



**JOLIET**  
JUNIOR COLLEGE  
—1901—

**Project Manual**  
for  
**Joliet Junior College,**  
**Illinois Community College District No. 525**  
**Master Facilities Plan**  
Joliet, Illinois

**BID RELEASE 22**

**Signage & Wayfinding**  
Gilbane Project No. 4764-009

**November 5, 2010**

**Volume 2 of 2**

**B.P. #**

010B

**Description:**

Signage Work

**Owner:**

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Illinois Community College District No. 525  
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**LEGAT**ARCHITECTS

**Gilbane**

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## SECTION 01 10 00

### SUMMARY

#### PART 1 GENERAL

##### 1.01 PROJECT

- A. Project Name: Joliet Junior College Interior and Exterior Wayfinding Signage.
- B. Owners's Name: Joliet Junior College; herein referred to as 'Owner'.
- C. Architects's Name: Legat Architects and Consultant Carol Naughton + Associates; herein referred to as 'Architect'.
- D. Construction Manager's Name: Gilbane Building Company; herein referred to as 'Construction Manager'.
- E. The Project consists of the following:
  - 1. Fabrication and installation of exterior wayfinding signs for the Joliet Junior College main campus in Joliet, Illinois.
  - 2. Fabrication and installation of interior and exterior wayfinding signs for the Campus Center (CC), teh Facilities Services Building (FSB), and the Greenhouse/Horticultural Facility (GHF) at the Joliet Junior College main campus in Joliet, Illinois.
  - 3. As-needed fabrication and installation of interior and exterior wayfinding sign types at various Joliet Junior College locations.

##### 1.02 CONTRACT DESCRIPTION

- A. Refer to Construction Manager's Scope of Work.

##### 1.03 OWNER OCCUPANCY

- A. Owner intends to continue to occupy portions of the existing building during the entire construction period.
- B. Cooperate with Owner to minimize conflict and to facilitate Owner's operations.
- C. Schedule the Work to accommodate Owner occupancy.

##### 1.04 CONTRACTOR USE OF SITE AND PREMISES

- A. Arrange use of site and premises to allow:
  - 1. Owner occupancy.
  - 2. Work by Others.
  - 3. Work by Owner.
  - 4. Use of site and premises by the public.
- B. Provide access to and from site as required by law and by Owner:
  - 1. Emergency Building Exits During Construction: Keep all exits required by code open during construction period; provide temporary exit signs if exit routes are temporarily altered.
  - 2. Do not obstruct roadways, sidewalks, or other public ways without permit.

##### 1.05 WORK SEQUENCE

- A. Coordinate construction schedule and operations with Owner.

##### 1.06 SPECIFICATION SECTIONS APPLICABLE TO ALL CONTRACTS

- A. Unless otherwise noted, all provisions of the sections listed below apply to all contracts. Specific items of work listed under individual contract descriptions constitute exceptions.
- B. Section 01 22 00 - Unit Prices.

- C. Section 01 30 00 - Administrative Requirements.
- D. Section 01 40 00 - Quality Requirements.
- E. Section 01 60 00 - Product Requirements.
- F. Section 01 70 00 - Execution and Closeout Requirements.
- G. Section 01 78 00 - Closeout Submittals.

**PART 2 PRODUCTS - NOT USED**

**PART 3 EXECUTION - NOT USED**

**END OF SECTION**

**SECTION 01 22 00**

**UNIT PRICES**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. List of unit prices, for use in preparing Bids.
- B. Measurement and payment criteria applicable to Work performed under a unit price payment method.
- C. Defect assessment and non-payment for rejected work.

**1.02 COSTS INCLUDED**

- A. Unit Prices included on the Bid Form shall include full compensation for all required labor, products, tools, equipment, plant, transportation, services and incidentals; erection, application or installation of an item of the Work; overhead and profit.

**1.03 UNIT QUANTITIES SPECIFIED**

- A. Quantities indicated in the Bid Form are for bidding and contract purposes only. Quantities and measurements of actual Work will determine the payment amount.

**1.04 MEASUREMENT OF QUANTITIES**

- A. Measurement methods delineated in the individual specification sections complement the criteria of this section. In the event of conflict, the requirements of the individual specification section govern.
- B. Take all measurements and compute quantities. Measurements and quantities will be verified by Architect.
- C. Assist by providing necessary equipment, workers, and survey personnel as required.

**1.05 PAYMENT**

**1.06 DEFECT ASSESSMENT**

**1.07 SCHEDULE OF UNIT PRICES**

- A. Refer to bid form and Wayfinding and Standards Manual list of sign types for full schedule of unit prices.

**PART 2 PRODUCTS - NOT USED**

**PART 3 EXECUTION - NOT USED**

**END OF SECTION**

## SECTION 01 30 00

### ADMINISTRATIVE REQUIREMENTS

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. Preconstruction meeting.
- B. Site mobilization meeting.
- C. Progress meetings.
- D. Coordination drawings.
- E. Submittals for review, information, and project closeout.
- F. Submittal procedures.

##### 1.02 RELATED REQUIREMENTS

- A. Construction Manager's Scope of Work.
- B. Section 01 70 00 - Execution and Closeout Requirements: Additional coordination requirements.
- C. Section 01 78 00 - Closeout Submittals: Project record documents.

##### 1.03 PROJECT COORDINATION

- A. Project Coordinator: Construction Manager.
- B. Cooperate with the Project Coordinator in allocation of mobilization areas of site; for field offices and sheds, for site access, traffic, and parking facilities.
- C. During construction, coordinate use of site and facilities through the Project Coordinator.
- D. Comply with Project Coordinator's procedures for intra-project communications; submittals, reports and records, schedules, coordination drawings, and recommendations; and resolution of ambiguities and conflicts.
- E. Comply with instructions of the Project Coordinator for use of temporary utilities and construction facilities.
- F. Coordinate field engineering and layout work under instructions of the Project Coordinator.
- G. Make the following types of submittals to Architect through the Project Coordinator:
  - 1. Requests for interpretation.
  - 2. Requests for substitution.
  - 3. Shop drawings, product data, and samples.
  - 4. Test and inspection reports.
  - 5. Manufacturer's instructions and field reports.
  - 6. Applications for payment and change order requests.
  - 7. Progress schedules.
  - 8. Coordination drawings.
  - 9. Closeout submittals.
  - 10. Mock-Ups.
  - 11. Prototypes.

#### PART 2 PRODUCTS - NOT USED

#### PART 3 EXECUTION

##### 3.01 PRECONSTRUCTION MEETING

- A. Attendance Required:
  - 1. Owner.
  - 2. Architect.
  - 3. Construction Manager.
  - 4. Contractors.
  - 5. Major Subcontractors.
  
- B. Agenda:
  - 1. Submission of executed bonds and insurance certificates.
  - 2. Distribution of Contract Documents.
  - 3. Submission of list of Subcontractors, list of Products, schedule of values, and progress schedule.
  - 4. Designation of personnel representing the parties to Contract for Contractor, Owner, Construction Manager and Architect.
  - 5. Procedures and processing of field decisions, submittals, substitutions, applications for payments, proposal request, Change Orders, and Contract closeout procedures.
  - 6. Scheduling.
  - 7. Required permits for off site and entrance signage.
  
- C. Record minutes and distribute copies within two days after meeting to participants, with two copies to Architect, Owner, participants, and those affected by decisions made.

### **3.02 SITE MOBILIZATION MEETING**

- A. Attendance Required:
  - 1. Construction Manager.
  - 2. Owner.
  - 3. Architect.
  - 4. Construction Manager's Superintendent.
  - 5. Major Subcontractors.
  - 6. Contractor.
  
- B. Agenda:
  - 1. Use of premises by Owner and Construction Manager.
  - 2. Owner's requirements and occupancy prior to completion.
  - 3. Construction facilities and controls provided by Owner.
  - 4. Temporary utilities provided by Owner.
  - 5. Survey and building layout.
  - 6. Security and housekeeping procedures.
  - 7. Schedules.
  - 8. Application for payment procedures.
  - 9. Procedures for testing.
  - 10. Procedures for maintaining record documents.
  - 11. Requirements for start-up of equipment.
  - 12. Inspection and acceptance of equipment put into service during construction period.
  
- C. Record minutes and distribute copies within two days after meeting to participants, with two copies to Architect, Owner, participants, and those affected by decisions made.

### **3.03 PROGRESS MEETINGS**

- A. Schedule and administer meetings throughout progress of the Work at maximum monthly intervals.
  
- B. Attendance Required: Job superintendent, major Subcontractors and suppliers, Owner, Architect, as appropriate to agenda topics for each meeting.
  
- C. Agenda:

1. Review minutes of previous meetings.
  2. Review of Work progress.
  3. Field observations, problems, and decisions.
  4. Identification of problems that impede, or will impede, planned progress.
  5. Review of submittals schedule and status of submittals.
  6. Maintenance of progress schedule.
  7. Corrective measures to regain projected schedules.
  8. Planned progress during succeeding work period.
  9. Maintenance of quality and work standards.
  10. Effect of proposed changes on progress schedule and coordination.
  11. Other business relating to Work.
- D. Record minutes and distribute copies within two days after meeting to participants, with two copies to Architect, Owner, participants, and those affected by decisions made.

### **3.04 COORDINATION DRAWINGS**

- A. Provide information required by Project Coordinator for preparation of coordination drawings.
- B. Review drawings for completion and for conflicts with other trades or for efforts on Contractor's schedule prior to submission to Architect.
- C. Construction Manager shall check/field verify subcontractor shop drawings against field conditions and contract documents prior to submission to Architect.

### **3.05 SUBMITTALS FOR REVIEW**

- A. When the following are specified in individual sections, submit them for review:
  1. Product data.
  2. Shop drawings.
  3. Samples for selection.
  4. Samples for verification.
  5. Coordination Drawings
  6. Refer to Section 10 14 00 for additional requirements.
- B. Submit to Architect for review for the limited purpose of checking for conformance with information given and the design concept expressed in the contract documents.
- C. Samples will be reviewed for aesthetic, color, or finish selection.
- D. After review, provide copies and distribute in accordance with SUBMITTAL PROCEDURES article below and for record documents purposes described in Section 01 78 00 - CLOSEOUT SUBMITTALS.

### **3.06 SUBMITTALS FOR INFORMATION**

- A. When the following are specified in individual sections, submit them for information:
  1. Design data.
  2. Certificates.
  3. Test reports.
  4. Inspection reports.
  5. Manufacturer's instructions.
  6. Manufacturer's field reports.
  7. Refer to Section 10 14 00 for additional requirements.
  8. Other types indicated.

### **3.07 SUBMITTALS FOR PROJECT CLOSEOUT**

- A. When the following are specified in individual sections, submit them at project closeout:
  1. Project record documents.

2. Operation and maintenance data.
  3. Warranties.
  4. Bonds.
  5. Other types as indicated.
- B. Submit for Owner's benefit during and after project completion.

### 3.08 NUMBER OF COPIES OF SUBMITTALS

- A. Documents for Review:
1. Small Size Sheets, Not Larger Than 8-1/2 x 11 inches: Submit the number of copies that Construction Manager requires (maximum of 5), plus one copy that will be retained by Architect. It is the Architect's preference that submittals are distributed by .pdf electronic format.
  2. Larger Sheets, Not Larger Than 36 x 48 inches: Submit the number of opaque reproductions that Construction Manager requires (maximum of 5), plus one copy that will be retained by Architect. It is the Architect's preference that submittals are distributed by .pdf electronic format.
- B. Documents for Information: Submit two copies.
- C. Documents for Project Closeout: Make one reproduction of submittal originally reviewed. Submit one extra of submittals for information.
- D. Samples: Submit the number specified in individual specification sections; one of which will be retained by Architect.
1. Retained samples will not be returned to Construction Manager unless specifically so stated.

### 3.09 SUBMITTAL PROCEDURES

- A. Request for Electronic Architectural Drawings:
1. Architectural Floor Plan background drawings can be made available for the production of shop drawings at no cost to the contractor.
  2. Shop drawings will not be accepted without specific submittal related information added to the background files. Submitting Architectural Floor Plan Backgrounds only, as the shop drawings, will be rejected.
  3. Architectural Floor Plan background drawings do not replace the Contractor's responsibility to verify current in-place field conditions that will affect their shop drawings and scope of work.
- B. Sequentially number the transmittal form. Revise submittals with original number and a sequential alphabetic suffix.
- C. Identify Project, Contractor, Subcontractor or supplier; pertinent drawing and detail number, and specification section number, as appropriate on each copy.
- D. Apply Contractor's stamp, signed or initialed certifying that review, approval, verification of Products required, field dimensions, adjacent construction Work, and coordination of information is in accordance with the requirements of the Work and Contract Documents.
- E. Deliver submittals to Construction Manager at business address.
- F. Schedule submittals to expedite the Project, and coordinate submission of related items.
- G. For each submittal for review, allow 10 days excluding delivery time to and from the Construction Manager.
- H. Identify variations from Contract Documents and Product or system limitations that may be detrimental to successful performance of the completed Work.

- I. Provide space for Construction Manager and Architect review stamps.
- J. When revised for resubmission, identify all changes made since previous submission.
- K. Distribute reviewed submittals as appropriate. Instruct parties to promptly report any inability to comply with requirements.
- L. Submittals not requested will not be recognized or processed.

**END OF SECTION**

## SECTION 01 40 00

### QUALITY REQUIREMENTS

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. References and standards.
- B. Quality assurance submittals.
- C. Mock-ups and Prototypes.
- D. Control of installation.
- E. Tolerances.
- F. Testing and inspection services.
- G. Manufacturers' field services.

##### 1.02 RELATED REQUIREMENTS

- A. Section 01 30 00 - Administrative Requirements: Submittal procedures.
- B. Section 01 60 00 - Product Requirements: Requirements for material and product quality.

##### 1.03 REFERENCE STANDARDS

- A. ASTM C 1021 - Standard Practice for Laboratories Engaged in Testing of Building Sealants; 2008.
- B. ASTM E 329 - Standard Specification for Agencies Engaged Construction Inspection and/or Testing; 2009.
- C. ASTM E 543 - Standard Specification for Agencies Performing Nondestructive Testing; 2009.

##### 1.04 SUBMITTALS

- A. Design Data: Submit for Architect's knowledge as contract administrator for the limited purpose of assessing conformance with information given and the design concept expressed in the contract documents, or for Owner's information.
- B. Test Reports: After each test/inspection, promptly submit two copies of report to Architect and to Construction Manager.
  - 1. Include:
    - a. Date issued.
    - b. Project title and number.
    - c. Name of inspector.
    - d. Date and time of sampling or inspection.
    - e. Identification of product and specifications section.
    - f. Location in the Project.
    - g. Type of test/inspection.
    - h. Date of test/inspection.
    - i. Results of test/inspection.
    - j. Conformance with Contract Documents.
    - k. When requested by Architect, provide interpretation of results.
  - 2. Test report submittals are for Architect's knowledge as contract administrator for the limited purpose of assessing conformance with information given and the design concept expressed in the contract documents, or for Owner's information.

- C. Certificates: When specified in individual specification sections, submit certification by the manufacturer and Construction Manager or installation/application subcontractor to Architect, in quantities specified for Product Data.
  - 1. Indicate material or product conforms to or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.
  - 2. Certificates may be recent or previous test results on material or product, but must be acceptable to Architect.
- D. Manufacturer's Instructions: When specified in individual specification sections, submit printed instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing, for the Owner's information. Indicate special procedures, perimeter conditions requiring special attention, and special environmental criteria required for application or installation.
- E. Manufacturer's Field Reports: Submit reports for Architect's benefit as contract administrator or for Owner.
  - 1. Submit report in duplicate within 30 days of observation to Architect for information.
  - 2. Submit for information for the limited purpose of assessing conformance with information given and the design concept expressed in the contract documents.

#### **1.05 REFERENCES AND STANDARDS**

- A. For products and workmanship specified by reference to a document or documents not included in the Project Manual, also referred to as reference standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.
- B. Conform to reference standard of date of issue current on date of Contract Documents, except where a specific date is established by applicable code.
- C. Obtain copies of standards where required by product specification sections.
- D. Maintain copy at project site during submittals, planning, and progress of the specific work, until Final Payment / Acceptance.
- E. Should specified reference standards conflict with Contract Documents, request clarification from Architect before proceeding.
- F. Neither the contractual relationships, duties, or responsibilities of the parties in Contract nor those of Architect shall be altered from the Contract Documents by mention or inference otherwise in any reference document.

#### **1.06 TESTING AND INSPECTION AGENCIES**

- A. Owner will employ services of an independent testing agency to perform certain specified testing.
- B. Employment of agency in no way relieves Construction Manager of obligation to perform Work in accordance with requirements of Contract Documents.
- C. Concrete and Soils shall be tested by the testing agency.

#### **PART 2 PRODUCTS - NOT USED**

#### **PART 3 EXECUTION**

##### **3.01 CONTROL OF INSTALLATION**

- A. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce Work of specified quality.
- B. Comply with manufacturers' instructions, including each step in sequence.

- C. Should manufacturers' instructions conflict with Contract Documents, request clarification from Architect before proceeding.
- D. Comply with specified standards as minimum quality for the Work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.
- E. Have Work performed by persons qualified to produce required and specified quality.
- F. Verify that field measurements are as indicated on shop drawings or as instructed by the manufacturer.
- G. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, and disfigurement.

### **3.02 MOCK-UPS AND PROTOTYPES**

- A. Assemble and erect specified items with specified attachment and anchorage devices, flashings, seals, and finishes.
- B. Accepted mock-ups and prototypes shall be a comparison standard for the remaining Work.
- C. Where mock-ups and prototypes have been accepted by Architect and is specified in product specification sections to be removed, remove mock-up and prototypes and clear area when directed to do so.
- D. Refer to section 10 14 00 for additional requirements.

### **3.03 TOLERANCES**

- A. Monitor fabrication and installation tolerance control of products to produce acceptable Work. Do not permit tolerances to accumulate.
- B. Comply with manufacturers' tolerances. Should manufacturers' tolerances conflict with Contract Documents, request clarification from Architect before proceeding.
- C. Adjust products to appropriate dimensions; position before securing products in place.

### **3.04 TESTING AND INSPECTION**

- A. Testing Agency Duties:
  1. Test samples of mixes submitted by Construction Manager.
  2. Provide qualified personnel at site. Cooperate with Architect and Construction Manager in performance of services.
  3. Perform specified sampling and testing of products in accordance with specified standards.
  4. Ascertain compliance of materials and mixes with requirements of Contract Documents.
  5. Promptly notify Architect and Construction Manager of observed irregularities or non-conformance of Work or products.
  6. Perform additional tests and inspections required by Architect.
  7. Submit reports of all tests/inspections specified.
- B. Limits on Testing/Inspection Agency Authority:
  1. Agency may not release, revoke, alter, or enlarge on requirements of Contract Documents.
  2. Agency may not approve or accept any portion of the Work.
  3. Agency may not assume any duties of Contractor.
  4. Agency has no authority to stop the Work.
- C. Contractor Responsibilities:
  1. Deliver to agency at designated location, adequate samples of materials proposed to be used that require testing, along with proposed mix designs.

2. Cooperate with laboratory personnel, and provide access to the Work and to manufacturers' facilities.
  3. Provide incidental labor and facilities:
    - a. To provide access to Work to be tested/inspected.
    - b. To obtain and handle samples at the site or at source of Products to be tested/inspected.
    - c. To facilitate tests/inspections.
    - d. To provide storage and curing of test samples.
  4. Notify Architect and laboratory 24 hours prior to expected time for operations requiring testing/inspection services.
  5. Arrange with Owner's agency and pay for additional samples, tests, and inspections required by Construction Manager beyond specified requirements.
- D. Re-testing required because of non-conformance to specified requirements shall be performed by the same agency on instructions by Architect.
- E. Re-testing required because of non-conformance to specified requirements shall be paid for by Construction Manager.

### **3.05 MANUFACTURERS' FIELD SERVICES**

- A. When specified in individual specification sections, require material or product suppliers or manufacturers to provide qualified staff personnel to observe site conditions, conditions of surfaces and installation, quality of workmanship, start-up of equipment, test, adjust and balance of equipment as applicable, and to initiate instructions when necessary.
- B. Report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturers' written instructions.

### **3.06 DEFECT ASSESSMENT**

- A. Replace Work or portions of the Work not conforming to specified requirements.
- B. If, in the opinion of Architect, it is not practical to remove and replace the Work, Architect will direct an appropriate remedy or adjust payment.

**END OF SECTION**

## SECTION 01 60 00

### PRODUCT REQUIREMENTS

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. General product requirements.
- B. Transportation, handling, storage and protection.
- C. Product option requirements.
- D. Substitution limitations and procedures.
- E. Maintenance materials, including extra materials, spare parts, tools, and software.

##### 1.02 RELATED REQUIREMENTS

- A. Section 01 40 00 - Quality Requirements: Product quality monitoring.

##### 1.03 REFERENCE STANDARDS

- A. 16 CFR 260 - Guides for the Use of Environmental Marketing Claims; Federal Trade Commission; current edition.
- B. NFPA 70 - National Electrical Code; National Fire Protection Association; 2008.

##### 1.04 SUBMITTALS

- A. Product Data Submittals: Submit manufacturer's standard published data. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information specific to this Project.
- B. Shop Drawing Submittals: Prepared specifically for this Project; indicate utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.
- C. Sample Submittals: Illustrate functional and aesthetic characteristics of the product, with integral parts and attachment devices. Coordinate sample submittals for interfacing work.
  - 1. For selection from standard finishes, submit samples of the full range of the manufacturer's standard colors, textures, and patterns.
- D. Refer to 10 14 00 for additional requirements.

#### PART 2 PRODUCTS

##### 2.01 NEW PRODUCTS

- A. Provide new products unless specifically required or permitted by the Contract Documents.
- B. Do not use products having any of the following characteristics:
  - 1. Made using or containing CFC's or HCFC's.
  - 2. Made of wood from newly cut old growth timber.
- C. Where all other criteria are met, Contractor shall give preference to products that:
  - 1. Are extracted, harvested, and/or manufactured closer to the location of the project.
  - 2. Have longer documented life span under normal use.
  - 3. Result in less construction waste.
  - 4. Are made of vegetable materials that are rapidly renewable.

##### 2.02 PRODUCT OPTIONS

- A. Products Specified by Reference Standards or by Description Only: Use any product meeting those standards or description.
- B. Products Specified by Naming One or More Manufacturers: Use a product of one of the manufacturers named and meeting specifications, no options or substitutions allowed.
- C. Products Specified by Naming One or More Manufacturers with a Provision for Substitutions: Submit a request for substitution for any manufacturer not named.

### **2.03 MAINTENANCE MATERIALS**

- A. Furnish extra materials, spare parts, tools, and software of types and in quantities specified in individual specification sections.
- B. Deliver to Project site; obtain receipt prior to final payment.

## **PART 3 EXECUTION**

### **3.01 SUBSTITUTION PROCEDURES**

- A. Instructions to Bidders specify time restrictions for submitting requests for substitutions during the bidding period. Comply with requirements specified in this section.
- B. Architect will consider requests for substitutions only within 30 days after date of Agreement.
- C. Substitutions will only be considered when a product becomes unavailable through no fault of the Contractor.
- D. Document each request with complete data substantiating compliance of proposed substitution with Contract Documents.
- E. A request for substitution constitutes a representation that the submitter:
  1. Has investigated proposed product and determined that it meets or exceeds the quality level of the specified product.
  2. Will provide the same warranty for the substitution as for the specified product.
  3. Will coordinate installation and make changes to other Work that may be required for the Work to be complete with no additional cost to Owner.
  4. Waives claims for additional costs or time extension that may subsequently become apparent.
  5. Will reimburse Owner and Architect for review or redesign services associated with re-approval by authorities.
- F. Substitutions will not be considered when they are indicated or implied on shop drawing or product data submittals, without separate written request, or when acceptance will require revision to the Contract Documents.
- G. Substitution Submittal Procedure:
  1. Submit three copies of request for substitution for consideration. Limit each request to one proposed substitution.
  2. Submit shop drawings, product data, and certified test results attesting to the proposed product equivalence. Burden of proof is on proposer.
  3. The Architect will notify Construction Manager in writing of decision to accept or reject request.

### **3.02 TRANSPORTATION AND HANDLING**

- A. Coordinate schedule of product delivery to designated prepared areas in order to minimize site storage time and potential damage to stored materials.
- B. Transport and handle products in accordance with manufacturer's instructions also refer to Section 10 14 00 for additional requirements.

- C. Transport materials in covered trucks to prevent contamination of product and littering of surrounding areas.
- D. Promptly inspect shipments to ensure that products comply with requirements, quantities are correct, and products are undamaged.
- E. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damage.
- F. Arrange for the return of packing materials, such as wood pallets, where economically feasible.

### **3.03 STORAGE AND PROTECTION**

- A. Designate receiving/storage areas for incoming products so that they are delivered according to installation schedule and placed convenient to work area in order to minimize waste due to excessive materials handling and misapplication.
- B. Store and protect products in accordance with manufacturers' instructions.
- C. Store with seals and labels intact and legible.
- D. Store sensitive products in weather tight, climate controlled, enclosures in an environment favorable to product.
- E. For exterior storage of fabricated products, place on sloped supports above ground.
- F. Provide bonded off-site storage and protection when site does not permit on-site storage or protection.
- G. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of products.
- H. Store loose granular materials on solid flat surfaces in a well-drained area. Prevent mixing with foreign matter.
- I. Prevent contact with material that may cause corrosion, discoloration, or staining.
- J. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.
- K. Arrange storage of products to permit access for inspection. Periodically inspect to verify products are undamaged and are maintained in acceptable condition.

**END OF SECTION**

## SECTION 01 70 00

### EXECUTION AND CLOSEOUT REQUIREMENTS

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. Examination, preparation, and general installation procedures.
- B. Requirements for alterations work, including selective demolition, except removal, disposal, and/or remediation of hazardous materials and toxic substances.
- C. Cutting and patching.
- D. Surveying for laying out the work.
- E. Cleaning and protection.
- F. Closeout procedures, except payment procedures.
- G. General requirements for maintenance service.

##### 1.02 QUALIFICATIONS

- A. For survey work, employ a land surveyor registered in Illinois and acceptable to Architect. Submit evidence of Surveyor's Errors and Omissions insurance coverage in the form of an Insurance Certificate.

##### 1.03 PROJECT CONDITIONS

- A. Ventilate enclosed areas to assist cure of materials, to dissipate humidity, and to prevent accumulation of dust, fumes, vapors, or gases.
- B. Dust Control: Execute work by methods to minimize raising dust from construction operations. Provide positive means to prevent air-borne dust from dispersing into atmosphere and over adjacent property.
  - 1. Provide dust-proof enclosures to prevent entry of dust generated outdoors.
  - 2. Provide dust-proof barriers between construction areas and areas continuing to be occupied by Owner.
- C. Noise Control: Provide methods, means, and facilities to minimize noise produced by construction operations.
  - 1. At All Times: Excessively noisy tools and operations will not be tolerated inside the building at any time of day; excessively noisy includes jackhammers.
- D. Pest and Rodent Control: Provide methods, means, and facilities to prevent pests and insects from damaging the work.
- E. Pollution Control: Provide methods, means, and facilities to prevent contamination of soil, water, and atmosphere from discharge of noxious, toxic substances, and pollutants produced by construction operations. Comply with federal, state, and local regulations.

##### 1.04 COORDINATION

- A. Coordinate scheduling, submittals, and work of the various sections of the Project Manual to ensure efficient and orderly sequence of installation of interdependent construction elements, with provisions for accommodating items installed later.
- B. Notify affected utility companies and comply with their requirements.

- C. Verify that utility requirements and characteristics of new operating equipment are compatible with building utilities. Coordinate work of various sections having interdependent responsibilities for installing, connecting to, and placing in service, such equipment.
- D. Coordinate space requirements, supports, and installation of mechanical and electrical work that are indicated diagrammatically on Drawings. Follow routing shown for pipes, ducts, and conduit, as closely as practicable; place runs parallel with lines of building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.
- E. In finished areas except as otherwise indicated, conceal pipes, ducts, and wiring within the construction. Coordinate locations of fixtures and outlets with finish elements.
- F. Coordinate completion and clean-up of work of separate sections.
- G. After Owner occupancy of premises, coordinate access to site for correction of defective work and work not in accordance with Contract Documents, to minimize disruption of Owner's activities.

## **PART 2 PRODUCTS**

### **2.01 PATCHING MATERIALS**

- A. New Materials: As specified in product sections; match existing products and work for patching and extending work.
- B. Type and Quality of Existing Products: Determine by inspecting and testing products where necessary, referring to existing work as a standard.
- C. Product Substitution: For any proposed change in materials, submit request for substitution described in Section 01 60 00.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify that existing site conditions and substrate surfaces are acceptable for subsequent work. Start of work means acceptance of existing conditions.
- B. Verify that existing substrate is capable of structural support or attachment of new work being applied or attached.
- C. Examine and verify specific conditions described in individual specification sections.
- D. Take field measurements before confirming product orders or beginning fabrication, to minimize waste due to over-ordering or misfabrication.
- E. Verify that utility services are available, of the correct characteristics, and in the correct locations.
- F. Prior to Cutting: Examine existing conditions prior to commencing work, including elements subject to damage or movement during cutting and patching. After uncovering existing work, assess conditions affecting performance of work. Beginning of cutting or patching means acceptance of existing conditions.

### **3.02 PREPARATION**

- A. Clean substrate surfaces prior to applying next material or substance.
- B. Seal cracks or openings of substrate prior to applying next material or substance.
- C. Apply manufacturer required or recommended substrate primer, sealer, or conditioner prior to applying any new material or substance in contact or bond.

### **3.03 LAYING OUT THE WORK**

- A. Verify locations of survey control points prior to starting work.
- B. Promptly notify Architect of any discrepancies discovered.
- C. Protect survey control points prior to starting site work; preserve permanent reference points during construction.
- D. Promptly report to Architect the loss or destruction of any reference point or relocation required because of changes in grades or other reasons.
- E. Replace dislocated survey control points based on original survey control. Make no changes without prior written notice to Architect.
- F. Utilize recognized engineering survey practices.
- G. Establish elevations, lines and levels. Locate and lay out by instrumentation and similar appropriate means:
  - 1. Site improvements including pavements; stakes for grading, fill and topsoil placement; utility locations, slopes, and invert elevations.
  - 2. Grid or axis for structures.
  - 3. Refer to Section 10 14 00 for additional procedures to establish sign locations.
- H. Periodically verify layouts by same means.
- I. Maintain a complete and accurate log of control and survey work as it progresses.

### **3.04 GENERAL INSTALLATION REQUIREMENTS**

- A. Install products as specified in individual sections, in accordance with manufacturer's instructions and recommendations, and so as to avoid waste due to necessity for replacement.
- B. Make vertical elements plumb and horizontal elements level, unless otherwise indicated.
- C. Install equipment and fittings plumb and level, neatly aligned with adjacent vertical and horizontal lines, unless otherwise indicated.
- D. Make consistent texture on surfaces, with seamless transitions, unless otherwise indicated.
- E. Make neat transitions between different surfaces, maintaining texture and appearance.

### **3.05 ALTERATIONS**

- A. Drawings showing existing construction and utilities are based on casual field observation and existing record documents only.
  - 1. Verify that construction and utility arrangements are as shown.
  - 2. Report discrepancies to Architect before disturbing existing installation.
  - 3. Beginning of alterations work constitutes acceptance of existing conditions.
  - 4. Refer to Section 10 14 00 for additional information addressing sign removal.
- B. Remove existing work as indicated and as required to accomplish new work.
  - 1. Remove items indicated on drawings.
  - 2. Relocate items indicated on drawings.
  - 3. Where new surface finishes are to be applied to existing work, perform removals, patch, and prepare existing surfaces as required to receive new finish; remove existing finish if necessary for successful application of new finish.
  - 4. Where new surface finishes are not specified or indicated, patch holes and damaged surfaces to match adjacent finished surfaces as closely as possible.
- C. Utility Services (Including but not limited to Plumbing, Electrical, and Telecommunications):

Remove, relocate, and extend existing systems to accommodate new construction.

1. Maintain existing active systems that are to remain in operation; maintain access to equipment and operational components; if necessary, modify installation to allow access or provide access panel.
  2. Where existing systems or equipment are not active and Contract Documents require reactivation, put back into operational condition; repair supply, distribution, and equipment as required.
  3. Where existing active systems serve occupied facilities but are to be replaced with new services, maintain existing systems in service until new systems are complete and ready for service.
    - a. Disable existing systems only to make switchovers and connections; minimize duration of outages.
    - b. Provide temporary connections as required to maintain existing systems in service.
  4. Verify that abandoned services serve only abandoned facilities.
  5. Remove abandoned pipe, ducts, conduits, and equipment, including those above accessible ceilings; remove back to source of supply where possible, otherwise cap stub and tag with identification; patch holes left by removal using materials specified for new construction.
- D. Protect existing work to remain.
1. Prevent movement of structure; provide shoring and bracing if necessary.
  2. Perform cutting to accomplish removals neatly and as specified for cutting new work.
  3. Repair adjacent construction and finishes damaged during removal work.
- E. Adapt existing work to fit new work: Make as neat and smooth transition as possible.
- F. Patching: Where the existing surface is not indicated to be refinished, patch to match the surface finish that existed prior to cutting. Where the surface is indicated to be refinished, patch so that the substrate is ready for the new finish.
- G. Refinish existing surfaces as indicated:
1. Where rooms or spaces are indicated to be refinished, refinish all visible existing surfaces to remain to the specified condition for each material, with a neat transition to adjacent finishes.
  2. If mechanical or electrical work is exposed accidentally during the work, re-cover and refinish to match.
- H. Clean existing systems and equipment.
- I. Remove demolition debris and abandoned items from alterations areas and dispose of off-site; do not burn or bury.
- J. Do not begin new construction in alterations areas before demolition is complete.
- K. Comply with all other applicable requirements of this section.

### **3.06 CUTTING AND PATCHING**

- A. Whenever possible, execute the work by methods that avoid cutting or patching.
- B. See Alterations article above for additional requirements.
- C. Perform whatever cutting and patching is necessary to:
  1. Complete the work.
  2. Fit products together to integrate with other work.
  3. Provide openings for penetration of mechanical, electrical, and other services.
  4. Match work that has been cut to adjacent work.
  5. Repair areas adjacent to cuts to required condition.
  6. Repair new work damaged by subsequent work.

- 7. Remove samples of installed work for testing when requested.
- 8. Remove and replace defective and non-conforming work.
- D. Execute work by methods that avoid damage to other work and that will provide appropriate surfaces to receive patching and finishing. In existing work, minimize damage and restore to original condition.
- E. Employ original installer to perform cutting for weather exposed and moisture resistant elements, and sight exposed surfaces.
- F. Cut rigid materials using masonry saw or core drill. Pneumatic tools not allowed without prior approval.
- G. Restore work with new products in accordance with requirements of Contract Documents.
- H. Patching:
  - 1. Finish patched surfaces to match finish that existed prior to patching. On continuous surfaces, refinish to nearest intersection or natural break. For an assembly, refinish entire unit.
  - 2. Match color, texture, and appearance.
  - 3. Repair patched surfaces that are damaged, lifted, discolored, or showing other imperfections due to patching work. If defects are due to condition of substrate, repair substrate prior to repairing finish.

### **3.07 PROGRESS CLEANING**

- A. Maintain areas free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition.
- B. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces, and other closed or remote spaces, prior to enclosing the space.
- C. Broom and vacuum clean interior areas prior to start of surface finishing, and continue cleaning to eliminate dust.
- D. Collect and remove waste materials, debris, and trash/rubbish from site periodically and dispose off-site; do not burn or bury.

### **3.08 PROTECTION OF INSTALLED WORK**

- A. Protect installed work from damage by construction operations.
- B. Provide special protection where specified in individual specification sections.
- C. Provide temporary and removable protection for installed products. Control activity in immediate work area to prevent damage.
- D. Provide protective coverings at walls, projections, jambs, sills, and soffits of openings.
- E. Protect finished floors, stairs, and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects, by protecting with durable sheet materials.
- F. Prohibit traffic or storage upon waterproofed or roofed surfaces. If traffic or activity is necessary, obtain recommendations for protection from waterproofing or roofing material manufacturer.
- G. Remove protective coverings when no longer needed; reuse or recycle plastic coverings if possible.

### **3.09 ADJUSTING**

- A. Adjust operating products and equipment to ensure smooth and unhindered operation.

### **3.10 FINAL CLEANING**

- A. Use cleaning materials that are nonhazardous.
- B. Clean interior and exterior glass, surfaces exposed to view; remove temporary labels, stains and foreign substances, polish transparent and glossy surfaces, vacuum carpeted and soft surfaces.
- C. Remove all labels that are not permanent. Do not paint or otherwise cover fire test labels or nameplates on mechanical and electrical equipment.
- D. Clean equipment and fixtures to a sanitary condition with cleaning materials appropriate to the surface and material being cleaned.
- E. Clean filters of operating equipment.
- F. Clean debris from roofs, gutters, downspouts, and drainage systems.
- G. Clean site; sweep paved areas, rake clean landscaped surfaces.
- H. Remove waste, surplus materials, trash/rubbish, and construction facilities from the site; dispose of in legal manner; do not burn or bury.

### **3.11 CLOSEOUT PROCEDURES**

- A. Make submittals that are required by governing or other authorities.
- B. Notify Architect when work is considered ready for Final Payment / Acceptance.
- C. Submit written certification that Contract Documents have been reviewed, work has been inspected, and that work is complete in accordance with Contract Documents and ready for Architect's review.
- D. Correct items of work listed in executed Certificates of Final Payment / Acceptance and comply with requirements for access to Owner-occupied areas.
- E. Notify Architect when work is considered finally complete.
- F. Complete items of work determined by Architect's final inspection.

### **3.12 MAINTENANCE**

- A. Provide service and maintenance of components indicated in specification sections.
- B. Maintenance Period: As indicated in specification sections or, if not indicated, not less than 2 years from the Date of Final Payment / Acceptance or the length of the specified warranty, whichever is longer.
- C. Examine system components at a frequency consistent with reliable operation. Clean, adjust, and lubricate as required.
- D. Include systematic examination, adjustment, and lubrication of components. Repair or replace parts whenever required. Use parts produced by the manufacturer of the original component.
- E. Maintenance service shall not be assigned or transferred to any agent or subcontractor without prior written consent of the Owner.
- F. Maintain at site, additional LED modules, typical products which are replaced during normal use.

**END OF SECTION**

## SECTION 01 78 00

### CLOSEOUT SUBMITTALS

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. Project Record Documents.
- B. Operation and Maintenance Data.
- C. Warranties and bonds.

##### 1.02 RELATED REQUIREMENTS

- A. Construction Manager's General Conditions: Performance bond and labor and material payment bonds, warranty, and correction of work.
- B. Section 01 30 00 - Administrative Requirements: Submittals procedures, shop drawings, product data, and samples.
- C. Section 01 70 00 - Execution and Closeout Requirements: Contract closeout procedures.
- D. Individual Product Sections: Specific requirements for operation and maintenance data.
- E. Individual Product Sections: Warranties required for specific products or Work.

##### 1.03 SUBMITTALS

- A. Project Record Documents: Submit documents to Architect with claim for final Application for Payment.
- B. Operation and Maintenance Data:
  - 1. Submit two copies of preliminary draft or proposed formats and outlines of contents before start of Work. Architect will review draft and return one copy with comments.
  - 2. For equipment, or component parts of equipment put into service during construction and operated by Owner, submit completed documents within ten days after acceptance.
  - 3. Submit one copy of completed documents 15 days prior to final inspection. This copy will be reviewed and returned after final inspection, with Architect comments. Revise content of all document sets as required prior to final submission.
  - 4. Submit two sets of revised final documents in final form within 10 days after final inspection.
- C. Warranties and Bonds:
  - 1. Make other submittals within 10 days after Date of Final Payment / Acceptance, prior to final Application for Payment.
  - 2. For items of Work for which acceptance is delayed beyond Date of Final Payment / Acceptance, submit within 10 days after acceptance, listing the date of acceptance as the beginning of the warranty period.

#### PART 2 PRODUCTS- NOT USED

#### PART 3 EXECUTION

##### 3.01 PROJECT RECORD DOCUMENTS

- A. Maintain on site one set of the following record documents; record actual revisions to the Work:
  - 1. Drawings.
  - 2. Specifications.
  - 3. Addenda.
  - 4. Change Orders and other modifications to the Contract.
  - 5. Reviewed shop drawings, product data, and samples.

- B. Ensure entries are complete and accurate, enabling future reference by Owner.
- C. Store record documents separate from documents used for construction.
- D. Record information concurrent with construction progress.
- E. Specifications: Legibly mark and record at each product section description of actual products installed, including the following:
  - 1. Changes made by Addenda and modifications.
- F. Record Drawings and Shop Drawings: Legibly mark each item to record actual construction including:
  - 1. Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
  - 2. Field changes of dimension and detail.
  - 3. Details not on original Contract drawings.
- G. Refer to Section 10 14 00 for additional requirements.

### **3.02 WARRANTIES AND BONDS**

- A. Obtain warranties and bonds, executed in duplicate by responsible Subcontractors, suppliers, and manufacturers, within 10 days after completion of the applicable item of work. Except for items put into use with Owner's permission, leave date of beginning of time of warranty until the Date of Final Payment/ Acceptance is determined.
- B. Verify that documents are in proper form, contain full information, and are notarized.
- C. Co-execute submittals when required.
- D. Retain warranties and bonds until time specified for submittal.

**END OF SECTION**

## SECTION 10 14 00

### WAYFINDING SIGNAGE

#### PART 1 – GENERAL

- 1.01 The Work shown in the plans, elevations, sections, the Joliet Junior College Wayfinding and Signage Standards Manual, the Message Schedule, the Specifications, and other drawings (the Drawings) provided is subject to the requirements of the Contract Documents including, but not limited to, the General Conditions, Special and Supplementary Conditions, Division 00, Division 01, and Instructions for Bidders.
- 1.02 The Contract shall be governed by all applicable city, county, state, and federal laws, ordinances, rules, and regulations, and the laws, ordinances, rules, and regulations of any other governing bodies, regulatory agencies, authorities, government departments, and any other entities having jurisdiction over the place where the Work is performed.
- 1.03 Work under this Section is the responsibility of the Contractor and consists of furnishing everything necessary for and incidental to the execution and completion of the wayfinding signs.

#### 1.04 DESCRIPTION OF WORK

- A. The Work shown in the Drawings shall be installed at and around Joliet Junior College (JJC) facilities in Joliet, Illinois.
- B. The Work is as shown in the Drawings and specified herein and includes, but is not limited to, the following:
1. Provide fabrication and installation of interior and exterior wayfinding signs, wayfinding sign frames and structures, wayfinding sign bases, wayfinding sign panels, letters, and components with message copy and symbols, including all engineering, fabrication, excavation, erection, installation, electrical, concrete, and masonry.
  2. Provide Review Drawings, Coordination Drawings, Shop Drawings, Working Drawings, Record Documents, and incidentals.
  3. Provide all required Samples, Submittals, Proofs, Mock-Ups, and Prototype Signs.
  4. Provide all the preparation, materials, equipment, tools, labor, testing, inspections, and temporary light and power necessary for the fabrication and installation of the wayfinding signs.
  5. Provide all the materials, fasteners, adhesives, structures, brackets, blocking, miscellaneous steel, embed plates, and all other structural and mounting hardware necessary for the proper fabrication and installation of the wayfinding signs.
  6. Provide professional engineering of all wayfinding signs, wayfinding sign structures, wayfinding sign supports, wayfinding sign frames, wayfinding sign mounting methods, wayfinding sign mounting components and hardware, adhesives, embeds, wayfinding sign bases, wayfinding sign foundations and footings, wayfinding sign mow pads, and all other wayfinding sign structural components, for structural adequacy. All wayfinding signs, wayfinding sign structures, wayfinding sign supports, wayfinding sign frames, wayfinding sign mounting methods, wayfinding sign mounting components and hardware, adhesives, embeds, wayfinding sign bases, wayfinding sign foundations and footings, wayfinding sign mow pads, and all other wayfinding sign structural components must be professionally engineered. The signature and seal of a qualified professional structural engineer, licensed in the State of Illinois, shall appear on the Shop Drawings.

7. Provide and install all required LED dynamic displays for the wayfinding signs, including all required hardware, software, controllers, power supply units, cables, conduit, wiring, and all other required components.
  8. Provide and install all required wayfinding sign light fixtures, lamps, ballasts, cables, conduit, wiring, and all other electrical components for illuminated wayfinding signs.
  9. Run power and data to the wayfinding sign locations as required and provide the final electrical and data connections. Provide all required cables, conduit, wiring, and all other electrical components for the wayfinding signs as required.
  10. Provide set-up, training, and testing for LED dynamic displays.
  11. Provide all required color, finish, material, and process matching for all of the wayfinding signs.
  12. Provide and prepare all digital art and camera ready files as required.
  13. Remove and properly dispose of existing signs and sign materials that have been identified for removal.
  14. Provide restoration of existing finishes, surfaces, pavements, landscaping, and all other site and building conditions, finishes, and/or features that are affected by the removal of any existing signs or the installation of new wayfinding signs.
  15. Acquire all necessary reviews, licenses, permits, permissions, and approvals. Provide written documentation to the Owner, the Architect, and the Construction Manager verifying that all the required licenses, permits, and permissions have been properly obtained.
  16. Provide all safety barricades and warning signs as required to safely complete the Work.
- C. Wayfinding Sign Types – The Work under this Section includes the following exterior and interior wayfinding sign types. This list is provided for reference.
1. Exterior Wayfinding Sign Types
    - a. Ext 1.1
    - b. Ext 2.1
    - c. Ext 2.2
    - d. Ext 3.1
    - e. Ext 3.2
    - f. Ext 4.1
    - g. Ext 4.2
    - h. Ext 5.1
    - i. Ext 5.2
    - j. Ext 5.3
    - k. Ext 5.4
    - l. Ext 5.5
    - m. Ext 5.6
    - n. Ext 5.7
    - o. Ext 6.1.1
    - p. Ext 6.1.2
    - q. Ext 7.1
    - r. Ext 7.2
    - s. Ext 8.1
    - t. Ext 9.1
    - u. Ext 10.1
    - v. Ext 11.1
    - w. Ext 11.2
    - x. Ext 11.3
    - y. Ext 12.1
  2. Interior Wayfinding Sign Types
    - a. Int 1.1

- b. Int 1.2
- c. Int 2.1
- d. Int 2.2
- e. Int 2.3
- f. Int 3.1
- g. Int 3.2
- h. Int 3.3
- i. Int 3.4
- j. Int 3.5
- k. Int 4.1
- l. Int 4.2
- m. Int 5.1.1
- n. Int 5.1.2
- o. Int 5.2
- p. Int 5.3
- q. Int 6.1
- r. Int 6.2
- s. Int 6.2.1
- t. Int 6.3
- u. Int 6.4
- v. Int 6.4.1
- w. Int 6.4.2
- x. Int 6.4.3
- y. Int 6.5
- z. Int 7.1
- aa. Int 7.2
- bb. Int 7.3
- cc. Int 8.1

- D. The Drawings provided are the Bidding Documents. Fabrication of the wayfinding signs is not allowed until the Final Issue for Construction Documents have been released by the Owner.
1. Bidders shall provide per unit pricing for the fabrication and per unit pricing for the installation of each wayfinding sign type. These per unit prices shall remain applicable for two (2) years from the bid opening date.
  2. The Project shall include the interior and exterior wayfinding signage for the Facilities Services Building (FSB), the interior and exterior wayfinding signage for the Greenhouse/Horticultural Facility (GHF), the exterior site wayfinding signage, and the interior wayfinding signage for the Campus Center (CC). The FSB, GHF, and the CC are located on the main JJC campus in Joliet, Illinois. The exterior wayfinding signage includes locations at the main campus, as well as one off-campus location.
  3. After the Contract has been awarded, but prior to the start of fabrication, the Owner shall review the messages and the sign quantities provided in the Bidding Documents. The Owner may revise the messages and may change the wayfinding sign quantities. These revisions will be documented in the Final Issue for Construction Documents.
  4. If wayfinding signs are eliminated in the Final Issue for Construction Documents, the Owner shall be credited the appropriate per unit fabrication and installation costs as originally submitted with the Bid. If wayfinding signs are added in the Final Issue for Construction Documents, the Owner shall be charged only the appropriate per unit fabrication and installation costs as originally submitted with the Bid. No other charges or fees will be accepted. Changes to sign message content, without change to the sign type, shall be incorporated into the Work without additional cost to the Owner.

- E. At any time during the course of the Project, the Owner may choose to add new wayfinding sign types to the Project. If the Owner adds any new wayfinding sign types, the Owner shall provide the Contractor with design intent information for the new sign types and request that the Contractor provide per unit pricing for the fabrication and installation of the new sign types. Fabrication and installation of the new sign types shall not proceed until the Owner has reviewed the per unit pricing submitted and provided written notice that the submitted per unit pricing has been accepted.
- F. In addition to review and acceptance of Coordination Drawings, Product Data, and Shop Drawings, review and acceptance of all Color Samples, Material Samples, Sign Face Layouts, Mock-Ups, Prototype Signs, and Proofs is required prior to the start of fabrication.
- F. Life safety signs, traffic regulatory signs, pavement markings, exit signs, evacuation maps, and egress signage are not included in this Section.

### 1.05 REFERENCE STANDARDS

- A. Where more stringent requirements than those described in the Drawings and the Specifications are set forth under codes, laws, rules, regulations, and ordinances of federal, state, county, and any local governing bodies, regulatory agencies, authorities, government departments, and any other entities having jurisdiction, notify the Owner, the Architect, and the Construction Manager in writing before proceeding with Work. Work is subject to the applicable portions of the following standards:
  1. All Work shall comply with the laws, codes, ordinances, guidelines, standards, rules, regulations, and requirements of the United States, the State of Illinois, Will County, the City of Joliet, and any other federal, state, or local governing body having jurisdiction.
  2. All Work shall comply with all applicable Joliet Junior College rules, guidelines, standards, and requirements.
  3. All Work shall comply with all applicable Illinois Community College Board rules, guidelines, standards, and requirements.
  4. Illuminated wayfinding signs, electrical materials, equipment, and installation thereof shall conform to City of Joliet Electrical Code and the standards of the National Electrical Manufacturers Association (NEMA) and of the Underwriters' Laboratories (UL). Where a UL standard is unavailable, the equipment supplied for the project shall be UL listed and shall bear the UL label.
  5. AWS D1.1 "Structural Welding Code," American Welding Society
  6. SSPC SP-6 "Surface Preparation Specification No. 6, Commercial Blast Cleaning," Steel Structures Painting Council
  7. SSPC PA-1 "Painting Application Specifications," Steel Structures Painting Council
  8. "Aluminum Finishes for Architecture," Aluminum Association
  9. "Code of Standard Practice of Steel Buildings and Bridges," AISC
  10. "Specifications for Design, Fabrication, and Erection of Structural Steel Buildings," AISC
  11. All applicable American Society for Testing and Materials (ASTM) standards and requirements including, but not limited to:
    - a. ASTM 46 – "General Requirements for Delivery of Rolled Steel Plates, Shapes, Sheet Piling and Bars for Structural Use"
    - b. ASTM B209 – "Aluminum and Aluminum Alloy Sheet Plate"
    - c. ASTM B221 – "Aluminum and Aluminum Alloy Wire, Rod, Bar, Shapes and Tube; Extended"
    - d. ASTM B241 – "Aluminum and Aluminum Alloy Tube; Extended, Seamless"

- e. ASTM E1164 – “Standard Practice for Obtaining Spectrophotometric Data for Object Color Evaluation”
  - f. ASTM E308 – “Standard Method for Computing the Colors of Objects by Using the CIE System”
  - g. ASTM E284 – “Standard Definition of Terms Relating to Appearance of Materials”
  - h. All applicable ASTM standards and requirements for Hot Dip Galvanized Steel.
  - i. All applicable ASTM standards and requirements for masonry, concrete, and cement.
  - j. ASTM D4956 – “Standard Specification for Retroreflective Sheeting for Traffic Control”
12. “Specifications for Assembly of Structural Joints Using High Strength Steel Bolts,” as approved by the Research Council on Riveted and Bolted Structural Joints of the Engineering Foundation
  13. “Handbook on Bolt, Nut, and Rivet Standards,” Industrial Fasteners Institute
  14. “Steel Structures Painting Manual, Volume 2, Systems and Specifications,” SSPC
  15. All applicable specifications, guidelines, regulations, and requirements of the Americans with Disabilities Act (ADA) and the Illinois Accessibility Code.
  16. All applicable rules and regulations of the Occupational Safety and Health Administration (OSHA).
  17. AASHTO M68 – “Standard Specification for Retroreflective Sheeting for Traffic Control”
  18. All applicable AASHTO standards and specifications for traffic control devices, signs, and sign structures.
  19. Aluminum shall be fabricated, welded, and inspected in accordance with “ANSI/AWS D1.2/D1.2M: 2008 Structural Welding Code - Aluminum (2008).”
  20. All applicable sections, specifications, standards, guidelines, performance criteria, regulations, rules, and requirements of the Manual on Uniform Traffic Control Devices (MUTCD) and the Illinois Supplement to the MUTCD.
  21. All applicable Federal Highway Administration (FHWA) policies, specifications, standards, guidelines, requirements, performance criteria, rules, and regulations.
  22. All applicable Illinois Department of Transportation (IDOT) policies, specifications, standards, guidelines, requirements, performance criteria, rules, and regulations.
  23. All applicable standards of the American National Standards Institute (ANSI).
  24. All applicable National Cooperative Highway Research Program (NCHRP) reports, including but not limited to, “NCHRP Report 412, Fatigue-Resistant Design of Cantilevered Signal, Sign, and Light Supports” and “NCHRP Report 350, Recommended Procedures for the Safety Performance Evaluation of Highway Features.”

#### **1.06 INTENT OF PLANS AND SPECIFICATIONS**

- A. The Contractor may not manufacture, reproduce, or exhibit the Drawings, or modify them for any other purpose outside of this current Contract, without written approval of the Owner and the Architect.
- B. The intent of the Drawings is to prescribe the outline of Work that the Contractor undertakes to do in full compliance with the Contract. The Contractor shall do all Work provided in the Contract and such additional, extra, collateral, and incidental Work as may be necessary to complete the Work in an acceptable and timely manner.
- C. Notify the Owner, the Architect, and the Construction Manager in writing of any discrepancies in the Drawings, in the Message Schedule, in any field dimensions, and in any field conditions. Notify the Owner, the Architect, and the Construction Manager in writing of any changes required in any aspect of the fabrication and the installation of the wayfinding signs.

- D. The Drawings show design intent only and are not intended to cover every detail of materials, parts, fabrication, construction, mounting, and installation. Furnish all required inspections, testing, engineering, materials, parts, fabrication, construction, mounting, and installation necessary to complete the entire Work in compliance with the design intent, whether or not said details are shown or specified, at no additional cost to the Owner.
  
- E. Wayfinding Sign Locations
  - 1. The wayfinding sign locations shown on the Sign Location Plans are for general reference only and are not representative of the exact final locations.
  - 2. The final locations for the wayfinding signs shall be established on-site by the Contractor, the Owner, and the Architect. The final locations for the wayfinding signs shall be shown in the Shop Drawings. Prior to installation, the final locations for the wayfinding signs shall be verified by the Contractor.
  - 3. Obtain all the necessary reviews and approvals for the wayfinding sign locations. Wayfinding signs installed in locations that have not received all necessary reviews and approvals and that have not been established with, and reviewed and accepted by, the Owner and the Architect may need to be removed and reinstalled in new locations determined by the Owner and the Architect. Work for relocating such wayfinding signs shall be completed by the Contractor at his own expense.
  
- F. The wayfinding sign message examples shown in the Drawings are for reference only. The actual messages for the wayfinding signs shall be provided in the Final Issue for Construction Message Schedules.
  
- G. The Message Schedules for the Joliet Junior College Facilities Services Building Exterior and Interior Wayfinding Signage are located at the end of this Section.

**1.07 PROJECT/SITE CONDITIONS**

- A. Provide all on-site inspections, surveys, and testing required to properly, safely, and securely install the wayfinding signs.
  
- B. Prior to the start of fabrication, identify all the governing bodies, regulatory agencies, authorities, government departments, and all other entities having jurisdiction over the locations where wayfinding signs are to be installed. Determine all applicable code and regulatory requirements. Provide the Owner, the Architect, and the Construction Manager with written notice of any wayfinding signs which conflict with any of the applicable codes or any other regulatory requirements. Obtain all the necessary reviews, licenses, permits, variances, and permissions from all the governing bodies, regulatory agencies, authorities, government departments, and all other entities having jurisdiction over the locations where the wayfinding signs are to be installed. The Contractor shall provide all the necessary fees, presentations, drawings, and any other documentation required to obtain any necessary reviews, licenses, permits, and permissions. Prior to the start of the fabrication, provide the Owner, the Architect, and the Construction Manager with documentation showing that all required reviews, licenses, permits, and permissions have been received.
  
- C. Before any existing signs or sign components are removed and prior to the start of any fabrication, examine the existing conditions on-site.
  - 1. Examine the overall existing site conditions.

2. Verify the existing site dimensions at each of the wayfinding sign installation locations. Provide the Owner and the Architect with on-site dimensions for the locations and items indicated in the Drawings.
  3. Carefully examine on-site the existing conditions at and around each of the locations where wayfinding signs are to be installed. Identify any conditions at any of the installation locations that would prevent any of the wayfinding signs from being properly, safely, and securely installed.
  4. Carefully examine on-site the existing conditions at and around each of the locations where existing signs or sign components are to be removed. Identify any conditions at any of the removal locations that would prevent the proper removal of the existing signs or sign components.
  5. Provide the Owner, the Architect, and the Construction Manager with written notice of any conditions that will have an effect on the appearance or design intent of the wayfinding signs, prevent proper execution of the Work, or endanger its permanency. Provide the Owner, the Architect, and the Construction Manager with written notice of any conditions that would prevent any of the wayfinding signs from being properly, safely, and securely installed. Work shall not proceed until all such conditions have been resolved, corrected, or adjusted by the Owner and the Architect, and the Contractor receives written notice.
- D. Before any existing signs or sign components signs are removed and prior to the start of any fabrication, provide the Owner, the Architect, and the Construction Manager with written notice of any locations where the wayfinding sign dimensions do not coordinate with the existing site dimensions or conditions. Provide the Owner, the Architect, and the Construction Manager with documentation showing the on-site dimensions and conditions. The Architect may adjust the wayfinding sign sizes and/or graphic layouts from those shown in the Drawings to coordinate with the on-site dimensions and/or conditions. Do not proceed with fabrication of wayfinding signs requiring any changes or adjustments to coordinate with on-site dimensions or conditions until directed to do so by the Owner and the Architect. Coordinate wayfinding sign production to allow the Owner and the Architect a minimum of fifteen (15) working days to make any changes or adjustments to wayfinding sign sizes and/or layouts that may be required to coordinate with the on-site dimensions or conditions.
- E. Before the start of any fabrication, at locations where wayfinding signs are to be mounted to light poles or other existing structures, verify that the light poles or other existing structures can properly, securely, and safely support the wayfinding signs. Notify the Owner, the Architect, and the Construction Manager in writing of any locations where wayfinding signs have been scheduled to be mounted to a light pole or other existing structure and the light pole or other existing structure cannot safely, securely, and properly accept the wayfinding signs or the wayfinding signs cannot be properly mounted for any reason. Work on the wayfinding signs shall not proceed until such conditions have been resolved, corrected, or adjusted by the Owner and the Architect, and the Contractor receives written notice.
- F. Prior to the start of any fabrication, verify the site conditions at each wayfinding sign location as required to confirm that the design intent for the wayfinding sign bases, frames, structures, foundations, and/or any other wayfinding sign mounting materials, components, and methods are compatible with the site conditions at each location. Provide the Owner, the Architect, and the Construction Manager with written notice of any locations where the design intent for wayfinding sign bases, frames, structures, foundations, and/or any other wayfinding sign mounting materials, components, and methods are not compatible with the site conditions. Work on the wayfinding signs shall not proceed until such conditions are resolved, corrected, or adjusted by the Owner and the Architect, and the Contractor receives written notice.

- G. Installation of the wayfinding signs must not damage any structural elements in ceilings, floors, walls, bulkheads, or columns in any way.
  - 1. The Contractor shall not drill into or otherwise penetrate any floor, ceiling, wall, bulkhead, column, or any other building surface without having first received written approval from the Owner to do so.
  - 2. Coordinate the mounting methods for each of the wayfinding signs with the building structure, and any other site conditions, at each of the wayfinding sign locations.
  - 3. Prior to the start of fabrication, review all the wayfinding sign locations and all the wayfinding sign mounting methods with the Owner, the Architect, and the Construction Manager.
  - 4. Prior to the start of fabrication, provide the Owner, the Architect, and the Construction Manager with written documentation describing how drilling into or otherwise penetrating any floor, ceiling, wall, bulkhead, column, or any other building surface can be safely done so that it will not create any sort of hazard, damage, or defect now or in the future.
  
- H. Verify on-site conditions at the start of the Work and during the course of the Work as needed to understand the site conditions during all phases of the Project and to confirm the wayfinding signage will be coordinated with any changes to the site conditions that may occur during the course of the Work.
  
- I. Include on-site dimensions in the Shop Drawings.
  
- J. Obtain measurements at the site and not from the Drawings for correct lengths of wayfinding signs, wayfinding sign supports, and other items that must be accurately fitted. Design (subject to review by the Owner and the Architect), engineer, fabricate, and install wayfinding sign supports, structures, and attachments. The Contractor will be responsible for the engineering, accuracy of measurements, and the precise fitting and assembly of the finished products. Written dimensions on Drawings shall have precedence over scaled dimensions. Modifications to written dimensions shall be made only when accepted in writing by the Owner and the Architect.

#### **1.08 COORDINATION**

- A. Before the start of the Work, verify the overall Project Schedule with the Owner, the Architect, and the Construction Manager. Coordinate the wayfinding signage fabrication, installation, and all other Work for the wayfinding signs with the overall Project Schedule. The Contractor shall be responsible for receiving all deliveries related to the wayfinding signs. Provide the Owner, the Architect, and the Construction Manager with complete schedule information for the fabrication, installation, and all other Work for the wayfinding signs. At a minimum, indicate dates for the review of on-site conditions, Mock-up and Prototype Sign review dates, start and end dates for fabrication, and start and end dates for installation.
  
- B. Coordinate with the Owner and the Construction Manager to schedule site visits, deliveries, installations, and any other on-site activities. Coordinate and schedule all Work so that campus operations and activities are disrupted as little as possible.
  
- C. Coordinate sizes of finished wayfinding sign assemblies with access limitations to final locations.

- D. Coordinate the Work of this Section as required to obtain proper installation of all items. The Contractor shall acquaint himself with all other projects or work that may be taking place on the JJC Campus that may affect, or may be affected by, the Work under this Section.
- E. Coordinate with other trades involved in the fabrication and installation of the wayfinding signs and those trades that may be affected by the Work.
- F. Coordinate with the appropriate manufacturers, suppliers, and installers so that all the wayfinding signs, wayfinding sign components, and wayfinding graphics can be properly assembled, will function correctly, and can be properly, safely, and securely installed.
- G. Structural Elements
  - 1. Provide all structural elements, bracing, blocking, hardware, concrete, foundations, and/or miscellaneous steel that may be needed to adequately, securely, safely, and properly support the wayfinding signs.
  - 2. Access proper installation locations and/or points of attachment as required, including any locations concealed by existing landscaping, existing pavement, existing building surfaces, or other existing materials.
- H. Coordinate the size, placement, and mounting of all wayfinding sign components to reflect the design intent shown in the Drawings. Verify that the wayfinding signs will be able to be installed as required, fit correctly, function properly, and will be able to be mounted properly, safely, and securely. Before fabrication, inform the Owner, the Architect, and the Construction Manager in writing of any changes or conditions that will have an effect on the appearance or design intent of the wayfinding signs, prevent proper execution of the Work, or endanger its permanency. Do not proceed with fabrication until such conditions are resolved, corrected, or adjusted by the Owner and the Architect, and the Contractor receives written notice.

#### **1.09 DELIVERY AND PROTECTION**

- A. Before delivery, each wayfinding sign shall be tagged or labeled with its identifying number and installation location as shown on the Drawings. Labeling shall be both on the sign and the protective covering. Labels with identifying numbers or installation location numbers shall be removed without damage to the sign at the time of installation.
- B. Finished surfaces shall be adequately protected during all phases of the Work to prevent damage by scratches, stains, discoloration, or other causes. Any damage to any wayfinding signs incurred during fabrication, handling, shipment, storage, and installation shall be remedied by the Contractor at his own expense.
- C. Arrange with the Owner and the Construction Manager for adequate, secure, locked storage for wayfinding signs and sign materials that have been delivered to the site but not yet installed. If adequate storage space is not available, coordinate the delivery of the wayfinding signs and sign materials to coincide with installation. The Contractor must be present to receive all deliveries.
- D. Wherever installed wayfinding signs are exposed to possible damage from ongoing construction, install protective barriers or other measures to protect the wayfinding signs from becoming dirty, dusty, or damaged.

## 1.10 QUALITY ASSURANCE

- A. The Contractor shall be an experienced, full service, sign company, with skilled workmen, especially trained in this type of Work.
- B. The Contractor shall supervise and coordinate all subcontractors to insure that the wayfinding signs shall be supplied per the Owner's and the Architect's requirements.
- C. A minimum of 50% of the Work shall be performed by the Contractor's own forces.
- D. The Contractor must be a firm with at least ten (10) years of successful experience with projects of similar scope. The Contractor shall be a full service sign company. The Contractor shall have in-house sign fabrication and installation capabilities, including the ability to manufacture and install internally illuminated signs. The Contractor shall be a member of a recognized professional sign organization including, but not limited to, SEG D or ISA.

## 1.11 WARRANTY/CORRECTION OF WORK

- A. Warranties listed below are in addition to and not a limitation of, any other rights the Owner may have under the Contract Documents.
- B. Provide the Owner with documentation of the manufacturers' warranties for all products supplied as part of the Work.
- C. All fastening devices and adhesives must be durable, suitable for long-term use in exposed exterior locations, and vandal-resistant and tamper-resistant. All fastening devices must be corrosion-resistant. All fastening devices and adhesives must be warranted as to permanency of performance.
- D. Warrant to the Owner in writing that the materials and equipment furnished under the Contract will be high quality and new unless otherwise required or permitted in writing by the Owner, that the Work will conform with the requirements of the Contract Documents, and the Work will be free of defects not inherent in the quality required or permitted in writing by the Owner. Work not conforming to these requirements, including unauthorized substitutions, may be considered defective. If required by the Owner, furnish satisfactory evidence as to the kind and quality of materials and equipment.
- E. Warrant to the Owner in writing that the all the paint finishes, silkscreen inks, and the protective clearcoat finishes furnished under the Contract will be high quality, free of defects in appearance or application, will not develop excessive fading or excessive non-uniformity of color, and will not yellow, crack, peel, or otherwise fail as a result of defects in materials or workmanship, for a period of at least seven (7) years beginning at the time of Final Payment/Acceptance by the Owner.
- F. Warrant to the Owner in writing that the embedded graphic panels furnished under the Contract will not crack, craze, warp, delaminate, chip, peel, develop excessive fading, develop excessive non uniformity of color, or otherwise fail as a result of defects in materials or workmanship for a period of at least ten (10) years beginning at the time of Final Payment/Acceptance by the Owner.

- G. Warrant to the Owner in writing that the Work furnished under the Contract will be high quality and free from any defects in workmanship, fabrication, and installation for a period of at least five (5) years beginning at the time of Final Payment/Acceptance by the Owner.
- H. If, within five (5) years after Final Payment/Acceptance of the Work, any of the Work is found to be defective or not in accordance with the requirements of the Contract Documents, the Work shall be corrected promptly after receipt of written notice from the Owner to do so, unless the Contractor has previously received written acceptance of such condition. Correction of Work shall be completed at no additional cost to the Owner. This obligation shall survive termination of the Contract. All Work shall be done at a time convenient to the Owner.
- I. Remove from the site and properly dispose of, at no additional cost to the Owner, portions of the Work which are defective or not in accordance with the requirements of the Contract Documents and are neither corrected by the Contractor nor accepted by the Owner.
- J. If the Contractor does not proceed with the correction of Work after a reasonable time fixed by written notice from the Owner, the Owner may have the Work corrected. The cost for the corrections shall be deducted from the payments due the Contractor. If payments due the Contractor are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner. If there are no payments due the Contractor, the Contractor shall pay the entire amount of the cost of the corrections to the Owner.

#### **1.12 OPERATIONS AND MAINTENANCE DATA AND SAFETY INSPECTION INSTRUCTIONS**

- A. Provide complete and detailed operations and maintenance data and safety inspection instructions to the Owner and the Architect. Provide detailed information on the proper operations, maintenance, and safety inspection procedures for all wayfinding sign types installed under this Contract. Provide four (4) printed copies and one (1) digital copy of the operations and maintenance data and safety inspection instructions to the Owner. Provide one (1) printed copy and (1) digital copy of the operations and maintenance data and safety inspection instructions to the Architect. Digital copies shall be provided on CD or on a USB flash drive as .pdf files.
- B. Provide three (3), bound, hard copies and three (3) digital copies of all system operation and maintenance manuals for the LED dynamic displays. Digital copies shall be provided on CD or on a USB flash drive as .pdf files.

#### **1.13 ATTIC STOCK**

- A. Provide to the Owner in the manufacturer's original packaging and store where directed by the Owner the following as Attic Stock:
  - 1. One (1) quart of touch up paint for each type of paint and in each of the colors specified.
  - 2. One (1) quart of silkscreen ink in each of the colors used.
  - 3. Three (3) replacement transformers/power supplies for each type used.
  - 4. Four (4) of each type of tool required for removal of each type of vandal resistant fastener used.

#### **1.14 SAMPLES AND SUBMITTALS**

- A. Within ten (10) working days after the Project has been awarded and prior to making any submissions, provide the Owner, the Architect, and the Construction Manager with a

Submittal Schedule. At a minimum, list all Submittals, their content, the planned submission dates, and the review period for each Submittal. Include anticipated dates for review of the Mock-Ups and Prototype Signs. All Samples and Submittals shall be made with such promptness as to cause no delay in the Work. Schedule the Work so that the Owner and the Architect will each have a minimum of fifteen (15) working days to review each Submittal, excluding shipping time, and without overlap.

- B. If additional review of any Submittal is required after two (2) resubmittals, the Owner shall be compensated by the Contractor for the time and for any fees and expenses incurred for the work needed to complete all additional reviews required until the Submittal is accepted.
- C. The Owner and the Architect will review all the Samples and Submittals for conformance with the design intent of the Project. Any Work undertaken prior to receipt of written acceptance of the Samples and Submittals, shall, based upon the acceptance or rejection of the Samples and Submittals, be corrected at the Contractor's expense. All notifications of acceptance or rejection will be in writing. All materials furnished for the Project must be as represented by the accepted Samples and Submittals.
- D. Product Data
  - 1. Submit manufacturer's technical data, preparation, installation, storage, handling, and maintenance instructions for all the materials, components, and applied finishes used for the Work. At a minimum, provide Product Data for the following:
    - a. All metal materials and components.
    - b. All acrylic, polycarbonate, and PVC materials and components.
    - c. All concrete.
    - d. All mounting components and hardware.
    - e. Standard and custom extrusions.
    - f. Each manufactured component used within fabricated assemblies.
    - g. Shop applied painting, and priming systems.
    - h. Field applied painting and priming systems.
    - i. All UV resistant clearcoat finishes.
    - j. Adhesives and sealants.
    - k. All vinyl graphic sheeting, films, and overlaminates.
    - l. Silkscreen and inkjet printing inks.
    - m. Electrical components.
    - n. All lighting components, lamps, and fixtures.
    - o. All embedded graphic panels.
    - p. All LED dynamic displays and related components.
    - q. Installation accessory materials for each type and condition as applicable.
- E. Shop Drawings
  - 1. Fabricate only from Shop Drawings that have been reviewed and accepted by the Owner and the Architect. Prior to submission, verify submittal and resubmittal formats, quantities, and procedures with the Owner and the Construction Manager.
  - 2. Prior to the start of fabrication, submit complete and detailed Shop Drawings for all wayfinding sign types and all wayfinding sign components. Shop Drawings shall show all wayfinding sign fabrication and mounting methods, materials, dimensions, and details. Show all the final wayfinding sign locations in the Shop Drawings.
  - 3. All wayfinding sign structural and mounting components shall be professionally engineered. Submit Shop Drawings that have been signed and sealed by a qualified professional structural engineer, licensed in the State of Illinois, for all wayfinding sign

structures, wayfinding sign supports, wayfinding sign posts, wayfinding sign frames, wayfinding sign cabinets, wayfinding sign mounting methods, wayfinding sign mounting components and hardware, adhesives, embeds, fabricated wayfinding sign bases, and all other wayfinding sign structural and mounting components.

4. All the concrete bases, concrete foundations, concrete footings, concrete mow pads, and all the other concrete work for the wayfinding signs shall be professionally engineered. Submit Shop Drawings for the concrete bases, concrete foundations, concrete footings, concrete mow pads, and all the other concrete work for the wayfinding signs that have been signed and sealed by a qualified professional structural engineer, licensed in the State of Illinois. The concrete formulation shall be approved by the qualified licensed professional structural engineer and shall be included in the signed and sealed Shop Drawing submittals.
  5. Include engineering calculations as part of the Shop Drawing submittals. Submit engineering calculations that have been prepared, signed, and sealed by a qualified professional structural engineer, licensed in the State of Illinois, for all wayfinding sign structures, wayfinding sign supports, wayfinding sign posts, wayfinding sign frames, wayfinding sign cabinets, wayfinding sign mounting methods, wayfinding sign mounting components and hardware, adhesives, fabricated wayfinding sign bases, concrete bases, concrete foundations, concrete footings, concrete mow pads, and all other concrete work for the wayfinding signs, and all other wayfinding sign structural and mounting components. Submit engineering calculations that have been prepared, signed, and sealed by a qualified professional structural engineer, licensed in the State of Illinois, showing that all wayfinding sign types can safely and properly withstand all applicable wind loads and ice loads.
  6. Shop Drawing submittals shall be returned with the appropriate submittal review stamps indicating the submittal's status. Shop Drawings will be checked only for conformance with the design intent of the Project. Acceptance of the Shop Drawings shall not be construed as permitting any departure from the Contract requirements; as relieving the Contractor of the responsibility for any error in details, dimensions, or otherwise; or as permitting any departure from additional details, bulletins, and instructions previously furnished by the Owner. Also, Shop Drawing acceptance shall not relieve the Contractor from responsibility for any errors that may exist in the items submitted.
  7. Shop Drawings and engineering calculations that have been signed and sealed by a qualified professional structural engineer are provided for information only. The Owner shall not review any engineering information for accuracy or completeness. Acceptance of the Shop Drawings and engineering calculations that have been signed and sealed by a qualified professional structural engineer shall not be construed as any sort of approval of the drawings or calculations; as permitting any departure from the Contract requirements; as permitting any departure from additional details, bulletins, and instructions previously furnished by the Owner; or as relieving the Contractor of the responsibility for any errors that may exist in the items submitted.
  8. If the submitted Shop Drawings show variations from the Contract requirements, make specific reference to such variations on the Drawings and in the letter of transmittal with a request for acceptance. Any variations shall be made only when accepted in writing by the Owner and the Architect.
- F. Reproduction of any portion of the Drawings provided for use in Submittals or Shop Drawings is unacceptable. Such Submittals will be returned unreviewed.
- G. Submit Samples of all the materials, finishes, fixtures, fittings, and hardware.

- H. Color Samples
  - 1. Submit Samples of all the colors used in the Project.
  - 2. Show each of the colors in each of the reproduction methods, and on each of the substrates used.
  - 3. Show all the colors with the correct finishes. Show the paint colors and silkscreen colors with the correct clearcoat.
  - 4. Show each of the metal finishes.
  
- I. Submit Samples of all the fonts, alphabets, symbols, arrows, and logos used on the wayfinding signs for review and acceptance by the Owner and the Architect prior to preparing any wayfinding sign face layouts.
  
- J. The wayfinding signs have custom letter spacing and custom word spacing. Submit several examples of the custom letter spacing and the custom word spacing to the Owner and the Architect for review and acceptance prior to preparing any sign face layouts.
  
- K. Sign Face Layouts
  - 1. Provide dimensioned sign face layouts for review by the Owner and the Architect for all wayfinding sign types and all wayfinding sign locations.
  - 2. The sign face layouts shall show all the final wayfinding sign messages and graphics.
  - 3. Camera ready digital art for all logos and symbols shall be supplied by the Architect.
  - 4. Prepare final artwork as required and provide all required file preparation.
  - 5. Sign face layouts shall be shown in a scale accepted by the Owner and the Architect prior to submission of the layouts.
  - 6. All sign face layouts shall be printed on bright white paper and shall show actual typographic, symbol, and logo layouts in color on white backgrounds with all fonts, colors, dimensions, and the perimeters of the sign faces indicated. Provide the location number for each wayfinding sign face on the sign face layouts.
  - 7. Layouts shall be reviewed for content, accuracy of alignments, typeface, type weight, letter spacing, word spacing, color breaks, symbol quality, quality of reproduction, and conformance with the design intent.
  - 8. Incorporate minor revisions and changes made to the graphics and/or messages shown on the layouts at no additional charge to the Owner.
  - 9. All Work shall be expected to conform to the accuracy, quality, and acuity of the accepted layouts.
  
- L. Proofs and Samples for Embedded Graphic Panels
  - 1. Provide color layout proofs, color match samples, and graphic test sections for the embedded graphic panels for review by the Owner and the Architect prior to producing any of the final panels.
  - 2. Prepare final artwork as required and provide all required file preparation.
  - 3. Submit color layout proofs for each panel. The color layout proofs shall be printed on paper and shall show the complete sign face for each location at actual size. The perimeter of the sign face shall be indicated. Provide the location number for each sign face in the layout proofs. The layout proofs will be reviewed by the Owner and the Architect for layout, content, accuracy of alignments, typeface, type weight, symbol quality, and conformance with the design intent.
  - 4. Submit color match samples. The color match samples shall be produced using the actual embedded graphic panel material and shall show all the actual finishes and each of the colors to be used on the final panels. The color match samples shall be reviewed by the Owner and the Architect for color match, overall quality of reproduction, and conformance

with the design intent. Accepted colors shall serve as the standards for all the embedded graphic panels produced.

5. Submit typical graphic test sections for each sign type that uses the embedded graphic panels. The test sections shall be a minimum of twelve inches by twelve inches (12" x 12"). The test sections shall be produced using the actual embedded graphic panel material and will be reviewed by the Owner and the Architect. The test sections shall be produced using final art, reproduced at actual size. Test sections shall be produced for each panel thickness specified and shall show the correct panel finish. Provide test sections in sufficient quantity and/or sufficient size to show all the colors used in the graphics, examples of all the types of graphics, and examples of all the fonts shown on the panels. The edge details on the test samples shall match the edge details that will be used for the final panels. Include on the test sections examples of the final mounting hardware to be used. The graphic test sections shall be reviewed by the Owner and the Architect for overall quality, accuracy, quality of reproduction, and conformance with the design intent.
  6. Incorporate color adjustments and minor revisions or changes requested by the Owner or the Architect to the color layout proofs, color match samples, or the graphic test sections at no additional charge to the Owner.
  7. Accepted color layout proofs, color match samples, and graphic test sections shall be retained by the Architect and shall serve as the standards for the all the embedded graphic panels produced for installation.
- M. Proofs of Building Map Graphics and Other Insert Graphics
1. Provide full size color proofs of all building map graphics, building directory insert graphics, and all other insert graphics.
  2. The proofs shall show the final building map graphics, building directory insert graphics, and all other insert graphics.
  3. Camera ready digital art for the building map graphics, building directory insert graphics, and other insert graphics shall be supplied by the Architect.
  4. Prepare final artwork as required and provide all required file preparation.
  5. The proofs shall be printed on the actual substrates, using the actual printing methods to be used on the final graphics.
  6. Proofs shall be reviewed for content, accuracy of alignments, typeface, type weight, letter spacing, word spacing, color breaks, color match, symbol quality, quality of reproduction, and conformance with the design intent.
  7. Incorporate color adjustments and minor revisions and changes made to the graphics and/or messages shown on the proofs at no additional charge to the Owner.
  8. All Work shall be expected to conform to the accuracy, quality, and acuity of the accepted proofs.
- N. For each Sample and Submittal, provide the quantity required by the Construction Manager plus one copy or example that will be retained by the Architect. Samples and Submittals shall be of adequate size showing quality, type, color range, finish, texture, etc. The Contractor shall be responsible for the timely delivery of the Samples and Submittals in excellent condition, freight prepaid.

#### **1.15 MOCK-UPS AND PROTOTYPE SIGNS**

- A. Prior to commencing fabrication of the final wayfinding signs, provide the following for review as Prototype Signs:
1. One (1) complete example of each of the following exterior wayfinding sign types:
    - a. Ext 5.3
    - b. Ext 5.5

- c. Ext 6.1.2
  - d. Ext 9.1
  - e. Ext 10.1
  - 2. One (1) complete example of each of the following interior wayfinding sign types:
    - a. Int 1.2
    - b. Int 2.1
    - c. Int 2.2
    - d. Int 2.3
    - e. Int 3.4
    - f. Int 4.2
    - g. Int 5.1.1
    - h. Int 5.1.2
    - i. Int 5.2
    - j. Int 5.3
    - k. Int 7.1
  - 3. Two (2) complete examples of each of the following interior wayfinding sign types:
    - a. Int 6.1
    - b. Int 6.2
    - c. Int 6.2.1
    - d. Int 6.3
    - e. Int 6.4
    - f. Int 6.4.1
    - g. Int 6.4.2
    - h. Int 6.4.3
    - i. Int 6.5
    - j. Int 7.2
    - k. Int 7.3
- B. Prior to commencing fabrication of the final wayfinding signs, provide the following Mock-ups for review by the Owner and the Architect:
- 1. Provide a minimum of three (3) full size examples of sign type Ext 11.2 building identification letters. The example letters shall be produced using the actual materials, finishes, and fabrication that shall appear on the final sign type Ext 11.2 letters. Include the actual mounting hardware for the letters.
  - 2. Provide one (1) full size, functional section of the sign type Ext 11.3 internally illuminated sign box. Include the building identification letter symbol and examples of the sign face typography. The mock-up shall demonstrate the internal illumination, the graphics fabrication, and the overall sign box construction. Include face, corner, and edge details. Show how the interior of the sign box is accessed. The mock-up should be produced using the actual, final sign materials and components and should show the actual colors and finishes. The mock-up shall represent the overall fabrication and approach that shall be used on all internally illuminated signs. Provide a power supply and standard plug-in cord so the internal illumination can be reviewed.
- C. The Mock-Ups and Prototype Signs shall be full size and shall utilize the same materials, finishes, and fabrication and installation methods that are intended for the final wayfinding signs. The Prototype Signs shall include all the components of the final wayfinding signs, including all mounting hardware, materials, and methods.
- D. The Mock-ups and Prototype Signs shall be reviewed on a date and at a location acceptable to the Owner and the Architect. Provide the Owner and the Architect with a minimum of thirty (30) days notice prior to review of any of the Mock-Ups and Prototype Signs.

- E. The Mock-Ups and Prototype Signs shall be reviewed by the Owner and the Architect. The Contractor shall prepare and submit to the Owner and the Architect a written summary of the review documenting any adjustments or changes made to the Mock-Ups and Prototype Signs during the review. Any necessary adjustments or changes will be made prior to commencing fabrication of the final wayfinding signs. Replace unsatisfactory items as directed. When accepted, the Mock-Ups and Prototype Signs shall serve as the standard for materials, workmanship, and appearance throughout the Project. Accepted Prototype Signs shall be fully installed in their proper locations except for one (1) example of each of the following wayfinding sign types which will be retained by the Architect as control samples:
1. Int 6.1
  2. Int 6.2
  3. Int 6.2.1
  4. Int 6.3
  5. Int 6.4
  6. Int 6.4.1
  7. Int 6.4.2
  8. Int 6.4.3
  9. Int 6.5
  10. Int 7.2
  11. Int 7.3
- F. The Contractor shall be responsible for the proper packaging, crating, and shipping of the Mock-Ups and Prototype Signs. The Contractor shall be responsible for setting up and dismantling the Mock-Ups and Prototypes at the review location. The Contractor shall be responsible for any costs that may be required to ship the Mock-Ups and Prototype Signs to and from the review location and for any costs that may be required to ship the Prototype Signs retained as control samples to Chicago, Illinois.

## **PART 2 – PRODUCTS**

### **2.01 MATERIALS AND MANUFACTURERS**

- A. Source Quality Control
1. Obtain primary materials from a single manufacturer.
  2. Provide secondary materials only as recommended by the manufacturer of the primary materials.
  3. Do not change source or brands of materials during fabrication.
- B. Aluminum
1. Provide high-grade material of alloy and temper as best suited to furnish the finish and strength required. Provide all aluminum extrusions, plate, sheet, castings, hardware, and all other aluminum wayfinding sign components as required.
  2. Finish aluminum wayfinding sign components as indicated in the Drawings. Brushed aluminum shall have a Number 4 brushed finish, horizontal grain. Brushed aluminum shall have a non-glare protective clearcoat. The non-glare protective clearcoat shall conform to all applicable ADA guidelines and requirements.
- C. Steel

1. Provide high-grade material of alloy and temper as best suited to furnish the strength and finish required. Provide all steel sheets, plates, channels, shapes, and all other steel sign components as required.
2. Sheet Steel – cold rolled into channels and other shapes, galvanized, primed. Thickness of material shall be determined by the Contractor to provide the finish and strength required.
3. Structural Steel – When structural steel is required, all steel supports, shapes, pipes, plates, hardware, etc. shall comply with all applicable standards.
4. Stainless Steel
  - a. Type 316
  - b. Brushed stainless steel shall have a Number 4 brushed finish, horizontal grain.
5. Provide high grade stainless steel for etched symbol panels of alloy and temper as best suited to furnish the performance required for production of durable, high quality etched graphics while also providing high strength, corrosion resistance, and vandal resistance
6. Galvanized Steel
  - a. Galvanize steel using the hot-dip process.
  - b. Meet all the requirements of all applicable ASTM, AASHTO, and IDOT specifications, standards, guidelines, requirements, performance criteria, rules, and regulations for zinc (hot-dip galvanized) coatings on iron and steel sign supports, hardware, and components.

D. Acrylic Sheet

1. Provide scratch-resistant and UV-resistant clear, clear non-glare, and translucent acrylic sheets as required.
2. Acrylic sheeting shall be Plexiglas Acrylic Sheet products manufactured by Altuglas International/Arkema Inc., 2000 Market Street, Philadelphia, PA 19103, Telephone: 1-800-523-1532, or equivalent acrylic sheet products accepted by the Owner and the Architect.
3. Unless indicated in the Drawings, the thickness of the material shall be determined by the Contractor, subject to review by the Owner and the Architect.

E. Polycarbonate Sheet

1. Provide scratch-resistant and UV-resistant clear, clear non-glare, and translucent polycarbonate sheets as required.
2. Polycarbonate sheeting shall be Lexan Sheet products manufactured by Sabic Innovative Plastics, One Plastics Avenue, Pittsfield, MA 01201, Telephone: 413-448-7110, or equivalent polycarbonate sheet products accepted by the Owner and the Architect.
3. Unless indicated in the Drawings, the thickness of the material shall be determined by the Contractor, subject to review by the Owner and the Architect.

F. Black and White Acrylic Sheeting for Internally Illuminated Signs

1. Provide acrylic sheeting designed to appear black during the day and white at night with back lighting as required.
2. Black and white acrylic sheeting shall be Casocryl Black 'n White, distributed by E & T Plastics Mfg. Co., Inc., Telephone: 800-221-9555, or an equivalent black and white acrylic sheeting product accepted by the Owner and the Architect.
3. Unless indicated in the Drawings, the thickness of the material shall be determined by the Contractor, subject to review by the Owner and the Architect.

G. Sintra Panels and Sheets

1. Provide Sintra panels and sheets as required.
2. Sintra panels and sheets shall be expanded PVC sheet as manufactured by Alcan Composites USA, Inc., or an equivalent expanded PVC sheet accepted by the Owner and the Architect.

3. Unless indicated in the Drawings, the thickness of the material shall be determined by the Contractor, subject to review by the Owner and the Architect.
- H. Threaded Fasteners
1. ASTM A 300 Series Grade A non-magnetic stainless steel.
  2. Vandal and tamper resistant screws – Stainless steel, vandal-resistant, and tamper-resistant drilled spanner drive screws or equal as accepted by the Owner and the Architect.
  3. All hardware for exterior applications, or for applications where signs will be exposed to high moisture conditions, shall be of non-magnetic stainless steel, or of other non-magnetic corrosion-resistant material accepted by the Owner and the Architect.
- I. Mounting Hardware
1. Provide all required mounting hardware and materials to properly, safely, and securely mount the wayfinding signs and the wayfinding sign components. All hardware shall be high quality, long lasting, vandal-resistant, tamper-resistant, corrosion-resistant, and suitable for long-term use in exposed exterior installations.
- J. Strap Mounting Components for Signs
1. Provide durable, heavy duty, high strength, exterior-grade, stainless steel straps, stainless steel clips, stainless steel brackets, and all other required components and hardware needed to safely, securely, and permanently strap mount sign assemblies to existing columns, existing light poles, and other similar existing structures.
  2. Size the mounting straps and brackets as required to safely, securely, and properly support the signs to be strap mounted.
- K. Silkscreen
1. Photographic screen. Hand cut screens will not be accepted. Screens shall be fine mesh fabric as required.
  2. Silkscreen inks shall be exterior grade, UV resistant, water resistant, and compatible with the specified substrates and finishes. Do not blend materials from different manufacturers. Silkscreen inks shall have a non-glare finish. The non-glare finish shall conform to all applicable ADA guidelines and requirements.
  3. Acceptable silkscreen ink manufacturers include:
    - a. Naz Dar
    - b. Akzo Coatings
    - c. Spraylat Corp.
    - d. 3M – for use with 3M graphic films and sheeting
- L. Opaque, Retroreflective, and Translucent Vinyl Graphic Films and Sheeting
1. Carefully prepare all substrates to receive vinyl graphic films and sheeting per the appropriate manufacturer's specifications.
  2. Follow all of the applicable manufacturer's guidelines and specifications for production, cutting, and application of all opaque, retroreflective, and translucent vinyl materials.
  3. Maintain all product warranties.
  4. All graphics produced using opaque, retroreflective, and translucent graphic films and sheeting must be durable and long lasting. Use production and application techniques as recommended by the film and sheeting manufacturer to produce high quality graphics with the longest possible life expectancy.
  5. Reflective graphic sheeting shall be 3M High Intensity Prismatic Sheeting, Series 3930, or an equivalent reflective graphic sheeting accepted by the Owner and the Architect.

6. Opaque graphic films shall be 3M Scotchcal Electrocut Film, Series 7725, or an equivalent opaque graphic film accepted by the Owner and the Architect.
7. Translucent graphic films shall be 3M Scotchcal Translucent Graphic Films, Series 3630 or Series 3632GPS, as indicated in the Drawings, or equivalent translucent graphic films accepted by the Owner and the Architect.

M. Paint

1. Paint shall be Matthews Acrylic Polyurethane, manufactured by Matthews Paint Company, with a non-glare finish. The non-glare finish shall conform to all applicable ADA guidelines and requirements. An equivalent, exterior grade, acrylic polyurethane sign paint may be used if it is accepted by the Owner and the Architect.
2. All painted finishes shall have a UV inhibiting protective clearcoat with a non-glare finish. Brushed aluminum shall have an appropriately formulated protective clearcoat with a non-glare finish. The non-glare finishes shall conform to all applicable ADA guidelines and requirements. The UV inhibiting protective clearcoat and the color coat paint beneath shall be manufactured by the same company. The UV inhibiting protective clearcoat and the brushed aluminum clearcoat shall be formulated to be compatible with the finishes, colors, and substrates underneath.

N. Colors/Finishes

1. Colors for the wayfinding signs shall be as indicated in the Drawings.
2. The surfaces of the wayfinding signs, wayfinding sign components, letters, symbols, logos, structural components, and elements shall be finished to match the colors as described in the Drawings.
3. Colors are described in the Drawings for application using paint, ink, vinyl, or other coatings and materials specified. Submit appropriate Samples for review and acceptance in each of the colors, in each of the finishes/coatings, and on each of the substrates used in the Project.
4. Indicate all color breaks and descriptions of all the materials and methods used to produce each of the colors in the Shop Drawings.

O. Lettering Style

1. The Contractor shall provide all the required fonts as indicated in the Drawings. If required, the Contractor shall purchase the required fonts. The Owner and the Architect shall not provide any fonts.
2. Letter weight (Medium, Bold, etc.) and style (Roman, Italic) shall match the Drawings. Legends shall include letters, numbers, arrows, symbols, logos, graphics, borders, characters, typography, and other applications shown for wayfinding sign panels. Enlargement or reduction of artwork applications shall be done photographically or digitally. Hand cut masks or templates will not be accepted.
3. Wayfinding sign lettering shall be executed in such a manner that all the edges and corners of the letterforms and symbols are true, clean, and photographically precise. All letterforms and symbols must be accurately reproduced.

P. Symbols

1. Symbols, logos, and logotypes shown in the Drawings are for reference only.
2. Symbols, logos, and logotypes shall match the standards as shown in the Drawings. Original digital art for all symbols, logos, and logotypes shall be supplied by the Architect.
3. Symbols and logos shall be executed in such a manner that all edges and corners are true, clean, and photographically precise. All symbols and logos must be accurately reproduced.

Q. Adhesives

1. Provide high quality, high-strength, high-performance, permanent adhesives as required. Adhesives shall be suitable for the components being adhered and the locations where the components are to be mounted or installed.
2. Adhesives shall not react with surface finishes.
3. All adhesives, sealants, and sealant primers installed in any building interior (defined as inside of the weatherproofing system and applied on site) shall meet the requirements identified in LEED for New Construction 2009, Version 3, Credit EQ 4.1: Adhesives and Sealants.
  - a. Submit certification demonstrating that all adhesives, sealants, and sealant primers installed shall meet the testing and product requirements of the Southern Coast Air Quality District (SCAQMD) Rule 1168 and volatile organic compound (VOC) limits listed in LEED for New Construction 2009, Version 3, Credit EQ 4.1: Adhesives and Sealants.
  - b. Submit certification demonstrating that all aerosol adhesives installed in any building interior shall meet the testing and product requirements of the Green Seal Standard GS-36.

R. Wayfinding Signs with Raised Characters, Raised Graphics, and Braille

1. Wayfinding signs with raised characters, raised graphics, and Braille shall conform to all ADA specifications, guidelines, regulations, and requirements indicated for materials, thickness, finish, colors, designs, shapes, sizes, and details of construction. Installed dimensional tolerances shall be plus/minus 1/16 of an inch.
2. The wayfinding signs with raised characters, raised graphics, and Braille shall be produced using 1/8-inch (1/8") thick etched zinc. The zinc material shall be of alloy and temper as best suited to furnish the finish and strength required to conform to all ADA specifications, guidelines, regulations, and requirements.
3. The faces of the wayfinding signs with raised characters, raised graphics, and Braille shall have painted backgrounds and contrasting copy and graphics.
4. Raised characters and raised graphics shall be relieved 1/32-inch (1/32") minimum from the plaque first surface by the manufacturer's photomechanical stratification process. Precisely formed, uniformly indicated for size, style, spacing, content, position, and color. Flat faces of raised characters and graphics shall be evenly and opaquely colored using silkscreen tipping with enamel ink suitable for printing on the sign face material and finish.
5. Braille shall conform to all relevant ADA specifications, guidelines, regulations and requirements indicated for size, style, shape, spacing, content, position, and color. Braille shall be Grade 2. The Contractor shall translate the sign copy to appear in Braille.
6. Materials and finishes for all wayfinding signs with raised characters, raised graphics, and Braille shall be suitable for use in either interior or exterior locations. The signs shall have an appropriately formulated, protective, UV-resistant, non-glare clearcoat. The non-glare clearcoat shall conform to all applicable ADA guidelines and requirements. Sign finishes shall conform to all ADA specifications, guidelines, regulations, and requirements for gloss level. There shall be no sharp or rough edges on the signs.
7. Wayfinding signs with raised characters, raised graphics, and Braille shall be safely, permanently, properly, and securely mounted to interior and exterior walls without visible fasteners. Each sign shall have a 1/8-inch (1/8") thick acrylic backer panel. Each backer panel shall be safely, properly, permanently, and securely attached to the wall with appropriate, exterior grade mechanical fasteners and anchors. Sign panels are then safely, properly, permanently, and securely mounted to the backer panels with appropriate, high-strength, exterior grade double coated 3M VHB tape and silicone (silastic) adhesive.

S. LED Sign Lighting Components

1. Provide all required LED sign lighting fixtures and all related components.
2. Acceptable LED sign lighting component manufacturers:
  - a. GE Lumination, 1975 Noble Rd., Building 338E, East Cleveland, OH 44112, Telephone: (216) 266-4800, www.lumination.com.
  - b. SloanLED, 5725 Olivas Park Dr., Ventura, CA, 93003, Telephone: (888) 747-4533, www.sloanled.com.
  - c. Osram Sylvania, 100 Endicott St., Danvers, MA 01923, Telephone: (978) 777-1900, www.sylvania.com.
  - d. Other manufacturers accepted by the Owner and the Architect.
3. Determine the type of fixture, the quantity, layout, and spacing of the lighting units required to provide bright, even illumination of the wayfinding sign faces. The lighting units and all related components shall all be designed for use in signage and shall all be suitable for use in exterior locations.
4. Provide LED fixtures that produce a mid-range/warm white color temperature.
5. Provide all the required components, hardware, ballasts, transformers/power supplies, conduit, and wiring necessary.

T. Concrete Bases, Concrete Foundations, Concrete Footings, and Concrete Mow Pads

1. Provide all the concrete bases, concrete foundations, concrete footings, concrete mow pads, and all the other concrete work for the wayfinding signs as required.
2. All the concrete bases, concrete foundations, concrete footings, concrete mow pads, and all the other concrete work for the wayfinding signs shall be professionally engineered by the Contractor to properly, safely, securely, and permanently support the signs. Formulate the concrete for the concrete bases, concrete foundations, concrete footings, concrete mow pads, and for all the other concrete work for the wayfinding signs as required to provide the necessary strength and durability. Coordinate the concrete bases, concrete foundations, concrete footings, concrete mow pads, and all the other concrete work for the wayfinding signs with the breakaway capabilities of the signs as required to provide proper breakaway function.
3. Provide all the necessary site inspection, testing, excavation, materials, professional engineering, and installation required for concrete bases, concrete foundations, concrete footings, concrete mow pads, and all the other concrete work for the wayfinding signs.
4. Coordinate the concrete bases, concrete foundations, concrete footings, concrete mow pads, and all the other concrete work for the wayfinding signs with the construction and mounting of the signs, the sign structures, and the site conditions at each installation location.
5. The concrete bases, concrete foundations, concrete footings, concrete mow pads, and all other concrete work for the wayfinding signs shall meet all applicable MUTCD, ASTM, AASHTO, FHWA, and IDOT codes, specifications, standards, guidelines, requirements, performance criteria, rules, and regulations.

U. Breakaway Capability for Exterior Vehicular Wayfinding Signs

1. Provide sign posts, sign framing, sign mounting, and sign bases for the exterior vehicular wayfinding signs that provide proper roadway sign breakaway function as required.
2. Provide sign bases mounting components appropriate for the sign posts and sign framing, the conditions at the installation locations, and to provide proper roadway sign breakaway function. Indicate all breakaway components in the Shop Drawings.
3. The sign posts, sign framing, sign mounting, and sign bases for the exterior roadway wayfinding signs shall provide proper roadway sign breakaway capability. The breakaway capability shall meet all applicable MUTCD, ASTM, AASHTO, FHWA, and IDOT codes, specifications, standards, guidelines, requirements, performance criteria, rules, and regulations.

4. Provide all the plates, bolts, and all other hardware and components that are required to safely, securely, and properly mount the vehicular wayfinding signs while also providing the proper roadway sign breakaway capability. Coordinate the overall wayfinding sign fabrication with the breakaway components to maintain proper roadway sign breakaway function.
5. The breakaway components shall be finished to provide optimum corrosion resistance, performance, and longevity. The finishes provided for breakaway components shall not interfere with the component's breakaway capability or function in any way.
6. The breakaway components and all other related wayfinding sign mounting hardware and components shall comply with all applicable MUTCD, ASTM, AASHTO, FHWA, and IDOT codes, specifications, standards, guidelines, requirements, performance criteria, rules, and regulations.

V. Flexible Face Signs

1. Provide internally illuminated signs with flexible faces, as indicated in the Drawings.
2. The flexible faces shall be a heavy-duty, UV-resistant material, specifically designed for long-term use in exterior locations. The flexible face material shall be translucent.
3. Graphics shall be accurately and evenly printed on the flexible face material, at high resolution, using UV-resistant inks. Provide a UV-resistant clearcoat if recommended by the fabric and ink manufacturers.
4. The graphics shall be evenly colored and evenly translucent across the entire face of the sign. There shall be no thin spots, hot spots, or banding on the sign face.
5. Provide a durable, heavy-duty aluminum bleed type frame to securely hold the flexible face material in position. The bleed frame shall securely hold the flexible face at the correct tension. The flexible face shall be completely smooth and even. There shall be no sagging, stretching, gathers, wrinkles, or any other imperfections in the sign face.

W. LED Dynamic Displays

1. LED dynamic displays shall have a pixel pitch of 20 mm and shall be full matrix, full color, RGB, LED displays suitable for exterior use.
2. Acceptable LED dynamic display manufacturers:
  - a. Daktronics, 201 Daktronics Dr., Brookings, SD 57006, Telephone: (800) 325-8766, [www.daktronics.com](http://www.daktronics.com)
  - b. Watchfire Signs, 1015 Maple St., Danville, IL 61832, Telephone: (800) 637-2645, [www.watchfiresigns.com](http://www.watchfiresigns.com)
  - c. AdsLED, Inc., 9111 Jollyville Rd., Suite 107, Austin, TX 78759, Telephone: (800) 455-1955, [www.adsled.com](http://www.adsled.com).
  - d. Other manufacturers accepted by the Owner and the Architect.
3. Provide all required LED dynamic display components, electrical wiring and data cables, and control system software and hardware.
4. Route all required power and data cabling underground to the sign locations on the main campus from on-campus control locations. The control locations are to be determined. Coordinate source locations and cable routing with the Owner and the Construction Manager. Coordinate the connection of off-campus campus signs to existing power and data lines.
5. Provide all required cables, conduit, site inspection, excavation, and site restoration. No cables or conduit shall be visible.
6. Training and Support
  - a. Provide JJC staff with a minimum of eight (8) hours of training on the use of the sign controller software (two 4-hour sessions) at a location on the JJC main campus. Provide an additional two (2) hours of follow-up instruction six months after the completion of the installation.

- b. Provide JJC staff with a minimum of four (4) hours of training on the maintenance of the LED dynamic displays and related components and systems at a location on the JJC main campus.
  - c. Provide phone technical support six (6) days a week (minimum Monday through Friday, 8:00 AM to 6:00 PM) for a period of one (1) year after the displays are fully operational. If phone support cannot solve the problem or issue, provide a service call per agreement within the time frame specified.
7. Provide all testing and setup required to make the displays fully operational.
  8. LED dynamic displays shall be double or single sided, as indicated in the Drawings. The displays shall be full matrix, full color, RGB, LED displays with a pixel pitch capable of clearly and legibly reproducing text with a cap height of approximately six inches (6") and greater. The displays shall have the capability to display different fonts, various letter sizes, graphic images, as well as punctuation, symbols, logos, and other graphics.
  9. All the dynamic sign components shall be contained within the dynamic sign housing. There shall be no cabinets or boxes in addition to the sign housing for sign control circuitry, modems, etc.
  10. LED dynamic displays shall be able to produce a number of message effects, alone or in combination, including static messages, flashing messages, scrolling messages and multi-page messages.
  11. LED dynamic displays shall be visible in all lighting conditions and have a minimum 50 degrees vertical and 120 degrees horizontal readability angles.
  12. LED dynamic displays shall be capable of functioning outdoors and in all weather conditions. The displays and the display housings shall be engineered for exterior use. The displays and the display housings shall be durable, weather-resistant, and vandal-resistant. Coordinate the LED dynamic display unit fabrication and the overall sign fabrication to allow for proper maintenance and servicing of both the display unit and the overall sign.
  13. LED Dynamic Display Control Software and Hardware
    - a. Provide all the controller software, hardware, signal converters, and electrical and data components required for the on-campus and off-campus LED dynamic displays.
    - b. The LED dynamic display control software shall be Microsoft Windows compatible and shall operate on standard desktop and laptop computers. Provide one complete desktop workstation with the sign controller software installed. Confirm with the Owner which version of Windows shall be installed on the desktop workstation.
    - c. Provide three (3) CD's or USB flash drives with complete back up copies of the all the control software for the LED Dynamic Displays.
    - d. The system shall have the capability to control all displays individually from multiple locations. The exact number and location of the control centers shall be determined by the Owner.
    - e. At a minimum, the variable message control software shall have the following capabilities:
      - i. Control and communicate with displays on-campus and off-campus.
      - ii. Control of a large quantity of displays both individually and in groups.
      - iii. Editing and control of display content without disruption of the sign operation.
      - iv. Previewing of the display on the desktop.
      - v. Import and manage images and graphics.
      - vi. Scheduling of when messages are displayed.
      - vii. Spell check feature.
      - viii. Text filter to prevent selected words from being displayed.
      - ix. Management of content and display effects to meet local zoning requirements.
    - f. Communication with the on-campus signs shall be via serial fiber optic network. Communication with the off-campus sign shall be via an existing phone line connection.

- g. Provide software and hardware required for diagnostics, notification, and monitoring of functional and operational status of individual sign components on both remote and local computers.
14. LED Dynamic Display Service and Maintenance
- a. Provide two (2) years of service and maintenance as part of the base bid.
  - c. Replace defective materials and repair faulty workmanship within forty-eight (48) hours of discovery at no cost to the Owner.
  - c. Every three (3) months, provide the following:
    - i. Clean the LED dynamic displays and the associated signs.
    - ii. Clean the interior of the signs and the interiors of the LED dynamic displays.
    - iii. Clean the ventilation fans and vents and check their operation.
    - iv. Provide adjustments and balancing of the brightness of the modules.
    - v. Check the control systems and control software for errors.
    - vi. Provide software updates.
    - vii. Update and check all controllers and CPUs.
  - d. If during a period of two (2) years from the date of Final Payment/Acceptance, any component is out of service for more than one (1) week, due to unavailability of parts or service within that period, supply and install an identical new component. If an identical new component is not available, substitute an equivalent component, but only if the equivalent component has been accepted by the Owner and the Architect. Provide replacement/service/maintenance parts shipped via overnight delivery for quick restoration of sign function.
  - e. Contractor/Manufacturer shall provide spare parts for the LED dynamic displays. Provide the Owner and the Architect with a suggested list of spare parts for review and acceptance. The Owner and the Architect shall determine if the spare parts list is sufficient and shall add and delete as deemed necessary. Spare parts must be listed by manufacturer's name, model number, use, quantity, and individual price per item. No Lump Sum pricing of spare parts shall be allowed. The inclusion of spare parts in this list does not limit the Contractor from his responsibilities in respect to any warranties or the warranty period. Any spare parts delivered to the Owner, which shall replace components that fail during the warranty period, shall be replaced at no additional charge to the Owner during the warranty period.
  - f. Supply and store on site where directed by the Owner, the following replacement parts:
    - i. Two (2) replacement modules.
    - ii. Two (2) power cables.
    - iii. Two (2) of each type of other typical service/replacement parts.
  - g. Identify the cost of the replacement parts on the Bid Form.

X. Embedded Graphic Panels

- 1. The embedded graphic panels shall be Rhino Graphic Panels as manufactured by Aardvark Graphic Solutions, Inc., 1400 South Lipan Street, Denver, Colorado 80223, telephone: 1-877-221-3360, fax: 303-282-6698, www.rhinopanel.com, or an equivalent embedded graphic panel accepted by the Owner and the Architect.
- 2. The embedded graphic panels shall be extremely durable, vandal-resistant, graffiti-resistant, weatherproof, UV-resistant, impact resistant, and suitable for long-term exterior use in exposed locations.
- 3. The graphics shall be completely embedded within the panel.
- 4. The graphics shall be reproduced using UV-resistant inks that will not fade for a minimum of ten (10) years when installed in exposed exterior locations.
- 5. The panels shall be vandal-resistant. The surface of the panels shall be scratch-resistant. The panels shall allow for on-site removal of graffiti and repair of scratches, scuffs, gouges, and burns using simple tools and readily available materials.
- 6. The panels shall have a non-glare finish.

7. The panels shall be installed without frames or applied sealants along the panel edges. The panel edges must be inherently permanently sealed and weather-resistant. Panels shall not delaminate or allow water or dirt to become trapped behind the face layer at any time.
8. Unless indicated in the Drawings, the thicknesses of embedded graphic panels shall be determined by the Contractor, subject to review by the Owner and the Architect. Panels shall be completely flat with smooth, finished edges. Corners of the panels shall be ninety degrees – do not bevel the panel edges.

Y. Paper Holders

1. Paper holders shall be slide in sheet holders that are fabricated from solid aluminum.
1. The paper holders shall have flush, plastic end caps. The end cap color shall match the color of the paper holder.
2. The paper holders shall be finished so that there are no rough or sharp edges, no sharp corners, burrs, or other imperfections. Roll pins, or any other hardware, shall not be visible on the faces of the paper holders.
3. Prior to the start of fabrication, provide a sample paper holder, with end caps, for review and acceptance by the Owner and the Architect.

## 2.02 FABRICATION – GENERAL

- A. All wayfinding signs shall be structurally sound and carefully fabricated using high quality materials and quality craftsmanship. All wayfinding signs and sign components shall be carefully, properly, securely, and safely assembled and attached. All wayfinding signs and sign components shall be carefully, securely, properly, and safely mounted and installed.
- B. Provide all the required labor, site inspection, testing, professional engineering, parts, hardware, materials, and components required to completely, properly, safely, and securely fabricate and install all the wayfinding signs, all the wayfinding sign structures, and all the wayfinding sign components. Provide all the internal and external framing and components required to safely, securely, and properly support the wayfinding signs, the sign faces, and any other components that are mounted to or in the wayfinding signs.
- C. All wayfinding signs shall be fabricated to have a neat and clean appearance. All wayfinding signs shall be rigid and structurally sound. Wayfinding sign materials, design, sizes, and thickness shall be as shown on Drawings and herein specified. Methods of fabrication, assembly, erection, mounting, and installation, however, unless otherwise specifically stated, shall be at the discretion of the Contractor, whose responsibility it shall be to guarantee satisfactory performance as herein specified.
- D. All wayfinding sign structural and mounting components including, but not limited to, wayfinding sign frames, wayfinding sign structures, wayfinding sign cabinets, wayfinding sign hardware, wayfinding sign mounting systems, and wayfinding sign foundations and footings shall be professionally engineered.
- E. Size the wayfinding sign frames and wayfinding sign face panels to allow for expansion and contraction of the wayfinding signs and wayfinding sign components without causing the signs to become damaged or the sign faces to become warped, cracked, or otherwise damaged.
- F. Provide mounting hardware and mounting components that are compatible with the conditions at each of the installation locations. The sign mounting information in the Drawings is schematic. The Contractor shall be responsible for determining the type of mounting hardware and components required to safely, securely, and properly mount the wayfinding signs.

1. Prior to fabrication, verify the existing conditions at each wayfinding sign mounting location on site.
  2. The Contractor shall not drill into or otherwise penetrate any existing floor, ceiling, wall, bulkhead, or column at JJC without having first received written approval from the Owner to do so.
  3. Determine the type of mounting hardware and components required for each condition and each location. Provide all required professional structural engineering.
  4. Indicate the mounting hardware and components in the Shop Drawings.
  5. All mounting hardware and mounting components shall be properly sized, compatible with the wayfinding signs and the structures supporting the wayfinding signs, and shall provide the proper strength and durability.
  6. Use materials and hardware that will provide long service life and will properly, securely, and safely support the wayfinding signs. All mounting components and mounting hardware shall be heavy-duty, durable, high quality, long lasting, vandal-resistant, tamper-resistant, and corrosion-resistant components. All mounting hardware and mounting components shall be suitable for long-term use in exposed exterior locations.
  7. Provide all the necessary straps, clips, brackets, and all other hardware and components required to safely, securely, and properly mount the wayfinding signs.
  8. There are to be no sharp projections or edges on any of the wayfinding signs, any of the wayfinding sign bases, any of the wayfinding sign mounting hardware, and any of the wayfinding sign mounting components.
  9. All wayfinding sign bases, mounting hardware, and mounting components shall meet all applicable MUTCD, ASTM, AASHTO, FHWA, and IDOT codes, specifications, standards, guidelines, requirements, rules, regulations, and performance criteria.
- G. All artwork shall be enlarged photographically or digitally to match the sizes and placement as shown in the Drawings. Provide all file preparation required. Assemble legends, prepare digital files, and prepare camera ready art. The Contractor shall be responsible for creating all required artwork and layouts. The Contractor shall be responsible and for preparing all digital art files for production. Copies of all the digital art files prepared by the Contractor for the Project shall be supplied to the Owner upon completion of the Work and before Final Payment/Acceptance. Provide each of the files both as native files in the software used to create the files and as .pdf files.
- H. All wayfinding signs, wayfinding sign cabinets, and wayfinding sign structures shall be rain-tight. Service covers, doors, access panels, and other openings shall not be located on the tops of exterior wayfinding signs, wayfinding sign cabinets, or wayfinding sign structures. Provide concealed, vandal-resistant access to allow servicing of components housed within the wayfinding signs, wayfinding sign cabinets, or wayfinding sign structures and/or to allow structural connections, electrical connections, or access to mounting hardware. The finishes of the removable wayfinding sign surfaces shall match the surrounding areas, unless otherwise noted. Service covers, doors, access panels, and other openings in the wayfinding signs, wayfinding sign cabinets, or wayfinding sign structures shall be weather-tight and gasketed to prevent water, dust, or dirt from entering the wayfinding signs, wayfinding sign cabinets, or wayfinding sign structures. Provide hold open devices for service covers, doors, access panels, and other openings in the wayfinding signs that are adequate for safety and ease of maintenance. Hold open devices shall not be released accidentally, or by the action of the wind, and shall not interfere with the display when the service covers, doors, access panels, and other openings in the wayfinding signs are closed. Service covers, doors, access panels, and other openings in the wayfinding signs, wayfinding sign cabinets, or wayfinding sign

structures shall be held securely closed with concealed tamper-resistant and vandal-resistant hardware or locks. Indicate the exact hardware to be used in the Shop Drawings.

- I. All wayfinding sign faces and edges shall be flat, rigid, smooth, and free of defects and "oil-canning." Edges and corners shall be precise, smooth, true, and free of saw marks, chips, burrs, discoloration, irregularities, and any other defects. Corners shall be eased. Faces and returns shall be flat, precise, smooth, true, and free of saw marks, chips, burrs, discoloration, irregularities, and any other defects. There shall be no sharp or rough edges, no sharp or rough corners, and no sharp or rough projections anywhere on the wayfinding signs. Seams shall have hairline contact. Wayfinding sign faces shall be of sufficient thickness that hardware or materials mounted to or attached to the backs of the sign faces shall not distort or discolor the fronts of the sign faces or otherwise detract from the smoothness and the appearance of the sign faces in any way. Joins shall be undetectable and completely and permanently sealed. There shall be no visible hardware on any sign faces unless indicated in the Drawings. Any visible hardware shall be finished to match the surrounding material.
- J. Provide ventilation of the wayfinding signs and wayfinding sign structures as required to prevent the wayfinding signs and wayfinding sign structures from becoming damaged from heat, to prevent internal components from overheating, and to prevent sign faces from warping or otherwise becoming damaged from heat. Position vents to be as unobtrusive as possible while maintaining their functionality, effectiveness, and a proper weather seal. Baffle and screen all vent openings to stop insects from entering the wayfinding signs and wayfinding sign structures. Fabricate the vents so that the interiors of the wayfinding signs and wayfinding sign structures are not visible through the vents and so that there are no light leaks. Show the vents in the Shop Drawings.
- K. Place weep holes to allow water accumulated through condensation to drain. Place weep holes so as to not interfere with the display of the graphics and to be as unobtrusive as possible. Indicate the location of weep holes in the Shop Drawings. Provide screening over all weep holes to prevent animals and insects from entering the wayfinding signs and wayfinding sign structures. Fabricate the weep holes so that the interiors of the wayfinding signs and wayfinding sign structures are not visible through the holes and so that there are no light leaks. Wayfinding signs and wayfinding sign structures with light leaks will not be accepted.
- L. Provide back-up panels for all wayfinding signs mounted to glass. The back-up panels shall be properly, safely, and securely mounted to the side of the glass opposite the wayfinding sign to conceal the back of the wayfinding sign panel and the mounting adhesive. The back-up panel shall be painted acrylic, sized to match the wayfinding sign panel exactly. Align the back-up panel with the wayfinding sign panel. The face and returns of the back-up panel shall be painted to match the overall color and finish used for the wayfinding sign panel.
- M. Internally illuminated graphics shall be completely, evenly, and adequately lit without thin spots, shadows, halos, or hot spots. Opaque sign faces and components must be completely and evenly opaque without thin spots, shadows, halos, or light leaks.
- N. Provide wayfinding signs and wayfinding sign assemblies that are designed, tested, and installed to withstand positive and negative wind loads and ice loads appropriate for the install locations, and approved by a qualified professional licensed structural engineer. Furnish to the Owner and the Architect engineering calculations to show that maximum stresses and deflections of wayfinding signage and wayfinding signage support systems do not exceed specified and required performance requirements under full design loading. Calculations shall

be prepared, signed, and sealed by a qualified professional structural engineer, licensed in the State of Illinois.

- O. Provide all the concrete bases, concrete foundations, concrete footings, concrete mow pads, and all the other concrete work for the signs as required. Provide all the site inspection, professional engineering, excavation, and materials required to properly install the concrete bases, concrete foundations, concrete footings, concrete mow pads, and all the other concrete work for the signs. Concrete bases, concrete foundations, concrete footings, and concrete mow pads shall safely, securely, and properly support the signs and all related sign components and structures. Visible concrete surfaces shall be smooth and neatly troweled and finished. The concrete sign bases, concrete foundations, concrete footings, concrete mow pads, and all the other concrete work for the signs shall meet all applicable MUTCD, ASTM, AASHTO, FHWA, and IDOT codes, specifications, standards, guidelines, requirements, rules, regulations, and performance criteria.
- P. All concrete must be properly mixed for adequate compressive strength as shown in the Shop Drawings. Do not pour concrete into excavations filled with rainwater. Do not add extra water to the concrete mix.
- Q. Reinforcing steel rebars or mats, steel framing, and other sign structural components shall be placed according to the Shop Drawings to give adequate support, strength, and stiffness.
- R. Anchor and mounting bolt sizes and types shall be as shown in the Shop Drawings. All anchor and mounting bolts shall be suitable for use in exterior locations. All anchor and mounting bolts shall be properly tightened and equipped with nut-locking devices when structures are assembled and installed.
- S. Insofar as practicable, fitting and assembly of the Work shall be done in the shop. Work that cannot be permanently shop-assembled shall be completely assembled, marked, and disassembled before shipment, to insure proper assembly in the field. Unless otherwise noted, field joints in the face of wayfinding signs will not be allowed. The Contractor shall coordinate the sizes of finished assemblies with access limitations to the final locations.
- T. Steel and aluminum shall be well formed to shape and size. Fabrication shall leave clean, true lines and surfaces. Carefully match exposed Work to produce continuity of line and design. Joints and seams, unless otherwise shown or specified, shall be accurately fitted and rigidly secured with hairline contact. The Contractor shall be responsible for structural details, thickness of metal, and details of assembly and support to give adequate strength and stiffness.
- U. Welding shall be in accordance with the appropriate recommendations of the American Welding Society, and shall be done with electrodes and methods recommended by the manufacturers of the alloys being welded. Type, size, and spacing of welds shall be as shown in the Shop Drawings. Welds behind finished surfaces shall be so done as to minimize distortion and discoloration on the finished side. Weld spatter and welding oxides on finished surfaces shall be removed by descaling or grinding. Unless otherwise shown or specified, all weld beads on exposed polished surfaces shall be ground and polished to match and blend with the finish on adjacent parent metal. Remove paint from existing steel members at contact areas and on surfaces within two inches (2") of field welds, in order to attach signage steel supports. At attachments to exposed steel, grind exposed field welded joints smooth and restore to match factory finishes.

V. Welding shall be executed by experienced, certified operators with proper equipment and training and who have been qualified previously by tests as prescribed in the American Welding Society's "Standard Qualification Procedure" to perform the work required.

W. Maintain correct message order. Correct message order shall be shown in the Shop Drawings.

## **2.03 FABRICATION – ADDITIONAL REQUIREMENTS**

### **A. Non-illuminated Wayfinding Signs and Sign Cabinets**

1. Non-illuminated wayfinding signs and sign cabinets shall be fabricated from the materials indicated in the Drawings. Thicknesses of the materials shall be adequate for the size of sign or sign cabinet. Finishes shall be as shown in the Drawings.
2. The non-illuminated wayfinding signs and sign cabinets shall be fabricated so that their corners shall be smooth, free from defects, burrs, and discoloration. Faces, edges, and returns shall be flat, smooth, and free from irregularities and defects. Joins shall be undetectable and completely and permanently sealed.
3. Faces of non-illuminated wayfinding signs and sign cabinets shall be opaque and shall be fabricated using the materials and finishes indicated in the Drawings. The faces shall be flat, smooth, and free from irregularities and defects. Graphics shall be properly applied using the materials and finishes indicated in the Drawings. Sign faces and sign cabinets shall be safely, securely, and properly mounted. There shall be no visible hardware on the sign faces.
4. Provide vent and drain holes in the non-illuminated wayfinding sign cabinets as required. Position vent and drain holes to be as unobtrusive as possible without interfering with their functionality or effectiveness. Baffle and screen all vent and drain holes to stop insects from entering the non-illuminated wayfinding sign cabinets. Fabricate the drain holes and vents so that the interiors of the non-illuminated wayfinding sign cabinets are not visible through the holes or vents. Show vent and drain holes in the Shop Drawings.
5. Provide durable, corrosion resistant framing for the non-illuminated wayfinding signs and sign cabinets as required for the signs and sign cabinets to be rigid and structurally sound and to safely, securely, and properly support the signs, the sign cabinets, and any other components mounted to the non-illuminated wayfinding signs. Provide all framing as required for the wayfinding signs and sign cabinets to be safely, securely, and properly mounted.
6. Non-illuminated wayfinding signs and sign cabinets shall be safely, securely and permanently mounted. Provide all the appropriate mounting components, hardware, materials, and methods required. There shall be no visible hardware.

### **B. Internally Illuminated Wayfinding Sign Cabinets**

1. Internally illuminated wayfinding sign cabinets shall be fabricated from aluminum. Thickness of the aluminum shall be adequate for the size of sign cabinet. Finishes shall be as shown in the Drawings.
2. The internal illumination shall be provided by concealed LEDs. The Contractor shall determine the LED type, quantity, and spacing required to provide even and adequate illumination of the entire sign face and to provide the best color reproduction. The LED fixtures and components shall be designed specifically for use in signage and shall be suitable for exterior applications. The internal illumination shall be controlled by concealed photocell or by remote timer. Coordinate with the Owner to determine the type of control required for each illuminated sign.
3. The internally illuminated wayfinding sign cabinets shall be fabricated so that their corners shall be smooth, free from defects, burrs, and discoloration. Faces, edges, and returns

shall be flat, smooth, and free from irregularities and defects. Joins shall be undetectable and completely and permanently sealed.

4. The inside surfaces of the internally illuminated wayfinding sign cabinets shall be finished with a reflective white coating, specifically formulated for use in internally illuminated sign cabinets, such as Spraylat Star-Brite White, or an equivalent reflective coating accepted by the Owner and the Architect. The wayfinding sign cabinets shall provide bright, even lighting across the entire sign face.
5. Sign faces for internally illuminated wayfinding sign cabinets shall be translucent with translucent graphics or opaque with translucent graphics, as indicated in the Drawings. The faces shall be flat, smooth, and free from irregularities and defects. Translucent graphics shall be evenly colored and adequately and evenly lit across the entire sign face. Sign faces shall be safely, securely, and properly mounted to the sign cabinets. There shall be no visible hardware on the sign faces.
6. Provide vent and drain holes in the internally illuminated wayfinding sign cabinets as required. Position vent and drain holes to be as unobtrusive as possible without interfering with their functionality or effectiveness. Baffle and screen all vent and drain holes to stop insects from entering the internally illuminated wayfinding sign cabinets and to prevent light leaks. Fabricate the drain holes and vents so that the interiors of the internally illuminated wayfinding sign cabinets are not visible through the holes or vents and so that no light is visible through the holes or vents. Show vent and drain holes in the Shop Drawings.
7. Provide durable, corrosion resistant internal framing for the internally illuminated wayfinding sign cabinets as required for the cabinets to be rigid and structurally sound and to safely, securely, and properly support the sign faces and any other components mounted to the internally illuminated wayfinding sign cabinets. Provide all internal framing as required for the cabinets to be safely, securely, and properly mounted.
8. Internally illuminated wayfinding sign cabinets shall be safely, securely and permanently mounted. Provide all the appropriate mounting components, hardware, materials, and methods required. There shall be no visible hardware, raceways, or conduit.

C. Push Through Acrylic Letters and Graphics

1. Push through letters graphics shall be translucent black and white acrylic. The faces of the letters and graphics shall be appear black during the day and white at night, when backlit. Opaque areas and finishes must be completely and evenly opaque without thin spots, shadows, halos, and light leaks
2. The faces of the push through letters and graphics shall be exactly flush with the surrounding sign face.
3. On wayfinding sign faces with push through letters and graphics, the openings in the sign faces for the letters and graphics shall be precisely cut and free of saw marks and any other defects. Letters and graphics shall fit the cut outs precisely. Return edges of the cut outs shall be finished to match the surrounding sign face. There shall be no sharp or rough edges, no sharp or rough corners, and no sharp or rough projections on the cut-outs for the push through letters and graphics.
4. The acrylic letterforms, symbols, and logos shall be produced so that their proportions and details are accurately and precisely reproduced. Corners shall be precise, smooth, and free of burrs, discoloration, irregularities, and any other defects. Faces, edges, and returns shall be flat, smooth, and free of any irregularities and defects. There shall be no sharp or rough edges, no sharp or rough corners, and no sharp or rough projections on the push through acrylic letters and graphics.
5. Push through letters and graphics shall be safely, properly, and securely mounted to the back of the wayfinding sign face without gaps and light leaks. Mounting hardware or materials for the push through letters and graphics must not affect the appearance of the letters and graphics and the wayfinding sign face in any way.

6. Opaque letter components not part of continuous sign face, for example, the center of the letter "O", shall be permanently bonded to the acrylic in the correct position and even with the surface of the surrounding sign face.

D. Non-illuminated Fabricated Metal Letters

1. Non-illuminated fabricated metal letters shall be the materials and sizes as indicated on the Drawings, with heliarc welded construction. Thickness of the metal shall be adequate for the size of letter.
2. The letterforms shall be fabricated so that their proportions and details are accurately and precisely reproduced. Corners and edges shall be precise, smooth, true, and free of any saw marks, chips, burrs, discoloration, irregularities, and any other defects. Faces and returns shall be flat, precise, smooth, true, and free of saw marks, chips, burrs, discoloration, irregularities, and any other defects. There shall be no sharp or rough edges, no sharp or rough corners, and no sharp or rough projections on the fabricated metal letters. Joins are to be undetectable and completely and permanently sealed.
3. Non-illuminated fabricated metal letters shall be properly, safely, securely, and permanently pin mounted. Properly, safely, securely, and permanently pin mount the fabricated letters flush to the mounting surface, as indicated in the Drawings, using appropriate hardware, materials, and methods.

E. Non-illuminated Cut Out Letters

1. Non-illuminated cut out letters shall be water jet cut from the materials indicated in the Drawings. Thickness of the letters shall be as shown in the Drawings.
2. The letterforms shall be cut out so that their proportions and details are accurately and precisely reproduced. Corners shall be precise, true, smooth, and free of chips, burrs, discoloration, irregularities, and any other defects. Faces, edges, and returns shall be flat, smooth, true, and free of saw marks, chips, burrs, discoloration, irregularities, and any other defects. The letters shall not have any rough edges or sharp edges, there shall be no sharp or rough corners, and there shall be no sharp or rough projections.
3. Non-illuminated cut out letters shall be properly, safely, securely, and permanently pin mounted. There shall be no visible hardware. The mounting must be vandal resistant and suitable for exposed exterior locations. Properly, safely, securely, and permanently pin mount cut out letters flush to the mounting surface using appropriate exterior grade hardware, materials, and methods.

F. Opaque, Retroreflective, and Translucent Vinyl Graphic Films and Sheeting

1. Opaque, retroreflective, and translucent vinyl graphic films and sheeting shall be handled and applied in accordance with the material manufacturer's instructions.
2. Graphics produced using opaque, retroreflective, and translucent vinyl graphic films and sheeting shall be produced in accordance with the material manufacturer's instructions.
3. Cut-out letterforms, symbols, and logos shall be cut out so that their proportions and details are accurately and precisely reproduced. Vinyl graphic films and sheeting applied to sign faces and panels shall be neatly trimmed and properly placed and aligned. The edges of the vinyl graphic films and sheeting shall be smooth and free of any tears, irregularities, and defects.
4. Properly clean and prepare substrates to receive opaque, retroreflective, and translucent vinyl graphic films and sheeting.
5. All opaque, retroreflective, and translucent vinyl graphic films and sheeting shall be carefully installed so that the films and sheeting are properly and completely adhered. There shall be no loose edges or gaps between the applied materials and the substrates to which there are adhered. All vinyl graphic films and sheeting shall be installed so that they are completely smooth, flat, even, and without any surface irregularities, wrinkles, air

bubbles, and free from any trapped dirt or dust. Seal the trimmed edges of the graphic films and sheeting per the appropriate manufacturer's specifications.

6. For signs with retroreflective sheeting, apply the sheeting to the sign panels so that the pattern in the sheeting is oriented in the same direction on all the wayfinding signs.
  
- G. Embedded graphic panels shall be completely flat, rigid, smooth, and free from any defects and surface irregularities. Edges and corners shall be smooth, true, and free of saw marks, discoloration, sharp edges, rough edges, chips, burrs, or any other defects. There shall be no sharp or rough edges, no sharp or rough corners, and no sharp or rough projections on the embedded graphic panels. The panels shall be precisely cut to size and accurately fitted to the sign supports. The panels shall be safely, securely, and properly mounted using vandal and tamper resistant hardware and/or materials suitable for long-term use in exposed exterior locations. Mounting hardware and materials mounted to the backs of panels must not affect the appearance of the graphics or the faces of the panels in any way. No hardware shall be visible on the faces of the panels. Any visible hardware shall be finished to match the surrounding material.
  
- H. Map Graphics and Insert Graphics
  1. Provide building map graphics, building directory insert graphics, and other insert graphics as indicated in the Drawings.
  2. Building map graphics, directory insert graphics, and other insert graphics shall be printed at high resolution on durable, long lasting, readily available, UV-resistant substrates using UV-resistant inks, or other durable, UV-resistant reproduction methods accepted by the Owner and the Architect. Indicate the materials and reproduction methods to be used on the Shop Drawings for review and acceptance by the Owner and the Architect.
  3. Digital art for the building map graphics, building directory insert graphics, and other insert graphics shall be provided the Architect.
  4. Provide non-glare, scratch-resistant, and vandal-resistant insert windows and holders for the building map graphics, building directory insert graphics, and other insert graphics as indicated in the Drawings. Insert windows and holders must securely hold the building map graphics, building directory insert graphics, and other insert graphics in position, protect the graphics from vandalism, and also allow the graphics to be easily changed and updated by authorized personnel. The insert windows and holders shall not have visible hardware. Provide detailed information on the fabrication of the insert windows and holders in the Shop Drawings for review and acceptance by the Owner and the Architect.

## **2.04 PAINTING AND FINISHING**

- A. All wayfinding sign finishes, coatings, and graphic reproduction methods shall be durable, exterior grade, UV-resistant, and vandal-resistant. Provide Product Data and information on all the finishes, coatings, and graphic reproduction methods to be used for review by the Owner and the Architect.
  
- B. Finish all wayfinding sign components to protect them from corrosion with materials and finishes as appropriate for the component, its location, its function, and its visibility. Indicate all finishes to be used in the Shop Drawings.
  
- C. Thoroughly clean and properly prepare all surfaces to be finished in strict accordance with the finish manufacturer's instructions. Follow the paint manufacturer's instructions to properly clean and prepare surfaces to be painted. Remove all dust, dirt, foreign materials, waxes, grease,

silicones, and other contaminants from the surfaces to be finished following the manufacturer's recommendations.

- D. Properly protect all surfaces and materials from rust and corrosion at all times.
- E. Protective paint systems shall be applied in the shop as much as possible. All primer shall be applied in strict accordance with the manufacturer's published technical bulletins, procedures, and instructions. Steel material shall be shop coated with at least one (1) coat of primer. Surfaces that will be inaccessible for painting after assembly or installation shall be given at least two (2) shop coats of primer. All primers shall be appropriate for the substrate and the finish, as recommended by the manufacturer.
- F. Provisions should be made for proper handling at all stages of the priming, painting, shipping, storing, erection, and installation for protection of primed and/or painted surfaces from damage or soiling.
- G. The paint topcoat shall be applied in strict accordance with the manufacturer's published technical bulletins, procedures, and instructions.
  - 1. Paint shall be applied in the shop as much as possible.
  - 2. Apply paint topcoat over compatible primer. Apply paint topcoat to achieve the minimum dry film thickness recommended by the manufacturer to provide a high quality, durable finish and optimum corrosion protection.
- H. Apply a non-glare protective clearcoat containing UV inhibitors to external painted and silkscreen printed wayfinding sign surfaces. Brushed aluminum shall also receive a non-glare protective clearcoat containing UV inhibitors. The non-glare protective clearcoat shall conform to all applicable ADA guidelines and requirements. The clearcoat and the color topcoat shall be manufactured by the same company. Formulate the clearcoat to be compatible with the finishes and materials to which it will be applied and to provide maximum protection and longevity. Apply the clearcoat to achieve the minimum dry film thickness recommended by the manufacturer to provide a high quality, durable finish and to insure protection of the finish, color, and substrate underneath
- I. Paint surfaces and materials as required to provide proper performance, protection, function, appearance, durability, and longevity. Do not paint surfaces and materials where the paint would in any way interfere with proper assembly, installation, mounting, performance, function, appearance, durability, and longevity. Inform the Owner and the Architect of any conditions where the wayfinding sign finishes would interfere with the function or longevity of the wayfinding signs.
- J. After being brushed, ground and polished, or where subject to severe forming operations, stainless steel surfaces shall be cleaned of all extraneous material, thoroughly rinsed with clean water and dried. Lubricants used in fabrication shall be removed before work leaves the shop.
- K. Field touch up primer after assembly and installation (all interior surfaces including bolted connections nuts, and washers, etc.) one coat.
- L. Protection of metals against galvanic action shall be provided wherever dissimilar metals are in contact. All metals except galvanized steel and stainless steel, which will be in contact with concrete, mortar, plaster, or other masonry, shall also be protected. Indicate the type of protection to be provided in the Shop Drawings.

## 2.05 ELECTRICAL FABRICATION

- A. Provide all electrical engineering as required for all wayfinding signs and wayfinding sign components that require electric power. Coordinate wayfinding sign electrical requirements with the appropriate building and site electrical systems.
- B. All electrical and lighting components provided for the wayfinding signs shall be UL listed. Electrical requirements shown in the Drawings are schematic. Identify in the Shop Drawings the materials and wiring to be used. Internally illuminated signs shall be internally wired with concealed leads for connection to the electric power service.
- C. All wayfinding signs and wayfinding sign components that are connected to the electric power service shall conform to all applicable electric codes including, but not limited to, the City of Joliet Electrical Code and the National Electrical Code. All wayfinding signs and wayfinding sign components that are connected to the electric power service shall also comply with all applicable UL, ANSI, and NEC safety and performance standards and all other applicable safety and performance standards. Wayfinding signs that are connected to the electric power service shall be UL approved. The Contractor's name shall not appear on the visible surfaces of the signs except as required by code.
- D. All the light fixtures and related components used with the wayfinding signs shall comply with all applicable codes including, but not limited to, the City of Joliet Electrical Code and the National Electrical Code. All the light fixtures and related components used with the wayfinding signs shall comply with all applicable UL, ANSI, and NEC safety and performance standards and all other applicable safety and performance standards. Illuminated wayfinding signs shall be UL approved.
- E. Furnish and install all the junction boxes, electrical and data conduit, wire, and cable required. The Contractor shall make the final electrical and data connections for the wayfinding signs.
- F. For on-campus wayfinding signs requiring power, or power and data, route and install the power and data lines underground to the sign locations as required. Provide all required materials and equipment. Show the locations of all buried power and data lines in the Shop Drawings. Buried power and data lines shall comply with all applicable codes and safety and performance standards.
- G. All wayfinding signs and wayfinding sign components that are connected to the electric power service shall be equipped with an approved external disconnect switch to be flush mounted on the sign/sign cabinet. The switch shall have circuits and capacity to control all primary wiring within the sign. The external disconnect switch shall comply with all applicable code requirements. The switch shall be shown in the Shop Drawings for review.
- H. Wiring for power and data for wayfinding signs shall be routed through the sign frames and/or the sign enclosures to the electrical components housed within, or mounted to, the signs. There shall be no visible conduit, transformers, or raceways.
- I. Inform the Owner and the Architect if any of the wayfinding signs with power shall require an electric meter. Show the location of the meter on the Shop Drawings.

- J. Coordinate the placement and routing of conduit and the placement of cutoff switches and other electrical components with the wayfinding sign graphics and wayfinding sign structures. Cutoff switches should be consistently placed within wayfinding sign type groups. Electrical components must not interfere with the functioning or appearance of the wayfinding signs.

## **PART 3 - EXECUTION**

### **3.01 SIGN REMOVAL**

- A. The Contractor shall remove and properly dispose of the existing signs and sign structures from locations to be determined by the Owner and from all locations where the existing signs are to be replaced by new signs.
- B. Examine each sign removal location on site to verify the quantity and condition of the existing signs and sign structures that will need to be removed.
- C. Do not remove any existing signs until directed to do so by the Owner.
- D. At locations where existing signs are to be removed:
  - 1. Coordinate all sign removals with the Owner.
  - 2. Carefully and completely remove the existing signs and all associated sign structures and mounting materials.
  - 3. Carefully and completely remove existing concrete sign bases, foundations, and footings.
  - 4. Properly disconnect and terminate any electrical service at locations where existing electrical signs are not being replaced by new electrical signs. Meet all applicable code requirements. Remove any visible conduit or other electrical components.
  - 5. Remove from the site and properly dispose of all signs and materials that have been removed.
  - 6. Do not remove any existing signs from a location until the new signs are ready to be installed in that location. Coordinate sign removal and installation so that locations are not left without signs.
  - 7. Repair the areas from which existing signs are removed. Match the surrounding materials and finishes so that the repaired areas blend seamlessly with the surrounding areas.
  - 8. Clean work areas after signs have been removed. Remove all rubbish, waste, litter, and other foreign materials. Remove any stains, spills, and debris. Remove all tools, installation equipment, and surplus materials.

### **3.02 INSTALLATION**

- A. Do not install any wayfinding signs in locations where they cannot be properly, securely, and safely installed. Do not install any signs where they will block traffic signals or otherwise interfere with traffic regulatory signs. Do not install any wayfinding signs where they may be hazardous to vehicles or pedestrians in any way. Installation of the wayfinding signs shall not proceed until the conditions at the locations where the wayfinding signs cannot be properly, safely, and securely installed have been resolved, corrected, or adjusted by the Owner and the Architect, and the Contractor receives written notice.
- B. Notify the Owner, the Architect, and the Construction Manager in writing of any unsatisfactory conditions at any of the locations where wayfinding signs are to be installed. Do not proceed with the installation until the unsatisfactory conditions have been resolved, corrected, or adjusted by the Owner and the Architect, and the Contractor receives written notice.

- C. Do not drill into or otherwise penetrate any floor, ceiling, wall, bulkhead, or column at JJC without having first received written approval from the Owner to do so.
- D. Prepare the locations where wayfinding signs are to be installed.
  - 1. Mask off and protect areas which may be stained, damaged, or adversely affected by installation of the wayfinding signs.
  - 2. Properly clean and prepare surfaces that are to receive wayfinding signs prior to installation so that the installation may proceed smoothly and the wayfinding signs may be installed properly.
  - 3. Provide all required warning signs and safety barricades at work areas to prevent accidents, accidental injuries, or property damage.
- E. Provide all required planning, temporary signage, and barricades for any required lane closures.
  - 1. Coordinate any lane closures required for Work related to the wayfinding sign installation with the Owner and the Construction Manager.
  - 2. Schedule Work so that lanes are closed for as short a time as possible. Prior to making any lane closures, provide the Owner and the Construction Manager with a schedule outlining when the Work requiring lane closures will be conducted, how much time will be required to complete the Work, and a plan showing how any required lane closures or other traffic disruptions will be safely and effectively managed.
  - 3. Work requiring lane closures shall be scheduled so that it disrupts normal traffic as little as possible. Provide all required temporary signage and barricades. Follow all applicable codes, specifications, standards, requirements, rules, regulations, performance criteria, and guidelines for lane closures and temporary roadway signs.
- F. The schedule for all wayfinding sign installation Work shall be coordinated with the Owner, the Architect, and the Construction Manager. Prior to the start of any installation Work, provide the Owner, the Architect, and the Construction Manager with an installation schedule for review.
- G. Properly and legally remove from the site and dispose of all rubbish and debris resulting from the Work. Comply with all safety and regulatory standards and all applicable environmental and antipollution laws, rules, and regulations for cleaning and the disposal of all rubbish and debris.
- H. Work areas shall be cleaned each day. Keep work areas clean, safe, and orderly. Remove all rubbish, waste, litter, and other foreign materials. Remove any stains, spills, and debris. Remove all tools, installation equipment, and surplus materials.
- I. Complete installation shall be in accordance with manufacturers' printed instructions and the accepted Shop Drawings.
- J. Carefully, securely, properly, and safely install all signs plumb and level and in the correct locations.
- K. Contact appropriate services, including, but not limited to, J.U.L.I.E. (Joint Utility Locating Information for Excavators), to locate buried utilities prior to digging.
- L. Concrete Installation
  - 1. At all times while mixing, pouring, and finishing concrete, and at all times while new concrete is curing, provide all necessary protections and measures required to protect the

concrete from temperatures, weather conditions, site conditions, or other factors that could adversely affect the performance, appearance, strength, durability, or longevity of the concrete.

2. Provide all the necessary protections and measures required to establish and maintain the proper conditions, temperature, and moisture levels for concrete to be installed correctly and to cure properly. Properly install concrete so that it will provide the required performance, strength, and durability.
  3. All concrete must be properly mixed for adequate compressive strength as shown in the Shop Drawings. Do not pour concrete into excavations filled with rainwater or add extra water to the concrete mix.
  4. Do not install concrete under conditions that will adversely affect the concrete's performance, strength, or durability. Do not place concrete when the base surface temperature is less than 40 degrees Fahrenheit or when the surface is wet or frozen.
  5. Provide all measures required for new concrete to cure properly. Keep new concrete at the proper and correct temperature and moisture level required for the new concrete to cure properly during all stages of installation and curing.
  6. Confirm all rules and requirements regarding washing concrete trucks or equipment and dumping excess or surplus concrete on site with the Owner and the Construction Manager before any concrete is delivered to the site. Verify proper compliance with all rules and requirements regarding washing concrete trucks or equipment and dumping excess or surplus concrete on site.
  7. Do not apply protective coatings or joint sealers during inclement weather or when weather forecasts are unfavorable, unless the Work will proceed in accordance with the manufacturer's requirements and instructions. If installation is necessary under conditions not listed in the manufacturer's recommendations, consult the manufacturer's representative to establish the proper requirements, then record in writing the conditions under when the installation must proceed and the provisions made to ensure satisfactory Work.
- M. Protect all installed signs from damage until acceptance by the Owner.
- N. Do not install any items that are damaged, scratched, or with any other defects.
- O. After installation, clean soiled wayfinding sign surfaces and the installation area. Remove dirt, dust, fingerprints, shavings, adhesives, packing materials, etc. Touch up any scratches in painted surfaces and replace any damaged applied graphics.

### **3.03 SITE RESTORATION**

- A. Repair and restore to original condition and appearance any finishes, surfaces, pavements, landscaping, and any other site and building conditions, finishes, and features that are affected by the installation of the wayfinding signs and the removal of the existing signs.
- B. Provide new materials and finishes as required to repair and restore the areas affected by the installation of the wayfinding signs and the removal of the existing signs. The new materials and finishes shall match the existing finishes and materials in the areas surrounding the locations where the wayfinding signs have been installed or removed.
- C. Provide all required repairs at locations where the wayfinding signs have been installed or removed so that the repaired areas blend seamlessly with the surrounding areas.

- D. Coordinate site restoration with the installation and removal schedule so that areas are restored as soon as possible after wayfinding sign installations and removals are completed.

### **3.04 COMPLETION**

- A. The Work shall be under the charge and care of the Contractor until Final Payment/Acceptance by the Owner, including all Punch List Work. The Work shall not be considered as completed and accepted until written notice is received from the Owner confirming the completion and acceptance of all Work, including Punch List Work.
- B. Upon completion of the Work and before Final Payment/Acceptance, provide the Owner a complete set of Record Documents that shall include drawings and digital files for all wayfinding signs and wayfinding sign locations showing as-built conditions. Record Documents shall be formatted as specified by the Owner. The Record Documents shall completely document all the Work as actually located, built, and installed. The Record Documents shall also include complete documentation of any and all changes made to the Work as shown in the Contract Documents and the Shop Drawings.
- C. Upon completion of the Work and before Final Payment/Acceptance, provide the Owner with a complete set of digital files for all Submittals.
- D. All digital files, artwork, silkscreens, patterns, and models are to be preserved and shall become the property of the Owner.

**END OF SECTION 10 14 00**

**APPENDIX A**

**EXTERIOR MESSAGE SCHEDULE - FACILITY SERVICES BUILDING**

**Message Schedule**

Sign Loc. Number	Arch Rm # / Door Tag	Color / Area	Overall Sign Message			Sign Type	Sign Loc. Plan	Graphic Elevation	Remarks
			Bldg	Room #	Arrow Symbol Message				
<b>N-002-A</b>					N-L (L) Facility Services Building	Ext-11.3 •	SG1.10	E-28	
<b>N-002-B</b>					N-L (L) Facility Services Building	Ext-11.3	SG1.10	E-28	
<b>N-003-A</b>				1-3	Semi-truck Receiving	Ext-12.1 •	SG1.00	E-29	
<b>N-004-A</b>				1-3	JJC Truck Unloading	Ext-12.1 •	SG1.00	E-29	

**APPENDIX B**

**INTERIOR MESSAGE SCHEDULE - FACILITY SERVICES BUILDING**

**Message Schedule**

Sign Loc. Number	Arch Rm # / Door Tag	Color / Area	Overall Sign Message			Sign Type	Sign Loc. Plan	Graphic Elevation	Message Schedule Remarks
			Bldg	Room #	Arrow Symbol Message				
<b>02-A</b>	001	--			Shipping & Receiving Office	Int-5.2	SG1.00	I-23	Glass entrance signage.
	001	--			Hours of Operation 7:30 AM – 4:00 PM Monday – Friday	Int-5.3	SG1.00	I-24	Sign location also needs a notebare paper holder, mounted to inside of glass.
	001B	North (Green)		6-1	Authorized Personnel Only	Int-7.3	SG1.00	I-33	
	002	North (Green)	L	0002	Shipping & Receiving Office	Int-6.2	SG1.00	I-26	
	003	North (Green)		2-1	UNISEX	Int-6.1	SG1.00	I-25	
	004	North (Green)	L	0004	(Storage)	Int-6.5	SG1.00	I-30	
	004	North (Green)		6-1	Authorized Personnel Only	Int-7.3	SG1.00	I-33	
	004B	North (Green)	L	0004	Surplus Storage	Int-6.2	SG1.00	I-26	
<b>01-A</b>	100	--			Facility Services	Int-5.2	SG1.10	I-23	Glass entrance signage.
	100	--			Hours of Operation 7:30 AM – 4:00 PM Monday – Friday	Int-5.3	SG1.10	I-24	
	101	North (Green)			Dawn Baffa Clerk Assistant Facility Services	Int-6.4.2	SG1.10	I-29.1	(Desktop insert)
	101	North (Green)			Jean Cavanaugh Clerk Assistant Facility Services	Int-6.4.2	SG1.10	I-29.1	(Desktop insert)

**Message Schedule**

Sign Loc. Number	Arch Rm # / Door Tag	Color / Area	Overall Sign Message			Sign Type	Sign Loc. Plan	Graphic Elevation	Message Schedule	Remarks
			Bldg	Room #	Arrow Symbol Message					
102		North (Green)			Shirley Hacker Administrative Assistant	Int-6.4.2	SG1.10	I-29.1	(Desktop insert)	
102		North (Green)			Sherry Borcharding Department Secretary	Int-6.4.2	SG1.10	I-29.1	(Desktop insert)	
102		North (Green)			Karin Randolph Facilities Systems Specialist	Int-6.4.2	SG1.10	I-29.1	(Desktop insert)	
102		North (Green)			Amanda Jensen Construction Project Assistant	Int-6.4.2	SG1.10	I-29.1	(Desktop insert)	
103		North (Green)	L	1003	Richard T. Rivera Assistant Director for Facility Services Roads & Grounds	Int-6.4	SG1.10	I-29		
104		North (Green)	L	1004	Pat Van Duyne Director for Facility Services	Int-6.4	SG1.10	I-29		
105		North (Green)	L	1005	Conference Room (Schedule Sheet)	Int-6.2.1	SG1.10	I-27		
105A		North (Green)	L	1005	Conference Room (Schedule Sheet)	Int-6.2.1	SG1.10	I-27		
106		North (Green)	L	1006	Rick Lyman Manager of Construction and Facility Planning	Int-6.4	SG1.10	I-29		
107		North (Green)	L	1007	Tony Chobot Construction Project Coordinator	Int-6.4	SG1.10	I-29	(Desktop insert)	

Sign Loc. Number	Arch Rm # / Door Tag	Color / Area	Overall Sign Message			Sign Type	Sign Loc. Plan	Graphic Elevation	Remarks
			Bldg	Room #	Arrow Symbol Message				
	108	North (Green)	L	1008		Edward F. Vasil Environmental, Health & Safety Manager	Int-6.4	SG1.10	I-29
	109	North (Green)	L	1009		John E. Jawor Maintenance Superintendent	Int-6.4	SG1.10	I-29
	110	North (Green)	L	1010		Linda Pollock Custodial Superintendent Facilities Coordinator	Int-6.4	SG1.10	I-29
	112	North (Green)	L	1012		(Work/Copy/Files Area)	Int-6.5	SG1.10	I-30
	113	North (Green)	L	1013		(Plan Storage)	Int-6.5	SG1.10	I-30
	114	Neutral (Silver)	L	1014		(I.T. Room)	Int-6.5	SG1.10	I-30
	115	North (Green)			2-3	WOMEN	Int-6.1	SG1.10	I-25
	116	North (Green)			2-2	MEN	Int-6.1	SG1.10	I-25
	117	North (Green)			2-3	WOMEN	Int-6.1	SG1.10	I-25
	118	North (Green)			2-2	MEN	Int-6.1	SG1.10	I-25
	119	North (Green)	L	1019		Lunch / Training	Int-6.2	SG1.10	I-26
	119A	North (Green)	L	1019		(Lunch / Training)	Int-6.5	SG1.10	I-30
	119B	North (Green)			6-1	Authorized Personnel Only	Int-7.3	SG1.10	I-33
	120	North (Green)	L	1020		EHS Storage	Int-6.2	SG1.10	I-27

**Message Schedule**

Sign Loc. Number	Arch Rm # / Door Tag	Color / Area	Overall Sign Message			Sign Type	Sign Loc. Plan	Graphic Elevation	Remarks
			Bldg	Room #	Arrow Symbol Message				
121		North (Green)			6-1	Authorized Personnel Only	Int-7.3	SG1.10	I-33
121		North (Green)				Cheryl Nixon Custodial Lead	Int-6.4.2	SG1.11	I-29.1 (Desktop insert)
121		North (Green)				Mary Ann Holland Custodial Assistant Lead	Int-6.4.2	SG1.11	I-29.1 (Desktop insert)
121		North (Green)				Tim Solley Custodial Set-ups / Events	Int-6.4.2	SG1.11	I-29.1 (Desktop insert)
121A		North (Green)	L	1021		Custodial Services	Int-6.2	SG1.11	I-27
122		North (Green)	L	1022		George Podrebarac Evening Supervisor	Int-6.4	SG1.11	I-29
123		North (Green)	L	1023		Custodial Services	Int-6.2	SG1.11	I-27
123		North (Green)			6-1	Authorized Personnel Only	Int-7.3	SG1.11	I-33
124		North (Green)	L	1024		(Laundry)	Int-6.5	SG1.11	I-30
124A		North (Green)	L	1024		(Laundry)	Int-6.5	SG1.11	I-30
125		Neutral (Silver)	L	1025		(Battery Storage)	Int-6.5	SG1.11	I-30
126		North (Green)	L	1026		Custodial Services	Int-6.2	SG1.11	I-27
126A		North (Green)	L	1023		Custodial Services Storage	Int-6.2	SG1.11	I-27

**Message Schedule**

Sign Loc. Number	Arch Rm # / Door Tag	Color / Area	Overall Sign Message			Sign Type	Sign Loc. Plan	Graphic Elevation	Remarks
			Bldg	Room #	Arrow Symbol Message				
127		North (Green)	L	1027		Maintenance Shop	Int-6.2	SG1.11	I-27
127B		North (Green)			6-1	Authorized Personnel Only	Int-7.3	SG1.11	I-33
128		North (Green)	L	1028		Rudy Wolf Maintenance Lead / Energy Manager	Int-6.4	SG1.11	I-29
129		North (Green)	L	1029		(Wood Shop)	Int-6.5	SG1.11	I-30
130		North (Green)	L	1030		(Paint / Tool Storage)	Int-6.5	SG1.11	I-30
131		North (Green)	L	1032		Roads & Grounds Shop	Int-6.2	SG1.11	I-26
132A		North (Green)	L	1032A			Int-6.5	SG1.11	I-30
133		North (Green)	L	1033		Dave Zobel Roads & Grounds Lead	Int-6.4	SG1.11	I-29
134		North (Green)	L	1034		(Roads & Grounds Shop)	Int-6.5	SG1.11	I-30
134A		North (Green)			6-1	Authorized Personnel Only	Int-7.3	SG1.11	I-33
135		North (Green)	L	1035		(Tool Storage)	Int-6.5	SG1.11	I-30
136		North (Green)	L	1036		Pesticide Storage	Int-6.2	SG1.11	I-27
136		North (Green)			6-1	Authorized Personnel Only	Int-7.3	SG1.11	I-33

**Message Schedule**

Sign Loc. Number	Arch Rm # / Door Tag	Color / Area	Overall Sign Message			Sign Type	Sign Loc. Plan	Graphic Elevation	Remarks
			Bldg	Room #	Arrow Symbol Message				
137		North (Green)	L	1037		(Parts Room)	Int-6.5	SG1.11	I-30
138		North (Green)	L	1038		(Vehicle Storage)	Int-6.5	SG1.10	I-30
138B		North (Green)			6-1	Authorized Personnel Only	Int-7.3	SG1.10	I-33
138C		North (Green)			6-1	Authorized Personnel Only	Int-7.3	SG1.10	I-33
138E		North (Green)			6-1	Authorized Personnel Only	Int-7.3	SG1.11	I-33
139		Neutral (Silver)	L	1039		(Electric)	Int-6.5	SG1.11	I-30
140		North (Green)	L	1040		Electric Services	Int-6.2	SG1.11	I-26
141		North (Green)	L	1041		Water Services	Int-6.2	SG1.11	I-26
142		North (Green)	L	1042		Hazardous Waste	Int-6.2	SG1.11	I-26

**APPENDIX C**

**WAYFINDING AND SIGNAGE STANDARDS MANUAL (SEPARATE DOCUMENT)**

**APPENDIX D**

**QUANTITY ESTIMATES (SITE, CAMPUS CENTER, GREENHOUSE)**

<b>EXTERIOR</b>					<b>Facility Services Building (FSB)</b>	<b>Exterior Campus Site</b> <small>(Preliminary Estimated Quantity)</small>	<b>Greenhouse Building (GHB)</b> <small>(Preliminary Estimated Quantity)</small>		
<b>Sign Type</b>	<b>Description</b>	<b>Per Unit Cost (Fabrication)</b>	<b>Per Unit Cost (Installation)</b>	<b>Quantity</b>	<b>Subtotal</b>	<b>Quantity</b>	<b>Subtotal</b>	<b>Quantity</b>	<b>Subtotal</b>
1.1	Primary Identification with LED (At Airport)			-		1		-	
2.1	Primary Site Identification			-		2		-	
2.2	Primary Entrance Identification			-		3		-	
3.1	Vehicular Campus Information with LED			-		1		-	
3.2	Vehicular Campus Information with LED			-		1		-	
4.1	Building / Area Listing			-		4		-	
4.2	Building / Area Listing			-		2		-	
5.1	Primary Vehicular Directional			-		1		-	
5.2	Primary Vehicular Directional			-		4		-	
5.3	Primary Vehicular Directional			-		9		-	
5.4	Primary Vehicular Directional			-		15		-	
5.5	Secondary Vehicular Directional			-		24		-	
5.6	Secondary Vehicular Directional			-		12		-	
5.7	Parking Lot Directional			-		14		-	
6.1.1	Parking Lot Identification (Two-Sided)			-		44		-	
6.1.2	Parking Lot Identification (Four-Sided)			-		28		-	
7.1	Temporary Directional			-		6		-	
7.2	Temporary Freestanding Sign			-		15		-	
8.1	Pedestrian Directional			-		31		-	
9.1	Pedestrian Directional and Map			-		17		-	
10.1	Pedestrian Interpretive			-		34		-	
11.1	Building Identification Symbol			-		11		-	
11.2	Building Identification Letters			-		203		10	
11.3	Building Freestanding ID			1		5		-	
12.1	Truck Dock Directional			2		7		-	
					<b>Facility Services Building Exterior Sub-Total</b>	<b>Exterior Campus Site Sub-Total</b>	<b>Greenhouse Building Exterior Sub-Total</b>		

**Carol Naughton + Associates, Inc.**  
**November 05, 2010**  
**Joliet Junior College Wayfinding Signage - Interior**

<b>INTERIOR</b>				<b>Facility Services Building (FSB)</b>		<b>Campus Center (CC)</b> (Preliminary Estimated Quantity)		<b>Greenhouse Building (GHB)</b> (Preliminary Estimated Quantity)	
		<b>Per Unit Cost (Fabrication)</b>	<b>Per Unit Cost (Installation)</b>	<b>Quantity</b>	<b>Subtotal</b>	<b>Per Unit</b>	<b>Subtotal</b>	<b>Per Unit</b>	<b>Subtotal</b>
<b>Sign Type</b>	<b>Description</b>								
1.1	Ceiling Mount, Directional, Three Panel			-		-		-	
1.2	Ceiling Mount, Directional, Two Panel			-		14		-	
2.1	Blade Mount, Department Identification			-		17		-	
2.2	Blade Mount, Facility Identification			-		11		-	
2.3	Blade Mount, Emergency Identification			-		7		-	
3.1	Ground Mount, Directional			-		-		-	
3.2	Column Mount, Directional			-		-		-	
3.3	Primary Wall Directional			-		-		-	
3.4	Secondary Wall Directional			-		6		-	
3.5	Tertiary Wall Directional			-		11		-	
4.1	Entrance Directory			-		-		-	
4.2	Elevator Directory			-		3		-	
5.1.1	Bookstore / Information Desk Identification			-		2		-	
5.1.2	President's Suite Identification			-		3		-	
5.2	Department Identification			2		17		-	
5.3	Hours Information			2		19		-	
6.1	Toilet Identification			5		36		2	
6.2	Room Identification			14		49		6	
6.2.1	Room Identification with Notebar			2		43		1	
6.3	Room Identification with Name			-		-		1	
6.4	Room Identification with Slide-In			10		87		-	
6.4.1	Room Identification with Slide-In and Notebar			-		27		-	
6.4.2	Desktop Identification with Slide-In			9		138		-	
6.4.3	Sheet Insert Sign			-		25		-	
6.5	Room Identification, Room Number Only			16		79		7	
7.1	Stairwell, Interior Identification			-		9		-	
7.2	Stairwell, Corridor Identification			-		9		-	
7.3	Stairwell, Area of Rescue Assistance Identification			11		31		1	
8.1	Donor Plaque or Donor Bar			-		-		-	
				<b>Facility Services Building Interior Sub-Total</b>		<b>Campus Center Interior Sub-Total</b>		<b>Greenhouse Building Interior Sub-Total</b>	

