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CHAPTER 1. DATA

- 1-1 PURPOSE. Fast, accurate cost estimates depend on valid preassembled data.
- A. The Chief of the cost staff is responsible for seeing that information is collected and recorded.
    - 1) Identify and store for quick retrieval of particular information.
    - 2) File using the 16 trade divisions of the Uniform System for Construction Specifications, Data Filing and Cost Accounting.
  - B. Review data annually or more often to update or remove obsolete information.
  - C. Field survey all data at least annually to obtain current information from the construction industry. Surveys may be by interview, telephone or correspondence.
    - 1) Sources are general contractors, subcontractors, material suppliers, equipment lessors, developers, mortgagees, architects and engineers, bonding companies, utility companies, testing labs, local and state agencies, and other Federal agencies.
    - 2) Develop a wide range of information sources and establish a working rapport to assure factual data.
      - a) Use tact, judgment and common sense.
      - b) Explain the purpose and use of the information and the mutual benefit.
      - c) Assure the source of information will be kept confidential.
- 1-2 DATA BANKS. Collect and maintain project cost data for later use in making project cost estimates based on comparability.
- A. Use a numerical coding system for the Field Office to describe the work in each trade item shown on Form FHA 2326, Project Cost Estimate. Base the code on the 16 trade divisions of the Uniform System for Construction specifications, Data Filing and Cost Accounting.

- (1-2)
    - 1) Assign code 00 for the most typical material, labor and equipment composition of a trade item.
    - 2) Code significant variations from the most typical, 01 through 99. Variations will frequently be combinations of other coded descriptions.
    - 3) Example:  
  
Division 11, Trade Item-Appliances  
00 - Refrigerator, range and oven  
01 - Garbage disposal plus 00  
02 - Dishwasher plus 00  
03 - Dishwasher plus 01  
04 - Range hood plus 00  
05 - Range hood plus 01  
06 - Range hood plus 03
    - 4) Avoid elaborate and extensive codes or coding for minor variations.
    - 5) A single coding system for each trade item is desirable, but it may be necessary to establish separate coding systems for certain project types and structural systems to describe all data.
  - B. Record data from accepted Form FHA 2328, Contractor's and/or Mortgagor's Cost Breakdown, cost certifications, and conventionally financed projects.
    - 1) Before entering a project, review the cost of all trade items. Purge any cost that is excessive according to other verified data. Do not record for data purposes any cost that is not valid.
    - 2) Make entries on Form FHA 2326. Use the numerical coding system to describe the work in each trade item for the project.
    - 3) File the Form FHA 2326 by:
      - a) Conventional or Section of the Act (202, 207, 221(d)(4), etc.).
      - b) Project type (Detached, semi-detached, row, two-story walk-up, etc.).
      - c) Structural system (wood, frame, masonry, concrete, etc.).
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(1-2) C. Review data banks

- 1) Replace Form FHA 2328 costs with certified cost after cost certification review. Include the cost effect of approved change orders in the certified data.
- 2) Enter as the effective date of the data the month and year of the actual construction start not the estimated start.
- 3) Remove data older than 4 years unless it is for a unique project type or structural system and necessary to provide comprehensive data banks.

1-3 BENCH MARKS. Develop and record costs of trade item elements, trade items, and building components typical in construction in the Field Office jurisdiction for adjusting comparables, preparation of supplemental estimates, and review of change orders and cost certifications.

A. Establish Bench Marks from data bank costs, commercial building cost data (Means, Dodge, etc.), and quotations of field sources.

- 1) Prepare a worksheet for each bench mark describing the item, data source, calculation of cost with basis of measurement, and summary.
- 2) In demolition bench marks, include the salvage value of recoverable materials.
- 3) Use typical units of measurement (i.e., square foot-gross square foot, linear foot, cubic yard, lump sum). The summary must be convertible to gross square-foot or per-unit cost for use in cost estimation.
- 4) Code each trade item in the bench mark.
- 5) Identify the effective date of the costs.

B. File bench marks alphabetically or by trade division.

C. Review bench marks annually or as often as necessary to up-date costs. The bench mark is valid as long as the cost is current. Remove a bench mark only when it is no longer useful or not current.

1-4 ALLOWANCES AND FEES. Collect information from data bank projects and field sources on typical allowances and fees in the Field Office jurisdiction. Record as lump sum dollar amounts or a percentage.

A. General Requirements is an allowance for the general contractor's Job overhead for a specific project.

- 1) Items will vary due to project type, location and site conditions. Include:
  - a) Supervision and Job site engineering.
  - b) Job office expenses including clerical wages, whether on-site or offsite, if for the project.
  - c) Temporary buildings, tool sheds, shops and toilets.
  - d) Temporary heat, water, light and power for construction.
  - e) Temporary walkways, fences, roads, siding and docking facilities, sidewalk and street rental.
  - f) Construction equipment rental not in trade item costs.
  - g) Clean-up and disposal of construction debris.
  - h) Medical and first aid supplies and temporary facilities.
  - i) Watchman's wages, security cost, and theft and vandalism insurance.

- 2) Salaries of owners, partners or officers of the general contracting firm are not part of general requirements. Actual work on the job in a trade or supervision is allowable.

B. Builder's Fee is the profit and overhead of the general contractor. Gather data on customary fee for various project types, sizes and structural systems.

- 1) General overhead is the cost of continuing operations of a building construction firm.
  - 2) Profit is the return anticipated for providing building construction services under competitive conditions. For a specific project consider:
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- (1-4)
- a) On-site construction time.
  - b) Work performed by the general contractor.
  - c) Number of subcontractors and extent of subcontract work.
  - d) Risk and responsibility.
- 3) In processing, estimate the builders fee from data as a percentage.
- a) Always compute general overhead as 2 percent of the total cost of land improvements, structures and general requirements.
  - b) Apply the remaining percentage to the same total cost to determine profit.
- 4) For projects with a Builder's and Sponsor's Profit and Risk Allowance (BSPRA), compute only the 2 percent general overhead as the builders fee. Do not include an amount for profit.
- C. Architect's Fees are the typical amounts paid professionals for design and construction contract administration (supervision).
- 1) Include information on architectural, structural, mechanical and other engineering and consultant services.
- a) Data must be convertible to a fixed fee (stipulated sum) but may be on the basis of: a percentage of construction costs; stipulated sum; hourly billing; fixed fee plus expenses; multiple of direct expenses; or any other local practice.
  - b) Separate data for design and supervision services.
- 2) In estimating the architect's fees for a specific project use data from projects similar in design and services rendered.
- a) Determine the professional services from review of the project's Owner-architect Agreement, AIA Document B1 1.
  - b) Consider all factors in the agreement that may influence the fees--such as repetition, redesign, design complexity, research, client identity, location.

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- (1-4)            c) Use the fees stated in the Agreement unless totally unreasonable in comparison with data.
- d) Document the method of estimating the fees.
- D. Bond Premium is the typical cost for various bonds required for building construction.
- 1) Record data at the rate charged.
  - 2) Use the applicable rates to calculate the cost of the bond premium for a specific project.
- E. Other Fees are the costs of various required items and services. Record data as typically a cost to either the owner or contractor.
- 1) Site and topographic surveys.
  - 2) Subsurface exploration (test borings).
  - 3) Soil tests, concrete tests, and other construction testing.
  - 4) Fees for utility taps and connections.
  - 5) Building permits and licenses.
  - 6) Fees for cost certification.
- 1-5 CONSTRUCTION TYPE. Record number of months required to construct various types of projects.
- A. Categorize this data by:
- 1) Project type.
  - 2) Structural system (A further breakdown between on-site "stick built" and factory components or modules may be made).
  - 3) Number of units.
- B. Plot the data on graphs.
- 1) Develop a graph for each project type and structural system.



- 1) Make any adjustments due to knowledge of the job, such as location, contractor, or labor and material market.
- 2) Document the method of estimating the construction time.