Refer to details 10 & 11 on S4.1 and structural general notes sheet.
41	Pearson	4/6/2022	Will connections engineering be required by the masonry contractor as well if there is more than loose laid lintel?	TSC: Refer to Structural Steel notes on S1.1.
42	Pearson	4/6/2022	TESTING, Per the Multiple Contract Summary, Testing is provided by the owner. Specification section 033000 issued via addendum lists several testing requirements for both the PIA and FF/FL requirements. Please confirm all these testing items will be provided under the owner testing.	TSC: Yes, all required field related construction material testing will be provided by the Owner through the CM.
43	EMC Electric	4/7/2022	On M4.0 there is an electric heater schedule (3 items located in the D section of the building). None of these heaters show up on the power page, or in LPO panel schedule (the 120/208 panel servicing the addition). Clarification requested.	CC: Refer to Adendum 2.
44	EMC Electric	4/7/2022	On M4.0 there is an indoor coil unit schedule (A,C, and D sections) I cannot find them on the E-drawings, or a panel designation for them. Clarification requested.	CC: Refer to Adendum 2.
45	EMC Electric	4/7/2022	On M4.0 there is a remote air cooled condensing unit schedule. (both above kitchen). They are labeled B112, and B113 on M4.0 schedule, and B11 and 112 on E pages. No feeder location is provided (panel/ circuit number) Clarification requested.	CC: Refer to Adendum 2.
46	EMC Electric	4/7/2022	On M4.0 there is an electric duct heater schedule. (A,B,C, and D areas). They are not found on the E power plans, or in any panel schedules. Clarification requested.	CC: Refer to Adendum 2.
47	EMC Electric	4/7/2022	UV B100 shows up on E power pages, but not on E4.3 mechanical connection schedule. Clarification requested.	CC: Refer to Adendum 2.
48	EMC Electric	4/7/2022	E4.3 mechanical connection schedule shows UV B113, A127, and A 125 but these do now show up on existing 3-pole breaker space in their local panels. New panel location and circuitry numbers are not on E power pages, or panel schedule. Clarification requested.	CC: Refer to Adendum 2.
49	Mainline Fire Sprinkler	4/7/2022	The only fire suprresion that I am seeing is a new riser and piping and heads in a kindergarden room, is this correct?	CC: The addition shall be provided a fully sprinkler system. The riser shall include a total of 4 fire protection zone assemblies.
50	Gibson-Lewis	4/7/2022	Specification Section 114000 – Foodservice Equipment is assigned to the General Trades bid package. The spec describes stainless steel shelving and tables, however I cannot locate these items on the drawings. Please advise.	CC: REFER TO DETAILS 1-5 SHEET A8.3 RELATED TO FOOD SERVICE A124. QTY (3) SS TABLES AND QTY (2) SHELVES.
51	Columbia Lockers	4/7/2022	The plans seem to only list new Lockers/Cubbies for Area D; Pages A2.1D & A8.7. Please confirm.	CC: YES SEE SPECIFICATIONS FOR QUANTITY

52	MCS	4/7/2022	In regards to the plastic laminate cabinets, some of the tall storage cabinets have totes. I can provide those, but cannot find the exact ones they need dimensional wise. I did find some that are very close. See Drawings 8/A8.10 - requesting totes that are 13" W x 18 1/4" D x 4 1/4" H - Is this acceptable?	CC: Yes.
53	Gibson-Lewis	4/7/2022	Regrading Spec 124113 window shades, Floorplans show finish keynotes #F9 & F10 call out manual or motorized Shades, have not been able to find those called out anywhere. Sheet A3.2 #16 & #17 show head details one being new shade the other existing, those on shown on RCPs. Are those manual or motorized and what type of shade, are those the only areas then that get new shades?	CC: All manual shades - should be called out via 16&17/A3.2.
54	EMC Electric	4/8/2022	unit ventilators being removed are all under 20-amp according to schedule on E4.3. new units are up to 50-amp units. Which will need new conduit and wire to support the new units. Care was taken on fire alarm routes, and feeders moved onto roof to keep from running down hallways above drop ceiling. How should we plan on this piping to be installed from their respective panel to the UV's?	CC: For bidding purposes, assume new branch raceways as needed are routed exposed if the existing raceway is too small or unavailable.
55	EMC Electric	4/8/2022	in addendum 1 on new page E2.2 on the left side of the building there is a note for approximate location of new pad mount/main for the new 120/208V 1600A service. This is between 440' and 500' depending on route. To take this 1600A secondary wiring that distance with noted XHHW wiring, cost for material alone would be over $175,000.00. is there an ability to directional bore from existing transformer to new addition location for utility wiring, place new transformer and main disconnect there, and shrink secondary 1600A feeder length down to 30/40' length?	CC: Refer to Adendum 2.
56	Columbia Lockers	4/8/2022	Columbia Locker Product Substitution Request.	CC: Approved
57	Pearson	4/8/2022	Please clarify where and the extent of the type C barrier curb shown on sheet C-8 goes.	CC: See Addendum 002, sheet C-2 for call out
58	Hollerbach Excavating	4/8/2022	Alt. #2-State the Cost to do Site Work on the westside of project. Q-Where does Base Bid end and Alt #2 begin? Appears to be very vague.	TSC: Refer to C series drawings and descriptions in Addendum No. 2.
59	Hollerbach Excavating	4/8/2022	Who is responsible for footing excavation and backfilling the addition?	TSC: Refer to Clarifications added in Addendum No. 2. Bid Category No. 2 Sitework shall provide all required building excavation, backfilling, and compaction work.
60	Hollerbach Excavating	4/8/2022	Who is responsible for fence removal and nets at tennis court for Alt.#4?	TSC: Bid Category No. 2 Sitework shall provide site demolition work for Alternate No. 4, including fencing, nets and post removal. Reinstallation of fencing, nets and posts for Alternatate 4 work, shall be provided by Bid Category No. 1 General Trades.
61	Hollerbach Excavating	4/8/2022	Who is responsible for 8" watermain to be brought into addition and stubbed up for Fire Protection.	TSC: Please refer to RFI Log, Q & A No. 1.
62	Hollerbach Excavating	4/8/2022	Utility Plan Sheet C-5-Calls for 8" DIWM. Q-Specifications says C-900 PVC pipe can be used. Is this acceptable?	CC: Yes, as long as it is approved by the municipality
63	Hollerbach Excavating	4/8/2022	Who is responsible for Berrien County Drain Commission Soil Erosion Permit?	CC: Watermark is making the submittal. Refer to Section 01 12 00 Multiple Contract Summary Section, Part 1.09 Permits, Fees and Notices. Each Contractor shall secure and pay for all other permits, fees and licenses necessary for the proper execution and completion of the Contractors Work. Bid Category No. 2 Sitework shall procure and pay for all required permits to execute your work.
64	Hollerbach Excavating	4/8/2022	Is Snow Removal included in Site Work Bid Category	TSC: Refer to Section 01 50 50-Temporary Facilities and Controls. Any general snow removal required beyond whas is specified in this Section will be handled on a time and material basis and allocated against the Contractor's Allowance.
65	Ritsema	4/11/2022	On ceiling drawing A3.1C in the Media Center, there looks to be some suspended drywall clouds. I am not finding any details on the construction of these clouds or an edge detail. Can this be provided?	CC: Cloud edge detail similar to 3/A3.2, provide Armstrong axiom trim or equal.

DOCUMENT 00 12 10 – SUBSTITUTION REQUEST FORM

TO: Cordogan Clark / Skillman Corp

Project: River Valley High MS & ES

We hereby submit for your consideration the following product instead of the specified item for the above project:

Section	Paragraph	Specified Item
074213.23	2.2A1	Metal Composite Material Wall Panels

Proposed
Substitution: Alfrex FR Metal Composite Material

Attach complete technical data including laboratory tests if applicable.

Include complete information changes to Drawings and/or Specifications which proposed substitution require for proper installation.

Fill in Blanks Below, use additional sheets if necessary:

A. Does the substitution affect dimensions shown on Drawings?
No

B. Will the undersigned pay for changes to building design, including engineering and detailing costs caused by substitution, if any?
NA

C. What effect does substitution have on other trades?

None

D. Differences between proposed substitution and specified item?

None - Alfrex is an as equal product to the specification.

E. Manufacturer's guarantees of proposed and specified items are:

X Same _____ Different (explain on attachment)

The undersigned states that the function, appearance and quality are equivalent or superior to the specified item.

Submitted by:

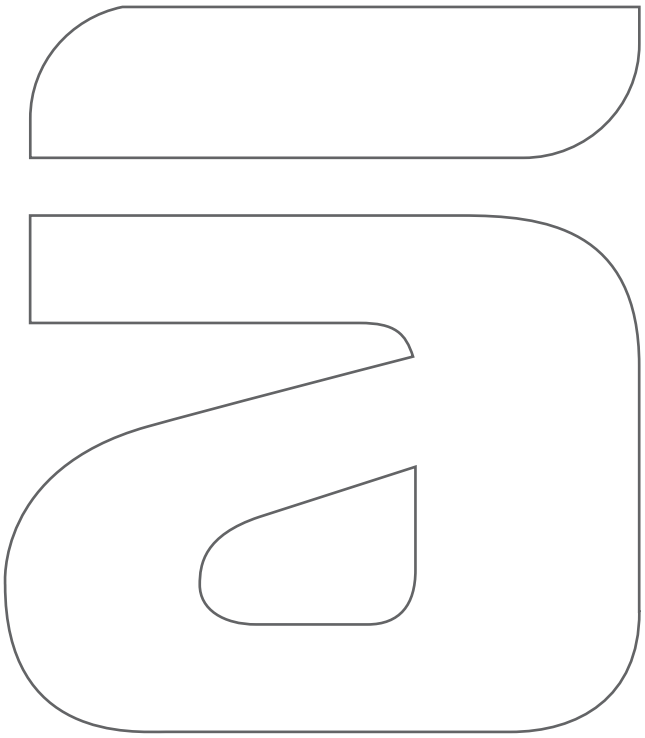
Camille Knezevich
Signature
Firm Alfrex
Address
943 Gainesville Hwy Bldg 100-4000
Buford, GA 30518
Telephone 803-464-3418

For use by Design Consultant

Accepted
Not Accepted
Accepted as Noted
Received too Late
By Cayce Horton, CCA
Date 4.7.22
Remarks

alfrex

Fire Resistant & Non-Combustible Cladding



ALFREX FR MCM

SUBMITTAL PACKAGE

ARCHITECTURAL

TABLE OF CONTENTS

SPECIFICATION COMPLIANCE CHECKLIST

Section 07 42 13 - Metal Composite Wall Panels

alfrex
Fire Resistant & Non-Combustible Cladding

PART 1: GENERAL

ASTM E330 Structural Performance

Perimeter Framing Deflection ≤ L/175

Panel Deflection ≤ L/60

Panel Deflection - Compliant

± 75 psf, 20.0 psf water penetration per ASTM E330

		Deflection (in)		Permanent Set (in)	
		Measured	Allowed Per TAS 202 (L/250)	Measured	Allowed Per TAS 202 (L/250)
Design Pressure	+ 75.0/psf	0.15	0.48	0.01	0.17
	- 75.0/psf	0.10	0.48	‹ 0.01	0.17
Test Pressure	+ 112.5/psf	0.23	0.48	0.17	0.17
	- 112.5/psf	0.17	0.48	0.02	0.17

Perimeter Framing Deflection - Compliant

		Deflection (in)		Permanent Set (in)	
		Measured	Allowed Per TAS 202 (L/1333)	Measured	Allowed Per TAS 202 (L/1333)
Design Pressure	+ 75.0/psf	0.01	0.09	0.01	0.03
	- 75.0/psf	0.02	0.09	‹ 0.01	0.03
Test Pressure	+ 112.5/psf	0.01	N/A	‹ 0.01	0.03
	- 112.5/psf	0.12	N/A	‹ 0.01	0.03

Quality Assurance

Product Certifications & Test Report Compliance

ICC-ESR Certification Report (ESR-4566)	View
ICC-AC 25 Certification of Compliance Listing	View
ICC Supplements California	CBC
	DSA
	OSHPD
	LABC
Florida Product Approval HVHZ	FL 33597
	FL I6406-R5

MCM Manufacturer Qualifications

12 Years Manufacturing Experience
Produces FR core material in-house
Intertek - Product Testing, Certification, Listing Compliance
Project References View

ASTM E283, Air Leakage

< 0.06 cfm per sf at psf

0.02 cfm/ft² (0.10 L/s/m²) at 1.57 psf (25 mph)	Compliant
0.04 cfm/ft² (0.20 L/s/m²) at 6.27 psf (50 mph)	Compliant

ASTM E331, Water Penetration

No water infiltration at 6.24 psf (0.299 kPa)

No water infiltration at 20 psf (0.96 kPa)	Compliant

Fire Performance

Compliant with regulatory fire code testing

NFPA 285, ASTM E84, ASTM E119, ASTM E108, ASTM D1929, CAN/ULC S102, CAN/ULC S134

*** See page 2 for result summaries for each test.*

Warranty

Bond Integrity	10 Years	Product
Hairline Aluminum	10 Years	Finish
2 Coat Solid / 2 Coat Mica	30 Years	Finish
Vivid Solid	20 Years	Finish
3 Coat Metallic	30 Years	Finish
Wood and Metal Series	20 Years	Finish

PART 2: PRODUCT

MCM Material

Two sheets of aluminum sandwiching a solid core of extruded thermoplastic fire-resistant solid material formed in a continuous process with no glues or liquid adhesives between dissimilar materials.

MCM Face Sheets

Aluminum Alloy	3003-H14
Thickness	0.5mm (0.020") nominal of each

PART 2: PRODUCT (con't)

MCM Panel Dimensions

Thickness	4mm (0.157 in) & 6mm (0.236 in)
Widths	40", 50", 62"
Lengths	Made to order 48" min - 300" max

MCM Fire Resistant Core

Fire Resistant Mineral Core:	
3.0 mm (0.117 in) nominal	4mm FR panel
5.0 mm (0.197 in) nominal	6mm FR panel

Finishes

AAMA 2605 Compliant Coil Coated

70% KYNAR® 500 based Polyvinylidene Fluoride (PVDF) finishes

PROPERTY	STANDARD	COIL COATED ALUMINUM
Color Uniformity	ASTM D2244	Max. 2 Delta E
Color Retention - Fade	ASTM D2244	≤ 5 Delta E units
Chalk Rating	ASTM D4214	≤ 8 units
Specular Gloss	ASTM D523	± 5 units
Dry Film Hardness	ASTM D3363	F - 2H
Dry Adhesion	ASTM D3359	No coating removal
Abrasion Resistance	ASTM D968	Abrasion Coefficient Value ≥ 40
Reverse Impact	ASTM D2794	No coating removal
Muriatic Acid Resistance (10% HCl, 15 min)	ASTM D1308	No blistering or visual change
Nitric Acid Resistance (HNO_3, 30 min)	ASTM D1308	≤ 5 Delta E
Alkali Mortar Resistance (10%, 25% NaOH, 60 min)	ASTM D1308	No removal No loss of adhesion or visual change
Flexibility	ASTM D4145	2T - no pick off
Humidity Resistance	ASTM D714 ASTM D2247	4000 hour exposure Less than "few" blisters Size No. 8
Cyclic Corrosion	ASTM B117 AAMA 2605-13	2000 hour exposure Min rating of 7 scribe or cut edge Min. blister rating of 8

Bond Integrity

No adhesive failure when tested to ASTM D1781

ICC-AC 25 ASTM D1781 Intertek Report No. J6080.01-106-16 R0

Condition	Peel Torque (in•lb/in)		Result
	Average	Required	
Control	39.91	22.5	Pass
8 Hour Boil	48.71	22.5	Pass
21 Day Water	40.31	22.5	Pass
Freeze - Thaw	42.21	22.5	Pass

Fire Performance

Intertek Cerified Test	Results
NFPA 285 Multi-Story Fire Test	Passed
ASTM E84: Flame spread <25 Smoke Developed <450	Class A Flame Spread: 0 Smoke Developed: 0
CAN/ULC S102	Class A Flame Spread: 0 Smoke Developed: 0
CAN/ULC S134	Passed
ASTM E119	Passed - 2 Hour rating
ASTM E108 Surface Flammability	Passed
ASTM D1929 Ignition Temperature	Flash: 716 °F (380 °C) Ignition: 752 °F (400 °C)

Technical Properties Data Sheet

Alfrex MCM 4mm FR	View
Alfrex MCM 6mm FR	View

Related Materials

Matching trim and accessories formed from sheet metal to match MC panel finish.

Alfrex stocks 0.040" x 48" x 120" flat sheet in 32 colors that match Alfrex FR MCM standard colors.

Alfrex FR MCM Sell Sheet

4mm Aluminum Composite Material

Fire Resistant & Non-Combustible Cladding

ALFREX 4mm FR MCM

» Fire Resistant Core Only - No PE
» In-house produced FR core
» Minimal price difference between solid, mica and metallics
» Thickness: Standard 4mm
[Available in 3mm and 6mm]
» Width: Standard 62in
50in in select colors
40.2in and 49.2in also available
» 10 Year Bond Integrity Warranty
» 10, 20, & 30 Year Finish Warranties
» 30 colors in Finished Goods

MATCHING FLAT SHEET

» Sheet Size: 0.040in x 48in x 120in
» 28 standard matching colors in stock
» Perfect for trim and accessories
» Same paint finishes as Alfrex FR

LEAD TIMES

	Alfrex FR (Currently)	Alfrex FR (Winter '20 - '21)	Matching Flat Sheet
Finished Goods	3 days	3 days	3 days
Standards	6 weeks	2 weeks	3 days
Customs	10 weeks	8 weeks	-

FINISHED GOODS

» Stocking Locations: Atlanta and Toronto
» MCM FR: 30 standard colors - 4mm X 62in X 196in lengths
» Matching Flat Sheet: 28 colors - 0.040in X 48in X 120in
» 3mm Plate: 62in X 165in in 4 standard colors

STANDARD COLORS

Alfrex FR MCM

» 2-Coat Solid:
» 2-Coat Mica:
» 3-Coat Metallic:
» Wood Series:
» Metal Series:
» Specialty Series:

CUSTOM COLORS

» Minimum 1,000 sf production quantity
» Custom colors extremely competitive
» Require color sample, paint code, PMS or Pantone number
» Wood and Metal Series 22,000 sf minimum

PRODUCT CERTIFICATIONS

Alfrex FR ACM - Building Codes

» ICC AC-25	Certificate WHI18-26206601 (Spec ID 36858)
» ICC-ESR Evaluation Report	ESR-4566
» ICC-ESR Supplements [California]	CBC (California Building Code)
	DSA (Division of the State Architect)
	OSHPD (Office of Statewide Health Planning Development)
	LABC (Los Angeles Building Code)
» Los Angeles Research Report	Per IB119 exempt with ICC ESR
» Florida Product Approval	Product Approval with HVHZ

Alfrex FR MCM - Fire Performance

» ASTM E84
» ASTM E119
» NFPA 285
» CAN/ULC S102
» CAN/ULC S134

LEED Certification Recycled Content MR Credit 4 - 26.07%

» LEED v3 : 2 Points
» LEED v4 : 1 Point

MANUFACTURING PLANT

100,000sf facility in metro Atlanta

Winter '20 - '21 start-up

Production line design:
» No danger of pressure mottling
» Numerous color changeovers, minimal scrap, no line stoppage
» Cost control - 7,500sf as efficient as 50,000sf

ALFREX FR PRODUCT GUIDE

ABOUT US

ABOUT ALFREX, LLC.

Alfrex, LLC specializes in fire-resistant and non-combustible architectural metal wall cladding with a portfolio including Alfrex FR Metal Composite Material, matching flat sheet, coil coated aluminum Alfrex Plate, and primer coated Alfrex Plate for post painting small lot, custom colors. Its company history and highlights include:

2000: Parent company Unience, Ltd. founded manufacturing fire-resistant compounds

2008: Alfrex FR Metal Composite Material launched with 2 manufacturing lines

2016: Alfrex USA commercial offices opened

2017: Alfrex Canada commercial offices opened

2019: Alfrex Plate - coil coated architectural aluminum plate added to portfolio

2020: New FR-core only MCM manufacturing plant and global headquarters inaugurated in Buford, Georgia USA

2020: All required product testing and certifications for the USA and Canada completed for Alfrex FR MCM and Alfrex Plate

Product Lines

Alfrex FR MCM Metal Composite Material Wall Panels

Matching Coil Coated Flat Sheet

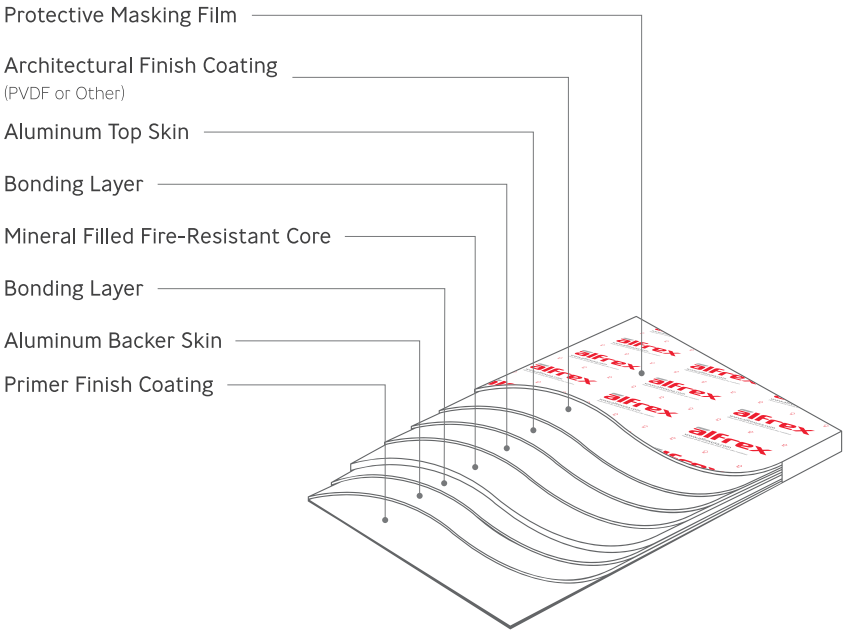
Alfrex Plate Pre-Finished Architectural Wall Panels

PRODUCT OVERVIEW

INTRODUCING ALFREX FR

Alfrex FR is a continuous process manufactured metal composite material (MCM) consisting of an extruded fire-resistant core permanently bonded to pre-finished aluminum skins on each side. It is extremely lightweight and exceptionally flat, yet easy to fabricate into any shape. Alfrex FR is coil coated utilizing 70% PvDF Kynar resin and other high-quality paint finishes - providing color uniformity, an extensive range of colors, unique coating patterns and textures, and the confidence of industry standard performance warranties. Its properties make Alfrex FR an ideal choice for most any architectural design intent imaginable.

COMPOSITION OF ALFREX FR



PRODUCT FEATURES

FEATURES OF ALFREX FR

Coil Coated for Performance

Alfrex FR premium quality paint finishes are applied by coil coating lines specialized in the continuous roll coating of fluoropolymer and specialty paint coating systems. The process ensures superior color uniformity and the overall long-term performance expected of exterior architectural coatings.

Wide Standard Color Range

Alfrex FR is offered in a broad range of standard colors geared towards exterior architectural building applications. Finishes utilizing 70% PVDF Kynar resin span popular color ranges in 2-coat solid, 2-coat mica, and 3-coat metallic configurations. Other specialty finishes include Prismatic Color-Shifting, Textured Wood Grain, Stone, Brushed Aluminum, and Faux Natural Metals.

Custom Colors

Alfrex provides custom matching to transform your imagination into reality using the color or finish of your choice. Simply send us a color sample, coating manufacturer paint code, Pantone number, or PMS number, and we'll quickly turn around an accurate match that meets your project requirements.

Fire-Resistance is a Core Competency

The fire-resistant core of Alfrex FR is an in-house manufactured, mineral-filled extruded material permanently bonded to aluminum skins. This provides an economical advantage for customers without sacrificing quality. Alfrex FR has passed American and Canadian testing standards including ASTM E84, ASTM E119, NFPA 285, CAN/ULC S102, and CAN/ULC S134.

Lightweight and Highly Durable

Alfrex FR is lightweight, at only 1.51 lbs / sqft, yet durable with non-corrosive aluminum skins and weather resistant architectural coatings.

Ease of Fabrication and Formability

Alfrex FR can be fabricated using proven methods such as: cutting, routing, shearing, bending, folding, and roll forming.

PRODUCT CERTIFICATIONS

BUILDING CODES

ICC AC-25	Certificate WHI18-26206601 (Spec ID 36858)	
ICC-ESR Evaluation Report	ESR-4566	
ICC-ESR Supplements [California]	CBC	California Building Code
	DSA	Division of the State Architect
	OSHPD	Office of Statewide Health Planning Development
	LABC	Los Angeles Building Code
Los Angeles Research Report	Per IB119 exempt with ICC ESR	
Florida Product Approval	Product Approval with HVHZ	

FIRE PERFORMANCE

ASTM E84	Class A
ASTM E119	Fire Rating - 2 hours
NFPA 285	Passed
CAN/ULC S102	Class A
CAN/ULC S134	Passed

ADDITIONAL PRODUCTS AND PUBLICATIONS

ALFREX MATCHING FLAT SHEET

Alfrex stocks tension leveled 0.040″ (1mm) aluminum flat sheet in coordinated standard colors.

ALFREX PLATE : CUSTOMIZABLE AND NON-COMBUSTIBLE

Coil Coated 3mm Plate is a standard with Alfrex Plate. Projects requiring a non-combustible solution can count on Alfrex Plate coil coated in coordinated colors with Alfrex FR as well as custom colors.

Small Lot Custom Colors for MCM are very expensive and difficult to source. Alfrex offers a solution by stocking Alfrex 3mm thick aluminum plate in 62″ wide x 165″ long sheets with a primed back side. This enables the post-painting of sheets in both air dry or baked on spray finishes, and a more economical solution than purchasing the minimum quantities for a custom ACM color.

For more information on Alfrex Plate, please consult the Alfrex Plate Product Brochure or visit www.alfrexusa.com.

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ALFREX FR MCM TECHNICAL DATA SHEET

COMPOSITION

Aluminum Skin Alloy	3003-H14	
Core Material	Fire rated mineral filled core	
PROPERTY	**4mm FR**	**UNITS**
Panel Thickness	0.157	in
	4.0	mm
Skin Thickness (*nominal*)	0.020	in
	0.50	mm
Panel Weight	1.51	lb / ft^2
	7.37	kg / m^2
Specific Gravity (Product)	1.76	
Specific Gravity (Core Layer)	1.43	

STANDARD SIZES

PROPERTY	4mm FR		UNITS
Standard Widths	50	62	in
	1,270	1,575	mm
Other Available Widths	40.2	49.2	in
	1,020	1,270	mm

PRODUCTION TOLERANCES

PROPERTY	4mm FR	UNITS
Width	+/- 0.080	in
	2.0	mm
Length	+/- 0.157	in
	4.0	mm
Thickness	+/- 0.008	in
	0.20	mm
Squareness	+/- 0.157	in
	4.0	mm

FIRE PERFORMANCE

TEST	RESULT
ASTM E84	Class A
NFPA 285	Passed
CAN/ULC-S102	Class A
CAN/ULC-S134	Passed
ASTM E119	2 Hours Passed
CAN/ULC S102 & S134	Passed

WARRANTIES

See warranty tables and sample warranties for conditions and exclusions

Bond Integrity	10 Years	Product
Hairline Aluminum	10 Years	Finish
2-Coat Solid 2-Coat Mica	30 Years	Finish
2-Coat Vivid Solid	20 Years	Finish
3-Coat Metallic	30 Years	Finish
Wood and Metal Series	20 Years	Finish

TECHNICAL PROPERTIES

PROPERTY		4mm FR	UNITS
Minimum Bond Strength	ASTM D1781	22.5	in•lb/in
		100	Nm/m
Transverse Shear Stress	ASTM C393	3.34	Psi
		23 X 10^{-3}	Mpa
Coefficient of Expansion	ASTM E831	182 X 10^{-6}	in/in/°F (@ 32-212°F)
Flexular Modulus	ASTM C393	5.22 X 10^6	Psi
		36 X 10^3	Mpa
Modulus of Elasticity	ASTM E8	2.46 X 10^6	Psi
		17 X 10^3	Mpa
Moment of Inertia		1.9 X 10^{-4}	in^4/in
		7.9 X 10^{-3}	cm^4/m
Section Modulus		1.81 X 10^{-3}	in^3/in
		29.7 X 10^{-3}	cm^3/m
Tensile Strength *(Aluminum Skin)*	ASTM E8	6.96 X 10^3	Psi
		48	Mpa
Yield Strength *(Aluminum Skin)*	ASTM E8	6.23 X 10^3	Psi
		43	Mpa
Elongation	ASTM E8	5	%
Deflection Temperature	ASTM D648	› 428	°F
		› 220	°C
Core Density		0.054	lb/in^3
		1.5	g/cm^3
Self Ignition Temperature	ASTM 1929	775	°F
		413	°C
Oxygen Index	D2863	32	%
Thermal Conductivity	C518	0.422	W/(m•K)

COATING PROPERTIES

70% Kynar 500 / Hylar 5000 PVDF Resin Coatings
AAMA 2605 Compliant

PROPERTY	STANDARD	COIL COATED ALUMINUM
Color Uniformity	ASTM D2244	Max. 2 Delta E
Color Retention - Fade	ASTM D2244	≤ 5 Delta E units
Chalk Rating	ASTM D4214	≤ 8 units
Specular Gloss	ASTM D523	± 5 units
Dry Film Hardness	ASTM D3363	F - 2H
Dry Adhesion	ASTM D3359	No coating removal
Abrasion Resistance	ASTM D968	Abrasion Coefficient Value ≥ 40
Reverse Impact	ASTM D2794	No coating removal
Muriatic Acid Resistance *(10% HCl, 15 mins)*	ASTM D1308	No blistering or visual change
Nitric Acid Resistance *(HNO_3, 30 mins)*	ASTM D1308	≤ 5 Delta E
Alkali Mortar Resistance *(10%, 25% NaOH, 60 mins)*	ASTM D1308	No removal. No loss of adhesion or visual change
Flexibility	ASTM D4145	2T - no pick off
Humidity Resistance	ASTM D714	4000 hour exposure
	ASTM D2247	Less than "few" blisters Size No. 8
Cyclic Corrosion	ASTM B117	2000 hour exposure.
	AAMA 2605-13	Min rating of 7 scribe or cut edge Min. blister rating of 8

STRUCTURAL PERFORMANCE TESTING SUMMARY DATA

Fire Resistant & Non-Combustible Cladding

Wall Panel Assembly	Alfrex FR with ACCU-TRAC DS Pressure Equalized Rainscreen System courtesy of Altech Panel Systems	
Testing Protocols	Florida Building Code / Miami-Dade County Requirements TAS 201-94: Large Missile Impact Test, Level D, Wind Zone 4 TAS 202-94: Uniform Static Air Pressure TAS 203-94: Cyclic Pressure Loading	ASTM Standards ASTM E283 ASTM E330 ASTM E331 ASTM E1996 ASTM E1886
Florida Product Approval	FL 33597	
Panel Size Referenced	120 in wide x 60 in high	
Engineering Evaluation Report Download	Report No.: 514689	

ASTM E330 - Structural Performance

Panel Deflection

Deflection Criteria	Deflection Inches
L/360	0.33
TAS 202 L/250	0.48
L/240	0.50
L/180	0.67
L/90	1.33
L/60	2.00

		Deflection (in)		Permanent Set (in)	
		Measured	Allowed Per TAS 202 (L/250)	Measured	Allowed Per TAS 202 (L/250)
Design Pressure	+ 75.0 / psf	0.15	0.48	0.01	0.17
	- 75.0 / psf	0.10	0.48	‹ 0.01	0.17
Test Pressure	+ 112.5 / psf	0.23	0.48	0.17	0.17
	+112.5 / psf	0.17	0.48	0.02	0.17

Perimeter Framing Deflection

Deflection Criteria	Deflection Inches
TAS 202 L/1333	0.09
L/720	0.17
L/360	0.33
L/240	0.50
L/175	0.69

		Deflection (in)		Permanent Set (in)	
		Measured	Allowed Per TAS 202 (L/1333)	Measured	Allowed Per TAS 202 (L/1333)
Design Pressure	+ 75.0 / psf	0.01	0.09	0.01	0.03
	- 75.0 / psf	0.02	0.09	‹ 0.01	0.03
Test Pressure	+ 112.5 / psf	0.01	N/A	‹ 0.01	0.03
	+112.5 / psf	0.12	N/A	‹ 0.01	0.03

ASTM 283 - Air Infiltration

	Results	Allowed per TAS 202
Air Leakage: 1.57 psf (25 mph)	0.02 cfm / ft^2 (0.10 L/s/m^2)	0.06 cfm / ft^2 (0.30 L/s/m^2)
Air Leakage: 6.27 psf (50 mph)	0.04 cfm / ft^2 (0.20 L/s/m^2)	0.06 cfm / ft^2 (0.30 L/s/m^2)

ASTM E331 - Water Penetration

	Results	Allowed per TAS 202
20 psf: 15% of Positive Design Pressure at 960 Pa	Pass	No Leakage

MCM COMPETITOR COMPARISON MATRICES

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COMPETITOR TECHNICAL DATA COMPARISON

	Company MCM Brand	**Alfrex, LLC Alfrex FR**	Arconic Reynobond FR	Mitsubishi Chemical Alpolic fr	3A Composites Alucobond Plus	Alucoil N. America Larson by Alucoil
GENERAL COMPARISON	**Product** 4mm Aluminum Composite Material (ACM / MCM)	✓	✓	✓	✓	✓
	MCM Manufacturing Experience 10+ Years	✓	✓	✓	✓	✓
	MCM Manufacturing Process Continuous Process Manufactured with No Glues or Adhesives	✓	✓	✓	✓	✓
	Fire Resistant Mineral Filled Core	✓	✓	✓	✓	✓
	FR Core Manufactured In-House	✓		✓	✓	
	USA Manufacturing Plant Location	Buford, GA	Eastman, GA	Chesapeake, VA	Benton, KY	Manning, SC
	Product Bond Integrity Warranty	✓	✓	✓	✓	✓
	Members of MCM Manufacturers Council	✓	✓	✓	✓	✓
	AIA Show Exhibitors	✓	✓	✓	✓	✓
PRODUCT CERTIFICATIONS	**3rd Party Certifying Agencies** Intertek / International Code Council, Inc. (ICC)	✓	✓	✓	✓	✓
	ICC-ESR Certification Report	ESR-4566	ESR-3435	ESR-2653	ESR-1185	
	ICC-AC 25 Certification for ACM / MCM	✓	✓	✓	✓	✓
	Fire Performance Certification USA NFPA 285, ASTM E84, ASTM E119	✓	✓	✓	✓	✓
	Fire Performance Certification Canada CAN / ULC S102, S134	✓		✓	✓	✓
	ICC Supplement CBC California Building Code	✓				
	ICC Supplement DSA Division of the State Architect - California	✓				
	ICC Supplement OSHPD Office of Statewide Health Planning Development - California	✓				
	ICC Supplement LABC Los Angeles Building Code - California	✓	✓			
	Los Angeles Research Report Per IB119 exempt with ICC ESR	✓	✓	✓	✓	
	Florida State Product Approval	✓	✓	✓	✓	
	High Velocity Hurricane Zone	✓	✓	✓	✓	
FIRE PERFORMANCE	**ASTM E84** Class A	✓	✓	✓	✓	✓
	NFPA 285 Passed	✓	✓	✓	✓	✓
	CAN / ULC S102 Class A	✓		✓	✓	✓
	CAN / ULC S134 Passed	✓		✓	✓	✓

* All data was compiled from published sources and is displayed for comparative reference purposes only.

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COMPETITOR TECHNICAL DATA COMPARISON

	Company MCM Brand	**Alfrex, LLC** **Alfrex FR**	Arconic Reynobond FR	Mitsubishi Chemical Alpolic fr	3A Composites Alucobond Plus	Alucoil N. America Larson by Alucoil
ARCHITECTURAL PRODUCT OFFERING AND SERVICES	**Standard Widths (62" / 50")**	✓	✓	✓	✓	✓
	Other Widths (49.2" / 40")	✓	✓	✓	✓	✓
	Custom Lengths : Panels are Cut to Length during Manufacturing	✓	✓	✓	✓	✓
	Standard Colors : 30+ Solid, Mica, 3-coat Metallic, Wood Grain, Brushed Metal, Natural Metals, Corten Rust	✓	✓	✓	✓	✓
	Custom Colors	✓	✓	✓	✓	✓
	Finished Goods ACM Panels	✓	✓	✓	✓	✓
	Company Finished Goods Locations	USA & Canada	USA only	USA only	USA only	USA only
	Matching Flat Sheet	✓	✓	✓	✓	✓
	Matching Flat Sheet Thickness	0.040"	0.040"	0.032"	0.040"	0.040"
TECHNICAL DATA COMPARISON	**Product** 4mm Aluminum Composite Material (ACM / MCM)	✓	✓	✓	✓	✓
	Aluminum Alloy 3000 Series	✓	✓	✓	✓	✓
	Product Thickness 4mm / 0.157"	✓	✓	✓	✓	✓
	Aluminum Skin Thickness (nominal) *0.020" Top Skin / 0.020" Bottom Skin*	✓	✓	✓	✓	✓
	Panel Weight *Pounds per Square Foot*	1.51	1.53	1.56	1.56	1.57
	Minimum Bond Strength [ASTM 1781] *in•lb / in*	22.5	22.5	22.5	22.5	22.5
	Tensile Strength [ASTM E8] (Aluminum skin) *Psi*	6.96 X 10^3		7.13 X 10^3		
	Yield Strength [ASTM E8] (Aluminum skin) *Psi*	6.96 X 10^3	6.37 X 10^3	6.34 X 10^3		
	Elongation [ASTM E8] *%*	5		5		
ARCHITECTURAL PAINT SYSTEMS	**Primary System**	70% Kynar PvDF	70% Kynar PvDF	Lumiflon	70% Kynar PvDF	70% Kynar PvDF
	Secondary System	Lumiflon	Lumiflon	70% Kynar PvDF	Lumiflon	Lumiflon
	Primary Paint Suppliers	PPG	PPG Beckers	Sherwin-Williams PPG	PPG Akzo Noble	PPG Akzo Noble
	AAMA 2605 Compliant	✓	✓	✓	✓	✓
	30 Year Finish Performance Warranty	✓	✓	✓	✓	✓

* All data was compiled from published sources and is displayed for comparative reference purposes only.

ALFREX PRODUCT FINISHES COLOR CHART

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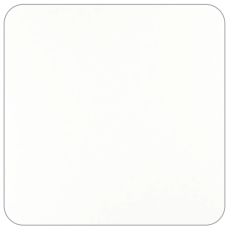
ALFREX FR MCM FINISHES

Standard Stocking 4mm FR MCM Finishes

›› Painted coil and finished goods panel inventory
›› 2,000 sf Production Order Minimum
›› Matching 0.040in Flat Sheet finished goods inventory

2 COAT **SOLIDS**

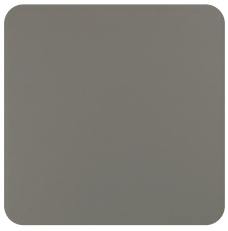


JY-5195
CLASSIC WHITE

JY-5165
BONE WHITE

JY-5110
ASCOT WHITE

JY-6120
DOVE GRAY

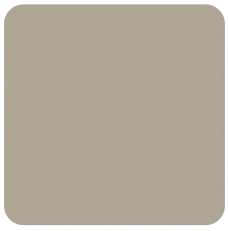


JY-6130
FASHION GRAY

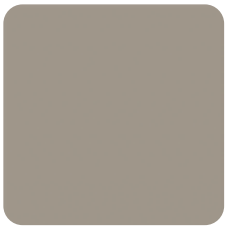
JY-6140
DARK GRAY

JY-6150
CHARCOAL

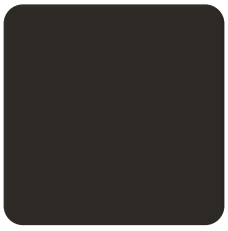
JY-6220
BLACK



JY-6160
CASTLE GRAY



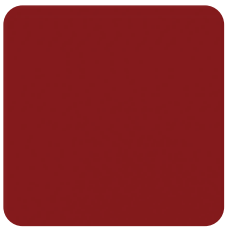
JY-6175
SEA WOLF



JY-6180
BRONZE

VIVID **SOLIDS**

JY-7110
SIGNAL BLUE



JY-7120
VIBRANT RED

alfrexusa.com | 470.589.7449 | contact@alfrexusa.com | 943 Gainsville Hwy. Building 100-4000, Buford, GA 30518

ALFREX FR MCM FINISHES

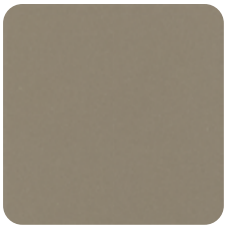
2 COAT **MICA**

JY-2510
ANODIC CLEAR MICA

JY-2520
EXOTIC SILVER MICA

JY-2530
GRAY SILVER MICA

JY-2540
PEWTER MICA



JY-2550
CHAMPAGNE MICA

JY-2560
MEDIUM BRONZE MICA

JY-2570
COPPER PENNY MICA

3 COAT **METALLICS**

JY-3510
BRIGHT SILVER METALLIC

JY-3520
CHAMPAGNE METALLIC

JY-3530
GRAPHITE METALLIC

WOOD SERIES

JY-W120
TEAK

JY-W140
GOLDEN OAK

JY-W150
DARK WALNUT

METAL SERIES

JY-M110
FAUX ZINC GRAPHITE

JY-M120
FAUX ZINC

JY-M130
FAUX ZINC LITE

JY-M140
TILE CORTEN

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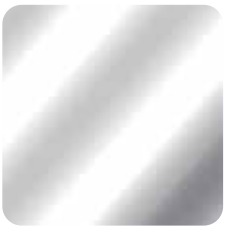
ALFREX FR MCM FINISHES

SPECIALTY SERIES

JY-H100
HAIRLINE CLEAR



JY-A160
MIRROR

Pre-formulated Global Colors

›› Alfrex 4mm FR MCM
› 2,500 SF Production Order Minimum - No Finished Goods
› Consult for Lead Times
›› Matching 0.040in Flat Sheet Not Available

JY-5120
YELLOW WHITE

JY-5140
CONCRETE WHITE

JY-5150
IVORY

JY-5185
PURE WHITE

JY-6110
RAW GRAY

JY-4160
YELLOW

JY-7130
SOFT BLUE

JY-8110
VALENCIA ORANGE

JY-8120
CRYSTAL RED

JY-9120
EMERALD GREEN

JY-1230
BRIGHT SILVER

JY-2221
GOLD

JY-2515
SILVERSMITH MICA

JY-3210
JADE

JY-4210
WINE RED

JY-4330
ANODIC DESERT

JY-4220
SILVER METALLIC

JY-4240
MEDIUM BRONZE METALLIC

JY-C120
MARIGOLD ORANGE

JY-C130
ROSEMARY GREEN

JY-T520
SPARKING BLACK

JY-T531
SPARKING WHITE

SPECIFICATION : 07 42 13 COMPOSITE METAL WALL PANELS

SECTION 07 42 13

COMPOSITE METAL WALL PANELS

PART 1: GENERAL

1.01 SCOPE

A. Section Includes

1. MCM - Fire resistant composite metal panels.
2. Panel system requirements of composite fire resistive panels including exterior and interior installation assemblies, components, and accessories.

B. Related Sections: Section(s) related to this section include:

1. Division 05 Metal Framing Sections
2. Division 07 Air and Vapor Barrier
3. Division 07 Flashing and Trim Sections
4. Division 07 Joint Treatment Section
5. Division 08 Aluminum Windows Section
6. Division 08 Glass and Glazing Section
7. Division 08 Curtain Wall Sections

1.02 QUALITY ASSURANCE

A. General: Standards listed by reference, including revisions by issuing authority, form a part of this specification section to the extent indicated. Standards listed have either been identified by the International Building Code (IBC), local building code, or specific requirement for this building construction type.

B. Aluminum Association (AA)

1. Aluminum Design Manual
2. AA-M12C22A41: Anodized - Clear Coating
3. AA-M12C22A44: Anodized - Color Coating

C. American Society for Testing and Materials (ASTM) International

1. ASTM D1781 Standard Test Method for Climbing Drum Peel for Adhesives
2. ASTM D1929 Standard Test Method for Determining Ignition Temperature of Plastics
3. ASTM E84 Standard Test Method for Surface Burning Characteristics of Building Materials
4. ASTM D635 Standard Test Method for Rate of Burning and/or Extent and Time of Burning of Plastics in a Horizontal Position
5. ASTM E330 Standard Test Method for Structural Performance of Exterior Windows, Curtain Walls, and Doors By Uniform Static Air Pressure Difference
6. ASTM E331 Standard Test Method for Water Penetration of Exterior Windows, Curtain Wall, and Doors By Uniform Static Air Pressure Difference

D. American Architectural Manufacturers Association (AAMA)

1. AAMA 2605 Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels.
2. AAMA 509 Voluntary Test and Classification Method of Drained and Back Ventilated Rain Screen Wall Cladding Systems

E. National Fire Protection Association (NFPA):

1. NFPA 285 Standard Fire Test Method for Evaluation of Fire Propagation Characteristics of Exterior Non-Load-Bearing Wall Assemblies Containing Combustible Components

1.03 SYSTEM DESCRIPTION

A. Performance Requirements:

1. Provide installed MCM system designed to withstand specified loadings while maintaining allowable deflection, thermal movement performance as defined by the Manufacturer.

B. Deflection and Thermal Movement: Provide installed MCM systems that have been designed to resist to the wind loading, acting inward and outward.

1. Perimeter Framing Deflection: Deflection of panel perimeter framing member shall not exceed L/175 normal to plane of the wall where L is the unsupported span of the perimeter framing member.
2. Panel Deflection: Deflection of the panel face shall not exceed L/60 at design load where L is the unsupported span of the panel.
3. Anchor Deflection: At connection points of framing members to anchors, anchor deflection in any direction shall not exceed 0.0625 inch (1.6 mm).
4. Thermal Movements: Allow for free and noiseless horizontal and vertical thermal movement due to expansion and contraction of component parts over a temperature range of -20°F (- 29°C) to +180°F (82.2°C) at the material surface.
    a. Buckling, opening of joints, undue stress on fasteners, failure of sealants, or any other detrimental effects of thermal movement will not be permitted.
    b. Fabrication, assembly and erection procedures shall take into account the ambient temperature range at the time of the respective operation.

C. Water and Air Leakage: Provide systems that have been tested and certified to conform to the following criteria:

1. Air Leakage, ASTM E283: Not more than 0.06 cfm per ft_2 of wall area (0.003 (L/s m_2) when tested at 1.57 psf (0.075 kPa).
2. Water Penetration: No water infiltration under static pressure when tested in accordance with ASTM E331 at a differential of 10% of inward acting design load, 6.24 psf (0.299 kPa) minimum, after 15 minutes.
    a. Water penetration is defined as the appearance of uncontrolled water in the wall.
    b. Wall design shall feature provisions to drain to the exterior face of the wall any leakage of water at joints and any condensation that may occur within the construction.

D. Structural: Provide systems that have been tested in accordance with ASTM E330 at a design pressure of [specify design pressure in psf (kPa)] and have been certified to be without permanent deformation or failures of structural members.

E. Fire Performance: Provide composite fire rated panels that have been evaluated and are in compliance with regulatory code agency requirements specified herein.

1.04 SUBMITTALS

A. Submit in accordance with Conditions of the Contract and Division 01 Submittal Procedures Section.

B. Submit product data, including manufacturer's brochures and Spec-Data Sheets SPEC-DATA sheets.

C. Shop Drawings: Submit shop drawings showing project layout and elevations; fastening and anchoring methods; detail and location of joints, sealants, and gaskets, including joints necessary to accommodate thermal movement; trim; flashing; and accessories.

D. Samples: Submit selection and verification samples for finishes, colors and textures.

1. Selected Samples: Manufacturer's color charts or chips illustrating full range of colors, finishes and patterns available for composite metal panels with factory applied finishes.
2. Verification Samples:
    a. Panel System Assembly: Two samples of each assembly 12 inch × 12 inch (304 × 304 mm) 4

b. Two samples of each color in coil coated, or drawdown samples on aluminum substrate, not less than 3 inches × 4 inches (76 mm × 102 mm).

E. Quality Assurance Submittals: Submit the following:

1. Product Test Reports: Certified test reports showing compliance with specified performance characteristics and physical properties, or a third-party listing documenting compliance to a comparable code section.
2. Product Certificates: Product certificates signed by manufacturer certifying materials comply with specified performance characteristics and physical requirements.
3. Manufacturer's Product Literature
4. Manufacturer’s Field Reports: Manufacturer’s field reports.

F. Closeout Submittals: Submit the following:

1. Warranty: Warranty documents specified.

1.05 QUALITY ASSURANCE

A. MCM Manufacturer Qualifications

1. MCM Manufacturer Qualifications: Company with a minimum of 10 years of continuous experience manufacturing MCM of the type specified.

c. Able to provide specified warranty on finish.

d. Able to provide a list of other projects of similar size, including approximate date of installation and name of Architect for each.

e. Able to produce the composite material without outsourcing of the fire-resistant core manufacture and compounding, or panel bonding process.

B. MCM Fabricator Qualifications

1. MCM system fabricator will have at least (3) years of continuous documented experience fabricating the panel material type specified.
2. MCM system fabricator will have been in business under its present name for at least five (5) years prior to the start of this project.
3. MCM system fabricator will be capable of providing field service representation during construction.
4. MCM system fabricator will not have filed for protection from creditors under state or federal insolvency or debtor relief statues or codes

C. MCM System Installer Qualifications

1. MCM system fabricator will have been in business under its present name for at least five (5) years prior to the start of this project and have experience with similar sized MCM system projects.
2. MCM system fabricator will be capable of providing field service representation during construction.
3. The MCM System Installer must be an approved installer by the MCM Fabricator for the installation of their MCM System and have undergone proper training for the specified system thereof.

D. Mock-Up

1. At location on building and to extent directed by Architect, install areas of specified wall panels, support framing, flashing, trim and accessories to show:

a. Substrate preparation

f. Support framing, furring, and flashing

g. Clearances and gaps between members

h. Fastening methods

i. Trim details

j. Joint protection

k. Workmanship

2. Prepare mock-up for Architect's approval before start of wall panel work. Prepare additional mock-ups, if required by Architect, until approved.
3. Maintain approved mock-up during construction to establish required standard of workmanship and basis of comparison for installation of wall panel work. Approved mock-up may remain as part of finished work.

E. Installation Documents On-Site

1. Maintain copies of installation instructions, approved submittals and other execution related documents on-site; make available as needed to confirm proper installation.

F. [___]

1.06 DELIVERY, STORAGE & HANDLING

A. Adhere to manufacturer's ordering instructions and lead time requirements to avoid delays.
B. Deliver materials to fabricator in manufacturer's original, unopened, undamaged containers with identification labels intact.
C. Protect finish of panels by applying heavy-duty removable plastic film during production.
D. After fabrication, package composite wall panels for protection against transportation damage.
E. Store material in accordance with manufacturer's guidelines.

1. Exercise care unloading, storing and installing panels to prevent bending, warping, twisting and surface damage to the factory applied finish.
2. Store materials protected from exposure to harmful weather conditions, out of direct sunlight when unpackaged, and at temperatures not to exceed 120 degrees F.
3. Protect panels from moisture and condensation with tarpaulins or other suitable weather tight covering installed to provide ventilation.
4. Slope panels to ensure positive drainage of any accumulated water.
5. Avoid contact with any other materials that might cause staining, denting or other surface damage to the factory applied finish.

1.07 WARRANTY

A. Manufacturer's Warranties: Submit, for Owner's acceptance, manufacturer's standard warranty document executed by authorized company official. Manufacturer's warranty is in addition to, and not a limitation of, other rights Owner may have under the Contract Documents.
B. Warranty Periods:

1. Panel Integrity: 10 years commencing on Date of Substantial Completion.
2. Painted Finish: 20 years commencing on Date of Substantial Completion.
3. MCM Natural Metals: No finish warranty
4. Anodized Finish: 5 years commencing on Date of Substantial Completion.

PART 2: PRODUCTS

2.01 FIRE RESISTANT METAL COMPOSITE MATERIAL (MCM)

A. Fire Resistant Metal Composite Material (MCM) Manufacturer

1. Alfrex, LLC, 943 Gainesville HWY, Building 100, Suite 4000, Buford, GA 30518; Phone (470) 589-7449; Website: http://alfrexusa.com/; Email: alfrex@alfrexusa.com

2.02 BASIS OF DESIGN

A. Alfrex FR – Metal Composite Material

B. Description: Two sheets of aluminum sandwiching a solid core of extruded thermoplastic fire-resistant material formed in a continuous process with no glues or liquid adhesives between dissimilar materials. The core material shall be free of voids and/or air spaces and not contain foamed insulation material. Products that are laminated sheet by sheet in a batch process using glues or adhesives between materials shall not be acceptable.

C. MCM Thickness: 4mm (0.157 inch)

D. MCM Face Sheets:

1. Front Face: 0.5mm (0.020") nominal
2. Fire Resistant Mineral Core: 3.0 mm (0.117 inch) nominal
3. Back Face: 0.5mm (0.020") nominal

E. Aluminum Alloy: 3003-H14

F. Weight: 1.51 lb/ft2 (7.37 kg/m2)

G. Finishes

1. Coil coated KYNAR® 500 or HYLAR® 5000 based Polyvinylidene Fluoride (PVDF) or Fluoro Ethylene - Alkyl Vinyl Ether (FEVE) resin in conformance with the following general requirements of AAMA 2605.
    a. Color: (Select one of the following)
        1) Standard color as selected by the owner / architect / engineer from manufacturer's standard, color selection.
            a) 2-Coat Solid
            b) 2-Coat Mica
            c) 3-Coat Metallic
            d) [___]
        2) Custom color to be matched by the panel supplier.
            a) 2-Coat Solid
            a) 2-Coat Mica
            b) 3-Coat Metallic
            c) [___]
        3) Clear coat over hairline aluminum substrate.
    b. Dry Film Thickness:
        1) 2-Coat: 1.0mil (±0.2mil).
        2) 3-Coat: 1.0mil (±0.2mil) + 0.50 mil (± 0.05 mil).
    c. Hardness: ASTM D-3383; HB minimum using Eagle Turquoise Pencil.
    d. Impact Resistance
        1) Test method: ASTM D_2794; Gardner Variable Impact Tester with 5/8" mandrel.
        2) Coating shall withstand reverse impact of 1.5"/pounds per mil substrate thickness.
        3) Coating shall adhere tightly to metal when subjected to #600 Scotch Tape pick-off test. Slight

minute cracking permissible. No removal of film to substrate.

e. Adhesion:
   1) Test Method: ASTM D-3359: Coating shall not pick off when subjected to an 11" x 11" x 1/16" grid and taped with #600 Scotch Tape.

f. Humidity Resistance:
   1) Test Method: ASTM D-2247.
   2) No formation of blisters when subject to condensing water fog at 100% relative humidity and 100°F for 4000 hours.

g. Salt Spray Resistance:
   1) Test Method: ASTM B-117; Expose coating system to 4000 hours, using 5% NaCl solution,
   2) Corrosion creepage from scribe line: 1/16" max.
   3) Minimum blister rating of 8 within the test specimen field.

h. Weather Exposure:
   1) Outdoor:
      a) Ten-year exposure at 45° angle facing south Florida exposure.
      b) Maximum color change of 5 Delta E units as calculated in accordance with ASTM D-2244.
      c) Minimum chalk rating of 8 in accordance with ASTM D-4214.
      d) No checking, crazing, adhesion loss.

i. Chemical Resistance:
   1) ASTM D-1308 utilizing 10% Muriatic Acid for an exposure time of 15 minutes. No loss of film adhesion or visual change when viewed by the unaided eye.
   2) ASTM D-1308 utilizing 20% Sulfuric Acid for an exposure time of 18 hours. No loss of film adhesion or visual change when viewed by the unaided eye.
   3) AAMA 2605 utilizing 70% reagent grade Nitric Acid vapor for an exposure time of 30 minutes. Maximum color change of 5 Delta E units as calculated in accordance with ASTM D-2244.

2.03 ALTERNATES

A. Base Bid/Contract Manufacturer: [Specify base bid/contract manufacturer].
   1. Product: [Specify product base bid/contract brand/trade name with product attributes and characteristics].

A. Alternate No. [Specify #]: [Specify alternate manufacturer].
   1. Product: [Specify product alternate brand/trade name with product attributes and characteristics].

B. Alternate No. [Specify #]: [Specify alternate manufacturer].
   1. Product: [Specify product alternate brand/trade name with product attributes and characteristics].

2.04 MCM PRODUCT PERFORMANCE

1. Bond Integrity: Tested for resistance to delamination as follows:
   a. Peel Strength (ASTM D1781): 22.5 in-lb/in (100 N-m/m) minimum.
   b. No degradation in bond performance after 8 hours of submersion in boiling water at 212 degrees Fahrenheit, (100 degrees Celsius).
   c. No degradation in bond performance after and 21 days of immersion in water at 70 degrees Fahrenheit, (21 degrees Celsius).
   d. Thermally bonded to the fire-resistant core material in a continuous process under tension.

2. Fire Performance:
    a. Flamespread, ASTM E84: <25.
    b. Smoke Developed, ASTM E84: <450.
    c. Surface Flammability, Modified ASTM E108: Pass.
    d. Ignition Temperature:
        1) Flash, ASTM D1929: 716 degrees F (380 degrees C).
        2) Ignition: 752 degrees F (400 degrees C).
    e. Flammability, Exterior, Non-load-bearing wall assemblies and panels, NFPA 285: Pass.
3. Production Tolerances:
    a. Width: +/- 0.080 inch (2.0 mm)
    b. Length: + 0.197 inch (5 mm)
    c. Thickness (4 mm Panel): +/- 0.008 inch (0.2 mm)
    d. Thickness (6 mm Panel): +/- 0.012 inch (0.3 mm)
    e. Bow: Maximum 0.2% length or width.
    f. Squareness: Maximum 0.157 inch (4 mm)

2.05 FABRICATION

A. General: Shop fabricate to sizes and joint configurations indicated on drawings.
    1. Fabricate panels too dimensions indicated on drawings based on an assumed design temperature of 70°F (21°C). Allow for ambient temperature range at time of fabrication.
    2. Formed MCM panel lines, breaks and angles to be sharp and true, with surfaces that are free from warp or buckle.
    3. Fabricate panels with sharply cut edges and no displacement of face sheet or protrusion of core.
B. Fabrication Tolerances: Shop-fabricate panels to sizes and joint configurations indicated on drawings.
    4. Width: +/- 0.079 inch [+/- 2 mm] @ 70°F (21°C)
    5. Length: +/- 0.079 inch [+/- 2 mm] @ 70°F (21°C)
    6. Squareness: +/- 0.079 inch [+/- 2 mm] @ 70°F (21°C)

PART 3: EXECUTION

3.01 MCM FABRICATOR/INSTALLER INSTRUCTIONS

A. Compliance: Comply with manufacturer's product data, including product technical bulletins, product catalog installation instructions and product carton instructions.

3.02 EXAMINATION AND PREPARATION

A. Verify that conditions of substrates previously installed under other sections or divisions are acceptable for MCM system installation. Documentation should be provided indicating any conditions detrimental to the performance or installation of the MCM System.
    1. Notify [Architect] of unacceptable conditions once discovered.
    2. Proceed with preparation and installation only after unacceptable conditions have been corrected.
B. Field Measurements
    1. If required per project conditions, field measurements of the site condition are to be taken prior to beginning fabrication work and notification of any material modifications and resulting schedule adjustment shall be formally documented.

2. Field measurements are to be made once all substrate and adjacent materials are installed, verifying the locations of wall framing members and wall opening dimensions before commencement of installation. Indicate measurements on the “As Built Shop Drawings”.

C. Project Schedule: Provisions in the project schedule must accommodate the time interval between field measurements and fabrication/installation.

D. Miscellaneous Framing: Install miscellaneous MCM system support members and anchorage according to MCM System written instructions and drawings supplied by the MCM System Fabricator.

3.04 INSTALLATION

A. General:

1. Install panels plumb, level and true in compliance with fabricator’s recommendations.
2. Anchor panels securely in place in accordance with fabricator’s approved shop drawings.
3. Comply with fabricator’s instructions for installation of concealed fasteners and with provisions of Section 07 90 00 for installation of joint sealers.
4. Installation Tolerances: Maximum deviation from horizontal and vertical alignment of installed panels: 0.25 inch in 20 feet (6.4 mm in 6.1 m), noncumulative.
5. Separate contact of dissimilar metals with bituminous paint, approved plastic shims, or other approved methods as defined within the Aluminum Design Manual (ASD). Use gasketed or approved coated fasteners where needed to eliminate the possibility of corrosive or electrolytic action between metals.

B. Related Products

1. General: Refer to other related sections in Related Sections paragraph specified herein for related materials, including cold-form metal framing, flashing and trim, joint sealants, aluminum windows, glass and glazing and curtain walls.

3.05 FIELD QUALITY REQUIREMENTS

A. Field Quality Control: Comply with panel system fabricator’s recommendations and guidelines for field forming of panels.

B. Field Quality Control: When required by contract, mock up shall be constructed and tested at the expense of the Architect/Owner/General Contractor.

C. Testing Agency: If required, the Owner shall engage a qualified testing agency top perform tests and inspections.

D. Fabricator’s Field Services: Upon Owner’s request, provide fabricator’s field service consisting of product use recommendations and periodic site visit for inspection of product installation in accordance with fabricator’s instructions.

3.06 ADJUSTING AND CLEANING

A. ADJUSTING

1. Remove and replace panels damaged beyond repair as a direct result of the panel installation. After installation, panel repair and replacement are the responsibility of the General Contractor.
2. Removal of panels damaged by other trades is the responsibility of the General Contractor.
3. Repair components of the MCM system that present with minor damage provided said repairs are not visibly apparent at a distance of 10 feet (3m) from the surface at a 90° angle per AAMA 2605.
4. Remove and replace components of the MCM system damaged beyond repair.
5. Remove protective film immediately after installation of MCM and immediately prior to completion of the MCM system work. Protective film intentionally left in place after panel installation on any elevation at the direction of the General Contractor, is the responsibility of the General Contractor.
6. Any additional protection, after installation, is the responsibility of the General Contractor.
7. Ensure weep holes and drainage channels are unobstructed and free of dirt and sealants.

8. Promptly remove from the jobsite any damaged MCM panels, protective film, and other debris attributable to MCM system and installation, and legally dispose of said materials.

B. CLEANING

1. After MCM system installation remove temporary coverings and protection of adjacent work areas. Repair or replace damaged installed products. Clean installed products in accordance with manufacturer's instructions prior to owner's acceptance.

3.06 PROTECTION

A. Protect installed products from damage during subsequent construction work until final inspection and acceptance by Owner

B. [___]

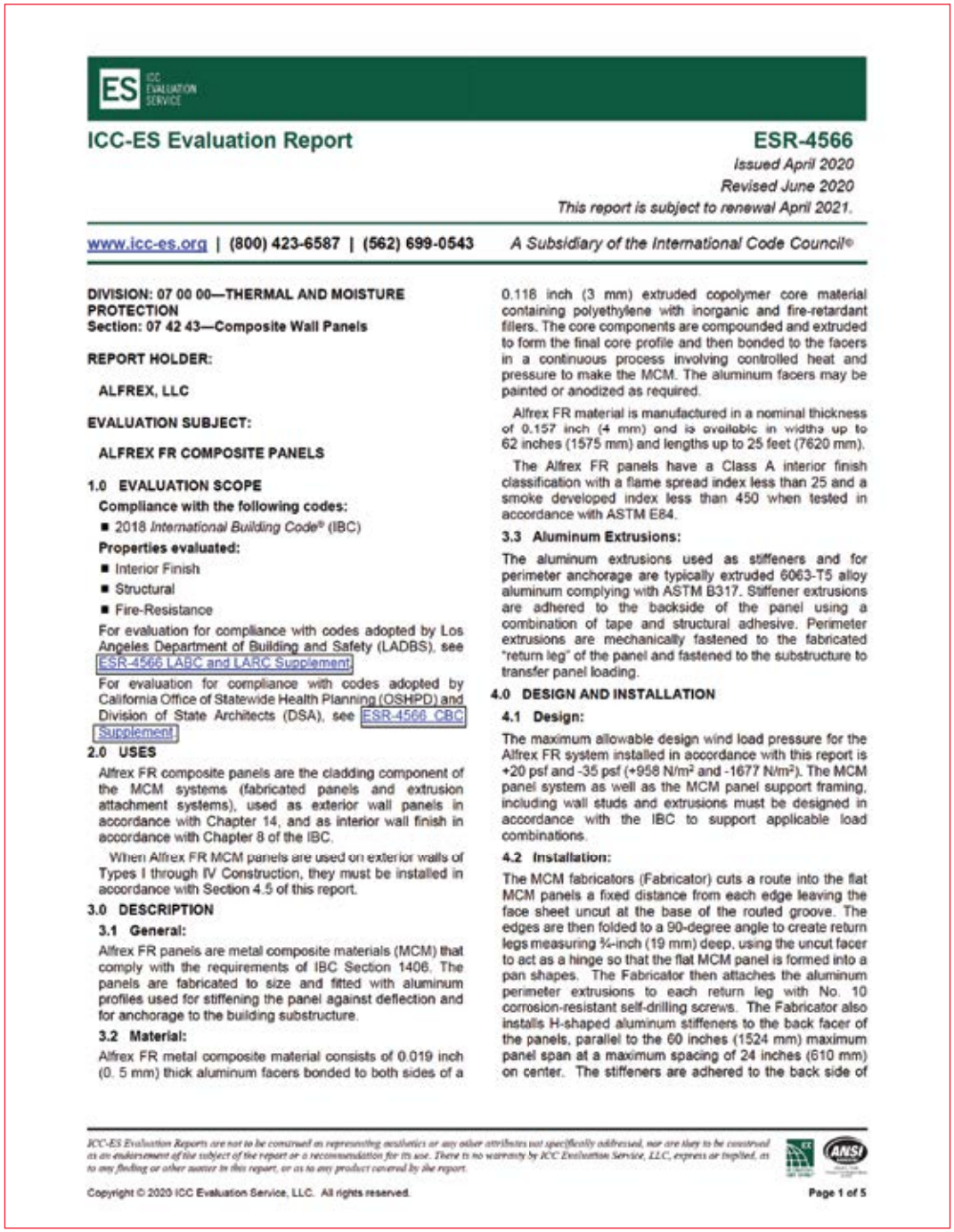
END OF SECTION

ICC-ES EVALUATION REPORT

ICC-ES REPORT: ESR-4566

An ICC-ES Report is one of the most powerful documents for verification of a product's compliance with code requirements and acceptance criteria. ICC-ESR 4566 for Alfrex FR MCM may be accessed via the link below for confirmation of compliance with 2018 IBC, Acceptance Criteria ICC AC25, various supplemental codes for the state of California, and exemption from the LARR city of Los Angeles Research Report.

VIEW REPORT



ES ICC EVALUATION SERVICE

ICC-ES Evaluation Report

ESR-4566

Issued April 2020
Revised June 2020
This report is subject to renewal April 2021.

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DIVISION: 07 00 00—THERMAL AND MOISTURE PROTECTION
Section: 07 42 43—Composite Wall Panels

REPORT HOLDER:

ALFREX, LLC

EVALUATION SUBJECT:

ALFREX FR COMPOSITE PANELS

1.0 EVALUATION SCOPE

Compliance with the following codes:

- 2018 *International Building Code®* (IBC)

Properties evaluated:

- Interior Finish
- Structural
- Fire-Resistance

For evaluation for compliance with codes adopted by Los Angeles Department of Building and Safety (LADBS), see ESR-4566 LABC and LARC Supplement.

For evaluation for compliance with codes adopted by California Office of Statewide Health Planning (OSHPD) and Division of State Architects (DSA), see ESR-4566 CBC Supplement.

2.0 USES

Alfrex FR composite panels are the cladding component of the MCM systems (fabricated panels and extrusion attachment systems), used as exterior wall panels in accordance with Chapter 14, and as interior wall finish in accordance with Chapter 8 of the IBC.

When Alfrex FR MCM panels are used on exterior walls of Types I through IV Construction, they must be installed in accordance with Section 4.5 of this report.

3.0 DESCRIPTION

3.1 General:

Alfrex FR panels are metal composite materials (MCM) that comply with the requirements of IBC Section 1406. The panels are fabricated to size and fitted with aluminum profiles used for stiffening the panel against deflection and for anchorage to the building substructure.

3.2 Material:

Alfrex FR metal composite material consists of 0.019 inch (0. 5 mm) thick aluminum facers bonded to both sides of a 0.118 inch (3 mm) extruded copolymer core material containing polyethylene with inorganic and fire-retardant fillers. The core components are compounded and extruded to form the final core profile and then bonded to the facers in a continuous process involving controlled heat and pressure to make the MCM. The aluminum facers may be painted or anodized as required.

Alfrex FR material is manufactured in a nominal thickness of 0.157 inch (4 mm) and is available in widths up to 62 inches (1575 mm) and lengths up to 25 feet (7620 mm).

The Alfrex FR panels have a Class A interior finish classification with a flame spread index less than 25 and a smoke developed index less than 450 when tested in accordance with ASTM E84.

3.3 Aluminum Extrusions:

The aluminum extrusions used as stiffeners and for perimeter anchorage are typically extruded 6063-T5 alloy aluminum complying with ASTM B317. Stiffener extrusions are adhered to the backside of the panel using a combination of tape and structural adhesive. Perimeter extrusions are mechanically fastened to the fabricated "return leg" of the panel and fastened to the substructure to transfer panel loading.

4.0 DESIGN AND INSTALLATION

4.1 Design:

The maximum allowable design wind load pressure for the Alfrex FR system installed in accordance with this report is +20 psf and -35 psf (+958 N/m² and -1677 N/m²). The MCM panel system as well as the MCM panel support framing, including wall studs and extrusions must be designed in accordance with the IBC to support applicable load combinations.

4.2 Installation:

The MCM fabricators (Fabricator) cuts a route into the flat MCM panels a fixed distance from each edge leaving the face sheet uncut at the base of the routed groove. The edges are then folded to a 90-degree angle to create return legs measuring ¾-inch (19 mm) deep, using the uncut facer to act as a hinge so that the flat MCM panel is formed into a pan shapes. The Fabricator then attaches the aluminum perimeter extrusions to each return leg with No. 10 corrosion-resistant self-drilling screws. The Fabricator also installs H-shaped aluminum stiffeners to the back facer of the panels, parallel to the 60 inches (1524 mm) maximum panel span at a maximum spacing of 24 inches (610 mm) on center. The stiffeners are adhered to the back side of

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CERTIFICATIONS AND COMPLIANCE REPORTS

alfrexusa.com | 470.589.7449 | contact@alfrexusa.com | 943 Gainsville Hwy. Building 100-4000, Buford, GA 30518

CERTIFICATIONS AND COMPLIANCE REPORTS

Alfrex FR MCM is thoroughly tested by independent third party laboratories and passes all necessary requirements for use in the USA and Canada.

Please click on the links below to access.

Warnock Hersey: Intertek Fire Performance Listing USA & Canada

VIEW DOCUMENT

NFPA 285 Fire Performance Summary Letter

VIEW DOCUMENT

LEED Certification Summary Alfrex FR

VIEW DOCUMENT

Material Safety Data Sheet Alfrex FR MCM

VIEW DOCUMENT

ACCU-TRAC® PANEL SYSTEM DETAILS

ACCU-TRAC® is shown courtesy of Altech Panel Systems
Alfrex only manufactures MCM sheets

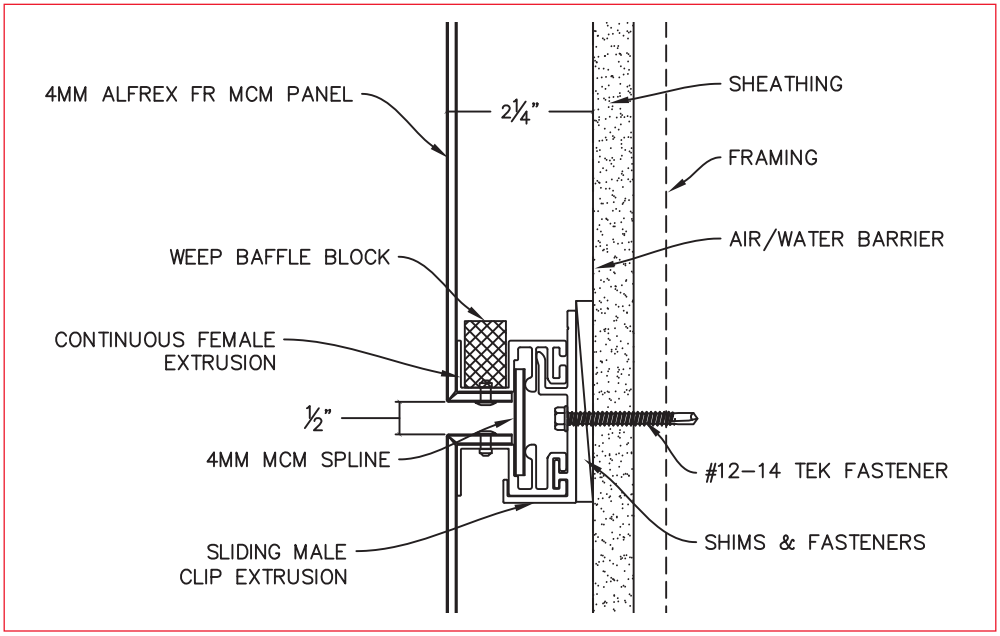
ACCU-TRAC®

ATTACHMENT SYSTEMS TYPICAL DETAILS

Courtesy of Altech Panel Systems

ACCU-TRAC® DS

Pressure Equalized Rainscreen System

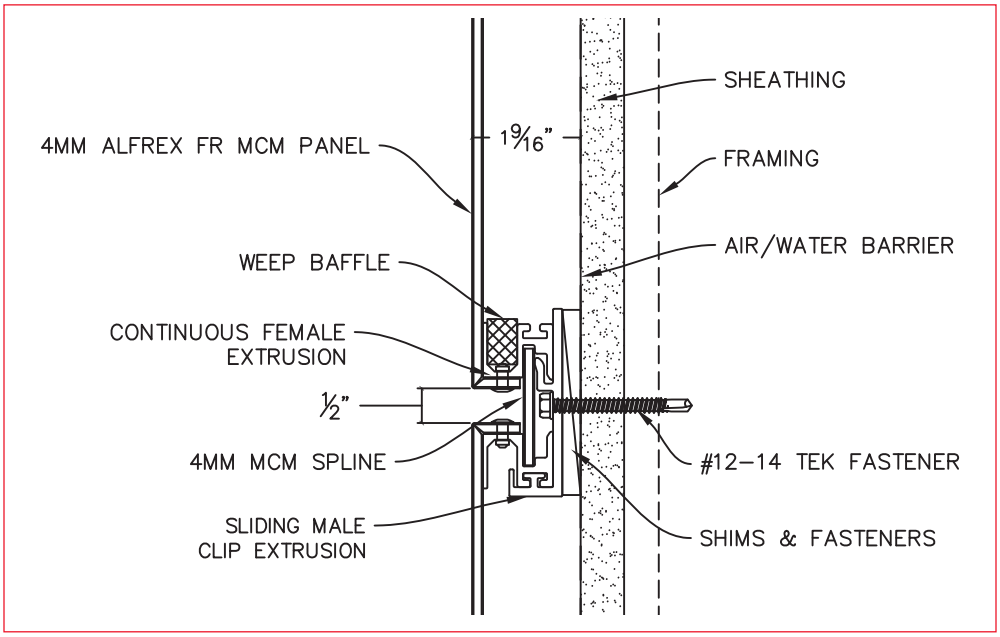


FULL DETAILS

TEST DATA

ACCU-TRAC® Low Profile DS

Back Ventilated Rainscreen System



FULL DETAILS

DOCUMENTATION

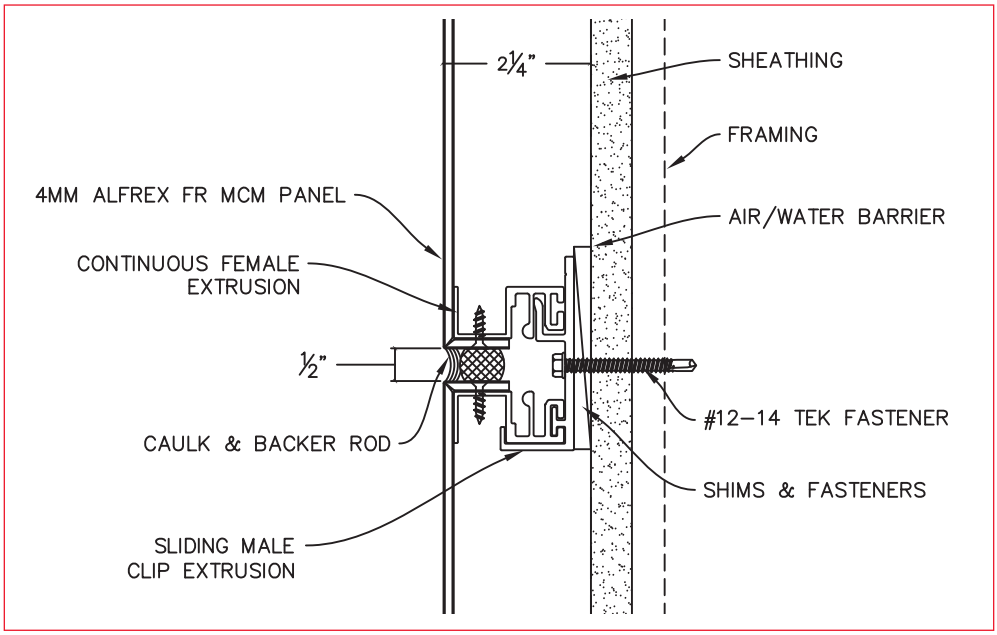
ACCU-TRAC®

ATTACHMENT SYSTEMS TYPICAL DETAILS

Courtesy of Altech Panel Systems

ACCU-TRAC® ES

Route & Return Exposed Sealant System

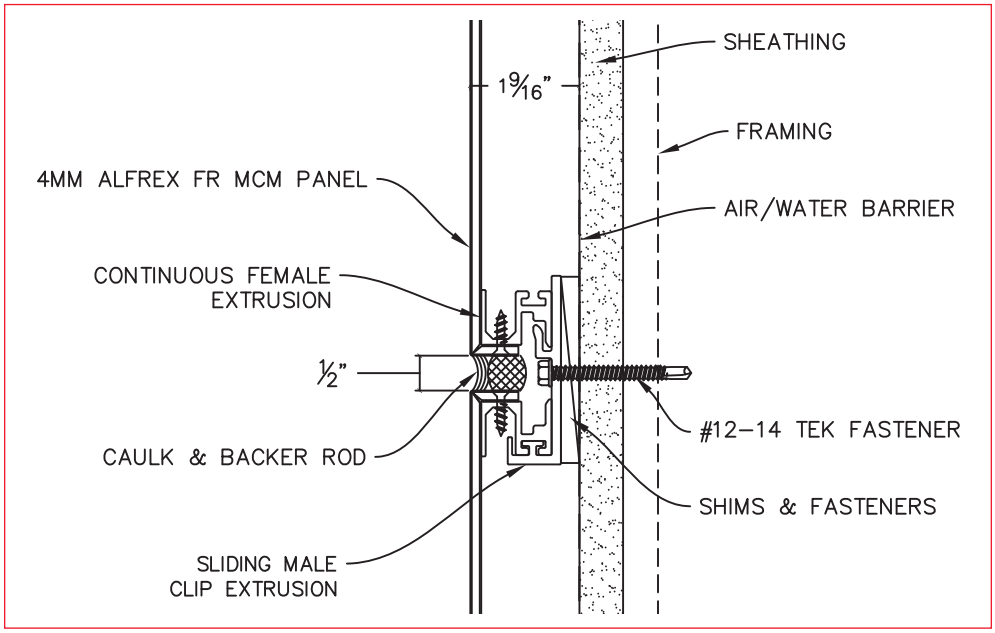


FULL DETAILS

TEST DATA

ACCU-TRAC® Low Profile ES

Low Profile Route & Return Exposed Sealant System



FULL DETAILS

DOCUMENTATION

NORTH AMERICAN ALFREX FR PROJECT REFERENCES

alfrexusa.com | 470.589.7449 | contact@alfrexusa.com | 943 Gainsville Hwy. Building 100-4000, Buford, GA 30518

NORTH AMERICAN ALFREX FR PROJECT REFERENCES

LOCATION	PROJECT NAME	SIZE (sqft)	ARCHITECTURAL FIRM	ARCH CONTACT	GENERAL CONTRACTOR	GC CONTACT
Nova Scotia, Canada	Fenwick Tower / The Vuze	231,974	Stantec Architecture	866.782.6832	Templeton Construction	902.422.6901
Alberta, Canada	HAT at West Village	140,485	NORR Architects	403.264.4000	Cidex Group	403.245.6996
Ontario, Canada	Kipling Go Bus Station	87,904	Strasman Architects	416.588.1800	EllisDon Design-Build Inc.	905.896.8900
Manitoba, Canada	The Arc	62,870	Ark	647.777.3500	Concord Pacific	604.681.8882
Alberta, Canada	Casadona Place	59,077	Gibbs Gage	403.233.2000	EllisDon Design-Build Inc.	905.896.8900
Ontario, Canada	CAMH - 1st	48,731	KPMB Architects	416.977.5104	PLC Constructors Canda Inc.	905.276.7600
Ontario, Canada	SNC Lavalin Office	44,833	De Silva Architect	905.491.6823	Arguson Projects Inc.	905.848.0707
Alberta, Canada	The Windsor	37,303	NORR Architects	403.264.4000	Westpointe Building Services, Inc.	587.774.9579
New York, USA	Victoria Theater	37,131	Aufgang Architects	845.368.0004	Flintlock Construction	914.630.7503
Alberta, Canada	HAT at East Village	34,395	NORR Architects	403.264.4000	Cidex Group	403.245.6996
Utah, USA	Fairbourne Station Office Tower	33,616	EDA Architects	801.531.7600	ICO Development	213.270.8000
Alberta, Canada	West Village - 1	29,536	NORR Architects	403.264.4000	Cidex Group	403.245.6996
Ontario, Canada	360 Oakville	18,116	B+H Architects	416.596.2299	Cooper Construction	905.829.0444
New Jersey, USA	Rutgers University Health Athletic Performance Center	17,018	Perkins Eastman	212.353.7200	Epic Management	732.752.6100
Ontario, Canada	Gateway Meadowvale	16,041	Quadrangle Architects	416.598.1240	Carttera Private Equities	416.593.4747
Utah, USA	Mountain Tech South	15,696	FFKR Architects	801.521.6186	R&O Construction	801.627.1403
Alberta, Canada	West Village - 2	12,658	NORR Architects	403.264.4000	Cidex Group	403.245.6996
Idaho, USA	Fruitland Subaru	10,127	BRS Architects	208.336.8370	ESI Construction	208.362.3040
New York, USA	Hutchinson Metro Center Tower II and Atrium	N/A	Newman Design	212.673.3110	Mc Gowan	201.865.4666
Alberta, Canada	Canadian Blood Services	5,908	Norr Architecture	403.264.4000	Bird Construction	403.319.0470
B. Columbia, Canada	Tempo Amenity Building	2,115	Robert Ciccozzi Architecture	604.687.4741	Cressey Development	604.683.1256

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NORTH AMERICAN ALFREX FR PROJECT REFERENCES

Click to view or download our full portfolio.

VISIT WEBSITE DOWNLOAD

Rutgers University Athletic Performance Center | New Jersey, USA

GLOBAL PROJECT REFERENCES

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GLOBAL PROJECT REFERENCES

COUNTRY	PROJECT NAME	ARCHITECTURAL FIRM	SQ. FEET
Korea	The Hillstate	kmd architects & Samoo Architects	753,480
Korea	Doosan We've The Zenith	De Stefano + Partners	317,538
Korea	Sangam Kaiser Palace	HAEAHN Architecture	269,100
Korea	Kolon-Parkpolis	Morphosis Architects	258,336
Korea	Seongnam City hall	kmd architects & Samoo Architects	129,168
Korea	OCI Central R&D center	HAEAHN Architecture + H Architecture	129,168
Korea	Dangin Power Plant of TAIHAN	Obra Architects	118,404
Korea	Lions Valley	Mass Studies	107,640
Korea	National Police Agency	H Architecture	96,876
Korea	KEPCO Reaearch Institute	KEPCO Reaearch Institute	75,348
Korea	Korea Land & Housing Corp	DRDS, Moo Young & Tomoon	16,146
Thailand	Honda Big Wing	VaSLab Architecture	53,820
Vietnam	Landmark 81 Tower	Atkins	484,380

DOCUMENT 00 12 10 – SUBSTITUTION REQUEST FORM

TO: _____

Project: River Valley High, Middle and Elementary School Addition and Renovations

We hereby submit for your consideration the following product instead of the specified item for the above project:

Section	Paragraph	Specified Item
105126	2.1 A	Solid Plastic Lockers

Proposed Substitution: Columbia Solid Plastic Lockers

Attach complete technical data including laboratory tests if applicable.

Include complete information changes to Drawings and/or Specifications which proposed substitution require for proper installation.

Fill in Blanks Below, use additional sheets if necessary:

A. Does the substitution affect dimensions shown on Drawings?
No

B. Will the undersigned pay for changes to building design, including engineering and detailing costs caused by substitution, if any?
NA

C. What effect does substitution have on other trades?
None

D. Differences between proposed substitution and specified item?
See attached

E. Manufacturer's guarantees of proposed and specified items are:

x Same _____ Different (explain on attachment)

The undersigned states that the function, appearance and quality are equivalent or superior to the specified item.

Submitted by:

Jim Williams
Signature
Jim Williams
Firm Columbia Lockers
Address 9031 Farrow Road
Columbia SC 29203
Telephone 803.636.7017

For use by Design Consultant

Accepted
Not Accepted
Accepted as Noted
Received too Late
By Cayce Horton, CCA
Date 4.12.22
Remarks _____

PSiSC®
PARTITION SYSTEMS INCORPORATED OF SOUTH CAROLINA

COLUMBIA PARTITIONS®

COLUMBIA LOCKERS®

Locker Comparison

Here are specific reason's to select Columbia Lockers®

	Columbia Lockers®	Most Others
Box construction	Mortise & Tenon	Butt joint
Color Selection	61 Colors and 10 stocking	19 colors
Door Design	Frameless - Provides maximum Access and a cleaner look	Framed - Reduces access and is not as appealing
Warranty	25 years	10 - 25 years
Ventilation	Concealed ventilation around perimeter of door	same
Lock options	Hasp, key lock, coin and keypad	same
Number of shelves	4	2
Number of hinges per door	2	same
Approximate Weight of locker 12 x 18 x 72	115 lbs	135 lbs
Assembled	At Our Facility by Experienced Staff	In the Field by Random Companies

TOILET PARTITIONS SHOWER STALLS LOCKERS
(Office) 803.252.3020 (Fax) 803.256.7769
PO Box 181 / Columbia, SC / 29202
www.psisc.com

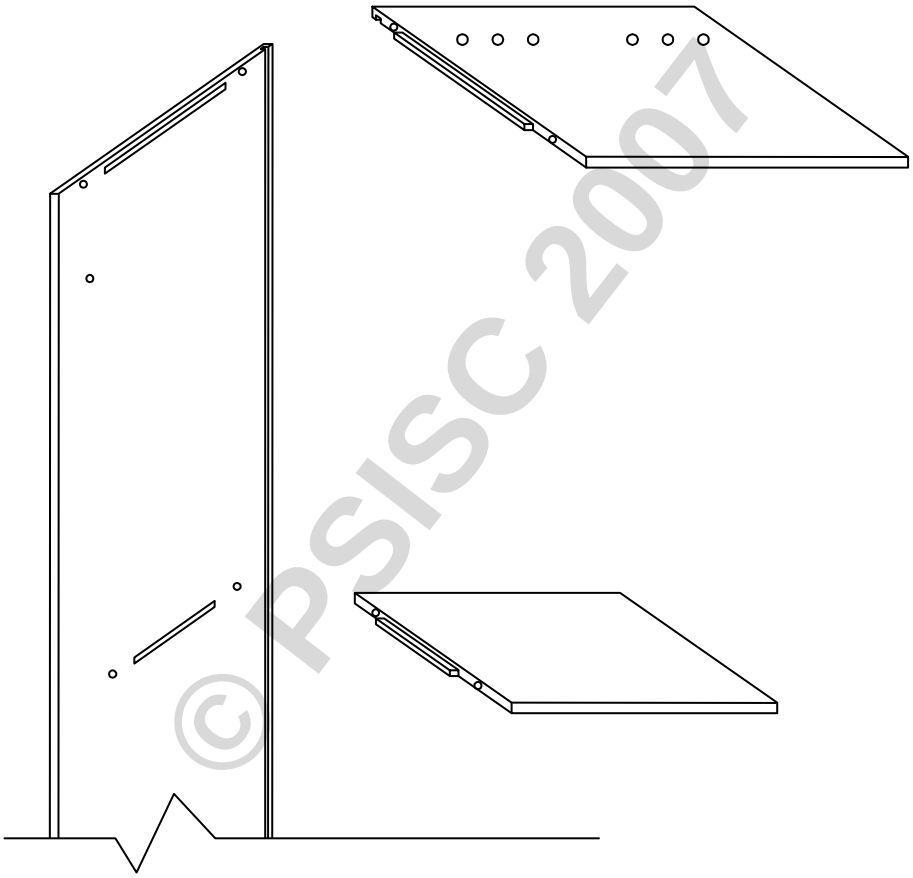
PSiSC
PARTITION SYSTEMS INCORPORATED OF SOUTH CAROLINA

COLUMBIA PARTITIONS®

COLUMBIA LOCKERS®

Mortise & Tenon Construction

The mortise and tenon is one of the strongest joinery techniques utilized within the cabinet and furniture industry today. It is comprised of a mortise or groove cut in the side panel of the Locker and a corresponding projecting tab. A mortise and tenon joint causes the top, bottom and shelf to reside inside part of the side panel of the Locker which will support the weight placed on these horizontal surfaces. When these two pieces are meshed together they form a joint that is virtually unbreakable.



Most Lockers currently constructed utilize a butt joint where the screws hold the shelf, top and bottom in place. However, when subjected to heavy backpacks and books, these screws can bend or pull out of the material. When using the mortise and tenon construction joinery, the horizontal panel is stronger.

TOILET PARTITIONS SHOWER STALLS LOCKERS

(Office) 803.252.3020 (Fax) 803.256.7769
PO Box 181 / Columbia, SC / 29202
www.psisc.com

COLUMBIA LOCKERS®

A Division of PSISC®

866.337.7286
www.psisc.com

LOCKER CATALOG

NEW Recessed Handles for Phenolic Lockers

See Page 27 for More Information

ABOUT COLUMBIA LOCKERS

PSiSC is proud to provide our customers and distributors with the highest quality products made from the most durable and eco-friendly materials on the market.

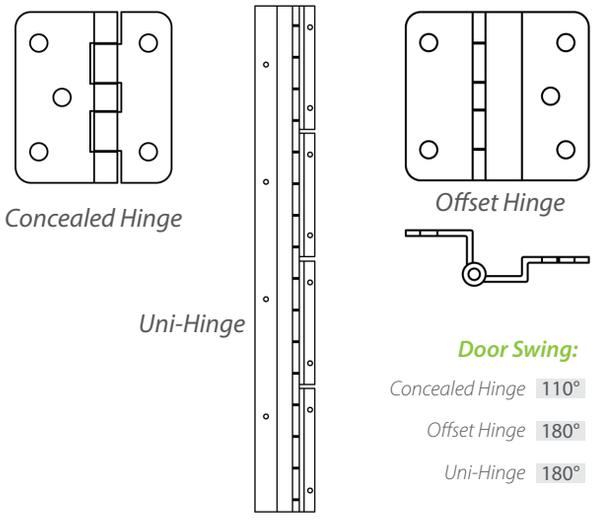
Columbia Lockers, a division of PSiSC, has been manufacturing Phenolic and PolyLife® HDPE Lockers for over 15 years. Our lockers feature mortise & tenon joints, type 304 stainless steel fasteners & hardware, aluminum & stainless steel hinges, and frameless doors.

The Uni-Box® design allows for our lockers to be arranged into hundreds of configurations and can be mixed and matched to create a truly custom locker facility.

Columbia Lockers can be combined with matching benches, hardware and a variety of optional accessories.

CONTENTS

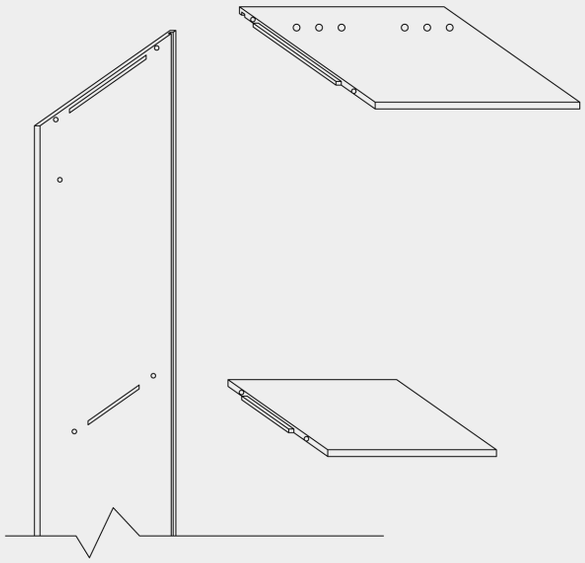
Innovative Design & Engineering



Hinges & Door Swing

Most locker designs have a limited opening and door swing, which can inhibit the end user's access to the interior of the locker. Columbia Lockers are designed with 3 additional inches of locker opening space.

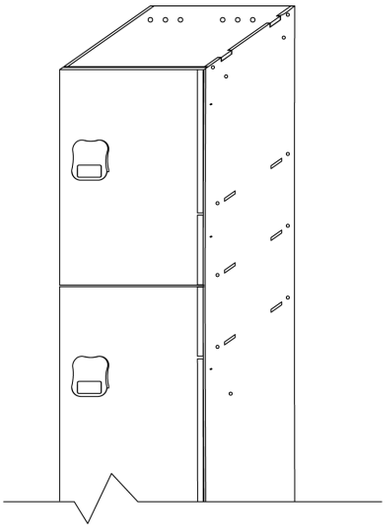
Our hinges include the: **Concealed Hinge** for phenolic lockers, made from stainless steel, the **Offset Hinge** for phenolic lockers, made from powder coated stainless steel, and the **Uni-Hinge** for both phenolic lockers (*only available in black*) and PolyLife lockers (*color matched to locker*), made from powder coated aluminum.



Mortise & Tenon Joints

Most lockers utilize what is known as a "butt joint," which places the majority of the weight of the locker and its contents solely on the screws. Over time, or with enough weight, the screws will bend, break, or pull away from the material, compromising the strength of the locker.

Columbia Lockers designed a virtually unbreakable joint, which is comprised of a mortise, or groove, cut in the side panel of the locker and a corresponding tenon, or projecting tab. The top, bottom, and shelves of the locker reside inside part of the side panels and are secured by stainless steel screws.



Frameless Doors & Improved Ventilation

Columbia Lockers incorporate an innovative solution to locker ventilation without unsightly louvers on the face of the locker. Our lockers are designed with an 1/8" opening between the door and the frame of the locker, along with concealed ventilation holes in the tops, bottoms, and shelves of the body.

This creative solution increases the airflow through the locker in a well-ventilated room by 3 to 4 times a standard locker with louvers.

LOCKER MATERIALS

It's time to raise the bar on our expectations of what a truly high quality locker should look like. Columbia Lockers began by selecting only the most durable, aesthetically pleasing materials on the market: Solid Phenolic and PolyLife HDPE.

These solid plastics are not only more durable, but will never rust, dent, or bend (unlike traditional metal lockers.) Take a look at each of our durable materials and the properties that set them above and beyond the rest.

LOCKER MATERIALS

POLYLIFE® (HDPE)

Also known as HDPE (High Density Polyethylene), PolyLife is created from 100% recyclable solid plastic material. It is an excellent choice for high-traffic, high-moisture areas and is resistant to damage from graffiti. PolyLife is non-porous and the same color throughout the entire material.

SPECIAL PROPERTIES:

Contributes to Green Building Certifications • Non-Porous • 25 Year Warranty • Graffiti & Wear Resistant • Never Delaminates or Requires Painting • Antimicrobial Handles

Antimicrobial PolyLife®

Protected by Columbia Guard, a microbiocidal that kills harmful bacteria on contact. The antimicrobial protection is infused throughout the material, making these lockers safer and more secure. Antimicrobial Lockers defend against MRSA, staph, and other harmful bacteria.

SPECIAL PROPERTIES:

Microbiocidal • 99.99% Kill Effectiveness on Contact • JIS Z 2801 Test Result of > 4.0 Efficacy • Contributes to LEED Certification • Can Be Cleaned Using Strong Chemicals

PHENOLIC

A high density material made by applying heat and pressure to layers of kraft paper that has been saturated in a synthetic phenolic resin. A chemical reaction known as polymerization occurs, transforming the materials into a high-pressure, thermosetting plastic. Phenolic is water resistant and highly durable, making it an excellent choice for high traffic areas.

SPECIAL PROPERTIES:

Contributes to Green Building Certifications • Multiple Thicknesses for Different Applications • Fire Rated Material Options • 20 Year Warranty • Graffiti & Wear Resistant • Never Delaminates or Requires Painting • Engravings available

TERRA CORE®

A true color-through phenolic, Columbia Terra Core features all of the same properties as standard black core phenolic, with the added aesthetic quality of a single color material. This sought-after material option adds a unique touch to any locker room design.

SPECIAL PROPERTIES:

Contributes to Green Building Certifications • Fire Rated Material Options • 25 Year Warranty • Graffiti & Wear Resistant • Never Delaminates or Requires Painting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CONFIGURATIONS

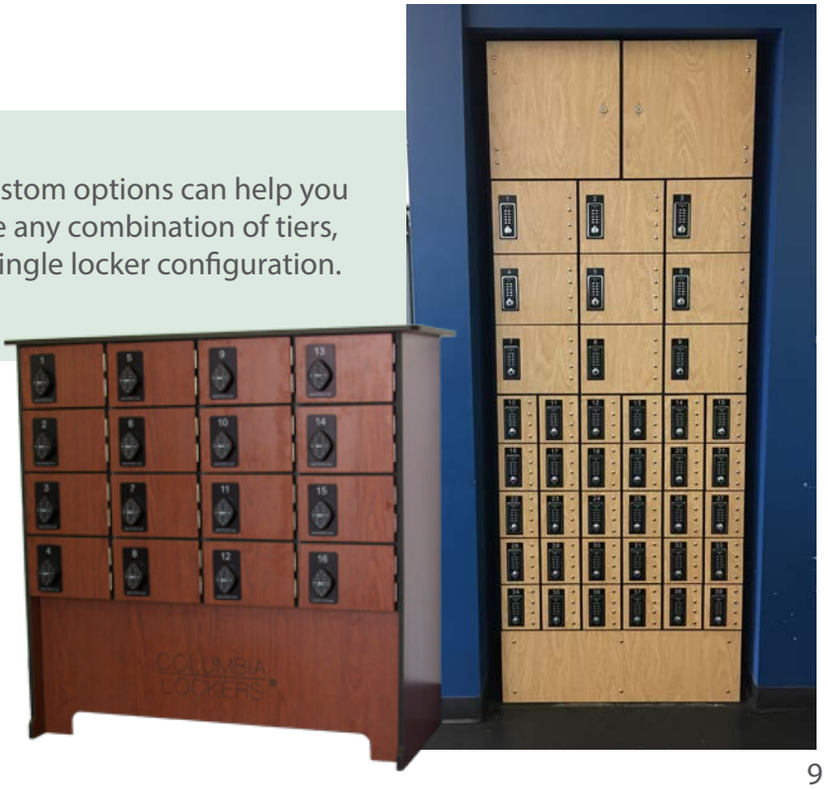
During the design process of a locker room, it's vital to keep in mind the use and functionality of the space. We understand that no two designs are ever the same, which is why we designed our lockers to be individual units.

This modular design allows for you to have the flexibility and variety to fit any layout. The designer has the ability to maximize the amount of openings while leaving room for traffic flow within the locker room.

Being able to mix and match locker door units and configurations also allows for the possibility of mixing and matching different combinations of colors, by individual unit or by row.

We pride ourselves on manufacturing the most versatile lockers on the market. If you have a custom project or something a little "different" in mind, our team of experts can accommodate you and help design the perfect lockers for your project.

Our modular design and extensive selection of custom options can help you create nearly any style of locker room. Incorporate any combination of tiers, colors, openings, door sizes, and more - within a single locker configuration.



CONFIGURATIONS

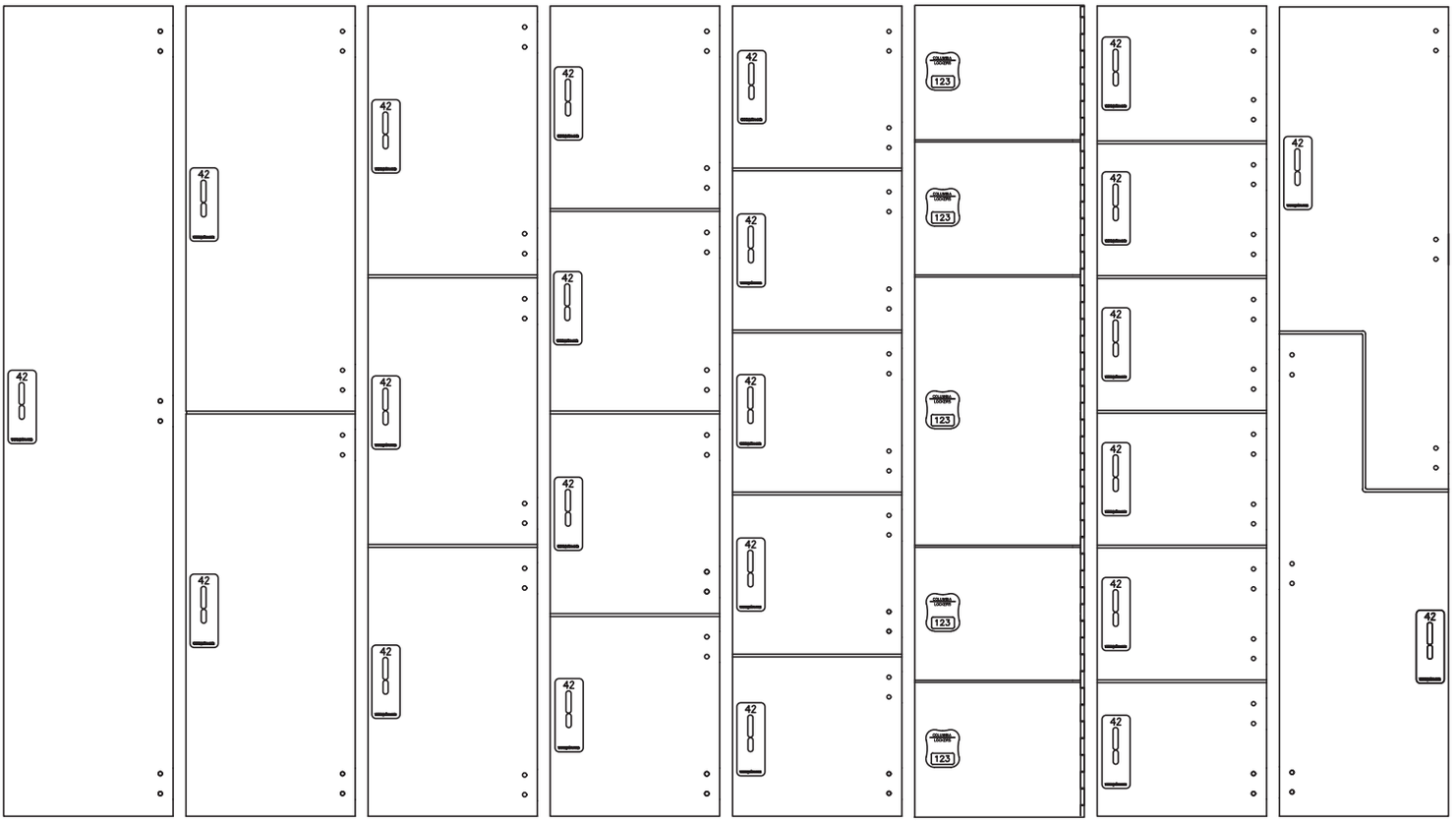
1-6 & Z-Tier Lockers

Sizes:

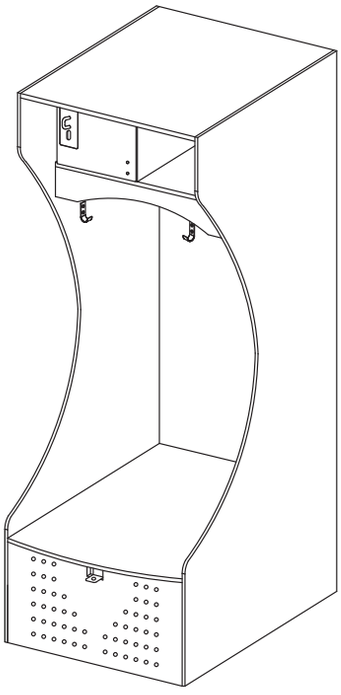
Height	36″	48″	60″	72″
Width	9″	12″	15″	18″
Depth	12″	15″	18″	

Material Thicknesses:

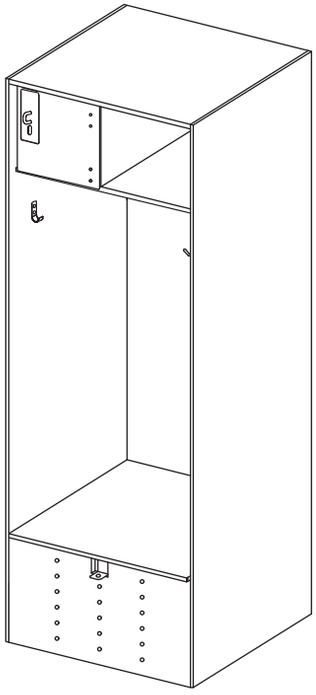
	Phenolic	PolyLife
Top, Bottom, & Shelves	⅜″	⅜″
Sides & Back	5⁄16″	⅜″
Doors	½″	½″
Benches	¾″	1″



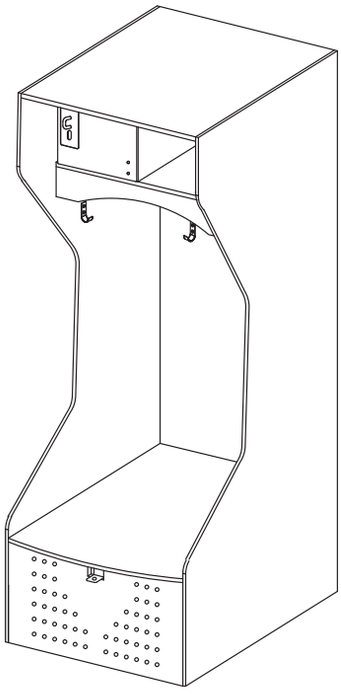
1 Tier | 2 Tier | 3 Tier | 4 Tier | 5 Tier Phenolic | 5 Tier PolyLife | 6 Tier | Z Tier



Elliptical



Classic



Angular

Athletic Lockers

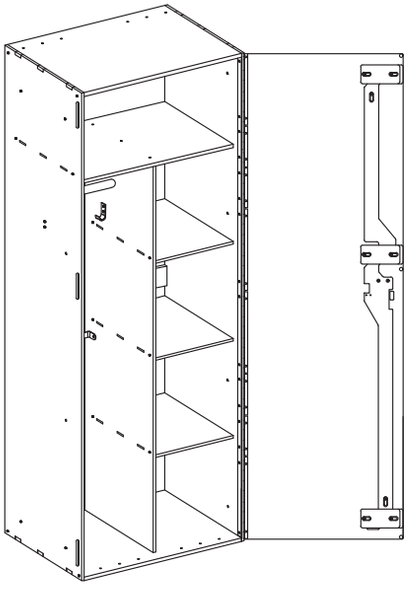
For more information, see pg. 15

Sizes:

Height	72″
Width	18″ 24″ 30″
Depth	18″ 24″ 30″

Material Thicknesses:

	Phenolic	*PolyLife*
Top, Bottom, & Shelves	⅜″	½″
Sides & Back	5⁄16″	½″
Doors	½″	½″
Locker Seat	½″	½″



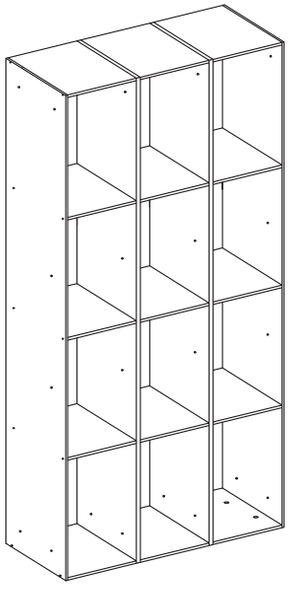
Coach's/ Executive

Sizes:

Height	72″
Width	18″ 24″
Depth	18″ 21″ 24″

Material Thicknesses:

	Phenolic	*PolyLife*
Top, Bottom, & Shelves	⅜″	½″
Sides & Back	5⁄16″	½″
Doors	½″	½″
Benches	¾″	1″



Cubbies

Sizes:

Overall Height	36″ 48″ 60″ 72″
Overall Width	9″ 12″ 15″ 18″
Overall Depth	12″ 15″ 18″
Units	From 2x1 to 6x6*

**Height Dependent*

Material Thicknesses:

	Phenolic	*PolyLife*
Top, Bottom, & Shelves	⅜″	½″
Sides & Back	5⁄16″	½″
Benches	¾″	1″

DOUGLAS
NITRO
PSI
SC
NEXT

ATHLETIC LOCKERS

Looking for a unique storage solution that can be tailored to serve all of your team's unique needs? Columbia Lockers is proud to offer athletic lockers - choose from a full line of custom locker options, accessories, and styles that can be specialized to fit every athlete's needs, no matter what level of play.

Select one of our many standard top of the line athletic lockers:

- ***Collegiate Modular Athletic Lockers***
- ***High School Athletic Lockers***

or let us customize a design that is unique to you.

COLLEGIATE MODULAR ATHLETIC LOCKERS

This top of the line series features lockers best suited for professional and collegiate sports teams. Designed as a mix-and-match modular locker, you're able to choose from 4 upper sections, 6 middle sections, and 4 base sections to create up to 96 different locker combinations.

We offer a wide variety of locker accessories and options:

- *Glass & Acrylic Doors*
- *LED & Custom Backlit Nameplates*
- *Helmet & Shoulder Pad Holders*
- *Hooks & Rod for Hanging Storage*
- *Personal Locker with Outlets & USB for Charging Securely*
- *Additional drawers or closures*
- *Vented Back Plate*
- *Custom Embroidered Bench Seats*
- *Drawer with Shoe Compartment Dividers*
- *Stainless Steel Storage Options*

Upper Section: *4 Modules*

Middle Section: *6 Modules*

Base Section: *4 Modules*

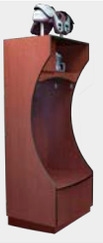
HIGH SCHOOL ATHLETIC LOCKERS

The high school athletic locker series features three locker body designs with a secure top locker and bottom lifting cabinet. Get all of the benefits from phenolic or PolyLife HDPE materials and add a more personal touch by mixing and matching dozens of add-ons and accessories.

We offer a wide variety of locker accessories and options:

- *Helmet & Shoulder Pad Holder*
- *Choose a Lock Option for the Top Locker*
- *Concealed Game Day Hook*
- *Stainless Steel Hardware & Fasteners*
- *Option for Engravings & Name Plates*
- *Lifting Cabinet for Additional Storage*
- *Optional Stainless Steel Top Locker & Bottom Cabinet*

Choose a Material & Body Style:

	Classic	*Angular*	*Elliptical*
Phenolic			
PolyLife			

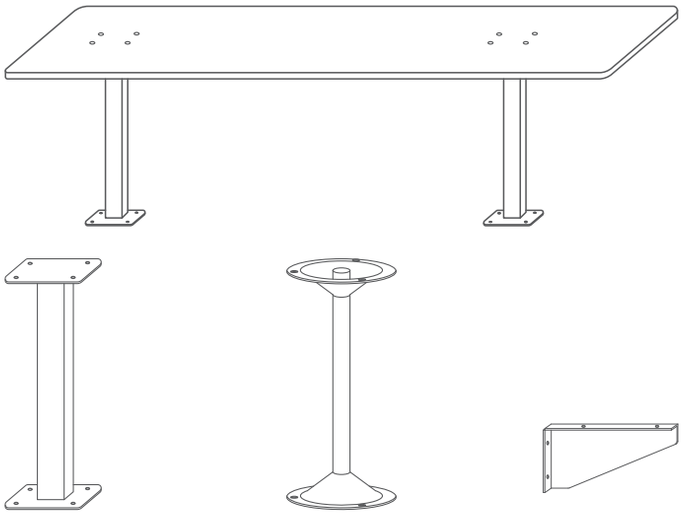

80
81
82
83
84

ADDITIONAL OPTIONS

When it comes to designing the perfect locker room, having a wide range of accessories and locker options is imperative. Whether you're looking to add LED lighting to a locker interior, or just need benches made of the same material as the lockers, we've got you covered.

As the industry's most experienced manufacturer of phenolic and PolyLife HDPE lockers, we welcome the opportunity to create a custom locker that exceeds all expectations in both quality and design.

ADDITIONAL OPTIONS



Aluminum Stainless Steel Wall Mounted

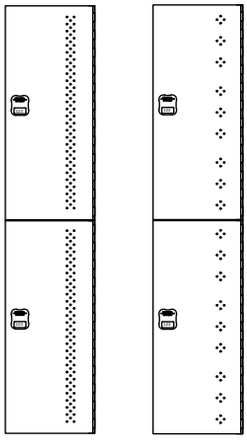
Locker Benches

Add phenolic or PolyLife HDPE locker benches to match your Columbia Lockers. Made from 1" PolyLife or 3/4" Phenolic thicknesses with rounded corners and eased edges. Bench tops are secured using thru-bolting or drilled & tapped holes for concealed attachment. Pedestals are connected to the wall or floor with stainless steel fasteners.

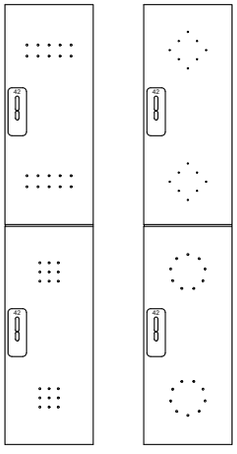
Choose between wall mounted (powder coated aluminum) or pedestal benches (powder coated aluminum, stainless steel, powder coated steel). ADA compliant benches are also available.

Sizes:

Length	36"	48"	60"	72"	84"	96"	120"
Depth	9"	10"	12"	24"			



PolyLife Options



Phenolic Options

Additional Ventilation

Columbia Lockers understand that customers may desire additional ventilation. We now offer two sets of hole patterns for each of our materials that increases airflow by approximately 17% or 47%. The 1/4" diameter holes are arranged in patterns that are designed to maintain the structural integrity of the locker door.

Engravings & Logos

Looking for a more personalized locker? Add any logo or graphic to your next phenolic locker project. Get all of the durability of solid phenolic with the added aesthetic appeal of a well-designed locker surface. Our design team will convert a mascot, logo, or custom graphic into an etched pattern. Choose any color of our phenolic materials with solid black core.

Custom Designs & Solutions

When it comes to creating the perfect locker, we believe that if you can dream it, we can design & build it. From wiring electronic components to creating custom drawers and cabinets, we have every option to create the perfect locker for your team or organization.


03
05
07
09
06

LOCK OPTIONS

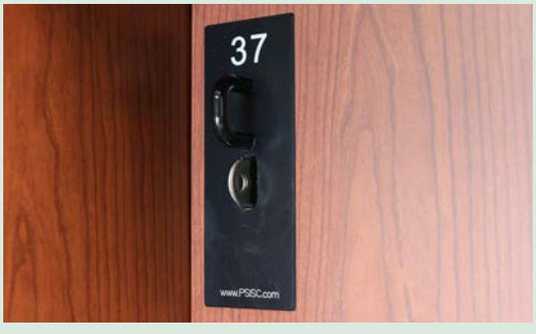
Standard Lock Option: *Hasp Bar for Padlock*

The hasp bar for padlock is a highly versatile locking system. It allows the user to bring their own lock to secure their personal belongings. The interior hasp bar is made of 11 gauge 304 grade stainless steel. This hasp bar fits through a slot on the door, offering superior theft resistance.

The identification plate is supplied for each door and is reverse engraved on the back so the front shows the numbers and will not collect dirt. Up to 4 alphanumeric characters are allowed on each plate.

PolyLife Hasp

An antimicrobial lift-handle is connected to the door to operate the latch and activation bars. A second hasp is connected to the handle which lines up with the interior hasp bar when in the closed position. A standard padlock can then be looped through both hasp bars to secure the locker.



Phenolic Hasp

The hasp bar is located in the interior of the locker and fits through a slot on the face of the door, which allows any padlock to be locked on the locker. The nylon or stainless steel handle fits nicely with the engraved name plate & makes identifying and opening the locker door easy.

Phenolic Recessed Handles

Handle and lock are flush with the locker face, perfect for hallways & other areas with a lot of foot traffic.

For more info, see pg. 27

MECHANICAL LOCKS

Brand	MasterLock	MasterLock	MasterLock
Model Number	1652	1670	1690
Latch Style	Springbolt	Deadbolt	Wrap Around
Locker Material	Phenolic	PolyLife	Phenolic
User Access	3-digit Combination	3-digit Combination	3-digit Combination
Supervisor Access	Lock Operation & Combo Changes	Lock Operation & Combo Changes	Lock Operation & Combo Changes
Assigned/Shared	Assigned	Assigned	Assigned
Left/Right Handed	Left/Right Handed	Left/Right Handed	Right Handed
Lock Orientations	Vertical	Vertical	Vertical
ADA Compliancy	ADA Compliant Key	ADA Compliant Key	ADA Compliant Key
Other Features	• Preloaded with 5 Combinations	• Preloaded with 5 Combinations	• Preloaded with 5 Combinations

				
MasterLock	Ojmar	Zephyr	Kenstan	Zephyr
3670	8001	6510	KL-100	5554
Deadbolt	Rotating Cam	Rotating Cam	Springbolt or Deadbolt	Springbolt or Deadbolt
Phenolic or PolyLife	Phenolic	Phenolic	Phenolic or PolyLife	Phenolic or PolyLife
3-digit Combination	4-digit Combination or Key	User-defined Combination (Clears Upon Opening)	Key	User-defined Combination (Clears Upon Opening)
Lock Operation & Combo Changes	Lock Operation & Combo Changes	Lock Operation & Combo Changes	Lock Operation	Lock Operation & Combo Changes
Shared	Assigned/Shared	Shared	Assigned	Shared
Left/Right Handed	Left/Right Handed	Left/Right Handed (Horizontal Orientation Only)	Left/Right Handed	Left/Right Handed
Vertical	Vertical	Vertical or Horizontal	Vertical	Vertical
N/A	ADA Compliant Key	N/A	N/A	N/A
• Retains Combination Until Reset	• Die-cast Lock body in Matte Chrome Finish	• Manual Turn Knob Operation • Zinc Die-cast Lock body	• Easy to Operate	• Zinc Die-cast Lock body

Important Note: Lock availablility is subject to change, please refer to lock manufacturer's website for more information.

ELECTRONIC LOCKS

Brand	MasterLock	Zephyr	Zephyr	Zephyr
Model Number	3685	2310	2154	2254
Latch Style	Deadbolt	Rotating Cam	Springbolt	Springbolt
Locker Material	Phenolic or PolyLife	Phenolic	Phenolic or PolyLife	Phenolic or PolyLife
User Access	4, 5, or 6-digit Combination or FOB	4 or 6-digit Combination	RFID Card Access	4-digit Combination or RFID Card Access
Supervisor Access	Lock Operation & Combo Changes	Lock Operation & Combo Changes	Lock Operation & Audit Trail	Lock Operation, Combo Changes, & Audit Trail
Assigned/Shared	Assigned/Shared	Assigned/Shared	Assigned/Shared	Assigned/Shared
Left/Right Handed	Right Handed	Right Handed	Left/Right Handed	Left/Right Handed
Lock Orientations	Vertical	Vertical or Horizontal	Horizontal	Horizontal
ADA Compliancy	ADA Compliant Options Available	N/A	ADA Compliant	ADA Compliant
Other Features	• CR123A Lithium Battery w/9V battery backup • Display/Sounds provide interactive feedback	• 2 AA Batteries • Surface or Recessed Mounting • Master Key Override • Rubberized knob for better grip	• 4 AA batteries (External battery powered emergency access) • Audible low power warning • RFID Cards, mini cards, key FOBS & wristbands	• 4 AA batteries (External battery powered emergency access) • Audible low power warning • RFID Cards, mini cards, key FOBS & wristbands

				
Zephyr	Zephyr	Zephyr	Ojmar	CompX
6210	5154	5254	OJ-100	Cam: REG-M-V-3 Springbolt: REG-S-L-3
Rotating Cam	Springbolt	Springbolt	Springbolt or Deadbolt	Rotating Cam or Springbolt
Phenolic	Phenolic or PolyLife	Phenolic or PolyLife	Phenolic or PolyLife	Phenolic
Programmable Push Button Combination or FOB	RFID Card, FOB, or Wristband	Programmable Combination or FOB	4, 5, or 6-digit Combination or FOB	4-8-digit Combination
Lock Operation & Combo Changes	Lock Operation & Audit Trail	Lock Operation, Combo Changes, & Audit Trail	Lock Operation, Combo Changes, & Audit Trail	Lock Operation & Combo Changes
Assigned/Shared	Assigned/Shared	Assigned/Shared	Assigned/Shared	Assigned/Shared Use* *Cam for Assigned Use Only*
Left/Right Handed (Horizontal Orientation Only)	Left/Right Handed	Left/Right Handed	Left/Right Handed	Left/Right Handed
Vertical or Horizontal	Horizontal	HorizontaL	Vertical	Vertical or Horizontal
ADA Compliant Options Available	ADA Compliant	ADA Compliant	ADA Compliant Options Available	N/A
• Zinc Die-Cast Lock Body • Wireless Capability with optional Hardwire Capability • Audible and LED visual indicators	• Zinc Die-Cast Lock Body • Audible and Visual LED Indicators • Humidity Resistant	• Zinc Die-Cast Lock Body • Audible and Visual LED Indicators • Humidity Resistant	• Black or White Finishes • 3 Color LED for Lock Status • Automatic Open & Time-Delay Open via Software • Low Battery Indicator	• Low Battery Indicator • Easy to Clean • 2 AAA Batteries (Accessible from outside of Locker Body)

Important Note: Lock availablility is subject to change, please refer to lock manufacturer's website for more information.

ELECTRONIC LOCKS, *Continued*

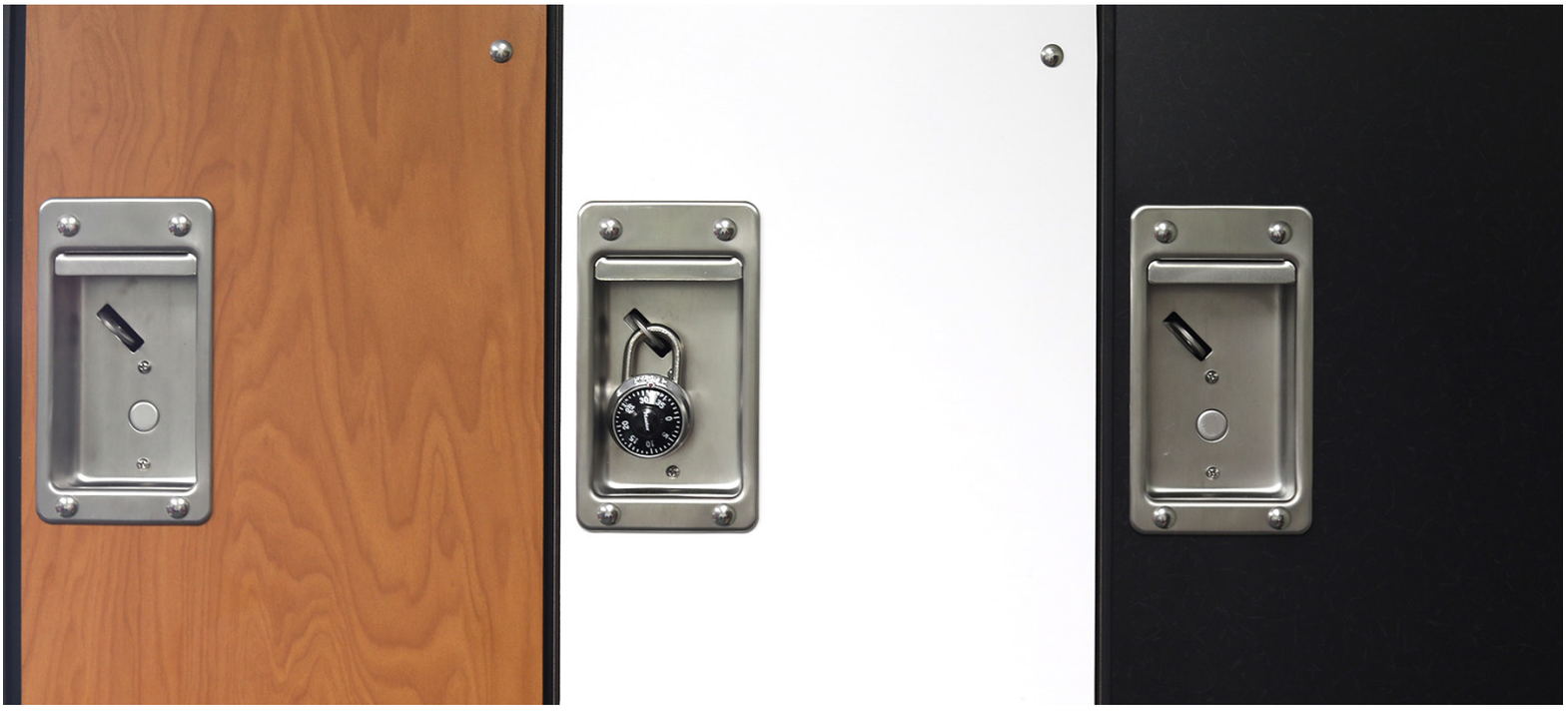
Brand	Digilock Axis	Digilock Cue	Digilock Sola	Digilock Legacy
Model Number	DL-100	DL-535	DL-540	DL-500
Latch Style	Springbolt or Deadbolt	Springbolt or Deadbolt	Rotating Cam	Springbolt or Deadbolt
Locker Material	Phenolic or PolyLife	Phenolic or PolyLife	Phenolic	Phenolic or PolyLife
User Access	4-digit Combination, Key, or Touch RFID	4-digit Combination, Key, or Touch RFID	Programmable Combination	Programmable Combination
Supervisor Access	Lock Operation & Combo Changes	Lock Operation & Combo Changes	Lock Operation & Combo Changes	Lock Operation & Combo Changes
Assigned/Shared	Assigned/Shared	Assigned/Shared	Assigned/Shared	Assigned/Shared
Left/Right Handed	Left/Right Handed	Left/Right Handed	Left/Right Handed	Left/Right Handed
Lock Orientations	Vertical or Horizontal	Vertical	Vertical or Horizontal	Vertical or Horizontal
ADA Compliancy	ADA Compliant Options Available	ADA Compliant Options Available	ADA Compliant Options Available	ADA Compliant Options Available
Other Features	• 4 AA batteries • 2 Models: Standard Keypad or Touch RFID Access • Optional Pull Handle • 2 Body Style Options	• 4 AA batteries • 2 Models: Standard Keypad or Touch RFID Access • Integrated Pull Handle • Key or Code Managed Options	• 2 AAA batteries • Visual & Audible Indicators • Key or Code Managed Operations	• 4 AA batteries • Optional Pull Handle • 2 Body Style Options

Important Note: Lock availablility is subject to change, please refer to lock manufacturer's website for more information.

Don't see a lock you're looking for? Ask a member of our team about a specific lock brand or model for your locker projects.

NEW

PHENOLIC RECESSED HANDLES



Solid phenolic is the most durable material for the manufacturing of lockers and is an excellent choice for high-traffic facilities. As a highly versatile and customizable material, it was a surprise to discover an important aspect was missing from the phenolic locker market: a flat locker face.

As the first and only recessed handle on the phenolic locker market, Columbia Lockers is proud to introduce this innovative design option to our entire phenolic locker product line.

Recessed handles are a safer option because passerby foot traffic can avoid bumping into or catching on a handle or lock that protrudes from the surface of the lockers.

Recessed Handles are available for any configuration of phenolic Columbia Lockers.

MANUFACTURED BY PSiSC®:

COLUMBIA LOCKERS®

COLUMBIA PARTITIONS®

COLUMBIA ACCESSORIES®

SEE OUR SPECIFICATIONS:

MASTERSPEC® building specs done right

ARCAT®

BSD speclink™

PSiSC®
PARTITION SYSTEMS INTERNATIONAL
OF SOUTH CAROLINA
"Promoting a Greener Environment"
A DIVISION OF CSSC®

825 Garland Street | Columbia, SC 29201
www.psisc.com **Office:** 866.337.7286 **Fax:** 866.337.7291

SAMPLE COLUMBIA POLYLIFE® LOCKER WARRANTY

Partition Systems Incorporated of South Carolina guarantees its PolyLife® Lockers and Locker Benches when properly maintained, against defects in workmanship and defects in the materials to include corrosion and delamination for a period of (25) twenty five years from date of invoice.

This warranty also guarantees that the hardware provided for the Columbia PolyLife® Lockers to be free from defects and to operate accordingly for a period of (2) two years from date of invoice.

This warranty excludes damage from acts of vandalism, misuse, improper installation, inadequate maintenance, use of acid products or improper handling of the product.

This warranty is in lieu of any other warranties expressed or implied by representatives, dealers or employees without the written consent of Partition Systems Incorporated of South Carolina

Very truly yours,
Partition Systems Incorporated of South Carolina

Kenneth A. Bass
CEO

(Office) 866.337.7286 (Fax) 866.337.7291 PO Box 181 / Columbia, SC / 29202 / www.PSiSC.com

CORDOGAN CLARK
ARCHITECTURE · ENGINEERING · CONSTRUCTION

ARCHITECT'S ADDENDUM

Addendum Number: 002

Date: 04.12.22

RE: River Valley School Consolidation

Prepared By: Cayce Horton
Cordogan, Clark & Associates

CCA Project No.: 21346

To: Prospective Bidders

Subject: Addendum No. 001 to the Construction Documents for the River Valley School Consolidation Project.

This Addendum forms a part of the Construction Documents and modifies the original Construction Documents, dated 03.22.22. Acknowledge receipt of this Addendum in space provided on the Bid Form. Failure to do so may subject Bidder to disqualification.

THE FOLLOWING ITEMS ARE TO BE INCLUDED IN THE PROPOSAL.

Clarifications To The Specifications:

237413 – PACKAGED, OUTDOOR, ROOFTOP UNITS

- Section 2.1A.2 – CLEARIFY Trane (Horizon RTU)
- Section 2.3C – REVISE to double wall, foam insulated R-13 panel.
- Section 2.4 – REVISE to 2" MERV 8 pre-filter and 4" MERV 13 Final filter.
- Section 2.5.C – REMOVE from section
- Section 2.6.C – REVISE to stainless steel heat exchanger.
- Section 2.9.C – REMOVE from section
- Section 2.10 – REVISE to factory installed modulating power exhaust with EC motor or VFD.
- Section 2.12.B – REMOVE from section
- Section 2.14.G – REMOVE from section
- Section 2.15A – REMOVE from section
- Section 2.15E – REMOVE from section

Clarifications To The Drawings:

Sheet C1.1

- CLARIFY Alternate descriptions

Sheet C2
- CLARIFY Alternate descriptions

Sheet A1.1C
- DEMOLISH door, note d1, north wall of room C114.

Sheet A1.2B
- REVISE ceiling demolition to full ceiling removal in B114.

Sheet A2.1C
- ADD door E.5 replacement room C114.

Sheet A3.1B
- REVISE ceiling to full ceiling replacement in B114.

Sheet A4.1
- ADD detail 7/A4.2 tag.

Sheet A4.1D
- ADD detail 7/A4.2 tag.

Sheet A4.2
- REVISE roof detail 3 " TYPICAL PIPE PENETRATION DETAIL"
- OMIT roof detail 6 "EQUIPMENT SUPPORT – RAILS"

Sheet A9.0
- ADD door E5. HARDWARE SET TBD

Sheet M2.1A
- ADD FC-A128 with assoacited ductwork, 1" condensate pipe, outside air intake, and controls.

Sheet M2.1B
- MODIFY the supply and return ductwork on RTU-B114 and RTU-B117.
- MODIFY the supply and return ductwork on RTU-B120 along with the rooftop units location.

Sheet M2.1C
- MODIFY supply and return ductwork on FC-C119 system.

Sheet M2.2A
- ADD HP-A128 and GC-A128 to the roof plan.

Sheet M2.2B
- ADJUST RTU-B120 location on roof along with its assoacited gas piping.

Sheet M2.2C
- ADD GC-C119 to the roof plan.

Sheet M4.0

- REVISE RTU-B120 note from 3 to 2.
- ADD FC-A128 to the indoor dan coil unit schedule
- ADD HP-A128 to the outdoor heat pump schedule.
- REVISE NOTE 3 AND 4 on the unit ventilator schedule to the following; "Refer to louver schedule for additional information".
- ADD diffuser tag H model number CFD-18 by Titus, flush mounted diffuser, aluminum, and white finish.
- ADD to note1 in the RTU schedule and RTU alternate #1 schedule to include the following' Provide and include enonomizer fault detection diagnostics (FDD), CO2 demand controlled ventilation, and powered exhusat fan with building static pressure control.'

SHEET E1.1A

- REVISE per attached

SHEET E1.1C

- REVISE per attached

SHEET E1.1D

- REVISE per attached

SHEET E2.1B

- REVISE per attached

SHEET E2.2

- REVISE per attached

SHEET E4.2

- REVISE per attached

SHEET E4.3

- REVISE per attached

SHEET E4.4

- REVISE per attached

SHEET E4.5

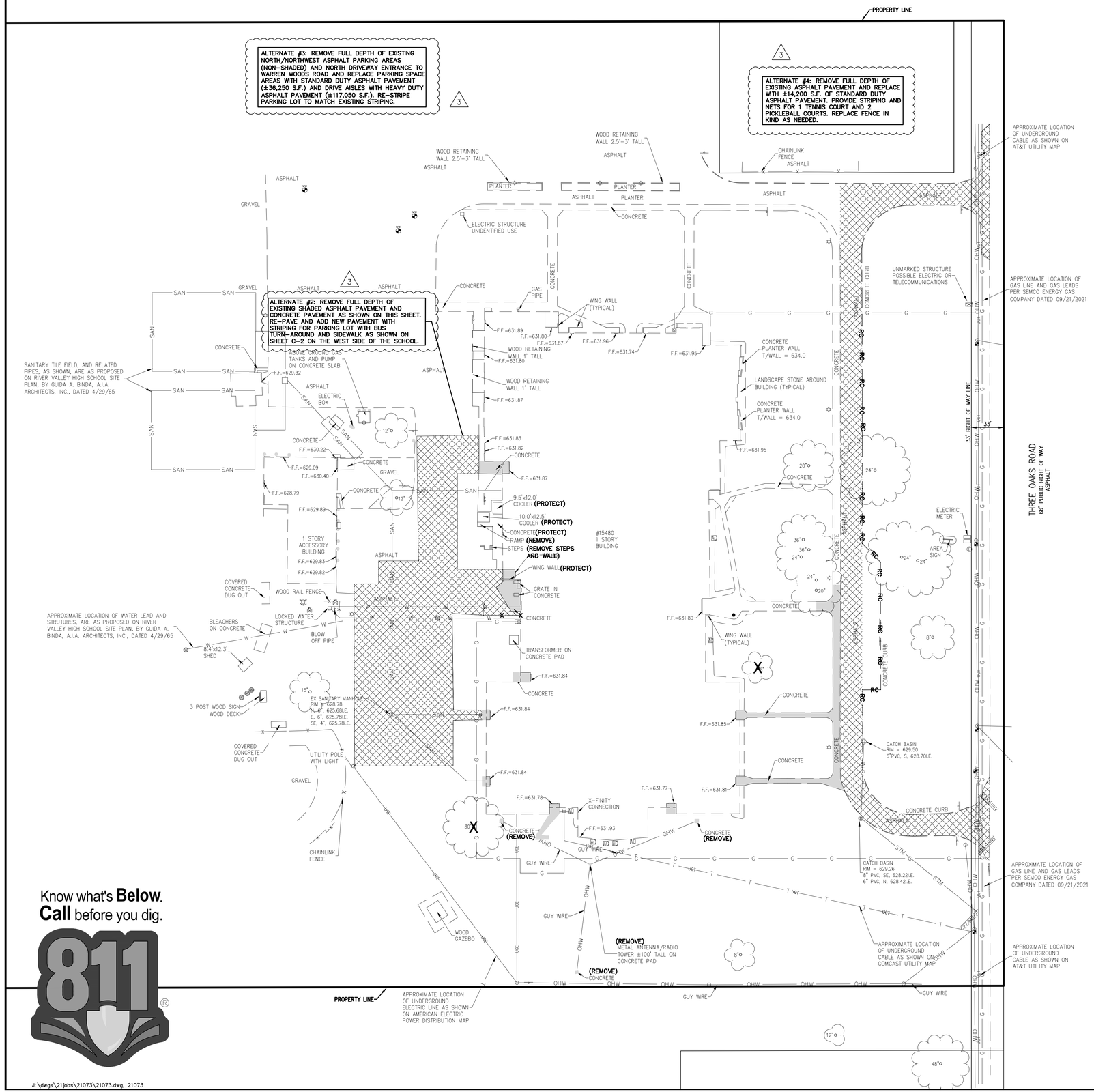
- REVISE per attached

Attachments:

REVISED C1.1
REVISED C2
REVISED A2.1C
REVISED A3.1B
REVISED A4.1
REVISED A4.1D

REVISED A4.2
REVISED A9.0
REVISED M2.1A
REVISED M2.1B
REVISED M2.1C
REVISED M2.2A
REVISED M2.2B
REVISED M2.2C
REVISED M4.0
REVISED E1.1A
REVISED E1.1C
REVISED E1.1D
REVISED E2.1B
REVISED E2.2
REVISED E4.2
REVISED E4.3
REVISED E4.4
REVISED E4.5

End Of Addendum No. 002



Know what's **Below**.
Call before you dig.

811

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GENERAL NOTES:

1. THESE PLANS ARE BASED ON THE ARCHITECTURAL SURVEY (SURVEY PROJECT #3452-271 DATED 11/04/2021) PREPARED BY: CORE LAND CONSULTING 30445 NORTHWESTERN HWY., SUITE 143 FARMINGTON HILL, MI 48334 (248) 932-7120
2. PRIOR TO CONSTRUCTION, CONTRACTOR TO CONTACT THE DESIGN ENGINEER AND ARCHITECT TO VERIFY THAT THEY ARE WORKING FROM THE MOST CURRENT SET OF PLANS AND SPECIFICATIONS.

GENERAL NOTES:

1. CONTRACTOR SHALL VERIFY IF STOCKPILES WILL BE ALLOWED ON SITE. COORDINATE WITH PROJECT MANAGER FOR THE PLACEMENT OF MATERIAL STOCKPILES IF PERMITTED. ALL MATERIALS ARE TO BE STOCKPILED SEPARATELY FOR USE IN PREPARING THE BUILDING PAD AND PAVEMENT SUB-BASE IF APPROVED BY TESTING COMPANY AS SUPPLIED BY THE OWNER.
2. ALL CONCRETE TO BE PULVERIZED TO 3" MAXIMUM PIECES. MATERIALS MAY BE STOCKPILED (SEPARATELY) AND USED FOR BACKFILL AT A LATER DATE IF APPROVED BY TESTING COMPANY AS SUPPLIED BY THE OWNER.
3. ASPHALT MILLINGS MAY BE USED IN UNDERCUT AREAS ONLY IF THEIR GRADATION EQUALS CA-6 AND IF APPROVED BY TESTING COMPANY AS SUPPLIED BY THE OWNER.
4. ALL EXISTING UTILITIES ARE TO BE REMOVED WHERE INDICATED.
5. CONTRACTOR TO COORDINATE WITH ALL UTILITY COMPANIES.
6. CONTRACTOR IS TO TAKE CARE IN LIMITING MATERIALS FROM ENTERING THE STORM EXISTING STORM AND SANITARY SEWERS.
7. MAINTAIN POSITIVE DRAINAGE DURING CONSTRUCTION.
8. CONTRACTOR SHALL OBTAIN ALL PERMITS REQUIRED FOR DEMOLITION INCLUDING, BUT NOT LIMITED TO BERRIEN COUNTY, NPDES, VILLAGE OF THREE OAKS.
9. CONTRACTOR TO VERIFY ALL QUANTITIES PRIOR TO BIDDING AND SHALL INFORM OWNER/ENGINEER OF ANY DISCREPANCIES.
10. CONTRACTOR TO CONTACT OWNER/ENGINEER TO DISCUSS ANY QUESTIONS OR DISCREPANCIES FOUND ON SITE PRIOR TO ANY CONSTRUCTION. EXISTING UTILITIES ENCOUNTERED THAT ARE NOT SHOWN ON THIS PLAN SHOULD BE BROUGHT TO THE ATTENTION OF THE ENGINEER/OWNER IMMEDIATELY IN ORDER TO MAKE A DECISION. PROVIDE ITEMIZED FEE FOR UTILITY REMOVAL (LINEAL FOOT) IN BID.
11. CONTRACTOR SHALL REMOVE ALL ABOVE GROUND STRUCTURES TO GRADE.
12. CONTRACTOR SHALL REMOVE ALL FOOTINGS, FOUNDATIONS, AND BELOW GRADE CONCRETE OR OTHER OBSTRUCTIONS TO FULL DEPTH.
13. ALL SANITARY AND WATER SERVICES SHALL BE REMOVED AND CAPPED AT THE PROPERTY LINE UNLESS OTHERWISE NOTED.
14. CONTRACTOR SHALL REFERENCE LANDSCAPE PLAN AND/OR TREE PRESERVATION PLAN FOR ALL PLANT MATERIAL. NOTES SHOWN ON THIS PLAN REGARDING LANDSCAPING ARE FOR REFERENCE ONLY. DETAILED INFORMATION REGARDING THE EXISTING PLANT MATERIALS IS SHOWN ON THOSE PLANS AND SHALL BE FOLLOWED.
15. ALL ITEMS LABELED "PROTECT" SHALL BE PROTECTED AND SHALL NOT BE REMOVED OR ALTERED AS THEY ARE TO BE RE-USED IN THE PROPOSED DEVELOPMENT.
16. THE PLAN IS NOT INTENDED TO DICTATE MEANS AND METHODS, BUT RATHER CLARIFY WHICH EXISTING IMPROVEMENTS SHALL BE PROTECTED AND WHICH SHALL BE REMOVED OR ABANDONED AND THE EXTENT TO WHICH THEY SHALL BE REMOVED OR ABANDONED.

DEMOLITION LEGEND

- REMOVE EXISTING ASPHALT (FULL DEPTH)
- REMOVE EXISTING CONCRETE (FULL DEPTH)
- RC RC RC RC RC RC RC = REMOVE EXISTING CURB AND GUTTER (TYP.)
- ⊠ = REMOVE EXISTING OBJECT (UTILITY POLES, GUY WIRES, LIGHTS, MANHOLES, SIGNS, ETC.) (TYP.)
- X = REMOVE EXISTING TREE INCLUDING STUMP AND STUMP GRINDINGS/REMOVE BUSH. SEE LATEST TREE PRESERVATION PLAN FOR DETAILS.

50 0 25 50 100 200

DEMOLITION PLAN

NO	REVISIONS	DATE
1	95% CD PROGRESS SET	3/3/22
2	CD BID SET	3/22/22
3	ADDENDUM 002	4/12/22

Prepared For:

CORDOGAN CLARK AND ASSOCIATES
960 Ridgeway Road
Aurora, IL 60506

RIVER VALLEY K-12 SCHOOL - THREE OAKS
15480 Three Oaks Road
Three Oaks, Michigan

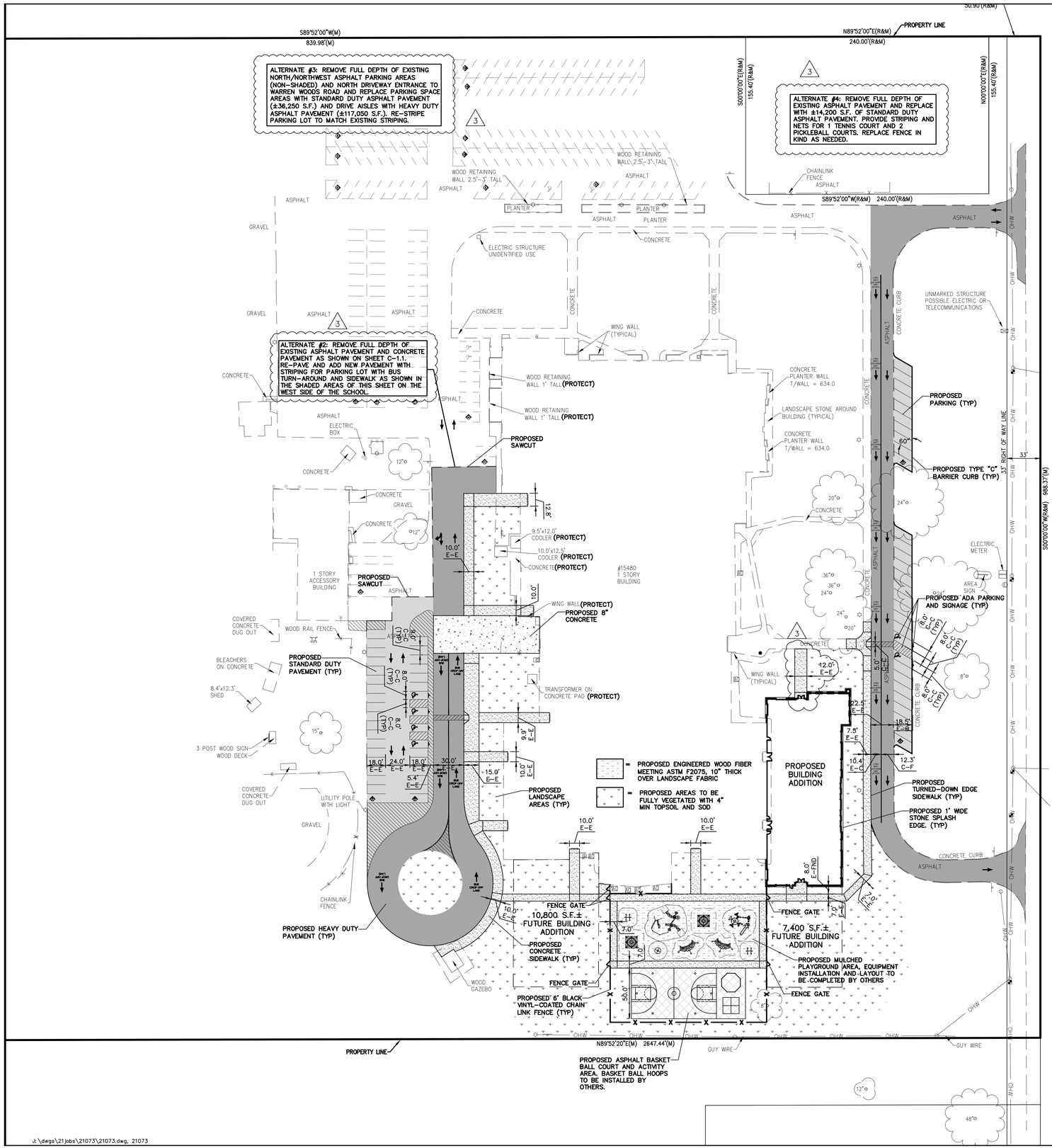
Prepared By:

Watermark Engineering RESOURCES
watermark-engineering.com | 2631 Ginger Woods Pkwy | Aurora, IL 60502 | (630) 375-1800

CHECKED BY: J. MILLER
DESIGN BY: H. WITTENKELLER
DRAWN BY: K. SACK
DATE: NOVEMBER 23, 2021
SCALE: 1" = 50'
PROJECT NO.: 21-073

DEMOLITION PLAN

C-1.1



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2. PRIOR TO CONSTRUCTION, CONTRACTOR TO CONTACT THE DESIGN ENGINEER AND ARCHITECT TO VERIFY THAT THEY ARE WORKING FROM THE MOST CURRENT SET OF PLANS AND SPECIFICATIONS.

ON SITE PARKING DATA

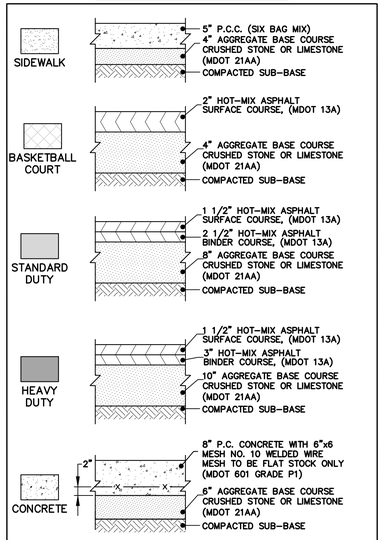
REGULAR SPACES	237
ADA ACCESSIBLE SPACES	8
TOTAL SPACES	245

SITE DATA

LOT AREA	= 2,619,698 S.F. (60.14 AC.)
PROPOSED BUILDING AREA	= 12,263 S.F.
F.A.R.	

GEOMETRIC PLAN NOTES:
1. PROPOSED IMPROVEMENTS ARE PARALLEL AND PERPENDICULAR TO THE EXISTING BUILDING.
2. ALL RADIUS DIMENSIONS ARE TO BACK OF CURB.
3. SEE ARCHITECTURAL PLANS FOR EXACT BUILDING DIMENSIONS.
4. ALL STRIPING TO BE DOUBLE COATED 4" YELLOW PAINT UNLESS OTHERWISE NOTED.
5. WHERE PEDESTRIANS HAVE TO CROSS A TAPERING RAMP OR CURB RAMP THE FACE AND TOP OF CURB ARE TO BE PAINTED USING YELLOW, SLIP RESISTANT PAINT.

PAVEMENT LEGEND



NOTES:
1. REFERENCE M.D.O.T. STANDARD SPECIFICATIONS (LATEST EDITION) DIVISION 5 FOR BINDER & SURFACE COURSES AND DIVISION 3 FOR AGGREGATE BASE COURSE.
2. ASPHALT BINDER TO BE IN CONFORMANCE WITH LOCAL AGENCY PROGRAMS, HMA SELECTION GUIDELINES, BINDER GRADES BY REGION. (SUPERIOR, METRO OR OTHER)
3. THE APPLICATION RATES FOR THE PRIME COAT AND TACK COAT ARE TO BE 0.30 AND 0.10 GALLONS PER SQUARE YARD, RESPECTIVELY.
4. SEE PROJECT SPECIFICATIONS FOR SUB-BASE AND BASE COURSE COMPACTION.
5. ALL CONCRETE FLATWORK TO INCLUDE A JOINTING PATTERN SUBMITTAL TO THE CONSTRUCTION MANAGER. CONTRACTOR TO STAY AS CLOSE TO 9'x9' SQUARE PANELS IN LARGE CONCRETE FLATWORK AREAS AS POSSIBLE.
6. FOR SIDEWALKS, PROVIDE TOOLED JOINTS AT 5' O.C., CONTRACTION JOINTS AT 15' O.C., EXPANSION JOINTS AT 45' O.C.
7. PROVIDE AN EXPANSION JOINT ADJACENT TO ALL STRUCTURES. THESE JOINTS SHOULD BE SEALED WITH A TOOL-FINISHED SILICONE SEALANT PER M.D.O.T. STANDARD.

DIMENSION LEGEND

F	= FACE	FNC	= FENCE
FND	= FOUNDATION	R	= RADIUS
B	= BACK	C	= CENTER
E	= EDGE	PL	= PROPERTY LINE

50 0 25 50 100 200

GEOMETRIC PLAN

C-2

NO	REVISIONS	DATE
1	95% CD PROGRESS SET	3/3/22
	CD BID SET	3/22/22
2	ADDENDUM 002	4/12/22
3		

Prepared For:

CORDOGAN CLARK AND ASSOCIATES
960 Ridgeway Road
Aurora, IL 60506

RIVER VALLEY K-12 SCHOOL - THREE OAKS
15480 Three Oaks Road
Three Oaks, Michigan

Prepared By:

Watermark Engineering RESOURCES
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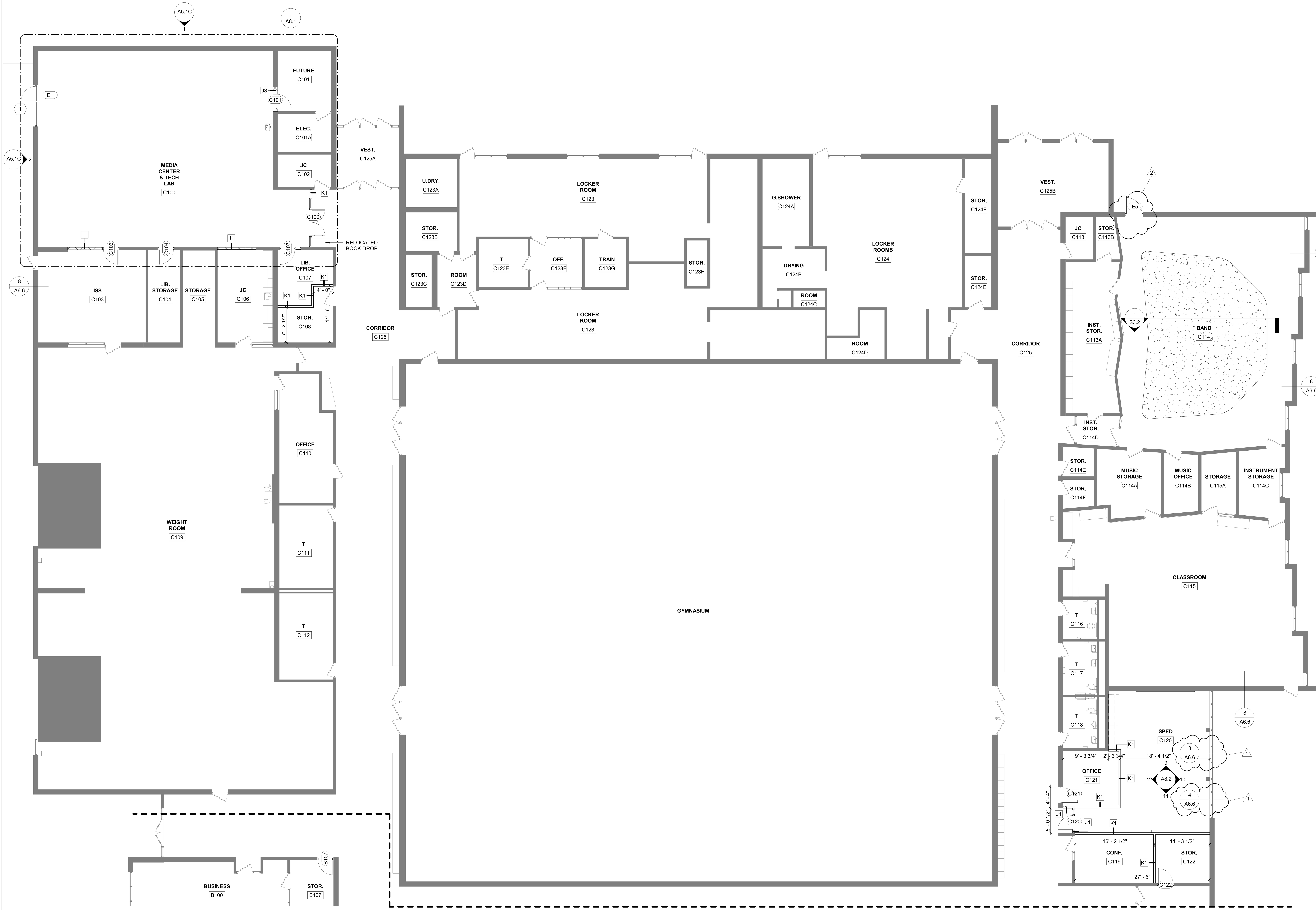
CHECKED BY: J. MILLER
DESIGN BY: H. WITTENKELLER
DRAWN BY: K. SACK
DATE: NOVEMBER 23, 2021
SCALE: 1" = 50'
PROJECT NO.: 21-073

GEOMETRIC PLAN



NORTH

1 FLOOR PLAN - AREA C
1/8" = 1'-0"

GENERAL FLOOR PLAN NOTES

1. PROVIDE GYPSUM BOARD CONTROL JOINTS THE FULL HEIGHT OF THE PARTITION PER GYPSUM ASSOCIATION STANDARD RECOMMENDATIONS.
2. EXTEND ALL PARTITIONS TO BOTTOM OF DECK. CEILING ABOVE UNLESS OTHERWISE NOTED.
3. LOCATE DOORS 4" FROM INSIDE CORNER UNLESS OTHERWISE NOTED.
4. ALL INFILL WALLS ARE TO MATCH ADJACENT CONSTRUCTION AND THICKNESS (V.I.F.). PATCH, MATCH, AND PAINT BOTH SIDES TO ACHIEVE CONTINUOUS FINISH ON BOTH SIDES.
5. ALL EXISTING DOOR FRAMES WITHIN PROJECT SCOPE TO REMAIN ARE TO BE PAINTED TO MATCH NEW DOOR FRAMES.
6. AT ALL AREAS OF GYP BD WALLS AND CEILING TO REMAIN, PATCH AND MATCH ALL PREVIOUSLY EXISTING DAMAGE, IMPERFECTIONS, AND HOLES AS WELL AS ANY DAMAGE OCCURRING DURING CONSTRUCTION AND DEVICE RELOCATION TO ACHIEVE CONTINUOUS FINISH.
7. PATCH AND MATCH EXISTING CONCRETE FLOOR SLAB TO MATCH ADJACENT CONSTRUCTION AS REQUIRED AT ALL AREAS DISTURBED FOR IN-SLAB PLUMBING WORK. COORDINATE WITH PLUMBING DRAWINGS.
8. PROVIDE CORNER GUARDS AS SPECIFIED ON ALL VERTICAL GYP BD OUTSIDE CORNERS.

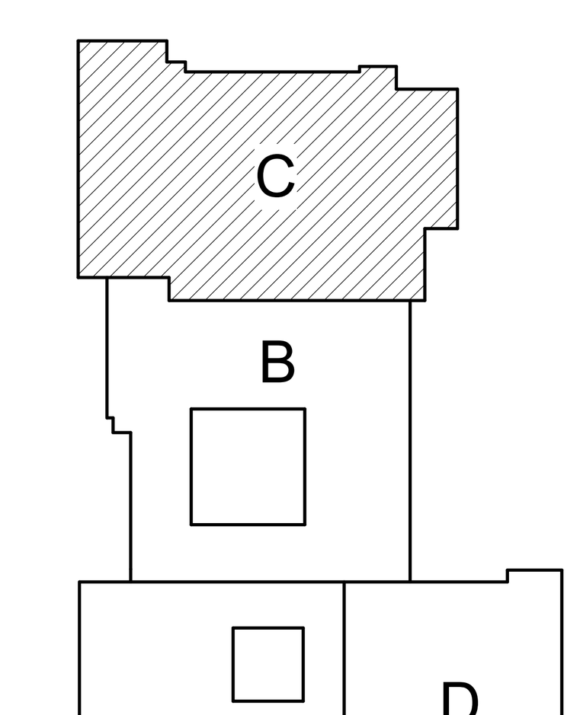
FLOOR PLAN KEYNOTES

- F1 PROVIDE FRAMING AND GYP BD AS REQUIRED TO MATCH GYP BD COLUMN WRAP ON OPPOSITE SIDE OF CORRIDOR.
- F2 ROOM TO BE FULLY ENCLOSED IN 2 HOUR FIRE RATING. PROVIDE 2 LAYERS OF TYPE X GYP BD AT EACH SIDE OF ALL WALLS AND 2 LAYERS AT CEILING REGARDLESS OF WALL TYPES NOTED. FIRE CAULK ALL PENETRATIONS. REFERENCE UL U419. PROVIDE RATED DOOR AND FRAME.
- F3 STEEL SHIPS LADDER AS SPECIFIED. PAINT <PT-02> AS SPECIFIED.
- F4 INFILL WALL PENETRATION TO MATCH ADJACENT CONSTRUCTION. PATCH AND MATCH ALL FINISHES, TYP.
- F5 EXISTING MECHANICAL EQUIPMENT TO REMAIN. PROTECT AT ALL TIMES DURING CONSTRUCTION.
- F6 NEW MECHANICAL EQUIPMENT. MODIFY EXISTING LOUVER OPENING TO ACCOMMODATE NEW LOUVER AS REQUIRED. PROVIDE NEW LINTEL AND BRICK LEDGE AS REQUIRED. PATCH AND MATCH EXISTING FINISHES AS REQ'D. COORDINATE WITH MECH DRAWINGS FOR FURTHER INFORMATION.
- F7 MODIFY WALL AND FINISHES AS REQUIRED FOR NEW PLUMBING WORK. PATCH AND MATCH AS REQUIRED. COORDINATE WITH PLUMBING AND MECHANICAL DRAWINGS.
- F8 CUT WALLS AS REQUIRED FOR NEW PIPING WORK. COORDINATE WITH PLUMBING DRAWINGS FOR MORE INFORMATION. CORE THROUGH BRICK AND SUPPORT REMAINING BRICKS AS REQ'D.
- F9 PROVIDE NEW MANUAL ROLLER SHADE AS SPECIFIED.
- F10 PROVIDE NEW MOTORIZED ROLLER SHADE AS SPECIFIED. COORDINATE WITH ELECTRICAL DRAWINGS FOR CONTROL INFORMATION.
- F11 PROVIDE NEW CHASE FOR EXISTING UNIT PIPING. ALL PIPING AND ELECTRICAL CONDUIT/BOXES TO BE CONCEALED FROM VIEW.
- F12 PROVIDE NEW CHASE WALL TO EXTEND EXISTING CHASE TO ACCOMMODATE NEW PIPING WORK. REFER TO MPFP DRAWINGS FOR MORE INFORMATION. PATCH AND MATCH EXISTING FINISHES. MODIFY SURFACE RACEWAY AS REQUIRED TO ACCOMMODATE WORK. PROVIDE ACCESS DOORS AS REQUIRED FOR MAINTENANCE

ALTERNATES KEYNOTES

WORK RELATED WITH THE FOLLOWING ALTERNATES:

- A1 ROOF TOP UNITS IN LIEU OF UNIT VENTILATION AT EXISTING.
- A2 SITE WORK ON WEST SIDE OF THE BUILDING.
- A3 ADDITIONAL PAVEMENT REPLACEMENT.
- A4 TENNIS COURT SURFACE REPLACEMENT.
- A5 SINKS IN ELEMENTARY CLASSROOMS.
- A6 CLERESTORY OMISSION.



KEY PLAN
NOT TO SCALE

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RIVER VALLEY SCHOOL DISTRICT

SCHOOL CONSOLIDATION
15480 THREE OAKS RD.
THREE OAKS, MI 49128

FLOOR PLAN - AREA C

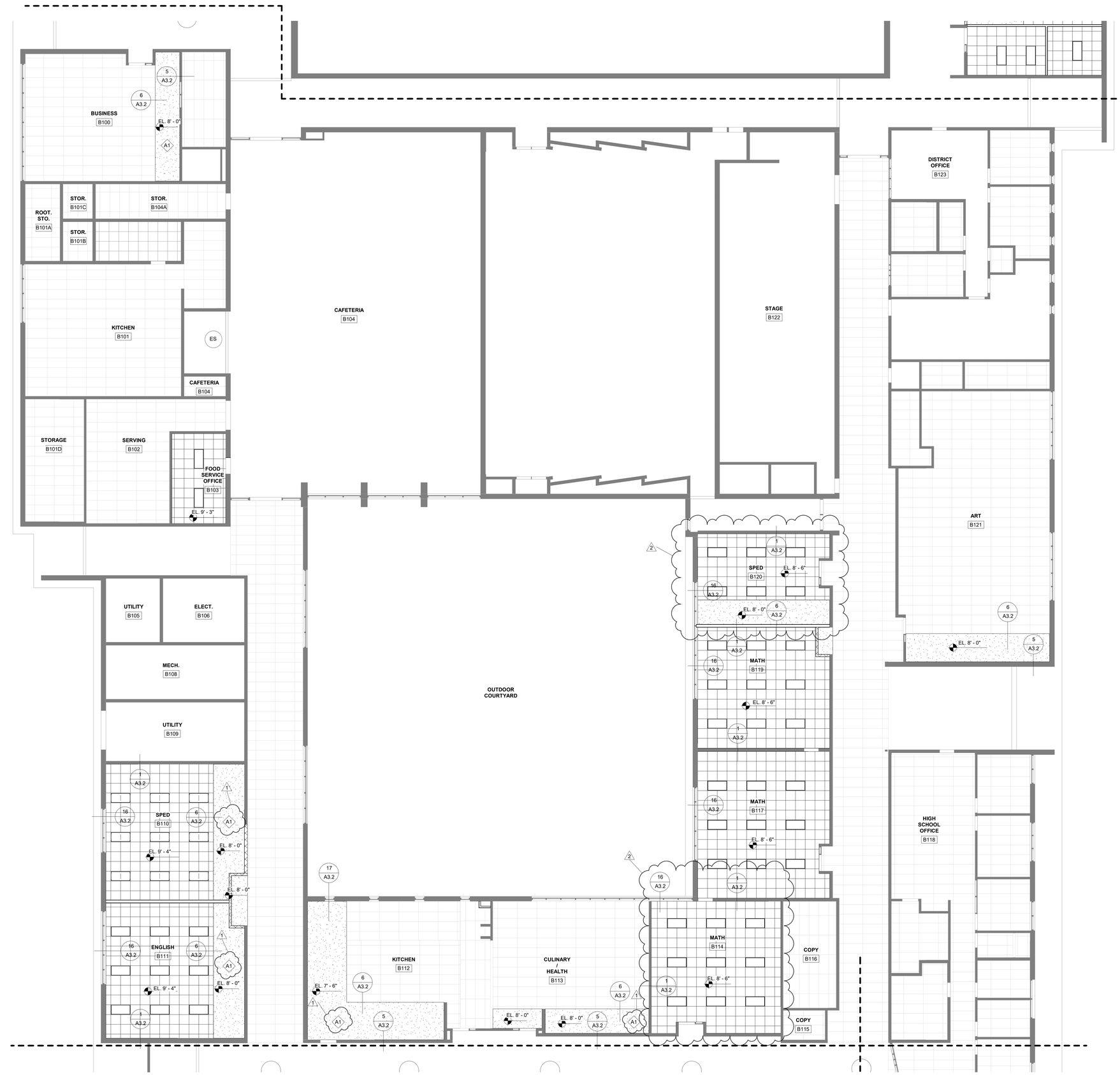
JOB NUMBER 21-346
DATE 03.22.22

REVISIONS:
1 ADD. 1 03.31.22
2 ADD. 2 04.12.22

STATE OF MICHIGAN
John G. Cordogan
Architect
No. 1301035955
LICENSED ARCHITECT

CD BID SET

A2.1C



NORTH

1 REFLECTED CEILING PLAN - AREA B
1/8" = 1'-0"

REFLECTED CEILING LEGEND

- EXISTING LIGHT FIXTURE. SEE ELECTRICAL PLANS FOR REPLACEMENT SCOPE.
- NEW LIGHT FIXTURE. SEE ELECTRICAL PLANS FOR MORE INFORMATION
- EXISTING ACOUSTICAL CEILING TILE
- NEW ACOUSTICAL CEILING TILE
- EXISTING 1x1 ADHERED CEILING TILE
- EXISTING, NEW GYPSUM BOARD CEILING, RESPECTIVELY
- PJ — NEW PROJECTOR. SEE ELECTRICAL DRAWINGS FOR FURTHER INFORMATION.
- EXISTING, NEW EM LIGHT. SEE ELECTRICAL DRAWINGS FOR FURTHER INFORMATION.
- EXISTING, NEW EXIT SIGN. SEE ELECTRICAL DRAWINGS FOR FURTHER INFORMATION.
- MECHANICAL UNIT. SEE MECHANICAL DRAWINGS FOR MORE INFORMATION.

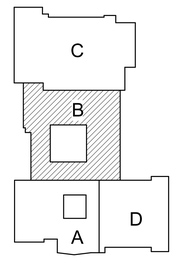
GENERAL CEILING NOTES

1. REFER TO ELECTRICAL DRAWINGS AND SPECIALTY LIGHTING DRAWINGS FOR LIGHT FIXTURE INFORMATION.
2. REFER TO ELECTRICAL DRAWINGS FOR COORDINATION OF EXIT SIGNS, ETC.
3. REFER TO MECHANICAL AND FIRE PROTECTION DRAWINGS FOR COORDINATION OF DIFFUSERS, SPRINKLER HEADS, ETC.
4. REFER TO AUDIO VISUAL DRAWINGS FOR SPEAKER LOCATIONS, ETC.
5. CENTER SPRINKLER HEADS IN CEILING TILES, UNLESS NOTED OTHERWISE.
6. IN AREAS OF 2'x2' ACT WHERE LESS THAN 4" OF TILE WOULD BE REQUIRED TO FILL SPACE TO THE WALL, PROVIDE MATCHING 2'x4' TILE CUT AS REQUIRED TO FILL SPACE. DO NOT PROVIDE INTERVENING TEE GRID.
7. PROVIDE GYPSUM BOARD CONTROL JOINTS THE FULL LENGTH OF THE CEILING FOR A SPACING OF 30'-0" O.C. MAX.
8. METAL FRAMING PERFORMANCE CRITERIA: PROVIDE NECESSARY FRAMING, GAUGES, FASTENERS, ETC. TO ACHIEVE L/360 DEFLECTION AT ALL METAL FRAMING INSTALLATIONS.
9. ALL PENETRATIONS WITHIN FIRE RATED CEILINGS ARE TO BE SEALED WITH FIRE CAULKING TO MAINTAIN THE SPECIFIED U.L. DESIGN. CONTRACTOR RESPONSIBLE FOR THE PENETRATION IS RESPONSIBLE FOR THE FIRE CAULKING INSTALLATION.
10. CAREFULLY REMOVE EXISTING CEILING GRID, TILES, AND LIGHTING AS REQUIRED TO ACCOMMODATE NEW MECHANICAL AND SPRINKLER PIPING WORK. REINSTALL TO MATCH PREVIOUS CONDITION, TYP. DAMAGED GRID AND TILES TO BE REPLACED TO MATCH EXISTING. SEE MECHANICAL DRAWINGS FOR FULL EXTENT OF PIPING, DUCTING, AND MECHANICAL WORK. OUTLINED AREA FOR REFERENCE ONLY. CONTRACTOR TO VERIFY FULL EXTENT OF EXISTING CEILING MANIPULATION. COORDINATE WITH MEP DRAWINGS.

ALTERNATES KEYNOTES

WORK RELATED WITH THE FOLLOWING ALTERNATES:

- A1 ROOF TOP UNITS IN LIEU OF UNIT VENTILATION AT EXISTING.
- A2 SITE WORK ON WEST SIDE OF THE BUILDING.
- A3 ADDITIONAL PAVEMENT REPLACEMENT.
- A4 TENNIS COURT SURFACE REPLACEMENT.
- A5 SINKS IN ELEMENTARY CLASSROOMS.
- A6 CLERESTORY OMISSION.



KEY PLAN
NOT TO SCALE

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RIVER VALLEY SCHOOL DISTRICT

SCHOOL CONSOLIDATION
15480 THREE OAKS RD.
THREE OAKS, MI 49128

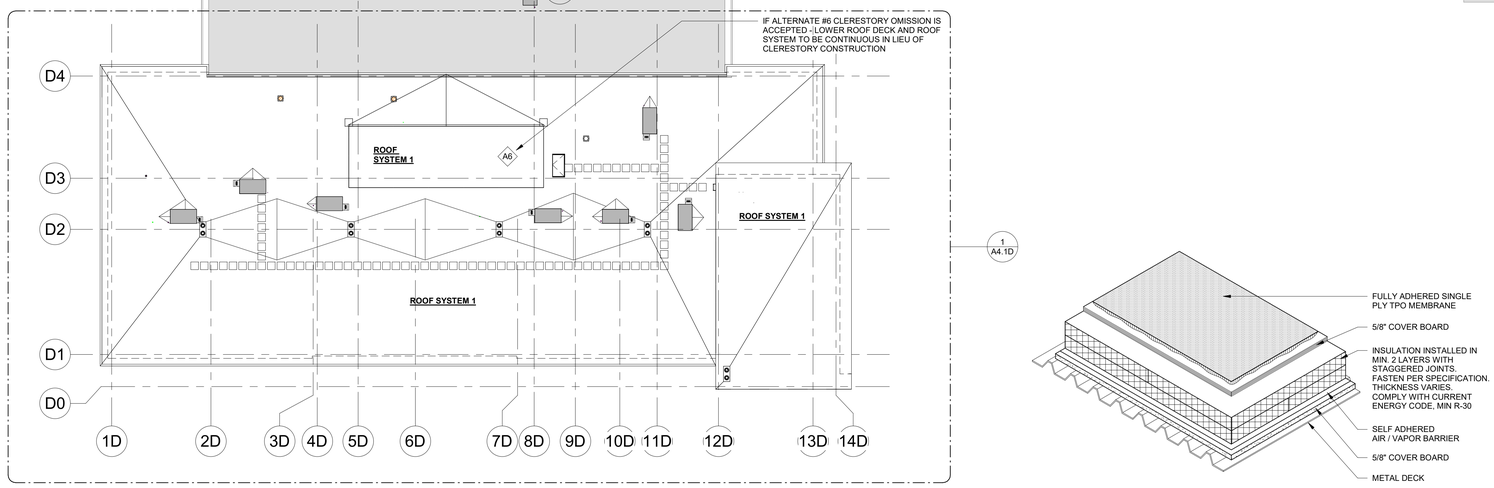
REFLECTED CEILING PLAN - AREA B

JOB NUMBER 21-346
DATE 03.22.22
REVISIONS: 03.31.22 ADD. 1, 04.12.22 ADD. 2

STATE OF MICHIGAN
John G. Cordogan
Architect
No. 1301035955
LICENSED ARCHITECT

CD BID SET

A3.1B



NORTH

1 ROOF PLAN - OVERALL
1/16" = 1'-0"

ROOF SYSTEM AXON - TPO ON METAL DECK
1 1/2" = 1'-0"

ROOF PLAN LEGEND

	NEW ROOF
	EXISTING ROOF
	ROOF HATCH
RTU	RTU
	ROOF WALK PAD
SLOPE	FLAT INSULATION OVER SLOPED STRUCTURE OR SLOPED INSULATION OVER FLAT STRUCTURE (MINIMUM SLOPE = 1/4" PER FOOT)
SADDLED	PROVIDE TAPERED INSULATION TO SADDLE. SLOPE = 1/2" PER FOOT)
	EQUIPMENT SCREEN REFER TO MECHANICAL DRAWINGS
RD / OD	PRIMARY ROOF DRAIN AND OVERFLOW DRAIN ROOF DRAIN SHALL BE AT THE LOW POINT OF THE ROOF. OVERFLOW DRAIN (INLET TO BE SET AT 2" ABOVE THE PRIMARY ROOF DRAIN WITH A STANDARD 2" DAM)
EF/GV	EXHAUST FAN / GRAVITY VENT REFER TO MECHANICAL DRAWINGS
VTR	VENT STACK REFER TO PLUMBING DRAWINGS
RP	ROOF PENETRATION REFER TO MECHANICAL DRAWINGS
T/CP	TOP OF COPING
T/PT	TOP OF PARAPET
T/STL	TOP OF STEEL ELEVATION
T/GLZ	TOP OF GLAZING
	EXISTING SKYLIGHT
DS	DOWNSPOUT

GENERAL ROOFING NOTES

1. PROVIDE MECHANICAL EQUIPMENTS INCLUDING INSULATED ROOF CURBS. REFER TO STRUCTURAL AND MECHANICAL DRAWINGS FOR ROOF PENETRATIONS AND ROOF TOP EQUIPMENT. REFER TO SHEET _____ FOR ROOF CURB DETAILS FOR ROOF TERMINATIONS AND COUNTERFLASHING.
2. REFER TO PLUMBING DRAWINGS FOR ROOF PENETRATIONS. REFER TO SHEET _____ FOR ROOF PENETRATION DETAILS ROOF TERMINATIONS AND COUNTERFLASHING.
3. ALL TAPERED INSULATION SHALL PROVIDE A MINIMUM 1/4"= 1'-0" SLOPE UNLESS OTHERWISE NOTED.
4. ALL INSULATION JOINTS, HORIZONTAL AND VERTICAL, TO BE STAGGERED.
5. ALL ROOF PENETRATIONS, INCLUDING VENT STACKS, ROOF CURBS, AND PIPE SUPPORT CURBS, ARE TO BE A MINIMUM OF 8" ABOVE THE ROOF MEMBRANE.
6. ALL COUNTER FLASHING, COPING, AND MISCELLANEOUS METAL FLASHING PIECES ARE TO HAVE SEALANT APPLIED AT THE END CONDITION.
7. ALL EXPOSED FASTENERS TO BE CORROSIVE RESISTANT, HAVE NEOPRENE WASHERS, AND TO BE COVERED WITH SEALANT FOLLOWING ARCHITECT'S APPROVAL.
8. DRAINS TO BE FLASHED PER MANUFACTURER'S SPECIFICATION.
9. PROVIDE THROUGH-WALL COUNTER-FLASHING FOR ALL VERTICAL FLANGES, END WALL FLASHING, AND ROOF INTERSECTIONS.
10. INSTALL SADDLES ON THE HIGH SIDE OF ALL ROOF PENETRATION DETAILS.

ALTERNATES KEYNOTES

WORK RELATED WITH THE FOLLOWING ALTERNATES:

- A1 ROOF TOP UNITS IN LIEU OF UNIT VENTILATION AT EXISTING.
- A2 SITE WORK ON WEST SIDE OF THE BUILDING.
- A3 ADDITIONAL PAVEMENT REPLACEMENT.
- A4 TENNIS COURT SURFACE REPLACEMENT.
- A5 SINKS IN ELEMENTARY CLASSROOMS.
- A6 CLERESTORY OMISSION.

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RIVER VALLEY SCHOOL DISTRICT

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THREE OAKS, MI 49128

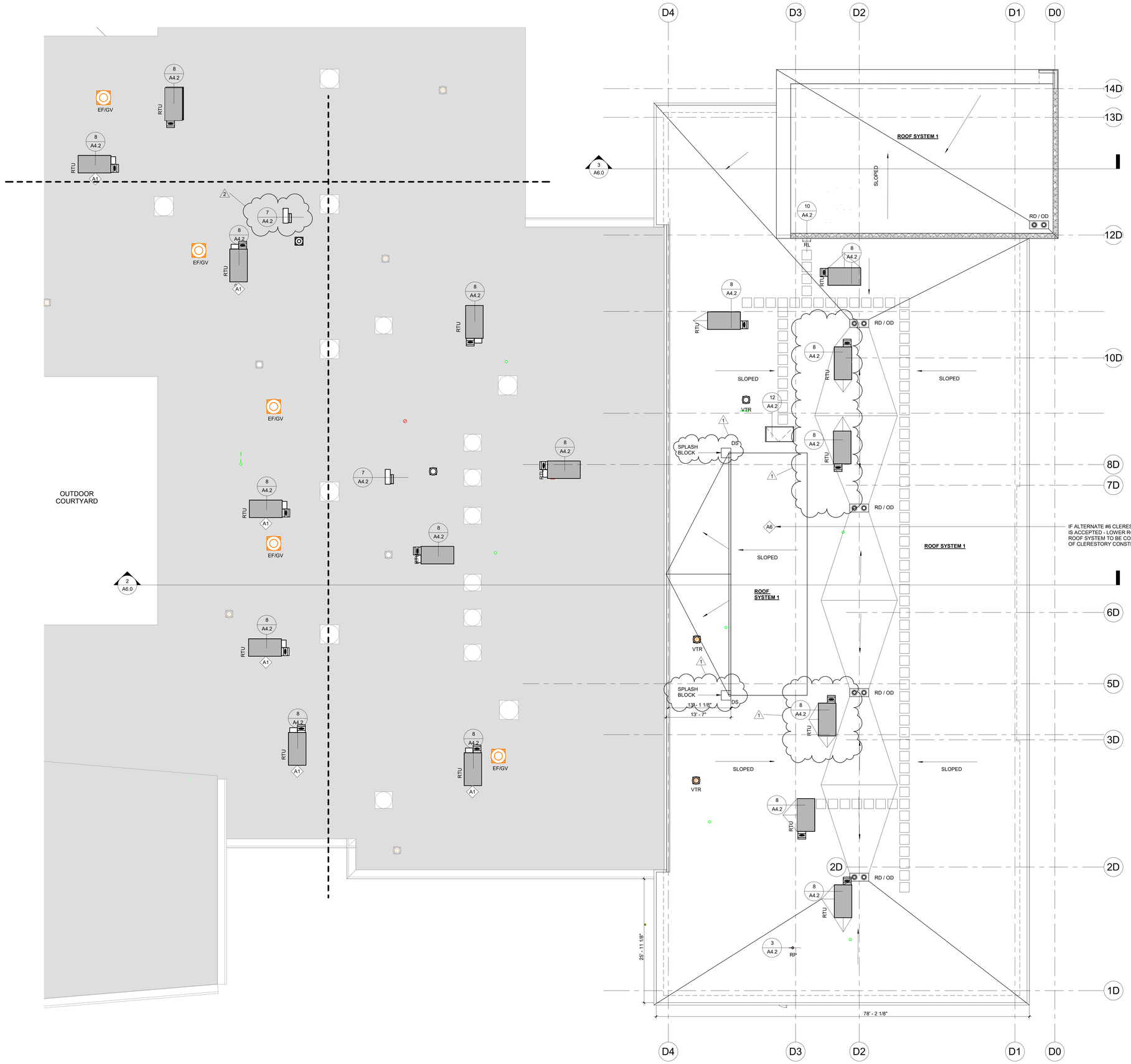
ROOF PLAN - OVERALL

JOB NUMBER 21-346
DATE 03.22.22
03.31.22
04.12.22
REVISIONS:
ADD. 1
ADD. 2

STATE OF MICHIGAN
John G. Cordogan
Architect
No. 1301035955
LICENSED ARCHITECT

CD BID SET

A4.1



NORTH

1 ROOF PLAN - AREA D
1/8" = 1'-0"

GENERAL ROOFING NOTES

1. PROVIDE MECHANICAL EQUIPMENTS INCLUDING INSULATED ROOF CURBS. REFER TO STRUCTURAL AND MECHANICAL DRAWINGS FOR ROOF PENETRATIONS AND ROOF TOP EQUIPMENT. REFER TO SHEET _____ FOR ROOF CURB DETAILS FOR ROOF TERMINATIONS AND COUNTERFLASHING.
2. REFER TO PLUMBING DRAWINGS FOR ROOF PENETRATIONS. REFER TO SHEET _____ FOR ROOF PENETRATION DETAILS ROOF TERMINATIONS AND COUNTERFLASHING.
3. ALL TAPERED INSULATION SHALL PROVIDE A MINIMUM 1/4"= 1'-0" SLOPE UNLESS OTHERWISE NOTED.
4. ALL INSULATION JOINTS, HORIZONTAL AND VERTICAL, TO BE STAGGERED.
5. ALL ROOF PENETRATIONS, INCLUDING VENT STACKS, ROOF CURBS, AND PIPE SUPPORT CURBS, ARE TO BE A MINIMUM OF 8" ABOVE THE ROOF MEMBRANE.
6. ALL COUNTER FLASHING, COPING, AND MISCELLANEOUS METAL FLASHING PIECES ARE TO HAVE SEALANT APPLIED AT THE END CONDITION.
7. ALL EXPOSED FASTENERS TO BE CORROSIVE RESISTANT, HAVE NEOPRENE WASHERS, AND TO BE COVERED WITH SEALANT FOLLOWING ARCHITECT'S APPROVAL.
8. DRAINS TO BE FLASHED PER MANUFACTURER'S SPECIFICATION.
9. PROVIDE THROUGH-WALL COUNTER-FLASHING FOR ALL VERTICAL FLANGES, END WALL FLASHING, AND ROOF INTERSECTIONS.
10. INSTALL SADDLES ON THE HIGH SIDE OF ALL ROOF PENETRATION DETAILS.

ROOF PLAN LEGEND

	NEW ROOF
	EXISTING ROOF
	ROOF HATCH
RTU	RTU
	ROOF WALK PAD
SLOPE	FLAT INSULATION OVER SLOPED STRUCTURE OR SLOPED INSULATION OVER FLAT STRUCTURE (MINIMUM SLOPE = 1/4" PER FOOT)
SADDLED	PROVIDE TAPERED INSULATION TO SADDLE. SLOPE = 1/2" PER FOOT)
	EQUIPMENT SCREEN REFER TO MECHANICAL DRAWINGS
RD / OD	PRIMARY ROOF DRAIN AND OVERFLOW DRAIN ROOF DRAIN SHALL BE AT THE LOW POINT OF THE ROOF. OVERFLOW DRAIN (INLET TO BE SET AT 2" ABOVE THE PRIMARY ROOF DRAIN WITH A STANDARD 2" DAM)
EF/GV	EXHAUST FAN / GRAVITY VENT REFER TO MECHANICAL DRAWINGS
VTR	VENT STACK REFER TO PLUMBING DRAWINGS
RP	ROOF PENETRATION REFER TO MECHANICAL DRAWINGS
T/CP	TOP OF COPING
T/PT	TOP OF PARAPET
T/STL	TOP OF STEEL ELEVATION
T/GLZ	TOP OF GLAZING
	EXISTING SKYLIGHT
DS	DOWNSPOUT

ALTERNATES KEYNOTES

WORK RELATED WITH THE FOLLOWING ALTERNATES:

- A1 ROOF TOP UNITS IN LIEU OF UNIT VENTILATION AT EXISTING.
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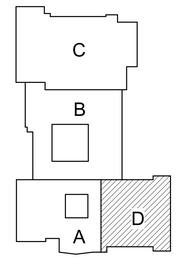
- A4 TENNIS COURT SURFACE REPLACEMENT.
- A5 SINKS IN ELEMENTARY CLASSROOMS.
- A6 CLERESTORY OMISSION.



KEY PLAN
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RIVER VALLEY SCHOOL DISTRICT

SCHOOL CONSOLIDATION
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THREE OAKS, MI 49128

ROOF PLAN - AREA D

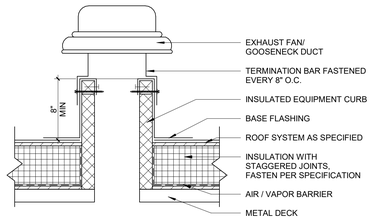
JOB NUMBER 21-346
DATE 03.22.22
03.31.22
04.12.22

REVISIONS
ADD. 1
ADD. 2

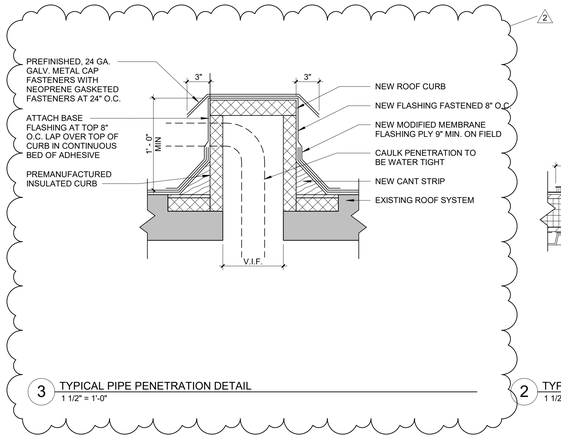
STATE OF MICHIGAN
John G. Cordogan
Architect
No. 1301035955
LICENSED ARCHITECT

CD BID SET

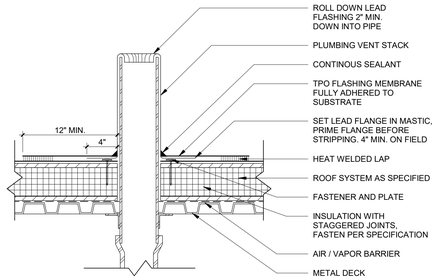
A4.1D



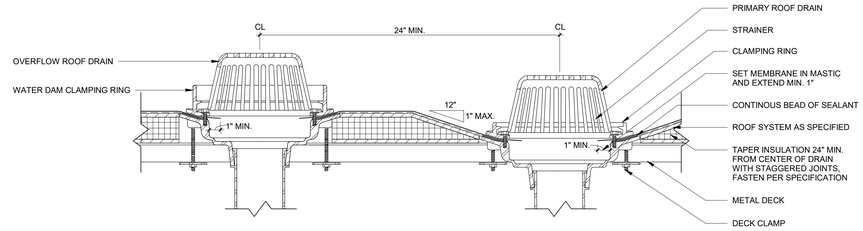
4 TYPICAL EXHAUST FAN DETAIL
1 1/2" = 1'-0"



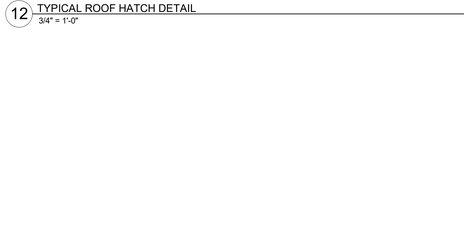
3 TYPICAL PIPE PENETRATION DETAIL
1 1/2" = 1'-0"



2 TYPICAL VENT PIPE DETAIL
1 1/2" = 1'-0"



1 TYPICAL ROOF DRAIN DETAIL
1 1/2" = 1'-0"



9 TYPICAL HATCH LADDER ANCHOR DETAIL
1 1/2" = 1'-0"

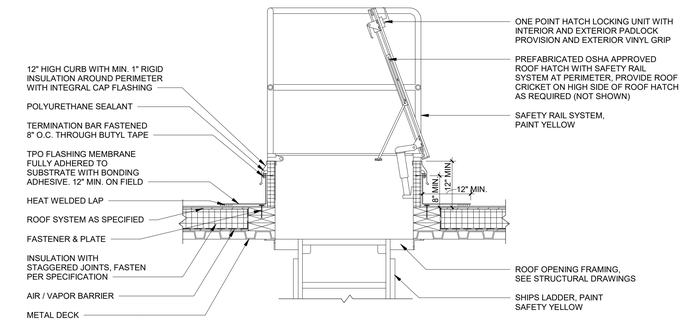
8 TYP. ROOF TOP UNIT CURB DETAIL
1 1/2" = 1'-0"

7 TYPICAL EQUIPMENT SUPPORT DETAIL
1 1/2" = 1'-0"

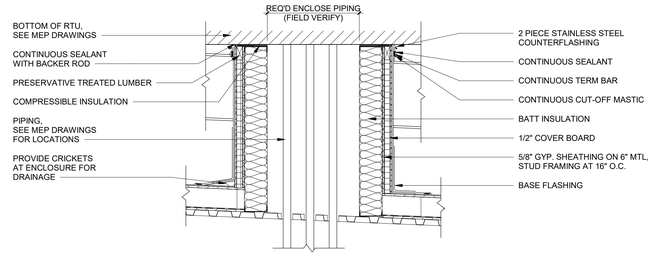
NOT USED

6 EQUIPMENT SUPPORT - RAILS
1 1/2" = 1'-0"

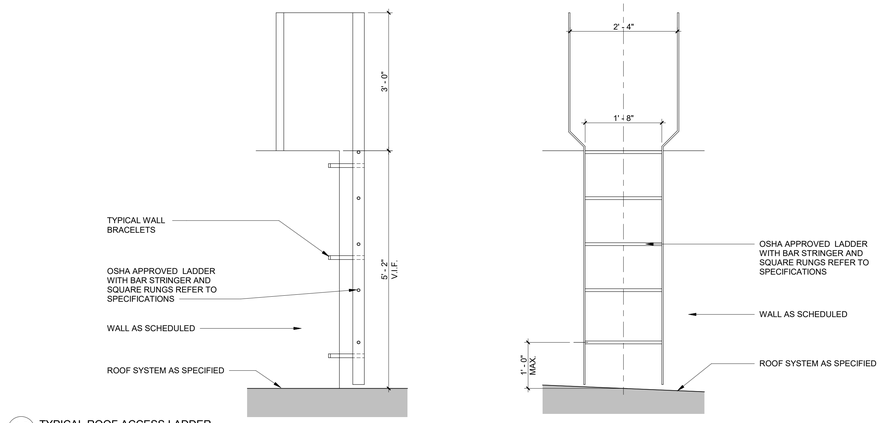
5 TYPICAL PIPE SUPPORT DETAIL
1 1/2" = 1'-0"



12 TYPICAL ROOF HATCH DETAIL
3/4" = 1'-0"



11 TYPICAL ROOF TOP UNIT
3/4" = 1'-0"



10 TYPICAL ROOF ACCESS LADDER
3/4" = 1'-0"

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RIVER VALLEY SCHOOL DISTRICT

SCHOOL CONSOLIDATION
15480 THREE OAKS RD.
THREE OAKS, MI 49128

ROOF DETAILS

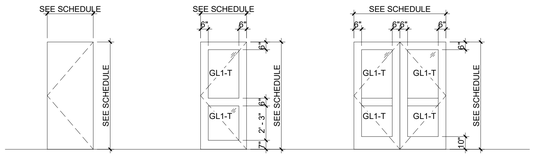
JOB NUMBER 21-346
DATE 03.22.22
03.31.22
04.12.22
REVISIONS:
ADD. 1
ADD. 2

STATE OF MICHIGAN
John G. Cordogan
Architect
No. 1301035955
LICENSED ARCHITECT

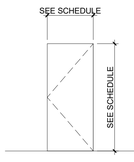
CD BID SET

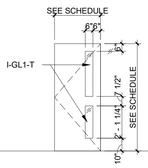
A4.2

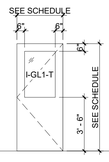
EXTERIOR DOORS

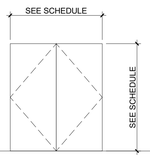


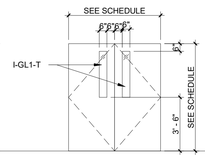
INTERIOR DOORS

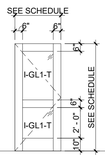


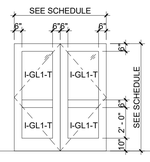


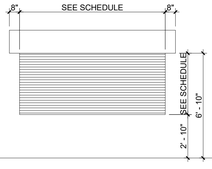












DOOR TYPE LEGEND
1/4" = 1'-0"

FRAME TYPE LEGEND
1/4" = 1'-0"

GLAZING TYPES LEGEND

REFER TO SPECIFICATION SECTION 088000 FOR FURTHER DETAIL ON GLAZING TYPES AND ASSEMBLIES.

GL1	INSULATED LOW-E COATED CLEAR VISION GLASS
GL1-T	INSULATED LOW-E COATED CLEAR TEMPERED VISION GLASS
GL1-S	INSULATED LOW-E COATED SPANDREL GLAZING WITH PAINTED GLASS
IP1	2" INSULATED METAL PANEL REFER TO SPECIFICATIONS
I-GL1-T	NON-INSULATED CLEAR TEMPERED GLAZING

ABBREVIATIONS

GL1	-	GLAZING #
T	-	TEMPERED
S	-	SPANDREL
I (PREFIX)	-	INTERIOR

DOOR & FRAME GENERAL NOTES

1. REFER TO SPECIFICATION SECTION 081113 FOR INFORMATION REGARDING HOLLOW METAL DOORS AND FRAMES.
2. REFER TO SPECIFICATION SECTION 081416 FOR INFORMATION REGARDING WOOD DOORS.
3. REFER TO SPECIFICATION SECTION 084113 FOR INFORMATION REGARDING ALUMINUM DOORS.
4. ALL EXISTING HOLLOW METAL FRAMES AND DOORS WITHIN RENOVATED ROOMS TO BE PAINTED.

DOOR & FRAME LEGEND

EX	EXISTING TO REMAIN
AL	ALUMINUM
GL	SOLID GLAZING
HM	HOLLOW METAL
PF	PREFINISHED
PT	PAINT
ST	STAIN - PREFINISHED
WD	SOLID CORE WOOD
SS	STAINLESS STEEL

DOOR SCHEDULE

DOOR NO.	DOOR W	DOOR H	DOOR T	DOOR TYPE	DOOR MATERIAL	DOOR FINISH	FRAME TYPE	FRAME MATERIAL	FRAME FINISH	DETAILS SILL DETAIL	DETAILS HEAD DETAIL	DETAILS JAMB DETAIL	Door Hardware	REMARKS
A114	3' - 0"	7' - 0"	1 3/4"	D4	WD	ST	F1	HM	PT	7 / A9.1	10 / A9.1	11 / A9.1	11	
A122	6' - 0"	7' - 0"	1 3/4"	D7	WD	ST	F3	HM	PT	7 / A9.1	8 / A9.1	9 / A9.1	17	
A123	3' - 0"	7' - 0"	1 3/4"	D4	WD	ST	F2	HM	PT	7 / A9.1	8 / A9.1	9 / A9.1	14	
A124	3' - 0"	7' - 0"	1 3/4"	D4	HM	PT	F1	HM	PF	7 / A9.1	8 / A9.1	9 / A9.1	19	
A125	3' - 0"	7' - 0"	1 3/4"	D4	WD	ST	F2	HM	PT	7 / A9.1	8 / A9.1	9 / A9.1	19	
A127	3' - 0"	7' - 0"	1 3/4"	D4	WD	ST	F2	HM	PT	7 / A9.1	10 / A9.1	11 / A9.1	19	
A128	3' - 0"	7' - 0"	1 3/4"	D5	WD	ST	F1	HM	PT	7 / A9.1	8 / A9.1	9 / A9.1	19	
A129	3' - 0"	7' - 0"	1 3/4"	D5	WD	ST	F1	HM	PT	7 / A9.1	8 / A9.1	9 / A9.1	19	
A134	6' - 0"	7' - 0"	1 3/4"	D7	WD	ST	F3	HM	PT	7 / A9.1	10 / A9.1	11 / A9.1	9	
A134A	6' - 0"	7' - 0"	1 3/4"	D7	WD	ST	F3	HM	PT	7 / A9.1	10 / A9.1	11 / A9.1	9	
B103	3' - 4"	8' - 0"	1 3/4"	D6	WD	ST	EX	HM	PT	7 / A9.1	8 / A9.1	9 / A9.1	15	FRAME TO REMAIN - DOOR REPLACEMENT ONLY
B107	3' - 0"	7' - 0"	1 3/4"	D4	HM	PT	F1	HM	PF	7 / A9.1	8 / A9.1	9 / A9.1	12	
B110	3' - 0"	7' - 0"	1 3/4"	D4	WD	ST	F2	HM	PT	7 / A9.1	8 / A9.1	9 / A9.1	21	
B111	3' - 0"	7' - 0"	1 3/4"	D4	WD	ST	F2	HM	PT	7 / A9.1	8 / A9.1	9 / A9.1	21	
B119	3' - 0"	7' - 0"	1 3/4"	D4	WD	ST	F2	HM	PT	7 / A9.1	8 / A9.1	9 / A9.1	21	
C100	5' - 4"	7' - 0"	1 3/4"	D10	AL / GL	PF	F3	AL	PF	12 / A9.1	15 / A9.1	16 / A9.1	7	
C101	3' - 0"	7' - 0"	1 3/4"	D4	WD	ST	F1	HM	PT	7 / A9.1	8 / A9.1	9 / A9.1	11	
C103	3' - 0"	7' - 0"	1 3/4"	D4	HM	PT	F1	HM	PF	7 / A9.1	8 / A9.1	9 / A9.1	19	
C104	3' - 0"	7' - 0"	1 3/4"	D4	HM	PT	F1	HM	PF	7 / A9.1	8 / A9.1	9 / A9.1	11	
C107	3' - 0"	7' - 0"	1 3/4"	D4	WD	ST	F2	HM	PT	7 / A9.1	8 / A9.1	9 / A9.1	14	
C120	3' - 0"	7' - 0"	1 3/4"	D4	WD	ST	F2	HM	PT	7 / A9.1	10 / A9.1	11 / A9.1	12	
C121	3' - 0"	7' - 0"	1 3/4"	D4	WD	ST	F1	HM	PT	7 / A9.1	8 / A9.1	9 / A9.1	16	
C122	3' - 0"	7' - 0"	1 3/4"	D4	HM	PT	F1	HM	PF	7 / A9.1	10 / A9.1	11 / A9.1	12	
D103	3' - 0"	7' - 0"	1 3/4"	D4	WD	ST	F2	HM	PT	7 / A9.1	8 / A9.1	9 / A9.1	19	
D103A	3' - 0"	7' - 0"	1 3/4"	D4	HM	ST	F1	HM	PT	7 / A9.1	8 / A9.1	9 / A9.1	22	2HR FIRE RATING
D104	3' - 0"	7' - 0"	1 3/4"	D4	WD	ST	F1	HM	PT	7 / A9.1	8 / A9.1	9 / A9.1	29	
D105	3' - 0"	7' - 0"	1 3/4"	D4	WD	ST	F1	HM	PT	7 / A9.1	8 / A9.1	9 / A9.1	26	
D108	3' - 0"	7' - 0"	1 3/4"	D4	WD	ST	F1	HM	PT	7 / A9.1	8 / A9.1	9 / A9.1	20	
D113	3' - 0"	7' - 0"	1 3/4"	D4	WD	ST	F1	HM	PT	7 / A9.1	8 / A9.1	9 / A9.1	29	
D114	3' - 0"	7' - 0"	1 3/4"	D4	WD	ST	F1	HM	PT	7 / A9.1	8 / A9.1	9 / A9.1	12	
D115	3' - 0"	7' - 0"	1 3/4"	D4	WD	ST	F1	HM	PT	7 / A9.1	8 / A9.1	9 / A9.1	12	
D115A	3' - 0"	7' - 0"	1 3/4"	D4	WD	ST	F2	HM	PT	7 / A9.1	8 / A9.1	9 / A9.1	19	
D116	3' - 0"	7' - 0"	1 3/4"	D4	WD	ST	F1	HM	PT	7 / A9.1	10 / A9.1	11 / A9.1	28	
D117	3' - 0"	7' - 0"	1 3/4"	D4	HM	PT	F1	HM	PF	7 / A9.1	10 / A9.1	11 / A9.1	12	
D118	3' - 0"	7' - 0"	1 3/4"	D4	HM	ST	F1	HM	PT	7 / A9.1	8 / A9.1	9 / A9.1	27	2HR FIRE RATING
D122	6' - 0"	7' - 0"	1 3/4"	D10	AL / GL	PF	F3	AL	PF	12 / A9.1	15 / A9.1	16 / A9.1	2	
D124	3' - 0"	7' - 0"	1 3/4"	D4	HM	ST	F1	HM	PT	7 / A9.1	8 / A9.1	9 / A9.1	27	2HR FIRE RATING
D125	3' - 0"	7' - 0"	1 3/4"	D4	WD	ST	F1	HM	PT	7 / A9.1	10 / A9.1	11 / A9.1	28	
D126	3' - 0"	7' - 0"	1 3/4"	D4	WD	ST	F1	HM	PT	7 / A9.1	8 / A9.1	9 / A9.1	12	
D126A	3' - 0"	7' - 0"	1 3/4"	D4	WD	ST	F2	HM	PT	7 / A9.1	8 / A9.1	9 / A9.1	19	
D128	5' - 4"	7' - 0"	1 3/4"	D10	AL / GL	PF	F3	AL	PF	12 / A9.1	13 / A9.1	14 / A9.1	8	
D129	8' - 0"	7' - 0"	1 3/4"	D7	HM	ST	F3	HM	PT	7 / A9.1	8 / A9.1	9 / A9.1	10	2HR FIRE RATING
D129A	8' - 0"	7' - 0"	1 3/4"	D7	HM	ST	F3	HM	PT	7 / A9.1	8 / A9.1	9 / A9.1	10	2HR FIRE RATING
D130	3' - 0"	7' - 0"	1 3/4"	D4	WD	ST	F2	HM	PT	7 / A9.1	8 / A9.1	9 / A9.1	19	
D130A	3' - 0"	7' - 0"	1 3/4"	D4	WD	ST	F1	HM	PT	7 / A9.1	10 / A9.1	11 / A9.1	18	
D131	3' - 0"	7' - 0"	1 3/4"	D4	WD	ST	F2	HM	PT	7 / A9.1	8 / A9.1	9 / A9.1	19	
D132	3' - 0"	7' - 0"	1 3/4"	D4	WD	ST	F2	HM	PT	7 / A9.1	8 / A9.1	9 / A9.1	19	
D132A	3' - 0"	7' - 0"	1 3/4"	D4	WD	ST	F1	HM	PT	7 / A9.1	10 / A9.1	11 / A9.1	18	
D133	3' - 0"	7' - 0"	1 3/4"	D4	WD	ST	F2	HM	PT	7 / A9.1	8 / A9.1	9 / A9.1	19	
D134	3' - 0"	7' - 0"	1 3/4"	D4	WD	ST	F2	HM	PT	7 / A9.1	8 / A9.1	9 / A9.1	19	
D134A	3' - 0"	7' - 0"	1 3/4"	D4	WD	ST	F1	HM	PT	7 / A9.1	10 / A9.1	11 / A9.1	18	
D135	3' - 0"	7' - 0"	1 3/4"	D4	WD	ST	F2	HM	PT	7 / A9.1	8 / A9.1	9 / A9.1	19	
D136	3' - 0"	7' - 0"	1 3/4"	D9	AL / GL	PF	F1	AL	PF	12 / A9.1	15 / A9.1	16 / A9.1	23	
D136A	3' - 0"	7' - 0"	1 3/4"	D4	WD	ST	F2	HM	PT	7 / A9.1	8 / A9.1	9 / A9.1	24	
D137	3' - 0"	7' - 0"	1 3/4"	D9	AL / GL	PF	F1	AL	PF	12 / A9.1	15 / A9.1	14 / A9.1	6	
D137A	3' - 0"	7' - 0"	1 3/4"	D9	AL / GL	PF	F1	AL	PF	12 / A9.1	15 / A9.1	14 / A9.1	5	
D139	3' - 0"	7' - 0"	1 3/4"	D4	WD	ST	F2	HM	PT	7 / A9.1	10 / A9.1	11 / A9.1	14	
D140	3' - 0"	7' - 0"	1 3/4"	D4	WD	ST	F2	HM	PT	7 / A9.1	10 / A9.1	11 / A9.1	14	
D141	3' - 0"	7' - 0"	1 3/4"	D4	WD	ST	F2	HM	PT	7 / A9.1	10 / A9.1	11 / A9.1	14	
D142	3' - 0"	7' - 0"	1 3/4"	D4	WD	ST	F1	HM	PT	7 / A9.1	10 / A9.1	11 / A9.1	25	
D144	3' - 0"	7' - 0"	1 3/4"	D4	WD	ST	F1	HM	PT	7 / A9.1	8 / A9.1	9 / A9.1	13	
E1	3' - 0"	7' - 0"	1 3/4"	D2	AL / GL	PF	EX	AL	PF	4 / A9.1	5 / A9.1	6 / A9.1	3	FRAME TO REMAIN. INSULATED EXTERIOR DOOR
E2	3' - 0"	7' - 0"	1 3/4"	D1	HM	PT	F1	HM	PF	1 / A9.1	2 / A9.1	3 / A9.1	4	INSULATED EXTERIOR DOOR AND FRAME
E3	5' - 4"	7' - 0"	1 3/4"	D3	AL / GL	PF	F3	AL	PF	4 / A9.1	5 / A9.1	6 / A9.1	1	INSULATED EXTERIOR DOOR AND FRAME
E4	5' - 4"	7' - 0"	1 3/4"	D3	AL / GL	PF	F3	AL	PF	4 / A9.1	5 / A9.1	6 / A9.1	1	INSULATED EXTERIOR DOOR AND FRAME
E5	3' - 4"	7' - 0"	1 3/4"	D1	HM	PT	F1	HM	PF	1 / A9.1	2 / A9.1	3 / A9.1	0	INSULATED EXTERIOR DOOR AND FRAME. HARDWARE TBD.
OH1	10' - 0"	4' - 0"	2"	D11	SS	PF	-	ST	PF	17 / A9.1	18 / A9.1	19 / A9.1	30	
OH2	10' - 0"	4' - 0"	2"	D11	SS	PF	-	ST	PF	17 / A9.1	18 / A9.1	19 / A9.1	30	

CORDOGAN CLARK
Chicago
715 North Hale Street, Chicago, IL 60304
Tel: 312.943.0300
Aurora
200 N Stolp Avenue, Aurora, IL 60506
Tel: 630.896.4800 Fax: 630.896.4817

RIVER VALLEY SCHOOL DISTRICT

SCHOOL CONSOLIDATION
15480 THREE OAKS RD.
THREE OAKS, MI 49128

DOOR/FRAME SCHEDULE & TYPES

JOB NUMBER 21-346
DATE 03.22.22
03.31.22
04.12.22
REVISIONS:
ADD. 1
ADD. 2

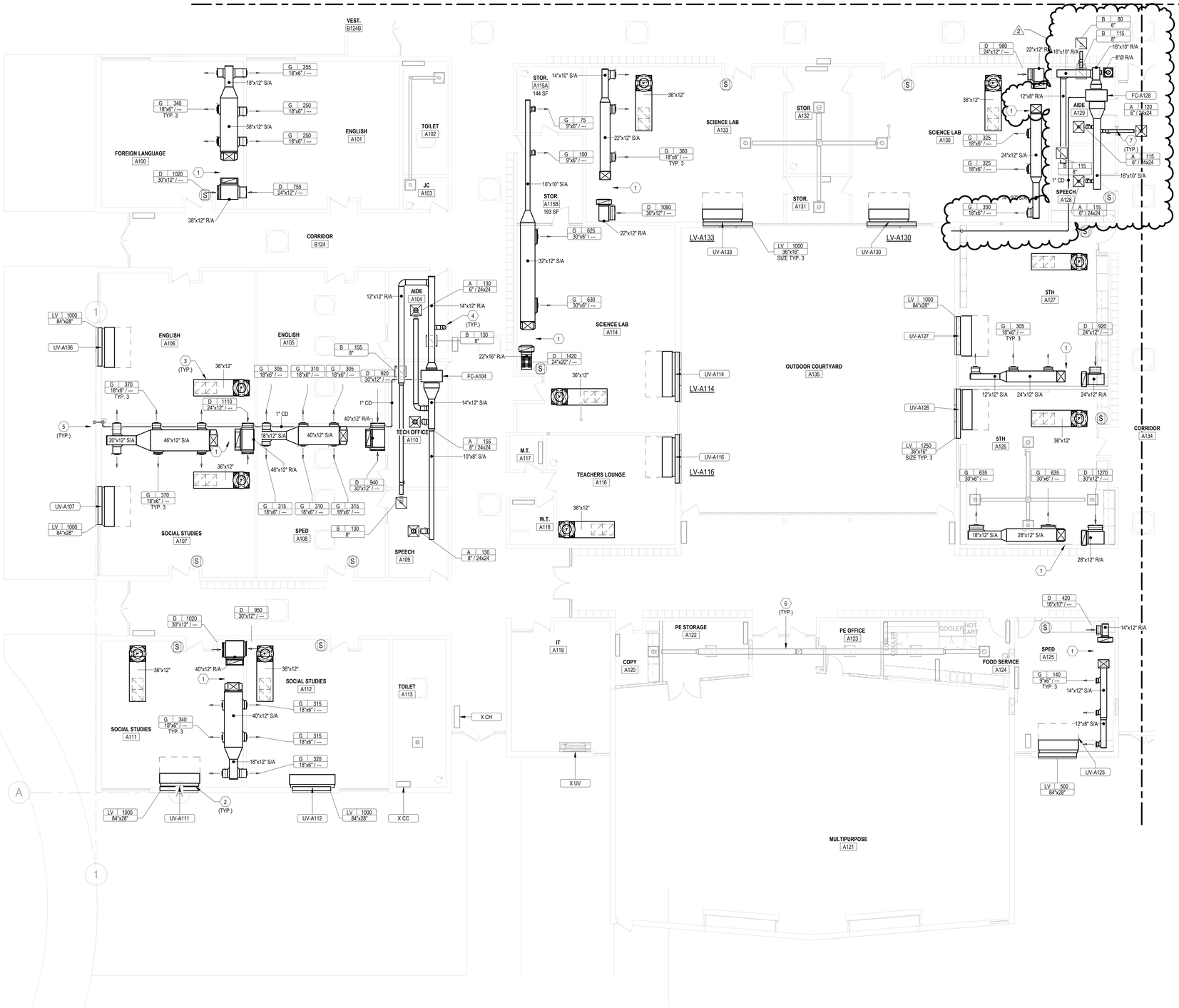
STATE OF MICHIGAN
John G. Cordogan
Architect
No. 1301035955
LICENSED ARCHITECT

CD BID SET

A9.0

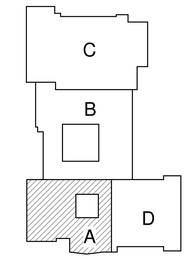
KEYNOTES

1. ALTERNATE 1: PACKAGED ROOFTOP UNIT, GAS PIPING, ASSOCIATED DUCTWORK, AND CONTROL.
2. ROUTE 1" CONDENSATE DRAIN TO EXTERIOR AND TERMINATE 12" ABOVE GRADE WITH A 90 DEGREE ELBOW.
3. PROVIDE AND INSTALL (2) DIFFUSERS TAG B FOR RELIEF SYSTEM WITH 22x22 N.K.
4. ROUTE 8" DIAMETER UP TO GV-A104
5. ROUTE 1" CONDENSATE LINE TO THE EXTERIOR. TERMINATE 12" ABOVE GRADE WITH A 90 DEGREE ELBOW.
6. EXISTING TO REMAIN
7. PROVIDE FIRE DAMPER WITH ACCESS DOOR.



NORTH

1 PARTIAL FIRST FLOOR MECHANICAL PLAN - AREA A
1/8" = 1'-0"



1 KEY PLAN
NOT TO SCALE

CORDOGAN CLARK
Chicago
118 North Wells Street, Chicago, IL 60606
Tel 312.641.3000 Fax 312.641.4171
Naperville
Old Willowbrook Avenue, Suite A, Naperville, IL 60540
Tel 630.904.3400 Fax 630.904.3401

RIVER VALLEY SCHOOL DISTRICT

RIVER VALLEY HIGH SCHOOL
15480 THREE OAKS RD.
THREE OAKS, MI 49128

PARTIAL FIRST FLOOR MECHANICAL PLAN - AREA A

JOB NUMBER 21-346
DATE 03.22.2022

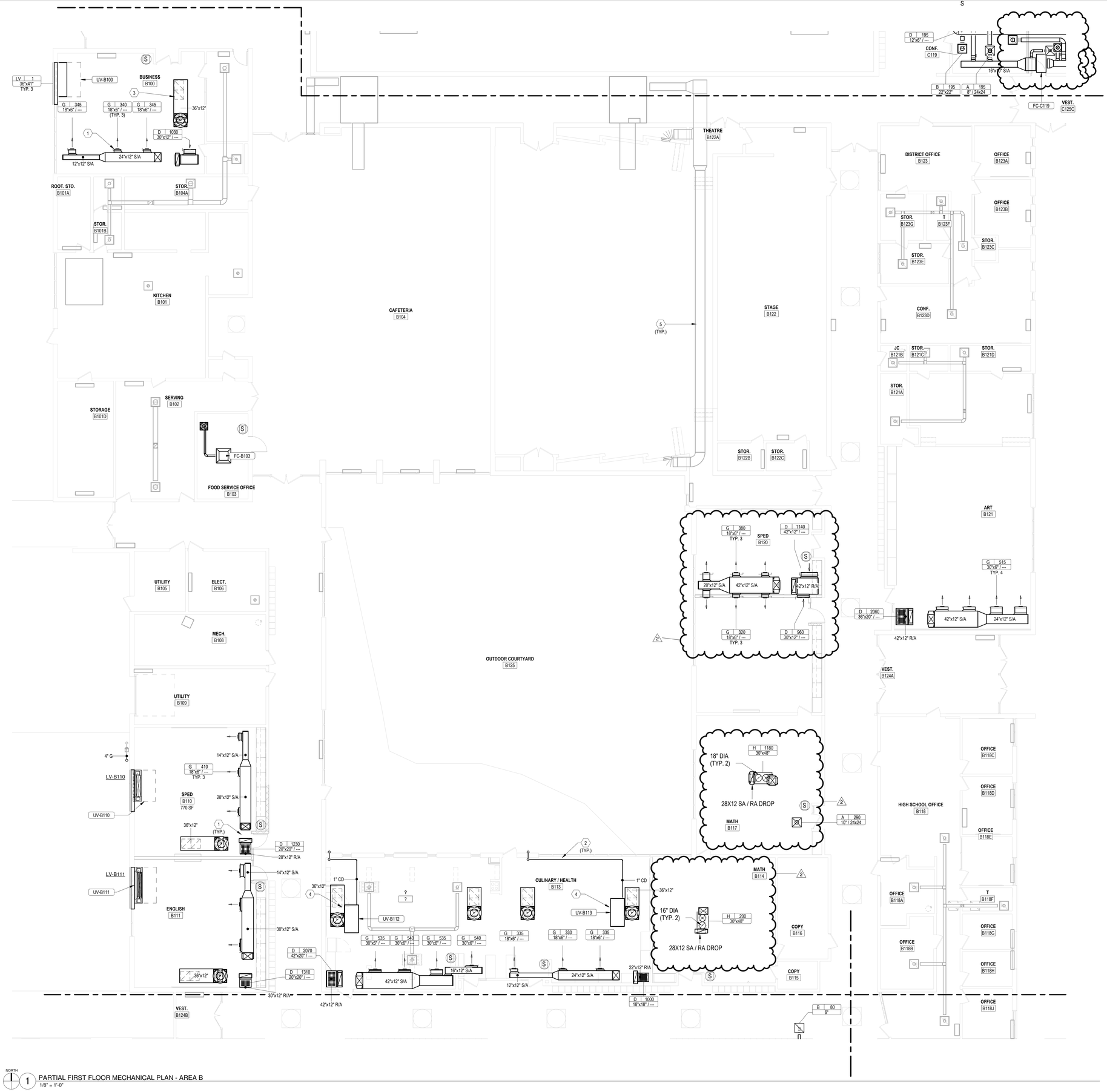
REVISIONS:
2 ADDENDUM 002 04.12.2022

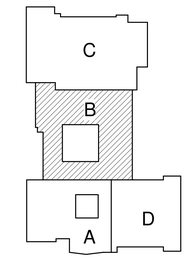
BID SET

M2.1A

KEYNOTES

1. ALTERNATE 1: PACKAGED ROOFTOP UNIT, GAS PIPING, ASSOCIATED DUCTWORK, AND CONTROL.
2. ROUTE 1" CONDENSATE DRAIN TO EXTERIOR AND TERMINATE 12" ABOVE GRADE WITH A 90 DEGREE ELBOW.
3. PROVIDE AND INSTALL (2) DIFFUSERS TAG B FOR RELIEF SYSTEM WITH 22x22 N.K.
4. PROVIDE AND INSTALL REFRIGERANT PIPING FROM ROOF MOUNTED CONDENSING UNIT TO THE UNIT VENTILATOR PER THE MANUFACTURER'S RECOMMENDATIONS.
5. EXISTING TO REMAIN





KEY PLAN
NOT TO SCALE

NORTH
1 PARTIAL FIRST FLOOR MECHANICAL PLAN - AREA B
1/8" = 1'-0"

CORDOGAN CLARK
Chicago
118 North Wells Street, Chicago, IL 60606
tel 312.782.3900
Grand Rapids
924 Ottawa Avenue, Suite A, 49503
tel 616.356.1400 fax 616.356.1401

RIVER VALLEY SCHOOL DISTRICT

RIVER VALLEY HIGH SCHOOL
15480 THREE OAKS RD.
THREE OAKS, MI 49128

PARTIAL FIRST FLOOR MECHANICAL PLAN - AREA B

JOB NUMBER 21-346
DATE 03.22.2022

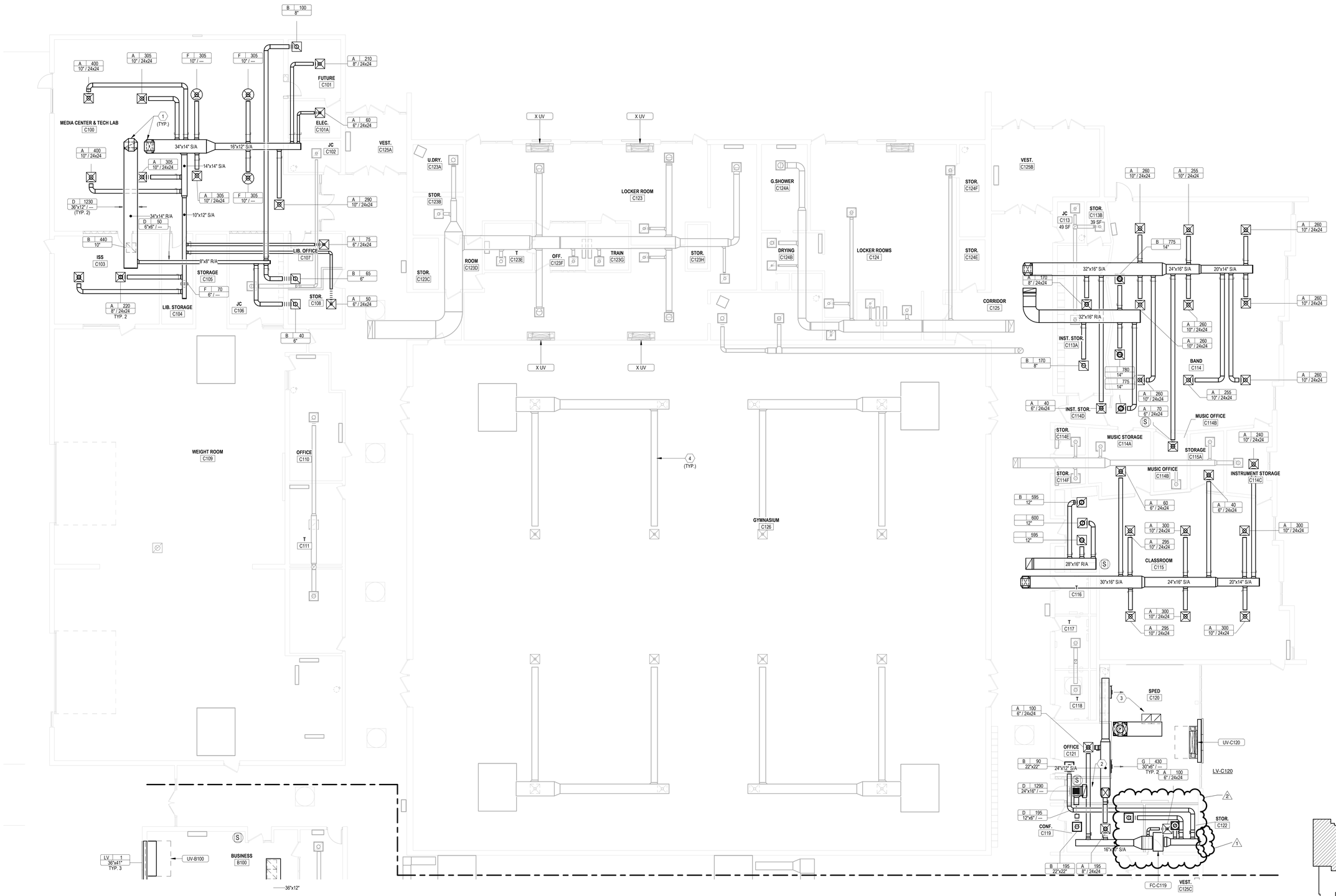
REVISIONS:
1 ADDENDUM 001 03.30.2022
2 ADDENDUM 002 04.12.2022

BID SET

M2.1B

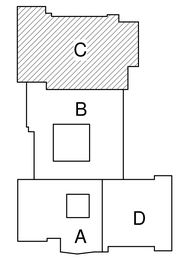
KEYNOTES

1. PROVIDE DOUBLE WALL DUCTWORK FOR ALL SUPPLY AND RETURN DUCTWORK FOR THE INDICATED RTU SYSTEM.
2. ALTERNATE 1: PACKAGED ROOFTOP UNIT, GAS PIPING, ASSOCIATED DUCTWORK, AND CONTROL.
3. PROVIDE AND INSTALL (2) DIFFUSERS TAG B FOR RELIEF SYSTEM WITH 22x22 N.K.
4. EXISTING TO REMAIN



NORTH

1 PARTIAL FIRST FLOOR MECHANICAL PLAN - AREA C
1/8" = 1'-0"



KEY PLAN
NOT TO SCALE

CORDOGAN CLARK
Chicago
118 North Wabash Street, Chicago, IL 60602
Tel 312.782.0600 Fax 312.782.1611
Naperville
Tel 630.355.3315 Fax 630.355.3661
1624 Ogden Avenue, Aurora, IL 60504

RIVER VALLEY SCHOOL DISTRICT

RIVER VALLEY HIGH SCHOOL
15480 THREE OAKS RD.
THREE OAKS, MI 49128

PARTIAL FIRST FLOOR MECHANICAL PLAN - AREA C

JOB NUMBER 21-346

DATE 03.22.2022

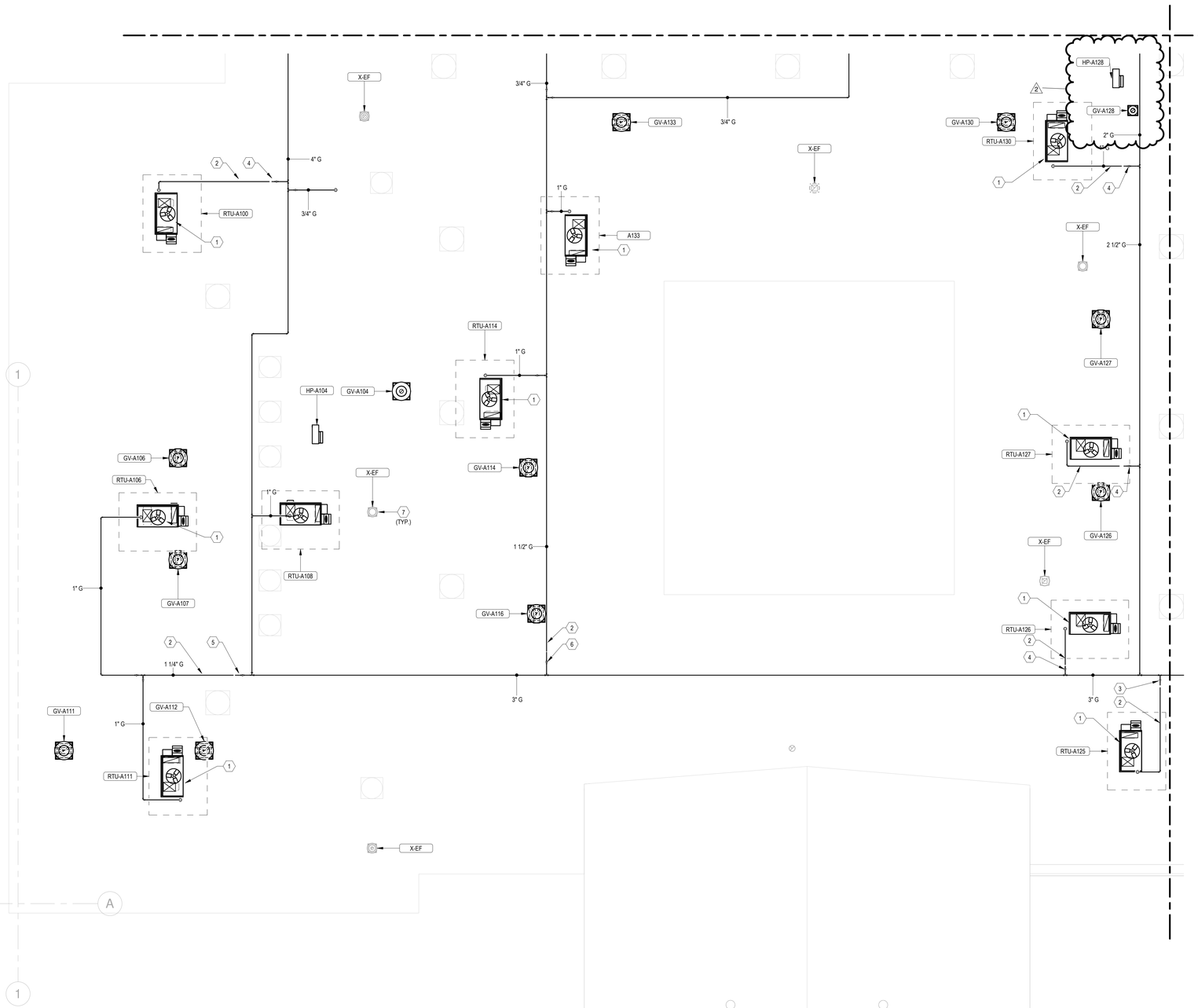
REVISIONS:
1 ADDENDUM 001 03.30.2022
2 ADDENDUM 002 04.12.2022

BID SET

M2.1C

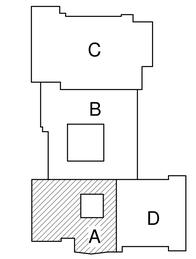
KEYNOTES

1. ALTERNATE 1: PACKAGED ROOFTOP UNIT, GAS PIPING, ASSOCIATED DUCTWORK, AND CONTROL.
2. ALTERNATE 1: ROOF MOUNTED GAS PIPING TO THE ASSOCAITED ROOFTOP EQUIPMENT.
3. PROVIDE FUTURE 3/4" GAS CONNECTION WITH SHUT-OFF VALVE AND FLANGE.
4. PROVIDE FUTURE 1" GAS CONNECTION WITH SHUT-OFF VALVE AND FLANGE.
5. PROVIDE FUTURE 1.25" GAS CONNECTION WITH SHUT-OFF VALVE AND FLANGE.
6. PROVIDE FUTURE 1.5" GAS CONNECTION WITH SHUT-OFF VALVE AND FLANGE.
7. EXISTING TO REMAIN



NORTH

1 PARTIAL ROOF MECHANICAL PLAN - AREA A
1/8" = 1'-0"



KEY PLAN
NOT TO SCALE

CORDOGAN CLARK
Chicago
118 North Wabash Street, Chicago, IL 60602
tel 312.782.3900 fax 312.782.4771
Aurora
Old Second Building, 53 West Downer Place, Aurora, IL 60506
tel 630.896.3400 fax 630.896.4891

RIVER VALLEY SCHOOL DISTRICT

RIVER VALLEY HIGH SCHOOL
15480 THREE OAKS RD.
THREE OAKS, MI 49128

PARTIAL ROOF MECHANICAL PLAN - AREA A

JOB NUMBER 21-346
DATE 03.22.2022

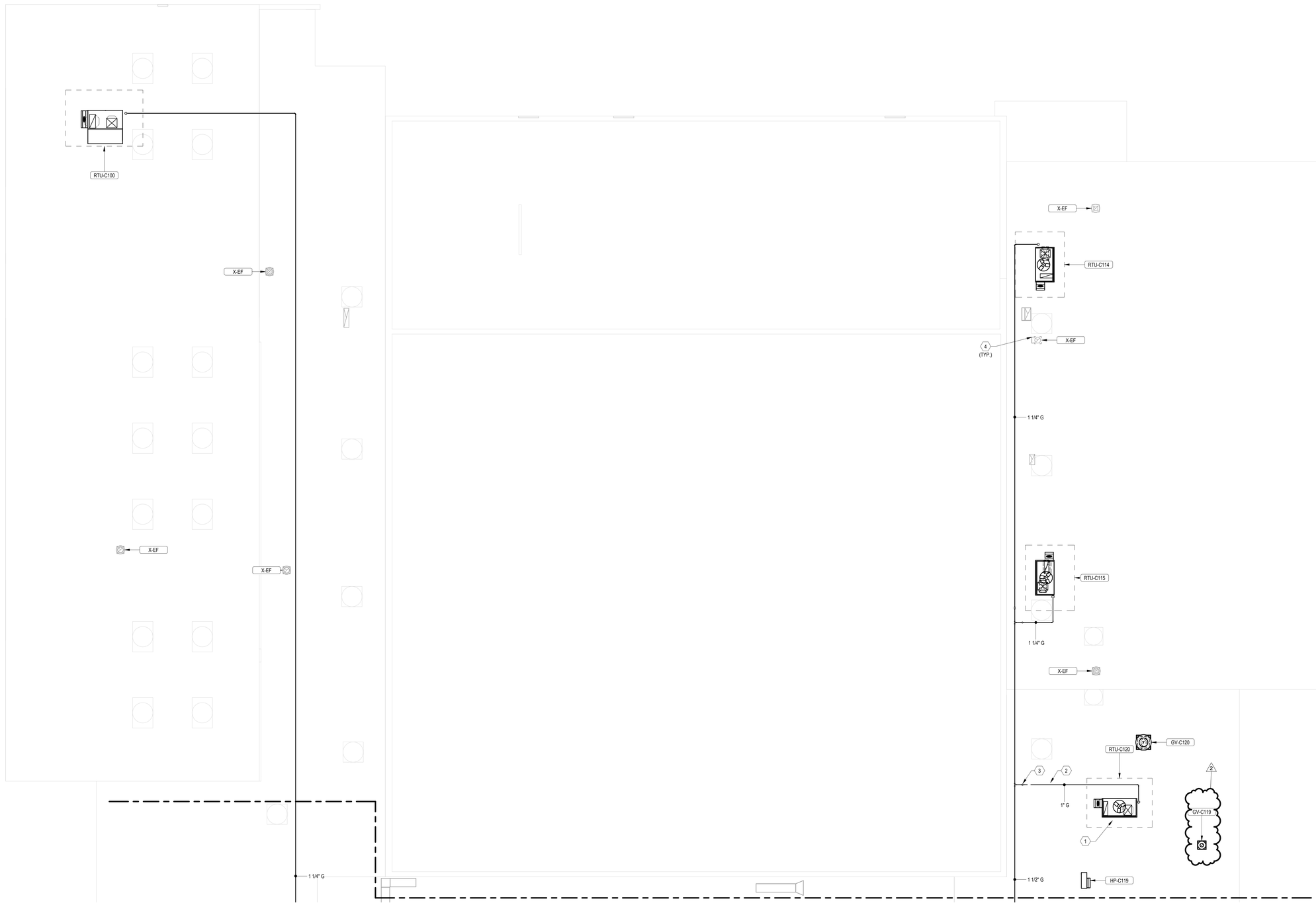
REVISIONS:
2 ADDENDUM 002 04.12.2022

BID SET

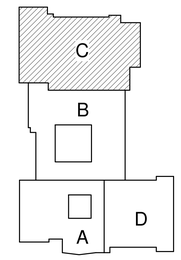
M2.2A

KEYNOTES

1. ALTERNATE 1: PACKAGED ROOFTOP UNIT, GAS PIPING, ASSOCIATED DUCTWORK, AND CONTROL.
2. ALTERNATE 1: ROOF MOUNTED GAS PIPING TO THE ASSOCAITED ROOFTOP EQUIPMENT.
3. PROVIDE FUTURE 1" GAS CONNECTION WITH SHUT-OFF VALVE AND FLANGE.
4. EXISTING TO REMAIN



NORTH 1 PARTIAL ROOF MECHANICAL PLAN - AREA C
1/8" = 1'-0"



KEY PLAN
NOT TO SCALE

CORDOGAN CLARK
Chicago
118 North Wells Street Chicago, IL 60606
Tel 312.641.3000 Fax 312.641.4171
Aurora
Fax 630.844.4481

RIVER VALLEY SCHOOL DISTRICT

RIVER VALLEY HIGH SCHOOL
15480 THREE OAKS RD.
THREE OAKS, MI 49128

PARTIAL ROOF MECHANICAL PLAN - AREA C

JOB NUMBER 21-346
DATE 03.22.2022

REVISIONS:
2 ADDENDUM 002 04.12.2022

BID SET

M2.2C

GRAVITY VENTILATOR SCHEDULE

TAG	SERVICE	CFM	TYPE	MAX PD (IN)	THROAT	MFR	MODEL
GV-A100	CLASSROOM A100	1,000	RELIEF	0.05	20X20	TITUS	PR20
GV-A106	CLASSROOM A106	1,000	RELIEF	0.05	20X20	TITUS	PR20
GV-A107	CLASSROOM A107	1,000	RELIEF	0.05	20X20	TITUS	PR20
GV-A109	SPEECH A109	160	INTAKE	0.05	8x8	TITUS	PR8
GV-A111	CLASSROOM A111	1,000	RELIEF	0.05	20X20	TITUS	PR20
GV-A112	CLASSROOM A112	1,000	RELIEF	0.05	20X20	TITUS	PR20
GV-A114	CLASSROOM A114	1,250	RELIEF	0.05	20X20	TITUS	PR20
GV-A116	CLASSROOM A116	500	RELIEF	0.05	12x12	TITUS	PR12
GV-A125	SPED A125	500	RELIEF	0.05	12x12	TITUS	PR12
GV-A126	CLASSROOM A126	1,250	RELIEF	0.05	20X20	TITUS	PR20
GV-A127	CLASSROOM A127	1,000	RELIEF	0.05	20X20	TITUS	PR20
GV-A129	SPED A125	50	RELIEF	0.05	8X8	TITUS	PR8
GV-A130	SCIENCE A130	1,000	RELIEF	0.05	20X20	TITUS	PR20
GV-A133	SCIENCE A133	1,000	RELIEF	0.05	20X20	TITUS	PR20
GV-B103	FOOD OFFICE B103	30	RELIEF	0.05	8x8	TITUS	PR8
GV-B110	SPED B110	1,000	RELIEF	0.05	20X20	TITUS	PR20
GV-B111	CLASSROOM B111	1,250	RELIEF	0.05	20X20	TITUS	PR20
GV-B112A	KITCHEN B112	1,500	INTAKE	0.05	16X16	TITUS	PR16
GV-B113A	KITCHEN B113	1,000	INTAKE	0.05	20X20	TITUS	PR20
GV-B112B	KITCHEN B112	1,500	RELIEF	0.05	16X16	TITUS	PR16
GV-B113B	KITCHEN B113	1,000	RELIEF	0.05	20X20	TITUS	PR20
GV-C120	SPED C120	1,000	RELIEF	0.05	20X20	TITUS	PR20
GV-D107	AIDE D107	50	INTAKE	0.05	8x8	TITUS	PR8
GV-D121	SPED D121	500	INTAKE	0.05	12x12	TITUS	PR12
GV-D123	CLASSROOM D123	1,250	RELIEF	0.05	20X20	TITUS	PR20

NOTES:

1. ROOF MOUNTED GRAVITY VENT, ALL ALUMINUM, ALUMINUM INSECT SCREEN, HINGED BASE, 30" INSULATED ROOF CURB WITH DAMPER TRAY. PROVIDE RUSKIN TED-50 INSULATED MOTORIZED DAMPER WITH 24V BELIMO ACTUATOR WITH FEEDBACK/END SWITCH AND DDC CONTROL INPUTS.

RTU SCHEDULE

TAG	SERVICE	SUPPLY FAN TOT CFM	SUPPLY FAN E.S.P.	SUPPLY FAN HP	DX COOLING TOT / SENS MBH	DX COOLING EAT DB / WB	DX COOLING LAT DB / WB	DX COOLING # COMP. / STAGES	REHEAT LAT DB/WB	HEATING MBH IN / OUT	HEATING LAT	HEATING STAGES	ELECTRICAL VOLT.	ELECTRICAL MCA	ELECTRICAL MOCP	OA CFM	EER	WEIGHT (LBS.)	MFR.	MODEL	NOTES
RTU-A101	CLASSROOM A100 / A101	1,775	0.5	2	71.8 / 51.3	82.9 / 68.3	57.1 / 55.4	MOD	75 / 60.62	140 / 113.4	91.5	MOD	460/3	21	30	880	11.2	1,600	AAON	RQ-006-3-V-FA09	1, 2, 4, 5 & 6
RTU-A108	CLASSROOM A105 / A108	1,860	0.5	2	59.6 / 46.0	78.6 / 64.9	57.0 / 54.6	MOD	75 / 61.98	100 / 81	92.3	MOD	460-3	19	25	815	13.2	1,700	AAON	RQ-005-3-V-FA09	1, 2, 4, 5 & 6
RTU-B114	MATH B114	1,045	0.5	1	41.69 / 29.84	82.04 / 67.6	56.18 / 54.72	MOD	75 / 60.9	100 / 81	106	MOD	460 / 3	15	20	460	13.5	1,500	AAON	RQ-003-3-V-EA09	1, 3, 4, 5, & 6
RTU-B117	MATH B117	2,130	0.6	2	92.4 / 63.4	82.3 / 67.9	54.9 / 53.5	MOD	75 / 61.1	150 / 120	93.9	MOD	460 / 3	23	35	760	11.5	1,900	AAON	RN-008-3-0-EA09	1, 3, 4, 5, & 6
RTU-B120	SPED B119 / B120	1,140	0.5	1	41.3 / 30.6	80.8 / 66.7	56.2 / 54.6	MOD	75 / 61.7	100 / 81	108	MOD	460 / 3	15	20	400	13.5	1,500	AAON	RQ-003-3-V-EA09	1, 3, 4, 5, & 6
RTU-B121	ART B121	2,060	0.5	1	58.14 / 38.32	84.38 / 69.41	56.33 / 54.60	MOD	75 / 61.66	140 / 113.4	103.5	MOD	460/3	19	25	620	11.6	1,700	AAON	RQ-005-3-V-FA09	1, 2, 4, 5 & 6
RTU-C100	MEDIA CENTER C100	3,835	0.75	2	116.86 / 83.13	81.9 / 67.5	57.6 / 55.5	MOD	75 / 61.9	292.5 / 234	102.3	MOD	460 / 3	27	30	1,400	11.2	2,400	AAON	RN-011-3-0-FA09	1, 2, 4, 5 & 6
RTU-C114	BAND C114	2,610	0.5	2	92.9 / 63.9	82.3 / 67.8	55.4 / 3.7	MOD	75 / 61.2	210 / 168	105.4	MOD	460 / 3	23	35	1,000	11.5	1,900	AAON	RN-008-3-0-EA09	1, 2, 4, 5 & 6
RTU-C115	CHOIR C115	2,130	0.5	2	72.8 / 52.96	83.1 / 68.5	58.1 / 56.3	MOD	75 / 62.5	160 / 129.6	93.4	MOD	460 / 3	21	30	950	11.6	1,600	AAON	RN-006-3-0-EA09	1, 2, 4, 5 & 6
RTU-D102	CLASSROOM D101 / D102	1,330	0.5	1	49.9 / 36.4	81.1 / 66.9	56.6 / 54.8	MOD	75 / 61.55	100 / 81	95.7	MOD	460/3	18	25	650	13.55	1,600	AAON	RQ-004-3-V-EA09	1, 2, 4, 5 & 6
RTU-D103	CLASSROOM D103	1,500	0.5	1	55.5 / 42.1	81.9 / 67.6	56.9 / 55.8	MOD	75 / 62.1	140 / 113.4	105.4	MOD	460 / 3	18	25	525	13.3	1,500	AAON	RQ-004-3-V-EA09	1, 2, 4, 5 & 6
RTU-D110	ART D109 / MEDIA D110	1,860	0.5	2	67.7 / 49.4	80.8 / 66.7	57.4 / 55.1	MOD	75 / 62.2	140 / 113.4	97.2	MOD	460/3	21	30	680	13.2	1,600	AAON	RQ-006-3-V-FA09	1, 2, 4, 5 & 6
RTU-D115	CLASSROOM D115	1,835	0.5	1	53.7 / 42.1	80.8 / 66.7	58.1 / 56.3	MOD	75 / 62.1	100 / 81	99.1	MOD	460 / 3	15	20	500	13.5	1,500	AAON	RQ-004-3-V-EA09	1, 2, 4, 5 & 6
RTU-D117	CLASSROOM D117, D111, D112	1,170	0.5	1	50.6 / 34.9	84.3 / 69.3	57.1 / 55.6	MOD	75 / 62.02	140 / 113.4	113.2	MOD	460/3	17	25	720	12.9	1,600	AAON	RQ-004-3-V-EA09	1, 2, 4, 5 & 6
RTU-D126	CLASSROOM D126	1,795	0.75	2	60.5 / 45.8	80.8 / 66.7	57.9 / 55.5	MOD	75 / 62.5	140 / 113.4	105.8	MOD	460 / 3	19	25	590	13.3	1,500	AAON	RQ-005-3-V-EA09	1, 2, 4, 5 & 6
RTU-D130	CLASSROOM D130 / D131	1,650	0.75	2	72.1 / 49.9	84.5 / 69.5	57.5 / 55.8	MOD	75 / 62.3	160 / 129.6	95.2	MOD	460 / 3	21	30	980	11.6	1,600	AAON	RQ-006-3-V-EA09	1, 2, 4, 5 & 6
RTU-D132	CLASSROOM D132 / D133	1,470	0.75	2	64.2 / 44.7	83.7 / 68.9	56.5 / 55	MOD	75 / 61.9	140 / 113.4	97.9	MOD	460 / 3	19	25	800	12.4	1,600	AAON	RQ-005-3-V-EA09	1, 2, 4, 5 & 6
RTU-D134	CLASSROOM D134 / D135	1,470	0.75	2	64.2 / 44.7	83.7 / 68.9	56.5 / 55	MOD	75 / 61.9	140 / 113.4	97.9	MOD	460 / 3	19	25	800	12.4	1,600	AAON	RQ-005-3-V-EA09	1, 2, 4, 5 & 6
RTU-D137	OFFICE AREA D137	1,400	0.9	1	48.6 / 36.8	78.4 / 64.8	55.4 / 53.4	MOD	75 / 61.1	100 / 81	106.5	MOD	460 / 3	15	20	300	12.9	1,500	AAON	RQ-004-3-V-EA09	1, 2, 4, 5 & 6

NOTES

1. SINGLE-ZONE VAV GAS/DX RTU WITH DOUBLE WALL R13 FOAM INSULATED CABINET WITH THERMAL BREAKS, DOWNWARD DISCHARGE, TOOL-LESS ACCESS DOORS, MODULATING HGRH, VARIABLE SPEED DIRECT DRIVE FANS, STAINLESS STEEL DRAIN PAN, STAINLESS STEEL HEAT EXCHANGER, VARIABLE SPEED CONDENSER FANS WITH HEAD PRESSURE CONTROL, DEHUMIDIFCATION CONTROL, CONVENIENCE OUTLET, MERV 13 FINAL FILTERS, BACNET INTERFACE, HAIL GAURD, AND DISCONNECT. PROVIDE AND INCLUDE ECONOMIZER FAULT DETECTION AND DIAGNOSSTIC, CO2 DEMAND CONTROL VENTILATION, AND POWERED EXHAUST FAN WITH BUILDING STATIC PRESSURE CONTROL.
2. PROVIDE INSULATED VIBRATION ISOLATION CURB BY THYBAR.
3. PROVIDE AN ADPOT-A-CURB.
4. PROVIDE EVERGREENUV PRU PHOTOCATALYTIC OXIDIZER WITH UV LIGHT AS PART OF A COMPLETE PACKAGE BY RTU SUPPLIER LOCATED WITHIN THE UNIT CABINET. ELECTRICAL: 120/1, 15 AMPS.
5. PROVIDE WITH-IN THE VIBRO CURB THE HUSHCORE DECK SYSTME MODEL NUMBER DS-53 FOR ROOFTOP MOUNTED HVAC UNITS. SYSTEM BY BRD.
6. RTUS OTHER THAN BASIS OF DESIGN MUST, IN ADDITION TO MEETING THE SCHEDULED PERFORMANCE, HAVE SUBSTANTIALLY SIMILAR DIMENSIONS, WEIGHTS, AND CONFIGURATION. MECHANICAL CONTRACTOR WILL BE RESPONSIBLE TO PROVIDE STAMPED STRUCTURAL DRAWINGS AND WILL BEAR THE COST FOR ANY ADDITIONAL STRUCTURAL WORK REQUIRED TO ACCOMMODATE RTUS THAT ARE NOT DIMENSIONALLY SIMILAR TO BASIS OF DESIGN.

ELECTRIC HEATER SCHEDULE

TAG	SERVICE	KW	MBH	FAN CFM	FAN H.P.	ELECTRICAL VOLTAGE	ELECTRICAL AMPS	MFR	MODEL	NOTES
EUH-D122	VESTIBULE 30	4	13.6	100	-	208 / 3	11.2	QMARK	FRC40203F	1
EUH-D127	SPRINKLER ROOM 35	4	13.6	100	-	208 / 3	11.2	QMARK	FRC40203F	1
EUH-D128	TRASH ROOM 36	4	13.6	100	-	208 / 3	11.2	QMARK	FRC40203F	1

NOTES:

1. WALL MOUNTED ELECTRIC HEATER, 14 GA WHITE SECURITY FRONT COVER, FRAME FOR RECESSED MOUNTING, UNIT MOUNTED THERMOSTAT, AND DISCONNECT.

UNIT VENTILATOR SCHEDULE

TAG	SERVICE	SUPPLY FAN CFM	SUPPLY FAN HP	COOLING TOT. MBH	COOLING SENS. MBH	ELECTRIC HEATING BTU/HR	ELECTRIC HEATING KW	ELECTRIC HEATING EAT / LAT	ELECTRICAL VOLT.	ELECTRICAL MCA	ELECTRICAL MOCP	EER	OA CFM	MFR.	MODEL	NOTES
UV-A106	CLASSROOM A106	1,000	0.25	27.1	17.9	62.7	18	45 / 102	460 / 3	43.75	45	10.56	395	DAIKINAPPLIED	UAZR9036	1 & 4
UV-A107	CLASSROOM A107	1,000	0.25	27.1	17.9	62.7	18	45 / 102	460 / 3	43.75	45	10.56	395	DAIKINAPPLIED	UAZR9036	1 & 4
UV-A111	CLASSROOM A111	1,000	0.25	27.1	17.9	62.7	18	45 / 102	460 / 3	43.75	45	10.56	340	DAIKINAPPLIED	UAZR9036	1 & 4
UV-A112	CLASSROOM A112	1,000	0.25	27.1	17.9	62.7	18	45 / 102	460 / 3	43.75	45	10.56	340	DAIKINAPPLIED	UAZR9036	1 & 4
UV-A114	CLASSROOM A114	1,250	0.25	40.7	27.9	67 / 80	68,243	46 / 96	460 / 3	43.75	45	10.43	550	DAIKINAPPLIED	UAZR9036	1 & 4
UV-A116	TEACHER LOUNGE	500	0.25	14.8	11.7	50.1	15	45 / 106	460 / 3	34.25	35	9.44	375	DAIKINAPPLIED	UAZR9024	1 & 3
UV-A125	SPED A125	500	0.25	14.8	11.7	50.1	15	45 / 106	460 / 3	34.25	35	9.44	260	DAIKINAPPLIED	UAZR9024	1 & 3
UV-A126	CLASSROOM A126	1,250	0.25	40.7	27.9	67 / 80	68,243	46 / 96	460 / 3	43.75	45	10.43	360	DAIKINAPPLIED	UAZR9036	1 & 4
UV-A127	CLASSROOM A127	1,000	0.25	27.1	17.9	62.7	18	45 / 102	460 / 3	43.75	45	10.56	370	DAIKINAPPLIED	UAZR9036	1 & 4
UV-A130	SCIENCE A130	1,000	0.25	27.1	17.9	62.7	18	45 / 102	460 / 3	43.75	45	10.56	440	DAIKINAPPLIED	UAZR9036	1 & 4
UV-A133	SCIENCE A133	1,000	0.25	27.1	17.9	62.7	18	45 / 102	460 / 3	43.75	45	10.56	440	DAIKINAPPLIED	UAZR9036	1 & 4
UV-B100	BUSINESS B100	1,000	0.25	27.1	17.9	62.7	18	45 / 102	460 / 3	43.75	45	10.56	370	DAIKINAPPLIED	UAZR9036	1 & 4
UV-B110	SPED B110	1,000	0.25	27.1	17.9	62.7	18	45 / 102	460 / 3	43.75	45	10.56	370	DAIKINAPPLIED	UAZR9036	1 & 4
UV-B111	CLASSROOM B111	1,250	0.25	43.4	27.9	67 / 80	68,243	46 / 96	460 / 3	43.75	45	10.43	370	DAIKINAPPLIED	UAZR9036	1 & 4
UV-B112	KITCHEN B112	1,500	0.25	57.6	36.8	81.9	24	45 / 102	460 / 3	39.1	40	10.43	360	DAIKINAPPLIED	UAHR9H15	2
UV-B113	KITCHEN B113	1,250	0.25	43.4	32.5	54.6	16	45 / 102	460 / 3	25.6	30	10.43	310	DAIKINAPPLIED	UAHR9H10	2
UV-C120	SPED C120	1,000	0.25	27.1	17.9	62.7	18	45 / 102	460 / 3	43.75	45	10.56	370	DAIKINAPPLIED	UAZR9036	1 & 4
UV-D121	SPED / AIDE D102	500	0.25	14.8	11.7	50.1	15	45 / 106	460 / 3	34.25	35	9.44	375	DAIKINAPPLIED	UAZR9024	1 & 3
UV-D123	CLASSROOM D123	1,250	0.25	27.1	17.9	62.7	18	45 / 102	460 / 3	43.75	45	10.56	485	DAIKINAPPLIED	UAZR9036	1 & 4

NOTES:

1. SELFCONTAINED FLOOR MOUNTED UNIT VENTILATOR WITH ELECTRIC HEAT, COMPRESSOR, CONDENSER FAN, CONDENSER COIL, DX COIL, STAINLESS STEEL DRAIN PAN, DISCONNECT, DEMAND CONTROL VENTILATION SEQUINCE, (3) SPEED ECM SUPPLY FANS, ELECTRIC HEAT IN THE RE-HEAT POSTION, DEHUMIDIFCATION CONTROL, AND END PANEL(S). CONNECT THE EXISTING CONDENSTATE LINE TO EQUIPMENT AS REQUIRED.
2. CEILING MOUNTED UNIT VENTILATOR WITH ELECTRIC HEAT IN REHEAT POSTION, DX COIL, (3) SPEED ECM SUPPLY FAN, DEHUMIDIFCATION CONTROL, BOTTOM RETURN AIR GRILLE, OUTSOOR AIR REA DUCT COLLAR, FACE DISCHARGE, DOUBLE DLEFLECTION GRILLES, AND DISCONNECT. CONNECT TO THE EXISTING CONDENSATE LINE AS REQUIRED.
3. REFER TO LOUVER SCHEDULE FOR ADDITIONAL INFORMATION.
4. REFER TO LOUVER SCHEDULE FOR ADDITIONAL INFORMATION.

LOUVER SCHEDULE

TAG	SYSTEM LOCATION	AIR SYSTEM	AIRFLOW (CFM)	QTY.	WIDTH (IN)	HEIGHT (IN)	EX. WIDTH (IN)	EX. HEIGHT (IN)	EXISTING LOUVER LOCATION	P.D.	MFR	MODEL	NOTES
UV-A106	CLASSROOM A106	INTAKE	1,000	1	84	28	48	12	WALL	0.011"	RUSKIN	EME520DD	1
UV-A107	CLASSROOM A106	INTAKE	1,000	1	84	28	48	12	WALL	0.011"	RUSKIN	EME520DD	1
UV-A111	CLASSROOM A111	INTAKE	1,000	1	84	28	48	12	WALL	0.011"	RUSKIN	EME520DD	1
UV-A112	CLASSROOM A112	INTAKE	1,000	1	84	28	48	12	WALL	0.011"	RUSKIN	EME520DD	1
UV-A114	CLASSROOM A114	INTAKE	1,250	3	36X16 (LOW)		72	16	WINDOW	0.011"	RUSKIN	EME520DD	2
		CONDENSER DISCHARGE	TBD	3	36X17 (HIGH)								
UV-A116	TEACHER LOUNGE A116	INTAKE	500	3	36X16 (LOW)		21	12	WALL	0.011"	RUSKIN	EME520DD	2
		CONDENSER DISCHARGE	TBD	3	36X17 (HIGH)								
UV-A125	SPED A125	INTAKE	500	3	36X16 (LOW)		72	16	WINDOW	0.011"	RUSKIN	EME520DD	2
		CONDENSER DISCHARGE	TBD	3	36X17 (HIGH)								
UV-A126	CLASSROOM A126	INTAKE	1,250	1	72	33	N/A	N/A	N/A	0.011"	RUSKIN	EME520DD	1
UV-A127	CLASSROOM A127	INTAKE	1,000	3	36X16 (LOW)		36	16	WINDOW	0.011"	RUSKIN	EME520DD	2
		CONDENSER DISCHARGE	TBD	3	36X17 (HIGH)								
UV-A130	SCIENCE A130	INTAKE	1,000	3	36X16 (LOW)		72	16	WINDOW	0.011"	RUSKIN	EME520DD	2
		CONDENSER DISCHARGE	TBD	3	36X17 (HIGH)								
UV-A133	SCIENCE A133	INTAKE	1,000	3	36X16 (LOW)		72	16	WINDOW	0.011"	RUSKIN	EME520DD	2
		CONDENSER DISCHARGE	TBD	3	36X17 (HIGH)								
UV-B100	BUSINESS B100	INTAKE	1,000	3	36X16 (LOW)		72	16	WINDOW	0.011"	RUSKIN	EME520DD	2
		CONDENSER DISCHARGE	TBD	3	36X17 (HIGH)								
UV-B110	SPED B110	INTAKE	1,000	3	36X16 (LOW)		32	16	WINDOW	0.011"	RUSKIN	EME520DD	2
		CONDENSER DISCHARGE	TBD	3	36X17 (HIGH)								
UV-B111	CLASSROOM B111	INTAKE	1,250	3	36X16 (LOW)		68	16	WINDOW	0.011"	RUSKIN	EME520DD	2
		CONDENSER DISCHARGE	TBD	3	36X17 (HIGH)								
UV-C120	SPED C120	INTAKE	1,000	3	36X16 (LOW)		62	16	WINDOW	0.011"	RUSKIN	EME520DD	2
		CONDENSER DISCHARGE	TBD	3	36X17 (HIGH)								
UV-C122	STORAGE ROOM C122	INTAKE	400	1	72	33	16	12	WALL	0.011"	RUSKIN	EME520DD	1
UV-D121	SPED / AIDE D102	INTAKE	500	1	72	33	48	12	WALL	0.011"	RUSKIN	EME520DD	1
UV-D123	CLASSROOM D123	INTAKE	1,250	1	84	28	48	12	WALL	0.011"	RUSKIN	EME520DD	1

NOTES:

1. EQUIPMENT MANUFACUTRE PROVIDED FLANGED LOUVER WITH WALL BOX, BIRD SCREEN, AND ALUMINUM CONSTRUCTION.
2. PROVIDED LOUVER INSTALLED IN WINDOW OPENING WITH A FIELD MANUFACTURES CUSTOM WALL BOX INCLUDING A DIVDING PANEL TO SEPERTAE THE AIR PAHTS TO THE UNIT, BIRD SCREEN, AND ALUMINUM CONSTRUCTION. CORRDINATE WITH THE SUBMITTED EQUIPMENT MANUFACUTRE AND EXISTING WINDOW ASSEMBLY MANUFUCATRE FOR A COMPLETE SYSTEM. PROVIDE AN INSULATED BLANK-OFF PANEL AS REQUIRED TO INSTALL EQUIPMENT PER MANUFACTURES RECOMMENDATIONS.

EXHAUST FAN SCHEDULE

TAG	SERVICE	CFM	E.S.P	HP	TYPE	DRIVE	VOLT.	MFR	MODEL	CONTROL	NOTES
EF-1	RESTROOM GROUP	800	0.5	0.167	ROOF	DIRECT	115 / 1	LOREN COOK	C101C17D	BAS - OCC SCHEDULE	1
EF-D109	ART D109	510	0.4	0.125	CEILING	DIRECT	115 / 1	LOREN COOK	101C17D(VF)	BAS - OCC SCHEDULE	1
EF-D116	TOILET ROOM D116	55 / 80	0.1	7.9 W	CEILING	DIRECT	115 / 1	BROAN	ZB80	OCC SENSOR	2 & 3
EF-D118	TOILET ROOM D118	55 / 80	0.1	7.9 W	CEILING	DIRECT	115 / 1	BROAN	ZB80	OCC SENSOR	2 & 3
EF-D124	TOILET ROOM D124	55 / 80	0.1	7.9 W	CEILING	DIRECT	115 / 1	BROAN	ZB80	OCC SENSOR	2 & 3
EF-D125	TOILET ROOM D125	55 / 80	0.1	7.9 W	CEILING	DIRECT	115 / 1	BROAN	ZB80	OCC SENSOR	2 & 3

NOTES

1. ROOF MOUNTED DOWNBLAST EXHAUST FAN WITH ALL ALUMINUM, 24" INSULATED CURB, BIRD SCREEN, BACKDRAFT DAMPER, AND DISCONNECT.
2. CEILING MOUNTED ENERGY STAR RATED EXHAUST FAN, BACKDRAFT DAMPER, SPEED CONTROLLER, AND DISCONNECT.
3. MULTISPEED FAN SHALL BE SET TO 45 CFM TO PROVIDE CONTINUOUS VENTILATION DURING NORMAL OPERATION. DURING MOTION SENSING MODE THE FAN SHALL INCREASE TO 80 CFM FOR 5 MINUTES AFTER MOTION IS NOT DETECTED.

DUCT-FREE SPLIT SYSTEM SCHEDULE

TAG	SERVICE	COOL MBH	CFM	SEER	INDOOR MCA / MOCP	OUTDOOR MCA / MOCP	OUTDOOR VOLTAGE	AMBIENT TEMP	MFR	OA (CFM)	INDOOR MODEL	OUTDOOR MODEL	ACCESSORIES	NOTES
FC-B103 / HP-B103	FODD SERVICE OFFICE B103	12	425	18.5	1 / 15	14 / 24	208/1	-13 / 115	MITSUBISHI	20	NTXCKS09A112AA	NTXSKH09112AA	WIND BAFFLE	1

NOTES:

1. PROVIDE BACNET INTERFACE AND SIMPLE MA CONTROLLER. MOUNT OUTDOOR UNIT TO EXTERIOR WALL. ORIENT CONDENSER FAN DISCHARGE AWAY FROM PREVAILING WIND. ROUTE REFRIGERANT PIPING BETWEEN INDOOR AND OUTDOOR UNIT PER MFR'S REQUIREMENTS. INTERIOR REF PIPING TO BE CONCEALED, PROVIDE LINE HIDE FOR EXTERIOR REF PIPING. PROVIDE BLUE DIAMOND MINI CONDENSATE PUMP. ROUTE CONDENSATE TO NEAREST DRAIN U.N.O.

ELECTRIC DUCT HEATER SCHEDULE

TAG	SERVICE	CFM	EAT	LAT	KW	VOLTAGE	MFR	MODEL	NOTES
EDH-A109A	FC-A109	160	-10	50	3	460 / 3	THERMOLEC	TER	1
EDH-A109B	FC-A109	340	55	95	5	460 / 3	THERMOLEC	TER	1
EDH-B103	FC-B103	135	50	95	2	460 / 3	THERMOLEC	TER	1
EDH-C119	FC-C119	405	55	95	6	460 / 3	THERMOLEC	TER	1
EDH-D107	FC-D107	405	55	95	6	460 / 3	THERMOLEC	TER	1

NOTES:

1. VERTICAL AIR FLOW ELECTRIC DUCT HEATER WITH DISCHARGE AIR TEMPERATURE SENSOR, OUTSIDE AIR TEMPERATURE SENSOR, SCR CONTROLLER, AND BUILT-IN DISCONNECT SWITCH. CONTROLLER SHALL MAINTAIN A DISCHARGE AIR TEMPERATURE OF 45, WHEN THE OUTSIDE AIR TEMPERATURE DROPS BELOW 30.

GRILLE AND DIFFUSER SCHEDULE

TAG	DESCRIPTION	SIZE	MATERIAL	DAMPER	FINISH	MFR	MODEL
A	24X24 PLAQUE FACE SUPPLY DIFFUSER WITH EQUALIZING GRID	VARIES	STEEL	NO	WHITE	TITUS	OMNI
B	PERFORATED FACE RETURN DIFFUSER. TYPICAL SIZE IS 24X24, INSECT SCREEN PER PLANS	VARIES	STEEL	NO	WHITE	TITUS	PAR
C	DOUBLE DEFLECTION SUPPLY GRILLE, 3/4" SPACING, SHORT BLADE	VARIES	STEEL	NO	WHITE	TITUS	300RS
D	SINGLE DEFLECTION RETURN GRILLE, 3/4" SPACING, LONG BLADE	VARIES	STEEL	NO	WHITE	TITUS	350RL
F	ROUND PLAQUE CEILING DIFFUSER	VARIES	STEEL	NO	WHITE	TITUS	R-OMNI
G	DRUM LOUVER WITH HIGH CAPACITY, LONG THROW, AND SPLIT DEFLECTOR VANE	VARIES	ALUMINUM	NO	WHITE	TITUS	DL-SV
H	FLUSH MOUNT DIFFUSERS	48X30	ALUMINUM	NO	WHITE	TITUS	CDF-18

PROVIDE EQUALIZING GRID FOR ALL TYPE A DIFFUSERS OVER 300 CFM AND AS SHOWN ON DETAIL.

REMOTE AIR COOLED CONDENSING UNIT SCHEDULE

TAG	SERVICE	NOM. TONS	COMPRESSOR REF. TYPE	COMPRESSOR QTY	COMPRESSOR CIRCUITS	COMPRESSOR STAGES	ELECTRICAL VOLT.	ELECTRICAL MCA	ELECTRICAL MOCP	SEER	MFR.	MODEL	NOTES
CU-B112	KITCHEN B112	4	R-410A	1	1	2	208 / 1	19.7	30	16	DAIKIN	DX16TC0481	1
CU-B113	KITCHEN B113	3	R-410A	1	1	2	208 / 1	19.7	30	16	DAIKIN	DX16TC0361	1

NOTES

1. TWO STAGE AIR COOLED CONDENSING UNIT WITH SCROLL COMPRESSOR, COMPRESSOR SHORT CYCLE PROTECTION, COMPRESSOR START ASSIST, UNIT MOUNTED DISCONNECT, AND REFRIGERANT PIPING AS REQUIRED PER MANUFACTURE RECOMMENDATION.

DUCT INSULATION SCHEDULE

SINGLE ZONE VAV SYSTEMS / INDOOR FAN COIL UNITS

DUCT TYPE	INSULATION TYPE	R-VALUE
ROUND SUPPLY	2-1/8" WRAP	6
ROUND SUPPLY (GYM)	1-1/2" LINER	6
RECTANGULAR SUPPLY	1-1/2" LINER	6
ROUND RETURN	1-1/2" LINER	6
OUTSIDE AIR	3" WRAP	8
DOUBLE WALL RECTANGULAR DUCTWORK	PERFORATED LINER	6
DOUBLE WALL ROUND DUCTWORK	PERFORATED LINER	6
EXTERIOR DUCT	DOUBLE WALL + POLYISO	12
EXHAUST DUCT	NONE	NA

NOTE: INSULATION SHALL HAVE A FLAME SPREAD INDEX NOT MORE THAN 25 AND A SMOKE-DEVELOPED INDEX NOT MORE THAN 50 WHEN TESTED IN ACCORDANCE WITH ASTM E 84 OR UL 723. WRAP INSULATION TO HAVE INTEGRAL VAPOR BARRIER.

NOTE: DUCT SIZES SHOWN ON PLAN ARE SHEETMETAL SIZES U.NO. REFER TO PLANS FOR AREAS WITH SPECIAL REQUIREMENTS, SUCH AS DOUBLE WALL DUCT.

NOTE: DOUBLE WALL DUCT SIZES SHOWN ON PLAN ARE INSIDE SHEETMETAL DIMENSION.

WRAP FIRST 5' OF EXHAUST DUCT FROM EXTERIOR WITH 1" INSULATION.

OUTDOOR HEAT PUMP SCHEDULE

TAG	NOMINAL CAPACITIES COOLING (MBH)	NOMINAL CAPACITIES HEATING (MBH)	DESIGN CAPACITIES COOLING O.A. DB	DESIGN CAPACITIES HEATING O.A. DB	DESIGN CAPACITIES COOLING (MBH)	DESIGN CAPACITIES HEATING (MBH)	ELECTRICAL VOLT.	ELECTRICAL MCA	ELECTRICAL MOCP	WEIGHT (LBS.)	MODEL NUMBER	MFR.	ACCESSORIES	NOTES
HP-A104	12	18	95	5	12.0	15.0	208 / 1	11	30	150	PUY-A12NKA7	MITSUBISHI	WIND BAFFEL	1
HP-C119	12	18	95	5	12.0	15.0	208 / 1	11	30	150	PUY-A12NKA7	MITSUBISHI	WIND BAFFEL	1
HP-D107	12	18	95	5	12.0	15.0	208 / 1	11	30	150	PUY-A12NKA7	MITSUBISHI	WIND BAFFEL	1
HP-A128	12	18	95	5	12.0	15.0	208 / 1	11	30	150	PUY-A12NKA7	MITSUBISHI	WIND BAFFEL	1

NOTES:

1. PROVIDE OUTDOOR HEAP PUMP WITH WIND BAFFLE, 14" EQUIPMENT RAILS, AND DISCONNECT. ORIENT CONDENSER FAN DISCHARGE AWAY FRO PREVAILING WIND.

INDOOR FAN COIL UNIT SCHEDULE

TAG	SERVICE	SUPPLY FAN CFM	SUPPLY FAN W	NOMINAL CAPACITIES COOLING (BTU)	NOMINAL CAPACITIES HEATING (BTU)	ELECTRICAL VOLT.	ELECTRICAL MOCP	OA	MFR.	MODEL	TYPE	NOTES
FC-A104	AIDE A104	340	85	12,000	12,000	208 / 1	15	160	MITSUBISHI	TPEADA0121AA70A	CEILING CONCEALED	1
FC-C119	CONFERENCE C119	405	85	12,000	12,000	208 / 1	15	50	MITSUBISHI	TPEADA0121AA70A	CEILING CONCEALED	1
FC-D107	AIDE D107	405	85	12,000	12,000	208 / 1	15	50	MITSUBISHI	TPEADA0121AA70A	CEILING CONCEALED	1
FC-A128	SPEECH A128	340	85	12,000	12,000	208 / 1	15	160	MITSUBISHI	TPEADA0121AA70A	CEILING CONCEALED	1

NOTES:

1. PROVIDE BACNET INTERFACE AND SIMPLE MA CONTROLLER. MOUNT OUTDOOR UNIT TO EXTERIOR WALL. ORIENT CONDENSER FAN DISCHARGE AWAY FROM PREVAILING WIND. ROUTE REFRIGERANT PIPING BETWEEN INDOOR AND OUTDOOR UNIT PER MFR'S REQUIREMENTS. INTERIOR REF PIPING TO BE CONCEALED, PROVIDE LINE HIDE FOR EXTERIOR REF PIPING. ROUTE CONDENSATE TO NEAREST DRAIN U.N.O.

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RIVER VALLEY SCHOOL DISTRICT

RIVER VALLEY HIGH SCHOOL

15480 THREE OAKS RD
THREE OAKS, MI 49128

MECHANICAL SCHEDULES AND DETAILS

JOB NUMBER 21-346

DATE 03.22.2022

04.12.2022

REVISIONS:
2 ADDENDUM 002

BID SET

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4/11/2022 12:13:09 PM

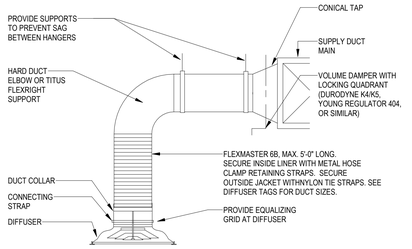
RTU SCHEDULE - ALTERNATE #1

TAG	SERVICE	SUPPLY FAN			DX COOLING				REHEAT	HEATING			ELECTRICAL			OA CFM	EER	WEIGHT (LBS.)	MFR.	MODEL	NOTES
		TOT CFM	E.S.P.	HP	TOT / SENS MBH	EAT DB / WB	LAT DB / WB	# COMP. / STAGES	LAT DB/WB	MBH IN / OUT	LAT	STAGES	VOLT.	MCA	MOCP						
RTU-A106	CLASSROOM A106 / A107	2,490	0.5	2	94.5 / 68.3	81.3 / 67.1	56.7 / 54.8	MOD	75 / 61.76	210 / 168	101	MOD	460/3	24	35	980	12.1	1,850	AAON	RQ-008-3-0-BA01	1, 2, 3, 4, & 5
RTU-A111	CLASSROOM A111 / A112	1,970	0.5	2	72.2 / 53.4	81.9 / 67.5	55.8 / 55.0	MOD	75 / 62.2	140 / 113.5	89	MOD	460/3	21	30	840	11.6	1,800	AAON	RQ-006-3-V-EA09	1, 2, 3, 4, & 5
RTU-A114	CLASSROOM A114	1,595	0.5	2	60.3 / 43.5	81.9 / 67.5	57.5 / 55.5	MOD	75 / 62.46	100 / 81	101	MOD	460/3	19	25	740	12.9	1,600	AAON	RQ-005-3-V-FA09	1, 2, 3, 4, & 5
RTU-A125	CLASSROOM A125	460	0.5	0.5	24.57 / 16.05	86.15 / 70.68	57.20 / 55.66	MOD	75 / 62.28	60/48.6	117.1	MOD	460/3	11	15	250	13.4	1,600	AAON	RQ-002-3-V-HA02	1, 2, 3, 4, & 5
RTU-A126	CLASSROOM A126	1,270	0.5	1	49.23 / 35.5	80.7 / 66.6	55.5 / 53.9	MOD	75 / 62.17	100 / 81	100.4	MOD	460/3	18	25	455	13.55	1,600	AAON	RQ-004-3-V-EA09	1, 2, 3, 4, & 5
RTU-A127	CLASSROOM A127	920	0.5	1	38.0 / 25.9	83 / 68.3	57.3 / 55.0	MOD	75 / 61.41	100 / 81	111	MOD	460/3	15	20	460	13.2	1,600	AAON	RQ-003-3-V-FA09	1, 2, 3, 4, & 5
RTU-A130	SCIENCE A130	980	0.5	1	42.1 / 29.3	83.9 / 69.0	56.6 / 55.3	MOD	75 / 62.11	100 / 81	102	MOD	460/3	15	20	545	13.2	1,600	AAON	RQ-003-3-V-FA09	1, 2, 3, 4, & 5
RTU-A133	SCIENCE A133	1080	0.5	1	48.9 / 33.1	83.1 / 68.5	55.1 / 53.5	MOD	75 / 62.18	100 / 81	98.7	MOD	460/3	17	25	550	13.55	1,600	AAON	RQ-004-3-V-EA09	1, 2, 3, 4, & 5
RTU-B100	BUSINESS B100	970	0.5	1	40.84 / 27.87	84.07 / 69.18	56.66 / 55.32	MOD	75 / 62.18	100 / 81	96.7	MOD	460/3	15	20	550	13.55	1,600	AAON	RQ-003-3-V-EA09	1, 2, 3, 4, & 5
RTU-B110	BUSINESS B110	1230	0.5	1	49.0 / 35.0	80.9 / 66.8	55.2 / 53.6	MOD	75 / 61.58	100 / 81	110.6	MOD	460/3	17	25	455	13.2	1,600	AAON	RQ-004-3-V-EA09	1, 2, 3, 4, & 5
RTU-B111	CLASSROOM B111	1,310	0.5	1	49.4 / 35.9	80.5 / 66.5	55.9 / 54.0	MOD	75 / 62.20	100 / 81	100	MOD	460/3	18	25	455	13.55	1,600	AAON	RQ-004-3-V-EA09	1, 2, 3, 4, & 5
RTU-B112	KITCHEN B112	2,070	0.5	2	59.9 / 48.5	77.7 / 64.3	57.6 / 55.1	MOD	75 / 61.76	100 / 81	92.4	MOD	460/3	19	25	490	13.5	1,700	AAON	RQ-005-3-V-FA09	1, 2, 3, 4, & 5
RTU-B113	KITCHEN B113	1,000	0.5	1	37.2 / 26.5	79.9 / 66	56.0 / 53.7	MOD	75 / 60.48	60 / 48.6	93.8	MOD	460/36	15	20	310	13.2	1,600	AAON	RQ-003-3-V-FA09	1, 2, 3, 4, & 5
RTU-C120	CLASS/OFFICE C120	1,665	0.5	1	50.16 / 40.2	78.8 / 65.1	57.4 / 55.3	MOD	75 / 61.18	100 / 81	95	MOD	460/3	18	25	400	11.6	1,600	AAON	RQ-004-3-V-FA09	1, 2, 3, 4, & 5
RTU-D123	CLASS/OFFICE D123	1,595	0.5	1	59.76 / 43.3	81 / 66.9	57 / 54.9	MOD	75 / 61.18	140 / 113.4	105.5	MOD	460/3	19	25	605	11.6	1,600	AAON	RQ-005-3-V-FA09	1, 2, 3, 4, & 5

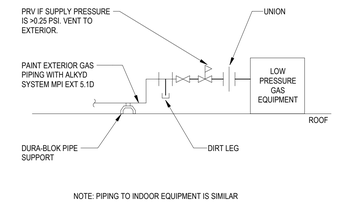
NOTES

1	SINGLE-ZONE VAV GAS/DX RTU WITH DOUBLE WALL R13 FOAM INSULATED CABINET WITH THERMAL BREAKS, DOWNWARD DISCHARGE, TOOL-LESS ACCESS DOORS, MODULATING HIGH, VARIABLE SPEED DIRECT DRIVE FANS, STAINLESS STEEL DRAIN PAN, STAINLESS STEEL HEAT EXCHANGER, VARIABLE SPEED CONDENSER FANS WITH HEAD PRESSURE CONTROL, DEHUMIDIFICATION CONTROL, CONVENIENCE OUTLET, MERV 13 FINAL FILTERS, BACNET INTERFACE, HAIL GAURD, AND DISCONNECT. PROVIDE AND INCLUDE ECONOMIZER FAULT DETECTION AND DIAGNOSSTIC, CO2 DEMAND CONTROL VENTILATION, AND POWERED EXHAUST FAN WITH BUILDING STATIC PRESSURE CONTROL.
2	PROVIDE INSULATED VIBRATION ISOLATION CURB BY THYBAR.
3	PROVIDE EVERGREENUV PRU PHOTOCATALYTIC OXIDIZER WITH UV LIGHT AS PART OF A COMPLETE PACKAGE BY RTU SUPPLIER LOCATED WITHIN THE UNIT CABINET. ELECTRICAL: 120/1, 15 AMPS.
4	PROVIDE WITH-IN THE VIBRO CURB THE HUSHCORE DECK SYSTME MODEL NUMBER DS-53 FOR ROOFTOP MOUNTED HVAC UNITS. SYSTEM BY BRD.
5	RTUS OTHER THAN BASIS OF DESIGN MUST, IN ADDITION TO MEETING THE SCHEDULED PERFORMANCE, HAVE SUBSTANTIALLY SIMILAR DIMENSIONS, WEIGHTS, AND CONFIGURATION. MECHANICAL CONTRACTOR WILL BE RESPONSIBLE TO PROVIDE STAMPED STRUCTURAL DRAWINGS AND WILL BEAR THE COST FOR ANY ADDITIONAL STRUCTURAL WORK REQUIRED TO ACCOMMODATE RTUS THAT ARE NOT DIMENSIONALLY SIMILAR TO BASIS OF DESIGN.

2

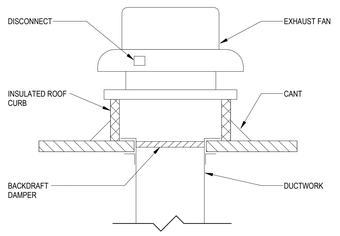


1 M4.1 DIFFUSER FLEXIBLE DUCT CONNECTION
NOT TO SCALE



NOTE: PIPING TO INDOOR EQUIPMENT IS SIMILAR

4 M4.1 TYPICAL GAS PIPING DETAIL
NOT TO SCALE



2 M4.1 TYPICAL ROOF MOUNTED EXHAUST FAN DETAIL
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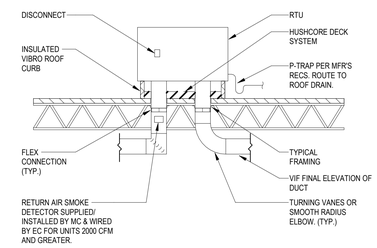

5 M4.1 TYPICAL RTU DETAIL
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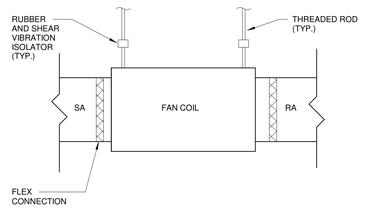

3 M4.1 TYPICAL HORIZONTAL FAN COIL DETAIL
NOT TO SCALE

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RIVER VALLEY SCHOOL DISTRICT

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MECHANICAL DEATILS

JOB NUMBER 21-346
DATE 03.22.2022
04.12.2022
REVISIONS:
2 ADDENDUM 002

BID SET

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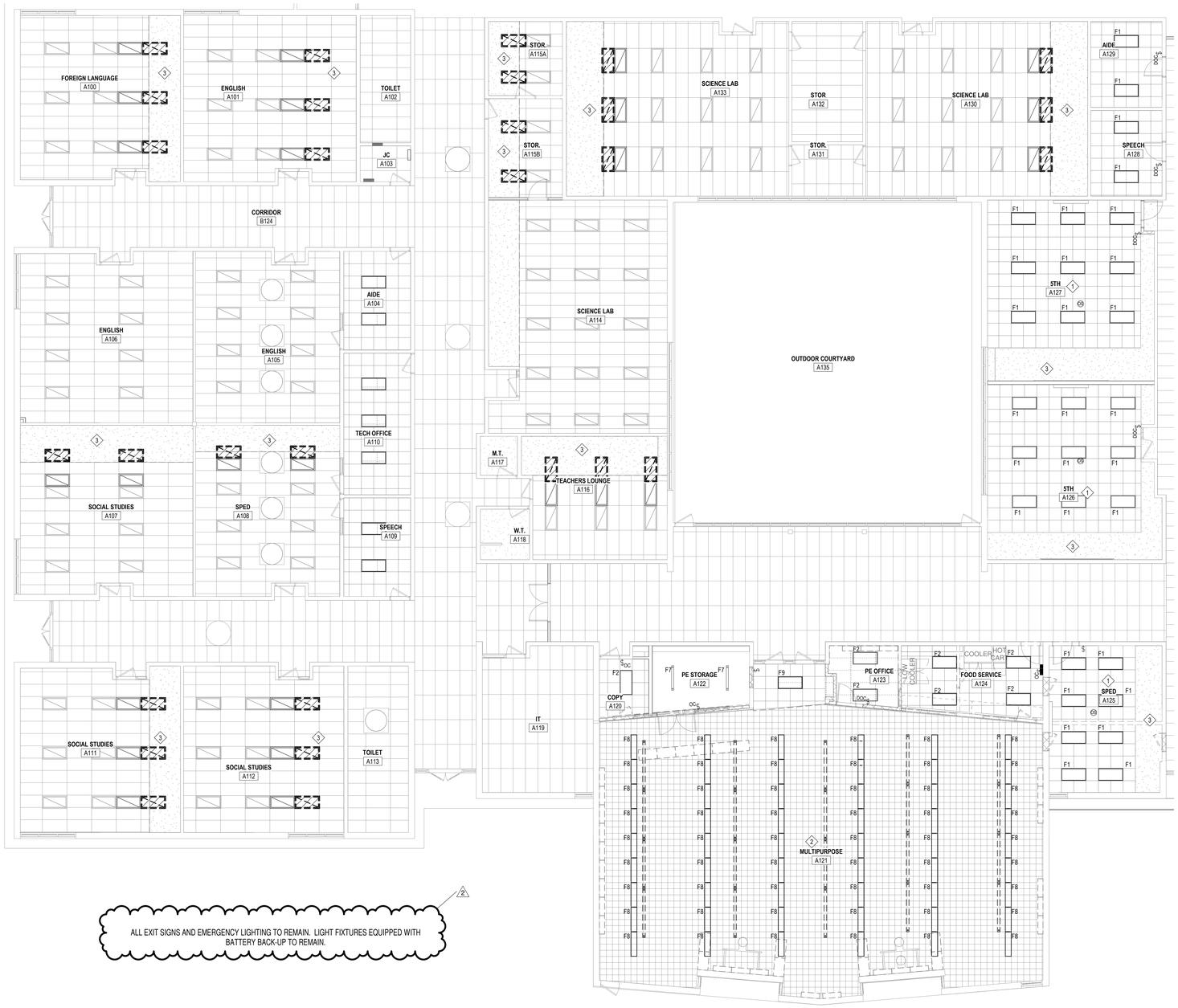


NORTH

1 LEVEL 1 LIGHTING PLAN
1/8" = 1'-0"

GENERAL LIGHTING & POWER NOTES

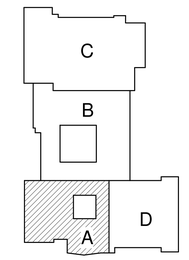
1. REFER TO ARCHITECTURAL, MECHANICAL, PLUMBING, & FIRE PROTECTION PLANS FOR ADDITIONAL INFORMATION ON EXACT POWER, WIRING, & ROUGH-IN REQUIREMENTS AND LOCATIONS OF DEVICES.
2. MINIMUM NEW CIRCUIT WIRING SHALL CONSIST OF 2#12,1#12G, 1/2"C. WHERE HOME RUNS EXCEED 75' OR CONTINUOUS LOAD EXCEEDS 65% OF CIRCUIT RATING, MINIMUM CIRCUIT SIZE SHALL CONSIST OF 2#10G, 1/2"C. ALL NEW CIRCUITS SHALL INCLUDE A CONTINUOUS EQUIPMENT GROUNDING CONDUCTOR.
3. CIRCUITS BEING CONTROLLED BY VARIABLE DIMMING EQUIPMENT SHALL ROUTED WITH SEPARATED DEDICATED NEUTRALS
4. CONTRACTOR SHALL VERIFY EXACT LOCATIONS OF ALL RECESSED LIGHTING FIXTURES WITH ARCHITECTURAL REFLECTED CEILING PLANS PRIOR TO INSTALLATION. VERIFY CEILING CONSTRUCTION WITH ARCHITECT IN ALL AREAS. CONTRACTOR SHALL BE RESPONSIBLE FOR ORDERING FIXTURES WITH CORRECT TRIMS, ETC. TO ASSURE COMPATIBILITY WITH CEILING STRUCTURE.
5. WHERE MORE THAN ONE SWITCH IS INDICATED AT A LOCATION, CONTRACTOR SHALL INSTALL CO-LOCATED LIGHT SWITCHES IN A COMMON FACEPLATE. USE MULTI-GANG BACKBOXES. VERIFY MOUNTING HEIGHT WITH ADA REQUIREMENTS. PROVIDE STEEL BARRIES BETWEEN SWITCHES FOR EACH CIRCUIT WHERE MANDATED BY CODE.
6. COORDINATE INSTALLATION OF LIGHTING FIXTURES IN MECHANICAL AREAS, EQUIPMENT ROOM, ETC; ADJUST FIXTURE HEIGHTS AND LOCATIONS AS NECESSARY TO OFFSET CONFLICTS
7. FOR EXISTING AREAS WITH NEW REPLACMENT LIGHTING.
   a. E.C. TO REWORK AND EXTEND EXISTING LIGHTING CIRCUIT TO NEW REPLACEMENT FIXTURES IN LOCATIONS AS SHOWN.
   b. REPLACEMENT WALL CONTROLS SHALL BE INSTALLED IN EXISTING SWITCH LOCATIONS WITH NEW FACEPLATES MATCHING NEW DEVICES. EXTEND NEW NEUTRAL TO SWITCH LOCATION AS REQUIRED FOR NEW WALL STATION LIGHTING CONTROLS.

ELECTRICAL LIGHTING KEYNOTES

1. CLASSROOM LIGHTING CONTROL SEQUENCE:
   LIGHTING SHALL BE MANUAL ON TO 100% LIGHTING LEVEL AND CONTROLLED VIA WALL SWITCH STATION NEAR ROOM ENTRY. PROVIDE WALL SWITCH STATION FOR EACH ENTRY AS INDICATED. LIGHTING TO AUTOMATICALLY TURN OFF AFTER THE ROOM HAS BEEN VACANT FOR 20MIN. ALL ROOM LIGHTING TO BE (1) DIMMING ZONE WITH DIMMING DOWN TO 1% OF FIXTURE OUTPUT CONTROLLED VIA WALL STATIONS AS INDICATED ON PLANS.

   BASIS OF DESIGN:
   ACUITY nLIGHT LOAD CONTROLLER (nPP16) PAIRED WITH A ON/OFF + DIMMING WALL STATION (nPODM DX). OCCUPENCY SENSORS AS SHOWN TO BE EQUAL TO ACUITY (nCM PDT 9).
2. MULTIPURPOSE ROOM CONTROL SEQUENCE:
   LIGHTING SHALL BE MANUAL ON TO 100% LIGHTING LEVEL AND CONTROLLED VIA WALL SWITCH STATION NEAR ROOM ENTRY. PROVIDE WALL SWITCH STATION FOR EACH ENTRY AS INDICATED. LIGHTING TO AUTOMATICALLY TURN OFF AFTER THE ROOM HAS BEEN VACANT FOR 20MIN. ALL ROOM LIGHTING TO BE (1) DIMMING ZONE WITH DIMMING DOWN TO 1% OF FIXTURE OUTPUT CONTROLLED VIA WALL STATIONS AS INDICATED ON PLANS.

   BASIS OF DESIGN:
   WIRELESS CONTROLS EQUAL TO ACUITY nLIGHT. PROVIDE (1) WIRLESS WALLBOX CONTROL EQUAL TO rPODBA DX G2 FOR EXISTING SWITCH LOCATION.
3. ADJUST AND PROPERLY PROTECT EXISTING LIGHTING FIXTURES AS INDICATED TO ACCOMODATE NEW SOFFIT IN THE CEILING.



KEY PLAN
NOT TO SCALE

CORDOGAN CLARK
Chicago
118 North Wells Street, Chicago, IL 60606
tel 312.641.3200 fax 312.641.4771
Grand Rapids
924 Ottawa Avenue, Suite A, 49503
tel 616.356.3870 fax 616.356.3871

RIVER VALLEY SCHOOL DISTRICT

RIVER VALLEY HIGH SCHOOL
15480 THREE OAKS RD
THREE OAKS, MI 49128

ELECTRICAL LIGHTING PLAN - AREA A

JOB NUMBER 21-346
DATE 03/22/2022

REVISIONS:
ADDENDUM 02 04.12.2022

STATE OF MICHIGAN
John G. Cordogan
Architect
No. 1301035955
LICENSED ARCHITECT

CD BID SET

E1.1A

GENERAL LIGHTING & POWER NOTES

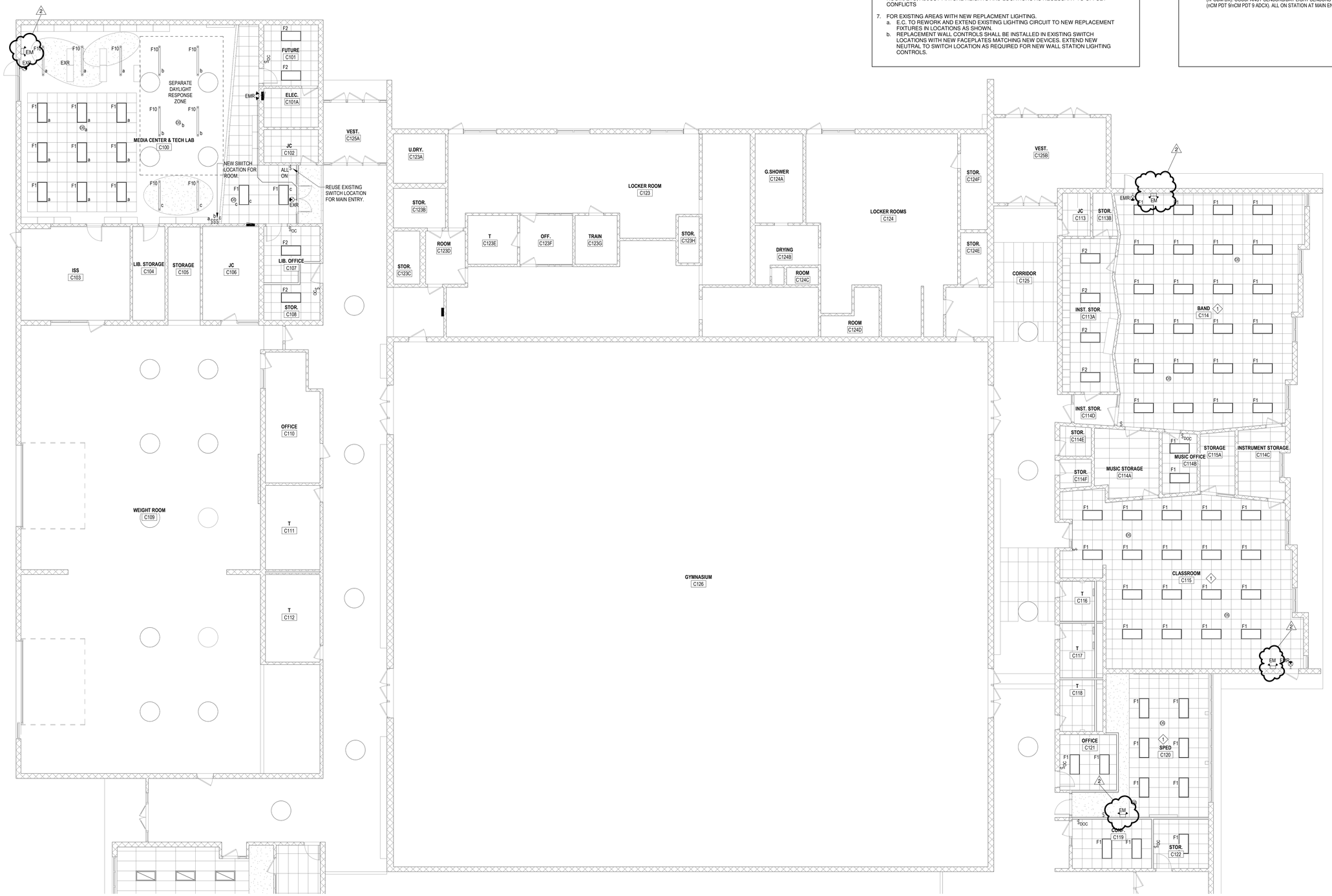
1. REFER TO ARCHITECTURAL, MECHANICAL, PLUMBING, & FIRE PROTECTION PLANS FOR ADDITIONAL INFORMATION ON EXACT POWER, WIRING, & ROUGH-IN REQUIREMENTS AND LOCATIONS OF DEVICES.
2. MINIMUM NEW CIRCUIT WIRING SHALL CONSIST OF 2#12,1#12G, 1/2"C. WHERE HOME RUNS EXCEED 75' OR CONTINUOUS LOAD EXCEEDS 65% OF CIRCUIT RATING, MINIMUM CIRCUIT SIZE SHALL CONSIST OF 2#10G, 1/2"C. ALL NEW CIRCUITS SHALL INCLUDE A CONTINUOUS EQUIPMENT GROUNDING CONDUCTOR.
3. CIRCUITS BEING CONTROLLED BY VARIABLE DIMMING EQUIPMENT SHALL ROUTED WITH SEPARATED DEDICATED NEUTRALS
4. CONTRACTOR SHALL VERIFY EXACT LOCATIONS OF ALL RECESSED LIGHTING FIXTURES WITH ARCHITECTURAL REFLECTED CEILING PLANS PRIOR TO INSTALLATION. VERIFY CEILING CONSTRUCTION WITH ARCHITECT IN ALL AREAS. CONTRACTOR SHALL BE RESPONSIBLE FOR ORDERING FIXTURES WITH CORRECT TRIMS, ETC. TO ASSURE COMPATIBILITY WITH CEILING STRUCTURE.
5. WHERE MORE THAN ONE SWITCH IS INDICATED AT A LOCATION, CONTRACTOR SHALL INSTALL CO-LOCATED LIGHT SWITCHES IN A COMMON FACEPLATE. USE MULTI-GANG BACKBOXES. VERIFY MOUNTING HEIGHT WITH ADA REQUIREMENTS. PROVIDE STEEL BARRIES BETWEEN SWITCHES FOR EACH CIRCUIT WHERE MANDATED BY CODE.
6. COORDINATE INSTALLATION OF LIGHTING FIXTURES IN MECHANICAL AREAS, EQUIPMENT ROOM, ETC; ADJUST FIXTURE HEIGHTS AND LOCATIONS AS NECESSARY TO OFFSET CONFLICTS
7. FOR EXISTING AREAS WITH NEW REPLACMENT LIGHTING.
   a. E.C. TO REWORK AND EXTEND EXISTING LIGHTING CIRCUIT TO NEW REPLACEMENT FIXTURES IN LOCATIONS AS SHOWN.
   b. REPLACEMENT WALL CONTROLS SHALL BE INSTALLED IN EXISTING SWITCH LOCATIONS WITH NEW FACEPLATES MATCHING NEW DEVICES. EXTEND NEW NEUTRAL TO SWITCH LOCATION AS REQUIRED FOR NEW WALL STATION LIGHTING CONTROLS.

ELECTRICAL LIGHTING KEYNOTES

1. CLASSROOM LIGHTING CONTROL SEQUENCE:
   LIGHTING SHALL BE MANUAL ON TO 100% LIGHTING LEVEL AND CONTROLLED VIA WALL SWITCH STATION NEAR ROOM ENTRY. PROVIDE WALL SWITCH STATION FOR EACH ENTRY AS INDICATED. LIGHTING TO AUTOMATICALLY TURN OFF AFTER THE ROOM HAS BEEN VACANT FOR 20MIN. ALL ROOM LIGHTING TO BE (1) DIMMING ZONE WITH DIMMING DOWN TO 1% OF FIXTURE OUTPUT CONTROLLED VIA WALL STATIONS AS INDICATED ON PLANS.

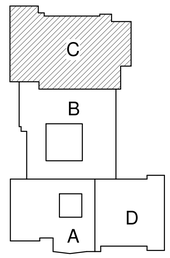
   BASIS OF DESIGN:
   ACUITY nLIGHT LOAD CONTROLLER (nPP16) PAIRED WITH A ON/OFF + DIMMING WALL STATION (nPODM DX). OCCUPENCY SENSORS AS SHOWN TO BE EQUAL TO ACUITY (nCM PDT 9).
2. MEDIA CENTER CONTROL SEQUENCE:
   LIGHTING SHALL BE MANUAL ON TO 100% LIGHTING LEVEL WITH ALL ON CONTROL STATION AT MAIN ENTRY. PROVIDE ON/OFF/RAISE/LOWER WALL CONTROL FOR EACH INDICATED ZONE. LIGHTING TO AUTOMATICALLY TURN OFF AFTER INDICATED ZONE HAS BEEN VACANT FOR 20MIN. PROVIDE SEPARATE DAYLIGHT ZONE WITH AUTOMATIC DAYLIGHT RESPONSE SENSOR AS INDICATED.

   BASIS OF DESIGN:
   ACUITY nLIGHT LOAD CONTROLLERS (nPP16) PAIRED WITH A ON/OFF + DIMMING WALL STATIONS (nPODM DX). OCCUPANCY SENSORS/DAY LIGHT SENSORS AS SHOWN TO BE EQUAL TO ACUITY (nCM PDT 9/nCM PDT 9 ADCX). ALL ON STATION AT MAIN ENTRY EQUAL TO (nPODM).



NORTH

1 LEVEL 1 LIGHTING PLAN
1/8" = 1'-0"



KEY PLAN
NOT TO SCALE

CD BID SET

CORDOGAN CLARK
Chicago
118 North Wells Street, Chicago, IL 60606
tel 312.641.3000 fax 312.641.4171
Aurora
924 Broadway Avenue, Aurora, IL 60504
tel 630.896.4400 fax 630.896.4499

RIVER VALLEY SCHOOL DISTRICT

RIVER VALLEY HIGH SCHOOL
15480 THREE OAKS RD.
THREE OAKS, MI 49128

ELECTRICAL LIGHTING PLAN - AREA C

JOB NUMBER 21-346
DATE 03/22/2022
REVISIONS: 04.12.2022 ADDENDUM 02

STATE OF MICHIGAN
John G. Cordogan Architect No. 1301035955
LICENSED ARCHITECT

E1.1C

NORTH

1 LEVEL 1 LIGHTING PLAN
1/8" = 1'-0"

GENERAL LIGHTING & POWER NOTES

1. REFER TO ARCHITECTURAL, MECHANICAL, PLUMBING, & FIRE PROTECTION PLANS FOR ADDITIONAL INFORMATION ON EXACT POWER, WIRING, & ROUGH-IN REQUIREMENTS AND LOCATIONS OF DEVICES.
2. MINIMUM NEW CIRCUIT WIRING SHALL CONSIST OF 2#12,1#12G, 1/2"C. WHERE HOME RUNS EXCEED 75' OR CONTINUOUS LOAD EXCEEDS 65% OF CIRCUIT RATING, MINIMUM CIRCUIT SIZE SHALL CONSIST OF 2#10G, 1/2"C. ALL NEW CIRCUITS SHALL INCLUDE A CONTINUOUS EQUIPMENT GROUNDING CONDUCTOR.
3. CIRCUITS BEING CONTROLLED BY VARIABLE DIMMING EQUIPMENT SHALL ROUTED WITH SEPARATED DEDICATED NEUTRALS
4. CONTRACTOR SHALL VERIFY EXACT LOCATIONS OF ALL RECESSED LIGHTING FIXTURES WITH ARCHITECTURAL REFLECTED CEILING PLANS PRIOR TO INSTALLATION. VERIFY CEILING CONSTRUCTION WITH ARCHITECT IN ALL AREAS. CONTRACTOR SHALL BE RESPONSIBLE FOR ORDERING FIXTURES WITH CORRECT TRIMS, ETC. TO ASSURE COMPATIBILITY WITH CEILING STRUCTURE.
5. WHERE MORE THAN ONE SWITCH IS INDICATED AT A LOCATION, CONTRACTOR SHALL INSTALL CO-LOCATED LIGHT SWITCHES IN A COMMON FACEPLATE. USE MULTI-GANG BACKBOXES. VERIFY MOUNTING HEIGHT WITH ADA REQUIREMENTS. PROVIDE STEEL BARRIES BETWEEN SWITCHES FOR EACH CIRCUIT WHERE MANDATED BY CODE.
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ELECTRICAL LIGHTING KEYNOTES

1. CLASSROOM LIGHTING CONTROL SEQUENCE:
   LIGHTING SHALL BE MANUAL ON TO 100% LIGHTING LEVEL AND CONTROLLED VIA WALL SWITCH STATION NEAR ROOM ENTRY. PROVIDE WALL SWITCH STATION FOR EACH ENTRY AS INDICATED. LIGHTING TO AUTOMATCALLY TURN OFF AFTER THE ROOM HAS BEEN VACANT FOR 20MIN. ALL ROOM LIGHTING TO BE (1) DIMMING ZONE WITH DIMMING DOWN TO 1% OF FIXTURE OUTPUT CONTROLLED VIA WALL STATIONS AS INDICATED ON PLANS.

   BASIS OF DESIGN:
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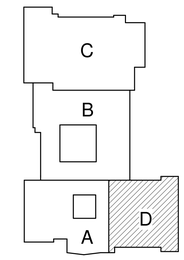

KEY PLAN
NOT TO SCALE

CORDOGAN CLARK
Chicago
118 North Main Street, Chicago, IL 60606
tel 312.641.0777
Ann Arbor
500 Maynard Avenue, Ann Arbor, IL 48104
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RIVER VALLEY SCHOOL DISTRICT

RIVER VALLEY HIGH SCHOOL
15480 THREE OAKS RD
THREE OAKS, MI 49128

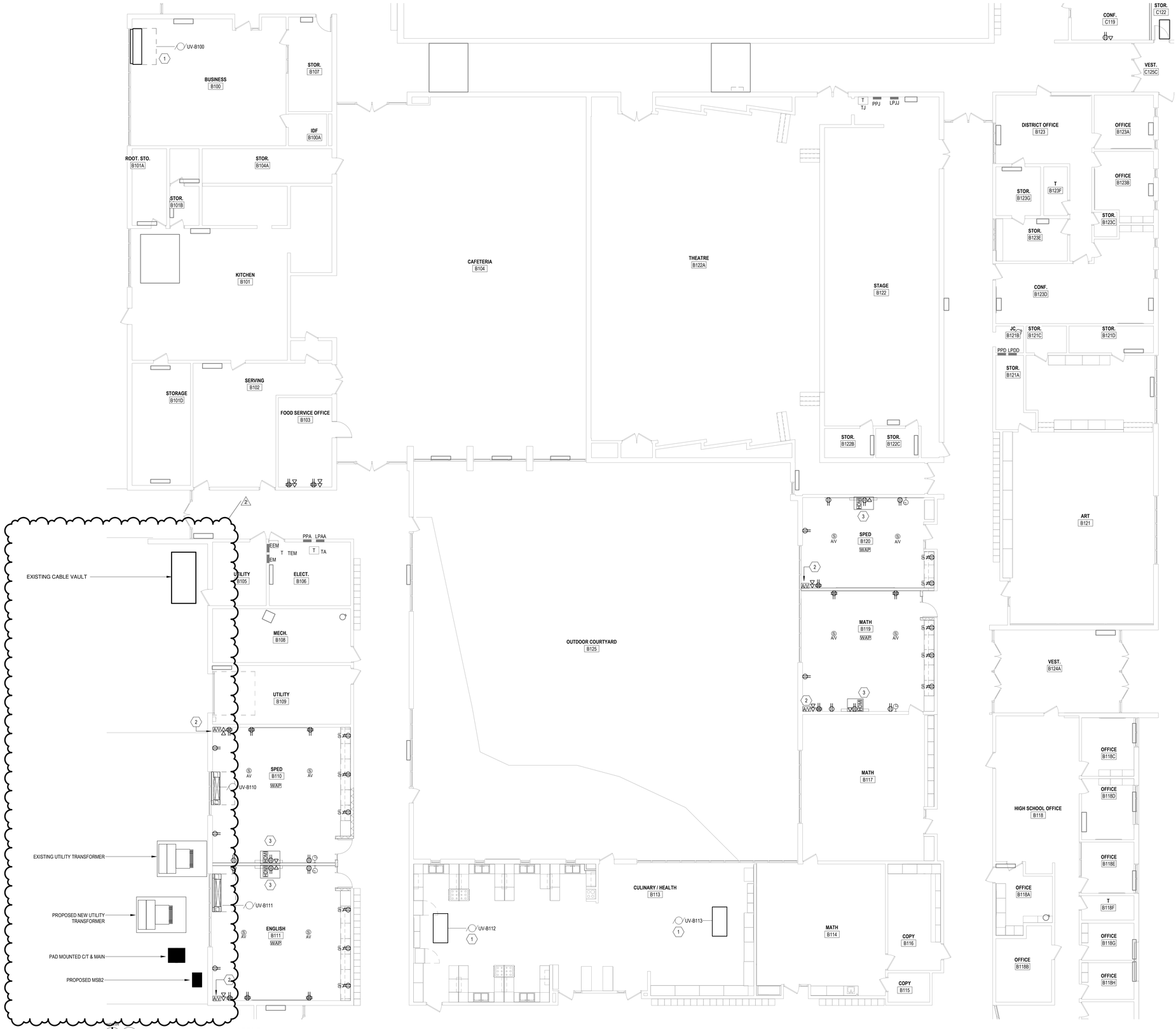
ELECTRICAL LIGHTING PLAN - AREA D

JOB NUMBER 21-346
DATE 03/22/2022
04.12.2022 REVISIONS: ADDENDUM 02

STATE OF MICHIGAN
John G. Cordogan
Architect
No. 1301035955
LICENSED ARCHITECT

CD BID SET

E1.1D



1 ELECTRICAL POWER PLAN - AREA B
1/8" = 1'-0"

GENERAL LIGHTING & POWER NOTES

1. REFER TO ARCHITECTURAL, MECHANICAL, PLUMBING, & FIRE PROTECTION PLANS FOR ADDITIONAL INFORMATION ON EXACT POWER, WIRING, & ROUGH-IN REQUIREMENTS AND LOCATIONS OF DEVICES.
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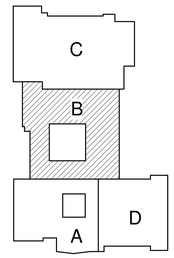
ELECTRICAL POWER KEYNOTES

1. SEE E4.3 FOR GENERAL SCOPE. PROVIDE NEW BRANCH WIRING, RACEWAY, AND BREAKER TO SERVE NEW EQUIPMENT FROM THE EXISTING POWER PANEL SERVICE THIS AREA.
2. TYPICAL TEACHER'S WALL DEVICES. SEE DETAIL E4.1 #4
3. THREE-GANG RECESSED TV BOX(ARLINGTON STEEL TVBS507)



1 KEY PLAN
NOT TO SCALE

CORDOGAN CLARK
Chicago
118 North Wells Street, Chicago, IL 60606
tel 312.641.3000
Aurora
Fox Valley Corporate Center
100 Mystic Parkway Avenue, Aurora, IL 60504
tel 630.896.4400 fax 630.896.4499

RIVER VALLEY SCHOOL DISTRICT

RIVER VALLEY HIGH SCHOOL
15480 THREE OAKS RD.
THREE OAKS, MI 49128

ELECTRICAL POWER PLAN - AREA B

JOB NUMBER 21-346

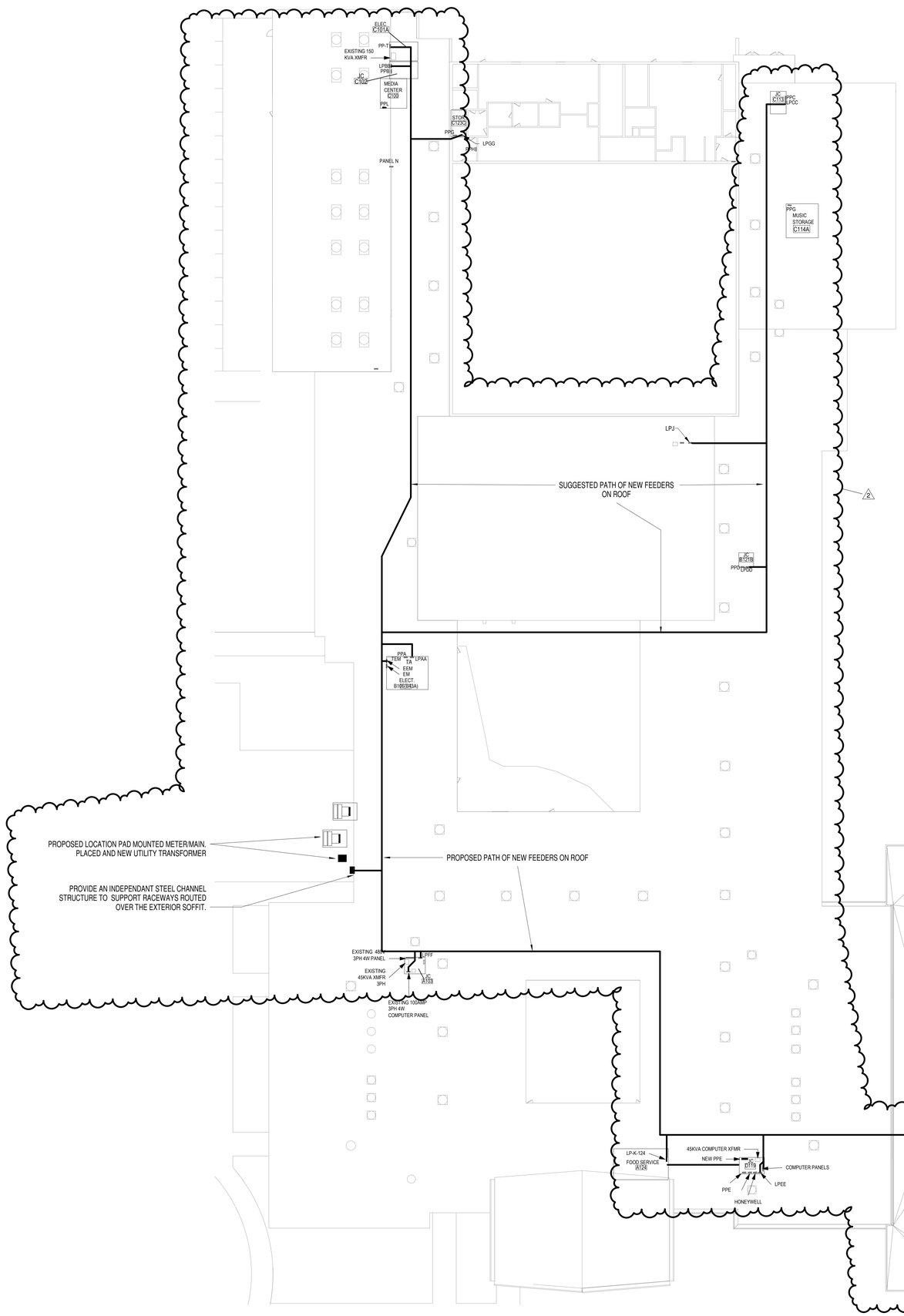
DATE 03/22/2022

REVISIONS:
03.29.2022 ADDENDUM 01
04.12.2022 ADDENDUM 02

STATE OF MICHIGAN
John G. Cordogan
Architect
No.
1301035955
LICENSED ARCHITECT

CD BID SET

E2.1B



NORTH

1 ELECTRICAL POWER PLAN - OVERALL ROOF
1" = 20'-0"

GENERAL LIGHTING & POWER NOTES

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DB10

DB Series

Base with Galv. Channel - 1" (25mm) high

Dimensions - 5" (127mm) High x 6" (152mm) Wide x Length (overall length)

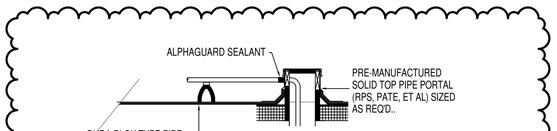
Ultimate Load Capacity - (uniform load) *

DB5 = 200 lbs. (0.89kN)
DB10 = 500 lbs. (2.22kN)
DB20 = 1,000 lbs. (4.45kN)
DB30 = 1,500 lbs. (6,67kN)
DB40 = 2,000 lbs. (8.89kN)
DB48 = 2,500 lbs. (11.12kN)

UPC/Part #	Cat. #	Height	Width	Overall Length	Weight Each
782051 50035	**DB5**	5" (127mm)	6" (152mm)	4.8" (122mm)	2.75 (1.25kg)
782051 49972	**DB10**	5" (127mm)	6" (152mm)	9.6" (244mm)	5.28 (2.39kg)
782051 49974	**DB20**	5" (127mm)	6" (152mm)	20.2" (513mm)	10.63 (4.82kg)
782051 50021	**DB30**	5" (127mm)	6" (152mm)	30.8" (782mm)	15.99 (7.25kg)
782051 50022	**DB40**	5" (127mm)	6" (152mm)	41.4" (1052mm)	21.34 (9.68kg)
782051 50023	**DB48**	5" (127mm)	6" (152mm)	52.0" (1321mm)	26.70 (12.4kg)

ROOF MOUNTED RACEWAYS SHALL BE RIGID STEEL OR IMC (ALUMINUM AND PVC ARE NOT ACCEPTABLE) MOUNTED ON RECYCLED RUBBER UV RESISTANT SUPPORTS WITH INTEGRAL GALVANIZED STEEL CHANNEL, EQUAL TO EATON DURA-BLOK SERIES, SIZED AS REQUIRED. COMPLY WITH ADJUSTMENT TAB LES OF NEC 310 FOR RACEWAYS AND CABLES EXPOSED TO SUNLIGHT ON ROOFTOPS. TYPE XHHW-2 CABLES DO NOT REQUIRE AMPACITY ADJUSTMENT AND ARE BASE SPECIFICATION; BUT, IT MAY NOT BE READILY AVAILABLE DUE TO SUPPLY DELAYS IN WHICH CASE THERMOPLASTIC TYE (THHN/THWN) IS ACCEPTABLE.

2 ROOFTOP RACEWAY SUPPORT DETAIL



3 ROOF PENETRATION DETAIL

2

CORDOGAN CLARK
Chicago
113 North Wells Street, Chicago, IL 60606
Tel 312.782.3900 Fax 312.641.6171
Grand Rapids
Old Kalamazoo Avenue, Suite A, Kalamazoo, MI 49048
Tel 269.381.2830 Fax 269.381.4951

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15480 THREE OAKS RD.
THREE OAKS, MI 49128

ELECTRICAL POWER PLAN - OVERALL ROOF

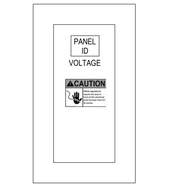
JOB NUMBER 21-346
DATE 03/22/2022

REVISIONS:
ADDENDUM 01 03.29.2022
ADDENDUM 02 04.12.2022

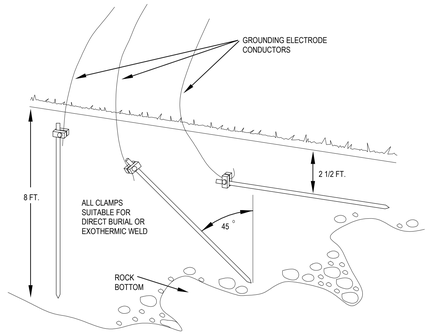
STATE OF MICHIGAN
John G. Cordogan
Architect
No. 1301035955
LICENSED ARCHITECT

CD BID SET

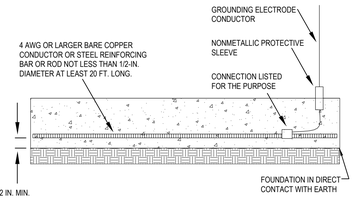
E2.2



5 TYP. PANEL PLACECARDING

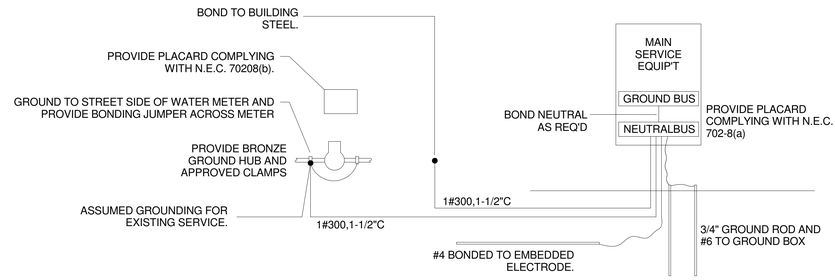


4 GROUND ROD COORDINATION

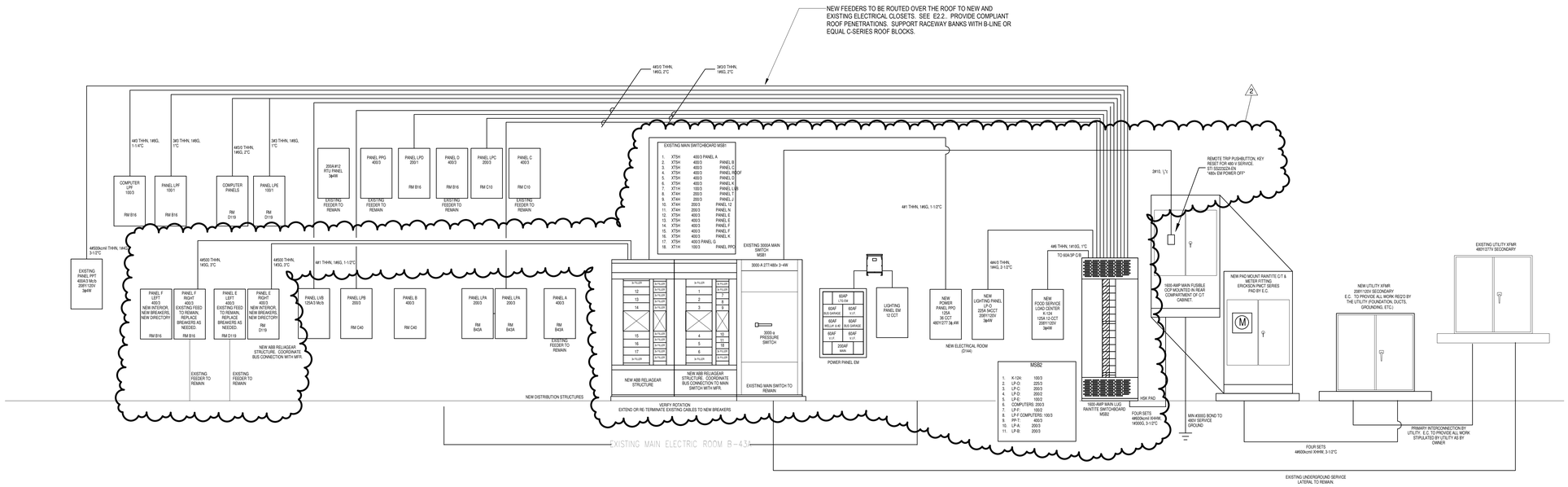


3 EMBEDDED (UFER) GROUND DETAIL

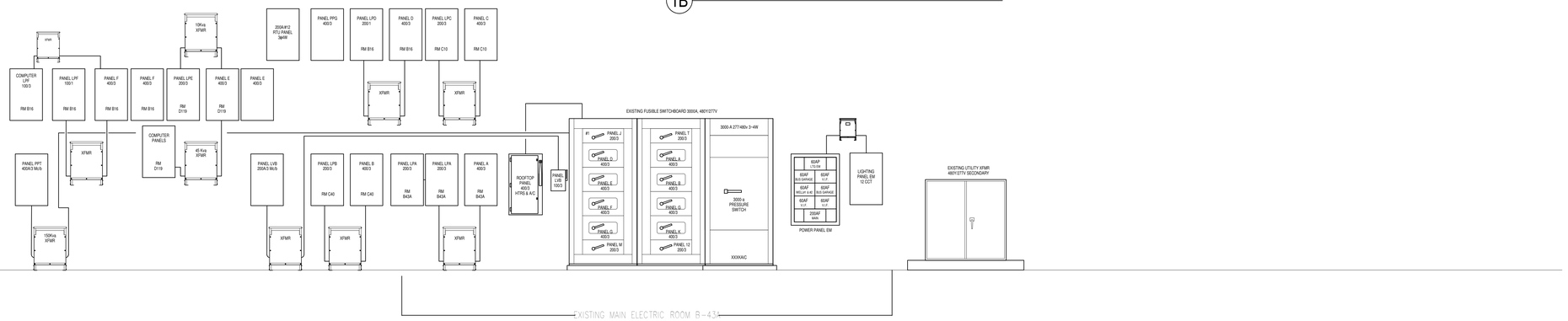
ALL CONNECTIONS TO BE EXOTHERMIC (EXCEPT MECHANICAL TERMINATIONS MANUFACTURED AND APPROVED FOR THE PURPOSE AND ACCEPTED BY THE AHJ).



2 GROUNDING PLAN



1B DISTRIBUTION SYSTEM REVISIONS AND ADDITIONS



1A EXISTING DISTRIBUTION SYSTEM

CORDOGAN CLARK
Chicago
118 North Wells Street, Chicago, IL 60606
tel 312.641.3000
fax 312.641.4171
Grand Rapids
Key Old Kent Building
161 Ottawa Avenue, Suite 400
Grand Rapids, MI 49503-2832
tel 616.459.3431
fax 616.459.4491

RIVER VALLEY SCHOOL DISTRICT

RIVER VALLEY HIGH SCHOOL
1:5480 THREE OAKS RD
THREE OAKS, MI 49128

DISTRIBUTION RISER AND GROUNDING PLAN

JOB NUMBER 21-346
DATE 03/22/2022

ISSUE/REVISIONS:
03.29.2022 ADDENDUM 01
04.12.2022 ADDENDUM 02

STATE OF MICHIGAN
John G. Cordogan
Architect
No. 1301035955
LICENSED ARCHITECT

CD BID SET

E4.2

LEGACY EQUIPMENT REPLACEMENT SCHEDULE								BASE CONTRACT REPLACEMENT SCHEDULE					COORDINATE WITH MECHANICAL		ALTERNATE REPLACEMENT SCHEDU				COORDINATE WITH MECHANICAL PLANS		
OLD ROOM No.	DESIGNATED SPACE TYPE	EXISTING EQUIT	KW	VOLT	PHASE	ASSIGNED CCT	NEW ROOM No.	BASE REPLACEMENT	MCA	KW	VOLT	PHASE	O.C.P.	NEW ROOM No.	ALTERNATE ADDITION	MCA	VOLT	PHSE	O.C.P.	NOTES
A9	CLASSROOM	UV-1	10.67	480	3	E-19,21,23	D102	RTU-D102	15		480	3	20							TYPICAL RTU: PROVIDE A 20-AMP CCT TO INTEGRAL PHOTOCATALYTIC OXIDIZER AND TO INTEGRAL CONVENINECE OUTLET.
A14	STUDY	S-1	0.5	277	1	E-12	D107	FC-D107+OUTDOOR UNIT	15		208	1	30							SPLIT SYSTEM FED FROM NEW 30-AMP 2-POLE BREAKER IN PANEL LP-E
A19	CLASSROOM	UV-6	10.67	480	3	E-26,28,30	D110	RTU-D110	15				20							TYPICAL RTU: PROVIDE A 20-AMP CCT TO INTEGRAL PHOTOCATALYTIC OXIDIZER AND TO INTEGRAL CONVENINECE OUTLET.
A21	CLASSROOM	UV-2	13.33	480	3	E-32,34,36	D123	UV-D123B	43.75	18	480	3	45	D123	RTU-B123	19	480	3	25	TYPICAL RTU: PROVIDE A 20-AMP CCT TO INTEGRAL PHOTOCATALYTIC OXIDIZER AND TO INTEGRAL CONVENINECE OUTLET.
A22	CLASSROOM	UV-1	10.67	480	3	E-37,39,41	D121	UV-D121	34.25		480	3	35							
A25	AV STORAGE	CC-1	2	277	1	E-47	A125	UV-A125	34.25		480	3	35	A125	RTU-A125	11	480	3	15	TYPICAL RTU: PROVIDE A 20-AMP CCT TO INTEGRAL PHOTOCATALYTIC OXIDIZER AND TO INTEGRAL CONVENINECE OUTLET.
A36	CLASSROOM	UV-1	10.67	480	3	F-32,34,36	A112	UV-A112	43.75	18	480	3	45	A111/A112	RTU-A111	15	480	3	20	TYPICAL RTU: PROVIDE A 20-AMP CCT TO INTEGRAL PHOTOCATALYTIC OXIDIZER AND TO INTEGRAL CONVENINECE OUTLET.
A37	CLASSROOM	UV-2	13.33	480	3	F-37,39,41	A111	UV-A111	43.75	18	480	3	45		AS ABOVE					
A38	CLASSROOM	UV-1	10.67	480	3	F-43,45,47	A107	UV-107	43.75	18	480	3	45	A106/A107	RTU-A106/A107					
A39	CLASSROOM	UV-6	10.67	480	3	F-38,40,42	A108	RTU-A108	11.5		480	3	20							TYPICAL RTU: PROVIDE A 20-AMP CCT TO INTEGRAL PHOTOCATALYTIC OXIDIZER AND TO INTEGRAL CONVENINECE OUTLET.
A44	STUDY	S-1	0.5	277	1	F-28	A104	FC-A104+OUTDOOR UNIT	15		208	1	30							SPLIT SYSTEM FED FROM NEW 30-AMP 2-POLE BREAKER IN PANEL LP-A
A47	CLASSROOM	UV-1	10.67	480	3	F-44,46F48	A106	UV-A106	43.75	18	480	3	45	A106/A107	RTU-A106/A107	21	480	3	30	TYPICAL RTU: PROVIDE A 20-AMP CCT TO INTEGRAL PHOTOCATALYTIC OXIDIZER AND TO INTEGRAL CONVENINECE OUTLET.
A48	CLASSROOM	UV-2	13.33	480	3	F-50,52,54	A100/A101	WITH NEXT												TYPICAL RTU: PROVIDE A 20-AMP CCT TO INTEGRAL PHOTOCATALYTIC OXIDIZER AND TO INTEGRAL CONVENINECE OUTLET.
A49	CLASSROOM	UV-1	10.67	480	3	F-55,57,59	A100/A101	RTU-A100/A101	21		480	3	30							TYPICAL RTU: PROVIDE A 20-AMP CCT TO INTEGRAL PHOTOCATALYTIC OXIDIZER AND TO INTEGRAL CONVENINECE OUTLET.
A52	LOUNGE	UV-5	5.33	480	3	F-20,22,24	A116	UV-A116	34.25	15	480	3	35							
A56	SCIENCE LAB	UV-3	13.33	480	3	F-19,21,23	A114	UV-A114	43.75	18.4	480	3	45	A114	RTU-A114	17	480	3	25	TYPICAL RTU: PROVIDE A 20-AMP CCT TO INTEGRAL PHOTOCATALYTIC OXIDIZER AND TO INTEGRAL CONVENINECE OUTLET.
A58	SCIENCE LAB	UV-3	13.33	480	3	F-14,16,18	A133	UV-A133	43.75	18	480	3	45	A133	RTU-A133	15	480	3	20	TYPICAL RTU: PROVIDE A 20-AMP CCT TO INTEGRAL PHOTOCATALYTIC OXIDIZER AND TO INTEGRAL CONVENINECE OUTLET.
A62	SCIENCE LAB	UV-3	13.33	480	3	F-13,15,17	A130	UV-A130	43.75	18	480	3	45	A130	RTU-A130	15	480	3	20	TYPICAL RTU: PROVIDE A 20-AMP CCT TO INTEGRAL PHOTOCATALYTIC OXIDIZER AND TO INTEGRAL CONVENINECE OUTLET.
A65	SCIENCE LAB	UV-4	16	480	3	E-44,46,48	A126	UV-A126	43.75	18	480	3	45	A126	RTU-A126	15	480	3	20	TYPICAL RTU: PROVIDE A 20-AMP CCT TO INTEGRAL PHOTOCATALYTIC OXIDIZER AND TO INTEGRAL CONVENINECE OUTLET.
							A127	UV-A127	43.75	18	480	3	45	A127	RTU-A127	15	480	3	20	TYPICAL RTU: PROVIDE A 20-AMP CCT TO INTEGRAL PHOTOCATALYTIC OXIDIZER AND TO INTEGRAL CONVENINECE OUTLET.
B21	ART	UV-3	13.33	480	3	D-25,27,29	B121	RTU-B121	19		480	3	25							TYPICAL RTU: PROVIDE A 20-AMP CCT TO INTEGRAL PHOTOCATALYTIC OXIDIZER AND TO INTEGRAL CONVENINECE OUTLET.
B22	CLASSROOM	UV-3	13.33	480	3	D-31,33,35	B120	RTU-B120	15		480	3	20							TYPICAL RTU: PROVIDE A 20-AMP CCT TO INTEGRAL PHOTOCATALYTIC OXIDIZER AND TO INTEGRAL CONVENINECE OUTLET.
B22A	CLASSROOM	N/A																		
B23	CLASSROOM	UV-1	10.67	480	3	D-32,34,36	B117	RTU-B117	23		480	3	35							TYPICAL RTU: PROVIDE A 20-AMP CCT TO INTEGRAL PHOTOCATALYTIC OXIDIZER AND TO INTEGRAL CONVENINECE OUTLET.
B39	CLASSROOM	UV-1	10.67	480	3	A-26,28,30	B114	RTU-B114	15		480	3	20							
B40	HOME EC	UV-7	13.33	480	3	A-25,27,29	B112	UV-B112	39.1	24	480	3	40	B112	RTU-B112	19	480	3	25	TYPICAL RTU: PROVIDE A 20-AMP CCT TO INTEGRAL PHOTOCATALYTIC OXIDIZER AND TO INTEGRAL CONVENINECE OUTLET.
							B113	UV-B113	25.6	16	480	3	30	B113	RTU-B113	15	480	3	20	TYPICAL RTU: PROVIDE A 20-AMP CCT TO INTEGRAL PHOTOCATALYTIC OXIDIZER AND TO INTEGRAL CONVENINECE OUTLET.
B41	COOKING	UV-7	13.33	480	3	A-37,39,41														
B42	CLASSROOM	UV-3	13.33	480	1	A-19,21,23	B111	UV-B111	43.75	18.4	480	3	45	B111	RTU-B111	15	480	3	20	TYPICAL RTU: PROVIDE A 20-AMP CCT TO INTEGRAL PHOTOCATALYTIC OXIDIZER AND TO INTEGRAL CONVENINECE OUTLET.
B42A	CLASSROOM	UV-5	5.33	480	1	A-32,34,36	B110	UV-B110	43.75	18	480	3	45	B110	RTU-B110	15	480	3	20	TYPICAL RTU: PROVIDE A 20-AMP CCT TO INTEGRAL PHOTOCATALYTIC OXIDIZER AND TO INTEGRAL CONVENINECE OUTLET.
B59	CLASSROOM	UV-4	16	480	3	A-20,22,24	B100	UV-B100	43.75	18.4	480	3	45	B100	RTU-B100	15	480	3	20	TYPICAL RTU: PROVIDE A 20-AMP CCT TO INTEGRAL PHOTOCATALYTIC OXIDIZER AND TO INTEGRAL CONVENINECE OUTLET.
C8	BAND	UV-1	10.67	480	3	C-8,10,12	C114	RTU-C114	23		480	3	35							TYPICAL RTU: PROVIDE A 20-AMP CCT TO INTEGRAL PHOTOCATALYTIC OXIDIZER AND TO INTEGRAL CONVENINECE OUTLET.
C19	MUSIC	UV-3	13.33	480	3	C-20,22,24	C115	RTU-C115	21		480	3	30							TYPICAL RTU: PROVIDE A 20-AMP CCT TO INTEGRAL PHOTOCATALYTIC OXIDIZER AND TO INTEGRAL CONVENINECE OUTLET.
C22	CLASSROOM	UV-3	13.33	480	3	D-14,16,18	C120	UV-C120	43.75	18	480	3	45	C120	RTU-C120	18	480	3	25	TYPICAL RTU: PROVIDE A 20-AMP CCT TO INTEGRAL PHOTOCATALYTIC OXIDIZER AND TO INTEGRAL CONVENINECE OUTLET.
C24	SHOP	HV-4	30	480	3	B-13,15,17	C119	FC-C119+OUTDOOR UNIT	15		208	1	30							FEED FROM NEW 30-AMP 2-POLE BREAKER IN PANEL LP-C
C42	WOOD SHOP	HV-4	30	480	3	B-19,21,23	C100	RTU-C100	27		480	3	30							

GENERAL ELECTRICAL NOTES.

1. LOCATE, IDENTIFY, SECURE EXISTING BRANCH CIRCUIT WIRING AND CONDUIT TO EQUIPMENT TO BE DEMOLISHED. SEE ELECTRICAL, MECHANICAL, AND PLUMBINB PLANS FOR ADDITONAL SCOPE AND INFORMATON.

2. UPGRADE OR REPLACE PANELBOARDS WHERE INDICATED ON THE PLAN.

2. ALL WIRING TO NEW EQUIPMENT TO BE NEW. ALL BREAKERS SERVING NEW EQUIPMENT SHALL BE NEW. DO NOT SERVE NEW EQUIPMENT FROM OLD BREAKERS AND WIRING.

3. FOR PANELBOARDS REMAINING, PROVIDE NEW G.E./ABB #TED FRAME BREAKERS TO REPLACE EXISTING G.E. 480V LEGACY BREAKERS. ABB ADVISES THAT TED STYLE BREAKERS ARE AVAILABLE.

4. MINIMUM WIRE SIZE SHALL BE #12 THHN/THWN, MINIMUM 1/2"C.

5. PROVIDE 120-V CIRCUITS AS NEEDED FOR ACCESSORY APPLICATIONS FROM GENERAL USE 120-VOLT PANELS; DO NOT USE AOMPUTE PANELS TO SERVE MECHANICAL EQUIPMENT.

MECHANCAL EQUIPMENT ELECTRICAL HOOK-UP SCHEDULE

TAG	DESCRIPTION	NEW EQUIPMENT	VOLT	PHASE	SOURCE		H.D. DISCONNECT BY E.C.			STARTER			CIRCUIT WIRING		NOTES
		MCA			CIRCUIT	NEW O.C.P.	POLE	AMP	FUSE	TYPE	IRN. H	LOC	WIRE	COND	
RTU-D115	ROOFTOP UNIT	15	460	3	PPO-1.3.5	20	INTEGRATED WITH UNIT			INTEGRATED WITH UNIT			3#12, 1#10G	1/2"	TYPICAL RTU: PROVIDE A 20-AMP CCT TO INTEGRAL PHOTOCATALYTIC OXIDIZER AND TO INTEGRAL CONVENINECE OUTLET.
RTU-D117	ROOFTOP UNIT	15	460	3	PPO-7,9,11	20	INTEGRATED WITH UNIT			INTEGRATED WITH UNIT			3#12, 1#10G	1/2"	TYPICAL RTU: PROVIDE A 20-AMP CCT TO INTEGRAL PHOTOCATALYTIC OXIDIZER AND TO INTEGRAL CONVENINECE OUTLET.
RTU-D126	ROOFTOP UNIT	18	460	3	PPO-13,15,17	25	INTEGRATED WITH UNIT.			INTEGRATED WITH UNIT			3#12, 1#10G	1/2"	TYPICAL RTU: PROVIDE A 20-AMP CCT TO INTEGRAL PHOTOCATALYTIC OXIDIZER AND TO INTEGRAL CONVENINECE OUTLET.
RTU-D130	ROOFTOP UNIT	21	460	3	PPO-19,21,23	30	INTEGRATED WITH UNIT.			INTEGRATED WITH UNIT			3#12, 1#10G	1/2"	TYPICAL RTU: PROVIDE A 20-AMP CCT TO INTEGRAL PHOTOCATALYTIC OXIDIZER AND TO INTEGRAL CONVENINECE OUTLET.
RTU-D132	ROOFTOP UNIT	19	460	3	PPO-25,27,29	25	INTEGRATED WITH UNIT			INTEGRATED WITH UNIT			3#12, 1#10G	1/2"	TYPICAL RTU: PROVIDE A 20-AMP CCT TO INTEGRAL PHOTOCATALYTIC OXIDIZER AND TO INTEGRAL CONVENINECE OUTLET.
RTU-D134	ROOFTOP UNIT	19	460	3	PPO-31,33,35	25	INTEGRATED WITH UNIT			INTEGRATED WITH UNIT			3#12, 1#10G	1/2"	TYPICAL RTU: PROVIDE A 20-AMP CCT TO INTEGRAL PHOTOCATALYTIC OXIDIZER AND TO INTEGRAL CONVENINECE OUTLET.
RTU-D137	ROOFTOP UNIT	15	460	3	PPO-2,4,6	20	INTEGRATED WITH UNIT			INTEGRATED WITH UNIT			3#12, 1#10G	1/2"	TYPICAL RTU: PROVIDE A 20-AMP CCT TO INTEGRAL PHOTOCATALYTIC OXIDIZER AND TO INTEGRAL CONVENINECE OUTLET.

PANEL PPO | PHASE 3P4W | VOLTAGE 480
TYPE G.E. ENTELLEON SERIES | AMPS 225 | MAIN: LUGS X
LOCATION D144 | MOUNTING SURFACE | BREAKER

AMPS	P	LOCATION		VA	A	B	C	VA		LOCATION	P	AMPS
20	3	RTU-D115	1	3322	7474			4152	2	RTU-D137	3	20
X	X		3	3322		7474		4152	4		X	X
X	X		5	3322			7474	4152	6		X	X
20	3	RTU-D117	7	3875	3875				8	3-POLE SPACE		
X	X		9	3875		3875			10			
X	X		11	3875			3875		12			
25	3	RTU-D1126	13	4429	4429				14	3-POLE SPACE		
X	X		15	4429		4429			16			
X	X		17	4429			4429		18			
30	3	RTU-D130	19	4982	4982				20	3-POLE SPACE		
X	X		21	4982		4982			22			
X	X		23	4982			4982		24			
25	3	RTU-D132	25	4706	4706				26	3-POLE SPACE		
X	X		27	4706		4706			28			
X	X		29	4706			4706		30			
25	3	RTU-D134	31	4706	4706				32	3-POLE SPACE		
X	X		33	4706		4706			34			
X	X		35	4706			4706		36			
					30172	30172	30172	VA				
					108.92	108.92	108.92	AMPS				

TOTAL WATTAGE:	90516
CONNECTED LOAD:	109

COPPER BUS, PLUG-IN STYLE BREAKERS (I-LINE, G.E. ENTELLEON, ABB ReliaGear; LOCKING COVER.

PANEL LP-O | PHASE 3P4W | VOLTAGE 208
TYPE CIRCUIT BREAKER | AMPS 225 | MAIN: LUGS:
LOCATION D144 | MOUNTING SURFACE | BREAKER X

AMPS	P	LOCATION		VA	A	B	C	VA		LOCATION	P	AMPS
20	1	RECEPS: D130	1	900	1800			900	2	RECEPS: D103	1	20
20	1	RECEPS: D130	3	1080		1980		900	4	RECEPS: D103	1	20
20	1	RECEPS: D131	5	900			2400	1500	6	RECEPS: D104	1	20
20	1	RECEPS: D131	7	1080	2580			1500	8	RECEPS: D105	1	20
20	1	RECEPS: D132	9	900		1800		900	10	WATER FOUNTAIN	1	20
20	1	RECEPS: D132	11	1080			1980	900	12	RECEPS: D129	1	20
20	1	RECEPS: D133	13	900	1800			900	14	RECEPS: D113	1	20
20	1	RECEPS: D133	15	1080		2580		1500	16	RECEPS: D114	1	20
20	1	RECEPS: D134	17	900			1800	900	18	RECEPS: D115	1	20
20	1	RECEPS: D134	19	1080	1980			900	20	RECEPS: D115	1	20
20	1	RECEPS: D135	21	900		2400		1500	22	RECEPS: D116	1	20
20	1	RECEPS: D135	23	1080			2580	1500	24	RECEPS: D118	1	20
20	1	RECEPS: D136, D137	25	1080	1980			900	26	RECEPS: CORRIDOR	1	20
20	1	RECEPS: D138 COPIER	27	1200		2100		900	28	RECEPS: D126	1	20
20	1	RECEPS: D138 WORK ROOM	29	900			1800	900	30	RECEPS: D126	1	20
20	1	RECEPS: D139, D140	31	900	2400			1500	32	RECEPS: D124	1	20
20	1	RECEPS: D141	33	900		2400		1500	34	RECEPS: D125	1	20
20	1	RECEPS: D142	35	1500			2400	900	36	RECEPS: D144	1	20
20	1	RECEPS: D143	37	900	1800			900	38	RECEPS: D127	1	20
20	1	SPARE	39			0			40	SPARE	1	20
20	1	SPARE	41				0		42	SPARE	1	20
20	3	EUH-D127	43	1333	2666			1333	44	EUH-D128	3	20
X	X		45	1333		2666		1333	46		X	X
X	X		47	1333			2666	1333	48		X	X
20	3	EUH-D129	49	1333	2666				50	SPACE		
X	X		51	1333		1333			52	SPACE		
X	X		53	1333			1333		54	SPACE		
					18339	17259	16959	VA				
					152.83	143.83	141.33	AMPS				

TOTAL WATTAGE:	52557
CONNECTED LOAD:	146

COPPER BUS, DOOR-IN-DOOR
METAL DIRECTORYHOLDER, TYPEWRITTEN DIRECTORY

PANEL PPA

400A
480Y/277V. 3P. 4W

1			2
3			4
5			6
7			8
9			10
11			12
13			14
15			16
17			18
19			20
21			22
23			24
25			26
27			28
29			30
31			32
33			34
35			36
37			38
39			40

N

CIRCUIT ASSIGNMENT INFORMATION IS NOT AVAILABLE

PANEL PPB

400A
480Y/277V. 3P. 4W

LIGHTING	1		2 LIGHTING
V.I.F.	3		4 HONEYWELL
RM 32,43	5	20	6 V.I.F.
WRESTLING OFC HTR	7	30	20 8 V.I.F.
WTR HTR 7 RM C40	9		10 HONEYWELL
WTR HTR AUTO	11	20	12 SHOWER RM CORR
TOILET RM HTRS	13	40	14 37,39,41 R, C42
XFMR	15		16
	17		18
LOBBY HTR	19		20 BOYS LKR RM
8,10,12 RM C34	21		22 25,27,29 RM C53
	23		24
BOYS LKR RM SO	25		26 7,9,11 RM C33,24
20,22,24 RM C48	27		28
	29		30
TECH RM HTR	31		32 SO HTR AUTO
19,21,23 RM C42	33		34 13,15,17 RM C24
	35		36
14,16,18 RM C33	37		38 LAUNDRY WH
	39		40
	41		42

N

PANEL PPC

400A
480Y/277V. 3P. 4W

LIGHTING	1		2 V.I.F.
V.I.F.	3		4 V.I.F.
V.I.F.	5		6 V.I.F.
LIGHTING	7		8 V.I.F.
WTR HTR MAIN OFC	9		10 HONEYWELL
V.I.F.	11		12 V.I.F.
EXH FAN BOY'S LKR	13		14 BAND OFC HT
HLLWAY HTR	15		16 XFMR
V.I.F.	17		18
GIRLS LKR RM	19		20 14,16,18
	21		22 XFMR
V.I.F.	23		24
	25		26 CHOIR RM HTR
	27		28
	29		30
BAND HTR	31		32 BAND HTR
	33		34
	35		36
SPARE	37		38 SPARE
	39		40
	41		42

N

PANEL PPD

400A
480Y/277V. 3P. 4W

LIGHTING	1		2 BOARD RM, SUPT, FILE
V.I.F.	3		4 OFFICES
V.I.F.	5		6 V.I.F.
OFFICE HTR	7		8 V.I.F.
WTR HTR MAIN OFC	9		10 HONEYWELL
HONEYWELL	11		12 V.I.F.
A4	13		14 A2
V.I.F.	15		16 SPARE
V.I.F.	17		18 WTR HTR
V.I.F.	19		20 B25
WTR HTR	21		22 XFMR
WTR HTR	23		24
B2 HEAT	25		26 32,34,36 RM B23
	27		28
	29		30
B1 HEAT	31		32 14,16,18 RM C22
	33		34
	35		36
B6,26,28,30,1	37		38 B6,8,10,12,26
	39		40
	41		42

N

EXISTING PANEL PPE LEFT

400A
480Y/277V. 3P. 4W

A8	1	20A	20A	2	A5/A6
V.I.F.	3	20A	20A	4	A2
LIBRARY	5	20A	20A	6	A2/A1
V.I.F.	7	20A	20A	8	WTR HTR RM A9
AA	9	20A	20A	10	V.I.F.
V.I.F.	11	20A	20A	12	HALLWAY HTR
WTR HTR #3	13	20A	XX	14	V.I.F.
V.I.F.	15	20A		16	
WTR HTR #2	17	20A		18	
OLD LIBRARY HTR	19	XX	XX	20	HEATER
OFF	21			22	
	23			24	
OLD LIBRARY HTR	25	XX	XX	26	A9 HTR
OFF	27			28	
	29			30	

N

EXISTING FEEDER

EXISTING PANEL PPE RIGHT

400A
480Y/277V. 3P. 4W

V.I.F.	1			2	V.I.F.
	3			4	V.I.F.
V.I.F.	5			6	V.I.F.
SPACE	9			8	V.I.F.
SPACE	11			10	
A4	13			12	
	15			14	A2
	17			16	
A5	19			18	
	21			20	A3
	23			22	
A7	25			24	
	27			26	A1 HEAT
	29			28	
A8	31			30	
	33			32	A6
	35			34	
				36	

N

NEW FEEDER

PANEL PPF LEFT

400A
480Y/277V. 3P. 4W

A8	1	20A	20A	2	WTR HTR #5
JOHNSON CONTR	3	20A	20A	4	WTR HTR #2
WTR HTR	5	20A	20A	6	V.I.F.
ENTRY #9	7		XX	8	A13
31,33,35	9	XX		10	
	11			12	
WTR HTR #3	13		XX	14	V.I.F.
25,27,29	15	XX		16	
	17			18	
A15 HTR	19	XX	XX	20	A17
44,46,48	21			22	
	23			24	
V.I.F.	25	XX	60	26	COMPUTER XFMR
	27			28	
	29			30	

N

NEW FEEDER

PANEL PPF RIGHT

400A
480Y/277V. 3P. 4W

					V.I.F.
LIGHTING	1			2	LIGHTING
LIGHTING	3			4	A12
LIGHTING	5			6	V.I.F.
V.I.F.	7			8	WTR HTR LOUNGE
V.I.F.	9			10	V.I.F.
V.I.F.	11			12	V.I.F.
V.I.F.	13			14	LOUNGE,SERVER
HEATER FANS	15			16	
	17			18	
A16	19			20	A12 HEAT
	21			22	
	23			24	
A11	25			26	V.I.F.
	27			28	
	29			30	
V.I.F.	31			32	V.I.F.
	33			34	
	35			36	

N

EXISTING FEEDER

CORDOGAN CLARK
Chicago
115 North Wabash Street Chicago, IL 60602
tel 312.782.1008 fax 312.782.4811
Aurora
100 Mastaway Avenue Aurora, IL 60504
tel 630.896.3470 fax 630.896.3480

RIVER VALLEY SCHOOL DISTRICT

RIVER VALLEY HIGH SCHOOL
15480 THREE OAKS RD
THREE OAKS, MI 49128

PANEL SCHEDULE, EQUIPMENT HOOKUP SCHEDULE, AND DETAILS

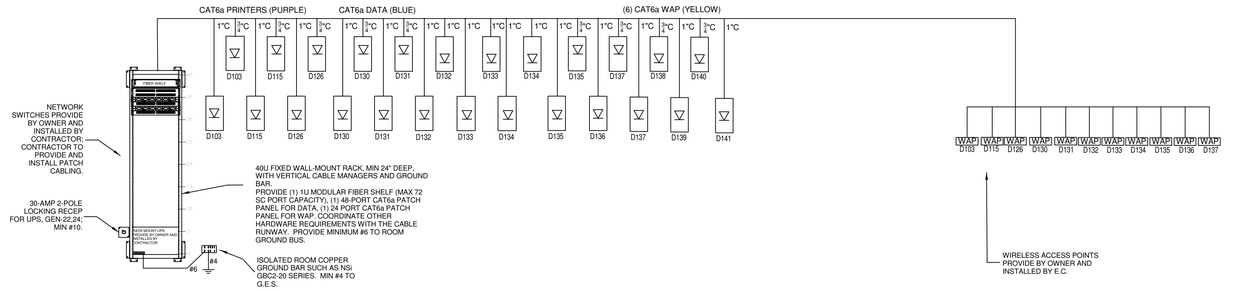
JOB NUMBER 21-346
DATE 03/22/2022

REVISIONS:
04.12.2022 ADDENDUM 02

STATE OF MICHIGAN
John G. Cordogan
Architect
No. 1301035955
LICENSED ARCHITECT

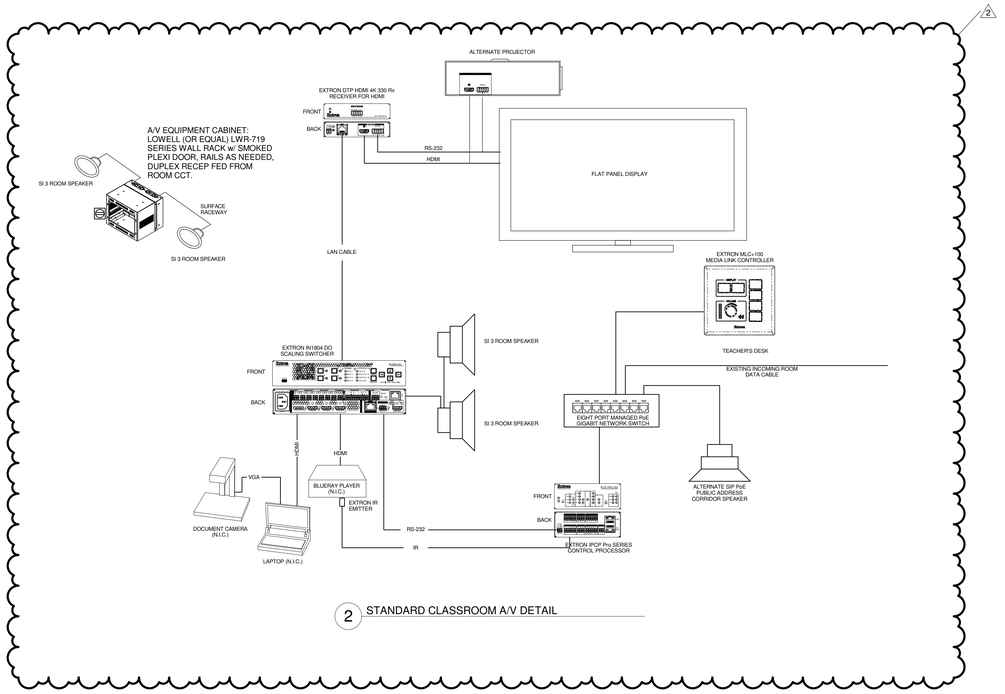
CD BID SET

E4.3



ALL DATA CABLING TO BE MINIMUM CAT6a RATED 500MHZ UTP. INSTALL 10G RJ-45 WALL OUTLETS, CAT 6a TERMINATIONS AND PATCH PANELS, AND COMPLY WITH EIA/TIA-568, 569, AND 607. TEST AND CERTIFY THE ENTIRE CABLING SYSTEM FOR ALL TEST PARAMETERS NOTED IN EIA/TIA-568. ALL WORK MUST MEET OWNER REQUIREMENTS AND BICSI INSTALLATION STANDARDS. SEE SPECIFICATIONS FOR MORE INFORMATION.

1 STRUCTURED CABLING RISER



2 STANDARD CLASSROOM A/V DETAIL

LEGEND FOR STRUCTURED CABLING	
WAP CEILING OR WALL WIRELESS ACCESS POINT DROP CAT6a	(1) CAT6a CABLE IDENTIFIED FOR USE OF DATA
WALL BOX	
FLOOR BOX SEE PLAN FOR FACE PLATES	
COPY WALL BOX FOR COPIER/PRINTER CAT6E	

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STRUCTURED CABLING RISERS, SPEAKER, AND CLOCK RISER

JOB NUMBER 21-346

DATE 03/22/2022

REVISIONS:
ADDENDUM 01 03.29.2022
ADDENDUM 02 04.12.2022

STATE OF MICHIGAN
John G. Cordogan Architect No. 1301035955
LICENSED ARCHITECT

CD BID SET

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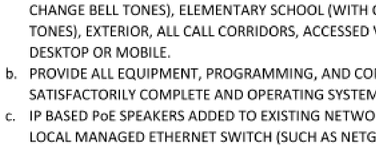
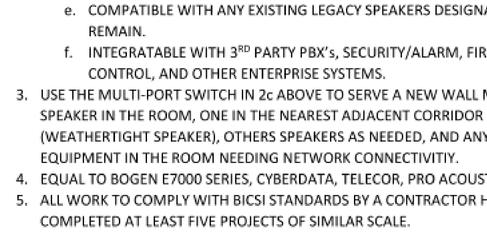
ALTERNATE IP BASED PUBLIC ADDRESS SYTEM:

1. DEDUCT PROVISION OF PUBLIC ADDRESS FUNCTIONS THROUGH THE NEW FIRE ALARM SYSTEM.
2. DESIGN, FURNISH, AND INSTALL A ONE-WAY ZONED PUBLIC ADDRESS SYSTEM UTILIZING THE EXISTING OR NEW BUILDING IP NETWORK INFRASTRUCTURE AS APPLICABLE.
   a. PROVIDE PROGRAMMING FOR MULIPLE P.A. ZONES: HIGH SCHOOL (WITH CLASS CHANGE BELL TONES), ELEMENTARY SCHOOL (WITH CLASS CHANHE BELL TONES), EXTERIOR, ALL CALL CORRIDORS, ACCESSED VIA WEB ENABLED DEVICES, DESKTOP OR MOBILE.
   b. PROVIDE ALL EQUIPMENT, PROGRAMMING, AND COMMISSIONING FOR A SATISFACTORILY COMPLETE AND OPERATING SYSTEM.
   c. IP BASED PoE SPEAKERS ADDED TO EXISTING NETWORK BY PATCHING A NEW LOCAL MANAGED ETHERNET SWITCH (SUCH AS NETGEAR GS110TPv3) TO EXISTING WIFI ROOM PORT. PROVIDE 120-VOLT RECEPTACLE.
   d. SIP DEVICE AND TRUNK SUPPORT. SUPPORT FUTURE VISUAL MESSAGING DEVICES.
   e. COMPATIBLE WITH ANY EXISTING LEGACY SPEAKERS DESIGNATED BY OWNER TO REMAIN.
   f. INTEGRATABLE WITH 3RD PARTY PBX's, SECURITY/ALARM, FIRE, ACCESS CONTROL, AND OTHER ENTERPRISE SYSTEMS.
3. USE THE MULTI-PORT SWITCH IN 2c ABOVE TO SERVE A NEW WALL MOUNTED SIP PoE SPEAKER IN THE ROOM, ONE IN THE NEAREST ADJACENT CORRIDOR OR EXTERIOR (WEATHERTIGHT SPEAKER), OTHERS SPEAKERS AS NEEDED, AND ANY OTHER NEW EQUIPMENT IN THE ROOM NEEDING NETWORK CONNECTIVITIY.
4. EQUAL TO BOGEN E7000 SERIES, CYBERDATA, TELECOR, PRO ACOUSTICS, VALCOM.
5. ALL WORK TO COMPLY WITH BICSI STANDARDS BY A CONTRACTOR HAVING COMPLETED AT LEAST FIVE PROJECTS OF SIMILAR SCALE.

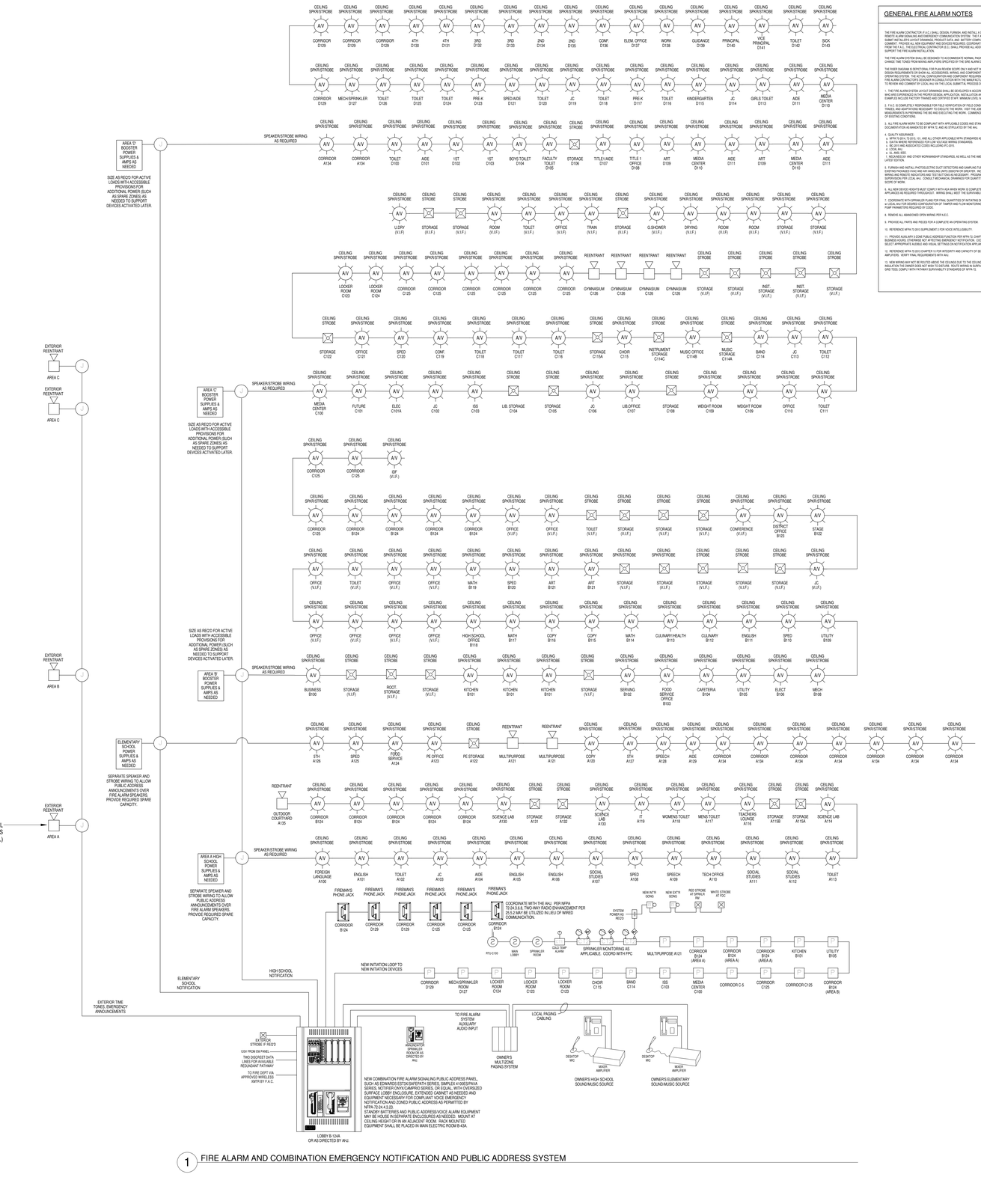


TYPICAL FAN CONTROL SHUT DOWN CCT.



DUCT DETECTORS ARE FURNISHED AND MOUNTED BY M.C., WIRED BY E.C. (POWER) AND F.A.C. (SYSTEM). REFERENCE NEMA "GUIDE FOR THE PROPER USE OF SMOKE DETECTORS IN DUCT APPLICATIONS". PROVIDE 120-VOLT DETECTOR POWER FROM LOCAL FIRE ALARM CCT SERVING NAC PANELS.

2 DUCT DETECTOR WIRING DETAIL



1 FIRE ALARM AND COMBINATION EMERGENCY NOTIFICATION AND PUBLIC ADDRESS SYSTEM

GENERAL FIRE ALARM NOTES

THE FIRE ALARM CONTRACTOR (F.A.C.) SHALL DESIGN, FURNISH AND INSTALL A COMPLETE LOCAL PROTECTIVE AND REMOTE ALARM SIGNALING AND EMERGENCY COMMUNICATION SYSTEM. THE F.A.C. SHALL PROCURE PERMITS AND SUBMIT INSTALLER'S LAYOUT DRAWINGS, PRODUCT DATA, AND BATTERY CONFIGURATIONS TO THE AHJ FOR REVIEW AND COMMENT. PROVIDE ALL NEW EQUIPMENT AND DEVICES REQUIRED, COORDINATE WITH OTHER SYSTEMS. IF DIFFERENT MANUFACTURERS ARE USED, THE CONTRACTOR (E.C.) SHALL PROVIDE ALL ADDITIONAL HARDWARE WHERE REQUIRED TO SUPPORT THE FIRE ALARM INSTALLATION.

THE FIRE ALARM SYSTEM SHALL BE DESIGNED TO ACCOMMODATE NORMAL PHONE ANNOUNCEMENTS AND CLASS CHANGE TIME TONES FROM WIRING AMPLIFIERS SPECIFIED BY THE SHR ALARM DESIGN AND PROVIDED BY THE OWNER.

THE RISER DIAGRAM IS DIRECTIONAL FOR PLAN REVIEW SCOPE ONLY AND NOT INTENDED TO REPRESENT THE COMPLETE DESIGN REQUIREMENTS OR SHOW ALL ACCESSORIES, WIRING, AND COMPONENTS NECESSARY FOR A COMPLETE AND OPERATING SYSTEM. THE ACTUAL CONFIGURATION AND COMPONENT REQUIREMENTS ARE TO BE DETERMINED BY THE F.A.C. BASED ON THE MANUFACTURER'S LISTINGS AND APPROVALS FOR THE EQUIPMENT USED. ALL WORK IS SUBJECT TO REVIEW AND COMMENT BY LOCAL AHJ VIA THE LOCAL SUBMITTAL PROCESS DEFINED BY THE AHJ.

1. THE FIRE ALARM SYSTEM LAYOUT DRAWINGS SHALL BE DEVELOPED IN ACCORDANCE WITH NFPA 72-24.23.3 BY PERSONS WHO ARE EXPERIENCED IN THE PROPER DESIGN, APPLICATION, INSTALLATION AND TESTING OF FIRE ALARM SYSTEMS. EXAMPLES INCLUDE FACTORY TRAINED AND CERTIFIED STAFF, MINIMUM LEVEL IV, NICET CERTIFICATION, OR LICENSED P.E.

2. F.A.C. IS COMPLETELY RESPONSIBLE FOR FIELD VERIFICATION OF FIELD CONDITIONS, COORDINATION WITH AFFECTED TRADES, AND ADAPTATIONS NECESSARY TO EXECUTE THE WORK. VISIT THE JOB SITE. USE FIELD SURVEYS AND MEASUREMENTS IN PREPARING THE BID AND EXECUTING THE WORK. COMMENCEMENT OF WORK INDICATES ACCEPTANCE OF EXISTING CONDITIONS.

3. ALL FIRE ALARM WORK TO BE COMPLIANT WITH APPLICABLE CODES AND STANDARDS. THE F.A.C. SHALL PROVIDE ALL DOCUMENTATION AS MANDATED BY NFPA 72, AND AS STIPULATED BY THE AHJ.

4. QUALITY ASSURANCE
   1. NFPA 70 (N.E.C. 2017), 101, AND ALL OTHER APPLICABLE NFPA STANDARDS AS LOCALLY ADOPTED.
   2. ANSI A117.1 AND ICC/ANSI A117.1 ACCESSIBILITY STANDARDS.
   3. BELOW'S AND ASSOCIATED CODES INCLUDING IFC 2015.
   4. LOCAL AHJ.
   5. NFPA 72-2019.
   6. NICA/ANSI 901 AND OTHER WORKMANSHIP STANDARDS, AS WELL AS THE AMERICAN ELECTRICIANS HANDBOOK, LATEST EDITION.

5. FURNISH AND INSTALL PHOTOELECTRIC DUCT DETECTORS AND SAMPLING TUBES WHEN REQUIRED FOR ALL NEW AND EXISTING PACKAGED HVAC AND AIR HANDLING UNITS 2000CFM OR GREATER. INCLUDE FAN SHUTDOWN INTERCONNECTIONS AS REQUIRED. INDICATING AND TEST BUTTONS SHALL BE MOUNTED IN AN ACCESSIBLE LOCATION AS APPROVED BY SUPERVISING FIRE LOCAL AHJ. CONSULT MECHANICAL DRAWINGS FOR QUANTITIES OF UNITS AND ANY ADDITIONAL SCOPE OF WORK.

6. ALL NEW DEVICE HEIGHTS MUST COMPLY WITH ADA WHEN WORK IS COMPLETED. PROVIDE ADA NOTIFICATION APPLIANCES AS REQUIRED THROUGHOUT. WIRING SHALL MEET THE SURVIVABILITY STANDARDS INDICATED IN NFPA 72.

7. COORDINATE WITH SPRINKLER PLANS FOR FINAL QUANTITIES OF INITIATING DEVICES TO BE MONITORED. COORDINATE WITH MECHANICAL PLANS FOR QUANTITIES AND LOCATIONS OF DAMPER AND AIR FLOW MONITORING. WHERE APPLICABLE, MONITOR ALL FIRE PUMP PARAMETERS REQUIRED BY CODE.

8. REMOVE ALL ABANDONED OPEN WIRING PER N.E.C.

9. PROVIDE ALL PARTS AND PIECES FOR A COMPLETE AN OPERATING SYSTEM.

10. REFERENCE NFPA 72-2013 SUPPLEMENT 2 FOR VOICE INTELLIGIBILITY.

11. PROVIDE AUXILIARY 2-ZONE PUBLIC ADDRESS FUNCTION PER NFPA 72, CHAPTER 24.3.24.3.23, AVAILABLE ONLY DURING BUSINESS HOURS, OTHERWISE NOT AFFECTING EMERGENCY NOTIFICATION. COORDINATE WITH LOCAL AHJ, F.A.C. TO SELECT APPROPRIATE AUDIBLE AND VISUAL SETTINGS ON NOTIFICATION APPLIANCES.

12. REFERENCE NFPA 72-2013 CHAPTER 10 FOR INTEGRITY AND CAPACITY OF SECONDARY POWER SUPPLY AND AMPLIFIERS. VERIFY FINAL REQUIREMENTS WITH AHJ.

13. NEW WIRING MAY NOT BE ROUTED ABOVE THE CEILINGS DUE TO THE CEILING PANELS BEING COVERED WITH BATT INSULATION THE OWNER DOES NOT WISH TO DISTURB. ROUTE WIRING IN SURFACE RACEWAY INSTALLED ON THE ACT GRID TEES. COMPLY WITH PATHWAY SURVIVABILITY STANDARDS OF NFPA 72.

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RIVER VALLEY HIGH SCHOOL

FIRE ALARM RISER

JOB NUMBER 21-346

DATE 03/22/2022

REVISIONS:
03.29.2022 ADDENDUM 01

CD BID SET

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John G. Cordogan
Architect
No. 1301035955
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E4.5