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8 May 1963


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Declass Review, NIMA/DoD

Main P. O. Box 1031
Washington, D. C.


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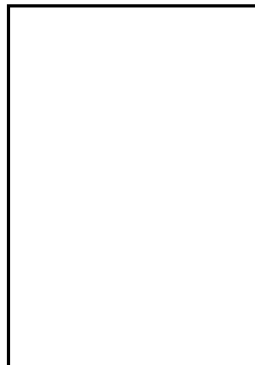
Dear Mr. 

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In accordance with your request to our Mr.  we are pleased to submit the following information which supplements our proposal of 24 January 1963 for a High Speed Precision Coordinatograph.

We have thoroughly reviewed our earlier cost estimates for this project and find in general that the estimates are still current in total, though there are a few specific changes in the breakdown. As you requested we have added in our estimates shipping costs involved in changing the F. O. B. point to Washington, D. C. In addition, we found we inadvertently omitted selling expenses from our previous estimates, and since our earlier proposal we have received a contract for similar equipment which will allow us to make some minor savings in both labor and material on the project. A complete breakdown of our present cost estimate is attached. A summary of the estimated costs is as follows:

- 1. Direct labor
- 2. Burden  of Item 1)
- 3. Direct Material
- 4. Other direct costs
- 5. Selling expense
- 6. Total direct cost and burden



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7. G & A of Item 6)
8. Total estimated cost
9. Fixed fee

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As we have previously indicated, we strongly recommend a CPFF-type contract for this program and our detailed cost-estimate breakdown and the above summary is based upon this type of contract. There are two important factors which support this recommendation in the present program.

First, in the design of a piece of equipment of this type, considerable latitude exists for trading one characteristic for another, for example, accuracy vs. speed, flexibility vs. operating simplicity, etc. We have already done some of this type of trade-off in discussions with your technical personnel and our discussions have indicated that further study may very well lead to further optimization of design specifications. While we do not expect such changes to affect the cost of the equipment markedly, we strongly believe that such trade-off decisions should be made in close consultation with your people to fit your problems and objectives as we both come to understand the over-all problem better. Otherwise we will be forced at this point to freeze a set of specifications when we know least about your applications and you know least about the benefits and penalties of individual specification items.

Second, we must necessarily assume a more conservative attitude in our project management under a fixed-price contract. Under a flexible price contract, it is often desirable to by-pass some experimental breadboard experimentation and leap in one step from first design to final hardware. The decision to do so in any particular case is made only after adequate consultation with the project sponsor and full agreement that the promise of important savings in by-passing expensive and time-consuming breadboard work outweighs the ever present risk of serious error and consequent increased costs. Our CPFF estimate is based upon our best estimate of the net results to be obtained by a judicious amount of such corner-cutting, some of which will be successful; some of which will not.

In examining the program in terms of risks which are reasonably related to the resources of , however, we must plan for a heavy increase in

breadboard work to minimize the probability of expensive changes in final hardware. Thus, the probable cost of the program is increased, though the range of probable costs is materially reduced (the possible minimum cost is increased while the possible maximum cost is decreased).

In the light of the above, our fixed-price cost estimate differs from our CPFF estimate as follows:

1. Direct Labor - The most difficult design task in this project is in the area of servomechanism design. Extensive breadboarding of servo designs will be required to assure that contract performance specifications are met. Furthermore, some additional labor in the areas of mechanical design and system testing must be planned. Altogether, these factors result in an increase of our estimate of engineering staff labor from 3220 man hours to 4000 man hours, drafting labor from 1850 to 2100 man hours, technician labor from 900 man hours to 1050 man hours, and machinist's labor from 350 man hours to 400 man hours.
2. Material - Our estimates for material would also have to be increased to cover breadboard materials. Again, the major portion of this increase would be utilized in the servo area and would amount to approximately . Thus, our fixed-price materials estimate is \$

The above changes lead to a fixed price of based on the following breakdown:

1. Direct labor
2. Burden of Item 1)
3. Direct material
4. Other direct costs
5. Selling expense
6. Total direct cost and burden
7. G & A (10% of Item 6)
8. Total estimated cost
9. Profit
10. Price

Under either of the above programs we are including our standard manuals, drawings, list of recommended spare parts, personnel training, and installation as follows:

Manuals - We will supply six copies of our operating and maintenance manual containing full operating instructions, discussion of the theory of operation, description of actual circuits, illustrative diagrams, recommended maintenance procedures, etc.

Drawings - We will supply two sets of prints of working drawings used to construct the plotter system. These will include mechanical layouts and details sufficient for operation and maintenance of the equipment, and complete electrical schematics, wiring diagrams, and block diagrams.

List of Recommended Spare Parts - We will supply a list of spare parts recommended for operation and maintenance of the system. This list will include both parts and supplies normally expected to be consumed in operation of the equipment with adequate data to permit procurement and such special parts as circuit modules which are not actually consumed but which greatly facilitate rapid trouble diagnosis and repair.

Personnel Training - We will provide training programs for both operating and maintenance personnel. Training for maintenance personnel will include approximately one week of instruction for one or two of your personnel. This program may be arranged at your convenience either at [] during the final phases of system check-out or at your plant during the installation period. STATOTHR

Installation - [] will provide all necessary technical personnel to supervise the installation of the equipment at the customer's facilities. All necessary installation instructions and power requirements needed to provide the proper space, service facilities, and personnel at the installation will be furnished to the customer in advance of the estimated delivery of the system. STATOTHR

Acceptance - Before shipment of the completed equipment to the customer, [] will perform such tests and operations as are required to demonstrate that the system meets all of the specifications set forth in this proposal. Acceptance STATOTHR

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of the system from [redacted]. will be made in Washington, D. C. The specific programs and procedures to be used in the conductance of these acceptance tests will be determined jointly by customer and [redacted], representatives before the actual tests.

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Our present major DOD and other Government contracts include the following:

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| Customer | Contract No. | Item description |
|--|--------------|--|
| Army Map Service C.O. C.O. rep | [redacted] | Map contour tracing system |
| U. S. Navy Oceanographic Office C.O. C. O. rep | [redacted] | Photographic projector unit |
| USAF Rome Air Development Center C.O. C.O. rep | [redacted] | Automatic photocomposition/ placement system |
| U. S. Coast & Geodetic Survey C.O. | [redacted] | 4 Loran C receivers |

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In addition, we have recently shipped a large precision plotter system rather similar to the presently proposed equipment to the U. S. Navy Oceanographic Office under Contracts [redacted]. The total amount of these contracts was [redacted], the Contracting Office was Mr. [redacted] and the Contracting Officer's Representative was Mr. [redacted].

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The majority of [redacted] present orders and future sales activity center around computer oriented systems for map preparation and production. Strong engineering emphasis and meticulous manufacturing technique has enabled us to penetrate the mapping market as well as other scientific and engineering markets.

The early months of 1963 saw a rapid rise in our backlog to [redacted] of that backlog [redacted] will be shipped during the next twelve months.

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The largest single order we have received for mapping systems was signed in April 1963. This contract is with the USAF for an Automatic Photo Composition/Placement System; value [] To this we conservatively expect [] worth of additional mapping system orders in 1963. In electronic instrumentation for NASA and [] we will add [] and in oceanographic research instrumentation we will add another []. Our forecast for orders received in 1963 is [] dollars. STATOTHR

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Because of the favorably redundant nature of the work we will perform this year no development write-offs are anticipated. A sound profit is forecast for the year ending December 1963 and for the next twelve-month period.

We specifically understand and agree that knowledge of the identity of the sponsoring organization for this project will be restricted to those individuals within our company who have been specifically approved in advance by your organization. Our corporate authority includes authorization to safeguard classified information of this type and we are, therefore, authorized to withhold such classified information from officers, directors, and stockholders of our parent corporation in accordance with security regulations. STATOTHR

[] obtain our entire working capital by means of progress payments from customers and a standing loan agreement with the [] under which we pledge receipts under contracts in process. We understand your reluctance to submit the proposed contract to assignment, yet in the absence of assignment we will require substantial financial assistance in prosecuting the project. We would, therefore, urge again the CPFF type of contract under which full current costs are returnable as progress payments under adequate audit safeguard to you. Alternatively, under a fixed-price contract we would require progress payments to 100% of total cost, or a program which would allow some advanced payments, or which would allow you to issue an unclassified document evidencing a government obligation which we could then offer to our bank.

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I certify that current action of our Board of Directors authorizes me to accept contracts on behalf of without limit.

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Very truly yours

President

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JM'D/hc
Enclosure