$12,259,000.00

BID OF CORPORATE CONTRACTORS INC.

2025

PROPOSAL, CONTRACT, BOND AND SPECIFICATIONS

FOR

IMAGINATION CENTER AT REINDAHL PARK

CONTRACT NO. 9610

MUNIS NO. 17085

IN

MADISON, DANE COUNTY, WISCONSIN

AWARDED BY THE COMMON COUNCIL
MADISON, WISCONSIN ON **APRIL 15, 2025**

CITY ENGINEERING DIVISION
1600 EMIL STREET
MADISON, WISCONSIN 53713

https://bidexpress.com/login

IMAGINATION CENTER AT REINDAHL PARK
CONTRACT NO. 9610

INDEX

Materials available within Bid Express:

Exhibit-A: Drawings, dated January 06, 2025
Exhibit-B: Specifications, dated January 06, 2025
Exhibit-C: Lands For Work plan
Exhibit-D: Construction Sequence Requirements plan

Reference-1: Draft Topographic Survey
Reference-2: Draft ALTA Survey
Reference-3: Hazardous Materials Report – Asbestos and Lead
Reference-4: Geotechnical Exploration Report
Reference-5: Existing Conditions drawings
Reference-6: Facilities Bid Submittal Checklist

This Proposal, and Agreement have
been prepared by:

CITY ENGINEERING DIVISION
CITY OF MADISON
MADISON, DANE COUNTY, WISCONSIN

JMW: bp

James M. Wolfe, P.E., City Engineer

SECTION A: ADVERTISEMENT FOR BIDS AND INSTRUCTIONS TO BIDDERS

REQUEST FOR BID FOR PUBLIC WORKS CONSTRUCTION
CITY OF MADISON, WISCONSIN

A BEST VALUE CONTRACTING MUNICIPALITY

PROJECT NAME:	IMAGINATION CENTER AT REINDAHL PARK
CONTRACT NO.:	9610
TBE GOAL	12%
BID BOND	5%
TBE PRE BID MEETING (2:00 P.M.)	MARCH 20, 2025
BID TALK – VIRTUAL	FEBRUARY 27, 2025 (12:00-1:00 PM)
SITE TOUR	MARCH 3, 2025 (12:00-1:00 PM)
BID QUESTIONS/CLARIFICATIONS/SUBSTITUTIONS DUE	MARCH 13, 2025
PUBLISHED LAST ADDENDUM	MARCH 20, 2025
PREQUALIFICATION APPLICATION DUE (2:00 P.M.)	MARCH 20, 2025
BID SUBMISSION (2:00 P.M.)	MARCH 27, 2025
BID OPEN (2:30 P.M.)	MARCH 27, 2025
PUBLISHED IN WSJ	FEBRUARY 13, 20, 27 & MARCH 6, 13, 20

TBE PRE BID MEETING: Pre-Bid Meetings are being held virtually. Advance registration is required. Visit the TBE Meeting web page on Engineering's web site: https://www.cityofmadison.com/engineering/developers-contractors/contractors/how-to-bid-public-works-contracts/small-business.
Questions regarding TBE Program requirements may be directed to Tracy Lomax, Affirmative Action Division. Tracy may be reached at (608) 267-8634, or by email, TLomax@cityofmadison.com.

BID TALK (VIRTUAL): The City of Madison Engineering Division is hosting virtual live (and later recording posted) sessions called "Bid Talks." This is an opportunity for you to learn about the project to help with your bid and estimating numbers. During our "Bid Talks" session for this project, the project staff will present information about the project specific to your bidding process. Staff will answer any questions you have. You will also be able to see who is attending. This meeting will be held in an informal format, where participants are able to ask questions and have a conversation. Please send your estimators and bidders to these Bid Talks, as they take the place of in-person site visits for specific projects. Registration prior is required. Please register by visiting the Imagination Center at Reindahl Park project page at https://www.cityofmadison.com/engineering/projects/imagination-center-at-reindahl-park. A recording link will also be posted to the project page after the meeting.

REQUESTS FOR SUBSTITUTIONS:
Requests for Substitutions: Any requests for product or equipment substitution shall be submitted directly to the Project Architect and the City Project Manager via email.

- See the contract contact information at the end of Section D-Special Provisions for names and email addresses.
- Emails shall have "Contract 9538 – Request for Substitution" in the subject line.

All requestors shall review Specification 00 43 25 Substitution Request Form (During Bidding) prior to submitting their substitution request.

- All requests for substitution shall meet one of the three criteria in Section 1.1.B of the specification. Requests that do not meet the criteria will not be considered.
- All requests for substitution shall be complete in a single PDF document as described in Section 3.1 of the Specification. Requests that do not provide sufficient information, multiple documents, etc. will not be considered

- Sales solicitations (including solicitations of products or equipment that are not in the plans and specifications) and requests to other than the Project Architect and City Project Manager will not be considered.

All approved substitutions shall be published in the form of an addendum.

QUESTIONS AND CLARIFICATIONS: Any questions or requests for clarifications regarding plans and specifications shall be submitted directly to the Project Architect and the City Project Manager via email.

- See the contract contact information at the end of Section D-Special Provisions for names and email addresses.
- Emails shall have "Contract 9538 - Questions and Clarifications" in the subject line.

All responses shall be published in the form of an addendum

PUBLISHED ADDENDA: The City of Madison shall publish bidding addenda as needed during the bidding period.

The City of Madison reminds all General Contractors you that you must acknowledge having read all addenda when submitting your bid. Failure to acknowledge all addenda shall disqualify your bid

SITE TOUR: The City of Madison will be holding one (1) Pre-Bid Site Tours as indicated in the schedule above, at the existing Park Shelter, located at 1818 Portage Rd Madison, WI 53704. All bidding contractors are encouraged to attend. This will be an opportunity for bidding contractors to ask questions regarding the project and become fully aware of existing site conditions.

Please be aware of the following:

1. Reindahl Park is a large parcel of land, the Park Shelter is at the SW corner of the property and is accessible by Parkside Drive
2. Parking is available directly adjacent to the Park Shelter.
3. All participants are required to sign-in with the City Project Manager prior to attending the site tour.
4. Contractors are encouraged to attend. Questions and responses will be published, in an addendum to all bidding contractors.
5. Please note that the Project Area is in a public park, therefore a portion of the area is accessible to the public. Bidders can visit that site during Park hours and have access to the project area other than the existing shelter interior.

PREQUALIFICATION APPLICATION: Forms are available on our website, www.cityofmadison.com/engineering/developers-contractors/contractors/how-to-get-prequalified. If not currently prequalified in the categories listed in Section A, an amendment to your Prequalification will need to be submitted prior to the same due date. Postmark is not applicable.

SAM UNIQUE ENTITY ID REQUIRED: Apparent Low Bidder for this project must submit a SAM Unique Entity ID to the City for all proposed prime and subcontractors listed in the bid within 48 hours of notification. Go to SAM.gov for information on getting a SAM ID.

BIDS TO BE SUBMITTED by hand to 1600 EMIL ST., MADISON, WI 53713 or online at www.bidexpress.com.

Bids may be submitted on line through Bid Express or in person at 1600 Emil St. The bids will be posted on line after the bid opening. If you have any questions, please call Alane Boutelle at (608) 267-1197.

STANDARD SPECIFICATIONS

The City of Madison's Standard Specifications for Public Works Construction - 2025 Edition, as supplemented and amended from time to time, forms a part of these contract documents as if attached hereto.

These standard specifications are available on the City of Madison Public Works website,

www.cityofmadison.com/engineering/developers-contractors/standard-specifications.

The Contractor shall review these Specifications prior to preparation of proposals for the work to be done under this contract, with specific attention to Article 102, "BIDDING REQUIREMENTS AND CONDITIONS" and Article 103, "AWARD AND EXECUTION OF THE CONTRACT." For the convenience of the bidder, below are highlights of three subsections of the specifications.

SECTION 102.1: PRE-QUALIFICATION OF BIDDERS

In accordance with Wisconsin State Statutes 66.0901(2) and (3), all bidders must submit to the Board of Public Works proof of responsibility on forms furnished by the City. The City requires that all bidders be qualified on a biennial basis.

Bidders must present satisfactory evidence that they have been regularly engaged in the type of work specified herein and they are fully prepared with necessary capital, materials, machinery and supervisory personnel to conduct the work to be contracted for to the satisfaction of the City. All bidders must be pre-qualified by the Board of Public Works for the type of construction on which they are bidding prior to the opening of the bid.

In accordance with Section 39.02(9)(a)l. of the General Ordinances, all bidders shall submit in writing to the Affirmative Action Division Manager of the City of Madison, a Certificate of Compliance or an Affirmative Action Plan at the same time or prior to the submission of the proof of responsibility forms.

The bidder shall be disqualified if the bidder fails to or refuses to, prior to opening of the bid, submit a Certificate of compliance, Affirmative Action Plan or Affirmative Action Data Update, as applicable, as defined by Section 39.02 of the General Ordinances (entitled Affirmative Action) and as required by Section 102.11 of the Standard Specifications.

SECTION 102.4 PROPOSAL

No bid will be accepted that does not contain an adequate or reasonable price for each and every item named in the Schedule of Unit Prices.

A lump sum bid for the work in accordance with the plans and specifications is required. The lump sum bid must be the same as the total amounts bid for the various items and it shall be inserted in the space provided.

All papers bound with or attached to the proposal form are considered a part thereof and must not be detached or altered when the proposal is submitted. The plans, specifications and other documents designated in the proposal form will be considered a part of the proposal whether attached or not.

A proposal submitted by an individual shall be signed by the bidder or by a duly authorized agent. A proposal submitted by a partnership shall be signed by a member/partner or by a duly authorized agent thereof. A proposal submitted by a corporation shall be signed by an authorized officer or duly authorized registered agent of such corporation, and the proposal shall show the name of the State under the laws of which such corporation was chartered. The required signatures shall in all cases appear in the space provided thereof on the proposal.

Each proposal shall be placed, together with the proposal guaranty, in a sealed envelope, so marked as to indicate name of project, the contract number or option to which it applies, and the name and address of the Contractor or submitted electronically through Bid Express (www.bidexpress.com). Proposals will be accepted at the location, the time and the date designated in the advertisement. Proposals received after the time and date designated will be returned to the bidder unopened.

SECTION 102.5: BID DEPOSIT (PROPOSAL GUARANTY)

All bids, sealed or electronic, must be accompanied with a Bid Bond equal to at least 5% of the bid or a Certificate of Annual/Biennial Bid Bond or certified check, payable to the City Treasurer. Bid deposit of the

successful bidders shall be returned within forty-eight (48) hours following execution of the contract and bond as required.

MINOR DISCREPENCIES

Bidder is responsible for submitting all forms necessary for the City to determine compliance with State and City bidding requirements. Notwithstanding any language to the contrary contained herein, the City may exercise its discretion to allow bidders to correct or supplement submissions after bid opening, if the minor discrepancy, bid irregularity or omission is insignificant and not one related to price, quality, quantity, time of completion or performance of the contract.

Bidders for this Contract(s) must be Pre-Qualified for at least one of the following type(s) of construction denoted by an ☒

Building Demolition

101 ☐ Asbestos Removal
120 ☐ House Mover
110 ☐ Building Demolition

Street, Utility and Site Construction

201 ☐ Asphalt Paving
205 ☐ Blasting
210 ☐ Boring/Pipe Jacking
215 ☐ Concrete Paving
220 ☐ Con. Sidewalk/Curb & Gutter/Misc. Flat Work
221 ☐ Concrete Bases and Other Concrete Work
222 ☐ Concrete Removal
225 ☐ Dredging
230 ☐ Fencing
235 ☐ Fiber Optic Cable/Conduit Installation
240 ☐ Grading and Earthwork
241 ☐ Horizontal Saw Cutting of Sidewalk
242 ☐ Infrared Seamless Patching
245 ☐ Landscaping, Maintenance
246 ☐ Ecological Restoration
250 ☐ Landscaping, Site and Street
251 ☐ Parking Ramp Maintenance
252 ☐ Pavement Marking
255 ☐ Pavement Sealcoating and Crack Sealing
260 ☐ Petroleum Above/Below Ground Storage Tank Removal/Installation
262 ☐ Playground Installer
265 ☐ Retaining Walls, Precast Modular Units
270 ☐ Retaining Walls, Reinforced Concrete
275 ☐ Sanitary, Storm Sewer and Water Main Construction
276 ☐ Sawcutting
280 ☐ Sewer Lateral Drain Cleaning/Internal TV Insp.
285 ☐ Sewer Lining
290 ☐ Sewer Pipe Bursting
295 ☐ Soil Borings
300 ☐ Soil Nailing
305 ☐ Storm & Sanitary Sewer Laterals & Water Svc.
310 ☐ Street Construction
315 ☐ Street Lighting
318 ☐ Tennis Court Resurfacing
320 ☐ Traffic Signals
325 ☐ Traffic Signing & Marking
332 ☐ Tree pruning/removal
333 ☐ Tree, pesticide treatment of
335 ☐ Trucking
340 ☐ Utility Transmission Lines including Natural Gas, Electrical & Communications
399 ☐ Other_____

Bridge Construction

501 ☐ Bridge Construction and/or Repair

Building Construction

401 ☐ Floor Covering (including carpet, ceramic tile installation, rubber, VCT
402 ☐ Building Automation Systems
403 ☐ Concrete
404 ☐ Doors and Windows
405 ☐ Electrical - Power, Lighting & Communications
410 ☐ Elevator - Lifts
412 ☐ Fire Suppression
413 ☐ Furnishings - Furniture and Window Treatments
415 ☐ General Building Construction, Equal or Less than $250,000
420 ☐ General Building Construction, $250,000 to $1,500,000
425 ☒ General Building Construction, Over $1,500,000
428 ☐ Glass and/or Glazing
429 ☐ Hazardous Material Removal
430 ☐ Heating, Ventilating and Air Conditioning (HVAC)
433 ☐ Insulation - Thermal
435 ☐ Masonry/Tuck pointing
437 ☐ Metals
440 ☐ Painting and Wallcovering
445 ☐ Plumbing
450 ☐ Pump Repair
455 ☐ Pump Systems
460 ☐ Roofing and Moisture Protection
464 ☐ Tower Crane Operator
461 ☐ Solar Photovoltaic/Hot Water Systems
465 ☐ Soil/Groundwater Remediation
466 ☐ Warning Sirens
470 ☐ Water Supply Elevated Tanks
475 ☐ Water Supply Wells
480 ☐ Wood, Plastics & Composites - Structural & Architectural
499 ☐ Other_____
_____

State of Wisconsin Certifications

1 ☐ Class 5 Blaster - Blasting Operations and Activities 2500 feet and closer to inhabited buildings for quarries, open pits and road cuts.
2 ☐ Class 6 Blaster - Blasting Operations and Activities 2500 feet and closer to inhabited buildings for trenches, site excavations, basements, underwater demolition, underground excavations, or structures 15 feet or less in height.
3 ☐ Class 7 Blaster - Blasting Operations and Activities for structures greater than 15 ' in height, bridges, towers, and any of the objects or purposes listed as "Class 5 Blaster or Class 6 Blaster".
4 ☐ Petroleum Above/Below Ground Storage Tank Removal and Installation (Attach copies of State Certifications.)
5 ☐ Hazardous Material Removal (Contractor to be certified for asbestos and lead abatement per the Wisconsin Department of Health Services, Asbestos and Lead Section (A&LS).) See the following link for application: www.dhs.wisconsin.gov/Asbestos/Cert. State of Wisconsin Performance of Asbestos Abatement Certificate must be attached.
6 ☐ Certification number as a Certified Arborist or Certified Tree Worker as administered by the International Society of Arboriculture
7 ☐ Pesticide application (Certification for Commercial Applicator For Hire with the certification in the category of turf and landscape (3.0) and possess a current license issued by the DATCP)
8 ☐ State of Wisconsin Master Plumbers License.

SECTION B: PROPOSAL

Please refer to the Bid Express Website at https://bidexpress.com look up contract number and go to Section B: Proposal Page

You can access all City of Madison bid solicitations for FREE at www.bidexpress.com

Click on the "Register for Free" button and follow the instructions to register your company and yourself. You will be asked for a payment subscription preference, since you may wish to bid online someday. Simply choose the method to pay on a 'per bid' basis. This requires no payment until / unless you actually bid online. You can also choose the monthly subscription plan at this time. You will, however, be asked to provide payment information. Remember, you can change your preference at anytime. You will then be able to complete your free registration and have full access to the site. Your free access does not require completion of the 'Digital ID' process, so you will have instant access for viewing and downloading. To be prepared in case you ever do wish to bid online, you may wish to establish your digital ID also, since you cannot bid without a Digital ID.

If you have any problems with the free registration process, you can call the bidexpress help team, toll free at 1-888-352-2439 (option 1, option1).

SECTION C: TARGETED BUSINESS ENTERPRISE
Instructions to Bidders
City of Madison
TBE Information

2 Targeted Business Enterprise (TBE) Information

2.1 Policy and Goal

This contract is subject to the federal targeted business enterprise (TBE) requirements set forth in Sec. 200.321 of 2 CFR Part 200, Subpart D, which reads as follows:

> § 200.321 Contracting with small businesses, minority businesses, women's business enterprises, veteran-owned businesses, and labor surplus area firms.
>
> (a) When possible, the recipient or subrecipient should ensure that small businesses, minority businesses, women's business enterprises, veteran-owned businesses, and labor surplus area firms (See U.S. Department of Labor's list) are considered as set forth below.
>
> (b) Such consideration means:
>
> (1) These business types are included on solicitation lists;
>
> (2) These business types are solicited whenever they are deemed eligible as potential sources;
>
> (3) Dividing procurement transactions into separate procurements to permit maximum participation by these business types;
>
> (4) Establishing delivery schedules (for example, the percentage of an order to be delivered by a given date of each month) that encourage participation by these business types;
>
> (5) Utilizing organizations such as the Small Business Administration and the Minority Business Development Agency of the Department of Commerce; and
>
> (6) Requiring a contractor under a Federal award to apply this section to subcontracts.

The City of Madison reaffirms its policy of nondiscrimination in the conduct of City business by maintaining a procurement process which remains open to all who have the potential and ability to sell goods and services to the City. It is the policy of the City of Madison to allow) maximum feasible opportunity to participate in City of Madison contracting. The bidder acknowledges that its bid has been submitted in accordance with the TBE program and is for the public's protection and welfare.

Please refer to the "ADVERTISEMENT FOR BIDS" for the goal for the utilization of TBEs on this project. TBEs may participate as subcontractors, vendors and/or suppliers, which provide a commercially useful function. The dollar value for TBE suppliers or 'materials only' vendors shall be discounted to 60% for purposes of meeting TBE goals.

A bidder which achieves or exceeds the TBE goal will be in compliance with the TBE requirements of this project. In the event that the bidder is unable to achieve the TBE goal, the bidder must demonstrate that a good faith effort to do so was made. Failure to either achieve the goal or demonstrate a good faith effort to do so will be grounds for the bidder being deemed a non-responsible contractor ineligible for award of this contract.

A bidder may count towards its attainment of the TBE goal only those expenditures to TBEs that perform a commercially useful function. For purposes of evaluating a bidder's responsiveness to the attainment of the TBE goal, the contract participation by an TBE is based on the percentage of the total base bid proposed by the Contractor. The total base bid price is inclusive of all addenda.

Work performed by an TBE firm in a particular transaction can be counted toward the goal only if it involves a commercially useful function. That is, in light of industry practices and other relevant considerations, does the TBE firm have a necessary and useful role in the transaction, of a kind for which there is a market outside the context of the TBE Program, or is the firm's role a superfluous step added in an attempt to obtain credit towards goals? If, in the judgment of the Affirmative Action Division, the TBE firm will not perform a commercially useful function in the transaction, no credit towards goals will be awarded.

The question of whether a firm is performing a commercially useful function is completely separate from the question of whether the firm is an eligible TBE. A firm is eligible if it meets the definitional criteria and ownership and control requirements, as set forth in the City of Madison's TBE Program.

If the City of Madison determines that the TBE firm is performing a commercially useful function, then the City of Madison must then decide what that function is. If the commercially useful function is that of an TBE vendor / supplier that regularly transacts business with the respective product, then the City of Madison will count 60% of the value of the product supplied toward TBE goals.

To be counted, the TBE vendor / supplier must be engaged in selling the product in question to the public. This is important in distinguishing an TBE vendor / supplier, which has a regular trade with a variety of customers, from a firm which performs supplier-like functions on an ad hoc basis or for only one or two contractors with whom it has a special relationship.

A supplier of bulk goods may qualify as an eligible TBE vendor / supplier if it either maintains an inventory or owns or operates distribution equipment. With respect to the distribution equipment; e.g., a fleet of trucks, the term "operates" is intended to cover a situation in which the supplier leases the equipment on a regular basis for its entire business. It is not intended to cover a situation in which the firm simply provides drivers for trucks owned or leased by another party; e.g., a prime contractor, or leases such a party's trucks on an ad hoc basis for a specific job.

If the commercially useful function being performed is not that of a qualified TBE vendor / supplier, but rather that of delivery of products, obtaining bonding or insurance, procurement of personnel, acting as a broker or manufacturer's representative in the procurement of supplies, facilities, or materials, etc., only the fees or commissions will apply towards the goal.

For example, a business that simply transfers title of a product from manufacturer to ultimate purchaser; e. g., a sales representative who re-invoices a steel product from the steel company to the Contractor, or a firm that puts a product into a container for delivery would not be considered a qualified TBE vendor / supplier. The Contractor would not receive credit based on a percentage of the cost of the product for working with such firms.

Concerning the use of services that help the Contractor obtain needed supplies, personnel, materials or equipment to perform a contract: only the fee received by the service provider will be counted toward the goal. For example, use of a TBE sales representative or distributor for a steel company, if performing a commercially useful function at all, would entitle the Contractor receiving the steel to count only the fee paid to the representative or distributor toward the goal. This provision would also govern fees for professional and other services obtained expressly and solely to perform work relating to a specific contract.

Concerning transportation or delivery services: if an TBE trucking company picks up a product from a manufacturer or a qualified vendor / supplier and delivers the product to the Contractor, the commercially useful function it is performing is not that of a supplier, but simply that of a transporter of goods. Unless the trucking company is itself the manufacturer or a qualified vendor / supplier in

the product, credit cannot be given based on a percentage of the cost of the product. Rather, credit would be allowed for the cost of the transportation service.

The City is aware that the rule's language does not explicitly mention every kind of business that may contribute work on this project. In administering these programs, the City would, on a case-by-case basis, determine the appropriate counting formula to apply in a particular situation.

2.2 Contract Compliance

Questions concerning the TBE Program shall be directed to the Contract Compliance Officer of the City of Madison Department of Civil Rights, Affirmative Action Division, 210 Martin Luther King, Jr. Blvd., Room 523, Madison, WI 53703; telephone (608) 266-4910.

2.3 Certification of TBE by City of Madison

The Affirmative Action Division maintains a directory of TBEs which are currently certified as such by the City of Madison. Contact the Contract Compliance Officer as indicated in Section 2.2 to receive a copy of the TBE Directory or you may access the TBE Directory online at https://www.cityofmadison.com/civil-rights/contract-compliance.

All contractors, subcontractors, vendors and suppliers seeking TBE status must complete and submit the **Targeted Business Certification Application** to the City of Madison Affirmative Action Division by the time and date established for receipt of bids. A copy of the Targeted Business Certification Application is available by contacting the Contract Compliance Officer at the address and telephone indicated in Section 2.2 or you may access the Targeted Business Certification Application online atwww.cityofmadison.com/civil-rights/contract-compliance/targeted-business-enterprise-programs/targeted-business-enterprise. Submittal of the Targeted Business Certification Application by the time specified does not guarantee that the applicant will be certified as a TBE eligible to be utilized towards meeting the TBE goal for this project.

2.4 Targeted Business Enterprise Compliance Report

2.4.1 Good Faith Efforts

Bidders shall take all necessary affirmative steps to assure that TBEs are utilized when possible and that the established TBE goal for this project is achieved. A contractor who self performs a portion of the work, and is pre-qualified to perform that category of work, may subcontract that portion of the work, but shall not be required to do so. When a bidder is unable to achieve the established TBE goal, the bidder must demonstrate that a good faith effort to do so was made. Such a good faith effort should include the following:

2.4.1.1 Attendance at the pre-bid meeting.

2.4.1.2 Using the City of Madison's directory of certified TBEs to identify TBEs from which to solicit bids.

2.4.1.3 Assuring that TBEs are solicited whenever they are potential sources.

2.4.1.4 Referring prospective TBEs to the City of Madison Affirmative Action Division for certification.

2.4.1.5 Dividing total project requirements into smaller tasks and/or quantities, where economically feasible, to permit maximum feasible TBE participation.

2.4.1.6 Establishing delivery schedules, where requirements permit, which will encourage participation by TBEs.

2.4.1.7 Providing TBEs with specific information regarding the work to be performed.

2.4.1.8 Contacting TBEs in advance of the deadline to allow such businesses sufficient time to prepare a bid.

2.4.1.9 Utilizing the bid of a qualified and competent TBE when the bid of such a business is deemed reasonable (i.e. 5% above the lowest bidder), although not necessarily low.

2.4.1.10 Contacting TBEs which submit a bid, to inquire about the details of the bid and confirm that the scope of the work was interpreted as intended.

2.4.1.11 Completion of Cover Page (page C-6), Summary Sheet (page C-7) and TBE Contact Reports (pages C-8 and C9) if applicable.

2.4.2 **Reporting TBE Utilization and Good Faith Efforts**

The Targeted Business Enterprise Compliance Report is to be submitted by the bidder with the bid: This report is due by the specified bid closing time and date. Bids submitted without a completed TBE Compliance Report as outlined below may be deemed non-responsible and the bidder ineligible for award of this contract. Nothwithstanding any language to the contrary contained herein, the City may exercise its discretion to allow bidders to correct or supplement submissions after bid opening, if the minor discrepancy, bid irregularity or omission is insignificant and not one related to price, quality, quantity, time of completion, performance of the contract, or percentage of TBE utilization.

2.4.2.1 If the Bidder meets or exceeds the goal established for TBE utilization, the Targeted Business Enterprise Compliance Report shall consist of the following:

2.4.2.1.1 **Cover Page,** Page C-6; and
2.4.2.1.2 **Summary Sheet,** C-7.

2.4.2.2 If the bidder does not meet the goal established for TBE utilization, the Targeted Business Enterprise Compliance Report shall consist of the following:

2.4.2.2.1 **Cover Page,** Page C-6;
2.4.2.2.2 **Summary Sheet,** C-7; and
2.4.2.2.3 **TBE Contact Report,** C-8 and C-9. (A separate Contact Report must be completed for each applicable TBE which is not utilized.)

2.5 Appeal Procedure

A bidder which does not achieve the established goal and is found non-responsible for failure to demonstrate a good faith effort to achieve such goal and subsequently denied eligibility for award of contract may appeal that decision to the Targeted Business Enterprises Appeals Committee. All appeals shall be made in writing, and shall be delivered to and received by the City Engineer no later than 4:30 PM on the third business day following the bidder's receipt of the written notification of ineligibility by the Affirmative Action Division Manager. Postmark not acceptable. The notice of appeal shall state the basis for the appeal of the decision of the Affirmative Action Division Manager. The Appeal shall take place in accordance with Madison General Ordinance 33.54.

2.6 TBE Requirements After Award of the Contract

The successful bidder shall identify TBE subcontractors, suppliers and vendors on the subcontractor list in accordance with the specifications. The Contractor shall submit a detailed explanation of any variances between the listing of TBE subcontractors, vendors and/or suppliers on the subcontractor list and the Contractor's TBE Compliance Report for TBE participation.

No change in TBE subcontractors, vendors and/or suppliers from those TBEs indicated in the TBE Compliance Report will be allowed without prior approval from the Engineer and the Affirmative Action Division. The contractor shall submit in writing to the City of Madison Affirmative Action Division a request to change any TBE citing specific reasons which necessitate such a change. The Affirmative Action Division will use a general test of reasonableness in approving or rejecting the contractor's request for change. If the request is approved, the Contractor will make every effort to utilize another TBE if available.

The City will monitor the project to ensure that the actual percentage commitment to TBE firms is carried out.

2.7 TBE Definition and Eligibility Guidelines

A Targeted Business Enterprise is a business concern awarded certification by the City of Madison. For the purposes of this program a Targeted Business Enterprise is defined as:

A. An independent business operated under a single management. The business may not be a subsidiary of any other business and the stock or ownership may not be held by any individual or any business operating in the same or a similar field. In determining whether an entity qualifies as a TBE, the City shall consider all factors relevant to being an independent business including, but not limited to, the date the business was established, adequacy of its resources for the work in which it proposes to involve itself, the degree to which financial, equipment leasing and other relationships exist with other ineligible firms in the same or similar lines of work. TBE owner(s) shall enjoy the customary incidents of ownership and shall share in the risks and profits commensurate with their enjoyment interests, as demonstrated by an examination of the substance rather than form or arrangements that may be reflected in its ownership documents.

B. A business that has averaged no more than $4.0 million in annual gross receipts over the prior three year period and the principal owner(s) do not have a personal net worth in excess of $1.32 million.

Firm and/or individuals that submit fraudulent documents/testimony may be barred from doing business with the City and/or forfeit existing contracts.

TBE certification is valid for one (1) year unless revoked.

SECTION D: SPECIAL PROVISIONS

IMAGINATION CENTER AT REINDAHL PARK
CONTRACT NO. 9610

It is the intent of these Special Provisions to set forth the final contractual intent as to the matter involved and shall prevail over the Standard Specifications and plans whenever in conflict therewith. In order that comparisons between the Special Provisions can be readily made, the numbering system for the Special Provisions is equivalent to that of the Specifications.

Whenever in these Specifications the term "Standard Specifications" appears, it shall be taken to refer to the City of Madison Standard Specifications for Public Works Construction and Supplements thereto.

ARTICLE 102.4 PROPOSALS

This bid consists of:

1. ITEM 90000, IMAGINATION CENTER AT REINDAHL PARK - NEW CONSTRUCTION (EXCLUDING ALTERNATE 1)
2. ITEM 90001, ALTERNATE NO. 1: Photovoltaic Array

The contractor must do all of the following:

1. Provide a unit price for all bid items
2. Provide a total bid for each bid item
3. Provide a BASE BID TOTAL of all BASE BID item (#90000)
4. Provide a GRAND TOTAL of the BASE BID TOTAL plus Alternates (#90001)

ARTICLE 102.9 BIDDERS UNDERSTANDING

All Contractors are reminded that this is a Public Works contract for the City of Madison and is exempt from State Sales Tax. Refer to this section of the City Standard Specification for Public Works and Specification 00 62 76.13 in Exhibit B for more information.

ARTICLE 102.11 BEST VALUE CONTRACTING

This Contract shall be considered a Best Value Contract if the Contractor's bid is equal to or greater than $76,500 for a single trade contract; or equal to or greater than $373,000 for a multi-trade contract pursuant to MGO 33.07(7).

ARTICLE 103 AWARD AND EXECUTION OF THE CONTRACT

The Awarded Contractor shall completely execute the signing of all contract documents and submit them to City Engineering (1600 Emil St) prior to 12:00pm on APRIL 16, 2025. Delays in turning in the required completed contract documents will not adjust the project completion date.

Payment and Performance Bonds shall be dated no sooner than Wednesday APRIL 17, 2025.

ARTICLE 103.2 AWARD OF CONTRACT

All bids shall remain open for fifty (50) calendar days after the day of bid opening. Award will be made to the lowest responsible bidder submitting a conforming bid, unless all bids are rejected.

ARTICLE 104 SCOPE OF WORK

This contract is for the demolition of an existing park shelter and construction of the future Imagination Center at Reindahl Park site and facility located at 1818 Portage Rd., Madison, WI. The work includes,

but is not limited to, general site and building construction including civil, landscape, architectural, mechanical, electrical, plumbing, fire suppression, fire alarm, technology, and site utilities. This contract includes a potential for (1) alternate labeled as ITEM 90001.

The scope of work for the bidding contractor and all sub-contractors includes the furnishing of all labor, materials, equipment, tools, and other services necessary to complete the work in accordance with the intent of this contract. All Contractors shall use properly functioning equipment capable of performing the tasks required. All Contractors shall furnish workers who perform quality work and who are experienced and knowledgeable in the work proposed.

In addition, the Contractors shall include all costs of disposal, equipment rental, utility service installations, temporary services, and any other costs whatsoever which may be required for execution of this contract.

ARTICLE 104.1 LANDS FOR WORK

Refer to Exhibit-C: Lands For Work plan.

ARTICLE 104.2 INTENT AND COORDINATION OF CONTRACT DOCUMENTS

The contract documents are complimentary of each other and consist of all of the following:

1. The City of Madison Standard Specifications for Public Works Construction, 2025 Edition
2. These Special Provisions including all plans and specifications as noted by the exhibits list below
3. EXHIBITS FOR BIDDING PURPOSES:
    a. Exhibit-A: Drawings, dated January 06, 2025
    b. Exhibit-B: Specifications, dated January 06, 2025
    c. Exhibit-C: Lands For Work plan
    d. Exhibit-D: Construction Sequence Requirements plan
4. EXHIBITS FOR BIDDING REFERENCE:
    a. Reference-1: Draft Topographic Survey
    b. Reference-2: Draft ALTA Survey
    c. Reference-3: Hazardous Materials Report – Asbestos and Lead
    d. Reference-4: Geotechnical Exploration Report
    e. Reference-5: Existing Conditions drawings
    f. Reference-6: Facilities Bid Submittal Checklist
5. Contract Terms & Condition

ARTICLE 104.7 EXTRA WORK

Sec. 104.7 applies in full except that when calculating the prices for Extra Work to be completed by subcontractors federal requirements prohibit the addition of a percentage of cost as a mechanism for recovering indirect costs such as overhead or administrative costs. Contractors wishing to account for indirect costs must provide specific indirect cost rates at the time of submitting its costs that have been accepted by a Federal or State government agency in compliance with FAR Part 31 cost principles. These must be submitted in conjunction calculating the overall price for Extra Work.

ARTICLE 105.5 INSPECTION OF WORK

The Contractor shall be responsible for coordinating all required regulatory inspections associated with items and installations during the execution of this contract.

ARTICLE 105.6 CONTRACTORS RESPONSIBILITY FOR WORK

The Contractor shall not take advantage of any discrepancy in the plans or specifications. This shall include but not be limited to apparent errors, omissions, and interpretations involving codes, regulations, and standards. Any Contractor who identifies such a discrepancy during the bidding process shall notify

the Project Architect and the City Project Manager of the discrepancy as soon as possible. Review Specification 01 31 13 Project Coordination for additional responsibilities.

ARTICLE 105.7 CONTRACT DOCUMENTS

The General Contractor is responsible for reproducing all construction documents necessary to complete the Work at their own cost. This shall include plans, specifications, and addenda for the General Contractor and all Sub-contractors. The Contractor shall keep one copy of all drawings and Specifications on the project site, in good order, available to the Project Designers and all City representatives.

ARTICLE 105.9 SURVEYS, POINTS, AND INSTRUCTIONS

The General Contractor is responsible for providing all survey, benchmarks, points, and elevations required for this project.

ARTICLE 105.12 COOPERATION BY THE CONTRACTOR

1818 Portage Road is an active City of Madison Park. The site will continue to be used by City staff and the General Public. The Contractor shall expect vehicle and pedestrian traffic throughout the site. The Contractor shall be responsible for ensuring at the end of each day, that the work site is left clean, orderly, free of construction debris, barricades, etc. The Contractor may have to work around specific special events. Additionally, the Contractor shall be aware of maintenance activities that will occur throughout the duration of the Contract. The Contractor shall accommodate mowing, trash pickup, and other maintenance activities. Review **Exhibit-G: Lands For Work** for additional information.

Contractor shall coordinate Lateral fiber connection to the Metropolitan Unified Fiber Network with Right Of Way Fiber utility Contractor.

Contractor shall schedule work to meet **Exhibit-D: Construction Sequence Requirements plan** intent.

ARTICLE 109.7 TIME OF COMPLETION

Work shall begin only after the contract is completely executed and the Start Work Letter (SWL) is received. It is anticipated that the start work letter shall be issued on or about week of April 28, 2025.

Interim Completion Date #1 - The Contractor shall complete all the following by June 30, 2025.

Scopes of Work:

1. Demolition of existing Park shelter is complete

The Contractor shall have reached a level of Construction Closeout **NO LATER THAN** July 31, 2026. See Exhibit B, Specification 01 77 00 for the definition of Construction Closeout.

ARTICLE 109.8 DELAYS AND EXTENSIONS OF TIME

The Contractor shall include ten (10) weather days in their Bid Proposal to account for adverse weather conditions that may impact the progress of work, and must notify the City Construction Manager in writing of their intention to use a Weather Day prior to or on the day in question. The Engineer shall have sole authority to approve or deny the use of Weather Days based on actual site conditions and weather impacts to planned work activities. In the event that approved Weather Days exceed the ten (10) days included in the Contract, the Contractor shall submit a written request to the Board of Public Works for an Extension of Time, detailing the circumstances and justification for the additional time needed to complete the work, and the Board shall determine whether to grant such extension based on the merit of the request.

ARTICLE 110.2 PARTIAL PAYMENT TO CONTRACTORS AND PROMPT PAYMENT TO SUBCONTRACTORS

I. Partial Payments to Contractor. Partial payments based on the value of the work satisfactorily performed or satisfactory materials furnished, at contract or agreed unit or lump sum prices, will be made to the Contractor as the work progresses, except that partial payments will not be made if the Contractor is in noncompliance with any order given to the Contractor by the Engineer pursuant to the contract.

Twice each month (provided that a payment of $1,000 or more becomes due, which amount may at the Engineer's discretion be reduced for contracts of $25,000 or less) the Contractor will prepare an estimate of the quantities of work performed and the value thereof at contract or agreed unit or lump sum prices. The estimate will be prepared on forms provided by the Engineer. After review and acceptance of the estimate by the Engineer, the City shall issue a partial payment. Workforce Profiles shall be approved prior to the first partial payment.

The quantities included shall be computed to reflect the approximate amount of work completed, or substantially completed under each of the pertinent contract items to the date of the estimate less, in each case, an allowance adequate to cover contingencies and costs still to be incurred incident to finishing, maintaining, repairing and restoring of the work, and to cover possible variations between the contract and final quantities in instances where contract quantities are used as a basis for the estimate.

The Engineer may, upon presentation by the Contractor of receipted bills, freight bills or other satisfactory evidence of payment, include in the estimate prepared for partial payment the value of nonperishable materials which are to form a part of the completed work, produced or purchased, and delivered and stored in the vicinity of the work at such location where they will be available for ready incorporation into the work. The amounts paid for such materials shall go to reduce the amount of other partial or final payments due to the Contractor for the work performed as the materials are incorporated into the completed work.

The payment of any current estimate prior to final acceptance of the work by the City shall in no way constitute acceptance of the work, nor in any way prejudice or affect the obligation of the Contractor, to repair, restore, correct, renew or replace any defects or imperfections in the construction or in the strength or quality of the materials used in or about the construction of the work under contract and its appurtenances, or any damage due or attributable to such defects, which defects, imperfections or damage shall have been discovered on or before the final inspection or acceptance of the work. The Engineer shall be the sole judge of such defects, imperfections or damage and the Contractor shall be liable to the City for failure to correct the same as provided herein.

II. Prompt Payment to Subcontractors. The Contractor is required pursuant to 49 CFR §26.29 and Wis. Stat. § 66.0135 to pay all Subcontractors for all work that the Subcontractor has satisfactorily completed, no later than seven (7) days from the receipt of each payment that the City makes to the Contractor under sub. I above. Contractor must pay subcontractors in full and may not withhold any amount in retainage. Any delay in or postponement of payment to the Subcontractor requires good cause and prior written approval of the Engineer. Failure to comply with this prompt payment requirement is a breach of contract, which may result in the City withholding payment under sub. I above or pursuing any remedies permitted under law, including, but not limited to, Contractor Debarment. In addition, Contractor's failure to promptly pay its Subcontractors is subject to the provisions of Wis. Stat. §66.0135(3).

This project is eligible for Inflation Reduction Act Direct Payment for geothermal, solar photovoltaic (PV) and Electric Vehicle (EV) charger(s) and is under 1 MW of installed capacity. In addition to the requirements of specification section 012973 SCHEDULE OF VALUES, the Contractor, when directed by the City, shall provide the additional cost breakout/itemization for Divisions 22, 23 and 26. Examples of possible requests include, but are not limited to the following:

1. Division 22 – cost of condensate, sanitary and hub drains associated with HVAC Systems
2. Division 23 – cost of HVAC sub systems not directly connected to the geothermal system for purposes of deduction from the total Division 23 Schedule of Value including:
    i. data room split systems
    ii. stand alone exhaust fans
    iii. electric unit heaters
    iv. boilers
3. Division 26 – cost of electrical components associated with HVAC Systems, excluding non-eligible Division 23 components listed previously
4. Division 26 – if not already itemized in Schedule of Values, the entire cost of the Solar PV System
5. Division 26 – if not already itemized in Schedule of Values, the entire cost of Electric Vehicle Charging Stations

STANDARD BID ITEMS

Note: The Contractor shall be responsible for reviewing the descriptions, methods of measurement, and basis of payment of all standard bid items as described in the City of Madison Standard Specifications for Public Works Construction, 2025 Edition. The following Standard Bid Items described in these special provisions have been modified for this contract.

NON STANDARD BID ITEMS

ITEM 90000, IMAGINATION CENTER AT REINDAHL PARK - NEW CONSTRUCTION

DESCRIPTION

BID ITEM shall be for the following work:

- Site and building demolition as described in contact Exhibits
- Construction of site and building systems as described in contract Exhibits
- In Lieu of ITEM 90001, Omit Photovoltaic Array and all related work – i.e. structural modifications, roof anchors, racking, panels, electrical connections inverters, disconnects, etc.

The Contractor shall be aware that the following work IS NOT included in this bid item:

- ITEM 90001

METHOD OF MEASUREMENT

Bid Item shall be measured as LUMP SUM for a complete installation of the work described above.

BASIS OF PAYMENT

Bid Item shall be paid at the contract unit price for all labor, materials, equipment, and incidentals associated with completing the work described above. Partial payments for this bid item shall be permitted based on the percentage of bid item work completed on site.

ITEM 90001, ALTERNATE NO. 1: Photovoltaic Array

DESCRIPTION

BID ITEM shall be for the following work:

- Provide Photovoltaic Array and all related work as described in Drawings and Specifications.

The Contractor shall be aware that the following work IS NOT included in this bid item:

- ITEM 90000

METHOD OF MEASUREMENT

Bid Item shall be measured as LUMP SUM for a complete installation of the work described above as the BASE BID.

BASIS OF PAYMENT

Bid Item shall be paid at the contract unit price for all labor, materials, equipment, and incidentals associated with completing the work described above. Partial payments for this bid item shall be permitted based on the percentage of bid item work completed on site.

POINT OF CONTACT

The Construction Manager for City Engineering, Facility Management for this contract is:

Maria Delestre
PH: (608) 243-5891
Email: MDelestre@CityofMadison.com
210 Martin Luther King Jr. Blvd
Room 115
Madison, WI 53703

The Project Manager for City Engineering, Facility Management for this contract is:

Brent Pauba
PH: (608) 266-4092
Email: BPauba@CityofMadison.com
210 Martin Luther King Jr. Blvd
Room 115
Madison, WI 53703

The Architect for Joseph Lee & Associates (JLA) is:

Jennifer Camp, AIA
PH: (608) 210-1232
Email: jcamp@jla-ap.com
333 East Chicago Street
Milwaukee, WI 53202

END OF SPECIAL PROVISIONS

Department of Public Works
Engineering Division
James M. Wolfe, P.E., City Engineer

City-County Building, Room 115
210 Martin Luther King, Jr. Boulevard
Madison, Wisconsin 53703
Phone: (608) 266-4751
Fax: (608) 264-9275
engineering@cityofmadison.com
www.cityofmadison.com/engineering

Deputy City Engineer
Bryan Cooper, AIA
Gregory T. Fries, P.E.
Chris Petykowski, P.E.

Deputy Division Manager
Kathleen M. Cryan

Principal Engineer 2
Janet Schmidt, P.E.

Principal Engineer 1
Kyle Frank, P.E.
Mark D. Moder, P.E.
Fadi El Musa Gonzalez, P.E.
Andrew J. Zwieg, P.E.

Financial Manager
Steven B. Danner-Rivers

March 7, 2025

ADDENDUM NO. 1
City of Madison, Engineering Division

CONTRACT NO. 9610
IMAGINATION CENTER AT REINDAHL PARK

This addendum is issued to modify, explain or correct the original Drawings, Specifications, or Contract Documents marked as **Imagination Center at Reindahl Park, Contract #9610, as issued on February 13, 2025** and is hereby made a part of the contract documents.

Please acknowledge this addendum on page E-1 of the contract documents and/or in Section E: Bidder's Acknowledgement on Bid Express.

Electronic version of these documents can be found on Bid Express at https://www.bidexpress.com/ and the City of Madison web site at http://www.cityofmadison.com/business/PW/contracts/openforBid.cfm

If you are unable to download plan revisions associated with the addendum, please contact the Engineering office at (608) 266-4751 to receive the material by another method.

For questions regarding this bid, contact:

Brent Pauba
PH: (608) 266-4092
Email: BPauba@CityofMadison.com
210 Martin Luther King Jr. Blvd
Room 115
Madison, WI 53703

Sincerely,

James M. Wolfe, P.E.
City Engineer

This addendum modifies the following documents:

1. 9610 Exhibit-A_drawings.pdf
2. 9610 Exhibit-B_specifications.pdf
3. 9610 reference-6_form_BidSubmittalChecklist.pdf

Please attach these Addendum documents to the Drawings and Project manual in your possession.

1. **GENERAL**
   - **A.** See attached Bid Talk attendee list
   - **B.** See attached Site Tour attendee list

2. **BIDDER QUESTIONS AND ANSWERS**
   - ***A.*** *Are prevailing wages required? It's unclear if there are required rates, as there is a reference in the contract closeout requirements but nowhere else.*
     - **i. Prevailing Wage is not required for this Contract.**

   - **B.** Are there any areas of the project site that need to be substantially completed earlier than the final substantial completion date? Example: will we need to have asphalt mobilize two times to complete paving a portion at a time? I don't see any referenced but want to make sure what areas we can fence off for the duration of the project.
     - **i. Yes. See Exhibit-D: Construction Sequence Requirements plan (9610 Exhibit-D_ConstructionSequenceRequirements.pdf) for construction sequencing requirements and the Contract (9610 Contract.pdf), SECTION D-3, ARTICLE 109.7 TIME OF COMPLETION for an interim construction completion date.**

   - **C.** Specification page 01 43 50 - 5 is a partial duplicate of 01 43 50 - 4. Is it required?
     - **i. See updated Specification section 01 43 50 Air Barrier Systems.**

   - **D.** Does any portion or all of the parking lot need be available to the public during any point during the construction timeline?
     - **i. See Exhibit-C: Lands For Work plan (9610 Exhibit-C_drawing_landsForWork.pdf). Any parking lot within the PROJECT LIMITS will not be available for public use. Please note that parking lots outside of the PROJECT LIMITS are subject to requirements set forth in Exhibit-C.**

   - **E.** The specifications and 9610 Contract documents have different construction start and completion dates. Which should we follow?
     - **i. Refer to the Contract (9610 Contract.pdf) for Construction Start and Completion dates. Specification section 00 01 02 PROJECT INFORMATION is now revised, removing Start and Completion dates.**

   - **F.** The specifications and 9610 Contract documents have different alternates as well. Which are we to include?
     - **i. Refer to the Contract (9610 Contract.pdf) for Bid Alternates. Specification section 01 23 00 ALTERNATES has been removed fully.**

   - **G.** Are there any additional requirements for the Inflation Reduction Act eligibility than what is discussed on pages 21 and 22 of the 9610 Contract document?
     - **i. ARTICLE 110.2 PARTIAL PAYMENT TO CONTRACTORS AND PROMPT PAYMENT TO SUBCONTRACTORS of the Contract (9610 Contract.pdf) includes the extent of Inflation Reduction Act requirements for the Contractor.**

   - **H.** Drawings show aluminum posts and aluminum panels for the trash enclosure. The specifications list Plankwall PVC. Please verify what is required.
     - **i. Plans are revised to show the proper enclosure materials, per specifications manual.**

   - **I.** Is the solar tree in the GC scope. The drawings list it as future in some locations and by GC in others. The specs also say future, but the requirements are written more in line with a GC requirement. Please verify. If this is a future item and should be excluded from the GC scope, please confirm what shop drawing requirements, if any, are to be

included, including engineering requirements. If we are not installing the unit, why would we be required to provide sealed engineered drawings?

i. **The solar tree is in the project scope. See updated drawings and specifications for clarification.**

J. MDC Interior Solutions 3390AL Allegrai Lyric appears to be discontinued. https://www.mdcwall.com/product/type-ii-wall/3390al Please verify desired wall covering for folding panel.

i. **See updated drawings for revised wall covering selection.**

K. Is the solar Tree to be included in Alternate #1?

i. **No, the solar Tree is to be included in the Base Bid (Item 90000)**

L. Is the pitch for the solar PV modules called out? Based on the inter-row spacing specified, it appears the pitch to be 8-10 degrees. Would designs to maximize kWh/kW be acceptable?

i. **Panel orientation and pitch may be modified through the submittal process, provided that system capacity meets or exceeds the minimum performative requirements established in the drawings and specifications. All layouts shall comply with ROOF EDGE SAFETY AND WORKING CLEARANCE parameters as delineated in the electrical drawings. Any modifications to panel layouts must be fully coordinated with other building systems that interface with the roof assembly.**

M. Can you clarify the LEED Goal? Spec is Silver

i. **This project requires a minimum of LEED silver. See SECTION 01 81 13 SUSTAINABLE DESIGN REQUIREMENTS – LEED FOR NEW CONSTRUCTION V4.0 for relevant information.**

N. Can an Isometric view of the facility be provided?

i. **There are two structural isometrics and an isometric showing the MEP systems in the drawing set. There will not be any additional isometrics added.**

O. Does the existing shelter provide electricity to any other Park buildings or site improvements?

i. **The existing shelter does not provide electrical service to any other property buildings. Site improvements currently powered by the shelter's electrical system will not require temporary power provisions during construction activities. Refer to Civil drawings for complete documentation of existing electrical demolition requirements.**

P. Please confirm Lutron Shade connections are to be provided by Division 28 – AV Contractor?

i. **Division 27 and 28 specifications have been updated to remove shade connections. See Division 26 for Lutron Shade scope of work.**

Q. What is the preferred Mohawk Series Cable(s) for Structured Cabling?

i. **The Mohawk cable part numbers are currently included under Section 27 00 05.**

R. Is there a specification for book shelving and general shelving?

i. **Library Stack shelving is not in this contract's scope of work, see A141 for clarification of shelving scope. See section 10 56 17 WALL MOUNTED STANDARDS AND SHELVING for storage shelving requirements.**

3. **ACCEPTABLE EQUIVALENTS**
   A. Specification section 08 80 00 – Glazing, Vitro Solarban 65
      i. **In review – response to be communicated in future addendum.**

4. **9610 Contract**
   A. No change

5. **9610 Exhibit-A_drawings**
   A. **L104 - "LANDSCAPE PLAN"**
      i. Removed "future" from the solar tree.

B. **L402 - "LANDSCAPE PLAN ENLARGEMENT"**
   i. Removed "future" from the solar tree.
C. **ASP200 - "SITE PLANS AND DETAILS"**
   i. Revised all plans, elevations, and details to clarify trash enclosure materials.
D. **AI103 - "WALL FINISH PLAN"**
   i. Revised First Floor Wall Finish Plan, folding partition panel material as shown.
E. **E001 - "ELECTRICAL SYMBOLS & ABBREVIATIONS"**
   i. Added sheet E507
F. **E101 - "FIRST FLOOR PLAN – POWER & FIRE ALARM"**
   i. Detail C3 – Moved telecom ground bar to the technology set.
   ii. Added special purpose outlets HL1C, MCB, and S1C.
G. **E501 - "ELECTRICAL DETAILS"**
   i. Detail A5 – Added notes #3 and #4.
H. **E507 - "ELECTRICAL DETAILS"**
   i. Moved sheet T505 to E507.
   ii. Added wiring information.
   iii. Revised general sheet notes.
I. **E602 - "ELECTRICAL SCHEDULES"**
   i. Special Purpose Outlet Schedule
      (1) Added special purpose outlets HL1C, MCB and S1C.
J. **E610 - "PANEL SCHEDULES"**
   i. Panel A
      (1) Revised description for circuit #12.
   ii. Panel B
      (1) Revised description for circuit #36
      (2) Added circuit #59.
K. **E610 - "PANEL SCHEDULES"**
   i. Panel D
      (1) Added circuit #69.
L. **T001 - "TECHNOLOGY SYMBOLS & ABBREVIATIONS"**
   i. Removed sheet T505.
   ii. Revised sheet name for T601.
M. **T101 - "FIRST FLOOR PLAN - TECHNOLOGY"**
   i. Revised keyed note #67.
   ii. Added keyed note #86.
   iii. C1 – Revised detail.
   iv. C5 – Showed the telecom ground bar.
   v. Revised telecom outlets in Community Room 107, Pavillion #1 151 and Pavillion #2 152.
   vi. Added telecom ground bars in Storage 107A and 156.
   vii. Added TE1 and TE2.
   viii. Moved AV MCBs to be mounted on a shelf in Storage 107A and 156.
   ix. Revised AV equipment listed inside the telecom rack in Storage 107A.
   x. Removed camera HL1 and replaced with camera S1 in Classroom 109.
   xi. Added AV WAP-WM in Classroom 109.
   xii. Add AV RT to Meeting – Large 120, Meeting – Small 121, and Meeting – Small 122.
   xiii. Removed telecom outlet in Family Hub 117.
N. **T502 - "TECHNOLOGY DETAILS"**
   i. Revised details A2, A5, and C2.
   ii. Added details D4 and D6
O. **T601 - "TECHNOLOGY SCHEDULES"**
   i. Revised sheet name.
   ii. Audio / Visual Connection Schedule
      (1) Revised note #1.
      (2) Added camera S1.

(3) Revised WAP-WM conduit route.

P. **T701 - "AV FLOW DIAGRAMS"**
   i. Added general notes.
   ii. Flow diagram
      (1) Moved note to general notes.
      (2) Removed (1) AV HL1.
      (3) Revised UC BRACKET to AV-CF UC BRACKET.
   iii. Schedule
      (1) See sheet for revisions.

Q. **T702 - "AV FLOW DIAGRAMS"**
   i. Added general notes.
   ii. Flow diagram
      (1) Moved note to general notes.
      (2) Added AV WAP-WM and body pack mike.
      (3) Revised (1) AV HL1 to AV S1.
      (4) Revised UC BRACKET to AV-CF UC BRACKET.
   iii. Schedule
      (1) See sheet for revisions.

R. **T703 - "AV FLOW DIAGRAMS"**
   i. Added general notes.
   ii. Flow diagram
      (1) Moved note to general notes.
      (2) See sheet for revisions.

S. **T704 - "AV FLOW DIAGRAMS"**
   i. Schedule
      (1) See sheet for revisions.

6. **9610 Exhibit-B_specifications**

A. 00 01 10 TABLE OF CONTENTS
   i. Sections revised or omitted are noted in the Table of Contents with (A1) after section title.

B. 00 01 02 PROJECT INFORMATION
   i. Removed Paragraph 1.04 PROCUREMENT TIMETABLE.

C. 01 23 00 ALTERNATES
   i. Omitted entire section from specification.

D. SECTION 01 29 76 PROGRESS PAYMENT PROCEDURES
   i. Paragraph 1.04.E Progress Payment Milestone Schedule – Two (2) rows added to encourage early coordination of the electrical equipment prior to Partial Payment 2 and Partial Payment 3:
      (1) Electrical Gear Submittal and Approval Milestone
      (2) Electrical Gear Supplier Confirmation Milestone

E. 01 43 50 AIR BARRIER SYSTEMS
   i. Removed duplicate page 5 from pdf.

F. 08 80 00 - GLAZING
   i. Paragraph 1.02.A - Omitted reference to Section 01 23 00 – ALTERNATES.
   ii. Paragraph 2.01.A.2 - Added "Or Approved Equal".
   iii. Paragraph 2.01.A.3 - Substitutions – Omitted reference to Section 01 60 00 and replaced with reference to Section 01 25 13 – Product Substitution Procedures.
   iv. Paragraph 2.01.B.2 - Added "Or Approved Equal".
   v. Paragraph 2.01.B.3 - Substitutions – Omitted reference to Section 01 60 00 and replaced with reference to Section 01 25 13 – Product Substitution Procedures.
   vi. Paragraph 2.01.C.2 - Added "Or Approved Equal".
   vii. Paragraph 2.01.C.3 - Substitutions – Omitted reference to Section 01 60 00 and replaced with reference to Section 01 25 13 – Product Substitution Procedures.
   viii. Paragraph 2.04.G - Omitted reference to Section 01 23 00 – ALTERNATES.

G. 10 22 39 FOLDING PANEL PARTITIONS

i. Paragraph 2.02.A.1 - spelling correction.
ii. Paragraph 2.02.C.1 - Revised panel finish selection.

H. 13 34 16 PRE-ENGINEEERED STRUCTURES – SOLAR FORMA
i. Paragraph 1.01.A - omitted the word "future" in reference to the Solar Tree. The solar tree is part of the project scope.

I. 27 41 16 – PARK PAVILION AUDIO VISUAL SYSTEM
i. Paragraph 1.03.B - omitted "video displays".
ii. Paragraph 1.03.D - added "screen will lower".

J. 27 51 16 – LIBRARY AUDIO VISUAL SYSTEM
i. Paragraph 1.02.B-G – additional sections added to Related Requirements.
ii. Paragraph 1.04.A -multiple edits for AV system in Community Room 107.
iii. Paragraph 1.04.B - multiple edits for AV system in Classroom 109.
iv. Paragraph 1.04.C - multiple edits for input components in Community Room 107 and Classroom 109.
v. Paragraph 1.06.A - added full name of Section 27 41 00.
vi. Paragraph 1.07.A - added full name of Section 27 41 00.

K. 27 11 23 – FLAT SCREENS
i. Paragraph 1.01.E - replaced "Install a City furnished" with "At each display provide a".
ii. Paragraph 2.01.A.8 - Omit entire line regarding substitutions.

L. 32 33 00 – SITE FURNISHNGS
i. Paragraph 1.02.C - omitted the word "future" in reference to the Solar Tree. The solar tree is Part of the project scope.

7. **9610 Exhibit-C_drawing_landsForWork**
A. No change

8. **9610 Exhibit-D_ConstructionSequenceRequirements**
A. No change

9. **9610 Reference-1_survey_topographic**
A. No change

10. **9610 Reference-2_survey_ALTA**
A. No change

11. **9610 Reference-3_report_AsbestosLead**
A. No change

12. **9610 Reference-4_report_GeotechExploration**
A. No change

13. **9610 reference-5_drawings_existingConditions**
A. No change

14. **9610 reference-6_form_BidSubmittalChecklist**
A. Added (4) SECTION H items to checklist
B. Added (1) SECTION I item to checklist

15. **9610 Proposal Page**
A. No change

ADDENDUM-1
BID TALK AND SITE VISIT ATTENDEE LIST

Attendee Report		
Date/Time	2025-FEB-27	
Topic	Bid Talk: Imagination Center at Reindahl Park	
Webinar ID	844 7950 6407	
Attendee Details		
First Name	**Last Name**	**Email**
Sabrina	Madison	district17@cityofmadison.com
Harlan	Ward	harlan@archsolar.com
Mitchell	Hayes	Mitchell.Hayes@miron-construction.com
Lou	Olson	lolson@findorff.com
Isaac	Siegmann	isiegmann@bachmannconstruction.com
Erin	Woodard	ewoodard@mplfoundation.org
J	Humphries	j@bachmannconstruction.com

Imagination Center at Reindahl Park
Contract 9610
Pre-Bid Site
Monday, March 03, 2025, 12:00p.m.

ATTENDEES
PLEASE SIGN-IN

NAME	COMPANY	EMAIL	PHONE
Mitchell Hayes	Miron Construction	Mitchell.Hayes@Miron-Construction.com	920-574-8575
Anana Toder	CJ & Associates	atjader@cjassociatesinc.com	920.517.3286
Noah Wexler	NAMI	nwexler@namiC.com	608-225-3241
Lou Olson	FINDORFF	madisonbids@findorff.com lolson@findorff.com	608-442-7368
Isaac Siegmann	Bachmann Const.	isiegmann@bachmannconstruction.com	608-358-6668
Steve Esling	CCI	bids@cciwi.com	262-758-0083

ADDENDUM-1
DRAWINGS

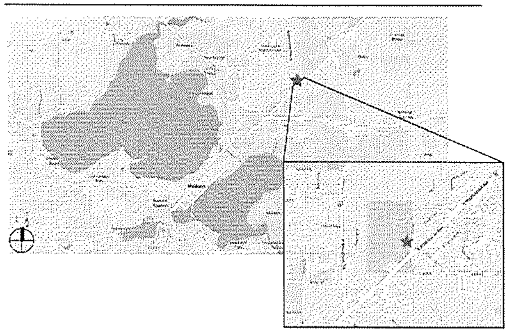
ABBREVIATIONS

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

SYMBOL LEGEND

- VIEW NUMBER / TITLE — VIEW NAME / 1/2" = 1'-0" — VIEW SCALE
- DETAIL CALLOUT
- SECTION CALLOUT
- ELEVATION CALLOUT
- ELEVATION DATUM
- NORTH ARROW
- EXISTING CONSTRUCTION
- DEMOLITION
- NEW CONSTRUCTION
- WALL TAG
- DOOR TAG
- KEYNOTE TAG
- REVISION TAG
- FURNITURE TAG
- EQUIPMENT TAG
- WINDOW TAG
- CASEWORK TAG (PLAN OR ELEVATION)
- FINISH PLAN TAG (FLOOR / BASE / WALL / REMARKS)
- CEILING TAG (TYPE / HEIGHT)
- ROOM TAG (NAME / 0000)
- NEW GRID AND IDENTIFICATION
- EXISTING GRID AND IDENTIFICATION

VICINITY MAP



SHEET ORGANIZATION

EACH DRAWING SHEET IS BASED UPON A 30 SQUARE GRID SYSTEM, STARTING WITH '1' IN THE TOP LEFT HAND CORNER AND WORKING LEFT-TO-RIGHT AND TOP-TO-BOTTOM TO '30' IN THE BOTTOM RIGHT HAND CORNER, EXAMPLE BELOW:

1	2	3	4	5	6	TITLEBLOCK
7	8	9	10	11	12	
13	14	15	16	17	18	
19	20	21	22	23	24	
25	26	27	28	29	30	

PROJECT ADDRESS

IMAGINATION CENTER AT REINDAHL PARK

LIBRARY: 1814 PARKSIDE DR.
MADISON, WI 53704

PAVILION: 1818 PARKSIDE DR.
MADISON, WI 53704

CONTRACT No: 9610

MUNIS No: 17085

OWNER INFORMATION

CITY OF MADISON
210 MARTIN LUTHER KING, JR. BLVD.
MADISON, WI 53703-3342

CONTACT: Brent Pauba - Department of Public Works, Engineering Division
EMAIL: bpauba@cityofmadison.com
MAIN: 608.266.4092

PROJECT TEAM

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JLA ARCHITECTS & PLANNERS
800 WEST BROADWAY, SUITE 200
MONONA, WISCONSIN 53713
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G000-G300, ASP-200, A101-A811

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MADISON, WI 53703
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C100-C904

LANDSCAPING

SAIKI DESIGN, INC.
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275 WEST WISCONSIN AVENUE, SUITE 300
MILWAUKEE, WI 53203
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STRUCTURAL SHEETS:
S001-S603

PLUMBING & FIRE PROTECTION

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275 WEST WISCONSIN AVENUE, SUITE 300
MILWAUKEE, WI 53203
CONTACT: Jessica Culver, PE
EMAIL: jessica.culver@graef-usa.com
MAIN: 414.266.9008
FIRE PROTECTION SHEETS: F001-F101
PLUMBING SHEETS: P001-P811

MECHANICAL

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MADISON, WI 53703
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EMAIL: matthew.garcia@graef-usa.com
MAIN: 414.266.9232
MECHANICAL SHEETS:
M001-M806

ELECTRICAL & TECHNOLOGY

GRAEF, INC.
275 WEST WISCONSIN AVENUE, SUITE 300
MILWAUKEE, WI 53203
CONTACT: Beth Ann Bruss, DES
EMAIL: beth.bruss@graef-usa.com
MAIN: 414.266.9252
ELECTRICAL SHEETS: E001-E620
TECHNOLOGY SHEETS: T001-T704

INTERIOR DESIGN

INTERIOR LOGIC
1201 SOUTH STOUGHTON ROAD, SUITE 150
MADISON, WI 53716
CONTACT: Robin Stroebel, ASID, PID, LEED AP ID+C, WELL AP
EMAIL: rstroebel@intlogic.com
MAIN: 608.316.3870
INTERIORS SHEETS:
AI102-AI413

SET ISSUE

BID DOCUMENTS
JANUARY 6, 2025

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A517	BUILDING DETAILS		
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T703	AV FLOW DIAGRAMS	A1	01/07/2025
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REVISED

JLA ARCHITECTS
MADISON | MILWAUKEE | DENVER
JLA-AP.COM

JLA PROJECT NUMBER: 20-0925

CITY OF MADISON WISCONSIN

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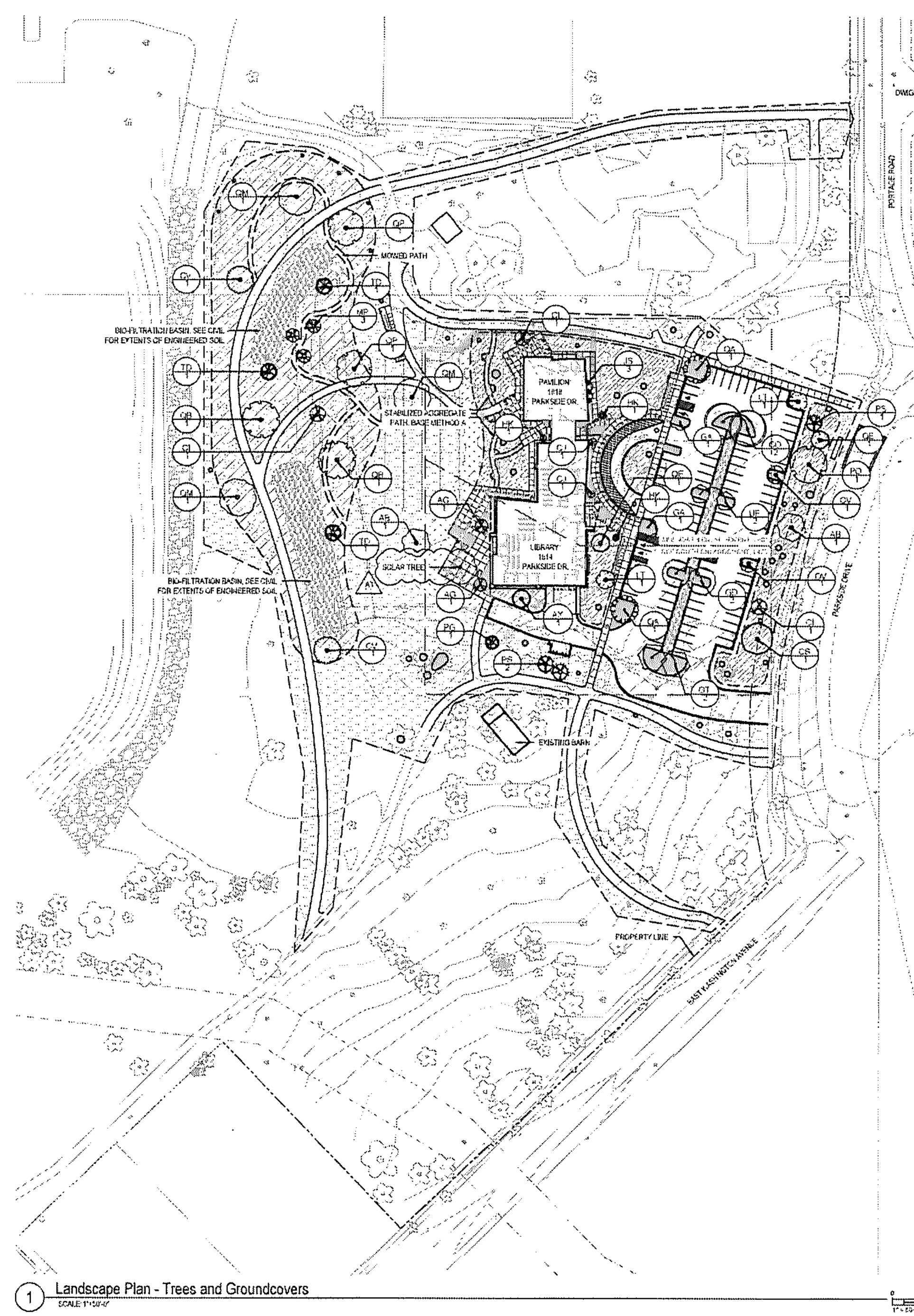
IMAGINATION CENTER AT REINDAHL PARK

BID DOCUMENTS

SHEET TITLE: INDEX SHEET

SHEET NUMBER: G001

REVISED



(1) Landscape Plan - Trees and Groundcovers
SCALE: 1"=50'-0"

LEGEND
- SHREDDED HARDWOOD MULCH
- STONE MULCH
- DECORATIVE CONCRETE
- STABILIZED AGGREGATE PATH, SEE 10/L501
- METAL BED EDGING SEE 7/L501
- SPADED BED EDGING SEE 6/L501
- STONE MAINTENANCE EDGE SEE 8/L501
- PROJECT LIMITS
- EXISTING SITE FEATURES
- PROPERTY LINE
- MULCH TREE RING
- FUTURE PUBLIC ART LOCATION
- EXISTING EVERGREEN TREE
- EXISTING DECIDUOUS TREE

PLAN NOTES
1. FIELD VERIFY SURVEY INFORMATION AND SITE CONDITIONS PRIOR TO START OF CONSTRUCTION AND REPORT ANY DISCREPANCIES TO LANDSCAPE ARCHITECT. CONTACT DIGGER'S HOTLINE TO LOCATE ALL PUBLIC AND PRIVATE UTILITIES PRIOR TO THE START OF CONSTRUCTION. ANY DAMAGE CAUSED TO EXISTING UTILITIES, EITHER SHOWN OR NOT, SHALL BE REPAIRED AND PAID FOR AT THE CONTRACTOR'S EXPENSE.
2. PROTECT ALL BENCHMARKS. INCLUDE ANY RELOCATED BENCHMARKS IN AS-BUILT DRAWINGS.
3. ALL EXISTING PLANT MATERIAL IS SHOWN AT EXISTING, APPROXIMATED SIZE PER CITY OF MADISON STANDARDS.
4. ANY STREET TREE REMOVALS REQUESTED AFTER THE DEVELOPMENT PLAN IS APPROVED BY THE PLAN COMMISSION OR THE BOARD OF PUBLIC WORKS AND CITY FORESTRY WILL REQUIRE A MINIMUM OF A 72-HOUR REVIEW PERIOD WHICH SHALL INCLUDE THE NOTIFICATION OF THE ALDERPERSON WITHIN WHOSE DISTRICT IS AFFECTED BY THE STREET TREE REMOVAL(S) PRIOR TO A TREE REMOVAL PERMIT BEING ISSUED.
3. ALL WRAPPINGS, WIRE BASKETS, BURLAP, AND OTHER MISCELLANEOUS MATERIAL SHALL BE COMPLETELY REMOVED FROM ALL SHRUB AND TREE ROOT BALLS PRIOR TO INSTALLATION.
4. VISUALLY INSPECT AND VERIFY SPECIFIED TOPSOIL AND PLANTING SOIL DEPTHS ARE PRESENT PRIOR TO PLANTING AS OUTLINED IN SPECIFICATIONS.
5. ANY LAWN OR LANDSCAPED AREAS WITHIN OR OUTSIDE OF THE CONSTRUCTION BOUNDARY THAT ARE DISTURBED SHALL BE RE-SEEDED AND/OR REPAIRED WITH ORIGINAL MATERIALS AND TO PRE-DISTURBANCE STANDARDS AT NO COST TO THE OWNER OR CITY.
6. SEE SECTIONS 32 92 19 "SEEDING" AND 32 93 00 "PLANTS" FOR NATIVE SEED AREA AND BIO-FILTRATION AREA EROSION CONTROL MATERIALS.
7. CONTRACTOR IS RESPONSIBLE FOR WATERING AND MAINTENANCE OF PLANT MATERIAL, SEE SPECIFICATIONS FOR MORE INFORMATION.
8. CONTACT CITY OF MADISON PRIOR TO PERFORMING ANY WORK WITHIN THE CITY RIGHT OF WAY TO CONFIRM RESTORATION.
9. THE RIGHT OF WAY IS THE SOLE JURISDICTION OF THE CITY OF MADISON AND IS SUBJECT TO CHANGE AT ANY TIME PER THE RECOMMENDATION OF TRAFFIC ENGINEERING AND ENGINEERING DIVISIONS. FORWARD ANY CHANGES PROPOSED BY CITY OFFICIALS TO LANDSCAPE ARCHITECT FOR CONSIDERATION AND DIRECTION BEFORE PROCEEDING.

PLANT SCHEDULE - TREES

SYMBOL	CODE	BOTANICAL / COMMON NAME	CONT	SIZE
DECIDUOUS TREES				
	AB	Acer saccharum 'Bailsta' / Fall Fiesta® Sugar Maple	B & B	3"Cal
	AX	Aesculus x bushii 'Aaron' / Mystic Rays Buckeye	B & B	2.5"Cal
	CV	Carya ovata / Shagbark Hickory	B & B	2.5"Cal
	CS	Catalpa speciosa / Northern Catalpa	B & B	2.5"Cal
	CO	Celtis occidentalis 'Chicagoland' / Chicagoland Hackberry	B & B	3"Cal
	GA	Ginkgo biloba 'Autumn Gold' TM / Autumn Gold Maidenhair Tree	B & B	2" Cal
	GT	Gleditsia triacanthos inermis 'Shademaster' / Shademaster Locust	B & B	2.5"Cal
	GD	Gymnocladus dioica 'Espresso' / Espresso Kentucky Coffeetree	B & B	2.5"Cal
	LT	Liriodendron tulipifera / Tulip Tree	B & B	2.5"Cal
	OV	Ostrya virginiana / American Hophornbeam	B & B	2.5"Cal
	PO	Platanus occidentalis 'Morton Circle' / Exclamation! American Sycamore	B & B	2.5"Cal
	QA	Quercus alba / White Oak	B & B	3"Cal
	QB	Quercus bicolor / Swamp White Oak	B & B	3"Cal
	QE	Quercus ellipsoidalis / Northern Pin Oak	B & B	3"Cal
	QP	Quercus macrocarpa / Burr Oak	B & B	3" Cal
	QM	Quercus muehlenbergii / Chinkapin Oak	B & B	3" Cal
	TD	Taxodium distichum / Bald Cypress	B & B	6' HT (MIN)
	UF	Ulmus x 'Frontier' / Frontier Elm	B & B	3"Cal
EVERGREEN TREES				
	JS	Juniperus scopulorum 'Wichita Blue' / Wichita Blue Juniper	B & B	5' HT. (MIN)
	PG	Picea glauca densata / Black Hills Spruce	B & B	6' HT (MIN)
	PS	Pinus strobus / White Pine	B & B	6' HT (MIN)
ORNAMENTAL TREES				
	AG	Amelanchier x grandiflora 'Autumn Brilliance' / Autumn Brilliance Serviceberry	B & B	6'HT (MIN),
	CJ	Carpinus caroliniana 'J.N. Upright' / Firespire American Hornbeam	B & B	2" Cal
	CI	Crataegus crus-galli inermis / Thornless Cockspur Hawthorn	B & B	6'HT (MIN),
	HK	Hamamelis vernalis 'Kohankie Red' / Kohankie Red Ozark Witchhazel	B & B	3' HT. (MIN)
	MP	Malus x 'Prairifire' / Prairifire Crabapple	B & B	2" Cal

GROUNDCOVERS SCHEDULE

NATIVE SEED - 01	Low-Growing Meadow for Dry Soils	21,628 sf
NATIVE SEED - 02	Diverse Prairie for Dry Soils	52,864 sf
NATIVE SEED - 03	Woodland Edge - Savanna for Medium Soils	5,804 sf
BLUEGRASS LAWN SOD		8,611 sf
BLUEGRASS LAWN SEED	Madison Parks Blend	111,488 sf

BIO-FILTRATION BASIN PLUG MIX — 14,305 sf

Allium cernuum / Nodding Onion	182	4" Plug	[illegible]
Andropogon gerardii / Big Bluestem	144	4" Plug	[illegible]
Asclepias incarnata / Swamp Milkweed	330	4" Plug	[illegible]
Baptisia alba / White Wild Indigo	330	4" Plug	[illegible]
Carex albicans / Whitetinge Sedge	144	4" Plug	[illegible]
Carex eburnea / Bristleleaf Sedge	330	4" Plug	[illegible]
Carex muskingumensis / Palm Sedge	330	4" Plug	[illegible]
Carex praegracilis / California Field Sedge	330	4" Plug	[illegible]
Dalea purpurea / Purple Prairie Clover	144	4" Plug	[illegible]
Elymus canadensis / Canada Wild Rye	182	4" Plug	[illegible]
Iris versicolor / Blue Flag	144	4" Plug	[illegible]
Liatris spicata / Spike Gayfeather	330	4" Plug	[illegible]
Lobelia siphilitica / Great Lobelia	330	4" Plug	[illegible]
Monarda fistulosa / Bergamot	330	4" Plug	[illegible]
Panicum virgatum / Switch Grass	330	4" Plug	[illegible]
Pycnanthemum tenuifolium / Slender Mountain Mint	144	4" Plug	[illegible]
Ratibida pinnata / Yellow Coneflower	144	4" Plug	[illegible]
Rudbeckia subtomentosa / Sweet Black-eyed Susan	144	4" Plug	[illegible]
Senna hebecarpa / Wild Senna	144	4" Plug	[illegible]
Silphium perfoliatum / Cup Plant	144	4" Plug	[illegible]
Silphium terebinthinaceum / Prairie Dock	144	4" Plug	[illegible]
Sorghastrum nutans / Indian Grass	182	4" Plug	[illegible]
Sporobolus heterolepis / Prairie Dropseed	144	4" Plug	[illegible]
Symphyotrichum novae-angliae / New England Aster	330	4" Plug	[illegible]
Verbena hastata / Blue Vervain	144	4" Plug	[illegible]
Vernonia fasciculata / Ironweed	330	4" Plug	[illegible]
Zizia aurea / Golden Alexander	144	4" Plug	[illegible]

NOTES
- VERIFY SQUARE FOOTAGE OF ALL GROUNDCOVER AREAS. IF PLAN CONFLICTS WITH SCHEDULE, PLAN SHALL GOVERN.
- FOR BIO-FILTRATION BASIN PLANTINGS, DISTRIBUTE PLANT SPECIES RANDOMLY AND EVENLY.

0 50' 100'
NORTH

JLA ARCHITECTS
MADISON | MILWAUKEE | DENVER
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saiki DESIGN

JLA PROJECT NUMBER 20-0978

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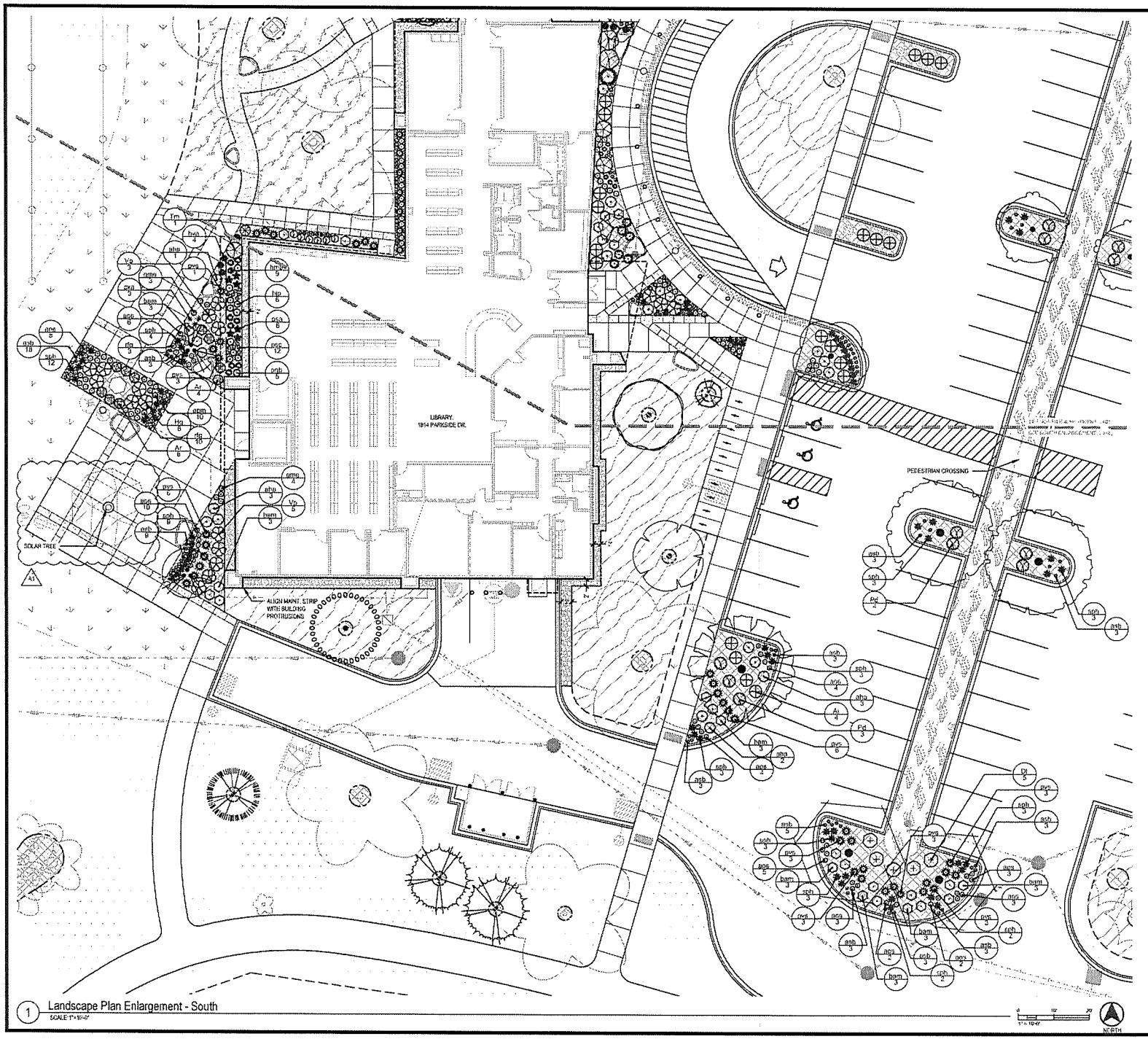
IMAGINATION CENTER AT REINDAHL PARK

Bid Documents

REVISION SCHEDULE

LANDSCAPE PLAN

L104



1 Landscape Plan Enlargement - South
SCALE: 1" = 10'-0"

REVISED

JLA ARCHITECTS
MADISON | MILWAUKEE | DENVER
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saiki DESIGN

JLA PROJECT NUMBER: 20-0928

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IMAGINATION CENTER AT REINDAHL PARK

Bid Documents

DATE OF ISSUANCE: DRAWING SCALE:

REVISION SCHEDULE

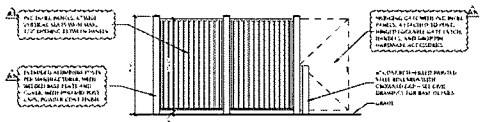
MARK	DESCRIPTION	DATE
A1	ADDENDUM #1	03/07/25

SHEET TITLE

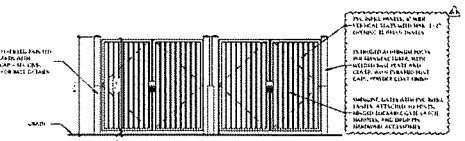
LANDSCAPE PLAN ENLARGEMENT

SHEET NUMBER

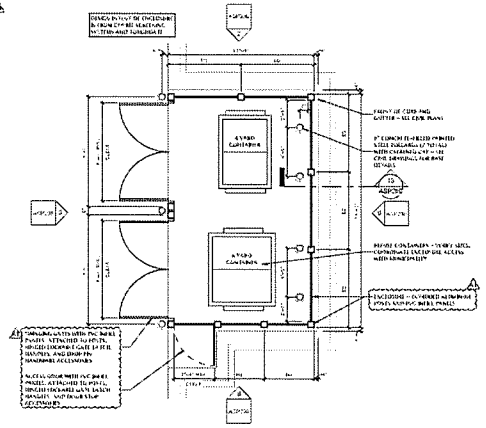
L402



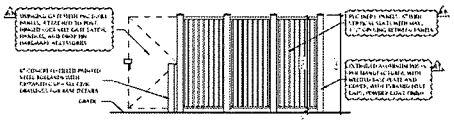
2 TRASH ENCLOSURE - EAST ELEVATION
1/4" = 1'-0"



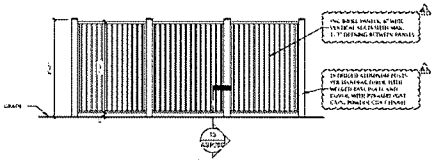
3 TRASH ENCLOSURE - NORTH ELEVATION
1/4" = 1'-0"



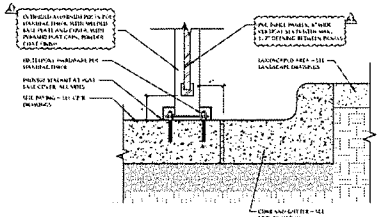
11 TRASH ENCLOSURE ENLARGED PLAN
1/4" = 1'-0"



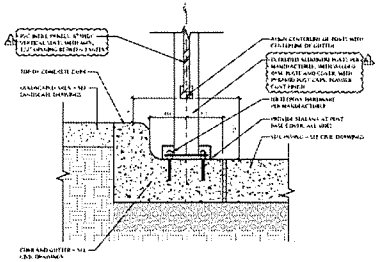
5 TRASH ENCLOSURE - WEST ELEVATION
1/4" = 1'-0"



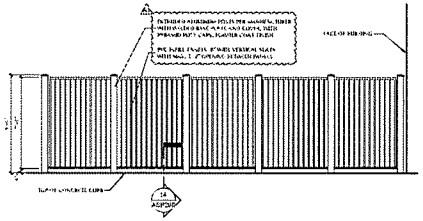
6 TRASH ENCLOSURE - SOUTH ELEVATION
1/4" = 1'-0"



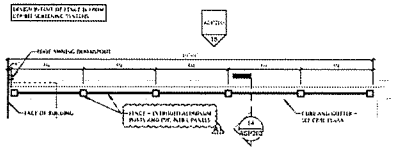
15 POST BASE DETAIL - ENCLOSURE
1 1/2" = 1'-0"



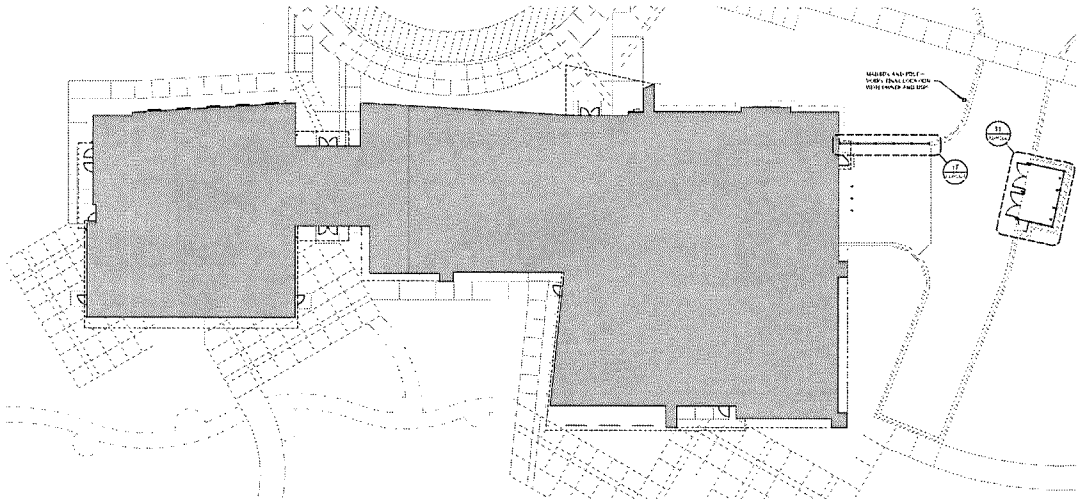
16 POST BASE DETAIL - FENCE
1 1/2" = 1'-0"



13 EXTERIOR FENCE - EAST ELEVATION
1/4" = 1'-0"



7 EXTERIOR FENCE ENLARGED PLAN
1/4" = 1'-0"



27 FIRST FLOOR PLAN - SITE
1/16" = 1'-0"

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DATE OF ISSUANCE: [illegible]

REVISION SCHEDULE

NO.	DESCRIPTION	DATE
1	ADDENDUM #1	[illegible]

SHEET TITLE

SITE PLANS AND DETAILS

SHEET NUMBER

ASP200

CWT-01: CERAMIC TILEWORKS SYMMETRY, MORNING MIST LINEN, 12X24, HORIZONTAL STACK INSTALLATION

CWT-02: CROSSVILLE NATIVE METAL NICKEL PLATE, 12X24, VERTICAL STACK INSTALLATION

CWT-03: VIRGINIA TILE WOW USA – DUO WHITE 6X6, RANDOM INSTALLATION

CWT-04: VIRGINIA TILE 6TH AVENUE JADE 8X8 CURVE CHEVRON MOSAIC, GLOSSY

CWT-05: CERAMIC TILEWORKS CRAFT STERLING, 3X12, GLOSSY, SUBWAY INSTALLATION

CWT-06: CERAMIC TILEWORKS EQUIPE VILLAGE SILVER MIST, 2.5X5, GLOSSY, SUBWAY INSTALLATION

CWT-07: CERAMIC TILEWORKS SYMMETRY, SUNRISE LINEN, 12X24, HORIZONTAL STACK INSTALLATION

CWT-08: CERAMIC TILEWORKS:
A. UP AVANA 4X4 GLOSSY
B. SMALL PRUNE 4X4 GLOSSY
C. SMALL FLAMINGO 4X4 GLOSSY

CWT-09: CERAMIC TILEWORKS:
A. SMALL LIGHT BLUE 4X4 GLOSSY
B. SMALL SAGE 4X4 GLOSSY
C. SMALL PRUSSIAN 4X4 GLOSSY

PT-01 & SRPT-01: SW 9166 DRIFT OF MIST

PT-02: OMIT

PT-03: SW 7018 DOVETAIL (HOLLOW METAL FRAMES)

PT-04: SW 2812 ROOKWOOD JADE

PT-05: SW 2854 CARIBBEAN CORAL

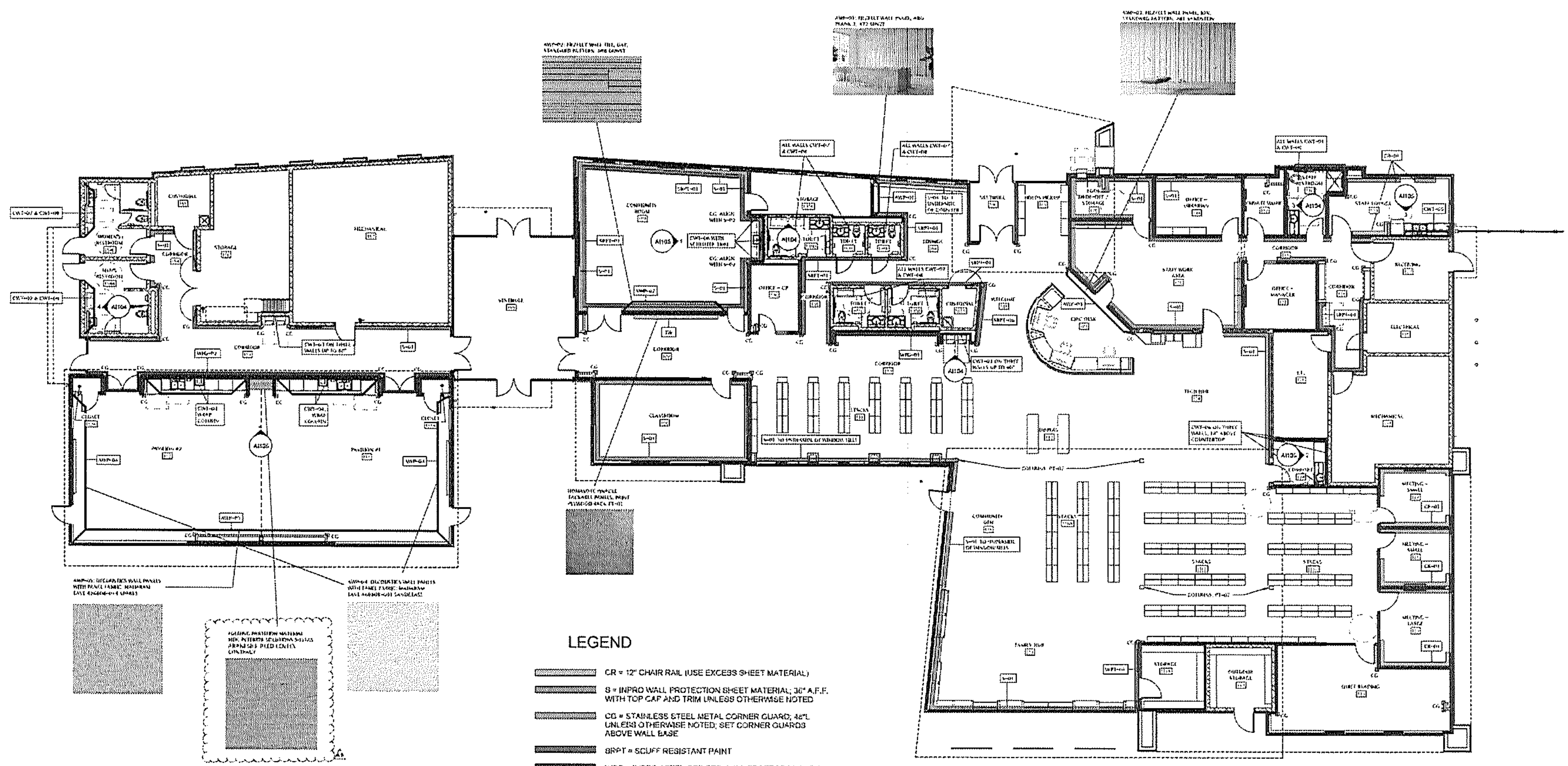
PT-06 & SRPT-06: SW 7601 DOCKSIDE BLUE

PT-07: SW 6247 KRYPTON

WALL PROTECTION / FINISH NOTES:
- ALL WALLS PAINTED PT-01 UNLESS OTHERWISE NOTED.
- NO CORNER GUARDS ON EXPOSED STEEL COLUMNS.
- ALL EXPOSED METAL COLUMNS TO BE PAINTED PT-03, UNLESS OTHERWISE NOTED.
- WALL PROTECTION TO INCLUDE TOP CAP AND CORNER TRIM.
- WALL PROTECTION REQUIRES SMOOTH, DUST-FREE FINISH.
- WALL PROTECTION GRAPHICS: INCLUDE CLEAR WALL PROTECTION WITH BACK PRINTED GRAPHIC, IMAGES TBD.
- PAINT GYPSUM BULKHEADS PT-01 UNLESS OTHERWISE NOTED; REFER TO SHEET AI113 REFLECTED CEILING PLAN FOR CEILING FINISHES.
- CHAIR RAILS: INCLUDE TOP CAP AND TRIM
  1. 42" A.F.F. TO TOP IN MEETING ROOMS 120, 121 & 122
  2. 34" A.F.F. TO TOP IN STAFF LOUNGE 129

TILE ACCESSORIES NOTES:
- INCLUDE SCHLUTER SYSTEMS DILEX-AHKA OR EQUAL COVE AT CERAMIC WALL TILE TO EPOXY FLOOR TRANSITIONS
- INCLUDE SCHLUTER SYSTEMS DILEX-EHK OR EQUAL AT CERAMIC WALL/FLOOR TILE TRANSITIONS
- INCLUDE SCHLUTER SYSTEMS JOLLY OR EQUAL AT EDGE/CORNER PROTECTION

CASEWORK NOTES:
- CASEWORK ELEVATIONS AND DETAILS BY JLA.
- CASEWORK: WILSONART LAMINATE PALISADES OAK 7987-38 FINE VELVET FINISH
- CIRC DESK AND BENCHES: WILSONART HIGH IMPACT LAMINATE PALISADES OAK 7987-38 FINE VELVET FINISH
- SOLID SURFACE TOPS: WILSONART SOLID SURFACE MORNING ICE 9204CE
- WINDOW SILLS: WILSONART SOLID SURFACE MORNING ICE 9204CE
- STAFF RESTROOM SINK APRON: FORMICA LAMINATE WEATHERED ASH 8842-WR WOODBRUSH FINISH
- STAFF RESTROOM TOP: WILSONART SOLID SURFACE ARCTIC DUNE 9253CM
- MAIN RESTROOMS SINK APRON: NEVAMAR LAMINATE GALAO WX0075-AB AGED BARK
- MAIN RESTROOM TOPS: AVONITE SURFACES ALASKAN STONE 4312



LEGEND

CR = 12" CHAIR RAIL (USE EXCESS SHEET MATERIAL)

S = INPRO WALL PROTECTION SHEET MATERIAL; 36" A.F.F. WITH TOP CAP AND TRIM UNLESS OTHERWISE NOTED

CG = STAINLESS STEEL METAL CORNER GUARD; 48"L UNLESS OTHERWISE NOTED; SET CORNER GUARDS ABOVE WALL BASE

SRPT = SCUFF RESISTANT PAINT

WPG = INPRO ASPEX PRINTED WALL PROTECTION WITH CUSTOM GRAPHIC

TW = TACKABLE WALL

PT = PAINT

AWP = ACOUSTIC WALL PANEL

1 FIRST FLOOR WALL FINISH PLAN
1/8" = 1'-0"

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InteriorLOGIC

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IMAGINATION CENTER AT REINDAHL PARK

BID DOCUMENTS

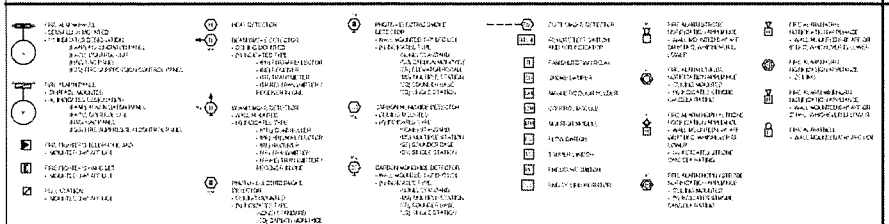
PROGRESS DOCUMENTS

REVISION SCHEDULE

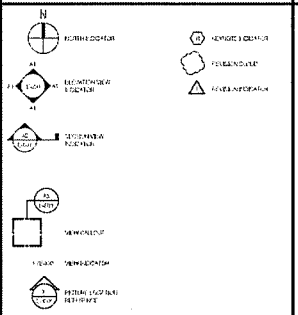
WALL FINISH PLAN

AI103

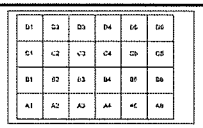
FIRE ALARM



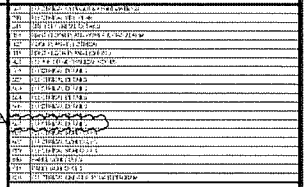
GENERAL SYMBOLS



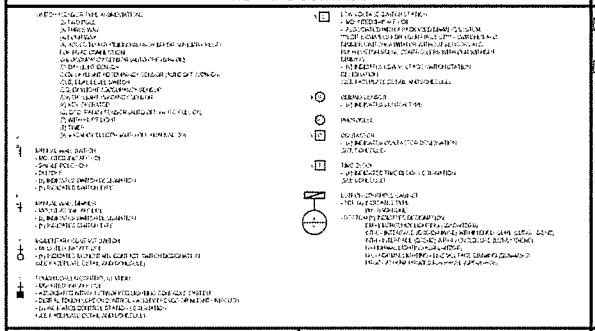
VIEW LOCATION LEGEND



ELECTRICAL SHEET INDEX

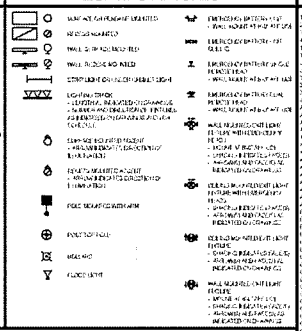


LIGHTING CONTROL

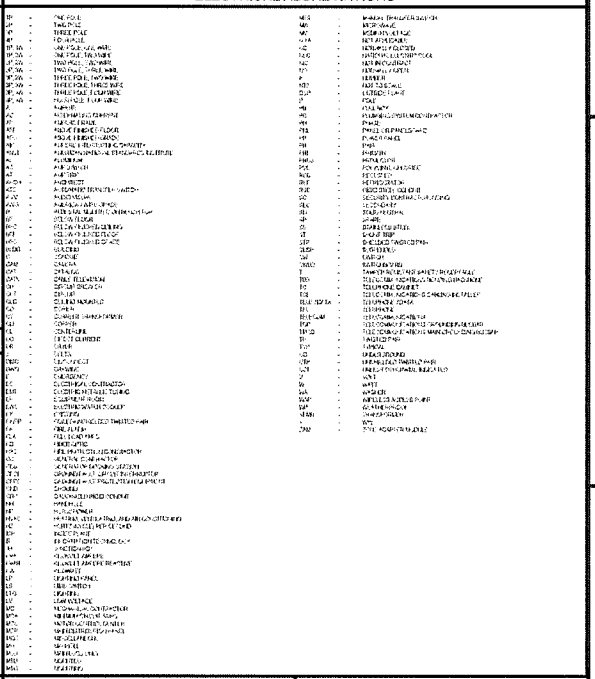


LIGHTING FIXTURE DESIGNATIONS

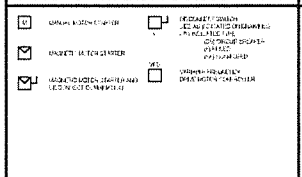
LIGHTING FIXTURES



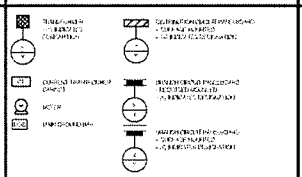
ELECTRICAL ABBREVIATIONS



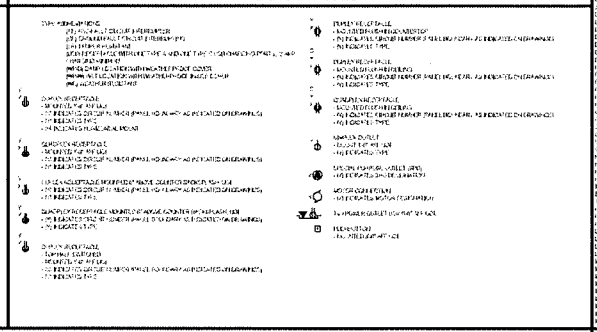
MOTOR STARTERS AND DISCONNECTS



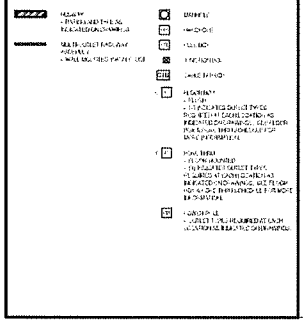
EQUIPMENT AND PANELBOARDS



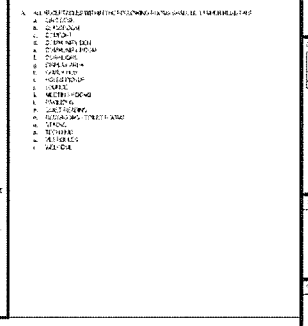
WIRING DEVICES



RACEWAYS AND BOXES



GENERAL PROJECT NOTES



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JLA PROJECT NUMBER: 20-3908

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BID DOCUMENTS

REVISION SCHEDULE		
NO.	DESCRIPTION	DATE

SHEET TITLE

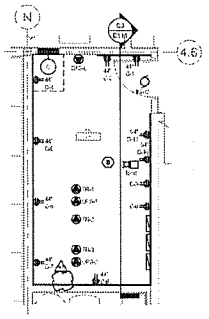
ELECTRICAL SYMBOLS & ABBREVIATIONS

SHEET NUMBER

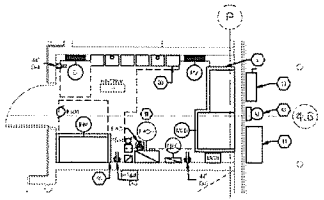
E001

GENERAL SHEET NOTES

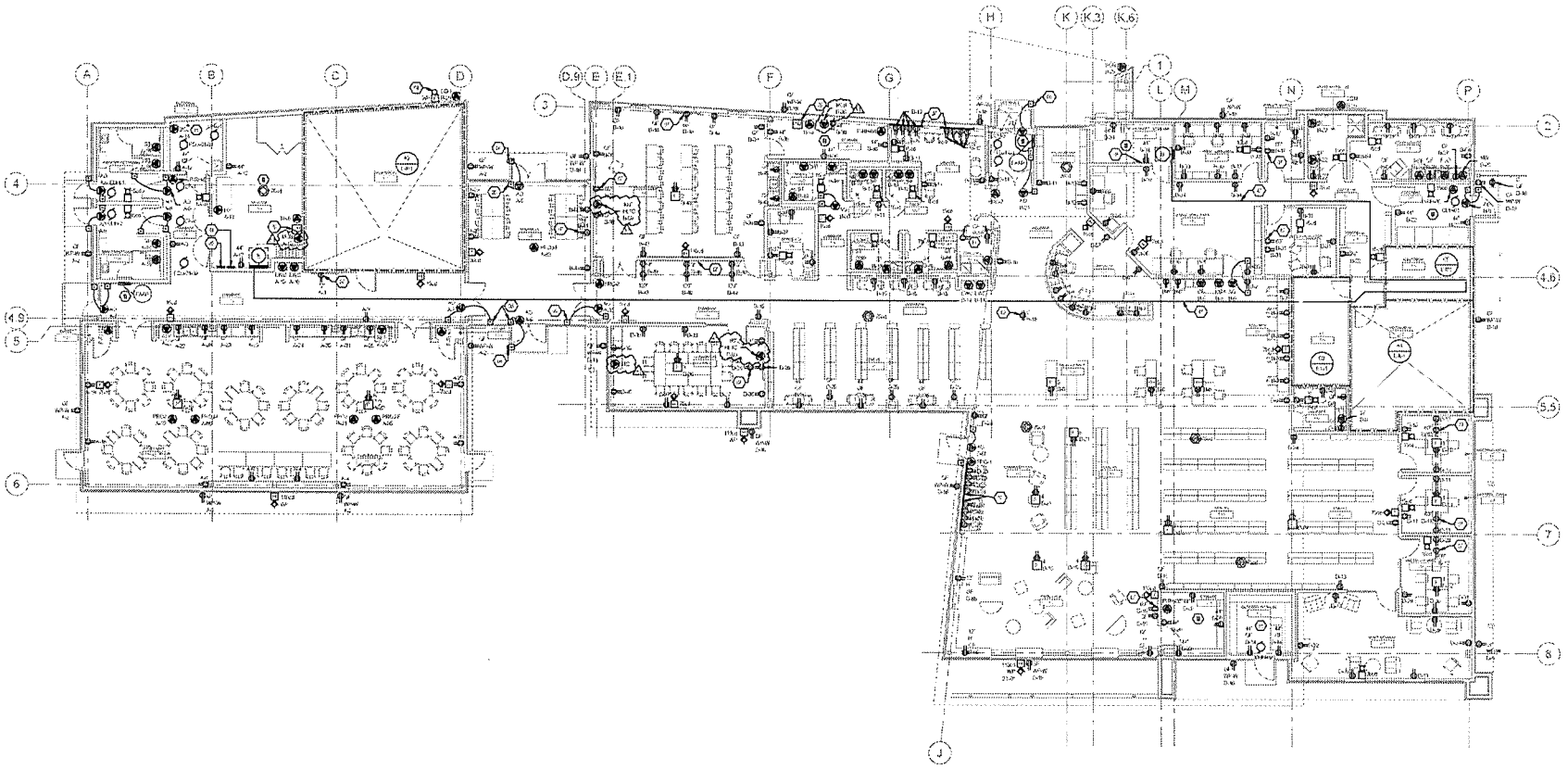
SHEET KEYNOTES



C3 ENLARGED PLAN - IT ROOM 125 - POWER & FIRE ALARM



C5 ENLARGED PLAN - ELECTRICAL ROOM 126 - POWER & FIRE ALARM



A1 FIRST FLOOR PLAN - POWER & FIRE ALARM

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REVISION SCHEDULE

ADD'L	DESCRIPTION	DATE

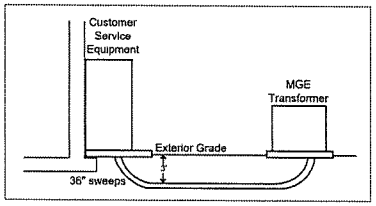
SHEET TITLE
FIRST FLOOR PLAN - POWER & FIRE ALARM

SHEET NUMBER
E101

SER-1

EXTERIOR SERVICE AT GRADE

PREFERRED FOR ALL METERING INSTALLATIONS



NOTES:

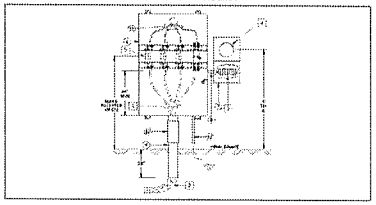
- Electric service to be at exterior grade located on an exterior wall. Meter shields required if overhang is less than 24".
- MGE connects onto customer provided conduit stubs, which are provided at 18" into ground with expansion fittings, or horizontally at 3' below grade from concrete pad. Use 36" radius sweeps.
- MGE pulls service conductors into service equipment and terminates on customer main disconnect or main lugs.
  - For a service 1600A or less, MGE requires at least 24" of pull space from bottom of conduits to termination lugs.
  - For a service larger than 1600A, MGE requires a separate pull section with termination lugs only.

COM-3

COMMERCIAL SINGLE-METER WALL-MOUNT UNDERGROUND SERVICE

SINGLE-PHASE – 400A TO 600A

THREE-PHASE – 400A TO 2000A



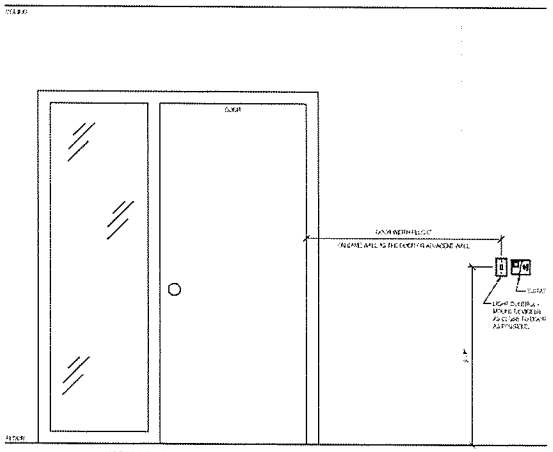
MGE WILL FURNISH:

1. Underground service conductors.
2. Conduit(s), including 36-inch 90 degree sweep(s), up to the customer's stubbed conduit(s).
3. Meter test switch, installed by MGE.
4. Electric meter and wiring to test switch.
5. Bar-type current transformers (CTs), installed by customer.

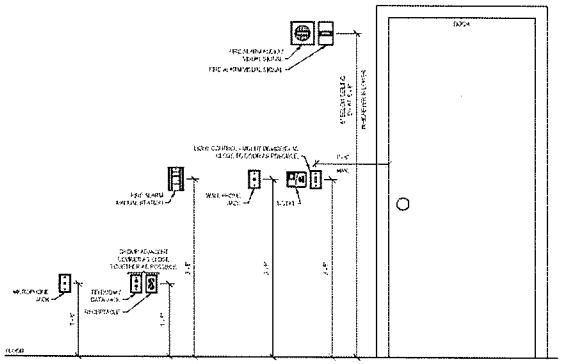
CUSTOMER WILL FURNISH:

6. MGE approved bar-type CT cabinet, securely fastened to wall surface, using strut when needed. See *TABLE 5.*
7. MGE approved CT rated meter socket, on opposite side of wireway, if applicable. See *TABLE 4.*
   - The use of a meter shield may be required, see *ADS-10.*
8. One-inch rigid conduit for meter wiring, minimum 6" long, with grounding locknuts.
   - Use existing knockouts on meter socket.
   - MGE does not allow 1¼ as an unsistered conduit.
9. MGE approved underground service conduit(s). See *TABLE 7.* OR optional underground raceway(s). See *TABLE 8.*
10. Expansion fitting(s) installed above-grade.
11. Conduit and wires to main service disconnect.
    - The ampacity rating of the main disconnect(s) may not exceed the ampacity rating of the CT cabinet.
12. Ground in accordance with applicable electrical codes.

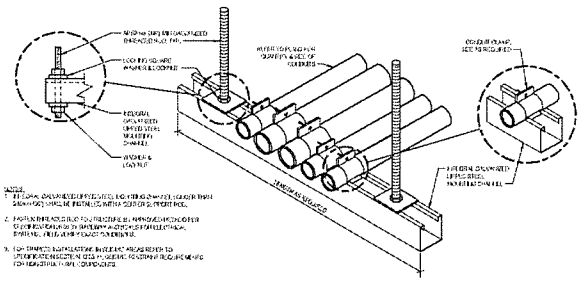
A1 COMMERICAL SINGLE-METER SERVICE CONNECTION



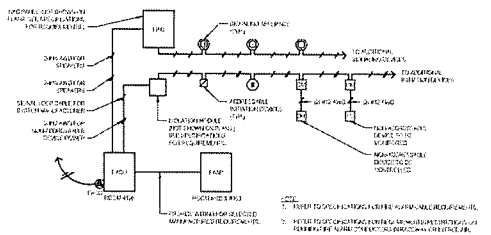
SIDE LIGHT OR WINDOW WALL LIGHT SWITCH AND THERMOSTAT INSTALLATIONS



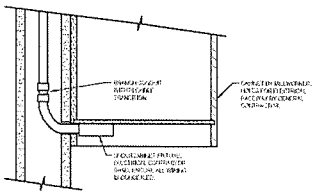
B2 TYPICAL MOUNTING HEIGHT DETAIL



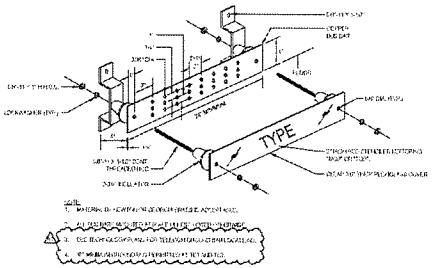
A2 TRAPEZE SUPPORT



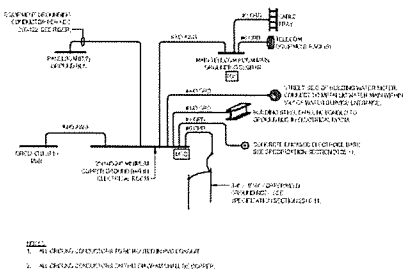
D5 FIRE ALARM RISER DIAGRAM



C5 UNDERCABINET LIGHT MOUNTING DETAIL



B5 GROUND BUS



A5 GROUNDING SYSTEM DETAIL

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DATE OF ISSUANCE: 29 MARCH 2021

REVISION SCHEDULE		
MARK	Description	Date

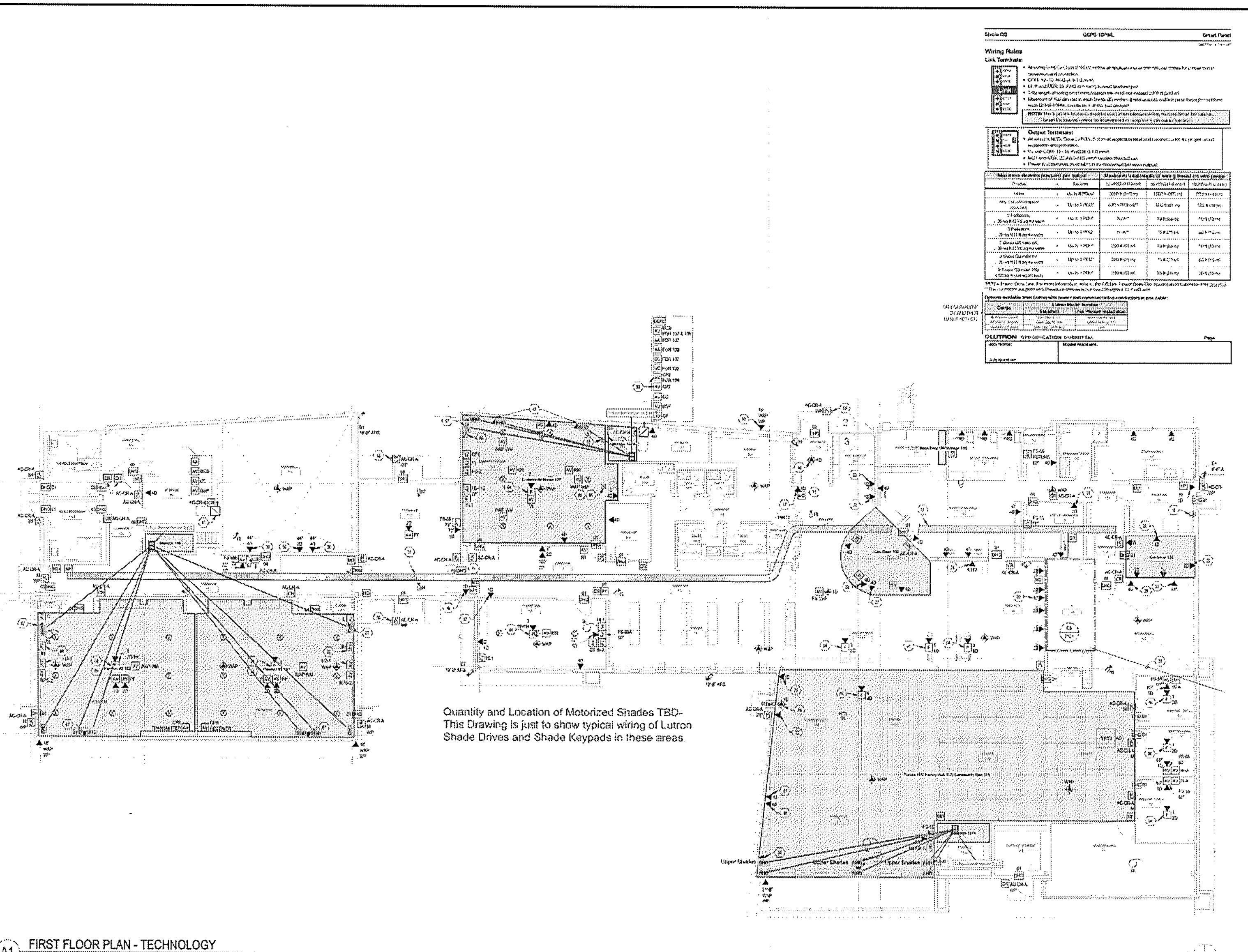
SHEET TITLE

ELECTRICAL DETAILS

SHEET NUMBER

E501

GENERAL SHEET NOTES



A1 FIRST FLOOR PLAN - TECHNOLOGY

REVISION-NEW

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JLA PROJECT NUMBER: 20-0926

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REVISION SCHEDULE

ELECTRICAL DETAILS

4 E507

REVISED

INVERTER: INV — New Construction

INPUT VOLTAGE: 208	CAPACITY IN WATTS: 8000	MAKE & MODEL: IOTA	
OUTPUT VOLTAGE: 120	QTY OF OUTPUT BREAKERS: [illegible]	CATALOG NUMBER: [illegible]	

CKT	Load Name	TRIP	POLE	CB TYPE	LOAD TYPE	A		B		LOAD TYPE	CB TYPE	POLE	TRIP	Load Name	CKT
1	EXTERIOR LIGHTS [illegible]	20 A	1		L	[illegible] VA	[illegible] VA			L		1	20 A	LIGHTING	2
3	LIGHTING	20 A	1		L			[illegible] VA	[illegible] VA	L		1	20 A	LIGHTING	4
5	SPARE	20 A	1		–	0 VA	0 VA			–		1	20 A	SPARE	6
						[illegible] VA		[illegible] VA							

PANEL TOTALS	
TOTAL CONN. LOAD:	[illegible] VA
TOTAL ADJUSTED LOAD:	[illegible] VA
TOTAL CONN. AMPS:	[illegible] A
TOTAL ADJUSTED AMPS:	[illegible] A

NOTES:

LOAD TYPE	CONNECTED LOAD	ADJUSTMENT FACTOR	ADJUSTED LOAD
L	[illegible] VA	125.00%	[illegible] VA

GENERAL NOTES:
1. PROVIDE WITH [illegible]
2. [illegible]

CIRCUIT BREAKER TYPE ABBREVIATIONS: / LOAD TYPE ABBREVIATIONS: [illegible]

PANEL: C — New Construction

VOLTAGE:	208Y/120V	BUS RATING:	100 A	FEED THRU LUGS:	NO
PHASE/WIRE:	3P / 4W	MAIN TYPE:	MLO	MOUNTING:	RECESSED
SVC ENTRANCE LABEL:	NO	MAIN RATING:	0 A	ENCLOSURE:	TYPE 1
MANUFACTURER:		SHORT CIRCUIT RATING:	10 A	200% NEUTRAL:	NO
SERIES RATED ALLOWED:	NO	SPD:	NO	ENCLOSURE TYPE:	PANELBOARD

CKT	DESCRIPTION	TRIP	POLE	CB TYPE	LOAD TYPE	LOAD	A		B		C		LOAD	LOAD TYPE	CB TYPE	POLE	TRIP	DESCRIPTION	CKT
1	125	20 A	1		R	180 VA	180 VA	180 VA					180 VA	R		1	20 A	125	2
3	125	20 A	1		R	180 VA			180 VA	180 VA			180 VA	R		1	20 A	125	4
5	[illegible] 125	20 A	1		R	180 VA					180 VA	180 VA	180 VA	R		1	20 A	125	6
7	125	20 A	1		R	180 VA	180 VA	180 VA					180 VA	R		1	20 A	125	8
9	125	20 A	1		R	180 VA			180 VA	180 VA			180 VA	R		1	20 A	125	10
11	125	20 A	1		R	180 VA					180 VA	1200 VA	1200 VA	EQ		1	20 A	SPD-[illegible]	12
13	SPD-[illegible]	20 A	1		EQ	1500 VA	1500 VA	1500 VA					1500 VA	EQ		1	20 A	SPD-[illegible]	14
15	SPD-[illegible]	20 A	1		EQ	1500 VA			1500 VA	1500 VA			1500 VA	EQ		1	20 A	SPD-[illegible]	16
17																			18
19																			20
21																			22
23																			24
25	SPARE	20 A	1		–	–	0 VA	0 VA					–	–		1	20 A	SPARE	26
27	SPARE	20 A	1		–	–			0 VA	0 VA			–	–		1	20 A	SPARE	28
29	SPARE	20 A	1		–	–					0 VA	0 VA	–	–		1	20 A	SPARE	30
							[illegible] VA		[illegible] VA		[illegible] VA								

PANEL TOTALS	
TOTAL CONN. LOAD:	[illegible] VA
TOTAL ADJUSTED LOAD:	[illegible] VA
TOTAL CONN. AMPS:	[illegible] A
TOTAL ADJUSTED AMPS:	[illegible] A

NOTES:

LOAD TYPE	CONNECTED LOAD	ADJUSTMENT FACTOR	ADJUSTED LOAD
EQ	[illegible] VA	100.00%	[illegible] VA
R	[illegible] VA	100.00%	[illegible] VA

CIRCUIT BREAKER TYPE ABBREVIATIONS: / LOAD TYPE ABBREVIATIONS: [illegible]

PANEL: D — New Construction

VOLTAGE:	208Y/120V	BUS RATING:	400 A	FEED THRU LUGS:	NO
PHASE/WIRE:	3P / 4W	MAIN TYPE:	MLO	MOUNTING:	SURFACE
SVC ENTRANCE LABEL:	NO	MAIN RATING:	0 A	ENCLOSURE:	TYPE 1
MANUFACTURER:		SHORT CIRCUIT RATING:	[illegible] A	200% NEUTRAL:	NO
SERIES RATED ALLOWED:	NO	SPD:	NO	ENCLOSURE TYPE:	PANELBOARD

CKT	DESCRIPTION	TRIP	POLE	CB TYPE	LOAD TYPE	LOAD	A		B		C		LOAD	LOAD TYPE	CB TYPE	POLE	TRIP	DESCRIPTION	CKT
1	SITE LIGHTING	20 A	1		L	[illegible] VA	[illegible] VA	[illegible] VA					[illegible] VA	R		1	20 A	[illegible]	2
3	[illegible]	20 A	1		R	[illegible] VA			[illegible] VA	[illegible] VA			[illegible] VA	R		1	20 A	[illegible]	4
5	[illegible]	20 A	1		R	360 VA					360 VA	[illegible] VA	[illegible] VA	R		1	20 A	EXTERIOR	6
7	SPD-[illegible]	20 A	1		EQ	[illegible] VA	[illegible] VA	[illegible] VA					[illegible] VA	R		1	20 A	[illegible]	8
9	[illegible]	20 A	1		EQ, R	[illegible] VA			[illegible] VA	[illegible] VA			[illegible] VA	R		1	20 A	[illegible]	10
11	[illegible]	20 A	1		R	[illegible] VA					[illegible] VA	[illegible] VA	[illegible] VA	R		1	20 A	[illegible]	12
13	[illegible]	20 A	1		R	[illegible] VA	[illegible] VA	[illegible] VA					[illegible] VA	R		1	20 A	[illegible]	14
15	[illegible]	20 A	1		R	[illegible] VA			[illegible] VA	[illegible] VA			[illegible] VA	R		1	20 A	EXTERIOR	16
17	SPD-[illegible]	[illegible] A	2		EQ	[illegible] VA					[illegible] VA	[illegible] VA	[illegible] VA	R		1	20 A	EXTERIOR	18
19	–	–	–	–	–	–	[illegible] VA	720 VA					720 VA	R		1	20 A	[illegible]	20
21	[illegible]	20 A	1		R	720 VA			[illegible] VA	[illegible] VA			[illegible] VA	R	GFCI	1	20 A	[illegible]	22
23	[illegible]	20 A	1	GFCI	R	[illegible] VA					[illegible] VA	[illegible] VA	[illegible] VA	R		1	20 A	[illegible]	24
25	[illegible]	20 A	1		R	[illegible] VA	[illegible] VA	720 VA					720 VA	R		1	20 A	[illegible]	26
27	[illegible]	20 A	1		R	[illegible] VA			[illegible] VA	[illegible] VA			[illegible] VA	R		1	20 A	[illegible]	28
29	[illegible]	20 A	1		R	180 VA					180 VA	180 VA	[illegible] VA	R		1	20 A	[illegible]	30
31	[illegible]	20 A	1		R	180 VA	[illegible] VA	[illegible] VA					[illegible] VA	R		1	20 A	[illegible]	32
33	[illegible]	20 A	1		R	180 VA			180 VA	180 VA			180 VA	R		1	20 A	[illegible]	34
35	[illegible]	20 A	1		R	180 VA					180 VA	180 VA	180 VA	R		1	20 A	[illegible]	36
37	[illegible]	20 A	1		R	[illegible] VA	[illegible] VA	[illegible] VA					[illegible] VA	R		1	20 A	[illegible]	38
39	[illegible]	20 A	1		R	[illegible] VA			180 VA	180 VA			180 VA	R		1	20 A	[illegible]	40
41	LIGHTING	20 A	1		L	[illegible] VA					[illegible] VA	[illegible] VA	[illegible] VA	L		1	20 A	LIGHTING	42
43	LIGHTING	20 A	1		L	[illegible] VA	[illegible] VA	[illegible] VA					[illegible] VA	Spare L		2	[illegible] A	[illegible]	44
45	SPD-[illegible]	15 A	1		EQ	2 VA			2 VA	[illegible] VA			–	–	–	–	–	–	46
47	SPD-[illegible]	20 A	1		L	[illegible] VA					[illegible] VA	[illegible] VA	[illegible] VA	EQ		1	20 A	SPD-[illegible]	48
49	MOTOR-[illegible]	25 A	2		[illegible]	[illegible] VA	[illegible] VA	[illegible] VA					[illegible] VA	[illegible]		2	25 A	MOTOR-[illegible]	50
51	–	–	–	–	–	–			[illegible] VA	[illegible] VA			–	–	–	–	–	–	52
53	MOTORS-[illegible]	15 A	1		[illegible]	[illegible] VA					[illegible] VA	[illegible] VA	[illegible] VA	H		1	15 A	SPD-[illegible]	54
55	SPD-[illegible]	20 A	1		EQ	[illegible] VA	[illegible] VA	[illegible] VA					[illegible] VA	H		2	[illegible] A	SPD-[illegible]	56
57	MOTOR-[illegible]	20 A	3		V	[illegible] VA			[illegible] VA	[illegible] VA			–	–	–	–	–	–	58
59	–	–	–	–	–	–					[illegible] VA	[illegible] VA	–	–	–	–	–	–	60
61	–	–	–	–	–	–	[illegible] VA	[illegible] VA					[illegible] VA	V		3	15 A	MOTOR-[illegible]	62
63	EXTERIOR	20 A	1		R	[illegible] VA			[illegible] VA	[illegible] VA			–	–	–	–	–	–	64
65	[illegible]	20 A	1		R	[illegible] VA					[illegible] VA	[illegible] VA	–	–	–	–	–	–	66
67	120	20 A	1		R	[illegible] VA	[illegible] VA	[illegible] VA					[illegible] VA	H		2	20 A	SPD-[illegible]	68
69	SPD-[illegible]	20 A	1		EQ	[illegible] VA			[illegible] VA	[illegible] VA			–	–	–	–	–	–	70
71																			72
73																			74
75																			76
77																			78
79	SPARE	20 A	1		–	–	0 VA	0 VA					–	–		1	20 A	SPARE	80
81	SPARE	20 A	1		–	–			0 VA	0 VA			–	–		1	20 A	SPARE	82
83	SPARE	20 A	1		–	–					0 VA	0 VA	–	–		1	20 A	SPARE	84
							[illegible] VA		[illegible] VA		[illegible] VA								

PANEL TOTALS	
TOTAL CONN. LOAD:	[illegible] VA
TOTAL ADJUSTED LOAD:	[illegible] VA
TOTAL CONN. AMPS:	[illegible] A
TOTAL ADJUSTED AMPS:	[illegible] A

NOTES:

LOAD TYPE	CONNECTED LOAD	ADJUSTMENT FACTOR	ADJUSTED LOAD
EQ	[illegible] VA	100.00%	[illegible] VA
H	[illegible] VA	100.00%	[illegible] VA
L	[illegible] VA	125.00%	[illegible] VA
Motor	[illegible] VA	125.00%	[illegible] VA
R	[illegible] VA	[illegible]	[illegible] VA
V	[illegible] VA	100.00%	[illegible] VA
YP	[illegible] VA	100.00%	[illegible] VA

CIRCUIT BREAKER TYPE ABBREVIATIONS: / LOAD TYPE ABBREVIATIONS: [illegible]

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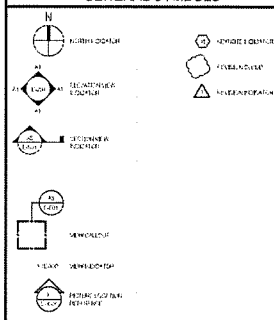
REVISION SCHEDULE

MARK	DESCRIPTION	DATE
[illegible]	[illegible]	[illegible]

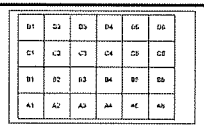
SHEET TITLE: PANEL SCHEDULES

SHEET NUMBER: E611

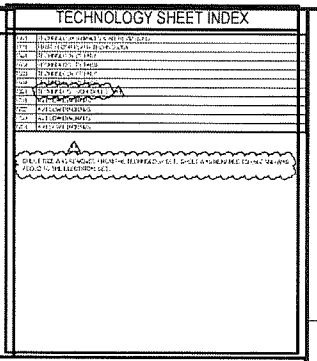
GENERAL SYMBOLS



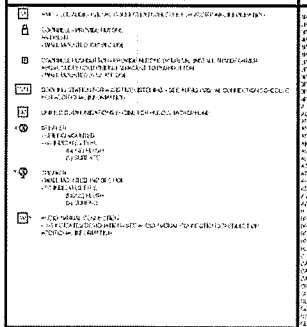
VIEW LOCATION LEGEND



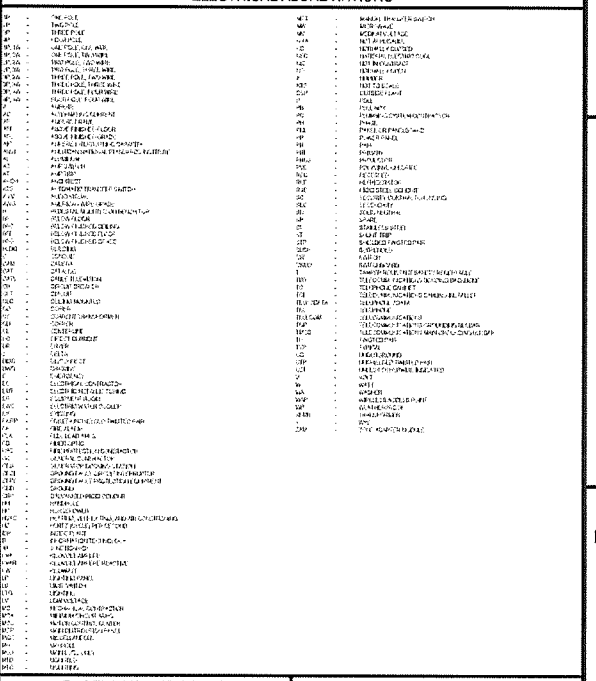
TECHNOLOGY SHEET INDEX



COMMUNICATIONS

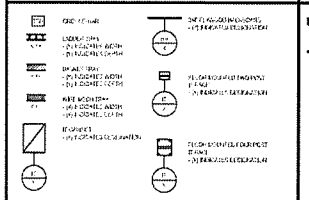


ELECTRICAL ABBREVIATIONS

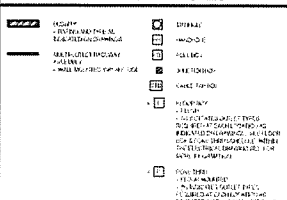


VOICE / DATA

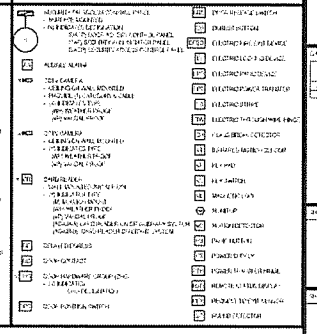
TELECOMMUNICATIONS EQUIPMENT



RACEWAYS AND BOXES



SECURITY AND ACCESS CONTROL



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REVISION SCHEDULE

NO.	DESCRIPTION	DATE

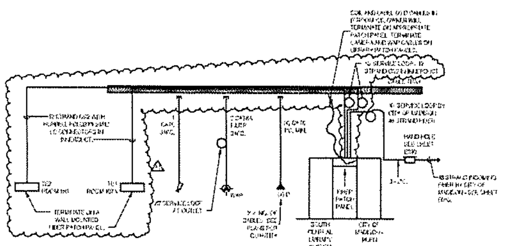
TECHNOLOGY SYMBOLS & ABBREVIATIONS

T001

REVISED

REVISED

SHEET KEYNOTES



C1 STRUCTURED CABLING RISER DIAGRAM

NOT TO SCALE

ASSISTIVE LISTENING SYSTEM FOR COMMUNITY ROOM 107

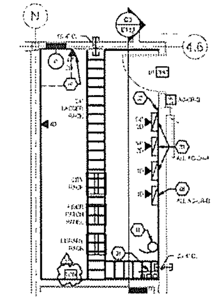
GENERAL NOTES:

[illegible]

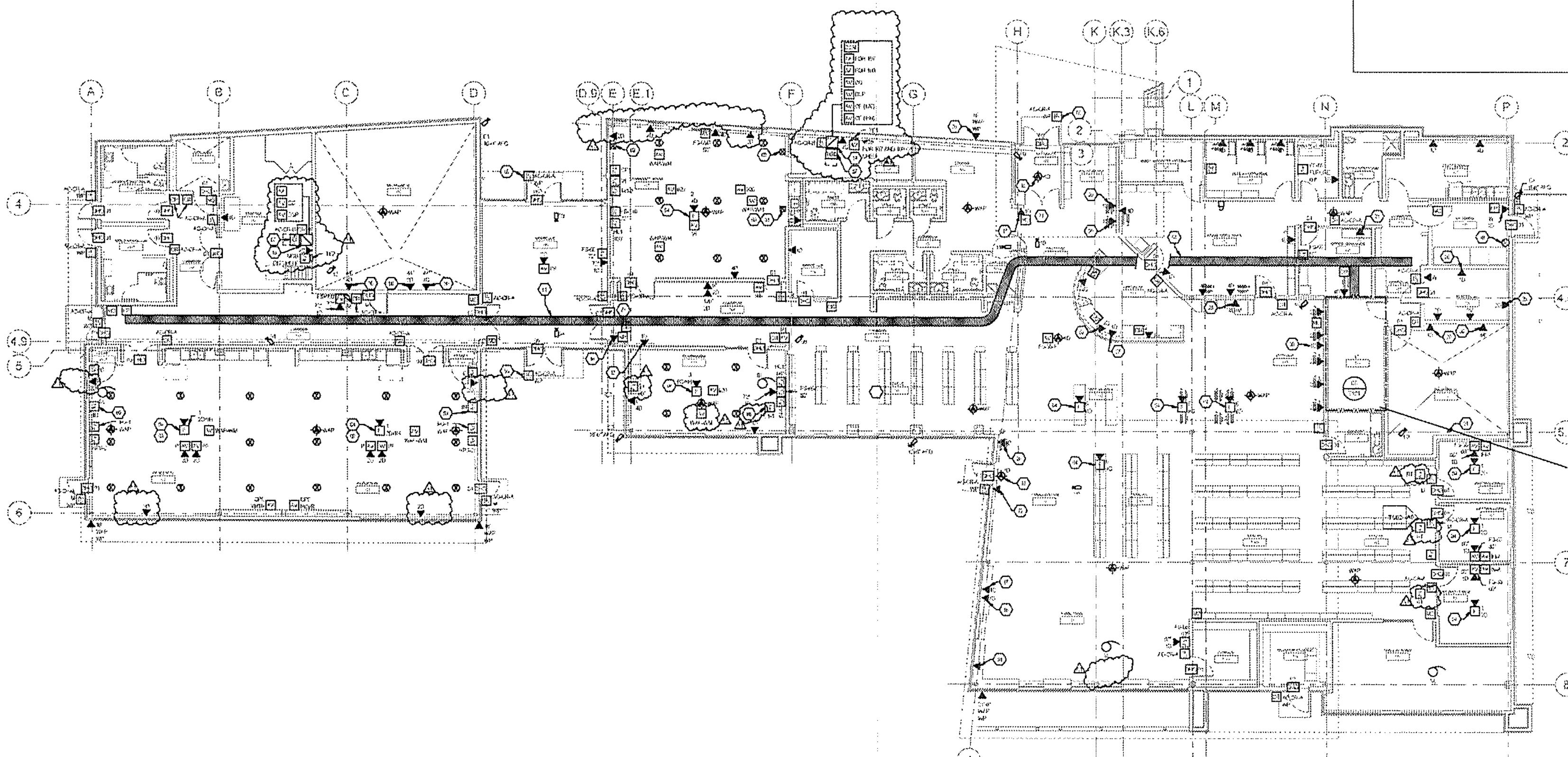
NOTE:

[illegible]

QTY	MODEL	EQUIPMENT
1	LA-122	UNIVERSAL ANTENNA KIT [illegible]
1	LA-304	[illegible]
1	LA-326	UNIVERSAL RACK MOUNTING KIT
1	LA-381-01	INTELLIGENT [illegible] CHARGING TRAY
1	LA-392	INTELLIGENT CABLE MANAGEMENT UNIT
4	LA-401	UNIVERSAL EAR SPEAKER
1	LA-422	USB TO MICRO USB CABLE
4	LA-430	[illegible]
1	LA-904	[illegible]
1	[illegible]	[illegible]
4	[illegible]	ADVANCED [illegible] RECEIVER [illegible]



C5 ENLARGED PLAN - IT ROOM 125 - TECHNOLOGY



A1 FIRST FLOOR PLAN - TECHNOLOGY

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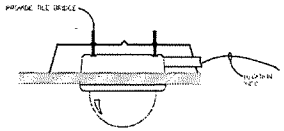
MARK	DESCRIPTION	DATE

SHEET TITLE

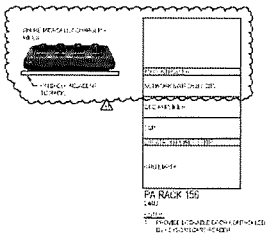
FIRST FLOOR PLAN - TECHNOLOGY

SHEET NUMBER

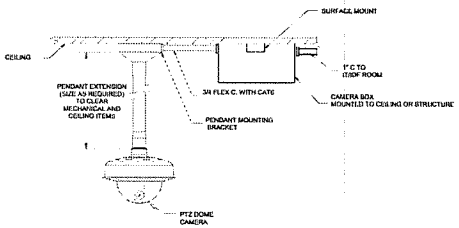
T101



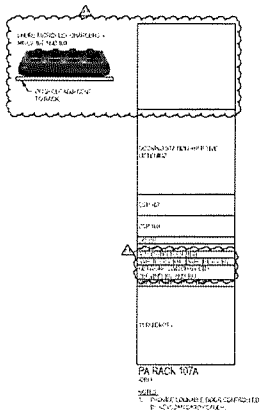
D3 FIXED INDOOR IN-CEILING DOME



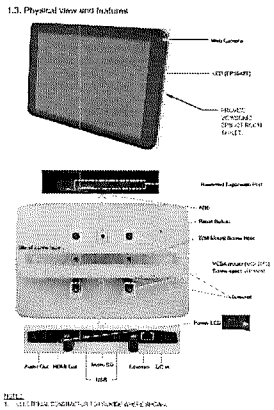
C2 TELECOM RACK 156



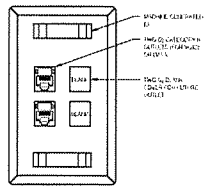
C3 SECURITY CAMERAS 06, 12 & 13 MOUNTING DETAIL



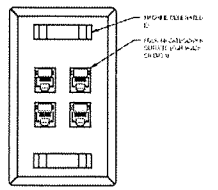
A2 TELECOM RACK 107A



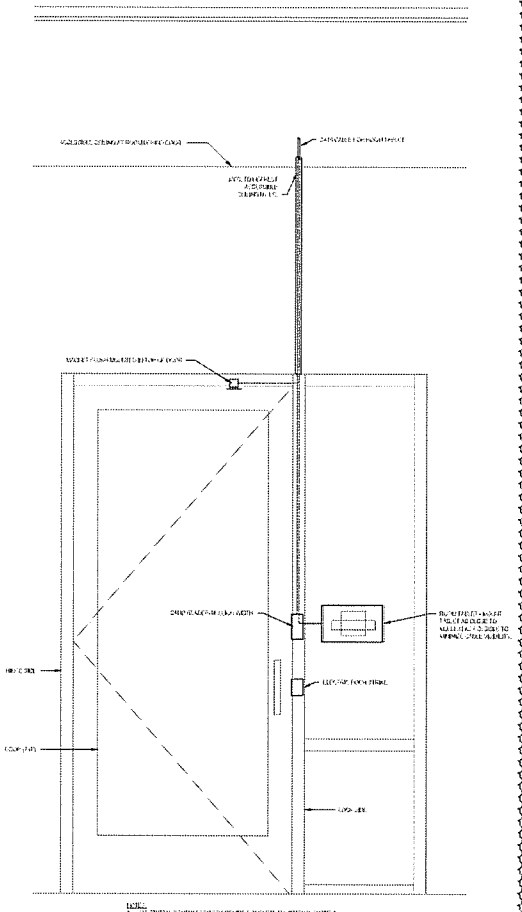
A3 VIEWSONIC ROOM TABLET DETAIL



D4 2 DATA TELECOMMUNICATIONS OUTLET DETAIL



D6 4 DATA TELECOMMUNICATIONS OUTLET DETAIL



A5 MULLION MOUNT CARD READER & ROOM TABLET DETAIL

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REVISION SCHEDULE

NO.	DESCRIPTION	DATE

REVISED

SHEET TITLE

TECHNOLOGY DETAILS

SHEET NUMBER

T502

REVISED

CAMERA SCHEDULE

ABBREVIATIONS:
POE = POWER OVER ETHERNET
PTZ = PAN/TILT/ZOOM

GENERAL NOTE:
A. CAMERAS, HOUSINGS, LENS AND MOUNTING BRACKETS FURNISHED, INSTALLED, AND WIRED BY CONTRACTOR. REFERENCE SPECIFICATIONS 28 23 00 AND 28 23 00.

NOTE:
1. SEE SHEETS T200 AND T201 FOR CAMERA INFORMATION.
2. CAMERA OUTPUT TO BE VIEWED ON DEDICATED MONITOR. SEE KEYED NOTE ON SHEET T101.

CAMERA NO.	LOCATION	MOUNT	TYPE: FIXED	TYPE: PTZ	VIEWING OBJECTIVE	APPROXIMATE VIEWING DISTANCE (STATED IN FEET)	FEATURES: VANDAL PROOF	FEATURES: WEATHER PROOF	FEATURES: SMOKED DOME	FEATURES: IP66 & NEMA 4X	FEATURES: VARIFOCAL LENS	FEATURES: REMOTE FOCUS & ZOOM	FEATURES: POE	FEATURES: ENVIRONMENTAL	ACCESSORIES: WALL MOUNT BRACKET	ACCESSORIES: CORNER BRACKET	ACCESSORIES: [illegible]	ACCESSORIES: [illegible]	SEE NOTE
01	103	CEILING	X		FACE OF INDIVIDUAL ENTERING PAVILION	16 - 20			X				X						1
02	153	CEILING	X		FACE OF INDIVIDUAL ENTERING PAVILION	17'			X				X						1
03	150	CEILING	X		FACE OF INDIVIDUAL ENTERING PAVILION	20'			X				X						1
04	150	CEILING	X		FACE OF INDIVIDUAL ENTERING PAVILION	23'			X				X						1,2
05	110	CEILING		X	FACE OF INDIVIDUAL LEAVING 1??	15'			X				X						1
06	115	PENDANT	X		FACE OF INDIVIDUAL ENTERING LIBRARY	15'			X				X						1
07	114	CEILING		X	PATRONS AT COMPUTERS	20'			X				X						1
08	123	PENDANT		X	MECHANICAL ROOM - 360°							X	X						1
09	100	CEILING	X		FACE OF INDIVIDUALS LEAVING LIBRARY	12'			X				X						1
10	101	CEILING	X		FACE OF INDIVIDUAL ENTERING LIBRARY	17'			X				X						1
11	106	CEILING	X		ACTIVITY IN COLLABORATIVE	10 - 20'			X				X						1
12	157	PENDANT		X	MECHANICAL ROOM - 360°							X	X						1
E1	EXTERIOR	WALL	X		PATRONS ENTERING PAVILION	17'	X	X		X		X	X		X				1
E2	EXTERIOR	WALL	X		PATRONS ENTERING PAVILION	30'	X	X		X			X		X				1
E3	EXTERIOR	WALL	X		FACE OF INDIVIDUAL ENTERING LIBRARY	14'	X	X		X			X		X				1
E4	EXTERIOR	WALL	X		COVERED AREA OUT TO DUMPSTER - OPTIONAL PTZ	6 - 40'	X	X		X		X	X		X				1

DOOR HARDWARE GROUP SCHEDULE

ABBREVIATIONS:
CR = CARD READER
DPS = DOOR POSITION SWITCH
EL = ELECTRONIC LATCH RETRACTION
ELT = ELECTRIFIED LEVER TRIM
EPT = ELECTRIC POWER TRANSFER
ES = ELECTRIC STRIKE
FAMDH = FIRE ALARM MAGNETIC DOOR HOLDER
FASD = SMOKE DETECTOR
PS = POWER SUPPLY

GENERAL NOTES:
A. INFORMATION LISTED BELOW IS BASED ON DOOR HARDWARE INFORMATION PROVIDED BY THE OWNER. COORDINATION WITH DOOR HARDWARE WILL BE DONE DURING THE SHOP DRAWING PHASE.
B. SEE PLANS FOR DOOR HARDWARE GROUP LOCATIONS.
C. FIRE ALARM DOOR HOLDING AND RELATED SMOKE DETECTORS ARE SHOWN ON PLANS.
D. AUTO DOORS, AUTO DOOR PUSH BUTTONS, POWER SUPPLIES AND CARD READERS ARE SHOWN ON PLANS.

NOTE:
1. POWER SUPPLY LOCATED IN ____

HARDWARE GROUP NUMBER	AUTO DOOR	AUTO DOOR PUSH BUTTONS	CR	DPS	EL	ELT	EPT	ES	FAMDH	FASD	PS	SEE NOTE
01			1	1				1				
02	1	2	1	2	2							
03	1	2	1	1				1				
04			1	2	2							
05	1	2	1	2				1				

AUDIO / VISUAL CONNECTION SCHEDULE

AV TAG

GENERAL NOTE:
1. SEE SPECIFICATION SECTION 27 AND 28 FOR MANUFACTURER AND MODEL NUMBER INFORMATION.

NOTES:
1. PROVIDE OFFSET [illegible] INSTALLATION KIT.
2. PROVIDE CAT6 CABLE.
3. MOUNT AT 7'-0" AFF.
4. COIL 15 FEET OF CABLE ABOVE THE CEILING FOR A FUTURE FLAT SCREEN TV.
5. PROVIDE WIREMOLD EVOLUTION SERIES [illegible] AND WALL BOX [illegible]. INSTALL REQUIRED DEVICES WITHIN.
6. PROVIDE RELAY [illegible] AT PARTITION FOR USE BY [illegible] CONTRACTOR. [illegible] PROGRAM TO ACTIVATE ON PARTITION OPEN/CLOSE.
7. COORDINATE INSTALLATION WITH WOOD CEILING INSTALLER.

TAG	DESCRIPTION	CONDUIT ROUTE	CONDUIT	INSTALLED BY	PROCURED BY	SEE NOTE
EZ1	MICROPHONE ARRAY	TO AV RACK (107A)	3/4"	EC	EC	
AA	AUDIO AMPLIFIER	INSTALL IN RACK (107A)	-	EC	EC	
C	ROOM CONTROLLER	TO AV RACK (150)	3/4"	EC	EC	
CP1	AV CONTROL TOUCH PANEL	TO AV RACK (107A)	-	EC	EC	
DC	AV CONTROLLER	INSTALL IN ASSOCIATED RACK (107A)	3/4"	EC	EC	
VC (107)	VIDEO CONFERENCING SYSTEM	INSTALL IN RACK (107A)	-	EC	EC	
VC (150)	VIDEO CONFERENCING SYSTEM	INSTALL IN RACK (107A)	-	EC	EC	
CP1	AV CONTROL TOUCH PANEL	TO AV RACK (107A)	-	EC	EC	1
CPS	CREATE ON PARTITION SENSOR FOR AUTO-COMBINING AV SYSTEM FOR ROOMS	TO AV RACK (150)	3/4"	EC	EC	6
DSAL	DOCKING STATION ASSISTIVE LISTENING	INSTALL IN RACK (107A)	-	EC	EC	
DSP	DIGITAL SIGNAL PROCESSOR	INSTALL IN ASSOCIATED RACK (107A)	3/4"	EC	EC	
FS-55	55" FLAT SCREEN DISPLAY	TO 105	3/4"	EC	EC	5
FS-65F	65" FLAT SCREEN DISPLAY - FUTURE (ROUGH-IN ONLY)	TO 105	3/4"	EC	EC	4,5
FS-55	55" FLAT SCREEN DISPLAY	TO AV RACK (107A)	3/4"	EC	EC	5
FS-65A	65" FLAT SCREEN DISPLAY	TO 105	3/4"	EC	EC	5
FS-65B	65" FLAT SCREEN DISPLAY	TO 105	3/4"	EC	EC	5
FS-75	75" FLAT SCREEN DISPLAY	TO AV RACK (107A)	3/4"	EC	EC	5
HC1	CAMERA	TO AV RACK (107A)	3/4"	EC	EC	7,5
IPX1	INPUT PLATE - DVI/XLR	TO AV RACK (105)	(2) 3/4"	EC	EC	5
IPX2	INPUT PLATE - DVI/XLR	TO AV RACK (107A)	(2) 3/4"	EC	EC	5
IH	INPUT PLATE - HDMI WITH CAT EXTENDER AND 1/4" AUDIO JACK	TO AV RACK (150)	3/4"	EC	EC	5
INA	INPUT PLATE - HDMI		1-1/4"	EC	EC	5
MCB						
P	PROJECTOR	FROM ACCESSIBLE CEILING TO RACK (150)	3/4"	EC	EC	7
PF	PROJECTOR - FUTURE (ROUGH-IN ONLY)	FROM ACCESSIBLE CEILING TO RACK (150)	3/4"	EC	-	7
RPS	RETRACTABLE PROJECTION SCREEN - WALL	TO AV RACK (150)	3/4"	EC	EC	
RT	ROOM TABLET	TO ACCESSIBLE CEILING	3/4"	EC	EC	2
ST	CAMERA	TO AV RACK (107A)	3/4"	EC	EC	3,6
VI	INPUT PLATE - HDMI WITH CAT CONNECTION	TO AV RACK (107A)	N/A	EC	EC	6
WAP-AV	WIRELESS ACCESS POINT - WIRELESS SIGNAL ONLY	TO ASSOCIATED AV RACK (107 OR 150)	-	EC	EC	

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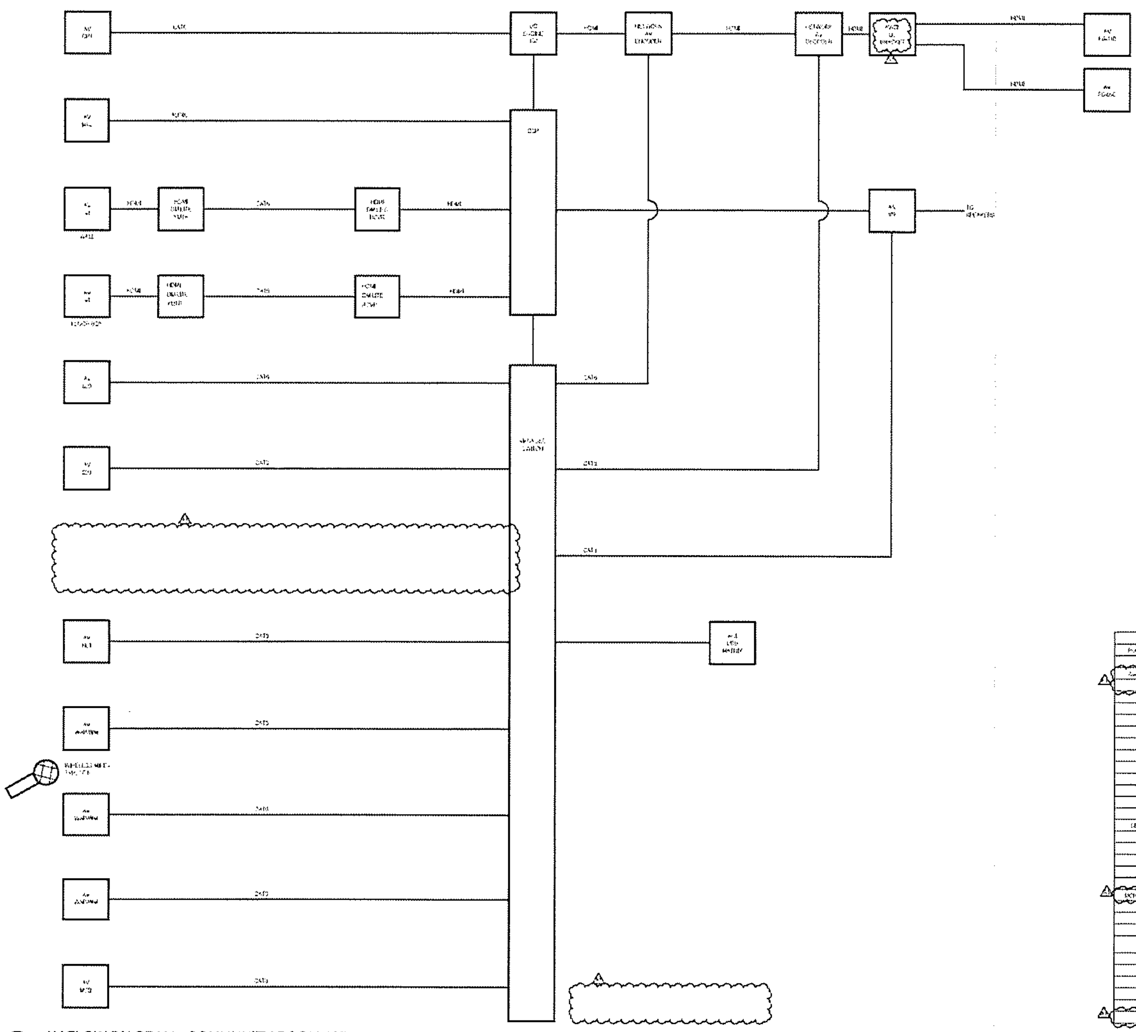
DATE OF ISSUANCE: JANUARY [illegible], 2021

REVISION SCHEDULE

MARK	DESCRIPTION	DATE
[illegible]	[illegible]	[illegible]

SHEET TITLE
TECHNOLOGY SCHEDULES

SHEET NUMBER
T601



A1 AV FLOW DIAGRAM - COMMUNITY ROOM 107

COMMUNITY ROOM 107

[illegible]	[illegible]	[illegible]	[illegible]	DESCRIPTION
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
NOT USED				
[illegible]	1	[illegible]	[illegible]	[illegible]
[illegible]	1	[illegible]	[illegible]	[illegible]
[illegible]	1	[illegible]	[illegible]	[illegible]
[illegible]	4	[illegible]	[illegible]	[illegible]
[illegible]	2	[illegible]	[illegible]	[illegible]
[illegible]	1	[illegible]	[illegible]	[illegible]
[illegible]	1	[illegible]	[illegible]	[illegible]
[illegible]	1	[illegible]	[illegible]	[illegible]
[illegible]	2	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	1	[illegible]	[illegible]	[illegible]
[illegible]	12	[illegible]	[illegible]	[illegible]
[illegible]	1	[illegible]	[illegible]	[illegible]
[illegible]	1	[illegible]	[illegible]	[illegible]
[illegible]	2	[illegible]	[illegible]	[illegible]
[illegible]	1	[illegible]	[illegible]	[illegible]
[illegible]	6	[illegible]	[illegible]	[illegible]
[illegible]	1	[illegible]	[illegible]	[illegible]
[illegible]	1	[illegible]	[illegible]	[illegible]
[illegible]	1	[illegible]	[illegible]	[illegible]
[illegible]	1	[illegible]	MIDDLE ATLANTIC	[illegible]
[illegible]	1	[illegible]	MIDDLE ATLANTIC	[illegible]
[illegible]	1	[illegible]	MIDDLE ATLANTIC	[illegible]
[illegible]	1	[illegible]	MIDDLE ATLANTIC	[illegible]
[illegible]	2	[illegible]	MIDDLE ATLANTIC	[illegible]
[illegible]	1	[illegible]	MIDDLE ATLANTIC	[illegible]
[illegible]	1	[illegible]	[illegible]	[illegible]
NOT USED				

GENERAL SHEET NOTES

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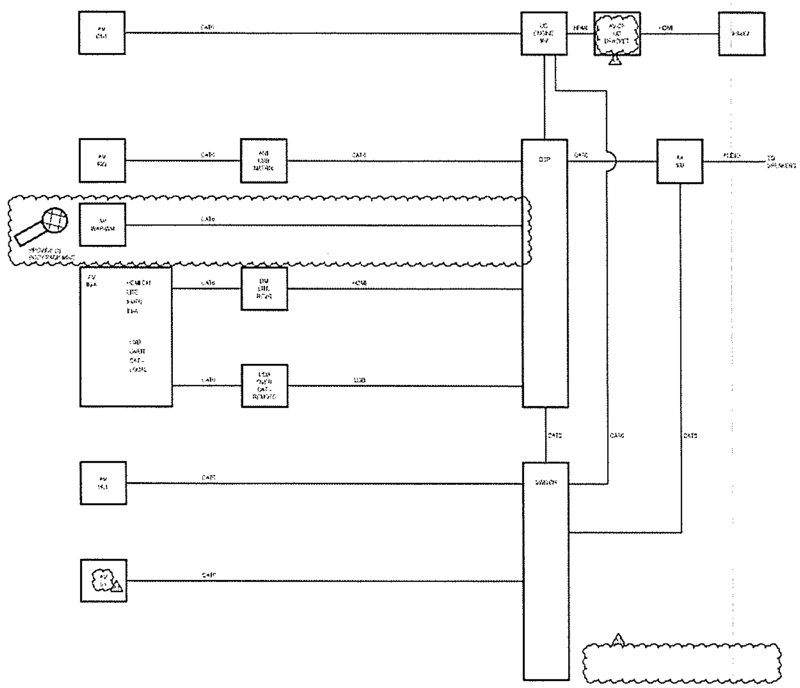
AV FLOW DIAGRAMS

T701

REVISED

GENERAL SHEET NOTES

A. [illegible]
B. [illegible]
C. [illegible]



A2 AV FLOW DIAGRAM - CLASSROOM

CLASSROOM 109				
PLAN DESIGNATION	QTY	MODEL NO.	MANUFACTURER	DESCRIPTION
[illegible]	1	[illegible]	SONY	[illegible]
[illegible]	1	[illegible]	CHIEF	[illegible]
[illegible]	1	[illegible]	CRESTRON	[illegible]
[illegible]	1	[illegible]	CRESTRON	[illegible]
[illegible]	1	TESIRAFORTE [illegible]	BIAMP	[illegible]
[illegible]	1	[illegible]	SHURE	[illegible]
[illegible]	1	[illegible]	CRESTRON	[illegible]
[illegible]	1	[illegible]	CRESTRON	[illegible]
[illegible]	1	[illegible]	CRESTRON	[illegible]
[illegible]	1	[illegible]	CRESTRON	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
NOT USED				
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	QSC	[illegible]
[illegible]	1	[illegible]	QSC	[illegible]
[illegible]	1	[illegible]	[illegible]	[illegible]
[illegible]	1	[illegible]	[illegible]	[illegible]
				[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	1	[illegible]	HUBBELL	[illegible]
NOT SHOWN	1	[illegible]	SHURE	[illegible]
[illegible]	1	[illegible]	SHURE	[illegible]

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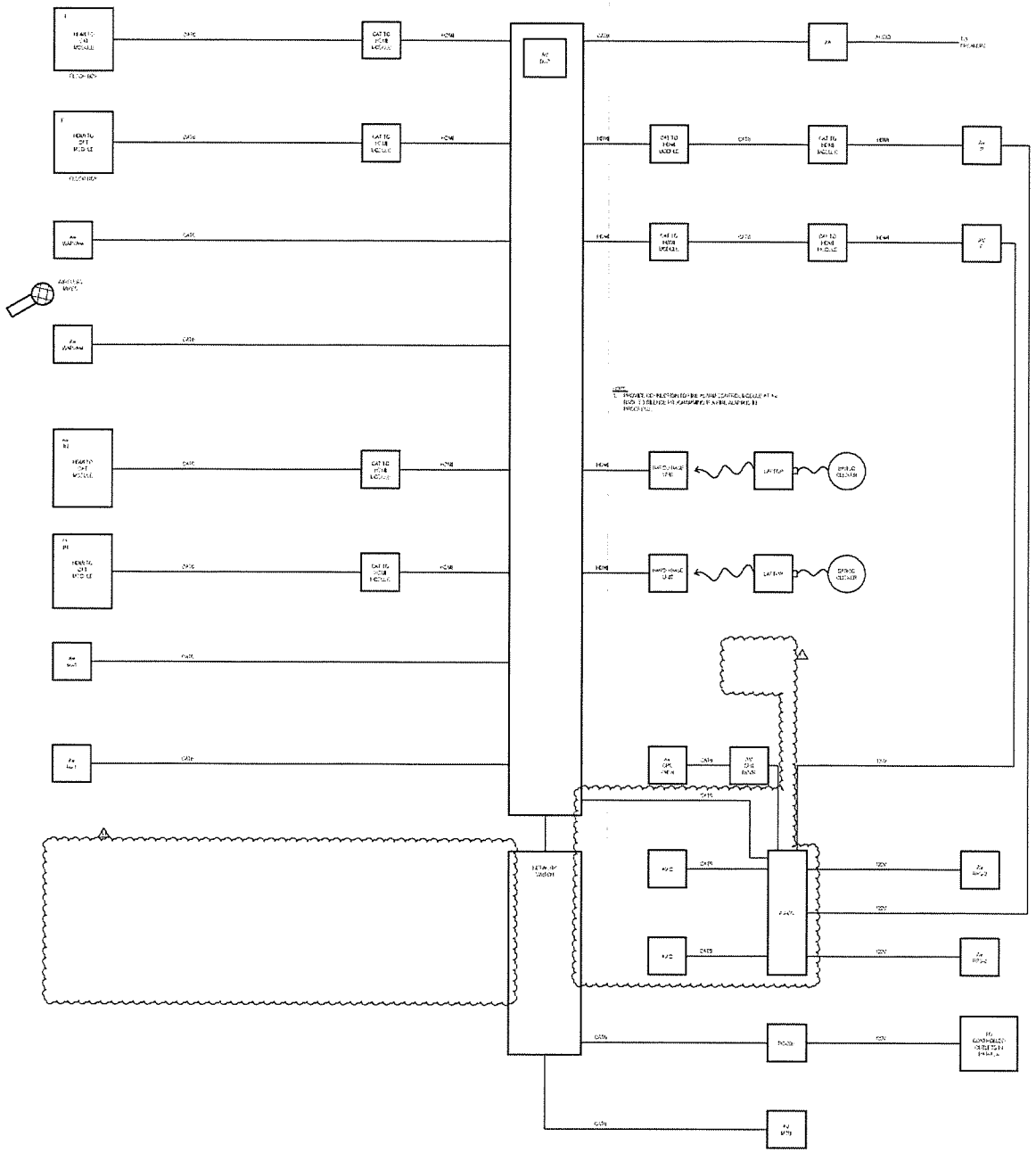
SHEET TITLE

AV FLOW DIAGRAMS

SHEET NUMBER

T702



A2 AV FLOW DIAGRAM - PAVILIONS 1 & 2

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REVISION SCHEDULE

NO.	DESCRIPTION	DATE

REVISED

AV FLOW DIAGRAMS

T703

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GENERAL SHEET NOTES

1. [illegible]

PAVILION #1 151 & PAVILION #2 152				
PLAN DESCRIPTION	QTY	MASTER NO.	MANUFACTURER	DESCRIPTION
[illegible]	2	[illegible]	DA-LITE	[illegible] MOTORIZED PROJECTION SCREEN
[illegible]	2	[illegible]	EPSON	[illegible] PROJECTION
	2	[illegible]	EPSON	UNIVERSAL PROJECTOR MOUNT
[illegible]	2	[illegible]	CRESTRON	HDMI INPUT PLATE
	2	[illegible]	CRESTRON	HDMI RECEIVER
[illegible]	2	[illegible]	CRESTRON	WALL TOUCHPANEL
[illegible]	1	[illegible]	CRESTRON	[illegible]
	1	[illegible]	CRESTRON	POWER SUPPLY
	1	[illegible]	CRESTRON	[illegible]
	LOT	[illegible]	CRESTRON	[illegible] CABLE
	1	[illegible]	[illegible]	DIGITAL SIGNAL PROCESSOR
	2	[illegible]	SHURE	DUAL CHANNEL WIRELESS MICS
SEE FLOOR PLAN	10	[illegible]	QSC	CEILING SPEAKERS [illegible]
[illegible]	1	[illegible]	QSC	[illegible] WATT [illegible] AMPLIFIER
[illegible]	2	[illegible]	RDL	[illegible] INPUT PLATE
	1	[illegible]	[illegible]	[illegible]
	1	[illegible]	[illegible]	[illegible] FURNISHED BY [illegible]
	LOT	[illegible]		CABLE
	LOT	14 AWG [illegible]		SPEAKER WIRE
	1	[illegible]	[illegible]	[illegible]
[illegible]	1	[illegible]	CRESTRON	[illegible] CONTROL SYSTEM

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SHEET TITLE
AV FLOW DIAGRAMS

SHEET NUMBER
T704

ADDENDUM-1
SPECIFICATIONS

SECTION 00 01 02
PROJECT INFORMATION

PART 1 GENERAL

1.01 PROJECT IDENTIFICATION

A. Project Name: Imagination Center at Reindahl Park
   Library: 1814 Parkside Drive.
   Pavilion: 1818 Parkside Drive
   Madison, Wisconsin 53704.

B. Architect's Project Number: 20-0928-02.

C. Owner's Project Number: MUNIS NO 17085.

D. The Owner, hereinafter referred to as Owner: City of Madison Engineering Division

E. Additional Stakeholders:
   1. Madison Public Library.
   2. Madison Parks - City of Madison Parks Division.

1.02 PROJECT DESCRIPTION

A. Summary Project Description: 17,468 square foot single-story public library and community center on an 87.315 acre site. This is a multi-agency collaborative effort to serve the residents of northeast Madison, Wisconsin.

B. Contract Scope: Construction and demolition.

C. Contract Terms: Cost plus a fee, with a guaranteed maximum price (GMP).

1.03 PROJECT CONSULTANTS

A. The Architect, hereinafter referred to as Architect: JLA Architects.
   800 E. Broadway, Suite 200.
   Monona, WI 53713.
   Project Manager: Jennifer Camp, AIA
   Phone: 608.241.9500.
   E-mail: jcamp@jla-ap.com.

1.04 ~~PROCUREMENT TIMETABLE~~

~~Desired Construction Start: Thursday, April 3, 2025.~~

~~Desired Substantial Completion Date: Not later than Thursday, September 3, 2026.~~

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

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[CoM] Denotes City of Madison section

(A1) = Revised as part of Bid Specification Addendum 1, dated 3-6-25

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Division 09 -- Finishes

Division 10 -- Specialties

Division 33 -- Utilities

END OF SECTION

SECTION 00 01 15
LIST OF DRAWINGS

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G101	CODE INFORMATION
G300	ACCESSIBILITY DIAGRAMS

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C101	EXISTING CONDITIONS - SURVEY
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C300	SITE LAYOUT PLAN
C401	SITE GRADING PLAN
C402	SITE GRADING PLAN
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C600	FIRE ACCESS PLAN
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C901	CONSTRUCTION DETAILS
C902	CONSTRUCTION DETAILS
C903	CONSTRUCTION DETAILS
C904	CONSTRUCTION DETAILS

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L104	LANDSCAPE PLAN
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L601	PLANT SCHEDULES AND LANDSCAPE POINTS

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A411	CASEWORK & INTERIOR ELEVATIONS

A412	CASEWORK & INTERIOR ELEVATIONS
A413	INTERIOR ELEVATIONS AND CASEWORK
A414	INTERIOR ELEVATIONS AND CASEWORK
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A511	BUILDING DETAILS
A512	BUILDING DETAILS
A513	BUILDING DETAILS
A514	BUILDING DETAILS
A515	BUILDING DETAILS
A516	BUILDING DETAILS
A517	BUILDING DETAILS
A518	BUILDING DETAILS
A519	BUILDING DETAILS
A520	BUILDING DETAILS
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M603 MECHANICAL SCHEDULES
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M703 MECHANICAL HYDRONIC SYSTEM SCHEMATIC
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M803 MECHANICAL SYSTEM CONTROL DIAGRAMS

M804 MECHANICAL SYSTEM CONTROL DIAGRAMS
M805 MECHANICAL SYSTEM CONTROL DIAGRAMS
M806 MECHANICAL SYSTEM CONTROL DIAGRAMS

ELECTRICAL

E001 ELECTRICAL SYMBOLS & ABBREVIATIONS
E010 ELECTRICAL SITE PLAN
E011 SITE ELECTRICAL DETAILS
E101 FIRST FLOOR PLAN - POWER & FIRE ALARM
E102 ROOF PLAN - ELECTRICAL
E111 FIRST FLOOR PLAN - LIGHTING
E401 ENLARGED MECHANICAL ROOMS
E501 ELECTRICAL DETAILS
E502 ELECTRICAL DETAILS
E503 ELECTRICAL DETAILS
E504 ELECTRICAL DETAILS
E505 ELECTRICAL DETAILS
E506 ELECTRICAL DETAILS
E507 ELECTRICAL DETAILS
E601 ELECTRICAL SCHEDULES
E602 ELECTRICAL SCHEDULES
E603 ELECTRICAL SCHEDULES
E610 PANEL SCHEDULES
E611 PANEL SCHEDULES
E620 ELECTRICAL ONE-LINE POWER DIAGRAM

TECHNOLOGY

T001 TECHNOLOGY SYMBOLS & ABBREVIATIONS
T101 FIRST FLOOR PLAN - TECHNOLOGY
T501 TECHNOLOGY DETAILS
T502 TECHNOLOGY DETAILS
T503 TECHNOLOGY DETAILS
T504 TECHNOLOGY DETAILS
~~T505 TECHNOLOGY DETAILS~~
T601 ELECTRICAL SCHEDULES

PART 2 - NOT USED

PART 3 - NOT USED

END OF SECTION

SECTION 01 29 76
PROGRESS PAYMENT PROCEDURES

PART 1 – GENERAL

1.01 SUMMARY

A. The General Contractor (GC) shall review this and all related specifications prior to submitting progress payment requests.

B. Progress payment requests (Partial Payment-PP) for this contract shall be applied for by the GC in the Project Management Web Site.

C. The City Project Manager (CPM) shall review and amend or approve the PP on the Project Management Web Site.

D. After approval of the PP by the CPM, they shall forward the PP to the appropriate agencies for BPW contractual review and payment processing.

1.02 RELATED SPECIFICATIONS

A. Section 01 26 63 - Change Order (CO).

B. Section 01 29 73 - Schedule of Values.

C. Section 01 31 19 - Progress Meetings.

D. Section 01 31 23 - Project Management Web Site.

E. Section 01 32 16 - Construction Progress Schedules.

F. Section 01 32 26 - Construction Progress Reporting.

G. Section 01 33 23 - Submittals.

H. Section 01 45 16 - Field Quality Control Procedures.

I. Section 01 77 00 - Closeout Procedures.

J. Section 01 78 13 - Completion and Correction List.

K. Section 01 78 23 - Operation and Maintenance Data.

L. Section 01 78 36 - Warranties.

M. Section 01 78 39 - As-Built Drawings.

N. Section 01 78 43 - Spare Parts and Extra Materials.

O. Section 01 79 00 - Demonstration and Training.

1.03 RELATED DOCUMENTS

A. The following documents shall be used when evaluating PP requests.

1. Daily and weekly construction progress reports filed since the last payment request.
2. Contractors Schedule of Values as updated from the last payment request. See Specification 01 29 73 - Schedule of Values.
3. Any document that may be required to be submitted for review and approval, as noted by the specifications listed in Section 1.02 above, or the Progress Payment Milestone Schedule in Section 1.04 below, to achieve a required bench mark of contract progression or contract requirement.

1.04 PROGRESS PAYMENT MILESTONES

A. City Engineering-Facility Management has developed the Project Payment Milestone Schedule (Section 1.04 below) to assist the GC in providing required construction specific documentation and general contractual documentation in a timely manner.

B. The Progress Payment Milestone Schedule is not an all inclusive list. Multiple agencies review progress payment requests and contract closeout requests. Missing, incomplete, or incorrect documentation for any agency may be a cause for not processing progress payments. It shall be the sole responsibility of the Contractor for providing documentation as required or requested to the appropriate agencies.

C. The milestone schedule is based on the contract total sum and shall be valid for most contracts. Milestone submittals will be required with whatever progress payment hits the percentage of contract total indicated in the schedule.

D. The CPM shall review the milestone schedule with each progress payment request and at their option may elect to hold processing the progress payment until such time as the contractor has met the requirements for providing construction specific documentation.

E. It shall be the General Contractors responsibility to comply with all BPW Contract Administration requirements and related deadlines as outlined in the Award Letter, Award Checklist, and Start Work Letter.

See next page for Progress Payment Milestone Schedule table (revised).

Progress Payment (PP) Milestone Schedule		
MILESTONE DESCRIPTION	**DUE BEFORE**	**REMARKS**
BPW Contract Administration Documentation • Workforce profiles • Best Value Contracting Documentation • Sub-contractors prequalification approval & Affirmative Action plans • Submittals Schedule • Other as may be required	PP-1, or start work as applicable	• For GC and Sub-contractors before PP-1 regardless of scheduling • Sub-contractors (if applicable), due 10 days before they may start work • Sub-contractors (if applicable), due 10 days before they may start work • Specification 01 32 19
Required Construction Submittals/Administrative Documents • Contractors Project Directory • Schedule of Values • Waste Management Plan • Closeout Requirement Checklist • Warranty Checklist • Time Lapse Construction Camera (camera installed and operational) • Submission and Completion of all long-lead construction element submittals	PP-1	References • Specification 01 31 23 • Specification 01 29 73 • Specification 01 74 19 • Specification 01 77 00 • Specification 01 78 36 • Specification 01 32 33 • Various Specifications
Construction Progress Milestones Early submittals, per submittal schedule Detailed Contract Schedules	PP-1	See specifications for specific requirements • Specification 01 32 19, Examples: concrete mix, structural steel, products with long lead times • See Specification 01 32 16
Electrical Gear Submittal and Approval Milestone 1. Electrical Contractor (EC) must provide for Engineer's review all permanent power distribution equipment as specified in the remarks column. The following submittals must be completed for all equipment listed in the remarks: a. manufacturer's data sheets b. shop drawings 2. EC/GC must provide written notification from Electrical Utility notifying an Electric Service Report (ESR) is submitted and under review. 3. No fabrication or shipping shall commence prior to receipt of conditional approval from the Engineer of Record.	PP-2	• Specification 26 05 73.10 • Specification 26 09 13.13 • Specification 26 21 00 • Specification 26 24 13.11 • Specification 26 24 16.11 • Specification 26 27 13.13 • Specification 26 27 13.16

Progress Payment (PP) Milestone Schedule		
MILESTONE DESCRIPTION	**DUE BEFORE**	**REMARKS**
Electrical Gear Supplier Confirmation Milestone 1. EC/GC must provide written confirmation of equipment shipping dates on supplier's letterhead.	PP-3	• Specification 26 05 73.10 • Specification 26 09 13.13 • Specification 26 21 00 • Specification 26 24 13.11 • Specification 26 24 16.11 • Specification 26 27 13.13 • Specification 26 27 13.16
General Construction Progress Requirements are all up to date • Progress Schedules • Submittals/Re-submittals (ongoing) • Schedule of Values • Progress Reporting • LEED Documentation • Waste Management documentation • QMOs are being addressed and closed • Progress Cleaning • As-Built Drawings	Each future PP	Verified with each Progress Payment Request • Specification 01 32 16 • Specification 01 33 23 • Specification 01 29 73 • Specification 01 32 26 • All specifications with LEED documentation requirements • Specification 01 74 19 • Specification 01 45 16 • Specification 01 74 13 • Specification 01 78 39
*** All of the above are being updated on the Project Management Web Site as required**		
BPW Contract Administration Documentation • Weekly payroll reports • Best Value Contracting Reports • SBE Reports	25% CT or PP 2	See 1.04.E above. *This progress payment will be withheld by BPW for any missing contractual documentation.*
Construction Progress Milestones • Construction/Contract Closeout Meeting #1 • Submittals/Re-submittals complete	50% CT	• Specification 01 31 19 • Specification 01 33 23
Operation and Maintenance (O & M) drafts	60% CT	• Specification 01 78 23
Construction/Contract Closeout Meeting #2 • Construction closeout checklist	70% CT	• Specification 01 31 19 • Specification 01 77 00

Progress Payment (PP) Milestone Schedule		
MILESTONE DESCRIPTION	**DUE BEFORE**	**REMARKS**
BPW Contract Administration Documentation • Request Finalization Review from BPW	80% CT	This is a recommendation to the GC and is not a requirement of this PP. • Specification 01 77 00
Construction Progress Milestones • Operation and Maintenance (O & M) finals, accepted • All major QMO issues resolved • As-Built Drawings, Division Trades ready for GC review	80% CT	• Specification 01 78 23 • Specification 01 45 16; Items that could prevent occupancy • Specification 01 78 39
All of the following shall be completed for this PP: • Regulatory Inspections completed • All QMO reports closed • Demonstration and Training completed • Attic Stock completed • Final Cleaning	90% CT	Contractor to determine the proper order of completion: • Governing ordinances and statutes • Specification 01 45 16 • Specification 01 79 00 • Specification 01 78 43 • Specification 01 74 13
Construction Closeout Procedures: • Letter of Substantial Compliance sent to BI and DHS as needed • Certificate of Occupancy issued • As-Built Drawings, finals, accepted • City Letter of Substantial Completion • Warranty letters dated and issued	100% CT	• Specification 01 77 00 • Generated/Signed by the Architect • Building Inspection • Specification 01 78 39 • Signed by the City Engineer • Specification 01 78 36
*** Completion of this begins the one year warranty.**		
BPW Contract Administration Documentation Contract Closeout Procedures • Construction Closeout has been completed • Contractor requests final payment of retainage upon receiving City Letter of Substantial Completion • All BPW contractual requirements are verified	Final	• Specification 01 77 00 • Contractor must provide any missing BPW Contractual Documentation
*** Completion of this closes the contract but not the warranty period/bond.**		
***NOTE:* CT = Contract Total less held retainage**		

1.05 PROGRESS PAYMENT SUBMITTAL

A. Each progress payment submittal shall be completed in the Project Management Website. See guide on the Project Management Website for the procedure.

B. Submit all required construction progress documentation to the appropriate Project Management Web Site component as described in guides.

C. In general the following shall apply to all PP requests:
   1. Materials or products:
      a. On order, being shipped, etc. may not be invoiced.
      b. Received and stored on the project site may be invoiced.
      c. Being manufactured off site at any location may not be invoiced (example: cabinetry, ductwork, etc.)
      d. Completed products stored off site locally waiting for delivery to the project site may be invoiced with prior approval by the CPM. All of the following conditions must be met to be allowed:
         1) Items must be visually inspected by CPM to verify product is complete.
         2) Item must be stored inside a compatible structure and the structure and contents must be insured.
         3) Contractor is responsible for condition until installation is completed.
   2. All labor and equipment, including rental time for the current progress period may be invoiced.
   3. Only completed installations may be invoiced to 100% based on the Schedule of Values.

D. DO NOT submit BPW Contract Administration Documentation for review with Progress Payment Requests, submit them directly to the correct agency and in the correct format as instructed from information in your BPW Contract Award Packet instructions.

PART 2 - PRODUCTS - THIS SECTION NOT USED

PART 3 - EXECUTION

3.01 GENERAL CONTRACTOR PROCEDURE

A. The GC shall use the Project Management Website for each PP request.
   1. 1. The GC shall subtotal the work completed to date for all of the original Schedule of Value items.
   2. Ensure that any newly posted change orders have been entered.
   3. The GC shall submit the PP request in the Project Management Website. The username and date will be automatically recorded.
   4. The GC shall provide the dates from and to for the PP being requested.
   5. The GC shall provide the list of all contractors/sub-contractors that were actively working during the dates indicated above. The guide details the appropriate location for this list.
      a. All contractors/sub-contractors named must be in compliance with all City requirements (Pre-qualified, Affirmative Action Plan on file, etc). The PP will be held and not processed by the City of Madison until all contractors/sub-contractors are in compliance.
      b. Do not list the names of suppliers or manufacturers, doing so will slow down processing and require a re-submittal of the paperwork.
   6. The GC shall attach a copy of the current Project Schedule.

3.02 CITY PROJECT MANAGER PROCEDURE

A. The CPM shall review all documents submitted by the GC to ensure the schedule of values accurately reflects the work completed to date.

B. The CPM may elect to hold processing of any progress payment pending submittal of required progress payment milestones.

C. When verified, the CPM shall send the PP and required documentation to the appropriate City agencies for further processing of the payment request.

D. The PP processing will be completed and available for view on the Project Management Web Site.

END OF SECTION

SECTION 01 43 50
AIR BARRIER SYSTEMS

PART 1 – GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, Division 07 Specification Sections, apply to this Section.

1.02 SUMMARY

A. Contractor will engage a qualified consultant(s) to perform tests and inspections prior to the installation of air barrier components.

B. This section includes administrative and procedural requirements for accomplishing an airtight building enclosure that controls infiltration or exfiltration of air.

C. Related Sections:
   1. Section 07 25 00: Weather Barriers.
   2. Requirements of this section relate to the coordination between subcontractors required to provide an airtight building enclosure, customized fabrication and installation procedures, not production of standard products.

1.03 DEFINITIONS

A. Air Barrier System: The airtight components of the building enclosure and the joints, junctures and transitions between materials, products, and assemblies forming the air-tightness of the building enclosure.

B. Services: Include coordination between the trades, the proper scheduling and sequencing of the work, pre-construction meetings, inspections, tests, and related actions, including reports performed by Contractor, by independent agencies, and by governing authorities. They do not include contract enforcement activities performed by Architect.

1.04 PERFORMANCE REQUIREMENTS

A. General Performance: The Contractor shall ensure that the intent of constructing the building enclosure with a continuous air barrier system to control air leakage into, or out of the conditioned space is achieved. The air barrier system shall have the following characteristics:
   1. It shall be continuous, with all joints sealed.
   2. It shall be structurally supported to withstand positive and negative air pressures applied to the building enclosure.
   3. Continuity of the air barrier materials and products with joints to provide complete assemblies.
   4. Continuity of all the enclosure assemblies with joints and transition materials to provide a whole building air barrier system.

B. Connection shall be made between:
   1. Foundation and walls.
   2. Walls and windows or doors.
   3. Different wall systems.
   4. Wall and roof.
   5. Wall and roof over unconditioned space.
   6. Walls, floor and roof across construction, control and expansion joints.
   7. Walls, floors and roof to utility, pipe and duct penetrations.

C. Air Barrier Penetrations: All penetrations of the air barrier and paths of air infiltration / exfiltration shall be made air-tight.

D. Compliance Requirements:
   1. Assemblies: an air permeance not to exceed 0.03 cfm/ft2p under a pressure differential of 0.3 inch (7.62 mm). water (1.57psf) (0.15 L/s.m2 @ 75 Pa) when tested in accordance with ASTM E 1677.
   2. Materials: Materials used for the air barrier system in the opaque envelope shall have an air permeance not to exceed 0.004 cfm/ft2 under a pressure differential of 0.3 inch (7.62 mm). water (1.57psf) (0.02 L/s.m2 @ 75 Pa) when tested in accordance with ASTM E 2178. Or,
   3. Entire Building: The air leakage of the entire building shall not exceed 0.15 cfm/sf under a pressure differential of 0.3 inch (7.62 mm). water (1.57psf) (0.75 L/s.m2 @ 75 Pa) when tested according to ASTM E 779.

1.05 SUBMITTALS

A. Field quality-control reports.

B. Testing agency shall submit a certified written report, in duplicate, of each inspection, test, or similar service to the Architect. If the Contractor is responsible for the service, submit a certified written report, in duplicate, of each inspection, test, or similar service through the Contractor.
   1. Submit additional copies of each written report directly to the governing authority, when the authority so directs.

C. Report Data: Written reports of each inspection, test, or similar service include, but are not limited to, the following:
   1. Date of issue.
   2. Project title and number.
   3. Name, address, and telephone number of testing agency.
   4. Dates and locations of samples and tests or inspections.
   5. Names of individuals making the inspection or test.
   6. Designation of the Work and test method.
   7. Identification of product and Specification Section.
   8. Complete inspection or test data.
   9. Test results and an interpretation of test results.
   10. Ambient conditions at the time of sample taking and testing.
   11. Comments or professional opinion on whether inspected or tested Work complies with Contract Document requirements.
   12. Name and signature of laboratory inspector.
   13. Recommendations on retesting.

1.06 QUALITY ASSURANCE

A. General Performance: The Contractor shall ensure that the intent of constructing the building enclosure with a continuous air barrier system to control air leakage into, or out of the conditioned space is achieved. The air barrier system shall have the following characteristics:

B. Inspection and testing services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with Contract Document requirements.
   1. Qualifications for Air Barrier Testing and Inspection Agencies: Engage Air Barrier inspection and testing service agencies, including independent testing laboratories, that are prequalified and that specialize in the types of air barrier system inspections and tests to be performed.

C. Specific quality-control requirements for individual construction activities are specified in the sections of the specifications. Requirements in those sections may also cover production of standard products. It is the Contractor's responsibility to ensure that each subcontractor is adequately and satisfactorily performing the quality assurance documentation, tests and procedures required by each section.

D. Specified inspections, tests, and related actions do not limit Contractor's quality-control procedures that facilitate compliance with Contract Document requirements.

1.07 PROJECT CONDITIONS

A. Contractor Responsibilities: Unless otherwise indicated as the responsibility of another identified entity, Contractor shall provide coordination of the trades, and the sequence of construction to ensure continuity of the air barrier system joints, junctures and transitions between materials and assemblies of materials and products, from substructure to walls to roof. Provide quality assurance procedures, testing and verification as specified herein. Facilitate inspections, tests, and other quality-control services specified elsewhere in the Contract Documents and required by authorities having jurisdiction or by the Owner. Costs for these services are included in the Contract Sum.

B. Organize preconstruction meetings between the trades involved in the whole building's air barrier system to discuss where each trade begins and ends and the responsibility and sequence of installation of all the air-tight joints, junctures, and transitions between materials, products and assemblies of products specified in the different sections, to be installed by the different trades.

C. Build a mock-up before proceeding with the work, satisfactory to the Architect, of each airtight joint type, juncture, and transition between products, materials and assemblies.

D. Associated Services: Cooperate with agencies performing required inspections, tests, and similar services, and provide reasonable auxiliary services as requested. Notify the agency sufficiently in advance of operations to permit assignment of personnel. Auxiliary services required include, but are not limited to, the following:
   1. Provide access to the Work.
   2. Furnish incidental labor and facilities necessary to facilitate inspections and tests.
   3. Take adequate quantities of representative samples of materials that require testing or assist the agency in taking samples.
   4. Deliver samples to testing laboratories.
   5. Provide security and protection of samples and test equipment at the Project Site.

E. Duties of the Testing and Inspection Agency: The independent agency engaged to perform inspections, sampling, and testing of air barrier materials, components and assemblies specified in individual Sections shall cooperate with the Architect and the Contractor in performance of the agency's duties. The testing agency shall provide qualified personnel to perform required inspections and tests.
   1. The agency shall notify the Architect and the Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
   2. The agency is not authorized to release, revoke, alter, or enlarge requirements of the Contract Documents or approve or accept any portion of the Work.
   3. The agency shall not perform any duties of the Contractor.

F. Coordination: Coordinate the sequence of activities to accommodate required services with a minimum of delay. Coordinate activities to avoid the necessity of removing and replacing construction to accommodate inspections and tests.
   1. The Contractor is responsible for scheduling times for inspections, tests, taking samples, and similar activities.

PART 2 – PRODUCTS – NOT USED

PART 3 - EXECUTION

3.01 FIELD QUALITY CONTROL

A. Testing Agency: Contractor will engage a qualified testing agency to perform tests and inspections.

B. Tests and Inspections:

1. Qualitative Testing and Inspection:
   a. Daily reports of observations, with copies to the Owner, Contractor and Architect.
   b. Continuity of the air barrier system throughout the building enclosure with no gaps, holes.
   c. Structural support of the air barrier system to withstand design air pressures.
   d. Masonry and concrete surfaces are smooth, clean and free of cavities, protrusions and mortar droppings, with mortar joints struck flush, or as required by the manufacturer of the air barrier material.
   e. Site conditions for application temperature and dryness of substrates.
   f. Maximum length of exposure time of materials to ultra-violet deterioration.
   g. Surfaces are properly primed.
   h. Laps in material are 2" minimum, shingled in the correct direction (or mastic applied on exposed edges), with no fishmouths.
   i. Mastic applied on cut edges.
   j. Roller has been used to enhance adhesion.
   k. Measure application thickness of liquid-applied materials to manufacturer's specifications for the specific substrate.
   l. Materials used for compatibility.
   m. Transitions at changes in direction, and structural support at gaps.
   n. Connections between assemblies (membrane and sealants) for cleaning, preparation and priming of surfaces, structural support, integrity and continuity of seal.
   o. All penetrations sealed.
2. Testing Standards
   a. Refer to Specification Sections 01-91-19 Building Enclosure Commissioning Requirements

3.02 REPAIR AND PROTECTION

A. Upon completion of inspection, testing, sample taking and similar services, repair damaged construction and restore substrates and finishes. Comply with Contract Document requirements for Division 1 Section "Cutting and Patching."

B. Protect construction exposed by or for quality-control service activities and protect repaired construction.

C. C. Repair and protection is Contractor's responsibility, regardless of the assignment of responsibility for inspection, testing, or similar services.

END OF SECTION

SECTION 08 80 00
GLAZING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Insulating glass units.

B. Glazing units.

C. Laminated glass interlayers.

D. Glazing compounds.

1.02 RELATED REQUIREMENTS

~~Section 01 23 00 - Alternates: add alternate for IG-3B locations.~~

A. Section 07 25 00 - Weather Barriers.

B. Section 07 26 00 - Vapor Retarders.

C. Section 07 27 00 - Air Barriers.

D. Section 07 92 00 - Joint Sealants: Sealants for other than glazing purposes.

E. Section 08 11 13 - Hollow Metal Doors and Frames: Glazed lites in doors and borrowed lites.

F. Section 08 41 26 - All-Glass Entrances and Storefronts: Glazing provided as part of entrance assembly.

G. Section 08 43 13 - Aluminum-Framed Storefronts: Glazing provided as part of storefront assembly.

1.03 REFERENCE STANDARDS

A. 16 CFR 1201 - Safety Standard for Architectural Glazing Materials; Current Edition.

B. AAMA 501.6 - Recommended Dynamic Test Method for Determining the Seismic Drift Causing Glass Fallout from Window Wall, Curtain Wall and Storefront Systems; 2018.

C. ANSI Z97.1 - American National Standard for Safety Glazing Materials Used in Buildings - Safety Performance Specifications and Methods of Test; 2015 (Reaffirmed 2020).

D. ASTM C864 - Standard Specification for Dense Elastomeric Compression Seal Gaskets, Setting Blocks, and Spacers; 2005 (Reapproved 2019).

E. ASTM C920 - Standard Specification for Elastomeric Joint Sealants; 2018.

F. ASTM C1036 - Standard Specification for Flat Glass; 2021.

G. ASTM C1048 - Standard Specification for Heat-Strengthened and Fully Tempered Flat Glass; 2018.

H. ASTM C1172 - Standard Specification for Laminated Architectural Flat Glass; 2019.

I. ASTM C1193 - Standard Guide for Use of Joint Sealants; 2016 (Reapproved 2023).

J. ASTM C1376 - Standard Specification for Pyrolytic and Vacuum Deposition Coatings on Flat Glass; 2021a.

K. ASTM E1300 - Standard Practice for Determining Load Resistance of Glass in Buildings; 2016.

L. ASTM E2190 - Standard Specification for Insulating Glass Unit Performance and Evaluation; 2019.

M. GANA (SM) - GANA Sealant Manual; 2008.

N. ICC (IBC) - International Building Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

O. NFRC 100 - Procedure for Determining Fenestration Product U-factors; 2023.

P. NFRC 200 - Procedure for Determining Fenestration Product Solar Heat Gain Coefficient and Visible Transmittance at Normal Incidence; 2023.

Q. NFRC 300 - Test Method for Determining the Solar Optical Properties of Glazing Materials and Systems; 2023.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Preinstallation Meeting: Convene a preinstallation meeting one week before starting work of this section; require attendance by each of the affected installers.

1.05 SUBMITTALS

A. See Section 01 33 23-Submittals for City of Madison required submittal procedures.

B. Product Data on Glazing Compounds and Accessories: Provide chemical, functional, and environmental characteristics, limitations, special application requirements, and identify available colors.

C. Installer's qualification statement.
   1. Architectural Glass and Metal Technician (AGMT) certificates or equivalent ANSI accredited certificates for architectural glass and metal installers for no less than 50% of the crew installing architectural glass and metal products.

1.06 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years of documented experience.
   1. Provide certified glass products through ANSI accredited certifications that include plant audits and independent laboratory performance testing.

B. Installer Qualifications: A qualified glazing contractor for this Project who employs glazing technicians certified under the Architectural Glass and Metal Technician (AGMT) certification program. No less than 50% of the crew performing architectural glass and metal work shall be Architectural Glass and Metal Technicians (AGMT).

C. Testing Agency Qualifications: Independent firm specializing in performing testing and inspections of the type specified in this section.

1.07 MOCK-UPS

A. See Section 01 43 39 - Mockups for additional requirements.

1.08 FIELD CONDITIONS

A. Do not install glazing when ambient temperature is less than 40 degrees F (4 degrees C).

B. Maintain minimum ambient temperature before, during and 24 hours after installation of glazing compounds.

1.09 WARRANTY

A. See Section 01 77 00-Closeout Procedures for additional warranty requirements.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Float Glass Manufacturers:
   1. Cardinal Glass Industries: www.cardinalcorp.com/#sle.
   2. ~~[~~ ~~]~~Or Approved Equal.
   3. Substitutions: ~~See Section01 60 00-Product Requirements~~See Section 01 25 13 - Product Substitution Procedures.

B. Laminated Glass Manufacturers:
   1. Cardinal Glass Industries: www.cardinalcorp.com/#sle.
   2. ~~[~~ ~~]~~Or Approved Equal.
   3. Substitutions: ~~See Section01 60 00-Product Requirements~~See Section 01 25 13 - Product Substitution Procedures.

C. Bird-Friendly Glass Manufacturers:
1. Cardinal Glass Industries: www.cardinalcorp.com/#sle.
2. ~~[~~ ~~]~~Or Approved Equal.
3. Substitutions: ~~See Section01 60 00 Product Requirements~~See Section 01 25 13 - Product Substitution Procedures.

2.02 PERFORMANCE REQUIREMENTS - EXTERIOR GLAZING ASSEMBLIES

A. Provide type and thickness of exterior glazing assemblies to support assembly dead loads, and to withstand live loads caused by positive and negative wind pressure acting normal to plane of glass.
1. Comply with ASTM E1300 for design load resistance of glass type, thickness, dimensions, and maximum lateral deflection of supported glass.
2. Provide glass edge support system sufficiently stiff to limit the lateral deflection of supported glass edges to less than 1/175 of their lengths under specified design load.
3. Glass thicknesses listed are minimum.

B. Weather-Resistive Barrier Seals: Provide completed assemblies that maintain continuity of building enclosure water-resistive barrier, vapor retarder, and/or air barrier.
1. In conjunction with weather barrier related materials described in other sections, as follows:
a. Water-Resistive Barriers: See Section 07 25 00.
b. Vapor Retarders: See Section 07 26 00.
c. Air Barriers: See Section 07 27 00.
2. To utilize inner pane of multiple pane insulating glass units for continuity of vapor retarder and/or air barrier seal.
3. To maintain a continuous vapor retarder and/or air barrier throughout glazed assembly from glass pane to heel bead of glazing sealant.

C. Thermal and Optical Performance: Provide exterior glazing products with performance properties as indicated. Performance properties are in accordance with manufacturer's published data as determined with the following procedures and/or test methods:
1. Center of Glass U-Value: Comply with NFRC 100 using Lawrence Berkeley National Laboratory (LBNL) WINDOW 6.3 computer program.
2. Center of Glass Solar Heat Gain Coefficient (SHGC): Comply with NFRC 200 using Lawrence Berkeley National Laboratory (LBNL) WINDOW 6.3 computer program.
3. Solar Optical Properties: Comply with NFRC 300 test method.

2.03 GLASS MATERIALS

A. Float Glass: Provide float glass based glazing unless otherwise indicated.
1. Annealed Type: ASTM C1036, Type I - Transparent Flat, Class 1 - Clear, Quality - Q3.
2. Kind HS - Heat-Strengthened Type: Complies with ASTM C1048.
3. Kind FT - Fully Tempered Type: Complies with ASTM C1048.

B. Laminated Glass: Float glass laminated in accordance with ASTM C1172.
1. Laminated Safety Glass: Complies with ANSI Z97.1 - Class B or 16 CFR 1201 - Category I impact test requirements.

2.04 INSULATING GLASS UNITS

A. Manufacturers:
1. Cardinal Glass Industries: www.cardinalcorp.com/#sle.
2. Substitutions: See Section 01 60 00 - Product Requirements.

B. Insulating Glass Units: Types as indicated.
1. Durability: Certified by an independent testing agency to comply with ASTM E2190.
2. Coated Glass: Comply with requirements of ASTM C1376 for pyrolytic (hard-coat) or magnetic sputter vapor deposition (soft-coat) type coatings on flat glass; coated vision glass, Kind CV; coated overhead glass, Kind CO.
3. Spacer Color: Black.

4. Edge Seal:
   a. Color: Black.
5. Purge interpane space with dry air, hermetically sealed.

C. Type IG-1 - Insulating Glass Units: Vision glass, double glazed.
1. Applications: Exterior glazing unless otherwise indicated.
2. Space between lites filled with argon.
   a. Basis of Design: Cardinal Endure IG spacer.
   b. Basis of Design Air Gap: 1/2 inch or 13 mm.
3. Outboard Lite: Heat-strengthened float glass, 1/4 inch or 5.77 mm thick, minimum.
   a. Tint: Clear.
   b. Coating: Self-cleaning type, on #1 surface.
   c. Coating: Low-E (passive type), LoE-270 on #2 surface.
4. Inboard Lite: Heat-strengthened float glass, 1/4 inch or 5.77 mm thick, minimum.
   a. Tint: Clear.
5. Total Thickness: 1 inch or 24.4 mm .
6. Thermal Transmittance (U-Value), Summer - Center of Glass: 0.30, nominal.
7. Visible Light Transmittance (VLT): 68 percent, nominal.
8. Solar Heat Gain Coefficient (SHGC): 0.41, nominal.

D. Type IG-1B - Insulating Glass Units: Bird-friendly Acid Etched vision glass, double glazed.
1. Applications: Exterior glazing unless otherwise indicated.
2. Space between lites filled with argon.
   a. Basis of Design: Cardinal Endure IG spacer.
   b. Basis of Design Air Gap: 1/2 inch or 13 mm.
3. Outboard Lite: Heat-strengthened float glass, 1/4 inch or 5.77 mm thick, minimum.
   a. Tint: Clear.
   b. Bird-Friendly Pattern: 5 mm dots, spaced at 2 by 2 inches.
      1) Acid-etched on exterior, Surface 1, of IGU.
   c. Coating: Low-E (passive type), LoE-270 on #2 surface.
4. Inboard Lite: Heat-strengthened float glass, 1/4 inch or 5.77 mm thick, minimum.
   a. Tint: Clear.
5. Total Thickness: 1 inch or 24.4 mm .
6. Thermal Transmittance (U-Value), Summer - Center of Glass: 0.30, nominal.

E. Type IG-2 - Insulating Glass Units: Vision glass, double glazed.
1. Applications: Tempered exterior glazing as indicated on drawings.
2. Space between lites filled with argon.
   a. Basis of Design: Cardinal Endure IG spacer.
   b. Basis of Design Air Gap: 1/2 inch or 13 mm.
3. Outboard Lite: Fully tempered float glass, 1/4 inch or 5.77 mm thick, minimum.
   a. Tint: Clear.
   b. Coating: Self-cleaning type, on #1 surface.
   c. Coating: Low-E (passive type), LoE-270 on #2 surface.
4. Inboard Lite: Fully tempered laminated float glass, 1/4 inch or 5.77 mm thick, minimum.
   a. Tint: Clear.
5. Total Thickness: 1 inch or 25.7 mm.
6. Thermal Transmittance (U-Value), Summer - Center of Glass: 0.30, nominal.

F. Type IG-2B - Insulating Glass Units: Bird-friendly Acid Etched vision glass, double glazed.
1. Applications: Tempered exterior glazing as indicated on drawings.
2. Space between lites filled with argon.
   a. Basis of Design: Cardinal Endure IG spacer.
   b. Basis of Design Air Gap: 1/2 inch or 13 mm.

3. Outboard Lite: Fully tempered float glass, 1/4 inch or 5.77 mm thick, minimum.
   a. Tint: Clear.
   b. Bird-Friendly Pattern: 5 mm dots, spaced at 2 by 2 inches.
      1) Acid-etched on exterior, Surface 1, of IGU.
   c. Coating: Low-E (passive type), LoE-270 on #2 surface.
4. Inboard Lite: Fully tempered float glass, 1/4 inch or 5.77 mm thick, minimum.
   a. Tint: Clear.
5. Total Thickness: 1 inch or 24.4 mm .
6. Thermal Transmittance (U-Value), Summer - Center of Glass: 0.30, nominal.

G. Type IG-3B - Insulating Glass Units: Bird-friendly Acid Etched laminated exterior glazing.
   ~~Applications: See Section 01 23 00 - Alternates for locations .~~
1. Space between lites filled with argon.
   a. Basis of Design: Cardinal Endure IG spacer.
   b. Basis of Design Air Gap: 1/2 inch or 13 mm.
2. Outboard Lites: Heat-strengthened float glass, 1/4 inch or 5.77 mm thick, minimum.
   a. Tint: Clear.
   b. Bird-Friendly Pattern: 5 mm dots, spaced at 2 by 2 inches.
      1) Acid-etched on exterior, Surface 1, of IGU.
   c. Coating: Low-E (passive type), LoE-270 on #2 surface.
   d. PVB Interlayer between outboard lites (LGI-1).
3. Inboard Lite: Heat-strengthened float glass, 1/4 inch or 5.77 mm thick, minimum.
   a. Tint: Clear.
4. Total Thickness: 1 inch or 24.4 mm .
5. Thermal Transmittance (U-Value), Summer - Center of Glass: 0.30, nominal.

2.05 BASIS OF DESIGN - INSULATING GLASS UNITS

A. Basis of Design - Insulating Glass Units: Vision glazing, with low-e coating.
1. Applications: Exterior insulating glass glazing unless otherwise indicated.
2. Space between lites filled with argon.
3. Total Thickness: 1 inch or 24.4 mm.
4. Thermal Transmittance (U-Value), Summer - Center of Glass: 0.30, nominal.
5. Coated Glass: Comply with requirements of ASTM C1376 for pyrolytic (hard-coat) or magnetic sputter vapor deposition (soft-coat) type coatings on flat glass; coated vision glass, Kind CV; coated overhead glass, Kind CO.
6. Spacer Color: Black.
7. Edge Seal:
   a. Dual-Sealed System: Provide polyisobutylene sealant as primary seal applied between spacer and glass panes, and silicone, polysulfide, or polyurethane sealant as secondary seal applied around perimeter.
8. Color: Black.
9. Purge interpane space with dry air, hermetically sealed.

2.06 GLAZING UNITS

A. Type G-1 - Monolithic Interior Vision Glazing:
1. Applications: Interior glazing unless otherwise indicated.
2. Glass Type: Annealed float glass.
3. Tint: Clear.
4. Thickness: 1/4 inch (6.4 mm), nominal.

B. Type G-2 - Monolithic Interior Vision Glazing:
1. Applications: Tempered interior glazing as indicated on drawings.
2. Glass Type: Fully tempered float glass.

3. Tint: Clear.
4. Thickness: 1/4 inch (6.4 mm), nominal.

2.07 LAMINATED GLASS INTERLAYERS

A. Type LGI-1 - Polyvinyl Butyral (PVB) Interlayer for Laminated Glazing:
   1. Functionality: Post-breakage safety and security.
   2. Applications:
      a. Single pane, laminated glass unit.
      b. Interior laminated pane of insulating glass unit, Type IG-3B.
   3. Color: Clear.
   4. Thickness: As required for indicated performance of laminated glass application.
   5. Manufacturers:
      a. Eastman Chemical Company; Saflex Clear PVB Interlayer: www.saflex.com/#sle.
      b. Sekisui S-LEC America, LLC; S-LEC Clear Film: www.s-lec.us/#sle.
      c. Substitutions: See Section 01 60 00 - Product Requirements.

2.08 GLASS COATINGS

A. Decorative Coating: Two component, water-based silicone polyurethane opaque color hybrid coating for roll coat and spray applications.
   1. Application: Interior locations as indicated on drawings.
      a. Glass and Coating Orientation: On surface facing substrate
   2. Decorative Coating Glass Unit Fabrication: Strictly according to coating manufacturer's written instructions.
   3. Dry Film Thickness: Between 0.0012 inch (0.030 mm) and 0.0015 inch (0.040 mm), minimum.
   4. Color: Selected from manufacturer's standard range and indicated on drawings.

2.09 GLAZING COMPOUNDS

A. Type GC-1 - Glazing Putty: Polymer modified latex recommended by manufacturer for outdoor use, knife grade consistency; gray color.

B. Type GC-2 - Butyl Sealant: Single component; ASTM C920 Grade NS, Class 12-1/2, Uses M and A, Shore A hardness of 10 to 20; black color.

C. Type GC-3 - Polysulfide Sealant: Two component; chemical curing, nonsagging type; ASTM C920 Type M, Grade NS, Class 25, Uses M, A, and G; with cured Shore A hardness range of 15 to 25; color as selected.

D. Type GC-4 - Polyurethane Sealant: Single component, chemical curing, nonstaining, nonbleeding; ASTM C920 Type S, Grade NS, Class 25, Uses M, A, and G; with cured Shore A hardness range of 20 to 35; color as selected.

E. Type GC-5 - Silicone Sealant: Single component; neutral curing; capable of water immersion without loss of properties; nonbleeding, nonstaining; ASTM C920 Type S, Grade NS, Class 25, Uses M, A, and G; with cured Shore A hardness range of 15 to 25; color as selected.

F. Manufacturers:
   1. Bostik Inc: www.bostik-us.com/#sle.
   2. Dow Corning Corporation: www.dowcorning.com/construction/#sle.Dow Corning Corporation: www.dowcorning.com/construction/#sle.
   3. Momentive Performance Materials, Inc: www.momentive.com/#sle.
   4. Pecora Corporation: www.pecora.com/#sle.
   5. Tremco Commercial Sealants & Waterproofing; Proglaze: www.tremcosealants.com/#sle.

2.10 ACCESSORIES

A. Concealed nonprogressive structural glass mounting system.
   1. Glass Panel Mounting System: Two-part patented system of interlocking metal rail brackets structurally connected to substrate surface and backs of glass units for concealed support.

a. Applications: As indicated on drawings for wall mounted glass units.
   1) Include adaptations for installation where compliance with applicable seismic design is required.
      (a) Provide system successfully tested in accordance with AAMA 501.6.
b. Mounting Action: Hook shape of mounting rail bracket interlocks with hook shape of another mounting bracket.
c. Nonprogressive mounting sequence.
d. System Weight Supporting Capacity: Up to 84 lb/sq ft (410.0 kg/sq m) glass panel weight per unit of area, or up to 500 lb (226.8 kg) total glass panel weight.
e. Maximum Reveal Width Between Panel Edges: 1/4 inch (6.4 mm) at completed installation.
f. Manufacturers:
   1) McGrory Glass Inc; CaptiveHook by McGrory Glass: www.mcgrory.com/#sle.
   2) Substitutions: See Section 01 60 00 - Product Requirements.

B. Setting Blocks: Silicone, with 80 to 90 Shore A durometer hardness; ASTM C864 Option II. Length of 0.1 inch for each square foot (25 mm for each square meter) of glazing or minimum 4 inch (100 mm) by width of glazing rabbet space minus 1/16 inch (1.5 mm) by height to suit glazing method and pane weight and area.

C. Glazing Tape, Back Bedding Mastic Type: Preformed, butyl-based, 100 percent solids compound with integral resilient spacer rod applicable to application indicated; 5 to 30 cured Shore A durometer hardness; coiled on release paper; black color.
   1. Width: As required for application.
   2. Thickness: As required for application.
   3. Spacer Rod Diameter: As required for application.
   4. Manufacturers:
      a. Pecora Corporation: www.pecora.com/#sle.
      b. Tremco Global Sealants: www.tremcosealants.com/#sle.
      c. Substitutions: See Section 01 60 00 - Product Requirements.

D. Glazing Splines: Resilient silicone extruded shape to suit glazing channel retaining slot; ASTM C864 Option II; color black.

E. Glazing Clips: Manufacturer's standard type.

F. Smoke Removal Window/Glazing Unit Markings: Adhesive backed markings affixed to manually operable or fixed windows of high-rise buildings to identify units intended for post-fire smoke removal in compliance with ICC (IBC) and local building officials.

2.11 SOURCE QUALITY CONTROL

A. See Section 01 40 00 - Quality Requirements for additional requirements.

B. Provide shop inspection and testing for all types of glass.

PART 3 EXECUTION

3.01 VERIFICATION OF CONDITIONS

A. Verify that openings for glazing are correctly sized and within tolerances, including those for size, squareness, and offsets at corners.

B. Verify that the minimum required face and edge clearances are being provided.

C. Verify that surfaces of glazing channels or recesses are clean, free of obstructions that may impede moisture movement, weeps are clear, and support framing is ready to receive glazing system.

D. Verify that sealing between joints of glass framing members has been completed effectively.

E. Proceed with glazing system installation only after unsatisfactory conditions have been corrected.

3.02 PREPARATION

A. Clean contact surfaces with appropriate solvent and wipe dry within maximum of 24 hours before glazing. Remove coatings that are not tightly bonded to substrates.

B. Seal porous glazing channels or recesses with substrate compatible primer or sealer.

C. Prime surfaces scheduled to receive sealant where required for proper sealant adhesion.

3.03 INSTALLATION, GENERAL

A. Install glazing in compliance with written instructions of glass, gaskets, and other glazing material manufacturers, unless more stringent requirements are indicated, including those in glazing referenced standards.

B. Install glazing sealants in accordance with ASTM C1193, GANA (SM), and manufacturer's instructions.

C. Do not exceed edge pressures around perimeter of glass lites as stipulated by glass manufacturer.

D. Set glass lites of system with uniform pattern, draw, bow, and similar characteristics.

E. Set glass lites in proper orientation so that coatings face exterior or interior as indicated.

F. Prevent glass from contact with any contaminating substances that may be the result of construction operations such as, and not limited to the following; weld splatter, fire-safing, plastering, mortar droppings, and paint.

3.04 INSTALLATION - DRY GLAZING METHOD (GASKET GLAZING)

A. Application - Exterior and/or Interior Glazed: Set glazing infills from either the exterior or the interior of the building.

B. Place setting blocks at 1/4 points with edge block no more than 6 inch (152 mm) from corners.

C. Rest glazing on setting blocks and push against fixed stop with sufficient pressure on gasket to attain full contact.

D. Install removable stops without displacing glazing gasket; exert pressure for full continuous contact.

3.05 INSTALLATION - DRY GLAZING METHOD (TAPE AND GASKET SPLINE GLAZING)

A. Application - Exterior Glazed: Set glazing infills from the exterior of the building.

B. Cut glazing tape to length; install on glazing pane. Seal corners by butting tape and sealing junctions with butyl sealant.

C. Place setting blocks at 1/4 points with edge block no more than 6 inch (152 mm) from corners.

D. Rest glazing on setting blocks and push against fixed stop with sufficient pressure to attain full contact.

E. Install removable stops without displacing glazing spline. Exert pressure for full continuous contact.

F. Carefully trim protruding tape with knife.

3.06 INSTALLATION - DRY GLAZING METHOD (TAPE AND TAPE)

A. Application - Interior Glazed: Set glazing infills from the interior of the building.

B. Cut glazing tape to length and set against permanent stops, projecting 1/16 inch (1.6 mm) above sight line.

C. Place setting blocks at 1/4 points with edge block no more than 6 inch (152 mm) from corners.

D. Rest glazing on setting blocks and push against tape for full contact at perimeter of pane or unit.

E. Place glazing tape on free perimeter of glazing in same manner described above.

F. Install removable stop without displacement of tape. Exert pressure on tape for full continuous contact.

G. Carefully trim protruding tape with knife.

3.07 INSTALLATION - WET GLAZING METHOD (COMPOUND AND COMPOUND)

A. Application - Interior Glazed: Set glazing infills from the interior of the building.

B. Install glazing resting on setting blocks. Install applied stop and center pane by use of spacer shims at 24 inch (610 mm) centers, kept 1/4 inch (6 mm) below sight line.

C. Locate and secure glazing pane using glazers' clips.

D. Fill gaps between glazing and stops with glazing compound until flush with sight line. Tool surface to straight line.

3.08 INSTALLATION - WET/DRY GLAZING METHOD (PREFORMED TAPE AND SEALANT)

A. Application - Exterior Glazed: Set glazing infills from the exterior of the building.

B. Cut glazing tape to length and set against permanent stops, 3/16 inch (5 mm) below sight line. Seal corners by butting tape and dabbing with butyl sealant.

C. Apply heel bead of butyl sealant along intersection of permanent stop with frame ensuring full perimeter seal between glass and frame to complete the continuity of the air and vapor seal.

D. Place setting blocks at 1/4 points with edge block no more than 6 inch (152 mm) from corners.

E. Rest glazing on setting blocks and push against tape and heel bead of sealant with sufficient pressure to attain full contact at perimeter of pane or glass unit.

F. Install removable stops, with spacer strips inserted between glazing and applied stops 1/4 inch (6.4 mm) below sight lines.
   1. Place glazing tape on glazing pane of unit with tape flush with sight line.

G. Fill gap between glazing and stop with _____ type sealant to depth equal to bite of frame on glazing, but not more than 3/8 inch (9 mm) below sight line.

H. Apply cap bead of _____ type sealant along void between the stop and the glazing, to uniform line, flush with sight line. Tool or wipe sealant surface smooth.

3.09 INSTALLATION - WET/DRY GLAZING METHOD (TAPE AND SEALANT)

A. Application - Interior Glazed: Set glazing infills from the interior of the building.

B. Cut glazing tape to length and install against permanent stops, projecting 1/16 inch (1.6 mm) above sight line.

C. Place setting blocks at 1/4 points with edge block no more than 6 inch (152 mm) from corners.

D. Rest glazing on setting blocks and push against tape to ensure full contact at perimeter of pane or unit.

E. Install removable stops, spacer shims inserted between glazing and applied stops at 24 inch (610 mm) intervals, 1/4 inch (6 mm) below sight line.

F. Fill gaps between pane and applied stop with specified type sealant to depth equal to bite on glazing, to uniform and level line.

G. Carefully trim protruding tape with knife.

3.10 INSTALLATION - BUTT JOINT GLAZING METHOD (SEALANT ONLY)

A. Application - Exterior Glazed: Set glazing infills from exterior side of building.

B. Temporarily brace glass in position for duration of glazing process; mask edges of glass at adjoining glass edges and between glass edges and framing members.

C. Temporarily secure a small diameter nonadhering foamed rod on back side of joint.

D. Apply sealant to open side of joint in continuous operation; thoroughly fill joint without displacing foam rod, and then tool sealant surface smooth to concave profile.

E. Permit sealant to cure then remove foam backer rod, and then apply sealant to opposite side, tool smooth to concave profile.

F. Remove masking tape.

3.11 INSTALLATION - PRESSURE GLAZED SYSTEMS

3.12 INSTALLATION - STRUCTURAL SILICONE GLAZING

A. Application - Factory (Shop) Glazed: Follow basic guidelines of structural silicone glazing for glazing application.

B. Provide design review of the glazing system and project details, adhesion testing, proper surface preparation, training and a quality service program.

C. Provide only structural silicone sealant, tested and manufactured for structural glazing.

3.13 INSTALLATION - ACRYLIC FOAM TAPE STRUCTURAL GLAZING

A. Application - Factory (Shop) Glazed: Follow basic guidelines of structural silicone glazing for acrylic foam tape structural glazing application.

B. Provide design review of the glazing system and project details, adhesion testing, proper surface preparation, training and a quality service program.

C. Provide only acrylic foam tapes designed, tested and manufactured for structural glazing.

3.14 INSTALLATION - PLASTIC FILM

A. Install plastic film with adhesive, applied in accordance with film manufacturer's instructions.

B. Place without air bubbles, creases or visible distortion.

C. Install film tight to perimeter of glass and carefully trim film with razor sharp knife. Provide 1/16 inch (1.6 mm) to 1/8 inch (3.2 mm) gap at perimeter of glazed panel unless otherwise required. Do not score the glass.

3.15 FIELD QUALITY CONTROL

A. See Section 01 45 16-Field Quality Control Procedures for City of Madison requirements.

B. Glass and Glazing product manufacturers to provide field surveillance of the installation of their products.

C. Monitor and report installation procedures and unacceptable conditions.

3.16 CLEANING

A. See Section 01 74 19 - Construction Waste Management and Disposal, for additional requirements.

B. Remove excess glazing materials from finish surfaces immediately after application using solvents or cleaners recommended by manufacturers.

C. Remove nonpermanent labels immediately after glazing installation is complete.

D. Clean glass and adjacent surfaces after sealants are fully cured.

E. Clean glass on both exposed surfaces not more than 4 days prior to Date of Substantial Completion in accordance with glass manufacturer's written recommendations.

3.17 PROTECTION

A. After installation, mark pane with an 'X' by using removable plastic tape or paste; do not mark heat absorbing or reflective glass units.

B. Remove and replace glass that is damaged during construction period prior to Date of Substantial Completion.

3.18 SCHEDULES

A. See applicable schedules as indicated on the drawings.

END OF SECTION

SECTION 10 22 39
FOLDING PANEL PARTITIONS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Top-supported folding panel partitions, horizontal opening.

1.02 RELATED REQUIREMENTS

A. Section 06 10 00 - Rough Carpentry: Wood blocking and track support shimming.

B. Section 08 71 00 - Door Hardware: Lock cylinders for panels

C. Section 26 05 33.13 - Conduit for Electrical Systems: Empty conduit from partition motor controller to disconnect and from motor controller to control buttons.

D. Section 26 05 83 - Wiring Connections: Electrical characteristics and wiring connections; control buttons .

1.03 REFERENCE STANDARDS

A. ANSI A208.1 - American National Standard for Particleboard; 2022.

B. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes; 2021.

C. ASTM B221M - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes (Metric); 2021.

D. ASTM E90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements; 2009 (Reapproved 2016).

E. ASTM E413 - Classification for Rating Sound Insulation; 2022.

F. ASTM E557 - Standard Guide for Architectural Design and Installation Practices for Sound Isolation Between Spaces Separated by Operable Partitions; 2012 (Reapproved 2020).

G. ASTM F793/F793M - Standard Classification of Wall Coverings by Use Characteristics; 2020.

H. HPVA HP-1 - American National Standard for Hardwood and Decorative Plywood; 2020.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Preinstallation Meeting: Convene at project site seven calendar days prior to scheduled beginning of construction activities of this section to review section requirements.
   1. Require attendance by representatives of installer.

1.05 SUBMITTALS

A. See Section 01 33 23-Submittals for City of Madison required submittal procedures.

B. Product Data: Provide data on partition materials, operation, hardware and accessories, electric operating components, track switching components, and colors and finishes available.

C. Design Data: Design calculations, bearing seal and signature of structural engineer licensed to practice in the State in which the Project is located, showing loads at points of attachment to the building structure.

D. Shop Drawings: Indicate opening sizes, track layout, details of track and required supports, static and dynamic loads, location and details of pass door and frame, adjacent construction and finish trim, and stacking depth.

E. Samples for Review: Submit two samples of surface finish, 12 by 12 inches (300 by 300 mm) size, illustrating quality, colors selected, texture, and weight.

F. Certificates: Certify that partition system meets or exceeds specified acoustic requirements.

G. Manufacturer's Instructions: Indicate special procedures.

H. Maintenance Data: Include recommended cleaning methods, cleaning materials, and stain removal methods. Describe cleaning materials detrimental to finish surfaces and hardware finish.

1.06 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing products specified this section with minimum three years of documented experience.

B. Installer Qualifications: Company specializing in performing work of the type specified and with at least three years of documented experience.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Store products in manufacturer's unopened packaging until installation.

1.08 WARRANTY

A. See Section 01 77 00-Closeout Procedures, for additional warranty requirements.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Folding Panel Partitions - Horizontal Opening:
   1. Modernfold, a DORMA Group Company: www.modernfold.com/#sle.
   2. Substitutions: See Section 01 60 00 - Product Requirements.

2.02 FOLDING PANEL PARTITIONS - HORIZONTAL OPENING

A. Folding Panel Partitions: Center opening; paired panels; side stacking; motor operated.
   1. Basis of Design: Acousti-seal Encore Paired Panel, STC 56 by **Modernfold.**

B. Panel Construction:
   1. Panel Properties:
      a. Thickness With Finish: 4 inches (100 mm).
      b. Width: Equal widths.
      c. Weight: 12 lb/sq ft (59 kg/sq m).

C. Panel Finishes:
   1. Facing: Vinyl coated fabric .
      a. **Selection: Reed (Arani) 101189-513.**
   2. Exposed Metal Trim: Clear anodized.

D. Panel Seals:
   1. Modernfold Sure Set Automatic System: Top and Bottom
   2. Panel to Panel Seals: Grooved and gasketed astragals, with continuous flexible ribbed vinyl seal fitted to panel edge construction; color to match panel finish.
   3. Acoustic Seals: Flexible acoustic seals at jambs, meeting mullions, ceilings, floor and ceiling seals, and above track to structure acoustic seal.

E. Suspension System:
   1. Modernfold Smart Track suspension system

F. Performance:
   1. Acoustic Performance:
      a. Sound Transmission Class (STC): Equal to or greater than 55 calculated in accordance with ASTM E413, based on tests conducted in accordance with ASTM E90, on panel size of 100 sq ft (9.3 sq m).
   2. Installed partition system track capable of supporting imposed loads, with maximum deflection of 1/360 of span.

G. Operation:

1. Electric Operator: 12 inches (300 mm) per second traveling speed; adjustable friction clutch brake actuated by solenoid controlled motor starter; enclosed limit switch; enclosed magnetic reversing starter.
2. Control Station: One standard keyed, three button OPEN-STOP-CLOSE type; 24 volt circuit; surface mounted.
   a. Location to be determined
   b. Key switch prepared for mortise lock cylinder.
   c. Key switches alike.
3. Safety Features:
   a. Limit Switches: Automatic type, at both extremes of travel, to prevent over-travel.
   b. Emergency Release: Mechanism to disengage motor drive system and permit manual operation.
   c. Pocket Door Interlock: Mechanism to prevent operation of panels unless storage pocket doors are fully open.
4. Electrical Requirements:
   a. See Manufacturer recommendations for motor size required for specified panel system.
   b. Disconnect Switch: Factory mount disconnect switch in control panel.

H. Accessories:
   1. Pocket Enclosures: Door, frame, and trim to match adjacent panels.

2.03 MATERIALS

A. Aluminum Extrusions: ASTM B221 (ASTM B221M), 6063 alloy, T6 temper.

B. Vinyl Coated Fabric: ASTM F793 Category VI, polyvinyl fluoride (PVC) finish for washability and improved flame retardance; color as selected by Architect from manufacturer's standard range.

C. Hardwood Plywood: Face species Beech, plain sliced, book matched, veneer core; HPVA HP-1, Front Face Grade AA, Back Face Grade 1; glue type as recommended for application.

D. Particleboard: ANSI A208.1; composed of wood chips, sawdust, or flakes of medium density, made with waterproof resin binders; of grade to suit application; sanded faces.

E. Acoustic Insulation:
   1. Type: As required for acoustic performance indicated.
   2. Thickness: As required for acoustic performance indicated.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that field measurements are as indicated.

B. Verify that required utilities are available, of the correct characteristics, in proper location, and ready for use.

C. Verify track supports are laterally braced and will permit track to be level within 1/4 inch (6.4 mm) of required position and parallel to the floor surface.

D. Verify floor flatness of 1/8 inch in 10 feet (3 mm in 3 m), non-cumulative.

E. Verify wall plumbness of 1/8 inch in 10 feet (3 mm in 3 m), non-cumulative.

3.02 INSTALLATION

A. Install partition in accordance with manufacturer's instructions and ASTM E557.

B. Fit and align partition assembly level and plumb.

C. Lubricate moving components.

D. Install acoustic sealant to achieve required acoustic performance.

3.03 ADJUSTING

A. Adjust partition assembly to provide smooth operation from stacked to full open position. Do not over-compress acoustic seals.

B. Visually inspect partition in full extended position for light leaks to identify a potential acoustical leak.

C. Adjust partition assembly to achieve lightproof seal.

3.04 CLEANING

A. Clean finish surfaces and partition accessories.

3.05 CLOSEOUT ACTIVITIES

A. Demonstrate operation of partition and identify potential operational problems.

END OF SECTION

SECTION 13 34 16
PRE-ENGINEERED STRUCTURES - SOLAR FORMA

PART 1 GENERAL

1.01 SUMMARY

A. Provide required infrastructure to support ~~FUTURE~~ pre-engineered structures as shown and as specified. Comply with applicable provisions of Divisions 00 and 01.

B. Section includes pre-engineered structures for:
   1. Shade Structure

1.02 RELATED REQUIREMENTS

A. Section 03 30 00 - Cast-in-Place Concrete: Concrete encasement of conduits; foundation for structure.

B. Section 26 05 33.13 - Conduit for Electrical Systems.

C. Section 26 05 33.16 - Boxes for Electrical Systems.

D. Section 26 05 26 - Grounding and Bonding for Electrical Systems.

1.03 SUBMITTALS

A. See Section 01 33 23 - Submittals, for City of Madison required submittal procedures.

B. Shop Drawings: Submit shop drawing, including complete erection drawings, framing members and details, wind bracing details, column schedule, and (where applicable) provisions for accommodation of electrical equipment. Include foundation and structural design calculations. Shop drawings and design calculations shall be sealed by a professional engineer registered in the State of Wisconsin.

C. Samples: Submit color samples for selection/verification of finish colors.

D. Warranty: Submit written warranty as specified below.

1.04 DELIVERY, STORAGE, AND HANDLING

A. Protect products after arrival at destination from weather, sunlight, and damage.

B. Store products elevated to allow air circulation and to not introduce mold, fungi decay, or insects to the product.

C. Handle products with protective straps or padded forks if lifted with mechanical equipment. Use of chain or cable to lift product into place will not be accepted.

D. To curtail warping of lumber, all units shall remain packaged while being stored.

1.05 WARRANTY

A. Structures shall have a 10-year limited warranty on steel frame members and a 10-year limited warranty on paint system.

B. For photovoltaic (PV) panels, micro inverters and other solar-related electrical equipment shall have a 10-year warranty.

PART 2 PRODUCTS

2.01 ACCEPTABLE MANUFACTURER

A. Pre-engineered solar powered shade structures shall be manufactured by Solar Forma Design, 1106 Mondovi Road, Eau Claire, WI 54701.

B. Representative for Solar Forma Design is Engineered Representation, Inc.
   1. Contact: Jeff Gatzow.
   2. Phone: 414-458-9074.
   3. email: jg@engineeredrepinc.com

C. Substitutions: No "or equal" products or substitutions will be allowed.

2.02 DESIGN REQUIREMENTS

A. Foundation and structural design shall be the responsibility of structure manufacturer.

B. Design, manufacture, and erection shall conform to the following code:
   1. Wisconsin Commercial Building Code (Wis. Adm. Code, chs. SPS 361 to 366).

C. Structures shall be designed to support construction loads and the structural loads as required by the referenced building code.

2.03 SHADE STRUCTURES

A. Model: Qty (1) E2 (B/17') Model. Location provided on plans .

B. Solar PV:
   1. 708 cells, min. 3.5Kw and temperature range of -40-degree C. to +65 degrees C.

C. Lighting: Internally lighted

D. Power: (1) GFI outlet per tree, by Electrical Contractor.

E. Mounting: Concrete foundation per manufacturers recommendations.

PART 3 EXECUTION

3.01 ERECTION

A. Erect structures in accordance with shop drawings and manufacturer's recommendations. Coordinate the work of other trades to facilitate the general progress of the work.

CLEAN-UP

A. Upon completion, clean panels, and other components to remove construction staining and dirt, and repair defects which might detract from visual appearance of structures.

END OF SECTION

SECTION 27 41 16
PARK PAVILION AUDIO VISUAL SYSTEM

PART 1 - GENERAL

1.01 SCOPE

A. This section includes furnishing and installing an AV system including speakers, controls and other equipment required for a complete operating system.

B. Applicable provisions of Division 01 – General Requirements shall govern all work under this Section.

1.02 SUMMARY

A. Section Includes:
1. Scope.
2. Summary.
3. Applicable Codes.
4. System Functions.
5. Quality Assurance.
6. Submittals.
7. Bill of Material.
8. General Provisions.
9. Wiring.
10. Equipment Grounding.
11. Equipment Racks.
12. Work Included.
13. Maintenance and Operation Manuals.
14. Commissioning.
15. Warranty.

B. Related Sections:
1. Section 26 05 26 – Grounding and Bonding.
2. Section 26 05 29 – Electrical Hangers and Supports.
3. Section 26 05 33.13 – Conduit for Electrical Systems.
4. Section 26 05 33.16 - Boxes for Electrical Systems.
5. Section 26 05 33.23 - Surface Raceways for Electrical Systems.
6. Section 27 00 05 - Communications Cabling
7. Section 27 41 00 - Professional Audiovisual Systems

C. All work and materials shall conform in every detail to the rules and requirements of the National Fire Protection Association, the Wisconsin Electrical Code and present manufacturing standards.

D. All materials shall be listed by UL and shall bear the UL label. If UL has no published standards for a particular item, then other national independent testing standards shall apply and such items shall bear those labels. Where UL has an applicable system listing and label, the entire system shall be so labeled.

E. Other applicable standards (plus applicable update bulletins and errata) are as follows:
1. General.
2. ANSI/IEEE C2 - National Electrical Safety Code.
3. SPS Chapter 316 – Wisconsin Dept. of Safety and Professional Services Electrical Code.
4. IEEE/ANSI 142-1982 - Recommended Practice for Grounding of Industrial and Commercial Power Systems.

1.03 SYSTEM FUNCTIONS

A. The audiovisual system shall accept input from these sources:
1. Wireless microphones.
2. The local area network.

3. Portable devices connected via wall plate.
4. Portable devices connected via Barco click-share system.
5. The cable TV network.

B. It will provide amplified sound over ceiling speakers ~~and video displays~~ and video projectors via devices connected via wall plates or the Barco click-share system. All functions will be controlled via touch-screen wall plates located at the front of the Event Spaces. Equipment will be installed in wall rack in an adjacent Storage Room.

C. System shall sense position of folding partition and automatically combine or separate Event Space AV functions and inputs. Provide an output contact for the building automation system to inform it of the partition position. In addition, Crestron system shall be able to effect combination manually in the event of a sensor failure.

D. When a patron plugs into an HDMI jack at a wall plate or a floor box, the projector will automatically turn on and show video, **the screen will lower,** and the audio amplifier will turn on and broadcast audio without help from staff.

E. When a patron plugs an audio source into a 3.5 mm jack at a wall plate, the audio amplifier will automatically turn on and broadcast audio without help from staff.

F. These functions shall be available from the Crestron touch-screens:
1. Raise/lower Lutron shades.
2. Raise/lower projection screens.
3. Power-on projector.
4. Select sound source.
5. Select volume level.
6. Combine or separate room halves.

1.04 QUALITY ASSURANCE

A. See Section 27 41 00.

1.05 SUBMITTALS

A. See Section 27 41 00.

B. Bidder Qualifications
1. See Section 27 41 00.

PART 2 - PRODUCTS

2.01 BILL OF MATERIAL

A. See plans including sheets T701 through T704 for materials.

PART 3 – EXECUTION

3.01 GENERAL PROVISIONS

A. Contractor shall furnish all required equipment whether or not specifically mentioned in these specifications or on the drawings. Such devices shall include but not be limited to hardware, fasteners, rack screws, rack brackets, power supplies, grille covers, impedance matching devices, transformers, line pads, line amplifiers, relay and LED power supplies, and other devices as necessary to interface, control, or balance the AV systems.

B. All devices shall be capable of being shut down except the control system itself.

3.02 WIRING

A. All wiring shall be run in conduit.

B. Manufacturers minimum bend radius specifications shall be observed in all instances.

3.03 EQUIPMENT GROUNDING

A. See Section 26 05 26.

3.04 EQUIPMENT RACKS

A. All interface plates and panels must be permanently labeled or engraved. Rack blanks and vented panels shall be used in rack spaces that do not have equipment occupying them.

3.05 WORK INCLUDED

A. The following shall be the responsibility of the Contractor:
   1. Furnish and install all equipment, panels, and devices associated with the AV systems.
   2. Termination of all AV systems wiring.
   3. AC 120-volt power and wiring within AV systems equipment racks.
   4. Preparation of AV design, shop drawings, maintenance manuals, wiring diagrams and other submittals required by the individual AV system specification sections.
   5. Tests, balancing, trouble shooting, adjustments and other similar work as may be required to insure complete operating AV systems.
   6. AV training.
   7. Warranty work associated with the building audio-visual systems.

3.06 MAINTENANCE AND OPERATION MANUALS

A. See Section 27 41 00.

3.07 COMMISSIONING

A. See Section 27 41 00.

3.08 WARRANTY

A. See Section 27 41 00.

END OF SECTION

SECTION 27 51 16
LIBRARY AUDIO VISUAL SYSTEM

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Applicable provisions of Division 01 – General Requirements shall govern all work under this Section.

B. This section includes furnishing and installing AV systems including speakers, controls and other equipment required for complete operating systems.
   1. Local programming and Zoom-room system for the Community Room 107.
   2. Local programming and Zoom-room system for Classroom 109.

1.02 RELATED REQUIREMENTS

A. Section 26 05 26 - Grounding and Bonding for Electrical Systems.

B. **Section 26 05 29 - Electrical Hangers and Supports**

C. **Section 26 05 33.13 - Conduit for Electrical Systems**

D. **Section 26 05 33.16 - Boxes for Electrical Systems**

E. **Section 26 05 33.23 - Surface Raceways for Electrical Systems**

F. **Section 27 00 05 - Communications Cabling**

G. **Section 27 41 00 - Professional Audio/Video Systems**

1.03 REFERENCE STANDARDS

A. NFPA 70 - National Electrical Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

1.04 SYSTEM DESCRIPTION

A. Community Room 107
   1. Provide voice lift for local meetings.
   2. Play program material from patrons' devices on overhead speakers and flat screen displays.
   3. Participate via Zoom in remote meetings using audio from overhead ceiling microphone arrays, **wireless microphones** and a local camera.
   4. ~~Allow setup by patrons via wireless room controller.~~
   5. Facilitate future upgrade toType 1 meetings and civic engagement.
   6. These functions shall be available from the Crestron touch-screens:
      a. ~~Raise/lower Lutron shades~~
      b. Power-on flat screens
      c. Initiate Zoom meeting
      d. Select sound sources
      e. **Select device input**
      f. Select volume level

B. Classroom 109
   1. Provide voice lift for local meetings.
   2. Play program material from patrons' devices on overhead speakers and flat screen display.
   3. Participate via Zoom in remote meetings using audio from overhead ceiling microphone arrays, a wireless microphone, and local cameras.
   4. ~~Allow setup by patrons via wireless room controller.~~
   5. These functions shall be available from the Crestron touch-screen:
      a. Power-on flat screen
      b. Select sound source
      c. Select volume level
      d. Initiate Zoom meeting

C. Input components:
   1. Community Room 107
      a. Body pack microphones.
      b. Handheld microphones.
      c. Overhead ceiling microphone arrays and a local camera when in Zoom mode.
      d. Patrons' devices via HDMI connection **or B connection**.
   2. Classroom 109
      a. ~~Handheld~~**Bodypack** microphones.
      b. Overhead ceiling microphone array and local cameras when in Zoom mode.
      c. Patrons' devices via HDMI connection **or USB connection**.

1.05 SUBMITTALS

A. See Section 27 41 00 - Professional Audio/Video Systems.

1.06 QUALITY ASSURANCE

A. See Section 27 41 00 - Professional Audio/Video Systems .

B. Products: Listed, classified, and labeled as suitable for the purpose intended.

1.07 BIDDER QUALIFICATIONS

A. See Section 27 41 00 - Professional Audio/Video Systems.

PART 2 PRODUCTS

2.01 BILL OF MATERIAL - COMMUNITY ROOM 107

A. See plans including sheets T701 through T704 for materials.

B. See plans including sheets T701 through T704 for materials.

2.02 BILL OF MATERIAL - CLASSROOM 109

A. Dante enabled.

2.03 AMPLIFICATION AND CONTROL EQUIPMENT

A. Microphone Inputs: Two low impedance inputs with 600 microvolt sensitivity and noise level at least 55 dB below rated output.

B. System Frequency Response: 50 to 15,000 Hz, plus or minus 2 dB.

C. System Distortion: Less than 1.5 percent, 100 to 100,000 Hz at rated power.

D. System Output: 4 ohms 25 volts.

E. Volume Controls: One for each input and one master volume.

F. Bass Control: Plus 8 dB to minus 12 dB at 50 Hz.

G. Treble Control: Plus 8 dB to minus 12 dB at 10,000 Hz.

H. Program Selector: Provide program , listen-talk, and mode selector switches.

I. System Cabinet: Console mounted.

2.04 COMPONENTS

A. Speakers: 8 inch coaxial speaker with integral crossover circuit.
   1. Power Rating: 20 watts.
   2. Frequency Range: 45 to 18,000 Hz.
   3. Sound Pressure Level: 95 dB at 3 feet with 1 watt input.
   4. Magnet: Ceramic; 10 ounces low frequency unit; 3 ounces high frequency unit.
   5. Dispersion: Minus 3 dB at 90 degrees, minus 5 dB at 110 degrees.

B. Speaker Baffles and Enclosure: Round, painted steel, with uniform perforations.
   1. Size: 12 inch.

2. Finish: White.
3. Speaker Backbox: Insulated with sound-deadening material.

C. Matching Transformers: Tapped from 0.5 to 4 watts in 1 watt steps, with primary/secondary ratio to match amplifier to speaker impedances.

D. Volume Pads: Transformer type rated 10 watts.

E. Microphone Cord: 20 AWG stranded copper conductor, 600 volt insulation, rated 60 degrees C, two conductor shielded cable with rubber jacket.

2.05 WIRE AND CABLE

A. Speaker Wire and Cable: 22 AWG copper conductor, 300 volt insulation, rated 60 degrees C, paired conductors twisted together shielded and covered with a PVC jacket.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Mounting Heights: Coordinate locations of outlet boxes specified in Section 26 05 33.16 to obtain mounting heights indicated.

C. Splice cable only in accessible junction boxes or at terminal block units.

D. Make cable shields continuous at splices and connect speaker circuit shield to equipment ground only at amplifier.

E. Install input circuits in separate cables and raceways from output circuits.

F. Provide protection for exposed cables where subject to damage.

G. Use armored cable for outside speaker circuits.

H. Support cables above accessible ceilings to keep them from resting on ceiling tiles. Use spring metal clips or plastic cable ties to support cables from structure for ceiling suspension system. Include bridle rings or drive rings.

I. Use suitable cable fittings and connectors.

J. Connect reproducers to amplifier with matching transformers.

K. Ground and bond equipment and circuits in accordance with Section 26 05 26.

3.02 FIELD QUALITY CONTROL

A. See Section 27 41 00.

B. Adjust transformer taps for appropriate sound level.

3.03 ADJUSTING

A. Adjust devices and wall plates to be flush and level.

B. See Section 27 41 00.

3.04 CLOSEOUT ACTIVITIES

END OF SECTION

SECTION 27 51 23
FLAT SCREENS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Flat screen displays in various locations to display owner generated content via the local area network.

B. NUC's to provide HDMI outputs for the displays.

C. Cabling.

D. Licenses.

E. ~~Install a City-furnished~~**At each display, provide a** Brightsign player and connect to displays.

1.02 RELATED REQUIREMENTS

A. Section 07 84 00 - Firestopping.

B. Section 26 05 19 - Low-Voltage Electrical Power Conductors and Cables.

C. Section 26 05 26 - Grounding and Bonding for Electrical Systems.

D. Section 26 05 33.13 - Condit for Electrical Systems,

E. Section 26 05 53 - Identification of Electrical Systems.

F. Section 27 00 05 - Communications Cabling

G. Section 27 41 00 - Professional Audio/Video Systems

1.03 SUBMITTALS

A. Shop Drawings: Indicate cable routing and connections.

B. Product Data: For each item of equipment.

1.04 QUALITY ASSURANCE

A. Products: Listed, classified, and labeled as suitable for the purpose intended.

B. Product Listing Organization Qualifications: An organization recognized by OSHA as a Nationally Recognized Testing Laboratory (NRTL) and acceptable to authorities having jurisdiction.

PART 2 PRODUCTS

2.01 DISPLAYS

A. Manufacturers:
1. Samsung 65" PM-H (basis of design).
2. Sharp.
3. Sony
4. Christie
5. NEC.
6. Philips.
7. Panasonic.
8. ~~Substitutions: See Section 01 60 00 - Product Requirements.~~

B. Specifications:
1. Diagonal size: 65".
2. Operations hours: 24/7.
3. Resolution: 1920 x 1080 (full HD)..
4. Type: 60 Hz E-LED BLU.
5. Brightness: 500 nit.
6. Viewing angle: 178:178.
7. Contrast ratio: 4000:1.

8. Pixel pitch: 0.21 mm x 0.63 mm.
9. Display colors: (10 bit dithering) - 1.07 Billion.
10. Built-in speaker.
11. Inputs: RGB, HDMI 2.0 (2), HDCP, USB 2.0 (2).

C. Provide similar for 55" displays.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that surfaces are ready to receive work.

B. Verify field measurements are as indicated on drawings.

C. Verify that required utilities are available, in proper location, and ready for use.

D. Beginning of installation means installer accepts conditions.

3.02 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Wiring Method:
1. Use listed plenum rated cables in spaces used for environmental air.
2. Install wiring in conduit where required for rough-in, where required by authorities having jurisdiction, and where exposed to damage.
3. Conduit: Comply with Section 26 05 33.13.
4. Conceal all cables unless specifically indicated to be exposed.
5. Cables in the following areas may be exposed, unless otherwise indicated:
   a. Equipment closets.
   b. Within joists in areas with no ceiling.
6. Route exposed cables parallel or perpendicular to building structural members and surfaces.

C. Provide grounding and bonding in accordance with Section 26 05 26.

D. Install firestopping to preserve fire resistance rating of partitions and other elements, using materials and methods specified in Section 07 84 00.

E. Identify system wiring and components in accordance with Section 26 05 53.

F. Provide all licenses necessary for displays.

G. Provide all components necessary to interface displays with Owner's program source.

3.03 FIELD QUALITY CONTROL

A. See Section 01 45 16 - Field Quality Control Procedures for City of Madison additional requirements.

B. Perform operational test on completed installation to verify proper operation.

C. Replace equipment, components, and wiring to eliminate audible noise, clicks, pops, or hum when system is in standby or operation.

3.04 ADJUSTING

A. Adjust controls and configuration switches for operation as indicated.

3.05 DEMONSTRATION

A. Provide systems demonstration and instructions. Allow minimum of one (1) hours.

END OF SECTION

SECTION 32 33 00
SITE FURNISHINGS

PART 1 GENERAL

1.01 DESCRIPTION

A. Exterior site furnishings, materials, and assemblies.

1.02 RELATED WORK AND REQUIREMENTS

A. Applicable provisions of Division 01 shall govern Work of this Section.

B. Section 03 30 00 - Cast-in-Place Concrete: for formed and poured concrete walls, backings and/or other constructions that the work in this section attaches to or relies on cast-in-place concrete for footings and/or foundations.

C. Section 13 34 16 - Pre-Engineered Structures – Solar Forma: for coordination of infrastructure for ~~future~~ solar tree.

D. Section 32 14 13.13 - Miscellaneous Landscape Surfaces: for coordination with aggregate paths and aggregate base materials and installations.

E. Section 32 13 13 - Concrete Paving: for flatwork concrete pavement surfaces that site furnishings will attach to or install on.

1.03 SUBMITTALS

A. Product Data: Manufacturer's cut sheet for each different type of premanufactured site furnishing or product listed in this section, including all components. Cut sheet should indicate final style selection, colors choices, materials, etc. consistent with this section and shall indicate if any additional selections are required of the Landscape Architect prior to ordering.

B. Warranty Certificates: For all site furnishings and products listed in this section.

C. Maintenance Data: For site furnishings and products listed in this section to include in O&M manuals.

D. Submit markup of project construction details indicating any proposed deviations from the Working Drawings; obtain approval of markups prior to construction.

1.04 QUALITY ASSURANCE

A. Source Limitations: Obtain each type of site furnishing(s) through one source from the manufacturer indicated in this section.

B. Installer Qualifications: The installer of all site furnishings must have a minimum of 2 years of proven construction experience, be capable of assembling and building from manufacturer's assembly instructions, plan drawings and details, determine elevations and properly handle materials, including custom assemblies and constructions requiring close coordination with other contractors (for lighting, metals, concrete, etc.). All work must comply with the project drawings and approved shop drawings.

C. Preinstallation Conference: Conduct conference at Project site to verify final location and orientation of all site furnishings with Landscape Architect and City of Madison Representative in attendance prior to installation. Obtain Landscape Architect or City of Madison Representative's written sign-off prior to final installation and anchoring/placing each individual site furnishing unit.

D. Refer to each individual manufacturer for information on delivery, storage, handling, and quality assurance and conform the work of this section to any and all specific conditions of those sections.

1.05 COORDINATION

A. Coordinate installation of all site furnishings with all local codes and ordinances.

B. Coordinate with other contractors working on adjacent portions of the site and/or those whose work affects any of the custom assemblies and constructions (i.e., electrical).

C. Coordinate the ordering and delivery of all products so as to cause no delays in the overall project schedule, the work of others, or the occupancy of the project.

PART 2 PRODUCTS

2.01 MISCELLANEOUS HARDWARE

A. Anchors, Fasteners, Fittings, and Hardware: Stainless steel grade 316; commercial quality; tamperproof, vandal and theft resistant.

2.02 BIKE RACK

A. Basis of Design: Complying with the requirements, provide the following bike racks from Madrax (www.madrax.com), or approved equal:
   1. Model: PIN-2-SF. "Pin" Bike Rack, 2-bike capacity. Round tubing. 2'-2" L.
   2. Mounting Type: Surface mounted.
   3. Finish: Powdercoated by manufacturer.
   4. Color: As selected by Landscape Architect from manufacturer's standard full range.

B. Hardware: Provide manufacturer's supplied tamper-resistant stainless-steel anchors or comparable contractor-supplied stainless-steel anchors. Size shall be coordinated with pre-punched opening size for hardware in pre-manufactured units and length coordinated with the minimum embedment depths into concrete pavement

2.03 BIKE REPAIR STATION WITH PUMP

A. Bike Repair Station Basis of Design: Complying with the requirements, provide the following bike repair station from Saris Infrastructure (www.sarisinfrastructure.com), or approved equal:
   1. Model: Delux Public Work Stand, #26347BLK.
   2. Mounting Type: Surface mounted.
   3. Finish: Powdercoated by manufacturer.
   4. Color: Black.

B. Pump Accessory: Complying with the requirements, provide the following bike pump from Saris Infrastructure (www.sarisinfrastructure.com), or approved equal:
   1. Model: Outdoor Public Bike Pump with Gauge and "Long Hose" option, #26246.
   2. Finish / Color: Stainless steel, standard manufacturer's SS finish.
   3. Mounting Type: Surface mounted (floor mount) independently from the bike repair station.

C. Hardware: Contractor-supplied, tamper-resistant stainless-steel concrete anchors. Size shall be coordinated with pre-punched opening size for hardware in pre-manufactured units and length coordinated with the minimum embedment depths into concrete pavement.

2.04 GRILL, SMALL

A. Basis of Design: Complying with the requirements, provide the following small grills from Anova (www.anovafurnishings.com), or approved equal:
   1. Small Grill Model: #100PRG-SM. 10" (ht) x 20" (w) x 15" (d) firebox, heavy-duty, single adjustable rack, adjustable ADA steel park grill with 300 square inches of cooking surface and steel post with surface mount base with 360-degree swivel, and theft-proof post-to-top locking device. 34" total height when assembled (from grade).
   2. Finish / Color: Non-toxic black powdercoat.

B. Hardware: Hardware: Contractor-supplied, tamper-resistant stainless-steel concrete anchors. Size shall be coordinated with pre-punched opening size for hardware in pre-manufactured units and length coordinated with the minimum embedment depths into concrete pavement.

2.05 GRILL, MEDIUM

A. Basis of Design: Complying with the requirements, provide the following large grills from Anova (www.anovafurnishings.com), or approved equal:
   1. Medium Grill Model: #150PRG. 10" (ht) x 20" (w) x 32" (d) firebox, heavy-duty, double adjustable racks, steel park grill with 600 square inches of cooking surface and steel post supposed by a heavy-duty 4" square gusseted post and base for surface mounting. 34 1/8" total height when assembled (from grade).

2. Finish / Color: Non-toxic black powdercoat.

B. Hardware: Contractor-supplied, tamper-resistant stainless-steel concrete anchors. Size shall be coordinated with pre-punched opening size for hardware in pre-manufactured units and length coordinated with the minimum embedment depths into concrete pavement.

2.06 ASH URN

A. Basis of Design: Complying with the requirements, provide the following coal/ash urns from Petersen Manufacturing Co. (www.petersenmfg.com), or approved equal:
1. Model: #500-0715 w/ Center Anchor Hole. 35" (ht) x 22" (sq.), 30-gallon, reinforced concrete receptacle with removable steel grate and steel door for emptying; includes standard (4) 1" diameter drainage holes in bottom and a 12" square "Hot Ash Only" sign integrated into the urn.
2. Customization: Contractor shall indicate that manufacturer is required to customize the standard unit to include a full-depth, ½" dia. opening, centered in base (bottom) of each precast ash urn unit.
3. Color/Finish: Sand Tan-Smooth Concrete.

B. Hardware: Hardware: Contractor-supplied, tamper-resistant stainless-steel concrete anchors. Size shall be coordinated with pre-punched opening size for hardware in pre-manufactured units and length coordinated with the minimum embedment depths into concrete pavement.

2.07 PRECAST CONCRETE BENCHES

A. Basis of Design: Complying with the requirements, provide the following Urbastyle series, pebble-shaped precast concrete benches from Wausau Tile (www.wausautile.com), or approved equal:
1. Model: Galet, in the following size/configurations as indicated in the drawings:
   a. PCB-1: ZB.GL.01. 50" (l) x 50" (w) x 16" (ht). Color/Finish: A22 – Sand.
   b. PCB-2: ZB.GL.02. 63" (l) x 63" (w) x 19.5" (ht). Color/Finish: A23 – Grey.
   c. PCB-3: ZB.GL.03. 94" (l) x 52" (w) x 17" (ht). Color/Finish: A20 – White.
   d. PCB-4: ZB.GL.04. 96" (l) x 70" (w) x 17" (ht). Color/Finish: A26 – Charcoal.
   e. PCB-6: ZB.GL.06. 72" (l) x 72" (w) x 17 1/2" (ht). A21 – Buff.
2. Mounting Type: Freestanding (no hardware or anchors)
3. Finish: Acid wash.
4. Color: As selected by Landscape Architect from manufacturer's standard full range. Note: multiple colors may be selected.

B. Hardware: n/a.

2.08 PICNIC TABLE

A. Basis of Design: Complying with the requirements, provide the following freestanding picnic tables from Thomas Steele (www.thomas-steele.com), or approved equal:
1. Model: "Monona" freestanding picnic table, in the following size/configurations as indicated in the drawings:
   a. PT: MNTFS-8. Dining Height. 8-foot length. Metal frame with recycled plastic top. Standard configuration.
   b. PT-HC: MNTFS-8HC. Dining Height. 8-foot length. Metal frame with recycled plastic top. Accessible wheelchair configuration.
2. Mounting Type: Freestanding (no hardware or anchors)
3. Metal Finish and Color: Powdercoated finish by manufacturer. Color: Bronze.
4. Recycled Plastic Size and Color: 3" x 4" profile, recycled plastic slats. Color: Mahogany.

B. Hardware: n/a.

2.09 MOVEABLE TABLE, LARGE

A. Basis of Design: Complying with the requirements, provide the following large, moveable tables from Thomas Steele (www.thomas-steele.com), or approved equal:
1. Model: CFT-42-P-DSK 'Cafe' table, 42" diameter, with solid steel top and disk base.

2. Mounting Type: Freestanding (no hardware or anchors)
3. Finish: Powdercoated by manufacturer.
4. Color: As selected by Landscape Architect from manufacturer's standard full range.

B. Hardware: n/a.

2.10 MOVEABLE TABLE, SMALL

A. Basis of Design: Complying with the requirements, provide the following small, moveable tables from Thomas Steele (www.thomas-steele.com), or approved equal:
1. Model: TET-30-P 'Terrace' table, 30" diameter, with solid steel top and disk base.
2. Mounting Type: Freestanding (no hardware or anchors)
3. Finish: Powdercoated by manufacturer.
4. Color: As selected by Landscape Architect from manufacturer's standard full range.

B. Hardware: n/a.

2.11 MOVEABLE CHAIRS

A. Basis of Design: Complying with the requirements, provide the following stackable metal chairs with arms from Landscape Forms (www.landscapeforms.com), or approved equal:
1. Model: 'Chair 21', with arms. 25.5" x 25.75" x 32.75", stackable. Include manufacturer's bumpers/glides at each leg to resist damage from dragging on rough surfaces.
2. Mounting Type: Freestanding (no hardware or anchors)
3. Finish: Powdercoated by manufacturer.
4. Color: As selected by Landscape Architect from manufacturer's standard full range.

B. Hardware: n/a.

2.12 LITTER RECEPTACLE

A. Basis of Design: Complying with the requirements, provide the following litter receptacles from Thomas Steele (www.thomas-steele.com), or approved equal:
1. Model: 'Windsor' Receptacle.
   a. LR-T: WNTR-32-P & LID-ED-P 'Windsor' receptacles for trash with elevated dome lid. Include standard decal for trash receptacles; letter color to be selected by Landscape Architect from manufacturer's standard full range.
   b. LR-R: WNTR-32-P & LID-F-P 'Windsor' receptacles for recycling with flat lid. Include standard decal for recycling receptacles; letter color to be selected by Landscape Architect from manufacturer's standard full range
2. Mounting Type: Freestanding (no hardware or anchors).
3. Finish: Powdercoated by manufacturer.
4. Color: As selected by Landscape Architect from manufacturer's standard full range. Note: Separate colors may be selected for body of receptacles and each lid type (trash or recycling).

B. Hardware: n/a.

2.13 BOLLARD, DECORATIVE

A. Basis of Design: Complying with the requirements, provide the following decorative bollards from Forms + Surfaces (www.forms-surfaces.com), or approved equal:
1. Model: LBLHO-603-N. 'Helio', Series 600, non-illuminated outdoor bollard.
2. Mounting Type: Surface mounted with J-bolts per manufacturer's standard product offerings Finish: Powdercoated by manufacturer.
3. Color: As selected by Landscape Architect from manufacturer's standard full range.

B. Hardware: Contractor may be required to furnish and install additional stainless-steel hardware to install each bollard unit fully and completely in compliance with manufacturer's written and graphic installation instructions.

2.14 BOLLARD, UTILITY

A. Provide 6" o.d. x 8-foot length Schedule 40 galvanized steel pipe, filled with concrete and set into concrete footing at each location indicated in the drawings.

B. Polyethylene Cover: Provide high-density, 1/8" thick polyethylene bollard cover for 6" o.d. pipe.
   1. Color: Submit manufacturer's standard full range of colors and colored/reflective tape options for final selections by Landscape Architect.
   2. Optional reflective tape and/or colored tape to be added at the request of City of Madison Representatives and/or Landscape Architect at no additional cost to the project. Up to two (2) reflective or colored strips per bollard.

C. Concrete: Refer to Section 03 30 00, "Cast-in-Place Concrete" for concrete footings.

2.15 BOLLARD, SAFETY

A. Provide 4.5" o.d. x 48" ht. steel bollard constructed of 10 ga. steel with integrally welded 8" x 8" x 1/4" steel mounting plate for surface mounting.

B. Basis of Design: Complying with the requirement, provide the following safety bollards from Global Industrial (www.globalindustrial.com), or approved equal.
   1. Model #T9F337327R, Steel Safety Bollard w/ Black Hazard Tape.
   2. Color: Safety Yellow with Black Hazard Tape.

C. Hardware: Furnish and install stainless steel anchoring hardware to match pre-drilled mounting holes in base plate of each bollard. Qty. 4 per bollard. Hardware length shall provide min. 3" embed and be specifically designed for concrete anchoring.

PART 3 EXECUTION

3.01 EXAMINATION

A. Examine areas and conditions, with Installer present, for compliance with requirements for correct and level finished grade, mounting surfaces, installation tolerances, and other conditions affecting performance.
   1. Proceed with installation only after unsatisfactory conditions have been corrected.
   2. Report any damage to adjacent surfaces. Do not proceed with installation until all unsatisfactory or damaged adjacent conditions have been documented and corrected.

3.02 INSTALLATION, GENERAL

A. Place or otherwise demarcate the location and orientation for each individual site furnishing unit on site and request field review from City of Madison Representative and Landscape Architect of orientation and location for all site furnishings prior to installation or placement.

B. Comply with manufacturer's written installation instructions unless more stringent requirements are indicated. Complete field assembly of all site furnishings, custom assemblies, and constructions.

C. Supply and install all hardware associated with full and complete product unit installations.

D. Unless otherwise indicated, install site furnishings after landscaping and paving have been completed. Ensure that concrete has fully cured prior to installing any site furnishings into or setting on top of concrete pavements.

E. Install site furnishings level, plumb, true, and securely anchored (only anchoring if indicated) at locations indicated on Drawings.

F. For all surface-mounted site furnishings, ensure that furnishings are placed such that the minimum distance between anchoring hardware and edge of concrete slab is no less than 4-inches to ensure that anchoring doesn't compromise concrete pavement integrity.

3.03 INSTALLATION, PRECAST CONCRETE BENCHES

A. For Precast Concrete Benches in Landscape Areas: Prepare subgrades and aggregate base course in accordance with Section 32 14 13.13 - Miscellaneous Landscape Surfaces; Subgrade and Aggregate Base Preparation, Method A or B as indicated in the drawings.

B. For Precast Concrete Benches in Paved Areas: Examine concrete to ensure that it has fully cured.

C. Place precast concrete benches on top of prepared aggregate base or concrete pavement, depending on location, after obtaining sign off of final placement and orientation.

D. Ensure benches are level, stable and do not rock, tip or otherwise move.

3.04 PROTECTION AND REPAIR

A. Project all adjacent pavements, surfaces and landscapes from damage at all times during site furnishings storage, assembly, and installation.

B. Any and all damage to site furnishings shall be reviewed by City of Madison Representative and Landscape Architect to determine whether field repairs can be performed sufficiently to correct the damage or whether the furnishing shall be removed and replaced. Contractor is responsible for removal and replacement of any and all furnishings deemed to be damaged beyond repair at no additional cost to the City.

C. Field repair of any precast concrete units is unacceptable; contractor will be required to replace damaged precast concrete units with new units.

3.05 CLEANING

A. After completing site furnishing, custom assemblies, and constructions installation, inspect components. Remove spots, dirt, and debris. Repair damaged finishes to match original finish or replace component.

END OF SECTION

ADDENDUM-1
CHECKLIST

Department of Public Works
Engineering Division
James M. Wolfe, P.E., City Engineer
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210 Martin Luther King, Jr. Boulevard
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Phone: (608) 266-4751
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Fadi El Musa Gonzalez, P.E.
Andrew J. Zwieg, P.E.
Financial Manager
Steven B. Danner-Rivers

BID SUBMITTAL CHECKLIST FOR CONTRACTOR

DO NOT ATTACH TO CONTRACT

- This bid submittal checklist is included to ensure all required documents for a complete bid submittal are present and signed as required.
- You must be prequalified prior to the bid opening date. Applications for prequalification must be submitted one week prior to the bid opening date.

Your bid submittal MUST include ALL the following applicable information completely filled out or it may be disqualified after bid opening.

☐ SECTION B: Proposal Page

☐ SECTION C: Targeted Business Enterprise Compliance Report Cover Sheet

☐ SECTION C: Targeted Business Enterprise Compliance Report Summary Sheet

☐ SECTION C: Targeted Business Enterprise Compliance Report Contact Report

☐ SECTION E: Bidder Acknowledgement (including acknowledgement of addendum/addenda if any)

☐ SECTION F: Best Value Contracting

☐ SECTION G: Bid Bond

Pursuant to Wis. Stat. Sec. 62.15(3) and Standard Specifications Sec. 102.5, no proposal shall be considered unless either (i) it is accompanied by a Bid Deposit of the character and amount described in the Advertisement for Bids or (ii) a Biennial bid bond in an amount and form acceptable to the City of Madison has been previously submitted.

Bid Deposits *SHALL* include a Bid Bond on the City of Madison Bid Bond form unless Biennial bid bond is on file with the City of Madison or unless the Bid Deposit is made by certified check. Failure to use the City of Madison Bid Bond form may be considered as sufficient for rejection of the bidder as non-responsive.

City of Madison Bond forms may be found in:

- Bid Bond: Section G of the Bid Express advertisement
- Biennial Bid Bond: link on web page http://www.cityofmadison.com/business/pw/forms.cfm

☐ SECTION H: AFFIDAVIT AND INFORMATION REQUIRED OF BIDDERS

☐ SECTION H: COMPLIANCE WITH SPECIFICATIONS/SCOPE OF WORK

☐ SECTION H: DEBARMENT AND SUSPENSION CERTIFICATION (LOWER TIER COVERED TRANSACTION)

☐ SECTION H: DEBARMENT AND SUSPENSION CERTIFICATION – PRIMARY

☐ SECTION I: ATTACHMENT 2 to ADDENDUM A: CERTIFICATION REGARDING LOBBYING

For assistance in completing any of these forms, the following staff in the Department of Public Works, Engineering Division are available to help:

Alane Boutelle, (608) 267-1197; email: aboutelle@cityofmadison.com
Johanna Johnson, (608) 264-9274; email: jjohnson@cityofmadison.com

Department of Public Works
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Andrew J. Zwieg, P.E.

Financial Manager
Steven B. Danner-Rivers

March 13, 2025

ADDENDUM NO. 2
City of Madison, Engineering Division

CONTRACT NO. 9610
IMAGINATION CENTER AT REINDAHL PARK

This addendum is issued to modify, explain or correct the original Drawings, Specifications, or Contract Documents marked as **Imagination Center at Reindahl Park, Contract #9610, as issued on February 13, 2025** and is hereby made a part of the contract documents.

Please acknowledge this addendum on page E-1 of the contract documents and/or in Section E: Bidder's Acknowledgement on Bid Express.

Electronic version of these documents can be found on Bid Express at https://www.bidexpress.com/ and the City of Madison web site at http://www.cityofmadison.com/business/PW/contracts/openforBid.cfm

If you are unable to download plan revisions associated with the addendum, please contact the Engineering office at (608) 266-4751 to receive the material by another method.

For questions regarding this bid, contact:

Brent Pauba
PH: (608) 266-4092
Email: BPauba@CityofMadison.com
210 Martin Luther King Jr. Blvd
Room 115
Madison, WI 53703

Sincerely,

James M. Wolfe, P.E.
City Engineer

This addendum modifies the following documents:

1. 9610 Contract.pdf

Please attach these Addendum documents to the Drawings and Project manual in your possession.

1. **GENERAL**
   - **A. CHANGE TO BID SUBMISSION DUE DATE:** Bid Submission date is amended from March 27 to **April 3, 2025.**
   - **B.** Associated Bidding due dates are amended to align with the above change.
   - **C.** See item #4 of this document for additional information.

2. **BIDDER QUESTIONS AND ANSWERS**
   - **A.** No new Q&A

3. **ACCEPTABLE EQUIVALENTS**
   - **A.** No new Acceptable Equivalents

4. **9610 Contract**
   - **A.** SECTION A, page A-1
     - **i.** Revised BID QUESTIONS/CLARIFICATIONS/SUBSTITUTIONS DUE date
     - **ii.** Revised PUBLISHED LAST ADDENDUM date
     - **iii.** Revised PREQUALIFICATION APPLICATION DUE (2:00 P.M.) date
     - **iv.** Revised BID SUBMISSION (2:00 P.M.) date
     - **v.** Revised BID OPEN (2:30 P.M.) date
     - **vi.** Revised PUBLISHED IN WSJ dates
     - **vii.** See Attachment ADDENDUM-2 CONTRACT for additional information.

5. **9610 Exhibit-A_drawings**
   - **A.** No change

6. **9610 Exhibit-B_specifications**
   - **A.** No change

7. **9610 Exhibit-C_drawing_landsForWork**
   - **A.** No change

8. **9610 Exhibit-D_ConstructionSequenceRequirements**
   - **A.** No change

9. **9610 Reference-1_survey_topographic**
   - **A.** No change

10. **9610 Reference-2_survey_ALTA**
    - **A.** No change

11. **9610 Reference-3_report_AsbestosLead**
    - **A.** No change

12. **9610 Reference-4_report_GeotechExploration**
    - **A.** No change

13. **9610 reference-5_drawings_existingConditions**
    - **A.** No change

14. **9610 reference-6_form_BidSubmittalChecklist**

A. No change

15. 9610 Proposal Page

A. No change

ADDENDUM-2
CONTRACT

SECTION A: ADVERTISEMENT FOR BIDS AND INSTRUCTIONS TO BIDDERS

REQUEST FOR BID FOR PUBLIC WORKS CONSTRUCTION
CITY OF MADISON, WISCONSIN

A BEST VALUE CONTRACTING MUNICIPALITY

PROJECT NAME:	IMAGINATION CENTER AT REINDAHL PARK
CONTRACT NO.:	9610
TBE GOAL	12%
BID BOND	5%
TBE PRE BID MEETING (2:00 P.M.)	MARCH 20, 2025
BID TALK – VIRTUAL	FEBRUARY 27, 2025 (12:00-1:00 PM)
SITE TOUR	MARCH 3, 2025 (12:00-1:00 PM)
BID QUESTIONS/CLARIFICATIONS/SUBSTITUTIONS DUE	MARCH 20, 2025
PUBLISHED LAST ADDENDUM	MARCH 27, 2025
PREQUALIFICATION APPLICATION DUE (2:00 P.M.)	MARCH 27, 2025
BID SUBMISSION (2:00 P.M.)	APRIL 3, 2025
BID OPEN (2:30 P.M.)	APRIL 3, 2025
PUBLISHED IN WSJ	FEBRUARY 13, 20, 27 & MARCH 6, 13, 20, 27

ADD-2

TBE PRE BID MEETING: Pre-Bid Meetings are being held virtually. Advance registration is required. Visit the TBE Meeting web page on Engineering's web site: https://www.cityofmadison.com/engineering/developers-contractors/contractors/how-to-bid-public-works-contracts/small-business.
Questions regarding TBE Program requirements may be directed to Tracy Lomax, Affirmative Action Division. Tracy may be reached at (608) 267-8634, or by email, TLomax@cityofmadison.com.

BID TALK (VIRTUAL): The City of Madison Engineering Division is hosting virtual live (and later recording posted) sessions called "Bid Talks." This is an opportunity for you to learn about the project to help with your bid and estimating numbers. During our "Bid Talks" session for this project, the project staff will present information about the project specific to your bidding process. Staff will answer any questions you have. You will also be able to see who is attending. This meeting will be held in an informal format, where participants are able to ask questions and have a conversation. Please send your estimators and bidders to these Bid Talks, as they take the place of in-person site visits for specific projects. Registration prior is required. Please register by visiting the Imagination Center at Reindahl Park project page at https://www.cityofmadison.com/engineering/projects/imagination-center-at-reindahl-park. A recording link will also be posted to the project page after the meeting.

REQUESTS FOR SUBSTITUTIONS:
Requests for Substitutions: Any requests for product or equipment substitution shall be submitted directly to the Project Architect and the City Project Manager via email.

- See the contract contact information at the end of Section D-Special Provisions for names and email addresses.
- Emails shall have "Contract 9538 – Request for Substitution" in the subject line.

All requestors shall review Specification 00 43 25 Substitution Request Form (During Bidding) prior to submitting their substitution request.

- All requests for substitution shall meet one of the three criteria in Section 1.1.B of the specification. Requests that do not meet the criteria will not be considered.
- All requests for substitution shall be complete in a single PDF document as described in Section 3.1 of the Specification. Requests that do not provide sufficient information, multiple documents, etc. will not be considered

Department of Public Works
Engineering Division
James M. Wolfe, P.E., City Engineer

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Andrew J. Zwieg, P.E.

Financial Manager
Steven B. Danner-Rivers

March 20, 2025

ADDENDUM NO. 3
City of Madison, Engineering Division

CONTRACT NO. 9610
IMAGINATION CENTER AT REINDAHL PARK

This addendum is issued to modify, explain or correct the original Drawings, Specifications, or Contract Documents marked as **Imagination Center at Reindahl Park, Contract #9610, as issued on February 13, 2025** and is hereby made a part of the contract documents.

Please acknowledge this addendum on page E-1 of the contract documents and/or in Section E: Bidder's Acknowledgement on Bid Express.

Electronic version of these documents can be found on Bid Express at https://www.bidexpress.com/ and the City of Madison web site at http://www.cityofmadison.com/business/PW/contracts/openforBid.cfm

If you are unable to download plan revisions associated with the addendum, please contact the Engineering office at (608) 266-4751 to receive the material by another method.

For questions regarding this bid, contact:

Brent Pauba
PH: (608) 266-4092
Email: BPauba@CityofMadison.com
210 Martin Luther King Jr. Blvd
Room 115
Madison, WI 53703

Sincerely,

James M. Wolfe, P.E.
City Engineer

This addendum modifies the following documents:

1. 9610 Exhibit-A_drawings.pdf
2. 9610 Exhibit-B_specifications.pdf

Please attach these Addendum documents to the Drawings and Project manual in your possession.

1. **GENERAL**
   - A. Bid Express Online Bidding Instructions updated to note that the submission cost will be $50 per bid, or $60 monthly starting April 1, 2025.

2. **BIDDER QUESTIONS AND ANSWERS**
   - A. Specs call for 5/8" dens-deck for coverboard and thermal but drawings call for ½". Which should we proceed with?
     - i. **The spec has been updated to match the drawings.**
   - B. Is there a specific attachment you would like us to use to mechanically fasten the insulation? Or is the standard attachment sufficient?
     - i. **The A/E team is reviewing the preferred attachment methods for the entire roof assembly. Clarification will be provided in future addendum.**
   - C. In the roof accessories specifications, snow guards are called out. We do not see anything noted in the drawings regarding this. Can you confirm there is none needed for this project?
     - i. **Confirmed, this spec section has been removed.**
   - D. Would you be able to push the bid date by a week or so?
     - i. **See Addendum #2.**
   - E. Is Division 27 Contractor to provide all (3) Racks? SC Library Rack, 2-Post Rack, and City of Madison Rack per Detail B1 on T501? To provide all cable management and Power Strips as detailed in Detail B1 on T501?
     - i. **Per Section 27 00 05, article 2.06, the Division 27 contractor provides all racks for structured cabling.**
     - ii. **Per Section 27 00 05, articles 2.07 and 2.08, the Division 27 contractor provides both horizontal and vertical cable management.**
   - F. What is the type of parking marking? The spec listed all types. Paint or Epoxy?
     - i. **Thermoplastic pavement markings per City of Madison Specification Article 608.3.**
   - G. IG-2 is specifying fully tempered laminated glass. The minimum thickness that we use for that product is 7.8 laminated (3.1-060-3.1). We would also have to make you aware of the distortion that could appear in construction like this.
     - i. **IG-2 is incorrectly specified and has been changed in the spec to be fully tempered float glass.**
   - H. Type IG-2B we currently are not able to print ¼ bird glass with a coating on #2 surface.
     - i. **The bird glass for IG-2B and IG-3B will be an acid etching on the #1 surface. Low-E coating on the #2 surface.**
   - I. Are the furnishings for the sensory room(s) at the Imagination Center going to be bid separately? Or directly by the center's administration perhaps?
     - i. **Furnishings, including loose furniture and specialty equipment, not included in the bid documents will be bid separately. Please review Vendor Resources information on the City of Madison website: https://www.cityofmadison.com/finance/purchasing/vendor-resources. City bid opportunities are published on two internet bid distribution networks. To make sure you receive future bid or quote opportunities, subscribe to one or both bid networks.**
   - J. Can a standard size plant plug size be used in the bio-filtration basin instead of the 4" plug size that is specified?

i. **See updated landscape drawings for revised size.**

3. **ACCEPTABLE EQUIVALENTS**
   A. Specification section 07 95 13 – Expansion Joint Cover Assemblies, Erie Metal.
      i. **Request is approved – see updated specification.**

   B. Specification section 08 80 00 – Glazing, Guardian Glass.
      i. **Request is approved – see updated specification.**

   C. Specification section 08 80 00 – Glazing, Vitro Solarban 65.
      i. **Request is approved – see updated specification.**

   D. Specification section 08 80 00 – Glazing, Oldcastle Building Envelope.
      i. **Request is approved – see updated specification.**

   E. Specification section 09 51 26 – Veneered Wood Ceiling Panels: Woodworks Grille - Forte, 9Wood.
      i. **Request is approved – see updated specification.**

   F. Specification section 10 22 39 – Folding Panel Partitions, Kwik-Wall.
      i. **Request is approved – see updated specification.**

   G. Specification section 10 71 13 43 – Fixed Sun Screens, Perforated Laser Metal Panels by Hendrick.
      i. **Request is denied.**

   H. Specification section 26 09 23 – Lighting Control Devices – Lutron, Creston.
      i. **In review – response to be communicated in future addendum.**

   I. Specification section 28 46 00 – Fire Detection and Alarm, Edwards.
      i. **In review – response to be communicated in future addendum.**

4. **9610 Contract**
   A. No change

5. **9610 Exhibit-A_drawings**
   A. **G001 - "INDEX SHEET"**
      i. Revised sheets are indicated with revision mark 'A3'.
   B. **L104 - "LANDSCAPE PLAN"**
      i. Plant sizes of bio-filtration basin plug mix reduced from 4" to 2-1/2".
   C. **L601 - "PLANT SCHEDULES AND LANDSCAPE POINTS"**
      i. Plant sizes of bio-filtration basin plug mix reduced from 4" to 2-1/2".
   D. **A500 - "EXTERIOR AND INTERIOR WALL ASSEMBLIES"**
      i. Revised wall assembly type S6CP.
   E. **AI102 - "RENDERED FLOOR FINISH PLAN"**
      i. Revised POR-01 and POR-02 graphics.
   F. **AI103 - "WALL FINISH PLAN"**
      i. Revised CWT-05 graphic.
   G. **AI104 - "WALL FINISH ELEVATIONS"**
      i. Revised CWT-05 graphic.
   H. **AI105 - "WALL FINISH ELEVATIONS"**
      i. Revised CWT-05 graphic.
   I. **AI411 – FINISHES & MATERIALS SCHEDULE**
      i. Revised Finishes & Materials Schedule, Floor, POR-01 and POR-02.

ii. Revised Finishes & Materials Schedule, Wall, CWT-05.

J. **E010 - "ELECTRICAL SITE PLAN"**
   i. Added keyed note #76.

K. **E101 - "FIRST FLOOR PLAN - POWER & FIRE ALARM"**
   i. Added keyed notes #84 and #85.
   ii. Revised receptacle layout and lighting control panel locations in IT 125.
   iii. Added lighting control panels in Storage 156.

L. **E111 - "FIRST FLOOR PLAN - LIGHTING"**
   i. Added keyed notes #33, #68, #77 - #83.
   ii. Revised wall section C3/E111.

M. **E504 - "ELECTRICAL DETAILS"**
   i. Replaced Lutron drawing with current layout.

N. **E505 - "ELECTRICAL DETAILS"**
   i. Replaced Lutron drawing with current layout.

O. **E506 - "ELECTRICAL DETAILS"**
   i. Replaced Lutron drawing with current layout.

P. **T501 - "TECHNOLOGY DETAILS"**
   i. Detail B5 – Added a note.

Q. **T502 - "TECHNOLOGY DETAILS"**
   i. Detail A3 – Added a note.

R. **T704 - "AV FLOW DIAGRAMS"**
   i. AV RPS-2 – Added a note.

6. **9610 Exhibit-B_specifications**

A. 00 01 10 TABLE OF CONTENTS
   i. Sections revised or omitted are noted in the Table of Contents with (A3) after section title.

B. 01 60 00 PRODUCT REQUIREMENTS
   i. Paragraph 1.01: added the following note: "Referrals to this section for the purpose of product substitution should instead see Section 01 25 13 – Product Substitution Procedures". Section 01 60 00 typically references substitution requirements and most sections refer back to this as default. However, for this project, Section 01 60 00 is a City of Madison authored section and does not reference substitution requirements.

C. 07 42 13.23 METAL COMPOSITE MATERIAL WALL PANELS
   i. Paragraph 2.01.A.1: added "BASIS OF DESIGN"
   ii. Paragraph 2.01.A.2: added Alfrex FR as pre-approved equal.
   iii. Paragraph 2.01.A.4: corrected section reference for product substitution requests.

D. 07 53 00 ELASTOMERIC MEMBRANE ROOFING
   i. Paragraph 2.01.A.5: corrected section reference for product substitution requests.
   ii. Paragraph 2.04.A.1: corrected Deck Sheathing thickness to 1/2-inch from 5/8-inch to match drawings.
   iii. Paragraph 2.04.A.2.e: corrected section reference for product substitution requests.
   iv. Paragraph 2.05.A.1: corrected Coverboard thickness to 1/2-inch from 5/8-inch to match drawings.
   v. Paragraph 2.05.A.3.e: corrected section reference for product substitution requests.
   vi. Paragraph 2.06.A.6.e: corrected section reference for product substitution requests.
   vii. Paragraph 2.07.L.5.c: added section reference for product substitution requests.

E. 07 71 00 ROOF SPECIALTIES
   i. Paragraph 1.02.C: reference to snow guards removed.

F. 07 72 00 ROOF ACCESSORIES
   i. Paragraph 1.01.C: omitted snow guards from section since metal roof is no longer in project scope.
   ii. Paragraph 1.03: removed references to ASTM A123/A123M and ASTM A153/A153M.
   iii. Paragraph 1.04.C.1: omitted snow guards from submittal requirement.
   iv. Paragraph 2.01.A.5: corrected section reference for product substitution requests.
   v. Paragraph 2.02: add back to section roof hatch manufacturers, which was missing from original issuance.
   vi. Paragraph 2.03: added Pre-Manufactured Roof Ladder Safety Grab Post to section.
   vii. Paragraph 2.03: omitted all paragraphs related to snow guards.

G. 07 91 00 PREFORMED JOINT SEALS
   i. Paragraph 2.01.A.6: added Erie Metal Specialties, Inc. as pre-approved equal.
   ii. Paragraph 2.01.A.7: corrected section reference for product substitution requests.
   iii. Paragraph 2.01.B.5: added Erie Metal Specialties, Inc. as pre-approved equal.
   iv. Paragraph 2.01.B.6: corrected section reference for product substitution requests.

H. 07 95 13 EXPANSION JOINT COVER ASSEMBLIES
   i. Paragraph 2.01.A.10: added Erie Metal Specialties, Inc. as pre-approved equal.
   ii. Paragraph 2.01.A.11: corrected section reference for product substitution requests.
   iii. Paragraph 2.02.A.1.c: added Erie Metal Specialties, Inc. as pre-approved equal.
   iv. Paragraph 2.02.A.1.d: corrected section reference for product substitution requests.
   v. Paragraph 2.02.B.1.e: added Erie Metal Specialties, Inc. as pre-approved equal.
   vi. Paragraph 2.02.B.1.f: corrected section reference for product substitution requests.

I. 08 80 00 GLAZING
   i. Paragraph 1.03: omitted reference to AAMA 501.6. Not relevant to this project.
   ii. Paragraph 2.01.A: added Guardian Glass, LLC, Oldcastle Building Envelope, and Vitro Architectural Glass as pre-approved equals.
   iii. Paragraph 2.01.C: added Guardian Glass, LLC, Oldcastle Building Envelope, and Vitro Architectural Glass as pre-approved equals.
   iv. Paragraph 2.01.C.6: corrected section reference for product substitution requests.
   v. Paragraph 2.04.A: added Guardian Glass, LLC, Oldcastle Building Envelope, and Vitro Architectural Glass as pre-approved equals.
   vi. Paragraph 2.04.A.6: corrected section reference for product substitution requests.
   vii. Paragraph 2.04.E.4: omitted "laminated" from description for Inboard lite of IG-2.
   viii. Paragraph 2.10: removed Concealed nonprogressive structural glass mounting system – does not apply to this project.
   ix. Part 3: Removed the Wet Glazing installation methods. Dry glazing is less severely affected by installation, weather, workmanship, or compatibility issues than wet glazing.
   x. Part 3: Removed the following installation methods since they do not apply to this project.
      (1) Butt Joint Glazing Method
      (2) Pressure Glazed Systems
      (3) Structural Silicone Glazing
      (4) Acrylic Foam Tape Glazing
      (5) Plastic Film
   xi. Paragraphs 3.07.G-H: replaced "___ type sealant" with "manufacturer's recommended sealant".
   xii. Paragraphs 3.08.F: replaced "specified" with "manufacturer's recommended".

J. 09 30 00 TILING
   i. Paragraphs 2.01.B.5.a-b: added tile material ID for clarity.
   ii. Paragraphs 2.01.C.7.a-b: added new tile selections for discontinued product originally specified.
   iii. Paragraphs 2.01.D.7.a-b: added tile material ID for clarity.
   iv. Paragraph 2.01.E.6.a: added tile material ID for clarity.

K. 09 51 26 VENEERED WOOD CEILING PANELS
   i. Renamed section to remove proprietary product name.
   ii. Paragraph 1.02.A.1: Removed proprietary reference to product.
   iii. Paragraph 2.01.C: corrected section reference for product substitution requests. Added 9Wood Inc. as pre-approved equal.

L. 10 22 39 FOLDING PANEL PARTITIONS
   i. Paragraph 2.01.A.1: added "BASIS OF DESIGN"
   ii. Paragraph 2.01.A.2: added Kwik-Wall Company as pre-approved equal.
   iii. Paragraph 2.01.A.3: corrected section reference for product substitution requests.

M. 28 13 00 ACCESS CONTROL SYSTEM (KEYSCAN)
   i. Paragraph 2.05.E: replaced "City-IT" with "Parks" and "City" with "Library".

ii. Added paragraph 2.06 Security Panel (AC-SEC-2) for clarity. Remaining paragraphs in Part 2 renumbered accordingly.
iii. Paragraphs 2.07.B.1-2: revised to amend an outdated catalogue number.

N. 32 17 23 PAVEMENT MARKINGS
i. Paragraph 1.03.H: Added reference to City of Madison – Standard Specifications for Public Works Construction (2025).
ii. Paragraph 2.02: Replaced "painted" with "thermoplastic".
iii. 2.02.B: "Painted pavement Markings: As indicated on drawings" replaced with "Comply with City of Madison Standard Specifications for Public Works Construction – Article 608".
iv. Paragraph 3.02.B: Replaced "painted" with "thermoplastic".
v. Paragraph 3.02.B.3: Added "Apply in accordance with City of Madison Standard Specifications for Public Works Construction – Article 608".

7. **9610 Exhibit-C_drawing_landsForWork**
   A. No change

8. **9610 Exhibit-D_ConstructionSequenceRequirements**
   A. No change

9. **9610 Reference-1_survey_topographic**
   A. No change

10. **9610 Reference-2_survey_ALTA**
    A. No change

11. **9610 Reference-3_report_AsbestosLead**
    A. No change

12. **9610 Reference-4_report_GeotechExploration**
    A. No change

13. **9610 reference-5_drawings_existingConditions**
    A. No change

14. **9610 reference-6_form_BidSubmittalChecklist**
    A. No change

15. **9610 Proposal Page**
    A. No change

ADDENDUM-3
DRAWINGS

ABBREVIATIONS

SYMBOL LEGEND

19 — VIEW NUMBER; TITLE — VIEW NAME; 1/2" = 1'-0" — VIEW SCALE

DETAIL CALLOUT

SECTION CALLOUT

ELEVATION CALLOUT

ELEVATION DATUM

NORTH ARROW

EXISTING CONSTRUCTION

DEMOLITION

NEW CONSTRUCTION

WALL TAG

DOOR TAG

KEYNOTE TAG

REVISION TAG

FURNITURE TAG

EQUIPMENT TAG

WINDOW TAG

CASEWORK TAG (PLAN OR ELEVATION)

FLOOR / BASE / WALL / REMARKS — FINISH PLAN TAG

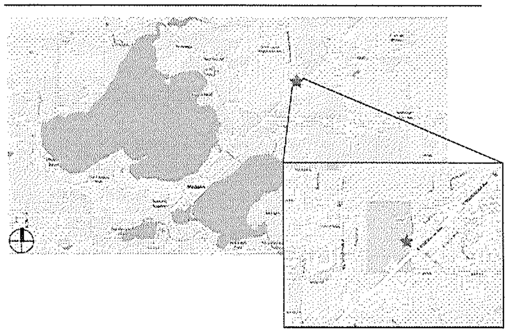
TYPE / HEIGHT — CEILING TAG

NAME / 0000 — ROOM TAG

NEW GRID AND IDENTIFICATION

EXISTING GRID AND IDENTIFICATION

VICINITY MAP



SHEET ORGANIZATION

EACH DRAWING SHEET IS BASED UPON A 30 SQUARE GRID SYSTEM, STARTING WITH "1" IN THE TOP LEFT HAND CORNER AND WORKING LEFT-TO-RIGHT AND TOP-TO-BOTTOM TO "30" IN THE BOTTOM RIGHT HAND CORNER. EXAMPLE BELOW:

1	2	3	4	5	6	TITLEBLOCK
7	8	9	10	11	12	
13	14	15	16	17	18	
19	20	21	22	23	24	
25	26	27	28	29	30	

PROJECT ADDRESS

IMAGINATION CENTER AT REINDAHL PARK

LIBRARY: 1614 PARKSIDE DR.
MADISON, WI 53704

PAVILION: 1818 PARKSIDE DR.
MADISON, WI 53704

CONTRACT No: 9610

MUNIS No: 17085

OWNER INFORMATION

CITY OF MADISON
210 MARTIN LUTHER KING, JR. BLVD.
MADISON, WI 53703-3342

CONTACT: Brent Pauba - Department of Public Works, Engineering Division
EMAIL: bpauba@cityofmadison.com
MAIN: 608.266.4092

PROJECT TEAM

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MAIN: 608.245.1962
CIVIL SHEETS:
C100-C904

LANDSCAPING

SAIKI DESIGN, INC.
1110 SOUTH PARK STREET
MADISON, WI 53715
CONTACT: Abbie Mollien, PLA, ASLA
EMAIL: amollien@saiki.design
MAIN: 608.405.8149
LANDSCAPE SHEETS:
L101-L601

STRUCTURAL ENGINEERING

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275 WEST WISCONSIN AVENUE, SUITE 300
MILWAUKEE, WI 53203
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STRUCTURAL SHEETS:
S001-S603

PLUMBING & FIRE PROTECTION

GRAEF, INC.
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MILWAUKEE, WI 53203
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EMAIL: jessica.culver@graef-usa.com
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PLUMBING SHEETS: P001-P911

MECHANICAL

GRAEF, INC.
1010 EAST WASHINGTON AVENUE, SUITE 202
MADISON, WI 53703
CONTACT: Matt Garcia, PE
EMAIL: matthew.garcia@graef-usa.com
MAIN: 414.266.9232
MECHANICAL SHEETS:
M001-M806

ELECTRICAL & TECHNOLOGY

GRAEF, INC.
275 WEST WISCONSIN AVENUE, SUITE 300
MILWAUKEE, WI 53203
CONTACT: Beth Ann Bruss, DES
EMAIL: beth.bruss@graef-usa.com
MAIN: 414.266.9252
ELECTRICAL SHEETS: E001-E620
TECHNOLOGY SHEETS: T001-T704

INTERIOR DESIGN

INTERIOR LOGIC
1201 SOUTH STOUGHTON ROAD, SUITE 150
MADISON, WI 53716
CONTACT: Robin Stroebel, ASID, RID, LEED AP ID +C, WELL AP
EMAIL: rstroebel@intlogic.com
MAIN: 608.316.3870
INTERIORS SHEETS:
AI102-AI411

SET ISSUE

BID DOCUMENTS
JANUARY 6, 2025

SHEET INDEX

SHEET DISCIPLINE AND NUMBER	SHEET INDEX	REVISIONS Mark	REVISIONS Date
GENERAL			
G000	COVER		
G001	INDEX SHEET	A1	01/20/2025
G100	CODE INFORMATION		
G101	CODE INFORMATION		
G100	ACCESSIBILITY DIAGRAMS		
CIVIL			
C100	EXISTING CONDITIONS		
C101	EXISTING CONDITIONS - SURVEY		
C200	DEMOLITION AND EROSION CONTROL PLAN		
C300	SITE LAYOUT PLAN		
C401	SITE GRADING PLAN		
C402	SITE GRADING PLAN		
C403	SITE GRADING PLAN		
C500	SITE UTILITY PLAN		
C600	FIRE ACCESS PLAN		
C900	CONSTRUCTION NOTES		
C901	CONSTRUCTION DETAILS		
C902	CONSTRUCTION DETAILS		
C903	CONSTRUCTION DETAILS		
C904	CONSTRUCTION DETAILS		
LANDSCAPE			
L101	TREE PROTECTION AND REMOVALS		
L104	SITE PLAN		
L104	LANDSCAPE PLAN	A1	01/20/2025
L401	LANDSCAPE PLAN ENLARGEMENT		
L402	LANDSCAPE PLAN ENLARGEMENT	A2	02/07/2025
L403	SITE FURNISHINGS PLAN		
L501	LANDSCAPE DETAILS		

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ARCHITECTS
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JLA PROJECT NUMBER: 20-0925

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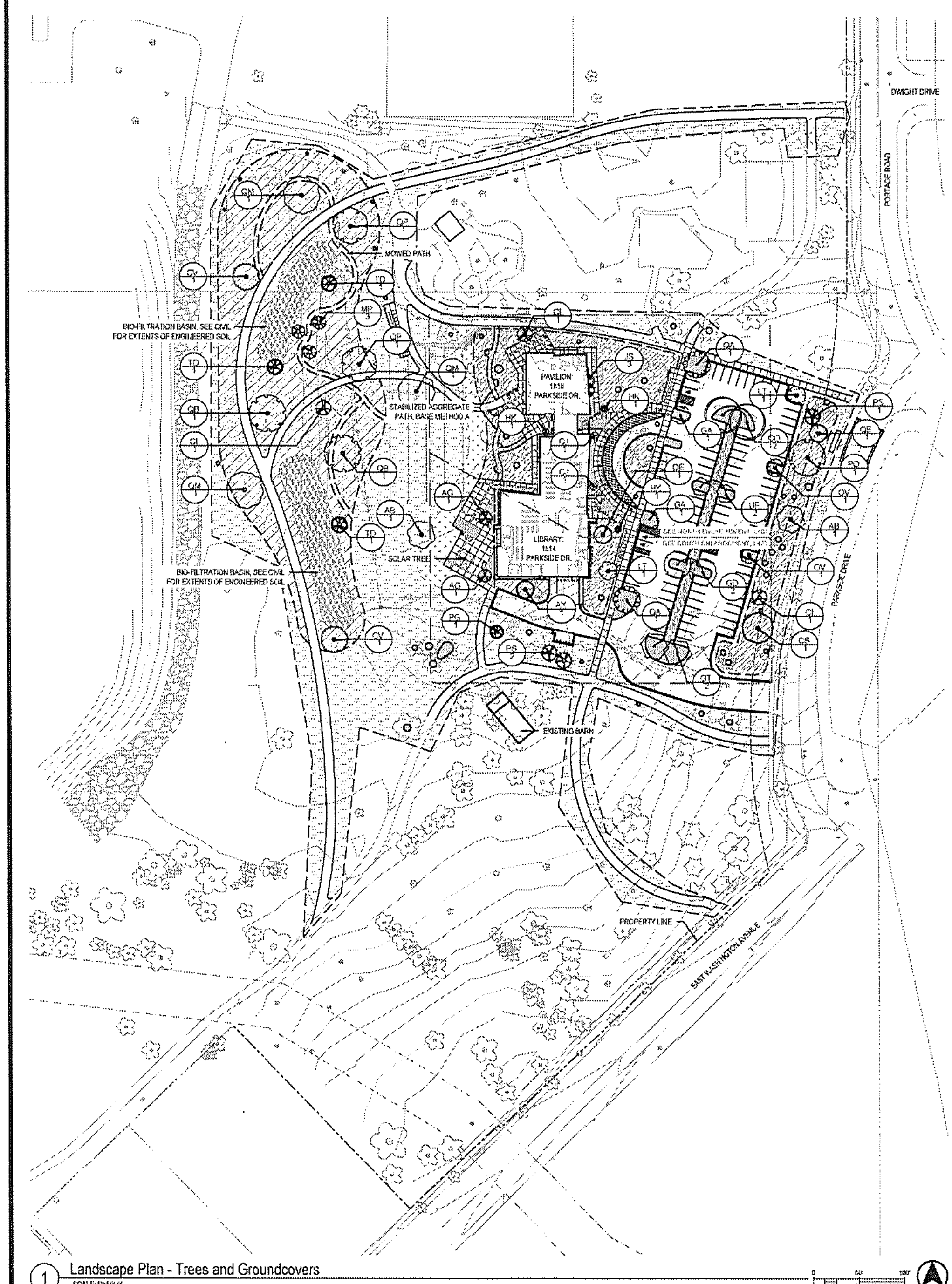
IMAGINATION CENTER AT REINDAHL PARK

BID DOCUMENTS

SHEET TITLE
INDEX SHEET

SHEET NUMBER
G001

ADDENDUM



1 Landscape Plan - Trees and Groundcovers
SCALE: 1"=50'-0"

LEGEND

- SHREDDED HARDWOOD MULCH
- STONE MULCH
- DECORATIVE CONCRETE
- STABILIZED AGGREGATE PATH, SEE 10/L501
- METAL BED EDGING, SEE 7/L501
- SPADED BED EDGING, SEE 8/L501
- STONE MAINTENANCE EDGE SEE 6/L501
- PROJECT LIMITS
- EXISTING SITE FEATURES
- PROPERTY LINE
- MULCH TREE RING
- FUTURE PUBLIC ART LOCATION
- EXISTING EVERGREEN TREE
- EXISTING DECIDUOUS TREE

PLAN NOTES

1. FIELD VERIFY SURVEY INFORMATION AND SITE CONDITIONS PRIOR TO START OF CONSTRUCTION AND REPORT ANY DISCREPANCIES TO LANDSCAPE ARCHITECT. CONTACT DIGGER'S HOTLINE TO LOCATE ALL PUBLIC AND PRIVATE UTILITIES PRIOR TO THE START OF CONSTRUCTION. ANY DAMAGE CAUSED TO EXISTING UTILITIES, EITHER SHOWN OR NOT, SHALL BE REPAIRED AND PAID FOR AT THE CONTRACTOR'S EXPENSE.
2. PROTECT ALL BENCHMARKS. INCLUDE ANY RELOCATED BENCHMARKS IN AS-BUILT DRAWINGS.
3. ALL EXISTING PLANT MATERIAL IS SHOWN AT EXISTING, APPROXIMATED SIZE PER CITY OF MADISON STANDARDS.
4. ANY STREET TREE REMOVALS REQUESTED AFTER THE DEVELOPMENT PLAN IS APPROVED BY THE PLAN COMMISSION OR THE BOARD OF PUBLIC WORKS AND CITY FORESTRY WILL REQUIRE A MINIMUM OF A 72-HOUR REVIEW PERIOD WHICH SHALL INCLUDE THE NOTIFICATION OF THE ALDERPERSON WITHIN WHOSE DISTRICT IS AFFECTED BY THE STREET TREE REMOVAL(S) PRIOR TO A TREE REMOVAL PERMIT BEING ISSUED.
3. ALL WRAPPINGS, WIRE BASKETS, BURLAP, AND OTHER MISCELLANEOUS MATERIAL SHALL BE COMPLETELY REMOVED FROM ALL SHRUB AND TREE ROOT BALLS PRIOR TO INSTALLATION
4. VISUALLY INSPECT AND VERIFY SPECIFIED TOPSOIL AND PLANTING SOIL DEPTHS ARE PRESENT PRIOR TO PLANTING AS OUTLINED IN SPECIFICATIONS
5. ANY LAWN OR LANDSCAPED AREAS WITHIN OR OUTSIDE OF THE CONSTRUCTION BOUNDARY THAT ARE DISTURBED SHALL BE RE-SEEDED AND/OR REPAIRED WITH ORIGINAL MATERIALS AND TO PRE-DISTURBANCE STANDARDS AT NO COST TO THE OWNER OR CITY.
6. SEE SECTIONS 32 92 19 "SEEDING" AND 32 93 00 "PLANTS" FOR NATIVE SEED AREA AND BIO-FILTRATION AREA EROSION CONTROL MATERIALS.
7. CONTRACTOR IS RESPONSIBLE FOR WATERING AND MAINTENANCE OF PLANT MATERIAL. SEE SPECIFICATIONS FOR MORE INFORMATION.
8. CONTACT CITY OF MADISON PRIOR TO PERFORMING ANY WORK WITHIN THE CITY RIGHT OF WAY TO CONFIRM RESTORATION.
9. THE RIGHT OF WAY IS THE SOLE JURISDICTION OF THE CITY OF MADISON AND IS SUBJECT TO CHANGE AT ANY TIME PER THE RECOMMENDATION OF TRAFFIC ENGINEERING AND ENGINEERING DIVISIONS. FORWARD ANY CHANGES PROPOSED BY CITY OFFICIALS TO LANDSCAPE ARCHITECT FOR CONSIDERATION AND DIRECTION BEFORE PROCEEDING.

PLANT SCHEDULE - TREES

SYMBOL	CODE	BOTANICAL / COMMON NAME	CONT	SIZE
DECIDUOUS TREES				
	AS	Acer saccharum 'Bailsta' / Fall Fiesta® Sugar Maple	B & B	3"Cal
	AX	Aesculus x bushii 'Aorani' / Mystic Rays Buckeye	B & B	2.5"Cal
	CV	Carya ovata / Shagbark Hickory	B & B	2.5"Cal
	CS	Catalpa speciosa / Northern Catalpa	B & B	2.5"Cal
	CO	Celtis occidentalis 'Chicagoland' / Chicagoland Hackberry	B & B	3"Cal
	GA	Ginkgo biloba 'Autumn Gold' TM / Autumn Gold Maidenhair Tree	B & B	2" Cal
	GT	Gleditsia triacanthos inermis 'Shademaster' / Shademaster Locust	B & B	2.5"Cal
	GO	Gymnocladus dioica 'Espresso' / Espresso Kentucky Coffeetree	B & B	2.5"Cal
	LT	Liriodendron tulipifera / Tulip Tree	B & B	2.5"Cal
	OV	Ostrya virginiana / American Hophornbeam	B & B	2.5"Cal
	PO	Platanus occidentalis 'Morton Circle' / Exclamation! American Sycamore	B & B	2.5"Cal
	QA	Quercus alba / White Oak	B & B	3"Cal
	QB	Quercus bicolor / Swamp White Oak	B & B	3"Cal
	QE	Quercus ellipsoidalis / Northern Pin Oak	B & B	3"Cal
	QP	Quercus macrocarpa / Burr Oak	B & B	3' Cal
	QM	Quercus muehlenbergii / Chinkapin Oak	B & B	3' Cal
	TD	Taxodium distichum / Bald Cypress	B & B	6' HT (MIN.)
	UF	Ulmus x 'Frontier' / Frontier Elm	B & B	3"Cal
EVERGREEN TREES				
	JS	Juniperus scopulorum 'Wichita Blue' / Wichita Blue Juniper	B & B	5' HT. (MIN)
	PB	Picea glauca densata / Black Hills Spruce	B & B	6' HT (MIN.)
	PS	Pinus strobus / White Pine	B & B	6' HT (MIN.)
ORNAMENTAL TREES				
	AG	Amelanchier x grandiflora 'Autumn Brilliance' / Autumn Brilliance Serviceberry	B & B	6'HT (MIN.),
	CJ	Carpinus caroliniana 'J.N. Upright' / Firespire American Hornbeam	B & B	2" Cal
	CI	Crataegus crus-galli inermis / Thornless Cockspur Hawthorn	B & B	6'HT (MIN.),
	HK	Hamamelis vernalis 'Kohankie Red' / Kohankie Red Ozark Witchhazel	B & B	5' HT. (MIN.)
	MP	Malus x 'Prairifire' / Prairifire Crabapple	B & B	2" Cal

GROUNDCOVERS SCHEDULE

NATIVE SEED - 01	Low-Growing Meadow for Dry Soils	21,617 sf
NATIVE SEED - 02	Diverse Prairie for Dry Soils	52,564 sf
NATIVE SEED - 03	Woodland Edge - Savanna for Medium Soils	5,806 sf
BLUEGRASS LAWN SOD		8,611 sf
BLUEGRASS LAWN SEED	Madison Parks Blend	111,488 sf

BIO-FILTRATION BASIN PLUG MIX	14,305 sf		
Allium cernuum / Nodding Onion	152	2 1/2" plug	2% @ 18" o.c.
Andropogon gerardii / Big Bluestem	144	2 1/2" plug	2% @ 18" o.c.
Asclepias incarnata / Swamp Milkweed	330	2 1/2" plug	5% @ 18" o.c.
Baptisia alba / White Wild Indigo	330	2 1/2" plug	5% @ 18" o.c.
Carex albicans / Whitetinge Sedge	144	2 1/2" plug	2% @ 18" o.c.
Carex eburnea / Bristleleaf Sedge	330	2 1/2" plug	5% @ 18" o.c.
Carex muskingumensis / Palm Sedge	330	2 1/2" plug	5% @ 18" o.c.
Carex praegracilis / California Field Sedge	330	2 1/2" plug	5% @ 18" o.c.
Dalea purpurea / Purple Prairie Clover	144	2 1/2" plug	2% @ 18" o.c.
Elymus canadensis / Canada Wild Rye	152	2 1/2" plug	2% @ 18" o.c.
Iris versicolor / Blue Flag	144	2 1/2" plug	2% @ 18" o.c.
Liatris spicata / Spike Gayfeather	330	2 1/2" plug	5% @ 18" o.c.
Lobelia siphilitica / Great Lobelia	330	2 1/2" plug	5% @ 18" o.c.
Monarda fistulosa / Bergamot	330	2 1/2" plug	5% @ 18" o.c.
Panicum virgatum / Switch Grass	330	2 1/2" plug	5% @ 18" o.c.
Pycnanthemum tenuifolium / Slender Mountain Mint	144	2 1/2" plug	2% @ 18" o.c.
Ratibida pinnata / Yellow Coneflower	144	2 1/2" plug	2% @ 18" o.c.
Rudbeckia subtomentosa / Sweet Black-eyed Susan	144	2 1/2" plug	2% @ 18" o.c.
Senna hebecarpa / Wild Senna	144	2 1/2" plug	2% @ 18" o.c.
Silphium perfoliatum / Cup Plant	144	2 1/2" plug	2% @ 18" o.c.
Silphium terebinthinaceum / Prairie Dock	144	2 1/2" plug	2% @ 18" o.c.
Sorghastrum nutans / Indian Grass	152	2 1/2" plug	2% @ 18" o.c.
Sporobolus heterolepis / Prairie Dropseed	144	2 1/2" plug	2% @ 18" o.c.
Symphyotrichum novae-angliae / New England Aster	330	2 1/2" plug	5% @ 18" o.c.
Verbena hastata / Blue Vervain	144	2 1/2" plug	2% @ 18" o.c.
Vernonia fasciculata / Ironweed	330	2 1/2" plug	5% @ 18" o.c.
Zizia aurea / Golden Alexander	144	2 1/2" plug	2% @ 18" o.c.

NOTES:
- VERIFY SQUARE FOOTAGE OF ALL GROUNDCOVER AREAS. IF PLAN CONFLICTS WITH SCHEDULE, PLAN SHALL GOVERN
- FOR BIO-FILTRATION BASIN PLANTINGS, DISTRIBUTE PLANT SPECIES RANDOMLY AND EVENLY.

ADDENDUM

JLA ARCHITECTS
MADISON | MILWAUKEE | DENVER
JLA-AP.COM

saiki DESIGN

JLA PROJECT NUMBER: 20-0978

CITY OF MADISON WISCONSIN

MADISON PUBLIC LIBRARY

play MADISON PARKS

IMAGINATION CENTER AT REINDAHL PARK

Bid Documents

REVISION SCHEDULE

LANDSCAPE PLAN

L104

ADDENDUM

PLANT SCHEDULE

SYMBOL	CODE	BOTANICAL / COMMON NAME	CONT	SIZE	QTY
		DECIDUOUS TREES			
	AS	Acer saccharum 'Bailsta' / Fall Fiesta® Sugar Maple	B & B	3"Cal	2
	AX	Aesculus x bushii 'Aaron' / Mystic Ruby Buckeye	B & B	2.5"Cal	1
	CV	Carya ovata / Shagbark Hickory	B & B	2.5"Cal	2
	CS	Catalpa speciosa / Northern Catalpa	B & B	2.5"Cal	1
	CO	Celtis occidentalis 'Chicagoland' / Chicagoland Hackberry	B & B	3"Cal	2
	GA	Ginkgo biloba 'Autumn Gold' TM / Autumn Gold Maidenhair Tree	B & B	2" Cal	2
	GT	Gleditsia triacanthos inermis 'Shademaster' / Shademaster Locust	B & B	2.5"Cal	2
	GD	Gymnocladus dioica 'Espresso' / Espresso Kentucky Coffeetree	B & B	2.5"Cal	2
	LT	Liriodendron tulipifera / Tulip Tree	B & B	2.5"Cal	2
	OV	Ostrya virginiana / American Hophornbeam	B & B	2.5"Cal	2
	PO	Platanus occidentalis 'Morton Circle' / Exclamation! American Sycamore	B & B	2.5"Cal	1
	QA	Quercus alba / White Oak	B & B	3"Cal	2
	QB	Quercus bicolor / Swamp White Oak	B & B	3"Cal	2
	QE	Quercus ellipsoidalis / Northern Pin Oak	B & B	3"Cal	2
	QP	Quercus macrocarpa / Burr Oak	B & B	3' Cal	2
	QM	Quercus muehlenbergii / Chinkapin Oak	B & B	3' Cal	3
	TD	Taxodium distichum / Bald Cypress	B & B	6' HT (MIN.)	5
	UF	Ulmus x 'Frontier' / Frontier Elm	B & B	3"Cal	2
		EVERGREEN TREES			
	JS	Juniperus scopulorum 'Wichita Blue' / Wichita Blue Juniper	B & B	8' HT. (MIN)	3
	PG	Picea glauca densata / Black Hills Spruce	B & B	6' HT (MIN.)	1
	PS	Pinus strobus / White Pine	B & B	6' HT (MIN.)	5
		ORNAMENTAL TREES			
	AG	Amelanchier x grandiflora 'Autumn Brilliance' / Autumn Brilliance Serviceberry	B & B	6'HT (MIN.), MULTI-STEMMED	2
	CJ	Carpinus caroliniana 'J.N. Upright' / Firespire American Hornbeam	B & B	2" Cal	2
	CI	Crataegus crus-galli inermis / Thornless Cockspur Hawthorn	B & B	6'HT (MIN.), MULTI-STEMMED	5
	HK	Hamamelis vernalis 'Kohankie Red' / Kohankie Red Ozark Witchhazel	B & B	5' HT. (MIN.), MULTI-STEMMED	5
	MP	Malus x 'Prairifire' / Prairifire Crabapple	B & B	2" Cal	5

SYMBOL	CODE	BOTANICAL / COMMON NAME	CONT	SIZE	QTY
		DECIDUOUS SHRUBS			
	Am	Aronia melanocarpa 'Low Scape Mound' / Low Scape Mound Chokeberry	2 gal	CONT.	20
	Al	Aronia melanocarpa 'Morton' TM / Iroquois Beauty Black Chokeberry	5 gal	CONT.	26
	Ar	Aronia melanocarpa 'UCONNAM012' TM / Ground Hog Black Chokeberry	5 gal	CONT.	15
	Dl	Diervilla lonicera / Dwarf Bush Honeysuckle	2 gal	CONT.	10
	Ha	Hydrangea arborescens 'Annabelle' / Annabelle Hydrangea	5 gal	CONT.	4
	Hq	Hydrangea paniculata 'Little Quick Fire' / Little Quick Fire Hydrangea	5 gal	CONT.	10
	Pd	Physocarpus opulifolius 'Donna May' TM / Little Devil Ninebark	5 gal	CONT.	17
	Vp	Viburnum carlesii 'Compactum' / Compact Koreanspice Viburnum	5 gal	CONT.	6
		EVERGREEN SHRUBS			
	Jb	Juniperus Scopulorum 'Blue Arrow' / Blue Arrow Juniper	5 gal	CONT.	1
	Ps	Pinus strobus 'Blue Shag' / Blue Shag White Pine	5 gal	CONT.	2
	Tm	Taxus x media 'Tauntonii' / Taunton Yew	5 gal	CONT.	4
		GRASSES			
	cxa	Carex albicans / White-tinged Sedge	1 qt	CONT.	15
	hma	Hakonechloa macra 'All Gold' / Japanese Forest Grass	1 gal	CONT.	4
	pvs	Panicum virgatum 'Shenandoah' / Switch Grass	1 gal	CONT.	55
	sht	Sesleria heufleriana / Moor Grass	1 gal	CONT.	20
	sph	Sporobolus heterolepis / Prairie Dropseed	1 qt	CONT.	47
		PERENNIALS			
	asb	Allium x 'Summer Beauty' / Summer Beauty Allium	1 qt	CONT.	144
	aha	Amsonia hubrichtii 'Halfway to Arkansas' / Arkansas Blue-star	1 gal	CONT.	17
	asc	Asarum canadense / Wild Ginger	1 qt	CONT.	31
	aoo	Aster oblongifolius 'October Skies' / October Skies Aromatic Aster	1 gal	CONT.	82
	bam	Baptisia australis minor / Dwarf Blue Wild Indigo	1 gal	CONT.	47
	cnb	Calamintha nepeta 'Blue Cloud' / Blue Cloud Lesser Calamint	1 qt	CONT.	57
	epm	Echinacea x 'CBG Cone 2' / Pixie Meadowbrite® Purple Coneflower	1 gal	CONT.	38
	gme	Geranium maculatum 'Espresso' / Spotted Geranium	1 gal	CONT.	27
	hjp	Helleborus x hybridus 'Peppermint Ice' TM / Peppermint Ice Lenten Rose	1 gal	CONT.	6
	hva	Heuchera villosa var. atropurpurea / Maple Leaved Alumroot	1 gal	CONT.	14
	isc	Iris sibirica 'Caesar's Brother' / Caesar's Brother Siberian Iris	1 gal	CONT.	11
	pgb	Polygonatum biflorum / Solomon's Seal	1 gal	CONT.	15
	paa	Polystichum acrostichoides / Christmas Fern	1 gal	CONT.	6
	rfg	Rudbeckia fulgida 'Little Goldstar' / Little Goldstar Black-eyed Susan	1 gal	CONT.	48
		VINES			
	Hy	Hydrangea petiolaris / Climbing Hydrangea	2 gal	CONT.	10

GROUNDCOVERS SCHEDULE

NATIVE SEED - 01 Low-Growing Meadow for Dry Soils	21,017 sf			
NATIVE SEED - 02 Diverse Prairie for Dry Soils	52,884 sf			
NATIVE SEED - 03 Woodland Edge - Savanna for Medium Soils	5,808 sf			
BIO-FILTRATION BASIN PLUG MIX	14,305 sf			
Allium cernuum / Nodding Onion	152	2 1/2" plug	2% @ 18" o.c.	
Andropogon gerardii / Big Bluestem	191	2 1/2" plug	5% @ 18" o.c.	
Asclepias incarnata / Swamp Milkweed	380	2 1/2" plug	5% @ 18" o.c.	
Baptisia alba / White Wild Indigo	380	2 1/2" plug	5% @ 18" o.c.	
Carex albicans / Whitetinge Sedge	191	2 1/2" plug	5% @ 18" o.c.	
Carex eburnea / Bristleleaf Sedge	380	2 1/2" plug	5% @ 18" o.c.	
Carex muskingumensis / Palm Sedge	380	2 1/2" plug	5% @ 18" o.c.	
Carex praegracilis / California Field Sedge	380	2 1/2" plug	5% @ 18" o.c.	
Dalea purpurea / Purple Prairie Clover	191	2 1/2" plug	5% @ 18" o.c.	
Elymus canadensis / Canada Wild Rye	152	2 1/2" plug	2% @ 18" o.c.	
Iris versicolor / Blue Flag	191	2 1/2" plug	5% @ 18" o.c.	
Liatris spicata / Spike Gayfeather	380	2 1/2" plug	5% @ 18" o.c.	
Lobelia siphilitica / Great Lobelia	380	2 1/2" plug	5% @ 18" o.c.	
Monarda fistulosa / Bergamot	380	2 1/2" plug	5% @ 18" o.c.	
Panicum virgatum / Switch Grass	380	2 1/2" plug	5% @ 18" o.c.	
Pycnanthemum tenuifolium / Slender Mountain Mint	191	2 1/2" plug	5% @ 18" o.c.	
Ratibida pinnata / Yellow Coneflower	191	2 1/2" plug	5% @ 18" o.c.	
Rudbeckia subtomentosa / Sweet Black-eyed Susan	191	2 1/2" plug	5% @ 18" o.c.	
Senna hebecarpa / Wild Senna	191	2 1/2" plug	5% @ 18" o.c.	
Silphium perfoliatum / Cup Plant	191	2 1/2" plug	5% @ 18" o.c.	
Silphium terebinthinaceum / Prairie Dock	191	2 1/2" plug	5% @ 18" o.c.	
Sorghastrum nutans / Indian Grass	152	2 1/2" plug	2% @ 18" o.c.	
Sporobolus heterolepis / Prairie Dropseed	191	2 1/2" plug	5% @ 18" o.c.	
Symphyotrichum novae-angliae / New England Aster	380	2 1/2" plug	5% @ 18" o.c.	
Verbena hastata / Blue Vervain	191	2 1/2" plug	5% @ 18" o.c.	
Vernonia fasciculata / Ironweed	380	2 1/2" plug	5% @ 18" o.c.	
Zizia aurea / Golden Alexander	191	2 1/2" plug	5% @ 18" o.c.	
BLUEGRASS LAWN SOD	8,611 sf			
BLUEGRASS LAWN SEED Madison Parks Blend	111,488 sf			

A3

NOTES:
- VERIFY SQUARE FOOTAGE OF ALL GROUNDCOVER AREAS. IF PLAN CONFLICTS WITH SCHEDULE, PLAN SHALL GOVERN.
- FOR BIO-FILTRATION BASIN PLANTINGS, DISTRIBUTE PLANT SPECIES RANDOMLY AND EVENLY.

Imagination Center at Reindahl Park
Madison, WI
2025-01-06

Developed Lots	SF	Acres	Landscape Points Subtotal
Total Developed Area	330,256	7.58	
Landscape Points (5 pts/300 SF for first 5 acres, 1 pt/100 SF for additional)			4755
		Landscape Points Required	4755

Development Frontage (Parkside Drive)	LF	Overstory Trees Required*	Shrubs Required
Total LF of Street Frontage Between Parking/Building & Street	404	13	67

Element	Point Value	Quantity Proposed	Quantity Existing	Points Achieved
Overstory Deciduous Tree	35	4	5	315
Ornamental Tree	15	1	1	30
Tall Evergreen Tree	35	1	9	350
Upright Evergreen Shrub	10	0	0	0
Shrub, deciduous	3	0	0	0
Shrub, evergreen	4	0	0	0
Ornamental Grass/Perennial	2	0	0	0
		Development Frontage Points Total		695

Interior Parking Lots	SF	Overstory Trees Required**	Islands Achieved (SF)
Total Parking Lot Area	59,016	30	
Min. Parking Lot Islands (8%)	4,721		8,037

Element	Point Value	Quantity Proposed	Quantity Existing	Points Achieved
Overstory Deciduous Tree	35	15	1	560
Ornamental Tree	15	0	0	0
Tall Evergreen Tree	35	0	0	0
Upright Evergreen Shrub	10	0	0	0
Shrub, deciduous	3	47	0	141
Shrub, evergreen	4	0	0	0
Ornamental Grass/Perennial	2	264	0	528
		Interior Parking Lots Points Total		1229

General Site, Foundation, Screening

Element	Point Value	Quantity Proposed	Quantity Existing	Points Achieved
Overstory Deciduous Tree	35	16	32	1680
Ornamental Tree	15	12	0	180
Tall Evergreen Tree	35	6	1	245
Upright Evergreen Shrub	10	0	0	0
Shrub, deciduous	3	61	0	183
Shrub, evergreen	4	7	0	28
Vine, deciduous	3	10	0	30
Ornamental Grass/Perennial	2	436	0	872
Ornamental/Decorative Fence or Wall (4 pts/10 LF)	4	0	0	0
		Foundation Plantings Total		3218

TOTAL LANDSCAPE POINTS	5142

* Two (2) ornamental trees or two (2) evergreen trees may be used in place of one (1) overstory deciduous tree.
** Two (2) ornamental deciduous trees may be substituted for one (1) canopy tree, but ornamental trees shall constitute no more than twenty-five percent (25%) of the required trees.

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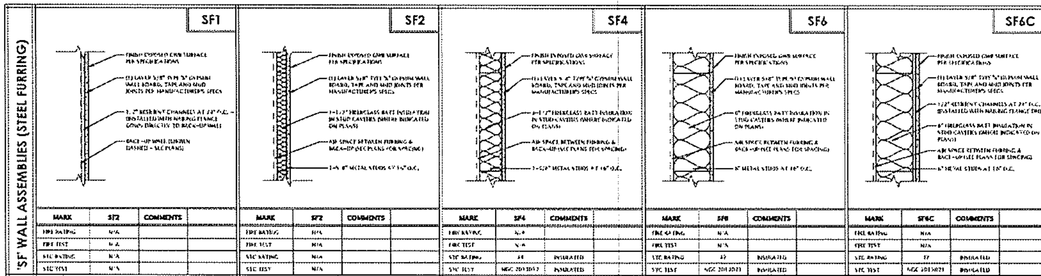
IMAGINATION CENTER AT REINDAHL PARK

Bid Documents

REVISION SCHEDULE

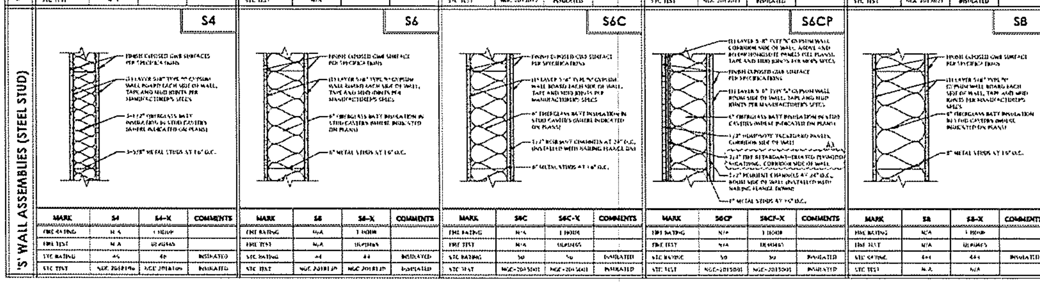
SHEET TITLE
PLANT SCHEDULES AND LANDSCAPE POINTS

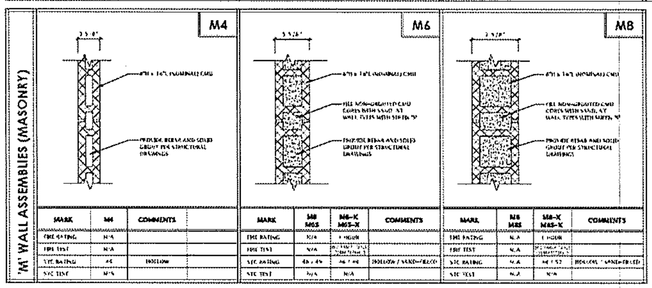
SHEET NUMBER
L601

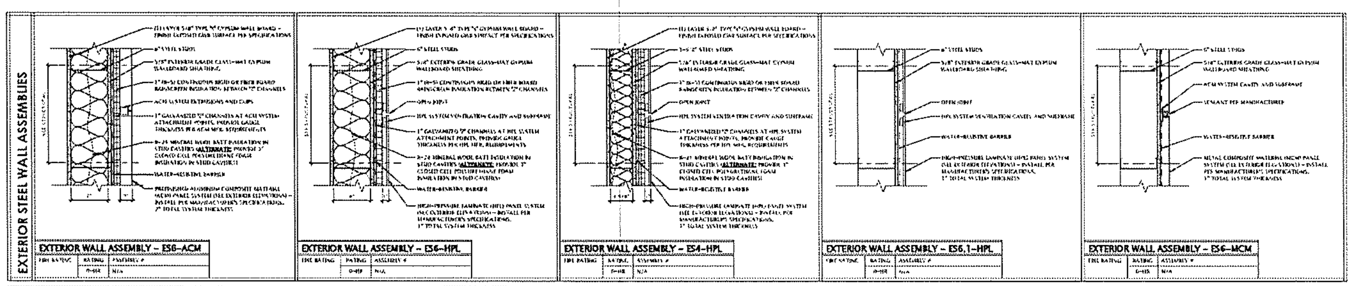


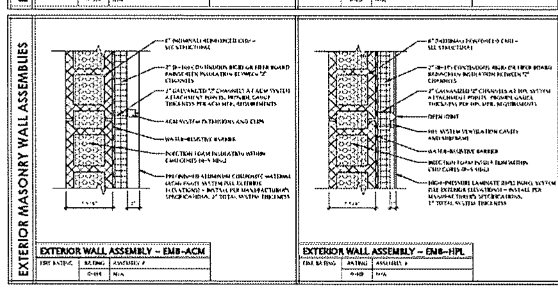
'S' WALL TYPE NOTES

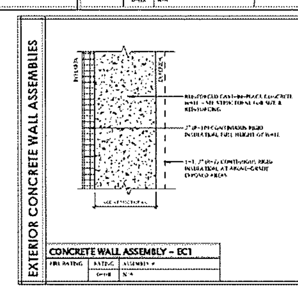
- SEE 2009 UNDERWRITER'S LABORATORY DIRECTORY FOR ADDITIONAL INFORMATION.
- SEE 2009 UNDERWRITER'S LABORATORY DIRECTORY FOR ALLOWABLE INSULATION TYPES IN RATED WALLS.
- SEE STRUCTURAL DRAWINGS FOR FINAL STUD SPACING.
- REFER TO SPECIFICATIONS FOR METAL STUD GAUGE INFORMATION.
- STC RATINGS ARE WITH INSULATION. AT ALL INTERIOR WALLS, PROVIDE ACOUSTICAL SEALANT AT TOP & BOTTOM OF PARTITION, AND AT ALL WALL PENETRATIONS.
- PROVIDE MOISTURE RESISTANT GYPSUM BOARD AT ALL WET AREAS INCLUDING KITCHENS, BATHROOMS, AND RESTROOMS.











ADDENDUM

JLA ARCHITECTS
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BID DOCUMENTS

REVISION SCHEDULE

SHEET TITLE

EXTERIOR AND INTERIOR WALL ASSEMBLIES

SHEET NUMBER

A500

ADDENDUM

RES-01: TARKETT JOHNSONITE 24x24 COLOR SPLASH HAMMERED SPECKLED LAKE SHORE

RES-02: TARKETT JOHNSONITE 24x24 COLOR SPLASH HAMMERED SPECKLED TERRYS BLUE

RES-03: TARKETT JOHNSONITE 24x24 COLOR SPLASH HAMMERED SPECKLED VINEYARD

WOF-01: INTERFACE FLOR INDUSTRIOUS - BEIGE

WOF-02: INTERFACE FLOR INDUSTRIOUS - BEIGE, MAHOGANY, AND LIME

POR-01: CERAMIC TILEWORKS GHITAKE MOON 12X24 THIRD LAP INSTALL

POR-02: CERAMIC TILEWORKS PLATFORM BLUE 12X24 THIRD LAP INSTALL

CPT-01: MILLIKEN REVELATION - PATHWAY TRIMLINE, FOREST

CPT-02: MILLIKEN REVELATION - PATHWAY TRIMLINE, SAIL

STAINED CONCRETE

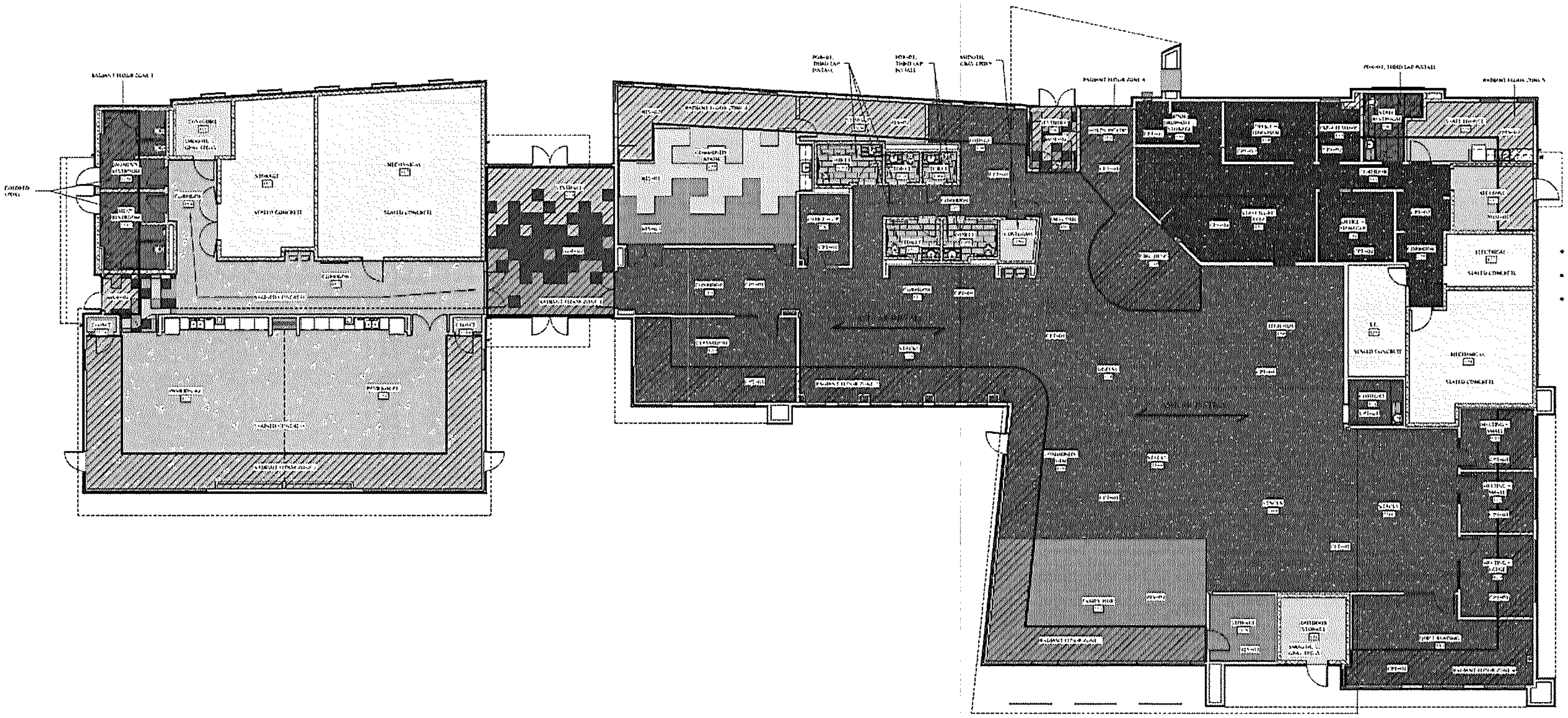
SEALED CONCRETE

SMOOTH GRAY EPOXY: DUR-A-FLEX SHOP FLOOR EPOXY, SLATE GRAY

COLORED EPOXY: DUR-A-FLEX, ARMOR TOP GLOSS WITH GRIT, OCEAN

GENERAL NOTES:

- FINAL FLOORING PATTERN/LAYOUT TO BE COMPLETED BY FLOORING CONTRACTOR.
- FLOORING CONTRACTOR TO PROVIDE INSTALLATION DRAWINGS AT AREAS WHERE THERE ARE MULTIPLE COLORS FOR REVIEW AND APPROVAL PRIOR TO ORDER PLACEMENT.
- IN-FLOOR RADIANT HEAT ZONES ARE FOR REFERENCE ONLY. REFER TO MECHANICAL PLANS FOR EXACT LOCATION AND INFORMATION.
- FOLLOW MANUFACTURERS REQUIREMENTS FOR INSTALL OVER IN-FLOOR RADIANT HEAT.
- TRANSITIONS:
  1. SCHLUTER SYSTEMS RENO U 1/8" RAMPED TRANSITION OR EQUAL FROM CARPET TO PORCELAIN TILE AND CARPET TO EPOXY. COLOR: CLEAR ANODIZED.
  2. SCHLUTER SYSTEMS RENO U 1/8" RAMPED TRANSITION OR EQUAL FROM EPOXY TO CONCRETE. COLOR: CLEAR ANODIZED.
  3. JOHNSONITE SLIM LINE RUBBER TRANSITIONS FROM - COLOR IRONSTONE FROM CARPET TO CONCRETE.
  4. JOHNSONITE METAL EDGE ME001 TRANSITION - COLOR IRONSTONE FROM RUBBER TO CARPET.
- FLOORING INSTALLATIONS
  1. CARPET: ASHLAR INSTALL
  2. WALK OFF CARPET IN VESTIBULES: INSTALL PER PATTERN AS SHOWN; QUARTER-TURNED TILES
  3. PORCELAIN TILE: THIRD LAP INSTALL
  4. RESILIENT: INSTALL PER PATTERN AS SHOWN



1 FIRST FLOOR RENDERED FLOOR PLAN

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RENDERED FLOOR FINISH PLAN

AI102

CWT-01: CERAMIC TILEWORKS SYMMETRY, MORNING MIST LINEN, 12X24, HORIZONTAL STACK INSTALLATION

CWT-02: CROSSVILLE NATIVE METAL NICKEL PLATE, 12X24, VERTICAL STACK INSTALLATION

CWT-03: VIRGINIA TILE WOW USA - DUO WHITE 6X6, RANDOM INSTALLATION

CWT-04: VIRGINIA TILE 6TH AVENUE JADE 8X9 CURVE CHEVRON MOSAIC, GLOSSY

CWT-05: CERAMIC TILEWORKS COUNTRY ASH BLUE, GLOSSY, GLAZED CERAMIC WALL TILE SUBWAY INSTALLATION

CWT-06: CERAMIC TILEWORKS EQUIPE VILLAGE SILVER MIST, 2.5X5, GLOSSY, SUBWAY INSTALLATION

CWT-07: CERAMIC TILEWORKS SYMMETRY, SUNRISE LINEN, 12X24, HORIZONTAL STACK INSTALLATION

CWT-08: CERAMIC TILEWORKS:
A. UP AVANA 4X4 GLOSSY
B. SMALL PRUNE 4X4 GLOSSY
C. SMALL FLAMINGO 4X4 GLOSSY

CWT-09. CERAMIC TILEWORKS:
A. SMALL LIGHT BLUE 4X4 GLOSSY
B. SMALL SAGE 4X4 GLOSSY
C. SMALL PRUSSIAN 4X4 GLOSSY

PT-01 & SRPT-01: SW 9166 DRIFT OF MIST

PT-02: OMIT

PT-03: SW 7018 DOVETAIL (HOLLOW METAL FRAMES)

PT-04: SW 2812 ROOKWOOD JADE

PT-05: SW 2854 CARIBBEAN CORAL

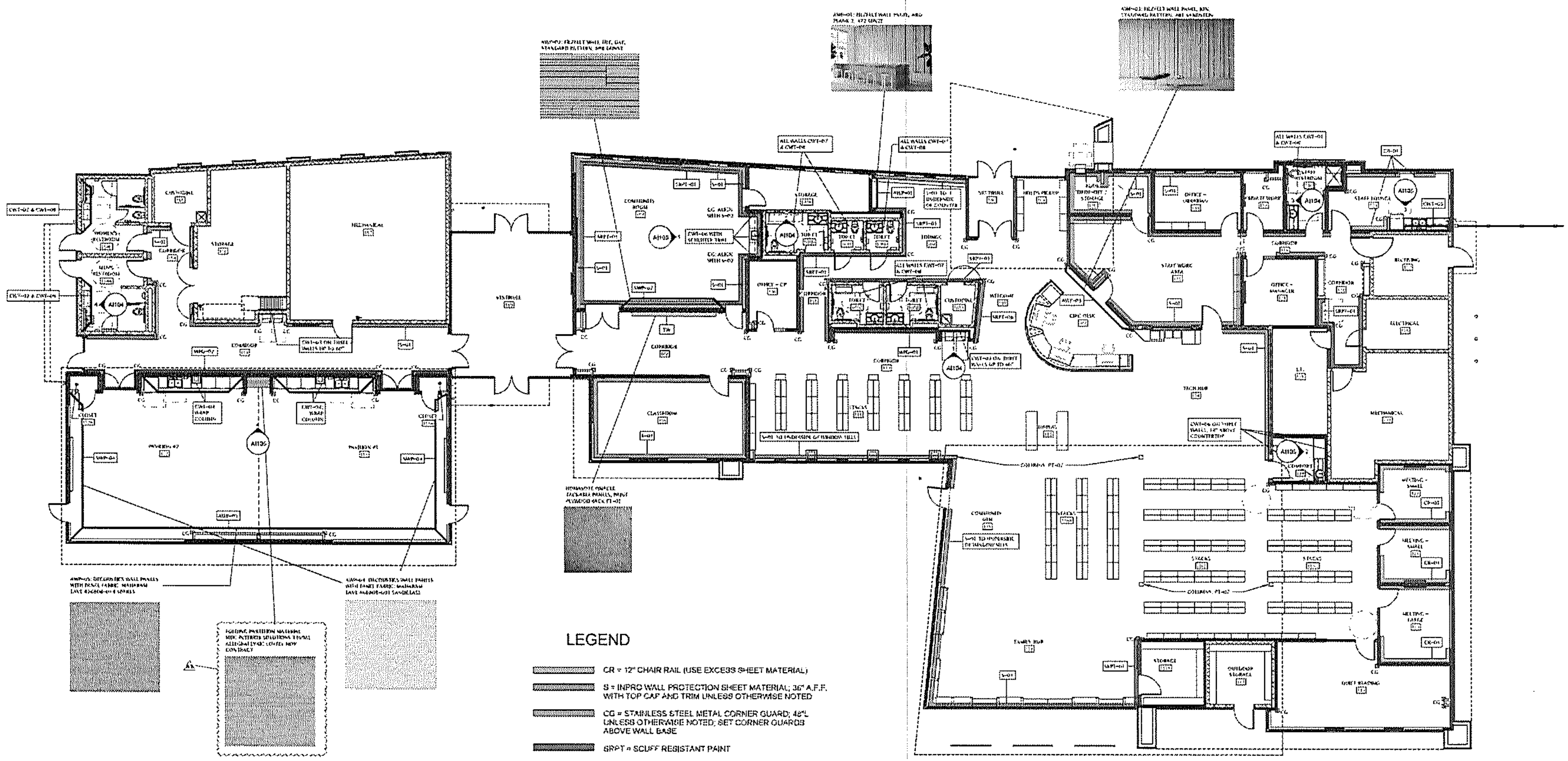
PT-06 & SRPT-06: SW 7601 DOCKSIDE BLUE

PT-07: SW 6247 KRYPTON

WALL PROTECTION / FINISH NOTES:
- ALL WALLS PAINTED PT-01 UNLESS OTHERWISE NOTED.
- NO CORNER GUARDS ON EXPOSED STEEL COLUMNS.
- ALL EXPOSED METAL COLUMNS TO BE PAINTED PT-03, UNLESS OTHERWISE NOTED.
- WALL PROTECTION TO INCLUDE TOP CAP AND CORNER TRIM.
- WALL PROTECTION REQUIRES SMOOTH, DUST-FREE FINISH.
- WALL PROTECTION GRAPHICS: INCLUDE CLEAR WALL PROTECTION WITH BACK PRINTED GRAPHIC. IMAGES TBD.
- PAINT GYPSUM BULKHEADS PT-01 UNLESS OTHERWISE NOTED; REFER TO SHEET AI113 REFLECTED CEILING PLAN FOR CEILING FINISHES.
- CHAIR RAILS: INCLUDE TOP CAP AND TRIM
  1. 42" A.F.F. TO TOP IN MEETING ROOMS 120, 121 & 122
  2. 34" A.F.F. TO TOP IN STAFF LOUNGE 129

TILE ACCESSORIES NOTES:
- INCLUDE SCHLUTER SYSTEMS DILEX-AHKA OR EQUAL COVE AT CERAMIC WALL TILE TO EPOXY FLOOR TRANSITIONS
- INCLUDE SCHLUTER SYSTEMS DILEX-EHK OR EQUAL AT CERAMIC WALL/FLOOR TILE TRANSITIONS
- INCLUDE SCHLUTER SYSTEMS JOLLY OR EQUAL AT EDGE/CORNER PROTECTION

CASEWORK NOTES:
- CASEWORK ELEVATIONS AND DETAILS BY JLA.
- CASEWORK: WILSONART LAMINATE PALISADES OAK 7987-38 FINE VELVET FINISH
- CIRC DESK AND BENCHES: WILSONART HIGH IMPACT LAMINATE PALISADES OAK 7987-38 FINE VELVET FINISH
- SOLID SURFACE TOPS: WILSONART SOLID SURFACE MORNING ICE 9204CE
- WINDOW SILLS: WILSONART SOLID SURFACE MORNING ICE 9204CE
- STAFF RESTROOM SINK APRON: FORMICA LAMINATE WEATHERED ASH 8842-WR WOODBRUSH FINISH
- STAFF RESTROOM TOP: WILSONART SOLID SURFACE ARCTIC DUNE 9253CM
- MAIN RESTROOMS SINK APRON: NEVAMAR LAMINATE GALAO WX0075-AB AGED BARK
- MAIN RESTROOM TOPS: AVONITE SURFACES ALASKAN STONE 4312



LEGEND

- CR = 12" CHAIR RAIL (USE EXCESS SHEET MATERIAL)
- S = INPRO WALL PROTECTION SHEET MATERIAL; 36" A.F.F. WITH TOP CAP AND TRIM UNLESS OTHERWISE NOTED
- CG = STAINLESS STEEL METAL CORNER GUARD; 48"L UNLESS OTHERWISE NOTED; SET CORNER GUARDS ABOVE WALL BASE
- SRPT = SCUFF RESISTANT PAINT
- WPG = INPRO ASPEX PRINTED WALL PROTECTION WITH CUSTOM GRAPHIC
- TW = TACKABLE WALL
- PT = PAINT
- AWP = ACOUSTIC WALL PANEL

1 FIRST FLOOR WALL FINISH PLAN

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WALL FINISH PLAN

AI103

ADDENDUM

CWT-01: CERAMIC TILEWORKS SYMMETRY, MORNING MIST LINEN, 12X24, HORIZONTAL STACK INSTALLATION

CWT-02: CROSSVILLE NATIVE METAL NICKEL PLATE, 12X24, VERTICAL STACK INSTALLATION

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C. SMALL FLAMINGO 4X4 GLOSSY

CWT-09, CERAMIC TILEWORKS:
A. SMALL LIGHT BLUE 4X4 GLOSSY
B. SMALL SAGE 4X4 GLOSSY
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PT-01 & SRPT-01: SW 9166 DRIFT OF MIST

PT-02: OMIT

PT-03: SW 7018 DOVETAIL (HOLLOW METAL FRAMES)

PT-04: SW 2812 ROOKWOOD JADE

PT-05: SW 2854 CARIBBEAN CORAL

PT-06 & SRPT-06: SW 7601 DOCKSIDE BLUE

PT-07: SW 6247 KRYPTON

WALL PROTECTION / FINISH NOTES:
- ALL WALLS PAINTED PT-01 UNLESS OTHERWISE NOTED.
- NO CORNER GUARDS ON EXPOSED STEEL COLUMNS.
- ALL EXPOSED METAL COLUMNS TO BE PAINTED PT-03, UNLESS OTHERWISE NOTED.
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- STAFF RESTROOM TOP: WILSONART SOLID SURFACE ARCTIC DUNE 925 ICM
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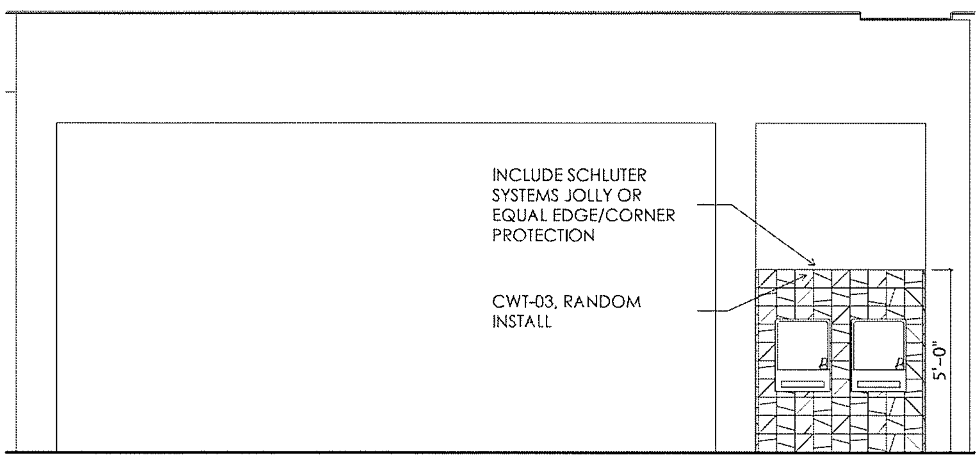
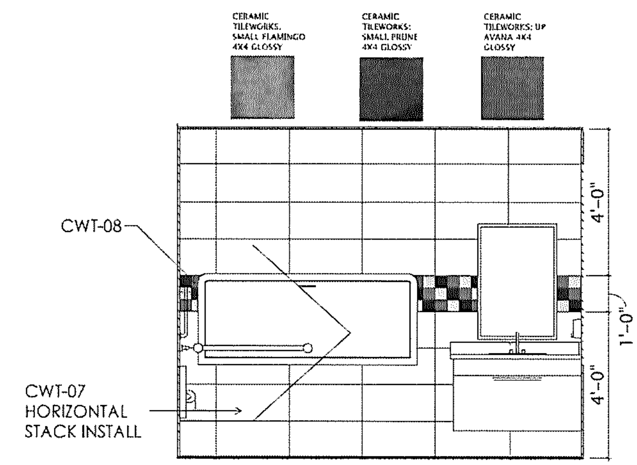
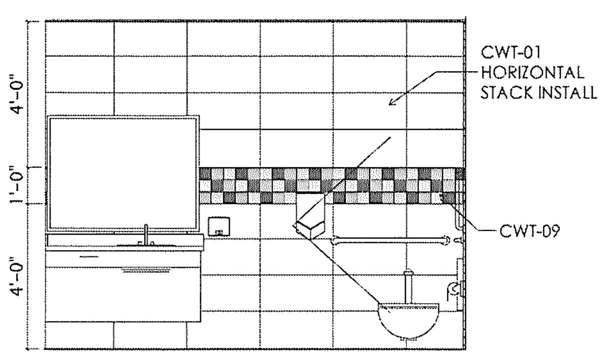


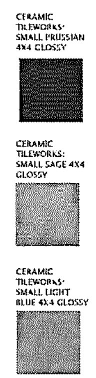
1 WATER FOUNTAIN - TILE INSTALLATION
3/4" = 1'-0"

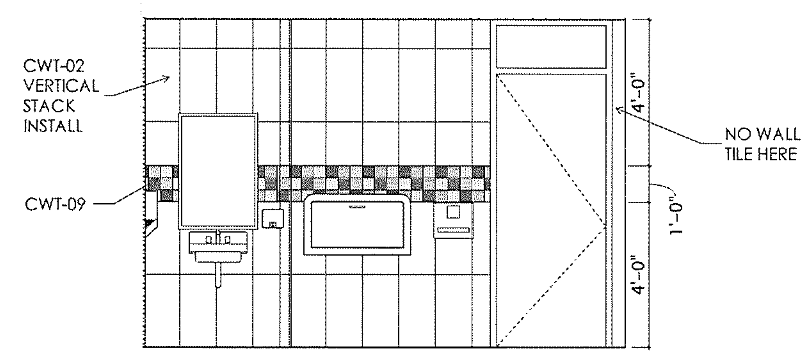


2 TOILET ROOMS - WALL FINISHES TYPICAL
3/4" = 1'-0"



3 STAFF RESTROOM - WALL FINISHES TYPICAL
3/4" = 1'-0"





4 PAVILION RESTROOM - NORTH WALL TILE INSTALL
3/4" = 1'-0"

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InteriorLOGIC

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PROGRESS DOCUMENTS

REVISION SCHEDULE

WALL FINISH ELEVATIONS

AI104

Addendum

CWT-01: CERAMIC TILEWORKS SYMMETRY, MORNING MIST LINEN, 12X24, HORIZONTAL STACK INSTALLATION

CWT-02: CROSSVILLE NATIVE METAL NICKEL PLATE, 12X24, VERTICAL STACK INSTALLATION

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PT-03: SW 7018 DOVETAIL (HOLLOW METAL FRAMES)

PT-04: SW 2812 ROOKWOOD JADE

PT-05: SW 2854 CARIBBEAN CORAL

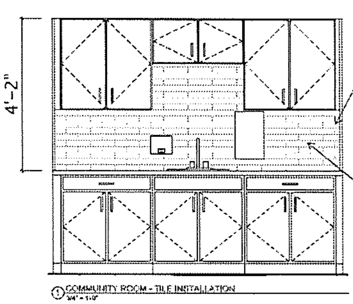
PT-06 & SRPT-06: SW 7601 DOCKSIDE BLUE

PT-07: SW 6247 KRYPTON

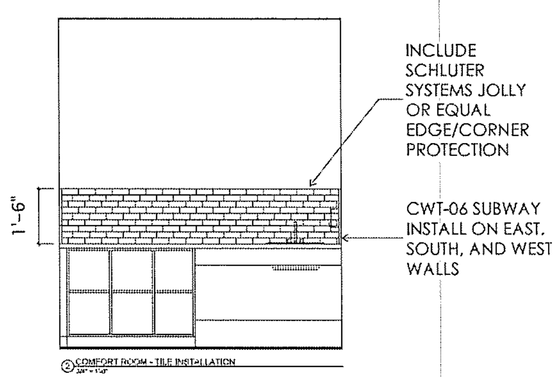
WALL PROTECTION / FINISH NOTES:
- ALL WALLS PAINTED PT-01 UNLESS OTHERWISE NOTED.
- NO CORNER GUARDS ON EXPOSED STEEL COLUMNS.
- ALL EXPOSED METAL COLUMNS TO BE PAINTED PT-03, UNLESS OTHERWISE NOTED.
- WALL PROTECTION TO INCLUDE TOP CAP AND CORNER TRIM.
- WALL PROTECTION REQUIRES SMOOTH, DUST-FREE FINISH.
- WALL PROTECTION GRAPHICS: INCLUDE CLEAR WALL PROTECTION WITH BACK PRINTED GRAPHIC. IMAGES TBD.
- PAINT GYPSUM BULKHEADS PT-01 UNLESS OTHERWISE NOTED; REFER TO SHEET AI113 REFLECTED CEILING PLAN FOR CEILING FINISHES.
- CHAIR RAILS: INCLUDE TOP CAP AND TRIM
  1. 42" A.F.F. TO TOP IN MEETING ROOMS 120, 121 & 122
  2. 34" A.F.F. TO TOP IN STAFF LOUNGE 129

TILE ACCESSORIES NOTES:
- INCLUDE SCHLUTER SYSTEMS DILEX-AHKA OR EQUAL COVE AT CERAMIC WALL TILE TO EPOXY FLOOR TRANSITIONS
- INCLUDE SCHLUTER SYSTEMS DILEX-EHK OR EQUAL AT CERAMIC WALL/FLOOR TILE TRANSITIONS
- INCLUDE SCHLUTER SYSTEMS JOLLY OR EQUAL AT EDGE/CORNER PROTECTION

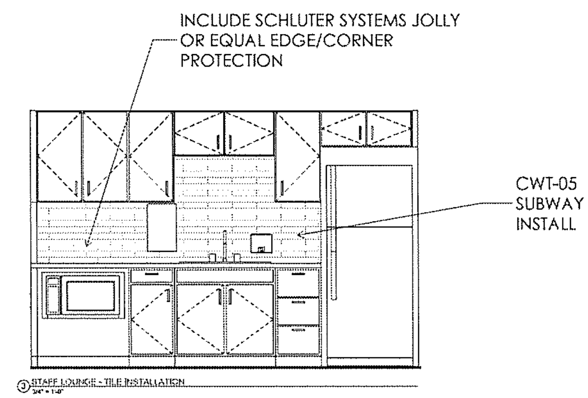
CASEWORK NOTES:
- CASEWORK ELEVATIONS AND DETAILS BY JLA.
- CASEWORK: WILSONART LAMINATE PALISADES OAK 7987-38 FINE VELVET FINISH
- CIRC DESK AND BENCHES: WILSONART HIGH IMPACT LAMINATE PALISADES OAK 7987-38 FINE VELVET FINISH
- SOLID SURFACE TOPS: WILSONART SOLID SURFACE MORNING ICE 9204CE
- WINDOW SILLS: WILSONART SOLID SURFACE MORNING ICE 9204CE
- STAFF RESTROOM SINK APRON: FORMICA LAMINATE WEATHERED ASH 8842-WR WOODBRUSH FINISH
- STAFF RESTROOM TOP: WILSONART SOLID SURFACE ARCTIC DUNE 9253CM
- MAIN RESTROOMS SINK APRON: NEVAMAR LAMINATE GALAO WX0075-AE AGED BARK
- MAIN RESTROOM TOPS: AVONITE SURFACES ALASKAN STONE 4312



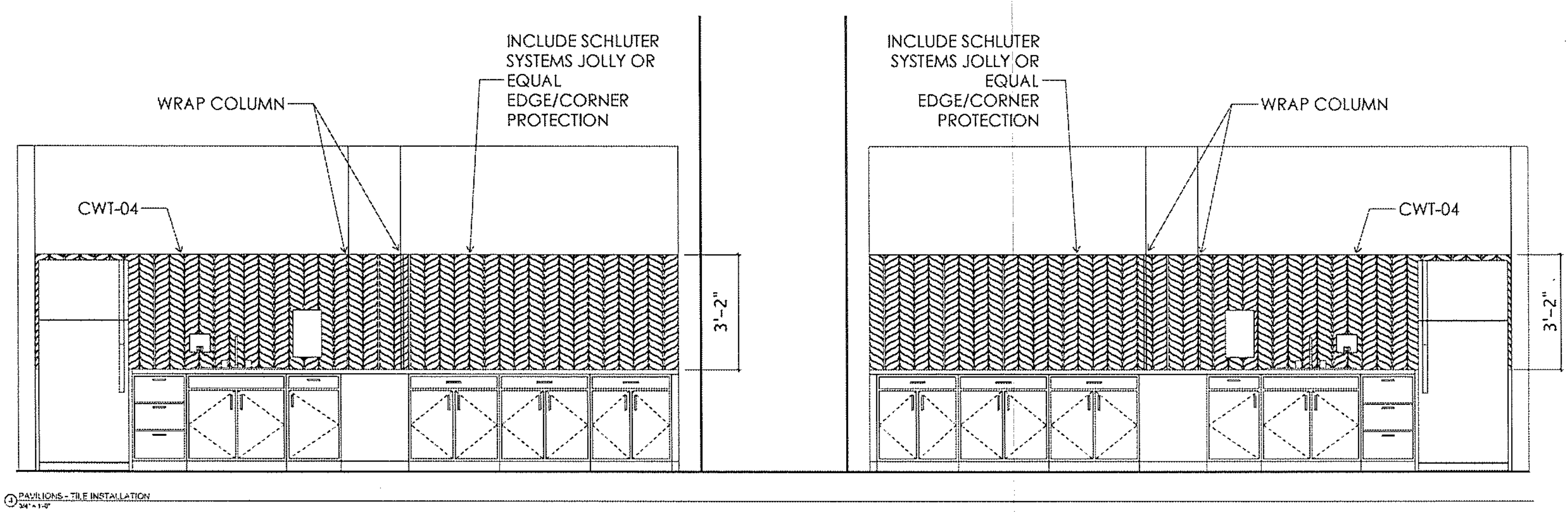
1 COMMUNITY ROOM - TILE INSTALLATION
3/4" = 1'-0"



2 COMFORT ROOM - TILE INSTALLATION
3/4" = 1'-0"



3 STAFF LOUNGE - TILE INSTALLATION
3/4" = 1'-0"



4 PAVILIONS - TILE INSTALLATION
3/4" = 1'-0"

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REVISION SCHEDULE

WALL FINISH ELEVATIONS

AI105

ADDENDUM

FINISHES & MATERIAL SCHEDULE

DIVISION	TITLE	CODE	SPECIFICATION	COLOR	INSTALLATION	REP CONTACT INFO
09 FINISHES						
09 30 00	TILING					
	FLOOR	POR-01	CERAMIC TILEWORKS OHITAKE GROUT: LATICRETE 54 DESERT KHAKI 1/4" GROUT JOINT	MOON	1/3 LAP	Liz Nelson; Cell | (414) 412-0828 liz@ceramictileworksmo.com
		POR-02	CERAMIC TILEWORKS PLATFORM GROUT: LATICRETE 78 STERLING SILVER 1/8" GROUT JOINT	BLUE	1/3 LAP	Liz Nelson; Cell | (414) 412-0828 liz@ceramictileworksmo.com
	WALL	CWT-01	CERAMIC TILEWORKS SYMMETRY 12X24 RECTIFIED TILE GROUT: LATICRETE 78 STERLING SILVER 3/16" GROUT JOINT	MORNING MIST LINEN	HORIZONTAL STACK	Liz Nelson; Cell | (414) 412-0828 liz@ceramictileworksmo.com
		CWT-02	CROSSVILLE NATIVE METAL 12x24 RECTIFIED TILE, UPS FINISH, GROUT: LATICRETE 78 STERLING SILVER 1/8" GROUT JOINT	NICKEL PLATE	VERTICAL STACK	Caitlin Frucci (763) 218-7230 Caitlin.Frucci@virginiatile.com
		CWT-03	VIRGINIA TILE WOW USA DUO 6x6 RECTIFIED TILE, UPS FINISH, GROUT: LATICRETE 78 STERLING SILVER 1/8" GROUT JOINT	WHITE	STACKED - RANDOM PATTERN	Caitlin Frucci (763) 218-7230 Caitlin.Frucci@virginiatile.com
		CWT-04	VIRGINIA TILE 5TH AVENUE 4x8 CURVE CHEVRON MOSAIC TILE, GLOSSY FINISH GROUT: LATICRETE 78 STERLING SILVER 1/8" GROUT JOINT	JADE	STACKED	Caitlin Frucci (763) 218-7230 Caitlin.Frucci@virginiatile.com
		CWT-05	CERAMIC TILEWORKS COUNTRY, GLAZED CERAMIC WALL TILE, GLOSSY FINISH, GROUT: LATICRETE 78 STERLING SILVER GROUT: 3/16" GROUT JOINT LONG LEAD TIME ITEM, CONFIRM WITH CONSTRUCTION SCHEDULE.	ASH BLUE	SUBWAY	Liz Nelson; Cell | (414) 412-0828 liz@ceramictileworksmo.com
		CWT-06	CERAMIC TILEWORKS VILLAGE 2.5x5 TILE, GLOSSY FINISH GROUT: LATICRETE 78 STERLING SILVER GROUT: 3/16" GROUT JOINT	SILVER MIST	SUBWAY	Liz Nelson; Cell | (414) 412-0828 liz@ceramictileworksmo.com
		CWT-07	CERAMIC TILEWORKS SYMMETRY 12X24 RECTIFIED TILE GROUT: LATICRETE 78 STERLING SILVER GROUT: 3/16" GROUT JOINT	SUNRISE LINEN	HORIZONTAL STACK	Liz Nelson; Cell | (414) 412-0828 liz@ceramictileworksmo.com
		CWT-08	CERAMIC TILEWORKS UP 4X4 TILE, GLOSSY CERAMIC TILEWORKS SMALL 4X4 TILE, GLOSSY GROUT: LATICRETE 78 STERLING SILVER GROUT: 3/16" GROUT JOINT	UP - AVANA SMALL - PRUNE SMALL - FLAMINGO	PATTERN AS INDICATED	Liz Nelson; Cell | (414) 412-0828 liz@ceramictileworksmo.com
		CWT-09	CERAMIC TILEWORKS SMALL 4X4 TILE, GLOSSY GROUT: LATICRETE 78 STERLING SILVER GROUT: 3/16" GROUT JOINT	SMALL - LIGHT BLUE, SMALL - PRUSSIAN	PATTERN AS INDICATED	Liz Nelson; Cell | (414) 412-0828 liz@ceramictileworksmo.com
	TILE ACCESSORIES					
		Floor	SCHLUTER SYSTEMS RENO U RAMPED TRANSITION OR EQUAL FROM CARPET TO PORCELAIN TILE AND CARPET TO EPOXY	AE ANODIZED ALUMINUM		
		Wall	SCHLUTER SYSTEMS – JOLLY OR EQUAL - TOP/END CAP SCHLUTER SYSTEMS – DILEX-AHKA COVE OR EQUAL - WALL TILE TO EPOXY FLOOR SCHLUTER SYSTEMS – DILEX-EHK OR EQUAL - CERAMIC WALL TO FLOOR TILE	AE ANODIZED ALUMINUM		
09 60 00	FLOORING					
03 35 19	CONCRETE FLOOR STAINING	STAINED CONCRETE	SIKA USA LITHOCHROME CHEMSTAIN CLASSIC	CS 11 COPPER PATINA		
09 65 00	RESILIENT FLOOR	RES-01	TARKETT JOHNSONITE RUBBER TILE 24x24, 3.17MM THICK, HAMMERED SPECKLED	VE2 LAKESHORE	PATTERN AS INDICATED	Melissa Smith | (414) 299-0156 Melissa.Smith@tarkett.com
		RES-02	TARKETT JOHNSONITE RUBBER TILE 24x24, 3.17MM THICK, HAMMERED SPECKLED	VEE PERRYS BLUE	PATTERN AS INDICATED	Melissa Smith | (414) 299-0156 Melissa.Smith@tarkett.com
		RES-03	TARKETT JOHNSONITE RUBBER TILE 24x24, 3.17MM THICK, HAMMERED SPECKLED	VJS VINEYARD	PATTERN AS INDICATED	Melissa Smith | (414) 299-0156 Melissa.Smith@tarkett.com
09 65 13	RESILIENT BASE					
		RB-01	Tarkett 4", 1/8 gauge, coiled. Toeless in carpeted areas. With Toe at VCT or SL areas.	32 PEBBLE		
09 65 13	ACCESSORIES					
			SCHLUTER SYSTEMS RENO U 1/4" RAMPED TRANSITION OR EQUAL FROM EPOXY TO CONCRETE, CARPET TO PORCELAIN TILE, AND CARPET TO EPOXY	CLEAR ANODIZED		
			JOHNSONITE SLIM LINE RUBBER TRANSITIONS FROM CARPET TO CONCRETE	0017E IRONSTONE		
			JOHNSONITE METAL EDGE ME001 TRANSITION FROM RUBBER TO CARPET	C0178 IRONSTONE		
09 67 00	FLUID APPLIED FLOORING					
		COLORED EPOXY	DUR-A-FLEX DUR-A-CHIP MICRO BROADCAST HIGH PERFORMANCE EPOXY	OCEAN		
		SMOOTH EPOXY	DUR-A-FLEX SHOP FLOOR PIGMENTED EPOXY FLOOR 1/8" THICKNESS	MEDIUM GREY		
09 68 13	CARPET TILE	CPT-01	MILLIKEN REVELATION PATHWAY TRIMLINE 50CM x 1M CARPET TILE	FOREST	ASHLAR PLANK	Roxanne Carlson, 414.418.9014 roxanne.carlson@milliken.com
		CPT-02	MILLIKEN REVELATION PATHWAY TRIMLINE 50CM x 1M CARPET TILE	SAIL	ASHLAR PLANK	Roxanne Carlson; 414.418.9014 roxanne.carlson@milliken.com
	WALK-OFF	WOF-01	INTERFACE FLOR INDUSTRIOUS 50CM x 50CM TILE	BEIGE	QUARTER TURN	Britt Resheske, 608.886.0328 britt.resheske@interface.com
		WOF-02	INTERFACE FLOR INDUSTRIOUS 50CM x 50CM TILE	BEIGE, MAHOGANY, LIME	QUARTER TURN, PATTERN AS INDICATED	Britt Resheske; 608.886.0328 britt.resheske@interface.com
09 80 00	WALL FINISHES					
09 84 33	ACOUSTIC TREATMENT	AWP-01	FILZFELT AND PLANK 2.3 WALL MOUNTED PANELS REPEAT WIDTH 5"	472 MINZE	STRAPPING WITH INTERLOCKING MOUNTS; FLOOR TO CEILING	Amy Mayer: 312.454.6920 amayer@spinneybeck.com
		AWP-02	FILZFELT GAP STANDARD PATTERN	600 DUNST	CONSTRUCTION ADHESIVE; LOWER PANELS TO BE REMOVABLE FOR FUTURE REPLACEMENT, FLOOR TO CEILING	Amy Mayer: 312.454.6920 amayer@spinneybeck.com
		AWP-03	FILZFELT ION WALL PANELS STANDARD PATTERN; ONE COLOR	481 SANDSTEIN	Z-CLIP; FLOOR TO CEILING	Amy Mayer: 312.454.6920 amayer@spinneybeck.com
		AWP-04	DECOUSTICS WALL PANELS		METAL CLIPS	
		AWP-04 PANEL FABRIC	MAHARAM FAME 466608-001	001 SANDGLASS		Cara McDonough: 414.458.8144 cmcdonough@maharam.com
		AWP-05	DECOUSTICS WALL PANELS		METAL CLIPS	

DIVISION	TITLE	CODE	SPECIFICATION	COLOR	INSTALLATION	REP CONTACT INFO.
09 90 00	PAINTING AND COATING					
	GENERAL	PT-01	Sherwin Williams ProMar® 200 Zero VOC LATEX, EGGSHELL FINISH	SW 9166 DRIFT OF MIST		
	GENERAL SCUFF RESISTANT	SRPT-01	Sherwin Williams Scuff Tuff Interior Waterbased Enamel LATEX, EGGSHELL FINISH	SW 9166 DRIFT OF MIST		
	ACCENT	PT-02	OMIT			
	HM FRAMES & EXPOSED COLUMNS	PT-03	Sherwin Williams – Enamel satin finish Must not exceed 250g/l VOC per Green Seal Standard GC-03 for anti-rust –paints applied to interior ferrous metal	SW 7018 DOVETAIL		
	CEILING TILE, GRID & TRIM	PT-04	Sherwin Williams	SW 2812 ROCKWOOD JADE	CEILING TILE AND GRID FINISHED BY MANUFACTURER.	
	CEILING GRID & TRIM	PT-05	Sherwin Williams ProMar® 200 Zero VOC LATEX, EGGSHELL FINISH	SW 2854 CARIBBEAN CORAL	GRID FINISHED BY MANUFACTURER.	
	ACCENT	PT-06	Sherwin Williams ProMar® 200 Zero VOC LATEX, EGGSHELL FINISH	SW 7601 DOCKSIDE BLUE		
	ACCENT SCUFF RESISTANT	SRPT-06	Sherwin Williams Scuff Tuff Interior Waterbased Enamel LATEX, EGGSHELL FINISH	SW 7601 DOCKSIDE BLUE		
	ACCENT	PT-07	Sherwin Williams ProMar® 200 Zero VOC LATEX, EGGSHELL FINISH	SW 6747 KRYPTON		

ROOM FINISH NOTES:

- FINAL FLOORING PATTERN/LAYOUT TO BE COMPLETED BY FLOORING CONTRACTOR.
- FLOORING CONTRACTOR TO PROVIDE INSTALLATION DRAWINGS AT AREAS WHERE THERE ARE MULTIPLE COLORS FOR REVIEW AND APPROVAL PRIOR TO ORDER PLACEMENT.
- FOLLOW MANUFACTURERS REQUIREMENTS FOR INSTALL OVER IN-FLOOR RADIANT HEAT.
- ALL WALLS PAINTED PT-01 UNLESS OTHERWISE NOTED.
- NO CORNER GUARDS ON EXPOSED STEEL COLUMNS.
- ALL EXPOSED METAL COLUMNS TO BE PAINTED PT-03, UNLESS OTHERWISE NOTED.
- WALL PROTECTION TO INCLUDE TOP CAP AND CORNER TRIM.
- WALL PROTECTION REQUIRES SMOOTH, DUST-FREE FINISH.
- WALL PROTECTION GRAPHICS. INCLUDE CLEAR WALL PROTECTION WITH BACK PRINTED GRAPHIC, IMAGE TBD.
- CHAIR RAILS: INCLUDE TOP CAP AND TRIM
  1. 42" A.F.F. TO TOP IN MEETING ROOMS 120, 121 & 122
  2. 34" A.F.F. TO TOP IN STAFF LOUNGE 129
- PAINT GYPSUM BULKHEADS PT-01 UNLESS OTHERWISE NOTED; REFER TO SHEET AI113 REFLECTED CEILING PLAN FOR CEILING FINISHES.
- TRANSITIONS.
  1. SCHLUTER SYSTEMS RENO U 1/8" RAMPED TRANSITION OR EQUAL FROM CARPET TO PORCELAIN TILE AND CARPET TO EPOXY. COLOR: CLEAR ANODIZED.
  2. SCHLUTER SYSTEMS RENO U 1/8" RAMPED TRANSITION OR EQUAL FROM EPOXY TO CONCRETE. COLOR: CLEAR ANODIZED.
  3. JOHNSONITE SLIM LINE RUBBER TRANSITIONS FROM – COLOR IRONSTONE FROM CARPET TO CONCRETE.
  4. JOHNSONITE METAL EDGE ME001 TRANSITION – COLOR IRONSTONE FROM RUBBER TO CARPET.
- FLOORING INSTALLATIONS
  1. CARPET: ASHLAR INSTALL
  2. WALK OFF CARPET IN VESTIBULES: INSTALL PER PATTERN AS SHOWN; QUARTER-TURNED TILES
  3. PORCELAIN TILE: THIRD LAP INSTALL
  4. RESILIENT: INSTALL PER PATTERN AS SHOWN
- DOORS:
  1. MASONITE ARCHITECTURAL ASPIRO SERIES WHITE MAPLE (PLAIN SLICE), STAIN COLOR: NUTMEG
  2. ALTERNATE: MASONITE ARCHITECTURAL ASPIRO SERIES WHITE MAPLE (PLAIN SLICE), STAIN COLOR: CANE

TILE ACCESSORIES NOTES:

- INCLUDE SCHLUTER SYSTEMS DILEX-AHKA OR EQUAL COVE AT CERAMIC WALL TILE TO EPOXY FLOOR TRANSITIONS
- INCLUDE SCHLUTER SYSTEMS DILEX-EHK OR EQUAL AT CERAMIC WALL/FLOOR TILE TRANSITIONS
- INCLUDE SCHLUTER SYSTEMS JOLLY OR EQUAL AT EDGE/CORNER PROTECTION

CASEWORK NOTES:

- CASEWORK ELEVATIONS AND DETAILS BY JLA.
- CASEWORK: WILSONART LAMINATE PALISADES OAK 7987-38 FINE VELVET FINISH
- CIRC DESK AND BENCHES: WILSONART HIGH IMPACT LAMINATE PALISADES OAK 7987-38 FINE VELVET FINISH
- SOLID SURFACE TOPS: WILSONART SOLID SURFACE MORNING ICE 9204CE
- WINDOW SILLS: WILSONART SOLID SURFACE MORNING ICE 9204CE
- STAFF RESTROOM SINK APRON: FORMICA LAMINATE WEATHERED ASH 8842-WR WOODBRUSH FINISH
- STAFF RESTROOM TOP: WILSONART SOLID SURFACE ARCTIC DUNE 9253CM
- MAIN RESTROOMS SINK APRON: NEVAMAR LAMINATE GALAD WX0075-A8 AGED BARK
- MAIN RESTROOM TOPS: AVONITE SURFACES ALASKAN STONE 4312

JLA ARCHITECTS
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InteriorLOGIC
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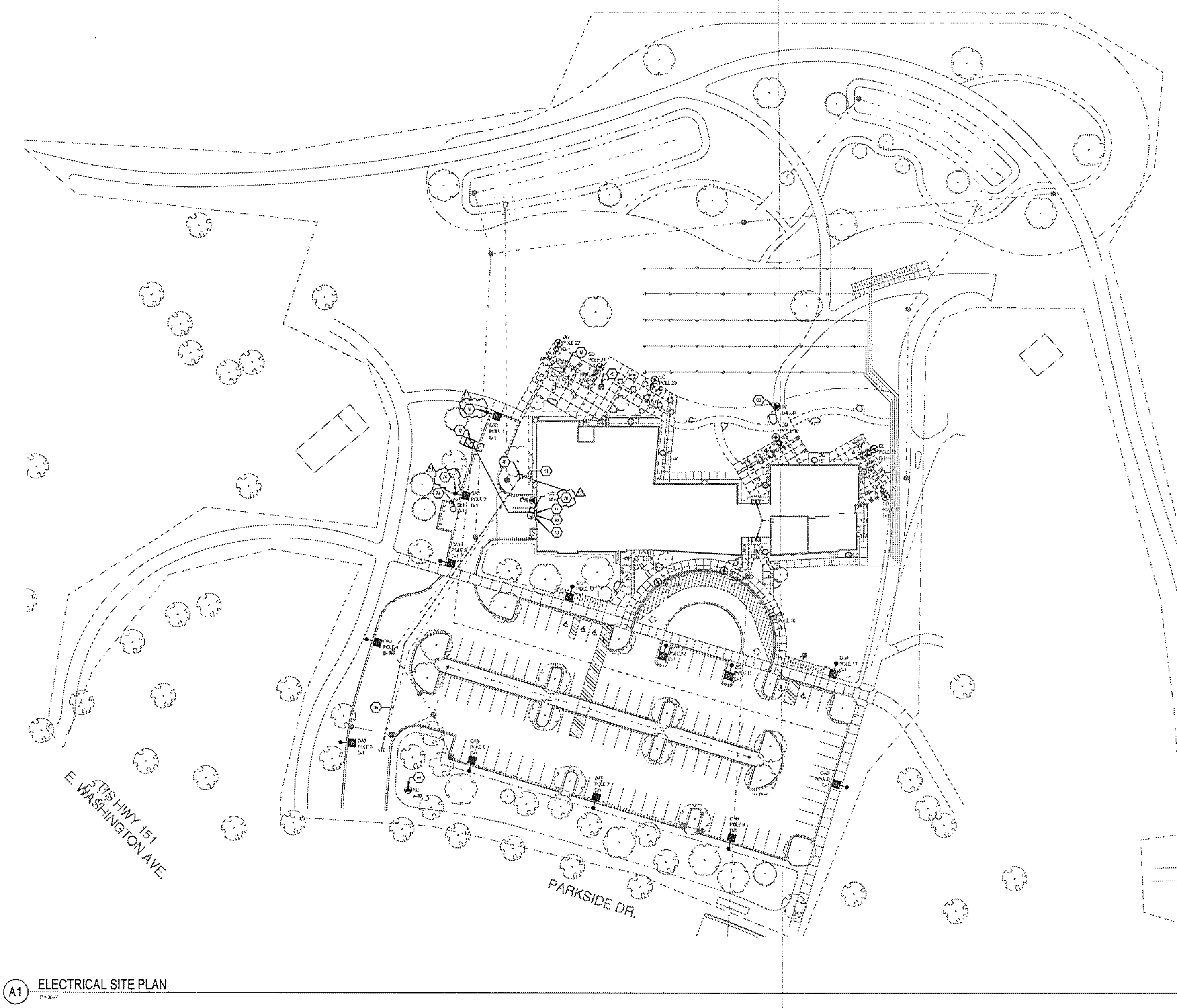
PROGRESS DOCUMENTS

REVISION SCHEDULE

SHEET TITLE:
FINISHES & MATERIALS SCHEDULE

SHEET NUMBER:
AI411



A1 ELECTRICAL SITE PLAN

GENERAL SHEET NOTES

SHEET KEYNOTES

JLA ARCHITECTS
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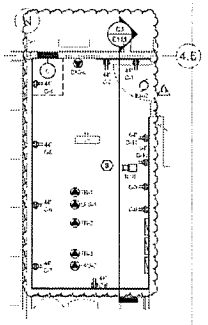
ELECTRICAL SITE PLAN

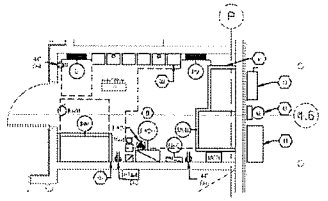
E010

GENERAL SHEET NOTES

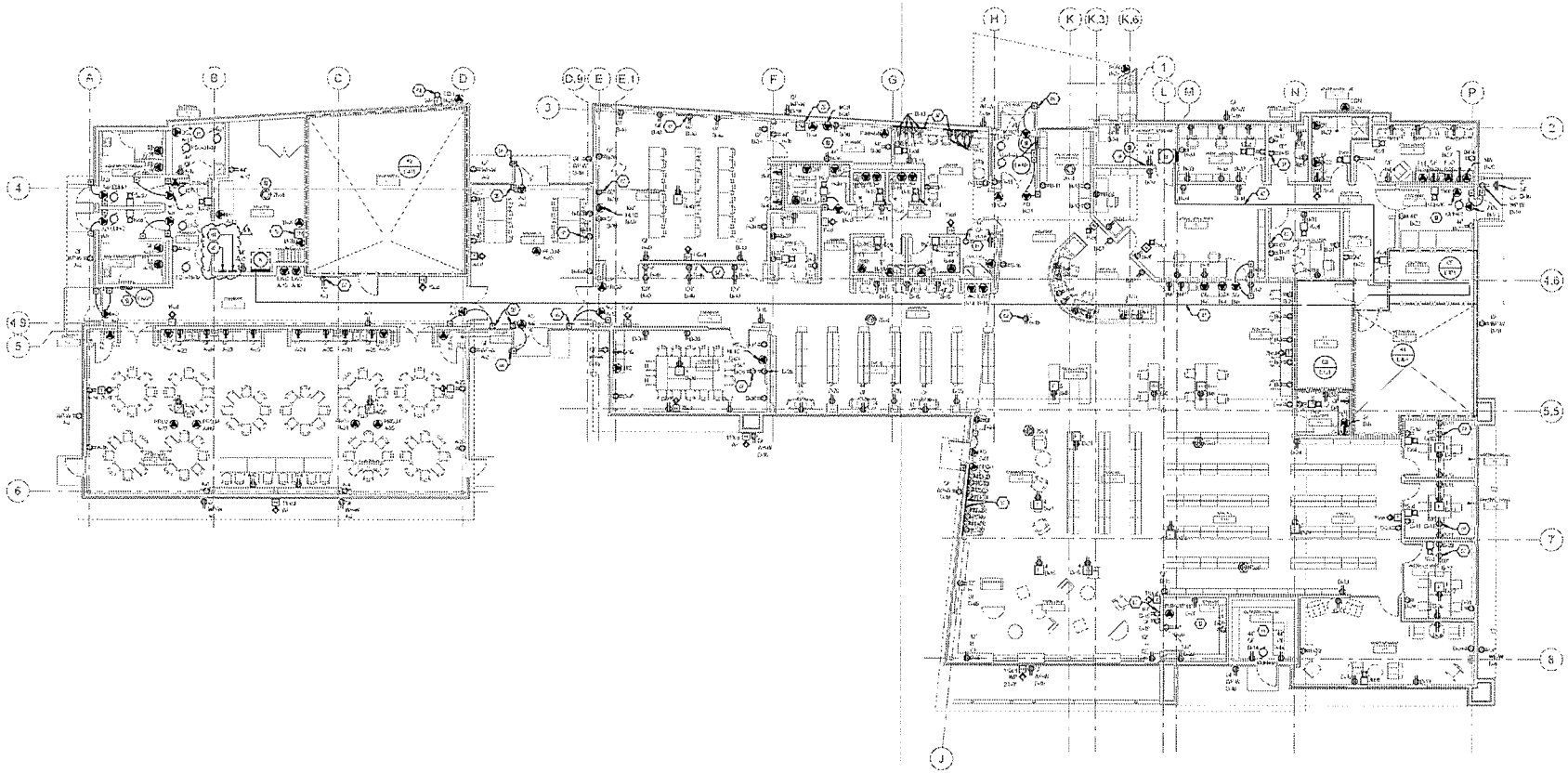
SHEET KEYNOTES



C3 ENLARGED PLAN - IT ROOM 125 - POWER & FIRE ALARM



C5 ENLARGED PLAN - ELECTRICAL ROOM 126 - POWER & FIRE ALARM



A1 FIRST FLOOR PLAN - POWER & FIRE ALARM

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NO.	DESCRIPTION	DATE

SHEET TITLE

FIRST FLOOR PLAN - POWER & FIRE ALARM

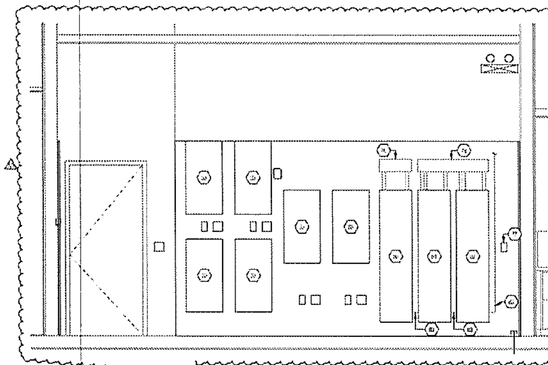
SHEET NUMBER

E101

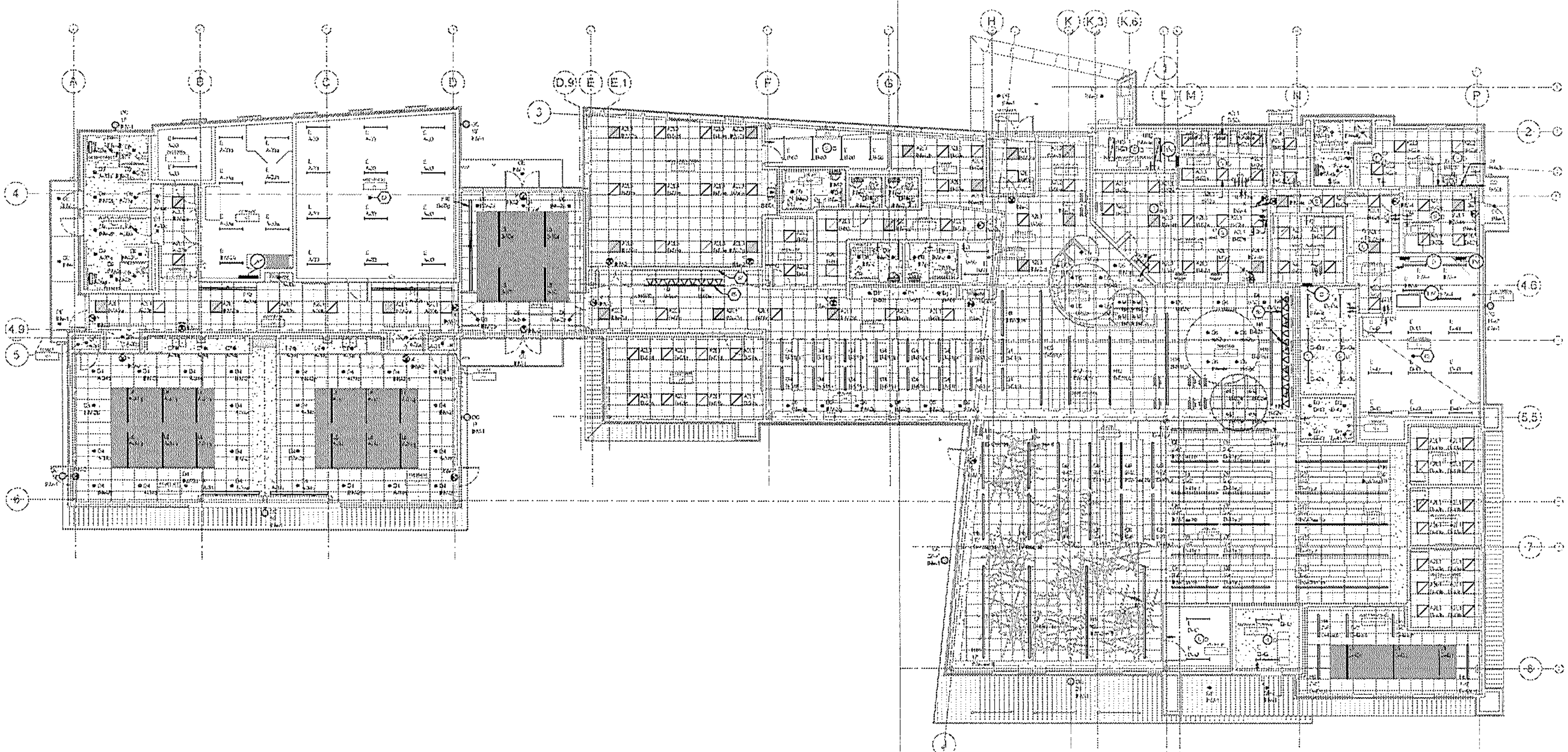
ADDENDUM

GENERAL SHEET NOTES

SHEET KEYNOTES



C3 IT ROOM 125 - SOUTH WALL SECTION - LUTRON EQUIPMENT



A1 FIRST FLOOR PLAN - LIGHTING

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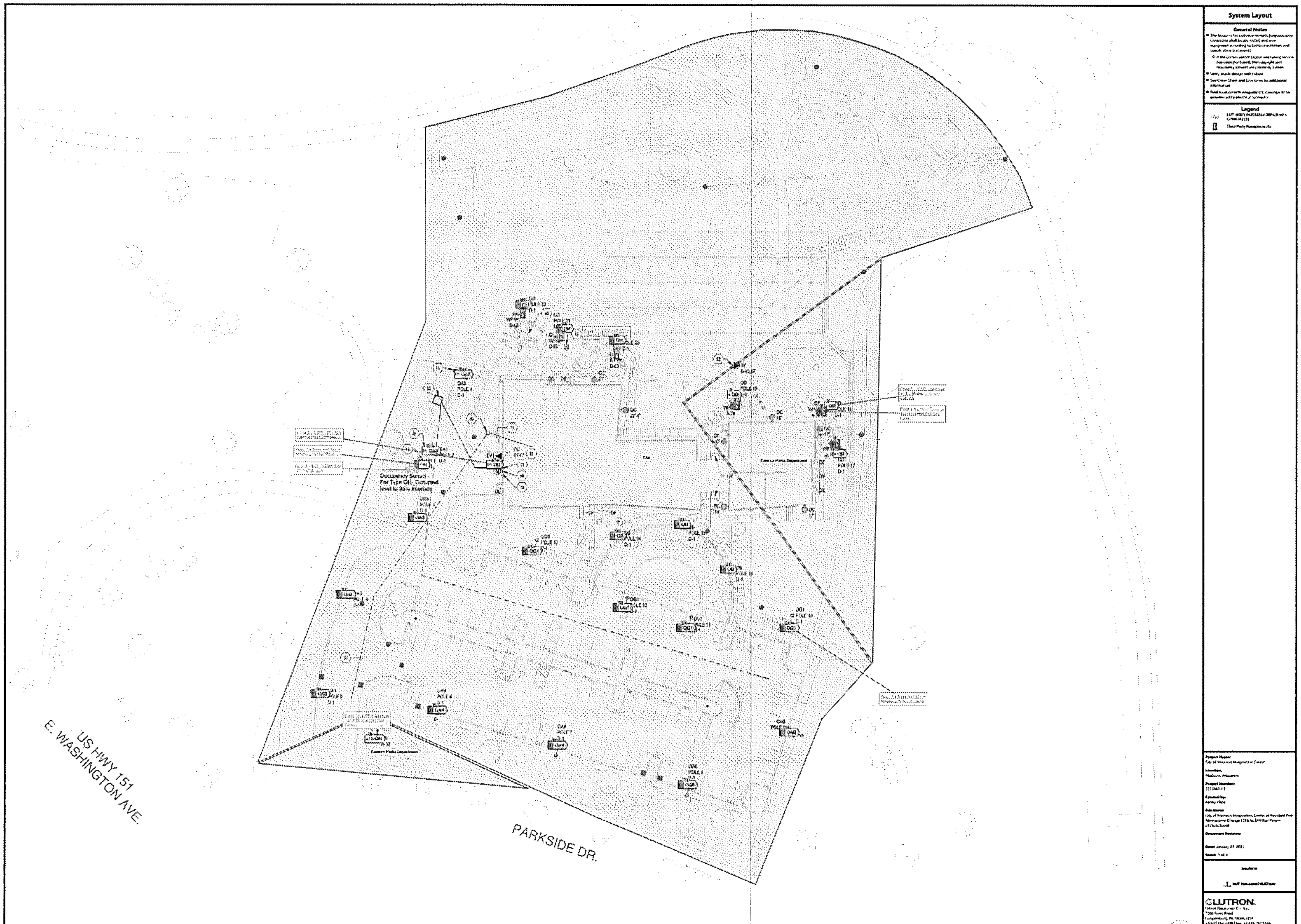
REVISION SCHEDULE

SHEET TITLE
FIRST FLOOR PLAN - LIGHTING

SHEET NUMBER
E111

ADDENDUM

GENERAL SHEET NOTES



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JLA PROJECT NUMBER: 20-0928

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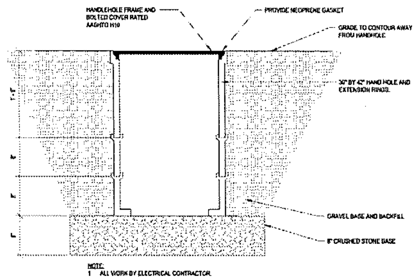
BID DOCUMENTS

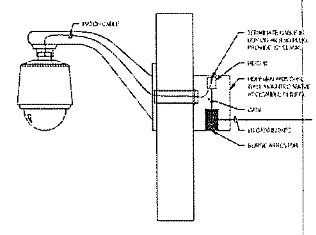
REVISION SCHEDULE

ELECTRICAL DETAILS

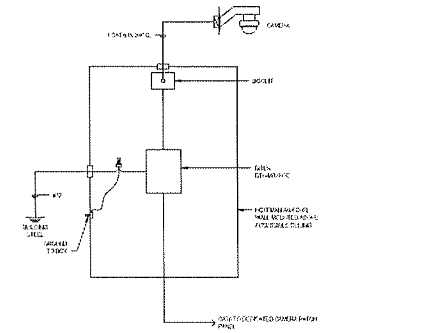
E504



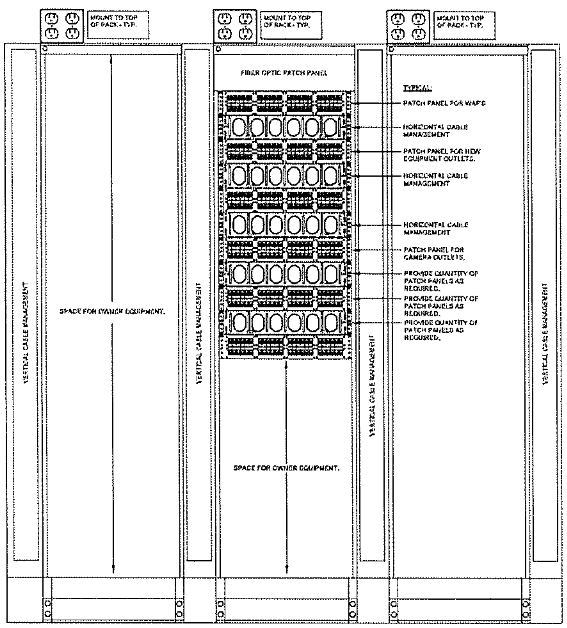
D1 TYPICAL HANDHOLE SECTION



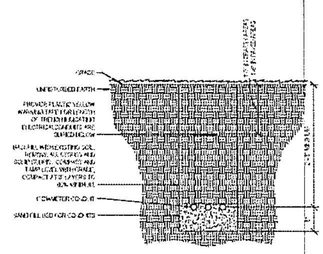
D3 EXTERIOR CAMERA MOUNTING DETAIL



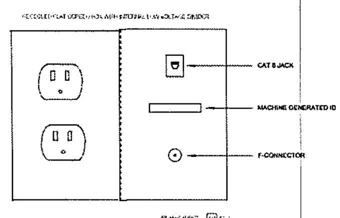
D5 EXTERIOR CAMERA SURVEILLANCE SURGE PROTECTION



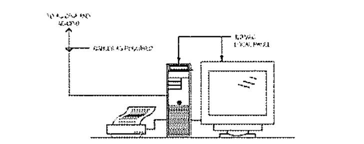
B1 TELECOM RACK DETAIL



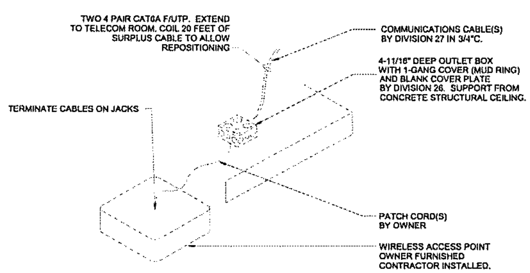
C3 CONDUIT TRENCH DETAIL



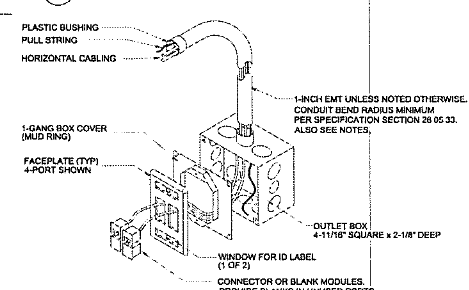
B3 FLAT SCREEN TV OUTLET DETAIL



B5 NETWORKED SECURITY BLOCK DIAGRAM

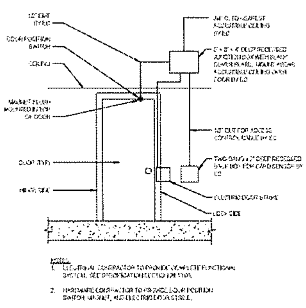


A1 EQUIPMENT OUTLET FOR WIRELESS ACCESS POINT



NOTES:
1. CONDUIT SHALL BE CONTINUOUS FROM OUTLET BOX TO ACCESSIBLE CEILING SPACE OR AS INDICATED ON DRAWINGS.
2. PROVIDE PULL STRING IN ALL CONDUITS.
3. REFER TO SPECIFICATION SECTION 27 10 00 FOR CONNECTOR TYPES.

A3 COMMUNICATIONS EQUIPMENT OUTLET ROUGH-IN



A5 SECURITY SYSTEM DETAIL

ADDENDUM

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JLA-AP.COM

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608 / 242 1550

JLA PROJECT NUMBER: 20-0925

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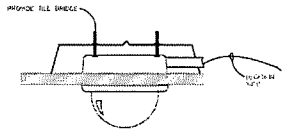
IMAGINATION CENTER AT REINDAHL PARK

BID DOCUMENTS

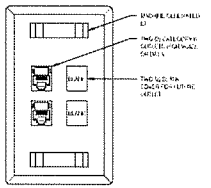
REVISION SCHEDULE

TECHNOLOGY DETAILS

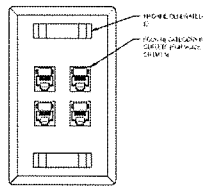
T501



D3 FIXED INDOOR IN-CEILING DOME



D4 2 DATA TELECOMMUNICATIONS OUTLET DETAIL



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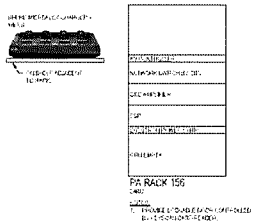
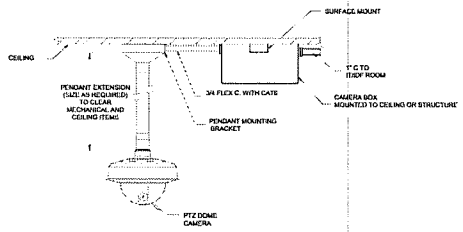
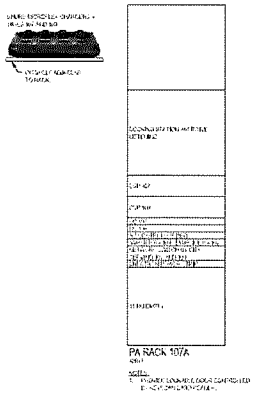


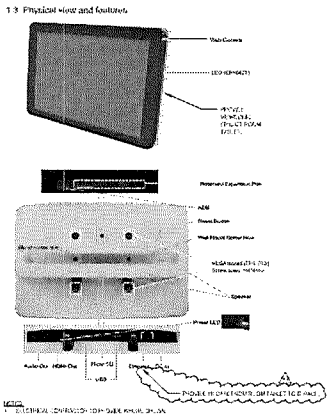
C2 TELECOM RACK 156



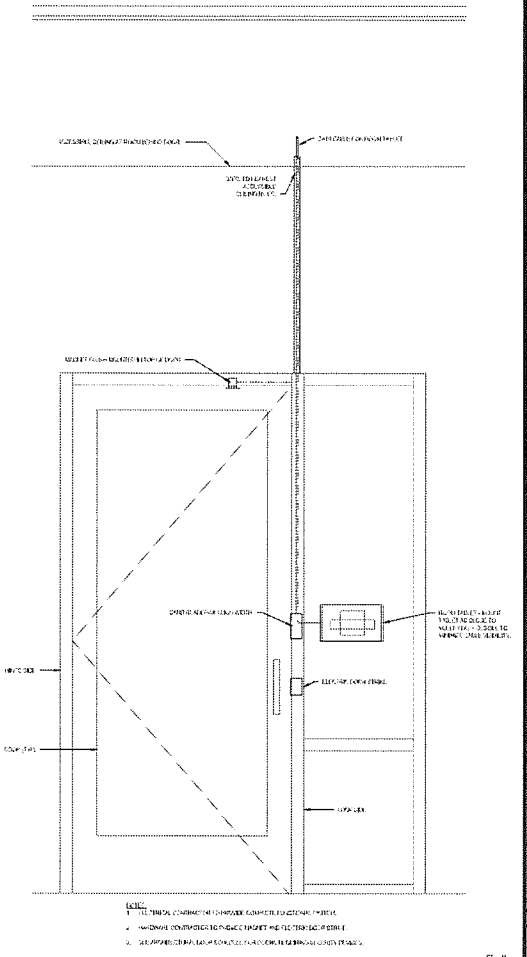
C3 SECURITY CAMERAS 06, 12 & 13 MOUNTING DETAIL



A2 TELECOM RACK 107A



A3 VIEWSONIC ROOM TABLET DETAIL



A5 MULLION MOUNT CARD READER & ROOM TABLET DETAIL

ADDENDUM

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REVISION SCHEDULE

NO.	DESCRIPTION	DATE

SHEET TITLE

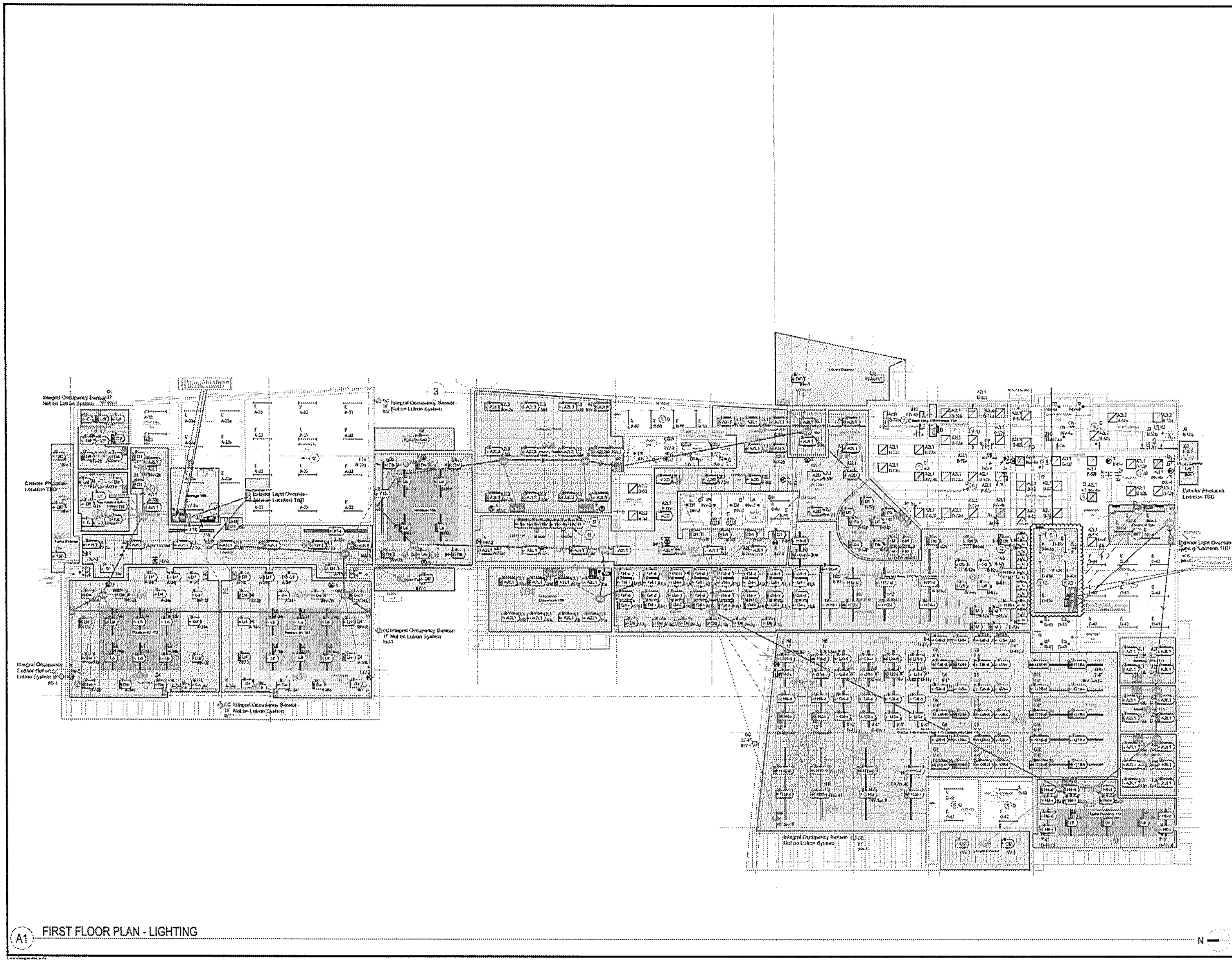
TECHNOLOGY DETAILS

SHEET NUMBER

T502

ADDENDUM

GENERAL SHEET NOTES



(A1) FIRST FLOOR PLAN - LIGHTING

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BID DOCUMENTS

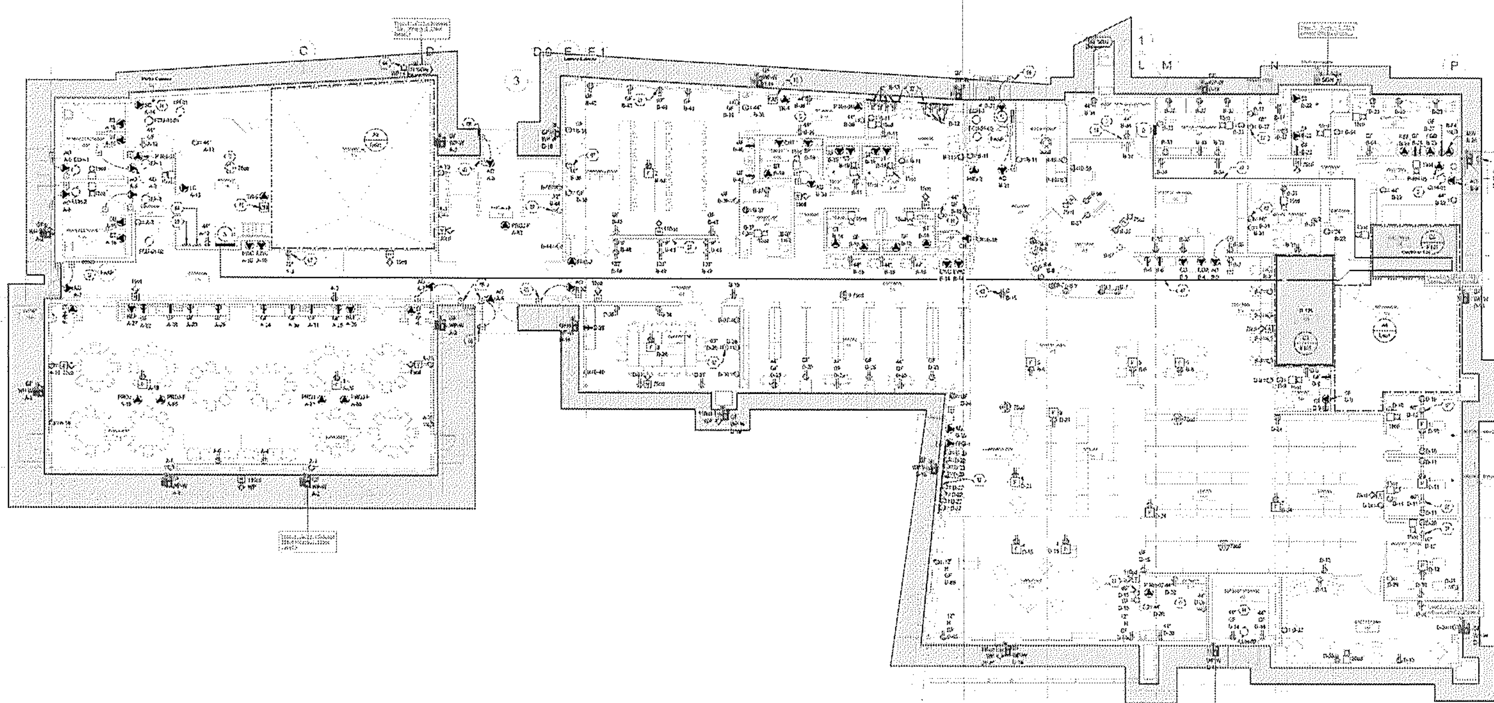
REVISION SCHEDULE

ELECTRICAL DETAILS

E505

ADDENDUM

GENERAL SHEET NOTES



(A1) FIRST FLOOR PLAN - POWER & FIRE ALARM

System Layout

General Notes

Legend

LUTRON

JLA ARCHITECTS
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IMAGINATION CENTER AT REINDAHL PARK

BID DOCUMENTS

REVISION SCHEDULE

ELECTRICAL DETAILS

E506

ADDENDUM

GENERAL SHEET NOTES

[illegible]

PAVILION #1 151 & PAVILION #2 152				
PART DESIGNATION	QTY	MASTER NO.	MANUFACTURER	DESCRIPTION
[illegible]	2	[illegible]	[illegible]	[illegible]
AV-P	2	[illegible]	EPSON	[illegible] PROJECTOR
	2	[illegible]	EPSON	UNIVERSAL PROJECTOR MOUNT
AV-IN	2	[illegible]	CRESTRON	HDMI INPUT PLATE
	2	[illegible]	CRESTRON	HDMI RECEIVER
AV-C	2	[illegible]	CRESTRON	WALL TOUCHPANEL
[illegible]	1	[illegible]	CRESTRON	[illegible]
	1	[illegible]	CRESTRON	POWER SUPPLY
	1	[illegible]	CRESTRON	POWER STRIP
	LOT	[illegible]	CRESTRON	CRESTRON [illegible] CABLE
	1	[illegible]	[illegible]	DIGITAL SIGNAL PROCESSOR
	2	[illegible]	SHURE	DUAL CHANNEL WIRELESS MICS
SEE FLOOR PLAN	[illegible]	[illegible]	QSC	CEILING SPEAKERS, 70/100V TRANSFORMERS
[illegible]	1	[illegible]	QSC	[illegible] WATT 2-CHANNEL AUDIO AMPLIFIER
[illegible]	2	[illegible]	RDL	AUX AUDIO INPUT PLATE
	1	[illegible]	[illegible]	[illegible]
	1	[illegible]	CISCO	SWITCH FURNISHED BY CITY
	LOT	CAT6		CABLE
	LOT	[illegible]		SPEAKER WIRE
	2	[illegible]	[illegible]	[illegible] WIRELESS CONNECTIONS [illegible]
[illegible]	1	CP4	CRESTRON	RACK MOUNTED AV CONTROL SYSTEM

JLA
ARCHITECTS
MADISON | MILWAUKEE | DENVER
JLA-AP.COM

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Suite 202
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608 / 242 1550

JLA PROJECT NUMBER: 20-0925

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BID DOCUMENTS

REVISION SCHEDULE

SHEET TITLE

AV FLOW DIAGRAMS

SHEET NUMBER

T704

ADDENDUM-3
SPECIFICATIONS

TABLE OF CONTENTS

[CoM] Denotes City of Madison section
(A1) = Revised as part of Bid Specification Addendum 1, dated 3-6-25
(A3) - REvised as part of Bid Specification Addendum 3, dated 3-20-25.

Division 08 -- Openings

Division 09 -- Finishes

Division 10 -- Specialties

Division 33 -- Utilities

END OF SECTION

SECTION 01 60 00
PRODUCT REQUIREMENTS

PART 1 – GENERAL

1.01 SUMMARY

Referrals to this section for the purpose of product substitution should instead see Section 01 25 13 - Product Substitution Procedures.

A. The purpose of this specification is to provide general guidelines and responsibilities related to the receiving, handling, and storage of all materials and products from arrival on the job site through installation.
   1. Immediate inspection of delivered goods means a timely replacement if damaged.
   2. Proper storage helps prevent damage and loss by weather, vandalism, theft, and job site accidents.
   3. Proper storage helps with job site performance and safety.
   4. Proper handling helps prevent damage and job site accidents.

B. Each Contractor shall be directly responsible for the receiving, handling, and storage of all materials and products associated with the Work of their Division or Trade.

C. Each Contractor responsible for Work associated with Owner provided materials or products shall be responsible for the receiving, handling and storage of the material/product as outlined in Section 3.08 below..

1.02 RELATED SPECIFICATIONS

A. Parts of this specification will reference articles within "The City of Madison FACILITIES MANAGEMENT SPECIFICATIONS for Public Works Construction".
   1. Use the following link to access the FACILITIES MANAGEMENT SPECIFICATIONS web page: http://www.cityofmadison.com/business/pw/specs.cfm
      a. Click on the "Part" chapter identified in the specification text. For example if the specification says "Refer to City of Madison FACILITIES MANAGEMENT SPECIFICATION 210.2" click the link for Part II, the Part II PDF will open.
      b. Scroll through the index of Part II for specification 210.2 and click the text link which will take you to the referenced text.
      c. City Standard Detail Drawings (SDD) may be located from the index in Part VIII.

B. Section 01 57 21 - Indoor Air Quality.

C. Section 01 74 13 - Progress Cleaning.

D. Section 01 76 00 - Protecting Installed Construction.

E. Other Divisions and Specifications that may address more specifically the requirements for the storage and handling of materials and products associated Work of other Divisions or Trades.

1.03 QUALITY ASSURANCE

A. The GC shall be responsible for ensuring that these minimum storage and handling requirements are met by all contractors on the project site including but not limited to the following:
   1. Receiving deliveries of materials, products, and equipment.
      a. Inspect all deliveries upon arrival for damage, completeness, and compliance with the construction documents.
         1) Deliveries shall remain in original packaging or crates, shipping manifest shall be kept with the delivery and the packaging shall have visible identification of the items within the packaging.
      b. Immediately report any damaged products or equipment to the GC, begin arrangements for immediate replacement.
      c. Materials or equipment that have been damaged, are incomplete, or do not comply with the construction documents shall not be permitted to be installed.

2. All materials and products shall be stored within the designated limits of the project site. Only store the amount of material necessary for upcoming operations so as not to interfere with other construction activities and access to Work by the Owner and Architect. Any offsite storage shall be at the expense of the contractor storing the material or product. All offsite storage requirements shall comply with this specification. All offsite storage of materials is subject to Owner Representative Quality Management review at any time.
3. Large storage containers may be used but shall be weather tight, securable, placed on concrete blocks, timbers, or jack stands and shall be level.
4. When lifting equipment is required the equipment rating shall be greater than the loading requirements of the item being lifted. In addition all of the following shall apply as necessary:
   a. Only designated and/or designed lift points shall be used.
   b. Large items shall have tag lines and handlers at all times during lifting operations.
   c. Lift at multiple points as needed to prevent bending.
5. Materials and products stored inside of the structure shall comply with all of the following:
   a. Storage shall not be allowed to impede the flow of work in progress.
   b. Storage shall not be allowed to hide completed work from review and inspections.
   c. Storage shall not exceed the design loads of the structural components it is being stored upon.
6. All materials and products shall be stored according the manufacturers minimum recommended requirements. All of the following shall be considered before storing any product or material:
   a. Dust and dirt
   b. Moisture and humidity, including rain and snow
   c. Excessive temperatures, direct sun, etc
   d. Product or material weight and size
   e. Potential for breakage
   f. Product incompatibility with other products such as corrosiveness, chemical reactions, flammability, etc.
   g. Product or material value and replacement cost
7. The Contractor shall be responsible for providing fully functional tarps or plastic wrap, to protect materials and products from the weather. All coverings shall be free of large holes and tears, and shall be tied, strapped, or weighted down to resist blowing.
8. The Contractor shall be responsible for any temporary heating, cooling, or other utility requirement that may be associated with the storage of a material or product.
9. The Contractor shall be responsible for securing materials and products of value such as copper, A/V equipment, etc. Such items shall be stored in securable shipping containers, job trailers or other such storage devices. Container shall be kept secured when not in use.

B. The GC shall inspect the job site daily to ensure that all products and materials stay weather tight and are secured against vandalism or theft as required by this specification.

C. The Owners Representative may at any time request improvements regarding storage of any material or product being provided under these construction documents.

PART 2 – PRODUCTS – THIS SECTION NOT USED

PART 3 - EXECUTION

3.01 GENERAL CONTRACTOR REQUIREMENTS

A. Designate material storage and handling areas as needed including all of the following:
   1. Designate specific areas of the site for delivery and storage of materials to be used during the execution of the Work.
   2. Designated areas shall not be located so as to interfere with the installation of any Work including Work by others such as the installation of utilities or the maintenance of existing utilities. This shall include not storing items in active utility easements as designated by the site plan.

B. Arrange for openings in the building as needed to allow delivery and installation of large items. Openings shall be appropriately sized to include the use of booms, slings, and other such lifting devices that may be larger than the item being installed.
   1. When openings are required in completed Work (new or existing) the GC shall be responsible for providing an appropriate opening and for restoring the opening to the original or better condition upon completion. Restoration shall be weather tight and complete.

C. Repeated moving and handling of items being stored shall not be allowed. The GC shall be responsible for any damage and replacement because of mishandling or excessive handling.

3.02 BULK MATERIAL

A. Bulk material such as sand, gravel, top soil and other types of fill shall be stored away from the construction area and shall be stock piled as follows:
   1. All bulk material shall be piled safely and efficiently in as small an area as practical. Only store the amount of material necessary for upcoming operations so as not to interfere with other construction activities and access to Work by the Owner and Architect.
   2. All stock piles shall have silt fence/sock properly installed around the perimeter to prevent erosion and loss of material. Refer to City of Madison FACILITIES MANAGEMENT SPECIFICATION Section 210.1(f) and other related specification or details.
   3. Fine grained material shall be protected with tarps to prevent blowing. Tarps shall be weighted or staked to stay in place.

B. Bulk material such as brick, concrete block, stone, and other palletized materials shall be stored on original shipping pallets until ready for use.

3.03 DRY PACKAGED MATERIAL

A. Dry packaged material such as cement, mortar, etc shall be stored on pallets, on slightly elevated ground or clear stone pad to keep water away from the base of the material being stored. Protect from moisture.

3.04 STRUCTURAL AND FRAMING MATERIAL

A. All structural and framing material shall be stored in an organized manner arranged by type, size and dimension. Materials shall be stored on pallets or timbers as necessary and shall not be allowed to lie directly on the ground.

B. Long and heavy items shall be supported at several points to prevent bending and warping.

3.05 EQUIPMENT

A. Equipment delivered to the site shall be stored away from all construction activities until the item can either be moved inside or properly installed.

B. Equipment shall be stored on slightly elevated ground or clear stone pad to keep water away from the base of the equipment.

3.06 FINISH PRODUCTS

A. Finish products such as flooring, tile, counters, lockers, toilets, partitions, lighting, and other similar items should not be delivered and stored until the structure has been enclosed, is weather tight, temperature controlled and the contractor is ready for such items to be installed.
   1. Storage of finished products outside for any length of time shall not be allowed.

B. Products that cannot be stored inside the structure shall be stored in secured containers or job trailers until such time as they are ready to be installed.

C. Products with a high potential for breakage such as glass, mirrors, tiles, toilet fixtures, etc. shall be stored with additional protection as necessary such as but not limited to the following:
   1. Store in original shipping containers until ready for installation.
   2. Do not store in high traffic areas.
   3. Shield with other materials such as cardboard, plywood, or similar products.

3.07 DUCTWORK, PIPING, AND CONDUIT

A. All piping and conduit shall be stored horizontally unless otherwise specified by the manufacturer or Division and Trade Specifications.
   1. Do not store directly on grade.
   2. Cover metal pipes and tubes to prevent rust and corrosion, allow ventilation to prevent condensation.
   3. Whenever possible use pipe stands for storing pipe and conduit to prevent tripping and rolling hazards.

B. All ductwork shall be stored horizontally or vertically as necessary unless otherwise specified by the manufacturer or Division and Trade Specifications.
   1. During storage, both ends of each duct shall be protected with plastic sheathing to prevent dust and dirt from getting inside the duct. Sheathing shall be sufficiently taped to the duct.
   2. After installation, free/open ends shall remain protected with taped plastic sheathing and or temporary filters as specified by division or Trade specifications.

3.08 OWNER PROVIDED, CONTRACTOR INSTALLED EQUIPMENT

A. Section 3.08.A. shall apply to all equipment being provided to any contractor directly from the Owner for installation under the contract.
   1. The Owner or Owners Representative shall do the following:
      a. Inspect all deliveries upon receipt and notify manufacturer of any issues directly.
      b. Review the received shipment with the contractor.
         1) Only provide products or materials to the contractor that were not damaged through shipping or handling.
         2) Confirm missing products or materials and anticipated delivery schedule if known.
   2. The Contractor responsible for the installation of Work associated with Owner provided materials or products shall "take ownership" and provide safe and secure storage and handling as previously described within this specification.
      a. The Contractor shall be liable for the repair or replacement of any material or product damaged after taking ownership of the product from receipt through final acceptance.

B. Section 3.08.B. shall apply to all equipment being provided by the Owner but shipped directly to any sub-contractor or the project site for installation under the contract.
   1. The GC and/or Contractor responsible for the Work associated with the Owner provided materials or products shall do the following:
      a. Inspect all deliveries upon receipt and notify the Owner or Owners Representative of any issues directly.
         1) Owner or Owners Representative shall notify manufacturer of any issues directly.
      b. Review the received shipment with the Owner or Owners Representative
         1) Confirm missing products or materials and anticipated delivery schedule if known.
   2. The Contractor shall "take ownership" and provide safe and secure storage and handling as previously described within this specification.
      a. The Contractor shall be liable for the repair or replacement of any material or product damaged after taking ownership of the product from receipt through final acceptance.

END OF SECTION

SECTION 07 42 13.23
METAL COMPOSITE MATERIAL WALL PANELS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Exterior curtain wall system consisting of formed metal composite material (MCM) sheet, framing, secondary supports, and anchors to structure.

B. Matching flashing and trim.

1.02 RELATED REQUIREMENTS

A. Section 03 30 00 - Cast-in-Place Concrete: Installation of anchors.

B. Section 04 20 00 - Unit Masonry: Installation of anchors.

C. Section 05 40 00 - Cold-Formed Metal Framing: Panel support framing.

D. Section 07 25 00 - Weather Barriers: Water-resistive barrier behind wall panel system.

E. Section 07 62 00 - Sheet Metal Flashing and Trim: Metal flashing components integrated with this wall system.

F. Section 07 92 00 - Joint Sealants: Sealing joints between siding and adjacent construction and fixtures.

1.03 REFERENCE STANDARDS

A. AAMA 2605 - Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels (with Coil Coating Appendix); 2022.

B. ASHRAE Std 90.1 I-P - Energy Standard for Buildings Except Low-Rise Residential Buildings; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

C. ASTM A480/A480M - Standard Specification for General Requirements for Flat-Rolled Stainless and Heat-Resisting Steel Plate, Sheet, and Strip; 2023b.

D. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2023.

E. ASTM A792/A792M - Standard Specification for Steel Sheet, 55% Aluminum-Zinc Alloy-Coated by the Hot-Dip Process; 2023.

F. ASTM B209/B209M - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate; 2021a.

G. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes; 2021.

H. ASTM B221M - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes (Metric); 2021.

I. ASTM C920 - Standard Specification for Elastomeric Joint Sealants; 2018.

J. ASTM D1781 - Standard Test Method for Climbing Drum Peel for Adhesives; 1998 (Reapproved 2021).

K. ASTM D1929 - Standard Test Method for Determining Ignition Temperature of Plastics; 2023.

L. ASTM D4145 - Standard Test Method for Coating Flexibility of Prepainted Sheet; 2010 (Reapproved 2022).

M. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2023c.

N. ASTM E283/E283M - Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Skylights, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen; 2019.

O. ASTM E330/E330M - Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference; 2014 (Reapproved 2021).

P. ASTM E331 - Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference; 2000 (Reapproved 2023).

1.04 ADMINISTRATIVE REQUIREMENTS

A. Pre-Installation Meeting: Convene one week before starting work of this section to verify project requirements, coordinate with installers of other work, establish condition and completeness of building substrate, and review manufacturers' installation instructions and warranty requirements.
   1. Require attendance by the installer and relevant sub-contractors.
   2. Include MCM sheet manufacturer's representative and wall system manufacturer's representative to review storage and handling procedures.
   3. Review in detail truck transportation, parking, vertical transportation, schedule, personnel, installation of adjacent materials and substrate.
   4. Review procedures for protection of work and other construction.
   5. Review safety precautions.

1.05 SUBMITTALS

A. See Section 01 33 23-Submittals for City of Madison required submittal procedures.

B. Product Data - MCM Sheets: Manufacturer's data sheets on each product to be used, including thickness, physical characteristics, and finish, and:
   1. Finish manufacturer's data sheet showing physical and performance characteristics.
   2. Storage and handling requirements and recommendations.
   3. Fabrication instructions and recommendations.
   4. Specimen warranty for finish, as specified herein.

C. Product Data - Wall System: Manufacturer's data sheets on each product to be used, including:
   1. Physical characteristics of components shown on shop drawings.
   2. Storage and handling requirements and recommendations.
   3. Installation instructions and recommendations.
   4. Specimen warranty for wall system, as specified herein.

D. Shop Drawings: Show layout and elevations, dimensions and thickness of panels, connections, details and location of joints, sealants and gaskets, method of anchorage, support clips, exposed fasteners, number of anchors, supports, reinforcement, trim, flashings, and accessories.
   1. Indicate panel numbering system.
   2. Differentiate between shop and field fabrication.
   3. Indicate substrates and adjacent work with which the wall system must be coordinated.
   4. Include large-scale details of anchorages and connecting elements.
   5. Include large-scale details or schematic, exploded or isometric diagrams to fully explain flashing at a scale of not less than 1-1/2 inches per 12 inches (1:10).
   6. Include design engineer's stamp or seal on shop drawings for attachments and anchors.

E. Selection Samples: For each finish product specified, submit at least three sample color chips representing manufacturer's standard range of available colors and patterns.

F. Verification Samples: For each finish product specified, submit at least three samples, minimum size 12 inch (305 mm) square, and representing actual product in color and texture.

G. Design Data: Submit structural calculations stamped by design engineer, for Architect's information and project record.

H. Test Report: Submit report of full-size mock-up tests for air infiltration, water penetration, and wind performance.

I. Manufacturer's Field Reports: Provide within 48 hours of field review. State what was observed and what changes, if any, were requested or required.

J. Testing agency's qualification statement.

K. Maintenance Data: Care of finishes and warranty requirements.

1.06 QUALITY ASSURANCE

A. Design Engineer's Qualifications: Design structural supports and anchorages under direct supervision of a Structural Engineer experienced in design of this type of work and licensed in the State in which the Project is located.

B. Testing Agency Qualifications: Independent agency experienced in testing assemblies of the type required for this project and having the necessary facilities for full-size mock-up testing of the type specified.

1.07 MOCK-UPS

A. See Section 01 43 39 - Mockups for requirements.

1.08 DELIVERY, STORAGE, AND HANDLING

A. Deliver products in manufacturer's original, unopened, undamaged containers with identification labels intact.
   1. Protect finishes by applying heavy-duty removable plastic film during production.
   2. Package for protection against transportation damage.
   3. Provide markings to identify components consistently with drawings.
   4. Exercise care in unloading, storing, and installing panels to prevent bending, warping, twisting, and surface damage.

B. Store products protected from exposure to harmful weather conditions and at temperature conditions recommended by manufacturer.
   1. Store in well-ventilated space out of direct sunlight.
   2. Protect from moisture and condensation with tarpaulins or other suitable weathertight covering installed to provide ventilation.
   3. Store at a slope to ensure positive drainage of accumulated water.
   4. Do not store in enclosed space where ambient temperature can exceed 120 degrees F (49 degrees C).
   5. Avoid contact with other materials that might cause staining, denting, or other surface damage.

1.09 FIELD CONDITIONS

A. Do not install panels when air temperature or relative humidity are outside manufacturer's limits.

1.10 WARRANTY

A. See Section 01 77 00-Closeout Procedures for additional warranty requirements.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Metal Composite Material (MCM) Sheet Manufacturers:
   1. BASIS OF DESIGN: ALUCOBOND by 3A Composites USA; ALUCOBOND PLUS: www.alucobondusa.com/#sle.
   2. Alfrex, LLC; Alfrex fr: www.alfrexusa.com/#sle.
   3. Coated Metals Group, CMG; System 1000: www.cmgmetals.com.
   4. Substitutions: See Section ~~01 60 00-Product Requirements~~. 01 25 13 – Product Substitution Procedures.

2.02 WALL PANEL SYSTEM

A. Wall Panel System: Metal panels, fasteners, and anchors designed to be supported by framing or other substrate provided by others; provide installed panel system capable of maintaining specified performance without defects, damage, or failure.
   1. Provide structural design by or under direct supervision of a Structural Engineer licensed in the State in which the Project is located.
   2. Provide panel jointing and weatherseal using a "wet", sealant-sealed system.
   3. Anchor panels to supporting framing without exposed fasteners.

2.03 PERFORMANCE REQUIREMENTS

A. Thermal Movement: Provide for free and noiseless vertical and horizontal thermal movement due to expansion and contraction under material temperature range of minus 20 degrees F (minus 29 degrees C) to 180 degrees F (82 degrees C) without buckling, opening of joints, undue stress on fasteners, or other detrimental effects; allow for ambient temperature at time of fabrication, assembly, and erection procedures.
   1. Wind Performance: Provide system tested in accordance with ASTM E330/E330M without permanent deformation or failures of structural members under the following conditions:
   2. Inward Design Wind Pressure: as indicated on the Structural Engineer's drawings.
   3. Outward Design Wind Pressure:as indicated on the Structural Engineer's drawings.
   4. Maximum deflection of perimeter framing member of L/175 normal to plane of the wall; maximum deflection of individual panels of L/60.
   5. Maximum anchor deflection in any direction of 1/16 inch (1.6 mm) at connection points of framing members to anchors.

B. Air Leakage: 0.10 cfm/sq ft (0.50 L/sec sq m) maximum leakage when tested at 1.57 psf (75 Pa) pressure difference in accordance with ASTM E283/E283M.

C. Water Penetration: No water penetration under static pressure when tested in accordance with ASTM E331 at a differential of 10 percent of inward acting design load, 6.27 psf (300 Pa) minimum, after 15 minutes.
   1. Water penetration is defined as the appearance of uncontrolled water on the interior face of the wall.
   2. Design to drain leakage and condensation to the exterior face of the wall.

D. Building Envelope Performance: Comply with ASHRAE Std 90.1 I-P when tested as part of building envelope assembly.

2.04 PANELS

A. Panels: 1 inch (25.4 mm) deep pans formed of metal composite material sheet by routing back edges of sheet, removing corners, and folding edges.
   1. Reinforce corners with riveted aluminum angles.
   2. Provide concealed attachment to supporting structure by adhering attachment members to back of panel; attachment members may also function as stiffeners.
   3. Maintain maximum panel bow of 0.8 percent of panel dimension in width and length; provide stiffeners of sufficient size and strength to maintain panel flatness without showing local stresses or read-through on panel face.
   4. Reinforce panels per manufacturer recommendations with metal angle braces 24 inches (610 mm) on center in short direction.
   5. Secure members to back face of panels using structural silicone sealant approved by MCM sheet manufacturer.
   6. Metallic Finished Panels: Maintain consistent grain of MCM sheet; specifically, do not rotate sheet purely to avoid waste.
   7. Fabricate panels under controlled shop conditions.
   8. Where final dimensions cannot be established by field measurement before commencement of manufacturing, make allowance for field adjustments without requiring field fabrication of panels.

9. Fabricate as indicated on drawings and as recommended by MCM sheet manufacturer.
   a. Make panel lines, breaks, curves, and angles sharp and true.
   b. Keep plane surfaces free from warp or buckle.
   c. Keep panel surfaces free of scratches or marks caused during fabrication.
10. Provide joint details providing a watertight and structurally sound wall panel system that allows no uncontrolled water penetration on inside face of panel system.

2.05 MATERIALS

A. Metal Composite Material (MCM) Sheet: Two sheets of aluminum sandwiching a core of extruded thermoplastic material; no foamed insulation material content.
   1. Overall Sheet Thickness: 0.118 inch (3 mm), minimum.
   2. Bond and Peel Strength: No adhesive failure of the bond between the core and the skin nor cohesive failure of the core itself below 22.4 inch-pound/inch (100 N-mm/mm) with no degradation in bond performance, when tested in accordance with ASTM D1781, simulating resistance to panel delamination, after 8 hours of submersion in boiling water and after 21 days of immersion in water at 70 degrees F (21 degrees C).
   3. Surface Burning Characteristics: Flame spread index of 25, maximum; smoke developed index of 450, maximum; when tested in accordance with ASTM E84.
   4. Flammability: Self-ignition temperature of 650 degrees F (343 degrees C) or greater when tested in accordance with ASTM D1929.

B. Metal Framing Members: Include sub-girts, zee-clips, base and sill angles and channels, hat-shaped and rigid channels, and furring channels required for complete installation.
   1. Provide material strength, dimensions, configuration as required to meet applied loads and in compliance with applicable building code.
   2. Sheet Steel Components: ASTM A653/A653M galvanized to G90/Z275 or zinc-iron alloy-coated to A60/ZF180; or ASTM A792/A792M aluminum-zinc coated to AZ60/AZM180.
   3. Stainless Steel Sheet Components: ASTM A480/A480M.
   4. Aluminum Components: ASTM B209/B209M; or ASTM B221 (ASTM B221M).

2.06 FINISHES

A. Factory Finish: Two coat fluoropolymer resin coating, approved by coating manufacturer for length of warranty specified for project, and applied by coil manufacturing facility that specializes in coil applied finishes.
   1. Coating Flexibility: Pass ASTM D4145 minimum 1T Bend at time of manufacturing.
   2. Long-Term Performance: Not less than that specified under WARRANTY in PART 1.

B. Fluoropolymer Coil Coating System: Polyvinylidene fluoride (PVDF) multi-coat superior performing organic coatings system complying with AAMA 2605, including at least 70 percent PVDF resin, with at least 80 percent of coil coated metal surfaces having minimum total dry film thickness (DFT) of 0.9 mil, 0.0009 inch (0.023 mm); color and gloss as selected by Architect from manufacturer's standard line.
   1. Products:
      a. PPG; Duranar: www.ppgmetalcoatings.com/#sle.
      b. Sherwin-Williams Company; Fluropon: www.coil.sherwin.com/#sle.
      c. Substitutions: See Section 01 60 00 - Product Requirements.

C. Color/Texture: As indicated on the drawings and selected by Architect from manufacturer's standard range.

2.07 ACCESSORIES

A. Flashing: Sheet aluminum; 0.040 inch (1.0 mm) thick, minimum; finish and color to match MCM sheet; see Section 07 62 00 for additional requirements.

B. Joint Sealer: Provide color to match wall panels silicone sealant of type approved by MCM sheet manufacturer, and in compliance with ASTM C920.

C. Provide panel system manufacturer's and installer's standard corrosion resistant accessories, including fasteners, clips, anchorage devices, and attachments.

PART 3 EXECUTION

3.01 EXAMINATION

A. Examine dimensions, tolerances, and interfaces with other work.

B. Examine substrate on-site to determine that conditions are acceptable for product installation in accordance with manufacturer's written instructions.

C. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

D. Notify Architect in writing of conditions detrimental to proper and timely completion of work, and do not proceed with erection until unsatisfactory conditions have been corrected.

3.02 PREPARATION

A. Protect adjacent work areas and finish surfaces from damage during installation.

B. Provide anchorage items to be cast into concrete or built into masonry to appropriate installer(s) together with setting templates.
   1. See Section 03 30 00 for additional cast-in-place concrete requirements.
   2. See Section 04 20 00 for additional unit masonry requirements.

3.03 INSTALLATION

A. Do not install products that are defective, including warped, bowed, dented, and broken members, and members with damaged finishes.

B. Comply with instructions and recommendations of MCM sheet manufacturer and wall system manufacturer, as well as with approved shop drawings.

C. Install wall system securely allowing for necessary thermal and structural movement; comply with wall system manufacturer's instructions for installation of concealed fasteners.

D. Do not handle or tool products during erection in manner that damages finish, decreases strength, or results in visual imperfection or failure in performance. Return component parts that require alteration to shop for refabrication, if possible, or for replacement with new parts.

E. Do not form panels in field unless required by wall system manufacturer and approved by the Architect; comply with MCM sheet manufacturer's instructions and recommendations for field forming.

F. Separate dissimilar metals; use gasket fasteners, isolation shims, or isolation tape where needed to eliminate possibility of electrolytic action between metals.

G. Where joints are designed for field-applied sealant, seal joints completely with specified sealant.

H. Install flashings as indicated on shop drawings. At flashing butt joints, provide a lap strap under flashing and seal lapped surfaces with a full bed of non-hardening sealant.

I. Install square, plumb, straight, and true, accurately fitted, with tight joints and intersections maintaining the following installation tolerances:
   1. Variation From Plane or Location: 1/2 inch in 30 feet (10 mm in 10 m) of length and up to 3/4 inch in 300 feet (20 mm in 100 m), maximum.
   2. Deviation of Vertical Member From True Line: 0.1 inch in 25 feet (3 mm in 9 m) run, maximum.
   3. Deviation of Horizontal Member From True Line: 0.1 inch in 25 feet (3 mm in 9 m) run, maximum.
   4. Offset From True Alignment Between Two Adjacent Members Abutting End To End, In Line: 0.03 inch (0.75 mm), maximum.

J. Replace damaged products.
   1. Exception: Field repairs of minor damage to finishes are permitted only when approved in writing by Architect, panel manufacturer, and fabricator.

2. Field Repairs to Finishes: Using materials and methods sufficient that repairs are not discernible when viewed at distance of 10 feet (3 m) under all typical light conditions experienced at the project.

3.04 FIELD QUALITY CONTROL

A. See Section 01 45 16-Field Quality Control Procedures for City of Madison requirements.

B. Wall System Manufacturer's Field Services: Provide field services consisting of product use recommendations and periodic site visits for inspection of product installation in accordance with instructions.

C. Site Visits: Schedule two site visits during execution of installation.

3.05 CLEANING

A. See Section 01 77 00-Closeout Procedures for additional requirements.

B. Ensure weep holes and drainage channels are unobstructed and free of dirt and sealants.

C. Remove protective film after installation of joint sealers, after cleaning of adjacent materials, and immediately prior to completion of work.

D. Remove temporary coverings and protection of adjacent work areas.

E. Clean installed products in accordance with manufacturer's instructions.

3.06 PROTECTION

A. Protect installed panel system from damage until Date of Substantial Completion.

END OF SECTION

SECTION 07 53 00
ELASTOMERIC MEMBRANE ROOFING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Elastomeric roofing membrane application.

B. Insulation, flat and tapered.

C. Vapor retarder.

D. Deck sheathing.

E. Cover boards.

F. Roofing walkway pads.

1.02 RELATED REQUIREMENTS

A. Section 05 31 00 - Steel Decking: Placement of acoustical insulation for deck flutes.

B. Section 07 62 00 - Sheet Metal Flashing and Trim.

C. Section 07 71 00 - Roof Specialties: Prefabricated roofing expansion joint flashing.

D. Section 07 71 23 - Manufactured Gutters and Downspouts.

E. Section 07 72 00 Roof Accessories.

1.03 REFERENCE STANDARDS

A. ASTM C1177/C1177M - Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing; 2017.

B. ASTM C1289 - Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board; 2023a.

C. ASTM D412 - Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers--Tension; 2016 (Reapproved 2021).

D. ASTM D570 - Standard Test Method for Water Absorption of Plastics; 2022.

E. ASTM D624 - Standard Test Method for Tear Strength of Conventional Vulcanized Rubber and Thermoplastic Elastomers; 2000 (Reapproved 2020).

F. ASTM D2240 - Standard Test Method for Rubber Property--Durometer Hardness; 2015 (Reapproved 2021).

G. ASTM D4637/D4637M - Standard Specification for EPDM Sheet Used in Single-Ply Roof Membrane; 2015, with Editorial Revision (2022).

H. ASTM E96/E96M - Standard Test Methods for Gravimetric Determination of Water Vapor Transmission Rate of Materials; 2022a, with Editorial Revision (2023).

I. FM (AG) - FM Approval Guide; Current Edition.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Coordinate with installation of associated counterflashings installed under other sections.

B. Preinstallation Meeting: Convene a preinstallation meeting one week before starting work of this section; require attendance by all affected installers; review preparation and installation procedures and coordination and scheduling necessary for related work.

1.05 SUBMITTALS

A. See Section 01 33 23-Submittals for City of Madison required submittal procedures.

B. Product Data: Provide data indicating membrane materials, flashing materials, insulation, surfacing, and fasteners.

1. Vapor Retarder: per manufacturer requirements.

C. Shop Drawings: Indicate joint or termination detail conditions, conditions of interface with other materials, setting plan for tapered insulation, and mechanical fastener layout.

D. Samples for Verification: Submit two samples of standard size.

E. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

F. Installer's qualification statement.

G. Warranty: Submit manufacturer warranty and ensure forms have been completed in Owner's name and registered with manufacturer.

1.06 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years of documented experience.

B. Installer Qualifications: Company specializing in performing the work of this section with minimum three years documented experience.

1.07 DELIVERY, STORAGE, AND HANDLING

A. See Section 01 74 19 - Construction Waste Management and Disposal for packaging waste requirements.

B. Deliver materials in manufacturer's original containers, dry and undamaged, with seals and labels intact.

C. Store materials in weather protected environment, clear of ground and moisture.

D. Ensure storage and staging of materials does not exceed static and dynamic load-bearing capacities of roof decking.

E. Protect foam insulation from direct exposure to sunlight.

1.08 FIELD CONDITIONS

A. Do not apply roofing membrane during unsuitable weather.

B. Do not apply roofing membrane when ambient temperature is below 40 degrees F (5 degrees C) or above 100 degrees F (38 degrees C).

C. Do not apply roofing membrane to damp or frozen deck surface or when precipitation is expected or occurring.

D. Do not expose materials vulnerable to water or sun damage in quantities greater than can be weatherproofed the same day.

E. Schedule applications so that no partially completed sections of roof are left exposed at end of workday.

1.09 WARRANTY

A. See Section 01 77 00-Closeout Procedures for additional warranty requirements.

B. Correct defective work within a two year period after Date of Substantial Completion.

C. Provide 30 year manufacturer's material and labor warranty to cover failure to prevent penetration of water.

1. Cover wind speeds up to 72 mph

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. EPDM Membrane Materials:

1. Basis of Design: Elevate/Firestone Rubbergard Max EPDM: www.holcimelevate.com
2. Carlisle SynTec Systems; Sure-Tough EPDM: www.carlisle-syntec.com/#sle.
3. Johns Manville; JM EPDM: www.jm.com/#sle.
4. Versico Roofing Systems; VersiGard EPDM: www.versico.com/#sle.

5. Substitutions: ~~See Section01 60 00 Product Requirements~~See Section 01 25 13 – Product Substitution Procedures.

B. Insulation:
1. Dow: www.dow.com/#sle.
2. GAF: www.gaf.com/#sle.
3. Hunter Panels: www.hunterpanels.com/#sle.
4. Owens Corning Corporation: www.owenscorning.com/#sle.
5. ROCKWOOL: www.rockwool.com/#sle.
6. Versico Roofing Systems; SecurShield Insulation: www.versico.com/#sle.
7. Substitutions: See Section 01 60 00 - Product Requirements.

2.02 ROOFING - UNBALLASTED APPLICATIONS

A. Elastomeric Membrane Roofing: One ply membrane, fully adhered, over vapor retarder and insulation.

B. Roofing Assembly Requirements:
1. Insulation Thermal Resistance (R-Value): 5 per inch, minimum; provide insulation of thickness required.

C. Acceptable Insulation Types - Constant Thickness Application: Any type that meets requirements and is approved by membrane manufacturer for application.

D. Acceptable Insulation Types - Tapered Application: Any type that meets requirements and is approved by membrane manufacturer for application.

2.03 ROOFING MEMBRANE AND ASSOCIATED MATERIALS

A. Membrane: Ethylene-propylene-diene-monomer (EPDM); non-reinforced; complying with minimum properties of ASTM D4637/D4637M.
1. Thickness: 90 mil, 0.090 inch (2.3 mm), minimum.
2. Sheet Width: 120 inches (3,048 mm), maximum.
a. Adhered Application: Limit width to 120 inches (3,048 mm), maximum, when ambient temperatures are less than 40 degrees F (4.4 degress C) for extended period of time during installation.
3. Color: Black.
4. Tensile Strength: 9 psi (1305 MPa), minimum, measured in accordance with ASTM D412.
5. Ultimate Elongation: 200 percent, minimum, measured in accordance with ASTM D412.
6. Durometer Hardness, Type A: 30, minimum, in accordance with ASTM D2240
7. Tear Strength: 150 lbf per inch (26.3 kN/m), measured in accordance with ASTM D624.
8. Water Absorption: 8 percent increase in weight, maximum, measured in accordance with ASTM D570, 24 hour immersion.
9. Water Vapor Permeability: 1 perm inch, measured in accordance with ASTM E96/E96M.

B. Seaming Materials: As recommended by membrane manufacturer.

C. Vapor Retarder: (only if required by manufacturer requirements) Non-bituminous, foil and fibrous mesh laminate, complying with requirements of fire rating classification; compatible with roofing and insulation materials.
1. Fire-retardant adhesive.
2. Vapor Permeability: 1 perm inch, measured in accordance with ASTM E96/E96M.

D. Flexible Flashing Material: Same material as membrane.
1. Thickness: 30 mil (0.76 mm).
2. Maximum Perm Rate: 0.04.
3. Tensile Strength: 1,200 psi (8.3 MPa).
4. Elasticity: 50 percent with full recovery without set.
5. Color: Black.

2.04 DECK SHEATHING

A. Deck Sheathing: Glass mat faced gypsum panels, ASTM C1177/C1177M, fire resistant type, 1/4 inch (6.4 mm) thick.
   1. Thickness: ~~5/8 inch (15.9 mm)~~1/2-inch (12.7 mm), Type X, fire-resistant.
   2. Products:
      a. Georgia-Pacific; DensDeck: www.densdeck.com/#sle.
      b. Georgia-Pacific; DensDeck Prime with EONIC Technology: www.densdeck.com/#sle.
      c. USG Corporation; Securock Ultralight Glass-Mat Roof Board: www.usg.com/#sle.
      d. USG Corporation; Securock Ultralight Coated Glass-Mat Roof Board: www.usg.com/#sle.
      e. Substitutions: ~~See Section01 60 00-Product Requirements~~See Section 01 25 13 – Product Substitution Procedures.

2.05 COVER BOARDS

A. Cover Boards: Glass-mat faced gypsum panels complying with ASTM C1177/C1177M.
   1. Thickness: ~~5/8 inch (15.9 mm)~~1/2-inch (12.7 mm), Type X, fire-resistant.
   2. FM classified for Very Severe Hail (VSH) in approved single ply membrane assemblies.
   3. Products:
      a. Georgia-Pacific; DensDeck: www.densdeck.com/#sle.
      b. Substitutions: ~~See Section01 60 00-Product Requirements~~See Section 01 25 13 – Product Substitution Procedures.

2.06 INSULATION

A. Polyisocyanurate (ISO) Board Insulation: Rigid cellular foam, complying with ASTM C1289.
   1. Classifications:
      a. Type VII: Faced with glass mat faced gypsum board on one major surface of the core foam and faced on the other major surface with any facer described in this specification.
         1) Compressive Strength: 16 psi (110 kPa), minimum.
         2) Thermal Resistance, R-value (RSI-value): At 1-1/2 inches (38 mm) thick; R-8.5 (1.23) at 75 degrees F (24 degrees C); at total system minimum R-40 must be achieved.
   2. Board Size: 48 by 96 inches (1220 by 2440 mm).
   3. Board Thickness: 1.5 inch (37.5 mm).
   4. Tapered Board: Slope as indicated; minimum thickness as indicated on the drawings; fabricate of fewest layers possible.
   5. Board Edges: Square.
   6. Products:
      a. Dow Chemical Company: www.dow.com/#sle.
      b. GAF; EnergyGuard Polyiso Insulation: www.gaf.com/#sle.
      c. Mule-Hide Products Co, Inc; Poly ISO Flat: www.mulehide.com/#sle.
      d. Versico Roofing Systems; SecurShield Insulation: www.versico.com/#sle.
      e. Substitutions: ~~See Section01 60 00-Product Requirements~~See Section 01 25 13 – Product Substitution Procedures.

2.07 ACCESSORIES

A. Prefabricated Roofing Expansion Joint Flashing: See Section 07 71 00.

B. Stack Boots: Prefabricated flexible boot and collar for pipe stacks through membrane; elastomeric material compatible with membrane.

C. Sheathing Joint Tape: Paper type, 6 inches (152 mm) wide, self adhering.

D. Insulation Joint Tape: Glass fiber reinforced type as recommended by insulation manufacturer, compatible with roofing materials; 6 inches (152 mm) wide; self adhering.

E. Membrane Adhesive: As recommended by membrane manufacturer.

F. Thinners and Cleaners: As recommended by adhesive manufacturer, compatible with membrane.

G. Insulation Adhesive: As recommended by insulation manufacturer.

H. Roofing Nails: Galvanized, hot-dipped type, size and configuration as required to suit application.

I. Strip Reglet Devices: Galvanized steel, maximum possible lengths per location, with attachment flanges.

J. Insulation Perimeter Restraint: Stainless steel edge device configured to restrain insulation boards in position and provide top flashing.

K. Sealants: As recommended by membrane manufacturer.

L. Walkway Pads: Suitable for maintenance traffic, contrasting color or otherwise visually distinctive from roof membrane.
   1. Composition: 100% Recycled Rubber, non-slip surface.
      a. With EPDM compatable adhesive strip
   2. Size: 30 inches wide, minimum.
   3. Thickness: 1/2-inch to 2-inches.
   4. Surface Color: Black, Grey or White.
   5. Manufacture:
      a. Same as roofing supplier, if they offer a suitable product.
      b. RubberForm Recycled Products, LLC.; Rooftop Walkway Rubber Mats;
      c. Substitutions: See Section 01 25 13 – Product Substitution Procedures

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that surfaces and site conditions are ready to receive work.

B. Verify deck is supported and secure.

C. Verify deck is clean and smooth, flat, free of depressions, waves, or projections, properly sloped and suitable for installation of roof system.

D. Verify deck surfaces are dry and free of snow or ice.

E. Verify that roof openings, curbs, and penetrations through roof are solidly set, and cant strips are in place.

3.02 PREPARATION - METAL DECK

A. Install deck sheathing on metal deck.
   1. Lay with long side at right angle to flutes; stagger end joints; provide support at ends.
   2. Cut sheathing cleanly and accurately at roof breaks and protrusions to provide smooth surface.
   3. Tape joints.

B. Mechanically fasten sheathing to roof deck, in accordance with roofing manufacturer's instructions.
   1. Over entire roof area, fasten sheathing using six fasteners with washers per sheathing board.
   2. At roof perimeter to a distance of 4 feet (1.2 m) in from edges, fasten sheathing using 6 fasteners with washers per board.

3.03 INSTALLATION - VAPOR RETARDER AND INSULATION, UNDER MEMBRANE

A. Install vapor retarder to deck surface with adhesive in accordance with manufacturer's instructions.
   1. Extend vapor retarder under cant strips and blocking to deck edge.
   2. Install flexible flashing from vapor retarder to air seal material of wall construction, lap and seal to provide continuity of the air barrier plane.

B. Ensure vapor retarder is clean and dry, continuous, and ready for application of insulation.

C. Attachment of Insulation: Embed insulation in adhesive in full contact, in accordance with roofing and insulation manufacturers' instructions.

D. Cover Boards: Mechanically fasten cover boards in accordance with roofing manufacturer's instructions and FM (AG) Factory Mutual requirements.

E. Lay subsequent layers of insulation with joints staggered minimum 6 inches (152 mm) from joints of preceding layer.

F. Place tapered insulation to the required slope pattern in accordance with manufacturer's instructions.

G. On metal deck, place boards parallel to flutes with insulation board edges bearing on deck flutes.

H. Lay boards with edges in moderate contact without forcing. Cut insulation to fit neatly to perimeter blocking and around penetrations through roof.

I. Tape joints of insulation in accordance with roofing and insulation manufacturers' instructions.

J. At roof drains, use factory-tapered boards to slope down to roof drains over a distance of 18 inches (457 mm).

K. Do not apply more insulation than can be covered with membrane in same day.

3.04 INSTALLATION - MEMBRANE

A. Roll out membrane, free from wrinkles or tears. Place sheet into place without stretching.

B. Shingle joints on sloped substrate in direction of drainage.

C. Fully Adhered Application: Apply adhesive to substrate at rate of ___ gal per 100 sq ft (___ L/9.3 sq m). Fully embed membrane in adhesive except in areas directly over or within 3 inches (76 mm) of expansion joints. Fully adhere one roll before proceeding to adjacent rolls.

D. Overlap edges and ends and seal seams by contact adhesive, minimum 3 inches (76 mm). Seal permanently waterproof. Apply uniform bead of sealant to joint edge.

E. At intersections with vertical surfaces:
   1. Extend membrane over cant strips and up a minimum of 4 inches (102 mm) onto vertical surfaces.
   2. Fully adhere flexible flashing over membrane and up to nailing strips.

F. Around roof penetrations, seal flanges and flashings with flexible flashing.

G. Install roofing expansion joints where indicated. Make joints watertight.
   1. Install prefabricated joint components in accordance with manufacturer's instructions.

H. Coordinate installation of roof drains and sumps and related flashings.

3.05 FIELD QUALITY CONTROL

A. See Section 01 45 16-Field Quality Control Procedures for City of Madison requirements. for additional requirements.

B. Owner will provide testing services, and Contractor to provide temporary construction and materials for testing in accordance with requirements.

C. Provide daily on-site attendance of roofing and insulation manufacturer's representative during installation of this work.

3.06 CLEANING

A. See Section 01 77 00-Closeout Procedures for additional requirements.

B. Remove bituminous markings from finished surfaces.

C. In areas where finished surfaces are soiled by work of this section, consult manufacturer of surfaces for cleaning advice and comply with their documented instructions.

D. Repair or replace defaced or damaged finishes caused by work of this section.

3.07 PROTECTION

A. Protect installed roofing and flashings from construction operations.

B. Where traffic must continue over finished roof membrane, protect surfaces using durable materials.

END OF SECTION

SECTION 07 71 00
ROOF SPECIALTIES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Manufactured roof specialties, including copings, fascias, pentration flashings, and box scuppers.

B. Roof control and expansion joint covers.

1.02 RELATED REQUIREMENTS

A. Section 07 62 00 - Sheet Metal Flashing and Trim

B. Section 07 71 23 - Manufactured Gutters and Downspouts

C. Section 07 72 00 - Roof Accessories: Manufactured curbs, roof hatches ~~and snow guards~~.

1.03 REFERENCE STANDARDS

A. AAMA 611 - Voluntary Specification for Anodized Architectural Aluminum; 2020.

B. AAMA 2605 - Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels (with Coil Coating Appendix); 2022.

C. ANSI/SPRI/FM 4435/ES-1 - Test Standard for Edge Systems Used with Low Slope Roofing Systems; 2022.

D. ASTM E283/E283M - Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Skylights, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen; 2019.

E. ASTM E2178 - Standard Test Method for Determining Air Leakage Rate and Calculation of Air Permeance of Building Materials; 2021a.

F. NRCA (RM) - The NRCA Roofing Manual; 2025.

1.04 SUBMITTALS

A. See Section 01 33 23-Submittals for City of Madison required submittal procedures.

B. Product Data: Provide data on shape of components, materials and finishes, anchor types and locations.

C. Shop Drawings: Indicate configuration and dimension of components, adjacent construction, required clearances and tolerances, and other affected work.

D. Manufacturer's Installation Instructions: Indicate special procedures, fasteners, supporting members, and perimeter conditions requiring special attention.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Roof Edge Flashings and Copings:
   1. Architectural Products Co: www.archprod.com/#sle.
   2. ATAS International, Inc; Rapid-Lok Fascia: www.atas.com/#sle.
   3. Drexel Metals Inc: www.drexmet.com/#sle.
   4. Hickman Edge Systems; Formed Coping Plus: www.hickmanedgesystems.com/#sle.
   5. Metal-Era Inc; Perma-Tite Coping: www.metalera.com/#sle.
   6. Metal Roofing Systems, Inc; Rapid Lock Coping: www.metalroofingsystems.biz/#sle.
   7. Substitutions: See Section 01 60 00 - Product Requirements.

B. Control and Expansion Joint Covers:
   1. Construction Specialties, Inc; Roof Covers: www.c-sgroup.com/#sle.
   2. EMSEAL Joint Systems, Ltd; Emseal RoofJoint: www.emseal.com/#sle.

3. SITURA Inc; RedLINE Waterproof Expansion Joint Systems: www.situra.com/#sle.
4. Substitutions: See Section 01 60 00 - Product Requirements.

C. Pipe and Penetration Flashings:
1. Elmdor: www.elmdor.com/#sle.
2. Substitutions: See Section 01 60 00 - Product Requirements.

D. Counterflashings:
1. ATAS International, Inc: www.atas.com/#sle.
2. Substitutions: See Section 01 60 00 - Product Requirements.

E. Pipe Penetration Wall Seal:
1. Airex Manufacturing, Inc; Airex Titan Outlet: www.airexmfg.com/#sle.
2. Substitutions: See Section 01 60 00 - Product Requirements.

F. Expansion Joint Covers Vapor Barriers:
1. Construction Specialties, Inc; Vapor Barriers: www.c-sgroup.com/#sle.
2. Substitutions: See Section 01 60 00 - Product Requirements.

2.02 COMPONENTS

A. Roof Edge Flashings: Factory fabricated to sizes required; corners mitered; concealed fasteners.
1. Configuration: Fascia, cant, and edge securement for roof membrane.
2. Pull-Off Resistance: Tested in accordance with ANSI/SPRI/FM 4435/ES-1 using test methods RE-1 and RE-2 to positive and negative design wind pressure as defined by applicable local building code.
3. Exposed Face Height: As indicated on drawings.
4. Material: Formed steel sheet, galvanized, 24 gauge, 0.024 inch (0.6 mm) thick, minimum.
5. Finish: 70 percent polyvinylidene fluoride.
6. Color: As selected by Architect from manufacturer's standard range.
7. Products:
   a. Hickman Edge Systems; TerminEdge Fascia: www.hickmanedgesystems.com/#sle.
   b. Substitutions: See Section 01 60 00 - Product Requirements.

B. Copings: Factory fabricated to sizes required; corners mitered; concealed fasteners.
1. Configuration: Concealed continuous hold down cleat at both legs; internal splice piece at joints of same material, thickness, and finish as cap; concealed stainless steel fasteners.
2. Pull-Off Resistance: Tested in accordance with ANSI/SPRI/FM 4435/ES-1 using test method RE-3 to positive and negative design wind pressure as defined by applicable local building code.
3. Material: Formed steel sheet, galvanized, 24 gauge, 0.024 inch (0.6 mm) thick, minimum.
4. Finish: Mill finish.
5. Color: As selected by Architect from manufacturer's standard range.
6. Products:
   a. Metal-Era Inc: www.metalera.com/#sle.
   b. Hickman Edge Systems; Formed Coping Plus: www.hickmanedgesystems.com/#sle.
   c. Substitutions: See Section 01 60 00 - Product Requirements.

C. Control and Expansion Joint Covers: Composite construction of 2-inch (51 mm) wide flexible EPDM flashing of white color with closed cell urethane foam backing, each edge seamed to aluminum sheet metal flanges, designed for nominal joint width of 1 inch (25.4 mm). Include special formed corners, tees, intersections, and wall flashings, each sealed watertight.

D. Pipe and Penetration Flashing: Base of galvanized steel, compatible with sheet metal roof systems, and capable of accomodating pipes sized between 3/8 inch (9.5 mm) and 12 inches (305 mm).
1. Caps: EPDM.
2. Color: As indicated on drawings.
3. Products:
   a. Menzies Metal Products; Plumbing Stack Spun Aluminum: www.menzies-metal.com/#sle.

b. Substitutions: See Section 01 60 00 - Product Requirements.

E. Roof Penetration Sealing Systems: Premanufactured components and accessories as required to preserve integrity of roofing system and maintain roof warranty; suitable for conduits and roofing system to be installed; designed to accommodate existing penetrations where applicable.
1. Products:
a. Menzies Metal Products; Electrical Roof Stack and Cap: www.menzies-metal.com/#sle.
b. Substitutions: See Section 01 60 00 - Product Requirements.

F. Counterflashings: Factory fabricated and finished sheet metal that overlaps top edges of base flashing by at least 4 inches (102 mm), and designed to snap into through-wall flashing or reglets with lapped joints.
1. Material: Formed aluminum sheet, 0.025 inch (0.64 mm) thick, minimum.
2. Finish: Mill finish aluminum.
3. Color: As indicated on drawings.

G. Pipe Penetration Wall Seal: Seal for HVAC piping wall penetrations with wall-mounted rigid plastic outlet cover and elastomeric wall seal gasket.
1. Wall Outlet Size, Siding and Compact Applications: 6-7/8 inches wide by 3-7/8 inches high (175 mm wide by 99 mm high).
a. Elastomeric Sleeve Diameter: 1-11/16 inches (43 mm).
2. Outlet Cover Color: Match adjacent cladding material color.
3. Wall Outlet Air Leakage: Comply with ASTM E283/E283M performance tests.
4. Wall Outlet Air Permeance: Comply with ASTM E2178 performance tests.

H. Box Scupper Drains: Parapet and sidewall applications for roof overflow and drainage.
1. Box Size: 4 inches square x 18 inches long. (Cut to appropriate wall thickness)
2. Flange: Full 4 inches.
3. Outlet Drain Box: 3 inch box wiht overflow and cleanout to be screw attached to box at building exterior.
4. Fasteners: Stainless Steel
5. Material: Aluminum
6. Finish/Color: As selected by Architect from manufacturer's standard options.
7. Accessories: Strainer Kit; finish to match scupper
8. Products:
a. Menzies Metal Products; Clamp-Tite Aluminum Box Scupper Drain: www.menzies-metal.com/#sle.
9. Substitutions: See Section 01 60 00 - Product Requirements.

2.03 FINISHES

A. Clear Anodized Finish: AAMA 611 AA-M12C22A41 Class I clear anodic coating not less than 0.7 mil, 0.0007 inch (0.018 mm) thick.

B. Color Anodized Finish: AAMA 611 AA-M12C22A42/44 Class I integrally or electrolytically colored anodic coating not less than 0.7 mil, 0.0007 inch (0.018 mm) thick.

C. PVDF (Polyvinylidene Fluoride) Coating: Superior Performance Organic Finish, AAMA 2605; multiple coat, thermally cured fluoropolymer finish system; color as indicated.

2.04 ACCESSORIES

A. Sealant for Joints in Linear Components: As recommended by component manufacturer.

B. Adhesive for Anchoring to Roof Membrane: Compatible with roof membrane and approved by roof membrane manufacturer.

C. Insulation Board Adhesive: Two-component, low-rise polyurethane foam adhesive used for adhering insulation to low slope roof deck materials.
1. Products:

a. OMG Roofing Products; OlyBond500: www.roofing.com/#sle.
b. Substitutions: See Section 01 60 00 - Product Requirements.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that deck, curbs, roof membrane, base flashing, and other items affecting work of this Section are in place and positioned correctly.
   1. See Section 07 72 00 for information on roofing related accessories.

3.02 INSTALLATION

A. Install components in accordance with manufacturer's instructions and NRCA (RM) applicable requirements.

B. Seal joints within components when required by component manufacturer.

C. Anchor components securely.

D. Coordinate installation of components of this section with installation of roofing membrane and base flashings.

E. Coordinate installation of sealants and roofing cement with work of this section to ensure water tightness.

END OF SECTION

SECTION 07 72 00
ROOF ACCESSORIES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Roof curbs.

B. Insulated Roof hatches.

~~Snow guards.~~

1.02 RELATED REQUIREMENTS

A. Section 07 62 00-Sheet Metal Flashing and Trim.

B. Section 07 71 00 - Roof Specialties: Other manufactured roof specialty items.

1.03 REFERENCE STANDARDS

~~ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products; 2017.~~

~~ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware; 2023.~~

A. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2023.

1.04 SUBMITTALS

A. See Section 01 33 23-Submittals for City of Madison required submittal procedures.

B. Product Data: Manufacturer's data sheets on each product to be used.
   1. Preparation instructions and recommendations.
   2. Storage and handling requirements and recommendations.
   3. Installation methods.
   4. Maintenance requirements.

C. Shop Drawings: Submit detailed layout developed for this project and provide dimensioned location and number for each type of roof accessory.

   ~~Snow Guards: Submit design calculations for loadings and spacings based on manufacturer testing.~~

D. Warranty Documentation:
   1. Submit manufacturer warranty.
   2. Ensure that forms have been completed in Owner's name and registered with manufacturer.
   3. Submit documentation that roof accessories are acceptable to roofing manufacturer, and do not limit the roofing warranty.

1.05 DELIVERY, STORAGE, AND HANDLING

A. See Section 01 74 19 - Construction Waste Management and Disposal for packaging waste requirements.

B. Store products in manufacturer's unopened packaging until ready for installation.

C. Store products under cover and elevated above grade.

1.06 WARRANTY

A. See Section 01 77 00-Closeout Procedures for additional warranty requirements.

B. Manufacturer Warranty: Provide 5-year manufacturer warranty for parts and labor. Complete forms in Owner's name and register with manufacturer.

C. Extended Correction Period: Correct defective work within 5-year period commencing on Date of Substantial Completion.

PART 2 PRODUCTS

2.01 ROOF CURBS

A. Roof Curbs Manufacturers:
   1. AES Industries Inc: www.aescurb.com/#sle.
   2. The Pate Company: www.patecurbs.com/#sle.
   3. LMCurbs; Roof Curbs: www.lmcurbs.com/#sle.
   4. MKT Metal Manufacturing: www.mktduct.com/#sle.
   5. Substitutions: ~~See Section01 60 00 Product Requirements~~See Section 01 25 13 – Product Substitution Procedures.~~.~~

B. Roof Curbs Mounting Assemblies: Factory fabricated hollow sheet metal construction, internally reinforced, and capable of supporting superimposed live and dead loads and designated equipment load with fully mitered and sealed corner joints welded or mechanically fastened, and integral counterflashing with top and edges formed to shed water.
   1. Applications: Roof curbs used for roof penetrations/openings as indicated on drawings and HVAC units.
   2. Roof Curb Mounting Substrate: Curb substrate consists of flat roof deck sheathing with insulation.
   3. Sheet Metal Material:
      a. Galvanized Steel: Hot-dip zinc coated steel sheet complying with ASTM A653/A653M, SS Grade 33 (230); G60 (Z180) coating designation; 18 gauge, 0.048 inch (1.21 mm) thick.
   4. Roofing Cants: Provide integral sheet metal roofing cants dimensioned to begin slope at top of roofing system at 1:1 slope; minimum cant height 4 inches (102 mm).
   5. Provide layouts and configurations indicated on drawings.

C. Curbs Adjacent to Roof Openings: Provide curb on each side of opening, with top of curb horizontal for equipment mounting.
   1. Provide preservative treated wood nailers along top of curb.
   2. Insulate inside curbs with 1-1/2 inch (38 mm) thick fiberglass insulation.
   3. Height Above Finished Roof Surface: 8 inches (203 mm), minimum.

2.02 INSULATED ROOF HATCHES

A. Roof Hatch Manufacturers:
   1. Activar Construction Products Group, Inc. - JL Industries: www.activarcpg.com/#sle.
   2. Babcock-Davis: www.babcockdavis.com/#sle.
   3. Best Access Doors: www.bestaccessdoors.com/#sle.
   4. Bilco Company: www.bilco.com/#sle.
   5. FAKRO America LLC: www.fakrousa.com/#sle.
   6. Precision Ladders, LLC: www.precisionladders.com/#sle.
   7. Substitutions: See Section 01 25 13 – Product Substitution Procedures.

B. Frames and Curbs: One-piece curb and frame with integral cap flashing to receive roof flashings; extended bottom flange to suit mounting.
   1. Material: Galvanized steel, 14 gauge, 0.0747 inch (1.90 mm) thick.
   2. Material: Galvanized steel, 14 gauge, 0.0747 inch (1.90 mm) thick.
   3. Finish: Factory prime paint.
   4. Finish: Factory prime paint.
   5. Insulation: Manufacturer's standard; 1 inch (25 mm) rigid glass fiber, located on outside face of curb.

6. Insulation: Manufacturer's standard; 1 inch (25 mm) rigid glass fiber, located on outside face of curb.
7. Curb Height: 12 inches (305 mm) from finished surface of roof, minimum.
8. Provide when hatch or equipment does not have an integral curb.

C. Hardware: Steel, zinc coated and chromate sealed, unless otherwise indicated or required by manufacturer.
   1. Lifting Mechanisms: Compression or torsion spring operator with shock absorbers that automatically opens upon release of latch; capable of lifting covers despite 10 psf (475 kPa) load.
   2. Hinges: Heavy duty pintle type.
   3. Hold open arm with vinyl-coated handle for manual release.
   4. Latch: Upon closing, engage latch automatically and reset manual release.
   5. Manual Release: Pull handle on interior.
   6. Locking: Padlock hasp on interior.

2.03 NON-PENETRATING ROOFTOP SUPPORTS/ASSEMBLIES

A. Pre-Manufactured Roof Ladder Safety Grab Post
   1. Attaches to roof hatch, with hinged or telescoping movement that locks when fully extended above hatch opening. To provide stability when exiting or entering roof hatch.
   2. Material: Steel or Aluminum
   3. Finish: Powder coated
   4. Color: Safety Yellow
   5. Manufacturers:
      a. Global Industrial; Model WB713158: www.globalindustrial.com
      b. Bilco Company: Model LU-1: www.bilco.com
      c. Babcock Davis; Model BSPS; www.babcockdavis.com
      d. JL Industries/Activar Construction Products Group; Model LP-4, LP-6: www.activarcpg.com
      e. Or Approved Equal
   6. Substitutions: See Section 01 25 13 – Product Substitution Procedures.

~~SNOW GUARDS~~

~~Roof Membrane Fence Type Snow Guards: Base plate attached on top of EPDM, TPO, or PVC roof membrane and anchored to roof deck with mounting bracket that supports flat faced bar or single tube snow guard.~~

~~Base Plate: Stainless steel plate with holes for mounting with anchor bolts through membrane to roof deck.~~

~~Bracket: Aluminum mounting bracket bolted to base plate.~~
~~Products:~~
~~Alpine SnowGuards; PP115 Pipe-Style Snow Guard: www.alpinesnowguards.com/#sle.~~
~~Rocky Mountain Snow Guards, Inc; Single Ply - 2 Pipe or 3 Pipe Bolt Down Snow Fence Bracket: www.rockymountainsnowguards.com/#sle.~~
~~TRA Snow and Sun; Single Ply 1 Deck Mount Snow Fence: www.trasnowandsun.com/#sle.~~
~~Substitutions: See Section 01 60 00 - Product Requirements.~~

PART 3 EXECUTION

3.01 EXAMINATION

A. Do not begin installation until substrates have been properly prepared.

B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

C. See Section 07 71 00 for information on roof specialties.

3.02 PREPARATION

A. Clean surfaces thoroughly prior to installation.

B. Prepare surfaces using methods recommended by manufacturer for achieving acceptable results for applicable substrate under project conditions.

3.03 INSTALLATION

A. Install in accordance with manufacturer's instructions, in manner that maintains roofing system weather-tight integrity.

3.04 CLEANING

A. See Section 01 77 00-Closeout Procedures. for additional requirements.

B. Clean installed work to like-new condition.

3.05 PROTECTION

A. Protect installed products until completion of project.

B. Touch-up, repair or replace damaged products before Date of Substantial Completion.

END OF SECTION

SECTION 07 91 00
PREFORMED JOINT SEALS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Precompressed foam seals.

B. Compression gaskets.

C. Preformed strip seals.

1.02 RELATED REQUIREMENTS

A. Section 01 61 16 - Volatile Organic Compound (VOC) Content Restrictions: Emissions restrictions for joint seal adhesives and primers.

B. Section 07 92 00 - Joint Sealants: Liquid and mastic joint sealants and their backing materials.

C. Section 07 95 13 - Expansion Joint Cover Assemblies: for coordiantion.

1.03 REFERENCE STANDARDS

A. ASTM D1056 - Standard Specification for Flexible Cellular Materials—Sponge or Expanded Rubber; 2020.

B. ASTM D2240 - Standard Test Method for Rubber Property--Durometer Hardness; 2015 (Reapproved 2021).

C. ASTM D2628 - Standard Specification for Preformed Polychloroprene Elastomeric Joint Seals for Concrete Pavements; 1991 (Reapproved 2016).

D. UL 2079 - Standard for Tests for Fire Resistance of Building Joint Systems; Current Edition, Including All Revisions.

1.04 SUBMITTALS

A. See Section 01 33 23-Submittals for City of Madison required submittal procedures. for submittal procedures.

B. Product Data: Manufacturer's technical data sheets for each product, including chemical composition, movement capability, color availability, limitations on application, and installation instructions.

C. Color Cards: For color selection.

D. Volatile Organic Content (VOC) Documentation: For adhesives and primers, submit VOC content and emissions documentation as specified in Section 01 61 16.

E. Manufacturer's Qualification Statement.

F. Installer's Qualification Statement.

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum 10 years documented experience.

B. Installer Qualifications: Company specializing in performing work of the type specified in this section with at least 10 years of documented experience.

1.06 WARRANTY

A. See Section 01 77 00-Closeout Procedures. for additional warranty requirements.

B. Correct defective work within a two year period after Date of Substantial Completion.

C. Warranty: Include coverage for installed sealers that fail to achieve watertight seal or exhibit loss of adhesion or cohesion.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Precompressed Foam Seals:
1. EMSEAL Joint Systems, Ltd: www.emseal.com/#sle.
2. Nystrom, Inc: www.nystrom.com/#sle.
3. Tremco Commercial Sealants & Waterproofing: www.tremcosealants.com/#sle.
4. Watson Bowman Acme Corporation: www.watsonbowmanacme.com/#sle.
5. Willseal LLC: www.willseal.com/#sle.
6. ~~[~~ ~~]~~Erie Metal Specialties, Inc., CSS Series; www.eriemetal.com.
7. Substitutions: ~~See Section01 60 00 Product Requirements~~See Section 01 25 13 - Product Substitution Procedures.

B. Preformed Strip Seals:
1. EMSEAL Joint Systems, Ltd: www.emseal.com/#sle.
2. Sika Corporation: www.usa-sika.com/#sle.
3. Tremco Commercial Sealants & Waterproofing: www.tremcosealants.com/#sle.
4. Willseal LLC: www.willseal.com/#sle.
5. ~~[~~ ~~]~~Erie Metal Specialties, Inc., CSS Series; www.eriemetal.com.
6. Substitutions: ~~See Section01 60 00 Product Requirements~~See Section 01 25 13 - Product Substitution Procedures.

2.02 PRECOMPRESSED FOAM SEALS

A. Precompressed Foam Seal: Comprised of urethane, modified-acrylic impregnated, open-cell polyurethane, or closed-cell neoprene foam impregnated with water-repellent, and with self-adhesive faces protected prior to installation by release paper.
1. Color: Black.
2. Size as required to provide weathertight seal when installed.
3. Calculate size according to manufacturer's recommendations.
4. Measure size of existing joints before selecting seal width.
5. Provide product recommended by manufacturer for traffic-bearing use.
6. Applications:
   a. Exterior wall expansion joints.
   b. Building facade with seismic constraints.

B. Precompressed Foam Seal, Fire-Retardant Impregnated: Comprised of waterproof silicone face on fire-retardant impregnated foam seal.
1. Color: Gray.
2. Size as required to provide water-tight seal when installed.
3. Calculate size according to manufacturer's recommendations.
4. Measure size of existing joints before selecting seal width.
5. Provide product recommended by manufacturer for traffic-bearing use.
6. Fire-Rating: As indicated on drawings, comply with UL 2079.
7. Applications:
   a. Exterior wall expansion joints.
   b. Building facade with seismic constraints.

2.03 COMPRESSION GASKETS

A. Compression Gasket: Extruded hollow polychloroprene (neoprene) gasket complying with ASTM D2628; not requiring blockout recess in substrate; not requiring vacuum to collapse seal for installation.
1. Color: Black.
2. Durometer Hardness, Type A: Within 55 to 65, when tested in accordance with ASTM D2240.
3. Size and Shape: As indicated on Drawings.

4. Calculate size in accordance with manufacturer's recommendations.
5. Measure size of existing joints before selecting seal width.
6. Applications:
   a. Exterior wall expansion joints.

B. Compression Gasket: Extruded hollow gasket made of closed cell expanded rubber complying with ASTM D1056, with dense surface skin and serrated sidewalls.
1. Color: Black.
2. Durometer Hardness, Type OO: Within 35 to 65, when tested in accordance with ASTM D2240.
3. Calculate size in accordance with manufacturer's recommendations.
4. Measure size of existing joints before selecting seal width.
5. Adhesive: Epoxy sealant/adhesive recommended by gasket manufacturer.
6. Applications:
   a. Exterior wall expansion joints.

2.04 PREFORMED STRIP SEALS

A. Preformed Strip Seal: Factory formed profile for adhered application to face of joint substrate.
1. Measure size of existing joints before selecting seal width.
2. Provide compatible materials for application as recommended by manufacturer.
3. Applications:
   a. Exterior wall expansion joints.
   b. Door and window perimeter joints.

2.05 ACCESSORIES

A. Adhesive: As recommended by seal manufacturer.

B. Substrate Cleaner: Non-corrosive, non-staining type recommended by seal manufacturer; compatible with joint forming materials.

C. Primer: Type recommended by seal manufacturer to suit application; non-staining.

D. Backing Tape: Self-adhesive polyethylene tape with surface that seal will not adhere to.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that joints are ready to receive this work.

B. Measure joint dimensions and verify that seal products are of the correct size to properly seal the joints.

3.02 PREPARATION

A. Properly prepare construction components adjacent to the work of this section to prevent damage and disfigurement due to this work.

3.03 INSTALLATION

A. Install in accordance with manufacturer's written instructions.

B. Precompressed Foam Seals:
1. Install only when ambient temperature is within recommended application temperature range of adhesive. Consult manufacturer when installing outside this temperature range.
2. Prepare joints and install seals in accordance with manufacturer's written recommendations.
3. Remove loose materials and foreign matter that could impair adhesion of sealant.
4. Do not stretch precompressed seal; avoid joints except at corners, ends, and intersections; install with face 1/8 to 1/4 inch (3 to 6 mm) below adjoining surface.

C. Compression Gaskets:
1. Install only when ambient temperature is within recommended application temperature range of adhesive. Consult manufacturer when installing outside this temperature range.

2. Prepare joints and install seals in accordance with manufacturer's written recommendations.
3. Remove loose materials and foreign matter that could impair adhesion of sealant.
4. Avoid joints except at ends, corners, and intersections; seal joints with adhesive; install with face 1/8 to 1/4 inch (3 to 6 mm) below adjoining surface.

D. Preformed Strip Seals:
1. Install when ambient temperature is within recommended application temperature range of adhesive, and consult with manufacturer before installing outside this temperature range.
2. Prepare joints and install seals in accordance with manufacturer's written recommendations.
3. Remove loose materials and foreign matter that could impair adhesion.
4. When installing over existing non-functioning sealant, remove portions of existing installation that protrude beyond surface; install backing tape on surface of existing sealant installation to prevent adhesion of strip seal.

3.04 CLEANING

A. Clean adjacent soiled surfaces.

3.05 PROTECTION

A. Protect joints from damage until adhesives have properly cured.

END OF SECTION

SECTION 07 95 13
EXPANSION JOINT COVER ASSEMBLIES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Expansion joint cover assemblies for wall and ceiling surfaces.

1.02 RELATED REQUIREMENTS

A. Section 07 91 00 - Preformed Joint Seals: Sealing expansion and control joints using preformed joint seals.

B. Section 07 92 00 - Joint Sealants: Sealing expansion and control joints using gunnable and pourable sealants.

C. Section 09 21 16 - Gypsum Board Assemblies: Placement of expansion joint assemblies in gypsum board walls and ceilings.

1.03 REFERENCE STANDARDS

A. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes; 2021.

B. ASTM B221M - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes (Metric); 2021.

C. ASTM B308/B308M - Standard Specification for Aluminum-Alloy 6061-T6 Standard Structural Profiles; 2020.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Installation Templates: For frames and anchors to be embedded in concrete or masonry, furnish templates to relevant installers; include installation instructions and tolerances.

1.05 SUBMITTALS

A. See Section 01 33 23-Submittals for City of Madison required submittal procedures.

B. Product Data: Provide joint assembly profiles, profile dimensions, anchorage devices and available colors and finish.

C. Shop Drawings: Indicate joint and splice locations, miters, layout of the work, affected adjacent construction and anchorage locations.

D. Samples: Submit two samples of standard lengths, illustrating profile, dimension, color, and finish selected.

E. Manufacturer's Installation Instructions: Indicate rough-in sizes and required tolerances for item placement.

F. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
   1. See Section 01 60 00 for additional provisions.
   2. Extra Resilient Joint Filler: 15% of installed length and any special tools required for installation.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Expansion Joint Cover Assemblies:
   1. Basis of Design: Inpro: www.inprocorp.com/#sle.
   2. Architectural Art Mfg, Inc: www.archart.com/#sle.
   3. Construction Specialties, Inc: www.c-sgroup.com/#sle.
   4. EMSEAL Joint Systems, Ltd: www.emseal.com/#sle.
   5. MM Systems Corp: www.mmsystemscorp.com/#sle.
   6. Nystrom, Inc: www.nystrom.com/#sle.
   7. Pecora Corporation: www.pecora.com/#sle.

8. SITURA Inc: www.situra.com/#sle.
9. Watson Bowman Acme Corporation: www.watsonbowmanacme.com/#sle.
10. [~~_____~~]Erie Metal Specialties, Inc., CSS Series; www.eriemetal.com.
11. Substitutions: ~~See Section01 60 00 Product Requirements~~See Section 01 25 13 - Product Substitution Procedures.

2.02 EXPANSION JOINT COVER ASSEMBLY APPLICATIONS

A. Interior Wall/Ceiling Joints Subject to Thermal Movement:
   1. Manufacturers:
      a. Balco, Inc; WD Wall and Ceiling Snap-On Joint Cover: www.balcousa.com/#sle.
      b. Construction Specialties, Inc; Allway Standard Wall and Ceiling Covers: www.c-sgroup.com/#sle.
      c. [~~_____~~]Erie Metal Specialties, Inc., CSS Series; www.eriemetal.com.
      d. Substitutions: ~~See Section01 60 00 Product Requirements~~See Section 01 25 13 – Product Substitution Procedures..

B. Exterior Wall Joints Subject to Thermal Movement:
   1. Manufacturers:
      a. Balco, Inc; Exterior Wall, Elastomeric Face Seal System (FCWW): www.balcousa.com/#sle.
      b. Construction Specialties, Inc; Exterior Wall Covers: www.c-sgroup.com/#sle.
      c. EMSEAL Joint Systems, Ltd; BG System: www.emseal.com/#sle.
      d. SITURA Inc; RedLINE Waterproof Expansion Joint Systems: www.situra.com/#sle.
      e. [~~_____~~]Erie Metal Specialties, Inc., CSS Series; www.eriemetal.com.
      f. Substitutions: ~~See Section01 60 00 Product Requirements~~See Section 01 25 13 – Product Substitution Procedures..

2.03 EXPANSION JOINT COVER ASSEMBLIES

A. Expansion Joint Cover Assemblies - General: Factory-fabricated and assembled; designed to completely fill joint openings, sealed to prevent passage of air, dust, water, smoke; suitable for traffic expected.
   1. Joint Dimensions and Configurations: As indicated on drawings.
   2. Joint Cover Sizes: Selected to suit joint width and configuration, based on manufacturer's published recommendations and limitations.
   3. Joint Cover Styles: As indicated on drawings.
   4. Joint Movement Capability: If not indicated, provide minimum plus/minus 25 percent joint movement capability.
   5. Lengths: Provide covers in full lengths required; avoid splicing wherever possible.
   6. Anchors, Fasteners, and Fittings: Provided by cover manufacturer.

B. Sliding Cover Plate Type Covers: Provide plate with beveled edges and neat fit that does not collect dirt.

C. Covers in Gypsum Board Assemblies: Provide style with anchoring wings that can be completely covered by joint compound.

2.04 MATERIALS

A. Extruded Aluminum: ASTM B221 (ASTM B221M), 6063 alloy, T6 temper; or ASTM B308/B308M, 6061 alloy, T6 temper.
   1. Exposed Finish Outdoors: Natural anodized.
   2. Exposed Finish at Floors: Mill finish or natural anodized.
   3. Exposed Finish at Walls and Ceilings: Natural anodized.

B. Anchors and Fasteners: As recommended by cover manufacturer.

C. Threaded Fasteners: Galvanized steel.

D. Backing Paint for Aluminum Components in Contact with Cementitious Materials: Asphaltic type.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that joint preparation and dimensions are acceptable and in accordance with manufacturer's requirements.

B. Verify that frames and anchors installed by others are in correct locations and suitable for installation of remainder of assembly.

3.02 INSTALLATION

A. Install components and accessories in accordance with manufacturer's instructions.

B. Align work plumb and level.

C. Rigidly anchor to substrate to prevent misalignment.

3.03 PROTECTION

A. Do not permit traffic over unprotected floor joint surfaces.

B. Provide strippable coating to protect finish surface.

END OF SECTION

SECTION 08 80 00
GLAZING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Insulating glass units.

B. Glazing units.

C. Laminated glass interlayers.

D. Glazing compounds.

1.02 RELATED REQUIREMENTS

A. Section 07 25 00 - Weather Barriers.

B. Section 07 26 00 - Vapor Retarders.

C. Section 07 27 00 - Air Barriers.

D. Section 07 92 00 - Joint Sealants: Sealants for other than glazing purposes.

E. Section 08 11 13 - Hollow Metal Doors and Frames: Glazed lites in doors and borrowed lites.

F. Section 08 41 26 - All-Glass Entrances and Storefronts: Glazing provided as part of entrance assembly.

G. Section 08 43 13 - Aluminum-Framed Storefronts: Glazing provided as part of storefront assembly.

1.03 REFERENCE STANDARDS

A. 16 CFR 1201 - Safety Standard for Architectural Glazing Materials; Current Edition.

~~AAMA 501.6 - Recommended Dynamic Test Method for Determining the Seismic Drift Causing Glass Fallout from Window Wall, Curtain Wall and Storefront Systems; 2018.~~

B. ANSI Z97.1 - American National Standard for Safety Glazing Materials Used in Buildings - Safety Performance Specifications and Methods of Test; 2015 (Reaffirmed 2020).

C. ASTM C864 - Standard Specification for Dense Elastomeric Compression Seal Gaskets, Setting Blocks, and Spacers; 2005 (Reapproved 2019).

D. ASTM C920 - Standard Specification for Elastomeric Joint Sealants; 2018.

E. ASTM C1036 - Standard Specification for Flat Glass; 2021.

F. ASTM C1048 - Standard Specification for Heat-Strengthened and Fully Tempered Flat Glass; 2018.

G. ASTM C1172 - Standard Specification for Laminated Architectural Flat Glass; 2019.

H. ASTM C1193 - Standard Guide for Use of Joint Sealants; 2016 (Reapproved 2023).

I. ASTM C1376 - Standard Specification for Pyrolytic and Vacuum Deposition Coatings on Flat Glass; 2021a.

J. ASTM E1300 - Standard Practice for Determining Load Resistance of Glass in Buildings; 2016.

K. ASTM E2190 - Standard Specification for Insulating Glass Unit Performance and Evaluation; 2019.

L. GANA (SM) - GANA Sealant Manual; 2008.

M. ICC (IBC) - International Building Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

N. NFRC 100 - Procedure for Determining Fenestration Product U-factors; 2023.

O. NFRC 200 - Procedure for Determining Fenestration Product Solar Heat Gain Coefficient and Visible Transmittance at Normal Incidence; 2023.

P. NFRC 300 - Test Method for Determining the Solar Optical Properties of Glazing Materials and Systems; 2023.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Preinstallation Meeting: Convene a preinstallation meeting one week before starting work of this section; require attendance by each of the affected installers.

1.05 SUBMITTALS

A. See Section 01 33 23-Submittals for City of Madison required submittal procedures.

B. Product Data on Glazing Compounds and Accessories: Provide chemical, functional, and environmental characteristics, limitations, special application requirements, and identify available colors.

C. Installer's qualification statement.
   1. Architectural Glass and Metal Technician (AGMT) certificates or equivalent ANSI accredited certificates for architectural glass and metal installers for no less than 50% of the crew installing architectural glass and metal products.

1.06 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years of documented experience.
   1. Provide certified glass products through ANSI accredited certifications that include plant audits and independent laboratory performance testing.

B. Installer Qualifications: A qualified glazing contractor for this Project who employs glazing technicians certified under the Architectural Glass and Metal Technician (AGMT) certification program. No less than 50% of the crew performing architectural glass and metal work shall be Architectural Glass and Metal Technicians (AGMT).

C. Testing Agency Qualifications: Independent firm specializing in performing testing and inspections of the type specified in this section.

1.07 MOCK-UPS

A. See Section 01 43 39 - Mockups for additional requirements.

1.08 FIELD CONDITIONS

A. Do not install glazing when ambient temperature is less than 40 degrees F (4 degrees C).

B. Maintain minimum ambient temperature before, during and 24 hours after installation of glazing compounds.

1.09 WARRANTY

A. See Section 01 77 00-Closeout Procedures for additional warranty requirements.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Float Glass Manufacturers:
   1. Cardinal Glass Industries: www.cardinalcorp.com/#sle.
   2. Guardian Glass, LLC;~~[____]~~: www.guardianglass.com/#sle.
   3. Oldcastle Building Envelope: www.obe.com
   4. Vitro Architectural Glass (formerly PPG Glass);~~[____]~~; Solarban 65: www.vitroglazings.com/#sle.
   5. Or Approved Equal.
   6. Substitutions: See Section 01 25 13 - Product Substitution Procedures.

B. Laminated Glass Manufacturers:
   1. Cardinal Glass Industries: www.cardinalcorp.com/#sle.
   2. Or Approved Equal.
   3. Substitutions: See Section 01 25 13 - Product Substitution Procedures.

C. Bird-Friendly Glass Manufacturers:
1. Cardinal Glass Industries: www.cardinalcorp.com/#sle.
2. Guardian Glass, LLC;[ ]: www.guardianglass.com/#sle.
3. Oldcastle Building Envelope: www.obe.com
4. Vitro Architectural Glass (formerly PPG Glass);[ ]; Solarban 65: www.vitroglazings.com/#sle.
5. Or Approved Equal.
6. Substitutions: See Section 01 25 13 - Product Substitution Procedures.

2.02 PERFORMANCE REQUIREMENTS - EXTERIOR GLAZING ASSEMBLIES

A. Provide type and thickness of exterior glazing assemblies to support assembly dead loads, and to withstand live loads caused by positive and negative wind pressure acting normal to plane of glass.
1. Comply with ASTM E1300 for design load resistance of glass type, thickness, dimensions, and maximum lateral deflection of supported glass.
2. Provide glass edge support system sufficiently stiff to limit the lateral deflection of supported glass edges to less than 1/175 of their lengths under specified design load.
3. Glass thicknesses listed are minimum.

B. Weather-Resistive Barrier Seals: Provide completed assemblies that maintain continuity of building enclosure water-resistive barrier, vapor retarder, and/or air barrier.
1. In conjunction with weather barrier related materials described in other sections, as follows:
a. Water-Resistive Barriers: See Section 07 25 00.
b. Vapor Retarders: See Section 07 26 00.
c. Air Barriers: See Section 07 27 00.
2. To utilize inner pane of multiple pane insulating glass units for continuity of vapor retarder and/or air barrier seal.
3. To maintain a continuous vapor retarder and/or air barrier throughout glazed assembly from glass pane to heel bead of glazing sealant.

C. Thermal and Optical Performance: Provide exterior glazing products with performance properties as indicated. Performance properties are in accordance with manufacturer's published data as determined with the following procedures and/or test methods:
1. Center of Glass U-Value: Comply with NFRC 100 using Lawrence Berkeley National Laboratory (LBNL) WINDOW 6.3 computer program.
2. Center of Glass Solar Heat Gain Coefficient (SHGC): Comply with NFRC 200 using Lawrence Berkeley National Laboratory (LBNL) WINDOW 6.3 computer program.
3. Solar Optical Properties: Comply with NFRC 300 test method.

2.03 GLASS MATERIALS

A. Float Glass: Provide float glass based glazing unless otherwise indicated.
1. Annealed Type: ASTM C1036, Type I - Transparent Flat, Class 1 - Clear, Quality - Q3.
2. Kind HS - Heat-Strengthened Type: Complies with ASTM C1048.
3. Kind FT - Fully Tempered Type: Complies with ASTM C1048.

B. Laminated Glass: Float glass laminated in accordance with ASTM C1172.
1. Laminated Safety Glass: Complies with ANSI Z97.1 - Class B or 16 CFR 1201 - Category I impact test requirements.

2.04 INSULATING GLASS UNITS

A. Manufacturers:
1. Glass: Any of the manufacturers specified for float glass.
2. Cardinal Glass Industries: www.cardinalcorp.com/#sle.
3. Guardian Glass, LLC;[ ]: www.guardianglass.com/#sle.
4. Oldcastle Building Envelope: www.obe.com

5. Vitro Architectural Glass (formerly PPG Glass);~~[_____]~~; Solarban 65: www.vitroglazings.com/#sle.
6. Substitutions: ~~See Section01 60 00-Product Requirements~~See Section 01 25 13 - Product Substitution Procedures.

B. Insulating Glass Units: Types as indicated.
1. Durability: Certified by an independent testing agency to comply with ASTM E2190.
2. Coated Glass: Comply with requirements of ASTM C1376 for pyrolytic (hard-coat) or magnetic sputter vapor deposition (soft-coat) type coatings on flat glass; coated vision glass, Kind CV; coated overhead glass, Kind CO.
3. Spacer Color: Black.
4. Edge Seal:
   a. Color: Black.
5. Purge interpane space with dry air, hermetically sealed.

C. Type IG-1 - Insulating Glass Units: Vision glass, double glazed.
1. Applications: Exterior glazing unless otherwise indicated.
2. Space between lites filled with argon.
   a. Basis of Design: Cardinal Endure IG spacer.
   b. Basis of Design Air Gap: 1/2 inch or 13 mm.
3. Outboard Lite: Heat-strengthened float glass, 1/4 inch or 5.77 mm thick, minimum.
   a. Tint: Clear.
   b. Coating: Self-cleaning type, on #1 surface.
   c. Coating: Low-E (passive type), LoE-270 on #2 surface.
4. Inboard Lite: Heat-strengthened float glass, 1/4 inch or 5.77 mm thick, minimum.
   a. Tint: Clear.
5. Total Thickness: 1 inch or 24.4 mm .
6. Thermal Transmittance (U-Value), Summer - Center of Glass: 0.30, nominal.
7. Visible Light Transmittance (VLT): 68 percent, nominal.
8. Solar Heat Gain Coefficient (SHGC): 0.41, nominal.

D. Type IG-1B - Insulating Glass Units: Bird-friendly Acid Etched vision glass, double glazed.
1. Applications: Exterior glazing unless otherwise indicated.
2. Space between lites filled with argon.
   a. Basis of Design: Cardinal Endure IG spacer.
   b. Basis of Design Air Gap: 1/2 inch or 13 mm.
3. Outboard Lite: Heat-strengthened float glass, 1/4 inch or 5.77 mm thick, minimum.
   a. Tint: Clear.
   b. Bird-Friendly Pattern: 5 mm dots, spaced at 2 by 2 inches.
      1) Acid-etched on exterior, Surface 1, of IGU.
   c. Coating: Low-E (passive type), LoE-270 on #2 surface.
4. Inboard Lite: Heat-strengthened float glass, 1/4 inch or 5.77 mm thick, minimum.
   a. Tint: Clear.
5. Total Thickness: 1 inch or 24.4 mm .
6. Thermal Transmittance (U-Value), Summer - Center of Glass: 0.30, nominal.

E. Type IG-2 - Insulating Glass Units: Vision glass, double glazed.
1. Applications: Tempered exterior glazing as indicated on drawings.
2. Space between lites filled with argon.
   a. Basis of Design: Cardinal Endure IG spacer.
   b. Basis of Design Air Gap: 1/2 inch or 13 mm.
3. Outboard Lite: Fully tempered float glass, 1/4 inch or 5.77 mm thick, minimum.
   a. Tint: Clear.
   b. Coating: Self-cleaning type, on #1 surface.

c. Coating: Low-E (passive type), LoE-270 on #2 surface.
4. Inboard Lite: Fully tempered ~~laminated~~ float glass, 1/4 inch or 5.77 mm thick, minimum.
a. Tint: Clear.
5. Total Thickness: 1 inch or 25.7 mm.
6. Thermal Transmittance (U-Value), Summer - Center of Glass: 0.30, nominal.

F. Type IG-2B - Insulating Glass Units: Bird-friendly Acid Etched vision glass, double glazed.
1. Applications: Tempered exterior glazing as indicated on drawings.
2. Space between lites filled with argon.
a. Basis of Design: Cardinal Endure IG spacer.
b. Basis of Design Air Gap: 1/2 inch or 13 mm.
3. Outboard Lite: Fully tempered float glass, 1/4 inch or 5.77 mm thick, minimum.
a. Tint: Clear.
b. Bird-Friendly Pattern: 5 mm dots, spaced at 2 by 2 inches.
1) Acid-etched on exterior, Surface 1, of IGU.
c. Coating: Low-E (passive type), LoE-270 on #2 surface.
4. Inboard Lite: Fully tempered float glass, 1/4 inch or 5.77 mm thick, minimum.
a. Tint: Clear.
5. Total Thickness: 1 inch or 24.4 mm .
6. Thermal Transmittance (U-Value), Summer - Center of Glass: 0.30, nominal.

G. Type IG-3B - Insulating Glass Units: Bird-friendly Acid Etched laminated exterior glazing.
~~Applications: See Section 01 23 00 - Alternates for locations .~~
1. Space between lites filled with argon.
a. Basis of Design: Cardinal Endure IG spacer.
b. Basis of Design Air Gap: 1/2 inch or 13 mm.
2. Outboard Lites: Heat-strengthened float glass, 1/4 inch or 5.77 mm thick, minimum.
a. Tint: Clear.
b. Bird-Friendly Pattern: 5 mm dots, spaced at 2 by 2 inches.
1) Acid-etched on exterior, Surface 1, of IGU.
c. Coating: Low-E (passive type), LoE-270 on #2 surface.
d. PVB Interlayer between outboard lites (LGI-1).
3. Inboard Lite: Heat-strengthened float glass, 1/4 inch or 5.77 mm thick, minimum.
a. Tint: Clear.
4. Total Thickness: 1 inch or 24.4 mm .
5. Thermal Transmittance (U-Value), Summer - Center of Glass: 0.30, nominal.

2.05 BASIS OF DESIGN - INSULATING GLASS UNITS

A. Basis of Design - Insulating Glass Units: Vision glazing, with low-e coating.
1. Applications: Exterior insulating glass glazing unless otherwise indicated.
2. Space between lites filled with argon.
3. Total Thickness: 1 inch or 24.4 mm.
4. Thermal Transmittance (U-Value), Summer - Center of Glass: 0.30, nominal.
5. Coated Glass: Comply with requirements of ASTM C1376 for pyrolytic (hard-coat) or magnetic sputter vapor deposition (soft-coat) type coatings on flat glass; coated vision glass, Kind CV; coated overhead glass, Kind CO.
6. Spacer Color: Black.
7. Edge Seal:
a. Dual-Sealed System: Provide polyisobutylene sealant as primary seal applied between spacer and glass panes, and silicone, polysulfide, or polyurethane sealant as secondary seal applied around perimeter.
8. Color: Black.
9. Purge interpane space with dry air, hermetically sealed.

2.06 GLAZING UNITS

A. Type G-1 - Monolithic Interior Vision Glazing:
   1. Applications: Interior glazing unless otherwise indicated.
   2. Glass Type: Annealed float glass.
   3. Tint: Clear.
   4. Thickness: 1/4 inch (6.4 mm), nominal.

B. Type G-2 - Monolithic Interior Vision Glazing:
   1. Applications: Tempered interior glazing as indicated on drawings.
   2. Glass Type: Fully tempered float glass.
   3. Tint: Clear.
   4. Thickness: 1/4 inch (6.4 mm), nominal.

2.07 LAMINATED GLASS INTERLAYERS

A. Type LGI-1 - Polyvinyl Butyral (PVB) Interlayer for Laminated Glazing:
   1. Functionality: Post-breakage safety and security.
   2. Applications:
      a. Single pane, laminated glass unit.
      b. Interior laminated pane of insulating glass unit, Type IG-3B.
   3. Color: Clear.
   4. Thickness: As required for indicated performance of laminated glass application.
   5. Manufacturers:
      a. Eastman Chemical Company; Saflex Clear PVB Interlayer: www.saflex.com/#sle.
      b. Sekisui S-LEC America, LLC; S-LEC Clear Film: www.s-lec.us/#sle.
      c. Substitutions: See Section 01 60 00 - Product Requirements.

2.08 GLASS COATINGS

A. Decorative Coating: Two component, water-based silicone polyurethane opaque color hybrid coating for roll coat and spray applications.
   1. Application: Interior locations as indicated on drawings.
      a. Glass and Coating Orientation: On surface facing substrate
   2. Decorative Coating Glass Unit Fabrication: Strictly according to coating manufacturer's written instructions.
   3. Dry Film Thickness: Between 0.0012 inch (0.030 mm) and 0.0015 inch (0.040 mm), minimum.
   4. Color: Selected from manufacturer's standard range and indicated on drawings.

2.09 GLAZING COMPOUNDS

A. Type GC-1 - Glazing Putty: Polymer modified latex recommended by manufacturer for outdoor use, knife grade consistency; gray color.

B. Type GC-2 - Butyl Sealant: Single component; ASTM C920 Grade NS, Class 12-1/2, Uses M and A, Shore A hardness of 10 to 20; black color.

C. Type GC-3 - Polysulfide Sealant: Two component; chemical curing, nonsagging type; ASTM C920 Type M, Grade NS, Class 25, Uses M, A, and G; with cured Shore A hardness range of 15 to 25; color as selected.

D. Type GC-4 - Polyurethane Sealant: Single component, chemical curing, nonstaining, nonbleeding; ASTM C920 Type S, Grade NS, Class 25, Uses M, A, and G; with cured Shore A hardness range of 20 to 35; color as selected.

E. Type GC-5 - Silicone Sealant: Single component; neutral curing; capable of water immersion without loss of properties; nonbleeding, nonstaining; ASTM C920 Type S, Grade NS, Class 25, Uses M, A, and G; with cured Shore A hardness range of 15 to 25; color as selected.

F. Manufacturers:

1. Bostik Inc: www.bostik-us.com/#sle.
2. Dow Corning Corporation: www.dowcorning.com/construction/#sle.Dow Corning Corporation: www.dowcorning.com/construction/#sle.
3. Momentive Performance Materials, Inc: www.momentive.com/#sle.
4. Pecora Corporation: www.pecora.com/#sle.
5. Tremco Commercial Sealants & Waterproofing; Proglaze: www.tremcosealants.com/#sle.

2.10 ACCESSORIES

~~Concealed nonprogressive structural glass mounting system.~~

~~Glass Panel Mounting System: Two-part patented system of interlocking metal rail brackets structurally connected to substrate surface and backs of glass units for concealed support.~~

~~Applications: As indicated on drawings for wall-mounted glass units.~~

~~Include adaptations for installation where compliance with applicable seismic design is required.~~

~~Provide system successfully tested in accordance with AAMA 501.6.~~

~~Mounting Action: Hook shape of mounting rail bracket interlocks with hook shape of another mounting bracket.~~

~~Nonprogressive mounting sequence.~~

~~System Weight Supporting Capacity: Up to 84 lb/sq ft (410.0 kg/sq m) glass panel weight per unit of area, or up to 500 lb (226.8 kg) total glass panel weight.~~

~~Maximum Reveal Width Between Panel Edges: 1/4 inch (6.4 mm) at completed installation.~~

~~Manufacturers:~~

~~McGrory Glass Inc; CaptiveHook by McGrory Glass: www.mcgrory.com/#sle.~~

~~Substitutions: See Section 01 60 00 - Product Requirements.~~

A. Setting Blocks: Silicone, with 80 to 90 Shore A durometer hardness; ASTM C864 Option II. Length of 0.1 inch for each square foot (25 mm for each square meter) of glazing or minimum 4 inch (100 mm) by width of glazing rabbet space minus 1/16 inch (1.5 mm) by height to suit glazing method and pane weight and area.

B. Glazing Tape, Back Bedding Mastic Type: Preformed, butyl-based, 100 percent solids compound with integral resilient spacer rod applicable to application indicated; 5 to 30 cured Shore A durometer hardness; coiled on release paper; black color.
   1. Width: As required for application.
   2. Thickness: As required for application.
   3. Spacer Rod Diameter: As required for application.
   4. Manufacturers:
      a. Pecora Corporation: www.pecora.com/#sle.
      b. Tremco Global Sealants: www.tremcosealants.com/#sle.
      c. Substitutions: See Section 01 60 00 - Product Requirements.

C. Glazing Splines: Resilient silicone extruded shape to suit glazing channel retaining slot; ASTM C864 Option II; color black.

D. Glazing Clips: Manufacturer's standard type.

E. Smoke Removal Window/Glazing Unit Markings: Adhesive backed markings affixed to manually operable or fixed windows of high-rise buildings to identify units intended for post-fire smoke removal in compliance with ICC (IBC) and local building officials.

2.11 SOURCE QUALITY CONTROL

A. See Section 01 40 00 - Quality Requirements for additional requirements.

B. Provide shop inspection and testing for all types of glass.

PART 3 EXECUTION

3.01 VERIFICATION OF CONDITIONS

A. Verify that openings for glazing are correctly sized and within tolerances, including those for size, squareness, and offsets at corners.

B. Verify that the minimum required face and edge clearances are being provided.

C. Verify that surfaces of glazing channels or recesses are clean, free of obstructions that may impede moisture movement, weeps are clear, and support framing is ready to receive glazing system.

D. Verify that sealing between joints of glass framing members has been completed effectively.

E. Proceed with glazing system installation only after unsatisfactory conditions have been corrected.

3.02 PREPARATION

A. Clean contact surfaces with appropriate solvent and wipe dry within maximum of 24 hours before glazing. Remove coatings that are not tightly bonded to substrates.

B. Seal porous glazing channels or recesses with substrate compatible primer or sealer.

C. Prime surfaces scheduled to receive sealant where required for proper sealant adhesion.

3.03 INSTALLATION, GENERAL

A. Install glazing in compliance with written instructions of glass, gaskets, and other glazing material manufacturers, unless more stringent requirements are indicated, including those in glazing referenced standards.

B. Install glazing sealants in accordance with ASTM C1193, GANA (SM), and manufacturer's instructions.

C. Do not exceed edge pressures around perimeter of glass lites as stipulated by glass manufacturer.

D. Set glass lites of system with uniform pattern, draw, bow, and similar characteristics.

E. Set glass lites in proper orientation so that coatings face exterior or interior as indicated.

F. Prevent glass from contact with any contaminating substances that may be the result of construction operations such as, and not limited to the following; weld splatter, fire-safing, plastering, mortar droppings, and paint.

3.04 INSTALLATION - DRY GLAZING METHOD (GASKET GLAZING)

A. Application - Exterior and/or Interior Glazed: Set glazing infills from either the exterior or the interior of the building.

B. Place setting blocks at 1/4 points with edge block no more than 6 inch (152 mm) from corners.

C. Rest glazing on setting blocks and push against fixed stop with sufficient pressure on gasket to attain full contact.

D. Install removable stops without displacing glazing gasket; exert pressure for full continuous contact.

3.05 INSTALLATION - DRY GLAZING METHOD (TAPE AND GASKET SPLINE GLAZING)

A. Application - Exterior Glazed: Set glazing infills from the exterior of the building.

B. Cut glazing tape to length; install on glazing pane. Seal corners by butting tape and sealing junctions with butyl sealant.

C. Place setting blocks at 1/4 points with edge block no more than 6 inch (152 mm) from corners.

D. Rest glazing on setting blocks and push against fixed stop with sufficient pressure to attain full contact.

E. Install removable stops without displacing glazing spline. Exert pressure for full continuous contact.

F. Carefully trim protruding tape with knife.

3.06 INSTALLATION - DRY GLAZING METHOD (TAPE AND TAPE)

A. Application - Interior Glazed: Set glazing infills from the interior of the building.

B. Cut glazing tape to length and set against permanent stops, projecting 1/16 inch (1.6 mm) above sight line.

C. Place setting blocks at 1/4 points with edge block no more than 6 inch (152 mm) from corners.

D. Rest glazing on setting blocks and push against tape for full contact at perimeter of pane or unit.

E. Place glazing tape on free perimeter of glazing in same manner described above.

F. Install removable stop without displacement of tape. Exert pressure on tape for full continuous contact.

G. Carefully trim protruding tape with knife.

~~INSTALLATION - WET GLAZING METHOD (COMPOUND AND COMPOUND)~~

~~Application - Interior Glazed: Set glazing infills from the interior of the building.~~

~~Install glazing resting on setting blocks. Install applied stop and center pane by use of spacer shims at 24 inch (610 mm) centers, kept 1/4 inch (6 mm) below sight line.~~

~~Locate and secure glazing pane using glazers' clips.~~

~~Fill gaps between glazing and stops with glazing compound until flush with sight line. Tool surface to straight line.~~

3.07 INSTALLATION - WET/DRY GLAZING METHOD (PREFORMED TAPE AND SEALANT)

A. Application - Exterior Glazed: Set glazing infills from the exterior of the building.

B. Cut glazing tape to length and set against permanent stops, 3/16 inch (5 mm) below sight line. Seal corners by butting tape and dabbing with butyl sealant.

C. Apply heel bead of butyl sealant along intersection of permanent stop with frame ensuring full perimeter seal between glass and frame to complete the continuity of the air and vapor seal.

D. Place setting blocks at 1/4 points with edge block no more than 6 inch (152 mm) from corners.

E. Rest glazing on setting blocks and push against tape and heel bead of sealant with sufficient pressure to attain full contact at perimeter of pane or glass unit.

F. Install removable stops, with spacer strips inserted between glazing and applied stops 1/4 inch (6.4 mm) below sight lines.
   1. Place glazing tape on glazing pane of unit with tape flush with sight line.

G. Fill gap between glazing and stop with _____ ~~type~~manufacturer's recommended sealant to depth equal to bite of frame on glazing, but not more than 3/8 inch (9 mm) below sight line.

H. Apply cap bead of _____ ~~type~~ manufacturer's recommended sealant along void between the stop and the glazing, to uniform line, flush with sight line. Tool or wipe sealant surface smooth.

3.08 INSTALLATION - WET/DRY GLAZING METHOD (TAPE AND SEALANT)

A. Application - Interior Glazed: Set glazing infills from the interior of the building.

B. Cut glazing tape to length and install against permanent stops, projecting 1/16 inch (1.6 mm) above sight line.

C. Place setting blocks at 1/4 points with edge block no more than 6 inch (152 mm) from corners.

D. Rest glazing on setting blocks and push against tape to ensure full contact at perimeter of pane or unit.

E. Install removable stops, spacer shims inserted between glazing and applied stops at 24 inch (610 mm) intervals, 1/4 inch (6 mm) below sight line.

F. Fill gaps between pane and applied stop with ~~[specified]~~ manufacturer's recommended type sealant to depth equal to bite on glazing, to uniform and level line.

G. Carefully trim protruding tape with knife.

~~INSTALLATION - BUTT JOINT GLAZING METHOD (SEALANT ONLY)~~

~~Application - Exterior Glazed: Set glazing infills from exterior side of building.~~

~~Temporarily brace glass in position for duration of glazing process; mask edges of glass at adjoining glass edges and between glass edges and framing members.~~

~~Temporarily secure a small diameter nonadhering foamed rod on back side of joint.~~

~~Apply sealant to open side of joint in continuous operation; thoroughly fill joint without displacing foam rod, and then tool sealant surface smooth to concave profile.~~

~~Permit sealant to cure then remove foam backer rod, and then apply sealant to opposite side, tool smooth to concave profile.~~

~~Remove masking tape.~~

~~INSTALLATION - PRESSURE GLAZED SYSTEMS~~

~~INSTALLATION - STRUCTURAL SILICONE GLAZING~~

~~Application - Factory (Shop) Glazed: Follow basic guidelines of structural silicone glazing for glazing application.~~

~~Provide design review of the glazing system and project details, adhesion testing, proper surface preparation, training and a quality service program.~~

~~Provide only structural silicone sealant, tested and manufactured for structural glazing.~~

~~INSTALLATION - ACRYLIC FOAM TAPE STRUCTURAL GLAZING~~

~~Application - Factory (Shop) Glazed: Follow basic guidelines of structural silicone glazing for acrylic foam tape structural glazing application.~~

~~Provide design review of the glazing system and project details, adhesion testing, proper surface preparation, training and a quality service program.~~

~~Provide only acrylic foam tapes designed, tested and manufactured for structural glazing.~~

~~INSTALLATION - PLASTIC FILM~~

~~Install plastic film with adhesive, applied in accordance with film manufacturer's instructions.~~

~~Place without air bubbles, creases or visible distortion.~~

~~Install film tight to perimeter of glass and carefully trim film with razor sharp knife. Provide 1/16 inch (1.6 mm) to 1/8 inch (3.2 mm) gap at perimeter of glazed panel unless otherwise required. Do not score the glass.~~

3.09 FIELD QUALITY CONTROL

A. See Section 01 45 16-Field Quality Control Procedures for City of Madison requirements.

B. Glass and Glazing product manufacturers to provide field surveillance of the installation of their products.

C. Monitor and report installation procedures and unacceptable conditions.

3.10 CLEANING

A. See Section 01 74 19 - Construction Waste Management and Disposal, for additional requirements.

B. Remove excess glazing materials from finish surfaces immediately after application using solvents or cleaners recommended by manufacturers.

C. Remove nonpermanent labels immediately after glazing installation is complete.

D. Clean glass and adjacent surfaces after sealants are fully cured.

E. Clean glass on both exposed surfaces not more than 4 days prior to Date of Substantial Completion in accordance with glass manufacturer's written recommendations.

3.11 PROTECTION

A. After installation, mark pane with an 'X' by using removable plastic tape or paste; do not mark heat absorbing or reflective glass units.

B. Remove and replace glass that is damaged during construction period prior to Date of Substantial Completion.

3.12 SCHEDULES

A. See applicable schedules as indicated on the drawings.

END OF SECTION

SECTION 09 30 00
TILING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Tile for floor applications.

B. Tile for wall applications.

C. Ceramic accessories.

D. Non-ceramic trim.

1.02 RELATED REQUIREMENTS

A. Section 07 92 00 - Joint Sealants: Sealing joints between tile work and adjacent construction and fixtures.

B. Section 07 95 13 - Expansion Joint Cover Assemblies: Expansion joint components.

C. Section 09 05 61 - Common Work Results for Flooring Preparation: Concrete slab moisture and alkalinity testing; remediation procedures.

D. Section 09 21 16 - Gypsum Board Assemblies: Tile backer board.

E. Section 22 40 00 - Plumbing Fixtures: Shower receptor.

1.03 REFERENCE STANDARDS

A. ANSI A108.1a - American National Standard Specifications for Installation of Ceramic Tile in the Wet-Set Method, with Portland Cement Mortar; 2017 (Reaffirmed 2022).

B. ANSI A108.1b - Installation of Ceramic Tile on a Cured Portland Cement Mortar Setting Bed with Dry-Set, Modified Dry-Set, or Improved Modified Dry-Set Cement Mortar; 2023.

C. ANSI A108.1c - Contractor's Option: Installation of Ceramic Tile in the Wet-Set Method with Portland Cement Mortar or Installation of Ceramic Tile on a Cured Portland Cement Mortar Setting Bed with Dry-Set, Modified Dry-Set, or Improved Modified Dry-Set Cement Mortar; 2023.

D. ANSI A108.4 - American National Standard Specifications for Installation of Ceramic Tile with Organic Adhesive or Water Cleanable Tile-Setting Epoxy Adhesive; 2023.

E. ANSI A108.5 - Setting of Ceramic Tile with Dry-Set Cement Mortar, Modified Dry-Set Cement Mortar, EGP (Exterior Glue Plywood) Modified Dry-Set Cement Mortar, or Improved Modified Dry-Set Cement Mortar; 2023.

F. ANSI A108.6 - American National Standard Specifications for Installation of Ceramic Tile with Chemical Resistant, Water Cleanable Tile-Setting and -Grout Epoxy; 2023.

G. ANSI A108.9 - American National Standard Specifications for Installation of Ceramic Tile with Modified Epoxy Emulsion Mortar/Grout; 2023.

H. ANSI A108.10 - American National Standard Specifications for Installation of Grout in Tilework; 2017 (Reaffirmed 2022).

I. ANSI A108.11 - American National Standard Specifications for Interior Installation of Cementitious Backer Units; 2018.

J. ANSI A108.19 - American National Standard Specifications for Interior Installation of Gauged Porcelain Tiles and Gauged Porcelain Tile Panels/Slabs by the Thin-Bed Method Bonded with Modified Dry-Set Cement Mortar or Improved Modified Dry-Set Cement Mortar; 2020.

K. ANSI A108.20 - American National Standard Specifications for Exterior Installation of Gauged Porcelain Tiles and Gauged Porcelain Tile Panels/Slabs; 2020.

L. ANSI A108/A118/A136 - American National Standard Specifications for the Installation of Ceramic Tile (Compendium); 2019.

M. ANSI A118.3 - American National Standard Specifications for Chemical Resistant, Water Cleanable Tile-Setting and -Grouting Epoxy and Water Cleanable Tile-Setting Epoxy Adhesive; 2021.

N. ANSI A118.6 - American National Standard Specifications for Standard Cement Grouts for Tile Installation; 2019.

O. ANSI A118.7 - American National Standard Specifications for High Performance Cement Grouts for Tile Installation; 2019.

P. ANSI A118.9 - American National Standard Specifications for Test Methods and Specifications for Cementitious Backer Units; 2019.

Q. ANSI A118.10 - American National Standard Specifications for Load Bearing, Bonded, Waterproof Membranes for Thin-Set Ceramic Tile and Dimension Stone; 2014 (Reaffirmed 2019).

R. ANSI A118.11 - American National Standard Specifications for EGP (Exterior Glue Plywood) Latex-Portland Cement Mortar; 2017.

S. ANSI A118.12 - American National Standard Specifications for Crack Isolation Membranes for Thin-Set Ceramic Tile and Dimension Stone Installation; 2014 (Reaffirmed 2019).

T. ANSI A118.13 - American National Standard Specification for Bonded Sound Reduction Membranes for Thin-Set Ceramic Tile Installation; 2014 (Reaffirmed 2024).

U. ANSI A118.15 - American National Standard Specifications for Improved Modified Dry-Set Cement Mortar; 2019.

V. ANSI A136.1 - American National Standard Specifications for Organic Adhesives for Installation of Ceramic Tile; 2020.

W. ANSI A137.1 - American National Standard Specifications for Ceramic Tile; 2022.

X. ANSI A137.2 - American National Standard Specifications for Glass Tile; 2022.

Y. ANSI A137.3 - American National Standard Specifications for Gauged Porcelain Tile and Gauged Porcelain Tile Panels/Slabs; 2021.

Z. ASTM C33/C33M - Standard Specification for Concrete Aggregates; 2023.

AA. ASTM C150/C150M - Standard Specification for Portland Cement; 2022.

BB. ASTM C373 - Standard Test Methods for Determination of Water Absorption and Associated Properties by Vacuum Method for Pressed Ceramic Tiles and Glass Tiles and Boil Method for Extruded Ceramic Tiles and Non-tile Fired Ceramic Whiteware Products; 2018 (Reapproved 2023).

CC. ASTM E492 - Standard Test Method for Laboratory Measurement of Impact Sound Transmission through Floor-Ceiling Assemblies Using the Tapping Machine; 2022.

DD. ASTM E2179 - Standard Test Method for Laboratory Measurement of the Effectiveness of Floor Coverings in Reducing Impact Sound Transmission Through Concrete Floors; 2021.

EE. ASTM F710 - Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring; 2022.

FF. ASTM F1869 - Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride; 2023.

GG. ASTM F2170 - Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes; 2019a.

HH. ICC-ES AC380 - Acceptance Criteria for Termite Physical Barrier Systems; 2021, with Editorial Revision (2022).

II. TCNA (HB) - Handbook for Ceramic, Glass, and Stone Tile Installation; 2023.

JJ. ANSI A108.2 - American National Standard General Requirements: Materials, Environmental and Workmanship 2019.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Pre-installation Meeting: Convene a pre-installation meeting one week before starting work of this section; require attendance by affected installers

1.05 SUBMITTALS

A. See Section 01 33 23-Submittals for City of Madison required submittal procedures.

B. Product Data: Provide manufacturers' data sheets on tile, mortar, grout, and accessories. Include instructions for using grouts and adhesives.

C. Shop Drawings: Indicate tile layout; patterns; color arrangement; perimeter conditions; junctions with dissimilar materials; control and expansion joints; thresholds; ceramic accessories; setting details.

D. Samples: Provide two of each type indicated.

E. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

F. Master Grade Certificate: Submit for each type of tile, signed by the tile manufacturer and tile installer.

G. Installer's Qualification Statement:
   1. Submit documentation of National Tile Contractors Association (NTCA) or Tile Contractors' Association of America (TCAA) accreditation.
   2. Submit documentation of completion of apprenticeship and certification programs.
   3. Submit documentation of Natural Stone Institute Accreditation.

H. Maintenance Data: Include recommended cleaning methods, cleaning materials, and stain removal methods.

I. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
   1. See Section 01 60 00 - Product Requirements, for additional provisions.
   2. Extra Tile: 5 percent of each type, size, color, and surface finish combination

1.06 QUALITY ASSURANCE

A. Maintain one copy of ANSI A108/A118/A136 and TCNA (HB) on site.

B. Installer Qualifications:
   1. Company specializing in performing tile installation, with minimum of five years of documented experience.
   2. Installer Certification:
      a. Ceramic Tile Education Foundation (CTEF): Certified Tile Installer (CTI).
      b. Apprenticeship Program: Installer has achieved Journey-worker status through an apprenticeship from the International Union of Bricklayers and Allied Craft-workers (IUBAC) or a U.S. Department of Labor (DOL)-recognized program.
      c. International Masonry Training and Education Foundation (IMTEF): Supervisor Certification Program (SCP).

1.07 DELIVERY, STORAGE, AND HANDLING

A. Protect adhesives from freezing or overheating in accordance with manufacturer's instructions.

1.08 FIELD CONDITIONS

A. Do not install solvent-based products in an unventilated environment.

B. Maintain ambient and substrate temperature above 50 degrees F (10 degrees C) during installation and curing of setting materials.

PART 2 PRODUCTS

2.01 TILE

A. Manufacturers: All products of each type by the same manufacturer.
   1. Substitutions: Not permitted.

B. Glazed Wall Tile.
   1. Size: As indicated on the drawings.
   2. Surface finish as indicated on drawings.
   3. Color(s): As indicated on drawings.
   4. Pattern: As indicated on drawings.
   5. Products
      a. Virginia Tile; Wow USA Duo [CWT-03].
      b. Ceramic Tileworks; Craft [CWT-05], Village [CWT-06], Up [CWT-08], Small [CWT-09].
      c. Substitutions: Not permitted.

C. Porcelain Floor Tile.
   1. Size: As indicated on the drawings.
   2. Thickness: 3/8 inch.
   3. Edges: Square (Rectified).
   4. Surface Finish: UPS.
   5. Color: As indicated on drawings.
   6. Pattern: 1/3 lap.
   7. Products:
      a. ~~Crossville Argent.~~Ceramic Tileworks; Oh!Take [POR-01].
      b. Ceramic Tileworks; Platform [POR-02].
      c. Substitutions: Not permitted.

D. Porcelain Wall Tile.
   1. Size: As indicated on the drawings.
   2. Thickness: 3/8 inch.
   3. Edges: Square (Rectified).
   4. Surface Finish: UPS.
   5. Color: As indicated on drawings.
   6. Pattern: As indicated on drawings.
   7. Products:
      a. Ceramic Tileworks; Symmetry [CWT-01 / CWT-07].
      b. Crossville; Native Metal [CWT-02].
      c. Substitutions: Not permitted.

E. Mosaic Wall Tile.
   1. Type: Curve Chevron.
   2. Size: As indicated on drawings.
   3. Finish: Gloss.
   4. Color(s): Jade.
   5. Pattern: As indicated on drawings.
   6. Products:
      a. Virginia Tile: Walker Zanger 6th Ave. [CWT-04]
      b. Substitutions: Not permitted.

2.02 TRIM AND ACCESSORIES

A. Non-Ceramic: Satin natural anodized extruded aluminum.
   1. Application: End Cap and Outside Corners
      a. Product: Schluter Systems Jolly.
      b. Size: As necessary for the tile/application.
   2. Application: Tile to carpet flooring transitions.
      a. Product: Schluter Systems Schiene.
      b. Size: As necessary for the tile/application.
   3. Application: Floor to wall transitions.

a. Product: Schluter Systems DILEX-EHK & AHKA.
b. Size: As necessary for the tile/application.
4. Installation: Set with tile mortar or adhesive.
5. Substitutions: ~~See Section 01 60 00 - Product Requirements.~~See Section 01 25 13 – Product Substitution Procedures.

2.03 SETTING MATERIALS

A. Provide setting and grout materials from same manufacturer.

B. Manufacturers:
1. Basis of Design: LATICRETE International.
2. Substitutions: ~~See Section 01 60 00 - Product Requirements.~~See Section 01 25 13 – Product Substitution Procedures.

C. Improved Latex-Portland Cement Mortar Bond Coat: ANSI A118.15.
1. Applications: Use this type of bond coat where indicated, and where no other type of bond coat is indicated.
2. Products:
a. Basis of Design: LATICRETE International, Inc; MULTIMAX LITE.
b. Substitutions: ~~See Section 01 60 00 - Product Requirements.~~ See Section 01 25 13 – Product Substitution Procedures.

2.04 GROUTS

A. Provide setting and grout materials from same manufacturer.

B. Manufacturers:
1. Basis of Design: LATICRETE International, Inc.
a. Substitutions: ~~See Section 01 60 00 - Product Requirements.~~See Section 01 25 13 – Product Substitution Procedures.

C. Epoxy Grout: ANSI A118.3 chemical resistant and water-cleanable epoxy grout.
1. Applications: Use this type of grout where indicated.
2. Color(s): As selected by Architect from manufacturer's full line.
3. Products:
a. SPECTRALOCK Pro.

2.05 ACCESSORY MATERIALS

A. Manufacturers:
1. Basis of Design: LATICRETE International.
2. Substitutions: ~~See Section 01 60 00 - Product Requirements.~~See Section 01 25 13 – Product Substitution Procedures.

B. Concrete Floor Slab Crack Isolation Membrane: Material complying with ANSI A118.12; intended as waterproofing.
1. Crack Resistance: No failure at 1/8 inch (3.2 mm).
2. Fluid or Trowel Applied Type:
a. Material: Synthetic rubber; Acrylic.
b. Thickness: 20 mils (0.5 mm).
c. Product: HydroBAN.

C. Tile Underlayment: Specifically designed for bonding to thin-set setting mortar; not primarily waterproofing material and having the following characteristics:
1. Sound Reduction: Comply with ANSI A118.13; ASTM E492; ASTM E2179
2. Crack Resistance: No failure at 1/8-inch (3.2 mm) inch gap, minimum; comply with ANSI A118.12
3. Water Resistance: Comply with ANSI A118.10, bonded waterproofing.
4. Termite Resistance: 100 percent when tested in accordance with ICC-ES AC380.

5. Suitable for installation over green concrete.
6. Type: Fluid or trowel applied.
    a. Products:
        1) LATICRETE International, Inc; Level Plus.
        2) Substitutions: ~~See Section 01 60 00 - Product Requirements.~~See Section 01 25 13 – Product Substitution Procedures.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that subfloor surfaces are smooth and flat within the tolerances specified for that type of work and are ready to receive tile.

B. Verify that wall surfaces are smooth and flat within the tolerances specified for that type of work, are dust-free, and are ready to receive tile.

C. Verify that subfloor surfaces are dust free and free of substances that could impair bonding of setting materials to subfloor surfaces.

D. Cementitious Subfloor Surfaces: Verify that substrates are ready for tiling installation by testing for moisture and alkalinity (pH).
    1. Test in accordance with Section 09 05 61.
    2. Test as Follows:
        a. Alkalinity (pH): ASTM F710.
        b. Internal Relative Humidity: ASTM F2170.
        c. Moisture Vapor Emission: ASTM F1869.
    3. Obtain instructions if test results are not within limits recommended by tiling material manufacturer and setting material manufacturer.
    4. Follow moisture and alkalinity remediation procedures in Section 09 05 61.

E. Verify that required floor-mounted utilities are in correct location.

3.02 PREPARATION

A. Protect surrounding work from damage.

B. Vacuum clean surfaces and damp clean.

C. Seal substrate surface cracks with filler. Level existing substrate surfaces to acceptable flatness tolerances.

D. Install backer board in accordance with ANSI A108.11 and board manufacturer's instructions. Tape joints and corners, cover with skim coat of setting material to a feather edge.

E. Prepare substrate surfaces for adhesive installation in accordance with adhesive manufacturer's instructions.

3.03 INSTALLATION - GENERAL

A. Install tile and grout in accordance with applicable requirements of ANSI A108.1a through ANSI A108.20, manufacturer's instructions, and TCNA (HB) recommendations.

B. Lay tile to pattern indicated. Do not interrupt tile pattern through openings.

C. Cut and fit tile to penetrations through tile, leaving sealant joint space. Form corners and bases; Align floor, base, and wall joints.; Align floor and wall joints

D. Place tile joints uniform in width, subject to variance in tolerance allowed in tile size. Make grout joints without voids, cracks, excess mortar or excess grout, or too little grout.

E. Form internal angles square; and external angles square

F. Install ceramic accessories rigidly in prepared openings.

G. Install non-ceramic trim in accordance with manufacturer's instructions.

H. Install thresholds where indicated.

I. Sound tile after setting. Replace hollow sounding units.

J. Keep control and expansion joints free of mortar, grout, and adhesive.

K. Prior to grouting, allow installation to completely cure; minimum of 48 hours.

L. Grout tile joints unless otherwise indicated. Use standard grout unless otherwise indicated.

M. At changes in plane and tile-to-tile control joints, use tile sealant instead of grout, with either bond breaker tape or backer rod as appropriate to prevent three-sided bonding.

3.04 INSTALLATION - FLOORS - THIN-SET METHODS

A. Over interior; concrete substrates, install in accordance with TCNA (HB) Method F113, dry-set or latex-Portland cement bond coat; F116, organic adhesive; with standard grout unless otherwise indicated.
   1. Use uncoupling membrane under all tile unless other underlayment is indicated.
   2. Where waterproofing membrane is indicated, install in accordance with TCNA (HB) Method F122, with latex-Portland cement grout.
   3. Where epoxy bond coat and grout are indicated, install in accordance with TCNA (HB) Method F131.
   4. Where furan bond coat and grout are indicated, install in accordance with TCNA (HB) Method F133.
   5. Where epoxy or furan grout is indicated, but not epoxy or furan bond coat, install in accordance with TCNA (HB) Method F115.

3.05 INSTALLATION - WALL TILE

A. Over gypsum wallboard on wood or metal studs install in accordance with TCNA (HB) Method W243, thin-set with dry-set or latex-Portland cement bond coat; W223, thin-set with organic adhesive.
   1. Where mortar bed is indicated, install in accordance with TCNA (HB) Method W222, one coat method.
   2. Where waterproofing membrane is indicated other than at showers and bathtub walls, install in accordance with TCNA (HB) Method W222, one coat method.

B. Over interior concrete and masonry install in accordance with TCNA (HB) Method W202, thin-set with dry-set or latex-Portland cement bond coat, W211, bonded mortar bed without membrane.

3.06 CLEANING AND MAINTENANCE

A. Clean tile and grout surfaces.

3.07 PROTECTION

A. Do not permit traffic over finished floor surface 4 days after installation.

3.08 SCHEDULE

A. As indicated on the drawings.

END OF SECTION

SECTION 09 51 26
VENEERED WOOD CEILING PANELS~~: WOODWORKS GRILLE - FORTÉ~~

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general conditions of Contract, including General and Supplementary Conditions and Divisions-1 Specification sections apply to work of this section.

1.02 SUMMARY

A. Section Includes:
   1. ~~WoodWorks Grille Forté~~ Veneered Wood Ceiling Panels ~~with Centered Notched and Flat Backers~~
   2. Exposed grid suspension system.
   3. Wire hangers, fasteners, main runners, cross tees, wall angle moldings and accessories.

B. Related Sections:
   1. Section 09 51 00 - Acoustical Ceilings
   2. Section 09 21 16 - Gypsum Board Assemblies
   3. Section 09 22 16 - Non-Structural Metal Framing
   4. Division 23 - HVAC
   5. Division 26 - Electrical Work

1.03 REFERENCES

A. American Society for Testing and Materials (ASTM):
   1. ASTM A 641 Standard Specification for Zinc-Coated (Galvanized) Carbon Steel Wire.
   2. ASTM A 653 Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) by the Hot- Dip Process.
   3. ASTM A 1008 Standard Specification for Steel, Sheet, and Cold Rolled Carbon, Structural, High-Strength Low-Alloy and High-Strength Low-Alloy with Improved Formability.
   4. ASTM C 635 Standard Specification for Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings.
   5. ASTM C 636 Recommended Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels.
   6. ASTM E 84 Standard Test Method for Surface Burning Characteristics of Building Materials.
   7. ASTM E 580 Application of Ceiling Suspension Systems for Acoustical Tile and Lay-In Panels in Areas Requiring Seismic Restraint.
   8. ASTM C 423 Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method.
   9. ASTM E 1264 Classification for Acoustical Ceiling Products.
   10. Hardwood Plywood & Veneer Association (HPVA)
   11. International Building Code
   12. ASHRAE Standard 62 1 2004 Ventilation for Acceptable Indoor Air Quality
   13. NFPA 70 National Electrical Code
   14. ASCE 7 American Society of Civil Engineers, Minimum Design Loads for Buildings and Other Structures
   15. International Code Council-Evaluation Services - AC 156 Acceptance Criteria for Seismic Qualification Testing of Non-structural Components
   16. International Code Council-Evaluation Services Report - Seismic Engineer Report
       a. ESR 1308 - Armstrong T-Bar or Dimensional Suspension
   17. California Air Resources Board (CARB) compliant
   18. LEED - Leadership in Energy and Environmental Design is a set of rating systems for the design, construction, operation, and maintenance of green buildings

1.04 SUBMITTALS

A. See Section 01 33 23-Submittals for City of Madison required submittal procedures.

B. Shop Drawings: Layout and details of ceilings. Show locations of items that are to be coordinated with or supported by the ceilings.

C. Installation Instructions: Submit manufacturer's installation instructions as referenced in Part three, Installation.

D. Product Data: Submit manufacturer's technical data for each type of ceiling unit and suspension system required.

E. Samples: 4-1/4"x 7"x 3/4 – Real Wood Veneer on fire rated particle board– Semi-gloss tinted topcoat – Clear Finish

F. Certifications: Manufacturer's certifications that products comply with specified requirements, including laboratory reports showing compliance with specified tests and standards.

G. Non-Conformance: All products not conforming to the requirements of this specification and or the manufacturer's published values are to be disposed. The Contractor performing the work will replace with approved product at their expense.

1.05 QUALITY ASSURANCE

A. Single-Source Responsibility: Provide ceiling panel units and grid components by a single manufacturer.

B. Fire Performance Characteristics: Identify ceiling components with appropriate markings of applicable testing and inspecting organization.

1. Surface Burning Characteristics: As follows, tested per ASTM E-84 and complying with ASTM E 1264 for Class A products.
2. HPVA (Hardwood Plywood and Veneer Association) certification and audit program per ASTM E-84 tunnel test.

C. Woodworking Standards: Manufacturer must comply with specified provisions of Architectural Woodworking Institute quality standards.

D. Coordination of Work: Coordinate ceiling work with installers of related work including, but not limited to building insulation, gypsum board, light fixtures, mechanical systems, electrical systems, and sprinklers.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Store ceiling components in a dry interior location in their cartons prior to installation to avoid damage. Store cartons in a flat, horizontal position. The protectors between the panels should not be removed until installation.

B. Do not store in unconditioned spaces with humidity greater than 55 percent or lower than 25 percent relative humidity and temperatures lower than 50 degrees F or greater than 86 degrees F. Panels must not be exposed to extreme temperatures, for example, close to a heating source or near a window with direct sunlight.

C. Handle ceiling units carefully to avoid chipped edges or damage to units in any way.

1.07 PROJECT CONDITIONS

A. Wood ceiling materials should be permitted to reach room temperature and have a stabilized moisture content for a minimum of 72 hours before installation. (Remove plastic wrap to allow panels to climatize).

B. The wood panels should not be installed in spaces where the temperature or humidity conditions vary from the temperatures and conditions that will be normal in the occupied space.

C. As interior finish products, the veneered panels are designed for installation in temperature conditions between 50 degrees F and 86 degrees F, in spaces where the building is enclosed, and HVAC systems are functioning and will be in continuous operation. Relative humidity should not fall below 25 percent or exceed 55 percent.

1.08 WARRANTY

A. Veneered Wood Panel: Submit a written warranty executed by the manufacturer, agreeing to repair or replace panels that fail within the warranty period. Failures include, but are not limited to:
   1. Veneered Wood Panels: Defects in materials or factory workmanship.
   2. Grid System: Rusting and manufacturing defects.

B. Warranty Period:
   1. Veneered Wood panels: One (1) year from date of installation.
   2. Grid: Ten (10) years from date of installation.

C. The Warranty shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and will be in addition to and run concurrent with other warranties made by the Contractor under the requirements of the Contract Documents.

1.09 MAINTENANCE

A. Extra Materials: Deliver extra materials to Owner. Furnish extra materials described below that match products installed. Packaged with protective covering for storage and identified with appropriate labels.
   1. Ceiling Units: Furnish quality of full-size units equal to 2.0 percent of amount installed.
   2. Exposed Suspension System Components: Furnish quantity of each exposed suspension component equal to 1.0 percent of amount installed.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Basis of Design WoodWorks Grille - Forte' Veneered Ceilings Panels:
   1. Armstrong World Industries, Inc.

B. Suspension Systems:
   1. Armstrong World Industries, Inc.

C. Substitutions: ~~not permitted.See Section~~ See Section 01 25 13 – Product Substitution Procedures. Pre-Approved Equal: 9Wood Inc; 1100 Cross Piece Grille: www.9wood.com.

2.02 WOOD CEILING UNITS

A. Ceiling Panels Type: WD-1
   1. Surface Texture: Smooth
   2. Composition: Real wood veneer on fire rated particle board
   3. Finish(s): Real Wood Veneer
      a. Dark Cherry
   4. Panel Width: as indicated on the drawings.
      a. Panel Length Size(s): as indicated on the drawings.
      b. Slat Width: as indicated on the drawings.
         1) Height – Number of Slats (Spacing)
            (a) As indicated on the drawings.
   5. Acoustical Performance Infill:
      a. Calla Square Lay-in panel - Item 2820BK – NRC 0.85, CAC 35
   6. Flame Spread:
      a. Class A: ASTM E84 surface burning characteristics. Flame Spread Index 25 or less. Smoke Developed Index 50 or less.

7. Acceptable Product: WoodWorks Grille Forté Veneered Panels –items 6333L_ S14-S17, 6334L_S14-S14, 6335L _S14_S17, 6336L_S14-S16 as manufactured by Armstrong World Industries.
   a. Please use ordering format found on manufacturer's data page.

B. Accessories:
   1. As required for selected panel configuration(s)

2.03 SUSPENSION SYSTEMS

A. Components: All main beams and cross tees shall be commercial quality hot dipped galvanized steel as per ASTM A653. Main beams and cross tees are double-web steel construction with 15/16-inch type exposed flange design. Exposed surfaces chemically cleansed, capping prefinished galvanized steel in baked polyester paint. Main beams and cross tees shall have rotary stitching.
   1. Structural Classification: ASTM C635 (Heavy Duty).
   2. Color: Tech Black.
   3. Acceptable Product: Prelude XL 15/16" Exposed Tee Main beam item 7301BL, Prelude XL Exposed Tee item XL7341BL, Prelude XL Exposed Tee 2' item XL7328BL as manufactured by Armstrong World Industries, Inc.

B. Attachment Devices: Size for five times design load indicated in ASTM C 635, Table 1, Direct Hung unless otherwise indicated.

C. Wire for Hangers and Ties: ASTM A641, Class 1 zinc coating, soft temper, pre-stretched, with a yield stress load of at least times-three design load, but not less than 12 gauge.

D. Accessories/Edge Moldings and Perimeter Trim:
   1. As selected by Architect from manufactuer's standard options.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Do not proceed with installation until all wet work such as concrete, terrazzo, plastering and painting has been completed and thoroughly dried out.

B. Proper designs for both supply air and return air, maintenance of the HVAC filters and building interior space are essential to minimize soiling. Before starting the HVAC system, make sure supply air is properly filtered and the building interior is free of construction dust.

3.02 PREPARATION

A. Measure each ceiling area and establish layout of acoustical units to balance border widths at opposite edges of each ceiling. Avoid use of less than half width units at borders and comply with reflected ceiling plans. Coordinate panel layout with mechanical and electrical fixtures.

B. WoodWorks ceiling materials should be permitted to reach room temperature and have a stabilized moisture content for a minimum of 72 hours before installation. (Remove plastic wrap to allow panels to climatize).

3.03 INSTALLATION

A. Interior WoodWorks products, the veneered wood panels are designed for installation in temperature conditions between 50 degrees F and 86 degrees F, in spaces where the building is enclosed, and HVAC systems are functioning and will be in continuous operation. Relative humidity should not fall below 25 percent or exceed 55 percent.

B. Install suspension system and panels in compliance with ASTM C636, ASTM E580, with the approval of the authorities having jurisdiction, and in accordance with the manufacturer's WoodWorks Grille Forté Veneered Installation Instructions.

3.04 ADJUSTING AND CLEANING

A. Replace damaged and broken panels.

B. Clean exposed surfaces of ceilings panels, including trim, edge moldings, and suspension members. Comply with manufacturer's instructions for cleaning and touch up of minor finish damage.

END OF SECTION

SECTION 10 22 39
FOLDING PANEL PARTITIONS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Top-supported folding panel partitions, horizontal opening.

1.02 RELATED REQUIREMENTS

A. Section 06 10 00 - Rough Carpentry: Wood blocking and track support shimming.

B. Section 08 71 00 - Door Hardware: Lock cylinders for panels

C. Section 26 05 33.13 - Conduit for Electrical Systems: Empty conduit from partition motor controller to disconnect and from motor controller to control buttons.

D. Section 26 05 83 - Wiring Connections: Electrical characteristics and wiring connections; control buttons .

1.03 REFERENCE STANDARDS

A. ANSI A208.1 - American National Standard for Particleboard; 2022.

B. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes; 2021.

C. ASTM B221M - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes (Metric); 2021.

D. ASTM E90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements; 2009 (Reapproved 2016).

E. ASTM E413 - Classification for Rating Sound Insulation; 2022.

F. ASTM E557 - Standard Guide for Architectural Design and Installation Practices for Sound Isolation Between Spaces Separated by Operable Partitions; 2012 (Reapproved 2020).

G. ASTM F793/F793M - Standard Classification of Wall Coverings by Use Characteristics; 2020.

H. HPVA HP-1 - American National Standard for Hardwood and Decorative Plywood; 2020.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Preinstallation Meeting: Convene at project site seven calendar days prior to scheduled beginning of construction activities of this section to review section requirements.
   1. Require attendance by representatives of installer.

1.05 SUBMITTALS

A. See Section 01 33 23-Submittals for City of Madison required submittal procedures.

B. Product Data: Provide data on partition materials, operation, hardware and accessories, electric operating components, track switching components, and colors and finishes available.

C. Design Data: Design calculations, bearing seal and signature of structural engineer licensed to practice in the State in which the Project is located, showing loads at points of attachment to the building structure.

D. Shop Drawings: Indicate opening sizes, track layout, details of track and required supports, static and dynamic loads, location and details of pass door and frame, adjacent construction and finish trim, and stacking depth.

E. Samples for Review: Submit two samples of surface finish, 12 by 12 inches (300 by 300 mm) size, illustrating quality, colors selected, texture, and weight.

F. Certificates: Certify that partition system meets or exceeds specified acoustic requirements.

G. Manufacturer's Instructions: Indicate special procedures.

H. Maintenance Data: Include recommended cleaning methods, cleaning materials, and stain removal methods. Describe cleaning materials detrimental to finish surfaces and hardware finish.

1.06 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing products specified this section with minimum three years of documented experience.

B. Installer Qualifications: Company specializing in performing work of the type specified and with at least three years of documented experience.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Store products in manufacturer's unopened packaging until installation.

1.08 WARRANTY

A. See Section 01 77 00-Closeout Procedures, for additional warranty requirements.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Folding Panel Partitions - Horizontal Opening:
   1. BASIS OF DESIGN: Modernfold, a DORMA Group Company: www.modernfold.com/#sle.
   2. Kwik-Wall Company; ~~2000 Series Operable Walls;~~ Model 3050: www.kwik-wall.com/#sle.
   3. Substitutions: ~~See Section01 60 00 Product Requirements~~See Section 01 25 13 – Product Substitution Procedures.

2.02 FOLDING PANEL PARTITIONS - HORIZONTAL OPENING

A. Folding Panel Partitions: Center opening; paired panels; side stacking; motor operated.
   1. Basis of Design: Acousti-seal Encore Paired Panel, STC 56 by Modernfold.

B. Panel Construction:
   1. Panel Properties:
      a. Thickness With Finish: 4 inches (100 mm).
      b. Width: Equal widths.
      c. Weight: 12 lb/sq ft (59 kg/sq m).

C. Panel Finishes:
   1. Facing: Vinyl coated fabric.
      a. Selection: Reed (Arani) 101189-513.
   2. Exposed Metal Trim: Clear anodized.

D. Panel Seals:
   1. Modernfold Sure Set Automatic System: Top and Bottom
   2. Panel to Panel Seals: Grooved and gasketed astragals, with continuous flexible ribbed vinyl seal fitted to panel edge construction; color to match panel finish.
   3. Acoustic Seals: Flexible acoustic seals at jambs, meeting mullions, ceilings, floor and ceiling seals, and above track to structure acoustic seal.

E. Suspension System:
   1. Modernfold Smart Track suspension system

F. Performance:
   1. Acoustic Performance:
      a. Sound Transmission Class (STC): Equal to or greater than 55 calculated in accordance with ASTM E413, based on tests conducted in accordance with ASTM E90, on panel size of 100 sq ft (9.3 sq m).
   2. Installed partition system track capable of supporting imposed loads, with maximum deflection of 1/360 of span.

G. Operation:

1. Electric Operator: 12 inches (300 mm) per second traveling speed; adjustable friction clutch brake actuated by solenoid controlled motor starter; enclosed limit switch; enclosed magnetic reversing starter.
2. Control Station: One standard keyed, three button OPEN-STOP-CLOSE type; 24 volt circuit; surface mounted.
   a. Location to be determined
   b. Key switch prepared for mortise lock cylinder.
   c. Key switches alike.
3. Safety Features:
   a. Limit Switches: Automatic type, at both extremes of travel, to prevent over-travel.
   b. Emergency Release: Mechanism to disengage motor drive system and permit manual operation.
   c. Pocket Door Interlock: Mechanism to prevent operation of panels unless storage pocket doors are fully open.
4. Electrical Requirements:
   a. See Manufacturer recommendations for motor size required for specified panel system.
   b. Disconnect Switch: Factory mount disconnect switch in control panel.

H. Accessories:
   1. Pocket Enclosures: Door, frame, and trim to match adjacent panels.

2.03 MATERIALS

A. Aluminum Extrusions: ASTM B221 (ASTM B221M), 6063 alloy, T6 temper.

B. Vinyl Coated Fabric: ASTM F793 Category VI, polyvinyl fluoride (PVC) finish for washability and improved flame retardance; color as selected by Architect from manufacturer's standard range.

C. Hardwood Plywood: Face species Beech, plain sliced, book matched, veneer core; HPVA HP-1, Front Face Grade AA, Back Face Grade 1; glue type as recommended for application.

D. Particleboard: ANSI A208.1; composed of wood chips, sawdust, or flakes of medium density, made with waterproof resin binders; of grade to suit application; sanded faces.

E. Acoustic Insulation:
   1. Type: As required for acoustic performance indicated.
   2. Thickness: As required for acoustic performance indicated.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that field measurements are as indicated.

B. Verify that required utilities are available, of the correct characteristics, in proper location, and ready for use.

C. Verify track supports are laterally braced and will permit track to be level within 1/4 inch (6.4 mm) of required position and parallel to the floor surface.

D. Verify floor flatness of 1/8 inch in 10 feet (3 mm in 3 m), non-cumulative.

E. Verify wall plumbness of 1/8 inch in 10 feet (3 mm in 3 m), non-cumulative.

3.02 INSTALLATION

A. Install partition in accordance with manufacturer's instructions and ASTM E557.

B. Fit and align partition assembly level and plumb.

C. Lubricate moving components.

D. Install acoustic sealant to achieve required acoustic performance.

3.03 ADJUSTING

A. Adjust partition assembly to provide smooth operation from stacked to full open position. Do not over-compress acoustic seals.

B. Visually inspect partition in full extended position for light leaks to identify a potential acoustical leak.

C. Adjust partition assembly to achieve lightproof seal.

3.04 CLEANING

A. Clean finish surfaces and partition accessories.

3.05 CLOSEOUT ACTIVITIES

A. Demonstrate operation of partition and identify potential operational problems.

END OF SECTION

SECTION 28 13 00
ACCESS CONTROL SYSTEM (KEYSCAN)

PART 1 GENERAL

1.01 SUMMARY

A. The City of Madison Information Technology Department has been assisting other City agencies with standardizing facilities through the use of access cards, key fobs, and punch pads. All hardware is installed locally at the facility while software controls access to various doors remotely.

B. These specifications describe the materials, equipment, and installation requirements to install an integrated, computerized access control and alarm monitoring system utilized by the City of Madison Information Technology (CoM-IT) Department.

C. The ACS System Contractor shall be responsible for verifying equipment requirements, locations, and coordination with the General Contractor and all other necessary trades as needed for a complete installation.

D. The ACS System Contractor shall be aware that the installation plans and specifications are for one (1) building with (3) separate areas and shall be wired as such. Refer to the Part 3-Execution for additional details.

1.02 RELATED SPECIFICATIONS

A. 01 31 23 - Project Management Web Site.

B. 01 33 23 - Submittals.

C. 08 71 00 - Door Hardware.

D. 27 00 05 - Communications Cabling.

1.03 RELATED DRAWINGS

A. Refer to all Electrical drawings for locations of distribution panels and equipment as it relates to standard line voltage locations.

B. Refer to all Technical drawings for locations of Access Control System (Keyscan) equipment.

C. Refer to the door hardware schedule and Architectural floor plans for information relating to door access locations and specific hardware requirements.

1.04 REFERENCES

A. The system shall comply with the standards, codes and regulations of the following regulatory bodies:
   1. Underwriters Laboratories (UL) Std No. 294 – Access Control System Units.
   2. Canadian Standards Association (CSA) Std C22.2 No. 205-M1983 – Signal Equipment.
   3. CE Standards.
      a. EN 55022 RF Emissions.
      b. EN 55024 RF Immunity.
      c. EN 60950-1 Equipment Safety.
   4. FCC Subpart B – RF Emissions.
   5. Industry Canada ICES 003 Emissions.
   6. RoHS.

1.05 CONTRACTORS QUALIFICATIONS

A. The Contractor installing the ACS system shall:
   1. Be a Certified Keyscan Enterprise Partner.
   2. Utilize installers who are Keyscan Enterprise Certified Technicians.
   3. Be able to provide 24/7/365 support during the warranty period of this project.
   4. Be able to respond and repair or replace most components within 4 hours of notification.

1.06 SUBMITTALS

A. The Contractor shall provide a complete submittal package in a timely manner to allow sufficient review time prior to ordering the system components required for a complete installation. The contractor shall be solely responsible for any equipment, purchased/ordered/delivered that is not approved of during the submittal review process.

B. The complete submittal package shall include but not be limited to the following:
   1. All certifications of the contractor and contractor's installation team. Certifications shall be current from the start of the contract through the end of the warranty period.
   2. Cut sheets indicating, shop drawings, performance data, and other such information that will indicate the component being installed matches the component that was specified.
   3. Cut sheets and shop drawing of Contractors recommendations for tags and labels.

1.07 WARRANTY

A. The Contractor shall warrant for one year the complete installation of equipment and components associated with this contract and installation. Contractor's warranty shall be in the form of a written letter on company letterhead referring to the contract information, dates of installation and acceptance, signed by an authorized representative of the Contractors Company.
   1. The Contractor's warranty shall include but not be limited to the following:
      a. Transportation to and from the location as often as needed during the warranty period.
      b. All labor and materials necessary to properly and thoroughly trouble shoot the system.
      c. All fees associated with the shipping of any component that needs to be returned or supplied by the manufacturer for repair or replacement.
      d. All labor and materials required to remove, repair, replace, or re-install any component.

B. The Contractor shall also provide all manufacturers warranties/guarantees associated with installed components of the completed installation.

1.08 QUALITY ASURANCE

A. The Contractor shall be responsible for coordinating his/her Work with other trades and divisions as needed for a complete installation. This shall include pre-installation meetings for locating equipment, conduit, cabling, control devices, and other materials and equipment required by this installation.

B. The General Contractor (GC) shall be responsible for ensuring that all doors requiring controlled access are properly prepared and installed per the contract documents. The GC shall further be responsible for ensuring all project coordination, pre-installation meetings, submittals and other such project management responsibilities are conducted efficiently and according to the project specifications and schedules.

PART 2 PRODUCTS

2.01 EXISTING SYSTEM PRODUCTS OVERVIEW

A. The City of Madison Information Technology Department (CoM IT) owns and operates a fully licensed copy of the Keyscan Access Control System software.
   1. The Keyscan Access Control System (ACS) provides controlled access to secured doors and elevators through the use of electronic door latches, proximity readers, control panels, and a proprietary software program.
   2. The Keyscan software allows CoM-IT and the facility the Owner to customize multiple levels of access and system performance through any combination of the following:
      a. Calendar and time based lock/unlock controls
      b. Group access control for common personnel groups
      c. Individual access control for specialized access control
      d. Elevator access control for accessing/not accessing various floors
      e. Temporarily disable access control for a specified time period
      f. Remotely unlock/lock a door
      g. Lockdown a facility from one location

h. Provide customizable alert notifications

2.02 NEW EQUIPMENT AND COMPONENTS

A. The Contractor guarantees that all equipment and components shall be furnished new, undamaged, free of defects, and conform to the drawings and specifications of this contract. The contractor is solely responsible for replacing any damaged or defective item.

B. New ACS components on interior and exterior access doors shall be able to be integrated with the Owners existing system.

2.03 DISTRIBUTION SUPPLY PANEL (AC-DS-1)

A. AC-DS-1 brings line voltage into the ACS system with the following performance specifications:
   1. Input
      a. 115VAC, 60Hz, 1.45A
   2. Output
      a. Eight (8) PTC protected outputs
      b. 16VAC output
      c. 16VAC @ 10amp (175 VA) supply current (1.25 amp per device, 2.5 amp max.)
      d. Outputs rated @ 2.5 amp
      e. Main fuse rated @ 15 amp/32V
      f. Surge suppression
   3. Miscellaneous electrical information
      a. Operating temperature 0° C to 49°C ambient
      b. 82 BTU/hr
      c. System AC input VA requirement 166.75 AV
   4. Miscellaneous required features
      a. AC power LED indicators
      b. Illuminated master power disconnect circuit breaker with manual reset
   5. Agency Approvals
      a. UL 294 listed for Access Control System Units
      b. CUL listed-CSA Standard C22.2 No 205-M1983 Signal Equipment

B. AC-DS-1 shall be:
   1. Altronix, AL168175CB
   2. Pre-approved equal

2.04 POWER SUPPLY PANEL (AC-PS-1)

A. The AC-PS-1 brings line voltage from the AC-DS-1, reduces then distributes the voltage to the Access Security Panels (AC-SEC-1) with the following performance specifications:
   1. Input
      a. 115VAC, 60Hz, 1.9A
      b. Power supply input options
         1) One (1) common power input for ACM8 and lock power (factory installed)
         2) Two (2) isolated power inputs; one (1) to power the ACM8 and one (1) for lock accessory power, (external power supply is required). Current is determined by the power supply connected, not to exceed a maximum of 10 amp total
      c. Eight (8) Access control System trigger inputs with the following options:
         1) Eight (8) normally open (NO) inputs
         2) Eight (8) open collector inputs
         3) Any combination of the above
   2. Output
      a. 12VDC or 24VDC @ 6 amp supply current
      b. Eight (8) independently controlled outputs with the following options:
         1) Eight (8) Fail-Safe and/or Fail-Secure power outputs

2) Eight (8) form "C" 5 amp rated relay outputs
3) Any combination of the above

c. Eight (8) auxiliary power outputs (un-switched)
d. Output fuses rated @ 3.5 amp
e. Filtered and electronically regulated outputs (built-in power supply).

3. Miscellaneous electrical information
   a. Operating temperature 0° C to 49°C ambient
   b. BTU/hr:
      1) 12VDC = 36.85 BTU/hr
      2) 24VDC = 73.70 BTU/hr
   c. ACM8 board main fuse is rated at 10 amp
4. Battery Backup
   a. Built-in charger for sealed lead acid or gel type batteries
   b. Power supply board maximum charge current 0.7 amp
   c. Automatic switch over to stand-by battery when AC fails
   d. Zero voltage drop when unit switches over to battery backup (AC failure condition)
   e. Battery fail and battery presence supervision (form "C" contact)
5. Miscellaneous required features
   a. Fire Alarm disconnect (latching or non-latching) is individually selectable for any or all of the eight (8) outputs.
   b. Fire Alarm disconnect input options:
      1) Normally open (NO) or normally closed (NC) dry contact input
      2) Polarity reversal input for FACP signaling circuit
   c. Alarm output relay indicates that FACP input is triggered (form "C" contact rated @ 1 amp 28VDC)
   d. Short circuit and thermal overload protection
   e. AC fail supervision (form "C" contact)
   f. Red LEDs indicate outputs are triggered (relays energized)
   g. Green LED indicates FACP disconnect is triggered
   h. AC input and DC output LED indicators
   i. Enclosure accommodates up to two (2) 12AH batteries
6. Agency Approvals
   a. UL 294 listed for Access Control System Units
   b. CUL listed-CSA Standard C22.2 No 205-M1983 Signal Equipment

B. AC-PS-1 shall be:
   1. Altronix, AL600ULACM
   2. Pre-approved equal

2.05 SECURITY PANEL (AC-SEC-1)

A. The AC-SEC-1 distributes the reduced voltage and control wiring to/from each door with an access control device.

B. AC-SEC-1 shall be:
   1. Keyscan CA8500 – 8 Reader Access Control Panel

C. The AC-SEC-1 shall be provided, located and mounted by the Contractor.

D. Provide quantity required.

E. Provide separate security panels for doors/items controlled by ~~City IT~~ Parks and doors controlled by ~~City~~ Library.

2.06 SECURITY PANEL (AC-SEC-2)

A. The AC-SEC-2 distributes the reduced voltage and control wiring to/from each door to an IT telecommunications room.

B. AC-SEC-2 shall be:
   1. Keyscan CA150 - Single Door Access Control Panel.
   2. The AC-SEC-2 shall be provided, located, and mounted by the contractor.
   3. Provide one to control the door to the IT room.

2.07 DOOR CONTROL DEVICES

A. The Contractor shall be responsible for verifying the Door Control Device (DCD) quantities and locations with the door hardware schedule.

B. DCD shall be:
   1. ~~Keyscan K-KPR – Keyscan Proximity Reader/Keypad~~HID Global 40KTNKS-00-000000-Signo 40 wall mount keypad reader, this reader accepts swipe monitoring of cards, key fobs, and other such devices as well as accepting personal identification numbers (PINs). If a keypad is not needed, the HID Global 40NTKS-00-000000 Signo 40 0r 20NTKS-00-000000 Signo 20 can be used.
      1) Plan designation = AC-CR-A for door control device associated with City-Library system.
      2) Plan designation = AC-CR-B for door control device associiated with City-IT system.
   2. The ~~K-KPR~~S-00-000000 shall be used for all locations.

2.08 DOOR CONTROL CABLES

A. The following cables are required for a complete installation of the ACS, per controlled door, as follows:
   1. One (1) 22/6 shielded cable, required; to DCD
   2. One (1) 18/2 un-shielded cable, required; lock power
   3. One (1) 22/2 un-shielded cable, required; door contact
   4. One (1) 22/4 un-shielded cable, required but not used; for future request to exit sensors

B. At the Contractors option he/she may run a manufactured cable bundle containing all four (4) cables listed above. It shall be the sole responsibility of the contractor to appropriately size the conduits for the installation.

PART 3 EXECUTION

3.01 COOPERATION OF THE ACS CONTRACTOR

A. The Contractor shall be required to coordinate with all trades for a complete and timely installation. This includes attending all pre-installation meetings where equipment locations, conduit locations, and control devices will be installed or may be in conflict with the installation of other trades. The Contractor shall be solely responsible for any additional cost required for removing/replacing/modifying any completed work by other trades because the installation was not properly coordinated.

B. The Contractor shall coordinate with the Owners Representative from City IT for all information necessary to complete the installation and integration with the Owners existing hardware and software.

C. The Contractor shall verify with the appropriate Owners Representative for mounting heights of all hardware and equipment prior to installation. This shall be completed at a pre-installation walk through prior to rough-in.

D. The Contractor shall coordinate with the elevator equipment installer the location and wiring of the EFACP.

E. The Contractor shall coordinate with the Owner's Representative from City IT to verify all requirements for all access controlled doors are properly coordinated and understood prior to roughing in the installation.

3.02 GENERAL EQUIPMENT MOUNTING

A. All ACS equipment shall be mounted to the 3/4" AC fire rated plywood panels provided and installed by the General Contractor. Contractor shall tape out all equipment prior to mounting to insure adequate space is allotted for the complete installation per the riser diagrams including all related conduits and cables.

B. All equipment shall be neatly arranged so as to meet or exceed the manufacturer's recommended working space around each component.

C. Equipment to be installed on plywood mounting panels shall include but not be limited to the following:
   1. Distribution Service Panel (AC-DS-1)
   2. Power Supply Panel (AC-PS-1)
   3. Access Control Panel (AC-SEC-1)
   4. All required conduits, and boxes for line voltage

3.03 GENERAL CONDUITS AND WIRING

A. This section shall apply to both the ACS Contractor and the Electrical Contractor. The following division of responsibilities shall apply:
   1. The Electrical Contractor shall be responsible for furnishing, installing, and connecting all conduits, connectors, conductors, and other related materials associated with providing line voltage to the ACS system as follows:
      a. Providing an 110V, 20A, dedicated circuit from the designated distribution panel to AC-DS-1 as described in Section 2.3 above.
      b. Providing line voltage from AC-DS-1 to AC-PS-1 as described in Section 2.4 above.
   2. The ACS Contractor shall be responsible for furnishing installing, and connecting all conduits, connectors, conductors and other related materials required to complete the installation of the low voltage wiring and door controller cabling.

B. All conduits shall be properly sized for the number of wires or wire bundles being pulled through the conduit. The Contractor shall verify with the manufacturer the recommended fill rate by conduit size and shall not exceed the recommendations.

C. The contractor shall neatly lay out all conduits in such a fashion so as to minimize bending, crossovers, etc.

D. Bends, pull boxes, and pull points shall be sized and located as per all applicable codes and standards for the number of wires or wire bundles in the bend, pull box, pull point.

E. CAT6 cables from each AC-SEC-1 shall be neatly run in cable management equipment supplied and installed by the cabling contractor or conduits supplied and installed by the ACS Contractor as needed. The switch to be used for all ACS equipment shall be located in Telecom Room 125. Cables shall be labeled on both ends per the cabling specification.

F. The General Contractor and the ACS Contractor shall ensure the following Emergency Access requirements are properly installed and operational prior to the final Madison Fire Department inspection for occupancy.
   1. CoM IT shall provide a minimum of six (6) swipe cards to each installed Knox Box for emergency entrance. The cards shall be appropriately coded for entry at all controlled access doors.
   2. The following doors shall be wired to unlock in the event of an emergency.
      a. As directed by Owner.

3.04 EQUIPMENT IDENTIFICATION AND LABLEING

A. The Contractor shall provide and install all equipment identification and labeling to the following specifications.
   1. Tags and labels shall be permanent rigid plastic or metal tags with engraved or machine stamped lettering. Hand written self stick or metal hand stamped tags will not be accepted.
   2. The Contractor shall work out the labeling scheme for doors with City IT, Owner, and Architect prior to ordering any labels or tags.

3. The Contractor shall provide all labels and tags associated with this specification. This shall include the line voltage feed to each AC-DS-1 from the electrical distribution panel.

B. Panels and Boxes
1. All panels and boxes shall be labeled on the outside cover that readily identifies the panel/box as a "Distribution Supply", "Power Supply", "Access Control Panel", "Elevator Floor Access Control Panel", etc. An associated number shall also be on each tag and the number "1" shall be used even if there is only one of that type panel/box.
2. Access Control Panels shall have a card index inside the front cover of each door indicating the controller number, door number, and door location being served by that panel.

C. Conduits
1. Line voltage from electrical distribution panels shall have conduits labeled on both ends as follows:
   a. At the distribution panel the line voltage conduit shall be labeled with the system supplied, and the ACS distribution supply panel number.
   b. In the Telecommunications Room the line voltage conduit label shall indicate the distribution panel and circuit number(s) controlling the supply line.
2. Conduits between Access Control Panels and the controlled doors shall be labeled on both ends as follows:
   a. In the Telecommunications Room each conduit shall labeled with the door number(s) being supplied.
   b. Above the finished ceiling where the conduit is exposed prior to going into the wall space that serves the door the conduit shall be labeled with the Door Control Panel and Controller number associated with the door being served.
   c. If the conduit size is reduced as control cabling is supplied to doors along the run each change is conduit size shall be re-labeled as noted in 2.b. above.
3. Conduits between equipment and components in the Telecommunications Room do not need to be identified.

3.05 INSTALLATION TESTING AND ACCEPTANCE

A. The CoM IT and the Owner shall be responsible for completing all software programming associated with the installation of this contract prior to the completion of the installation of the system components. It is the sole responsibility of the Contractor to notify the Owner no less than two (2) weeks in advance of completing the installation that all codes and time setting shall be prepared for final installation and testing.

B. The Contractor, CoM IT, and the Owner shall test each access control point with swipe cards and PINs to insure the door unlocks.

C. CoM IT shall test each door using the existing fully integrated software. This shall include but not be limited to the following:
1. Remotely lock/unlock the doors
2. Verify time clock feature works for locking doors
3. Verify swipe cards and PINs work on all doors
4. Verify emergency entrance cards for knox boxes work on all doors for the areas served.

D. The Contractor, CoM IT, and the Owner shall test the elevator floor access functions as follows:
1. With swipe cards and PINs to ensure controlled access to all floors.
2. With no swipe cards or PINs to ensure that the general public can only access the designated public floors and not controlled access floors.
3. Verify time clock feature works for accessing floors

E. A completed and accepted installation shall pass all of the above tests for all controlled access points.

F. The warranty period for the completed and accepted installation shall not begin until the date of the accepted general contract. The Contractor shall coordinate this date with the General Contractor.

END OF SECTION

SECTION 32 17 23
PAVEMENT MARKINGS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Painted pavement markings.

1.02 RELATED REQUIREMENTS

A. Section 32 12 16 - Asphalt Paving.

B. Section 32 16 23 - Sidewalks.

C. Section 32 17 13 - Parking Bumpers.

D. Section 32 17 26 - Tactile Warning Surfacing.

1.03 REFERENCE STANDARDS

A. AASHTO M 237 - Standard Specification for Epoxy Resin Adhesives for Bonding Traffic Markers to Hardened Portland Cement and Asphalt Concrete 2005 (Reapproved 2019).

B. AASHTO M 247 - Standard Specification for Glass Beads Used in Pavement Markings 2013 (Reapproved 2018).

C. AASHTO M 249 - Standard Specification for White and Yellow Reflective Thermoplastic Striping Material (Solid Form) 2012 (Reapproved 2020).

D. AASHTO MP 24 - Standard Specification for Waterborne White and Yellow Traffic Paints 2015 (Reapproved 2020).

E. ASTM D4505 - Standard Specification for Preformed Retroreflective Pavement Marking Tape for Extended Service Life 2012 (Reapproved 2017).

F. ASTM E303 - Standard Test Method for Measuring Surface Frictional Properties Using the British Pendulum Tester 1993 (Reapproved 2018).

G. FHWA MUTCD - Manual on Uniform Traffic Control Devices 2009, with Editorial Revision (2022).

H. City of Madison - Standard Specifications for Public Works Construction (2025)

1.04 ADMINISTRATIVE REQUIREMENTS

A. Coordination: Coordinate the work of this section with adjoining work.

B. Preinstallation Meeting: Conduct a preinstallation meeting one week prior to the start of the work of this section; require attendance by affected installers.

1.05 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements for submittal procedures.

B. Product Data: Manufacturer's data sheets on each product to be used.

1.06 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with not less than three years of documented experience.

B. Installer Qualifications: Company specializing in performing work of the type specified and with at least three years of documented experience and approved by manufacturer.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Deliver glass beads in containers suitable for handling and strong enough to prevent loss during shipment, accompanied by batch certificate.

B. Store products in manufacturer's unopened packaging until ready for installation.

C. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

1.08 FIELD CONDITIONS

A. Do not install products under environmental conditions outside manufacturer's absolute limits.

B. Do not apply paint if temperature of surface to be painted or the atmosphere is less than 50 degrees F or more than 95 degrees F.

1.09 SEQUENCING

A. Allow new pavement surfaces to cure for a period of not less than 14 days before application of markings.

PART 2 PRODUCTS

2.01 MANUFACTURERS

2.02 ~~PAINTED~~THERMOPLASTIC PAVEMENT MARKINGS

A. Comply with State of Wisconsin Highway Department standards.

B. Comply with City of Madison Specifications for Public Works Construction - Article 608

C. ~~Painted Pavement Markings: As indicated on drawings.~~

PART 3 EXECUTION

3.01 PREPARATION

A. Establish survey control points for locating and dimensioning of markings.

B. Place barricades, warning signs, and flags as necessary to alert approaching traffic.

C. Clean surfaces prior to installation.
   1. Remove dust, dirt, and other debris.

3.02 INSTALLATION

A. General:
   1. Position pavement markings as indicated on drawings.
   2. Field location adjustments require approval of Architect.

B. ~~Painted Pavement Markings:~~Thermoplastic Pavement Marking
   1. Apply in accordance with manufacturer's instructions.
   2. Apply in accordance with State of Wisconsin Highway Department standards.
   3. Apply in accordance with City of Madison Specifications for Public Works Construction - Article 608

3.03 TOLERANCES

A. Maximum Variation From True Position: 3 inches (76 mm).

B. Maximum Offset From True Alignment: 3 inches (76 mm).

3.04 FIELD QUALITY CONTROL

A. See Section 01 40 00 - Quality Requirements for additional requirements.

B. Perform field inspection for deviations from true alignment or material irregularities.

C. If inspections indicate work does not meet specified requirements, rework and reinspect at no cost to Owner.

D. Allow the pavement marking to set at least the minimum time recommended by manufacturer.

3.05 CLOSEOUT ACTIVITIES

A. See Section 01 78 00 - Closeout Submittals for additional requirements.

3.06 PROTECTION

A. Prevent approaching traffic from crossing newly applied pavement markings.

B. Replace damaged or removed markings at no additional cost to Owner.

C. Preserve survey control points until pavement marking acceptance.

END OF SECTION

Department of Public Works
Engineering Division
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Fadi El Musa Gonzalez, P.E.
Andrew J. Zwieg, P.E.

Financial Manager
Steven B. Danner-Rivers

March 27, 2025

ADDENDUM NO. 4
City of Madison, Engineering Division

CONTRACT NO. 9610
IMAGINATION CENTER AT REINDAHL PARK

This addendum is issued to modify, explain or correct the original Drawings, Specifications, or Contract Documents marked as **Imagination Center at Reindahl Park, Contract #9610, as issued on February 13, 2025** and is hereby made a part of the contract documents.

Please acknowledge this addendum on page E-1 of the contract documents and/or in Section E: Bidder's Acknowledgement on Bid Express.

Electronic version of these documents can be found on Bid Express at https://www.bidexpress.com/ and the City of Madison web site at http://www.cityofmadison.com/business/PW/contracts/openforBid.cfm

If you are unable to download plan revisions associated with the addendum, please contact the Engineering office at (608) 266-4751 to receive the material by another method.

For questions regarding this bid, contact:
Brent Pauba
PH: (608) 266-4092
Email: BPauba@CityofMadison.com
210 Martin Luther King Jr. Blvd
Room 115
Madison, WI 53703

Sincerely,

James M. Wolfe, P.E.
City Engineer

This addendum modifies the following documents:
1. 9610 Exhibit-A_drawings.pdf
2. 9610 Exhibit-B_specifications.pdf

Please attach these Addendum documents to the Drawings and Project manual in your possession.

1. GENERAL

A. No General Updates

2. **BIDDER QUESTIONS AND ANSWERS**

A. With the bid due date changing from 3/27 to 4/3, is the desired construction start date moving to "Thursday, April 10, 2025." And the desired substantial completion date moving to "Not later than Thursday, September 10, 2026."

i. **Start Work Letter (SWL) and Construction Closeout dates have not been modified.**

ii. **See 9610 Contract.pdf, SECTION-D, ARTICLE 109.7 TIME OF COMPLETION for information on SWL, Interim Completion Date #1, and Construction Closeout dates.**

B. Please provide the size or rating for the fire extinguishers so a cabinet size can be determined.

i. **Specification Section 10 44 00 – Fire Protection Specialties already specifies a Multi-Purpose Dry Chemical Class ABC Fire Extinguisher. Specification has been updated to indicated a 5 LB extinguisher size.**

C. For the epoxy flooring areas, the documents require sealing horizontal joints. Please verify if caulk or fill is required.

i. **Dynamic joints such as expansion/construction or isolation; include a closed cell backer rod 1/8" wider than the joint. Use a flexible joint material, Metzger/McGuire, VersaFlex or equal. The manufacturer recommends honoring the joint by making a sawcut through the finished floor at a minimum depth of 3/4" and 1/4" wide.**

ii. **See updated specification Section 09 67 23 – Resinous Flooring.**

D. Please confirm whether AWI QCP is required for any portion of the project.

i. **No**

E. What kind of stone is required to be installed? 1 ½" wash stone or a different type?

i. **See Section 32 93 00, 2.04**

Stone Mulch: Hard, durable stone, washed free of loam, sand, clay, and other foreign substances, of following type, size range, and color:

- **Material: Washed, rounded clear stone.**
- **Size: 1.5"**
- **Color range: blend of buff, & light brown tones.**
- **Sample: Submit sample of mulch to Landscape Architect for approval before installation.**

F. What is required for the stabilized aggregate pathway? Pea gravel or permeable aggregate? "

i. **See Section 32 14 13.13, 2.01**

Stabilized Aggregate Material: Aggregate consisting of sound, angular, durable particles with patented powdered organic binder made from 100% naturally occurring integral binding/stabilizing material, factory blended, specifically for use as a stabilized pathway and surfacing material for exterior applications. Basis of Design: Pathway Aggregate with Organic-Lock Stabilizer by Kafka Granite, or approved equal.

- **Gradation: Material needs be provided in accordance with ASTM C136.**
- **Color: Blend of beige, light brown and cream accents; BOD Color "Golden Cream Marble" by Kafka Granite, or approved equal.**

G. Do we need to add a monitor for the E4 camera?

i. **Yes, per note 18 on sheet T101**

H. If we are providing an NVR for this site, how many days of retention time can we consider for recording?

i. **NVR is not required.**

I. Who will be responsible for the NVR and POE switches, camera licenses and cable? As per Div 28, it looks like it is in the customer's scope. Please verify."

i. **NVR is not required. The Owner purchases switches with the required POE. The Owner is providing camera licenses per Section 28 20 00, article 1.03C. Camera cabling is by Division 27 per detail C1 on sheet T101.**

J. Is stack signage by GC or by owner? This includes the "Nonfiction" and "Romance" signage shown in the bid documents.
   i. **Signage related to library collections (books, magazines, media) is outside the scope of this contract.**
   ii. **See updated Sheets AI412 and AI413.**

K. The specs only state - minimum 6" - as a dimension for the signage. Please specify the length x width dimensions for any sign that is greater than 6" in either direction.
   i. **Refer to the signage schedule on Sheet AI413 for dimensions, font sizes, etc.**

L. Provide dimensions for vertical identification/wayfinding signs/letters.
   i. **Refer to the signage schedule on Sheet AI413 for dimensions, font sizes, etc.**

M. Can the injection molded signage be 3D printed?
   i. **Yes**

N. For the "Targeted Business Enterprise Compliance Report Contact Report" which is required to be submitted with the bid for Imagination Center at Reindahl Park Contract No. 9610 in accordance with Addenda #1 "Bid Submittal Checklist For Contractor"; due to the increased number of TBEs contacted because of this project's TBE goal of 12% which includes subcontractors from SBE, MBE, WBE, and DBE directories of the City of Madison's Targeted Business Enterprise Programs we are requesting permission to submit the bid tracking sheet that has been used on similar City of Madison projects with DBE requirements. We had uploaded a similar form to the City previously.
   i. **Per DCR's response at the 3/20 SBE Meeting, a separate spreadsheet would be accepted in lieu of providing individual copies of the Target Business Enterprise Compliance Report – TBE Contact Report. If a separate spreadsheet is to be used, please indicate "see spreadsheet" on one copy of the TBE Contact Report. Ensure that the spreadsheet contains all the same required information as the TBE Contact Report. See example included with Addendum.**

O. Section 23 83 00, please verify if the tubing material is intended to be PEX/AL/PEX. Or, is standard crosslinked polyethylene with EVOH oxygen diffusion barrier, which is the majority, if not all, of what infloor radiant applications use, is acceptable and is actually the design intent?
   i. **Standard crosslinked polyethylene is acceptable.**
   ii. **See updated specification Section 23 83 00.**

P. Sheet E602, special purpose outlet EV1 – Electric Vehicle Juice Box. Aside from the connection shown on Sheet E010 this equipment is not listed anywhere else within the project documents. What are we providing for this connection? i.e., ground box for future, hard-wired connection, etc.
   i. **GC to provide EV charger and all associated electrical provisions.**
   ii. **See updated Sheets E602 and E611.**
   iii. **See new specification Section 26 27 29 – Electrical Vehicle Charging Station.**

Q. There are no specifications or part numbers listed for the EV Juice box; please provide. Who will be furnishing the EV Juice Box?
   i. **GC to provide EV charger and all associated electrical provisions.**
   ii. **See new specification Section 26 27 29 – Electrical Vehicle Charging Station for acceptable manufacturers.**

R. Per general note B & C on sheet E502, the Solar Tree will be purchased and installed (complete) by the General Contractor. Please confirm this is correct or clarify the exact scope of work required for both the GC & EC. Our understanding is that the EC is only responsible for the required electrical connections.
   i. **GC to procure and install solar tree as per described in the Bid Documents.**
   ii. **GC is to determine Scope of work for subcontractors.**

S. Sheet E620 states that the EC is to provide the utility transformer pad & empty raceway for the secondary service laterals. Per the MG&E handbook, these are to be furnished & installed by MG&E. Are we to follow the drawings or MG&E's handbook?

i. **Follow MG&E Handbook.**
ii. **See updated Sheet E620.**

T. MG&E requires the EC to stub conduit out of the CT cabinet. Typically, these conduits are SCH 40/80 PVC. Per specification section 26 05 33.13 – 4, Line F, all exterior conduit is to be either Galvanized Rigid Metal Conduit, Intermediate Metal Conduit, or PVC-coated galvanized steel rigid metal conduit. MG&E does not require these conduit types for their service entrance. Does the specification still apply here?
i. **On page 26 05 33.13-4 of the specification, section line F refers to Concealed within hollow stud walls conduit applications. Line C refers to Underground conduit applications. Follow C.3., C.4 and/or C.5 as required.**

U. The advertisement for bids & instructions to bidders references a pre-qualification application. Is this referencing the Best Value Contractor application or is there another application that needs to be submitted?
i. **See SECTION-A, PREQUALIFICATION APPLICATION of 9610 Contract.pdf. Relevant information copied for convenience below:**
ii. **PREQUALIFICATION APPLICATION: Forms are available on our website, www.cityofmadison.com/engineering/developers-contractors/contractors/how-to-get-prequalified. If not currently prequalified in the categories listed in Section A, an amendment to your Prequalification will need to be submitted prior to the same due date. Postmark is not applicable**

V. Community Room 107
i. T701 - Why (3) 8 channel Shure WAPs for only 6 mics? (1) WAP would be sufficient unless more mics are to be added per the following question below.
1. **More mics are anticipated after project completion.**
ii. Body packs mentioned in spec page 27 51 16 - 1, but no quantity or associated mic type listed in T701 equipment list. How many body packs and what mic type is desired?
1. **See schedules on T701 and T702 for mics required.**
iii. T701 - What is the intended purpose of the Shure ANI USB on the AV flow?
1. **To allow connection of patron's analog devices to the Dante network.**
iv. Switch model spec'd on T701 does not have enough ports for needed ethernet devices.
1. **Switch was changed to 48 port in Addendum 1. If this is insufficient, inform City after bidding as the switch is owner-furnished.**
v. T701 AV flow material list shows a count of (2) NVX-E10 encoders. There are (4) sources that need encoders; UC-Engine, (2) HD-RX receivers for wall plate/floor box HDMI transmitters, Blu-ray player.
1. **Blu-ray player was deleted in Addendum 1. One pair of encoders/decoders have now been added.**
vi. Where is the Crestron UC-PR going?
1. **At the rack.**
vii. T701 - No control processor listed, please advise. (CP4N used as placeholder to serve both rooms 107 and 109.)
1. **See updated Sheet T701.**
viii. Spec page 27 51 16 – 2, Item 2.04 A states speakers are to be 8", T701 specifies 6" QSC AD-C6T. Please advise.
1. **Speaker description has been revised to match T701.**

W. Classroom 109
i. T702 - What is the intended purpose of the Shure ANI USB on the AV Flow?
1. **To allow connection of patron's analog devices to the Dante network.**
ii. Does UC-PR stay in head-end rack, extended to wall plate via specified HDMI and USB wall plate transmitters?
1. **Correct.**
iii. T702 - There are no NVX-D10s spec'd. (1) Will be needed.
1. **One pair of encoders/decoders have been added.**
iv. Spec 27 51 16 – 2 item 1.44.C.2.a states handheld mics are required but T702 lists no HH mics or associated receivers. Please advise.
1. **See Addendum 1.**

X. Pavilions 1 & 2
i. T704 - No control processor listed, please advise. (CP4N used as placeholder).
1. **See Addendum 1.**

ii. T704 - DSP spec'd as "Biamp Server I/O" but no card types or counts are listed. Please advise quantity and type of cards desired and specify intended functions.
   1. **See functional description in Section 27 41 16 article 1.03 and provide appropriately.**

iii. T502 Rack drawing shows Shure Microflex wireless mics and charger, T704 AV flow equipment list shows Shure SLX wireless. Which is correct?
   1. **Revised to Microflex. See updated Sheet T704.**

iv. Cable TV is mentioned as a source on spec page 27 41 16 – 2 but is not shown on AV flow T703 or equipment list on T704.
   1. **Provide appropriate input facility.**

v. T704 – equipment list item HD-MD4X4-4KZ-E has been discontinued. Replace with HD-MD8X8-4KZ-E?
   1. **Revised to HD-MD8X8-4KZ-E. See updated Sheet T704.**

vi. Spec page 27 41 16 – 2 item E under System Functions mentions a 3.5mm audio jack. T703 AV flow and T704 equipment lists show no items with 3.5mm jacks. Note 69 on T101 says these should be ¼" jacks. Please confirm this jack plate type for block "I-O-1" and specify it's intended function.
   1. **Provide ¼" jacks. Note 69 describes the required function.**

vii. Spec page 27 51 16 – 2, Item 2.04A states speakers are to be 8"; T704 specifies 6" QSC AD-C6T. Please advise.
   1. **Speaker description has been revised to match T701.**

Y. Flat Screens

i. Spec page 27 51 23 – 1 item 1.01 lists NUC's and City-provided BrightSign players as sources. Please specify the type of NUC and whether or not it is client or contractor provided. Please also specify the desired licensing type and duration needed(BrightSIgn, Reach, etc.)
   1. **Note that Addendum 1 revised the BrightSign players to contractor-furnished. NUCs have now been deleted as BrightSign players have HDMI outputs. A one-year BrightSign Network Pass will be required for each BrightSign player.**

ii. Spec page 27 51 23 – 1 item 2.01A States 'Samsung 65" PM-H'. Samsung PM-H series displays are only available 43", 49" and 55". Please advise approved substitute.
   1. **Revised to Samsung QMR 65.**
   2. **See updated specification.**

Z. Small Meeting Rooms 120, 121, 122: Where are the specs/system descriptions for these rooms?

i. **See AV Connection Schedule on T601 for requirements for FS-55 and AV IN-A. These are all that is required in those rooms.**

AA. Specification Section 23 21 13 – Hydronic Piping: Please confirm that the project intended to specify type-K copper piping in lieu of type-L. "95%" of commercial projects specify type-L.

i. **It should be type L, not type K.**

ii. **See updated specification.**

BB. From Addendum #3 for Section 07 53 00 – Elastomeric Membrane Roofing: Is there a specific attachment you would like us to use to mechanically fasten the insulation? Or is the standard attachment sufficient?

i. **The A/E team reviewed the roof assembly as a whole and clarified the attachment methods for each layer. Standard mechanical attachment for the insulation is sufficient, as long as it meets the membrane manufacturer's recommendations.**

ii. **See updated specification.**

3. **ACCEPTABLE EQUIVALENTS**

A. Specification Section 26 09 23 – Lighting Control Devices – Lutron, Creston.

i. **Request is approved – see updated specification.**

B. Specification Section 28 46 00 – Fire Detection and Alarm, Edwards.

i. **Request is approved – see updated specification.**

C. Specification Section 23 83 00 – Radiant Heating and Cooling Units, Watts Radiant - Radiant heating hydronic piping and system

i. **Request is approved – see updated specification.**

4. **9610 Contract**

A. No change

5. **9610 Exhibit-A_drawings**
   - **A. G001 - "INDEX SHEET"**
     - i. Revised sheets are indicated with revision mark "A4".
   - **B. AI412 - "SIGNAGE PLAN"**
     - i. Removed stacked signage – not in scope.
   - **C. AI413 – "SIGNAGE SCHEDULE"**
     - i. Removed stacked signage – not in scope.
   - **D. E602 - "ELECTRICAL SCHEDULES"**
     - i. Revised EV1 requirements.
   - **E. E611 – "PANEL SCHEDULES"**
     - i. Revised circuit breaker size for circuit 17,19.
   - **F. E620 – "ELECTRICAL ONE-LINE POWER DIAGRAM"**
     - i. Revised transformer pad and service entrance conduit requirements.
   - **G. T701 – "AV FLOW DIAGRAMS"**
     - i. See sheet for revisions.
   - **H. T702 – "AV FLOW DIAGRAMS"**
     - i. See sheet for revisions.
   - **I. T704 – "AV FLOW DIAGRAMS"**
     - i. See sheet for revisions.

6. **9610 Exhibit-B_specifications**
   - A. 00 01 10 TABLE OF CONTENTS
     - i. Sections revised, added or omitted are noted in the Table of Contents with (A4) after section title.
   - B. 07 53 00 ELASTOMERIC MEMBRANE ROOFING
     - i. Paragraph 2.03.C: Clarified requirements of vapor retarder.
     - ii. Paragraph 3.03.A: replaced "deck surface" with "bottom Cover Board-Layer"; added self-adhesive to description.
     - iii. Paragraph 3.03.C: Change method of attachment for insulation to mechanically fastened.
     - iv. Paragraph 3.03.D.1: Clarified two (2) Cover Board layers per Roof Assembly diagram on the drawings and respective attachment methods.
   - C. 08 80 00 GLAZING
     - i. Paragraph 2.04.C.3: removed requirement for Self-cleaning type on #1 surface of IG-1.
     - ii. Paragraph 2.04.D.3: removed requirement for Self-cleaning type on #1 surface of IG-1B.
     - iii. Paragraph 2.04.E.3: removed requirement for Self-cleaning type on #1 surface of IG-2.
     - iv. Paragraph 2.04.F.3: removed requirement for Self-cleaning type on #1 surface of IG-2B.
   - D. 09 30 00 TILING
     - i. Paragraph 1.05.B: added requirement to confirm lead times for tile as part of submittal.
     - ii. Paragraph 2.01.B.5: Specified tile for CWT-05 is discontinued. Provided replacement specification for CWT-05.
   - E. 09 67 23 RESINOUS FLOORING
     - i. Paragraph 3.02.A.6: added content for Horizontal joint preparation for Dynamic and Static joints.
   - F. 10 14 00 SIGNAGE
     - i. Paragraph 1.04.I.1: Corrected section reference for Maintenance Materials.
     - ii. Paragraph 2.01.A.5: Corrected section reference for substitutions.
     - iii. Paragraph 2.01.B.4: Corrected section reference for substitutions.
     - iv. Paragraph 2.02.B.10: Omitted Stack signage.
     - v. Paragraph 2.01.A.3: Added 3D printer as acceptable means of fabrication.
     - vi. Paragraph 2.05.A.1: Added 3D printed as acceptable material.
   - G. 10 22 39 FOLDING PANEL PARTITIONS
     - i. Paragraph 2.02.C.2: Omitted Clear Anodized as Exposed metal trim finish and replaced with "Selected by Architect from Manufacturer's standard finish options".
     - ii. Paragraph 2.02.F.1.a: Changed STC rating from "Equal to or greater than 55" to "52-57".

iii. Paragraph 2.02.G.5: Omitted Pocket Enclosures.

H. 10 44 00 FIRE PROTECTION SPECIALTIES
   i. Paragraph 2.01.A.8: Corrected section reference for substitutions.
   ii. Paragraph 2.01.B.8: Corrected section reference for substitutions.
   iii. Paragraph 2.01.C.2: Corrected section reference for substitutions.
   iv. Paragraph 2.02.B: Added Aluminum as acceptable tank material.
   v. Paragraph 2.02.B.2: Changed size of extinguisher to 5 pound.
   vi. Paragraph 2.02.B.3: Added finish of extinguisher to be Baked polyester powder coat, red color.

I. 23 21 13 HYDRONIC PIPING
   i. Paragraph 2.02.C: Changed copper tube from Type K to Type L.
   ii. Paragraph 2.03.C: Changed copper tube from Type K to Type L.
   iii. Paragraph 2.05.B: Changed copper tube from Type K to Type L.
   iv. Paragraph 2.06.A: Changed copper tube from Type K to Type L.

J. 23 83 00 RADIANT HEATING AND COOLING UNITS
   i. Paragraph 2.01.A: Updated material specifications for tube.
   ii. Paragraph 2.01.C: Added Watts as an approved manufacturer.

K. 26 09 23 LIGHTING CONTROL DEVICES - LUTRON
   i. Paragraph 2.01.B: Corrected section reference for substitutions.
   ii. Paragraph 2.01.C: Added Crestron Zum as an approved equal.

L. 26 27 29 ELECTRIC VEHICLE CHARGING STATION
   i. NEW section added.

M. 27 51 16 LIBRARY AUDIO VISUAL SYSTEMS
   i. Paragraph 2.04.A: Omitted specific requirements of Speakers and replaced with "See plans".
   ii. Paragraph 2.04.B: Omitted specific requirements of Speakers Baffles and Enclosure and replaced with "See plans".

N. 27 51 23 FLAT SCREENS
   i. Paragraph 1.01.B: Omitted NUCs.
   ii. Paragraph 1.01.D: Added language for BrightSign licensing.
   iii. Paragraph 1.01.E: Omitted "Install City furnished" and replaced with "At each display, provide a...".
   iv. Paragraph 2.01.A.1: Changed Display size from 65" to 55".
   v. Paragraph 2.01.B.1: Changed diagonal size from 65" to 55".
   vi. Paragraph 2.01.C: Omitted "similar for 55" displays" and replaced with "Samsung QMR 65 for 65" displays".

O. 28 46 00 FIRE DETECTION AND ALARM
   i. Paragraph 2.01.B: Added Edwards as acceptable Manufacturer.
   ii. Paragraph 2.01.C: Added Edwards as acceptable Manufacturer.
   iii. Paragraph 2.01.D: Corrected section reference for substitutions.

P. 32 17 23 PAVEMENT MARKINGS
   i. Reverted back to paint in lieu of thermosplastic paint.
   ii. Added reference to the specific WISDOT section for paint products.

7. **9610 Exhibit-C_drawing_landsForWork**
   A. No change

8. **9610 Exhibit-D_ConstructionSequenceRequirements**
   A. No change

9. **9610 Reference-1_survey_topographic**
   A. No change

10. **9610 Reference-2_survey_ALTA**
    A. No change

11. **9610 Reference-3_report_AsbestosLead**
    A. No change

12. **9610 Reference-4_report_GeotechExploration**
    A. No change

13. **9610 reference-5_drawings_existingConditions**
    A. No change

14. **9610 reference-6_form_BidSubmittalChecklist**
    A. No change

15. **9610 Proposal Page**
    A. No change

ADDENDUM-4
TBE CONTRACT REPORT TRACKING - EXAMPLE

Company	Address	Telephone Number	Contact Person/Title	Question 1: Outline below all efforts to solicit a bid from the TBE. Include date, means of contact, who from your company made this contact and the result.	Question 2: Describe the information provided to the aforementioned TBE regarding the scope of work for which he/she was to provide a bid.	Question 3: Is this the same scope of work on which the subcontractor you intend to utilize based his/her bid? (Yes/No)	Did this TBE submit a bid? (Yes/No)	Is the General Contractor pre-qualified to self-perform this category of work? (Yes/No)

If you responded "Yes" to Question 3, please indicate which items (Items 1-5) apply and provide the requested detail. If you responded "No" to Question 3, please skip ahead to Question 6.	Item 1: The TBE listed is unavailable for work on this project for the following reasons. Provide specific detail for this conclusion. (Yes/No + Detail)	Item 2: The TBE listed is unqualified for work on this project. Provide specific details for this conclusion. (Yes/No + Detail)	Item 3: The TBE listed provided a price that was unreasonable (i.e. more than 5% above the lowest bidder). Provide specific detail for this conclusion including the TBE's price and the price of the subcontractor you intend to utilize. (Yes/No + Detail)	Item 3: A contract with the TBE listed may constitute a breach of the bidder's collective bargaining agreements. Provide specific detail for this conclusion including, but not limited to, correspondence from the TBE indicating it will not sign a project labor agreement and/or correspondence from the applicable trade union indicating a project labor agreement will not be allowed at the time of project bidding. (Yes/No + Detail)	Other; please specify reason(s) other than previously listed which made it impossible for you to utilize this TBE on this project. (Yes/No + Detail)	Question 6: Describe any other good faith efforts

ADDENDUM-4
DRAWINGS

ABBREVIATIONS

SYMBOL LEGEND

VIEW NUMBER · TITLE — VIEW NAME · 1/2" = 1'-0" — VIEW SCALE

DETAIL CALLOUT

SECTION CALLOUT

ELEVATION CALLOUT

ELEVATION DATUM

NORTH ARROW

WALL TAG

DOOR TAG

KEYNOTE TAG

REVISION TAG

FURNITURE TAG

EQUIPMENT TAG

WINDOW TAG

CASEWORK TAG (PLAN OR ELEVATION)

FINISH PLAN TAG (FLOOR / BASE / WALL / REMARKS)

CEILING TAG (TYPE / HEIGHT)

ROOM TAG (NAME / 0000)

EXISTING CONSTRUCTION

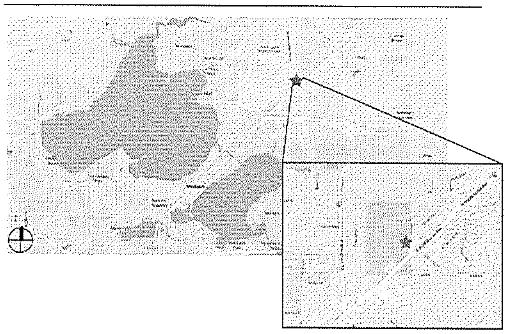
DEMOLITION

NEW CONSTRUCTION

NEW GRID AND IDENTIFICATION

EXISTING GRID AND IDENTIFICATION

VICINITY MAP



SHEET ORGANIZATION

EACH DRAWING SHEET IS BASED UPON A 30 SQUARE GRID SYSTEM, STARTING WITH "1" IN THE TOP LEFT HAND CORNER AND WORKING LEFT-TO-RIGHT AND TOP-TO-BOTTOM TO "30" IN THE BOTTOM RIGHT HAND CORNER. EXAMPLE BELOW:

1	2	3	4	5	6	TITLEBLOCK
7	8	9	10	11	12	
13	14	15	16	17	18	
19	20	21	22	23	24	
25	26	27	28	29	30	

PROJECT ADDRESS

IMAGINATION CENTER AT REINDAHL PARK

LIBRARY: 1814 PARKSIDE DR. MADISON, WI 53704

PAVILION: 1818 PARKSIDE DR. MADISON, WI 53704

CONTRACT No: 9610

MUNIS No: 17085

OWNER INFORMATION

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MADISON, WI 53703-3342

CONTACT: Brent Pauba - Department of Public Works, Engineering Division
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MAIN: 608.266.4092

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MADISON, WI 53703
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S001-S603

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FIRE PROTECTION SHEETS: F001-F101
PLUMBING SHEETS: P001-P611

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MECHANICAL SHEETS:
M001-M806

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EMAIL: beth.bruss@graef-usa.com
MAIN: 414.266.9252
ELECTRICAL SHEETS: E001-E620
TECHNOLOGY SHEETS: T001-T704

INTERIOR DESIGN

INTERIOR LOGIC
1201 SOUTH STOUGHTON ROAD, SUITE 150
MADISON, WI 53716
CONTACT: Robin Shoebel, ASID, RID, LEED AP ID+C, WELL AP
EMAIL: rshoebel@intlogic.com
MAIN: 608.316.3870
INTERIORS SHEETS:
AI102-AI613

SET ISSUE

BID DOCUMENTS
JANUARY 6, 2025

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ADDENDUM

JLA ARCHITECTS
MADISON | MILWAUKEE | DENVER
JLA-AP.COM

JLA PROJECT NUMBER: 20-0925

MADISON PUBLIC LIBRARY

play MADISON PARKS

IMAGINATION CENTER AT REINDAHL PARK

BID DOCUMENTS

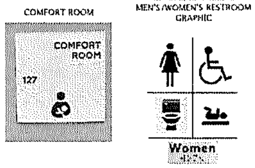
SHEET TITLE: INDEX SHEET

SHEET NUMBER: G001

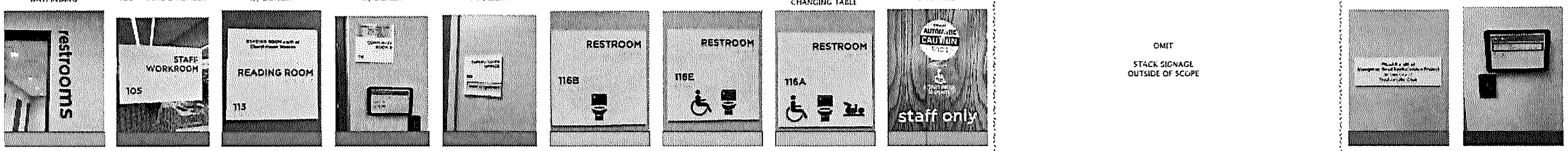
BASIS OF DESIGN SIGNAGE:

COMFORT ROOM

ADA/FAMILY RESTROOMS W/ CHANGING TABLE & MEN'S/WOMEN'S RESTROOM GRAPHIC

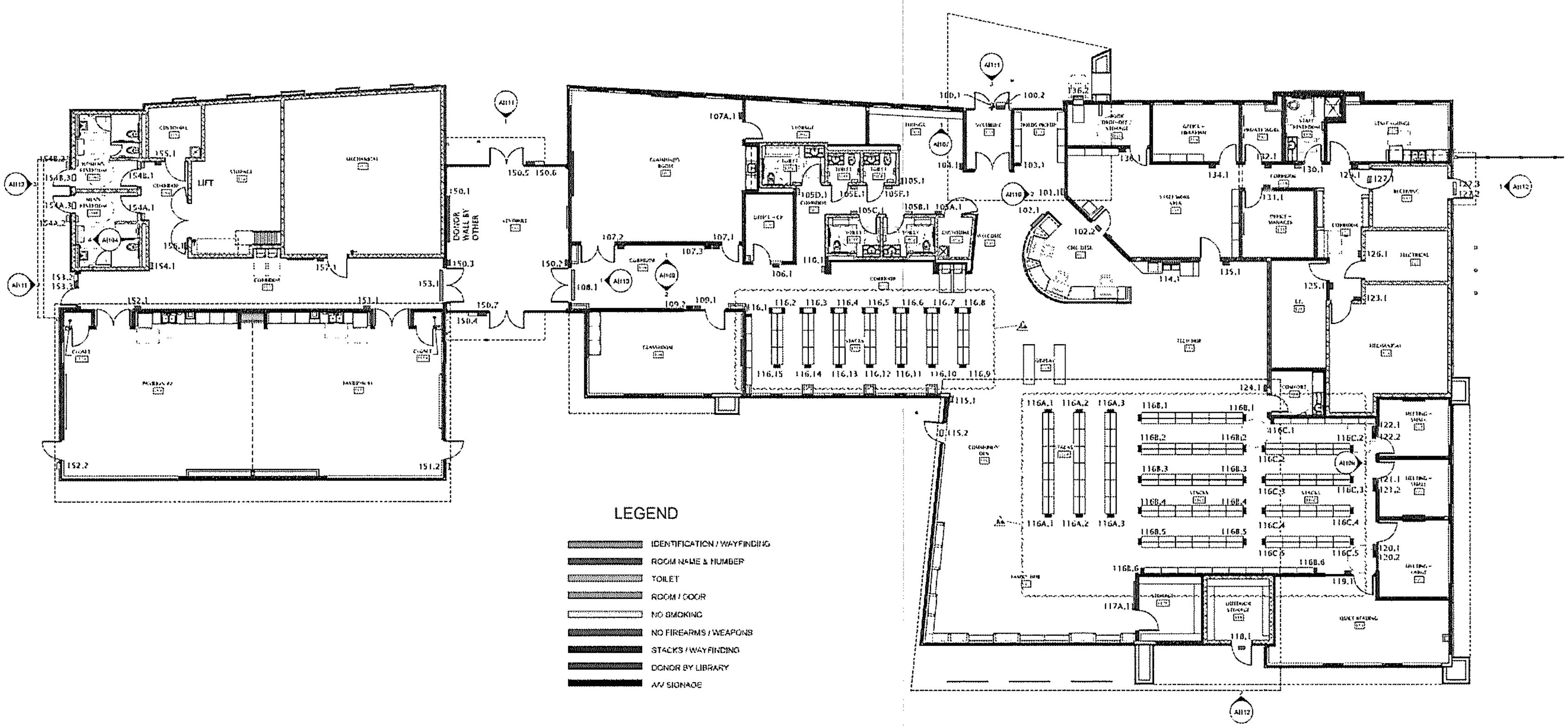


VERTICAL IDENTIFICATION/ WAYFINDING | ROOM NAME & NUMBER | ROOM NAME & NUMBER W/ DONOR | ROOM NAME & NUMBER W/ DONOR | ROOM NAME & NUMBER W/ INSERT | NON-ADA RESTROOMS | ADA RESTROOMS | ADA/FAMILY RESTROOMS W/ CHANGING TABLE | ADHESIVE/DOOR EXAMPLES | DONOR ONLY | A/V



OMIT
STACK SIGNAGE OUTSIDE OF SCOPE

SIGNAGE NOTES:
- IMAGES PROVIDED FOR BASIS OF DESIGN ONLY. FINAL SIGNAGE DESIGN BY SUPPLIER. PROVIDE SHOP DRAWINGS FOR APPROVAL.
- EXTERIOR MONUMENT & BUILDING SIGNAGE – SEE ARCHITECTURAL DRAWINGS.
- DONOR SIGNAGE BY LIBRARY.
- A/V SIGNAGE – SEE TECHNOLOGY DRAWINGS.
- FOLLOW ADA SIGNAGE INSTALLATION GUIDELINES.
- COORDINATE MOUNTING HEIGHTS FOR EXTERIOR APPLIACTIONS.



LEGEND
- IDENTIFICATION / WAYFINDING
- ROOM NAME & NUMBER
- TOILET
- ROOM / DOOR
- NO SMOKING
- NO FIREARMS / WEAPONS
- STACKS / WAYFINDING
- DONOR BY LIBRARY
- A/V SIGNAGE

1 FIRST FLOOR SIGNAGE PLAN

ADDENDUM

JLA ARCHITECTS
MADISON | MILWAUKEE | DENVER
JLA-AP.COM

InteriorLOGIC
workplace strategy

JLA PROJECT NUMBER: 20-0926

MADISON PUBLIC LIBRARY

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IMAGINATION CENTER AT REINDAHL PARK

BID DOCUMENTS

PROGRESS DOCUMENTS

REVISION SCHEDULE

SIGNAGE PLAN

AI412

SIGNAGE NOTES:

- IMAGES PROVIDED FOR BASIS OF DESIGN ONLY. FINAL SIGNAGE DESIGN BY SUPPLIER. PROVIDE SHOP DRAWINGS FOR APPROVAL.
- EXTERIOR MONUMENT & BUILDING SIGNAGE – SEE ARCHITECTURAL DRAWINGS.
- DONOR SIGNAGE BY LIBRARY.
- A/V SIGNAGE – SEE TECHNOLOGY DRAWINGS.
- FOLLOW ADA SIGNAGE INSTALLATION GUIDELINES.
- COORDINATE MOUNTING HEIGHTS FOR EXTERIOR APPLICATIONS.

ADDENDUM

JLA ARCHITECTS
MADISON | MILWAUKEE | DENVER
JLA-AP.COM

InteriorLOGIC workplace strategy

JLA PROJECT NUMBER: 20-0926

CITY OF MADISON WISCONSIN

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IMAGINATION CENTER AT REINDAHL PARK

BID DOCUMENTS

PROGRESS DOCUMENTS

REVISION SCHEDULE

SIGNAGE SCHEDULE

AI413

SPECIAL PURPOSE OUTLET SCHEDULE

GENERAL NOTE:

[illegible]

NOTE:

[illegible]

TAG	DRIVING	LOCATION	POWER: SPECIFIED SIZE	POWER: VOLTAGE	POWER: PHASE	POWER: ELECTRICAL LOAD	FEED FROM: PANEL	FEED FROM: CIRCUIT	BREAKER: SIZE	BREAKER: POLES	WIRING: PHASE & NEUTRAL QTY	WIRING: PHASE & NEUTRAL SIZE	WIRING: GROUND SIZE	WIRING: COND.	RECEPTACLE INFORMATION: GFCI	RECEPTACLE INFORMATION: NEMA TYPE	MOUNTING HEIGHT	SEE NOTE
TR-1	TELECOM RACK	125		120 V	1	1800 VA	C	10	20	1	2	12	12	1/2"		[illegible]	RACK	5
TR-2	TELECOM RACK	125		120 V	1	1800 VA	C	12	20	1	2	12	12	1/2"		[illegible]	RACK	5
TR-3	TELECOM RACK	125		120 V	1	1800 VA	C	14	20	1	2	12	12	1/2"		[illegible]	RACK	5
TR-4	TELECOM RACK	125		120 V	1	1800 VA	B	41	20	1	2	12	12	1/2"		[illegible]	WALL MOUNT RACK	
TR-5	TELECOM RACK	125		120 V	1	1800 VA	A	80	20	1	2	12	12	1/2"		[illegible]	WALL MOUNT RACK	
UPS-1	RACK MOUNTED UPS	125		120 V	1	[illegible]	C	16	20	1	2	12	12	1/2"		TBD	RACK	5
UPS-2	RACK MOUNTED UPS	125		120 V	1	[illegible]	C	18	20	1	2	12	12	1/2"		TBD	RACK	8
WS-1	WATER SOFTENER	162	1 FLA	120 V	1	120 VA	A	[illegible]	20	1	2	12	12	1/2"			48"	

SPECIAL PURPOSE OUTLET SCHEDULE

GENERAL NOTE:

[illegible]

NOTE:

[illegible]

TAG	DRIVING	LOCATION	POWER: SPECIFIED SIZE	POWER: VOLTAGE	POWER: PHASE	POWER: ELECTRICAL LOAD	FEED FROM: PANEL	FEED FROM: CIRCUIT	BREAKER: SIZE	BREAKER: POLES	WIRING: PHASE & NEUTRAL QTY	WIRING: PHASE & NEUTRAL SIZE	WIRING: GROUND SIZE	WIRING: COND.	RECEPTACLE INFORMATION: GFCI	RECEPTACLE INFORMATION: NEMA TYPE	MOUNTING HEIGHT	SEE NOTE
AHU-1-C2	AIR HANDLING UNIT - CIRCUIT 2 - LIGHTING	[illegible]	5 A	120 V	1	600 VA	A	10	20	1	2	12	12	1/2"			TBD	
AHU-1-C3	AIR HANDLING UNIT - CIRCUIT 3 - BIPOLAR IONIZATION	[illegible]	[illegible]	120 V	1	[illegible]	A	30	15	1	2	12	12	1/2"			TBD	
AHU-2-C2	AIR HANDLING UNIT - CIRCUIT 2 - LIGHTING	[illegible]	5 A	120 V	1	[illegible]	C	12	20	1	2	12	12	1/2"			TBD	
AHU-2-C3	AIR HANDLING UNIT - CIRCUIT 3 - BIPOLAR IONIZATION	[illegible]	[illegible]	120 V	1	[illegible]	D	[illegible]	15	1	2	12	12	1/2"			TBD	
AO	AUTO OPERATOR	SEE PLANS		120 V	1	500 VA	[illegible]	[illegible]	20	1	2	12	12	1/2"				
[illegible]	[illegible]	[illegible]		120 V	1	[illegible]	[illegible]	[illegible]	[illegible]	1	2	12	12	1/2"			TBD	
[illegible]	[illegible]	157		120 V	1	[illegible]	A	[illegible]	[illegible]	1	[illegible]	12	12	1/2"			TBD	
[illegible]	[illegible]	[illegible]		120 V	1	[illegible]	[illegible]	[illegible]	20	1	2	12	12	1/2"		[illegible]	[illegible]	
[illegible]	[illegible]	[illegible]		120 V	1	500 VA	B	20	20	1	2	12	12	1/2"		TBD	TBD	
[illegible]	[illegible]	[illegible]		120 V	1	[illegible]	[illegible]	[illegible]	20	1	2	12	12	1/2"		[illegible]	[illegible]	
[illegible]	[illegible]	[illegible]		120 V	1	[illegible]	[illegible]	[illegible]	20	1	[illegible]	12	12	1/2"		[illegible]	[illegible]	
[illegible]	[illegible]	[illegible]	[illegible]	208 V	1	[illegible]	[illegible]	[illegible]	40	2	2	8	10	3/4"			48"	
[illegible]	ENERGY RECOVERY VENTILATOR ELECTRIC PREHEAT COIL	[illegible]	[illegible]	208 V	1	[illegible]	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	10	[illegible]				
[illegible]	ENERGY RECOVERY VENTILATOR ELECTRIC PREHEAT COIL	[illegible]	[illegible]	208 V	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	10	[illegible]				
EV-1	ELECTRIC VEHICLE CHARGER	[illegible]	[illegible]	208 V	1	[illegible]	[illegible]	[illegible]	40	2	2	8	10	3/4"			48"	
[illegible]	ELECTRIC WATER COOLER	SEE PLANS		120 V	1	[illegible]	[illegible]	[illegible]	20	1	2	12	12	1/2"	■	[illegible]	[illegible]	
[illegible]	FIRE ALARM CONTROL UNIT	[illegible]		120 V	1	500 VA	D	[illegible]	20	1	2	12	12	1/2"			TBD	
[illegible]	[illegible] HEAT PUMP WATER HEATER	[illegible]		208 V	1	[illegible]	A	[illegible]	40	2	2			[illegible]			48"	1
[illegible]	FUTURE GARBAGE DISPOSAL	[illegible]		120 V	1	[illegible]	B	[illegible]	20	1	2	12	12	1/2"		[illegible]	[illegible]	
[illegible]	FUTURE [illegible] GATE - WALL MOUNTED	[illegible]		120 V	1	[illegible]			20	1	2	-	-	1/2"			[illegible]	2, 4
[illegible]	FUTURE [illegible] GATE - [illegible]	SEE PLANS		120 V	1	[illegible]			20	1	2	-	-	3/4"			-	3, 4
[illegible]	GUTTER DE-ICING SYSTEM	ROOF	OWNER FURNISHED	208 V	1	[illegible]	A	[illegible]	15	2	2	12	12	1/2"			TBD	7
[illegible]	GUTTER DE-ICING SYSTEM	ROOF	OWNER FURNISHED	208 V	1	[illegible]	D	[illegible]	20	2	2	12	12	1/2"			TBD	8
[illegible]	[illegible]	SEE PLANS		120 V	1	[illegible]	[illegible]	[illegible]	20	1	2	12	12	1/2"		[illegible]	[illegible]	
[illegible]	LIFT CHARGER	[illegible]		120 V	1	500 VA	A	[illegible]	20	1	2	12	12	1/2"		[illegible]	48"	
[illegible]	LIFT CHARGING [illegible]	SEE PLANS		120 V	1	[illegible]	[illegible]	[illegible]	20	1	2	12	12	1/2"		[illegible]	48"	
[illegible]	[illegible] SIGN	[illegible]		120 V	1	[illegible]	A	[illegible]	20	1	2	12	12	1/2"			TBD	
MW	MICROWAVE	[illegible]		120 V	1	[illegible]	[illegible]	[illegible]	20	1	2	12	12	1/2"		[illegible]	[illegible]	
[illegible]	RADIANT HEAT MANIFOLD PUMP	[illegible]	[illegible] FLA	120 V	1	[illegible]	A	15	15	1	2	12	12	1/2"				
[illegible]	RADIANT HEAT MANIFOLD PUMP	[illegible]	[illegible] FLA	120 V	1	[illegible]	A	15	15	1	2	12	12	1/2"				
[illegible]	RADIANT HEAT MANIFOLD PUMP	[illegible]	[illegible] FLA	120 V	1	[illegible]	A	[illegible]	15	1	2	12	12	1/2"				
[illegible]	RADIANT HEAT MANIFOLD PUMP	[illegible]	[illegible] FLA	120 V	1	[illegible]	D	[illegible]	15	1	2	12	12	1/2"				
[illegible]	RADIANT HEAT MANIFOLD PUMP	[illegible]	[illegible] FLA	120 V	1	[illegible]	D	[illegible]	15	1	2	12	12	1/2"				
[illegible]	RADIANT HEAT MANIFOLD PUMP	[illegible]	[illegible] FLA	120 V	1	[illegible]	D	[illegible]	15	1	2	12	12	1/2"				
[illegible]	RADIANT HEAT MANIFOLD PUMP	[illegible]	[illegible] FLA	120 V	1	[illegible]	D	[illegible]	15	1	2	12	12	1/2"				
[illegible]	PROJECTOR	SEE PLANS	[illegible]	120 V	1	[illegible]	A	[illegible]	20	1	2	12	12	1/2"		[illegible]	CEILING	6
[illegible]	PROJECTOR [illegible]	SEE PLANS	[illegible]	120 V	1	[illegible]	A	[illegible]	20	1	2	12	12	1/2"		[illegible]	CEILING	6
[illegible]	[illegible]	SEE PLANS		120 V	1	[illegible]	[illegible]	[illegible]	20	1	2	12	12	1/2"		[illegible]	[illegible]	
[illegible]	[illegible]			120 V	1	[illegible]	[illegible]	[illegible]	20	1	2	12	12	1/2"		[illegible]	[illegible]	
[illegible]	[illegible]	[illegible]		120 V	1	[illegible]	A	[illegible]	20	1	2	12	12	1/2"		[illegible]	48"	
[illegible]	SENSOR FAUCET	SEE PLANS	[illegible]	120 V	1	[illegible]	[illegible]	[illegible]	20	1	2	12	12	1/2"		SIMPLEX [illegible]	[illegible]	
[illegible]	[illegible]	EXTERIOR		120 V	1	[illegible]	D	29	20	1	2	12	12	1/2"				
[illegible]	[illegible] TOILET	SEE PLANS	[illegible]	120 V	1	[illegible]	[illegible]	[illegible]	20	1	2	12	12	1/2"		SIMPLEX [illegible]	[illegible]	
[illegible]	[illegible]	[illegible]	[illegible]	120 V	1	[illegible]	[illegible]	[illegible]	20	1	2	12	12	1/2"		SIMPLEX [illegible]	[illegible]	
TP	TEMPORARY POWER	[illegible]		[illegible]	1	[illegible]	[illegible]	[illegible]	[illegible]	2	2	8	10	3/4"		[illegible]	[illegible]	

ADDENDUM

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ELECTRICAL SCHEDULES

E602

PANEL: C																	New Construction
CKT	DESCRIPTION	TRIP	POLE	CB TYPE	LOAD TYPE	LOAD	A		B		C		LOAD	LOAD TYPE	CB TYPE	POLE	TRIP	DESCRIPTION	CKT
1	125	20 A	1		R	180 VA	180 VA	180 VA					180 VA	R		1	20 A	125	2
3	125	20 A	1		R	180 VA			180 VA	180 VA			180 VA	R		1	20 A	125	4
5	125	20 A	1		R	180 VA					180 VA	180 VA	180 VA	R		1	20 A	125	6
7	125	20 A	1		R	180 VA	180 VA	180 VA					180 VA	R		1	20 A	125	8
9	125	20 A	1		R	180 VA			180 VA	180 VA			180 VA	R		1	20 A	125	10
11	125	20 A	1		R	180 VA					180 VA	1200 VA	1200 VA	EQ		1	20 A	SPD-[illegible]	12
13	SPD-[illegible]	20 A	1		EQ	1500 VA	1500 VA	1500 VA					1500 VA	EQ		1	20 A	SPD-[illegible]	14
15	SPD-[illegible]	20 A	1		EQ	1500 VA			1500 VA	1500 VA			1500 VA	EQ		1	20 A	SPD-[illegible]	16
17																			18
19																			20
21																			22
23																			24
25	SPARE	20 A	1		–	–	0 VA	0 VA					–	–		1	20 A	SPARE	26
27	SPARE	20 A	1		–	–			0 VA	0 VA			–	–		1	20 A	SPARE	28
29	SPARE	20 A	1		–	–					0 VA	0 VA	–	–		1	20 A	SPARE	30

PANEL TOTALS

NOTES:

INVERTER: INV — New Construction

GENERAL NOTES:

PANEL: D — New Construction

NOTES:

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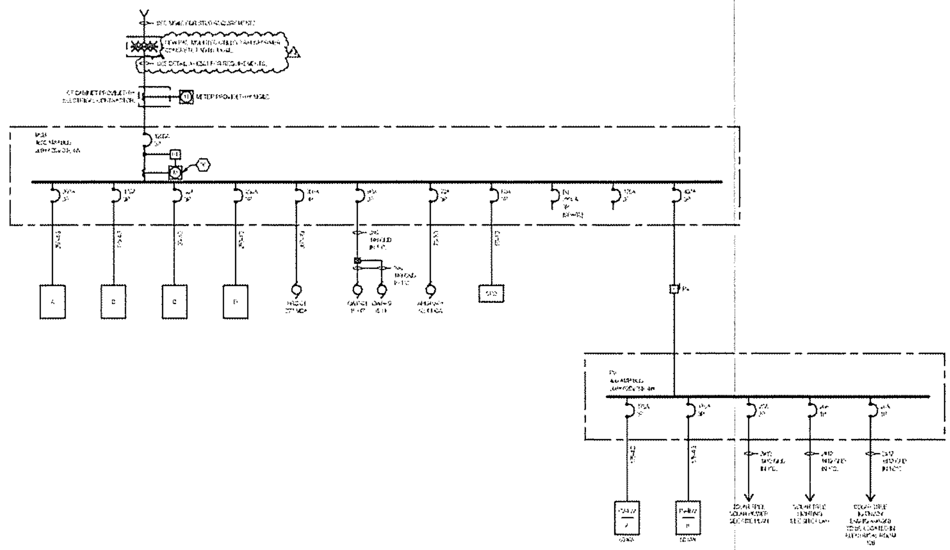
PANEL SCHEDULES

E611

ADDENDUM

Addendum



A1 ONE-LINE POWER DIAGRAM

SHEET KEYNOTES

COPPER FEEDER SCHEDULE				
[illegible]	CONDUCTORS [illegible]		CONDUIT SIZE	
	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

GENERAL NOTES:

1. [illegible]
2. [illegible]
3. [illegible]

LINE TYPE LEGEND

STANDARD PANEL DESIGNATIONS

STANDARD SWITCHBOARD & I-LINE PANEL (GEAR) DESIGNATIONS

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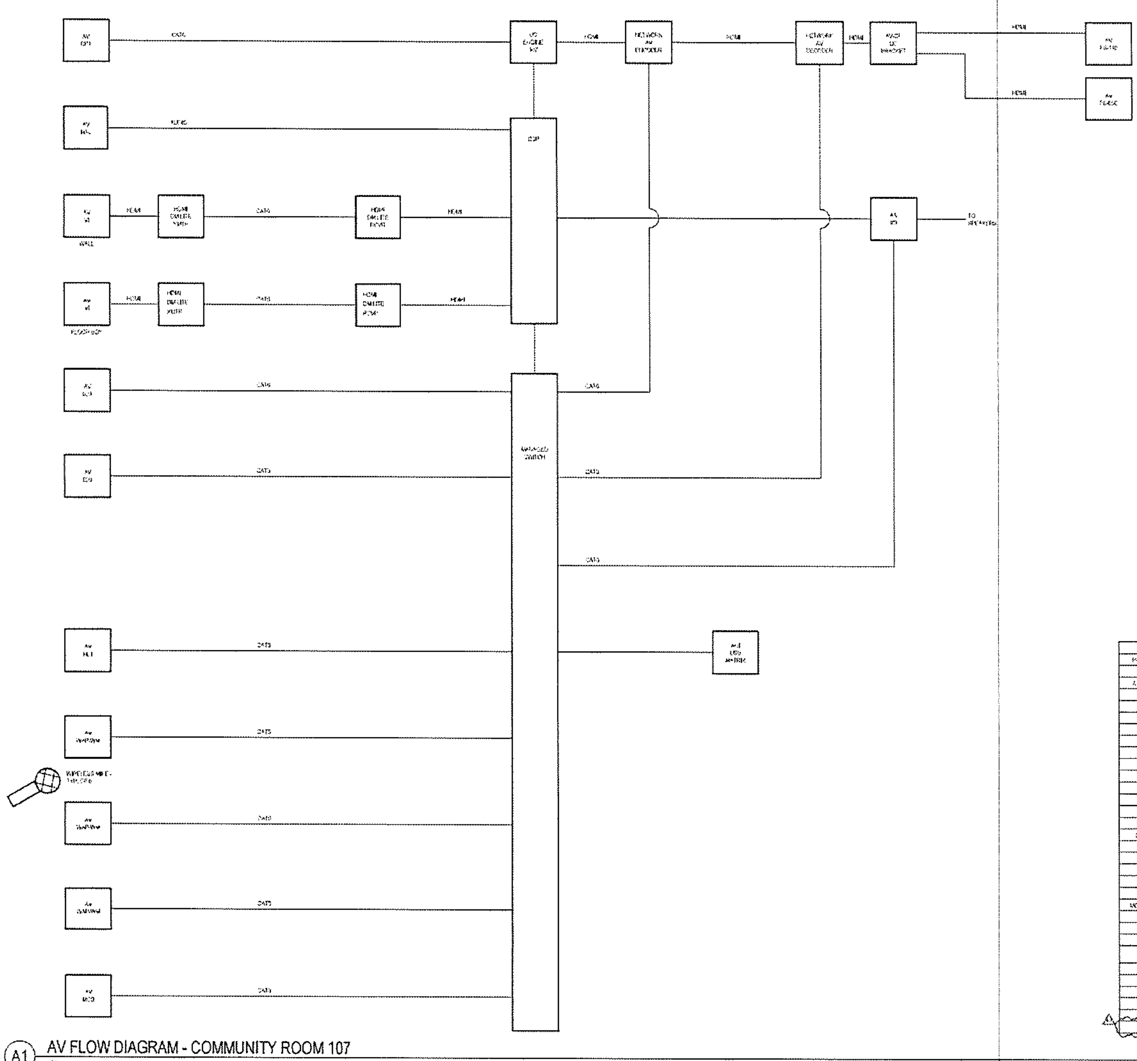
E620



(A1) AV FLOW DIAGRAM - COMMUNITY ROOM 107

GENERAL SHEET NOTES

COMMUNITY ROOM 107				
PLAN DESIGNATION	QTY	MODEL NO.	MANUFACTURER	DESCRIPTION
[illegible]	1	[illegible]	[illegible]	[illegible]
[illegible]	1	[illegible]	CRESTRON	[illegible]
NOT USED				
AV RACK 107	1	[illegible]	CRESTRON	[illegible]
AV RACK 107	1	[illegible]	BIAMP	[illegible]
AV RACK 107	1	[illegible]	BIAMP	[illegible]
AV RACK 107	3	[illegible]	BIAMP	[illegible]
AV RACK 107	3	[illegible]	BIAMP	[illegible]
AV RACK 107	1	[illegible]	BIAMP	[illegible]
[illegible]	1	[illegible]	CRESTRON	[illegible]
AV RACK 107	1	[illegible]	CRESTRON	[illegible]
NOT SHOWN	3	[illegible]	CRESTRON	[illegible]
NOT SHOWN	3	[illegible]	CRESTRON	[illegible]
[illegible]	1	[illegible]	[illegible]	[illegible]
SEE FLOOR PLAN	12	[illegible]	QSC	[illegible]
[illegible]	1	[illegible]	QSC	[illegible]
[illegible]	1	[illegible]	[illegible]	[illegible]
[illegible]	2	[illegible]	SHURE	[illegible]
[illegible]	3	[illegible]	SHURE	[illegible]
NOT SHOWN	8	[illegible]	SHURE	[illegible]
[illegible]	1	[illegible]	SHURE	[illegible]
[illegible]	1	[illegible]	[illegible]	[illegible]
AV RACK 107	1	[illegible]	[illegible]	[illegible]
AV RACK 107	1	[illegible]	MIDDLE ATLANTIC	[illegible]
AV RACK 107	1	[illegible]	MIDDLE ATLANTIC	[illegible]
AV RACK 107	1	[illegible]	MIDDLE ATLANTIC	[illegible]
AV RACK 107	1	[illegible]	MIDDLE ATLANTIC	[illegible]
AV RACK 107	2	[illegible]	MIDDLE ATLANTIC	[illegible]
AV RACK 107	1	[illegible]	MIDDLE ATLANTIC	[illegible]
[illegible]	1	[illegible]	[illegible]	[illegible]
[illegible]	1	[illegible]	CRESTRON	RACK MOUNTED AV CONTROL SYSTEM

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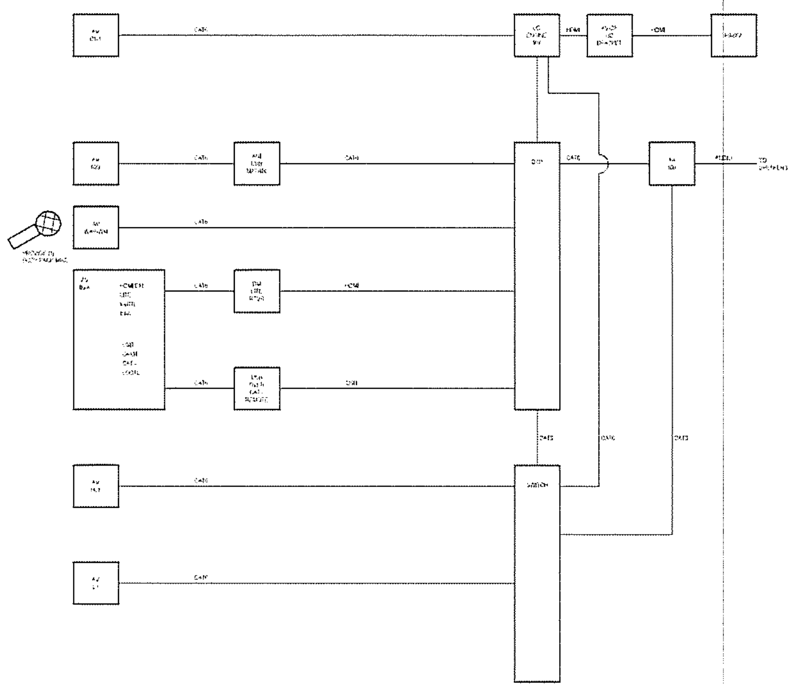
GENERAL SHEET NOTES

[illegible]



A2 AV FLOW DIAGRAM - CLASSROOM

CLASSROOM 109				
[illegible]	QTY	[illegible]	[illegible]	[illegible]
[illegible]	1	[illegible]	[illegible]	[illegible]
[illegible]	1	[illegible]	[illegible]	[illegible]
[illegible]	1	[illegible]	[illegible]	[illegible]
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[illegible]	1	[illegible]	[illegible]	[illegible]
[illegible]	1	[illegible]	[illegible]	[illegible]
[illegible]	1	[illegible]	[illegible]	[illegible]
[illegible]	1	[illegible]	[illegible]	[illegible]
[illegible]	2	[illegible]	[illegible]	[illegible]
[illegible]				
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				[illegible]
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[illegible]	1	[illegible]	[illegible]	[illegible]
NOT SHOWN	1	[illegible]	[illegible]	[illegible]
NOT SHOWN	1	[illegible]	[illegible]	[illegible]

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Addendum

GENERAL SHEET NOTES

1. [illegible]

PAVILION #1 151 & PAVILION #2 152				
PLAN DESIGNATION	QTY	PART NO.	MANUFACTURER	DESCRIPTION
[illegible]	2	[illegible]	DA-LITE	[illegible] MOTORIZED PROJECTION SCREEN [illegible]
[illegible]	2	[illegible]	EPSON	[illegible] LUMEN LASER PROJECTORS
	2	[illegible]	EPSON	UNIVERSAL PROJECTOR MOUNT
[illegible]	2	[illegible]	CRESTRON	HDMI INPUT PLATE
	2	[illegible]	CRESTRON	HDMI RECEIVER
[illegible]	2	[illegible]	CRESTRON	WALL TOUCH PANEL
[illegible]	1	[illegible]	CRESTRON	[illegible]
	1	[illegible]	CRESTRON	POWER SUPPLY
	1	[illegible]	CRESTRON	POWER STRIP
	LOT	[illegible]	CRESTRON	CRESTRON [illegible] CABLE
	1	[illegible]	[illegible]	DIGITAL SIGNAL PROCESSOR
	2	[illegible]	SHURE	DUAL CHANNEL WIRELESS MIC
SEE FLOOR PLANS	16	[illegible]	QSC	CEILING SPEAKERS 70/100V TRANSFORMERS
[illegible]	1	[illegible]	QSC	1200 WATT 2-CHANNEL AUDIO AMPLIFIER
[illegible]	2	[illegible]	RDL	AUX AUDIO INPUT PLATE
	1	[illegible]	[illegible]	[illegible]
	1	[illegible]	CISCO	[illegible]
	LOT	[illegible]		CABLE
	LOT	[illegible]		SPEAKER WIRE
	2	[illegible]	BARCO	[illegible] WIRELESS CONNECTION SYSTEM
[illegible]	1	[illegible]	CRESTRON	RACK MOUNTED [illegible] SYSTEM

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SHEET NUMBER

T704

ADDENDUM-4
SPECIFICATIONS

TABLE OF CONTENTS

[CoM] Denotes City of Madison section

(A1) = Revised as part of Bid Specification Addendum 1, dated 3-6-25.

(A3) = Revised as part of Bid Specification Addendum 3, dated 3-20-25.

(A4) = Revised as part of Bid Specification Addendum 4, dated 3-27-25.

END OF SECTION

SECTION 07 53 00
ELASTOMERIC MEMBRANE ROOFING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Elastomeric roofing membrane application.

B. Insulation, flat and tapered.

C. Vapor retarder.

D. Deck sheathing.

E. Cover boards.

F. Roofing walkway pads.

1.02 RELATED REQUIREMENTS

A. Section 05 31 00 - Steel Decking: Placement of acoustical insulation for deck flutes.

B. Section 07 62 00 - Sheet Metal Flashing and Trim.

C. Section 07 71 00 - Roof Specialties: Prefabricated roofing expansion joint flashing.

D. Section 07 71 23 - Manufactured Gutters and Downspouts.

E. Section 07 72 00 Roof Accessories.

1.03 REFERENCE STANDARDS

A. ASTM C1177/C1177M - Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing; 2017.

B. ASTM C1289 - Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board; 2023a.

C. ASTM D412 - Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers--Tension; 2016 (Reapproved 2021).

D. ASTM D570 - Standard Test Method for Water Absorption of Plastics; 2022.

E. ASTM D624 - Standard Test Method for Tear Strength of Conventional Vulcanized Rubber and Thermoplastic Elastomers; 2000 (Reapproved 2020).

F. ASTM D2240 - Standard Test Method for Rubber Property--Durometer Hardness; 2015 (Reapproved 2021).

G. ASTM D4637/D4637M - Standard Specification for EPDM Sheet Used in Single-Ply Roof Membrane; 2015, with Editorial Revision (2022).

H. ASTM E96/E96M - Standard Test Methods for Gravimetric Determination of Water Vapor Transmission Rate of Materials; 2022a, with Editorial Revision (2023).

I. FM (AG) - FM Approval Guide; Current Edition.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Coordinate with installation of associated counterflashings installed under other sections.

B. Preinstallation Meeting: Convene a preinstallation meeting one week before starting work of this section; require attendance by all affected installers; review preparation and installation procedures and coordination and scheduling necessary for related work.

1.05 SUBMITTALS

A. See Section 01 33 23-Submittals for City of Madison required submittal procedures.

B. Product Data: Provide data indicating membrane materials, flashing materials, insulation, surfacing, and fasteners.

1. Vapor Retarder: per manufacturer requirements.

C. Shop Drawings: Indicate joint or termination detail conditions, conditions of interface with other materials, setting plan for tapered insulation, and mechanical fastener layout.

D. Samples for Verification: Submit two samples of standard size.

E. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

F. Installer's qualification statement.

G. Warranty: Submit manufacturer warranty and ensure forms have been completed in Owner's name and registered with manufacturer.

1.06 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years of documented experience.

B. Installer Qualifications: Company specializing in performing the work of this section with minimum three years documented experience.

1.07 DELIVERY, STORAGE, AND HANDLING

A. See Section 01 74 19 - Construction Waste Management and Disposal for packaging waste requirements.

B. Deliver materials in manufacturer's original containers, dry and undamaged, with seals and labels intact.

C. Store materials in weather protected environment, clear of ground and moisture.

D. Ensure storage and staging of materials does not exceed static and dynamic load-bearing capacities of roof decking.

E. Protect foam insulation from direct exposure to sunlight.

1.08 FIELD CONDITIONS

A. Do not apply roofing membrane during unsuitable weather.

B. Do not apply roofing membrane when ambient temperature is below 40 degrees F (5 degrees C) or above 100 degrees F (38 degrees C).

C. Do not apply roofing membrane to damp or frozen deck surface or when precipitation is expected or occurring.

D. Do not expose materials vulnerable to water or sun damage in quantities greater than can be weatherproofed the same day.

E. Schedule applications so that no partially completed sections of roof are left exposed at end of workday.

1.09 WARRANTY

A. See Section 01 77 00-Closeout Procedures for additional warranty requirements.

B. Correct defective work within a two year period after Date of Substantial Completion.

C. Provide 30 year manufacturer's material and labor warranty to cover failure to prevent penetration of water.
   1. Cover wind speeds up to 72 mph

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. EPDM Membrane Materials:
   1. Basis of Design: Elevate/Firestone Rubbergard Max EPDM: www.holcimelevate.com
   2. Carlisle SynTec Systems; Sure-Tough EPDM: www.carlisle-syntec.com/#sle.
   3. Johns Manville; JM EPDM: www.jm.com/#sle.
   4. Versico Roofing Systems; VersiGard EPDM: www.versico.com/#sle.

5. Substitutions: See Section 01 25 13 – Product Substitution Procedures.

B. Insulation:
1. Dow: www.dow.com/#sle.
2. GAF: www.gaf.com/#sle.
3. Hunter Panels: www.hunterpanels.com/#sle.
4. Owens Corning Corporation: www.owenscorning.com/#sle.
5. ROCKWOOL: www.rockwool.com/#sle.
6. Versico Roofing Systems; SecurShield Insulation: www.versico.com/#sle.
7. Substitutions: See Section 01 60 00 - Product Requirements.

2.02 ROOFING - UNBALLASTED APPLICATIONS

A. Elastomeric Membrane Roofing: One ply membrane, fully adhered, over vapor retarder and insulation.

B. Roofing Assembly Requirements:
1. Insulation Thermal Resistance (R-Value): 5 per inch, minimum; provide insulation of thickness required.

C. Acceptable Insulation Types - Constant Thickness Application: Any type that meets requirements and is approved by membrane manufacturer for application.

D. Acceptable Insulation Types - Tapered Application: Any type that meets requirements and is approved by membrane manufacturer for application.

2.03 ROOFING MEMBRANE AND ASSOCIATED MATERIALS

A. Membrane: Ethylene-propylene-diene-monomer (EPDM); non-reinforced; complying with minimum properties of ASTM D4637/D4637M.
1. ~~Thickness: 90 mil, 0.090 inch (2.3 mm), minimum.~~
2. Sheet Width: 120 inches (3,048 mm), maximum.
a. Adhered Application: Limit width to 120 inches (3,048 mm), maximum, when ambient temperatures are less than 40 degrees F (4.4 degress C) for extended period of time during installation.
3. Color: Black.
4. Tensile Strength: 9 psi (1305 MPa), minimum, measured in accordance with ASTM D412.
5. Ultimate Elongation: 200 percent, minimum, measured in accordance with ASTM D412.
6. Durometer Hardness, Type A: 30, minimum, in accordance with ASTM D2240
7. Tear Strength: 150 lbf per inch (26.3 kN/m), measured in accordance with ASTM D624.
8. Water Absorption: 8 percent increase in weight, maximum, measured in accordance with ASTM D570, 24 hour immersion.
9. Water Vapor Permeability: 1 perm inch, measured in accordance with ASTM E96/E96M.

B. Seaming Materials: As recommended by membrane manufacturer.

C. Vapor Retarder: ~~(only if required by manufacturer requirements)~~ ~~Non-bituminous, foil and fibrous mesh laminate~~Self-adhesive tri-laminate woven, high-density polyethylene top surface with factory laminated SBS modified bitumen adhesive, complying with requirements of fire rating classification; compatible with roofing and insulation materials.
1. Fire-retardant adhesive.
2. Vapor Permeability: ~~1 perm inch, measured in accordance with ASTM E96/E96M.~~ Meet requirements of ASTM D1970 or ASTM E2178.
3. Sealability around Nail: Conforms to ASTM D1970.
4. Product: Elevate V-Force Vapor Barrier Membrane; www.holcimelevate.com

D. Flexible Flashing Material: Same material as membrane.
1. Thickness: 30 mil (0.76 mm).
2. Maximum Perm Rate: 0.04.

3. Tensile Strength: 1,200 psi (8.3 MPa).
4. Elasticity: 50 percent with full recovery without set.
5. Color: Black.

2.04 DECK SHEATHING

A. Deck Sheathing: Glass mat faced gypsum panels, ASTM C1177/C1177M, fire resistant type, 1/4 inch (6.4 mm) thick.
1. Thickness: 1/2-inch (12.7 mm), Type X, fire-resistant.
2. Products:
a. Georgia-Pacific; DensDeck: www.densdeck.com/#sle.
b. Georgia-Pacific; DensDeck Prime with EONIC Technology: www.densdeck.com/#sle.
c. USG Corporation; Securock Ultralight Glass-Mat Roof Board: www.usg.com/#sle.
d. USG Corporation; Securock Ultralight Coated Glass-Mat Roof Board: www.usg.com/#sle.
e. Substitutions: See Section 01 25 13 – Product Substitution Procedures.

2.05 COVER BOARDS

A. Cover Boards: Glass-mat faced gypsum panels complying with ASTM C1177/C1177M.
1. Thickness: 1/2-inch (12.7 mm), Type X, fire-resistant.
2. FM classified for Very Severe Hail (VSH) in approved single ply membrane assemblies.
3. Products:
a. Georgia-Pacific; DensDeck: www.densdeck.com/#sle.
b. Substitutions: See Section 01 25 13 – Product Substitution Procedures.

2.06 INSULATION

A. Polyisocyanurate (ISO) Board Insulation: Rigid cellular foam, complying with ASTM C1289.
1. Classifications:
a. Type VII: Faced with glass mat faced gypsum board on one major surface of the core foam and faced on the other major surface with any facer described in this specification.
1) Compressive Strength: 16 psi (110 kPa), minimum.
2) Thermal Resistance, R-value (RSI-value): At 1-1/2 inches (38 mm) thick; R-8.5 (1.23) at 75 degrees F (24 degrees C); at total system minimum R-40 must be achieved.
2. Board Size: 48 by 96 inches (1220 by 2440 mm).
3. Board Thickness: 1.5 inch (37.5 mm).
4. Tapered Board: Slope as indicated; minimum thickness as indicated on the drawings; fabricate of fewest layers possible.
5. Board Edges: Square.
6. Products:
a. Dow Chemical Company: www.dow.com/#sle.
b. GAF; EnergyGuard Polyiso Insulation: www.gaf.com/#sle.
c. Mule-Hide Products Co, Inc; Poly ISO Flat: www.mulehide.com/#sle.
d. Versico Roofing Systems; SecurShield Insulation: www.versico.com/#sle.
e. Substitutions: See Section 01 25 13 – Product Substitution Procedures.

2.07 ACCESSORIES

A. Prefabricated Roofing Expansion Joint Flashing: See Section 07 71 00.

B. Stack Boots: Prefabricated flexible boot and collar for pipe stacks through membrane; elastomeric material compatible with membrane.

C. Sheathing Joint Tape: Paper type, 6 inches (152 mm) wide, self adhering.

D. Insulation Joint Tape: Glass fiber reinforced type as recommended by insulation manufacturer, compatible with roofing materials; 6 inches (152 mm) wide; self adhering.

E. Insulation Fasteners: Appropriate for purpose intended.

F. Membrane Adhesive: As recommended by membrane manufacturer.

G. Thinners and Cleaners: As recommended by adhesive manufacturer, compatible with membrane.

H. Insulation Adhesive: As recommended by insulation manufacturer.

I. Roofing Nails: Galvanized, hot-dipped type, size and configuration as required to suit application.

J. Strip Reglet Devices: Galvanized steel, maximum possible lengths per location, with attachment flanges.

K. Insulation Perimeter Restraint: Stainless steel edge device configured to restrain insulation boards in position and provide top flashing.

L. Sealants: As recommended by membrane manufacturer.

M. Walkway Pads: Suitable for maintenance traffic, contrasting color or otherwise visually distinctive from roof membrane.
   1. Composition: 100% Recycled Rubber, non-slip surface.
      a. With EPDM compatable adhesive strip
   2. Size: 30 inches wide, minimum.
   3. Thickness: 1/2-inch to 2-inches.
   4. Surface Color: Black, Grey or White.
   5. Manufacture:
      a. Same as roofing supplier, if they offer a suitable product.
      b. RubberForm Recycled Products, LLC.; Rooftop Walkway Rubber Mats;
      c. Substitutions: See Section 01 25 13 – Product Substitution Procedures

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that surfaces and site conditions are ready to receive work.

B. Verify deck is supported and secure.

C. Verify deck is clean and smooth, flat, free of depressions, waves, or projections, properly sloped and suitable for installation of roof system.

D. Verify deck surfaces are dry and free of snow or ice.

E. Verify that roof openings, curbs, and penetrations through roof are solidly set, and cant strips are in place.

3.02 PREPARATION - METAL DECK

A. Install deck sheathing on metal deck.
   1. Lay with long side at right angle to flutes; stagger end joints; provide support at ends.
   2. Cut sheathing cleanly and accurately at roof breaks and protrusions to provide smooth surface.
   3. Tape joints.

B. Mechanically fasten sheathing to roof deck, in accordance with roofing manufacturer's instructions.
   1. Over entire roof area, fasten sheathing using six fasteners with washers per sheathing board.
   2. At roof perimeter to a distance of 4 feet (1.2 m) in from edges, fasten sheathing using 6 fasteners with washers per board.

3.03 INSTALLATION - VAPOR RETARDER AND INSULATION, UNDER MEMBRANE

A. Install self-adhesive vapor retarder to ~~deck surface~~Cover Board-Layer 1~~with adhesive~~ in accordance with manufacturer's instructions.
   1. Extend vapor retarder under cant strips and blocking to deck edge.
   2. Install flexible flashing from vapor retarder to air seal material of wall construction, lap and seal to provide continuity of the air barrier plane.

B. Ensure vapor retarder is clean and dry, continuous, and ready for application of insulation.

~~Attachment of Insulation: Embed insulation in adhesive in full contact, in accordance with roofing and insulation manufacturers' instructions.~~

C. Attachment of Insulation: Mechanically fasten insulation to deck in accordance with roofing manufacturer's instructions and FM (AG) Factory Mutual requirements.

~~Cover Boards: Mechanically fasten cover boards in accordance with roofing manufacturer's instructions and FM (AG) Factory Mutual requirements.~~

D. Cover Boards: Mechanically fasten cover boards in accordance with roofing manufacturer's instructions ~~and FM (AG) Factory Mutual requirements.~~
   1. Layer 1 (bottom): Mechanically fasten cover boards to roof deck in accordnace with roofing manufacturer's instructions.
   2. Layer 2 (top): Adhere cover boards with low-rise foam to top layer of poly-iso insulation.

E. Lay subsequent layers of insulation with joints staggered minimum 6 inches (152 mm) from joints of preceding layer.

F. Place tapered insulation to the required slope pattern in accordance with manufacturer's instructions.

G. On metal deck, place boards parallel to flutes with insulation board edges bearing on deck flutes.

H. Lay boards with edges in moderate contact without forcing. Cut insulation to fit neatly to perimeter blocking and around penetrations through roof.

I. Tape joints of insulation in accordance with roofing and insulation manufacturers' instructions.

J. At roof drains, use factory-tapered boards to slope down to roof drains over a distance of 18 inches (457 mm).

K. Do not apply more insulation than can be covered with membrane in same day.

3.04 INSTALLATION - MEMBRANE

A. Roll out membrane, free from wrinkles or tears. Place sheet into place without stretching.

B. Shingle joints on sloped substrate in direction of drainage.

C. Fully Adhered Application: Apply adhesive to substrate at rate ~~of ___ gal per 100 sq ft (___ L/9.3 sq m).~~ recommended by roofing manufacturer. Fully embed membrane in adhesive except in areas directly over or within 3 inches (76 mm) of expansion joints. Fully adhere one roll before proceeding to adjacent rolls.

D. Overlap edges and ends and seal seams by contact adhesive, minimum 3 inches (76 mm). Seal permanently waterproof. Apply uniform bead of sealant to joint edge.

E. At intersections with vertical surfaces:
   1. Extend membrane over cant strips and up a minimum of 4 inches (102 mm) onto vertical surfaces.
   2. Fully adhere flexible flashing over membrane and up to nailing strips.

F. Around roof penetrations, seal flanges and flashings with flexible flashing.

G. Install roofing expansion joints where indicated. Make joints watertight.
   1. Install prefabricated joint components in accordance with manufacturer's instructions.

H. Coordinate installation of roof drains and sumps and related flashings.

3.05 FIELD QUALITY CONTROL

A. See Section 01 45 16-Field Quality Control Procedures for City of Madison requirements. for additional requirements.

B. Owner will provide testing services, and Contractor to provide temporary construction and materials for testing in accordance with requirements.

C. Provide daily on-site attendance of roofing and insulation manufacturer's representative during installation of this work.

3.06 CLEANING

A. See Section 01 77 00-Closeout Procedures for additional requirements.

B. Remove bituminous markings from finished surfaces.

C. In areas where finished surfaces are soiled by work of this section, consult manufacturer of surfaces for cleaning advice and comply with their documented instructions.

D. Repair or replace defaced or damaged finishes caused by work of this section.

3.07 PROTECTION

A. Protect installed roofing and flashings from construction operations.

B. Where traffic must continue over finished roof membrane, protect surfaces using durable materials.

END OF SECTION

SECTION 08 80 00
GLAZING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Insulating glass units.

B. Glazing units.

C. Laminated glass interlayers.

D. Glazing compounds.

1.02 RELATED REQUIREMENTS

A. Section 07 25 00 - Weather Barriers.

B. Section 07 26 00 - Vapor Retarders.

C. Section 07 27 00 - Air Barriers.

D. Section 07 92 00 - Joint Sealants: Sealants for other than glazing purposes.

E. Section 08 11 13 - Hollow Metal Doors and Frames: Glazed lites in doors and borrowed lites.

F. Section 08 41 26 - All-Glass Entrances and Storefronts: Glazing provided as part of entrance assembly.

G. Section 08 43 13 - Aluminum-Framed Storefronts: Glazing provided as part of storefront assembly.

1.03 REFERENCE STANDARDS

A. 16 CFR 1201 - Safety Standard for Architectural Glazing Materials; Current Edition.

B. ANSI Z97.1 - American National Standard for Safety Glazing Materials Used in Buildings - Safety Performance Specifications and Methods of Test; 2015 (Reaffirmed 2020).

C. ASTM C864 - Standard Specification for Dense Elastomeric Compression Seal Gaskets, Setting Blocks, and Spacers; 2005 (Reapproved 2019).

D. ASTM C920 - Standard Specification for Elastomeric Joint Sealants; 2018.

E. ASTM C1036 - Standard Specification for Flat Glass; 2021.

F. ASTM C1048 - Standard Specification for Heat-Strengthened and Fully Tempered Flat Glass; 2018.

G. ASTM C1172 - Standard Specification for Laminated Architectural Flat Glass; 2019.

H. ASTM C1193 - Standard Guide for Use of Joint Sealants; 2016 (Reapproved 2023).

I. ASTM C1376 - Standard Specification for Pyrolytic and Vacuum Deposition Coatings on Flat Glass; 2021a.

J. ASTM E1300 - Standard Practice for Determining Load Resistance of Glass in Buildings; 2016.

K. ASTM E2190 - Standard Specification for Insulating Glass Unit Performance and Evaluation; 2019.

L. GANA (SM) - GANA Sealant Manual; 2008.

M. ICC (IBC) - International Building Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

N. NFRC 100 - Procedure for Determining Fenestration Product U-factors; 2023.

O. NFRC 200 - Procedure for Determining Fenestration Product Solar Heat Gain Coefficient and Visible Transmittance at Normal Incidence; 2023.

P. NFRC 300 - Test Method for Determining the Solar Optical Properties of Glazing Materials and Systems; 2023.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Preinstallation Meeting: Convene a preinstallation meeting one week before starting work of this section; require attendance by each of the affected installers.

1.05 SUBMITTALS

A. See Section 01 33 23-Submittals for City of Madison required submittal procedures.

B. Product Data on Glazing Compounds and Accessories: Provide chemical, functional, and environmental characteristics, limitations, special application requirements, and identify available colors.

C. Installer's qualification statement.
   1. Architectural Glass and Metal Technician (AGMT) certificates or equivalent ANSI accredited certificates for architectural glass and metal installers for no less than 50% of the crew installing architectural glass and metal products.

1.06 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years of documented experience.
   1. Provide certified glass products through ANSI accredited certifications that include plant audits and independent laboratory performance testing.

B. Installer Qualifications: A qualified glazing contractor for this Project who employs glazing technicians certified under the Architectural Glass and Metal Technician (AGMT) certification program. No less than 50% of the crew performing architectural glass and metal work shall be Architectural Glass and Metal Technicians (AGMT).

C. Testing Agency Qualifications: Independent firm specializing in performing testing and inspections of the type specified in this section.

1.07 MOCK-UPS

A. See Section 01 43 39 - Mockups for additional requirements.

1.08 FIELD CONDITIONS

A. Do not install glazing when ambient temperature is less than 40 degrees F (4 degrees C).

B. Maintain minimum ambient temperature before, during and 24 hours after installation of glazing compounds.

1.09 WARRANTY

A. See Section 01 77 00-Closeout Procedures for additional warranty requirements.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Float Glass Manufacturers:
   1. Cardinal Glass Industries: www.cardinalcorp.com/#sle.
   2. Guardian Glass, LLC: www.guardianglass.com/#sle.
   3. Oldcastle Building Envelope: www.obe.com
   4. Vitro Architectural Glass (formerly PPG Glass); Solarban 65: www.vitroglazings.com/#sle.
   5. Or Approved Equal.
   6. Substitutions: See Section 01 25 13 - Product Substitution Procedures.

B. Laminated Glass Manufacturers:
   1. Cardinal Glass Industries: www.cardinalcorp.com/#sle.
   2. Or Approved Equal.
   3. Substitutions: See Section 01 25 13 - Product Substitution Procedures.

C. Bird-Friendly Glass Manufacturers:

1. Cardinal Glass Industries: www.cardinalcorp.com/#sle.
2. Guardian Glass, LLC: www.guardianglass.com/#sle.
3. Oldcastle Building Envelope: www.obe.com
4. Vitro Architectural Glass (formerly PPG Glass); Solarban 65: www.vitroglazings.com/#sle.
5. Or Approved Equal.
6. Substitutions: See Section 01 25 13 - Product Substitution Procedures.

2.02 PERFORMANCE REQUIREMENTS - EXTERIOR GLAZING ASSEMBLIES

A. Provide type and thickness of exterior glazing assemblies to support assembly dead loads, and to withstand live loads caused by positive and negative wind pressure acting normal to plane of glass.
   1. Comply with ASTM E1300 for design load resistance of glass type, thickness, dimensions, and maximum lateral deflection of supported glass.
   2. Provide glass edge support system sufficiently stiff to limit the lateral deflection of supported glass edges to less than 1/175 of their lengths under specified design load.
   3. Glass thicknesses listed are minimum.

B. Weather-Resistive Barrier Seals: Provide completed assemblies that maintain continuity of building enclosure water-resistive barrier, vapor retarder, and/or air barrier.
   1. In conjunction with weather barrier related materials described in other sections, as follows:
      a. Water-Resistive Barriers: See Section 07 25 00.
      b. Vapor Retarders: See Section 07 26 00.
      c. Air Barriers: See Section 07 27 00.
   2. To utilize inner pane of multiple pane insulating glass units for continuity of vapor retarder and/or air barrier seal.
   3. To maintain a continuous vapor retarder and/or air barrier throughout glazed assembly from glass pane to heel bead of glazing sealant.

C. Thermal and Optical Performance: Provide exterior glazing products with performance properties as indicated. Performance properties are in accordance with manufacturer's published data as determined with the following procedures and/or test methods:
   1. Center of Glass U-Value: Comply with NFRC 100 using Lawrence Berkeley National Laboratory (LBNL) WINDOW 6.3 computer program.
   2. Center of Glass Solar Heat Gain Coefficient (SHGC): Comply with NFRC 200 using Lawrence Berkeley National Laboratory (LBNL) WINDOW 6.3 computer program.
   3. Solar Optical Properties: Comply with NFRC 300 test method.

2.03 GLASS MATERIALS

A. Float Glass: Provide float glass based glazing unless otherwise indicated.
   1. Annealed Type: ASTM C1036, Type I - Transparent Flat, Class 1 - Clear, Quality - Q3.
   2. Kind HS - Heat-Strengthened Type: Complies with ASTM C1048.
   3. Kind FT - Fully Tempered Type: Complies with ASTM C1048.

B. Laminated Glass: Float glass laminated in accordance with ASTM C1172.
   1. Laminated Safety Glass: Complies with ANSI Z97.1 - Class B or 16 CFR 1201 - Category I impact test requirements.

2.04 INSULATING GLASS UNITS

A. Manufacturers:
   1. Glass: Any of the manufacturers specified for float glass.
   2. Cardinal Glass Industries: www.cardinalcorp.com/#sle.
   3. Guardian Glass, LLC: www.guardianglass.com/#sle.
   4. Oldcastle Building Envelope: www.obe.com
   5. Vitro Architectural Glass (formerly PPG Glass); Solarban 65: www.vitroglazings.com/#sle.
   6. Substitutions: See Section 01 25 13 - Product Substitution Procedures.

B. Insulating Glass Units: Types as indicated.

1. Durability: Certified by an independent testing agency to comply with ASTM E2190.
2. Coated Glass: Comply with requirements of ASTM C1376 for pyrolytic (hard-coat) or magnetic sputter vapor deposition (soft-coat) type coatings on flat glass; coated vision glass, Kind CV; coated overhead glass, Kind CO.
3. Spacer Color: Black.
4. Edge Seal:
   a. Color: Black.
5. Purge interpane space with dry air, hermetically sealed.

C. Type IG-1 - Insulating Glass Units: Vision glass, double glazed.
1. Applications: Exterior glazing unless otherwise indicated.
2. Space between lites filled with argon.
   a. Basis of Design: Cardinal Endure IG spacer.
   b. Basis of Design Air Gap: 1/2 inch or 13 mm.
3. Outboard Lite: Heat-strengthened float glass, 1/4 inch or 5.77 mm thick, minimum.
   a. Tint: Clear.
   ~~Coating: Self-cleaning type, on #1 surface.~~
   b. Coating: Low-E (passive type), LoE-270 on #2 surface.
4. Inboard Lite: Heat-strengthened float glass, 1/4 inch or 5.77 mm thick, minimum.
   a. Tint: Clear.
5. Total Thickness: 1 inch or 24.4 mm .
6. Thermal Transmittance (U-Value), Summer - Center of Glass: 0.30, nominal.
7. Visible Light Transmittance (VLT): 68 percent, nominal.
8. Solar Heat Gain Coefficient (SHGC): 0.41, nominal.

D. Type IG-1B - Insulating Glass Units: Bird-friendly Acid Etched vision glass, double glazed.
1. Applications: Exterior glazing unless otherwise indicated.
2. Space between lites filled with argon.
   a. Basis of Design: Cardinal Endure IG spacer.
   b. Basis of Design Air Gap: 1/2 inch or 13 mm.
3. Outboard Lite: Heat-strengthened float glass, 1/4 inch or 5.77 mm thick, minimum.
   a. Tint: Clear.
   b. Bird-Friendly Pattern: 5 mm dots, spaced at 2 by 2 inches.
      1) Acid-etched on exterior, Surface 1, of IGU.
   ~~Coating: Self-cleaning type, on #1 surface.~~
   c. Coating: Low-E (passive type), LoE-270 on #2 surface.
4. Inboard Lite: Heat-strengthened float glass, 1/4 inch or 5.77 mm thick, minimum.
   a. Tint: Clear.
5. Total Thickness: 1 inch or 24.4 mm .
6. Thermal Transmittance (U-Value), Summer - Center of Glass: 0.30, nominal.

E. Type IG-2 - Insulating Glass Units: Vision glass, double glazed.
1. Applications: Tempered exterior glazing as indicated on drawings.
2. Space between lites filled with argon.
   a. Basis of Design: Cardinal Endure IG spacer.
   b. Basis of Design Air Gap: 1/2 inch or 13 mm.
3. Outboard Lite: Fully tempered float glass, 1/4 inch or 5.77 mm thick, minimum.
   a. Tint: Clear.
   ~~Coating: Self-cleaning type, on #1 surface.~~
   b. Coating: Low-E (passive type), LoE-270 on #2 surface.
4. Inboard Lite: Fully tempered float glass, 1/4 inch or 5.77 mm thick, minimum.
   a. Tint: Clear.
5. Total Thickness: 1 inch or 25.7 mm.

6. Thermal Transmittance (U-Value), Summer - Center of Glass: 0.30, nominal.

F. Type IG-2B - Insulating Glass Units: Bird-friendly Acid Etched vision glass, double glazed.
1. Applications: Tempered exterior glazing as indicated on drawings.
2. Space between lites filled with argon.
a. Basis of Design: Cardinal Endure IG spacer.
b. Basis of Design Air Gap: 1/2 inch or 13 mm.
3. Outboard Lite: Fully tempered float glass, 1/4 inch or 5.77 mm thick, minimum.
a. Tint: Clear.
b. Bird-Friendly Pattern: 5 mm dots, spaced at 2 by 2 inches.
1) Acid-etched on exterior, Surface 1, of IGU.
~~Coating: Self-cleaning type, on #1 surface.~~
c. Coating: Low-E (passive type), LoE-270 on #2 surface.
4. Inboard Lite: Fully tempered float glass, 1/4 inch or 5.77 mm thick, minimum.
a. Tint: Clear.
5. Total Thickness: 1 inch or 24.4 mm .
6. Thermal Transmittance (U-Value), Summer - Center of Glass: 0.30, nominal.

G. Type IG-3B - Insulating Glass Units: Bird-friendly Acid Etched laminated exterior glazing.
1. Space between lites filled with argon.
a. Basis of Design: Cardinal Endure IG spacer.
b. Basis of Design Air Gap: 1/2 inch or 13 mm.
2. Outboard Lites: Heat-strengthened float glass, 1/4 inch or 5.77 mm thick, minimum.
a. Tint: Clear.
b. Bird-Friendly Pattern: 5 mm dots, spaced at 2 by 2 inches.
1) Acid-etched on exterior, Surface 1, of IGU.
c. Coating: Low-E (passive type), LoE-270 on #2 surface.
d. PVB Interlayer between outboard lites (LGI-1).
3. Inboard Lite: Heat-strengthened float glass, 1/4 inch or 5.77 mm thick, minimum.
a. Tint: Clear.
4. Total Thickness: 1 inch or 24.4 mm .
5. Thermal Transmittance (U-Value), Summer - Center of Glass: 0.30, nominal.

2.05 BASIS OF DESIGN - INSULATING GLASS UNITS

A. Basis of Design - Insulating Glass Units: Vision glazing, with low-e coating.
1. Applications: Exterior insulating glass glazing unless otherwise indicated.
2. Space between lites filled with argon.
3. Total Thickness: 1 inch or 24.4 mm.
4. Thermal Transmittance (U-Value), Summer - Center of Glass: 0.30, nominal.
5. Coated Glass: Comply with requirements of ASTM C1376 for pyrolytic (hard-coat) or magnetic sputter vapor deposition (soft-coat) type coatings on flat glass; coated vision glass, Kind CV; coated overhead glass, Kind CO.
6. Spacer Color: Black.
7. Edge Seal:
a. Dual-Sealed System: Provide polyisobutylene sealant as primary seal applied between spacer and glass panes, and silicone, polysulfide, or polyurethane sealant as secondary seal applied around perimeter.
8. Color: Black.
9. Purge interpane space with dry air, hermetically sealed.

2.06 GLAZING UNITS

A. Type G-1 - Monolithic Interior Vision Glazing:
1. Applications: Interior glazing unless otherwise indicated.

2. Glass Type: Annealed float glass.
3. Tint: Clear.
4. Thickness: 1/4 inch (6.4 mm), nominal.

B. Type G-2 - Monolithic Interior Vision Glazing:
1. Applications: Tempered interior glazing as indicated on drawings.
2. Glass Type: Fully tempered float glass.
3. Tint: Clear.
4. Thickness: 1/4 inch (6.4 mm), nominal.

2.07 LAMINATED GLASS INTERLAYERS

A. Type LGI-1 - Polyvinyl Butyral (PVB) Interlayer for Laminated Glazing:
1. Functionality: Post-breakage safety and security.
2. Applications:
a. Single pane, laminated glass unit.
b. Interior laminated pane of insulating glass unit, Type IG-3B.
3. Color: Clear.
4. Thickness: As required for indicated performance of laminated glass application.
5. Manufacturers:
a. Eastman Chemical Company; Saflex Clear PVB Interlayer: www.saflex.com/#sle.
b. Sekisui S-LEC America, LLC; S-LEC Clear Film: www.s-lec.us/#sle.
c. Substitutions: See Section 01 60 00 - Product Requirements.

2.08 GLASS COATINGS

A. Decorative Coating: Two component, water-based silicone polyurethane opaque color hybrid coating for roll coat and spray applications.
1. Application: Interior locations as indicated on drawings.
a. Glass and Coating Orientation: On surface facing substrate
2. Decorative Coating Glass Unit Fabrication: Strictly according to coating manufacturer's written instructions.
3. Dry Film Thickness: Between 0.0012 inch (0.030 mm) and 0.0015 inch (0.040 mm), minimum.
4. Color: Selected from manufacturer's standard range and indicated on drawings.

2.09 GLAZING COMPOUNDS

A. Type GC-1 - Glazing Putty: Polymer modified latex recommended by manufacturer for outdoor use, knife grade consistency; gray color.

B. Type GC-2 - Butyl Sealant: Single component; ASTM C920 Grade NS, Class 12-1/2, Uses M and A, Shore A hardness of 10 to 20; black color.

C. Type GC-3 - Polysulfide Sealant: Two component; chemical curing, nonsagging type; ASTM C920 Type M, Grade NS, Class 25, Uses M, A, and G; with cured Shore A hardness range of 15 to 25; color as selected.

D. Type GC-4 - Polyurethane Sealant: Single component, chemical curing, nonstaining, nonbleeding; ASTM C920 Type S, Grade NS, Class 25, Uses M, A, and G; with cured Shore A hardness range of 20 to 35; color as selected.

E. Type GC-5 - Silicone Sealant: Single component; neutral curing; capable of water immersion without loss of properties; nonbleeding, nonstaining; ASTM C920 Type S, Grade NS, Class 25, Uses M, A, and G; with cured Shore A hardness range of 15 to 25; color as selected.

F. Manufacturers:
1. Bostik Inc: www.bostik-us.com/#sle.
2. Dow Corning Corporation: www.dowcorning.com/construction/#sle.Dow Corning Corporation: www.dowcorning.com/construction/#sle.
3. Momentive Performance Materials, Inc: www.momentive.com/#sle.

4. Pecora Corporation: www.pecora.com/#sle.
5. Tremco Commercial Sealants & Waterproofing; Proglaze: www.tremcosealants.com/#sle.

2.10 ACCESSORIES

A. Setting Blocks: Silicone, with 80 to 90 Shore A durometer hardness; ASTM C864 Option II. Length of 0.1 inch for each square foot (25 mm for each square meter) of glazing or minimum 4 inch (100 mm) by width of glazing rabbet space minus 1/16 inch (1.5 mm) by height to suit glazing method and pane weight and area.

B. Glazing Tape, Back Bedding Mastic Type: Preformed, butyl-based, 100 percent solids compound with integral resilient spacer rod applicable to application indicated; 5 to 30 cured Shore A durometer hardness; coiled on release paper; black color.
   1. Width: As required for application.
   2. Thickness: As required for application.
   3. Spacer Rod Diameter: As required for application.
   4. Manufacturers:
      a. Pecora Corporation: www.pecora.com/#sle.
      b. Tremco Global Sealants: www.tremcosealants.com/#sle.
      c. Substitutions: See Section 01 60 00 - Product Requirements.

C. Glazing Splines: Resilient silicone extruded shape to suit glazing channel retaining slot; ASTM C864 Option II; color black.

D. Glazing Clips: Manufacturer's standard type.

E. Smoke Removal Window/Glazing Unit Markings: Adhesive backed markings affixed to manually operable or fixed windows of high-rise buildings to identify units intended for post-fire smoke removal in compliance with ICC (IBC) and local building officials.

2.11 SOURCE QUALITY CONTROL

A. See Section 01 40 00 - Quality Requirements for additional requirements.

B. Provide shop inspection and testing for all types of glass.

PART 3 EXECUTION

3.01 VERIFICATION OF CONDITIONS

A. Verify that openings for glazing are correctly sized and within tolerances, including those for size, squareness, and offsets at corners.

B. Verify that the minimum required face and edge clearances are being provided.

C. Verify that surfaces of glazing channels or recesses are clean, free of obstructions that may impede moisture movement, weeps are clear, and support framing is ready to receive glazing system.

D. Verify that sealing between joints of glass framing members has been completed effectively.

E. Proceed with glazing system installation only after unsatisfactory conditions have been corrected.

3.02 PREPARATION

A. Clean contact surfaces with appropriate solvent and wipe dry within maximum of 24 hours before glazing. Remove coatings that are not tightly bonded to substrates.

B. Seal porous glazing channels or recesses with substrate compatible primer or sealer.

C. Prime surfaces scheduled to receive sealant where required for proper sealant adhesion.

3.03 INSTALLATION, GENERAL

A. Install glazing in compliance with written instructions of glass, gaskets, and other glazing material manufacturers, unless more stringent requirements are indicated, including those in glazing referenced standards.

B. Install glazing sealants in accordance with ASTM C1193, GANA (SM), and manufacturer's instructions.

C. Do not exceed edge pressures around perimeter of glass lites as stipulated by glass manufacturer.

D. Set glass lites of system with uniform pattern, draw, bow, and similar characteristics.

E. Set glass lites in proper orientation so that coatings face exterior or interior as indicated.

F. Prevent glass from contact with any contaminating substances that may be the result of construction operations such as, and not limited to the following; weld splatter, fire-safing, plastering, mortar droppings, and paint.

3.04 INSTALLATION - DRY GLAZING METHOD (GASKET GLAZING)

A. Application - Exterior and/or Interior Glazed: Set glazing infills from either the exterior or the interior of the building.

B. Place setting blocks at 1/4 points with edge block no more than 6 inch (152 mm) from corners.

C. Rest glazing on setting blocks and push against fixed stop with sufficient pressure on gasket to attain full contact.

D. Install removable stops without displacing glazing gasket; exert pressure for full continuous contact.

3.05 INSTALLATION - DRY GLAZING METHOD (TAPE AND GASKET SPLINE GLAZING)

A. Application - Exterior Glazed: Set glazing infills from the exterior of the building.

B. Cut glazing tape to length; install on glazing pane. Seal corners by butting tape and sealing junctions with butyl sealant.

C. Place setting blocks at 1/4 points with edge block no more than 6 inch (152 mm) from corners.

D. Rest glazing on setting blocks and push against fixed stop with sufficient pressure to attain full contact.

E. Install removable stops without displacing glazing spline. Exert pressure for full continuous contact.

F. Carefully trim protruding tape with knife.

3.06 INSTALLATION - DRY GLAZING METHOD (TAPE AND TAPE)

A. Application - Interior Glazed: Set glazing infills from the interior of the building.

B. Cut glazing tape to length and set against permanent stops, projecting 1/16 inch (1.6 mm) above sight line.

C. Place setting blocks at 1/4 points with edge block no more than 6 inch (152 mm) from corners.

D. Rest glazing on setting blocks and push against tape for full contact at perimeter of pane or unit.

E. Place glazing tape on free perimeter of glazing in same manner described above.

F. Install removable stop without displacement of tape. Exert pressure on tape for full continuous contact.

G. Carefully trim protruding tape with knife.

3.07 INSTALLATION - WET/DRY GLAZING METHOD (PREFORMED TAPE AND SEALANT)

A. Application - Exterior Glazed: Set glazing infills from the exterior of the building.

B. Cut glazing tape to length and set against permanent stops, 3/16 inch (5 mm) below sight line. Seal corners by butting tape and dabbing with butyl sealant.

C. Apply heel bead of butyl sealant along intersection of permanent stop with frame ensuring full perimeter seal between glass and frame to complete the continuity of the air and vapor seal.

D. Place setting blocks at 1/4 points with edge block no more than 6 inch (152 mm) from corners.

E. Rest glazing on setting blocks and push against tape and heel bead of sealant with sufficient pressure to attain full contact at perimeter of pane or glass unit.

F. Install removable stops, with spacer strips inserted between glazing and applied stops 1/4 inch (6.4 mm) below sight lines.
   1. Place glazing tape on glazing pane of unit with tape flush with sight line.

G. Fill gap between glazing and stop with manufacturer's recommended sealant to depth equal to bite of frame on glazing, but not more than 3/8 inch (9 mm) below sight line.

H. Apply cap bead of manufacturer's recommended sealant along void between the stop and the glazing, to uniform line, flush with sight line. Tool or wipe sealant surface smooth.

3.08 INSTALLATION - WET/DRY GLAZING METHOD (TAPE AND SEALANT)

A. Application - Interior Glazed: Set glazing infills from the interior of the building.

B. Cut glazing tape to length and install against permanent stops, projecting 1/16 inch (1.6 mm) above sight line.

C. Place setting blocks at 1/4 points with edge block no more than 6 inch (152 mm) from corners.

D. Rest glazing on setting blocks and push against tape to ensure full contact at perimeter of pane or unit.

E. Install removable stops, spacer shims inserted between glazing and applied stops at 24 inch (610 mm) intervals, 1/4 inch (6 mm) below sight line.

F. Fill gaps between pane and applied stop with manufacturer's recommended type sealant to depth equal to bite on glazing, to uniform and level line.

G. Carefully trim protruding tape with knife.

3.09 FIELD QUALITY CONTROL

A. See Section 01 45 16-Field Quality Control Procedures for City of Madison requirements.

B. Glass and Glazing product manufacturers to provide field surveillance of the installation of their products.

C. Monitor and report installation procedures and unacceptable conditions.

3.10 CLEANING

A. See Section 01 74 19 - Construction Waste Management and Disposal, for additional requirements.

B. Remove excess glazing materials from finish surfaces immediately after application using solvents or cleaners recommended by manufacturers.

C. Remove nonpermanent labels immediately after glazing installation is complete.

D. Clean glass and adjacent surfaces after sealants are fully cured.

E. Clean glass on both exposed surfaces not more than 4 days prior to Date of Substantial Completion in accordance with glass manufacturer's written recommendations.

3.11 PROTECTION

A. After installation, mark pane with an 'X' by using removable plastic tape or paste; do not mark heat absorbing or reflective glass units.

B. Remove and replace glass that is damaged during construction period prior to Date of Substantial Completion.

3.12 SCHEDULES

A. See applicable schedules as indicated on the drawings.

END OF SECTION

SECTION 09 30 00
TILING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Tile for floor applications.

B. Tile for wall applications.

C. Ceramic accessories.

D. Non-ceramic trim.

1.02 RELATED REQUIREMENTS

A. Section 07 92 00 - Joint Sealants: Sealing joints between tile work and adjacent construction and fixtures.

B. Section 07 95 13 - Expansion Joint Cover Assemblies: Expansion joint components.

C. Section 09 05 61 - Common Work Results for Flooring Preparation: Concrete slab moisture and alkalinity testing; remediation procedures.

D. Section 09 21 16 - Gypsum Board Assemblies: Tile backer board.

E. Section 22 40 00 - Plumbing Fixtures: Shower receptor.

1.03 REFERENCE STANDARDS

A. ANSI A108.1a - American National Standard Specifications for Installation of Ceramic Tile in the Wet-Set Method, with Portland Cement Mortar; 2017 (Reaffirmed 2022).

B. ANSI A108.1b - Installation of Ceramic Tile on a Cured Portland Cement Mortar Setting Bed with Dry-Set, Modified Dry-Set, or Improved Modified Dry-Set Cement Mortar; 2023.

C. ANSI A108.1c - Contractor's Option: Installation of Ceramic Tile in the Wet-Set Method with Portland Cement Mortar or Installation of Ceramic Tile on a Cured Portland Cement Mortar Setting Bed with Dry-Set, Modified Dry-Set, or Improved Modified Dry-Set Cement Mortar; 2023.

D. ANSI A108.4 - American National Standard Specifications for Installation of Ceramic Tile with Organic Adhesive or Water Cleanable Tile-Setting Epoxy Adhesive; 2023.

E. ANSI A108.5 - Setting of Ceramic Tile with Dry-Set Cement Mortar, Modified Dry-Set Cement Mortar, EGP (Exterior Glue Plywood) Modified Dry-Set Cement Mortar, or Improved Modified Dry-Set Cement Mortar; 2023.

F. ANSI A108.6 - American National Standard Specifications for Installation of Ceramic Tile with Chemical Resistant, Water Cleanable Tile-Setting and -Grout Epoxy; 2023.

G. ANSI A108.9 - American National Standard Specifications for Installation of Ceramic Tile with Modified Epoxy Emulsion Mortar/Grout; 2023.

H. ANSI A108.10 - American National Standard Specifications for Installation of Grout in Tilework; 2017 (Reaffirmed 2022).

I. ANSI A108.11 - American National Standard Specifications for Interior Installation of Cementitious Backer Units; 2018.

J. ANSI A108.19 - American National Standard Specifications for Interior Installation of Gauged Porcelain Tiles and Gauged Porcelain Tile Panels/Slabs by the Thin-Bed Method Bonded with Modified Dry-Set Cement Mortar or Improved Modified Dry-Set Cement Mortar; 2020.

K. ANSI A108.20 - American National Standard Specifications for Exterior Installation of Gauged Porcelain Tiles and Gauged Porcelain Tile Panels/Slabs; 2020.

L. ANSI A108/A118/A136 - American National Standard Specifications for the Installation of Ceramic Tile (Compendium); 2019.

M. ANSI A118.3 - American National Standard Specifications for Chemical Resistant, Water Cleanable Tile-Setting and -Grouting Epoxy and Water Cleanable Tile-Setting Epoxy Adhesive; 2021.

N. ANSI A118.6 - American National Standard Specifications for Standard Cement Grouts for Tile Installation; 2019.

O. ANSI A118.7 - American National Standard Specifications for High Performance Cement Grouts for Tile Installation; 2019.

P. ANSI A118.9 - American National Standard Specifications for Test Methods and Specifications for Cementitious Backer Units; 2019.

Q. ANSI A118.10 - American National Standard Specifications for Load Bearing, Bonded, Waterproof Membranes for Thin-Set Ceramic Tile and Dimension Stone; 2014 (Reaffirmed 2019).

R. ANSI A118.11 - American National Standard Specifications for EGP (Exterior Glue Plywood) Latex-Portland Cement Mortar; 2017.

S. ANSI A118.12 - American National Standard Specifications for Crack Isolation Membranes for Thin-Set Ceramic Tile and Dimension Stone Installation; 2014 (Reaffirmed 2019).

T. ANSI A118.13 - American National Standard Specification for Bonded Sound Reduction Membranes for Thin-Set Ceramic Tile Installation; 2014 (Reaffirmed 2024).

U. ANSI A118.15 - American National Standard Specifications for Improved Modified Dry-Set Cement Mortar; 2019.

V. ANSI A136.1 - American National Standard Specifications for Organic Adhesives for Installation of Ceramic Tile; 2020.

W. ANSI A137.1 - American National Standard Specifications for Ceramic Tile; 2022.

X. ANSI A137.2 - American National Standard Specifications for Glass Tile; 2022.

Y. ANSI A137.3 - American National Standard Specifications for Gauged Porcelain Tile and Gauged Porcelain Tile Panels/Slabs; 2021.

Z. ASTM C33/C33M - Standard Specification for Concrete Aggregates; 2023.

AA. ASTM C150/C150M - Standard Specification for Portland Cement; 2022.

BB. ASTM C373 - Standard Test Methods for Determination of Water Absorption and Associated Properties by Vacuum Method for Pressed Ceramic Tiles and Glass Tiles and Boil Method for Extruded Ceramic Tiles and Non-tile Fired Ceramic Whiteware Products; 2018 (Reapproved 2023).

CC. ASTM E492 - Standard Test Method for Laboratory Measurement of Impact Sound Transmission through Floor-Ceiling Assemblies Using the Tapping Machine; 2022.

DD. ASTM E2179 - Standard Test Method for Laboratory Measurement of the Effectiveness of Floor Coverings in Reducing Impact Sound Transmission Through Concrete Floors; 2021.

EE. ASTM F710 - Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring; 2022.

FF. ASTM F1869 - Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride; 2023.

GG. ASTM F2170 - Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes; 2019a.

HH. ICC-ES AC380 - Acceptance Criteria for Termite Physical Barrier Systems; 2021, with Editorial Revision (2022).

II. TCNA (HB) - Handbook for Ceramic, Glass, and Stone Tile Installation; 2023.

JJ. ANSI A108.2 - American National Standard General Requirements: Materials, Environmental and Workmanship 2019.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Pre-installation Meeting: Convene a pre-installation meeting one week before starting work of this section; require attendance by affected installers

1.05 SUBMITTALS

A. See Section 01 33 23-Submittals for City of Madison required submittal procedures.

B. Product Data: Provide manufacturers' data sheets on tile, mortar, grout, and accessories. Include instructions for using grouts and adhesives.
   1. Confirm lead times for tile products at time of submittals to provide adequate delivery time to meet the construction schedule. Significant lead times of greater than 12 weeks could require re-assessment of specified product and potential substitution.

C. Shop Drawings: Indicate tile layout; patterns; color arrangement; perimeter conditions; junctions with dissimilar materials; control and expansion joints; thresholds; ceramic accessories; setting details.

D. Samples: Provide two of each type indicated.

E. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

F. Master Grade Certificate: Submit for each type of tile, signed by the tile manufacturer and tile installer.

G. Installer's Qualification Statement:
   1. Submit documentation of National Tile Contractors Association (NTCA) or Tile Contractors' Association of America (TCAA) accreditation.
   2. Submit documentation of completion of apprenticeship and certification programs.
   3. Submit documentation of Natural Stone Institute Accreditation.

H. Maintenance Data: Include recommended cleaning methods, cleaning materials, and stain removal methods.

I. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
   1. See Section 01 60 00 - Product Requirements, for additional provisions.
   2. Extra Tile: 5 percent of each type, size, color, and surface finish combination

1.06 QUALITY ASSURANCE

A. Maintain one copy of ANSI A108/A118/A136 and TCNA (HB) on site.

B. Installer Qualifications:
   1. Company specializing in performing tile installation, with minimum of five years of documented experience.
   2. Installer Certification:
      a. Ceramic Tile Education Foundation (CTEF): Certified Tile Installer (CTI).
      b. Apprenticeship Program: Installer has achieved Journey-worker status through an apprenticeship from the International Union of Bricklayers and Allied Craft-workers (IUBAC) or a U.S. Department of Labor (DOL)-recognized program.
      c. International Masonry Training and Education Foundation (IMTEF): Supervisor Certification Program (SCP).

1.07 DELIVERY, STORAGE, AND HANDLING

A. Protect adhesives from freezing or overheating in accordance with manufacturer's instructions.

1.08 FIELD CONDITIONS

A. Do not install solvent-based products in an unventilated environment.

B. Maintain ambient and substrate temperature above 50 degrees F (10 degrees C) during installation and curing of setting materials.

PART 2 PRODUCTS

2.01 TILE

A. Manufacturers: All products of each type by the same manufacturer.
   1. Substitutions: Not permitted.

B. Glazed Wall Tile.
   1. Size: As indicated on the drawings.
   2. Surface finish as indicated on drawings.
   3. Color(s): As indicated on drawings.
   4. Pattern: As indicated on drawings.
   5. Products
      a. Virginia Tile; Wow USA Duo [CWT-03].
      b. Ceramic Tileworks; ~~Craft [CWT-05]~~, Village [CWT-06], Up [CWT-08], Small [CWT-09].
      c. Ceramic Tileworks: Country Ash Blue [CWT-05], 3x8
      d. Substitutions: Not permitted.

C. Porcelain Floor Tile.
   1. Size: As indicated on the drawings.
   2. Thickness: 3/8 inch.
   3. Edges: Square (Rectified).
   4. Surface Finish: UPS.
   5. Color: As indicated on drawings.
   6. Pattern: 1/3 lap.
   7. Products:
      a. Ceramic Tileworks; Oh!Take [POR-01].
      b. Ceramic Tileworks; Platform [POR-02].
      c. Substitutions: Not permitted.

D. Porcelain Wall Tile.
   1. Size: As indicated on the drawings.
   2. Thickness: 3/8 inch.
   3. Edges: Square (Rectified).
   4. Surface Finish: UPS.
   5. Color: As indicated on drawings.
   6. Pattern: As indicated on drawings.
   7. Products:
      a. Ceramic Tileworks; Symmetry [CWT-01 / CWT-07].
      b. Crossville; Native Metal [CWT-02].
      c. Substitutions: Not permitted.

E. Mosaic Wall Tile.
   1. Type: Curve Chevron.
   2. Size: As indicated on drawings.
   3. Finish: Gloss.
   4. Color(s): Jade.
   5. Pattern: As indicated on drawings.
   6. Products:
      a. Virginia Tile: Walker Zanger 6th Ave. [CWT-04]
      b. Substitutions: Not permitted.

2.02 TRIM AND ACCESSORIES

A. Non-Ceramic: Satin natural anodized extruded aluminum.
   1. Application: End Cap and Outside Corners

a. Product: Schluter Systems Jolly.
b. Size: As necessary for the tile/application.

2. Application: Tile to carpet flooring transitions.
   a. Product: Schluter Systems Schiene.
   b. Size: As necessary for the tile/application.
3. Application: Floor to wall transitions.
   a. Product: Schluter Systems DILEX-EHK & AHKA.
   b. Size: As necessary for the tile/application.
4. Installation: Set with tile mortar or adhesive.
5. Substitutions: .See Section 01 25 13 – Product Substitution Procedures.

2.03 SETTING MATERIALS

A. Provide setting and grout materials from same manufacturer.

B. Manufacturers:
   1. Basis of Design: LATICRETE International.
   2. Substitutions: .See Section 01 25 13 – Product Substitution Procedures.

C. Improved Latex-Portland Cement Mortar Bond Coat: ANSI A118.15.
   1. Applications: Use this type of bond coat where indicated, and where no other type of bond coat is indicated.
   2. Products:
      a. Basis of Design: LATICRETE International, Inc; MULTIMAX LITE.
      b. Substitutions: . See Section 01 25 13 – Product Substitution Procedures.

2.04 GROUTS

A. Provide setting and grout materials from same manufacturer.

B. Manufacturers:
   1. Basis of Design: LATICRETE International, Inc.
      a. Substitutions: See Section 01 25 13 – Product Substitution Procedures.

C. Epoxy Grout: ANSI A118.3 chemical resistant and water-cleanable epoxy grout.
   1. Applications: Use this type of grout where indicated.
   2. Color(s): As selected by Architect from manufacturer's full line.
   3. Products:
      a. SPECTRALOCK Pro.

2.05 ACCESSORY MATERIALS

A. Manufacturers:
   1. Basis of Design: LATICRETE International.
   2. Substitutions: See Section 01 25 13 – Product Substitution Procedures.

B. Concrete Floor Slab Crack Isolation Membrane: Material complying with ANSI A118.12; intended as waterproofing.
   1. Crack Resistance: No failure at 1/8 inch (3.2 mm).
   2. Fluid or Trowel Applied Type:
      a. Material: Synthetic rubber; Acrylic.
      b. Thickness: 20 mils (0.5 mm).
      c. Product: HydroBAN.

C. Tile Underlayment: Specifically designed for bonding to thin-set setting mortar; not primarily waterproofing material and having the following characteristics:
   1. Sound Reduction: Comply with ANSI A118.13; ASTM E492; ASTM E2179
   2. Crack Resistance: No failure at 1/8-inch (3.2 mm) inch gap, minimum; comply with ANSI A118.12
   3. Water Resistance: Comply with ANSI A118.10, bonded waterproofing.

4. Termite Resistance: 100 percent when tested in accordance with ICC-ES AC380.
5. Suitable for installation over green concrete.
6. Type: Fluid or trowel applied.
   a. Products:
      1) LATICRETE International, Inc; Level Plus.
      2) Substitutions: See Section 01 25 13 – Product Substitution Procedures.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that subfloor surfaces are smooth and flat within the tolerances specified for that type of work and are ready to receive tile.

B. Verify that wall surfaces are smooth and flat within the tolerances specified for that type of work, are dust-free, and are ready to receive tile.

C. Verify that subfloor surfaces are dust free and free of substances that could impair bonding of setting materials to subfloor surfaces.

D. Cementitious Subfloor Surfaces: Verify that substrates are ready for tiling installation by testing for moisture and alkalinity (pH).
   1. Test in accordance with Section 09 05 61.
   2. Test as Follows:
      a. Alkalinity (pH): ASTM F710.
      b. Internal Relative Humidity: ASTM F2170.
      c. Moisture Vapor Emission: ASTM F1869.
   3. Obtain instructions if test results are not within limits recommended by tiling material manufacturer and setting material manufacturer.
   4. Follow moisture and alkalinity remediation procedures in Section 09 05 61.

E. Verify that required floor-mounted utilities are in correct location.

3.02 PREPARATION

A. Protect surrounding work from damage.

B. Vacuum clean surfaces and damp clean.

C. Seal substrate surface cracks with filler. Level existing substrate surfaces to acceptable flatness tolerances.

D. Install backer board in accordance with ANSI A108.11 and board manufacturer's instructions. Tape joints and corners, cover with skim coat of setting material to a feather edge.

E. Prepare substrate surfaces for adhesive installation in accordance with adhesive manufacturer's instructions.

3.03 INSTALLATION - GENERAL

A. Install tile and grout in accordance with applicable requirements of ANSI A108.1a through ANSI A108.20, manufacturer's instructions, and TCNA (HB) recommendations.

B. Lay tile to pattern indicated. Do not interrupt tile pattern through openings.

C. Cut and fit tile to penetrations through tile, leaving sealant joint space. Form corners and bases; Align floor, base, and wall joints.; Align floor and wall joints

D. Place tile joints uniform in width, subject to variance in tolerance allowed in tile size. Make grout joints without voids, cracks, excess mortar or excess grout, or too little grout.

E. Form internal angles square; and external angles square

F. Install ceramic accessories rigidly in prepared openings.

G. Install non-ceramic trim in accordance with manufacturer's instructions.

H. Install thresholds where indicated.

I. Sound tile after setting. Replace hollow sounding units.

J. Keep control and expansion joints free of mortar, grout, and adhesive.

K. Prior to grouting, allow installation to completely cure; minimum of 48 hours.

L. Grout tile joints unless otherwise indicated. Use standard grout unless otherwise indicated.

M. At changes in plane and tile-to-tile control joints, use tile sealant instead of grout, with either bond breaker tape or backer rod as appropriate to prevent three-sided bonding.

3.04 INSTALLATION - FLOORS - THIN-SET METHODS

A. Over interior; concrete substrates, install in accordance with TCNA (HB) Method F113, dry-set or latex-Portland cement bond coat; F116, organic adhesive; with standard grout unless otherwise indicated.
   1. Use uncoupling membrane under all tile unless other underlayment is indicated.
   2. Where waterproofing membrane is indicated, install in accordance with TCNA (HB) Method F122, with latex-Portland cement grout.
   3. Where epoxy bond coat and grout are indicated, install in accordance with TCNA (HB) Method F131.
   4. Where furan bond coat and grout are indicated, install in accordance with TCNA (HB) Method F133.
   5. Where epoxy or furan grout is indicated, but not epoxy or furan bond coat, install in accordance with TCNA (HB) Method F115.

3.05 INSTALLATION - WALL TILE

A. Over gypsum wallboard on wood or metal studs install in accordance with TCNA (HB) Method W243, thin-set with dry-set or latex-Portland cement bond coat; W223, thin-set with organic adhesive.
   1. Where mortar bed is indicated, install in accordance with TCNA (HB) Method W222, one coat method.
   2. Where waterproofing membrane is indicated other than at showers and bathtub walls, install in accordance with TCNA (HB) Method W222, one coat method.

B. Over interior concrete and masonry install in accordance with TCNA (HB) Method W202, thin-set with dry-set or latex-Portland cement bond coat, W211, bonded mortar bed without membrane.

3.06 CLEANING AND MAINTENANCE

A. Clean tile and grout surfaces.

3.07 PROTECTION

A. Do not permit traffic over finished floor surface 4 days after installation.

3.08 SCHEDULE

A. As indicated on the drawings.

END OF SECTION

SECTION 09 67 23
RESINOUS FLOORING

PART 1 – GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.02 SECTION INCLUDES

A. Resinous flooring system as shown on the drawings and in schedules.

1.03 RELATED REQUIREMENTS

A. Section 03 30 00 - Cast-in-Place Concrete

1.04 SYSTEM DESCRIPTION

A. The work shall consist of preparation of the substrate, the furnishing and application of an epoxy based multi roller applied flooring system. The system shall have the color and texture as specified by the Owner. It shall be applied to the prepared area(s) as defined in the plans strictly in accordance with the Manufacturer's recommendations.

B. Cove base (if required) to be applied where noted on plans and per manufacturers standard details unless otherwise noted.

1.05 SUBMITTALS

A. Product Data: Latest edition of Manufacturer's literature including performance data and installation procedures.

B. Manufacturer's Safety Data Sheet (SDS) for each product being used.

C. Samples: A 3 x 3 inch square sample of the proposed system. Color, texture, and thickness shall be representative of overall appearance of finished system subject to normal tolerances.

1.06 QUALITY ASSURANCE

A. The Manufacturer shall have a minimum of 10 years experience in the production, sales, and technical support of epoxy and urethane industrial flooring and related materials.

B. The Applicator shall have experience in installation of the flooring system as confirmed by the manufacturer in all phases of surface preparation and application of the product specified.

C. No requests for substitutions shall be considered that would change the generic type of the specified system.

D. System shall be in compliance with requirements of United States Department of Agriculture (USDA),

E. Food, Drug Administration (FDA), and local Health Department.

F. A pre-installation conference shall be held between Applicator, General Contractor and the Owner to review and clarification of this specification, application procedure, quality control, inspection and acceptance criteria and production schedule.

1.07 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Packing and Shipping
   1. All components of the system shall be delivered to the site in the Manufacturer's packaging, clearly identified with the product type and batch number.

B. Storage and Protection
   1. The Applicator shall be provided with a storage area for all components. The area shall be between 60 F and 90 F, dry, out of direct sunlight and in accordance with the Manufacturer's recommendations and relevant health and safety regulations.
   2. Copies of Safety Data Sheets (SDS) for all components shall be kept on site for review by the Engineer or other personnel.

C. Waste Disposal
   1. The Applicator shall be provided with adequate disposal facilities for non-hazardous waste generated during installation of the system.

1.08 PROJECT CONDITIONS

A. Site Requirements
   1. Application may proceed while air, material and substrate temperatures are between 60 F and 90 F providing the substrate temperature is above the dew point. Outside of this range, the Manufacturer shall be consulted.
   2. The relative humidity in the specific location of the application shall be less than 85 % and the surface temperature shall be at least 5 F above the dew point.
   3. The Applicator shall ensure that adequate ventilation is available for the work area.
   4. The Applicator shall be supplied with adequate lighting equal to the final lighting level during the preparation and installation of the system.

B. Conditions of new concrete to be coated with epoxy material.
   1. Concrete shall be moisture cured for a minimum of 7 days and have fully cured a minimum of twenty eight days in accordance with ACI-308 prior to the application of the coating system pending moisture tests.
   2. Concrete shall have a flat rubbed finish, float or light steel trowel finish (a hard steel trowel finish is neither necessary nor desirable).
   3. Sealers and curing agents should not to be used.
   4. Concrete surfaces on grade shall have been constructed with a vapor barrier to protect against the effects of vapor transmission and possible delamination of the system.

C. Safety Requirements
   1. All open flames and spark-producing equipment shall be removed from the work area prior to commencement of application.
   2. "No Smoking" signs shall be posted at the entrances to the work area.
   3. The Owner shall be responsible for the removal of foodstuffs from the work area.
   4. Non-related personnel in the work area shall be kept to a minimum.

1.09 WARRANTY

A. Dur-A-Flex, Inc. warrants that material shipped to buyers at the time of shipment substantially free from material defects and will perform substantially to Dur-A-Flex, Inc. published literature if used in accordance with the latest prescribed procedures and prior to the expiration date.

B. Dur-A-Flex, Inc. liability with respect to this warranty is strictly limited to the value of the material purchase.

PART 2 – PRODUCTS

2.01 MANUFACTURER

A. Basis of Design: Dur-A-Flex, Inc.,
   95 Goodwin Street, East Hartford, CT 06108
   Phone: (860) 528-9838, Fax: (860) 528-2802
   www.dur-a-flex.com

B. Manufacturer of Approved System shall be single source and made in the USA.

2.02 FLOORING – PAVILION RESTROOMS

A. Dur-A-Flex, Inc; Dur-A-Chip Broadcast with Urethane Topcoat (to be referenced as **Micro**)
   1. System Materials:
      a. Primer: Dur-A-Glaze #4 WB resin and hardener.
      b. First Broadcast Coat: Dur-A-Gard OPF resin and hardener.
         1) Chips: Micro Decorative Colored Chips.
      c. Second Broadcast and Grout Coat: Dur-A-Glaze #4 resin and Water Clear hardener.

1) Chips: Micro Decorative Colored Chips.
d. Grout coat: Dur-A-Glaze #4 resin and Water Clear hardener.
e. Topcoat: Armor Top resin, hardener and grit.
f. Nominal Thickness: 60mils
2. Patch Materials
a. Shallow Fill and Patching: Use Dur-A-Glaze #4 Cove Rez.
b. Deep Fill and Sloping Material (over ¼ inch): Use Dur-A-Crete.

2.03 FLOORING - CUSTODIAL 105A, 155 AND STORAGE 118

A. Dur-A-Flex, Inc, Shop Floor Epoxy Broadcast seamless flooring system (to be referenced as **Shop Floor**)
1. System Materials:
a. Primer: Dur-A-Glaze #4 WB resin and hardener.
b. First Broadcast Coat: Dur-A-Gard OPF resin and hardener.
1) Chips: Micro Decorative Colored Chips.
c. Second Broadcast and Grout Coat: Dur-A-Glaze #4 resin and Water Clear hardener.
1) Chips: Micro Decorative Colored Chips.
d. Dur-A-Glaze #4 resin and Water Clear hardener.
e. Topcoat: Armor Top resin, hardener and grit.
f. Nominal Thickness: 1/8 inch
2. Patch Materials
a. Shallow Fill and Patching: Use Dur-A-Glaze #4 Cove Rez.
b. Deep Fill and Sloping Material (over ¼ inch): Use Dur-A-Crete.

2.04 PRODUCT REQUIREMENTS – DUR-A-CHIP (MICRO)

A. Primer: Dur-A-Glaze #4 WB
1. Percent Solids: 56 %
2. VOC: 2 g/L
3. Bond Strength to Concrete ASTM D 4541: 550 psi, substrates fails
4. Hardness, ASTM D 3363: 3H
5. Elongation, ASTM D 2370: 9 %
6. Flexibility (1/4: Cylindrical mandrel), ASTM D 1737: Pass
7. Impact Resistance, MIL D-2794: >160
8. Abrasion Resistance ASTM D 4060
a. CS 17 wheel; 1,000g Load: 30 mg loss

B. Broadcast Coat: Dur-A-Gard OPF
1. Percent Solids: 100 %
2. VOC: 59 g/L
3. Compressive Strength, ASTM D 695: 16,000 psi
4. Tensile Strength, ASTM D 638: 3,800 psi
5. Flexural Strength, ASTM D 790: 4,000 psi
6. Abrasion Resistance, ASTM D 4060
a. C-10 Wheel, 1,000 gm load; 1,000 cycles: 35 mg loss
7. Flame Spread/NFPA-101, ASTM E 84: Class A
8. Impact Resistance MIL D-3134: 0.025 inch Max
9. Water Absorption MIL D-3134: Pass
10. Potlife @ 70 F: 20-25 minutes

C. Broadcast Coat and Grout Coat: Dur-A-Glaze #4 Water Clear
1. Percent Solids: 100 %
2. VOC: 3.8 g/L
3. Compressive Strength, ASTM D 695: 11,200 psi

4. Tensile Strength, ASTM D 638: 2,100 psi
5. Flexural Strength, ASTM D 790: 5,100 psi
6. Abrasion Resistance, ASTM D 4060
   a. C-10 Wheel, 1,000 gm load; 1,000 cycles: 29 mg loss
7. Flame Spread/NFPA-101, ASTM E 84: Class A
8. Impact Resistance MIL D-24613: 0.0007 inches, no cracking or delamination
9. Water Absorption. MIL D-24613: Nil
10. Potlife @ 70 F: 20 minutes

D. Topcoat: Armor Top
1. Percent Solids: 95 %
2. VOC: 0 g/L
3. Tensile Strength, ASTM D 2370: 7,000 psi
4. Adhesion, ASTM 4541: Substrate Failure
5. Hardness, ASTM D 3363: 4H
6. 60^0 Gloss ASTM D 523: 70
7. Abrasion Resistance, ASTM D4060 Gloss; Satin
   a. CS 17 wheel (1,000 g load) 1,000 cycles:
      1) Gloss: 4 mg loss with grit; 10 mg loss without grit
      2) Satin: 8 mg loss with grit; 12 mg loss without grit
8. Pot Life, 70 F, 50% RH: 2 Hours
9. Full Chemical Resistance: 7 days

2.05 PRODUCT REQUIREMENTS – EPOXY BROADCAST (SHOP FLOOR)

A. Primer: Dur-A-Glaze #4 WB
1. Percent Solids: 56 %
2. VOC: 2 g/L
3. Bond Strength to Concrete ASTM D 4541: 550 psi, substrates fails
4. Hardness, ASTM D 3363: 3H
5. Elongation, ASTM D 2370: 9 %
6. Flexibility (1/4: Cylindrical mandrel), ASTM D 1737: Pass
7. Impact Resistance, MIL D-2794: >160
8. Abrasion Resistance ASTM D 4060,
   a. CS 17 wheel; 1,000 g Load: 30 mg loss

B. Broadcast and Grout Coat: Dur-A-Guard OPF
1. Percent Solids: 95.2%
2. VOC: 8 g/L
3. Compressive Strength, ASTM D 695: 17,500 psi
4. Tensile Strength, ASTM D 638: 4,000 psi
5. Flexural Strength, ASTM D 790: 6,250 psi
6. Flexural Modulus of Elasticity, ASTM D 790: 6.2×10^5
7. Abrasion Resistance, ASTM D 4060
   a. CS 17 Wheel, 1,000 gm load; 1,000 cycles: 24 mg loss
8. Flame Spread/NFPA-101, ASTM E 84: Class B
9. Flammability, ASTM D 635: Self Extinguishing
10. Indentation, MIL D-3134: 0.025 Max
11. Impact Resistance MIL D-3134: Pass
12. Water Absorption. ASTM D-750: 0.04%

C. Topcoat: Armor Top
1. Percent Solids: 95.2 %
2. VOC: 0 g/L
3. Tensile Strength, ASTM D 2370: 7,000 psi

4. Adhesion, ASTM 4541: Substrate Failure
5. Hardness, ASTM D 3363: >4H
6. 60^0 Gloss ASTM D 523; Gloss: 75 +/- 10; Satin: 50+/- 10.
7. Abrasion Resistance, ASTM D4060
   a. CS 17 wheel (1,000 g load) 1,000 cycles
      1) Gloss: 4 mg loss with grit; 10 mg loss without grit
      2) Satin: 8 mg loss with grit; 12 mg loss without grit
8. Pot Life, 70 F, 50% RH: 45 mins
9. Full Chemical Resistance: 7 days

PART 3 – EXECUTION

3.01 EXAMINATION

A. Examine substrates, areas and conditions, with Applicator present, for compliance with requirements for maximum moisture content, installation tolerances and other conditions affecting flooring performance.

B. Verify that substrates and conditions are satisfactory for flooring installation and comply with requirements specified.

3.02 PREPARATION

A. General
   1. New and existing concrete surfaces shall be free of oil, grease, curing compounds, loose particles, moss, algae growth, laitance, friable matter, dirt, and bituminous products.
   2. Moisture Testing: Perform tests recommended by manufacturer and as follows.
      a. Perform relative humidity test using is situ probes, ASTM F 2170. Proceed with installation only after substrates have a maximum 75% relative humidity level measurement.
      b. If the relative humidity exceeds 75% then Dur-A-Glaze MVP Primer moisture mitigation system by Dur-A-Flex, Inc must be installed prior to resinous flooring installation. Slab-on grade substrates without a vapor barrier may also require this moisture mitigation system.
   3. There shall be no visible moisture present on the surface at the time of application of the system Compressed oil-free air and/or a light passing of a propane torch may be used to dry the substrate.
   4. Mechanical surface preparation
      a. Shot blast all surfaces to receive flooring system with a mobile steel shot, dust recycling machine (Blastrac or equal). All surface and embedded accumulations of paint, toppings hardened concrete layers, laitance, power trowel finishes and other similar surface characteristics shall be completely removed leaving a bare concrete surface having a minimum profile of CSP 3-4 as described by the International Concrete Repair Institute.
      b. Floor areas inaccessible to the mobile blast machines shall be mechanically abraded to the same degree of cleanliness, soundness and profile using diamond grinders, needle guns, bush hammers, or other suitable equipment.
      c. Where the perimeter of the substrate to be coated is not adjacent to a wall or curb, a minimum 1/4 inch key cut shall be made to properly seat the system, providing a smooth transition between areas. The detail cut shall also apply to drain perimeters and expansion joint edges.
      d. Cracks and joints (non-moving) greater than 1/8 inch wide are to be chiseled or chipped-out and repaired according to the manufacturer's recommendations.
   5. At spalled or worn areas, mechanically remove loose or delaminated concrete to a sound concrete and patch per manufactures recommendations.
   6. Horizontal joint preparation
      a. Dynamic Joints (Expansion/Construction/Isolation) Saw cut through the finished floor at a minimum depth of 3/4"D x 1/4"W with a diamond blade saw. Include a closed cell backer rod, 1/8" wider than the joint. Infill with flexible joint material, Metzger/McQuire, Versaflex or equal.

b. Static Joints (Control/Contraction) Remove all laitance, debris and sealers to a depth of 3/4"D x 1/4"W with a diamond blade saw. Include a closed cell backer rod, 1/8" wider than the joint. Infill with Dur-A-Glaze #4 with Cab, Poly-Crete SL or MD, MMA SL, Metzger/McQuire MM-80 or equal.

3.03 APPLICATION

A. General
1. The system shall be applied in six distinct steps as listed below:
   a. Substrate preparation
   b. Priming
   c. First broadcast coat application with first chip broadcast
   d. Second broadcast coat with second chip broadcast
   e. Grout coat application
   f. Topcoat application
2. Immediately prior to the application of any component of the system, the surface shall be dry and any remaining dust or loose particles shall be removed using a vacuum or clean, dry, oil-free compressed air.
3. The handling, mixing and addition of components shall be performed in a safe manner to achieve the desired results in accordance with the manufacturer's recommendations.
4. The system shall follow the contour of the substrate unless pitching or other leveling work has been specified by the Architect.
5. A neat finish with well-defined boundaries and straight edges shall be provided by the Applicator.

B. Primer
1. **Micro:** the primer shall be Dur-A-Glaze #4 WB Primer that is mixed at the ratio of 1 part resin to 4 parts hardener per the manufacturer's instructions.
   a. The primer shall be applied by 1/8 inch notched squeegee and back rolled at the rate of 200 sf/gal to yield a dry film thickness of 4 mils.
2. **Shop Floor**: the primer shall consist of a liquid resin and hardener that is mixed at the ratio of 1 part resin to 4 parts hardener per the manufacturer's instructions.
   a. The primer shall be applied by 1/8 inch notched squeegee and back rolled at the rate of 200 sf/gal to yield a dry film thickness of 6 mils.

C. Broadcast Coats
1. The broadcast coat shall be applied as a double broadcast system as specified by the Architect.
2. The broadcast coat shall be comprised of two components: a resin, and hardener as supplied by the Manufacturer and mixed in the ratio of 2 parts resin to 1 part hardener.
3. The resin shall be added to the hardener and thoroughly mixed by suitably approved mechanical means.
4. First Broadcast Coat
   a. **Micro**: The first broadcast coat shall be applied over horizontal surfaces using the dip and roll, and back roll method at the rate of 300 sf/gal using the Dur-A-Gard OPF material.
      1) Chips shall be broadcast to excess into the wet material at the rate of 0.15 lbs/sf.
      2) Allow material to fully cure. Vacuum, sweep and/or blow to remove all loose aggregate.
      3) Scrape the floor with a trowel or floor scraper. Sweep and vacuum the floor again.
   b. **Shop Floor**: The first broadcast coat shall be applied over horizontal surfaces using "v" notched squeegee and back rolled at the rate of 90-100 sf/gal.
      1) Quartz aggregate shall be broadcast to excess into the wet material at the rate of 0.5 lbs/sf.
      2) Allow material to fully cure. Vacuum, sweep and/or blow to remove all loose aggregate.
5. Second Broadcast Coat

a. **Micro**: Apply a second broadcast coat of resin shall be applied by flat squeegee then back rolled with a coverage rate of 150 sf/gal with the Dur-A-Glaze #4 Water Clear epoxy.
   1) Chips shall be broadcast to excess at the rate of 0.15 lbs/sf.
   2) Allow material to fully cure. Vacuum, sweep and/or blow to remove all loose chips.
   3) Scrape the floor with a trowel or floor scraper. Sweep and vacuum the floor again.
b. **Shop Floor**: Apply a second coat of resin with a coverage rate of 90-100 sf/gal
   1) Broadcast flintshot aggregate to rejection at the rate of 0.5 lbs/sf.
   2) Allow material to fully cure. Vacuum, sweep and/or blow to remove all loose chips.

D. Grout Coat
1. **Micro**: The grout coat shall be comprised of a Dur-A-Glaze # 4 Water Clear epoxy that is mixed in the ratio of 1 part hardener to 2 parts resin and installed per the manufacturer's recommendations.
   a. The grout coat shall be squeegee applied and back rolled with a coverage rate of 100 sf/gal.
2. **Shop Floor**: The grout coat shall be comprised of liquid components, combined at a ratio of 2 parts resin to 1 part hardener by volume and shall be thoroughly blended by mechanical means such as a high speed paddle mixer.
   a. The grout coat shall be squeegee applied with a coverage rate of 90-100 sf/gal
   b. The grout coat will be back rolled and cross rolled to provide a uniform texture and finish

E. Topcoat (Urethane)
1. **Micro:** The topcoat of Armor Top shall be roller applied at the rate of 500 sf/gal to yield a dry film thickness of 3 mils.
   a. The finish floor will have a nominal thickness of 60 mils.
2. **Shop Floor:** The topcoat of Armor Top shall be roller applied at the rate of 500 sf/gal to yield a dry film thickness of 3 mils.
   a. The topcoat shall be comprised of a liquid resin, hardener and pigment mixed per the manufacturer's instructions.
   b. The finished floor will have a nominal thickness of 1/8 inch.

3.04 FIELD QUALITY CONTROL

A. Tests, Inspection
1. The following tests shall be conducted by the Applicator:
   a. Temperature
      1) Air, substrate temperatures and, if applicable, dew point.
   b. Coverage Rates
      1) Rates for all layers shall be monitored by checking quantity of material used against the area covered.

3.05 CLEANING AND PROTECTION

A. Cure flooring material in compliance with manufacturer's directions, taking care to prevent their contamination during stages of application and prior to completion of the curing process.

B. Remove masking. Perform detail cleaning at floor termination, to leave cleanable surface for subsequent work of other sections.

END OF SECTION

SECTION 10 14 00
SIGNAGE

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Room and door signs.

B. Recognition/Donor panels.

C. Building identification signs.

1.02 RELATED REQUIREMENTS

A. Section 26 51 00 - Interior Lighting: Exit signs required by code.

B. Section 10 14 63 - Electrionic Message Signage.

1.03 REFERENCE STANDARDS

A. 36 CFR 1191 - Americans with Disabilities Act (ADA) Accessibility Guidelines for Buildings and Facilities; Architectural Barriers Act (ABA) Accessibility Guidelines current edition.

B. ADA Standards - 2010 ADA Standards for Accessible Design 2010.

C. ASTM E2072 - Standard Specification for Photo-luminescent (Phosphorescent) Safety Markings 2014.

D. ICC A117.1 - Accessible and Usable Buildings and Facilities 2009.

E. NFPA 170 - Standard for Fire Safety and Emergency Symbols 2021.

F. UL 1994 - Luminous Egress Path Marking Systems Current Edition, Including All Revisions.

1.04 SUBMITTALS

A. See Section 01 33 23 - Submittals for City of Madison required submittal procedures.

B. Product Data: Manufacturer's printed product literature for each type of sign, indicating sign styles, font, foreground and background colors, locations, overall dimensions of each sign.

C. Signage Schedule: Provide information sufficient to completely define each sign for fabrication, including room number, room name, other text to be applied, sign and letter sizes, fonts, and colors.
   1. When room numbers to appear on signs differ from those on drawings, include the drawing room number on schedule.
   2. When content of signs is indicated to be determined later, request such information from Owner through Architect at least 2 months prior to start of fabrication, submit preliminary schedule.
   3. Submit for approval by Owner through Architect prior to fabrication.

D. Samples: Submit one sample of each type of sign, of size similar to that required for project, illustrating sign style, font, and method of attachment.

E. Selection Samples: Where colors are not specified, submit two sets of color selection charts or chips.

F. Verification Samples: Submit samples showing colors specified.

G. Manufacturer's Installation Instructions: Include installation templates and attachment devices.

H. Manufacturer's Qualification Statement.

I. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
   1. ~~See Section 01 60 00 - Product Requirements~~ See Section 01 78 43 – Spare Parts and Extra Materials, for additional provisions.

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years of documented experience.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Package signs as required to prevent damage before installation.

B. Package room and door signs in sequential order of installation, labeled by floor or building.

C. Store tape adhesive at normal room temperature.

1.07 FIELD CONDITIONS

A. Do not install tape adhesive when ambient temperature is lower than recommended by manufacturer.

B. Maintain this minimum temperature during and after installation of signs.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Flat Signs:
   1. Best Sign Systems, Inc.
   2. FASTSIGNS
   3. Inpro
   4. Takeform
   5. Substitutions: ~~See Section 01 60 00 - Product Requirements~~ See Section 01 25 13 – Product Substitution Procedures.

B. Dimensional Letter Signs:
   1. FASTSIGNS.
   2. Inpro
   3. Takeform
   4. Substitutions: ~~See Section 01 60 00 - Product Requirements~~See Section 01 25 13 – Product Substitution Procedures

2.02 SIGNAGE APPLICATIONS

A. Accessibility Compliance: Signs are required to comply with ADA Standards and ICC A117.1 and applicable building codes, unless otherwise indicated; in the event of conflicting requirements, comply with the most comprehensive and specific requirements.

B. Room and Door Signs: Provide a sign for every doorway, whether it has a door or not, not including corridors, lobbies, and similar open areas.
   1. Sign Type: Flat signs with injection molded panel media as specified.
   2. Provide "tactile" signage, with letters raised minimum 1/32 inch (0.8 mm) and Grade II braille.
   3. Character Height: 1 inch (25 mm)
   4. Sign Height: 6" minimum, unless otherwise indicated.
   5. Office Doors: Identify with the room names and numbers indicated on drawings; in addition, provide "window" section for replaceable occupant name and braille.
   6. Conference, Meeting Rooms, Community Room, Class Room & Pavilion: Identify with the room names and numbers indicated on drawings and braille.
      a. Include Room Schedulers per Sign Schedule on drawings.
   7. Service Rooms: Identify with the room names and numbers indicated on drawings and braille.
   8. Rest Rooms: Identify with pictograms, the names "MEN" and "WOMEN" restrooms 154A and 154B only Restroom on all others, room numbers indicated on the drawings and braille.
   9. Staff Only; refer to drawings and schedule for vinyl door graphic
      ~~Stacks; Dewey Decimal guide signs on end of stacks. Numbers to be determined.~~

C. Recognition/Donor Panels: Engraved panel media; individual name signs attached with magnetic tape to fixed panel.
   1. Dimensions and Number of Name Signs: To be determined.
   2. Provide all name signs whether engraved or not, for uniform overall appearance.
   3. Color: To be determined

D. Building Information Signs:
   1. Type:
      a. No Smoking with City of Madison Ordinance.
      b. No Weapons with City of Madison Ordinance.
   2. Mount on outside wall and/or glazing in location indicated on drawings.

E. Other Dimensional Letter Signs: Wall-mounted.
   1. Interior: As indicated on drawings and schedule. Letters, 8 inches (150 mm) high, plastic.

2.03 SIGN TYPES

A. Flat Signs: Refer to drawings for basis of design.
   1. Edges: Square.
   2. Corners: Square.
   3. Wall Mounting of One-Sided Signs: Tape adhesive; Concealed screws.
   4. Suspended Mounting: Stainless steel suspension cables, cable clamps, and ceiling fastener suitable for attachment to ceiling construction indicated.

2.04 TACTILE SIGNAGE MEDIA

A. Injection Molded Panels: One-piece acrylic plastic, with raised letters and braille.
   1. Product: Refer to drawings for basis of design
   2. Total Thickness: 1/8 inch (3 mm)
   3. Signs created with a 3D printer are acceptable as long as they meet all other requirements.

2.05 DIMENSIONAL LETTERS

A. Plastic Letters:
   1. Material: Injection molded plastic or Formed plastic or 3D printed.
   2. Color: To be determined
   3. Mounting: Concealed screws

2.06 ACCESSORIES

A. Concealed Screws: Stainless steel, galvanized steel, chrome plated, or other non-corroding metal.

B. Tape Adhesive: Double sided tape, permanent adhesive.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that substrate surfaces are ready to receive work.

3.02 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Install neatly, with horizontal edges level.

C. Locate signs and mount at heights indicated on drawings and in accordance with ADA Standards and ICC A117.1.

D. Protect from damage until Date of Substantial Completion; repair or replace damaged items.

END OF SECTION

SECTION 10 22 39
FOLDING PANEL PARTITIONS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Top-supported folding panel partitions, horizontal opening.

1.02 RELATED REQUIREMENTS

A. Section 06 10 00 - Rough Carpentry: Wood blocking and track support shimming.

B. Section 08 71 00 - Door Hardware: Lock cylinders for panels

C. Section 26 05 33.13 - Conduit for Electrical Systems: Empty conduit from partition motor controller to disconnect and from motor controller to control buttons.

D. Section 26 05 83 - Wiring Connections: Electrical characteristics and wiring connections; control buttons .

1.03 REFERENCE STANDARDS

A. ANSI A208.1 - American National Standard for Particleboard; 2022.

B. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes; 2021.

C. ASTM B221M - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes (Metric); 2021.

D. ASTM E90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements; 2009 (Reapproved 2016).

E. ASTM E413 - Classification for Rating Sound Insulation; 2022.

F. ASTM E557 - Standard Guide for Architectural Design and Installation Practices for Sound Isolation Between Spaces Separated by Operable Partitions; 2012 (Reapproved 2020).

G. ASTM F793/F793M - Standard Classification of Wall Coverings by Use Characteristics; 2020.

H. HPVA HP-1 - American National Standard for Hardwood and Decorative Plywood; 2020.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Preinstallation Meeting: Convene at project site seven calendar days prior to scheduled beginning of construction activities of this section to review section requirements.
   1. Require attendance by representatives of installer.

1.05 SUBMITTALS

A. See Section 01 33 23-Submittals for City of Madison required submittal procedures.

B. Product Data: Provide data on partition materials, operation, hardware and accessories, electric operating components, track switching components, and colors and finishes available.

C. Design Data: Design calculations, bearing seal and signature of structural engineer licensed to practice in the State in which the Project is located, showing loads at points of attachment to the building structure.

D. Shop Drawings: Indicate opening sizes, track layout, details of track and required supports, static and dynamic loads, location and details of pass door and frame, adjacent construction and finish trim, and stacking depth.

E. Samples for Review: Submit two samples of surface finish, 12 by 12 inches (300 by 300 mm) size, illustrating quality, colors selected, texture, and weight.

F. Certificates: Certify that partition system meets or exceeds specified acoustic requirements.

G. Manufacturer's Instructions: Indicate special procedures.

H. Maintenance Data: Include recommended cleaning methods, cleaning materials, and stain removal methods. Describe cleaning materials detrimental to finish surfaces and hardware finish.

1.06 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing products specified this section with minimum three years of documented experience.

B. Installer Qualifications: Company specializing in performing work of the type specified and with at least three years of documented experience.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Store products in manufacturer's unopened packaging until installation.

1.08 WARRANTY

A. See Section 01 77 00-Closeout Procedures, for additional warranty requirements.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Folding Panel Partitions - Horizontal Opening:
   1. BASIS OF DESIGN: Modernfold, a DORMA Group Company: www.modernfold.com/#sle.
   2. Kwik-Wall Company; Model 3050: www.kwik-wall.com/#sle.
   3. Substitutions: See Section 01 25 13 – Product Substitution Procedures.

2.02 FOLDING PANEL PARTITIONS - HORIZONTAL OPENING

A. Folding Panel Partitions: Center opening; paired panels; side stacking; motor operated.
   1. Basis of Design: Acousti-seal Encore Paired Panel, STC 56 by Modernfold.

B. Panel Construction:
   1. Panel Properties:
      a. Thickness With Finish: 4 inches (100 mm).
      b. Width: Equal widths.
      c. Weight: 12 lb/sq ft (59 kg/sq m).

C. Panel Finishes:
   1. Facing: Vinyl coated fabric.
      a. Selection: Reed (Arani) 101189-513.
   2. Exposed Metal Trim: ~~Clear anodized~~Selected by Architect from Manufacturer's standard finish options..

D. Panel Seals:
   1. Modernfold Sure Set Automatic System: Top and Bottom
   2. Panel to Panel Seals: Grooved and gasketed astragals, with continuous flexible ribbed vinyl seal fitted to panel edge construction; color to match panel finish.
   3. Acoustic Seals: Flexible acoustic seals at jambs, meeting mullions, ceilings, floor and ceiling seals, and above track to structure acoustic seal.

E. Suspension System:
   1. Modernfold Smart Track suspension system

F. Performance:
   1. Acoustic Performance:
      a. Sound Transmission Class (STC): ~~[Equal to or greater than 55]~~52 to 57 calculated in accordance with ASTM E413, based on tests conducted in accordance with ASTM E90, on panel size of 100 sq ft (9.3 sq m).
   2. Installed partition system track capable of supporting imposed loads, with maximum deflection of 1/360 of span.

G. Operation:

1. Electric Operator: 12 inches (300 mm) per second traveling speed; adjustable friction clutch brake actuated by solenoid controlled motor starter; enclosed limit switch; enclosed magnetic reversing starter.
2. Control Station: One standard keyed, three button OPEN-STOP-CLOSE type; 24 volt circuit; surface mounted.
   a. Location to be determined
   b. Key switch prepared for mortise lock cylinder.
   c. Key switches alike.
3. Safety Features:
   a. Limit Switches: Automatic type, at both extremes of travel, to prevent over-travel.
   b. Emergency Release: Mechanism to disengage motor drive system and permit manual operation.
   c. Pocket Door Interlock: Mechanism to prevent operation of panels unless storage pocket doors are fully open.
4. Electrical Requirements:
   a. See Manufacturer recommendations for motor size required for specified panel system.
   b. Disconnect Switch: Factory mount disconnect switch in control panel.

~~Accessories:~~

~~Pocket Enclosures: Door, frame, and trim to match adjacent panels.~~

2.03 MATERIALS

A. Aluminum Extrusions: ASTM B221 (ASTM B221M), 6063 alloy, T6 temper.

B. Vinyl Coated Fabric: ASTM F793 Category VI, polyvinyl fluoride (PVC) finish for washability and improved flame retardance; color as selected by Architect from manufacturer's standard range.

C. Hardwood Plywood: Face species Beech, plain sliced, book matched, veneer core; HPVA HP-1, Front Face Grade AA, Back Face Grade 1; glue type as recommended for application.

D. Particleboard: ANSI A208.1; composed of wood chips, sawdust, or flakes of medium density, made with waterproof resin binders; of grade to suit application; sanded faces.

E. Acoustic Insulation:
   1. Type: As required for acoustic performance indicated.
   2. Thickness: As required for acoustic performance indicated.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that field measurements are as indicated.

B. Verify that required utilities are available, of the correct characteristics, in proper location, and ready for use.

C. Verify track supports are laterally braced and will permit track to be level within 1/4 inch (6.4 mm) of required position and parallel to the floor surface.

D. Verify floor flatness of 1/8 inch in 10 feet (3 mm in 3 m), non-cumulative.

E. Verify wall plumbness of 1/8 inch in 10 feet (3 mm in 3 m), non-cumulative.

3.02 INSTALLATION

A. Install partition in accordance with manufacturer's instructions and ASTM E557.

B. Fit and align partition assembly level and plumb.

C. Lubricate moving components.

D. Install acoustic sealant to achieve required acoustic performance.

3.03 ADJUSTING

A. Adjust partition assembly to provide smooth operation from stacked to full open position. Do not over-compress acoustic seals.

B. Visually inspect partition in full extended position for light leaks to identify a potential acoustical leak.

C. Adjust partition assembly to achieve lightproof seal.

3.04 CLEANING

A. Clean finish surfaces and partition accessories.

3.05 CLOSEOUT ACTIVITIES

A. Demonstrate operation of partition and identify potential operational problems.

END OF SECTION

SECTION 10 44 00
FIRE PROTECTION SPECIALTIES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Fire extinguishers.

B. Self-service reloadable fire extinguishers.

C. Fire blankets.

D. Fire extinguisher cabinets.

E. Accessories.

1.02 REFERENCE STANDARDS

A. ASTM E814 - Standard Test Method for Fire Tests of Penetration Firestop Systems; 2023a.

B. FM (AG) - FM Approval Guide; Current Edition.

C. NFPA 10 - Standard for Portable Fire Extinguishers; 2022.

D. UL (DIR) - Online Certifications Directory; Current Edition.

1.03 SUBMITTALS

A. See Section 01 33 23-Submittals for City of Madison required submittal procedures.

B. Product Data: Provide extinguisher operational features.

C. Shop Drawings: Indicate locations of cabinets and cabinet physical dimensions.

D. Manufacturer's Installation Instructions: Indicate special criteria and wall opening coordination requirements.

E. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

F. Maintenance Data: Include test, refill or recharge schedules and re-certification requirements.

1.04 FIELD CONDITIONS

A. Do not install extinguishers when ambient temperature may cause freezing of extinguisher ingredients.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Fire Extinguishers:

1. Activar Construction Products Group, Inc. - JL Industries; Cosmic Extinguisher - Multipurpose Chemical: www.activarcpg.com/#sle.
2. Ansul, a Tyco Business: www.ansul.com/#sle.
3. Kidde, a unit of United Technologies Corp: www.kidde.com/#sle.
4. Nystrom, Inc: www.nystrom.com/#sle.
5. Oval Brand Fire Products; Oval Dry Chemical Fire Extinguisher - Multipurpose ABC: www.ovalfireproducts.com/#sle.
6. Potter-Roemer: www.potterroemer.com/#sle.
7. Pyro-Chem, a Tyco Business: www.pyrochem.com/#sle.
8. Substitutions: ~~See Section 01 60 00 - Product Requirements.~~See Section 01 25 13 – Product Substitution Procedures

B. Fire Extinguisher Cabinets and Accessories:

1. Activar Construction Products Group, Inc. - JL Industries; Ambassador Series: www.activarcpg.com/#sle.
2. Kidde, a unit of United Technologies Corp: www.kidde.com/#sle.
3. Larsen's Manufacturing Co: www.larsensmfg.com/#sle.

4. Nystrom, Inc: www.nystrom.com/#sle.
5. Oval Brand Fire Products; Cabinets for Low Profile Extinguishers: www.ovalfireproducts.com/#sle.
6. Potter-Roemer: www.potterroemer.com/#sle.
7. The Williams Brothers Corporation of America; Classic Economy Series: www.wbdoors.com/#sle.
8. Substitutions: ~~See Section 01 60 00 - Product Requirements.~~See Section 01 25 13 – Product Substitution Procedures

C. Fire Hose and Hydrant Cabinets and Accessories:
1. The Williams Brothers Corporation of America; Hose & Hydrant Storage Series: www.wbdoors.com/#sle.
2. Substitutions: ~~See Section 01 60 00 - Product Requirements.~~See Section 01 25 13 – Product Substitution Procedures

2.02 FIRE EXTINGUISHERS

A. Fire Extinguishers - General: Comply with product requirements of NFPA 10 and applicable codes, whichever is more stringent.
1. Provide extinguishers labeled by UL (DIR) or FM (AG) for purpose specified and as indicated.

B. Multipurpose Dry Chemical Type Fire Extinguishers: ~~Carbon steel~~Carbon steel or Aluminum tank, with pressure gauge.
1. Class: A:B:C type.
2. Size: ~~2.5 pound (1.13 kg)~~5 pound (2.27 kg).
~~Size and classification as scheduled.~~
3. Finish: ~~Baked polyester powder coat,[ ]color~~Baked polyester powder coat, red color.
4. Temperature range: Minus 40 degrees F (Minus 40 degrees C) to 120 degrees F (49 degrees C).

2.03 FIRE EXTINGUISHER CABINETS

A. Fire Rating: Listed and labeled in accordance with ASTM E814 requirements for fire resistance rating of walls where being installed.

B. Cabinet Construction: Non-fire rated.
1. Formed primed steel sheet; 0.036 inch (0.9 mm) thick base metal.

C. Fire Rated Cabinet Construction: One-hour fire rated.
1. Steel; double wall or outer and inner boxes with 5/8 inch (15.9 mm) thick fire barrier material.

D. Cabinet Configuration: Semi-recessed type.
1. Size to accommodate accessories.
2. Trimless type.
3. Provide cabinet enclosure with right angle inside corners and seams, and with formed perimeter trim and door stiles.

E. Door: 0.036 inch (0.9 mm) metal thickness, reinforced for flatness and rigidity with nylon catch. Hinge doors for 180 degree opening with two butt hinges.

F. Door Glazing: Acrylic plastic, clear, 1/8 inch (3 mm) thick, flat shape and set in resilient channel glazing gasket.

G. Cabinet Mounting Hardware: Appropriate to cabinet, with pre-drilled holes for placement of anchors.

H. Fabrication: Weld, fill, and grind components smooth.

I. Finish of Cabinet Exterior Trim and Door: No.4 - Brushed stainless steel.

J. Finish of Cabinet Interior: White colored enamel.

2.04 ACCESSORIES

A. Fire Blanket: Fire retardant treated wool; red, 62 by 84 inch (1575 by 2135 mm) size.

B. Extinguisher Brackets: Formed steel, chrome-plated.

C. Extinguisher Theft Alarm: Battery operated alarm, 10 second delay for disarming, activated by opening cabinet door.

D. Lettering: "FIRE EXTINGUISHER" decal, or vinyl self-adhering, prespaced black lettering in accordance with authorities having jurisdiction (AHJ).

E. Floor Signs:

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify existing conditions before starting work.

B. Verify rough openings for cabinet are correctly sized and located.

3.02 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Secure rigidly in place.

C. Place extinguishers in cabinets.

3.03 MAINTENANCE

A. See Section 01 77 00-Closeout Procedures for additional requirements relating to maintenance service.

3.04 MAINTENANCE - SELF-SERVICE FIRE EXTINGUISHERS

A. Monthly Inspections: Inspect self-service fire extinguishers on monthly basis in accordance with manufacturer's instructions, and requirements of the authorities having jurisdiction (AHJ).

B. Annual Inspections: Inspect self-service fire extinguishers on annual basis in accordance with manufacturer's instructions, and requirements of the authorities having jurisdiction (AHJ).

C. Inspection Certification Tag: Provide new tag indicating acceptable condition of fire extinguisher, date of inspection, and name of self-service inspector for each inspection.

END OF SECTION

SECTION 23 21 13
HYDRONIC PIPING

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Hydronic system requirements.
B. Heating water piping, above grade.
C. Chilled water piping, above grade.
D. Condenser water piping, buried.
E. Condenser water piping, above grade.
F. Equipment drains and overflows.
G. Pipe hangers and supports.
H. Unions, flanges, mechanical couplings, and dielectric connections.

1.02 RELATED REQUIREMENTS

A. Section 23 05 16 - Expansion Fittings and Loops for HVAC Piping.
B. Section 23 05 23 - General-Duty Valves for HVAC Piping.
C. Section 23 05 48 - Vibration and Seismic Controls for HVAC.
D. Section 23 05 53 - Identification for HVAC Piping and Equipment.
E. Section 23 07 19 - HVAC Piping Insulation.
F. Section 23 21 14 - Hydronic Specialties.
G. Section 23 25 00 - HVAC Water Treatment: Pipe cleaning.

1.03 REFERENCE STANDARDS

A. ASME B16.3 - Malleable Iron Threaded Fittings: Classes 150 and 300 2021.
B. ASME B16.18 - Cast Copper Alloy Solder Joint Pressure Fittings 2021.
C. ASME B16.22 - Wrought Copper and Copper Alloy Solder-Joint Pressure Fittings 2021.
D. ASME B31.9 - Building Services Piping 2020.
E. ASTM A53/A53M - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless 2022.
F. ASTM A106/A106M - Standard Specification for Seamless Carbon Steel Pipe for High-Temperature Service 2019a.
G. ASTM A183 - Standard Specification for Carbon Steel Track Bolts and Nuts 2014 (Reapproved 2020).
H. ASTM A234/A234M - Standard Specification for Piping Fittings of Wrought Carbon Steel and Alloy Steel for Moderate and High Temperature Service 2023a.
I. ASTM A536 - Standard Specification for Ductile Iron Castings 1984, with Editorial Revision (2019).
J. ASTM B32 - Standard Specification for Solder Metal 2020.
K. ASTM B88 - Standard Specification for Seamless Copper Water Tube 2022.
L. ASTM B88M - Standard Specification for Seamless Copper Water Tube (Metric) 2020.
M. ASTM D2000 - Standard Classification System for Rubber Products in Automotive Applications 2018.
N. ASTM F708 - Standard Practice for Design and Installation of Rigid Pipe Hangers 1992 (Reapproved 2022).
O. ASTM F876 - Standard Specification for Crosslinked Polyethylene (PEX) Tubing 2023.

P. ASTM F877 - Standard Specification for Crosslinked Polyethylene (PEX) Hot- and Cold-Water Distribution Systems 2023.

Q. ASTM F1476 - Standard Specification for Performance of Gasketed Mechanical Couplings for Use in Piping Applications 2007 (Reapproved 2019).

R. AWS A5.8M/A5.8 - Specification for Filler Metals for Brazing and Braze Welding 2019.

S. AWS D1.1/D1.1M - Structural Welding Code - Steel 2020, with Errata (2023).

T. AWWA C105/A21.5 - Polyethylene Encasement for Ductile-Iron Pipe Systems 2018.

U. AWWA C606 - Grooved and Shouldered Joints 2022.

V. MSS SP-58 - Pipe Hangers and Supports - Materials, Design, Manufacture, Selection, Application, and Installation 2018, with Amendment (2019).

1.04 SUBMITTALS

A. See Section 01 33 23 - Submittals for City of Madison required submittal procedures.

B. Product Data:
   1. Include data on pipe materials, pipe fittings, valves, and accessories.
   2. Provide manufacturers catalog information.

C. Manufacturer's Installation Instructions: Indicate hanging and support methods, joining procedures.

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing products of the type specified in this section, with minimum three years of documented experience.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Provide temporary end caps and closures on piping and fittings. Maintain in place until installation.

B. Protect piping systems from entry of foreign materials by temporary covers, completing sections of the work, and isolating parts of completed system.

PART 2 - PRODUCTS

2.01 HYDRONIC SYSTEM REQUIREMENTS

A. Comply with ASME B31.9 and applicable federal, state, and local regulations.

B. Piping: Provide piping, fittings, hangers, and supports as required, as indicated, and as follows:
   1. Where more than one piping system material is specified, provide joining fittings that are compatible with piping materials and ensure that the integrity of the system is not jeopardized.
   2. Use non-conducting dielectric connections whenever jointing dissimilar metals.
   3. Provide pipe hangers and supports in accordance with ASME B31.9 or MSS SP-58 unless indicated otherwise.

C. Pipe-to-Valve and Pipe-to-Equipment Connections: Use flanges or unions to allow disconnection of components for servicing; do not use direct welded, soldered, or threaded connections.

2.02 HEATING WATER PIPING, ABOVE GRADE

A. Steel Pipe: ASTM A53/A53M, Schedule 40, black, using one of the following joint types:
   1. Welded Joints: ASTM A234/A234M, wrought steel welding type fittings; AWS D1.1/D1.1M welded.
   2. Threaded Joints: ASME B16.3, malleable iron fittings.

B. Steel Pipe Sizes 12 Inches and Greater: ASTM A53/A53M, 3/8 inch wall, black, using one of the following joint types:
   1. Welded Joints: ASTM A234/A234M, wrought steel welding type fittings; AWS D1.1/D1.1M welded.
   2. Threaded Joints: ASTM A536 ductile iron fittings.

C. Copper Tube: ASTM B88 (ASTM B88M), Type ~~K~~L (A), drawn, using one of the following joint types:
   1. Solder Joints: ASME B16.18 cast brass/bronze or ASME B16.22 solder wrought copper fittings.
      a. Solder: ASTM B32 lead-free solder, HB alloy (95-5 tin-antimony) or tin and silver.
      b. Braze: AWS A5.8M/A5.8 BCuP copper/silver alloy.
   2. Tee Connections: Mechanically extracted collars with notched and dimpled branch tube.

2.03 CHILLED WATER PIPING, ABOVE GRADE

A. Steel Pipe: ASTM A53/A53M, Schedule 40, black; using one of the following joint types:
   1. Welded Joints: ASTM A234/A234M, wrought steel welding type fittings; AWS D1.1/D1.1M welded.
   2. Threaded Joints: ASME B16.3, malleable iron fittings.

B. Steel Pipe Sizes 12 Inches and Greater: ASTM A53/A53M, 3/8 inch wall, black; using one of the following joint types:
   1. Welded Joints: ASTM A234/A234M, wrought steel welding type fittings; AWS D1.1/D1.1M welded.
   2. Threaded Joints: ASTM A536 ductile iron fittings.

C. Copper Tube: ASTM B88 (ASTM B88M), Type ~~K~~L (A), hard drawn; using one of the following joint types:
   1. Solder Joints: ASME B16.18 cast brass/bronze or ASME B16.22, solder wrought copper fittings.
      a. Solder: ASTM B32 lead-free solder, HB alloy (95-5 tin-antimony) or tin and silver.
      b. Braze: AWS A5.8M/A5.8 BCuP copper/silver alloy.
   2. Tee Connections: Mechanically extracted collars with notched and dimpled branch tube.

2.04 CONDENSER WATER PIPING, BURIED

A. Steel Pipe: ASTM A53/A53M, Schedule 40, black with AWWA C105/A21.5 polyethylene jacket, or double layer, half-lapped polyethylene tape.
   1. Fittings: ASTM A234/A234M, wrought steel welding type with double layer, half-lapped polyethylene tape.
   2. Joints: Threaded for pipe 2 inches and under; AWS D1.1/D1.1M, welded for pipe over 2 inches.

2.05 CONDENSER WATER PIPING, ABOVE GRADE

A. Steel Pipe: ASTM A53/A53M, Schedule 40, black.
   1. Welded Joints: ASTM A234/A234M, wrought steel welding type fittings with finish matching piping; AWS D1.1/D1.1M welded.
   2. Threaded Joints: ASME B16.3, malleable iron fittings with finish matching piping.

B. Copper Tube: ASTM B88 (ASTM B88M), Type ~~K~~L (A), drawn; using one of the following joint types:
   1. Solder Joints: ASME B16.18 cast brass/bronze or ASME B16.22 solder wrought copper fittings.
      a. Solder: ASTM B32 lead-free solder, HB alloy (95-5 tin-antimony) or tin and silver.
   2. Tee Connections: Mechanically extracted collars with notched and dimpled branch tube.

2.06 EQUIPMENT DRAINS AND OVERFLOWS

A. Copper Tube: ASTM B88 (ASTM B88M), Type ~~K~~L (A), drawn; using one of the following joint types:
   1. Solder Joints: ASME B16.18 cast brass/bronze or ASME B16.22 solder wrought copper fittings; ASTM B32 lead-free solder, HB alloy (95-5 tin-antimony) or tin and silver.

2.07 PIPE HANGERS AND SUPPORTS

A. Provide hangers and supports that comply with MSS SP-58.
   1. If type of hanger or support for a particular situation is not indicated, select appropriate type using MSS SP-58 recommendations.
   2. Hangers for Pipe Sizes 1/2 to 1-1/2 Inches: Carbon steel, adjustable swivel, split ring.
   3. Hangers for Cold Pipe Sizes 2 Inches and Greater: Carbon steel, adjustable, clevis.
   4. Hangers for Hot Pipe Sizes 2 to 4 Inches: Carbon steel, adjustable, clevis.

5. Hangers for Hot Pipe Sizes 6 Inches and Greater: Adjustable steel yoke, cast iron roll, double hanger.
6. Multiple or Trapeze Hangers: Steel channels with welded spacers and hanger rods.
7. Multiple or Trapeze Hangers for Hot Pipe Sizes 6 Inches and Greater: Steel channels with welded spacers and hanger rods, cast iron roll.
8. Wall Support for Pipe Sizes to 3 Inches: Cast iron hook.
9. Wall Support for Pipe Sizes 4 Inches and Greater: Welded steel bracket and wrought steel clamp.
10. Wall Support for Hot Pipe Sizes 6 Inches and Greater: Welded steel bracket and wrought steel clamp with adjustable steel yoke and cast iron roll.
11. Vertical Support: Steel riser clamp.
12. Floor Support for Cold Pipe: Cast iron adjustable pipe saddle, lock nut, nipple, floor flange, and concrete pier or steel support.
13. Floor Support for Hot Pipe Sizes to 4 Inches: Cast iron adjustable pipe saddle, lock nut, nipple, floor flange, and concrete pier or steel support.
14. Floor Support for Hot Pipe Sizes 6 Inches and Greater: Adjustable cast iron roll and stand, steel screws, and concrete pier or steel support.
15. Copper Pipe Support: Carbon steel ring, adjustable, copper plated.
16. Hanger Rods: Mild steel threaded both ends, threaded one end, or continuous threaded.
17. Inserts: Malleable iron case of galvanized steel shell and expander plug for threaded connection with lateral adjustment, top slot for reinforcing rods, lugs for attaching to forms; size inserts to suit threaded hanger rods.

2.08 UNIONS, FLANGES, MECHANICAL COUPLINGS, AND DIELECTRIC CONNECTIONS

A. Unions for Pipe 2 Inches and Less:
   1. Ferrous Piping: 150 psig malleable iron, threaded.
   2. Copper Pipe: Bronze, soldered joints.

B. Flanges for Pipe 2 Inches and Greater:
   1. Ferrous Piping: 150 psig forged steel, slip-on.
   2. Copper Piping: Bronze.
   3. Gaskets: 1/16 inch thick, preformed neoprene.

C. Dielectric Connections:
   1. Waterways:
      a. Water impervious insulation barrier capable of limiting galvanic current to 1 percent of short circuit current in a corresponding bimetallic joint.
      b. Dry insulation barrier able to withstand 600-volt breakdown test.
      c. Construct of galvanized steel with threaded end connections to match connecting piping.
      d. Suitable for the required operating pressures and temperatures.
   2. Flanges:
      a. Dielectric flanges with same pressure ratings as standard flanges.
      b. Water impervious insulation barrier capable of limiting galvanic current to 1 percent of short circuit current in a corresponding bimetallic joint.
      c. Dry insulation barrier able to withstand 600-volt breakdown test.
      d. Construct of galvanized steel with threaded end connections to match connecting piping.
      e. Suitable for the required operating pressures and temperatures.
   3. Unions:
      a. 1/2 to 1 Inches: Brass solder to galvanized FPT.
      b. 1/2 to 2 Inches: Brass solder to galvanized FPT.
      c. 1/2 to 1 Inches: Brass to galvanized FPT or FIP (Female Iron Pipe).
      d. 3/4 to 1/2 Inch Reducer: Brass solder to galvanized FPT.
      e. Service: 250 psi, minus 20 to 180 deg F.

PART 3 - EXECUTION

3.01 PREPARATION

A. Ream pipe and tube ends. Remove burrs. Bevel plain end ferrous pipe.

B. Remove scale and dirt on inside and outside before assembly.

C. Prepare piping connections to equipment using jointing system specified.

D. Keep open ends of pipe free from scale and dirt. Protect open ends with temporary plugs or caps.

E. After completion, fill, clean, and treat systems. See Section 23 25 00 for additional requirements.

3.02 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Route piping in orderly manner, parallel to building structure, and maintain gradient.

C. Install piping to conserve building space and to avoid interference with use of space.

D. Group piping whenever practical at common elevations.

E. Sleeve pipe passing through partitions, walls, and floors.

F. Install firestopping to preserve fire resistance rating of partitions and other elements, using materials and methods specified.

G. Slope piping and arrange to drain at low points.

H. Install piping to allow for expansion and contraction without stressing pipe, joints, or connected equipment. See Section 23 05 16.

I. Pipe Hangers and Supports:
   1. Install in accordance with ASME B31.9, ASTM F708, or MSS SP-58.
   2. Support horizontal piping as scheduled.
   3. Install hangers to provide minimum 1/2-inch space between finished covering and adjacent work.
   4. Place hangers within 12 inches of each horizontal elbow.
   5. Use hangers with 1-1/2 inches minimum vertical adjustment. Design hangers for pipe movement without disengagement of supported pipe.
   6. Support vertical piping at every other floor. Support riser piping independently of connected horizontal piping.
   7. Where several pipes can be installed in parallel and at same elevation, provide multiple or trapeze hangers.
   8. Provide copper plated hangers and supports for copper piping.
   9. Prime coat exposed steel hangers and supports. See Section 09 9123. Hangers and supports located in crawl spaces, pipe shafts, and suspended ceiling spaces are not considered exposed.

3.03 SCHEDULES

A. Hanger Spacing for Copper Tubing.
   1. 1/2 Inch and 3/4 inch: Maximum span, 5 feet; minimum rod size, 1/4 inch.
   2. 1 Inch: Maximum span, 6 feet; minimum rod size, 1/4 inch.
   3. 1-1/2 Inches and 2 Inches: Maximum span, 8 feet; minimum rod size, 3/8 inch.
   4. 2-1/2 Inches: Maximum span, 9 feet; minimum rod size, 3/8 inch.
   5. 3 Inches: Maximum span, 10 feet; minimum rod size, 3/8 inch.
   6. 4 Inches: Maximum span, 12 feet; minimum rod size, 1/2 inch.

B. Hanger Spacing for Steel Piping.
   1. 1/2 Inch, 3/4 Inch, and 1 Inch: Maximum span, 7 feet; minimum rod size, 1/4 inch.
   2. 1-1/4 Inches: Maximum span, 8 feet; minimum rod size, 3/8 inch.
   3. 1-1/2 Inches: Maximum span, 9 feet; minimum rod size, 3/8 inch.
   4. 2 Inches: Maximum span, 10 feet; minimum rod size, 3/8 inch.

5. 2-1/2 Inches: Maximum span, 11 feet; minimum rod size, 3/8 inch.
6. 3 Inches: Maximum span, 12 feet; minimum rod size, 3/8 inch.
7. 4 Inches: Maximum span, 14 feet; minimum rod size, 1/2 inch.

END OF SECTION

SECTION 23 83 00
RADIANT HEATING AND COOLING UNITS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Radiant heating hydronic piping.

1.02 RELATED REQUIREMENTS

A. Section 03 30 00 - Cast-in-Place Concrete.

B. Section 08 31 00 - Access Doors and Panels.

C. Section 23 09 93 - Sequence of Operations for HVAC Controls.

1.03 REFERENCE STANDARDS

A. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials 2022.

B. ASTM F876 - Standard Specification for Crosslinked Polyethylene (PEX) Tubing 2022a, with Editorial Revision.

C. ASTM F1281 - Standard Specification for Crosslinked Polyethylene/Aluminum/Crosslinked Polyethylene (PEX-AL-PEX) Pressure Pipe 2017, with Editorial Revision (2021).

D. ASTM F1807 - Standard Specification for Metal Insert Fittings Utilizing a Copper Crimp Ring, or Alternate Stainless Steel Clamps, for SDR9 Cross-Linked Polyethylene (PEX) Tubing and SDR9 Polyethylene of Raised Temperature (PE-RT) Tubing 2023.

E. ASTM F1974 - Standard Specification for Metal Insert Fittings for Polyethylene/Aluminum/Polyethylene and Crosslinked Polyethylene/Aluminum/Crosslinked Polyethylene Composite Pressure Pipe 2023.

F. DIN 4726 - Warm Water Surface Heating Systems and Radiator Connecting Systems - Plastics Piping Systems and Multilayer Piping Systems 2017.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Preinstallation Meeting: Conduct a preinstallation meeting one week prior to the start of the work of this section; require attendance by all affected installers.

B. Sequencing: Ensure that utility connections are achieved in an orderly and expeditious manner.

1.05 SUBMITTALS

A. See Section 01 33 23 - Submittals for City of Madison required submittal procedures.

B. Product Data: Provide data for in-floor heating system products.

C. Operation and Maintenance Data: Include manufacturer's descriptive literature, operating instructions of equipment and controls, installation instructions, maintenance and repair data, and parts listings.

D. Submit shop drawings indicating detailed layout of system, including equipment, tubing locations, loop lengths, critical dimensions, tubing/slab penetration details, fittings, and details for protected exposed PEX tubing. Provide pressure drops at design flow rates for all equipment including loops, manifolds, isolation valves, and control valves. Provide detailed flow, pressure, and electrical power requirements of radiant system pump.

E. Submit manufacturer's technical instructions including specific installation instructions for system installation in the specific construction of the radiant panel or slab. Include details at slab construction joints and expansion joints.

F. Submit installer's certifications of training for installation of PEX floor heating systems.

G. Submit data indicating tube sizing and panel performance at tube spacing and warm water temperatures selected.

H. Submit independent certification results for the tubing systems from a recognized testing laboratory.

I. Submit catalog data on all supports, tube guides, spacers, fittings, and associated items necessary for the installation of the tubing and manifolds.

1.06 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with not less than three years of documented experience.

B. Deliver and store tubing and specialties in shipping containers with labeling in place. Do not expose to ultraviolet light for more than 90 days.

C. Protect tubing and specialties from entry of contaminating material by installing tape or plugs in all open tube ends until installation and/or maintain tubing in the original shipping boxes or packaging until usage.

D. Unprotected tubes shall not be dragged across the ground or concrete surfaces, and shall be stored on a flat surface with no sharp edges.

E. Tube shall be protected from oil, grease, direct sunlight, paint, and other elements as recommended by manufacturer.

1.07 WARRANTY

A. See Section 01 78 36 - Warranties, for additional warranty requirements.

B. Provide 5 year manufacturer's warranty for tubing, connectors and manifolds.

PART 2 PRODUCTS

2.01 RADIANT-HEATING HYDRONIC PIPING

~~Applications:~~

~~Provide the following types of hydronic, radiant heating piping for the applications described:~~

~~Piping in Interior Reinforced Concrete Floors: PEX/AL/PEX.~~

~~Piping in Level Fill Concrete Floors (Not Reinforced): PEX/AL/PEX.~~

~~Crosslinked Polyethylene/Aluminum/Crosslinked Polyethylene (PEX/AL/PEX) Pipe and Fittings:~~

~~Pipe Material: PEX plastic bonded to the inside and outside of a welded aluminum tube according to ASTM F1281.~~

~~Oxygen Barrier: Limit oxygen diffusion through the pipe to maximum 0.0000436996 grains per cu ft/day at 104 degrees F according to DIN 4726.~~

~~Fittings: ASTM F1974, metal insert fittings with split ring and compression nut (compression joint) or metal insert fittings with copper crimp rings (crimp joint).~~

~~Flame Spread and Smoke Developed Indexes: 25 and 50 or less, respectively, when tested in accordance with ASTM E84.~~

~~Pressure/Temperature Rating: Minimum 100 psig and 210 degrees F.~~

A. Tube:

1.

2. The tube shall be manufactured in accordance with ASTM standard specification F876. The tube shall be listed to ASTM by independent third party testing laboratory.

3. The tube shall be of cross-linked polyethylene with a minimum degree of cross-linking of 80% or multi-layer, elastomeric, industrial grade EPDM rubber hose. The tube shall have an oxygen diffusion barrier capable of limiting oxygen diffusion through the tube to no greater than 0.10g/m3/day @ 104°F water temperature.

4. The tube dimensions shall be: 5/8" nominal inside diameter or 3/4" nominal inside diameter in accordance with ASTM standard specification, as pertaining to paragraph 2.

5. The minimum bend radius for cold bending of the tube shall not be less than six (6) times the outside diameter. Bends with a radius less than stated shall require the use of a bend support as supplied by the tube manufacturer.

6. All Components: Components of the buried tubing system shall be provided by one manufacturer, including; tube, fittings, manifolds, controls, and other ancillary items required for a complete installation.

B. Distribution Manifolds (Manufacturer's Standard):
   1. Manifold: Minimum 1 inch, brass, copper, or stainless steel.
   2. Main Shutoff Valves:
      a. Factory installed on supply and return connections.
      b. Two-piece brass or bronze body.
      c. Ball: Chrome-plated bronze.
      d. Seals: PTFE.
      e. CWP Rating: 150 psig.
      f. Maximum Operating Temperature: 225 degrees F.
   3. Manual Air Vents:
      a. Body to consist of bronze or brass.
      b. Internal Parts: Nonferrous.
      c. Operator: Key furnished with valve or screwdriver bit.
      d. Inlet Connection: 1/2 inch.
      e. Discharge Connection: 1/8 inch.
      f. CWP Rating: 150 psig.
      g. Maximum Operating Temperature: 225 degrees F.
   4. Balancing Valves:
      a. Body: Provide plastic or bronze, plug or globe cartridge type.
      b. Plug: EPDM.
      c. Globe Cartridge and Washer: Brass with EPDM composition washer.
      d. Seat: PTFE.
      e. Visual Flow Indicator: Flowmeter with visible indication in a clear plastic cap at top of valve.
      f. Differential Pressure Gauge Connections: Integral seals for portable meter to measure loss across calibrated orifice.
      g. Handle Style: Knob, with memory stop to retain set position if used for shutoff.
      h. CWP Rating: Minimum 125 psig.
      i. Maximum Operating Temperature: 250 degrees F.
   5. Zone Control Valves:
      a. Body: Provide brass or bronze, plug, globe, or cartridge type.
      b. Plug: EPDM.
      c. Globe Cartridge and Washer: Brass with EPDM composition washer.
      d. Seat: PTFE.
      e. Actuator: Replaceable electric motor.
      f. CWP Rating: Minimum 125 psig.
      g. Maximum Operating Temperature: 250 degrees F.
   6. Thermometers:
      a. Mounted on supply and return connections.
      b. Case: Dry type, metal or plastic, 2 inch diameter.
      c. Element: Bi-metallic coil.
      d. Movement: Mechanical, connecting element and pointer.
      e. Dial: Satin-faced, non-reflective aluminum with permanently etched scale markings.
      f. Pointer: Black metal.
      g. Window: Plastic.
      h. Connector: Rigid, back type.
      i. Thermal System: Bi-metallic coil.
      j. Accuracy: Plus or minus 1 percent of range or 1 scale division to maximum of 1.5 percent of range.

7. Mounting Brackets: Provide copper, plastic, or rubber-clad steel, where in contact with manifold.

C. Manufacturers:
1. Uponor
2. Rehau
~~Viega LLC~~
3. Watts
4. Viega LLC
5. Substitutions: ~~See Section 01 25 13 - Product Substitution Procedures~~See Section 01 25 13 – Product Substitution Procedures.

PART 3 EXECUTION

3.01 EXAMINATION

A. Hydronic Radiant Heating Piping:
1. Examine surfaces and substrates to receive radiant heating piping for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
a. Ensure that surfaces and pipes in contact with radiant heating piping are free of burrs and sharp protrusions.
b. Ensure that surfaces and substrates are level and plumb.
2. Proceed with installation only after unsatisfactory conditions are corrected.

3.02 PREPARATION

A. Clean all surfaces prior to installation.

3.03 INSTALLATION

A. Install in accordance with manufacturer's recommendations.

B. Hydronic Radiant Heating Piping:
1. Drawing plans, schematics, and diagrams indicate general location and arrangement of piping systems.
2. Indicate piping locations and arrangements if such were used to size pipe and calculate friction loss, expansion, pump sizing, and other design considerations.
3. Install piping as indicated unless deviations to layout are approved on shop drawings or coordination drawings.
4. Install radiant heating piping continuous from the manifold through the heated panel and back to the manifold without piping joints in heated panels.
5. All fittings should be accessible for maintenance. Tubing loops shall be installed without splices, as a minimum, from the point at which the tubing enters the panel to the point at which it exits the panel. No splices shall occur underground
6. Connect radiant piping to manifold in a reverse-return arrangement.
7. Do not bend pipes in radius smaller than manufacturer's minimum bend radius dimension.
8. Comply with requirements in Sections 23 21 13 and 23 21 14 for pipes and connections to hydronic systems and for glycol-solution fill requirements.
9. Piping in Interior Reinforced Concrete Floors:
a. Secure piping in concrete floors by attaching pipes to reinforcement using cable ties.
b. Space cable ties a maximum of 18 inches and at center of turns or bends.
c. Maintain 2 inch minimum cover.
d. Install a sleeve of 3/8 inch thick, foam type insulation or PE pipe around tubing and extending for a minimum of 10 inches on each side of slab joints to protect the tubing passing through expansion or control joints.
e. Maintain minimum 40 psig pressure in piping during concrete placement and continue for 24 hours after placement.
10. Piping in Level Fill Concrete Floors (Not Reinforced):

a. Secure piping in concrete floors by attaching pipes to subfloor using tracks, clamps, or staples.
b. Space tracks, clamps, or staples a maximum of 18 inches on center and at center turn of bends.
c. Maintain 3/4 inch minimum cover.
d. Install a sleeve of 3/8 inch thick, foam type insulation or PE pipe around tubing and extending for a minimum of 10 inches on each side of slab joints to protect the tubing passing through expansion or control joints.
e. Maintain minimum 40 psig pressure in piping during the concrete pour and continue for 24 hours during curing.

11. Revise locations and elevations from those indicated as required to suit field conditions and ensure integrity of piping and as approved by Architect.
12. After system balancing has been completed, mark balancing valves to permanently indicate final position.
13. Perform the following adjustments before operating the system:
    a. Open valves to fully open position.
    b. Check operation of automatic valves.
    c. Set temperature controls so all zones call for full flow.
    d. Purge air from piping.

C. Provide warning labels in mechanical equipment spaces to alert future building remodelers of the presence of in-slab tubing.

D. Any deviations from shop drawing layout must be accurately dimensioned for Owner's records.

E. Contractor shall take detailed photographs of installation and provide to owner as part of record documents in digital format for future reference.

3.04 FIELD QUALITY CONTROL

A. See Section 01 45 16 - Field Quality Control Procedures, for additional requirements.

B. Provide manufacturer's field representative to test, inspect, instruct, and observe.

C. Hydronic Radiant Heating Piping:
1. Prepare radiant heating piping for testing as follows:
    a. Open all isolation valves and close bypass valves.
    b. Open and verify operation of zone control valves.
    c. Flush with clean water and clean strainers.
2. Perform the following tests and inspections with the assistance of a factory authorized service representative:
    a. Leak Test:
        1) After installation, charge system and test for leaks.
        2) Subject piping to hydrostatic test pressure that is not less than 1.5 times the design pressure but not more than 100 psig for a period of 8 hours.
        3) Repair leaks and retest until no leaks exist.
    b. Test and adjust controls and safeties.
    c. Replace damaged and malfunctioning controls and equipment.
    d. Notify owner 24 hours prior to pressure testing.
3. Execute, complete, and pass required radiant-heating piping tests and inspections to accept installed piping.
4. Prepare test and inspection reports.
5. Protect hydronic piping system from damage during construction.

3.05 PROTECTION

A. Protect installed products from damage until Date of Substantial Completion.

END OF SECTION

SECTION 26 09 23
LIGHTING CONTROL DEVICES - LUTRON

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Devices and associated accessories for automatic control of lighting and other loads:
   1. Wallbox timers.
   2. Wallbox occupancy sensors.
   3. Wired wallbox occupancy sensors with wireless communication inputs.
   4. Wired occupancy sensors.
   5. Wireless occupancy/vacancy sensors.
   6. Wireless daylight sensors.
   7. Wired load control modules with wireless communication inputs for wireless sensors and control stations.
   8. Wired wall dimmers and switches with wireless communication inputs.
   9. Wireless control stations.

1.02 RELATED REQUIREMENTS

A. Section 26 05 26 - Grounding and Bonding for Electrical Systems.

B. Section 26 05 33.16 - Boxes for Electrical Systems.

C. Section 26 05 53 - Identification for Electrical Systems: Identification products and requirements.

1.03 REFERENCE STANDARDS

A. 47 CFR 15 - Radio Frequency Devices current edition.

B. ASTM D4674 - Standard Practice for Accelerated Testing for Color Stability of Plastics Exposed to Indoor Office Environments 2019.

C. ASTM E308 - Standard Practice for Computing the Colors of Objects by Using the CIE System 2022.

D. IEC 60929 - AC and/or DC-Supplied Electronic Control Gear for Tubular Fluorescent Lamps - Performance Requirements 2011, with Amendment (2015).

E. IEC 61000-4-2 - Electromagnetic Compatibility (EMC) - Part 4-2: Testing and Measurement Techniques - Electrostatic Discharge Immunity Test 2008.

F. ISO 9001 - Quality Management Systems — Requirements 2015.

G. NECA 1 - Standard for Good Workmanship in Electrical Construction 2015.

H. NECA 130 - Standard for Installing and Maintaining Wiring Devices 2016.

I. NEMA WD 1 - General Color Requirements for Wiring Devices 1999 (Reaffirmed 2020).

J. NFPA 70 - National Electrical Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

K. UL 94 - Tests for Flammability of Plastic Materials for Parts in Devices and Appliances Current Edition, Including All Revisions.

L. UL 1472 - Solid-State Dimming Controls Current Edition, Including All Revisions.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Coordination:
   1. Coordinate the placement of sensors and wall controls with millwork, furniture, equipment, etc. installed under other sections or by others.
   2. Coordinate the placement of wall controls with actual installed door swings.
   3. Coordinate the placement of daylight sensors with windows, skylights, and luminaires to achieve optimum operation. Coordinate placement with ductwork, piping, equipment, or other potential obstructions to light level measurement installed under other sections or by others.

4. Coordinate the work to provide luminaires and lamps compatible with the lighting controls to be installed.
5. Notify Architect of any conflicts or deviations from the contract documents to obtain direction prior to proceeding with work.

B. Sequencing:
1. Do not install sensors and wall controls until final surface finishes and painting are complete.

1.05 SUBMITTALS

A. See Section 01 33 23 - Submittals for City of Madison required submittal procedures.

B. Product Data: Include ratings, configurations, standard wiring diagrams, dimensions, colors, service condition requirements, and installed features.
1. Occupancy/Vacancy Sensors: Include detailed basic motion detection coverage range diagrams.
2. Wall Dimmers: Include derating information for ganged multiple devices.

C. Manufacturer's Installation Instructions: Include application conditions and limitations of use stipulated by product testing agency. Include instructions for storage, handling, protection, examination, preparation, and installation of product.

D. Project Record Documents: Record actual installed locations and settings for lighting controls.

E. Operation and Maintenance Data: Include detailed information on lighting control system operation, equipment programming and setup, replacement parts, and recommended maintenance procedures and intervals.

F. Warranty: Submit sample of manufacturer's Warranty as specified in Part 1 under "WARRANTY". Submit documentation of final executed warranty completed in Owner's name and registered with manufacturer.

1.06 QUALITY ASSURANCE

A. Conform to requirements of NFPA 70.

B. Maintain at the project site a copy of each referenced document that prescribes execution requirements.

C. Manufacturer Qualifications:
1. Company with not less than ten years of experience manufacturing lighting controls, including products using wireless communication between devices.
2. Registered to ISO 9001, including in-house engineering for product design activities.
3. Provides factory direct technical support hotline available 24 hours per day, 7 days per week.
4. Qualified to supply specified products and to honor claims against product presented in accordance with warranty.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Store products in a clean, dry space in original manufacturer's packaging in accordance with manufacturer's written instructions until ready for installation.

1.08 FIELD CONDITIONS

A. Maintain field conditions within manufacturer's required service conditions during and after installation.
1. Basis of Design System Requirements - Lutron, Unless Otherwise Indicated:
a. Ambient Temperature:
1) Lighting Controls: Between 32 and 104 degrees F.
b. Relative Humidity: Less than 90 percent, non-condensing.
c. Protect lighting controls from dust.

1.09 WARRANTY

A. See Section 01 78 00 - Closeout Submittals, for additional warranty requirements.

B. Manufacturer's Standard Warranty:
   1. Manufacturer Lighting Control System Components, Except Wallbox Occupancy Sensors, Wireless Sensors, Ballasts/Drivers and Ballast Modules: One year 100 percent parts coverage, no manufacturer labor coverage.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Basis of Design Manufacturer: Lutron Electronics Company, Inc; www.lutron.com/#sle.

B. Substitutions: ~~See Section 01 60 00 - Product Requirements~~See Section 01 25 13 – Product Substitution Procedures.

C. Crestron Zum wired or wireless lighting controls are a prior approved equal.

2.02 LIGHTING CONTROL DEVICES - GENERAL REQUIREMENTS

A. Provide products listed, classified, and labeled by Underwriters Laboratories Inc. (UL) as suitable for the purpose indicated.

B. Unless specifically indicated to be excluded, provide all required equipment, conduit, boxes, wiring, connectors, hardware, supports, accessories, programming, etc. as necessary for a complete operating system that provides the control intent indicated.

C. Design lighting control equipment for 10 year operational life while operating continually at any temperature in an ambient temperature range of 32 degrees F to 104 degrees F and 90 percent non-condensing relative humidity.

D. Electrostatic Discharge Tolerance: Design and test equipment to withstand electrostatic discharges without impairment when tested according to IEC 61000-4-2.

E. Power Failure Recovery: When power is interrupted for periods up to 10 years and subsequently restored, lights to automatically return to same levels (dimmed setting, full on, or full off) as prior to power interruption.

F. Wireless Devices:
   1. Capable of diagnosing system communications.
   2. Capable of having addresses automatically assigned to them.
   3. Receives signals from other wireless devices and provides feedback to user.
   4. Capable of determining which devices have been addressed.
   5. RF Frequency: 434 MHz; operate in FCC governed frequency spectrum for periodic operation; continuous transmission spectrum is not permitted.
   6. RF Range: 60 feet line-of-sight or 30 feet through typical construction materials between RF transmitting devices and compatible RF receiving devices.
   7. Electromagnetic Interference/Radio Frequency Interference (EMI/RFI) Limits: Comply with FCC requirements of 47 CFR 15, for Class B application.

G. Device Finishes:
   1. Standard Colors: Comply with NEMA WD 1 where applicable.
   2. Color Variation in Same Product Family: Maximum delta E of 1, CIE L*a*b color units per ASTM E308.
   3. Visible Parts: Exhibit ultraviolet color stability when tested with multiple actinic light sources as defined in ASTM D4674. Provide proof of testing upon request.

2.03 WALLBOX TIMERS

A. Provide warning to occupant of impending load turn-off.

B. Product(s):

1. Type - Wallbox Timer; Lutron Maestro Series Countdown Timer Control Switch, Model MA-T51: 120 V, 600 W/VA (5 A) lighting (incandescent/halogen, magnetic low voltage), 3 A general purpose fan; adjustable from 5 to 60 minutes with option for untimed full on; minimum load requirement.

2.04 WALLBOX OCCUPANCY SENSORS

A. General Requirements:
   1. Passive Infrared Sensing:
      a. Utilize multiple segmented lens, with internal grooves to eliminate dust and residue build-up.
      b. Passive infrared coupled with technology for sensing fine motions; Lutron XCT Technology. Signal processing technology detects fine-motion passive infrared (PIR) signals without the need to change the sensor's sensitivity threshold.
   2. Ultrasonic Sensing: Utilize an operating frequency of 32 kHz or 40 kHz, crystal-controlled to operate within plus/minus 0.005 percent tolerance.
   3. Dual Technology Sensing: Passive infrared and ultrasonic sensing coupled with technology for sensing very fine motions; Lutron XCT Technology. Signal processing technology detects fine-motion passive infrared (PIR) and ultrasonic signals without the need to change the sensor's sensitivity threshold.

B. Wall Switch Occupancy/Vacancy Sensors; Lutron Maestro Series:
   1. General Requirements:
      a. Turns off lighting after reasonable and adjustable time delay once the last person to occupy the space vacates a room or area. Provide adjustable timeout settings of 1, 5, 15, and 30 minutes.
      b. Switches at point of minimum energy to maximize relay life, actively adapting to variations in relay timing.
      c. Suitable for incandescent, halogen, electronic low-voltage, magnetic low-voltage, compact fluorescent, LED, magnetic fluorescent, electronic fluorescent, and fan loads.
   2. Passive Infrared Wall Switch Combination Occupancy/Vacancy Sensors:
      a. Programmable to operate as an occupancy sensor (automatic-on and automatic-off) or a vacancy sensor (manual-on and automatic-off).
      b. Adjustable sensitivity (high, low presets).
      c. Selectable option to enable low light feature (automatic-on when ambient light is below threshold). Ambient light threshold to be adaptive utilizing occupant feedback; Lutron Smart Ambient Light Detection.
      d. Selectable option to inhibit automatic turn-on of lights after manual-off operation while room is occupied for applications such as presentation viewing in conference rooms and classrooms; when room is vacated, returns to normal automatic-on operation after time delay period.
   3. Passive Infrared Wall Switch Vacancy-Only Sensors:
      a. Operates only as a vacancy sensor (manual-on and automatic-off) in accordance with California Title 24 requirements.
      b. Adjustable sensitivity (high, low presets).
   4. Dual Technology Wall Switch Combination Occupancy/Vacancy Sensors:
      a. Programmable to operate as an occupancy sensor (automatic-on and automatic-off) or a vacancy sensor (manual-on and automatic-off).
      b. Adjustable sensitivity (high, medium, low, and off presets) individually for passive infrared and ultrasonic sensing.
      c. Selectable option to enable low light feature (automatic-on when ambient light is below threshold). Ambient light threshold to be selectable as either adaptive utilizing occupant feedback (Lutron Smart Ambient Light Detection) or as fixed (high, medium, low, and ultra low presets).

d. Selectable option to inhibit automatic turn-on of lights after manual-off operation while room is occupied for applications such as presentation viewing in conference rooms and classrooms.

5. Dual Technology Wall Switch Vacancy-Only Sensors:
   a. Operates only as a vacancy sensor (manual-on and automatic-off) in accordance with California Title 24 requirements.
   b. Adjustable sensitivity (high, medium, low, and off presets) individually for passive infrared and ultrasonic sensing.
6. Dual-Circuit Passive Infrared Wall Switch Combination Occupancy/Partial-On Sensors:
   a. Each circuit programmable to operate as an occupancy sensor (automatic-on and automatic-off) or a partial-on sensor (manual-on and automatic-off).
   b. Adjustable sensitivity (high, low presets).
   c. Selectable option to enable low light feature (automatic-on when ambient light is below threshold) or to inhibit automatic turn-on of lights after manual-off operation while room is occupied for applications such as presentation viewing in conference rooms and classrooms; applicable for auto-on only. Ambient light threshold to be adaptive utilizing occupant feedback; Lutron Smart Ambient Light Detection.
   d. Timeout settings to be individually adjustable for each circuit.
   e. Independent manual switching for each circuit.
7. Dual-Circuit Passive Infrared Wall Switch Partial-On Sensors:
   a. Operates only as a partial-on sensor (one circuit auto-on and auto-off and one circuit manual-on and automatic-off) in accordance with California Title 24 requirements.
   b. Adjustable sensitivity (high, low presets).
   c. Selectable option to enable low light feature (automatic-on when ambient light is below threshold) or to inhibit automatic turn-on of lights after manual-off operation while room is occupied for applications such as presentation viewing in conference rooms and classrooms; applicable for auto-on only. Ambient light threshold to be adaptive utilizing occupant feedback; Lutron Smart Ambient Light Detection.
   d. Timeout settings to be individually adjustable for each circuit.
   e. Independent manual switching for each circuit.
8. Dual-Circuit Dual Technology Wall Switch Combination Occupancy/Partial-On Sensors:
   a. Each circuit programmable to operate as an occupancy sensor (automatic-on and automatic-off) or a partial-on sensor (manual-on and automatic-off).
   b. Adjustable sensitivity (high, medium, low, and off presets) individually for passive infrared and ultrasonic sensing.
   c. Selectable option to enable low light feature (automatic-on when ambient light is below threshold). Ambient light threshold to be selectable as either adaptive utilizing occupant feedback (Lutron Smart Ambient Light Detection) or as fixed (high, medium, low, and ultra low presets); applicable for auto-on only.
   d. Selectable option to inhibit automatic turn-on of lights after manual-off operation while room is occupied for applications such as presentation viewing in conference rooms and classrooms; applicable for auto-on only.
   e. Timeout settings to be individually adjustable for each circuit.
   f. Independent manual switching for each circuit.
9. Companion Switches: Provide as required for multi-location control as indicated.
   a. Product(s): As specified in Section 26 27 26.

C. Wall Dimmer Occupancy Sensors; Lutron Maestro LED+ Sensor Dimmer Series:
   1. General Requirements;
      a. Dimmer: Solid-state with continuous full-range even control following square law dimming curve, integral radio frequency interference filtering, power failure preset memory, air gap switch accessible without removing wall plate, and listed as complying with UL 1472.
      b. Adjustable sensitivity (high, low presets).

c. Adjustable auto-on light level (100 percent, 50 percent, last light level, locked presets).
d. Turns off lighting after reasonable and adjustable time delay once the last person to occupy the space vacates a room or area. Provide adjustable timeout settings of 1, 3, 5, 15, and 30 minutes.
e. Provide fade-to-off operation to warn occupant of impending load turn-off.
f. Suitable for dimmable incandescent, halogen, compact fluorescent, and LED loads.

2. Passive Infrared Wall Dimmer Combination Occupancy/Vacancy Sensors:
   a. Programmable to operate as an occupancy sensor (automatic-on and automatic-off) or a vacancy sensor (manual-on and automatic-off).
   b. Selectable options to enable low light feature (automatic-on when ambient light is below threshold) or to inhibit automatic turn-on of lights after manual-off operation while room is occupied for applications such as presentation viewing in conference rooms and classrooms (applicable for auto-on only). Ambient light threshold to be adaptive utilizing occupant feedback; Lutron Ambient Smart Light Detection.
3. Passive Infrared Wall Dimmer Vacancy-Only Sensors:
   a. Operates only as a vacancy sensor (manual-on and automatic-off) in accordance with California Title 24 requirements.
4. Companion Dimmers: Provide as required for multi-location control as indicated.
   a. Product(s): As specified in Section 26 27 26.

D. Wall Dimmer Occupancy Sensors; Lutron Maestro Occupancy Sensor Dimmer Series:
1. General Requirements;
   a. Dimmer: Solid-state with continuous full-range even control following square law dimming curve, integral radio frequency interference filtering, power failure preset memory, air gap switch accessible without removing wall plate, and listed as complying with UL 1472.
   b. Adjustable sensitivity (high, low presets).
   c. Dimmer Features: Locked preset, fade-to-on, fade-to-off.
   d. Turns off lighting after reasonable and adjustable time delay once the last person to occupy the space vacates a room or area. Provide adjustable timeout settings of 1, 3, 5, 15, and 30 minutes.
   e. Provide selectable option to dim lights by 50 percent to warn occupant of impending load turn-off.
   f. Suitable for dimmable incandescent and halogen loads.
2. Passive Infrared Wall Dimmer Combination Occupancy/Vacancy Sensors:
   a. Programmable to operate as an occupancy sensor (automatic-on and automatic-off) or a vacancy sensor (manual-on and automatic-off).
3. Passive Infrared Wall Dimmer Vacancy-Only Sensors:
   a. Operates only as a vacancy sensor (manual-on and automatic-off) in accordance with California Title 24 requirements.
4. Companion Dimmers: Provide as required for multi-location control as indicated.
   a. Product(s): As specified in Section 26 27 26.

E. 0-10 V Wall Dimmer Occupancy Sensors; Lutron Maestro 0-10 V Dimmer Sensor Series:
1. General Requirements;
   a. Compatible with sourcing electronic 0-10 V ballasts/drivers, as per IEC 60929 Annex E.2 0-10 V protocol.
   b. Adjustable sensitivity (high, medium, low, and minimum presets).
   c. Adjustable high/low end trims.
   d. Selectable dimming curve (linear or square law).
   e. Dimmer Features: Locked preset, fade-to-on, fade-to-off.
   f. Turns off lighting after reasonable and adjustable time delay once the last person to occupy the space vacates a room or area. Provide adjustable timeout settings of 1, 5, 15, and 30 minutes.

g. Selectable option to enable low light feature (automatic-on when ambient light is below threshold). Ambient light threshold to be selectable as either adaptive utilizing occupant feedback (Lutron Smart Ambient Light Detection) or as fixed (high, medium, low, and minimum presets); applicable for auto-on only.
h. Fades lights to off over period of 10 seconds to warn occupant of impending load turn-off.
i. Provides visual alert for miswire and incompatible load.

2. Passive Infrared 0-10 V Wall Dimmer Combination Occupancy/Vacancy Sensors:
   a. Programmable to operate as an occupancy sensor (automatic-on and automatic-off) or a vacancy sensor (manual-on and automatic-off).
3. Passive Infrared 0-10 V Wall Dimmer Vacancy-Only Sensors:
   a. Operates only as a vacancy sensor (manual-on and automatic-off) in accordance with California Title 24 requirements.
4. Companion Switches: Provide as required for multi-location control as indicated.

2.05 WIRED WALLBOX OCCUPANCY SENSORS WITH WIRELESS COMMUNICATION INPUTS

A. 0-10 V Wall Dimmer/Switch Combination Occupancy/Vacancy Sensors with Wireless Communication Inputs; Lutron Maestro Wireless 0-10 V Dimmer Sensor/Maestro Wireless Sensor Switch Series.
   1. Communicates via radio frequency with up to ten compatible wireless occupancy/vacancy sensors, ten wireless control stations, and one wireless daylight sensor.
   2. Compatible with sourcing electronic 0-10 V ballasts/drivers, as per IEC 60929 Annex E.2 0-10 V protocol.
   3. Selectable option to enable low light feature (automatic-on when ambient light is below threshold). Ambient light threshold to be selectable as either adaptive utilizing occupant feedback (Lutron Smart Ambient Light Detection) or as fixed (high, medium, low, and minimum presets).
   4. Occupancy/Vacancy Sensors:
      a. Utilize multiple segmented lens, with internal grooves to eliminate dust and residue build-up.
      b. Sensing Mechanism: Passive infrared coupled with technology for sensing fine motions; Lutron XCT Technology. Signal processing technology detects fine-motion passive infrared (PIR) signals without the need to change the sensor's sensitivity threshold.
      c. Programmable to operate as an occupancy sensor (automatic-on and automatic-off) or a vacancy sensor (manual-on and automatic-off).
      d. Turns off lighting after reasonable and adjustable time delay once the last person to occupy the space vacates a room or area; adjustable timeout settings (1, 5, 15, and 30 minutes).
      e. Adjustable sensitivity (high, medium, low, and minimum presets).
      f. Selectable option to inhibit automatic turn-on of lights after manual-off operation while room is occupied for applications such as presentation viewing in conference rooms and classrooms; when room is vacated, returns to normal automatic-on operation after time delay period.
      g. Selectable walk-through mode to override selected timeout and automatically turn off lights if no motion is detected within 3 minutes after initial occupancy for applications where space may be briefly occupied.
   5. Vacancy-Only Sensors:
      a. Operates only as a vacancy sensor (manual-on and automatic-off) in accordance with California Title 24 requirements.
      b. Adjustable sensitivity (high, medium, low, and minimum presets).
   6. Dimmer Features:
      a. Adjustable high/low end trims.
      b. Selectable dimming curve (linear or switched).
      c. Selectable fade on/fade off times (15, 5, 2.5, or 0.75 sec).
      d. Adjustable auto-on light level (fully adjustable from one to 100 percent).
   7. Dimmer Control: Multi-function tap switch with small, raised rocker for dimmer adjustment.
      a. Rocker raises/lowers light level, with new level becoming the current preset level.

b. Switch single tap raises lights to preset level or fades lights to off.
c. Switch double tap raises light to full on level.

8. Switch Control: Switch single tap turns lights on/off.

2.06 WIRED OCCUPANCY SENSORS

A. General Requirements:
1. Connects directly to compatible ballasts and modules without the need of a power pack or other interface.
2. Turns off or reduces lighting automatically after reasonable time delay when a room or area is vacated by the last person to occupy the space.
3. Accommodates all conditions of space utilization and all irregular work hours and habits.
4. Comply with UL 94.
5. Self-Adaptive: Continually adjusts sensitivity and timing to ensure optimal lighting control for any use of the space.
6. Furnished with field-adjustable controls for time delay and sensitivity to override any adaptive features.
7. Power Failure Memory: Settings and learned parameters to be saved in non-volatile memory and not lost should power be interrupted and subsequently restored.
8. Furnished with all necessary mounting hardware and instructions.
9. Class 2 devices.
10. Ceiling-Mounted Sensors: Indicate viewing directions on mounting bracket.
11. Wall-Mounted Sensors: Provide swivel-mount base.
12. Color: White.

B. Wired Passive Infrared Sensors:
1. Utilize multiple segmented lens, with internal grooves to eliminate dust and residue build-up.
2. Ceiling-Mounted Sensors: Provide customizable mask to block off unwanted viewing areas.

C. Wired Ultrasonic Sensors:
1. Utilize an operating frequency of 32 kHz or 40 kHz, crystal-controlled to operate within plus/minus 0.005 percent tolerance.

D. Wired Dual Technology Sensors:
1. Passive Infrared Sensing: Utilize multiple segmented lens, with internal grooves to eliminate dust and residue build-up.
2. Ultrasonic Sensing: Utilize an operating frequency of 32 kHz or 40 kHz, crystal-controlled to operate within plus/minus 0.005 percent tolerance.
3. Ceiling-Mounted Sensors: Provide customizable mask to block off unwanted viewing areas.
4. Isolated Relay: Provide an internal additional isolated relay with Normally Open, Normally Closed, and Common outputs for use with HVAC control, Data Logging and other control options where indicated.
5. Integral Photocell: Provide an integral photocell with adjustable sensitivity to prevent lights from turning on when there is sufficient natural light where indicated.

E. Power Packs for Wired Sensors:
1. Provide sensor power packs where required for power connection to sensors.
2. For ease of mounting, installation and future service, power pack(s) to be able to mount through a 1/2 inch knockout in a standard electrical enclosure and be an integrated, self-contained unit consisting internally of an isolated load switching control relay and a transformer to provide low-voltage power. Transformer to provide power to a minimum of three sensors.
3. Plenum-rated.
4. Control Wiring Between Sensors and Control Units: Class 2, 18-24 AWG, stranded UL Classified, PVC insulated or TEFLON jacketed cable suitable for use in plenums, where applicable.

2.07 WIRELESS SENSORS

A. General Requirements:
   1. Operational life of 10 years without the need to replace batteries when installed per manufacturer's instructions.
   2. Communicates directly to compatible RF receiving devices through use of a radio frequency communications link.
   3. Does not require external power packs, power wiring, or communication wiring.
   4. Capable of being placed in test mode to verify correct operation from the face of the unit.

B. Wireless Occupancy/Vacancy Sensors:
   1. General Requirements:
      a. Provides a clearly visible method of indication to verify that motion is being detected during testing and that the unit is communicating to compatible RF receiving devices.
      b. Utilize multiple segmented lens, with internal grooves to eliminate dust and residue build-up.
      c. Sensing Mechanism: Passive infrared coupled with technology for sensing fine motions; Lutron XCT Technology. Signal processing technology detects fine-motion passive infrared (PIR) signals without the need to change the sensor's sensitivity threshold.
      d. Provide optional, readily accessible, user-adjustable controls for timeout, automatic/manual-on, and sensitivity.
      e. Turns off lighting after reasonable and adjustable time delay once the last person to occupy the space vacates a room or area. Provide adjustable timeout settings of 1, 5, 15, and 30 minutes.
      f. Capable of turning dimmer's lighting load on to an optional locked preset level selectable by the user. Locked preset range to be selectable on the dimmer from 1 percent to 100 percent.
      g. Color: White.
      h. Provide all necessary mounting hardware and instructions for both temporary and permanent mounting.
      i. Provide temporary mounting means for drop ceilings to allow user to check proper performance and relocate as needed before permanently mounting sensor. Temporary mounting method to be designed for easy, damage-free removal.
      j. Sensor lens to illuminate during test mode when motion is detected to allow installer to place sensor in ideal location and to verify coverage prior to permanent mounting.
      k. Ceiling-Mounted Sensors:
         1) Provide surface mounting bracket compatible with drywall, plaster, wood, concrete, and compressed fiber ceilings.
         2) Provide recessed mounting bracket compatible with drywall and compressed fiber ceilings.
      l. Wall-Mounted Sensors: Provide wall or corner mounting brackets compatible with drywall and plaster walls.
   2. Wireless Combination Occupancy/Vacancy Sensors:
      a. Ceiling-Mounted Sensors: Programmable to operate as an occupancy sensor (automatic-on and automatic-off), an occupancy sensor with low light feature (automatic-on when less than one footcandle of ambient light available and automatic-off), or a vacancy sensor (manual-on and automatic-off).
      b. Wall-Mounted Sensors: Programmable to operate as an occupancy sensor (automatic-on and automatic-off), or a vacancy sensor (manual-on and automatic-off).
   3. Wireless Vacancy-Only Sensors:
      a. Operates only as a vacancy sensor (manual-on and automatic-off) in accordance with California Title 24 requirements.

C. Wireless Daylight Sensors:
   1. Product: Lutron Radio Powr Savr Series, Model LFR2-DCRB-WH.

2. Open-loop basis for daylight sensor control scheme.
3. Stable output over temperature from 32 degrees F to 104 degrees F.
4. Partially shielded for accurate detection of available daylight to prevent fixture lighting and horizontal light component from skewing sensor detection.
5. Provide linear response from 2 to 150 footcandles.
6. Color: White.
7. Mounting:
   a. Provide surface mounting bracket compatible with drywall, plaster, wood, concrete, and compressed fiber ceilings.
   b. Provide all necessary mounting hardware and instructions for both temporary and permanent mounting.
   c. Provide temporary mounting means for drop ceilings to allow user to check proper performance and relocate as needed before permanently mounting sensor. Temporary mounting method to be designed for easy, damage-free removal.
8. Meets California Title 24 requirements.

2.08 WIRED WALL DIMMERS AND SWITCHES WITH WIRELESS COMMUNICATION INPUTS

A. General Requirements:
1. Utilize air gap off, activated when user selects "off" at any control to disconnect the load from line supply.
2. Provide air gap service switch accessible without removing faceplate.
3. Operates at the rated capacity across the full ambient temperature range including modified capacities for ganged configurations which require removal of fins.
4. Provide radio frequency interference suppression.
5. Surge Tolerance: Designed and tested to withstand surges of 6,000 V, 200 amps according to IEEE C62.41.2 without impairment to performance.
6. Dimmers: Provide full range, continuously variable control of light intensity.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that field measurements are as shown on the drawings.

B. Verify that ratings and configurations of devices are consistent with the indicated requirements.

C. Verify that mounting surfaces are ready to receive devices.

D. Verify that conditions are satisfactory for installation prior to starting work.

3.02 PREPARATION

A. Clean dirt, debris, plaster, and other foreign materials from outlet boxes.

3.03 INSTALLATION

A. Perform work in a neat and workmanlike manner in accordance with NECA 1 and, where applicable, NECA 130, except for mounting heights specified in those standards.

B. Coordinate locations of outlet boxes provided under Section 26 05 33.16 as required for installation of devices provided under this section.

C. Where multiple devices are installed at the same location and at the same mounting height, gang devices together under a common wall plate.

D. Install products in accordance with manufacturer's instructions.

E. Install permanent barrier between ganged devices when voltage between adjacent devices exceeds 300 V.

F. Lamp Burn-In: Operate lamps at full output for prescribed period per manufacturer's recommendations prior to use with any dimming controls. Replace lamps that fail prematurely due to improper lamp burn-in.

3.04 FIELD QUALITY CONTROL

A. See Section 01 45 16 - Field Quality Control Procedures for City of Madison additional requirements.

B. Correct defective work, adjust for proper operation, and retest until entire system complies with contract documents.

3.05 ADJUSTING

3.06 CLEANING

A. Clean exposed surfaces to remove dirt, paint, or other foreign material and restore to match original factory finish.

3.07 CLOSEOUT ACTIVITIES

3.08 PROTECTION

A. Protect installed products from subsequent construction operations.

END OF SECTION

SECTION 26 27 29
ELECTRIC VEHICLE CHARGING STATION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. This specification provides information as it relates to the complete installation of Electric Vehicle Charging Stations (EVCS) and related components.

1.02 RELATED REQUIREMENTS

A. Section 00 31 46 - Permits.
B. Section 01 31 13 - Project Coordination.
C. Section 01 31 19 - Project Meetings.
D. Section 01 33 23 – Submittals.
E. Section 01 73 29 - Cutting and Patching.
F. Section 01 74 13 - Progress Cleaning.
G. Section 01 76 00 - Protecting Installed Construction.
H. Section 01 78 13 - Completion and Correction List.
I. Section 01 78 23 - Operation and Maintenance Data.
J. Section 01 78 36 – Warranties.
K. Section 01 78 39 - As-Built Drawings.
L. Section 01 78 43 - Spare Parts and Extra Materials.
M. Section 01 79 00 - Demonstration and Training.

1.03 REFERENCE STANDARDS

A. ISO/IEC 14443-4 - Cards and Security Devices for Personal Identification – Contactless Proximity Objects – Part 4: Transmission Protocol - Amendment 1: Dynamic Power Level Management; 2018, with Amendment (2021).
B. ISO/IEC 15693-2 - Cards and Security Devices for Personal Identification - Contactless Vicinity Objects - Part 2: Air Interface and Initialization; 2019.
C. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum); 2020.
D. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
E. SAE J1772 - SAE Electric Vehicle and Plug in Hybrid Electric Vehicle Conductive Charge Coupler; 2024.
F. UL 2202 - Standard for Electric Vehicle (EV) Charging System Equipment; Current Edition, Including All Revisions.
G. UL 2231-1 - Standard for Safety for Personnel Protection Systems for Electric Vehicle (EV) Supply Circuits: General Requirements; Current Edition, Including All Revisions.
H. UL 2231-2 - Standard for Safety for Personnel Protection Systems for Electric Vehicle (EV) Supply Circuits: Particular Requirements for Protection Devices for Use in Charging Systems; Current Edition, Including All Revisions.
I. UL 2594 - Standard for Electric Vehicle Supply Equipment; Current Edition, Including All Revisions.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Coordination:
   1. Coordinate this work with other installers to provide required electric power for specified charging units and accessory equipment being installed at designated locations.

2. Coordinate this work with other installers to provide readily accessible location for disconnection as indicated and as required by NFPA 70.
3. Notify Architect of any conflicts with or deviations from Contract Documents and obtain documented directions before proceeding with this work.

B. Manufacturer's charges associated with providing Cloud-Based Services subscriptions as necessary for charging unit operation to be paid by Owner.

C. Preinstallation Meetings:
1. Conduct meeting with facility representatives to review charging unit and accessory equipment locations and require attendance by each affected installer.

D. Sequencing: Do not install charging unit until final surface finishes and painting are complete.

1.05 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements, for submittal procedures.

B. Product Data: Submit manufacturer's standard catalog and data sheets for charging units and installed accessories; include ratings, configurations, standard wiring diagrams, dimensions, finishes, service condition requirements, and installed features.

C. Manufacturer's Installation Instructions: Submit necessary application conditions and limitations of use stipulated by product testing agency; include instructions for storage, handling, protection, examination, preparation, installation, and operation of product.

D. Manufacturer's detailed field testing procedures.

E. Field quality control test reports.

F. Maintenance Contracts.

G. Operation and Maintenance Data: Include detailed information on system operation, equipment programming and setup, replacement parts, and recommended maintenance procedures and intervals.
1. Include contact information for entity that will be providing contract maintenance and trouble call-back service.

H. Warranty: Submit sample of manufacturer's warranty and documentation of final executed warranty completed in Owner's name and registered with manufacturer.

I. Project Record Documents: Record actual locations of system components and installed wiring arrangements and routing.

1.06 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.

B. Installer Qualifications: Company with minimum three years documented experience with similar charging units; manufacturer's authorized installer.

C. Maintenance Contractor Qualifications: Same entity as installer.

D. Product Listing Organization Qualifications: An organization recognized by OSHA as a Nationally Recognized Testing Laboratory (NRTL) and acceptable to authorities having jurisdiction.

E. Maintain at project site a copy of each referenced document that prescribes execution requirements.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Receive, inspect, handle, and store products in accordance with manufacturer's instructions.

1.08 WARRANTY

A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.

B. Upon completion and acceptance of the contract the Electrical Contractor shall provide a one (1) workmanship warranty from the date of substantial completion.

C. The Electrical Contractor shall also provide completed Manufacturer's Warranty for the equipment and durations noted within the products section of this specification.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. OpConnect Supported Electric Vehicle Charging Units (Level 2):
   1. ABB
   2. BTC Power:
   3. ClipperCreek/Enphase - HCS-XX-N and CS-XX-N network chargers manufactured by available exclusively from OpConnect
   4. CMI
   5. Dunimas
   6. LiteOn (private labeled OpConnect)
   7. LG
   8. Samsung
   9. WallBox
   10. Substitutions: See Section 01 25 13 – Product Substitution Procedures.
   11. Source Limitations: Furnish electric vehicle charging units and accessory equipment produced by single manufacturer and obtained from single supplier.

2.02 ELECTRIC VEHICLE CHARGING UNITS

A. Provide electric vehicle charging units in compliance with NFPA 70 and including required equipment, conduit, boxes, wiring, connectors, hardware, supports, accessories, software, system programming, etc. as necessary for a complete operating system that provides functional intent indicated.

B. General Requirements:
   1. Listed and labeled as complying with UL 2594 or UL 2202.
   2. Provide personnel protection in accordance with UL 2231-1 and UL 2231-2.
   3. Enclosure Environment Type: In compliance with NEMA 250, Type 3R or Type 4, unless otherwise indicated.
   4. Service Conditions: Provide charging units suitable for operation between minus 22 and 122 degrees Fahrenheit (50 degrees Celsius) without derating.

C. Electric Vehicle Charging Unit:
   1. Electric Supply: Single phase 208 VAC, 40 A, 60 Hz.
   2. Input Cable: 2 ft with NEMA 14-50 plug.
   3. Output Cable & Connector: 25 ft cable with J1772 standard compliant connector. Provide with cable/connector support while not in use.
   4. Communication: Built in Wi-Fi connectivity (802.11 b/g/n 2.4 GHz)
   5. Display: LEDs for charging status, fault indication, and Wi-Fi connectivity.
   6. Enclosure: Minimum NEMA 3R
   7. Configuration: Single port, wall mount.
   8. Charging: AC Level 2 with SAE J1772 connector(s).
   9. Charging: DC Fast with SAE J1772 Combo connector(s).
   10. Warranty: 3-year product warranty.
   11. Software:
      a. OpConnect
         1) Support management of driver authentication, payment methods, and pricing models.
         2) Allow driver to access station availability and status.
   12. Features:
      a. Overhead cable management.
      b. Liquid crystal display (LCD) driver interface.

c. Card reader with ISO/IEC 15693-2 (vicinity card), ISO/IEC 14443-4 (proximity card), and NFC support.
d. Integral surge protection.
e. Locking holster(s).

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that field measurements are as indicated.
B. Verify that ratings of charging units are consistent with indicated requirements.
C. Verify that charging unit locations indicated are free from obstructions and meet manufacturer's minimum clearance requirements.
D. Verify that mounting surfaces are ready to receive charging units.
E. Verify that branch circuit wiring installation is completed, tested, and ready for connection to charging units.
F. Verify that conditions are satisfactory for installation prior to starting work.

3.02 INSTALLATION

A. Install in accordance with manufacturer's instructions and all code requirements.
B. Provide panel and circuit labels for all circuits servicing the electric vehicle charging station.
C. Provide setup, testing, and configuration of Wi-Fi connection per manufacturer instructions.

3.03 FIELD QUALITY CONTROL

A. See Section 01 4000 - Quality Requirements, for additional requirements.
B. Provide services of a manufacturer's authorized representative to observe installation and assist in inspection and testing. Include manufacturer's detailed testing procedures and field reports with submittals.
C. Prepare and start system in accordance with manufacturer's instructions.
D. Program system parameters according to requirements of Owner.
E. Confirm network connectivity.
F. Test system for proper operation.
G. Correct defective work, adjust for proper operation, and retest until entire system complies with Contract Documents.
H. Submit detailed reports indicating inspection and testing results and corrective actions taken.

3.04 CLEANING

A. See Section 01 7419 - Construction Waste Management and Disposal, for additional requirements.
B. Clean exposed surfaces to remove dirt, paint, or other foreign material and restore to match original factory finish.

3.05 CLOSEOUT ACTIVITIES

A. See Section 01 7800 - Closeout Submittals, for closeout submittals.
B. See Section 01 7900 - Demonstration and Training, for additional requirements.
C. Demonstration: Demonstrate proper operation of system to Owner, and correct deficiencies or make adjustments as directed.
D. Training: Train Owner's personnel on operation, adjustment, and maintenance of system.
   1. Use operation and maintenance manual as training reference, supplemented with additional training materials as required.
   2. Provide minimum of two hours of training.

3. Instructor: Manufacturer's authorized representative.
4. Location: At project site.

3.06 PROTECTION

A. Protect installed system components from subsequent construction operations.

3.07 MAINTENANCE

A. See Section 01 7000 - Execution and Closeout Requirements, for additional requirements relating to maintenance service.

B. Provide to Owner, a proposal as an alternate to the base bid, a separate maintenance contract for service and maintenance of charging units for one year from Date of Substantial Completion; Include a complete description of preventive maintenance, systematic examination, adjustment, cleaning, inspection, and testing, with a detailed schedule.

C. Provide trouble call-back service upon notification by Owner:
   1. Include allowance for call-back service during normal working hours at no extra cost to Owner.
   2. Owner will pay for call-back service outside of normal working hours on an hourly basis, based on actual time spent at site and not including travel time; include hourly rate and definition of normal working hours in maintenance contract.

END OF SECTION

SECTION 27 51 16
LIBRARY AUDIO VISUAL SYSTEM

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Applicable provisions of Division 01 – General Requirements shall govern all work under this Section.

B. This section includes furnishing and installing AV systems including speakers, controls and other equipment required for complete operating systems.
   1. Local programming and Zoom-room system for the Community Room 107.
   2. Local programming and Zoom-room system for Classroom 109.

1.02 RELATED REQUIREMENTS

A. Section 26 05 26 - Grounding and Bonding for Electrical Systems.

B. **Section 26 05 29 - Electrical Hangers and Supports**

C. **Section 26 05 33.13 - Conduit for Electrical Systems**

D. **Section 26 05 33.16 - Boxes for Electrical Systems**

E. **Section 26 05 33.23 - Surface Raceways for Electrical Systems**

F. **Section 27 00 05 - Communications Cabling**

G. **Section 27 41 00 - Professional Audio/Video Systems**

1.03 REFERENCE STANDARDS

A. NFPA 70 - National Electrical Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

1.04 SYSTEM DESCRIPTION

A. Community Room 107
   1. Provide voice lift for local meetings.
   2. Play program material from patrons' devices on overhead speakers and flat screen displays.
   3. Participate via Zoom in remote meetings using audio from overhead ceiling microphone arrays, **wireless microphones** and a local camera.
   4. Facilitate future upgrade toType 1 meetings and civic engagement.
   5. These functions shall be available from the Crestron touch-screens:
      a. Power-on flat screens
      b. Initiate Zoom meeting
      c. Select sound sources
      d. **Select device input**
      e. Select volume level

B. Classroom 109
   1. Provide voice lift for local meetings.
   2. Play program material from patrons' devices on overhead speakers and flat screen display.
   3. Participate via Zoom in remote meetings using audio from overhead ceiling microphone arrays, a wireless microphone, and local cameras.
   4. These functions shall be available from the Crestron touch-screen:
      a. Power-on flat screen
      b. Select sound source
      c. Select volume level
      d. Initiate Zoom meeting

C. Input components:
1. Community Room 107
a. Body pack microphones.
b. Handheld microphones.
c. Overhead ceiling microphone arrays and a local camera when in Zoom mode.
d. Patrons' devices via HDMI connection **or B connection**.
2. Classroom 109
a. **Bodypack** microphones.
b. Overhead ceiling microphone array and local cameras when in Zoom mode.
c. Patrons' devices via HDMI connection **or USB connection**.

1.05 SUBMITTALS

A. See Section 27 41 00 - Professional Audio/Video Systems.

1.06 QUALITY ASSURANCE

A. See Section 27 41 00 - Professional Audio/Video Systems .

B. Products: Listed, classified, and labeled as suitable for the purpose intended.

1.07 BIDDER QUALIFICATIONS

A. See Section 27 41 00 - Professional Audio/Video Systems.

PART 2 PRODUCTS

2.01 BILL OF MATERIAL - COMMUNITY ROOM 107

A. See plans including sheets T701 through T704 for materials.

B. See plans including sheets T701 through T704 for materials.

2.02 BILL OF MATERIAL - CLASSROOM 109

A. Dante enabled.

2.03 AMPLIFICATION AND CONTROL EQUIPMENT

A. Microphone Inputs: Two low impedance inputs with 600 microvolt sensitivity and noise level at least 55 dB below rated output.

B. System Frequency Response: 50 to 15,000 Hz, plus or minus 2 dB.

C. System Distortion: Less than 1.5 percent, 100 to 100,000 Hz at rated power.

D. System Output: 4 ohms 25 volts.

E. Volume Controls: One for each input and one master volume.

F. Bass Control: Plus 8 dB to minus 12 dB at 50 Hz.

G. Treble Control: Plus 8 dB to minus 12 dB at 10,000 Hz.

H. Program Selector: Provide program , listen-talk, and mode selector switches.

I. System Cabinet: Console mounted.

2.04 COMPONENTS

A. Speakers: ~~8 inch coaxial speaker with integral crossover circuit.~~**See plans.**
~~Power Rating: 20 watts.~~
~~Frequency Range: 45 to 18,000 Hz.~~
~~Sound Pressure Level: 95 dB at 3 feet with 1 watt input.~~
~~Magnet: Ceramic; 10 ounces low frequency unit; 3 ounces high frequency unit.~~
~~Dispersion: Minus 3 dB at 90 degrees, minus 5 dB at 110 degrees.~~

B. Speaker Baffles and Enclosure: **See plans.**~~Round, painted steel, with uniform perforations.~~
~~Size: 12 inch.~~

~~Finish: White.~~
~~Speaker Backbox: Insulated with sound-deadening material.~~

C. Matching Transformers: Tapped from 0.5 to 4 watts in 1 watt steps, with primary/secondary ratio to match amplifier to speaker impedances.

D. Volume Pads: Transformer type rated 10 watts.

E. Microphone Cord: 20 AWG stranded copper conductor, 600 volt insulation, rated 60 degrees C, two conductor shielded cable with rubber jacket.

2.05 WIRE AND CABLE

A. Speaker Wire and Cable: 22 AWG copper conductor, 300 volt insulation, rated 60 degrees C, paired conductors twisted together shielded and covered with a PVC jacket.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Mounting Heights: Coordinate locations of outlet boxes specified in Section 26 05 33.16 to obtain mounting heights indicated.

C. Splice cable only in accessible junction boxes or at terminal block units.

D. Make cable shields continuous at splices and connect speaker circuit shield to equipment ground only at amplifier.

E. Install input circuits in separate cables and raceways from output circuits.

F. Provide protection for exposed cables where subject to damage.

G. Use armored cable for outside speaker circuits.

H. Support cables above accessible ceilings to keep them from resting on ceiling tiles. Use spring metal clips or plastic cable ties to support cables from structure for ceiling suspension system. Include bridle rings or drive rings.

I. Use suitable cable fittings and connectors.

J. Connect reproducers to amplifier with matching transformers.

K. Ground and bond equipment and circuits in accordance with Section 26 05 26.

3.02 FIELD QUALITY CONTROL

A. See Section 27 41 00 - Professional Audio/Video Systems.

B. Adjust transformer taps for appropriate sound level.

3.03 ADJUSTING

A. Adjust devices and wall plates to be flush and level.

B. See Section 27 41 00 - Professional Audio/Video Systems.

3.04 CLOSEOUT ACTIVITIES

END OF SECTION

SECTION 27 51 23
FLAT SCREENS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Flat screen displays in various locations to display owner generated content via the local area network.

B. ~~NUC's to provide HDMI outputs for the displays.~~

C. Cabling.

D. Licenses. Provide a one-year BrightSign Network Pass for each BrightSign player.

E. ~~Install a City-furnished~~At each display, provide a Brightsign player and connect to displays.

1.02 RELATED REQUIREMENTS

A. Section 07 84 00 - Firestopping.

B. Section 26 05 19 - Low-Voltage Electrical Power Conductors and Cables.

C. Section 26 05 26 - Grounding and Bonding for Electrical Systems.

D. Section 26 05 33.13 - Condit for Electrical Systems,

E. Section 26 05 53 - Identification of Electrical Systems.

F. Section 27 00 05 - Communications Cabling

G. Section 27 41 00 - Professional Audio/Video Systems

1.03 SUBMITTALS

A. Shop Drawings: Indicate cable routing and connections.

B. Product Data: For each item of equipment.

1.04 QUALITY ASSURANCE

A. Products: Listed, classified, and labeled as suitable for the purpose intended.

B. Product Listing Organization Qualifications: An organization recognized by OSHA as a Nationally Recognized Testing Laboratory (NRTL) and acceptable to authorities having jurisdiction.

PART 2 PRODUCTS

2.01 DISPLAYS

A. Manufacturers:
1. Samsung-~~65~~55" PM-H (basis of design).
2. Sharp.
3. Sony
4. Christie
5. NEC.
6. Philips.
7. Panasonic.

B. Specifications:
1. Diagonal size: ~~65"~~55".
2. Operations hours: 24/7.
3. Resolution: 1920 x 1080 (full HD)..
4. Type: 60 Hz E-LED BLU.
5. Brightness: 500 nit.
6. Viewing angle: 178:178.
7. Contrast ratio: 4000:1.

8. Pixel pitch: 0.21 mm x 0.63 mm.
9. Display colors: (10 bit dithering) - 1.07 Billion.
10. Built-in speaker.
11. Inputs: RGB, HDMI 2.0 (2), HDCP, USB 2.0 (2).

C. Provide ~~similar for 55" displays.~~ **Samsung QMR 65 for 65" displays.**

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that surfaces are ready to receive work.

B. Verify field measurements are as indicated on drawings.

C. Verify that required utilities are available, in proper location, and ready for use.

D. Beginning of installation means installer accepts conditions.

3.02 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Wiring Method:
1. Use listed plenum rated cables in spaces used for environmental air.
2. Install wiring in conduit where required for rough-in, where required by authorities having jurisdiction, and where exposed to damage.
3. Conduit: Comply with Section 26 05 33.13.
4. Conceal all cables unless specifically indicated to be exposed.
5. Cables in the following areas may be exposed, unless otherwise indicated:
   a. Equipment closets.
   b. Within joists in areas with no ceiling.
6. Route exposed cables parallel or perpendicular to building structural members and surfaces.

C. Provide grounding and bonding in accordance with Section 26 05 26.

D. Install firestopping to preserve fire resistance rating of partitions and other elements, using materials and methods specified in Section 07 84 00.

E. Identify system wiring and components in accordance with Section 26 05 53.

F. Provide all licenses necessary for displays.

G. Provide all components necessary to interface displays with Owner's program source.

3.03 FIELD QUALITY CONTROL

A. See Section 01 45 16 - Field Quality Control Procedures for City of Madison additional requirements.

B. Perform operational test on completed installation to verify proper operation.

C. Replace equipment, components, and wiring to eliminate audible noise, clicks, pops, or hum when system is in standby or operation.

3.04 ADJUSTING

A. Adjust controls and configuration switches for operation as indicated.

3.05 DEMONSTRATION

A. Provide systems demonstration and instructions. Allow minimum of one (1) hours.

END OF SECTION

SECTION 28 46 00
FIRE DETECTION AND ALARM

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Fire alarm system design and installation, including all components, wiring, and conduit.

B. Transmitters for communication with supervising station.

C. Circuits from protected premises to supervising station, including conduit.

D. Maintenance of fire alarm system under contract for specified warranty period.

1.02 RELATED REQUIREMENTS

A. Section 07 84 00 - Firestopping: Materials and methods for work to be performed by this installer.

B. Section 08 71 00 - Door Hardware: Electrically operated locks and door holder devices to be monitored and released by fire alarm system.

C. Section 21 13 00 - Fire-Suppression Sprinkler Systems: Supervisory, alarm, and actuating devices installed in sprinkler system.

D. Section 23 33 00 - Air Duct Accessories: Smoke dampers monitored and controlled by fire alarm system.

1.03 REFERENCE STANDARDS

A. 36 CFR 1191 - Americans with Disabilities Act (ADA) Accessibility Guidelines for Buildings and Facilities; Architectural Barriers Act (ABA) Accessibility Guidelines current edition.

B. ADA Standards - 2010 ADA Standards for Accessible Design 2010.

C. IEEE C62.41.2 - IEEE Recommended Practice on Characterization of Surges in Low-Voltage (1000 V and less) AC Power Circuits 2002 (Corrigendum 2012).

D. NFPA 70 - National Electrical Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

E. NFPA 72 - National Fire Alarm and Signaling Code Most Recent Edition Cited by Referring Code or Reference Standard.

F. NFPA 76 - Standard for the Fire Protection of Telecommunications Facilities 2020.

G. UL 268 - Standard for Smoke Detectors for Fire Alarm Systems Current Edition, Including All Revisions.

1.04 SUBMITTALS

A. See Section 01 33 23 - Submittals for City of Madison required submittal procedures.

B. Proposal Documents: Submit the following with cost/time proposal:
   1. NFPA 72 "Record of Completion", filled out to the extent known at the time.
   2. Manufacturer's detailed data sheet for each control unit, initiating device, and notification appliance.
   3. Certification by Contractor that the system design will comply with Contract Documents.
   4. Proposed maintenance contract.

C. Drawings must be prepared. Using AutoCAD 2023

D. Evidence of designer qualifications.

E. Design Documents: Submit all information required for plan review and permitting by authorities having jurisdiction, including but not limited to floor plans, riser diagrams, and description of operation:
   1. Copy (if any) of list of data required by authority having jurisdiction.
   2. NFPA 72 "Record of Completion", filled out to the extent known at the time.

3. Clear and concise description of operation, with input/output matrix similar to that shown in NFPA 72 Appendix A-7-5-2.2(9), and complete listing of software required.
4. System zone boundaries and interfaces to fire safety systems.
5. Location of all components, circuits, and raceways; mark components with identifiers used in control unit programming.
6. Circuit layouts; number, size, and type of raceways and conductors; conduit fill calculations; spare capacity calculations; notification appliance circuit voltage drop calculations.
7. List of all devices on each signaling line circuit, with spare capacity indicated.
8. Manufacturer's detailed data sheet for each component, including wiring diagrams, installation instructions, and circuit length limitations.
9. Air-Sampling Smoke Detection Systems: Include air-sampling pipe network layout with sampling ports identified; include calculations demonstrating compliance with specified requirements.
10. Description of power supplies; if secondary power is by battery include calculations demonstrating adequate battery power.
11. Certification by either the manufacturer of the control unit or by the manufacturer of each other component that the components are compatible with the control unit.
12. Certification by the manufacturer of the control unit that the system design complies with Contract Documents.
13. Certification by Contractor that the system design complies with Contract Documents.

F. Evidence of installer qualifications.

G. Evidence of instructor qualifications; training lesson plan outline.

H. Evidence of maintenance contractor qualifications, if different from installer.

I. Inspection and Test Reports:
1. Submit inspection and test plan prior to closeout demonstration.
2. Submit documentation of satisfactory inspections and tests.
3. Submit NFPA 72 "Inspection and Test Form," filled out.

J. Operating and Maintenance Data: See Section 01 78 00 for additional requirements; revise and resubmit until acceptable; have one set available during closeout demonstration:
1. Complete set of specified design documents, as approved by authority having jurisdiction.
2. Additional printed set of project record documents and closeout documents, bound or filed in same manuals.
3. Contact information for firm that will be providing contract maintenance and trouble call-back service.
4. List of recommended spare parts, tools, and instruments for testing.
5. Replacement parts list with current prices, and source of supply.
6. Detailed troubleshooting guide and large scale input/output matrix.
7. Preventive maintenance, inspection, and testing schedule complying with NFPA 72; provide printed copy and computer format acceptable to Owner.
8. Detailed but easy to read explanation of procedures to be taken by non-technical administrative personnel in the event of system trouble, when routine testing is being conducted, for fire drills, and when entering into contracts for remodeling.

K. Project Record Documents: See Section 01 78 00 for additional requirements; have one set available during closeout demonstration:
1. Complete set of floor plans showing actual installed locations of components, conduit, and zones.
2. "As installed" wiring and schematic diagrams, with final terminal identifications.
3. "As programmed" operating sequences, including control events by device, updated input/output chart, and voice messages by event.

L. Closeout Documents:

1. Certification by manufacturer that the system has been installed in compliance with manufacturer's installation requirements, is complete, and is in satisfactory operating condition.
2. NFPA 72 "Record of Completion", filled out completely and signed by installer and authorized representative of authority having jurisdiction.
3. Certificate of Occupancy.
4. Maintenance contract.
5. Report on training results.

M. Maintenance Materials, Tools, and Software: Furnish the following for Owner's use in maintenance of project.
1. See Section 01 60 00 - Product Requirements, for additional provisions.
2. Furnish spare parts of same manufacturer and model as those installed; deliver in original packaging, labeled in same manner as in operating and maintenance data and place in spare parts cabinet.
3. In addition to the items in quantities indicated in PART 2, furnish the following:
   a. All tools, software, and documentation necessary to modify the fire alarm system using Owner's personnel; minimum modification capability to include addition and deletion of devices, circuits, and zones, and changes to system description, operation, and evacuation and instructional messages.
   b. One copy, on CD-ROM, of all software not resident in read-only-memory.

1.05 QUALITY ASSURANCE

A. Copies of Design Criteria Documents: Maintain at the project site for the duration of the project, bound together, an original copy of NFPA 72, the relevant portions of applicable codes, and instructions and guidelines of authorities having jurisdiction; deliver to Owner upon completion.

B. Designer Qualifications: NICET Level III or IV (3 or 4) certified fire alarm technician or registered fire protection engineer, employed by fire alarm control panel manufacturer, Contractor, or installer , with experience designing fire alarm systems in the jurisdictional area of the authorities having jurisdiction.

C. Installer Qualifications: Firm with minimum 3 years documented experience installing fire alarm systems of the specified type and providing contract maintenance service as a regular part of their business.
1. Authorized representative of control unit manufacturer; submit manufacturer's certification that installer is authorized; include name and title of manufacturer's representative making certification.
2. Installer Personnel: At least 2 years of experience installing fire alarm systems.
3. Supervisor: NICET level III or IV (3 or 4) certified fire alarm technician; furnish name and address.
4. Contract maintenance office located within 50 miles of project site.
5. Certified in the State in which the Project is located as fire alarm installer.

D. Maintenance Contractor Qualifications: Same entity as installer or different entity with specified qualifications.

E. Instructor Qualifications: Experienced in technical instruction, understanding fire alarm theory, and able to provide the required training; trained by fire alarm control unit manufacturer.

1.06 WARRANTY

A. See Section 01 77 00 - Closeout Submittals for City of Madison additional warranty requirements.

B. Provide control panel manufacturer's warranty that system components other than wire and conduit are free from defects and will remain so for 1 year after date of Substantial Completion.

C. Provide installer's warranty that the installation is free from defects and will remain so for 1 year after date of Substantial Completion.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Fire Alarm Control Units and Accessories - Basis of Design: Notifier.

B. Fire Alarm Control Units and Accessories - Other Acceptable Manufacturers:
   1. Honeywell Security & Fire Solutions/Gamewell-FCI: www.gamewell-fci.com/#sle.
   2. Honeywell Security & Fire Solutions/Fire-Lite: www.firelite.com/#sle.
   3. Honeywell Security & Fire Solutions/Notifier: www.notifier.com/#sle.
   4. Honeywell Security & Fire Solutions/Silent Knight: www.silentknight.com/#sle.
   5. Honeywell Security & Fire Solutions/Vista: www.security.honeywell.com/#sle.
   6. National Time & Signal: www.natsco.net/#sle.
   7. Potter Electric Signal Company: www.pottersignal.com/#sle.
   8. Siemens Building Technologies, Inc: www.usa.siemens.com/#sle.
   9. Simplex, a brand of Johnson Controls: www.simplex-fire.com/#sle.
   10. Edwards: www.edwardsfiresafety.com/en/us/
   11. Provide control units made by the same manufacturer.

C. Initiating Devices and Notification Appliances:
   1. Honeywell Security & Fire Solutions/Gamewell-FCI: www.gamewell-fci.com/#sle.
   2. Honeywell Security & Fire Solutions/Fire-Lite: www.firelite.com/#sle.
   3. Honeywell Security & Fire Solutions/Notifier: www.notifier.com/#sle.
   4. Honeywell Security & Fire Solutions/Silent Knight: www.silentknight.com/#sle.
   5. Honeywell Security & Fire Solutions/Vista: www.security.honeywell.com/#sle.
   6. National Time & Signal: www.natsco.net/#sle.
   7. Siemens Building Technologies, Inc: www.sbt.siemens.com/#sle.
   8. Simplex, a brand of Johnson Controls: www.simplex-fire.com/#sle.
   9. Edwards: www.edwardsfiresafety.com/en/us/
   10. Same manufacturer as control units.

D. Substitutions: ~~See Section 01 60 00 - Product Requirements~~See Section 01 25 13 – Product Substitution Procedures.
   1. For other acceptable manufacturers of control units specified, submit product data showing equivalent features and compliance with Contract Documents.
   2. For substitution of products by manufacturers not listed, submit product data showing features and certification by Contractor that the design will comply with Contract Documents.

2.02 FIRE ALARM SYSTEM

A. Fire Alarm System: Provide a new automatic fire detection and alarm system:
   1. Provide all components necessary, regardless of whether shown in Contract Documents or not.
   2. Protected Premises: Entire building shown on drawings.
   3. Comply with the following; where requirements conflict, order of precedence of requirements is as listed:
      a. ADA Standards.
      b. The requirements of the local authority having jurisdiction .
      c. Applicable local codes.
      d. Contract Documents (drawings and specifications).
      e. NFPA 72; where the word "should" is used consider that provision mandatory; where conflicts between requirements require deviation from NFPA 72, identify deviations clearly on design documents.
   4. Evacuation Alarm: Multiple smoke zones; allow for evacuation notification of any individual zone or combination of zones, in addition to general evacuation of entire premises.
   5. Voice Notification: Provide emergency voice/alarm communications with multichannel capability; digital.

6. General Evacuation Zones: Each smoke zone is considered a general evacuation zone unless otherwise indicated, with alarm notification in all zones on the same floor, on the floor above, and the floor below.

B. Supervising Stations and Fire Department Connections:
   1. Public Fire Department Notification: By on-premises supervising station.
   2. On-Premises Supervising Station: Existing proprietary station operated by Owner, located at .
   3. Means of Transmission to On-Premises Supervising Station: Directly connected noncoded system.

C. Circuits:
   1. Initiating Device Circuits (IDC): Class B, Style A.
   2. Signaling Line Circuits (SLC) Within Single Building: Class B, Style 0.5.
   3. Notification Appliance Circuits (NAC): Class B, Style W.

D. Spare Capacity:
   1. Initiating Device Circuits: Minimum 25 percent spare capacity.
   2. Notification Appliance Circuits: Minimum 25 percent spare capacity.
   3. Fire Alarm Control Units: Capable of handling all circuits utilized to capacity without requiring additional components other than plug-in control modules.

E. Power Sources:
   1. Primary: Dedicated branch circuits of the facility power distribution system.
   2. Secondary: Storage batteries.
   3. Capacity: Sufficient to operate entire system for period specified by NFPA 72.
   4. Each Computer System: Provide uninterruptible power supply (UPS).

2.03 FIRE SAFETY SYSTEMS INTERFACES

A. Supervision: Provide supervisory signals in accordance with NFPA 72 for the following:
   1. Sprinkler water control valves.
   2. Dry-pipe sprinkler system pressure.
   3. Dry-pipe sprinkler valve room low temperature.

B. Alarm: Provide alarm initiation in accordance with NFPA 72 for the following:
   1. Sprinkler water flow.
   2. Duct smoke detectors.

C. HVAC:
   1. Duct Smoke Detectors: Close dampers indicated; shut down air handlers indicated.

D. Doors:
   1. Smoke Barrier Door Magnetic Holders: Release upon activation of smoke detectors in smoke zone on either side of door, upon alarm from manual pull station on same floor, and upon sprinkler activation on same floor. Refer to Section 08 71 00.

2.04 COMPONENTS

A. General:
   1. Provide flush mounted units where installed in finish areas; in unfinished areas, surface mounted unit are acceptable.
   2. Provide legible, permanent labels for each control device, using identification used in operation and maintenance data.

B. Fire Alarm Control Units: Analog, addressable type; listed, classified, and labeled as suitable for the purpose intended.

C. Addressable Fire Alarm Control Unit - Basis of Design: Notifier.

D. Master Control Unit: As specified for Basis of Design above, or equivalent.

E. Remote Annunciators: Notifier.

F. Initiating Devices:
   1. Addressable Systems:
      a. Addressable Devices: Individually identifiable by addressable fire alarm control unit.
      b. Provide suitable addressable interface modules as indicated or as required for connection to conventional (non-addressable) devices and other components that provide a dry closure output.
   2. Manual Pull Stations: Notifier.
   3. Smoke Detectors: Notifier.
   4. Duct Smoke Detectors: Notifier.
   5. Air-Sampling Smoke Detection Systems:
      a. Design and provide smoke detection system suitable for application and coverage area indicated, consisting of smoke detector unit with aspirator/fan that continuously draws air into sensing chamber through connected sampling pipe network and associated sampling ports.
      b. Comply with NFPA 72 and list and label as complying with UL 268.
      c. Comply with applicable requirements of NFPA 76 for Very Early Warning Fire Detection (VEWFD).
      d. Detector Unit:
         1) Sensitivity: Programmable; capable of meeting NFPA 76 requirements for Very Early Warning Fire Detection (VEWFD).
         2) Smoke Detection Method: Provide detector units employing laser-based light scattering mass detection.
         3) Alarm Levels: Programmable; as indicated or as required to perform alert, pre-alarm action, and alarm functions; minimum of three.
         4) Minimum Number of Output Relays Supported: Equivalent to basis of design.
         5) Display: Provides local annunciation of detector trouble and alarm status.
      e. Sampling Pipe Network:
         1) Use manufacturer's recommended sampling pipe and fittings; plenum rated; identified in accordance with NFPA 72.
         2) Designed using manufacturer's product-specific design software or based on manufacturer's pre-engineered design suitable for the application.

G. Notification Appliances:
   1. Bells: Notifier.
      a. Provide 1 extra.
   2. Speakers: Notifer.
      a. Provide 1 extra.
   3. Strobes: Notifier.
      a. Provide 1 extra.

H. Circuit Conductors: Copper or optical fiber; provide 200 feet extra; color code and label.

I. Surge Protection: In accordance with IEEE C62.41.2 category B combination waveform and NFPA 70; except for optical fiber conductors.

J. Locks and Keys: Deliver keys to Owner.

K. Instruction Charts: Printed instruction chart for operators, showing steps to be taken when a signal is received (normal, alarm, supervisory, and trouble); easily readable from normal operator's station.
   1. Frame: Stainless steel or aluminum with polycarbonate or glass cover.
   2. Provide one for each control unit where operations are to be performed.
   3. Obtain approval of Owner prior to mounting; mount in location acceptable to Owner.
   4. Provide extra copy with operation and maintenance data submittal.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install in accordance with applicable codes, NFPA 72, NFPA 70, and Contract Documents.

B. Conceal all wiring, conduit, boxes, and supports where installed in finished areas.

C. Obtain Owner's approval of locations of devices, before installation.

D. Install instruction cards and labels.

3.02 INSPECTION AND TESTING FOR COMPLETION

A. Notify Owner 7 days prior to beginning completion inspections and tests.

B. Notify authorities having jurisdiction and comply with their requirements for scheduling inspections and tests and for observation by their personnel.

C. Provide the services of the installer's supervisor or person with equivalent qualifications to supervise inspection and testing, correction, and adjustments.

D. Prepare for testing by ensuring that all work is complete and correct; perform preliminary tests as required.

E. Provide all tools, software, and supplies required to accomplish inspection and testing.

F. Perform inspection and testing in accordance with NFPA 72 and requirements of local authorities; document each inspection and test.

G. Correct defective work, adjust for proper operation, and retest until entire system complies with Contract Documents.

H. Diagnostic Period: After successful completion of inspections and tests, Operate system in normal mode for at least 14 days without any system or equipment malfunctions.
   1. Record all system operations and malfunctions.
   2. If a malfunction occurs, start diagnostic period over after correction of malfunction.
   3. Owner will provide attendant operator personnel during diagnostic period; schedule training to allow Owner personnel to perform normal duties.
   4. At end of successful diagnostic period, fill out and submit NFPA 72 "Inspection and Testing Form."

3.03 OWNER PERSONNEL INSTRUCTION

A. Provide the following instruction to designated Owner personnel:
   1. Hands-On Instruction: On-site, using operational system.
   2. Classroom Instruction: Owner furnished classroom, on-site or at other local facility.
   3. Factory Instruction: At control unit manufacturer's training facility.

B. Administrative: One-hour session(s) covering issues necessary for non-technical administrative staff; classroom:
   1. Initial Training: 1 session pre-closeout.

C. Basic Operation: One-hour sessions for attendant personnel, security officers, and engineering staff; combination of classroom and hands-on:
   1. Initial Training: 1 session pre-closeout.
   2. Refresher Training: 1 session post-occupancy.

D. Detailed Operation: Two-hour sessions for engineering staff; assume NICET level I qualifications or equivalent; combination of classroom and hands-on:
   1. Initial Training: 1 session pre-closeout.

E. Maintenance Technicians: Detailed training for electrical technicians, on programming, maintaining, repairing, and modifying; factory training:
   1. Initial Training: One 3-day session, pre-closeout.

F. Furnish the services of instructors and teaching aids; have copies of operation and maintenance data available during instruction.

G. Provide means of evaluation of trainees suitable to type of training given; report results to Owner.

3.04 CLOSEOUT

A. Closeout Demonstration: Demonstrate proper operation of all functions to Owner.
   1. Be prepared to conduct any of the required tests.
   2. Have at least one copy of operation and maintenance data, preliminary copy of project record drawings, input/output matrix, and operator instruction chart(s) available during demonstration.
   3. Have authorized technical representative of control unit manufacturer present during demonstration.
   4. Demonstration may be combined with inspection and testing required by authority having jurisdiction; notify authority having jurisdiction in time to schedule demonstration.
   5. Repeat demonstration until successful.

B. Occupancy of the project will not occur prior to Substantial Completion.

C. Substantial Completion of the project cannot be achieved until inspection and testing is successful and:
   1. Specified diagnostic period without malfunction has been completed.
   2. Approved operating and maintenance data has been delivered.
   3. Spare parts, extra materials, and tools have been delivered.
   4. All aspects of operation have been demonstrated to Owner.
   5. Final acceptance of the fire alarm system has been given by authorities having jurisdiction.
   6. Occupancy permit has been granted.
   7. Specified pre-closeout instruction is complete.

D. Perform post-occupancy instruction within 3 months after Substantial Completion.

3.05 MAINTENANCE

A. See Section 01 77 00 - Closeout Procedures, for City of Madison additional requirements relating to maintenance service.

B. Provide to Owner, at no extra cost, a written maintenance contract for entire manufacturer's warranty period, to include the work described below.

C. Perform routine inspection, testing, and preventive maintenance required by NFPA 72, including:
   1. Maintenance of fire safety interface and supervisory devices connected to fire alarm system.
   2. Repairs required, unless due to improper use, accidents, or negligence beyond the control of the maintenance contractor.
   3. Record keeping required by NFPA 72 and authorities having jurisdiction.

D. Provide trouble call-back service upon notification by Owner:
   1. Provide on-site response within 2 hours of notification.
   2. Include allowance for call-back service during normal working hours at no extra cost to Owner.
   3. Owner will pay for call-back service outside of normal working hours on an hourly basis, based on actual time spent at site and not including travel time; include hourly rate and definition of normal working hours in maintenance contract.

E. Provide a complete description of preventive maintenance, systematic examination, adjustment, cleaning, inspection, and testing, with a detailed schedule.

F. Maintain a log at each fire alarm control unit, listing the date and time of each inspection and call-back visit, the condition of the system, nature of the trouble, correction performed, and parts replaced. Submit duplicate of each log entry to Owner's representative upon completion of site visit.

G. Comply with Owner's requirements for access to facility and security.

END OF SECTION

SECTION 32 17 23
PAVEMENT MARKINGS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Painted pavement markings.

1.02 RELATED REQUIREMENTS

A. Section 32 12 16 - Asphalt Paving.

B. Section 32 16 23 - Sidewalks.

C. Section 32 17 13 - Parking Bumpers.

D. Section 32 17 26 - Tactile Warning Surfacing.

1.03 REFERENCE STANDARDS

A. AASHTO M 237 - Standard Specification for Epoxy Resin Adhesives for Bonding Traffic Markers to Hardened Portland Cement and Asphalt Concrete 2005 (Reapproved 2019).

B. AASHTO M 247 - Standard Specification for Glass Beads Used in Pavement Markings 2013 (Reapproved 2018).

C. AASHTO M 249 - Standard Specification for White and Yellow Reflective Thermoplastic Striping Material (Solid Form) 2012 (Reapproved 2020).

D. AASHTO MP 24 - Standard Specification for Waterborne White and Yellow Traffic Paints 2015 (Reapproved 2020).

E. ASTM D4505 - Standard Specification for Preformed Retroreflective Pavement Marking Tape for Extended Service Life 2012 (Reapproved 2017).

F. ASTM E303 - Standard Test Method for Measuring Surface Frictional Properties Using the British Pendulum Tester 1993 (Reapproved 2018).

G. FHWA MUTCD - Manual on Uniform Traffic Control Devices 2009, with Editorial Revision (2022).

H. City of Madison - Standard Specifications for Public Works Construction (2025)

1.04 ADMINISTRATIVE REQUIREMENTS

A. Coordination: Coordinate the work of this section with adjoining work.

B. Preinstallation Meeting: Conduct a preinstallation meeting one week prior to the start of the work of this section; require attendance by affected installers.

1.05 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements for submittal procedures.

B. Product Data: Manufacturer's data sheets on each product to be used.

1.06 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with not less than three years of documented experience.

B. Installer Qualifications: Company specializing in performing work of the type specified and with at least three years of documented experience and approved by manufacturer.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Deliver glass beads in containers suitable for handling and strong enough to prevent loss during shipment, accompanied by batch certificate.

B. Store products in manufacturer's unopened packaging until ready for installation.

C. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

1.08 FIELD CONDITIONS

A. Do not install products under environmental conditions outside manufacturer's absolute limits.

B. Do not apply paint if temperature of surface to be painted or the atmosphere is less than 50 degrees F or more than 95 degrees F.

1.09 SEQUENCING

A. Allow new pavement surfaces to cure for a period of not less than 14 days before application of markings.

PART 2 PRODUCTS

2.01 MANUFACTURERS

2.02 ~~PAINTED THERMOPLASTIC~~PAINTED PAVEMENT MARKINGS

A. Comply with State of Wisconsin Highway Department standards.

B. Comply with City of Madison Specifications for Public Works Construction - Article 608

C. Furnish paint pavement markings confirming to WisDOT Section 646.2

D. Painted Pavement Markings: As indicated on the drawings.

PART 3 EXECUTION

3.01 PREPARATION

A. Establish survey control points for locating and dimensioning of markings.

B. Place barricades, warning signs, and flags as necessary to alert approaching traffic.

C. Clean surfaces prior to installation.

1. Remove dust, dirt, and other debris.

3.02 INSTALLATION

A. General:

1. Position pavement markings as indicated on drawings.
2. Field location adjustments require approval of Architect.

B. ~~Painted Pavement Markings:Thermoplastic~~ Painted Pavement Markings

1. Apply in accordance with manufacturer's instructions.
2. Apply in accordance with State of Wisconsin Highway Department standards.
3. Apply in accordance with City of Madison Specifications for Public Works Construction - Article 608

3.03 TOLERANCES

A. Maximum Variation From True Position: 3 inches (76 mm).

B. Maximum Offset From True Alignment: 3 inches (76 mm).

3.04 FIELD QUALITY CONTROL

A. See Section 01 40 00 - Quality Requirements for additional requirements.

B. Perform field inspection for deviations from true alignment or material irregularities.

C. If inspections indicate work does not meet specified requirements, rework and reinspect at no cost to Owner.

D. Allow the pavement marking to set at least the minimum time recommended by manufacturer.

3.05 CLOSEOUT ACTIVITIES

A. See Section 01 78 00 - Closeout Submittals for additional requirements.

3.06 PROTECTION

A. Prevent approaching traffic from crossing newly applied pavement markings.

B. Replace damaged or removed markings at no additional cost to Owner.

C. Preserve survey control points until pavement marking acceptance.

END OF SECTION

Department of Public Works
Engineering Division
James M. Wolfe, P.E., City Engineer
City-County Building, Room 115
210 Martin Luther King, Jr. Boulevard
Madison, Wisconsin 53703
Phone: (608) 266-4751
Fax: (608) 264-9275
engineering@cityofmadison.com
www.cityofmadison.com/engineering

April 2, 2025

ADDENDUM NO. 5
City of Madison, Engineering Division

CONTRACT NO. 9610
IMAGINATION CENTER AT REINDAHL PARK

This addendum is issued to modify, explain or correct the original Drawings, Specifications, or Contract Documents marked as **Imagination Center at Reindahl Park, Contract #9610, as issued on February 13, 2025** and is hereby made a part of the contract documents.

Please acknowledge this addendum on page E-1 of the contract documents and/or in Section E: Bidder's Acknowledgement on Bid Express.

Electronic version of these documents can be found on Bid Express at https://www.bidexpress.com/ and the City of Madison web site at http://www.cityofmadison.com/business/PW/contracts/openforBid.cfm

If you are unable to download plan revisions associated with the addendum, please contact the Engineering office at (608) 266-4751 to receive the material by another method.

For questions regarding this bid, contact:
Brent Pauba
PH: (608) 266-4092
Email: BPauba@CityofMadison.com
210 Martin Luther King Jr. Blvd
Room 115
Madison, WI 53703

Sincerely,

James M. Wolfe, P.E.
City Engineer

This addendum modifies the following documents:
1. **9610 Contract.pdf**

Please attach these Addendum documents to the Drawings and Project manual in your possession.

1. **GENERAL**

A. No Update

2. **BIDDER QUESTIONS AND ANSWERS**
   A. In [9610_contract.pdf, SECTION H: FEDERAL AND LOCAL CERTIFICATIONS, sub-section 2, COMPLIANCE WITH SPECIFICATIONS/SCOPE OF WORK] statement B, do you think the statement is referring to clarifications approved in addenda issued, "all areas except those where requests for clarification were approved by the City prior to Bid submission" ?
      i. **Yes**

3. **ACCEPTABLE EQUIVALENTS**
      i. No additional acceptable equivalents specified for this addendum

4. **9610 Contract**
   A. Add the following to SECTION D: SPECIAL PROVISIONS
      i. 102.1 Prequalification of Bidders - In addition to the City of Madison Standard Public Works Specifications, the attached DOA DEHCR Flexible Facilities Program 4/1/2025 communication and, State of Wisconsin Affirmative Action Plan Requirements item shall apply to prime contractors and subcontractors of any tier. See attachment ADDENDUM-5 DOA DEHCR Flexible Facilities Program 4/1/2025 communication and, State of Wisconsin Affirmative Action Plan Requirements for State of Wisconsin Affirmative Action Plan requirements.
5. **9610 Exhibit-A_drawings**
   A. No change

6. **9610 Exhibit-B_specifications**
   A. No change

7. **9610 Exhibit-C_drawing_landsForWork**
   A. No change

8. **9610 Exhibit-D_ConstructionSequenceRequirements**
   A. No change

9. **9610 Reference-1_survey_topographic**
   A. No change

10. **9610 Reference-2_survey_ALTA**
    A. No change

11. **9610 Reference-3_report_AsbestosLead**
    A. No change

12. **9610 Reference-4_report_GeotechExploration**
    A. No change

13. **9610 reference-5_drawings_existingConditions**
    A. No change

14. **9610 reference-6_form_BidSubmittalChecklist**
    A. No change

15. **9610 Proposal Page**
    A. No change

ADDENDUM-5

DOA DEHCR Flexible Facilities Program 4/1/2025 communication and,
State of Wisconsin Affirmative Action Plan Requirements

Outlook

FFP Grantee Affirmative Action Plan Exemption & Requirements

From DOA DEHCR Flexible Facilities Program <DOADEHCRFlexibleFacilitiesProgram@wisconsin.gov>
Date Tue 4/1/2025 7:31 AM
To DOA DEHCR Flexible Facilities Program <DOADEHCRFlexibleFacilitiesProgram@wisconsin.gov>

1 attachment (236 KB)
WIAffirmativeActionRequirements.pdf;

Hello FFP Grantee,

This email is to provide new guidance regarding the applicability of the Affirmative Action Plan (AAP) exemption request requirements set forth in Article 12 of the Flexible Facilities Program (FFP) grant agreement, per clarifications from the Department of Administration (DOA) State Bureau of Procurement (SBOP). While Wisconsin local municipal, county, and tribal governments are exempt from having to submit a written AAP to the State, all FFP grantees that will have any "subcontracts" for the project (i.e., the grantee's and/or subrecipient's prime contracts for construction, professional services, etc.) are required to submit the following:

1. Request for Exemption from Submitting an Affirmative Action Plan (form DOA-3024), which includes an attestation that the grantee has posted the notice explaining Wisconsin's contract compliance law (available online in [in%20English%20and%20the%20other%20in%20Spanish]English and [in%20English%20and%20the%20other%20in%20Spanish]Spanish), due within 15 days of the grant agreement being executed;
2. Request for Exemption from Submitting an Affirmative Action Plan (form DOA-3024) for each subcontractor (i.e., each prime contractor of the grantee or subrecipient) that *is exempt* from submitting a written AAP, due within 15 days of the subcontract being executed if applicable;
3. Affirmative Action Plan Data (form DOA-3784) for any subcontractor (i.e., each prime contractor of the grantee or subrecipient) that has a contract value exceeding $50,000 *and is not exempt* from submitting a written AAP, along with their Affirmative Action Plan, due within 15 days of the subcontracting being executed, if applicable;
4. Contractor's Subcontractor List (form DOA-3023) to accompany the grantee's and any subcontractor's form DOA-3024 or form DOA-3784, due within 15 days of the grantee agreement or subcontract being executed, respectively.

All forms are available on the DOA SBOP Forms website and are to be submitted to DOADEOSBOPPrograms@wisconsin.gov. Also refer to the Wisconsin Affirmative Action Requirements guide sheet attached and linked here.

FFP grantees are the "contractors" and the entities with which the grantee or subrecipient (if applicable) directly contracts are the "subcontractors" subject to these requirements. Any grantee with an executed FFP grant agreement that was executed more than 15 days ago, please submit the following to the email address above:

- Grantee's form DOA-3024 and form DOA-3023 (with a list of subcontracts executed to date) no later than as soon as possible (ASAP) or by **4/15/2025**.
- *Current* and any *future* subcontractors' form DOA-3024 (if exempt) or DOA-3078 (if not exempt) that have a contract exceeding $50,000, within **15 days of the subcontract being executed, or by 4/15/2025**, whichever date is *later.*

Please contact your assigned project representative or email the DOA SBOP at DOADEOSBOPPrograms@wisconsin.gov if you have any questions.

Department of Administration
Division of Energy, Housing and Community Resources
Bureau of Community Development
FlexibleFacilitiesProgram@wisconsin.gov

State of Wisconsin Affirmative Action Plan Requirements

Answer the following questions to determine which forms and documents must be submitted to meet the Affirmative Action Plan requirements. All documents should be submitted by email to the State Bureau of Procurement's Contract Compliance Program at DoaDeoSbopPrograms@wisconsin.gov.

To help simplify this process for you, we have noted page numbers where you can find additional instructions or sample documents from DOA-3021P Contract Compliance Program Contractor Instructions for each applicable requirement below.

In addition, every Contractor with the State of Wisconsin must post the following notices in conspicuous places which are available to employees and applicants for employment:

- Contract Compliance Law Poster *(disponible en Español)*
- Department of Workforce Development's Wisconsin Fair Employment Law Poster

If you need assistance or need help understanding the requirements, please contact the Contract Compliance Program at DoaDeoSbopPrograms@wisconsin.gov.

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1. Is the contract valued at less than $50,000.01?

a. **Yes** – you are not required to submit affirmative action documents. There is nothing further you need to do.

b. **No**, the contract is valued at $50,000.01 or more – Continue to #2.

---

2. Can you answer "Yes" to any of the following statements?

My company/organization...

- has less than fifty (50) employees as of the date the contract was awarded.
- is foreign and has a work force of less than fifty (50) employees in the United States.
- is an agency with the federal government.
- is a Wisconsin municipality.

a. **Yes** – You are exempt from having to complete an affirmative action plan. Instead, you must complete and submit the following forms by email to DoaDeoSbopPrograms@wisconsin.gov:

i. DOA-3023: Contractor's Subcontractor List *(See page 14 for instructions.)*

ii. DOA-3024: Request for Exemption from Submitting Affirmative Action Plan

b. **No** – Continue to #3.

---

3. Does your company/organization have a balanced work force?

A "balanced work force" means an equitable representation of persons with disabilities, minorities, and women in each level (job category) of a work force which approximates the percentage of persons with disabilities, minorities, and women available for jobs at each level from the relevant labor market from which the contractor recruits job applicants.

a. **Yes** – You are exempt from having to complete an affirmative action plan. Instead, you must complete and submit the following by email to DoaDeoSbopPrograms@wisconsin.gov:

i. DOA-3022: Contractor Work Force Analysis *(See pages 8-9 for instructions.)*

ii. DOA-3023: Contractor's Subcontractor List *(See page 14 for instructions.)*

iii. DOA-3024: Request for Exemption from Submitting Affirmative Action Plan

iv. Supporting labor market information

- *Go to Job Center of Wisconsin's site and scroll to bottom of page to find "Economist Downloads." Click the dropdown menu under "Affirmative Action" and choose a county, then click "Download."*

v. An affirmative action policy statement or a letter to confirm your company or organization complies with s. 16.765, Wis. Stats. and Adm 50, Wisconsin Administrative Code *(See page 7 for a sample statement.)*

b. **No** – Continue to #4.

---

4. Was your company or organization audited and deemed compliant by the U.S. Office of Federal Contract Compliance (OFCC) within the past year?

a. **Yes** – You are exempt from having to complete an affirmative action plan. Instead, you must complete and submit the following by email to DoaDeoSbopPrograms@wisconsin.gov:

i. DOA-3023: Contractor's Subcontractor List *(See page 14 for instructions.)*

ii. DOA-3024: Request for Exemption from Submitting Affirmative Action Plan

iii. A copy of the OFCC's Acceptance/Compliance letter

iv. An affirmative action policy statement or a letter to confirm your company/organization complies with s. 16.765, Wis. Stats. and Adm 50, Wisconsin Administrative Code *(See page 7 for a sample statement.)*

b. **No** – Continue to #5.

---

5. Does your company have an affirmative action plan that has been approved by a federal, state, or local government agency within the past three (3) years?

a. **Yes** – Typically, Wisconsin can accept an affirmative action plan that has been approved by other federal, state, or local governments. Complete and submit the following by email to DoaDeoSbopPrograms@wisconsin.gov:

i. A copy of a current plan approved by an agency of the federal, state, or local government

ii. A copy of the acceptance/compliance letter received from an agency of the federal, state, or local government

b. **No** – Continue to #6

---

6. If none of the above apply, you must complete and submit the following by email to DoaDeoSbopPrograms@wisconsin.gov:

a. DOA-3784: Affirmative Action Plan Contractor Data

b. DOA-3022: Contractor Work Force Analysis *(See pages 8-9 for instructions.)*

c. DOA-3023: Contractor's Subcontractor List *(See page 14 for instructions.)*

d. Must include the company/organization's equal opportunity/affirmative action policy statement regarding equal employment in affirmative action practices, or a letter confirming compliance with s. 16.765, Wis. Stats. and Adm 50, Wisconsin Administrative Code *(See page 7 for a sample statement.)*

i. Must be signed by the head of the company/organization

ii. Must be dated within the last year

e. A document outlining the goals and timetables to determine a balanced representation of female, handicapped, and minority employees in the work force. *(See page 11 for a sample.)*

f. A description of the dissemination of the policy both internally and externally. *(See page 12 for a sample.)*

g. A description of the system used to monitor the plan's implementation. *(See page 13 for a sample.)*

SECTION E: BIDDERS ACKNOWLEDGEMENT

IMAGINATION CENTER AT REINDAHL PARK
CONTRACT NO. 9610

Bidder must state a Unit Price and Total Bid for each item. The Total Bid for each item must be the product of quantity, by Unit Price. The Grand Total must be the sum of the Total Bids for the various items. In case of multiplication errors or addition errors, the Grand Total with corrected multiplication and/or addition shall determine the Grand Total bid for each contract. The Unit Price and Total Bid must be entered numerically in the spaces provided. All words and numbers shall be written in ink.

1. The undersigned having familiarized himself/herself with the Contract documents, including Advertisement for Bids, Instructions to Bidders, Form of Proposal, City of Madison Standard Specifications for Public Works Construction - 2025 Edition thereto, Form of Agreement, Form of Bond, and Addenda issued and attached to the plans and specifications on file in the office of the City Engineer, hereby proposes to provide and furnish all the labor, materials, tools, and expendable equipment necessary to perform and complete in a workmanlike manner the specified construction on this project for the City of Madison; all in accordance with the plans and specifications as prepared by the City Engineer, including Addenda Nos. 1 through 5 to the Contract, at the prices for said work as contained in this proposal. (Electronic bids submittals shall acknowledge addendum under Section E and shall not acknowledge here)
2. If awarded the Contract, we will initiate action within seven (7) days after notification or in accordance with the date specified in the contract to begin work and will proceed with diligence to bring the project to full completion within the number of work days allowed in the Contract or by the calendar date stated in the Contract.
3. The undersigned Bidder or Contractor certifies that he/she is not a party to any contract, combination in form of trust or otherwise, or conspiracy in restraint of trade or commerce or any other violation of the anti-trust laws of the State of Wisconsin or of the United States, with respect to this bid or contract or otherwise.
4. I hereby certify that I have met the Bid Bond Requirements as specified in Section 102.5. *(IF BID BOND IS USED, IT SHALL BE SUBMITTED ON THE FORMS PROVIDED BY THE CITY. FAILURE TO DO SO MAY RESULT IN REJECTION OF THE BID).*
5. I hereby certify that all statements herein are made on behalf of Corporate Contractors, Inc. (name of corporation, partnership, or person submitting bid) a corporation organized and existing under the laws of the State of Wisconsin a partnership consisting of Corporation; an individual trading as Corporate Contractors, Inc.; of the City of Beloit State of Wisconsin; that I have examined and carefully prepared this Proposal, from the plans and specifications and have checked the same in detail before submitting this Proposal; that I have fully authority to make such statements and submit this Proposal in (its, their) behalf; and that the said statements are true and correct.

SIGNATURE

President
TITLE, IF ANY

KELLY R WEST NOTARY PUBLIC STATE OF WISCONSIN

Sworn and subscribed
2nd day of October, 20 25.

Kelly R West
(Notary Public or other officer authorized to administer oaths)
My Commission Expires 04/26/25

Bidders shall not add any conditions or qualifying statements to this Proposal.

Section F: Best Value Contracting (BVC) Fillable Online Form 9610

Best Value Contracting

1. The Contractor shall indicate the non-apprenticeable trades used on this contract.

2. Madison General Ordinance (M.G.O.), 33.07(7), does provide for some exemptions from the active apprentice requirement. Apprenticeable trades are those trades considered apprenticeable by the State of Wisconsin. Please check applicable box if you are seeking an exemption.

☐ **Contractor has a total skilled workforce of four or less individuals in all apprenticeable trades combined.**

☐ **No available trade training program; The Contractor has been rejected by the only available trade training program, or there is no trade training program within 90 miles.**

☐ **Contractor is not using an apprentice due to having a journey worker on layoff status, provided the journey worker was employed by the contractor in the past six months.**

☒ **First time contractor on City of Madison Public Works contract requests a onetime exemption but intends to comply on all future contracts and is taking steps typical of a "good faith" effort.**

☐ **Contractor has been in business less than one year.**

☐ **Contractor doesn't have enough journeyman trade workers to qualify for a trade training program in that respective trade.**

☐ **An exemption is granted in accordance with a time period of a "Documented Depression" as defined by the State of Wisconsin.**

3. The Contractor shall indicate on the following section which apprenticeable trades are to be used on this contract. Compliance with active apprenticeship, to the extent required by M.G.O. 33.07(7), shall be satisfied by documentation from an applicable trade training body; an apprenticeship contract with the Wisconsin Department of Workforce Development or a similar agency in another state; or the U.S Department of Labor. This documentation is required prior to the Contractor beginning work on the project site.

☐ **The Contractor has reviewed the list and shall not use any apprenticeable trades on this project.**

LIST APPRENTICABLE TRADES (check all that apply to your work to be performed on this contract)

☑ **BRICKLAYER**

☑ **CARPENTER**

☐ **CEMENT MASON / CONCRETE FINISHER**

☐ **CEMENT MASON (HEAVY HIGHWAY)**

☐ **CONSTRUCTION CRAFT LABORER**

☐ **DATA COMMUNICATION INSTALLER**

☐ **ELECTRICIAN**

☐ **ENVIRONMENTAL SYSTEMS TECHNICIAN / HVAC SERVICE TECH/HVAC INSTALL / SERVICE**

☐ **GLAZIER**

☐ **HEAVY EQUIPMENT OPERATOR / OPERATING ENGINEER**

☐ **INSULATION WORKER (HEAT and FROST)**

☐ **IRON WORKER**

☐ **IRON WORKER (ASSEMBLER, METAL BLDGS)**

☐ PAINTER and DECORATOR

☐ PLASTERER

☐ PLUMBER

☐ RESIDENTIAL ELECTRICIAN

☐ ROOFER and WATER PROOFER

☐ SHEET METAL WORKER

☐ SPRINKLER FITTER

☐ STEAMFITTER

☐ STEAMFITTER (REFRIGERATION)

☐ STEAMFITTER (SERVICE)

☐ TAPER and FINISHER

☐ TELECOMMUNICATIONS (VOICE, DATA and VIDEO) INSTALLER-TECHNICIAN

☐ TILE SETTER

IMAGINATION CENTER AT REINDAHL PARK
CONTRACT NO. 9610

Targeted Business Enterprise Compliance Report

This information may be submitted electronically through Bid Express or submitted with bid in sealed envelope.

Cover Sheet

Prime Bidder Information

Company: Corporate Contractors, Inc.

Address: 3800 Milwaukee rd., Suite 200 Beloit, WI 53511

Telephone Number: 262-788-0083 Fax Number: _____

Contact Person/Title: Steve Ebling/Preconstruction Manager

Prime Bidder Certification

Homer Auge (Name), President (Title) of

Corporate Contractors, Inc. (Company) certify that the information contained in this TBE Compliance Report is true and correct to the best of my knowledge and belief.

Witness' Signature

Bidder's Signature

03/27/2025
Date

IMAGINATION CENTER AT REINDAHL PARK
CONTRACT NO. 9610

Targeted Business Enterprise Compliance Report

Summary Sheet

TBE Subcontractors Who Are NOT Suppliers

Name(s) of TBEs Utilized	Type of Work	% of Total Bid Amount
Par Loc	Accessories	<0.1 %
Amigo	Metal Panels	9.9 %
Angels	Roofing	2.9 %
Beson & Houle	Solar Tree	1.5 %
		%
		%
		%
		%
		%
		%
		%
		%
		%
Subtotal TBE who are NOT suppliers:		14 %

TBE Subcontractors Who Are Suppliers

Name(s) of TBEs Utilized	Type of Work	% of Total Bid Amount
		%
		%
		%
		%
		%
		%

Subtotal Contractors who are suppliers: _____ % x 0.6 = _____ % (discounted to 60%)

Total Percentage of TBE Utilization: 14 %.

SECTION B - PROPOSAL PAGE

IMAGINATION CENTER AT REINDAHL PARK

CONTRACT NO. 9610

ITEM	DESCRIPTION	ESTIMATED		TOTAL
90000	IMAGINATION CENTER AT REINDAHL PARK - NEW CONSTRUCTION (EXCLUDING ALTERNATE 1)	1.00	Lump Sum	$11,960,000
90001	ALTERNATE NO. 1: Photovoltaic Array. Provide Photovoltaic Array and all related work as described in Drawings and Specifications.		Lump Sum	$299,000

GRAND TOTAL BASE BID + ALTERNATE NO. 1 $12,259,000

NOTE: The bidder must completely fill in the base bid and the alternate(s). After the initial bid advertisement and prior to bid opening the City will establish a Construction Budget Dollar Value.

1. If any responsible bidder submits a base bid plus alternate one (1) that is below the Construction Budget Dollar Value, the City will award the contract based on the base bid plus alternate one (1).
2. If no responsible bidder submits a base bid plus alternate one (1) that is below the Construction Budget Dollar Value, the City will award the contract based on the base bid only.
3. The City shall have the right to proceed or not proceed with alternate one (1) regardless of how the bid was awarded. The City shall have the right to reject all bids regardless of the value of the bids submitted.

Corporate Contractors, Inc.

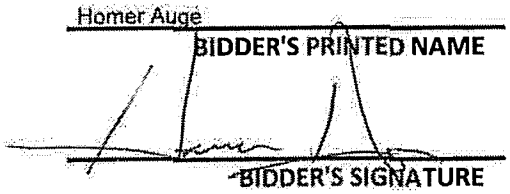
FIRM NAME

03/27/2025

DATE

Homer Auge

BIDDER'S PRINTED NAME



BIDDER'S SIGNATURE

SECTION G: BID BOND

LET ALL KNOW BY THESE DOCUMENTS PRESENTED, THAT Principal and Surety, as identified below, are held and firmly bound unto the City of Madison, (hereinafter referred to as the "Obligee"), in the sum of five percent (5%) of the amount of the total bid or bids of the Principal herein accepted by the Obligee, for the payment of which the Principal and the Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

The conditions of this obligation are such that, whereas the Principal has submitted, to the City of Madison a certain bid, including the related alternate, and substitute bids attached hereto and hereby made a part hereof, to enter into a contract in writing for the construction of:

IMAGINATION CENTER AT REINDAHL PARK
CONTRACT NO. 9610

1. If said bid is rejected by the Obligee, then this obligation shall be void.

2. If said bid is accepted by the Obligee and the Principal shall execute and deliver a contract in the form specified by the Obligee (properly completed in accordance with said bid) and shall furnish a bond for his/her faithful performance of said contract, and for the payment of all persons performing labor or furnishing materials in connection therewith, and shall in all other respects perform the agreement created by the acceptance of said bid, then this obligation shall be void.

   If said bid is accepted by the Obligee and the Principal shall fail to execute and deliver the contract and the performance and payment bond noted in 2. above executed by this Surety, or other Surety approved by the City of Madison, all within the time specified or any extension thereof, the Principal and Surety agree jointly and severally to forfeit to the Obligee as liquidated damages the sum mentioned above, it being understood that the liability of the Surety for any and all claims hereunder shall in no event exceed the sum of this obligation as stated, and it is further understood that the Principal and Surety reserve the right to recover from the Obligee that portion of the forfeited sum which exceed the actual liquidated damages incurred by the Obligee.

   The Surety, for value received, hereby stipulates and agrees that the obligations of said Surety and its bond shall be in no way impaired or affected by an extension of the time within which the Obligee may accept such bid, and said Surety does hereby waive notice of any such extension.

IN WITNESS WHEREOF, the Principal and the Surety have hereunto set their hands and seals, and such of them as are corporations have caused their corporate seals to be hereto affixed and these presents to be signed by their proper officers, on the day and year set forth below.

Seal PRINCIPAL

Corporate Contractors, Inc.
Name of Principal

By _____ 3/27/2025
Date

Homer Auge President
Name and Title

Seal SURETY

Berkley Insurance Company
Name of Surety

James I. Moore
By _____ March 27, 2025
Date

James I Moore
Name and Title James I. Moore, Attorney-In-Fact

This certifies that I have been duly licensed as an agent for the above company in Wisconsin under National Provider No. 255072 for the year 2025, and appointed as attorney in fact with authority to execute this bid bond and the payment and performance bond referred to above, which power of attorney has not been revoked.

March 27, 2027
Date

James I Moore
Agent Signature

475 Steamboat Road
Address

Greenwich, CT. 06830
City, State and Zip Code

(630) 210-0454
Telephone Number

NOTE TO SURETY & PRINCIPAL

The bid submitted which this bond guarantees shall be rejected if the following instrument is not attached to this bond:

Power of Attorney showing that the agent of Surety is currently authorized to execute bonds on behalf of the Surety, and in the amounts referenced above.

State of Illinois}

} ss.

County of DuPage}

On March 27, 2025, before me, Cynthia A. Schwinn, a Notary Public in and for said County and State, residing therein, duly commissioned and sworn, personally appeared James I. Moore known to me to be Attorney-in-Fact of Berkley Insurance Company the corporation described in and that executed the within and foregoing instrument, and known to me to be the person who executed the said instrument in behalf of the said corporation, and he duly acknowledged to me that such corporation executed the same.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal, the day and year stated in this certificate above.

My Commission Expires: May 24, 2025

Cynthia A. Schwinn

Cynthia A. Schwinn, Notary Public

Commission No. 932502

OFFICIAL SEAL
CYNTHIA A. SCHWINN
NOTARY PUBLIC, STATE OF ILLINOIS
My Commission Expires 05-24-2025

No. BI-112k-el

POWER OF ATTORNEY
BERKLEY INSURANCE COMPANY
WILMINGTON, DELAWARE

KNOW ALL MEN BY THESE PRESENTS, that BERKLEY INSURANCE COMPANY (the "Company"), a corporation duly organized and existing under the laws of the State of Delaware, having its principal office in Greenwich, CT, has made, constituted and appointed, and does by these presents make, constitute and appoint: ***James I. Moore; Stephen T. Kazmer; Kelly A. Gardner; Jennifer J. McComb; Melissa Schmidt; Tariese M. Pisciotto; Diane M. Rubright; Sinem Nava; Martin Moss; or Maria A. Gonzalez of HUB International Midwest Limited of Downers Grove, IL*** its true and lawful Attorney-in-Fact, to sign its name as surety only as delineated below and to execute, seal, acknowledge and deliver any and all bonds and undertakings, with the exception of Financial Guaranty Insurance, providing that no single obligation shall exceed **One Hundred Million and 00/100 U.S. Dollars (U.S.$100,000,000.00),** to the same extent as if such bonds had been duly executed and acknowledged by the regularly elected officers of the Company at its principal office in their own proper persons.

This Power of Attorney shall be construed and enforced in accordance with, and governed by, the laws of the State of Delaware, without giving effect to the principles of conflicts of laws thereof. This Power of Attorney is granted pursuant to the following resolutions which were duly and validly adopted at a meeting of the Board of Directors of the Company held on January 25, 2010:

RESOLVED, that, with respect to the Surety business written by Berkley Surety, the Chairman of the Board, Chief Executive Officer, President or any Vice President of the Company, in conjunction with the Secretary or any Assistant Secretary are hereby authorized to execute powers of attorney authorizing and qualifying the attorney-in-fact named therein to execute bonds, undertakings, recognizances, or other suretyship obligations on behalf of the Company, and to affix the corporate seal of the Company to powers of attorney executed pursuant hereto; and said officers may remove any such attorney-in-fact and revoke any power of attorney previously granted; and further

RESOLVED, that such power of attorney limits the acts of those named therein to the bonds, undertakings, recognizances, or other suretyship obligations specifically named therein, and they have no authority to bind the Company except in the manner and to the extent therein stated; and further

RESOLVED, that such power of attorney revokes all previous powers issued on behalf of the attorney-in-fact named; and further

RESOLVED, that the signature of any authorized officer and the seal of the Company may be affixed by facsimile to any power of attorney or certification thereof authorizing the execution and delivery of any bond, undertaking, recognizance, or other suretyship obligation of the Company; and such signature and seal when so used shall have the same force and effect as though manually affixed. The Company may continue to use for the purposes herein stated the facsimile signature of any person or persons who shall have been such officer or officers of the Company, notwithstanding the fact that they may have ceased to be such at the time when such instruments shall be issued.

IN WITNESS WHEREOF, the Company has caused these presents to be signed and attested by its appropriate officers and its corporate seal hereunto affixed this 2nd day of May , 2024 .

Attest:
By _____
Philip S. Welt
Executive Vice President & Secretary

Berkley Insurance Company
By _____
Jeffrey M. Hafter
Senior Vice President

STATE OF CONNECTICUT)
) ss:
COUNTY OF FAIRFIELD)

Sworn to before me, a Notary Public in the State of Connecticut, this 2nd day of May , 2024 , by Philip S. Welt and Jeffrey M. Hafter who are sworn to me to be the Executive Vice President and Secretary, and the Senior Vice President, respectively, of Berkley Insurance Company.

_____
Notary Public, State of Connecticut

MARIA C. RUNDBAKEN
NOTARY PUBLIC
CONNECTICUT
MY COMMISSION EXPIRES 04-30-2029

CERTIFICATE

I, the undersigned, Assistant Secretary of BERKLEY INSURANCE COMPANY, DO HEREBY CERTIFY that the foregoing is a true, correct and complete copy of the original Power of Attorney; that said Power of Attorney has not been revoked or rescinded and that the authority of the Attorney-in-Fact set forth therein, who executed the bond or undertaking to which this Power of Attorney is attached, is in full force and effect as of this date.

Given under my hand and seal of the Company, this 13th day of March , 2025 .

_____
Vincent P. Forte

SECTION I: AGREEMENT

THIS AGREEMENT made this 23rd day of April in the year Two Thousand and Twenty-Five between **CORPORATE CONTRACTORS INC.** hereinafter called the Contractor, and the City of Madison, Wisconsin, hereinafter called the City.

WHEREAS, the Common Council of the said City of Madison under the provisions of a resolution adopted **APRIL 15, 2025**, and by virtue of authority vested in the said Council, has awarded to the Contractor the work of performing certain construction.

NOW, THEREFORE, the Contractor and the City, for the consideration hereinafter named, agree as follows:

1. **Scope of Work.** The Contractor shall, perform the construction, execution and completion of the following listed complete work or improvement in full compliance with the Plans, Specifications, Standard Specifications, Supplemental Specifications, Special Provisions, this Agreement, and the Federal Funding Compliance Requirements set forth in Addendum A to this Agreement; perform all items of work covered or stipulated in the proposal; perform all altered or extra work; and shall furnish, unless otherwise provided in the contract, all materials, implements, machinery, equipment, tools, supplies, transportation, and labor necessary to the prosecution and completion of the work or improvements:

IMAGINATION CENTER AT REINDAHL PARK
CONTRACT NO. 9610

2. **Completion Date/Contract Time.** Construction work must begin within seven (7) calendar days after the date appearing on mailed written notice to do so shall have been sent to the Contractor and shall be carried on at a rate so as to secure full completion SEE SPECIAL PROVISIONS, the rate of progress and the time of completion being essential conditions of this Agreement.

3. **Contract Price.** The City shall pay to the Contractor at the times, in the manner and on the conditions set forth in said specifications, the sum of **TWELVE MILLION TWO HUNDRED FIFTY-NINE THOUSAND AND NO/100 ($12,259,000.00)** Dollars being the amount bid by such Contractor and which was awarded to him/her as provided by law.

4. **A. Non-Discrimination.** During the term of this Agreement, the Contractor agrees not to discriminate against any employee or applicant because of race, religion, marital status, age, color, sex, disability, national origin or ancestry, income level or source of income, arrest record or conviction record, less than honorable discharge, physical appearance, sexual orientation, gender identity, political beliefs, or student status. The Contractor further agrees not to discriminate against any subcontractor or person who offers to subcontract on this contract because of race, religion, color, age, disability, sex, sexual orientation, gender identity or national origin.

   B. Affirmative Action. The Contractor agrees that within thirty (30) days after the effective date of this agreement, the Contractor will provide to the City Affirmative Action Division certain workforce utilization statistics, using a form to be furnished by the City.

   If the contract is still in effect, or if the City enters into a new agreement with the Contractor, within one year after the date on which the form was required to be provided, the Contractor will provide updated workforce information using a second form, also to be furnished by the City. The second form will be submitted to the City Affirmative Action Division no later than one year after the date on which the first form was required to be provided.

   The Contractor further agrees that, for at least twelve (12) months after the effective date of this contract, it will notify the City Affirmative Action Division of each of its job openings at facilities in Dane County for which applicants not already employees of the Contractor are to be considered. The notice will include a job description, classification, qualifications and application procedures and deadlines. The Contractor agrees to interview and consider candidates referred by the

Affirmative Action Division if the candidate meets the minimum qualification standards established by the Contractor, and if the referral is timely. A referral is timely if it is received by the Contractor on or before the date started in the notice.

Articles of Agreement

Article I

The Contractor shall take affirmative action in accordance with the provisions of this contract to insure that applicants are employed, and that employees are treated during employment without regard to race, religion, color, age, marital status, disability, sex, sexual orientation, gender identity or national original and that the employer shall provide harassment free work environment for the realization of the potential of each employee. Such action shall include, but not be limited to, the following: employment, upgrading, demotion or transfer, recruitment or recruitment advertising, layoff or termination, rates of pay or other forms of compensation and selection for training including apprenticeship insofar as it is within the control of the Contractor. The Contractor agrees to post in conspicuous places available to employees and applicants notices to be provided by the City setting out the provisions of the nondiscrimination clauses in this contract.

Article II

The Contractor shall in all solicitations or advertisements for employees placed by or on behalf of the Contractors state that all qualified or qualifiable applicants will be employed without regard to race, religion, color, age, marital status, disability, sex, sexual orientation, gender identity or national origin.

Article III

The Contractor shall send to each labor union or representative of workers with which it has a collective bargaining agreement or other contract or understanding a notice to be provided by the City advising the labor union or worker's representative of the Contractor's equal employment opportunity and affirmative action commitments. Such notices shall be posted in conspicuous places available to employees and applicants for employment.

Article V

The Contractor agrees that it will comply with all provisions of the Affirmative Action Ordinance of the City of Madison, including the contract compliance requirements. The Contractor agrees to submit the model affirmative action plan for public works contractors in a form approved by the Affirmative Action Division Manager.

Article VI

The Contractor will maintain records as required by Section 39.02(9)(f) of the Madison General Ordinances and will provide the City Affirmative Action Division with access to such records and to persons who have relevant and necessary information, as provided in Section 39.02(9)(f). The City agrees to keep all such records confidential, except to the extent that public inspection is required by law.

Article VII

In the event of the Contractor's or subcontractor's failure to comply with the Equal Employment Opportunity and Affirmative Action Provisions of this contract or Section 39.03 and 39.02 of the Madison General Ordinances, it is agreed that the City at its option may do any or all of the following:

1. Cancel, terminate or suspend this Contract in whole or in part.

2. Declare the Contractor ineligible for further City contracts until the Affirmative Action requirements are met.

3. Recover on behalf of the City from the prime Contractor 0.5 percent of the contract award price for each week that such party fails or refuses to comply, in the nature of liquidated damages, but not to exceed a total of five percent (5%) of the contract price, or tenthousand dollars ($10,000), whichever is less. Under public works contracts, if a subcontractor is in noncompliance, the City may recover liquidated damages from the prime Contractor in the manner described above. The preceding sentence shall not be construed to prohibit a prime Contractor from recovering the amount of such damage from the non-complying subcontractor.

Article VIII

The Contractor shall include the above provisions of this contract in every subcontract so that such provisions will be binding upon each subcontractor. The Contractor shall take such action with respect to any subcontractor as necessary to enforce such provisions, including sanctions provided for noncompliance.

Article IX

The Contractor shall allow the maximum feasible opportunity to small business enterprises to compete for any subcontracts entered into pursuant to this contract. (In federally funded contracts the terms "DBE, MBE and WBE" shall be substituted for the term "small business" in this Article.)

5. **Substance Abuse Prevention Program Required**. Prior to commencing work on the Contract, the Contractor, and any Subcontractor, shall have in place a written program for the prevention of substance abuse among its employees as required under Wis. Stat. Sec. 103.503.

6. **Contractor Hiring Practices.**

Ban the Box - Arrest and Criminal Background Checks. (Sec. 39.08, MGO)

This provision applies to all prime contractors on contracts entered into on or after January 1, 2016, and all subcontractors who are required to meet prequalification requirements under MGO 33.07(7)(I), MGO as of the first time they seek or renew pre-qualification status on or after January 1, 2016. The City will monitor compliance of subcontractors through the pre-qualification process.

a. **Definitions.** For purposes of this section, "Arrest and Conviction Record" includes, but is not limited to, information indicating that a person has been questioned, apprehended, taken into custody or detention, held for investigation, arrested, charged with, indicted or tried for any felony, misdemeanor or other offense pursuant to any law enforcement or military authority.

"Conviction record" includes, but is not limited to, information indicating that a person has been convicted of a felony, misdemeanor or other offense, placed on probation, fined, imprisoned or paroled pursuant to any law enforcement or military authority.

"Background Check" means the process of checking an applicant's arrest and conviction record, through any means.

b. **Requirements.** For the duration of this Contract, the Contractor shall:

1. Remove from all job application forms any questions, check boxes, or other inquiries regarding an applicant's arrest and conviction record, as defined herein.

2. Refrain from asking an applicant in any manner about their arrest or conviction record until after conditional offer of employment is made to the applicant in question.

3. Refrain from conducting a formal or informal background check or making any other inquiry using any privately or publicly available means of obtaining the arrest or conviction record of an applicant until after a conditional offer of employment is made to the applicant in question.

4. Make information about this ordinance available to applicants and existing employees, and post notices in prominent locations at the workplace with information about the ordinance and complaint procedure using language provided by the City.

5. Comply with all other provisions of Sec. 39.08, MGO.

c. **Exemptions:** This section shall not apply when:

1. Hiring for a position where certain convictions or violations are a bar to employment in that position under applicable law, or

2. Hiring a position for which information about criminal or arrest record, or a background check is required by law to be performed at a time or in a manner that would otherwise be prohibited by this ordinance, including a licensed trade or profession where the licensing authority explicitly authorizes or requires the inquiry in question.

To be exempt, Contractor has the burden of demonstrating that there is an applicable law or regulation that requires the hiring practice in question, if so, the contractor is exempt from all of the requirements of this ordinance for the position(s) in question.

7. **Choice of Law and Forum Selection.** This Contract shall be governed by and construed, interpreted and enforced in accordance with the laws of the State of Wisconsin. The parties agree, for any claim or suit or other dispute relating to this Contract that cannot be mutually resolved, the venue shall be a court of competent jurisdiction within the State of Wisconsin and the parties agree to submit themselves to the jurisdiction of said court, to the exclusion of any other judicial district that may have jurisdiction over such a dispute according to any law.

8. **Counterparts, Electronic Signature and Delivery.** This Contract may be signed in counterparts, each of which shall be taken together as a whole to comprise a single document. Signatures on this Contract may be exchanged between the parties by facsimile, electronic scanned copy (.pdf) or similar technology and shall be as valid as original; and this Contract may be converted into electronic format and signed or given effect with one or more electronic signature(s) if the electronic signature(s) meets all requirements of Wis. Stat. ch. 137 or other applicable Wisconsin or Federal law. Executed copies or counterparts of this Contract may be delivered by facsimile or email and upon receipt will be deemed original and binding upon the parties hereto, whether or not a hard copy is also delivered. Copies of this Contract, fully executed, shall be as valid as an original.

IMAGINATION CENTER AT REINDAHL PARK
CONTRACT NO. 9610

IN WITNESS WHEREOF, the Contractor has hereunto set their hand and seal and the City has caused this contract to be sealed with its corporate seal and to be executed by its Mayor and City Clerk on the dates written below.

Countersigned:

CORPORATE CONTRACTORS INC.
Company Name

4/16/25
Witness Date

4/16/25
President Date

4/16/2025
Witness Date

4/16/25
Secretary Date

CITY OF MADISON

Satya Rhodes-Conway, Mayor — 04/23/2025 — Date

Michael Haas, Acting City Clerk — 04/22/2025 — Date

Provisions have been made to pay the liability that will accrue under this contract.

David P. Schmiedicke, Finance Director — 04/23/2025 — Date

Approved as to form:

for Michael Haas, City Attorney — 4/23/2025 — Date

Execution of this Agreement by City was authorized by Resolution Enactment No. RES - 25-00256 ID No. 87752, adopted by the Common Council of the City of Madison on April 15, 2025.

ADDENDUM A TO AGREEMENT: FEDERAL FUNDING COMPLIANCE REQUIREMENTS

The Contract will be funded, in part, by the Flexible Facilities Program (FFP), which is funded by the U.S. Department of Treasury's Capital Projects Fund (CPF), and administered by the State of Wisconsin Department of Administration (DOA) – Division of Energy, Housing and Community Resources (DEHCR). Due to the federal funding, Contractor agrees to comply with applicable federal requirements, and follow applicable federal guidance as applicable. The federal requirements are set forth in Attachment 1 to this Addendum A, Wisconsin Flexible Facilities Program (FFP) Project Contract Terms & Conditions. Attachment 2 to this Addendum A is the lobbying certification that must be completed as described in Section 6 of Attachment 1.

In addition to the terms set forth in Attachment 1 to this Addendum A, the following federal funding compliance requirements are incorporated into and made a part of this Agreement:

1. Notice to Contractor; Changes in Applicable Federal Law.

   a. This is an acknowledgement that FFP financial assistance will be used to fund a portion of the contract. The contractor will comply with all applicable federal law, regulations, executive orders, Department of Treasury policies, procedures, and directives.

   b. Federal requirements that apply to the City, this Contract, and any Amendments thereto may change due to changes in federal law, regulation, other requirements, or guidance, or changes in the City's underlying agreements with the United States, including information incorporated by reference and made part of any such agreements; and

   c. Applicable changes to those federal requirements will apply to this Contract and any subcontracts entered into by Contractor.

2. No Federal Government Obligation to Third Parties.

   a. Contractor acknowledges and agrees that, notwithstanding any concurrence by the Federal Government in or approval of the solicitation or award of the Contract, absent the express written consent by the Federal Government, the Federal Government is not a party to this Contract and shall not be subject to any obligations or liabilities to City, Contractor, or any other party (whether or not a party to the Contract) pertaining to any matter resulting from the Contract. Contractor agrees to include the above clause in each subcontract financed in whole or in part with Federal assistance provided by FPP. It is further agreed that the clause shall not be modified, except to identify the subcontractor who will be subject to its provisions.

3. Termination for Default.

   a. The City may, by written notice of default to the Contractor, terminate the whole or any part of this Contract if the Contractor fails to make delivery of the supplies and/or work including, but not limited to materials, equipment, and any other components provided for under this contract, or to perform the services within the time specified herein or any extension thereof; or if the Contractor fails to perform any of the other provisions of the Contract, or so fails to make progress as to endanger performance of this Contract in accordance with its terms, and in either of these two circumstances does not cure such failure within a period of 10 (ten) calendar days (or such longer period as the City may authorize in writing) after receipt of notice from the City specifying such failure.

b. In the event the City elects to waive its remedies for any breach by Contractor of any covenant, term or condition of this Contract, such waiver by the City shall not limit the City's remedies for any succeeding breach of that or of any other term, covenant, or condition of this Contract.

c. If the Contract is terminated in whole or in part for default, the City may procure, upon such terms and in such manner as the City may deem appropriate, including all articles supplies or services similar to those so terminated. The Contractor shall be liable to the City for any excess costs for such similar work including all materials, services and supplies, and shall continue the performance of this Contract to the extent not terminated under the provisions of this clause. Except with respect to defaults of subcontractors, the Contractor shall not be liable for any excess costs if the failure to perform the Contract arises out of causes beyond the control and without the fault or negligence of the Contractor. If the failure to perform is caused by the default of a subcontractor, and if such default arises out of causes beyond the control of both the Contractor and subcontractor, and without the fault or negligence of either of them, the Contractor shall not be liable for any excess costs for failure to perform, unless the materials or services to be furnished by the subcontractor were obtainable from other sources in sufficient time to permit the Contractor to meet the required delivery or performance schedule.

d. Payment for completed work including all articles delivered to and accepted by the City shall be at the Contract price. The City may withhold from amounts otherwise due the Contractor for such completed work including all articles such sum as the City determines to be necessary to protect the City against loss because of outstanding liens or claims of former lien holders.

e. If, after notice of termination of this Contract under the provisions of this clause, it is determined for any reason that the Contractor was not in default under the provisions of this clause, or that the default was excusable under the provisions of this clause, the rights and obligations of the parties shall be the same as if the notice of termination had been issued pursuant to termination for convenience of the City.

f. The rights and remedies of the City provided in this clause shall not be exclusive and are in addition to any other rights and remedies provided by law or under this Contract.

4. Termination for Convenience.

a. The performance of work under this Contract may be terminated at any time upon seven (7)-calendar days written notice to the Contractor, by the City in accordance with this clause in whole, or from time to time in part, whenever the City shall determine that such termination is in the best interest of the City. Any such termination shall be effected by delivery to the Contractor of a notice of termination specifying the extent to which performance of work under the Contract is terminated, and the date upon which such termination becomes effective.

b. After receipt of a notice of termination, and except as otherwise directed by the City, the Contractor shall: stop work under the Contract on the date and to the extent specified in the notice of termination; place no further orders or subcontracts for materials, services, or facilities, except as may be necessary for completion of such portion of the work under the Contract as is not terminated; terminate all orders and subcontracts to the extent that they relate to the performance of work terminated by the notice of termination; assign to the City in the manner, at the times, and to the extent directed by the City, all of the right, title, and interest of the Contractor under the orders and subcontracts so terminated, in which case the City shall have the right, in its discretion, to settle or pay and or all claims arising out of the termination of such orders and subcontracts; settle all outstanding liabilities and all

claims arising out of such termination of orders and subcontracts, with the approval or ratification of the City, to the extent it may require, which approval or ratification shall be final for all the purposes of this clause; transfer title to the City and deliver in the manner, at the times, and to the extent, if any, directed by the City the fabricated or unfabricated parts, work in process, completed work, supplies, and other material produced as part of, or acquired in connection with the performance of, the work terminated, and the completed or partially completed plans, drawings, information and other property which, if the Contract had been completed, would have been required to be furnished to the City; use its best efforts to sell, in the manner, at the times, to the extent, and at the price(s) directed or authorized by the City, any property of the types referred to above, provided, however, that the Contractor shall not be required to extend credit to any purchaser, and may acquire any such property under the conditions prescribed by and at a price(s) approved by the City, and provided further, that the proceeds of any such transfer or disposition shall be applied in reduction of any payments to be made by the City to the Contractor under this Contract or shall otherwise be credited to the price or cost of the work covered by this Contract or paid in such other manner as the City may direct; complete performance of such part of the work as shall not have been terminated by the notice of termination; and take such action as may be necessary, or as the City may direct, for the protection or preservation of the property related to this Contract which is in the possession of the Contractor and in which the City has or may acquire an interest.

c. The Contractor shall promptly submit its claim for payment to the City to be paid to the Contractor. Settlement of claims by the Contractor under this termination for convenience clause shall be in accordance with the provisions set forth in 48 C.F.R. Part 31.2 except that wherever the word "Government" appears it shall be deleted and the word "the City" shall be substituted in lieu thereof.

WISCONSIN FLEXIBLE FACILITIES PROGRAM (FFP) PROJECT CONTRACT TERMS & CONDITIONS

For Prime Contractors and Subcontractors

This document must be included in all construction and non-construction prime contracts and subcontracts for an FFP project.

The Flexible Facilities Program (FFP) is funded by the U.S. Department of Treasury's Capital Projects Fund (CPF), and administered by the State of Wisconsin Department of Administration (DOA) – Division of Energy, Housing and Community Resources (DEHCR). The contracting entity (the "contractor" hereafter) signing the contract to which this document is attached agrees to comply with the requirements of section 604 of the Social Security Act (the Capital Projects Fund Statute), as added by section 9901 of the American Rescue Plan Act of 2021, and guidance issued by the Treasury and DEHCR regarding the foregoing. The contractor also agrees to comply with all other applicable federal statutes, regulations, and executive orders, including but not limited to applicable statutes and regulations prohibiting discrimination in programs receiving federal financial assistance and all applicable federal environmental laws and regulations. The contractor shall provide for such compliance by other parties in any agreements it enters into with other parties relating to the FFP project.

The FFP requirements applicable to the contract award include, without limitation, the following:

1. **Uniform Cost Principles:** Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards, 2 CFR Part 200, other than such provisions as Treasury may determine are inapplicable to the FFP grant and associated contracts, and subject to such exceptions as may be otherwise provided by Treasury or DOA-DEHCR.

2. **Recipient Integrity and Performance Matters:** Recipient Integrity and Performance Matters pursuant to which the award term set forth in 2 CFR Part 200, Appendix XII to Part 200 is hereby incorporated by reference.

3. **Conflict of Interest Restrictions:** Conflict of interest restrictions and requirements in accordance with 2 CFR Part 200.112, 2 CFR Part 200.318 and 2 CFR Part 200.319(b).
   2 CFR Part 200.112. All conflicts must be disclosed by the contractor to the owner of this contract prior to contract execution, and will be reported to Treasury, as deemed appropriate, by the State of Wisconsin.
   2 CFR Part 200.318. Entities must maintain written standards of conduct covering conflicts of interest and governing the actions of its employees engaged in the selection, award, and administration of contracts. No employee, officer, agent, or board member with a real or apparent conflict of interest may participate in the selection, award, or administration of a contract supported by the Federal award. A conflict of interest includes when the employee, officer, agent, or board member, any member of their immediate family, their partner, or an organization that employs or is about to employ any of the parties indicated herein, has a financial or other interest in or a tangible personal benefit from an entity considered for a contract. An employee, officer, agent, and board member of a grantee or subrecipient may neither solicit nor accept gratuities, favors, or anything of monetary value from contractors. However, the grantee or subrecipient may set standards for situations where the financial interest is not substantial or a gift is an unsolicited item of nominal value. The grantee's or subrecipient's standards of conduct must also provide for disciplinary actions to be applied for violations by its employees, officers, agents, or board members.
   2 CFR Part 200.319(b). To ensure objective contractor performance and eliminate unfair competitive advantage, contractors that develop or draft specifications, requirements, statements of work, or invitations for bids must be excluded from competing on those procurements.

4. **SAM.gov Debarment and Suspension:** OMB Guidelines to Agencies on Governmentwide Debarment and Suspension (Non-procurement) through the System for Award Management (*SAM.gov* at *https://sam.gov/content/entity-information*), pursuant 2 CFR Part 180, including the requirement to include a term or condition in all lower tier covered transactions (contracts and subcontracts described in 2 CFR Part 180, subpart B) that the award is subject to 2 CFR Part 180 and Treasury's implementing regulation at 31 CFR Part 19.

5. **SAM.gov Records:** "Recipient Integrity and Performance Matters," pursuant to which the award term set forth in 2 CFR Part 200, Appendix XII to Part 200, hereby incorporated by reference, pertaining to entity records on *SAM.gov*.

6. **Lobbying Restrictions and Disclosure of Lobbying Activities:** The new restrictions on lobbying per 31 CFR Part 21. The contractor is to comply with lobbying certification and lobbying disclosure requirements for the FFP project. If the amount of the award under this contract is greater than $100,000.00, the contractor certifies that to the best of their knowledge and belief, that:
   (a) No Federal appropriated funds have been paid or will be paid, by or on behalf of the contractor, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
   (b) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, contractor shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions [accessed at: *https://www.ojp.gov/sites/g/files/xyckuh241/files/media/document/disclosure.pdf*].
   (c) The contractor shall require that the language of this certification be included in the contract award documents for all subawards at all tiers (including subcontracts and contracts under grants, loans, and cooperative agreements) and that all subcontractors shall certify and disclose accordingly.

   The certification in this contract is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

7. **Domestic Preference Expectation:** In accordance with the domestic preference provisions of *2 CFR Part 200.322*, the contractor agrees, to the greatest extent practicable and consistent with law, to provide a preference for the purchase, acquisition, or use of goods, products, or materials produced in the United States (including but not limited to iron, aluminum, steel, cement, and other manufactured products).

8. **Build America Buy America (BABA) Exemption (Conditional):** A general exemption has been granted by Treasury from the domestic preference requirements of *Executive Order 14005: Ensuring the Future is Made in All of America by All of America's Workers* (January 25, 2021) and the Build America Buy America Act (*2 CFR 184*, enacted as part of the Infrastructure Investment and Jobs Act on November 15, 2021) for projects funded by the Treasury's Capital Projects Fund (CPF). They are *not applicable* to FFP projects *unless* otherwise triggered by another federal funding source for the CPF-funded project, which is specified in this contract.

9. **Consideration for Small Businesses, Women-Owned, Minority-Owned, and Disabled Veteran-Owned Businesses and Labor Surplus Area Firms:** The contractor and their subcontractors (all tiers) shall take all affirmative steps to ensure small businesses, woman-owned, minority-owned and disabled veteran-owned businesses, and labor surplus area firms are considered for sources of supplies and services in accordance with 2 CFR Part 200.321 and Department policy, and as defined below:
   - **Small Business** – A business firm that matches the revenue and employment status of a small business in their industry, as specified in *13 CFR Part 121.101* and the *North American Industry Classification System (NAICS)*. Registered small businesses may be found in directories available on the *U.S. Small Business Administration website*.
   - **Minority-Owned Business Enterprise- (MBE)*** – A firm that is at least 51% owned, controlled, and actively managed by one or more members of an eligible minority group member; is a sole proprietorship, corporation, LLC, or joint ventures; is organized in a for profit basis and currently performing a useful business function; and is not held in trust. If the business is a subsidiary or affiliate, the parent company must be at least 51% owned by a minority or minority owners. Eligible racial ethnic categories include: American Indian, Asian-Indian, Asian-Pacific, Black, Eskimo or Aleut, Hispanic, and Native Hawaiian [*Wis. Stat. § 16.287(1)* and *Wis. Admin. Code §§ 84.01(29)(a-e)*].
   - **Women-Owned Business Enterprise (WBE)*** – A firm that is at least 51% owned, controlled, and actively managed by one or more women; is a sole proprietorship, corporation, LLC, or joint ventures; is organized in a for profit basis and currently performing a useful business function; and if held in trust, it must be a woman or women as the owner, beneficiary, and trustee of the trust. If the business is a subsidiary or affiliate, the parent company must be at least 51% owned by a woman or women owners.

- **Disabled Veteran-Owned Business (DVB)*** – A firm that it least 51% owned, controlled, and actively managed by one or more service-disabled veterans; is a sole proprietorship, corporation, LLC, or joint ventures; is organized in a for profit basis and currently performing a useful business function; and is not held in trust. If the business is a subsidiary or affiliate, the parent company must be at least 51% owned by a service-disabled veteran owner or service-disabled veteran owners. The headquarters must be located in Wisconsin. A disabled veteran is defined as having a Certificate of Release or Discharge from Active Duty (Form DD214); being a resident of Wisconsin; having a Disability Rating of at least 0% with the Department of Veteran's Affairs or an Armed Services Branch [*Wis. Stat. § 16.283(1)(b)* and *Wis. Admin. Code § 82.22*].
- **Labor Surplus Area Firm** – A business that operates in a "labor surplus area" as designated by the U.S. Department of Labor (USDOL). USDOL publishes a list of LSAs on a fiscal year basis on the *USDOL Labor Surplus Area website* [*https://www.dol.gov/agencies/eta/lsa*].

*A directory of MBE, WBE and DVB firms may be accessed on the *Wisconsin Supplier Diversity Program* website [*https://supplierdiversity.wi.gov/Pages/Home.aspx*].

10. **Drug-Free Workplace:** The Government-wide Requirements for Drug-Free Workplace, 31 CFR Part 20 is hereby incorporated by reference.

11. **Environmental Laws:** Generally applicable federal environmental laws and regulations, as summarized in DOA – DEHCR's *FFP Environmental Report Template*.

12. **Solid Waste Disposal Act:** Pursuant to 2 CFR Part 200.323, the contractor represents and warrants that in its performance under the Agreement, contractor shall comply with section 6002 of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act. The requirements of Section 6002 include procuring only items designated in guidelines of the Environmental Protection Agency (EPA) at 40 CFR Part 247 that contain the highest percentage of recovered materials practicable, consistent with maintaining a satisfactory level of competition, where the purchase price of the item exceeds $10,000 or the value of the quantity acquired during the preceding fiscal year exceeded $10,000; procuring solid waste management services in a manner that maximizes energy and resource recovery; and establishing an affirmative procurement program for procurement of recovered materials identified in the EPA guidelines.

13. **Clean Air Act:** If the contractor's prime contract or subcontract for the FFP project is in excess of $150,000, the contractor must comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act (42 U.S.C. §§ 7401-7671q) and the Federal Water Pollution Control Act as amended (33 U.S.C. §§ 1251-1387) and agrees to include these requirements in each subcontract exceeding $150,000 financed in whole or in part with the FFP Grant Award. Violations must be reported to the Federal awarding agency and the Regional Office of the Environmental Protection Agency (EPA).

14. **Protections for Whistleblowers:**
    (a) In accordance with 41 U.S.C. § 4712, contractor may not discharge, demote, or otherwise discriminate against an employee in reprisal for disclosing to any of the list of persons or entities provided below, information that the employee reasonably believes is evidence of gross mismanagement of a federal contract or grant, a gross waste of federal funds, an abuse of authority relating to a federal contract or grant, a substantial and specific danger to public health or safety, or a violation of law, rule, or regulation related to a federal contract (including the competition for or negotiation of a contract) or grant.

    (b) The list of persons and entities referenced in the paragraph above includes the following:

        1) A member of Congress or a representative of a committee of Congress;
        2) An Inspector General;
        3) The Government Accountability Office;
        4) A Treasury employee responsible for contract or grant oversight or management;
        5) An authorized official of the Department of Justice or other law enforcement agency;
        6) A court or grand jury; or
        7) A management official or other employee of Grantee or DOA – DEHCR, contractor, or subcontractor who has the responsibility to investigate, discover, or address misconduct.

(c) Grantee shall inform its employees in writing of the rights and remedies provided under this section, in the predominant native language of the workforce.

15. **Encouraging Seat Belt Use:** To promote increasing seat belt use in the United States and pursuant to Executive Order 13043, 62 FR 19217 (Apr. 18, 1997), contractors are encouraged to adopt and enforce on-the-job seat belt policies and programs for their employees when operating company-owned, rented or personally owned vehicles.

16. **Reducing Text Messaging While Driving:** Pursuant to Executive Order 13513, 74 FR 51225 (Oct. 6, 2009), the contractor is encouraged to adopt and enforce policies that ban text messaging while driving, and Grantee should establish workplace safety policies to decrease accidents caused by distracted drivers.

17. **Prohibition on Certain Telecommunications and Video Surveillance Services or Equipment:** The FFP funds may not be used to procure or obtain any covered telecommunication and video surveillance services or equipment as described in 2 CFR Part 200.216, including covered telecommunication and video surveillance services or equipment provided or produced by entities owned or controlled by the People's Republic of China and telecommunications equipment produced by Huawei Technologies Company or ZTE Corporation (or any subsidiary or affiliate of such entities).

18. **Publications:** Any publications produced with funds from this contract award must display the following language: "This project [is being] [was] supported, in whole or in part, by federal award number CFDA # 21.029, awarded to [name of FFP project grantee] via the Wisconsin Department of Administration by the U.S. Department of the Treasury."

19. **Assurances with Compliance with Civil Rights Requirements:** The following equal opportunity and Civil Rights compliance laws for which the associated requirements apply to FFP project contracts:
    1. Executive Order 13160
    2. Federal Coordination And Compliance Section (justice.gov)
    3. Executive Order 12250
    4. Civil Rights Division | Executive Order 12250 (justice.gov)
    5. Executive Order 13166
    6. Civil Rights Division | Executive Order 13166 (justice.gov)
    7. Title VI of the Civil Rights Act of 1964
    8. Title IX of the Education Amendments of 1972
    9. Section 504 of the Rehabilitation Act of 1973
    10. Age Discrimination Act of 1975

(a) As a condition of receipt of federal funding under this contract, the contractor provides the following assurances with respect to the fulfillment of the contract:

1) ***Title VI of the Civil Rights Act of 1964.*** The contractor will ensure its current and future compliance with Title VI of the Civil Rights Act of 1964, as amended, which prohibits exclusion from participation, denial of the benefits of, or subjection to discrimination under programs and activities receiving federal financial assistance, of any person in the United States on the ground of race, color, or national origin (42 U.S.C. § 2000d et seq.), as implemented by the Department of the Treasury Title VI regulations at 31 CFR Part 22 and other pertinent executive orders such as Executive Order 13166, directives, circulars, policies, memoranda, and/or guidance documents.
2) ***Executive Order 13166 - Access to Services for Persons with Limited English Proficiency.*** The contractor acknowledges that Executive Order 13166, "Improving Access to Services for Persons with Limited English Proficiency" [https://www.justice.gov/crt/executive-order-13166], seeks to improve access to federally assisted programs and activities for individuals who, because of national origin, have Limited English proficiency (LEP). The contractor understands that denying a person access to its programs, services, and activities because of LEP is a form of national origin discrimination prohibited under Title VI of the Civil Rights Act of 1964 and the Department of the Treasury's implementing regulations. Accordingly, contractor shall initiate reasonable steps, or comply with the Department of the Treasury's directives, to ensure that LEP persons have meaningful access to its programs, services, and activities. The contractor understands and agrees that meaningful access may entail providing language

assistance services, including oral interpretation and written translation where necessary, to ensure effective communication in the contractor's programs, services, and activities.

3) ***LEP Persons Consideration.*** The contractor agrees to consider the need for language services for LEP persons when the contractor develops applicable budgets and conducts programs, services, and activities. As a resource, the Department of the Treasury has published its LEP guidance at 70 FR 6067. For more information on taking reasonable steps to provide meaningful access for LEP persons, please visit *http://www.lep.gov.*

4) ***Civil Rights Act Contract Clause.*** The contractor acknowledges and agrees that it must require any subcontractors, successors, transferees, and assignees to comply with assurances (1)-(3). above, and agrees to incorporate the following language in every contract or agreement subject to Title VI and its regulations between contractor and its subcontractors, successors, transferees, and assignees:

> ***Civil Rights Act Subcontract Clause:***
> *The subcontractor, successor, transferee, and assignee shall comply with Title VI of the Civil Rights Act of 1964, which prohibits recipients of federal financial assistance from excluding from a program or activity, denying benefits of, or otherwise discriminating against a person on the basis of race, color, or national origin (42 U.S.C. § 2000d et seq.), as implemented by the Department of the Treasury's Title VI regulations, 31 CFR Part 22, which are herein incorporated by reference and made a part of this contract (or agreement). Title VI also includes protection to persons with "Limited English Proficiency" in any program or activity receiving federal financial assistance, 42 U.S.C. § 2000d et seq., as implemented by the Department of the Treasury's Title VI regulations, 31 CFR Part 22, and herein incorporated by reference and made a part of this contract or agreement.*

(b) The contractor shall cooperate with the owner of this contract, the FFP grantee, and the State of Wisconsin FFP in any enforcement or compliance review activities by the U.S. Department of the Treasury of the aforementioned obligations. Enforcement may include investigation, arbitration, mediation, litigation, and monitoring of any settlement agreements that may result from these actions.

20. **Equal Opportunity Contract Clause:**

41 CFR Part 60-1.4(b) **EQUAL OPPORTUNITY CLAUSE. [EO 11246, as amended by EO 11375]**
Federally assisted construction contracts.

(a) ***Law and Provisions.*** Except as otherwise provided under 41 CFR Part 60, if the contractor has been awarded a construction contract for the federally assisted FFP project, then the contractor shall comply with, and include in all construction subcontracts for the FFP project, the equal opportunity clause provided under 41 CFR Part 60-1.4(b), as listed on the pages that follow. This is required in accordance with Executive Order 11246, "Equal Employment Opportunity" (30 FR 12319, 12935, 3 CFR Part, 1964-1965 Comp., p. 339), as amended by Executive Order 11375, "Amending Executive Order 11246 Relating to Equal Employment Opportunity," and implementing regulations at 41 CFR Part 60, "Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor."

(b) ***Contract Language.*** Except as otherwise provided, the FFP grantee, grant subrecipient, each prime contractor and each subcontractor is required to agree to the terms and include the following language as a condition of any contract for the FFP project:

> The contractor signing this contract hereby agrees that it will incorporate or cause to be incorporated into any contract for construction work, or modification thereof, as defined in the regulations of the Secretary of Labor at *41 CFR Chapter 60*, which is paid for in whole or in part with funds obtained from the Federal Government or borrowed on the credit of the Federal Government pursuant to a grant, contract, loan, insurance, or guarantee, or undertaken pursuant to any Federal program involving such grant, contract, loan, insurance, or guarantee, the following equal opportunity clause:
>
> During the performance of this contract, the contractor agrees as follows:
> (1) The contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, sexual orientation, gender identity, or national origin. The contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without

regard to their race, color, religion, sex, sexual orientation, gender identity, or national origin. Such action shall include, but not be limited to the following:
Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.
(2) The contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, sexual orientation, gender identity, or national origin.
(3) The contractor will not discharge or in any other manner discriminate against any employee or applicant for employment because such employee or applicant has inquired about, discussed, or disclosed the compensation of the employee or applicant or another employee or applicant. This provision shall not apply to instances in which an employee who has access to the compensation information of other employees or applicants as a part of such employee's essential job functions discloses the compensation of such other employees or applicants to individuals who do not otherwise have access to such information, unless such disclosure is in response to a formal complaint or charge, in furtherance of an investigation, proceeding, hearing, or action, including an investigation conducted by the employer, or is consistent with the contractor's legal duty to furnish information.
(4) The contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representatives of the contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
(5) The contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.
(6) The contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the administering agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.
(7) In the event of the contractor's noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations, or orders, this contract may be canceled, terminated, or suspended in whole or in part and the contractor may be declared ineligible for further Government contracts or federally assisted construction contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.
(8) The contractor will include the portion of the sentence immediately preceding paragraph (1) and the provisions of paragraphs (1) through (8) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor.

The contractor will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for noncompliance: *Provided,* however, that in the event a contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the administering agency, the contractor may request the United States to enter into such litigation to protect the interests of the United States.

The contractor further agrees that it will be bound by the above equal opportunity clause with respect to its own employment practices when it participates in federally assisted construction work: *Provided,* That if the contractor so participating is a State or local government, the above equal opportunity clause is not applicable to any agency, instrumentality or subdivision of such government which does not participate in work on or under the contract.

The contractor agrees that it will assist and cooperate actively with the administering agency and the Secretary of Labor in obtaining the compliance of contractors and subcontractors with the equal opportunity clause and the rules, regulations, and relevant orders of the Secretary of Labor, that it will furnish the

administering agency and the Secretary of Labor such information as they may require for the supervision of such compliance, and that it will otherwise assist the administering agency in the discharge of the agency's primary responsibility for securing compliance.

The contractor further agrees that it will refrain from entering into any contract or contract modification subject to Executive Order 11246 of September 24, 1965, with a contractor debarred from, or who has not demonstrated eligibility for, Government contracts and federally assisted construction contracts pursuant to the Executive Order and will carry out such sanctions and penalties for violation of the equal opportunity clause as may be imposed upon contractors and subcontractors by the administering agency or the Secretary of Labor pursuant to Part II, Subpart D of the Executive Order.

In addition, the contractor agrees that if it fails or refuses to comply with these undertakings, the administering agency may take any or all of the following actions: Cancel, terminate, or suspend in whole or in part this grant (contract, loan, insurance, guarantee); refrain from extending any further assistance to the contractor under the program with respect to which the failure or refund occurred until satisfactory assurance of future compliance has been received from such contractor; and refer the case to the Department of Justice for appropriate legal proceedings.

(c) ***Subcontracts.*** Each nonexempt prime contractor or subcontractor shall include the equal opportunity clause in each of its nonexempt subcontracts.

(d) ***Inclusion of the equal opportunity clause by reference.*** *[This is not a provision allowable for or applicable to FFP project construction contractors and subcontractors.]*

(e) ***Incorporation by operation of the order.*** By operation of the order, the equal opportunity clause shall be considered to be a part of every contract and subcontract required by the order and the regulations in this part to include such a clause whether or not it is physically incorporated in such contracts and whether or not the contract between the agency and the contractor is written.

(f) ***Adaptation of language.*** Such necessary changes in language may be made in the equal opportunity clause as shall be appropriate to identify properly the parties and their undertakings.

[*80 FR 54975*, Sept. 11, 2015]

21. **Labor – Mechanics & Laborers.**

(a) **Contract Work Hours and Safety Standards Act (CWHSSA):** Where applicable, all contracts awarded for this project financed in whole or in part with the grant award in excess of $100,000 that involve the employment of mechanics or laborers must include a provision for compliance with 40 U.S.C. §§ 3702 and 3704, as supplemented by Department of Labor regulations (29 CFR Part 5). Under 40 U.S.C. § 3702 of the Contract Work Hours and Safety Standards Act (CWHSSA), each contractor must be required to compute the wages of every mechanic and laborer on the basis of a standard work week of 40 hours. Work in excess of the standard work week is permissible provided that the worker is compensated at a rate of not less than one and a half times the basic rate of pay for all hours worked in excess of 40 hours in the work week. The requirements of 40 U.S.C. § 3704 are applicable to construction work and provide that no laborer or mechanic must be required to work in surroundings or under working conditions which are unsanitary, hazardous or dangerous. These requirements do not apply to the purchases of supplies or materials or articles ordinarily available on the open market, or contracts for transportation or transmission of intelligence.

i. If such certification is not provided, a contractor must provide a project employment and local impact report detailing:
   - The number of contractors and sub-contractors working on the Project;
   - The number of employees on the Project hired directly and hired through a third party;
   - The wages and benefits of workers on the Project by classification; and
   - Whether those wages are at rates less than those prevailing (As determined by the U.S. Secretary of Labor in accordance with subchapter IV of chapter 31 of title 40, United States Code (commonly known as the "Davis-Bacon Act"), for the corresponding classes of laborers and mechanics employed on projects of a character similar to the contract work in the civil subdivision of the State (or the District of Columbia) in which the work is to be performed).

(b) **Davis-Bacon Act (DBA) Conditional Exemption:** Contractors and subcontractors are not subject to Davis-Bacon Act compliance requirements for the FFP project (per an exemption allowed by Treasury for projects funded by the Capital

Project Fund) *unless* DBA requirements are triggered by another funding source for the FFP project. If triggered by another funding source, the DBA requires contractors and subcontractors performing on federally funded or assisted contracts in excess of $2,000 for the construction, alteration, or repair (including painting and decorating) of public buildings or public works, to pay their laborers and mechanics employed under the contract no less than the prevailing wages and fringe benefits for corresponding work on similar projects in the area, as established by the federal wage rates published on *SAM.gov*.

(c) **Copeland "Anti-Kickback" Act (40 U.S.C. 3145) Conditional Exemption**: FFP projects are not subject to Copeland "Anti-Kickback" Act compliance requirements *unless* the project is subject to the Davis-Bacon Act and Federal wages, if triggered by another funding source to the FFP project. The Copeland Act, as supplemented by the U.S. Department of Labor (USDOL) regulations (*29 CFR Part 3, Contractors and Subcontractors on Public Building or Public Work Financed in Whole or in Part by Loans or Grants from the United States*), is only applicable to construction projects subject to the Federal wage standards (i.e., Davis-Bacon Act wage requirements). If DBA is triggered by another funding source for the FFP project, the Copeland Act is applicable. The Copeland Act provides that each contractor is prohibited from inducing, by any means, any person employed in the construction, completion, or repair of public work, to give up any part of the compensation to which he or she is otherwise entitled. The payroll reporting, monitoring, and recordkeeping specifications of *29 CFR Part 3* would apply.

(d) **Fair Labor Practices - Fair Wages, Payroll Reporting, & Monitoring Requirements:** Competitive wages and payroll documentation are required for construction laborer and mechanic job classifications. The contractor agrees to ensure workers in a laborer or mechanic job classification are paid wages and benefits in accordance with the applicable provisions summarized as follows:

1) If the Davis-Bacon Acts (DBA) is deemed to apply to this contract for the FFP project as required by another funding source other than the Flexible Facilities Program funds (which are *not* subject to DBRA compliance), then the contractor agrees to comply with all requirements of the DBA, Copeland Anti-Kickback, CWHSSA, and related laws for labor and wages.
2) If DBA is confirmed to *not* apply to this contract for the FFP project, the contractor agrees to comply with the requirement of having fair labor practices and fair wages in accordance with the following FFP labor standards:
    - If the laborer or mechanic is a member of a collective bargaining agreement, the laborer or mechanic shall be paid wages and benefits in accordance with the collective bargaining agreement.
    - If the laborer or mechanic is not a member of a collective bargaining agreement, the laborer or mechanic is entitled to wages and benefits in accordance with whichever is the higher of:
        - Their regular hourly wage and fringe benefits rate for other similar work they perform for the contractor;
        - An hourly wage rate (including cash wage plus fringe benefits rate) not less than the wage rate specified in Federal *Executive Order 14026* for work performed on or in connection with covered federal contracts, which is an hourly rate totaling $17.20 per hour as of January 1, 2024, per the *Notice of Rate Change for 2024*; increasing to $17.75 per hour starting January 1, 2025, per the *Notice of Rate Change for 2025*); and subject to an annual inflation increase in 2026.
    - Apprentices shall be compensated according to the provisions of their Federal or State recognized apprenticeship documentation.
3) The contractor agrees to provide payroll documentation for its employees and payroll documentation for its subcontractors' employees working on the project to verify fair labor practices, including providing certified payroll records to the owner of this contract no later than **seven (7) days** after the conclusion of each payroll period for all pay periods in which their employees work on the FFP project. Records are to be submitted weekly or bi-weekly, depending on the contractor's regular payroll cycle.

    In accordance with the CWHSSA recordkeeping requirements specified on the *USDOL CWHSSA guidance*, the payroll documentation will include the following:
    - Contractor/employer company name;
    - Payroll period dates;

- Employee names – for each laborer or mechanic working on the FFP project for construction (i.e., new construction, renovation, rehabilitation, expansion, demolition, and related infrastructure and equipment installation at the FFP project site)
- Each employee's unique identification (ID) number (the assigned employee ID number or last four digits of their social security number);
- Each employee's address
- Each employee's telephone number
- Each employee's job classification for work performed
- Number of hours each employee worked per day and total hours worked each week on the FFP project;
- Hourly rate of pay, including the hourly wage rate for straight-time (ST) hours (hours worked that total 40 and less during the work week) and overtime (OT) hours (hours worked over 40 in the work week);
- The total gross wages amount earned, and net wages amount paid to the employee after deductions;
- Hourly fringe benefits rates, including the hourly rate cash equivalent of each fringe benefit;
- Payroll deductions made for the pay period; and
- Additional payroll supporting documentation related to wages, fringe benefits plans and rates, records of payments made to employees and fringe benefits plans, and deductions (types, employee authorizations, etc.) on file, which must be provided upon request to the grantee, subrecipient, DOA, the U.S. Department of Treasury, and/or other state and federal agencies.

(e) **Labor Standards Records Retention.** Contractors must maintain these records during the course of the work and for a period of three (3) years after all the work on the prime contract is completed. They also must be made available to the contracting agency (including Department of Treasury and the State of Wisconsin, FFP grantee and subrecipient, if applicable) and the Department of Labor upon request. [Note: Grantees must retain all records for the FFP project, including the contracting and payroll and related records collected from contractors for seven (7) years in accordance with the FFP requirements.]

22. **Termination Clauses in Contracts:** All contracts made by the contractor and owner of this contract under a federal award, as applicable must contain the contract provisions required under 2 CFR Part 200, Appendix II to Part 200 Contract Provisions for Non-Federal Entity Contracts Under Federal Awards. Specifically, contractor must ensure that all subcontracts in excess of $10,000 address termination for cause and for convenience, including the manner by which it will be affected and the basis for settlement.

23. **Records and Inspection:** The contractor shall maintain records and financial documents sufficient to evidence compliance with the Treasury Capital Projects Fund Statute, the Uniform Guidance, this contract and the FFP. The grantee, subrecipient (if applicable), the State of Wisconsin, Treasury Office of Inspector General, the Government Accountability Office, Treasury, and their authorized representatives, shall have the right of access to records (electronic and otherwise) of the contractor related to the FFP grant in order to conduct inspections, audits or other investigations. This right also includes timely and reasonable access to the contractor's personnel for the purpose of interview and discussion related to such documents.

24. **General Compliance:** The contractor agrees to comply with the FFP, CPF Statute and the Guidance and all other applicable federal statutes, regulations, and executive orders, including but not limited to applicable statutes and regulations prohibiting discrimination in programs receiving federal financial assistance and all applicable federal environmental laws and regulations, and the contractor shall provide for such compliance in any agreements it enters into with other parties relating to the FFP project.

25. **False Statements:** The contractor understands that making false statements or claims in connection with this contract is a violation of federal law and may result in criminal, civil, or administrative sanctions, including fines, imprisonment, civil damages and penalties, debarment from participating in federal awards or contracts, and/or any other remedy available by law.

ATTACHMENT 2 to ADDENDUM A: CERTIFICATION REGARDING LOBBYING

31 CFR Part 21 – New Restrictions on Lobbying

The undersigned certifies, to the best of their knowledge and belief, that:

1. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

2. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

3. The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all contractors shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

The Contractor certifies or affirms the truthfulness and accuracy of each statement of its certification and disclosure, if any. In addition, the Contractor understands and agrees that the provisions of 31 U.S.C. Ch. 38, Administrative Remedies for False Claims and Statements, apply to this certification and disclosure, if any.

Signature of Contractor's authorized official

Date: 4/2/20

Homer Augé

(Print name of person signing above)

President

(Print title of person signing above)

Bond #0269168

SECTION J: PAYMENT AND PERFORMANCE BOND

LET ALL KNOW BY THESE DOCUMENTS PRESENTED, that we **CORPORATE CONTRACTORS INC.** as principal, and Berkley Insurance Company, 475 Steamboat Road, Greenwich, CT. 06830 Company of Delaware as surety, are held and firmly bound unto the City of Madison, Wisconsin, in the sum of **TWELVE MILLION TWO HUNDRED FIFTY-NINE THOUSAND AND NO/100** (**$12,259,000.00**) dollars, lawful money of the United States, for the payment of which sum to the City of Madison, we hereby bind ourselves and our respective executors and administrators firmly by these presents.

The condition of this Bond is such that if the above bounden shall on his/her part fully and faithfully perform all of the terms of the Contract entered into between him/herself and the City of Madison for the construction of:

IMAGINATION CENTER AT REINDAHL PARK
CONTRACT NO. 9610

in Madison, Wisconsin, and shall pay all claims for labor performed and material furnished in the prosecution of said work, and save the City harmless from all claims for damages because of negligence in the prosecution of said work, and shall save harmless the said City from all claims for compensation (under Chapter 102, Wisconsin Statutes) of employees and employees of subcontractor, then this Bond is to be void, otherwise of full force, virtue and effect.

Signed and sealed this 16th day of April, 2025

Countersigned:

CORPORATE CONTRACTORS INC.
Company Name (Principal)

Witness

President ~~Seal~~ No Seal

Secretary

Approved as to form:

Berkley Insurance Company
Surety Seal

[X] Salary Employee [X] Commission

By
Attorney-In-Fact James I. Moore

This certifies that I have been duly licensed as an agent for the above company in Wisconsin under National Producer Number 255072 for the year 2025, and appointed as attorney-in-fact with authority to execute this payment and performance bond which power of attorney has not been revoked.

April16, 2025
Date

Agent Signature James I. Moore, Attorney-In-Fact

The foregoing Bond has been approved as to form:

4/23/2025

Date

for City Attorney

State of Illinois}

} ss.

County of DuPage}

On April 16, 2025, before me, Cynthia A. Schwinn, a Notary Public in and for said County and State, residing therein, duly commissioned and sworn, personally appeared James I. Moore known to me to be Attorney-in-Fact of Berkley Insurance Company the corporation described in and that executed the within and foregoing instrument, and known to me to be the person who executed the said instrument in behalf of the said corporation, and he duly acknowledged to me that such corporation executed the same.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal, the day and year stated in this certificate above.

My Commission Expires: May 24, 2025

Cynthia A. Schwinn

Cynthia A. Schwinn, Notary Public

Commission No. 932502

No. BI-112k-el

POWER OF ATTORNEY
BERKLEY INSURANCE COMPANY
WILMINGTON, DELAWARE

KNOW ALL MEN BY THESE PRESENTS, that BERKLEY INSURANCE COMPANY (the "Company"), a corporation duly organized and existing under the laws of the State of Delaware, having its principal office in Greenwich, CT, has made, constituted and appointed, and does by these presents make, constitute and appoint: ***James I. Moore; Stephen T. Kazmer; Kelly A. Gardner; Jennifer J. McComb; Melissa Schmidt; Tariese M. Pisciotto; Diane M. Rubright; Sinem Nava; Martin Moss; or Maria A. Gonzalez of HUB International Midwest Limited of Downers Grove, IL*** its true and lawful Attorney-in-Fact, to sign its name as surety only as delineated below and to execute, seal, acknowledge and deliver any and all bonds and undertakings, with the exception of Financial Guaranty Insurance, providing that no single obligation shall exceed **One Hundred Million and 00/100 U.S. Dollars (U.S.$100,000,000.00),** to the same extent as if such bonds had been duly executed and acknowledged by the regularly elected officers of the Company at its principal office in their own proper persons.

This Power of Attorney shall be construed and enforced in accordance with, and governed by, the laws of the State of Delaware, without giving effect to the principles of conflicts of laws thereof. This Power of Attorney is granted pursuant to the following resolutions which were duly and validly adopted at a meeting of the Board of Directors of the Company held on January 25, 2010:

RESOLVED, that, with respect to the Surety business written by Berkley Surety, the Chairman of the Board, Chief Executive Officer, President or any Vice President of the Company, in conjunction with the Secretary or any Assistant Secretary are hereby authorized to execute powers of attorney authorizing and qualifying the attorney-in-fact named therein to execute bonds, undertakings, recognizances, or other suretyship obligations on behalf of the Company, and to affix the corporate seal of the Company to powers of attorney executed pursuant hereto; and said officers may remove any such attorney-in-fact and revoke any power of attorney previously granted; and further

RESOLVED, that such power of attorney limits the acts of those named therein to the bonds, undertakings, recognizances, or other suretyship obligations specifically named therein, and they have no authority to bind the Company except in the manner and to the extent therein stated; and further

RESOLVED, that such power of attorney revokes all previous powers issued on behalf of the attorney-in-fact named; and further

RESOLVED, that the signature of any authorized officer and the seal of the Company may be affixed by facsimile to any power of attorney or certification thereof authorizing the execution and delivery of any bond, undertaking, recognizance, or other suretyship obligation of the Company; and such signature and seal when so used shall have the same force and effect as though manually affixed. The Company may continue to use for the purposes herein stated the facsimile signature of any person or persons who shall have been such officer or officers of the Company, notwithstanding the fact that they may have ceased to be such at the time when such instruments shall be issued.

IN WITNESS WHEREOF, the Company has caused these presents to be signed and attested by its appropriate officers and its corporate seal hereunto affixed this 2nd day of May, 2024.

Attest:
By _____
Philip S. Welt
Executive Vice President & Secretary

Berkley Insurance Company
By _____
Jeffrey M. Hafter
Senior Vice President

STATE OF CONNECTICUT)
) ss:
COUNTY OF FAIRFIELD)

Sworn to before me, a Notary Public in the State of Connecticut, this 2nd day of May, 2024, by Philip S. Welt and Jeffrey M. Hafter who are sworn to me to be the Executive Vice President and Secretary, and the Senior Vice President, respectively, of Berkley Insurance Company.

_____
Notary Public, State of Connecticut

MARIA C. RUNDBAKEN
NOTARY PUBLIC
CONNECTICUT
MY COMMISSION EXPIRES 04-30-2020

CERTIFICATE

I, the undersigned, Assistant Secretary of BERKLEY INSURANCE COMPANY, DO HEREBY CERTIFY that the foregoing is a true, correct and complete copy of the original Power of Attorney; that said Power of Attorney has not been revoked or rescinded and that the authority of the Attorney-in-Fact set forth therein, who executed the bond or undertaking to which this Power of Attorney is attached, is in full force and effect as of this date.

Given under my hand and seal of the Company, this 16th day of April, 2025.

_____
Vincent P. Forte