

Barosaurus Mount
American Museum of Natural History
Theodore Roosevelt Memorial Hall

Specifications for Construction

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SECTION 0110
QUALIFICATIONS

01 CONTRACTOR'S QUALIFICATIONS AND CONDUCT

- .01 The Contractor shall be a qualified exhibit contractor with at least seven (7) years proven experience in the fabrication of high quality permanentmuseum exhibits of similar scale and complexity as this project.
- .02 Subcontractors shall be recognized and established companies producing the highest quality, first-class construction and installation of their work in their respective fields.
- .03 The Contractor and all Subcontractors shall at all times enforce strict discipline among his employees and shall not employ on the Work any unfit person or anyone not skilled in the task assigned to him. All work shall be performed in a workman-like manner.

02 CONTRACTOR'S UNDERSTANDING

- .01 It is understood and agreed that the Contractor has, by careful examination, satisfied himself as to the nature and location of the work, the character, quality and quantity of the materials to be encountered, the character of equipment and facilities needed preliminary to and during the prosecution of the work, the general and local conditions, and all other matters which can in any way affect the work under this Contract. No verbal agreement or conversation with any officer, agent, or employee of the Owner, either before or after the execution of this Contract, shall affect or modify any of the terms or obligations herein contained.
- .02 If the Contractor observes that any portion of the drawings is at variance in any respect with any applicable laws, statutes, building codes or regulations, he shall notify the Owner promptly in writing. If the Contractor performs any work contrary to such regulations, he shall assume full responsibility therefor and shall bear all costs attributable there to.

03 SAFETY AND INSURANCE

- .01 The Contractor shall be solely responsible for conditions of the job site, including safety of all persons and property during the performance of the

work. This requirement shall apply continuously and not be limited to normal working hours.

04 GUARANTEES AND WARRANTIES

.01 The Contractor shall warrant that all work has been done as shown on drawings and/or as specified, or as otherwise agreed upon in writing, that all materials and workmanship are of the highest quality and free from faults and defects, that all materials and equipment are new unless otherwise specified, and that all materials, equipment, and processes have been installed or carried out in accordance with the respective manufacturers' latest printed instructions.

.02 Guarantee of Work:

01) Except as otherwise specified, Contractor shall guarantee his work against defects resulting from the use of inferior materials, equipment, or workmanship for one (1) year from the date of Substantial Completion of the Contract, or from full occupancy of the gallery by the Owner, whichever is earlier.

02) If the Contractor cannot guarantee a certain material or construction that is shown or is specified, or if he cannot furnish guarantees that are required, then he shall inform the Owner and the Designer to that effect in his proposal.

03) If, within any guarantee period, repairs or changes are required in connection with guaranteed work, which, in the opinion of the Owner, is rendered necessary as the result of the use of materials, equipment or workmanship which are inferior, defective, or not in accordance with the terms of the Contract, the Contractor shall promptly upon receipt of notice from the Owner, and without expense to the Owner:

A) Place in satisfactory condition in every particular all of such guaranteed work, correct all defects therein; and

B) Make good all damage to the building or site, or equipment or contents thereof, which, in the opinion of the Owner, is the result of the use of materials, equipment, or workmanship which are inferior, defective, or not in accordance with the terms of the Contract; and

C) Make good any work or material, or the equipment and contents of said building or

SECTION 0120
SCHEDULING

01 TIME OF COMPLETION & CONSTRUCTION SCHEDULE

- .01 Award of Contract will be made as soon as possible after Bid Opening so as to facilitate immediate ordering of materials and the start of in-plant construction.
- .02 Immediately after award of Contract, the Owner, with assistance from Contractor shall prepare an estimated progress schedule for the Work. The schedule shall be related to the entire Project to the extent required by the Contract Documents. This schedule shall indicate the dates for the starting and completion of the various stages of construction and shall be revised as required by the conditions of the Work, subject to the Owner's approval.

02 PRE-CONSTRUCTION CONFERENCE

- .01 Following the signing of the Contract Documents and prior to the actual beginning of construction, a preconstruction conference will be held. The Prime Contractor and major Sub Contractors shall be present to discuss the time for construction; methods and plan of operation; authority of the Owner representatives and Designers; approval of shop drawings; progress estimates and request for payment; and other relevant questions. The time and location of this meeting will be determined by the Designers in consultation with other interested parties.

END OF SECTION

SECTION 0130
MEANS AND METHODS

01 MEANS AND METHODS

- .01 Unless otherwise expressly provided in the Contract Documents, the means and methods of construction shall be such as the Contractor may choose; subject, however, to the Owner's right to reject means and methods proposed by the Contractor which: (a) will constitute or create a hazard to the work, or to persons or property; or (b) will not produce the finished work in accordance with the terms of the Contract.
- .02 The Owner's approval of the Contractor's means and methods of construction or his failure to exercise his right to reject such means or methods, shall not relieve the Contractor of his obligation to accomplish the result intended by the Contract; nor shall the exercise of such rights to reject create a cause of action for damages.

02 SUPERVISION

- .01 The Contractor shall personally supervise the work or have a competent superintendent, satisfactory to the Owner, on the work at all times during progress with full authority to act for him.

03 MEASUREMENTS

- .01 The Contractor and each sub-Contractor shall be responsible for verification of all measurements at the site before ordering any materials or doing any work. No extra charge or compensation shall be allowed due to differences between actual dimensions and dimensions indicated on the Drawings.
- .02 Any such discrepancy in dimensions which may be found shall be submitted to the Owner for consideration before the Contractor proceeds with the work in the affected areas.
- .03 The Contractor shall lay out his work and be responsible for all necessary lines, levels, elevations, and measurements. He must verify the figures shown on the drawings before laying out the work and will be held responsible for any error resulting from his failure to do so.

.04 The Contractor shall be prepared to guarantee to each of his sub-Contractors the dimensions which he may require for the layout and fitting of his work to the surrounding work.

04 SHOP FABRICATION

.01 All exhibits included in the Scope of Work shall be shop fabricated. No on-site fabrication is permitted.

END OF SECTION

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SECTION 0140
SUBMITTALS

01 SPECIFICATIONS AND DRAWINGS

- .01 In general, specifications indicate qualities of materials and workmanship, and drawings indicate dimensions, location, quantities, and details of the components. Figured dimensions take precedence over scaled measurements. Detailed drawings and specifications take precedence over general drawings and specifications. Supplementary details and instructions, revisions of later date, and addenda take precedence over original documents, information and earlier addenda.
- .02 Work not particularly detailed, marked, or specified shall be the same as similar parts that are detailed, marked or specified. Repetitive features shown in outline on the drawings shall be in exact accordance with corresponding features completely shown.
- .03 The work in this and all subsequent Divisions shall include all labor, materials, equipment, and services required to construct and install the complete exhibits shown on all drawings. The omission of express reference to any parts of work necessary for, or reasonably incidental to, a complete installation shall not be construed as releasing the Contractor from providing such parts of work as may be required.
- .04 The drawings contained herein are for design control purposes only and may not be used in lieu of Shop Drawings.

02 SHOP DRAWINGS

- .01 Contractor shall make thorough Shop Drawings of all custom-built items. Drawings shall include the manufacturer's part numbers for all commercially procured components.
- .02 Shop drawings shall show design, materials (kind, thickness, and finish), dimensions, connections, and other details as necessary at full or very large scale to insure that they accurately interpret Contract Drawings and specifications. Shop drawings shall show adjoining work in such detail as required to provide proper connection with same.

- .03 Shop Drawings shall confirm color and material specifications by showing their specific applications on all surfaces.
- .04 Contractor shall submit Shop Drawings to Designer in the form of one (1) set of sepia transparencies and two (2) sets of blueline prints. Shop drawings shall be numbered consecutively and insofar as possible shall be uniform in size.
- .05 Designer shall return Shop Drawings to Contractor as follows:
 - 01) "Approved:" Contractor may proceed with fabrication.
 - 02) "Approved with Revisions:" Contractor shall make revisions to the Shop Drawings as noted, and resubmit same to Designer.
 - 03) "Not Approved:" Contractor shall make such corrections per revisions to Shop Drawings as required, and resubmit same to Designer.

03 AS-BUILT DRAWINGS

- .01 The Contractor shall maintain in good condition at the project site one (1) set of blueline prints of all Contract Drawings, upon which a qualified representative of the Contractor shall enter periodically as required the actual "As-Built" record of the construction, if different than shown or indicated on the Drawings. Entries and notations shall be made in a neat and legible manner, and these prints shall be delivered to the Owner upon completion of the construction. One set of blueline prints shall be furnished by the Owner for "As-Built" records required. Final payment to the Contractor will be dependent on submission of an acceptable set of prints.

04 SAMPLES

- .01 Samples shall bear clear identification as to manufacturer, product, type, color range, texture, finish and other identifying data. Samples shall be accompanied by a letter of transmittal and manufacturer's brochures, any special installation requirements or other supporting information. Samples shall not be used in the Work and shall remain in the Designer's possession, unless specified otherwise.

END OF SECTION

SECTION 0150
COORDINATION

01 COORDINATION BETWEEN TRADES

- .01 The Contractor shall cooperate with all other trades to obtain the most practical arrangement of the work. Make known to other trades the intended positioning of materials and equipment and intended order of work. Coordinate the work with that of other trades and proceed with the installation in such a manner to assure no delays to other trades. Similarly, determine the intended locations of the work of other trades and the intended order of work. Examine drawings and specifications of all other trades and determine exact locations and sizes of equipment, roughing-in requirements and equipment to be connected. Contractor shall refer to the Architectural and Structural Drawings and Specifications for the general conditions of the construction area, and shall be guided accordingly.
- .02 Failure of this Contractor to make known his own needs and to determine the requirements of others shall not be cause for additional compensation to correct interferences, or for extra work which could have been avoided by proper coordination.
- .03 If any part of the Contractor's work depends for proper execution or results upon the work of any other Contractor, the Contractor shall inspect and promptly report to the Owner any defects in such work that render it unsuitable for such proper execution and results. His failure to inspect and report shall constitute an acceptance of the other Contractor's work as fit and proper for the reception of his work, except as to defects which may develop in the other Contractor's work after the execution of his work.
- .04 To insure the proper execution of this subsequent work, the Contractor shall measure work already in place and shall at once report to the Designer any discrepancy between the executed work and the drawings.

02 ADJOINING WORK

- .01 Where work of one trade joins or is on other work, there shall be no discrepancy when same is completed. In engaging one kind of work with another, marring or damaging same will not be permitted. Should improper work of any trade result in damage or defects, the

whole work affected shall be made good without expense to the Owner. Any trade which must do work in an area previously prepared by another trade shall approve such prior work before commencing. Any unsatisfactory conditions shall be reported to the Contractor, and no work shall be done in the affected area until the unsatisfactory conditions have been eliminated. Starting work will be construed as acceptance of the areas as satisfactory.

END OF SECTION

SECTION 0160
MATERIALS

01 ORDERING MATERIALS

- .01 Only materials of high-grade, well-known, and reputable manufacturers shall be used.
- .02 Immediately following the Award of Contract for this work, the Contractor shall determine source of supply for all materials and length of time required for their delivery, and order materials promptly.
- .03 If for any reason, any item specified will not be available when needed and Contractor can show that he has made reasonable persistent effort to obtain item in question, the Owner is to be notified in writing within fifteen (15) days after the Contract is signed, and the Contractor shall either determine another source of supply or arrange with the Owner for an appropriate substitute within terms of the Contract.
- .04 Otherwise, the Contractor will not be excused for delays in securing materials specified and will be held accountable if completion of building is thereby delayed.

02 SUBMITTALS

- .01 Contractor shall in a timely fashion, submit to Designer for approval samples and prototypes as specified herein and under other sections of the Specifications. Contractor shall not proceed with fabrication or process using the materials, products or assemblies for which the samples or prototypes are being submitted until same have been approved by Designer.
- .02 Where the phase "or Equal" appears in the Specifications:
 - 01) If the Contractor intends to use a product which he considers equal or better, he shall submit samples and manufacturer's literature to the Owner for approval before use.
 - 02) The Owner or Designer shall review samples and specifications and authorize the substitution if the product meets their approval.

03 SINGLE-SOURCE RESPONSIBILITY FOR EXHIBIT ELEMENTS

- .01 Obtain each type of exhibit element (tile, casework, metal framework, and specialty construction) from a single source with resources to provide products of consistent quality in appearance and physical properties without delaying progress of the work.

04 SUBSTITUTION OF MATERIALS AND EQUIPMENT

- .01 If a Contractor requests approval of substitute materials and/or equipment, it shall be understood and agreed that such substitution, if approved, will be made without costs to the Owner, regardless of changes caused. In all cases where substitutions affect other trades, the Contractor offering such substitutions shall remunerate all affected Contractors for all necessary changes of work.
- .02 Contractor may propose to Owner the use of other articles, devices, products, materials, fixtures, forms or types of construction which in his judgement are equivalent to those herein specified. However, Contractor may proceed with such proposed substitution only after receiving Owner's approval in writing. It is understood that the burden of proof of equivalency is with the Contractor.

END OF SECTION

SECTION 0170
PROTECTION

01 PROTECTION OF EQUIPMENT AND MATERIALS

- .01 The Contractor shall provide suitable protection from dampness, damage, dirt, etc., for all equipment, materials and finished surfaces during construction until acceptance by the Owner. Such protection shall be a means acceptable to the Owner and as may be specified under other sections of the specifications.
- .02 Contractor shall protect finished surfaces, including jambs and soffits of openings used as passageways, through which equipment and materials are handled.
- .03 Contractor shall provide protection for finished floor services before allowing equipment or materials to be moved over such surfaces.

02 PROTECTION OF EXISTING FACILITIES

- .01 Care shall be exercised while doing all work to insure that the existing buildings, equipment, utilities, and site improvements are not damaged.
- .02 The Contractor will be held responsible for any damage to existing areas due to failure on his part to properly protect those areas. Any damage resulting from work under these Sections shall be repaired at the expense of the Contractor.

END OF SECTION

SECTION 0180
CLEANING

01 PROGRESS CLEANING

- .01 Contractor shall retain stored items in an orderly arrangement allowing maximum access, not impeding traffic or drainage, and providing required protection of materials.
- .02 Contractor shall not allow accumulation of scrap, debris, waste material, and other items not required for construction of the Work, and shall maintain the site in a neat and orderly condition at all times.
- .03 Contractor shall provide adequate storage for all items awaiting removal from the job site, observing requirements for fire protection and protection of the ecology. Store volatile waste in covered metal containers and remove from premises daily. Disposal of volatile fluid wastes in storm or sanitary systems or streams or waterways is not permitted.
- .04 Daily, and more often if necessary, Contractor shall inspect the site and pick up all scrap, debris, and waste material.
- .05 Weekly, and more often if necessary, Contractor shall clean the job site and legally dispose of waste materials and rubbish off the Owner's property.

02 MATERIALS: Contractor shall use only the cleaning materials and equipment which are compatible with the surface being cleaned, as recommended by the manufacturer of the material.

03 FINAL CLEANING

- .01 "Clean," for the purpose of this Article, and except as may be specifically provided otherwise, shall be interpreted as meaning the level of cleanliness generally provided by skilled cleaners using commercial quality building maintenance equipment and material.
- .02 Prior to completion of the Work, Contractor shall remove form the job site all tools, surplus materials, equipment, scrap, debris, and waste. Contractor shall conduct final progress cleaning as described in Section 0180-01 "PROGRESS CLEANING."
- .03 Exhibit Site:

Contractor shall clean all interior and exterior floor surfaces in the vicinity of the work to remove all debris, dust, and dirt.

.04 Exhibits:

01) Just prior to acceptance or occupancy Contractor shall visually inspect all exposed surfaces.

02) Contractor shall remove grease, dust, dirt, stains, labels, fingerprints, and other foreign materials from interior and exterior of finished surfaces as follows:

A) Glass : Clean inside and out, leaving absolutely no streaks, fingerprints, paint droppings, etc.

B) Painted Surfaces: Remove marks, stains, fingerprints, and dirt, touch-up as required to match adjacent finish.

C) Casework: Contractor shall apply the polish or cleaner recommended by the manufacturer of the material being polished or cleaned.

D) Metal: Remove all temporary protective covering, clean as required.

.05 Contractor shall schedule final cleaning as approved by the Owner or Owner's designated Representative to enable the Owner to accept a completely clean work.

END OF SECTION

DIVISION 5: METALS

SECTION 0530
METALWORK

01 CONDITIONS OF THE CONTRACT

.01 GENERAL: The General Requirements at the forepart of these specifications are hereby made a part of this section.

02 SCOPE

.01 WORK INCLUDED: The Contractor shall furnish all labor, materials, equipment, etc. necessary to fabricate, ship, and install all Metalwork as shown in Drawings, specified herein, or both. The work of this Section includes but is not necessarily limited to the following:

- 01) Metal Grid Graphic Panel Support by Specialty Contractor
- 02) Metal Grid Specimen Support by Specialty Contractor
- 03) Tubular Metal Base Units
- 04) Metal Plates and Sleeves for Dinosaur Mount

03 SUBMITTALS

.01 Product data for each product used in metalwork, including finishing materials and methods.

.02 SHOP DRAWINGS: Prior to fabrication, prepare shop drawings of Work and submit to and obtain Designer's approval.

01) Shop Drawings shall be provided in a timely manner as per Section 0140.

02) Shop drawings shall show fabrication and installation of metalwork including plans, elevations and details of components and attachments to other units of Work. Indicate materials, profiles of each metalwork member and fitting, joinery, finishes, fasteners, anchorages and accessory items.

.03 Samples for verification purposes of each type of metal finish required, prepared on metal of same thickness and alloy indicated for final unit of Work. Where finishes involve normal color and texture variations, include sample sets composed of two or more units showing full range of variations expected.

- 01) Include 12 inch long samples of linear shapes.
- 02) Include 12 inch square samples of plates.

04 METALS

.01 General: Provide metalwork composed of metals of the forms and types which comply with requirements of referenced standards and which are free from surface blemishes where exposed to view in the finished unit. Exposed-to-view surfaces exhibiting pitting, seam marks, roller marks, stains, discolorations or other imperfections on finished units are not acceptable.

.02 Steel: Provide steel in the form indicated complying with the following requirements:

- 01) Tubing: Cold-formed, ASTM A 500;
- 02) Steel Plates, Shapes, and Bars: ASTM A 36.

05 MISCELLANEOUS MATERIALS

.01 Welding Electrodes and Filler Metal: Type and alloy of filler metal and electrodes as recommended by producer of metal to be welded, complying with applicable AWS specifications, and as required for color match, strength and compatibility in the fabricated items.

.02 Fasteners: Of same basic metal and alloy as fastened metal, unless otherwise indicated. Do not use metals which are corrosive or otherwise incompatible with metals joined.

.03 Primer Paint for Steel : Manufacturer's standard rust-inhibiting primer; compatible with finish coats of paint. Coordinate selection of metal primer with finish paint requirements as specified.

- .01 Form metalwork to required shapes and sizes, with true curves, lines and angles. Provide components in sizes and profiles indicated, but not less than required to comply with requirements indicated for structural performance.
- .02 Comply with AWS for recommended practices in shop welding. Provide welds behind finished surfaces without distortion or discoloration of exposed side. Clean exposed welded joints of all welding flux, and dress on all exposed and contact surfaces. Use welding method which is appropriate for metal and finish indicated and develops strength required to comply with structural performance criteria. Finish exposed welds and surfaces smooth, flush, and blended to match adjoining surfaces.
- .03 Mill joints to a tight, hairline fit. Cope or miter corner joints.
- .04 Finish exposed surfaces to smooth, sharp, well-defined lines and arrises.
- .05 Preassemble items in shop to greatest extent possible to minimize field splicing and assembly. Disassemble units only as necessary for shipping and handling limitations. Clearly mark units for reassembly and coordinated installation.
- .06 Form changes in direction of members by bending members, radius bends, or by mitering.
 - 01) Form simple and compound curves by bending members in jigs to produce uniform curvature for each repetitive configuration required; maintain profile of member throughout entire bend without buckling, twisting, or otherwise deforming exposed surfaces of members.

- .01 Comply with NAAMM "Metal Finishes Manual" for recommendations relative to application and designations of finishes.
- .03 Tubular Metal Base Units and Metal Plates and Sleeves: "Polane" two-part epoxy paint finish. Apply in compliance with paint manufacturer's specifications for cleaning, priming, and painting. Color and finish

to be a Dark Bronze, to be reviewed and approved by Designer.

- .04 Metal Grid Specimen Support and Graphic Panel Support: Dark Bronzed Finish. Administer in compliance with manufacturer's and ASTM standards for bronzed steel finishes. Finish and method of application to be reviewed and approved by Designer.

08 INSTALLATION

- .01 Perform cutting, drilling and fitting required for installation of metalwork. Set products accurately in location, alignment and elevation, plumb, level and true, measured from established lines and levels.
- .02 Fit exposed connections accurately together to form tight, hairline joints or, where indicated, with uniform reveals and spaces for sealants and joint fillers. Where cutting, welding and grinding are required for proper shop fitting and jointing of metalwork items, restore finishes to eliminate any evidence of such corrective work.
- .03 Do not cut or abrade finishes which cannot be completely restored in the field. Return items with such finishes to the shop for required alterations, followed by complete refinishing or provide new units as required.

09 PROTECTION

- .01 Protect finishes of metalwork from damage during construction period by use of temporary protective coverings approved by metalwork fabricator. Remove protective covering at time of Substantial Completion.
- .02 Restore finishes damaged during installation and construction period so that no evidence remains of correction work. Return items which cannot be refinished in the field to the shop; make required alterations and refinish entire unit, or provide new units as required.

END OF SECTION

DIVISION 6: WOOD

SECTION 0630
ROUGH AND FINISH CARPENTRY

01 CONDITIONS OF THE CONTRACT

- .01 GENERAL: The General Requirements at the forepart of these Specifications are hereby made a part of this Section.

02 SCOPE

- .01 WORK INCLUDED: The Contractor shall furnish all labor, material, equipment, etc., necessary to fabricate, ship, and install the Rough and Finish Carpentry as shown on Drawings, specified herein, or both. The Work of this Section includes but is not necessarily limited to the following:

01) Land Mass Skirt and support by Specialty Contractor.

02) Plywood Substrate for terrazo pad

03 SUBMITTALS

- .01 SHOP DRAWINGS: Prior to fabrication and/or purchase prepare shop drawings of Work and submit to and obtain Designers approval thereof. Shop Drawings shall be based on Drawings, specifications and field measurements essential for proper fitting of finish carpentry with other construction and shall present complete information as to fabrication and installation.

- .02 SAMPLES: Prior to purchasing, and in advance of fabrication, the Contractor shall prepare one foot square (1' x 1') samples of each finish (or specified substrate), and submit them to the Designer for approval thereof. The Contractor will also submit finished samples of any exposed joinery, and complex or curved corners.

04 MATERIALS

- .01 SOFTWOOD PLYWOOD: U.S. Product Standard PSI-66, grade trademarked as follows and samples to be approved:

01) Plywood Substrate: 3/4" Marine Grade Douglas Fir

02) Land Mass Skirt: 1/2" A-D INT-APA

.03 FASTENERS: Shall conform to the following:

- 01) Nails: Federal Specification FF-N-105
- 02) Lag Screws: Federal Specification FF-B-561
- 03) Wood Screws: Federal Specification FF-S-111

05 FABRICATION

.01 WORKMANSHIP: All work shall be shop fabricated to the extent possible and delivered to the job site for installation. Allow sufficient additional material to permit scribing to related work, and make due allowance whenever possible for such shrinkage as may develop after installation. Single lengths of wood shall be used whenever practical. Splicing or piecing of finish wood shall be done with beveled joints over solid backing and shall be matched for consistency. All work shall be true and straight with edges clean cut and assembled with members properly housed together and tightly joined. Install in accurate positions plumb and level with separate parts accurately fitted and properly aligned. Neatly scribe to other construction and securely attach in place with concealed fastenings where possible, finishing nails, or where required, flat-head screws. All exposed surfaces shall be stressed and sanded smooth, free from marks and other blemishes and ready for finish work.

.02 QUALITY ASSURANCE: All fabrication of finish carpentry and millwork shall conform to the latest addition of the AWI "Quality Standards Illustrated." Any application of plywood shall be in accordance with the recommendations of the American Plywood Association.

.03 COORDINATION: The Contractor shall be responsible for the coordination and proper fitting of all components. The Contractor must coordinate all applicable hardware, access panel requirements, maintenance requirements and details with the Designer and Manufacturer (or hardware supplier).

06 SPECIFIC REQUIREMENTS

.01 LAND MASS SKIRT

01) General: Custom Grade Softwood plywood, shall be used for the Land Mass Skirt. There shall be no

exposed edges. All joints shall be accurately and tightly made. The method of jointing to be used shall be indicated on the shop drawings. The plywood Land Mass Skirt shall be curved evenly and consistently, the face of which shall be smooth and continuous. Where special connections are to be installed, the location and method of installation shall be indicated on shop drawings. Surface to be primed and painted to match Designer's sample.

.02 PLYWOOD SUBSTRATE for Terrazo Pad

01) General: Two (2) layers of 3/4" Softwood Marine plywood shall be used for the Plywood Substrate. Layers of plywood shall be cross-lapped and rigidly connected to Metal Base Units, level and continuous. All joints shall be accurately and tightly made.

07 INSTALLATION

.01 HANDLING: Do not deliver finish carpentry to the job site unless there is a suitable storage facility provided or installation can be immediate. Cover finish carpentry and otherwise protect from damage and moisture during delivery and storage.

END OF SECTION

DIVISION 8: GLASS

SECTION 0800
GLASS

01 CONDITIONS OF THE CONTRACT

- .01 GENERAL: The General Requirements at the forepart of these specifications are hereby made a part of this Section.

02 SCOPE

- .01 WORK INCLUDED: The Contractor shall furnish all labor, materials, equipment, etc. necessary to provide all specified Glass for specimen casework , by Specialty Contractor.

03 SUBMITTALS

- .01 SAMPLES: Prior to purchasing, the Contractor shall submit to the Designer for verification and approval one twelve inch (12") square sample of each type of glass specified.

04 MATERIALS

.01 GLASS

- 01) Tempered: 3/8" clear, ground and polished edges.

05 STANDARDS

- .01 GENERAL: Comply with the recommendations of Flat Glass Marketing Association (FGMA) "Glazing Manual" and "Sealant Manual" except where more stringent requirements are indicated or required. Refer to those publications for definitions of glass and glazing terms not otherwise defined in this Section or other referenced standards. All glass shall conform to Federal Specification DD-G-451a.

- .04 HEAT-TREATED GLASS: Provide heat-treated glass which complies with ASTM C-1048 requirements, including those indicated by reference to kind, condition, type, quality, class, and if applicable, form, finish and pattern.

06 MANUFACTURERS

.01 AVAILABLE MANUFACTURERS: Subject to compliance with requirements, manufacturers offering products which may be incorporated in the Work include, but are not limited to, the following:

01) Clear and tinted float glass:

- A) AFG Industries, Inc.
- B) Ford Glass Division
- C) Guardian Industries Corp.
- D) LOF Glass, Inc.
- E) PPG Industries, Inc.

02) Heat-treated glass:

- A) AFG Industries, Inc.
- B) Cardinal IG
- C) Environmental Glass Products
- D) Falconer Glass Industries
- E) Ford Glass Division

07 EXECUTION

.01 WORKMANSHIP: All glass shall have clean cut, ground and beveled edges; nipping edges will not be permitted; glass with chipped edges will be rejected. Cut glass to fit easily, with ample room for expansion; forcing glass into position will not be permitted.

.02 EXAMINATION: Contractor is to inspect work of glass supplier for compliance with specified glass type, overall dimensions and condition. There are to be no chips, cracks, scratches or other imperfections on the glass. Replace glass with edge damage.

.03 PRODUCT HANDLING: Protect glass from edge damage during handling and installation; use a rolling block in rotating glass sheets to prevent damage to glass corners. Do not impact glass with metal framing. Use suction cups to shift glass sheets into and within openings; do not raise or drift glass with a pry bar.

08 COMPLETION

- .01 CLEANING AND PROTECTION: Until acceptance thereof, adequately protect all glass and replace all broken and imperfect glass at no additional cost to the Owner. Carefully and completely remove all markings, pads and labels. Wash both faces of glass, with a recommended commercially available glass cleaner and lintless static-free cloth, not more than one day prior to date scheduled for Substantial Completion. There should be no evidence of streaking, fingerprints or clouding on both faces.
- .02 CLEANING UP: Upon completion of glass installation remove discarded materials, equipment, apparatus and tools and leave premises clean, neat and orderly.

END OF SECTION

SECTION 0910

PAINT

01 CONDITIONS OF THE CONTRACT

.01 GENERAL: The General Requirements at the forepart of these specifications are hereby made a part of this Section.

02 SCOPE

.01 WORK INCLUDED: The Contractor shall furnish all labor, materials, equipment, etc. necessary to provide all specified Painting. The Work of this Section includes but is not necessarily limited to the following:

01) Land Mass Skirt by Specialty Contractor

02) Tubular Metal Base Units

03 SUBMITTALS

.01 SAMPLES: Before beginning Work, the Contractor shall prepare samples of all prime coats, colors, and finishes specified for the approval of the Owner and Designer. Such approved samples shall constitute standards for color and finish for acceptance or rejection of completed Work. Make flat samples twelve inches square (12"x 12") and linear samples twelve inches long. Show all specified coats by letting down or stepping back each coat on the substrate. Label each coat. Include all pertinent information including brand name. Furnish sufficient samples until approval has been obtained. The approved samples shall be marked for identification and retained by the Owner. The Work shall match the approved samples.

.02 MAINTENANCE INSTRUCTIONS: Submit cleaning and maintenance instructions for paint finishes as specified.

04 MATERIALS

.01 PAINT: All paint shall have a fire classification of A or B in conformance with all applicable local codes and requirements.

.02 UNSUITABILITY OF SPECIFIED PRODUCTS: No claim by the Contractor concerning the unsuitability of any material specified or his inability to produce first

class work with same shall be entertained unless such claim is made in writing to the Owner before the Work is started.

05 DEFINITIONS AND NOMENCLATURE

- .01 PAINT: The term "paint" as used herein includes emulsions, enamels, paints, stains, varnishes, sealers, primers and other coatings, organic or inorganic, whether they be used as prime, intermediate or finish coats.
- .02 SHOP PAINTING: The term "shop painting" as referred to herein and/or on the Drawings covers surface preparation and painting operations conducted in or at a shop, mill, or plant before shipment of paint receiving items to the project site.
- .03 FIELD PAINTING: The term "field painting" as referred to herein and/or on the Drawings covers surface preparation and painting operations conducted at the project site.
- .04 TOUCH-UP PAINTING: The term "touch-up painting" refers to the application of paint on small areas of painted surfaces to repair mars, scratches, and small areas where the coating has deteriorated in order to restore the coating to an unbroken condition.
- .05 REPAINTING: The term "repainting" designates the cleaning and recoating with the same materials originally used on extensive areas on which the existing coatings have deteriorated or otherwise do not provide adequate protection.

06 PREPARATION

.01 SURFACES:

01) In general, all Painting shall be Shop Painted. Touch-up Painting shall occur during and/or after installation of painted work. Surfaces shall be painted only when they are free from moisture. Receiving surfaces shall be dried out before proceeding with the Work. No work shall be done when temperature is below 50 degrees F., except when specifically directed otherwise in writing by the Owner.

02) Contractor shall furnish, maintain and remove equipment required for this Work, drop cloths for the protection of floors, prefinished materials, building fixtures, etc. Finished surfaces subject to damage or defacement due to other work on the building shall be

protected and covered. Contractor shall be responsible for damage to his work and to that of other work caused by his operations under this Section.

03) Contractor shall remove or protect during painting all finish hardware, accessories, fixtures and similar items installed prior to painting and not required to be painted. If removed, carefully replace and adjust on completion of painting.

04) Surfaces shall be clean, free of dirt, grease and any foreign matter that would adversely affect the adhesion, finished appearance or protective properties of the paint coatings.

05) If for any reason the surface cannot be properly prepared, the condition shall be reported to the Owner in writing. The unsatisfactory condition shall be rectified prior to the commencement of painting and/or finishing.

06) Contractor shall do necessary puttying of nail holes, cracks, etc. after first coat with putty or color to match that of finish. Bring putty flush with adjoining surface.

07) Contractor shall wash any metal surfaces with mineral spirits to remove any dirt or grease before applying materials. Where rust or scale is present use wire brush or sandpaper to clean before painting. Clean shop coats of paint that become marred; touch-up with specified primer.

08) Contractor shall apply paste wood filler to open grain wood.

07

APPLICATION

.01 SURFACES:

01) Land Mass Skirt: two coats latex paint - Matte Black, as reviewed and approved by Designer. Tubular Metal Base Units: "Polane" two-part epoxy paint - Dark Bronze as reviewed and approved by Designer. Paint shall be applied in accordance with Manufacturer's specifications. Use of thinners at any time must have approval of the Owner.

02) Contractor shall sand millwork and woodwork to receive paint finish, and clean surface before proceeding with first coat application. Use fine sandpaper between coats on enamel or varnish finish

applied to wood or metal to produce even, smooth finish.

03) Contractor shall see that coats are thoroughly dry before applying succeeding coats.

04) Apply paint to achieve a uniform finish, color and appearance. Give special attention to ensure that surfaces, including edges, corners, crevices, welds, and exposed fasteners, receive a dry film thickness equivalent to that of flat surfaces.

08 COMPLETION

.01 Cleaning Up:

01) Upon completion of Work, remove paint, varnish spots from floors, glass, woodwork, hardware, electric outlet plates, and other surfaces; remove from premises rubbish accumulated materials, of what ever nature not caused by other trades; leave work in an orderly, acceptable condition.

02) At completion of entire job, painted and finished work shall be touched-up and restored where damaged and/or defaced and the entire Work shall be left free of blemishes.

END OF SECTION

DIVISION 9

SECTION 0930

TERRAZZO

01 CONDITIONS OF THE CONTRACT

.01 GENERAL: The General Requirements at the forepart of these specifications are hereby made a part of this section.

02 SCOPE

.01 WORK INCLUDED: The Contractor shall furnish all labor, materials, equipment, etc. necessary to fabricate, ship and install all Terrazzo and related Work as shown in Drawings, specified herein, or both. The work of this Section includes but is not necessarily limited to the following:

- 01) Monolithic terrazzo.
- 02) Precast terrazzo.

03 SUBMITTALS

.01 Product data for each type of terrazzo, accessory item, and component material specified.

.02 Shop Drawings: Showing layout of divider strips, control joint strips, and base and border strips.

01) Show large-scale details of precast terrazzo jointing and edge conditions, and show elevation and plan layouts. Include anchorage and other special features.

.03 Samples: 6-inch-square samples of each different pattern, color, and type of terrazzo required. Provide minimum 6-inch-long samples of each type accessory item specified.

.04 Material Certification: Supplier's/manufacturer's written certification that terrazzo materials provided meet or exceed specified NTMA properties.

.05 Maintenance Instructions: Submit 2 copies of written instructions for recommended periodic maintenance of each type of terrazzo.

04 QUALITY ASSURANCE

- .01 NTMA Standards: Comply with specified provisions and recommendations of National Terrazzo and Mosaic Association, Inc. (NTMA).
- .02 Installer Qualifications: Engage an experienced Installer who has completed terrazzo installations similar in material and extent to that indicated for Project and that has resulted in construction with a record of successful in-service performance.

05 CEMENTITIOUS TERRAZZO MATERIALS

- .01 Portland Cement: ASTM C 150, Type I, Obtain cement from a single source for each required color.
- .02 Sand: ASTM C 33.
- .03 Water: Clean; free of oil, soluble salts, and other deleterious substances.
- .04 Aggregate: Natural, sound, crushed marble chips without excessive flats or flakes, complying with NTMA requirements.
 - 01) Colors and gradation of aggregate sizes as required to match Designer's sample.
- .05 Matrix Pigments: Pure mineral or synthetic pigments, resistant to alkalies and nonfading. Mix pigments with matrix as required to match Designer's sample.
- .06 Underbed Reinforcement: Galvanized welded wire fabric, 2 inches by 2 inches, W0.3 x W0.3 (0.06250-inch diameter or 16 ASW gage); comply with ASTM A 185 and ASTM A 82, except for minimum wire size.
- .07 Isolation Membrane: Polyethylene film, complying with ASTM D 2103, not less than 4.0 mils thick.
- .08 Curing Compound: Liquid membrane-forming compound, ASTM C 309, Type 1.

06 TERRAZZO ACCESSORIES

- .01 Divider Strips: Depth and style required for terrazzo type and thickness. Width, material, and color as

indicated. Angle or "T"-type for adhesive bonding to substrate.

.01) Unless otherwise indicated, use divider strips with 1/4-inch-wide top, as follows:

a. Half-hard brass

.02 Divider Strip Adhesive: Trowelable mixture of fine sand and bonding agent, specially compounded by manufacturer for this use.

.03 Cleaner: Chemically neutral, liquid cleaner, with Ph factor between 7 and 10, of formulation recommended by sealer manufacturer for type of terrazzo used and complying with NTMA requirements.

.04 Interior Sealer: Colorless, slip- and stain-resistant penetrating sealer with Ph factor between 7 and 10, that does not affect color or physical properties of terrazzo surface.

07 PRECAST TERRAZZO

.01 Provide precast terrazzo units only where specifically indicated on drawings.

.02 At Contractor's option, precast terrazzo units may be provided for any terrazzo work except for areas in excess of 15 sq. ft. and except for adhesive-bonded, bonded, or monolithic terrazzo.

01) Comply with NTMA specifications and recommendations for fabrication of precast terrazzo. Reinforce precast terrazzo units, as indicated.

02) Match color and pattern of precast work with color and pattern of cast-in-place work, unless otherwise indicated.

08 PREPARATION

.01 Examine plywood substrate to ensure that surface levelness tolerances are within tolerance ranges required by NTMA for type of terrazzo application specified.

01) Notify Contractor of unsatisfactory levelness tolerances. Do not begin installation until unsatisfactory tolerances have been corrected and are ready to receive terrazzo.

.02 Clean and prepare substrate to comply with NTMA specifications for type of terrazzo application indicated. Clean substrate of loose chips and foreign matter.

09 INSTALLATION

.01 For cementitious terrazzo, comply with NTMA recommendations for proportioning mixes, installing strips, and placing, curing, grinding, grouting, and finishing.

.02 Install divider and accessory strips in adhesive setting bed, in accordance with manufacturer's instructions, without voids below strips. Provide mechanical anchorage as required for adequate attachment of strips to substrate.

10 CEMENTITIOUS TERRAZZO

.01 Monolithic Terrazzo: Comply with NTMA "Guide Specification for Monolithic Terrazzo." Adhere thin-set strips to substrate with a full adhesive setting bed and nail strips to substrate. Remove excess adhesive from substrate.

11 CLEANING, SEALING, AND PROTECTING

.01 Clean terrazzo after installing and finishing operations are completed, complying with sealer manufacturer's instructions.

.02 Apply sealer to cleaned terrazzo surfaces to comply with sealer manufacturer's instructions.

.03 Protect terrazzo from damage and wear during construction operation.

12 FINAL CLEANING

.01 Clean terrazzo as recommended by manufacturer of sealer and machine buff if required when building is ready for occupancy.

END OF SECTION 0930

SECTION 1020
PORCELAIN ENAMELED GRAPHICS

01 CONDITIONS OF THE CONTRACT

- .01 GENERAL: The General Requirements at the forepart of these specifications are hereby made a part of this Section.

02 SCOPE

- .01 WORK INCLUDED: The Contractor shall furnish all labor, materials, equipment, etc. necessary to prepare, bake, and install all Porcelain Enameled Panels as shown in Drawings, specified herein, or both. The Work of this Section includes but is not necessarily limited to the following:

01) Three (3) graphic panels, approx. 2' x 3',
1'x 2', 2'x 2', N.I.C.

03 SUBMITTALS

- .01 SHOP DRAWINGS: Prior to fabrication, prepare shop drawings of Work and submit to and obtain Designers approval thereof. Shop drawings shall be based on Drawings, specifications and field measurements (if applicable) for proper mounting or fitting of panels. Drawings shall show dimensions, layout of framing (if any), location of mounting holes, and method of mounting.
- .02 SAMPLES: The Contractor shall submit for approval, to the Designer, a porcelain enameled sample consisting of text and photography similar in nature to the work specified above. The sample shall be mounted or welded to a steel frame or substrate (if any) as specified in the Drawings. A prototype panel may be submitted instead of a sample. Approved prototypes may be installed as part of the finished work only if they are undamaged and in no way distinguishable in appearance from the main production run of panels.

04 MATERIALS

- .01 GRAPHIC: Porcelain enameled steel graphics shall be as manufactured by Follis Systems, 2124 Venice Boulevard, Los Angeles, California 90006, or approved equal.
Gauge: 16.

05 FABRICATION

.01 PRODUCT HANDLING: Care shall be taken to avoid scratching or marring in any way the porcelain enameled surface or painted finishes.

.02 WORKMANSHIP:

01) Flanges (if any): Flanges shall meet at corners in a welded and ground radiused joint indistinguishable from the brake-formed edges of the unit.

02) Color: Coloration shall be continuously even and opaque.

03) Type: All type shall have sharp, crisp, unbroken edges and be completely opaque with no background color showing through.

04) Photography: All four color reproductions in porcelain enamel shall have a resolution of three hundred (300) lines per inch, and have a gloss finish. Images shall be in sharp focus, and color separations shall be in perfect registration.

.03 QUALITY ASSURANCE:

01) The Contractor shall replace at no cost to the Owner any panels damaged before the date of completion of the Contract, even if such damage is discovered after that date.

.04 ORIGINAL PHOTOGRAPHY AND ART:

01) All mechanicals will be supplied as camera-ready.

02) Imagery will be supplied in the form of black and white and/or color transparencies or thirty five millimeter (35mm) slides; or original art. Each of these originals will be coded with a Graphic Reference Number, as well as reference numbers of the loaning photographer or institution. In all cases, these numbers must be used as reference for production and should remain intact. All acetate sleeves, covers, envelopes, etc. must be kept with their associated original, and returned to the Owner. Specific cropping information will be provided with each original, and shall also be returned to the Owner.

03) The Contractor shall guarantee the safety of each original transparency and/or slide. If loss or damage occurs, the Contractor is liable for the worth or replacement value of the original. Liability will begin upon receipt of the materials by the Contractor until they are returned and received by the Owner.

04) The Contractor shall securely and safely pack all original materials. The package should be moisture-proof and well-wrapped, reinforced and labeled. All shipments shall be by registered mail, return receipt requested, and adequately insured to cover loss. The Owner should be notified of shipment in advance.

06 INSTALLATION

.01 PROTECTION:

01) The Contractor shall ship, store and handle all porcelain enameled panels in such a way that they shall be perfect and unmarred when installation is complete. They shall be protected from dirt, dust, abrasion and moisture.

02) Porcelain enamel panels should be installed by experienced personnel familiar with the handling and installation of glass. Precautions taken with the installation of glass should be observed. Exercise great care not to overtighten fastening hardware. All damaged panels will be rejected and must be replaced.

.02 LABELING: All porcelain enameled panels shall be appropriately labeled in a concealed place with the Graphic Reference Number as provided on the mechanicals, photography or art.

END OF SECTION

DIVISION 13: SPECIAL CONSTRUCTION

SECTION 1300
DINOSAUR MOUNT

01 CONDITIONS OF THE CONTRACT

- .01 GENERAL: The General Requirements at the forepart of these specifications are hereby made a part of this Section.

02 SCOPE

- .01 WORK INCLUDED: The Contractor shall furnish all labor, materials, equipment, etc. necessary to fabricate, ship and install Dinosaur Mounts as shown in the Drawings, specified, or both. The Work of this Section includes, but is not necessarily limited to the following, by Specialty Contractor:

- 01) One (1) Barosaurus adult with mount.
- 02) One (1) Barosaurus juvenile with mount.
- 03) One (1) Allosaurus with mount.

03 SUBMITTALS

- .01 SHOP DRAWINGS: The Contractor will submit shop drawings indicating the structure and method of support for each Dinosaur, for approval by Owner and Designer.

- .02 TEMPLATES: The Contractor will submit a template pinpointing the exact mounting locations for each Dinosaur.

04 MATERIALS

- .01 BONES: Each bone used to reconstruct each Dinosaur will be made of a cast urethane foam. Each bone will receive a painted finish, sealed as required to prevent wear and discoloration.

- .02 MOUNTS: Each Dinosaur (in the posture indicated by the Designers models and drawings) will be supported and mounted with structural steel, as required, with all joinery to receive welds.

05 SPECIFIC REQUIREMENTS

- .01 SUPPLIER: The Dinosaurs and their mounts are to be fabricated, shipped and installed by: Research Casting International, or equal, subject to Designer's approval.
- .02 WORKMANSHIP: The method for support and mounting is to be undetectable from any eye-level.

END OF SECTION

SECTION 1310
LAND CONSTRUCTION

01 CONDITIONS OF CONTRACT

- .01 GENERAL: The General Requirements at the forepart of these specifications are hereby made a part of this Section.

02 SCOPE

- .01 WORK INCLUDED: The Contractor shall furnish all labor, materials, equipment, etc. necessary to fabricate, ship and install the Land Mass as shown in Drawings, specified herein, or both. The Work of this Section includes but is not necessarily limited to the following, by Specialty Contractor:

01) Irregularly shaped Land Mass measuring approximately twenty-three feet by fifty-two feet (23'x 52').

03 SUBMITTALS

- .01 SAMPLES: The Contractor will submit a one foot square (3' x 3') sample indicating basic textures, color, edge treatment and underside treatment for approval by Owner and Designer.

04 SPECIFIC REQUIREMENTS

- .01 SUPPLIER: The materials and method of casting is a proprietary process and must be bid by suppliers approved by Owner and Designer. Any other supplier would need to provide an equal, or better product.

END OF SECTION