

RFP # FY 2012-2013 SIGN FABRICATION AND INSTALLATION EXHIBIT 1 SPECIFICATIONS

Prepared by AECOM March 2012

Specifications

1 INTRODUCTION AND PROJECT DESCRIPTION

1.0 INCLUSIONS

This work shall include all labor, materials and equipment necessary for the proper execution and completion of said work, as shown on the plans and as herein specified. It shall also include all work not specifically included in the Design Intent Documents which is properly inferable and necessary for the completion of this work.

1.1 RELATED DOCUMENTS

Drawings and general provisions of the Contract, including Special Conditions, apply to this Section.

1.2 SUMMARY OF WORK INCLUDED

- A. Sign Fabrication: Types of signs, messages, and graphics are indicated on the Drawings and herein, and require various materials, finishes, Illumination and fabrication and installation techniques.
- B. Submit shop drawings, layouts, samples, and mock-ups for Owner approval.
- C. Structural design and wind-load calculations for all signs and foundations mounted and/or suspended signage to confirm structural integrity of the designed support connection. All structural connections will require certification by an Engineer licensed in project state. The drawings are diagrammatic and indicate the aesthetic of "design intent" only. Details shown are intended as a guide for the interfacing of adjacent surfaces.
- D. Installation of all fabricated signs, including all fasteners and fastenings and related electrical and data connections.

- E. Coordination with all trades of this Contract required for the fabrication and installation of the signage, including the approvals by the Owner required in this Section. Fabrication and installation of the Work shall be done in accordance with municipal code requirements.
- F. Coordination and verification of all messages with Owner. Architect/Designer will provide complete set of sign location plans with sample numbering system and electronic message schedule template for fabricator to complete sign message schedule for submission and approval by the Owner.
- G. Verification of all conditions and sign dimensions in the field. Sign Fabricator to coordinate all signage requirements with the architectural, structural, lighting, electrical, and telecommunications drawings to ensure that all proposed signs can be installed, with power and required data connections and structurally supported. Verification of conditions and sign dimensions to be completed prior to sign fabrication and approval of all required submittals.

2 REQUIREMENTS

Details on Drawings indicate a design approach for sign fabrication but do not include all fabricating details required for the complete structural integrity of the signs, including consideration for static, dynamic, and erection loads during handling, erecting, and service at the installed locations. Therefore, it shall be the responsibility of the Fabricator to perform the complete structural design of the signs and to incorporate all the reasonable safety factors necessary to protect the Owner and their representatives, against public liability. Contractor will submit engineered "shop drawings" to the client/clients representative for review and approval by the Owner. Signs must meet all

RFP # FY 2012-2013 SIGN FABRICATION AND INSTALLATION EXHIBIT 1 SPECIFICATIONS

Prepared by AECOM March 2012

applicable local codes, as well as testing laboratory listings where required.

Fabricator is responsible to document final connections for all power and data cabling.

2.1 SHOP DRAWINGS

The Drawings presented for bid are not fabrication drawings. The Signage Contractor is expected to provide all details necessary to effectively explain and specify the fabrication process and the expected performance of the installed product. The Signage Contractor must demonstrate through details and specifications their complete understanding of the desired final product and the method/process by which they are producing said product. The Signage Contractor is responsible to field measure and verify with architectural drawings prior to submitting Shop Drawings. Repackaging the supplied Drawings with new title blocks and delivering them as submittals will not be accepted. Although art may be supplied electronically, Signage Contractors will not be required to create all graphic content from scratch but to demonstrate and verify the quality and accuracy of the delivered product.

- A. The graphics and drawings represent the design intent for the signs required for the Project. The Sign Fabricator is responsible for the proper engineering of all elements of the Work and where applicable, to include a set of wet stamped, signed engineering calculations by a licensed Structural Engineer from the project's state. The internal structure, dimensions, and specifications for all items shall be indicated in the shop drawings.
- B. Description: Provide shop drawings for all items including, but not limited to the following: Complete fabrication and installation drawings for each sign type. Indicate dimensions, materials, finishes, fastening, anchorage, joining, sealing, backing, utility requirements, rough-in, and adjacent related site conditions.

2.2 SUBMITTALS

Procedure: Prepare submittals in accordance with the requirements of the Special Conditions, and to include the following:

- A. Notes on Drawings shall clearly define any actions requiring review by the Owner or owner's representative.
- B. First article of production-run items, both large and small, will be reviewed by the Owner or owner's representative before production run is commenced.
- C. It shall be the responsibility of the Contractor to schedule all review meetings with the Owner or owner's representative.
- D. Submit physical samples of sufficient size and quantity to illustrate materials, finishes, equipment or workmanship, and to establish standards by which completed work will be judged. Samples must represent the functional characteristics of the product or material, with integrally related parts and attachment devices, colors, and finishes.
- E. Shop drawings including structural design and wind-load calculations for all signs and foundations mounted and/or suspended signage to confirm structural integrity of the designed support connection. All structural connections will require certification by a licensed structural engineer.
- F. Required samples for review: First article mock-ups/samples of entire sign types of ALL sign types indicated in the design intent drawing set.
- G. Full 101mm x 101mm (4 inch x 4 inch) set of all specified paint colors and finishes.

RFP # FY 2012-2013 SIGN FABRICATION AND INSTALLATION EXHIBIT 1 SPECIFICATIONS

Prepared by AECOM March 2012

- H. Complete, full-size message in each typeface to demonstrate proper spacing (black text on white background: outline not accepted).
- I. Each type of metal used for major elements of work with respective finish.
- J. Each type of adhesive vinyl film, including computer-cut designs, shown full-size on each of the specified ground colors.
- K. Mock-ups as scheduled in this section. Approved mock-ups can be used as part of the completed work.
- L. Project schedule
- M. Supplementary Product Literature: Submit for information. Furnish within seven (7) days of request, manufacturer's literature describing the general properties of each product to be used in the Work.

2.3 QUALITY ASSURANCE

- A. Provide a mock-up (partial for large signs; complete for smaller signs) of each sign type requested at the fabrication facility for review. The requested Sign types are shown on the drawings. Refer to the drawings for further information. Mock-ups once approved may be used towards final install count.
- B. Utilize the same materials and installation methods in the mock-up as intended for the final Work. Schedule the installation so that the mock-up may be examined, and any necessary adjustments made, prior to commencing fabrication of the final Work. Replace unsatisfactory items as directed.
- C. When accepted, mock-up shall serve as the standard for materials, workmanship, and appearance for the work throughout the project.

Work-In-Progress Approvals:

Provide work-in-progress sign elements reviews. Scheduled or unscheduled viewings at the Fabrication Facility may be initiated by the Owner's Representative as deemed necessary to ensure continued quality control and make any adjustments required during fabrication. Unsatisfactory items are to be corrected by the Signage Contractor as directed by the Owner or owner's representative.

Regulatory Requirements:

Comply with applicable requirements of the Applicable Laws and Authorities. Obtain necessary approvals and permits from all such Authorities as required.

Markings and Labels:

- A. Locate markings, labels, manufacturer names and other identifications so as to be concealed from public view and as acceptable by the Owner's Representative.
- B. No trade name or other identification shall appear on any item where it will be seen by the public except as specifically approved by the Owner's Representative in advance.

Final Location of Signs:

- A. The location of signs as shown on the Location Plans is for general reference only and in some cases is not representative of the exact final location. Final locations of Signs shall be field located in coordination with the Owner's Representative.
- B. Signage Contractor shall arrange for meetings at the Project to accommodate direction of final locations according to Project Construction Schedule.

Lettering:

- A. The contractor shall be responsible for the quality control of all lettering. All letterforms shall

RFP # FY 2012-2013 SIGN FABRICATION AND INSTALLATION EXHIBIT 1 SPECIFICATIONS

Prepared by AECOM March 2012

be crisp, sharp, free of nicks, ragged edges and discontinuous curves. All lettering shall conform to approved typeface, weight and letter spacing. No substitutions of typeface foundry, brand or version or implementation technique will be accepted without prior approval.

- B. Vinyl Die Cut Graphics: All camera-ready artwork shall be scanned for cutting on a Gerber Sign Maker II or approved equal.
- C. All cutting and routing shall be executed in such a manner that all edges and corners of finished letterforms are true and clean. Letterforms with rounded positive or negative corners, nicked, cut, or ragged edges, etc., will not be accepted. All letterforms shall be so aligned as to maintain a baseline parallel to the sign format. Margins must be maintained as specified in drawings.
- D. All Work under the Agreement shall be performed by skilled craftsmen under supervision of trained foremen, experienced in the trade of craft required to accomplish the Work and produce a product of high quality.
- E. All letters specified as vinyl and or painted finish shall be produced as indicated in the bid documents and substitutions will not be accepted without owners or owner's representative approval.

High Quality of Workmanship:

- A. The Contractor shall be responsible for the high quality of all materials and workmanship required for the execution of the project including materials and workmanship of any firm or individual who act as Signage Contractor's Sub-Contractor.
- B. Signage Contractor shall be responsible for providing up-to-date drawings, specifications, graphic schedule, etc., to all sub-contractors.

Dimensions

- A. Written dimensions on drawings shall have precedence over scaled dimensions.
- B. Signage Contractor shall verify and be responsible for all dimensions and conditions shown by these drawings. Shop details must be approved by the Owner's Representative prior to fabrication.

Discrepancies

Signage Contractor shall notify the Owner's Representative of any discrepancies in the Drawings, Sign Location Plan or Sign Message Schedule, in field dimensions or conditions and/or changes required in construction details.

2.4 GRAPHICS/ARTWORK

Owner or owner's representative to provide contractor artwork on: CD-Rom, DVD or via electronic file transfer; Adobe Illustrator 11.0 for graphic layouts included in the drawings.

2.5 WARRANTY

Submit to the Owner's Representative a 1-year written warranty (effective the date of final acceptance) covering all signs contractor will agree to repair or replace defective signs. Upon notification of such defective signs within the warranty period, make necessary repairs or replacement at the convenience of the Owner's Representative.

Paint Finish Warranty

Submit to the Owner's Representative a 1 year written warranty, warranting that the factory-applied finishes will not develop excessive fading or excessive non uniformity of color or shade, and will not crack, peel, pit, corrode or otherwise fail as a result of defects in materials or workmanship within the following defined limits. Upon notification of such defects within the warranty period, make necessary repairs or replacement at the convenience of the owner's representative.

RFP # FY 2012-2013 SIGN FABRICATION AND INSTALLATION EXHIBIT 1 SPECIFICATIONS

Prepared by AECOM March 2012

Definitions:

Excessive Fading - A change in appearance which is perceptible and objectionable as determined when visually compared with the original color range standards.

Excessive Non-Uniformity - Non-uniform fading to the extent that adjacent panels have a color difference greater than the original acceptable range of color.

Will Not Pit or Otherwise Corrode - No pitting or other type of corrosion, discernible from a distance of 3m (10 feet), resulting from the natural elements in the atmosphere at the project site.

2.6 MAINTENANCE

- A. Contractor shall prepare a Maintenance and Operating Manual comprised of cleaning and operations needs for each sign type. This shall include information on repair due to common vandalism, changing of messages and parts replacement needs.
- B. Submit four (4) copies of Maintenance and Operating Manuals to the Owner's Representative and 1 digital copy.
- C. Furnish complete manuals describing the materials, devices and procedures to be followed in operating, cleaning and maintaining the work. Include manufacturers' brochures and parts lists describing the actual materials used in the work, including metal alloys, finishes, electrical components and other major components.
- D. Assemble manuals for component parts into single binders identified for each system.

2.7 FABRICATION

- A. Signage shall be complete for proper installation as described in the drawings.

- B. Finish work shall be firm, well anchored, in true alignment, properly squared, with smooth clean uniform appearance, without holes, cracks, discoloration, distortion, stains, or marks.
- C. Construct all work to eliminate burrs, dents, cutting edges, and sharp corners.
- D. Finish welds on exposed surfaces to be imperceptible in the finished work.
- E. Except as indicated or directed otherwise, finish all surfaces smooth.
- F. Surfaces, which are intended to be flat, shall be without dents, bulges, oil canning, gaps, or other physical deformities.
- G. Surfaces, which are intended to be curved, shall be smoothly free-flowing to required shapes.
- H. Except where approved otherwise by Owner, conceal all fasteners.
- I. Make access panels tight-fitting, light proof, and flush with adjacent surfaces.
- J. Conceal all identification labels.
- K. Carefully follow manufacturer's recommended fabricating procedures regarding expansion or contraction, fastening, and restraining of acrylic plastic.
- L. Exercise care to ensure that painted, polished, and plated surfaces are unblemished in the finished work.
- M. Isolate dissimilar materials. Exercise particular care to isolate nonferrous metals from ferrous metals.
- N. All illumination shall be even and without hot spots.
- O. Ease all exposed metal edges.

RFP # FY 2012-2013 SIGN FABRICATION AND INSTALLATION EXHIBIT 1 SPECIFICATIONS

Prepared by AECOM March 2012

- P. Provide miscellaneous metal items required for completion of the work even though not shown or specified.
- Q. Refer to Drawings for sign color specifications.
- R. Paint finishes shall be Matthews Acrylic Polyurethane with Matthews Primers and Metal Pre-Treatments or Owner approved equal.
- S. Shop painting to be uniform on and around all sign elements to ensure sign elements will withstand all weather conditions.
- T. Mounting: Mounting plates shall be in conformance with manufacturer's written recommendations.

2.8 MATERIALS

- A. Aluminum shall be suitable for ornamental, architectural work. Surface finish shall be smooth, free of extrusion marks or imperfections. Alloy shall be selected to meet the structural requirements of the specific application.
- B. Stainless steel shall be suitable for ornamental and architectural work. Surface finish shall be smooth, free of all extrusion marks or imperfections. Alloy shall be selected to meet the structural requirements of specific application. Structural metal for concealed framing shall be of galvanized rolled steel or equal as required to satisfy structural requirements.
- C. Aluminum exterior cabinets, spacers, back plates and frames shall be constructed from 6mm (.25 inch) aluminum, #4 horizontal brushed and clear anodized finishes, unless otherwise specified on Drawings.
- D. Aluminum interior plaques shall be constructed from 3mm (0.125 inch) aluminum, #4 horizontal brushed finish with semi-gloss linear polyurethane clear coat, unless otherwise specified on Drawings.
- E. Aluminum interior fabricated components shall be constructed from 3mm (0.125 inch) thickness aluminum sheet unless otherwise indicated.
- F. Adhesive used for installing signs shall be manufactured by Dow Corning or equal. Polyfoam or "Isotac" contact adhesive tape manufactured by 3M shall be used in conjunction with silicone adhesives for installation of wall signs, in minimum thicknesses available.
- G. Concrete installation of anchoring devices into concrete slab shall be adjusted to avoid penetrating existing reinforcing conduit, etc. contained in the concrete slab. Coordinate with the Project Architect and Structural Engineer.
- H. Stainless steel shall be suitable for ornamental and architectural work. Surface finish shall be smooth, free of all extrusion marks or imperfections. Alloy shall be selected to meet the structural requirements of specific application. Structural metal for concealed framing shall be of galvanized rolled steel or equal as required to satisfy structural requirements.
- I. Acrylic intended for non-illuminated use shall be 6mm (0.25 inch) cast acrylic sheet with non-glare finish, unless otherwise specified on Drawings. Acrylic intended for edge-illuminated use shall be 10mm (0.5 inch) extruded acrylic sheet with embedded diffuser particles designed specifically for edge-lighting, unless otherwise specified on Drawings.
- J. Use Plexiglas II as manufactured by Rohm and Haas Co., or equal quality. Thickness shall be

RFP # FY 2012-2013 SIGN FABRICATION AND INSTALLATION EXHIBIT 1 SPECIFICATIONS

Prepared by AECOM March 2012

as indicated on Drawings or not less than 3mm (0.125 inch) thick. Signage Contractor shall provide color and finish samples of all plastics for approval before fabrication; no substitution in color, thickness, or finish of plastics will be accepted without written approval from the Owner's Representative. All plastics shall be of uniform color, translucence and illumination, as supplied by manufacturer. Any exposed edges of acrylic shall be finished so as no saw marks are visible.

- K. Bolts, nuts, screws, washers, anchors and other devices required to complete the work. Signage Contractor shall use the same basic metal or alloy as the metal fastened, and finish matching in color and texture. Use stainless steel 300 series alloy where used to join dissimilar materials.
- L. All exposed fasteners to be 3mm (0.125 inch) tamper proof stainless steel screws painted to match adjoining surfaces unless otherwise specified on drawings.
- M. Pin-mount supports shall be painted threaded rods as appropriate.
- N. Insulation /Material Isolation: Separate all ferrous and non-ferrous metals with non-conductive gaskets to prevent electrolysis. In addition to gaskets, provide stainless steel fasteners for some cases as required.
- O. Applied interior vinyl graphics to be High Performance Cast Vinyl Sheeting, unless otherwise specified on Drawings. Applied exterior vinyl graphics shall be High Performance Reflective Vinyl Sheeting, unless otherwise specified on Drawings.
- P. Dissimilar Materials: Where metal surfaces will be in contact with dissimilar materials, coat the surfaces with epoxy paint or plate with zinc chromate, or provide other means of dielectric separation as recommended by manufacturer to prevent galvanic corrosion (i.e. Neoprene gasket as an isolation membrane)
- Q. Castings: Exposed surfaces shall be uniformly free from porosity and roughness. Edges shall be filled and ground smooth. Faces shall be chemically etched and mechanically polished for specified finish.
- R. Galvanizing: Provide for steel components in exterior construction, and where noted in Drawings shall be galvanized. Complete the shop fabrication prior to application of the zinc coating. Remove mill scale and rust, clean and pickle the units as required for proper pretreatment of the surfaces.
- S. Hardware: Provide all incidental hardware necessary for the proper functioning of signs. External hardware shall conform to the external appearance of the sign.
- T. Supports and Backing in Walls: Contractor shall provide engineered sign supports anchored to building structure where required and to meet requirements of applicable building codes. Support or backing requiring installation within the building wall construction shall be immediately relayed to the Architect of Record and Owner's Representative for field coordination. Contractor shall meet with the Architect to review all requirements.

2.9 ELECTRICAL COMPONENTS

Electrical components must conform to applicable electrical codes and the following:

- A. All materials must be approved and listed by Underwriters Laboratories, Inc.

RFP # FY 2012-2013 SIGN FABRICATION AND INSTALLATION EXHIBIT 1 SPECIFICATIONS

Prepared by AECOM March 2012

- B. Light Emitting Diode (LED) general lighting requirements:
1. Provide sufficient LED wattage, quantities and spacing to ensure continuous, maximum illumination.
 2. Provide LED lighting prototypes to verify brightness and uniformity of lighting with designer.

Electrical Wiring and Equipment

- A. Provide and install electrical materials such as ballasts, transformers, lamps, sockets, neon units, connectors, and all other equipment which shall be new and shall be approved by Underwriters Laboratories, Inc. The assembly of all components within the illuminated signs shall conform to all standards of Underwriters Laboratories, Inc. as published in the latest edition of "Standards for Sign Safety" and all illuminated signs shall bear the U.L. label. All wiring and equipment shall be concealed within the Sign structure.
- B. Conduit and Devices: Provide Rigid steel conduit, junction boxes and associated devices in accordance with applicable codes as required.
- C. Wiring: Minimum #12 AWG copper shall be used. High tension wiring shall not be less than GTO 15 wire as manufactured by Carol Cable Company or approved equal. All wiring shall be AWM 90 0 centigrade 1000 volt TW/MTW U.L. file no. 18971. Wiring connectors for wire splicing shall be U.L. approved 1000 volt capacity and shall be Scotch Lock type Y or R or equal. All splices should be easily accessible for inspection and should be shown on Shop Drawings.
- D. Ballasts shall be used as required for internally illuminated cabinet signs, in quantity and arrangement as recommended by ballast manufacturer and accessible for maintenance and shown on Shop Drawings.
- E. Disconnect Switch: All Signs or Sign components with electrical service shall be equipped with an approved external disconnect switch, flush mounted on the cabinet / Sign, with circuits and capacity to control all primary wiring within the Sign. Location of switch must be shown on Shop Drawings and is subject to approval.
- F. Illumination: All Signs with fluorescent fixtures shall utilize minimum 800 milliamp T8 output cool white fluorescent lamps at the length and placement necessary to provide even illumination without light leaks. All Signs with LED light sources shall be built to perform as required by the Design Consultant's documentation. Signage Contractor shall provide any specification information required to verify performance. All lamps and ballasts shall be provided by the Signage Contractor. Signage Contractor shall provide waterproof flush access panel(s), which shall be concealed wherever possible. Conduit wiring and electrical equipment from the field electrical connection to any part of the sign and within the sign shall be provided by the Signage Contractor.
- G. Ventilation: While maintaining a proper weather seal, Signage Contractor shall provide for sufficient ventilation of Sign components to prevent overheating or warping; allowing for color of sign, mounting surface, climate conditions, etc. In providing for ventilation, Signage Contractor shall protect sign from elements (sand, rain, wind, debris, etc.) that might cause operational or cleaning problems. Signs / cabinets with light leaks will not be accepted. Signage Contractor shall utilize

RFP # FY 2012-2013 SIGN FABRICATION AND INSTALLATION EXHIBIT 1 SPECIFICATIONS

Prepared by AECOM March 2012

stainless steel bug mesh screen for integration with weep holes or vent / louvers on the Signs to prevent insect migration into illuminated Signs.

- H. Cooling System: Contractor shall provide air-conditioning as necessary for the digital kiosks to ensure temperature thresholds for monitors proper cooling based upon manufacturer specifications of all hardware elements.

2.10 FINISHING MATERIALS

- A. Linear Polyurethane Coatings: Provide the following, or other products as acceptable.
- B. Powder coat shall be TGIC super polyester powder coat with a polymer undercoating. Shop painting shall be uniform on and around sign elements to ensure sign elements will withstand weather conditions.
- C. Acrylic Linear Polyurethane enamel: Matthews provides a wide variety of coating systems on a global basis. Specific regions have different branded names: U.S and Canada – Grip Guard or Grip Guard Base Coat, Europe and Asia – Dynacoat, and Global – Sikkens or Lesonal. The approved color system shall follow the products manufacturer specifications for mixing hardeners, reducers clear coats, etc. Contractor shall refer to the Matthews paint code when ordering the product. Matthews and client require the use of clearcoat over all basecoat systems for durability and warranty purposes. Clearcoat application per Matthews specifications shall be required on all painted surfaces.
- D. Painted Surfaces: Manufacturer shall apply a wet film coating of gloss or semi-gloss UV inhibited CLEAR COAT to assure color and finish stability. Manufacturer shall either sand a cured paint surface prior to application or apply wet-on-wet to assure positive bonding.

- E. Primer for Aluminum and Steel: Clean surface and remove all contaminates using approved Matthews wax and grease remover. Sand surface using P-120-P180 Grit dry for aluminum and P-80-P120 for steel. Re-apply wax and grease remover, wipe clean and let dry. Apply Matthews primer specific to technical data sheet from manufacturer.

- F. Metal Finishes: Remove scratches, abrasions, dents and other blemishes before applying finish. Apply the following to the fabricated Work, with texture and reflectivity as required to match the Architect's sample.

- G. Silk Screening Materials: Provide photo processed screening, arranged to furnish sharp and solid images without edge build up or bleeding of the coating. Pattern-cut screens may be used for non-repeat copy, provided that final image copy is equal to photo screen quality. Provide only weather-resistant coating materials, compatible with the intended substrates. All silk-screened graphics are to be done with the finest screen size feasible for sharp, even reproduction.

- H. Vinyl Die-Cut and Pattern Cut-out Graphics: Use Scotchcal Opaque and Translucent film manufactured by 3M where specified. Use pressure-sensitive, non-yellowing, non-peeling and weather resistant vinyl as specified. Use approved fonts and equipment as specified.

2.11 FABRICATION OF SIGNS AND SUPPORTS

- A. General: Provide custom manufactured sign assemblies, components completely fabricated and finished at factory before delivery to project. Construct to accurate detail and dimensions as shown and as review on approved Shop Drawings. Fit and assemble the Work at the shop and mark the components as required to facilitate assembly during installation. Exposed

RFP # FY 2012-2013 SIGN FABRICATION AND INSTALLATION EXHIBIT 1 SPECIFICATIONS

Prepared by AECOM March 2012

fasteners on finished faces will not be allowed, unless specifically indicated. Waviness and oil canning of surfaces is not acceptable. Minimum material thickness is to be 2.3mm (0.09 inches). Conceal wiring, conduct and other electrical items within sign enclosures.

- B. Lettering: Cut and rout in a manner to produce true and clean edges and corners of finished letterforms. Letterforms having rounded positive or negative corners, nicked, cut, or ragged edges are not acceptable. Align letter forms to maintain a baseline parallel to the sign format. Maintain margins as indicated on the Drawings.
 - C. Seams and Joints: The contractor shall cut walls and floors carefully and neatly repair them in an acceptable manner. Contractor shall consult the Architect of Record in cases where cutting into a structural portion of the building is required so that satisfactory reinforcement may be provided. Added joints shall be ground filled and finished flush and smooth with adjacent work. Such seams shall be invisible after final finish has been applied. Spot welded joints shall not be visible on exterior of signs after final finish has been applied. No gaps, light leaks, waves, or oil canning will be permitted in work. If any of these are evident, the contractor will be required to correct its work or construct a new sign at its own expense.
 - D. Metal Signs and Supports: Fabricate exposed surfaces uniformly flat and smooth, without distortion, pitting, or other blemishes. Form exposed metal edges to a smooth radius. Permanently bond the laminated metal components and honeycomb core with adhesive or sealant in accordance with product manufacturer's recommendations. Grind exposed welds and rough areas to make flush with adjacent smooth surfaces.
 - E. Welding: Make welds continuous.
 - F. Fasteners: Use exposed fasteners only if shown on the Bid Documents. Perform drilling and tapping at shop.
 - G. Contractor shall confirm soils are compatible with foundation engineering requirements for compaction.
 - H. Contractor shall be responsible for verification of any adjacent utility conflicts that might be disrupted or impacted by installation of foundations or installation of sign elements.
- 2.12 GRAPHIC APPLICATION
- A. Preparation: Surfaces to receive the graphic markings shall be clean, dry, and otherwise made ready for application of the materials. Accurately measure and lay out the required marking configurations as indicated on drawings.
 - B. Vinyl Die-cut and Pattern-cut Graphics: Use pressure sensitive, non-yellowing, non-peeling and weather resistant vinyl adhesive letters or images, custom flood coated as required, die cut from specified vinyl manufacturing company. Apply in strict accordance with manufacturer's instructions. Make uniformly smooth and free from bubbles, wrinkles, stretching and blemishes.
 - C. Painted or Silk-screened Graphics: All graphics shall be applied using photo processed screens from camera ready art, arranged to furnish sharp and solid images without build-up or bleeding of the coating. Comply with coating manufacturer's application instructions. Provide proper type of primer to suit each substrate and obtain a permanent bond. Verify compatibility of each substrate with the coatings to be used in the Work. Apply the markings with neat edges,

RFP # FY 2012-2013 SIGN FABRICATION AND INSTALLATION EXHIBIT 1 SPECIFICATIONS

Prepared by AECOM March 2012

minimum 3 mils (0.075 mm) dry film thickness and as required to obtain solid markings without voids.

- D. Digitally Printed Graphics: All digitally printed graphics to be executed from Owner/Designer approved art and to be produced at a high rate of resolution. Usage of substrate and ink types to be for the specific (interior or exterior) installation environment and to be applied in strict accordance with manufacturer's instructions.

3 EXECUTION

3.1 VERIFICATION OF CONDITIONS

- A. Inspect all surfaces to receive signage and report all defects which would interfere with signage installation.
- B. Starting work implies acceptance of surfaces as satisfactory
- C. Verify all conditions and sign dimensions in field. Contractor to review and study architectural, landscape, lighting, electrical and related plans to insure that all proposed signs can be installed and supported. Verification of conditions and sign dimensions to be completed prior to sign fabrication and reviewed with the architect.

3.2 INSTALLATION

- A. Install signage upon acceptance by the owner of material and substantial completion of job site area to receive such materials.
- B. Special Precautions: Guard against damaging existing pavements and planting where signage is to be installed.
- C. Footings beneath topping surface shall be installed and located prior to top surface installation.

- D. Prior to installation, check all components, nuts, bolts, and other connections for proper alignment, fit and any damage. Replace damaged or defective components.
- E. Prior to installation, confirm all electrical locations and requirements with the owner or owners representative.

3.3 CLEAN UP

- A. Keep areas of work clean, neat and orderly at all times. Clean surfaces, inside and out. Use approved cleaners if necessary to remove dirt.
- B. Protective coverings and strippable films shall be removed at a time that will afford the greatest protection of the furniture. Surfaces shall be cleaned to remove excess glazing and sealant compounds, dirt, and other substances.
- C. Upon completion of work and before final acceptance, remove tools, surplus materials, apparatus, and debris from the site. Leave the site in a neat, clean condition, acceptable to the Engineer. Wash, clean, and leave paved areas without stains.
- D. Contractor shall repair and/or replace all damaged surfaces with like materials. All new surfaces adjacent to and within 2 meters of sign, including the entire excavated area shall be returned to its original condition and quality, including, materials, finish and grading that was present prior to excavation.

3.4 PROTECTION OF EXISTING FEATURES

Contractor shall preserve and protect all existing trees, shrubs, plantings, street signs, parking meters, fences, retaining walls, buildings, entry ways, surface materials, property survey monuments, structures and utility line appurtenances. Any removal and replacements or protection required shall be considered part of the

RFP # FY 2012-2013 SIGN FABRICATION AND INSTALLATION EXHIBIT 1 SPECIFICATIONS

Prepared by AECOM March 2012

contractor's responsibility and shall be incidental to the Contract. Any damage to existing features within and adjacent to the work area, created by failure of the contractor to provide adequate protection from its construction operations, shall be repaired or replaced to the satisfaction of the respective owner at the contractor's expense.

Contractor shall preserve and protect all permanent survey markers, including private property corner markers, section or quarter section monuments, and permanent benchmarks. Survey markers necessarily moved as a result of construction, or otherwise damaged by the contractor shall be replaced at the contractor's expense by a land surveyor registered in the project state.

3.5 UTILITY CONFLICTS

At some locations on the project, (water, gas, power pole supports, etc.) may be in conflict with the work authorized under this project. The contractor will inform the client's representative to determine a resolution of the conflict which may include relocation of the sign or utility.

3.6 FINAL CLEANUP

All dirt, mud, trench backfill, materials, temporary surface or other debris shall be removed by the contractor from pavement surfaces, ground surfaces, sewers, manholes, and catch basins as directed by the contractor. Sewers downstream of the project that have accumulated deposits or debris as a result of construction shall be jet cleaned and vacuumed to remove the material at the contractor's own expense.

3.7 FINAL INSPECTION AND ACCEPTANCE

- A. Upon completion of work, a final inspection for acceptance will be performed by the Owner.
- B. All mock-ups and unused submittals shall be removed from site prior to final acceptance.

- C. Submit operation manuals, tools, and keys as necessary to maintain and adjust the built products.

3.8 STRUCTURES AND UTILITIES ENCOUNTERED

Various underground and surface structures may or may not be shown on the plans. The locations and dimensions of such structures where shown do not purport to be absolutely correct. In some cases, the structures are plotted on the plans for the information of the contractor, but information so given is not to be construed as a representation that such structures will be found or encountered exactly as plotted. Other structure may also be encountered which are not shown on the plans.

The contractor shall maintain in operating condition all utilities encountered in this work. The contractor shall be entirely responsible for all injuries to water pipes; fiber optic cables; electric conduits; existing drains or sewers; gas pipes; and poles carrying electrical current, telephone or cable television during the prosecution of the work and shall be liable for damages to public or private property resulting there from, which amount may be deducted from any monies due him/her for work done. Any damage to existing utilities as a result of the construction shall be repaired to the satisfaction of the owner of the utility at the contractor's expense, whether or not said utilities are shown on the plans.

Existing utilities may be relocated with the approval of the owner of the utility. This relocation shall be at the contractor's expense, done according to the requirements of the utility owner and shall be sufficient to clear the proposed improvements.

Before beginning work, the contractor shall contact each company, municipality, or agency maintaining utilities in the project area and request their assistance in field locating their utilities in that area. The contractor, however, shall be solely responsible for the location of utilities.

RFP # FY 2012-2013 SIGN FABRICATION AND INSTALLATION EXHIBIT 1 SPECIFICATIONS

Prepared by AECOM March 2012

4 CORRESPONDENCE AND COMMUNICATION

The contractor shall direct all project related questions and concerns in writing to the clients representative for the project. Contact information is listed on the Bid Documents on each page.