

**Part 1            General**

**1.1                ADMINISTRATIVE**

- .1        Submit to Contract Administrator submittals listed for review. Submit with reasonable promptness and in orderly sequence so as to not cause delay in Work. Failure to submit in ample time is not considered sufficient reason for an extension of Contract Time and no claim for extension by reason of such default will be allowed.
- .2        Work affected by submittal shall not proceed until review is complete.
- .3        Present shop drawings, product data, samples and mock-ups in SI Metric units.
- .4        Where items or information is not produced in SI Metric units converted values are acceptable.
- .5        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 co-ordinated with requirements of Work and Contract Documents. Submittals not stamped, signed, dated and identified as to specific project will be returned without being examined and shall be considered rejected.
- .6        Notify Contract Administrator, in writing at time of submission, identifying deviations from requirements of Contract Documents stating reasons for deviations.
- .7        Verify field measurements and affected adjacent Work are coordinated.
- .8        Contractor's responsibility for errors and omissions in submission is not relieved by Contract Administrator's review of submittals.
- .9        Contractor's responsibility for deviations in submission from requirements of Contract Documents is not relieved by Contract Administrator review.
- .10      Keep one reviewed copy of each submission on site.

**1.2                NOTIFICATION TO CONTRACT ADMINISTRATOR**

- .1        Minimum 48 hours of notification to Contract Administrator is required for placing of any piles or concrete work or any critical construction technique. All construction work will be halted if notice is not adhered to.

**1.3                SHOP DRAWINGS AND PRODUCT DATA**

- .1        The term "shop drawings" means drawings, diagrams, illustrations, schedules, performance charts, brochures and other data which are to be provided by Contractor to illustrate details of a portion of Work.
- .2        Indicate materials, methods of construction and attachment or anchorage, erection diagrams, connections, explanatory notes and other information necessary for completion of Work. Where articles or equipment attach or connect to other articles

or equipment, indicate that such items have been coordinated, regardless of Section under which adjacent items will be supplied and installed. Indicate cross references to design drawings and specifications.

- .3 Allow minimum 5 working days for Contract Administrator's review of each submission.
- .4 Adjustments made on shop drawings by Contract Administrator are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to Contract Administrator prior to proceeding with Work.
- .5 Make changes in shop drawings as Contract Administrator may require, consistent with Contract Documents. When resubmitting, notify Contract Administer in writing of any revisions other than those requested.
- .6 Accompany submissions with transmittal letter, in duplicate, containing:
  - .1 Date.
  - .2 Project title and number.
  - .3 Contractor's name and address.
  - .4 Identification and quantity of each shop drawing, product data and sample.
  - .5 Other pertinent data.
- .7 Submissions shall include:
  - .1 Date and revision dates.
  - .2 Project title and number.
  - .3 Name and address of:
    - .1 Subcontractor.
    - .2 Supplier.
    - .3 Manufacturer.
  - .4 Contractor's stamp, signed by Contractor's authorized representative certifying approval of submissions, verification of field measurements and compliance with Contract Documents.
  - .5 Details of appropriate portions of Work as applicable:
    - .1 Fabrication.
    - .2 Layout, showing dimensions, including identified field dimensions, and clearances.
    - .3 Setting or erection details.
    - .4 Capacities.
    - .5 Performance characteristics.
    - .6 Standards.
    - .7 Operating weight.
    - .8 Wiring diagrams.
    - .9 Single line and schematic diagrams.
    - .10 Relationship to adjacent work.
- .8 After Contract Administrator's review, distribute copies.

- .9 Submit 6 prints of shop drawings for each requirement requested in specification Sections and as Contract Administrator may reasonably request.
- .10 Submit 6 copies of product data sheets or brochures for requirements requested in specification Sections and as requested by Contract Administer where shop drawings will not be prepared due to standardized manufacture of product.
- .11 Delete information not applicable to project.
- .12 Supplement standard information to provide details applicable to project.
- .13 If upon review by Contract Administrator, no errors or omissions are discovered or if only minor corrections are made, copies will be returned and fabrication and installation of Work may proceed. If shop drawings are rejected, noted copy will be returned and resubmission of corrected shop drawings, through same procedure indicated above, must be performed before fabrication and installation of Work may proceed.
- .14 The review of shop drawings by the Contract Administrator is for sole purpose of ascertaining conformance with general concept. This review shall not mean that Contract Administrator approves detail design inherent in shop drawings, responsibility for which shall remain with Contractor submitting same, and such review shall not relieve Contractor of responsibility for errors or omissions in shop drawings or of responsibility for meeting all requirements of construction and Contract Documents. Without restricting generality of foregoing, Contractor is responsible for dimensions to be confirmed and correlated at job site, for information that pertains solely to fabrication processes or to techniques of construction and installation and for co-ordination of Work of all sub-trades.

#### **1.4 SAMPLES**

- .1 Submit for review samples in duplicate as requested in respective specification Sections. Label samples with origin and intended use.
- .2 Deliver samples prepaid to Contract Administrator's office.
- .3 Notify Contract Administrator in writing, at time of submission of deviations in samples from requirements of Contract Documents.
- .4 Where colour, pattern or texture is criterion, submit full range of samples.
- .5 Adjustments made on samples by Contract Administrator are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to Contract Administrator prior to proceeding with Work.
- .6 Make changes in samples which Contract Administrator may require, consistent with Contract Documents.
- .7 Reviewed and accepted samples will become standard of workmanship and material against which installed Work will be verified.

**1.5 MOCK-UPS**

- .1 Erect mock-ups in accordance with 01 45 00 - Quality Control.

**1.6 PRE-CONSTRUCTION PHOTOGRAPHS**

- .1 Submit progress photographs in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Sizes: 100 mm x 150 mm
- .3 Finish: glossy colour with binding margin at one end.
- .4 Paper: single weight, un-mounted
- .5 Number of Prints required: 3 sets
  - .1 Submit one set to the Contract Administrator and maintain one set on site and the other set in Contractor's office prior to the request of the first progress claim.
  - .2 Each set shall be placed in a 3-ring binder and photo sleeves.
  - .3 Upon completion of the project and prior to requesting substantial Performance Review, submit all three (3) sets along with the contract Operation and Maintenance Manuals, as indicated in Section 01 78 00.
  - .4 All photographs to be done in digital format.
- .6 Identification: typewritten name and number of project and date of exposure on reverse side of each photograph.
- .7 Number of viewpoints: Sufficient views and proximity to clearly indicate condition of existing building, all building elevations, facade, roof, surrounding site, entire floor area.
- .8 Frequency: before demolition proceeds.
- .9 Existing area to be photographed:
  - .1 Contractor to take photographs of existing entrances, including stairs and corridors to be used by contractors and for the transport of materials.
  - .2 Contractor to take photographs of existing room ceilings, walls, and floor areas.

**1.7 PHOTO DOCUMENTATION**

- .1 The Contractor shall photograph and submit monthly colour pictures in digital format demonstrating the progress of the Work and at all concealed areas prior to being covered.
- .2 Submit two sets: one to the Contract Administrator and one to the Design Authority.
- .3 Submit 100 mm x 150 mm copies of each, labelled and in protective covers in three-ring binders to the Contract Administrator with the Contract Operation and Maintenance Manuals upon completion of the project.

**Part 2            Products**

**2.1                NOT USED**

**Part 3            Execution**

**3.1                NOT USED**

**END OF SECTION**

**Part 1 General**

**1.1 INSPECTION**

- .1 Allow Contract Administrator access to Work.
- .2 Give timely notice requesting inspection if Work is designated for special tests, inspections or approvals by Contract Administrator instructions, or law of Place of Work.
- .3 If Contractor covers or permits to be covered Work that has been designated for special tests, inspections or approvals before such is made, uncover such Work, have inspections or tests satisfactorily completed and make good such Work.
- .4 Contract Administrator may order any part of Work to be examined if Work is suspected to be not in accordance with Contract Documents. If, upon examination such work is found not in accordance with Contract Documents, correct such Work and pay cost of examination and correction. If such Work is found in accordance with Contract Documents, Contract Administrator shall pay cost of examination and replacement.

**1.2 INDEPENDENT INSPECTION AGENCIES**

- .1 Independent Inspection/Testing Agencies will be engaged by Contract Administrator for purpose of inspecting and/or testing portions of Work. Cost of such services will be borne by Contract Administrator.
- .2 Provide equipment required for executing inspection and testing by appointed agencies.
- .3 Employment of inspection/testing agencies does not relax responsibility to perform Work in accordance with Contract Documents.
- .4 If defects are revealed during inspection and/or testing, appointed agency will request additional inspection and/or testing to ascertain full degree of defect. Correct defect and irregularities as advised by Contract Administrator at no cost to Contract Administrator. Pay costs for retesting and re-inspection.

**1.3 ACCESS TO WORK**

- .1 Allow inspection/testing agencies access to Work, off site manufacturing and fabrication plants.
- .2 Co-operate to provide reasonable facilities for such access.

**1.4 PROCEDURES**

- .1 Notify appropriate agency and Contract Administrator in advance of requirement for tests, in order that attendance arrangements can be made.
- .2 Submit samples and/or materials required for testing, as specifically requested in specifications. Submit with reasonable promptness and in an orderly sequence so as not to cause delay in Work.

- .3 Provide labour and facilities to obtain and handle samples and materials on site. Provide sufficient space to store and cure test samples.

## **1.5 REJECTED WORK**

- .1 Remove defective Work, whether result of poor workmanship, use of defective products or damage and whether incorporated in Work or not, which has been rejected by Contract Administrator as failing to conform to Contract Documents. Replace or re-execute in accordance with Contract Documents.
- .2 Make good other Contractor's work damaged by such removals or replacements promptly.
- .3 If in opinion of Contract Administrator it is not expedient to correct defective Work or Work not performed in accordance with Contract Documents, Contract Administrator may deduct from Contract Price difference in value between Work performed and that called for by Contract Documents, amount of which shall be determined by Contract Administrator.

## **1.6 REPORTS**

- .1 Submit 4 copies of inspection and test reports to Contract Administrator.
- .2 Provide copies to Subcontractor of work being inspected or tested, manufacturer or fabricator of material being inspected or tested.

## **1.7 MOCK-UPS**

- .1 Prepare mock-ups for Work specifically requested in specifications. Include for Work of all Sections required to provide mock-ups.
- .2 Construct in all locations acceptable to Contract Administrator as specified in specific Section.
- .3 Prepare mock-ups for Contract Administrator's review with reasonable promptness and in an orderly sequence, so as not to cause any delay in Work.
- .4 Failure to prepare mock-ups in ample time is not considered sufficient reason for an extension of Contract Time and no claim for extension by reason of such default will be allowed.
- .5 If requested, Contract Administrator will assist in preparing a schedule fixing dates for preparation.
- .6 Remove mock-up at conclusion of Work or when acceptable to Contract Administrator.
- .7 Mock-ups may remain as part of Work.
- .8 Specification section identifies whether mock-up may remain as part of Work or if it is to be removed and when.

**END OF SECTION**

**Part 1            General**

**1.1                INSTALLATION AND REMOVAL**

- .1        Provide temporary utilities controls in order to execute work expeditiously.
- .2        Remove from site all such work after use.

**1.2                WATER SUPPLY**

- .1        Contractor to provide continuous supply of potable water for construction use.
- .2        Arrange for connection with appropriate utility company and pay all costs for installation, maintenance and removal.
- .3        Contractor will pay for utility charges at prevailing rates.

**1.3                TEMPORARY HEATING AND VENTILATION**

- .1        Contractor to provide heating required during construction period.
- .2        Ventilating:
  - .1        Prevent accumulations of dust, fumes, mists, vapours or gases in areas occupied during construction.
  - .2        Provide local exhaust ventilation to prevent harmful accumulation of hazardous substances into atmosphere of occupied areas.
  - .3        Dispose of exhaust materials in manner that will not result in harmful exposure to persons.
  - .4        Ventilate storage spaces containing hazardous or volatile materials.
  - .5        Continue operation of ventilation and exhaust system for time after cessation of work process to assure removal of harmful contaminants.
- .3        Permanent heating system of building, may be used. Be responsible for damage to heating system.
- .4        On completion of Work for which permanent heating system is used, replace filters.
- .5        Contract Administrator will pay utility charges when temporary heat source is existing building equipment.

**1.4                TEMPORARY POWER AND LIGHT**

- .1        Contractor to provide and pay for temporary power during construction for temporary lighting and operating of power tools, to a maximum supply of 230 volts 30 amps.
- .2        Arrange for connection with appropriate utility company. Pay all costs for installation, maintenance and removal.



- .3 Temporary power for electric cranes and other equipment requiring in excess of above is responsibility of Contractor.
- .4 Provide and maintain temporary lighting throughout project. Ensure level of illumination on all floors and stairs is not less than 162 lx.

**1.5 TEMPORARY COMMUNICATION FACILITIES**

- .1 Provide and pay for temporary telephone, fax, data hook up, lines, equipment necessary for own use.

**1.6 FIRE PROTECTION**

- .1 Provide and maintain temporary fire protection equipment during performance of Work required by insurance companies having jurisdiction, and governing codes, regulations and bylaws.
- .2 Burning rubbish and construction waste materials is not permitted on site.

**Part 2 Products NOT USED**

**Part 3 Execution NOT USED**

**END OF SECTION**

**Part 1            General**

**1.1                INSTALLATION AND REMOVAL**

- .1    Provide construction facilities in order to execute work expeditiously.
- .2    Remove from site all such work after use.

**1.2                SCAFFOLDING**

- .1    Provide and maintain scaffolding, ramps, ladders, and platforms.

**1.3                SITE STORAGE/LOADING**

- .1    Confine work and operations of employees by Contract Documents. Do not unreasonably encumber premises with products.
- .2    Do not load or permit to load any part of Work with a weight or force that will endanger the Work.

**1.4                CONSTRUCTION PARKING**

- .1    Parking will be permitted on site.
- .2    Contract Administrator to assign parking area.

**1.5                EQUIPMENT, TOOL AND MATERIALS STORAGE**

- .1    Provide and maintain, in a 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 a manner to cause least interference with work activities.

**Part 2            Products NOT USED**

**Part 3            Execution NOT USED**

**END OF SECTION**

**Part 1            General**

**1.1                INSTALLATION AND REMOVAL**

- .1      Provide temporary controls in order to execute Work expeditiously.
- .2      Remove from site all such work after use.

**1.2                WEATHER ENCLOSURES**

- .1      Provide weather tight closures to unfinished door and window openings, tops of shafts and other openings in floors and roofs.
- .2      Close off floor areas where walls are not finished; seal off other openings; enclose building interior work for temporary heat.
- .3      Design enclosures to withstand wind pressure and snow loading.

**1.3                DUST TIGHT SCREENS**

- .1      Provide dust tight screens or insulated partitions to localize dust generating activities, and for protection of workers, finished areas of Work and public.
- .2      Maintain and relocate protection until such work is complete.

**1.4                PUBLIC TRAFFIC FLOW**

- .1      Provide and maintain competent signal flag operators, traffic signals, barricades and flares, lights, or lanterns as required to perform Work and protect the public.

**1.5                FIRE ROUTES**

- .1      Maintain access to property including overhead clearances for use by emergency response vehicles.

**1.6                PROTECTION FOR OFF-SITE AND PUBLIC PROPERTY**

- .1      Protect surrounding private and public property from damage during performance of Work.
- .2      Be responsible for damage incurred.

**1.7                PROTECTION OF BUILDING FINISHES**

- .1      Provide protection for finished and partially finished building finishes and equipment during performance of Work.
- .2      Provide necessary screens, covers, and hoardings.
- .3      Confirm with Contract Administrator locations and installation schedule 3 days prior to installation.

- .4      Be responsible for damage incurred due to lack of or improper protection.

**END OF SECTION**

**Part 1 General**

**1.1 REFERENCE STANDARDS**

- .1 Within text of each specifications section, reference may be made to reference standards. Conform to these reference standards, in whole or in part as specifically requested in specifications.
- .2 If there is question as to whether any product or system is in conformance with applicable standards, Contract Administrator reserves right to have such products or systems tested to prove or disprove conformance.
- .3 Cost for such testing will be born by The City in event of conformance with Contract Documents or by Contractor in event of non-conformance.
- .4 Conform to latest date of issue of referenced standards in effect on date of submission of Tenders, except where specific date or issue is specifically noted.

**1.2 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, whenever identified prior to completion of Work, 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.
- .4 Unless otherwise indicated in specifications, maintain uniformity of manufacture for any particular or like item throughout building.
- .5 Permanent labels, trademarks and nameplates on products are not acceptable in prominent locations, except where required for operating instructions, or when located in mechanical or electrical rooms.

**1.3 AVAILABILITY**

- .1 Immediately upon signing Contract, review product delivery requirements and anticipate foreseeable supply delays for any items. If delays in supply of products are foreseeable, notify Contract Administrator of such, in order that substitutions or other remedial action may be authorized in ample time to prevent delay in performance of Work.
- .2 In event of failure to notify Contract Administrator at commencement of Work and should it subsequently appear that Work may be delayed for such reason, Contract Administrator reserves right to substitute more readily available products of similar character, at no increase in Contract Price or Contract Time.

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**1.4 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 packaged or bundled products in original and undamaged condition with manufacturer's seal and labels intact. Do not remove from packaging or bundling until required in Work.
- .3 Store products subject to damage from weather in weatherproof enclosures.
- .4 Store cementitious products clear of earth or concrete floors, and away from walls.
- .5 Keep sand, when used for grout or mortar materials, clean and dry. Store sand on wooden platforms and cover with waterproof tarpaulins during inclement weather.
- .6 Store sheet materials, lumber on flat, solid supports and keep clear of ground. Slope to shed moisture.
- .7 Store and mix paints in heated and ventilated room. Remove oily rags and other combustible debris from site daily. Take every precaution necessary to prevent spontaneous combustion.
- .8 Remove and replace damaged products at own expense and to satisfaction of Contract Administrator.
- .9 Touch-up damaged factory finished surfaces to Contract Administrator's satisfaction. Use touch-up materials to match original. Do not paint over name plates.

**1.5 TRANSPORTATION**

- .1 Pay costs of transportation of products required in performance of Work.

**1.6 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.
- .3 Improper installation or erection of products, due to failure in complying with these requirements, authorizes Contract Administrator to require removal and re-installation at no increase in Contract Price or Contract Time.

**1.7 QUALITY OF WORK**

- .1 Ensure Quality of Work is of highest standard, 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 Do not employ anyone unskilled in their required duties. Contract Administrator reserves right to require dismissal from site, workers deemed incompetent or careless.
- .3 Decisions as to standard or fitness of Quality of Work in cases of dispute rest solely with Contract Administrator, whose decision is final.

#### **1.8 CO-ORDINATION**

- .1 Ensure cooperation of workers in laying out Work. Maintain efficient and continuous supervision.
- .2 Be responsible for coordination and placement of openings, sleeves and accessories.

#### **1.9 CONCEALMENT**

- .1 In finished areas, conceal pipes, ducts and wiring in floors, walls and ceilings, except where indicated otherwise.
- .2 Before installation, inform Contract Administrator if there is interference. Install as directed by Contract Administrator.

#### **1.10 REMEDIAL WORK**

- .1 Perform remedial work required to repair or replace parts or portions of Work identified as defective or unacceptable. Coordinate adjacent affected Work as required.
- .2 Perform remedial work by specialists familiar with materials affected. Perform in a manner to neither damage nor put at risk any portion of Work.

#### **1.11 LOCATION OF FIXTURES**

- .1 Consider location of fixtures, outlets, and mechanical and electrical items indicated as approximate.
- .2 Inform Contract Administrator of conflicting installation. Install as directed.

#### **1.12 FASTENINGS**

- .1 Provide metal fastenings and accessories in same texture, colour and finish as adjacent materials, unless indicated otherwise.
- .2 Prevent electrolytic action between dissimilar metals and materials.
- .3 Use non-corrosive hot dip galvanized steel fasteners and anchors for securing exterior work, unless stainless steel or other material is specifically requested in affected specification Section.
- .4 Space anchors within individual load limit or shear capacity and ensure they provide positive permanent anchorage. Wood, or any other organic material plugs are not acceptable.
- .5 Keep exposed fastenings to a minimum, space evenly and install neatly.

- .6 Fastenings which cause spalling or cracking of material to which anchorage is made are not acceptable.

**1.13 FASTENINGS - EQUIPMENT**

- .1 Use fastenings of standard commercial sizes and patterns with material and finish suitable for service.
- .2 Use heavy hexagon heads, semi-finished unless otherwise specified. Use No. 304 stainless steel for exterior areas.
- .3 Bolts may not project more than one diameter beyond nuts.
- .4 Use plain type washers on equipment, sheet metal and soft gasket lock type washers where vibrations occur. Use resilient washers with stainless steel.

**1.14 PROTECTION OF WORK IN PROGRESS**

- .1 Prevent overloading of any part of building. Do not cut, drill or sleeve any load bearing structural member, unless specifically indicated without written approval of Contract Administrator.

**1.15 EXISTING UTILITIES**

- .1 When breaking into or connecting to existing services or utilities, execute Work at times directed by local governing authorities, with minimum of disturbance to Work, and/or building occupants.

**Part 2 Products NOT USED**

**Part 3 Execution NOT USED**

**END OF SECTION**



**Part 1 General**

**1.1 RELATED SECTIONS**

- .1 Individual product Sections: cutting and patching incidental to work of section. Advance notification to other sections required.

**1.2 SUBMITTALS**

- .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 Owner or separate contractor.
- .2 Include in request:
  - .1 Identification of Project.
  - .2 Location and description of affected Work.
  - .3 Statement on necessity for cutting or alteration.
  - .4 Description of proposed Work, and products to be used.
  - .5 Alternatives to cutting and patching.
  - .6 Effect on Work of Owner or separate contractor.
  - .7 Written permission of affected separate contractor.
  - .8 Date and time work will be executed.

**1.3 MATERIALS**

- .1 Required for original installation.
- .2 Change in Materials: Submit request for substitution in accordance with Section 01 33 00 - Submittal Procedures.

**1.4 PREPARATION**

- .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.
- .4 Provide supports to assure structural integrity of surroundings; provide devices and methods to protect other portions of project from damage.
- .5 Provide protection from elements for areas which may be exposed by uncovering work.

**1.5 EXECUTION**

- .1 Execute cutting, fitting, and patching to complete Work.
- .2 Fit several parts together, to integrate with other Work.
- .3 Uncover Work to install ill-timed Work.
- .4 Remove and replace defective and non-conforming Work.
- .5 Remove samples of installed Work for testing.
- .6 Provide openings in non-structural elements of Work for penetrations of mechanical and electrical Work.
- .7 Execute Work by methods to avoid damage to other Work, and which will provide proper surfaces to receive patching and finishing.
- .8 Employ original installer to perform cutting and patching for weather-exposed and moisture-resistant elements, and sight-exposed surfaces.
- .9 Cut rigid materials using masonry saw or core drill. Pneumatic or impact tools not allowed on masonry work without prior approval.
- .10 Restore work with new products in accordance with requirements of Contract Documents.
- .11 Fit Work airtight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.
- .12 At penetration of fire rated wall, ceiling, or floor construction, completely seal voids with fire stopping material, full thickness of the construction element.
- .13 Refinish surfaces to match adjacent finishes: For continuous surfaces refinish to nearest intersection; for an assembly, refinish entire unit.
- .14 Conceal pipes, ducts and wiring in floor, wall and ceiling construction of finished areas except where indicated otherwise.

**Part 2 Products NOT USED**

**Part 3 Execution NOT USED**

**END OF SECTION**

**Part 1            General**

**1.1                PROJECT CLEANLINESS**

- .1        Maintain Work in tidy condition, free from accumulation of waste products and debris, including other than that caused by Contract Administrator or other Contractors.
- .2        Remove waste materials from site at regularly scheduled times or dispose of as directed by Contract Administrator. Do not burn waste materials on site.
- .3        Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.
- .4        Provide on-site containers for collection of waste materials and debris.
- .5        Remove waste material and debris from site at end of each working day.
- .6        Dispose of waste materials and debris off site.
- .7        Clean interior areas prior to start of finish work, and maintain areas free of dust and other contaminants during finishing operations.
- .8        Store volatile waste in covered metal containers, and remove from premises at end of each working day.
- .9        Provide adequate ventilation during use of volatile or noxious substances. Use of building ventilation systems is not permitted for this purpose.
- .10      Use only cleaning materials recommended by manufacturer of surface to be cleaned, and as recommended by cleaning material manufacturer.
- .11      Schedule cleaning operations so that resulting dust, debris and other contaminants will not fall on wet, newly painted surfaces nor contaminate building systems.

**1.2                FINAL CLEANING**

- .1        When Work is Substantially Performed, remove surplus products, tools, construction machinery and equipment not required for performance of remaining Work.
- .2        Remove waste products and debris other than that caused by others, and leave Work clean and suitable for occupancy.
- .3        Prior to final review, remove surplus products, tools, construction machinery and equipment.
- .4        Remove waste products and debris other than that caused by Contract Administrator or other Contractors.
- .5        Remove waste materials from site at regularly scheduled times or dispose of as directed by Contract Administrator. Do not burn waste materials on site.

- .6 Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.
- .7 Clean and polish glass, mirrors, hardware, wall tile, stainless steel, chrome, porcelain enamel, baked enamel, plastic laminate, and mechanical and electrical fixtures. Replace broken, scratched or disfigured glass.
- .8 Remove stains, spots, marks and dirt from decorative work, electrical and mechanical fixtures, furniture fitments, walls, and floors .
- .9 Clean lighting reflectors, lenses, and other lighting surfaces.
- .10 Vacuum clean and dust building interiors, behind grilles, louvres and screens.
- .11 Inspect finishes, fitments and equipment and ensure specified workmanship and operation.
- .12 Broom clean and wash exterior walks, steps and surfaces; rake clean other surfaces of grounds.
- .13 Remove dirt and other disfiguration from exterior surfaces.
- .14 Sweep and wash clean paved areas.
- .15 Clean equipment and fixtures to a sanitary condition; clean or replace filters of mechanical equipment.
- .16 Remove debris and surplus materials from crawl areas and other accessible concealed spaces.

**Part 2 Products NOT USED**

**Part 3 Execution NOT USED**

**END OF SECTION**

**Part 1 General**

**1.1 INSPECTION AND DECLARATION**

- .1 Contractor's Inspection: Contractor and all Subcontractors shall conduct an inspection of Work, identify deficiencies and defects, and repair as required to conform to Contract Documents.
  - .1 Notify Contract Administrator in writing of satisfactory completion of Contractor's Inspection and that corrections have been made.
  - .2 Request Contract Administrator's Inspection.
- .2 Contract Administrator's Inspection: Contract Administrator and Contractor will perform inspection of Work to identify obvious defects or deficiencies. Contractor shall correct Work accordingly.
- .3 Completion: submit written certificate that following have been performed:
  - .1 Work has been completed and inspected for compliance with Contract Documents.
  - .2 Defects have been corrected and deficiencies have been completed.
  - .3 Equipment and systems have been tested, adjusted and balanced and are fully operational.
  - .4 Operation of systems have been demonstrated to Owner's personnel.
  - .5 Work is complete and ready for Final Inspection.
- .4 Final Inspection: when items noted above are completed, request final inspection of Work by Contract Administrator, and Contractor. If Work is deemed incomplete by Contract Administrator, complete outstanding items and request re-inspection.
- .5 Declaration of Substantial Performance: when Contract Administrator considers deficiencies and defects have been corrected and it appears requirements of Contract have been substantially performed, make application for certificate of Substantial Performance.
- .6 Commencement of Lien and Warranty Periods: date of Contract Administrator's acceptance of submitted declaration of Substantial Performance shall be date for commencement for warranty period and commencement of lien period unless required otherwise by lien statute of Place of Work.
- .7 Final Payment: When Contract Administrator considers final deficiencies and defects have been corrected and it appears requirements of Contract have been totally performed, make application for final payment. If Work is deemed incomplete by Contract Administrator, complete outstanding items and request re-inspection.

**END OF SECTION**

**Part 1            General**

**1.1                SUBMISSION**

- .1        Prepare instructions and data using personnel experienced in maintenance and operation of described products.
- .2        Copy will be returned after final inspection, with Contract Administrator's comments.
- .3        Revise content of documents as required prior to final submittal.
- .4        Two weeks prior to Substantial Performance of the Work, submit to the Contract Administrator four final copies of operating and maintenance manuals in English.
- .5        Ensure spare parts, maintenance materials and special tools provided are new, undamaged or defective, and of same quality and manufacture as products provided in Work.
- .6        If requested, furnish evidence as to type, source and quality of products provided.
- .7        Defective products will be rejected, regardless of previous inspections. Replace products at own expense.
- .8        Pay costs of transportation.

**1.2                FORMAT**

- .1        Organize data in the form of an instructional manual.
- .2        Binders: vinyl, hard covered, 3 'D' ring, loose leaf 219 x 279 mm with spine and face pockets.
- .3        When multiple binders are used, correlate data into related consistent groupings. Identify contents of each binder on spine.
- .4        Cover: Identify each binder with type or printed title 'Project Record Documents'; list title of project and identify subject matter of contents.
- .5        Arrange content by systems under Section numbers and sequence of Table of Contents.
- .6        Provide tabbed fly leaf for each separate product and system, with typed description of product and major component parts of equipment.
- .7        Text: Manufacturer's printed data, or typewritten data.
- .8        Drawings: provide with reinforced punched binder tab. Bind in with text; fold larger drawings to size of text pages.
- .9        Provide 1:1 scaled CAD files in dwg format on CD.
- .10      Provide photo documentation as per section 01 33 00 paragraph 1.9

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**1.3 CONTENTS - EACH VOLUME**

- .1 Table of Contents: provide title of project;
  - .1 Date of submission; names,
  - .2 Addresses, and telephone numbers of Contract Administrator, Consultants and Contractor with name of responsible parties;
  - .3 Schedule of products and systems, indexed to content of volume.
- .2 For each product or system:
  - .1 List names, addresses and telephone numbers of subcontractors and suppliers, including local source of supplies and replacement parts.
- .3 Product Data: mark each sheet to clearly identify specific products and component parts, and data applicable to installation; delete inapplicable information.
- .4 Drawings: supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams.
- .5 Typewritten Text: as required to supplement product data. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions specified in Section 01 45 00 - Quality Control.

**1.4 AS-BUILTS AND SAMPLES**

- .1 In addition to requirements in General Conditions, maintain at the site for Contract Administrator one record copy of:
  - .1 Contract Drawings.
  - .2 Specifications.
  - .3 Addenda.
  - .4 Change Orders and other modifications to the Contract.
  - .5 Reviewed shop drawings, product data, and samples.
  - .6 Field test records.
  - .7 Inspection certificates.
  - .8 Manufacturer's certificates.
- .2 Store record documents and samples in field office apart from documents used for construction. Provide files, racks, and secure storage.
- .3 Label record documents and file in accordance with Section number listings in List of Contents of this Project Manual. Label each document "PROJECT RECORD" in neat, large, printed letters.
- .4 Maintain record documents in clean, dry and legible condition. Do not use record documents for construction purposes.
- .5 Keep record documents and samples available for inspection by Contract Administrator.

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**1.5 RECORDING ACTUAL SITE CONDITIONS**

- .1 Record information on set of black line opaque drawings, and in copy of Project Manual, provided by Contract Administrator.
- .2 Provide felt tip marking pens, maintaining separate colours for each major system, for recording information.
- .3 Record information concurrently with construction progress. Do not conceal Work until required information is recorded.
- .4 Contract Drawings and shop drawings: legibly mark each item to record actual construction, including:
  - .1 Measured locations of internal utilities and appurtenances, referenced to visible and accessible features of construction.
  - .2 Field changes of dimension and detail.
  - .3 Changes made by change orders.
  - .4 Details not on original Contract Drawings.
  - .5 References to related shop drawings and modifications.
- .5 Specifications: legibly mark each item to record actual construction, including:
  - .1 Manufacturer, trade name, and catalogue number of each product actually installed, particularly optional items and substitute items.
  - .2 Changes made by Addenda and change orders.
- .6 Other Documents: maintain manufacturer's certifications, inspection certifications, field test records, required by individual specifications sections.

**1.6 EQUIPMENT AND SYSTEMS**

- .1 Each Item of Equipment and Each System: include description of unit or system, and component parts. Give function, normal operation characteristics, and limiting conditions.
- .2 Include manufacturer's printed operation and maintenance instructions.
- .3 Additional requirements: As specified in individual specification sections.

**1.7 MATERIALS AND FINISHES**

- .1 Building Products, Applied Materials, and Finishes: include product data, with catalogue number, size, composition, and colour and texture designations. Provide information for re-ordering custom manufactured products.
- .2 Instructions for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.
- .3 Moisture-protection and Weather-exposed Products: include manufacturer's recommendations for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.
- .4 Additional Requirements: as specified in individual specifications sections.



**1.8 WARRANTIES AND BONDS**

- .1 Separate each warranty or bond with index tab sheets keyed to Table of Contents listing.
- .2 List subcontractor, supplier, and manufacturer, with name, address, and telephone number of responsible principal.
- .3 Obtain warranties and bonds, executed in duplicate by subcontractors, suppliers, and manufacturers, within ten days after completion of the applicable item of work.
- .4 Except for items put into use with Contract Administrator 's permission, leave date of beginning of time of warranty until the Date of Substantial Performance is determined.
- .5 Verify that documents are in proper form, contain full information, and are notarized.
- .6 Co-execute submittals when required.
- .7 Retain warranties and bonds until time specified for submittal.

**Part 2 Products NOT USED**

**Part 3 Execution NOT USED**

**END OF SECTION**