



Architectural Services

130 Regional Park Drive
Kingsport, TN 37660
Phn (423) 349-7760
Fax (423) 349-7413
www.grcinc.com

ADDENDUM ONE

Project: **Sullivan County Schools West Ridge Construction Lab**

Address: **4180 Weaver Pike, Bluff City, TN**

March 1, 2024

This Addendum is part of the Contract Documents for the above referenced project and modifies the original drawings and/or specifications, dated **February 7, 2024**, as noted below. The bidder shall acknowledge receipt of this Addendum in the place provided in the Bid Form. The published bid date and time shall remain the same.

GENERAL:

1. See attached Pre-Bid Meeting sign in sheet.
2. See attached ComCheck Reports.

CLARIFICATION:

1. *We need specifications for the spiral duct work and rectangular duct work construction for the duct collection system.*
Answer: All exhaust duct for the dust collection system shall meet the SMACNA High Pressure Duct Standards with a -10" w.g. rating as noted in the recent Addendum. I reviewed the construction charts out of the SMACNA HVAC Duct Construction Standards. The duct gauge, joint reinforcements, and reinforcement spacing is all dependent on the duct size at the -10" pressure class charts in chapter 2. These charts will need to be used for construction guidelines for the high pressure duct. The contractor can also check with the dust collector manufacturer on duct construction standards as we worked with them on the sizing and layout here; but I believe that they will also refer to the SMACNA High Pressure Duct Standards. Also – on the discharge duct side off the dust collector they will need to reduce to 14" round duct size at the connection to the explosion isolation valve. We just want to keep this duct at the 24x22 rectangular size for the outlet to the space so that the velocity isn't too high.
2. *I also need specifications for the spiral and rectangular duct from the roof top unit. It states double wall, but I specifically need to know the gauge.*
Answer: This would all just be low pressure duct per our spec on the drawing. Page 1 of this document is the design basis spec for the double wall duct which lists out steel gauges for different duct sizes. https://www.mcgillairflow.com/pdf/dimperf/DWR_UG_dimensions.pdf

3. In regards to the duct collector, I need to know whether or not we are responsible for the explosion isolation valves and controls, and whether or not we are providing or installing it.
Answer: Yes the mechanical contractor will be providing the entire dust collection system including the valves, controls, and ductwork.

DRAWINGS:

1. **DRAWING G-00** – See revised Cover Sheet.
2. **DRAWING A-51** – See revised stair section.
3. **DRAWING M-10** – See additional information related to the dust collection system.
4. **DRAWING M-10** – See additional information related to the dust collection system.

SPECIFICATIONS:

1. **SECTION 095113 – Acoustical Panel Ceiling** – Acoustical ceiling panels ACC-1 is to be Armstrong School Zone Fine Fissured panels as the Basis of Design.
2. **SECTION 095113 – Acoustical Panel Ceiling** – Delete Section 2.3, this does not exist within the project.

Cain Rash West Architects

Richard Lutz

OFFICE OF THE SULLIVAN COUNTY PURCHASING AGENT
 3411 HIGHWAY 126—SUITE 201
 BLOUNTVILLE, TN 37617-0569

PHONE 423-323-6400
 FAX 423-323-7249
 kris.davis@sullivancountytn.gov

KRISTINIA DAVIS
 PURCHASING AGENT

PRE-BID ATTENDANCE RECORD

DATE: 02.15.24 TIME: 10:00am

PROJECT DESCRIPTION: West Ridge High School Construction Lab

LOCATION OF PROJECT: West Ridge High School

*NOTE: MANDATORY PRE-BID MEETING REQUIRES REPRESENTATION OF COMPANY AGENT, VERIFIED BY REGISTRATION, TO AFFORD AN OPPORTUNITY FOR COMPANY TO OFFER A PRICED PROPOSAL.

Purchasing Dept: Kris Davis - Michelle Ranney

YOUR NAME	COMPANY / AGENCY	PHONE NUMBER	EMAIL ADDRESS
Brian Jett	ASA	423.323.8017	bproej@astmnet.com
Anthony Rhymmer Nick Folsythe	W.A. Rhymmer Electric Marin	423 612 5644 727 470 5639	estimating@warbyrmerclectric.com nfolsythe@marinconstructing.com
Rick Wtz	CRW	423-349-7760	rickw@crwinc.com
Janita Wilbur	SCS	423-914-0617	janita.wilbur@sullivancountyt.net
George Lavo	SCS	423-845-0454	george.lavo@sullivancountyt.net
Dineen West	CRW ARCHITECTS	423.349.7760	dineen@grcinc.com



COMcheck Software Version COMcheckWeb Envelope Compliance Certificate

Project Information

Energy Code: 2012 IECC
Project Title: WRHS Construction Lab
Location: Blountville, Tennessee
Climate Zone: 4a
Project Type: Addition

Construction Site: Owner/Agent: Designer/Contractor:

Building Area	Floor Area
1-School/university : Nonresidential	42017

Envelope Assemblies

Assembly	Gross Area or Perimeter	Cavity R-Value	Cont. R-Value	Proposed U-Factor	Budget U-Factor _(a)
NORTH WALL: Other Mass Wall, Heat capacity 0.0, [Bldg. Use 1 - School/university] (b)	1260	---	---	0.070	0.064
Door: Insulated Metal, Swinging, [Bldg. Use 1 - School/university]	42	---	---	0.300	0.610
Door: Insulated Metal, Non-Swinging, [Bldg. Use 1 - School/university]	140	---	---	0.300	0.179
WEST WALL: Other Mass Wall, Heat capacity 0.0, [Bldg. Use 1 - School/university] (b)	1818	---	---	0.070	0.064
SOUTH WALL: Other Mass Wall, Heat capacity 0.0, [Bldg. Use 1 - School/university] (b)	1127	---	---	0.070	0.064
SOUTH VESTIBULE WALL: Other Mass Wall, Heat capacity 0.0, [Bldg. Use 1 - School/university] (b)	152	---	---	0.070	0.064
Door: Insulated Metal, Swinging, [Bldg. Use 1 - School/university]	42	---	---	0.300	0.610
WEST VESTIBULE WALL: Other Mass Wall, Heat capacity 0.0, [Bldg. Use 1 - School/university] (b)	148	---	---	0.070	0.064
Roof: Insulation Entirely Above Deck, [Bldg. Use 1 - School/university]	42017	---	31.0	0.031	0.039
Floor: Unheated Slab-On-Grade, [Bldg. Use 1 - School/university] (c)	239	---	---	0.730	0.540

- (a) Budget U-factors are used for software baseline calculations ONLY, and are not code requirements.
- (b) 'Other' components require supporting documentation for proposed U-factors.
- (c) Slab-On-Grade proposed and budget U-factors shown in table are F-factors.

Envelope PASSES: Design 4% better than code

Envelope Compliance Statement

Compliance Statement: The proposed envelope design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed envelope systems have been designed to meet the 2012 IECC requirements in COMcheck Version COMcheckWeb and to comply with any applicable

mandatory requirements listed in the Inspection Checklist.

Name - Title

Signature

Date



Interior Lighting Compliance Certificate

Project Information

Energy Code: 2012 IECC
Project Title: WRHS Construction Lab
Project Type: Addition

Construction Site: Owner/Agent: Designer/Contractor:

Allowed Interior Lighting Power

A Area Category	B Floor Area (ft2)	C Allowed Watts / ft2	D Allowed Watts
Unspecified	42017	0.00	0
Total Allowed Watts =			N/A

Proposed Interior Lighting Power

A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixture	D Fixture Watt.	E (C X D)
Unspecified (wattage exempt for this area)				
Total Proposed Watts =			0	

Interior Lighting TBD: Invalid building use type



COMcheck Software Version COMcheckWeb

Exterior Lighting Compliance Certificate

Project Information

Energy Code: 2012 IECC
 Project Title: WRHS Construction Lab
 Project Type: Addition
 Exterior Lighting Zone: 0 (Unspecified)

Construction Site: Owner/Agent: Designer/Contractor:

Allowed Exterior Lighting Power

A Area/Surface Category	B Quantity	C Allowed Watts /	D Tradable Wattage	E Allowed Watts (B X C)
Total Tradable Watts (a) =				0
Total Allowed Watts =				0
Total Allowed Supplemental Watts (b) =				500

- (a) Wattage tradeoffs are only allowed between tradable areas/surfaces.
- (b) A supplemental allowance equal to 500 watts may be applied toward compliance of both non-tradable and tradable areas/surfaces.

Proposed Exterior Lighting Power

Exterior Lighting TBD: Exterior lighting zone not specified (see project screen)



Mechanical Compliance Certificate

Project Information

Energy Code: 2012 IECC
 Project Title: West Ridge High School
 Location: Blountville, Tennessee
 Climate Zone: 4a
 Project Type: Addition

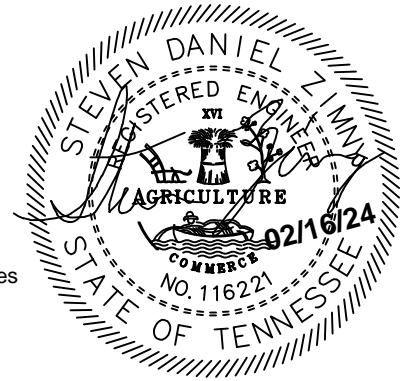
Construction Site: _____ Owner/Agent: _____ Designer/Contractor: _____

Mechanical Systems List

Quantity System Type & Description

- 1 RTU-1 (Single Zone):
 Single Package Heat Pump
 Heating Mode: Capacity = 120 kBtu/h,
 Proposed Efficiency = 3.49 COP, Required Efficiency = 3.30 COP
 Cooling Mode: Capacity = 131 kBtu/h, , Air Economizer
 Proposed Efficiency = 11.10 EER, Required Efficiency: 11.00 EER + 11.2 IEER
 Fan System: FAN SYSTEM 1 -- Compliance (Motor nameplate HP method) : Passes

 Fans:
 FAN 1 Supply, Single-Zone VAV, 3500 CFM, 3.0 motor nameplate hp



Mechanical Compliance Statement

Compliance Statement: The proposed mechanical design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed mechanical systems have been designed to meet the 2012 IECC requirements in COMcheck Version 4.1.5.1 and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

Steven Zimny - Mechanical Engineer

Name - Title

Signature

02/16/24

Date



Inspection Checklist

Energy Code: 2012 IECC

Requirements: 100.0% were addressed directly in the COMcheck software

Text in the "Comments/Assumptions" column is provided by the user in the COMcheck Requirements screen. For each requirement, the user certifies that a code requirement will be met and how that is documented, or that an exception is being claimed. Where compliance is itemized in a separate table, a reference to that table is provided.

Section # & Req.ID	Plan Review	Complies?	Comments/Assumptions
C103.2 [PR1] ¹	Plans and/or specifications provide all information with which compliance can be determined for the building envelope and document where exceptions to the standard are claimed.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C406 [PR9] ¹	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the additional energy efficiency package options.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C402.3.1 [PR10] ¹	The vertical fenestration area <= 30 percent of the gross above-grade wall area.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C402.3.1 [PR11] ¹	The skylight area <= 3 percent of the gross roof area.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C402.3.2 [PR14] ¹	In enclosed spaces > 10,000 ft ² directly under a roof with ceiling heights >15 ft. and used as an office, lobby, atrium, concourse, corridor, storage, gymnasium/exercise center, convention center, automotive service, manufacturing, non-refrigerated warehouse, retail store, distribution/sorting area, transportation, or workshop, the following requirements apply: (a) the daylight zone under skylights is >= half the floor area; (b) the skylight area to daylight zone is >= 3 percent with a skylight VT >= 0.40; or a minimum skylight effective aperture >= 1 percent.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C402.3.2.2 [PR15] ¹	Skylights in office, storage, automotive service, manufacturing, non-refrigerated warehouse, retail store, and distribution/sorting area have a measured haze value > 90 percent unless designed to exclude direct sunlight.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement does not apply.

Additional Comments/Assumptions:

1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)
---	----------------------	---	------------------------	---	---------------------

Section # & Req.ID	Footing / Foundation Inspection	Complies?	Comments/Assumptions
C104 [FO3] ²	Installed slab-on-grade insulation type and R-value consistent with insulation specifications reported in plans and COMcheck reports.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	See the Envelope Assemblies table for values.
C303.2 [FO4] ²	Slab edge insulation installed per manufacturer's instructions.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C402.2.6 [FO5] ²	Slab edge insulation depth/length. Slab insulation extending away from building is covered by pavement or >= 10 inches of soil.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	See the Envelope Assemblies table for values.
C403.2.8.1 [FO6] ¹	Exterior insulation protected against damage, sunlight, moisture, wind, landscaping and equipment maintenance activities.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C402.2.8 [FO12] ³	Bottom surface of floor structures incorporating radiant heating insulated to >=R-3.5.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement does not apply. See the Envelope Assemblies table for values.

Additional Comments/Assumptions:

1 High Impact (Tier 1)	2 Medium Impact (Tier 2)	3 Low Impact (Tier 3)
------------------------	--------------------------	-----------------------

Section # & Req.ID	Framing / Rough-In Inspection	Complies?	Comments/Assumptions
C402.4.1, C402.4.2 [FR16] ¹	The building envelope contains a continuous air barrier that is sealed in an approved manner and either constructed or tested in an approved manner. Air barrier penetrations are sealed in an approved manner.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C402.4.3, C402.4.4 [FR18] ³	Factory-built fenestration and doors are labeled as meeting air leakage requirements.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C402.4.7 [FR17] ³	Vestibules are installed on all building entrances. Doors have self-closing devices.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C402.3.3, C402.3.4 [FR8] ¹	Vertical fenestration U-Factor.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	See the Envelope Assemblies table for values.
C402.3.3 [FR10] ¹	Vertical fenestration SHGC value.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	See the Envelope Assemblies table for values.
C303.1.3 [FR12] ²	Fenestration products rated in accordance with NFRC.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Default values are used.
C303.1.3 [FR13] ¹	Fenestration products are certified as to performance labels or certificates provided.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.

Additional Comments/Assumptions:

1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)
---	----------------------	---	------------------------	---	---------------------

Section # & Req.ID	Mechanical Rough-In Inspection	Complies?	Comments/Assumptions
C402.4.5.1 [ME3] ³	Stair and elevator shaft vents have motorized dampers that automatically close.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement does not apply.
C402.4.5.2 [ME58] ³	Outdoor air and exhaust systems have motorized dampers that automatically shut when not in use and meet maximum leakage rates. Check gravity dampers where allowed.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement does not apply.

Additional Comments/Assumptions:

1 High Impact (Tier 1)	2 Medium Impact (Tier 2)	3 Low Impact (Tier 3)
------------------------	--------------------------	-----------------------

Section # & Req.ID	Insulation Inspection	Complies?	Comments/Assumptions
C402.4.1.1 [IN1] ¹	All sources of air leakage in the building thermal envelope are sealed, caulked, gasketed, weather stripped or wrapped with moisture vapor-permeable wrapping material to minimize air leakage.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C402.4.2.1 [IN2] ¹	Roof R-value. For some ceiling systems, verification may need to occur during Framing Inspection.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	See the Envelope Assemblies table for values.
C303.2 [IN3] ¹	Roof insulation installed per manufacturer's instructions. Blown or poured loose-fill insulation is installed only where the roof slope is ≤ 3 in 12.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C303.2 [IN7] ¹	Above-grade wall insulation installed per manufacturer's instructions.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C104 [IN8] ²	Installed floor insulation type and R-value consistent with insulation specifications reported in plans and COMcheck reports.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	See the Envelope Assemblies table for values.
C303.1 [IN10] ²	Building envelope insulation is labeled with R-value or insulation certificate providing R-value and other relevant data.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C303.2.1 [IN14] ²	Exterior insulation is protected from damage with a protective material. Verification for exposed foundation insulation may need to occur during Foundation Inspection.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.

Additional Comments/Assumptions:

1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)
---	----------------------	---	------------------------	---	---------------------

Section # & Req.ID	Final Inspection	Complies?	Comments/Assumptions
C402.4.6 [FI37] ¹	Weatherseals installed on all loading dock cargo doors.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C402.4.8 [FI26] ³	Recessed luminaires in thermal envelope to limit infiltration and be IC rated and labeled. Seal between interior finish and luminaire housing.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement does not apply.

Additional Comments/Assumptions:

1 High Impact (Tier 1)	2 Medium Impact (Tier 2)	3 Low Impact (Tier 3)
------------------------	--------------------------	-----------------------



Mechanical Compliance Certificate

Project Information

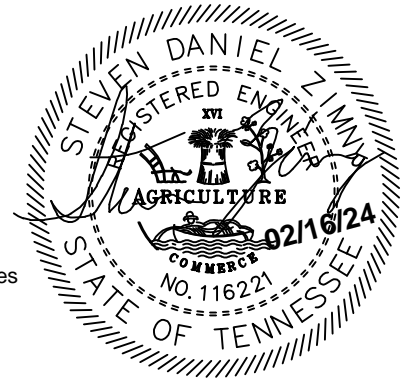
Energy Code: 2012 IECC
 Project Title: West Ridge High School
 Location: Blountville, Tennessee
 Climate Zone: 4a
 Project Type: Addition

Construction Site: _____ Owner/Agent: _____ Designer/Contractor: _____

Mechanical Systems List

Quantity System Type & Description

- 1 RTU-1 (Single Zone):
 Single Package Heat Pump
 Heating Mode: Capacity = 120 kBtu/h,
 Proposed Efficiency = 3.49 COP, Required Efficiency = 3.30 COP
 Cooling Mode: Capacity = 131 kBtu/h, , Air Economizer
 Proposed Efficiency = 11.10 EER, Required Efficiency: 11.00 EER + 11.2 IEER
 Fan System: FAN SYSTEM 1 -- Compliance (Motor nameplate HP method) : Passes
- Fans:
 FAN 1 Supply, Single-Zone VAV, 3500 CFM, 3.0 motor nameplate hp



Mechanical Compliance Statement

Compliance Statement: The proposed mechanical design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed mechanical systems have been designed to meet the 2012 IECC requirements in COMcheck Version 4.1.5.1 and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

Steven Zimny - Mechanical Engineer
 Name - Title

Steven Zimny
 Signature

02/16/24
 Date

Proposed Addition for:



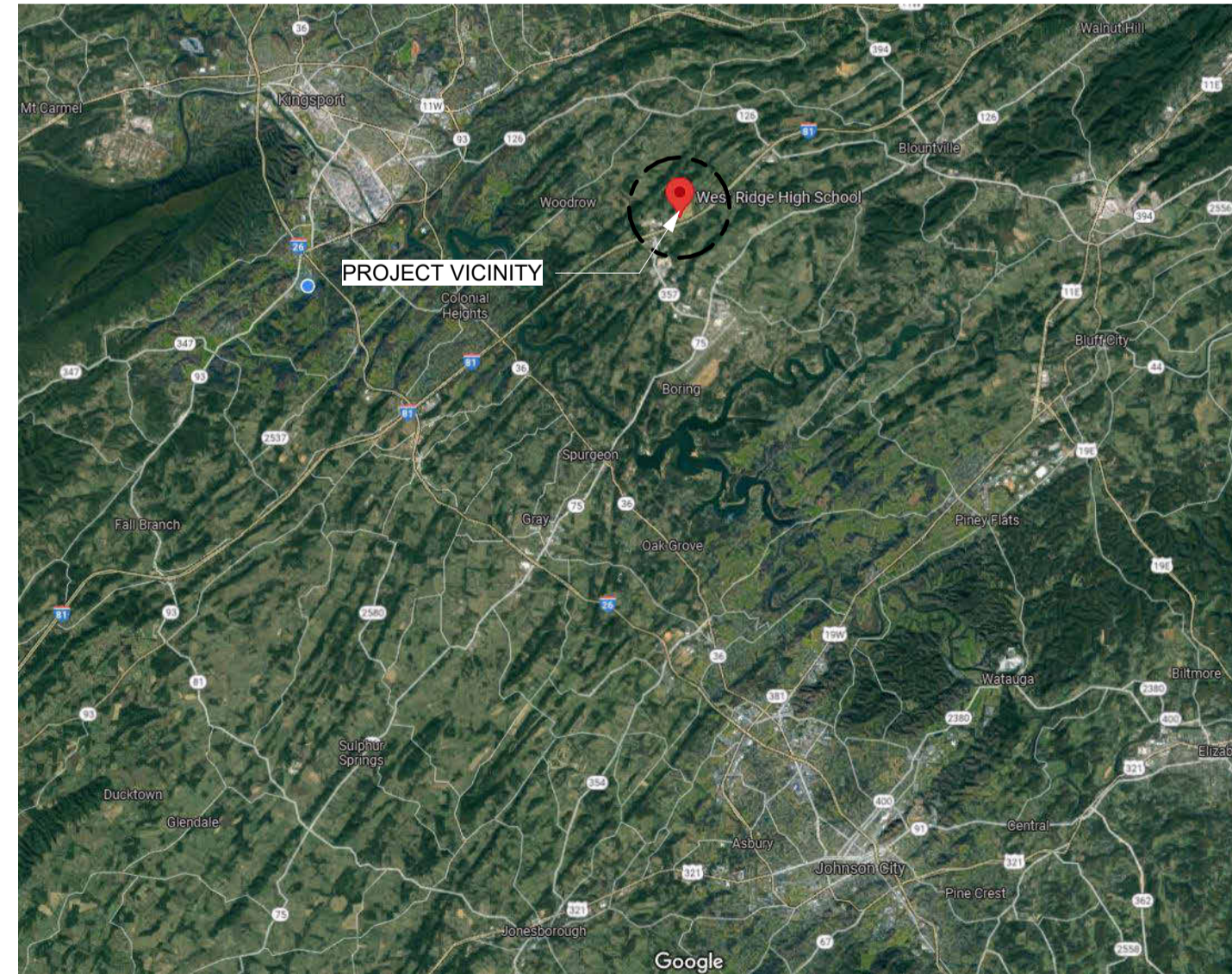
WEST RIDGE HIGH SCHOOL

380 Lynn Road, Blountville, TN 37617

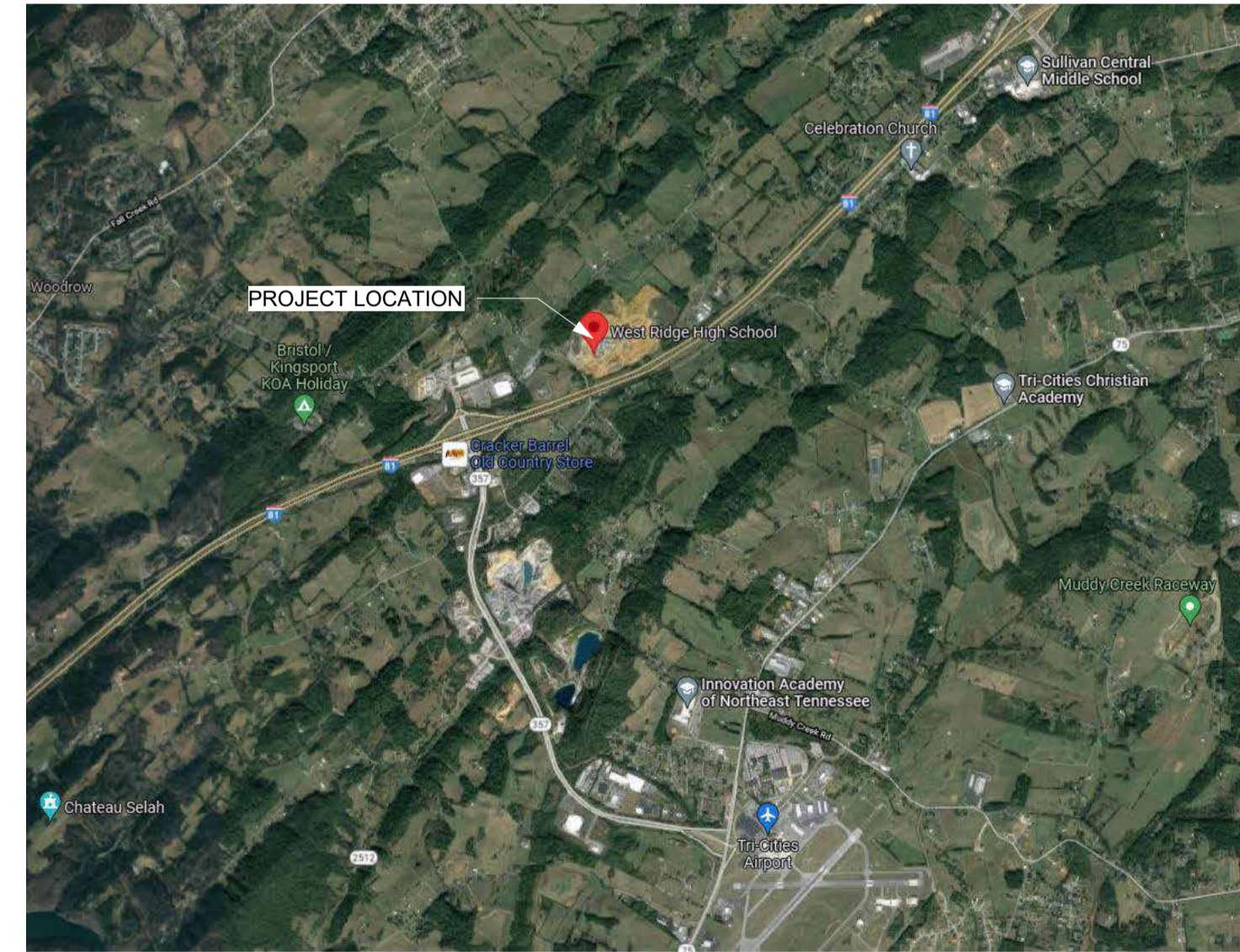
ISSUED: 2/7/24

CRW PROJECT #: 202337

TFM #19310
SFMO #2024-02-12-02



VICINITY MAP



LOCATION MAP

DRAWING INDEX				
SHEET #	SHEET NAME	Issue Date	Revision Date	Description
GENERAL				
G-00	COVER SHEET	2/7/24	2/14/24	CODE DATA
G-01	GENERAL INFORMATION	2/7/24		
G-11	LIFE SAFETY PLAN	2/7/24		
SITE/CIVIL				
C-01	CIVIL LEGENDS & NOTES	2/7/24		
C-02	PARTIAL SITE DEMO PLAN	2/7/24		
C-11	SITE PLAN	2/7/24		
C-12	CIVIL DETAILS	2/7/24		
STRUCTURAL				
S-1.1	FOUNDATION PLAN	2/7/24		
S-1.2	DETAILS AND NOTES	2/7/24		
S-1.3	TYPICAL CMU DETAILS	2/7/24		
S-2.1	SECOND FLOOR FRAMING PLAN	2/7/24		
S-3.1	SECTIONS	2/7/24		
ARCHITECTURAL				
A-10	MAIN FLOOR PLAN - BASE BID	2/7/24		
A-11	MAIN FLOOR AND MEZZANINE PLAN - ALT. #1	2/7/24		
A-12	REFLECTED CEILING PLAN - BASE BID	2/7/24		
A-13	REFLECTED CEILING PLAN - ALT. #1	2/7/24		
A-14	ROOF PLAN	2/7/24		
A-20	EXTERIOR ELEVATIONS	2/7/24		
A-30	BUILDING SECTIONS - BASE BID	2/7/24		
A-31	BUILDING SECTIONS - ALT. #1	2/7/24		
A-40	WALL SECTIONS	2/7/24		
A-50	ENLARGED DETAILS	2/7/24		
A-51	STAIR SECTION AND DETAILS	2/7/24	2/14/24	CODE DATA
A-52	TYPICAL ROOF DETAILS	2/7/24		
A-53	TYPICAL ROOF DETAILS	2/7/24		
A-60	WINDOW AND DOOR SCHEDULES	2/7/24		
A-61	HEAD AND JAMB DETAILS	2/7/24		
INTERIOR				
I-11	FINISH FLOOR PLAN	2/7/24		
MECHANICAL				
M-10	FIRST FLOOR PLAN - HVAC	2/7/24	2/16/24	CODE REVISIONS
M-11	FIRST FLOOR PLAN - HVAC ALT BID	2/7/24	2/16/24	CODE REVISIONS
PLUMBING				
P-10	FIRST FLOOR PLAN - WATER	2/7/24		
P-11	FIRST FLOOR PLAN - WASTE	2/7/24		
FIRE PROTECTION				
FP-10	SCHEDULES & SPECIFICATIONS	2/7/24		
ELECTRICAL				
E-01	LEGENDS & SCHEDULES	2/7/24		
E-02	PANELBOARDS AND FEEDER DIAGRAM	2/7/24		
E-10	MAIN FLOOR PLAN - LIGHTING	2/7/24		
E-11	MAIN FLOOR PLAN - POWER	2/7/24		
E-12	MAIN FLOOR PLAN - COMMUNICATIONS	2/7/24		
E-13	MAIN FLOOR PLAN - FIRE ALARM AND HVAC WIRING	2/7/24		
E-14	MEZZANINE PLAN - ELECTRICAL	2/7/24		

Proposed Addition for:

WEST RIDGE HIGH SCHOOL



380 Lynn Road, Blountville, TN 37617

Cain Rash West

Architects

130 Regional Park Dr.
Kingsport, TN 37660
Phn (423) 349-7760
Fax (423) 349-7413
www.grcinc.com

THIS DRAWING AS PREPARED BY CainRashWest Architects SHALL BE USED FOR THE SPECIFIC IDENTIFIED PROJECT ONLY. THIS DRAWING IS THE PROPERTY OF CainRashWest Architects AND SHALL BE RETURNED PER THEIR REQUEST

no.	date	rev. description
1	2/14/24	CODE DATA



ARCHITECTURAL SERVICES



130 REGIONAL PARK DRIVE
KINGSPORT, TN 37660
PHONE: 423.349.7760



Issued Date 2/7/24
Checked by RL
Drawn by RKL
Project number 202337

STRUCTURAL



SPODEN & WILSON CONSULTING ENGINEERS
430 CLAY STREET
KINGSPORT, TENNESSEE 37660
Phone: (423) 245-1181 Fax: (423) 245-0852
email: sweng@spodenwilson.com

MECHANICAL / PLUMBING ENGINEER




5641 MERCHANTS CENTER BLVD., STE. A104
KNOXVILLE, TN 37912
(865) 637-8339

ELECTRICAL ENGINEER

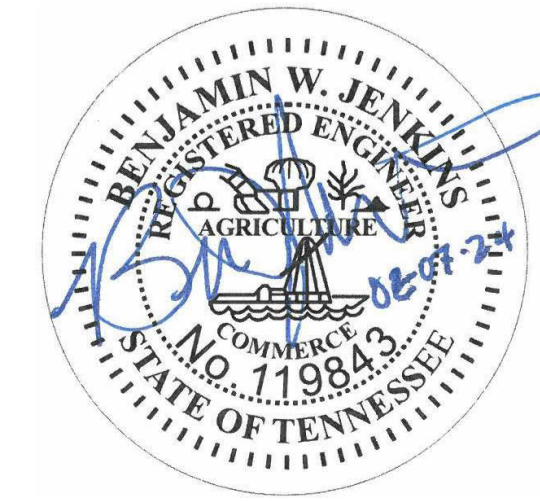



VREELAND ENGINEERS INC.
CONSULTING ELECTRICAL ENGINEERS
3107 SUTHERLAND AVENUE
P.O. BOX 10648
KNOXVILLE, TENNESSEE 37939-0648
PHONE 865/637-4451 FAX 865/637-1558

ARCHITECTURAL / CIVIL



130 REGIONAL PARK DRIVE
KINGSPORT, TN 37660
PHONE: 423.349.7760



COVER SHEET

G-00

Proposed Addition for:



380 Lynn Road, Blountville, TN 37617

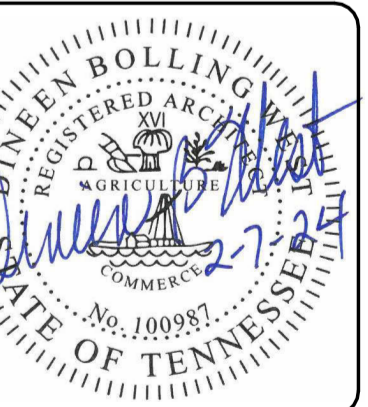


130 Regional Park Dr.
Kingsport, TN 37660
Phn (423) 349-7760
Fax (423) 349-7413
www.grcinc.com

THIS DRAWING AS PREPARED BY CainRashWest Architects SHALL BE USED FOR THE SPECIFIC IDENTIFIED PROJECT ONLY. THIS DRAWING IS THE PROPERTY OF CainRashWest Architects AND SHALL BE RETURNED PER THEIR REQUEST

no. date rev. description

2 2/14/24 CODE DATA



Issued Date 2/7/24

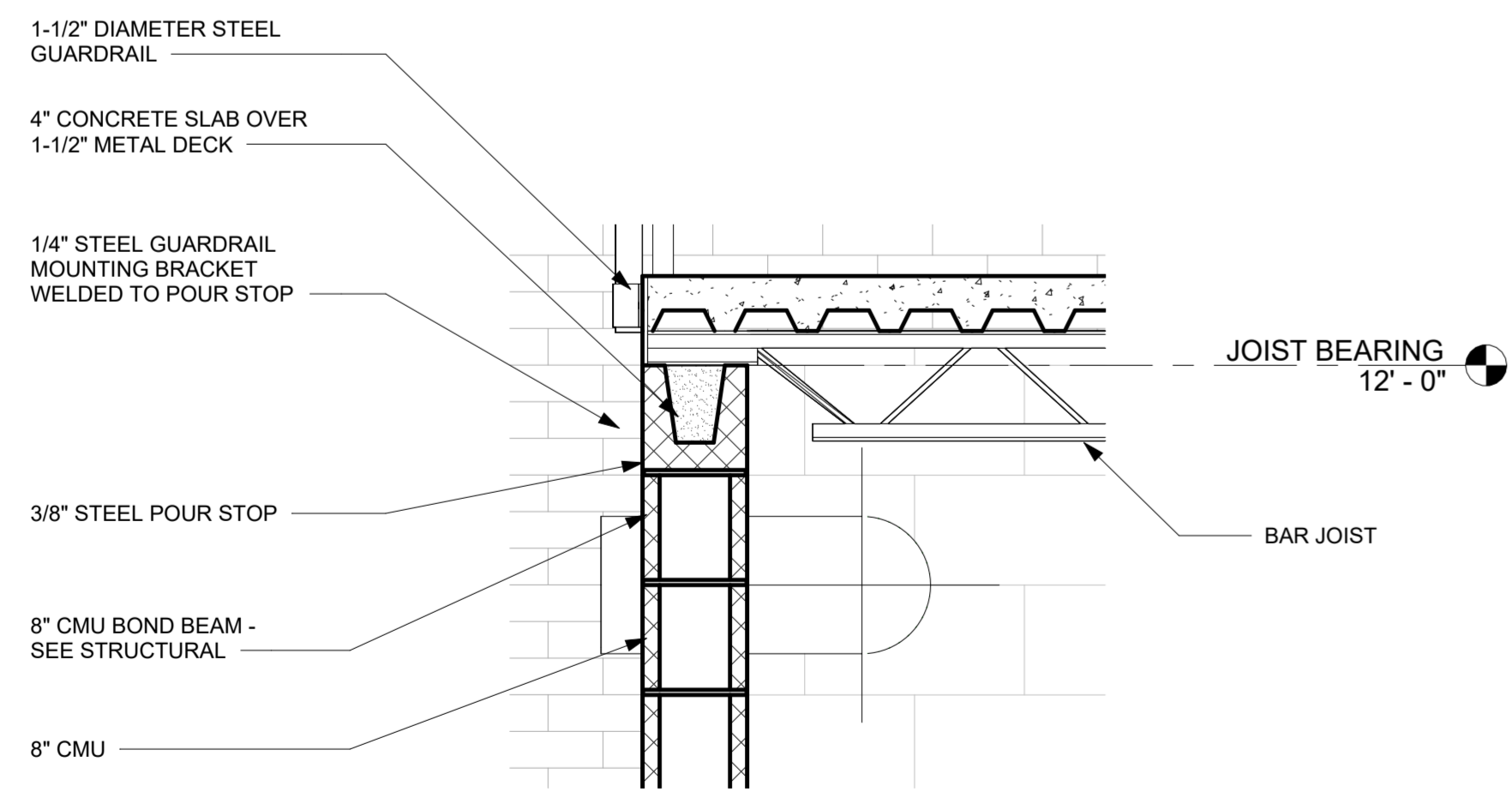
Checked by RL

Drawn by RKL

Project number 202337

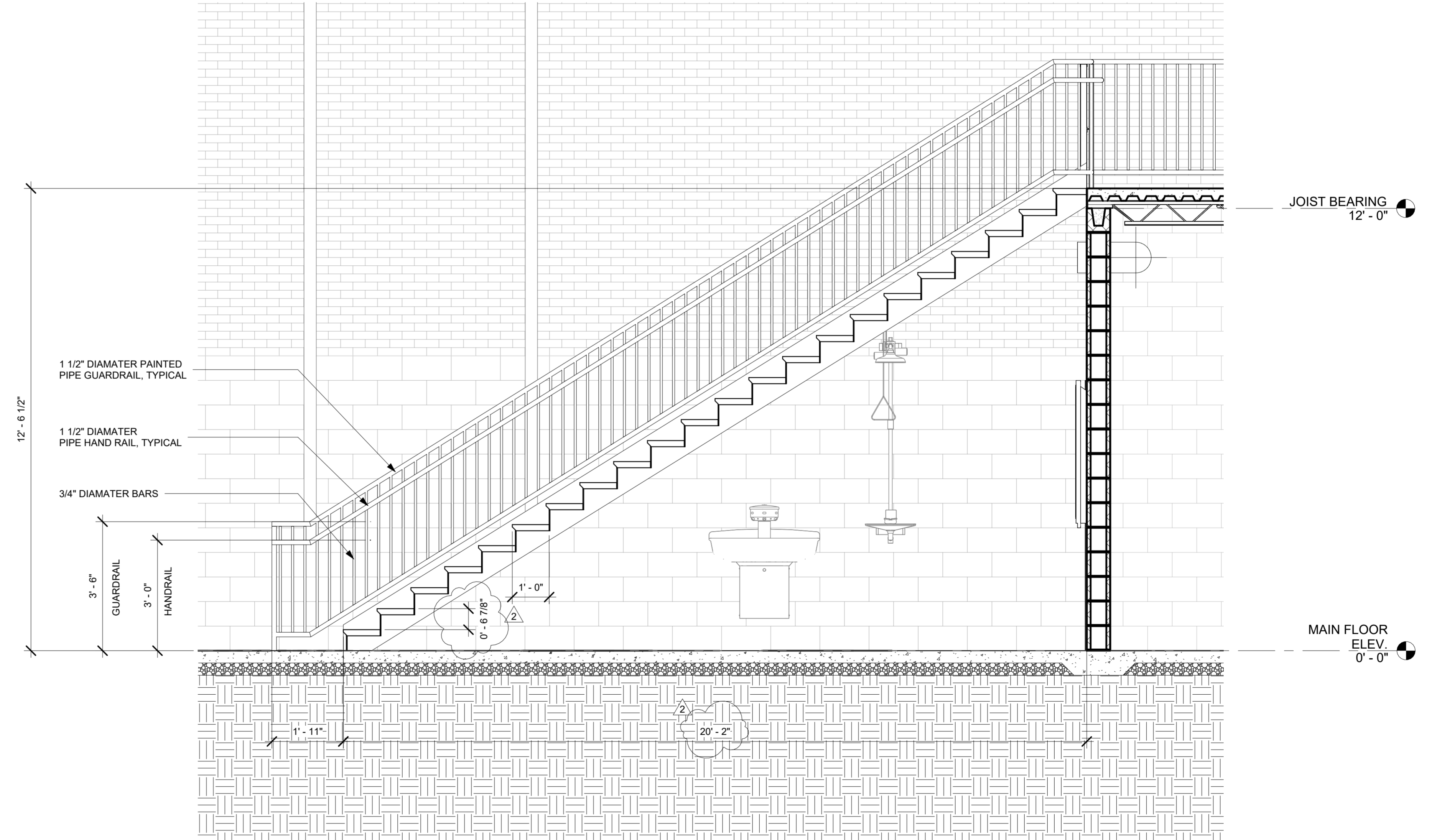
STAIR SECTION AND DETAILS

A-51



2 RAILING DETAIL

SCALE: 1" = 1'-0"



1 STAIR SECTION

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

ROOFTOP HEAT PUMP (RTU) SCHEDULE

MARK	AIR SYSTEM		SUPPLY FAN			EXHAUST FAN			COOLING CAPACITY		MIN. EER	HEATING CAPACITY		COP @ 47°	MCA	MOCP	VOLTS/PHASE	UNIT WEIGHT (LBS)	NOMINAL TONNAGE	VALENT MFG MODEL
	TOTAL CFM	O.A. CFM	TOTAL CFM	MIN. FAN HP	EXT. STATIC (INCHES W.G.)	TOTAL CFM	MIN. FAN HP	EXT. STATIC (INCHES W.G.)	SENS (MBH)	TOTAL (MBH)		@ 10° (MBH)	ELEC. HEAT KW							
①	3,500	570	3,500	3.0	1.0	3,500	1.5	0.5	95.6	131.1	11.1	53.2	30.0	3.49	75.6	80.0	460/3	5,100	10	VX-112-10A-1-G1

- NOTES:**
- VERIFY VOLTAGE BEFORE ORDERING EQUIPMENT
 - COOLING RATINGS FOR 95°F AMBIENT; 67°WB & 80°DB E.A.T. - HEATING RATINGS FOR 62°F E.A.T.
 - BOTH RETURN & SUPPLY DUCT SMOKE DETECTORS SHALL BE FURNISHED BY ELECTRICAL CONTRACTOR AND INSTALLED BY MECHANICAL CONTRACTOR. DETECTORS SHALL MEET ALL REQUIREMENTS OF THE INTERNATIONAL MECHANICAL CODE SECTION 606.
 - UNIT SHALL BE FURNISHED WITH MICROPROCESSOR CONTROLS, LOW AMBIENT COOLING TO 0°F, ROOF CURB, AND 100% ECONOMIZER AND POWERED EXHAUST, SCR ELECTRIC MODULATING HEAT CONTROL, MODULATING HOT GAS REHEAT, AND SINGLE ZONE VAV CONTROL
 - UNIT SHALL BE FURNISHED WITH 7-DAY PROGRAMMABLE THERMOSTAT AND HUMIDITY SENSOR FOR HOT GAS REHEAT; OA DAMPER OPENS ONLY DURING OCCUPIED PERIODS
 - INSTALL 2 TIGHT FITTING LAYERS OF 5/8" CEMENT BOARD WITH JOINTS OVERLAPPING & 2" THICK RIGID THERMAFIBER ACOUSTIC INSULATION INSIDE EACH ROOF CURB

ELECTRIC WALL HEATER (EWH) SCHEDULE

MARK	WATTS	VOLTS/PHASE	MFR MODEL
Ⓐ	1500	120/1	MARKEL SERIES 3320 WALL HEATER

- NOTES:**
- VERIFY VOLTAGE BEFORE ORDERING EQUIPMENT
 - HEATER SHALL BE FURNISHED WITH BUILT-IN TAMPER PROOF THERMOSTAT
 - HEATER SHALL BE FURNISHED WITH DISCONNECT SWITCH & OVERHEAT PROTECTION

DIFFUSER/GRILLE SCHEDULE

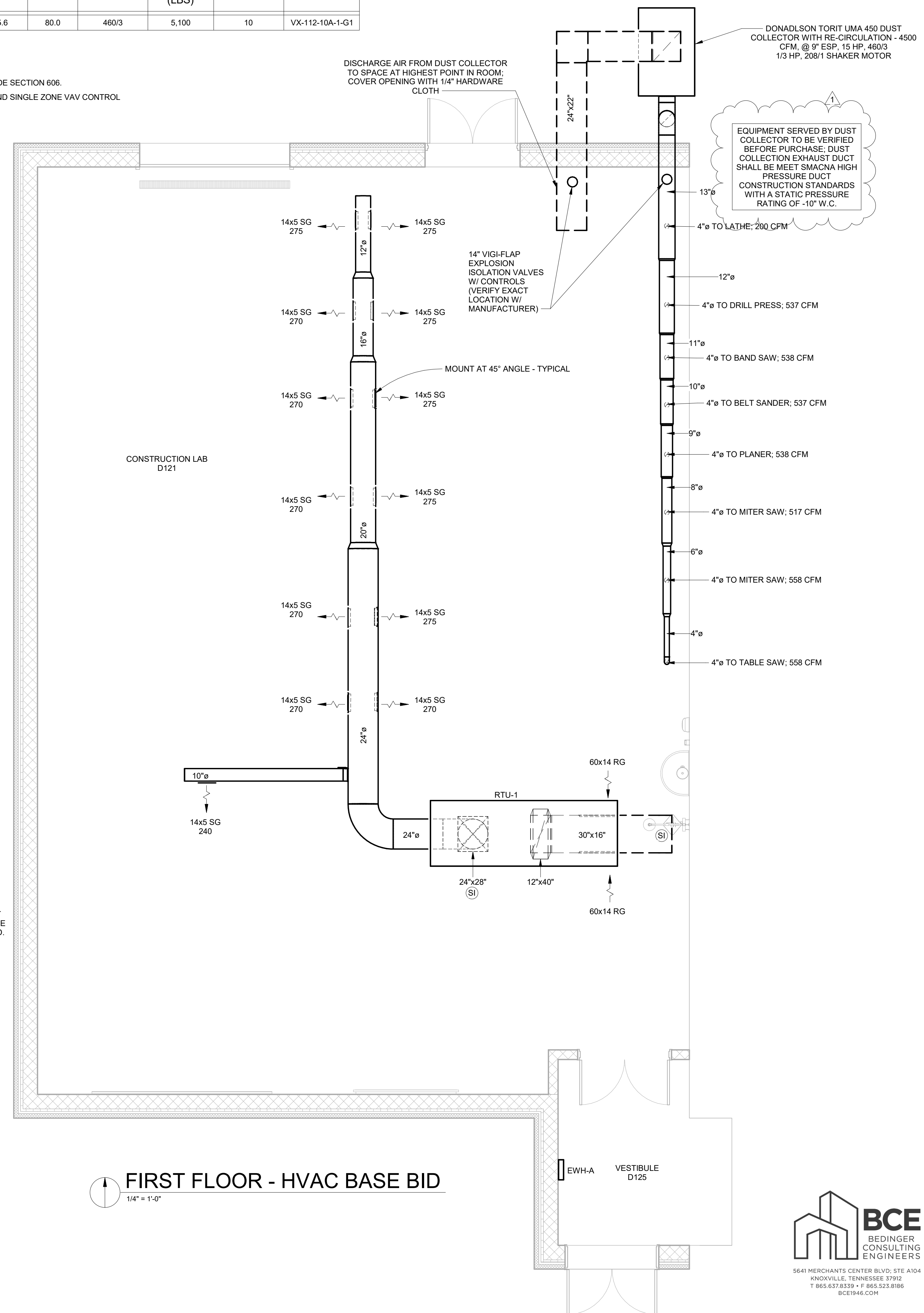
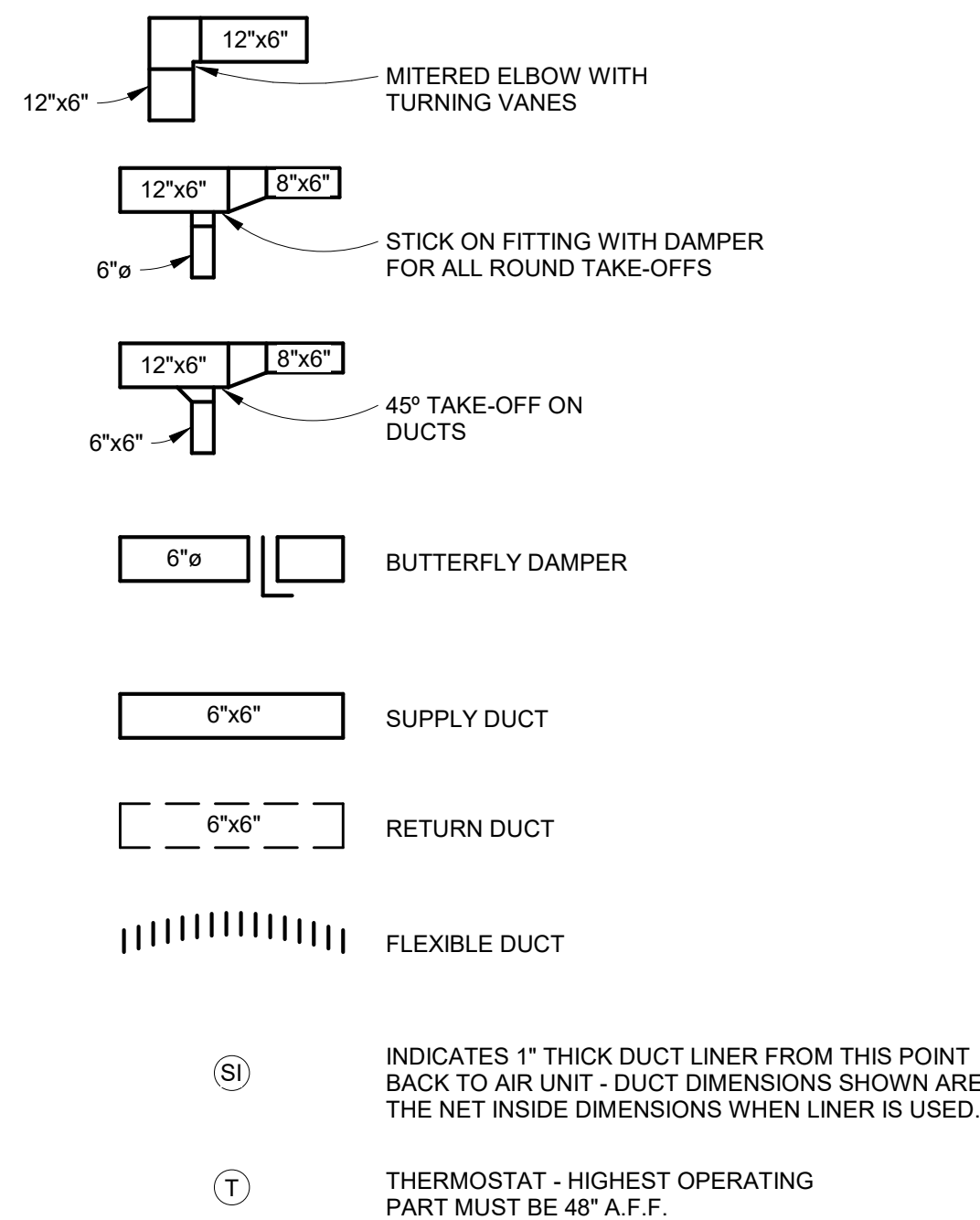
MARK	SERVICE	DESCRIPTION	ACCESSORIES
CDS	SUPPLY	CEILING DIFFUSER, PRICE MODEL SMD-1 SQUARE NECK, LOUVERED FACE DIFFUSER, SURFACE MOUNTED TYPE, 4-WAY BLOW	OPPOSED BLADE DAMPER, SQUARE-TO-ROUND ADAPTER, PLASTER FRAME
SG	SUPPLY	SUPPLY GRILLE, PRICE MODEL SDG SPIRAL DUCT, 3/4" SPACING	OPPOSED BLADE DAMPER
CRS	RETURN	CEILING RETURN, PRICE MODEL 80D-F EGG CRATE RETURN GRILLE, SURFACE MOUNTED TYPE, 1/2" CUBES	OPPOSED BLADE DAMPER, SQUARE-TO-ROUND ADAPTER, PLASTER FRAME

- NOTES:**
- COORDINATE WITH ARCHITECT & OWNER FOR FINISHES

HVAC SPECIFICATIONS

- FURNISH ALL LABOR, MATERIALS AND EQUIPMENT REQUIRED TO INSTALL A COMPLETE HEATING AND COOLING SYSTEM AS INDICATED AND SPECIFIED ON THE DRAWINGS.
- WORK SHALL COMPLY WITH IMC, NFPA, ALL APPLICABLE LAWS, ORDINANCES & CODES OF THE STATE OF TENNESSEE, LOCAL AUTHORITIES HAVING JURISDICTION AND WITH APPLICABLE RULES & REGULATIONS.
- OBTAIN ALL PERMITS & INSPECTIONS REQUIRED FOR THE COMPLETION OF THE WORK & PAY ALL FEES & COSTS IN CONNECTION THEREWITH.
- THE MECHANICAL DRAWINGS ARE GENERALLY DIAGRAMMATIC AND UNLESS SPECIFICALLY DIMENSIONED, THE LOCATIONS OF DUCTWORK AND EQUIPMENT AND THE ROUTING OF DUCTWORK IS APPROXIMATE ONLY AND SHALL NOT BE SCALED FROM THE MECHANICAL DRAWINGS.
- INSTALL ALL EQUIPMENT IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
- SUBMIT TO THE ARCHITECT FOR APPROVAL, 10 DAYS AFTER RECEIPT OF NOTICE TO PROCEED WITH THE WORK, A COMPLETE LIST OF MATERIALS, EQUIPMENT AND ACCESSORIES PROPOSED FOR USE, INCLUDING COMPLETE DESCRIPTIONS AND SPECIFICATIONS OF ANY PROPOSED SUBSTITUTIONS, MANUFACTURER'S SHOP DRAWINGS, ROUGHING-IN DRAWINGS, AND ANY OTHER INFORMATION REQUIRED FOR THE PROPER INSTALLATION OF THE WORK. SUBMITTALS SHALL BE IN PDF FORMAT (NO PAPER COPIES).
- THE BUILDING IS ASSIGNED TO SEISMIC DESIGN CATEGORY C, RISK CATEGORY III WITH AN IMPORTANCE FACTOR OF 1.0. THEREFORE, THE MECHANICAL COMPONENTS MAY REQUIRE SEISMIC REVIEW. SEE SEISMIC NOTES ON DRAWINGS. VERIFY WITH THE ARCHITECT.
- ALL DUCTWORK SHALL BE GALVANIZED STEEL FABRICATED ACCORDING TO SMACNA DETAILS. DUCTS SHALL BE SIZE INDICATED ON DRAWINGS (NET INSIDE DIMENSIONS), RIGIDLY BRACED, ADEQUATELY SUPPORTED & SECURELY FASTENED IN PLACE.
- ALL ROUND DUCTWORK AND FITTINGS EXPOSED IN FINISHED SPACES SHALL BE McGILL AIRFLOW UNI-SEAL, SEMCO, OR EQUAL, DOUBLE WALL, SPIRAL LOCKSEAM DUCT. ALL TAGS AND OTHER MARKINGS SHALL BE THOROUGHLY REMOVED.
- ALL EXPOSED DUCTWORK SHALL BE CLEANED PRIOR TO PAINTING IN STRICT ACCORDANCE WITH THE DTM (DIRECT TO METAL) PAINT MANUFACTURERS RECOMMENDATIONS. ALL TAGS AND OTHER MARKINGS SHALL BE THOROUGHLY REMOVED FROM ALL EXPOSED DUCTWORK PRIOR TO PAINTING.
- FLEXIBLE DUCT FOR INSULATED SYSTEMS SHALL BE THERMAFLEX M-KF, OR EQUAL, PRE-INSULATED DUCT WITH A MINIMUM R-VALUE OF 6.0. FLEXIBLE DUCT FOR NON-INSULATED DUCT SYSTEMS SHALL BE THERMAFLEX S-LD, OR EQUAL. ALL FLEXIBLE DUCT SHALL BE INSTALLED IN STRICT ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. DUCT RUNS SHALL BE AS STRAIGHT AS POSSIBLE AND LIMITED TO MAXIMUM OF 5 FEET IN LENGTH.
- ALL TAKE-OFFS IN ROUND AND FLAT OVAL DUCTWORK SHALL BE OF THE CONICAL TYPE. ALL ACCESS DOORS SHALL BE FACTORY INSULATED WITH HINGES AND CAM LATCH. FULL RADIUS ELBOWS SHALL BE USED EXCEPT WHERE SPECIFICALLY NOTED OTHERWISE.
- LINE ALL DUCTWORK (IN ADDITION TO DUCTWRAP) WITH 1" THICK OWENS-CORNING FIBERGLASS DUCT LINER WHERE INDICATED ON THE DRAWINGS.
- VISIBLE INTERIOR PORTIONS OF DUCTS AT GRILLES AND REGISTERS SHALL BE GIVEN A COAT OF FLAT BLACK PAINT BEFORE GRILLES AND REGISTERS ARE INSTALLED.
- WHEN THE INSTALLATION IS COMPLETE, IT SHALL BE RUN & ADJUSTED BY THE CONTRACTOR. ANY EXCESSIVE NOISE OR VIBRATION SHALL BE CORRECTED.
- SUBMIT WRITTEN AIR BALANCE REPORT TO THE ARCHITECT A MINIMUM OF 10 DAYS PRIOR TO THE FINAL INSPECTION. THE AIR BALANCE CONTRACTOR SHALL BE AABC OR NEBB CERTIFIED.
- THE CONTRACTOR SHALL INSTRUCT THE OWNER IN THE OPERATION OF EQUIPMENT & PROVIDE THE OWNER WITH A COMPLETE SET OF OPERATING INSTRUCTIONS FOR EQUIPMENT INSTALLED UNDER HIS CONTRACT.
- THE WORK SHALL BE GUARANTEED AGAINST ALL DEFECTIVE MATERIALS & EQUIPMENT FOR A PERIOD OF ONE YEAR AFTER ACCEPTANCE. THE CONTRACTOR SHALL MAKE ALL NECESSARY CORRECTIONS WITHOUT COST TO THE OWNER.

DUCT LEGEND



FIRST FLOOR - HVAC BASE BID
1/4" = 1'-0"

BCE
BEDINGER
CONSULTING
ENGINEERS
5641 MERCHANTS CENTER BLVD, STE A104
KNOXVILLE, TENNESSEE 37912
T 865.637.8339 • F 865.523.8186
BCE1946.COM

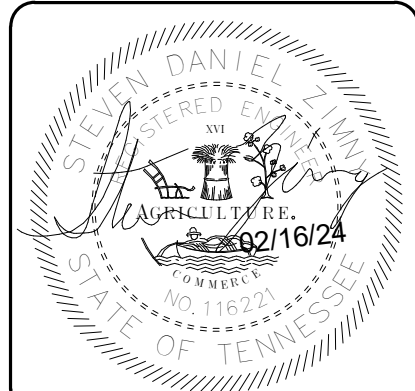
Proposed Addition for:
WEST RIDGE HIGH SCHOOL
380 Lynn Road, Blountville, TN 37617

Cain Rash West
Architects

130 Regional Park Dr.
Kingsport, TN 37660
Phn (423) 349-7760
Fax (423) 349-7413
www.grcinc.com

THIS DRAWING AS PREPARED BY CainRashWest Architects SHALL BE USED FOR THE SPECIFIC IDENTIFIED PROJECT ONLY. THIS DRAWING IS THE PROPERTY OF CainRashWest Architects AND SHALL BE RETURNED PER THEIR REQUEST.

no.	date	rev. description
1	02/16/24	ADDENDUM 1



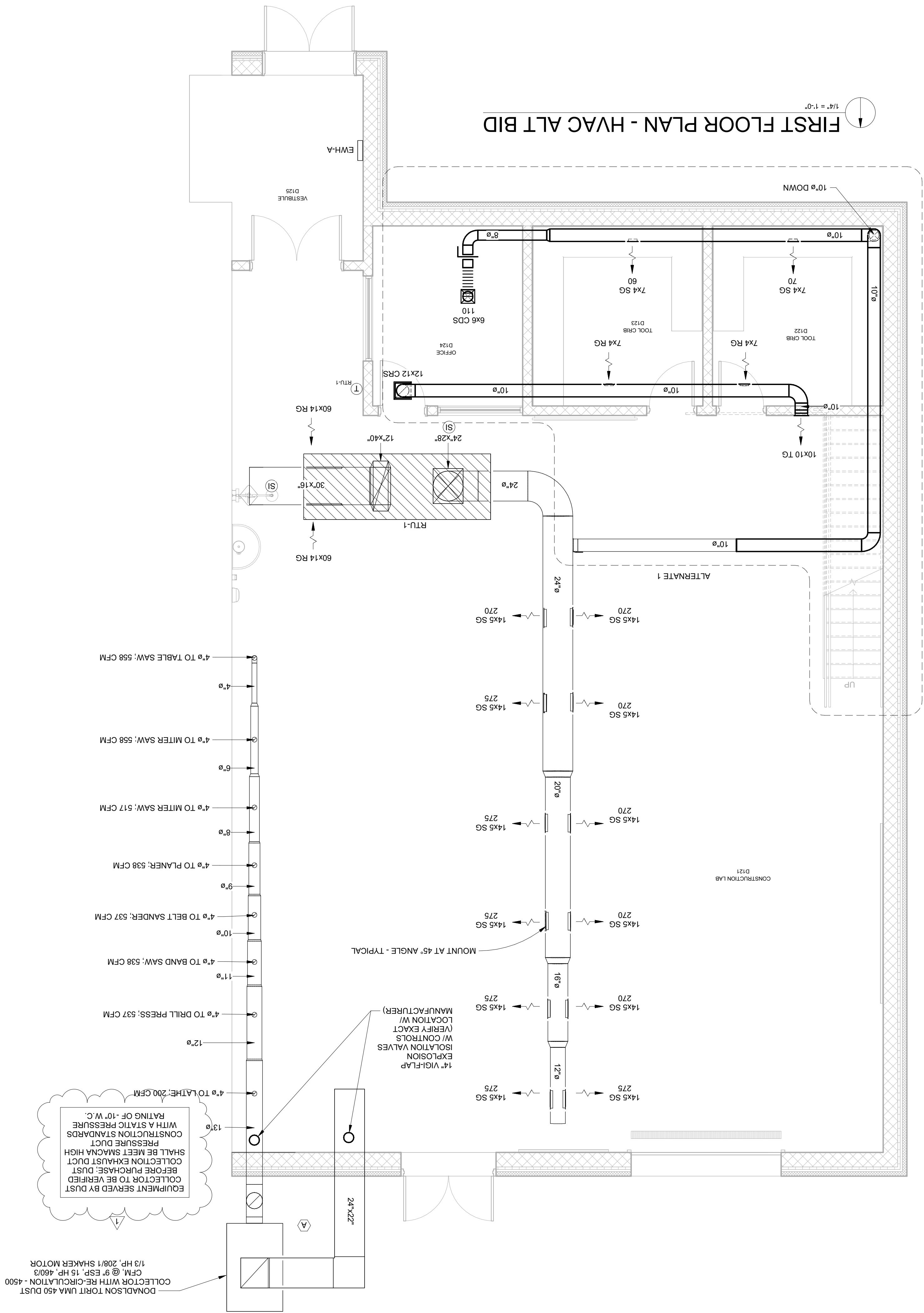
Issued Date	02/07/24
Checked by	SDZ
Drawn by	CJA
Project number	202337

FIRST FLOOR PLAN - HVAC

M-10

FIRST FLOOR PLAN - HVAC ALT BID

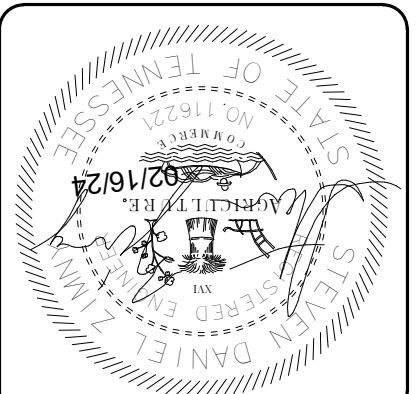
1/4" = 1'-0"



M-11

FIRST FLOOR
PLAN - HVAC
Copy 1

Issued Date	02/07/24
Checked by	SDZ
Drawn by	CJA
Project number	202337



no.	date	rev. description
1	02/16/24	ADDENDUM 1

THIS DRAWING AS PREPARED BY CONTRACTOR ARCHITECTS SHALL BE USED FOR THE SPECIFIC IDENTIFIED PROJECT ONLY. THIS DRAWING IS THE PROPERTY OF CONTRACTOR ARCHITECTS AND SHALL BE RETURNED PER THEIR REQUEST.

130 Regional Park Dr.
Kingsport, TN 37660
Phn (423) 349-7760
Fax (423) 349-7413
www.grcinc.com

Cain Rash West Architects

Proposed Addition for:

WEST RIDGE HIGH SCHOOL

380 Lynn Road, Blountville, TN 37617

SECTION 095113 - ACOUSTICAL PANEL CEILINGS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes:
 - 1. Acoustical panels and exposed suspension systems for ceilings.
 - 2. Acoustical ceiling baffles.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Samples: For each exposed product and for each color and texture specified, 6 inches in size.
- C. Samples for Verification: For each component indicated and for each exposed finish required, prepared on Samples of size indicated below.
 - 1. Acoustical Panel: Set of 6-inch- square Samples of each type, color, pattern, and texture.
 - 2. Exposed Suspension-System Members, Moldings, and Trim: Set of 6-inch- long Samples of each type, finish, and color.

1.4 INFORMATIONAL SUBMITTALS

- A. Coordination Drawings: Reflected ceiling plans, drawn to scale, on which the following items are shown and coordinated with each other, using input from installers of the items involved:
 - 1. Suspended ceiling components.
 - 2. Structural members to which suspension systems will be attached.
 - 3. Size and location of initial access modules for acoustical panels.
 - 4. Items penetrating finished ceiling including the following:
 - a. Lighting fixtures.
 - b. Air outlets and inlets.
 - c. Speakers.
 - d. Sprinklers.
 - e. Access panels.

5. Perimeter moldings.

B. Product Test Reports: For each acoustical panel ceiling, for tests performed by manufacturer and witnessed by a qualified testing agency.

C. Field quality-control reports.

1.5 CLOSEOUT SUBMITTALS

A. Maintenance Data: For finishes to include in maintenance manuals.

1.6 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Acoustical Ceiling Panels: Full-size panels equal to 2 percent of quantity installed.

2. Suspension-System Components: Quantity of each exposed component equal to 2 percent of quantity installed.

3. Hold-Down Clips: Equal to 2 percent of quantity installed.

1.7 QUALITY ASSURANCE

A. Testing Agency Qualifications: Qualified according to NVLAP for testing indicated.

B. Source Limitations:

1. Acoustical Ceiling Panel: Obtain each type from single source from single manufacturer.

2. Suspension System: Obtain each type from single source from single manufacturer.

C. Mockups: Build mockups to verify selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.

1. Build mockup of typical ceiling area as shown on Drawings.

2. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

D. Surface-Burning Characteristics: Comply with ASTM E 84; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

1. Flame-Spread Index: Comply with ASTM E 1264 for Class A materials.

2. Smoke-Developed Index: 50 or less.

E. Fire-Resistance Ratings: Comply with ASTM E 119; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

1. Indicate design designations from UL's "Fire Resistance Directory" or from the listings of another qualified testing agency.

- F. Seismic Standard: Provide acoustical panel ceilings designed and installed to withstand the effects of earthquake motions according to the following:
 - 1. CISCA's Guidelines for Systems Requiring Seismic Restraint: Comply with CISCA's "Guidelines for Seismic Restraint of Direct-Hung Suspended Ceiling Assemblies-- Seismic Zones 0-2."

1.8 DELIVERY, STORAGE, AND HANDLING

- A. Deliver acoustical panels, suspension-system components, and accessories to Project site in original, unopened packages and store them in a fully enclosed, conditioned space where they will be protected against damage from moisture, humidity, temperature extremes, direct sunlight, surface contamination, and other causes.
- B. Before installing acoustical panels, permit them to reach room temperature and a stabilized moisture content.
- C. Handle acoustical panels carefully to avoid chipping edges or damaging units in any way.

1.9 FIELD CONDITIONS

- A. Environmental Limitations: Do not install acoustical panel ceilings until spaces are enclosed and weatherproof, wet work in spaces is complete and dry, work above ceilings is complete, and ambient temperature and humidity conditions are maintained at the levels indicated for Project when occupied for its intended use.
 - 1. Pressurized Plenums: Operate ventilation system for not less than 48 hours before beginning acoustical panel ceiling installation.

1.10 COORDINATION

- A. Coordinate layout and installation of acoustical panels and suspension system with other construction that penetrate ceilings or is supported by them, including light fixtures, HVAC equipment, fire-suppression system, and partition assemblies.

PART 2 - PRODUCTS

2.1 ACOUSTICAL PANELS ~~ACT-1 through ACT-5~~

- A. Basis-of-Design Products: Subject to compliance with requirements, provide Basis-of-Design products indicated on Drawings, or a comparable product by one of the following:
 - 1. Armstrong World Industries, Inc. (Basis-of-Design).
 - a. Products: As indicated on Interior Finish Legend on Drawings.
 - 2. CertainTeed Corp.

3. Rockfon LLC.
4. USG Interiors, Inc.; a subsidiary of USG Corporation.

- B. Glass-Fiber-Based Panels: Made with binder containing no urea formaldehyde.
- C. Acoustical Panel Standard: Provide manufacturer's standard panels of configuration indicated that comply with ASTM E 1264 classifications as designated by types, patterns, acoustical ratings, and light reflectances unless otherwise indicated.
- D. Color: As indicated on Room Finish Legend on Drawings.
- E. Edge/Joint Detail: As indicated on Room Finish Legend on Drawings.
- F. Modular Size: As indicated on Room Finish Legend on Drawings.

2.2 ACOUSTICAL CEILING CANOPIES ACC-1

- A. Basis-of-Design Products: Subject to compliance with requirements, provide Basis-of-Design products indicated on Drawings, or a comparable product by one of the following:
 1. Armstrong World Industries, Inc. (Basis-of-Design).
 - a. Products: Acoustical ceiling panels ACC-1 is to be Armstrong School Zone Fine Fissured panels as the Basis of Design.

~~2.3 ACOUSTICAL CEILING TRIM AXT-1 through AXT-2~~

- ~~A. Basis of Design Products: Subject to compliance with requirements, provide Basis of Design products indicated on Drawings, or a comparable product by one of the following:
 - ~~1. Armstrong World Industries, Inc., Axium Classic (Basis of Design).
 - ~~a. Products: As indicated on Room Finish Legend on Drawings.~~~~~~
- ~~B. Color: As indicated on Room Finish Legend on Drawings.~~
- ~~C. Modular Size, Shapes and Profile: As indicated on Room Finish Legend on Drawings.~~
- ~~D. Accessories: Provide prefabricated pockets for accent lighting.~~

~~2.4 METAL SUSPENSION SYSTEMS, GENERAL~~

- ~~A. Basis of Design: Subject to compliance with requirements, provide Basis of Design products indicated on Drawings, or a comparable product by one of the following:
 - ~~1. Armstrong World Industries, Inc. (Basis of Design).~~
 - ~~2. CertainTeed Corp.~~
 - ~~3. Chicago Metallie, Inc.~~~~

- ~~4. Hunter Douglas~~
- ~~5. USG Interiors, Inc.; a subsidiary of USG Corporation.~~

~~B. Metal Suspension System Standard: Provide manufacturer's standard direct hung metal suspension systems of types, structural classifications, and finishes indicated that comply with applicable requirements in ASTM C 635/C 635M.~~

~~C. Attachment Devices: Size for five times the design load indicated in ASTM C 635/C 635M, Table 1, "Direct Hung," unless otherwise indicated. Comply with seismic design requirements.~~

~~D. Wire Hangers, Braces, and Ties: Provide wires complying with the following requirements:~~

- ~~1. Zinc Coated, Carbon Steel Wire: ASTM A 641/A 641M, Class 1 zinc coating, soft temper.~~
- ~~2. Stainless Steel Wire: ASTM A 580/A 580M, Type 304, nonmagnetic.~~
- ~~3. Nickel Copper Alloy Wire: ASTM B 164, nickel copper alloy UNS No. N04400.~~
- ~~4. Size: Select wire diameter so its stress at three times hanger design load (ASTM C 635/C 635M, Table 1, "Direct Hung") will be less than yield stress of wire, but provide not less than 0.106 inch diameter wire.~~

~~E. Hanger Rods: Mild steel, zinc coated or protected with rust inhibitive paint.~~

~~F. Angle Hangers: Angles with legs not less than 7/8 inch wide; formed with 0.04 inch thick, galvanized steel sheet complying with ASTM A 653/A 653M, G90 coating designation; with bolted connections and 5/16 inch diameter bolts.~~

~~G. Hold Down Clips: Where indicated, provide manufacturer's standard hold down clips spaced 24 inches o.c. on all cross tees.~~

2.5 METAL SUSPENSION SYSTEM

A. Wide-Face, Hot-Dip Galvanized-Steel Suspension System: Main and cross runners roll formed from cold-rolled steel sheet; prepainted, electrolytically zinc coated, or hot-dip galvanized according to ASTM A 653/A 653M, not less than G30 coating designation; with prefinished 15/16-inch- wide metal caps on flanges.

1. Structural Classification: Intermediate-duty system.
2. Face Design: Flat, flush.
3. Cap Material: Steel cold-rolled sheet.
4. Cap Finish: Painted white.

2.6 METAL EDGE MOLDINGS AND TRIM

A. Manufacturers: Subject to compliance with requirements, provide products indicated on Drawings, or a comparable product by one of the following:

1. Armstrong World Industries, Inc.
2. CertainTeed Corp.

3. Fry Reglet Corporation.
 4. USG Interiors, Inc.; Subsidiary of USG Corporation.
- B. Extruded-Aluminum Edge Moldings and Trim: Where indicated, provide manufacturer's extruded-aluminum edge moldings and trim of profile indicated or referenced by manufacturer's designations, including splice plates, corner pieces, and attachment and other clips, complying with seismic design requirements and the following:
1. Aluminum Alloy: Alloy and temper recommended by aluminum producer and finisher for type of use and finish indicated, and with not less than the strength and durability properties of aluminum extrusions complying with ASTM B 221 for Alloy and Temper 6063-T5.
 2. Baked-Enamel or Powder-Coat Finish: Minimum dry film thickness of 1.5 mils. Comply with ASTM C 635/C 635M and coating manufacturer's written instructions for cleaning, conversion coating, and applying and baking finish.
 - a. Color: As indicated on Room Finish Legend on Drawings.

2.7 ACOUSTICAL SEALANT

- A. Acoustical Sealant: Manufacturer's standard sealant complying with ASTM C 834 and effective in reducing airborne sound transmission through perimeter joints and openings in building construction as demonstrated by testing representative assemblies according to ASTM E 90.
1. Exposed and Concealed Joints: Nonsag, paintable, nonstaining latex sealant.
 2. Concealed Joints: Nondrying, nonhardening, nonskinning, nonstaining, gunnable, synthetic-rubber sealant.
 3. Acoustical sealant shall have a VOC content of 250 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, including structural framing to which acoustical panel ceilings attach or abut, with Installer present, for compliance with requirements specified in this and other Sections that affect ceiling installation and anchorage and with requirements for installation tolerances and other conditions affecting performance of acoustical panel ceilings.
- B. Examine acoustical panels before installation. Reject acoustical panels that are wet, moisture damaged, or mold damaged.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Measure each ceiling area and establish layout of acoustical panels to balance border widths at opposite edges of each ceiling. Avoid using less-than-half-width panels at borders, and comply with layout shown on reflected ceiling plans.

3.3 INSTALLATION OF ACOUSTICAL PANELS AND SUSPENSION SYSTEM

- A. General: Install acoustical panel ceilings to comply with ASTM C 636/C 636M and seismic design requirements indicated, according to manufacturer's written instructions and CISCA's "Ceiling Systems Handbook."
- B. Suspend ceiling hangers from building's structural members and as follows:
 - 1. Install hangers plumb and free from contact with insulation or other objects within ceiling plenum that are not part of supporting structure or of ceiling suspension system.
 - 2. Splay hangers only where required to miss obstructions; offset resulting horizontal forces by bracing, countersplaying, or other equally effective means.
 - 3. Where width of ducts and other construction within ceiling plenum produces hanger spacings that interfere with location of hangers at spacings required to support standard suspension-system members, install supplemental suspension members and hangers in form of trapezes or equivalent devices.
 - 4. Secure wire hangers to ceiling-suspension members and to supports above with a minimum of three tight turns. Connect hangers directly either to structures or to inserts, eye screws, or other devices that are secure and appropriate for substrate and that will not deteriorate or otherwise fail due to age, corrosion, or elevated temperatures.
 - 5. Secure flat, angle, channel, and rod hangers to structure, including intermediate framing members, by attaching to inserts, eye screws, or other devices that are secure and appropriate for both the structure to which hangers are attached and the type of hanger involved. Install hangers in a manner that will not cause them to deteriorate or fail due to age, corrosion, or elevated temperatures.
 - 6. Do not support ceilings directly from permanent metal forms or floor deck. Fasten hangers to cast-in-place hanger inserts, postinstalled mechanical or adhesive anchors, or power-actuated fasteners that extend through forms into concrete.
 - 7. When steel framing does not permit installation of hanger wires at spacing required, install carrying channels or other supplemental support for attachment of hanger wires.
 - 8. Do not attach hangers to steel deck tabs.
 - 9. Do not attach hangers to steel roof deck. Attach hangers to structural members.
 - 10. Space hangers not more than 48 inches o.c. along each member supported directly from hangers unless otherwise indicated; provide hangers not more than 8 inches from ends of each member.
 - 11. Size supplemental suspension members and hangers to support ceiling loads within performance limits established by referenced standards and publications.
- C. Secure bracing wires to ceiling suspension members and to supports with a minimum of four tight turns. Suspend bracing from building's structural members as required for hangers, without attaching to permanent metal forms, steel deck, or steel deck tabs. Fasten bracing wires into concrete with cast-in-place or postinstalled anchors.

- D. Install edge moldings and trim of type indicated at perimeter of acoustical ceiling area and where necessary to conceal edges of acoustical panels.
 - 1. Apply acoustical sealant in a continuous ribbon concealed on back of vertical legs of moldings before they are installed.
 - 2. Screw attach moldings to substrate at intervals not more than 16 inches o.c. and not more than 3 inches from ends, leveling with ceiling suspension system to a tolerance of 1/8 inch in 12 feet. Miter corners accurately and connect securely.
 - 3. Do not use exposed fasteners, including pop rivets, on moldings and trim.
- E. Install suspension-system runners so they are square and securely interlocked with one another. Remove and replace dented, bent, or kinked members.
- F. Install acoustical panels with undamaged edges and fit accurately into suspension-system runners and edge moldings. Scribe and cut panels at borders and penetrations to provide a neat, precise fit.
 - 1. Arrange directionally patterned acoustical panels as follows:
 - a. As indicated on reflected ceiling plans.
 - 2. For square-edged panels, install panels with edges fully hidden from view by flanges of suspension-system runners and moldings.
 - 3. For reveal-edged panels on suspension-system runners, install panels with bottom of reveal in firm contact with top surface of runner flanges.
 - 4. For reveal-edged panels on suspension-system members with box-shaped flanges, install panels with reveal surfaces in firm contact with suspension-system surfaces and panel faces flush with bottom face of runners.
 - 5. Paint cut edges of panel remaining exposed after installation; match color of exposed panel surfaces using coating recommended in writing for this purpose by acoustical panel manufacturer.
 - 6. Install hold-down clips in areas indicated, in areas required by authorities having jurisdiction, and for fire-resistance ratings; space as recommended by panel manufacturer's written instructions unless otherwise indicated.
 - 7. Install clean-room gasket system in areas indicated, sealing each panel and fixture as recommended by panel manufacturer's written instructions.
 - 8. Protect lighting fixtures and air ducts to comply with requirements indicated for fire-resistance-rated assembly.

3.4 FIELD QUALITY CONTROL

- A. Testing Agency: Engage a qualified testing agency to perform tests and inspections and prepare test reports.
- B. Perform the following tests and inspections of completed installations of acoustical panel ceiling hangers and anchors and fasteners in successive stages. Do not proceed with installations of acoustical panel ceiling hangers for the next area until test results for previously completed installations show compliance with requirements.

1. Extent of Each Test Area: When installation of ceiling suspension systems on each floor has reached 20 percent completion but no panels have been installed.
 - a. Within each test area, testing agency will select one of every 10 power-actuated fasteners and postinstalled anchors used to attach hangers to concrete and will test them for 200 lbf of tension; it will also select one of every two postinstalled anchors used to attach bracing wires to concrete and will test them for 440 lbf of tension.
 - b. When testing discovers fasteners and anchors that do not comply with requirements, testing agency will test those anchors not previously tested until 20 pass consecutively and then will resume initial testing frequency.
- C. Acoustical panel ceiling hangers and anchors and fasteners will be considered defective if they do not pass tests and inspections.
- D. Prepare test and inspection reports.

3.5 CLEANING

- A. Clean exposed surfaces of acoustical panel ceilings, including trim, edge moldings, and suspension-system members. Comply with manufacturer's written instructions for cleaning and touchup of minor finish damage. Remove and replace ceiling components that cannot be successfully cleaned and repaired to permanently eliminate evidence of damage.

END OF SECTION 095113