



PROJECT SPECIFICATIONS

THE CITY OF TORONTO, TORONTO ANIMAL SERVICES

821 Progress Ave., Toronto, ON

Project: #23-1552

Each Section and Subsection of the Specification is numbered to conform to six-digit NMS MASTERFORMAT, Division 00 to 49.

The Sections are written as parts of work and have been assigned permanent numbers. They are arranged in sequence for this particular Project. Any gaps in the order of numerical sequence do not indicate that a Specification Section or Subsection has been omitted, but rather that a Section or Subsection is not included in work required for this Project. Neither the organization of the specifications into divisions, sections and parts, nor the arrangement of the drawings, is intended to control the Contractor in dividing the Work among Subcontractors and Suppliers, or in establishing the extent of the work to be performed by any trade.

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1 GENERAL

This project is for the Renovation of the Toronto Animal Services dog runs and shed. The project is located at 821 Progress Avenue, Toronto, Ontario.

This project consists of demolition of the existing exterior shed, a single pet enclosure and removal of selected portion of dog runs to be replaced with new conc. pad and prefab container shed, a new single pet enclosure and dog runs.

2 ALLOWANCES – See section 01 21 00 and Owner's documents on Contingency Allowance cost.

END OF DOCUMENT

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- .1 CONTRACT DOCUMENTS
- .1 Work will be performed under one Contract, bound by a purchase order issued by City of Toronto and the Canadian Standard Construction Document CCDC-2, which will be used to govern this project and any discrepancies.
- .2 GENERAL CONDITIONS
- .1 The General Conditions of the Contract form an integral part of the Specifications.
- .3 DIVISIONS 00 and 01
- .1 The provisions of all Sections of Divisions 00 and 01 shall apply to each Section of this Specification.
- .4 SUPPLEMENTARY DEFINITIONS
- .1 Wherever in the Specification the word "Owner" is used in any form, it shall mean the **"City of Toronto"**.
- .2 Wherever in the Specification the word "Consultant" is used in any form, it shall mean **"ATA Architects Inc."**.
- .3 In the Specification, references such as "Shown on the Drawings", "Specified", "Scheduled", "Called for" and the like shall be deemed to include work required by any of the Contract Documents.
- .4 In the Specifications the expression Trade(s) is synonymous with Subcontractor(s) if the context permits. The expression "All Trades" shall be deemed to include the Contractor.
- .5 MATERIAL HANDLING AND STORAGE
- .1 Store packaged materials in original, undamaged containers with manufacturer's labels and seals intact.
- .2 Prevent damage to materials during handling and storage.
- .3 Damaged materials are not acceptable; remove damaged or rejected materials from site immediately at contractors' own expense.
- .6 TEMPORARY WORK
- .1 The expression "Provide" shall be deemed to include the provision, installation and finishing, maintenance, servicing and removal of the work described. All work damaged by temporary installation shall be repaired and made good at no expense to the Owner.
- .7 EXAMINATION
- .1 Each Trade shall examine surfaces prepared by Other Trades which effect its work and shall ensure that defects are corrected. Commencement of work shall imply acceptance of prepared work.
- .2 All Trades shall check and verify with the Contractor all dimensions, especially those pertaining to the work of more than just their Trades.
- .3 All details and measurements of any work which is to fit to, or conform with, work already installed by Other Trades, shall be taken at the job site by the Trades concerned.
- .8 SATISFACTION/APPROVAL
- .1 The expression "to the satisfaction or approval of the Consultant" shall be implied throughout the Specification in regard to the materials and workmanship.

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- .2 "Submit for approval" means that the item in question is to be submitted to the Consultant for approval and that a written acceptance of it and authorization for its use in the work shall be obtained before it is incorporated in the work. Trades shall submit items for approval to the Consultant via the Contractor.
- .3 An "approved method" means that which has the manufacturer's recommendation, or which is generally accepted as good trade practice. The Consultant's approval is also required.
- .9 BURIED SERVICES
- .1 Make all necessary enquiries to determine the location of any existing services such as hydro, telephone, water, gas, sewer, etc. This applies to interior as well as exterior work.
- .2 Ascertain the location of any services buried in floor slabs prior to cutting. Unless all existing services can be visually located, all concrete floors to be cut must be **x-rayed** to determine possible buried services, submit all pertinent information to consultant to obtain approval before work commences. Contractor shall be responsible for any damages which result from negligence.
- .10 EMERGENCIES
- .1 Notify the Department of Labour immediately should an emergency arise on the site, including personal injuries and accidents. Provide complete details on the extent of emergency, cause and the action being taken. This notification shall be by telephone or facsimile immediately after the occurrence.
- .11 EXISTING SERVICES
- .1 The Owner will not be liable for any loss, damage, delay or claim whatsoever resulting or arising from the absence in whole or in part of services.
- .2 Without limiting the generality of the foregoing, this includes roads, water, storm and sanitary services, electricity and condition of drainage from or to the site.
- .12 WASTE AUDIT AND WASTE REDUCTION
- .1 Comply with requirements of jurisdictional authorities.
- .2 Deliver to nearest appropriate depot materials accepted for recycling by region or municipality having jurisdiction over the Place of the Work, including but not limited to cardboard, paper, plastic, aluminum, steel, and glass. Deliver to nearest appropriate depot scrap and excess gypsum wallboard for recycling of this material. Costs for this work are to be included in the Contract Price.
- .3 Refer to Section 01 74 11 - Cleaning and Waste Management, for additional requirements.
- .13 SECURITY
- .1 Contractor shall be responsible for security of the Place of the Work and material from time the Work commences until completion of the Work.
- .2 Provide and maintain signs, hoardings, guard rails, barriers, warning signs, warning lights, and other protection as required by authorities having jurisdiction for safety of the Place of the Work. Be responsible for adequacy of protection.
- .14 PUBLICITY RELEASES AND PHOTOGRAPHS
- .1 No press or publicity releases will be permitted without prior written approval of the Owner.
- .2 No photographs of the Place of the Work or of any portion of the Work will be permitted without written approval of the Owner, except as provided by the Contract Documents.

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- .15 ELECTRONIC FILES
- .1 In the event that the Contractor, a Subcontractor, or a Supplier requests AutoCAD files from the Consultant, the Consultant will be allowed to use their discretion whether or not they will provide them. The Consultant will charge a fee for providing such electronic files and will require a signed endorsement of disclaimer form to the Contractor.
- .16 OPERATIONAL LIMITATIONS
- .1 The existing Toronto Animal Services (animal shelter) and grounds will remain in full use and occupancy throughout the Work. The Contractor will be responsible for keeping the public safe during the renovations inside and outside the building.
- .2 Contractor's use of the Place of the Work is limited to permit regular use of existing Owner's facilities to continue with the least amount of interference and disruptions possible and as specified herein.
- .1 The Contractor shall organize the Work in cooperation with the Owner so that the operation of the existing building is not disrupted. Such organization shall take place at least five (5) working days prior to commencing work except where a longer lead time is specified in the Contract Documents, in which case the longer lead time shall govern.
- .2 Any potential interferences with the ongoing operation of the existing facility required for the proper execution of the Work shall be coordinated with the Owner prior to undertaking such operations. Owner shall require a minimum of ten (10) working days' notice of such potential interruptions and any requirements or restrictions that the Owner might reasonably have in connection with such disruptions shall be accommodated by the Contractor at no increase in either the Contract Price or the Contract Time.
- .3 In consultation with, and to acceptance of, the Consultant and the Owner, designate an entrance and a circulation route into and around the Place of the Work that workers shall use and that shall not be used by the Owner's staff or the public.
- .1 Deliveries to the Place of the Work shall be closely coordinated with the Owner. There shall be no increase in either the Contract Price or the Contract Time on account of such restrictions.
- .2 Deliveries shall be completed through the Contractor's entrance shown on the drawings. The General Contractor is to clean up any refuse or damage caused by the passage through areas while delivering materials.
- .3 Work within the project hoarding line shall be done between 0700 hours and 1800 hours. The Contractor shall make special arrangements with the Owner to perform work outside of these hours. Requests for special arrangement shall be made at least five (5) working days in advance except where a longer lead time is specified in the Contract Documents, in which case the longer lead time shall govern.
- .4 Any cost associated with work outside of regular hours will be charged to and shall be the responsibility of the Contractor. On-site access problems are to be referred to the Owner.
- .5 Owner to specify rules for the contractor to access the site.
- .4 In addition to the requirements for waste removal and disposal specified in Section 01 74 11 and elsewhere in the Contract Documents, the Contractor shall clean up and remove debris on a daily basis. Under no circumstances shall the Contractor or workers involved in or retained for the purpose of the Work use the Owner's garbage disposal containers.
- .5 The Contractor shall provide proper and adequate protection for all Owner's property and equipment. The Contractor shall ensure that dust is kept to a minimum. Refer also to Section 01 74 11 in this regard. The Contractor shall make good at no additional cost to the Owner, all surfaces disturbed by the execution of the Work whether such surfaces are located within the area of work or not.
- .6 The Contractor is confined to areas within the project hoarding line for storage of equipment and materials that are to be stored at the Place of the Work. The Contractor is responsible for the safe on-site storage of Products and their protection (including Products supplied by the Owner and other contractors to be installed under the Contract) in such ways as to avoid dangerous conditions or

contamination to the Products or other persons or property and in locations at the Place of the Work to the satisfaction of the Owner and the Consultant. The Owner shall provide all relevant information on the Products to be supplied by the Owner.

.17 FIELD MARKING

- .1 Do not use wick pens to mark face of products to be installed in the work. Such pen marks will show through applied paint or vinyl coatings in due course. The Contractor will be held responsible and required to remedy such defects, classified as "latent defects" regardless of when they occur.

.18 TRADEMARKS AND LABELS

- .1 Trademarks and labels, including applied labels, shall not be visible in the finished work. Such trademarks or labels shall be removed by grinding if necessary or painted out where the particular material has been painted.
- .2 The exception of this requirement shall be those essential to obtain identification of mechanical and electrical equipment and those required to be visible by Authorities having jurisdiction and those on plumbing fixtures and trims, i.e. all U.L.C., C.S.A., and A.S.T.M. labels.

.19 FASTENINGS

- .1 Unless otherwise specified fasteners shall be concealed. Use where not possible to conceal, exposed metal fasteners and accessories of a permanent type that are of same texture, colour and finish as base metal on which they occur.
- .2 Use metal fastenings of the same materials as the metal component they are anchoring or of a metal which will not set up an electrolytic action which would cause damage to the fastening or metal component.
- .3 Use fastenings of a type and size and install them in a manner to provide positive anchorage of the unit to be anchored in position. Install anchors at required spacing to provide required load bearing or shear capacity.
- .4 Keep exposed fastenings to a minimum, evenly spaced and neatly laid out. To be shown on Shop Drawings.
- .5 Fastenings which cause spalling or cracking of material to which anchorage is being made are not permitted.
- .6 Limitations for Use of Powder Actuated Tools:
 - .1 The use of powder activated fasteners is prohibited without the written authorization of the Consultant.
 - .2 Where such authority is given, it will be for low velocity type powder activated fasteners and for horizontal application only.
 - .3 The manufacturer of the equipment selected, Ramset, Omark or equal, shall send a representative to the site to demonstrate the equipment prior to its use, and this representative shall make periodic inspections to ensure compliance with instructions issued by him and correct application of material. In all cases a shield shall be used where fasteners are to be applied to concrete. The use of fasteners in pre-cast concrete is to be avoided if possible as there is an increased tendency to shatter surfaces.
 - .4 Fasteners shall be not nearer than 63 mm to the edge of any cast-in-place formed concrete member.

- .5 Under no circumstances shall such fasteners be used on concrete members less than 75 mm in thickness.
- .6 Such fasteners shall not be in areas where corrosion can take place, for instance due to high humidity or condensation.
- .7 Generally use support anchorage of cast-in-place type set into concrete forms prior to pouring concrete, or self-drilling type such as "Red Head" T-32 tie wire type. When drilling upwards, use jig to hold drill steady and plumb.
- .8 Provide pull-out tests on anchors, or otherwise test to ensure anchorage is sufficient for the particular application including a minimum safety factor of seven. Provide evidence of such tests if requested.
- .9 Submit samples of proposed anchoring or hanging devices with technical data and test data.

END OF SECTION

1 GENERAL

1.1 CONTRACT DOCUMENTS

- .1 Refer to GC 1.1 – Contract Documents
- .2 Work of this Contract comprises the construction work as detailed in the Contract Documents for the Toronto Animal Services at 821 Progress Ave., Toronto, ON and further identified as ATA Project No. 23-1552.
- .3 Division of the Work among Subcontractors and Suppliers is solely the Contractor's responsibility and the Consultant assume no responsibility to act as an arbiter to establish subcontract limits between Sections or Divisions of work.
- .4 The Contract Documents were prepared by the Consultants for the account of the Owner. The material contained herein reflects the Consultant's best judgment in light of the information available to him at the time of preparation. Any use that a third party makes of the Contract Documents, or any reliance on or decisions to be made based on them, are the responsibility of such third parties. The Consultant accepts no responsibility for damages if any, suffered by any third party as a result of decisions made or actions based on the Contract Documents.
- .5 These specifications are written in imperative mode in an abbreviated form. The imperative language of the technical sections is directed to the Contractor, unless specifically noted otherwise. Incomplete sentences shall be completed by inserting "shall", "the Contractor shall" and "shall be", and similar mandatory phrases by inference in the same manner as they are applied to notes on the Drawings. The words "shall be" will be supplied by inference were a colon (:) is used within sentences and phrases. Except where worded to the contrary, fulfil and perform all indicated requirements whether stated imperatively or otherwise.

1.2 CONTRACT METHOD

- .1 Single Contract: Construct the Work under a single lump sum contract.

1.3 CONTRACTOR USE OF PREMISES

- .1 Contractor will need to phase work on the kennels and dog runs to be approved by owner, otherwise has unrestricted use of the Place of the Work until Substantial Performance of the Work where upon Contractor and Subcontractors may be restricted access to and may require approval from the Owner to areas in the Place of Work in order to complete deficiencies in the Work in a timely manner.

1.4 PARTIAL OWNER OCCUPANCY OF THE WORK

- .1 The Owner shall have the right to enter or occupy the Place of the Work in whole or in part for the purpose of placing materials, fittings and equipment or for other uses at any time before Substantial Performance of the Work, if, in the reasonable opinion of the Consultant, such entry or occupation does not prevent or substantially interfere with the Contractor's completion of the Contract or achieving Substantial Performance of the Work within the Contract Time. Such entry or occupation or use of equipment or systems shall not be considered as acceptance of the Work in whole or in part, or in any way relieve the Contractor from its responsibility as constructor under the Occupational Health and Safety Act or to complete the Contract.

- .2 Refer to GC 5.9 – Non-Conforming Work.
- 1.5 SUBSTANTIAL PERFORMANCE OF THE WORK
 - .1 Refer to GC 5.4 – Substantial Performance of the Work.

END OF SECTION

1 GENERAL

1.1 REFERENCES

- .1 CCDC 2, Stipulated Price Contract.

1.2 CONTINGENCY ALLOWANCE

- .1 Refer to CCDC 2, GC 4.2 Contingency Allowance.
- .2 Refer to Owner's Documents for Contingency Allowance cost to be included in bid price.
- .3 Do not include in Bid Price, additional contingency allowances for products, installation, overhead or profit.
- .4 Expenditures under contingency allowance will be authorized in accordance with procedures provided in CCDC 2, GC 6.1 – Owner's Right to Make Changes, CCDC 2, 6.2 Change Order and CCDC 2, 6.3 Change Directive.

END OF SECTION

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- 1 GENERAL
- 1.1 SECTION INCLUDES
- .1 Product substitution procedures
- 1.2 PRODUCT SUBSTITUTION PROCEDURES
- .1 Request for substitution will only be considered when submitted in sufficient time, in the opinion of the Consultant, to permit proper evaluation by the Consultant
- .2 When requesting a Consultant review of a proposed Product substitution, demonstrate that the proposed substitution will perform equally as well as better as the specified Product.
- .3 Products must be available to be delivered to the site within 30 days from the approval of the substitution by the architect and Owner.
- .4 Accompany each request for substitution with a list of properties for both the specified Product and the proposed substitution, including the following information:
- .1 Product identification, including manufacturer's name, address, telephone and fax numbers, and website address where available.
- .2 Manufacturer's Product data sheets, including material descriptions, compliance with applicable reference standards, and performance and test data.
- .3 A summarized comparison of physical properties and performance characteristics for the specified Product and the proposed substitution, and clearly highlighting significant variations.
- .4 Indication of availability of maintenance services and sources of replacement materials and parts, including associated costs and time frames.
- .5 Indication of cost savings and reduction of the construction schedule.
- .6 Verification that the substitute will not result in additional costs or a reduction in performance to other portions of the Work.
- .7 Reason for requesting the substitution.
- .5 The clauses "or equal", or "approved equal", or "equivalent", or "approved alternate" or other similar clauses, will not be construed as an invitation to submit requests for substitution or to unilaterally substitute Products in place of the specified Products and/or systems.
- .6 Failure to order specified Products in adequate time to meet the approved construction schedule will not be a valid reason to submit a request for substitution. In accordance, with CCDC 2, GC 6.5 – Delays, such delays remain the responsibility of the Contractor, and will not result in an extension to the Contract Time or be subject to reimbursement by the Owner.
- .7 The Owner is under no obligation to consider Product or System substitution recommended by the Contractor.
- .8 Remove and replace substitutions incorporated into the Work without the Owner's and Consultant's written approval.

END OF SECTION

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- 1 GENERAL
 - 1.1 COORDINATION
 - .1 Coordinate the Work to ensure the Work proceeds safely and expeditiously.
 - .2 Ensure adequate communication among involved parties.
 - .3 Allocate mobilization areas of the Place of the Work, for field offices, sheds, access, traffic and parking facilities.
 - .4 Coordinate use of the Place of the Work and facilities through procedures for submittals, reports and records, schedules, coordination of Drawings, recommendations, and resolution of ambiguities and conflicts.
 - .5 Submit information required for preparation of coordination and interference drawings. Review and approve revised drawings for submission to Consultant.
 - 1.2 OTHER CONTRACTORS
 - .1 Cooperate with any separate contractor employed by the Owner and, if necessary, co-ordinate with their work.
 - .2 Submit necessary information to Owner to assist in the required scheduling of such contractors.
 - 1.3 CONTINUANCE OF OWNER OPERATIONS
 - .1 Coordinate and schedule the Work to minimize any disruption of the normal functions of the existing building.
 - .2 Changes to the traditional scheduling of construction may be required and certain portions of the Work may not be able to proceed in continuous sequence.
 - .3 Every reasonable effort will be made to cooperate with the construction process.
 - .4 The Owner may modify proposed scheduling where such changes are in the best interests regarding the operation of the existing building.
 - 1.4 ADMINISTRATIVE
 - .1 Schedule and administer project meetings in consultation with Consultant and Owner, throughout the progress of the Work. Meetings to occur at regular weekly (7 day) intervals.
 - .2 Prepare agenda for meetings.
 - .3 Coordinate written notice of each meeting five (5) days in advance of meeting date with Consultant and Owner.
 - .4 Provide physical space and make arrangements for meetings.
 - .5 Preside over meetings.
 - .6 Record the meeting minutes. Include significant proceedings and decisions. Identify actions by parties.
 - .7 Reproduce and distribute copies of minutes within three (3) days after meetings and transmit to meeting participants, affected parties not in attendance, Consultant and Owner.
 - .8 Representative of Contractor, Subcontractor and suppliers attending meetings will be qualified and authorized to act on behalf of party each represents.

1.5 PRECONSTRUCTION MEETING

- .1 Within fifteen (15) days after award of Contract, upon notification, attend at a location to be determined, a pre-construction meeting along with authoritative representatives of certain key sub-contractors as specifically requested by the Consultant and Owner.
- .2 Consultant shall chair and issue minutes associated with the pre-construction meeting.
- .3 Purpose of meeting is to discuss and review items of agenda as noted below.

Agenda to include but may not necessarily be limited to items as listed below:

- .1 Appointment of official representative of participants in the Work.
- .2 Schedule of Work: in accordance with Section 01 32 16 - Construction Progress Documentation - Bar Chart.
- .3 Schedule of submission of shop drawings, samples, colour chips. Submit submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .4 Requirements for temporary facilities, site sign, offices, storage sheds, utilities, fences in accordance with Section 01 50 00 - Temporary Facilities and Controls.
- .5 Delivery schedule of specified equipment.
- .6 Site security in accordance with City of Toronto.
- .7 Proposed changes, change orders, procedures, approvals required, mark-up percentages permitted, time extensions, overtime, administrative requirements.
- .8 Owner provided products.
- .9 Record drawings in accordance with Section 01 33 00 - Submittal Procedures and Owner's closeout checklist.
- .10 Maintenance manuals in accordance with Section 01 78 00 - Closeout Submittals.
- .11 Take-over procedures, acceptance, warranties in accordance with Section 01 78 00 Closeout Submittals.
- .12 Monthly progress claims, administrative procedures, photographs, hold backs.
- .13 Appointment of inspection and testing agencies or firms.
- .14 Insurances, transcript of policies.
- .15 Testing, documenting and photographing existing conditions with Consultant and Owner and issuing a summary of findings.
- .16 Warranty Security
- .17 Scale of Holdback for Closeout Document

1.6 PROJECT/PROGRESS/DEFICIENCY MEETINGS

- .1 During course of Work General Contractor shall chair project (progress) meetings on site, on a weekly basis and will coordinate notices stating time and place to Owner's Representative, Consultants, Contractor and sub-contractors, and/or other persons whose presence may be required.
- .2 During course of Work, a pre-arranged scheduled Draft Proper Invoice meeting will be held once monthly, to be chaired by the General Contractor. All subcontractors with billing amounts shall be present at this meeting.
- .3 All parties will be notified a minimum of five (5) days prior to meetings.
- .4 Minutes of meetings to be circulated by email, to attending parties and affected parties not in attendance within three (3) days after meeting.
- .5 Agenda for project/progress meeting to include but may not necessarily be limited to the following:
 - .1 Health and Safety issues to be reviewed and discussed.
 - .2 Review, approval of minutes of previous meeting.
 - .3 Review of Work progress since previous meeting.

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- .4 Field observations, problems, conflicts.
 - .5 Problems which impede construction schedule.
 - .6 Review of off-site fabrication delivery schedules.
 - .7 Corrective measures and procedures to regain projected schedule.
 - .8 Revision to construction schedule.
 - .9 Progress schedule, during succeeding work period.
 - .10 Review submittal schedules: Expedite as required.
 - .11 Review of CCN log, CO log, and Shop drawing log.
 - .12 Maintenance of quality standards.
 - .13 Review proposed changes for effect on construction schedule and on completion date.
 - .14 Commissioning
 - .15 Two (2) week look ahead
 - .16 Two (2) month look ahead
 - .17 Work that may affect the operation of the existing facility.
 - .18 Other business
- .6 After Substantial Completion, General Contractor shall chair project (deficiency) meetings on site, on a bi-weekly basis and will coordinate notices stating time and place to Owner's Representative, Consultants, Contractor and sub-contractors, and/or other persons whose presence may be required. The meetings shall end at Total Completion.

END OF SECTION

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- 1 GENERAL
 - 1.1 SECTION INCLUDES
 - .1 Construction Schedules
 - .2 Construction Photographs
 - 1.2 SUBMISSION REQUIREMENTS
 - .1 Submit initial schedules within fifteen (15) days after award of Contract and resubmit updated schedules with each application for payment.
 - .2 The scheduling shall be done on MS-Project Latest Version; the initial schedule shall be the baseline schedule, and schedule re-submission shall include the baseline schedule with the schedule updates superimposed on same, so schedule issues can readily be identified.
 - 1.3 CONSTRUCTION SCHEDULE - CRITICAL PATH METHOD
 - .1 Include complete sequence of construction activities.
 - .2 Include dates for commencement and completion of each major element of Work.
 - .3 Show projected percentage of completion of each item as of the first day of the month.
 - .4 Indicate progress of each activity to date of submission of the schedule.
 - .5 Update schedule monthly and resubmit with each application for progress payment. The Consultant will not review an application for payment that does not include an updated construction schedule. Update schedules shall show the baseline schedule as well as the updates.
 - .6 Show changes occurring since previous submission of schedule:
 - .1 Major changes in scope
 - .2 Activities modified since previous submission.
 - .3 Revised projections of progress and completion
 - .4 Other identifiable changes.
 - .7 Provide a narrative report to define:
 - .1 Problem areas, anticipated delays, and impact on schedule
 - .2 Corrective action recommended and its effect
 - .3 Effect of changes on schedules of other contractors (sub).
 - 1.4 ADDITIONAL SCHEDULES
 - .1 Concurrently with construction schedule, submit a schedule of values, a shop drawing schedule, a change management schedule and an equipment delivery schedule in formats acceptable to the Consultant.
 - .2 Schedule of Values: to requirements of the Contract.
 - .3 Submittal Schedule:
 - .1 Refer to GC 3.10 - Shop Drawings
 - .2 Indicate anticipated submission dates and review periods for shop drawings, samples, lists or materials and other documentation.
 - .3 Highlight critical items, including latest date for submittal review by the Consultant.
 - .4 Design sequence of submissions to reflect requirements of the construction schedule.
 - .4 Equipment Delivery Schedule: Indicate list of manufactured equipment complete with order dates and anticipated delivery dates.

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- .5 Change management schedule broken down by Contemplated Change Order Log, Change Order Log, Site Instruction Log and Request for Information Log.
- 1.5 PROGRESS PHOTOGRAPHS
- .1 Contractor to send JPEG photos by email, to the owner and consultant at a minimum resolution of 800 x 600, on a weekly basis.
 - .2 Positions of photographs may be determined by Consultant.
 - .3 Photographs will be properly exposed and in focus, with unobstructed views of various aspects of the Work.
 - .4 Identify each photograph with:
 - .1 name of Project
 - .2 name of photographer
 - .3 description of view, and
 - .4 date photograph was taken.

END OF SECTION

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- 1 GENERAL
 - 1.1 SECTION INCLUDES
 - .1 Shop Drawings and product data
 - 1.2 ADMINISTRATIVE
 - .1 Submit to Consultant submittals listed for review. Submit promptly and in orderly sequence to not cause delay in Work. Failure to submit in ample time is not considered sufficient reason for extension of Contract Time and no claim for extension by reason of such default will be allowed.
 - .2 Do not proceed with Work affected by submittal 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 Consultant. 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 Work and Contract Documents. Submittals not stamped, signed, dated and identified as to specific project will be returned without being examined and considered rejected.
 - .6 Notify Consultant, 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 Consultant's review of submittals.
 - .9 Contractor's responsibility for deviations in submission from requirements of Contract Documents is not relieved by Consultant review.
 - .10 Keep one reviewed copy of each submission on site.
 - .11 Within two (2) weeks of shop drawing being reviewed, maintenance instructions shall be submitted for Consultant review.
 - 1.3 SUBMITTALS PRIOR TO START OF WORK
 - .1 Submit the following documents within the time stipulated, or, if not stipulated, prior to first application for payment:
 - .1 Insurance certificates
 - .2 Bonds
 - .3 Workplace Safety and Insurance Board certificates
 - .4 Construction schedule (within 10 Working Days following the notice of award of the Contract)
 - .5 Interference drawings
 - .6 Schedule of values
 - .7 Shop drawing and submittal schedule
 - .8 Equipment delivery schedule.
 - .2 Prior to the first application for payment, the Contractor and the Consultant shall jointly prepare a schedule of the dates for submission and return of Shop Drawings and any Submittals.
 - 1.4 SHOP DRAWINGS AND PRODUCT DATA
 - .1 Refer to CCDC 2, GC 3.10 – Shop Drawings, in addition to the following.

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- .2 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.

 - .3 Submissions to 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.

 - .10 Relationship to adjacent work.

 - .4 After Consultant's review, distribute copies to affected parties.

 - .5 Submit by email, shop drawings for each requirement requested in specification Sections and as Consultant may reasonably request by email.

 - .6 Submit by email, product data sheets or brochures, for requirements requested in specification Sections and as requested by Consultant where shop drawings will not be prepared due to standardized manufacture of product.

 - .7 Submit by email, test reports for requirements requested in specification Sections and as requested by Consultant.
 - .1 Report signed by authorized official of testing laboratory that material, product or system identical to material, product or system to be provided has been tested in accord with specified requirements.
 - .2 Testing must have been within 3 years of date of contract award for project.

 - .8 Submit by email, certificates for requirements requested in specification Sections and as requested by Consultant.
 - .1 Statements printed on manufacturer's letterhead and signed by responsible officials of manufacturer of product, system or material attesting that product, system or material meets specification requirements.
 - .2 Certificates must be dated after award of project contract complete with project name.

 - .9 Submit by email, manufacturer's instructions for requirements requested in specification Sections and as requested by Consultant.
 - .1 Pre-printed material describing installation of product, system or material, including special notices and Material Safety Data Sheets concerning impedances, hazards and safety precautions.

 - .10 Submit by email, manufacturer's Field Reports for requirements requested in specification Sections and as requested by Consultant.
 - .1 Documentation of the testing and verification actions taken by manufacturer's representative to confirm compliance with manufacturer's standards or instructions.

.11 Submit by email, copies of Operation and/or Maintenance Data for requirements requested in specification Sections and as requested by Consultant.

.12 Delete information not applicable to project.

.13 Supplement standard information to provide details applicable to project.

.14 If upon review by Consultant, no errors or omissions are discovered or if only minor corrections are made, reviewed copies will be returned by email, 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.

1.5 LAYOUT DRAWINGS

.1 Do not use the Contract Drawing measurements for prefabrication and layout of work. Locations and routing are to generally be in accordance with the Contract Drawings, however, layout drawings are to be prepared for all such work. Use established benchmarks for both horizontal and vertical measurements. Coordinate with and make allowances for the work of other trades, accurately layout the work, and be entirely responsible for all work installed in accordance with layout drawings.

.2 Submit by email, copies of layout drawings to Consultant prior to start of Work.

.3 Coordinate and review with interference drawings with affected Subcontractors prior to commencement of their respective portions of Work.

1.6 SAMPLES

.1 No later than three (3) weeks after award of Contract, submit to Consultant the following information:

.1 a complete list of Suppliers and/or manufacturers intended for use in the completion of the Contract.

.2 all colour samples required by the individual sections for selection by Consultant. Include the preparation of any representative panels of materials or colours deemed necessary by the Consultant.

.2 Submit for review samples in triplicate as requested in respective specification Sections. Label samples with origin and intended use.

.3 Deliver samples prepaid to Consultant's business address.

.4 Notify Consultant in writing, at time of submission of deviations in samples from requirements of Contract Documents.

.5 Where colour, pattern or texture is criterion, submit full range of samples.

.6 Adjustments made on samples by Consultant are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to Consultant prior to proceeding with Work.

.7 Make changes in samples which Consultant may require, consistent with Contract Documents.

.8 Reviewed and accepted samples will become standard of workmanship and material against which installed Work will be verified.

1.7 MOCK-UPS

.1 Contractor to provide mock-ups in accordance with Section 01 45 00 - Quality Control.

END OF SECTION

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- 1 GENERAL
 - 1.1 DEFINITIONS
 - .1 Environmental Pollution and Damage: presence of chemical, physical, biological elements or agents which adversely affect human health and welfare; unfavorably alter ecological balances of importance to human life; affect other species of importance to humankind; or degrade environment aesthetically, culturally and/or historically.
 - .2 Environmental Protection: prevention/control of pollution and habitat or environment disruption during construction. Control of environmental pollution and damage requires consideration of land, water, and air; biological and cultural resources; and includes management of visual aesthetics; noise; solid, chemical, gaseous, and liquid waste; radiant energy and radioactive material as well as other pollutants.
 - 1.2 SUBMITTALS
 - .1 Submittals: in accordance with Section 01 33 00 - Submittal Procedures.
 - .2 Prior to commencing construction activities or delivery of materials to site, submit Environmental Protection Plan for review and approval by Consultant and Owner. Environmental Protection Plan is to present comprehensive overview of known or potential environmental issues which must be addressed during construction.
 - .3 Address topics at level of detail commensurate with environmental issue and required construction task.
 - .4 Environmental protection plan: include:
 - .1 Name of person responsible for ensuring adherence to Environmental Protection Plan.
 - .2 Name and qualifications of person responsible for manifesting hazardous waste to be removed from site.
 - .3 Erosion and sediment control plan which identifies type and location of erosion and sediment controls to be provided including monitoring and reporting requirements to assure that control measures are in compliance with erosion and sediment control plan, Federal, Provincial, and Municipal laws and regulations.
 - .4 Drawings showing locations of proposed temporary excavations or embankments for haul roads, material storage areas, structures, sanitary facilities, and stockpiles of excess or spoil materials including methods to control runoff and to contain materials on site.
 - .5 Traffic control plans including measures to reduce erosion of temporary roadbeds by construction traffic, especially during wet weather. Plans include measures to minimize amount of mud transported onto paved public roads by vehicles or runoff.
 - .6 Work area plan showing proposed activity in each portion of area and identifying areas of limited use or non-use. Plan to include measures for marking limits of use areas including methods for protection of features to be preserved within authorized work areas.
 - .7 Waste water management plan that identifies methods and procedures for management and/or discharge of waste waters which are directly derived from construction activities, such as concrete curing water, clean-up water, dewatering of ground water, disinfection water, hydrostatic test water, and water used in flushing of lines.
 - 1.3 FIRES
 - .1 Fires and burning of rubbish on site not permitted.
 - 1.4 DISPOSAL OF WASTES
 - .1 Do not bury rubbish and waste materials on site unless approved by Consultant.
 - .2 Do not dispose of waste or volatile materials, such as mineral spirits, oil or paint thinner into waterways, storm or sanitary sewers.
 - 1.6 POLLUTION CONTROL

- .1 Maintain temporary erosion and pollution control features installed under this contract.
- .2 Control emissions from equipment and plant to local authorities' emission requirements.
- .3 Prevent sandblasting and other extraneous materials from contaminating air and waterways beyond application area, by providing temporary enclosures.
- .4 Cover or wet down dry materials and rubbish to prevent blowing dust and debris. Provide dust control for temporary roads.

1.7 NOTIFICATION

- .1 Consultant and/or Owner will notify Contractor in writing of observed noncompliance with Federal Provincial or Municipal environmental laws or regulations, permits, and other elements of Contractor's Environmental Protection plan.
- .2 Contractor: after receipt of such notice, inform Consultant of proposed corrective action and take such action for approval by Consultant.
- .3 Consultant will issue stop order of work until satisfactory corrective action has been taken.
- .4 No time extensions granted or equitable adjustments allowed to Contractor for such suspensions.

END OF SECTION

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- 1 GENERAL
- 1.1 RELATED SECTIONS
- .1 Refer to individual Sections for quality control requirements.
- 1.2 REFERENCES
- .1 CCDC 2, Stipulated Price Contract.
- 1.3 INSPECTION
- .1 Refer to CCDC 2, GC 2.3 – Review and Inspection of Work.
- 1.4 ACCESS TO WORK
- .1 Allow inspection agencies access to Work, off site manufacturing and fabrication plants.
- .2 Co-operate to provide reasonable facilities for such access.
- 1.5 INSPECTIONS
- .1 Notify the appropriate agency and Consultant in advance of requirement for inspection, in order that attendance arrangements can be made.
- .2 Submit samples and/or materials required for inspection, as specifically requested in specifications. Submit with reasonable promptness and in orderly sequence to not cause delays 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.
- 1.6 REJECTED WORK
- .1 Refer to CCDC 2, GC 2.4 – Defective Work.
- .2 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 Consultant as failing to conform to Contract Documents. Replace or re-execute in accordance with Contract Documents.
- .3 Make good other Contractor's work damaged by such removals or replacements promptly.
- .4 If in opinion of Consultant it is not expedient to correct defective Work or Work not performed in accordance with Contract Documents, Owner will deduct from Contract Price difference in value between Work performed and that called for by Contract Documents, amount of which will be determined by Consultant.
- 1.7 REPORTS
- .1 Submit by email, copies of inspections and test reports to the Owner and Consultant.
- .2 Provide copies to subcontractor of work being inspected or tested and manufacturer or fabricator of material being inspected or tested.
- 1.8 TESTS AND MIX DESIGNS
- .1 Furnish test results and mix designs as requested.

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- .2 Cost of tests and mix designs beyond those called for in Contract Documents or beyond those required by law of Place of Work will be appraised by Engineer and/or Consultant and may be authorized as recoverable.
- 1.9 MOCK-UPS
- .1 Prepare mock-ups for Work specifically requested in specifications. Include for Work of Sections required to provide mock-ups.
- .3 Prepare mock-ups for Consultant's review with reasonable promptness and in orderly sequence, to not cause delays in Work.
- .4 Failure to prepare mock-ups in ample time is not considered sufficient reason for extension of Contract Time and no claim for extension by reason of such default will be allowed.
- .5 If requested, Engineer and/or Consultant will assist in preparing schedule fixing dates for preparation.
- .7 Contractor to provide mock-up for the following work:
Section 32 14 43 - Porous Unit Paving
- 1.10 MANUFACTURER'S FIELD REVIEW
- .1 Where manufacturer's field review is specified, manufacturer's representative shall review the relevant parts of the work at the Place of the Work, or wherever such affected work is in progress, to ensure that work is being executed in accordance with manufacturer's written recommendations.
- .2 Manufacturer's field review is to ensure that the Products specified are being used in the Work and are being applied on surfaces prepared in accordance with their recommendations and the requirements of the Contract Documents.
- .3 Unless otherwise indicated, manufacturer's representative shall undertake a minimum of one (1) field review, with additional reviews as deemed necessary by the manufacturer, to determine that the work of such sections is in accordance with the manufacturer's written recommendations.
- .4 Manufacturer's representative shall submit a type-written report on manufacturer's letterhead within two (2) working days after each field review. Report shall document manufacturer's representative's field observations and recommendations.
- .5 Manufacturer's field review reports shall be prepared and distributed following the procedures specified for preparation and submittal of inspection and testing reports given above.

END OF SECTION

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- 1 GENERAL
 - 1.1 SECTION INCLUDES
 - .1 Administrative Requirements
 - .2 Temporary Utilities
 - .3 Construction Facilities
 - .4 Temporary Enclosures and Barriers
 - .5 Construction Aids
 - .6 Temporary Drainage
 - .7 Project Identification
 - .8 General Protection
 - 1.2 ADMINISTRATIVE REQUIREMENTS
 - .1 Provide and maintain temporary utilities, facilities and controls in order to execute the Work expeditiously.
 - .2 Maintain temporary utilities, facilities and controls in a neat and tidy condition.
 - .3 Remove temporary utilities, facilities and controls from the Place of Work after use.
 - 1.3 TEMPORARY UTILITIES
 - .1 Temporary Electricity
 - .1 Contractor can use electricity within the Toronto Animal Services. Contractor to confirm and get approval from the Owner.
 - .2 Provide and pay for temporary power during construction to provide adequate temporary lighting, operation of power tools, temporary heating and ventilation, and to ensure the proper completion of the Work.
 - .2 Arrange for connection with appropriate utility company, if necessary. Pay all costs for installation, maintenance and removal.
 - .3 Provide and maintain temporary electrical systems to CSA C22.1-1990, Canadian Electrical Code, Part 1 – Temporary Wiring.
 - .2 Temporary Lighting: Provide and maintain suitable lighting during hours of darkness at danger points.
 - .3 Temporary Water:
 - .1 Contractor can use water within the Toronto Animal Services.
 - 1.4 CONSTRUCTION FACILITIES
 - .1 Sanitary Facilities:
 - .1 Provide sanitary facilities for work force in accordance with the municipal regulations and ordinances.
 - .2 Post notices and take precautions as required by local health authorities. Keep area and premises in sanitary condition. Have toilets maintained in sanitary conditions under contract.
 - .3 Use of Owner's existing washrooms is not permitted.
 - 1.5 TEMPORARY ENCLOSURES and BARRIERS
 - .1 Protective Enclosures:
 - .1 Provide and maintain fully safety protection at open shafts in floors, roof decks and other working surfaces, to protect the public, workers and private property from injury or damage in accordance with applicable regulations and by-laws.
 - .2 Provide and maintain suitable warning signs as required by all applicable regulations and by-laws.

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- .2 Weather Enclosures:
 - .1 Provide weather tight closures to unfinished door and window openings, tops or 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 Dust Barriers;
 - .1 Provide dust tight screens or partitions between new addition and existing building, to localize dust generating activities, and for the protection of workers, public (including Town personnel), and finished areas of Work.
 - .2 Maintain and relocate protection from time to time as Work proceeds and is complete in various areas.
 - .4 Security Measures:
 - .1 Maintain security of construction site by control of access through enclosing fences, barricades, and hoardings during times work is in progress, and by locking hardware otherwise.
 - .2 After new building is enclosed, maintain its security by adequate barriers to entry, and by temporary doors equipped with locking hardware.
 - .3 Maintain security at all times construction is shut down due to strikes or lockouts.
 - .4 Make good damage resulting from vandalism or other breach of security.
 - .5 Replace stolen and damaged products resulting from breach of security.
- 1.6 CONSTRUCTION AIDS
- .1 Select, operate and maintain hoisting equipment and cranes as may be required. Operate such equipment only by qualified hoist or crane operators. Make hoist available for Work of each Section.
 - .2 Erect scaffolding, independent of walls. Use scaffolding so as to interfere as little as possible with the work. When not in use, move scaffolding as necessary to permit other work. Construct and maintain scaffolding in rigid, secure and safe manner. Remove scaffolding promptly when no longer required. Scaffolding shall permit convenient access to all levels for all workmen and inspection staff.
- 1.9 TEMPORARY DRAINAGE
- .1 Provide and maintain adequate temporary pumping and drainage systems to keep excavations and structures free of water. Prevent flow of surface water into excavations. Locate sumps away from foundations. Prevent pumped water from carrying soil in suspension in sufficient quantity to cause settlement of adjacent earth. Provide sufficient standby equipment to ensure continuity of pumping systems.
 - .2 Dewater site as required to protect excavations and to permit execution of the work.
 - .3 Control drainage on site to prevent flooding, erosion and run-off onto adjacent properties as a result of construction operations.
 - .4 Dispose of water containing silt in suspension in accordance with requirements of jurisdictional authorities.
 - .5 Conform to sedimentation and erosion control requirements of the conservation authority having jurisdiction. Provide and maintain until completion of work or until directed by Consultant to be removed, sediment control devices at catch basins, drainage courses and at other locations on site as directed.
 - .6 Clean catch basins and storm lines on site as required to ensure their continuous operation during the execution of the Work.
- 1.10 GENERAL PROTECTION
- .1 Without limiting the Contractor's responsibility to provide all necessary protection, the Contractor shall:
 - .1 Protect materials and equipment delivered to the Site in the Owner's name for installation in the

Work.

- .2 Any Work damaged by failure to provide protection as required or damaged as a result of lack of adequate temporary heat, shall be removed and replaced with new, at no additional cost to the Owner.
- .3 Each Trade shall avoid damaging the Work of other Trades. Conduct the Work and provide protective covering as necessary to meet this requirement. Make good at own expense any damage resulting from failure to meet this requirement. Protective measures shall be to Consultant's approval.

END OF SECTION

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- 1 GENERAL
- 1.1 SECTIONS INCLUDES
- .1 Product requirements
 - .2 Workmanship requirements
- 1.2 REFERENCES
- .1 Refer to GC 3.8 - Labour and Products.
 - .2 Within text of each specification section, reference may be made to reference standards.
 - .3 Conform to these reference standards, in whole or in part as specifically requested in specifications.
 - .4 If there is question as to whether products or systems are in conformance with applicable standards, Consultant reserves the right to have such products or systems tested to prove or disprove conformance.
 - .5 Cost for such testing will be borne by Owner in event of conformance with Contract Documents or by Contractor in event of non-conformance.
- 1.3 QUALITY
- .1 Products, materials, equipment and articles incorporated in Work shall be new, not damaged or defective, and of best quality 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 a 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 disputes arise as to quality or fitness of products, decision rests strictly with Consultant based upon requirements of Contract Documents.
 - .4 Unless otherwise indicated in specifications, maintain uniformity of manufacture for any particular or like item throughout the 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.
- 1.4 AVAILABILITY
- .1 In event of failure to notify Consultant at commencement of Work and should it subsequently appear that Work may be delayed for such reason, Consultant reserves right to substitute more readily available products of similar character, at no increase in Contract Price or Contract Time.
- 1.5 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.

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- .4 Store sheet materials, on flat, solid supports and keep clear of ground. Slope to shed moisture.
 - .5 Remove and replace damaged products at own expense and to satisfaction of Consultant.
 - .6 Touch-up damaged factory finished surfaces to Consultant's satisfaction. Use touch-up materials to match original. Do not paint over name plates.
- 1.6 TRANSPORTATION
- .1 Pay costs of transportation of products required in performance of Work.
 - .2 Transportation cost of products supplied by Owner will be paid for by Owner. Unload, handle and store such products.
- 1.7 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 Consultant in writing, of conflicts between specifications and manufacturer's instructions, so that Consultant will establish course of action.
 - .3 Improper installation or erection of products, due to failure in complying with these requirements, authorizes Consultant to require removal and re-installation at no increase in Contract Price or Contract Time.
- 1.8 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 Consultant in writing, if required Work is such as to make it impractical to produce required results.
 - .2 Do not employ anyone unskilled in their required duties. Consultant and Owner 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 Consultant, whose decision is final.
- 1.9 COORDINATION
- .1 Ensure co-operation of workers in laying out Work. Maintain efficient and continuous supervision.
 - .2 Be responsible for coordination and placement of openings, sleeves and accessories.
- 1.10 CONCEALMENT
- .1 In finished areas conceal pipes, ducts and wiring in floors, walls and ceilings, except where indicated otherwise.
 - .2 Before installation, inform Consultant if there is interference. Install as directed by Consultant.
- 1.11 REMEDIAL WORK
- .1 Perform remedial work required to repair or replace parts or portions of Work identified as defective or unacceptable. Co-ordinate 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.

1.12 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 parts of building. Do not cut, drill or sleeve load bearing structural member, unless specifically indicated without written approval of Consultant.

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, building occupants and pedestrian and vehicular traffic.
- .2 Protect, relocate or maintain existing active services. When services are encountered, cap off in manner approved by authority having jurisdiction. Stake and record location of capped service.

END OF SECTION

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- 1 GENERAL
 - 1.1 SECTIONS INCLUDES
 - .1 Field engineering
 - .2 Concealed conditions
 - .3 Acceptance of existing conditions
 - 1.2 SUBMITTALS AND RECORDS
 - .1 Submit name and address of surveyor to Consultant.
 - .2 On request of Consultant, submit documentation to verify accuracy of field engineering work.
 - .3 Submit certificate signed by surveyor certifying that elevations and locations of completed Work are in conformance, or non-conformance with Contract Documents.
 - .4 Maintain a complete, accurate log of control and survey work as it progresses.
 - .5 On completion of foundation and major site improvements, prepare a certified survey record showing dimensions, locations, angles and elevations of Work.
 - .6 Record locations of maintained, re-routed and abandoned service lines.
 - 1.3 FIELD ENGINEERING
 - .1 Make no changes or relocations without prior written notice to and approval of Consultant.
 - 1.4 CONCEALED CONDITIONS
 - .1 Refer to GC 6.4 - Concealed or Unknown Conditions.
 - 1.5 EXAMINATION AND ACCEPTANCE OF CONDITIONS
 - .1 Verify conditions are ready to receive installation.
 - .2 Ensure substrate surfaces are clean, dimensionally stable, cured and free of contaminants such as oil, sealers and curing compounds.
 - .3 Notify Consultant in writing of unacceptable conditions.
 - .4 Commencement of installation means acceptance of conditions.

END OF SECTION

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- 1 GENERAL
 - 1.1 SECTION INCLUDES
 - .1 Execution requirements, previously titled "Cutting and Patching".
 - 1.2 SUBMITTALS
 - .1 Submittals: in accordance with Section 01 33 00 - Submittal Procedures.
 - .2 Submit written request in advance of cutting or alteration which affects:
 - .1 Structural integrity of elements of project.
 - .2 Integrity of weather-exposed or moisture-resistant elements.
 - .3 Efficiency, maintenance, or safety of operational elements.
 - .4 Visual qualities of sight-exposed elements.
 - .5 Work of Owner or separate contractor.
 - .6 Owner occupied areas.
 - .7 Life Safety Systems.
 - .8 Work that will cause noise that may interrupt the operation of the existing Community Centre.
 - .3 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 Effect of use of Owner occupied areas.
 - .8 Written permission of affected separate contractor.
 - .9 Date and time work will be executed.
 - 1.3 EXISTING UTILITIES
 - .1 When breaking into or connecting to existing service utilities, execute Work at times directed by local governing authorities, with a minimum of disturbance to Work, pedestrian and vehicular traffic, and with little or no disruption to the hospital site.
 - .2 Protect, relocate or maintain existing active services and security. When services are encountered, cap off in a manner approved by authority having jurisdiction and stake otherwise record location of capped services.
 - 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 are to be exposed by uncovering work; maintain excavations free of water.
 - 1.5 EXECUTION
 - .1 Execute cutting, fitting, and patching including excavation and fill, to complete Work.
 - .2 Fit several parts together, to integrate with other Work.

- .3 Uncover Work to install ill-timed Work at no additional cost to Owner.
- .4 Remove and replace defective and non-conforming Work at no cost to Owner.
- .5 Remove samples of installed Work for testing where applicable.
- .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.
- .13 Refinish surfaces to match adjacent finishes: Refinish continuous surfaces to nearest intersection. Refinish assemblies by refinishing entire unit.

END OF SECTION

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- 1 GENERAL
 - 1.1 SECTION INCLUDES
 - .1 Project Cleanliness
 - .2 Final Cleaning
 - .3 Waste management and disposal procedures
 - .4 Hazardous waste disposal procedures
 - 1.2 REFERENCES
 - .1 CCDC 2, Stipulated Price Contract.
 - .2 Section 01 00 50 - General Instructions.
 - 1.3 PROJECT CLEANLINESS
 - .1 Maintain Work in tidy condition, free from accumulation of waste products and debris, including that caused by Owner or other Contractors.
 - .2 Remove waste materials from site at daily regularly scheduled times or dispose of as directed by Consultant. Do not burn waste materials on site.
 - .3 Clear snow and ice from access to building, bank/pile snow in designated areas only.
 - .4 Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.
 - .5 Provide on-site dump containers for collection of waste materials and debris.
 - .6 Dispose of waste materials and debris off site.
 - .7 Clean interior areas prior to start of finishing 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.
 - .12 In public areas, add walk-off mats and debris collecting carpets to minimize tracking debris throughout the public spaces.
 - 1.4 FINAL CLEANING
 - .1 Refer to the following during Final Cleaning:
 - .1 When Work is Substantially Performed remove surplus products, tools, construction machinery and equipment not required for performance of remaining Work.

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- .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 Owner or other Contractors.
 - .5 Remove waste materials from site at regularly scheduled times or dispose of as directed by Consultant. 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 Inspect finishes, fitments and equipment and ensure specified workmanship and operation.
 - .8 Broom clean and wash exterior walks, steps and surfaces; rake clean other surfaces of grounds.
 - .9 Remove dirt and other disfiguration from exterior surfaces.
 - .10 Sweep and wash clean paved areas.
 - .11 Remove snow and ice from access to building.

1.5 WASTE MANAGEMENT AND DISPOSAL

- .1 Fire and burning of rubbish and waste materials at the Place of the Work is not permitted.
- .2 Burying of rubbish and waste materials at the Place of the Work is not permitted.
- .3 Disposal of waste or volatile materials, such as kerosene, mineral spirits, oil or paint thinner into storm or sanitary sewers is prohibited. Collect such waste materials in appropriate containers and dispose of in accordance with the regulations and guidelines of the authority having jurisdiction.
- .4 Provide on-site disposal service for rubbish accumulated by Contractor, Subcontractors and suppliers, in accordance with the requirements of the local municipality.
- .5 Prevent extraneous materials from contaminating air beyond application areas by providing temporary enclosures as specified in Section 01 50 00.
- .6 Cover or wet down dry materials and rubbish to prevent blowing dust and debris.
- .7 Deposit packaging materials in appropriate container at the Place of the Work for recycling or reuse.
- .8 Avoid using landfill waste disposal procedures when recycling facilities are available.
- .9 Keep discarded packaging away from children.

1.6 HAZARDOUS WASTE DISPOSAL

- .1 If and when required, remove and dispose of contaminated material in accordance with the regulations and guidelines of the authority having jurisdiction.
- .2 Contaminated material shall be transported by a licensed waste hauling company. Submit a copy of the "Certificate of Approval" to the Consultant and Owner prior to the transport of any contaminated material.
- .3 Stockpile suspected contaminated material temporarily in neat and secure stockpiles overlying a double layer of 0.20mm thick high density polyethylene. Isolate stockpiles from remainder of the site and cover with a single layer of 0.20mm thick polyethylene to prevent entry, wind disturbance or the collection of surface water.
- .4 Do not transport potentially contaminated material until such material has been identified by the appropriate

authority.

END OF SECTION

GENERAL

1.1 SECTIONS INCLUDES

- .1 Protection of installed construction

1.2 PROTECTING INSTALLED CONSTRUCTION

- .1 Adequately protect parts of the Work that are completed and in progress of being completed.
- .2 As soon as the Work is sufficiently advanced, and in order to prevent delay, enclose the Work using tarpaulins, plastic sheeting or glazing and temporary doors, with locks to doors as required.
- .3 Provide protection for finished and partially finished building components and equipment during performance of the Work.
- .4 Protect existing trees and vegetation designated to remain from construction damage. Provide snow fencing or other protection were directed by Consultant.
- .5 Make good parts or portions of the Work identified as defective or unacceptable. Coordinate adjacent affected Work as required.

END OF SECTION

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- 1 GENERAL
 - 1.1 SECTIONS INCLUDES
 - .1 Closeout procedures
 - 1.2 CLOSEOUT PROCEDURES
 - .1 Conform to OAA/OGCA Document 100.
 - .2 Substantial Performance of the Work:
 - 1 Prior to requesting Substantial Performance of the Work, prepare and submit a complete deficiency list.
 - .2 Owner, Consultant and affected Subconsultants will review the Work and may require additional items to be added to the deficiency list.
 - .3 Prior to requesting Substantial Performance of the Work, submit the following:
 - .1 Written statement that the Work has been substantially performed in accordance with the Contract Document, and is ready for use.
 - .2 Verification that operation of systems has been demonstrated to Owner.
 - .3 Three (3) copies of complete and reviewed operations and maintenance manuals.
 - .4 inspection and acceptance certificates required from all regulatory agencies.
 - .5 Life safety systems verification and acceptance.
 - .3 Final Payment:
 - .1 When all deficiencies have been corrected, but not later than 30 days after the date of Substantial Performance of the Work, request a final review of the Work.
 - .2 Owner, Consultant and affected Subconsultants will review the Work and notify the Contractor of outstanding deficiencies.
 - .3 Prior to claiming final payment, submit:
 - .1 record drawings
 - .2 a complete set or reviewed shop drawings, folded to 8 ½"x11" size, contained in heavy duty manila envelopes, numbered and labeled. Follow specification format with no more than one Section per envelope.
 - .3 maintenance manuals
 - .4 as-built documents
 - .5 a final accounting of all approved changes to the Contract Price.
 - .6 Failure to deliver any of the foregoing documents shall be subject to the Scale of Holdback as described in CCDC 2, GC 5.7 as amended by the City of Toronto's Supplementary Conditions.

END OF SECTION

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- 1 GENERAL
- 1.1 SECTIONS INCLUDES
- .1 Closeout submittals
- 1.2 OPERATION, MAINTENANCE MANUALS AND AS-BUILT DRAWINGS
- .1 AS-BUILT DRAWINGS - The contractor is required to complete As-Built drawings as it constructs the project and upon which it documents the actual locations of the building components and changes to the original contract documents.
- .1 Promptly record revisions, omissions and additions on a set of black line opaque Drawings. These documents must be kept up to date at all times. Failure to do so may result in postponement of final payment.
- .2 During construction, promptly record information concurrently with construction progress.
- .3 Do not conceal work until all required information has been recorded.
- .4 Specifications: legibly mark each item to record actual construction, including manufacturers, trade name, and catalog number of each product installed, particularly optional items and substitute items.
- .5 Other Documents: maintain manufacturer's certifications, inspection certifications, hardware schedules, colour schedules and field test records as required by the individual specification Sections.
- .2 OPERATIONS AND MAINTENANCE MANUALS – The project Operations and Maintenance Manuals should contain all reports, certificates, shop drawings, manufactures instructions, warranties, change orders, etc. Manuals are to contain pertinent care, maintenance, operational and installation information for the building. Manuals must be organized with an indexing structure whose sections match the Product Specification Divisions.
- .3 SUBMISSION - The As-built Drawings and Maintenance Manuals are to be supplied to the architect at substantial performance in the following manner:
- .1 ELECTRONIC SET of all Contract Documents and manuals on two (2) USB keys:
- .1 Autocad Drawings
- All drawings to be bound - NO XREF's/IMAGES/PDF's shall be attached.
 - Files to be purged of all unnecessary data
 - Files to be saved in version AutoCAD 2010
 - File name shall indicate the drawing number & title (Ex: AXX_FLOORPLAN.dwg)
- .2 BIM Drawings
- Save files using Revit Autodesk eTransmit only
 - Include Linked Revit Models dependent files, omit all other files
 - Clean up: Disable work sets, purge unused, include all sheets & all views on sheets
- .3 PDF Drawings
- Each drawing sheet shall be its own individual file
 - Each PDF file name shall indicate the drawing number and title (Ex: A1_SITEPLAN.pdf)
- .4 Manuals – see below for more information
- Organize digital manuals with folder structure matching the indexing structure of the hard copy manuals – see below.
 - Each information sheet shall be its own individual file
 - Each PDF file name shall indicate the document (Ex: Condensing Gas Furnace.pdf)

-
- .2 **HARDCOPY SET** of all Contract Documents and manuals – Two (2) printed sets and binders
- Provide complete list of drawings on coversheet
 - Half size (Min. 18"x24"), bounded & rolled
 - All disciplines to be bounded together
- .4 OPERATION AND MAINTENANCE MANUAL ORGANIZATION
- .1 Organize data in the form of an instructional manual in binders of commercial quality, 8 ½"x11" size, maximum ring size.
- 2 Cover: Identify each binder with typed or printed title "Project Record Documents", list title of Project, identify subject matter or contents.
- .3 Arrange content by systems, under Section numbers and sequence of Table of Contents.
- .4 Provide tabbed fly leaf for each separate product and system, with typed description of product and major component parts of equipment.
- .5 Extended Warranties: arranged in systematic order matching specification format; include a listing of extended warranties as noted but limited to those as listed in Section 01 80 00. Each warranty must indicate the name and address of the Project the name of the Owner and the corresponding Section number and title, and the issuer's name, address, telephone and fax numbers, contact person, seal and signature.
- .6 Drawings: provide with reinforced punched binder tab. Bind in with text; fold larger drawings to size of text pages.
- .7 Product Data: mark each sheet to clearly identify specific products and component parts, and data applicable to installation; delete inapplicable information.
- .8 As a minimum requirement, include the following materials as applicable:
- .1 Table of Contents. If more than one volume is required, provide a cross reference contents page at the front of each volume.
 - .2 Complete list of Subcontractors and Suppliers, indicating name, address, telephone and fax numbers, contact person, and description of work performed.
 - .3 Complete list of Products used in the Work, indicating Product name, part number or code and manufacturer for each listing.
 - .4 Warranties and Extended warranties
 - .5 Guarantees
 - .6 Certificates
 - .7 Test Reports
 - .8 Maintenance manuals
 - .9 Samples
 - .10 Existing reports and correspondence from authorities having jurisdiction in the Place of the Work.
 - .11 A copy of all shop drawings that were processed under GC 3.10 showing all notations and amendments made by the Contractor and the Consultant.
 - .12 Other materials or documentation required to be submitted under the Contract, together with written proof acceptable to the Owner and the Consultant that the Work has been substantially performed in conformance with the requirements of municipal, governmental, and utility authorities having jurisdiction in the Place of the Work.
 - .13 Other data that may be required by the Contract Documents.
- 1.3 SPARE PARTS AND MAINTENANCE MATERIALS
- .1 Two (2) weeks prior to Substantial Performance of the Work, submit to Consultant any special tools or equipment supplied for maintenance purposes.
- .2 Spare parts and maintenance materials provided shall be new, not damaged or defective, and of same quality and manufacture as Products provided in the Work. If requested, furnish evidence as to type,

source and quality of Products provided.

- .3 Defective products will be rejected, regardless of previous inspections. Replace products at own expense.
- .4 Store spare parts and maintenance materials in a manner to prevent damage, or deterioration.
- .5 Provide spare parts, special tools, maintenance and extra materials in quantities specified in individual specification Sections.
- .6 Provide items of same manufacture and quality as items in Work.

END OF SECTION

PART 1 - GENERAL

1.1 WARRANTIES

- .1 Warranties shall be in accordance with General Conditions GC 12.3, as amended, and as follows:
 - .1 Warranties shall commence at date of Substantial Performance of the Work.
 - .2 Submit warranties for applicable items, signed by the applicable company responsible for each warranty.
 - .3 Submit warranties on form approved by Owner including, but not limited to the following information:
 - .1 Name and address of Project.
 - .2 Warranty commencement date (date of Substantial Performance of the Work).
 - .3 Duration of warranty.
 - .4 Clear indication of what is being warranted and what remedial action will be taken under warranty.
 - .5 Authorized signature and seal of company providing each warranty.
 - .4 Owner shall be named in manufacturer's Product warranties. Submit on relevant Product manufacturer's standard warranty or guarantee form.
 - .5 See the individual specification sections for product warranty requirements.

END OF SECTION

1 GENERAL

1.1 SUMMARY

- .1 This specification describes the application of Epoxy Resin Grit and Gravel Hardener. This will include any test standards that are applicable to Epoxy Resin Grit and Gravel Hardener in general.

1.2 QUALITY ASSURANCE

- .1 Manufacturing qualifications: The manufacturer of the product shall be ISO 9001 certified and obtain a good ongoing quality assurance program.
- .2 Contractor Qualifications: Contractor should be qualified in the field of hardscape or concrete finishing with a successful track record. The contractor should have qualified personnel that are trained in this type of installation.
- .3 Install materials in accordance with all environmental conditions required by the manufacturer. All products installed should be installed under the safety conditions set forth by the manufacturer or as modified by the applicable rules and regulations of the local, provincial, and federal authorities having jurisdiction. Consult safety data sheets for all handling recommendations.

1.3 DELIVERY, STORAGE AND HANDLING

- .1 All materials must be delivered in original, unopened containers with the manufacturer's name, labels, product identification, and batch numbers. Damaged material must be documented.
- .2 Store all materials off the ground and avoid excessive heat, or freezing temperatures until ready for use.

1.4 JOB CONDITIONS

- .1 Site Conditions: The foundation needs to be prepared according to the expected traffic loads. Superstructure and substructure must be water permeable. Future loads must not cause the surface to settle or loosen stones. Regulations and leaflets regarding construction of paved stone surfaces should be heeded. Future loads must not cause the surface to settle or loosen stones.
- .2 Environmental Conditions: Do not apply if the if the surface below 5° or over 30° Celsius. Product should not be applied in rain.
- .3 Protection: Precautions should be taken to protect surrounding surfaces that are not to receive the product.

2. PRODUCTS

2.1 MANUFACTURERS

- .1 ROMEX® Rompox Profi-Deko as manufactured by Romex AG, Mühlgrabenstraße 21, 53340 Meckenheim, Germany is considered to conform to the requirements of this specification.
- .2 OR approved alternate.

2.2 INSTALLERS

- .2 ALC – Aldershot Landscape Contractors
- .3 Verdi Alliance Group of Companies
- .4 UCC Group Construction Contractors

-
- .5 Orin Enterprises Inc
- 2.3 MATERIALS
- .1 Rounded Aggregate 6mm (1/4") max. Cleaned, Died, Smooth surface, Light coloured
- .2 Epoxy Resin Grit and Gravel Hardener
- 2.4 PERFORMANCE CRITERIA
- .1 Test report no. 53-1607/12 CPH-13478 (Technical data is dependent on used grit/gravel)
- | | |
|---|---|
| .1 System | 2-component epoxy resin pavement jointing mortar |
| .2 Compressive strength | 13.9 N/mm ² 2 016 psi Building site value
DIN 18555 part 3 |
| .3 Bending tensile strength | 4.8 N/mm ² 696 psi Building site value
DIN 18555 part 3 |
| .4 Hard mortar raw density | 1.58 kg/dm ³ 0.91 oz/in ³ Building site value
DIN 18555 part 3 |
| .5 Application time at 20 °C 68 °F | 20–30 minutes ROMEX®-norm 04 |
| .6 Application temperature | > 0 °C up to max. 30 °C > 32 °F up to max. 86 °F At
lower temperatures slow hardening, at high
temperatures quick hardening |
| .7 Re-opening of surface at 20 °C 68 °F | After 24 hours can be walked on, after 6 days fully load
bearing |
| .8 Water permeability | Very high permeable depending on grain size |
| .9 Storage life | 24 months, frost free, dry |
3. EXECUTION
- 3.1 INSPECTION
- .1 The surface to be strengthened should be prepared to a depth of the minimum: 38mm (1-1/2") TO 50mm (2"). The subsurface should be firm. Adjoining surfaces that are not to be strengthened must be protected / taped off to avoid resin film staining. Dusty, dirty gravel /grit must be washed and fully dried; if moisture/dampness are present then there may be a reduction in bonding strength. Application of the materials constitutes an acceptance of the site, surface, and environmental conditions at the time of application
- .2 Temperature readings of the ambient and substrate must be taken and recorded before and during application.
- .3 Do not apply if the surface temperature is below 5°c (41°F)
- .4 Aggregate to be bound must be cleaned, died, smooth and free of contaminants.
- 3.2 SURFACE PREPARATION
- .1 All adjoining surfaces must be cleared of any all debris.
- .2 Areas or walls adjacent to where the Epoxy Resin Grit and Gravel Hardener will be applied must be protected / taped off to prevent the Epoxy Resin Grit and Gravel Hardener from leaving a visible resin stain on their surface.
- 3.3 MIXING
- .1 Follow manufacturer's instructions.

3.4 APPLICATION

.1 Follow manufacturer's instructions.

3.5 MOCK-UP

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

3.6 CLEAN-UP

.1 Refer to 01 74 11 - Cleaning and Waste Management

END OF SECTION