🧠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 (⅛″ 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:

6. Smart Lap Siding (SF)

7. Smart Trim (LF)
8. Smart Soffit (SF)
9. 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:

   4. ReadyFrame = `SquareFootage * 0.45`

   5. Ext Price = `Qty * Unit Price`
   6. Auto-check for missing unit prices (highlight blank cells red).
   7. 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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Version: v1.0
Date: October 2025