10010 Stationary Truck Sale

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10010-1 Scope of Work

The Contractor shall design, manufacture, supply, deliver, install, supervise, and commission a Weights and Measures (Consumer and Corporate Affairs, Canada) approved pitless, low profile, flush top, truck scale with all the mechanical and electrical components to indicate, record and data manage truck weights as a variety of trucks exit the City of Saskatoon's Spadina Avenue landfill.

The scale shall be supplied complete and shall be mounted on a contractor designed and approved base which shall be supplied by others. The scale shall be outdoors.

The Contractor shall be responsible for the delivery of the scale and all the necessary appurtenances as well as the unloading and temporary storage of the same.

The Contractor shall integrate the new scale and system with the existing inbound scale and digital reader. The Contractor shall provide a Turnkey System.

Finally, the Contractor shall be responsible for a working scale integrated with the existing system at the landfill meeting all required agencies tests, approvals and certifications prior to the acceptance or any payment for the installation part of the contract by the City.

10010-2 System Configuration

The existing system consists of a 70 foot by 10 foot 80 ton pitless 4 section Fairbanks Scale and a Superior Scale Model DF 1000 Digital Weight Indicator. The scale is outside, whereas the indicator is housed in a heated weigh scale building.

There is in the scale house an electrical panel for the power supply.

The weigh system shall be as per the System Diagram on the next page. The completed system shall have the following: 2 - scales; 1 - digital reader; 1 - ticket printer; 1 - PC; 1 - amber monitor; 1 - line printer.

The scales are to be in parallel with the present scale being dedicated to the incoming vehicles and the proposed scale being used for outgoing vehicles. This is under normal operations.

The computer and the ticket printer shall be in parallel. The monitor and the line printer shall be connected to the computer.

10010-3 Design and Construction

3.1 General Requirements

The scale shall be designed and constructed for industrial use (including dust and vibrations) and shall be of the type approved by Weights and Measures. A system that has not been previously approved by Weights and Measures shall not be accepted. Although under normal operations the proposed scale shall weigh outgoing vehicles, the design and construction of the scale shall be such that the scale can weigh on a continuous basis incoming vehicles.

All components used in the instrumentation including the computer and line printer, shall be used under industrial conditions and shall be so designed and constructed.

Truck weights as determined by the scale load cells shall be transmitted to the digital reader. The information from the reader shall under normal operations be sent to the computer for processing and then a ticket will be generated by the line printer. In the event that the computer is down the information from the reader shall be sent to the ticket printer.

Power surge protection shall be provided for the entire system.

3.2 Scale

1. The scale shall meet the following minimum requirements:
2. The scale shall be capable of weighing tractor/trailer combinations, container carriers, and load packers, single axle and tandem axle dump trucks and tanker trucks, private cars and trailers.
3. The scale shall be of the pitless, low profile, flush top with no side rails.
4. The physical aspects shall be: 80 ton capacity; 70 foot length; 10 foot width.
5. The weighing mechanism shall be self aligning, self restoring load cells.

In addition, the scale shall be double skinned having a checker plate steel deck and a steel plate underside with no side beams. The deck shall be modular construction. All cell wiring beyond the cell access holes shall be enclosed in rigid steel conduit. Access to all the load cells shall be through the top steel deck. The scale shall have a bumper

checking system for controlling the movement of the scale. The surfaces shall be epoxy painted throughout and all surfaces except the top and sides are to be sealed and rust proofed in addition. All exposed fasteners, shims, washers, etc., are to be of stainless steel. Approved weather skirting shall be provided and installed on both sides of the scale as well as "T" belt for both ends. The load cells shall be weather protected precision load cells with built in lightning protectors. The load cells shall be located inboard with access through the top.

3.3 Ticket Printer

The ticket printer shall be compatible with the Superior Scale Model DF 1000 Digital Weight Indicator. The ticket printer shall be of the "intelligent" type as Industrial Data Systems' Model 750 with 2000 ID memory positions and multiple scale inputs. An equivalent ticket printer may be considered.

3.4 Computer

The computer shall be an IBm PC AT compatible or an equivalent. It shall be designed and manufactured for the industrial environment.

The specific computer shall meet the following minimum requirements:

1. There shall be automatic system backup every ten completed transactions.
2. The computer shall have an internal Hayes compatible modem with 300/1200/2400 BAUD sellectability. The modem shall have auto-dial and auto-answer.
3. In the event of a power failure, a resident UPS must be available for down loading the RAM to a hard disk drive.
4. The computer shall be complete with 640k RAM and a single disk drive and a 20 Meg. CDC hard drive.
5. The computer shall support an amber monitor.
6. Included with the computer shall be an amber screen monitor.

3.5 Line Printer

The line printer shall have as a minimum the following features:

1. A 300cpm speed
2. Be a dot matrix printer with a push track and friction feed.

The line printer shall be a Cilton Model C310 or equivalent.

10010-4 Functional Requirements

4.1 Vehicle In/Out Operation

Under normal operations the existing scale shall be used for inbound vehicles and the proposed scale shall be used for outbound vehicles. However, in the event that the existing scale breaks down, the proposed scale will serve both as the inbound and outbound scale. The same will apply to the existing scale in the event that the proposed scale breaks down.

4.2 Information (Data) Flow

The weight shall be determined by the scale. From the scale the information shall flow to the digital reader. Next the information shall flow either to the ticket printer or the computer. At either location the weight shall be combined with other input and a final record completed as per the weight receipt. At the end of every ten completed records the information shall be automatically down loaded to the hard drive. At the end of every day or at the beginning of the next day the hard drive will copy the records to a remote tape back up. In the event that there is a further need the day's hard drive records shall be committed to floppy disks.

During the time that a vehicle is at the dump face, records shall be kept in the RAM for further processing.

4.3 Billing Requirements

Currently, companies using the landfill extensively have a charge arrangement with City Hall. With the advent of the computer the charge information will be down loaded through the modem to the Engineering Department's PCs and invoices made on a monthly basis.

The invoices shall have the following information:

Date; Company Name and Address; current charges listing the date of the transaction, the unit number, the weight (either metric or imperial), the cost based on the weight, the entrance charge, the total cost for each transaction, the total charges based on the weight, the total entrance charges, the total charges on the specific invoice.

The invoice may extend over more than a single page. Each page shall have a header consisting of the company's name, date, and page number. Also each page shall have a sub total and the last page shall have a final total.

At a future date there may be a requirement that the charges be made against a deposit which would be made at the beginning of the month. The invoicing shall be capable from the outset to accommodate this future requirement.

4.4 Database Requirements

The database shall be capable of handling up to 2000 entries/records a day of the type listed on the weigh scale receipt (minimum of 50 files per record). It shall also be able to recall information on the basis of company name and truck unit number so as to process the transaction. Further the database shall be able to recall information on the basis of vehicle category.

On an as required basis the database shall be capable of producing a summary by customer, account number, vehicle number, vehicle category, material class, material source, tare weight, weight, time in, total weight, entrance fees, total charges. The database shall be capable of identifying companies where the deposit is below a certain amount.

The database shall have the capability to down load the information to Lotus 123, Lotus Symphony and dBase III Plus.

4.5 Down Loading/Up loading Data

Data shall be automatically down loaded at a frequency of not less than every ten completed records during the time that the scale is in operation. Management may at any time request data transmission to a remote computer during a lull in the operation. The data fields shall be as per the weigh scale receipt sheet with the cursor moving from one field to another based on the return key.

4.6 Security and Back Up

There shall be provision for two levels of security, each with a six alpha-numeric password code to upload the data and get the system working. At the end of the day the operator will be required to back up the days transactions onto floppy disks or transmit to a remote tape back up, which will be kept at the Yards Office.

4.7 Non-normal Operations

In the event that the computer fails the next mode of operation will be the ticket printer which will have been previously programmed to provide tare weights based on the various companies and their units. The minimum ticket output shall be as per the sample ticket output. In the event that both the computer and the ticket printer are down the weights will be read off the digital reader and the ticket will be completed manually.

In the event of a power failure the computer will have a UPS to down load the information to the hard drive.

4.8 Displays, Output Formats, Flexibility

The first and foremost display shall be that of the weigh scale receipt. Other displays shall include the invoices, and the summaries as outlined above based on day, week, month and year.

In addition, the information shall be down loaded to the daily Lotus 123 spread sheet.

There shall be flexibility in the system for additional fields.

10010-5 Installation Requirements

5.1 Location

The scale shall be installed on the east side of the existing scale house. The deck of the scale shall be flush with the scale house slab. A by pass road will be constructed east of the proposed scale.

5.2 Scale Foundation

The scale foundation structurally shall be the responsibility of others; however, the Contractor shall be responsible, prior to erecting the scale, for the scale supports being located in the required place and at the required elevation.

5.3 Office Layout

Upon being awarded the Contract, the Contractor shall provide special instructions to the owner if there are any significant modifications required to the scale house. These modifications will be taken under advisement.

5.4 Cabling

The Contractor shall install all necessary cabling including all necessary duct work. Minimum cover on duct work shall be 24 inches.

5.5 Telephone Line for Dial-up

The Contractor shall make all necessary arrangements for providing a telephone line for dialing up the computer.

End of Specification 10010