

MERIDIAN

COMPLIANCE GROUP, LLC

SAMPLE MECHANICAL PLAN REVIEW

Representative Client Deliverable

Sample Project

Commercial Tenant Build-Out - Northern Virginia

Illustrative report prepared for website demonstration only. No actual project or jurisdictional approval is represented.

Review Scope: Mechanical / HVAC / ventilation / exhaust / fuel-gas coordination

Code Framework: 2021 Virginia code cycle; model-code section references noted for illustration

Review Status: SAMPLE - NOT FOR CONSTRUCTION

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Commercial & Residential Building Code Consulting, Compliance & Training

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1. Review Purpose & Basis

Purpose

This sample demonstrates the organization, tone, technical depth, and closeout workflow a client can expect from a Meridian mechanical plan review. It is not a substitute for a project-specific review.

Representative Project Profile

Project Type	Commercial tenant build-out
Occupancy	Business / support spaces - illustrative only
Mechanical Systems	Packaged rooftop units, ducted supply/return, toilet exhaust, commercial kitchen exhaust, natural-gas appliances
Documents Reviewed	M0.1, M1.1, M2.1, M3.1, equipment schedules, architectural life-safety plan
Review Objective	Identify code-coordination items likely to produce permit comments, inspection failures, rework, or incomplete construction documents
Jurisdiction	Virginia - illustrative sample only

Code Basis

- 2021 Virginia Construction Code / Uniform Statewide Building Code framework, as applicable to the project.
- 2021 International Mechanical Code (IMC) model-code provisions, subject to Virginia amendments.
- 2021 International Fuel Gas Code (IFGC) model-code provisions, subject to Virginia amendments.
- Referenced standards, approved equipment listings, and manufacturer installation instructions where applicable.

Important

Meridian reviews are advisory compliance reviews. The authority having jurisdiction retains final interpretation and approval authority. Design responsibility remains with the project design professional and contractor, as applicable.

2. Executive Summary

Representative Review Outcome

Eight coordination items were identified in this sample set. The comments below are written to help a contractor or design team resolve the issue before permit resubmittal, procurement, rough-in, or final inspection.

HIGH	MODERATE	ADVISORY	TOTAL
2	4	2	8

Finding Register

ID	Topic	Priority	Primary Reference	Status
M-01	Outdoor-air calculation	High	IMC 403	Open
M-02	Exhaust / intake separation	High	IMC 501.3.1	Open
M-03	Service access	Moderate	IMC 306.1	Open
M-04	Condensate disposal	Moderate	IMC 307.2.1	Open
M-05	Rated-wall duct penetration	Moderate	IMC 607.5	Open
M-06	Commercial kitchen makeup air	Moderate	IMC 508.1	Open
M-07	Combustion-air documentation	Advisory	IFGC 304	Verify
M-08	Venting / manufacturer coordination	Advisory	IFGC 503 / listing	Verify

How to Use This Report

Resolve High items before release for permit/construction. Close Moderate items during coordinated revision. Verify Advisory items with final equipment selection, architectural details, manufacturer instructions, and AHJ requirements.

Finding M-01

Outdoor-Air Calculation Not Reconciled With Occupant Load

CLASSIFICATION	PRIORITY	DRAWING / DETAIL	CODE BASIS
Ventilation	High	M2.1 / Ventilation Schedule	2021 IMC Section 403

Observed Condition

The mechanical schedule identifies outdoor-air quantities for RTU-1 and RTU-2, but the plan set does not show the occupant-load basis, space-by-space ventilation calculation, or reconciliation between the architectural use of each space and the scheduled outdoor-air values.

Compliance Concern

Without a traceable ventilation calculation, the reviewer cannot verify that the outdoor-air rate serving each zone is consistent with the applicable occupancy and space requirements. This commonly results in plan-review comments and late balancing changes.

Recommended Resolution

Add a ventilation calculation or schedule showing each space, area, design occupant load, applicable ventilation rate, required outdoor airflow, zone/system aggregation method, and final scheduled outdoor-air quantity. Coordinate the final values with the equipment schedule and controls sequence.

Closeout Verification

Confirm revised calculations match the architectural floor plan and final equipment schedules. Verify test-and-balance values are capable of achieving the documented design airflow.

Reviewer Note

This sample finding illustrates Meridian's reporting format. Final project comments depend on approved construction documents, adopted code edition, Virginia amendments, equipment listings, manufacturer instructions, and the authority having jurisdiction.

Finding M-02

Environmental Exhaust Outlet Too Close to Outdoor-Air Intake

CLASSIFICATION	PRIORITY	DRAWING / DETAIL	CODE BASIS
Exhaust / Ventilation	High	M1.1 Roof Plan	2021 IMC Sections 501.3 and 501.3.1

Observed Condition

The roof plan locates an environmental exhaust outlet approximately 6 feet from the outdoor-air intake serving RTU-2. No approved combination termination or other exception is identified.

Compliance Concern

Environmental exhaust discharge must be located so discharged air is not readily drawn back into a ventilation system. The model code establishes separation requirements from mechanical air intakes; the depicted arrangement does not demonstrate compliant separation.

Recommended Resolution

Relocate the exhaust outlet or outdoor-air intake to provide the required separation, or submit a listed/approved configuration that satisfies the applicable exception. Coordinate architectural roof penetrations before equipment curbs and duct drops are released.

Closeout Verification

Dimension the final separation on the roof plan and verify the installed condition before final inspection.

Reviewer Note

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Finding M-03

Required Service Space Not Demonstrated at Air-Handling Equipment

CLASSIFICATION	PRIORITY	DRAWING / DETAIL	CODE BASIS
Equipment Access	Moderate	M1.1 / Mechanical Room 104	2021 IMC Section 306.1

Observed Condition

AHU-1 is shown tight to the east wall with piping and ductwork routed across the control/service side. The drawing does not dimension the clear working area required for inspection, service, repair, and replacement.

Compliance Concern

Equipment must remain accessible and have required service space at the control side. Crowded mechanical-room layouts often pass schematic review but fail when valves, piping, disconnects, or duct offsets consume the intended access zone.

Recommended Resolution

Revise the plan to preserve a clear service zone at the control side of AHU-1. Coordinate piping, condensate, electrical disconnect location, filter access, coil pull, and equipment removal path. Show critical clearance dimensions on the plan.

Closeout Verification

Field-verify the service side remains unobstructed after piping, controls, insulation, and electrical work are installed.

Reviewer Note

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Finding M-04

Condensate Disposal Point Not Identified

CLASSIFICATION	PRIORITY	DRAWING / DETAIL	CODE BASIS
Condensate	Moderate	M2.1 / RTU Details	2021 IMC Section 307.2.1

Observed Condition

The plans show condensate drains leaving the rooftop equipment but do not identify the final approved place of disposal or coordinate how the drain route terminates.

Compliance Concern

Cooling-coil condensate must be conveyed to an approved place of disposal with required drainage characteristics. An undefined termination creates uncertainty for the mechanical, plumbing, and roofing trades and can produce an inspection correction after equipment is set.

Recommended Resolution

Identify the complete condensate route and final disposal point. Coordinate required slope, material, traps where required by the equipment, roof penetration details, freeze protection if applicable, and plumbing receptor coordination where used.

Closeout Verification

Confirm the installed drain is continuous, properly supported, pitched to drain, and terminates at the approved location without creating a nuisance.

Reviewer Note

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Finding M-05

Duct Penetration of Rated Partition Lacks Damper Coordination

CLASSIFICATION	PRIORITY	DRAWING / DETAIL	CODE BASIS
Fire / Smoke Protection	Moderate	M2.1 / Life-Safety Plan A0.3	2021 IMC Section 607.5; coordinate with applicable building-code rated-assembly provisions

Observed Condition

A supply duct crosses a wall identified on the architectural life-safety plan as a fire-resistance-rated partition. The mechanical plan does not identify a fire damper, combination device, or documented exception at the penetration.

Compliance Concern

Duct penetrations of rated assemblies require coordination between the mechanical and building-code protection provisions. Missing damper symbols or details can result in procurement delays, inaccessible devices, or field rejection after ceilings are closed.

Recommended Resolution

Confirm the wall classification and applicable protection requirement. Where a damper is required, show the listed damper type, access location, retaining/installation detail, sleeve/duct coordination, and any required smoke detector or actuator interface. Where an exception applies, document the basis on the plans.

Closeout Verification

Verify the installed assembly matches the listed installation, remains accessible for inspection/maintenance, and is coordinated with ceiling and access-panel locations.

Reviewer Note

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Finding M-06

Commercial Kitchen Makeup-Air Balance Not Documented

CLASSIFICATION	PRIORITY	DRAWING / DETAIL	CODE BASIS
Kitchen Ventilation	Moderate	M3.1 / Kitchen Hood Schedule	2021 IMC Section 508.1

Observed Condition

The Type I hood schedule indicates 3,200 cfm exhaust. The plans identify a 2,100 cfm dedicated makeup-air unit but do not provide a building air-balance schedule showing the remaining replacement air sources and overall exhaust/replacement relationship.

Compliance Concern

Commercial kitchen exhaust operation requires coordinated makeup air, and the design documents should demonstrate the overall outdoor-air balance. Without that coordination, the space can become excessively negative, impair hood capture, create door-pressure complaints, or affect combustion appliances.

Recommended Resolution

Add a design outdoor-air balance identifying hood exhaust, toilet/general exhaust, dedicated makeup air, transfer air, HVAC outdoor air, and intended net building pressure. Coordinate the makeup-air unit controls to operate with the hood exhaust system and confirm the final HVAC capacity addresses the makeup-air load.

Closeout Verification

Commission the hood and makeup-air systems together. Verify exhaust airflow, replacement airflow, capture/containment, and intended room/building pressure under operating conditions.

Reviewer Note

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Finding M-07

Combustion-Air Method Not Shown for Gas-Fired Appliance Room

CLASSIFICATION	PRIORITY	DRAWING / DETAIL	CODE BASIS
Fuel Gas	Advisory	M1.1 / Mechanical Room 120	2021 IFGC Section 304

Observed Condition

Two natural-gas appliances are scheduled in Mechanical Room 120. The plan does not identify whether combustion air is provided from the indoor volume, outdoor openings, mechanical supply, or an engineered method.

Compliance Concern

Fuel-fired appliance installations require a documented source of combustion, ventilation, and dilution air unless the specific appliance configuration is exempt or addressed by the listing/manufacture instructions. The current documents do not establish the design method.

Recommended Resolution

Identify the appliance category and manufacturer combustion-air requirements. Provide calculations and opening/duct sizes for the selected code method, or clearly indicate the listed direct-vent/mechanical-combustion-air configuration. Coordinate exhaust systems serving or adjacent to the room.

Closeout Verification

Verify final appliance model numbers and input ratings match the design assumptions and that permanent combustion-air provisions remain unobstructed.

Reviewer Note

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Finding M-08

Gas-Vent Termination and Listing Requirements Need Final Coordination

CLASSIFICATION	PRIORITY	DRAWING / DETAIL	CODE BASIS
Fuel Gas / Venting	Advisory	M1.1 Roof Plan / Equipment Schedule	2021 IFGC Chapter 5 / appliance listing and manufacturer instructions

Observed Condition

The equipment schedule identifies high-efficiency gas-fired appliances, but the roof/wall termination details are generic and do not identify final manufacturer-required termination spacing, approved vent material, or relationship to openings and air intakes.

Compliance Concern

Venting requirements vary by appliance category, listing, vent system, and manufacturer instructions. Generic details can conflict with the selected equipment after submittal, especially where multiple intake/exhaust terminations are grouped near doors, windows, or ventilation intakes.

Recommended Resolution

Once equipment is selected, incorporate the approved vent material and termination configuration into the construction documents. Show critical clearances and coordinate the termination location with openings, outdoor-air intakes, property conditions, and other exhaust systems.

Closeout Verification

At installation, verify model-specific venting instructions are on site and that pipe material, equivalent length, fittings, support, slope, termination kit, and clearances match the listing.

Reviewer Note

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3. Recommended Closeout Workflow

Meridian Closeout Standard

The objective is not simply to identify comments. The objective is to turn each comment into a clear, traceable correction that can be verified before the next permit, procurement, or inspection milestone.

1

Triage

Address High-priority items first; identify comments affecting equipment selection, shafts, rated construction, roof penetrations, or major airflow quantities.

2

Coordinate

Resolve mechanical comments against architectural, structural, electrical, plumbing, fire-protection, and equipment-submittal information.

3

Revise

Update plans, schedules, details, and calculations so the correction is visible and internally consistent.

4

Verify

Perform a focused re-review of revised sheets and calculations before resubmittal or construction release.

5

Field Check

Use the final review set during installation and pre-inspection readiness checks to reduce field drift from the approved documents.

Deliverables a Client Can Expect

- Executive finding register with priority classification
- Sheet/detail references for each finding
- Code-basis references and concise compliance rationale
- Recommended correction path rather than comment-only reporting
- Re-review / closeout option for revised documents
- Optional pre-inspection field-readiness support

4. Sample Report Notes & Sources

Important Limitations

- This document is a representative marketing sample. It does not review or approve an actual project.
- Code references are provided to illustrate Meridian's reporting format. A real review confirms the adopted edition, Virginia amendments, project scope, occupancy, construction type, equipment, and jurisdictional requirements before comments are issued.
- Meridian compliance reviews do not replace services that must legally be performed by a registered design professional, special inspector, commissioning provider, or authority having jurisdiction.
- Final interpretation and approval remain with the authority having jurisdiction.
- Equipment listings and manufacturer installation instructions may impose requirements in addition to or more restrictive than the model-code provisions.

Code Framework References

Virginia DHCD - Codes

2021 Virginia Codes effective January 18, 2024

<https://www.dhcd.virginia.gov/codes>

Virginia DHCD - Building and Fire Regulations Archive

Virginia USBC regulations and amendments

<https://www.dhcd.virginia.gov/building-and-fire-regulations-archives>

ICC - 2021 International Mechanical Code

Model-code section references used illustratively in this sample

<https://codes.iccsafe.org/content/IMC2021P1>

ICC - 2021 International Fuel Gas Code

Fuel-gas model-code section references used illustratively in this sample

<https://codes.iccsafe.org/content/IFGC2021P1>

For Website Use

Recommended CTA placement: “See What a Meridian Review Looks Like” -> “View Sample Report” -> “Start a Review.” This sample can also be attached to proposal follow-ups and Code Desk sales conversations.

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