INVITATION TO BID

The City of Rochester, New Hampshire, will accept sealed bids for a new diesel driven generator. Bids must be submitted in a sealed envelope plainly marked:

Emergency Generator – Old Rt. 125 Station Bid # 07-17
City of Rochester, New Hampshire
31 Wakefield St.
Rochester, NH 03867
Attn: Purchasing Agent

All bids must be received no later than October 5th, 2006 at 2:30PM. No late bids, telephone, faxed or e-mailed bids will be accepted. The bid specifications, appendices and proposal forms may be obtained by visiting www.rochesternh.net, or e-mailing purchasing@rochesternh.net, or by contacting the Purchasing Agent at City Hall, 31 Wakefield Street, Rochester, NH 03867, (603) 335-7602. All bid questions must be submitted in writing (e-mail preferred) to the Purchasing Agent. All bid proposals must be made on the bid proposal forms supplied, and the bid proposal forms must be fully completed when submitted.
A Mandatory site visit will be held at the Old Route 125 Pump Station, #16 Gonic Road on September 26th, 2006 at 8AM. All bidders excluding currently contracted maintenance company must attend walk through.

BID #07-17

EMERGENCY GENERATOR – OLD ROUTE 125 PUMP STATION

BID PROPOSAL FORM

Bidder Name (Print): _____

Bidder Address: _____

_____

_____

100KW - Generator

Written Word Amount: _____

Numerical figures: $ _____

125KW - Generator

Written Word Amount: _____

Numerical figures: $ _____

Signature of Bidder: _____

Printed Name: _____

TELEPHONE #: _____ FAX #: _____

E-MAIL: _____ CELL #: _____

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Packaged Generator Set

1.1 General

1.1.1 References and Standards

The generator set covered by these specifications shall be designed, tested, rated, assembled and installed in strict accordance with all applicable standards below:
CSA C22.2 No14
CSA 282
CSA 100
EN61000-6
EN55011
FCC Part 15 Subpart B
ISO8528
IEC61000
UL508
UL2200
UL142
Designed to allow for installed compliance to NFPA 70, NFPA99 and NFPA 110

1.2 Related Sections

N/A

1.3 Work Included

1.3.1 Installation

The CONTRACTOR shall be responsible for the removal and disposal of the existing generator set and exhaust system.

The work includes supplying and installing a complete integrated generator system. The system consists of a 100 KW diesel generator set with related component accessories as specified herein.

An alternate proposal shall be provided for a 125 KW generator set with related component accessories.

The unit shall be of such physical dimensions to fit into existing space provided.

The CONTRACTOR shall be responsible for the temporary hook-up of the OWNERS portable generator set to automatically run off the transfer switch in the event of normal power loss. The CONTRACTOR shall coordinate the project so that portable generator set is in use for the least

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possible time. After the new generator set has been installed and tested it is the CONTRACTORS responsibility to dismantle the temporary hook-up service.

1.3.2 Fuel System

The CONTRACTOR shall plumb the new generator set to the existing PRYCO diesel fuel tank. Plumbing shall be schedule 40 threaded black iron with the terminations at the generators made up of flexible hose suitable for use with diesel fuel. Existing black iron piping can be reused, provided that it is sized to accommodate the flow required by the new engine.

1.3.3 Air Intake and Discharge System

The CONTRACTOR shall reuse the existing air intake and discharge louvers. The existing motor operated louvers shall be interfaced with the new generator set controls such that they open any time the generator set is called on to run. Radiator discharge ductwork shall be modified (or replaced as needed) to accommodate the new generator set.

1.3.4 House Power for Generator Set

The CONTRACTOR shall wire the new generator set's jacket water heater and battery charger circuit to a suitable single phase voltage source within the pump station. All wiring methods shall meet the approval of the local electrical inspector.

1.3.5 Generator Start Circuit

The CONTRACTOR shall provide a suitable raceway and wire the new generator set's automatic start circuit to the existing automatic transfer switch. This start circuit shall be isolated from all AC circuits.

1.3.6 System Test

A complete system load test shall be performed after all equipment is installed. Guidelines in the Start-up Section.

1.3.6 Requirements, Codes and Regulations

The equipment supplied and installed shall meet the requirements of the NEC and all applicable local codes and regulations. All electrical work shall be performed by an electrician that is licensed by and in good standing with the State of New Hampshire. All equipment shall be of new and current production by a MANUFACTURER who has 25 years of experience building this type of equipment. Manufacturer and Distributor of equipment shall be ISO9001 certified.

1.4 Substitution

Proposed deviations from the specifications shall be treated as follows:

1.4.1 Substitution Time Requirement

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Requests for substitutions shall be made a minimum of ten (10) days prior to bid date. Manufacturers catalog data shall accompany each request and authorized acceptance shall be addenda only.

1.4.2 Substitution Responsibility

The power system has been designed to the specified manufacturer's electrical and physical characteristics. The equipment sizing, spacing, amounts, electrical wiring, ventilation equipment, fuel and exhaust components have all been sized and designed around CATERPILLAR supplied equipment. Should any substitutions be made, the CONTRACTOR shall bear responsibility for the installation, coordination and operation of the system as well as any engineering and redesign costs, which may result from such substitutions.

1.5 Submittals

Engine-generator submittals shall include the following information:

1. Factory published specification sheet.
2. Manufacturer's catalog cut sheets of all auxiliary components such as battery charger, control panel, enclosure, etc.
3. Dimensional elevation and layout drawings of the generator set, enclosure and transfer switchgear and related accessories.
4. Weights of all equipment.
5. Concrete pad recommendation, layout and stub-up locations of electrical and fuel systems.
6. Interconnect wiring diagram of complete emergency system, including generator, switchgear, day tank, remote pumps, battery charger, control panel, and remote alarm indications.
7. Engine mechanical data, including heat rejection, exhaust gas flows, combustion air and ventilation air flows, fuel consumption, etc.
8. Generator electrical data including temperature and insulation data, cooling requirements, excitation ratings, voltage regulation, voltage regulator, efficiencies, waveform distortion and telephone influence factor.
9. Generator resistances, reactances and time constants.
10. Generator locked rotor motor starting curves.
11. Manufacturer's and dealer's written warranty.

1.7 System Responsibility

1.7.1 Generator Set Distributor

The completed engine generator set shall be supplied by the **Manufacturer's** authorized distributor only.

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1.7.2 Requirements, Codes and Regulations

The equipment supplied and installed shall meet the requirements of NEC and all-applicable local codes and regulations. All equipment shall be new, of current production. There shall be one source responsibility for warranty; parts and service through a local representative with factory trained service personnel.

1.7.3 Automatic Transfer Switch

The existing ASCO Series 300 automatic transfer switch shall be reused. Upon completion of start up of the new generator set, the manufacturer's field service representative shall perform a full system operational test, including operation of the existing automatic transfer switch.

1.8 Warranty

1.8.1 **Two Year** Standby (ISO 8528-1: ESP) **Generator Set Warranty**

The manufacturer's standard warranty shall in no event be for a period of less than two (2) years from date of initial start-up of the system and shall include repair parts, labor, reasonable travel expense necessary for repairs at the job site, and expendables (lubricating oil, filters, antifreeze, and other service items made unusable by the defect) used during the course of repair. Running hours shall be limited to 500 hours annually for the system warranty by both the manufacturer and servicing distributor. Submittals received without written warranties as specified will be rejected in their entirety.

1.9 Parts and Service Qualifications

1.9.1 Service Facility

The engine-generator supplier shall maintain 24-hour parts and service capability within 75 miles of the project site. The distributor shall stock parts as needed to support the generator set package for this specific project. The supplier must carry sufficient inventory to cover no less than 80% parts service within 24hrs and 95% within 48 hours.

1.9.2 Service Personnel

The dealer shall maintain qualified factory trained service personnel.

2 Product Specifications

2.1 General Requirements

2.1.1 Genset Requirements

The generator set shall be Standby Duty rated at 100.0 ekW, 125.0 kVA, N/A RPM, 0.8 power factor, 480 V, 3-Phase, 60 hertz, including radiator fan and all parasitic loads. Generator set shall be sized to operate at the specified load at a maximum ambient of 122° F (50° C) and altitude of 500.0 feet (152.4 m).

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2.1.2 Material and Parts
All materials and parts comprising the unit shall be new and unused.

2.1.3 Engine
The engine shall be diesel fueled, four (4) cycle, water-cooled, while operating with nominal speed not exceeding 1800 RPM. The engine will utilize in-cylinder combustion technology, as required, to meet applicable EPA non-road mobile regulations and/or the EPA NSPS rule for stationary reciprocating compression ignition engines. Additionally, the engine shall comply with the State Emission regulations at the time of installation/commissioning. Actual engine emissions values must be in compliance with applicable EPA emissions standards per ISO 8178 – D2 Emissions Cycle at specified ekW / bHP rating. Utilization of the "Transition Program for Equipment Manufacturers" (also known as "Flex Credits") to achieve EPA certification is not acceptable. The in-cylinder engine technology must not permit unfiltered exhaust gas to be introduced into the combustion cylinder. Emissions requirements / certifications of this package: EPA TIER 2

2.1.3.1 Engine Governing

The engine will be equipped with an isochronous electronic governor to maintain +/- 0.25% steady state frequency variation from steady state no load to steady state full load.

2.2 Generator

2.2.1 Generator Specifications
The synchronous three phase generator shall be a single bearing, self-ventilated, drip-proof design in accordance with NEMA MG 1 and directly connected to the engine flywheel housing with a flex coupling. The generator shall meet performance class G3 of IEC. The excitation system shall enable the alternator to sustain 300% of rated current for ten seconds during a fault condition and shall improve the immunity of the voltage regulator to non-linear distorting loads. The excitation system shall be of brushless construction and be independent of main stator windings (either permanent magnet or auxiliary windings).

2.2.2 Voltage Regulator
2.2.2.1 Automatic Voltage Regulator
The automatic voltage regulator (AVR) shall maintain generator output voltage within +/- 0.5% for any constant load between no load and full load. The regulator shall be a totally solid state design, which includes electronic voltage buildup, volts per Hertz regulation, over-excitation protection, shall limit voltage overshoot on startup, and shall be environmentally sealed.

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2.2.3 Motor Starting

Provide locked rotor motor starting capability of 271.1 skVA at 30% instantaneous voltage dip as defined per NEMA MG 1. Sustained voltage dip data is not acceptable.

2.3 Circuit Breaker

2.3.1 Circuit Breaker Specifications

Provide a generator mounted circuit breaker, molded case, Qty.(1), 3 pole, NEMA 1/IP22. Breaker shall utilize a solid state trip unit. The breaker shall be UL/CSA Listed of IEC construction and connected to engine/generator safety shutdowns. Breaker shall be housed in an extension terminal box which is isolated from vibrations induced by the generator set. Mechanical type lugs, sized for the circuit breaker feeders shown on drawing, shall be supplied on the load side of breaker.

Controls – Generator Set Mounted

Provide a fully solid-state, microprocessor based, generator set control. The control panel shall be designed and built by the engine manufacturer. The control shall provide all operating, monitoring, and control functions for the generator set. The control panel shall provide real time digital communications to all engine and regulator controls via SAE J1939.

2.4.1 Environmental

The generator set control shall be tested and certified to the following environmental conditions.
–40°C to +70°C Operating Range
95% humidity non-condensing, 30°C to 60°C
IP22 protection
5% salt spray, 48 hours, +38°C, 36.8V system voltage
Sinusoidal vibration 4.3G's RMS, 24-1000Hz
Electromagnetic Capability (89/336/EEC, 91/368/EEC, 93/44/EEC, 93/68/EEC, BS EN 50081-2, 50082-2)
Shock: withstand 15G

Functional Requirements

The following functionality shall be integral to the control panel.
The control shall include a 33 x 132 pixel, 24mm x 95mm, positive image, transflective LCD display with text based alarm/event descriptions.
Audible horn for alarm and shutdown with horn silence switch
Standard ISO labeling
Multiple language capability
Remote start/stop control
Local run/off/auto control integral to system microprocessor
Cool down timer

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Speed adjust
Lamp test
Push button emergency stop button
Password protected system programming

Digital Monitoring Capability
The controls shall provide the following digital readouts for the engine and generator. All readings shall be indicated in either metric or English units

Engine
Engine oil pressure
Engine oil temperature
Engine coolant temperature
Engine RPM
Battery volts

Generator
Generator AC volts (Line to Line, Line to Neutral and Average)
Generator AC current (Avg and Per Phase)
Generator AC Frequency
Generator kW (Total and Per Phase)
Generator kVA (Total and Per Phase)
Generator kVAR (Total and Per Phase)
Power Factor (Avg and Per Phase)
Total kW-hr
Total kVAR-hr
% kW
% kVA
% kVAR

2.4.4 Alarms and Shutdowns
The control shall monitor and provide alarm indication and subsequent shutdown for the following conditions. All alarms and shutdowns are accompanied by a time, date, and engine hour stamp that are stored by the control panel for first and last occurrence:

Engine Alarm/Shutdown
Low oil pressure alarm/shutdown
High coolant temperature alarm/shutdown
Loss of coolant shutdown
Over speed shutdown
Over crank shutdown

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Low coolant level alarm
Low fuel level alarm
Emergency stop depressed shutdown
Low coolant temperature alarm
Low battery voltage alarm
High battery voltage alarm
Control switch not in auto position alarm
Battery charger failure alarm

Generator Alarm/Shutdown
Generator Over Voltage
Generator Under Voltage
Generator Over Frequency
Generator Under Frequency
Generator Reverse Power
Generator Over current

Engine Alarms, Generator Alarms & Generator Run Status shall be tied into the existing ProControl Series 2plus microprocessor based control/telemonitoring system
for the purpose of monitoring, reporting, data-logging & paging.

2.4.5 Inputs and Outputs

Programmable Digital Inputs
The Controller shall include the ability to accept six (6) digital input signals. The signals may be programmed for either high or low activation using programmable Normally Open or Normally Closed contacts.

Digital Outputs
The control shall include the ability to operate six (6) programmable relay output signals, integral to the controller. The output relays shall be rated for 2A @ 30VDC.

Discrete Outputs
The control shall include the ability to operate one (1) discrete outputs, integral to the controller, which are capable of sinking up to 300mA.

2.4.6 Maintenance
All engine, voltage regulator, control panel and accessory units shall be accessible through a single electronic service tool. The following maintenance functionality shall be integral to the generator set control:
Engine running hours display

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Service maintenance interval (running hours or calendar days)
Engine crank attempt counter
Engine successful starts counter
20 events are stored in control panel memory

Programmable cycle timer that starts and runs the generator for a predetermined time. The timer shall use 14 user-programmable sequences that are repeated in a 7-day cycle. Each sequence shall have the following programmable set points:
Day of week
Time of day to start
Duration of cycle

2.4.8 Local and Remote Annunciation

Local Annunciator (NFPA 99/110, CSA 282)
Provide a local, control panel mounted, annunciator to meet the requirements of NFPA 110, Level 1.
Annunciators shall be networked directly to the generator set control
Local Annunciator shall include a lamp test pushbutton, alarm horn and alarm acknowledge pushbutton
Provide the following individual light indications for protection and diagnostics
Over crank
Low coolant temperature
High coolant temperature warning
High coolant temperature shutdown
Low oil pressure warning
Low oil pressure shutdown
Over speed
Low coolant level
EPS supplying load
Control switch not in auto
High battery voltage
Low battery voltage
Battery charger AC failure
Emergency stop
Spare
Spare

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2.5 Cooling System

The generator set shall be equipped with a rail-mounted, engine-driven radiator with blower fan and all accessories. The cooling system shall be sized to operate at full load conditions and 122° F ambient air entering the room or enclosure (If an enclosure is specified). The generator set supplier is responsible for providing a properly sized cooling system based on the enclosure static pressure restriction.

2.6 Fuel System

2.6.1 Fuel System

The fuel system shall be integral with the engine. In addition to the standard fuel filters provided by the engine manufacturer, there shall also be installed a primary fuel filter/water separator in the fuel inlet line to the engine. All fuel piping shall be black iron or flexible fuel hose rated for this service. No galvanized piping will be permitted. Flexible fuel lines shall be minimally rated for 300 degrees F and 100 psi.

2.7 Exhaust System

2.7.1 Silencer

A critical grade silencer, companion flanges, and flexible stainless steel exhaust fitting properly sized shall be furnished and installed according to the manufacturer's recommendation. Mounting shall be provided by the contractor, utilizing the existing building penetration, if practical. The silencer shall be mounted so that its weight is not supported by the engine nor will exhaust system growth due to thermal expansion be imposed on the engine. Exhaust pipe size shall be sufficient to ensure that exhaust backpressure does not exceed the maximum limitations specified by the engine manufacturer.

Exhaust silencer and piping shall be insulated and jacketed with a product suitable for the application to reduce engine room temperature and to provide physical protection to equipment operator.

2.8 Starting System

2.8.1 Starting Motor

A DC electric starting system with positive engagement shall be furnished. The motor voltage shall be as recommended by the engine manufacturer.

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2.8.2 Jacket Water Heater

Jacket water heater shall be provided and shall be sized to insure that genset will start within the specified time period and ambient conditions.

2.8.3 Batteries

Batteries - A lead-acid storage battery set of the heavy-duty diesel starting type shall be provided. Battery voltage shall be compatible with the starting system. Suitable rack and cables shall be provided.

2.8.4 Battery Charger

A UL listed/CSA certified 10 amp voltage regulated battery charger shall be provided for each engine-generator set. Input AC voltage and DC output voltage shall be as required. Chargers shall be equipped with float and equalize charge settings, with provisions to automatically switch between the two modes. It shall maintain its rated output voltage within ±0.2% with AC input variation of ±10%. Operational monitors shall provide with individual form C contacts rated at 4 amps, 120 VAC, 30VDC for remote indication of battery charger malfunction, low battery voltage, and high battery voltage. Charger shall include an Analog DC voltmeter and ammeter and fused AC input and DC output, and shall be factory installed on the generator set in a wall mount type in a NEMA 1 enclosure.

3 Execution

3.1 Installation

Install equipment in accordance with manufacturer's recommendations, the project drawings and specifications, and all applicable codes.

3.2 Start-Up and Testing

Coordinate all start-up and testing activities with the Engineer and Owner. After installation is complete and normal power is available, the manufacturer's local dealer shall perform the following:
Perform a 4 hour load bank test at a 1.0 PF at full nameplate rating. Load bank, cables and other equipment required for this test to be supplied by the genset supplier. Upon completion of load bank test, a complete system functional test will be performed by simulating a normal power failure (open utility main circuit breaker). System shall be observed for proper operation of existing automatic transfer switch and pumps. Fuel for testing to be supplied by the owner.

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3.3 Operation and Maintenance Manuals

Provide Four (4) sets of operation and maintenance manuals covering the generator, switchgear, and auxiliary components. Include final as-built wiring interconnect diagrams and recommended preventative maintenance schedules.

3.4 Training

3.4.1 On-Site Training

Provide on-site training to instruct the owner's personnel in the proper operation and maintenance of the equipment. Review operation and maintenance manuals, parts manuals, and emergency service procedures.

INSTRUCTION TO BIDDERS

PREPARATION OF BID PROPOSAL

1. The Bidder shall submit her/his proposal upon the forms furnished by the City (attached). The bidder shall specify a unit price, both in words and figures if requested, for each pay item for which a quantity is given. All words and figures shall be in ink or typed.
2. If a unit price or lump sum bid already entered by the bidder on the proposal form is to be altered it should be crossed out with ink, the new unit price or lump sum bid entered above or below it, and initialed by the bidder, also with ink. In case of discrepancy between the prices written in words and those written in figures, the prices written in words shall govern.
3. The bidder's proposal must be signed with ink by the individual, by one or more members of the partnership, by one or more members or officers of each firm representing a joint venture; by one or more officers of a corporation, or by an agent of the contractor legally qualified and acceptable to the owner. If the proposal is made by an individual, his name and post office address must be shown, by a partnership the name and post office address if each partnership member must be shown; as a joint venture, the name and post office address of each must be shown; by a corporation, the name of the corporation and its business address must be shown, together with the name of the state in which it is incorporated, and the names, titles, and business addresses of the President, Secretary, and Treasurer.
4. All questions shall be submitted in writing to the Purchasing Agent. The Purchasing Agent will then forward both the question and the City's response to the question to all prospective bidders.

IRREGULAR PROPOSALS

Bid proposals will be considered irregular and may be rejected for any of the following reasons:

1. If the proposal is on a form other than that furnished by the Owner or if the form is altered or any thereof is detached.
2. If there are unauthorized additions, conditional or alternate bids, or irregularities of any kind which may tend to make the proposal incomplete, indefinite or ambiguous as to its meaning.
3. If the bidder adds any provisions reserving the right to accept or reject an award, or to enter into a contract pursuant to an award.
4. If the proposal does not contain a unit price for each pay item listed, except in the case of authorized alternate pay items.

DELIVERY OF BID PROPOSALS

When sent by mail, the sealed proposal shall be addressed to the owner at the address and in the care of the official in whose office the bids are to be received. All proposals shall be filed prior to the time and at the place specified in the invitation for bids. Proposals received after the time for opening of the bids will be returned to the bidder, unopened. Faxed bid proposals are <u>not</u> acceptable.

WITHDRAWAL OF BID PROPOSALS

A bidder will be permitted to withdraw his proposal unopened after it has been deposited if such request is received in writing prior to the time specified for opening the proposals.

PUBLIC OPENING OF BID PROPOSALS

Proposals will be opened and read publicly at the time and place indicated in the invitation for bids. Bidders, their authorized agents, and other interested parties are invited to be present.

DISQUALIFICATION OF BIDDERS

Either of the following reason may be considered as being sufficient for the disqualification of a bidder and the rejection of his proposal of proposals:

1. Evidence of collusion among bidders.
2. Failure to supply complete information as requested by the bid specifications.

AWARD AND EXECUTION OF CONTRACT

CONSIDERATION OF PROPOSALS

1. Bids will be made public at the time of opening and may be reviewed only after they have been properly recorded. In case of discrepancy between the prices written in words and those written figures, the prices written in words shall govern. In case of a discrepancy between the total shown in the proposal and that obtained by adding the products of the quantities of items and unit bid prices, the latter shall govern.
2. The right is reserved to reject any or all proposals, to waive technicalities or to advertise for new proposals, if in the judgment of the City, the best interest of the City of Rochester will be promoted thereby.

AWARD OF CONTRACT

If a contract is to be awarded, the award will be made to the lowest responsible and qualified bidder whose proposal complies with all the requirements prescribed as soon as practical after the bid opening. No bid shall be withdrawn for a period of (60) sixty days subsequent to the opening of bids without the consent of the City of Rochester. The successful bidder will be notified, by the form mailed to the address on his proposal, that his bid has been accepted and that he has been awarded the contract.

CANCELLATION OF AWARD

The City reserves the right to cancel the award of any contract at any time before the execution of such contract by all parties without any liability against the City.

BID EVALUATION

In addition to the bid amount, additional factors will be considered as an integral part of the bid evaluation process, including, but not limited to:

1. the bidder's ability, capacity, and skill to perform within the specified time limits
2. the bidder's experience, reputation, efficiency, judgment, and integrity
3. the quality, availability and adaptability of the supplies and materials sold
4. bidder's last performance
5. sufficiency of bidder's financial resources to fulfill the contract
6. bidder's ability to provide future maintenance and/or services

7. Other applicable factors as the City determines necessary of appropriate (such as compatibility with existing equipment.)

CONDITIONS AT SITE

Bidders must visit the site and shall be responsible for having ascertained pertinent local conditions, such as: location, accessibility and general character of the site of the building. The character and extent of existing work within or adjacent to the site, and any other work being performed thereon at the time of the submission of his bid.

LAWS, PERMITS AND REGULATIONS

1. The Contractor shall obtain and pay for all licenses and permits as may be required of him by law, and shall pay for all fees and charges for connection to outside services, and use of property other than the site of the work for storage of materials or other purposes
2. The Contractor shall comply with all State and Local laws, ordinances, regulations and requirements applicable to work hereunder, including building code requirements. If the Contractor ascertains at any time that any requirement of this Contract is at variance with applicable laws, ordinances, regulations or building code requirements, he shall promptly notify the City of Rochester in writing.

CONTRACTOR'S AND SUBCONTRACTOR'S INSURANCE

1. The Contractor shall deliver at the time of execution of the Contract, certificates of all insurance required hereunder and shall be reviewed prior to approval by the City of Rochester. The certificates of insurance shall contain the description of the Project, and shall state that the companies issuing insurance will endeavor to mail to the City of Rochester ten (10) days notice of cancellation, alteration or material change of any listed policies. The Contractor shall keep in force the insurance required herein for the period of the Contract. At the request of the City of Rochester, the Contractor shall promptly make available a copy of any and all listed insurance policies. The requested insurance must be written by a Company licensed to do business in New Hampshire at the time the policy is issued.

2. The City of Rochester, NH shall be listed as additional insured on all the Certificates of Insurance.

3. The Contractor shall require each Subcontractor employed on the Project to maintain the coverage listed below unless the Contractor's insurance covers activities of the Subcontractor on the Project.
4. No operations under this Contract shall commence until certificates of insurance attesting to the below listed requirements have been filed with and approved by the Department of Public Buildings & Grounds, and the Contract approved by the City Manager.

   a. Workmen's Compensation Insurance

      Limit of Liability - $100,000.00 per accident

   b. Commercial General Liability

      Limits of Liability

      Bodily Injury: $1,000,000.00 per occurrence, $1,000,000.00 aggregate

Property Damage: $500,000.00 per occurrence, $500,000.00 aggregate

Combined Single Limit, Bodily Injury and Property Damage:

$1,500,000.00 per occurrence, $1,500,000.00 aggregate

c. Automobile Liability

Limits of Liability - $500,000.00 per accident

5. The Contractor shall indemnify, defend, and save harmless the City of Rochester and its agents and employees from and against any suit, action or claim of loss or expenses because of bodily injury. Including death at any time resulting there from, sustained by any person or persons or on account of damage to property, including loss of use thereof, whether caused by or contributed to by said City of Rochester, its agents, employees or others.

ACCIDENT PROTECTIONS

It is a condition of this Contract, and shall be made a condition of each subcontract entered into pursuant to the Contract. That a Contractor and any Subcontractors shall not require any laborer or mechanic employed in the performance of the Contract to work in surroundings or under working conditions which are unsanitary hazardous or dangerous to health or safety. As determined by construction safety and health standards of the Occupational Safety and Health Administration, United States Department of Labor, which standards include, by reference, the established Federal Safety and Health regulations for Construction. These standards and regulations comprise Part 1910 and Part 1926 respectively of Title 29 of the Code of Federal Regulations and are set forth in the Federal Register. In the event any revisions in the Code of Federal Regulations are published, such revisions will be deemed to supersede the appropriate Part 1910 and Part 1926, and be effective as of the date set forth in the revised regulation.

SUBCONTRACTS

1. Nothing contained in the Specifications or Drawings shall be construed as creating any contractual relationship between any Subcontractor and the City of Rochester. The Division or Sections of the Specifications are not intended to control the Contractor in dividing the work among Subcontractors or to limit the work performed by any trade.
2. The Contractor shall be as fully responsible to the City of Rochester for the acts and omissions of Subcontractors and of persons employed by him, as he is responsible for the acts and omissions of persons directly employed by him.

PROTECTION OF WORK AND PROPERTY

The Contractor shall, at all times, safely guard the City's property from injury or loss in connection with this Contract. He shall, at all times, safely guard and protect his own work and that of adjacent property from damage. All passageways, guard fences, lights and other facilities required for protection by State or Municipal laws, regulations and local conditions must be provided and maintained.

USE OF PREMISES AND REMOVAL OF DEBRIS

The Contractor expressly undertakes at his own expense:

1. To take every precaution against injuries to persons or damage to property;
2. To comply with the regulations governing the operations of premises which are occupied

and to perform his Contract in such a manner as not to interrupt or interfere with the operation of the Institution;

3. To perform any work necessary to be performed after working hours or on Sunday or legal holidays without additional expense to the City, but only when requested to do so by the City;
4. To store his apparatus, materials, supplies and equipment in such orderly fashion at the site of the work as will not unduly interfere with the progress of his work or the work of any other Contractors;
5. Daily to clean up and legally dispose of (away from the site), all refuse, rubbish, scrap materials and debris caused by his operation. Including milk cartons, paper cups and food wrappings left by his employees, to the end that at all times the site of the work shall present a neat, orderly and workmanlike appearance;
6. All work shall be executed in a workmanlike manner by experienced mechanics in accordance with the most modern mechanical practice and shall represent a neat appearance when completed.

MATERIALS AND WORKMANSHIP

Unless otherwise specified, all materials and equipment incorporated into the work under the Contract shall be new. All workmanship shall be first class and by persons qualified in their respective trades.

Where the use of optional materials or construction method is approved, the requirements for workmanship, fabrication and installation indicated for the prime material or construction method shall apply wherever applicable. Required and necessary modifications and adjustments resulting from the substitution or use of an optional material or construction method shall be made at no additional cost to the City.

STANDARDS

1. Materials specified by reference to the number, symbol or title of a specific standard, such as a Commercial Standard, a Federal Specification, Department's Standard Specifications, a trade association standard or other similar standard. Shall comply with requirements in the latest revision thereof and any amendment or supplement thereto in effect on the data of advertisement, except as limited to type, class or grade or modified in such reference.
2. Reference in the Specifications to any article, device, product, material, fixture, form or type of construction by name, make or catalog number shall be interpreted as establishing a standard of quality and shall not be construed as limiting competition. In such cases the Contractor may, at his option, use any articles, device, product, material fixture, form or type of construction which, in the judgment of the City expressed in writing to all Bidders before opening of bids as an addendum, is an acceptable substitute to the specified.
3. Substitution During Bid Time: Whenever any particular brand or make of material or apparatus is called for in the Specifications, a Bidder's Proposal must be based upon such material or apparatus, or upon a brand or make which has been specifically approved as a substitution in an Addendum issued to all Bidders during the bidding time.

4. The intent is that the brand or make of material or apparatus which is called for herein establishes a standard of excellence which, in the opinion of the Consultant and Engineer, is necessary for this particular Project.
5. Substitution After Bid Opening: No substitutions will be considered after bids have been opened unless necessary due to strikes, lockouts, bankruptcy or discontinuance of manufacture, etceteras. In such cases, the Contractor shall apply to the City, in writing within ten (10) days of his realizing his inability to furnish the article specified, describing completely the substitution he desires to make.

EXTRAS

Except as otherwise herein provided, no charge for any extra work or material will be allowed unless the same has been ordered, in writing, by the Director of Public Works.

GUARANTEE OF WORK

1. Except as otherwise specified, all work shall be guaranteed by the Contractor against defects result in from the use of inferior materials, equipment or workmanship for one (1) year from the Date of Final Acceptance.
2. Make good any work or material, or the equipment and contents of said building or site disturbed in fulfilling any such guarantee.
3. In any case, wherein fulfilling the requirements of the Contract or of any guarantee, should the Contractor disturb any work guaranteed under another contract, the Contractor shall restore such disturbed work to a condition satisfactory to the Director of Public Works. And guarantee such restored work to the same extent as it was guaranteed under such other contracts.
4. If the Contractor, after notice, fails to proceed promptly to comply with the terms of the guarantee, the City of Rochester may have the defects corrected and the Contractor shall be liable for all expense incurred.
5. All special guarantees applicable to definite parts of the work that may be stipulated in the Specifications or other papers forming a part of the Contract shall be subject to the terms of this paragraph during the first year of the life of such special guarantee.

DEFAULT AND TERMINATION OF CONTRACT

If the Contractor:

1. Fails to begin work under Contract within the time specified in the notice to proceed; or
2. Fails to perform the work with sufficient workmen and equipment, or with sufficient materials to assume prompt completion of said work; or
3. Performs the work unsuitably or neglects or refuses to remove materials or to perform a new such work as may be rejected as unacceptable and unsuitable; or
4. Discontinues the prosecution of the work; or
5. Fails to resume work, which has been discontinued, within a reasonable time after notice to do so; or

6. Becomes insolvent or has declared bankruptcy, or commits any act of bankruptcy or insolvency; or
7. Makes an assignment for the benefit of creditors; or
8. For any other causes whatsoever, fails to carry on the work in an acceptable manner the City of Rochester will give notice, in writing, to the Contractor for such delay, neglect, and default.

If the Contractor does not proceed in accordance with the Notice, then the City of Rochester will have full power and authority without violating the Contract to take the prosecution of the work out of the hands of the Contractor. The City of Rochester may enter into an agreement for the completion of said Contract according to the terms and conditions thereof, or use such other methods as in his opinion will be required for the completion of said Contract in an acceptable manner.

All extra costs and charges incurred by the City of Rochester as a result of such delay, neglect or default, together with the cost of completing the work under the Contract will be deducted from any monies due or which may become due to said Contractor. If such expenses exceed the sum which would have been payable under the contract, then the Contractor shall be liable and shall pay to the City of Rochester the amount of such excess.

OBTAINING BID RESULTS

Bid results will be posted after 48 hours on the City of Rochester's web site: www.rochesternh.net or will be available by request via e-mail at the following address: purchasing@rochesternh.net