

SECTION 101400
WAYFINDING SIGNAGE

PART 1 – GENERAL

1.1 SUMMARY

- A. This section covers all custom sign work per Great Rivers Greenway Exterior Sign design standards. This section does not apply to “environmental graphics”. See the Construction Documents for further direction. Please note **Appendix 1** within this project manual for custom sign standard installation guidelines.
- B. The General Contractor (Contractor) is responsible for sourcing a qualified manufacturer, ordering, installation and condition of the signs, including but not limited to, sign fabrication costs, sign packing and shipping costs, any manufacturing costs associated with project setup, production of proofs or shop drawings, as-needed engineering, construction of the below-grade components such as foundations (footings), connection bolts (if applicable), as well as connecting the signs to the foundations. The Developer, as referenced within this section, will provide the design of all sign construction and content.
- C. Contractor’s responsibilities:
1. Secure any and all necessary permits for signage installation.
 2. Source a qualified manufacturer for sign fabrication. Manufacturer shall have capability to provide a “delegated design” responsibility including prototypes, value engineering and budget analysis.
 3. Deliver final sign content and artwork design documents provided by the Developer after contract award to the manufacturer (See 1.3 Submittals).
 4. Deliver graphic proofs of all sign faces using messaging from Developer’s Construction Documents from manufacturer for approval by the Developer. (See 1.3 Submittals).
 5. Order signs from manufacturer after receiving approval from Developer (See 1.3 Submittals).
 6. Work with the Developer’s Representative to coordinate with other trades performing work on site.
 7. Construct sign foundations and connection bolts per the Construction Documents and the Developer Sign Standards.
 8. Be knowledgeable of relevant federal, state and local code requirements, and be responsible for ensuring that all signs meet current local, state and federal codes, especially, but not limited to, ADA and Fire/Life Safety codes.
 9. Notify the Developer’s Representative for any serious variations of local site soil conditions for below-grade components of the signs, such as foundation and connection bolts, and incorporate all the safety features necessary to adequately support the sign for its intended use and purpose, as required by approvals and permits, and to protect the Developer.
 10. Visit the site to observe existing site and soil conditions, verify mounting conditions and space availability, take field measurements and verify all signage locations with Developer’s Representative prior to the start of fabrication. If access to the site is unfeasible, the Contractor shall obtain the Developer’s Representative’s approval of such

situation prior to the start of fabrication.

11. Work with the Developer's Representative to secure any necessary variances.
12. Notify the Developer's Representative immediately if any discrepancies exist within the Construction Documents or field conditions.
13. Provide all submittals outlined in the specifications in a timely fashion and according to the agreed upon contract schedule.

1.2 WARRANTY

- A. Extend in writing all manufacturers' warranties.
- B. Assure materials, and processing or application of materials, comply with the manufacturers' warranties.
- C. Obtain a minimum five (5) year extended warranty and assign to Developer on all paint and powder coat applications.
- D. Obtain a minimum eight (8) year manufacturer's extended warranty and assign to Developer on the sign face.
- E. Seller warrants that the items or services to be furnished hereunder are:
(a) new and free from defects in design, materials, or workmanship; (b) in full conformity with Buyer's specifications, drawings, technical and other data, Seller's samples or other description; and (c) merchantable and fit for the use intended by Buyer. This warranty shall extend for a period of 24 months from installation (the "Warranty"). Seller further warrants that it has good title to the items to be provided hereunder, has the right to convey good title to such items, and such items are free and clear of the claims of third parties. The warranties provided herein shall be in addition to any warranties of additional scope given to Buyer by Seller whether express, implied or by operation of law, including without limitation warranties implied pursuant to the applicable Uniform Commercial Code. All Warranties shall be automatically assigned to Buyer without notice to Seller. All warranties shall survive acceptance or payment by Buyer. If any items or services are found to be defective within the Warranty period, then Buyer shall notify Seller of such defect and Seller shall repair or replace the defective items or services, at Seller's cost, as soon as reasonably possible. Neither acceptance nor payment for all or any items or service shall be deemed to be a waiver of Buyer's rights under this Order or applicable law. In addition to the foregoing rights and remedies, Buyer shall be entitled to recover any damages allowed by law, including special or consequential damages together with reasonable attorney's fees and other expenses.
- F. Repair or replace, including installation, any defective signs or hardware, which develop during the warranty period and repair any damage to other work due to such imperfections at no charge to the Developer and to the Developer's satisfaction.

1.3 SUBMITTALS

- A. Pre-Fabrication Submittals: Submit the following to the Developer's Representatives for review and approval prior to directing the manufacturer to start of each respective sign

fabrication.

1. Contractor's Final Sign Plan and Order: Detailed schedule of each sign type, numbers of signs, exact messaging, and placement plan. Contractor shall also provide documentation from the manufacturer confirming receipt of the order and the Developer's final sign content and artwork design documents.
 2. Manufacturer's Proofs Approval Confirmation: Documentation confirming manufacturer's receipt and approval of sign proofs by the Developer.
- B. At Request Submittals: The Developer may, at their reasonable discretion, require the Contractor to provide an additional submittal for the purpose of verifying quality and performance of the selected manufacturer. If requested, please submit the following to the Developer's Representative for review and approval prior to order fabrication. Allow sufficient time for review and adjustments to avoid significant impact on the project schedule.
1. Prototype: Provide a full-size prototype sign for review and approval. Prototypes shall include exact materials, finishes, colors, and graphics as specified. Deliver the prototype sign to:

Great Rivers Greenway
Attn: [Developer's Representative]
3745 Foundry Way, Suite 253
St. Louis, MO 63110
- C. Fabrication Submittals: Submit the following to the Developer's Representatives for review and approval during and after signage fabrication as described.
1. Schedule: Include detailed fabrication and installation plans/tasks within the Construction Schedule updates.
 - a. Include all pertinent dates and milestones such as submittal dates, required approval dates, fabrication dates, delivery dates, and installation dates.
 - b. Include all lead times for materials and third-party supplied items.
 - c. Allow a minimum of 15 business days for any Developer and/or Developer Representative's review with one round of revisions built in unless otherwise noted within the bid schedule.
 2. Pre-Shipping Photos: Secure and provide copies of photos to Developer's Representative of all signage prior to packing and shipping.
 3. Post-Fabrication Submittals: Upon completion of the initial installation, the following are to be submitted – one hard copy and one electronic (pdf) copy:
 - a. Maintenance instructions and manuals for all sign components (lighting, paint, etc.), along with any amended drawings, as-installed sign location plans and approved keystroke documents.
 - b. Instructions for maintenance and waxing of painted, powder coated and fiberglass elements.
 - c. Templates for all insertion-based signs, utilizing standard software for the Developer's use in printing replacement inserts
 - d. One (1) pint of each finish paint color for touch-up purposes.
 - e. Warranty documentation, as outlined above.

1.4 QUALITY ASSURANCE

- A. The materials, products, equipment and performance specifications described within, establish a high-quality standard of required function, dimension, appearance, performance and quality to be met by the Contractor.
- B. Contractor shall submit “Qualification Data” for the Sign Fabricator to demonstrate their capabilities and experience. Include lists of completed projects with project names and address for review.
- C. Materials used for this project shall be new materials, not reconditioned.
- D. Contractor shall only use workforce skilled and experienced with the products, methods, and installation requirements outlined for this project.
- E. Installation is to withstand severe abuse and souvenir theft vandalism, but not less than the equivalent of resisting simple hand implements and tools (screwdrivers, knives, coins, keys, and similar items), and adult physical force. It is the Contractor’s responsibility to suggest alternate installation methods, should they be deemed necessary to hinder theft or vandalism.
- F. Regulatory Requirements: Signage shall meet or exceed requirements of all current applicable local, state and federal codes, including, but not limited to:
 - 1. Manual on Uniform Traffic Control Devices (MUTCD) standards, December 2023 edition;
 - 2. 2010 Americans with Disabilities Act Standards for Accessible Design, including local modifications and amendments; and
 - 3. Local and State Building and Fire Codes.

1.5 DELIVERIES, STORAGE AND MATERIAL HANDLING

- A. Receive and inspect all shipped items for accuracy, defects, and damage immediately upon receipt. Any damage not reported to the Developer’s Representative within 24 hours of delivery shall be the responsibility of the Contractor.
- B. Manufacturer shall pack, wrap, crate, bundle, box, bag, or otherwise package, handle, transport, all fabricated work as necessary to provide protection from damage.
- C. Provide clear and legible identifying information on all product packaging to ensure proper on-site identification and installation.
- D. Cover all sign faces with a low-tack protective vinyl cover, to be removed after installation. This is to help minimize minor scratches and nicks that happen during unpacking and installation.
- E. Contractor shall coordinate the delivery and secure storage of signs with the Developer’s Representative to meet deadlines.

PART 2 – PRODUCTS

2.1 MANUFACTURERS

A. Substitution:

1. No substitution will be considered unless Developer's Representative has received written request for approval.
2. Equal or better equipment or method may be recommended, but Contractor will be required to provide full documentation, upon request, establishing such a substitution's equality or superiority as measured in: compliance with the visual design intent, cost, ease of maintenance, and performance.
3. The Owner's Representative decision of approval or disapproval of a proposed substitution shall be final.

B. Approved manufacturers include:

1. Acrylic Polyurethane Paint: Matthews Paint Company or Akzo Nobel
2. Powder Coating: Cardinal Polyurethane
3. Exterior Vinyl: 3M or equivalent
4. 3M custom traffic reflective sign face (CTSF program). Full face, digitally printed (using 3M UV-cured inks) onto 3M reflective sheeting with 3M acrylic overlay film.
5. Acrylic Sheets: Rohm and Hass Co, Acrylite or equal.
6. Panaflex: 3M or equivalent
7. Exterior Extrusions: SignComp, Charleston Industries or equivalent
8. Exterior Tactile signs: Gravoply or equivalent
9. Stainless Steel Strapping System: Band-It or equivalent
10. Banner Hanging System: Banner Saver
11. Electronic Message Centers: Daktronics, Firewatch, Vantage LED
12. Adhesive Silicone: Dow Corning or equivalent
13. Adhesive Tape: Polyfoam or "Isotac" by 3M or equivalent

2.2 MATERIALS

- A. Aluminum: suitable for ornamental work. Finish to be smooth and free of imperfections. Alloy based upon structural requirements of the signage design.
- B. Material thicknesses are provided in the Developer's Sign Standards.
- C. Structural Steel: galvanized rolled steel or equal as required to meet structural requirements.
- D. Adhesive vinyl: opaque color, reflective color, translucent color and transparent color.
- E. Exterior grade paint: acrylic polyurethane paint in solid and metallic colors with primer and Super Satin Clearcoat finish.
- F. Miscellaneous mounting hardware: including but not limited to, screws, bolts, stainless steel cable, hinges, and adhesives.
- G. Labels: Only labels required by law are permitted on the exterior of the sign face.
1. Labels shall not be on the primary messaging faces of the sign, unless dictated so by the

- local ordinance.
 - 2. Labels shall be located in a position as discreet as possible.
 - 3. No other labels are permitted on the signs.
 - 4. Manufacturer contact information may be placed inside the sign on the access panel.
- H. All printed graphics shall be printed at a minimum of 300 DPI using exterior grade UV inks.
- I. Sign Substrates:
- 1. Aluminum sheet: 0.5" minimum thickness for side-mounted signs and 0.125" minimum thickness for all other signs unless otherwise specified.
 - 2. All sign substrates shall comply with sign sheeting warranties.
- J. Sign Sheeting:
- 1. Sign sheeting shall be in accordance with latest versions of ASTM D 4956 and AASHTO M 268.
 - 2. Color and luminance values for all types of reflective sheeting shall be in accordance with ASTM D 4956.
 - 3. Sign sheeting shall have sufficient adhesion, strength and flexibility such that the sheeting can be handled, processed and applied according to the manufacturer's recommendations without appreciable stretching, tearing, cracking or other damage.
 - 4. Adhesive performance for retroreflective sheeting shall be in accordance with ASTM D 4956.
 - 5. The sheeting surface shall be in condition to be readily screen processed and compatible with transparent overlay films and recommended transparent and opaque screen process colors.
 - 6. The sheeting manufacturer shall furnish information as to the type of solvent or solvents that may be used to clean the surface of the sheeting without detrimental loss of performance and durability.
 - 7. Standard reflective sheeting, also known as "Engineer Grade", shall be manufactured from "3M IJ680CR-10" reflective film with "3M 8518 Vandal Guard" Exterior Gloss overlay laminate. Background sheeting shall be of the same.
 - 8. Retroreflective sheeting, also known as "Diamond Grade" shall meet the requirements for ASTM D 4956 Type XI retroreflective sheeting. Background sheeting shall be of the same.
 - 9. Retroreflective sheeting having a datum mark on the surface shall be oriented vertically. ASTM D 4956 Type XI retroreflective sheeting applied as legend and border for specific signing applications, without a datum mark on the surface of the sheeting, shall be evaluated for rotational sensitivity per AASHTO M 268, Section 3.3.
 - 10. Retroreflective sheeting products that do not meet the rotational sensitivity requirements of Section 3.3 shall follow guidelines detailed in AASHTO M 268 Section 3.3.1 and fabricated per AASHTO M 268 Section 3.3.2.

2.3 FABRICATION

- A. Details on design drawings indicate a design approach for sign structure but do not necessarily include all fabrication 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.
- B. Site-verify all locations to determine special installation requirements, uneven footing needs based on sloped grades. Field verify measurements for wall mounted and glass-mounted signage, etc. prior to fabrication.

THE GREAT RIVERS GREENWAY DISTRICT – [PROJECT NAME]

SECTION 101400 - EXTERIOR SIGNAGE

- C. A sign shall consist of acceptable substrate flat sheets or extruded panels retroreflectorized on the face side with all letters, numerals, symbols, borders, corners and route shields mounted on the face, and shall include all necessary mounting devices shown on the plans. Signs equal to or greater in width than six feet are considered structural (ST) and shall be fabricated on extruded panels. Signs less than six feet in width will be considered sheet (SH) signs and shall be fabricated with flat sheet. Any exceptions to these fabrication standards will be indicated on the plans.
- D. Fabricate signage such that major components of the sign can be removed and replaced with similar components. Incorporate this changeability such that it does not promote vandalism but can be done by a qualified maintenance crew.
- E. Within fabrication tolerances, allow for expansion and contraction of materials due to temperature changes as appropriate to the project location.
- F. Construction Methodology:
 - 1. The drawings call for a variety of fabrication techniques.
 - 2. Sign faces are to be fabricated using aluminum sheets of varying thicknesses, as specified on design drawings, with a minimum thickness as specified under Sign Substrates.
 - 3. All aluminum substrate shall be given a chromate conversion coating in accordance with ASTM B 449, Class 2, and shall be prepared by one of the Treatment Sequence Options described in ASTM B 449, Appendix X2 as well as 3M's Sign Base Surface Preparation Information Folder 1.7, August 2013 (or the most recent date).
 - 4. Conceal all fasteners except for access panels or where approved otherwise by Owner's Representative and Designer. Access panel fasteners are to be stainless steel, tamper resistant, counter-sunk flush screws, painted to match adjacent finish.
 - 5. All hardware and fasteners within reach shall be vandal resistant.
 - 6. All panel adapters shall match the corresponding sign substrate thickness
 - 7. Any sign faces smaller than 8' by 20' are to be fabricated from 1 piece of seamless material.
 - 8. To prevent electrolysis, separate all ferrous and non-ferrous materials with a non-conductive gasket or barrier and utilize stainless steel fasteners as required.
 - 9. Welded joints:
 - a. Exposed welded joints must be filled and ground smooth so that there is no seam visible when painted.
 - b. Dimensional and structural welding defects will not be accepted, including but not limited to: poor weld contours, including excessive bead convexity and reinforcement, and considerable concavity or undersized welds; cracks; undercutting; porosity; incomplete fusion; inadequate penetration; spatter; and non-metallic inclusions.
 - c. Welding is to be performed by AWS (or similar) certified personnel, following AWS Standard Welding Procedure Specifications (SWPSs) for steel, aluminum, and stainless steel as appropriate.
 - 10. Non-welded joints between various portions of signs must have a tight, hairline-type appearance, without gaps. Provide sufficient fastenings to preclude looseness, racking, or similar movement.
 - 11. Exposed edges are to be finished such that no saw marks are visible.
 - 12. Drain holes:
 - a. Provide drain holes as needed to prevent accumulation of water within signs.
 - b. Holes must be inconspicuous and located such that drainage does not occur onto

- signs, or other surfaces subject to staining.
 - c. Provide internal system of baffles to prevent “light leaks” through drain holes of illuminated signs.
 - d. Use color-coordinated stainless steel bug mesh screen over drain holes or vents.
13. Visible metal joints must adhere to a fit tolerance of 0.01”.
 14. Sign panels shall be appropriately pre-drilled/pre-cut before priming and painting or coating.
 15. The perimeter of both faces of all sign panels shall be tooled/rounded slightly to avoid any potentially cutting or sharp edges.
 16. All signs shall be of the highest quality with consistent daytime and nighttime color and retroreflectivity throughout the sign and produced as follows.

G. Coating:

1. The surfaces of metal posts and supports are to be powder coated per the most recent Cardinal product bulletins.
2. Preparation of surfaces to include removal of all scratches and imperfections, sanding and chemical etching.
3. Substrate cleaning, preparation, application and thickness to be in strict compliance with Cardinal published recommendations.
4. Surfaces to be properly covered with a primer per manufacturer’s recommendations.
5. Acceleration of the drying process is not allowed.
6. All backs and edges of signs shall be painted with Matthews Paint or Akzo Nobel to match post and support color.
7. All paint and powder coat finishes to be a satin finish.
8. All painted surfaces to have a clearcoat finish to add UV protection and protection from the elements.

H. Direct Embed Coating Systems (DECS) permanent imaging thermally-embedded in flat surfaces and dimensional objects shall be used for the informational signage identified in the drawings.

1. Process: The process embeds a high-resolution image deep into and throughout a super durable powder coated layer. The image is embedded inside the powder and flows seamlessly over edges and corners. It is not a film or a laminate. There are no visible corners and no delamination. The process shall be capable of coating and decorating both flat surfaces and dimensional objects.
 - a. Product substrates selected shall be able to withstand the 350 degree F (177 degree C) temperature of the powder coating oven. This includes and is not limited to aluminum, steel, glass, MDF, ceramic and high temperature plastics.
2. Characteristics: Coating shall be super durable polyurethane powder coated finish that is resistant to abrasion, humidity and corrosion. It shall be anti-graffiti, scratch resistant and non-combustible. The coating process shall be applicable for both interior and exterior applications. Coating shall withstand high traffic and extreme weather.
 - a. Available characteristics include anti-skid, antimicrobial, post-formable and super texture.
3. Capability: Embed process capability shall allow parts from the size of a button to 24 feet (7315 mm) in length. Includes dimensional objects, flat and embossed sheets, extruded profiles, and folded panels.
4. Submittals: Submit under provisions of this section:
 - a. Product Data: Manufacturer's data sheets on each product to be used.
 - b. Shop Drawings: For all fabrications, including details of construction and attachment to adjacent surfaces.

- c. Verification Samples: For each finish product specified, two samples, minimum size 6 inches (150 mm) square representing actual product, color, and patterns.
 - d. Certificates for percentage of recyclable base materials, recyclable transfer film and organic water-based inks.
 - e. Coating Process documentation of polyurethane powders emitting zero or near zero volatile organic compounds (no VOC's).
- 5. Manufacturer: Manufacturer must have minimum 3 years experience manufacturing similar products. Manufacturer shall have capability to provide a "delegated design" responsibility including prototypes, value engineering and budget analysis.
- 6. Quality Assurance Process: The following services shall be provided by the manufacturer to deliver the specified product for installation.
 - a. Project Management: Management of the design facilitation, review, prototype and implementation process.
 - b. Value Engineering: Reviewing possible cost saving approaches for single or multiple production pieces.
 - c. Prototype Development: Creating a full design element or portion of the element that reflects the final production piece.
 - d. Production/Fabrication: Creation of the final production piece.
 - e. Coating and Embedding: The powder coating and embedded decoration of the final production piece.
 - f. Installation and Service: Installation of the final production piece as well the maintenance of the final piece after installation.
- 7. Conditions: Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's recommended limits.
- 8. Sequencing: Ensure that products of this section are supplied to affected trades in time to prevent interruption of construction progress.
- 9. Warranty: Provide manufacturer's standard warranty for up to 10 years depending on location, substrate, environment and amount of direct sunlight.
- 10. Acceptable Manufacturer: Direct Embed Coating Systems; 6 Morris St., Paterson, NJ 07501. ASD. Tel: (954) 825-0410. Email: info@directembedcoating.com. Web: <http://www.directembedcoating.com>.
- 11. Substitutions: Not permitted.
- 12. Powder Coating with Embedded Image using DECS Equipment: As manufactured by Direct Embed Coating Systems. Coating shall be resistant to abrasion, humidity and corrosion; anti-graffiti, scratch resistant, non-combustible, super-durable (UV resistant), and TGIC free (non-toxic). Suitable for both interior and exterior applications. Coating shall withstand high traffic and extreme weather.
 - a. Substrate Material: As indicated on the Drawings.
 - b. Image Source: As indicated on the Drawings.
 - c. Color: As indicated on the Drawings.
 - d. Finish: As indicated on the Drawings.
- 13. Examination: Do not begin installation until substrates have been properly prepared. If substrate preparation is the responsibility of another installer, notify Developer's Representative of unsatisfactory preparation before proceeding.
- 14. Preparation: Clean surfaces thoroughly prior to installation. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
- 15. Installation: Install in accordance with manufacturer's instructions and in proper relationship

to adjacent surfaces.

16. Protection: Protect installed products until completion of project. Touch-up, repair or replace damaged products before Substantial Completion.

I. Fonts/Typefaces:

1. Fonts used within the Designer's programs were purchased by and are licensed to the Designer. It is the responsibility of the manufacturer to purchase the specified licensed fonts for use within this program. See the design intent typography page for the specific fonts. Fonts are Clarendon and Gotham and specific type is included in the INDD files.
2. The designer is responsible for spacing the letters (Kerning) to meet ADA code requirements.
3. Letter height/cap height is based upon the height of the capital letter "E" or any capital character that has a flat top and base.
4. Under no circumstances are typefaces to be electronically distorted ("squeezed" or "extended") for purposes of fitting to the specified sign or general alteration of the sign face composition unless noted in the drawings. This includes (but is not limited to) stretching, squeezing, tilting, outlining or shadowing.
5. Apostrophes and quotation marks are to be used, not footmarks and inches. Note that there is a difference in most fonts.
6. Manufacturer to reference spacing within the Design files. Layout of copy is critical for the proper function of the wayfinding signage. Any typesetting concerns or issues are to be brought to the Designer for resolution recommendations.
7. Manufacturer is responsible for correcting any typesetting errors that may be necessary.

J. Silk-screen, digital printing and vinyl copy:

1. All letterforms, symbols or graphics shall be reproduced either by photographic or computer-generated means.
2. Cutting shall be done such that edges and corners of finished letterforms will be straight, sharp and true.
3. Letterforms with nicked, cut, ragged, rounded corners, and similar disfigurements will not be acceptable.
4. Copy is to match the sheen of the copy panel background (satin).
5. Surface of letters shall be uniform in color finish, and free from pinholes and other imperfections.
6. Silk-screened images shall be executed with photo-processed screens prepared from original electronic art.
7. Use only weather-resistant coating materials that are compatible with substrates.
8. Silk-screening shall be highest quality, with sharp lines and no sawtooth or uneven ink coverage.
9. Images shall be uniform in color and ink thickness.
10. Images shall be free from squeegee marks and lines resulting from improper print stroke or screen off contact height.

PART 3 – EXECUTION

3.1 DEMOLITION

- A. It is required that the contractor remove all existing signs as noted on the demolition plan.
- B. Contractor is to remove all below grade footings and foundations completely to a minimum depth

of 8" below grade and fill with compacted soil.

- C. If there are electrical connections, contractor must properly terminate them.
- D. Contractor is responsible for disposal of existing signage. Recycling is encouraged. Open dumping is prohibited. Coordinate with Developer's Representative.
- E. Contractor is to repair and bring to consistent look with surrounding area (includes hardscaped or landscaped areas) any areas damaged or left exposed in an unfinished condition due to the removal of a sign.

3.2 INSTALLATION

- A. Permits and Variances:
 - 1. Research relevant local code requirements and honor the same in fabrication and installation.
 - 2. Secure all necessary permits for signage installation. Coordinate with the Developer's Representative to secure variances, should any be required.
 - 3. Have all underground utilities properly located and marked. Any damage to below-grade utilities or structures are the responsibility of the Contractor.
- B. Site Visit:
 - 1. Ensure that every building-mounted sign location has the necessary blocking for safe and secure mounting. Where additional blocking is needed, recommend changes and receive approval from the Developer's Representative prior to beginning installation.
 - 2. The final Sign Placement Plan, adapted from the Construction Documents, shall be consulted together, and all sign locations shall be approved on-site by the Developer, and the Developer's Representative to determine the precise location for each sign. Any necessary adjustments will be made with the approval of the Developer.
- C. Contractor to maintain current signage and directional information during installation in order to continue to provide proper wayfinding. This can be done through the use of temporary signs, or vinyl over existing sign faces as directed by the Developer's Representative.
- D. Contractor to coordinate delivery and temporary storage of signage with the Developer's Representative.
- E. Contractor to provide a site logistics plan indicating the work areas, proposed equipment and power sources, extent and duration of street closures, and schedule time/dates of the respective sign installations. This schedule is to be updated on a weekly basis if changes occur.
- F. Masonry/Foundations:
 - 1. All concrete bases for signage are to be poured in place from thoroughly mixed and agitated concrete.
 - 2. Concrete used for foundations shall meet the requirements for concrete materials in accordance with the concrete specifications and the specified testing.
 - 3. Foundations are to extend beneath the frost line, or deeper to meet local code.
 - 4. All foundations or bases should be poured within a form and level with grade unless otherwise specified in the design drawings or as specified by state or local code.
 - 5. Foundations should not extend above grade more than 1.5" and exposed edges should be

finished with a bevel to prevent chipping or hazards, unless otherwise indicated in the Construction Documents.

6. It's recommended that the concrete be floated by machine or hand before finishing in order to embed larger aggregates especially when part of the foundation or base extends above ground.
7. Concrete surface should have a smooth or brushed finish grade appearance. Match the finish appearance of connecting concrete surfaces when applicable.
8. All concrete bases and foundations should be edged to break any bond with the form and create a neat appearance. All forms should be removed once the concrete has properly cured.
9. Provide the necessary templates, mounting plates and hardware for concrete and masonry bases.
10. All masonry (concrete block, poured concrete, brick, slab, veneer, mortar, etc.) is to be properly treated and protected to maintain the structural integrity of the masonry work with exposure to all environmental conditions found at the site. For exposed or visible masonry, this shall include the application of protective sealers or similar finishes to diminish the effects of close-proximity sprinkling or irrigation systems.
11. Wet concrete with foundations and posts must fully cure in place before signage is installed on the foundations or mounted to the posts.

G. Mounting:

1. Signs are to be mounted to the foundations or breakaway bases as indicated in the Construction Documents, centered on the concrete base or foundation, and engineered per code, unless otherwise specified in the Construction Documents or required by code.
2. For all bolts, nuts, washers and other fasteners, use stainless steel 300 series. However galvanized steel is acceptable, so long as all exposed surfaces are sealed.
3. Manufacturer to specify mounting hardware and anchoring per the design of the signage. The visual appearance of the sign is not to be compromised from that shown in the design drawings.
4. Install all signage products such that there are no misalignments between visible components. Sign elements intended to be removable or changeable after installation must function as intended without binding, sticking or blocking.
5. All signs to be mounted level and true, and within the guidelines of applicable local, state and federal codes including, but not limited to, the 2010 Standards for Accessible Design (ADA) and fire/life safety codes, where applicable.
 - a. If signs are to be installed in a parking garage where the structural elements are not level due to the grade of the garage, the Developer is to decide whether the sign should be mounted level or aligned with the structural elements.

H. Locating Signs:

1. Contractor must have applicable understanding of the 2010 Standards for Accessible Design (ADA) mounting guidelines, city zoning and other applicable federal, state and local codes, general sign locating practices, and any particular unique installations.
2. Contractor to follow the regulations, noted guidelines, and architectural details around an installation location for the best visual placement.
3. Keep a reasonable distance from protruding objects.
4. Any signage that is improperly located is to be moved to the proper location, and all repairs to wall surfaces and signage are to be handled by the Contractor.
5. All sign locations must be staked by the contractor for approval by the Developer's Representative prior to installation.

- I. Upon completion of installation, Contractor is to remove any protective covering, tape, or installation hardware. Contractor is then to clean the sign per the manufacturer recommendations, ensuring that sign is clean from dirt, stains, fingerprints, tape residue, etc.
- J. All exposed hardware is to be touch-up painted on site as required immediately following installation prior to punch list.
- K. All minor blemishes or marring are to be repaired such that the repairs are imperceptible. Components having permanent, non-removable scratches or defects are to be replaced completely.
- L. Site Safety and Restoration:
 - 1. Contractor is responsible for their own safety during the installation period.
 - 2. Maintain a safe environment for pedestrians and vehicular traffic during the installation period, following OSHA safety standards as necessary.
 - 3. Keep the Developer's and Owner's premises and the adjoining premises, driveways and streets clean and clear.
 - 4. Job site shall be left safe, neat and clean at the completion of each day's operation.
 - 5. In addition to maintaining old or temporary signs for their directional or informational purposes, Contractor is to maintain signage that meets or exceeds MUTCD and local standards during the installation period.
 - 6. At the completion of work, remove all rubbish, tools, equipment, and surplus materials, from and about the premises, and leave the site as originally found.
 - 7. Repair or correct damage to other contractors' work resulting from signage installation work.

3.3 PUNCH LIST

- A. The Contractor is to complete a walk through with the Developer's Representative immediately following installation to identify any errors, such as construction or installation issues. Such errors are to be corrected in a timely manner, and to the satisfaction of the Developer's Representative.
- B. Fully replace all signs that are in error relative to the working documents (final sign message schedule, design drawings, and Construction Documents).
- C. Correct any installation misalignments at no charge.

PART 4 – PAYMENT

4.1 QUANTITY

- A. The following table is provided for Contractor's information. The sign types are as indicated.

[INSERT SIGNAGE QUANTITY TABLE]

Note: Signs to be removed/demolished shall be included as part of Removal of Improvements. Quantity shown for information only.

4.2 METHOD OF MEASUREMENT

THE GREAT RIVERS GREENWAY DISTRICT – [PROJECT NAME]

SECTION 101400 - EXTERIOR SIGNAGE

- B. Each location of WAYFINDING SIGNAGE shall be measured per each and include all labor, packaging, shipping, delivery, materials, footings, posts, etc. necessary to provide the Developer with a finished and installed WAYFINDING SIGNAGE.
- C. The measurement of items in this section shall be made per free-standing sign (each) or per sign (each) attached to an existing building, fence, post, etc. The contract unit price shall be considered as full compensation for all labor, equipment, materials, posts, footing, and other construction involved to fabricate the sign and complete the work of installing the signs, including Contractor footings and furnishing and installing anchors.

4.3 BASIS OF PAYMENT

- A. Payment for WAYFINDING SIGNAGE will be made at the respective contracted unit bid prices for each sign type, based on actual quantities installed and accepted.
- B. The Contractor shall be responsible for obtaining all pricing information and finding a manufacturer.
Note: GRG is exempt from sales tax, and a tax waiver can be provided to Contractor

1. Manufacturers may include:

- a. Engraphix Architectural Signage, Inc.
132 Hanley Industrial Court
St. Louis, MO 63144
<https://www.engraphix.com/>
- b. Image Manufacturing Group, LLC (IMG)
5405 Buford Hwy., STE 270
Norcross, GA 30071
<https://www.imgbuilds.com/>
- c. Approved vendor meeting the requirements described herein.