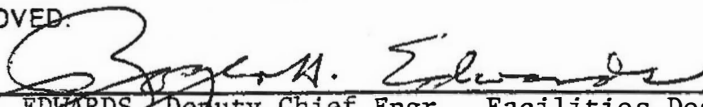


TO: SUPERSEDED BY EI 94-014 EFFECTIVE 10/20/94	ENGINEERING INSTRUCTION NEW YORK STATE DEPARTMENT OF TRANSPORTATION			
	SUBJECT: ENGINEER'S ESTIMATE Subject Code: 7.26-2-21.05			
Distribution:	<input checked="" type="checkbox"/> Main Office	<input checked="" type="checkbox"/> Regions	<input checked="" type="checkbox"/> Special	Code: <u>84-12</u>
APPROVED:	 R. H. EDWARDS, Deputy Chief Engr., Facilities Design Div.			Date: <u>Feb. 21, 1984</u> Supersedes:

Recently we were audited by FHWA under Certification Acceptance and they made a recommendation that we review our Engineer's Estimating procedure. The purpose of this Engineering Instruction is to clarify the intent of the Engineer's Estimate and to modify Chapter 21 of the Highway Design Manual to incorporate the new wording. When the next revision to the Highway Design Manual is issued, this revision will be included.

A summary of the changes follows.

Pg. 21-32

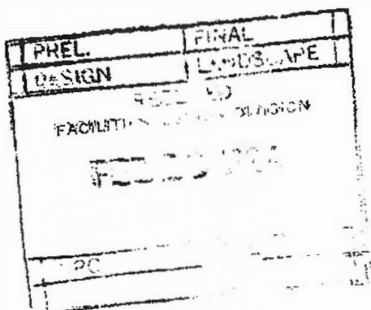
Section 21.04 Special Notes
 Unchanged

Section 21.05 Estimate
 Added material

Pg. 21-33 (Form C114-1)
 Unchanged

Pg. 21-34
 Delete last paragraph.

Pg. 21-35
 Delete first three paragraphs.



21.04 SPECIAL NOTES

Special notes pertaining to the Contract will be included in the proposal. However, notes which relate to specific plan details should be placed with the details on the plans. The Main Office will insert commonly used special notes. The Region will furnish all other special notes for proposal use including a list of specialty items when required.

Special notes must be submitted on 8-1/2" x 11" original bond paper or good Xerox copies with a 1" all-around border. More than one special note may be shown on the same sheet. Each special note must have a title.

The use of Special Notes which significantly modify existing specifications should be avoided by the use of a Special Specification.

Manufacturers' names should be avoided in special notes in the proposal and on the plans. If trade names cannot be avoided, the same procedure should be followed as if a proprietary Special Specification were being prepared.

21.05 ESTIMATE

The Engineer's Estimate serves several purposes. It provides information for determining whether funds are available to build the project. It provides a basis for reviewing bids to determine whether contracts should be awarded. It provides a format for charging costs to appropriate fiscal categories.

The Engineer's Estimate should be the Project Designer's best estimate of a reasonable cost for doing the contract work under free, competitive market conditions. Estimated prices should reflect the conditions which will prevail on the specific project at the time the work is to be done. The Weighted Average Bid Prices book is based on low bids for past projects with widely varying conditions. Therefore, these prices should be used only with discretion and with appropriate adjustments for unusual conditions and current inflation/deflation rates. Where appropriate adjustments to average bid prices cannot be determined, the unit prices should be established by an analysis based on anticipated labor, equipment and material costs.

Current inflation/deflation rates can be determined by referring to the Federal Highway Administration's quarterly publication on price trends or to price information in the Engineering News Record. Also, compare minimum wage rates in recent contract proposals with those in previous contracts. Unusual project conditions which warrant consideration in determining prices include such things as:

Quantity - Generally unit bid prices increase as quantities decrease.

Location - Unit bid prices may vary depending on the location of the work. For example, it usually costs more to remove a tree along an urban street than in a rural area.

Nature of work - Unit prices depend on the construction methods that must be used to accomplish the work. It costs more per cubic yard to excavate a shallow ditch with a backhoe than to remove the same amount of material from a large excavation with a scraper.

Contract restrictions - Any restriction placed on the Contractor's operations is likely to result in higher bid prices. For example, unit costs for paving will be higher where paving operations are restricted to accommodate traffic if these restrictions reduce the production rate of the paving crew.

Obviously it is not reasonable to expect the Engineer's Estimate to be an accurate prediction of the low bid, particularly where there is a wide range of bidders. However, ordinarily it should fall within the median range of the bids. If it does not, consideration should be given to the possibility of an error in the Engineer's Estimate or a constraint in the competitive bidding process.

An Estimate Title Sheet, Figure 21-H, will be used with all estimates including all breakdown estimates. With combined estimates or if the project involves one estimate only, the title sheet should be filled out completely except for the spaces for F. A. Project and Contract Numbers. With breakdown estimates, the data pertinent only to the particular estimate should be given. The information needed is self-explanatory except the spaces labeled "Type of Estimate" and "Type of Work". Type of Estimate identifies the estimate as combined, road, structure, utility, etc. Type of work is a description of the work to be performed. The sheet for the combined estimate should give the project category such as construction, reconstruction, safety improvement, reconditioning and preservation, landscaping, etc. On title sheets for the breakdown estimates, Type of Work should be described as the actual work to be performed and the location (by station, if possible). For example, the term road, roadway or highway is not adequate. Give the location and stations as well. For such shares as non-participating bridge items, state what they comprise such as safety walk, etc.

When an estimate is created under the Engineer's Estimate Program Create, the following requirements should be adhered to:

- A. When Capital Project Identification Numbers are assigned they are basically a six digit number. If two or more contracts are to be prepared and constructed under the same basic six digit CPIN, they are differentiated by the use of (01), (02), etc. added to the basic six digit CPIN. In order to separate the estimates in the computer, an alpha designation is used within the basic six digit CPIN for positive identification. (Example: 12345A would identify CPIN 123456(01), 12345B would identify 123456(02) etc.) When the estimate is entered into the computer, both numbers will be used. Computer Project Identification Number is entered with Card Type 1 on Form HC205-1 in columns 3 to 8 (12345A). Beginning in column 14 the CPIN 123456(01) should be entered with appropriate Project Description.
- B. When the designer has completed all work on the estimate and the estimate computer files have been correspondingly finalized, the Region will TRANSFER ownership of estimate computer files to Final Plan Review Bureau via computer terminal using Program TRANSFER. Output from this program will automatically provide information pertaining to: Capital Project Identification Number, COMPUTER Project Identification Number, Dollar value, Letting date, Number of Items, Number of Shares, Designer's name/Telephone number and Project Description as entered by Program CREATE.

This transfer is to be sent no later than the date of PS&E transmittal, and preferably a week earlier. Upon transfer receipt, the Final Plan Review Bureau will obtain estimate output from the computer files. (No changes to the estimate computer file are to be made by the Region office subsequent to executing program transfer). In order to obtain satisfactory estimate output, all Special Specifications must have been previously approved and entered into the computer file.

- C. Item numbers shall not be altered in any manner, shape or form from that produced by the computer. Should a substitute approved item number be substituted for an unapproved item number to facilitate estimate production, it shall be so indicated in the PS&E Letter of Transmittal second under remarks in program TRANSFER.
- D. Item 699.01, Mobilization, shall be added to the contract with percentage allocation to individual shares in accordance with the ratio of share dollar value to combined estimate. If a fixed percentage (or no percentage) must be used in a particular share due to agreed participation in share cost (betterments, private utility work, Thruway participation, etc.), such percentage must be given in the PS&E Transmittal Letter.

The following numbered items describe the make up of the estimate:

- 1. A total combined estimate is required, including the total contract quantity of every item, to be shown in significant figures appropriate for the total amount of the particular item, as exhibited in the plan summary of quantities. (Reference: Section 21.02.06). Quantities in the combined estimate (which will also appear in the bid proposal) shall not be carried into tenths, except for items of very small quantity and very high unit cost, such as Seeding on Special Areas.

This estimate will show item number, description, unit of payment, quantity, estimated price and amount for each item. Computer printouts of the total combined estimate and all shares will be obtained by the Main Office. (Reference: Engineer's Estimate Program Report).

- 2. Road shares are required for all work except that included in bridge or utility shares. A separate road share must be included for each category under paragraphs numbered 6 through 12.
- 3. Shares for bridges excluding utilities should be in accordance with shares needed to comply with the "Bridge Monthly Progress Report". If this report does not list a structure you are working on, than there will be no need for a separate structure share.
- 4. Public utilities are to be set up in separate shares for each category 6 through 11. If no betterments are involved, all public utilities shall be combined within each of these general categories. If there is a betterment involved, the work must be apportioned between two separate but related shares for each agency having betterment work. One share shall contain only that portion of the total betterment quantities for which the requesting agency is responsible. The other share shall contain the remainder of the total betterment quantities for which the State is (continued on Page 21-36).