

A.D.0 Status of MCASES Cost ESTIMATES

A.D.1 Cost Engineering

Construction cost estimates for the Project Implementation Report (PIR) were made in the Micro Computer Aided Cost Estimating System software (MCACES) version 5.31. The basis of the cost estimates was the scope of work provided by the engineering technical lead. The scope of works may provide a layout of the component features, a description of the major features, geotechnical assumptions, special considerations, quantity calculations, and specific reference to particular structures. Cost estimates for spillways, culvert structures, and pump plants were produced from descriptions provided in the SOW.

A.D.2 Earthwork Cost Estimates

The earthwork structures levees, canals, berms, swales and other general earthwork employed standard construction techniques and standard equipment. The cost estimates for this work relied on estimates of soil parameters (swell, compaction, density) and equipment manufactures' data. The cost estimates rely the provided scope of work for estimates of suitable and unsuitable material, rock and overburden, and swell and compaction factors. Earthwork quantities were calculated from dimension parameters provided. The new levee is chiefly constructed from material excavated from an internal borrow canal. Other sources of borrow include a seepage canal on the eastern side of the impoundment, material on the surface in the southeastern corner, and miscellaneous excavations associated with the structures.

A.D.3 Pump Plant Cost Estimates

Pump plant cost estimates were produced by incorporating data provided by designers relating to pump capacity, number of pumps. The data provided served as the basis for modifying a standard cost estimate for a pump plant of the same type. The particular standard pump plant cost estimate was derived from the government estimate of cost and the contract cost for pump plants under construction or recently completed.

A.D.4 Culvert Cost Estimates

Culvert estimates were produced by incorporating data provided by designers relating to culvert length, number of barrels, diameter, and gates. The data served to modify a culvert estimate based on a standard culvert design produced for the WPA feasibility study. The standard cost estimate was a developed cost estimate using MCACES cost data, recent material quotes, and historical data.

A.D.5 Other Structures

Other structures (Weirs) had cost estimates developed from MCACES cost data, recent material quotes, and historical data. The quantities were developed from descriptions of the structures.

A.D.6 Planning Engineering and Design

Planning, engineering and design cost were estimated by the various engineering functions and provided for inclusion in the cost estimate.

A.D.7 Construction Management

Construction management cost is 7.6% of contract cost and was an estimate provided by Construction Operations.

A.D.8 Contingency

A contingency cost of 20% of construction cost was used for all cost codes other than Pump Plant. Fifteen percent is applied to pump plant cost. No statistical analysis of cost risk was performed. The major factors influencing the contingency cost are:

1. The estimate of rock quantity and usable material percentage. The rock elevations were provided and were based on available borings data. Normal variations are expected as the subsurface investigations are made.
2. Haul distances for trucking operations. Haul distances were analyzed inasmuch as identifying reasonable areas with the required carrying capacity. Normal variances are expected in routing.
3. The structure construction quantities. The structure quantities were calculated from standard designs. Normal variations are expected in site-specific designs.
4. The levee and canal alignments and cross sections. A change that would affect quantity is not anticipated. Normal design variances are expected as more specific site data is acquired.
5. Clear and grub quantities and exotic removal. The spatial extent and character of the vegetation is somewhat defined. Normal variances are expected as more specific site data is acquired. Normal design variances are expected and normal contingency values are used.
6. A contingency of 15% is applied to pump plant cost. The costs of pump plants are comparable to recent contracts. Normal design variances are expected and normal contingency values are used.

A.D.9 Contractor Cost

A contractor cost of 26.6% is used in the estimate. The contractor costs include field overhead, home office expense, profit and bond cost.

A.D.10 Equipment Cost

All equipment costs are from EP 1110-1-8 Construction Equipment Ownership and operating Expense Schedule. The costs have been adjusted for fuel expense.

A.D.11 Labor Rates

Labor rates are derived from general decision data for central and south Florida counties.

A.D.12 Recreation Costs

See Section 6.1.5 of the main report for description and cost estimate of Site 1 Impoundment recreation features.

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