

PART 1 GENERAL

1.1 SUMMARY OF WORK

- .1 Title and description of Work: City of Winnipeg, Transit Department, Paint Booth Breathing Air System.
- .2 Contract method: stipulated price contract.
- .3 Work by others: Testing of Air Quality.
- .4 The City's occupancy: The City will occupy the premises at 421 Osborne Street over the course of the Work. Existing operations are not to be interrupted except for short periods of time when tie-ins are performed; times for performing tie-ins will be specified by the contract administrator and are likely to occur during off shifts.

1.2 CODES AND STANDARDS

- .1 Perform Work in accordance with National Building Code of Canada (NBC) and any other code of provincial or local application provided. In any case of conflict or discrepancy, the more stringent requirements shall apply.
- .2 Meet or exceed requirements of:
 - .1 Contract documents.
 - .2 Specified standards, codes and references documents.
 - .3 Workers'/Workmens' Compensation Board and municipal authority
 - .4 Requirements of FCC No. 30.1-Standard for Construction Operations, June 1982, issued by Fire Commissioner of Canada.
 - .5 Workplace Hazardous Materials Information System (WHMIS).

1.3 WORK RESTRICTIONS

- .1 Existing Services:
 - .1 Notify Contract Administrator of intended interruption of mechanical or electrical services and obtain required permission.
 - .2 Where Work involves breaking into or connecting to existing services, give Contract Administrator 48 hours of notice for necessary interruption of mechanical or electrical service throughout course of Work. Keep duration of interruptions minimum. Carry out interruptions after normal Working hours of occupants.
 - .3 Construct barriers as required to meet safety requirements

1.4 PROJECT COORDINATION

- .1 Coordinate progress of the Work, progress schedules, submittals, use of Site, temporary utilities and construction facilities and controls.
- .2 Maintain at job Site, one copy each of the following:
 - .1 Contract drawings and specifications.
 - .2 Addenda.
 - .3 Reviewed shop drawings.
 - .4 Change Orders/Instructions.
 - .5 Other modifications to Contract.
 - .6 Field test reports.
 - .7 Approved Work schedule.
 - .8 Manufacturer's installation and application instructions.
 - .9 Safety Program

1.5 CUTTING AND PATCHING

- .1 Approvals
 - .1 Submit written request in advance of cutting or alteration which affects:
 - .1 Structural integrity of any element of project.
 - .2 Integrity of weather-exposed or moisture-resistant elements.
 - .3 Efficiency, maintenance, or safety of any operational element.
 - .4 Visual qualities of sight-exposed elements.
 - .5 Work of The City or separate contractor.
- .2 Inspection
 - .1 Inspect existing conditions, including elements subject to damage or movement during cutting and patching.
 - .2 After uncovering, inspect conditions affecting performance of Work.
 - .3 Beginning of cutting or patching means acceptance of existing conditions.
- .3 Execution
 - .1 Perform cutting, fitting, and patching, to complete the Work.
 - .2 Remove and replace defective and nonconforming Work.
 - .3 Provide openings in nonstructural elements of Work for penetrations of mechanical and electrical Work.
 - .4 Perform Work to avoid damage to other Work.
 - .5 Prepare proper surfaces to receive patching and finishing.
 - .6 Cut rigid materials using power saw or core drill. Pneumatic or impact tools not allowed.
 - .7 Restore Work with new products in accordance with Contract Documents.

- .8 Fit Work airtight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces. Penetrations through exterior roof and walls to be flashed and sealed water tight.
- .9 At penetration of fire-rated wall, ceiling, or floor construction, completely seal voids with fire-rated material, full thickness of construction element.
- .10 Refinish surfaces to match adjacent finishes.

1.6 FIELD ENGINEERING

- .1 Toxic and Hazardous Substances and Materials
 - .1 Asbestos discovery: Demolition of spray or trowel-applied asbestos can be hazardous to health. Should material resembling spray or trowel-applied asbestos be encountered in the course of demolition Work, stop Work and notify the Contract Administrator immediately. Do not proceed until written instructions have been received from the Contract Administrator.

1.7 PROJECT MEETINGS

- .1 Preconstruction Meeting
 - .1 A preconstruction meeting will be held with the Contractor and his subtrade representatives and . The meeting will be scheduled by the Contract Administrator after Contract Award and prior to commencement of construction.
- .2 Construction Meetings
 - .1 Contract Administrator will Schedule and administer project progress meetings throughout progress of Work.
 - .2 Contractor shall Provide physical space and make arrangements for meetings.
 - .3 Contract Administrator will Record minutes and include significant proceedings and decisions and identify "action by" parties.

1.8 SUBMITTALS

- .1 Administrative
 - .1 Submit to Contract Administrator submittals listed for review. Submit with reasonable promptness and in an orderly sequence so as to not cause delay in the Work.
 - .2 To ensure prompt attention, address all submittals to the Contract Administrator.
 - .3 Work affected by submittals shall not proceed until review is complete.
 - .4 Review submittals prior to submission to Contract Administrator. This review represents that necessary requirements have been determined and verified, or will be, and that each submittal has been checked and coordinated with requirements of the Work and Contract Documents.
 - .5 Verify field measurements and affected adjacent Work are coordinated.

- .2 Shop Drawings and Product Data
 - .1 Shop Drawings shall carry the stamp of a Professional Engineer licensed to practice in the Province of Manitoba where called for.
 - .2 Indicate materials, methods of construction and attachment or anchorage, erection diagrams, connection, explanatory notes and other information necessary for completion of Work.
 - .3 Adjustments made on shop drawings by Contract Administrator are not intended to change Contract Price.
 - .4 Make changes in shop drawings as Contract Administrator may require. Contract Administrator will require 10 Working Days for review of shop drawings.
 - .5 Submit shop drawings (numbers as indicated below) for review to Contract Administrator for all items requested in the specification and as Contract Administrator may reasonably request.
 - .1 Letter sizes: 210 mm x 280 mm 6 copies
 - .2 Other than above: 6 copies
 - .6 Identify all shop drawings in lower right-hand corner as follows:
 - .1 Name of project
 - .2 The City project number (if applicable)
 - .3 Contract Administrator project number
 - .4 Title of shop drawing
 - .5 Specification section number
 - .6 Date (revised for each submission)
 - .7 Submissions shall include:
 - .1 Name and address of:
 - .1 Subcontractor (if applicable)
 - .2 Supplier (if applicable)
 - .3 Manufacturer (if applicable)
 - .2 Contractor's review stamp, signed by an authorized representative certifying approval of submission, verification of field measurements and compliance with Contract Documents.
 - .3 Details of appropriate portions of Work as applicable indicating:
 - .1 Fabrication.
 - .2 Layout; showing dimensions, including identified field dimensions and clearance.
 - .3 Setting or erection details.
 - .4 Capacities.
 - .5 Performance characteristics.
 - .6 Standards.
 - .7 Operating weight.
 - .8 Relationship to adjacent Work.
- .3 Operating and Maintenance Manuals
 - .1 Two weeks prior to the anticipated date of Substantial Performance of the Work, submit to Contract Administrator, 1 copy of operating and maintenance manuals for review. Upon receipt of final comments from Contract Administrator, revise manuals as required and submit 3 copies of manuals to Contract Administrator.

- .2 Manuals to contain operational information on equipment, cleaning and lubrication schedules, filters, overhaul and adjustment schedules and similar maintenance information.
- .3 Bind contents in a three-ring, hard covered, plastic -jacketed binder. Organize contents into applicable categories of Work, parallel to specifications sections.
- .4 Record Drawings
 - .1 After award of Contract, Contract Administrator will provide 1 set of prints for purpose of maintaining record drawings. Accurately and neatly record deviations from Contract Documents caused by Site conditions and changes ordered by Contract Administrator.
 - .2 Record locations of concealed components of mechanical and electrical services.
 - .3 Identify drawings as "Project Record Copy". Maintain in new condition and make available for inspection on Site by Contract Administrator.
 - .4 On completion of Work and prior to final inspection, submit record documents to Contract Administrator.

1.9 SCHEDULE

- .1 Schedules Required
 - .1 Construction Progress Schedule.
 - .2 Submittal Schedule for Shop Drawings, etc.
- .2 Format
 - .1 Indicate the following:
 - .1 Anticipated delivery dates for compressors and air purification equipment
 - .2 Commencement and completion of Work of each trade conforming to the project milestones.
 - .3 Final completion date within time period required by Contract Documents.
- .3 Submission
 - .1 Submit initial schedules within 15 days after award of Contract.
 - .2 Submit one opaque reproduction, plus 2 copies to be retained by Contract Administrator.
 - .3 Contract Administrator will review schedule and return reviewed copy within 10 days after receipt.
 - .4 Resubmit finalized schedule within 7 days after return of reviewed copy.

1.10 QUALITY CONTROL

- .1 Independent Inspection Agencies
 - .1 Independent Inspection/Testing Agencies will be engaged by the City for purpose of inspecting and/or testing portions of Work. Work to be tested includes quality of treated air.
 - .2 Provide equipment required for executing inspection and testing by appointed agencies.
- .2 Reports
 - .1 Submit 4 copies of inspection and test reports promptly to Contract Administrator.
 - .2 Provide copies to Subcontractor of Work being inspected/tested.

- .3 The contractor shall perform piping pressure tests, TAB, etc, as specified.

1.11 CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

- .1 Scaffolding
- .1 Provide and maintain scaffolding, ramps, ladders, and platforms.
 - .2 Design and construct scaffolding in accordance with CSA S269.2-M87(R1998).
- .2 Hoisting
- .1 Provide, operate and maintain hoists and cranes required for moving of equipment and materials.
 - .2 Hoists and cranes shall be operated by qualified operator.
- .3 Guard Rails and Barricades
- .1 Provide as required by governing authorities, secure, rigid guard railings and barricades around deep excavations, open shafts, open stair wells, open edges of floors and roofs.
- .4 Sanitary Facilities
- .1 The City will allow use of his designated sanitary facilities.
- .8 Water Supply
- .1 The City will provide a continuous supply of potable water for construction use. Provide connections from designated takeoff points.
 - .2 The City assumes no responsibility for inconvenience or costs incurred due to loss of water or interruptions.
- .9 Temporary Power and Lighting
- .1 The City will pay for temporary power required during construction for temporary lighting and operating of power tools, to maximum supply of 230 volts 30 amps.
 - .2 Provide connections from designated take-off points.
 - .3 Temporary power for electric cranes and other equipment requiring a supply in excess of above shall be the responsibility of the Contractor.
 - .4 Pay for damage to existing plant if caused by Contractor negligence.
 - .5 The City assumes no responsibility for inconvenience or costs incurred due to loss of power or interruptions.
- .10 Construction Offices
- .1 Provide and maintain in clean condition during progress of Work, adequately lighted, heated and ventilated Contractor's office with space for filing and layout of Contract Documents and Contractor's normal Site office staff.
 - .2 Provide adequate required first aid facilities.
- .11 Equipment/Tool/Materials Storage
- .1 If required Provide and maintain, in clean and orderly condition, lockable weatherproof sheds for storage of tools, equipment and materials.
 - .2 Locate materials not required to be stored in weatherproof sheds on Site in manner to cause least interference with Work activities.

- .12 Construction Parking
 - .1 Parking as directed by The City will be permitted on Site provided it does not disrupt the performance of Work.
- .13 Project Cleanliness
 - .1 Maintain the Work in tidy condition, free from accumulation of waste products and debris.

1.12 MATERIAL AND EQUIPMENT

- .1 Product and Material Quality
 - .1 Products, materials, equipment and articles (referred to as products throughout specifications) incorporated in Work shall be new, not damaged or defective, and of best quality (compatible with specifications) for purpose intended. If requested, furnish evidence as to type, source and quality of products provided.
 - .2 Defective products, will be rejected, regardless of previous inspections. Inspection does not relieve responsibility, but is precaution against oversight or error. Remove and replace defective products at own expense and be responsible for delays and expenses caused by rejection.
 - .3 Should any dispute arise as to quality or fitness of products, decision rests strictly with Contract Administrator based upon requirements of Contract Documents.
- .2 Storage, Handling and Protection
 - .1 Handle and store products in manner to prevent damage, adulteration, deterioration and soiling and in accordance with manufacturer's instructions when applicable.
 - .2 Store products subject to damage from weather in weatherproof enclosures.
- .3 Manufacturer's Instructions
 - .1 Unless otherwise indicated in specifications, install or erect products in accordance with manufacturer's instructions. Do not rely on labels or enclosures provided with products. Obtain written instructions directly from manufacturers.
 - .2 Notify Contract Administrator in writing, of conflicts between specifications and manufacturer's instructions, so that Contract Administrator may establish course of action.
- .4 Workmanship
 - .1 Workmanship shall be best quality, executed by workers experienced and skilled in respective duties for which they are employed. Immediately notify Contract Administrator if required Work is such as to make it impractical to produce required results.
 - .2 Decisions as to quality or fitness of workmanship in cases of dispute rest solely with Contract Administrator, whose decision is final.

1.13 PAINTING

- .1 The contractor shall paint all new construction to match existing. All metal materials, supports, etc shall be painted with primer and finish paint. Materials supplied with primer only (e.g. fan) shall be finish painted. Prefinished materials shall be touch up painted only as required to repair scratches and marred factory finishes. Stainless steel, galvanized and

copper finishes need not be painted, Colors to be as advised by the contract administrator. All painting to conform to MPI requirements.

1.14 CONTROL SYSTEMS

- .1 Control systems for packaged compressors and air purification skids to be integral to the packaged units. External alarms for breathing air low pressure, high CO levels, etc shall be provided by the contractor. Refer to the electrical drawings.
- .2 The sequence of operation for the ventilation system controls shall be as follows: The ventilation fan shall run whenever a compressor is running or whenever cooling is required in the compressor room. The system shall have a hand-off-auto switch. On a rise in room temperature the fresh air damper shall modulate open and the return air damper shall modulate closed, On a drop in room temperature the return air damper shall modulate open and the fresh air damper shall modulate closed to maintain room thermostat set point. Whenever the ventilation system is running, a fresh air damper minimum position set point will be in effect (150 cfm minimum). Whenever the ventilation system shuts off, the fresh air damper will close fully.

1.15 PROJECT CLOSEOUT

- .1 Final Cleaning
 - .1 Remove waste materials and debris from Site at regularly scheduled times or dispose of as directed by Contract Administrator. Do not burn waste materials on Site.
 - .2 Leave Work broom clean before inspection process commences.
- .2 Systems Demonstration
 - .1 Prior to final inspection, demonstrate operation of each system to The City and Contract Administrator.
 - .2 Instruct personnel in operation, adjustment, and maintenance of equipment and systems, using provided operation and maintenance data as basis for instruction.
- .3 Documents
 - .1 Collect reviewed submittals and assemble documents executed by Subcontractors, suppliers, and manufacturers.
 - .2 Submit material prior to final Application for Payment.
 - .3 Submit operation and maintenance data, record (as-built) drawings.
 - .4 Provide warranties and bonds fully executed and notarized.
 - .5 Execute transition of Performance and Labour and Materials Payment Bond to warranty period requirements.

END OF SECTION