



MH 1708 Estimating Workflow – AI Training Guide

This guide transforms your existing takeoff videos into structured AI-training lessons and standardized estimator workflows. Each module builds on the last to create a fully documented digital estimator process.



Overview

Purpose: Train AI systems and new estimators to understand, replicate, and optimize your full takeoff and pricing workflow using standardized logic, terminology, and structure.

Training Source Videos: 1. *Building the Second Floor – Framing & Design Insights* 2. *Second Floor Joist System Overview and Planning* 3. *Roof Takeoffs and Elevation Planning* 4. *Inputting Pricing for the 1708 Exterior Unit* 5. *MH 1708 Elevation A Siding Takeoff*

Core Objectives: - Standardize takeoff processes for repeatable accuracy. - Train AI and staff to interpret patterns, materials, and plan logic. - Reduce redundant manual entry and regenerate totals automatically. - Establish a foundation for Power Automate and Excel/VBA integration.



Module 1 – Setup & Calibration

Focus: Preparing the workspace and plan environment before any measurement.

Goal: Ensure every takeoff starts from a calibrated, error-free foundation.

Tools: PlanSwift (Area & Linear Tools), Excel, Power Automate, SharePoint.

Steps: 1. Confirm correct scale on import ($\frac{1}{8}$ " per ft default). 2. Apply project template folder: 1708_Base_Template → Floors / Walls / Roof / Siding / Hardware. 3. Verify naming conventions (Elevation A/B, Interior/Exterior Units). 4. Remove unnecessary packages and export filter logic. 5. Initialize ReadyFrame constant (0.45 default) in Excel for automated reference.

AI Tag Goals: scale_verification, naming_standardization, data_filtering, template_initialization.

Common Errors: Incorrect scale, duplicate package names, missing template linkage.

Module 2 – Floor & Wall Framing

Focus: Constructing the second floor structure including joists, walls, and hardware.

Goal: Create accurate takeoffs for framing assemblies with automated quantity regeneration.

Key Elements: - 2×12 floor joists @16" O.C. - LSL rimboard integration. - Blocking 48" O.C. - MSTC40 straps, A35 connectors, LUS/HUS hangers.

Workflow Highlights: 1. Start from architectural "S7" sheet – confirm joist type & hanger schedule. 2. Use area tool for decking, linear for rimboard. 3. Label blocking zones (2×12, 48" O.C.) and mark double joist conditions. 4. Automate regeneration via macro or button-click event. 5. Save framing logic as `Component_Catalog` entry (for future automation reuse).

AI Tag Goals: `joist_logic`, `rimboard_validation`, `blocking_automation`, `hardware_insertion`.

Common Errors: - Rimboard mismatch (2×10 vs 2×12). - Missing hangers in double-joist conditions. - Manual recalculation of totals instead of automated regeneration.

Module 3 – Roof Framing & Sheathing

Focus: Calculating roof structure, fire-treated zones, and shear wall hardware.

Goal: Standardize roof takeoff logic, slope-based sheathing rules, and LS50 placement.

Core Data Points: - Elevation A: 5:12 pitch (main) / 8:12 pitch (overbuild). - Waste Factors: 15% standard / 20–25% for complex cuts. - Fire-Treated Plywood: within 4 ft of property line. - Gable sheathing: 4×8 / 4×9 panels @ 10 ft wall height.

Workflow Highlights: 1. Separate Elevations A/B into unique roof packs. 2. Apply correct pitch before measuring. 3. Tag fire-treated areas; use color code for AI visibility. 4. Insert LS50 straps (A=48" OC, B=30", D=16", F=8"). 5. Confirm soffit type: vented vs solid (per plan proximity).

AI Tag Goals: `roof_pitch_detection`, `fire_zone_mapping`, `soffit_type_classification`, `hardware_distribution`.

Common Errors: - Incorrect scale at roof plan. - Unmarked fire-treated zones. - Mixed soffit conditions in shared elevation packs.

Module 4 – Siding, Trim & Soffit

Focus: Measuring siding areas, trim runs, and soffit details for Elevation A.

Goal: Automate separation of material categories and apply standard waste logic.

Workflow Highlights: 1. Verify scale and pitch alignment (8 ft wall, 10 ft gables). 2. Area tool for SmartSide siding – apply 15% waste. 3. Linear tool for trim (5/4×4, 5/4×6, fascia, corner boards). 4. Separate vented vs solid soffits. 5. Export totals into Excel categories: - Smart Lap Siding (SF) - Smart Trim (LF) - Smart Soffit (SF) - Accessories (EA)

AI Tag Goals: siding_area_measurement, trim_classification, soffit_segmentation, waste_factor_standardization.

Common Errors: - Double-counted gables. - Missed fire-rated soffit under 4 ft proximity rule. - Trim overlap mismatch (e.g., 5/4×6 used instead of 5/4×4).

Module 5 – Pricing Integration

Focus: Cleaning, consolidating, and pricing material exports.

Goal: Streamline manual entry and reduce redundancy across Exterior/Interior scopes.

Workflow Highlights: 1. Export to Excel using “Use SKU to consolidate tallied items.” 2. Filter by Exterior vs Interior scope. 3. Apply formulas: - ReadyFrame = $\text{SquareFootage} * 0.45$ - Ext Price = $\text{Qty} * \text{Unit Price}$ 4. Auto-check for missing unit prices (highlight blank cells red). 5. Duplicate and adjust Interior Units sheet (apply 0.5x or 2x logic where needed).

AI Tag Goals: pricing_cleanup, scope_filtering, readyframe_calc, cost_validation.

Common Errors: - Misapplied scope filters. - Duplicate ReadyFrame constants. - Missing hangers or hardware in export sheet.

Module 6 – QA & Continuous Improvement

Focus: Validation, optimization, and iterative AI training.

Goal: Establish automated QA loops to verify material accuracy and learn from corrections.

Verification Checklist: - [] All elevations calibrated and named correctly. - [] Hardware matches structural sheet (A35 → LS50 substitutions logged). - [] Fire-treated sheathing only where required. - [] Waste %s consistent across trades. - [] No double-counted or orphan assemblies.

Automation Opportunities: - Power Automate triggers on file export → auto QA summary. - VBA macro: “Regenerate Totals + Color-Code Errors.” - AI model retraining every 10 projects using logged corrections.

AI Tag Goals: error_detection, pattern_learning, process_refinement.

Next Steps

1. **Refine Inputs:** Segment each video into 2–4 minute topic clips for micro-learning.
2. **Add Reference Tables:** Include SKUs, hardware lists, and waste factors in a linked Excel knowledge base.
3. **Train the AI:** Upload labeled datasets per module with voiceover transcription for contextual cues.
4. **Integrate Power Automate:** Use Flow triggers to pull data from Excel exports for training reinforcement.

Long-Term Vision

- Every takeoff video becomes an automated, teachable blueprint.
- The AI learns framing, siding, and pricing logic directly from your voice and cursor behavior.
- Estimators can interact with an AI assistant trained on your process, asking:

“Show me the LS50 spacing logic for Elevation A roofs.”

“What’s the ReadyFrame multiplier for the 1708 plan?”

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