$9,069,900.00

BID OF VOGEL BROS. BUILDING CO.

2024

PROPOSAL, CONTRACT, BOND AND SPECIFICATIONS

FOR

WARNER PARK COMMUNITY RECREATION CENTER EXPANSION

CONTRACT NO. 9502

PROJECT NO. 17196-51-140

MUNIS NO. 17196

IN

MADISON, DANE COUNTY, WISCONSIN

AWARDED BY THE COMMON COUNCIL
MADISON, WISCONSIN ON **AUGUST 6, 2024**

CITY ENGINEERING DIVISION
1600 EMIL STREET
MADISON, WISCONSIN 53713

https://bidexpress.com/login

WARNER PARK COMMUNITY RECREATION CENTER EXPANSION
CONTRACT NO. 9502

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EXHIBITS FOR BIDDING PURPOSES:

- EXHIBIT A – Volume 1 Architectural Drawings dated May 16, 2024
- EXHIBIT B – Volume 2 MEP Drawings dated May 16, 2024
- EXHIBIT C – Project Manual Specifications dated May 16, 2024

DOCUMENTS FOR BIDDING REFERENCE:

- REF DOC 1 – Lands for Work
- REF DOC 2 – 1998 Construction Drawings
- REF DOC 3 – Site Photos
- REF DOC 4 – Cost Estimate

This Proposal, and Agreement have
been prepared by:

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

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

JMW: as

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:	WARNER PARK COMMUNITY RECREATION CENTER EXPANSION
CONTRACT NO.:	9502
SBE GOAL	6%
BID BOND	5%
SBE PRE BID MEETING (2:00 P.M.)	Thursday June 20, 2024
PRE-BID BUILDING TOUR #1 (2:00 P.M.)	Wednesday May 29, 2024
VIRTUAL BID TALK (11:00 A.M.)	Friday May 31, 2024
PRE-BID BUILDING TOUR #2 (2:00 P.M.)	Thursday June 6, 2024
BIDDER QUESTIONS DUE	Monday June 17, 2024
PREQUALIFICATION APPLICATION DUE (2:00 P.M.)	Thursday June 20, 2024
BID SUBMISSION (2:00 P.M.)	**Thursday June 27, 2024**
BID OPEN (2:30 P.M.)	Thursday June 27, 2024
PUBLISHED IN WSJ	May 16, 23, 30 and June 6, 13, 20, 2024

SBE PRE BID MEETING: Pre-Bid Meetings are being held virtually. Advance registration is required. Visit the SBE 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 SBE 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.

VIRTUAL BID TALK: The City of Madison is hosting a virtual Bid Talk session to review the Warner Park Community Recreation Center Expansion project with interested bidders. All contractors are invited to attend the virtual meeting which will include a brief presentation of the project and a chance to ask questions. Please refer to the schedule in the table above for Bid Talk date and time.

PRE-BID BUILDING TOUR: The City of Madison is conducting two (2) Pre-Bid Building Tour sessions at the existing Warner Park Community Recreation Center, 1625 Northport Drive during the bidding period of this contract. All contractors are invited to attend a short introductory meeting, a short, guided tour of the project area, and then will be allowed to more thoroughly review the project area at their own pace. Please refer to the schedule in the table above for Building Tour dates and times.

These are the only times contractors shall be allowed access to the interior spaces of the building that are not available to the public during the Center's business hours. Contractors may review exterior public areas at any time during normal park hours and interior public spaces during the Center's regular business hours.

City staff will be in attendance to take questions related to the plans and specifications. Questions shall be recorded and responded to in the form of a published addendum.

BIDDER QUESTIONS, CLARIFICATIONS, AND REQUESTS FOR SUBSTITUTIONS:
If needed, the City Project Manager (CPM) shall publish addenda to respond to any questions, clarifications, or requests for substitutions.

- Any questions or requests for clarifications regarding plans and specifications shall be submitted directly to the City Project Manager and City Construction Manager. Responses that change the contract scope and/or schedule will be published by the CPM in the form of a published bidding addendum.

- Requests for substitutions shall be done according to Specification 00 43 25 Substitution Request (During Bidding) and other specifications as necessary. Contractors are cautioned to review all specifications and note whether substitutions for specific products will be allowed or not.
- See the contract contact information at the end of Section D-Special Provisions for contact information. All questions and/or substitution requests shall be sent via email with reference to WPCRC 9502 in the subject line.
- **The deadline for receiving all questions, clarifications, and requests for substitutions shall be as indicated in the schedule table above.**

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.

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, or John Fahrney at (608) 266-9091.

STANDARD SPECIFICATIONS

The City of Madison's Standard Specifications for Public Works Construction - 2024 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 (City of Madison form) 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. 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 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 ☐ Hydro Excavating
243 ☐ 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: SMALL BUSINESS ENTERPRISE

Instructions to Bidders
City of Madison
SBE Program Information

2 Small Business Enterprise (SBE) Program Information

2.1 Policy and Goal

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 Small Business Enterprises (SBE) maximum feasible opportunity to participate in City of Madison contracting. The bidder acknowledges that its bid has been submitted in accordance with the SBE program and is for the public's protection and welfare.

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

A bidder which achieves or exceeds the SBE goal will be in compliance with the SBE requirements of this project. In the event that the bidder is unable to achieve the SBE 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 SBE goal only those expenditures to SBEs that perform a commercially useful function. For purposes of evaluating a bidder's responsiveness to the attainment of the SBE goal, the contract participation by an SBE 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 SBE 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 SBE firm have a necessary and useful role in the transaction, of a kind for which there is a market outside the context of the SBE 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 SBE 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 SBE. A firm is eligible if it meets the definitional criteria and ownership and control requirements, as set forth in the City of Madison's SBE Program.

If the City of Madison determines that the SBE 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 SBE 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 SBE goals.

To be counted, the SBE vendor / supplier must be engaged in selling the product in question to the public. This is important in distinguishing an SBE 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 SBE 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 SBE 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 SBE 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 SBE 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 SBE 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 SBE 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 SBE by City of Madison

The Affirmative Action Division maintains a directory of SBEs 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 SBE Directory or you may access the SBE Directory online at www.cityofmadison.com/civil-rights/contract-compliance/targeted-business-enterprise-programs/targeted-business-enterprise.

All contractors, subcontractors, vendors and suppliers seeking SBE 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 at www.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 SBE eligible to be utilized towards meeting the SBE goal for this project.

2.4 Small Business Enterprise Compliance Report

2.4.1 Good Faith Efforts

Bidders shall take all necessary affirmative steps to assure that SBEs are utilized when possible and that the established SBE 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 SBE 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 SBEs to identify SBEs from which to solicit bids.

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

2.4.1.4 Referring prospective SBEs 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 SBE participation.

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

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

2.4.1.8 Contacting SBEs 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 SBE 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 SBEs 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 SBE Contact Reports (pages C-8 and C9) if applicable.

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

The Small 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 SBE 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 SBE utilization.

2.4.2.1 If the Bidder meets or exceeds the goal established for SBE utilization, the Small 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 SBE utilization, the Small 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 **SBE Contact Report,** C-8 and C-9. (A separate Contact Report must be completed for each applicable SBE 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 Small 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 SBE Requirements After Award of the Contract

The successful bidder shall identify SBE 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 SBE subcontractors, vendors and/or suppliers on the subcontractor list and the Contractor's SBE Compliance Report for SBE participation.

No change in SBE subcontractors, vendors and/or suppliers from those SBEs indicated in the SBE 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 SBE 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 SBE if available.

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

2.7 SBE Definition and Eligibility Guidelines

A Small Business Enterprise is a business concern awarded certification by the City of Madison. For the purposes of this program a Small 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 SBE, 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. SBE 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.

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

SECTION D: SPECIAL PROVISIONS

WARNER PARK COMMUNITY RECREATION CENTER EXPANSION
CONTRACT NO. 9502

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.

SECTION 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 $75,500 for a single trade contract; or equal to or greater than $369,500 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 (Attn: Alane Boutelle, 1600 Emil Street, Madison, WI 53703) prior to **12:00pm on Thursday, July 18, 2024**. Delays by the Contractor in submitting the required completed contract documents will not adjust the project completion date. Payment and Performance Bonds shall be dated no sooner than **Wednesday, July 17, 2024**.

ARTICLE 104: SCOPE OF WORK

This contract is for an expansion to the Warner Park Community Recreation Center building and site located at 1625 Northport Drive, Madison, WI. The work includes, but is not limited to, removal of some existing exterior walls, excavation for new footings and foundations, construction of a building addition, which includes a gymnasium, with new exterior walls, roofs and interior slabs. Installation of new mechanical, electrical, and plumbing systems, and interior renovations to create new restrooms and a comfort room. Site work including geothermal, landscaping, and parking lot modifications.

The scope of work 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. The Contractor shall use properly functioning equipment capable of performing the tasks required. The Contractor shall furnish workers who perform quality work and who are experienced and knowledgeable in the work proposed.

PLEASE NOTE: The Contractor will coordinate with the CPM and Center staff to maintain operation and use of the facility during construction. The City understands that areas directly adjacent to construction will be impacted and operations may need to shift temporarily. The Center plans to use the existing gymnasium and related hallway, staff offices, front entrance and lobby, and all spaces to the west of the lobby during the majority of the construction activities. The existing fitness room will remain operational as long as possible.

SECTION 104.1: LANDS FOR WORK

General outlines for the Lands for Work for this contract are represented in REF DOC 1 and generally include the area related to the addition and geothermal field. Placement of Contractor-provided security fencing, dumpsters, and other items shall be located in the area indicated as general extents and shall be reviewed by the CPM.

Vehicles may only be parked in the area indicated as the Lands for Work general extents and in the parking lot to the south of the rain garden during construction business hours. Under no circumstances shall construction vehicles or personal vehicles of construction personnel be parked on the adjacent park land.

No tobacco product use is allowed within the park.

SECTION 104.2: INTENT AND COORDINATION OF CONTRACT DOCUMENTS

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

- The City Standard Specifications for Public Works Construction, 2024 Edition
- Special Provisions including all plans and specifications as noted by the exhibits and documents listed below.

  EXHIBITS FOR BIDDING PURPOSES:

  EXHIBIT A – Volume 1 Architectural Drawings dated May 16, 2024
  EXHIBIT B – Volume 2 MEP Drawings dated May 16, 2024
  EXHIBIT C – Project Manual Specifications dated May 16, 2024

  DOCUMENTS FOR BIDDING REFERENCE:

  REF DOC 1 – Lands for Work
  REF DOC 2 – 1998 Construction Drawings
  REF DOC 3 – Site Photos
  REF DOC 4 – Cost Estimate
- All Addenda to the bidding documents.
- Any supplemental instructions, details, or specifications issued during the course of the contract.

SECTION 105.5: INSPECTION OF WORK

The Contractor shall coordinate directly with any and all regulatory agencies having jurisdiction over the licensing, permitting, and inspection of work as described in the construction documents.

All Contractors shall be familiar with Specification 01 45 16 – Field Quality Control Procedures regarding City of Madison policies and procedures for Quality Assurance and Quality Control.

SECTION 105.6: CONTRACTOR'S 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 CPM of the discrepancy prior to the "Questions and Clarifications Deadline" as noted in Section A of the bid documents.

Any Contractor who identifies such a discrepancy after the bidding process and/or after contract signing shall immediately notify the CPM in writing and request clarification on how to proceed. See Specification 01 26 13 – Request for Information (RFI).

SECTION 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 all City representatives.

SECTION 105.9: SURVEYS, POINTS, AND INSTRUCTIONS

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

SECTION 105.12: COOPERATION BY THE CONTRACTOR

Any Work outside the specified Lands for Work will need to be coordinated with CPM for City of Madison Engineering.

- Provide an anticipated work schedule including number of people, type of access, equipment, and duration. Schedule shall be supplied at least five (5) working days prior to the date access will be required.
- All tools, equipment, and materials shall be mobile and shall be moved back to the Lands for Work at the end of each workday.

All excessive noisy activities shall be coordinated and scheduled in advance with the CPM for City of Madison Engineering.

The General Contractor shall be responsible for the sequencing of the project.

The Contractor shall review all other specifications within the construction documents and Additional Reference Documents for other requirements and coordination of work associated with this contract.

Periodically there will be request for tours of the park shelter during construction by Engineering or Parks Division staff. Generally, the tours will be scheduled on one day per week (typically Friday) from 1-2 PM. Contractor shall accommodate these tour requests.

SECTION 107.2: PROTECTION AND RESTORATION OF PROPERTY
The Contractor shall be responsible for the protection and restoration of all new and existing work according to Specification 01 76 00 – PROTECTING INSTALLED CONSTRUCTION.

SECTION 108.2: PERMITS AND LICENSING
The Contractor shall be required to apply and obtain all permits or licenses that may be required by these contract documents regardless of ordinance, statute, or other regulatory requirement. The City of Madison will pay for all City of Madison required Permits.

The Contractor shall obtain and pay for permits and private utility installation fees for this project unless otherwise provided. These costs will include, but may not be limited to, gas service/meter set, electric, telephone, and water service/meter set.

The Contractor shall be responsible for compliance with all required permits including the City of Madison Erosion Control permit and the Wisconsin Department of Natural Resources WRAPP Storm Water NOI permit.

The Contractor shall be responsible for any fines issued due to non-compliance with the project permits.

SECTION 109.7: TIME OF COMPLETION
Work shall only begin after the contract is completely executed and the start work letter is received. It is anticipated that the start work letter shall be issued on or about August 12, 2024 and the pre-construction meeting and site mobilization would follow

The Contractor shall have reached a level of Substantial Completion/Certificate of Occupancy **NO LATER THAN December 31, 2025.** The total time for completion of contract shall be twelve (12) months from the actual start of onsite construction work. This shall include all minor punch list items, final inspections and all final copies of contract deliverables completed with the appropriate agency. All long lead time materials shall be ordered as needed in advance of onsite construction work in order to maintain the contracted schedule. The Contractor shall notify the City Construction Manager four (4) weeks in advance of the selected onsite construction start date.

The Contractor shall review Specifications 01 29 76 Progress Payment Procedures and 01 77 00 Closeout Procedures and be completely familiar with the progress payment milestones and definitions related to construction closeout and contract closeout.

SECTION 109.9: LIQUIDATED DAMAGES
The fixed, agreed upon, liquidated damages for failure to complete all work within the Contract Time, shall be calculated in accordance with Article 109 of Standard Specifications, per working day.

NON STANDARD BID ITEMS

BID ITEM 90000 – BASE BID

DESCRIPTION: The BASE BID shall include the complete installation of all building, site, and utility components; the accepted testing, and commissioning of all systems; and the completion, and turn-in of all deliverables as outlined in the plans and specifications. Exclude BID ITEM 90001 – ALTERNATE 1 AND BID ITEM 90002 – ALTERNATE 2

METHOD OF MEASUREMENT: The BASE BID shall be measured as Lump Sum of the required construction and installations described in the plans and specifications. Partial Payments shall be requested as indicated in Specifications 01 29 73 - Schedule of Values and 01 29 76 – Progress Payment Procedures.

BASIS OF PAYMENT: The BASE BID shall be paid at the contract unit price. Partial payments shall be reviewed and authorized as describe in the above referenced specifications.

BID ITEM 90001 – ALTERNATE 1

DESCRIPTION: ALTERNATE 1: Provide all work to furnish and install the roof mounted solar photovoltaic system as shown on Drawing Sheet(s) A201, E601 and in Specification section 26 31 00. Exclude BID ITEM 90000 – BASE BID AND BID ITEM 90002 – ALTERNATE 2

METHOD OF MEASUREMENT: The ALTERNATE 1 shall be measured as Lump Sum of the required construction and installations described in the plans and specifications. Partial Payments shall be requested as indicated in Specifications 01 29 73 - Schedule of Values and 01 29 76 – Progress Payment Procedures.

BASIS OF PAYMENT: The ALTERNATE 1 shall be paid at the contract unit price. Partial payments shall be reviewed and authorized as describe in the above referenced specifications.

BID ITEM 90002 – ALTERNATE 2

DESCRIPTION: ALTERNATE 2: Provide all work to provide building heating load entirely through heat recovery chiller and relying on the existing boiler as emergency backup as shown on Drawing Sheet(s) M502, M800, MS200 and E800. Exclude BID ITEM 90000 – BASE BID AND BID ITEM 90001 – ALTERNATE 1

METHOD OF MEASUREMENT: The ALTERNATE 2 shall be measured as Lump Sum of the required construction and installations described in the plans and specifications. Partial Payments shall be requested as indicated in Specifications 01 29 73 - Schedule of Values and 01 29 76 – Progress Payment Procedures.

BASIS OF PAYMENT: The ALTERNATE 2 shall be paid at the contract unit price. Partial payments shall be reviewed and authorized as describe in the above referenced specifications.

POINTS OF CONTACT

Contractors with questions and concerns regarding the bidding documents shall contact the Project Architect and/or City Project Managers by e-mail so we may properly log, track and respond to all issues. Please reference WPCRC 9502 in the subject line of the email.

The Project Architect for this contract is:

Drew Kemp-Baird, RA
Engberg Anderson
305 West Washington Ave
Madison, WI 53703
PH: (608) 250-0100
Email: drewkb@engberganderson.com

The City Construction Manager for this contract is:

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

The Project Manager for City Engineering Division for this contract is:

Amy Scanlon
210 Martin Luther King Jr Blvd
Madison, WI 53703
PH: (608) 267-0743
Email: ascanlon@cityofmadison.com

The Project Manager for City Parks Division for this contract is:

Mike Sturm
330 E. Lakeside St
Madison, WI 53715
PH: (608) 267-4921
Email: msturm@cityofmadison.com

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

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

Deputy Division Manager
Kathleen M. Cryan

Principal Engineer 2
John S. Fahrney, P.E.
Janet Schmidt, P.E.

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

Financial Manager
Steven B. Danner-Rivers

MAY 28, 2024

ADDENDUM NO. 01

CONTRACT NO. 9502
WARNER PARK COMMUNITY RECREATION CENTER EXPANSION

This addendum is issued to modify, explain or correct the original Drawings, Specifications, or Contract Documents marked as ***Warner Park Community Recreation Center Expansion, City of Madison, Contract #9502, as issued on May 17, 2024*** and is hereby made a part of the contract documents.

Please attach these Addendum documents to the Bid Proposal document, Volume 1 Architectural Drawings (Exhibit A) and Project Manual (Exhibit C) in your possession.

BID PROPOSAL DOCUMENT

1. Page A-1

VOLUME 1 ARCHITECTURAL DRAWINGS (EXHIBIT A)

2. Structural Drawings including S001, S002, S200, S201, S800, S801, S802, S803

PROJECT MANUAL SPECIFICATIONS (EXHIBIT C)

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Please acknowledge this addendum on page E1 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, please contact:

Drew Kemp-Baird, RA
Engberg Anderson
PH: (608) 250-0100
Email: drewkb@engberganderson.com

Maria Delestre
PH: (608) 243-5891
Email: mdelestre@cityofmadison.com

Amy Scanlon
PH: (608) 267-0743
Email: ascanlon@cityofmadison.com

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:	WARNER PARK COMMUNITY RECREATION CENTER EXPANSION
CONTRACT NO.:	9502
SBE GOAL	6%
BID BOND	5%
SBE PRE BID MEETING (2:00 P.M.)	Thursday June 20, 2024
PRE-BID BUILDING TOUR #1 (2:00 P.M.)	Wednesday May 29, 2024
VIRTUAL BID TALK (11:00 A.M.)	Friday May 31, 2024
PRE-BID BUILDING TOUR #2 (2:00 P.M.)	Thursday June 6, 2024
BIDDER QUESTIONS DUE	Thursday June 17, 2024
PREQUALIFICATION APPLICATION DUE (2:00 P.M.)	Thursday June 20, 2024
BID SUBMISSION (2:00 P.M.)	**Thursday June 27, 2024**
BID OPEN (2:30 P.M.)	Thursday June 27, 2024
PUBLISHED IN WSJ	May 16, 23, 30 and June 6, 13, 20, 2024

SBE PRE BID MEETING: Pre-Bid Meetings are being held virtually. Advance registration is required. Visit the SBE 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 SBE 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.

VIRTUAL BID TALK: The City of Madison is hosting a virtual Bid Talk session to review the Warner Park Community Recreation Center Expansion project with interested bidders. All contractors are invited to attend the virtual meeting which will include a brief presentation of the project and a chance to ask questions. Please refer to the schedule in the table above for Bid Talk date and time. Prior registration is required. Please register by visiting the project web page at https://www.cityofmadison.com/engineering/projects/warner-park-community-recreation-center-expansion

PRE-BID BUILDING TOUR: The City of Madison is conducting two (2) Pre-Bid Building Tour sessions at the existing Warner Park Community Recreation Center, 1625 Northport Drive during the bidding period of this contract. All contractors are invited to attend a short introductory meeting, a short, guided tour of the project area, and then will be allowed to more thoroughly review the project area at their own pace. Please refer to the schedule in the table above for Building Tour dates and times.

These are the only times contractors shall be allowed access to the interior spaces of the building that are not available to the public during the Center's business hours. Contractors may review exterior public areas at any time during normal park hours and interior public spaces during the Center's regular business hours.

City staff will be in attendance to take questions related to the plans and specifications. Questions shall be recorded and responded to in the form of a published addendum.

BIDDER QUESTIONS, CLARIFICATIONS, AND REQUESTS FOR SUBSTITUTIONS:
If needed, the City Project Manager (CPM) shall publish addenda to respond to any questions, clarifications, or requests for substitutions.

- Any questions or requests for clarifications regarding plans and specifications shall be submitted directly to the City Project Manager and City Construction Manager. Responses that change the contract scope and/or schedule will be published by the CPM in the form of a published bidding addendum.

WARNER PARK COMMUNITY RECREATION CENTER EXPANSION

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SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes (all items might not apply – see below and drawings):
   1. Demolition and removal of selected portions of building or structure.
   2. Demolition and removal of selected site elements.
   3. Salvage of existing items to be reused or recycled.

1.2 MATERIALS OWNERSHIP

A. Unless otherwise indicated, demolition waste becomes property of Contractor.

B. Historic items, relics, antiques, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, and other items of interest or value to Owner that may be uncovered during demolition remain the property of Owner.
   1. Carefully salvage in a manner to prevent damage and promptly return to Owner.

1.3 PREINSTALLATION MEETINGS

A. Predemolition Conference: Conduct conference at Project site.

1.4 INFORMATIONAL SUBMITTALS

A. Engineering Survey: Submit engineering survey of condition of building.

B. Proposed Protection Measures: Submit report, including Drawings, that indicates the measures proposed for protecting individuals and property, for environmental protection, for dust control and, for noise control. Indicate proposed locations and construction of barriers.

C. Schedule of selective demolition activities with starting and ending dates for each activity.

D. Predemolition photographs or video.

E. Statement of Refrigerant Recovery if any noted to be removed: Signed by refrigerant recovery technician.

1.5 CLOSEOUT SUBMITTALS

A. Inventory of items that have been removed and salvaged.

1.6 QUALITY ASSURANCE

A. Refrigerant Recovery Technician Qualifications: Certified by an EPA-approved certification program.

1.7 FIELD CONDITIONS

A. Owner will occupy portions of building immediately adjacent to selective demolition area. Conduct selective demolition so Owner's operations will not be disrupted.

B. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.
   1. Before selective demolition, Owner will remove the following items:
      a. All furniture, fixtures, and equipment (i.e., items not mounted or anchored to building) within project work area.

C. Notify Architect of discrepancies between existing conditions and Drawings before proceeding with selective demolition.

D. Hazardous Materials: It is not expected that hazardous materials will be encountered in the Work because the building was constructed in 1999.
   1. If suspected hazardous materials are encountered, do not disturb; immediately notify Architect and Owner. Hazardous materials will be removed by Owner under a separate contract.

E. Storage or sale of removed items or materials on-site is not permitted.

F. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.
   1. Maintain fire-protection facilities in service during selective demolition operations.

G. Arrange selective demolition schedule so as not to interfere with Owner's operations.

1.8 WARRANTY

A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during selective demolition, by methods and with materials and using approved contractors so as not to void existing warranties.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.

B. Standards: Comply with ANSI/ASSP A10.6 and NFPA 241.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that utilities have been disconnected and capped before starting selective demolition operations.

B. Perform an engineering survey of condition of building to determine whether removing any element might result in structural deficiency or unplanned collapse of any portion of structure or adjacent structures during selective building demolition operations.
   1. Engage a professional engineer to perform the survey if beyond capability of General Contractor or Demolition Contractor. Cost of Engineering Services to be included in bid.

C. Inventory and record the condition of items to be removed and salvaged.

3.2 PREPARATION

A. Refrigerant: Before starting demolition, remove refrigerant from mechanical equipment according to 40 CFR 82 and regulations of authorities having jurisdiction.

3.3 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

A. Existing Services/Systems to Remain: Maintain services/systems indicated to remain and protect them against damage.

3.4 PROTECTION

A. Temporary Protection: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.

B. Temporary Shoring: Design, provide, and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.

C. Remove temporary barricades and protections where hazards no longer exist.

3.5 SELECTIVE DEMOLITION

A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:
   1. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping. Temporarily cover openings to remain.
   2. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
   3. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain portable fire-suppression devices during flame-cutting operations.
   4. Maintain fire watch during and for at least two hours after flame-cutting operations.
   5. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
   6. Dispose of demolished items and materials promptly.

B. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.

C. Removed and Salvaged Items:
   1. Clean salvaged items.
   2. Pack or crate items after cleaning. Identify contents of containers.
   3. Store items in a secure area until delivery to Owner.
   4. Transport items to Owner's storage area on-site unless directed otherwise in drawings.
   5. Protect items from damage during transport and storage.

D. Removed and Reinstalled Items:
   1. Clean and repair items to functional condition adequate for intended reuse.
   2. Pack or crate items after cleaning and repairing. Identify contents of containers.
   3. Protect items from damage during transport and storage.
   4. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.

E. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Architect, items may be removed to a suitable, protected storage location during selective demolition and cleaned and reinstalled in their original locations after selective demolition operations are complete.

F. The following items are to be salvaged or reinstalled:
   1. See drawings.

3.6 CLEANING

A. Remove demolition waste materials from Project site and dispose of them in an EPA-approved construction and demolition waste landfill acceptable to authorities having jurisdiction.

1. Do not allow demolished materials to accumulate on-site.
2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
3. Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.
4. Comply with requirements specified in Section 01 74 19 "Construction Waste Management and Disposal."

B. Burning: Do not burn demolished materials.

C. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

END OF SECTION

SECTION 06 10 00
ROUGH CARPENTRY

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Rooftop equipment bases and support curbs.
   2. Wood blocking, cants, and nailers.
   3. Plywood backing panels.

1.2 ACTION SUBMITTALS

A. Product Data:
   1. For each type of process and factory-fabricated product.
   2. For preservative-treated wood products.

B. Sustainable Design Submittals:
   1. Regional Materials: For each product.
   2. Chain-of-Custody Certificates: For certified wood products. Include statement of costs.
   3. Chain-of-Custody Qualification Data: For manufacturer and vendor.
   4. Laboratory Test Reports: For adhesives, indicating compliance with requirements for low-emitting materials.

1.3 INFORMATIONAL SUBMITTALS

A. Material Certificates:
   1. For dimension lumber specified to comply with minimum allowable unit stresses. Indicate species and grade selected for each use and design values approved by the ALSC Board of Review.
   2. For preservative-treated wood products. Indicate type of preservative used and net amount of preservative retained.

B. Evaluation Reports: For the following, from ICC-ES:
   1. Wood-preservative-treated wood.
   2. Fire-retardant-treated wood.
   3. Engineered wood products.
   4. Shear panels.
   5. Power-driven fasteners.
   6. Post-installed anchors.
   7. Metal framing anchors.

1.4 QUALITY ASSURANCE

A. Certified Wood: Provide an invoice including vendor's chain-of-custody number, product cost, and entity being invoiced.

B. Vendor Qualifications: A vendor that is certified for chain of custody by an FSC-accredited certification body.

PART 2 - PRODUCTS

2.1 WOOD PRODUCTS, GENERAL

A. Regional Materials: Manufacture the following wood products within 100 miles (160 km) of Project site from materials that have been extracted, harvested, or recovered, as well as manufactured, within 100 miles (160 km) of Project site.
   1. Dimension lumber, except treated materials.
   2. Laminated-veneer lumber.
   3. Parallel-strand lumber.
   4. Prefabricated wood I-joists.
   5. Rim boards.

B. Certified Wood: Certify the following wood products as "FSC Pure" or "FSC Mixed Credit" in accordance with FSC STD-01-001 and FSC STD-40-004.
   1. Dimension lumber, except treated materials.
   2. Laminated-veneer lumber.
   3. Parallel-strand lumber.
   4. Prefabricated wood I-joists.
   5. Rim boards.

C. Lumber: Comply with DOC PS 20 and applicable rules of grading agencies indicated. If no grading agency is indicated, comply with the applicable rules of any rules-writing agency certified by the ALSC Board of Review. Grade lumber by an agency certified by the ALSC Board of Review to inspect and grade lumber under the rules indicated.
   1. Factory mark each piece of lumber with grade stamp of grading agency.
   2. Dress lumber, S4S, unless otherwise indicated.

D. Maximum Moisture Content:
1. Boards: 15 percent.
2. Dimension Lumber: 19 percent unless otherwise indicated.
3. Timber: 19 percent.

E. Engineered Wood Products: Acceptable to authorities having jurisdiction and for which current model code research or evaluation reports exist that show compliance with building code in effect for Project.
1. Allowable design stresses, as published by manufacturer, are to meet or exceed those indicated. Manufacturer's published values are to be determined from empirical data or by rational engineering analysis and demonstrated by comprehensive testing performed by a qualified independent testing agency.

2.2 PRESERVATIVE TREATMENT

A. Preservative Treatment by Pressure Process: AWPA U1; Use Category UC2.
1. Preservative Chemicals: Acceptable to authorities having jurisdiction and containing no arsenic or chromium. Do not use inorganic boron (SBX) for sill plates.

B. Kiln-dry lumber after treatment to a maximum moisture content of 19 percent. Do not use material that is warped or that does not comply with requirements for untreated material.

C. Mark lumber with treatment quality mark of an inspection agency approved by the ALSC Board of Review.

D. Application: Treat items indicated on Drawings, and the following:
1. Wood cants, nailers, curbs, equipment support bases, blocking, stripping, and similar members in connection with roofing, flashing, vapor barriers, and waterproofing.
2. Wood sills, sleepers, blocking, furring, stripping, and similar concealed members in contact with masonry or concrete.
3. Wood framing and furring attached directly to the interior of below-grade exterior masonry or concrete walls.

2.3 FIRE-RETARDANT-TREATMENT

A. General: Where fire-retardant-treated materials are indicated, materials are to comply with requirements in this article, that are acceptable to authorities having jurisdiction, and with fire-test-response characteristics specified as determined by testing identical products per test method indicated by a qualified testing agency.

B. Fire-Retardant-Treated Lumber and Plywood by Pressure Process: Products with a flame-spread index of 25 or less when tested according to ASTM E84, and with no evidence of significant progressive combustion when the test is extended an additional 20 minutes, and with the flame front not extending more than 10.5 feet beyond the centerline of the burners at any time during the test.
1. Exterior Type: Treated materials are to comply with requirements specified above for fire-retardant-treated lumber and plywood by pressure process after being subjected to accelerated weathering according to ASTM D2898. Use for exterior locations and where indicated.
2. Interior Type A: Treated materials are to have a moisture content of 28 percent or less when tested according to ASTM D3201/D3201M at 92 percent relative humidity. Use where exterior type is not indicated.

C. Kiln-dry lumber after treatment to maximum moisture content of 19 percent. Kiln-dry plywood after treatment to maximum moisture content of 15 percent.

D. Identify fire-retardant-treated wood with appropriate classification marking of qualified testing agency.

E. Application: Treat
1. Framing for raised platforms.
2. Framing for stages.
3. Concealed blocking.
4. Plywood backing panels.

2.4 MISCELLANEOUS LUMBER

A. Provide miscellaneous lumber indicated and lumber for support or attachment of other construction, including the following:
1. Blocking.
2. Nailers.
3. Rooftop equipment bases and support curbs.
4. Cants.
5. Furring.

B. Dimension Lumber Items: Construction or No. 2 grade lumber of any species.

C. Concealed Boards: 15 percent maximum moisture content and any of the following species and grades:
1. Mixed southern pine or southern pine; No. 2 grade; SPIB.
2. Eastern softwoods; No. 2 Common grade; NeLMA.
3. Northern species; No. 2 Common grade; NLGA.

4. Western woods; Construction or No. 2 Common grade; WCLIB or WWPA.

2.5 PLYWOOD BACKING PANELS

A. Equipment Backing Panels: Plywood, DOC PS 1, Exterior, A-C, fire-retardant treated, in thickness indicated or, if not indicated, not less than 3/4-inch nominal thickness.

2.6 FASTENERS

A. General: Fasteners are to be of size and type indicated and comply with requirements specified in this article for material and manufacture. Provide nails or screws, in sufficient length, to penetrate not less than 1-1/2 inches into wood substrate.

1. Where rough carpentry is exposed to weather, in ground contact, pressure-preservative treated, or in area of high relative humidity, provide fasteners with hot-dip zinc coating complying with ASTM A153/A153M.

B. Power-Driven Fasteners: Fastener systems with an evaluation report acceptable to authorities having jurisdiction, based on ICC-ES AC70.

C. Post-Installed Anchors: Fastener systems with an evaluation report acceptable to authorities having jurisdiction, based on ICC-ES AC01, ICC-ES AC58, ICC-ES AC193, or ICC-ES AC308 as appropriate for the substrate.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Framing Standard: Comply with AF&PA's WCD 1, "Details for Conventional Wood Frame Construction," unless otherwise indicated.

B. Framing with Engineered Wood Products: Install engineered wood products to comply with manufacturer's written instructions.

C. Set work to required levels and lines, with members plumb, true to line, cut, and fitted. Fit rough carpentry accurately to other construction. Locate furring, nailers, blocking, grounds, and similar supports to comply with requirements for attaching other construction.

D. Securely attach rough carpentry work to substrate by anchoring and fastening as indicated, complying with the following:

1. Table 2304.9.1, "Fastening Schedule," in ICC's International Building Code (IBC).
2. Table R602.3(1), "Fastener Schedule for Structural Members," and Table R602.3(2), "Alternate Attachments," in ICC's International Residential Code for One- and Two-Family Dwellings.
3. ICC-ES evaluation report for fastener.

END OF SECTION

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SECTION 06 20 23
INTERIOR FINISH CARPENTRY

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Interior trim and plywood construction.
   2. Fire-retardant-treated wood material.

1.2 DEFINITIONS

A. MDF: Medium-density fiberboard.
B. MDO: Plywood with a medium-density overlay on the face.
C. PVC: Polyvinyl chloride.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of process and factory-fabricated product.
B. Sustainable Design Submittals:
   1. Regional Materials: For each product.
   2. Chain-of-Custody Certificates: For certified wood products. Include statement of costs.
   3. Chain-of-Custody Qualification Data: For manufacturer and vendor.
   4. Laboratory Test Reports: For composite wood products, indicating compliance with requirements for low-emitting materials.
   5. Product Data: For installation adhesives, indicating VOC content.
   6. Laboratory Test Reports: For installation adhesives, indicating compliance with requirements for low-emitting materials.
C. Samples: For each exposed product and for each color and texture specified.

1.4 QUALITY ASSURANCE

A. Certified Wood: Provide an invoice including vendor's chain-of-custody number, product cost, and entity being invoiced.
B. Vendor Qualifications: A vendor that is certified for chain of custody by an FSC-accredited certification body.

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

A. Regional Materials: Manufacture the following wood products within 100 miles (160 km) of Project site from materials that have been extracted, harvested, or recovered, as well as manufactured, within 100 miles (160 km) of Project site.
   1. Interior trim.
   2. Fire-rated interior door and sidelight frames.
   3. Interior plywood, hardboard, and/or board paneling.
   4. Shelving and clothes rods.
B. Certified Wood: Certify the following wood products as "FSC Pure" or "FSC Mixed Credit" in accordance with FSC STD-01-001 and FSC STD-40-004.
   1. Interior trim.
   2. Fire-rated interior door and sidelight frames.
   3. Interior plywood, hardboard,and/or board paneling.
   4. Shelving and clothes rods.
C. Composite Wood Products: Verify products are made using ultra-low-emitting formaldehyde resins, as defined in the California Air Resources Board's "Airborne Toxic Control Measure to Reduce Formaldehyde Emissions from Composite Wood Products," or are made with no added formaldehyde.

2.2 INTERIOR TRIM AND SHEET MATERIAL

A. Hardwood Lumber Trim for Transparent Finish (Stain or Clear Finish):
   1. Species and Grade: Birch.
      a. Field verify to match existing plywood as noted in drawings.
   2. Maximum Moisture Content: 13 percent.
   3. Finger Jointing: Not allowed.
   4. Gluing for Width: Allowed - Use for lumber trim wider than 6 inches.
   5. Veneered Trim Material: Not allowed.
   6. Plywood Core: Wood veneer.
      a. Field verify core quantity to match existing plywood as noted in drawings.
   7. Face Surface: Surfaced (smooth) and sanded.
   8. Matching: Selected for compatible grain and color.

2.3 FIRE-RETARDANT-TREATED WOOD MATERIALS

A. Fire-Retardant-Treated Wood Materials: Where fire-retardant-treated materials are indicated – generally in buildings with "non-combustible" construction type - use materials complying with requirements that are acceptable to authorities having jurisdiction and with fire-test-response characteristics specified as determined by testing identical products in accordance with test method indicated by a qualified testing agency.

1. Use treated materials that comply with requirements of the Architectural Woodwork Standards. Do not use materials that are warped, discolored, or otherwise defective.
2. Use fire-retardant-treatment formulations that do not bleed through or otherwise adversely affect finishes. Do not use colorants to distinguish treated materials from untreated materials.
3. Identify fire-retardant-treated materials with appropriate classification marking of qualified testing agency in the form of removable paper label or imprint on surfaces that will be concealed from view after installation.

B. Fire-Retardant-Treated Lumber and Plywood: Products with a flame-spread index of 25 or less when tested in accordance with ASTM E84, with no evidence of significant progressive combustion when the test is extended an additional 20 minutes, and with the flame front not extending more than 10.5 feet beyond the centerline of the burners at any time during the test.

1. Kiln-dry lumber and plywood after treatment to a maximum moisture content of 19 and 15 percent, respectively.
2. For items indicated to receive a stained, transparent, or natural finish, use organic resin chemical formulation.
3. Mill lumber after treatment within limits set for wood removal that do not affect listed fire-test-response characteristics, using a woodworking shop certified by testing and inspecting agency.
4. Mill lumber before treatment, and implement procedures during treatment and drying processes that prevent lumber from warping and developing discolorations from drying sticks or other causes, marring, and other defects affecting appearance of treated woodwork.

2.4 MISCELLANEOUS MATERIALS

A. Furring, Blocking, Shims, and Nailers: Softwood or hardwood lumber, kiln-dried to less than 15 percent moisture content.

1. Fire-Retardant Treatment: Complying with requirements; provide where indicated.

B. Fasteners for Interior Finish Carpentry: Nails, screws, and other anchoring devices of type, size, material, and finish required for application indicated to provide secure attachment, concealed where possible.

C. Glue: Aliphatic-resin, polyurethane, or resorcinol wood glue recommended by manufacturer for general carpentry use.

1. Verify adhesive complies with the testing and product requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."
2. Verify adhesives have a VOC content of 30 g/L or less.

D. Multipurpose Construction Adhesive: Formulation, complying with ASTM D3498, that is recommended for indicated use by adhesive manufacturer.

1. Verify adhesives have a VOC content of 70 g/L or less.
2. Verify adhesive complies with the testing and product requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."

PART 3 - EXECUTION

3.1 PREPARATION

A. Clean substrates of projections and substances detrimental to application.

B. Before installing interior finish carpentry, condition materials to average prevailing humidity in installation areas for a minimum of 24 hours unless longer conditioning is recommended by manufacturer.

3.2 INSTALLATION, GENERAL

A. Install interior finish carpentry level, plumb, true, and aligned with adjacent materials.

1. Use concealed shims where necessary for alignment.
2. Scribe and cut interior finish carpentry to fit adjoining work. Refinish and seal cuts as recommended by manufacturer.
3. Where face fastening is unavoidable, countersink fasteners, fill surface flush, and sand unless otherwise indicated.
4. Install to tolerance of 1/8 inch in 96 inches for level and plumb. Install adjoining interior finish carpentry with 1/32-inch maximum offset for flush installation and 1/16-inch maximum offset for reveal installation.

5. Coordinate interior finish carpentry with materials and systems in or adjacent to it. Provide cutouts for mechanical and electrical items that penetrate interior finish carpentry.

3.3 INSTALLATION OF STANDING AND RUNNING TRIM

A. Install trim with minimum number of joints as is practical, using full-length pieces from maximum lengths of lumber available.

1. Do not use pieces less than 24 inches long, except where necessary.
2. Stagger joints in adjacent and related standing and running trim.
3. Cope at returns, miter at outside corners, and cope at inside corners to produce tight-fitting joints with full-surface contact throughout length of joint.
4. Use scarf joints for end-to-end joints.
5. Plane backs of casings to provide uniform thickness across joints where necessary for alignment.
6. Match color and grain pattern of trim for transparent finish (stain or clear finish) across joints.
7. Install trim after gypsum-board joint finishing operations are completed.
8. Install without splitting; drill pilot holes before fastening where necessary to prevent splitting.
9. Fasten to prevent movement or warping.
10. Countersink fastener heads on exposed carpentry work and fill holes.

3.4 INSTALLATION OF ITEMS MADE OF PLYWOOD AS NOTED IN DRAWINGS

A. Match detailing of existing.

B. Prepare for stain and clear coat as identified in Section 09 93 00 - Staining and Transparent Finishing.

END OF SECTION

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SECTION 07 11 13
BITUMINOUS DAMPPROOFING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Cold-applied, cut-back-asphalt dampproofing.

B. Related Section: 072100 - Thermal Insulation.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. VOC Content: Products are to comply with VOC content limits of authorities having jurisdiction unless otherwise indicated.

2.2 COLD-APPLIED, CUT-BACK-ASPHALT DAMPPROOFING

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   1. Henry Company; a Carlisle company.
   2. W. R. Meadows, Inc.

B. Trowel Coats: ASTM D4586/D4586M, Type I, Class 1, fibered.

C. Brush and Spray Coats: ASTM D4479/D4479M, Type I, fibered.

2.3 AUXILIARY MATERIALS

A. Furnish auxiliary materials recommended in writing by dampproofing manufacturer for intended use and compatible with bituminous dampproofing.

B. Cut-Back-Asphalt Primer: ASTM D41/D41M.

C. Asphalt-Coated Glass Fabric: ASTM D1668/D1668M, Type I.

D. Protection Course: Fan folded, with a core of extruded-polystyrene board insulation faced on one side or both sides with plastic film, nominal thickness 1/4 inch, with a compressive strength of not less than 8 psi per ASTM D1621, and maximum water absorption by volume of 0.6 percent per ASTM C272/C272M.

PART 3 - EXECUTION

3.1 APPLICATION, GENERAL

A. Comply with manufacturer's written instructions for dampproofing application, cure time between coats, and drying time before backfilling unless otherwise indicated.
   1. Apply dampproofing to provide continuous plane of protection.
   2. Apply additional coats if recommended in writing by manufacturer or to achieve a smooth surface and uninterrupted coverage.

B. Where dampproofing footings and foundation walls, apply from finished-grade line to top of footing; extend over top of footing and down a minimum of 6 inches over outside face of footing.
   1. Extend dampproofing 12 inches onto intersecting walls and footings, but do not extend onto surfaces exposed to view when Project is completed.
   2. Install flashings and corner protection stripping at internal and external corners, changes in plane, construction joints, cracks, and where indicated as "reinforced," by embedding an 8-inch-wide strip of asphalt-coated glass fabric in a heavy coat of dampproofing. Dampproofing coat for embedding fabric is in addition to other coats required.

C. Where dampproofing exterior face of inner wythe of exterior masonry cavity walls, lap dampproofing at least 1/4 inch onto flashing, masonry reinforcement, veneer ties, and other items that penetrate inner wythe.
   1. Extend dampproofing over outer face of structural members and concrete slabs that interrupt inner wythe.
   2. Lap dampproofing at least 1/4 inch onto shelf angles supporting veneer.

D. Where dampproofing interior face of above-grade, exterior concrete and masonry single-wythe masonry walls, continue dampproofing through intersecting walls by keeping vertical mortar joints at intersection temporarily open or by dampproofing wall before constructing intersecting walls.

3.2 COLD-APPLIED, CUT-BACK-ASPHALT DAMPPROOFING

A. Concrete Foundations and Parged Masonry Foundation Walls: Apply two brush or spray coats at not less than 1.25 gal./100 sq. ft. for first coat and 1 gal./100 sq. ft. for second coat.

B. Unparged Masonry Foundation Walls: Apply primer and two brush or spray coats at not less than 1.25 gal./100 sq. ft. for first coat and 1 gal./100 sq. ft. for second coat.

C. Unexposed Face of Concrete Retaining Walls: Apply one brush or spray coat at not less than 1.25 gal./100 sq. ft..

D. Unexposed Face of Masonry Retaining Walls: Apply primer and one brush or spray coat at not less than 1.25 gal./100 sq. ft..

3.3 PROTECTION COURSE INSTALLATION

A. Install protection course over completed-and-cured dampproofing. Comply with dampproofing-material and protection-course manufacturers' written instructions for attaching protection course.

B. Protection course is not required if drawings call for foundation insulation on exterior side of foundation wall.

END OF SECTION

SECTION 07 21 00
THERMAL INSULATION

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Extruded polystyrene foam-plastic board insulation.
   2. Polyisocyanurate foam-plastic board insulation.

B. Related Section:
   1. See roofing membrane specification for roofing insulation.
   2. See Section 09 29 00 SF - Gypsum Board for Sound Attenuating Blankets.

1.2 ACTION SUBMITTALS

A. Product Data: For the following:
   1. Extruded polystyrene foam-plastic board insulation.
   2. Polyisocyanurate foam-plastic board insulation.

B. Sustainable Design Submittals:
   1. Product Data: For recycled content, indicated postconsumer and preconsumer recycled content and cost.
   2. Environmental Product Declaration: For each product.
   3. Health Product Declaration: For each product.
   4. Sourcing of Raw Materials: Corporate sustainability report for each manufacturer.
   5. Verify insulation complies with the requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."
   6. Laboratory Test Reports: For adhesives, indicating compliance with requirements for low-emitting materials.
   7. Laboratory Test Reports: For insulation, indicating compliance with requirements for low-emitting materials.

1.3 INFORMATIONAL SUBMITTALS

A. Installer's Certification: Listing type, manufacturer, and R-value of insulation installed in each element of the building thermal envelope.
   1. Sign, date, and post the certification in a conspicuous location on Project site.

B. Product test reports.

C. Research reports.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Surface-Burning Characteristics: Maximum flame-spread and smoke-developed indexes less than 25 and 450 when tested in accordance with ASTM E84.

B. Fire-Resistance Ratings: Comply with ASTM E119 or UL 263; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
   1. Indicate design designations from UL's "Fire Resistance Directory" or from listings of another qualified testing agency.

C. Fire Propagation Characteristics: Passes NFPA 285 testing as part of an approved assembly.

D. Labeling: Provide identification of mark indicating R-value of each piece of insulation 12 inches and wider in width.

E. Thermal-Resistance Value (R-Value) in accordance with ASTM C518:
   1. Walls (above grade): R-20 min.
   2. Foundation Walls: R-20 min.
   3. Underslab: Not applicable.

2.2 EXTRUDED POLYSTYRENE FOAM-PLASTIC BOARD INSULATION

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   a. Atlas Polyiso Roof and Wall Insulation.
   b. Carlisle Coatings & Waterproofing Inc.
   c. DuPont de Nemours, Inc.
   d. Johns Manville; a Berkshire Hathaway company.
   e. Rmax, Inc.
   f. The Dow Chemical Company.

B. Extruded Polystyrene Board Insulation, Type IV: ASTM C578, Type IV, 25-psi minimum compressive strength; unfaced – ***for foundation condition***.

2.3 POLYISOCYANURATE FOAM-PLASTIC BOARD INSULATION

A. For exterior walls (not foundation).

B. Polyisocyanurate Board Insulation, Foil Faced: ASTM C1289, foil faced, Type I, Class 1 or 2.
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
a. Atlas Polyiso Roof and Wall Insulation.
b. Carlisle Coatings & Waterproofing Inc.
c. DuPont de Nemours, Inc.
d. Johns Manville; a Berkshire Hathaway company.
e. Rmax, Inc.
f. The Dow Chemical Company.

2.4 ACCESSORIES

A. Insulation for Miscellaneous Voids:
1. Glass-Fiber Insulation: ASTM C764, Type II, loose fill; with maximum flame-spread and smoke-developed indexes of 5, per ASTM E84.
2. Polyurethane Pour-In-Place Insulation: Closed cell, with maximum flame-spread and smoke-developed indexes of 75 and 450, respectively, per ASTM E84, specifically formulated for pour-in-place applications.

B. Insulation Anchors, Spindles, and Standoffs: As recommended by manufacturer.
a. Adhesive for Bonding Insulation: Product compatible with insulation and air and water barrier materials, and with demonstrated capability to bond insulation securely to substrates without damaging insulation and substrates.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Comply with insulation manufacturer's written instructions applicable to products and applications.

B. Install insulation that is undamaged, dry, and unsoiled and that has not been left exposed to ice, rain, or snow at any time.

C. Install insulation with manufacturer's R-value label exposed after insulation is installed.

D. Extend insulation to envelop entire area to be insulated. Fit tightly around obstructions and fill voids with insulation. Remove projections that interfere with placement.

E. Provide sizes to fit applications and selected from manufacturer's standard thicknesses, widths, and lengths. Apply single layer of insulation units unless multiple layers are otherwise shown or required to make up total thickness or to achieve R-value.

3.2 INSTALLATION OF FOUNDATION WALL INSULATION

A. Butt panels together for tight fit.

B. Adhesive Installation: Install with adhesive or press into tacky waterproofing or dampproofing according to manufacturer's written instructions.

C. If not otherwise indicated, extend insulation a minimum of 48 inches in from exterior walls.

3.3 INSTALLATION OF CAVITY-WALL INSULATION

A. Foam-Plastic Board Insulation: Install pads of adhesive spaced approximately 24 inches o.c. both ways on inside face and as recommended by manufacturer.
1. Fit courses of insulation between wall ties and other obstructions, with edges butted tightly in both directions, and with faces flush.
2. Press units firmly against inside substrates.
3. Supplement adhesive attachment of insulation by securing boards with two-piece wall ties designed for this purpose.

END OF SECTION

SECTION 07 27 26
FLUID-APPLIED MEMBRANE AIR BARRIERS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Vapor-retarding, fluid-applied air barriers.

1.2 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.
B. Shop Drawings: For air-barrier assemblies.
   1. Include details for substrate joints and cracks, counterflashing strips, penetrations, inside and outside corners, terminations, and tie-ins with adjoining construction.

1.4 INFORMATIONAL SUBMITTALS

A. Product certificates.
B. Product test reports.
C. Field quality-control reports.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by manufacturer.
B. Mockups: Build mockups to set quality standards for materials and execution.
   1. Build integrated mockups of exterior wall assembly, 150 sq. ft., incorporating backup wall construction, external cladding, window, storefront, door frame and sill, insulation, ties and other penetrations, and flashing to demonstrate surface preparation, crack and joint treatment, application of air barriers, and sealing of gaps, terminations, and penetrations of air-barrier assembly.
      a. Coordinate construction of mockups to permit inspection and testing of air barrier before external insulation and cladding are installed.
      b. Include junction with roofing membrane, building corner condition, and foundation wall intersection.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Air-Barrier Performance: Air-barrier assembly and seals with adjacent construction to be capable of performing as a continuous air barrier and as a liquid-water drainage plane flashed to discharge to the exterior incidental condensation or water penetration. Air-barrier assemblies to be capable of accommodating substrate movement and of sealing substrate expansion and control joints, construction material changes, penetrations, and transitions at perimeter conditions without deterioration and air leakage exceeding specified limits.
B. Air-Barrier Assembly Air Leakage: Maximum 0.04 cfm/sq. ft. of surface area at 1.57 lbf/sq. ft., when tested in accordance with ASTM E2357.
C. Air Permeance: Maximum 0.004 cfm/sq. ft. of surface area at 1.57 lbf/sq. ft. pressure difference; ASTM E2178.
D. Ultimate Elongation: Minimum 200 percent; ASTM D412, Die C.
E. Adhesion to Substrate: Minimum 16 lbf/sq. in. when tested in accordance with ASTM D4541.
F. Fire Propagation Characteristics: Passes NFPA 285 testing as part of an approved assembly.
G. UV Resistance: Can be exposed to sunlight for 60 days in accordance with manufacturer's written instructions.

2.1 HIGH-BUILD AIR BARRIERS, VAPOR RETARDING

A. High-Build, Vapor-Retarding Air Barrier Modified Bituminous Type: Modified bituminous membrane with an installed dry film thickness, according to manufacturer's written instructions, of 35 mils or thicker over smooth, void-free substrates.
   1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
      a. Carlisle Coatings & Waterproofing Inc.
      b. Henry Company; a Carlisle company.
      c. Tremco Incorporated.
      d. W. R. Meadows, Inc.
B. Vapor Permeance: Maximum 0.1 perm; ASTM E96/E96M, Procedure A, Desiccant Method.

PART 3 - EXECUTION

3.1 SURFACE PREPARATION

A. Clean, prepare, treat, fill, and seal substrate and joints and cracks in substrate in accordance with manufacturer's written instructions and details. Provide clean, dust-free, and dry substrate for air-barrier application.

B. Mask off adjoining surfaces not covered by air barrier to prevent spillage and overspray affecting other construction.

C. Remove fins, ridges, mortar, and other projections and fill honeycomb, aggregate pockets, holes, and other voids in concrete with substrate-patching material.

D. Remove excess mortar from masonry ties, shelf angles, and other obstructions.

E. At changes in substrate plane, apply sealant or termination mastic beads at sharp corners and edges to form a smooth transition from one plane to another.

F. Bridge isolation joints, expansion joints, and discontinuous wall-to-wall, deck-to-wall, and deck-to-deck joints with air-barrier accessory material that accommodates joint movement in accordance with manufacturer's written instructions and details.

3.2 INSTALLATION

A. Install materials in accordance with air-barrier manufacturer's written instructions and details to form a seal with adjacent construction and ensure continuity of air and water barrier.

1. Coordinate the installation of air barrier with installation of roofing membrane and base flashing to ensure continuity of air barrier with roofing membrane.
2. Install transition strip on roofing membrane or base flashing so that a minimum of 3 inches of coverage is achieved over each substrate.
3. Unless manufacturer recommends in writing against priming, apply primer to substrates at required rate and allow it to dry.
4. Apply primer to substrates at required rate and allow it to dry. Limit priming to areas that will be covered by air-barrier material on same day. Reprime areas exposed for more than 24 hours.

B. Connect and seal exterior wall air-barrier material continuously to roofing-membrane air barrier, concrete below-grade structures, floor-to-floor construction, exterior glazing and window systems, glazed curtain-wall systems, storefront systems, exterior louvers, exterior door framing, and other construction used in exterior wall openings, using accessory materials.

C. Wall Openings: Prime concealed, perimeter frame surfaces of windows, curtain walls, storefronts, and doors. Apply transition strip so that a minimum of 3 inches of coverage is achieved over each substrate. Maintain 3 inches of full contact over firm bearing to perimeter frames.

D. Repair punctures, voids, and deficient lapped seams in strips and transition strips. Slit and flatten fishmouths and blisters. Patch with transition strips extending 6 inches beyond repaired areas in strip direction.

E. High-Build Air Barriers: Apply continuous unbroken air-barrier material to substrates according to the following thickness. Apply air-barrier material in full contact around protrusions such as masonry ties.

1. Vapor-Retarding, High-Build Air Barrier: Total dry film thickness as recommended in writing by manufacturer to comply with performance requirements, but not less than 40 mils, applied in one or more equal coats.

F. Do not cover air barrier until it has been tested and inspected by testing agency.

G. Correct deficiencies in or remove air barrier that does not comply with requirements; repair substrates and reapply air-barrier components.

3.3 FIELD QUALITY CONTROL

A. Testing Agency: Engage a qualified testing agency to perform tests and inspections.

B. Tests: As determined by testing agency from among the following tests:

1. Air-barrier dry film thickness.
2. Air-Leakage-Location Testing: Air-barrier assemblies will be tested for evidence of air leakage in accordance with ASTM E1186, chamber pressurization or depressurization with smoke tracers.
3. Air-Leakage-Volume Testing: Air-barrier assemblies will be tested for air-leakage rate in accordance with ASTM E783 or ASTM E2357.

C. Air barriers will be considered defective if they do not pass tests and inspections.

1. Apply additional air-barrier material, in accordance with manufacturer's written instructions, where inspection results indicate insufficient thickness.
2. Remove and replace deficient air-barrier components for retesting as specified above.

D. Repair damage to air barriers caused by testing; follow manufacturer's written instructions.

E. Prepare test and inspection reports.

3.4 CLEANING AND PROTECTION

A. Protect air-barrier system from damage during application and remainder of construction period, in accordance with manufacturer's written instructions.

B. Remove masking materials after installation.

END OF SECTION

SECTION 07 41 13.16
STANDING-SEAM METAL ROOF PANELS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Vertical-rib, seamed-joint, standing-seam metal roof panels.
   2. Substrate board.
   3. Vapor retarder.
   4. Roof insulation.
   5. Cover board.
   6. Underlayment.

1.2 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1.3 ACTION SUBMITTALS

A. Product data.
B. Shop Drawings:
   1. Include fabrication and installation layouts of metal panels; details of edge conditions, joints, panel profiles, corners, anchorages, attachment system, trim, flashings, closures, and accessories; and special details.
   2. Accessories: Include details of the flashing, trim, and anchorage systems, at a scale of not less than 1-1/2 inches per 12 inches.

1.4 INFORMATIONAL SUBMITTALS

A. Certificates for portable roll-forming equipment.
B. Product test reports.
C. Sample warranties.

1.5 CLOSEOUT SUBMITTALS

A. Maintenance data.

1.6 QUALITY ASSURANCE

A. Roof Installer qualifications.
B. Portable Roll-Forming Equipment Certification: UL-certified, portable roll-forming equipment capable of producing metal panels warranted by manufacturer to be the same as factory-formed products. Maintain UL certification of portable roll-forming equipment for duration of Work.

1.7 WARRANTY

A. Special Warranty: Manufacturer agrees to repair or replace components of metal panel systems that fail in materials or workmanship within specified warranty period.
   1. Warranty Period: Two years from date of Substantial Completion.
B. Special Warranty on Panel Finishes: Manufacturer agrees to repair finish or replace metal panels that show evidence of deterioration of factory-applied finishes within specified warranty period.
   1. Finish Warranty Period: 20 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Structural Performance: Provide metal panel systems capable of withstanding the effects of the following loads, based on testing in accordance with ASTM E1592:
   1. Deflection Limits: For wind loads, no greater than 1/180 of the span.
B. Air Infiltration: Air leakage of not more than 0.06 cfm/sq. ft. when tested in accordance with ASTM E1680 or ASTM E283/E283M at the following test-pressure difference:
   1. Test-Pressure Difference: 1.57 lbf/sq. ft..
C. Water Penetration under Static Pressure: No water penetration when tested in accordance with ASTM E1646 or ASTM E331 at the following test-pressure difference:
   1. Test-Pressure Difference: 2.86 lbf/sq. ft..
D. Watertightness: No water penetration when tested in accordance with ASTM E2140 for hydrostatic-head resistance.
E. Wind-Uplift Resistance: Provide metal roof panel assemblies that comply with UL 580 for wind-uplift-resistance class indicated.
   1. Uplift Rating: UL 90.
F. FM Approvals Listing: Provide metal roof panels and component materials that comply with requirements in FM Approvals 4471 as part of a panel roofing system and that are listed in FM's "Approval Guide" for Class 1 or noncombustible construction, as applicable. Identify materials with FM Approvals markings.
   1. Fire/Windstorm Classification: Class 1A- 90.

2. Hail Resistance: SH.

G. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes.
1. Temperature Change: 120 deg F, ambient; 180 deg F, material surfaces.

H. Energy Performance:
1. Provide roof panels in accordance with one of the following when tested in accordance with CRRC-1:
a. Three-year, aged solar reflectance of not less than 0.55 and emissivity of not less than 0.75.
b. Three-year, aged Solar Reflectance Index (SRI) of not less than 64 when calculated in accordance with ASTM E1980.

2.2 STANDING-SEAM METAL ROOF PANELS, GENERAL

A. Provide factory-formed metal roof panels designed to be installed by lapping and interconnecting raised side edges of adjacent panels with joint type indicated and mechanically attaching panels to supports using concealed clips in side laps. Include clips, cleats, pressure plates, and accessories required for weathertight installation.
1. Steel Panel Systems: Unless more stringent requirements are indicated, comply with ASTM E1514.

2.3 VERTICAL-RIB, SEAMED-JOINT, STANDING-SEAM METAL ROOF PANELS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. ATAS International, Inc.
2. Berridge Manufacturing Company.
3. CENTRIA, a Nucor Brand.
4. PAC-CLAD; Petersen; a Carlisle company.

B. **Basis-of-Design**: Atas, 2 3/8" Field-Lok, 18" coverage with stiffening ribs.

C. Panels: Formed with vertical ribs at panel edges; designed for sequential installation by mechanically attaching panels to supports using concealed clips located under one side of panels, engaging opposite edge of adjacent panels, and mechanically seaming panels together.
1. Structural Support: Over solid deck.
2. Material: Metallic-coated steel.
3. Seam Type: Double folded.
4. Panel Profile: Intermediate stiffening ribs symmetrically spaced between ribs.
5. Panel Coverage: 18 inches.
6. Panel Height: 1.5 inches nominal.
7. Clips: Two piece, floating, designed to accommodate thermal movement.
a. Steel Clips: 0.028-inch-nominal thickness, zinc-coated (galvanized) or aluminum-zinc alloy-coated steel sheet.
b. Clip Spacing: 24 inches.

2.4 SUBSTRATE BOARD

A. Glass-Mat Gypsum Roof Substrate Board: ASTM C1177/C1177M, water-resistant gypsum board.
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
a. CertainTeed; SAINT-GOBAIN.
b. Georgia-Pacific Gypsum LLC.
c. USG Corporation.
2. Thickness: Type X, 5/8 inch.
3. Surface Finish: Factory primed.

B. Fasteners: Factory-coated steel fasteners and metal or plastic plates complying with corrosion-resistance provisions for fastening substrate panel to roof deck.

2.5 VAPOR RETARDER

A. **IF PROJECT HAS A SINGLE-PLY ROOFING MEMBRANE SPECIFICATION**, use vapor retarder specified for that system. Otherwise, use...

B. Rubberized-Asphalt-Sheet Vapor Retarder, Self-Adhering: ASTM D1970/D1970M polyethylene film laminated to layer of rubberized asphalt adhesive, minimum 40-mil total thickness; maximum permeance rating of 0.1 perm; cold applied, with slip-resisting surface and release paper backing. Provide primer when recommended by vapor-retarder manufacturer.

2.6 ROOF INSULATION

A. Roof insulation assembly must provide an overall average of R-35.

B. Insulation over Solid Deck:
1. Polyisocyanurate Board Insulation: ASTM C1289, Type II, Class 1, Grade 2, felt or glass-fiber mat facer on both major surfaces.
a. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
1) Atlas Polyiso Roof and Wall Insulation.

2) Carlisle Syntec Systems.
3) CertainTeed; SAINT-GOBAIN.
4) GAF.
5) Johns Manville; a Berkshire Hathaway company.
6) Rmax, A Business Unit of Sika Corporation.

b. Compressive Strength: 25 psi.
c. Size: 48 by 96 inches.
d. Thickness:
1) Base Layer: 1-1/2 inches.
2) Upper Layer: As needed to meet required R-value.

2.7 COVER BOARD

A. Oriented Strand Board or Plywood – as recommended by roof panel manufacturer: DOC PS 2, Exposure 1, 3/4 inch thick.

2.8 UNDERLAYMENT

A. Self-Adhering, High-Temperature Underlayment: Provide self-adhering, cold-applied, sheet underlayment, a minimum of 30 mils thick, consisting of slip-resistant, polyethylene-film top surface laminated to a layer of butyl or SBS-modified asphalt adhesive, with release-paper backing. Provide primer when recommended by underlayment manufacturer.
1. Thermal Stability: Stable after testing at 240 deg F; ASTM D1970/D1970M.
2. Low-Temperature Flexibility: Passes after testing at minus 20 deg F; ASTM D1970/D1970M.
3. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
a. ATAS International, Inc.
b. Carlisle WIP Products; a brand of Carlisle Construction Materials.
c. Henry Company; a Carlisle company.
d. Owens Corning.

B. Slip Sheet: Manufacturer's recommended slip sheet, of type required for application.

2.9 PANEL MATERIALS

A. Metallic-Coated Steel Sheet: Zinc-coated (galvanized) steel sheet complying with minimum ASTM A653/A653M, G90 coating designation, or aluminum-zinc alloy-coated steel sheet complying with minimum ASTM A792/A792M, Class AZ50 coating designation; structural quality. Prepainted by the coil-coating process to comply with ASTM A755/A755M.
1. Nominal Thickness: 0.028 inch.
2. Surface: Smooth, flat finish.

2.10 MISCELLANEOUS MATERIALS

A. Miscellaneous Metal Subframing and Furring: ASTM C645; cold-formed, metallic-coated steel sheet, minimum ASTM A653/A653M, G90 hot-dip galvanized coating designation or ASTM A792/A792M, Class AZ50 coating designation. Provide manufacturer's standard sections as required for support and alignment of metal panel system.

B. Panel Accessories: Provide components required for a complete, weathertight panel system including trim, copings, fasciae, mullions, sills, corner units, clips, flashings, sealants, gaskets, fillers, closure strips, and similar items. Match material and finish of metal panels unless otherwise indicated.
1. Closures: Provide closures at eaves and ridges, fabricated of same metal as metal panels.
2. Backing Plates: Provide metal backing plates at panel end splices, fabricated from material recommended by manufacturer.
3. Closure Strips: Closed-cell, expanded, cellular, rubber or crosslinked, polyolefin-foam or closed-cell laminated polyethylene; minimum 1-inch-thick, flexible closure strips; cut or premolded to match metal panel profile. Provide closure strips where indicated or necessary to ensure weathertight construction.

C. Flashing and Trim: Provide flashing and trim formed from same material as metal panels as required to seal against weather and to provide finished appearance. Locations include, but are not limited to, eaves, rakes, corners, bases, framed openings, ridges, fasciae, and fillers. Finish flashing and trim with same finish system as adjacent metal panels.

D. Gutters and Downspouts: See Section 07 62 00 - Sheet Metal Flashing and Trim.

E. Panel Fasteners: Self-tapping screws designed to withstand design loads.

F. Panel Sealants: Provide sealant type recommended by manufacturer that are compatible with panel materials, are nonstaining, and do not damage panel finish.
1. Sealant Tape: Pressure-sensitive, 100 percent solids, gray polyisobutylene compound sealant tape with release-paper backing. Provide permanently elastic, nonsag, nontoxic, nonstaining tape 1/2 inch wide and 1/8 inch thick.

2. Joint Sealant: ASTM C920; elastomeric polyurethane or silicone sealant; of type, grade, class, and use classifications required to seal joints in metal panels and remain weathertight; and as recommended in writing by metal panel manufacturer.
3. Butyl-Rubber-Based, Solvent-Release Sealant: ASTM C1311.

2.11 FABRICATION

A. Fabricate and finish metal panels and accessories at the factory, by manufacturer's standard procedures and processes, as necessary to fulfill indicated performance requirements demonstrated by laboratory testing. Comply with indicated profiles and with dimensional and structural requirements.

B. On-site Fabrication: Subject to compliance with requirements of this Section, metal panels may be fabricated on-site using UL-certified, portable roll-forming equipment if panels are of same profile and warranted by manufacturer to be equal to factory-formed panels. Fabricate in accordance with equipment manufacturer's written instructions and to comply with details shown.

C. Provide panel profile, including major ribs and intermediate stiffening ribs, if any, for full length of panel.

D. Fabricate metal panel joints with factory-installed captive gaskets or separator strips that provide a weathertight seal and prevent metal-to-metal contact, and that minimize noise from movements.

E. Sheet Metal Flashing and Trim: Fabricate flashing and trim to comply with manufacturer's recommendations that apply to design, dimensions, metal, and other characteristics of item indicated.

1. Form exposed sheet metal accessories that are without excessive oil canning, buckling, and tool marks and that are true to line and levels indicated, with exposed edges folded back to form hems.
2. Seams for Aluminum: Fabricate nonmoving seams with flat-lock seams. Form seams and seal with epoxy seam sealer. Rivet joints for additional strength.
3. Sealed Joints: Form nonexpansion, but movable, joints in metal to accommodate sealant and to comply with manufacturer's recommendations.
4. Conceal fasteners and expansion provisions where possible. Exposed fasteners are not permitted on faces of accessories exposed to view.
5. Fabricate cleats and attachment devices from same material as accessory being anchored or from compatible, noncorrosive metal recommended in writing by metal panel manufacturer.
    a. Size: As recommended by metal panel manufacturer for application, but not less than thickness of metal being secured.

2.12 FINISHES

A. Protect mechanical and painted finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

B. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Noticeable variations in same piece are unacceptable. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

C. Steel and Aluminum Panels and Accessories:

1. Three-Coat Fluoropolymer: Fluoropolymer finish containing not less than 70 percent PVDF resin by weight in both color coat and clear topcoat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
2. Concealed Finish: Apply pretreatment and manufacturer's standard white or light-colored acrylic or polyester backer finish consisting of prime coat and wash coat with a minimum total dry film thickness of 0.5 mil.

PART 3 - EXECUTION

3.1 PREPARATION

A. Miscellaneous Supports: Install subframing, furring, and other miscellaneous panel support members and anchorages in accordance with ASTM C754 and metal panel manufacturer's written installation instructions.

3.2 INSTALLATION OF SUBSTRATE BOARD

A. Install substrate board with long joints in continuous straight lines, with end joints staggered not less than 24 inches in adjacent rows.

1. At steel roof decks, install substrate board at right angle to flutes of deck.
    a. Locate end joints over crests of steel roof deck.
2. Tightly butt substrate boards together.
3. Cut substrate board to fit tight around penetrations and projections, and to fit tight to intersecting sloping roof decks.
4. Fasten substrate board in accordance with roofing system manufacturers' written installation instructions.

3.3 INSTALLATION OF VAPOR RETARDER

A. Loosely lay vapor retarder in a single layer over area to receive vapor retarder, side and end lapping each sheet a minimum of 2 and 6 inches, respectively.
   1. Extend vertically up parapet walls and projections to a minimum height equal to height of insulation and cover board.
   2. Continuously seal side and end laps with tape.

3.4 INSTALLATION OF ROOF INSULATION

A. General: Install insulation concurrently with metal panel installation, in thickness indicated to cover entire surface, in accordance with manufacturer's written installation instructions.
   1. Set vapor-retarder-faced units with vapor retarder toward warm side of construction unless otherwise indicated. Do not obstruct ventilation spaces except for firestopping.
   2. Tape joints and ruptures in vapor retarder and seal each continuous area of insulation to the surrounding construction to ensure airtight installation.

3.5 INSTALLATION OF COVER BOARD

A. Install cover board over insulation in accordance with manufacturer's written installation instructions. Install with long joints in continuous straight lines with end joints staggered between rows. Offset joints of insulation below a minimum of 6 inches in each direction.

3.6 INSTALLATION OF UNDERLAYMENT

A. Self-Adhering Sheet Underlayment: Apply primer if required by manufacturer. Comply with temperature restrictions of underlayment manufacturer for installation. Apply at locations indicated below, wrinkle free, in shingle fashion to shed water, and with end laps of not less than 6 inches staggered 24 inches between courses. Overlap side edges not less than 3-1/2 inches. Extend underlayment into gutter trough. Roll laps with roller. Cover underlayment within 14 days.
   1. Apply over the entire roof surface.

B. Slip Sheet: Apply slip sheet over underlayment before installing metal roof panels.

C. Flashings: Install flashings to cover underlayment to comply with requirements specified in Section 07 62 00 "Sheet Metal Flashing and Trim."

3.7 INSTALLATION OF STANDING-SEAM METAL ROOF PANELS

A. Install metal panels in accordance with manufacturer's written installation instructions and approved Shop Drawings in orientation, sizes, and locations indicated. Anchor metal panels and other components of the Work securely in place, with provisions for thermal and structural movement.
   1. Shim or otherwise plumb substrates receiving metal panels.
   2. Flash and seal metal panels at perimeter of all openings. Fasten with self-tapping screws. Do not begin installation until air- or water-resistive barriers and flashings that will be concealed by metal panels are installed.
   3. Install screw fasteners in predrilled holes.
   4. Locate and space fastenings in uniform vertical and horizontal alignment.
   5. Install flashing and trim as metal panel work proceeds.
   6. Locate panel splices over, but not attached to, structural supports. Stagger panel splices and end laps to avoid a four-panel lap splice condition.
   7. Align bottoms of metal panels and fasten with blind rivets, bolts, or self-tapping screws. Fasten flashings and trim around openings and similar elements with self-tapping screws.
   8. Provide weathertight escutcheons for pipe- and conduit-penetrating panels.

B. Fasteners:
   1. Steel Panels: Use stainless steel fasteners for surfaces exposed to the exterior; use galvanized-steel fasteners for surfaces exposed to the interior.

C. Anchor Clips: Anchor metal roof panels and other components of the Work securely in place, using manufacturer's approved fasteners in accordance with manufacturers' written installation instructions.

D. Metal Protection: Where dissimilar metals contact each other or corrosive substrates, protect against galvanic action as recommended in writing by metal panel manufacturer.

E. Standing-Seam Metal Roof Panel Installation: Fasten metal roof panels to supports with concealed clips at each standing-seam joint at location, spacing, and with fasteners recommended in writing by manufacturer.
   1. Install clips to supports with self-tapping fasteners.
   2. Install pressure plates at locations indicated in manufacturer's written installation instructions.
   3. Snap Joint: Nest standing seams and fasten together by interlocking and completely engaging factory-applied sealant.
   4. Seamed Joint: Crimp standing seams with manufacturer-approved, motorized seamer tool so clip, metal roof panel, and factory-applied sealant are completely engaged.

5. Watertight Installation:
   a. Apply a continuous ribbon of sealant or tape to seal joints of metal panels, using sealant or tape as recommended in writing by manufacturer as needed to make panels watertight.
   b. Provide sealant or tape between panels and protruding equipment, vents, and accessories.
   c. At panel splices, nest panels with minimum 6-inch end lap, sealed with sealant and fastened together by interlocking clamping plates.

F. Accessory Installation: Install accessories with positive anchorage to building and weathertight mounting and provide for thermal expansion. Coordinate installation with flashings and other components.
1. Install components required for a complete metal panel system including trim, copings, corners, seam covers, flashings, sealants, gaskets, fillers, closure strips, and similar items. Provide types indicated by metal roof panel manufacturers; or, if not indicated, types recommended by metal roof panel manufacturer.

G. Flashing and Trim: Comply with performance requirements and manufacturer's written installation instructions. Provide concealed fasteners where possible and set units true to line and level as indicated. Install work with laps, joints, and seams that will be permanently watertight and weather resistant.
1. Install exposed flashing and trim that is without buckling and tool marks, and that is true to line and levels indicated, with exposed edges folded back to form hems. Install sheet metal flashing and trim to fit substrates and achieve waterproof and weather-resistant performance.
2. Expansion Provisions: Provide for thermal expansion of exposed flashing and trim. Space movement joints at a maximum of 10 ft. with no joints allowed within 24 inches of corner or intersection. Where lapped expansion provisions cannot be used or would not be sufficiently weather resistant and waterproof, form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with mastic sealant (concealed within joints).

H. Pipe and Conduit Penetrations: Fasten and seal to metal roof panels as recommended by manufacturer.

3.8 CLEANING AND PROTECTION

A. Remove temporary protective coverings and strippable films, if any, as metal panels are installed, unless otherwise indicated in manufacturer's written installation instructions. On completion of metal panel installation, clean finished surfaces as recommended by metal panel manufacturer. Maintain in a clean condition during construction.

B. Replace metal panels that have been damaged or have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

END OF SECTION

SECTION 07 42 13.13
FORMED METAL WALL PANELS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Concealed-fastener, lap-seam metal wall panels.

1.2 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.
B. Sustainable Design Submittals:
   1. Product Data: For recycled content, indicating postconsumer and preconsumer recycled content and cost.
   2. Environmental Product Declaration: For each product.
   3. Health Product Declaration: For each product.
   4. Sourcing of Raw Materials: Corporate sustainability report for each manufacturer.
C. Shop Drawings: Include fabrication and installation layouts of metal panels; details of edge conditions, joints, panel profiles, corners, anchorages, attachment system, trim, flashings, closures, and accessories; and special details.
D. Samples: For each type of metal panel indicated.

1.4 INFORMATIONAL SUBMITTALS

A. Product test reports.
B. Warranties: Samples of special warranties.

1.5 CLOSEOUT SUBMITTALS

A. Maintenance data.

1.6 QUALITY ASSURANCE

A. Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by manufacturer.
B. UL-Certified, Portable Roll-Forming Equipment: UL-certified, portable roll-forming equipment capable of producing metal panels warranted by manufacturer to be the same as factory-formed products. Maintain UL certification of portable roll-forming equipment for duration of work.

1.7 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of metal panel systems that fail in materials or workmanship within specified warranty period.
   1. Warranty Period: Two years from date of Substantial Completion.
B. Special Warranty on Panel Finishes: Manufacturer's standard form in which manufacturer agrees to repair finish or replace metal panels that show evidence of deterioration of factory-applied finishes within specified warranty period.
   1. Finish Warranty Period: 20 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Recycled Content: Postconsumer recycled content plus one-half of preconsumer recycled content not less than 25 percent.
B. Structural Performance: Provide metal panel systems capable of withstanding the effects of the following loads, based on testing according to ASTM E1592:
   1. Wind Loads: As indicated on Drawings.
   2. Deflection Limits: For wind loads, no greater than 1/180 of the span.
C. Air Infiltration: Air leakage of not more than 0.06 cfm/sq. ft. when tested according to ASTM E283 at the following test-pressure difference:
   1. Test-Pressure Difference: 1.57 lbf/sq. ft..
D. Water Penetration under Static Pressure: No water penetration when tested according to ASTM E331 at the following test-pressure difference:
   1. Test-Pressure Difference: 2.86 lbf/sq. ft..
E. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes by preventing buckling, opening of joints, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Base calculations on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.
   1. Temperature Change (Range): 120 deg F, ambient; 180 deg F, material surfaces.
F. Fire-Resistance Ratings: Comply with ASTM E119; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

1. Indicate design designations from UL's "Fire Resistance Directory" or from the listings of another qualified testing agency.

2.2 CONCEALED-FASTENER, LAP-SEAM METAL WALL PANELS

A. Provide factory-formed metal panels designed to be field assembled by lapping and interconnecting side edges of adjacent panels and mechanically attaching through panel to supports using concealed fasteners and factory-applied sealant in side laps. Include accessories required for weathertight installation.

B. Flush-Profile, Concealed-Fastener Metal Wall Panels **MP-1-2-3**: Formed with vertical panel edges and a flat pan between panel edges; with flush joint between panels.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   a. ATAS International, Inc.
   b. Berridge Manufacturing Company.
   c. CENTRIA, a Nucor Brand.
   d. Dri-Design.
   e. PAC-CLAD; Petersen; a Carlisle company.
2. Basis-of-Design: Dri-Design, En-V, A80 Series.
3. Aluminum Sheet: Coil-coated sheet, ASTM B209, alloy as standard with manufacturer, with temper as required to suit forming operations and structural performance required.
   a. Thickness: 0.040 inch.
   b. Surface: Smooth, flat finish.
   c. Exterior Finish: Three-coat fluoropolymer.
   d. Color: As indicated by manufacturer's designations in drawings.
4. Panel Coverage: See drawings.
5. Panel Height: 1.25 inch.

2.3 MISCELLANEOUS MATERIALS

A. Miscellaneous Metal Subframing and Furring: ASTM C645, cold-formed, metallic-coated steel sheet, ASTM A653/A653M, G90 hot-dip galvanized coating designation or ASTM A792/A792M, Class AZ50 aluminum-zinc-alloy coating designation unless otherwise indicated. Provide manufacturer's standard sections as required for support and alignment of metal panel system.

B. Panel Accessories: Provide components required for a complete, weathertight panel system including trim, copings, fasciae, mullions, sills, corner units, clips, flashings, sealants, gaskets, fillers, closure strips, and similar items. Match material and finish of metal panels unless otherwise indicated.

1. Closures: Provide closures at eaves and rakes, fabricated of same metal as metal panels.
2. Backing Plates: Provide metal backing plates at panel end splices, fabricated from material recommended by manufacturer.
3. Closure Strips: Closed-cell, expanded, cellular, rubber or crosslinked, polyolefin-foam or closed-cell laminated polyethylene; minimum 1-inch-thick, flexible closure strips; cut or premolded to match metal panel profile. Provide closure strips where indicated or necessary to ensure weathertight construction.

C. Flashing and Trim: Provide flashing and trim formed from same material as metal panels as required to seal against weather and to provide finished appearance. Locations include, but are not limited to, bases, drips, sills, jambs, corners, endwalls, framed openings, rakes, fasciae, parapet caps, soffits, reveals, and fillers. Finish flashing and trim with same finish system as adjacent metal panels.

D. Panel Fasteners: Self-tapping screws designed to withstand design loads. Provide exposed fasteners with heads matching color of metal panels by means of plastic caps or factory-applied coating. Provide EPDM or PVC sealing washers for exposed fasteners.

E. Panel Sealants: Provide sealant type recommended by manufacturer that are compatible with panel materials, are nonstaining, and do not damage panel finish.

1. Sealant Tape: Pressure-sensitive, 100 percent solids, gray polyisobutylene compound sealant tape with release-paper backing; 1/2 inch wide and 1/8 inch thick.
2. Joint Sealant: ASTM C920; as recommended in writing by metal panel manufacturer.
3. Butyl-Rubber-Based, Solvent-Release Sealant: ASTM C1311.

2.4 FABRICATION

A. Fabricate and finish metal panels and accessories at the factory, by manufacturer's standard procedures and processes, as necessary to fulfill indicated performance requirements demonstrated by laboratory testing. Comply with indicated profiles and with dimensional and structural requirements.

B. On-Site Fabrication: Subject to compliance with requirements of this Section, metal panels may be fabricated on-site using UL-certified, portable roll-forming equipment if panels are of same profile and warranted by manufacturer to be equal to factory-formed panels. Fabricate according to equipment manufacturer's written instructions and to comply with details shown.

C. Provide panel profile, including major ribs and intermediate stiffening ribs, if any, for full length of panel.

D. Fabricate metal panel joints with factory-installed captive gaskets or separator strips that provide a weathertight seal and prevent metal-to-metal contact, and that minimize noise from movements.

E. Sheet Metal Flashing and Trim: Fabricate flashing and trim to comply with manufacturer's recommendations and recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to design, dimensions, metal, and other characteristics of item indicated.

2.5 FINISHES

A. Panels and Accessories:

1. Three-Coat Fluoropolymer: AAMA 621. Fluoropolymer finish containing not less than 70 percent polyvinylidene fluoride (PVDF) resin by weight in both color coat and clear topcoat.
2. Concealed Finish: White or light-colored acrylic or polyester backer finish.

PART 3 - EXECUTION

3.1 PREPARATION

A. Miscellaneous Supports: Install subframing, furring, and other miscellaneous panel support members and anchorages according to ASTM C754 and metal panel manufacturer's written recommendations.

3.2 INSTALLATION

A. Lap-Seam Metal Panels: Fasten metal panels to supports with fasteners at each lapped joint at location and spacing recommended by manufacturer.

1. Lap ribbed or fluted sheets one full rib. Apply panels and associated items true to line for neat and weathertight enclosure.
2. Provide metal-backed washers under heads of exposed fasteners bearing on weather side of metal panels.
3. Locate and space exposed fasteners in uniform vertical and horizontal alignment. Use proper tools to obtain controlled uniform compression for positive seal without rupture of washer.
4. Install screw fasteners with power tools having controlled torque adjusted to compress washer tightly without damage to washer, screw threads, or panels. Install screws in predrilled holes.
5. Flash and seal panels with weather closures at perimeter of all openings.

B. Watertight Installation:

1. Apply a continuous ribbon of sealant or tape to seal lapped joints of metal panels, using sealant or tape as recommend by manufacturer on side laps of nesting-type panels; and elsewhere as needed to make panels watertight.
2. Provide sealant or tape between panels and protruding equipment, vents, and accessories.
3. At panel splices, nest panels with minimum 6-inch end lap, sealed with sealant and fastened together by interlocking clamping plates.

C. Accessory Installation: Install accessories with positive anchorage to building and weathertight mounting, and provide for thermal expansion. Coordinate installation with flashings and other components.

D. Flashing and Trim: Comply with performance requirements, manufacturer's written installation instructions, and SMACNA's "Architectural Sheet Metal Manual." Provide concealed fasteners where possible, and set units true to line and level as indicated. Install work with laps, joints, and seams that are permanently watertight.

3.3 CLEANING

A. Remove temporary protective coverings and strippable films, if any, as metal panels are installed, unless otherwise indicated in manufacturer's written installation instructions. On completion of metal panel installation, clean finished surfaces as recommended by metal panel manufacturer. Maintain in a clean condition during construction.

END OF SECTION

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SECTION 07 42 93
SOFFIT PANELS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Metal soffit panels.

1.2 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.
B. Sustainable Design Submittals:
   1. Product Data: For recycled content, indicating postconsumer and preconsumer recycled content and cost.
C. Shop Drawings: Include fabrication and installation layouts of metal panels; details of edge conditions, joints, panel profiles, corners, anchorages, attachment system, trim, flashings, closures, and accessories; and special details.
D. Samples: For each type of metal panel indicated.

1.4 INFORMATIONAL SUBMITTALS

A. Product test reports.
B. Warranties: Samples of special warranties.

1.5 CLOSEOUT SUBMITTALS

A. Maintenance data.

1.6 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of metal panel systems that fail in materials or workmanship within specified warranty period.
   1. Warranty Period: Two years from date of Substantial Completion.
B. Special Warranty on Panel Finishes: Manufacturer's standard form in which manufacturer agrees to repair finish or replace metal panels that show evidence of deterioration of factory-applied finishes within specified warranty period.
   1. Finish Warranty Period: 20 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Recycled Content: Postconsumer recycled content plus one-half of preconsumer recycled content not less than 25 percent.
B. Structural Performance: Provide metal panel systems capable of withstanding the effects of the following loads, based on testing according to ASTM E1592:
   1. Deflection Limits: For wind loads, no greater than 1/180 of the span.
C. Air Infiltration: Air leakage of not more than 0.06 cfm/sq. ft. when tested according to ASTM E283 at the following test-pressure difference:
   1. Test-Pressure Difference: 1.57 lbf/sq. ft..
D. Water Penetration under Static Pressure: No water penetration when tested according to ASTM E331 at the following test-pressure difference:
   1. Test-Pressure Difference: 2.86 lbf/sq. ft..
E. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes by preventing buckling, opening of joints, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Base calculations on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.
   1. Temperature Change (Range): 120 deg F, ambient; 180 deg F, material surfaces.

2.2 METAL SOFFIT PANELS

A. Provide metal soffit panels designed to be installed by lapping and interconnecting side edges of adjacent panels and mechanically attaching through panel to supports using concealed fasteners in side laps. Include accessories required for weathertight installation.
B. Flush-Profile Metal Soffit Panels: Solid panels formed with vertical panel edges and a flat pan between panel edges; with flush joint between panels.
   1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
      a. ATAS International, Inc.
      b. Berridge Manufacturing Company.
      c. CENTRIA, a Nucor Brand.
      d. PAC-CLAD; Petersen; a Carlisle company.
   2. **Basis-of-Design**: Pac-Clad, Flush Soffit.

3. Metallic-Coated Steel Sheet: Zinc-coated (galvanized) steel sheet complying with ASTM A653/A653M, G90 coating designation, or aluminum-zinc alloy-coated steel sheet complying with ASTM A792/A792M, Class AZ50 coating designation; structural quality. Prepainted by the coil-coating process to comply with ASTM A755/A755M.
   a. Nominal Thickness: 0.022 inch.
   b. Exterior Finish: Two-coat fluoropolymer.
   c. Color: As selected by Architect from manufacturer's full range.
4. Panel Coverage: 12 inches.
5. Panel Height: 1.0 inch.

2.3 MISCELLANEOUS MATERIALS

A. Miscellaneous Metal Subframing and Furring: ASTM C645, cold-formed, metallic-coated steel sheet, ASTM A653/A653M, G90 hot-dip galvanized coating designation or ASTM A792/A792M, Class AZ50 aluminum-zinc-alloy coating designation unless otherwise indicated. Provide manufacturer's standard sections as required for support and alignment of metal panel system.

B. Panel Accessories: Provide components required for a complete, weathertight panel system including trim, clips, flashings, sealants, gaskets, fillers, closure strips, and similar items. Match material and finish of metal panels unless otherwise indicated.
1. Closure Strips: Closed-cell, expanded, cellular, rubber or crosslinked, polyolefin-foam or closed-cell laminated polyethylene; minimum 1-inch-thick, flexible closure strips; cut or premolded to match metal panel profile. Provide closure strips where indicated or necessary to ensure weathertight construction.

C. Flashing and Trim: Provide flashing and trim formed from same material as metal panels as required to seal against weather and to provide finished appearance. Finish flashing and trim with same finish system as adjacent metal panels.

D. Panel Fasteners: Self-tapping screws designed to withstand design loads. Provide exposed fasteners with heads matching color of metal panels by means of plastic caps or factory-applied coating. Provide EPDM or PVC sealing washers for exposed fasteners.

E. Panel Sealants: Provide sealant types recommended by manufacturer that are compatible with panel materials, are nonstaining, and do not damage panel finish.
1. Sealant Tape: Pressure-sensitive, 100 percent solids, gray polyisobutylene compound sealant tape with release-paper backing; 1/8 inch thick.
2. Joint Sealant: ASTM C920; as recommended in writing by metal panel manufacturer.
3. Butyl-Rubber-Based, Solvent-Release Sealant: ASTM C1311.

2.4 FABRICATION

A. Fabricate and finish metal panels and accessories at the factory, by manufacturer's standard procedures and processes, as necessary to fulfill indicated performance requirements demonstrated by laboratory testing. Comply with indicated profiles and with dimensional and structural requirements.

B. On-Site Fabrication: Subject to compliance with requirements of this Section, metal panels may be fabricated on-site using UL-certified, portable roll-forming equipment if panels are of same profile and warranted by manufacturer to be equal to factory-formed panels. Fabricate according to equipment manufacturer's written instructions and to comply with details shown.

C. Provide panel profile, including major ribs and intermediate stiffening ribs, if any, for full length of panel.

D. Fabricate metal panel joints with factory-installed captive gaskets or separator strips that provide a weathertight seal and prevent metal-to-metal contact, and that minimize noise from movements.

E. Sheet Metal Flashing and Trim: Fabricate flashing and trim to comply with manufacturer's recommendations and recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to design, dimensions, metal, and other characteristics of item indicated.

2.5 FINISHES

A. Panels and Accessories:
1. Two-Coat Fluoropolymer: AAMA 621. Fluoropolymer finish containing not less than 70 percent polyvinylidene fluoride (PVDF) resin by weight in color coat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
2. Concealed Finish: White or light-colored acrylic or polyester backer finish.

PART 3 - EXECUTION

3.1 PREPARATION

A. Miscellaneous Supports: Install subframing, furring, and other miscellaneous panel support members and anchorages according to ASTM C754 and metal panel manufacturer's written recommendations.
1. Soffit Framing: Wire tie or clip furring channels to supports.

3.2 INSTALLATION

A. Metal Soffit Panels: Fasten metal panels to supports with fasteners at each lapped joint at location and spacing recommended by manufacturer.
   1. Apply panels and associated items true to line for neat and weathertight enclosure.
   2. Provide metal-backed washers under heads of exposed fasteners bearing on weather side of metal panels.
   3. Locate and space exposed fasteners in uniform vertical and horizontal alignment. Use proper tools to obtain controlled uniform compression for positive seal without rupture of washer.
   4. Install screw fasteners with power tools having controlled torque adjusted to compress washer tightly without damage to washer, screw threads, or panels. Install screws in predrilled holes.

B. Watertight Installation:
   1. Apply a continuous ribbon of sealant or tape to seal lapped joints of metal panels, using sealant or tape as recommend by manufacturer on side laps of nesting-type panels and elsewhere as needed to make panels watertight.
   2. Provide sealant or tape between panels and protruding equipment, vents, and accessories.
   3. At panel splices, nest panels with minimum 6-inch end lap, sealed with sealant and fastened together by interlocking clamping plates.

C. Accessory Installation: Install accessories with positive anchorage to building and weathertight mounting, and provide for thermal expansion. Coordinate installation with flashings and other components.

D. Flashing and Trim: Comply with performance requirements, manufacturer's written installation instructions, and SMACNA's "Architectural Sheet Metal Manual." Provide concealed fasteners where possible, and set units true to line and level as indicated. Install work with laps, joints, and seams that are permanently watertight.

3.3 CLEANING

A. Remove temporary protective coverings and strippable films, if any, as metal panels are installed unless otherwise indicated in manufacturer's written installation instructions. On completion of metal panel installation, clean finished surfaces as recommended by metal panel manufacturer. Maintain in a clean condition during construction.

END OF SECTION

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SECTION 07 53 23
ETHYLENE-PROPYLENE-DIENE-MONOMER (EPDM) ROOFING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
1. Adhered ethylene-propylene-diene-terpolymer (EPDM) roofing system.
2. Vapor barrier.
3. Accessory roofing materials.
4. Substrate board.
5. Roof insulation.
6. Insulation accessories.
7. Asphalt materials.
8. Walkways.

1.2 PREINSTALLATION MEETINGS

A. Preliminary Conference: Conduct conference at Project site.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.
1. For insulation and roof system component fasteners, include copy of FM Approvals' RoofNav listing.

B. Sustainable Design Submittals:
1. Environmental Product Declaration: For each product.

C. Shop Drawings: Include roof plans, sections, details, and attachments to other work, including the following:
1. Layout and thickness if insulation.
2. Base flashings and membrane terminations.
3. Flashing details at penetrations.
4. Tapered insulation, thickness, and slopes.
5. Roof plan showing orientation of steel roof deck and orientation of roof membrane and fastening spacings and patterns for mechanically fastened roofing system.
6. Insulation fastening patterns for corner, perimeter, and field-of-roof locations.
7. Tie-in with air barrier.

D. Samples: For the following products:
1. Roof membrane and flashings of color required.
2. Walkway pads or rolls, of color required.

E. Wind Uplift Resistance Submittal: For roofing system, indicating compliance with wind uplift performance requirements.

1.4 INFORMATIONAL SUBMITTALS

A. Manufacturer Certificates:
1. Performance Requirement Certificate: Signed by roof membrane manufacturer, certifying that roofing system complies with requirements specified in "Performance Requirements" Article.
a. Submit evidence of complying with performance requirements.
2. Special Warranty Certificate: Signed by roof membrane manufacturer, certifying that all materials supplied under this Section are acceptable for special warranty.

B. Product Test Reports: For components of roof membrane and insulation, for tests performed by a qualified testing agency, indicating compliance with specified requirements.

C. Research reports.

D. Field Test Reports:
1. Concrete internal relative humidity test reports.
2. Fastener-pullout test results and manufacturer's revised requirements for fastener patterns.

E. Field quality-control reports.

F. Sample warranties.

1.5 CLOSEOUT SUBMITTALS

A. Maintenance data.

B. Certified statement from existing roof membrane manufacturer stating that existing roof warranty has not been affected by Work performed under this Section.

1.6 QUALITY ASSURANCE

A. Qualifications:
1. Manufacturers: A qualified manufacturer that is listed in FM Approvals' RoofNav for roofing system identical to that used for this Project.

2. Installers: A qualified firm that is approved, authorized, or licensed by roofing system manufacturer to install manufacturer's product and that is eligible to receive manufacturer's special warranty.

1.7 WARRANTY

A. Special Warranty: Manufacturer agrees to repair or replace components of roofing system that fail in materials or workmanship within specified warranty period.

1. Warranty Period: 20 years from Date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Accelerated Weathering: Roof membrane to withstand 2000 hours of exposure when tested in accordance with ASTM G152, ASTM G154, or ASTM G155.

B. Impact Resistance: Roof membrane to resist impact damage when tested in accordance with ASTM D3746, ASTM D4272, or the "Resistance to Foot Traffic Test" in FM Approvals 4470.

C. FM Approvals' RoofNav Listing: Roof membrane, base flashings, and component materials comply with requirements in FM Approvals 4450 or FM Approvals 4470 as part of a roofing system, and are listed in FM Approvals' RoofNav for Class 1 or noncombustible construction, as applicable. Identify materials with FM Approvals Certification markings.

1. Fire/Windstorm Classification: Class 1A-90.
2. Hail-Resistance Rating: FM Global Property Loss Prevention Data Sheet 1-34 SH.

D. Exterior Fire-Test Exposure: ASTM E108 or UL 790, Class A; for application and roof slopes indicated; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

E. Fire-Resistance Ratings: Comply with fire-resistance-rated assembly designs indicated. Identify products with appropriate markings of applicable testing agency.

2.2 ETHYLENE-PROPYLENE-DIENE-TERPOLYMER (EPDM) ROOFING

A. EPDM Sheet: ASTM D4637/D4637M, Type I, nonreinforced, EPDM sheet with factory-applied seam tape.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   a. Carlisle Syntec Systems.
   b. Johns Manville; a Berkshire Hathaway company.
   c. Versico Roofing Systems; Carlisle Construction Materials.
2. Thickness: 90 mils, nominal.
3. Exposed Face Color: Black.
4. Recycled Content: Postconsumer recycled content plus one-half of preconsumer recycled content not less than <**Insert value**> percent.

2.3 VAPOR BARRIER

A. Composite Sheet *for wood or glass-mat sheathing or concrete*: Self-adhering 35-mil rubberized asphalt laminated to 5-mil polypropylene film.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   a. Carlisle Syntec Systems.
      1) Basis-of-Design: VapAir Seal 725TR.
   b. Johns Manville; a Berkshire Hathaway company.
   c. Versico Roofing Systems; Carlisle Construction Materials.
2. Thickness: 40 mils, nominal.
3. Permeability: .015 perms per ASTM D1970 tested to E96 standards.
4. Air Permeance: .000 L*m^2@75 Pa per ASTM E2148.

B. Composite Sheet *for metal deck*: Reinforced aluminum foil with self-adhering SBS; 15-mil overall thickness.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   a. Carlisle Syntec Systems.
      1) Basis-of-Design: VapAir Seal MD.
   b. Johns Manville; a Berkshire Hathaway company.
   c. Versico Roofing Systems; Carlisle Construction Materials.
2. Thickness: 40 mils, nominal.
3. Permeability: .030 perms per ASTM D1970 tested to E96 standards.
4. Air Permeance: .000 L*m^2@75 Pa per ASTM E2148.

2.4 ACCESSORY ROOFING MATERIALS

A. General: Accessory materials recommended by roofing system manufacturer for intended use and compatible with other roofing components.

1. Adhesive and Sealants: Comply with VOC limits of authorities having jurisdiction.
2. Verify adhesives and sealants comply with the following limits for VOC content:
   a. Plastic Foam Adhesives: 50 g/L.

b. Gypsum Board and Panel Adhesives: 50 g/L.
c. Multipurpose Construction Adhesives: 70 g/L.
d. Fiberglass Adhesives: 80 g/L.
e. Contact Adhesives: 80 g/L.
f. PVC Welding Compounds: 510 g/L.
g. Other Adhesives: 250 g/L.
h. Single-Ply Roof Membrane Sealants: 450 g/L.
i. Nonmembrane Roof Sealants: 300 g/L.
j. Sealant Primers for Nonporous Substrates: 250 g/L.
k. Sealant Primers for Porous Substrates: 775 g/L.

3. Verify adhesives and sealants comply with the testing and product requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."

B. Sheet Flashing: 60-mil-thick EPDM, partially cured or cured, according to application.

C. Protection Sheet: Epichlorohydrin or neoprene nonreinforced flexible sheet, 55 to 60 mils thick, recommended by EPDM manufacturer for resistance to hydrocarbons, non-aromatic solvents, grease, and oil. *Install within 8'-0" of perimeter of kitchen exhaust duct.*

D. Prefabricated Pipe Flashings: As recommended by roof membrane manufacturer.

E. Bonding Adhesive: Manufacturer's standard.

F. Seaming Material: Use factory-applied seam tape, width as recommended by manufacturer to extent possible. Then use manufacturer's standard, synthetic-rubber polymer primer and 3-inch-wide minimum, butyl splice tape with release film Factory-applied seam tape, width as recommended by manufacturer.

G. Lap Sealant: Manufacturer's standard, single-component sealant, colored to match membrane roofing.

H. Water Cutoff Mastic: Manufacturer's standard butyl mastic sealant.

I. Metal Termination Bars: Manufacturer's standard, predrilled stainless steel or aluminum bars, approximately 1 by 1/8 inch thick; with anchors.

J. Fasteners: Factory-coated steel fasteners and metal or plastic plates complying with corrosion-resistance provisions in FM Approvals 4470, designed for fastening components to substrate, and acceptable to roofing system manufacturer.

K. Miscellaneous Accessories: Provide pourable sealers, preformed cone and vent sheet flashings, molded pipe boot flashings, preformed inside and outside corner sheet flashings, reinforced EPDM securement strips, T-joint covers, in-seam sealants, termination reglets, cover strips, and other accessories.

1. Provide white flashing accessories for white EPDM membrane roofing.

2.5 SUBSTRATE BOARD

A. Glass-Mat Gypsum Roof Substrate Board: ASTM C1177/C1177M, water-resistant gypsum board.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   a. CertainTeed; SAINT-GOBAIN.
   b. Georgia-Pacific Gypsum LLC.
   c. USG Corporation.
2. Thickness: Type X, 5/8 inch.
3. Surface Finish: Factory primed.

B. Fasteners: Factory-coated steel fasteners and metal or plastic plates complying with corrosion-resistance provisions in FM Approvals 4470, designed for fastening substrate panel to roof deck.

2.6 ROOF INSULATION

A. Roof insulation assembly must provide an overall average of R-35.

B. Polyisocyanurate Board Insulation: ASTM C1289, Type II, Class 1 felt facer on both major surfaces.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   a. Atlas Polyiso Roof and Wall Insulation.
   b. Carlisle Syntec Systems.
   c. CertainTeed; SAINT-GOBAIN.
   d. GAF.
   e. Hunter Panels; a Carlisle company.
   f. Insulfoam; a Carlisle Company.
   g. Johns Manville; a Berkshire Hathaway company.
   h. Rmax, A Business Unit of Sika Corporation.
2. Size: 48 by 96 inches.
3. Thickness:
   a. Base Layer: 1-1/2 inches.

b. Upper Layer: As needed per tapered insulation plan to meet required R-value.

C. Tapered Insulation (if applicable): Provide factory-tapered insulation boards.
1. Material: Match roof insulation.
2. Minimum Thickness: 1/4 inch.
3. Slope:
a. Roof Field: 1/4 inch per foot unless otherwise indicated on Drawings.
b. Saddles and Crickets: 1/2 inch per foot unless otherwise indicated on Drawings.

2.7 INSULATION ACCESSORIES

A. Fasteners: Factory-coated steel fasteners and metal or plastic plates complying with corrosion-resistance provisions in FM Approvals 4470, designed for fastening roof insulation to substrate, and acceptable to roofing system manufacturer.

B. Insulation Adhesive: Insulation manufacturer's recommended adhesive formulated to attach roof insulation to substrate or to another insulation layer as follows:
1. Bead-applied, low-rise, one-component or multicomponent urethane adhesive.
2. Verify adhesives and sealants comply with the following limits for VOC content:
a. Plastic Foam Adhesives: 50 g/L.
b. Gypsum Board and Panel Adhesives: 50 g/L.
c. Multipurpose Construction Adhesives: 70 g/L.
d. Fiberglass Adhesives: 80 g/L.
e. Contact Adhesives: 80 g/L.
f. PVC Welding Compounds: 510 g/L.
g. Other Adhesives: 250 g/L.
h. Single-Ply Roof Membrane Sealants: 450 g/L.
i. Nonmembrane Roof Sealants: 300 g/L.
j. Sealant Primers for Nonporous Substrates: 250 g/L.
k. Sealant Primers for Porous Substrates: 775 g/L.
3. Verify adhesives and sealants comply with the testing and product requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."

C. Protection Mat: Woven or nonwoven polypropylene, polyolefin, or polyester fabric; water permeable and resistant to UV degradation; type and weight as recommended by roofing system manufacturer for application.

2.8 ASPHALT MATERIALS

A. Roofing Asphalt: ASTM D312/D312M, Type III or Type IV.

B. Asphalt Primer: ASTM D41/D41M.

2.9 WALKWAYS

A. Flexible Walkways (if called for in drawings): Factory-formed, nonporous, heavy-duty, slip-resisting, surface-textured walkway pads or rolls, approximately 3/16 inch thick and acceptable to roofing system manufacturer.
1. Size: Approximately 36 by 60 inches.
2. Color: Contrasting with roof membrane.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements and other conditions affecting performance of the Work.
1. Verify that minimum concrete drying period recommended by roofing system manufacturer has passed.
2. Verify that concrete substrate is visibly dry and free of moisture, and that minimum concrete internal relative humidity is not more than 75 percent, or as recommended by roofing system manufacturer when tested in accordance with ASTM F2170.
a. Test Frequency: One test probe per each 1000 sq. ft., or portion thereof, of roof deck, with not less than three test probes.
b. Submit test reports within 24 hours of performing tests.
3. Verify that concrete-curing compounds that will impair adhesion of roofing components to roof deck have been removed.
4. Verify that joints in precast concrete roof decks have been grouted flush with top of concrete.

3.2 PREPARATION

A. Perform fastener-pullout tests in accordance with roof system manufacturer's written instructions.
1. Submit test result within 24 hours of performing tests.
a. Include manufacturer's requirements for any revision to previously submitted fastener patterns required to achieve specified wind uplift requirements.

3.3 INSTALLATION OF ROOFING, GENERAL

A. Install roofing system in accordance with roofing system manufacturer's written instructions, FM Approvals' RoofNav assembly requirements, and FM Global Property Loss Prevention Data Sheet 1-29.

B. Complete terminations and base flashings and provide temporary seals to prevent water from entering completed sections of roofing system at end of workday or when rain is forecast. Remove and discard temporary seals before beginning work on adjoining roofing.

C. Install roof membrane and auxiliary materials to tie in to existing roofing to maintain weathertightness of transition (and to not void warranty for existing roofing system when applicable).

D. Coordinate installation and transition of roofing system component serving as an air barrier with air barrier specified under Section 07 27 26 "Fluid-Applied Membrane Air Barriers."

3.4 INSTALLATION OF SUBSTRATE BOARD

A. Install where identified in roofing details and/or roof assembly descriptions in the drawings.

B. Install substrate board with long joints in continuous straight lines, with end joints staggered not less than 24 inches in adjacent rows.

1. At steel roof decks, install substrate board at right angle to flutes of deck.
    a. Locate end joints over crests of steel roof deck.
2. At wood sheathing, install substrate board parallel to long axis of wood panels.
    a. Locate end joints over structural framing below but not over wood sheathing joints.
3. Tightly butt substrate boards together.
4. Cut substrate board to fit tight around penetrations and projections, and to fit tight to intersecting sloping roof decks.
5. Fasten substrate board to top flanges of steel deck (or wood sheathing) in accordance with recommendations in FM Approvals' RoofNav listed roof assembly requirements for specified Windstorm Resistance Classification and FM Global Property Loss Prevention Data Sheet 1-29.
6. Fasten substrate board to top flanges of steel deck (or wood sheathing) to resist uplift pressure at corners, perimeter, and field of roof in accordance with roofing system manufacturers' written instructions.

3.5 INSTALLATION OF VAPOR BARRIER

A. See product description above for correct product for application.

B. Install self-adhering membrane per manufacturer's written instructions.

3.6 INSTALLATION OF INSULATION

A. Coordinate installing roofing system components so insulation is not exposed to precipitation or left exposed at end of workday.

B. Comply with roofing system and insulation manufacturer's written instructions for installing roof insulation.

C. Insulation installation intent:

1. Top-most course of insulation is to be adhered to course below with lower courses screwed to deck as a stack (i.e., lower courses are not screwed per course).

D. Installation Over Metal Decking (applies to decks with or without substrate board):

1. Install base *and subsequent layers* of insulation with joints staggered not less than 24 inches in adjacent rows, end joints staggered not less than 12 inches in adjacent rows, and with long joints continuous at right angle to flutes of decking.
    a. Locate end joints over crests of decking.
    b. Where installing composite and noncomposite insulation in two or more layers, install noncomposite board insulation for bottom layer and intermediate layers, if applicable, and install composite board insulation for top layer.
    c. Trim insulation neatly to fit around penetrations and projections, and to fit tight to intersecting sloping roof decks.
    d. Make joints between adjacent insulation boards not more than 1/4 inch in width.
    e. At internal roof drains, slope insulation to create a square drain sump with each side equal to the diameter of the drain bowl plus 24 inches.
        1) Trim insulation so that water flow is unrestricted.
    f. Fill gaps exceeding 1/4 inch with insulation.
    g. Cut and fit insulation within 1/4 inch of nailers, projections, and penetrations.
    h. Loosely lay base layer of insulation units over substrate.
    i. Mechanically attach base layer of insulation (and substrate board when noted) using mechanical fasteners specifically designed and sized for fastening specified board-type roof insulation to metal decks.
        1) Fasten insulation in accordance with requirements in FM Approvals' RoofNav for specified Windstorm Resistance Classification.

2) Fasten insulation to resist specified uplift pressure at corners, perimeter, and field of roof.

2. Install top layer of tapered insulation with joints of each layer offset not less than 12 inches from previous layer of insulation.
   a. Staggered end joints within each layer not less than 24 inches in adjacent rows.
   b. Install with long joints continuous and with end joints staggered not less than 12 inches in adjacent rows.
   c. Trim insulation neatly to fit around penetrations and projections, and to fit tight to intersecting sloping roof decks.
   d. Make joints between adjacent insulation boards not more than 1/4 inch in width.
   e. At internal roof drains, slope insulation to create a square drain sump with each side equal to the diameter of the drain bowl plus 24 inches.
      1) Trim insulation so that water flow is unrestricted.
   f. Fill gaps exceeding 1/4 inch with insulation.
   g. Cut and fit insulation within 1/4 inch of nailers, projections, and penetrations.
   h. Adhere top layer of tapered insulation to layer below using adhesive in accordance with FM Approvals' RoofNav listed roof assembly requirements for specified Windstorm Resistance Classification and FM Global Property Loss Prevention Data Sheet 1-29, as follows:
      1) Set each layer of insulation in ribbons of bead-applied insulation adhesive, firmly pressing and maintaining insulation in place.

E. Installation Over Wood Sheathing (applies to decks with or without substrate board):
   1. Follow direction for "Installation Over Metal Decking" above, except that ends of insulation to be mechanically attached are to align with wood framing below.

3.7 ADHERED ROOFING INSTALLATION

A. Adhere roof membrane over area to receive roofing in accordance with roofing system manufacturer's written instructions.
B. Unroll membrane roof membrane and allow to relax before installing.
C. Start installation of roofing in presence of roofing system manufacturer's technical personnel.
D. Accurately align roof membrane, and maintain uniform side and end laps of minimum dimensions required by manufacturer. Stagger end laps.
E. Bonding Adhesive: Apply to substrate and underside of roof membrane at rate required by manufacturer, and allow to partially dry before installing roof membrane. Do not apply to splice area of roof membrane.
F. In addition to adhering, mechanically fasten roof membrane securely at terminations, penetrations, and perimeters.
G. Apply roof membrane with side laps shingled with slope of roof deck where possible.
H. Tape Seam Installation: Clean and prime both faces of splice areas, apply splice tape.
   1. Firmly roll side and end laps of overlapping roof membrane to ensure a watertight seam installation.
   2. Apply lap sealant and seal exposed edges of roofing terminations.
I. Factory-Applied Seam Tape Installation: Clean and prime surface to receive tape.
   1. Firmly roll side and end laps of overlapping roof membrane to ensure a watertight seam installation.
   2. Apply lap sealant and seal exposed edges of roofing terminations.
J. Spread sealant or mastic bed over deck-drain flange at roof drains, and securely seal roof membrane in place with clamping ring.
K. Adhere protection sheet over roof membrane at locations indicated.

3.8 INSTALLATION OF BASE FLASHING

A. Install sheet flashings and preformed flashing accessories, and adhere to substrates in accordance with roofing system manufacturer's written instructions.
B. Apply bonding adhesive to substrate and underside of sheet flashing at required rate, and allow to partially dry. Do not apply to seam area of flashing.
C. Flash penetrations and field-formed inside and outside corners with cured or uncured sheet flashing.
D. Clean splice areas, apply splicing cement, and firmly roll side and end laps of overlapping sheets to ensure a watertight seam installation. Apply lap sealant and seal exposed edges of sheet flashing terminations.
E. Terminate and seal top of sheet flashings and mechanically anchor to substrate through termination bars.

3.9 INSTALLATION OF WALKWAYS

A. Flexible Walkways: Install walkway products in accordance with manufacturer's written instructions.
   1. Install flexible walkways at the following locations:
      a. Perimeter of each rooftop unit.
      b. Between each rooftop unit location, creating a continuous path connecting rooftop unit locations.
      c. Between each roof hatch and each rooftop unit location or path connecting rooftop unit locations.
      d. Top and bottom of each roof access ladder.

e. Between each roof access ladder and each rooftop unit location or path connecting rooftop unit locations.
f. Locations indicated on Drawings.
g. As required by roof membrane manufacturer's warranty requirements.

2. Provide 6-inch clearance between adjoining pads.
3. Adhere walkway products to substrate with compatible adhesive in accordance with roofing system manufacturer's written instructions.

3.10 FIELD QUALITY CONTROL

A. Final Roof Inspection: Arrange for roofing system manufacturer's technical personnel to inspect roofing installation on completion, in presence of Architect, and to prepare inspection report.

B. Repair or remove and replace components of roofing system where inspections indicate that they do not comply with specified requirements.

3.11 PROTECTING AND CLEANING

A. Protect roofing system from damage and wear during remainder of construction period. When remaining construction does not affect or endanger roofing system, inspect roofing system for deterioration and damage, describing its nature and extent in a written report, with copies to Architect and Owner.

B. Correct deficiencies in or remove roofing system that does not comply with requirements, repair substrates, and repair or reinstall roofing system to a condition free of damage and deterioration at time of Substantial Completion and in accordance with warranty requirements.

C. Clean overspray and spillage from adjacent construction using cleaning agents and procedures recommended by manufacturer of affected construction.

END OF SECTION

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SECTION 07 62 00
SHEET METAL FLASHING AND TRIM

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes: **Custom** units for the following applications:
   1. Sheet metal materials.
   2. Wall sheet metal fabrications – for through-wall flashing and drip edge.
   3. Underlayment.
   4. Miscellaneous materials.

B. Related Section: See Section 07 71 00 - Roof Specialties for **manufactured** units if required.

1.2 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1.3 ACTION SUBMITTALS

A. Product data.

B. Shop Drawings: For sheet metal flashing and trim.
   1. Plans, elevations, sections, and attachment details.
   2. Fabrication and installation layouts, expansion-joint locations, and keyed details. Distinguish between shop- and field-assembled Work.
   3. Identification of material, thickness, weight, and finish for each item and location in Project.
   4. Details for forming, including profiles, shapes, seams, and dimensions.
   5. Details for joining, supporting, and securing, including layout and spacing of fasteners, cleats, clips, and other attachments. Include pattern of seams.
   6. Details of termination points and assemblies.
   7. Details of expansion joints and expansion-joint covers, including showing direction of expansion and contraction from fixed points.
   8. Details of roof-penetration flashing.
   9. Details of edge conditions, including eaves, ridges, valleys, rakes, crickets, flashings, and counterflashings.
   10. Details of special conditions.
   11. Details of connections to adjoining work.
   12. Formed flashing and trim at scale of not less than 1-1/2 inches per 12 inches.

C. Samples: For each exposed product and for each color and texture specified, 12 inches long by actual width.

D. Sustainable Design Submittals:
   1. Recycled Content: Postconsumer recycled content plus one-half of preconsumer recycled content not less than 25 percent.

1.4 INFORMATIONAL SUBMITTALS

A. Certificates: For each type of coping and roof edge flashing that is FM Approvals approved.

B. Product test reports.

C. Research reports.

D. Sample warranties.

1.5 CLOSEOUT SUBMITTALS

A. Maintenance data.

1.6 QUALITY ASSURANCE

A. Installer Qualifications: Entity that employs a supervisor who is an NRCA ProCertified Roofing Foreman or installers who are NRCA ProCertified Architectural Metal Flashings and Accessories Installers.

B. For roof edge flashings and copings that are ANSI/SPRI/FM 4435/ES-1 tested and FM Approvals approved, shop is to be listed as able to fabricate required details as tested and approved.

1.7 WARRANTY

A. Special Warranty on Finishes: Manufacturer agrees to repair finish or replace sheet metal flashing and trim that shows evidence of deterioration of factory-applied finishes within specified warranty period.
   1. Exposed Panel Finish: Deterioration includes, but is not limited to, the following:
      a. Color fading more than 5 Delta E units when tested in accordance with ASTM D2244.
      b. Chalking in excess of a No. 8 rating when tested in accordance with ASTM D4214.
      c. Cracking, checking, peeling, or failure of paint to adhere to bare metal.
   2. Finish Warranty Period: 20 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Sheet metal flashing and trim assemblies, including cleats, anchors, and fasteners, are to withstand wind loads, structural movement, thermally induced movement, and exposure to weather without failure due to defective

manufacture, fabrication, installation, or other defects in construction. Completed sheet metal flashing and trim are not to rattle, leak, or loosen, and are to remain watertight.

B. Sheet Metal Standard for Flashing and Trim: Comply with NRCA's "The NRCA Roofing Manual: Architectural Metal Flashing, Condensation and Air Leakage Control, and Reroofing" and SMACNA's "Architectural Sheet Metal Manual" requirements for dimensions and profiles shown unless more stringent requirements are indicated.

C. FM Approvals Listing: Manufacture and install roof edge flashings and copings that comply with requirements in FM Approvals 4471 as part of a roofing system and that are listed in FM Approvals' "Approval Guide" and approved for windstorm classification, Class 1A-90. Identify materials with name of fabricator and design approved by FM Approvals.

D. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes.

1. Temperature Change: 120 deg F, ambient; 180 deg F, material surfaces.

2.2 SHEET METAL MATERIALS

A. Protect mechanical and other finishes on exposed surfaces from damage by applying strippable, temporary protective film before shipping.

B. Metallic-Coated Steel Sheet: Zinc-coated (galvanized) steel sheet complying with minimum ASTM A653/A653M, G90 coating designation, or aluminum-zinc alloy-coated steel sheet complying with minimum ASTM A792/A792M, Class AZ50 coating designation; structural quality. Prepainted by the coil-coating process to comply with ASTM A755/A755M.

1. Nominal Thickness: 0.028 inch.
2. Recycled Content: Postconsumer recycled content plus one-half of preconsumer recycled content not less than 25 percent.
3. Surface: Smooth, flat.
4. Exposed Coil-Coated Finish:
   a. Two-Coat Fluoropolymer: Fluoropolymer finish containing not less than 70 percent PVDF resin by weight in color coat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
5. Color: As selected by Architect from manufacturer's full range.
6. Concealed Finish: Pretreat with manufacturer's standard white or light-colored acrylic or polyester backer finish, consisting of prime coat and wash coat with minimum total dry film thickness of 0.5 mil.

C. Stainless Steel Sheet: ASTM A240/A240M, Type 304, dead soft, fully annealed.

1. Nominal Thickness:
   a. Unless noted otherwise: 0.0188 inch.
   b. Drip Edge: 0.0250 inch.
   c. Built-In Gutters: 0.0250 inch.
2. Surface: Smooth, flat.
3. Exterior Finish: ASTM A480/A480M, No. 2D (dull, cold rolled).
   a. Surface Preparation: Remove tool and die marks and stretch lines, or blend into finish.

2.3 UNDERLAYMENT

A. Self-Adhering, High-Temperature Sheet Underlayment: Provide self-adhering, cold-applied, sheet underlayment, a minimum of 30 mils thick, specifically designed to withstand high metal temperatures beneath metal roofing. Provide primer when recommended by underlayment manufacturer.

1. Thermal Stability: Stable after testing at 240 deg F; ASTM D1970/D1970M.
2. Low-Temperature Flexibility: Passes after testing at minus 20 deg F or lower; ASTM D1970/D1970M.
3. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   a. ATAS International, Inc.
   b. Carlisle WIP Products; a brand of Carlisle Construction Materials.
   c. Henry Company; a Carlisle company.
   d. Owens Corning.

B. Slip Sheet: Rosin-sized building paper, 3 lb/100 sq. ft. minimum, of type required for application.

2.4 MISCELLANEOUS MATERIALS

A. Provide materials and types of fasteners, solder, protective coatings, sealants, and other miscellaneous items as required for complete sheet metal flashing and trim installation and as recommended by manufacturer of primary sheet metal or manufactured item unless otherwise indicated.

B. Fasteners: Wood screws, annular threaded nails, self-tapping screws, self-locking rivets and bolts, and other suitable fasteners designed to withstand design loads and recommended by manufacturer of primary sheet metal or manufactured item.

1. General: Blind fasteners or self-drilling screws, gasketed, with hex-washer head.

a. Exposed Fasteners: Heads matching color of sheet metal using plastic caps or factory-applied coating. Provide metal-backed EPDM or PVC sealing washers under heads of exposed fasteners bearing on weather side of metal.
b. Blind Fasteners: High-strength aluminum or stainless steel rivets suitable for metal being fastened.
c. Spikes and Ferrules: Same material as gutter; with spike with ferrule matching internal gutter width.

2. Fasteners for Zinc-Coated (Galvanized) or Aluminum-Zinc Alloy-Coated Steel Sheet: Series 300 stainless steel or hot-dip galvanized steel in accordance with ASTM A153/A153M or ASTM F2329/F2329M.
3. Fasteners for Aluminum Sheet: Aluminum or Series 300 stainless steel.
4. Fasteners for Stainless Steel Sheet: Series 300 stainless steel.
5. Fasteners for Copper Sheet: Copper, hardware bronze or passivated Series 300 stainless steel.

C. Solder:
1. For Zinc-Coated (Galvanized) Steel: ASTM B32, Grade Sn50, 50 percent tin and 50 percent lead or Grade Sn60, 60 percent tin and 40 percent lead with maximum lead content of 0.2 percent.
2. For Stainless Steel: ASTM B32, Grade Sn60, with acid flux of type recommended by stainless steel sheet manufacturer.

D. Sealant Tape: Pressure-sensitive, 100 percent solids, polyisobutylene compound sealant tape with release-paper backing. Provide permanently elastic, nonsag, nontoxic, nonstaining tape 1/2 inch wide and 1/8 inch thick.

E. Elastomeric Sealant: ASTM C920, elastomeric polyurethane polymer sealant; of type, grade, class, and use classifications required to seal joints in sheet metal flashing and trim and remain watertight.

F. Butyl Sealant: ASTM C1311, single-component, solvent-release butyl rubber sealant; polyisobutylene plasticized; heavy bodied for hooked-type expansion joints with limited movement.

G. Bituminous Coating: Cold-applied asphalt emulsion in accordance with ASTM D1187/D1187M.

H. Asphalt Roofing Cement: ASTM D4586/D4586M, asbestos free, of consistency required for application.

I. Reglets: Units of type, material, and profile required, formed to provide secure interlocking of separate reglet and counterflashing pieces, and compatible with flashing indicated with factory-mitered and -welded corners and junctions and with interlocking counterflashing on exterior face, of same metal as reglet.
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
a. Fry Reglet Corporation.
b. Heckmann Building Products, Inc.
c. Hohmann & Barnard, Inc.
d. Metal-Era, Inc.
2. Material: Stainless steel, 0.0188 inch thick.
3. Surface-Mounted Type: Provide with slotted holes for fastening to substrate, with neoprene or other suitable weatherproofing washers, and with channel for sealant at top edge.
4. Stucco Type: Provide with upturned fastening flange and extension leg of length to match thickness of applied finish materials.
5. Concrete Type: Provide temporary closure tape to keep reglet free of concrete materials, special fasteners for attaching reglet to concrete forms, and guides to ensure alignment of reglet section ends.
6. Masonry Type: Provide with offset top flange for embedment in masonry mortar joint.
7. Accessories:
a. Flexible-Flashing Retainer: Provide resilient plastic or rubber accessory to secure flexible flashing in reglet where clearance does not permit use of standard metal counterflashing or where Drawings show reglet without metal counterflashing.
b. Counterflashing Wind-Restraint Clips: Provide clips to be installed before counterflashing to prevent wind uplift of counterflashing's lower edge.
8. Finish: With manufacturer's standard color coating.

2.5 FABRICATION, GENERAL

A. Custom fabricate sheet metal flashing and trim to comply with details indicated and recommendations in cited sheet metal standard that apply to design, dimensions, geometry, metal thickness, and other characteristics of item required.
1. Fabricate sheet metal flashing and trim in shop to greatest extent possible.
2. Fabricate sheet metal flashing and trim in thickness or weight needed to comply with performance requirements, but not less than that specified for each application and metal.
3. Verify shapes and dimensions of surfaces to be covered and obtain field measurements for accurate fit before shop fabrication.
4. Form sheet metal flashing and trim to fit substrates without excessive oil-canning, buckling, and tool marks; true to line, levels, and slopes; and with exposed edges folded back to form hems.

5. Conceal fasteners and expansion provisions where possible. Do not use exposed fasteners on faces exposed to view.

B. Fabrication Tolerances:
1. Fabricate sheet metal flashing and trim that is capable of installation to a tolerance of 1/4 inch in 20 ft. on slope and location lines indicated on Drawings and within 1/8-inch offset of adjoining faces and of alignment of matching profiles.
2. Fabricate sheet metal flashing and trim that is capable of installation to tolerances specified.

C. Expansion Provisions: Form metal for thermal expansion of exposed flashing and trim.
1. Form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with butyl sealant concealed within joints.
2. Use lapped expansion joints only where indicated on Drawings.

D. Sealant Joints: Where movable, nonexpansion-type joints are required, form metal in accordance with cited sheet metal standard to provide for proper installation of elastomeric sealant.

E. Fabricate cleats and attachment devices from same material as accessory being anchored or from compatible, noncorrosive metal.

F. Fabricate cleats and attachment devices of sizes as recommended by cited sheet metal standard for application, but not less than thickness of metal being secured.

G. Seams - Typical:
1. Fabricate nonmoving seams with flat-lock seams. Form seams and seal with elastomeric sealant unless otherwise recommended by sealant manufacturer for intended use. Rivet joints where necessary for strength.
2. Seams for Aluminum: Fabricate nonmoving seams with flat-lock seams. Form seams and seal with epoxy seam sealer. Rivet joints where necessary for strength.

H. Seams – Concealed Gutters and Thru-Wall Scuppers:
1. Fabricate nonmoving seams with flat-lock seams. Tin edges to be seamed, form seams, and solder.

2.6 ROOF-DRAINAGE SHEET METAL FABRICATIONS

A. Hanging Gutters:
1. Fabricate to cross section required, complete with end pieces, outlet tubes, and other accessories as required.
2. Fabricate in minimum 96-inch-long sections.
3. Furnish flat-stock gutter brackets and flat-stock gutter spacers and straps fabricated from same metal as gutters, of size recommended by cited sheet metal standard, but with thickness not less than twice the gutter thickness.
4. Fabricate expansion joints, expansion-joint covers, gutter bead reinforcing bars, and gutter accessories from same metal as gutters. Shop fabricate interior and exterior corners.
5. Gutters with Girth up to 15 Inches: Fabricate from the following materials:
a. Aluminum-Zinc Alloy-Coated Steel: See above.

B. Built-in Gutters:
1. Fabricate to cross section required, with riveted and soldered joints, complete with end pieces, outlet tubes, and other special accessories as required.
2. Fabricate in minimum 96-inch-long sections. Fabricate expansion joints and accessories from same metal as gutters unless otherwise indicated.
3. Fabricate gutters with built-in expansion joints and gutter-end expansion joints at walls.
4. Fabricate from the following materials:
a. Stainless Steel: See above.

C. Downspouts: Fabricate rectangular downspouts to dimensions indicated on Drawings, complete with mitered elbows. Furnish with metal hangers from same material as downspouts and anchors. Shop fabricate elbows.
1. Fabricate from the following materials:
a. Aluminum-Zinc Alloy-Coated Steel: See above.

D. Splash Pans: Fabricate to dimensions and shape required and from the following materials:
1. Stainless Steel: See above.

2.7 LOW-SLOPE ROOF SHEET METAL FABRICATIONS

A. Roof Edge Flashing (Gravel Stop) and Fascia Cap: Fabricate in minimum 96-inch-long, but not exceeding 12 ft. long sections. Furnish with 6-inch-wide, joint cover plates. Shop fabricate interior and exterior corners.
1. Fabricate from the following materials:
a. Stainless Steel: See above.

B. Copings: Fabricate in minimum 96-inch-long, but not exceeding 12 ft.- long, sections. Fabricate joint plates of same thickness as copings. Furnish with continuous cleats to support edge of external leg and drill elongated holes for fasteners on interior leg. Miter corners, fasten and seal watertight. Shop fabricate interior and exterior corners.
1. Fabricate from the following materials:
a. Aluminum-Zinc Alloy-Coated Steel: **0.040 inch thick.**

C. Base Flashing: Shop fabricate interior and exterior corners. Fabricate from the following materials:
1. Aluminum-Zinc Alloy-Coated Steel: See above.

D. Counterflashing: Shop fabricate interior and exterior corners. Fabricate from the following materials:
1. Aluminum-Zinc Alloy-Coated Steel: See above.

E. Roof-Penetration Flashing: Fabricate from the following materials:
1. Stainless Steel: See above.

F. Roof-Drain Flashing: Fabricate from the following materials:
1. Stainless Steel: See above.

2.8 WALL SHEET METAL FABRICATIONS

A. Through-Wall Flashing: Fabricate continuous flashings in minimum 96-inch-long, but not exceeding 12 ft. long, sections, under copings, and at shelf angles. Fabricate discontinuous lintel, sill, and similar flashings to extend 6 inches beyond each side of wall openings; and form with 2-inch-high, end dams. Fabricate from the following materials:
1. Stainless Steel Flexible Flashing (self-adhering): 0.012 inch thick including butyl adhesive.

B. Opening Flashings in Frame Construction: Fabricate head, sill, jamb, and similar flashings to extend 4 inches beyond wall openings. Form head and sill flashing with 2-inch-high, end dams. Fabricate from the following materials:
1. Stainless Steel Flexible Flashing (self-adhering): 0.012 inch thick including butyl adhesive.

C. Basis-of-Design: York 304 SA.

D. Hemmed Drip-Edge: Manufactured from stainless steel sheet.
1. Thickness: See above.

E. Wall Expansion-Joint Cover: Fabricate from the following materials:
1. Aluminum-Zinc Alloy-Coated Steel: See above.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances, substrates, and other conditions affecting performance of the Work.
1. Verify compliance with requirements for installation tolerances of substrates.
2. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and securely anchored.
3. Verify that air- or water-resistant barriers have been installed over substrate to prevent air infiltration or water penetration.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION OF UNDERLAYMENT

A. Self-Adhering, High-Temperature Sheet Underlayment:
1. Install self-adhering, high-temperature sheet underlayment; wrinkle free.
2. Prime substrate if recommended by underlayment manufacturer.
3. Comply with temperature restrictions of underlayment manufacturer for installation; use primer for installing underlayment at low temperatures.
4. Apply in shingle fashion to shed water, with end laps of not less than 6 inches staggered 24 inches between courses.
5. Overlap side edges not less than 3-1/2 inches. Roll laps and edges with roller.
6. Roll laps and edges with roller.
7. Cover underlayment within 14 days.

B. Install slip sheet, wrinkle free, over underlayment before installing sheet metal flashing and trim.
1. Install in shingle fashion to shed water.
2. Lapp joints not less than 4 inches.

3.3 INSTALLATION OF SHEET METAL FLASHING AND TRIM, GENERAL

A. Install sheet metal flashing and trim to comply with details indicated and recommendations of cited sheet metal standard that apply to installation characteristics required unless otherwise indicated on Drawings.
1. Install fasteners, solder, protective coatings, separators, sealants, and other miscellaneous items as required to complete sheet metal flashing and trim system.
2. Install sheet metal flashing and trim true to line, levels, and slopes. Provide uniform, neat seams with minimum exposure of solder and/orsealant.

3. Anchor sheet metal flashing and trim and other components of the Work securely in place, with provisions for thermal and structural movement.
4. Install sheet metal flashing and trim to fit substrates and to result in watertight performance.
5. Install continuous cleats with fasteners spaced not more than 12 inches o.c.
6. Space individual cleats not more than 12 inches apart. Attach each cleat with at least two fasteners. Bend tabs over fasteners.
7. Install exposed sheet metal flashing and trim with limited oil-canning, and free of buckling and tool marks.
8. Do not field cut sheet metal flashing and trim by torch.
9. Do not use graphite pencils to mark metal surfaces.

B. Metal Protection: Where dissimilar metals contact each other, or where metal contacts pressure-treated wood or other corrosive substrates, protect against galvanic action or corrosion by painting contact surfaces with bituminous coating or by other permanent separation as recommended by sheet metal manufacturer or cited sheet metal standard.
1. Coat concealed side of uncoated-aluminum and stainless steel sheet metal flashing and trim with bituminous coating where flashing and trim contact wood, ferrous metal, or cementitious construction.
2. Underlayment: Where installing sheet metal flashing and trim directly on cementitious or wood substrates, install underlayment and cover with slip sheet.

C. Expansion Provisions: Provide for thermal expansion of exposed flashing and trim.
1. Space movement joints at maximum of 10 ft. with no joints within 24 inches of corner or intersection.
2. Form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with sealant concealed within joints.
3. Use lapped expansion joints only where indicated on Drawings.

D. Fasteners: Use fastener sizes that penetrate substrate not less than recommended by fastener manufacturer to achieve maximum pull-out resistance.

E. Conceal fasteners and expansion provisions where possible in exposed work and locate to minimize possibility of leakage. Cover and seal fasteners and anchors as required for a tight installation.

F. Seal joints as required for watertight construction.
1. Use sealant-filled joints unless otherwise indicated.
a. Embed hooked flanges of joint members not less than 1 inch into sealant.
b. Form joints to completely conceal sealant.
c. When ambient temperature at time of installation is between 40 and 70 deg F, set joint members for 50 percent movement each way.
d. Adjust setting proportionately for installation at higher ambient temperatures.
1) Do not install sealant-type joints at temperatures below 40 deg F.
2. Prepare joints and apply sealants to comply with requirements in Section 07 92 00 "Joint Sealants."

G. Soldered Joints: Clean surfaces to be soldered, removing oils and foreign matter.
1. Pretin edges of sheets with solder to width of 1-1/2 inches; however, reduce pretinning where pretinned surface would show in completed Work.
2. Do not solder metallic-coated steel and aluminum sheet.
3. Do not use torches for soldering.
4. Heat surfaces to receive solder, and flow solder into joint.
a. Fill joint completely.
b. Completely remove flux and spatter from exposed surfaces.
5. Stainless Steel Soldering:
a. Tin edges of uncoated sheets, using solder for stainless steel and acid flux.
b. Promptly remove acid-flux residue from metal after tinning and soldering.
c. Comply with solder manufacturer's recommended methods for cleaning and neutralization.

H. Rivets: Rivet joints in uncoated aluminum where necessary for strength.

3.4 INSTALLATION OF ROOF-DRAINAGE SHEET METAL FABRICATIONS

A. Install sheet metal roof-drainage items to produce complete roof-drainage system in accordance with cited sheet metal standard unless otherwise indicated. Coordinate installation of roof perimeter flashing with installation of roof-drainage system.

B. Hanging Gutters:
1. Join sections with riveted joints sealed with sealant.
2. Provide for thermal expansion.
3. Attach gutters at eave or fascia to firmly anchor them in position.
4. Provide end closures and seal watertight with sealant.
5. Slope to downspouts.

6. Install gutter with expansion joints at locations indicated on Drawings, but not exceeding, 50 ft. apart. Install expansion-joint caps.

C. Built-in Gutters:
1. Join sections with riveted and soldered joints.
2. Provide for thermal expansion.
3. Slope to downspouts.
4. Provide end closures and seal watertight with sealant.
5. Install underlayment layer in built-in gutter trough and extend to drip edge at eaves and under underlayment on roof sheathing.
a. Lap sides minimum of 2 inches over underlying course.
b. Lap ends minimum of 4 inches.
c. Stagger end laps between succeeding courses at least 72 inches.
d. Fasten with roofing nails.
e. Install slip sheet over underlayment.
6. Install gutter with expansion joints at locations indicated on Drawings, but not exceeding, 50 ft. apart. Install expansion-joint caps.

D. Downspouts:
1. Join sections with 1-1/2-inch telescoping joints.
2. Provide hangers with fasteners designed to hold downspouts securely to walls.
3. Locate hangers at top and bottom and at approximately 60 inches o.c.
4. Provide elbows at base of downspout to direct water away from building.
5. Connect downspouts to underground drainage system.

E. Splash Pans:
1. Install where downspouts discharge on low-slope roofs.
2. Set in asphalt roofing cement or elastomeric sealant compatible with the substrate.

3.5 INSTALLATION OF SLOPED ROOF SHEET METAL FABRICATIONS

A. Install sheet metal flashing and trim to comply with performance requirements and cited sheet metal standard.
1. Provide concealed fasteners where possible, and set units true to line, levels, and slopes.
2. Install work with laps, joints, and seams that are permanently watertight and weather resistant.

B. Roof Edge Flashing:
1. Install roof edge flashings in accordance with ANSI/SPRI/FM 4435/ES-1.
2. Anchor to resist uplift and outward forces in accordance with recommendations in cited sheet metal standard unless otherwise indicated. Interlock bottom edge of roof edge flashing with continuous cleat anchored to substrate at staggered 3-inch centers.
3. Anchor to resist uplift and outward forces in accordance with recommendations in FM Global Property Loss Prevention Data Sheet 1-49 for FM Approvals' listing for required windstorm classification.

C. Copings:
1. Install copings in accordance with ANSI/SPRI/FM 4435/ES-1.
2. Anchor to resist uplift and outward forces in accordance with recommendations in cited sheet metal standard unless otherwise indicated.
a. Interlock exterior bottom edge of coping with continuous cleat anchored to substrate at 24-inch centers.
b. Anchor interior leg of coping with washers and screw fasteners through slotted holes at 24-inch centers.

D. Pipe or Post Counterflashing: Install counterflashing umbrella with close-fitting collar with top edge flared for elastomeric sealant, extending minimum of 4 inches over base flashing. Install stainless steel draw band and tighten.

E. Counterflashing: Coordinate installation of counterflashing with installation of base flashing.
1. Insert counterflashing in reglets or receivers and fit tightly to base flashing.
2. Extend counterflashing 4 inches over base flashing.
3. Lap counterflashing joints minimum of 4 inches.

F. Roof-Penetration Flashing: Coordinate installation of roof-penetration flashing with installation of roofing and other items penetrating roof. Seal with elastomeric sealant and clamp flashing to pipes that penetrate roof.

3.6 INSTALLATION OF WALL SHEET METAL FABRICATIONS

A. Install sheet metal wall flashing to intercept and exclude penetrating moisture in accordance with cited sheet metal standard unless otherwise indicated. Coordinate installation of wall flashing with installation of wall-opening components such as windows, doors, and louvers.

B. Opening Flashings in Frame Construction: Install continuous head, sill, jamb, and similar flashings to extend 4 inches beyond wall openings.

C. Reglets: Installation of reglets is specified in Section 03 30 00 "Cast-in-Place Concrete" or Section 04 20 00 "Unit Masonry."

3.7 INSTALLATION TOLERANCES

A. Shim and align sheet metal flashing and trim within installed tolerance of 1/4 inch in 20 ft. on slope and location lines indicated on Drawings and within 1/8-inch offset of adjoining faces and of alignment of matching profiles.

3.8 CLEANING

A. Clean exposed metal surfaces of substances that interfere with uniform oxidation and weathering.

B. Clean and neutralize flux materials. Clean off excess solder.

C. Clean off excess sealants.

3.9 PROTECTION

A. Remove temporary protective coverings and strippable films as sheet metal flashing and trim are installed unless otherwise indicated in manufacturer's written installation instructions.

B. Replace sheet metal flashing and trim that have been damaged or that have deteriorated beyond successful repair by finish touchup or similar minor repair procedures, as determined by Architect.

END OF SECTION

SECTION 07 72 53
SNOW GUARDS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Pad-type, flat-mounted metal snow guards.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.
B. Shop Drawings: Include roof plans showing layouts and attachment details of snow guards.
   1. Include details of rail-type snow guards.
C. Samples:
   1. Pad-Type Snow Guards: Full-size unit with installation hardware.
      a. For units with factory-applied finishes, submit manufacturer's standard color selections.
D. Delegated Design Submittals: For snow guards, include analysis reports signed and sealed by the qualified professional engineer responsible for their preparation.
   1. Include calculation of number and location of snow guards.

1.3 INFORMATIONAL SUBMITTALS

A. Qualification Data: For professional engineer's experience with providing delegated design engineering services of the kind indicated, including documentation that the engineer is licensed in the state in which the Project is located.
B. Product Test Reports: For each type of snow guard, for tests performed by a qualified testing agency, indicating load at failure of attachment to roof system identical to roof system used on this Project.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Delegated Design: Engage a qualified professional engineer, as defined in Section 01 40 00 "Quality Requirements," to design snow guards, including attachment to roofing material and roof deck, applicable for attachment method, based on the following:
   1. Roof snow load.
   2. Snow drifting
   3. Roof slope.
   4. Roof type.
   5. Roof dimensions.
   6. Roofing substrate type and thickness.
   7. Snow guard type.
   8. Snow guard fastening method and strength.
   9. Snow guard spacing.
   10. Coefficient of Friction Between Snow and Roof Surface: 0.
   11. Factor of Safety: 2.
B. Performance Requirements: Provide snow guards that withstand exposure to weather and resist thermally induced movement without failure, rattling, or fastener disengagement due to defective manufacture, fabrication, installation, or other defects in construction.
   1. Temperature Change: 120 deg F, ambient; 180 deg F, material surfaces.
C. Structural Performance: Snow guards shall withstand the effects of gravity loads and the following loads and stresses within limits and under conditions indicated.
   1. Snow Loads: As indicated on Drawings.

2.2 PAD-TYPE SNOW GUARDS

A. Pad-Type, Flat-Mounted Metal Snow Guards:
   1. Material:
      a. ASTM A792/A792M, Class AZ50 aluminum-zinc alloy-coated steel sheet, Grade 40 but not less than 0.022 inch thick.
         1) Finish: High-performance organic two-coat fluoropolymer finish complying with AAMA 2605 and containing not less than 70 percent PVDF resin by weight in color coat.
            a) Color: As selected by Architect from manufacturer's full range.
   2. Attachment: Manufacturer's tested system, capable of resisting design loads.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install snow guards according to manufacturer's written instructions.
   1. Space rows as indicated on Shop Drawings.
B. Attachment for Standing-Seam Metal Roofing:

1. Do not use fasteners that will penetrate metal roofing or fastening methods that void metal roofing finish warranty.
2. Pad-Type, Flat-Mounted Snow Guards:
   a. Mechanically attach to metal roofing according to manufacturer's instructions.

END OF SECTION

SECTION 07 84 13
PENETRATION FIRESTOPPING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
1. Penetration firestopping systems.
2. Penetrations in fire-resistance-rated walls.
3. Penetrations in horizontal assemblies.
4. Penetrations in smoke barriers.
5. Exposed penetration firestopping systems.

1.2 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1.3 ACTION SUBMITTALS

A. Product data.

B. Product Schedule: For each penetration firestopping system. Include location, illustration of firestopping system, and design designation of qualified testing and inspecting agency.
1. Engineering Judgments: Where Project conditions require modification to a qualified testing and inspecting agency's illustration for a particular penetration firestopping system, submit illustration, with modifications marked, approved by penetration firestopping system manufacturer's fire-protection engineer as an engineering judgment or equivalent fire-resistance-rated assembly developed in accordance with current International Firestop Council (IFC) guidelines. Obtain approval of authorities having jurisdiction prior to submittal.

C. Sustainable Design Submittals:
1. Product Data: For sealants, indicating VOC content.
2. Laboratory Test Reports: For sealants, indicating compliance with requirements for low-emitting materials.

1.4 INFORMATIONAL SUBMITTALS

A. Listed system designs.

1.5 CLOSEOUT SUBMITTALS

A. Installer Certificates: From Installer indicating that penetration firestopping systems have been installed in compliance with requirements and manufacturer's written instructions.

1.6 QUALITY ASSURANCE

A. Installer Qualifications: Entity that has been approved by FM Approvals in accordance with FM Approvals 4991 or been evaluated by UL and found to comply with UL's "UL Solutions Qualified Firestop Contractor Program."

B. Manufacturer Qualifications: Entity that has received UL's "Firestop Movement Certification," which demonstrates that manufacturer's firestopping products designated with M-Ratings are based on exposure to cyclic movement and UL 1479 fire test evaluation when tested in accordance with ASTM E3037.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Fire-Test-Response Characteristics:
1. Perform penetration firestopping system tests by a qualified testing agency acceptable to authorities having jurisdiction.
2. Test in accordance with testing standards referenced in "Penetration Firestopping Systems" Article. Provide rated systems complying with the following requirements:
a. Penetration firestop systems installed with products bearing the classification marking of a qualified testing agency.
1) UL in its online directory "Product iQ."
2) Intertek Group in its "Directory of Building Products."
3) FM Approvals in its "Approval Guide."

2.2 PENETRATION FIRESTOPPING SYSTEMS

A. Penetration Firestopping Systems: Systems that resist spread of fire, passage of smoke and other gases, and maintain original fire-resistance rating of construction penetrated. Penetration firestopping systems are to be compatible with one another, with the substrates forming openings, and with penetrating items if any.
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
a. 3M Building and Construction.
b. Hilti, Inc.
c. Tremco Incorporated.

B. Penetrations in Fire-Resistance-Rated Walls: Penetration firestopping systems with ratings determined in accordance with ASTM E814 or UL 1479.

1. F-Rating: Not less than the fire-resistance rating of the wall penetrated.
2. Membrane Penetrations: Install recessed fixtures such that the required fire resistance will not be reduced.
3. M-Rating: Provide penetration firestopping systems meeting specified F-Rating after being tested in accordance with ASTM E3037.

C. Penetrations in Horizontal Assemblies: Penetration firestopping systems with ratings determined in accordance with ASTM E814 or UL 1479.
1. F-Rating: At least one hour, but not less than the fire-resistance rating of the floor penetrated.
2. T-Rating: At least one hour, but not less than the fire-resistance rating of the floor. The following floor penetrations do not require a T-rating:
a. Those within the cavity of a wall.
b. Floor, tub, or shower drains within a concealed space.
c. 4-inch or smaller metal conduit penetrating directly into metal-enclosed electrical switchgear.
3. W-Rating: Provide penetration firestopping systems with a Class 1 W-rating in accordance with UL 1479.
4. M-Rating: Provide penetration firestopping systems meeting specified F-Rating, T-Rating, and W-Rating after being tested in accordance with ASTM E3037.

D. Penetrations in Smoke Barriers: Penetration firestopping systems with ratings determined in accordance with UL 1479.
1. L-Rating: Not exceeding 5.0 cfm/sq. ft. of penetration opening and no more than 50-cfm cumulative total for any 100 sq. ft. at both ambient and elevated temperatures.
2. M-Rating: Provide penetration firestopping systems meeting specified L-Rating after being tested in accordance with ASTM E3037.

E. Exposed Penetration Firestopping Systems: Flame-spread and smoke-developed indexes of less than 25 and 450, respectively, when tested in accordance with ASTM E84 or UL 723.
1. Verify sealant has a VOC content of 250 g/L or less.
2. Verify sealant complies with the testing and product requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."

F. Accessories: Provide components for each penetration firestopping system that are needed to install fill materials and to maintain ratings required. Use only those components specified by penetration firestopping system manufacturer and approved by qualified testing and inspecting agency for conditions indicated.

PART 3 - EXECUTION

3.1 INSTALLATION OF PENETRATION FIRESTOPPING SYSTEMS

A. Examine substrates and conditions, with Installer present, for compliance with requirements for opening configurations, penetrating items, substrates, and other conditions affecting performance of the Work.

B. General: Install penetration firestopping systems to comply with manufacturer's written installation instructions and published drawings for products and applications.

C. Install forming materials and other accessories of types required to support fill materials during their application and in the position needed to produce cross-sectional shapes and depths required to achieve fire ratings.
1. After installing fill materials and allowing them to fully cure, remove combustible forming materials and other accessories not forming permanent components of firestopping.

D. Install fill materials by proven techniques to produce the following results:
1. Fill voids and cavities formed by openings, forming materials, accessories and penetrating items to achieve required fire-resistance ratings.
2. Apply materials so they contact and adhere to substrates formed by openings and penetrating items.
3. For fill materials that will remain exposed after completing the Work, finish to produce smooth, uniform surfaces that are flush with adjoining finishes.

3.2 IDENTIFICATION

A. Wall Identification: Permanently label walls containing penetration firestopping systems with the words "FIRE AND/OR SMOKE BARRIER - PROTECT ALL OPENINGS," using lettering not less than 3 inches high and with minimum 0.375-inch strokes.
1. Locate in accessible concealed floor, floor-ceiling, or attic space at 15 ft. from end of wall and at intervals not exceeding 30 ft..

END OF SECTION

SECTION 07 84 43
JOINT FIRESTOPPING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
1. Joints in or between fire-resistance-rated construction.
2. Joints at exterior curtain-wall/floor intersections.
3. Joints in smoke barriers.

1.2 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1.3 ACTION SUBMITTALS

A. Product data.

B. Product Schedule: For each joint firestopping system. Include location, illustration of firestopping system, and design designation of qualified testing agency.
1. Engineering Judgments: Where Project conditions require modification to a qualified testing agency's illustration for a particular joint firestopping system condition, submit illustration, with modifications marked, approved by joint firestopping system manufacturer's fire-protection engineer as an EJ or equivalent fire-resistance-rated assembly developed in accordance with current IFC guidelines.

C. Sustainable Design Submittals:
1. Product Data: For sealants, indicating VOC content.
2. Laboratory Test Reports: For sealants, indicating compliance with requirements for low-emitting materials.

1.4 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer.

B. Listed System Designs: For each joint firestopping system, for tests performed by a qualified testing agency.

1.5 CLOSEOUT SUBMITTALS

A. Installer Certificates: From Installer indicating that joint firestopping systems have been installed in compliance with requirements and manufacturer's written installation instructions.

1.6 QUALITY ASSURANCE

A. Installer Qualifications: A firm that has been approved by FM Approvals in accordance with FM Approvals 4991 or been evaluated by UL and found to comply with UL's "UL Solutions Qualified Firestop Contractor Program."

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Fire-Test-Response Characteristics:
1. A qualified testing agency, acceptable to authorities having jurisdiction, will perform joint firestopping system tests.
2. Test in accordance with testing standards referenced in "Joint Firestopping Systems" Article. Provide rated systems complying with the following requirements:
a. Joint firestop systems installed with products bearing the classification marking of a qualified product certification agency in accordance with listed system designs published by a qualified testing agency.
1) UL in its online directory "Product iQ."
2) Intertek Group in its "Directory of Building Products."

B. Rain/Water Resistance: For perimeter fire-barrier system applications, where inclement weather or greater-than-transient water exposure is expected, use products that dry rapidly and cure in the presence of atmospheric moisture sufficient to pass ASTM D6904 early rain-resistance test (24-hour exposure).

2.2 JOINT FIRESTOPPING SYSTEM TYPES

A. General: Systems that resist spread of fire, passage of smoke and other gases, and maintain original fire-resistance rating of assemblies in or between which joint firestopping systems are installed. Joint firestopping systems must accommodate building movements without impairing their ability to resist the passage of fire and hot gases.
1. Joint firestopping systems that are compatible with one another, with the substrates forming openings, and with penetrating items, if any.
2. Provide products that, upon curing, do not re-emulsify, dissolve, leach, break down, or otherwise deteriorate over time from exposure to atmospheric moisture, sweating pipes, ponding water or other forms of moisture.
3. Provide firestop products that do not contain ethylene glycol.

B. Joints in or between Fire-Resistance-Rated Construction: Provide joint firestopping systems with ratings determined in accordance with ASTM E1966 or UL 2079, with published L-Ratings for ambient and elevated temperatures as evidence of the ability of the fire-resistive joint system to restrict the movement of smoke.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   a. 3M Building and Construction.
   b. Hilti, Inc.
   c. Tremco Incorporated.
2. Fire-Resistance Rating: Equal to or exceeding the fire-resistance rating of the wall, floor, or roof in or between which it is installed.

C. Joints at Exterior Curtain-Wall/Floor Intersections: Provide joint firestopping systems with rating determined in accordance with ASTM E2307.
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   a. 3M Building and Construction.
   b. Hilti, Inc.
   c. Tremco Incorporated.
2. F-Rating: Equal to or exceeding the fire-resistance rating of the floor assembly.

D. Joints in Smoke Barriers: Provide joint firestopping systems with ratings determined in accordance with UL 2079 based on testing at a positive pressure differential of 0.30 inch wg.
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   a. 3M Building and Construction.
   b. Hilti, Inc.
   c. Tremco Incorporated.
2. L-Rating: Not exceeding 5.0 cfm/ft. of joint at both ambient and elevated temperatures.

E. Exposed Joint Firestopping Systems: Flame-spread and smoke-developed indexes of less than 25 and 450, respectively, as determined in accordance with ASTM E84.
1. Verify sealant complies with the testing and product requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."

2.3 ACCESSORIES

A. Provide components of joint firestopping systems, including primers and forming materials, that are needed to install elastomeric fill materials and to maintain ratings required. Use only components specified by joint firestopping system manufacturer and approved by the qualified testing agency for conditions indicated.

PART 3 - EXECUTION

3.1 PREPARATION

A. Surface Cleaning: Before installing joint firestopping systems, clean joints in accordance with fire-resistive joint system manufacturer's written installation instructions and the following requirements:
1. Remove foreign materials from substrate surfaces that could interfere with adhesion of elastomeric fill materials or compromise fire-resistive rating.
2. Clean joint substrates to produce clean, sound surfaces capable of developing optimum bond with elastomeric fill materials. Remove loose particles remaining from cleaning operation.
3. Remove laitance and form-release agents from concrete.

B. Prime substrates in accordance with joint firestopping system manufacturer's written installation instructions, using that manufacturer's recommended products and methods. Confine primers to areas of bond; do not allow spillage and migration onto exposed surfaces.

C. Apply a suitable bond breaker to prevent three-sided adhesion in applications where condition occurs.

3.2 INSTALLATION

A. General: Install joint firestopping systems in accordance with manufacturer's written installation instructions and published drawings for products and applications indicated.

B. Install forming materials and other accessories of types required to support elastomeric fill materials during their application and in position needed to produce cross-sectional shapes and depths required to achieve fire ratings indicated.
1. After installing elastomeric fill materials and allowing them to fully cure, remove combustible forming materials and other accessories not indicated as permanent components of fire-resistive joint system.

C. Install elastomeric fill materials for joint firestopping systems by proven techniques to produce the following results:
1. Apply elastomeric fill in voids and cavities formed by joints and forming materials as required to achieve fire-resistance ratings indicated.
2. Apply elastomeric fill materials so they contact and adhere to substrates formed by joints.
3. For elastomeric fill materials that will remain exposed after completing the Work, finish to produce smooth, uniform surfaces that are flush with adjoining finishes.

3.3 IDENTIFICATION

A. Wall Identification: Permanently label walls containing firestopping systems with the words "FIRE AND/OR SMOKE BARRIER - PROTECT ALL OPENINGS," using lettering not less than 3 inches high and with minimum 0.375-inch strokes.

1. Locate in accessible concealed floor, floor-ceiling, or attic space at 15 ft. from end of wall and at intervals not exceeding 30 ft..

3.4 CLEANING AND PROTECTION

A. Clean off excess elastomeric fill materials adjacent to joints as the Work progresses by methods and with cleaning materials that are approved in writing by joint firestopping system manufacturers and that do not damage materials in which joints occur.

B. Provide final protection and maintain conditions during and after installation that ensure joint firestopping systems are without damage or deterioration at time of Substantial Completion. If damage or deterioration occurs despite such protection, cut out and remove damaged or deteriorated joint firestopping systems immediately and install new materials to produce joint firestopping systems complying with specified requirements.

END OF SECTION

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SECTION 07 92 00
JOINT SEALANTS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Silicone joint sealants.
   2. Nonstaining silicone joint sealants.
   3. Urethane joint sealants.
   4. Immersible joint sealants.
   5. Mildew-resistant joint sealants.
   6. Latex joint sealants.

1.2 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1.3 ACTION SUBMITTALS

A. Product data.

B. Samples: Manufacturer's standard color charts consisting of strips of cured sealants showing the full range of colors available for each product exposed to view.

C. Joint-sealant schedule.

1.4 INFORMATIONAL SUBMITTALS

A. Field Quality-Control Reports: For field-adhesion-test reports, for each sealant application tested.

B. Sample warranties.

1.5 CLOSEOUT SUBMITTALS

A. Warranty Documentation:
   1. Manufacturers' special warranties.
   2. Installer's special warranties.

1.6 QUALITY ASSURANCE

A. Installer Qualifications: Authorized representative who is trained and approved by manufacturer.

B. Testing Agency Qualifications: Qualified in accordance with ASTM C1021 to conduct the testing indicated.

1.7 WARRANTY

A. Special Installer's Warranty: Installer agrees to repair or replace joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.
   1. Warranty Period: Two years from date of Substantial Completion.

B. Special Manufacturer's Warranty: Manufacturer agrees to furnish joint sealants to repair or replace those joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.
   1. Warranty Period: Five years from date of Substantial Completion.

C. Special warranties specified in this article exclude deterioration or failure of joint sealants from the following:
   1. Movement of the structure caused by stresses on the sealant exceeding sealant manufacturer's written specifications for sealant elongation and compression.
   2. Disintegration of joint substrates from causes exceeding design specifications.
   3. Mechanical damage caused by individuals, tools, or other outside agents.
   4. Changes in sealant appearance caused by accumulation of dirt or other atmospheric contaminants.

PART 2 - PRODUCTS

2.1 JOINT SEALANTS, GENERAL

A. Compatibility: Provide joint sealants, backings, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by joint-sealant manufacturer, based on testing and field experience.

B. Colors of Exposed Joint Sealants: As selected by Architect from manufacturer's full range.

2.2 NONSTAINING SILICONE JOINT SEALANTS

A. Nonstaining Joint Sealants: No staining of substrates when tested in accordance with ASTM C1248.

B. Silicone, Nonstaining, S, NS, 50, NT: Nonstaining, single-component, nonsag, plus 50 percent and minus 50 percent movement capability, nontraffic-use, neutral-curing silicone joint sealant; ASTM C920, Type S, Grade NS, Class 50, Use NT.
   1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
      a. GE Construction Sealants; Momentive Performance Materials Inc.
      b. Sika Corporation - Building Components.
      c. The Dow Chemical Company.
      d. Tremco Incorporated.

2.3 URETHANE JOINT SEALANTS

A. Urethane, S, NS, 25, NT: Single-component, nonsag, plus 25 percent and minus 25 percent movement capability, nontraffic-use, urethane joint sealant; ASTM C920, Type S, Grade NS, Class 25, Use NT.
   1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
      a. PPG Paints; PPG Industries, Inc.
      b. Sherwin-Williams Company (The).
      c. Sika Corporation - Building Components.
      d. Tremco Incorporated.

B. Urethane, S, P, 25, T, NT: Single-component, pourable, plus 25 percent and minus 25 percent movement capability, traffic- and nontraffic-use, urethane joint sealant; ASTM C920, Type S, Grade P, Class 25, Uses T and NT.
   1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
      a. Master Builders Solutions; brand of MBCC Group.
      b. Pecora Corporation.
      c. Sherwin-Williams Company (The).

C. Urethane, M, P, 50, T, NT: Multicomponent, pourable, plus 50 percent and minus 50 percent movement capability, traffic- and nontraffic-use, urethane joint sealant; ASTM C920, Type M, Grade P, Class 50, Uses T and NT.
   1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
      a. LymTal International, Inc.

2.4 IMMERSIBLE JOINT SEALANTS

A. Immersible Joint Sealants. Suitable for immersion in liquids; ASTM C1247, Class 1; tested in deionized water unless otherwise indicated

B. Urethane, Immersible, S, P, 25, T, NT, I: Immersible, single-component, pourable, plus 25 percent and minus 25 percent movement capability, traffic- and nontraffic-use, urethane joint sealant; ASTM C920, Type S, Grade P, Class 25, Uses T, NT, and I.
   1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
      a. Tremco Incorporated.
      b. W. R. Meadows, Inc.

2.5 MILDEW-RESISTANT JOINT SEALANTS

A. Mildew-Resistant Joint Sealants: Formulated for prolonged exposure to humidity with fungicide to prevent mold and mildew growth.

B. Silicone, Mildew Resistant, Acid Curing, S, NS, 25, NT: Mildew-resistant, single-component, nonsag, plus 25 percent and minus 25 percent movement capability, nontraffic-use, acid-curing silicone joint sealant; ASTM C920, Type S, Grade NS, Class 25, Use NT.
   1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
      a. GE Construction Sealants; Momentive Performance Materials Inc.
      b. PPG Paints; PPG Industries, Inc.
      c. Sika Corporation - Building Components.
      d. The Dow Chemical Company.
      e. Tremco Incorporated.

2.6 LATEX JOINT SEALANTS

A. Acrylic Latex: Acrylic latex or siliconized acrylic latex, ASTM C834, Type OP, Grade NF.
   1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
      a. PPG Paints; PPG Industries, Inc.
      b. Sherwin-Williams Company (The).
      c. Tremco Incorporated.

2.7 JOINT-SEALANT BACKING

A. Sealant Backing Material, General: Nonstaining; compatible with joint substrates, sealants, primers, and other joint fillers; and approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.

B. Cylindrical Sealant Backings: ASTM C1330, Type C (closed-cell material with a surface skin), Type O (open-cell material), Type B (bicellular material with a surface skin), or any of the preceding types, as approved in writing by joint-sealant manufacturer for joint application indicated, and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance.

C. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint-filler materials or joint surfaces at back of joint. Provide self-adhesive tape where applicable.

2.8 MISCELLANEOUS MATERIALS

A. Primer: Material recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.

B. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials, free of oily residues or other substances capable of staining or harming joint substrates and adjacent nonporous surfaces in any way, and formulated to promote optimum adhesion of sealants to joint substrates.

C. Masking Tape: Nonstaining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

PART 3 - EXECUTION

3.1 PREPARATION

A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions and the following requirements:

1. Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant, including dust, paints (except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer), old joint sealants, oil, grease, waterproofing, water repellents, water, surface dirt, and frost.
2. Clean porous joint substrate surfaces by brushing, grinding, mechanical abrading, or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealants. Remove loose particles remaining after cleaning operations above by vacuuming or blowing out joints with oil-free compressed air. Porous joint substrates include the following:
    a. Concrete.
    b. Masonry.
    c. Unglazed surfaces of ceramic tile.
    d. Exterior insulation and finish systems.
3. Remove laitance and form-release agents from concrete.
4. Clean nonporous joint substrate surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of joint sealants. Nonporous joint substrates include the following:
    a. Metal.
    b. Glass.
    c. Porcelain enamel.
    d. Glazed surfaces of ceramic tile.

B. Joint Priming: Prime joint substrates where recommended by joint-sealant manufacturer or as indicated by preconstruction joint-sealant-substrate tests or prior experience. Apply primer to comply with joint-sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.

C. Masking Tape: Use masking tape where required to prevent contact of sealant or primer with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

3.2 INSTALLATION OF JOINT SEALANTS

A. General: Comply with joint-sealant manufacturer's written installation instructions for products and applications indicated, unless more stringent requirements apply.

B. Sealant Installation Standard: Comply with recommendations in ASTM C1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.

C. Install sealant backings of type indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.

1. Do not leave gaps between ends of sealant backings.
2. Do not stretch, twist, puncture, or tear sealant backings.
3. Remove absorbent sealant backings that have become wet before sealant application, and replace them with dry materials.

D. Install bond-breaker tape behind sealants where sealant backings are not used between sealants and backs of joints.

E. Install sealants using proven techniques that comply with the following and at the same time backings are installed:

1. Place sealants so they directly contact and fully wet joint substrates.
2. Completely fill recesses in each joint configuration.
3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.

F. Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants in accordance with requirements specified in subparagraphs below to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.
   1. Remove excess sealant from surfaces adjacent to joints.
   2. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.
   3. Provide concave joint profile in accordance with Figure 8A in ASTM C1193 unless otherwise indicated.

G. Clean off excess sealant or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved in writing by manufacturers of joint sealants and of products in which joints occur.

H. Protect joint sealants during and after curing period from contact with contaminating substances and from damage resulting from construction operations or other causes so sealants are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out, remove, and repair damaged or deteriorated joint sealants immediately so installations with repaired areas are indistinguishable from original work.

3.3 JOINT-SEALANT SCHEDULE

A. Exterior joints in horizontal traffic surfaces:
   1. Joint Locations:
      a. Control and expansion joints in brick pavers.
      b. Isolation and contraction joints in cast-in-place concrete slabs.
      c. Joints between plant-precast architectural concrete paving units.
      d. Joints in stone paving units, including steps.
      e. Tile control and expansion joints.
      f. Joints between different materials listed above.
   2. Joint Sealant: **Urethane, M, P, 50, T, NT**.
   3. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors.

B. Exterior joints in horizontal traffic surfaces subject to water immersion:
   1. Joint Locations:
      a. Joints in pedestrian plazas.
      b. Joints in swimming pool decks.
   2. Joint Sealant: **Urethane, immersible, S, P, 25, T, NT, I**.
   3. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors.

C. Exterior joints in vertical surfaces and horizontal nontraffic surfaces:
   1. Joint Locations:
      a. Construction joints in cast-in-place concrete.
      b. Joints between plant-precast architectural concrete units.
      c. Control and expansion joints in unit masonry.
      d. Joints in dimension stone cladding.
      e. Joints in glass unit masonry assemblies.
      f. Joints in exterior insulation and finish systems.
      g. Joints between metal panels.
      h. Joints between different materials listed above.
      i. Perimeter joints between materials listed above and frames of doors, windows, and louvers.
      j. Control and expansion joints in ceilings and other overhead surfaces.
   2. Joint Sealant: **Silicone, nonstaining, S, NS, 50, NT**.
   3. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors.

D. Interior joints in horizontal traffic surfaces:
   1. Joint Locations:
      a. Isolation joints in cast-in-place concrete slabs.
      b. Control and expansion joints in stone flooring.
      c. Control and expansion joints in brick flooring.
      d. Control and expansion joints in tile flooring.
   2. Joint Sealant: **Urethane, S, P, 25, T, NT**.
   3. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors.

E. Interior joints in vertical surfaces and horizontal nontraffic surfaces:
   1. Joint Locations:
      a. Control and expansion joints on exposed interior surfaces of exterior walls.
      b. Tile control and expansion joints.
      c. Vertical joints on exposed surfaces of unit masonry, concrete walls, and partitions.

d. Joints on underside of plant-precast structural concrete beams and planks.

2. Joint Sealant: **Urethane, S, NS, 25, NT**.

3. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors.

F. Interior joints in vertical surfaces and horizontal nontraffic surfaces not subject to significant movement:

1. Joint Locations:

a. Control joints on exposed interior surfaces of exterior walls.

b. Perimeter joints between interior wall surfaces and frames of interior doors, windows, and elevator entrances.

2. Joint Sealant: **Acrylic latex or siliconized acrylic latex**.

3. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors.

G. Mildew-resistant interior joints in vertical surfaces and horizontal nontraffic surfaces:

1. Joint Locations:

a. Joints between plumbing fixtures and adjoining walls, floors, and counters.

b. Tile control and expansion joints where indicated.

2. Joint Sealant: **Silicone, mildew resistant, acid curing, S, NS, 25, NT**.

3. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors.

H. Concealed mastics:

1. Joint Locations:

a. Aluminum thresholds.

b. Sill plates.

2. Joint Sealant: **Butyl-rubber based**.

END OF SECTION

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SECTION 07 92 19
ACOUSTICAL JOINT SEALANTS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes: Acoustical joint sealants.

1.2 ACTION SUBMITTALS

A. Product data.

B. Samples: Manufacturer's color charts consisting of strips of cured sealants, showing full range of available colors for each product exposed to view.

C. Acoustical joint-sealant schedule.

D. Sustainable Design Submittals:

1. Product Data: For sealants, indicating VOC content.
2. Laboratory Test Reports: For sealants, indicating compliance with requirements for low-emitting materials.

1.3 INFORMATIONAL SUBMITTALS

A. Test and Evaluation Reports:

1. Product test reports.

B. Sample warranties.

1.4 CLOSEOUT SUBMITTALS

A. Warranty Documentation:

1. Manufacturers' special warranties.
2. Installer's special warranties.

1.5 WARRANTY

A. Installer's Special Warranty: Installer agrees to repair or replace acoustical joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.

1. Warranty Period: Two years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 ACOUSTICAL JOINT SEALANTS

A. Acoustical joint-sealant products that effectively reduce airborne sound transmission through perimeter joints and openings in building construction, as demonstrated by testing representative assemblies in accordance with ASTM E90.

1. Verify sealant has a VOC content of 250 g/L or less.
2. Verify sealant complies with the testing and product requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."

B. Acoustical Sealant for Exposed and Concealed Joints: Manufacturer's standard nonsag, paintable, nonstaining latex acoustical sealant complying with ASTM C834.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   a. Hilti, Inc.
   b. OSI Sealants; Henkel Corporation.
   c. Pecora Corporation.
2. Colors of Exposed Acoustical Joint Sealants: As selected by Architect from manufacturer's full range of colors.

2.2 MISCELLANEOUS MATERIALS

A. Primer: Material recommended by acoustical joint-sealant manufacturer where required for adhesion of sealant to joint substrates.

B. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials, free of oily residues or other substances capable of staining or harming joint substrates and adjacent nonporous surfaces in any way, and formulated to promote optimum adhesion of sealants to joint substrates.

C. Masking Tape: Nonstaining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine joints indicated to receive acoustical joint sealants, with Installer present, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting performance of the Work.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Surface Cleaning of Joints: Clean out joints immediately before installing acoustical joint sealants to comply with joint-sealant manufacturer's written instructions.

B. Joint Priming: Prime joint substrates where recommended by acoustical joint-sealant manufacturer. Apply primer to comply with joint-sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.

C. Masking Tape: Use masking tape where required to prevent contact of sealant or primer with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

3.3 INSTALLATION OF ACOUSTICAL JOINT SEALANTS

A. Comply with acoustical joint-sealant manufacturer's written installation instructions unless more stringent requirements apply.

B. STC-Rated Assemblies: Seal construction at perimeters, behind control joints, and at openings and penetrations with a continuous bead of acoustical joint sealant. Install acoustical joint sealants at both faces of partitions, at perimeters, and through penetrations. Comply with ASTM C919, ASTM C1193, and manufacturer's written instructions for closing off sound-flanking paths around or through assemblies, including sealing partitions to underside of floor slabs above acoustical ceilings.

C. Acoustical Ceiling Areas: Apply acoustical joint sealant at perimeter edge moldings of acoustical ceiling areas in a continuous ribbon concealed on back of vertical legs of moldings before they are installed.

END OF SECTION

SECTION 08 11 13
HOLLOW METAL DOORS AND FRAMES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Interior standard steel doors and frames.
   2. Exterior standard steel doors and frames.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.
B. Sustainable Design Submittals:
   1. Product Data: For recycled content, indicating postconsumer and preconsumer recycled content and cost.
   2. Environmental Product Declaration: For each product.
   3. Health Product Declaration: For each product.
   4. Sourcing of Raw Materials: Corporate sustainability report for each manufacturer.
C. Shop Drawings: Include the following:
   1. Elevations of each door type.
   2. Details of doors, including vertical- and horizontal-edge details and metal thicknesses.
   3. Frame details for each frame type, including dimensioned profiles and metal thicknesses.
D. Product Schedule: For hollow-metal doors and frames, prepared by or under the supervision of supplier, using same reference numbers for details and openings as those on Drawings. Coordinate with final door hardware schedule.

1.3 INFORMATIONAL SUBMITTALS

A. Product test reports.
B. Field quality-control reports.

1.4 CLOSEOUT SUBMITTALS

A. Record Documents: For fire-rated doors, list of door numbers and applicable room name and number to which door accesses.

1.5 QUALITY ASSURANCE

A. Fire-Rated Door Inspector Qualifications: Inspector for field quality-control inspections of fire-rated door assemblies is to meet the qualifications set forth in NFPA 80, Section 5.2.3.1 and the following:
   1. Door and Hardware Institute Fire and Egress Door Assembly Inspector (FDAI) certification.
B. Egress Door Inspector Qualifications: Inspector for field quality-control inspections of egress door assemblies is to meet the qualifications set forth in NFPA 101, Section 7.2.1.15.4 and the following:
   1. Door and Hardware Institute Fire and Egress Door Assembly Inspector (FDAI) certification.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
   1. Ceco Door; AADG, Inc.; ASSA ABLOY.
   2. Curries, AADG, Inc.; ASSA ABLOY Group.
   3. LaForce, LLC.

2.2 PERFORMANCE REQUIREMENTS

A. Fire-Rated Door Assemblies: Assemblies complying with NFPA 80 that are listed and labeled by a qualified testing agency acceptable to authorities having jurisdiction for fire-protection ratings and temperature-rise limits indicated on Drawings, based on testing at positive pressure in accordance with NFPA 252 or UL 10C.
   1. Smoke- and Draft-Control Door Assemblies: Listed and labeled for smoke and draft control by a qualified testing agency acceptable to authorities having jurisdiction, based on testing in accordance with UL 1784 and installed in compliance with NFPA 105.
   2. Temperature-Rise Limit: At vertical exit enclosures and exit passageways, provide doors that have a maximum transmitted temperature end point of not more than 450 deg F above ambient after 30 minutes of standard fire-test exposure.
B. Fire-Rated, Borrowed-Lite Assemblies: Assemblies complying with NFPA 80 and listed and labeled by a qualified testing agency acceptable to authorities having jurisdiction, for fire-protection ratings indicated, based on testing in accordance with NFPA 257 or UL 9.
C. Thermally Rated Door Assemblies: Provide door assemblies with U-factor of not more than 0.50 deg Btu/F x h x sq. ft. when tested in accordance with ASTM C1363 or ASTM E1423.

2.3 INTERIOR STANDARD STEEL DOORS AND FRAMES

A. Construct hollow-metal doors and frames to comply with standards indicated for materials, fabrication, hardware locations, hardware reinforcement, tolerances, and clearances, and as specified.

B. Heavy-Duty Doors and Frames: ANSI/SDI A250.8, Level 2; ANSI/SDI A250.4, Level B..
   1. Doors:
      a. Type: As indicated in the Door and Frame Schedule on Drawings.
      b. Thickness: 1-3/4 inches.
      c. Face: Uncoated steel sheet, minimum thickness of 0.042 inch.
      d. Edge Construction: Model 1, Full Flush.
      e. Core: Polystyrene.
      f. Fire-Rated Core: Manufacturer's standard vertical steel stiffener core for fire-rated and temperature-rise-rated doors.
   2. Frames:
      a. Materials: Metallic-coated steel sheet, minimum thickness of 0.053 inch.
      b. Sidelite and Transom Frames: Fabricated from same thickness material as adjacent door frame.
      c. Construction: Full profile welded.

2.4 EXTERIOR STANDARD STEEL DOORS AND FRAMES

A. Construct hollow-metal doors and frames to comply with standards indicated for materials, fabrication, hardware locations, hardware reinforcement, tolerances, and clearances, and as specified.

B. Heavy-Duty Doors and Frames: ANSI/SDI A250.8, Level 2; ANSI/SDI A250.4, Level B.
   1. Doors:
      a. Type: As indicated in the Door and Frame Schedule on Drawings.
      b. Thickness: 1-3/4 inches.
      c. Face: Metallic-coated steel sheet, minimum thickness of 0.042 inch, with minimum A40 coating.
      d. Edge Construction: Model 1, Full Flush.
      e. Edge Bevel: Provide manufacturer's standard beveled or square edges.
      f. Top Edge Closures: Close top edges of doors with flush closures of same material as face sheets. Seal joints against water penetration.
      g. Bottom Edges: Close bottom edges of doors with end closures or channels of same material as face sheets. Provide weep-hole openings in bottoms of exterior doors to permit moisture to escape.
      h. Core: Polyisocyanurate.
      i. Fire-Rated Core: Manufacturer's standard vertical steel stiffener with insulation core for fire-rated doors.
   2. Frames:
      a. Materials: Metallic-coated steel sheet, minimum thickness of 0.053 inch, with minimum A40 coating.
      b. Construction: Full profile welded.

2.5 BORROWED LITES

A. Fabricate of uncoated steel sheet, minimum thickness of 0.053 inch.

B. Construction: Face welded.

C. Fabricate in one piece except where handling and shipping limitations require multiple sections. Where frames are fabricated in sections due to shipping or handling limitations, provide alignment plates or angles at each joint, fabricated of metal of same or greater thickness as metal as frames.

D. Provide countersunk, flat- or oval-head exposed screws and bolts for exposed fasteners unless otherwise indicated.

2.6 FRAME ANCHORS

A. Jamb Anchors:
   1. Type: Anchors of minimum size and type required by applicable door and frame standard, and suitable for performance level indicated.
   2. Quantity: Minimum of three anchors per jamb, with one additional anchor for frames with no floor anchor. Provide one additional anchor for each 24 inches of frame height above 7 feet.
   3. Postinstalled Expansion Anchor: Minimum 3/8-inch-diameter bolts with expansion shields or inserts, with manufacturer's standard pipe spacer.

B. Floor Anchors: Provide floor anchors for each jamb and mullion that extends to floor.

C. Floor Anchors for Concrete Slabs with Underlayment: Adjustable-type anchors with extension clips, allowing not less than 2-inch height adjustment. Terminate bottom of frames at top of underlayment.

D. Material: ASTM A879/A879M, Commercial Steel (CS), 04Z coating designation; mill phosphatized.
   1. For anchors built into exterior walls, steel sheet complying with ASTM A1008/A1008M or ASTM A1011/A1011M; hot-dip galvanized in accordance with ASTM A153/A153M, Class B.

2.7 MATERIALS

A. Recycled Content of Steel Products: Postconsumer recycled content plus one-half of preconsumer recycled content not less than 25 percent.

B. Cold-Rolled Steel Sheet: ASTM A1008/A1008M, Commercial Steel (CS), Type B; suitable for exposed applications.

C. Hot-Rolled Steel Sheet: ASTM A1011/A1011M, Commercial Steel (CS), Type B; free of scale, pitting, or surface defects; pickled and oiled.

D. Metallic-Coated Steel Sheet: ASTM A653/A653M, Commercial Steel (CS), Type B.

E. Inserts, Bolts, and Fasteners: Hot-dip galvanized in accordance with ASTM A153/A153M.

F. Power-Actuated Fasteners in Concrete: Fastener system of type suitable for application indicated, fabricated from corrosion-resistant materials, with clips or other accessory devices for attaching hollow-metal frames of type indicated.

G. Mineral-Fiber Insulation: ASTM C665, Type I (blankets without membrane facing); consisting of fibers manufactured from slag or rock wool; with maximum flame-spread and smoke-developed indexes of 25 and 50, respectively; passing ASTM E136 for combustion characteristics.

H. Glazing: Comply with requirements in Section 08 80 00 "Glazing."

2.8 FABRICATION

A. Door Astragals: Provide overlapping astragal on one leaf of pairs of doors where required by NFPA 80 for fire-performance rating or where indicated. Extend minimum 3/4 inch beyond edge of door on which astragal is mounted or as required to comply with published listing of qualified testing agency.

B. Hollow-Metal Frames: Fabricate in one piece except where handling and shipping limitations require multiple sections. Where frames are fabricated in sections, provide alignment plates or angles at each joint, fabricated of metal of same or greater thickness as frames.

1. Sidelite and Transom Bar Frames: Provide closed tubular members with no visible face seams or joints, fabricated from same material as door frame. Fasten members at crossings and to jambs by welding.
2. Provide countersunk, flat- or oval-head exposed screws and bolts for exposed fasteners unless otherwise indicated.
3. Door Silencers: Except on weather-stripped frames, drill stops to receive door silencers as follows. Keep holes clear during construction.
   a. Single-Door Frames: Drill stop in strike jamb to receive three door silencers.
   b. Double-Door Frames: Drill stop in head jamb to receive two door silencers.

C. Hardware Preparation: Factory prepare hollow-metal doors and frames to receive templated mortised hardware, and electrical wiring; include cutouts, reinforcement, mortising, drilling, and tapping in accordance with ANSI/SDI A250.6, the Door Hardware Schedule on Drawings, and templates.

1. Reinforce doors and frames to receive nontemplated, mortised, and surface-mounted door hardware.
2. Comply with BHMA A156.115 for preparing hollow-metal doors and frames for hardware.

D. Glazed Lites: Provide stops and moldings around glazed lites where indicated. Form corners of stops and moldings with mitered hairline joints.

1. Provide stops and moldings flush with face of door, and with beveled stops unless otherwise indicated.
2. Multiple Glazed Lites: Provide fixed and removable stops and moldings so that each glazed lite is capable of being removed independently.
3. Provide fixed frame moldings on outside of exterior and on secure side of interior doors and frames. Provide loose stops and moldings on inside of hollow-metal doors and frames.
4. Coordinate rabbet width between fixed and removable stops with glazing and installation types indicated.
5. Provide stops for installation with countersunk flat- or oval-head machine screws spaced uniformly not more than 9 inches o.c. and not more than 2 inches o.c. from each corner.

2.9 STEEL FINISHES

A. Prime Finish: Clean, pretreat, and apply manufacturer's standard primer.

1. Shop Primer: Manufacturer's standard, fast-curing, lead- and chromate-free primer complying with ANSI/SDI A250.10; recommended by primer manufacturer for substrate; compatible with substrate and field-applied coatings despite prolonged exposure.

PART 3 - EXECUTION

3.1 PREPARATION

A. Remove welded-in shipping spreaders installed at factory. Restore exposed finish by grinding, filling, and dressing, as required to make repaired area smooth, flush, and invisible on exposed faces. Touch up factory-applied finishes where spreaders are removed.

B. Drill and tap doors and frames to receive nontemplated, mortised, and surface-mounted door hardware.

3.2 INSTALLATION

A. Hollow-Metal Frames: Comply with ANSI/SDI A250.11.

1. Set frames accurately in position; plumbed, aligned, and braced securely until permanent anchors are set. After wall construction is complete, remove temporary braces without damage to completed Work.

a. Where frames are fabricated in sections, field splice at approved locations by welding face joint continuously; grind, fill, dress, and make splice smooth, flush, and invisible on exposed faces. Touch-up finishes.
b. Install frames with removable stops located on secure side of opening.

2. Fire-Rated Openings: Install frames in accordance with NFPA 80.
3. Floor Anchors: Secure with postinstalled expansion anchors.
   a. Floor anchors may be set with power-actuated fasteners instead of postinstalled expansion anchors if so indicated and approved on Shop Drawings.
4. Solidly pack mineral-fiber insulation inside frames.
5. Masonry Walls: Coordinate installation of frames to allow for solidly filling space between frames and masonry with grout or mortar.
6. In-Place Concrete or Masonry Construction: Secure frames in place with postinstalled expansion anchors. Countersink anchors, and fill and make smooth, flush, and invisible on exposed faces.
7. Installation Tolerances: Adjust hollow-metal frames to the following tolerances:
   a. Squareness: Plus or minus 1/16 inch, measured at door rabbet on a line 90 degrees from jamb perpendicular to frame head.
   b. Alignment: Plus or minus 1/16 inch, measured at jambs on a horizontal line parallel to plane of wall.
   c. Twist: Plus or minus 1/16 inch, measured at opposite face corners of jambs on parallel lines, and perpendicular to plane of wall.
   d. Plumbness: Plus or minus 1/16 inch, measured at jambs at floor.

B. Hollow-Metal Doors: Fit and adjust hollow-metal doors accurately in frames, within clearances specified below.
1. Non-Fire-Rated Steel Doors: Comply with ANSI/SDI A250.8.
2. Fire-Rated Doors: Install doors with clearances in accordance with NFPA 80.
3. Smoke-Control Doors: Install doors in accordance with NFPA 105.

C. Glazing: Comply with installation requirements in Section 08 80 00 "Glazing" and with hollow-metal manufacturer's written instructions.

3.3 REPAIR

A. Prime-Coat Touchup: Immediately after erection, sand smooth rusted or damaged areas of prime coat and apply touchup of compatible air-drying, rust-inhibitive primer.

B. Metallic-Coated Surface Touchup: Clean abraded areas and repair with galvanizing repair paint in accordance with manufacturer's written instructions.

END OF SECTION

SECTION 08 14 16
FLUSH WOOD DOORS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
1. Five-ply flush wood veneer-faced doors for transparent finish.
2. Fire-rated wood door frames.
3. Factory priming and/or finishing flush wood doors and frames (if indicated in drawings).
4. Factory fitting flush wood doors to frames and factory machining for hardware.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product, including the following:
1. Door core materials and construction.
2. Door edge construction
3. Door face type and characteristics.
4. Door louvers.
5. Door trim for openings.
6. Door frame construction.
7. Factory-machining criteria.
8. Factory-priming and/or finishing specifications.

B. Sustainable Design Submittals:
1. Environmental Product Declaration: For each product.
2. Health Product Declaration: For each product.
3. Sourcing of Raw Materials: Corporate sustainability report for each manufacturer.
4. Regional Materials: For each product.
5. Chain-of-Custody Certificates: For certified wood products. Include statement of costs.
6. Chain-of-Custody Qualification Data: For manufacturer and vendor.
7. Laboratory Test Reports: For adhesives, indicating compliance with requirements for low-emitting materials.
8. Laboratory Test Reports: For composite wood products, indicating compliance with requirements for low-emitting materials.

C. Shop Drawings: Indicate location, size, and hand of each door; elevation of each type of door; construction details not covered in Product Data; and the following:
1. Door schedule indicating door location, type, size, fire protection rating, and swing.
2. Door elevations, dimension and locations of hardware, lite and louver cutouts, and glazing thicknesses.
3. Details of frame for each frame type, including dimensions and profile.
4. Details of electrical raceway and preparation for electrified hardware, access control systems, and security systems.
5. Dimensions and locations of blocking for hardware attachment.
6. Clearances and undercuts.
7. Requirements for veneer matching.

D. Samples: For factory-finished doors.

1.3 INFORMATIONAL SUBMITTALS

A. Qualification Data: For door inspector.
1. Fire-Rated Door Inspector: Submit documentation of compliance with NFPA 80, Section 5.2.3.1.
2. Egress Door Inspector: Submit documentation of compliance with NFPA 101, Section 7.2.1.15.4.
3. Submit copy of DHI's Fire and Egress Door Assembly Inspector (FDAI) certificate.

B. Field quality-control reports.

1.4 CLOSEOUT SUBMITTALS

A. Record Documents: For fire-rated doors, list of door numbers and applicable room name and number to which door accesses.

1.5 QUALITY ASSURANCE

A. Certified Wood: Provide an invoice including vendor's chain-of-custody number, product cost, and entity being invoiced.

B. Vendor Qualifications: A vendor that is certified for chain of custody by an FSC-accredited certification body.

C. Manufacturer's Certification: Licensed participant in AWI's Quality Certification Program.

D. Fire-Rated Door Inspector Qualifications: Inspector for field quality-control inspections of fire-rated door assemblies complies with qualifications set forth in NFPA 80, Section 5.2.3.1 and the following:
1. DHI's Fire and Egress Door Assembly Inspector (FDAI) certification.

E. Egress Door Inspector Qualifications: Inspector for field quality-control inspections of egress door assemblies complies with qualifications set forth in NFPA 101, Section 7.2.1.15.4 and the following:
1. DHI's Fire and Egress Door Assembly Inspector (FDAI) certification.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Fire-Rated Wood Door Assemblies: Assemblies complying with NFPA 80 that are listed and labeled by a qualified testing agency acceptable to authorities having jurisdiction, for fire-protection ratings indicated on Drawings, based on testing at positive pressure in accordance with UL 10C or NFPA 252.
1. Oversize Fire-Rated Door Assemblies: For units exceeding sizes of tested assemblies, provide certification by a qualified testing agency that doors comply with standard construction requirements for tested and labeled fire-rated door assemblies except for size.

B. Smoke- and Draft-Control Door Assemblies: Listed and labeled for smoke and draft control by a qualified testing agency acceptable to authorities having jurisdiction, based on testing in accordance with UL 1784 and installed in compliance with NFPA 105.

2.2 FLUSH WOOD DOORS AND FRAMES, GENERAL

A. Quality Standard: In addition to requirements specified, comply with "Architectural Woodwork Standards."

B. Regional Materials: Manufacture wood doors within 100 miles (160 km) of Project site from materials that have been extracted, harvested, or recovered, as well as manufactured, within 100 miles (160 km) of Project site.

C. Certified Wood: Certify wood doors as "FSC Pure" or "FSC Mixed Credit" in accordance with FSC STD-01-001 and FSC STD-40-004.

D. Adhesives: Use adhesives that meet the testing and product requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."

E. Composite Wood Products: Verify products are made using ultra-low-emitting formaldehyde resins, as defined in the California Air Resources Board's "Airborne Toxic Control Measure to Reduce Formaldehyde Emissions from Composite Wood Products," or are made with no added formaldehyde.

2.3 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
a. Oregon Door.
b. Oshkosh Door Company.
c. VT Industries, Inc.

2.4 SOLID-CORE, FIVE-PLY FLUSH WOOD VENEER-FACED DOORS FOR TRANSPARENT FINISH

A. Interior Doors, Solid-Core Five-Ply Veneer-Faced:
1. Performance Grade by Location:
a. ANSI/WDMA I.S. 1A Extra Heavy Duty: All locations but as noted for Standard Duty.
b. ANSI/WDMA I.S. 1A Standard Duty: Closets (not including janitor's closets) and private toilets.
2. Architectural Woodwork Standards Grade: Premium.
3. Faces: Single-ply wood veneer not less than 1/50 inch thick.
a. Species: Select white birch.
b. Cut: Plain sliced (flat sliced).
c. Match between Veneer Leaves: Book match.
d. Assembly of Veneer Leaves on Door Faces: Center-balance match.
e. Pair and Set Match: Provide for doors hung in same opening or separated only by mullions.
f. Room Match:
1) Match door faces within each separate room or area of building. Corridor-door faces do not need to match where they are separated by 10 feet or more.
2) Provide door faces of compatible color and grain within each separate room or area of building.
g. Blueprint Match: Where indicated, provide doors with faces produced from same flitches as adjacent wood paneling and arranged to provide blueprint match with wood paneling. Comply with requirements in Section 06 42 16 "Flush Wood Paneling."
4. Exposed Vertical Edges: Same species as faces or a compatible species - Architectural Woodwork Standards edge Type A.
a. Fire-Rated Single Doors: Provide edge construction with intumescent seals concealed by outer stile. Comply with specified requirements for exposed vertical edges.
b. Fire-Rated Pairs of Doors:

1) Provide fire-retardant stiles that are listed and labeled for applications indicated without formed-steel edges and astragals. Provide stiles with concealed intumescent seals. Comply with specified requirements for exposed edges.

c. Mineral-Core Doors: At hinge stiles, provide laminated-edge construction with improved screw-holding capability and split resistance. Comply with specified requirements for exposed edges.

1) Screw-Holding Capability: 550 lbf in accordance with WDMA T.M. 10.

5. Core for Non-Fire-Rated Doors:

a. ANSI A208.1, Grade LD-1 particleboard.

1) Blocking: Provide wood blocking in particleboard-core doors as follows:

a) 5-inch top-rail blocking, in doors indicated to have closers.

b) 5-inch bottom-rail blocking, in exterior doors and doors indicated to have kick, mop, or armor plates.

c) 5-inch midrail blocking, in doors indicated to have exit devices.

2) Provide doors with glued-wood-stave or WDMA I.S. 10 structural-composite-lumber cores instead of particleboard cores for doors scheduled to receive exit devices in Section 08 71 00 "Door Hardware."

6. Core for Fire-Rated Doors: As required to achieve fire-protection rating indicated on Drawings.

a. Blocking for Mineral-Core Doors: Provide composite blocking with improved screw-holding capability approved for use in doors of fire-protection ratings indicated on Drawings as follows:

1) 5-inch top-rail blocking.

2) 5-inch bottom-rail blocking, in doors indicated to have protection plates.

3) 5-inch midrail blocking, in doors indicated to have armor plates.

4) 5-inch midrail blocking, in doors indicated to have exit devices.

7. Construction: Five plies, hot-pressed bonded (vertical and horizontal edging is bonded to core), with entire unit abrasive planed before veneering.

2.5 LIGHT FRAMES AND LOUVERS

A. Wood Beads for Light Openings in Wood Doors: Provide manufacturer's standard wood beads unless otherwise indicated.

1. Wood Species: Same species as door faces.
2. Profile: Manufacturer's standard shape.
3. At wood-core doors with 20-minute fire-protection ratings, provide wood beads and metal glazing clips approved for such use.

B. Wood-Veneered Beads for Light Openings in Fire-Rated Doors: Manufacturer's standard wood-veneered noncombustible beads matching veneer species of door faces and approved for use in doors of fire-protection rating indicated on Drawings. Include concealed metal glazing clips where required for opening size and fire-protection rating indicated.

C. Wood Louvers: Door manufacturer's standard solid-wood louvers unless otherwise indicated.

1. Wood Species: Same species as door faces.
2. Profile: Flat.

D. Louvers for Fire-Rated Doors: Metal louvers with fusible link and closing device, listed and labeled for use in doors with fire-protection rating of 1-1/2 hours and less.

1. Metal and Finish: Hot-dip galvanized steel, 0.040 inch thick, factory primed for paint finish.

2.6 FABRICATION

A. Factory fit doors to suit frame-opening sizes indicated.

1. Comply with clearance requirements of referenced quality standard for fitting unless otherwise indicated.
2. Comply with NFPA 80 requirements for fire-rated doors.

B. Factory machine doors for hardware that is not surface applied.

1. Locate hardware to comply with DHI-WDHS-3.
2. Comply with final hardware schedules, door frame Shop Drawings, ANSI/BHMA-156.115-W, and hardware templates.
3. Coordinate with hardware mortises in metal frames, to verify dimensions and alignment before factory machining.
4. For doors scheduled to receive electrified locksets, provide factory-installed raceway and wiring to accommodate specified hardware.
5. Metal Astragals: Factory machine astragals and formed-steel edges for hardware for pairs of fire-rated doors.

C. Openings: Factory cut and trim openings through doors.

1. Light Openings: Trim openings with moldings of material and profile indicated.

2. Glazing: Factory install glazing in doors indicated to be factory finished. Comply with applicable requirements in Section 08 80 00 "Glazing."
3. Louvers: Factory install louvers in prepared openings.

D. Exterior Doors: Factory treat exterior doors with water repellent after fabrication has been completed but before factory priming or finishing.
1. Flash top of outswinging doors with manufacturer's standard metal flashing.

2.7 FACTORY PRIMING

A. Doors for Opaque Finish: Factory prime faces, all four edges, edges of cutouts, and mortises with one coat of wood primer specified in Section 09 91 23" Interior Painting."

2.8 FACTORY FINISHING

A. Comply with referenced quality standard for factory finishing.
1. Complete fabrication, including fitting doors for openings and machining for hardware that is not surface applied, before finishing.
2. Finish faces, all four edges, edges of cutouts, and mortises.
3. Stains and fillers may be omitted on top and bottom edges, edges of cutouts, and mortises.

B. Factory finish doors where indicated in schedules or on Drawings as factory finished.

C. Transparent Finish:
1. Architectural Woodwork Standards System-5, Varnish, Conversion.
2. Staining: Match Architect's sample (existing doors).
3. Sheen: Satin.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Hardware: For installation, see Section 08 71 00 "Door Hardware."

B. Install doors (and frames where noted) to comply with manufacturer's written instructions and referenced quality standard, and as indicated.

C. Install frames level, plumb, true, and straight.
1. Shim as required with concealed shims. Install level and plumb to a tolerance of 1/8 inch in 96 inches.
2. Anchor frames to anchors or blocking built in or directly attached to substrates.
a. Secure with countersunk, concealed fasteners and blind nailing.
b. Use fine finishing nails for exposed fastening, countersunk and filled flush with woodwork.
1) For factory-finished items, use filler matching finish of items being installed.
3. Install fire-rated doors and frames in accordance with NFPA 80.
4. Install smoke- and draft-control doors in accordance with NFPA 105.

D. Job-Fitted Doors:
1. Align and fit doors in frames with uniform clearances and bevels as indicated below.
a. Do not trim stiles and rails in excess of limits set by manufacturer or permitted for fire-rated doors.
2. Machine doors for hardware.
3. Seal edges of doors, edges of cutouts, and mortises after fitting and machining.
4. Clearances:
a. Provide 1/8 inch at heads, jambs, and between pairs of doors.
b. Provide 1/8 inch from bottom of door to top of decorative floor finish or covering unless otherwise indicated on Drawings.
c. Where threshold is shown or scheduled, provide 1/4 inch from bottom of door to top of threshold unless otherwise indicated.
d. Comply with NFPA 80 for fire-rated doors.
5. Bevel non-fire-rated doors 1/8 inch in 2 inches at lock and hinge edges.
6. Bevel fire-rated doors 1/8 inch in 2 inches at lock edge; trim stiles and rails only to extent permitted by labeling agency.

E. Factory-Fitted Doors: Align in frames for uniform clearance at each edge.

F. Factory-Finished Doors: Restore finish before installation if fitting or machining is required at Project site.

3.2 ADJUSTING

A. Operation: Rehang or replace doors that do not swing or operate freely.

B. Finished Doors: Replace doors that are damaged or that do not comply with requirements. Doors may be repaired or refinished if Work complies with requirements and shows no evidence of repair or refinishing.

END OF SECTION

SECTION 08 31 13
ACCESS DOORS AND FRAMES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Access doors and frames.
   2. Fire-rated access doors and frames.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.
B. Samples: For each type of access door and frame and for each finish specified.
C. Product Schedule: For access doors and frames.

1.3 CLOSEOUT SUBMITTALS

A. Record Documents: For fire-rated doors, list of applicable room name and number in which access door is located.

1.4 QUALITY ASSURANCE

A. Fire-Rated Door Inspector Qualifications: Inspector for field quality control inspections of fire-rated door assemblies meets the qualifications set forth in NFPA 80, Section 5.2.3.1 and the following:
   1. Door and Hardware Institute Fire and Egress Door Assembly Inspector (FDAI) certification.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Fire-Rated Access Doors and Frames: Assemblies complying with NFPA 80 that are listed and labeled by a qualified testing agency, for fire-protection ratings indicated, according to NFPA 252 or UL 10B.

2.2 ACCESS DOORS AND FRAMES

A. Flush Access Doors with Concealed Flanges:
   1. Description: Face of door flush with frame, with exposed flange and concealed hinge.
   2. Optional Features: Gasketing, piano hinges, and masonry anchors (where relevant).
   3. Locations: Wall and ceiling.
   4. Metallic-Coated Steel Sheet for Door: Nominal 0.064 inch, 16 gage, factory primed.
   5. Frame Material: Same material, thickness, and finish as door.
   6. Latch and Lock: Cam latch, screwdriver operated for walls in non-public spaces and ceilings, and cam latch, hex-head wrench operated for walls with public access.

2.3 FIRE-RATED ACCESS DOORS AND FRAMES

A. Fire-Rated, Flush Access Doors with Concealed Flanges:
   1. Description: Door face flush with frame, with a core of mineral-fiber insulation enclosed in sheet metal; with exposed flange, self-closing door, and concealed hinge.
   2. Optional Features: Gasketing, piano hinges, and masonry anchors (where relevant).
   3. Locations: Wall and ceiling.
   4. Fire-Resistance Rating: Not less than that of adjacent construction.
   5. Temperature-Rise Rating: 450 deg F at the end of 30 minutes.
   6. Metallic-Coated Steel Sheet for Door: Nominal 0.040 inch, 20 gage, factory primed.
   7. Frame Material: Same material, thickness, and finish as door.
   8. Latch and Lock: Self-closing and self-latching door hardware, operated by key.

2.4 MATERIALS

A. Steel Plates, Shapes, and Bars: ASTM A36/A36M.
B. Steel Sheet: Uncoated or electrolytic zinc coated, ASTM A879/A879M, with cold-rolled steel sheet substrate complying with ASTM A1008/A1008M, Commercial Steel (CS), exposed.
C. Metallic-Coated Steel Sheet: ASTM A653/A653M, Commercial Steel (CS), Type B; with minimum G60 or A60 metallic coating.
D. Frame Anchors: Same material as door face.
E. Inserts, Bolts, and Anchor Fasteners: Hot-dip galvanized steel according to ASTM A153/A153M or ASTM F2329.

2.5 FABRICATION

A. Metal Surfaces: For metal surfaces exposed to view in the completed Work, provide materials with smooth, flat surfaces without blemishes. Do not use materials with exposed pitting, seam marks, roller marks, rolled trade names, or roughness.
B. Doors and Frames: Grind exposed welds smooth and flush with adjacent surfaces. Furnish mounting holes, attachment devices and fasteners of type required to secure access doors to types of supports indicated.
C. Latch and Lock Hardware:
   1. Quantity: Furnish number of latches and locks required to hold doors tightly closed.
   2. Keys: Furnish two keys per lock and key all locks alike.

2.6 FINISHES

A. Painted Finishes: Comply with coating manufacturer's written instructions for cleaning, conversion coating, and applying and baking finish.

1. Factory Primed: Apply manufacturer's standard, lead- and chromate-free, universal primer immediately after surface preparation and pretreatment.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Comply with manufacturer's written instructions for installing access doors and frames.

B. Adjust doors and hardware, after installation, for proper operation.

3.2 FIELD QUALITY CONTROL

A. Inspection Agency: Engage a qualified inspector to perform inspections and to furnish reports to Architect.

B. Inspections:

1. Fire-Rated Door Inspections: Inspect each fire-rated access door in accordance with NFPA 80, Section 5.2.

C. Repair or remove and replace installations where inspections indicate that they do not comply with specified requirements.

D. Reinspect repaired or replaced installations to determine if replaced or repaired door assembly installations comply with specified requirements.

E. Prepare and submit separate inspection report for each fire-rated access door indicating compliance with each item listed in NFPA 80 and NFPA 101.

END OF SECTION

SECTION 08 41 13
ALUMINUM-FRAMED ENTRANCES AND STOREFRONTS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Aluminum-framed entrance and storefront systems.

1.2 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1.3 ACTION SUBMITTALS

A. Product data.
B. Shop Drawings:
   1. Plans, elevations, sections, full-size details, and attachments to other work.
   2. Connection to and continuity with adjacent thermal, weather, air, and vapor barriers.
   3. Point-to-point wiring diagrams.
C. Samples: Manufacturer's standard color sheets, showing full range of available colors for each type of exposed finish.
D. Entrance Door Hardware Schedule: Prepared by or under supervision of supplier, detailing fabrication and assembly of entrance door hardware, as well as procedures and diagrams.
E. Delegated Design Submittals: For aluminum-framed entrance and storefront systems, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.
F. Sustainable Design Submittals:
   1. Product Data: For sealants, indicating VOC content.
   2. Laboratory Test Reports: For sealants, indicating compliance with requirements for low-emitting materials.
   3. Product Data: For recycled content, indicating postconsumer and preconsumer recycled content and cost.
   4. Environmental Product Declaration: For each product.
   5. Health Product Declaration: For each product.
   6. Sourcing of Raw Materials: Corporate sustainability report for each manufacturer.

1.4 INFORMATIONAL SUBMITTALS

A. Energy Performance Certificates: NFRC-certified energy performance values from manufacturer.
B. Product test reports.
C. Source quality-control reports.
D. Field quality-control reports.
E. Sample warranties.

1.5 CLOSEOUT SUBMITTALS

A. Operation and maintenance data.

1.6 QUALITY ASSURANCE

A. Installer Qualifications:
   1. Fabricator of products.
   2. Entity that employs installers and supervisors who are trained and approved by manufacturer.
   3. Authorized representative who is trained and approved by manufacturer.
   4. Entity that is certified under the North American Contractor Certification Program (NACC) and that employs installers and supervisors who are trained and approved by manufacturer.
B. Delegated Design Engineer Qualifications: A professional engineer who is legally qualified to practice in state where Project is located and who is experienced in providing engineering services of the type indicated.
C. Testing Agency Qualifications: Qualified in accordance with ASTM E699 for testing indicated and acceptable to Owner and Architect.
D. Egress Door Inspector Qualifications:
   1. Inspector for field quality-control inspections of egress door assemblies to comply with qualifications set forth in NFPA 101, Ch. 7 "Means of Egress," Section "Means of Egress Components," Article "Inspection of Door Openings."
   2. Inspector for field quality-control inspections of egress door assemblies to be certified under DHI's certification program as a Fire and Egress Door Assembly Inspector (FDAI) or a Certified Fire and Egress Door Assembly Inspector (CFDAI).
E. Product Options: Information on Drawings and in Specifications establishes requirements for aesthetic effects and performance characteristics of assemblies. Aesthetic effects are indicated by dimensions, arrangements, alignment, and profiles of components and assemblies as they relate to sightlines, to one another, and to adjoining construction.

1. Do not change intended aesthetic effects, as judged solely by Architect, except with Architect's approval. If changes are proposed, submit comprehensive explanatory data to Architect for review.

1.7 WARRANTY

A. Special Warranty: Manufacturer and Installer agree to repair or replace components of aluminum-framed entrance and storefront systems that fail in materials or workmanship within specified warranty period.
1. Warranty Period: Five years from date of Substantial Completion.

B. Special Finish Warranty, Factory-Applied Finishes: Standard form in which manufacturer agrees to repair finishes or replace aluminum that shows evidence of deterioration of baked-enamel, powder-coat, or organic finishes within specified warranty period.
1. Warranty Period: 10 years from date of Substantial Completion.

C. Special Finish Warranty, Anodized Finishes: Standard form in which manufacturer agrees to repair finishes or replace aluminum that shows evidence of deterioration of anodized finishes within specified warranty period.
1. Warranty Period: 10 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Delegated Design: Engage a qualified professional engineer, as defined in Section 01 40 00 "Quality Requirements," to design aluminum-framed entrance and storefront systems.

B. General Performance: Comply with performance requirements specified, as determined by testing of aluminum-framed entrance and storefront systems representing those indicated for this Project without failure due to defective manufacture, fabrication, installation, or other defects in construction.
1. Aluminum-framed entrance and storefront systems to withstand movements of supporting structure, including, but not limited to, twist, column shortening, long-term creep, and deflection from uniformly distributed and concentrated live loads.
2. Failure also includes the following:
a. Thermal stresses transferring to building structure.
b. Glass breakage.
c. Noise or vibration created by wind and thermal and structural movements.
d. Loosening or weakening of fasteners, attachments, and other components.
e. Failure of operating units.

C. Structural Loads:
1. Wind Loads: As indicated on Drawings.
2. Other Design Loads: As indicated on Drawings.

D. Deflection of Framing Members Supporting Glass: At design wind load, as follows:
1. Deflection Normal to Wall Plane: Limited to 1/175 of clear span for spans of up to 13 feet 6 inches and to 1/240 of clear span plus 1/4 inch for spans greater than 13 feet 6 inches.
2. Deflection Parallel to Glazing Plane: Limited to amount not exceeding that which reduces glazing bite to less than 75 percent of design dimension and that which reduces edge clearance between framing members and glazing or other fixed components to less than 1/8 inch.
a. Operable Units: Provide a minimum 1/16-inch clearance between framing members and operable units.
3. Cantilever Deflection: Limited to 2L/175 at unsupported cantilevers.

E. Structural: Test in accordance with ASTM E330/E330M as follows:
1. When tested at positive and negative wind-load design pressures, storefront assemblies, including entrance doors, do not evidence deflection exceeding specified limits.
2. When tested at 150 percent of positive and negative wind-load design pressures, storefront assemblies, including entrance doors and anchorage, do not evidence material failures, structural distress, or permanent deformation of main framing members exceeding 0.2 percent of span.
3. Test Durations: As required by design wind velocity, but not less than 10 seconds.

F. Water Penetration under Static Pressure: Test in accordance with ASTM E331 as follows:
1. No evidence of water penetration through fixed glazing and framing areas, including entrance doors, when tested in accordance with a minimum static-air-pressure differential of 20 percent of positive wind-load design pressure, but not less than 10 lbf/sq. ft..

G. Energy Performance: Certified and labeled by manufacturer for energy performance as follows:
1. Thermal Transmittance (U-factor):
a. Fixed Glazing and Framing Areas: U-factor for the system of not more than 0.41 Btu/sq. ft. x h x deg F as determined in accordance with NFRC 100.
b. Entrance Doors: U-factor of not more than 0.68 Btu/sq. ft. x h x deg F as determined in accordance with NFRC 100.

2. Solar Heat-Gain Coefficient (SHGC):
   a. Fixed Glazing and Framing Areas: SHGC for the system of not more than 0.26 as determined in accordance with NFRC 200.
   b. Entrance Doors: SHGC of not more than 0.22 as determined in accordance with NFRC 200.
3. Air Leakage:
   a. Fixed Glazing and Framing Areas: Air leakage for the system of not more than 0.06 cfm/sq. ft. at a static-air-pressure differential of 6.24 lbf/sq. ft. when tested in accordance with ASTM E283.
   b. Entrance Doors: Air leakage of not more than 1.0 cfm/sq. ft. at a static-air-pressure differential of 1.57 lbf/sq. ft..
4. Condensation Resistance Factor (CRF):
   a. Fixed Glazing and Framing Areas: CRF for the system of not less than 55 as determined in accordance with AAMA 1503.
   b. Entrance Doors: CRF of not less than 57 as determined in accordance with AAMA 1503.

H. Windborne-Debris Impact Resistance: Passes ASTM E1886 missile-impact and cyclic-pressure tests in accordance with ASTM E1996 for Wind Zone 1 for basic protection.
1. Large-Missile Test: For glazing located within 30 feet of grade.
2. Small-Missile Test: For glazing located between 30 feet and 60 feet above grade.

I. Thermal Movements: Allow for thermal movements resulting from ambient and surface temperature changes.
1. Temperature Change: 120 deg F, ambient; 180 deg F, material surfaces.

2.2 ALUMINUM-FRAMED ENTRANCE AND STOREFRONT SYSTEMS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. EFCO Corporation.
2. Kawneer Company, Inc.; Arconic Corporation.
3. OldCastle BuildingEnvelope (OBE).
4. Trulite Glass & Aluminum Solutions, LLC.
5. Tubelite Inc.

B. Basis-of-Design: Kawneer, Tri-Fab Versaglaze 601UT (2x6 framing).

C. Framing Members: Manufacturer's extruded- or formed-aluminum framing members of thickness required and reinforced as required to support imposed loads.
1. Exterior Framing Construction: Thermally broken.
2. Interior Vestibule Framing Construction: Nonthermal.
3. Glazing System: Retained mechanically with gaskets on four sides.
4. Finish: Color anodic finish.
5. Fabrication Method: Field-fabricated stick system.
6. Aluminum: Alloy and temper recommended by manufacturer for type of use and finish indicated.
7. Steel Reinforcement: As required by manufacturer.

D. Backer Plates: Manufacturer's standard, continuous backer plates for framing members, if not integral, where framing abuts adjacent construction.

E. Brackets and Reinforcements: Manufacturer's standard high-strength aluminum with nonstaining, nonferrous shims for aligning system components.

F. Entrance Doors: Manufacturer's standard glazed entrance doors for manual-swing or automatic operation.
1. Door Construction: 1-3/4-inch overall thickness, with minimum 0.125-inch-thick, extruded-aluminum tubular rail and stile members. Mechanically fasten corners with reinforcing brackets that are deeply penetrated and fillet welded or that incorporate concealed tie rods.
   a. Thermal Construction: High-performance plastic connectors separate aluminum members exposed to the exterior from members exposed to the interior.
2. Door Design: As indicated.
3. Glazing Stops and Gaskets: Beveled, snap-on, extruded-aluminum stops and preformed gaskets.
   a. Provide nonremovable glazing stops on outside of door.

2.3 ENTRANCE DOOR HARDWARE

A. Entrance Door Hardware: Hardware not specified in this Section is specified in Section 08 71 00 "Door Hardware."

B. General: Provide entrance door hardware and entrance door hardware sets indicated in door and frame schedule for each entrance door, to comply with requirements in this Section.
1. Opening-Force Requirements:
   a. Egress Doors: Not more than 15 lbf to release the latch and not more than 30 lbf to set the door in motion and not more than 15 lbf to open the door to its minimum required width.
   b. Accessible Interior Doors: Not more than 5 lbf to fully open door.

2.4 GLAZING

A. Glazing: Comply with Section 08 80 00 "Glazing."

B. Glazing Gaskets: Manufacturer's standard sealed-corner pressure-glazing system of black, resilient elastomeric glazing gaskets, setting blocks, and shims or spacers.

C. Glazing Sealants: As recommended by manufacturer.

1. Verify sealant has a VOC content of 250 g/L or less.
2. Verify sealant complies with the testing and product requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."

2.5 MATERIALS

A. Sheet and Plate: ASTM B209.

B. Extruded Bars, Rods, Profiles, and Tubes: ASTM B221.

C. Structural Profiles: ASTM B308/B308M.

D. Steel Reinforcement:

1. Structural Shapes, Plates, and Bars: ASTM A36/A36M.
2. Cold-Rolled Sheet and Strip: ASTM A1008/A1008M.
3. Hot-Rolled Sheet and Strip: ASTM A1011/A1011M.

E. Steel Reinforcement Primer: Manufacturer's standard zinc-rich, corrosion-resistant primer complying with SSPC-PS Guide No. 12.00; applied immediately after surface preparation and pretreatment. Select surface preparation methods in accordance with recommendations in SSPC-SP COM, and prepare surfaces in accordance with applicable SSPC standard.

F. Recycled Content of Steel Products: Postconsumer recycled content plus one-half of preconsumer recycled content not less than 25 percent.

G. Recycled Content of Aluminum Components: Postconsumer recycled content plus one-half of preconsumer recycled content not less than 25 percent.

2.6 FABRICATION

A. Form or extrude aluminum shapes before finishing.

B. Weld in concealed locations to greatest extent possible to minimize distortion or discoloration of finish. Remove weld spatter and welding oxides from exposed surfaces by descaling or grinding.

C. Fabricate components that, when assembled, have the following characteristics:

1. Profiles that are sharp, straight, and free of defects or deformations.
2. Accurately fitted joints with ends coped or mitered.
3. Physical and thermal isolation of glazing from framing members.
4. Accommodations for thermal and mechanical movements of glazing and framing to maintain required glazing edge clearances.
5. Provisions for field replacement of glazing from exterior.
6. Fasteners, anchors, and connection devices that are concealed from view to greatest extent possible.

D. Mechanically Glazed Framing Members: Fabricate for flush glazing without projecting stops.

E. Entrance Door Frames: Reinforce as required to support loads imposed by door operation and for installing entrance door hardware.

F. Entrance Doors: Reinforce doors as required for installing entrance door hardware.

G. Entrance Door Hardware Installation: Factory install entrance door hardware to the greatest extent possible. Cut, drill, and tap for factory-installed entrance door hardware before applying finishes.

H. After fabrication, clearly mark components to identify their locations in Project in accordance with Shop Drawings.

2.7 ALUMINUM FINISHES

A. Color Anodic Finish: AAMA 611, AA-M12C22A42/A44, Class I, 0.018 mm or thicker.

1. Color: As selected by Architect from full range of industry colors and color densities.

PART 3 - EXECUTION

3.1 INSTALLATION OF ALUMINUM-FRAMED ENTRANCE AND STOREFRONT SYSTEMS

A. Comply with manufacturer's written instructions.

B. Do not install damaged components.

C. Fit joints to produce hairline joints free of burrs and distortion.

D. Rigidly secure nonmovement joints.

E. Install anchors with separators and isolators to prevent metal corrosion and electrolytic deterioration and to prevent impeding movement of moving joints.

F. Seal perimeter and other joints watertight unless otherwise indicated.

G. Metal Protection:

1. Where aluminum is in contact with dissimilar metals, protect against galvanic action by painting contact surfaces with materials recommended by manufacturer for this purpose or by installing nonconductive spacers.
2. Where aluminum is in contact with concrete or masonry, protect against corrosion by painting contact surfaces with bituminous paint.

H. Set continuous sill members and flashing in full sealant bed, as specified in Section 07 92 00 "Joint Sealants," to produce weathertight installation.

I. Install joint filler behind sealant as recommended by sealant manufacturer.

J. Install components plumb and true in alignment with established lines and grades.

K. Install entrance doors to produce smooth operation and tight fit at contact points.
1. Exterior Doors: Install to produce weathertight enclosure and tight fit at weather stripping.
2. Field-Installed Entrance Door Hardware: Install surface-mounted entrance door hardware in accordance with entrance door hardware manufacturers' written instructions using concealed fasteners to greatest extent possible.

L. Install glazing as specified in Section 08 80 00 "Glazing."

3.2 FIELD QUALITY CONTROL

A. Testing Agency: Engage a qualified testing agency to perform tests.

B. Tests: Perform the following test on representative areas of aluminum-framed entrance and storefront systems.
1. Water-Spray Test: Before installation of interior finishes has begun, areas designated by Architect to be tested in accordance with **AAMA 501.2** and to not evidence **any** water penetration.
a. Perform a minimum of two tests in areas as directed by Architect.
b. Ensure that spray area includes perimeter condition.
2. Air Leakage: Follow **AAMA 503** per ASTM E783 at 1.5 times the rate specified for laboratory testing in "Performance Requirements" Article but not more than 0.09 cfm/sq. ft. at a static-air-pressure differential of 1.57 lbf/sq. ft..
a. Perform a minimum of two tests in areas as directed by Architect.
3. Water Penetration: Follow **AAMA 503** per ASTM E1105 at a minimum uniform and cyclic static-air-pressure differential of 1.00 times the static-air-pressure differential specified for laboratory testing in "Performance Requirements" Article, but not less than 6.24 lbf/sq. ft., and to not evidence **any** water penetration.

C. Duration of Tests: Run all timed tests to end, and do not stop upon first evidence of minor failure. Intent is to understand if failure is due to window system or intersection of window system with adjacent wall (i.e., perimeter condition).

D. Aluminum-framed entrance and storefront systems will be considered defective if they do not pass tests and inspections.

E. Prepare test and inspection reports.

END OF SECTION

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SECTION 08 44 13
GLAZED ALUMINUM CURTAIN WALLS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Glazed aluminum curtain wall systems.

1.2 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.
B. Sustainable Design Submittals:
   1. Product Data: For sealants, indicating VOC content.
   2. Laboratory Test Reports: For sealants, indicating compliance with requirements for low-emitting materials.
   3. Product Data: For recycled content, indicating postconsumer and preconsumer recycled content and cost.
   4. Environmental Product Declaration: For each product.
   5. Health Product Declaration: For each product.
   6. Sourcing of Raw Materials: Corporate sustainability report for each manufacturer.
C. Shop Drawings: Include plans, elevations, sections, full-size details, and attachments to other work.
   1. Show connection to and continuity with adjacent thermal, weather, air, and vapor barriers.
D. Samples: For each type of exposed finish required.
E. Delegated-Design Submittal: For glazed aluminum curtain walls, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

1.4 INFORMATIONAL SUBMITTALS

A. Energy Performance Certificates: NFRC-certified energy performance values for each glazed aluminum curtain wall.
B. Product test reports.
C. Source quality-control reports.
D. Field quality-control reports.
E. Sample warranties.

1.5 CLOSEOUT SUBMITTALS

A. Maintenance data.

1.6 QUALITY ASSURANCE

A. Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by manufacturer and that employs a qualified glazing contractor for this Project who is certified under the North American Contractor Certification Program (NACC) for Architectural Glass & Metal (AGM) contractors.
B. Testing Agency Qualifications: Qualified in accordance with ASTM E699 for testing indicated and acceptable to Owner and Architect.
C. Product Options: Information on Drawings and in Specifications establishes requirements for aesthetic effects and performance characteristics of assemblies. Aesthetic effects are indicated by dimensions, arrangements, alignment, and profiles of components and assemblies as they relate to sightlines, to one another, and to adjoining construction.
   1. Do not change intended aesthetic effects, as judged solely by Architect, except with Architect's approval. If changes are proposed, submit comprehensive explanatory data to Architect for review.

1.7 WARRANTY

A. Special Assembly Warranty: Manufacturer agrees to repair or replace components of glazed aluminum curtain wall that do not comply with requirements or that fail in materials or workmanship within specified warranty period.
   1. Warranty Period: Five years from date of Substantial Completion.
B. Special Finish Warranty, Factory-Applied Finishes: Standard form in which manufacturer agrees to repair finishes or replace aluminum that shows evidence of deterioration of baked enamel, powder coat, or organic finishes within specified warranty period.
   1. Warranty Period: 10 years from date of Substantial Completion.
C. Special Finish Warranty, Anodized Finishes: Standard form in which manufacturer agrees to repair finishes or replace aluminum that shows evidence of deterioration of anodized finishes within specified warranty period.
   1. Warranty Period: 10 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Delegated Design: Engage a qualified professional engineer, as defined in Section 01 40 00 "Quality Requirements," to design glazed aluminum curtain walls.

B. General Performance: Comply with performance requirements specified, as determined by testing of glazed aluminum curtain walls representing those indicated for this Project without failure due to defective manufacture, fabrication, installation, or other defects in construction.
1. Glazed aluminum curtain walls shall withstand movements of supporting structure, including, but not limited to, story drift, twist, column shortening, long-term creep, and deflection from uniformly distributed and concentrated live loads.
2. Failure also includes the following:
a. Thermal stresses transferring to building structure.
b. Glass breakage.
c. Noise or vibration created by wind and thermal and structural movements.
d. Loosening or weakening of fasteners, attachments, and other components.
e. Failure of operating units.

C. Structural Loads:
1. Wind Loads: As indicated on Drawings.
2. Other Design Loads: As indicated on Drawings.

D. Deflection of Framing Members Supporting Glass: At design wind load, as follows:
1. Deflection Normal to Wall Plane: Limited to 1/175 of clear span for spans of up to 13 feet 6 inches and to 1/240 of clear span plus 1/4 inch for spans of greater than 13 feet 6 inches.
2. Deflection Parallel to Glazing Plane: Limited to amount not exceeding that which reduces glazing bite to less than 75 percent of design dimension and that which reduces edge clearance between framing members and glazing or other fixed components to less than 1/8 inch.
a. Operable Units: Provide a minimum 1/16-inch clearance between framing members and operable units.
3. Cantilever Deflection: Limited to 2l/175 at unsupported cantilevers.

E. Structural: Test in accordance with ASTM E330/E330M as follows:
1. When tested at positive and negative wind-load design pressures, assemblies do not evidence deflection exceeding specified limits.
2. When tested at 150 percent of positive and negative wind-load design pressures, assemblies, including anchorage, do not evidence material failures, structural distress, or permanent deformation of main framing members exceeding 0.2 percent of span.
3. Test Durations: As required by design wind velocity, but not less than 10 seconds.

F. Water Penetration under Static Pressure: Test in accordance with ASTM E331 as follows:
1. No evidence of water penetration through fixed glazing and framing areas when tested in accordance with a minimum static-air-pressure differential of 20 percent of positive wind-load design pressure, but not less than 10 lbf/sq. ft..

G. Energy Performance: Certified and labelled by manufacturer for energy performance as follows:
1. Thermal Transmittance (U-factor):
a. Fixed Glazing and Framing Areas: U-factor for the system of not more than 0.29 Btu/sq. ft. x h x deg F as determined in accordance with NFRC 100.
2. Solar Heat Gain Coefficient (SHGC):
a. Fixed Glazing and Framing Areas: SHGC for the system of not more than 0.26 as determined in accordance with NFRC 200.
3. Air Leakage:
a. Fixed Glazing and Framing Areas: Air leakage for the system of not more than 0.06 cfm/sq. ft. at a static-air-pressure differential of 1.57 lbf/sq. ft. when tested in accordance with ASTM E283.
4. Condensation Resistance Factor (CRF):
a. Fixed Glazing and Framing Areas: CRF for the system of not less than 55 as determined in accordance with AAMA 1503.

H. Windborne-Debris Impact Resistance: Pass ASTM E1886 missile-impact and cyclic-pressure tests in accordance with ASTM E1996 for Wind Zone 1 for basic protection.
1. Large-Missile Test: For glazing located within 30 feet of grade.
2. Small-Missile Test: For glazing located between 30 feet and 60 feet above grade.

I. Thermal Movements: Allow for thermal movements resulting from ambient and surface temperature changes:
1. Temperature Change: 120 deg F, ambient; 180 deg F, material surfaces.

2.2 GLAZED ALUMINUM CURTAIN WALL SYSTEMS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. EFCO Corporation.
2. Kawneer Company, Inc.; Arconic Corporation.

3. OldCastle BuildingEnvelope (OBE).
4. TRACO, a division of Kawneer.
5. Trulite Glass & Aluminum Solutions, LLC.
6. Tubelite Inc.

B. Basis-of-Design: Kawneer 1600 Wall System 1 (2x6 framing).

C. Framing Members: Manufacturer's extruded- or formed-aluminum framing members of thickness required and reinforced as required to support imposed loads.
1. Construction: Thermally broken.
2. Glazing System: Retained mechanically with gaskets on four sides.
3. Glazing Plane: Front.
4. Finish: Color anodic finish.
5. System: Either stick or unitized system.
6. Aluminum: Alloy and temper recommended by manufacturer for type of use and finish indicated.
7. Steel Reinforcement: As required by manufacturer.

D. Pressure Caps: Manufacturer's standard aluminum components that mechanically retain glazing.
1. Include snap-on aluminum trim that conceals fasteners.

E. Brackets and Reinforcements: Manufacturer's standard high-strength aluminum with nonstaining, nonferrous shims for aligning system components.

2.3 GLAZING

A. Glazing: Comply with Section 08 80 00 "Glazing."

B. Glazing Gaskets: ASTM C509 or ASTM C864. Compression-type, replaceable EPDM.
1. Color: Black.

C. Glazing Sealants: As recommended by manufacturer.
1. Verify sealant has a VOC content of 250 g/L or less.
2. Verify sealant complies with the testing and product requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."

2.4 MATERIALS

A. Sheet and Plate: ASTM B209.

B. Extruded Bars, Rods, Profiles, and Tubes: ASTM B221.

C. Structural Profiles: ASTM B308/B308M.

D. Steel Reinforcement:
1. Structural Shapes, Plates, and Bars: ASTM A36/A36M.
2. Cold-Rolled Sheet and Strip: ASTM A1008/A1008M.
3. Hot-Rolled Sheet and Strip: ASTM A1011/A1011M.

E. Steel Reinforcement Primer: Manufacturer's standard zinc-rich, corrosion-resistant primer complying with SSPC-PS Guide No. 12.00; applied immediately after surface preparation and pretreatment. Select surface preparation methods in accordance with recommendations in SSPC-SP COM, and prepare surfaces in accordance with applicable SSPC standard.

F. Recycled Content of Steel Products: Postconsumer recycled content plus one-half of preconsumer recycled content not less than 25 percent.

G. Recycled Content of Aluminum Components: Postconsumer recycled content plus one-half of preconsumer recycled content not less than 25 percent.

2.5 FABRICATION

A. Form or extrude aluminum shapes before finishing.

B. Weld in concealed locations to greatest extent possible to minimize distortion or discoloration of finish. Remove weld spatter and welding oxides from exposed surfaces by descaling or grinding.

C. Fabricate components that, when assembled, have the following characteristics:
1. Profiles that are sharp, straight, and free of defects or deformations.
2. Accurately fitted joints with ends coped or mitered.
3. Physical and thermal isolation of glazing from framing members.
4. Accommodations for thermal and mechanical movements of glazing and framing to maintain required glazing edge clearances.
5. Provisions for field replacement of glazing from exterior.
6. Provisions for safety railings mounted between mullions at interior.
7. Fasteners, anchors, and connection devices that are concealed from view to greatest extent possible.
8. Components curved to indicated radii.

D. Fabricate components to resist water penetration as follows:

1. Internal guttering system or other means to drain water passing joints, condensation occurring within framing members, and moisture migrating within glazed aluminum curtain wall to exterior.
2. Pressure-equalized system or double barrier design with primary air and vapor barrier at interior side of glazed aluminum curtain wall and secondary seal weeped and vented to exterior.

E. Curtain-Wall Framing: Fabricate components for assembly using manufacturer's standard assembly method.

F. Factory-Assembled Frame Units:
1. Rigidly secure nonmovement joints.
2. Prepare surfaces that are in contact with structural sealant in accordance with sealant manufacturer's written instructions, to ensure compatibility and adhesion.
3. Preparation includes, but is not limited to, cleaning and priming surfaces.
4. Seal joints watertight unless otherwise indicated.
5. Install glazing to comply with requirements in Section 08 80 00 "Glazing."

G. After fabrication, clearly mark components to identify their locations in Project in accordance with Shop Drawings.

2.6 ALUMINUM FINISHES

A. Color Anodic Finish: AAMA 611, AA-M12C22A42/A44, Class I, 0.018 mm or thicker.
1. Color: As selected by Architect from full range of industry colors and color densities.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Comply with manufacturer's written instructions.

B. Do not install damaged components.

C. Fit joints to produce hairline joints free of burrs and distortion.

D. Rigidly secure nonmovement joints.

E. Install anchors with separators and isolators to prevent metal corrosion and electrolytic deterioration and to prevent impeding movement of moving joints.

F. Where welding is required, weld components in concealed locations to minimize distortion or discoloration of finish. Protect glazing surfaces from welding.

G. Seal joints watertight unless otherwise indicated.

H. Metal Protection:
1. Where aluminum is in contact with dissimilar metals, protect against galvanic action by painting contact surfaces with primer, applying sealant or tape, or installing nonconductive spacers as recommended by manufacturer for this purpose.
2. Where aluminum is in contact with concrete or masonry, protect against corrosion by painting contact surfaces with bituminous paint.

I. Install components to drain water passing joints, condensation occurring within framing members, and moisture migrating within glazed aluminum curtain wall to exterior.

J. Install components plumb and true in alignment with established lines and grades.

3.2 INSTALLATION OF GLAZING

A. Install glazing as specified in Section 08 80 00 "Glazing."

3.3 FIELD QUALITY CONTROL

A. Testing Agency: Engage a qualified testing agency to perform tests and inspections.

B. Test Area: Perform tests on representative areas of glazed aluminum curtain walls.

C. Field Quality-Control Testing: Perform the following test on representative areas of glazed aluminum curtain walls.
1. Water-Spray Test: Before installation of interior finishes has begun, areas designated by Architect shall be tested in accordance with **AAMA 501.2** and shall not evidence **any** water penetration.
   a. Perform a minimum of two tests in areas as directed by Architect.
   b. Ensure that spray area includes perimeter condition.

D. Duration of Tests: Run all timed tests to end, and do not stop upon first evidence of minor failure. Intent is to understand if failure is due to window system or intersection of window system with adjacent wall (i.e., perimeter condition).

E. Glazed aluminum curtain walls will be considered defective if they do not pass tests and inspections.

F. Prepare test and inspection reports.

END OF SECTION

SECTION 08 71 00
DOOR HARDWARE

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PART 1 – GENERAL

1.1 SUMMARY

A. Section Includes:
1. Commercial door hardware for aluminum entrances, wood and steel doors
2. Coordination and interface with Owner's Security System.
3. Templates
4. Keying System

1.2 WORK FURNISHED BUT INSTALLED UNDER OTHER SECTIONS

A. Furnish all hardware to Section 06200 for installation.

1.3 RELATED WORK

A. Section 08 11 00 - Metal Doors and Frames: Doors and Frames prepared for finish hardware.
B. Section 08 21 00 - Wood Doors: Wood doors: Doors and Frames prepared for finish hardware.
C. Division 26 - Electrical Power supply to electric hardware devices and low voltage control.

1.4 REFERENCES

A. ANSI A117.1 - Specifications for Making Buildings and Facilities Accessible to and Usable by Physically Handicapped People.
B. ANSI/NFPA 80 - Fire Doors and Windows.
C. BHMA - Builders' Hardware Manufacturers Association.
D. DHI - Door and Hardware Institute.
E. NAAMM - National Association of Architectural Metal Manufacturers.
F. NFPA 101 - Life Safety Code.
G. SDI - Steel Door Institute.
H. ADA - The Americans with Disabilities Act.

1.5 COORDINATION

A. Coordinate work of this Section with other directly affected Sections involving manufacturer of any internal reinforcement for hardware.

B. Furnish template for application to doors and jambs with machine or wood screws or through-bolts as required. Templates or hardware or both shall be delivered to factory or building as required by those furnishing items to which hardware is to be applied. Refer to other Sections of Specifications for this information. Locksets for metal doors shall have beveled faces to correspond with bevel or doors. Strikes shall be ASA Standard dimension. Locks having bolts or latches engaging with mullions or jambs of hollow metal shall have box type strikes with curved lips.

C. Electrical System Roughing-In: Coordinate layout and installation of electrified door hardware with connections to power supplies and building safety and security systems.

D. Cooperate with installing contractor and others with regard to application of hardware. Make occasional inspections to verify that items are properly used, installed, in correct location and master-key system is maintained. Report improper application of hardware.

E. Prior to preparing shop drawing submittal, contact Architect to set up a meeting with the Owner to review door functions.

1.6 QUALITY ASSURANCE

A. Manufacturers: Companies specializing in manufacturing door hardware with minimum three years experience.

B. Hardware Supplier: Company specializing in supplying commercial and institutional door hardware with five years experience.

C. Each type of hardware shall be furnished from only one manufacturer.

D. No hardware shall be attached to metal frames with self-tapping or sheet metal screws.

E. Furnish thru bolts for fastening overhead holders and closers on composite core doors.

1.7 REGULATORY REQUIREMENTS

A. Conform to NFPA Standard No. 80 requirements applicable to fire rated doors and frames.

B. Provide only hardware which has been tested and listed by U.L. for types and sizes of doors required and complies with requirements of door and door frame labels.

1.8 CERTIFICATIONS

A. Architectural Hardware Vendor shall inspect complete installation and certify that hardware and installation has been furnished and installed in accordance with manufacturer's instructions and as specified herein.

B. Provide two copies of certifications to Architect.

1.9 SUBMITTALS

A. Before ordering material, prepare and submit complete vertical hardware schedule for all hardware materials to Architect for review. Approval of schedule does not relieve Contractor of any responsibility for furnishing material in accordance with requirements of work.

B. Schedule shall be specific and conclusive with respect to catalog numbers, finishes, template requirements, brackets, type of fasteners and locations. Incomplete schedule will not be checked.

C. Include in schedule, installation dimensions, hardware locations and mounting heights of each type of hardware.

D. Prepare detailed keying schedule after obtaining Owner's instructions and requirements, and submit for approval.

E. Samples, if requested shall be submitted to Architect for approval. Approved samples, if of proper finish, will be delivered to job for ultimate use; otherwise samples will be returned to Contractor upon completion.

F. Submit certificate that hardware to be furnished meets or exceed specified requirements.

G. Submit catalog cut sheets describing all hardware items.

H. Coordinate with Electrical Contractor and Owner's Security Design Vendor installation requirements for locksets that have electric strikes, door position switches and other line or low voltage requirements.

I. Operation and Maintenance data.

1.10 OPERATION AND MAINTENANCE DATA

A. Submit operation and maintenance data for all hardware items provided.

B. Include data on operating hardware, lubrication requirements, and inspection procedures related to preventative maintenance.

C. Include one copy of final approved hardware and keying schedule.

1.11 DELIVERY, STORAGE, AND HANDLING

A. Send duplicate list of hardware in each shipment to Contractor. Original list shall accompany shipment. Hardware vendor shall pay shipping and delivery charges.

B. Deliver hardware to Carpenter (Section 06200) or to respective shops of other Contractors as required. Consult with named Contractors and follow their directions regarding manner, sequence and time of delivery and obtain receipt.

C. Responsibility for safekeeping after delivery rests with trade to whom hardware was delivered.

D. Hardware shall be sorted and delivered to jobsite plainly marked to correspond with item numbers of vendor's approved schedule and be specific as to exact openings and other locations for which items are packaged. Each door opening shall receive separate item number on Hardware Schedule.

E. Plainly mark packages of hardware so that locations of their use may be ascertained without breaking package. Where several packages are needed to complete schedule for one location, securely tie together or box.

F. Pack hardware by building area unless Contractor receiving hardware orders otherwise.

G. Hardware Supplier shall check all shipments to insure proper accessories and templates.

H. Deliver hardware only after detailed schedule, keying diagrams, and samples have been approved.

I. Provide secure lock-up for hardware delivered to the project. Control handling and installation of hardware items which are not immediately replaceable so that the completion of the work will not be delayed by hardware losses.

1.12 MAINTENANCE MATERIALS

A. Provide three each special wrenches and tools applicable to each difference or special hardware component.

B. Provide three each maintenance tools and accessories supplied by hardware component manufacturer.

1.13 WARRANTY

A. Provide manufacturer's standard warranty.

PART 2 - PRODUCTS

2.1 SOURCE LIMITATIONS

A. Obtain each type of door hardware from single manufacturer.

2.2 PERFORMANCE REQUIREMENTS

A. Fire-Rated Door Assemblies: Where fire-rated doors are indicated, provide door hardware complying with NFPA 80 that is listed and labeled by a qualified testing agency, for fire-protection ratings indicated, based on testing at positive pressure in accordance with NFPA 252 or UL 10C.

B. Electrified Door Hardware: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

C. Means of Egress Doors: Latches do not require more than 15 lbf (67 N) to release the latch. Locks do not require use of a key, tool, or special knowledge for operation.

D. Accessibility Requirements: For door hardware on doors in an accessible route, comply with **ICC A117.1**.

1. Provide operating devices that do not require tight grasping, pinching, or twisting of the wrist and that operate with a force of not more than 5 lbf (22.2 N).
2. Comply with the following maximum opening-force requirements:
   a. Interior, Non-Fire-Rated Hinged Doors: 5 lbf (22.2 N) applied perpendicular to door.
   b. Fire Doors: Minimum opening force allowable by authorities having jurisdiction.
3. Bevel raised thresholds with a slope of not more than 1:2. Provide thresholds not more than 1/2 inch (13 mm) high.
4. Adjust door closer sweep periods so that, from an open position of 90 degrees, the door will take at least 5 seconds to move to a position of 12 degrees from the latch.
5. Adjust spring hinges so that, from an open position of 70 degrees, the door will take at least 1.5 seconds to move to the closed position.

2.3 MATERIALS

A. Locks, Latches, Cylinders, and Dead Locks

1. Shall be Schlage L series as noted in hardware sets. Backset shall be 2-3/4" for all locks, latches and dead locks, unless otherwise required to match existing door prep's. No substitutions.
2. All locks and latches shall be of one manufacturer.
3. Included construction cores for all cylinders.
4. All cylinder cores shall be Schlage Primus brand cores. No substitutions. Primus cores are to be supplied by owner.

B. Exit Devices

1. Devices shall be as manufactured by Von Duprin as noted in hardware sets. No substitutions.
2. Function shall be as noted in schedule.
3. Mount exit devices to match mullions at adjacent doors and frames wherever possible.

C. Butt Hinges

1. Shall be Best, Hager, or Ives ball bearing, nonrising loose pin, flat button tip, unless specified to the contrary.
2. Number of butts required:
   a. Doors up to 7' – 4" - 3 butts
   b. Doors 7'- 4" up to 10' – 4 butts

3. Butt size requirements
   a. Interior doors up to 36" wide 4-1/2 x 4-1/2 standard weight.
   b. Interior doors over 36" wide 4-1/2 x 4-1/2 heavy weight.
   c. Exterior doors 4-1/2 x 4-1/2 heavy weight.
4. Door butt legend: (unless otherwise noted in Schedule)
   a. Exterior doors and interior doors exposed to garage/wet areas –stainless steel-NRP.
   b. All other doors steel based.
5. Furnish UL approved butts on labeled doors.
6. Provide non-removable pins (NRP) on all exterior and lockable outswinging doors.
7. Continuous Gear Hinges: Hager, Ives, or Select.

D. Door Closers
1. Shall be LCN 4040XP series unless otherwise specified in hardware groups. No substitutions.
2. Closers shall have key adjusting device.
3. Mount to provide maximum opening permitted by building construction or equipment. Note on schedule the maximum swing per location for other trades involved in reinforcement or installation.
4. All door closers shall be similar in design and appearance to those listed in the schedule, so far as possible, of one manufacturer. Furnish special arms and applications as indicated in hardware schedule or as dictated by structural conditions or local code requirements. Provide appropriate brackets for doors with transoms.
5. Door closers at labeled fire doors shall bear UL approval. Provide thru-bolts for mineral core doors unless otherwise specified in door specifications.

E. Pushes, Pulls, and Kickplates
1. Shall be as manufactured by Hager, Ives, Rockwood, or Trimco..
2. All plates shall be 16 gauge (0.50), beveled sides and with countersunk screw holes at intervals of not over 6" on all four sides. Screws shall be stainless steel oval head, finish to match plates.

F. Stops and Bumpers
1. Shall be Hager, Ives, Rixson, Rockwood, or Trimco..
2. Install bumper behind each door.
3. Overhead stops and holder types as specified in hardware groups.
4. Apply with expansion shield and machine screws only.
5. Provide special templates as required for proper coordination of door closers and overhead door holders.

G. Manual and Automatic flushbolts.
1. Shall be Hager, Ives, Rockwood, or Trimco.

H. Low Energy Openers
1. ADA Automatic Openers: Stanley Magic Force, Horton 4000LE or Motion Access Condor Swing as specified in hardware groups. Automatic operators are to be included as supply and install. Coordinate installation and operation of opener and switches with electrical contractor.

I. Thresholds, Weatherstripping, Sound Seals
1. National Guard, Hager, or Pemko.

J. Door Silencers or Mutes
1. Furnish three for each pressed steel frame for single doors, two for each pressed steel frame for pairs of doors.

K. Other Materials
1. Provide other materials not specifically described but required for a complete and proper installation, as selected by the Contractor and approved by the Architect.

2.4 KEYING

A. Keying is by owner.

2.5 FABRICATION

A. Base Metals: Produce door hardware units of base metal indicated, fabricated by forming method indicated, using manufacturer's standard metal alloy, composition, temper, and hardness. Furnish metals of a quality equal to or greater than that of specified door hardware units and ANSI/BHMA A156.18.

B. Fasteners: Provide door hardware manufactured to comply with published templates prepared for machine, wood, and sheet metal screws. Provide screws that comply with commercially recognized industry standards for application intended; however, aluminum fasteners are not permitted. Provide Phillips flat-head screws with finished heads to match surface of door hardware unless otherwise indicated.

2.6 FINISHES

A. Provide finishes complying with ANSI/BHMA A156.18 as indicated in door hardware schedule.

B. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

C. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Noticeable variations in the same piece are not acceptable. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine doors and frames, with Installer present, for compliance with requirements for installation tolerances, labeled fire-rated door assembly construction, wall and floor construction, and other conditions affecting performance of the Work.

B. Examine roughing-in for electrical power systems to verify actual locations of wiring connections before electrified door hardware installation.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Steel Doors and Frames: For surface-applied door hardware, drill and tap doors and frames in accordance with ANSI/SDI A250.6.

3.3 INSTALLATION

A. Mounting Heights: Mount door hardware units at heights **to comply with the following** unless otherwise indicated or required to comply with governing regulations.

1. Standard Steel Doors and Frames: ANSI/SDI A250.8.
2. Custom Steel Doors and Frames: HMMA 831.

B. Install each door hardware item to comply with manufacturer's written instructions. Where cutting and fitting are required to install door hardware onto or into surfaces that are later to be painted or finished in another way, coordinate removal, storage, and reinstallation of surface protective trim units with finishing work. Do not install surface-mounted items until finishes have been completed on substrates involved.

1. Set units level, plumb, and true to line and location. Adjust and reinforce attachment substrates as necessary for proper installation and operation.
2. Drill and countersink units that are not factory prepared for anchorage fasteners. Space fasteners and anchors in accordance with industry standards.

C. Hinges: Install types and in quantities indicated in door hardware schedule, but not fewer than the number recommended by manufacturer for application indicated or one hinge for every 30 inches (760 mm) of door height, whichever is more stringent, unless other equivalent means of support for door, such as spring hinges or pivots, are provided.

D. Boxed Power Supplies: Locate power supplies as indicated or, if not indicated, above accessible ceilings or in equipment room. Verify location with Architect.

1. Configuration: Provide one power supply for each door opening or least number of power supplies required to adequately serve doors with electrified door hardware.

E. Thresholds: Set thresholds for exterior doors and other doors indicated in full bed of sealant complying with requirements specified in Section 079200 "Joint Sealants."

F. Perimeter Gasketing: Apply to head and jamb, forming seal between door and frame.

1. Do not notch perimeter gasketing to install other surface-applied hardware.

3.4 INSPECTION AND ADJUSTMENTS

A. Hardware vendor shall, before substantial completion of project, and/or as directed by Architect, inspect all locks that are part of this project to see that keys pass proper locks as required.

B. Check that all locks and latches are properly lubricated, as recommended by manufacturer, with lock lubricant and that all moving parts are adjusted correctly to insure free, smooth operation.

C. Door closers and holders shall be checked for proper lubrication. After building is in use, arrange with factory representative of closer manufacturer to make final adjustments to closers to meet building conditions.

3.5 CLEANING AND PROTECTION

A. Clean adjacent surfaces soiled by door hardware installation.

B. Clean operating items as necessary to restore proper function and finish.

C. Provide final protection and maintain conditions that ensure that door hardware is without damage or deterioration at time of Substantial Completion.

SCHEDULE

Check specified schedule against latest revised plans when making up schedule for approval. Schedule each door separately and, where practical, item numbers shall be same as door numbers and in consecutive sequence.

If hardware is not scheduled for a particular door, furnish hardware of types specified for similar locations as far as practical.

Include accessories required to fully equip in satisfactory manner, doors and the like as shown and specified. Include necessary screws, nuts, bolts, expansion shields and other devices necessary for proper application.]

Items of hardware herein described shall be considered as standard and, unless otherwise specifically mentioned, all hardware used throughout work shall be equal thereto in size, weight, material and workmanship. Revision of standard hardware, which may be necessary to conform to details shall be provided. Items not specifically mentioned but necessary for completion of work shall be of most suitable type matching in quality and finish items which are described.

SET 01

	EA	HINGES	AS SPECIFIED	640 IVES
1	EA	CLASSROOM LOCK	L9070T X 03A	613 SCHLAGE
1	EA	PRIMUS CORE	AS REQUIRED	613 SCHLAGE
2	EA	CLOSER	4040XP-H	695 LCN
2	EA	OVERHEAD STOP	GJ100 SERIES	613 GLYNN-JOHNSON
1	SET	AUTO FLUSHBOLTS	FB31P/FB41P	613 IVES
1	EA	DUSTPROOF STRIKE	DP2	613 IVES
1	EA	COORDINATOR	COR X FL	711 IVES
2	EA	KICKPLATE	10" X 1" LDW	613 IVES

**PROVIDE LCN SPECIAL TEMPLATE ST1630 AND 4040XP-18TJ PLATE AS REQUIRED FOR CLOSER AND OVERHEAD STOP INSTALLATION.

SET 02

	EA	HINGES	AS SPECIFIED	640 IVES
1	EA	CLASSROOM LOCK	L9070T X 03A	613 SCHLAGE
1	EA	PRIMUS CORE	AS REQUIRED	613 SCHLAGE
1	EA	CLOSER	4040XP-H	695 LCN
1	EA	OVERHEAD STOP	GJ100 SERIES	613 GLYNN-JOHNSON
1	EA	KICKPLATE	10" X 2" LDW	613 IVES

SET 03

	EA	HINGES	AS SPECIFIED	640 IVES
1	EA	PRIVACY	L9040 X 03A X L283-722	613 SCHLAGE
1	EA	CLOSER	4040XP	695 LCN
1	EA	WALL STOP	409	613 ROCKWOOD
1	EA	KICKPLATE	10" X 2" LDW	613 IVES

SET 04

	EA	HINGES	AS SPECIFIED	640 IVES
1	EA	EXIT DEVICE	9927NL X LBR	613 VON DUPRIN
1	EA	EXIT DEVICE	9927DT X LBR	613 VON DUPRIN
1	EA	I/C CYLINDER	AS REQUIRED	613 SCHLAGE
1	EA	PRIMUS CORE	AS REQUIRED	613 SCHLAGE
2	EA	CLOSER	4040XP	695 LCN

2	EA	OVERHEAD HOLDER	GJ100H SERIES	613	GLYNN-JOHNSON
2	EA	KICKPLATE	10" X 1" LDW	613	IVES

**PREP DOORS WITH RACEWAYS FOR FUTURE ELECTRIC LATCH RETRACTION KITS AND ELECTRIC HINGES FOR FUTURE CARD ACCESS.

SET 05

	EA	HINGES	AS SPECIFIED	640	IVES
2	EA	EXIT DEVICE	9927DT X LBR	613	VON DUPRIN
2	EA	CLOSER	4040XP	695	LCN
2	EA	OVERHEAD HOLDER	GJ100H SERIES	613	GLYNN-JOHNSON
2	EA	KICKPLATE	10" X 1" LDW	613	IVES

**PREP DOORS WITH RACEWAYS FOR FUTURE ELECTRIC LATCH RETRACTION KITS AND ELECTRIC HINGES FOR FUTURE CARD ACCESS.

SET 06

	EA	HINGES	224HD	640	IVES
1	EA	EXIT DEVICE	99EO	613	VON DUPRIN
1	EA	CLOSER	4040XP	695	LCN
1	EA	OVERHEAD STOP	GJ100 SERIES	613	GLYNN-JOHNSON
1	SET	WEATHERSTRIP	700SDKB	DKB	NGP
1	EA	SWEEP	200NDKB	DKB	NGP
1	EA	THRESHOLD	8425	AL	NGP

SET 07

1	EA	CONTINUOUS HINGE	112HD	DKB	IVES
1	EA	EXIT DEVICE	99EO	613	VON DUPRIN
1	EA	CLOSER	4040XP	695	LCN
1	EA	OVERHEAD STOP	GJ100 SERIES	613	GLYNN-JOHNSON
1	EA	SWEEP	200NDKB	DKB	NGP
1	EA	THRESHOLD	8425	AL	NGP

**SEALS BY DOOR SUPPLIER.
**PROVIDE DROP PLATE AND BLADE STOP SPACER AS REQUIRED FOR CLOSER INSTALLATION.

SET 08

	EA	HINGES	AS SPECIFIED	640	IVES
1	EA	STOREROOM LOCK	L9080T X 03A	613	SCHLAGE
1	EA	PRIMUS CORE	AS REQUIRED	613	SCHLAGE
2	EA	CLOSER	4040XP-SCUSH	695	LCN
1	SET	AUTO FLUSHBOLTS	FB31P/FB41P	613	IVES
1	EA	DUSTPROOF STRIKE	DP2	613	IVES
1	EA	COORDINATOR	COR X FL	711	IVES
2	EA	MNTG BRACKETS	AS REQUIRED	BLK	IVES
2	EA	KICKPLATE	10" X 1" LDW	613	IVES
1	SET	SEALS	5050C	BLK	NGP
1	SET	ASTRAGAL	115N	DKB	NGP
2	EA	AUTO DR BOTTOM	320N	AL	NGP

SET 09

	EA	HINGES	AS SPECIFIED	640	IVES
1	EA	STOREROOM LOCK	L9080T X 03A	613	SCHLAGE

1	1	EA	PRIMUS CORE	AS REQUIRED	613	SCHLAGE
2	2	EA	CLOSER	4040XP	695	LCN
3	2	EA	OVERHEAD HOLDER	GJ100H SERIES	613	GLYNN-JOHNSON
4	1	SET	AUTO FLUSHBOLTS	FB31P/FB41P	613	IVES
5	1	EA	DUSTPROOF STRIKE	DP2	613	IVES
6	1	EA	COORDINATOR	COR X FL	711	IVES
7	2	EA	MNTG BRACKETS	AS REQUIRED	BLK	IVES
8	2	EA	KICKPLATE	10" X 1" LDW	613	IVES
9	1	SET	SEALS	5050C	BLK	NGP
10	1	SET	ASTRAGAL	115N	DKB	NGP
11	2	EA	AUTO DR BOTTOM	320N	AL	NGP
12						
13						
14	**SET 10**					
15		EA	HINGES	AS SPECIFIED	640	IVES
16	1	EA	STOREROOM LOCK	L9080T X 03A	613	SCHLAGE
17	1	EA	PRIMUS CORE	AS REQUIRED	613	SCHLAGE
18	1	EA	CLOSER	4040XP	695	LCN
19	1	EA	WALL STOP	409	613E	ROCKWOOD
20	1	EA	KICKPLATE	10" X 2" LDW	613	IVES
21	1	EA	DEADBOLT FILLER PLATE	AS REQUIRED		
22						
23	**GC TO CUT NEW 4 7/8" ANSI STRIKE PREP IN FRAME FOR NEW LOCK.					
24	**PROVIDE NEW FILLER FOR EXISTING DEADBOLT STRIKE. FIELD VERIFY.					
25						
26						
27	**SET 11**					
28		EA	HINGES	AS SPECIFIED	640	IVES
29	1	EA	PUSH	70C	613	ROCKWOOD
30	1	EA	PULL	BF111 X 70C	613	ROCKWOOD
31	1	EA	CLOSER	4040XP	695	LCN
32	1	EA	WALL STOP	409	613E	ROCKWOOD
33	1	EA	KICKPLATE	10" X 2" LDW	613	IVES
34	1	EA	FOOT PULL	FP1230	613E	ROCKWOOD
35						
36						
37						
38						
39						
40						
41						
42						
43						
44						
45				**END OF SECTION**		

SECTION 08 80 00
GLAZING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Glass products.
   2. Laminated glass.
   3. Insulating glass.
   4. Glazing sealants.
   5. Glazing tapes.
   6. Miscellaneous glazing materials.

1.2 COORDINATION

A. Coordinate glazing channel dimensions to provide necessary bite on glass, minimum edge and face clearances, and adequate sealant thicknesses, with reasonable tolerances to achieve proper safety margins for glazing retention under each design load case, load case combination, and service condition.

1.3 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product.
B. Sustainable Design Submittals:
   1. Product Data: For sealants, indicating VOC content.
   2. Laboratory Test Reports: For sealants, indicating compliance with requirements for low-emitting materials.
C. Glass Samples: For each type of glass product other than clear monolithic vision glass; 12 inches square.
D. Delegated Design Submittal: For glass indicated to comply with performance requirements and design criteria, including analysis data signed and sealed by qualified professional engineer responsible for their preparation.

1.5 INFORMATIONAL SUBMITTALS

A. Product Certificates: For glass.
B. Product test reports.
C. Preconstruction adhesion and compatibility test report.
D. Sample warranties.

1.6 QUALITY ASSURANCE

A. Sealant Testing Agency Qualifications: An independent testing agency qualified according to ASTM C1021 to conduct the testing indicated.

1.7 WARRANTY

A. Manufacturer's Special Warranty for Coated-Glass Products: Manufacturer agrees to replace coated-glass units that deteriorate within specified warranty period. Deterioration of coated glass is defined as defects developed from normal use that are not attributed to glass breakage or to maintaining and cleaning coated glass contrary to manufacturer's written instructions. Defects include peeling, cracking, and other indications of deterioration in coating.
   1. Warranty Period: 10 years from date of Substantial Completion.
B. Manufacturer's Special Warranty for Laminated Glass: Manufacturer agrees to replace laminated-glass units that deteriorate within specified warranty period. Deterioration of laminated glass is defined as defects developed from normal use that are not attributed to glass breakage or to maintaining and cleaning laminated glass contrary to manufacturer's written instructions. Defects include edge separation, delamination materially obstructing vision through glass, and blemishes exceeding those allowed by referenced laminated-glass standard.
   1. Warranty Period: 10 years from date of Substantial Completion.
C. Manufacturer's Special Warranty for Insulating Glass: Manufacturer agrees to replace insulating-glass units that deteriorate within specified warranty period. Deterioration of insulating glass is defined as failure of hermetic seal under normal use that is not attributed to glass breakage or to maintaining and cleaning insulating glass contrary to manufacturer's written instructions. Evidence of failure is obstruction of vision by dust, moisture, or film on interior surfaces of glass.
   1. Warranty Period: 10 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Delegated Design: Engage a qualified professional engineer, as defined in Section 01 40 00 "Quality Requirements," to design glazing.
B. Structural Performance: Glazing shall withstand the following design loads within limits and under conditions indicated determined in accordance with the IBC and ASTM E1300:

1. Design Wind Pressures: As indicated on Drawings.
2. Design Snow Loads: As indicated on Drawings.
3. Thermal Loads: Design glazing to resist thermal stress breakage induced by differential temperature conditions and limited air circulation within individual glass lites and insulated glazing units.

C. Windborne-Debris-Impact Resistance: Exterior glazing shall pass ASTM E1886 missile-impact and cyclic-pressure tests in accordance with ASTM E1996 for Wind Zone 1 for basic protection.
1. Large-Missile Test: For glazing located within 30 feet of grade.
2. Small-Missile Test: For glazing located between 30 feet and 60 feet above grade.

D. Safety Glazing: Where safety glazing is indicated, provide glazing that complies with 16 CFR 1201, Category II.

E. Thermal and Optical Performance Properties: Provide glass with performance properties specified, as indicated in manufacturer's published test data, based on procedures indicated below:
1. U-Factors: Center-of-glazing values, in accordance with NFRC 100 and based on most current non-beta version of LBL's WINDOW computer program, expressed as Btu/sq. ft. x h x deg F.
2. SHGC and Visible Transmittance: Center-of-glazing values, in accordance with NFRC 200 and based on most current non-beta version of LBL's WINDOW computer program.
3. Visible Reflectance: Center-of-glazing values, in accordance with NFRC 300.

F. Acoustic Performance:
1. Exterior Glazing: 28 OITC min.
2. Interior Glazing: 35 STC min.

2.2 GLASS PRODUCTS, GENERAL

A. Glazing Publications: Comply with published recommendations of glass product manufacturers and organizations below unless more stringent requirements are indicated. See these publications for glazing terms not otherwise defined in this Section or in referenced standards.
1. NGA Publications: "Laminated Glazing Reference Manual" and "Glazing Manual."
2. AAMA Publications: AAMA GDSG-1, "Glass Design for Sloped Glazing," and AAMA TIR A7, "Sloped Glazing Guidelines."
3. IGMA Publication for Sloped Glazing: IGMA TB-3001, "Guidelines for Sloped Glazing."
4. IGMA Publication for Insulating Glass: SIGMA TM-3000, "North American Glazing Guidelines for Sealed Insulating Glass Units for Commercial and Residential Use."

B. Safety Glazing Labeling: Where safety glazing is indicated, permanently mark glazing with certification label of the SGCC or another certification agency acceptable to authorities having jurisdiction. Label shall indicate manufacturer's name, type of glass, thickness, and safety glazing standard with which glass complies.

C. Insulating-Glass Certification Program: Permanently marked either on spacers or on at least one component lite of units with appropriate certification label of the IGCC.

D. Thickness: Where glass thickness is indicated, it is a minimum. Provide glass that complies with performance requirements and is not less than thickness indicated.

E. Strength: Where annealed float glass is indicated, provide annealed float glass, heat-strengthened float glass, or fully tempered float glass as needed to comply with "Performance Requirements" Article. Where heat-strengthened float glass is indicated, provide heat-strengthened float glass or fully tempered float glass as needed to comply with "Performance Requirements" Article. Where fully tempered float glass is indicated, provide fully tempered float glass.

2.3 GLASS PRODUCTS

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
a. Cardinal Glass Industries, Inc.
b. Guardian Glass LLC.
c. Pilkington North America; NSG Group.
d. Saint-Gobain Glass Corp.
e. Viracon.

B. Clear Annealed Float Glass: ASTM C1036, Type I, Class 1 (clear), Quality-Q3.

C. Low-Iron Annealed Float Glass: ASTM C1036, Type I, Class I (clear), Quality-Q3; and with visible light transmission of not less than 91 percent.

D. Tinted Annealed Float Glass: ASTM C1036, Type I, Class 2 (tinted), Quality-Q3.

E. Fully Tempered Float Glass: ASTM C1048, Kind FT (fully tempered), Condition A (uncoated) unless otherwise indicated, Type I, Class 1 (clear) or Class 2 (tinted) as indicated, Quality-Q3.

F. Heat-Strengthened Float Glass: ASTM C1048, Kind HS (heat strengthened), Type I, Condition A (uncoated) unless otherwise indicated, Type I, Class 1 (clear) or Class 2 (tinted) as indicated, Quality-Q3.

G. Reflective- and Low-E-Coated Vision Glass: ASTM C1376.

H. Ceramic-Coated Vision Glass: ASTM C1048, Condition C, Type I, Class 1 (clear) or Class 2 (tinted) as indicated, Quality-Q3; and complying with Specification No. 95-1-31 in NGA's "Engineering Standards Manual."

I. Ceramic-Coated Spandrel Glass: ASTM C1048, Type I, Condition B, Quality-Q3.

J. Silicone-Coated Spandrel Glass: ASTM C1048, Type I, Condition C, Quality-Q3.

K. Reflective- and Low-E-Coated Spandrel Glass: ASTM C1376, Kind CS.

2.4 LAMINATED GLASS

A. Laminated Glass: ASTM C1172. Use materials that have a proven record of no tendency to bubble, discolor, or lose physical and mechanical properties after fabrication and installation.

1. Construction: Laminate glass with polyvinyl butyral interlayer, ionoplast interlayer, or cast-in-place and cured-transparent-resin interlayer to comply with interlayer manufacturer's written instructions.
2. Interlayer Thickness: Provide thickness not less than that indicated and as needed to comply with requirements.
3. Interlayer Color: Clear unless otherwise indicated.

2.5 INSULATING GLASS

A. Insulating-Glass Units: Factory-assembled units consisting of sealed lites of glass separated by a dehydrated interspace, qualified in accordance with ASTM E2190.

1. Sealing System: Dual seal, with manufacturer's standard primary and secondary sealants.
2. Perimeter Spacer: Manufacturer's standard spacer material and construction.
3. Desiccant: Molecular sieve or silica gel, or a blend of both.

2.6 GLAZING SEALANTS

A. General:

1. Compatibility: Compatible with one another and with other materials they contact, including glass products, seals of insulating-glass units, and glazing channel substrates, under conditions of service and application, as demonstrated by sealant manufacturer based on testing and field experience.
2. Suitability: Comply with sealant and glass manufacturers' written instructions for selecting glazing sealants suitable for applications indicated and for conditions existing at time of installation.
3. Verify sealant complies with the testing and product requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."
4. Colors of Exposed Glazing Sealants: As selected by Architect from manufacturer's full range of industry colors.

B. Neutral-Curing Silicone Glazing Sealant, Class 100/50: Complying with ASTM C920, Type S, Grade NS, Use NT.

2.7 GLAZING TAPES

A. Back-Bedding Mastic Glazing Tapes: Preformed, butyl-based, 100 percent solids elastomeric tape; nonstaining and nonmigrating in contact with nonporous surfaces; with or without spacer rod as recommended in writing by tape and glass manufacturers for application indicated; and complying with ASTM C1281 and AAMA 800 for products indicated below:

1. AAMA 804.3 tape, where indicated.
2. AAMA 806.3 tape, for glazing applications in which tape is subject to continuous pressure.
3. AAMA 807.3 tape, for glazing applications in which tape is not subject to continuous pressure.

2.8 MISCELLANEOUS GLAZING MATERIALS

A. Cleaners, Primers, and Sealers: Types recommended by sealant or gasket manufacturer.

B. Setting Blocks:

1. Type recommended in writing by sealant or glass manufacturer.

C. Spacers:

1. Type recommended in writing by sealant or glass manufacturer.

D. Edge Blocks:

1. Type recommended in writing by sealant or glass manufacturer.

E. Cylindrical Glazing Sealant Backing: ASTM C1330, Type O (open-cell material), of size and density to control glazing sealant depth and otherwise produce optimum glazing sealant performance.

PART 3 - EXECUTION

3.1 GLAZING, GENERAL

A. Comply with combined written instructions of manufacturers of glass, sealants, gaskets, and other glazing materials, unless more stringent requirements are indicated, including those in referenced glazing publications.

B. Protect glass edges from damage during handling and installation. Remove damaged glass from Project site and legally dispose of off Project site. Damaged glass includes glass with edge damage or other imperfections that, when installed, could weaken glass, impair performance, or impair appearance.

C. Apply primers to joint surfaces where required for adhesion of sealants, as determined by preconstruction testing.

D. Install setting blocks in sill rabbets, sized and located to comply with referenced glazing publications, unless otherwise required by glass manufacturer. Set blocks in thin course of compatible sealant suitable for heel bead.

E. Do not exceed edge pressures stipulated by glass manufacturers for installing glass lites.

F. Provide spacers for glass lites where length plus width is larger than 50 inches.

G. Provide edge blocking where indicated or needed to prevent glass lites from moving sideways in glazing channel, as recommended in writing by glass manufacturer and in accordance with requirements in referenced glazing publications.

3.2 TAPE GLAZING

A. Position tapes on fixed stops so that, when compressed by glass, their exposed edges are flush with or protrude slightly above sightline of stops.

B. Install tapes continuously, but not necessarily in one continuous length. Do not stretch tapes to make them fit opening.

C. Cover vertical framing joints by applying tapes to heads and sills first, then to jambs. Cover horizontal framing joints by applying tapes to jambs, then to heads and sills.

D. Place joints in tapes at corners of opening with adjoining lengths butted together, not lapped. Seal joints in tapes with compatible sealant approved by tape manufacturer.

E. Apply heel bead of elastomeric sealant.

F. Center glass lites in openings on setting blocks, and press firmly against tape by inserting dense compression gaskets formed and installed to lock in place against faces of removable stops. Start gasket applications at corners and work toward centers of openings.

G. Apply cap bead of elastomeric sealant over exposed edge of tape.

3.3 GASKET GLAZING (DRY)

A. Cut compression gaskets to lengths recommended by gasket manufacturer to fit openings exactly, with allowance for stretch during installation.

B. Insert soft compression gasket between glass and frame or fixed stop so it is securely in place with joints miter cut and bonded together at corners.

C. Installation with Drive-in Wedge Gaskets: Center glass lites in openings on setting blocks, and press firmly against soft compression gasket by inserting dense compression gaskets formed and installed to lock in place against faces of removable stops. Start gasket applications at corners and work toward centers of openings. Compress gaskets to produce a weathertight seal without developing bending stresses in glass. Seal gasket joints with sealant recommended in writing by gasket manufacturer.

D. Installation with Pressure-Glazing Stops: Center glass lites in openings on setting blocks, and press firmly against soft compression gasket. Install dense compression gaskets and pressure-glazing stops, applying pressure uniformly to compression gaskets. Compress gaskets to produce a weathertight seal without developing bending stresses in glass. Seal gasket joints with sealant recommended in writing by gasket manufacturer.

E. Install gaskets so they protrude past face of glazing stops.

3.4 SEALANT GLAZING (WET)

A. Install continuous spacers, or spacers combined with cylindrical sealant backing, between glass lites and glazing stops to maintain glass face clearances and to prevent sealant from extruding into glass channel and blocking weep systems until sealants cure. Secure spacers or spacers and backings in place and in position to control depth of installed sealant relative to edge clearance for optimum sealant performance.

B. Force sealants into glazing channels to eliminate voids and to ensure complete wetting or bond of sealant to glass and channel surfaces.

C. Tool exposed surfaces of sealants to provide a substantial wash away from glass.

3.5 CLEANING AND PROTECTION

A. Immediately after installation, remove nonpermanent labels and clean surfaces.

B. Protect glass from contact with contaminating substances resulting from construction operations. Examine glass surfaces adjacent to or below exterior concrete and other masonry surfaces at frequent intervals during construction, but not less than once a month, for buildup of dirt, scum, alkaline deposits, or stains.

1. If, despite such protection, contaminating substances do contact with glass, remove substances immediately as recommended in writing by glass manufacturer. Remove and replace glass that cannot be cleaned without damage to coatings.

C. Remove and replace glass that is damaged during construction period.

3.6 MONOLITHIC GLASS SCHEDULE

A. Clear Glass Type **GL-4**:

1. Annealed float glass. Provide fully tempered where safety glazing is required as noted in drawings.
2. Minimum Thickness: 6 mm.

3.7 LAMINATED GLASS SCHEDULE

A. Clear Laminated Glass Type **GL-3**:

1. Two plies of annealed float glass.
2. Minimum Thickness of Each Glass Ply: 3 mm.
3. Interlayer Thickness: 0.030 inch min.
4. Safety glazing required.

3.8 INSULATING GLASS SCHEDULE

A. Clear With Applied Membrane Insulating Glass Type **GL-2**:

1. Provide fully tempered where safety glazing is required as noted in drawings.
2. Basis-of-Design Product: Solera, Solera S R5+Aerogel.
3. Applied Membrane: Light Diffusing Veil (by Solera).
4. Overall Unit Thickness: 1 inch.
5. Minimum Thickness of Each Glass Lite: 6 mm.
6. Outdoor Lite: Annealed float glass.
7. Interspace Content: Aerogel.
8. Indoor Lite: Annealed float glass.
9. Safety glazing required.
10. Panel Characteristics:
    a. SHGC: 0.37 max.
    b. VLT: 0.40 min.
    c. U-factor: 0.20 max.

B. Low-E&Ceramic-Coated, Insulating Vision Glass Type **GL-1**:

1. Provide fully tempered where safety glazing is required as noted in drawings.
2. Basis-of-Design Product: Viracon, 51767 Bird Friendly glass.
3. Ceramic Coating Color and Pattern: 1% coverage, 1/4" dot, 2x2, staggered in warm grey.
4. Overall Unit Thickness: 1 inch.
5. Minimum Thickness of Each Glass Lite: 6 mm.
6. Outdoor Lite: Clear heat-strengthened float glass.
7. Interspace Content: Argon.
8. Indoor Lite: Clear heat-strengthened float glass.
9. Ceramic Coating Location: Second surface.
10. Low-E Coating: Pyrolytic or sputtered on third surface.
11. Panel Characteristics:
    a. SHGC: 0.25 max.
    b. VLT: 0.60 min.
    c. U-factor: 0.20 max.

END OF SECTION

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SECTION 08 83 00
MIRRORS

PART 1 - GENERAL

1.1 SUMMARY

A. This section does NOT apply to those tagged as Toilet Accessories in drawings.

B. Section Includes:

1. Silvered flat glass mirrors.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Shop Drawings: Include mirror elevations, edge details, mirror hardware, and attachment details.

C. Samples: For each type of the following:

1. Mirrors: 12 inches square, including edge treatment on two adjoining edges.
2. Mirror Clips: Full size.
3. Mirror Trim: 12 inches long.

D. Sustainable Design Submittals:

1. Product Data: For recycled content, indicating postconsumer and preconsumer recycled content and cost.
2. Product Data: For adhesives, indicating VOC content.
3. Laboratory Test Reports: For adhesives, indicating compliance with requirements for low-emitting materials.

1.3 INFORMATIONAL SUBMITTALS

A. Preconstruction Test Reports: From mirror manufacturer indicating that mirror mastic was tested for compatibility and adhesion with mirror backing and substrates on which mirrors are installed.

B. Sample Warranty: For special warranty.

1.4 CLOSEOUT SUBMITTALS

A. Maintenance Data: For mirrors to include in maintenance manuals.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: A qualified Installer, who employs glass installers for this Project who are certified under the National Glass Association's Certified Glass Installer Program.

1.6 PRECONSTRUCTION TESTING

A. Preconstruction Mirror Mastic Compatibility Test: Submit mirror mastic products to mirror manufacturer for testing to determine compatibility of mastic with mirror backing.

1. Testing is not required if data are submitted based on previous testing of mirror mastic products and mirror backing matching those submitted.

1.7 WARRANTY

A. Special Warranty: Manufacturer agrees to replace mirrors that deteriorate within specified warranty period. Deterioration of mirrors is defined as defects developed from normal use that are not attributed to mirror breakage or to maintaining and cleaning mirrors contrary to manufacturer's written instructions. Defects include discoloration, black spots, and clouding of the silver film.

1. Warranty Period: Five years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 SILVERED FLAT GLASS MIRRORS

A. Mirrors, General: ASTM C1503.

B. Annealed Monolithic Glass Mirrors: Mirror Select Quality, clear.

1. Nominal Thickness: 4.0 mm.

2.2 MISCELLANEOUS MATERIALS

A. Setting Blocks: Elastomeric material with a Shore, Type A durometer hardness of 85, plus or minus 5.

B. Edge Sealer: Coating compatible with glass coating and approved by mirror manufacturer for use in protecting against silver deterioration at mirrored glass edges.

C. Mirror Mastic: An adhesive setting compound, asbestos-free, produced specifically for setting mirrors.

1. Verify adhesives have a VOC content of 70 g/L or less.
2. Verify adhesive complies with the testing and product requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."

D. Film Backing for Safety Mirrors: Film backing and pressure-sensitive adhesive; both compatible with mirror backing paint as certified by mirror manufacturer.

2.3 MIRROR HARDWARE

A. Aluminum J-Channels: Aluminum extrusions with a return deep enough to produce a glazing channel to accommodate mirrors of thickness indicated and in lengths required to cover edges of mirrors in a single piece.

1. Aluminum J-Channel Bottom Trim: J-channels formed with front leg and back leg not less than 3/8 and 7/8 inch in height, respectively, and a thickness of not less than 0.04 inch.
2. Aluminum J-Channel Top Trim: J-channels formed with front leg and back leg not less than 5/8 and 1 inch in height, respectively, and a thickness of not less than 0.04 inch.
3. Finish: Clear bright anodized.

B. Fasteners: Fabricated of same basic metal and alloy as fastened metal and matching it in finished color and texture where fasteners are exposed.

2.4 FABRICATION

A. Fabricate cutouts for notches and holes in mirrors without marring visible surfaces. Locate and size cutouts, so they fit closely around penetrations in mirrors.

B. Mirror Edge Treatment: Flat polished.

1. Seal edges of mirrors with edge sealer after edge treatment to prevent chemical or atmospheric penetration of glass coating.

C. Film-Backed Safety Mirrors: Apply film backing with adhesive coating over mirror backing paint, as recommended in writing by film-backing manufacturer, to produce a surface free of bubbles, blisters, and other imperfections.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, over which mirrors are to be mounted, with Installer present, for compliance with installation tolerances, substrate preparation, and other conditions affecting performance of the Work.

B. Verify compatibility with and suitability of substrates, including compatibility of existing finishes or primers with mirror mastic.

C. Proceed with installation only after unsatisfactory conditions have been corrected and surfaces are dry.

3.2 PREPARATION

A. Comply with mastic manufacturer's written installation instructions for preparation of substrates, including coating substrates with mastic manufacturer's special bond coating where applicable.

3.3 INSTALLATION

A. General: Install mirrors to comply with mirror manufacturer's written instructions and with referenced National Glass Association (NGA) publications. Mount mirrors accurately in place in a manner that avoids distorting reflected images.

B. Install mirrors with mastic and mirror hardware. Attach mirror hardware securely to mounting surfaces with mechanical fasteners installed with anchors or inserts as applicable. Install fasteners so heads do not impose point loads on backs of mirrors.

1. Aluminum J-Channels: Provide setting blocks 1/8 inch thick by 4 inches long at quarter points. To prevent trapping water, provide, between setting blocks, two slotted weeps not less than 1/4 inch wide by 3/8 inch long at bottom channel.
2. Install mastic as follows:
   a. Apply barrier coat to mirror backing where approved in writing by manufacturers of mirrors and backing material.
   b. Apply mastic to comply with mastic manufacturer's written instructions for coverage and to allow air circulation between back of mirrors and face of mounting surface.
   c. After mastic is applied, align mirrors and press into place while maintaining a minimum airspace of 1/8 inch between back of mirrors and mounting surface.

C. Clean exposed surface of mirrors not more than four days before date scheduled for inspections that establish date of Substantial Completion. Clean mirrors as recommended in writing by mirror manufacturer and NGA's publication "Proper Procedures for Cleaning Flat Glass Mirrors."

END OF SECTION

SECTION 08 91 19
FIXED LOUVERS

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes fixed extruded-aluminum louvers.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.
   1. For louvers specified to bear AMCA seal, include printed catalog pages showing specified models with appropriate AMCA Certified Ratings Seals.

B. Sustainable Design Submittals:
   1. Product Data: For recycled content, indicating postconsumer and preconsumer recycled content and cost.
   2. Environmental Product Declaration: For each product.
   3. Health Product Declaration: For each product.
   4. Sourcing of Raw Materials: Corporate sustainability report for each manufacturer.

C. Shop Drawings: For louvers and accessories. Include plans, elevations, sections, details, and attachments to other work. Show frame profiles and blade profiles, angles, and spacing.

D. Samples: For each type of metal finish required.

E. Delegated Design Submittal: For louvers indicated to comply with structural performance requirements and design criteria, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

1.3 INFORMATIONAL SUBMITTALS

A. Product Test Reports: Based on tests performed according to AMCA 500-L.

B. Sample warranties.

1.4 QUALITY ASSURANCE

A. Welding Qualifications: Qualify procedures and personnel according to the following:
   1. AWS D1.2/D1.2M, "Structural Welding Code - Aluminum."
   2. AWS D1.3/D1.3M, "Structural Welding Code - Sheet Steel."
   3. AWS D1.6/D1.6M, "Structural Welding Code - Stainless Steel."

1.5 WARRANTY

A. Special Finish Warranty, Anodized Finishes: Standard form in which manufacturer agrees to repair finishes or replace aluminum that shows evidence of deterioration of anodized finishes within specified warranty period.
   1. Warranty Period: 10 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Delegated Design: Design louvers, including comprehensive engineering analysis by a qualified professional engineer, using structural performance requirements and design criteria indicated.

B. Structural Performance: Louvers withstand the effects of gravity loads and the following loads and stresses within limits and under conditions indicated without permanent deformation of louver components, noise or metal fatigue caused by louver-blade rattle or flutter, or permanent damage to fasteners and anchors. Wind pressures are considered to act normal to the face of the building.
   1. Wind Loads:
      a. Determine loads based on a uniform pressure of 20 lbf/sq. ft., acting inward or outward.

C. Louver Performance Ratings: Provide louvers complying with requirements specified, as demonstrated by testing manufacturer's stock units identical to those provided, except for length and width according to AMCA 500-L.

2.2 FIXED EXTRUDED-ALUMINUM LOUVERS

A. Horizontal, Wind-Driven-Rain-Resistant Louver, Extruded Aluminum:
   1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
      a. Greenheck Fan Corporation.
      b. Ruskin; Air Distribution Technologies, Inc.; Johnson Controls, Inc.
   2. Louver Depth: 6 inches.
   3. Frame and Blade Nominal Thickness: Not less than 0.080 inch.
   4. Louver Performance Ratings:
      a. Free Area: **See Mechanical for requirement.**
      b. Air Performance: Not more than **X-inch wg** static pressure drop at **Y-fpm** free-area exhaust and/or intake velocity. **See Mechanical for values.**
      c. Wind-Driven Rain Performance: Not less than 99 percent effectiveness when subjected to a rainfall rate of 3 inches per hour and a wind speed of 29 mph at a core-area intake velocity of 300 fpm.
   5. AMCA Seal: Mark units with AMCA Certified Ratings Seal.

B. Vertical, Wind-Driven-Rain-Resistant Louver, Extruded Aluminum:
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
a. Greenheck Fan Corporation.
b. Ruskin; Air Distribution Technologies, Inc.; Johnson Controls, Inc.
2. Louver Depth: 6 inches.
3. Frame and Blade Nominal Thickness: Not less than 0.080 inch.
4. Louver Performance Ratings:
a. Free Area: **See Mechanical for requirement.**
b. Air Performance: Not more than **X-inch wg** static pressure drop at **Y-fpm** free-area exhaust and/or intake velocity. **See Mechanical for values.**
c. Wind-Driven Rain Performance: Not less than 99 percent effectiveness when subjected to a rainfall rate of 3 inches per hour and a wind speed of 29 mph at a core-area intake velocity of 300 fpm.
5. AMCA Seal: Mark units with AMCA Certified Ratings Seal.

2.3 LOUVER SCREENS

A. General: Provide screen at each exterior louver.
1. Screen Location for Fixed Louvers: Interior face.
2. Screening Type: Bird screening.
B. Louver Screen Frames: Same type and form of metal as indicated for louver to which screens are attached.
C. Louver Screening for Aluminum Louvers:
1. Bird Screening, Stainless Steel: 1/2-inch-square mesh, 0.047-inch wire.

2.4 MATERIALS

A. Aluminum Extrusions: ASTM B221, Alloy 6063-T5, T-52, or T6.
B. Aluminum Sheet: ASTM B209, Alloy 3003 or 5005, with temper as required for forming, or as otherwise recommended by metal producer for required finish.
C. Galvanized-Steel Sheet: ASTM A653/A653M, G60 zinc coating, mill phosphatized.
D. Stainless Steel Sheet: ASTM A240/A240M, Type 304, No. 2B finish.
E. Fasteners: Use types and sizes to suit unit installation conditions.
1. Use Phillips flat-head screws for exposed fasteners unless otherwise indicated.
2. For fastening aluminum, use aluminum or 300 series stainless steel fasteners.
3. For fastening galvanized steel, use hot-dip-galvanized-steel or 300 series stainless steel fasteners.
4. For fastening stainless steel, use 300 series stainless steel fasteners.
5. For color-finished louvers, use fasteners with heads that match color of louvers.
F. Postinstalled Fasteners for Concrete and Masonry: Torque-controlled expansion anchors, fabricated from stainless steel components, with allowable load or strength design capacities calculated according to ICC-ES AC193 and ACI 318 greater than or equal to the design load, as determined by testing according to ASTM E488/E488M conducted by a qualified testing agency.
G. Bituminous Paint: Cold-applied asphalt emulsion complying with ASTM D1187/D1187M.
H. Recycled Content of Steel Products: Postconsumer recycled content plus one-half of preconsumer recycled content not less than 25 percent.
I. Recycled Content of Aluminum Components: Postconsumer recycled content plus one-half of preconsumer recycled content not less than 25 percent.

2.5 FABRICATION

A. Fabricate frames, including integral sills, to fit in openings of sizes indicated, with allowances made for fabrication and installation tolerances, adjoining material tolerances, and perimeter sealant joints.
B. Join frame members to each other and to fixed louver blades with fillet welds concealed from view, threaded fasteners, or both, as standard with louver manufacturer unless otherwise indicated or size of louver assembly makes bolted connections between frame members necessary.

2.6 ALUMINUM FINISHES

A. Color Anodic Finish: AAMA 611, AA-M12C22A42/A44, Class I, 0.018 mm or thicker.
1. Color: As selected by Architect from full range of industry colors and color densities.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Locate and place louvers level, plumb, and at indicated alignment with adjacent work.
B. Use concealed anchorages where possible. Provide brass or lead washers fitted to screws where required to protect metal surfaces and to make a weathertight connection.
C. Provide perimeter reveals and openings of uniform width for sealants and joint fillers, as indicated.

D. Protect unpainted galvanized- and nonferrous-metal surfaces that are in contact with concrete, masonry, or dissimilar metals from corrosion and galvanic action by applying a heavy coating of bituminous paint or by separating surfaces with waterproof gaskets or nonmetallic flashing.

3.2 ADJUSTING

A. Restore louvers damaged during installation and construction, so no evidence remains of corrective work. If results of restoration are unsuccessful, as determined by Architect, remove damaged units and replace with new units.

END OF SECTION

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SECTION 09 22 16
NON-STRUCTURAL METAL FRAMING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Framing systems.
   2. Suspension systems.

1.2 ACTION SUBMITTALS

A. Product Data: For each product.
B. Sustainable Design Submittals:
   1. Product Data: For recycled content, indicating postconsumer and preconsumer recycled content and cost.
   2. Recycled Content: Provide manufacturer documentation for recycled content, indicating postconsumer and preconsumer recycled content.

1.3 INFORMATIONAL SUBMITTALS

A. Product Certificates: For each type of code-compliance certification for studs and tracks.
B. Evaluation reports for high-strength steel studs and tracks, firestop tracks, post-installed anchors, and power-actuated fasteners.

1.4 QUALITY ASSURANCE

A. Code-Compliance Certification of Studs and Tracks: Provide documentation that framing members are certified according to the product-certification program of the Certified Steel Stud Association, the Steel Framing Industry Association, the Steel Stud Manufacturers Association, or the Supreme Steel Framing System Association.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Fire-Test-Response Characteristics: For fire-resistance-rated assemblies that incorporate non-load-bearing steel framing, provide materials and construction identical to those tested in assembly indicated, in accordance with ASTM E119 by an independent testing agency.
B. STC-Rated Assemblies: For STC-rated assemblies, provide materials and construction identical to those tested in assembly indicated on Drawings, in accordance with ASTM E90 and classified in accordance with ASTM E413 by an independent testing agency.

2.2 FRAMING SYSTEMS

A. Recycled Content of Steel Products: Postconsumer recycled content plus one-half of preconsumer recycled content not less than 25 percent.
B. Framing Members, General: Comply with ASTM C645 for conditions indicated.
   1. Steel Sheet Components: Comply with ASTM C645 requirements for metal unless otherwise indicated
   2. Protective Coating: Comply with ASTM C645; ASTM A653/A653M, G40; or coating with equivalent corrosion resistance. Galvannealed products are unacceptable.
      a. Coating demonstrates equivalent corrosion resistance with an evaluation report acceptable to authorities having jurisdiction.
C. Studs and Track: ASTM C645.
   1. Minimum Base-Steel Thickness: As required by performance requirements for horizontal deflection.
   2. Depth: As indicated on Drawings.
D. High-Strength Steel Studs and Tracks: Roll-formed with surface deformations to stiffen the framing members.
   1. Minimum Base-Steel Thickness: As required by horizontal deflection performance requirements.
   2. Depth: As indicated on Drawings.
E. Slip-Type Head Joints: Where indicated, provide one of the following:
   1. Clip System: Clips designed for use in head-of-wall deflection conditions that provide a positive attachment of studs to tracks while allowing 2-inch minimum vertical movement.
   2. Single Long-Leg Track System: Top track with 2-inch-deep flanges in thickness not less than indicated for studs, installed with studs friction fit into top track and with continuous bridging located within 12 inches of the top of studs to provide lateral bracing.
   3. Double-Track System: Top outer tracks, inside track with 2-inch-deep flanges in thickness not less than indicated for studs and fastened to studs, and outer track sized to friction-fit over inner track.
   4. Deflection Track: Steel sheet top track manufactured to prevent cracking of finishes applied to interior partition framing resulting from deflection of structure above; in thickness not less than indicated for studs and in width to accommodate depth of studs.

F. Firestop Tracks: Top track manufactured to allow partition heads to expand and contract with movement of structure while maintaining continuity of fire-resistance-rated assembly indicated; in thickness not less than indicated for studs and in width to accommodate depth of studs.

G. Flat Strap and Backing Plate: Steel sheet for blocking and bracing in length and width indicated.
1. Minimum Base-Steel Thickness: 0.0296 inch.

H. Cold-Rolled Channel Bridging: Steel, 0.0538-inch minimum base-steel thickness, with minimum 1/2-inch-wide flanges.
1. Depth: 1-1/2 inches.
2. Clip Angle: Not less than 1-1/2 by 1-1/2 inches, 0.068-inch-thick, galvanized steel.

I. Hat-Shaped, Rigid Furring Channels:
1. Minimum Base-Steel Thickness: 0.0296 inch.
2. Depth: As indicated on Drawings.

J. Resilient Furring Channels: 1/2-inch-deep, steel sheet members designed to reduce sound transmission.
1. Configuration: Asymmetrical or hat shaped.

K. Cold-Rolled Furring Channels: 0.053-inch uncoated-steel thickness, with minimum 1/2-inch-wide flanges.
1. Depth: As indicated on Drawings.
2. Furring Brackets: Adjustable, corrugated-edge-type steel sheet with minimum uncoated-steel thickness of 0.0329 inch.
3. Tie Wire: ASTM A641/A641M, Class 1 zinc coating, soft temper, 0.062-inch-diameter wire, or double strand of 0.048-inch-diameter wire.

L. Z-Shaped Furring: With slotted or nonslotted web, face flange of 1-1/4 inches, wall attachment flange of 3/4 inch, minimum uncoated-steel thickness of 0.0179 inch, and depth required to fit insulation thickness indicated.

2.3 SUSPENSION SYSTEMS

A. Tie Wire: ASTM A641/A641M, Class 1 zinc coating, soft temper, 0.062-inch-diameter wire, or double strand of 0.048-inch-diameter wire.

B. Hanger Attachments to Concrete:
1. Post-Installed Anchors: Fastener systems with an evaluation report acceptable to authorities having jurisdiction, based on ICC-ES AC01, AC193, AC58, or AC308 as appropriate for the substrate.
a. Uses: Securing hangers to structure.
b. Type: Torque-controlled, expansion anchor torque-controlled, adhesive.
c. Material for Interior Locations: Carbon-steel components zinc-plated to comply with ASTM B633 or ASTM F1941, Class Fe/Zn 5, unless otherwise indicated.
d. Material for Exterior or Interior Locations and Where Stainless Steel Is Indicated: Alloy Group 1 stainless steel bolts, ASTM F593, and nuts, ASTM F594.

C. Wire Hangers: ASTM A641/A641M, Class 1 zinc coating, soft temper, 0.16 inch in diameter.

D. Flat Hangers: Steel sheet, 1 by 3/16 inch by length indicated.

E. Carrying Channels (Main Runners): Cold-rolled, commercial-steel sheet with a base-steel thickness of 0.0538 inch and minimum 1/2-inch-wide flanges.
1. Depth: 2-1/2 inches.

F. Furring Channels (Furring Members):
1. Cold-Rolled Channels: 0.0538-inch uncoated-steel thickness, with minimum 1/2-inch-wide flanges, 3/4 inch deep.
2. Steel Studs and Tracks: Use either conventional steel studs and tracks or embossed, high-strength steel studs and tracks.
a. Minimum Base-Steel Thickness: 0.0269 inch.
b. Depth: As indicated on Drawings.
3. High-Strength Steel Studs and Tracks:
a. Minimum Base-Steel Thickness: 0.0180 inch.
b. Depth: As indicated on Drawings.
4. Hat-Shaped, Rigid Furring Channels: 7/8 inch deep.
a. Minimum Base-Steel Thickness: 0.0296 inch.
5. Resilient Furring Channels: 1/2-inch-deep members designed to reduce sound transmission.
a. Configuration: Asymmetrical or hat shaped.

2.4 AUXILIARY MATERIALS

A. General: Provide auxiliary materials that comply with referenced installation standards.
1. Fasteners for Steel Framing: Of type, material, size, corrosion resistance, holding power, and other properties required to fasten steel members to substrates.

B. Isolation Strip at Exterior Walls: Provide one of the following:

1. Asphalt-Saturated Organic Felt: ASTM D226/D226M, Type I (No. 15 asphalt felt), nonperforated.
2. Foam Gasket: Adhesive-backed, closed-cell vinyl foam strips that allow fastener penetration without foam displacement, 1/8 inch thick, in width to suit steel stud size.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Installation Standard: ASTM C754.
1. Gypsum Plaster Assemblies: Also comply with requirements in ASTM C841 that apply to framing installation.
2. Portland Cement Plaster Assemblies: Also comply with requirements in ASTM C1063 that apply to framing installation.
3. Gypsum Veneer Plaster Assemblies: Also comply with requirements in ASTM C844 that apply to framing installation.
4. Gypsum Board Assemblies: Also comply with requirements in ASTM C840 that apply to framing installation.

B. Install framing and accessories plumb, square, and true to line, with connections securely fastened.

C. Install supplementary framing, and blocking to support fixtures, equipment services, heavy trim, grab bars, toilet accessories, furnishings, or similar construction.

D. Install bracing at terminations in assemblies.

E. Do not bridge building control and expansion joints with non-load-bearing steel framing members. Frame both sides of joints independently.

3.2 INSTALLATION OF FRAMING SYSTEMS

A. Install framing system components according to spacings indicated, but not greater than spacings required by referenced installation standards for assembly types.

B. Where studs are installed directly against exterior masonry walls or dissimilar metals at exterior walls, install isolation strip between studs and exterior wall.

C. Install studs so flanges within framing system point in same direction.

D. Install tracks at floors and overhead supports. Extend framing full height to structural supports or substrates above suspended ceilings except where partitions are indicated to terminate at suspended ceilings. Continue framing around ducts that penetrate partitions above ceiling.
1. Slip-Type Head Joints: Where framing extends to overhead structural supports, install to produce joints at tops of framing systems that prevent axial loading of finished assemblies.
2. Door Openings: Screw vertical studs at jambs to jamb anchor clips on door frames; install track section (for cripple studs) at head and secure to jamb studs.
   a. Install two studs at each jamb unless otherwise indicated.
   b. Install cripple studs at head adjacent to each jamb stud, with a minimum 1/2-inch clearance from jamb stud to allow for installation of control joint in finished assembly.
   c. Extend jamb studs through suspended ceilings and attach to underside of overhead structure.
3. Other Framed Openings: Frame openings other than door openings the same as required for door openings unless otherwise indicated. Install framing below sills of openings to match framing required above door heads.
4. Fire-Resistance-Rated Partitions: Install framing to comply with fire-resistance-rated assembly indicated and support closures and to make partitions continuous from floor to underside of solid structure.
   a. Firestop Track: Where indicated, install to maintain continuity of fire-resistance-rated assembly indicated.
5. Sound-Rated Partitions: Install framing to comply with sound-rated assembly indicated.
6. Curved Partitions:
   a. Bend track to uniform curve and locate straight lengths so they are tangent to arcs.
   b. Begin and end each arc with a stud, and space intermediate studs equally along arcs. On straight lengths of no fewer than two studs at ends of arcs, place studs 6 inches o.c.

E. Direct Furring:
1. Screw to wood framing.
2. Attach to concrete or masonry with stub nails, screws designed for masonry attachment, or powder-driven fasteners spaced 24 inches o.c.

F. Z-Shaped Furring Members:
1. Erect insulation, specified in Section 07 21 00 "Thermal Insulation," vertically and hold in place with Z-shaped furring members spaced 24 inches o.c.
2. Except at exterior corners, securely attach narrow flanges of furring members to wall with concrete stub nails, screws designed for masonry attachment, or powder-driven fasteners spaced 24 inches o.c.

3. At exterior corners, attach wide flange of furring members to wall with short flange extending beyond corner; on adjacent wall surface, screw-attach short flange of furring channel to web of attached channel. At interior corners, space second member no more than 12 inches from corner and cut insulation to fit.

G. Installation Tolerance: Install each framing member so fastening surfaces vary not more than 1/8 inch from the plane formed by faces of adjacent framing.

3.3 INSTALLATION OF SUSPENSION SYSTEMS

A. Install suspension system components according to spacings indicated, but not greater than spacings required by referenced installation standards for assembly types.

B. Isolate suspension systems from building structure where they abut or are penetrated by building structure to prevent transfer of loading imposed by structural movement.

C. Suspend hangers from building structure as follows:

1. Install hangers plumb and free from contact with insulation or other objects within ceiling plenum that are not part of supporting structural or suspension system.
   a. Splay hangers only where required to miss obstructions and offset resulting horizontal forces by bracing, countersplaying, or other equally effective means.
2. Where width of ducts and other construction within ceiling plenum produces hanger spacings that interfere with locations of hangers required to support standard suspension system members, install supplemental suspension members and hangers in the form of trapezes or equivalent devices.
   a. Size supplemental suspension members and hangers to support ceiling loads within performance limits established by referenced installation standards.
3. Wire Hangers: Secure by looping and wire tying, either directly to structures or to inserts, eye screws, or other devices and fasteners that are secure and appropriate for substrate, and in a manner that will not cause hangers to deteriorate or otherwise fail.
4. Flat Hangers: Secure to structure, including intermediate framing members, by attaching to inserts, eye screws, or other devices and fasteners that are secure and appropriate for structure and hanger, and in a manner that will not cause hangers to deteriorate or otherwise fail.
5. Do not attach hangers to steel roof deck.
6. Do not attach hangers to permanent metal forms. Furnish cast-in-place hanger inserts that extend through forms.
7. Do not attach hangers to rolled-in hanger tabs of composite steel floor deck.
8. Do not connect or suspend steel framing from ducts, pipes, or conduit.

D. Fire-Resistance-Rated Assemblies: Wire tie furring channels to supports.

E. Seismic Bracing: Sway-brace suspension systems with hangers used for support.

3.4 FIELD QUALITY CONTROL

A. Installation Tolerances: Install suspension systems that are level to within 1/8 inch in 12 feet measured lengthwise on each member that will receive finishes and transversely between parallel members that will receive finishes.

END OF SECTION

SECTION 09 29 00
GYPSUM BOARD

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Interior gypsum board.
   2. Tile backing panels.
   3. Sound attenuating blankets.

1.2 ACTION SUBMITTALS

A. Product data.

B. Shop Drawings: Show locations and installation of control and expansion joints, including plans, elevations, sections, details of components, and attachments to other work.

C. Samples: For each texture finish indicated on same backing indicated for Work.

D. Sustainable Design Submittals:
   1. Product Data: For recycled content, indicating postconsumer and preconsumer recycled content and cost.
   2. Recycled Content: Provide manufacturer documentation for recycled content, indicating postconsumer and preconsumer recycled content.
   3. Verify ceiling and wall materials comply with the requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."
   4. Regional Materials: For each product.
   5. Product Data: For adhesives and sealants, indicating VOC content.
   6. Laboratory Test Reports: For adhesives and sealants, indicating compliance with requirements for low-emitting materials.
   7. Laboratory Test Reports: For ceiling and wall materials, indicating compliance with requirements for low-emitting materials.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Fire-Resistance-Rated Assemblies: For fire-resistance-rated assemblies, provide materials and construction identical to those tested in assembly indicated in accordance with ASTM E119 by an independent testing agency.

B. STC-Rated Assemblies: For STC-rated assemblies, provide materials and construction identical to those tested in assembly indicated in accordance with ASTM E90 and classified in accordance with ASTM E413 by an independent testing agency.

C. Verify ceiling and wall materials comply with the requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."

2.2 GYPSUM BOARD, GENERAL

A. Recycled Content: Postconsumer recycled content plus one-half of preconsumer recycled content not less than 70 percent.

B. Regional Materials: Manufacture products within 100 miles (160 km) of Project site from materials that have been extracted, harvested, or recovered, as well as manufactured, within 100 miles (160 km) of Project site.

C. Size: Provide maximum lengths and widths available that will minimize joints in each area and that correspond with support system indicated.

2.3 INTERIOR GYPSUM BOARD

A. Gypsum Board, Type X: ASTM C1396/C1396M.
   1. Thickness: 5/8 inch.
   2. Long Edges: Tapered.
   3. **Typical wall and ceiling board unless noted otherwise.**

B. Abuse-Resistant Gypsum Board: ASTM C1396/C1396M gypsum board, tested in accordance with ASTM C1629/C1629M.
   1. Core: 5/8 inch, Type X.
   2. Surface Abrasion: ASTM C1629/C1629M, meets or exceeds Level 1 requirements.
   3. Indentation: ASTM C1629/C1629M, meets or exceeds Level 1 requirements.
   4. Soft-Body Impact: ASTM C1629/C1629M, meets or exceeds Level 1 requirements.
   5. Long Edges: Tapered.
   6. Mold Resistance: ASTM D3273, score of 10 as rated in accordance with ASTM D3274.
   7. **Used where called for in drawings.**

C. Mold-Resistant Gypsum Board: ASTM C1396/C1396M. With moisture- and mold-resistant core and paper surfaces.

1. Core: 5/8 inch, Type X.
2. Long Edges: Tapered.
3. Mold Resistance: ASTM D3273, score of 10 as rated in accordance with ASTM D3274.
4. **Except surfaces to receive tile, used at wet walls and all walls/ceilings of restrooms and shower/locker rooms.**

2.4 SPECIALTY GYPSUM BOARD

A. Gypsum Board, Type C: ASTM C1396/C1396M. Manufactured to have increased fire-resistive capability.
1. Thickness: As required by fire-resistance-rated assembly indicated on Drawings.
2. Long Edges: Tapered.
3. **Used where required by UL design. See wall types.**

2.5 TILE BACKING PANELS

A. Cementitious Backer Units: ANSI A118.9 and ASTM C1288 or ASTM C1325, with manufacturer's standard edges.
1. Thickness: 1/2 inch unless noted/detailed otherwise in drawings.
2. Mold Resistance: ASTM D3273, score of 10 as rated in accordance with ASTM D3274.
3. **Used behind any wall or ceiling tile.**

2.6 TRIM ACCESSORIES

A. Interior Trim: ASTM C1047.
1. Material: Galvanized or aluminum-coated steel sheet, rolled zinc, plastic, or paper-faced galvanized-steel sheet.
2. Shapes:
   a. Cornerbead.
   b. Bullnose bead.
   c. LC-Bead: J-shaped; exposed long flange receives joint compound.
   d. L-Bead: L-shaped; exposed long flange receives joint compound.
   e. U-Bead: J-shaped; exposed short flange does not receive joint compound.
   f. Expansion (control) joint.
   g. Curved-Edge Cornerbead: With notched or flexible flanges.

2.7 JOINT TREATMENT MATERIALS

A. General: Comply with ASTM C475/C475M.
B. Joint Tape:
1. Interior Gypsum Board: Paper.
2. Exterior Gypsum Soffit Board: Paper.
3. Glass-Mat Gypsum Sheathing Board: 10-by-10 glass mesh.
4. Tile Backing Panels: As recommended by panel manufacturer.

C. Joint Compound for Interior Gypsum Board: For each coat, use formulation that is compatible with other compounds applied on previous or for successive coats.
1. Prefilling: At open joints, rounded or beveled panel edges, and damaged surface areas, use setting-type taping compound.
2. Embedding and First Coat: For embedding tape and first coat on joints, fasteners, and trim flanges, use setting-type taping compound.
   a. Use setting-type compound for installing paper-faced metal trim accessories.
3. Fill Coat: For second coat, use setting-type, sandable topping compound.
4. Finish Coat: For third coat, use setting-type, sandable topping compound.
5. Skim Coat: For final coat of Level 5 finish, use setting-type, sandable topping compound.

D. Joint Compound for Tile Backing Panels:
1. Cementitious Backer Units: As recommended by backer unit manufacturer.

2.8 AUXILIARY MATERIALS

A. Provide auxiliary materials that comply with referenced installation standards and manufacturer's written instructions.
B. Laminating Adhesive: Adhesive or joint compound recommended for directly adhering gypsum panels to continuous substrate.
1. Verify adhesives have a VOC content of 50 g/L or less.
2. Verify adhesive complies with the testing and product requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."

C. Steel Drill Screws: ASTM C1002 unless otherwise indicated.
1. Use screws complying with ASTM C954 for fastening panels to steel members from 0.033 to 0.112 inch thick.

2. For fastening cementitious backer units, use screws of type and size recommended by panel manufacturer.

D. Sound-Attenuation Blankets: ASTM C665, Type I (blankets without membrane facing) produced by combining thermosetting resins with mineral fibers manufactured from glass, slag wool, or rock wool.
1. Fire-Resistance-Rated Assemblies: Comply with mineral-fiber requirements of assembly.
2. Recycled Content: Postconsumer recycled content plus one-half of preconsumer recycled content not less than 70 percent.

E. Acoustical Sealant: As specified in Section 07 92 19 "Acoustical Joint Sealants."
1. Verify sealant has a VOC content of 250 g/L or less.
2. Verify sealant complies with the testing and product requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."

F. Thermal Insulation: As specified in Section 07 21 00 "Thermal Insulation."

G. Vapor Retarder: As specified in Section 07 26 00 "Vapor Retarders" if used.

PART 3 - EXECUTION

3.1 INSTALLATION OF PANELS

A. Examine panels before installation. Reject panels that are wet, moisture damaged, and mold damaged.

B. Comply with ASTM C840.

C. Isolate perimeter of gypsum board applied to non-load-bearing partitions at structural abutments. Provide 1/4- to 1/2-inch-wide spaces at these locations and trim edges with edge trim where edges of panels are exposed. Seal joints between edges and abutting structural surfaces with acoustical sealant.

D. For trim with back flanges intended for fasteners, attach to framing with same fasteners used for panels. Otherwise, attach trim according to manufacturer's written instructions.

3.2 FINISHING OF GYPSUM BOARD

A. Prefill open joints, rounded or beveled edges, and damaged surface areas.

B. Apply joint tape over gypsum board joints, except for trim products specifically indicated as not intended to receive tape.

C. Gypsum Board Finish Levels: Finish panels to levels indicated below and in accordance with ASTM C840:
1. Level 1: Ceiling plenum areas, concealed areas, and where indicated.
2. Level 2: Panels that are substrate for tile or for acoustical tile.
3. Level 3: N/A.
4. Level 4: At panel surfaces that will be exposed to view unless otherwise indicated – most common situation.
   a. Primer and its application to surfaces are specified in Section 09 91 23 "Interior Painting."
5. Level 5: At panel surfaces that will be exposed to view with gloss or high gloss painted finish, or where indicated on Drawings.
   a. Primer and its application to surfaces are specified in Section 09 91 23 "Interior Painting."

D. Glass-Mat Gypsum Sheathing Board: Finish according to manufacturer's written instructions for use as exposed soffit board.

E. Glass-Mat Faced Panels: Finish according to manufacturer's written instructions.

F. Cementitious Backer Units: Finish according to manufacturer's written instructions.

3.3 PROTECTION

A. Protect installed products from damage from weather, condensation, direct sunlight, construction, and other causes during remainder of the construction period.

B. Remove and replace panels that are wet, moisture damaged, and mold damaged.

END OF SECTION

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SECTION 09 30 13
CERAMIC TILING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Porcelain tile.
   2. Glazed wall tile.
   3. Waterproof membranes.
   4. Crack isolation membranes.
   5. Setting material.
   6. Grout materials.

B. See Section 09 29 00 SF - Gypsum Board for tile backing panels.

1.2 ACTION SUBMITTALS

A. Product data.

B. Shop Drawings: Show locations, plans, and elevations, of each type of tile and tile pattern. Show widths, details, and locations of movement joints in tile substrates and finished tile surfaces.

C. Samples:
   1. Full-size units of each type and composition of tile and for each color and finish required. For ceramic mosaic tile in color blend patterns, provide full sheets of each color blend. For tile with aesthetic classification V3 or V4, provide 12 tiles from same production run.
   2. Assembled samples mounted on a rigid panel, with grouted joints, for each type and composition of tile and for each color and finish required. Make samples at least 12 inches square, but not fewer than four tiles. Use grout of type and in color or colors approved for completed Work.
   3. Full-size units of each type of trim and accessory for each color and finish required.
   4. Stone thresholds in 6-inch lengths.

D. Sustainable Design Submittals:
   1. Environmental Product Declaration: For each product.
   2. Health Product Declaration: For each product.
   3. Sourcing of Raw Materials: Corporate sustainability report for each manufacturer.
   4. Product Data: For adhesives, indicating VOC content.
   5. Laboratory Test Reports: For sealers, indicating compliance with requirements for low-emitting materials.

1.3 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer.

1.4 MAINTENANCE MATERIAL SUBMITTALS

A. Extra Stock Material: Furnish extra materials, from the same production run, to Owner that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
   1. Tile and Trim Units: Furnish quantity of full-size units equal to ONE box for each type, composition, color, pattern, and size indicated.

1.5 QUALITY ASSURANCE

A. Installer Qualifications:
   1. Installer employs at least one installer for Project that has completed the Advanced Certification for Tile Installers (ACT) certification for installation of mud floors, mud walls, membranes, shower receptors, and large format tile.

PART 2 - PRODUCTS

2.1 PRODUCTS, GENERAL

A. ANSI Ceramic Tile Standard: Provide tile that complies with ANSI A137.1 for types, compositions, and other characteristics indicated.

B. ANSI Standards for Tile Installation Materials: Provide materials complying with ANSI A108.02, ANSI standards referenced in other Part 2 articles, ANSI standards referenced by TCNA installation methods specified in tile installation schedules, and other requirements specified.

2.2 PORCELAIN TILE

A. Porcelain Tile Type:
   1. See Finish Schedule and Finish Key in drawings for selected tiles.
   2. Certification: Tile certified by the Porcelain Tile Certification Agency.
   3. Face Size Variation: Rectified.
   4. Tile Color, Glaze, and Pattern: Per Finish Key.
   5. Grout Color: As selected by Architect from manufacturer's full range if not identified in Finish Key.
   6. Precoat with temporary protective coating.

7. Trim Units: Coordinated with sizes and coursing of adjoining flat tile where applicable and matching characteristics of adjoining flat tile. Provide shapes as follows, selected from manufacturer's standard shapes:
   a. Base Cap: Surface bullnose, module size same as adjoining flat tile.
   b. Wainscot Cap: Surface bullnose, module size same as adjoining flat tile.
   c. Wainscot Cap for Flush Conditions: Regular flat tile for conditions where tile wainscot is shown flush with wall surface above it; same size as adjoining flat tile.
   d. External Corners: Surface bullnose, module size same as adjoining flat tile.
   e. Internal Corners: Field-butted square corners.
   f. Tapered Transition Tile: Shape designed to effect transition between thickness of tile floor and adjoining floor finishes of different thickness, tapered to provide reduction in thickness from 1/2 to 1/4 inch across nominal 4-inch dimension.

2.3 GLAZED WALL TILE

A. Glazed Wall Tile Type:
   1. See Finish Schedule and Finish Key in drawings for selected tiles.
   2. Face Size Variation: Rectified.
   3. Tile Color and Pattern: Per Finish Key.
   4. Grout Color: As selected by Architect from manufacturer's full range if not identified in Finish Key.
   5. Trim Units: Coordinated with sizes and coursing of adjoining flat tile where applicable and matching characteristics of adjoining flat tile. Provide shapes as follows, selected from manufacturer's standard shapes:
      a. Base: Straight, module size per Finish Key.
      b. Wainscot Cap: Surface bullnose, module size per Finish Key.
      c. External Corners: Surface bullnose; same size as adjoining flat tile.
      d. Internal Corners: Field-butted square corners. For coved base and cap, use angle pieces designed to fit with stretcher shapes.

2.4 WATERPROOF MEMBRANES

A. General: Manufacturer's standard product that complies with ANSI A118.10 and ANSI A118.12 and is recommended by manufacturer for application indicated. Include reinforcement and accessories recommended by manufacturer.

B. Waterproof Membrane, Sheet: Polyethylene sheet faced on one or both sides with polyester fabric.
   1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
      a. ARDEX Americas.
      b. Laticrete International, Inc.
      c. MAPEI Corporation.
      d. Schluter Systems L.P.
   2. Nominal Thickness: 0.008 inch.

2.5 CRACK ISOLATION MEMBRANES

A. General: Manufacturer's standard product that complies with ANSI A118.12 for standard performance and is recommended by manufacturer for application indicated. Include reinforcement and accessories recommended by manufacturer.

B. Crack Isolation Membrane, Polyethylene Sheet: Polyethylene faced on both sides with polyester fabric.
   1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
      a. Custom Building Products.
      b. Laticrete International, Inc.
      c. MAPEI Corporation.
      d. Schluter Systems L.P.

2.6 SETTING MATERIALS

A. Portland Cement Mortar (Thickset) Installation Materials: ANSI A108.02.
   1. Cleavage Membrane: Installer's option of material that complies with ANSI A108.02, paragraph 3.8.
   2. Reinforcing Wire Fabric: Galvanized, welded-wire fabric, 2 by 2 inches by 0.062-inch diameter; comply with ASTM A1064/A1064M except for minimum wire size.
   3. Expanded Metal Lath: Diamond-mesh lath complying with ASTM C847.
   4. Latex Additive: Manufacturer's standard water emulsion, serving as replacement for part or all of gaging water, of type specifically recommended by latex-additive manufacturer for use with field-mixed portland cement and aggregate mortar bed.

B. Improved Modified Dry-Set Mortar (Thinset): ANSI A118.15.
   1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
      a. ARDEX Americas.

b. Custom Building Products.
c. H.B. Fuller Construction Products Inc. / TEC.
d. Laticrete International, Inc.
e. MAPEI Corporation.

2. Provide prepackaged, dry-mortar mix containing dry, redispersible, vinyl acetate or acrylic additive to which only water must be added at Project site.
3. Provide prepackaged, dry-mortar mix combined with acrylic resin or styrene-butadiene-rubber liquid-latex additive at Project site.
4. For wall applications, provide mortar that complies with requirements for nonsagging mortar in addition to other requirements in ANSI A118.15.

2.7 GROUT MATERIALS

A. Sand-Portland Cement Grout: ANSI A108.10, consisting of white or gray cement and white or colored aggregate as required to produce color indicated.
B. High-Performance Tile Grout: ANSI A118.7.
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
a. ARDEX Americas.
b. Custom Building Products.
c. H.B. Fuller Construction Products Inc. / TEC.
d. Laticrete International, Inc.
e. MAPEI Corporation.

2.8 MISCELLANEOUS MATERIALS

A. Trowelable Underlayments and Patching Compounds: Latex-modified, portland cement-based formulation provided or approved by manufacturer of tile-setting and adhesive materials for installations indicated.
B. Vapor-Retarder Membrane: Polyethylene sheeting, ASTM D4397, 4.0 mils thick.
C. Metal Flooring Transitions: Profile designed specifically for flooring applications; height to match tile and setting-bed thickness.
1. Manufacturers: Subject to compliance with requirements, provide products by the following:
a. Schluter Systems L.P.
2. Description: L-shaped unless noted otherwise in the drawings.
3. Material and Finish: Metallic; exposed-edge material.
a. Color: See finish schedule and key.
D. Temporary Protective Coating: Formulated to protect exposed surfaces of tile against adherence of mortar and grout; compatible with tile, mortar, and grout products and easily removable after grouting is completed without damaging grout or tile.
E. Tile Cleaner: A neutral cleaner capable of removing soil and residue without harming tile and grout surfaces, specifically approved for materials and installations indicated by tile and grout manufacturers.
F. Grout Sealer: Grout manufacturer's standard product for sealing grout joints that does not change color or appearance of grout.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions where tile will be installed, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
1. Verify that substrates for setting tile are firm; dry; clean; free of coatings that are incompatible with tile-setting materials, including curing compounds and other substances that contain soap, wax, oil, or silicone; and comply with flatness tolerances required by ANSI A108.01 for installations indicated.
2. Verify that concrete substrates for tile floors installed with adhesives, bonded mortar bed, or thinset mortar comply with surface finish requirements in ANSI A108.01 for installations indicated.
B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Remove coatings, including curing compounds or other coatings, that are incompatible with tile-setting materials.
B. Fill cracks, holes, and depressions in concrete substrates for tile floors installed with adhesives or thinset mortar with trowelable leveling and patching compound specifically recommended by tile-setting material manufacturer.
C. Where indicated, prepare substrates to receive waterproof membrane by applying a reinforced mortar bed that complies with ANSI A108.1 and is sloped 1/4 inch per foot toward drains.
D. Blending: For tile exhibiting color variations, verify that tile has been factory blended and packaged so tile units taken from one package show same range of colors as those taken from other packages and match approved Samples. If not factory blended, either return to manufacturer or blend tiles at Project site before installing.
E. Substrate Flatness:

1. For tile shorter than 15 inches, confirm that structure or substrate is limited to variation of 1/4 inch in 10 ft. from the required plane, and no more than 1/16 inch in 12 inches when measured from tile surface high points.
2. For large format tile, tile with at least one edge 15 inches or longer, confirm that structure or substrate is limited to 1/8 inch in 10 ft. from the required plane, and no more than 1/16 inch in 24 inches when measured from tile surface high points.

F. Field-Applied Temporary Protective Coating: If indicated under tile type or needed to prevent grout from staining or adhering to exposed tile surfaces, precoat them with continuous film of temporary protective coating, taking care not to coat unexposed tile surfaces.

3.3 INSTALLATION OF CERAMIC TILE SYSTEM

A. Install tile backing panels and treat joints in accordance with ANSI A108.11 and manufacturer's written instructions for type of application indicated.

B. Install waterproof membrane to comply with ANSI A108.13 and manufacturer's written instructions to produce waterproof membrane of uniform thickness that is bonded securely to substrate.
1. Allow waterproof membrane to cure and verify by testing that it is watertight before installing tile or setting materials over it.

C. Install crack isolation membrane to comply with ANSI A108.17 and manufacturer's written instructions to produce membrane of uniform thickness that is bonded securely to substrate.
1. Allow crack isolation membrane to cure before installing tile or setting materials over it.

D. Install tile in accordance with TCNA's "Handbook for Ceramic, Glass, and Stone Tile Installation" for TCNA installation methods specified in tile installation schedules. Comply with parts of ANSI A108 series that are referenced in TCNA installation methods and specified in tile installation schedules, and apply to types of setting and grouting materials used.

E. Extend tile work into recesses and under or behind equipment and fixtures to form complete covering without interruptions unless otherwise indicated. Terminate work neatly at obstructions, edges, and corners without disrupting pattern or joint alignments.

F. Accurately form intersections and returns. Perform cutting and drilling of tile without marring visible surfaces. Carefully grind cut edges of tile abutting trim, finish, or built-in items for straight aligned joints. Fit tile closely to electrical outlets, piping, fixtures, and other penetrations so plates, collars, or covers overlap tile.

G. Provide manufacturer's standard trim shapes where necessary to eliminate exposed tile edges.

H. Where accent tile differs in thickness from field tile, vary setting-bed thickness so that tiles are flush.

I. Jointing Pattern: Lay tile in grid pattern unless otherwise indicated. Lay out tile work and center tile fields in both directions in each space or on each wall area. Lay out tile work to minimize use of pieces that are less than half of a tile. Provide uniform joint widths unless otherwise indicated.

J. Lay out tile wainscots to dimensions indicated or to next full tile beyond dimensions indicated.

K. Movement Joints: Provide movement joints and other sealant-filled joints, including control, contraction, and isolation joints, where indicated on Drawings. Form joints during installation of setting materials, mortar beds, and tile. Keep joints free of dirt, debris, and setting materials prior to filling with sealants. Do not saw-cut joints after installing tiles.
1. Where joints occur in concrete substrates, locate joints in tile surfaces directly above them.

L. Metal Flooring Transitions: Install where exposed edge of tile flooring meets carpet, wood, or other flooring that finishes flush with or below top of tile and no threshold is indicated.

M. Grout Sealer: Apply grout sealer to cementitious grout joints in tile floors in accordance with manufacturer's written instructions. As soon as sealer has penetrated grout joints, remove excess sealer and sealer from tile faces by wiping with soft cloth.

END OF SECTION

SECTION 09 65 13
RESILIENT BASE AND ACCESSORIES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Thermoset-rubber base.
   2. Rubber stair accessories.
   3. Rubber molding accessories.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.
B. Sustainable Design Submittals:
   1. Product Data: For adhesives, indicating VOC content.
   2. Laboratory Test Reports: For adhesives, indicating compliance with requirements for low-emitting materials.
   3. Product Data: For sealants, indicating VOC content.
   4. Laboratory Test Reports: For sealants, indicating compliance with requirements for low-emitting materials.
   5. Laboratory Test Reports: For resilient base and stair products and accessories, indicating compliance with requirements for low-emitting materials.
   6. Environmental Product Declaration: For each product.
   7. Health Product Declaration: For each product.
   8. Sourcing of Raw Materials: Corporate sustainability report for each manufacturer.
C. Samples: For each exposed product and for each color and texture specified.

PART 2 - PRODUCTS

2.1 THERMOSET-RUBBER BASE

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
   1. Johnsonite; a Tarkett company.
   2. Nora by Interface.
   3. Roppe Corporation; Roppe Holding Company.
B. Product Standard: ASTM F1861, Type TS (rubber, vulcanized thermoset), Group I (solid, homogeneous).
   1. Style and Location: As selected in the Finish Key in the drawings.
C. Thickness: 0.125 inch.
D. Height: As selected in the Finish Key in the drawings.
E. Lengths: Coils in manufacturer's standard length.
F. Outside Corners: Preformed.
G. Inside Corners: Job formed.
H. Colors: As selected in the Finish Key in the drawings.

2.2 RUBBER MOLDING ACCESSORY

A. Manufacturer: To match adjacent resilient floor finish or stair accessory or as noted in Finish Key.
B. Profile and Dimensions: Provide rubber molding accessories at all transitions between floor finishes and where otherwise noted in drawings.
C. Colors and Patterns: See Finish Key for selections.

2.3 INSTALLATION MATERIALS

A. Trowelable Leveling and Patching Compounds: Latex-modified, portland-cement-based or blended hydraulic-cement-based formulation provided or approved by resilient-product manufacturer for applications indicated.
   1. Adhesives: Water-resistant type recommended by resilient-product manufacturer for resilient products and substrate conditions indicated.
   2. Verify adhesives have a VOC content of 50 g/L or less and 60 g/L or less for rubber stair treads.

PART 3 - EXECUTION

3.1 PREPARATION

A. Prepare substrates according to manufacturer's written instructions to ensure adhesion of resilient products.
B. Concrete Substrates for Resilient Stair Accessories: Prepare horizontal surfaces according to ASTM F710.
   1. Verify that substrates are dry and free of curing compounds, sealers, and hardeners.
   2. Remove substrate coatings and other substances that are incompatible with adhesives and that contain soap, wax, oil, or silicone, using mechanical methods recommended by manufacturer. Do not use solvents.
   3. Alkalinity and Adhesion Testing: Perform tests recommended by manufacturer. Proceed with installation only after substrate alkalinity falls within range on pH scale recommended by manufacturer in writing, but not less than 5 or more than 9 pH.

4. Moisture Testing: Perform tests so that each test area does not exceed 200 sq. ft., and perform no fewer than three tests in each installation area and with test areas evenly spaced in installation areas.
    a. Anhydrous Calcium Chloride Test: ASTM F1869. Proceed with installation only after substrates have maximum moisture-vapor-emission rate of 3 lb of water/1000 sq. ft. in 24 hours.
    b. Relative Humidity Test: Using in-situ probes, ASTM F2170. Proceed with installation only after substrates have a maximum 75 percent relative humidity level measurement.

C. Fill cracks, holes, and depressions in substrates with trowelable leveling and patching compound; remove bumps and ridges to produce a uniform and smooth substrate.

D. Do not install resilient products until materials are the same temperature as space where they are to be installed.

E. Immediately before installation, sweep and vacuum clean substrates to be covered by resilient products.

3.2 RESILIENT BASE INSTALLATION

A. Comply with manufacturer's written instructions for installing resilient base.

B. Apply resilient base to walls, columns, pilasters, casework and cabinets in toe spaces, and other permanent fixtures in rooms and areas where base is required.

C. Install resilient base in lengths as long as practical without gaps at seams and with tops of adjacent pieces aligned.

D. Tightly adhere resilient base to substrate throughout length of each piece, with base in continuous contact with horizontal and vertical substrates.

E. Do not stretch resilient base during installation.

F. On masonry surfaces or other similar irregular substrates, fill voids along top edge of resilient base with manufacturer's recommended adhesive filler material.

G. Preformed Corners: Install preformed corners before installing straight pieces.

H. Job-Formed Corners:

1. Outside Corners: Use straight pieces of maximum lengths possible and form with returns not less than 18 inches in length.
    a. Form without producing discoloration (whitening) at bends.
2. Inside Corners: Use straight pieces of maximum lengths possible and form with returns not less than 18 inches in length.
    a. Cope corners to minimize open joints.

3.3 RESILIENT ACCESSORY INSTALLATION

A. Comply with manufacturer's written instructions for installing resilient accessories.

B. Resilient Molding Accessories: Butt to adjacent materials and tightly adhere to substrates throughout length of each piece. Install reducer strips at edges of floor covering that would otherwise be exposed.

3.4 CLEANING AND PROTECTION

A. Comply with manufacturer's written instructions for cleaning and protecting resilient products.

B. Floor Polish (when required by flooring manufacturer): Remove soil, adhesive, and blemishes from resilient stair treads before applying liquid floor polish.

1. Apply two coat(s).

C. Cover resilient products subject to wear and foot traffic until Substantial Completion.

END OF SECTION

SECTION 09 65 16
RESILIENT SHEET FLOORING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
1. Vinyl sheet flooring with backing.
2. Rubber sheet flooring with backing.
3. Resilient sports flooring.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.
B. Sustainable Design Submittals:
1. Laboratory Test Reports: For floor covering products, indicating compliance with requirements for low-emitting materials.
2. Product Data: For adhesives, indicating VOC content.
3. Laboratory Test Reports: For adhesives, indicating compliance with requirements for low-emitting materials.
4. Product Data: For chemical-bonding compounds, indicating VOC content.
5. Laboratory Test Reports: For chemical-bonding compounds, indicating compliance with requirements for low-emitting materials.
6. Product Data: For sealants, indicating VOC content.
7. Laboratory Test Reports: For sealants, indicating compliance with requirements for low-emitting materials.
8. Environmental Product Declaration: For each product.
9. Health Product Declaration: For each product.
10. Sourcing of Raw Materials: Corporate sustainability report for each manufacturer.
C. Samples: For each exposed product and for each color, texture, and pattern specified.

1.3 CLOSEOUT SUBMITTALS

A. Maintenance data.

1.4 QUALITY ASSURANCE

A. Installer Qualifications: An entity that employs installers and supervisors who are competent in techniques required by manufacturer for resilient sheet flooring installation and seaming method indicated.
1. Engage an installer who employs workers for this Project who are trained or certified by resilient sheet flooring manufacturer for installation techniques required.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Fire-Test-Response Characteristics: For resilient sheet flooring, as determined by testing identical products according to ASTM E648 or NFPA 253 by a qualified testing agency.
1. Critical Radiant Flux Classification: Class I, not less than 0.45 W/sq. cm.
B. Verify flooring products comply with the requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."

2.2 RUBBER SHEET FLOORING WITH BACKING

A. Product Standard: ASTM F1860.
1. Type: Type I, homogeneous rubber sheet floor covering with backing.
2. Backing: Fibrous.
3. Hardness: Manufacturer's standard hardness, measured using Shore, Type A durometer per ASTM D2240.
B. Sheet Width: As standard with manufacturer.
C. Seamless-Installation Method: Heat welded.
D. Other Requirements: See Finish Schedule and Finish Key for selected products.

2.3 RESILIENT SPORTS FLOOR

1. Provide flooring material and all associated and installation materials by or recommended by the manufacturer as identified in the Finish Schedule and Finish Key. This includes all sports/field lines as identified in Finish Plan.

2.4 INSTALLATION MATERIALS

A. Trowelable Leveling and Patching Compounds: Latex-modified, portland-cement-based or blended hydraulic-cement-based formulation provided or approved by resilient sheet flooring manufacturer for applications indicated.
B. Adhesives: Water-resistant type recommended by flooring and adhesive manufacturers to suit resilient sheet flooring and substrate conditions indicated.
1. Verify adhesives have a VOC content of 50 g/L or less.

2. Verify adhesive complies with the testing and product requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."

C. Seamless-Installation Accessories:
1. Heat-Welding Bead: Manufacturer's solid-strand product for heat welding seams.
a. Colors: As selected by Architect from manufacturer's full range.

D. Integral-Flash-Cove-Base Accessories:
1. Cove Strip: 1-inch radius provided or approved by resilient sheet flooring manufacturer.
2. Cap Strip: Square metal cap provided or approved by resilient sheet flooring manufacturer.
3. Corners: Metal inside and outside corners and end stops provided or approved by resilient sheet flooring manufacturer.

E. Floor Polish: Provide protective, liquid floor-polish products recommended by resilient sheet flooring manufacturer.

PART 3 - EXECUTION

3.1 PREPARATION

A. Prepare substrates according to resilient sheet flooring manufacturer's written instructions to ensure adhesion of resilient sheet flooring.

B. Concrete Substrates: Prepare according to ASTM F710.
1. Verify that substrates are dry and free of curing compounds, sealers, and hardeners.
2. Remove substrate coatings and other substances that are incompatible with adhesives and that contain soap, wax, oil, or silicone, using mechanical methods recommended by resilient sheet flooring manufacturer. Do not use solvents.
3. Alkalinity and Adhesion Testing: Perform tests recommended by resilient sheet flooring manufacturer. Proceed with installation only after substrate alkalinity falls within range on pH scale recommended by manufacturer in writing, but not less than 5 or more than 9 pH.
4. Moisture Testing: Perform tests so that each test area does not exceed 200 sq. ft., and perform no fewer than three tests in each installation area and with test areas evenly spaced in installation areas.
a. Anhydrous Calcium Chloride Test: ASTM F1869. Proceed with installation only after substrates have maximum moisture-vapor-emission rate of 3 lb of water/1000 sq. ft. in 24 hours.
b. Relative Humidity Test: Using in-situ probes, ASTM F2170. Proceed with installation only after substrates have a maximum 75 percent relative humidity level measurement.

C. Fill cracks, holes, and depressions in substrates with trowelable leveling and patching compound; remove bumps and ridges to produce a uniform and smooth substrate.

D. Do not install resilient sheet flooring until materials are the same temperature as space where they are to be installed.
1. At least 48 hours in advance of installation, move flooring and installation materials into spaces where they will be installed.

E. Immediately before installation, sweep and vacuum clean substrates to be covered by resilient sheet flooring.

3.2 RESILIENT SHEET FLOORING INSTALLATION

A. Comply with manufacturer's written instructions for installing resilient sheet flooring.

B. Unroll resilient sheet flooring and allow it to stabilize before cutting and fitting.

C. Lay out resilient sheet flooring as follows:
1. Maintain uniformity of flooring direction.
2. Minimize number of seams; place seams in inconspicuous and low-traffic areas, at least 6 inches away from parallel joints in flooring substrates.
3. Match edges of flooring for color shading at seams.
4. Avoid cross seams.

D. Scribe and cut resilient sheet flooring to butt neatly and tightly to vertical surfaces and permanent fixtures including built-in furniture, cabinets, pipes, outlets, and door frames.

E. Extend resilient sheet flooring into toe spaces, door reveals, closets, and similar openings.

F. Maintain reference markers, holes, and openings that are in place or marked for future cutting by repeating on resilient sheet flooring as marked on substrates. Use chalk or other nonpermanent marking device.

G. Install resilient sheet flooring on covers for telephone and electrical ducts and similar items in installation areas. Maintain overall continuity of color and pattern between pieces of flooring installed on covers and adjoining flooring. Tightly adhere flooring edges to substrates that abut covers and to cover perimeters.

H. Adhere resilient sheet flooring to substrates using a full spread of adhesive applied to substrate to produce a completed installation without open cracks, voids, raising and puckering at joints, telegraphing of adhesive spreader marks, and other surface imperfections.

I. Seamless Installation:

1. Heat-Welded Seams: Comply with ASTM F1516. Rout joints and heat weld with welding bead to fuse sections permanently into a seamless flooring installation. Prepare, weld, and finish seams to produce surfaces flush with adjoining flooring surfaces.

J. Integral-Flash-Cove Base: Cove resilient sheet flooring 6 inches (unless indicated otherwise in drawings) up vertical surfaces. Support flooring at horizontal and vertical junction with cove strip. Butt at top against cap strip.

1. Install metal corners at inside and outside corners.

K. Floor Polish: Remove soil, adhesive, and blemishes from flooring surfaces before applying liquid floor polish.

1. Apply two coats if recommended by manufacturer.

3.3 RESILIENT SPORTS FLOORING INSTALLATION

A. Comply with manufacturer's written instructions for installing resilient sheet flooring.

END OF SECTION

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SECTION 09 66 23
RESINOUS MATRIX TERRAZZO FLOORING

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes thin-set, epoxy-resin terrazzo flooring **and base** (if noted in drawings) – a system that is to be *ground*.

1.2 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Sustainable Design Submittals:

1. Product Data: For recycled content, indicating postconsumer and preconsumer recycled content and cost.
2. Product Data: For adhesives, indicating VOC content.
3. Laboratory Test Reports: For adhesives, indicating compliance with requirements for low-emitting materials.
4. Laboratory Test Reports: For sealers, indicating compliance with requirements for low-emitting materials.

C. Shop Drawings: Include terrazzo installation requirements. Include plans, sections, component details, and relationship to other work.

D. Samples: For each exposed product and for each color and texture specified.

1.4 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer.

B. Material certificates.

C. Preinstallation moisture-testing reports.

1.5 CLOSEOUT SUBMITTALS

A. Maintenance data.

1.6 QUALITY ASSURANCE

A. Installer Qualifications:

1. Engage an installer who is a contractor member of NTMA.
2. Engage an installer who is certified in writing by terrazzo manufacturer as qualified to install manufacturer's products.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. NTMA Standards: Comply with NTMA's written recommendations for terrazzo type indicated unless more stringent requirements are specified.

B. Verify flooring products comply with the requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."

2.2 EPOXY-RESIN TERRAZZO

A. Epoxy-Resin Terrazzo: Comply with manufacturer's written instructions for matrix and aggregate proportions and mixing.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   a. Key Resin Company.
   b. Terrazzo & Marble Supply Companies.

B. Mix Color and Pattern: Match Architect's sample. See Finish Key for basis-of-design.

a. Note: ***Bidder is responsible for determining aggregate type and mix of sample prior to bid. A change order for aggregate will not be entertained unless Architect changes sample.***

C. Materials:

1. Moisture-Vapor-Emission-Control Membrane: Two-component, high-solids, high-density, low-odor, epoxy-based membrane-forming product produced by epoxy terrazzo manufacturer that reduces moisture emission from concrete substrate to not more than 3 lb of water/1000 sq. ft. in 24 hours.
2. Substrate-Crack-Suppression Membrane: Product of terrazzo-resin manufacturer, having minimum 120 percent elongation potential according to ASTM D412.
   a. Reinforcement: Fiberglass scrim.
   b. Note: ***Bidder to assume membrane will cover 20 percent of terrazzo floor finish area.***
3. Primer: Manufacturer's product recommended for substrate and use indicated.
4. Epoxy-Resin Matrix: Manufacturer's standard recommended for use indicated and in color required for mix indicated.

5. Recycled Content: Postconsumer recycled content plus one-half of preconsumer recycled content not less than 25 percent.
6. Finishing Grout: Resin based.

2.3 STRIP MATERIALS

A. Thin-Set Divider Strips: L-type angle in depth required for topping thickness indicated.
1. Material: Match Heavy-Top strips.
2. Top Width: 1/8 inch.
3. Application: Curved design.

B. Heavy-Top Divider Strips: L-type angle in depth required for topping thickness indicated.
1. Bottom-Section Material: Matching top-section material.
2. Top-Section Material: Brass.
3. Top-Section Width: 1/8 inch.
4. Application: All straight lines.

C. Control-Joint Strips: Separate, double L-type angles, positioned back to back, that match material and color of divider strips and in depth required for topping thickness indicated.

D. Accessory Strips: Match divider-strip width, material, and color unless otherwise indicated. Use the following types of accessory strips as required to provide a complete installation:
1. Base-bead strips for exposed top edge of terrazzo base.
2. Edge-bead strips for exposed edges of terrazzo.
3. Nosings for terrazzo stair treads and landings.

E. Abrasive Strips: Three-line abrasive inserts at nosings. Silicon carbide or aluminum oxide, or combination of both, in epoxy-resin binder and set in channel.
1. Width: 1/2 inch.
2. Depth: As required by terrazzo thickness.
3. Length: 4 inches less than stair width.
4. Color: As selected by Architect from full range of industry colors.

2.4 MISCELLANEOUS ACCESSORIES

A. Strip Adhesive: Epoxy-resin adhesive recommended by adhesive manufacturer for this use.
1. Verify adhesives have a VOC content of 70 g/L or less.
2. Verify adhesive complies with the testing and product requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."

B. Anchoring Devices: Provide mechanical anchoring devices or adhesives for strip materials as recommended by manufacturer and as required for secure attachment to substrate.

C. Patching and Fill Material: Terrazzo manufacturer's resinous product approved and recommended by manufacturer for application indicated.

D. Joint Compound: Terrazzo manufacturer's resinous product approved and recommended by manufacturer for application indicated.

E. Resinous Matrix Terrazzo Cleaner: Chemically neutral cleaner with pH factor between 7 and 10 that is biodegradable, phosphate free, and recommended by sealer manufacturer for use on terrazzo type indicated.

F. Sealer: Slip- and stain-resistant, penetrating-type sealer that is chemically neutral; does not affect terrazzo color or physical properties; and is recommended by sealer manufacturer for application.
1. Surface Friction: Not less than 0.6 according to ASTM D2047.
2. Acid-Base Properties: With pH factor between 7 and 10.
3. Verify products comply with the requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."
4. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
a. Johnson Diversey, Plaza Plus.

PART 3 - EXECUTION

3.1 PREPARATION

A. Clean substrates of substances, including oil, grease, and curing compounds, that might impair terrazzo bond. Provide clean, dry, and neutral substrate for terrazzo application.

B. Concrete Slabs:
1. Provide sound concrete surfaces free of laitance, glaze, efflorescence, curing compounds, form-release agents, dust, dirt, grease, oil, and other contaminants incompatible with terrazzo.
2. Prepare *existing* concrete slabs as follows:

a. Shot-blast surfaces with an apparatus that abrades the concrete surface, contains the dispensed shot within the apparatus, and recirculates the shot by vacuum pickup. Surface preparation results should achieve a CSP3- CSP5 profile according to International Concrete Repair Institute Guideline No. 03732. Grinding is preferred if acceptable in writing from manufacturer.

b. Repair damaged and deteriorated concrete according to terrazzo manufacturer's written instructions.

c. Use patching and fill material to fill holes and depressions in substrates according to terrazzo manufacturer's written instructions.

C. Verify that concrete substrates are dry and moisture-vapor emissions are within acceptable levels according to manufacturer's written instructions.

D. Preinstallation Moisture Testing:

1. Testing Agency: Engage a qualified testing agency to perform tests.

2. Moisture Testing: Perform tests so that each test area does not exceed 1000 sq. ft., and perform no fewer than three tests in each installation area and with test areas evenly spaced in installation areas.

a. Relative Humidity Test: Maximum 80 percent relative humidity measurement when tested according to ASTM F2170 using in-situ probes.

3. Proceed with terrazzo installation only after concrete substrates pass moisture testing or after installation of moisture-vapor-emission-control membrane on substrate areas that fail testing.

E. Moisture-Vapor-Emission-Control Membrane: Install according to manufacturer's written instructions.

1. Install on concrete substrates that incorporate lightweight aggregates.

2. Install concrete substrates that fail preinstallation moisture testing.

F. Substrate-Crack-Suppression Membrane: Install to isolate and suppress substrate cracks according to manufacturer's written instructions.

1. Prepare and prefill substrate cracks with membrane material.

2. Install membrane at substrate cracks in areas to receive terrazzo.

3. Reinforce membrane with fiberglass scrim.

G. Protect other work from water and dust generated by grinding operations. Control water and dust to comply with environmental protection regulations.

1. Erect and maintain temporary enclosures and other suitable methods to limit water damage and dust migration and to ensure adequate ambient temperatures and ventilation conditions during installation.

3.2 EPOXY-RESIN TERRAZZO INSTALLATION

A. Comply with NTMA's written recommendations for terrazzo and accessory installation.

B. Strip Materials:

1. Divider and Control-Joint Strips:

a. Locate divider strips in locations indicated.

b. Install control-joint strips back to back and directly above concrete-slab control joints.

c. Install control-joint strips with 1/4-inch gap between strips, and install sealant in gap.

d. Install strips in adhesive setting bed without voids below strips, or mechanically anchor strips as required to attach strips to substrate, as recommended by strip manufacturer.

2. Accessory Strips: Install as required to provide a complete installation.

3. Abrasive Strips: Install with surface of abrasive strip positioned 1/16 inch higher than terrazzo surface.

C. Apply primer to terrazzo substrates according to manufacturer's written instructions.

D. Place, rough grind, grout, cure grout, fine grind, and finish terrazzo according to manufacturer's written instructions.

1. Installed Thickness: 3/8 inch nominal.

2. Terrazzo Finishing: Ensure that matrix components and fluids from grinding operations do not stain terrazzo by reacting with divider and control-joint strips.

a. Rough Grinding: Grind with 24-grit or finer stones or with comparable diamond abrasives. Follow initial grind with 60/80-grit stones or with comparable diamond abrasives.

b. Grouting: Before grouting, clean terrazzo with water, rinse, and allow to dry. Apply and cure epoxy grout.

c. Fine Grinding/Polishing: Delay fine grinding until heavy trade work is complete and construction traffic through area is restricted. Grind with 200-grit stones or with comparable diamond abrasives until grout is removed from surface.

3. Installation Tolerance: Limit variation in terrazzo surface from level to 1/4 inch in 10 feet; noncumulative.

E. Install and finish poured-in-place terrazzo stairs at the same time the adjacent terrazzo flooring is installed.

F. Install and finish poured-in-place terrazzo base at the same time the adjacent terrazzo flooring is installed.

G. Cut out and replace terrazzo areas that evidence lack of bond with substrate. Cut out terrazzo areas in panels defined by strips and replace to match adjacent terrazzo, or repair panels according to NTMA's written recommendations, as approved by Architect.

H. Cleaning:

1. Remove grinding dust from installation and adjacent areas.
2. Wash surfaces with cleaner according to NTMA's written recommendations and manufacturer's written instructions; rinse surfaces with water and allow them to dry thoroughly.

I. Sealing:

1. Seal surfaces according to NTMA's written recommendations.
2. Apply sealer according to sealer manufacturer's written instructions.

END OF SECTION

SECTION 09 68 13
TILE CARPETING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Modular carpet tile.

1.2 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.
B. Sustainable Design Submittals:
   1. Product Data: For adhesives, indicating VOC content.
   2. Laboratory Test Reports: For adhesives, indicating compliance with requirements for low-emitting materials.
   3. Laboratory Test Reports: For flooring products, indicating compliance with requirements for low-emitting materials.
C. Shop Drawings: For carpet tile installation, plans showing the following:
   1. Columns, doorways, enclosing walls or partitions, built-in cabinets, and locations where cutouts are required in carpet tiles.
   2. Carpet tile type, color, and dye lot.
   3. Type of subfloor.
   4. Type of installation.
   5. Pattern of installation.
   6. Pattern type, location, and direction.
   7. Pile direction.
   8. Type, color, and location of insets and borders.
   9. Type, color, and location of edge, transition, and other accessory strips.
   10. Transition details to other flooring materials.
D. Samples: For each exposed product and for each color and texture required.

1.4 INFORMATIONAL SUBMITTALS

A. Product test reports.
B. Sample warranty.

1.5 MAINTENANCE MATERIAL SUBMITTALS

A. Extra Stock Material: Furnish extra materials, from the same production run, to Owner that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
   1. Full-size units equal to ONE box for each type indicated.

1.6 CLOSEOUT SUBMITTALS

A. Maintenance data.

1.7 QUALITY ASSURANCE

A. Installer Qualifications: Certified by the International Certified Floorcovering Installers Association at the Commercial II certification level.

1.8 WARRANTY

A. Special Warranty for Carpet Tiles: Manufacturer agrees to repair or replace components of carpet tile installation that fail in materials or workmanship within specified warranty period.
   1. Warranty Period: 10 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 CARPET TILE

A. Applied Treatments:
   1. Soil-Resistance Treatment: Manufacturer's standard treatment.
   2. Antimicrobial Treatment: Manufacturer's standard treatment that protects carpet tiles as follows:
      a. Antimicrobial Activity: Not less than 2-mm halo of inhibition for gram-positive bacteria, not less than 1-mm halo of inhibition for gram-negative bacteria, and no fungal growth, according to AATCC 174.
B. Sustainable Design Requirements:
   1. Sustainable Product Certification: Silver level certification according to ANSI/NSF 140.
   2. Verify flooring products comply with the requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."
C. Performance Characteristics:

1. Appearance Retention Rating: Heavy traffic, 3.0 minimum according to ASTM D7330.
2. Critical Radiant Flux Classification: Not less than 0.45 W/sq. cm according to NFPA 253.
3. Dry Breaking Strength: Not less than 100 lbf according to ASTM D2646.
4. Tuft Bind: Not less than 5 lbf according to ASTM D1335.
5. Delamination: Not less than 4 lbf/in. according to ASTM D3936.
6. Dimensional Tolerance: Within 1/32 inch of specified size dimensions, as determined by physical measurement.
7. Dimensional Stability: 0.2 percent or less according to ISO 2551 (Aachen Test).
8. Colorfastness to Crocking: Not less than 4, wet and dry, according to AATCC 165.
9. Colorfastness to Light: Not less than 4 after 40 AFU (AATCC fading units) according to AATCC 16, Option E.
10. Electrostatic Propensity: Less than 3.5 kV according to AATCC 134.

2.2 INSTALLATION ACCESSORIES

A. Trowelable Leveling and Patching Compounds: Latex-modified, hydraulic-cement-based formulation provided or recommended by carpet tile manufacturer.

B. Adhesives: Water-resistant, mildew-resistant, nonstaining, pressure-sensitive type to suit products and subfloor conditions indicated, that comply with flammability requirements for installed carpet tile, and are recommended by carpet tile manufacturer for releasable installation.
1. Verify adhesives have a VOC content of 50 g/L or less.
2. Verify adhesive complies with the testing and product requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."

PART 3 - EXECUTION

3.1 EXAMINATION

A. Concrete Slabs:
1. Moisture Testing: Perform tests so that each test area does not exceed 200 sq. ft., and perform no fewer than three tests in each installation area and with test areas evenly spaced in installation areas.
   a. Anhydrous Calcium Chloride Test: ASTM F1869. Proceed with installation only after substrates have maximum moisture-vapor-emission rate of 3 lb of water/1000 sq. ft. in 24 hours.
   b. Relative Humidity Test: Using in situ probes, ASTM F2170. Proceed with installation only after substrates have a maximum 75 percent relative humidity level measurement.
   c. Perform additional moisture tests recommended in writing by adhesive and carpet tile manufacturers. Proceed with installation only after substrates pass testing.

B. Wood Subfloors: Verify that underlayment surface is free of irregularities and substances that may interfere with adhesive bond or show through surface.

C. Metal Subfloors: Verify that underlayment surface is free of irregularities and substances that may interfere with adhesive bond or show through surface.

D. Painted Subfloors: Perform bond test recommended in writing by adhesive manufacturer.
1. Access Flooring Systems: Verify access floor substrate is compatible with carpet tile and adhesive, if any, and underlayment surface is gaps greater than 1/8 inch and protrusions more than 1/32 inch.

3.2 PREPARATION

A. General: Comply with the Carpet and Rug Institute's CRI 104 and with carpet tile manufacturer's written installation instructions for preparing substrates indicated to receive carpet tile.

B. Use trowelable leveling and patching compounds, according to manufacturer's written instructions, to fill cracks, holes, depressions, and protrusions in substrates. Fill or level cracks, holes and depressions 1/8 inch wide or wider, and protrusions more than 1/32 inch unless more stringent requirements are required by manufacturer's written instructions.

C. Concrete Substrates: Remove coatings, including curing compounds, and other substances that are incompatible with adhesives and that contain soap, wax, oil, or silicone, without using solvents. Use mechanical methods recommended in writing by adhesive and carpet tile manufacturers.

D. Metal Substrates: Clean grease, oil, soil and rust, and prime if recommended in writing by adhesive manufacturer. Rough sand painted metal surfaces and remove loose paint. Sand aluminum surfaces, to remove metal oxides, immediately before applying adhesive.

E. Broom and vacuum clean substrates to be covered immediately before installing carpet tile.

3.3 INSTALLATION

A. General: Comply with the Carpet and Rug Institute's CRI 104, Section 10, "Carpet Tile," and with carpet tile manufacturer's written installation instructions.

B. Installation Method: As recommended in writing by carpet tile manufacturer unless noted otherwise in drawings.

C. Maintain dye-lot integrity. Do not mix dye lots in same area.

D. Maintain pile-direction patterns recommended in writing by carpet tile manufacturer.

E. Cut and fit carpet tile to butt tightly to vertical surfaces, permanent fixtures, and built-in furniture including cabinets, pipes, outlets, edgings, thresholds, and nosings. Bind or seal cut edges as recommended by carpet tile manufacturer.

F. Extend carpet tile into toe spaces, door reveals, closets, open-bottomed obstructions, removable flanges, alcoves, and similar openings.

G. Maintain reference markers, holes, and openings that are in place or marked for future cutting by repeating on carpet tile as marked on subfloor. Use nonpermanent, nonstaining marking device.

H. Install pattern parallel to walls and borders unless indicated otherwise in drawings.

I. Access Flooring: Stagger joints of carpet tiles so carpet tile grid is offset from access flooring panel grid. Do not fill seams of access flooring panels with carpet adhesive; keep seams free of adhesive.

J. Protect carpet tile against damage from construction operations and placement of equipment and fixtures during the remainder of construction period. Use protection methods indicated or recommended in writing by carpet tile manufacturer.

END OF SECTION

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SECTION 09 91 23
INTERIOR PAINTING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Primers.
   2. Water-based finish coatings.
   3. Solvent-based finish coatings.
   4. Floor sealers and paints.
   5. Dry fall coatings.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Sustainable Design Submittals:
   1. Product Data: For paints and coatings, indicating VOC content.
   2. Laboratory Test Reports: For paints and coatings, indicating compliance with requirements for low-emitting materials.
   3. Environmental Product Declaration: For each product.
   4. Health Product Declaration: For each product.
   5. Sourcing of Raw Materials: Corporate sustainability report for each manufacturer.
   6. Manufacturer Inventory: For each product, provide manufacturer's manifest of ingredients.

C. Samples: For each type of topcoat product.

D. Product Schedule: Use same designations indicated on Drawings and in the Interior Painting Schedule to cross-reference paint systems specified in this Section. Include color designations.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
   1. Benjamin Moore & Co.
   2. PPG Paints; PPG Industries, Inc.
   3. Sherwin-Williams Company (The).

2.2 PAINT PRODUCTS, GENERAL

A. Material Compatibility:
   1. Materials for use within each paint system shall be compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
   2. For each coat in a paint system, products shall be recommended in writing by topcoat manufacturers for use in paint system and on substrate indicated.

B. VOC Content: For field applications that are inside the weatherproofing system, verify paints and coatings comply with VOC content limits of authorities having jurisdiction and the following VOC content limits:
   1. Flat Paints and Coatings: 50 g/L.
   2. Nonflat Paints and Coatings: 50 g/L.
   3. Dry-Fog Coatings: 150 g/L.
   4. Primers, Sealers, and Undercoaters: 100 g/L.
   5. Rust-Preventive Coatings: 100 g/L.
   6. Zinc-Rich Industrial Maintenance Primers: 100 g/L.
   7. Pretreatment Wash Primers: 420 g/L.
   8. Shellacs, Clear: 730 g/L.
   9. Shellacs, Pigmented: 550 g/L.

C. Low-Emitting Materials: For field applications that are inside the weatherproofing system, verify 90 percent of paints and coatings comply with the requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."

D. Colors: As indicated in a color schedule.

2.3 PRIMERS – see 'Interior Paint Schedule' article below for direction for each substrate

A. Items to be shipped "primed" are to use applicable primer from this list.

B. Interior/Exterior Latex Block Filler: Water-based, high-solids, emulsion coating formulated to bridge and fill porous surfaces of exterior concrete masonry units in preparation for specified subsequent coatings.

C. Alkali-Resistant, Water-Based Primer: Water-based primer formulated for use on alkaline surfaces, such as plaster, vertical concrete, and masonry.

D. Interior, Institutional Low-Odor/VOC Primer Sealer: Water-based primer sealer with low-odor characteristics and a VOC of less than 10 grams per liter for use on new interior plaster, concrete, and gypsum wallboard surfaces that are subsequently to be painted with latex finish coats.

E. Interior Alkyd Primer Sealer: Solvent-based, alkyd-type, primer/sealer for new interior wood, plaster, and porous surfaces,

F. Alkyd Quick-Dry Primer for Metal: Corrosion-resistant, solvent-based, modified-alkyd primer; lead and chromate free; formulated for quick-drying capabilities and for use on cleaned, interior steel surfaces.

G. Surface-Tolerant Metal Primer: Corrosion-resistant, solvent-based metal primer formulated for use on structural steel and metal fabrications that have been minimally prepared.

H. Cementitious Galvanized Primer: Solvent-based primer composed of linseed oil/alkyd resin and portland cement for cleaned galvanized metal prior to finish coating.

I. Quick-Drying Aluminum Primer: Corrosion-resistant, solvent-based, alkyd or modified-alkyd primer formulated for quick-drying capabilities and for use on prepared exterior aluminum.

2.4 WATER-BASED FINISH COATS - see 'Interior Paint Schedule' article below for direction for each substrate

A. Interior, Latex, Institutional Low Odor/VOC: White or colored latex paint with low-odor characteristics and a VOC of less than 10 grams per liter, for use in areas, such as hospitals and other occupied buildings, where the odor and VOC levels of conventional latex products would preclude their use.

B. Interior, Latex, Institutional Low Odor/VOC: White or colored latex paint with low-odor characteristics and a VOC of less than 10 grams per liter, for use in areas, such as hospitals and other occupied buildings, where the odor and VOC levels of conventional latex products would preclude their use.

2.5 SOLVENT-BASED FINISH COATS - see 'Interior Paint Schedule' article below for direction for each substrate

A. Interior, Alkyd: Pigmented, solvent-based alkyd paint for use on primed/sealed interior plaster, gypsum, wood, and metal walls primarily in residential and moderate traffic commercial environments.

2.6 FLOOR SEALERS AND PAINTS

A. Water-Based Concrete Floor Sealer: Clear, water-based, acrylic-copolymer-emulsion sealer formulated for oil, gasoline, alkali, and water resistance and for use on concrete traffic surfaces.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   a. H&C Decorative Concrete Products; a brand of Sherwin-Williams Co.
   b. Hempel (USA), Inc.
   c. PPG Paints; PPG Industries, Inc.
   d. Rust-Oleum Corporation; a subsidiary of RPM International, Inc.
   e. Sherwin-Williams Company (The).

2.7 DRY FALL COATINGS

A. Dry Fall, Latex, Flat: Pigmented, water-based, emulsion-type, fast-drying coating for use on interior plaster, concrete, gypsum board, primed wood, and metal ceilings.

1. Gloss and Sheen Level: Manufacturer's standard flat finish.

B. Water Based, Dry Fall for Galvanized Steel, Flat: Pigmented, water-based coating for direct application to cleaned, interior galvanized-metal ceiling surfaces and adjacent primed metals.

1. Gloss and Sheen Level: Manufacturer's standard flat finish.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify suitability of substrates, including surface conditions and compatibility, with existing finishes and primers.

B. Proceed with coating application only after unsatisfactory conditions have been corrected.

1. Application of coating indicates acceptance of surfaces and conditions.

3.2 PREPARATION

A. Comply with manufacturer's written instructions and recommendations applicable to substrates and paint systems indicated.

B. Remove hardware, covers, plates, and similar items already in place that are removable and are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.

C. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection if any.

3.3 INSTALLATION

A. Apply paints according to manufacturer's written instructions.

B. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.

C. Painting Fire-Suppression, Plumbing, HVAC, Electrical, Communication, and Electronic Safety and Security Work:
1. Paint the following work where exposed in all **but** mechanical or electrical rooms:
a. Equipment, including panelboards and switch gear.
b. Uninsulated metal piping.
c. Uninsulated plastic piping.
d. Pipe hangers and supports.
e. Metal conduit.
f. Plastic conduit.
g. Tanks that do not have factory-applied final finishes.
h. Duct, equipment, and pipe insulation having cotton or canvas insulation covering or other paintable jacket material.
2. Paint portions of internal surfaces of metal ducts, without liner, behind air inlets and outlets that are visible from occupied spaces.

3.4 CLEANING AND PROTECTION

A. After completing paint application, clean spattered surfaces. Remove spattered paints by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.

B. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.

C. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

3.5 INTERIOR PAINTING SCHEDULE – all systems might not apply

A. Concrete Substrates, Nontraffic Surfaces:
1. Institutional Low-Odor/VOC Latex System:
a. Prime Coat: Interior, institutional low-odor/VOC primer sealer.
b. Intermediate Coat: Matching topcoat.
c. Topcoat: Interior latex, institutional low odor/VOC, low sheen.

B. Concrete Substrates, Traffic Surfaces:
1. See 033543 - Polished Concrete Finishing if called for in Finish Schedule.
2. See 071800 - Traffic Coatings if called for in Finish Schedule.
3. Water-Based Concrete Floor Sealer System if called for in Finish Schedule:
a. First Coat: Matching topcoat.
b. Topcoat: Water-based concrete floor sealer.

C. CMU Substrates:
1. Institutional Low-Odor/VOC Latex System:
a. Block Filler: Interior/exterior latex block filler.
b. Intermediate Coat: Matching topcoat.
c. Topcoat: Interior, latex, institutional low odor/VOC, low sheen.

D. Steel Substrates:
1. Institutional Low-Odor/VOC Latex over Shop-Applied Quick-Drying Shop Primer System:
a. Prime Coat: Pre-primed.
b. Intermediate Coat: Matching topcoat.
c. Topcoat: Interior, latex, institutional low odor/VOC, satin.
d. For pre-primed elements like hollow metal doors/frames.
2. Institutional Low-Odor/VOC Latex over Alkyd Primer System:
a. Prime Coat: Alkyd Quick-Dry Primer for Metal.
b. Intermediate Coat: Matching topcoat.
c. Topcoat: Interior, latex, institutional low odor/VOC, satin.
d. For unprimed/uncoated elements.
3. Water-Based Dry Fall over Shop-Applied Shop Primer System:
a. Prime Coat: Shop primer specified in Section where substrate is specified.
b. Topcoat: Dry fall, latex, flat.
c. For non-galvanized ceiling elements.

E. Galvanized-Metal Substrates:
1. Institutional Low-Odor/VOC Latex System:
a. Prime Coat: Water-based galvanized primer.
b. Intermediate Coat: Matching topcoat.
c. Topcoat: Interior, latex, institutional low odor/VOC, satin.
d. For galvanized elements.
2. Water-based Dry Fall for Galvanized Steel System:

a. Prime Coat: Water-based dry fall for galvanized steel.
b. Topcoat: Dry fall, latex, flat.
c. For galvanized ceiling elements.

F. **Finish Carpentry & Architectural Woodwork**: Wood trim, Doors, Windows, and Wood board paneling.
1. Institutional Low-Odor/VOC Latex over Alkyd Primer System:
a. Prime Coat: Interior alkyd primer sealer.
b. Intermediate Coat: Matching topcoat.
c. Topcoat: Interior, latex, institutional low odor/VOC, satin.
d. For wood trim, doors, windows, wood paneling, and casework.

G. Gypsum Board Substrates:
1. Institutional Low-Odor/VOC Latex System:
a. Prime Coat: Interior, institutional low-odor/VOC primer sealer.
b. Intermediate Coat: Matching topcoat.
c. Topcoat: Interior, latex, institutional low odor/VOC, flat (ceilings/soffits) and eggshell (walls).
d. For walls, ceilings, and soffits.

END OF SECTION

SECTION 09 93 00
STAINING AND TRANSPARENT FINISHING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Wood stains.
   2. Transparent finishes.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.
B. Samples: For each type of finish system and in each color and gloss of finish required.
C. Product List: Cross-reference to finish system and locations of application areas. Use same designations indicated on Drawings and in schedules. Include color designations.
D. Sustainable Design Submittals:
   1. Product Data: For paints and coatings, indicating VOC content.
   2. Laboratory Test Reports: For paints and coatings, indicating compliance with requirements for low-emitting materials.
   3. Environmental Product Declaration: For each product.
   4. Health Product Declaration: For each product.
   5. Sourcing of Raw Materials: Corporate sustainability report for each manufacturer.
   6. Manufacturer Inventory: For each product, provide manufacturer's manifest of ingredients.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   1. Benjamin Moore & Co.
   2. Penofin.
   3. PPG Paints; PPG Industries, Inc.
   4. Sherwin-Williams Company (The).
   5. Sikkens.

2.2 MATERIALS, GENERAL

A. Material Compatibility:
   1. Provide materials for use within each coating system that are compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
B. VOC Content: For field applications that are inside the weatherproofing system, verify paints and coatings comply with VOC content limits of authorities having jurisdiction and the following VOC content limits:
   1. Primers, Sealers, and Undercoaters: 100 g/L.
   2. Clear Wood Finishes, Varnishes: 275 g/L.
   3. Clear Wood Finishes, Lacquers: 275 g/L.
   4. Shellacs, Clear: 730 g/L.
   5. Stains: 100 g/L.
C. Low-Emitting Materials: For field applications that are inside the weatherproofing system, verify 90 percent of paints and coatings comply with the requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."
D. Colors: As indicated in drawings.

2.3 WOOD STAINS

A. Stain, Interior, Semitransparent, for Interior Wood: Solvent-based, oil or oil/alkyd, semitransparent, pigmented stain for new interior wood surfaces that are to be finished with a clear varnish.

2.4 TRANSPARENT FINISHES

A. Varnish, Interior, Polyurethane, Oil Modified: Solvent-based, one-component, oil-modified polyurethane clear satin varnish for new or previously varnished or stained interior wood surfaces.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Maximum Moisture Content of Exterior Wood Substrates: 15 percent, when measured with an electronic moisture meter.
B. Maximum Moisture Content of Interior Wood Substrates: 15 percent, when measured with an electronic moisture meter.

3.2 PREPARATION

A. Remove hardware, covers, plates, and similar items already in place that are removable. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and finishing.

1. After completing finishing operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection if any.

B. Clean and prepare surfaces to be finished according to manufacturer's written instructions for each substrate condition and as specified.

1. Remove dust, dirt, oil, and grease by washing with a detergent solution; rinse thoroughly with clean water and allow to dry. Remove grade stamps and pencil marks by sanding lightly. Remove loose wood fibers by brushing.
2. Remove mildew by scrubbing with a commercial wash formulated for mildew removal and as recommended by stain manufacturer.

3.3 APPLICATION

A. Apply finishes according to manufacturer's written instructions.

B. Apply finishes to produce surface films without cloudiness, holidays, lap marks, brush marks, runs, ropiness, or other surface imperfections.

3.4 CLEANING AND PROTECTION

A. Protect work of other trades against damage from finish application. Correct damage by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.

B. At completion of construction activities of other trades, touch up and restore damaged or defaced finished wood surfaces.

3.5 INTERIOR WOOD-FINISH-SYSTEM SCHEDULE

A. Wood Substrates, Wood Trim, Architectural Woodwork, Doors, Windows, and/or Wood Board Paneling:

1. Polyurethane Varnish over Stain System:
   a. Stain Coat: Stain, semitransparent, for interior wood – color to match existing.
   b. First Intermediate Coat: Polyurethane varnish matching topcoat.
   c. Second Intermediate Coat: Polyurethane varnish matching topcoat.
   d. Topcoat: Varnish, interior, polyurethane, oil modified, satin.

END OF SECTION

SECTION 10 14 23
PANEL SIGNAGE

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Panel signs – for interior, wall-mounted applications.

1.2 ACTION SUBMITTALS

A. Product Data: For panel signs.
B. Sustainable Design Submittals:
   1. Product Data: For adhesives, indicating VOC content.
   2. Laboratory Test Reports: For adhesives, indicating compliance with requirements for low-emitting materials.
C. Shop Drawings: For panel signs.
   1. Include fabrication and installation details and attachments to other work.
   2. Show sign mounting heights, locations of supplementary supports to be provided by other installers, and accessories.
   3. Show message list, typestyles, graphic elements, including raised characters and Braille, and layout for each sign at least half size.
   4. Show locations of electrical service connections.
   5. Include diagrams for power, signal, and control wiring.
D. Samples: For each exposed product and for each color and texture specified.

1.3 CLOSEOUT SUBMITTALS

A. Maintenance data.

1.4 WARRANTY

A. Special Warranty: Manufacturer agrees to repair or replace components of signs that fail in materials or workmanship within specified warranty period.
   1. Warranty Period: Five years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Accessibility Standard: Comply with applicable provisions in the USDOJ's "2010 ADA Standards for Accessible Design," the ABA standards of the Federal agency having jurisdiction, and ICC A117.1.

2.2 PANEL SIGNS

A. Panel Sign: Sign with smooth, uniform surfaces; with message and characters having uniform faces, sharp corners, and precisely formed lines and profiles; and as follows:
   1. Integral Tactile Plaque: Graphics and Plaque materials are one piece. Tactile Photopolymer Inserts are .080" phenolic photopolymer with raised copy and fully domed Grade 2 Braille dots etched to 1/32". Background color is painted in acrylic lacquer in the specified Insert color. Top surface of copy characters is then added by roller printing in specified copy color using Silkscreen inks.
   2. Sign-Panel Perimeter: Finish edges smooth.
      a. Edge Condition:
         1) Vertical Edges: Square cut.
         2) Horizontal Edges: Square cut.
      b. Corner Condition in Elevation: Square.
   3. Mounting: Surface mounted to wall with adhesive and/or two-face tape.
   4. Color as selected by Architect from full range of industry colors.
      a. Painted Finish and Graphics: Manufacturer's standard, factory-applied acrylic lacquer, in color as selected by Architect from manufacturer's full range.
   5. Text and Typeface: Accessible raised characters and Braille. Typeface matching Architect's schedule. Finish raised characters to contrast with background color, and finish Braille to match background color.
   6. Flatness Tolerance: Sign is to remain flat under installed conditions within a tolerance of plus or minus 1/16 inch measured diagonally from corner to corner.

2.3 PANEL-SIGN MATERIALS

A. Paints and Coatings for Sheet Materials: Inks, dyes, and paints that are recommended by manufacturer for optimum adherence to surface and are UV and water resistant for colors and exposure indicated. Fade resistant to 5 years.

2.4 ACCESSORIES

A. Fasteners and Anchors: Manufacturer's standard as required for secure anchorage of signs, noncorrosive and compatible with each material joined, and complying with the following unless otherwise indicated:
   1. Use concealed fasteners and anchors unless indicated to be exposed.

B. Adhesive: As recommended by sign manufacturer.
1. Verify adhesives have a VOC content of 70 g/L or less.
2. Verify adhesive complies with the testing and product requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."

C. Two-Face Tape: Manufacturer's standard high-bond, foam-core tape, 0.045 inch thick, with adhesive on both sides.

2.5 FABRICATION

A. General: Provide manufacturer's standard sign assemblies according to requirements indicated.

B. Design components allow for expansion and contraction for a minimum material temperature range of 100 degrees F, without causing buckling or over stressing of adhesives and fasteners.

C. Form work to required shapes and sizes, with true lines and angles. Provide necessary rebates, lugs, and brackets for assembly of units.

D. Contact surfaces of connected members must be true. Assembled so joints will be tight and practically unnoticeable, without use of filling compound.

E. Signs shall have fine, even texture and be flat and sound. Lines and miters sharp, arises unbroken, profiles accurate and ornament true to pattern. Plane surfaces should be smooth, flat and without oil-canning, free of rack and twist. Maximum variation from plane of surface plus or minus .032". Restore texture to filled or cut areas.

F. Level or straighten wrought work. Members shall have sharp lines and angels and smooth surfaces.

G. All painted surfaces properly primed. Finish coating of paint to have complete coverage with no light or thin applications allowing substrate or primer to show. Parts are checked for approval against the color match master chip. Finished surface smooth, free of scratches, gouges, drips, bubbles, thickness variations, foreign matter, and other imperfections.

2.6 GENERAL FINISH REQUIREMENTS

A. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

PART 3 - EXECUTION

3.1 INSTALLATION

A. General: Install signs using mounting methods indicated and according to manufacturer's written instructions.
1. Install signs level, plumb, true to line, and at locations and heights indicated, with sign surfaces free of distortion and other defects in appearance.
2. Install signs so they do not protrude or obstruct according to the accessibility standard.
3. Before installation, verify that sign surfaces are clean and free of materials or debris that would impair installation.

B. Accessible Signage: Install in locations on walls as indicated on Drawings and according to the accessibility standard.

C. Mounting Methods:
1. Concealed Studs: Using a template, drill holes in substrate aligning with studs on back of sign. Remove loose debris from hole and substrate surface.
   a. Masonry Substrates: Fill holes with adhesive. Leave recess space in hole for displaced adhesive. Place sign in position and push until flush to surface, embedding studs in holes. Temporarily support sign in position until adhesive fully sets.
   b. Thin or Hollow Surfaces: Place sign in position and flush to surface, install washers and nuts on studs projecting through opposite side of surface, and tighten.
2. Projecting Studs: Using a template, drill holes in substrate aligning with studs on back of sign. Remove loose debris from hole and substrate surface.
   a. Masonry Substrates: Fill holes with adhesive. Leave recess space in hole for displaced adhesive. Place spacers on studs, place sign in position, and push until spacers are pinched between sign and substrate, embedding the stud ends in holes. Temporarily support sign in position until adhesive fully sets.
   b. Thin or Hollow Surfaces: Place spacers on studs, place sign in position with spacers pinched between sign and substrate, and install washers and nuts on stud ends projecting through opposite side of surface, and tighten.
3. Through Fasteners: Drill holes in substrate using predrilled holes in sign as template. Countersink holes in sign if required. Place sign in position and flush to surface. Install through fasteners and tighten.
4. Adhesive: Clean bond-breaking materials from substrate surface and remove loose debris. Apply linear beads or spots of adhesive symmetrically to back of sign and of suitable quantity to support weight of sign after cure without slippage. Keep adhesive away from edges to prevent adhesive extrusion as sign is applied

and to prevent visibility of cured adhesive at sign edges. Place sign in position, and push to engage adhesive. Temporarily support sign in position until adhesive fully sets.

5. Two-Face Tape: Clean bond-breaking materials from substrate surface and remove loose debris. Apply tape strips symmetrically to back of sign and of suitable quantity to support weight of sign without slippage. Keep strips away from edges to prevent visibility at sign edges. Place sign in position, and push to engage tape adhesive.

3.2 ADJUSTING AND CLEANING

A. Remove and replace damaged or deformed signs and signs that do not comply with specified requirements. Replace signs with damaged or deteriorated finishes or components that cannot be successfully repaired by finish touchup or similar minor repair procedures.

B. Remove temporary protective coverings and strippable films as signs are installed.

C. On completion of installation, clean exposed surfaces of signs according to manufacturer's written instructions, and touch up minor nicks and abrasions in finish. Maintain signs in a clean condition during construction and protect from damage until acceptance by Owner.

END OF SECTION

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SECTION 10 21 13.19
PLASTIC TOILET COMPARTMENTS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Solid-plastic toilet compartments.

B. Related Requirements:
   1. Section 06 10 00 "Rough Carpentry" for blocking.
   2. Section 09 22 16 "Non-Structural Metal Framing" for blocking.
   3. Section 10 28 00 "Toilet, Bath, and Laundry Accessories" for accessories mounted on toilet compartments.

1.2 ACTION SUBMITTALS

A. Product data.

B. Shop Drawings: Plans, elevations, sections, details, and attachment details.

C. Samples: Manufacturer's standard color sheets, showing full range of available colors for each type of toilet compartment.

D. Delegated Design Submittals: For grab bars mounted on toilet compartment panels, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.
   1. Include structural design calculations indicating compliance with specified structural-performance requirements.

E. Sustainable Design Submittals:
   1. Product Data: For recycled content, indicating postconsumer and preconsumer recycled content and cost.

1.3 CLOSEOUT SUBMITTALS

A. Operation and maintenance data.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Recycled Content: Postconsumer recycled content plus one-half of preconsumer recycled content not less than 25 percent.

B. Fire Performance: Tested in accordance with, and pass the acceptance criteria of, NFPA 286.

C. Structural Performance: Where grab bars are mounted on toilet compartments, design panels to comply with the following requirements:
   1. Panels are able to withstand a concentrated load on grab bar of at least 250 lbf applied at any direction and at any point, without deformation of panel.

D. Regulatory Requirements: Comply with applicable provisions in the USDOJ's "2010 ADA Standards for Accessible Design" and ICC A117.1 for toilet compartments designated as accessible.

2.2 SOLID-PLASTIC TOILET COMPARTMENTS

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
   1. ASI Global Partitions.
   2. Scranton Products.

B. Basis-of-Design: Scranton Products.

C. Toilet-Enclosure Style: Overhead braced.

D. Entrance-Screen Style: Overhead braced.

E. Urinal-Screen Style: Wall hung.

F. Door, Panel, and Pilaster Construction: Solid, high-density polyethylene (HDPE) material, not less than 1 inch thick, seamless, with eased edges, and with homogenous color throughout thickness of material. Provide with no-sightline system consisting of door and pilaster lapped edges on strike side of door and door and pilaster lapped edges on hinge side of door (unless continuous hinge is used).
   1. Heat-Sink Strip: Manufacturer's continuous, extruded-aluminum or stainless steel strip fastened to exposed bottom edges of solid-plastic components to hinder malicious combustion.
   2. Color: One color in each room as selected by Architect from manufacturer's full range.

G. Entrance-Screen Construction: Matching panel construction.

H. Urinal-Screen Construction: Matching panel construction.

I. Pilaster Sleeves (Caps): Manufacturer's standard design; solid plastic or stainless steel.
   1. Plastic Color: Matching pilaster.

J. Urinal-Screen Post: 1-3/4-inch-square aluminum tube with satin finish; with sleeve (cap) matching that on the pilaster (i.e., not to floor)

K. Brackets (Fittings):
   1. Full-Height (Continuous) Type: Manufacturer's standard design; stainless steel.

2.3 HARDWARE AND ACCESSORIES

A. Door Hardware and Accessories: Manufacturer's operating hardware and accessories. Mount with through bolts.

1. Hinges:
   a. Manufacturer's continuous, cam type that swings to a closed or partially open position, allowing emergency access by lifting door.
      1) Material, Continuous Hinge: Stainless steel.
2. Latch and Keeper: Manufacturer's surface-mounted latch unit, designed for emergency access, and with combination rubber-faced door strike and keeper. Provide units that comply with regulatory requirements for accessibility at toilet enclosures designated as accessible.
   a. Material: Stainless steel.
3. Coat Hook: As identified in Toilet Accessory section.
4. Door Bumper: Manufacturer's rubber-tipped bumper at outswinging doors UNLESS specified in Toilet Accessory section.
   a. Material: Stainless steel.
5. Door Pull: Manufacturer's unit at outswinging doors that complies with regulatory requirements for accessibility. Provide units on both sides of doors at toilet enclosures designated as accessible.
   a. Material: Stainless steel.

B. Overhead Bracing: Manufacturer's standard continuous, extruded-aluminum head rail with antigrip profile and in manufacturer's standard finish.

C. Anchorages and Fasteners: Manufacturer's standard exposed fasteners of stainless steel, finished to match items they are securing, with theft-resistant-type heads. Provide sex-type bolts for through-bolt applications. For concealed anchors, use stainless steel, hot-dip galvanized steel, or other rust-resistant, protective-coated steel compatible with related materials.

2.4 MATERIALS

A. Aluminum Castings: ASTM B26/B26M.

B. Aluminum Extrusions: ASTM B221.

C. Stainless Steel Sheet: ASTM A240/A240M or ASTM A666, Type 304, stretcher-leveled standard of flatness.

D. Stainless Steel Castings: ASTM A743/A743M.

E. Zamac: ASTM B86, commercial zinc-alloy die castings.

2.5 FABRICATION

A. Fabricate toilet compartment components to sizes indicated. Coordinate requirements and provide cutouts for through-partition toilet accessories where required for attachment of toilet accessories.

B. Overhead-Braced Units: Manufacturer's standard corrosion-resistant supports, leveling mechanism, and anchors at pilasters and walls to suit floor and wall conditions. Provide shoes at pilasters to conceal supports and leveling mechanism.

C. Urinal-Screen Posts: Manufacturer's standard corrosion-resistant anchoring assemblies at posts and walls, with leveling adjustment nuts at tops and bottoms of posts. Provide sleeves (caps) at posts to conceal anchorage.

D. Door Size and Swings: Unless otherwise indicated, provide 24-inch-wide, inswinging doors for standard toilet enclosures and 36-inch-wide, outswinging doors with a minimum 32-inch-wide, clear opening for toilet enclosures designated as accessible.

PART 3 - EXECUTION

3.1 INSTALLATION

A. General: Comply with manufacturer's written installation instructions. Install units rigid, straight, level, and plumb. Secure units in position with manufacturer's recommended anchoring devices.

1. Maximum Clearances:
   a. Pilasters and Panels or Screens: 1/2 inch.
   b. Panels or Screens and Walls: 1 inch.
2. Full-Height (Continuous) Brackets: Secure panels or screens to walls and to pilasters with full-height brackets.
   a. Locate bracket fasteners, so holes for wall anchors occur in masonry or tile joints.
   b. Align brackets at pilasters with brackets at walls.

B. Overhead-Braced Units: Secure pilasters to floor and level, plumb, and tighten. Set pilasters with anchors penetrating not less than 1-3/4 inches into structural floor unless otherwise indicated in manufacturer's written instructions. Secure continuous head rail to each pilaster with no fewer than two fasteners. Hang doors to align tops of doors with tops of panels and adjust, so tops of doors are parallel with overhead brace when doors are in closed position.

C. Urinal Screens: Attach with anchoring devices to suit supporting structure. Set units level and plumb, rigid, and secured to resist lateral impact.

3.2 ADJUSTING

A. Hardware Adjustment: Adjust and lubricate hardware in accordance with hardware manufacturer's written instructions for proper operation. Set hinges on inswinging doors to hold doors open approximately 30 degrees from closed position when unlatched. Set hinges on outswinging doors to return doors to fully closed position.

END OF SECTION

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SECTION 10 28 00
TOILET, BATH, AND LAUNDRY ACCESSORIES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
1. Public&Private-use washroom accessories.
2. Public-use shower room accessories.
3. Childcare accessories.
4. Needle disposal cabinet.
5. Sanitary Napkin Dispenser.

1.2 ACTION SUBMITTALS

A. Product data.
B. Samples: For each exposed product and for each finish specified, full size.
1. Approved full-size Samples will be returned and may be used in the Work.
C. Delegated Design Submittals: For grab bars and shower seats.
1. Include structural design calculations indicating compliance with specified structural-performance requirements.

1.3 INFORMATIONAL SUBMITTALS

A. Sample warranties.

1.4 CLOSEOUT SUBMITTALS

A. Maintenance data.

1.5 WARRANTY

A. Manufacturer's Special Warranty for Mirrors: Manufacturer agrees to repair or replace mirrors that fail in materials or workmanship within specified warranty period.
1. Warranty Period: 10 years from date of Substantial Completion.
B. Manufacturer's Special Warranty for Hand Dryers: Manufacturer agrees to repair or replace hand dryers that fail in materials or workmanship within specified warranty period.
1. Warranty Period: Two years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
B. Structural Performance: Design accessories and fasteners to comply with the following requirements:
1. Grab Bars: Installed units are able to resist 250 lbf concentrated load applied in any direction and at any point.
2. Shower Seats: Installed units are able to resist 250 lbf concentrated load applied in any direction and at any point.

2.2 MANUFACTURER

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
a. ASI-American Specialties, Inc.
b. Bobrick Washroom Equipment, Inc.
c. Bradley Corporation.
d. Gamco Commercial Restroom Accessories.
2. Style: Unless noted otherwise, all accessories to be the same style from the same manufacturer.
3. Basis-of-Design unless noted otherwise: **Bobrick Washroom Equipment.**

2.3 PUBLIC&PRIVATE-USE WASHROOM ACCESSORIES

A. Toilet Tissue (Roll) Dispenser **TA-03**:
1. Owner furnished; Contractor installed.
B. Grab Bar **TA-02**:
1. Basis-of-Design: B-6806.
2. Mounting: Flanges with concealed fasteners.
3. Material: Stainless steel, 0.05 inch thick.
a. Finish: Smooth, ASTM A480/A480M No. 4 finish (satin).
4. OD: 1-1/4 inches.
5. Configuration and Length: As indicated on Drawings.
C. Sanitary-Napkin Disposal Unit **TA-04**:
1. Owner furnished; Contractor installed.
D. Hook **TA-09**:

1. Basis-of-Design: B-672.
2. Description: Coat hook.
3. Mounting: Concealed.
4. Material and Finish: Stainless steel, ASTM A480/A480M No. 4 finish (satin).

E. Shelf **TA-07**:
1. Basis-of-Design: B-298.
2. Description: 5"x24" shelf with integral end brackets.
3. Mounting: Surface mounted.
4. Material and Finish: Stainless steel, ASTM A480/A480M No. 4 finish (satin).

2.4 PUBLIC-USE SHOWER ROOM ACCESSORIES

A. Shower Curtain Rod **TA-10**:
1. Basis-of-Design: B-6047.
2. Description: 1.25-inch-OD, straight rod.
3. Configuration: As indicated on Drawings.
4. Mounting Flanges: Concealed fasteners; in material and finish matching rod.
5. Rod Material and Finish: Stainless steel, ASTM A480/A480M No. 4 finish (satin).

B. Shower Curtain **TA-10**:
1. Size: Minimum 6 inches wider than opening by 72 inches high.
2. Material: Nylon-reinforced vinyl, minimum 9 oz. or 0.008-inch-thick vinyl, with integral antibacterial and flame-retardant agents.
3. Color: As selected from manufacturer's full range.
4. Grommets: Corrosion resistant at minimum 6 inches o.c. through top hem.
5. Shower Curtain Hooks: Stainless steel, spring wire curtain hooks with snap fasteners, sized to accommodate specified curtain rod. Provide one hook per curtain grommet.

C. Folding Shower Seat **TA-06**:
1. Basis-of-Design: B-5181.
2. Configuration: As indicated on Drawings.
3. Seat: Per basis-of-design.
4. Mounting Mechanism: Stainless steel, ASTM A480/A480M No. 4 finish (satin).
5. Dimensions: As indicated on Drawings.

2.5 CHILDCARE ACCESSORIES

A. Diaper-Changing Station **TA-05**:
1. Basis-of-Design: KB300-SS.
2. Description: Horizontal and/or vertical (as indicated in drawings) unit that opens by folding down from stored position and with child-protection strap.
   a. Engineered to support minimum of 250 lb static load when opened.
3. Mounting: Surface mounted, with unit projecting not more than 4 inches from wall when closed.
4. Operation: By pneumatic shock-absorbing mechanism.
5. Material and Finish: Stainless steel cladding over steel and polypropylene frame.
6. Liner Dispenser: Provide built-in dispenser for disposable sanitary liners.
7. Bag Hook: Independently mounted, stainless steel bag hook.

2.6 NEEDLE DISPOSAL CABINET

A. Needle Disposal Cabinet **TA-11**:
1. Owner furnished; Contractor installed.

2.7 SANITARY NAPKIN DISPENSER

A. Sanitary Napkin Dispenser **TA-08**:
1. Owner furnished; Contractor installed.

2.8 FABRICATION

A. Keys: Provide universal keys for internal access to accessories for servicing and resupplying. Provide minimum of six keys to Owner's representative.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install accessories in accordance with manufacturers' written instructions, using fasteners appropriate to substrate indicated and recommended by unit manufacturer. Install units level, plumb, and firmly anchored in locations and at heights indicated.
1. Remove temporary labels and protective coatings.

B. Grab Bars: Install to comply with specified structural-performance requirements.

C. Shower Seats: Install to comply with specified structural-performance requirements.

1 **END OF SECTION**

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SECTION 10 44 13
FIRE PROTECTION CABINETS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Fire-protection cabinets for portable fire extinguishers.
      a. FEC-1 & FEC-2.

1.2 PREINSTALLATION CONFERENCE

A. Preinstallation Conference: Conduct conference at Project site.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.
B. Shop Drawings: For fire-protection cabinets.
C. Samples: For each type of exposed finish required.

1.4 CLOSEOUT SUBMITTALS

A. Maintenance data.

1.5 COORDINATION

A. Coordinate size of fire-protection cabinets to ensure that type and capacity of fire extinguishers indicated are accommodated.
B. Coordinate sizes and locations of fire-protection cabinets with wall depths.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Fire-Rated Fire-Protection Cabinets: Listed and labeled to comply with requirements in ASTM E814 for fire-resistance rating of walls where they are installed.

2.2 FIRE-PROTECTION CABINET

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
   1. Larsen's Manufacturing Company.
      a. Models listed below are basis-of-design.
B. Cabinet Type: Suitable for fire extinguisher.
C. Cabinet Construction: Rated according to wall cabinet is recessed within.
   1. Fire-Rated Cabinets: Construct fire-rated cabinets with double walls fabricated from 0.043-inch-thick cold-rolled steel sheet lined with minimum 5/8-inch-thick fire-barrier material. Provide factory-drilled mounting holes.
D. Cabinet Material: Cold-rolled steel sheet.
E. Fully-recessed or Semi-recessed Cabinet – **FEC-1**: One-piece combination trim and perimeter door frame overlapping surrounding wall surface, with exposed trim face and wall return at outer edge (backbend). **Model 2409 series.**
   1. *Intent is for all public locations to have fully-recessed cabinets; semi-recessed only when wall depth does not permit fully-recessed.*
   2. Square-Edge Trim: 1-1/4- to 1-1/2-inch backbend depth.
   3. Rolled-Edge Trim: 2-1/2-inch backbend depth.
F. Surface-Mounted Cabinet – **FEC-2**: Cabinet box fully exposed and mounted directly on wall with no trim. **Model 2409 series.**
G. Cabinet Trim Material: Same material and finish as door.
H. Door Material: Stainless steel sheet.
I. Door Style: Solid.
J. Door Glazing: N/A.
K. Door Hardware: Manufacturer's standard door-operating hardware of proper type for cabinet type, trim style, and door material and style indicated.
L. Accessories:
   1. Mounting Bracket: Manufacturer's standard steel, designed to secure fire extinguisher to fire-protection cabinet, of sizes required for types and capacities of fire extinguishers indicated, with plated or baked-enamel finish.
   2. Identification: Lettering complying with authorities having jurisdiction for letter style, size, spacing, and location. Locate as indicated.
      a. Identify fire extinguisher in fire-protection cabinet with the words "FIRE EXTINGUISHER."
         1) Location: Applied to cabinet door.
         2) Application Process: Silk-screened.

3) Lettering Color: Red.
4) Orientation: Vertical.

M. Materials:
1. Cold-Rolled Steel: ASTM A1008/A1008M, Commercial Steel (CS), Type B.
a. Finish: Baked enamel, TGIC polyester powder coat, HAA polyester powder coat, epoxy powder coat, or polyester/epoxy hybrid powder coat, complying with AAMA 2603.
b. Color: As selected by Architect from manufacturer's full range.
2. Aluminum: ASTM B221 for extruded shapes and aluminum sheet, with strength and durability characteristics of not less than Alloy 6063-T5 for aluminum sheet.
a. Finish: Clear anodic.
3. Stainless Steel: ASTM A240/A240M or ASTM A666, Type 304.
a. Finish: ASTM A480/A480M No. 4 directional satin finish,.
4. Tempered Break Glass: ASTM C1048, Kind FT, Condition A, Type I, Quality q3, 1.5 mm thick.

2.3 FABRICATION

A. Fire-Protection Cabinets: Provide manufacturer's standard box (tub) with trim, frame, door, and hardware to suit cabinet type, trim style, and door style indicated.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Prepare recesses for recessed and semirecessed fire-protection cabinets as required by type and size of cabinet and trim style.

B. Install fire-protection cabinets in locations and at mounting heights indicated or, if not indicated, at heights acceptable to authorities having jurisdiction.

C. Fire-Protection Cabinets: Fasten cabinets to structure, square and plumb.

D. Identification: Apply decals and/or vinyl lettering at locations indicated.

E. Adjust fire-protection cabinet doors to operate easily without binding. Verify that integral locking devices operate properly.

END OF SECTION

SECTION 10 44 16
FIRE EXTINGUISHERS

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes portable, hand-carried fire extinguishers.
   1. FE-1 & FE-2.

1.2 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

1.4 INFORMATIONAL SUBMITTALS

A. Warranty: Sample of special warranty.

1.5 CLOSEOUT SUBMITTALS

A. Operation and maintenance data.

1.6 COORDINATION

A. Coordinate type and capacity of fire extinguishers with fire-protection cabinets to ensure fit and function.

1.7 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace fire extinguishers that fail in materials or workmanship within specified warranty period.
   1. Warranty Period: Six years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. NFPA Compliance: Fabricate and label fire extinguishers to comply with NFPA 10, "Portable Fire Extinguishers."

B. Fire Extinguishers: Listed and labeled for type, rating, and classification by an independent testing agency acceptable to authorities having jurisdiction.

2.2 PORTABLE, HAND-CARRIED FIRE EXTINGUISHERS

A. Fire Extinguishers: Type, size, and capacity for each fire-protection cabinet and mounting bracket indicated.
   1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
      a. Larsen's Manufacturing Company.
         1) Models listed below are basis-of-design.
   2. Instruction Labels: Include pictorial marking system complying with NFPA 10, Appendix B.

B. Multipurpose/ABC Dry-Chemical Type – **FE-1**: UL-rated UL-rated 4A-80B:C, 10 pound nominal capacity, with monoammonium phosphate-based dry chemical in manufacturer's standard red enameled container. **Model MP-10.**

C. Wet chemical class K Type (for use in commercial kitchen) – **FE-2**: UL-rated 2A:K, 2.5 gallon nominal capacity, with pressure-indicating gage. **Model WC2 1/2.**

PART 3 - EXECUTION

3.1 INSTALLATION

A. Examine fire extinguishers for proper charging and tagging.
   1. Remove and replace damaged, defective, or undercharged fire extinguishers.

B. Install fire extinguishers in locations indicated and in compliance with requirements of authorities having jurisdiction.

C. Mounting Brackets (where noted in drawings): Fasten mounting brackets to surfaces, square and plumb, at locations indicated.
   1. Mounting Height: Top of fire extinguisher to be at 42 inches above finished floor.

END OF SECTION

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SECTION 105100
PLASTIC LOCKERS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Lockers.

1.2 REFERENCES

A. NFPA 286 - Standard Methods of Fire Tests for Evaluating Contribution of Wall and Ceiling Interior Finish to Room Fire Growth.

1.3 SUBMITTALS

A. Product Data: Manufacturer's data sheets on each product to be used, including:
   1. Preparation instructions and recommendations.
   2. Storage and handling requirements and recommendations.
   3. Installation methods.

B. Shop Drawings: Drawings shall be submitted showing individual locker size and overall dimensions.

C. Selection Samples: For each finish product specified, two complete sets of color chips representing manufacturer's full range of available colors and patterns.

1.4 QUALITY ASSURANCE

A. Manufacturer Qualifications: A company regularly engaged in manufacture of products specified in this section, and whose products have been in satisfactory use under similar service conditions for not less than 5 years.

B. Installer Qualifications: A company regularly engaged in installation of products specified in this Section, with a minimum of 5 years experience.

1.5 DELIVERY, STORAGE, AND HANDLING

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

B. Locker components shall be stored flat until assembly. All finishes shall be protected from soiling and damage during handling.

1.6 PROJECT CONDITIONS

A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's recommended limits.

1.7 WARRANTY

A. Warranty: Manufacturer guarantees its plastic against breakage, corrosion, and delamination under normal conditions for 15 years from the date of receipt by the customer. If materials are found to be defective during that period for reasons listed above, the materials will be replaced free of charge. (Labor not included in warranty.)

PART 2 PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Fire Performance: Tested in accordance with, and pass the acceptance criteria of, NFPA 286.

B. Regulatory Requirements: Comply with applicable provisions in the USDOJ's "2010 ADA Standards for Accessible Design" and ICC A117.1 for toilet compartments designated as accessible.

2.2 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
   1. Scranton Products.

B. Basis-of-Design: Scranton Products, DuraLife Plastic School Lockers.

2.3 LOCKERS

A. Design: Solid plastic storage locker.
   1. See drawings for configuration.

B. Size: Individual and stack height as indicated on drawings.
   1. Locker Depth: 18 inches.

2. Locker Width: 15 inches.

C. Hardware:

1. Plastic Coat Hook: Top-mounted, two-pronged plastic coat hook.
2. Padlock hasp.
3. Horizontal venting.
4. Continuous hinge.
5. Top: Slope top.
6. End panel.

2.4 CONSTRUCTION

A. Locker Doors and Frames: Made from high impact, high density polyethylene (HDPE) formed under high pressure into solid plastic components 1/2 inch thick with homogeneous color throughout.

B. Sides, Tops, Bottoms, Backs, and Shelves: Made from high impact, high density, polyethylene (HDPE) formed under pressure into solid plastic components 3/8 inch thick with homogenous natural color throughout. Vertical back, outside, inside panels, horizontal top, bottom, divider, and shelves will be grey in color.

C. End Panels: Filler panels of plastic material in color of locker unless noted otherwise as an accent color.

D. Continuous Latch: Made from high impact HDPE plastic and capable of accepting various locking mechanisms. The spring-loaded latch shall be securely fastened to the entire length of the door providing a quiet positive latching function.

E. Door Hinge: Heavy duty zinc-plated steel. Full length, assembled onto door and locker front.

F. Assembly Profile: To be full height of lockers. Profile to be tongue-and-groove joint construction using 3/8 inch thick HDPE.

G. Coat Hooks: Two-prong, high impact plastic. Mounted to bottom of shelf or divider. One each per door opening.

2.5 MATERIALS

A. Lockers to be constructed from High Density Polyethylene (HDPE) resins.

1. Resins compounded under high pressure, forming a single component which is waterproof, nonabsorbent and has a self-lubricating surface that resists marks from pens, pencils, markers and other writing instruments.

B. HDPE Components: To have a smooth "orange peel" finish. Locker doors and door frames to be the same color.

1. Color: As selected from manufacturer's standard colors.

2.6 FABRICATION

A. Locker Components: Fabricated square and rigid with a finish free of scratches and chips.

B. Solid Plastic Locker Components: Snap together at profile connections or slide together at dovetail connections for easy assembly and provide a solid and secure anti-racking bookcase component construction for clean lines and precise reveals. Adjacent lockers share a common side panel. Locker units are manufactured for assembly in a group of no more than three adjacent lockers.

PART 3 EXECUTION

3.1 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.

3.2 PREPARATION

A. Clean surfaces thoroughly prior to installation.

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

C. Report discrepancies to the Architect.

3.3 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Install lockers at the location shown in accordance with the manufacturers' instructions for plumb, level, rigid and flush installations.

C. Anchor the units to the wall studs through the locker back and to the floor using 1-1/2 inch Tapcon screws.
D. Lockers shall be installed on a concrete base as indicated in drawings.

3.4 ADJUSTING

A. Hardware Adjustment: Adjust and lubricate hardware in accordance with manufacturer's written instructions for proper operation.

3.5 PROTECTION

A. Protect installed products until completion of project.
B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION

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SECTION 11 66 23
GYMNASIUM EQUIPMENT

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Basketball equipment.
   2. Volleyball equipment.
   3. Safety pads.

1.2 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.
B. Shop Drawings: For gymnasium equipment.
   1. Include plans, elevations, sections, and attachment details.
   2. Include diagrams for power, signal, and control wiring.
C. Samples: For each exposed product and for each item and color specified.

1.4 INFORMATIONAL SUBMITTALS

A. Coordination Drawings: Court layout plans, reflected ceiling plans, and other details, drawn to scale, and coordinated with ceiling-suspended gymnasium equipment, floor inserts, game lines, and markers applied to finished flooring, and coordinated with each other, using input from installers of the items involved.
B. Product Certificates: For each type of gymnasium equipment.
C. Sample warranty.

1.5 CLOSEOUT SUBMITTALS

A. Operation and maintenance data.

1.6 QUALITY ASSURANCE

A. Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by manufacturer.

1.7 WARRANTY

A. Special Warranty: Manufacturer agrees to repair or replace components of gymnasium equipment that fail in materials or workmanship within specified warranty period.
   1. Warranty Period: Five years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 BASKETBALL EQUIPMENT

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
   1. Porter – basis-of-design.
B. Standard Rules: Provide equipment according to the requirements of NFHS's "Basketball Rules Book."
C. Connections: Manufacturer's standard connections or connections recommended in writing by manufacturer and complying with Section 05 50 00 "Metal Fabrications" of size and type required to transfer loads to building structure.
D. Overhead-Supported Backstops:
   1. Folding Type: Manufacturer's standard assembly for side-folding backstop, with hardware and fittings to permit folding.
   2. Goal Height Adjuster: Adjustable from 8 to 10 feet to top of ring with gear-drive mechanism, locking in any position within adjustment range, with visible height scale attached to side of framing.
      a. Operation:
         1) Electrical: Electric operation with integral gear-drive motor, with limit switches preset to goal heights.
E. Winch: Hoist consisting of heavy-duty, fully enclosed worm-gear; brake; cable drum; cable; and fittings, for mounting on wall with equipment-mounting board; designed to move and hold backboard in any raised or lowered position.
F. Backstop Electric Operator: Provide operating machine of size and capacity recommended in writing by manufacturer for equipment specified, with electric motor and factory-prewired motor controls, starter, gear-reduction unit, and remote controls. Coordinate wiring requirements and electrical characteristics with building electrical system.
   1. Electrical Components, Devices, and Accessories: Listed and labeled according to NFPA 70, by a qualified testing agency, and marked for intended location and application.
   2. Motor Electrical Characteristics:

a. Horsepower: 3/4 hp.
b. Voltage: 115 V ac, single phase, 60 hertz.

3. Remote-Control Station(s): NEMA ICS 6, Type 1 enclosure for recessed or flush mounting and momentary-contact, three-position, switch-operated control with up, down, and off functions.
   a. Keys: Provide **[one key] [two keys] [one set of dual keys] [two sets of dual keys] [dual keys, one key for up and one for down]** per station.

4. Limit Switches: Adjustable switches at each backstop, interlocked with motor controls and set to automatically stop backstop at fully retracted and fully lowered positions.

G. Basketball Backboards:
1. **Basis-of-Design**: Bison.
   a. Model: BA42XL – See Drawings for location(s).
   b. Model: BA48XL – See Drawings for location(s).
   c. Other manufacturers will be considered if they substantially match the basis-of-design models.

H. Goal-Mounting Assembly: Compatible with goal, backboard, and backstop.

I. Basketball Goals: Basket ring complete with flanges, braces, attachment plate, and evenly spaced loops welded around underside of ring.
1. Single-rim basket ring competition goal.
2. Double-rim basket ring.
3. Type:
   a. Fixed: Nonmovable.
   b. Movable: pressure-release design with manufacturer's standard breakaway mechanism and rebound characteristics identical to those of fixed, nonmovable ring.
4. Finish: Manufacturer's standard finish.

J. Basketball Nets: 12-loop-mesh net, between 15 and 18 inches long, sized to fit ring diameter, and as follows:
1. Cord: Made from white cotton.

K. Backboard Safety Pads: Designed for backboard thickness and extending continuously along bottom and up sides of backboard and over backstop according to manufacturer's standard design.
1. Color: As selected by Architect from manufacturer's full range.

L. Basketball Shot Clock:
1. **Basis-of-Design**: Bison.
   a. Model: In-Time Wireless with all necessary mounting hardware and accessories to be a fully-functional system.
   b. Other manufacturers will be considered if they substantially match the basis-of-design model.

2.2 VOLLEYBALL EQUIPMENT

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
1. Porter – basis-of-design.

B. Standard Rules: Provide equipment according to the requirements of NFHS's "Volleyball Rules Book".

C. Floor Insert: Solid-brass floor plate and steel pipe sleeve, concealed by floor plate, with capped bottom end, 3 inch diameter, minimum 12 inches long, to securely anchor pipe sleeve as indicated on Drawings; with anchors designed for securing floor insert to floor substrate indicated; quantity as indicated on Drawings.
1. Flush Floor Plate: Manufacturer's standard hinged access cover, designed to be flush with adjacent flooring. Provide one tool(s) for unlocking access covers.
2. Floor Plate: 5 inch diameter brass.

2.3 SAFETY PADS

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
1. Porter Supersafe.

B. Surface-Burning Characteristics: Comply with ASTM E84; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
1. Flame-Spread Index: 25 or less.
2. Smoke-Developed Index: 50 or less.

C. Pad Coverings: Provide safety pad fabric covering that is fabricated from puncture- and tear-resistant, PVC-coated polyester or nylon-reinforced PVC fabric, minimum 14-oz./sq. yd. and treated with fungicide for mildew resistance; with surface-burning characteristics indicated, and lined with fire-retardant liner.

D. Wall Safety Pads: Padded wall wainscot panels designed to be attached in a continuous row; each panel section consisting of fill laminated to backer board, with visible surfaces fully covered by seamless fabric covering, free of sag and wrinkles and firmly attached to back of backer board.

1. Backer Board: Minimum 7/16-inch-thick wood board.
2. Fire-Resistive Fill: Multiple-impact-resistant foam minimum 2-inch-thick, fire-resistive neoprene, 6.0-lb/cu. ft. density.
3. Size: Each panel section 24 inches wide by minimum 72 inches long.
4. Number of Modular Panel Sections: As indicated on Drawings.
5. Installation Method: Manufacturer's standard.

E. Fabric Covering Color(s): As selected by Architect from manufacturer's full range for one color(s).

F. Cutout Trim: Manufacturer's standard flanged cutout trim kits for fitting pads around switches, receptacles, and other obstructions.

1. Color: Gray.

2.4 MATERIALS

A. Support Cable: Manufacturer's standard galvanized-stranded-steel wire rope. Provide fittings according to the wire rope manufacturer's written instructions for size, number, and installation method.

B. Support Chain and Fittings: For chains used for overhead lifting, provide Grade 80 heat-treated alloy-steel chains, according to ASTM A391/A391M, with commercial-quality, hot-dip galvanized steel connectors and hangars.

C. General-Purpose Chain: For chains not used for overhead lifting, provide carbon steel chain, according to ASTM A413/A413M (Grade 30 proof coil chain or higher grade recommended by gymnasium equipment manufacturer). Provide coating type, chain size, number, and installation method according to manufacturer's written instructions.

D. Castings and Hangers: Malleable iron, according to ASTM A47/A47M; grade as required for structural loading.

E. Composite Wood Products: Verify products are made using ultra-low-emitting formaldehyde resins, as defined in the California Air Resources Board's "Airborne Toxic Control Measure to Reduce Formaldehyde Emissions from Composite Wood Products," or are made with no added formaldehyde.

F. Softwood Plywood: DOC PS 1, exterior.

G. Particleboard: ANSI A208.1.

H. Equipment-Mounting Board: Wood, transparent or neutral-color-painted finish; size and quantity as required to mount gymnasium equipment according to manufacturer's written instructions.

I. Anchors, Fasteners, Fittings, and Hardware: Gymnasium equipment manufacturer's standard corrosion-resistant or noncorrodible units; concealed.

J. Grout: Nonshrink, nonmetallic, premixed, factory-packaged, nonstaining, noncorrosive, nongaseous grout, according to ASTM C1107/C1107M, with minimum strength recommended in writing by gymnasium-equipment manufacturer.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Comply with manufacturer's written installation instructions.

B. Permanently Placed Gymnasium Equipment and Components: Install rigid, level, plumb, square, and true; anchored securely to supporting structure; positioned at locations and elevations indicated; in proper relationship to adjacent construction; and aligned with court layout.

C. Connections: Connect electric operators to building electrical system.

D. Removable Gymnasium-Equipment Components: Assemble in place to verify that equipment and components are complete and in proper working order. Disassemble removable gymnasium equipment after assembled configuration is approved by Owner, and store units in location indicated on Drawings.

E. Adjust movable components of gymnasium equipment to operate safely, smoothly, easily, and quietly; free from binding, warp, distortion, nonalignment, misplacement, disruption, or malfunction, throughout entire operational range; and lubricate as recommended in writing by manufacturer.

3.2 DEMONSTRATION

A. Train Owner's maintenance personnel to adjust, operate, and maintain gymnasium equipment.

END OF SECTION

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SECTION 11 66 53
GYMNASIUM DIVIDERS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Electric operators.
   2. Divider curtains.
   3. Divider system accessories.

1.2 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.
B. Shop Drawings: For gymnasium dividers.
   1. Include diagrams for power, signal, and control wiring.
C. Samples: For each exposed product and for each item and color specified.

1.4 INFORMATIONAL SUBMITTALS

A. Coordination Drawings: Reflected ceiling plans with divider-curtain layouts, drawn to scale, on which the following items are shown and coordinated with each other, based on input from installers of the items involved:
B. Product Certificates: For each type of gymnasium divider.

1.5 CLOSEOUT SUBMITTALS

A. Operation and maintenance data.

1.6 QUALITY ASSURANCE

A. Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by manufacturer.

PART 2 - PRODUCTS

2.1 TOP-ROLL DIVIDER SYSTEMS

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
   1. Porter.
      a. Basis-of-Design: 92085000 2
      b. Other manufacturers will be considered if they substantially match the basis-of-design model.
B. Divider-Curtain System: Electrically operated, belt-guided, top/center-roll drive pipe, and as follows:
   1. Outer Edge Hems: Double turned and welded.
   2. Supports and Fittings: Corrosion-resistant steel clamps and hangers.
   3. Drive Pipe and Curtain Battens: Steel pipe or tubing.

2.2

2.3 ELECTRIC OPERATORS

A. Provide factory-assembled electric operation system of size and capacity recommended in writing and provided by gymnasium divider manufacturer for gymnasium dividers specified, with electric motors and factory-prewired motor controls, control devices, and accessories required for proper operation.
   1. Include wiring from control stations to motors and between synchronizer and dual motors for long curtains. Coordinate operator wiring requirements and electrical characteristics with building electrical system.
B. Electrical Components, Devices, and Accessories: Listed and labeled according to NFPA 70, by a qualified testing agency, and marked for intended location and application.
C. Motor Electrical Characteristics:
   1. Horsepower: 1 hp.
   2. Voltage: 115 V ac, single phase, 60 hertz.
D. Limit Switches: Adjustable switches at each divider curtain, interlocked with motor controls and set to automatically stop divider curtain at fully extended and fully retracted positions.
E. Control System:
   1. Key-Switch Operation: NEMA ICS 6, Type 1 enclosure, momentary-contact, three-position switch-operated control with up, down, and off functions.
      a. Keys: Provide key(s) per station.

2.4 DIVIDER CURTAINS

A. Upper Curtain, Mesh: Woven mesh of polyester yarn double-coated with vinyl, weighing not less than 19 oz./sq. yd..
   1. Mesh Color: As selected by Architect from full range of industry colors and color densities.
B. Lower Curtain, Solid: Woven polyester fabric double-coated with vinyl, 19 oz./sq. yd., 8-foot height above floor.

1. Fabric Color(s): One color(s), as selected by Architect from full range of industry colors and color densities.

C. Hems: Folded and electronically welded.

D. Seams: Electronically welded.

E. Overall Curtain Height: 20 feet.

F. Bottom of Curtain: Approximately 2 inches above finished floor.

G. Divider-Curtain Flame-Resistance Rating: Passes NFPA 701 Test 2.

2.5 DIVIDER SYSTEM ACCESSORIES

A. Safety Lock: Locks drive system when speed exceeds manufacturer's recommended speed.

B. Audible Motion Alarm: Provide alarm with intermittent warning tone when curtain is raised or lowered.

2.6 SUPPORT MATERIALS AND FASTENERS

A. Support Chain and Fittings: For chains used for overhead lifting, provide Grade 80, heat-treated alloy-steel chains, according to ASTM A391/A391M, with commercial-quality, hot-dip galvanized or zinc-plated steel connectors and hangers.

B. General-Purpose Chain: For chains not used for overhead lifting, provide carbon steel chain, according to ASTM A413/A413M, Grade 30 proof coil chain or higher grade recommended by gymnasium divider manufacturer. Provide coating type, chain size, number, and installation method according to manufacturer's written instructions.

C. Anchors, Fasteners, Fittings, and Hardware: Manufacturer's standard corrosion-resistant or noncorrodible units; concealed.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Comply with manufacturer's written installation instructions.

B. Install gymnasium dividers level, plumb, square, and true; anchored securely to supporting structure; positioned at locations and elevations indicated; in proper relation to adjacent construction; and aligned with sport-court layout.

C. Connections: Connect electric operators to building electrical system.

D. Adjust movable components of gymnasium dividers to operate safely, smoothly, easily, and quietly, free from binding, warp, distortion, uneven tension, nonalignment, misplacement, disruption, or malfunction, throughout entire operational range; and lubricate as recommended in writing by manufacturer.

E. Limit Switch Adjustment: Set and adjust upper and lower limit controls.

3.2 DEMONSTRATION

A. Train Owner's maintenance personnel to adjust, operate, and maintain gymnasium dividers.

END OF SECTION

SECTION 12 36 61.16
SOLID SURFACING COUNTERTOPS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Solid surface material countertops.
   2. Solid surface material backsplashes – if identified in drawings.
   3. Solid surface material end splashes – if identified in drawings.
   4. Solid surface material apron fronts – if identified in drawings.

1.2 ACTION SUBMITTALS

A. Product Data: For countertop materials and sinks.
B. Sustainable Design Submittals:
   1. Chain-of-Custody Certificates: For certified wood products. Include statement of costs.
   2. Product Data: For adhesives, indicating VOC content.
   3. Laboratory Test Reports: For adhesives, indicating compliance with requirements for low-emitting materials.
   4. Laboratory Test Reports: For composite wood products, indicating compliance with requirements for low-emitting materials.
C. Shop Drawings: For countertops. Show materials, finishes, edge and backsplash profiles, methods of joining, and cutouts for plumbing fixtures.
D. Samples: For each type of material exposed to view.

PART 2 - PRODUCTS

2.1 SOLID SURFACE COUNTERTOP MATERIALS

A. Solid Surface Material: Homogeneous-filled plastic resin complying with ISFA 2-01.
   1. Manufacturers, Colors, and Patterns: As identified in the finish schedule and key in the drawings.
   2. Type: Provide Standard type unless Special Purpose type is indicated.
   3. Integral Sink Bowls: Comply with CSA B45.5/IAPMO Z124.
B. Particleboard: ANSI A208.1, Grade M-2-Exterior Glue.
C. Plywood: Exterior softwood plywood complying with DOC PS 1, Grade C-C Plugged, touch sanded.

2.2 FABRICATION

A. Fabricate countertops according to solid surface material manufacturer's written instructions and to the AWI/AWMAC/WI's "Architectural Woodwork Standards."
   1. Grade: Premium.
B. Configuration:
   1. Front: See cabinet details in drawings.
   2. Backsplash: Straight, slightly eased at corner.
   3. End Splash: Matching backsplash.
C. Countertops:
   1. 3/4-inch-thick, solid surface material with front edge built up with same material.
D. Backsplashes: 3/4-inch-thick, solid surface material.
E. Joints:
   1. Fabricate countertops without joints to greatest extent possible.
F. Cutouts and Holes:
   1. Undercounter Plumbing Fixtures: Make cutouts for fixtures in shop using template or pattern furnished by fixture manufacturer. Form cutouts to smooth, even curves.

2.3 INSTALLATION MATERIALS

A. Adhesive: Product recommended by solid surface material manufacturer.
   1. Verify adhesives have a VOC content of 70 g/L or less.
   2. Verify adhesive complies with the testing and product requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."
B. Sealant for Countertops: Comply with applicable requirements in Section 07 92 00 "Joint Sealants."

PART 3 - EXECUTION

3.1 INSTALLATION

A. Fasten countertops by screwing through corner blocks of base units into underside of countertop. Predrill holes for screws as recommended by manufacturer.
B. Fasten subtops to cabinets by screwing through subtops into cornerblocks of base cabinets. Shim as needed to align subtops in a level plane.

C. Secure countertops to subtops with adhesive according to solid surface material manufacturer's written instructions.

D. Bond joints with adhesive and draw tight as countertops are set. Mask areas of countertops adjacent to joints to prevent adhesive smears.

E. Install backsplashes and end splashes by adhering to wall and countertops with adhesive.

F. Install aprons to backing and countertops with adhesive.

G. Complete cutouts not finished in shop. Mask areas of countertops adjacent to cutouts to prevent damage while cutting. Make cutouts to accurately fit items to be installed, and at right angles to finished surfaces unless beveling is required for clearance. Ease edges slightly to prevent snipping.

H. Apply sealant to gaps at walls; comply with Section 07 92 00 "Joint Sealants."

END OF SECTION

SECTION 22 42 23
COMMERCIAL SHOWERS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Shower basins.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.
   1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for shower basins.
   2. Include rated capacities, operating characteristics, and furnished specialties and accessories.

1.3 CLOSEOUT SUBMITTALS

A. Maintenance Data: For cleaning shower basins.

PART 2 - PRODUCTS

2.1 PRECAST-TERRAZZO SHOWER BASINS

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
   a. Acorn Engineering
   b. Florestone Products Co., Inc.
   c. Stern-Williams Co., Inc.
   d. Fiat Products.
   2. Source Limitations: Obtain shower basins from single source from single manufacturer.
   3. Description: Precast-terrazzo base for built-up-type shower fixture.
   4. Standard:
      a. CSA B45.8/IAPMO Z403.
      b. IAPMO PS 99.
      c. 2010 ADA Standards for Accessible Design.
   5. Threshold Type: Standard commercial and/or Handicapped/accessible – see Drawings.
   6. Shape: See Drawings.
   7. Nominal Size: See Drawings.
   8. Color: Color selected by Architect from manufacturer's standard color selection.
   9. Outlet: Removable stainless steel grid strainer, NPS 2, no-caulk drain.
   10. Tiling Flange: Integral, stainless steel.
      a. Square or rectangular fixture: Provide for all walls – See Drawings.
      b. Corner Fixture: Left and right.
   11. Rabbeted Joint Shoulders: 1 in. high.
   12. Accessories:
      a. Rubber drain gasket reducer for NPS 2 waste pipe.
      b. Vandal resistant strainer.
      c. Double drain.

2.2 GROUT

A. Standard: ASTM C1107/C1107M, Grade B, post-hardening and volume-adjusting, dry, hydraulic-cement grout.
B. Characteristics: Nonshrink; recommended for interior and exterior applications.
C. Design Mix: 5000 psi, 28-day compressive strength.
D. Packaging: Premixed and factory packaged.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine rough-in of water-supply and sanitary drainage and vent piping systems to verify actual locations of piping connections before shower installation.
B. Examine walls and floors for suitable conditions where showers will be installed.
C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Assemble shower basin components in accordance with manufacturers' written instructions.
B. Install shower basins level and plumb.
C. Set shower basins in leveling bed of cement grout.
D. Seal joints between showers and floors and walls using sanitary-type, one-part, mildew-resistant silicone sealant. Match sealant color to fixture color. Comply with sealant requirements specified in Section 07 92 00 "Joint Sealants."

3.3 PIPING CONNECTIONS

A. Connect fixtures with water supplies, stops, and risers, and with traps, soil, waste, and vent piping. Use size fittings required to match fixtures.

3.4 CLEANING AND PROTECTION

A. After completing installation of shower basins, inspect and repair damaged finishes.

B. Clean shower basins and fittings with manufacturers' recommended cleaning methods and materials.

C. Provide protective covering for installed fixtures and fittings.

D. Do not allow use of showers for temporary facilities unless approved in writing by Owner.

END OF SECTION

STRUCTURAL DESIGN CRITERIA

1. THESE NOTES SUPPLEMENT THE SPECIFICATIONS. PROJECT SPECIFICATIONS SHALL BE REFERRED TO FOR CLARIFICATIONS AND ADDITIONAL INFORMATION. IN CASE OF CONFLICT BETWEEN PROJECT SPECIFICATIONS AND THESE NOTES, THESE NOTES SHALL GOVERN.

2. GOVERNING BUILDING CODE: 2018 IBC AS AMENDED BY THE STATE OF WISCONSIN.

3. DESIGN LOADS

LIVE LOAD
- TYPICAL SLAB ON GRADE ---- 100 psf
- MEZZANINE ---- 100 psf

ROOF
- LIVE LOAD
- SNOW ---- 30 psf+DRIFTING
- SUPERIMPOSED DEAD LOAD
- TOP CHORD ---- 10 psf
- BOTTOM CHORD ---- 10 psf

SNOW LOADS
- GROUND SNOW (Pg) ---- 30 psf
- SNOW LOAD IMPORTANCE FACTOR (Is) ---- 1.0
- SNOW LOAD EXPOSURE FACTOR (Ce) ---- 1.0
- ROOF THERMAL LOAD FACTOR (Ct) AT BUILDING ---- 1.1
- BASE ROOF SNOW LOAD AT BUILDING ---- 21 psf

WIND LOADS
- BASIC WIND SPEED ---- 107 mph
- BUILDING OCCUPANCY CATEGORY ---- II
- WIND LOAD IMPORTANCE FACTOR (Iw) ---- 1.0
- WIND EXPOSURE CATEGORY ---- C
- INTERNAL PRESSURE COEFFICIENT ---- ±0.18

MAIN WIND FORCE - RESISTING SYSTEM:
- MWFRS SELECTED EDGE STRIP DISTANCE, (2A) ---- 11.0 ft
- CALCULATED HORIZONTAL LOADS:

	END ZONE WALL	END ZONE ROOF	INTERIOR ZONE WALL	INTERIOR ZONE ROOF
TRANSVERSE CASE #1:	24.0 psf	16.5 psf	19.2 psf	13.2 psf
TRANSVERSE CASE #2:	24.0 psf	16.5 psf	19.2 psf	13.2 psf
LONGITUDINAL:	24.0 psf	16.5 psf	19.2 psf	13.2 psf

- CALCULATED VERTICAL LOADS:

	END ZONE WINDWARD	END ZONE LEEWARD	INTERIOR ZONE WINDWARD	INTERIOR ZONE LEEWARD
TRANSVERSE CASE #1:	1.8 psf	-14.7 psf	0.7 psf	-12.5 psf
TRANSVERSE CASE #2:	9.3 psf	-7.2 psf	8.0 psf	-6.3 psf
LONGITUDINAL:	-25.7 psf	-14.7 psf	-17.8 psf	-11.3 psf

COMPONENTS AND CLADDING:
(SEE ASCE/SEI 7-SECTION 6 FOR ZONE DEFINITIONS AND DIAGRAMS)
- COMPONENT AND CLADDING SELECTED EDGE STRIP DISTANCE, (A) ---- 5.5 ft

	10 ft²	50 ft²	100 ft²
TRIBUTARY WIND LOAD AREAS			
ROOF (MONOSLOPE):			
ZONE 1 (NEGATIVE)	19.7 psf	17.3 psf	16.3 psf
ZONE 2 (NEGATIVE)	23.0 psf	20.7 psf	19.7 psf
ZONE 3 (NEGATIVE)	23.0 psf	20.7 psf	19.7 psf
WALLS:			
ZONE 4 (NEGATIVE)	21.3 psf	19.3 psf	18.4 psf
ZONE 5 (NEGATIVE)	26.3 psf	22.3 psf	20.4 psf
ZONE 4 & 5 (NEGATIVE)	19.7 psf	17.8 psf	16.7 psf

SEISMIC LOADS
- SEISMIC USE GROUP / OCCUPANCY CATEGORY ---- II
- SEISMIC IMPORTANCE FACTOR (Ie) ---- 1.0
- SEISMIC SITE CLASS ---- C
- SPECTRAL RESPONSE COEFFICIENT (Sds) ---- 0.048
- SPECTRAL RESPONSE COEFFICIENT (Sd1) ---- 0.032
- SEISMIC DESIGN CATEGORY ---- A
- BASIC SEISMIC FORCE RESISTING SYSTEM:
  BEARING WALL SYSTEM
  LIGHT FRAMED WALL SHEATHED WITH WOOD STRUCTURAL PANELS RATED FOR SHEAR RESISTANCE:
  R = 6.5 Do = 3.0 Cd = 4.0
- ANALYSIS PROCEDURE:
  EQUIVALENT LATERAL FORCE PROCEDURE

4. FOUNDATIONS AND EARTHWORK
- ALLOWABLE SOIL BEARING PRESSURE FOR FOOTINGS ---- 4,000 psf

5. CONCRETE
- MINIMUM 28 DAY COMPRESSIVE STRENGTH (f'c)
  - FOOTINGS ---- 4,000 psi
  - PIERS, WALLS ---- 4,000 psi
  - SLAB-ON-GRADE (INTERIOR) ---- 3,500 psi
  - SLAB-ON-GRADE (EXTERIOR) ---- 4,500 psi
- COVER ON MILD STEEL REINFORCEMENT
  - CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH ---- 3"
  - CONCRETE EXPOSED TO EARTH OR WEATHER
    - #6 BARS AND SMALLER ---- 1 1/2"
    - #6 BARS AND LARGER ---- 2"
  - CONCRETE NOT EXPOSED TO WEATHER OR IN CONTACT WITH GROUND ---- 1"
- CONCRETE REINFORCEMENT YIELD STRENGTH (Fy)
  - ALL DEFORMED MILD STEEL ---- 60,000 psi
  - WELDED WIRE FABRIC ---- 65,000 psi

6. CONCRETE MASONRY
- DESIGN STRESSES
  - MASONRY (NORMAL WEIGHT) MEETING ASTM C90 ---- f'm = 2,000 psi
  - GROUT: MIN COMPRESSIVE STRENGTH AT 28 DAYS MEETING ASTM C476 ---- 3,000 psi
  - MINIMUM BLOCK COMPRESSIVE STRENGTH ---- 2,800 psi

7. STRUCTURAL STEEL
- STRUCTURAL STEEL YIELD STRENGTH (Fy)
  - TUBES ---- 46,000 psi
  - WF BEAMS ---- 50,000 psi
  - WF COLUMNS ---- 50,000 psi
  - BOLTS FOR STANDARD FRAME CONNECTIONS ---- 3/4" DIAMETER A325
  - BOLTS FOR SINGLE SHEAR TAB CONNECTIONS ---- 3/4" DIAMETER A325
  - ANCHOR RODS ---- F1554
  - WELDING ELECTRODES ---- E70

8. MISCELLANEOUS
VERIFY OPENINGS THROUGH FLOOR AND WALLS WITH ARCHITECTURAL, MECHANICAL, PLUMBING, AND ELECTRICAL REQUIREMENTS. CHANGES IN SIZE, LOCATION OR NUMBER OF OPENINGS SHOWN ON THE STRUCTURAL DRAWINGS SHALL NOT BE PERMITTED WITHOUT WRITTEN APPROVAL OF THE STRUCTURAL ENGINEER. NOT ALL OPENINGS ARE SHOWN ON THE STRUCTURAL DRAWINGS.

GENERAL NOTES APPLY TO ALL SHEETS

1. CONTRACTOR TO PROVIDE DRAFT STOPPING IN ATTIC. MAXIMUM AREA OF SUBDIVIDE ATTIC AREA IS 3000 SF CONTRACTOR TO COORDINATE LOCATION OF DRAFT STOPPING WITH ARCHITECT AND TRUSS SHOP DRAWINGS PRIOR TO START OF CONSTRUCTION. PROVIDE AN ATTIC ACCESS PANEL INTO EACH ATTIC COMPARTMENT. MINIMUM OPENING SIZE OF 20" x 30" COORDINATE LOCATION WITH ARCHITECT. DRAFT STOPPING TO EXTEND TO FASCIA AT OVERHANGS.

2. SECURE TRUSSES AT EACH BEARING WITH SIMPSON H2.5A MIN.

3. CONTRACTOR TO SUBMIT TRUSS SHOP DRAWINGS TO ARCHITECT FOR REVIEW PRIOR TO CONSTRUCTION.

GENERAL

1. STRUCTURAL DRAWINGS ARE INTENDED TO BE USED WITH ARCHITECTURAL AND MECHANICAL DRAWINGS. CONTRACTOR IS RESPONSIBLE FOR COORDINATING SUCH REQUIREMENTS INTO THE SHOP DRAWINGS AND WORK.

2. NO OPENING SHALL BE MADE IN ANY STRUCTURAL BEAM, COLUMN, SUPPORT FLOOR, LOAD BEARING WALL, FOOTING, OR FOUNDATION WALL WITHOUT THE WRITTEN APPROVAL OF THE ARCHITECT/ ENGINEER. OPENINGS IN NON-LOAD BEARING WALLS REQUIRE THE ARCHITECT'S APPROVAL.

3. THE CONTRACTOR IS RESPONSIBLE FOR LIMITING THE AMOUNT OF CONSTRUCTION LOAD IMPOSED UPON NEW STRUCTURAL FRAMING. CONSTRUCTION LOADS SHALL NOT EXCEED THE DESIGN CAPACITY OF THE FRAMING AT THE TIME THE LOADS ARE IMPOSED.

4. THE STRUCTURE IS DESIGNED TO FUNCTION AS A UNIT UPON COMPLETION. THE CONTRACTOR IS RESPONSIBLE FOR FURNISHING ALL TEMPORARY BRACING AND/OR SUPPORT THAT MAY BE REQUIRED AS THE RESULT OF THE CONTRACTOR'S CONSTRUCTION METHODS AND/OR SEQUENCES. THE STRUCTURAL ENGINEER ASSUMES NO LIABILITY FOR THE STRUCTURE DURING CONSTRUCTION.

5. FIREPROOFING METHODS AND MATERIALS FOR STRUCTURAL DRAWINGS. REFER TO ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR RATING REQUIREMENTS, FIREPROOFING METHODS AND MATERIALS.

6. ALL SECTIONS, DETAIL AND NOTES SHOWN ON THE STRUCTURAL DRAWINGS ARE INTENDED TO BE TYPICAL AND SHALL APPLY TO SIMILAR SITUATIONS ELSEWHERE UNLESS OTHERWISE NOTED.

7. WHEN CONFLICTS ARE NOTED ON THE DRAWINGS, THE CONTRACTOR IS RESPONSIBLE FOR NOTIFYING THE A/E FOR RESOLUTION PRIOR TO FABRICATION OR INSTALLATION.

FOUNDATION NOTES

1. GEOTECHNICAL INFORMATION TAKEN FROM: GEOTECHNICAL EXPLORATION REPORT G22051-6.

2. THE OWNER SHALL RETAIN A SOILS ENGINEERING FIRM TO MONITOR PROPER SUBGRADE PREPARATIONS AND TO OVERSEE THE TESTING AND COMPACTION OF COMPACTED FILL MATERIAL.

3. CONTRACTOR SHALL LOCATE EXISTING UNDERGROUND UTILITIES BEFORE FOUNDATION EXCAVATION IF UNDERGROUND UTILITY CONFLICTS ARE DISCOVERED BEFORE OR ENCOUNTERED DURING EXCAVATION, NOTIFY THE ARCHITECT/ENGINEER IMMEDIATELY.

4. CONTRACTOR SHALL VERIFY THE LOCATION AND ELEVATION OF ANY EXISTING FOUNDATIONS.

5. BEFORE PLACING FOOTINGS, FOUNDATIONS, GRADE BEAMS, OR SLAB-ON-GRADE, THE SUB-GRADE SHALL BE PREPARED AND INSPECTED AS REQUIRED BY THE SPECIFICATIONS AND THE DRAWINGS.

6. REINFORCE ALL FOUNDATION WALLS AND FOOTINGS AS SHOWN ON THE ARCHITECTURAL AND STRUCTURAL DRAWINGS.

7. CONTROL JOINTS IN THE CAST-IN-PLACE CONCRETE FOUNDATION WALLS SHALL BE PLACED AT NOT TO EXCEED 20' OC OR AS LOCATED ON THE DRAWINGS.

8. PERIMETER FOUNDATION WALL INSULATION IS NOT SHOWN ON THE FOUNDATION DETAILS. SEE ARCHITECTURAL DRAWINGS AND THE SPECIFICATIONS FOR INSULATION REQUIREMENTS.

9. SEE SPECIFICATIONS FOR FREE DRAINING BACKFILL BENEATH ALL CONCRETE WALKS AND SLABS ADJACENT TO STRUCTURE.

10. CONTRACTOR NOTE: THE BASE OF ALL EXCAVATIONS SHALL BE KEPT FREE OF WATER AND LOOSE SOIL PRIOR TO PLACING CONCRETE. CARE SHOULD BE TAKEN DURING EXCAVATION AND CONSTRUCTION TO MINIMIZE DISTURBANCE OF THE BEARING SOILS. THE CONCRETE SHOULD BE PLACED AS SOON AS POSSIBLE AFTER EXCAVATION TO PREVENT EXCESSIVE DRYING OR WETTING OF THE SOIL.

MASONRY NOTES

1. ALL MASONRY WALLS ARE TO HAVE HORIZONTAL REINFORCEMENT WHICH DOES NOT EXCEED 16 INCHES ON CENTER VERTICALLY. SEE SPECIFICATIONS FOR INFORMATION RELATING TO CONCRETE BLOCK, BRICK, AND WALL REINFORCING.

2. ALL VERTICAL REINFORCING STEEL IN MASONRY WALLS ARE TO COMPLY WITH ASTM A615, GRADE 60. LAPS SHALL BE 48 BAR DIAMETERS (12" MINIMUM).

3. PROVIDE SPLICE BARS FOR ALL BOND BEAM REINFORCING AT ALL CORNERS. SPLICE BAR TO BE THE SAME SIZE AS BARS IN THE BOND BEAM. LAPS SHALL BE 50 BAR DIAMETER.

4. WHERE MASONRY IS APPLIED ADJACENT TO STEEL MEMBERS (BEAMS AND COLUMNS) PROVIDE ANCHORING DEVICES PER SPECIFICATIONS.

5. REFER TO ARCHITECTURAL PLANS FOR ROUGH OPENING LOCATIONS, SIZES, AND ELEVATIONS.

6. USE SIMPSON TITEN HD OR APPROVED EQUAL TYPE ANCHORS IN CMU WALL PARTITIONS.

7. ALL NON-STRUCTURAL CMU WALLS SHALL BE REINFORCED WITH A #3 VERTICAL BAR AT 48" OC WITH THAT CMU CORE GROUTED AND HORIZONTAL JOINT REINFORCEMENT AT 16" OC THE BOTTOM TWO COURSES SHALL BE GROUTED SOLID. PROVIDE CONTINUOUS BOND BEAM AT TOP OF WALL WITH 2 #4's CONTINUOUS GROUT BOND BEAM SOLID. PROVIDE #3 DOWEL AT 48" OC MATCH VERTICAL BAR, LAP 50 BAR DIAMETERS. PROVIDE LINTEL BLOCK AS BOND BEAM WITH (2) #5 x CONT. AND 8" BEARING EACH END. TYPICAL UNLESS NOTED OTHERWISE.

8. CONSTRUCTION BRACING FOR MASONRY WALLS SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE IN WHICH THE PROJECT IS LOCATED. MASONRY SUBMITTALS SHALL CONTAIN A LETTER SEALED BY THE ENGINEER AND SHALL BE ISSUED TO THE OWNER AFTER SUBMITTAL REVIEW AND PRIOR TO STARTING MASONRY CONSTRUCTION.

COLD FORMED TRUSS NOTES

1. TRUSS FABRICATOR SHALL DESIGN TRUSSES FOR LOADS SPECIFIED ON PLANS IN CONFORMANCE WITH "QUALITY CONTROL MANUAL" BY TPI. REFER TO THE ARCHITECTURAL DRAWINGS FOR ADDITIONAL DEAD LOADS RESULTING FROM DORMERS AND OTHER MISCELLANEOUS FRAMING. ALL TRUSSES SHALL BE DESIGNED FOR A MINIMUM OF 30 PSF LIVE LOAD PLUS 10 psf DEAD LOAD.

2. LIVE LOAD IS ON A HORIZONTAL PROJECTION OTHER LIVE LOADS SHOWN ON THE DRAWINGS ARE IN ADDITION TO THESE DESIGNATED LOADS.

3. CHECK VERTICALLY PROJECTED ELEMENTS FOR DESIGN WIND LOAD.

4. DESIGN TRUSSES TO RESIST A NET UPLIFT OF 10 PSF.

5. SUBMIT SHOP DRAWINGS AND CALCULATIONS PRIOR TO FABRICATION.

6. CONFORM TO TPI SPECIFICATIONS.

7. FLOOR TRUSS LL DEFLECTION SHALL NOT EXCEED L/480.

8. ROOF TRUSS LL DEFLECTION SHALL NOT EXCEED L/360.

9. PERMANENT BRACING NOT SHOWN ON PLANS, WHICH IS REQUIRED FOR STRENGTH AND STABILITY OF TRUSS MEMBERS, SHALL BE DESIGNED AND PROVIDED BY TRUSS SUPPLIER.

10. ALL TRUSS TOP CHORDS SHALL BE CONTINUOUSLY BRACED BY THE (ROOF/FLOOR) DECKING. ALL ROOF TRUSS WEB MEMBERS SHALL BE BRACED AT 4'-0" OC UNLESS CALCULATIONS SHOW OTHERWISE.

11. TEMPORARY BRACING SHALL BE THE CONTRACTOR'S RESPONSIBILITY. PROVIDE IN ACCORDANCE WITH TPI GUIDELINES.

12. PROVIDE 24" WIDE VIERENDEEL PANEL AT CENTER OF EACH PARALLEL CHORD TRUSS.

STRUCTURAL STEEL NOTES

1. FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL CONFORM WITH THE AISC (AMERICAN INSTITUTE OF STEEL CONSTRUCTION), "MANUAL OF STEEL CONSTRUCTION", LATEST EDITION.

2. ALL STEEL DETAILS AND CONNECTIONS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE AISC "SPECIFICATIONS FOR STRUCTURAL STEEL BUILDINGS, ALLOWABLE STRESS DESIGN AND PLASTIC DESIGN", LATEST EDITION.

3. ALL WELDING SHALL BE BY WELDERS HOLDING CURRENT VALID AWS CERTIFICATES IN THE TYPE OF WELD REQUIRED.

4. SHOP CONNECTIONS NOT SPECIFICALLY DETAILED ON THE DRAWINGS SHALL BE BOLTED OR WELDED. FIELD CONNECTIONS SHALL BE BOLTED UNLESS SPECIFICALLY DETAILED OTHERWISE.

5. DESIGN IN ACCORDANCE WITH GUIDE DETAILS AND REACTIONS.

6. USE A325N BOLTS UNLESS NOTED OTHERWISE.

7. OVERSIZED OR SLOTTED HOLES SHALL NOT BE USED FOR ANY CONNECTIONS UNLESS SPECIFICALLY INDICATED ON THE DRAWINGS OR APPROVED IN WRITING BY THE ENGINEER.

8. ALL BEAM COPES MUST BE MADE TO A RADIUS (1" MINIMUM). ALL BUTT AND FULL PENETRATION WELDS SHALL BE MADE USING RUN OFF TABS WHICH SHALL BE TRIMMED FLUSH AND GROUND SMOOTH AFTER WELD IS COMPLETED.

9. ALL WELDS INDICATED SHALL MEET THE MINIMUM WELD SIZE SPECIFIED BY THE CURRENT AISC MANUAL OF STEEL DESIGN. (SINGLE PASS AS REQUIRED).

10. CUTS, HOLES, COPING, ETC. REQUIRED FOR WORK OF OTHER TRADES SHALL BE SHOWN ON THE SHOP DRAWINGS AND MADE IN THE SHOP. CUTS OR BURNING OF HOLES IN STRUCTURAL STEEL MEMBERS IN THE FIELD WILL NOT BE PERMITTED.

11. PROVIDE ANY NECESSARY TEMPORARY BRACING OR GUYS TO PROVIDE LATERAL SUPPORT OF THE BUILDING UNTIL PERMANENT FRAME IS COMPLETELY INSTALLED.

12. INSTALL EXPANSION BOLTS IN ACCORDANCE WITH THE ICBO REPORT RECOMMENDATIONS.

13. ALL ELEVATOR GUIDE BEAMS SHALL BE S8x18.4 UNLESS NOTED OTHERWISE. SLOPE TO MATCH BEAM SLOPE.

14. STRUCTURAL STEEL FRAMING SHALL BE TRUE AND PLUMB BEFORE CONNECTIONS ARE FINALLY BOLTED OR WELDED.

Engberg Anderson ARCHITECTS
MILWAUKEE | MADISON | CHICAGO

ONEIDA Total Integrated Enterprises
www.oneida.com Job Number 2023037
Office 608.243.5478 Fax 608.241.3814
5150 Eastpark Blvd, Suite 300,
Madison, Wisconsin 53718

Contractors are responsible for the means, methods, techniques, sequences and procedures of construction including, but not limited to, temporary supports, shoring forming to support imposed loads and other similar items.

REVISION

WARNER PARK COMMUNITY RECREATION CENTER EXPANSION

1625 NORTHPORT DRIVE
MADISON, WI 53704

CITY OF MADISON PARKS DIVISION
330 EAST LAKESIDE STREET
MADISON, WI 53715

PROJECT NUMBER 22347.1.00

ISSUED FOR:

BID SET 5/16/2024

REVISION FOR:

NO. DESCRIPTION DATE

DRAWN BY AWB

CHECKED BY Checker

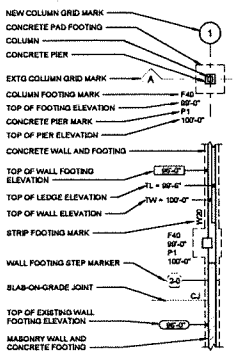
STRUCTURAL NOTES

S001

ABBREVIATION LIST

AB	ANCHOR BOLT (ROD)
AHU	AIR HANDLING UNIT
ALT	ALTERNATE
ARCH	ARCHITECTURAL
BLDG	BUILDING
BRG	BEARING
BP(##)	BASE PLATE CALL-OUT
CF	COLD-FORMED
CIP	CAST-IN-PLACE
CJ	CONTROL JOINT
CL	CENTER LINE
CLR	CLEAR (DISTANCE)
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
CONC	CONCRETE
CONT	CONTINUOUS
DBA	DEFORMED BAR ANCHOR
DEMO	DEMOLITION / DEMOLISH
DIA	DIAMETER
DWG	DRAWING
EOD	EDGE OF DECK
EOS	EDGE OF SLAB
EF	EACH FACE
EJ	EXPANSION JOINT
ELEV	ELEVATION
EQ	EQUAL
EW	EACH WAY
EWEF	EACH WAY EACH FACE
EXP	EXPANSION
EXT	EXTERIOR
EXTG	EXISTING
FD	FLOOR DRAIN
FLR	FLOOR
FV	FIELD VERIFY
F(##)	FOOTING CALL-OUT
GA	GAUGE
GALV	GALVANIZED
GC	GENERAL CONTRACTOR
GLULAM	GLUE-LAMINATED BEAM(S)
HK	HOOK
HORIZ	HORIZONTAL
HP	HIGH POINT
HWS	HEADED WELDED STUD(S)
IF	INSIDE FACE
INT	INTERIOR
JBE	JOIST BEARING ELEVATION
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LSL	LAMINATED STRAND LUMBER
LTWT	LIGHTWEIGHT
LVL	LAMINATED VENEER LUMBER
LW	LONG WAY
MAX	MAXIMUM
MECH	MECHANICAL
MFR	MANUFACTURER
MIN	MINIMUM
MISC	MISCELLANEOUS
NA	NOT APPLICABLE
NTS	NOT TO SCALE
OC	ON CENTER
OF	OUTSIDE FACE
OPNG	OPENING
OPP	OPPOSITE
PC	PRECAST / PRESTRESSED
PCI	POUNDS PER CUBIC INCH
PCF	POUNDS PER CUBIC FOOT
PL	PLATE
PLF	POUNDS PER LINEAR FOOT
PROJ	PROJECTION
PSF	POUNDS PER CUBIC FOOT
PSI	POUNDS PER SQUARE INCH
PT	PRE (POST) -TENSIONED
P(#)	PIER CALL-OUT
RD	ROOF DRAIN
REINF	REINFORCE(D)(ING)
RTU	ROOF TOP UNIT
SIM.	SIMILAR
SOG	SLAB-ON-GRADE
SPA	SPACE(D)(ING)
SPEC	SPECIFICATION(S)
SQ	SQUARE
SS	STAINLESS STEEL
SW	SHORT WAY
TL	TOP OF LEDGE
TP	TOP OF PIER
TW	TOP OF WALL
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
VERT	VERTICAL
WP	WORKING POINT
WWF	WELDED WIRE FABRIC

FOUNDATION LEGEND

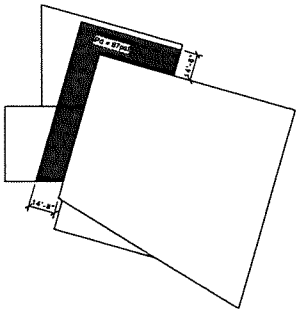


LINTEL SCHEDULE

LENGTH	SIZE AND REINFORCING	NOTE/ REMARKS
0'-4"	8" W x 8" H BOND BM W/ (2) #5 BOT	SEE ARCH FOR LOCATIONS
4'-8"	8" W x 16" H BOND BM W/ (2) #5 BOT	SEE ARCH FOR LOCATIONS

NOTES:

1. AT NEW WALLS, REINFORCE AT BEARING WITH (1) #5 VERT FULL HEIGHT OF WALL FROM FLOOR TO FLOOR OR FLOOR TO ROOF.
2. AT EXISTING WALLS, BEAR LINTEL ON MIN (2) COURSES GROUTED CMU.
3. AT EXTERIOR OPENINGS, PROVIDE GALV BENT PL5/16"x7 1/2"x7 1/2" x CONT TO OPENING CORNERS.
4. 8" MIN BEARING AT ENDS.



DRIFT LOAD KEY PLAN

SCALE: 12" = 1'-0"

WALL FOOTING SCHEDULE

MARK	CONTINUOUS FOOTING DIMENSIONS WIDTH	THICKNESS	FOOTING REINFORCEMENT	REMARKS
WO4	2'-4"	1'-0"	(3) #5; B, CONT	
WO6	2'-6"	1'-0"	(3) #5; B, CONT	
WO8	3'-0"	1'-0"	(3) #5; B, CONT	
WO0	9'-0"	1'-6"	(7) @ 12" T&B, EW	

MASONRY WALL REINFORCEMENT SCHEDULE

MARK	WALL TYPE	REINFORCEMENT VERTICAL	REINFORCEMENT HORIZONTAL	NOTES
A	12" CMU	#6 AT 16" OC	HJR AT 16" OC	BOND BEAM WITH (1) #5 AT 40" OC AND AT BOTTOM OF WALL
B	12" CMU	#8 AT 8" OC	HJR AT 16" OC	VERTICAL REINFORCING TO BE AT EXTERIOR FACE OF CMU
C	8" CMU	#6 AT 16" OC	HJR AT 16" OC	BOND BEAM WITH (1) #5 AT 40" OC AND AT BOTTOM OF WALL

NOTES:

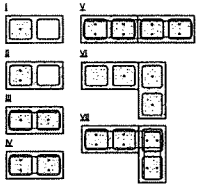
1. SEE ARCHITECTURAL WALL TYPES FOR ADDITIONAL REQUIREMENTS.
2. REINFORCEMENT IS TO BE LOCATED IN CENTER OF WALL UNO.
3. PROVIDE CONTINUOUS BOND BEAM WITH (2) #5 AT ALL BEARING ELEVATIONS AND OVER WINDOWS DOORS AND OTHER OPENINGS UNO.
4. PROVIDE HORIZONTAL REINFORCEMENT INTO INTERSECTING WALLS AT 16" OC VERTICAL. EXTENT 30" EACH DIRECTION WITH PREFABRICATED "T" AND "L" SECTION TYP.
5. SEE GENERAL MASONRY NOTES ON SHEET S001 FOR NON LOAD BEARING WALL REINFORCEMENT REQUIREMENTS.
6. PROVIDE DOWELS TO MATCH VERTICAL REINFORCEMENT. EMBED DOWELS 30" INTO FOUNDATION WALL AND LAP 30" WITH OR MAKE CONTINUOUS WITH VERTICAL STEEL.

MASONRY PIER SCHEDULE

MARK	SIZE (LENGTH)	TYPE	VERTICAL REINFORCING	CLOSED LOOP TIE	COMMENTS
MP1	16"	III	(6) #6	(2) SETS OF 1/4" AT 8"	
MP2	24"	IV	(8) #6	(2) SETS OF 1/4" AT 8"	

NOTES

1. ALL REINFORCED CMU CORES ARE GROUTED SOLID.
2. RUN HORIZONTAL JOINT REINFORCING CONT. THROUGH MASONRY PIERS.
3. USE 1/4" (2) RODS AS CLOSED LOOP TIES.
4. USE BOND BEAM CMU BLOCKS OR DROP TOP CMU BLOCK AT MASONRY PIERS WITH TIES.
5. SIZE IS WALL WIDTH x LENGTH.



LOOSE STEEL LINTEL SCHEDULE

PROVIDE WHERE OTHER LINTELS ARE NOT SPECIFICALLY DETAILED

WALL THICK	CLEAR MASONRY OPENING WIDTH	SECTION
ALL	AT FIRE EXTINGUISHER CABINETS AND DRINKING FOUNTAINS	1/4" PLATE —
4"	TO 5'-0"	ST3x6.25 3/16 1 1/2-8
4"	TO 7'-0"	PL 3/8 x 4 1/2 ON PL 3/8 x 3 1/2
4"	TO 9'-0"	PL3/8"x7 1/2" ON PL3/8"x3 1/2"
6"	TO 5'-0"	(2) L3 1/2x2 1/2x1/4 (LLV)
6"	TO 7'-0"	WT4x10.5
6"	TO 9'-0"	WT7x11
6"	TO 12'-0"	WT7x13 WITH PL1/2"x2" 3/16 1 1/2-8
8"	TO 5'-0"	(2) L3 1/2x3 1/2x1/4
8"	TO 7'-0"	(2) L4x3 1/2x5/16 (LLV)
8"	TO 9'-0"	WT7x15
10"	TO 7'-0"	W8x10 WITH PL5/16"x9" 3/16 1 1/2-8
10"	TO 10'-0"	W8x15 WITH PL5/16"x9"
12"	TO 5'-0"	(3) L3 1/2x3 1/2x1/4
12"	TO 7'-0"	W8x10 WITH PL5/16"x11" 3/16 1 1/2-8
12"	TO 10'-0"	W8x15 WITH PL5/16"x11"

NOTES:

1. PROVIDE MINIMUM 8" BEARING AT EACH END OF LINTEL.
2. GROUT BLOCK CORES AND REINFORCE WITH (1) #5 VERT BELOW LINTEL BEARING.
3. CENTER LINTELS IN WALL UNLESS OTHERWISE NOTED.
4. BOTTOM PLATES UNDER WIDE FLANGE SHAPES SHALL BE EXTENDED FULL LENGTH OF LINTEL.
5. WELD LINTEL COMPONENTS INTO SINGLE UNIT.
6. NOT LINTELS ARE REQUIRED FOR 4" AND 6" NON-BEARING MASONRY WALLS WHERE GROUTED HOLLOW METAL FRAMES HAVE A HEADSPAN OF 4'-0" OR LESS.

BRICK LOOSE LINTEL SCHEDULE

MARK	SECTION	NOTE/ REMARKS
W ≤ 4'-0"	L4x4x5/16	.
5'-0" < L < 8'-0"	L8x4x3/8	.
8'-0" < L < 12'-0"	L7x4x1/2	.
12'-0" < L < 16'-0"	L8x4x3/4	.

NOTES:

1. LINTELS TO BE SHOP PAINTED WITH ZINC RICH URETHANE. SEE SPECIFICATIONS.
2. PROVIDE 4" MIN BEARING EACH END OF LINTEL UNDER 9'-0", 8" BEARING FOR LONGER LINTELS.
3. SEE ARCH FOR CONTROL JOINT LOCATIONS AND FLASHING REQUIREMENTS.

Engberg Anderson ARCHITECTS

MILWAUKEE | MADISON | CHICAGO

ONEIDA Total Integrated Enterprises

www.oneida.com Job Number 202207

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5108 Eastpark Blvd, Suite 300, Madison, Wisconsin 53718

Contractors are responsible for the means, methods, techniques, sequences and procedures of construction including, but not limited to, temporary supports, bracing, bracing to support imposed loads and other similar items.

REVISION

WARNER PARK COMMUNITY RECREATION CENTER EXPANSION

1625 NORTHPORT DRIVE
MADISON, WI 53704

CITY OF MADISON PARKS DIVISION
330 EAST LAKESIDE STREET
MADISON, WI 53715

PROJECT NUMBER 223471.00

ISSUED FOR:

BID SET 5/16/2024

REVISION FOR:

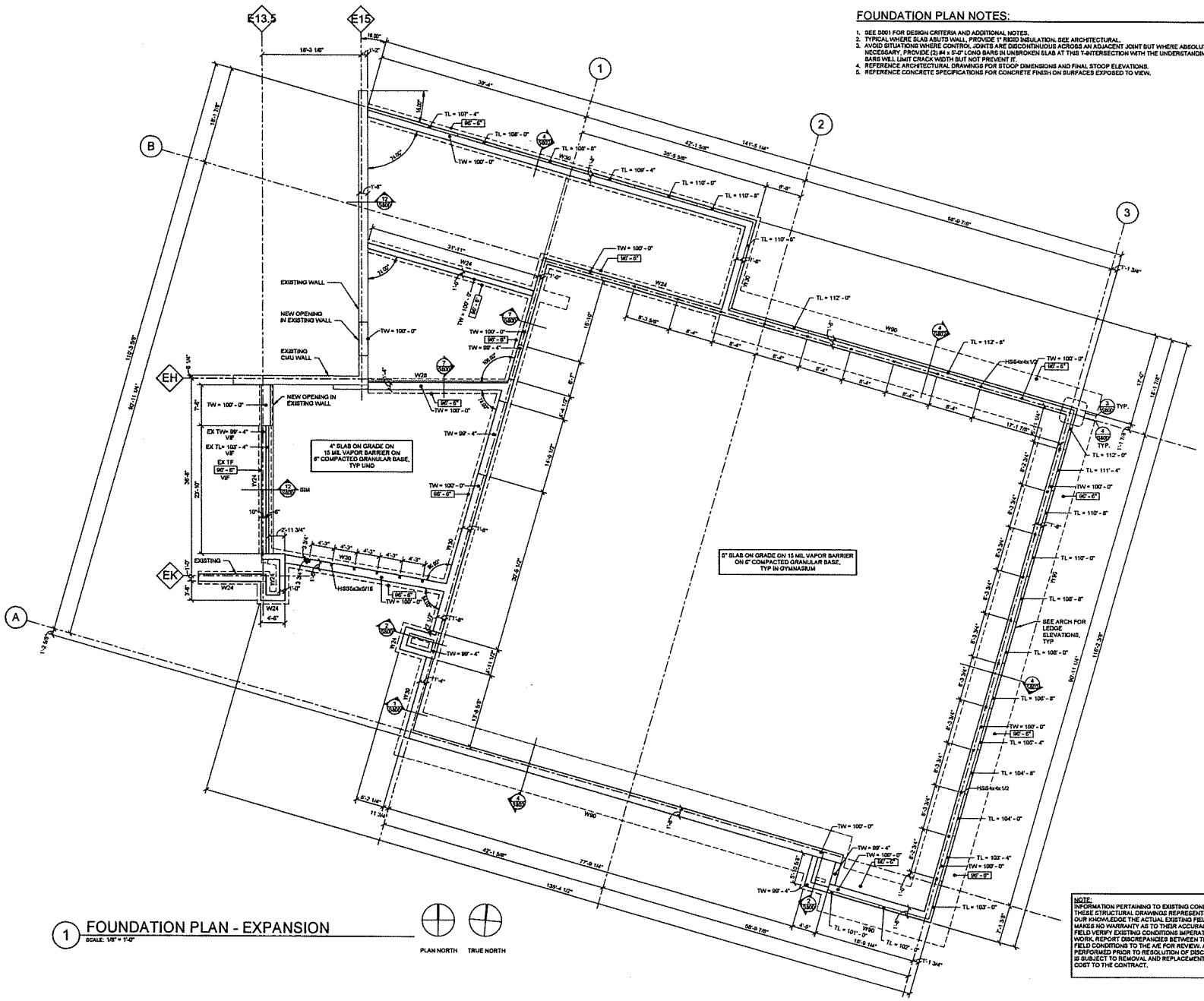
NO. DESCRIPTION DATE

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CHECKED BY Checker

STRUCTURAL SCHEDULES

S002



FOUNDATION PLAN NOTES:

1. SEE S001 FOR DESIGN CRITERIA AND ADDITIONAL NOTES.
2. TYPICAL WHERE SLAB ABUTS WALL, PROVIDE 1" RIGID INSULATION. SEE ARCHITECTURAL.
3. AVOID SITUATIONS WHERE CONTROL JOINTS ARE DISCONTINUOUS ACROSS AN ADJACENT JOINT BUT WHERE ABSOLUTELY NECESSARY, PROVIDE (2) #4 x 5'-0" LONG BARS IN UNBROKEN SLAB AT THIS T-INTERSECTION WITH THE UNDERSTANDING THAT BARS WILL LIMIT CRACK WIDTH BUT NOT PREVENT IT.
4. REFERENCE ARCHITECTURAL DRAWINGS FOR STOOP DIMENSIONS AND FINAL STOOP ELEVATIONS.
5. REFERENCE CONCRETE SPECIFICATIONS FOR CONCRETE FINISH ON SURFACES EXPOSED TO VIEW.

1 FOUNDATION PLAN - EXPANSION

SCALE: 1/8" = 1'-0"

PLAN NORTH TRUE NORTH

NOTE:
INFORMATION PERTAINING TO EXISTING CONDITIONS GIVEN ON THESE STRUCTURAL DRAWINGS REPRESENTS TO THE BEST OF OUR KNOWLEDGE THE ACTUAL EXISTING FIELD CONDITIONS. OTIE MAKES NO WARRANTY AS TO THEIR ACCURACY. CONTRACTOR TO FIELD VERIFY EXISTING CONDITIONS IMPERATIVE TO THE NEW WORK. REPORT DISCREPANCIES BETWEEN THE DRAWINGS AND FIELD CONDITIONS TO THE A/E FOR REVIEW. ANY WORK PERFORMED PRIOR TO RESOLUTION OF DISCREPANCIES BY THE A/E IS SUBJECT TO REMOVAL AND REPLACEMENT AT NO ADDITIONAL COST TO THE CONTRACT.

Engberg Anderson ARCHITECTS
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Madison, Wisconsin 53718

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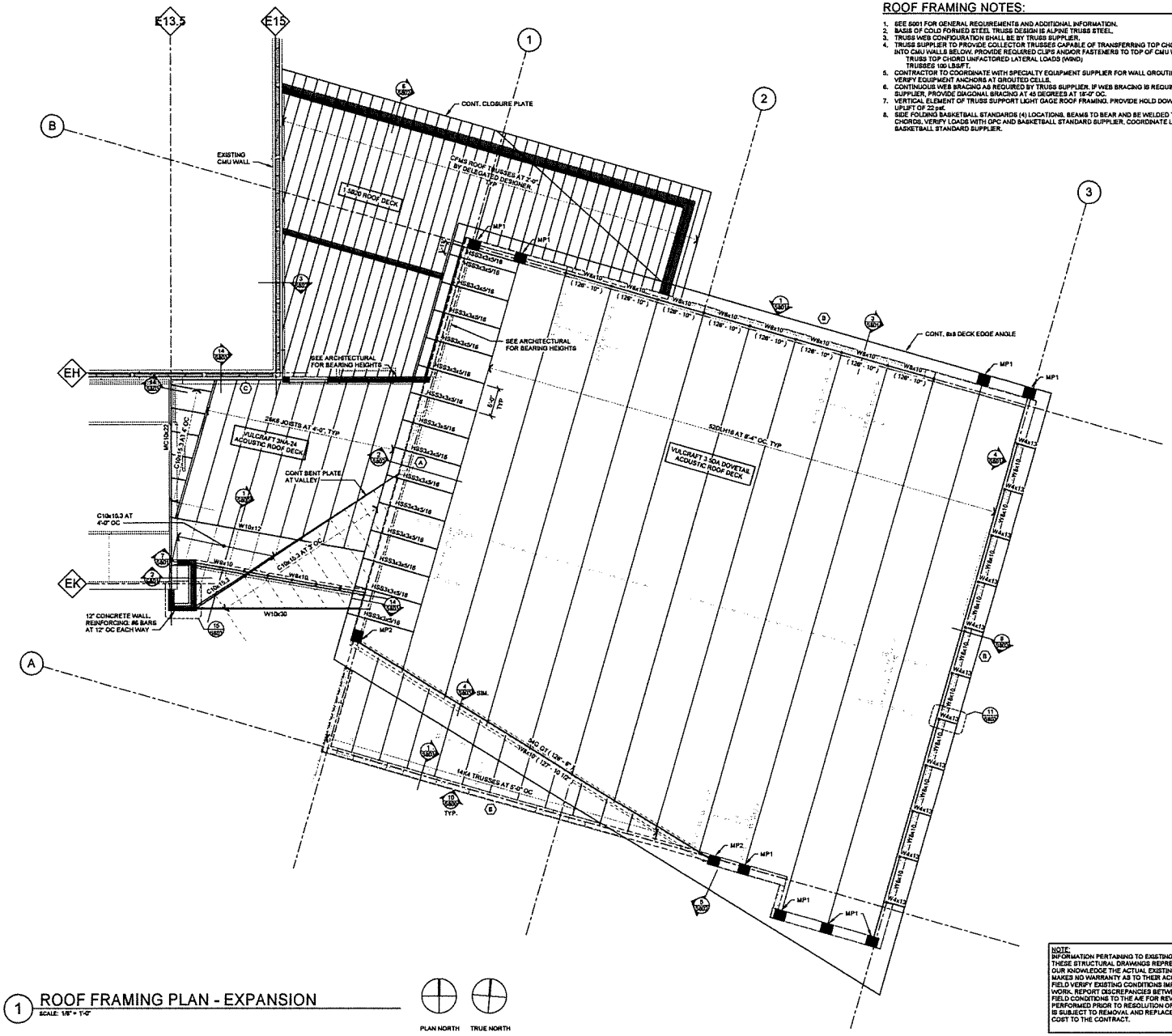
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BID SET 5/16/2024

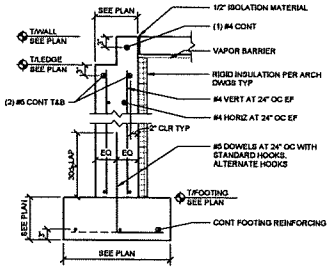
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FOUNDATION PLAN - EXPANSION

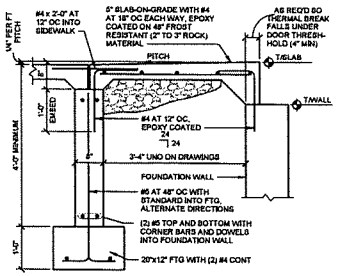
S200


E13.5
E15
1
2
3
A
B
EH
EK
CONT. CLOSURE PLATE
EXISTING CMU WALL
1.5B20 ROOF DECK
CMUS ROOF TRUSSES AT 5'-0" BY DELEGATED DESIGNER, TYP
SEE ARCHITECTURAL FOR BEARING HEIGHTS
24K6 JOISTS AT 5'-0" TYP
VULCRAFT 3NA-24 ACOUSTIC ROOF DECK
CONT BENT PLATE AT VALLEY
C10x15.3 AT 4'-0" OC
W10x12
W8x10
C10x15.3
W10x30
12" CONCRETE WALL, REINFORCING: #6 BARS AT 12" OC EACH WAY
HSS3x3x5/16
MP1
MP2
W8x10 (126' - 10")
CONT. 8x8 DECK EDGE ANGLE
32DH18 AT 5'-0" OC, TYP
VALCRAFT 3 32A DOVETAIL ACOUSTIC ROOF DECK
W4x13
W6x15
W6x16
W6x20
W4x10
W4x15
W6x12
W6x9
W4x16
W6x25
W6x8.5
W6x9.5
W6x25
W6x8.5
W6x9.5
W6x25
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W6x9.5



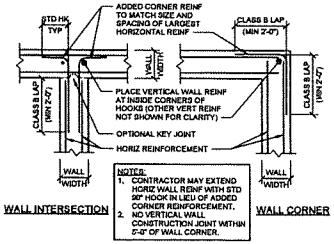
1 CONCRETE FROST WALL

SCALE: 3/4" = 1'-0"



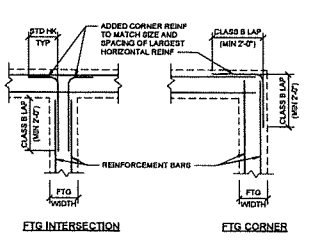
2 TYPICAL STOOP

SCALE: 3/4" = 1'-0"



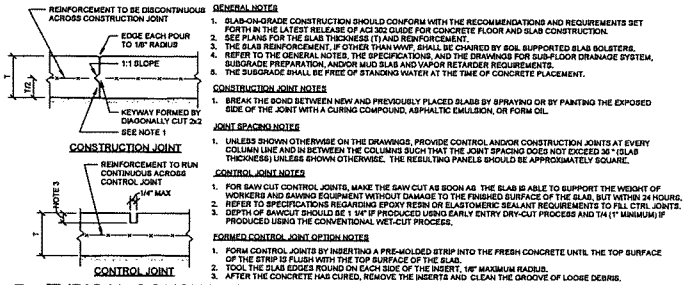
3 TYPICAL WALL CORNER REINFORCEMENT

SCALE: 3/4" = 1'-0"



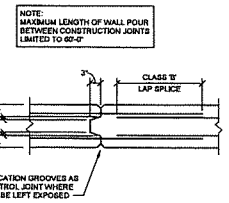
4 TYPICAL FOOTING CORNER REINFORCEMENT

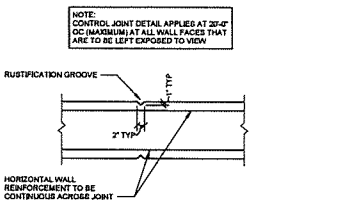
SCALE: 3/4" = 1'-0"



5 TYPICAL CONSTRUCTION AND CONTROL JOINTS IN SOG

SCALE: 3/4" = 1'-0"

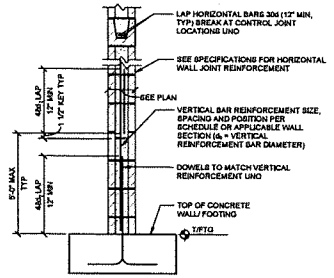




6 CONCRETE WALL JOINTS

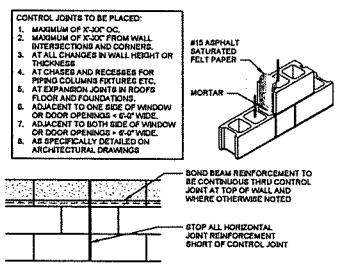
SCALE: 3/4" = 1'-0"

033000-102 (16)



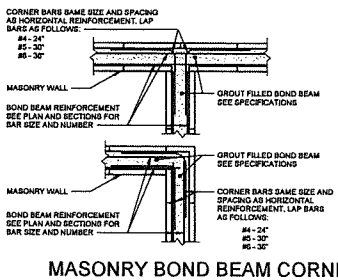
7 TYP REINF'D CMU WALL

SCALE: 3/4" = 1'-0"



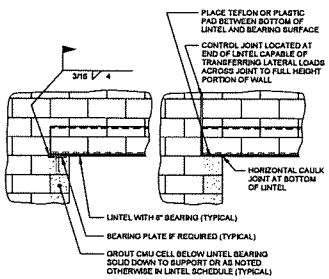
8 CMU CONTROL JOINT

SCALE: 3/4" = 1'-0"



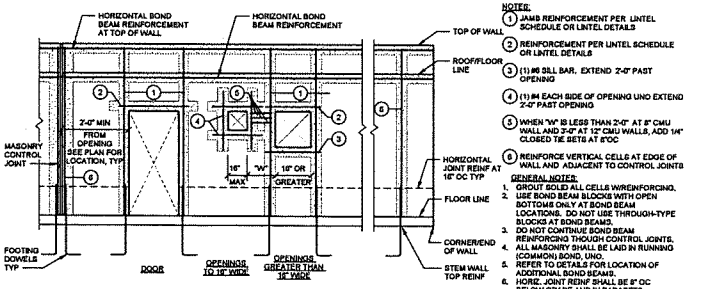
MASONRY BOND BEAM CORNER REINFORCEMENT PLAN

SCALE: 3/4" = 1'-0"



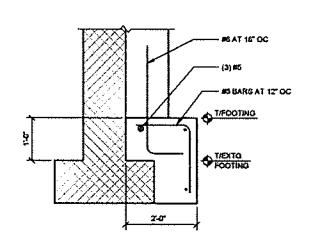
10 LINTEL BEARING DETAIL

SCALE: 3/4" = 1'-0"



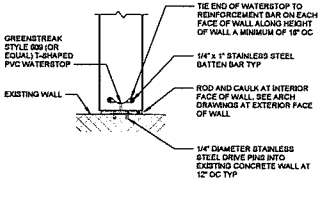
11 TYPICAL CMU WALL REINFORCEMENT AT OPENINGS

SCALE: 3/4" = 1'-0"



NEW WALL AND FOOTING ADJACENT TO EXISTING

SCALE: 3/4" = 1'-0"



13 NEW FDN TO EXISTING

SCALE: 3/4" = 1'-0"

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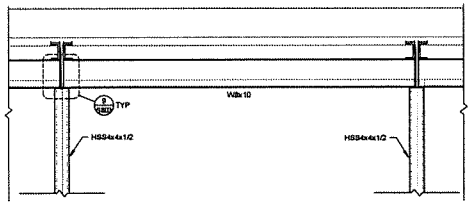
REVISION FOR:

NO.	DESCRIPTION	DATE

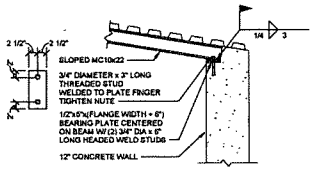
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STRUCTURAL DETAILS

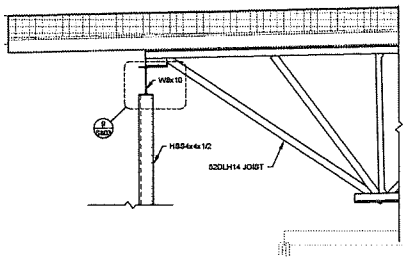
S800



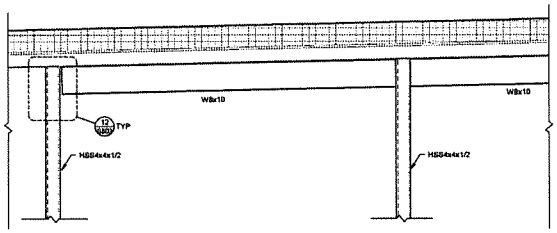
1 HSS COLUMNS FOR RIBBON WINDOW
SCALE: 3/4" = 1'-0"



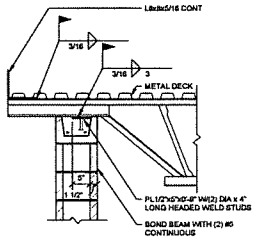
VESTIBULE ENTRY MC BEARING DETAIL
2
SCALE: 3/4" = 1'-0"



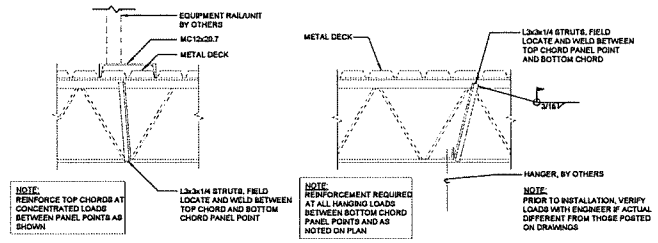
3 JOIST ON BEAM AT RIBBON WINDOW
SCALE: 3/4" = 1'-0"



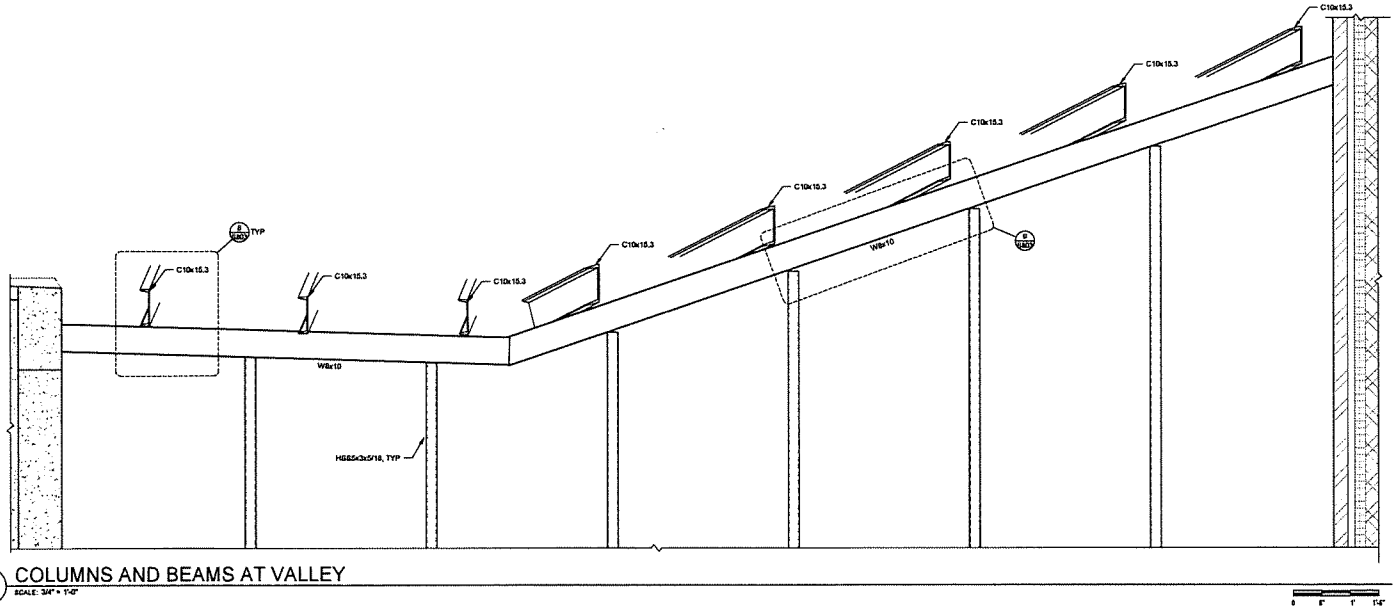
4 STEEL BEAM AT RIBBON WINDOW
SCALE: 3/4" = 1'-0"



LH JOIST ON CMU WALL WITH DECK CHORD ANGLE
5
SCALE: 3/4" = 1'-0"



6 LOAD AT JOIST
SCALE: 3/4" = 1'-0"



7 COLUMNS AND BEAMS AT VALLEY
SCALE: 3/4" = 1'-0"

Engberg Anderson ARCHITECTS
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REVISION

WARNER PARK COMMUNITY RECREATION CENTER EXPANSION

1625 NORTHPORT DRIVE
MADISON, WI 53704

CITY OF MADISON PARKS DIVISION
330 EAST LAKESIDE STREET
MADISON, WI 53715

PROJECT NUMBER 223471.00

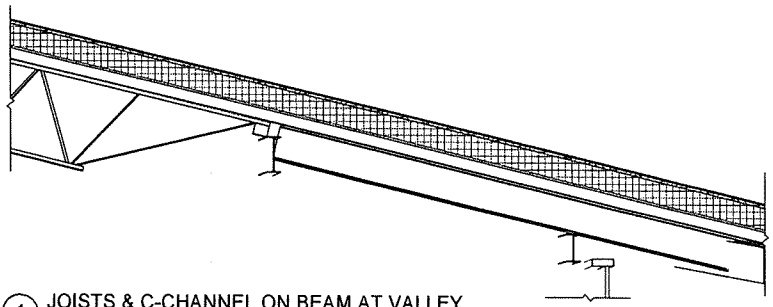
ISSUED FOR:
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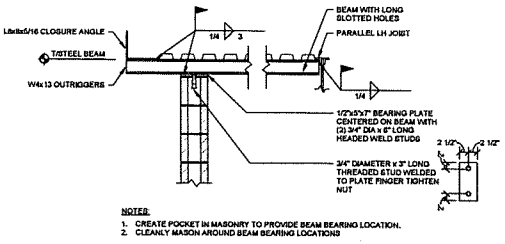
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CHECKED BY Checker

STRUCTURAL DETAILS

S801

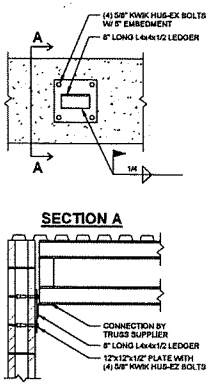


1 JOISTS & C-CHANNEL ON BEAM AT VALLEY
SCALE: 3/4" = 1'-0"

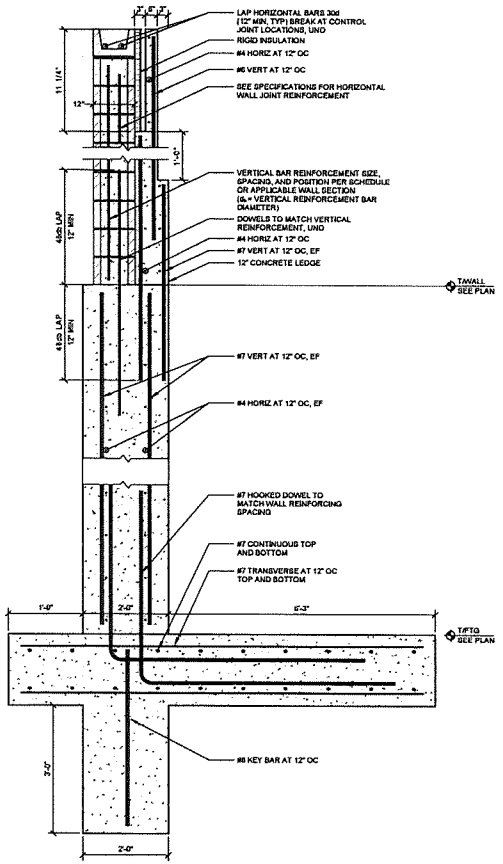


NOTES:
1. CREATE POCKET IN MASONRY TO PROVIDE BEAM BEARING LOCATION.
2. CLEANLY MASON AROUND BEAM BEARING LOCATIONS

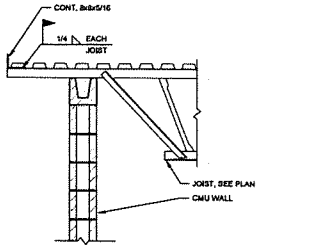
2 WEST OUTRIGGER DETAIL
SCALE: 3/4" = 1'-0"



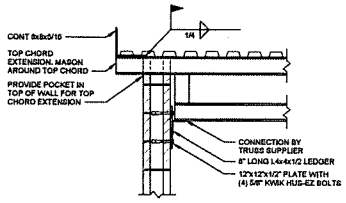
3 INTERIOR CFMS TRUSS BEARING
SCALE: 3/4" = 1'-0"



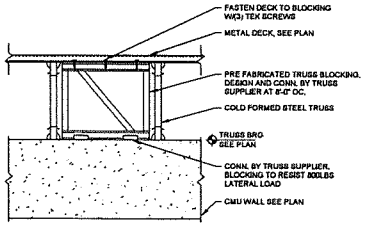
4 EXTERIOR GYM WALL SECTION
SCALE: 3/4" = 1'-0"



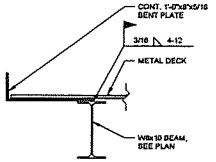
5 ROOF DECK EDGE
SCALE: 3/4" = 1'-0"



6 EXTERIOR CFMS TRUSS BEARING
SCALE: 3/4" = 1'-0"



7 TYP TRUSS BLOCKING
SCALE: 3/4" = 1'-0"



8 DECK EDGE AT EAST WALL
SCALE: 1 1/2" = 1'-0"

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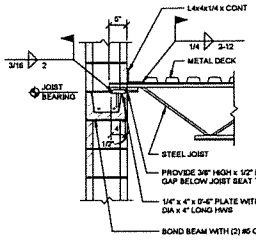
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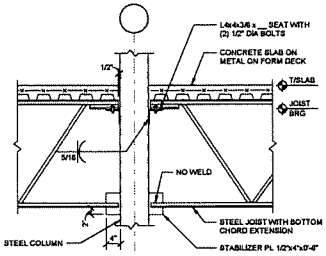
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STRUCTURAL DETAILS

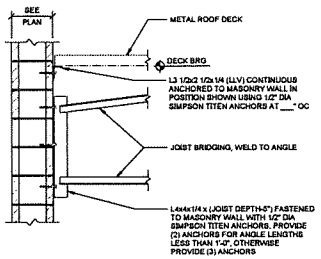
S802



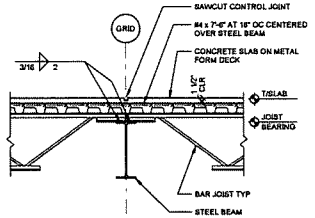
1 K-SERIES JOIST ON MASONRY WALL
SCALE: 3/4" = 1'-0"



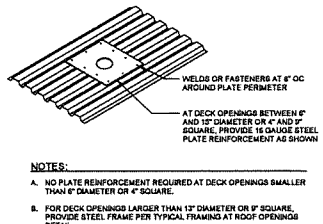
2 BAR JOIST BEARING ON HSS COLUMN
SCALE: 3/4" = 1'-0"



3 TYP END WALL BRIDGING
SCALE: 3/4" = 1'-0"

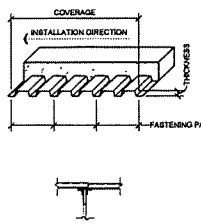


4 BAR JOIST BEARING ON BEAM
SCALE: 3/4" = 1'-0"



NOTES:
A. NO PLATE REINFORCEMENT REQUIRED AT DECK OPENINGS SMALLER THAN 6" DIAMETER OR 4" SQUARE.
B. FOR DECK OPENINGS LARGER THAN 12" DIAMETER OR 9" SQUARE, PROVIDE STEEL FRAME PER TYPICAL FRAMING AT ROOF OPENINGS DETAIL.

5 TYP ROOF DECK OPENING
SCALE: 3/4" = 1'-0"



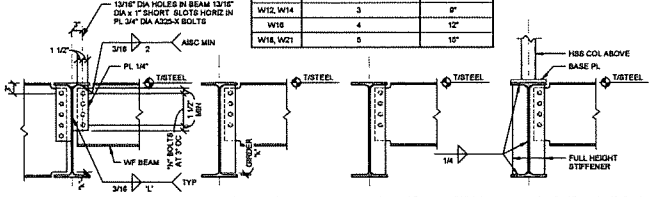
END LAP DETAIL
LAP END LAPS. LAPS ARE TO OCCUR AT SUPPORTS ONLY

DECK ID	DECK TYPE	GAUGE	DESIGN # OF SPANS	SUPPORT CONN PATTERN	SIDELAP CONN (PER SPAN)	GALV	PAINT	NOTES
D1	1.5B	20	3	36/4-#12 TEK SCREWS	(2) #10 SELF DRILLING SCREWS		X	1, 2, 3
D2	1.5B	18	3	36/5-3/4" PUDDLE WELD	(5) #10 SELF DRILLING SCREWS	X		1, 2, 3
D3	1.0C (NON-COMPOSITE)	24	3	33/4-#12 TEK SCREWS	(2) #10 SELF DRILLING SCREWS	X		1, 2, 3
D4	3"VLI (COMPOSITE)	20	3	36/4-5/8" PUDDLE WELDS	#10 SELF-DRILLING SCREWS AT 12" OC	X		1, 2, 3
D5	3" DOVETAIL	18	3	36/4-5/8" PUDDLE WELDS	#10 SELF-DRILLING SCREWS AT 12" OC	X		1, 2, 3

DECK NOTES:
1. ATTACH DECK TO ALL SUPPORTS WITH FASTENERS AND FASTENING PATTERNS INDICATED. FASTEN PERIMETER AT 12" OC.
2. GC CAN SUBMIT ALTERNATE FASTENING (WELDING, SCREWING, POWDER-ACTIVATED FASTENERS, PNEUMATICALLY-DRIVEN FASTENERS) FOR APPROVAL WITH MANUFACTURERS LITERATURE ON EQUAL PRIOR TO USING ALTERNATE.
3. ATTACH PARTIAL SHEETS IN ALL FLUTES.

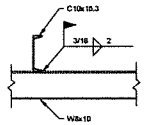
6 METAL ROOF DECK FASTENING
SCALE: 3/4" = 1'-0"

SHEAR TAB STEEL CONNECTIONS		
BEAM SIZE	"N" NUMBER OF 3/4" DIA BOLTS	"L" MIN LENGTH
W8, W10	2	6"
W12, W14	3	9"
W16	4	12"
W18, W21	5	15"

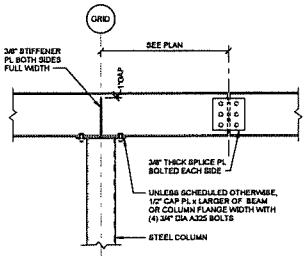


BEAM TO BEAM CONNECTION 2-SIDED CONDITION | BEAM TO BEAM CONNECTION 1-SIDED CONDITION | BEAM TO BEAM CONNECTION EXTERIOR WALL CONDITION | BEAM TO BEAM CONNECTION AT COLUMN BEARING

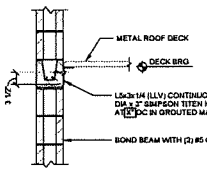
7 SHEARTAB BEAM CONNECTIONS
SCALE: 3/4" = 1'-0"



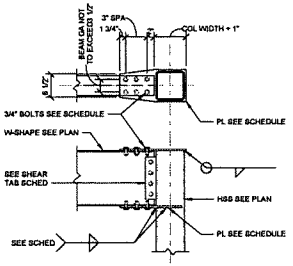
8 CHANNEL BEARING ON BEAM CONNECTION
SCALE: 3/4" = 1'-0"



9 TYP STEEL BEAM SPLICE
SCALE: 3/4" = 1'-0"

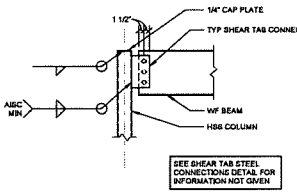


10 DECK BEARING ANGLE AT WALL
SCALE: 3/4" = 1'-0"

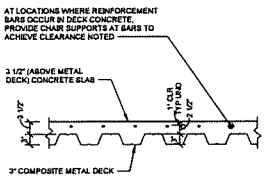


MOMENT SCHEDULE			
MARK	PLATE THICKNESS	NO. OF BOLTS PER FLANGE	WELD SIZE
MC1	1/2"	4	1/4

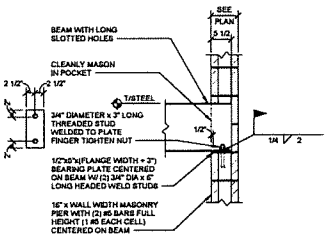
11 BEAM TO TUBE COLUMN MOMENT CONNECTION
SCALE: 3/4" = 1'-0"



12 WF BEAM TO HSS COL CONNECTION
SCALE: 3/4" = 1'-0"

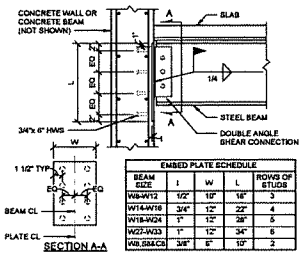


13 COMPOSITE METAL DECK
SCALE: 3/4" = 1'-0"



NOTES:
1. DETAIL APPLIES AT ALL BEAMS BEARING ON WALLS EXCEPT FOR LINTELS AND WHERE OTHERWISE NOTED.

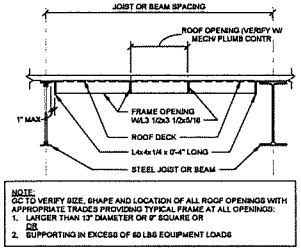
14 BEAM BEARING DETAIL
SCALE: 3/4" = 1'-0"



SECTION A-A

EMBED PLATE SCHEDULE				
BEAM SIZE	t	W	L	ROWS OF STUDS
W8-W12	1/2"	10"	18"	3
W14-W16	3/4"	12"	22"	4
W18-W24	1"	12"	38"	5
W27-W33	1"	12"	34"	6
W8,S8&C8	3/8"	8"	10"	2

15 BEAM CONNECTION AT CONCRETE FRAMING
SCALE: 3/4" = 1'-0"



NOTE:
GC TO VERIFY SIZE, SHAPE AND LOCATION OF ALL ROOF OPENINGS WITH APPROPRIATE TRADES PROVIDING TYPICAL FRAME AT ALL OPENINGS:
1. LARGER THAN 12" DIAMETER OR 9" SQUARE OR
2. SUPPORTING IN EXCESS OF 50 LBS EQUIPMENT LOADS

16 TYPICAL FRAMING AT OPENINGS
SCALE: 3/4" = 1'-0"

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Contractors are responsible for the means, methods, techniques, sequences and procedures of construction, including, but not limited to, temporary supports, shoring, bracing to support imposed loads and other similar items.

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S803

STRUCTURAL DESIGN CRITERIA

1. THESE NOTES SUPPLEMENT THE SPECIFICATIONS. PROJECT SPECIFICATIONS SHALL BE REFERRED TO FOR CLARIFICATIONS AND ADDITIONAL INFORMATION. IN CASE OF CONFLICT BETWEEN PROJECT SPECIFICATIONS AND THESE NOTES, THESE NOTES SHALL GOVERN.

2. GOVERNING BUILDING CODE: 2015 IBC AS AMENDED BY THE STATE OF WISCONSIN.

3. DESIGN LOADS

LIVE LOAD
- TYPICAL SLAB ON GRADE ---------- 100 psf
- MEZZANINE ---------- 100 psf

ROOF
LIVE LOAD
- SNOW ---------- 30 psf+DRIFTING
- SUPERIMPOSED DEAD LOAD
- TOP CHORD ---------- 10 psf
- BOTTOM CHORD ---------- 10 psf

SNOW LOADS
- GROUND SNOW (Pg) ---------- 30 psf
- SNOW LOAD IMPORTANCE FACTOR (Is) ---------- 1.0
- SNOW LOAD EXPOSURE FACTOR (Ce) ---------- 1.0
- ROOF THERMAL LOAD FACTOR (Ct) AT BUILDING ---------- 1.1
- BASE ROOF SNOW LOAD AT BUILDING ---------- 21 psf

WIND LOADS
- BASIC WIND SPEED ---------- 107 mph
- BUILDING OCCUPANCY CATEGORY ---------- II
- WIND LOAD IMPORTANCE FACTOR (Iw) ---------- 1.0
- WIND EXPOSURE CATEGORY ---------- C
- INTERNAL PRESSURE COEFFICIENT ---------- ±0.18

MAIN WIND FORCE - RESISTING SYSTEM:
- MWFRS SELECTED EDGE STRIP DISTANCE, (2a) ---------- 11.0 ft
- CALCULATED HORIZONTAL LOADS:

	END ZONE		INTERIOR ZONE	
	WALL	ROOF	WALL	ROOF
TRANSVERSE CASE #1:	24.0 psf	16.5 psf	19.2 psf	13.2 psf
TRANSVERSE CASE #2:	24.0 psf	16.5 psf	19.2 psf	13.2 psf
LONGITUDINAL:	24.0 psf	16.5 psf	19.2 psf	13.2 psf

- CALCULATED VERTICAL LOADS:

	END ZONE		INTERIOR ZONE	
	WINDWARD	LEEWARD	WINDWARD	LEEWARD
TRANSVERSE CASE #1:	1.8 psf	-14.7 psf	0.7 psf	-12.8 psf
TRANSVERSE CASE #2:	9.3 psf	-7.2 psf	8.0 psf	-5.2 psf
LONGITUDINAL:	-25.7 psf	-14.7 psf	-17.8 psf	-11.3 psf

COMPONENTS AND CLADDING:
(SEE ASCE/SEI 7-EECTION 6 FOR ZONE DEFINITIONS AND DIAGRAMS)
- COMPONENT AND CLADDING SELECTED EDGE STRIP DISTANCE, (a) ---------- 5.5 ft

	10 ft²	50 ft²	100 ft²
TRIBUTARY WIND LOAD AREAS			
ROOF (MONOSLOPE):			
ZONE 1 (NEGATIVE)	19.7 psf	17.3 psf	16.3 psf
ZONE 2 (NEGATIVE)	23.0 psf	20.7 psf	19.7 psf
ZONE 3 (NEGATIVE)	23.0 psf	20.7 psf	19.7 psf
WALLS:			
ZONE 4 (NEGATIVE)	21.3 psf	18.3 psf	18.4 psf
ZONE 5 (NEGATIVE)	26.3 psf	22.3 psf	20.4 psf
ZONE 4 & 5 (NEGATIVE)	19.7 psf	17.8 psf	16.7 psf

SEISMIC LOADS
- SEISMIC USE GROUP / OCCUPANCY CATEGORY ---------- II
- SEISMIC IMPORTANCE FACTOR (Ie) ---------- 1.0
- SEISMIC SITE CLASS ---------- C
- SPECTRAL RESPONSE COEFFICIENT (Sds) ---------- 0.048
- SPECTRAL RESPONSE COEFFICIENT (Sd1) ---------- 0.032
- SEISMIC DESIGN CATEGORY ---------- A
- BASIC SEISMIC FORCE RESISTING SYSTEM:
  - BEARING WALL SYSTEM
  - LIGHT FRAMED WALL SHEATHED WITH WOOD STRUCTURAL PANELS RATED FOR SHEAR RESISTANCE:
    R = 6.5 Ωo = 3.0 Cd = 4.0
- ANALYSIS PROCEDURE:
  - EQUIVALENT LATERAL FORCE PROCEDURE

4. FOUNDATIONS AND EARTHWORK
- ALLOWABLE SOIL BEARING PRESSURE FOR FOOTINGS ---------- 4,000 psf

5. CONCRETE
- MINIMUM 28 DAY COMPRESSIVE STRENGTH (f'c)
  - FOOTINGS ---------- 4,000 psi
  - PIERS, WALLS ---------- 4,000 psi
  - SLAB-ON-GRADE (INTERIOR) ---------- 3,500 psi
  - SLAB-ON-GRADE (EXTERIOR) ---------- 4,500 psi
- COVER ON MILD STEEL REINFORCEMENT
  - CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH ---------- 3"
  - CONCRETE EXPOSED TO EARTH OR WEATHER
    - #5 BARS AND SMALLER ---------- 1 1/2"
    - #6 BARS AND LARGER ---------- 2"
  - CONCRETE NOT EXPOSED TO WEATHER OR IN CONTACT WITH GROUND ---------- 1"
- CONCRETE REINFORCEMENT YIELD STRENGTH (Fy)
  - ALL DEFORMED MILD STEEL ---------- 60,000 psi
  - WELDED WIRE FABRIC ---------- 65,000 psi

6. CONCRETE MASONRY
- DESIGN STRESSES
  - MASONRY (NORMAL WEIGHT) MEETING ASTM C90 ---------- f'm = 2,250 psi
  - GROUT: MIN COMPRESSIVE STRENGTH AT 28 DAYS MEETING ASTM C476 ---------- 3,000 psi
  - MINIMUM BLOCK COMPRESSIVE STRENGTH ---------- 2,500 psi

7. STRUCTURAL STEEL
- STRUCTURAL STEEL YIELD STRENGTH (Fy)
  - TUBES ---------- 46,000 psi
  - WF BEAMS ---------- 50,000 psi
  - WF COLUMNS ---------- 50,000 psi
  - BOLTS FOR STANDARD FRAME CONNECTIONS ---------- 3/4" DIAMETER A325
  - BOLTS FOR SINGLE SHEAR TAB CONNECTIONS ---------- 3/4" DIAMETER A325
  - ANCHOR RODS ---------- F1554
  - WELDING ELECTRODES ---------- E70

8. MISCELLANEOUS
VERIFY OPENINGS THROUGH FLOOR AND WALLS WITH ARCHITECTURAL, MECHANICAL, PLUMBING, AND ELECTRICAL REQUIREMENTS. CHANGES IN SIZE, LOCATION OR NUMBER OF OPENINGS SHOWN ON THE STRUCTURAL DRAWINGS SHALL NOT BE PERMITTED WITHOUT WRITTEN APPROVAL OF THE STRUCTURAL ENGINEER. NOT ALL OPENINGS ARE SHOWN ON THE STRUCTURAL DRAWINGS.

GENERAL NOTES APPLY TO ALL SHEETS

1. CONTRACTOR TO PROVIDE DRAFT STOPPING IN ATTIC. MAXIMUM AREA OF SUBDIVIDE ATTIC AREA IS 3000 SF CONTRACTOR TO COORDINATE LOCATION OF DRAFT STOPPING WITH ARCHITECT AND TRUSS SHOP DRAWINGS PRIOR TO START OF CONSTRUCTION. PROVIDE AN ATTIC ACCESS PANEL INTO EACH ATTIC COMPARTMENT. MINIMUM OPENING SIZE OF 20" x 30" COORDINATE LOCATION WITH ARCHITECT. DRAFT STOPPING TO EXTEND TO FASCIA AT OVERHANGS.

2. SECURE TRUSSES AT EACH BEARING WITH SIMPSON H2.5A MIN.

3. CONTRACTOR TO SUBMIT TRUSS SHOP DRAWINGS TO ARCHITECT FOR REVIEW PRIOR TO CONSTRUCTION.

GENERAL

1. STRUCTURAL DRAWINGS ARE INTENDED TO BE USED WITH ARCHITECTURAL AND MECHANICAL DRAWINGS. CONTRACTOR IS RESPONSIBLE FOR COORDINATING SUCH REQUIREMENTS INTO THE SHOP DRAWINGS AND WORK.

2. NO OPENING SHALL BE MADE IN ANY STRUCTURAL BEAM, COLUMN, SUPPORT FLOOR, LOAD BEARING WALL, FOOTING, OR FOUNDATION WALL WITHOUT THE WRITTEN APPROVAL OF THE ARCHITECT/ ENGINEER. OPENINGS IN NON-LOAD BEARING WALLS REQUIRE THE ARCHITECT'S APPROVAL.

3. THE CONTRACTOR IS RESPONSIBLE FOR LIMITING THE AMOUNT OF CONSTRUCTION LOAD IMPOSED UPON NEW STRUCTURAL FRAMING. CONSTRUCTION LOADS SHALL NOT EXCEED THE DESIGN CAPACITY OF THE FRAMING AT THE TIME THE LOADS ARE IMPOSED.

4. THE STRUCTURE IS DESIGNED TO FUNCTION AS A UNIT UPON COMPLETION. THE CONTRACTOR IS RESPONSIBLE FOR FURNISHING ALL TEMPORARY BRACING AND/OR SUPPORT THAT MAY BE REQUIRED AS THE RESULT OF THE CONTRACTOR'S CONSTRUCTION METHODS AND/OR SEQUENCES. THE STRUCTURAL ENGINEER ASSUMES NO LIABILITY FOR THE STRUCTURE DURING CONSTRUCTION.

5. FIREPROOFING METHODS AND MATERIALS FOR STRUCTURAL DRAWINGS. REFER TO ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR RATING REQUIREMENTS, FIREPROOFING METHODS AND MATERIALS.

6. ALL SECTIONS, DETAIL AND NOTES SHOWN ON THE STRUCTURAL DRAWINGS ARE INTENDED TO BE TYPICAL AND SHALL APPLY TO SIMILAR SITUATIONS ELSEWHERE UNLESS OTHERWISE NOTED.

7. WHEN CONFLICTS ARE NOTED ON THE DRAWINGS, THE CONTRACTOR IS RESPONSIBLE FOR NOTIFYING THE A/E FOR RESOLUTION PRIOR TO FABRICATION OR INSTALLATION.

FOUNDATION NOTES

1. GEOTECHNICAL INFORMATION TAKEN FROM: GEOTECHNICAL EXPLORATION REPORT C22051-6.

2. THE OWNER SHALL RETAIN A SOILS ENGINEERING FIRM TO MONITOR PROPER SUBGRADE PREPARATIONS AND TO OVERSEE THE TESTING AND COMPACTION OF COMPACTED FILL MATERIAL.

3. CONTRACTOR SHALL LOCATE EXISTING UNDERGROUND UTILITIES BEFORE FOUNDATION EXCAVATION IF UNDERGROUND UTILITY CONFLICTS ARE DISCOVERED BEFORE OR ENCOUNTERED DURING EXCAVATION, NOTIFY THE ARCHITECT/ENGINEER IMMEDIATELY.

4. CONTRACTOR SHALL VERIFY THE LOCATION AND ELEVATION OF ANY EXISTING FOUNDATIONS.

5. BEFORE PLACING FOOTINGS, FOUNDATIONS, GRADE BEAMS, OR SLAB-ON-GRADE, THE SUB-GRADE SHALL BE PREPARED AND INSPECTED AS REQUIRED BY THE SPECIFICATIONS AND THE DRAWINGS.

6. REINFORCE ALL FOUNDATION WALLS AND FOOTINGS AS SHOWN ON THE ARCHITECTURAL AND STRUCTURAL DRAWINGS.

7. CONTROL JOINTS IN THE CAST-IN-PLACE CONCRETE FOUNDATION WALLS SHALL BE PLACED AT NOT TO EXCEED 20' OC OR AS LOCATED ON THE DRAWINGS.

8. PERIMETER FOUNDATION WALL INSULATION IS NOT SHOWN ON THE FOUNDATION DETAILS. SEE ARCHITECTURAL DRAWINGS AND THE SPECIFICATIONS FOR INSULATION REQUIREMENTS.

9. SEE SPECIFICATIONS FOR FREE DRAINING BACKFILL BENEATH ALL CONCRETE WALKS AND SLABS ADJACENT TO STRUCTURE.

10. CONTRACTOR NOTE: THE BASE OF ALL EXCAVATIONS SHALL BE KEPT FREE OF WATER AND LOOSE SOIL PRIOR TO PLACING CONCRETE. CARE SHOULD BE TAKEN DURING EXCAVATION AND CONSTRUCTION TO MINIMIZE DISTURBANCE OF THE BEARING SOILS. THE CONCRETE SHOULD BE PLACED AS SOON AS POSSIBLE AFTER EXCAVATION TO PREVENT EXCESSIVE DRYING OR WETTING OF THE SOIL.

MASONRY NOTES

1. ALL MASONRY WALLS ARE TO HAVE HORIZONTAL REINFORCEMENT WHICH DOES NOT EXCEED 16 INCHES ON CENTER VERTICALLY. SEE SPECIFICATIONS FOR INFORMATION RELATING TO CONCRETE BLOCK, BRICK, AND WALL REINFORCING.

2. ALL VERTICAL REINFORCING STEEL IN MASONRY WALLS ARE TO COMPLY WITH ASTM A615, GRADE 60. LAPS SHALL BE 48 BAR DIAMETERS (12" MINIMUM).

3. PROVIDE SPLICE BARS FOR ALL BOND BEAM REINFORCING AT ALL CORNERS. SPLICE BAR TO BE THE SAME SIZE AS BARS IN THE BOND BEAM. LAPS SHALL BE 50 BAR DIAMETER.

4. WHERE MASONRY IS APPLIED ADJACENT TO STEEL MEMBERS (BEAMS AND COLUMNS) PROVIDE ANCHORING DEVICES PER SPECIFICATIONS.

5. REFER TO ARCHITECTURAL PLANS FOR ROUGH OPENING LOCATIONS, SIZES, AND ELEVATIONS.

6. USE SIMPSON TITEN HD OR APPROVED EQUAL TYPE ANCHORS IN CMU WALL PARTITIONS.

7. ALL NON-STRUCTURAL CMU WALLS SHALL BE REINFORCED WITH A #3 VERTICAL BAR AT 48" OC WITH THAT CMU CORE GROUTED AND HORIZONTAL JOINT REINFORCEMENT AT 16" OC THE BOTTOM TWO COURSES SHALL BE GROUTED SOLID. PROVIDE CONTINUOUS BOND BEAM AT TOP OF WALL WITH 2 #4's CONTINUOUS GROUT BOND BEAM SOLID. PROVIDE #3 DOWELS AT 48" OC MATCH VERTICAL BAR, LAP 50 BAR DIAMETERS. PROVIDE LINTEL BLOCK AS BOND BEAM WITH (2) #5 x CONT, AND 8" BEARING EACH END, TYPICAL UNLESS NOTED OTHERWISE.

8. CONSTRUCTION BRACING FOR MASONRY WALLS SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE IN WHICH THE PROJECT IS LOCATED. MASONRY SUBMITTALS SHALL CONTAIN A LETTER SEALED BY THE ENGINEER AND SHALL BE ISSUED TO THE OWNER AFTER SUBMITTAL REVIEW AND PRIOR TO STARTING MASONRY CONSTRUCTION.

COLD FORMED TRUSS NOTES

1. TRUSS FABRICATOR SHALL DESIGN TRUSSES FOR LOADS SPECIFIED ON PLANS IN CONFORMANCE WITH "QUALITY CONTROL MANUAL" BY TPI. REFER TO THE ARCHITECTURAL DRAWINGS FOR ADDITIONAL DEAD LOADS RESULTING FROM DORMERS AND OTHER MISCELLANEOUS FRAMING. ALL TRUSSES SHALL BE DESIGNED FOR A MINIMUM OF 30 PSF LIVE LOAD PLUS 10 psf DEAD LOAD.

2. LIVE LOAD IS ON A HORIZONTAL PROJECTION OTHER LIVE LOADS SHOWN ON THE DRAWINGS ARE IN ADDITION TO THESE DESIGNATED LOADS.

3. CHECK VERTICALLY PROJECTED ELEMENTS FOR DESIGN WIND LOAD.

4. DESIGN TRUSSES TO RESIST A NET UPLIFT OF 10 PSF.

5. SUBMIT SHOP DRAWINGS AND CALCULATIONS PRIOR TO FABRICATION.

6. CONFORM TO TPI SPECIFICATIONS.

7. FLOOR TRUSS LL DEFLECTION SHALL NOT EXCEED L/480.

8. ROOF TRUSS LL DEFLECTION SHALL NOT EXCEED L/360.

9. PERMANENT BRACING NOT SHOWN ON PLANS, WHICH IS REQUIRED FOR STRENGTH AND STABILITY OF TRUSS MEMBERS, SHALL BE DESIGNED AND PROVIDED BY TRUSS SUPPLIER.

10. ALL TRUSS TOP CHORDS SHALL BE CONTINUOUSLY BRACED BY THE (ROOF/FLOOR) DECKING. ALL ROOF TRUSS WEB MEMBERS SHALL BE BRACED AT 4'-0" OC UNLESS CALCULATIONS SHOW OTHERWISE.

11. TEMPORARY BRACING SHALL BE THE CONTRACTOR'S RESPONSIBILITY. PROVIDE IN ACCORDANCE WITH TPI GUIDELINES.

12. PROVIDE 24" WIDE VIERENDEEL PANEL AT CENTER OF EACH PARALLEL CHORD TRUSS.

STRUCTURAL STEEL NOTES

1. FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL CONFORM WITH THE AISC (AMERICAN INSTITUTE OF STEEL CONSTRUCTION), "MANUAL OF STEEL CONSTRUCTION", LATEST EDITION.

2. ALL STEEL DETAILS AND CONNECTIONS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE AISC "SPECIFICATIONS FOR STRUCTURAL STEEL BUILDINGS, ALLOWABLE STRESS DESIGN AND PLASTIC DESIGN", LATEST EDITION.

3. ALL WELDING SHALL BE BY WELDERS HOLDING CURRENT VALID AWS CERTIFICATES IN THE TYPE OF WELD REQUIRED.

4. SHOP CONNECTIONS NOT SPECIFICALLY DETAILED ON THE DRAWINGS SHALL BE BOLTED OR WELDED. FIELD CONNECTIONS SHALL BE BOLTED UNLESS SPECIFICALLY DETAILED OTHERWISE.

5. DESIGN IN ACCORDANCE WITH GUIDE DETAILS AND REACTIONS.

6. USE A325N BOLTS UNLESS NOTED OTHERWISE.

7. OVERSIZED OR SLOTTED HOLES SHALL NOT BE USED FOR ANY CONNECTIONS UNLESS SPECIFICALLY INDICATED ON THE DRAWINGS OR APPROVED IN WRITING BY THE ENGINEER.

8. ALL BEAM COPES MUST BE MADE TO A RADIUS (1" MINIMUM). ALL BUTT AND FULL PENETRATION WELDS SHALL BE MADE USING RUN OFF TABS WHICH SHALL BE TRIMMED FLUSH AND GROUND SMOOTH AFTER WELD IS COMPLETED.

9. ALL WELDS INDICATED SHALL MEET THE MINIMUM WELD SIZE SPECIFIED BY THE CURRENT AISC MANUAL OF STEEL DESIGN. (SINGLE PASS AS REQUIRED).

10. CUTS, HOLES, COPING, ETC. REQUIRED FOR WORK OF OTHER TRADES SHALL BE SHOWN ON THE SHOP DRAWINGS AND MADE IN THE SHOP. CUTS OR BURNING OF HOLES IN STRUCTURAL STEEL MEMBERS IN THE FIELD WILL NOT BE PERMITTED.

11. PROVIDE ANY NECESSARY TEMPORARY BRACING OR GUYS TO PROVIDE LATERAL SUPPORT OF THE BUILDING UNTIL PERMANENT FRAME IS COMPLETELY INSTALLED.

12. INSTALL EXPANSION BOLTS IN ACCORDANCE WITH THE ICBO REPORT RECOMMENDATIONS.

13. ALL ELEVATOR GUIDE BEAMS SHALL BE S8x18.4 UNLESS NOTED OTHERWISE. SLOPE TO MATCH BEAM SLOPE.

14. STRUCTURAL STEEL FRAMING SHALL BE TRUE AND PLUMB BEFORE CONNECTIONS ARE FINALLY BOLTED OR WELDED.

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ORIGINAL

WARNER PARK COMMUNITY RECREATION CENTER EXPANSION

1625 NORTHPORT DRIVE
MADISON, WI 53704

CITY OF MADISON PARKS DIVISION
330 EAST LAKESIDE STREET
MADISON, WI 53715

PROJECT NUMBER 223471.00

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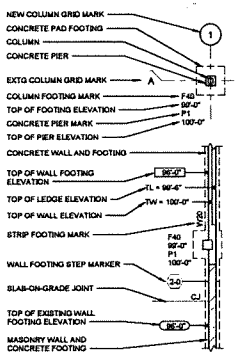
STRUCTURAL NOTES

S001

ABBREVIATION LIST

AB	ANCHOR BOLT (ROD)
AHU	AIR HANDLING UNIT
ALT	ALTERNATE
ARCH	ARCHITECTURAL
BLDG	BUILDING
BRG	BEARING
BP(##)	BASE PLATE CALL-OUT
CF	COLD-FORMED
CIP	CAST-IN-PLACE
CJ	CONTROL JOINT
CL	CENTER LINE
CLR	CLEAR (DISTANCE)
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
CONC	CONCRETE
CONT	CONTINUOUS
DBA	DEFORMED BAR ANCHOR
DEMO	DEMOLITION / DEMOLISH
DIA	DIAMETER
DWG	DRAWING
EGD	EDGE OF DECK
EGS	EDGE OF SLAB
EF	EACH FACE
EJ	EXPANSION JOINT
ELEV	ELEVATION
EQ	EQUAL
EW	EACH WAY
EWEF	EACH WAY EACH FACE
EXP	EXPANSION
EXT	EXTERIOR
EXTG	EXISTING
FD	FLOOR DRAIN
FLR	FLOOR
FV	FIELD VERIFY
F(##)	FOOTING CALL-OUT
GA	GAUGE
GALV	GALVANIZED
GC	GENERAL CONTRACTOR
GLULAM	GLUE-LAMINATED BEAM(S)
HK	HOOK
HORIZ	HORIZONTAL
HP	HIGH POINT
HWS	HEADED WELDED STUD(S)
IF	INSIDE FACE
INT	INTERIOR
JBE	JOIST BEARING ELEVATION
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LBL	LAMINATED STRAND LUMBER
LTWT	LIGHTWEIGHT
LVL	LAMINATED VENEER LUMBER
LW	LONG WAY
MAX	MAXIMUM
MECH	MECHANICAL
MFR	MANUFACTURER
MIN	MINIMUM
MISC	MISCELLANEOUS
NA	NOT APPLICABLE
NTS	NOT TO SCALE
OC	ON CENTER
OF	OUTSIDE FACE
OPNG	OPENING
OPP	OPPOSITE
PC	PRECAST / PRESTRESSED
PCI	POUNDS PER CUBIC INCH
PDF	POUNDS PER CUBIC FOOT
PL	PLATE
PLF	POUNDS PER LINEAR FOOT
PROJ	PROJECTION
PSF	POUNDS PER CUBIC FOOT
PSI	POUNDS PER SQUARE INCH
PT	PRE (POST)-TENSIONED
P(#)	PIER CALL-OUT
RD	ROOF DRAIN
REINF	REINFORC(ED)(ING)
RTU	ROOF TOP UNIT
SIM	SIMILAR
SOG	SLAB-ON-GRADE
SPA	SPAC(ES)(ED)(ING)
SPEC	SPECIFICATION(S)
SQ	SQUARE
SS	STAINLESS STEEL
SW	SHORT WAY
TL	TOP OF LEDGE
TP	TOP OF PIER
TW	TOP OF WALL
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
VERT	VERTICAL
WP	WORKING POINT
WWF	WELDED WIRE FABRIC

FOUNDATION LEGEND

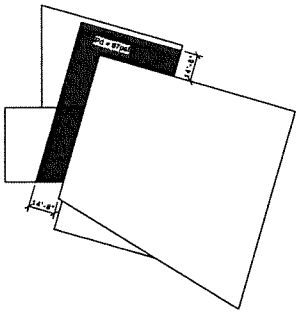


LINTEL SCHEDULE

LENGTH	SIZE AND REINFORCING	NOTE/REMARKS
0'-4"	8" W x 8" H BOND BM W/ (2) #5 BOT	SEE ARCH FOR LOCATIONS
4'-8"	8" W x 16" H BOND BM W/ (2) #5 BOT	SEE ARCH FOR LOCATIONS

NOTES:

1. AT NEW WALLS, REINFORCE AT BEARING WITH (1) #5 VERT FULL HEIGHT OF WALL FROM FLOOR TO FLOOR OR FLOOR TO ROOF.
2. AT EXISTING WALLS, BEAR LINTEL ON MIN (2) COURSES GROUTED CMU.
3. AT EXTERIOR OPENINGS, PROVIDE GALV BENT PL5/16"x7 1/2"x7 1/2" x CONT TO OPENING CORNERS.
4. 8" MIN BEARING AT ENDS.



DRIFT LOAD KEY PLAN

SCALE: 12" = 1'-0"

WALL FOOTING SCHEDULE

MARK	CONTINUOUS FOOTING DIMENSIONS		FOOTING REINFORCEMENT	REMARKS
	WIDTH	THICKNESS		
W24	2'-4"	1'-0"	(3) #5; B, CONT	
W28	2'-8"	1'-0"	(3) #5; B, CONT	
W30	3'-0"	1'-0"	(3) #5; B, CONT	
W60	6'-0"	1'-8"	(7) @ 12" T&B, EW	

MASONRY WALL REINFORCEMENT SCHEDULE

MARK	WALL TYPE	REINFORCEMENT		NOTES
		VERTICAL	HORIZONTAL	
A	12" CMU	#6 AT 16" OC	HJR AT 16" OC	BOND BEAM WITH (1) #5 AT 40" OC AND AT BOTTOM OF WALL
B	12" CMU	#6 AT 8" OC	HJR AT 16" OC	VERTICAL REINFORCING TO BE AT EXTERIOR FACE OF CMU
C	8" CMU	#6 AT 16" OC	HJR AT 16" OC	BOND BEAM WITH (1) #5 AT 40" OC AND AT BOTTOM OF WALL

NOTES:

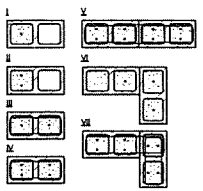
1. SEE ARCHITECTURAL WALL TYPES FOR ADDITIONAL REQUIREMENTS.
2. REINFORCEMENT IS TO BE LOCATED IN CENTER OF WALL UNO.
3. PROVIDE CONTINUOUS BOND BEAM WITH (2) #5 AT ALL BEARING ELEVATIONS AND OVER WINDOWS DOORS AND OTHER OPENINGS UNO.
4. PROVIDE HORIZONTAL REINFORCEMENT INTO INTERSECTING WALLS AT 16" OC VERTICAL, EXTENT 30" EACH DIRECTION WITH PREFABRICATED "T" AND "L" SECTION TYP.
5. SEE GENERAL MASONRY NOTES ON SHEET S001 FOR NON LOAD BEARING WALL REINFORCEMENT REQUIREMENTS.
6. PROVIDE DOWELS TO MATCH VERTICAL REINFORCEMENT, EMBED DOWELS 30" INTO FOUNDATION WALL AND LAP 30" WITH OR MAKE CONTINUOUS WITH VERTICAL STEEL.

MASONRY PIER SCHEDULE

MARK	SIZE (LENGTH)	TYPE	VERTICAL REINFORCING	CLOSED LOOP TIE	COMMENTS
MP1	16"	III	(6) #6	(2) SETS OF 1/4" AT 8"	
MP2	24"	IV	(8) #6	(3) SETS OF 1/4" AT 8"	

NOTES

1. ALL REINFORCED CMU CORES ARE GROUTED SOLID.
2. RUN HORIZONTAL JOINT REINFORCING CONT. THROUGH MASONRY PIERS.
3. USE 1/4" (2) RODS AS CLOSED LOOP TIES.
4. USE BOND BEAM CMU BLOCKS OR DROP TOP CMU BLOCK AT MASONRY PIERS WITH TIES.
5. SIZE IS WALL WIDTH x LENGTH.



LOOSE STEEL LINTEL SCHEDULE

PROVIDE WHERE OTHER LINTELS ARE NOT SPECIFICALLY DETAILED

WALL THICK	CLEAR MASONRY OPENING WIDTH	SECTION
ALL	AT FIRE EXTINGUISHER CABINETS AND DRINKING FOUNTAINS	1/4" PLATE
4"	TO 5'-0"	ST3x6.25
4"	TO 7'-0"	PL 3/8 x 4 1/2 ON PL 3/8 x 3 1/2
4"	TO 9'-0"	PL3/8"x7 1/2" ON PL3/8"x3 1/2"
6"	TO 5'-0"	(2) L3 1/2x2 1/2x1/4 (LLV)
6"	TO 7'-0"	WT4x10.5
8"	TO 8'-0"	WT7x11
6"	TO 12'-0"	WT7x13 WITH PL1/2"x2"
8"	TO 5'-0"	(2) L3 1/2x3 1/2x1/4
8"	TO 7'-0"	(2) L4x3 1/2x5/16 (LLV)
6"	TO 8'-0"	WT7x15
10"	TO 7'-0"	W8x10 WITH PL5/16"x8"
10"	TO 10'-0"	W8x15 WITH PL5/16"x8"
12"	TO 5'-0"	(3) L3 1/2x3 1/2x1/4
12"	TO 7'-0"	W8x10 WITH PL5/16"x11"
12"	TO 10'-0"	W8x15 WITH PL5/16"x11"

NOTES:

1. PROVIDE MINIMUM 8" BEARING AT EACH END OF LINTEL.
2. GROUT BLOCK CORES AND REINFORCE WITH (1) #5 VERT BELOW LINTEL BEARING.
3. CENTER LINTELS IN WALL UNLESS OTHERWISE NOTED.
4. BOTTOM PLATES UNDER WIDE FLANGE SHAPES SHALL BE EXTENDED FULL LENGTH OF LINTEL.
5. WELD LINTEL COMPONENTS INTO SINGLE UNIT.
6. NOT LINTELS ARE REQUIRED FOR 4" AND 6" NON-BEARING MASONRY WALLS WHERE GROUTED HOLLOW METAL FRAMES HAVE A HEADSPAN OF 4'-0" OR LESS.

BRICK LOOSE LINTEL SCHEDULE

MARK	SECTION	NOTE/ REMARKS
W ≤ 4'-0"	L4x4x5/16	.
6'-0" < L < 8'-0"	L6x4x3/8	.
8'-0" < L < 12'-0"	L7x4x1/2	.
12'-0" < L < 16'-0"	L8x4x3/4	.

NOTES:

1. LINTELS TO BE SHOP PAINTED WITH ZINC RICH URETHANE. SEE SPECIFICATIONS.
2. PROVIDE 4" MIN BEARING EACH END OF LINTEL UNDER 8'-0". 8" BEARING FOR LONGER LINTELS.
3. SEE ARCH FOR CONTROL JOINT LOCATIONS AND FLASHING REQUIREMENTS.

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PROJECT NUMBER 223471.00

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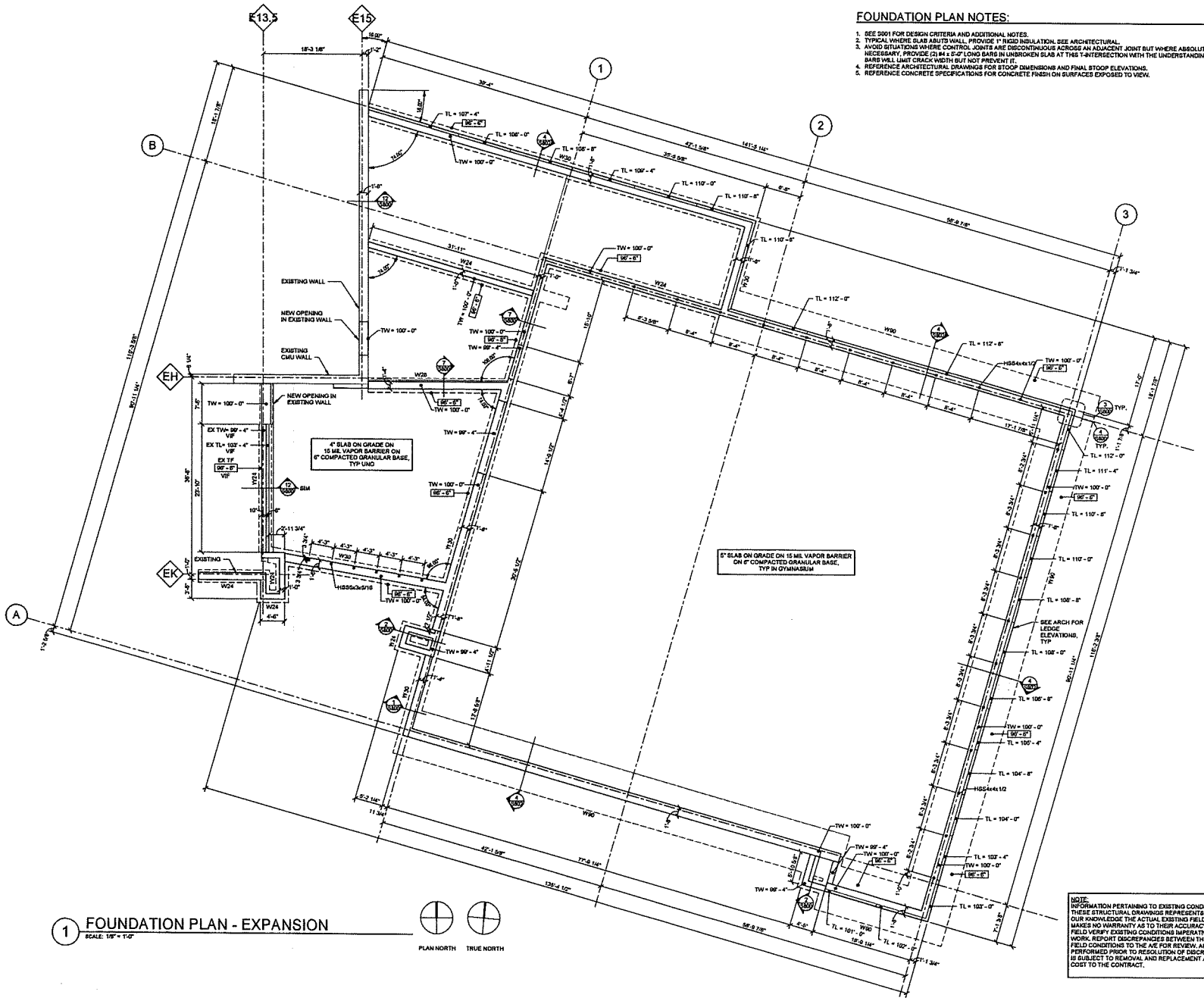
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STRUCTURAL SCHEDULES

S002



FOUNDATION PLAN NOTES:

1. SEE S001 FOR DESIGN CRITERIA AND ADDITIONAL NOTES.
2. TYPICAL WHERE SLAB ABUTS WALL, PROVIDE 1" RIGID INSULATION. SEE ARCHITECTURAL.
3. AVOID SITUATIONS WHERE CONTROL JOINTS ARE DISCONTINUOUS ACROSS AN ADJACENT JOINT BUT WHERE ABSOLUTELY NECESSARY, PROVIDE (2) #4 x 5'-0" LONG BARS IN UNBROKEN SLAB AT THIS T-INTERSECTION WITH THE UNDERSTANDING THAT BARS WILL LIMIT CRACK WIDTH BUT NOT PREVENT IT.
4. REFERENCE ARCHITECTURAL DRAWINGS FOR STOOP DIMENSIONS AND FINAL STOOP ELEVATIONS.
5. REFERENCE CONCRETE SPECIFICATIONS FOR CONCRETE FINISH ON SURFACES EXPOSED TO VIEW.

1 FOUNDATION PLAN - EXPANSION
SCALE: 1/8" = 1'-0"

PLAN NORTH TRUE NORTH

NOTE:
INFORMATION PERTAINING TO EXISTING CONDITIONS GIVEN ON THESE STRUCTURAL DRAWINGS REPRESENTS TO THE BEST OF OUR KNOWLEDGE THE ACTUAL EXISTING FIELD CONDITIONS. OTIE MAKES NO WARRANTY AS TO THEIR ACCURACY. CONTRACTOR TO FIELD VERIFY EXISTING CONDITIONS IMPERATIVE TO THE NEW WORK. REPORT DISCREPANCIES BETWEEN THE DRAWINGS AND FIELD CONDITIONS TO THE A/E FOR REVIEW. ANY WORK PERFORMED PRIOR TO RESOLUTION OF DISCREPANCIES BY THE A/E IS SUBJECT TO REMOVAL AND REPLACEMENT AT NO ADDITIONAL COST TO THE CONTRACT.

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Oneida Nation

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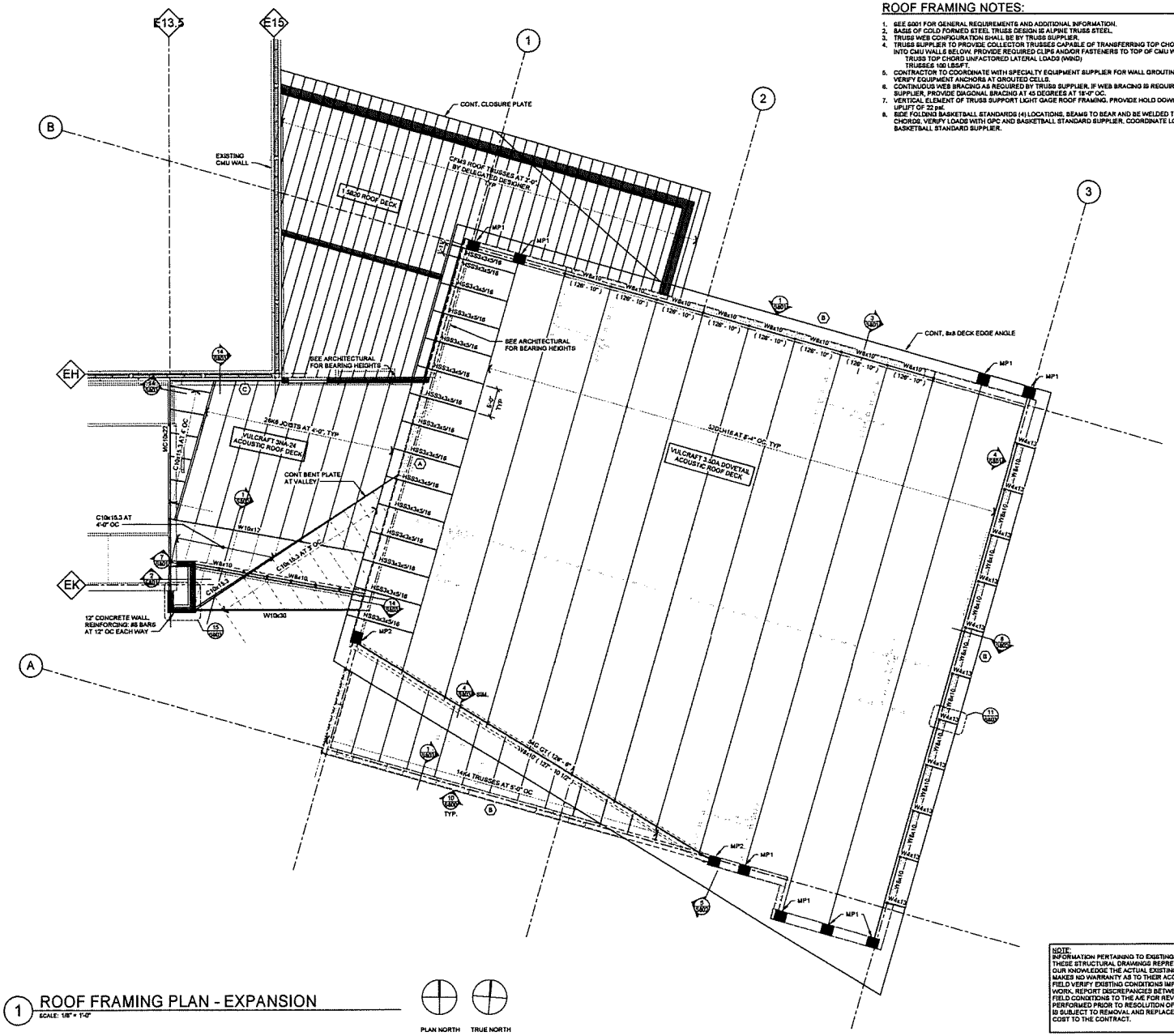
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FOUNDATION PLAN - EXPANSION

S200



1 ROOF FRAMING PLAN - EXPANSION
SCALE: 1/8" = 1'-0"

PLAN NORTH TRUE NORTH

ROOF FRAMING NOTES:

1. SEE 6001 FOR GENERAL REQUIREMENTS AND ADDITIONAL INFORMATION.
2. BASIS OF COLD FORMED STEEL TRUSS DESIGN IS ALPINE TRUSS STEEL.
3. TRUSS WEB CONFIGURATION SHALL BE BY TRUSS SUPPLIER.
4. TRUSS SUPPLIER TO PROVIDE COLLECTOR TRUSSES CAPABLE OF TRANSFERRING TOP CHORD LATERAL LOADS INTO CMU WALLS BELOW. PROVIDE REQUIRED CLIPS AND/OR FASTENERS TO TOP OF CMU WALL/LEDGER TRUSS TOP CHORD UNFACTORED LATERAL LOAD9 (WIND) TRUSSES 100 LBS/FT.
5. CONTRACTOR TO COORDINATE WITH SPECIALTY EQUIPMENT SUPPLIER FOR WALL GROUTING REQUIRMENTS. VERIFY EQUIPMENT ANCHORS AT GROUTED CELLS.
6. CONTINUOUS WEB BRACING AS REQUIRED BY TRUSS SUPPLIER. IF WEB BRACING IS REQUIRED BY THE TRUSS SUPPLIER, PROVIDE DIAGONAL BRACING AT 45 DEGREES AT 16'-0" OC.
7. VERTICAL ELEMENT OF TRUSS SUPPORT LIGHT GAGE ROOF FRAMING. PROVIDE HOLD DOWN/STRAP TO RESIST UPLIFT OF 22 psf.
8. SIDE FOLDING BASKETBALL STANDARDS (4) LOCATIONS, BEAMS TO BEAR AND BE WELDED TO JOISTS BOTTOM CHORDS, VERIFY LOADS WITH OPC AND BASKETBALL STANDARD SUPPLIER. COORDINATE LOCATIONS WITH BASKETBALL STANDARD SUPPLIER.

NOTE:
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WARNER PARK COMMUNITY RECREATION CENTER EXPANSION

1625 NORTHPORT DRIVE
MADISON, WI 53704

CITY OF MADISON PARKS DIVISION
330 EAST LAKESIDE STREET
MADISON, WI 53715

PROJECT NUMBER 223471.00

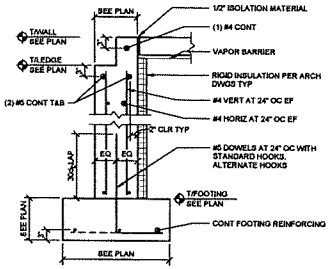
ISSUED FOR:
BID SET 5/16/2024

REVISION FOR:
NO. DESCRIPTION DATE

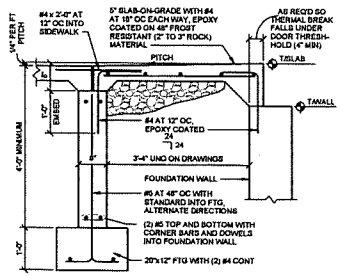
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ROOF FRAMING PLAN - EXPANSION

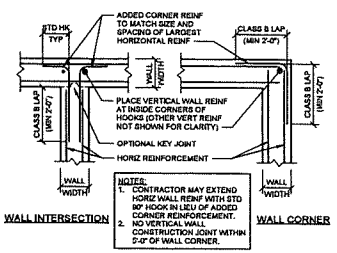
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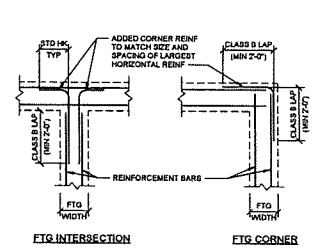
1 CONCRETE FROST WALL
SCALE: 3/4" = 1'-0"



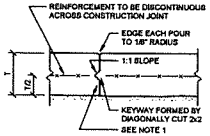
2 TYPICAL STOOP
SCALE: 3/4" = 1'-0"



3 TYPICAL WALL CORNER REINFORCEMENT
SCALE: 3/4" = 1'-0"



4 TYPICAL FOOTING CORNER REINFORCEMENT
SCALE: 3/4" = 1'-0"



GENERAL NOTES
1. SLAB-ON-GRADE CONSTRUCTION SHOULD CONFORM WITH THE RECOMMENDATIONS AND REQUIREMENTS SET FORTH IN THE LATEST RELEASE OF ACI 302 GUIDE FOR CONCRETE FLOOR AND SLAB CONSTRUCTION.
2. SEE PLANS FOR THE SLAB THICKNESS (T) AND REINFORCEMENT.
3. THE SLAB REINFORCEMENT, IF OTHER THAN WWF, SHALL BE CHAIRED BY SOIL SUPPORTED SLAB BOLSTERS.
4. REFER TO THE GENERAL NOTES, THE SPECIFICATIONS, AND THE DRAWINGS FOR SUB-FLOOR DRAINAGE SYSTEM, SUBGRADE PREPARATION, AND/OR MUD SLAB AND VAPOR RETARDER REQUIREMENTS.
5. THE SUBGRADE SHALL BE FREE OF STANDING WATER AT THE TIME OF CONCRETE PLACEMENT.

CONSTRUCTION JOINT NOTES
1. BREAK THE BOND BETWEEN NEW AND PREVIOUSLY PLACED SLABS BY SPRAYING OR BY PAINTING THE EXPOSED SIDE OF THE JOINT WITH A CURING COMPOUND, ASPHALTIC EMULSION, OR FORM OIL.

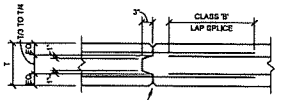
JOINT SPACING NOTES
1. UNLESS SHOWN OTHERWISE ON THE DRAWINGS, PROVIDE CONTROL AND/OR CONSTRUCTION JOINTS AT EVERY COLUMN LINE AND IN BETWEEN THE COLUMNS SUCH THAT THE JOINT SPACING DOES NOT EXCEED 36 * (SLAB THICKNESS) UNLESS SHOWN OTHERWISE. THE RESULTING PANELS SHOULD BE APPROXIMATELY SQUARE.

CONTROL JOINT NOTES
1. FOR SAW CUT CONTROL JOINTS, MAKE THE SAW CUT AS SOON AS THE SLAB IS ABLE TO SUPPORT THE WEIGHT OF WORKERS AND SAWING EQUIPMENT WITHOUT DAMAGE TO THE FINISHED SURFACE OF THE SLAB, BUT WITHIN 24 HOURS.
2. REFER TO SPECIFICATIONS REGARDING EPOXY RESIN OR ELASTOMERIC SEALANT REQUIREMENTS TO FILL CTRL JOINTS.
3. DEPTH OF SAWCUT SHOULD BE 1 1/4" IF PRODUCED USING EARLY ENTRY DRY-CUT PROCESS AND T/4 (1" MINIMUM) IF PRODUCED USING THE CONVENTIONAL WET-CUT PROCESS.

FORMED CONTROL JOINT OPTION NOTES
1. FORM CONTROL JOINTS BY INSERTING A PRE-MOLDED STRIP INTO THE FRESH CONCRETE UNTIL THE TOP SURFACE OF THE STRIP IS FLUSH WITH THE TOP SURFACE OF THE SLAB.
2. TOOL THE SLAB EDGES ROUND ON EACH SIDE OF THE INSERT, 1/8" MAXIMUM RADIUS.
3. AFTER THE CONCRETE HAS CURED, REMOVE THE INSERTS AND CLEAN THE GROOVE OF LOOSE DEBRIS.

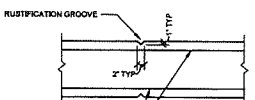
5 TYPICAL CONSTRUCTION AND CONTROL JOINTS IN SOG
SCALE: 3/4" = 1'-0"

NOTE:
MAXIMUM LENGTH OF WALL POUR BETWEEN CONSTRUCTION JOINTS LIMITED TO 60'-0"



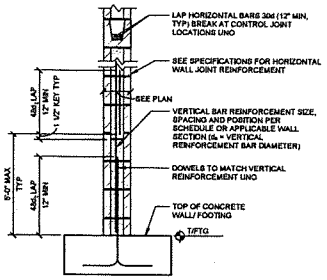
CONSTRUCTION JOINT

NOTE:
CONTROL JOINT DETAIL APPLIES AT 20'-0" OC (MAXIMUM) AT ALL WALL FACES THAT ARE TO BE LEFT EXPOSED TO VIEW



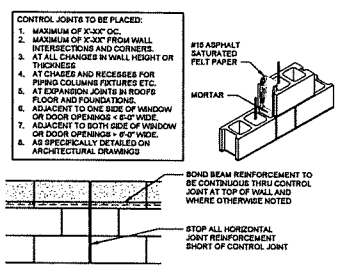
CONTROL JOINT

6 CONCRETE WALL JOINTS
SCALE: 3/4" = 1'-0"

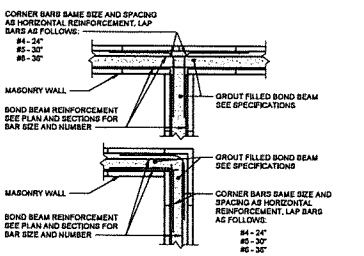


7 TYP REINF'D CMU WALL
SCALE: 3/4" = 1'-0"

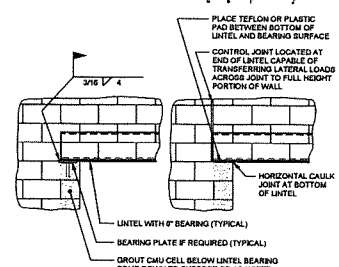
CONTROL JOINTS TO BE PLACED:
1. MAXIMUM OF X-XX" OC.
2. MAXIMUM OF X-XX" FROM WALL INTERSECTIONS AND CORNERS.
3. AT ALL CHANGES IN WALL HEIGHT OR THICKNESS
4. AT CHASES AND RECESSES FOR PIPING COLUMNS FIXTURES ETC.
5. AT EXPANSION JOINTS IN ROOFS FLOOR AND FOUNDATIONS.
6. ADJACENT TO ONE SIDE OF WINDOW OR DOOR OPENINGS < 6'-0" WIDE.
7. ADJACENT TO BOTH SIDE OF WINDOW OR DOOR OPENINGS > 6'-0" WIDE.
8. AS SPECIFICALLY DETAILED ON ARCHITECTURAL DRAWINGS



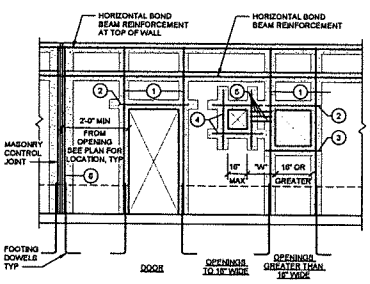
8 CMU CONTROL JOINT
SCALE: 3/4" = 1'-0"

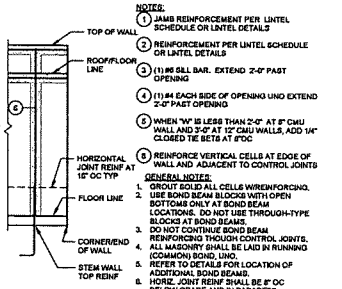


9 MASONRY BOND BEAM CORNER REINFORCEMENT PLAN
SCALE: 3/4" = 1'-0"



10 LINTEL BEARING DETAIL
SCALE: 3/4" = 1'-0"

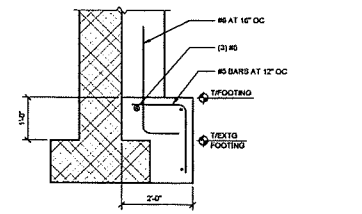




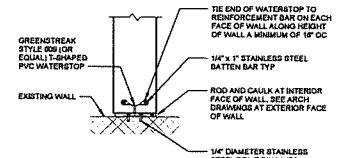
NOTES:
1. JAMB REINFORCEMENT PER LINTEL SCHEDULE OR LINTEL DETAILS
2. REINFORCEMENT PER LINTEL SCHEDULE OR LINTEL DETAILS
3. (1) #6 SILL BAR. EXTEND 2'-0" PAST OPENING
4. (1) #4 EACH SIDE OF OPENING UNO EXTEND 2'-0" PAST OPENING
5. WHEN "W" IS LESS THAN 2'-0" AT 8" CMU WALL AND 3'-0" AT 12" CMU WALLS, ADD 1/4" CLOSED TIE BETS AT 8"OC
6. REINFORCE VERTICAL CELLS AT EDGE OF WALL AND ADJACENT TO CONTROL JOINTS

GENERAL NOTES:
1. GROUT SOLID ALL CELLS WHEREINFORCING.
2. USE BOND BEAM BLOCKS WITH OPEN BOTTOMS ONLY AT BOND BEAM LOCATIONS. DO NOT USE THROUGH-TYPE BLOCKS AT BOND BEAMS.
3. DO NOT CONTINUE BOND BEAM REINFORCING THOUGH CONTROL JOINTS.
4. ALL MASONRY SHALL BE LAID IN RUNNING (COMMON) BOND, UNO.
5. REFER TO DETAILS FOR LOCATION OF ADDITIONAL BOND BEAMS.
6. HORIZ. JOINT REINF SHALL BE 8" OC BELOW GRADE AND IN PARAPETS.

11 TYPICAL CMU WALL REINFORCEMENT AT OPENINGS
SCALE: 3/4" = 1'-0"



12 NEW WALL AND FOOTING ADJACENT TO EXISTING
SCALE: 3/4" = 1'-0"



13 NEW FDN TO EXISTING
SCALE: 3/4" = 1'-0"

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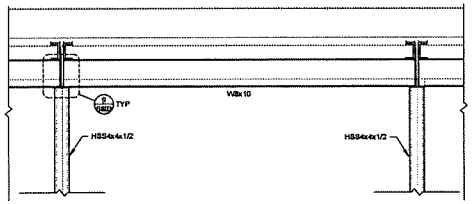
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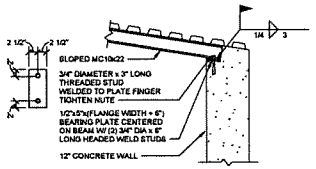
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STRUCTURAL DETAILS

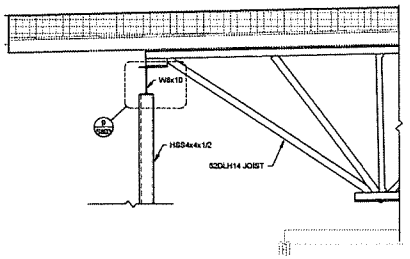
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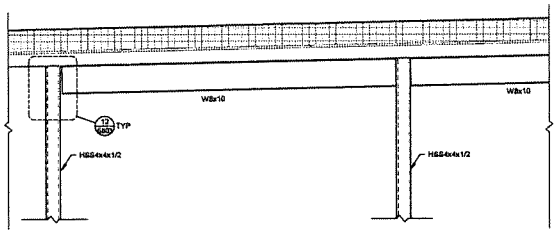
1 HSS COLUMNS FOR RIBBON WINDOW
SCALE: 3/4" = 1'-0"



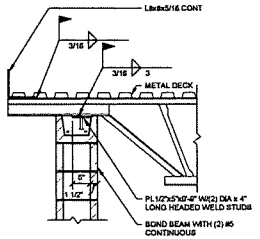
VESTIBULE ENTRY MC BEARING DETAIL
2 SCALE: 3/4" = 1'-0"



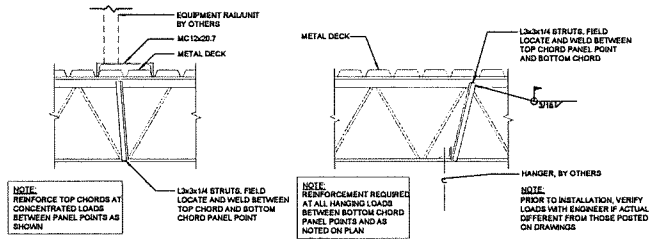
3 JOIST ON BEAM AT RIBBON WINDOW
SCALE: 3/4" = 1'-0"



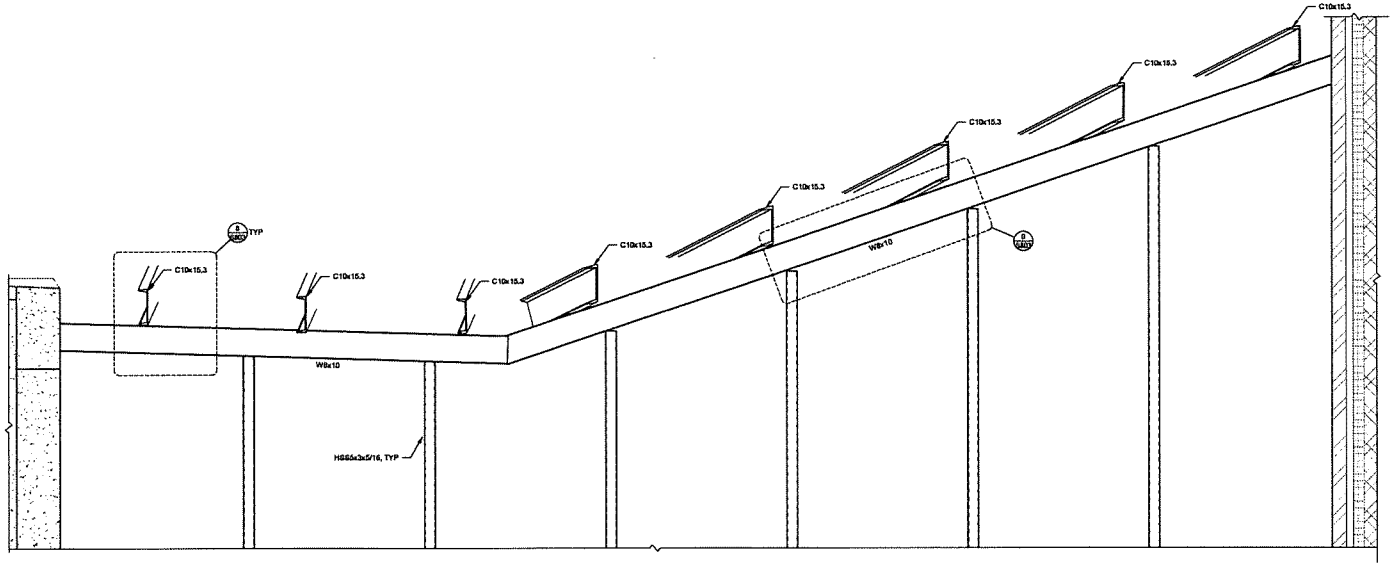
4 STEEL BEAM AT RIBBON WINDOW
SCALE: 3/4" = 1'-0"



LH JOIST ON CMU WALL WITH DECK CHORD ANGLE
5 SCALE: 3/4" = 1'-0"



6 LOAD AT JOIST
SCALE: 3/4" = 1'-0"



7 COLUMNS AND BEAMS AT VALLEY
SCALE: 3/4" = 1'-0"

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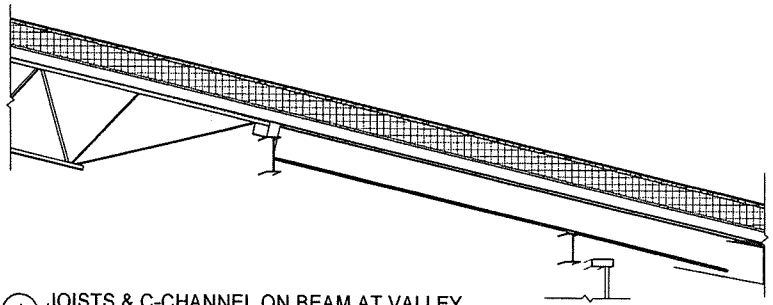
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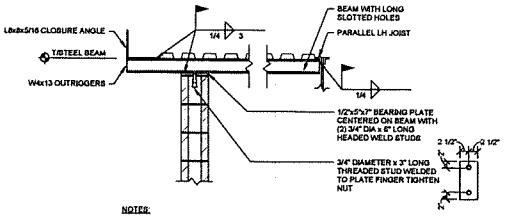
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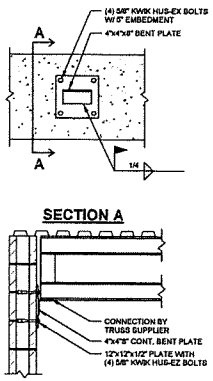
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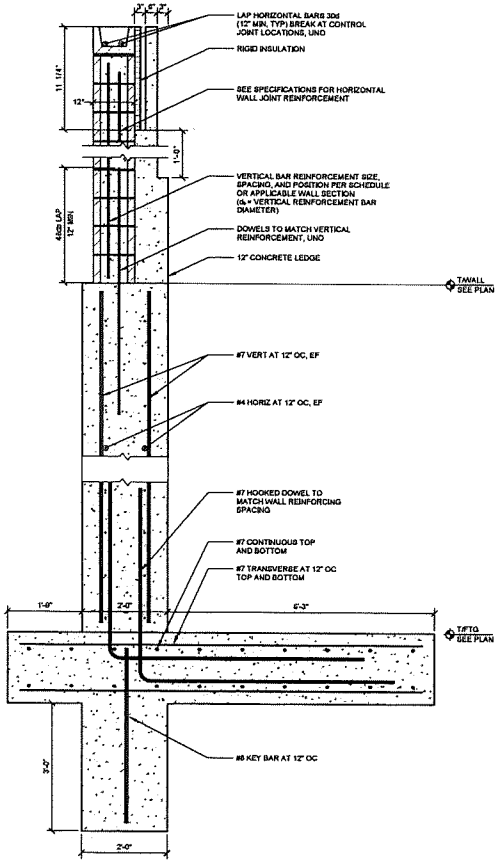
1 JOISTS & C-CHANNEL ON BEAM AT VALLEY
SCALE: 3/4" = 1'-0"



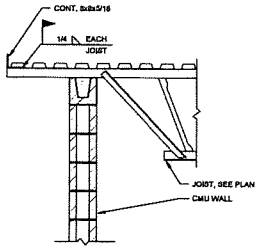
2 WEST OUTRIGGER DETAIL
SCALE: 3/4" = 1'-0"



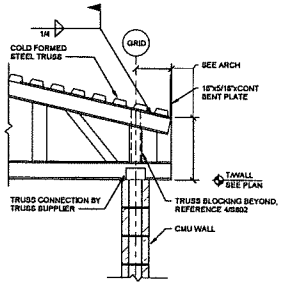
3 CFMS TRUSS BEARING
SCALE: 3/4" = 1'-0"



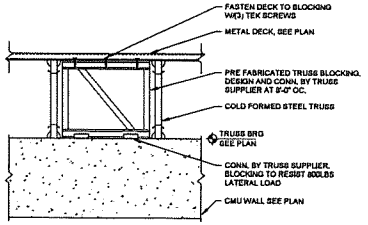
4 EXTERIOR GYM WALL SECTION
SCALE: 3/4" = 1'-0"



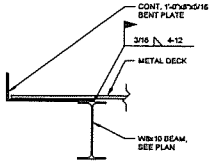
5 ROOF DECK EDGE
SCALE: 3/4" = 1'-0"



6 LT GAGE BRACING
SCALE: 3/4" = 1'-0"



7 TYP TRUSS BLOCKING
SCALE: 3/4" = 1'-0"



8 DECK EDGE AT EAST WALL
SCALE: 1 1/2" = 1'-0"

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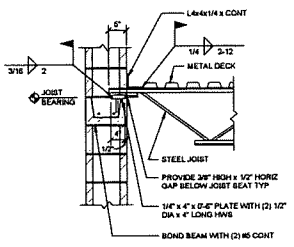
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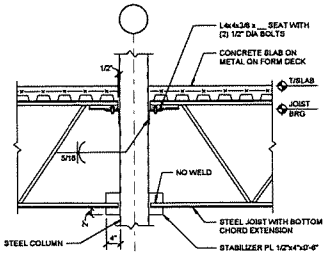
STRUCTURAL DETAILS

S802



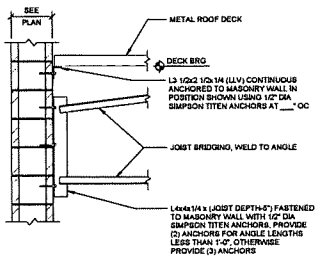
1 K-SERIES JOIST ON MASONRY WALL

SCALE: 3/4" = 1'-0"



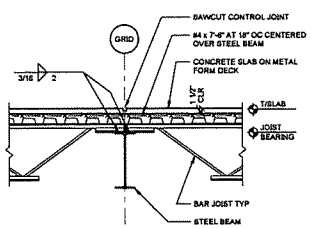
2 BAR JOIST BEARING ON HSS COLUMN

SCALE: 3/4" = 1'-0"



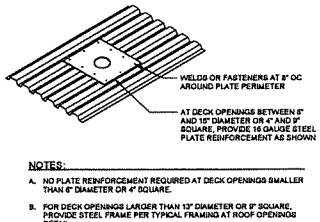
3 TYP END WALL BRIDGING

SCALE: 3/4" = 1'-0"



4 BAR JOIST BEARING ON BEAM

SCALE: 3/4" = 1'-0"



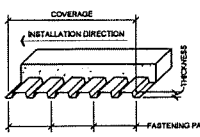
NOTES:

A. NO PLATE REINFORCEMENT REQUIRED AT DECK OPENINGS SMALLER THAN 8" DIAMETER OR 4" SQUARE.

B. FOR DECK OPENINGS LARGER THAN 12" DIAMETER OR 9" SQUARE, PROVIDE STEEL FRAME PER TYPICAL FRAMING AT ROOF OPENINGS DETAIL.

5 TYP ROOF DECK OPENING

SCALE: 3/4" = 1'-0"





END LAP DETAIL

LAP END LAPS, LAPS ARE TO OCCUR AT SUPPORTS ONLY

DECK ID	DECK TYPE	GAUGE	DESIGN # OF SPANS	SUPPORT CONN PATTERN	SIDELAP CONN (PER SPAN)	GALV	PAINT	NOTES
D1	1.5B	20	3	36/4-#12 TEK SCREWS	(2) #10 SELF DRILLING SCREWS		X	1, 2, 3
D2	1.5B	18	3	36/5-5/8" PUDDLE WELD	(5) #10 SELF DRILLING SCREWS	X		1, 2, 3
D3	1.0C (NON-COMPOSITE)	24	3	33/4-#12 TEK SCREWS	(2) #10 SELF DRILLING SCREWS	X		1, 2, 3
D4	3"VLI (COMPOSITE)	20	3	36/4-5/8" PUDDLE WELDS	#10 SELF-DRILLING SCREWS AT 12" OC	X		1, 2, 3
D5	3" DOVETAIL	18	3	36/4-5/8" PUDDLE WELDS	#10 SELF-DRILLING SCREWS AT 12" OC	X		1, 2, 3

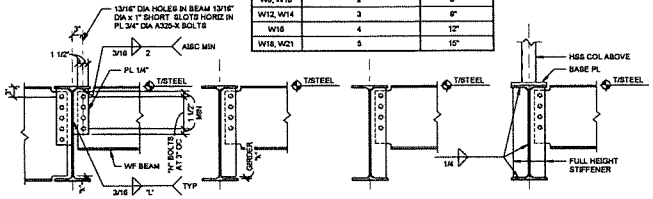
DECK NOTES:

1. ATTACH DECK TO ALL SUPPORTS WITH FASTENERS AND FASTENING PATTERNS INDICATED. FASTEN PERIMETER AT 12" OC.
2. GC CAN SUBMIT ALTERNATE FASTENING (WELDING, SCREWING, POWDER-ACTIVATED FASTENERS, PNEUMATICALLY-DRIVEN FASTENERS) FOR APPROVAL WITH MANUFACTURERS LITERATURE ON EQUAL PRIOR TO USING ALTERNATE.
3. ATTACH PARTIAL SHEETS IN ALL FLUTES.

6 METAL ROOF DECK FASTENING

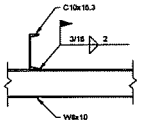
SCALE: 3/4" = 1'-0"

SHEAR TAB STEEL CONNECTIONS		
BEAM SIZE	"N" NUMBER OF 3/4" DIA BOLTS	"L" MIN LENGTH
W8, W10	2	6"
W12, W14	3	9"
W16	4	12"
W18, W21	5	15"



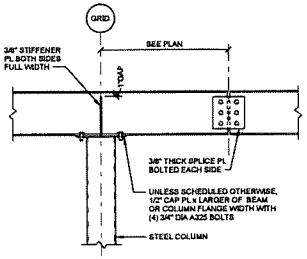
7 SHEARTAB BEAM CONNECTIONS

SCALE: 3/4" = 1'-0"



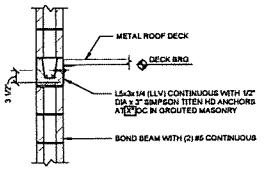
8 CHANNEL BEARING ON BEAM CONNECTION

SCALE: 3/4" = 1'-0"



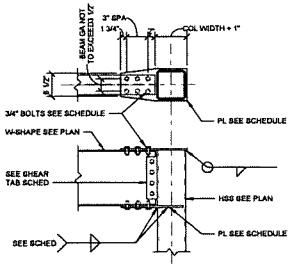
9 TYP STEEL BEAM SPLICE

SCALE: 3/4" = 1'-0"



10 DECK BEARING ANGLE AT WALL

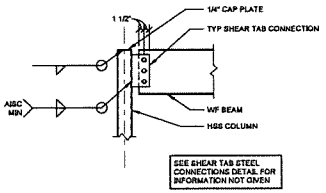
SCALE: 3/4" = 1'-0"



MOMENT SCHEDULE			
MARK	PLATE THICKNESS	NO. OF BOLTS PER FLANGE	WELD SIZE
MC1	1/2"	4	1/4

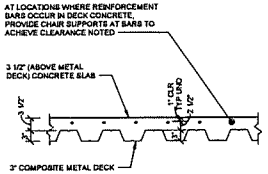
11 BEAM TO TUBE COLUMN MOMENT CONNECTION

SCALE: 3/4" = 1'-0"



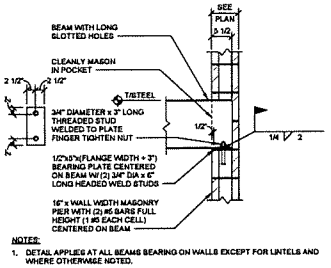
12 WF BEAM TO HSS COL CONNECTION

SCALE: 3/4" = 1'-0"



13 COMPOSITE METAL DECK

SCALE: 3/4" = 1'-0"

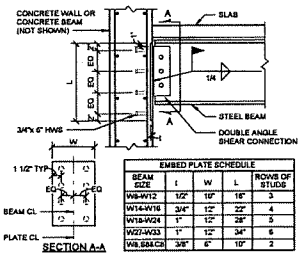


NOTES:

1. DETAIL APPLIES AT ALL BEAMS BEARING ON WALLS EXCEPT FOR LINTELS AND WHERE OTHERWISE NOTED.

14 BEAM BEARING DETAIL

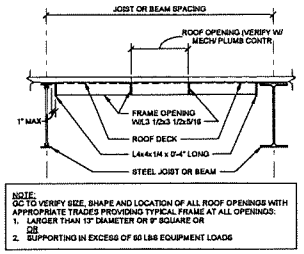
SCALE: 3/4" = 1'-0"



EMBED PLATE SCHEDULE				
BEAM SIZE	t	W	L	ROWS OF STUDS
W8-W12	1/2"	10"	16"	3
W14-W16	3/4"	12"	22"	4
W18-W24	1"	12"	28"	5
W27-W33	1"	12"	34"	6
W8, S8-CB	3/8"	6"	10"	2

15 BEAM CONNECTION AT CONCRETE FRAMING

SCALE: 3/4" = 1'-0"



NOTE:
GC TO VERIFY SIZE, SHAPE AND LOCATION OF ALL ROOF OPENINGS WITH APPROPRIATE TRADES PROVIDING TYPICAL FRAME AT ALL OPENINGS:

1. LARGER THAN 12" DIAMETER OR 9" SQUARE OR
OR
2. SUPPORTING IN EXCESS OF 50 LBS EQUIPMENT LOADS

16 TYPICAL FRAMING AT OPENINGS

SCALE: 3/4" = 1'-0"

Engberg Anderson ARCHITECTS
MILWAUKEE | MADISON | CHICAGO

ONEIDA Total Integrated Enterprises
www.oneida-nsn.gov Job Number 202304.01
Office 608.243.8478 Fax 608.241.3814
5100 Eastpark Blvd, Suite 300,
Madison, Wisconsin 53718

Contractors are responsible for the means, methods, techniques, sequences and procedures of construction including, but not limited to, temporary supports, shoring, bracing to support structural loads and other similar items.

WARNER PARK COMMUNITY RECREATION CENTER EXPANSION

1625 NORTHPORT DRIVE
MADISON, WI 53704

CITY OF MADISON PARKS DIVISION
330 EAST LAKESIDE STREET
MADISON, WI 53715

PROJECT NUMBER 223471.00

ISSUED FOR:

BID SET 5/16/2024

REVISION FOR:

NO. DESCRIPTION DATE

DRAWN BY AWB

CHECKED BY Checker

STRUCTURAL DETAILS

S803

2021 GMAC

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

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

Deputy Division Manager
Kathleen M. Cryan

Principal Engineer 2
John S. Fahrney, P.E.
Janet Schmidt, P.E.

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

Financial Manager
Steven B. Danner-Rivers

JUNE 14, 2024

ADDENDUM NO. 02

CONTRACT NO. 9502
WARNER PARK COMMUNITY RECREATION CENTER EXPANSION

This addendum is issued to modify, explain or correct the original Drawings, Specifications, or Contract Documents marked as ***Warner Park Community Recreation Center Expansion, City of Madison, Contract #9502, as issued on May 17, 2024*** and is hereby made a part of the contract documents.

Please attach these Addendum documents to the Bid Proposal document, Volume 1 Architectural Drawings (Exhibit A), Volume 2 MEP Drawings (Exhibit B), and Project Manual (Exhibit C) in your possession.

BID PROPOSAL DOCUMENT

1) Page C-3 – link update
2) REF DOC 5 - 1998 Fire Protection As-Built Drawings
3) REF DOC 6 – Fire Protection components

VOLUME 1 ARCHITECTURAL DRAWINGS (EXHIBIT A)

1) G001 – Code Conformance
   a) Add Notes 4 and 5.
2) C500 – Utility Plan
   a) 4" PVC sanitary lateral slope updated.
   b) Sanitary cleanout inverts updated to represent revised sanitary lateral slope.
3) D101 – Demolition Plan
   a) Detail 1: Revise note and extents for fence/vegetation removal outside building. Add signage removal note at locker rooms.
4) D400 – Demolition Elevations
   a) Detail 2: Add notes for masonry veneer and rigid insulation removal around concrete pillars.
5) A100 – Overall Floor Plan
   a) Add General Note #10.
   b) Detail 1: Add detail callout to wall patch note where chiller lines removed.
6) A101 – Expansion Floor Plan
   a) Add General Note #10.
   b) Detail 1: Revise downspout note. Note existing downspout and civil tie-in at south wall of Office 103. Add center mullion at louver.
7) A201 – Expansion Roof Plan
   a) Detail 1: Revise standing seam metal roof callouts.
   b) General Note regarding Alternate 1 – PV system shall be non-penetrating.
8) A400 – Exterior Elevations
   a) Detail 1: Add center mullion at louver and adjust note.

b) Detail 2: Revise downspout notes. Add Detail 4/A400 and Detail 4/A500 callouts.
c) Detail 4: Add Detail 4.

9) A500 – Building Sections
   a) Detail 3: Revise metal panel layout and note. Add Detail 6/A801 callout.
   b) Detail 4: Add Detail 4.
10) A603 – Exterior Details
   a) Detail 9: Add Detail 9.
11) A610 – Door Schedule & Wall Types
   a) Door Schedule: Add Remarks to doors 105E-1, 105E-2, 105E-3, and 105E-4.
12) A700 – Finish Plans & Schedule
   a) Detail 1: Revise RB-1 extents in Exercise 102.
13) A800 – Enlarged Plans & Interior Elevations
   a) Detail 1: Add dimension string in Locker Room 111A. Add TA-11 in Corridor 111.
   b) Detail 6: Add stainless steel sheet behind controls and handshower.
14) A801 – Interior Elevations
   a) Detail 4: Revise glazing type.
   b) Detail 6: Add Detail 6.
15) A811 – Interior Details
   a) Detail 8: Add Detail 8.
16) S001 – Structural Notes
   a) Under Design Loads – Roof – Added ROOF DEAD LOAD (8 PSF PV PANELS) 30 psf
17) S002 – Structural Schedules
   a) Added Base Plate Schedule including BP1 and BP2
18) S200 – Foundation Plan – Expansion
   a) Dimensions adjusted to match Architectural throughout foundation plan
   b) Wall thickness along North and East walls modified to match Detail 4/S802 with 2'-0" thickness
   c) Wall thickness along South walls modified to 1'-3" thickness to more closely match architectural CMU wall with Metal Panel system
   d) Wall thickness along South wall of connector modified to 1'-9" to match architectural section
19) S201 – Roof Framing Plan – Expansion
   a) Pitch of upper roof indicated as ¼"/FT
   b) Tube columns and Base Plates called out on North and East Walls
   c) Added Note regarding JOIST TOP CHORD EXTENSION TO FRAME OVERHANG on South side of Upper Roof
   d) Indicated Joist Girder 54GT (VARIES) for top chord elevation. Added TS callouts on each bearing end
   e) Modified low joists from 14K4 to 2.5K3 (error labeled as 2.5K5 on dwg) for shorter spans
   f) Joist Bearing elevations added for 14K4 and 2.5K3 joists. JOIST BRG AT 124'-1 ½")
   g) Note added pointing to W8x10 Label adjacent to 54G GT (VARIES). W8x10 BUILT INTO GIRDER TRUSS AS LOW ROOF BEARING (DECK BRG 124'-4", JOIST BRG 124'-1 ½")
   h) Added callout for 1.5B20 ROOF DECK on 14K4/2.5K3 lower roof
   i) South intersection area Tube columns and Base Plates called out
20) S802 – Structural Details
   a) Detail 4/S802 was modified
      i) Dimension string added to talk of detail for all elements
      ii) 11 ¼" and 1'-0" dimensions for the two ledges on the outer 12" of Concrete stem wall were clarified
      iii) Overall wall thickness corrected to be 2'-0"
      iv) Key aligned to match same location as stem wall above
      v) T/SLAB elevation callout and image was added at inside of building
      vi) Overall length of footing matches F90 callout in schedule on S002. Heal dimension changed to 5'-3". Footing depth identified as 1'-8"
   b) Detail 8/S802 was modified
      i) Roof Joist was added with dimension
      ii) Tube Steel column was added
      iii) W4 beam was added with connection detail callout

iv) Continuous angle was modified to a standard L8x8x5/16

VOLUME 2 MEP DRAWINGS (EXHIBIT B)

1) G001 – Code Conformance
   a) Add Notes 4 and 5.
2) P801 – Schedules - Plumbing
   a) Revise Plumbing Fixture Schedule, Shower (SH-1) as shown.
3) P901 – Details - Plumbing
   a) Add Detail 6/P901 as shown.
4) M201 – First Floor Expansion Plan - HVAC
   a) Add keyed note 43 and edit drawing, as shown.
5) M302 – Enlarged Mechanical Room Plan - HVAC
   a) Add keyed note 43 and edit drawing, as shown.
   b) Revise size of Heat Recovery Chiller modules, VME's, and geothermal, chilled and hot water piping as shown.
6) M401 – Sections – HVAC
   a) Revise Section 2/M401 as shown.
7) M902 – Details - HVAC
   a) Revise Detail 5/M902 as shown.
8) E200 – Overall First Floor Plan – Power and Systems
   a) Revise power general note #4, as shown.
9) E201 – Partial First Floor Plan – Power and Systems
   a) Revise power general note #4, as shown.
   b) Add keyed note P6 and edit drawings, as shown.
10) E202 – Partial First Floor Plan – Lighting
   a) Add 4/E300 elevation callout, as shown.
11) E300 – Large Scale Plans – Electrical
   a) Revise power general note #4, as shown.
   b) Add 4/E300 elevation callout, as shown.
   c) Add keyed note L7 and backlighting at vertical perforated panel in Pre-Function 105C.
12) E301 – Large Scale Plans – North Mezzanine
   a) Revise power general note #4, as shown.
13) E302 – Large Scale Plans – South Mezzanine
   a) Revise power general note #4, as shown.
14) E900 – Details – Electrical
   a) Add detail 10/E900, as shown.

PROJECT MANUAL SPECIFICATIONS (EXHIBIT C)

1) Table of Contents
   a) Page TOC-3: Add 09 51 33 – Acoustical Metal Pan Ceilings.
   b) Page TOC-4: Add 10 26 00 – Wall and Door Protection.
2) Section 04 20 00 – Unit Masonry
   a) Add the following after Page 2, Line 10:
      i) C. Sustainable Design Submittals:
         1. Regional Materials: Verify CMUs are manufactured within 100 miles of Project site from aggregates and cement that have been extracted, harvested, or recovered, as well as manufactured, within 100 miles of Project site.
         2. Regional Materials: Manufacture aggregate for mortar and grout, cement, and lime within 100 miles of Project site from materials that have been extracted, harvested, or recovered, as well as manufactured, within 100 miles of Project site.
   b) Add the following on Page 4:
      i) C. CMU-1: As indicated on Drawings.
      ii) D. CMU-2: As indicated on Drawings.
   c) Add the following on Page 4:
      i) C. CMU-1: As indicated on Drawings.
      ii) D. CMU-2: As indicated on Drawings.
   d) Add the following on Page 5 (previously Page 4):

i) I. Manufacture aggregate for mortar and grout, cement, and lime within 100 miles of Project site from materials that have been extracted, harvested, or recovered, as well as manufactured, within 100 miles of Project site.

3) Section 07 53 23 – Ethylene-Propylene-Diene-Monomer (EPDM) Roofing
   a) Remove Page 2, Lines 31-32.
4) Section 08 71 00 – Door Hardware
   a) Revise Page 6, Lines 20-41.

SET 01

	EA	HINGES	AS SPECIFIED	640 IVES
2	EA	EXIT DEVICE	9927L-BE X LBR	613 VON DUPRIN
2	EA	CLOSER	4040XP EDA	695 LCN
2	EA	OVERHEAD HOLDER	GJ100H SERIES	613 GLYNN-JOHNSON
2	EA	KICKPLATE	10" X 1" LDW	613 IVES

SET 02

	EA	HINGES	AS SPECIFIED	640 IVES
	EA	EXIT DEVICE	99L-BE	613 VON DUPRIN
1	EA	CLOSER	4040XP EDA	695 LCN
1	EA	OVERHEAD STOP	GJ100H SERIES	613 GLYNN-JOHNSON
1	EA	KICKPLATE	10" X 2" LDW	613 IVES

   b) Revise Page 7, Line 41 through Page 8, Line 11.

SET 08

	EA	HINGES	AS SPECIFIED	640 IVES
1	EA	STOREROOM LOCK	L9080T X 03A	613 SCHLAGE
1	EA	PRIMUS CORE	AS REQUIRED	613 SCHLAGE
1	EA	CLOSER	4040XP-SCUSH	695 LCN
1	EA	FLUSHBOLT	FB458-12"	613 IVES
2	EA	KICKPLATE	10" X 1" LDW	613 IVES
1	SET	SEALS	870	DKB ZERO
1	SET	SEALS	119W	DKB ZERO
1	SET	ASTRAGAL	41	DKB ZERO
1	EA	ASTRAGAL	40	DKB ZERO
2	EA	AUTO DR BOTTOM	355	AL ZERO
1	EA	THRESHOLD	564	AL ZERO

**COORDINATE SEALS AND HINGE REQUIREMENTS WITH STC DOOR SUPPLIER.

SET 09

	EA	HINGES	AS SPECIFIED	640 IVES
1	EA	STOREROOM LOCK	L9080T X 03A	613 SCHLAGE
1	EA	PRIMUS CORE	AS REQUIRED	613 SCHLAGE
1	EA	CLOSER	4040XP HEDA	695 LCN
2	EA	OVERHEAD HOLDER	GJ100 SERIES	613 GLYNN-JOHNSON
1	EA	FLUSHBOLT	FB458-12"	613 IVES
2	EA	KICKPLATE	10" X 1" LDW	613 IVES
1	SET	SEALS	870	DKB ZERO
1	SET	SEALS	119W	DKB ZERO
1	SET	ASTRAGAL	41	DKB ZERO
1	EA	ASTRAGAL	40	DKB ZERO
2	EA	AUTO DR BOTTOM	355	AL ZERO
1	EA	THRESHOLD	564	AL ZERO

**COORDINATE SEALS AND HINGE REQUIREMENTS WITH STC DOOR SUPPLIER.

5) Section 08 80 00 – Glazing
   a) Revise Page 5, Line 20.
      i) b. VLT: 0.35 min.
6) Section 09 51 33 – Acoustical Metal Pan Ceilings
   a) Add specification section.

7) Section 09 93 00 – Staining and Transparent Finishing
   a) Revise Page 1, Line 45.
      i) D. Colors: Match existing.
8) Section 10 21 13.19 – Plastic Toilet Compartments
   a) Revise Page 1, Line 53.
      i) I. Pilaster Sleeves (Caps): Manufacturer's standard design; stainless steel.
   b) Remove Page 1, Line 54.
9) Section 10 26 00 – Wall and Door Protection
   a) Add specification section.
10) Section 11 66 23 – Gymnasium Equipment
   a) Revise Page 2, Lines 5-6.
      i) a. Keys: Provide two sets of dual keys per station.
11) Section 23 64 23 – Heat Recovery Chillers
   a) Revise Page 3, Line 32:
      i) Acceptable refrigerant is R-513a.

ACCEPTABLE EQUIVALENTS

1) 08 91 19
2) 22 40 00 and P801

CONTRACTOR QUESTIONS

1) Question: Who is responsible for removing the existing fitness equipment, furniture, and misc. items?
   Answer: The City will remove the existing fitness equipment, furniture, and misc. items.
2) Question: Are there Liquidated Damages on this project? If so, please provide details.
   Answer: Liquidated damages should be calculated per working day. The City of Madison Standard Specifications for Public Works Construction table includes a working day charge based on the contract value. For this project the contractor would be assessed damages in the amount of $3,500 for every working day post the contract completion date (12 months after they start or 12/31/24, whichever is sooner) they need to complete the project.
3) Question: What is the construction duration?
   Answer: The City project schedule is 12 months or complete by December 31, 2025 whichever is sooner. For example, if the Contractor starts construction in September 2024, the project shall be complete September 2025.
4) Question: What is the protocol for performing construction work in an occupied building?
   Answer: The Center staff understands that there will be disruption during construction and requests that the Contractor actively communicate disruptions as far in advance as possible. The City will maintain consistent services for Center users and staff and use the existing fitness room, gymnasium, administrative offices, and locker rooms until the contractor needs to disrupt the space.
5) Question: How long is the bid hold open on the project?
   Answer: The bids remain open for forty calendar days after the day of bid opening per the City of Madison Standard Specifications for Public Works Construction.
6) Question: Can you confirm if this project is requiring the use of the Inflation Reduction Act of 2022? In conjunction does this project need to include Prevailing Wages?
   Answer: The project is using Inflation Reduction Act funds for the geothermal system. There are no prevailing wage requirements for the project because the system is less than 1 MW of thermal energy.
7) Question: Currently there is no Structural Reinforcement called out on the structural drawings for the Alternate #1-Photovoltaic system. Can we please have a detail provided on what would be required?
   Answer: No structural reinforcement is required for the photovoltaic system in Alternate #1. The base bid building structural design includes 8 PSF for a rooftop photovoltaic system.
8) Question: Please provide clarification regarding the project schedule as mentioned in Section D: Special provisions. As it read the anticipate award is August 12, 2024. We then would have to notify the city 4weeks in advance of our anticipated start, which can be anytime between the time frame of 08/12/2024 and 12/31/2024, correct?

Answer: Yes.

9) Question: Having difficulty locating Article 109, if its already provided please identify its location or if not, please provide.
   Answer: The full Article 109 is located in the City of Madison Standard Specifications for Public Works Construction. The link to the specifications is provided on page A-2.
10) Question: Specification section 11 66 53 – Gymnasium Dividers currently notes the following Basis of Design:"92085000 2"; can you please confirm that Porter is the basis of design?
    Answer: Yes, Porter is Basis of Design.
11) Question: Will solar arrays be combined?
    Answer: Yes, the interconnection breaker for the existing solar array will be relocated from the MDP to a new solar combiner panel as shown on E600 and E601. The existing solar disconnect will be removed and a new disconnect will be installed for the output of the combined systems. The existing array will not be changed upstream of the disconnect and interconnection breaker.
12) Question: Are there any current site or roof water issues in the area of work?
    Answer: During medium or larger rain events there is a small waterfall over the edge at the roof drain on the low roof. The drain is catching some of the runoff from the west part of the roof, but the drain cannot handle larger volumes.
13) Question: Who performed the electrical work during construction in 1998?
    Answer: Flowers Electric and Nichols Electric.

OTHER

1) Building Tours Sign In Sheets

Please acknowledge this addendum on page E1 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, please contact:

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Engberg Anderson
PH: (608) 250-0100
Email: drewkb@engberganderson.com

Maria Delestre
PH: (608) 243-5891
Email: mdelestre@cityofmadison.com

Amy Scanlon
PH: (608) 267-0743
Email: ascanlon@cityofmadison.com

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

2.3 Certification of SBE by City of Madison

The Affirmative Action Division maintains a directory of SBEs 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 SBE Directory or you may access the SBE Directory online at https://www.cityofmadison.com/civil-rights/contract-compliance.

All contractors, subcontractors, vendors and suppliers seeking SBE 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 at www.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 SBE eligible to be utilized towards meeting the SBE goal for this project.

2.4 Small Business Enterprise Compliance Report

2.4.1 Good Faith Efforts

Bidders shall take all necessary affirmative steps to assure that SBEs are utilized when possible and that the established SBE 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 SBE 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 SBEs to identify SBEs from which to solicit bids.

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

2.4.1.4 Referring prospective SBEs 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 SBE participation.

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

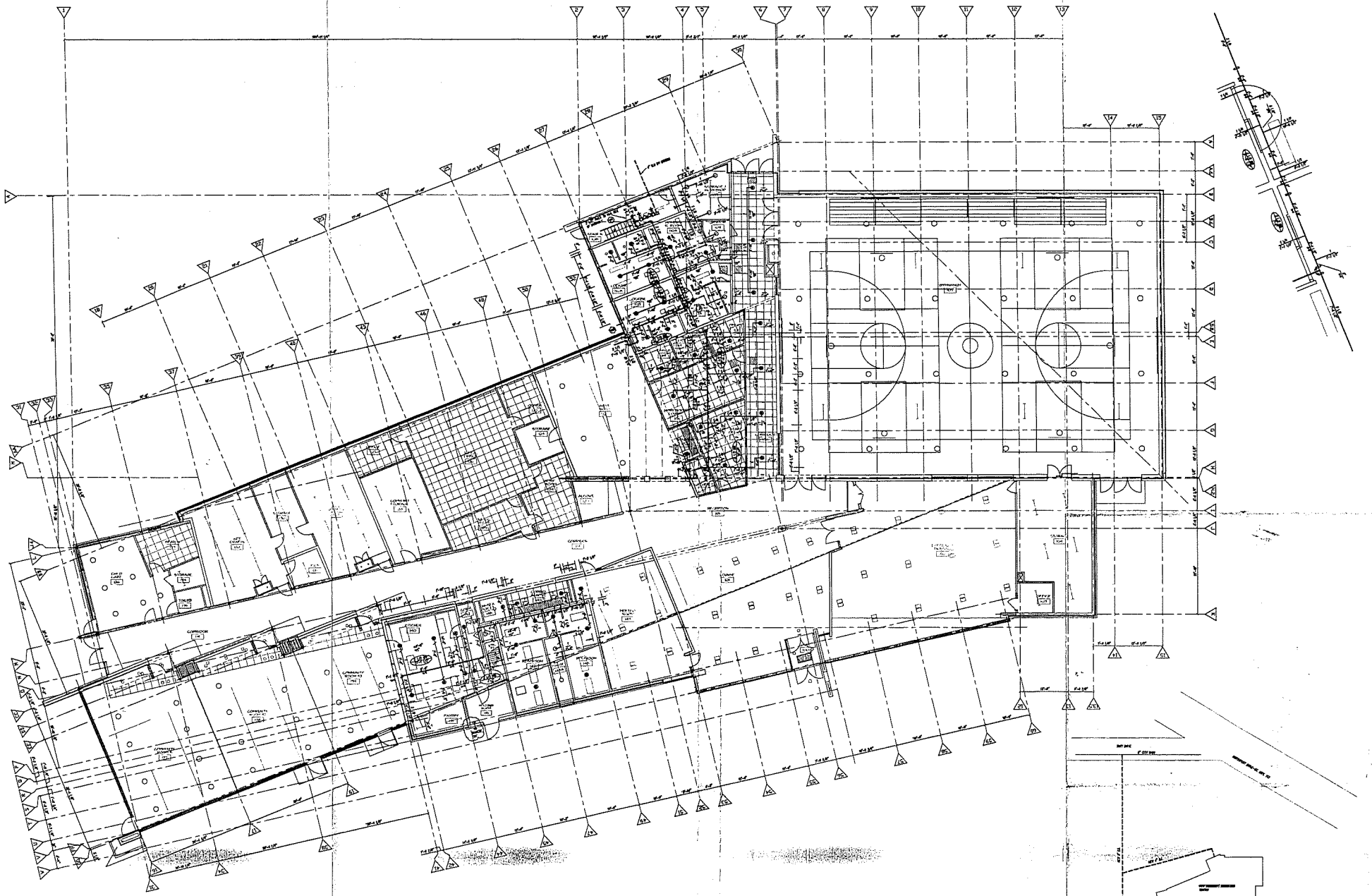
2.4.1.7 Providing SBEs with specific information regarding the work to be performed.

2.4.1.8 Contacting SBEs 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 SBE 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 SBEs 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 SBE Contact Reports (pages C-8 and C9) if applicable.



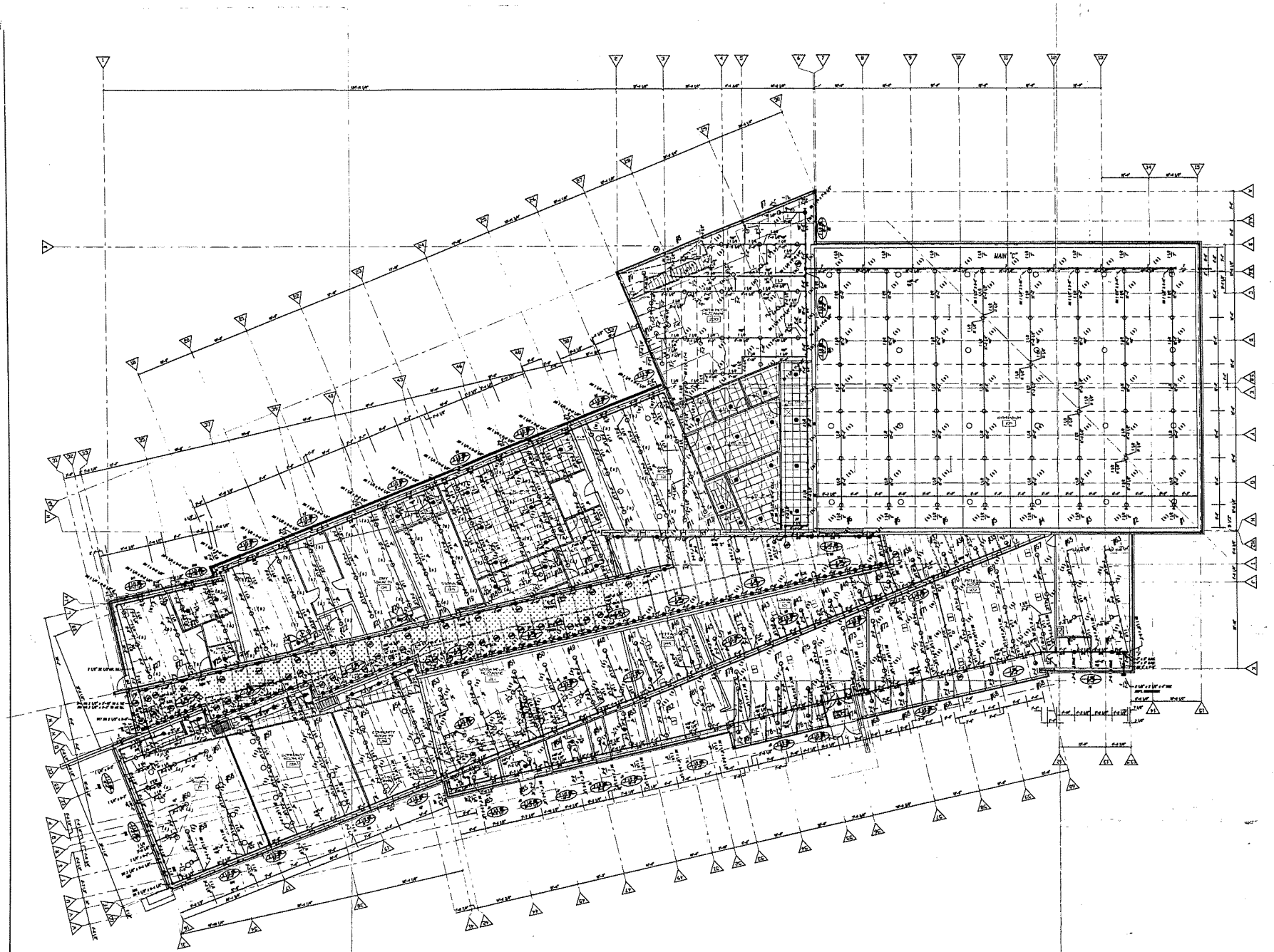
SITE PLAN-NTS

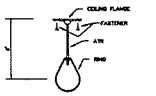
RISER DETAIL

GENERAL NOTES

					Pertzborn Plbg. & Fire Protection	WARNER COMMUNITY CENTER
					FIRE PROTECTION CONTRACTOR	WARNER PARK
					802 John Nolen Drive	MADISON, WISCONSIN
					Madison, Wisconsin 53713	
					(608) 256-3600	
					(608) 256-3604 fax	
1	FIRE DEPARTMENT LOCATION RELOCATED.	9/14	SA		DRAWN BY M. MUSHA	SCALE 1/8" = 1'-0"
NO	REVISIONS	DATE	BY	APP'D	DATE 7-8-98	CONTRACT NO.

FP1

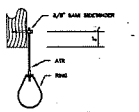




TYPICAL BRANCHLINE HANGER
UNDER PLYWOOD DECK

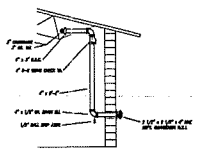


TYPICAL BRANCHLINE AND
CROSSMAIN HANGER - PIPE
PERPINDICULAR TO JOISTS



TYPICAL CROSSMAIN HANGER
UNDER I.W. BEAMS

GENERAL NOTES



DETAIL
FIRE DEPT. CONNECTION

NO.	REVISIONS	DATE	BY
5	MAIN CORRIDOR AS-BUILT	8/98	M.M.
4	REVISE MAIN CORRIDOR PER F.D.	4/98	M.M.
3	GENERAL REVISIONS FOR INSTALLATION	11/98	M.M.
2	REVISE LOCATION OF FIRE DEPT. CONN.	11/98	M.M.
1	REVISE LOCATION OF FIRE DEPT. CONN.	9/98	M.M.

Pertzborn Plbg. & Fire Protection
FIRE PROTECTION CONTRACTOR
1222 John Nolen Drive
MADISON, WISCONSIN 53713
(608) 256-3602
(608) 256-5004 fax

DRAWN BY M. MUSHA
SCALE 1/8" = 1'-0
DATE 7-29-98

WARNER COMMUNITY CENTER
WARNER PARK
MADISON, WISCONSIN

CONTRACT NO.

DRAWING NO. FP-2of2

Listing of Module Types:

1-	V14	ALD	2-	V14	ALD
250-	V7	Annunciator Panel	251-	V7	Annunciator Panel
253-	V6	MXL-IQ Panel	254-		MXL-IQ field programmer

Listing of Device Types in Module 2 (ALD):

1-	ID-60P Photo Detector	2-	ID-60P Photo Detector
3-	ID-60P Photo Detector	4-	TRI-2/60 Switch Input
5-	ID-60P Photo Detector	6-	ID-60P Photo Detector
7-	ID-60P Photo Detector	8-	ID-60P Photo Detector
9-	ID-60P Photo Detector	10-	ID-60P Photo Detector
11-	ID-60T-135 Thermal Detector	12-	ID-60P Photo Detector
13-	ID-60P Photo Detector	14-	ID-60P Photo Detector
15-	TRI-2/60 Switch Input	16-	TRI-2/60 Switch Input
17-	TRI-2/60 Switch Input	18-	TRI-2/60 Switch Input
19-	ID-60P Duct Photo Detector	20-	ID-60T-135 Thermal Detector
21-	ID-60T-135 Thermal Detector	22-	TRI-2/60 Switch Input
23-	FP-11 Photo Thermal Detector	24-	TRI-2/60 Switch Input
25-	ID-60P Photo Detector	26-	TRI-2/60 Switch Input
60-	TRI-2/60 Switch Input		

Listing of Messages in Module 2 (ALD):

1-	SMOKE STORAGE ROOM 104	2-	SMOKE CORRIDOR
3-	SMOKE IN ENTERYWAY	4-	PULLSTATION ENTERYWAY
5-	SMOKE FRONT ENTERYWAY	6-	SMOKE ABOVE RECEPTION DESK
7-	SMOKE WEST CORRIDOR HALL	8-	SMOKE WEST CORRIDOR
9-	SMOKE ROOM 143 STORAGE	10-	SMOKE IN ROOM 140
11-	HEAT IN KITCHEN	12-	SMOKE IN CORRIDOR WEST
13-	SMOKE IN CORRIDOR WEST	14-	SMOKE IN CORRIDOR WEST
15-	PULLSTATION WEST EXIT	16-	PULLSTATION COMMUNITY ROOM
17-	PULLSTATION COMMUNITY ROOM	18-	PULLSTATION COMMUNITY ROOM
19-	SMOKE IN ENTRYWAY	20-	HEAT SOUTH MEZZANINE
21-	HEAT SOUTH MEZZANINE	22-	PULLSTATION SOUTH MEZZANINE
23-	DUCT SMOKE IN SOUTH MEZZANINE	24-	PULLSTATION WEST EXIT
25-	SMOKE ENTERYWAY	26-	TRI KITCHEN HOOD RELEAS SYSTEM
60-	TROUBLE TRI ON PAD2		

Listing of Device Types in Module 1 (ALD):

1-	ID-60P Photo Detector	2-	ID-60P Photo Detector
3-	ID-60P Photo Detector	4-	ID-60P Photo Detector
5-	TRI-2/60 Switch Input	6-	ID-60P Photo Detector
7-	ID-60P Photo Detector	8-	TRI-2/60 Switch Input
9-	ID-60T-135 Thermal Detector	10-	TRI-2/60 Switch Input
11-	ID-60P Photo Detector	12-	ID-60P Photo Detector
13-	ID-60P Photo Detector	14-	ID-60P Photo Detector
15-	ID-60P Photo Detector	16-	ID-60T-135 Thermal Detector
17-	ID-60P Photo Detector	18-	ID-60P Photo Detector
19-	ID-60P Photo Detector	25-	ID-60T-135 Thermal Detector
26-	ID-60T-135 Thermal Detector	27-	TRI-2/60 Switch Input
28-	FP-11 Photo Thermal Detector	29-	FP-11 Photo Thermal Detector
31-	TRI-2/60D Dual Switch Input	32-	TRI-2/60D Dual Switch Input
33-	TRI-2/60 Switch Input		

Listing of Messages in Module 1 (ALD):

1-	SMOKE IN FACP ROOM	2-	SMOKE IN CORRIDOR
3-	SMOKE IN CORIDOR	4-	SMOKE IN CORIDOR
5-	PULLSTATION SOUTH EXIT	6-	SMOKE RM 107 WORKSHOP STORAGE
7-	SMOKE SOUTH STAIRWAY	8-	PULLSTATION SOUTH STAIRWAY
9-	HEAT IN JANITOR ROOM 109	10-	PULLSTATION GYMNASIUM
11-	SMOKE GAME ROOM 121	12-	SMOKE GAME ROOM 121
13-	SMOKE IN STORAGE ROOM 123	14-	SMOKE IN ROOM 128 STORAGE
15-	SMOKE IN ROOM 130 STORAGE	16-	HEAT IN ROOM 131
17-	SMOKE IN ROOM 134 STORAGE	18-	SMOKE IN ROOM 134 INFANTS
19-	SMOKE CHILD CARE RM 136	25-	HEAT NORTTH MEZZANINE
26-	HEAT NORTTH MEZZANINE	27-	PULLSSTATION NORTH MEZZANINE
28-	DUCT SMOKE NORTH MEZZANINE	29-	DUCT SMOKE IN NORTH MEZZANINE
31-	WATER FLOW SPRINKLER SYSTEM	32-	TAMPER SPRINKLER SYSTEM
33-	TAMPER SPRINKLER SYSTEM		

Bill of Materials

Fire Alarm System

1	MXL-IQ	Fire Alarm Control Panel
2	ASLA	Batteries
1	RCC-1F	Annunciator
7	MSI-10B	Manual Pull Stations
26	FP-11	Smoke Detectors
26	DB-11	Bases for Above
7	ILT-1	Heat Detectors
7	DB-3S	Bases for Above
1	PAL-1	Printer
1	PIM-1	Printer Module
1	PIM-2	Printer Module
13	MT-241575	Horn Strobe
15	RS-241575	Strobe Light
1	PS-12/24-6	Power Booster
2	ASLA	Batteries

APPLICABLE CODES

ZONING CODE	CITY OF MADISON ZONING CODE
BUILDING CODE	WISCONSIN SPS 362 / 2015 IBC
EXISTING BUILDING CODE	WISCONSIN SPS 366 / 2015 IEBC
ACCESSIBILITY CODE	2009 ICC A117.1
FIRE SAFETY CODE	WISCONSIN SPS 314 / 2012 NFPA 1
PLUMBING CODE	WISCONSIN SPS 381-387
ELECTRICAL CODE	WISCONSIN SPS 316 / 2017 NEC / 2017 NFPA 70
MECHANICAL CODE	WISCONSIN SPS 364 / 2015 IMC
ENERGY CODE	WISCONSIN SPS 363 / 2015 IECC

ZONING

CLASSIFICATION	PR PARKS AND RECREATION
PERMITTED USE	CONDITIONAL USE AS A COMMUNITY CENTER
MINIMUM LOT SIZE	5 ACRES
MAXIMUM HEIGHT	2 STORIES / 35' (MAXIMUM HEIGHT MAY BE EXCEEDED WITH CUP APPROVAL)
SETBACKS REQUIRED	
FRONT YARD	30'
SIDE YARD	30'
REAR YARD	30'
PARKING	
# OF SPACES REQ'D	STAFF TO PROVIDE DETERMINATION IN PR DISTRICT, DEPENDING UPON USE PROPOSED
# OF SPACES PROVIDED	78

NOTES

1. EXISTING OCCUPANCY, OCCUPANT LOAD, AND MEANS OF EGRESS TO REMAIN UNLESS NOTED OTHERWISE.
2. BUILDING PERIMETER IS GREATER THAN 30' FROM CLOSEST INTERIOR LOT LINE, ENTIRE WIDTH OF NEAREST PUBLIC WAY, AND ANY ADJACENT BUILDINGS. SEE BOUNDARY, TOPOGRAPHIC, AND UTILITY SURVEY FOR ADDITIONAL INFORMATION.
3. GRADUNOVE PER IBC CHAPTER 7, SEC. 705.8.
4. GENERAL NOTE REGARDING EXISTING CONDITIONS: EXISTING BUILDING PLANS HAVE BEEN SHOWN ACCORDING TO ORIGINAL BUILDING PLANS AND SOME FIELD MEASUREMENTS. EXISTING CONDITIONS AND DIMENSIONS SHALL BE FIELD VERIFIED BY CONTRACTORS AND ANY DISCREPANCIES SHALL BE REPORTED TO THE ARCHITECT.
5. GENERAL NOTE REGARDING SCOPE IN EXISTING BUILDING: FACILITY WILL REMAIN OPERATIONAL DURING CONSTRUCTION. CONTRACTOR SHALL COORDINATE DAILY WORKING AREAS WITH BUILDING OWNER AND PROVIDE AT LEAST (4) WEEKS' NOTICE IF ANY SPACES IN THE FACILITY WILL BE INOPERABLE DUE TO CONSTRUCTION ACTIVITIES. PROVIDE FULL PROJECT SCHEDULE AT CONSTRUCTION KICK-OFF AND COORDINATE TIMING OF WORK IN EXISTING BUILDING, INCLUDING SHUTDOWNS OR INTERRUPTIONS OF MEP-FP SERVICES, WITH BUILDING OWNER.

BUILDING DATA

DATE OF ORIGINAL CONSTRUCTION	1998	
OCC. CLASSIFICATION	A-3 (COMMUNITY HALL), B ACCESSORY (EXISTING)	
CONSTRUCTION TYPE	IIB (EXISTING)	
ALTERATION TYPE	ADDITION + LEVEL 2 ALTERATION	
SPRINKLERED	YES - NFPA 13	
FIRE ALARM	YES - COMPLIANT WITH IBC 907.2.2	
BUILDING HEIGHT (NEW CONSTRUCTION)	25'-0" ABOVE GRADE PLANE	
NUMBER OF STORIES	1 (EXISTING MEZZANINES)	
SQUARE FEET/ FLOOR	ALLOWABLE	ACTUAL
FIRST FLOOR	28,000 SF + 9,500 SF = 47,500 SF	42,940 SF
	100% FRONTAGE INCREASE	

CONSTRUCTION REQUIREMENTS

EXT. WALLS-NON BEARING	0 - HR
STRUCTURAL FRAME	0 - HR
PARTITIONS	0 - HR
SHAFT ENCLOSURES	1 - HR LESS THAN FOUR STORIES
FLOOR/CEILING	0 - HR
ROOF/CEILING	0 - HR
ROOFING CLASSIFICATION	CLASS C

ENERGY

CLIMATE ZONE	6			
ENVELOPE REQUIREMENTS	R-VALUE		U-FACTOR	PROVIDED
ROOF	20		0.048	R-35
WALLS	13.3		0.080	R-20
BELOW GRADE	7.5		0.119 (C-VALUE)	R-20
UNHEATED SLAB-ON-GRADE	10 @ 24" BELOW		0.54 (F-VALUE)	R-20 @ 48" BELOW
DOORS			0.70	U-0.70
FENESTRATION REQUIREMENTS	SHGC SEW	SHGC N	U-FACTOR	PROVIDED
FIXED	0.40	0.53	0.35	U-0.28, SHGC 0.37

MEANS OF EGRESS

OCCUPANT LOAD	1657 OCCUPANTS
EXITS PER STORY REQ'D	4
EXITS PER STORY PROVIDED	5
EXIT DOOR WIDTH REQ'D	240"
EXIT DOOR WIDTH PROVIDED	360"
EXIT ACCESS TRAVEL DISTANCE REQ'D	250'
EXIT ACCESS TRAVEL DISTANCE PROVIDED	SEE CODE CONFORMANCE PLAN

PLUMBING

IEBC 810.1 / IBC TABLE 2902.1

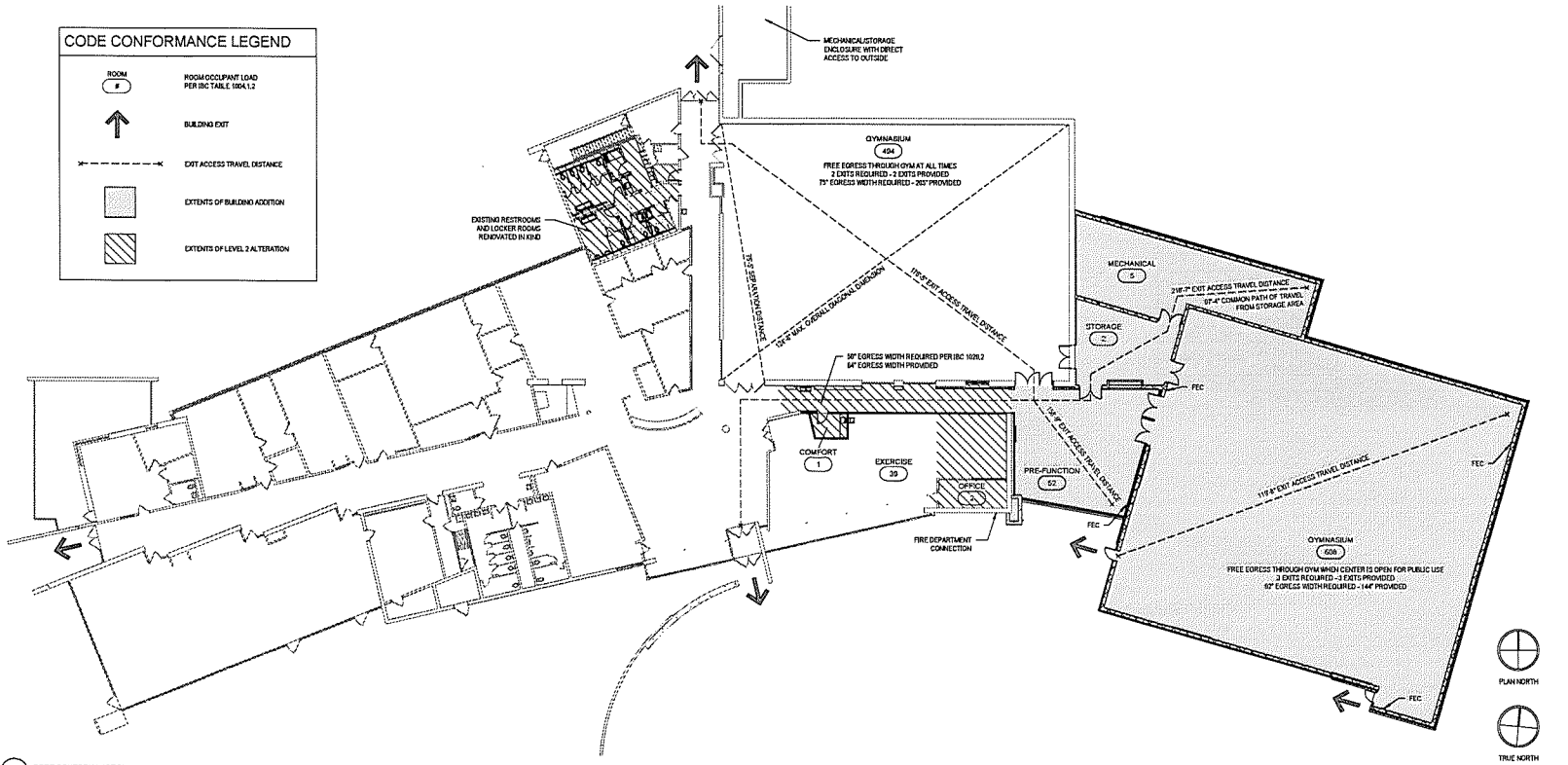
FIXTURES	OCCUPANT LOAD		REQUIREMENTS	REQUIRED	PROVIDED
WATER CLOSETS	MEN	829	1 PER 125 OCCUPANTS	7	8
	WOMEN	829	1 PER 65 OCCUPANTS	13	9 + 4 UNISEX
				20	21
LAVATORIES	MEN	829	1 PER 200 OCCUPANTS	5	5
	WOMEN	829	1 PER 200 OCCUPANTS	5	5 + 4 UNISEX
				10	14
DRINKING FOUNTAINS	1657		1 PER 500 OCCUPANTS	4	5
SERVICE SINKS				1	2

NOTES

1. FAMILY OR ASSISTED-USE TOILET ROOMS ARE PERMITTED TO BE INCLUDED IN THE NUMBER OF FIXTURES FOR MALE OR FEMALE OCCUPANTS IN ASSEMBLY OCCUPANCIES PER IBC 2902.1.2.
2. URINALS MAY BE SUBSTITUTED FOR UP TO 67 PERCENT OF REQUIRED WATER CLOSETS IN ASSEMBLY OCCUPANCIES PER IPC 418.2 (REFERENCED IN IBC TABLE 2902.1)

CODE CONFORMANCE LEGEND

- ROOM # — ROOM OCCUPANT LOAD PER IBC TABLE 1004.1.2
- BUILDING EXIT
- EXIT ACCESS TRAVEL DISTANCE
- EXTENTS OF BUILDING ADDITION
- EXTENTS OF LEVEL 2 ALTERATION



1 CODE CONFORMANCE PLAN
SCALE: 1/16" = 1'-0"

Engberg Anderson ARCHITECTS

MILWAUKEE | MADISON | CHICAGO

REVISIONS

WARNER PARK
COMMUNITY RECREATION
CENTER EXPANSION

1625 NORTHPORT DRIVE
MADISON, WI 53704

CITY OF MADISON PARKS DIVISION
330 EAST LAKESIDE STREET
MADISON, WI 53715

PROJECT NUMBER 223471.00

ISSUED FOR:

BID SET	5/16/2024

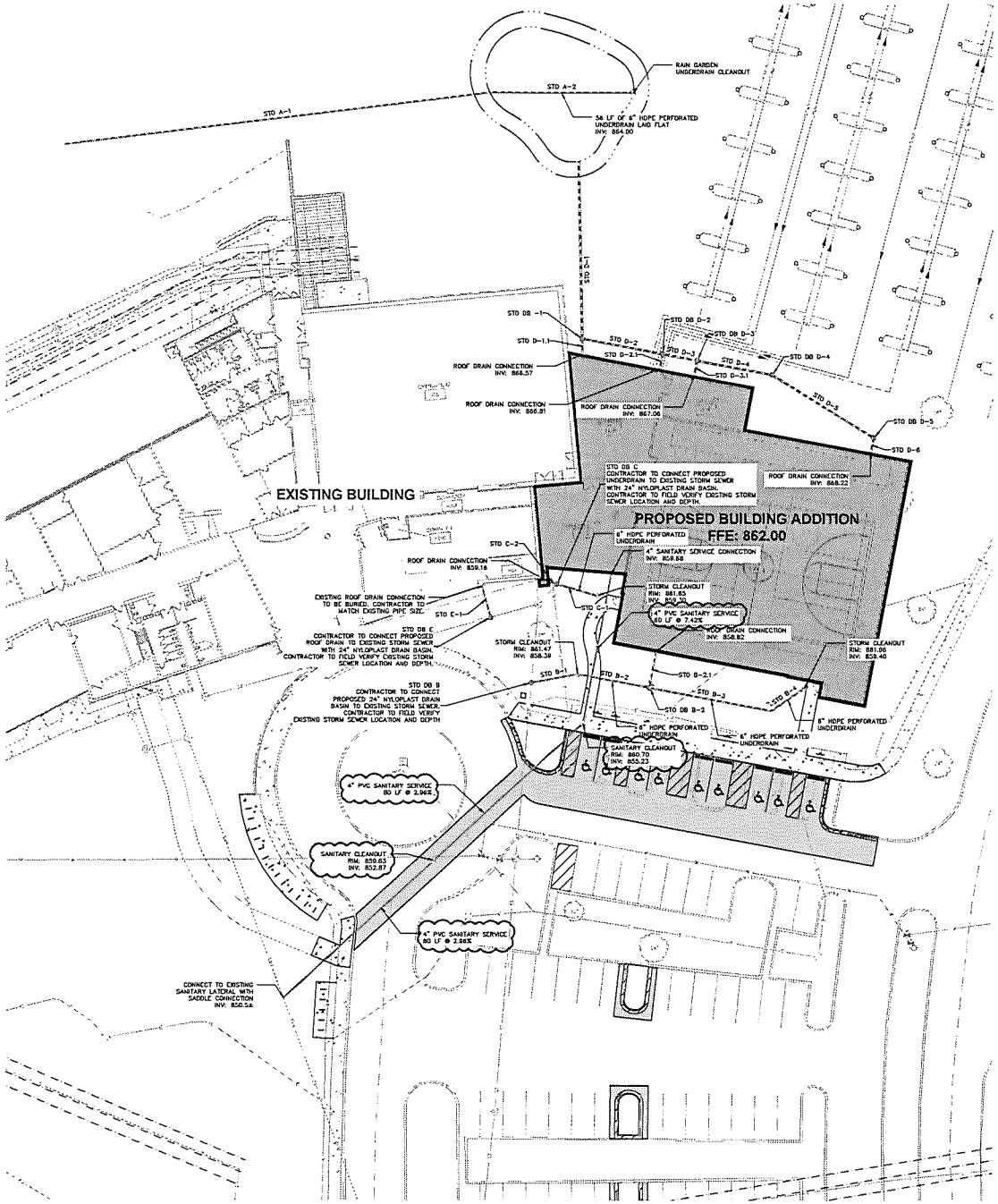
REVISION FOR:

NO.	DESCRIPTION	DATE
1	ADDENDUM #2	6/13/2024

DRAWN BY	DKD
CHECKED BY	JWH

CODE CONFORMANCE

G001



PROPOSED STORM SEWER STRUCTURE TABLE

LABEL	RIM EL. (FT)	INVERT EL. (FT)	DEPTH (FT)	STRUCTURE DESC.	FRAME & GRATE
STO DB -1	868.95	W INV: 866.52 (10") S INV: 866.52 (8") E INV: 866.52 (8")	2.4	24 IN DB	ADS DRAIN WITH BEEHIVE GRATE
STO DB B	861.24	E INV: 858.20 (8")	3.0	24 IN DB	ADS DRAIN WITH BEEHIVE GRATE
STO DB B-2	861.31	W INV: 858.68 (8") E INV: 858.68 (8") N INV: 858.68 (8")	2.8	24 IN DB	ADS DRAIN WITH BEEHIVE GRATE
STO DB C	861.99	E INV: 859.13 (8") W INV: 859.13 (8")	2.9	24 IN DB	ADS DRAIN WITH BEEHIVE GRATE
STO DB D-2	869.23	W INV: 866.78 (8") E INV: 866.76 (8") S INV: 866.76 (8")	2.5	24 IN DB	ADS DRAIN WITH BEEHIVE GRATE
STO DB D-3	870.14	W INV: 866.97 (8") E INV: 866.97 (8") S INV: 866.97 (8")	3.2	24 IN DB	ADS DRAIN WITH BEEHIVE GRATE
STO DB D-4	872.22	W INV: 867.42 (8") SE INV: 867.42 (8")	4.8	12 IN DB	ADS DRAIN WITH BEEHIVE GRATE
STO DB D-5	874.44	NW INV: 868.13 (8") S INV: 868.13 (8")	6.3	12 IN DB	ADS DRAIN WITH BEEHIVE GRATE
STO DB E	861.44	N INV: 858.70 (6")	2.7	24 IN DB	ADS DRAIN WITH BEEHIVE GRATE

PROPOSED STORM SEWER PIPE TABLE

LABEL	FROM	TO	LENGTH	INVERT EL. (FT)	DISCHARGE EL. (FT)	SLOPE	SIZE & MATERIAL
STO A-1	STO A-1	STO A	188'	864.00	862.00	1.18%	6 IN HDPE
STO A-2	STO A-2	STO A-1	56'	864.00	864.00	0.00%	6 IN HDPE
STO D-1	STO D-1	STO DB B	18'	858.39	858.20	1.06%	8 IN HDPE
STO B-2	STO DB B-2	STO B-1	20'	858.68	858.39	1.00%	6 IN HDPE
STO B-2.1	STO B-1.2	STO DB B-2	14'	858.82	858.68	1.00%	6 IN HDPE
STO B-3	STO B-3	STO DB B-2	49'	859.17	858.68	1.00%	6 IN HDPE
STO B-4	STO B-4	STO B-3	16'	859.40	859.17	1.50%	6 IN HDPE
STO C-1	STO C-1	STO DB C	17'	859.30	859.13	1.00%	6 IN HDPE
STO C-2	STO C-2	STO DB C	3'	859.16	859.13	1.00%	6 IN HDPE
STO D-1	STO DB -1	STO D	70'	868.52	868.00	0.75%	10 IN HDPE
STO D-1.1	STO D-1.1	STO DB -1	6'	866.57	866.52	0.75%	8 IN HDPE
STO D-2	STO DB D-2	STO DB -1	32'	866.78	866.52	0.75%	8 IN HDPE
STO D-2.1	STO D-2.1	STO DB D-2	6'	868.81	868.78	0.75%	8 IN HDPE
STO D-3	STO DB D-3	STO DB D-2	14'	866.97	866.78	1.50%	8 IN HDPE
STO D-3.1	STO D-3.1	STO DB D-3	6'	867.06	866.97	1.50%	8 IN HDPE
STO D-4	STO DB D-4	STO DB D-3	30'	867.42	866.97	1.50%	8 IN HDPE
STO D-5	STO DB D-5	STO DB D-4	47'	868.13	867.42	1.50%	8 IN HDPE
STO D-6	STO D-6	STO DB D-5	6'	868.22	868.13	1.50%	8 IN HDPE
STO E-1	STO E-1	STO DB E	13'	858.95	858.70	2.00%	6 IN HDPE

Engberg Anderson ARCHITECTS
MILWAUKEE | MADISON | CHICAGO

JSD
MADISON REGIONAL OFFICE
161 HORIZON DRIVE, SUITE 101
VERONA, WISCONSIN 53593
P. 608.848.5060

REVISED

WARNER PARK COMMUNITY RECREATION CENTER EXPANSION

1625 NORTHPORT DRIVE
MADISON, WI 53704

CITY OF MADISON PARKS DIVISION
CITY-COUNTY BUILDING, ROOM 104
210 MARTIN LUTHER KING JR. BLVD
MADISON, WI 53703

PROJECT NUMBER 223471.00

ISSUED FOR:
BID SET 05/16/2024

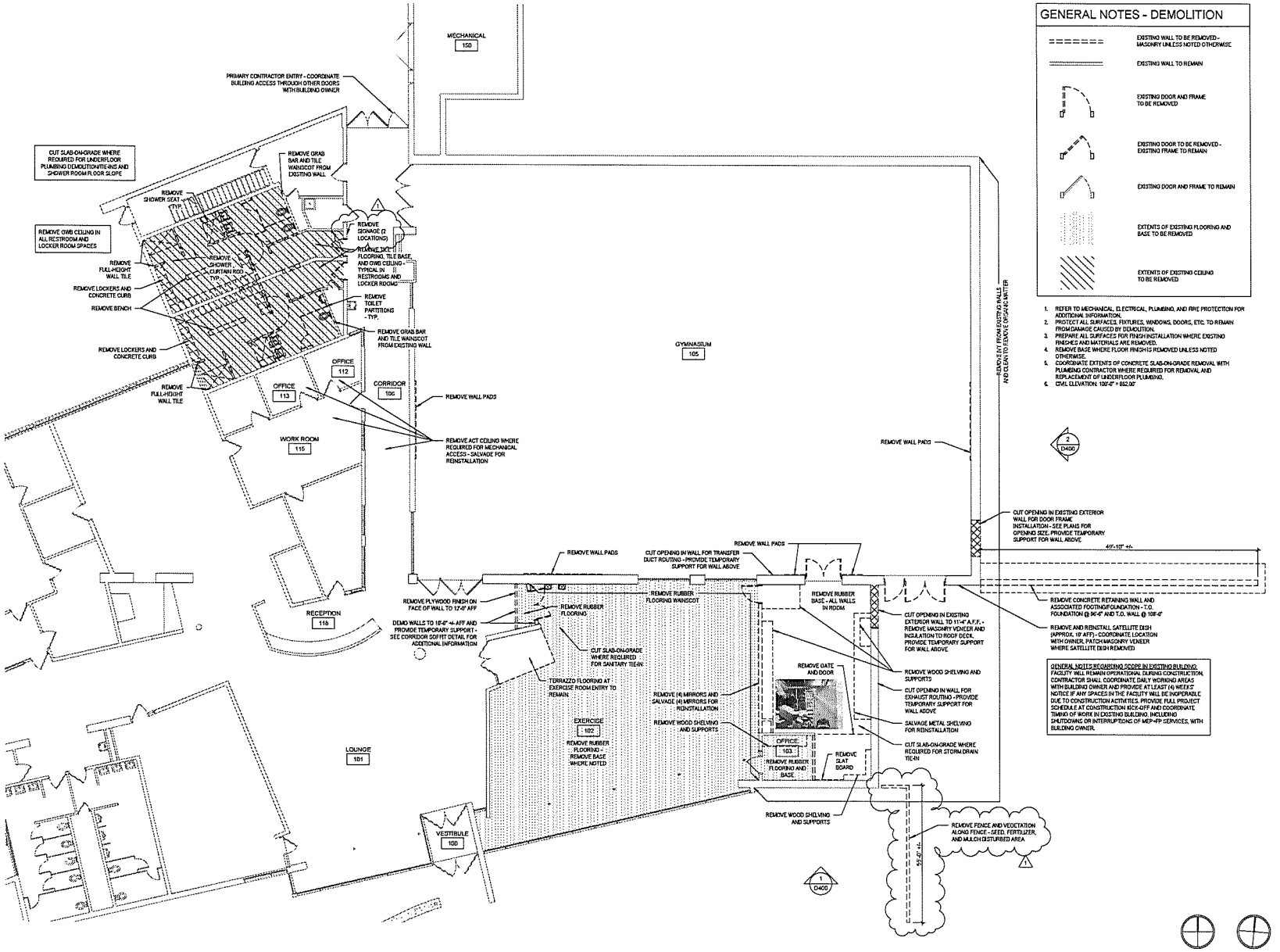
REVISION FOR:

NO.	DESCRIPTION	DATE
1	ADDENDUM 2	6/13/2024

DRAWN BY CHG/MRA
CHECKED BY KJY

UTILITY PLAN

C500



GENERAL NOTES - DEMOLITION

EXISTING WALL TO BE REMOVED - MASONRY UNLESS NOTED OTHERWISE

EXISTING WALL TO REMAIN

EXISTING DOOR AND FRAME TO BE REMOVED

EXISTING DOOR TO BE REMOVED - EXISTING FRAME TO REMAIN

EXISTING DOOR AND FRAME TO REMAIN

EXTENTS OF EXISTING FLOORING AND BASE TO BE REMOVED

EXTENTS OF EXISTING CEILING TO BE REMOVED

1. REFER TO MECHANICAL, ELECTRICAL, PLUMBING, AND FIRE PROTECTION FOR ADDITIONAL INFORMATION.
2. PROTECT ALL SURFACES, FIXTURES, WINDOWS, DOORS, ETC. TO REMAIN FROM DAMAGE CAUSED BY DEMOLITION.
3. PREPARE ALL SURFACES FOR FINISH INSTALLATION WHERE EXISTING FINISHES AND MATERIALS ARE REMOVED.
4. REMOVE BASE WHERE FLOOR FINISH IS REMOVED UNLESS NOTED OTHERWISE.
5. COORDINATE EXTENTS OF CONCRETE SLAB-ON-GRADE REMOVAL WITH PLUMBING CONTRACTOR WHERE REQUIRED FOR REMOVAL AND REPLACEMENT OF UNDERFLOOR PLUMBING.
6. CIVIL ELEVATION: 100'-0" = 852.00'

1 FIRST FLOOR PARTIAL DEMOLITION PLAN
SCALE: 1/8" = 1'-0"

Engberg Anderson ARCHITECTS
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WARNER PARK COMMUNITY RECREATION CENTER EXPANSION

1625 NORTHPORT DRIVE
MADISON, WI 53704

CITY OF MADISON PARKS DIVISION
330 EAST LAKESIDE STREET
MADISON, WI 53715

PROJECT NUMBER 223471.00

ISSUED FOR:

BID SET	5/16/2024

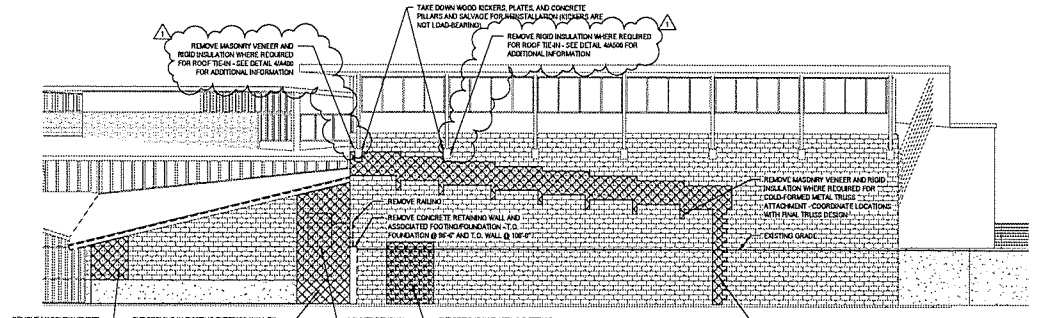
REVISION FOR:

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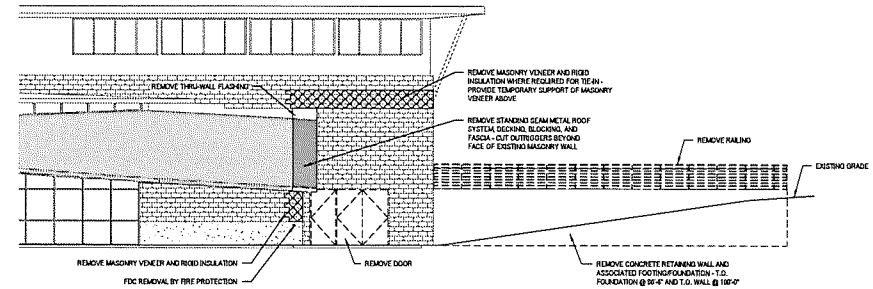
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CHECKED BY	JWH

DEMOLITION PLAN

D101



2 EAST DEMOLITION ELEVATION
SCALE: 1/8" = 1'-0"



1 SOUTH DEMOLITION ELEVATION
SCALE: 1/8" = 1'-0"

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Revision 2

WARNER PARK
COMMUNITY RECREATION
CENTER EXPANSION

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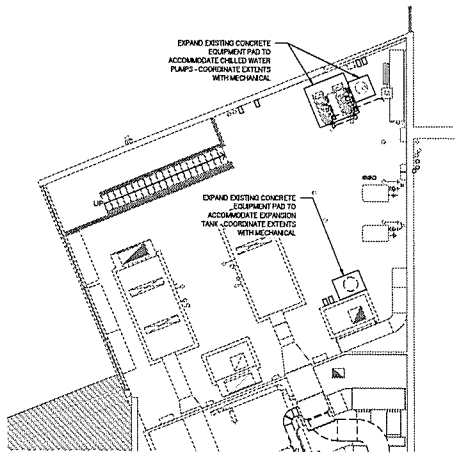
REVISION FOR:

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1	ADDENDUM #2	6/13/2024

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CHECKED BY	JWH

DEMOLITION
ELEVATIONS

D400



2 NORTH MECHANICAL MEZZANINE PLAN
SCALE: 1/8" = 1'-0"

GENERAL NOTES - FLOOR PLANS

METAL STUD WALL - SEE WALL TYPES

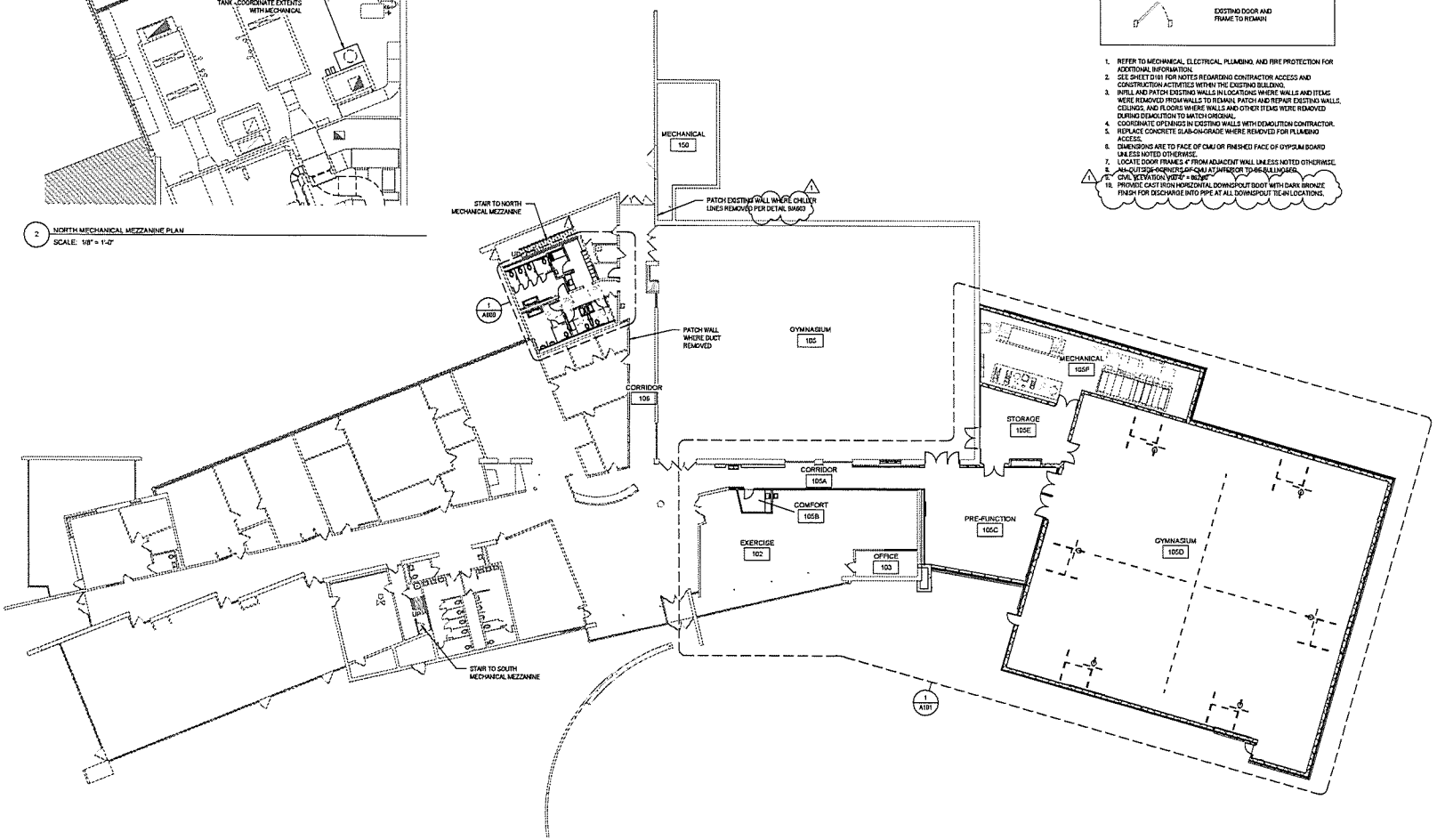
MASONRY WALL - SEE WALL TYPES

EXISTING WALL TO REMAIN

DOOR AND FRAME - SEE DOOR SCHEDULE

EXISTING DOOR AND FRAME TO REMAIN

1. REFER TO MECHANICAL, ELECTRICAL, PLUMBING, AND FIRE PROTECTION FOR ADDITIONAL INFORMATION.
2. SEE SHEET D101 FOR NOTES REGARDING CONTRACTOR ACCESS AND CONSTRUCTION ACTIVITIES WITHIN THE EXISTING BUILDING.
3. INFILL AND PATCH EXISTING WALLS IN LOCATIONS WHERE WALLS AND ITEMS WERE REMOVED FROM WALLS TO REMAIN. PATCH AND REPAIR EXISTING WALLS, CEILINGS, AND FLOORS WHERE WALLS AND OTHER ITEMS WERE REMOVED DURING DEMOLITION TO MATCH ORIGINAL.
4. COORDINATE OPENINGS IN EXISTING WALLS WITH DEMOLITION CONTRACTOR.
5. REPLACE CONCRETE SLAB-ON-GRADE WHERE REMOVED FOR PLUMBING ACCESS.
6. DIMENSIONS ARE TO FACE OF CMU OR FINISHED FACE OF GYPSUM BOARD UNLESS NOTED OTHERWISE.
7. LOCATE DOOR FRAMES 4" FROM ADJACENT WALL UNLESS NOTED OTHERWISE.
8. ALL OUTSIDE CORNERS OF CMU ATTHEDOR TO BE FULL UNITS.
9. CIVIL ELEVATION 930'-0" = 862.95'
10. PROVIDE CAST IRON HORIZONTAL DOWNSPOUT BOOT WITH DARK BRONZE FINISH FOR DISCHARGE INTO PIPE AT ALL DOWNSPOUT TIE-IN LOCATIONS.



1 OVERALL FIRST FLOOR PLAN
SCALE: 1/16" = 1'-0"

PLAN NORTH

TRUE NORTH

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Revision

WARNER PARK COMMUNITY RECREATION CENTER EXPANSION

1625 NORTHPORT DRIVE
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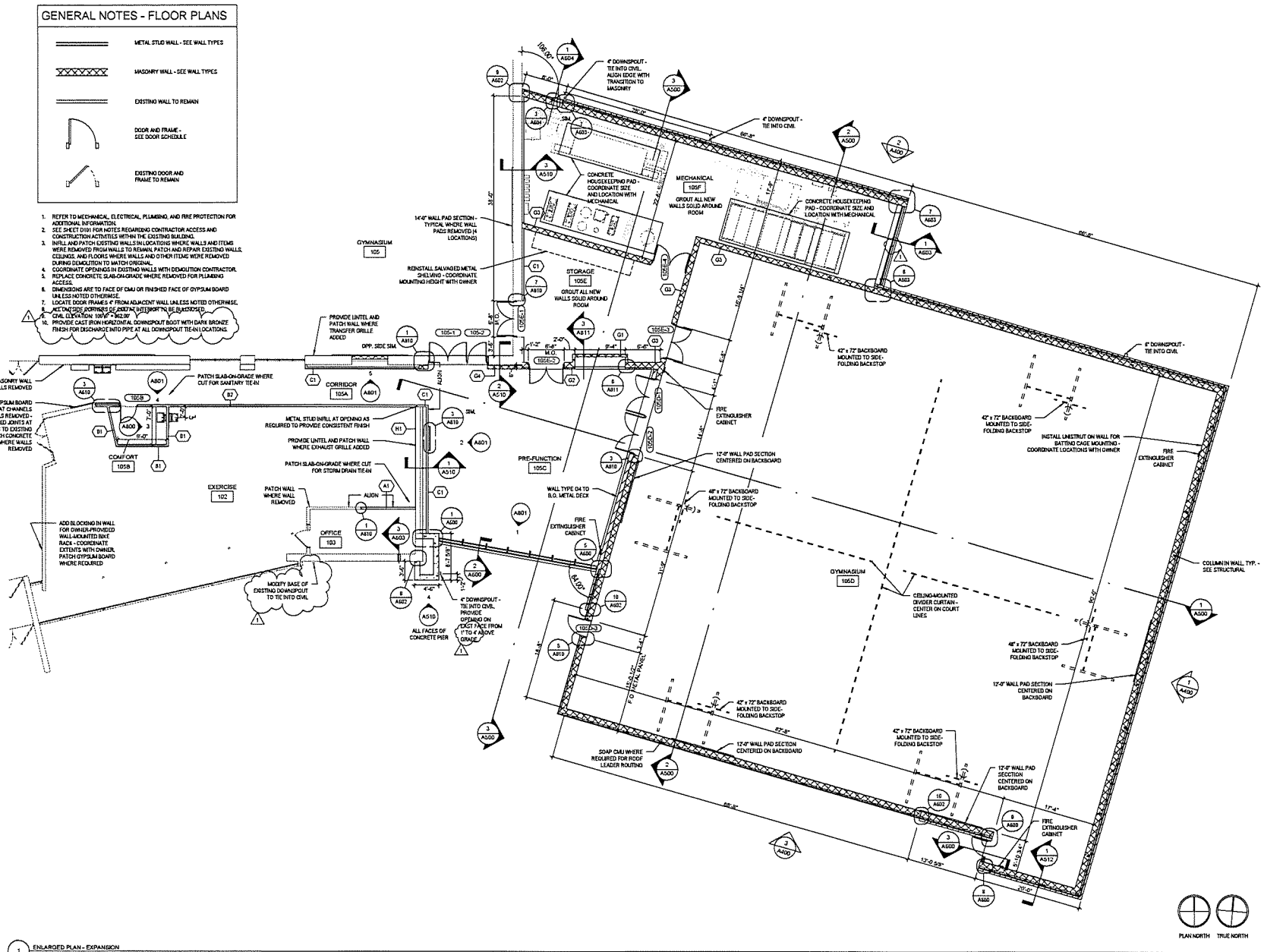
NO.	DESCRIPTION	DATE
1	ADDENDUM #2	6/13/2024

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CHECKED BY JWH

OVERALL FLOOR PLAN

A100



1 ENLARGED PLAN - EXPANSION
SCALE: 1/8" = 1'-0"

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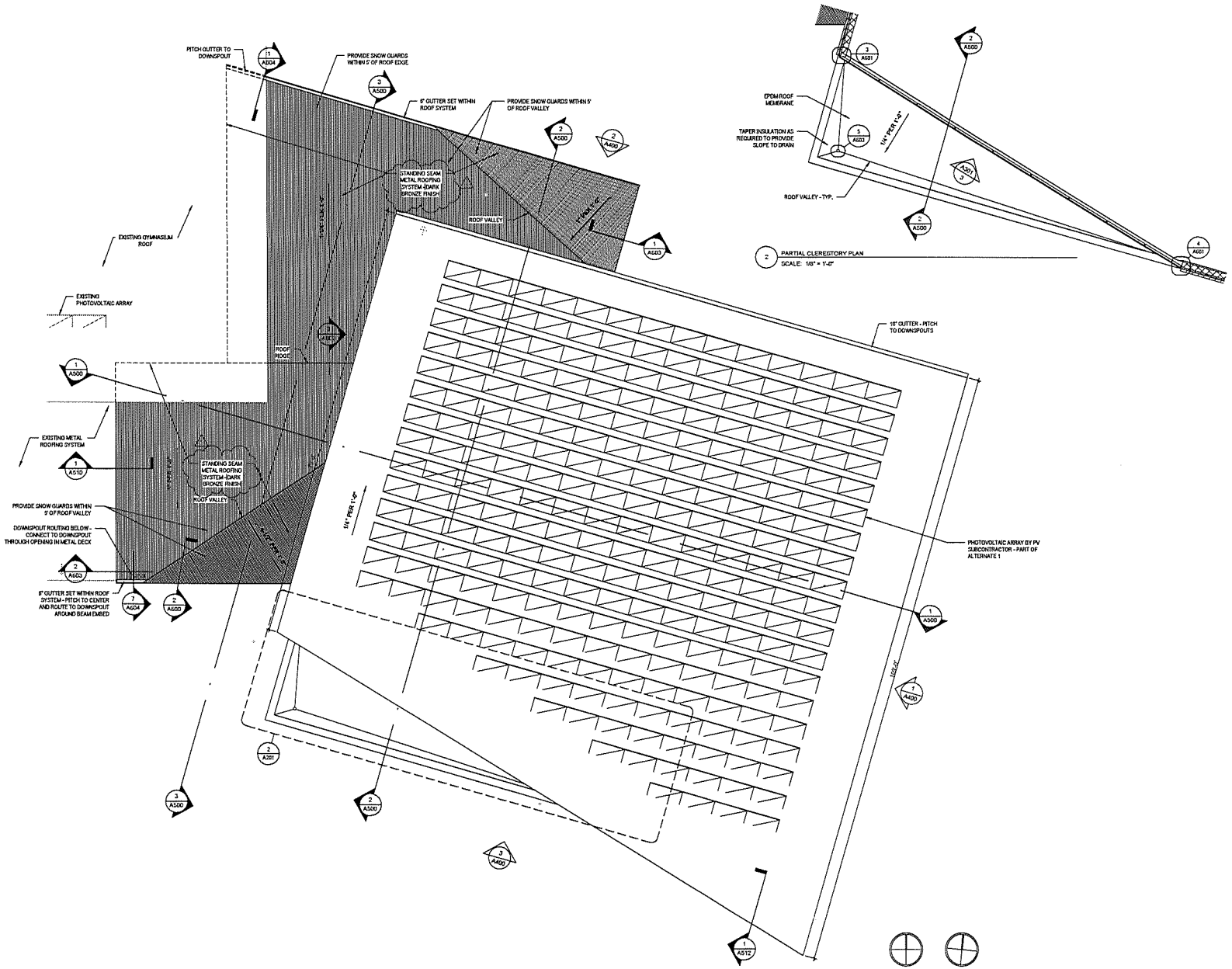
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CHECKED BY	JWH

EXPANSION FLOOR PLAN

A101



1 EXPANSION ROOF PLAN
SCALE: 1/8" = 1'-0"

2 PARTIAL CLERESTORY PLAN
SCALE: 1/8" = 1'-0"

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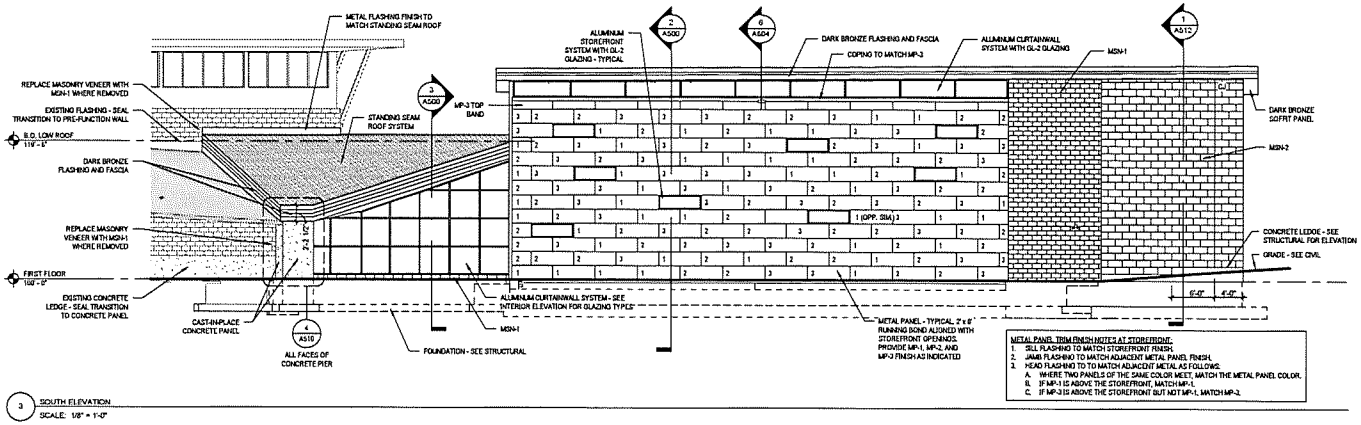
REVISION FOR:

NO.	DESCRIPTION	DATE
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EXPANSION ROOF PLAN

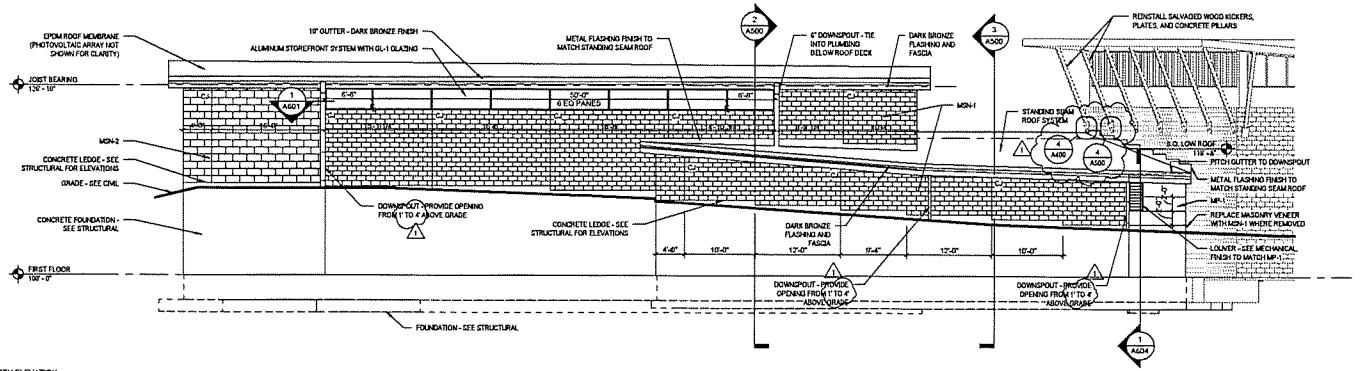
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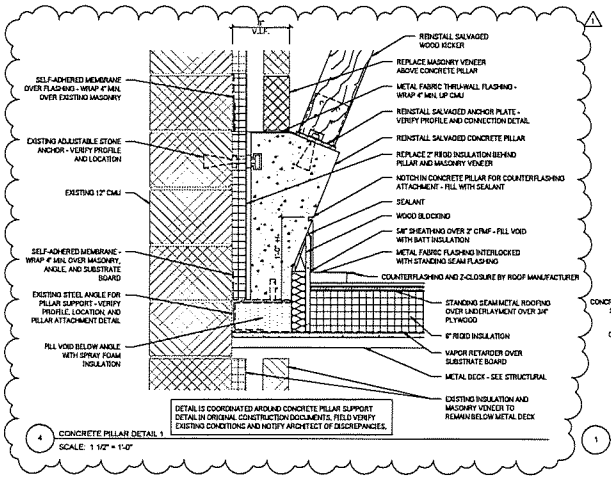
3 SOUTH ELEVATION
SCALE: 1/8" = 1'-0"

EXTERIOR FINISH LEGEND

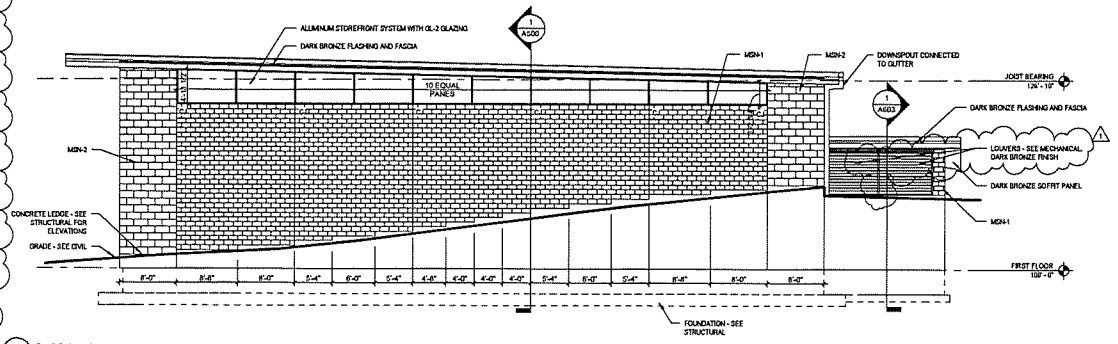
MSN-1	COUNTY MATERIALS DECORATIVE CONCRETE MASONRY COLOR: 18-1212 BISQUE (MATCHED TO EXISTING) TEXTURE: SPLITFACE 8" x 16" RUNNING BOND PATTERN
MSN-2	ARRISCRAFT THIN-CLAD RENAISSANCE UNITS COLOR: OAK RIDGE TEXTURE: SMOOTH 12" x 24" RUNNING BOND PATTERN
MP-1	DRI-DESIGN ENVY METAL PANEL SYSTEM COLOR: ENV 008 CITYSCAPE 24" x 72" RUNNING BOND PATTERN
MP-2	DRI-DESIGN ENVY METAL PANEL SYSTEM COLOR: DRI-005 SIERRA TAN 24" x 72" RUNNING BOND PATTERN
MP-3	DRI-DESIGN ENVY METAL PANEL SYSTEM COLOR: ENV 009 SLATE GRAY 24" x 72" RUNNING BOND PATTERN



2 NORTH ELEVATION
SCALE: 1/8" = 1'-0"



4 CONCRETE PILLAR DETAIL 1
SCALE: 1 1/2" = 1'-0"



1 EAST ELEVATION
SCALE: 1/8" = 1'-0"

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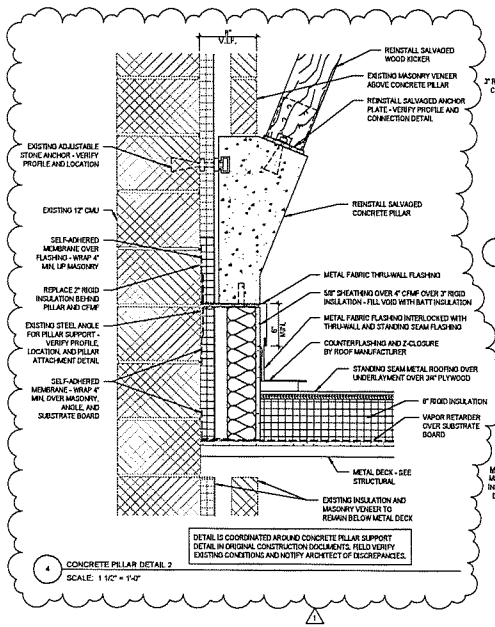
REVISION FOR:

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1	ADDENDUM #2	6/13/2024

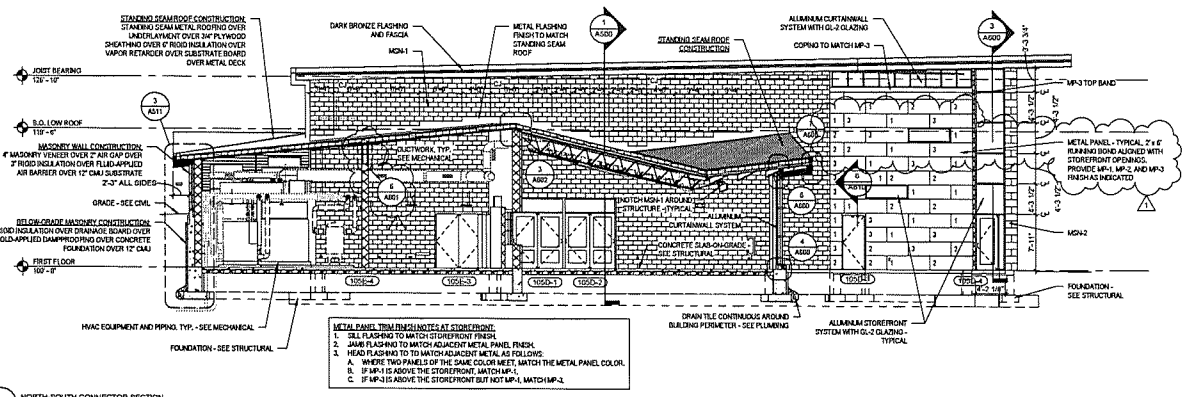
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EXTERIOR ELEVATIONS

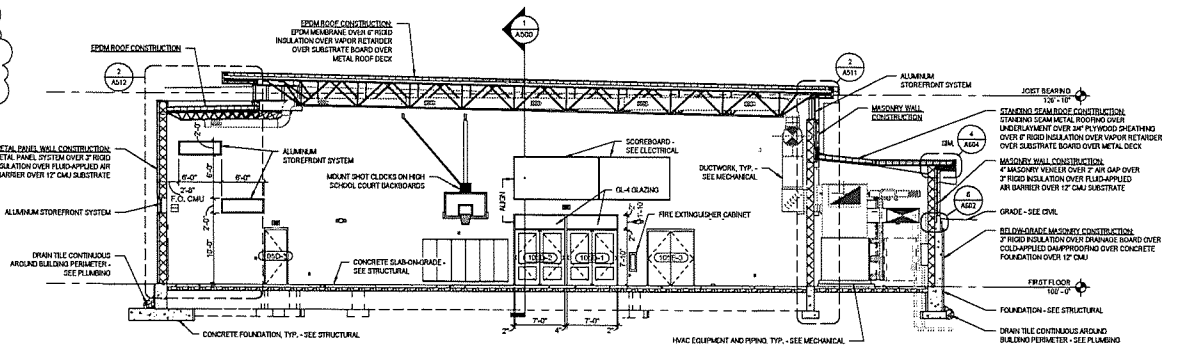
A400



4 CONCRETE PILLAR DETAIL 2
SCALE: 1 1/2" = 1'-0"



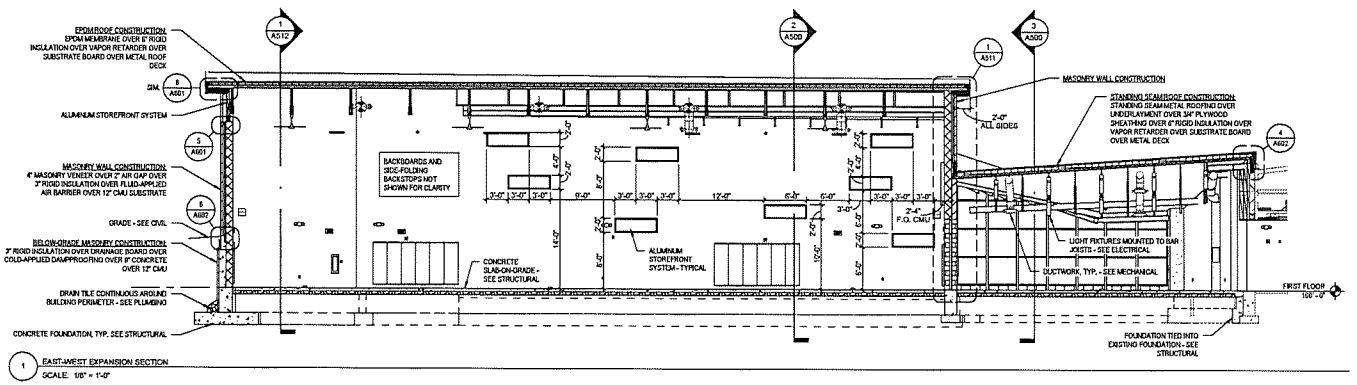
3 NORTH-SOUTH CONNECTOR SECTION
SCALE: 1/8" = 1'-0"



2 NORTH-SOUTH GYMNASIUM SECTION
SCALE: 1/8" = 1'-0"

EXTERIOR FINISH LEGEND

MSN-1	COUNTY MATERIALS DECORATIVE CONCRETE MASONRY COLOR: 18-121C BISQUE (MATCHED TO EXISTING) TEXTURE: SPLITFACE 8" x 16" RUNNING BOND PATTERN
MSN-2	ARRISCRAFT THIN-CLAD RENAISSANCE UNITS COLOR: OAK RIDGE TEXTURE: SMOOTH 12" x 24" RUNNING BOND PATTERN
MP-1	DRI-DESIGN EHV METAL PANEL SYSTEM COLOR: EHV 008 CITYSCAPE 24" x 72" RUNNING BOND PATTERN
MP-2	DRI-DESIGN EHV METAL PANEL SYSTEM COLOR: DR-005 SIERRA TAN 24" x 72" RUNNING BOND PATTERN
MP-3	DRI-DESIGN EHV METAL PANEL SYSTEM COLOR: EHV 009 SLATE GRAY 24" x 72" RUNNING BOND PATTERN



1 EAST-WEST EXPANSION SECTION
SCALE: 1/8" = 1'-0"

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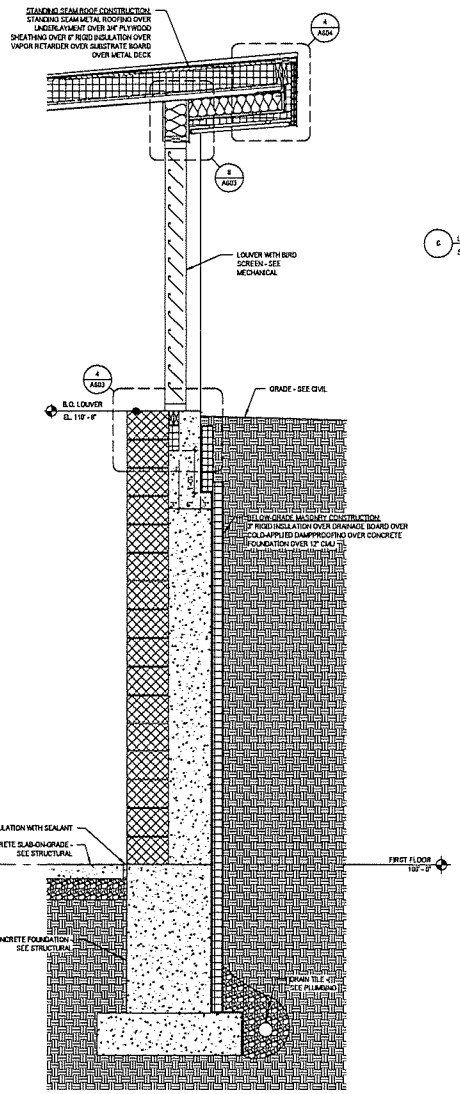
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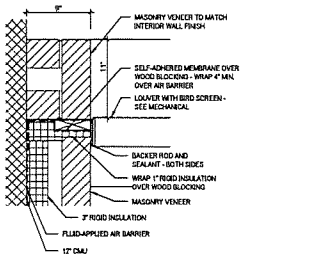
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BUILDING SECTIONS

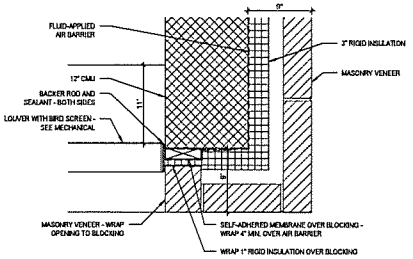
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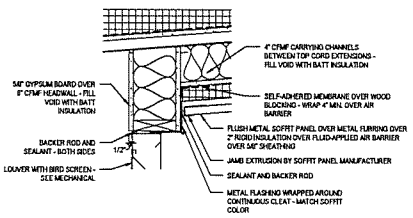
1 EAST WALL LOUVER SECTION
SCALE: 3/4" = 1'-0"



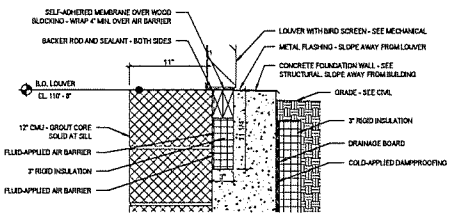
6 LOUVER JAMB @ GYM
SCALE: 1 1/2" = 1'-0"



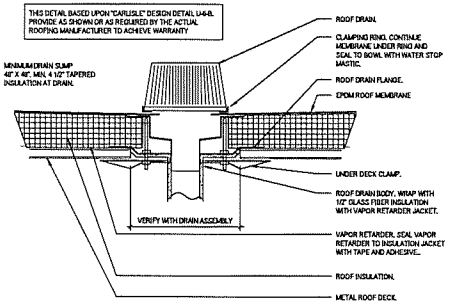
7 LOUVER JAMB @ EXT.
SCALE: 1 1/2" = 1'-0"



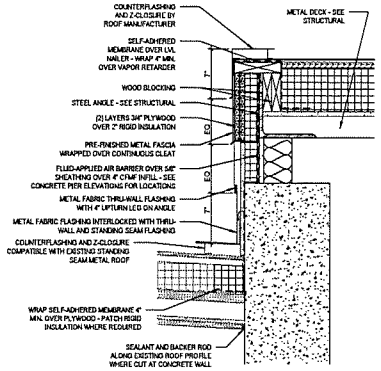
8 LOUVER HEAD
SCALE: 1 1/2" = 1'-0"



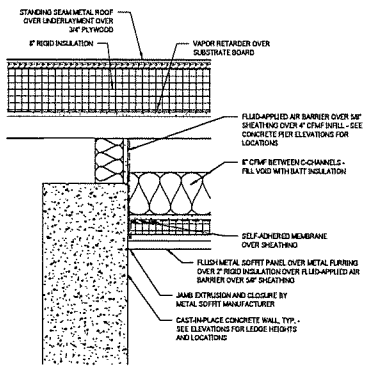
4 LOUVER SILL @ MASONRY
SCALE: 1 1/2" = 1'-0"



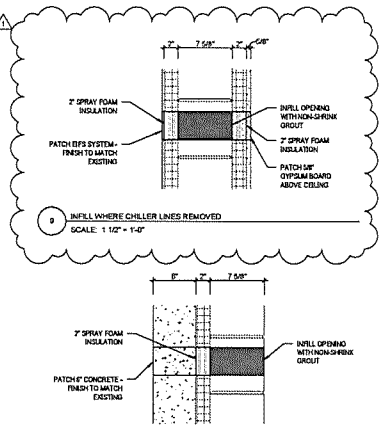
5 ROOF DRAIN
SCALE: 1 1/2" = 1'-0"



2 STANDING SEAM @ CONCRETE
SCALE: 1 1/2" = 1'-0"



3 INFILL WHERE FDC REMOVED
SCALE: 1 1/2" = 1'-0"



9 INFILL WHERE CHILLER LINES REMOVED
SCALE: 1 1/2" = 1'-0"

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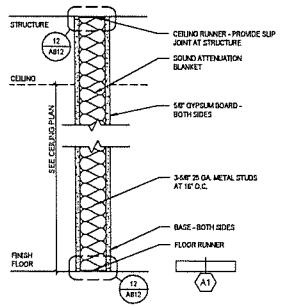
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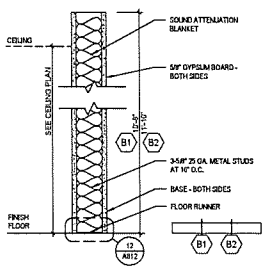
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EXTERIOR DETAILS

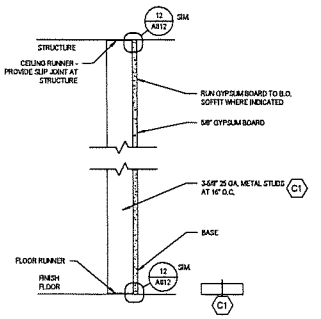
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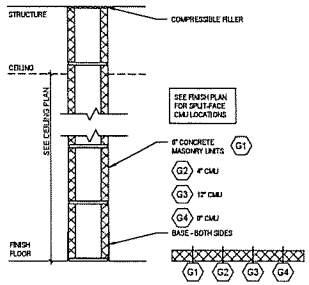
WALL TYPE A - NON RATED



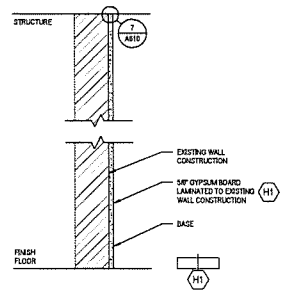
WALL TYPE B - NON RATED



WALL TYPE C - NON RATED

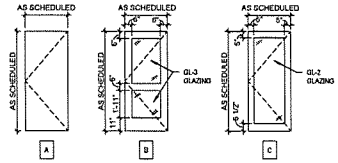


WALL TYPE D - NON RATED

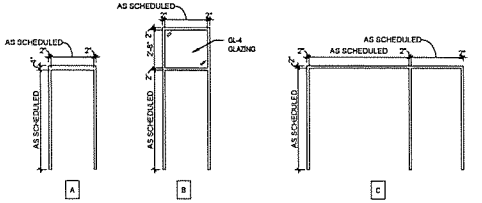


WALL TYPE H - NON RATED

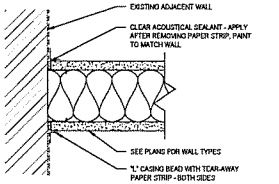
DOOR AND FRAME SCHEDULE																
	DOOR						FRAME			DETAIL						
NUMBER	TYPE	MATL	FINISH		WIDTH	HEIGHT	TYPE	MATL	FINISH	THRESH	JAMB	HEAD	LABEL	HARDWARE	REMARKS	NUMBER
105-1	B	WD	STAINED	(2)	7'-0"	7'-10"	C	HM	PAINTED	7/A812 SIM.	1/A610	2/A610		1		105-1
105-2	B	WD	STAINED		3'-0"	7'-10"	C	HM	PAINTED	7/A812 SIM.	1/A610	2/A610		2		105-2
105B	A	WD	STAINED		3'-0"	7'-0"	B	HM	PAINTED	-	2/A610	3/A610		3		105B
105D-1	B	WD	STAINED	(2)	7'-0"	7'-10"	SEE SECT	HM	PAINTED	8/A812	3/A610	4/A610		5		105D-1
105D-2	B	WD	STAINED	(2)	7'-0"	7'-10"	SEE SECT	HM	PAINTED	8/A812	3/A610	4/A610		4		105D-2
105D-3	A	INSUL HM	PAINTED		3'-0"	7'-8"	A	INSUL HM	PAINTED	3/A610	5/A610	6/A610		6		105D-3
105D-4	C	ALUM	DK BRZ		3'-0"	7'-10"	SEE SECT	ALUM	DK BRZ	2/A610	6 & 7/A600			7	PART OF STOREFRONT SYSTEM	105D-4
105E-1	A	WD	STAINED	(2)	3'-2"	7'-8"	A	HM	PAINTED	2/A610 SIM.	7/A610	8/A610		8	STC-47 DOOR ASSEMBLY	105E-1
105E-2	A	WD	STAINED	(2)	3'-2"	7'-8"	A	HM	PAINTED	7/A812	4/A610	4/A610		8	STC-47 DOOR ASSEMBLY	105E-2
105E-3	A	WD	STAINED	(2)	3'-2"	7'-8"	A	HM	PAINTED	2/A812	4/A610	4/A610		8	STC-47 DOOR ASSEMBLY	105E-3
105E-4	A	HM	PAINTED	(2)	3'-2"	7'-0"	A	HM	PAINTED	-	4/A610	4/A610		8	STC-47 DOOR ASSEMBLY	105E-4
110	A	WD	STAINED		3'-0"	7'-0"	EXIST	HM	PAINTED	4/A812				10	NO NEW DOOR OR FRAME	110
111A	A	-	-		3'-0"	7'-0"	A	HM	PAINTED	-	6/A610	4/A610			FRAME ONLY	111A
111B	A	WD	STAINED		3'-0"	7'-0"	A	HM	PAINTED	5/A812	4/A610	4/A610		3		111B
111C	A	WD	STAINED		3'-0"	7'-0"	A	HM	PAINTED	5/A812	5/A610	4/A610		11		111C
111D	A	WD	STAINED		3'-0"	7'-0"	A	HM	PAINTED	5/A812	4/A610	4/A610		11		111D
111F	A	WD	STAINED		3'-0"	7'-0"	A	HM	PAINTED	5/A812	4/A610	4/A610		3		111F
111G	A	WD	STAINED		3'-0"	7'-0"	A	HM	PAINTED	5/A812	4 & 6/A610	4/A610		3		111G



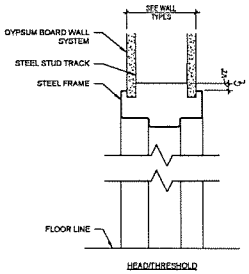
DOOR TYPES



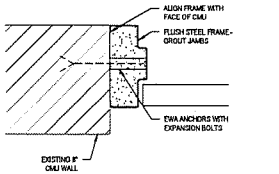
FRAME TYPES



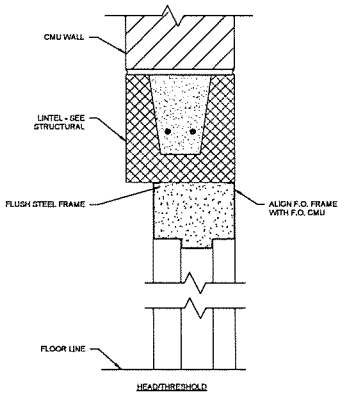
7 DISSIMILAR MATERIAL TRANSITION
SCALE: 3" = 1'-0"

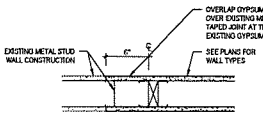


5 HM HEAD @ METAL STUDS
SCALE: 3" = 1'-0"

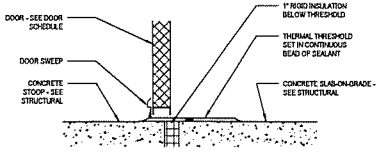


6 HM JAMB @ EXISTING CMU
SCALE: 3" = 1'-0"

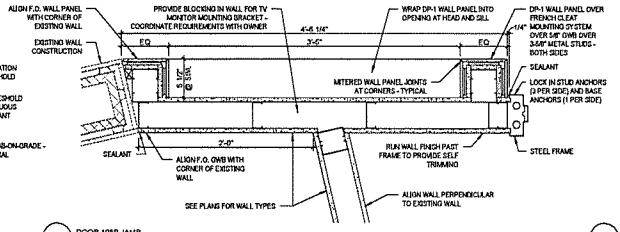




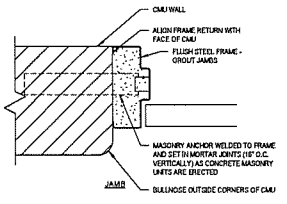
1 OFFICE WALL TRANSITION
SCALE: 1 1/2" = 1'-0"



2 EXTERIOR DOOR THRESHOLD
SCALE: 3" = 1'-0"



3 DOOR 105B JAMB
SCALE: 1 1/2" = 1'-0"



4 HM FRAME @ CMU
SCALE: 3" = 1'-0"

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Revision

WARNER PARK
COMMUNITY RECREATION
CENTER EXPANSION

1625 NORTHPORT DRIVE
MADISON, WI 53704

CITY OF MADISON PARKS DIVISION
330 EAST LAKESIDE STREET
MADISON, WI 53715

PROJECT NUMBER 22347.00

ISSUED FOR:

BID SET	5/10/2024

REVISION FOR:

NO.	DESCRIPTION	DATE
1	ADDENDUM #2	5/13/2024

DRAWN BY	DKB
CHECKED BY	JWH

DOOR SCHEDULE & WALL TYPES

A610

FINISH SCHEDULE

RM #	ROOM NAME	FLOORS FINISH	BASE FINISH	WALL FINISH NORTH FINISH	WALL FINISH EAST FINISH	WALL FINISH SOUTH FINISH	WALL FINISH WEST FINISH	CEILING FINISH	REMARKS
102	EXERCISE	RF-1/RF-2	RB-1	PT-1/PT-2	PT-7	EXPT-7	PT-8	OTS/EX	PAINT EXPOSED STRUCTURE AND UTILITIES TO MATCH EXISTING
103	OFFICE	RF-2	RB-1	PT-1	PT-1	PT-1	PT-1	OTS/EX	PAINT EXPOSED STRUCTURE AND UTILITIES TO MATCH EXISTING
105A	CORRIDOR	EXCPT-3/CPT-4	SEE PLAN	EXPT-4/DP-1	NA	PT-4/DP-1	NA	PLYWNP-1	
105B	COMFORT	CPT-3	RB-1	PT-1	PT-6	PT-1	PT-1	GWBPT-10	
105C	PRE-FUNCTION	TZ-1/TZ-2/TZ-3	SEE PLAN	SEE PLAN	SEE PLAN	SEE PLAN	DP-1/PT-2/PT-6	OTS/PT-11	
105D	GYMNASIUM	RSF-1/RSF-2	RB-1	CMU-1	CMU-1	CMU-1	CMU-1	OTS/PT-11	PAINT HEADWALLS ABOVE STOREFRONT TO MATCH METAL DECK
105E	STORAGE	SC-1	RB-1	PT-1	PT-1	PT-1	PT-1	OTS	
105F	MECHANICAL	SC-1	RB-1	PT-1	PT-1	PT-1	PT-1	OTS	
110	STORAGE	CPT-1	RB-1	PT-1	PT-1	PT-1	PT-1	GWBPT-8	
111	CORRIDOR	CPT-1/CPT-2	RB-1	PT-2	PT-1	PT-3	PT-2	GWBPT-10	
111A	LOCKER ROOM	CPT-1/CPT-2	CTB-1	PT-3/PT-1	PT-3/PT-1	PT-1	PT-1/PT-3/CT-4	GWBPT-8	SEE ELEVATIONS
111B	SHOWER	CT-2	CTB-1	SS-1	SS-1/PT-1	PT-1	SS-1/PT-1	GWBPT-8	SEE ELEVATIONS
111C	WOMENS	CT-1	CTB-1	CT-3	PT-1	CT-3/CT-4	CT-3	GWBPT-8	SEE ELEVATIONS
111D	MENS	CT-1	CTB-1	CT-3/CT-4	PT-1	CT-3	CT-3	GWBPT-8	SEE ELEVATIONS
111F	ADA TOILET	CT-1	CTB-1	PT-1	CT-3/CT-4	CT-3	PT-1	GWBPT-8	SEE ELEVATIONS
111G	ADA TOILET	CT-1	CTB-1	PT-1	PT-1	CT-3	CT-3/CT-4	GWBPT-8	SEE ELEVATIONS

GENERAL NOTES - FINISHES

- CPT-3 FLOOR FINISH
- CPT-4 FLOOR FINISH
- TZ-1 FLOOR FINISH
- TZ-2 FLOOR FINISH
- TZ-3 FLOOR FINISH

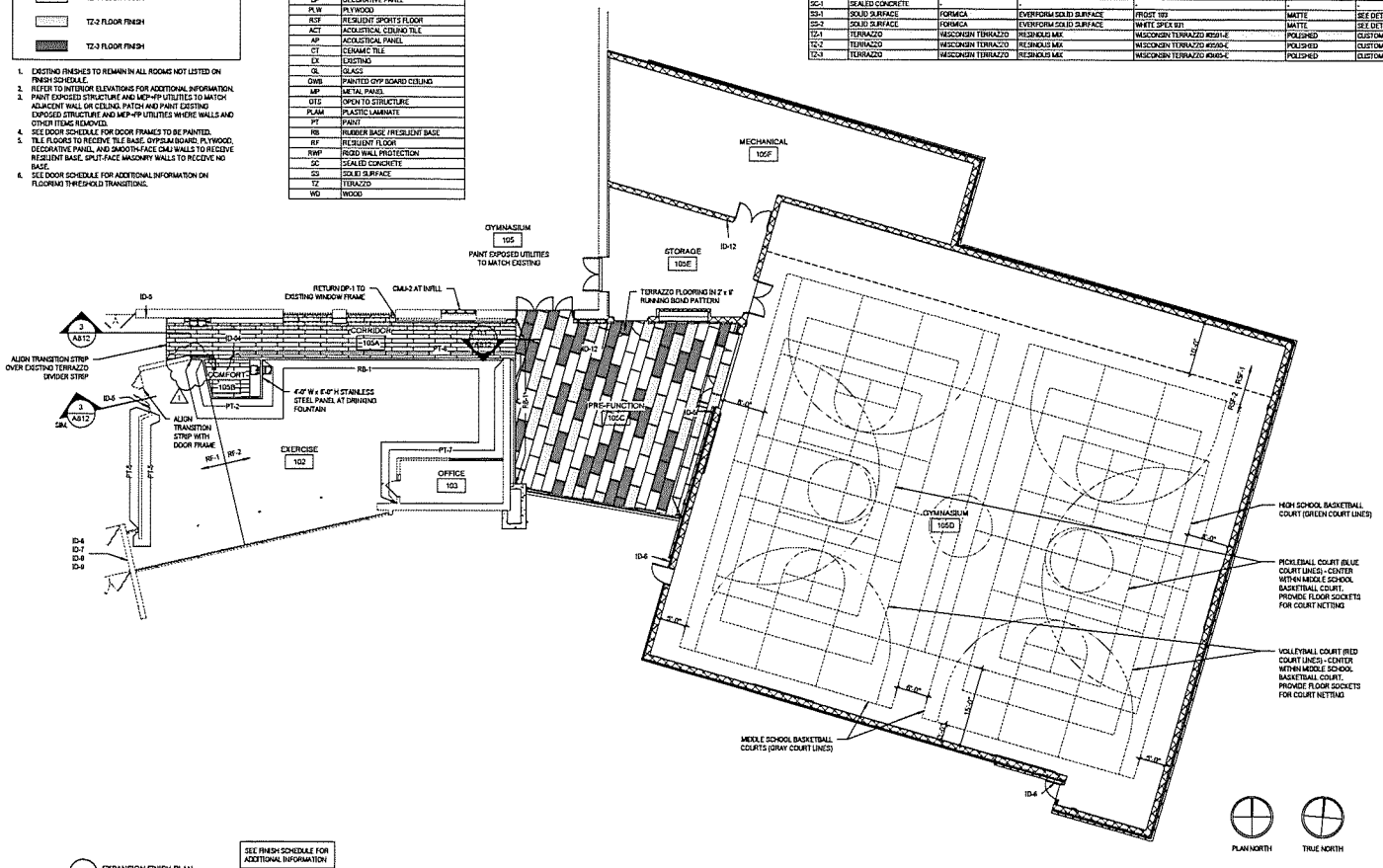
1. EXISTING FINISHES TO REMAIN IN ALL ROOMS NOT LISTED ON FINISH SCHEDULE.
2. REFER TO INTERIOR ELEVATIONS FOR ADDITIONAL INFORMATION.
3. PAINT EXPOSED STRUCTURE AND MEP-FP UTILITIES TO MATCH ADJACENT WALL OR CEILING. PATCH AND PAINT EXISTING EXPOSED STRUCTURE AND MEP-FP UTILITIES WHERE WALLS AND OTHER ITEMS REMOVED.
4. SEE DOOR SCHEDULE FOR DOOR FRAMES TO BE PAINTED.
5. TILE FLOORS TO RECEIVE TILE BASE. GYPSUM BOARD, PLYWOOD, DECORATIVE PANEL, AND SMOOTH-FACE CMU WALLS TO RECEIVE RESILIENT BASE. SPLIT-FACE MASONRY WALLS TO RECEIVE NO BASE.
6. SEE DOOR SCHEDULE FOR ADDITIONAL INFORMATION ON FLOORING THRESHOLD TRANSITIONS.

ABBREVIATIONS - FINISH

FINISH TAG	FINISH DESCRIPTION
CMU-1	CMU
CMU-2	CMU
CPT	CARPET TILE
DP	DECORATIVE PANEL
PLW	PLYWOOD
RSF	RESILIENT SPORTS FLOOR
ACT	ACOUSTICAL CEILING TILE
AP	ACOUSTICAL PANEL
CT	CERAMIC TILE
EX	EXISTING
GL	GLASS
GWB	PAINTED GYP BOARD CEILING
MP	METAL PANEL
OTS	OPEN TO STRUCTURE
PLAM	PLASTIC LAMINATE
PT	PAINT
RB	RUBBER BASE / RESILIENT BASE
RF	RESILIENT FLOOR
RWP	RIGID WALL PROTECTION
SC	SEALED CONCRETE
SS	SOLID SURFACE
TZ	TERRAZZO
WD	WOOD

FINISH KEY

TAG	PRODUCT	MANUFACTURER	COLLECTION/STYLE	COLOR	FINISH	SIZE	NOTES
AP-1	ACOUSTIC PANEL	ARKTURA	VAPOR TRAIL	ARKTURA WHITE	MATTE	24" X 48"	
CMU-1	CONCRETE MASONRY UNIT	COUNTY MATERIALS CORP.	SPLITFACE/SMOOTHFACE	SANDSTONE 18-314C	SMOOTH	8" X 16"	
CMU-2	CONCRETE MASONRY UNIT	COUNTY MATERIALS CORP.	PREMIER ULTRA BURNISHED	NORTH STAR 43-2236	SMOOTH	8" X 16"	
CPT-1	CARPET TILE	FORBO	FLOTEX/SEAGRASS	ALMOND 111003	STANDARD	9.5"X 39.4"	BRICK PATTERN INSTALLATION/50% OF COLOR MIX
CPT-2	CARPET TILE	FORBO	FLOTEX/SEAGRASS	CHARCOAL 111004	STANDARD	9.5"X 39.4"	BRICK PATTERN INSTALLATION/50% OF COLOR MIX
CPT-3	CARPET TILE	FORBO	FLOTEX/SEAGRASS	WALNUT 111005	STANDARD	9.5"X 39.4"	BRICK PATTERN INSTALLATION
CPT-4	CARPET TILE	FORBO	FLOTEX/SEAGRASS	LIQUORICE 111006	STANDARD	9.5"X 39.4"	BRICK PATTERN INSTALLATION
CT-1	CERAMIC TILE	DAL TILE	FABRIC ART/MODERN LINEAR	TAUPE 1A 62	MATTE	12" X 24"	
CT-2	CERAMIC TILE	DAL TILE	FABRIC ART/MODERN TEXTILE	TAUPE 1AT52	MATTE	1" X 3" MOSAIC	
CT-3	CERAMIC TILE	DAL TILE	FABRIQUE	BLANC LINEN P600	MATTE	12" X 24"	
CT-4	CERAMIC TILE	CAESAR CERAMICHE	COCOON/CADENCE TILE	OLEE	MATTE	8" X 48"	
CTB-1	CERAMIC TILE BASE	DAL TILE	FABRIC ART/MODERN LINEAR	TAUPE 1A 62	MATTE	6" X 12"	
DP-1	DECORATIVE PANEL	ACROVYN	ACROVYN BY DESIGN METALLICS	MEDIUM BRONZE #18172	METALLIC	-	
PT-1	PAINT	BENJAMIN MOORE	WALL PAINT	CLOUD WHITE 967	SEMI-GLOSS	-	
PT-2	PAINT	BENJAMIN MOORE	ACCENT PAINT	EDGECOMB GRAY HC-172	SEMI-GLOSS	-	
PT-3	PAINT	SHERWIN WILLIAMS	ACCENT PAINT	REVEALE SW6028	SEMI-GLOSS	-	
PT-4	PAINT	SHERWIN WILLIAMS	ACCENT PAINT	CURIO GRAY SW6024	EGGSHELL	-	
PT-5	PAINT	SHERWIN WILLIAMS	ACCENT PAINT	STILL WATER SW6223	EGGSHELL	-	
PT-6	PAINT	SHERWIN WILLIAMS	ACCENT PAINT	INTERESTING AQUA SW6220	EGGSHELL	-	
PT-7	PAINT	BENJAMIN MOORE	ACCENT PAINT	ORIENTA GREEN 422	EGGSHELL	-	
PT-8	PAINT	BENJAMIN MOORE	DOOR FRAME PAINT	DEVONSHIRE GREEN 1489	SEMI-GLOSS	-	
PT-9	PAINT	SHERWIN WILLIAMS	CEILING PAINT	HIGH REFLECTIVE WHITE SW7757	SEMI-GLOSS	-	
PT-10	PAINT	SHERWIN WILLIAMS	CEILING PAINT	HIGH REFLECTIVE WHITE SW7757	FLAT	-	
PT-11	PAINT	BENJAMIN MOORE	CEILING PAINT	DUNE WHITE 968	SEMI-GLOSS	-	
RB-1	RESILIENT BASE	TARKETT	THERMOSET RUBBER	BURNT UMBER 63	SOLID	4" HIGH	
RF-1	RESILIENT FLOOR	TARKETT SPORTS	DROPZONE ELITE	DARK GREY DZ302	STANDARD	48" W ROLL	
RF-2	RESILIENT FLOOR	TARKETT SPORTS	DROPZONE ELITE	MED GREY DZ304	STANDARD	48" W ROLL	
RSF-1	RESILIENT SPORTS FLOOR	TARKETT SPORTS	OMNISPORTS HPL7	GOLDEN MAPLE	STANDARD	66" W ROLL	CLASS 1 SYSTEM
RSF-2	RESILIENT SPORTS FLOOR	TARKETT SPORTS	OMNISPORTS ACTIVE+	GOLDEN MAPLE	STANDARD	66" W ROLL	CLASS 2 SYSTEM
SC-1	SEALED CONCRETE	-	-	-	-	-	
SS-1	SOLID SURFACE	FORMICA	EVERFORM SOLID SURFACE	FROST 189	MATTE	SEE DETAILS	
SS-2	SOLID SURFACE	FORMICA	EVERFORM SOLID SURFACE	WHITE SPEX 931	MATTE	SEE DETAILS	
TZ-1	TERRAZZO	WISCONSIN TERRAZZO	RESINOUS MIX	WISCONSIN TERRAZZO #2591-E	POLISHED	CUSTOM	
TZ-2	TERRAZZO	WISCONSIN TERRAZZO	RESINOUS MIX	WISCONSIN TERRAZZO #2593-C	POLISHED	CUSTOM	
TZ-3	TERRAZZO	WISCONSIN TERRAZZO	RESINOUS MIX	WISCONSIN TERRAZZO #2603-C	POLISHED	CUSTOM	



SEE FINISH SCHEDULE FOR ADDITIONAL INFORMATION

1 EXPANSION FINISH PLAN
SCALE: 3/32" = 1'-0"

Engberg Anderson ARCHITECTS
MILWAUKEE | MADISON | CHICAGO

WARNER PARK COMMUNITY RECREATION CENTER EXPANSION

1625 NORTHPORT DRIVE
MADISON, WI 53704

CITY OF MADISON PARKS DIVISION
330 EAST LAKESIDE STREET
MADISON, WI 53715

PROJECT NUMBER 223471.00

ISSUED FOR:
BID SET 5/16/2024

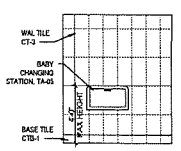
REVISION FOR:

NO.	DESCRIPTION	DATE
1	ADDENDUM #2	6/13/2024

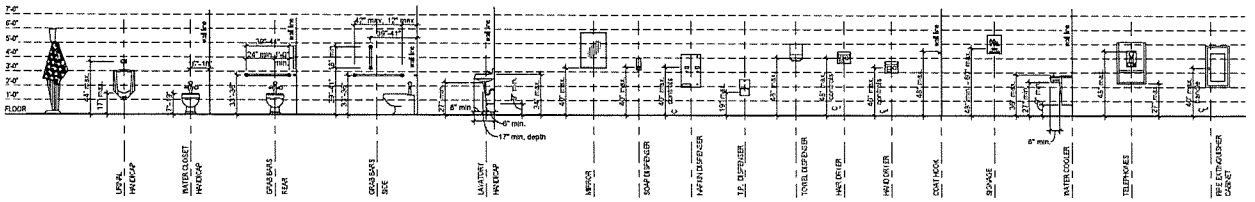
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CHECKED BY JWH

FINISH PLANS & SCHEDULE

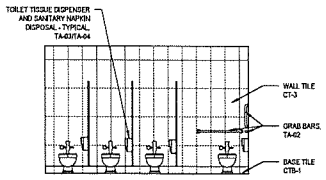
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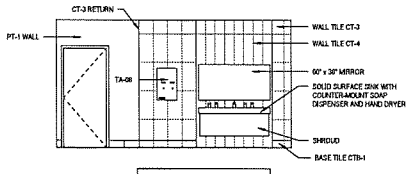
14 111F - WEST
SCALE: 1/4" = 1'-0"



TYPICAL MOUNTING HEIGHTS LEGEND (ANSI)

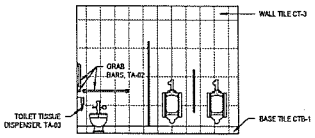


9 111C - NORTH
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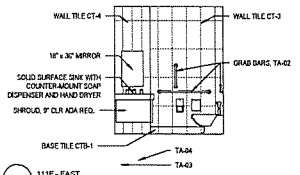


CT-4 TO BOTH ADJACENT WALLS @ SIM.

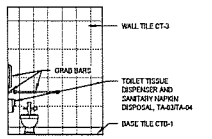
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SCALE: 1/4" = 1'-0"



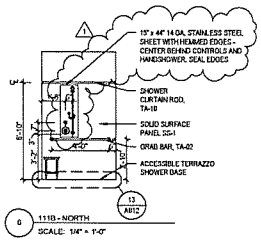
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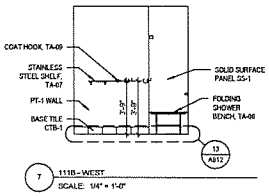
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SCALE: 1/4" = 1'-0"



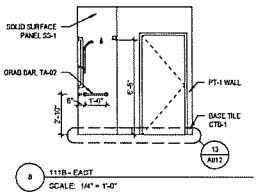
13 111F - SOUTH
SCALE: 1/4" = 1'-0"



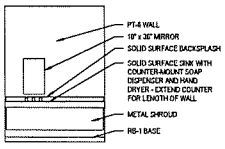
6 111G - NORTH
SCALE: 1/4" = 1'-0"



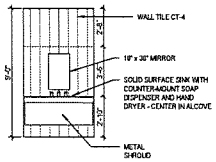
7 111B - WEST
SCALE: 1/4" = 1'-0"



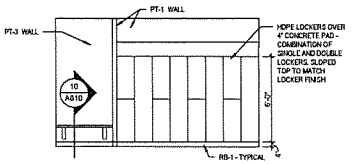
8 111B - EAST
SCALE: 1/4" = 1'-0"



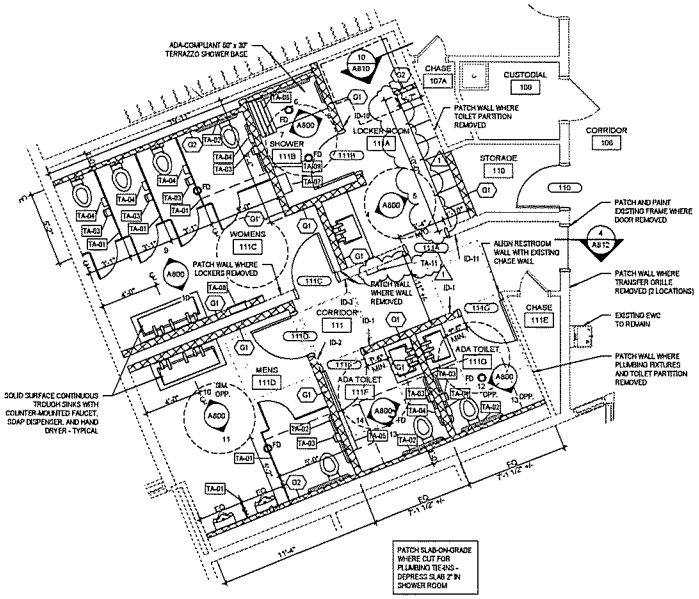
3 105B - EAST
SCALE: 1/4" = 1'-0"



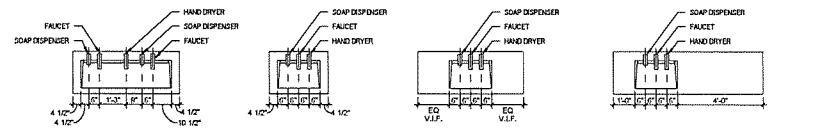
4 111A - WEST
SCALE: 1/4" = 1'-0"



5 111A - EAST
SCALE: 1/4" = 1'-0"



1 ENLARGED PLAN - RESTROOMS
SCALE: 1/4" = 1'-0"



SEE PLUMBING FOR ADDITIONAL INFORMATION

2 SINK DETAILS
SCALE: 3/8" = 1'-0"

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MILWAUKEE | MADISON | CHICAGO

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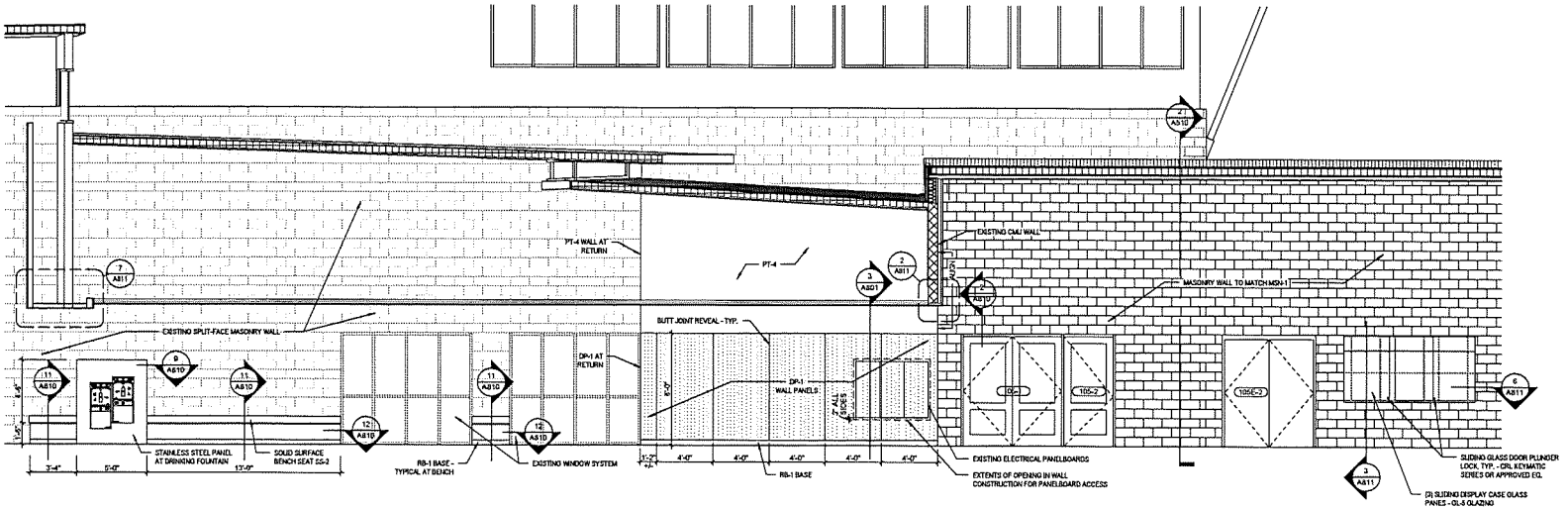
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1	ADDENDUM #2	6/13/2024

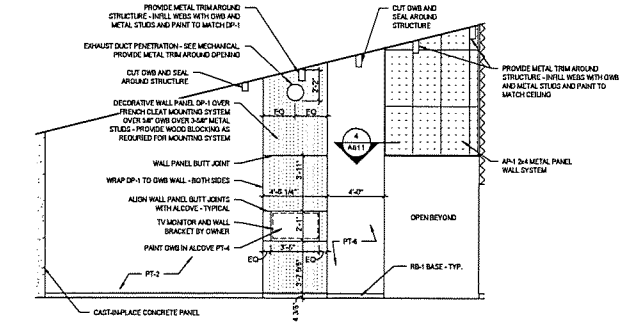
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ENLARGED PLANS & INTERIOR ELEVATIONS

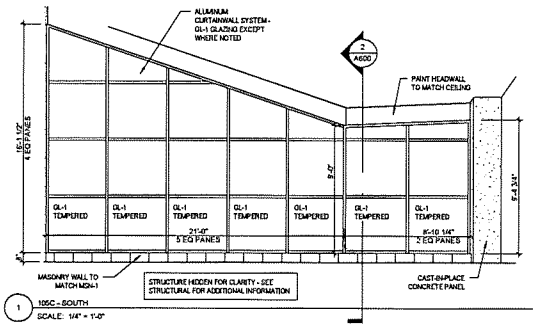
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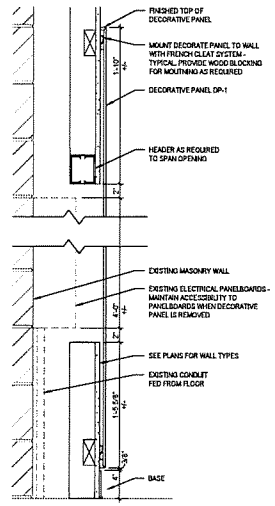
5 105A - NORTH
SCALE: 1/4" = 1'-0"



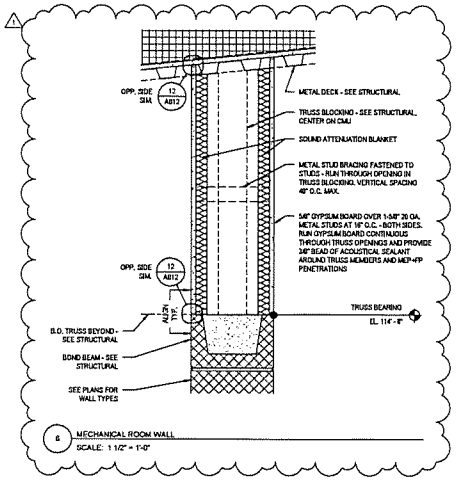
2 105C - WEST
SCALE: 1/4" = 1'-0"



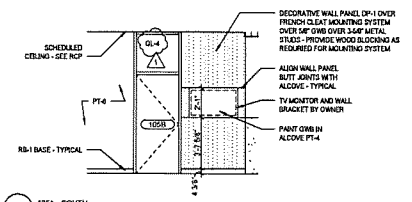
1 105C - SOUTH
SCALE: 1/4" = 1'-0"



3 WALL PANEL SECTION
SCALE: 1 1/2" = 1'-0"



6 MECHANICAL ROOM WALL
SCALE: 1 1/2" = 1'-0"



4 105A - SOUTH
SCALE: 1/4" = 1'-0"

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WARNER PARK
COMMUNITY RECREATION
CENTER EXPANSION

1625 NORTHPORT DRIVE
MADISON, WI 53704

CITY OF MADISON PARKS DIVISION
330 EAST LAKESIDE STREET
MADISON, WI 53715

PROJECT NUMBER 223471.00

ISSUED FOR:

BID SET	5/15/2024

REVISION FOR:

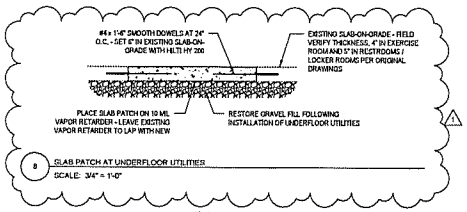
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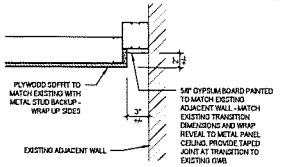
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INTERIOR ELEVATIONS

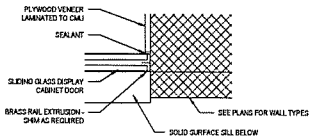
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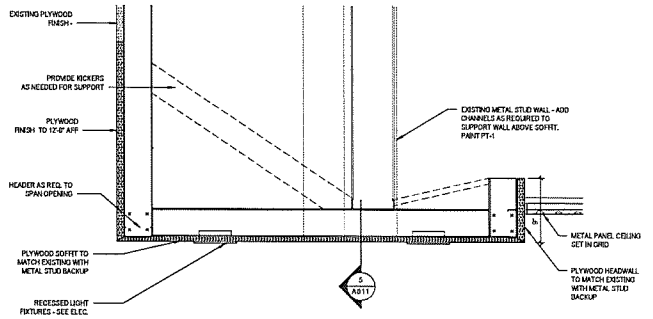
8 SLAB PATCH AT UNDERFLOOR UTILITIES
SCALE: 3/4" = 1'-0"



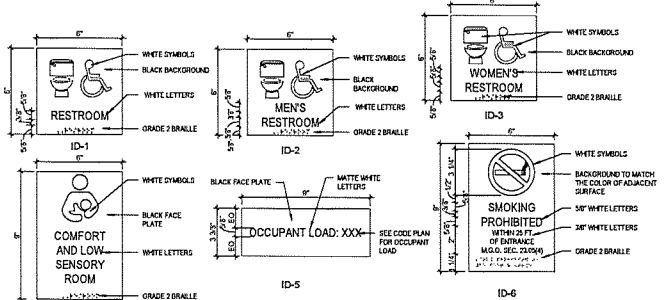
5 CORRIDOR CEILING @ PLYWOOD
SCALE: 1 1/2" = 1'-0"

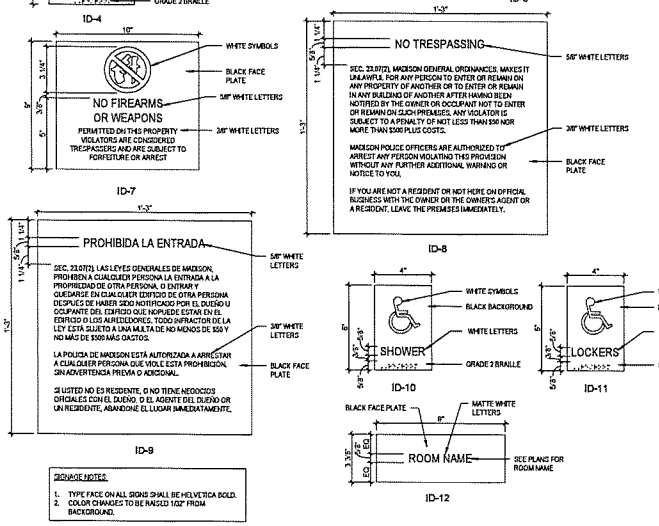


6 TROPHY CABINET JAMB
SCALE: 1 1/2" = 1'-0"



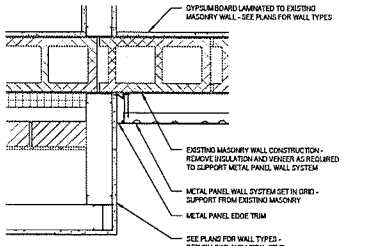
7 CORRIDOR CEILING @ EXISTING
SCALE: 1 1/2" = 1'-0"



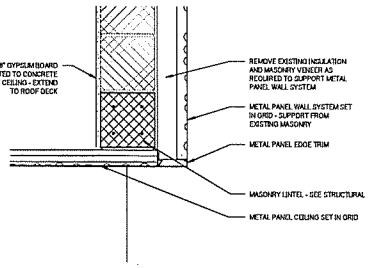


SIGNAGE NOTES:
1. TYPE FACE ON ALL SIGNS SHALL BE HELVETICA BOLD.
2. COLOR CHANGES TO BE RAISED 1/32" FROM BACKGROUND.

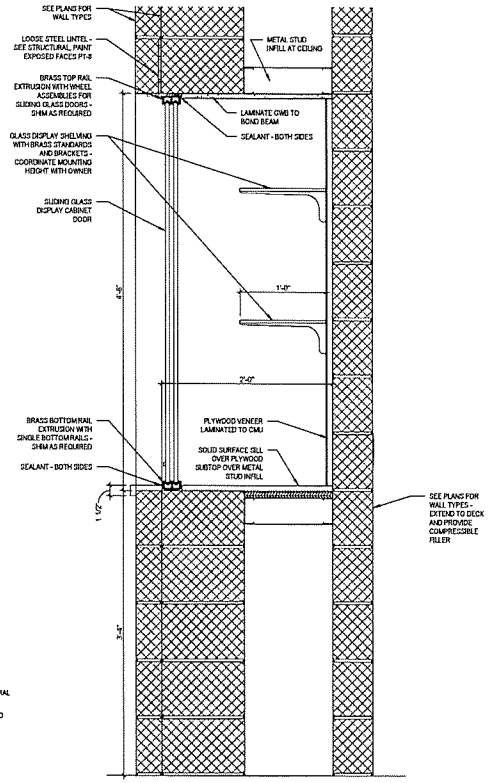
1 SIGNAGE SCHEDULE



4 CORRIDOR VERTICAL PANEL
SCALE: 1 1/2" = 1'-0"



2 CORRIDOR CEILING @ PRE-FUNCTION
SCALE: 1 1/2" = 1'-0"



3 TROPHY CABINET SECTION
SCALE: 1 1/2" = 1'-0"

Engberg Anderson ARCHITECTS
MILWAUKEE | MADISON | CHICAGO
Revision

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INTERIOR DETAILS

A811

STRUCTURAL DESIGN CRITERIA

1. THESE NOTES SUPPLEMENT THE SPECIFICATIONS. PROJECT SPECIFICATIONS SHALL BE REFERRED TO FOR CLARIFICATIONS AND ADDITIONAL INFORMATION. IN CASE OF CONFLICT BETWEEN PROJECT SPECIFICATIONS AND THESE NOTES, THESE NOTED SHALL GOVERN.

2. GOVERNING BUILDING CODE: 2015 IBC AS AMENDED BY THE STATE OF WISCONSIN.

3. DESIGN LOADS

LIVE LOAD
- TYPICAL SLAB ON GRADE ---------- 100 psf
- MEZZANINE ---------- 100 psf

ROOF
- LIVE LOAD
- SNOW ---------- 30 psf+DRIFTING
- SUPERIMPOSED DEAD LOAD
- TOP CHORD ---------- 10 psf
- BOTTOM CHORD ---------- 10 psf
- ROOF DEAD LOAD ---------- (6 PSF PV PANELS) 30 psf

SNOW LOADS
- GROUND SNOW (Pg) ---------- 30 psf
- SNOW LOAD IMPORTANCE FACTOR (Is) ---------- 1.0
- SNOW LOAD EXPOSURE FACTOR (Ce) ---------- 1.0
- ROOF THERMAL LOAD FACTOR (Ct) AT BUILDING ---------- 1.1
- BASE ROOF SNOW LOAD AT BUILDING ---------- 21 psf

WIND LOADS
- BASIC WIND SPEED ---------- 107 mph
- BUILDING OCCUPANCY CATEGORY ---------- II
- WIND LOAD IMPORTANCE FACTOR (Iw) ---------- 1.0
- WIND EXPOSURE CATEGORY ---------- C
- INTERNAL PRESSURE COEFFICIENT ---------- ±0.18

MAIN WIND FORCE - RESISTING SYSTEM:
- MWFRS SELECTED EDGE STRIP DISTANCE, (2A) ---------- 11.0 ft
- CALCULATED HORIZONTAL LOADS:

	END ZONE WALL	END ZONE ROOF	INTERIOR ZONE WALL	INTERIOR ZONE ROOF
TRANSVERSE CASE #1:	24.0 psf	16.5 psf	19.2 psf	13.2 psf
TRANSVERSE CASE #2:	24.0 psf	16.5 psf	19.2 psf	13.2 psf
LONGITUDINAL:	24.0 psf	16.5 psf	19.2 psf	13.2 psf

- CALCULATED VERTICAL LOADS:

	END ZONE WINDWARD	END ZONE LEEWARD	INTERIOR ZONE WINDWARD	INTERIOR ZONE LEEWARD
TRANSVERSE CASE #1:	1.8 psf	-14.7 psf	0.7 psf	-12.5 psf
TRANSVERSE CASE #2:	8.3 psf	-7.2 psf	8.0 psf	-5.2 psf
LONGITUDINAL:	-25.7 psf	-14.7 psf	-17.8 psf	-11.3 psf

COMPONENTS AND CLADDING:
(SEE ASCE/SEI 7-SECTION 6 FOR ZONE DEFINITIONS AND DIAGRAMS)
- COMPONENT AND CLADDING SELECTED EDGE STRIP DISTANCE, (A) ---------- 5.5 ft

TRIBUTARY WIND LOAD AREAS	10 ft²	50 ft²	100 ft²
ROOF (MONOSLOPE):			
ZONE 1 (NEGATIVE)	19.7 psf	17.3 psf	16.3 psf
ZONE 2 (NEGATIVE)	23.0 psf	20.7 psf	19.7 psf
ZONE 3 (NEGATIVE)	23.0 psf	20.7 psf	19.7 psf
WALLS			
ZONE 4 (NEGATIVE)	21.3 psf	19.3 psf	18.4 psf
ZONE 5 (NEGATIVE)	26.3 psf	23.3 psf	20.4 psf
ZONE 4 & 5 (NEGATIVE)	19.7 psf	17.6 psf	16.7 psf

SEISMIC LOADS
- SEISMIC USE GROUP / OCCUPANCY CATEGORY ---------- II
- SEISMIC IMPORTANCE FACTOR (Ie) ---------- 1.0
- SEISMIC SITE CLASS ---------- C
- SPECTRAL RESPONSE COEFFICIENT (SDs) ---------- 0.048
- SPECTRAL RESPONSE COEFFICIENT (SD1) ---------- 0.032
- SEISMIC DESIGN CATEGORY ---------- A
- BASIC SEISMIC FORCE RESISTING SYSTEM:
  - BEARING WALL SYSTEM
  - LIGHT FRAMED WALL SHEATHED WITH WOOD STRUCTURAL PANELS RATED FOR SHEAR RESISTANCE
  - R = 6.5 Ωo = 3.0 Cd = 4.0
- ANALYSIS PROCEDURE:
  - EQUIVALENT LATERAL FORCE PROCEDURE

4. FOUNDATIONS AND EARTHWORK
- ALLOWABLE SOIL BEARING PRESSURE FOR FOOTINGS ---------- 4,000 psf

5. CONCRETE
- MINIMUM 28 DAY COMPRESSIVE STRENGTH (f'c)
- FOOTINGS ---------- 4,000 psi
- PIERS, WALLS ---------- 4,000 psi
- SLAB-ON-GRADE (INTERIOR) ---------- 2,500 psi
- SLAB-ON-GRADE (EXTERIOR) ---------- 4,500 psi

COVER ON MILD STEEL REINFORCEMENT
- CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH ---------- 3"
- CONCRETE EXPOSED TO EARTH OR WEATHER
  - #5 BARS AND SMALLER ---------- 1 1/2"
  - #6 BARS AND LARGER ---------- 2"
- CONCRETE NOT EXPOSED TO WEATHER OR IN CONTACT WITH GROUND ---------- 1"

CONCRETE REINFORCEMENT YIELD STRENGTH (Fy)
- ALL DEFORMED MILD STEEL ---------- 60,000 psi
- WELDED WIRE FABRIC ---------- 65,000 psi

6. CONCRETE MASONRY
DESIGN STRESSES
- MASONRY (NORMAL WEIGHT) MEETING ASTM C90 ---------- f'm = 2,250 psi
- GROUT: MIN COMPRESSIVE STRENGTH AT 28 DAYS MEETING ASTM C476 ---------- 3,000 psi
- MINIMUM BLOCK COMPRESSIVE STRENGTH ---------- 2,000 psi

7. STRUCTURAL STEEL
STRUCTURAL STEEL YIELD STRENGTH (Fy)
- TUBES ---------- 46,000 psi
- WF BEAMS ---------- 50,000 psi
- WF COLUMNS ---------- 50,000 psi

- BOLTS FOR STANDARD FRAME CONNECTIONS ---------- 3/4" DIAMETER A325
- BOLTS FOR SINGLE SHEAR TAB CONNECTIONS ---------- 3/4" DIAMETER A325
- ANCHOR RODS ---------- F1554
- WELDING ELECTRODES ---------- E70

8. MISCELLANEOUS
VERIFY OPENINGS THROUGH FLOOR AND WALLS WITH ARCHITECTURAL, MECHANICAL, PLUMBING, AND ELECTRICAL REQUIREMENTS. CHANGES IN SIZE, LOCATION OR NUMBER OF OPENINGS SHOWN ON THE STRUCTURAL DRAWINGS SHALL NOT BE PERMITTED WITHOUT WRITTEN APPROVAL OF THE STRUCTURAL ENGINEER. NOT ALL OPENINGS ARE SHOWN ON THE STRUCTURAL DRAWINGS.

GENERAL NOTES APPLY TO ALL SHEETS

1. CONTRACTOR TO PROVIDE DRAFT STOPPING IN ATTIC. MAXIMUM AREA OF SUBDIVIDE ATTIC AREA IS 3000 SF CONTRACTOR TO COORDINATE LOCATION OF DRAFT STOPPING WITH ARCHITECT AND TRUSS SHOP DRAWINGS PRIOR TO START OF CONSTRUCTION. PROVIDE AN ATTIC ACCESS PANEL INTO EACH ATTIC COMPARTMENT. MINIMUM OPENING SIZE OF 20" x 30" COORDINATE LOCATION WITH ARCHITECT. DRAFT STOPPING TO EXTEND TO FASCIA AT OVERHANGS.

2. SECURE TRUSSES AT EACH BEARING WITH SIMPSON H2.5A MIN.

3. CONTRACTOR TO SUBMIT TRUSS SHOP DRAWINGS TO ARCHITECT FOR REVIEW PRIOR TO CONSTRUCTION.

GENERAL

1. STRUCTURAL DRAWINGS ARE INTENDED TO BE USED WITH ARCHITECTURAL AND MECHANICAL DRAWINGS. CONTRACTOR IS RESPONSIBLE FOR COORDINATING SUCH REQUIREMENTS INTO THE SHOP DRAWINGS AND WORK.

2. NO OPENING SHALL BE MADE IN ANY STRUCTURAL BEAM, COLUMN, SUPPORT FLOOR, LOAD BEARING WALL, FOOTING, OR FOUNDATION WALL WITHOUT THE WRITTEN APPROVAL OF THE ARCHITECT/ ENGINEER. OPENINGS IN NON-LOAD BEARING WALLS REQUIRE THE ARCHITECT'S APPROVAL.

3. THE CONTRACTOR IS RESPONSIBLE FOR LIMITING THE AMOUNT OF CONSTRUCTION LOAD IMPOSED UPON NEW STRUCTURAL FRAMING. CONSTRUCTION LOADS SHALL NOT EXCEED THE DESIGN CAPACITY OF THE FRAMING AT THE TIME THE LOADS ARE IMPOSED.

4. THE STRUCTURE IS DESIGNED TO FUNCTION AS A UNIT UPON COMPLETION. THE CONTRACTOR IS RESPONSIBLE FOR FURNISHING ALL TEMPORARY BRACING AND/OR SUPPORT THAT MAY BE REQUIRED AS THE RESULT OF THE CONTRACTOR'S CONSTRUCTION METHODS AND/OR SEQUENCES. THE STRUCTURAL ENGINEER ASSUMES NO LIABILITY FOR THE STRUCTURE DURING CONSTRUCTION.

5. FIREPROOFING METHODS AND MATERIALS FOR STRUCTURAL DRAWINGS. REFER TO ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR RATING REQUIREMENTS, FIREPROOFING METHODS AND MATERIALS.

6. ALL SECTIONS, DETAIL AND NOTES SHOWN ON THE STRUCTURAL DRAWINGS ARE INTENDED TO BE TYPICAL AND SHALL APPLY TO SIMILAR SITUATIONS ELSEWHERE UNLESS OTHERWISE NOTED.

7. WHEN CONFLICTS ARE NOTED ON THE DRAWINGS, THE CONTRACTOR IS RESPONSIBLE FOR NOTIFYING THE A/E FOR RESOLUTION PRIOR TO FABRICATION OR INSTALLATION.

FOUNDATION NOTES

1. GEOTECHNICAL INFORMATION TAKEN FROM: GEOTECHNICAL EXPLORATION REPORT C23051-6.

2. THE OWNER SHALL RETAIN A SOILS ENGINEERING FIRM TO MONITOR PROPER SUBGRADE PREPARATIONS AND TO OVERSEE THE TESTING AND COMPACTION OF COMPACTED FILL MATERIAL.

3. CONTRACTOR SHALL LOCATE EXISTING UNDERGROUND UTILITIES BEFORE FOUNDATION EXCAVATION IF UNDERGROUND UTILITY CONFLICTS ARE DISCOVERED BEFORE OR ENCOUNTERED DURING EXCAVATION, NOTIFY THE ARCHITECT/ENGINEER IMMEDIATELY.

4. CONTRACTOR SHALL VERIFY THE LOCATION AND ELEVATION OF ANY EXISTING FOUNDATIONS.

5. BEFORE PLACING FOOTINGS, FOUNDATIONS, GRADE BEAMS, OR SLAB-ON-GRADE, THE SUB-GRADE SHALL BE PREPARED AND INSPECTED AS REQUIRED BY THE SPECIFICATIONS AND THE DRAWINGS.

6. REINFORCE ALL FOUNDATION WALLS AND FOOTINGS AS SHOWN ON THE ARCHITECTURAL AND STRUCTURAL DRAWINGS.

7. CONTROL JOINTS IN THE CAST-IN-PLACE CONCRETE FOUNDATION WALLS SHALL BE PLACED AT NOT TO EXCEED 20' OC OR AS LOCATED ON THE DRAWINGS.

8. PERIMETER FOUNDATION WALL INSULATION IS NOT SHOWN ON THE FOUNDATION DETAILS. SEE ARCHITECTURAL DRAWINGS AND THE SPECIFICATIONS FOR INSULATION REQUIREMENTS.

9. SEE SPECIFICATIONS FOR FREE DRAINING BACKFILL BENEATH ALL CONCRETE WALKS AND SLABS ADJACENT TO STRUCTURE.

10. CONTRACTOR NOTE: THE BASE OF ALL EXCAVATIONS SHALL BE KEPT FREE OF WATER AND LOOSE SOIL PRIOR TO PLACING CONCRETE. CARE SHOULD BE TAKEN DURING EXCAVATION AND CONSTRUCTION TO MINIMIZE DISTURBANCE OF THE BEARING SOILS. THE CONCRETE SHOULD BE PLACED AS SOON AS POSSIBLE AFTER EXCAVATION TO PREVENT EXCESSIVE DRYING OR WETTING OF THE SOIL.

MASONRY NOTES

1. ALL MASONRY WALLS ARE TO HAVE HORIZONTAL REINFORCEMENT WHICH DOES NOT EXCEED 16 INCHES ON CENTER VERTICALLY. SEE SPECIFICATIONS FOR INFORMATION RELATING TO CONCRETE BLOCK, BRICK, AND WALL REINFORCING.

2. ALL VERTICAL REINFORCING STEEL IN MASONRY WALLS ARE TO COMPLY WITH ASTM A615, GRADE 60. LAPS SHALL BE 48 BAR DIAMETERS (12" MINIMUM).

3. PROVIDE SPLICE BARS FOR ALL BOND BEAM REINFORCING AT ALL CORNERS. SPLICE BAR TO BE THE SAME SIZE AS BARS IN THE BOND BEAM. LAPS SHALL BE 50 BAR DIAMETER.

4. WHERE MASONRY IS APPLIED ADJACENT TO STEEL MEMBERS (BEAMS AND COLUMNS) PROVIDE ANCHORING DEVICES PER SPECIFICATIONS.

5. REFER TO ARCHITECTURAL PLANS FOR ROUGH OPENING LOCATIONS, SIZES, AND ELEVATIONS.

6. USE SIMPSON TITEN HD OR APPROVED EQUAL TYPE ANCHORS IN CMU WALL PARTITIONS.

7. ALL NON-STRUCTURAL CMU WALLS SHALL BE REINFORCED WITH A #3 VERTICAL BAR AT 48" OC WITH THAT CMU CORE GROUTED AND HORIZONTAL JOINT REINFORCEMENT AT 16" OC THE BOTTOM TWO COURSES SHALL BE GROUTED SOLID. PROVIDE CONTINUOUS BOND BEAM AT TOP OF WALL WITH 2 #4's CONTINUOUS GROUT BOND BEAM SOLID. PROVIDE #3 DOWEL AT 48" OC MATCH VERTICAL BAR, LAP 50 BAR DIAMETERS. PROVIDE LINTEL BLOCK AS BOND BEAM WITH (2) #5 x CONT, AND 8" BEARING EACH END, TYPICAL UNLESS NOTED OTHERWISE.

8. CONSTRUCTION BRACING FOR MASONRY WALLS SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE IN WHICH THE PROJECT IS LOCATED. MASONRY SUBMITTALS SHALL CONTAIN A LETTER SEALED BY THE ENGINEER AND SHALL BE ISSUED TO THE OWNER AFTER SUBMITTAL REVIEW AND PRIOR TO STARTING MASONRY CONSTRUCTION.

COLD FORMED TRUSS NOTES

1. TRUSS FABRICATOR SHALL DESIGN TRUSSES FOR LOADS SPECIFIED ON PLANS IN CONFORMANCE WITH "QUALITY CONTROL MANUAL" BY TPI. REFER TO THE ARCHITECTURAL DRAWINGS FOR ADDITIONAL DEAD LOADS RESULTING FROM DORMERS AND OTHER MISCELLANEOUS FRAMING. ALL TRUSSES SHALL BE DESIGNED FOR A MINIMUM OF 30 PSF LIVE LOAD PLUS 10 psf DEAD LOAD.

2. LIVE LOAD IS ON A HORIZONTAL PROJECTION OTHER LIVE LOADS SHOWN ON THE DRAWINGS ARE IN ADDITION TO THESE DESIGNATED LOADS.

3. CHECK VERTICALLY PROJECTED ELEMENTS FOR DESIGN WIND LOAD.

4. DESIGN TRUSSES TO RESIST A NET UPLIFT OF 10 PSF.

5. SUBMIT SHOP DRAWINGS AND CALCULATIONS PRIOR TO FABRICATION.

6. CONFORM TO TPI SPECIFICATIONS.

7. FLOOR TRUSS LL DEFLECTION SHALL NOT EXCEED L/480.

8. ROOF TRUSS LL DEFLECTION SHALL NOT EXCEED L/360.

9. PERMANENT BRACING NOT SHOWN ON PLANS, WHICH IS REQUIRED FOR STRENGTH AND STABILITY OF TRUSS MEMBERS, SHALL BE DESIGNED AND PROVIDED BY TRUSS SUPPLIER.

10. ALL TRUSS TOP CHORDS SHALL BE CONTINUOUSLY BRACED BY THE (ROOF/FLOOR) DECKING. ALL ROOF TRUSS WEB MEMBERS SHALL BE BRACED AT 4'-0" OC UNLESS CALCULATIONS SHOW OTHERWISE.

11. TEMPORARY BRACING SHALL BE THE CONTRACTOR'S RESPONSIBILITY. PROVIDE IN ACCORDANCE WITH TPI GUIDELINES.

12. PROVIDE 24" WIDE VIERENDEEL PANEL AT CENTER OF EACH PARALLEL CHORD TRUSS.

STRUCTURAL STEEL NOTES

1. FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL CONFORM WITH THE AISC (AMERICAN INSTITUTE OF STEEL CONSTRUCTION), "MANUAL OF STEEL CONSTRUCTION", LATEST EDITION.

2. ALL STEEL DETAILS AND CONNECTIONS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE AISC "SPECIFICATIONS FOR STRUCTURAL STEEL BUILDINGS, ALLOWABLE STRESS DESIGN AND PLASTIC DESIGN", LATEST EDITION.

3. ALL WELDING SHALL BE BY WELDERS HOLDING CURRENT VALID AWS CERTIFICATES IN THE TYPE OF WELD REQUIRED.

4. SHOP CONNECTIONS NOT SPECIFICALLY DETAILED ON THE DRAWINGS SHALL BE BOLTED OR WELDED. FIELD CONNECTIONS SHALL BE BOLTED UNLESS SPECIFICALLY DETAILED OTHERWISE.

5. DESIGN IN ACCORDANCE WITH GUIDE DETAILS AND REACTIONS.

6. USE A325N BOLTS UNLESS NOTED OTHERWISE.

7. OVERSIZED OR SLOTTED HOLES SHALL NOT BE USED FOR ANY CONNECTIONS UNLESS SPECIFICALLY INDICATED ON THE DRAWINGS OR APPROVED IN WRITING BY THE ENGINEER.

8. ALL BEAM COPES MUST BE MADE TO A RADIUS (1" MINIMUM). ALL BUTT AND FULL PENETRATION WELDS SHALL BE MADE USING RUN OFF TABS WHICH SHALL BE TRIMMED FLUSH AND GROUND SMOOTH AFTER WELD IS COMPLETED.

9. ALL WELDS INDICATED SHALL MEET THE MINIMUM WELD SIZE SPECIFIED BY THE CURRENT AISC MANUAL OF STEEL DESIGN. (SINGLE PASS AS REQUIRED).

10. CUTS, HOLES, COPING, ETC. REQUIRED FOR WORK OF OTHER TRADES SHALL BE SHOWN ON THE SHOP DRAWINGS AND MADE IN THE SHOP. CUTS OR BURNING OF HOLES IN STRUCTURAL STEEL MEMBERS IN THE FIELD WILL NOT BE PERMITTED.

11. PROVIDE ANY NECESSARY TEMPORARY BRACING OR GUYS TO PROVIDE LATERAL SUPPORT OF THE BUILDING UNTIL PERMANENT FRAME IS COMPLETELY INSTALLED.

12. INSTALL EXPANSION BOLTS IN ACCORDANCE WITH THE ICBO REPORT RECOMMENDATIONS.

13. ALL ELEVATOR GUIDE BEAMS SHALL BE S8x18.4 UNLESS NOTED OTHERWISE. SLOPE TO MATCH BEAM SLOPE.

14. STRUCTURAL STEEL FRAMING SHALL BE TRUE AND PLUMB BEFORE CONNECTIONS ARE FINALLY BOLTED OR WELDED.

Engberg Anderson ARCHITECTS
MILWAUKEE | MADISON | CHICAGO

ONEIDA Total Integrated Enterprises
Office 608.343.6476 Fax 608.241.2614
5160 Eastpark Blvd, Suite 200,
Madison, Wisconsin 53718

Contractor is responsible for the project, methods, techniques, sequences or procedures of construction, including but not limited to, temporary supports, shoring, bracing, scheduling, safety precautions and programs incident thereto.

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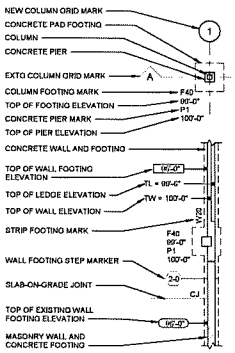
STRUCTURAL NOTES

S001

ABBREVIATION LIST

AB	ANCHOR BOLT (ROD)
AHU	AIR HANDLING UNIT
ALT	ALTERNATE
ARCH	ARCHITECTURAL
BLDG	BUILDING
BRG	BEARING
BP(##)	BASE PLATE CALL-OUT
CF	COLD-FORMED
CIP	CAST-IN-PLACE
CJ	CONTROL JOINT
CL	CENTER LINE
CLR	CLEAR (DISTANCE)
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
CONC	CONCRETE
CONT	CONTINUOUS
DBA	DEFORMED BAR ANCHOR
DEMO	DEMOLITION / DEMOLISH
DIA	DIAMETER
DWG	DRAWING
EOD	EDGE OF DECK
EOS	EDGE OF SLAB
EF	EACH FACE
EJ	EXPANSION JOINT
ELEV	ELEVATION
EQ	EQUAL
EW	EACH WAY
EWEF	EACH WAY EACH FACE
EXP	EXPANSION
EXT	EXTERIOR
EXTG	EXISTING
FD	FLOOR DRAIN
FLR	FLOOR
FV	FIELD VERIFY
F(##)	FOOTING CALL-OUT
GA	GAUGE
GALV	GALVANIZED
GC	GENERAL CONTRACTOR
GLULAM	GLUE-LAMINATED BEAM(S)
HK	HOOK
HORIZ	HORIZONTAL
HP	HIGH POINT
HWS	HEADED WELDED STUD(S)
IF	INSIDE FACE
INT	INTERIOR
JBE	JOIST BEARING ELEVATION
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LSL	LAMINATED STRAND LUMBER
LTWT	LIGHTWEIGHT
LVL	LAMINATED VENEER LUMBER
LW	LONG WAY
MAX	MAXIMUM
MECH	MECHANICAL
MFR	MANUFACTURER
MIN	MINIMUM
MISC	MISCELLANEOUS
NA	NOT APPLICABLE
NTS	NOT TO SCALE
OC	ON CENTER
OF	OUTSIDE FACE
OPNG	OPENING
OPP	OPPOSITE
PC	PRECAST / PRESTRESSED
PCI	POUNDS PER CUBIC INCH
PDF	POUNDS PER CUBIC FOOT
PL	PLATE
PLF	POUNDS PER LINEAR FOOT
PROJ	PROJECTION
PSF	POUNDS PER CUBIC FOOT
PSI	POUNDS PER SQUARE INCH
PT	PRE (POST)-TENSIONED
P(#)	PIER CALL-OUT
RD	ROOF DRAIN
REINF	REINFORCE(D)(ING)
RTU	ROOF TOP UNIT
SIM	SIMILAR
SOG	SLAB-ON-GRADE
SPA	SPAC(ES)(ED)(ING)
SPEC	SPECIFICATION(S)
SQ	SQUARE
SS	STAINLESS STEEL
SW	SHORT WAY
TL	TOP OF LEDGE
TP	TOP OF PIER
TW	TOP OF WALL
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
VERT	VERTICAL
WP	WORKING POINT
WWF	WELDED WIRE FABRIC

FOUNDATION LEGEND



LINTEL SCHEDULE

LENGTH	SIZE AND REINFORCING	NOTE/REMARKS
0'-4"	8" W x 8" H BOND BM W/ (2) #5 BOT	SEE ARCH FOR LOCATIONS
4'-8"	8" W x 16" H BOND BM W/ (2) #5 BOT	SEE ARCH FOR LOCATIONS

NOTES:

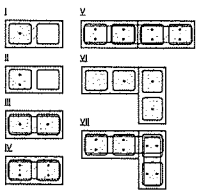
1. AT NEW WALLS, REINFORCE AT BEARING WITH (1) #5 VERT FULL HEIGHT OF WALL FROM FLOOR TO FLOOR OR FLOOR TO ROOF.
2. AT EXISTING WALLS, BEAR LINTEL ON MIN (2) COURSES GROUTED CMU.
3. AT EXTERIOR OPENINGS, PROVIDE GALV BENT PLS/16"x7 1/2"x7 1/2" x CONT TO OPENING CORNERS.
4. 8" MIN BEARING AT ENDS.

MASONRY PIER SCHEDULE

MARK	SIZE (LENGTH)	TYPE	VERTICAL REINFORCING	CLOSED LOOP TIE	COMMENTS
MP1	16"	III	(6) #6	(2) SETS OF 1/4" AT 8"	
MP2	24"	IV	(8) #6	(2) SETS OF 1/4" AT 8"	

NOTES

1. ALL REINFORCED CMU CORES ARE GROUTED SOLID.
2. RUN HORIZONTAL JOINT REINFORCING CONT. THROUGH MASONRY PIERS.
3. USE 1/4" (2) RODS AS CLOSED LOOP TIES.
4. USE BOND BEAM CMU BLOCKS OR DROP TOP CMU BLOCK AT MASONRY PIERS WITH TIES.
5. SIZE IS WALL WIDTH x LENGTH.



WALL FOOTING SCHEDULE

MARK	CONTINUOUS FOOTING DIMENSIONS WIDTH	THICKNESS	FOOTING REINFORCEMENT	REMARKS
W24	2'-4"	1'-0"	(3) #5, B, CONT	
W28	2'-8"	1'-0"	(3) #5, B, CONT	
W30	3'-0"	1'-0"	(3) #5, B, CONT	
W36	3'-6"	1'-0"	(9) #5, B, CONT	
W90	9'-0"	1'-0"	(7) @ 12" T&B, EW	

MASONRY WALL REINFORCEMENT SCHEDULE

MARK	WALL TYPE	REINFORCEMENT VERTICAL	REINFORCEMENT HORIZONTAL	NOTES
A	12" CMU	#6 AT 16" OC	HJR AT 16" OC	BOND BEAM WITH (1) #5 AT 40" OC AND AT BOTTOM OF WALL
B	12" CMU	#8 AT 8" OC	HJR AT 16" OC	VERTICAL REINFORCING TO BE AT EXTERIOR FACE OF CMU
C	8" CMU	#6 AT 16" OC	HJR AT 16" OC	BOND BEAM WITH (1) #5 AT 40" OC AND AT BOTTOM OF WALL

NOTES:

1. SEE ARCHITECTURAL WALL TYPES FOR ADDITIONAL REQUIREMENTS.
2. REINFORCEMENT IS TO BE LOCATED IN CENTER OF WALL UNO.
3. PROVIDE CONTINUOUS BOND BEAM WITH (2) #5 AT ALL BEARING ELEVATIONS AND OVER WINDOWS DOORS AND OTHER OPENINGS UNO.
4. PROVIDE HORIZONTAL REINFORCEMENT INTO INTERSECTING WALLS AT 16" OC VERTICAL EXTENT 30" EACH DIRECTION WITH PREFABRICATED "T" AND "L" SECTION TYP.
5. SEE GENERAL MASONRY NOTES ON SHEET S001 FOR NON LOAD BEARING WALL REINFORCEMENT REQUIREMENTS.
6. PROVIDE DOWELS TO MATCH VERTICAL REINFORCEMENT. EMBED DOWELS 30" INTO FOUNDATION WALL AND LAP 30" WITH NON-MAKE CONTINUOUS WITH VERTICAL STEEL.

BASE PLATE SCHEDULE

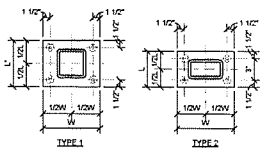
MARK	SIZE "T x "W" x "L"	ANCHOR RODS	BASE PLATE TYPE	NOTES
BP1	3/4" x 9" x 0'-9"	(4) 3/4" DIA x 4"	1	TYPICAL HSS4x4x1/2
BP2	3/4" x 11" x 0'-9"	(4) 3/4" DIA x 4"	2	TYPICAL HSS5x3x5/16

BASE PLATE NOTES:

1. FASTEN STEEL COLUMN TO TOP OF CONCRETE USING (4) F1554 (36) [55] [105] ANCHOR RODS OF SIZE INDICATED WITH DOUBLE NUTS AT COLUMN BASE PLATE, AND 1 1/2" GROUT AT 3/4" DIAMETER ANCHOR RODS AND 2" GROUT AT 1" DIAMETER ANCHOR RODS, SET ANCHOR RODS WITH 6" PROJECTION



BASE PLATE TYPES:



LOOSE STEEL LINTEL SCHEDULE

PROVIDE WHERE OTHER LINTELS ARE NOT SPECIFICALLY DETAILED

WALL THICK	CLEAR MASONRY OPENING WIDTH	SECTION
ALL	AT FIRE EXTINGUISHER CABINETS AND DRINKING FOUNTAINS	1/4" PLATE
4"	TO 5'-0"	ST3x6.25 3/16 1 1/2-8
4"	TO 7'-0"	PL 3/8 x 4 1/2 ON PL 3/8 x 3 1/2
4"	TO 9'-0"	PL3/8"x7 1/2" ON PL3/8"x3 1/2"
6"	TO 5'-0"	(2) L3 1/2x2 1/2x1/4 (LLV)
6"	TO 7'-0"	WT4x10.5
6"	TO 9'-0"	WT7x11
6"	TO 12'-0"	WT7x13 WITH PL1/2"x2" 5/16 1 1/2-8
8"	TO 5'-0"	(2) L3 1/2x3 1/2x1/4
8"	TO 7'-0"	(2) L4x3 1/2x5/16 (LLV)
8"	TO 9'-0"	WT7x15
10"	TO 7'-0"	W8x10 WITH PL5/16"x9" 3/16 1 1/2-8
10"	TO 10'-0"	W8x15 WITH PL5/16"x9"
12"	TO 5'-0"	(3) L3 1/2x3 1/2x1/4
12"	TO 7'-0"	W8x10 WITH PL5/16"x11" 3/16 1 1/2-8
12"	TO 10'-0"	W8x15 WITH PL5/16"x11"

NOTES:

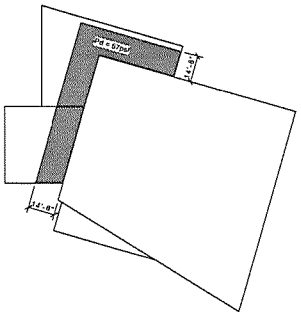
1. PROVIDE MINIMUM 8" BEARING AT EACH END OF LINTEL.
2. GROUT BLOCK CORES AND REINFORCE WITH (1) #5 VERT BELOW LINTEL BEARING.
3. CENTER LINTELS IN WALL UNLESS OTHERWISE NOTED.
4. BOTTOM PLATES UNDER WIDE FLANGE SHAPES SHALL BE EXTENDED FULL LENGTH OF LINTEL.
5. WELD LINTEL COMPONENTS INTO SINGLE UNIT.
6. NOT LINTELS ARE REQUIRED FOR 4" AND 6" NON-BEARING MASONRY WALLS WHERE GROUTED HOLLOW METAL FRAMES HAVE A HEADSPAN OF 4'-0" OR LESS.

BRICK LOOSE LINTEL SCHEDULE

MARK	SECTION	NOTE/REMARKS
W ≤ 4'-0"	L4x4x5/16	
6'-0" < L < 9'-0"	L6x4x3/8	
9'-0" < L < 12'-0"	L7x4x1/2	
12'-0" < L < 15'-0"	L8x4x3/4	

NOTES:

1. LINTELS TO BE SHOP PAINTED WITH ZINC RICH URETHANE. SEE SPECIFICATIONS.
2. PROVIDE 4" MIN BEARING EACH END OF LINTEL UNDER 9'-0". 8" BEARING FOR LONGER LINTELS.
3. SEE ARCH FOR CONTROL JOINT LOCATIONS AND FLASHING REQUIREMENTS.



DRIFT LOAD KEY PLAN

SCALE: 1/2" = 1'-0"

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WARNER PARK COMMUNITY RECREATION CENTER EXPANSION

1625 NORTHPORT DRIVE
MADISON, WI 53704

CITY OF MADISON PARKS DIVISION
330 EAST LAKESIDE STREET
MADISON, WI 53715

PROJECT NUMBER 223471.00

ISSUED FOR:

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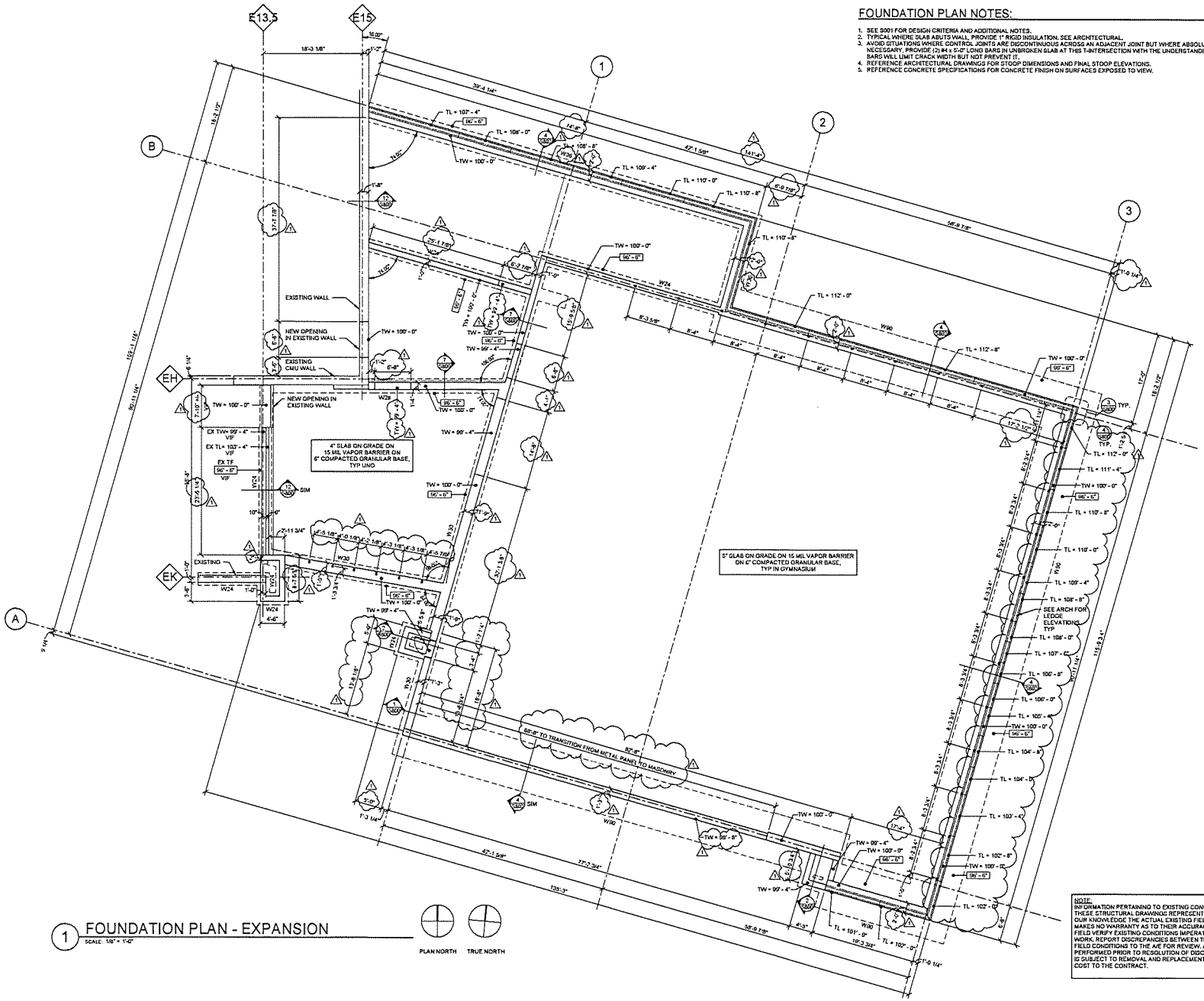
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NO.	DESCRIPTION	DATE
1	ADDENDUM 2	6/13/2024

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CHECKED BY	Checker

STRUCTURAL SCHEDULES

S002



FOUNDATION PLAN NOTES:

1. SEE S001 FOR DESIGN CRITERIA AND ADDITIONAL NOTES.
2. TYPICAL WHERE SLAB ABUTS WALL, PROVIDE 1" RIGID INSULATION, SEE ARCHITECTURAL.
3. AVOID SITUATIONS WHERE CONTROL JOINTS ARE DISCONTINUOUS ACROSS AN ADJACENT JOINT BUT WHERE ABSOLUTELY NECESSARY, PROVIDE (2) #4 x 5'-0" LONG BARS IN UNBROKEN SLAB AT THIS T-INTERSECTION WITH THE UNDERSTANDING THAT BARS WILL LIMIT CRACK WIDTH BUT NOT PREVENT IT.
4. REFERENCE ARCHITECTURAL DRAWINGS FOR STOOP DIMENSIONS AND FINAL STOOP ELEVATIONS.
5. REFERENCE CONCRETE SPECIFICATIONS FOR CONCRETE FINISH ON SURFACES EXPOSED TO VIEW.

1 FOUNDATION PLAN - EXPANSION
SCALE: 1/8" = 1'-0"

PLAN NORTH TRUE NORTH

NOTE:
INFORMATION PERTAINING TO EXISTING CONDITIONS GIVEN ON THESE STRUCTURAL DRAWINGS REPRESENTS TO THE BEST OF OUR KNOWLEDGE THE ACTUAL EXISTING FIELD CONDITIONS. O/E MAKES NO WARRANTY AS TO THEIR ACCURACY. CONTRACTOR TO FIELD VERIFY EXISTING CONDITIONS IMPERATIVE TO THE NEW WORK. REPORT DISCREPANCIES BETWEEN THE DRAWINGS AND FIELD CONDITIONS TO THE A/E FOR REVIEW. ANY WORK PERFORMED PRIOR TO RESOLUTION OF DISCREPANCIES BY THE A/E IS SUBJECT TO REMOVAL AND REPLACEMENT AT NO ADDITIONAL COST TO THE CONTRACT.

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1625 NORTHPORT DRIVE
MADISON, WI 53704

CITY OF MADISON PARKS DIVISION
330 EAST LAKESIDE STREET
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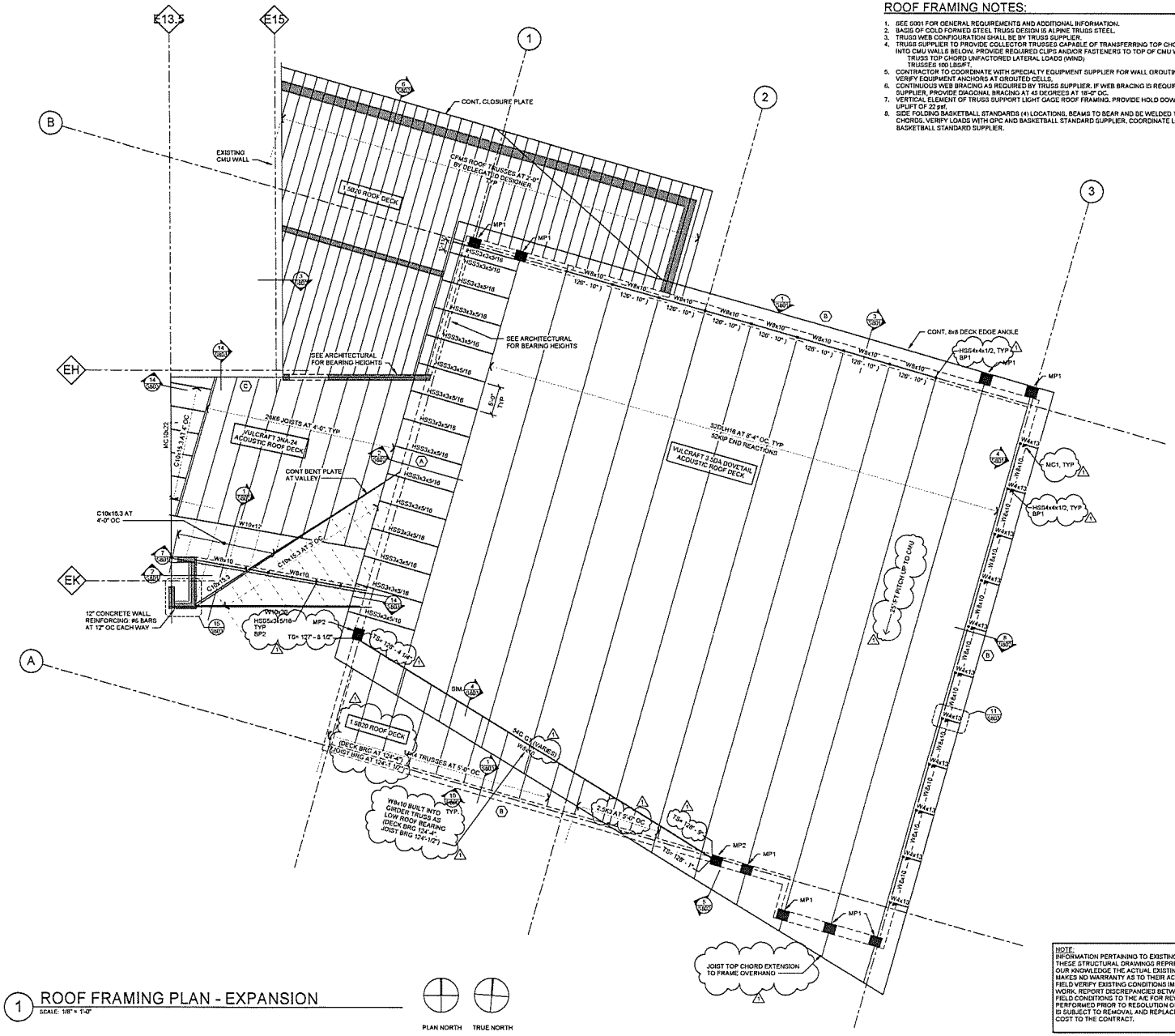
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FOUNDATION PLAN - EXPANSION

S200



ROOF FRAMING NOTES:

1. SEE S001 FOR GENERAL REQUIREMENTS AND ADDITIONAL INFORMATION.
2. BASIS OF COLD FORMED STEEL TRUSS DESIGN IS ALPINE TRUSS STEEL.
3. TRUSS WEB CONFIGURATION SHALL BE BY TRUSS SUPPLIER.
4. TRUSS SUPPLIER TO PROVIDE COLLECTOR TRUSSES CAPABLE OF TRANSFERRING TOP CHORD LATERAL LOADS INTO CMU WALLS BELOW. PROVIDE REQUIRED CLIPS AND/OR FASTENERS TO TOP OF CMU WALL/LEDGER
   TRUSS TOP CHORD UNFACTORED LATERAL LOADS (WIND)
   TRUSSES 100 LBS/FT
5. CONTRACTOR TO COORDINATE WITH SPECIALTY EQUIPMENT SUPPLIER FOR WALL GROUTING REQUIREMENTS. VERIFY EQUIPMENT ANCHORS AT GROUTED CELLS.
6. CONTINUOUS WEB BRACING AS REQUIRED BY TRUSS SUPPLIER. IF WEB BRACING IS REQUIRED BY THE TRUSS SUPPLIER, PROVIDE DIAGONAL BRACING AT 45 DEGREES AT 16'-0" OC.
7. VERTICAL ELEMENT OF TRUSS SUPPORT LIGHT GAGE ROOF FRAMING. PROVIDE HOLD DOWN/STRAP TO RESIST UPLIFT OF 22 psf.
8. SIDE FOLDING BASKETBALL STANDARDS (4) LOCATIONS. BEAMS TO BEAR AND BE WELDED TO JOISTS BOTTOM CHORDS. VERIFY LOADS WITH GPC AND BASKETBALL STANDARD SUPPLIER. COORDINATE LOCATIONS WITH BASKETBALL STANDARD SUPPLIER.

1 ROOF FRAMING PLAN - EXPANSION
SCALE: 1/8" = 1'-0"

PLAN NORTH TRUE NORTH

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Engberg Anderson ARCHITECTS
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Revision

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WARNER PARK COMMUNITY RECREATION CENTER EXPANSION

1625 NORTHPORT DRIVE
MADISON, WI 53704

CITY OF MADISON PARKS DIVISION
330 EAST LAKESIDE STREET
MADISON, WI 53715

PROJECT NUMBER 223471.00

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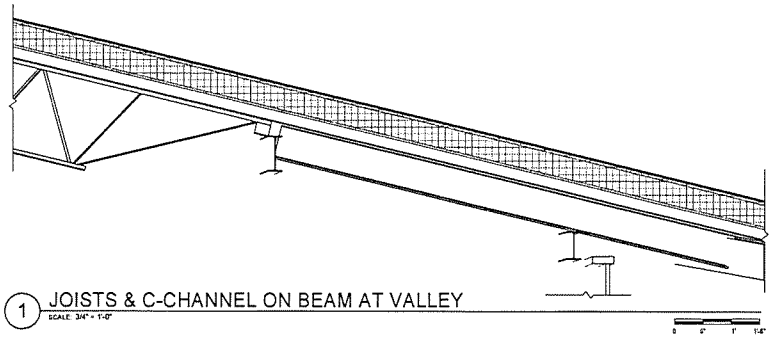
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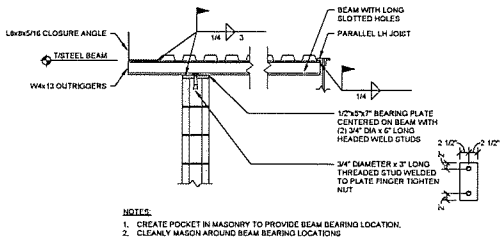
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ROOF FRAMING PLAN - EXPANSION

S201

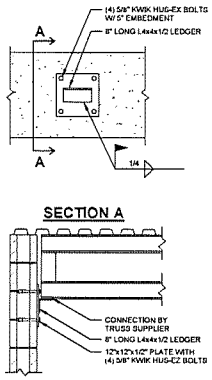


1 JOISTS & C-CHANNEL ON BEAM AT VALLEY
SCALE: 3/4" = 1'-0"

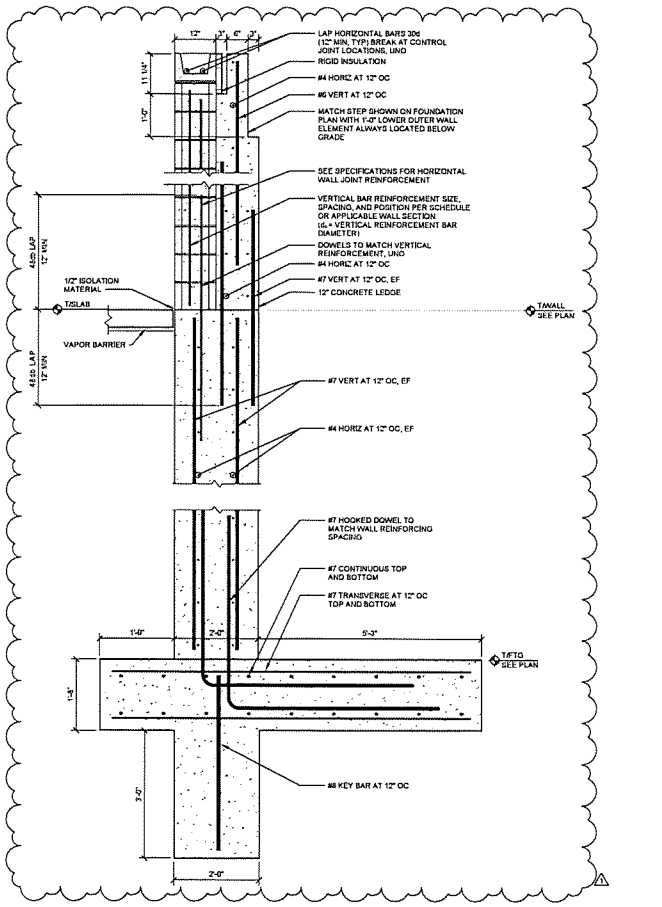


NOTES:
1. CREATE POCKET IN MASONRY TO PROVIDE BEAM BEARING LOCATION.
2. CLEANLY MASON AROUND BEAM BEARING LOCATIONS

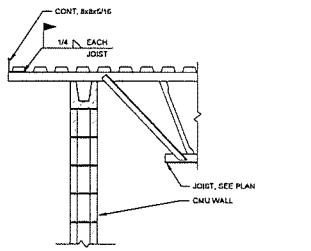
2 WEST OUTRIGGER DETAIL
SCALE: 3/4" = 1'-0"



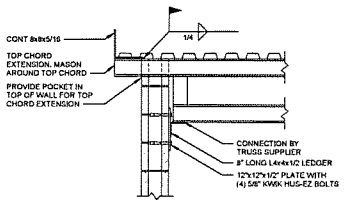
3 INTERIOR CFMS TRUSS BEARING
SCALE: 3/4" = 1'-0"



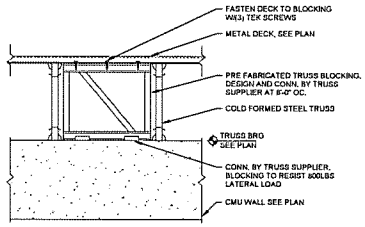
4 EXTERIOR GYM WALL SECTION
SCALE: 3/4" = 1'-0"



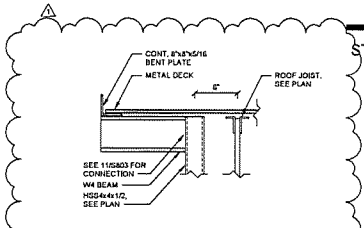
5 ROOF DECK EDGE
SCALE: 3/4" = 1'-0"



6 EXTERIOR CFMS TRUSS BEARING
SCALE: 3/4" = 1'-0"



7 TYP TRUSS BLOCKING
SCALE: 3/4" = 1'-0"



8 DECK EDGE AT EAST WALL
SCALE: 1 1/2" = 1'-0"

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STRUCTURAL DETAILS

S802

PLUMBING FIXTURES SCHEDULE

ID	FIXTURE	WASTE			WATER				DETAIL / SHEET	DESCRIPTION / REMARKS
		DFU	TRAP	VENT (MIN)	COLD		HOT			
					CWFU	SIZE	HWFU	SIZE		
EWC-1	ELECTRIC WATER COOLER WITH BOTTLE FILLER (ADA COMPLIANT)	1	1 1/2"	1 1/2"	0.25	1/2"	—	—	—	FIXTURE: ELKAY LVRCGRN8WSK WALL HUNG, VANDAL RESISTANT ELECTRIC WATER COOLER WITH BOTTLE FILLING STATION AND FILTER. LIGHT GRAY GRANITE FINISH, SELF-CLOSING PUSH BUTTON VALVE CONTROLS, SELF-CONTAINED CHILLER UNDER FIXTURE, ADA COMPLIANT. FIXTURE TO BE MOUNTED AT STANDARD HEIGHT.
										TRAP & DRAIN: CHROME PLATED 17 GAUGE CAST BRASS TRAP.
										STOPS & SUPPLIES: McGUIRE LFBV2165CC. LOOSE KEY QUARTER TURN ANGLE STOPS WITH CHROME PLATED ESCUTCHEONS & CHROME PLATED COPPER RISER SUPPLIES.
										SUPPORT: MANUFACTURER'S RECOMMENDED WALL BRACKET AND COMPONENTS.
EWC-2	ELECTRIC WATER-COOLER WITH BOTTLE FILLER (HI-LO)	1	1 1/2"	1 1/2"	0.25	1/2"	—	—	—	FIXTURE: ELKAY LVRCGRNTLSWSK WALL HUNG VANDAL RESISTANT HI-LO ELECTRIC WATER COOLER WITH BOTTLE FILLING STATION AND FILTER, LIGHT GRAY GRANITE FINISH, SELF-CLOSING PUSH BUTTON VALVE CONTROLS, SELF-CONTAINED CHILLER UNDER FIXTURE, ADA COMPLIANT. FIXTURE TO BE MOUNTED AT ADA HEIGHT.
										TRAP & DRAIN: CHROME PLATED 17 GAUGE CAST BRASS TRAP.
										STOPS & SUPPLIES: McGUIRE LFBV2165CC. LOOSE KEY QUARTER TURN ANGLE STOPS WITH CHROME PLATED ESCUTCHEONS & CHROME PLATED COPPER RISER SUPPLIES.
										SUPPORT: MANUFACTURER'S RECOMMENDED WALL BRACKET AND COMPONENTS.
HB-1	HOSE BIBB	—	—	—	3	1/2"	—	—	—	FIXTURE: WOODFORD MODEL 24 ANTI-SIPHON HOSE BIBB. EXPOSED COLD WATER, INTEGRAL VACUUM BREAKER, 3/4" HOSE CONNECTION.
L-1	LAVATORY (DOUBLE STATION)	1	1 1/4"	1 1/2"	0.5	1/2"	0.5	1/2"	—	FIXTURE: SLOAN AD-9200 CLARK STREET WALL MOUNTED TWIN STATION LAVATORY SINK, COORDINATE COLOR WITH ARCHITECT. ADA COMPLIANT. PROVIDE SUPPORT AS REQUIRED BY MANUFACTURER.
										FAUCET: (2) SLOAN OPTIMA ETF-410 HARDWIRED ELECTRONIC FAUCET, 0.35 GPM AERATOR, SINGLE HOLE MOUNTING, CHROME FINISH, SENSOR OPERATED, BOX TRANSFORMER POWER SUPPLY. INCLUDE STATE APPROVED BELOW DECK MIXING VALVE. REFER TO ARCHITECTURAL ELEVATIONS FOR LAYOUT OF FAUCETS.
										ACCESSORIES: (2) SLOAN EDD-413-CP HARDWIRED FOAM SOAP DISPENSER, CHROME FINISH. INCLUDE EDD-324 PLUG-IN POWER ACCESSORY. (1) XLERATOR XL-SYNC-C-120V HAND DRYER, CHROME FINISH. REFER TO ARCHITECTURAL ELEVATIONS FOR LAYOUT OF ACCESSORIES.
										TRAP & DRAIN: PROVIDE McGUIRE PROWRAP PRE-WRAPPED OFFSET DRAIN AND P-TRAP, CHROME PLATED 17 GAUGE CAST BRASS TRAP, WITH GRID STRAINER DRAIN.
										STOPS & SUPPLIES: McGUIRE LFBV2165CC. LOOSE KEY QUARTER TURN ANGLE STOPS WITH CHROME PLATED ESCUTCHEONS & CHROME PLATED COPPER RISER SUPPLIES.
L-2	LAVATORY (SINGLE STATION)	1	1 1/4"	1 1/2"	0.5	1/2"	0.5	1/2"	—	FIXTURE: SLOAN AD-9100 CLARK STREET WALL MOUNTED SINGLE STATION LAVATORY SINK, COORDINATE COLOR WITH ARCHITECT. ADA COMPLIANT. PROVIDE SUPPORT AS REQUIRED BY MANUFACTURER.
										FAUCET: (1) SLOAN OPTIMA ETF-410 HARDWIRED ELECTRONIC FAUCET, 0.35 GPM AERATOR, SINGLE HOLE MOUNTING, CHROME FINISH, SENSOR OPERATED, BOX TRANSFORMER POWER SUPPLY. INCLUDE STATE APPROVED BELOW DECK MIXING VALVE. REFER TO ARCHITECTURAL ELEVATIONS FOR LAYOUT OF FAUCET.
										ACCESSORIES: (1) SLOAN EDD-413-CP HARDWIRED FOAM SOAP DISPENSER, CHROME FINISH. INCLUDE EDD-324 PLUG-IN POWER ACCESSORY. (1) XLERATOR XL-SYNC-C-120V HAND DRYER, CHROME FINISH. REFER TO ARCHITECTURAL ELEVATIONS FOR LAYOUT OF ACCESSORIES.
										TRAP & DRAIN: PROVIDE McGUIRE PROWRAP PRE-WRAPPED OFFSET DRAIN AND P-TRAP, CHROME PLATED 17 GAUGE CAST BRASS TRAP, WITH GRID STRAINER DRAIN.
										STOPS & SUPPLIES: QUARTER TURN ANGLE STOPS WITH CHROME PLATED ESCUTCHEONS & CHROME PLATED COPPER RISER SUPPLIES.
SH-1	SHOWER (ADA COMPLIANT)	2	2"	1 1/2"	2	1/2"	2	1/2"	—	ENCLOSURE: FIELD BUILT BY OTHERS.
										FIXTURE INCLUDING CONTROLS: ACORN 536-CSH-WSB-DN-FX-QD-RD SHOWER SYSTEM, 1.5 GPM, ONE FIXED CONICAL SHOWER HEAD MOUNTED ON WALL, REFER TO ARCHITECTURAL PLANS FOR FIXED SHOWER HEAD MOUNTING HEIGHT, ANTI-LIGATURE TEMPERATURE / VOLUME CONTROL WITH INTEGRAL STOPS, TEMP-PRESSURE BALANCING VALVE. INCLUDE DIVERTER VALVE WITH HANDHELD SHOWER & 60" STAINLESS STEEL HOSE WITH QUICK DISCONNECT. PC TO PROVIDE 14 GAUGE STAINLESS STEEL PANEL FOR SHOWER CONTROL AND DIVERTER VALVE. COORDINATE SIZE AND LOCATION OF 14 GAUGE STAINLESS STEEL PANEL WITH GC. TEMPERATURE CONTROL AND DIVERTER VALVE MOUNTED ON 14 GAUGE STAINLESS STEEL PANEL. VALVE CONCEALED BEHIND PANEL. ADA COMPLIANT. HAND SHOWER. 14 GAUGE STAINLESS STEEL PANEL, AND CONTROLS TO BE INSTALLED ON NORTH (LONG SIDE) WALL. SHOWER HEAD TO BE INSTALLED ON EAST (SHORT SIDE) WALL.
										DRAIN: FLOOR DRAIN FD-1 IN SHOWER FLOOR.
UR-1	URINAL (STANDARD HEIGHT)	2	2"	1 1/2"	2	3/4"	—	—	—	FIXTURE: ZURN AQUASENSE ZER6003AV-WHT-TMHW, CONCEALED SENSOR OPERATED HARDWIRED URINAL FLUSH VALVE, INFRARED SENSOR, 3/4" TOP SPUD, 0.5 GPF, DIAPHRAGM TYPE, ELECTRICAL OVERRIDE, POLISHED CHROME FINISH, ADA COMPLIANT. PROVIDE ZURN P6000-HWS HARDWIRED POWER CONVERTER.
										SUPPORT: COMMERCIAL GRADE, WALL HUNG URINAL SUPPORT, STEEL STANCHIONS, IRON WELDED FEET, STEEL SLEEVES, FASTEN TO FLOOR.
UR-2	URINAL (ADA HEIGHT)	2	2"	1 1/2"	2	3/4"	—	—	—	FIXTURE: ZURN OMNI-FLO Z57564J, WALL HUNG URINAL, 0.5 GPF, FLUSHOMETER TYPE, WASHOUT, 3/4" TOP SPUD, WHITE VITREOUS CHINA. MOUNTED AT ADA HEIGHT.
										FLUSH VALVE: ZURN AQUASENSE ZER6003AV-HET-TMHW, CONCEALED SENSOR OPERATED HARDWIRED URINAL FLUSH VALVE, INFRARED SENSOR, 3/4" TOP SPUD, 0.5 GPF, DIAPHRAGM TYPE, ELECTRICAL OVERRIDE, POLISHED CHROME FINISH. ADA COMPLIANT. PROVIDE ZURN P6000-HWS HARDWIRED POWER CONVERTER.
										SUPPORT: COMMERCIAL GRADE, WALL HUNG URINAL SUPPORT, STEEL STANCHIONS, IRON WELDED FEET, STEEL SLEEVES, FASTEN TO FLOOR.
WC-1	WATER CLOSET (STANDARD HEIGHT)	6	4"	2"	6.5	1 1/2"	—	—	—	FIXTURE: ZURN ECO VANTAGE HET WALL HUNG TOILET Z5615-BWL-AM. FLUSH VALVE TOILET, WHITE VITREOUS CHINA, ELONGATED BOWL, ZURNSHIELD CERAMIC GLAZE, 1.28 GPF MAX, 2.125" TRAPWAY, 1-1/2" TOP SPUD, MOUNTED AT ADA HEIGHT.
										FLUSH VALVE: ZURN AQUASENSE ZER6003AV-HET-TMHW, CONCEALED SENSOR OPERATED HARDWIRED FLUSH VALVE, INFRARED SENSOR, 1-1/2" TOP SPUD, 1.28 GPF, DIAPHRAGM TYPE, ELECTRICAL OVERRIDE, POLISHED CHROME FINISH. ADA COMPLIANT. PROVIDE ZURN P6000-HWS HARDWIRED POWER CONVERTER.
										SEAT: ZURN Z5955SS-EL-AM, OPEN FRONT TOILET SEAT, WHITE INJECTION MOLDED, SELF SUSTAINING CHECK HINGES, ANTI-MICROBIAL AGENT.
										SUPPORT: COMMERCIAL GRADE WATER CLOSET CARRIER.
WC-2	WATER CLOSET (ADA HEIGHT)	6	4"	2"	6.5	1 1/2"	—	—	—	FIXTURE: ZURN ECO VANTAGE HET WALL HUNG TOILET Z5615-BWL-AM. FLUSH VALVE TOILET, WHITE VITREOUS CHINA, ELONGATED BOWL, ZURNSHIELD CERAMIC GLAZE, 1.28 GPF MAX, 2.125" TRAPWAY, 1-1/2" TOP SPUD, MOUNTED AT ADA HEIGHT.
										FLUSH VALVE: ZURN AQUASENSE ZER6003AV-HET-TMHW, CONCEALED SENSOR OPERATED HARDWIRED FLUSH VALVE, INFRARED SENSOR, 1-1/2" TOP SPUD, 1.28 GPF, DIAPHRAGM TYPE, ELECTRICAL OVERRIDE, POLISHED CHROME FINISH. ADA COMPLIANT. PROVIDE ZURN P6000-HWS HARDWIRED POWER CONVERTER.
										SEAT: ZURN Z5955SS-EL-AM, OPEN FRONT TOILET SEAT, WHITE INJECTION MOLDED, SELF SUSTAINING CHECK HINGES, ANTI-MICROBIAL AGENT.
										SUPPORT: COMMERCIAL GRADE WATER CLOSET CARRIER.
WH-1	WALL HYDRANT	—	—	—	4	3/4"	—	—	—	FIXTURE: WOODFORD MODEL B67, EXTERNAL FREEZELESS WALL HYDRANT BOX TYPE, AUTOMATIC DRAINING, INTEGRAL VACUUM BREAKER, 3/4" HOSE CONNECTION. LOOSE TEE KEY WITH TAMPER RESISTANT BOX.

PLUMBING DRAIN AND CLEANOUT SCHEDULE

ID	FIXTURE	WASTE			DETAIL / SHEET	DESCRIPTION / REMARKS
		DFU	TRAP	VENT		
FD-1	FLOOR DRAIN (ROUND)	2 3 4	2" 3" 4"	1 1/2" 1 1/2" 2"	—	FIXTURE: ZURN ZN415-B, CAST IRON BODY, 8" DIAMETER NICKEL BRONZE STRAINER, COMBINATION INVERTIBLE MEMBRANE CLAMP, AND ADJUSTABLE COLLAR.
FD-2	FLOOR DRAIN (ROUND, HEAVY DUTY)	2 3 4	2" 3" 4"	1 1/2" 1 1/2" 2"	—	FIXTURE: ZURN ZN568, CAST IRON BODY, 8" DIAMETER NICKEL BRONZE TOP, SEEPAGE PAN, COMBINATION MEMBRANE FLASHING CLAMP & FRAME, AND HEAVY DUTY DEEP FLANGE SLOTTED GRATE.
HD-1	HUB DRAIN - AT GRADE	3 4 5 6	2" 3" 3" 4"	1 1/2" 1 1/2" 2"	—	EXTEND HUB 3" (MIN) ABOVE FLOOR, INSTALL PIPE INCREASER ONE PIPE SIZE LARGER MINIMUM.
RD-1	ROOF DRAIN	—	—	—	—	FIXTURE: ZURN ZC100-C-EA-R ROOF DRAIN, CAST IRON BODY, 15" DIA. COMBINATION MEMBRANE FLASHING CLAMP/GRAVEL GUARD, UNDERDECK CLAMP, ADJUSTABLE EXTENSION, ROOF SUMP RECEIVER, AND CAST IRON STRAINER.
FCO	FLOOR CLEANOUT	—	—	—	—	FINISHED AREAS WITH HARD FLOORS: ZURN ZN1400-BP, CAST IRON, ADJUSTABLE FLOOR CLEANOUT WITH NICKEL BRONZE TOP AND BRONZE PLUG.
						FINISHED AREAS WITH CARPETED FLOORS: ZURN ZN1400-BP-CM, CAST IRON, ADJUSTABLE FLOOR CLEANOUT WITH NICKEL BRONZE TOP AND BRONZE PLUG, WITH CARPET MARKER.
						UNFINISHED AREAS: ZURN ZN1400-BP, CAST IRON, ADJUSTABLE FLOOR CLEANOUT WITH NICKEL BRONZE TOP AND BRONZE PLUG.
WCO	WALL CLEANOUT	—	—	—	—	FIXTURE: ZURN Z51468, POLISHED STAINLESS STEEL, ROUND ACCESS COVER, SECURING SCREW & BRONZE RAISED HEX HEAD PLUG, VERIFY LENGTH OF SCREW REQUIRED WITH WALL CONSTRUCTION.
YCO	YARD CLEANOUT	—	—	—	—	FIXTURE: 4" PIPE RISER WITH PLUMBING CREATION CI-48-8 FROST SLEEVE OR 6" PIPE RISER WITH PLUMBING CREATION CI-48-8 FROST SLEEVE EXTENDING 5 FEET BELOW FINISHED GRADE.

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JDR PROJECT NO: 23.0319

WARNER PARK
COMMUNITY RECREATION
CENTER EXPANSION

1625 NORTHPORT DRIVE
MADISON, WI 53704

CITY OF MADISON PARKS DIVISION
330 EAST LAKESIDE STREET
MADISON, WI 53715

PROJECT NUMBER 223471.00

ISSUED FOR:

BID SET 5/16/2024

REVISION FOR:

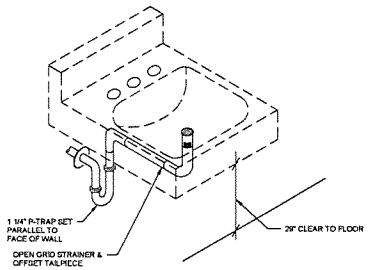
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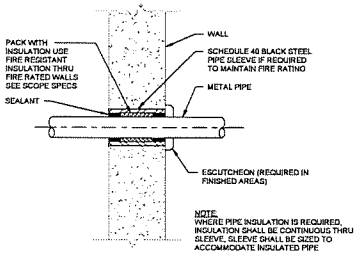
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SCHEDULES - PLUMBING

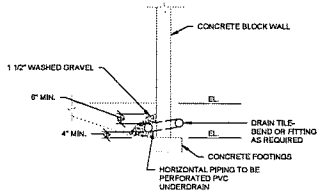
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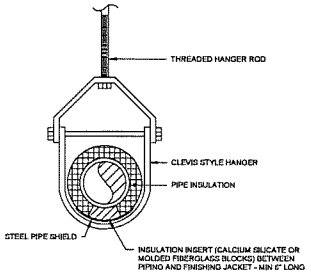
4 P901 WALL HUNG LAVATORY - BARRIER FREE
SCALE: NONE



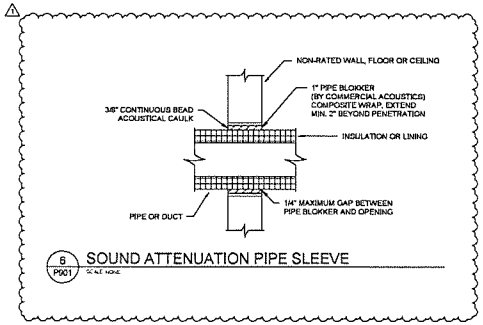
1 P901 SLEEVE THRU WALL DETAIL
SCALE: NONE



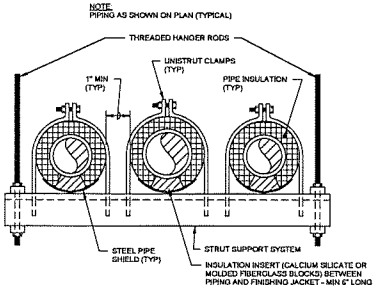
5 P901 SECTION THRU DRAIN TILE
SCALE: NONE



2 P901 PIPE HANGER DETAIL
SCALE: NONE



6 P901 SOUND ATTENUATION PIPE SLEEVE
SCALE: NONE



3 P901 TRAPEZE HANGER DETAIL
SCALE: NONE

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WARNER PARK COMMUNITY RECREATION CENTER EXPANSION

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MADISON, WI 53704

CITY OF MADISON PARKS DIVISION
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MADISON, WI 53715

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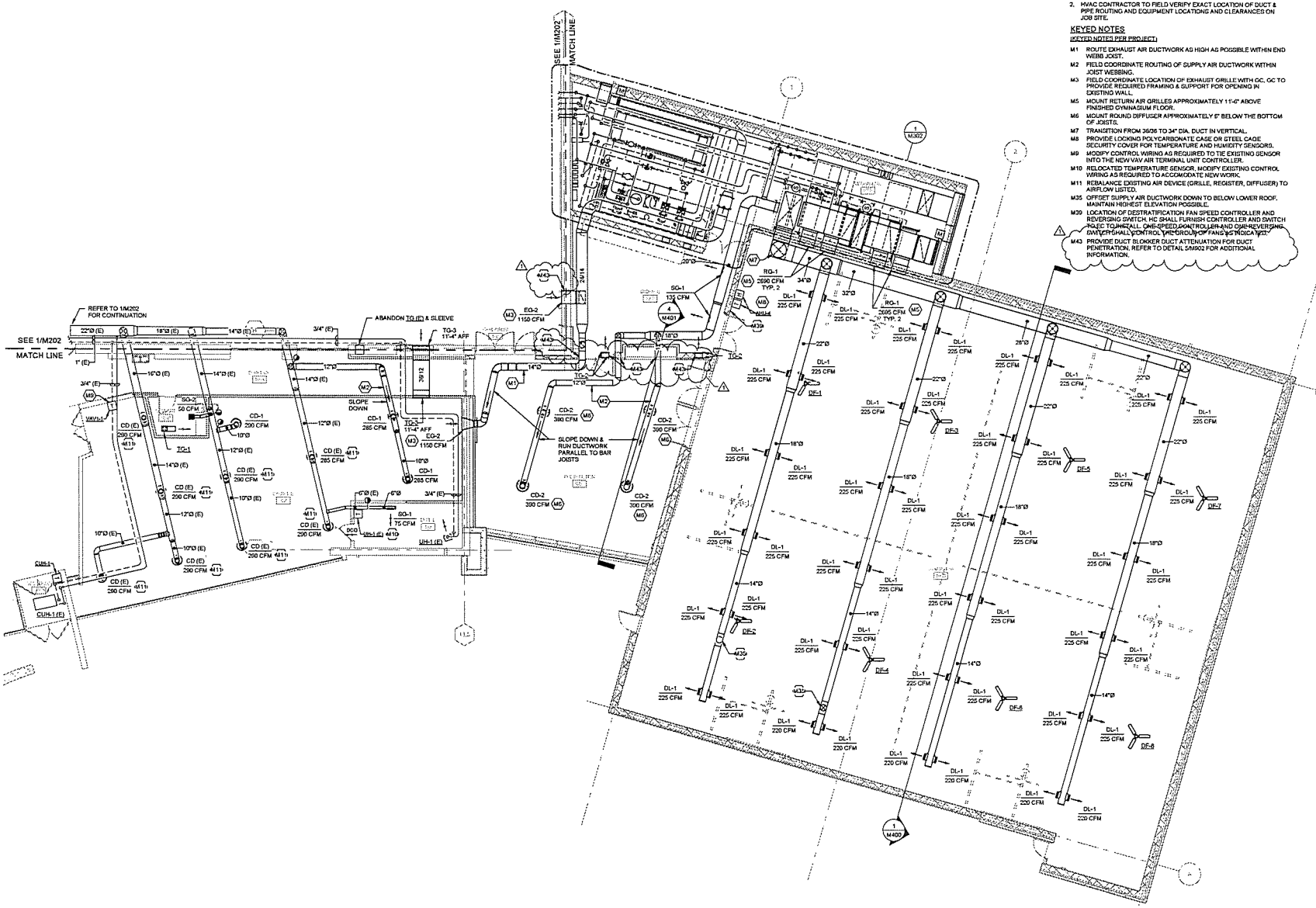
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DETAILS - PLUMBING

P901



GENERAL NOTES:

1. COORDINATE ALL DUCT, PIPING, AND EQUIPMENT INSTALLATION WITH JOIST LAYOUT WHERE REQUIRED.
2. HVAC CONTRACTOR TO FIELD VERIFY EXACT LOCATION OF DUCT & PIPE ROUTING AND EQUIPMENT LOCATIONS AND CLEARANCES ON JOB SITE.

KEYED NOTES

(KEYED NOTES PER PROJECT)

- M1 ROUTE EXHAUST AIR DUCTWORK AS HIGH AS POSSIBLE WITHIN END WEBB JOIST.
- M2 FIELD COORDINATE ROUTING OF SUPPLY AIR DUCTWORK WITHIN JOIST WEBBING.
- M3 FIELD COORDINATE LOCATION OF EXHAUST GRILLE WITH GC. GC TO PROVIDE REQUIRED FRAMING & SUPPORT FOR OPENING IN EXISTING WALL.
- M5 MOUNT RETURN AIR GRILLES APPROXIMATELY 11'-0" ABOVE FINISHED GYMNASIUM FLOOR.
- M6 MOUNT ROUND DIFFUSER APPROXIMATELY 6" BELOW THE BOTTOM OF JOISTS.
- M7 TRANSITION FROM 36X6 TO 34" DIA. DUCT IN VERTICAL.
- M8 PROVIDE LOCKING POLYCARBONATE CAGE OR STEEL CAGE SECURITY COVER FOR TEMPERATURE AND HUMIDITY SENSORS.
- M9 MODIFY CONTROL WIRING AS REQUIRED TO TIE EXISTING SENSOR INTO THE NEW VAV AIR TERMINAL UNIT CONTROLLER.
- M10 RELOCATED TEMPERATURE SENSOR. MODIFY EXISTING CONTROL WIRING AS REQUIRED TO ACCOMODATE NEW WORK.
- M11 REBALANCE EXISTING AIR DEVICE (GRILLE, REGISTER, DIFFUSER) TO AIRFLOW LISTED.
- M35 OFFSET SUPPLY AIR DUCTWORK DOWN TO BELOW LOWER ROOF. MAINTAIN HIGHEST ELEVATION POSSIBLE.
- M39 LOCATION OF DESTRATIFICATION FAN SPEED CONTROLLER AND REVERSING SWITCH. HC SHALL FURNISH CONTROLLER AND SWITCH SELECTED TO INSTALL ONE-SPEED CONTROLLER AND ONE-REVERSING SWITCH. SHALL CONTROL SIX GROUPS OF FANS AS INDICATED.
- M43 PROVIDE DUCT BLOCKER DUCT ATTENUATION FOR DUCT PENETRATION, REFER TO DETAIL 5/M902 FOR ADDITIONAL INFORMATION.

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WARNER PARK COMMUNITY RECREATION CENTER EXPANSION

1625 NORTHPORT DRIVE
MADISON, WI 53704

CITY OF MADISON PARKS DIVISION
330 EAST LAKESIDE STREET
MADISON, WI 53715

PROJECT NUMBER 223471.00

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FIRST FLOOR EXPANSION PLAN - HVAC

1 M201 FIRST FLOOR PLAN EXPANSION - HVAC
SCALE: 3/32" = 1'-0"

PROJECT NORTH

M201

CHILLER DEMOLITION & REPLACEMENT NOTES:

1. HVAC CONTRACTOR SHALL PHASE THE DEMOLITION OF THE EXISTING CHILLER AND CHILLED WATER PLANT WITH THE INSTALLATION OF THE NEW HEAT RECOVERY CHILLER PLANT. EXISTING CHILLER AND CHILLED WATER PLANT SHALL REMAIN OPERATIONAL TO LIMIT DOWNTIME OF COOLING TO THE FACILITY.

GENERAL NOTES:

1. COORDINATE ALL DUCT, PIPING, AND EQUIPMENT INSTALLATION WITH JOIST LAYOUT WHERE REQUIRED.
2. HVAC CONTRACTOR TO FIELD VERIFY EXACT LOCATION OF DUCT & PIPE ROUTING AND EQUIPMENT LOCATIONS AND CLEARANCES ON JOB SITE.

KEYED NOTES

(KEYED NOTES PER PROJECT)

M27 4" CONCRETE EQUIPMENT PAD BY GC. HC TO COORDINATE SIZE AND LOCATION.

M28 6" GEOTHERMAL BOREFIELD MANIFOLDS. REFER TO DETAIL 3/M902 FOR ADDITIONAL REQUIREMENTS.

M29 PROVIDE 72/76 INSULATED PLENUM FOR OUTSIDE AIR INTAKE, 72/76 INSULATED PLENUM FOR RELIEF AIR, AND PROVIDE INSULATED BLANK-OFF PANELS FOR UN-USED PORTIONS OF LOUVER.

M30 COORDINATE WITH EC TO PROVIDE 120/1 POWER AND DATA CONNECTION TO TEMPERATURE CONTROL PANEL.

M31 PROVIDE CONDENSATE LOOP SEAL AND ROUTE CONDENSATE TO HUB DRAIN. CONDENSATE PIPE SIZE SHALL NOT BE SMALLER THAN UNIT CONNECTION SIZE. HUB DRAIN BY PC.

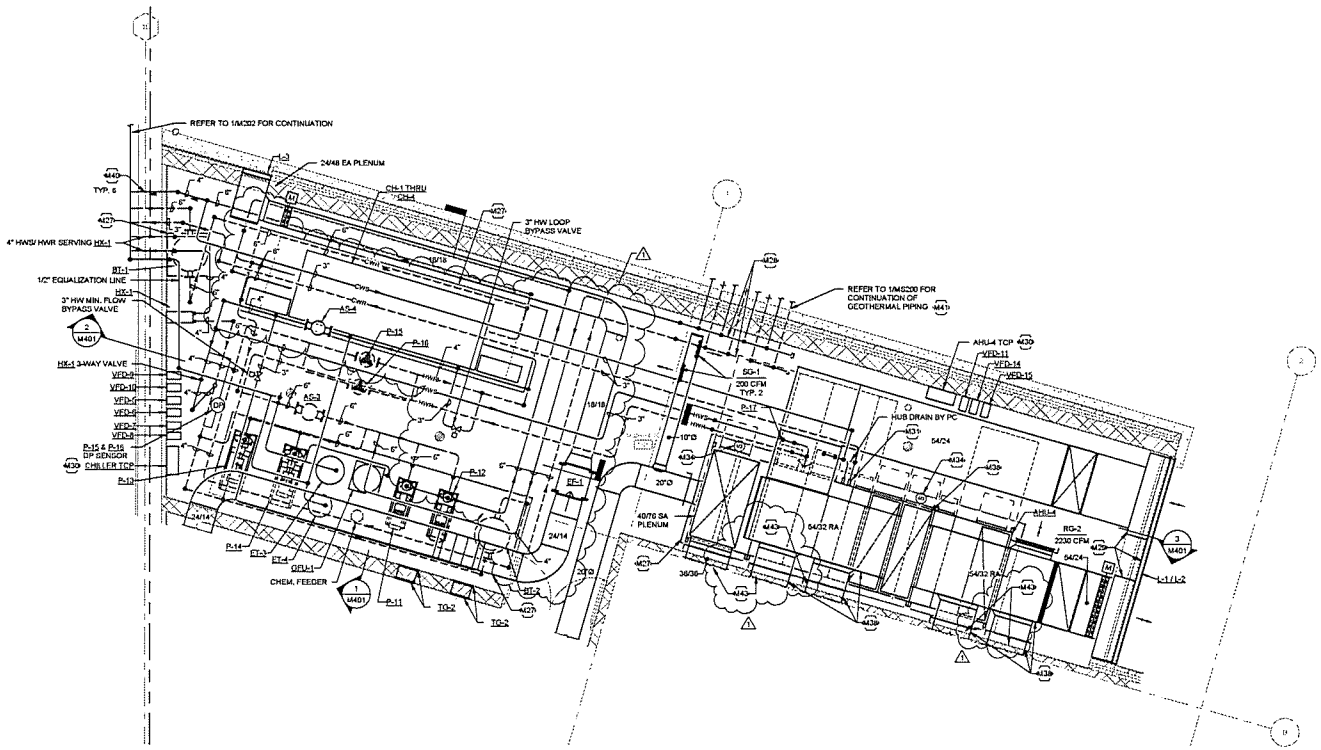
M34 DUCT MOUNTED SMOKE DETECTOR BY EC.

M38 LINE ALL RETURN AIR DUCTWORK ASSOCIATED WITH AHU-4. DUCT SIZES SHOWN ARE INSIDE DUCT DIMENSIONS.

M40 PROVIDE PIPE BLOKKER PIPE ATTENUATION FOR PIPE PENETRATION. REFER TO DETAIL 5/M902 FOR ADDITIONAL INFORMATION.

M41 FIELD COORDINATE GEOTHERMAL FIELD PIPING WITH STORM PIPING. REFER TO CIVIL DRAWINGS FOR ADDITIONAL INFORMATION.

M43 PROVIDE DUCT BLOKKER DUCT ATTENUATION FOR DUCT PENETRATION. REFER TO DETAIL 5/M902 FOR ADDITIONAL INFORMATION.



1 M302 ENLARGED MECHANICAL ROOM PLAN - HVAC

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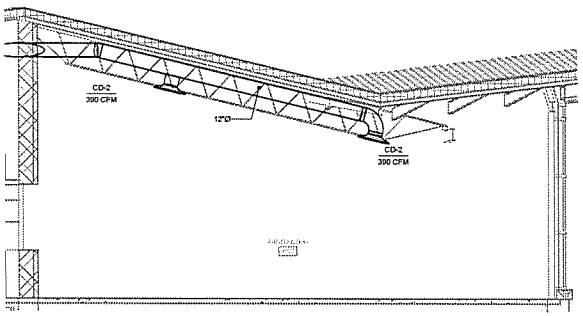
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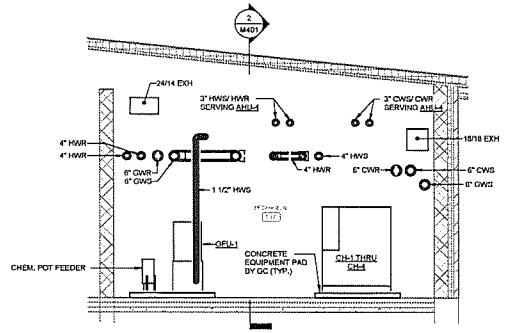
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ENLARGED MECHANICAL ROOM PLAN - HVAC

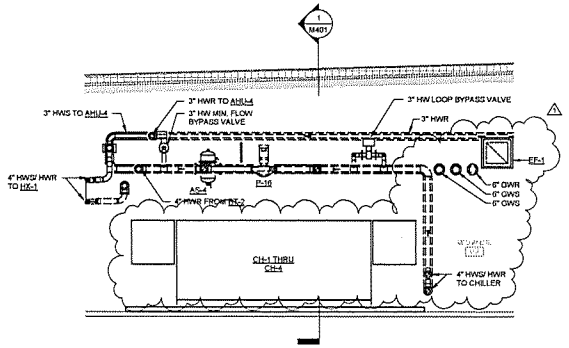
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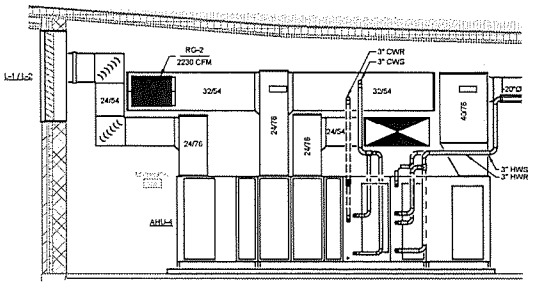
4 M401 105C PRE-FUNCTION SECTION



1 M401 105F MECHANICAL SECTION 1



2 M401 105F MECHCANICAL SECTION 2



3 M401 AHU-4 SECTION

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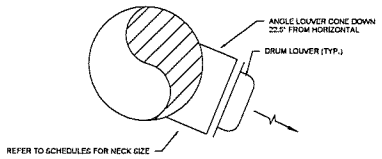
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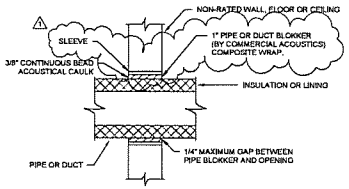
SECTIONS - HVAC

M401

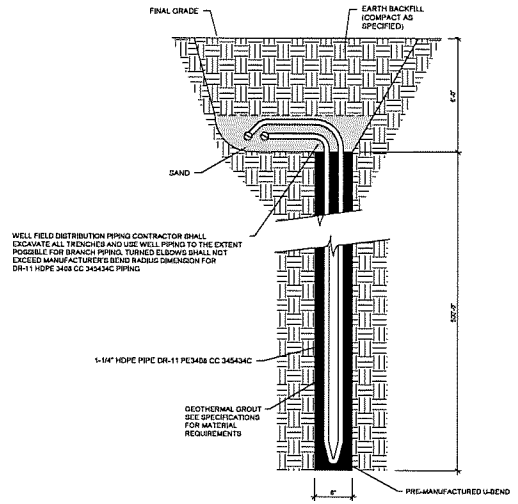


NOTE: PAINT ALL VISIBLE INTERIOR SURFACES OF DUCTWORK FLAT BLACK.

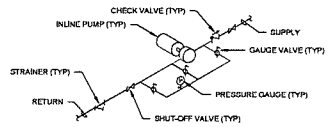
4 M902 DRUM LOUVER DETAIL



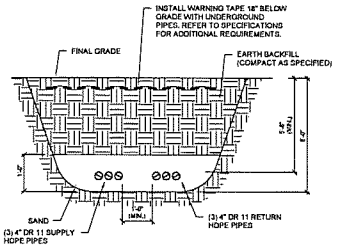
5 M902 SOUND ATTENUATION PIPE OR DUCT SLEEVE



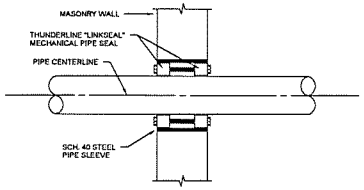
1 M902 GEOTHERMAL VERTICAL HEAT EXCHANGER DETAIL



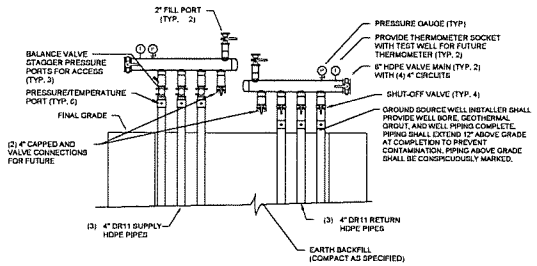
6 M902 INLINE PUMP (SINGLE) DETAIL



2 M902 GEOTHERMAL TRENCH DETAIL



7 M902 EXTERIOR WALL PIPE PENETRATION DETAIL



3 M902 GEOTHERMAL MANIFOLD DETAIL

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JDR PROJECT NO: 23.0519

REVISED

WARNER PARK COMMUNITY RECREATION CENTER EXPANSION

1625 NORTHPORT DRIVE
MADISON, WI 53704

CITY OF MADISON PARKS DIVISION
330 EAST LAKESIDE STREET
MADISON, WI 53715

PROJECT NUMBER 223471.00

ISSUED FOR:

BID SET	05/16/2024

REVISION FOR:

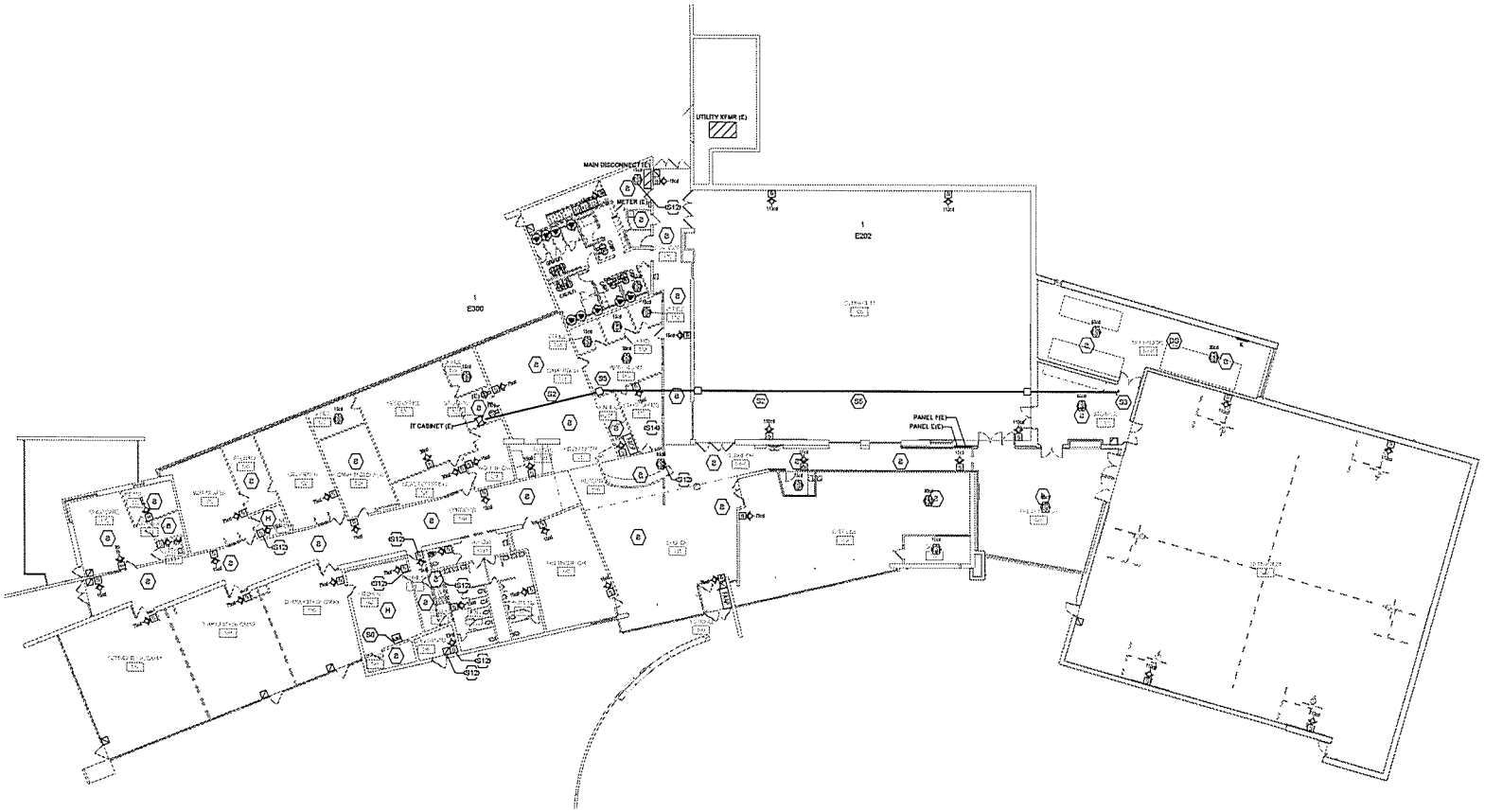
NO.	DESCRIPTION	DATE
1	Addendum #2	6/13/2024

DRAWN BY NSC

CHECKED BY RCS

DETAILS - HVAC

M902



1 E200 OVERALL FIRST FLOOR PLAN – POWER AND SYSTEMS

PROJECT NORTH

POWER GENERAL NOTES:

1. REFER TO SHEET E000 FOR ALL SYMBOLS, ABBREVIATIONS, AND DETAILS.
2. THE CONTRACTOR MAY INSTALL UP TO THREE (3) CURRENT CARRYING CONDUCTORS IN A CONDUIT. LOADINGS ARE BASED ON THWN INSULATION, 40°C AMBIENT WITH DERATINGS FOR TEMPERATURE AND UP TO THREE (3) CONDUCTORS IN A CONDUIT. CONTACT THE ENGINEER FOR WIRING IN OTHER CONDITIONS.
3. VERIFY ALL MOUNTING HEIGHTS OR REVISED BOXWORK WITH ARCHITECTURAL PLANS.
4. NOTE THAT THIS PROJECT CONSISTS OF A COMPLETE REPLACEMENT OF THE FIRE ALARM SYSTEM AS SHOWN ON THE PLANS. ANY/ALL EXISTING FIRE ALARM DEVICES, CONTROL PANELS, ANNUNCIATOR PANELS, CABLING, ETC. SHALL BE DISCONNECTED AND REMOVED COMPLETE. REUSE OF EXISTING INFRASTRUCTURE (BOXES AND CONDUITS ONLY) IS ACCEPTABLE WHERE SIZED AND SUPPORTED PROPERLY. THE NEW VOICE FIRE ALARM SYSTEM THROUGHOUT THE BUILDING SHALL BE INSTALLED, PROGRAMMED, TESTED, COMMISSIONED, AND APPROVED BY THE LOCAL AHJ PRIOR TO DECOMMISSIONING AND REMOVING THE EXISTING FIRE ALARM SYSTEM. ANY/ALL NEW FIRE ALARM DEVICES SHALL BE RECESSED IN EXISTING WALLS/CEILINGS UNLESS INDICATED OTHERWISE. ANY AND ALL FIRE ALARM CABLING SHALL BE EMT CONDUIT AT A MINIMUM. NO FREE AIR CABLING IS ALLOWED. ANY/ALL EXISTING BOXES AND CONDUITS WITHIN THE EXISTING BUILDING THAT ARE REMOVED SHALL HAVE THE EXISTING WALLS/CEILINGS PATCHED AND PAINTED TO OWNER'S SATISFACTION. ANY/ALL NEW BOXES AND CONDUITS WITHIN THE EXISTING BUILDING THAT ARE SURFACE MOUNTED ON EXISTING WALLS/CEILINGS SHALL BE PAINTED TO OWNER'S SATISFACTION.
5. ALL RECEPTACLES WITH A LIGHTING CONTROL SHALL BE CONTROLLABLE WITH ALL LIGHTING CONTROLS SHOWN ON THE LIGHTING PLANS. PROVIDE CONTROL DEVICES, ETC. AS REQUIRED TO ACHIEVE THE CONTROLS SHOWN.

SYSTEMS GENERAL NOTES:

1. ALL LOW VOLTAGE CABLES OR CONDUCTORS OPERATING AT LESS THAN 50 VOLTS SHALL BE IN ELECTRICAL METAL TUBING (EMT) WHERE INSTALLED WITHIN WALLS OR INACCESSIBLE SPACES.
2. TV OUTLETS, VOLUME CONTROLS, TELEPHONE OUTLETS, AND DATA OUTLETS SHALL CONSIST OF A BACK BOX WITH CONDUIT STUBBED ABOVE THE ACCESSIBLE CEILING. SEE ROUGH-IN DETAIL. VERIFY SIZE OF BACK BOX REQUIRED WITH DEVICE TO BE INSTALLED. LOCATE BACK BOXES 6" FROM ADJACENT POWER RECEPTACLE INTENDED FOR COMPUTER USE.
3. ANY/ALL LOW VOLTAGE SYSTEMS, INCLUDING BUT NOT LIMITED TO THE FOLLOWING: COMMUNICATIONS, PAGING, CLOCK SYSTEM, CLASS BELLS, ETC., SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION. FIELD VERIFY ALL LOW VOLTAGE SYSTEM REQUIREMENTS AND EXTEND/MAINTAIN/REUSE AS REQUIRED. EXTEND ANY/ALL NEW COMMUNICATIONS CABLING TO EXISTING MDF/IDF AS REQUIRED. COORDINATE JACK/CABLING REQUIREMENTS AND COLORS WITH OWNER.
4. CAMERA MOUNTING SHALL BE COORDINATED WITH OWNER. VERIFY DESIRED MOUNTING HEIGHT AND CAMERA MOUNT TYPE PRIOR TO INSTALL.
5. ALL WAP LOCATIONS SHOWN ARE APPROXIMATE. CONFIRM ALL EXACT/FINAL WAP LOCATIONS WITH CITY I.T. DEPARTMENT PRIOR TO ROUGH IN. WAP MOUNTING SHALL BE COORDINATED WITH OWNER. VERIFY DESIRED MOUNTING HEIGHT AND WAP MOUNT TYPE PRIOR TO INSTALL.
6. ALL NEW CAT6 CABLING SHALL BE ROUTED TO STORAGE (TR ROOM) #105E.

KEYED NOTES

(KEYED NOTES PER PROJECT)

S2 FOR CONNECTION OF TELECOM ROOMS, RUN TWELVE STRAND SINGLE MODE FIBER FROM STORAGE (TR ROOM) 123 TO STORAGE (TR ROOM) 105E. TERMINATE WITH LC CONNECTORS ON CABINET MOUNTED PATCH PANEL IN EACH TR. PROVIDE 12 LC TO LC PATCH CABLES.

S3 PROVIDE AND INSTALL NEW LOCKING IT CABINET EQUAL TO HUBBELL #HOC4830.

S5 PROVIDE AND INSTALL (2) 2" CONDUITS ROUTED FROM STORAGE (TR ROOM) 123 TO STORAGE (TR ROOM) 105E. PROVIDE JUNCTION BOXES ABOVE CEILING IN WORK ROOM 115 AND IN GYMNASIUM 105 APPROXIMATELY AS SHOWN. CONDUITS SHALL BE PAINTED TO MATCH EXISTING CEILING/UTILITIES COLOR WHEN ROUTED THROUGH SPACE(S) WITH NO CEILINGS.

S6 EXISTING KITCHEN HOOD MONITOR MODULE TO BE DISCONNECTED, REMOVED, AND REPLACED. CONNECT TO NEW FIRE ALARM CONTROL PANEL IN SAME LOCATION. FIELD VERIFY ALL REQUIREMENTS WITH EXISTING HOOD/EQUIPMENT AND CONNECT TO NEW FIRE ALARM SYSTEM AS REQUIRED.

S12 FIRE ALARM DEVICE TO BE SURFACE MOUNTED AT APPROXIMATE LOCATION SHOWN.

S14 PROVIDE A PAGING SPEAKER CABLING TERMINATION POINT (J-BOX AS REQUIRED) ABOVE THE CEILING IN THIS ROOM. ALL NEW PAGING SPEAKER CABLING FROM PRE-FUNCTION #105C AND GYMNASIUM #105D SHALL BE ROUTED TO THIS POINT. ALL NEW PAGING SPEAKER CABLING FROM OFFICE #103 (CURRENTLY DAMAGED) SHALL BE ROUTED OVERHEAD TO THIS POINT. EXTEND NEW CABLES TO EXISTING AMP FROM THIS LOCATION.

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JDR PROJECT NO: 23039

REVISION

WARNER PARK COMMUNITY RECREATION CENTER EXPANSION

1625 NORTHPORT DRIVE
MADISON, WI 53704

CITY OF MADISON PARKS DIVISION
330 EAST LAKESIDE STREET
MADISON, WI 53715

PROJECT NUMBER 223471.00

ISSUED FOR:

BID SET	5/15/2024

REVISION FOR:

NO.	DESCRIPTION	DATE
1	Addendum #2	6/13/2024

DRAWN BY JDR

CHECKED BY JDR

OVERALL FIRST FLOOR PLAN – POWER AND SYSTEMS

E200

KEYED NOTES

(KEYED NOTES PER PROJECT)

P1 LOCATE INVERTERS FOR ROOF MOUNTED PV ARRAY AT THIS LOCATION.

P2 PROVIDE AND INSTALL NEW 208Y/120V, 600A PANEL 'K'.

P3 PROVIDE AND INSTALL DUAL CONTROLLED RECEPTACLE EQUAL TO LEGRAND #WRC-20-2. PROVIDE CEILING MOUNTED RF TRANSMITTER EQUAL TO LEGRAND #WRC-TX-LMI. PROVIDE ROOM CONTROLLERS AS REQUIRED.

P4 COORDINATE HEIGHT OF POWER AND DATA FOR SCREEN WITH ARCHITECT.

P5 LOCATION OF DESTRATIFICATION FAN SPEED CONTROLLER AND REVERSING SWITCH. MC SHALL FURNISH CONTROLLER AND SWITCH TO EC TO INSTALL. REFER TO M2/P-500 FOR MORE DETAIL.

P6 PROVIDE SOUND ATTENUATION AS REQUIRED AT ANY/ALL WALL PENETRATIONS. REFER TO 10/E000 FOR MORE DETAIL.

S1 INSTALL SMOKE DETECTOR ABOVE ACCESSIBLE CEILING.

S2 FOR CONNECTION OF TELECOM ROOMS, RUN TWELVE STRAND SINGLE MODE FIBER FROM STORAGE (TR ROOM) 123 TO STORAGE (TR ROOM) 105E. TERMINATE WITH LC CONNECTORS ON CABINET MOUNTED PATCH PANEL IN EACH TR. PROVIDE 12 LC TO LC PATCH CABLES.

S3 PROVIDE AND INSTALL NEW LOCKING IT CABINET EQUAL TO HUBBELL #HSO4836.

S4 EXTEND EXISTING PAGING FEEDS THROUGH OVERHEAD CONDUIT SYSTEM TO THIS LOCATION. CONTRACTOR SHALL CUT EXISTING UNDERGROUND FEED AND SPLICE TO NEW OVERHEAD CONDUIT SYSTEM.

S5 PROVIDE AND INSTALL (2) 2" CONDUITS ROUTED FROM STORAGE (TR ROOM) 123 TO STORAGE (TR ROOM) 105E. PROVIDE JUNCTION BOXES ABOVE CEILING IN WORK ROOM 115 AND IN GYMNASIUM 105 APPROXIMATELY AS SHOWN. CONDUITS SHALL BE PAINTED TO MATCH EXISTING CEILING/UTILITIES COLOR WHEN ROUTED THROUGH SPACE(S) WITH NO CEILINGS.

S7 ADD INPUTS TO SOUND SYSTEM, XLR AND 1/4" LINE LEVEL STEREO INPUTS.

S8 FURNISH AND INSTALL COMPLETE A DAKTRONICS SCOREBOARD SYSTEM IN GYMNASIUM #105D AS APPROXIMATELY SHOWN ON THE PLANS, WITH EQUIPMENT LISTED BELOW AT A MINIMUM. COORDINATE ANY/ALL REQUIREMENTS WITH KYLE SYDOW AT DAKTRONICS AT (312) 339-3944 or kyle.sydow@daktronics.com. ONE(1) #LVN-2010-3.9MM VIDEO DISPLAY WITH TOP IDENTIFIER, ONE(1) #LVN-2010-5.9MM VIDEO DISPLAY WITH TOP IDENTIFIER, ONE(1) #BB-2107 SCORING DISPLAY, ONE(1) RACK WITH SCOREBOARD CONTROL SYSTEM (IN STORAGE #105E), CONTROL SOFTWARE (LAPTOP/PC BY OWNER.), ANY/ALL POWER, CONNECTIONS, FIBER, CAT6, ETC. FOR A COMPLETE AND OPERATIONAL SYSTEM, PROVIDE RACEWAYS BETWEEN EQUIPMENT AND RACKS AS REQUIRED BY DAKTRONICS.

S9 FURNISH AND INSTALL COMPLETE AN OCTASOUND GYMNASIUM SOUND SYSTEM IN GYMNASIUM #105D AS APPROXIMATELY SHOWN ON THE PLANS, WITH EQUIPMENT LISTED BELOW AT A MINIMUM. COORDINATE ANY/ALL REQUIREMENTS WITH KEVIN BULL AT OCTASOUND AT (416) 439-7158 or kevin@octasound.com. ONE(1) #SP8ODA 15" 360X180 SPEAKERS, ONE(1) #OSSX12 DUAL 12" SUBWOOFERS, TWO(2) #SPHOL-SS-66 ROPES, ONE(1) CROWN 4TSW DSP AMPLIFIER (WITH POWER CONDITIONER AND RACK AS REQUIRED (IN STORAGE #105E)), OCTASOUND RAMK2 AND RABK2 INPUTS, OCTASOUND RUSBC CHARGING PLATE, VANDAL CASES, VOLUME CONTROLS, ETC., ANY/ALL POWER, CONNECTIONS, FIBER, CAT6, ETC. FOR A COMPLETE AND OPERATIONAL SYSTEM, PROVIDE RACEWAYS BETWEEN EQUIPMENT AND RACKS AS REQUIRED BY OCTASOUND.

S10 PROVIDE AND INSTALL ONE(1) 2" CONDUIT AND ONE(1) 1" CONDUIT FROM AV RACK TO SB-1.

S11 PROVIDE AND INSTALL ONE(1) 2" CONDUIT AND ONE(1) 1" CONDUIT FROM AV RACK TO SB-2.

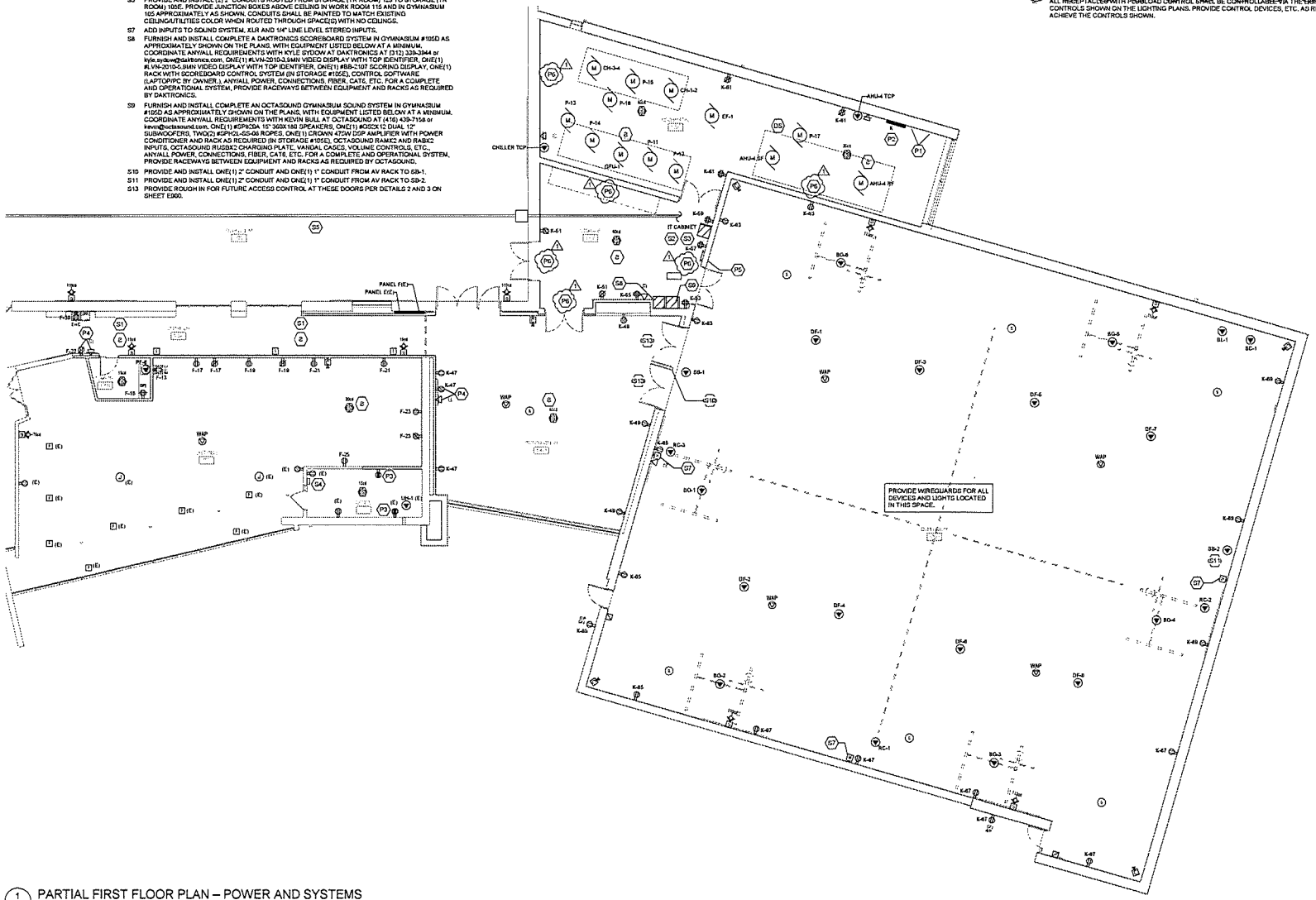
S13 PROVIDE ROUGH IN FOR FUTURE ACCESS CONTROL AT THESE DOORS PER DETAILS 2 AND 3 ON SHEET E000.

SYSTEMS GENERAL NOTES:

1. ALL LOW VOLTAGE CABLES OR CONDUCTORS OPERATING AT LESS THAN 50 VOLTS SHALL BE IN ELECTRICAL METAL TUBING (EMT) WHERE INSTALLED WITHIN WALLS OR INACCESSIBLE SPACES.
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4. CAMERA MOUNTING SHALL BE COORDINATED WITH OWNER. VERIFY DESIRED MOUNTING HEIGHT AND CAMERA MOUNT TYPE PRIOR TO INSTALL.
5. ALL WAP LOCATIONS SHOWN ARE APPROXIMATE. CONFIRM ALL EXACT/FINAL WAP LOCATIONS WITH CITY I.T. DEPARTMENT PRIOR TO ROUGH IN. WAP MOUNTING SHALL BE COORDINATED WITH OWNER. VERIFY DESIRED MOUNTING HEIGHT AND WAP MOUNT TYPE PRIOR TO INSTALL.
6. ALL NEW CAT6 CABLING SHALL BE ROUTED TO STORAGE (TR ROOM) #105E.

POWER GENERAL NOTES:

1. REFER TO SHEET E000 FOR ALL SYMBOLS, ABBREVIATIONS, AND DETAILS.
2. THE CONTRACTOR MAY INSTALL UP TO THREE (3) CURRENT CARRYING CONDUCTORS IN A CONDUIT. LOADINGS ARE BASED ON THWN INSULATION, 40°C AMBIENT WITH DERATINGS FOR TEMPERATURE AND UP TO THREE (3) CONDUCTORS IN A CONDUIT. CONTACT THE ENGINEER FOR WIRING IN OTHER CONDITIONS.
3. VERIFY ALL MOUNTING HEIGHTS OR DEVICES ROUGH-IN WORK WITH ARCHITECTURAL PLANS.
4. NOTE THAT THIS PROJECT CONSISTS OF A COMPLETE REPLACEMENT OF THE FIRE ALARM SYSTEM AS SHOWN ON THE PLANS. ANY/ALL EXISTING FIRE ALARM DEVICES, CONTROL PANELS, ANNUNCIATOR PANELS, CABLING, ETC., SHALL BE DISCONNECTED AND REMOVED COMPLETE. REUSE OF EXISTING INFRASTRUCTURE (BOXES AND CONDUITS ONLY) IS ACCEPTABLE WHERE SIZED AND SUPPORTED PROPERLY. THE NEW VOICE FIRE ALARM SYSTEM THROUGHOUT THE BUILDING SHALL BE INSTALLED, PROGRAMMED, TESTED, COMMISSIONED, AND APPROVED BY THE LOCAL AHJ PRIOR TO DECOMMISSIONING AND REMOVING THE EXISTING FIRE ALARM SYSTEM. ANY/ALL NEW FIRE ALARM DEVICES SHALL BE RECESSED IN EXISTING WALLS/CEILINGS UNLESS INDICATED OTHERWISE. ANY AND ALL FIRE ALARM CABLING SHALL BE ENT CONDUIT AT A MINIMUM. NO FREE AIR CABLING IS ALLOWED. ANY/ALL EXISTING BOXES AND CONDUITS WITHIN THE EXISTING BUILDING THAT ARE REMOVED SHALL HAVE THE EXISTING WALLS/CEILINGS PATCHED AND PAINTED TO OWNER'S SATISFACTION. ANY/ALL NEW BOXES AND CONDUITS WITHIN THE EXISTING BUILDING THAT ARE SURFACE MOUNTED ON EXISTING WALLS/CEILINGS SHALL BE PAINTED TO OWNER'S SATISFACTION.
5. ALL RECEPTACLES WITH PLUGLOAD CONTROL SHALL BE CONTROLLABLE VIA THE LIGHTING CONTROLS SHOWN ON THE LIGHTING PLANS. PROVIDE CONTROL DEVICES, ETC. AS REQUIRED TO ACHIEVE THE CONTROLS SHOWN.



1 E201 PARTIAL FIRST FLOOR PLAN – POWER AND SYSTEMS

PROJECT NORTH

Engberg Anderson ARCHITECTS
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PH: 608.277.1728 FAX: 608.277.0746
JDR PROJECT NO: 23.0319

WARNER PARK COMMUNITY RECREATION CENTER EXPANSION

1625 NORTHPORT DRIVE
MADISON, WI 53704

CITY OF MADISON PARKS DIVISION
330 EAST LAKESIDE STREET
MADISON, WI 53715

PROJECT NUMBER 223471.00

ISSUED FOR:

BID SET 5/16/2024

REVISION FOR:

NO.	DESCRIPTION	DATE
1	Addendum #2	6/13/2024

DRAWN BY JDR

CHECKED BY JDR

PARTIAL FIRST FLOOR PLAN – POWER AND SYSTEMS

E201

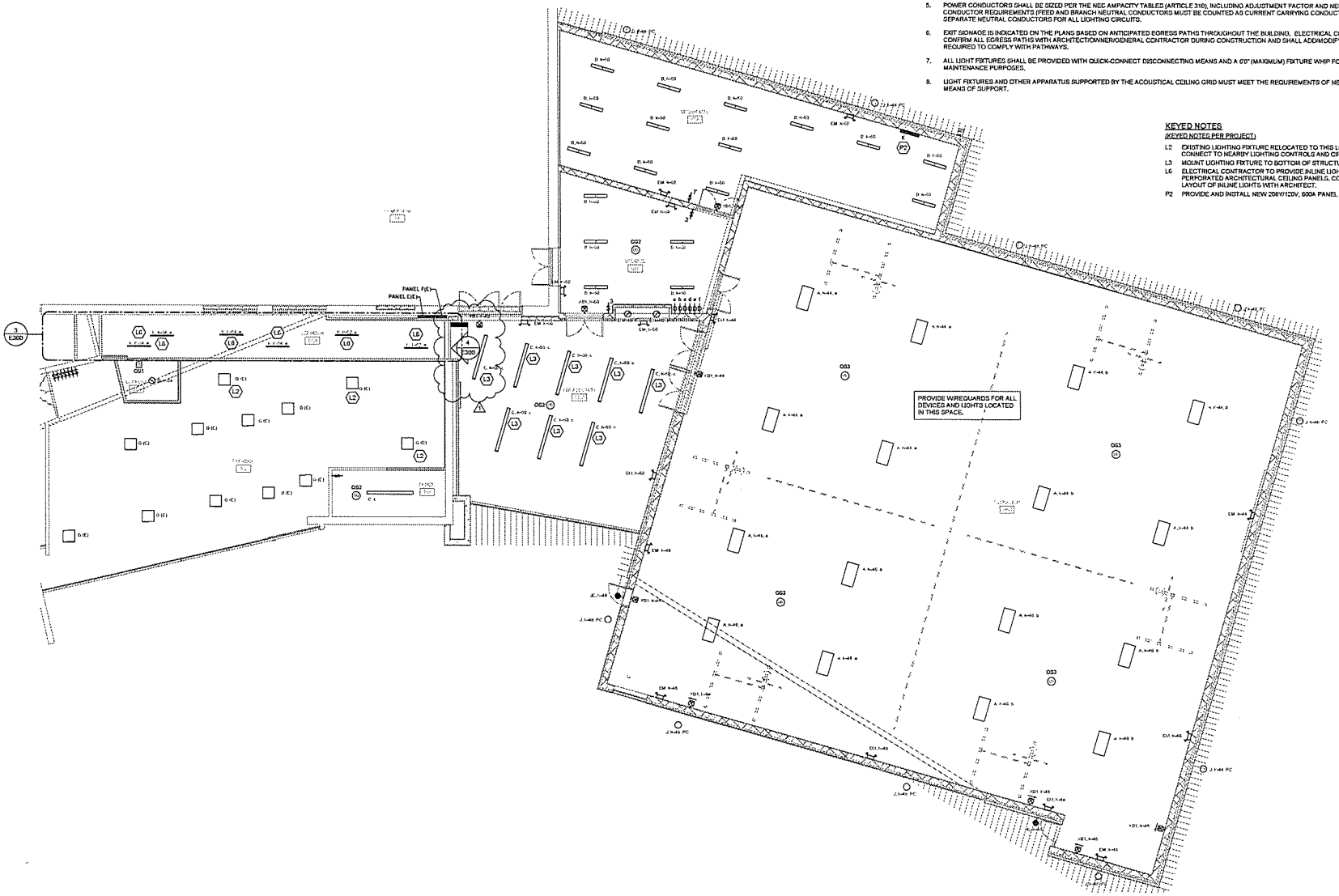
LIGHTING GENERAL NOTES:

1. REFER TO SHEET E000 FOR ALL SYMBOLS, ABBREVIATIONS, AND DETAILS.
2. REFER TO ARCHITECTURAL PLANS, SECTIONS, ELEVATIONS, AND REFLECTED CEILING PLANS FOR EXACT LOCATION AND COORDINATION OF ALL LIGHT FIXTURE AND CONTROLLER INSTALLATIONS.
3. VERIFY ALL MOUNTING HEIGHTS OF DEVICES ABOVE MILLWORK WITH ARCHITECTURAL PLANS.
4. WIRING SHALL CONFORM TO THE NATIONAL ELECTRICAL CODE (NEC) AND APPLICABLE LOCAL CODES, INCLUDING PROVISION OF EQUIPMENT GROUNDING AS REQUIRED BY THE NEC.
5. POWER CONDUCTORS SHALL BE SIZED PER THE NEC AMPACITY TABLES (ARTICLE 310), INCLUDING ADJUSTMENT FACTOR AND NEUTRAL CONDUCTOR REQUIREMENTS (FEED AND BRANCH NEUTRAL CONDUCTORS MUST BE COUNTED AS CURRENT CARRYING CONDUCTORS). RUN SEPARATE NEUTRAL CONDUCTORS FOR ALL LIGHTING CIRCUITS.
6. EXIT SIGNAGE IS INDICATED ON THE PLANS BASED ON ANTICIPATED EGRESS PATHS THROUGHOUT THE BUILDING. ELECTRICAL CONTRACTOR SHALL CONFIRM ALL EGRESS PATHS WITH ARCHITECT/OWNER/GENERAL CONTRACTOR DURING CONSTRUCTION AND SHALL ADD/MODIFY EXIT SIGNAGE AS REQUIRED TO COMPLY WITH PATHWAYS.
7. ALL LIGHT FIXTURES SHALL BE PROVIDED WITH QUICK-CONNECT DISCONNECTING MEANS AND A 6'0" (MAXIMUM) FIXTURE WHIP FOR FUTURE MAINTENANCE PURPOSES.
8. LIGHT FIXTURES AND OTHER APPARATUS SUPPORTED BY THE ACOUSTICAL CEILING GRID MUST MEET THE REQUIREMENTS OF NEC SECTION 410.16, MEANS OF SUPPORT.

KEYED NOTES

(KEYED NOTES PER PROJECT)

- L2 EXISTING LIGHTING FIXTURE RELOCATED TO THIS LOCATION. CONNECT TO NEARBY LIGHTING CONTROLS AND CIRCUIT.
- L3 MOUNT LIGHTING FIXTURE TO BOTTOM OF STRUCTURAL TRUSS.
- L6 ELECTRICAL CONTRACTOR TO PROVIDE INLINE LIGHTING IN PERFORATED ARCHITECTURAL CEILING PANELS. COORDINATE FINAL LAYOUT OF INLINE LIGHTS WITH ARCHITECT.
- P2 PROVIDE AND INSTALL NEW 208Y/120V, 600A PANEL 'K'.



1 E202 PARTIAL FIRST FLOOR PLAN – LIGHTING

PROJECT NORTH

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PH: 608.277.1728 FAX: 608.271.7046
JDR PROJECT NO: 23.0319

WARNER PARK
COMMUNITY RECREATION
CENTER EXPANSION

1625 NORTHPORT DRIVE
MADISON, WI 53704

CITY OF MADISON PARKS DIVISION
330 EAST LAKESIDE STREET
MADISON, WI 53715

PROJECT NUMBER 223471.00

ISSUED FOR:

BID SET	5/16/2024

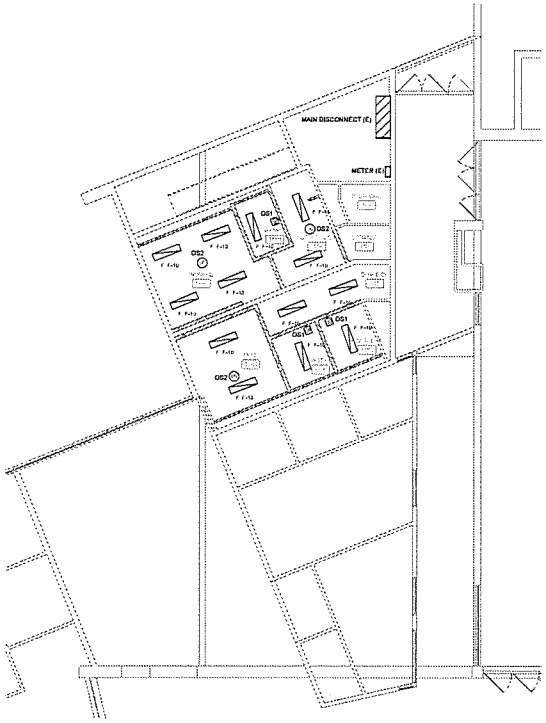
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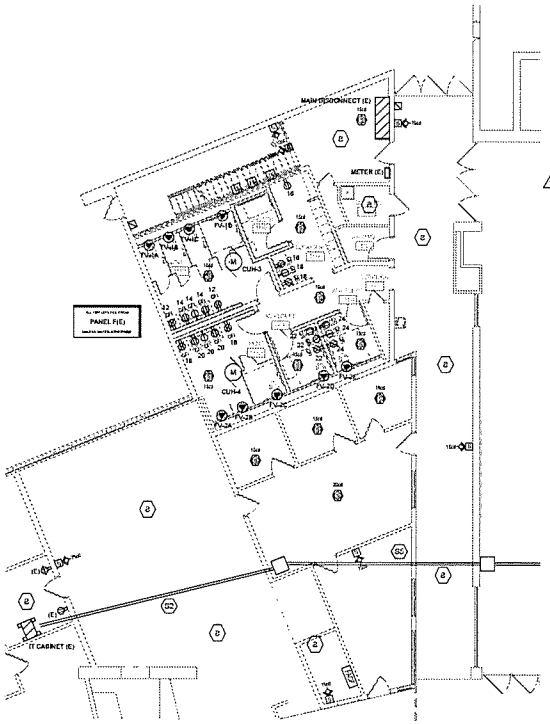
DRAWN BY	JDR
CHECKED BY	JDR

PARTIAL FIRST FLOOR
PLAN – LIGHTING

E202



2 E300 FIRST FLOOR PLAN – LIGHTING



1 E300 FIRST FLOOR PLAN – POWER AND SYSTEMS

LIGHTING CONTROLS GENERAL NOTES:

1. REFER TO SHEET E000 FOR ALL SYMBOLS, ABBREVIATIONS, AND DETAILS.
2. OCCUPANCY SENSOR LOCATIONS SHOWN ARE DIAGRAMMATIC ONLY. ACTUAL LOCATION TO BE DETERMINED IN FIELD PER MANUFACTURER'S RECOMMENDATIONS AND LAYOUT. PROVIDE A MINIMUM 4'-0" OF FLEX CONDUIT/WIRING SO THAT THE SENSOR CAN BE FIELD ADJUSTED FOR PROPER COVERAGE DURING FINAL COMMISSIONING. THE TRAINED FACTORY PERSONNEL SHALL PERFORM THE FINAL COMMISSIONING.

POWER GENERAL NOTES:

1. REFER TO SHEET E000 FOR ALL SYMBOLS, ABBREVIATIONS, AND DETAILS.
2. THE CONTRACTOR MAY INSTALL UP TO THREE (3) CURRENT CARRYING CONDUCTORS IN A CONDUIT. LOADINGS ARE BASED ON THWN INSULATION, 40°C AMBIENT WITH DERATINGS FOR TEMPERATURE AND UP TO THREE (3) CONDUCTORS IN A CONDUIT. CONTACT THE ENGINEER FOR WIRING IN OTHER CONDITIONS.
3. VERIFY ALL MOUNTING HEIGHTS OF DEVICES ABOVE MILLWORK WITH ARCHITECTURAL PLANS.
4. NOTE THAT THIS PROJECT CONSISTS OF A COMPLETE REPLACEMENT OF THE FIRE ALARM SYSTEM AS SHOWN ON THE PLANS. ANY/ALL EXISTING FIRE ALARM DEVICES, CONTROL PANELS, ANNUNCIATOR PANELS, CABLING, ETC. SHALL BE DISCONNECTED AND REMOVED COMPLETE. REUSE OF EXISTING INFRASTRUCTURE (BOXES AND CONDUITS ONLY) IS ACCEPTABLE WHERE SIZED AND SUPPORTED PROPERLY. THE NEW VOICE FIRE ALARM SYSTEM THROUGHOUT THE BUILDING SHALL BE INSTALLED, PROGRAMMED, TESTED, COMMISSIONED, AND APPROVED BY THE LOCAL AHJ PRIOR TO DECOMMISSIONING AND REMOVING THE EXISTING FIRE ALARM SYSTEM. ANY/ALL NEW FIRE ALARM DEVICES SHALL BE RECESSED IN EXISTING WALLS/CEILINGS UNLESS INDICATED OTHERWISE. ANY AND ALL FIRE ALARM CABLING SHALL BE EMT CONDUIT AT A MINIMUM. NO FREE AIR CABLING IS ALLOWED. ANY/ALL EXISTING BOXES AND CONDUITS WITHIN THE EXISTING BUILDING THAT ARE REMOVED SHALL HAVE THE EXISTING WALLS/CEILINGS PATCHED AND PAINTED TO OWNER'S SATISFACTION. ANY/ALL NEW BOXES AND CONDUITS WITHIN THE EXISTING BUILDING THAT ARE SURFACE MOUNTED ON EXISTING WALLS/CEILINGS SHALL BE PAINTED TO OWNER'S SATISFACTION.
5. ALL RECEPTACLES WITH A UG LOAD CONTROL SHALL BE CONTROLLABLE VIA THE LIGHTING CONTROLS SHOWN ON THE LIGHTING PLANS. PROVIDE CONTROL DEVICES, ETC. AS REQUIRED TO ACHIEVE THE CONTROLS SHOWN.

SYSTEMS GENERAL NOTES:

1. ALL LOW VOLTAGE CABLES OR CONDUCTORS OPERATING AT LESS THAN 50 VOLTS SHALL BE IN ELECTRICAL METAL TUBING (EMT) WHERE INSTALLED WITHIN WALLS OR INACCESSIBLE SPACES.
2. TV OUTLETS, VOLUME CONTROLS, TELEPHONE OUTLETS, AND DATA OUTLETS SHALL CONSIST OF A BACK BOX WITH CONDUIT STUBBED ABOVE THE ACCESSIBLE CEILING. SEE ROUGH-IN DETAIL. VERIFY SIZE OF BACK BOX REQUIRED WITH DEVICE TO BE INSTALLED. LOCATE BACK BOXES 6" FROM ADJACENT POWER RECEPTACLE INTENDED FOR COMPUTER USE.
3. ANY/ALL LOW VOLTAGE SYSTEMS, INCLUDING BUT NOT LIMITED TO THE FOLLOWING: COMMUNICATIONS, PAGING, CLOCK SYSTEM, CLASS BELLS, ETC., SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION. FIELD VERIFY ALL LOW VOLTAGE SYSTEM REQUIREMENTS AND EXTEND/MAINTAIN/REUSE AS REQUIRED. EXTEND ANY/ALL NEW COMMUNICATIONS CABLING TO EXISTING MDF/IDF AS REQUIRED. COORDINATE JACK/CABLING REQUIREMENTS AND COLORS WITH OWNER.
4. CAMERA MOUNTING SHALL BE COORDINATED WITH OWNER. VERIFY DESIRED MOUNTING HEIGHT AND CAMERA MOUNT TYPE PRIOR TO INSTALL.
5. ALL WAP LOCATIONS SHOWN ARE APPROXIMATE. CONFIRM ALL EXACT/FINAL WAP LOCATIONS WITH CITY I.T. DEPARTMENT PRIOR TO ROUGH IN. WAP MOUNTING SHALL BE COORDINATED WITH OWNER. VERIFY DESIRED MOUNTING HEIGHT AND WAP MOUNT TYPE PRIOR TO INSTALL.
6. ALL NEW CAT6 CABLING SHALL BE ROUTED TO STORAGE (TR ROOM) #105C.

KEYED NOTES

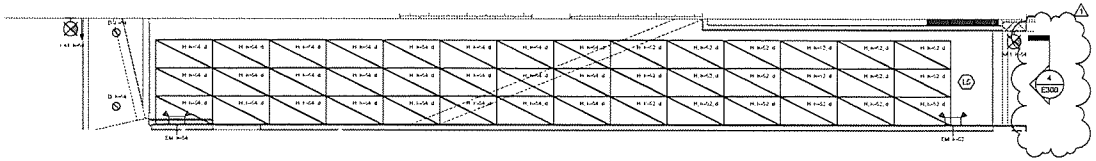
(KEYED NOTES PER PROJECT)

L5 ELECTRICAL CONTRACTOR TO PROVIDE INTEGRAL BACKLIGHTING BEHIND PERFORATED ARCHITECTURAL CEILING PANELS THROUGHOUT CORRIDOR 105A. FIELD CUT BACKLIGHTING SECTIONS THAT DO NOT FIT IN 2'X4' LIGHT TRAYS.

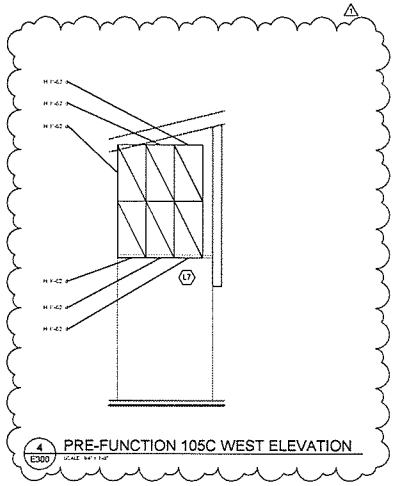
L7 ELECTRICAL CONTRACTOR TO PROVIDE INTEGRAL BACKLIGHTING BEHIND PERFORATED ARCHITECTURAL CEILING PANELS IN VERTICAL SECTION IN PRE-FUNCTION 105C. FIELD CUT BACKLIGHTING SECTIONS THAT DO NOT FIT IN 2'X4' LIGHT TRAYS.

[illegible] FOR CONNECTION OF TEACHOM AUDIO SYSTEM, INSTALL (2) STRAND SINGLE MODE FIBER FROM STORAGE (TR ROOM) 123 TO STORAGE (TR ROOM) 105C. TERMINATE WITH LC CONNECTORS ON CABINET MOUNTED PATCH PANEL IN EACH TR. PROVIDE 12 LC TO LC PATCH CABLES.

B5 PROVIDE AND INSTALL (2) 2" CONDUITS ROUTED FROM STORAGE (TR ROOM) 123 TO STORAGE (TR ROOM) 105E. PROVIDE JUNCTION BOXES ABOVE CEILING IN WORK ROOM 115 AND IN GYMNASIUM 105 APPROXIMATELY AS SHOWN. CONDUITS SHALL BE PAINTED TO MATCH EXISTING CEILING/UTILITIES COLOR WHEN ROUTED THROUGH SPACE(S) WITH NO CEILINGS.



3 E300 CORRIDOR 105A - LIGHTING



4 E300 PRE-FUNCTION 105C WEST ELEVATION

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JDR PROJECT NO: 23.0319

WARNER PARK
COMMUNITY RECREATION
CENTER EXPANSION

1625 NORTHPORT DRIVE
MADISON, WI 53704

CITY OF MADISON PARKS DIVISION
330 EAST LAKESIDE STREET
MADISON, WI 53715

PROJECT NUMBER 223471.00

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BID SET 5/16/2024

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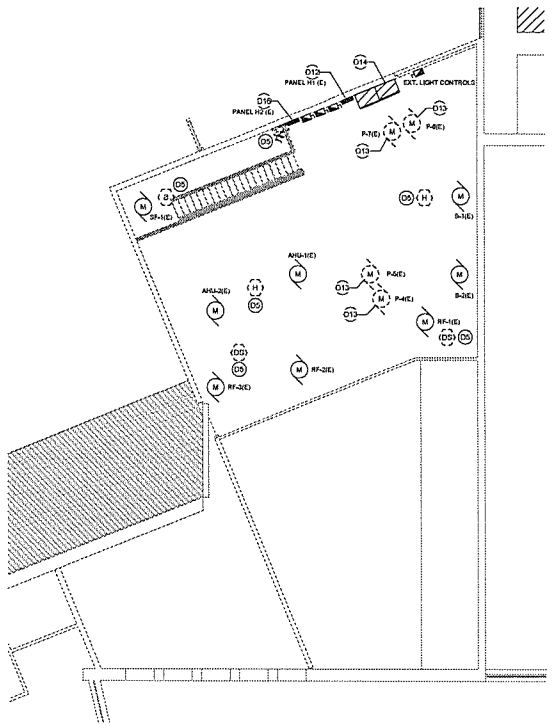
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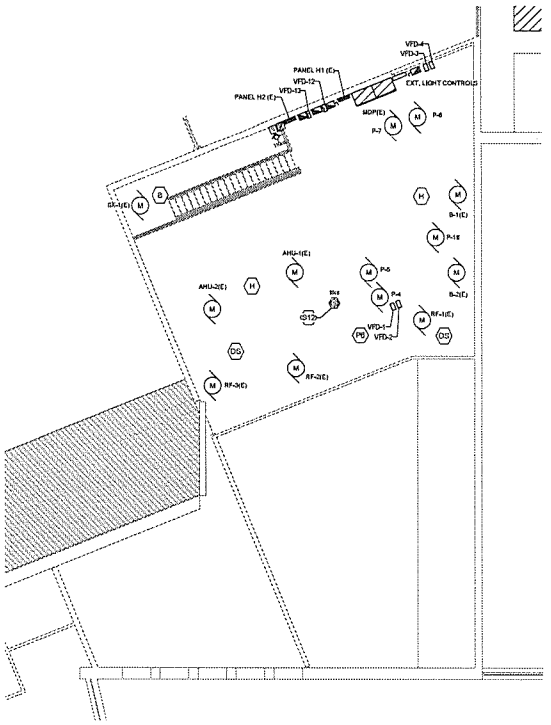
LARGE SCALE PLANS - ELECTRICAL

E300



2 E301 NORTH MEZZANINE DEMOLITION PLAN – POWER AND SYSTEMS

SCALE: 1/8" = 1'-0"



1 E301 NORTH MEZZANINE PLAN – POWER AND SYSTEMS

SCALE: 1/8" = 1'-0"

SYSTEMS GENERAL NOTES:

1. ALL LOW VOLTAGE CABLES OR CONDUCTORS OPERATING AT LESS THAN 50 VOLTS SHALL BE IN ELECTRICAL METAL TUBING (EMT) WHERE INSTALLED WITHIN WALLS OR INACCESSIBLE SPACES.
2. TV OUTLETS, VOLUME CONTROLS, TELEPHONE OUTLETS, AND DATA OUTLETS SHALL CONSIST OF A BACK BOX WITH CONDUIT STUBBED ABOVE THE ACCESSIBLE CEILING, SEE ROUGH-IN DETAIL. VERIFY SIZE OF BACK BOX REQUIRED WITH DEVICE TO BE INSTALLED. LOCATE BACK BOXES 6" FROM ADJACENT POWER RECEPTACLE INTENDED FOR COMPUTER USE.
3. ANY/ALL LOW VOLTAGE SYSTEMS, INCLUDING BUT NOT LIMITED TO THE FOLLOWING: COMMUNICATIONS, PAGING, CLOCK SYSTEM, CLASS BELLS, ETC., SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION. FIELD VERIFY ALL LOW VOLTAGE SYSTEM REQUIREMENTS AND EXTEND/MAINTAIN/REUSE AS REQUIRED. EXTEND ANY/ALL NEW COMMUNICATIONS CABLING TO EXISTING MDF/IDF AS REQUIRED. COORDINATE JACK/CABLING REQUIREMENTS AND COLORS WITH OWNER.
4. CAMERA MOUNTING SHALL BE COORDINATED WITH OWNER. VERIFY DESIRED MOUNTING HEIGHT AND CAMERA MOUNT TYPE PRIOR TO INSTALL.
5. ALL WAP LOCATIONS SHOWN ARE APPROXIMATE. CONFIRM ALL EXACT/FINAL WAP LOCATIONS WITH CITY I.T. DEPARTMENT PRIOR TO ROUGH IN. WAP MOUNTING SHALL BE COORDINATED WITH OWNER. VERIFY DESIRED MOUNTING HEIGHT AND WAP MOUNT TYPE PRIOR TO INSTALL.
6. ALL NEW CAT6 CABLING SHALL BE ROUTED TO STORAGE (TR ROOM) #105E.

POWER GENERAL NOTES:

1. REFER TO SHEET E000 FOR ALL SYMBOLS, ABBREVIATIONS, AND DETAILS.
2. THE CONTRACTOR MAY INSTALL UP TO THREE (3) CURRENT CARRYING CONDUCTORS IN A CONDUIT. LOADINGS ARE BASED ON THWN INSULATION, 40°C AMBIENT WITH DERATINGS FOR TEMPERATURE AND UP TO THREE (3) CONDUCTORS IN A CONDUIT. CONTACT THE ENGINEER FOR WIRING IN OTHER CONDITIONS.
3. VERIFY ALL MOUNTING HEIGHTS OF DEVICES ABOVE MILLWORK WITH ARCHITECTURAL PLANS.
4. NOTE THAT THIS PROJECT CONSISTS OF A COMPLETE REPLACEMENT OF THE FIRE ALARM SYSTEM AS SHOWN ON THE PLANS. ANY/ALL EXISTING FIRE ALARM DEVICES, CONTROL PANELS, ANNUNCIATOR PANELS, CABLING, ETC. SHALL BE DISCONNECTED AND REMOVED COMPLETE. REUSE OF EXISTING INFRASTRUCTURE (BOXES AND CONDUITS ONLY) IS ACCEPTABLE WHERE SIZED AND SUPPORTED PROPERLY. THE NEW VOICE FIRE ALARM SYSTEM THROUGHOUT THE BUILDING SHALL BE INSTALLED, PROGRAMMED, TESTED, COMMISSIONED, AND APPROVED BY THE LOCAL AHJ PRIOR TO DECOMMISSIONING AND REMOVING THE EXISTING FIRE ALARM SYSTEM. ANY/ALL NEW FIRE ALARM DEVICES SHALL BE RECESSED IN EXISTING WALLS/CEILINGS UNLESS INDICATED OTHERWISE. ANY AND ALL FIRE ALARM CABLING SHALL BE EMT CONDUIT AT A MINIMUM. NO FREE AIR CABLING IS ALLOWED. ANY/ALL EXISTING BOXES AND CONDUITS WITHIN THE EXISTING BUILDING THAT ARE REMOVED SHALL HAVE THE EXISTING WALLS/CEILINGS PATCHED AND PAINTED TO OWNER'S SATISFACTION. ANY/ALL NEW BOXES AND CONDUITS WITHIN THE EXISTING BUILDING THAT ARE SURFACE MOUNTED ON EXISTING WALLS/CEILINGS SHALL BE PAINTED TO OWNER'S SATISFACTION.
5. ALL RECEPTACLES WITH PLUG-LOAD CONTROL SHALL BE CONTROLLABLE VIA THE LIGHTING CONTROLS SHOWN ON THE LIGHTING PLANS. PROVIDE CONTROL DEVICES, ETC. AS REQUIRED TO ACHIEVE THE CONTROLS SHOWN.

DEMOLITION KEYED NOTES
(KEYED NOTES PER PROJECT)

- D5 EXISTING FIRE ALARM INITIATION DEVICE TO BE DISCONNECTED, REMOVED, AND REPLACED. CONNECT TO NEW FIRE ALARM CONTROL PANEL IN SAME LOCATION.
- D12 EXISTING CUTLER HAMMER PRL1A 225A 120/208V 3PH PANEL 'H1' TO REMAIN.
- D13 EXISTING PUMP TO BE DISCONNECTED AND REMOVED BY OTHERS. REMOVE FEEDER BACK TO SOURCE. DISCONNECT AND REMOVE EXISTING BREAKER AND REPLACE WITH NEW BREAKER SIZE SHOWN ON E600.
- D14 CHALLENGER 1600A 208Y/120V SWITCHBOARD EXISTING TO REMAIN. REFER TO E600 FOR DETAILS.
- D16 EXISTING CUTLER HAMMER PRL1A 225A 120/208V 3PH PANEL 'H2' TO REMAIN.

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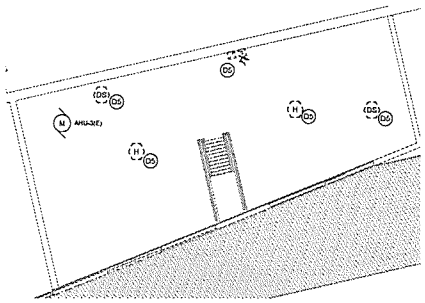
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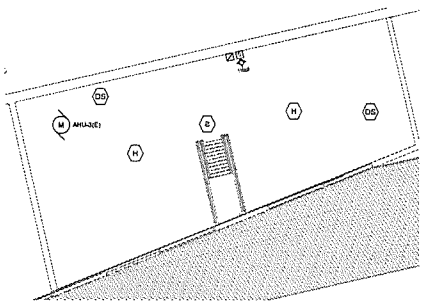
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CHECKED BY	JDR

LARGE SCALE PLANS -
NORTH MEZZANINE

E301



2 E302 SOUTH MEZZANINE DEMO PLAN – POWER AND SYSTEMS



1 E302 SOUTH MEZZANINE PLAN – POWER AND SYSTEMS

SYSTEMS GENERAL NOTES:

1. ALL LOW VOLTAGE CABLES OR CONDUCTORS OPERATING AT LESS THAN 50 VOLTS SHALL BE IN ELECTRICAL METAL TUBING (EMT) WHERE INSTALLED WITHIN WALLS OR INACCESSIBLE SPACES.
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POWER GENERAL NOTES:

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3. VERIFY ALL MOUNTING HEIGHTS OF DEVICES ABOVE MILLWORK WITH ARCHITECTURAL PLANS.
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5. ALL RECEPTACLES WITH PAD LOADED CONTROL SHALL BE CONTROLLED VIA THE LIGHTING CONTROLS SHOWN ON THE LIGHTING PLANS. PROVIDE CONTROL DEVICES, ETC. AS REQUIRED TO ACHIEVE THE CONTROLS SHOWN.

DEMOLITION KEYED NOTES

(KEYED NOTES PER PROJECT)

D5 EXISTING FIRE ALARM INITIATION DEVICE TO BE DISCONNECTED, REMOVED, AND REPLACED. CONNECT TO NEW FIRE ALARM CONTROL PANEL IN SAME LOCATION.

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Rev 5/10/24

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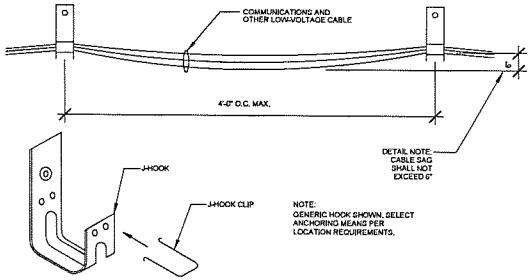
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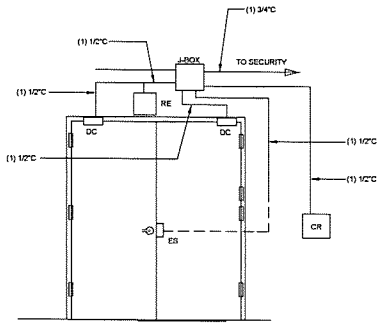
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LARGE SCALE PLANS -
SOUTH MEZZANINE

E302

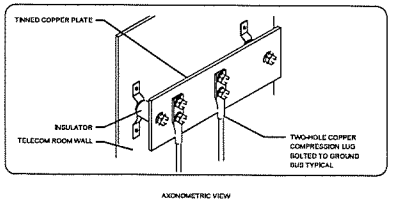


8 E900 TYPICAL CABLE SUPPORT HOOK INSTALLATION
SCALE: NONE

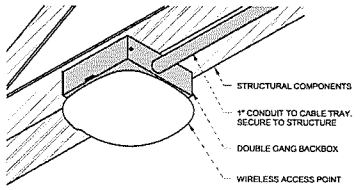


- CARD READER CONTROL WITH ELECTRIC STRIKE.
- ENTRY BY CARD READER, EXIT IS MANUAL AND ALWAYS AVAILABLE.
- REQUEST TO EXIT SHOWN ON PLANS.
- NOT ALL DEVICES ON DETAIL ARE AT EACH DOOR. REFER TO PLAN.

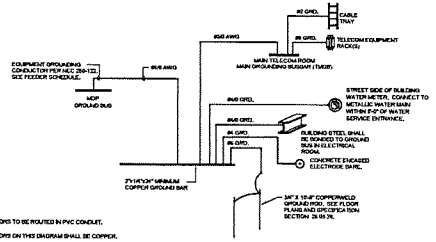
5 E900 TYPICAL ACCESS CONTROLS DOUBLE DOORS
SCALE: NONE



1 E900 TYPICAL GROUNDING BAR
SCALE: NONE

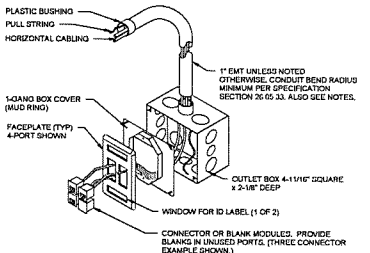


2 E900 TYPICAL WIRELESS ACCESS POINT PENDANT MOUNT
SCALE: NONE



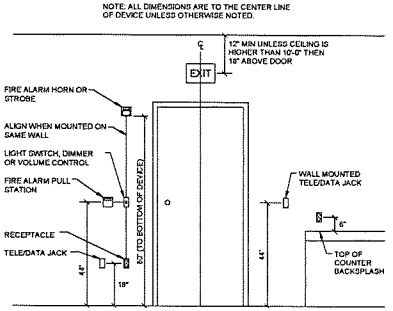
NOTES:
1. ALL GROUND CONDUCTORS TO BE ROUTED IN PVC CONDUIT.
2. ALL GROUND CONDUCTORS ON THIS DIAGRAM SHALL BE COPPER.

9 E900 TYPICAL GROUNDING SYSTEM
SCALE: NONE

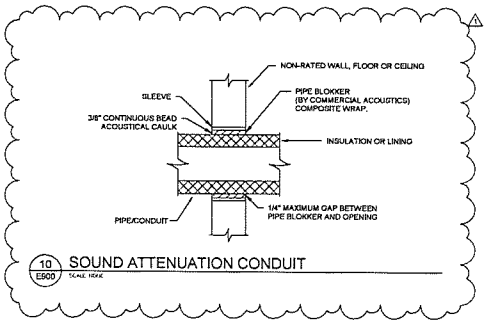


NOTES:
1. CONDUIT SHALL BE CONTINUOUS FROM OUTLET BOX TO ACCESSIBLE CEILING SPACE OR AS INDICATED ON DRAWINGS.
2. PROVIDE PULL STRING IN ALL CONDUITS.
3. REFER TO SPECIFICATION SECTION 27 00 05 FOR CONNECTOR TYPES.

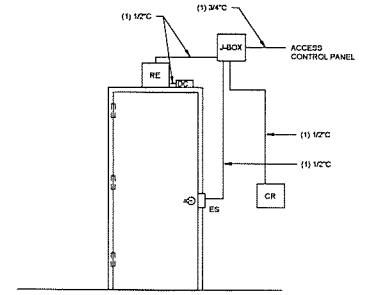
6 E900 TYPICAL COMMUNICATION EQUIPMENT OUTLET
SCALE: NONE



3 E900 TYPICAL MOUNTING HEIGHTS
SCALE: NONE

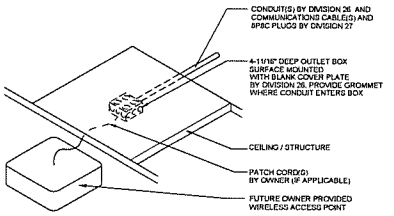


10 E900 SOUND ATTENUATION CONDUIT
SCALE: NONE



- CARD READER CONTROL WITH ELECTRIC STRIKE.
- ENTRY BY CARD READER, EXIT IS MANUAL AND ALWAYS AVAILABLE.
- REQUEST TO EXIT SHOWN ON PLANS.
- NOT ALL DEVICES ON DETAIL ARE AT EACH DOOR. REFER TO PLAN.

7 E900 TYPICAL ACCESS CONTROLS SINGLE DOOR
SCALE: NONE



4 E900 TYPICAL EQUIPMENT OUTLET FOR WIRELESS ACCESS - SURFACE
SCALE: NONE

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DETAILS - ELECTRICAL

E900

APPLICABLE CODES

ZONING CODE	CITY OF MADISON ZONING CODE
BUILDING CODE	WISCONSIN SPS 362 / 2015 IBC
EXISTING BUILDING CODE	WISCONSIN SPS 366 / 2015 IEBC
ACCESSIBILITY CODE	2009 ICC A117.1
FIRE SAFETY CODE	WISCONSIN SPS 314 / 2012 NFPA 1
PLUMBING CODE	WISCONSIN SPS 381-387
ELECTRICAL CODE	WISCONSIN SPS 316 / 2017 NEC / 2017 NFPA 70
MECHANICAL CODE	WISCONSIN SPS 364 / 2015 IMC
ENERGY CODE	WISCONSIN SPS 363 / 2015 IECC

ZONING

CLASSIFICATION	PR PARKS AND RECREATION
PERMITTED USE	CONDITIONAL USE AS A COMMUNITY CENTER
MINIMUM LOT SIZE	5 ACRES
MAXIMUM HEIGHT	2 STORIES / 35' (MAXIMUM HEIGHT MAY BE EXCEEDED WITH CUP APPROVAL)
SETBACKS REQUIRED	
FRONT YARD	30'
SIDE YARD	30'
REAR YARD	30'
PARKING	
# OF SPACES REQ'D	STAFF TO PROVIDE DETERMINATION IN PR DISTRICT, DEPENDING UPON USE PROPOSED
# OF SPACES PROVIDED	78

NOTES

1. EXISTING OCCUPANCY, OCCUPANT LOAD, AND MEANS OF EGRESS TO REMAIN UNLESS NOTED OTHERWISE.
2. BUILDING PERIMETER IS GREATER THAN 30' FROM CLOSEST INTERIOR LOT LINE. ENTIRE WIDTH OF NEAREST PUBLIC WAY, AND ANY ADJACENT BUILDINGS. SEE BOUNDARY, TOPOGRAPHIC, AND UTILITY SURVEY FOR ADDITIONAL INFORMATION.
3. GRADE PLANE PER IBC CHAPTER 2 = EL 185'-0"

BUILDING DATA

DATE OF ORIGINAL CONSTRUCTION	1958	
OCC. CLASSIFICATION	A-3 (COMMUNITY HALL), B ACCESSORY (EXISTING)	
CONSTRUCTION TYPE	IIB (EXISTING)	
ALTERATION TYPE	ADDITION + LEVEL 2 ALTERATION	
SPRINKLERED	YES - NFPA 13	
FIRE ALARM	YES - COMPLIANT WITH IBC 907.2.2	
BUILDING HEIGHT (NEW CONSTRUCTION)	35'-3" ABOVE GRADE PLANE	
NUMBER OF STORIES	1 (EXISTING MEZZANINES)	
SQUARE FEET / FLOOR	ALLOWABLE	ACTUAL
FIRST FLOOR	38,000 SF + 9,500 SF = 47,500 SF	42,940 SF
	100% FRONTAGE INCREASE	

CONSTRUCTION REQUIREMENTS

EXT. WALLS-NON BEARING	0 - HR
STRUCTURAL FRAME	0 - HR
PARTITIONS	0 - HR
SHAFT ENCLOSURES	1 - HR LESS THAN FOUR STORIES
FLOOR/CEILING	0 - HR
ROOF/CEILING	0 - HR
ROOFING CLASSIFICATION	CLASS C

ENERGY

CLIMATE ZONE	6			
ENVELOPE REQUIREMENTS	R-VALUE		U-FACTOR	PROVIDED
ROOF	20		0.048	R-25
WALLS	13.3		0.060	R-20
BELOW GRADE	7.5		0.119 (C-VALUE)	R-20
UNHEATED SLAB-ON-GRADE	10 @ 24" BELOW		0.54 (F-VALUE)	R-20 @ 48" BELOW
DOORS			0.70	U-0.70
FENESTRATION REQUIREMENTS	SHGC SEW	SHGC N	U-FACTOR	PROVIDED
FIXED	0.40	0.53	0.36	U-0.20, SHGC 0.37

MEANS OF EGRESS

OCCUPANT LOAD	1657 OCCUPANTS
EXITS PER STORY REQ'D	4
EXITS PER STORY PROVIDED	5
EXIT DOOR WIDTH REQ'D	248"
EXIT DOOR WIDTH PROVIDED	350"
EXIT ACCESS TRAVEL DISTANCE REQ'D	250'
EXIT ACCESS TRAVEL DISTANCE PROVIDED	SEE CODE CONFORMANCE PLAN

PLUMBING

IEBC 810.1 / IBC TABLE 2902.1

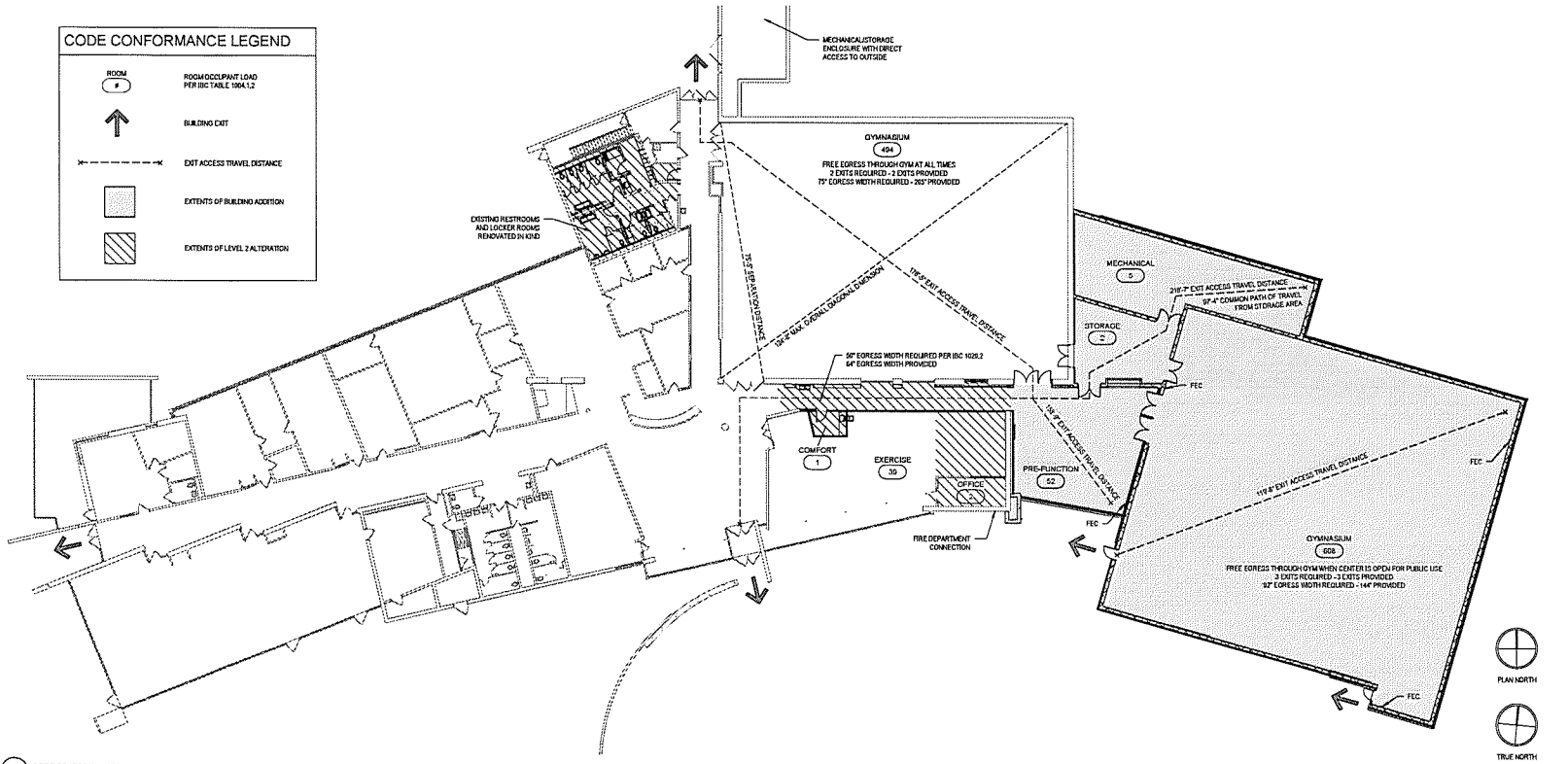
FIXTURES	OCCUPANT LOAD		REQUIREMENTS	REQUIRED	PROVIDED
WATER CLOSETS	MEN	829	1 PER 125 OCCUPANTS	7	8
	WOMEN	829	1 PER 65 OCCUPANTS	13	9 + 4 UNISEX
				20	21
LAVATORIES	MEN	829	1 PER 200 OCCUPANTS	5	5
	WOMEN	829	1 PER 200 OCCUPANTS	5	5 + 4 UNISEX
				10	14
DRINKING FOUNTAINS	1657		1 PER 500 OCCUPANTS	4	5
SERVICE SINKS				1	1

NOTES

1. FAMILY OR ASSISTED-USE TOILET ROOMS ARE PERMITTED TO BE INCLUDED IN THE NUMBER OF FIXTURES FOR MALE OR FEMALE OCCUPANTS IN ASSEMBLY OCCUPANCIES PER IBC 2902.1.2.
2. URINALS MAY BE SUBSTITUTED FOR UP TO 67 PERCENT OF REQUIRED WATER CLOSETS IN ASSEMBLY OCCUPANCIES PER IPC 418.2 (REFERENCED IN IBC TABLE 2902.1).

CODE CONFORMANCE LEGEND

- ROOM (#) — ROOM OCCUPANT LOAD PER IBC TABLE 1004.1.2
- BUILDING EXIT
- EXIT ACCESS TRAVEL DISTANCE
- EXTENTS OF BUILDING ADDITION
- EXTENTS OF LEVEL 2 ALTERATION



1 CODE CONFORMANCE PLAN
SCALE: 1/16" = 1'-0"

Engberg Anderson ARCHITECTS
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ORIGINAL

WARNER PARK COMMUNITY RECREATION CENTER EXPANSION

1625 NORTHPORT DRIVE
MADISON, WI 53704

CITY OF MADISON PARKS DIVISION
330 EAST LAKESIDE STREET
MADISON, WI 53715

PROJECT NUMBER 223471.00

ISSUED FOR:

BID SET 5/15/2024

REVISION FOR:

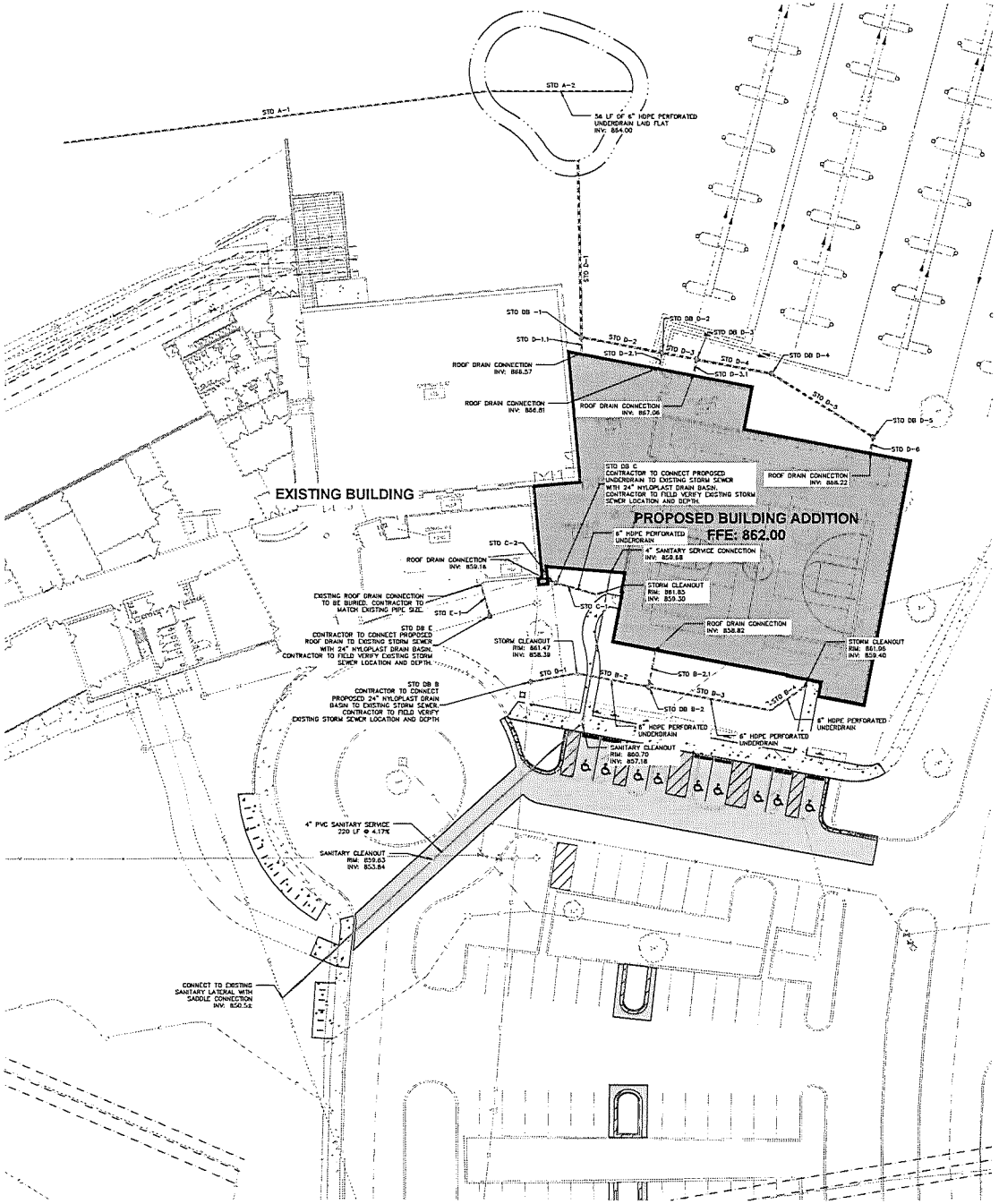
NO. DESCRIPTION DATE

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CHECKED BY JWH

CODE CONFORMANCE

G001



PROPOSED STORM SEWER STRUCTURE TABLE

LABEL	RIM EL. (FT)	INVERT EL. (FT)	DEPTH (FT)	STRUCTURE DESC.	FRAME & GRATE
STD DB -1	868.95	N INV: 865.52 (10") S INV: 866.52 (8") E INV: 866.52 (8")	2.4	24 IN DB	ADS DRAIN WITH BEEHIVE GRATE
STD DB B	861.24	E INV: 858.20 (6")	3.0	24 IN DB	ADS DRAIN WITH BEEHIVE GRATE
STD DB B-2	861.31	W INV: 858.68 (6") E INV: 858.68 (6") N INV: 858.88 (6")	2.8	24 IN DB	ADS DRAIN WITH BEEHIVE GRATE
STD DB C	861.99	E INV: 859.13 (6") W INV: 859.13 (6")	2.9	24 IN DB	ADS DRAIN WITH BEEHIVE GRATE
STD DB D-2	869.23	W INV: 866.78 (8") E INV: 866.76 (8") S INV: 866.76 (8")	2.5	24 IN DB	ADS DRAIN WITH BEEHIVE GRATE
STD DB D-3	870.14	W INV: 866.97 (8") E INV: 866.97 (8") S INV: 866.97 (8")	3.2	24 IN DB	ADS DRAIN WITH BEEHIVE GRATE
STD DB D-4	872.22	W INV: 867.42 (8") SE INV: 867.42 (8")	4.8	12 IN DB	ADS DRAIN WITH BEEHIVE GRATE
STD DB D-5	874.44	NW INV: 868.13 (8") S INV: 868.13 (8")	6.3	12 IN DB	ADS DRAIN WITH BEEHIVE GRATE
STD DB E	861.44	N INV: 858.70 (6")	2.7	24 IN DB	ADS DRAIN WITH BEEHIVE GRATE

PROPOSED STORM SEWER PIPE TABLE

LABEL	FROM	TO	LENGTH	INVERT EL. (FT)	DISCHARGE EL. (FT)	SLOPE	SIZE & MATERIAL
STD A-1	STD A-1	STD A	188'	864.00	862.00	1.18%	6 IN HDPE
STD A-2	STD A-2	STD A-1	56'	864.00	864.00	0.00%	6 IN HDPE
STD B-1	STD B-1	STD DB B	19'	858.39	858.20	1.00%	6 IN HDPE
STD B-2	STD DB B-2	STD B-1	29'	858.68	858.39	1.00%	6 IN HDPE
STD B-2.1	STD B-1.2	STD DB B-2	14'	858.82	858.68	1.00%	6 IN HDPE
STD B-3	STD B-3	STD DB B-2	49'	859.17	858.68	1.00%	6 IN HDPE
STD B-4	STD B-4	STD B-3	16'	859.40	859.17	1.50%	6 IN HDPE
STD C-1	STD C-1	STD DB C	17'	859.30	859.13	1.00%	6 IN HDPE
STD C-2	STD C-2	STD DB C	3'	859.16	859.13	1.00%	6 IN HDPE
STD D-1	STD DB -1	STD D	70'	866.52	866.00	0.75%	10 IN HDPE
STD D-1.1	STD D-1.1	STD DB -1	6'	866.57	866.52	0.75%	8 IN HDPE
STD D-2	STD DB D-2	STD DB -1	32'	866.76	866.52	0.75%	8 IN HDPE
STD D-2.1	STD D-2.1	STD DB D-2	8'	866.81	866.78	0.75%	8 IN HDPE
STD D-3	STD DB D-3	STD DB D-2	14'	866.97	866.78	1.50%	8 IN HDPE
STD D-3.1	STD D-3.1	STD DB D-3	6'	867.06	866.97	1.50%	8 IN HDPE
STD D-4	STD DB D-4	STD DB D-3	30'	867.42	866.97	1.50%	8 IN HDPE
STD D-5	STD DB D-5	STD DB D-4	47'	868.13	867.42	1.50%	8 IN HDPE
STD D-6	STD D-6	STD DB D-5	6'	868.22	868.13	1.50%	8 IN HDPE
STD E-1	STD E-1	STD DB E	13'	858.95	858.70	2.00%	6 IN HDPE

Engberg Anderson ARCHITECTS

MILWAUKEE | MADISON | CHICAGO

JSD
MADISON REGIONAL OFFICE
161 HORIZON DRIVE, SUITE 101
VERONA, WISCONSIN 53593
P: 608.848.5060

WARNER PARK COMMUNITY RECREATION CENTER EXPANSION

1625 NORTHPORT DRIVE
MADISON, WI 53704

CITY OF MADISON PARKS DIVISION
CITY-COUNTY BUILDING, ROOM 104
210 MARTIN LUTHER KING JR. BLVD
MADISON, WI 53703

PROJECT NUMBER 223471.00

ISSUED FOR:

BID SET 05/16/2024

REVISION FOR:

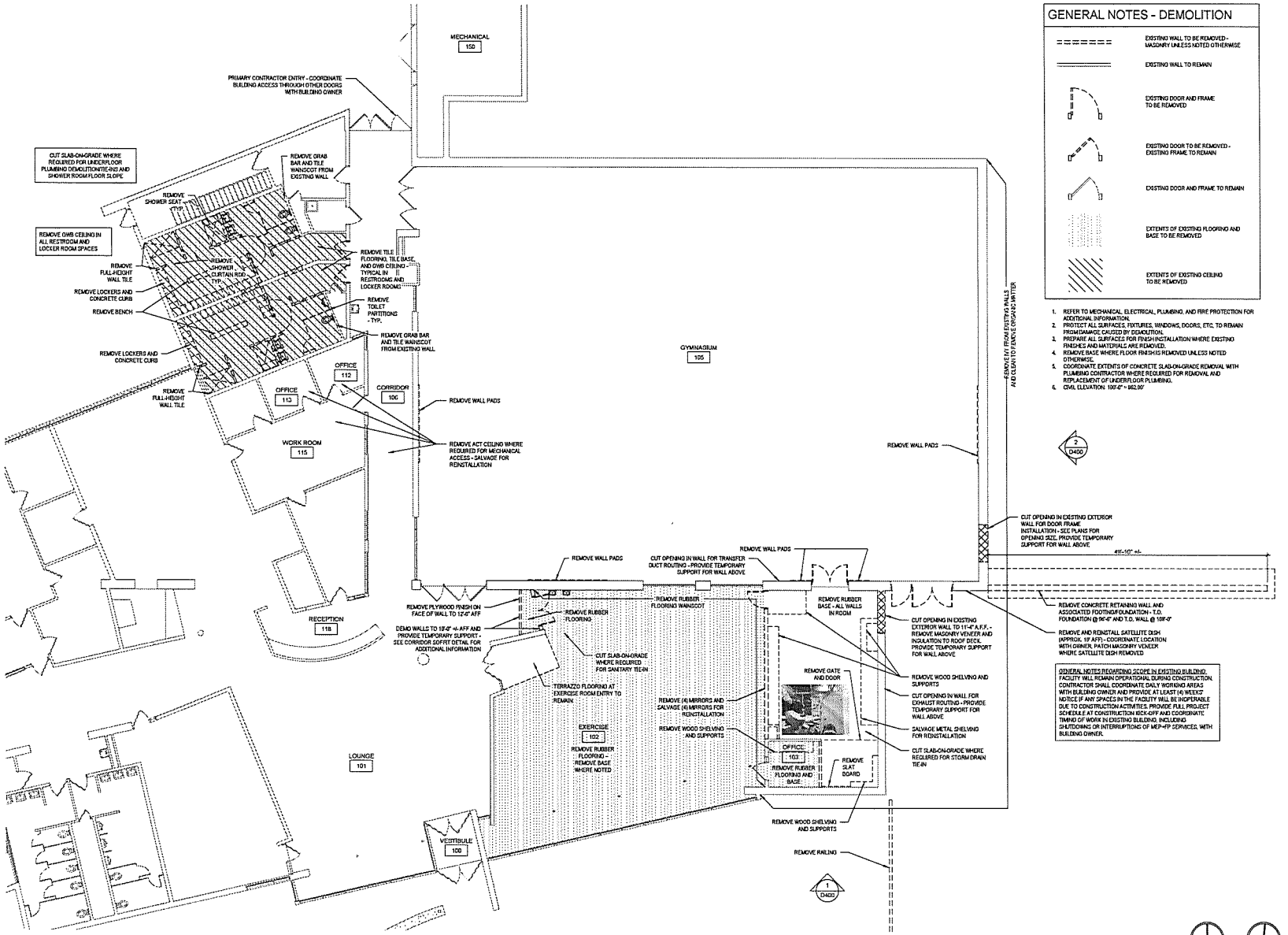
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CHECKED BY KJY

UTILITY PLAN

C500



GENERAL NOTES - DEMOLITION

- EXISTING WALL TO BE REMOVED - MASONRY UNLESS NOTED OTHERWISE
- EXISTING WALL TO REMAIN
- EXISTING DOOR AND FRAME TO BE REMOVED
- EXISTING DOOR TO BE REMOVED - EXISTING FRAME TO REMAIN
- EXISTING DOOR AND FRAME TO REMAIN
- EXTENTS OF EXISTING FLOORING AND BASE TO BE REMOVED
- EXTENTS OF EXISTING CEILING TO BE REMOVED

1. REFER TO MECHANICAL, ELECTRICAL, PLUMBING, AND FIRE PROTECTION FOR ADDITIONAL INFORMATION.
2. PROTECT ALL SURFACES, FIXTURES, WINDOWS, DOORS, ETC. TO REMAIN FROM DAMAGE CAUSED BY DEMOLITION.
3. PREPARE ALL SURFACES FOR FINISH INSTALLATION WHERE EXISTING FINISHES AND MATERIALS ARE REMOVED.
4. REMOVE BASE WHERE FLOOR FINISH IS REMOVED UNLESS NOTED OTHERWISE.
5. COORDINATE EXTENTS OF CONCRETE SLAB-ON-GRADE REMOVAL WITH PLUMBING CONTRACTOR WHERE REQUIRED FOR REMOVAL AND REPLACEMENT OF UNDERFLOOR PLUMBING.
6. CIVIL ELEVATION 100'-0" = 862.99'

GENERAL NOTES REGARDING SCOPE IN EXISTING BUILDING:
FACILITY WILL REMAIN OPERATIONAL DURING CONSTRUCTION. CONTRACTOR SHALL COORDINATE DAILY WORKING AREAS WITH BUILDING OWNER AND PROVIDE AT LEAST (4) WEEKS' NOTICE IF ANY SPACES IN THE FACILITY WILL BE INOPERABLE DUE TO CONSTRUCTION ACTIVITIES. PROVIDE FULL PROJECT SCHEDULE AT CONSTRUCTION KICK-OFF AND COORDINATE TIMING OF WORK IN EXISTING BUILDING, INCLUDING SHUTDOWNS OR INTERRUPTIONS OF MEP-FP SERVICES, WITH BUILDING OWNER.

1 FIRST FLOOR PARTIAL DEMOLITION PLAN
SCALE: 1/8" = 1'-0"

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ORIGINAL

WARNER PARK COMMUNITY RECREATION CENTER EXPANSION

1625 NORTHPORT DRIVE
MADISON, WI 53704

CITY OF MADISON PARKS DIVISION
330 EAST LAKESIDE STREET
MADISON, WI 53715

PROJECT NUMBER 223471.00

ISSUED FOR:

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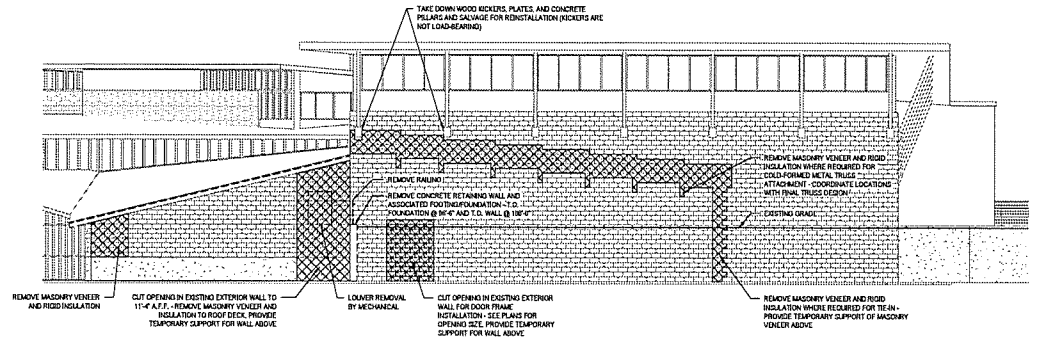
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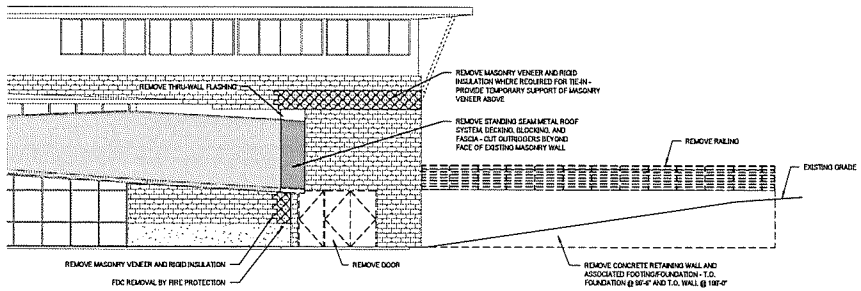
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DEMOLITION PLAN

D101



2 EAST DEMOLITION ELEVATION
SCALE: 1/8" = 1'-0"



1 SOUTH DEMOLITION ELEVATION
SCALE: 1/8" = 1'-0"

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Original

WARNER PARK
COMMUNITY RECREATION
CENTER EXPANSION

1625 NORTHPORT DRIVE
MADISON, WI 53704

CITY OF MADISON PARKS DIVISION
330 EAST LAKESIDE STREET
MADISON, WI 53715

PROJECT NUMBER 223471.00

ISSUED FOR:

BID SET	5/16/2024

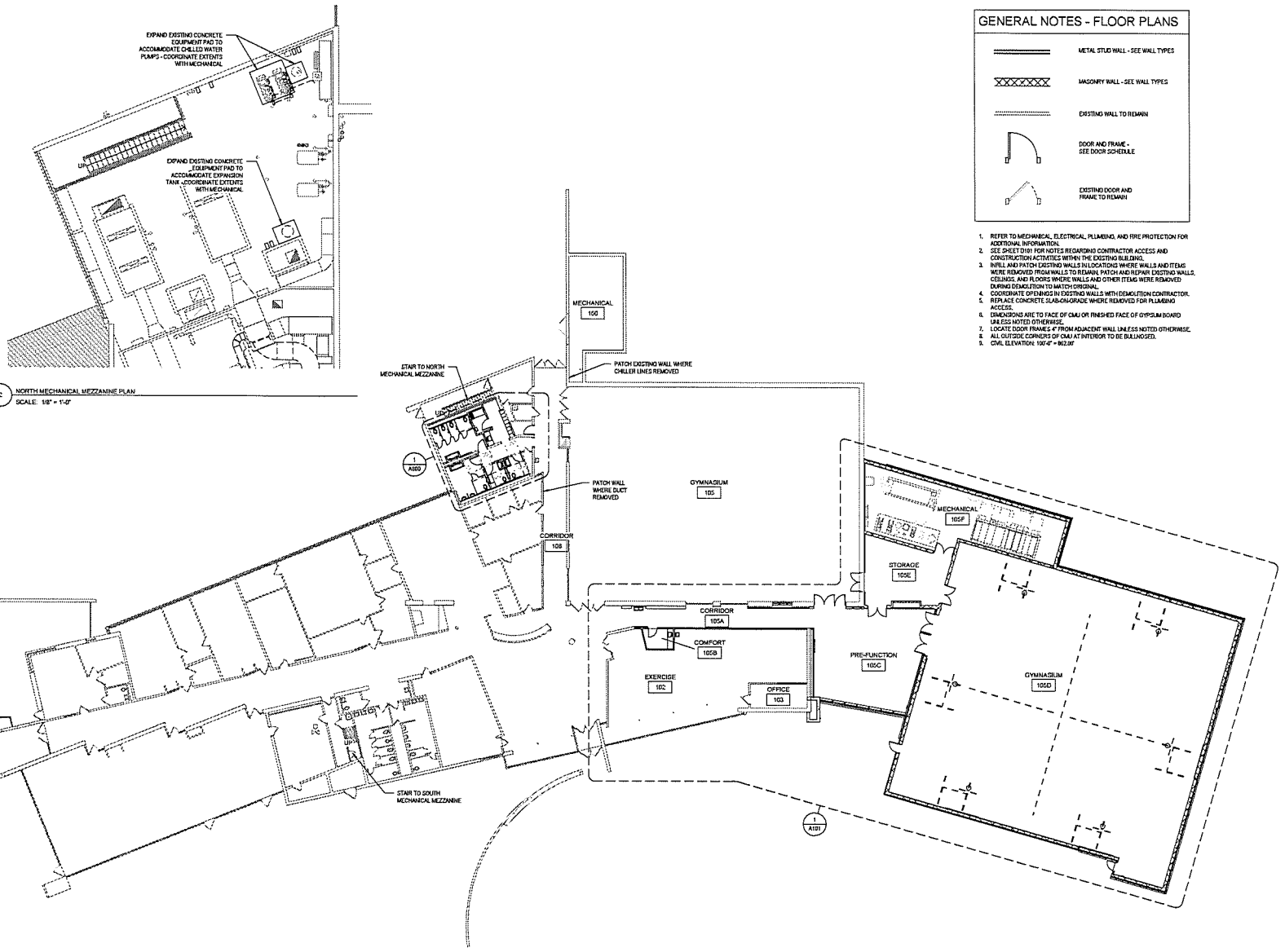
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DEMOLITION
ELEVATIONS

D400



2 NORTH MECHANICAL MEZZANINE PLAN
SCALE: 1/8" = 1'-0"

1 OVERALL FIRST FLOOR PLAN
SCALE: 1/16" = 1'-0"

GENERAL NOTES - FLOOR PLANS

- METAL STUD WALL - SEE WALL TYPES
- MASONRY WALL - SEE WALL TYPES
- EXISTING WALL TO REMAIN
- DOOR AND FRAME - SEE DOOR SCHEDULE
- EXISTING DOOR AND FRAME TO REMAIN

1. REFER TO MECHANICAL, ELECTRICAL, PLUMBING, AND FIRE PROTECTION FOR ADDITIONAL INFORMATION.
2. SEE SHEET D101 FOR NOTES REGARDING CONTRACTOR ACCESS AND CONSTRUCTION ACTIVITIES WITHIN THE EXISTING BUILDING.
3. INFILL AND PATCH EXISTING WALLS IN LOCATIONS WHERE WALLS AND ITEMS WERE REMOVED FROM WALLS TO REMAIN. PATCH AND REPAIR EXISTING WALLS, CEILINGS, AND FLOORS WHERE WALLS AND OTHER ITEMS WERE REMOVED DURING DEMOLITION TO MATCH ORIGINAL.
4. COORDINATE OPENINGS IN EXISTING WALLS WITH DEMOLITION CONTRACTOR.
5. REPLACE CONCRETE SLAB-ON-GRADE WHERE REMOVED FOR PLUMBING ACCESS.
6. DIMENSIONS ARE TO FACE OF CMU OR FINISHED FACE OF GYPSUM BOARD UNLESS NOTED OTHERWISE.
7. LOCATE DOOR FRAMES 4" FROM ADJACENT WALL UNLESS NOTED OTHERWISE.
8. ALL OUTSIDE CORNERS OF CMU AT INTERIOR TO BE BULLNOSED.
9. CIVIL ELEVATION: 100'-0" = 902.00'

PLAN NORTH TRUE NORTH

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WARNER PARK COMMUNITY RECREATION CENTER EXPANSION

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MADISON, WI 53704

CITY OF MADISON PARKS DIVISION
330 EAST LAKESIDE STREET
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PROJECT NUMBER 223471.00

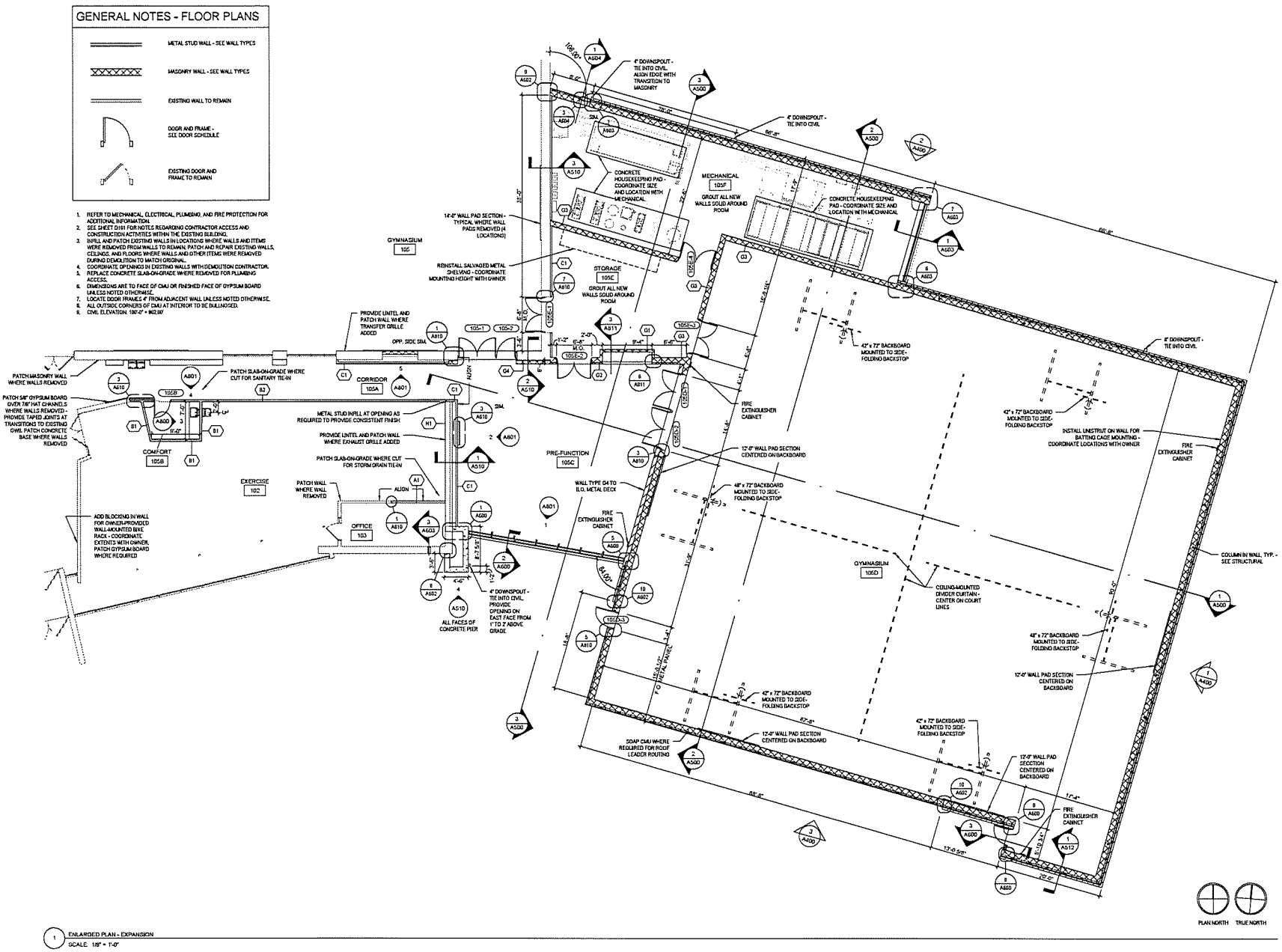
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OVERALL FLOOR PLAN

A100



1 ENLARGED PLAN - EXPANSION
SCALE: 1/8" = 1'-0"

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01/26/2024

WARNER PARK COMMUNITY RECREATION CENTER EXPANSION

1625 NORTHPORT DRIVE
MADISON, WI 53704

CITY OF MADISON PARKS DIVISION
330 EAST LAKESIDE STREET
MADISON, WI 53715

PROJECT NUMBER 223471.00

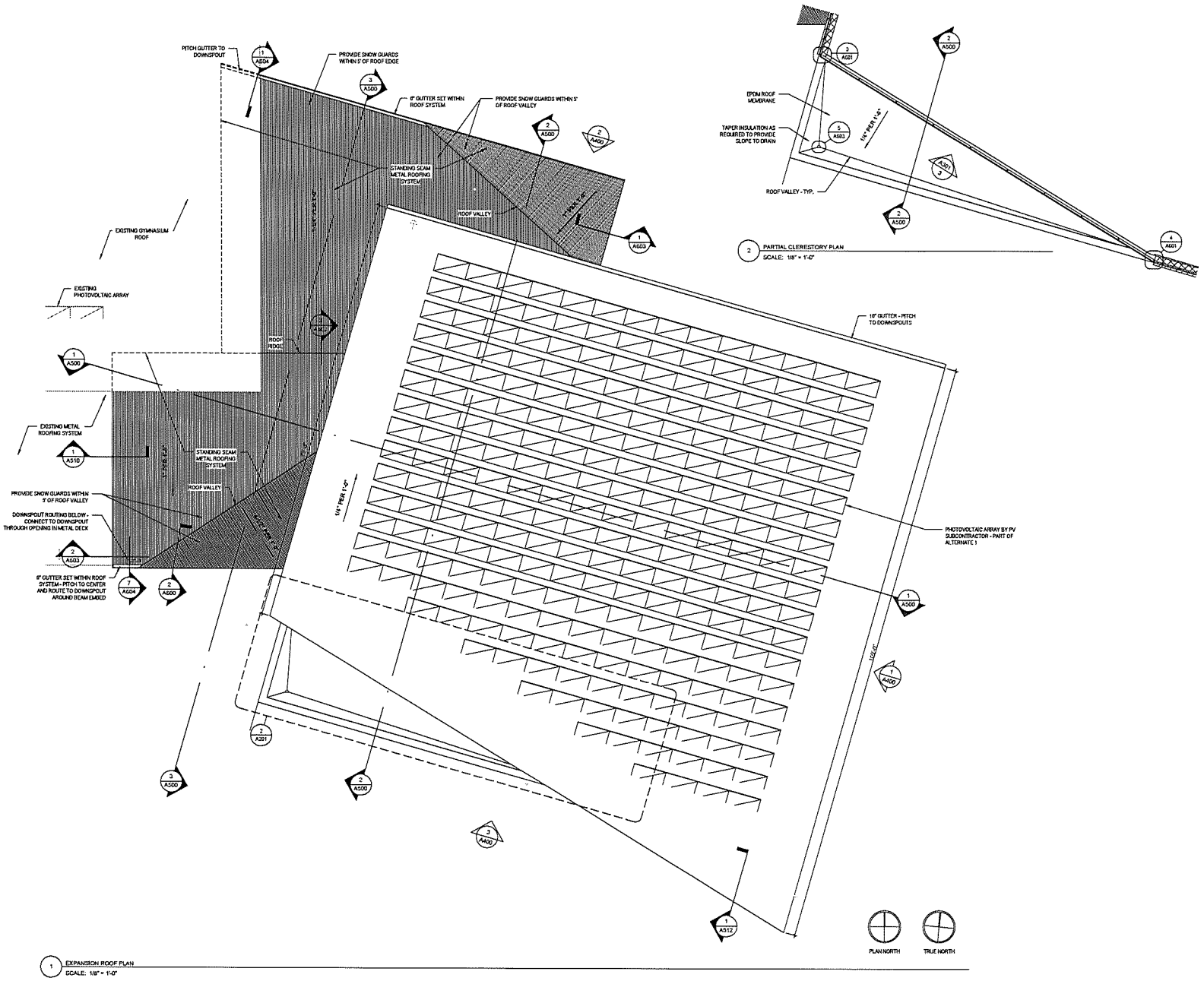
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EXPANSION FLOOR PLAN

A101



1 EXPANSION ROOF PLAN
SCALE: 1/8" = 1'-0"

2 PARTIAL CLERESTORY PLAN
SCALE: 1/8" = 1'-0"

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WARNER PARK
COMMUNITY RECREATION
CENTER EXPANSION

1625 NORTHPORT DRIVE
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330 EAST LAKESIDE STREET
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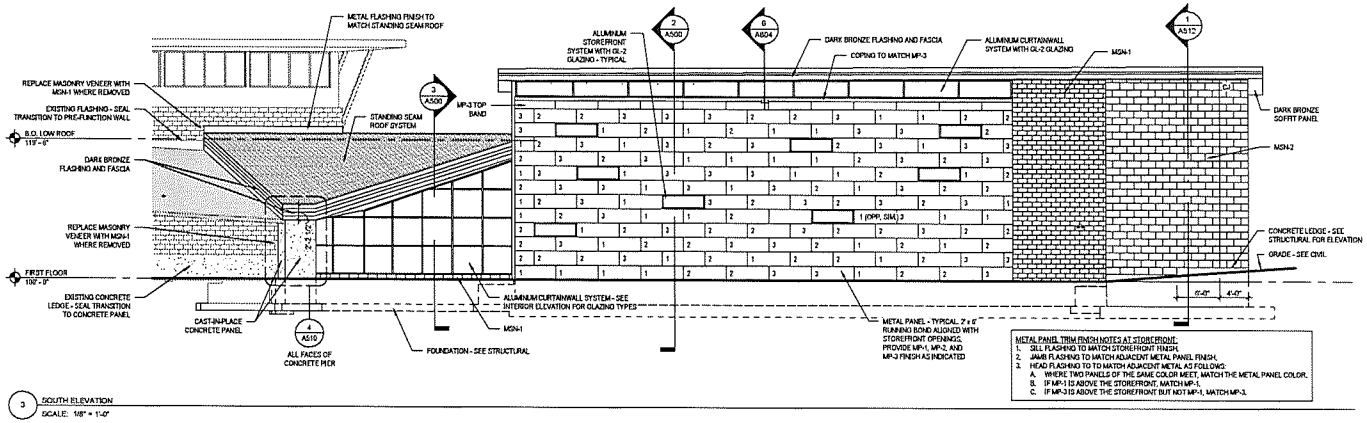
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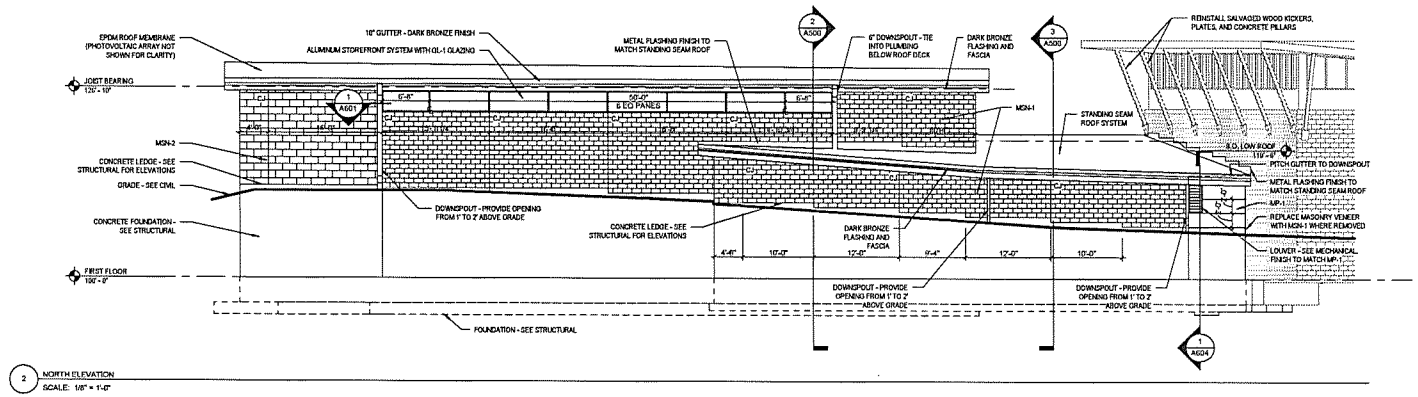
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EXPANSION ROOF PLAN

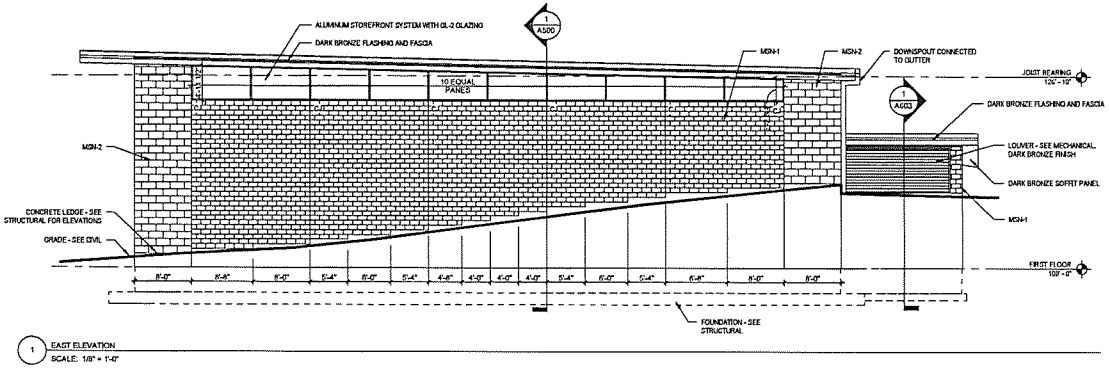
A201





EXTERIOR FINISH LEGEND

MSN-1	COUNTY MATERIALS DECORATIVE CONCRETE MASONRY COLOR: 15-12TC BISQUE (MATCHED TO EXISTING) TEXTURE: SPLITFACE 8" x 16" RUNNING BOND PATTERN
MSN-2	ARRISCRAFT THIN-CLAD RENAISSANCE UNITS COLOR: OAK RIDGE TEXTURE: SMOOTH 12" x 24" RUNNING BOND PATTERN
MP-1	DRI-DESIGN EN-V METAL PANEL SYSTEM COLOR: EN-V 008 CITYSCAPE 24" x 72" RUNNING BOND PATTERN
MP-2	DRI-DESIGN EN-V METAL PANEL SYSTEM COLOR: DRI-005 SIERRA TAN 24" x 72" RUNNING BOND PATTERN
MP-3	DRI-DESIGN EN-V METAL PANEL SYSTEM COLOR: EN-V 009 SLATE GRAY 24" x 72" RUNNING BOND PATTERN



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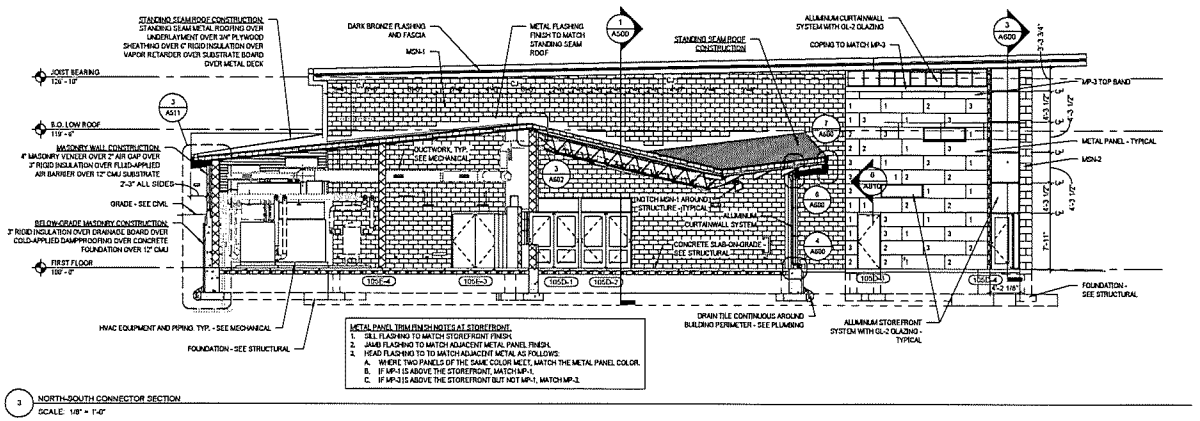
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EXTERIOR ELEVATIONS

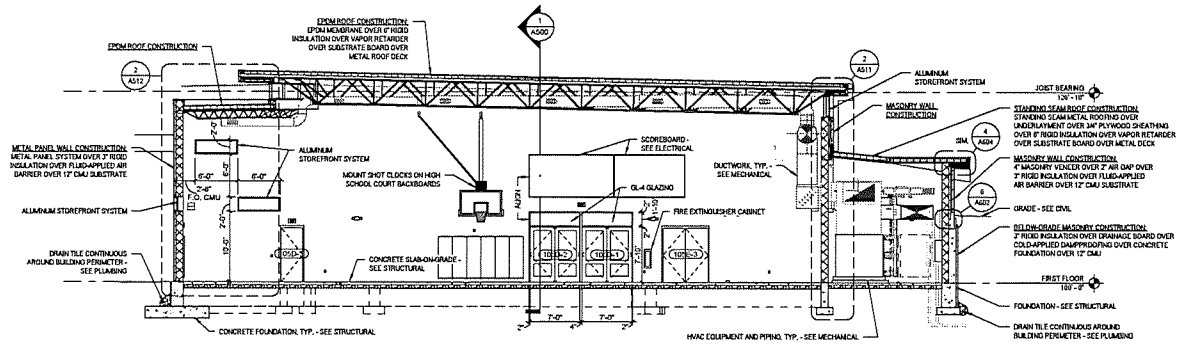
A400

EXTERIOR FINISH LEGEND

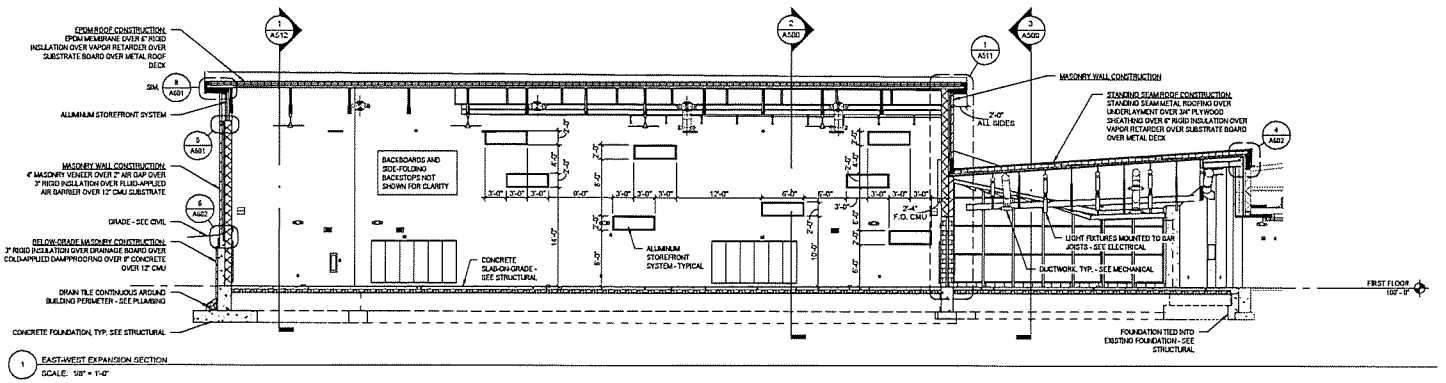
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MSN-2	ARRISCRAFT THIN-CLAD RENAISSANCE UNITS COLOR: OAK RIDGE TEXTURE: SMOOTH 12" x 24" RUNNING BOND PATTERN
MP-1	DRI-DESIGN DAV METAL PANEL SYSTEM COLOR: DAV 008 CITYSCAPE 24" x 72" RUNNING BOND PATTERN
MP-2	DRI-DESIGN DAV METAL PANEL SYSTEM COLOR: DRI-605 SIERRA TAN 24" x 72" RUNNING BOND PATTERN
MP-3	DRI-DESIGN DAV METAL PANEL SYSTEM COLOR: DAV 009 SLATE GRAY 24" x 72" RUNNING BOND PATTERN



3 NORTH-SOUTH CONNECTOR SECTION
SCALE: 1/8" = 1'-0"



2 NORTH-SOUTH GYMNASIUM SECTION
SCALE: 1/8" = 1'-0"



1 EAST-WEST EXPANSION SECTION
SCALE: 1/8" = 1'-0"

Engberg Anderson ARCHITECTS

MILWAUKEE | MADISON | CHICAGO

0216 W4L

WARNER PARK COMMUNITY RECREATION CENTER EXPANSION

1625 NORTHPORT DRIVE
MADISON, WI 53704

CITY OF MADISON PARKS DIVISION
330 EAST LAKESIDE STREET
MADISON, WI 53715

PROJECT NUMBER 223471.00

ISSUED FOR:

BID SET	5/16/2024

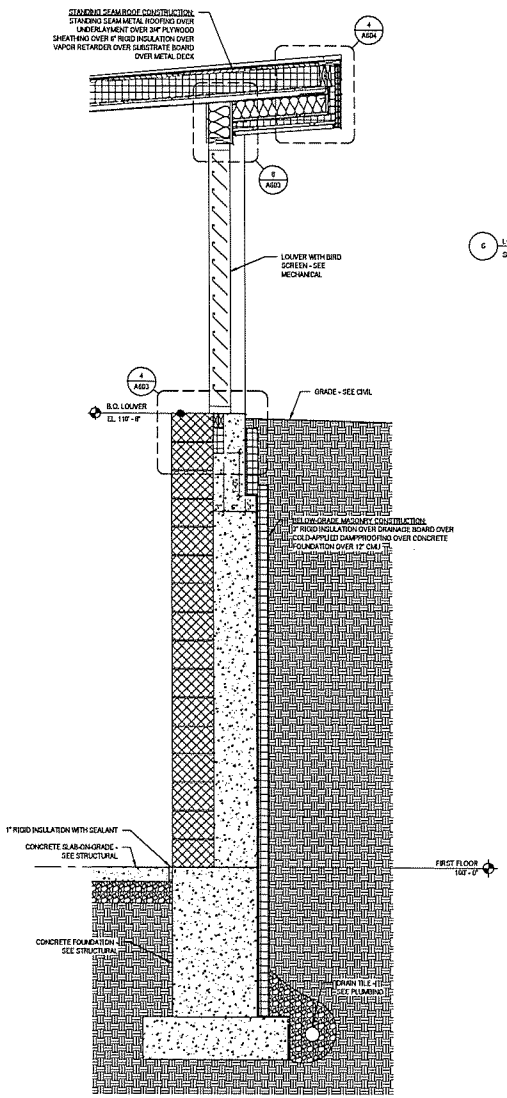
REVISION FOR:

NO.	DESCRIPTION	DATE

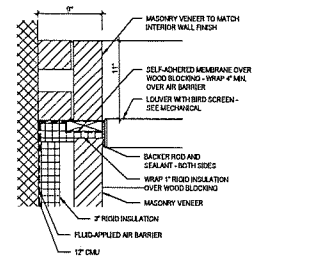
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CHECKED BY	JWH

BUILDING SECTIONS

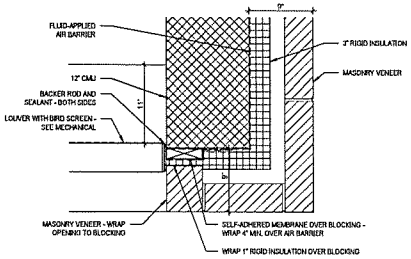
A500



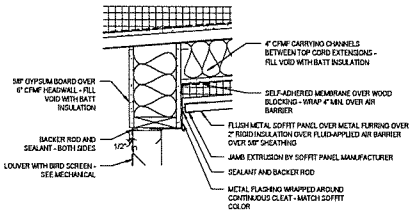
1 EAST WALL LOUVER SECTION
SCALE: 3/4" = 1'-0"



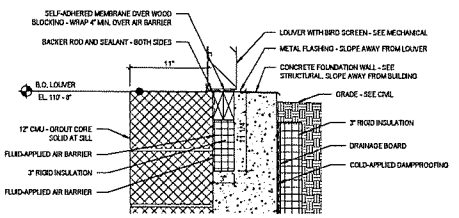
6 LOUVER JAMB @ GYM
SCALE: 1 1/2" = 1'-0"



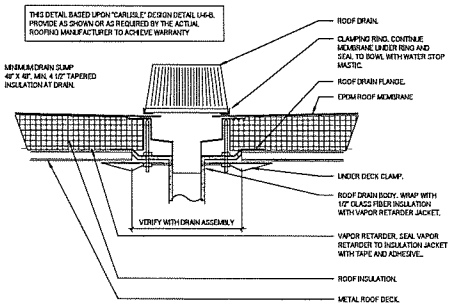
7 LOUVER JAMB @ EXT.
SCALE: 1 1/2" = 1'-0"



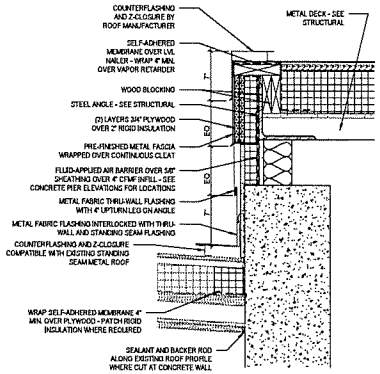
8 LOUVER HEAD
SCALE: 1 1/2" = 1'-0"



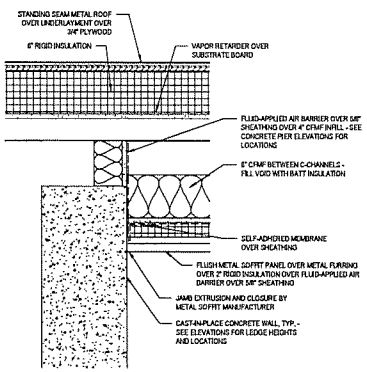
4 LOUVER SILL @ MASONRY
SCALE: 1 1/2" = 1'-0"



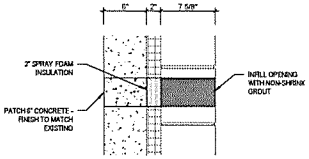
5 ROOF DRAIN
SCALE: 1 1/2" = 1'-0"



2 STANDING SEAM @ CONCRETE
SCALE: 1 1/2" = 1'-0"



3 INFILL WHERE FDC REMOVED
SCALE: 1 1/2" = 1'-0"



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WARNER PARK COMMUNITY RECREATION CENTER EXPANSION

1625 NORTHPORT DRIVE
MADISON, WI 53704

CITY OF MADISON PARKS DIVISION
330 EAST LAKESIDE STREET
MADISON, WI 53715

PROJECT NUMBER 223471.00

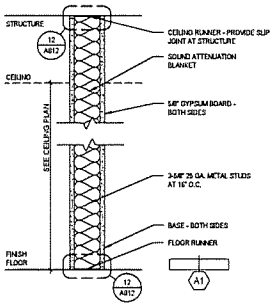
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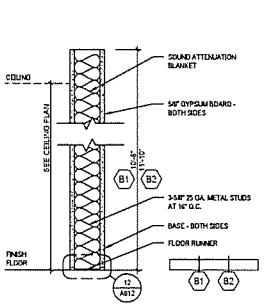
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EXTERIOR DETAILS

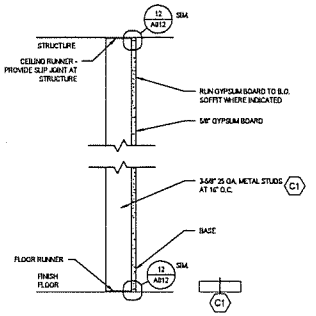
A603



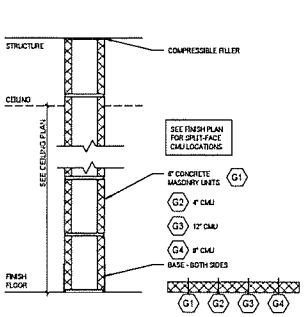
WALL TYPE A - NON RATED



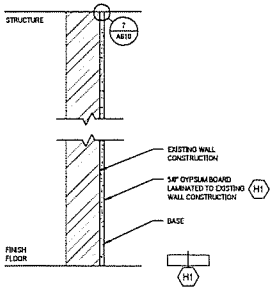
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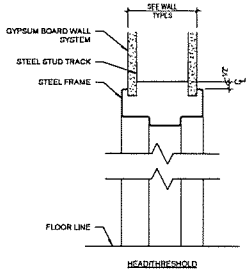
WALL TYPE C - NON RATED



WALL TYPE G - NON RATED

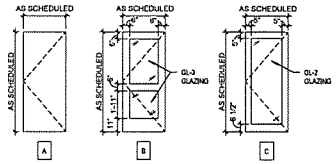


WALL TYPE H - NON RATED

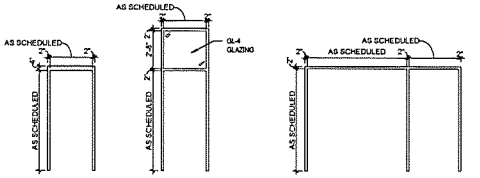


5 HM HEAD @ METAL STUDS
SCALE: 3" = 1'-0"

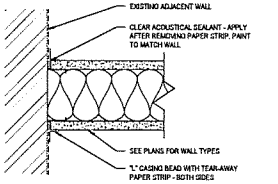
DOOR AND FRAME SCHEDULE																
	DOOR						FRAME			DETAIL						
NUMBER	TYPE	MATL	FINISH		WIDTH	HEIGHT	TYPE	MATL	FINISH	THRESH	JAMB	HEAD	LABEL	HARDWARE	REMARKS	NUMBER
105-1	B	WD	STAINED	(2)	7'-0"	7'-10"	C	HM	PAINTED	7/A812 SIM.	1/A610	2/A610		1		105-1
105-2	B	WD	STAINED		3'-0"	7'-10"	C	HM	PAINTED	7/A812 SIM.	1/A610	2/A610		2		105-2
105B	A	WD	STAINED		3'-0"	7'-0"	B	HM	PAINTED	-	3/A610	5/A610		3		105B
105D-1	B	WD	STAINED	(2)	7'-0"	7'-10"	SEE SECT	HM	PAINTED	8/A812	3/A610	4/A610		5		105D-1
105D-2	B	WD	STAINED	(2)	7'-0"	7'-10"	SEE SECT	HM	PAINTED	8/A812	3/A610	4/A610		4		105D-2
105D-3	A	INSUL HM	PAINTED		3'-0"	7'-8"	A	INSUL HM	PAINTED	2/A610	5/A610	6/A610		6		105D-3
105D-4	C	ALUM	DK. BRZ.		3'-0"	7'-10"	SEE SECT	ALUM	DK. BRZ.	2/A610	6 & 7/A600			7	PART OF STOREFRONT SYSTEM	105D-4
105E-1	A	WD	STAINED	(2)	3'-2"	7'-8"	A	HM	PAINTED	20/A10 SIM.	7/A610	8/A610		9		105E-1
105E-2	A	WD	STAINED	(2)	3'-2"	7'-8"	A	HM	PAINTED	7/A812	4/A610	4/A610		9		105E-2
105E-3	A	WD	STAINED	(2)	3'-2"	7'-8"	A	HM	PAINTED	2/A812	4/A610	4/A610		9		105E-3
105E-4	A	HM	PAINTED	(2)	3'-2"	7'-8"	A	HM	PAINTED	-	4/A610	4/A610		8		105E-4
110	A	WD	STAINED		3'-0"	7'-10"	EXIST	HM	PAINTED	4/A812				10	INSTALL DOOR IN EXISTING FRAME	110
111A	A	-	-		3'-0"	7'-0"	A	HM	PAINTED	-	5/A610	4/A610			FRAME ONLY	111A
111B	A	WD	STAINED		3'-0"	7'-0"	A	HM	PAINTED	5/A812	4/A610	4/A610		3		111B
111C	A	WD	STAINED		3'-0"	7'-0"	A	HM	PAINTED	5/A812	5/A610	4/A610		11		111C
111D	A	WD	STAINED		3'-0"	7'-0"	A	HM	PAINTED	5/A812	4/A610	4/A610		11		111D
111F	A	WD	STAINED		3'-0"	7'-0"	A	HM	PAINTED	5/A812	4/A610	4/A610		3		111F
111G	A	WD	STAINED		3'-0"	7'-0"	A	HM	PAINTED	5/A812	4 & 6/A610	4/A610		3		111G



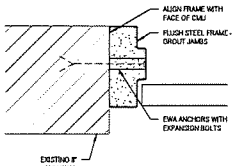
DOOR TYPES



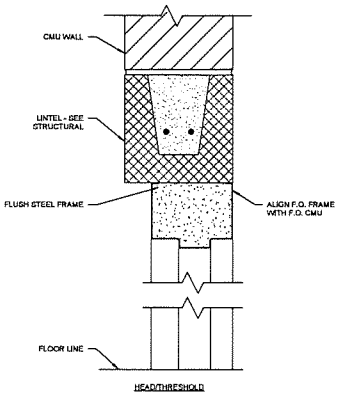
FRAME TYPES

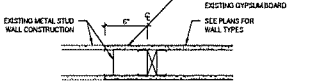


7 DISSIMILAR MATERIAL TRANSITION
SCALE: 3" = 1'-0"

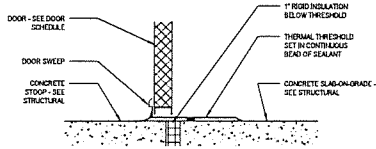


6 HM JAMB @ EXISTING CMU
SCALE: 3" = 1'-0"

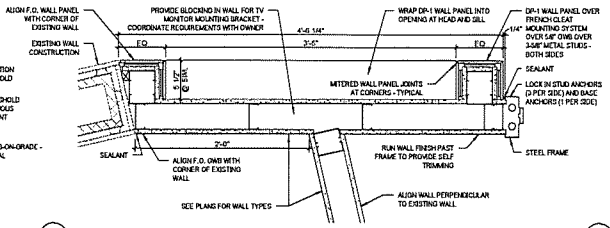




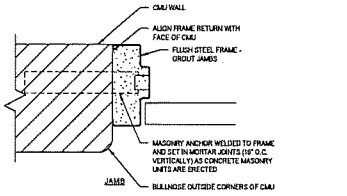
1 OFFICE WALL TRANSITION
SCALE: 1 1/2" = 1'-0"



2 EXTERIOR DOOR THRESHOLD
SCALE: 3" = 1'-0"



3 DOOR 105D JAMB
SCALE: 1 1/2" = 1'-0"



4 HM FRAME @ CMU
SCALE: 3" = 1'-0"

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DRAFT 10/16/2024

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CHECKED BY JWH

DOOR SCHEDULE & WALL TYPES

A610

FINISH SCHEDULE

RM #	ROOM NAME	FLOORS FINISH	BASE FINISH	WALL FINISH NORTH FINISH	WALL FINISH EAST FINISH	WALL FINISH SOUTH FINISH	WALL FINISH WEST FINISH	CEILING FINISH	REMARKS
102	EXERCISE	RF-1/RF-2	RB-1	PT-1/PT-2	PT-7	EXPT-7	PT-5	OTS/EX	PAINT EXPOSED STRUCTURE AND UTILITIES TO MATCH EXISTING
103	OFFICE	RF-2	RB-1	PT-1	PT-1	PT-1	PT-1	OTS/EX	PAINT EXPOSED STRUCTURE AND UTILITIES TO MATCH EXISTING
103A	CORRIDOR	EXCPT-3/CPT-4	SEE PLAN	EXPT-4/DP-1	NA	PT-4/DP-1	NA	PLWAP-1	
105B	COMFORT	CPT-3	RB-1	PT-1	PT-6	PT-1	PT-1	GWB/PT-10	
105C	PRE-FUNCTION	TZ-1/TZ-2/TZ-3	SEE PLAN	SEE PLAN	SEE PLAN	SEE PLAN	DP-1/PT-2/PT-6	OTS/PT-11	
105D	GYMNASIUM	RSF-1/RSF-2	RB-1	CMU-1	CMU-1	CMU-1	CMU-1	OTS/PT-11	PAINT HEADWALLS ABOVE STOREFRONT TO MATCH METAL DECK
105E	STORAGE	SC-1	RB-1	PT-1	PT-1	PT-1	PT-1	OTS	
105F	MECHANICAL	SC-1	RB-1	PT-1	PT-1	PT-1	PT-1	OTS	
110	STORAGE	CPT-1	RB-1	PT-1	PT-1	PT-1	PT-1	GWB/PT-9	
111	CORRIDOR	CPT-1/CPT-2	RB-1	PT-2	PT-1	PT-1	PT-3	GWB/PT-10	
111A	LOCKER ROOM	CPT-1/CPT-2	CTB-1	PT-3/PT-1	PT-3/PT-1	PT-1	PT-1/PT-3/CT-4	GWB/PT-9	SEE ELEVATIONS
111B	SHOWER	CT-2	CTB-1	SS-1	SS-1/PT-1	PT-1	SS-1/PT-1	GWB/PT-9	SEE ELEVATIONS
111C	WOMENS	CT-1	CTB-1	CT-3	PT-1	CT-3/CT-4	CT-3	GWB/PT-9	SEE ELEVATIONS
111D	MENS	CT-1	CTB-1	CT-3/CT-4	PT-1	CT-3	CT-3	GWB/PT-9	SEE ELEVATIONS
111F	ADA TOILET	CT-1	CTB-1	PT-1	CT-3/CT-4	CT-3	PT-1	GWB/PT-9	SEE ELEVATIONS
111G	ADA TOILET	CT-1	CTB-1	PT-1	PT-1	CT-3	CT-3/CT-4	GWB/PT-9	SEE ELEVATIONS

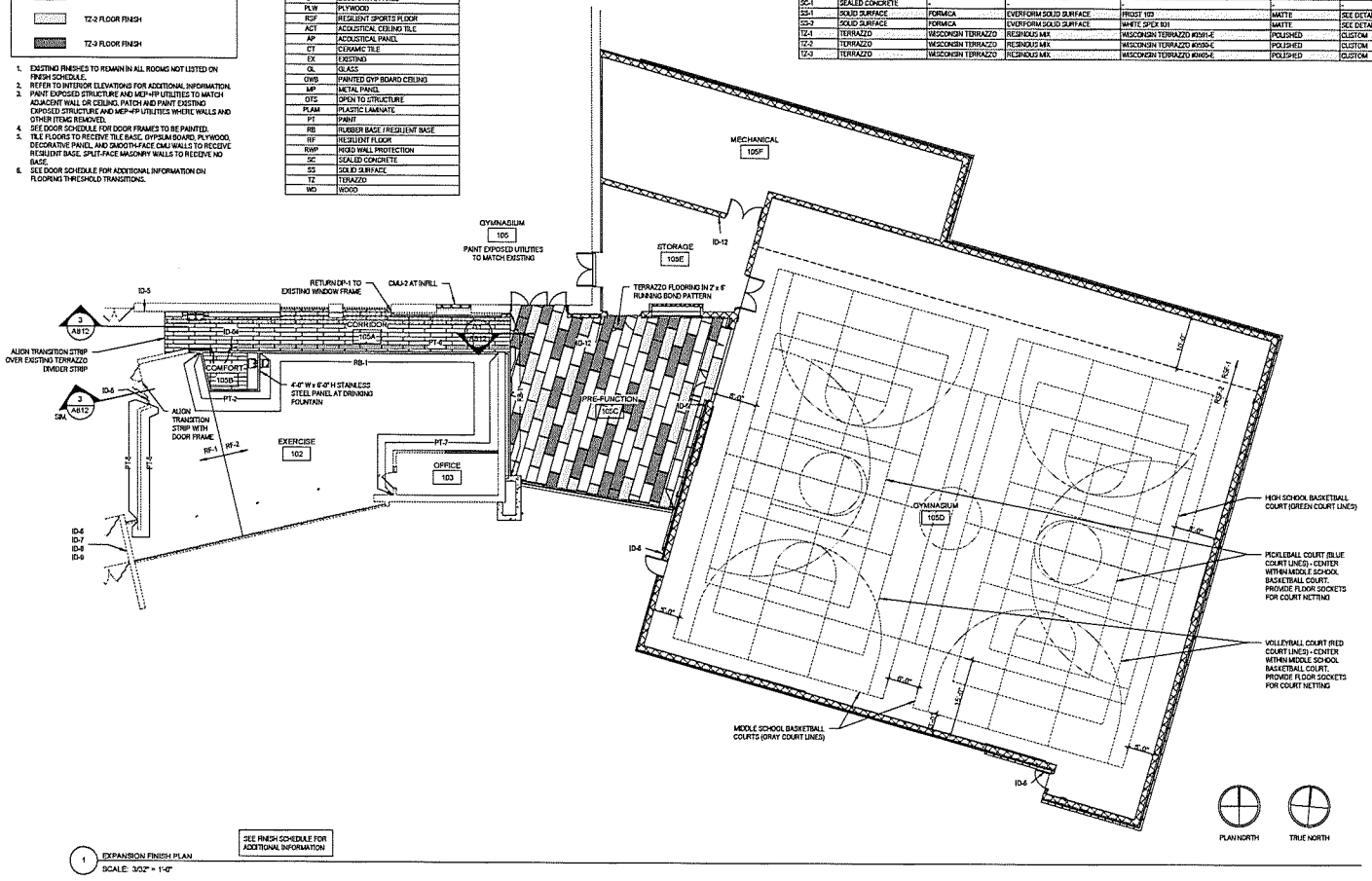
GENERAL NOTES - FINISHES

- CPT-3 FLOOR FINISH
- CPT-4 FLOOR FINISH
- TZ-1 FLOOR FINISH
- TZ-2 FLOOR FINISH
- TZ-3 FLOOR FINISH

1. EXISTING FINISHES TO REMAIN IN ALL ROOMS NOT LISTED ON FINISH SCHEDULE.
2. REFER TO INTERIOR ELEVATIONS FOR ADDITIONAL INFORMATION.
3. PAINT EXPOSED STRUCTURE AND MEP+FP UTILITIES TO MATCH ADJACENT WALL OR CEILING. PATCH AND PAINT EXISTING EXPOSED STRUCTURE AND MEP+FP UTILITIES WHERE WALLS AND OTHER ITEMS REMOVED.
4. SEE DOOR SCHEDULE FOR DOOR FRAMES TO BE PAINTED.
5. TILE FLOORS TO RECEIVE TILE BASE. GYPSUM BOARD, PLYWOOD, DECORATIVE PANEL, AND SMOOTH-FACE CMU WALLS TO RECEIVE RESILIENT BASE. SPLIT-FACE MASONRY WALLS TO RECEIVE NO BASE.
6. SEE DOOR SCHEDULE FOR ADDITIONAL INFORMATION ON FLOORING THRESHOLD TRANSITIONS.

ABBREVIATIONS - FINISH

FINISH TAG	FINISH DESCRIPTION
CMU-1	CMU
CMU-2	CMU
CPT	CARPET TILE
DP	DECORATIVE PANEL
PLW	PLYWOOD
RSF	RESILIENT SPORTS FLOOR
ACT	ACOUSTICAL CEILING TILE
AP	ACOUSTICAL PANEL
CT	CERAMIC TILE
EX	EXISTING
GL	GLASS
GWB	PAINTED GYP BOARD CEILING
MP	METAL PANEL
OTS	OPEN TO STRUCTURE
PLAM	PLASTIC LAMINATE
PT	PAINT
RB	RUBBER BASE / RESILIENT BASE
RF	RESILIENT FLOOR
RWP	RIGID WALL PROTECTION
SC	SEALED CONCRETE
SS	SOLID SURFACE
TZ	TERRAZZO
WD	WOOD



1 EXPANSION FINISH PLAN
SCALE: 3/32" = 1'-0"

SEE FINISH SCHEDULE FOR ADDITIONAL INFORMATION

FINISH KEY

TAG	PRODUCT	MANUFACTURER	COLLECTION/STYLE	COLOR	FINISH	SIZE	NOTES
AP-1	ACOUSTIC PANEL	ARKTURA	VAPOR TRAIL	ARKTURA WHITE	MATTE	24" X 48"	
CMU-1	CONCRETE MASONRY UNIT	COUNTY MATERIALS CORP.	SPLITFACE/SMOOTHFACE	SANDSTONE 10-314C	SMOOTH	8" X 16"	
CMU-2	CONCRETE MASONRY UNIT	COUNTY MATERIALS CORP.	PREMIER ULTRA BURNISHED	NORTH STAR 63-2228	SMOOTH	8" X 16"	
CPT-1	CARPET TILE	FORBO	FLOTEX/SEAGRASS	ALMOND 111883	STANDARD	9.5"X 39.4"	BRICK PATTERN INSTALLATION/50% OF COLOR MIX
CPT-2	CARPET TILE	FORBO	FLOTEX/SEAGRASS	CHARCOAL 111004	STANDARD	9.5"X 39.4"	BRICK PATTERN INSTALLATION/50% OF COLOR MIX
CPT-3	CARPET TILE	FORBO	FLOTEX/SEAGRASS	WALNUT 111005	STANDARD	9.5"X 39.4"	BRICK PATTERN INSTALLATION
CPT-4	CARPET TILE	FORBO	FLOTEX/SEAGRASS	LIQUORICE 111006	STANDARD	9.5"X 39.4"	BRICK PATTERN INSTALLATION
CT-1	CERAMIC TILE	DALTILE	FABRIC ART/MODERN LINEAR	TAUPE MJ02	MATTE	12" X 24"	
CT-2	CERAMIC TILE	DALTILE	FABRIC ART/MODERN TEXTILE	TAUPE MT02	MATTE	1"X 2" MOSAIC	
CT-3	CERAMIC TILE	DALTILE	FABRIQUE	BLANC LINEN P925	MATTE	12" X 24"	
CT-4	CERAMIC TILE	CAESAR CERAMICHE	COCOON/CADENCE TILE	OLEE	MATTE	8" X 48"	
CTB-1	CERAMIC TILE BASE	DALTILE	FABRIC ART/MODERN LINEAR	TAUPE MJ02	MATTE	6" X 12"	
DP-1	DECORATIVE PANEL	ACROVYN	ACROVYN BY DESIGN METALLICS	MEDIUM BRONZE #18172	METALLIC		
PT-1	PAINT	BENJAMIN MOORE	WALL PAINT	CLOUD WHITE 967	SEMI-GLOSS	-	
PT-2	PAINT	BENJAMIN MOORE	ACCENT PAINT	EDGECOMB GRAY HC-173	SEMI-GLOSS	-	
PT-3	PAINT	SHERWIN WILLIAMS	ACCENT PAINT	REFUGE SW6229	SEMI-GLOSS	-	
PT-4	PAINT	SHERWIN WILLIAMS	ACCENT PAINT	CURIO GRAY SW9074	EGGSHELL	-	
PT-5	PAINT	SHERWIN WILLIAMS	ACCENT PAINT	STILL WATER SW9223	EGGSHELL	-	
PT-6	PAINT	SHERWIN WILLIAMS	ACCENT PAINT	INTERESTING AQUA SW9220	EGGSHELL	-	
PT-7	PAINT	BENJAMIN MOORE	ACCENT PAINT	ORIENTAL GREEN 429	EGGSHELL	-	
PT-8	PAINT	BENJAMIN MOORE	DOOR FRAME PAINT	DEVONSHIRE GREEN 1486	SEMI-GLOSS	-	
PT-9	PAINT	SHERWIN WILLIAMS	CEILING PAINT	HIGH REFLECTIVE WHITE SW7757	SEMI-GLOSS	-	
PT-10	PAINT	SHERWIN WILLIAMS	CEILING PAINT	HIGH REFLECTIVE WHITE SW7757	FLAT	-	
PT-11	PAINT	BENJAMIN MOORE	CEILING PAINT	DUNE WHITE 968	SEMI-GLOSS	-	
RB-1	RESILIENT BASE	TARKETT	THERMOSET RUBBER	BURNT UMBER 63	SOLID	4" HIGH	
RF-1	RESILIENT FLOOR	TARKETT SPORTS	DROPZONE ELITE	DARK GREY DZ502	STANDARD	48" W ROLL	
RF-2	RESILIENT FLOOR	TARKETT SPORTS	DROPZONE ELITE	MID GREY DZ504	STANDARD	48" W ROLL	
RSF-1	RESILIENT SPORTS FLOOR	TARKETT SPORTS	OMNISPORTS HPL7	GOLDEN MAPLE	STANDARD	56" W ROLL	CLASS 1 SYSTEM
RSF-2	RESILIENT SPORTS FLOOR	TARKETT SPORTS	OMNISPORTS ACTIVE+	GOLDEN MAPLE	STANDARD	56" W ROLL	CLASS 3 SYSTEM
SC-1	SEALED CONCRETE	-	-	-	-	-	
SS-1	SOLID SURFACE	FORMICA	EVERFORM SOLID SURFACE	FROST 103	MATTE	SEE DETAILS	
SS-2	SOLID SURFACE	FORMICA	EVERFORM SOLID SURFACE	WHITE SPECK 001	MATTE	SEE DETAILS	
TZ-1	TERRAZZO	WISCONSIN TERRAZZO	RESINOUS MIX	WISCONSIN TERRAZZO #3591-E	POLISHED	CUSTOM	
TZ-2	TERRAZZO	WISCONSIN TERRAZZO	RESINOUS MIX	WISCONSIN TERRAZZO #3593-E	POLISHED	CUSTOM	
TZ-3	TERRAZZO	WISCONSIN TERRAZZO	RESINOUS MIX	WISCONSIN TERRAZZO #3605-E	POLISHED	CUSTOM	

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ORIGINAL

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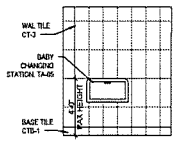
ISSUED FOR:
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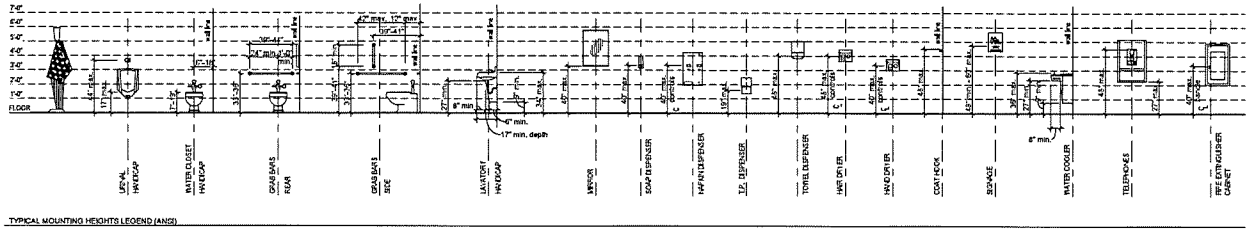
DRAWN BY DKB
CHECKED BY JWH

FINISH PLANS & SCHEDULE

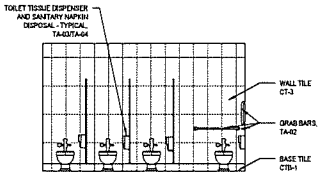
A700



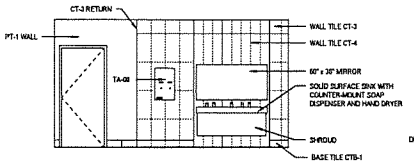
14 111F - WEST
SCALE: 1/4" = 1'-0"



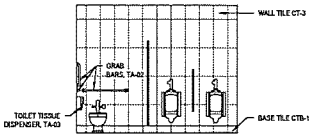
TYPICAL MOUNTING HEIGHTS LEGEND (ANSI)



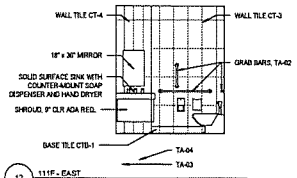
9 111C - NORTH
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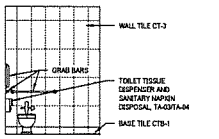
10 111C - SOUTH
SCALE: 1/4" = 1'-0"



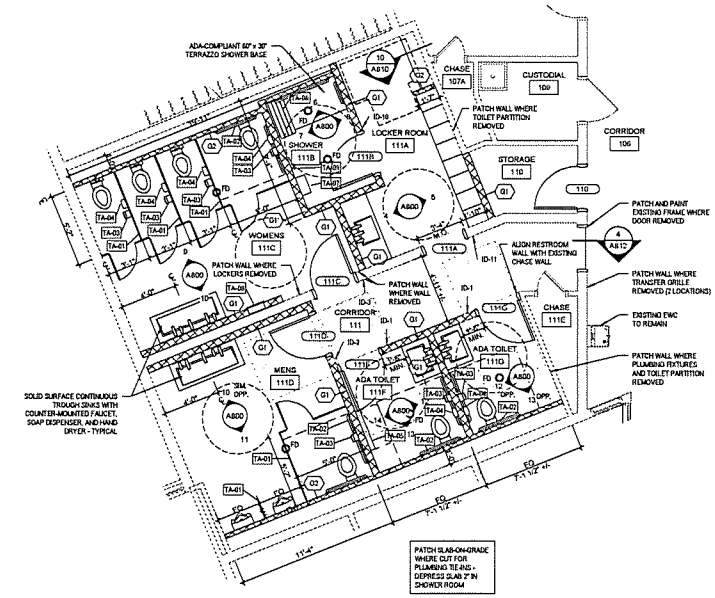
11 111D - SOUTH
SCALE: 1/4" = 1'-0"



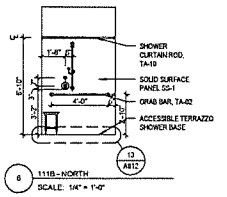
12 111F - EAST
SCALE: 1/4" = 1'-0"



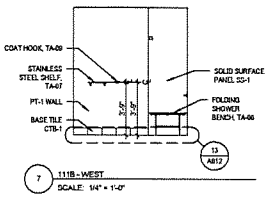
13 111F - SOUTH
SCALE: 1/4" = 1'-0"



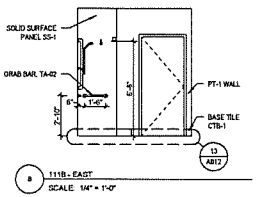
1 ENLARGED PLAN - RESTROOMS
SCALE: 1/4" = 1'-0"



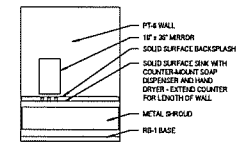
6 111B - NORTH
SCALE: 1/4" = 1'-0"



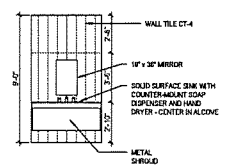
7 111B - WEST
SCALE: 1/4" = 1'-0"



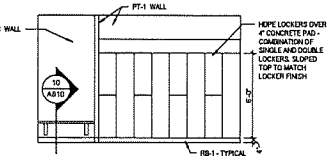
8 111B - EAST
SCALE: 1/4" = 1'-0"



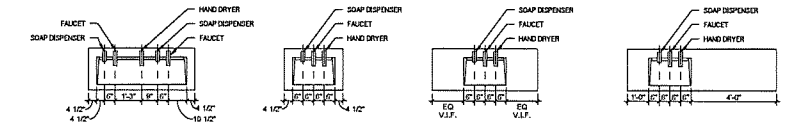
3 105B - EAST
SCALE: 1/4" = 1'-0"



4 111A - WEST
SCALE: 1/4" = 1'-0"



5 111A - EAST
SCALE: 1/4" = 1'-0"



SEE PLUMBING FOR ADDITIONAL INFORMATION

2 SINK DETAILS
SCALE: 3/8" = 1'-0"

Engberg Anderson ARCHITECTS

MILWAUKEE | MADISON | CHICAGO

0.2.6.1 FINAL

WARNER PARK COMMUNITY RECREATION CENTER EXPANSION

1625 NORTHPORT DRIVE
MADISON, WI 53704

CITY OF MADISON PARKS DIVISION
330 EAST LAKESIDE STREET
MADISON, WI 53715

PROJECT NUMBER 223471.00

ISSUED FOR:

BID SET 5/16/2024

REVISION FOR:

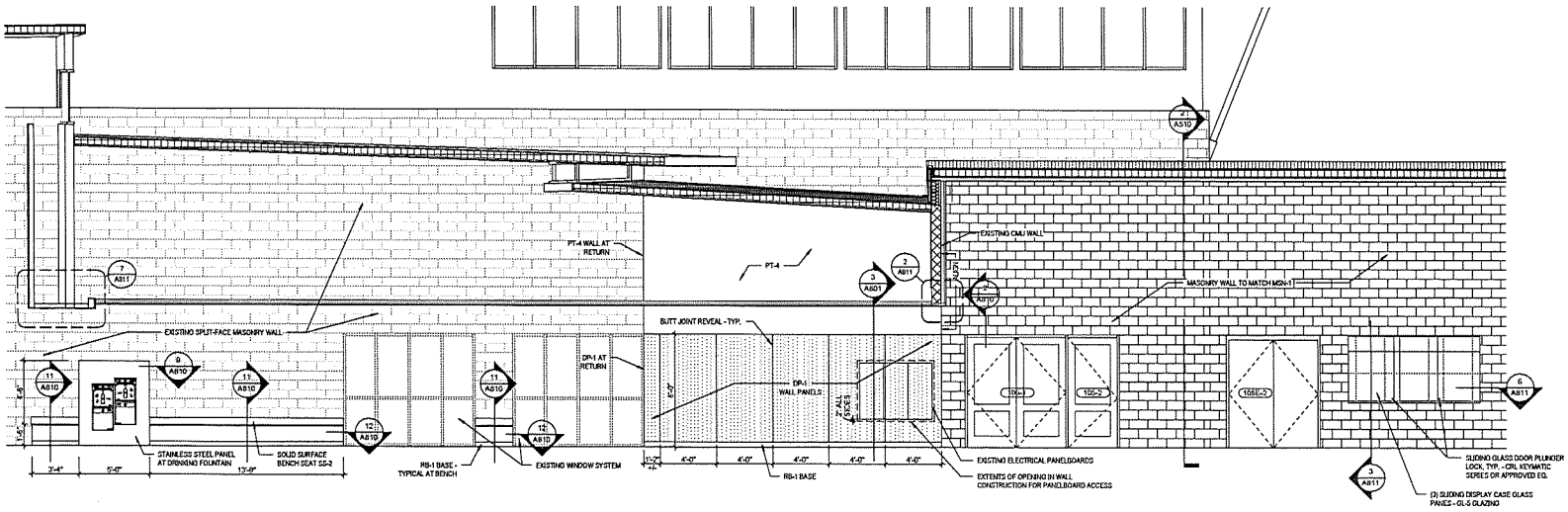
NO. DESCRIPTION DATE

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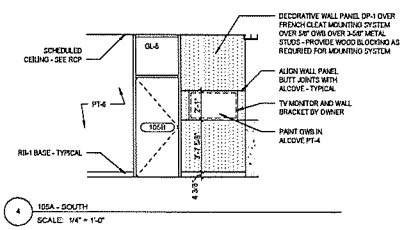
CHECKED BY JWH

ENLARGED PLANS & INTERIOR ELEVATIONS

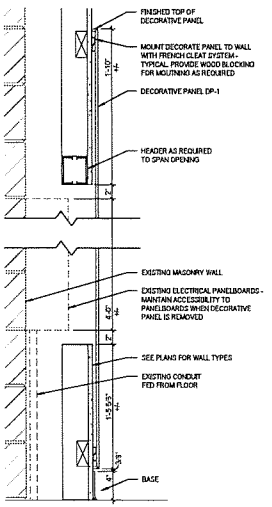
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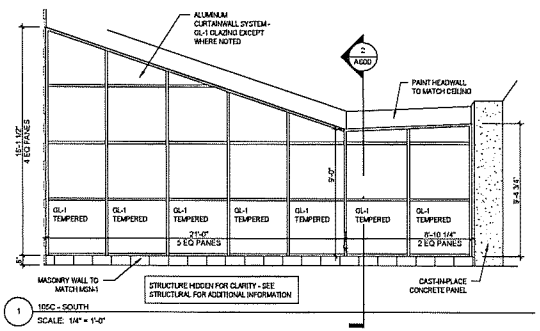


5 105A - NORTH
SCALE: 1/4" = 1'-0"

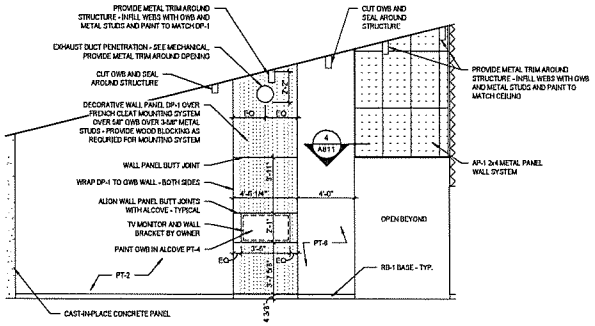


4 105A - SOUTH
SCALE: 1/4" = 1'-0"





1 105C - SOUTH
SCALE: 1/4" = 1'-0"



2 105C - WEST
SCALE: 1/4" = 1'-0"

3 WALL PANEL SECTION
SCALE: 1 1/2" = 1'-0"

Engberg Anderson ARCHITECTS
MILWAUKEE | MADISON | CHICAGO

WARNER PARK
COMMUNITY RECREATION
CENTER EXPANSION

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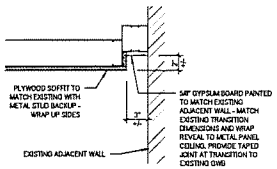
REVISION FOR:

NO.	DESCRIPTION	DATE

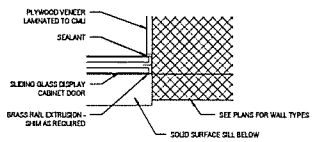
DRAWN BY	DKB
CHECKED BY	JWH

INTERIOR ELEVATIONS

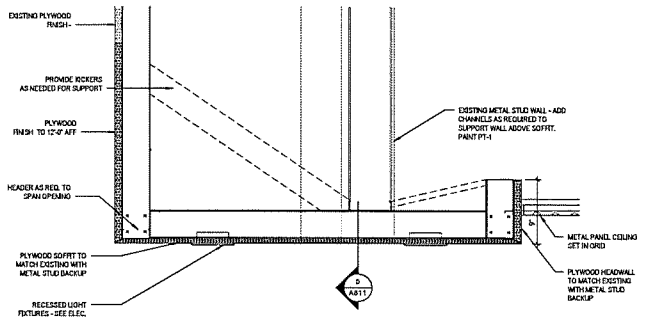
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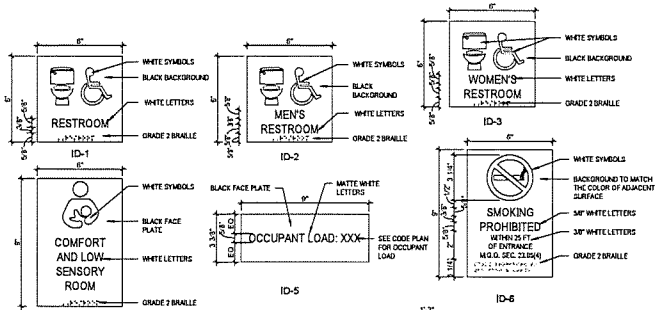
5 CORRIDOR CEILING @ PLYWOOD
SCALE: 1 1/2" = 1'-0"



6 TROPHY CABINET JAMB
SCALE: 1 1/2" = 1'-0"

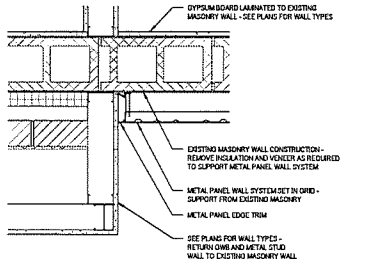


7 CORRIDOR CEILING @ EXISTING
SCALE: 1 1/2" = 1'-0"

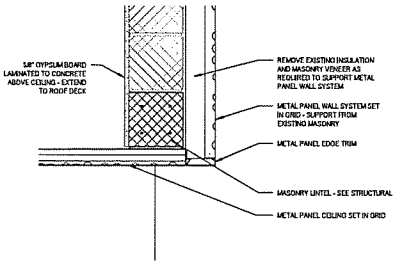


SIGNAGE NOTES:
1. TYPE FACE ON ALL SIGNS SHALL BE HELVETICA BOLD.
2. COLOR CHANGES TO BE RAISED 1/32" FROM BACKGROUND.

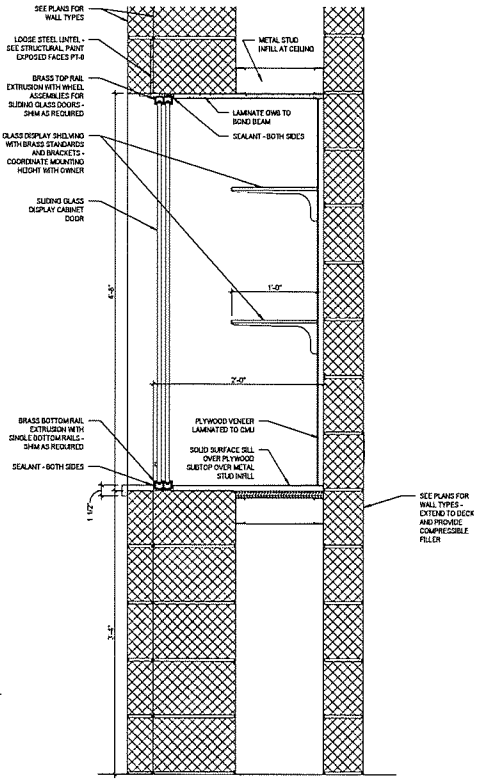
1 SIGNAGE SCHEDULE



4 CORRIDOR VERTICAL PANEL
SCALE: 1 1/2" = 1'-0"



2 CORRIDOR CEILING @ PRE-FUNCTION
SCALE: 1 1/2" = 1'-0"



3 TROPHY CABINET SECTION
SCALE: 1 1/2" = 1'-0"

Engberg Anderson ARCHITECTS
MILWAUKEE | MADISON | CHICAGO

ORIGINAL

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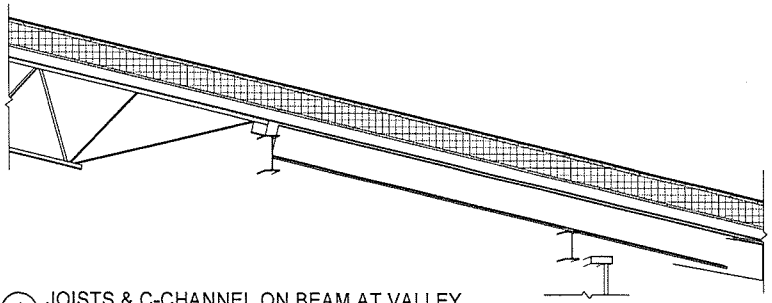
ISSUED FOR:
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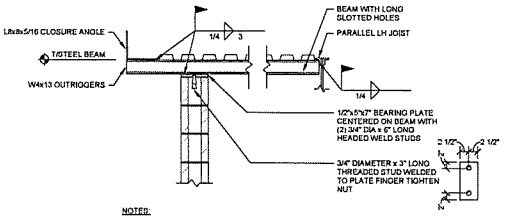
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CHECKED BY JWH

INTERIOR DETAILS

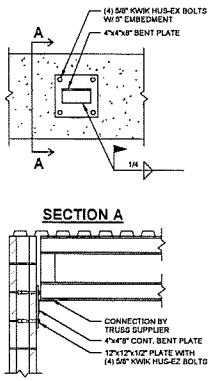
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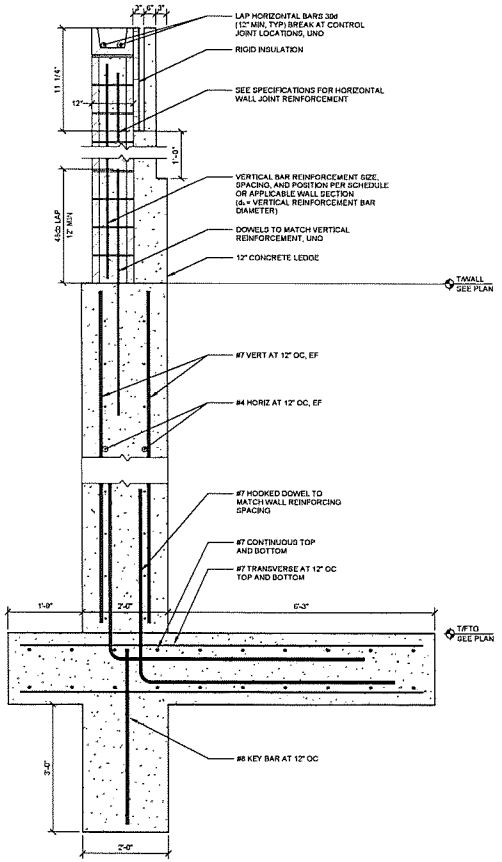
1 JOISTS & C-CHANNEL ON BEAM AT VALLEY
SCALE: 3/4" = 1'-0"



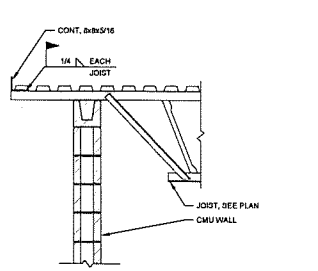
2 WEST OUTRIGGER DETAIL
SCALE: 3/4" = 1'-0"



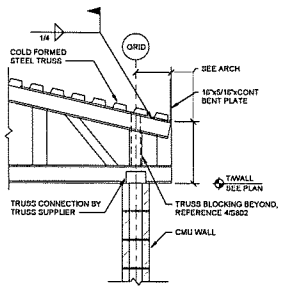
3 CFMS TRUSS BEARING
SCALE: 3/4" = 1'-0"



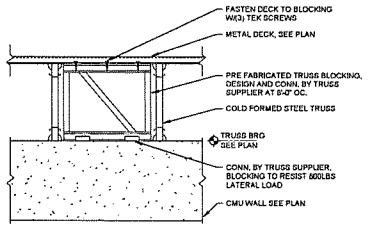
4 EXTERIOR GYM WALL SECTION
SCALE: 3/4" = 1'-0"



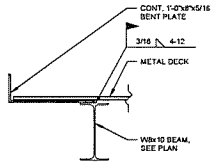
5 ROOF DECK EDGE
SCALE: 3/4" = 1'-0"



6 LT GAGE BRACING
SCALE: 3/4" = 1'-0"



7 TYP TRUSS BLOCKING
SCALE: 3/4" = 1'-0"



8 DECK EDGE AT EAST WALL
SCALE: 1 1/2" = 1'-0"

Engberg Anderson ARCHITECTS
MILWAUKEE | MADISON | CHICAGO
ONEIDA Total Integrated Enterprises
www.oneida.com Job Number 2C3007
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5100 Eastpark Blvd, Suite 300,
Madison, Wisconsin 53718

ORIGINAL

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PROJECT NUMBER 223471.00

ISSUED FOR:

BID SET	5/16/2024

REVISION FOR:

NO.	DESCRIPTION	DATE

DRAWN BY	AWB
CHECKED BY	Checker

STRUCTURAL DETAILS

S802

STRUCTURAL DESIGN CRITERIA

1. THESE NOTES SUPPLEMENT THE SPECIFICATIONS. PROJECT SPECIFICATIONS SHALL BE REFERRED TO FOR CLARIFICATIONS AND ADDITIONAL INFORMATION. IN CASE OF CONFLICT BETWEEN PROJECT SPECIFICATIONS AND THESE NOTES, THESE NOTES SHALL GOVERN.

2. GOVERNING BUILDING CODE: 2015 IBC AS AMENDED BY THE STATE OF WISCONSIN.

3. DESIGN LOADS

LIVE LOAD
- TYPICAL SLAB ON GRADE: 100 psf
- MEZZANINE: 100 psf

ROOF
- LIVE LOAD
  - SNOW: 30 psf+DRIFTING
  - SUPERIMPOSED DEAD LOAD
  - TOP CHORD: 10 psf
  - BOTTOM CHORD: 10 psf

SNOW LOADS
- GROUND SNOW (Pg): 30 psf
- SNOW LOAD IMPORTANCE FACTOR (Is): 1.0
- SNOW LOAD EXPOSURE FACTOR (Ce): 1.0
- ROOF THERMAL LOAD FACTOR (Ct) AT BUILDING: 1.1
- BASE ROOF SNOW LOAD AT BUILDING: 21 psf

WIND LOADS
- BASIC WIND SPEED: 107 mph
- BUILDING OCCUPANCY CATEGORY: II
- WIND LOAD IMPORTANCE FACTOR (Iw): 1.0
- WIND EXPOSURE CATEGORY: C
- INTERNAL PRESSURE COEFFICIENT: ±0.18

MAIN WIND FORCE - RESISTING SYSTEM:
- MWFRS SELECTED EDGE STRIP DISTANCE, (2A): 11.0 ft
- CALCULATED HORIZONTAL LOADS:

	END ZONE		INTERIOR ZONE	
	WALL	ROOF	WALL	ROOF
TRANSVERSE CASE #1:	24.0 psf	16.5 psf	19.2 psf	13.2 psf
TRANSVERSE CASE #2:	24.0 psf	16.5 psf	19.2 psf	13.2 psf
LONGITUDINAL:	24.0 psf	16.5 psf	19.2 psf	13.2 psf

- CALCULATED VERTICAL LOADS:

	END ZONE		INTERIOR ZONE	
	WINDWARD	LEEWARD	WINDWARD	LEEWARD
TRANSVERSE CASE #1:	1.8 psf	-14.7 psf	0.7 psf	-12.5 psf
TRANSVERSE CASE #2:	9.3 psf	-7.2 psf	8.0 psf	-5.2 psf
LONGITUDINAL:	-25.7 psf	-14.7 psf	-17.8 psf	-11.3 psf

COMPONENTS AND CLADDING:
(SEE ASCE/SEI 7-SECTION 6 FOR ZONE DEFINITIONS AND DIAGRAMS)
- COMPONENT AND CLADDING SELECTED EDGE STRIP DISTANCE, (A): 5.5 ft

TRIBUTARY WIND LOAD AREAS	10 ft²	50 ft²	100 ft²
ROOF (MONOSLOPE):			
ZONE 1 (NEGATIVE)	19.7 psf	17.3 psf	16.3 psf
ZONE 2 (NEGATIVE)	23.0 psf	20.7 psf	19.7 psf
ZONE 3 (NEGATIVE)	23.0 psf	20.7 psf	19.7 psf
WALLS:			
ZONE 4 (NEGATIVE)	21.3 psf	19.3 psf	18.4 psf
ZONE 5 (NEGATIVE)	26.3 psf	22.3 psf	20.4 psf
ZONE 4 & 5 (NEGATIVE)	19.7 psf	17.6 psf	16.7 psf

SEISMIC LOADS
- SEISMIC USE GROUP / OCCUPANCY CATEGORY: II
- SEISMIC IMPORTANCE FACTOR (Ie): 1.0
- SEISMIC SITE CLASS: C
- SPECTRAL RESPONSE COEFFICIENT (Sds): 0.048
- SPECTRAL RESPONSE COEFFICIENT (Sd1): 0.032
- SEISMIC DESIGN CATEGORY: A
- BASIC SEISMIC FORCE RESISTING SYSTEM:
  - BEARING WALL SYSTEM
  - LIGHT FRAMED WALL SHEATHED WITH WOOD STRUCTURAL PANELS RATED FOR SHEAR RESISTANCE.
  - R = 6.5 Ωo = 3.0 Cd = 4.0
- ANALYSIS PROCEDURE:
  - EQUIVALENT LATERAL FORCE PROCEDURE

4. FOUNDATIONS AND EARTHWORK
- ALLOWABLE SOIL BEARING PRESSURE FOR FOOTINGS: 4,000 psf

5. CONCRETE
- MINIMUM 28 DAY COMPRESSIVE STRENGTH (f'c)
  - FOOTINGS: 4,000 psi
  - PIERS, WALLS: 4,000 psi
  - SLAB-ON-GRADE (INTERIOR): 3,500 psi
  - SLAB-ON-GRADE (EXTERIOR): 4,500 psi
- COVER ON MILD STEEL REINFORCEMENT
  - CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH: 3"
  - CONCRETE EXPOSED TO EARTH OR WEATHER
    - #6 BARS AND SMALLER: 1 1/2"
    - #6 BARS AND LARGER: 2"
  - CONCRETE NOT EXPOSED TO WEATHER OR IN CONTACT WITH GROUND: 1"
- CONCRETE REINFORCEMENT YIELD STRENGTH (Fy)
  - ALL DEFORMED MILD STEEL: 60,000 psi
  - WELDED WIRE FABRIC: 65,000 psi

6. CONCRETE MASONRY
- DESIGN STRESSES
  - MASONRY (NORMAL WEIGHT) MEETING ASTM C90: f'm = 2,250 psi
  - GROUT: MIN COMPRESSIVE STRENGTH AT 28 DAYS MEETING ASTM C476: 3,000 psi
  - MINIMUM BLOCK COMPRESSIVE STRENGTH: 2,600 psi

7. STRUCTURAL STEEL
- STRUCTURAL STEEL YIELD STRENGTH (Fy)
  - TUBES: 46,000 psi
  - WF BEAMS: 50,000 psi
  - WF COLUMNS: 50,000 psi
  - BOLTS FOR STANDARD FRAME CONNECTIONS: 3/4" DIAMETER A325
  - BOLTS FOR SINGLE SHEAR TAB CONNECTIONS: 3/4" DIAMETER A325
  - ANCHOR RODS: F1554
  - WELDING ELECTRODES: E70

8. MISCELLANEOUS
- VERIFY OPENINGS THROUGH FLOOR AND WALLS WITH ARCHITECTURAL, MECHANICAL, PLUMBING, AND ELECTRICAL REQUIREMENTS. CHANGES IN SIZE, LOCATION OR NUMBER OF OPENINGS SHOWN ON THE STRUCTURAL DRAWINGS SHALL NOT BE PERMITTED WITHOUT WRITTEN APPROVAL OF THE STRUCTURAL ENGINEER. NOT ALL OPENINGS ARE SHOWN ON THE STRUCTURAL DRAWINGS.

GENERAL NOTES APPLY TO ALL SHEETS

1. CONTRACTOR TO PROVIDE DRAFT STOPPING IN ATTIC. MAXIMUM AREA OF SUBDIVIDE ATTIC AREA IS 3000 SF. CONTRACTOR TO COORDINATE LOCATION OF DRAFT STOPPING WITH ARCHITECT AND TRUSS SHOP DRAWINGS PRIOR TO START OF CONSTRUCTION. PROVIDE AN ATTIC ACCESS PANEL INTO EACH ATTIC COMPARTMENT. MINIMUM OPENING SIZE OF 20" x 30". COORDINATE LOCATION WITH ARCHITECT. DRAFT STOPPING TO EXTEND TO FASCIA AT OVERHANGS.

2. SECURE TRUSSES AT EACH BEARING WITH SIMPSON H2.5A MIN.

3. CONTRACTOR TO SUBMIT TRUSS SHOP DRAWINGS TO ARCHITECT FOR REVIEW PRIOR TO CONSTRUCTION.

GENERAL

1. STRUCTURAL DRAWINGS ARE INTENDED TO BE USED WITH ARCHITECTURAL AND MECHANICAL DRAWINGS. CONTRACTOR IS RESPONSIBLE FOR COORDINATING SUCH REQUIREMENTS INTO THE SHOP DRAWINGS AND WORK.

2. NO OPENING SHALL BE MADE IN ANY STRUCTURAL BEAM, COLUMN, SUPPORT FLOOR, LOAD BEARING WALL, FOOTING, OR FOUNDATION WALL WITHOUT THE WRITTEN APPROVAL OF THE ARCHITECT/ ENGINEER. OPENINGS IN NON-LOAD BEARING WALLS REQUIRE THE ARCHITECT'S APPROVAL.

3. THE CONTRACTOR IS RESPONSIBLE FOR LIMITING THE AMOUNT OF CONSTRUCTION LOAD IMPOSED UPON NEW STRUCTURAL FRAMING. CONSTRUCTION LOADS SHALL NOT EXCEED THE DESIGN CAPACITY OF THE FRAMING AT THE TIME THE LOADS ARE IMPOSED.

4. THE STRUCTURE IS DESIGNED TO FUNCTION AS A UNIT UPON COMPLETION. THE CONTRACTOR IS RESPONSIBLE FOR FURNISHING ALL TEMPORARY BRACING AND/OR SUPPORT THAT MAY BE REQUIRED AS THE RESULT OF THE CONTRACTOR'S CONSTRUCTION METHODS AND/OR SEQUENCES. THE STRUCTURAL ENGINEER ASSUMES NO LIABILITY FOR THE STRUCTURE DURING CONSTRUCTION.

5. FIREPROOFING METHODS AND MATERIALS FOR STRUCTURAL DRAWINGS. REFER TO ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR RATING REQUIREMENTS, FIREPROOFING METHODS AND MATERIALS.

6. ALL SECTIONS, DETAIL AND NOTES SHOWN ON THE STRUCTURAL DRAWINGS ARE INTENDED TO BE TYPICAL AND SHALL APPLY TO SIMILAR SITUATIONS ELSEWHERE UNLESS OTHERWISE NOTED.

7. WHEN CONFLICTS ARE NOTED ON THE DRAWINGS, THE CONTRACTOR IS RESPONSIBLE FOR NOTIFYING THE A/E FOR RESOLUTION PRIOR TO FABRICATION OR INSTALLATION.

FOUNDATION NOTES

1. GEOTECHNICAL INFORMATION TAKEN FROM: GEOTECHNICAL EXPLORATION REPORT C23051-6.

2. THE OWNER SHALL RETAIN A SOILS ENGINEERING FIRM TO MONITOR PROPER SUBGRADE PREPARATIONS AND TO OVERSEE THE TESTING AND COMPACTION OF COMPACTED FILL MATERIAL.

3. CONTRACTOR SHALL LOCATE EXISTING UNDERGROUND UTILITIES BEFORE FOUNDATION EXCAVATION IF UNDERGROUND UTILITY CONFLICTS ARE DISCOVERED BEFORE OR ENCOUNTERED DURING EXCAVATION, NOTIFY THE ARCHITECT/ENGINEER IMMEDIATELY.

4. CONTRACTOR SHALL VERIFY THE LOCATION AND ELEVATION OF ANY EXISTING FOUNDATIONS.

5. BEFORE PLACING FOOTINGS, FOUNDATIONS, GRADE BEAMS, OR SLAB-ON-GRADE, THE SUB-GRADE SHALL BE PREPARED AND INSPECTED AS REQUIRED BY THE SPECIFICATIONS AND THE DRAWINGS.

6. REINFORCE ALL FOUNDATION WALLS AND FOOTINGS AS SHOWN ON THE ARCHITECTURAL AND STRUCTURAL DRAWINGS.

7. CONTROL JOINTS IN THE CAST-IN-PLACE CONCRETE FOUNDATION WALLS SHALL BE PLACED AT NOT TO EXCEED 20' OC OR AS LOCATED ON THE DRAWINGS.

8. PERIMETER FOUNDATION WALL INSULATION IS NOT SHOWN ON THE FOUNDATION DETAILS. SEE ARCHITECTURAL DRAWINGS AND THE SPECIFICATIONS FOR INSULATION REQUIREMENTS.

9. SEE SPECIFICATIONS FOR FREE DRAINING BACKFILL BENEATH ALL CONCRETE WALKS AND SLABS ADJACENT TO STRUCTURE.

10. CONTRACTOR NOTE: THE BASE OF ALL EXCAVATIONS SHALL BE KEPT FREE OF WATER AND LOOSE SOIL PRIOR TO PLACING CONCRETE. CARE SHOULD BE TAKEN DURING EXCAVATION AND CONSTRUCTION TO MINIMIZE DISTURBANCE OF THE BEARING SOILS. THE CONCRETE SHOULD BE PLACED AS SOON AS POSSIBLE AFTER EXCAVATION TO PREVENT EXCESSIVE DRYING OR WETTING OF THE SOIL.

MASONRY NOTES

1. ALL MASONRY WALLS ARE TO HAVE HORIZONTAL REINFORCEMENT WHICH DOES NOT EXCEED 16 INCHES ON CENTER VERTICALLY. SEE SPECIFICATIONS FOR INFORMATION RELATING TO CONCRETE BLOCK, BRICK, AND WALL REINFORCING.

2. ALL VERTICAL REINFORCING STEEL IN MASONRY WALLS ARE TO COMPLY WITH ASTM A615, GRADE 60. LAPS SHALL BE 48 BAR DIAMETERS (12" MINIMUM).

3. PROVIDE SPLICE BARS FOR ALL BOND BEAM REINFORCING AT ALL CORNERS. SPLICE BAR TO BE THE SAME SIZE AS BARS IN THE BOND BEAM. LAPS SHALL BE 50 BAR DIAMETER.

4. WHERE MASONRY IS APPLIED ADJACENT TO STEEL MEMBERS (BEAMS AND COLUMNS) PROVIDE ANCHORING DEVICES PER SPECIFICATIONS.

5. REFER TO ARCHITECTURAL PLANS FOR ROUGH OPENING LOCATIONS, SIZES, AND ELEVATIONS.

6. USE SIMPSON TITEN HD OR APPROVED EQUAL TYPE ANCHORS IN CMU WALL PARTITIONS.

7. ALL NON-STRUCTURAL CMU WALLS SHALL BE REINFORCED WITH A #3 VERTICAL BAR AT 48" OC WITH THAT CMU CORE GROUTED AND HORIZONTAL JOINT REINFORCEMENT AT 16" OC. THE BOTTOM TWO COURSES SHALL BE GROUTED SOLID. PROVIDE CONTINUOUS BOND BEAM AT TOP OF WALL WITH 2 #4's CONTINUOUS GROUT BOND BEAM SOLID. PROVIDE #3 DOWEL AT 48" OC MATCH VERTICAL BAR, LAP 50 BAR DIAMETERS. PROVIDE LINTEL BLOCK AS BOND BEAM WITH (2) #5 x CONT, AND 8" BEARING EACH END. TYPICAL UNLESS NOTED OTHERWISE.

8. CONSTRUCTION BRACING FOR MASONRY WALLS SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE IN WHICH THE PROJECT IS LOCATED. MASONRY SUBMITTALS SHALL CONTAIN A LETTER SEALED BY THE ENGINEER AND SHALL BE ISSUED TO THE OWNER AFTER SUBMITTAL REVIEW AND PRIOR TO STARTING MASONRY CONSTRUCTION.

COLD FORMED TRUSS NOTES

1. TRUSS FABRICATOR SHALL DESIGN TRUSSES FOR LOADS SPECIFIED ON PLANS IN CONFORMANCE WITH "QUALITY CONTROL MANUAL" BY TPI. REFER TO THE ARCHITECTURAL DRAWINGS FOR ADDITIONAL DEAD LOADS RESULTING FROM DORMERS AND OTHER MISCELLANEOUS FRAMING. ALL TRUSSES SHALL BE DESIGNED FOR A MINIMUM OF 30 PSF LIVE LOAD PLUS 10 psf DEAD LOAD.

2. LIVE LOAD IS ON A HORIZONTAL PROJECTION OTHER LIVE LOADS SHOWN ON THE DRAWINGS ARE IN ADDITION TO THESE DESIGNATED LOADS.

3. CHECK VERTICALLY PROJECTED ELEMENTS FOR DESIGN WIND LOAD.

4. DESIGN TRUSSES TO RESIST A NET UPLIFT OF 10 PSF.

5. SUBMIT SHOP DRAWINGS AND CALCULATIONS PRIOR TO FABRICATION.

6. CONFORM TO TPI SPECIFICATIONS.

7. FLOOR TRUSS LL DEFLECTION SHALL NOT EXCEED L/480.

8. ROOF TRUSS LL DEFLECTION SHALL NOT EXCEED L/360.

9. PERMANENT BRACING NOT SHOWN ON PLANS, WHICH IS REQUIRED FOR STRENGTH AND STABILITY OF TRUSS MEMBERS, SHALL BE DESIGNED AND PROVIDED BY TRUSS SUPPLIER.

10. ALL TRUSS TOP CHORDS SHALL BE CONTINUOUSLY BRACED BY THE (ROOF/FLOOR) DECKING. ALL ROOF TRUSS WEB MEMBERS SHALL BE BRACED AT 4'-0" OC UNLESS CALCULATIONS SHOW OTHERWISE.

11. TEMPORARY BRACING SHALL BE THE CONTRACTOR'S RESPONSIBILITY. PROVIDE IN ACCORDANCE WITH TPI GUIDELINES.

12. PROVIDE 24" WIDE VIERENDEEL PANEL AT CENTER OF EACH PARALLEL CHORD TRUSS.

STRUCTURAL STEEL NOTES

1. FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL CONFORM WITH THE AISC (AMERICAN INSTITUTE OF STEEL CONSTRUCTION), "MANUAL OF STEEL CONSTRUCTION", LATEST EDITION.

2. ALL STEEL DETAILS AND CONNECTIONS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE AISC "SPECIFICATIONS FOR STRUCTURAL STEEL BUILDINGS, ALLOWABLE STRESS DESIGN AND PLASTIC DESIGN", LATEST EDITION.

3. ALL WELDING SHALL BE BY WELDERS HOLDING CURRENT VALID AWS CERTIFICATES IN THE TYPE OF WELD REQUIRED.

4. SHOP CONNECTIONS NOT SPECIFICALLY DETAILED ON THE DRAWINGS SHALL BE BOLTED OR WELDED. FIELD CONNECTIONS SHALL BE BOLTED UNLESS SPECIFICALLY DETAILED OTHERWISE.

5. DESIGN IN ACCORDANCE WITH GUIDE DETAILS AND REACTIONS.

6. USE A325N BOLTS UNLESS NOTED OTHERWISE.

7. OVERSIZED OR SLOTTED HOLES SHALL NOT BE USED FOR ANY CONNECTIONS UNLESS SPECIFICALLY INDICATED ON THE DRAWINGS OR APPROVED IN WRITING BY THE ENGINEER.

8. ALL BEAM COPES MUST BE MADE TO A RADIUS (1" MINIMUM). ALL BUTT AND FULL PENETRATION WELDS SHALL BE MADE USING RUN OFF TABS WHICH SHALL BE TRIMMED FLUSH AND GROUND SMOOTH AFTER WELD IS COMPLETED.

9. ALL WELDS INDICATED SHALL MEET THE MINIMUM WELD SIZE SPECIFIED BY THE CURRENT AISC MANUAL OF STEEL DESIGN. (SINGLE PASS AS REQUIRED).

10. CUTS, HOLES, COPING, ETC. REQUIRED FOR WORK OF OTHER TRADES SHALL BE SHOWN ON THE SHOP DRAWINGS AND MADE IN THE SHOP. CUTS OR BURNING OF HOLES IN STRUCTURAL STEEL MEMBERS IN THE FIELD WILL NOT BE PERMITTED.

11. PROVIDE ANY NECESSARY TEMPORARY BRACING OR GUYS TO PROVIDE LATERAL SUPPORT OF THE BUILDING UNTIL PERMANENT FRAME IS COMPLETELY INSTALLED.

12. INSTALL EXPANSION BOLTS IN ACCORDANCE WITH THE ICBO REPORT RECOMMENDATIONS.

13. ALL ELEVATOR GUIDE BEAMS SHALL BE S8x18.4 UNLESS NOTED OTHERWISE. SLOPE TO MATCH BEAM SLOPE.

14. STRUCTURAL STEEL FRAMING SHALL BE TRUE AND PLUMB BEFORE CONNECTIONS ARE FINALLY BOLTED OR WELDED.

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Contractors are responsible for the means, methods, techniques, sequences and procedures of construction, including, but not limited to, temporary supports, shoring, bracing, scaffolding, and other temporary items.

02/16/2024

WARNER PARK COMMUNITY RECREATION CENTER EXPANSION

1625 NORTHPORT DRIVE
MADISON, WI 53704

CITY OF MADISON PARKS DIVISION
330 EAST LAKESIDE STREET
MADISON, WI 53715

PROJECT NUMBER 223471.00

ISSUED FOR:
BID SET 2/16/2024

REVISION FOR:

NO.	DESCRIPTION	DATE

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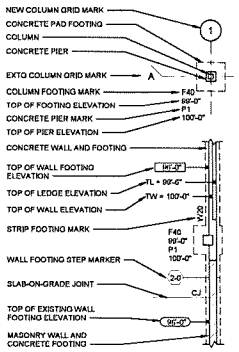
STRUCTURAL NOTES

S001

ABBREVIATION LIST

AB	ANCHOR BOLT (ROD)
AHU	AIR HANDLING UNIT
ALT	ALTERNATE
ARCH	ARCHITECTURAL
BLDG	BUILDING
BRG	BEARING
BP(##)	BASE PLATE CALL-OUT
CF	COLD-FORMED
CIP	CAST-IN-PLACE
CJ	CONTROL JOINT
CL	CENTER LINE
CLR	CLEAR (DISTANCE)
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
CONC	CONCRETE
CONT	CONTINUOUS
DBA	DEFORMED BAR ANCHOR
DEMO	DEMOLITION / DEMOLISH
DIA	DIAMETER
DWG	DRAWING
EGD	EDGE OF DECK
EGS	EDGE OF SLAB
EF	EACH FACE
EJ	EXPANSION JOINT
ELEV	ELEVATION
EQ	EQUAL
EW	EACH WAY
EWEF	EACH WAY EACH FACE
EXP	EXPANSION
EXT	EXTERIOR
EXTG	EXISTING
FD	FLOOR DRAIN
FLR	FLOOR
FV	FIELD VERIFY
F(##)	FOOTING CALL-OUT
GA	GAUGE
GALV	GALVANIZED
GC	GENERAL CONTRACTOR
GLULAM	GLUE-LAMINATED BEAM(S)
HK	HOOK
HORIZ	HORIZONTAL
HP	HIGH POINT
HWS	HEADED WELDED STUD(S)
IF	INSIDE FACE
INT	INTERIOR
JBE	JOIST BEARING ELEVATION
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LSL	LAMINATED STRAND LUMBER
LTWT	LIGHTWEIGHT
LVL	LAMINATED VENEER LUMBER
LW	LONG WAY
MAX	MAXIMUM
MECH	MECHANICAL
MFR	MANUFACTURER
MIN	MINIMUM
MISC	MISCELLANEOUS
NA	NOT APPLICABLE
NTS	NOT TO SCALE
OC	ON CENTER
OF	OUTSIDE FACE
OPNG	OPENING
OPP	OPPOSITE
PC	PRECAST / PRESTRESSED
PCF	POUNDS PER CUBIC INCH
PDF	POUNDS PER CUBIC FOOT
PL	PLATE
PLF	POUNDS PER LINEAR FOOT
PROJ	PROJECTION
PSF	POUNDS PER CUBIC FOOT
PSI	POUNDS PER SQUARE INCH
PT	PRE (POST)-TENSIONED
P(##)	PIER CALL-OUT
RD	ROOF DRAIN
REINF	REINFORCE(D)(ING)
RTU	ROOF TOP UNIT
SIM	SIMILAR
SOG	SLAB-ON-GRADE
SPA	SPACE(S)(ED)(ING)
SPEC	SPECIFICATION(S)
SQ	SQUARE
SS	STAINLESS STEEL
SW	SHORT WAY
TL	TOP OF LEDGE
TP	TOP OF PIER
TW	TOP OF WALL
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
VERT	VERTICAL
WP	WORKING POINT
WWF	WELDED WIRE FABRIC

FOUNDATION LEGEND

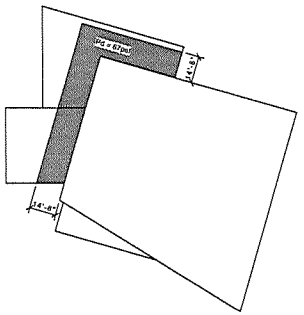


LINTEL SCHEDULE

LENGTH	SIZE AND REINFORCING	NOTE/REMARKS
0'-4"	8" W x 8" H BOND BM W/ (2) #5 BOT	SEE ARCH FOR LOCATIONS
4'-8"	8" W x 16" H BOND BM W/ (2) #5 BOT	SEE ARCH FOR LOCATIONS

NOTES:

1. AT NEW WALLS, REINFORCE AT BEARING WITH (1) #5 VERT FULL HEIGHT OF WALL FROM FLOOR TO FLOOR OR FLOOR TO ROOF.
2. AT EXISTING WALLS, BEAR LINTEL ON MIN (2) COURSES GROUTED CMU.
3. AT EXTERIOR OPENINGS, PROVIDE GALV BENT PL5/16"x7 1/2"x7 1/2" x CONT TO OPENING CORNERS.
4. 8" MIN BEARING AT ENDS.



DRIFT LOAD KEY PLAN

SCALE: 1/2" = 1'-0"

WALL FOOTING SCHEDULE

MARK	CONTINUOUS FOOTING DIMENSIONS WIDTH	THICKNESS	FOOTING REINFORCEMENT	REMARKS
W24	2'-4"	1'-0"	(3) #5; B, CONT	
W30	3'-0"	1'-0"	(3) #5; B, CONT	
W30	3'-0"	1'-0"	(3) #5; B, CONT	
W90	9'-0"	1'-8"	(7) @ 12" T&B, EW	

MASONRY WALL REINFORCEMENT SCHEDULE

MARK	WALL TYPE	REINFORCEMENT VERTICAL	REINFORCEMENT HORIZONTAL	NOTES
A	12" CMU	#6 AT 16" OC	HJR AT 16" OC	BOND BEAM WITH (1) #5 AT 40" OC AND AT BOTTOM OF WALL
B	12" CMU	#6 AT 8" OC	HJR AT 16" OC	VERTICAL REINFORCING TO BE AT EXTERIOR FACE OF CMU
C	8" CMU	#6 AT 16" OC	HJR AT 16" OC	BOND BEAM WITH (1) #5 AT 40" OC AND AT BOTTOM OF WALL

NOTES:

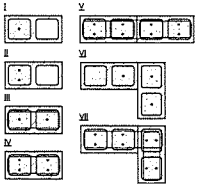
1. SEE ARCHITECTURAL WALL TYPES FOR ADDITIONAL REQUIREMENTS.
2. REINFORCEMENT IS TO BE LOCATED IN CENTER OF WALL UNO.
3. PROVIDE CONTINUOUS BOND BEAM WITH (2) #5 AT ALL BEARING ELEVATIONS AND OVER WINDOWS DOORS AND OTHER OPENINGS UNO.
4. PROVIDE HORIZONTAL REINFORCEMENT INTO INTERGECTING WALLS AT 16" OC VERTICAL EXTENT 30" EACH DIRECTION WITH PREFABRICATED "T" AND "L" SECTION TYP.
5. SEE GENERAL MASONRY NOTES ON SHEET S001 FOR NON LOAD BEARING WALL REINFORCEMENT REQUIREMENTS.
6. PROVIDE DOWELS TO MATCH VERTICAL REINFORCEMENT, EMBED DOWELS 30" INTO FOUNDATION WALL AND LAP 30" WITH OR MAKE CONTINUOUS WITH VERTICAL STEEL.

MASONRY PIER SCHEDULE

MARK	SIZE (LENGTH)	TYPE	VERTICAL REINFORCING	CLOSED LOOP TIE	COMMENTS
MP1	16"	III	(6) #6	(2) SETS OF 1/4" AT 8"	
MP2	24"	IV	(8) #6	(2) SETS OF 1/4" AT 8"	

NOTES

1. ALL REINFORCED CMU CORES ARE GROUTED SOLID.
2. RUN HORIZONTAL JOINT REINFORCING CONT. THROUGH MASONRY PIERS.
3. USE 1/4" (2) RODS AS CLOSED LOOP TIES.
4. USE BOND BEAM CMU BLOCKS OR DROP TOP CMU BLOCK AT MASONRY PIERS WITH TIES.
5. SIZE IS WALL WIDTH x LENGTH.



LOOSE STEEL LINTEL SCHEDULE

PROVIDE WHERE OTHER LINTELS ARE NOT SPECIFICALLY DETAILED

WALL THICK	CLEAR MASONRY OPENING WIDTH	SECTION
ALL	AT FIRE EXTINGUISHER CABINETS AND DRINKING FOUNTAINS	1/4" PLATE
4"	TO 5'-0"	ST3x6.25 3/16 1 1/2-8
4"	TO 7'-0"	PL 3/8 x 4 1/2 ON PL 3/8 x 3 1/2
4"	TO 9'-0"	PL3/8"x7 1/2" ON PL3/8"x3 1/2"
6"	TO 5'-0"	(2) L3 1/2x2 1/2x1/4 (LLV)
6"	TO 7'-0"	WT4x10.5
8"	TO 9'-0"	WT7x11
6"	TO 12'-0"	WT7x13 WITH PL1/2"x2" 3/16 1 1/2-8
8"	TO 5'-0"	(2) L3 1/2x3 1/2x1/4
8"	TO 7'-0"	(2) L4x3 1/2x5/16 (LLV)
8"	TO 9'-0"	WT7x15
10"	TO 7'-0"	W8x10 WITH PL5/16"x9" 3/16 1 1/2-8
10"	TO 10'-0"	W8x15 WITH PL5/16"x9"
12"	TO 5'-0"	(3) L3 1/2x3 1/2x1/4
12"	TO 7'-0"	W8x10 WITH PL5/16"x11" 3/16 1 1/2-8
12"	TO 10'-0"	W8x15 WITH PL5/16"x11"

NOTES:

1. PROVIDE MINIMUM 8" BEARING AT EACH END OF LINTEL.
2. GROUT BLOCK CORES AND REINFORCE WITH (1) #5 VERT BELOW LINTEL BEARING.
3. CENTER LINTELS IN WALL UNLESS OTHERWISE NOTED.
4. BOTTOM PLATES UNDER WIDE FLANGE SHAPES SHALL BE EXTENDED FULL LENGTH OF LINTEL.
5. WELD LINTEL COMPONENTS INTO SINGLE UNIT.
6. NOT LINTELS ARE REQUIRED FOR 4" AND 6" NON-BEARING MASONRY WALLS WHERE GROUTED HOLLOW METAL FRAMES HAVE A HEADSPAN OF 4'-0" OR LESS.

BRICK LOOSE LINTEL SCHEDULE

MARK	SECTION	NOTE/REMARKS
W ≤ 4'-0"	L4x4x5/16	.
6'-0" < L < 9'-0"	L6x4x3/8	.
9'-0" < L < 12'-0"	L7x4x1/2	.
12'-0" < L < 15'-0"	L8x4x3/4	.

NOTES:

1. LINTELS TO BE SHOP PAINTED WITH ZINC RICK URETHANE. SEE SPECIFICATIONS.
2. PROVIDE 4" MIN BEARING EACH END OF LINTEL UNDER 9'-0". 8" BEARING FOR LONGER LINTELS.
3. SEE ARCH FOR CONTROL JOINT LOCATIONS AND FLASHING REQUIREMENTS.

Engberg Anderson ARCHITECTS
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WARNER PARK COMMUNITY RECREATION CENTER EXPANSION

1625 NORTHPORT DRIVE
MADISON, WI 53704

CITY OF MADISON PARKS DIVISION
330 EAST LAKESIDE STREET
MADISON, WI 53715

PROJECT NUMBER 22347.00

ISSUED FOR:

BID SET 5/16/2024

REVISION FOR:

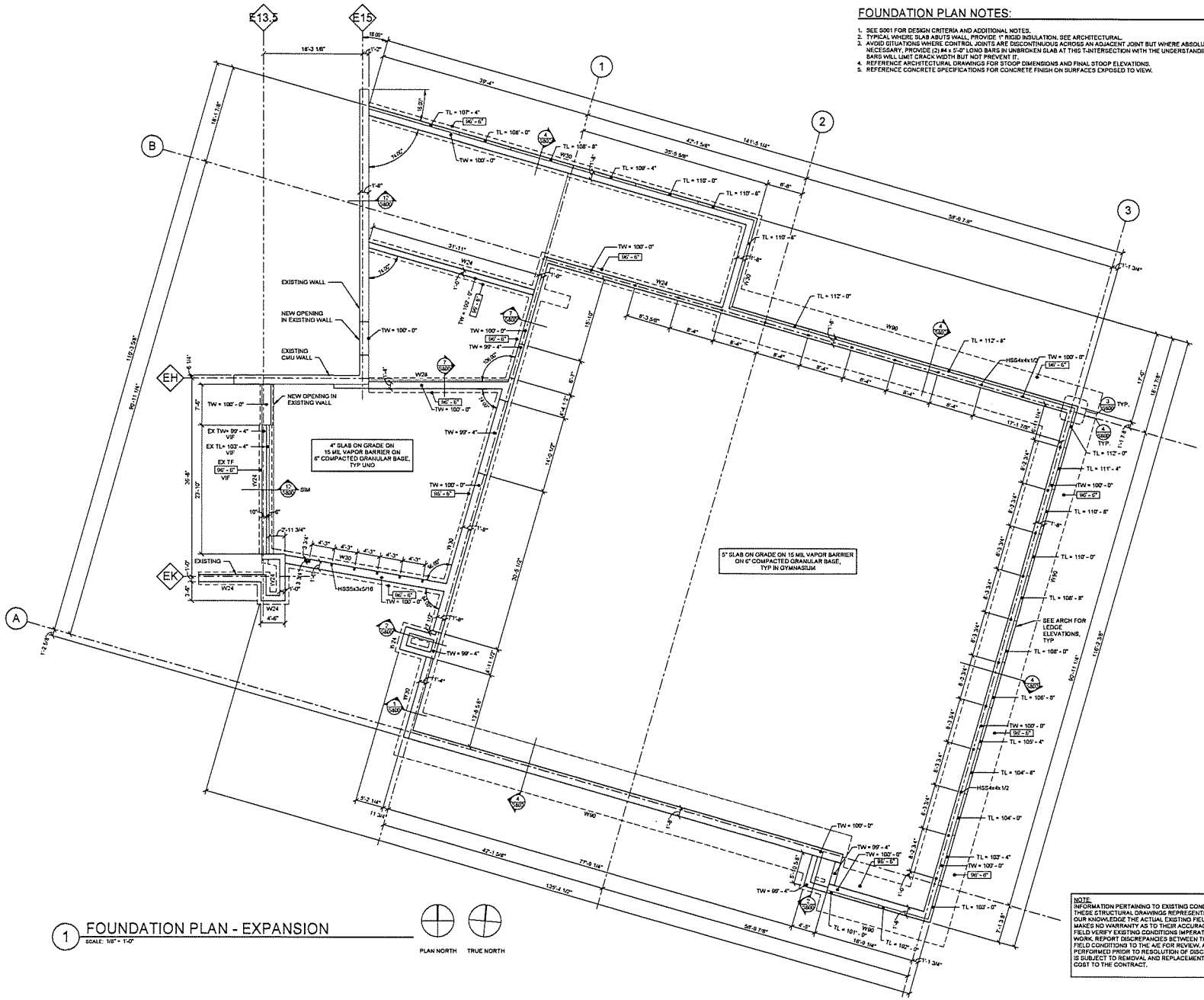
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STRUCTURAL SCHEDULES

S002



FOUNDATION PLAN NOTES:

1. SEE S001 FOR DESIGN CRITERIA AND ADDITIONAL NOTES.
2. TYPICAL WHERE SLAB ABUTS WALL, PROVIDE 1" RIGID INSULATION. SEE ARCHITECTURAL.
3. AVOID SITUATIONS WHERE CONTROL JOINTS ARE DISCONTINUOUS ACROSS AN ADJACENT JOINT BUT WHERE ABSOLUTELY NECESSARY, PROVIDE (2) #4 x 5'-0" LONG BARS IN UNBROKEN SLAB AT THIS T-INTERSECTION WITH THE UNDERSTANDING THAT BARS WILL LIMIT CRACK WIDTH BUT NOT PREVENT IT.
4. REFERENCE ARCHITECTURAL DRAWINGS FOR STOOP DIMENSIONS AND FINAL STOOP ELEVATIONS.
5. REFERENCE CONCRETE SPECIFICATIONS FOR CONCRETE FINISH ON SURFACES EXPOSED TO VIEW.

1 FOUNDATION PLAN - EXPANSION
SCALE: 1/8" = 1'-0"

PLAN NORTH TRUE NORTH

NOTE:
INFORMATION PERTAINING TO EXISTING CONDITIONS GIVEN ON THESE STRUCTURAL DRAWINGS REPRESENTS TO THE BEST OF OUR KNOWLEDGE THE ACTUAL EXISTING FIELD CONDITIONS. OTE MAKES NO WARRANTY AS TO THEIR ACCURACY. CONTRACTOR TO FIELD VERIFY EXISTING CONDITIONS IMPERATIVE TO THE NEW WORK. REPORT DISCREPANCIES BETWEEN THE DRAWINGS AND FIELD CONDITIONS TO THE A/E FOR REVIEW. ANY WORK PERFORMED PRIOR TO RESOLUTION OF DISCREPANCIES BY THE A/E IS SUBJECT TO REMOVAL AND REPLACEMENT AT NO ADDITIONAL COST TO THE CONTRACT.

Engberg Anderson ARCHITECTS
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Madison, Wisconsin 53718

ORIGINAL

WARNER PARK COMMUNITY RECREATION CENTER EXPANSION

1625 NORTHPORT DRIVE
MADISON, WI 53704

CITY OF MADISON PARKS DIVISION
330 EAST LAKESIDE STREET
MADISON, WI 53715

PROJECT NUMBER 223471.00

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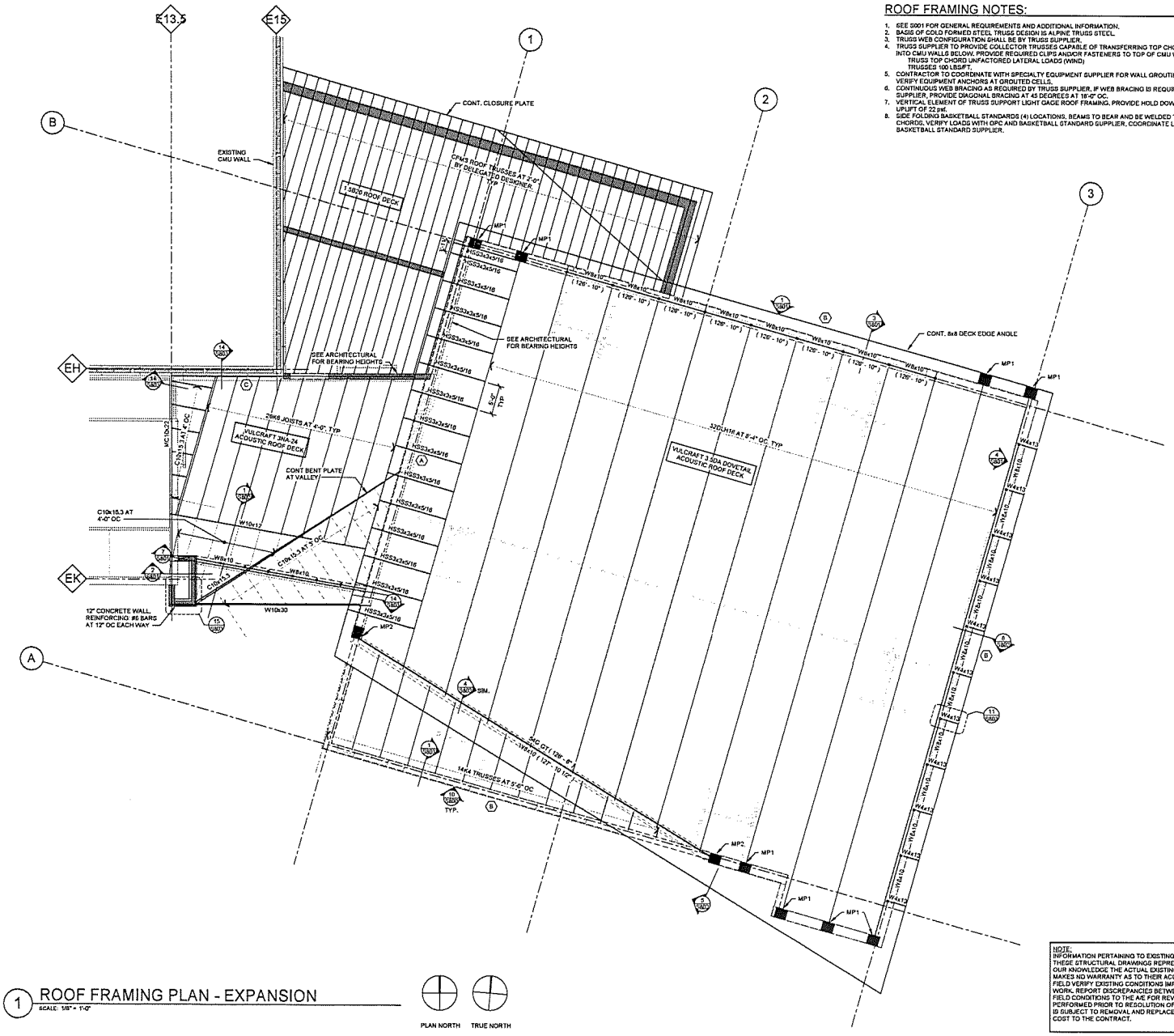
REVISION FOR:

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FOUNDATION PLAN - EXPANSION

S200



ROOF FRAMING NOTES:

1. SEE S001 FOR GENERAL REQUIREMENTS AND ADDITIONAL INFORMATION.
2. BASIS OF COLD FORMED STEEL TRUSS DESIGN IS ALPINE TRUSS STEEL.
3. TRUSS WEB CONFIGURATION SHALL BE BY TRUSS SUPPLIER.
4. TRUSS SUPPLIER TO PROVIDE COLLECTOR TRUSSES CAPABLE OF TRANSFERRING TOP CHORD LATERAL LOADS INTO CMU WALLS BELOW. PROVIDE REQUIRED CLIPS AND/OR FASTENERS TO TOP OF CMU WALL/LEDGER
   TRUSS TOP CHORD UNFACTORED LATERAL LOADS (WIND)
   TRUSSES 100 LBS/FT.
5. CONTRACTOR TO COORDINATE WITH SPECIALTY EQUIPMENT SUPPLIER FOR WALL GROUTING REQUIRMENTS. VERIFY EQUIPMENT ANCHORS AT GROUTED CELLS.
6. CONTINUOUS WEB BRACING AS REQUIRED BY TRUSS SUPPLIER. IF WEB BRACING IS REQUIRED BY THE TRUSS SUPPLIER, PROVIDE DIAGONAL BRACING AT 45 DEGREES AT 16'-0" OC.
7. VERTICAL ELEMENT OF TRUSS SUPPORT LIGHT GAGE ROOF FRAMING. PROVIDE HOLD DOWN/STRAP TO RESIST UPLIFT OF 22 psf.
8. SIDE FOLDING BASKETBALL STANDARDS (4) LOCATIONS. BEAMS TO BEAR AND BE WELDED TO JOISTS BOTTOM CHORDS. VERIFY LOADS WITH OPC AND BASKETBALL STANDARD SUPPLIER. COORDINATE LOCATIONS WITH BASKETBALL STANDARD SUPPLIER.

1 ROOF FRAMING PLAN - EXPANSION
SCALE: 1/8" = 1'-0"

PLAN NORTH TRUE NORTH

NOTE:
INFORMATION PERTAINING TO EXISTING CONDITIONS GIVEN ON THESE STRUCTURAL DRAWINGS REPRESENTS TO THE BEST OF OUR KNOWLEDGE THE ACTUAL EXISTING FIELD CONDITIONS. O.T.E MAKES NO WARRANTY AS TO THEIR ACCURACY. CONTRACTOR TO FIELD VERIFY EXISTING CONDITIONS IMPERATIVE TO THE NEW WORK. REPORT DISCREPANCIES BETWEEN THE DRAWINGS AND FIELD CONDITIONS TO THE A/E FOR REVIEW. ANY WORK PERFORMED PRIOR TO RESOLUTION OF DISCREPANCIES BY THE A/E IS SUBJECT TO REMOVAL AND REPLACEMENT AT NO ADDITIONAL COST TO THE CONTRACT.

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ONEIDA Total Integrated Enterprises
Office 608.243.5470 Fax 608.243.3014
5160 Eastpark Blvd, Suite 300,
Madison, Wisconsin 53718

Contractors are responsible for the means, methods, techniques, sequences and procedures of construction, including but not limited to, temporary supports, shoring, bracing to support imposed loads and other similar items.

ORIGINAL

WARNER PARK COMMUNITY RECREATION CENTER EXPANSION

1625 NORTHPORT DRIVE
MADISON, WI 53704

CITY OF MADISON PARKS DIVISION
330 EAST LAKESIDE STREET
MADISON, WI 53715

PROJECT NUMBER 223471.00

ISSUED FOR:

BID SET	5/16/2024

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NO.	DESCRIPTION	DATE

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ROOF FRAMING PLAN - EXPANSION

S201

PLUMBING FIXTURES SCHEDULE

ID	FIXTURE	WASTE			WATER				DETAIL / SHEET	DESCRIPTION / REMARKS
		DFU	TRAP	VENT (MIN)	COLD		HOT			
					CWFU	SIZE	HWFU	SIZE		
FWC-1	ELECTRIC WATER COOLER WITH BOTTLE FILLER (ADA COMPLIANT)	1	1 1/2"	1 1/2"	0.25	1/2"	—	—	—	FIXTURE: ELKAY LVRCGRN8WSK WALL HUNG, VANDAL RESISTANT ELECTRIC WATER COOLER WITH BOTTLE FILLING STATION AND FILTER, LIGHT GRAY GRANITE FINISH, SELF-CLOSING PUSH BUTTON VALVE CONTROLS, SELF-CONTAINED CHILLER UNDER FIXTURE. ADA COMPLIANT. FIXTURE TO BE MOUNTED AT STANDARD HEIGHT.
										TRAP & DRAIN: CHROME PLATED 17 GAUGE CAST BRASS TRAP.
										STOPS & SUPPLIES: McGUIRE LFBW2165CC. LOOSE KEY QUARTER TURN ANGLE STOPS WITH CHROME PLATED ESCUTCHEONS & CHROME PLATED COPPER RISER SUPPLIES.
										SUPPORT: MANUFACTURER'S RECOMMENDED WALL BRACKET AND COMPONENTS.
FWC-2	ELECTRIC WATER COOLER WITH BOTTLE FILLER (HI-LO)	1	1 1/2"	1 1/2"	0.25	1/2"	—	—	—	FIXTURE: ELKAY LVRCGRNTLSNSK WALL HUNG VANDAL RESISTANT HI-LO ELECTRIC WATER COOLER WITH BOTTLE FILLING STATION AND FILTER, LIGHT GRAY GRANITE FINISH, SELF-CLOSING PUSH BUTTON VALVE CONTROLS, SELF-CONTAINED CHILLER UNDER FIXTURE. ADA COMPLIANT. FIXTURE TO BE MOUNTED AT ADA HEIGHT.
										TRAP & DRAIN: CHROME PLATED 17 GAUGE CAST BRASS TRAP.
										STOPS & SUPPLIES: McGUIRE LFBW2165CC. LOOSE KEY QUARTER TURN ANGLE STOPS WITH CHROME PLATED ESCUTCHEONS & CHROME PLATED COPPER RISER SUPPLIES.
										SUPPORT: MANUFACTURER'S RECOMMENDED WALL BRACKET AND COMPONENTS.
HB-1	HOSE BIBB	—	—	—	3	1/2"	—	—	—	FIXTURE: WOODFORD MODEL 24 ANTI-SIPHON HOSE BIBB, EXPOSED COLD WATER, INTEGRAL VACUUM BREAKER, 3/4" HOSE CONNECTION.
L-1	LAVATORY (DOUBLE STATION)	1	1 1/4"	1 1/2"	0.5	1/2"	0.5	1/2"	—	FIXTURE: SLOAN AD-82000 CLARK STREET WALL MOUNTED TWIN STATION LAVATORY SINK, COORDINATE COLOR WITH ARCHITECT, ADA COMPLIANT. PROVIDE SUPPORT AS REQUIRED BY MANUFACTURER.
										FAUCET: (2) SLOAN OPTIMA ETF-410 HARDWIRED ELECTRONIC FAUCET, 0.35 GPM AERATOR, SINGLE HOLE MOUNTING, CHROME FINISH, SENSOR OPERATED, BOX TRANSFORMER POWER SUPPLY. INCLUDE STATE APPROVED BELOW DECK MIXING VALVE. REFER TO ARCHITECTURAL ELEVATIONS FOR LAYOUT OF FAUCETS.
										ACCESSORIES: (2) SLOAN ESD-410-CP HARDWIRED FOAM SOAP DISPENSER, CHROME FINISH. (1) XLERATOR XL-SYNC-C-120V HAND DRYER, CHROME FINISH. REFER TO ARCHITECTURAL ELEVATIONS FOR LAYOUT OF ACCESSORIES.
										TRAP & DRAIN: PROVIDE McGUIRE PROWRAP PREWRAPPED OFFSET DRAIN AND P-TRAP. CHROME PLATED 17 GAUGE CAST BRASS TRAP, WITH GRID STRAINER DRAIN.
										STOPS & SUPPLIES: QUARTER TURN ANGLE STOPS WITH CHROME PLATED ESCUTCHEONS & CHROME PLATED COPPER RISER SUPPLIES.
L-2	LAVATORY (SINGLE STATION)	1	1 1/4"	1 1/2"	0.5	1/2"	0.5	1/2"	—	FIXTURE: SLOAN AD-81000 CLARK STREET WALL MOUNTED SINGLE STATION LAVATORY SINK, COORDINATE COLOR WITH ARCHITECT, ADA COMPLIANT. PROVIDE SUPPORT AS REQUIRED BY MANUFACTURER.
										FAUCET: (1) SLOAN OPTIMA ETF-410 HARDWIRED ELECTRONIC FAUCET, 0.35 GPM AERATOR, SINGLE HOLE MOUNTING, CHROME FINISH, SENSOR OPERATED, BOX TRANSFORMER POWER SUPPLY. INCLUDE STATE APPROVED BELOW DECK MIXING VALVE. REFER TO ARCHITECTURAL ELEVATIONS FOR LAYOUT OF FAUCET.
										ACCESSORIES: (1) SLOAN ESD-410-CP HARDWIRED FOAM SOAP DISPENSER, CHROME FINISH. (1) XLERATOR XL-SYNC-C-120V HAND DRYER, CHROME FINISH. REFER TO ARCHITECTURAL ELEVATIONS FOR LAYOUT OF ACCESSORIES.
										TRAP & DRAIN: PROVIDE McGUIRE PROWRAP PREWRAPPED OFFSET DRAIN AND P-TRAP. CHROME PLATED 17 GAUGE CAST BRASS TRAP, WITH GRID STRAINER DRAIN.
										STOPS & SUPPLIES: QUARTER TURN ANGLE STOPS WITH CHROME PLATED ESCUTCHEONS & CHROME PLATED COPPER RISER SUPPLIES.
SH-1	SHOWER (ADA COMPLIANT)	2	2"	1 1/2"	2	1/2"	2	1/2"	—	ENCLOSURE: FIELD BUILT BY OTHERS.
										FIXTURE INCLUDING CONTROLS: ACORN 936-CD-HWSB-DN-FX-GD-RD SHOWER SYSTEM, 1.5 GPM. ONE FIXED CONICAL SHOWER HEAD MOUNTED ON WALL. REFER TO ARCHITECTURAL PLANS FOR FIXED SHOWER HEAD MOUNTING HEIGHT. ANTI-SCALDING TEMPERATURE / VOLUME CONTROL WITH INTEGRAL STOPS. TEMPERATURE BALANCING VALVE. INCLUDE DIVERTER VALVE WITH HANDHELD SHOWER & 60" STAINLESS STEEL HOSE WITH QUICK DISCONNECT. PC TO PROVIDE 14 GAUGE STAINLESS STEEL PANEL FOR SHOWER CONTROL AND DIVERTER VALVE. COORDINATE SIZE AND LOCATION OF 14 GAUGE STAINLESS STEEL PANEL WITH GC. TEMPERATURE CONTROL AND DIVERTER VALVE MOUNTED ON 14 GAUGE STAINLESS STEEL PANEL, VALVE CONCEALED BEHIND PANEL. ADA COMPLIANT. 14 GAUGE STAINLESS STEEL PANEL AND CONTROL TO BE INSTALLED ON NORTH (LONG SIDE) WALL. SHOWER HEAD AND HAND SHOWER TO BE INSTALLED ON EAST (SHORT SIDE) WALL.
										DRAIN: FLOOR DRAIN FD-1 IN SHOWER FLOOR.
UR-1	URINAL (STANDARD HEIGHT)	2	2"	1 1/2"	2	3/4"	—	—	—	FIXTURE: ZURN OMNI-FLO Z5755-U, WALL HUNG URINAL, 0.5 GPF, FLUSHOMETER TYPE, WASHOUT, 3/4" TOP SPUD, WHITE VITREOUS CHINA, MOUNTED AT STANDARD HEIGHT.
										FLUSH VALVE: ZURN AQUASENSE ZER6500AV-HET-TMHW, CONCEALED SENSOR OPERATED HARDWIRED URINAL FLUSH VALVE, INFRARED SENSOR, 3/4" TOP SPUD, 0.5 GPF, DIAPHRAGM TYPE, ELECTRICAL OVERRIDE, POLISHED CHROME FINISH, ADA COMPLIANT.
										SUPPORT: COMMERCIAL GRADE, WALL HUNG URINAL SUPPORT, STEEL STANCHIONS, IRON WELDED FEET, STEEL SLEEVES, FASTEN TO FLOOR.
UR-2	URINAL (ADA HEIGHT)	2	2"	1 1/2"	2	3/4"	—	—	—	FIXTURE: ZURN OMNI-FLO Z5755-U, WALL HUNG URINAL, 0.5 GPF, FLUSHOMETER TYPE, WASHOUT, 3/4" TOP SPUD, WHITE VITREOUS CHINA, MOUNTED AT ADA HEIGHT.
										FLUSH VALVE: ZURN AQUASENSE ZER6500AV-HET-TMHW, CONCEALED SENSOR OPERATED HARDWIRED URINAL FLUSH VALVE, INFRARED SENSOR, 3/4" TOP SPUD, 0.5 GPF, DIAPHRAGM TYPE, ELECTRICAL OVERRIDE, POLISHED CHROME FINISH, ADA COMPLIANT.
										SUPPORT: COMMERCIAL GRADE, WALL HUNG URINAL SUPPORT, STEEL STANCHIONS, IRON WELDED FEET, STEEL SLEEVES, FASTEN TO FLOOR.
WC-1	WATER CLOSET (STANDARD HEIGHT)	6	4"	2"	6.5	1 1/2"	—	—	—	FIXTURE: ZURN ECO VANTAGE HET WALL HUNG TOILET Z5615-SWL-AM, FLUSH VALVE TOILET, WHITE VITREOUS CHINA, ELONGATED BOWL, ZURNSHIELD CERAMIC GLAZE, 1.28 GPF MAX, 2.125" TRAPWAY, 1-1/2" TOP SPUD, MOUNTED AT ADA HEIGHT.
										FLUSH VALVE: ZURN AQUASENSE ZER6000AV-HET-TMHW, CONCEALED SENSOR OPERATED HARDWIRED FLUSH VALVE, INFRARED SENSOR, 1-1/2" TOP SPUD, 1.28 GPF, DIAPHRAGM TYPE, ELECTRICAL OVERRIDE, POLISHED CHROME FINISH, ADA COMPLIANT.
										SEAT: ZURN Z5955SS-EL-MM, OPEN FRONT TOILET SEAT, WHITE INJECTION MOLDED, SELF SUSTAINING CHECK HINGES, ANTI-MICROBIAL AGENT.
										SUPPORT: COMMERCIAL GRADE WATER CLOSET CARRIER.
WC-2	WATER CLOSET (ADA HEIGHT)	6	4"	2"	6.5	1 1/2"	—	—	—	FIXTURE: ZURN ECO VANTAGE HET WALL HUNG TOILET Z5615-SWL-AM, FLUSH VALVE TOILET, WHITE VITREOUS CHINA, ELONGATED BOWL, ZURNSHIELD CERAMIC GLAZE, 1.28 GPF MAX, 2.125" TRAPWAY, 1-1/2" TOP SPUD, MOUNTED AT ADA HEIGHT.
										FLUSH VALVE: ZURN AQUASENSE ZER6000AV-HET-TMHW, CONCEALED SENSOR OPERATED HARDWIRED FLUSH VALVE, INFRARED SENSOR, 1-1/2" TOP SPUD, 1.28 GPF, DIAPHRAGM TYPE, ELECTRICAL OVERRIDE, POLISHED CHROME FINISH, ADA COMPLIANT.
										SEAT: ZURN Z5955SS-EL-MM, OPEN FRONT TOILET SEAT, WHITE INJECTION MOLDED, SELF SUSTAINING CHECK HINGES, ANTI-MICROBIAL AGENT.
										SUPPORT: COMMERCIAL GRADE WATER CLOSET CARRIER.
WH-1	WALL HYDRANT	—	—	—	4	3/4"	—	—	—	FIXTURE: WOODFORD MODEL 96Y, EXTERNAL FREEZELESS WALL HYDRANT BOX TYPE, AUTOMATIC DRAINING, INTEGRAL VACUUM BREAKER, 3/4" HOSE CONNECTION, LOOSE TEE KEY WITH TAMPER RESISTANT BOX.

PLUMBING DRAIN AND CLEANOUT SCHEDULE

ID	FIXTURE	WASTE			DETAIL / SHEET	DESCRIPTION / REMARKS
		DFU	TRAP	VENT		
FD-1	FLOOR DRAIN (ROUND)	2 3 4	2" 3" 4"	1 1/2" 1 1/2" 2"	—	FIXTURE: ZURN ZN415-B, CAST IRON BODY, 6" DIAMETER NICKEL BRONZE STRAINER, COMBINATION INVERTIBLE MEMBRANE CLAMP, AND ADJUSTABLE COLLAR.
FD-2	FLOOR DRAIN (ROUND, HEAVY DUTY)	2 3 4	2" 3" 4"	1 1/2" 1 1/2" 2"	—	FIXTURE: ZURN ZN556, CAST IRON BODY, 6" DIAMETER NICKEL BRONZE TOP, SEEPAGE PAN, COMBINATION MEMBRANE FLASHING CLAMP & FRAME, AND HEAVY DUTY DEEP FLANGE SLOTTED GRATE.
HD-1	HUB DRAIN - AT GRADE	3 4 6	3" 3" 4"	1 1/2" 1 1/2" 2"	—	EXTEND HUB 2" (MIN) ABOVE FLOOR, INSTALL PIPE INCREASER ONE PIPE SIZE LARGER MINIMUM.
RD-1	ROOF DRAIN	—	—	—	—	FIXTURE: ZURN ZC100-C-EA-R ROOF DRAIN, CAST IRON BODY, 15" DIA, COMBINATION MEMBRANE FLASHING CLAMP/GRAVEL GUARD, UNDERDECK CLAMP, ADJUSTABLE EXTENSION, ROOF SUMP RECEIVER, AND CAST IRON STRAINER.
FCO	FLOOR CLEANOUT	—	—	—	—	FINISHED AREAS WITH HARD FLOORS: ZURN ZN1400-SP, CAST IRON, ADJUSTABLE FLOOR CLEANOUT WITH NICKEL BRONZE TOP AND BRONZE PLUG.
						FINISHED AREAS WITH CARPETED FLOORS: ZURN ZN1400-SP-CM, CAST IRON, ADJUSTABLE FLOOR CLEANOUT WITH NICKEL BRONZE TOP AND BRONZE PLUG, WITH CARPET MARKER.
						UNFINISHED AREAS: ZURN ZN1400-SP, CAST IRON, ADJUSTABLE FLOOR CLEANOUT WITH NICKEL BRONZE TOP AND BRONZE PLUG.
WCO	WALL CLEANOUT	—	—	—	—	FIXTURE: ZURN ZS1468, POLISHED STAINLESS STEEL, ROUND ACCESS COVER, SECURING SCREW & BRONZE RAISED HEX HEAD PLUG. VERIFY LENGTH OF SCREW REQUIRED WITH WALL CONSTRUCTION.
YCO	YARD CLEANOUT	—	—	—	—	FIXTURE: 4" PIPE RISER WITH PLUMBING CREATION CI-48-8 FROST SLEEVE OR 6" PIPE RISER WITH PLUMBING CREATION CI-48-6 FROST SLEEVE EXTENDING 5 FEET BELOW FINISHED GRADE.

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JDR PROJECT NO: 23.039

QC | SIGN OFF

WARNER PARK
COMMUNITY RECREATION
CENTER EXPANSION

1625 NORTHPORT DRIVE
MADISON, WI 53704

CITY OF MADISON PARKS DIVISION
330 EAST LAKESIDE STREET
MADISON, WI 53715

PROJECT NUMBER 223471.00

ISSUED FOR:

BID SET 5/16/2024

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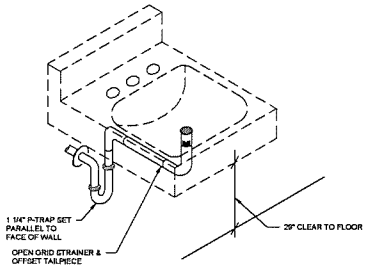
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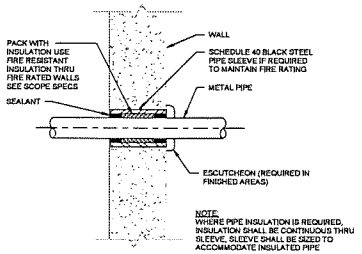
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SCHEDULES - PLUMBING

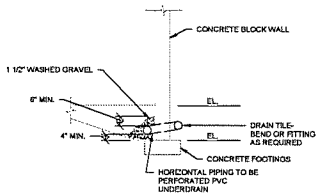
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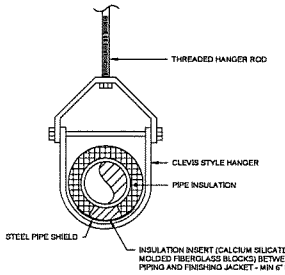
4 P901 WALL HUNG LAVATORY - BARRIER FREE
SCALE: NONE



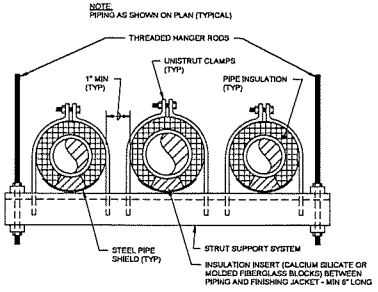
1 P901 SLEEVE THRU WALL DETAIL
SCALE: NONE



5 P901 SECTION THRU DRAIN TILE
SCALE: NONE



2 P901 PIPE HANGER DETAIL
SCALE: NONE



3 P901 TRAPEZE HANGER DETAIL
SCALE: NONE

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JDR PROJECT NO: 23.039

DRAFT 11/14/24

WARNER PARK COMMUNITY RECREATION CENTER EXPANSION

1625 NORTHPORT DRIVE
MADISON, WI 53704

CITY OF MADISON PARKS DIVISION
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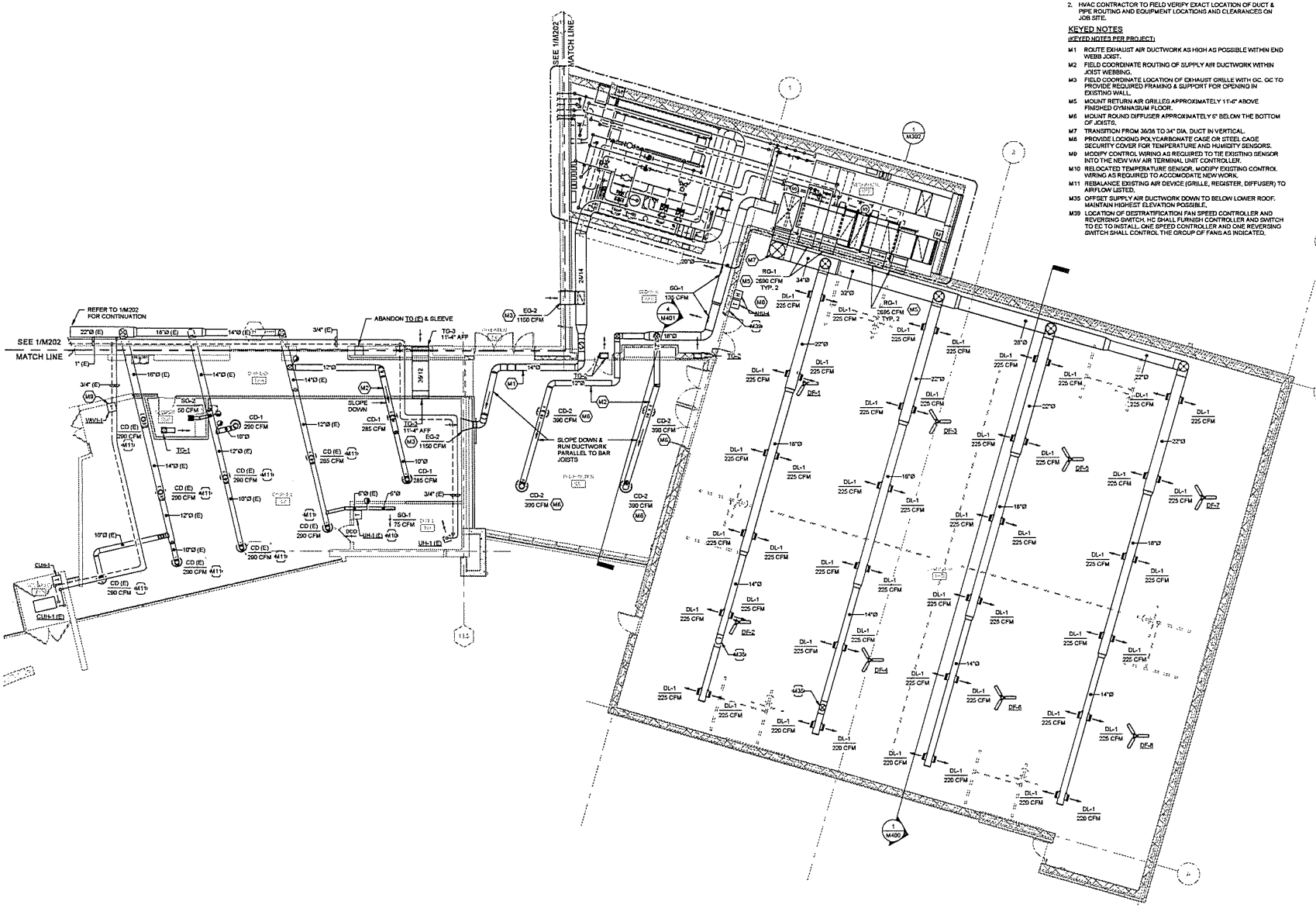
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DETAILS - PLUMBING

P901



1 M201 FIRST FLOOR PLAN EXPANSION - HVAC
SCALE: 1/8" = 1'-0"

GENERAL NOTES:

1. COORDINATE ALL DUCT, PIPING, AND EQUIPMENT INSTALLATION WITH JOIST LAYOUT WHERE REQUIRED.
2. HVAC CONTRACTOR TO FIELD VERIFY EXACT LOCATION OF DUCT & PIPE ROUTING AND EQUIPMENT LOCATIONS AND CLEARANCES ON JOB SITE.

KEYED NOTES
(KEYED NOTES PER PROJECT)

- M1 ROUTE EXHAUST AIR DUCTWORK AS HIGH AS POSSIBLE WITHIN END WEBB JOIST.
- M2 FIELD COORDINATE ROUTING OF SUPPLY AIR DUCTWORK WITHIN JOIST WEBBING.
- M3 FIELD COORDINATE LOCATION OF EXHAUST GRILLE WITH OC. OC TO PROVIDE REQUIRED FRAMING & SUPPORT FOR OPENING IN EXISTING WALL.
- M5 MOUNT RETURN AIR GRILLEG APPROXIMATELY 11'-6" ABOVE FINISHED GYMNASIUM FLOOR.
- M6 MOUNT ROUND DIFFUSER APPROXIMATELY 6" BELOW THE BOTTOM OF JOISTS.
- M7 TRANSITION FROM 36/36 TO 34" DIA. DUCT IN VERTICAL.
- M8 PROVIDE LOCKING POLYCARBONATE CASE OR STEEL CAGE SECURITY COVER FOR TEMPERATURE AND HUMIDITY SENSORS.
- M9 MODIFY CONTROL WIRING AS REQUIRED TO TIE EXISTING SENSOR INTO THE NEW VAV AIR TERMINAL UNIT CONTROLLER.
- M10 RELOCATED TEMPERATURE SENSOR. MODIFY EXISTING CONTROL WIRING AS REQUIRED TO ACCOMODATE NEW WORK.
- M11 REBALANCE EXISTING AIR DEVICE (GRILLE, REGISTER, DIFFUSER) TO AIRFLOW LISTED.
- M35 OFFSET SUPPLY AIR DUCTWORK DOWN TO BELOW LOWER ROOF. MAINTAIN HIGHEST ELEVATION POSSIBLE.
- M39 LOCATION OF DESTRATIFICATION FAN SPEED CONTROLLER AND REVERSING SWITCH. HC SHALL FURNISH CONTROLLER AND SWITCH TO EC TO INSTALL. ONE SPEED CONTROLLER AND ONE REVERSING SWITCH SHALL CONTROL THE GROUP OF FANS AS INDICATED.

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JDR PROJECT NO: 23.0319

OVER 4 | NAC

WARNER PARK COMMUNITY RECREATION CENTER EXPANSION

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MADISON, WI 53704

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FIRST FLOOR EXPANSION PLAN - HVAC

M201

CHILLER DEMOLITION & REPLACEMENT NOTES:

1. HVAC CONTRACTOR SHALL PHASE THE DEMOLITION OF THE EXISTING CHILLER AND CHILLED WATER PLANT WITH THE INSTALLATION OF THE NEW HEAT RECOVERY CHILLER PLANT. EXISTING CHILLER AND CHILLED WATER PLANT SHALL REMAIN OPERATIONAL TO LIMIT DOWNTIME OF COOLING TO THE FACILITY.

GENERAL NOTES:

1. COORDINATE ALL DUCT, PIPING, AND EQUIPMENT INSTALLATION WITH JOIST LAYOUT WHERE REQUIRED.
2. HVAC CONTRACTOR TO FIELD VERIFY EXACT LOCATION OF DUCT & PIPE ROUTING AND EQUIPMENT LOCATIONS AND CLEARANCES ON JOB SITE.

KEYED NOTES

(KEYED NOTES PER PROJECT)

M27 4" CONCRETE EQUIPMENT PAD BY GC. HC TO COORDINATE SIZE AND LOCATION.

M28 6" GEOTHERMAL BOREFIELD MANIFOLDS. REFER TO DETAIL 3/M502 FOR ADDITIONAL REQUIREMENTS.

M29 PROVIDE 72/76 INSULATED PLENUM FOR OUTSIDE AIR INTAKE, 72/76 INSULATED PLENUM FOR RELIEF AIR, AND PROVIDE INSULATED BLANK-OFF PANELS FOR UN-USED PORTIONS OF LOUVER.

M30 COORDINATE WITH EC TO PROVIDE 120/1 POWER AND DATA CONNECTION TO TEMPERATURE CONTROL PANEL.

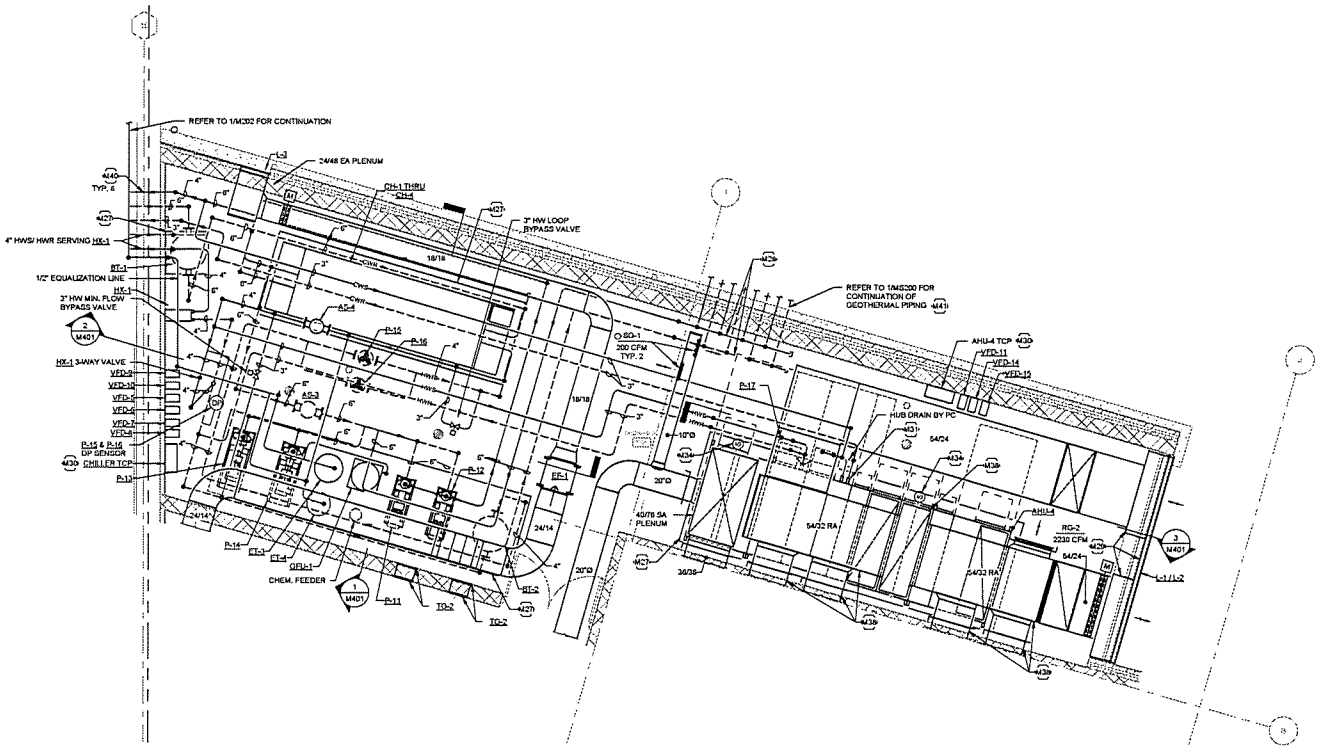
M31 PROVIDE CONDENSATE LOOP SEAL AND ROUTE CONDENSATE TO HUB DRAIN. CONDENSATE PIPE SIZE SHALL NOT BE SMALLER THAN UNIT CONNECTION SIZE. HUB DRAIN BY PC.

M34 DUCT MOUNTED SMOKE DETECTOR BY EC.

M38 LINE ALL RETURN AIR DUCTWORK ASSOCIATED WITH AHU-4. DUCT SIZES SHOWN ARE INSIDE DUCT DIMENSIONS.

M40 PROVIDE PIPE BLOCKER PIPE ATTENUATION. REFER TO DETAIL 5/M502 FOR ADDITIONAL INFORMATION.

M41 FIELD COORINATE GEOTHERMAL FIELD PIPING WITH STORM PIPING. REFER TO CIVIL PLANS FOR ADDITIONAL INFORMATION.



1 M302 ENLARGED MECHANICAL ROOM PLAN - HVAC

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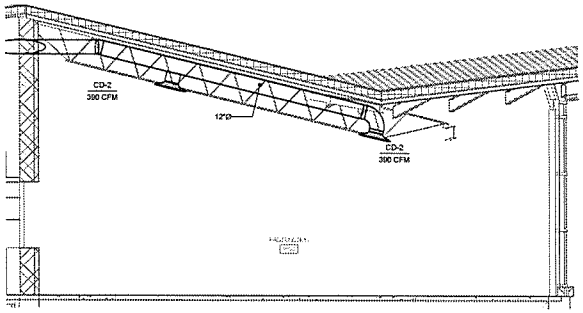
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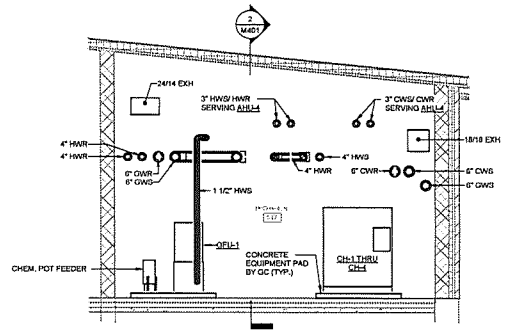
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ENLARGED MECHANICAL ROOM PLAN - HVAC

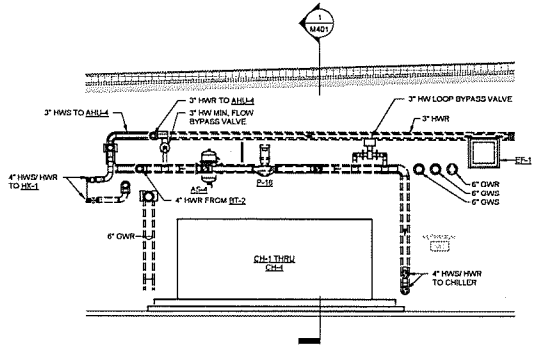
M302



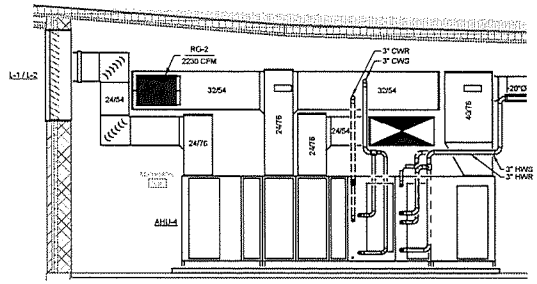
4 M401 105C PRE-FUNCTION SECTION
SCALE: 1/4" = 1'-0"



1 M401 105F MECHANICAL SECTION 1
SCALE: 1/4" = 1'-0"



2 M401 105F MECHCANICAL SECTION 2
SCALE: 1/4" = 1'-0"



3 M401 AHU-4 SECTION
SCALE: 1/4" = 1'-0"

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JDR PROJECT NO: 23.0319

WARNER PARK COMMUNITY RECREATION CENTER EXPANSION

1625 NORTHPORT DRIVE
MADISON, WI 53704

CITY OF MADISON PARKS DIVISION
330 EAST LAKESIDE STREET
MADISON, WI 53715

PROJECT NUMBER 22347.L00

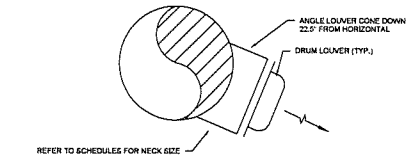
ISSUED FOR:
BID SET 05/16/2024

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NO. DESCRIPTION DATE

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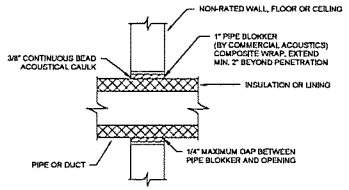
SECTIONS - HVAC

M401

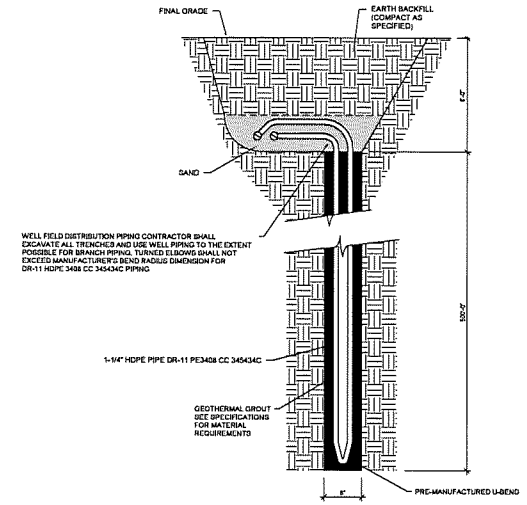


NOTE: PAINT ALL VISIBLE INTERIOR SURFACES OF DUCTWORK FLAT BLACK.

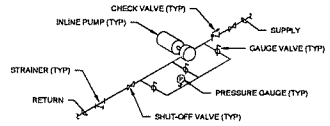
4 M902 DRUM LOUVER DETAIL



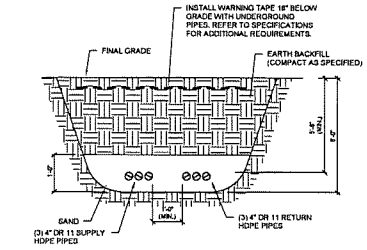
5 M902 SOUND ATTENUATION PIPE OR DUCT SLEEVE



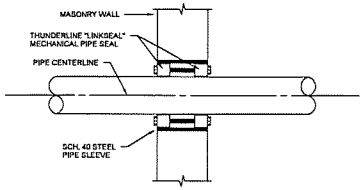
1 M902 GEOTHERMAL VERTICAL HEAT EXCHANGER DETAIL



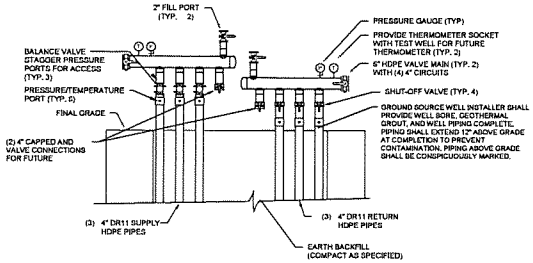
6 M902 INLINE PUMP (SINGLE) DETAIL



2 M902 GEOTHERMAL TRENCH DETAIL



7 M902 EXTERIOR WALL PIPE PENETRATION DETAIL



3 M902 GEOTHERMAL MANIFOLD DETAIL

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JDR PROJECT NO: 23.0319

ORIGINAL

WARNER PARK COMMUNITY RECREATION CENTER EXPANSION

1625 NORTHPORT DRIVE
MADISON, WI 53704

CITY OF MADISON PARKS DIVISION
330 EAST LAKESIDE STREET
MADISON, WI 53715

PROJECT NUMBER 223471.00

ISSUED FOR:

BID SET	05/16/2024

REVISION FOR:

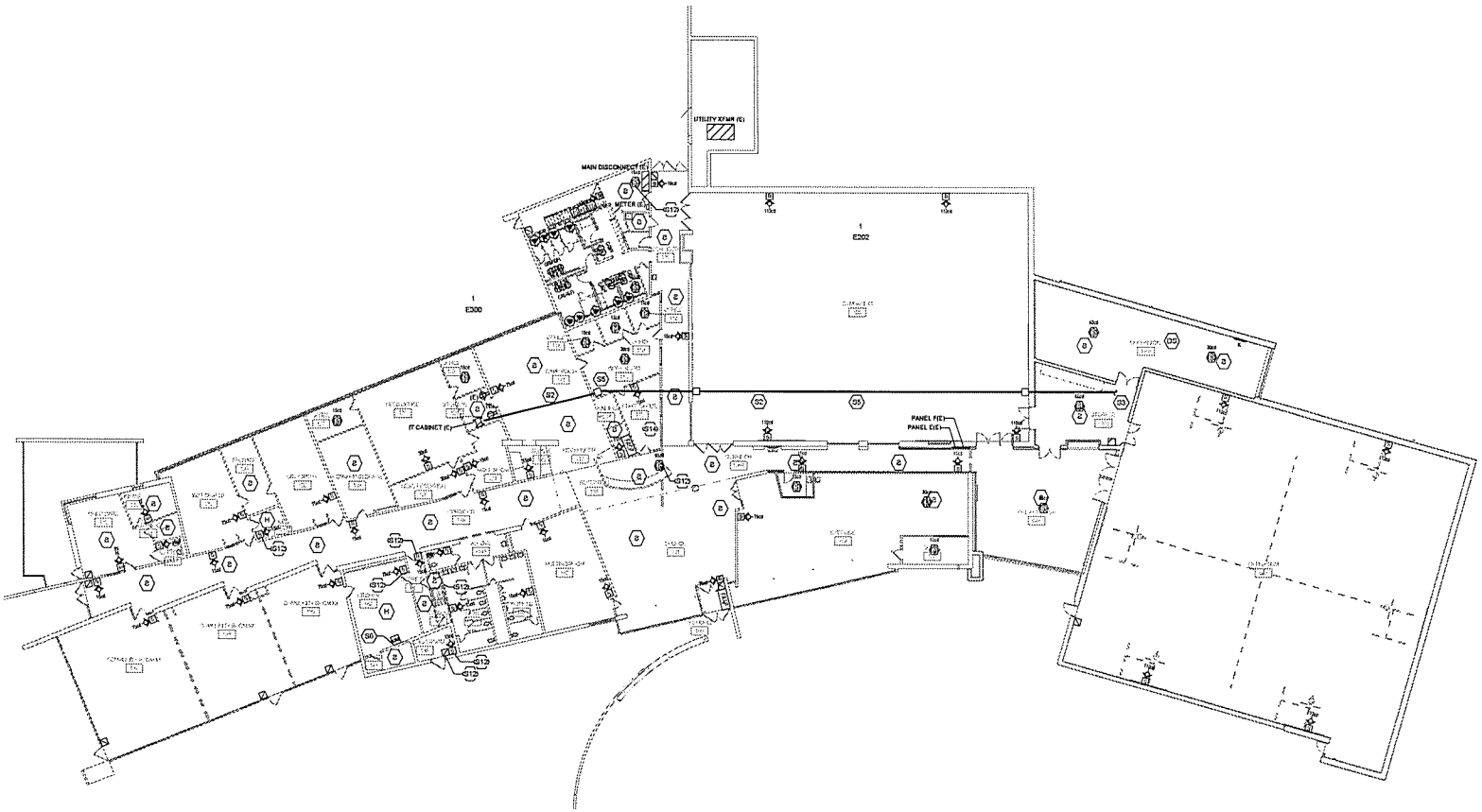
NO.	DESCRIPTION	DATE

DRAWN BY NSC

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DETAILS - HVAC

M902



1 E200 OVERALL FIRST FLOOR PLAN – POWER AND SYSTEMS

SCALE: 1/16" = 1'-0"

PROJECT NORTH

POWER GENERAL NOTES:

1. REFER TO SHEET E000 FOR ALL SYMBOLS, ABBREVIATIONS, AND DETAILS.
2. THE CONTRACTOR MAY INSTALL UP TO THREE (3) CURRENT CARRYING CONDUCTORS IN A CONDUIT. LOADINGS ARE BASED ON THWN INSULATION, 40°C AMBIENT WITH DERATINGS FOR TEMPERATURE AND UP TO THREE (3) CONDUCTORS IN A CONDUIT. CONTACT THE ENGINEER FOR WIRING IN OTHER CONDITIONS.
3. VERIFY ALL MOUNTING HEIGHTS OF DEVICES ABOVE MILLWORK WITH ARCHITECTURAL PLANS.
4. NOTE THAT THIS PROJECT CONSISTS OF A COMPLETE REPLACEMENT OF THE FIRE ALARM SYSTEM AS SHOWN ON THE PLANS. ANY/ALL EXISTING FIRE ALARM DEVICES, CONTROL PANELS, ANNUNCIATOR PANELS, CABLING, ETC. SHALL BE DISCONNECTED AND REMOVED COMPLETE. REUSE OF EXISTING INFRASTRUCTURE (BOXES AND CONDUITS ONLY) IS ACCEPTABLE WHERE SIZED AND SUPPORTED PROPERLY. THE NEW VOICE FIRE ALARM SYSTEM THROUGHOUT THE BUILDING SHALL BE INSTALLED, PROGRAMMED, TESTED, COMMISSIONED, AND APPROVED BY THE LOCAL AHJ PRIOR TO DECOMMISSIONING AND REMOVING THE EXISTING FIRE ALARM SYSTEM. ANY/ALL NEW FIRE ALARM DEVICES SHALL BE RECESSED IN EXISTING WALLS/CEILINGS UNLESS INDICATED OTHERWISE. ANY AND ALL FIRE ALARM CABLING SHALL BE EMT CONDUIT AT A MINIMUM. NO FREE AIR CABLING IS ALLOWED.
5. ALL RECEPTACLES WITH PLUGLOAD CONTROL SHALL BE CONTROLLABLE VIA THE LIGHTING CONTROLS SHOWN ON THE LIGHTING PLANS. PROVIDE CONTROL DEVICES, ETC. AS REQUIRED TO ACHIEVE THE CONTROLS SHOWN.

SYSTEMS GENERAL NOTES:

1. ALL LOW VOLTAGE CABLES OR CONDUCTORS OPERATING AT LESS THAN 50 VOLTS SHALL BE IN ELECTRICAL METAL TUBING (EMT) WHERE INSTALLED WITHIN WALLS OR INACCESSIBLE SPACES.
2. TV OUTLETS, VOLUME CONTROLS, TELEPHONE OUTLETS, AND DATA OUTLETS SHALL CONSIST OF A BACK BOX WITH CONDUIT STUBBED ABOVE THE ACCESSIBLE CEILING, SEE ROUGH-IN DETAIL. VERIFY SIZE OF BACK BOX REQUIRED WITH DEVICE TO BE INSTALLED. LOCATE BACK BOXES 6" FROM ADJACENT POWER RECEPTACLE INTENDED FOR COMPUTER USE.
3. ANY/ALL LOW VOLTAGE SYSTEMS, INCLUDING BUT NOT LIMITED TO THE FOLLOWING: COMMUNICATIONS, PAGING, CLOCK SYSTEM, CLASS BELLS, ETC., SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION. FIELD VERIFY ALL LOW VOLTAGE SYSTEM REQUIREMENTS AND EXTEND/MAINTAIN/REUSE AS REQUIRED. EXTEND ANY/ALL NEW COMMUNICATIONS CABLING TO EXISTING MDF/IDF AS REQUIRED. COORDINATE JACK/CABLING REQUIREMENTS AND COLORS WITH OWNER.
4. CAMERA MOUNTING SHALL BE COORDINATED WITH OWNER. VERIFY DESIRED MOUNTING HEIGHT AND CAMERA MOUNT TYPE PRIOR TO INSTALL.
5. ALL WAP LOCATIONS SHOWN ARE APPROXIMATE. CONFIRM ALL EXACT/FINAL WAP LOCATIONS WITH CITY I.T. DEPARTMENT PRIOR TO ROUGH IN. WAP MOUNTING SHALL BE COORDINATED WITH OWNER. VERIFY DESIRED MOUNTING HEIGHT AND WAP MOUNT TYPE PRIOR TO INSTALL.
6. ALL NEW CAT6 CABLING SHALL BE ROUTED TO STORAGE (TR ROOM) #105E.

KEYED NOTES

(KEYED NOTES PER PROJECT)

- D2 FOR CONNECTION OF TELECOM ROOMS, RUN TWELVE STRAND SINGLE MODE FIBER FROM STORAGE (TR ROOM) 123 TO STORAGE (TR ROOM) 105E. TERMINATE WITH LC CONNECTORS ON CABINET MOUNTED PATCH PANEL IN EACH TR. PROVIDE 12 LC TO LC PATCH CABLES.
- S3 PROVIDE AND INSTALL NEW LOCKING IT CABINET EQUAL TO HUBBELL #HDG4836.
- S5 PROVIDE AND INSTALL (2) 2" CONDUITS ROUTED FROM STORAGE (TR ROOM) 123 TO STORAGE (TR ROOM) 105E. PROVIDE JUNCTION BOXES ABOVE CEILING IN WORK ROOM 115 AND IN GYMNASIUM 105 APPROXIMATELY AS SHOWN. CONDUITS SHALL BE PAINTED TO MATCH EXISTING CEILING/UTILITIES COLOR WHEN ROUTED THROUGH SPACE(S) WITH NO CEILINGS.
- S6 EXISTING KITCHEN HOOD MONITOR MODULE TO BE DISCONNECTED, REMOVED, AND REPLACED. CONNECT TO NEW FIRE ALARM CONTROL PANEL IN SAME LOCATION. FIELD VERIFY ALL REQUIREMENTS WITH EXISTING HOOD/EQUIPMENT AND CONNECT TO NEW FIRE ALARM SYSTEM AS REQUIRED.
- S12 FIRE ALARM DEVICE TO BE SURFACE MOUNTED AT APPROXIMATE LOCATION SHOWN.
- S14 PROVIDE A PAGING SPEAKER CABLING TERMINATION POINT (J-BOX AS REQUIRED) ABOVE THE CEILING IN THIS ROOM. ALL NEW PAGING SPEAKER CABLING FROM PRE-FUNCTION #105C AND GYMNASIUM #105D SHALL BE ROUTED TO THIS POINT. ALL NEW PAGING SPEAKER CABLING FROM OFFICE #103 (CURRENTLY DAMAGED) SHALL BE ROUTED OVERHEAD TO THIS POINT. EXTEND NEW CABLES TO EXISTING AMP FROM THIS LOCATION.

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JDR PROJECT NO: 23.0319

ORIGINAL

WARNER PARK COMMUNITY RECREATION CENTER EXPANSION

1625 NORTHPORT DRIVE
MADISON, WI 53704

CITY OF MADISON PARKS DIVISION
330 EAST LAKESIDE STREET
MADISON, WI 53715

PROJECT NUMBER 223471.00

ISSUED FOR:

BID SET	5/16/2024

REVISION FOR:

NO.	DESCRIPTION	DATE

DRAWN BY	JDR
CHECKED BY	JDR

OVERALL FIRST FLOOR PLAN – POWER AND SYSTEMS

E200

KEYED NOTES

(KEYED NOTES PER PROJECT)

P1 LOCATE INVERTERS FOR ROOF MOUNTED PV ARRAY AT THIS LOCATION.

P2 PROVIDE AND INSTALL NEW 208Y/120V, 600A PANEL 'K'.

P3 PROVIDE AND INSTALL DUAL CONTROLLED RECEPTACLE EQUAL TO LEGRAND #WRC-20-2. PROVIDE CEILING MOUNTED RF TRANSMITTER EQUAL TO LEGRAND #WRC-TX-LM. PROVIDE ROOM CONTROLLERS AS REQUIRED.

P4 COORDINATE HEIGHT OF POWER AND DATA FOR SCREEN WITH ARCHITECT.

P5 LOCATION OF DESTRATIFICATION FAN SPEED CONTROLLER AND REVERSING SWITCH. HC SHALL FURNISH CONTROLLER AND SWITCH TO EC TO INSTALL. REFER TO M201 FOR MORE DETAILS.

S1 MOUNT SMOKE DETECTOR ABOVE PERFERATED CEILING.

S2 FOR CONNECTION OF TELECOM ROOMS, RUN TWELVE STRAND SINGLE MODE FIBER FROM STORAGE (TR ROOM) 123 TO STORAGE (TR ROOM) 105E. TERMINATE WITH LC CONNECTORS ON CABINET MOUNTED PATCH PANEL IN EACH TR. PROVIDE 12 LC TO LC PATCH CABLES.

S3 PROVIDE AND INSTALL NEW LOCKING IT CABINET EQUAL TO HUBBELL #HSC4636.

S4 EXTEND EXISTING PAGING FEEDS THROUGH OVERHEAD CONDUIT SYSTEM TO THIS LOCATION. CONTRACTOR SHALL CUT EXISTING UNDERGROUND FEED AND SPLICE TO NEW OVERHEAD CONDUIT SYSTEM.

S5 PROVIDE AND INSTALL (2) 2" CONDUITS ROUTED FROM STORAGE (TR ROOM) 123 TO STORAGE (TR ROOM) 105E. PROVIDE JUNCTION BOXES ABOVE CEILING IN WORK ROOM 115 AND IN GYMNASIUM 105 APPROXIMATELY AS SHOWN. CONDUITS SHALL BE PAINTED TO MATCH EXISTING CEILING/UTILITIES COLOR WHEN ROUTED THROUGH SPACE(S) WITH NO CEILINGS.

S7 ADD INPUTS TO SOUND SYSTEM. XLR AND 1/4" LINE LEVEL STEREO INPUTS.

S8 FURNISH AND INSTALL COMPLETE A DAKTRONICS SCOREBOARD SYSTEM IN GYMNASIUM #105D AS APPROXIMATELY SHOWN ON THE PLANS, WITH EQUIPMENT LISTED BELOW AT A MINIMUM. COORDINATE ANY/ALL REQUIREMENTS WITH KYLE SYDOW AT DAKTRONICS AT (312) 339-3944 or kyle.sydow@daktronics.com. ONE(1) #LVN-2510-3.9MM VIDEO DISPLAY WITH TOP IDENTIFIER, ONE(1) #LVN-2010-6.9MM VIDEO DISPLAY WITH TOP IDENTIFIER, ONE(1) #DB-2107 SCORING DISPLAY, ONE(1) RACK WITH SCOREBOARD CONTROL SYSTEM (IN STORAGE #105E), CONTROL SOFTWARE (LAPTOP/PC BY OWNER), ANY/ALL POWER, CONNECTIONS, FIBER, CAT6, ETC. FOR A COMPLETE AND OPERATIONAL SYSTEM, PROVIDE RACEWAYS BETWEEN EQUIPMENT AND RACKS AS REQUIRED BY DAKTRONICS.

S9 FURNISH AND INSTALL COMPLETE AN OCTASOUND GYMNASIUM SOUND SYSTEM IN GYMNASIUM #105D AS APPROXIMATELY SHOWN ON THE PLANS, WITH EQUIPMENT LISTED BELOW AT A MINIMUM. COORDINATE ANY/ALL REQUIREMENTS WITH KEVIN BULL AT OCTASOUND AT (416) 439-7158 or kevin@octasound.com. ONE(1) #SPK20A 15" 360X180 SPEAKERS, ONE(1) #CX2X12 DUAL 12" SUBWOOFERS, TWO(2) #SPK2L-SS-06 ROPES, ONE(1) CROWN 4700W DSP AMPLIFIER WITH POWER CONDITIONER AND RACK AS REQUIRED (IN STORAGE #105E), OCTASOUND RAMX2 AND RABX2 INPUTS, OCTASOUND RUSBX2 CHARGING PLATE, VANDAL CASES, VOLUME CONTROLS, ETC., ANY/ALL POWER, CONNECTIONS, FIBER, CAT6, ETC. FOR A COMPLETE AND OPERATIONAL SYSTEM, PROVIDE RACEWAYS BETWEEN EQUIPMENT AND RACKS AS REQUIRED BY OCTASOUND.

S10 PROVIDE AND INSTALL ONE(1) 2" CONDUIT AND ONE(1) 1" CONDUIT FROM AV RACK TO SB-1.

S11 PROVIDE AND INSTALL ONE(1) 2" CONDUIT AND ONE(1) 1" CONDUIT FROM AV RACK TO SB-2.

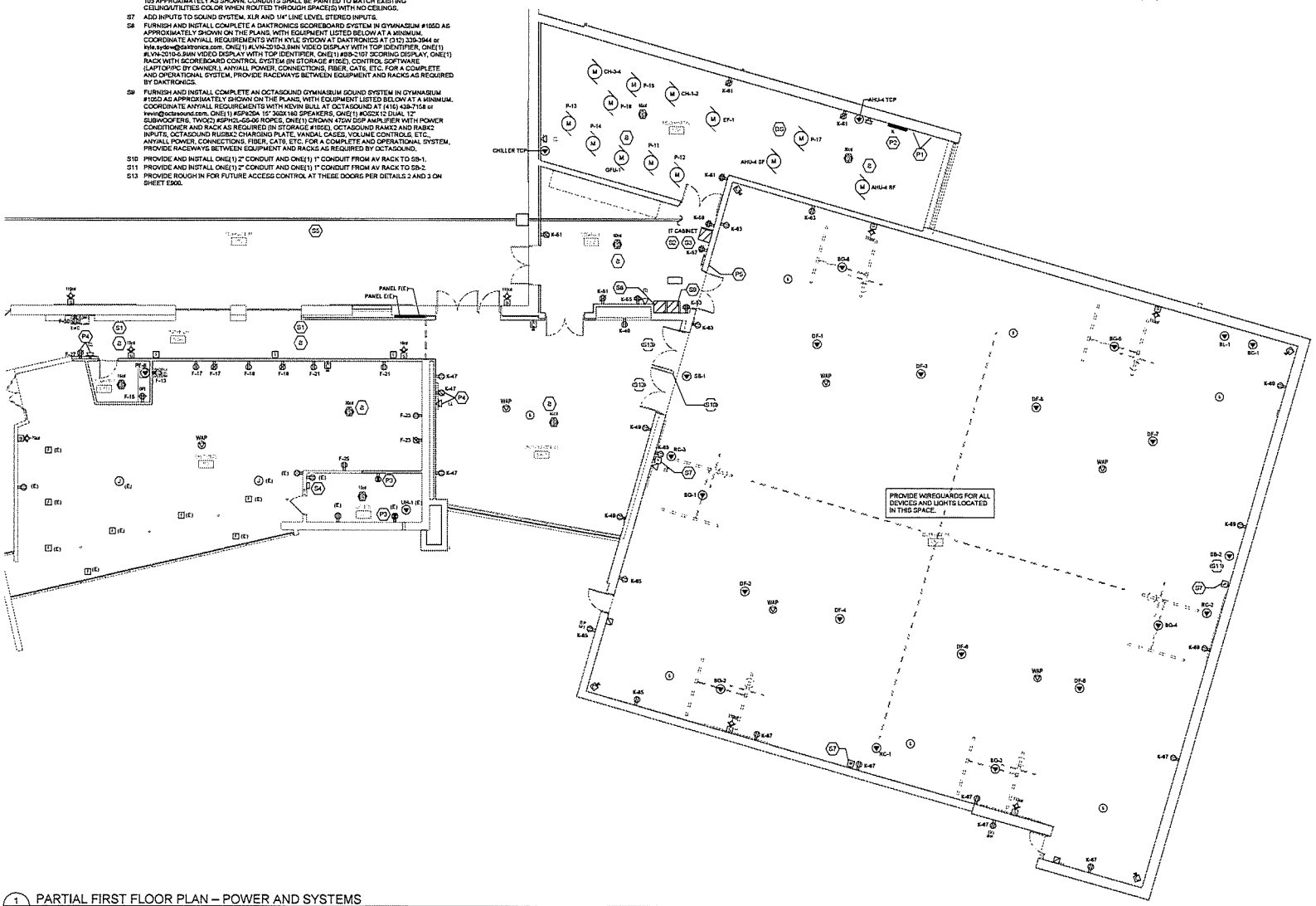
S13 PROVIDE ROUGH IN FOR FUTURE ACCESS CONTROL AT THESE DOORS PER DETAILS 2 AND 3 ON SHEET E900.

SYSTEMS GENERAL NOTES:

1. ALL LOW VOLTAGE CABLES OR CONDUCTORS OPERATING AT LESS THAN 50 VOLTS SHALL BE IN ELECTRICAL METAL TUBING (EMT) WHERE INSTALLED WITHIN WALLS OR INACCESSIBLE SPACES.
2. TV OUTLETS, VOLUME CONTROLS, TELEPHONE OUTLETS, AND DATA OUTLETS SHALL CONSIST OF A BACK BOX WITH CONDUIT STUBBED ABOVE THE ACCESSIBLE CEILING. SEE ROUGH-IN DETAIL. VERIFY SIZE OF BACK BOX REQUIRED WITH DEVICE TO BE INSTALLED. LOCATE BACK BOXES 6" FROM ADJACENT POWER RECEPTACLE INTENDED FOR COMPUTER USE.
3. ANY/ALL LOW VOLTAGE SYSTEMS, INCLUDING BUT NOT LIMITED TO THE FOLLOWING: COMMUNICATIONS, PAGING, CLOCK SYSTEM, CLASS BELLS, ETC., SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION. FIELD VERIFY ALL LOW VOLTAGE SYSTEM REQUIREMENTS AND EXTEND/MAINTAIN/REUSE AS REQUIRED. EXTEND ANY/ALL NEW COMMUNICATIONS CABLING TO EXISTING MDF/IDF AS REQUIRED. COORDINATE JACK/CABLING REQUIREMENTS AND COLORS WITH OWNER.
4. CAMERA MOUNTING SHALL BE COORDINATED WITH OWNER. VERIFY DESIRED MOUNTING HEIGHT AND CAMERA MOUNT TYPE PRIOR TO INSTALL.
5. ALL WAP LOCATIONS SHOWN ARE APPROXIMATE. CONFIRM ALL EXACT/FINAL WAP LOCATIONS WITH CITY LT. DEPARTMENT PRIOR TO ROUGH IN. WAP MOUNTING SHALL BE COORDINATED WITH OWNER. VERIFY DESIRED MOUNTING HEIGHT AND WAP MOUNT TYPE PRIOR TO INSTALL.
6. ALL NEW CAT6 CABLING SHALL BE ROUTED TO STORAGE (TR ROOM) #105E.

POWER GENERAL NOTES:

1. REFER TO SHEET E000 FOR ALL SYMBOLS, ABBREVIATIONS, AND DETAILS.
2. THE CONTRACTOR MAY INSTALL UP TO THREE (3) CURRENT CARRYING CONDUCTORS IN A CONDUIT. LOADINGS ARE BASED ON THWN INSULATION, 40°C AMBIENT WITH DERATINGS FOR TEMPERATURE AND UP TO THREE (3) CONDUCTORS IN A CONDUIT. CONTACT THE ENGINEER FOR WIRING IN OTHER CONDITIONS.
3. VERIFY ALL MOUNTING HEIGHTS OF DEVICES ABOVE MILLWORK WITH ARCHITECTURAL PLANS.
4. NOTE THAT THIS PROJECT CONSISTS OF A COMPLETE REPLACEMENT OF THE FIRE ALARM SYSTEM AS SHOWN ON THE PLANS. ANY/ALL EXISTING FIRE ALARM DEVICES, CONTROL PANELS, ANNUNCIATOR PANELS, CABLING, ETC., SHALL BE DISCONNECTED AND REMOVED COMPLETE. REUSE OF EXISTING INFRASTRUCTURE (BOXES AND CONDUITS ONLY) IS ACCEPTABLE WHERE SIZED AND SUPPORTED PROPERLY. THE NEW VOICE FIRE ALARM SYSTEM THROUGHOUT THE BUILDING SHALL BE INSTALLED, PROGRAMMED, TESTED, COMMISSIONED, AND APPROVED BY THE LOCAL AHJ PRIOR TO DECOMMISSIONING AND REMOVING THE EXISTING FIRE ALARM SYSTEM. ANY/ALL NEW FIRE ALARM DEVICES SHALL BE RECESSED IN EXISTING WALLS/CEILINGS UNLESS INDICATED OTHERWISE. ANY AND ALL FIRE ALARM CABLING SHALL BE EMT CONDUIT AT A MINIMUM. NO FREE AIR CABLING IS ALLOWED.
5. ALL RECEPTACLES WITH PLUGLOAD CONTROL SHALL BE CONTROLLABLE VIA THE LIGHTING CONTROLS SHOWN ON THE LIGHTING PLANS. PROVIDE CONTROL DEVICES, ETC. AS REQUIRED TO ACHIEVE THE CONTROLS SHOWN.



1 E201 PARTIAL FIRST FLOOR PLAN – POWER AND SYSTEMS

PROJECT NORTH

Engberg Anderson ARCHITECTS
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WARNER PARK COMMUNITY RECREATION CENTER EXPANSION

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MADISON, WI 53704

CITY OF MADISON PARKS DIVISION
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MADISON, WI 53715

PROJECT NUMBER 223471.00

ISSUED FOR:

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PARTIAL FIRST FLOOR PLAN – POWER AND SYSTEMS

E201

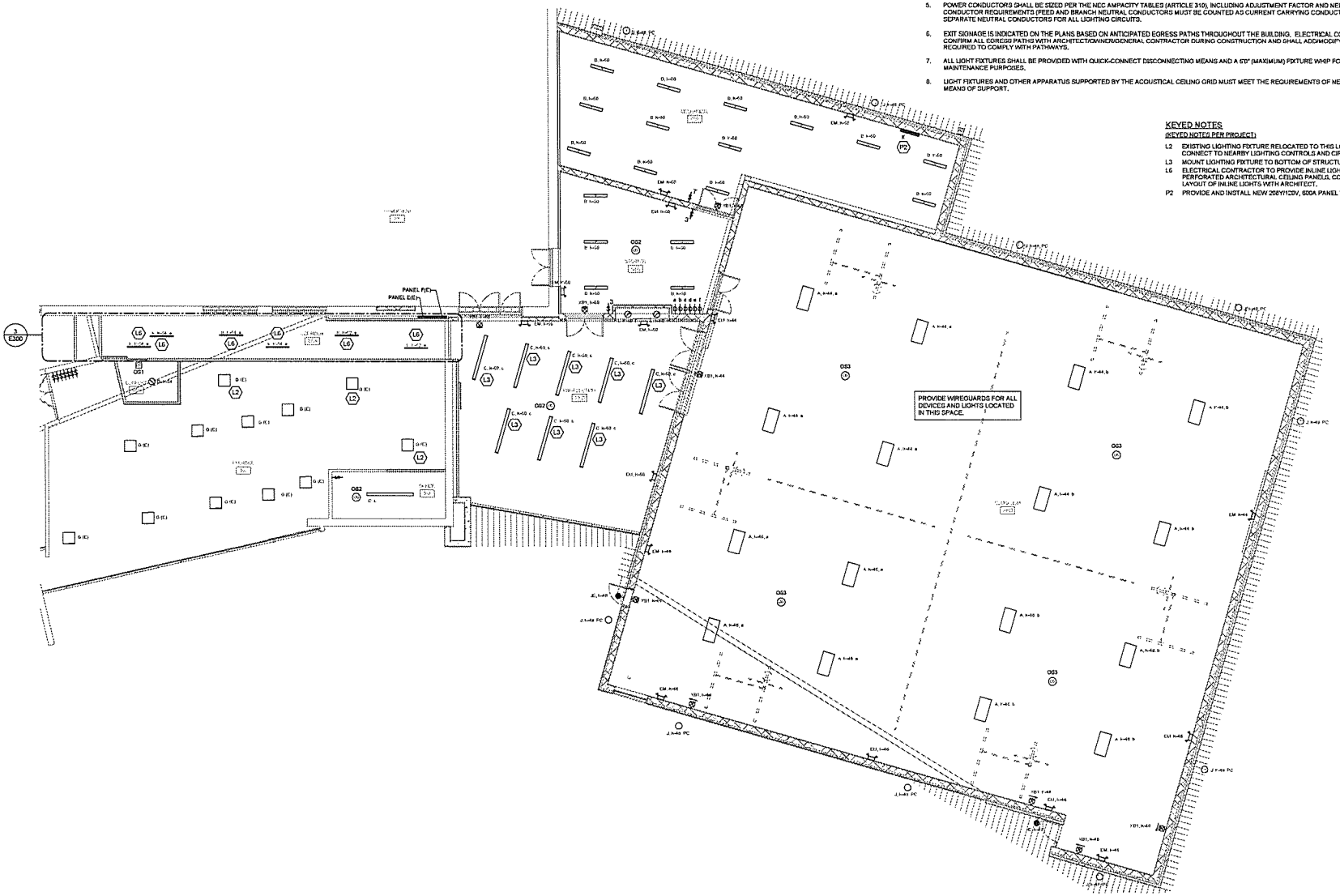
LIGHTING GENERAL NOTES:

1. REFER TO SHEET E000 FOR ALL SYMBOLS, ABBREVIATIONS, AND DETAILS.
2. REFER TO ARCHITECTURAL PLANS, SECTIONS, ELEVATIONS, AND REFLECTED CEILING PLANS FOR EXACT LOCATION AND COORDINATION OF ALL LIGHT FIXTURE AND CONTROLLER INSTALLATIONS.
3. VERIFY ALL MOUNTING HEIGHTS OF DEVICES ABOVE MILLWORK WITH ARCHITECTURAL PLANS.
4. WIRING SHALL CONFORM TO THE NATIONAL ELECTRICAL CODE (NEC) AND APPLICABLE LOCAL CODES, INCLUDING PROVISION OF EQUIPMENT GROUNDING AS REQUIRED BY THE NEC.
5. POWER CONDUCTORS SHALL BE SIZED PER THE NEC AMPACITY TABLES (ARTICLE 310), INCLUDING ADJUSTMENT FACTOR AND NEUTRAL CONDUCTOR REQUIREMENTS (FEED AND BRANCH NEUTRAL CONDUCTORS MUST BE COUNTED AS CURRENT CARRYING CONDUCTORS). RUN SEPARATE NEUTRAL CONDUCTORS FOR ALL LIGHTING CIRCUITS.
6. EXIT SIGNAGE IS INDICATED ON THE PLANS BASED ON ANTICIPATED EGRESS PATHS THROUGHOUT THE BUILDING. ELECTRICAL CONTRACTOR SHALL CONFIRM ALL EGRESS PATHS WITH ARCHITECT/OWNER/GENERAL CONTRACTOR DURING CONSTRUCTION AND SHALL ADD/MODIFY EXIT SIGNAGE AS REQUIRED TO COMPLY WITH PATHWAYS.
7. ALL LIGHT FIXTURES SHALL BE PROVIDED WITH QUICK-CONNECT DISCONNECTING MEANS AND A 6'0" (MAXIMUM) FIXTURE WHIP FOR FUTURE MAINTENANCE PURPOSES.
8. LIGHT FIXTURES AND OTHER APPARATUS SUPPORTED BY THE ACOUSTICAL CEILING GRID MUST MEET THE REQUIREMENTS OF NEC SECTION 410.16, MEANS OF SUPPORT.

KEYED NOTES

(KEYED NOTES PER PROJECT)

- L2 EXISTING LIGHTING FIXTURE RELOCATED TO THIS LOCATION. CONNECT TO NEARBY LIGHTING CONTROLS AND CIRCUIT.
- L3 MOUNT LIGHTING FIXTURE TO BOTTOM OF STRUCTURAL TRUSS.
- L6 ELECTRICAL CONTRACTOR TO PROVIDE INLINE LIGHTING IN PERFORATED ARCHITECTURAL CEILING PANELS. COORDINATE FINAL LAYOUT OF INLINE LIGHTS WITH ARCHITECT.
- P2 PROVIDE AND INSTALL NEW 208Y/120V, 600A PANEL 'K'.



1 E202 PARTIAL FIRST FLOOR PLAN – LIGHTING

PROJECT NORTH

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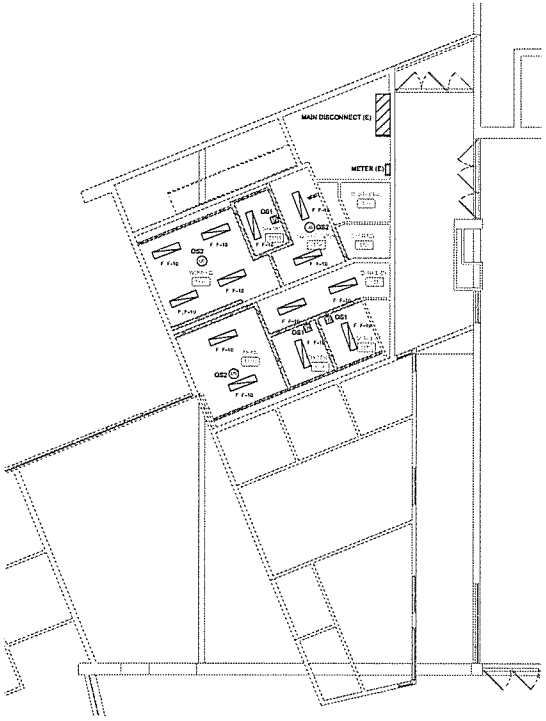
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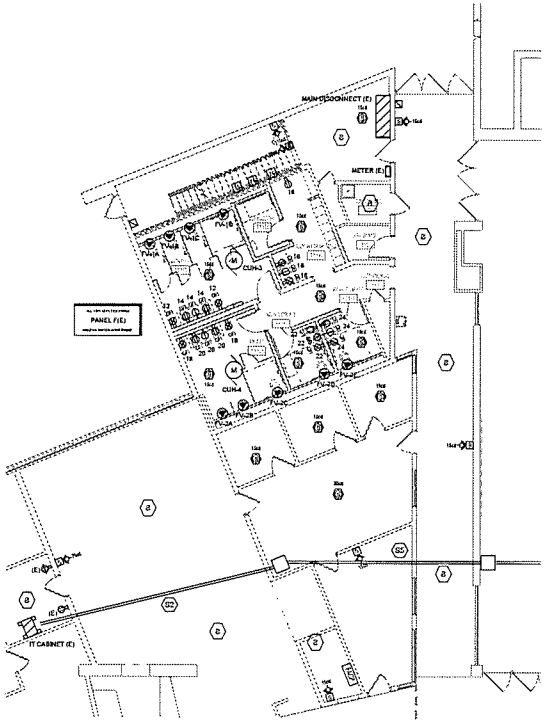
DRAWN BY	JDR
CHECKED BY	JDR

PARTIAL FIRST FLOOR PLAN – LIGHTING

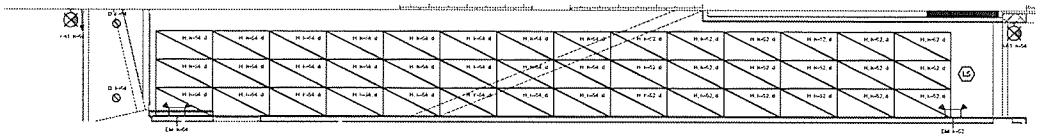
E202



2 E300 FIRST FLOOR PLAN – LIGHTING



1 E300 FIRST FLOOR PLAN – POWER AND SYSTEMS



3 E300 CORRIDOR 105A - LIGHTING

LIGHTING CONTROLS GENERAL NOTES:

1. REFER TO SHEET E000 FOR ALL SYMBOLS, ABBREVIATIONS, AND DETAILS.
2. OCCUPANCY SENSOR LOCATIONS SHOWN ARE DIAGRAMMATIC ONLY. ACTUAL LOCATION TO BE DETERMINED IN FIELD PER MANUFACTURER'S RECOMMENDATIONS AND LAYOUT. PROVIDE A MINIMUM 4'-0" OF FLEX CONDUIT/WIRING SO THAT THE SENSOR CAN BE FIELD ADJUSTED FOR PROPER COVERAGE DURING FINAL COMMISSIONING. THE TRAINED FACTORY PERSONNEL SHALL PERFORM THE FINAL COMMISSIONING.

POWER GENERAL NOTES:

1. REFER TO SHEET E000 FOR ALL SYMBOLS, ABBREVIATIONS, AND DETAILS.
2. THE CONTRACTOR MAY INSTALL UP TO THREE (3) CURRENT CARRYING CONDUCTORS IN A CONDUIT. LOADINGS ARE BASED ON THWN INSULATION, 40°C AMBIENT WITH DERATINGS FOR TEMPERATURE AND UP TO THREE (3) CONDUCTORS IN A CONDUIT. CONTACT THE ENGINEER FOR WIRING IN OTHER CONDITIONS.
3. VERIFY ALL MOUNTING HEIGHTS OF DEVICES ABOVE MILLWORK WITH ARCHITECTURAL PLANS.
4. NOTE THAT THIS PROJECT CONSISTS OF A COMPLETE REPLACEMENT OF THE FIRE ALARM SYSTEM AS SHOWN ON THE PLANS. ANY/ALL EXISTING FIRE ALARM DEVICES, CONTROL PANELS, ANNUNCIATOR PANELS, CABLING, ETC. SHALL BE DISCONNECTED AND REMOVED COMPLETE. REUSE OF EXISTING INFRASTRUCTURE (BOXES AND CONDUITS ONLY) IS ACCEPTABLE WHERE SIZED AND SUPPORTED PROPERLY. THE NEW VOICE FIRE ALARM SYSTEM THROUGHOUT THE BUILDING SHALL BE INSTALLED, PROGRAMMED, TESTED, COMMISSIONED, AND APPROVED BY THE LOCAL AHJ PRIOR TO DECOMMISSIONING AND REMOVING THE EXISTING FIRE ALARM SYSTEM. ANY/ALL NEW FIRE ALARM DEVICES SHALL BE RECESSED IN EXISTING WALLS/CEILINGS UNLESS INDICATED OTHERWISE. ANY AND ALL FIRE ALARM CABLING SHALL BE EMT CONDUIT AT A MINIMUM. NO FREE AIR CABLING IS ALLOWED.
5. ALL RECEPTACLES WITH PLUG/LOAD CONTROL SHALL BE CONTROLLABLE VIA THE LIGHTING CONTROLS SHOWN ON THE LIGHTING PLANS. PROVIDE CONTROL DEVICES, ETC. AS REQUIRED TO ACHIEVE THE CONTROLS SHOWN.

SYSTEMS GENERAL NOTES:

1. ALL LOW VOLTAGE CABLES OR CONDUCTORS OPERATING AT LESS THAN 50 VOLTS SHALL BE IN ELECTRICAL METAL TUBING (EMT) WHERE INSTALLED WITHIN WALLS OR INACCESSIBLE SPACES.
2. TV OUTLETS, VOLUME CONTROLS, TELEPHONE OUTLETS, AND DATA OUTLETS SHALL CONSIST OF A BACK BOX WITH CONDUIT STUBBED ABOVE THE ACCESSIBLE CEILING. SEE ROUGH-IN DETAIL. VERIFY SIZE OF BACK BOX REQUIRED WITH DEVICE TO BE INSTALLED. LOCATE BACK BOXES 6" FROM ADJACENT POWER RECEPTACLE INTENDED FOR COMPUTER USE.
3. ANY/ALL LOW VOLTAGE SYSTEMS, INCLUDING BUT NOT LIMITED TO THE FOLLOWING: COMMUNICATIONS, PAGING, CLOCK SYSTEM, CLASS BELLS, ETC., SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION. FIELD VERIFY ALL LOW VOLTAGE SYSTEM REQUIREMENTS AND EXTEND/MAINTAIN/REUSE AS REQUIRED. EXTEND ANY/ALL NEW COMMUNICATIONS CABLING TO EXISTING MDF/IDF AS REQUIRED. COORDINATE JACK/CABLING REQUIREMENTS AND COLORS WITH OWNER.
4. CAMERA MOUNTING SHALL BE COORDINATED WITH OWNER. VERIFY DESIRED MOUNTING HEIGHT AND CAMERA MOUNT TYPE PRIOR TO INSTALL.
5. ALL WAP LOCATIONS SHOWN ARE APPROXIMATE. CONFIRM ALL EXACT/FINAL WAP LOCATIONS WITH CITY I.T. DEPARTMENT PRIOR TO ROUGH IN. WAP MOUNTING SHALL BE COORDINATED WITH OWNER. VERIFY DESIRED MOUNTING HEIGHT AND WAP MOUNT TYPE PRIOR TO INSTALL.
6. ALL NEW CAT6 CABLING SHALL BE ROUTED TO STORAGE (TR ROOM) #105E.

KEYED NOTES

(KEYED NOTES PER PROJECT)

L5 ELECTRICAL CONTRACTOR TO PROVIDE INTEGRAL BACKLIGHTING BEHIND PERFORATED ARCHITECTURAL CEILING PANELS THROUGHOUT CORRIDOR 105A. FIELD CUT BACKLIGHTING SECTIONS THAT DO NOT FIT IN 2'x4' LIGHT TRAYS.

S2 FOR CONNECTION OF TELECOM ROOMS, RUN TWELVE STRAND SINGLE MODE FIBER FROM STORAGE (TR ROOM) 123 TO STORAGE (TR ROOM) 105E. TERMINATE WITH LC CONNECTORS ON CABINET MOUNTED PATCH PANEL IN EACH TR. PROVIDE 12 LC TO LC PATCH CABLES.

S5 PROVIDE AND INSTALL (2) 2" CONDUITS ROUTED FROM STORAGE (TR ROOM) 123 TO STORAGE (TR ROOM) 105E. PROVIDE JUNCTION BOXES ABOVE CEILING IN WORK ROOM 115 AND IN GYMNASIUM 105 APPROXIMATELY AS SHOWN. CONDUITS SHALL BE PAINTED TO MATCH EXISTING CEILING/UTILITIES COLOR WHEN ROUTED THROUGH SPACE(S) WITH NO CEILINGS.

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JDR PROJECT NO: 23.039

WARNER PARK COMMUNITY RECREATION CENTER EXPANSION

1625 NORTHPORT DRIVE
MADISON, WI 53704

CITY OF MADISON PARKS DIVISION
330 EAST LAKESIDE STREET
MADISON, WI 53715

PROJECT NUMBER 223471.00

ISSUED FOR:

BID SET 5/16/2024

REVISION FOR:

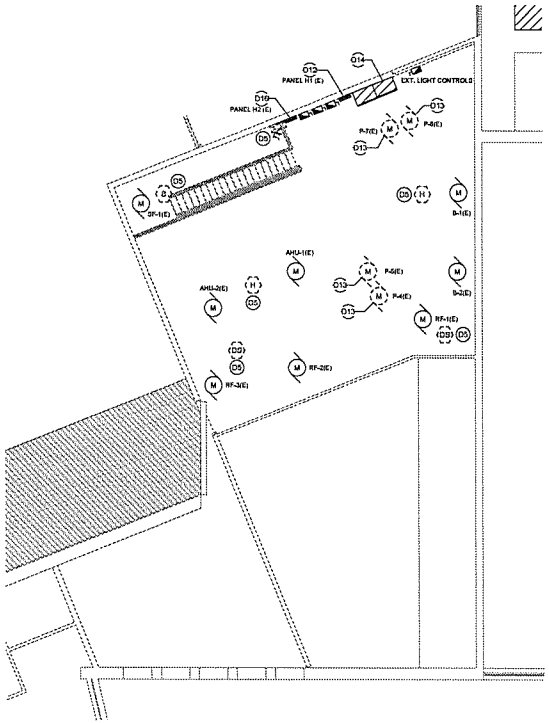
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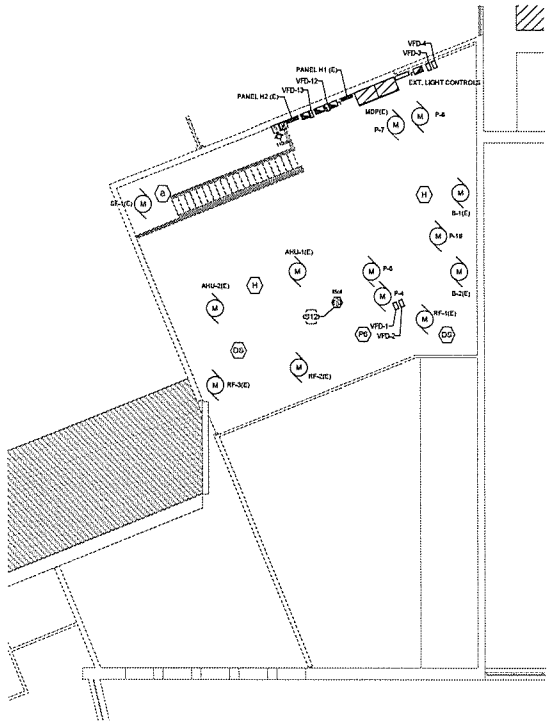
LARGE SCALE PLANS - ELECTRICAL

E300



2 E301 NORTH MEZZANINE DEMOLITION PLAN – POWER AND SYSTEMS

SCALE: 1/8" = 1'-0"



1 E301 NORTH MEZZANINE PLAN – POWER AND SYSTEMS

SCALE: 1/8" = 1'-0"

SYSTEMS GENERAL NOTES:

1. ALL LOW VOLTAGE CABLES OR CONDUCTORS OPERATING AT LESS THAN 50 VOLTS SHALL BE IN ELECTRICAL METAL TUBING (EMT) WHERE INSTALLED WITHIN WALLS OR INACCESSIBLE SPACES.
2. TV OUTLETS, VOLUME CONTROLS, TELEPHONE OUTLETS, AND DATA OUTLETS SHALL CONSIST OF A BACK BOX WITH CONDUIT STUBBED ABOVE THE ACCESSIBLE CEILING. SEE ROUGH-IN DETAIL. VERIFY SIZE OF BACK BOX REQUIRED WITH DEVICE TO BE INSTALLED. LOCATE BACK BOXES 6" FROM ADJACENT POWER RECEPTACLE INTENDED FOR COMPUTER USE.
3. ANY/ALL LOW VOLTAGE SYSTEMS, INCLUDING BUT NOT LIMITED TO THE FOLLOWING: COMMUNICATIONS, PAGING, CLOCK SYSTEM, CLASS BELLS, ETC., SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION. FIELD VERIFY ALL LOW VOLTAGE SYSTEM REQUIREMENTS AND EXTEND/MAINTAIN/REUSE AS REQUIRED. EXTEND ANY/ALL NEW COMMUNICATIONS CABLING TO EXISTING MDF/IDF AS REQUIRED. COORDINATE JACK/CABLING REQUIREMENTS AND COLORS WITH OWNER.
4. CAMERA MOUNTING SHALL BE COORDINATED WITH OWNER. VERIFY DESIRED MOUNTING HEIGHT AND CAMERA MOUNT TYPE PRIOR TO INSTALL.
5. ALL WAP LOCATIONS SHOWN ARE APPROXIMATE. CONFIRM ALL EXACT/FINAL WAP LOCATIONS WITH CITY I.T. DEPARTMENT PRIOR TO ROUGH IN. WAP MOUNTING SHALL BE COORDINATED WITH OWNER. VERIFY DESIRED MOUNTING HEIGHT AND WAP MOUNT TYPE PRIOR TO INSTALL.
6. ALL NEW CAT6 CABLING SHALL BE ROUTED TO STORAGE (TR ROOM) #105E.

POWER GENERAL NOTES:

1. REFER TO SHEET E000 FOR ALL SYMBOLS, ABBREVIATIONS, AND DETAILS.
2. THE CONTRACTOR MAY INSTALL UP TO THREE (3) CURRENT CARRYING CONDUCTORS IN A CONDUIT. LOADINGS ARE BASED ON THWN INSULATION, 40°C AMBIENT WITH DERATINGS FOR TEMPERATURE AND UP TO THREE (3) CONDUCTORS IN A CONDUIT. CONTACT THE ENGINEER FOR WIRING IN OTHER CONDITIONS.
3. VERIFY ALL MOUNTING HEIGHTS OF DEVICES ABOVE MILLWORK WITH ARCHITECTURAL PLANS.
4. NOTE THAT THIS PROJECT CONSISTS OF A COMPLETE REPLACEMENT OF THE FIRE ALARM SYSTEM AS SHOWN ON THE PLANS. ANY/ALL EXISTING FIRE ALARM DEVICES, CONTROL PANELS, ANNUNCIATOR PANELS, CABLING, ETC. SHALL BE DISCONNECTED AND REMOVED COMPLETE. REUSE OF EXISTING INFRASTRUCTURE (BOXES AND CONDUITS ONLY) IS ACCEPTABLE WHERE SIZED AND SUPPORTED PROPERLY. THE NEW VOICE FIRE ALARM SYSTEM THROUGHOUT THE BUILDING SHALL BE INSTALLED, PROGRAMMED, TESTED, COMMISSIONED, AND APPROVED BY THE LOCAL AHJ PRIOR TO DECOMMISSIONING AND REMOVING THE EXISTING FIRE ALARM SYSTEM. ANY/ALL NEW FIRE ALARM DEVICES SHALL BE RECESSED IN EXISTING WALLS/CEILINGS UNLESS INDICATED OTHERWISE. ANY AND ALL FIRE ALARM CABLING SHALL BE EMT CONDUIT AT A MINIMUM. NO FREE AIR CABLING IS ALLOWED.
5. ALL RECEPTACLES WITH PLUG/LOAD CONTROL SHALL BE CONTROLLABLE VIA THE LIGHTING CONTROLS SHOWN ON THE LIGHTING PLANS. PROVIDE CONTROL DEVICES, ETC. AS REQUIRED TO ACHIEVE THE CONTROLS SHOWN.

DEMOLITION KEYED NOTES

(KEYED NOTES PER PROJECT)

- D5 EXISTING FIRE ALARM INITIATION DEVICE TO BE DISCONNECTED, REMOVED, AND REPLACED. CONNECT TO NEW FIRE ALARM CONTROL PANEL IN SAME LOCATION.
- D12 EXISTING CUTLER HAMMER PRL1A 225A 120/208V 3PH PANEL "H1" TO REMAIN.
- D13 EXISTING PUMP TO BE DISCONNECTED AND REMOVED BY OTHERS. REMOVE FEEDER BACK TO SOURCE. DISCONNECT AND REMOVE EXISTING BREAKER AND REPLACE WITH NEW BREAKER SIZE SHOWN ON E600.
- D14 CHALLENGER 1600A 208Y/120V SWITCHBOARD EXISTING TO REMAIN. REFER TO E600 FOR DETAILS.
- D16 EXISTING CUTLER HAMMER PRL1A 225A 120/208V 3PH PANEL "H2" TO REMAIN.

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JDR PROJECT NO: 23.0319

CD'S, FINAL

WARNER PARK COMMUNITY RECREATION CENTER EXPANSION

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MADISON, WI 53704

CITY OF MADISON PARKS DIVISION
330 EAST LAKESIDE STREET
MADISON, WI 53715

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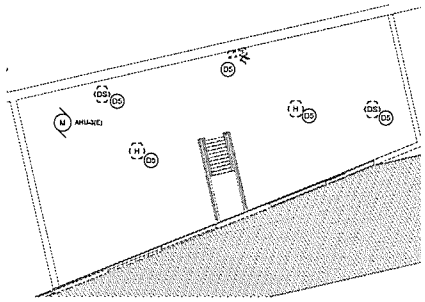
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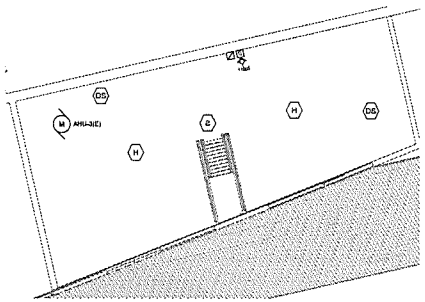
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LARGE SCALE PLANS - NORTH MEZZANINE

E301



2 E302 SOUTH MEZZANINE DEMO PLAN – POWER AND SYSTEMS



1 E302 SOUTH MEZZANINE PLAN – POWER AND SYSTEMS

SYSTEMS GENERAL NOTES:

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POWER GENERAL NOTES:

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DEMOLITION KEYED NOTES
(KEYED NOTES PER PROJECT)

D5 EXISTING FIRE ALARM INITIATION DEVICE TO BE DISCONNECTED, REMOVED, AND REPLACED. CONNECT TO NEW FIRE ALARM CONTROL PANEL IN SAME LOCATION.

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JDR PROJECT NO: 23.0.919

Original

WARNER PARK COMMUNITY RECREATION CENTER EXPANSION

1625 NORTHPORT DRIVE
MADISON, WI 53704

CITY OF MADISON PARKS DIVISION
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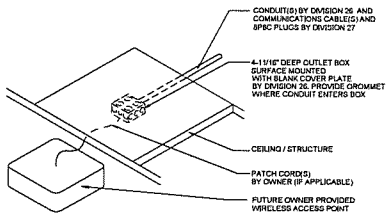
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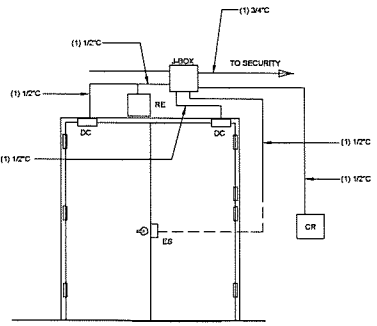
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LARGE SCALE PLANS - SOUTH MEZZANINE

E302

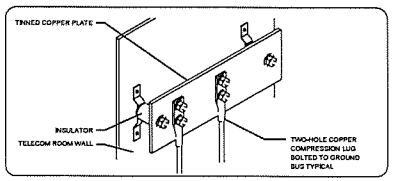


7 E900 TYPICAL EQUIPMENT OUTLET FOR WIRELESS ACCESS - SURFACE
SCALE: NONE



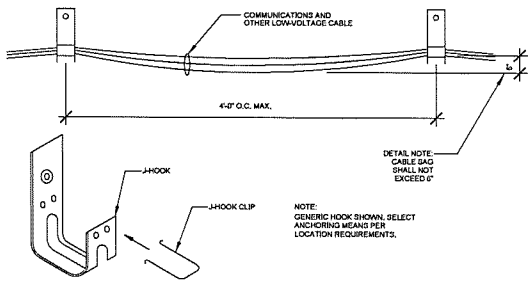
- CARD READER CONTROL WITH ELECTRIC STRIKE.
- ENTRY BY CARD READER. EXIT IS MANUAL AND ALWAYS AVAILABLE.
- REQUEST TO EXIT SHOWN ON PLANS.
- NOT ALL DEVICES ON DETAIL ARE AT EACH DOOR. REFER TO PLAN.

4 E900 TYPICAL ACCESS CONTROLS DOUBLE DOORS
SCALE: NONE

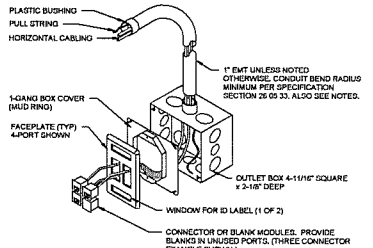


AXONOMETRIC VIEW

1 E900 TYPICAL GROUNDING BAR
SCALE: NONE

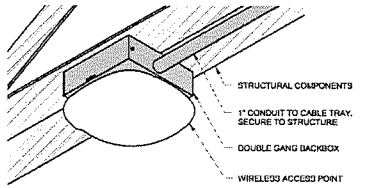


8 E900 TYPICAL CABLE SUPPORT HOOK INSTALLATION
SCALE: NONE

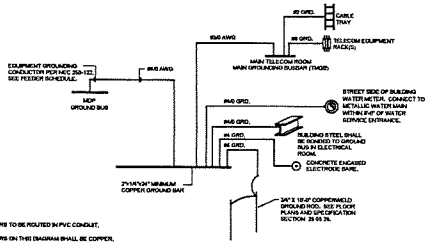


NOTES:
1. CONDUIT SHALL BE CONTINUOUS FROM OUTLET BOX TO ACCESSIBLE CEILING SPACE OR AS INDICATED ON DRAWINGS.
2. PROVIDE PULL STRING IN ALL CONDUITS.
3. REFER TO SPECIFICATION SECTION 27 00 05 FOR CONNECTOR TYPES.

5 E900 TYPICAL COMMUNICATION EQUIPMENT OUTLET
SCALE: NONE

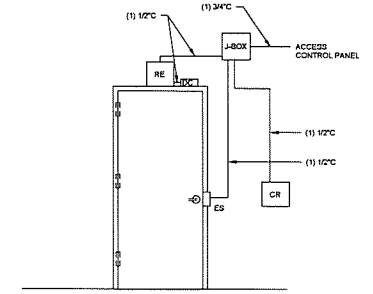


2 E000 TYPICAL WIRELESS ACCESS POINT PENDANT MOUNT
SCALE: NONE



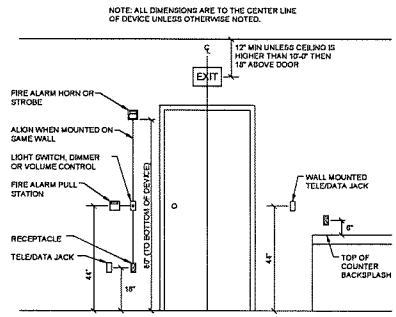
NOTES:
1. ALL GROUND CONDUCTORS TO BE ROUTED IN PVC CONDUIT.
2. ALL GROUND CONDUCTORS ON THIS DIAGRAM SHALL BE COPPER.

9 E900 TYPICAL GROUNDING SYSTEM
SCALE: NONE



- CARD READER CONTROL WITH ELECTRIC STRIKE.
- ENTRY BY CARD READER. EXIT IS MANUAL AND ALWAYS AVAILABLE.
- REQUEST TO EXIT SHOWN ON PLANS.
- NOT ALL DEVICES ON DETAIL ARE AT EACH DOOR. REFER TO PLAN.

6 E900 TYPICAL ACCESS CONTROLS SINGLE DOOR
SCALE: NONE



3 E900 TYPICAL MOUNTING HEIGHTS
SCALE: NONE

Engberg Anderson ARCHITECTS
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D'21 6.1 NAC

WARNER PARK
COMMUNITY RECREATION
CENTER EXPANSION

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DETAILS - ELECTRICAL

E900

WARNER PARK COMMUNITY RECREATION CENTER EXPANSION

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PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
1. Concrete masonry units.
2. Lintels.
3. Mortar and grout materials.
4. Reinforcement.
5. Ties and anchors.
6. Mortar and grout mixes.

B. Products Installed but not Furnished under This Section:
1. Steel lintels in unit masonry.
2. Steel shelf angles for supporting unit masonry.

C. Related Requirements:
1. Section 031000 "Concrete Forms and Accessories" for **installing** dovetail or channel slots for masonry-veneer anchors.
2. Section 051200 "Structural Steel Framing" for installing anchor sections of adjustable masonry anchors for connecting to structural steel frame.

1.2 DEFINITIONS

A. CMU(s): Concrete masonry unit(s).
B. Reinforced Masonry: Masonry containing reinforcing steel in grouted cells.

1.3 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Shop Drawings: For the following:

1. Masonry Units: Indicate sizes, profiles, coursing, and locations of special shapes.
2. Reinforcing Steel: Indicate bending, lap lengths, and placement of unit masonry reinforcing bars. Comply with ACI 315R.
3. Fabricated Flashing: Detail corner units, end-dam units, and other special applications.

C. Sustainable Design Submittals:

1. Regional Materials: Verify CMUs are manufactured within 100 miles of Project site from aggregates and cement that have been extracted, harvested, or recovered, as well as manufactured, within 100 miles of Project site.
2. Regional Materials: Manufacture aggregate for mortar and grout, cement, and lime within 100 miles of Project site from materials that have been extracted, harvested, or recovered, as well as manufactured, within 100 miles of Project site.

1.5 INFORMATIONAL SUBMITTALS

A. Material Certificates: For each type of the following:

1. Masonry units.
   a. Include **data on material properties**.
   b. For brick, include size-variation data verifying that actual range of sizes falls within specified tolerances.
   c. For exposed brick, include test report for efflorescence in accordance with ASTM C67/C67M.
   d. For surface-coated brick, include test report for durability of surface appearance after 50 cycles of freezing and thawing in accordance with ASTM C67/C67M
   e. For masonry units include data and calculations establishing average net-area compressive strength of units.
2. Cementitious materials. Include name of manufacturer, brand name, and type.
3. Mortar admixtures.
4. Preblended, dry mortar mixes. Include description of type and proportions of ingredients.
5. Grout mixes. Include description of type and proportions of ingredients.
6. Reinforcing bars.
7. Joint reinforcement.
8. Anchors, ties, and metal accessories.

B. Mix Designs: For each type of mortar **and grout**. Include description of type and proportions of ingredients.

1. Include test reports for mortar mixes required to comply with property specification. Test in accordance with ASTM C109/C109M for compressive strength, ASTM C1506 for water retention, and ASTM C91/C91M for air content.
2. Include test reports, in accordance with ASTM C1019, for grout mixes required to comply with compressive strength requirement.

C. Statement of Compressive Strength of Masonry: For each combination of masonry unit type and mortar type, provide statement of average net-area compressive strength of masonry units, mortar type, and resulting net-area compressive strength of masonry determined in accordance with TMS 602.

D. **Cold-Weather and Hot-Weather** Procedures: Detailed description of methods, materials, and equipment to be used to comply with requirements.

1.6 QUALITY ASSURANCE

A. Qualifications:

1. Installers: All masonry flashing installers must complete the International Masonry Institute Flashing Upgrade training course.
2. Testing Agency Qualifications: Qualified in accordance with ASTM C1093 for testing indicated.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Store masonry units on elevated platforms in a dry location. If units are not stored in an enclosed location, cover tops and sides of stacks with waterproof sheeting, securely tied. If units become wet, do not install until they are dry.

B. Store cementitious materials on elevated platforms, under cover, and in a dry location. Do not use cementitious materials that have become damp.

C. Store aggregates where grading and other required characteristics can be maintained and contamination avoided.

D. Deliver preblended, dry mortar mix in moisture-resistant containers. Store preblended, dry mortar mix in delivery containers on elevated platforms in a dry location or in covered weatherproof dispensing silos.

E. Store masonry accessories, including metal items, to prevent corrosion and accumulation of dirt and oil.

1.8 FIELD CONDITIONS

A. Protection of Masonry: During construction, cover tops of walls, projections, and sills with waterproof sheeting at end of each day's work. Cover partially completed masonry when construction is not in progress.

1. Extend cover a minimum of 24 inches (610 mm) down both sides of walls, and hold cover securely in place.
2. Where one wythe of multi-wythe masonry walls is completed in advance of other wythes, secure cover a minimum of 24 inches (610 mm) down face next to unconstructed wythe, and hold cover in place.

B. Do not apply uniform floor or roof loads for at least 12 hours and concentrated loads for at least three days after building masonry walls or columns.

C. Stain Prevention: Prevent grout, mortar, and soil from staining the face of masonry to be left exposed or painted. Immediately remove grout, mortar, and soil that come in contact with such masonry.

1. Protect base of walls from rain-splashed mud and from mortar splatter by spreading coverings on ground and over wall surface.
2. Protect sills, ledges, and projections from mortar droppings.
3. Protect surfaces of window and door frames, as well as similar products with painted and integral finishes, from mortar droppings.
4. Turn scaffold boards near the wall on edge at the end of each day to prevent rain from splashing mortar and dirt onto completed masonry.

D. Cold-Weather Requirements: Do not use frozen materials or materials mixed or coated with ice or frost. Do not build on frozen substrates. Remove and replace unit masonry damaged by frost or by freezing conditions. Comply with cold-weather construction requirements contained in TMS 602.

1. Cold-Weather Cleaning: Use liquid cleaning methods only when air temperature is 40 deg F (4 deg C) and higher and will remain so until masonry has dried, but not less than seven days after completing cleaning.

E. Hot-Weather Requirements: Comply with hot-weather construction requirements contained in TMS 602.

PART 2 - PRODUCTS

2.1 SOURCE LIMITATIONS

A. For **exposed masonry units and cementitious mortar components**, obtain each color and grade from single source with resources to provide materials of consistent quality in appearance and physical properties.

2.2 UNIT MASONRY, GENERAL

A. Masonry Standard: Comply with TMS 602, except as modified by requirements in the Contract Documents.

B. Defective Units: Referenced masonry unit standards may allow a certain percentage of units to contain chips, cracks, or other defects exceeding limits stated. Do not use units where such defects are exposed in the completed Work

C. Fire-Resistance Ratings: Comply with requirements for fire-resistance-rated assembly designs indicated.

1. Where fire-resistance-rated construction is indicated, **units are listed by UL or a qualified testing agency acceptable to authorities having jurisdiction.**

2.3 CONCRETE MASONRY UNITS

A. Verify CMU's are manufactured within 100 miles of Project site from aggregates and cement that have been extracted, harvested, or recovered, as well as manufactured, within 100 miles of Project site

B. Shapes: Provide shapes indicated and as follows, with exposed surfaces matching exposed faces of adjacent units unless otherwise indicated.

1. Provide special shapes for lintels, corners, jambs, sashes, movement joints, headers, bonding, and other special conditions.

2. Provide [**bullnose** units for outside corners unless otherwise indicated.

C. CMUs: ASTM C90, **normal weight**.
1. Unit Compressive Strength: Provide units with minimum average net-area compressive strength of **2800 psi (19.3 MPa)**.
2. Size (Width): Manufactured to dimensions 3/8 inch (10 mm) less than nominal dimensions.
3. Exposed Faces: Provide color and texture matching the range represented by Architect's sample.
4. Faces to Receive Plaster: Where units are indicated to receive a direct application of plaster, provide textured-face units made with gap-graded aggregates.

D. Concrete Building Brick: ASTM C55, **normal weight**.].
1. Unit Compressive Strength: Provide units with minimum average net-area compressive strength of **2800 psi (19.3 MPa)**.
2. Size (Actual Dimensions): Manufactured to dimensions 3/8 inch less-than-nominal dimensions.

E. Decorative CMUs: ASTM C90, **normal weight**.
1. Unit Compressive Strength: Provide units with minimum average net-area compressive strength of **2800 psi**.
2. Size (Width): Manufactured to dimensions specified in "CMUs" Paragraph above.
3. Pattern and Texture:
   a. MSN-1: County Materials Decorative Concrete Masonry, Splitface texture, 8" x 16" running bond pattern.
   b. MSN-2: Arriscraft Thin-Clad Renaissance Units, Smooth texture, 12" x 24" running bond pattern.
   c. CMU-1: As indicated on Drawings
   d. CMU-2: As indicated on Drawings
4. Colors:
   a. MSN-1: 18-121C Bisque (Matched to Existing)
   b. MSN-2: Oak Ridge.
   c. CMU-1: As indicated on Drawings
   d. CMU-2: As indicated on Drawings
5. Unit Compressive Strength: Provide units with minimum average net-area compressive strength of **2800 psi (19.3 MPa)**.
6. Size: Manufactured to dimensions specified in "CMUs" Paragraph above but with pre-faced surfaces having 1/16-inch- (1.6-mm-) wide returns of facing to create 1/4-inch- (6.2-mm-) wide mortar joints with modular coursing.

2.4 LINTELS

A. Solid Concrete Masonry Lintels: ASTM C1623, matching CMUs in color, texture, and density classification; and with reinforcing bars indicated.

B. Concrete Lintels: Precast or formed-in-place concrete lintels complying with requirements in Section 032000 "Concrete Reinforcing," and with reinforcing bars indicated.

C. Masonry Lintels: Prefabricated or built-in-place masonry lintels made from bond beam CMUs matching adjacent CMUs in color, texture, and density classification, with reinforcing bars placed as indicated and filled with coarse grout. Cure precast lintels before handling and installing. Temporarily support built-in-place lintels until cured.

D. Offset Angle Supports: Steel plate brackets anchored to structure, allowing continuous insulation behind shelf angle supporting veneer. Component and anchor size and spacing engineered by manufacturer.

2.5 MORTAR AND GROUT MATERIALS

A. Portland Cement: ASTM C150/C150M, Type I or II, except Type III may be used for cold-weather construction. Provide natural color or white cement as required to produce mortar color indicated.
1. Alkali content will not be more than 0.1 percent when tested in accordance with ASTM C114.

B. Hydrated Lime: ASTM C207, Type S.

C. Portland Cement-Lime Mix: Packaged blend of portland cement and hydrated lime containing no other ingredients.

D. Masonry Cement: ASTM C91/C91M.

E. Mortar Cement: ASTM C1329/C1329M.

F. Aggregate for Mortar: ASTM C144.
1. For mortar that is exposed to view, use washed aggregate consisting of natural sand or crushed stone.
2. For joints less than 1/4 inch (6.4 mm) thick, use aggregate graded with 100 percent passing the No. 16 (1.18-mm) sieve.
3. White-Mortar Aggregates: Natural white sand or crushed white stone.

4. Colored-Mortar Aggregates: Natural sand or crushed stone of color necessary to produce required mortar color.

G. Aggregate for Grout: ASTM C404.

H. Water: Potable.

I. Manufacture aggregate for mortar and grout, cement, and lime within 100 miles of Project site from materials that have been extracted, harvested, or recovered, as well as manufactured, within 100 miles of Project site.

2.6 REINFORCEMENT

A. Uncoated-Steel Reinforcing Bars: ASTM A615/A615M or ASTM A996/A996M, Grade 60 (Grade 420).

B. Reinforcing Bar Positioners: Wire units designed to fit into mortar bed joints spanning masonry unit cells and to hold reinforcing bars in center of cells. Units are formed from 0.148-inch (3.77-mm) steel wire, hot-dip galvanized after fabrication. Provide units designed for number of bars indicated.

C. Masonry-Joint Reinforcement, General: ASTM A951/A951M.

1. Interior Walls: Galvanized carbon steel.
2. Exterior Walls: **Hot-dip galvanized carbon** steel.
3. Wire Size for Side Rods: **0.148-inch (3.77-mm)** diameter.
4. Wire Size for Cross Rods: **0.148-inch (3.77-mm)** diameter.
5. Spacing of Cross Rods, Tabs, and Cross Ties: Not more than 16 inches (406 mm) o.c.
6. Provide in lengths of not less than 10 ft. (3 m).

D. Masonry-Joint Reinforcement for Single-Wythe Masonry: Ladder type with single pair of side rods.

E. Masonry-Joint Reinforcement for Multiwythe Masonry:

2.7 TIES AND ANCHORS

A. General: Ties and anchors extend at least 1-1/2 inches (38 mm) into veneer but with at least a 5/8-inch (16-mm) cover on outside face.

B. Materials: Provide ties and anchors specified in this article that are made from materials that comply with the following unless otherwise indicated:

1. Mill-Galvanized, Carbon-Steel Wire: ASTM A1064/A1064M, with ASTM A641/A641M, Class 1 coating.
2. Steel Plates, Shapes, and Bars: ASTM A36/A36M.

C. Adjustable Anchors for Connecting to Structural Steel Framing: Provide anchors that allow vertical or horizontal adjustment but resist tension and compression forces perpendicular to plane of wall.

1. Anchor Section for Welding to Steel Frame: Crimped 1/4-inch- (6.4-mm-) diameter, **hot-dip galvanized steel** wire.
2. Tie Section: Triangular-shaped wire tie made from [**0.187-inch- (4.76-mm-)**] diameter, [**hot-dip galvanized steel** wire.

D. Rigid Anchors: Fabricate from steel bars **1-1/2 inches (38 mm) wide by 1/4 inch (6.4 mm) thick by 24 inches (610 mm) long, with ends turned up 2 inches (51 mm) or with cross pins unless otherwise indicated.**

1. Corrosion Protection: **Hot-dip galvanized to comply with ASTM A153/A153M .**

2.8 MORTAR AND GROUT MIXES

A. General: Do not use admixtures, including pigments, air-entraining agents, accelerators, retarders, water-repellent agents, antifreeze compounds, or other admixtures unless otherwise indicated.

1. Do not use calcium chloride in mortar or grout.
2. Use **portland cement-lime** mortar unless otherwise indicated
3. For exterior masonry, use **portland cement-lime** mortar.
4. For reinforced masonry, use **portland cement-lime** mortar.
5. Add cold-weather admixture (if used) at same rate for all mortar that will be exposed to view, regardless of weather conditions, to ensure that mortar color is consistent.

B. Preblended, Dry Mortar Mix: Furnish dry mortar ingredients in form of a preblended mix. Measure quantities by weight to ensure accurate proportions, and thoroughly blend ingredients before delivering to Project site.

C. Mortar for Unit Masonry: Comply with ASTM C270, **Property** Specification. Provide the following types of mortar for applications stated unless another type is indicated.

1. For masonry below grade or in contact with earth, use Type M.
2. For reinforced masonry, use **Type S**.
3. For exterior, above-grade, load-bearing, nonload-bearing walls, and parapet walls; for interior load-bearing walls; for interior nonload-bearing partitions; and for other applications where another type is not indicated, use Type N.

4. For interior nonload-bearing partitions, Type O may be used instead of Type N.

D. Grout for Unit Masonry: Comply with ASTM C476.
1. Use grout of type indicated or, if not otherwise indicated, of type (fine or coarse) that will comply with TMS 602 for dimensions of grout spaces and pour height.
2. Proportion grout in accordance with ASTM C476..
3. Provide grout with a slump of **[8 to 11 inches (203 to 279 mm)] [10 to 11 inches (254 to 279 mm)]** as measured in accordance with ASTM C143/C143M.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
1. For the record, prepare written report, endorsed by Installer, listing conditions detrimental to performance of the Work.
2. Verify that foundations are within tolerances specified.
3. Verify that reinforcing dowels are properly placed.
4. Verify that substrates are free of substances that impair mortar bond.

B. Before installation, examine rough-in and built-in construction for piping systems to verify actual locations of piping connections.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION, GENERAL

A. Build chases and recesses to accommodate items specified in this and other Sections.

B. Leave openings for equipment to be installed before completing masonry. After installing equipment, complete masonry to match construction immediately adjacent to opening.

C. Use full-size units without cutting if possible. If cutting is required to provide a continuous pattern or to fit adjoining construction, cut units with motor-driven saws; provide clean, sharp, unchipped edges. Allow units to dry before laying unless wetting of units is specified. Install cut units with cut surfaces and, where possible, cut edges concealed.

3.3 TOLERANCES

A. Dimensions and Locations of Elements:
1. For dimensions in cross section or elevation, do not vary by more than plus 1/2 inch (13 mm) or minus 1/4 inch (6.4 mm).
2. For location of elements in plan, do not vary from that indicated by more than plus or minus 1/2 inch (13 mm).
3. For location of elements in elevation, do not vary from that indicated by more than plus or minus 1/4 inch (6.4 mm) in a story height or 1/2 inch (13 mm) total.

B. Lines and Levels:
1. For bed joints and top surfaces of bearing walls, do not vary from level by more than 1/4 inch in 10 ft. (6.4 mm in 3 m), or 1/2-inch (13-mm) maximum.
2. For conspicuous horizontal lines, such as lintels, sills, parapets, and reveals, do not vary from level by more than 1/8 inch in 10 ft. (3.2 mm in 3 m), 1/4 inch in 20 ft. (6.4 mm in 6 m), or 1/2-inch (13-mm) maximum.
3. For vertical lines and surfaces, do not vary from plumb by more than 1/4 inch in 10 ft. (6.4 mm in 3 m), 3/8 inch in 20 ft. (10 mm in 6 m), or 1/2-inch (13-mm) maximum.
4. For conspicuous vertical lines, such as external corners, door jambs, reveals, and expansion and control joints, do not vary from plumb by more than 1/8 inch in 10 ft. (3.2 mm in 3 m), 1/4 inch in 20 ft. (6.4 mm in 6 m), or 1/2-inch (13-mm) maximum.
5. For lines and surfaces, do not vary from straight by more than 1/4 inch in 10 ft. (6.4 mm in 3 m), 3/8 inch in 20 ft. (10 mm in 6 m), or 1/2-inch (13-mm) maximum.
6. For vertical alignment of exposed head joints, do not vary from plumb by more than 1/4 inch in 10 ft. (6.4 mm in 3 m), or 1/2-inch (13-mm) maximum.

C. Joints:
1. For bed joints, do not vary from thickness indicated by more than plus or minus 1/8 inch (3.2 mm), with a maximum thickness limited to 1/2 inch (13 mm).

2. For exposed bed joints, do not vary from bed-joint thickness of adjacent courses by more than 1/8 inch (3.2 mm).
3. For head and collar joints, do not vary from thickness indicated by more than plus 3/8 inch (10 mm) or minus 1/4 inch (6.4 mm).
4. For exposed head joints, do not vary from thickness indicated by more than plus or minus 1/8 inch (3.2 mm).
5. For exposed bed joints and head joints of stacked bond, do not vary from a straight line by more than 1/16 inch (1.6 mm) from one masonry unit to the next.

3.4 LAYING MASONRY WALLS

A. Lay out walls in advance for accurate spacing of surface bond patterns with uniform joint thicknesses and for accurate location of openings, movement-type joints, returns, and offsets. Avoid using less-than-half-size units, particularly at corners, jambs, and, where possible, at other locations.

B. Bond Pattern for Exposed Masonry: Unless otherwise indicated, lay exposed masonry in **running bond**; do not use units with less-than-nominal 4-inch (102-mm) horizontal face dimensions at corners or jambs.

C. Lay concealed masonry with all units in a wythe in running bond or bonded by lapping not less than **4 inches (102 mm)**. Bond and interlock each course of each wythe at corners. Do not use units with less-than-nominal 4-inch (102-mm) horizontal face dimensions at corners or jambs.

D. Stopping and Resuming Work: Stop work by stepping back units in each course from those in course below; do not tooth. When resuming work, clean masonry surfaces that are to receive mortar, remove loose masonry units and mortar, and wet brick if required before laying fresh masonry.

E. Built-in Work: As construction progresses, build in items specified in this and other Sections. Fill in solidly with masonry around built-in items.

F. Fill space between steel frames and masonry solidly with mortar unless otherwise indicated.

G. Where built-in items are to be embedded in cores of hollow masonry units, place a layer of metal lath, wire mesh, or plastic mesh in the joint below, and rod mortar or grout into core.

H. Fill cores in hollow CMUs with grout 24 inches (610 mm) under bearing plates, beams, lintels, posts, and similar items unless otherwise indicated.

I. Build nonload-bearing interior partitions full height of story to underside of solid floor or roof structure above unless otherwise indicated.

1. Install compressible filler in joint between top of partition and underside of structure above.Fasten partition top anchors to structure above and build into top of partition. Grout cells of CMUs solidly around plastic tubes of anchors, and push tubes down into grout to provide 1/2-inch (13-mm) clearance between end of anchor rod and end of tube. Space anchors **48 inches (1219 mm)** o.c. unless otherwise indicated.
2. Wedge nonload-bearing partitions against structure above with small pieces of tile, slate, or metal. Fill joint with mortar after dead-load deflection of structure above approaches final position.
3. At fire-rated partitions, treat joint between top of partition and underside of structure above to comply with Section 078443 "Joint Firestopping."

3.5 MORTAR BEDDING AND JOINTING

A. Lay **CMUs**as follows:

1. Bed face shells in mortar and make head joints of depth equal to bed joints.
2. Bed webs in mortar in all courses of piers, columns, and pilasters.
3. Bed webs in mortar in grouted masonry, including starting course on footings.
4. Fully bed entire units, including areas under cells, at starting course on footings where cells are not grouted.
5. Fully bed units and fill cells with mortar at anchors and ties as needed to fully embed anchors and ties in mortar.

B. Lay solid masonry units with completely filled bed and head joints; butter ends with sufficient mortar to fill head joints and shove into place. Do not deeply furrow bed joints or slush head joints.

C. Tool exposed joints slightly concave when thumbprint hard, using a jointer larger than joint thickness unless otherwise indicated.

1. For glazed masonry units, use a nonmetallic jointer 3/4 inch (19 mm) or more in width.

D. Cut joints flush for masonry walls to receive plaster or other direct-applied finishes (other than paint) unless otherwise indicated.

E. Cut joints flush where indicated to receive waterproofing unless otherwise indicated.

3.6 MASONRY-JOINT REINFORCEMENT

A. General: Install entire length of longitudinal side rods in mortar with a minimum cover of 5/8 inch (16 mm) on exterior side of walls, 1/2 inch (13 mm) elsewhere. Lap reinforcement a minimum of 6 inches (152 mm).
   1. Space reinforcement not more than 16 inches (406 mm) o.c.
   2. Space reinforcement not more than 8 inches (203 mm) o.c. in foundation walls and parapet walls.
   3. Provide reinforcement not more than 8 inches (203 mm) above and below wall openings and extending 12 inches (305 mm) beyond openings **in addition to continuous reinforcement**.

B. Interrupt joint reinforcement at control and expansion joints unless otherwise indicated.

C. Cut and bend reinforcing units as directed by manufacturer for continuity at[**corners,**] returns, offsets, column fireproofing, pipe enclosures, and other special conditions.

3.7 CONTROL AND EXPANSION JOINTS

A. General: Install control- and expansion-joint materials in unit masonry as masonry progresses. Do not allow materials to span control and expansion joints without provision to allow for in-plane wall or partition movement.

B. Form control joints in concrete masonry **using one of the following methods**:
   1. Fit bond-breaker strips into hollow contour in ends of CMUs on one side of control joint. Fill resultant core with grout, and rake out joints in exposed faces for application of sealant.
   2. Install preformed control-joint gaskets designed to fit standard sash block.
   3. Install interlocking units designed for control joints. Install bond-breaker strips at joint. Keep head joints free and clear of mortar, or rake out joint for application of sealant.
   4. Install temporary foam-plastic filler in head joints, and remove filler when unit masonry is complete for application of sealant.

3.8 LINTELS

A. Install steel lintels where indicated.

B. Provide **masonry**lintels where indicated and where openings of more than 12 inches (305 mm) for brick-size units and 24 inches (610 mm) for block-size units are indicated without structural steel or other supporting lintels.

C. Provide minimum bearing of 8 inches (203 mm) at each jamb unless otherwise indicated.

3.9 REINFORCED UNIT MASONRY

A. Temporary Formwork and Shores: Construct formwork and shores as needed to support reinforced masonry elements during construction.
   1. Construct formwork to provide shape, line, and dimensions of completed masonry as indicated. Make forms sufficiently tight to prevent leakage of mortar and grout. Brace, tie, and support forms to maintain position and shape during construction and curing of reinforced masonry.
   2. Do not remove forms and shores until reinforced masonry members have hardened sufficiently to carry their own weight and that of other loads that may be placed on them during construction.

B. Placing Reinforcement: Comply with requirements in TMS 602.

C. Grouting: Do not place grout until entire height of masonry to be grouted has attained enough strength to resist grout pressure.
   1. Comply with requirements in TMS 602 for cleanouts and for grout placement, including minimum grout space and maximum pour height.
   2. Limit height of vertical grout pours to not more than **60 inches (1524 mm)**

3.10 REPAIRING, POINTING, AND CLEANING

A. Remove and replace masonry units that are loose, chipped, broken, stained, or otherwise damaged or that do not match adjoining units. Install new units to match adjoining units; install in fresh mortar, pointed to eliminate evidence of replacement.

B. Pointing: During the tooling of joints, enlarge voids and holes, except weep holes, and completely fill with mortar. Point up joints, including corners, openings, and adjacent construction, to provide a neat, uniform appearance. Prepare joints for sealant application, where indicated.

C. tion, where indicated.

D. In-Progress Cleaning: Clean unit masonry as work progresses by dry brushing to remove mortar fins and smears before tooling joints.

E. Final Cleaning: After mortar is thoroughly set and cured, clean exposed masonry as follows:
   1. Remove large mortar particles by hand with wooden paddles and nonmetallic scrape hoes or chisels.

2. Test cleaning methods on sample wall panel; leave one-half of panel uncleaned for comparison purposes. Obtain Architect's approval of sample cleaning before proceeding with cleaning of masonry.
3. Clean concrete masonry by applicable cleaning methods indicated in NCMA TEK 8-4A.
4. Clean masonry with a proprietary acidic masonry cleaner applied according to manufacturer's written instructions.

3.11 MASONRY WASTE DISPOSAL

A. Salvageable Materials: Unless otherwise indicated, excess masonry materials are Contractor's property. At completion of unit masonry work, remove from Project site.

B. Waste Disposal as Fill Material: Dispose of clean masonry waste, including excess or soil-contaminated sand, waste mortar, and broken masonry units, by crushing and mixing with fill material as fill is placed.
   1. Crush masonry waste to less than 4 inches (102 mm) in each dimension.
   2. Do not dispose of masonry waste as fill within 18 inches (457 mm) of finished grade.

C. Masonry Waste Recycling: Return broken CMUs not used as fill to manufacturer for recycling.

D. Excess Masonry Waste: Remove excess clean masonry waste that cannot be used as fill, as described above or recycled, and other masonry waste, and legally dispose of off Owner's property.

END OF SECTION

SECTION 07 53 23
ETHYLENE-PROPYLENE-DIENE-MONOMER (EPDM) ROOFING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
1. Adhered ethylene-propylene-diene-terpolymer (EPDM) roofing system.
2. Vapor barrier.
3. Accessory roofing materials.
4. Substrate board.
5. Roof insulation.
6. Insulation accessories.
7. Asphalt materials.
8. Walkways.

1.2 PREINSTALLATION MEETINGS

A. Preliminary Conference: Conduct conference at Project site.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.
1. For insulation and roof system component fasteners, include copy of FM Approvals' RoofNav listing.

B. Sustainable Design Submittals:
1. Environmental Product Declaration: For each product.

C. Shop Drawings: Include roof plans, sections, details, and attachments to other work, including the following:
1. Layout and thickness if insulation.
2. Base flashings and membrane terminations.
3. Flashing details at penetrations.
4. Tapered insulation, thickness, and slopes.
5. Roof plan showing orientation of steel roof deck and orientation of roof membrane and fastening spacings and patterns for mechanically fastened roofing system.
6. Insulation fastening patterns for corner, perimeter, and field-of-roof locations.
7. Tie-in with air barrier.

D. Samples: For the following products:
1. Roof membrane and flashings of color required.
2. Walkway pads or rolls, of color required.

E. Wind Uplift Resistance Submittal: For roofing system, indicating compliance with wind uplift performance requirements.

1.4 INFORMATIONAL SUBMITTALS

A. Manufacturer Certificates:
1. Performance Requirement Certificate: Signed by roof membrane manufacturer, certifying that roofing system complies with requirements specified in "Performance Requirements" Article.
   a. Submit evidence of complying with performance requirements.
2. Special Warranty Certificate: Signed by roof membrane manufacturer, certifying that all materials supplied under this Section are acceptable for special warranty.

B. Product Test Reports: For components of roof membrane and insulation, for tests performed by a qualified testing agency, indicating compliance with specified requirements.

C. Research reports.

D. Field Test Reports:
1. Concrete internal relative humidity test reports.
2. Fastener-pullout test results and manufacturer's revised requirements for fastener patterns.

E. Field quality-control reports.

F. Sample warranties.

1.5 CLOSEOUT SUBMITTALS

A. Maintenance data.

B. Certified statement from existing roof membrane manufacturer stating that existing roof warranty has not been affected by Work performed under this Section.

1.6 QUALITY ASSURANCE

A. Qualifications:
1. Manufacturers: A qualified manufacturer that is listed in FM Approvals' RoofNav for roofing system identical to that used for this Project.

2. Installers: A qualified firm that is approved, authorized, or licensed by roofing system manufacturer to install manufacturer's product and that is eligible to receive manufacturer's special warranty.

1.7 WARRANTY

A. Special Warranty: Manufacturer agrees to repair or replace components of roofing system that fail in materials or workmanship within specified warranty period.

1. Warranty Period: 20 years from Date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Accelerated Weathering: Roof membrane to withstand 2000 hours of exposure when tested in accordance with ASTM G152, ASTM G154, or ASTM G155.

B. Impact Resistance: Roof membrane to resist impact damage when tested in accordance with ASTM D3746, ASTM D4272, or the "Resistance to Foot Traffic Test" in FM Approvals 4470.

C. FM Approvals' RoofNav Listing: Roof membrane, base flashings, and component materials comply with requirements in FM Approvals 4450 or FM Approvals 4470 as part of a roofing system, and are listed in FM Approvals' RoofNav for Class 1 or noncombustible construction, as applicable. Identify materials with FM Approvals Certification markings.

1. Fire/Windstorm Classification: Class 1A-90.
2. Hail-Resistance Rating: FM Global Property Loss Prevention Data Sheet 1-34 SH.

D. Exterior Fire-Test Exposure: ASTM E108 or UL 790, Class A; for application and roof slopes indicated; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

E. Fire-Resistance Ratings: Comply with fire-resistance-rated assembly designs indicated. Identify products with appropriate markings of applicable testing agency.

2.2 ETHYLENE-PROPYLENE-DIENE-TERPOLYMER (EPDM) ROOFING

A. EPDM Sheet: ASTM D4637/D4637M, Type I, nonreinforced, EPDM sheet with factory-applied seam tape.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   a. Carlisle Syntec Systems.
   b. Johns Manville; a Berkshire Hathaway company.
   c. Versico Roofing Systems; Carlisle Construction Materials.
2. Thickness: 90 mils, nominal.
3. Exposed Face Color: Black.
4. ~~Recycled Content: Postconsumer recycled content plus one-half of preconsumer recycled content not less than <Insert value> percent.~~

2.3 VAPOR BARRIER

A. Composite Sheet *for wood or glass-mat sheathing or concrete*: Self-adhering 35-mil rubberized asphalt laminated to 5-mil polypropylene film.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   a. Carlisle Syntec Systems.
      1) Basis-of-Design: VapAir Seal 725TR.
   b. Johns Manville; a Berkshire Hathaway company.
   c. Versico Roofing Systems; Carlisle Construction Materials.
2. Thickness: 40 mils, nominal.
3. Permeability: .015 perms per ASTM D1970 tested to E96 standards.
4. Air Permeance: .000 L*m^2@75 Pa per ASTM E2148.

B. Composite Sheet *for metal deck*: Reinforced aluminum foil with self-adhering SBS; 15-mil overall thickness.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   a. Carlisle Syntec Systems.
      1) Basis-of-Design: VapAir Seal MD.
   b. Johns Manville; a Berkshire Hathaway company.
   c. Versico Roofing Systems; Carlisle Construction Materials.
2. Thickness: 40 mils, nominal.
3. Permeability: .030 perms per ASTM D1970 tested to E96 standards.
4. Air Permeance: .000 L*m^2@75 Pa per ASTM E2148.

2.4 ACCESSORY ROOFING MATERIALS

A. General: Accessory materials recommended by roofing system manufacturer for intended use and compatible with other roofing components.

1. Adhesive and Sealants: Comply with VOC limits of authorities having jurisdiction.
2. Verify adhesives and sealants comply with the following limits for VOC content:
   a. Plastic Foam Adhesives: 50 g/L.

b. Gypsum Board and Panel Adhesives: 50 g/L.
c. Multipurpose Construction Adhesives: 70 g/L.
d. Fiberglass Adhesives: 80 g/L.
e. Contact Adhesives: 80 g/L.
f. PVC Welding Compounds: 510 g/L.
g. Other Adhesives: 250 g/L.
h. Single-Ply Roof Membrane Sealants: 450 g/L.
i. Nonmembrane Roof Sealants: 300 g/L.
j. Sealant Primers for Nonporous Substrates: 250 g/L.
k. Sealant Primers for Porous Substrates: 775 g/L.

3. Verify adhesives and sealants comply with the testing and product requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."

B. Sheet Flashing: 60-mil-thick EPDM, partially cured or cured, according to application.

C. Protection Sheet: Epichlorohydrin or neoprene nonreinforced flexible sheet, 55 to 60 mils thick, recommended by EPDM manufacturer for resistance to hydrocarbons, non-aromatic solvents, grease, and oil. *Install within 8'-0" of perimeter of kitchen exhaust duct.*

D. Prefabricated Pipe Flashings: As recommended by roof membrane manufacturer.

E. Bonding Adhesive: Manufacturer's standard.

F. Seaming Material: Use factory-applied seam tape, width as recommended by manufacturer to extent possible. Then use manufacturer's standard, synthetic-rubber polymer primer and 3-inch-wide minimum, butyl splice tape with release film Factory-applied seam tape, width as recommended by manufacturer.

G. Lap Sealant: Manufacturer's standard, single-component sealant, colored to match membrane roofing.

H. Water Cutoff Mastic: Manufacturer's standard butyl mastic sealant.

I. Metal Termination Bars: Manufacturer's standard, predrilled stainless steel or aluminum bars, approximately 1 by 1/8 inch thick; with anchors.

J. Fasteners: Factory-coated steel fasteners and metal or plastic plates complying with corrosion-resistance provisions in FM Approvals 4470, designed for fastening components to substrate, and acceptable to roofing system manufacturer.

K. Miscellaneous Accessories: Provide pourable sealers, preformed cone and vent sheet flashings, molded pipe boot flashings, preformed inside and outside corner sheet flashings, reinforced EPDM securement strips, T-joint covers, in-seam sealants, termination reglets, cover strips, and other accessories.

1. Provide white flashing accessories for white EPDM membrane roofing.

2.5 SUBSTRATE BOARD

A. Glass-Mat Gypsum Roof Substrate Board: ASTM C1177/C1177M, water-resistant gypsum board.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   a. CertainTeed; SAINT-GOBAIN.
   b. Georgia-Pacific Gypsum LLC.
   c. USG Corporation.
2. Thickness: Type X, 5/8 inch.
3. Surface Finish: Factory primed.

B. Fasteners: Factory-coated steel fasteners and metal or plastic plates complying with corrosion-resistance provisions in FM Approvals 4470, designed for fastening substrate panel to roof deck.

2.6 ROOF INSULATION

A. Roof insulation assembly must provide an overall average of R-35.

B. Polyisocyanurate Board Insulation: ASTM C1289, Type II, Class 1 felt facer on both major surfaces.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   a. Atlas Polyiso Roof and Wall Insulation.
   b. Carlisle Syntec Systems.
   c. CertainTeed; SAINT-GOBAIN.
   d. GAF.
   e. Hunter Panels; a Carlisle company.
   f. Insulfoam; a Carlisle Company.
   g. Johns Manville; a Berkshire Hathaway company.
   h. Rmax, A Business Unit of Sika Corporation.
2. Size: 48 by 96 inches.
3. Thickness:
   a. Base Layer: 1-1/2 inches.

b. Upper Layer: As needed per tapered insulation plan to meet required R-value.

C. Tapered Insulation (if applicable): Provide factory-tapered insulation boards.
1. Material: Match roof insulation.
2. Minimum Thickness: 1/4 inch.
3. Slope:
a. Roof Field: 1/4 inch per foot unless otherwise indicated on Drawings.
b. Saddles and Crickets: 1/2 inch per foot unless otherwise indicated on Drawings.

2.7 INSULATION ACCESSORIES

A. Fasteners: Factory-coated steel fasteners and metal or plastic plates complying with corrosion-resistance provisions in FM Approvals 4470, designed for fastening roof insulation to substrate, and acceptable to roofing system manufacturer.

B. Insulation Adhesive: Insulation manufacturer's recommended adhesive formulated to attach roof insulation to substrate or to another insulation layer as follows:
1. Bead-applied, low-rise, one-component or multicomponent urethane adhesive.
2. Verify adhesives and sealants comply with the following limits for VOC content:
a. Plastic Foam Adhesives: 50 g/L.
b. Gypsum Board and Panel Adhesives: 50 g/L.
c. Multipurpose Construction Adhesives: 70 g/L.
d. Fiberglass Adhesives: 80 g/L.
e. Contact Adhesives: 80 g/L.
f. PVC Welding Compounds: 510 g/L.
g. Other Adhesives: 250 g/L.
h. Single-Ply Roof Membrane Sealants: 450 g/L.
i. Nonmembrane Roof Sealants: 300 g/L.
j. Sealant Primers for Nonporous Substrates: 250 g/L.
k. Sealant Primers for Porous Substrates: 775 g/L.
3. Verify adhesives and sealants comply with the testing and product requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."

C. Protection Mat: Woven or nonwoven polypropylene, polyolefin, or polyester fabric; water permeable and resistant to UV degradation; type and weight as recommended by roofing system manufacturer for application.

2.8 ASPHALT MATERIALS

A. Roofing Asphalt: ASTM D312/D312M, Type III or Type IV.

B. Asphalt Primer: ASTM D41/D41M.

2.9 WALKWAYS

A. Flexible Walkways (if called for in drawings): Factory-formed, nonporous, heavy-duty, slip-resisting, surface-textured walkway pads or rolls, approximately 3/16 inch thick and acceptable to roofing system manufacturer.
1. Size: Approximately 36 by 60 inches.
2. Color: Contrasting with roof membrane.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements and other conditions affecting performance of the Work.
1. Verify that minimum concrete drying period recommended by roofing system manufacturer has passed.
2. Verify that concrete substrate is visibly dry and free of moisture, and that minimum concrete internal relative humidity is not more than 75 percent, or as recommended by roofing system manufacturer when tested in accordance with ASTM F2170.
a. Test Frequency: One test probe per each 1000 sq. ft., or portion thereof, of roof deck, with not less than three test probes.
b. Submit test reports within 24 hours of performing tests.
3. Verify that concrete-curing compounds that will impair adhesion of roofing components to roof deck have been removed.
4. Verify that joints in precast concrete roof decks have been grouted flush with top of concrete.

3.2 PREPARATION

A. Perform fastener-pullout tests in accordance with roof system manufacturer's written instructions.
1. Submit test result within 24 hours of performing tests.
a. Include manufacturer's requirements for any revision to previously submitted fastener patterns required to achieve specified wind uplift requirements.

3.3 INSTALLATION OF ROOFING, GENERAL

A. Install roofing system in accordance with roofing system manufacturer's written instructions, FM Approvals' RoofNav assembly requirements, and FM Global Property Loss Prevention Data Sheet 1-29.

B. Complete terminations and base flashings and provide temporary seals to prevent water from entering completed sections of roofing system at end of workday or when rain is forecast. Remove and discard temporary seals before beginning work on adjoining roofing.

C. Install roof membrane and auxiliary materials to tie in to existing roofing to maintain weathertightness of transition (and to not void warranty for existing roofing system when applicable).

D. Coordinate installation and transition of roofing system component serving as an air barrier with air barrier specified under Section 07 27 26 "Fluid-Applied Membrane Air Barriers."

3.4 INSTALLATION OF SUBSTRATE BOARD

A. Install where identified in roofing details and/or roof assembly descriptions in the drawings.

B. Install substrate board with long joints in continuous straight lines, with end joints staggered not less than 24 inches in adjacent rows.

1. At steel roof decks, install substrate board at right angle to flutes of deck.
    a. Locate end joints over crests of steel roof deck.
2. At wood sheathing, install substrate board parallel to long axis of wood panels.
    a. Locate end joints over structural framing below but not over wood sheathing joints.
3. Tightly butt substrate boards together.
4. Cut substrate board to fit tight around penetrations and projections, and to fit tight to intersecting sloping roof decks.
5. Fasten substrate board to top flanges of steel deck (or wood sheathing) in accordance with recommendations in FM Approvals' RoofNav listed roof assembly requirements for specified Windstorm Resistance Classification and FM Global Property Loss Prevention Data Sheet 1-29.
6. Fasten substrate board to top flanges of steel deck (or wood sheathing) to resist uplift pressure at corners, perimeter, and field of roof in accordance with roofing system manufacturers' written instructions.

3.5 INSTALLATION OF VAPOR BARRIER

A. See product description above for correct product for application.

B. Install self-adhering membrane per manufacturer's written instructions.

3.6 INSTALLATION OF INSULATION

A. Coordinate installing roofing system components so insulation is not exposed to precipitation or left exposed at end of workday.

B. Comply with roofing system and insulation manufacturer's written instructions for installing roof insulation.

C. Insulation installation intent:

1. Top-most course of insulation is to be adhered to course below with lower courses screwed to deck as a stack (i.e., lower courses are not screwed per course).

D. Installation Over Metal Decking (applies to decks with or without substrate board):

1. Install base *and subsequent layers* of insulation with joints staggered not less than 24 inches in adjacent rows, end joints staggered not less than 12 inches in adjacent rows, and with long joints continuous at right angle to flutes of decking.
    a. Locate end joints over crests of decking.
    b. Where installing composite and noncomposite insulation in two or more layers, install noncomposite board insulation for bottom layer and intermediate layers, if applicable, and install composite board insulation for top layer.
    c. Trim insulation neatly to fit around penetrations and projections, and to fit tight to intersecting sloping roof decks.
    d. Make joints between adjacent insulation boards not more than 1/4 inch in width.
    e. At internal roof drains, slope insulation to create a square drain sump with each side equal to the diameter of the drain bowl plus 24 inches.
        1) Trim insulation so that water flow is unrestricted.
    f. Fill gaps exceeding 1/4 inch with insulation.
    g. Cut and fit insulation within 1/4 inch of nailers, projections, and penetrations.
    h. Loosely lay base layer of insulation units over substrate.
    i. Mechanically attach base layer of insulation (and substrate board when noted) using mechanical fasteners specifically designed and sized for fastening specified board-type roof insulation to metal decks.
        1) Fasten insulation in accordance with requirements in FM Approvals' RoofNav for specified Windstorm Resistance Classification.

2) Fasten insulation to resist specified uplift pressure at corners, perimeter, and field of roof.

2. Install top layer of tapered insulation with joints of each layer offset not less than 12 inches from previous layer of insulation.
   a. Staggered end joints within each layer not less than 24 inches in adjacent rows.
   b. Install with long joints continuous and with end joints staggered not less than 12 inches in adjacent rows.
   c. Trim insulation neatly to fit around penetrations and projections, and to fit tight to intersecting sloping roof decks.
   d. Make joints between adjacent insulation boards not more than 1/4 inch in width.
   e. At internal roof drains, slope insulation to create a square drain sump with each side equal to the diameter of the drain bowl plus 24 inches.
      1) Trim insulation so that water flow is unrestricted.
   f. Fill gaps exceeding 1/4 inch with insulation.
   g. Cut and fit insulation within 1/4 inch of nailers, projections, and penetrations.
   h. Adhere top layer of tapered insulation to layer below using adhesive in accordance with FM Approvals' RoofNav listed roof assembly requirements for specified Windstorm Resistance Classification and FM Global Property Loss Prevention Data Sheet 1-29, as follows:
      1) Set each layer of insulation in ribbons of bead-applied insulation adhesive, firmly pressing and maintaining insulation in place.

E. Installation Over Wood Sheathing (applies to decks with or without substrate board):
   1. Follow direction for "Installation Over Metal Decking" above, except that ends of insulation to be mechanically attached are to align with wood framing below.

3.7 ADHERED ROOFING INSTALLATION

A. Adhere roof membrane over area to receive roofing in accordance with roofing system manufacturer's written instructions.
B. Unroll membrane roof membrane and allow to relax before installing.
C. Start installation of roofing in presence of roofing system manufacturer's technical personnel.
D. Accurately align roof membrane, and maintain uniform side and end laps of minimum dimensions required by manufacturer. Stagger end laps.
E. Bonding Adhesive: Apply to substrate and underside of roof membrane at rate required by manufacturer, and allow to partially dry before installing roof membrane. Do not apply to splice area of roof membrane.
F. In addition to adhering, mechanically fasten roof membrane securely at terminations, penetrations, and perimeters.
G. Apply roof membrane with side laps shingled with slope of roof deck where possible.
H. Tape Seam Installation: Clean and prime both faces of splice areas, apply splice tape.
   1. Firmly roll side and end laps of overlapping roof membrane to ensure a watertight seam installation.
   2. Apply lap sealant and seal exposed edges of roofing terminations.
I. Factory-Applied Seam Tape Installation: Clean and prime surface to receive tape.
   1. Firmly roll side and end laps of overlapping roof membrane to ensure a watertight seam installation.
   2. Apply lap sealant and seal exposed edges of roofing terminations.
J. Spread sealant or mastic bed over deck-drain flange at roof drains, and securely seal roof membrane in place with clamping ring.
K. Adhere protection sheet over roof membrane at locations indicated.

3.8 INSTALLATION OF BASE FLASHING

A. Install sheet flashings and preformed flashing accessories, and adhere to substrates in accordance with roofing system manufacturer's written instructions.
B. Apply bonding adhesive to substrate and underside of sheet flashing at required rate, and allow to partially dry. Do not apply to seam area of flashing.
C. Flash penetrations and field-formed inside and outside corners with cured or uncured sheet flashing.
D. Clean splice areas, apply splicing cement, and firmly roll side and end laps of overlapping sheets to ensure a watertight seam installation. Apply lap sealant and seal exposed edges of sheet flashing terminations.
E. Terminate and seal top of sheet flashings and mechanically anchor to substrate through termination bars.

3.9 INSTALLATION OF WALKWAYS

A. Flexible Walkways: Install walkway products in accordance with manufacturer's written instructions.
   1. Install flexible walkways at the following locations:
      a. Perimeter of each rooftop unit.
      b. Between each rooftop unit location, creating a continuous path connecting rooftop unit locations.
      c. Between each roof hatch and each rooftop unit location or path connecting rooftop unit locations.
      d. Top and bottom of each roof access ladder.

e. Between each roof access ladder and each rooftop unit location or path connecting rooftop unit locations.
f. Locations indicated on Drawings.
g. As required by roof membrane manufacturer's warranty requirements.

2. Provide 6-inch clearance between adjoining pads.
3. Adhere walkway products to substrate with compatible adhesive in accordance with roofing system manufacturer's written instructions.

3.10 FIELD QUALITY CONTROL

A. Final Roof Inspection: Arrange for roofing system manufacturer's technical personnel to inspect roofing installation on completion, in presence of Architect, and to prepare inspection report.

B. Repair or remove and replace components of roofing system where inspections indicate that they do not comply with specified requirements.

3.11 PROTECTING AND CLEANING

A. Protect roofing system from damage and wear during remainder of construction period. When remaining construction does not affect or endanger roofing system, inspect roofing system for deterioration and damage, describing its nature and extent in a written report, with copies to Architect and Owner.

B. Correct deficiencies in or remove roofing system that does not comply with requirements, repair substrates, and repair or reinstall roofing system to a condition free of damage and deterioration at time of Substantial Completion and in accordance with warranty requirements.

C. Clean overspray and spillage from adjacent construction using cleaning agents and procedures recommended by manufacturer of affected construction.

END OF SECTION

SECTION 08 71 00
DOOR HARDWARE

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PART 1 – GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Commercial door hardware for aluminum entrances, wood and steel doors
   2. Coordination and interface with Owner's Security System.
   3. Templates
   4. Keying System

1.2 WORK FURNISHED BUT INSTALLED UNDER OTHER SECTIONS

A. Furnish all hardware to Section 06200 for installation.

1.3 RELATED WORK

A. Section 08 11 00 - Metal Doors and Frames: Doors and Frames prepared for finish hardware.
B. Section 08 21 00 - Wood Doors: Wood doors: Doors and Frames prepared for finish hardware.
C. Division 26 - Electrical Power supply to electric hardware devices and low voltage control.

1.4 REFERENCES

A. ANSI A117.1 - Specifications for Making Buildings and Facilities Accessible to and Usable by Physically Handicapped People.
B. ANSI/NFPA 80 - Fire Doors and Windows.
C. BHMA - Builders' Hardware Manufacturers Association.
D. DHI - Door and Hardware Institute.
E. NAAMM - National Association of Architectural Metal Manufacturers.
F. NFPA 101 - Life Safety Code.
G. SDI - Steel Door Institute.
H. ADA - The Americans with Disabilities Act.

1.5 COORDINATION

A. Coordinate work of this Section with other directly affected Sections involving manufacturer of any internal reinforcement for hardware.

B. Furnish template for application to doors and jambs with machine or wood screws or through-bolts as required. Templates or hardware or both shall be delivered to factory or building as required by those furnishing items to which hardware is to be applied. Refer to other Sections of Specifications for this information. Locksets for metal doors shall have beveled faces to correspond with bevel or doors. Strikes shall be ASA Standard dimension. Locks having bolts or latches engaging with mullions or jambs of hollow metal shall have box type strikes with curved lips.

C. Electrical System Roughing-In: Coordinate layout and installation of electrified door hardware with connections to power supplies and building safety and security systems.

D. Cooperate with installing contractor and others with regard to application of hardware. Make occasional inspections to verify that items are properly used, installed, in correct location and master-key system is maintained. Report improper application of hardware.

E. Prior to preparing shop drawing submittal, contact Architect to set up a meeting with the Owner to review door functions.

1.6 QUALITY ASSURANCE

A. Manufacturers: Companies specializing in manufacturing door hardware with minimum three years experience.

B. Hardware Supplier: Company specializing in supplying commercial and institutional door hardware with five years experience.

C. Each type of hardware shall be furnished from only one manufacturer.

D. No hardware shall be attached to metal frames with self-tapping or sheet metal screws.

E. Furnish thru bolts for fastening overhead holders and closers on composite core doors.

1.7 REGULATORY REQUIREMENTS

A. Conform to NFPA Standard No. 80 requirements applicable to fire rated doors and frames.

B. Provide only hardware which has been tested and listed by U.L. for types and sizes of doors required and complies with requirements of door and door frame labels.

1.8 CERTIFICATIONS

A. Architectural Hardware Vendor shall inspect complete installation and certify that hardware and installation has been furnished and installed in accordance with manufacturer's instructions and as specified herein.

B. Provide two copies of certifications to Architect.

1.9 SUBMITTALS

A. Before ordering material, prepare and submit complete vertical hardware schedule for all hardware materials to Architect for review. Approval of schedule does not relieve Contractor of any responsibility for furnishing material in accordance with requirements of work.

B. Schedule shall be specific and conclusive with respect to catalog numbers, finishes, template requirements, brackets, type of fasteners and locations. Incomplete schedule will not be checked.

C. Include in schedule, installation dimensions, hardware locations and mounting heights of each type of hardware.

D. Prepare detailed keying schedule after obtaining Owner's instructions and requirements, and submit for approval.

E. Samples, if requested shall be submitted to Architect for approval. Approved samples, if of proper finish, will be delivered to job for ultimate use; otherwise samples will be returned to Contractor upon completion.

F. Submit certificate that hardware to be furnished meets or exceed specified requirements.

G. Submit catalog cut sheets describing all hardware items.

H. Coordinate with Electrical Contractor and Owner's Security Design Vendor installation requirements for locksets that have electric strikes, door position switches and other line or low voltage requirements.

I. Operation and Maintenance data.

1.10 OPERATION AND MAINTENANCE DATA

A. Submit operation and maintenance data for all hardware items provided.

B. Include data on operating hardware, lubrication requirements, and inspection procedures related to preventative maintenance.

C. Include one copy of final approved hardware and keying schedule.

1.11 DELIVERY, STORAGE, AND HANDLING

A. Send duplicate list of hardware in each shipment to Contractor. Original list shall accompany shipment. Hardware vendor shall pay shipping and delivery charges.

B. Deliver hardware to Carpenter (Section 06200) or to respective shops of other Contractors as required. Consult with named Contractors and follow their directions regarding manner, sequence and time of delivery and obtain receipt.

C. Responsibility for safekeeping after delivery rests with trade to whom hardware was delivered.

D. Hardware shall be sorted and delivered to jobsite plainly marked to correspond with item numbers of vendor's approved schedule and be specific as to exact openings and other locations for which items are packaged. Each door opening shall receive separate item number on Hardware Schedule.

E. Plainly mark packages of hardware so that locations of their use may be ascertained without breaking package. Where several packages are needed to complete schedule for one location, securely tie together or box.

F. Pack hardware by building area unless Contractor receiving hardware orders otherwise.

G. Hardware Supplier shall check all shipments to insure proper accessories and templates.

H. Deliver hardware only after detailed schedule, keying diagrams, and samples have been approved.

I. Provide secure lock-up for hardware delivered to the project. Control handling and installation of hardware items which are not immediately replaceable so that the completion of the work will not be delayed by hardware losses.

1.12 MAINTENANCE MATERIALS

A. Provide three each special wrenches and tools applicable to each difference or special hardware component.

B. Provide three each maintenance tools and accessories supplied by hardware component manufacturer.

1.13 WARRANTY

A. Provide manufacturer's standard warranty.

PART 2 - PRODUCTS

2.1 SOURCE LIMITATIONS

A. Obtain each type of door hardware from single manufacturer.

2.2 PERFORMANCE REQUIREMENTS

A. Fire-Rated Door Assemblies: Where fire-rated doors are indicated, provide door hardware complying with NFPA 80 that is listed and labeled by a qualified testing agency, for fire-protection ratings indicated, based on testing at positive pressure in accordance with NFPA 252 or UL 10C.

B. Electrified Door Hardware: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

C. Means of Egress Doors: Latches do not require more than 15 lbf (67 N) to release the latch. Locks do not require use of a key, tool, or special knowledge for operation.

D. Accessibility Requirements: For door hardware on doors in an accessible route, comply with **ICC A117.1**.

1. Provide operating devices that do not require tight grasping, pinching, or twisting of the wrist and that operate with a force of not more than 5 lbf (22.2 N).
2. Comply with the following maximum opening-force requirements:
   a. Interior, Non-Fire-Rated Hinged Doors: 5 lbf (22.2 N) applied perpendicular to door.
   b. Fire Doors: Minimum opening force allowable by authorities having jurisdiction.
3. Bevel raised thresholds with a slope of not more than 1:2. Provide thresholds not more than 1/2 inch (13 mm) high.
4. Adjust door closer sweep periods so that, from an open position of 90 degrees, the door will take at least 5 seconds to move to a position of 12 degrees from the latch.
5. Adjust spring hinges so that, from an open position of 70 degrees, the door will take at least 1.5 seconds to move to the closed position.

2.3 MATERIALS

A. Locks, Latches, Cylinders, and Dead Locks

1. Shall be Schlage L series as noted in hardware sets. Backset shall be 2-3/4" for all locks, latches and dead locks, unless otherwise required to match existing door prep's. No substitutions.
2. All locks and latches shall be of one manufacturer.
3. Included construction cores for all cylinders.
4. All cylinder cores shall be Schlage Primus brand cores. No substitutions. Primus cores are to be supplied by owner.

B. Exit Devices

1. Devices shall be as manufactured by Von Duprin as noted in hardware sets. No substitutions.
2. Function shall be as noted in schedule.
3. Mount exit devices to match mullions at adjacent doors and frames wherever possible.

C. Butt Hinges

1. Shall be Best, Hager, or Ives ball bearing, nonrising loose pin, flat button tip, unless specified to the contrary.
2. Number of butts required:
   a. Doors up to 7' – 4" - 3 butts
   b. Doors 7'- 4" up to 10' – 4 butts

3. Butt size requirements
   a. Interior doors up to 36" wide 4-1/2 x 4-1/2 standard weight.
   b. Interior doors over 36" wide 4-1/2 x 4-1/2 heavy weight.
   c. Exterior doors 4-1/2 x 4-1/2 heavy weight.
4. Door butt legend: (unless otherwise noted in Schedule)
   a. Exterior doors and interior doors exposed to garage/wet areas –stainless steel-NRP.
   b. All other doors steel based.
5. Furnish UL approved butts on labeled doors.
6. Provide non-removable pins (NRP) on all exterior and lockable outswinging doors.
7. Continuous Gear Hinges: Hager, Ives, or Select.

D. Door Closers
1. Shall be LCN 4040XP series unless otherwise specified in hardware groups. No substitutions.
2. Closers shall have key adjusting device.
3. Mount to provide maximum opening permitted by building construction or equipment. Note on schedule the maximum swing per location for other trades involved in reinforcement or installation.
4. All door closers shall be similar in design and appearance to those listed in the schedule, so far as possible, of one manufacturer. Furnish special arms and applications as indicated in hardware schedule or as dictated by structural conditions or local code requirements. Provide appropriate brackets for doors with transoms.
5. Door closers at labeled fire doors shall bear UL approval. Provide thru-bolts for mineral core doors unless otherwise specified in door specifications.

E. Pushes, Pulls, and Kickplates
1. Shall be as manufactured by Hager, Ives, Rockwood, or Trimco..
2. All plates shall be 16 gauge (0.50), beveled sides and with countersunk screw holes at intervals of not over 6" on all four sides. Screws shall be stainless steel oval head, finish to match plates.

F. Stops and Bumpers
1. Shall be Hager, Ives, Rixson, Rockwood, or Trimco..
2. Install bumper behind each door.
3. Overhead stops and holder types as specified in hardware groups.
4. Apply with expansion shield and machine screws only.
5. Provide special templates as required for proper coordination of door closers and overhead door holders.

G. Manual and Automatic flushbolts.
1. Shall be Hager, Ives, Rockwood, or Trimco.

H. Low Energy Openers
1. ADA Automatic Openers: Stanley Magic Force, Horton 4000LE or Motion Access Condor Swing as specified in hardware groups. Automatic operators are to be included as supply and install. Coordinate installation and operation of opener and switches with electrical contractor.

I. Thresholds, Weatherstripping, Sound Seals
1. National Guard, Hager, or Pemko.

J. Door Silencers or Mutes
1. Furnish three for each pressed steel frame for single doors, two for each pressed steel frame for pairs of doors.

K. Other Materials
1. Provide other materials not specifically described but required for a complete and proper installation, as selected by the Contractor and approved by the Architect.

2.4 KEYING

A. Keying is by owner.

2.5 FABRICATION

A. Base Metals: Produce door hardware units of base metal indicated, fabricated by forming method indicated, using manufacturer's standard metal alloy, composition, temper, and hardness. Furnish metals of a quality equal to or greater than that of specified door hardware units and ANSI/BHMA A156.18.

B. Fasteners: Provide door hardware manufactured to comply with published templates prepared for machine, wood, and sheet metal screws. Provide screws that comply with commercially recognized industry standards for application intended; however, aluminum fasteners are not permitted. Provide Phillips flat-head screws with finished heads to match surface of door hardware unless otherwise indicated.

2.6 FINISHES

A. Provide finishes complying with ANSI/BHMA A156.18 as indicated in door hardware schedule.

B. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

C. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Noticeable variations in the same piece are not acceptable. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine doors and frames, with Installer present, for compliance with requirements for installation tolerances, labeled fire-rated door assembly construction, wall and floor construction, and other conditions affecting performance of the Work.

B. Examine roughing-in for electrical power systems to verify actual locations of wiring connections before electrified door hardware installation.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Steel Doors and Frames: For surface-applied door hardware, drill and tap doors and frames in accordance with ANSI/SDI A250.6.

3.3 INSTALLATION

A. Mounting Heights: Mount door hardware units at heights **to comply with the following** unless otherwise indicated or required to comply with governing regulations.
   1. Standard Steel Doors and Frames: ANSI/SDI A250.8.
   2. Custom Steel Doors and Frames: HMMA 831.

B. Install each door hardware item to comply with manufacturer's written instructions. Where cutting and fitting are required to install door hardware onto or into surfaces that are later to be painted or finished in another way, coordinate removal, storage, and reinstallation of surface protective trim units with finishing work. Do not install surface-mounted items until finishes have been completed on substrates involved.
   1. Set units level, plumb, and true to line and location. Adjust and reinforce attachment substrates as necessary for proper installation and operation.
   2. Drill and countersink units that are not factory prepared for anchorage fasteners. Space fasteners and anchors in accordance with industry standards.

C. Hinges: Install types and in quantities indicated in door hardware schedule, but not fewer than the number recommended by manufacturer for application indicated or one hinge for every 30 inches (760 mm) of door height, whichever is more stringent, unless other equivalent means of support for door, such as spring hinges or pivots, are provided.

D. Boxed Power Supplies: Locate power supplies as indicated or, if not indicated, above accessible ceilings or in equipment room. Verify location with Architect.
   1. Configuration: Provide one power supply for each door opening or least number of power supplies required to adequately serve doors with electrified door hardware.

E. Thresholds: Set thresholds for exterior doors and other doors indicated in full bed of sealant complying with requirements specified in Section 079200 "Joint Sealants."

F. Perimeter Gasketing: Apply to head and jamb, forming seal between door and frame.
   1. Do not notch perimeter gasketing to install other surface-applied hardware.

3.4 INSPECTION AND ADJUSTMENTS

A. Hardware vendor shall, before substantial completion of project, and/or as directed by Architect, inspect all locks that are part of this project to see that keys pass proper locks as required.

B. Check that all locks and latches are properly lubricated, as recommended by manufacturer, with lock lubricant and that all moving parts are adjusted correctly to insure free, smooth operation.

C. Door closers and holders shall be checked for proper lubrication. After building is in use, arrange with factory representative of closer manufacturer to make final adjustments to closers to meet building conditions.

3.5 CLEANING AND PROTECTION

A. Clean adjacent surfaces soiled by door hardware installation.

B. Clean operating items as necessary to restore proper function and finish.

C. Provide final protection and maintain conditions that ensure that door hardware is without damage or deterioration at time of Substantial Completion.

SCHEDULE

Check specified schedule against latest revised plans when making up schedule for approval. Schedule each door separately and, where practical, item numbers shall be same as door numbers and in consecutive sequence.

If hardware is not scheduled for a particular door, furnish hardware of types specified for similar locations as far as practical.

Include accessories required to fully equip in satisfactory manner, doors and the like as shown and specified. Include necessary screws, nuts, bolts, expansion shields and other devices necessary for proper application.]

Items of hardware herein described shall be considered as standard and, unless otherwise specifically mentioned, all hardware used throughout work shall be equal thereto in size, weight, material and workmanship. Revision of standard hardware, which may be necessary to conform to details shall be provided. Items not specifically mentioned but necessary for completion of work shall be of most suitable type matching in quality and finish items which are described.

SET 01

	EA	HINGES	AS SPECIFIED	640	IVES
2	EA	EXIT DEVICE	9927L-BE X LBR	613	VON DUPRIN
2	EA	CLOSER	4040XP EDA	695	LCN
2	EA	OVERHEAD HOLDER	GJ100H SERIES	613	GLYNN-JOHNSON
2	EA	KICKPLATE	10" X 1" LDW	613	IVES

SET 02

	EA	HINGES	AS SPECIFIED	640	IVES
	EA	EXIT DEVICE	99L-BE	613	VON DUPRIN
1	EA	CLOSER	4040XP EDA	695	LCN
1	EA	OVERHEAD STOP	GJ100H SERIES	613	GLYNN-JOHNSON
1	EA	KICKPLATE	10" X 2" LDW	613	IVES

SET 03

	EA	HINGES	AS SPECIFIED	640	IVES
1	EA	PRIVACY	L9040 X 03A X L283-722	613	SCHLAGE
1	EA	CLOSER	4040XP	695	LCN
1	EA	WALL STOP	409	613	ROCKWOOD
1	EA	KICKPLATE	10" X 2" LDW	613	IVES

SET 04

	EA	HINGES	AS SPECIFIED	640	IVES
1	EA	EXIT DEVICE	9927NL X LBR	613	VON DUPRIN
1	EA	EXIT DEVICE	9927DT X LBR	613	VON DUPRIN
1	EA	I/C CYLINDER	AS REQUIRED	613	SCHLAGE
1	EA	PRIMUS CORE	AS REQUIRED	613	SCHLAGE
2	EA	CLOSER	4040XP	695	LCN

2	EA	OVERHEAD HOLDER	GJ100H SERIES	613	GLYNN-JOHNSON
2	EA	KICKPLATE	10" X 1" LDW	613	IVES

**PREP DOORS WITH RACEWAYS FOR FUTURE ELECTRIC LATCH RETRACTION KITS AND ELECTRIC HINGES FOR FUTURE CARD ACCESS.

SET 05

	EA	HINGES	AS SPECIFIED	640	IVES
2	EA	EXIT DEVICE	9927DT X LBR	613	VON DUPRIN
2	EA	CLOSER	4040XP	695	LCN
2	EA	OVERHEAD HOLDER	GJ100H SERIES	613	GLYNN-JOHNSON
2	EA	KICKPLATE	10" X 1" LDW	613	IVES

**PREP DOORS WITH RACEWAYS FOR FUTURE ELECTRIC LATCH RETRACTION KITS AND ELECTRIC HINGES FOR FUTURE CARD ACCESS.

SET 06

	EA	HINGES	224HD	640	IVES
1	EA	EXIT DEVICE	99EO	613	VON DUPRIN
1	EA	CLOSER	4040XP	695	LCN
1	EA	OVERHEAD STOP	GJ100 SERIES	613	GLYNN-JOHNSON
1	SET	WEATHERSTRIP	700SDKB	DKB	NGP
1	EA	SWEEP	200NDKB	DKB	NGP
1	EA	THRESHOLD	8425	AL	NGP

SET 07

1	EA	CONTINUOUS HINGE	112HD	DKB	IVES
1	EA	EXIT DEVICE	99EO	613	VON DUPRIN
1	EA	CLOSER	4040XP	695	LCN
1	EA	OVERHEAD STOP	GJ100 SERIES	613	GLYNN-JOHNSON
1	EA	SWEEP	200NDKB	DKB	NGP
1	EA	THRESHOLD	8425	AL	NGP

**SEALS BY DOOR SUPPLIER.
**PROVIDE DROP PLATE AND BLADE STOP SPACER AS REQUIRED FOR CLOSER INSTALLATION.

SET 08

	EA	HINGES	AS SPECIFIED	640	IVES
1	EA	STOREROOM LOCK	L9080T X 03A	613	SCHLAGE
1	EA	PRIMUS CORE	AS REQUIRED	613	SCHLAGE
1	EA	CLOSER	4040XP-SCUSH	695	LCN
1	EA	FLUSHBOLT	FB458-12"	613	IVES
2	EA	KICKPLATE	10" X 1" LDW	613	IVES
1	SET	SEALS	870	DKB	ZERO
1	SET	SEALS	119W	DKB	ZERO
1	SET	ASTRAGAL	41	DKB	ZERO
1	EA	ASTRAGAL	40	DKB	ZERO
2	EA	AUTO DR BOTTOM	355	AL	ZERO
1	EA	THRESHOLD	564	AL	ZERO

**COORDINATE SEALS AND HINGE REQUIREMENTS WITH STC DOOR SUPPLIER.

SET 09

	EA	HINGES	AS SPECIFIED	640	IVES
1	EA	STOREROOM LOCK	L9080T X 03A	613	SCHLAGE
1	EA	PRIMUS CORE	AS REQUIRED	613	SCHLAGE
1	EA	CLOSER	4040XP HEDA	695	LCN
2	EA	OVERHEAD HOLDER	GJ100 SERIES	613	GLYNN-JOHNSON
1	EA	FLUSHBOLT	FB458-12"	613	IVES
2	EA	KICKPLATE	10" X 1" LDW	613	IVES
1	SET	SEALS	870	DKB	ZERO
1	SET	SEALS	119W	DKB	ZERO
1	SET	ASTRAGAL	41	DKB	ZERO
1	EA	ASTRAGAL	40	DKB	ZERO
2	EA	AUTO DR BOTTOM	355	AL	ZERO
1	EA	THRESHOLD	564	AL	ZERO

**COORDINATE SEALS AND HINGE REQUIREMENTS WITH STC DOOR SUPPLIER.

SET 10

	EA	HINGES	AS SPECIFIED	640	IVES
1	EA	STOREROOM LOCK	L9080T X 03A	613	SCHLAGE
1	EA	PRIMUS CORE	AS REQUIRED	613	SCHLAGE
1	EA	CLOSER	4040XP	695	LCN
1	EA	WALL STOP	409	613E	ROCKWOOD
1	EA	KICKPLATE	10" X 2" LDW	613	IVES
1	EA	DEADBOLT FILLER PLATE	AS REQUIRED		

**GC TO CUT NEW 4 7/8" ANSI STRIKE PREP IN FRAME FOR NEW LOCK.
**PROVIDE NEW FILLER FOR EXISTING DEADBOLT STRIKE. FIELD VERIFY.

SET 11

	EA	HINGES	AS SPECIFIED	640	IVES
1	EA	PUSH	70C	613	ROCKWOOD
1	EA	PULL	BF111 X 70C	613	ROCKWOOD
1	EA	CLOSER	4040XP	695	LCN
1	EA	WALL STOP	409	613E	ROCKWOOD
1	EA	KICKPLATE	10" X 2" LDW	613	IVES
1	EA	FOOT PULL	FP1230	613E	ROCKWOOD

END OF SECTION

SECTION 08 80 00
GLAZING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Glass products.
   2. Laminated glass.
   3. Insulating glass.
   4. Glazing sealants.
   5. Glazing tapes.
   6. Miscellaneous glazing materials.

1.2 COORDINATION

A. Coordinate glazing channel dimensions to provide necessary bite on glass, minimum edge and face clearances, and adequate sealant thicknesses, with reasonable tolerances to achieve proper safety margins for glazing retention under each design load case, load case combination, and service condition.

1.3 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product.
B. Sustainable Design Submittals:
   1. Product Data: For sealants, indicating VOC content.
   2. Laboratory Test Reports: For sealants, indicating compliance with requirements for low-emitting materials.
C. Glass Samples: For each type of glass product other than clear monolithic vision glass; 12 inches square.
D. Delegated Design Submittal: For glass indicated to comply with performance requirements and design criteria, including analysis data signed and sealed by qualified professional engineer responsible for their preparation.

1.5 INFORMATIONAL SUBMITTALS

A. Product Certificates: For glass.
B. Product test reports.
C. Preconstruction adhesion and compatibility test report.
D. Sample warranties.

1.6 QUALITY ASSURANCE

A. Sealant Testing Agency Qualifications: An independent testing agency qualified according to ASTM C1021 to conduct the testing indicated.

1.7 WARRANTY

A. Manufacturer's Special Warranty for Coated-Glass Products: Manufacturer agrees to replace coated-glass units that deteriorate within specified warranty period. Deterioration of coated glass is defined as defects developed from normal use that are not attributed to glass breakage or to maintaining and cleaning coated glass contrary to manufacturer's written instructions. Defects include peeling, cracking, and other indications of deterioration in coating.
   1. Warranty Period: 10 years from date of Substantial Completion.
B. Manufacturer's Special Warranty for Laminated Glass: Manufacturer agrees to replace laminated-glass units that deteriorate within specified warranty period. Deterioration of laminated glass is defined as defects developed from normal use that are not attributed to glass breakage or to maintaining and cleaning laminated glass contrary to manufacturer's written instructions. Defects include edge separation, delamination materially obstructing vision through glass, and blemishes exceeding those allowed by referenced laminated-glass standard.
   1. Warranty Period: 10 years from date of Substantial Completion.
C. Manufacturer's Special Warranty for Insulating Glass: Manufacturer agrees to replace insulating-glass units that deteriorate within specified warranty period. Deterioration of insulating glass is defined as failure of hermetic seal under normal use that is not attributed to glass breakage or to maintaining and cleaning insulating glass contrary to manufacturer's written instructions. Evidence of failure is obstruction of vision by dust, moisture, or film on interior surfaces of glass.
   1. Warranty Period: 10 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Delegated Design: Engage a qualified professional engineer, as defined in Section 01 40 00 "Quality Requirements," to design glazing.
B. Structural Performance: Glazing shall withstand the following design loads within limits and under conditions indicated determined in accordance with the IBC and ASTM E1300:

1. Design Wind Pressures: As indicated on Drawings.
2. Design Snow Loads: As indicated on Drawings.
3. Thermal Loads: Design glazing to resist thermal stress breakage induced by differential temperature conditions and limited air circulation within individual glass lites and insulated glazing units.

C. Windborne-Debris-Impact Resistance: Exterior glazing shall pass ASTM E1886 missile-impact and cyclic-pressure tests in accordance with ASTM E1996 for Wind Zone 1 for basic protection.
1. Large-Missile Test: For glazing located within 30 feet of grade.
2. Small-Missile Test: For glazing located between 30 feet and 60 feet above grade.

D. Safety Glazing: Where safety glazing is indicated, provide glazing that complies with 16 CFR 1201, Category II.

E. Thermal and Optical Performance Properties: Provide glass with performance properties specified, as indicated in manufacturer's published test data, based on procedures indicated below:
1. U-Factors: Center-of-glazing values, in accordance with NFRC 100 and based on most current non-beta version of LBL's WINDOW computer program, expressed as Btu/sq. ft. x h x deg F.
2. SHGC and Visible Transmittance: Center-of-glazing values, in accordance with NFRC 200 and based on most current non-beta version of LBL's WINDOW computer program.
3. Visible Reflectance: Center-of-glazing values, in accordance with NFRC 300.

F. Acoustic Performance:
1. Exterior Glazing: 28 OITC min.
2. Interior Glazing: 35 STC min.

2.2 GLASS PRODUCTS, GENERAL

A. Glazing Publications: Comply with published recommendations of glass product manufacturers and organizations below unless more stringent requirements are indicated. See these publications for glazing terms not otherwise defined in this Section or in referenced standards.
1. NGA Publications: "Laminated Glazing Reference Manual" and "Glazing Manual."
2. AAMA Publications: AAMA GDSG-1, "Glass Design for Sloped Glazing," and AAMA TIR A7, "Sloped Glazing Guidelines."
3. IGMA Publication for Sloped Glazing: IGMA TB-3001, "Guidelines for Sloped Glazing."
4. IGMA Publication for Insulating Glass: SIGMA TM-3000, "North American Glazing Guidelines for Sealed Insulating Glass Units for Commercial and Residential Use."

B. Safety Glazing Labeling: Where safety glazing is indicated, permanently mark glazing with certification label of the SGCC or another certification agency acceptable to authorities having jurisdiction. Label shall indicate manufacturer's name, type of glass, thickness, and safety glazing standard with which glass complies.

C. Insulating-Glass Certification Program: Permanently marked either on spacers or on at least one component lite of units with appropriate certification label of the IGCC.

D. Thickness: Where glass thickness is indicated, it is a minimum. Provide glass that complies with performance requirements and is not less than thickness indicated.

E. Strength: Where annealed float glass is indicated, provide annealed float glass, heat-strengthened float glass, or fully tempered float glass as needed to comply with "Performance Requirements" Article. Where heat-strengthened float glass is indicated, provide heat-strengthened float glass or fully tempered float glass as needed to comply with "Performance Requirements" Article. Where fully tempered float glass is indicated, provide fully tempered float glass.

2.3 GLASS PRODUCTS

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
a. Cardinal Glass Industries, Inc.
b. Guardian Glass LLC.
c. Pilkington North America; NSG Group.
d. Saint-Gobain Glass Corp.
e. Viracon.

B. Clear Annealed Float Glass: ASTM C1036, Type I, Class 1 (clear), Quality-Q3.

C. Low-Iron Annealed Float Glass: ASTM C1036, Type I, Class I (clear), Quality-Q3; and with visible light transmission of not less than 91 percent.

D. Tinted Annealed Float Glass: ASTM C1036, Type I, Class 2 (tinted), Quality-Q3.

E. Fully Tempered Float Glass: ASTM C1048, Kind FT (fully tempered), Condition A (uncoated) unless otherwise indicated, Type I, Class 1 (clear) or Class 2 (tinted) as indicated, Quality-Q3.

F. Heat-Strengthened Float Glass: ASTM C1048, Kind HS (heat strengthened), Type I, Condition A (uncoated) unless otherwise indicated, Type I, Class 1 (clear) or Class 2 (tinted) as indicated, Quality-Q3.

G. Reflective- and Low-E-Coated Vision Glass: ASTM C1376.

H. Ceramic-Coated Vision Glass: ASTM C1048, Condition C, Type I, Class 1 (clear) or Class 2 (tinted) as indicated, Quality-Q3; and complying with Specification No. 95-1-31 in NGA's "Engineering Standards Manual."

I. Ceramic-Coated Spandrel Glass: ASTM C1048, Type I, Condition B, Quality-Q3.

J. Silicone-Coated Spandrel Glass: ASTM C1048, Type I, Condition C, Quality-Q3.

K. Reflective- and Low-E-Coated Spandrel Glass: ASTM C1376, Kind CS.

2.4 LAMINATED GLASS

A. Laminated Glass: ASTM C1172. Use materials that have a proven record of no tendency to bubble, discolor, or lose physical and mechanical properties after fabrication and installation.

1. Construction: Laminate glass with polyvinyl butyral interlayer, ionoplast interlayer, or cast-in-place and cured-transparent-resin interlayer to comply with interlayer manufacturer's written instructions.
2. Interlayer Thickness: Provide thickness not less than that indicated and as needed to comply with requirements.
3. Interlayer Color: Clear unless otherwise indicated.

2.5 INSULATING GLASS

A. Insulating-Glass Units: Factory-assembled units consisting of sealed lites of glass separated by a dehydrated interspace, qualified in accordance with ASTM E2190.

1. Sealing System: Dual seal, with manufacturer's standard primary and secondary sealants.
2. Perimeter Spacer: Manufacturer's standard spacer material and construction.
3. Desiccant: Molecular sieve or silica gel, or a blend of both.

2.6 GLAZING SEALANTS

A. General:

1. Compatibility: Compatible with one another and with other materials they contact, including glass products, seals of insulating-glass units, and glazing channel substrates, under conditions of service and application, as demonstrated by sealant manufacturer based on testing and field experience.
2. Suitability: Comply with sealant and glass manufacturers' written instructions for selecting glazing sealants suitable for applications indicated and for conditions existing at time of installation.
3. Verify sealant complies with the testing and product requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."
4. Colors of Exposed Glazing Sealants: As selected by Architect from manufacturer's full range of industry colors.

B. Neutral-Curing Silicone Glazing Sealant, Class 100/50: Complying with ASTM C920, Type S, Grade NS, Use NT.

2.7 GLAZING TAPES

A. Back-Bedding Mastic Glazing Tapes: Preformed, butyl-based, 100 percent solids elastomeric tape; nonstaining and nonmigrating in contact with nonporous surfaces; with or without spacer rod as recommended in writing by tape and glass manufacturers for application indicated; and complying with ASTM C1281 and AAMA 800 for products indicated below:

1. AAMA 804.3 tape, where indicated.
2. AAMA 806.3 tape, for glazing applications in which tape is subject to continuous pressure.
3. AAMA 807.3 tape, for glazing applications in which tape is not subject to continuous pressure.

2.8 MISCELLANEOUS GLAZING MATERIALS

A. Cleaners, Primers, and Sealers: Types recommended by sealant or gasket manufacturer.

B. Setting Blocks:

1. Type recommended in writing by sealant or glass manufacturer.

C. Spacers:

1. Type recommended in writing by sealant or glass manufacturer.

D. Edge Blocks:

1. Type recommended in writing by sealant or glass manufacturer.

E. Cylindrical Glazing Sealant Backing: ASTM C1330, Type O (open-cell material), of size and density to control glazing sealant depth and otherwise produce optimum glazing sealant performance.

PART 3 - EXECUTION

3.1 GLAZING, GENERAL

A. Comply with combined written instructions of manufacturers of glass, sealants, gaskets, and other glazing materials, unless more stringent requirements are indicated, including those in referenced glazing publications.

B. Protect glass edges from damage during handling and installation. Remove damaged glass from Project site and legally dispose of off Project site. Damaged glass includes glass with edge damage or other imperfections that, when installed, could weaken glass, impair performance, or impair appearance.

C. Apply primers to joint surfaces where required for adhesion of sealants, as determined by preconstruction testing.

D. Install setting blocks in sill rabbets, sized and located to comply with referenced glazing publications, unless otherwise required by glass manufacturer. Set blocks in thin course of compatible sealant suitable for heel bead.

E. Do not exceed edge pressures stipulated by glass manufacturers for installing glass lites.

F. Provide spacers for glass lites where length plus width is larger than 50 inches.

G. Provide edge blocking where indicated or needed to prevent glass lites from moving sideways in glazing channel, as recommended in writing by glass manufacturer and in accordance with requirements in referenced glazing publications.

3.2 TAPE GLAZING

A. Position tapes on fixed stops so that, when compressed by glass, their exposed edges are flush with or protrude slightly above sightline of stops.

B. Install tapes continuously, but not necessarily in one continuous length. Do not stretch tapes to make them fit opening.

C. Cover vertical framing joints by applying tapes to heads and sills first, then to jambs. Cover horizontal framing joints by applying tapes to jambs, then to heads and sills.

D. Place joints in tapes at corners of opening with adjoining lengths butted together, not lapped. Seal joints in tapes with compatible sealant approved by tape manufacturer.

E. Apply heel bead of elastomeric sealant.

F. Center glass lites in openings on setting blocks, and press firmly against tape by inserting dense compression gaskets formed and installed to lock in place against faces of removable stops. Start gasket applications at corners and work toward centers of openings.

G. Apply cap bead of elastomeric sealant over exposed edge of tape.

3.3 GASKET GLAZING (DRY)

A. Cut compression gaskets to lengths recommended by gasket manufacturer to fit openings exactly, with allowance for stretch during installation.

B. Insert soft compression gasket between glass and frame or fixed stop so it is securely in place with joints miter cut and bonded together at corners.

C. Installation with Drive-in Wedge Gaskets: Center glass lites in openings on setting blocks, and press firmly against soft compression gasket by inserting dense compression gaskets formed and installed to lock in place against faces of removable stops. Start gasket applications at corners and work toward centers of openings. Compress gaskets to produce a weathertight seal without developing bending stresses in glass. Seal gasket joints with sealant recommended in writing by gasket manufacturer.

D. Installation with Pressure-Glazing Stops: Center glass lites in openings on setting blocks, and press firmly against soft compression gasket. Install dense compression gaskets and pressure-glazing stops, applying pressure uniformly to compression gaskets. Compress gaskets to produce a weathertight seal without developing bending stresses in glass. Seal gasket joints with sealant recommended in writing by gasket manufacturer.

E. Install gaskets so they protrude past face of glazing stops.

3.4 SEALANT GLAZING (WET)

A. Install continuous spacers, or spacers combined with cylindrical sealant backing, between glass lites and glazing stops to maintain glass face clearances and to prevent sealant from extruding into glass channel and blocking weep systems until sealants cure. Secure spacers or spacers and backings in place and in position to control depth of installed sealant relative to edge clearance for optimum sealant performance.

B. Force sealants into glazing channels to eliminate voids and to ensure complete wetting or bond of sealant to glass and channel surfaces.

C. Tool exposed surfaces of sealants to provide a substantial wash away from glass.

3.5 CLEANING AND PROTECTION

A. Immediately after installation, remove nonpermanent labels and clean surfaces.

B. Protect glass from contact with contaminating substances resulting from construction operations. Examine glass surfaces adjacent to or below exterior concrete and other masonry surfaces at frequent intervals during construction, but not less than once a month, for buildup of dirt, scum, alkaline deposits, or stains.

1. If, despite such protection, contaminating substances do contact with glass, remove substances immediately as recommended in writing by glass manufacturer. Remove and replace glass that cannot be cleaned without damage to coatings.

C. Remove and replace glass that is damaged during construction period.

3.6 MONOLITHIC GLASS SCHEDULE

A. Clear Glass Type **GL-4**:

1. Annealed float glass. Provide fully tempered where safety glazing is required as noted in drawings.
2. Minimum Thickness: 6 mm.

3.7 LAMINATED GLASS SCHEDULE

A. Clear Laminated Glass Type **GL-3**:

1. Two plies of annealed float glass.
2. Minimum Thickness of Each Glass Ply: 3 mm.
3. Interlayer Thickness: 0.030 inch min.
4. Safety glazing required.

3.8 INSULATING GLASS SCHEDULE

A. Clear With Applied Membrane Insulating Glass Type **GL-2**:

1. Provide fully tempered where safety glazing is required as noted in drawings.
2. Basis-of-Design Product: Solera, Solera S R5+Aerogel.
3. Applied Membrane: Light Diffusing Veil (by Solera).
4. Overall Unit Thickness: 1 inch.
5. Minimum Thickness of Each Glass Lite: 6 mm.
6. Outdoor Lite: Annealed float glass.
7. Interspace Content: Aerogel.
8. Indoor Lite: Annealed float glass.
9. Safety glazing required.
10. Panel Characteristics:
    a. SHGC: 0.37 max.
    b. VLT: 0.35 min.
    c. U-factor: 0.20 max.

B. Low-E&Ceramic-Coated, Insulating Vision Glass Type **GL-1**:

1. Provide fully tempered where safety glazing is required as noted in drawings.
2. Basis-of-Design Product: Viracon, 51767 Bird Friendly glass.
3. Ceramic Coating Color and Pattern: 1% coverage, 1/4" dot, 2x2, staggered in warm grey.
4. Overall Unit Thickness: 1 inch.
5. Minimum Thickness of Each Glass Lite: 6 mm.
6. Outdoor Lite: Clear heat-strengthened float glass.
7. Interspace Content: Argon.
8. Indoor Lite: Clear heat-strengthened float glass.
9. Ceramic Coating Location: Second surface.
10. Low-E Coating: Pyrolytic or sputtered on third surface.
11. Panel Characteristics:
    a. SHGC: 0.25 max.
    b. VLT: 0.60 min.
    c. U-factor: 0.20 max.

END OF SECTION

SECTION 09 51 33
ACOUSTICAL METAL PAN CEILINGS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Aluminum pans for acoustical metal pan ceiling.
   2. Metal suspension system for acoustical, standard-grid metal pan ceilings.
   3. Metal suspension system for acoustical, snap-in metal pan ceilings.

B. Specified system might be intended for WALL installation. See Drawings for scope.

1.2 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Sustainable Design Submittals:
   1. Product Data: For recycled content, indicating postconsumer and preconsumer recycled content and cost.
   2. Product Data: For adhesives and sealants, indicating VOC content.
   3. Laboratory Test Reports: For adhesives and sealants, indicating compliance with requirements for low-emitting materials.
   4. Laboratory Test Reports: For ceiling products, indicating compliance with requirements for low-emitting materials.
   5. Laboratory Test Reports: For insulation, indicating compliance with requirements for low-emitting materials.
   6. Environmental Product Declaration: For each product.
   7. Health Product Declaration: For each product.
   8. Sourcing of Raw Materials: Corporate sustainability report for each manufacturer.

C. Samples: For each exposed product and for each color and texture specified.

1.4 INFORMATIONAL SUBMITTALS

A. Coordination Drawings: Reflected ceiling plans, drawn to scale and coordinated with each other, using input from installers of the items involved.

B. Product test reports.

C. Research reports.

D. Field quality-control reports.

1.5 CLOSEOUT SUBMITTALS

A. Maintenance data.

1.6 QUALITY ASSURANCE

A. Testing Agency Qualifications: Qualified according to NVLAP for testing indicated.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Delegated Design: Engage a qualified professional engineer, as defined in Section 01 40 00 "Quality Requirements," to design attachment devices.

B. Surface-Burning Characteristics: Comply with ASTM E84; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
   1. Flame-Spread Index: Comply with ASTM E1264 for Class A materials.
   2. Smoke-Developed Index: 50 or less.

2.2 ACOUSTICAL METAL PANS, GENERAL

A. Recycled Content of Steel Products: Postconsumer recycled content plus one-half of preconsumer recycled content not less than 25 percent.

B. Recycled Content of Aluminum Components: Postconsumer recycled content plus one-half of preconsumer recycled content not less than 25 percent.

C. Recycled Content of Insulation: Postconsumer recycled content plus one-half of preconsumer recycled content not less than 25 percent.

D. Verify insulation complies with the requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."

E. Regional Materials: Manufacture products within 100 miles of Project site from materials that have been extracted, harvested, or recovered, as well as manufactured within 100 miles of Project site.

F. Acoustical Panel Standard: Comply with ASTM E1264.

G. Sheet Metal Characteristics: For metal components exposed to view in the completed Work, provide materials with smooth, flat surfaces without blemishes. Do not use materials with exposed pitting, seam marks, roller marks, roughness, stains, or discolorations.
1. Aluminum Sheet: Rolled aluminum sheet, complying with ASTM B209; alloy and temper recommended by aluminum producer and finisher for type of use and finish indicated.

H. Adhesive: Manufacturer's standard nonflammable adhesive for sound-absorbent pads.
1. Verify adhesives have a VOC content of 70 g/L or less.
2. Verify adhesive complies with the testing and product requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."

2.3 ALUMINUM PANS FOR ACOUSTICAL METAL PAN CEILING

A. Aluminum Pans for Acoustical Metal Pan Ceiling:
1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
a. Arktura.
1) Basis-of-Design: Vapor Trail system – See Finish Key for selected options and detailing.

B. Classification: Units complying with ASTM E1264 for Type VII, perforated aluminum facing (pan) with mineral- or glass-fiber-base backing.
1. Pattern: See Finish Key.

C. Pan Fabrication: Manufacturer's standard units of size, profile, and edge treatment indicated, formed from metal indicated and finished to comply with requirements indicated.
1. Lay-in Pans: Formed to set in exposed suspension grid.
2. Clip-in Pans: Designed to clip in and be securely retained in exposed suspension grid by formed edges or accessory clips provided by manufacturer.
3. Snap-in Pans: Designed with dimples or continuous beads on flanges for snap-in, secure engagement with concealed suspension system.
4. Torsion-Spring-Hinged Pans: Designed to be securely retained in preslotted, exposed suspension grid by torsion springs provided by manufacturer.

D. Pan Thickness: Not less than basis-of-design.

E. Pan Edge Detail: Manufacturer's standard edge detail unless noted otherwise in Finish Key.

F. Pan Size: As indicated on Drawings.

G. Pan Face Finish: Painted in color selected from manufacturer's full range.

H. Light Reflectance Coefficient: Manufacturer's standard.

I. NRC: Manufacturer's standard.

J. Ceiling Attenuation Class: Manufacturer's standard.

2.4 METAL SUSPENSION SYSTEMS, GENERAL

A. Recycled Content: Postconsumer recycled content plus one-half of preconsumer recycled content not less than 25 percent.

B. Regional Materials: Manufacture products within 100 miles of Project site from materials that have been extracted, harvested, or recovered, as well as manufactured within 100 miles of Project site.

C. Metal Suspension System Standard: Comply with ASTM C635/C635M.

D. Attachment Devices: Size for 5 times the design load indicated in ASTM C635/C635M, Table 1, Direct Hung, unless otherwise indicated. Comply with seismic design requirements.

2.5 METAL SUSPENSION SYSTEM FOR ACOUSTICAL, STANDARD-GRID METAL PAN CEILINGS

A. Metal Suspension System for Acoustical, Standard-Grid Metal Pan Ceilings:
1. Manufactured by panel manufacturer.

B. Suspension System: For clip-in, lay-in, or torsion-spring-hinged pans.
1. Capped, Double-Web, Suspension System: Main and cross runners roll formed from cold-rolled steel sheet, prepainted, electrolytic zinc-coated or hot-dip galvanized in accordance with ASTM A653/A653M, G30 coating designation, with prefinished, cold-rolled, 15/16-inch-wide, sheet metal caps on flanges.
a. Structural Classification: Intermediate-duty system.
b. End Condition of Cross Runners: Override (stepped) or butt-edge type.
c. Face Design: Flat, flush.
d. Cap Material: Steel or aluminum cold-rolled sheet.
e. Cap Finish: Painted in color as selected from manufacturer's full range.
f. Profile: See Finish Key.

C. Suspension System for Torsion-Spring-Hinged Metal Pans: Provide runners with factory-cut slots fabricated to accept torsion-spring-hinged attachment.

2.6 METAL SUSPENSION SYSTEM FOR ACOUSTICAL SNAP-IN METAL PAN CEILINGS

A. Snap-In Grid Suspension System:

1. Manufacturers: Subject to compliance with requirements, provide products by snap-in metal pan ceiling manufacturer.

B. Indirect-Hung, Snap-Tee or Bar System: Designed to support metal pans that snap into main runners, consisting of main runners connected to carrying channels that are attached by hangers to building structure.

C. Access Panels: For access at locations indicated, provide acoustical snap-in metal pan ceiling units.

1. Access Key or Tool: Provide manufacturer's standard key or tool for opening access panels; one.

2.7 GENERAL FINISH REQUIREMENTS

A. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

B. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

2.8 ALUMINUM FINISHES

A. Color-Coated Finish: Manufacturer's standard powder-coat baked paint complying with coating manufacturer's written instructions for surface preparation, pretreatment, application, baking, and minimum dry film thickness.

PART 3 - EXECUTION

3.1 INSTALLATION

A. General: Install acoustical metal pan ceiling assemblies to comply with ASTM C636/C636M and manufacturer's written instructions.

B. Install edge moldings and trim of type indicated at perimeter of acoustical ceiling area and where necessary to conceal edges of acoustical metal pans.

C. Install acoustical metal pans in coordination with suspension system and exposed moldings and trim. Comply with manufacturer's installation tolerances.

1. Install directionally patterned or textured metal pans in directions indicated.

D. Install sound attenuation panels in areas indicated by reflected ceiling plans or room finish schedules.

END OF SECTION

SECTION 09 93 00
STAINING AND TRANSPARENT FINISHING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Wood stains.
   2. Transparent finishes.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.
B. Samples: For each type of finish system and in each color and gloss of finish required.
C. Product List: Cross-reference to finish system and locations of application areas. Use same designations indicated on Drawings and in schedules. Include color designations.
D. Sustainable Design Submittals:
   1. Product Data: For paints and coatings, indicating VOC content.
   2. Laboratory Test Reports: For paints and coatings, indicating compliance with requirements for low-emitting materials.
   3. Environmental Product Declaration: For each product.
   4. Health Product Declaration: For each product.
   5. Sourcing of Raw Materials: Corporate sustainability report for each manufacturer.
   6. Manufacturer Inventory: For each product, provide manufacturer's manifest of ingredients.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   1. Benjamin Moore & Co.
   2. Penofin.
   3. PPG Paints; PPG Industries, Inc.
   4. Sherwin-Williams Company (The).
   5. Sikkens.

2.2 MATERIALS, GENERAL

A. Material Compatibility:
   1. Provide materials for use within each coating system that are compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
B. VOC Content: For field applications that are inside the weatherproofing system, verify paints and coatings comply with VOC content limits of authorities having jurisdiction and the following VOC content limits:
   1. Primers, Sealers, and Undercoaters: 100 g/L.
   2. Clear Wood Finishes, Varnishes: 275 g/L.
   3. Clear Wood Finishes, Lacquers: 275 g/L.
   4. Shellacs, Clear: 730 g/L.
   5. Stains: 100 g/L.
C. Low-Emitting Materials: For field applications that are inside the weatherproofing system, verify 90 percent of paints and coatings comply with the requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."
D. Colors: Match existing.

2.3 WOOD STAINS

A. Stain, Interior, Semitransparent, for Interior Wood: Solvent-based, oil or oil/alkyd, semitransparent, pigmented stain for new interior wood surfaces that are to be finished with a clear varnish.

2.4 TRANSPARENT FINISHES

A. Varnish, Interior, Polyurethane, Oil Modified: Solvent-based, one-component, oil-modified polyurethane clear satin varnish for new or previously varnished or stained interior wood surfaces.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Maximum Moisture Content of Exterior Wood Substrates: 15 percent, when measured with an electronic moisture meter.
B. Maximum Moisture Content of Interior Wood Substrates: 15 percent, when measured with an electronic moisture meter.

3.2 PREPARATION

A. Remove hardware, covers, plates, and similar items already in place that are removable. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and finishing.

1. After completing finishing operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection if any.

B. Clean and prepare surfaces to be finished according to manufacturer's written instructions for each substrate condition and as specified.

1. Remove dust, dirt, oil, and grease by washing with a detergent solution; rinse thoroughly with clean water and allow to dry. Remove grade stamps and pencil marks by sanding lightly. Remove loose wood fibers by brushing.
2. Remove mildew by scrubbing with a commercial wash formulated for mildew removal and as recommended by stain manufacturer.

3.3 APPLICATION

A. Apply finishes according to manufacturer's written instructions.

B. Apply finishes to produce surface films without cloudiness, holidays, lap marks, brush marks, runs, ropiness, or other surface imperfections.

3.4 CLEANING AND PROTECTION

A. Protect work of other trades against damage from finish application. Correct damage by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.

B. At completion of construction activities of other trades, touch up and restore damaged or defaced finished wood surfaces.

3.5 INTERIOR WOOD-FINISH-SYSTEM SCHEDULE

A. Wood Substrates, Wood Trim, Architectural Woodwork, Doors, Windows, and/or Wood Board Paneling:

1. Polyurethane Varnish over Stain System:
   a. Stain Coat: Stain, semitransparent, for interior wood – color to match existing.
   b. First Intermediate Coat: Polyurethane varnish matching topcoat.
   c. Second Intermediate Coat: Polyurethane varnish matching topcoat.
   d. Topcoat: Varnish, interior, polyurethane, oil modified, satin.

END OF SECTION

SECTION 10 21 13.19
PLASTIC TOILET COMPARTMENTS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Solid-plastic toilet compartments.

B. Related Requirements:
   1. Section 06 10 00 "Rough Carpentry" for blocking.
   2. Section 09 22 16 "Non-Structural Metal Framing" for blocking.
   3. Section 10 28 00 "Toilet, Bath, and Laundry Accessories" for accessories mounted on toilet compartments.

1.2 ACTION SUBMITTALS

A. Product data.

B. Shop Drawings: Plans, elevations, sections, details, and attachment details.

C. Samples: Manufacturer's standard color sheets, showing full range of available colors for each type of toilet compartment.

D. Delegated Design Submittals: For grab bars mounted on toilet compartment panels, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.
   1. Include structural design calculations indicating compliance with specified structural-performance requirements.

E. Sustainable Design Submittals:
   1. Product Data: For recycled content, indicating postconsumer and preconsumer recycled content and cost.

1.3 CLOSEOUT SUBMITTALS

A. Operation and maintenance data.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Recycled Content: Postconsumer recycled content plus one-half of preconsumer recycled content not less than 25 percent.

B. Fire Performance: Tested in accordance with, and pass the acceptance criteria of, NFPA 286.

C. Structural Performance: Where grab bars are mounted on toilet compartments, design panels to comply with the following requirements:
   1. Panels are able to withstand a concentrated load on grab bar of at least 250 lbf applied at any direction and at any point, without deformation of panel.

D. Regulatory Requirements: Comply with applicable provisions in the USDOJ's "2010 ADA Standards for Accessible Design" and ICC A117.1 for toilet compartments designated as accessible.

2.2 SOLID-PLASTIC TOILET COMPARTMENTS

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
   1. ASI Global Partitions.
   2. Scranton Products.

B. Basis-of-Design: Scranton Products.

C. Toilet-Enclosure Style: Overhead braced.

D. Entrance-Screen Style: Overhead braced.

E. Urinal-Screen Style: Wall hung.

F. Door, Panel, and Pilaster Construction: Solid, high-density polyethylene (HDPE) material, not less than 1 inch thick, seamless, with eased edges, and with homogenous color throughout thickness of material. Provide with no-sightline system consisting of door and pilaster lapped edges on strike side of door and door and pilaster lapped edges on hinge side of door (unless continuous hinge is used).
   1. Heat-Sink Strip: Manufacturer's continuous, extruded-aluminum or stainless steel strip fastened to exposed bottom edges of solid-plastic components to hinder malicious combustion.
   2. Color: One color in each room as selected by Architect from manufacturer's full range.

G. Entrance-Screen Construction: Matching panel construction.

H. Urinal-Screen Construction: Matching panel construction.

I. Pilaster Sleeves (Caps): Manufacturer's standard design; ~~solid plastic or~~ stainless steel.
   ~~1. Plastic Color: Matching pilaster.~~

J. Urinal-Screen Post: 1-3/4-inch-square aluminum tube with satin finish; with sleeve (cap) matching that on the pilaster (i.e., not to floor)

K. Brackets (Fittings):
   1. Full-Height (Continuous) Type: Manufacturer's standard design; stainless steel.

2.3 HARDWARE AND ACCESSORIES

A. Door Hardware and Accessories: Manufacturer's operating hardware and accessories. Mount with through bolts.
   1. Hinges:
      a. Manufacturer's continuous, cam type that swings to a closed or partially open position, allowing emergency access by lifting door.
         1) Material, Continuous Hinge: Stainless steel.
   2. Latch and Keeper: Manufacturer's surface-mounted latch unit, designed for emergency access, and with combination rubber-faced door strike and keeper. Provide units that comply with regulatory requirements for accessibility at toilet enclosures designated as accessible.
      a. Material: Stainless steel.
   3. Coat Hook: As identified in Toilet Accessory section.
   4. Door Bumper: Manufacturer's rubber-tipped bumper at outswinging doors UNLESS specified in Toilet Accessory section.
      a. Material: Stainless steel.
   5. Door Pull: Manufacturer's unit at outswinging doors that complies with regulatory requirements for accessibility. Provide units on both sides of doors at toilet enclosures designated as accessible.
      a. Material: Stainless steel.

B. Overhead Bracing: Manufacturer's standard continuous, extruded-aluminum head rail with antigrip profile and in manufacturer's standard finish.

C. Anchorages and Fasteners: Manufacturer's standard exposed fasteners of stainless steel, finished to match items they are securing, with theft-resistant-type heads. Provide sex-type bolts for through-bolt applications. For concealed anchors, use stainless steel, hot-dip galvanized steel, or other rust-resistant, protective-coated steel compatible with related materials.

2.4 MATERIALS

A. Aluminum Castings: ASTM B26/B26M.

B. Aluminum Extrusions: ASTM B221.

C. Stainless Steel Sheet: ASTM A240/A240M or ASTM A666, Type 304, stretcher-leveled standard of flatness.

D. Stainless Steel Castings: ASTM A743/A743M.

E. Zamac: ASTM B86, commercial zinc-alloy die castings.

2.5 FABRICATION

A. Fabricate toilet compartment components to sizes indicated. Coordinate requirements and provide cutouts for through-partition toilet accessories where required for attachment of toilet accessories.

B. Overhead-Braced Units: Manufacturer's standard corrosion-resistant supports, leveling mechanism, and anchors at pilasters and walls to suit floor and wall conditions. Provide shoes at pilasters to conceal supports and leveling mechanism.

C. Urinal-Screen Posts: Manufacturer's standard corrosion-resistant anchoring assemblies at posts and walls, with leveling adjustment nuts at tops and bottoms of posts. Provide sleeves (caps) at posts to conceal anchorage.

D. Door Size and Swings: Unless otherwise indicated, provide 24-inch-wide, inswinging doors for standard toilet enclosures and 36-inch-wide, outswinging doors with a minimum 32-inch-wide, clear opening for toilet enclosures designated as accessible.

PART 3 - EXECUTION

3.1 INSTALLATION

A. General: Comply with manufacturer's written installation instructions. Install units rigid, straight, level, and plumb. Secure units in position with manufacturer's recommended anchoring devices.
   1. Maximum Clearances:
      a. Pilasters and Panels or Screens: 1/2 inch.
      b. Panels or Screens and Walls: 1 inch.
   2. Full-Height (Continuous) Brackets: Secure panels or screens to walls and to pilasters with full-height brackets.
      a. Locate bracket fasteners, so holes for wall anchors occur in masonry or tile joints.
      b. Align brackets at pilasters with brackets at walls.

B. Overhead-Braced Units: Secure pilasters to floor and level, plumb, and tighten. Set pilasters with anchors penetrating not less than 1-3/4 inches into structural floor unless otherwise indicated in manufacturer's written instructions. Secure continuous head rail to each pilaster with no fewer than two fasteners. Hang doors to align tops of doors with tops of panels and adjust, so tops of doors are parallel with overhead brace when doors are in closed position.

C. Urinal Screens: Attach with anchoring devices to suit supporting structure. Set units level and plumb, rigid, and secured to resist lateral impact.

3.2 ADJUSTING

A. Hardware Adjustment: Adjust and lubricate hardware in accordance with hardware manufacturer's written instructions for proper operation. Set hinges on inswinging doors to hold doors open approximately 30 degrees from closed position when unlatched. Set hinges on outswinging doors to return doors to fully closed position.

END OF SECTION

SECTION 10 26 00
WALL AND DOOR PROTECTION

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Wall guards.
   2. Impact-resistant handrails.
   3. Corner guards.

B. Related Requirements:
   1. Section 06 64 00 "Plastic Paneling" for fiber-reinforced wall paneling.
   2. Section 08 71 00 "Door Hardware" for metal protective trim units, according to BHMA A156.6, used for armor, kick, mop, and push plates.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Sustainable Design Submittals:
   1. Product Data: For adhesives, indicating VOC content.
   2. Laboratory Test Reports: For adhesives, indicating compliance with requirements for low-emitting materials.

C. Shop Drawings: For each type of wall and door protection showing locations and extent.
   1. Include plans, elevations, sections, and attachment details.

D. Samples: For each exposed product and for each color and texture specified, 12 inches long.

1.3 INFORMATIONAL SUBMITTALS

A. Product certificates.

B. Material certificates.

C. Sample warranty.

1.4 CLOSEOUT SUBMITTALS

A. Maintenance data.

1.5 WARRANTY

A. Special Warranty: Manufacturer agrees to repair or replace components of wall- and door-protection units that fail in materials or workmanship within specified warranty period.
   1. Warranty Period: Five years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Surface Burning Characteristics: Comply with ASTM E84 or UL 723; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
   1. Flame-Spread Index: 25 or less.
   2. Smoke-Developed Index: 450 or less.

B. Regulatory Requirements: Comply with applicable provisions in the U.S. Architectural & Transportation Barriers Compliance Board's ADA-ABA Accessibility Guidelines for Buildings and Facilities and ICC A117.1.

2.2 WALL GUARDS

A. Rub Rail: Standard-duty, PVC-free assembly consisting of continuous snap-on cover installed over concealed, continuous retainer.
   1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
      a. Construction Specialties – Acrovyn.
      b. inpro Corporation.
      c. **Basis-of-Design**: See Finish Schedule and Finish Key in Drawings.
   2. Cover: Extruded plastic, minimum 0.078-inch wall thickness; in dimensions and profiles indicated on Drawings.
      a. Color and Texture: As selected by Architect from manufacturer's full range.
   3. Retainer: Minimum 0.0625-inch-thick, one-piece, extruded aluminum.
   4. End Caps and Corners: Prefabricated, injection-molded plastic; color matching cover; field adjustable for close alignment with snap-on cover.
   5. Accessories: Concealed splices and mounting hardware.
   6. Mounting: See basis-of-design product.

2.3 MATERIALS

A. Plastic Materials: Chemical- and stain-resistant, high-impact-resistant plastic with integral color throughout; extruded and sheet material as required, thickness as indicated.

B. Polycarbonate Plastic Sheet: ASTM D6098, S-PC01, Class 1 or Class 2, abrasion resistant; with a minimum impact-resistance rating of 15 ft.-lbf/in. of notch when tested according to ASTM D256, Test Method A.

C. Stainless Steel: Type 304.

D. Fasteners: Aluminum, nonmagnetic stainless-steel, or other noncorrosive metal screws, bolts, and other fasteners compatible with items being fastened. Use security-type fasteners where exposed to view.

E. Adhesive: As recommended by protection product manufacturer.

1. Verify adhesives have a VOC content of 70 g/L or less.
2. Verify adhesive complies with the testing and product requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."

PART 3 - EXECUTION

3.1 INSTALLATION

A. Installation Quality: Install wall and door protection according to manufacturer's written instructions, level, plumb, and true to line without distortions. Do not use materials with chips, cracks, voids, stains, or other defects that might be visible in the finished Work.

B. Mounting Heights: Install wall and door protection in locations and at mounting heights indicated on Drawings.

C. Accessories: Provide splices, mounting hardware, anchors, trim, joint moldings, and other accessories required for a complete installation.

1. Provide anchoring devices and suitable locations to withstand imposed loads.
2. Where splices occur in horizontal runs of more than 20 feet, splice aluminum retainers and plastic covers at different locations along the run, but no closer than 12 inches apart.
3. Adjust end and top caps as required to ensure tight seams.

END OF SECTION

SECTION 11 66 23
GYMNASIUM EQUIPMENT

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Basketball equipment.
   2. Volleyball equipment.
   3. Safety pads.

1.2 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.
B. Shop Drawings: For gymnasium equipment.
   1. Include plans, elevations, sections, and attachment details.
   2. Include diagrams for power, signal, and control wiring.
C. Samples: For each exposed product and for each item and color specified.

1.4 INFORMATIONAL SUBMITTALS

A. Coordination Drawings: Court layout plans, reflected ceiling plans, and other details, drawn to scale, and coordinated with ceiling-suspended gymnasium equipment, floor inserts, game lines, and markers applied to finished flooring, and coordinated with each other, using input from installers of the items involved.
B. Product Certificates: For each type of gymnasium equipment.
C. Sample warranty.

1.5 CLOSEOUT SUBMITTALS

A. Operation and maintenance data.

1.6 QUALITY ASSURANCE

A. Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by manufacturer.

1.7 WARRANTY

A. Special Warranty: Manufacturer agrees to repair or replace components of gymnasium equipment that fail in materials or workmanship within specified warranty period.
   1. Warranty Period: Five years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 BASKETBALL EQUIPMENT

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
   1. Porter – basis-of-design.
B. Standard Rules: Provide equipment according to the requirements of NFHS's "Basketball Rules Book."
C. Connections: Manufacturer's standard connections or connections recommended in writing by manufacturer and complying with Section 05 50 00 "Metal Fabrications" of size and type required to transfer loads to building structure.
D. Overhead-Supported Backstops:
   1. Folding Type: Manufacturer's standard assembly for side-folding backstop, with hardware and fittings to permit folding.
   2. Goal Height Adjuster: Adjustable from 8 to 10 feet to top of ring with gear-drive mechanism, locking in any position within adjustment range, with visible height scale attached to side of framing.
      a. Operation:
         1) Electrical: Electric operation with integral gear-drive motor, with limit switches preset to goal heights.
E. Winch: Hoist consisting of heavy-duty, fully enclosed worm-gear; brake; cable drum; cable; and fittings, for mounting on wall with equipment-mounting board; designed to move and hold backboard in any raised or lowered position.
F. Backstop Electric Operator: Provide operating machine of size and capacity recommended in writing by manufacturer for equipment specified, with electric motor and factory-prewired motor controls, starter, gear-reduction unit, and remote controls. Coordinate wiring requirements and electrical characteristics with building electrical system.
   1. Electrical Components, Devices, and Accessories: Listed and labeled according to NFPA 70, by a qualified testing agency, and marked for intended location and application.
   2. Motor Electrical Characteristics:

a. Horsepower: 3/4 hp.
b. Voltage: 115 V ac, single phase, 60 hertz.

3. Remote-Control Station(s): NEMA ICS 6, Type 1 enclosure for recessed or flush mounting and momentary-contact, three-position, switch-operated control with up, down, and off functions.
   a. Keys: Provide ~~[one key] [two keys] [one set of dual keys] [two sets of dual keys] [dual keys, one key for up and one for down]~~ per station.
4. Limit Switches: Adjustable switches at each backstop, interlocked with motor controls and set to automatically stop backstop at fully retracted and fully lowered positions.

G. Basketball Backboards:
1. **Basis-of-Design**: Bison.
   a. Model: BA42XL – See Drawings for location(s).
   b. Model: BA48XL – See Drawings for location(s).
   c. Other manufacturers will be considered if they substantially match the basis-of-design models.

H. Goal-Mounting Assembly: Compatible with goal, backboard, and backstop.

I. Basketball Goals: Basket ring complete with flanges, braces, attachment plate, and evenly spaced loops welded around underside of ring.
1. Single-rim basket ring competition goal.
2. Double-rim basket ring.
3. Type:
   a. Fixed: Nonmovable.
   b. Movable: pressure-release design with manufacturer's standard breakaway mechanism and rebound characteristics identical to those of fixed, nonmovable ring.
4. Finish: Manufacturer's standard finish.

J. Basketball Nets: 12-loop-mesh net, between 15 and 18 inches long, sized to fit ring diameter, and as follows:
1. Cord: Made from white cotton.

K. Backboard Safety Pads: Designed for backboard thickness and extending continuously along bottom and up sides of backboard and over backstop according to manufacturer's standard design.
1. Color: As selected by Architect from manufacturer's full range.

L. Basketball Shot Clock:
1. **Basis-of-Design**: Bison.
   a. Model: In-Time Wireless with all necessary mounting hardware and accessories to be a fully-functional system.
   b. Other manufacturers will be considered if they substantially match the basis-of-design model.

2.2 VOLLEYBALL EQUIPMENT

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
1. Porter – basis-of-design.

B. Standard Rules: Provide equipment according to the requirements of NFHS's "Volleyball Rules Book".

C. Floor Insert: Solid-brass floor plate and steel pipe sleeve, concealed by floor plate, with capped bottom end, 3 inch diameter, minimum 12 inches long, to securely anchor pipe sleeve as indicated on Drawings; with anchors designed for securing floor insert to floor substrate indicated; quantity as indicated on Drawings.
1. Flush Floor Plate: Manufacturer's standard hinged access cover, designed to be flush with adjacent flooring. Provide one tool(s) for unlocking access covers.
2. Floor Plate: 5 inch diameter brass.

2.3 SAFETY PADS

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
1. Porter Supersafe.

B. Surface-Burning Characteristics: Comply with ASTM E84; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
1. Flame-Spread Index: 25 or less.
2. Smoke-Developed Index: 50 or less.

C. Pad Coverings: Provide safety pad fabric covering that is fabricated from puncture- and tear-resistant, PVC-coated polyester or nylon-reinforced PVC fabric, minimum 14-oz./sq. yd. and treated with fungicide for mildew resistance; with surface-burning characteristics indicated, and lined with fire-retardant liner.

D. Wall Safety Pads: Padded wall wainscot panels designed to be attached in a continuous row; each panel section consisting of fill laminated to backer board, with visible surfaces fully covered by seamless fabric covering, free of sag and wrinkles and firmly attached to back of backer board.

1. Backer Board: Minimum 7/16-inch-thick wood board.
2. Fire-Resistive Fill: Multiple-impact-resistant foam minimum 2-inch-thick, fire-resistive neoprene, 6.0-lb/cu. ft. density.
3. Size: Each panel section 24 inches wide by minimum 72 inches long.
4. Number of Modular Panel Sections: As indicated on Drawings.
5. Installation Method: Manufacturer's standard.

E. Fabric Covering Color(s): As selected by Architect from manufacturer's full range for one color(s).

F. Cutout Trim: Manufacturer's standard flanged cutout trim kits for fitting pads around switches, receptacles, and other obstructions.

1. Color: Gray.

2.4 MATERIALS

A. Support Cable: Manufacturer's standard galvanized-stranded-steel wire rope. Provide fittings according to the wire rope manufacturer's written instructions for size, number, and installation method.

B. Support Chain and Fittings: For chains used for overhead lifting, provide Grade 80 heat-treated alloy-steel chains, according to ASTM A391/A391M, with commercial-quality, hot-dip galvanized steel connectors and hangars.

C. General-Purpose Chain: For chains not used for overhead lifting, provide carbon steel chain, according to ASTM A413/A413M (Grade 30 proof coil chain or higher grade recommended by gymnasium equipment manufacturer). Provide coating type, chain size, number, and installation method according to manufacturer's written instructions.

D. Castings and Hangers: Malleable iron, according to ASTM A47/A47M; grade as required for structural loading.

E. Composite Wood Products: Verify products are made using ultra-low-emitting formaldehyde resins, as defined in the California Air Resources Board's "Airborne Toxic Control Measure to Reduce Formaldehyde Emissions from Composite Wood Products," or are made with no added formaldehyde.

F. Softwood Plywood: DOC PS 1, exterior.

G. Particleboard: ANSI A208.1.

H. Equipment-Mounting Board: Wood, transparent or neutral-color-painted finish; size and quantity as required to mount gymnasium equipment according to manufacturer's written instructions.

I. Anchors, Fasteners, Fittings, and Hardware: Gymnasium equipment manufacturer's standard corrosion-resistant or noncorrodible units; concealed.

J. Grout: Nonshrink, nonmetallic, premixed, factory-packaged, nonstaining, noncorrosive, nongaseous grout, according to ASTM C1107/C1107M, with minimum strength recommended in writing by gymnasium-equipment manufacturer.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Comply with manufacturer's written installation instructions.

B. Permanently Placed Gymnasium Equipment and Components: Install rigid, level, plumb, square, and true; anchored securely to supporting structure; positioned at locations and elevations indicated; in proper relationship to adjacent construction; and aligned with court layout.

C. Connections: Connect electric operators to building electrical system.

D. Removable Gymnasium-Equipment Components: Assemble in place to verify that equipment and components are complete and in proper working order. Disassemble removable gymnasium equipment after assembled configuration is approved by Owner, and store units in location indicated on Drawings.

E. Adjust movable components of gymnasium equipment to operate safely, smoothly, easily, and quietly; free from binding, warp, distortion, nonalignment, misplacement, disruption, or malfunction, throughout entire operational range; and lubricate as recommended in writing by manufacturer.

3.2 DEMONSTRATION

A. Train Owner's maintenance personnel to adjust, operate, and maintain gymnasium equipment.

END OF SECTION

SECTION 23 64 23
MODULAR HEAT RECOVERY CHILLERS

PART 1 - GENERAL

SCOPE
This section includes specifications for modular heat recovery scroll water chillers. Included are the following topics:

PART ONE - GENERAL
- Scope
- Related Work
- Reference
- Reference Standards
- Quality Assurance
- Performance Requirements
- Operating Sound Pressure Level
- Submittals
- Operation and Maintenance Data
- Delivery, Storage and Handling
- Warranty

PART TWO - PRODUCTS
- Manufacturers
- General
- Manufactured Units
- Compressors and Refrigeration
- Evaporator and Condenser Heat Exchanger
- Virtual Moveable Endcap II (VME II)
- Insulation
- Controls
- Electrical
- Vibration Isolation

PART THREE - EXECUTION
- Installation
- Startup
- Training
- Construction Verification Items
- Functional Performance Testing

RELATED WORK
Section 23 05 00 - Common Work Results for HVAC
Section 23 05 13 – Common Motor Requirements for HVAC Equipment
Section 23 05 48 - Vibration and Seismic Controls for HVAC Piping and Equipment
Section 23 21 13 – Hydronic Piping
Section 23 09 23 – Direct Digital Control for HVAC
Section 23 09 93 - Sequence of Operations for HVAC Controls

REFERENCE
Applicable provisions of Division 1 shall govern work under this section.

REFERENCE STANDARDS

ARI 550/590-2003	Centrifugal or Rotary Screw Water-Chilling Packages
ARI 575	Method of Measuring Machinery Sound Within an Equipment Space
ASHRAE 15	Safety Code for Mechanical Refrigeration
ASHRAE 90.1	Energy Standard for Building except Low Rise Residential Buildings
ASME SEC 8	Boiler and Pressure Vessel Code
NEMA MG1	Motors and Generators
UL 1995	Central Cooling Air Conditioners
UL 984	Safety Standards for Hermetic Compressors
COMM 45	Wisconsin Department of Commerce Mechanical Refrigeration Code

QUALITY ASSURANCE
Refer to Division 1, General Conditions, Equals and Substitutions.

Construct, test and rate chiller performance in accordance with ARI 550 with exceptions as noted in this specification.

Construct, install and operate chillers in accordance with ANSI/ASHRAE 15- Safety Code for Mechanical Refrigeration and COMM 45 Wisconsin Mechanical Refrigeration Code.

Construct and test chillers in accordance with ASME SEC 8.

Construct and label chillers in accordance with UL 1995.

PERFORMANCE REQUIREMENTS
Include the following performance documentation submitted along with the submittals.

OPERATING SOUND PRESSURE LEVEL
The unit shall operate at full load and all part load conditions without exceeding 85-dBA sound pressure level in the equipment room. If units do not meet the 85-dBA requirements, as measured in accordance with latest version ARI Standard 575, furnish all attenuation devices necessary to meet this requirement. The sound pressure levels in all octave bands must be met as scheduled for full load and part load conditions.

SUBMITTALS
Refer to Division 1, General Conditions, Submittals

Submit chiller shop drawings including the following information: specific manufacturer and model numbers, dimensional and weight data, required clearances, materials of construction, capacities and ratings, minimum load achievable without hot gas bypass, pressure ratings, refrigerant charge, pumpout refrigerant storage capacity, component information, assembly information, size and location of piping connections, electrical connections, wiring diagrams, motor information (ref. 23 05 13), surfaces requiring insulation, SqFt of surface insulation, sound pressure levels in all octave bands at 25%/50%/75%/100% load, information for all specialties and accessories.

Include an ARI approved chiller selection method for the specified refrigerants. Verification of date and version of computer program selection or catalog is available through the Vice-President, Engineering, ARI (703) 524-8800.

Indicate ASME construction and stamping of pressure vessels or unit physical characteristics and ASME code section and paragraph references that allow non-compliance with this construction and stamping requirement.

Submit manufacturer's installation and start-up instructions, maintenance data, troubleshooting guide, parts lists, controls and accessories.

At substantial completion, submit warranty certificate and copy of start-up report.

OPERATION AND MAINTENANCE DATA
All operations and maintenance data shall comply with the submission and content requirements specified under section GENERAL REQUIREMENTS.

DELIVERY, STORAGE AND HANDLING
Comply with manufacturer's installation instructions for rigging, unloading, and transporting units.

Protect units from physical damage. Leave factory-shipping covers in place until installation.

WARRANTY
Provide a one year all-inclusive warranty to begin upon acceptance of project by owner.

Provide an additional four (4) year material and labor warranty extension for compressor motor, compressor assembly and unit controls.

PART 2 - PRODUCTS

MANUFACTURERS
Multistack.

GENERAL

The chiller shall be a Multistack VME II patent pending geothermal heat recovery, heat recovery chiller. It shall be equipped with integral valving that allows the assembly to serve the following functions:

- Simultaneous Heating and Cooling Mode – Chiller/Heater assembly must be capable of varying the flow rate on the evaporator and condenser sides of the modules to maintain heating and cooling water set points simultaneously. Simultaneous loads must be satisfied with a single compression cycle and cannot use the source/sink solution as the means of energy transfer. Systems that require double compression to satisfy simultaneous loads are not acceptable.

- Cooling Dominant Mode – Chiller/Heater must be able to reject cooling dominant load to the source/sink. Cooling dominant modules must be capable of running at a lower head pressure than simultaneous modules to minimize power consumption.

- Heating Dominant Mode – Chiller/Heater must be able to satisfy heating dominant load by extracting heat from the source/sink solution. Heating dominant modules must be capable of running at optimal suction pressure to minimize power consumption.

- Packaged System Shall Be Reversing Valve Free Design – Chiller/Heater must be reversing valve free and optimize heat transfer in all control modes.

- Source/Sink Water Connections – Chiller/Heater must allow geothermal loop water to enter both the evaporator and condenser side of the machine.

System shall be configured to allow modules to run in simultaneous DHRC™ mode, dominant cooling mode, and dominant heating mode. The Chiller/Heater must be capable of allowing modules to run in multiple modes at the same time to optimize efficiency.

MANUFACTURED UNITS

Provide factory assembled and tested, packaged, heat recovery liquid chiller consisting of modular dual scroll compressor(s), compressor motor, condenser, evaporator, refrigeration accessories, instrument and control panel, gages and indicating lights, auxiliary components and accessories, solid state motor starter.

Acceptable refrigerant is ~~R-410A~~ R-513a.

Firmly attach metal nameplates to major components indicating the name of the manufacturer, unit model number, compressor/condenser/cooler type, refrigerant used, pounds of refrigerant needed for normal operation, operating pressures, and unit serial number.

Modules shall be provided with acoustical panels.

COMPRESSORS AND REFRIGERATION

Compressor assemblies shall be run tested at the factory. Vibration shall not exceed 1.0 mil peak to peak. Over-speed test compressor impeller(s) to not less than 20% above operating conditions.

Chiller must be supplied with dual refrigeration circuits and each circuit complete with externally equalized thermal expansion valve, liquid line solenoid to prevent liquid migration during the off cycle, liquid line filter dryer, sight glass moisture indicator and two (2) hermetic scroll compressors.

Each module have (2) stages of capacity at a minimum.

Scroll compressors must each be supplied with crankcase heaters, internal thermal protection, rubber isolation pads between compressor and frame, have two steps of capacity control by cycling of compressors, 100%, 50% and off.

EVAPORATOR AND CONDENSER HEAT EXCHANGERS

Evaporator and condenser shall be dual circuit brazed plate heat exchanger designed and constructed to ASME and UL standards.

Heat exchangers shall be constructed of copper brazed 316 stainless steel plates. Heat exchangers shall be mounted below the compressor, to eliminate the effect of migration of refrigerant to the cold evaporator with consequent liquid slugging on start-up.

Condenser and Evaporator heat exchangers shall be equipped with motorized modulating butterfly type valves driven independently by signals from the module controller and powered from the main power feed (ball valves are not acceptable).

The motorized actuators shall be NEMA 4X rated with easily visible position indicator and internal thermal motor overload protection. Valves shall be fast acting type with a maximum stroke time (full closed to full open) of 15 seconds. Load side valves shall modulate to maintain modular leaving load temperatures.

When heat exchangers are using sink/source due to unequal heating/cooling duty, master controller shall modulate valve to provide minimum required head pressure control in order to maximize efficiency of those Chiller/Heater modules and to provide equipment protection.

All valves must be installed such that proper piping practices are observed, including proper distances before and after elbows. Contractor shall provide required butterfly valves and actuators.

Each inlet water header shall incorporate a built-in 30 mesh inline strainer system to prevent heat exchanger fouling and accommodate 100% flow filtration with a minimum surface area of 475 square inches per module. This filtration is in addition to a field mounted Y-strainer in the chilled water loop piping.

Each module shall include supply and return mains for both load and source-sink water. Grooved end connections are provided for interconnection with Victaulic type couplings. Water Mains shall be installed such that they are beneath any power or control wiring so as to insure for safe operation in the event of any condensation or piping leaks.

Provide thermometer and pressure wells for temperature controller and low temperature cutout.

VIRTUAL MOVEABLE ENDCAP II (VME II)

The heat recovery chiller shall be designed for simultaneous variable heating and cooling capacity. The VME II valve module shall contain fast-acting motorized butterfly valves that open/close on a command from the central control system (ball valves are not acceptable). The motorized actuators shall be NEMA 4X rated with easily visible position indicators and internal thermal motor overload protection. Valves shall be fast acting type with a maximum stroke time (full closed to full open) of 30 seconds. Valve modules shall be built into pre-engineered headers and powered by the heat recovery chiller bussbar. VME II valves shall be Victaulic grooved connections.

INSULATION

3/4" thick, flexible closed cell elastomeric foam insulation; minimum nominal density of 5.5 lbs. per cu. ft., thermal conductivity of not more than 0.27 at 75 °F, minimum compressive strength of 4.5 psi at 25% deformation, maximum water vapor transmission of 0.17 perm inch, maximum water absorption of 6% by weight, rated for service range of -20 °F to 180 °F.

Factory insulate the following:

- Evaporator and condenser heat exchangers
- Motor housing (hermetic compressors)
- Motor cooling lines (hermetic compressors)
- All lines and surfaces 65°F or colder

CONTROLS

Provide fully automatic microprocessor controller in a lockable steel control panel containing solid state chiller operating and safety controls for each chiller. Factory mount, wire and test controls on chiller. Operating setpoints and diagnostic procedures to be programmed through a color-coded, tactile-feel keypad. Provide an alphanumeric display showing all system parameters, safety and cycle shutdowns in the English language with numeric data in English units. Safety and cycle shutdown display to consist of date, time, cause of shutdown, and type of restart required.

Provide master chiller controller, of same manufacturer of chillers, for sequencing, controlling and managing multiple modular chillers in a single plant.

The master controller shall sequence the operation of the of the various compressors, VME Isolating Valves, and Heat Exchanger Variable Flow Valves to maximize efficiency and minimize system energy usage.

Provide the following safety controls arranged so that activation of any one will shut down the respective chiller or plant and require a manual reset:

Low refrigerant pressure
Loss of flow through the source/sink heat exchanger
Loss of flow through the load (cooling and/or heating) heat exchanger
High refrigerant pressure
High compressor motor temperature
Low suction gas temperature
Low leaving water temperature

The Master Controller to be powered from the main Chiller/Heater power. Master controller will monitor and report the following on each refrigeration system:

Discharge Pressure Fault
Suction Pressure Fault
Suction Temperature
Load Leaving Water Temperature
Source-Sink Leaving Water Temperature

The Master Controller shall monitor and report the following system parameters:

Cooling Load Water Entering and Leaving Temperature
Heating Load Water Entering and Leaving Temperature
Source-Sink Water Entering and Leaving Temperature
Load Water (both heating and cooling) and Source-Sink Water Flow

Individual monitoring of leaving water temperatures from each refrigeration system shall be programmed to protect against heat exchanger freeze-up.

The control system shall evaluate the water temperatures of the heating and cooling systems to assess the required capacity of each and cycle compressors of the Chiller/Heater Modules, open/close VME Isolation Valves, & modulate Heat Exchanger Variable Flow Valves to meet load requirements, optimize efficiency, minimize system energy usage and equalize compressor run times.

Chiller/Heater shall have a single point power connection and external inputs and outputs to be compatible with the building management system. Hardwire Inputs/Outputs include:

Remote Start/Stop
General Alarm
Cooling Load Limit
Heating Load Limit
Cooling Load Reset
Heating Load Reset

Failure of DHRC Chiller/Heater/Heater to start or Chiller/Heater shutdown due to any of the above safety cutouts shall be enunciated by display of the appropriate diagnostic description at the unit control panel. This annunciation will be in plain English. Alphanumeric codes shall be unacceptable.

The DHRC Chiller/Heater/Heater shall be furnished with a Master Controller as an integral portion of the Chiller/Heater control circuitry to provide the following functions:

Provide automatic Chiller/Heater shutdown during periods when the load level decreases below the normal operating requirements of the Chiller/Heater. Upon an increase in load, the Chiller/Heater shall automatically restart.

Provisions for connection to automatically enable the Chiller/Heater from a remote energy management system.

The control panel shall provide alphanumeric display showing all system parameters in plain English language with numeric data in English units.

Normal Chiller/Heater Operation

When DHRC Chiller/Heater/Heater is enabled, the factory supplied Master Controller modulates the Chiller/Heater heating and cooling capacity from minimum to maximum as required by building load.

The DHRC Chiller/Heater/Heater control system shall respond to Entering Water Temperature and will have an integral reset based on entering water temperature to provide for efficient operation at part-load conditions.

Power Phase Monitor

Provide a Power Phase Monitor on the incoming power supply to the Chiller/Heater. This device shall prevent the Chiller/Heater from operating during periods when the incoming power is unsuitable for proper operation.

The Power Phase Monitor shall provide protection against the following conditions:
Low Voltage (Brown-Out)

Phase Rotation
Loss of Phase
Phase Imbalance

The Chiller/Heater shall be capable of communicating the above points with the Building Automation System via an Interoperability Web Portal. BacNet, Lonmark, or Modbus available.

Additional points shall include:

Chiller/Heater leaving chilled water temperature
Chiller/Heater leaving hot water temperature
Chiller/Heater percent cooling capacity
Chiller/Heater percent heating capacity
Module level leaving condenser temperature
Module level leaving evaporator temperature
Individual Compressor Status On/Off
Condenser VME valves Open/Close status
Evaporator VME valve Open/Close status

The master chiller controller shall convert information into the BACnet/IP protocol, or format compatible with the building direct digital control system (DDC) as specified in Section 23 09 23. This output shall be through the appropriate interface port capable of two-way communication with the building DDC system. Coordinate with the DDC contractor so that the data port connection provided at the chiller shall not require any additional intermediate gateway or media conversion devices to provide throughput of data. No additional labor by the DDC contractor to integrate the chiller data points to the DDC system shall be required other than to make the communication trunk connection and program the points at the DDC workstation.

The chiller master controller shall allow the modules to have IP addresses assigned utilizing DHCP. Manufacturer supplied static IP addresses will not be allowed for web interface.

ELECTRICAL
Modular chiller section groups shall have a single point electrical connection. Entire VME II package shall be equipped with a bussbar electrical distribution system to allow for single point power.

Refer to Drawing schedules for chiller section groups.

The pre-engineered system shall also incorporate individual module isolation circuit breakers for full redundancy and ability of a module to be taken off-line for repair while the rest of the modules continue to operate.

Future chiller modules and VME II shall be provided with their own electrical power connection.

VIBRATION ISOLATION
The chiller supplier shall furnish refrigeration machine vibration isolation in accordance with 23 05 48 for the installation by the mechanical contractor.

PART 3 - EXECUTION

INSTALLATION
Install chillers in accordance with manufacturer's installation instructions.

Chillers shall be factory assembled, tested, and shipped to the job site. The chiller manufacturer is responsible for unloading at the job site and the Mechanical Contractor is responsible for final setting and installation.

STARTUP
Include the service of a factory-trained technician/mechanic employed by the chiller manufacturer for the initial startup, 6 month maintenance review, and 1 year maintenance review. Accomplish initial startup before State acceptance of the installation.

Furnish a startup log to the Owner's operating personnel with a copy to the state construction representative for this project. Document each subsequent startup or shutdown procedure and send report to Owner's operating personnel. Demonstrate the following items have been accomplished:

1. Inspect/clean evaporator and condenser heat exchangers.

a. 6 Month & 1 Year Review: Visually inspect for corrosion, pitting, erosion and general appearance. Chemical cleaning will not be allowed.

2. Perform leak test on fabricated compressor, vessel and piping joints after the system has been serviced and closed.

a. Initial startup: Follow manufacturer's instructions with respect to evacuation, charging, positive pressure and/or vacuum testing. Pressure/vacuum testing to be in accordance with manufacturer's instructions. Perform any repairs necessary to obtain a successful pressure test.
Do not operate chiller until it is successfully pressure tested. Use nitrogen and suitable refrigerant for pressure test unless manufacturer's instructions require otherwise.

b. 6 Month & 1 Year Review: Electronically leak test all fabricated compressor and vessel joints in accordance with manufacturer's instructions and perform any repairs necessary to obtain a successful test.

3. Lubrication system

a. Initial startup: Charge unit with oil in accordance with manufacturer's instructions. Energize oil sump heater and verify thermostat setting per manufacturer's specification.

b. 6 Month & 1 Year Review: Remove lubrication charge from modules. Visually inspect for color, dirt, sludge, and burnt or acidic condition. Test oil in the chiller manufacturer's laboratory or a laboratory approved by the manufacturer to determine condition of oil and notify owner of the results. Clean lubrication system if visual and/or laboratory results indicate necessary. Recharge with new oil per manufacturer's specifications and replace oil filter elements.

4. Filters and strainers.

a. 6 Month & 1 Year Review: Remove and replace all oil and refrigerant filters, strainers and filter-drier cores. Use acid/moisture type replacement filter-drier cores.

5. Energize oil sump heater and verify thermostat setting is per manufacturer's instructions at each inspection.

6. Electrical

Tighten all starter electrical power connections and all control terminations at each inspection.

Check all contactors at each inspection for proper mechanical linkage, freedom of operation and contact surfaces for pitting, corrosion and spring tension. Clean all contact surfaces as required; notify owner if replacement is recommended.

Megger test and record all compressor and oil pump motor insulation readings at initial startup and each succeeding inspection. Compare findings to previous readings and make recommendations on any preventative maintenance required.

Visually inspect and clean all components including resistor banks, disconnects, fuse holders, arc chutes, ammeters, voltmeters, watt-hour meters, dash-pots, etc.

8. At initial startup and whenever refrigerant is transferred from a storage device to the chiller, record date and pounds of refrigerant in machine.

9. Clean and touchup paint unit as required for protection.

10. Repair or replace damaged insulation caused by service/repair/maintenance work.

11. Give any used compressor oil to owner; owner will make arrangements for proper disposal.

12. At the initial startup and each maintenance review, check all safety and operating controls, log all pertinent parameters of the unit, including but not limited to the following:
a. Refrigerant pressure in cooler
b. Saturated refrigerant temperature in cooler
c. Water inlet and outlet temperatures in cooler and condenser
d. Water side pressure drop in cooler and condenser
e. Flow rate in gallons per minute in cooler and condenser
f. Bearing temperatures

g. Oil sump temperature
h. Oil pressure
i. Motor voltage and amperage in each phase
j. Purge count and purge unit operating hours, if applicable
k. Purge condensing pressure, if applicable
l. Starter transition time, actual as measured

TRAINING

Contractor to provide factory authorized representative and/or field personnel knowledgeable with the operations, maintenance and troubleshooting of the system and/or components defined within this section for a minimum period of 8 hours.

CONSTRUCTION VERIFICATION ITEMS

Contractor is responsible for utilizing the construction verification checklists supplied by the third party commissioning agent in accordance with the procedures defined for construction verification in Section 01 91 00.

FUNCTIONAL PERFORMANCE TESTING

Contractor is responsible for utilizing the functional performance test forms supplied by the third party commissioning agent in accordance with the procedures defined for functional performance testing in Section 01 91 00.

END OF SECTION

Approved by Nick Cleaver, JDR
6/12/2024

For Pre-bid Substitution Requests all text boxes on this form are required information for a complete request.

Substitution Request

Today's Date:	06/11/2024
Project Title:	Warner Park Community Recreation Center Expansion
Project Number:	
Contract Number:	9502

By completing and submitting this form for review the General Contractor affirms that all of the following statements are correct:

1. The General Contractor affirms that this request is in compliance with the requirements described in *Specification 01 25 13 Product Substitution Procedures*.
2. The function, appearance, and quality of the proposed substitution are equal or superior to the specified item.
3. The proposed substitution does not affect dimensions shown on the drawings.
4. The proposed substitution will have no adverse affects on other trades, the construction schedule, or any specified warranty requirements.
5. Maintenance and service parts will be locally available for the proposed substitution. (GC shall provide supporting documentation in the attachments section below.)
6. The General Contractor shall be responsible for any and all costs associated with this substitution request if approved. This includes but is not to limited to fees for building design, engineering design fees, detailing fees, plan review fees, construction costs, and inspection fees.

GC Substitution Request:

General Title:	Fixed Louvers
Related Specification:	08 91 19
Reason for Substitution:	This product we believe is equivalent to the current Basis of Design.
Proposed Substitution: (Include Name, Model, etc.)	5WDRL-HP Stationaryywind Driven Rain Resistant Louver by Air Performance.

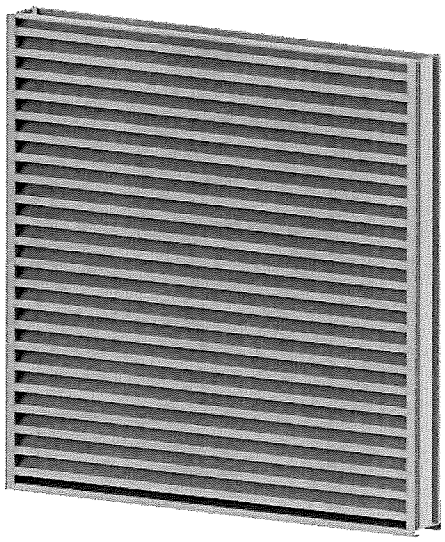
Submitted By:	***Phone:***
Clint Van Sambeek	715-598-5714
Company:	***Email:***
Miron Construction	clint.vansambeek@miron-construction.com

END OF SECTION

Air Performance

P.O. Box 86
159 Genco Drive
Hartford, AL 36344
Phone: (334) 588-0070
Fax: (334) 588-0071

5WDRL-HP STATIONARYYWIND DRIVEN RAIN RESISTANT LOUVER



STANDARD CONSTRUCTION:

Front Frame: 5" deep, 6063-T6 Extruded aluminum 0.080" Nominal wall thickness

Front Blade: 6063-T6 Extruded aluminum 0.065" Nominal wall thickness double drainable, sight-proof blades spaced on approximately 2.125" Centers

Birdscreen: .500" woven .062 bird screen , aluminum bird screen in removable frame. Screen will add approximately 1/2" to the depth of the louver.

Finish: MILL

Minimum Size: 12"W x 12"H

Maximum Single Section: 120"W X 84"H or 84"W X 120"H Louvers exeeding max single section size will be built in multiple sections and require field assembly.

Options

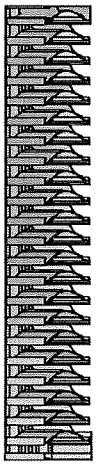
- ☐ Flanged Frame 150" 38mm std.
- ☐ Custom lange 1", 2", or 3" 25mm, 51mm, or 6mm
- ☐ Extended Sill
- ☐ Insect bird Screen other screens a ailable, see screen page
- ☐ Filter Racks no screen
- ☐ Security Bars
- ☐ Blank-off, Alum., non-insulated, no screen, non-removable
- ☐ Blank-off, Alum., non-insulated, with bird or insect screen.
- ☐ Blank-off, Alum., insulated double wall, with birdscreen.
- ☐ Blank-off, Alum., insulated double wall, no screen

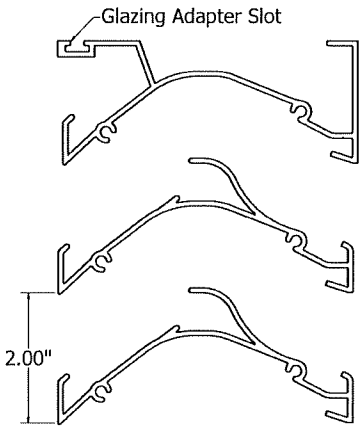
Air Performance certifies that the 5WDRL shown herein is approved to bear the AMCA Listing Label. The rating shown are based on test and procedures performed in accordance with AMCA Publication and comply with the requirements of the AMCA listing label apples to Wind Borne Debris Imapact Resistant Louvers and Rain Resistant Louvers

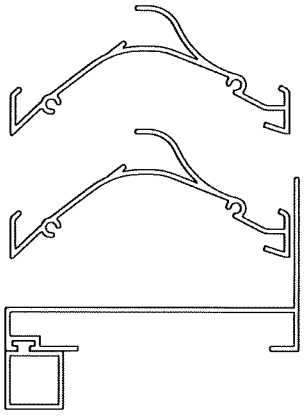
Available Finishes

- ☐ Baked Enamel
- ☐ Kynar
- ☐ Prime Coat
- ☐ Clear and Color Anodi ed.

Anodized color inconsistency is possible







Glazing Adapter Option

Other glazing adapters available

*Width and Height dimensions are approximately 1/4" under listed size.

5WDRL-HP PERFORMANCE DATA SHEET

Air Performance certifies that louver shown herein is licensed to bear the AMCA Seal. Ratings shown are based on tests and procedures performed in accordance with AMCA Publication 511 and comply with the requirements of the AMCA Certified Ratings Program. The AMCA Certified Ratings seal applies to air performance, water penetration, and wind-driven rain ratings only.

WIND-DRIVEN RAIN PERFORMANCE

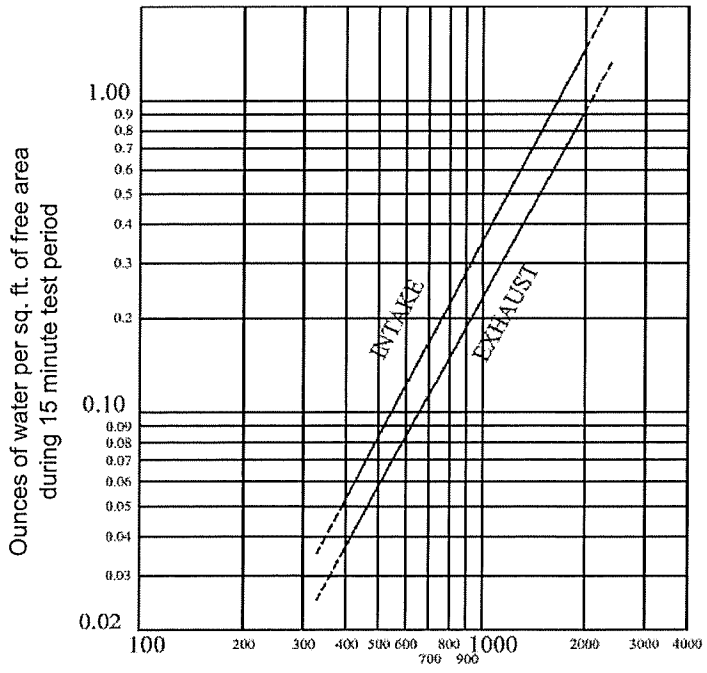
Test size is 39.375" x 39.375" Core Area

Wind Velocity (mph)	Rain Fall Rate (in./hr.)	Core Velocity fpm	Airflow cfm	Free Area Velocity fpm	Effectiveness Ratio	Class	Discharge Loss Class
29	3	593	6387	1150	99.3	A	3
29	3	993	10695	1925	85.6	C	3

Discharge Loss Coefficient Classifications	
Class	Discharge Loss Coefficient
1	0.4 and Above
2	0.3 to 0.399
3	0.2 to 0.299
4	0.199 and Below

Wind-driven Rain Penetration Classes	
Class	Effectiveness
A	1 to 0.99
B	0.989 to 0.95
C	0.949 to 0.80
D	Below 0.80

PRESSURE DROP
(Based on 48" x 48")



5WDRL-HP FREE AREA CHART

(Free Area Chart shows free area in ft[2])

LOUVER WIDTH IN INCHES

LOUVER HEIGHT IN INCHES	12	18	24	30	36	42	48	54	60	66	72	78	84	90	96	102	108	114	120
12	0.29	0.47	0.65	0.82	1.00	1.18	1.36	1.54	1.71	1.89	2.07	2.25	2.43	2.61	2.78	2.96	3.14	3.32	3.50
18	0.53	0.85	1.18	1.50	1.83	2.15	2.48	2.80	3.13	3.45	3.78	4.10	4.43	4.75	5.08	5.40	5.73	6.05	6.38
24	0.79	1.28	1.77	2.25	2.74	3.23	3.72	4.20	4.69	5.18	5.67	6.15	6.64	7.13	7.62	8.10	8.59	9.08	9.57
30	1.06	1.71	2.36	3.01	3.66	4.31	4.96	5.61	6.26	6.91	7.56	8.21	8.86	9.51	10.16	10.81	11.46	12.11	12.76
36	1.30	2.10	2.90	3.70	4.50	5.30	6.10	6.90	7.70	8.50	9.30	10.10	10.90	11.70	12.50	13.30	14.10	14.90	15.70
42	1.54	2.49	3.43	4.38	5.33	6.27	7.22	8.17	9.11	10.06	11.01	11.95	12.90	13.85	14.79	15.74	16.69	17.64	18.58
48	1.78	2.87	3.96	5.06	6.15	7.25	8.34	9.43	10.53	11.62	12.72	13.81	14.90	16.00	17.09	18.18	19.28	20.37	21.47
54	2.02	3.27	4.52	5.76	7.01	8.25	9.50	10.75	11.99	13.24	14.48	15.73	16.97	18.22	19.47	20.71	21.96	23.20	24.45
60	2.29	3.70	5.11	6.51	7.92	9.33	10.74	12.15	13.56	14.96	16.37	17.78	19.19	20.60	22.01	23.41	24.82	26.23	27.64
66	2.55	4.12	5.69	7.26	8.82	10.39	11.96	13.53	15.10	16.67	18.24	19.81	21.37	22.94	24.51	26.08	27.65	29.22	30.79
72	2.79	4.51	6.23	7.94	9.66	11.38	13.10	14.82	16.53	18.25	19.97	21.69	23.40	25.12	26.84	28.56	30.28	31.99	33.71
78	3.03	4.89	6.76	8.62	10.49	12.35	14.22	16.08	17.95	19.81	21.68	23.54	25.41	27.27	29.13	31.00	32.86	34.73	36.59
84	3.27	5.27	7.28	9.29	11.30	13.31	15.32	17.33	19.34	21.35	23.36	25.37	27.38	29.39	31.40	33.41	35.42	37.43	39.44
90	3.52	5.69	7.85	10.02	12.19	14.35	16.52	18.69	20.85	23.02	25.19	27.35	29.52	31.69	33.85	36.02	38.19	40.35	42.52
96	3.78	6.11	8.44	10.77	13.10	15.43	17.76	20.09	22.42	24.75	27.08	29.41	31.73	34.06	36.39	38.72	41.05	43.38	45.71
102	4.04	6.52	9.01	11.49	13.97	16.46	18.94	21.43	23.91	26.40	28.88	31.37	33.85	36.33	38.82	41.30	43.79	46.27	48.76
108	4.28	6.91	9.54	12.17	14.80	17.43	20.06	22.69	25.33	27.96	30.59	33.22	35.85	38.48	41.11	43.75	46.38	49.01	51.64
114	4.51	7.29	10.07	12.85	15.63	18.41	21.18	23.96	26.74	29.52	32.30	35.07	37.85	40.63	43.41	46.19	48.97	51.74	54.52
120	4.75	7.68	10.60	13.53	16.45	19.38	22.30	25.23	28.15	31.08	34.00	36.93	39.85	42.78	45.70	48.63	51.55	54.48	57.40

Approved by Carlos Ruef, JDR
6/13/2024

3.4. SUBSTITUTION REQUEST FORM

For Pre-bid Substitution Requests all text boxes on this form are required information for a complete request.

Substitution Request

Today's Date: 6/13/24

Project Title: Warner Park Community & Recreation Center Expansion

Project Number: ***Contract Number:*** 9502

By completing and submitting this form for review the General Contractor affirms that all of the following statements are correct:

1. The General Contractor affirms that this request is in compliance with the requirements described in *Specification 01 25 13 Product Substitution Procedures.*
2. The function, appearance, and quality of the proposed substitution are equal or superior to the specified item.
3. The proposed substitution does not affect dimensions shown on the drawings.
4. The proposed substitution will have no adverse affects on other trades, the construction schedule, or any specified warranty requirements.
5. Maintenance and service parts will be locally available for the proposed substitution. (GC shall provide supporting documentation in the attachments section below.)
6. The General Contractor shall be responsible for any and all costs associated with this substitution request if approved. This includes but is not to limited to fees for building design, engineering design fees, detailing fees, plan review fees, construction costs, and inspection fees.

GC Substitution Request:

General Title: Plumbing Fixtures Schedule P801

Related Specification: 22 40 00

Reason for Substitution: To be considered an equal and allow product to be used in project.

Proposed Substitution: (include Name, Model, etc.) D|13 Sink System featuring the new XLERATORsync® Hand Dryer

Submitted By: Melissa Aguiar

Phone: 786-374-1554

Company: Excel Dryer, Inc

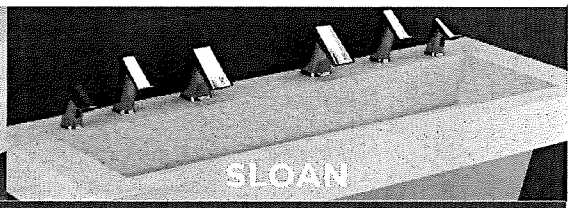
Email: MAguiar@Exceldryer.com

END OF SECTION

SINK. TO A NEW LEVEL.

D|13 Integrated Sink System Vs. Sloan

The D|13 Sink System is the most advanced integrated sink system on the market. A masterpiece of form and function, providing the most hygienic, sustainable and cost-effective way to wash and dry hands. D|13 is more than a supplier. We are a design-assist partner working directly with architects, designers and clients. We fabricate our sink system to your specifications offering unparalleled customization providing the ultimate product solution. We provide a high-end custom product at a competitive price.

FEATURES	 D|13	 SLOAN
USER EXPERIENCE: THE ULTIMATE DIFFERENTIATOR		
HAND DRYER	XLERATORsync® Hand Dryer, designed in collaboration with Excel Dryer and a world-renowned design firm. Unique "reverse airflow" design blows air/water flow away from the user, promoting hygiene and enhancing user experience.	AER-DEC® Integrated Sink System. Generic dryer fixture with same design ID as faucet and soap dispensers.
	HEPA Filter with washable pre-filter.	HEPA Filter with washable pre-filter.
	Sound suppression air delivery system (patent pending).	Sound suppression air delivery system.
	Adjustable sound, speed and heat.	Adjustable sound, speed and heat.
	LED illumination of drying area enhances visual experience identifying the optimal location for hand drying.	LED will display word "Dry" on users hands. Option to have sink basin lit in blue, green, purple or orange
SINK BASIN	Choice of undermount or trough-style sink with infinity drain. Specifically engineered and designed to work with the XLERATORsync dryer, keeping airflow away from the user and water where it belongs.	Trough-style or individual station sink with air dam.
	Engineered without air dams or additional holes eliminating the resistance for tampering.	Cloggable opening for air dam. Potential for water to drip through to the floor, creating a safety hazard.
INTUITIVENESS	Intuitive: Left to right functionality. Unique XLERATORsync dryer nozzle design.	Intuitive: left to right functionality. Shape is similar to soap and faucet, creating confusion.

D|13 GROUP

GOOD DESIGN SOLVES EVERYTHING.

245 West Central Street / Natick, MA 01760 / 1-888-670-3107 / D13Group.com / design@D13Group.com

SINK. TO A NEW LEVEL.

FEATURES	D|13	SLOAN
SINK DECK	Standard and custom lengths and configurations. Materials include solid surface, granite, quartz and other stone material.	Standard and custom sizes. Solid surface materials, including Corian and quartz.
ENCLOSURE PANEL	Choice of sliding door panels with ball bearings or hanging panels with z-clips. Secure locking mechanism optional. Available in solid surface, stainless steel, laminated MDF or phenolic.	Stainless steel access panel on piano hinge. Does not open fully, making it difficult to access.
FAUCET	Compatible with many faucet models from several manufacturers. Choice of size, finish, flow rate and shape to complement your design.	Sloan BASYS® faucets only.
SOAP DISPENSER	Flexible soap dispenser models and soap configurations available.	Sloan soap only.
WARRANTY	5-year warranty on XLERATORsync dryer. 3-year warranty on sink, countertop, enclosure panels and frame. Factory warranty on faucets and soap fixtures.	3-year warranty for the AER-DEC Integrated Sink. 5-year warranty for AER-DEC Hand Dryer. 10-year limited solid surface, quartz and other engineered and natural stone; 1-year limited warranty for laminates.
INSTALLATION	Factory templates and custom 3D laser templating available to reduce installation time and ensure accurate fit. Factory installation available in most areas.	Installation guide available.
PURCHASING	Purchased and shipped directly from D|13 Group.	Sold through wholesale distribution and manufacturer reps adding layers of margin/overhead.

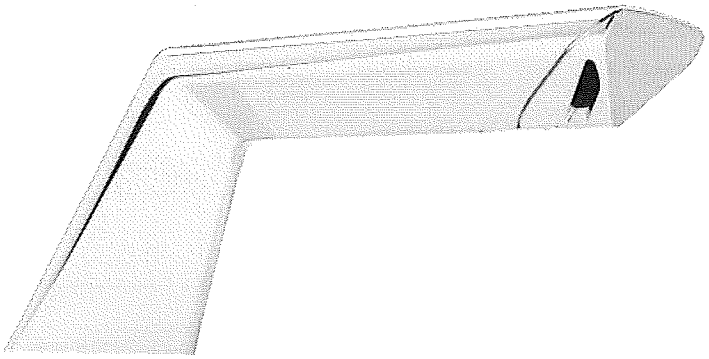
										DRAIN: FLOOR DRAIN FD-1 IN SHOWER FLOOI
UR-1	URINAL (STANDARD HEIGHT)	2	2"	1 1/2"	2	3/4"	---	---	---	FIXTURE: ZURN OMNI-FLO Z5755-U, WALL HUN
										FLUSH VALVE: ZURN AQUASENSE ZER6003AV DIAPHRAGM TYPE, ELECTRICAL OVERRIDE, P(
										SUPPORT: COMMERCIAL GRADE, WALL HUNG
UR-2	URINAL (ADA HEIGHT)	2	2"	1 1/2"	2	3/4"	---	---	---	FIXTURE: ZURN OMNI-FLO Z5755-U, WALL HUN
										FLUSH VALVE: ZURN AQUASENSE ZER6003AV DIAPHRAGM TYPE, ELECTRICAL OVERRIDE, P(
										SUPPORT: COMMERCIAL GRADE, WALL HUNG
WC-1	WATER CLOSET (STANDARD HEIGHT)	6	4"	2"	6.5	1 1/2"	---	---	---	FIXTURE: ZURN ECO VANTAGE HET WALL HUI GPF MAX, 2.125" TRAPWAY, 1-1/2" TOP SPUD, I
										FLUSH VALVE: ZURN AQUASENSE ZER6000AV DIAPHRAGM TYPE, ELECTRICAL OVERRIDE, P(
										SEAT: ZURN Z5955SS-EL-AM, OPEN FRONT TO
										SUPPORT: COMMERCIAL GRADE WATER CLOS
WC-2	WATER CLOSET (ADA HEIGHT)	6	4"	2"	6.5	1 1/2"	---	---	---	FIXTURE: ZURN ECO VANTAGE HET WALL HUI GPF MAX, 2.125" TRAPWAY, 1-1/2" TOP SPUD, I
										FLUSH VALVE: ZURN AQUASENSE ZER6000AV DIAPHRAGM TYPE, ELECTRICAL OVERRIDE, P(
										SEAT: ZURN Z5955SS-EL-AM, OPEN FRONT TO
										SUPPORT: COMMERCIAL GRADE WATER CLOS
WH-1	WALL HYDRANT	---	---	---	4	3/4"	---	---	---	FIXTURE: WOODFORD MODEL B67, EXTERNAL TEE KEY WITH TAMPER RESISTANT BOX.

PLU

ID	FIXTURE	WASTE		
		DFU	TRAP	VEN
FD-1	FLOOR DRAIN (ROUND)	2 3 4	2" 3" 4"	1 1/2 1 1/2 2"
FD-2	FLOOR DRAIN (ROUND, HEAVY DUTY)	2 3 4	2" 3" 4"	1 1/2 1 1/2 2"
HD-1	HUB DRAIN - AT GRADE	3 4 6	2" 3" 4"	1 1/2 1 1/2 2"
RD-1	ROOF DRAIN	---	---	---
FCO	FLOOR CLEANOUT	---	---	---

XLERATORsync® HAND DRYER

MODELS: **XL-ISS- C SP SI SF -VOLTAGE** (See Chart)



XL-ISS-C
Chrome Plated

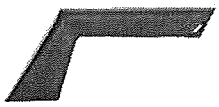


FEATURES & BENEFITS

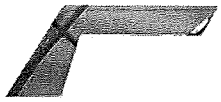
- Ultimate User Experience
- Elegant Streamlined Design Matches Any Aesthetic
- 95% Cost Savings Vs. Paper Towels
- Patent Pending Sound Suppression Air Delivery System
- HEPA Filtration System
- A Hygienic Hand Drying Solution
- Helps Qualify For Several LEED® Credits
- Washable Pre-Filter
- Industry Leading 7-Year Warranty



XL-ISS-C
Chrome Plated



XL-ISS-SP
Custom Special Paint



XL-ISS-SI
Custom Special Image



XL-ISS-SF
Special PVD Finishes

DIMENSIONS

DRYER BOX		
Width 12 1/16" (306mm)	**Height** 13 1/2" (343mm)	**Depth** 6 5/8" (168mm)

DRYER SPOUT		
Width 3 3/8" (86mm)	**Height** 7 1/2" (191mm)	**Depth** 10 13/16" (275mm)

FLEXIBLE HOSE ASSEMBLY	
Hose Dia. 2" (51mm)	**Std. Assembly Length:** 13" (330mm)

ACTIVATION

Automatic Sensor Operated

CERTIFICATIONS

c UL us

WARRANTY

Seven Year Limited Warranty

ELECTRICAL

VOLTS	AMPS	WATTS	HERTZ
120V	12A	1440 W	50/60 Hz

WEIGHT

DRYER BOX	11lbs. (5kgs.)
DRYER SPOUT	3.9lbs. (1.8kgs.)
FLEXIBLE HOSE ASSEMBLY	0.5lbs. (0.3kgs.)

THE DI13 SINK SYSTEM

The DI13 Sink System featuring the new XLERATORsync Hand Dryer by Excel Dryer is the future of commercial restrooms and the most hygienic, sustainable and cost-effective way to wash and dry hands. A masterpiece of form and function, the system seamlessly fuses no-touch, high efficiency fixtures on the sink deck allowing you to wash and dry hands all in one place, creating the ultimate user experience. The customizable sink design options allow architects and designers to completely transform the aesthetic of any restroom.

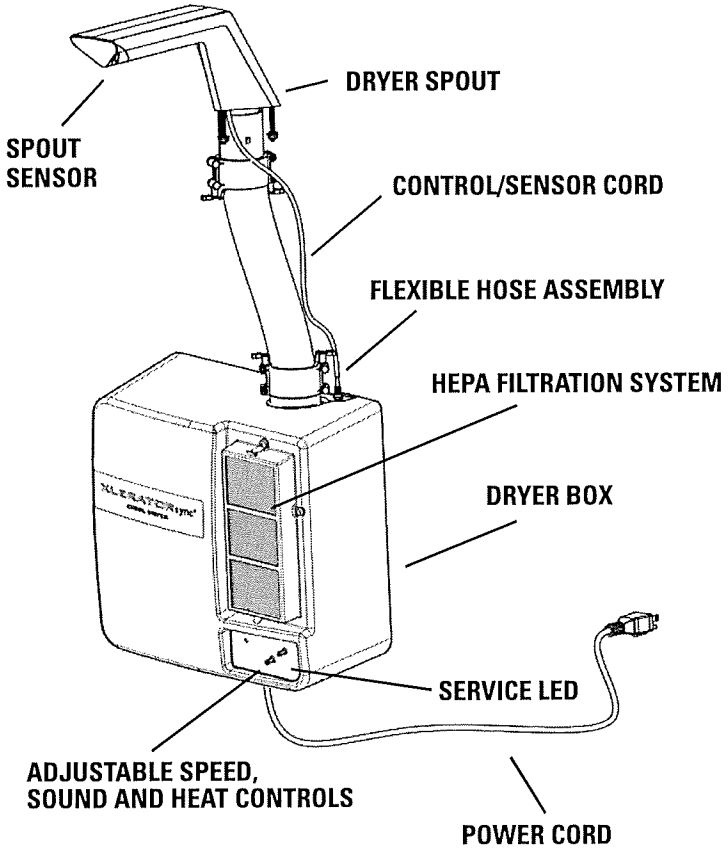
AVAILABLE IN THE USA EXCLUSIVELY THROUGH

D|13 GROUP

245 West Central Street
Natick, MA 01760
D13Group.com
design@D13Group.com
(617) 307-1150

XLERATORsync® HAND DRYER

MODELS: **XL-SYNC- C SP SI SF -VOLTAGE** (See Chart)



DIMENSIONS

DRYER BOX		
Width 12 1/16" (306mm)	**Height** 13 1/2" (343mm)	**Depth** 6 5/8" (168mm)

DRYER SPOUT		
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DRYER BOX	11lbs. (5kgs.)
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FLEXIBLE HOSE ASSEMBLY	0.5lbs. (0.3kgs.)

ELECTRICAL

VOLTS	AMPS	WATTS	HERTZ
120V	12A	1440 W	50/60 Hz

IP RATING

IP11B

CERTIFICATIONS

c UL us

PERFORMANCE

A. Wattage: 1440 Watts

B. Amperage: 12A

C. Volts: 120V

D. Adjustable Speed

E. Adjustable Heat Settings - High, Medium, Low & Off

F. HEPA Filtration System

G. Patent Pending Sound Suppression Air Delivery System

CONSTRUCTION

A. Cover will be fastened to a baseplate by hidden screws when mounted under sink.

B. Baseplate shall be equipped with two z-shaped metal brackets for dryer mounting to under sink wall surface.

C. Dryer Spout shall be rustproof die-cast zinc alloy, bright chrome plated, epoxy paint, and custom painted options.

D. All internal parts shall be coated according to Underwriter's Laboratories, Inc. requirements.

E. Entire mechanism shall be internally grounded.

F. HEPA Filtration System Removes 99.999% of Viruses from the Airstream[1]

G. Dryer Box to be connected to Dryer Spout via flexible hose with quick disconnect ends and low voltage sensor wire.

H. Dryer shall be equipped with grounded power cord.

[1]Based on April 2020 testing performed by LMS Technologies

MECHANISM

A. Motor shall be thermally protected, series commutated, through-flow discharge vacuum motor/blower (5/8 hp / 24000 rpm) which provides air velocity of up to est. 13,000 LFM (linear feet per minute) at the air outlet. Includes a washable metal mesh filter for more reliable performance.

B. Heating element (970W) is constructed of Nichrome wire and mounted inside the blower housing, thereby being vandal resistant. It shall be protected by an automatic resetting thermostat, which shall open whenever air flow is cut off and shall close when flow of air is resumed.

C. Control assembly is activated by an infrared optical sensor located in the spout. The dryer shall operate as long as hands are under the air outlet. Control includes a speed and adjustable heat control with High, Medium, Low and Off settings and a filter sensor which is activated should the filter become clogged. There is a 35-second lockout feature if hands are not removed. Dryer box is equipped with LED lights on Dryer Box and Dryer Spout that flash error codes to assist in troubleshooting.

LIMITED WARRANTY

The dryer shall be guaranteed to be free from defects for a period of seven (7) years. Warranty shall include labor performed at the factory as well as the repair or exchange of defective parts, at manufacturer's option.

ACTIVATION

Automatic Sensor Operated

MOUNTING

Deck-Mounted

AVAILABLE IN THE USA EXCLUSIVELY THROUGH

D|13 GROUP

245 West Central Street
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(617) 307-1150

Contract #9502 Warner Park Community Recreation Center Expansion
Pre-Bid Building/Site Tour Date: June 6, 2024

Name	Company Representing	Email	Phone
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Nick Schuch	Vogel Bros.	NSchuch@VOGELBLDG.com	608-440-0897
Matt Prescott	Tri NORTH	mprescott@tri-north.com	608-204-7255
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Henry Van Hoof	Custofoam Corp	hvanhoof@custofoam.com	608-343-0331
Jake Cates	Daniels	jake.cates@danielsco.com	608-235-1859

Contract #9502 Warner Park Community Recreation Center Expansion

Pre-Bid Building/Site Tour Date: May 29, 2024

Name	Company Representing	Email	Phone
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Nick Schuch	Vogel Bros.	NSchuch@VOGELBLDG.COM	608-440-0893
CAM KNUTESON	WESTPHAL	CKNUTESON@WESTPHALEC.com	262-453-3074

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

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Phone: (608) 266-4751
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Assistant City Engineer
Bryan Cooper, AIA
Gregory T. Fries, P.E.
Chris Petykowski, P.E.

Deputy Division Manager
Kathleen M. Cryan

Principal Engineer 2
John S. Fahrney, P.E.
Janet Schmidt, P.E.

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

Financial Manager
Steven B. Danner-Rivers

JUNE 21, 2024

ADDENDUM NO. 03

CONTRACT NO. 9502
WARNER PARK COMMUNITY RECREATION CENTER EXPANSION

This addendum is issued to modify, explain or correct the original Drawings, Specifications, or Contract Documents marked as ***Warner Park Community Recreation Center Expansion, City of Madison, Contract #9502, as issued on May 17, 2024*** and is hereby made a part of the contract documents.

Please attach these Addendum documents to the Bid Proposal document, Volume 1 Architectural Drawings (Exhibit A), Volume 2 MEP Drawings (Exhibit B), and Project Manual (Exhibit C) in your possession.

BID PROPOSAL DOCUMENT

None

CONTRACT

Section 109.7: TIME OF COMPLETION updated to remove "The total time for completion of contract shall be twelve (12) months from the actual start of onsite construction work."

VOLUME 1 ARCHITECTURAL DRAWINGS (EXHIBIT A)

1) C500 – Utility Plan
   a) Storm pipe "STO D-3.1" relocated along north side of proposed building.
   b) Drain basin "STO DB-3" eliminated and remaining upstream structures renamed starting from "STO DB-3".
   c) Pipe and structure table updated to reflect revised roof drain layout.
2) C600 – Details
   a) 6" box curb detail removed.
3) D101 – Demolition Plan
   a) Detail 1: Add note in Mechanical 150 about bar grating removal.
4) A100 – Overall Floor Plan
   a) Detail 1: Add note in Mechanical 150 about bar grating installation.
5) A101 – Expansion Floor Plan
   a) Detail 1: Add 8" downspout on north wall of Gymnasium 105D. Revise downspout size on north wall of Gymnasium 105D. Add tag for door 105D-4. Add (2) 12'-0" wall pad sections on the north wall of Gymnasium 105D.
6) A201 – Expansion Roof Plan
   a) Detail 1: Revise photovoltaic array note. Remove miscellaneous unannotated items (4 locations). Add pipe boot note.
7) A301 – Expansion Reflected Ceiling Plan
   a) Add General Note #5.

b) Detail 2: Add sound attenuation blanket note for Comfort 105B.

8) A400 – Exterior Elevations
   a) Detail 2: Revise downspout routing and note on west side of storefront.
9) A604 – Exterior Details
   a) Detail 5: Delete Detail 5.
10) A610 – Door Schedule & Wall Types
   a) Wall Type B: Add gypsum board header.
11) A700 – Finish Plans & Schedule
   a) Finish Schedule: Revise base finish in Exercise 102 and Locker Room 111A.
   b) Finish Key: Add notes for RF-1 and RF-2.
   c) Detail 1: Revise base callouts and extents in Exercise 102. Remove arrow from east wall of Pre-Function 105C.
12) A800 – Enlarged Plans & Interior Elevations
   a) Detail 1: Revise TA-01 tags in Women's Restroom 111C and Men's Restroom 111D.
   b) Detail 12: Revise TA-03 and TA-04 tags.
13) A801 – Interior Elevations
   a) Detail 5: Add metal stud plenum barrier, Unistrut support system, and sound attenuation blanket to corridor ceiling construction. Note transfer grille in corridor wall. Note gypsum board paint colors at ends of corridor walls.
14) A811 – Interior Details
   a) Detail 2: Revise detail to show metal stud plenum barrier and Unistrut support system for corridor ceiling. Revise location of masonry lintel and note metal stud headwall as required for metal panel wall support system.
   b) Detail 5: Revise detail to show gypsum board and sound attenuation blanket above plywood ceiling finish.
   c) Detail 7: Revise detail to show gypsum board and sound attenuation blanket above plywood ceiling finish. Revise notes at existing metal stud walls. Revise detail to show metal stud plenum barrier and Unistrut support system for corridor ceiling.
15) S002 – Structural Schedules
   a) Wall Footing Schedule updated.
      i) Added new wall footing: W18, 1'-8" Wide, 1'-0" Thickness, (2) #4; B, CONT, STOOP FTG.
      ii) Revised footing reinforcement for W90 footing to (9) #7 CONT T&B w/ #7 @ 12" T&B SHORT DIRECTION.
16) S200 – Foundation Plan – Expansion
   a) Revise drawings to more clearly show existing walls and footing along Grid EK, North on E13.5, along EH to Grid E15, and North on Grid E15.
   b) Showing existing stoop in corner of EH and E13.5.
   c) Calling out Top of Footing elevations along E15. 99'-4" North of Grid EH, stepping down to 96'-6" along Grid EH and Grid E13.5.
   d) Revised wall footing elevations along North and East exterior walls to 99'-4" due to grades being above finished floor elevation.
   e) Revised interior footing elevations to 99'-4".
   f) Added footing steps North of door 105D-3 step foundations from outside wall of 96'-6" to 99'-4".
   g) Dimensions adjusted throughout foundation plan.
      i) Added 3" dimension to outside face of 2'-0" foundation wall for North and East wall elements.
   h) Added detail 12/S800 section at existing foundation wall.
   i) Revised one elevation for outer ledge to 107'-4".
   j) Aligned inside of foundation wall at South wall.
   k) Revised footing to W30 from W90 and changed detail from 4/S802 SIM to 1/S800 along South wall of Gym. The W90 footing start in the SE corner of the Gym.
   l) Added steps along the East wall of Gym at 27'-6" North of SE Corner.
   m) Added top of slab elevations at 100'-0" throughout new addition.
   n) Revised TW 100'-0" to TW 99'-4" at the two new openings in existing walls.
   o) Added new top of footing elevation of 97'-6" at new footing along Grid E13.5 and Grid EH.

p) Added new top of footing elevation of 100'-0" at new footing along Grid E15.
q) Revised W24 footing callout along existing Foundation walls on Grid E13.5, EH and E15. They are labeled on the East and South side of these walls now matching section cut 12/S800.
r) Note "NO CONC FDN WALL REQUIRED ABOVE NEW FTG" along Grid E13.5 and E15.
s) Added new section cut 2/S804 to door opening on West wall of Gym.
t) Added existing wall length dimensions of 36'-6" and 18'-4" to corner of existing at Grid E13.5 and Grid EH.
u) Labeled both steep footings at W18.
v) Revised top of wall elevation on South side of Gym from 98'-8" to 100'-0".
w) Added a SLAB SCHEDULE table below FOUNDATION PLAN NOTES. 4" slab thickness to have 6x6 – W1.4xW1.4 WWF. 5" slab thickness to have 6x6 – W2.1xW2.1 WWF.

17) S201 – Roof Framing Plan – Expansion
a) Note added to lower roof in North roof, "FOR PITCH ROOF ELEVATIONS SEE A201."
b) Added a lintel in the existing gym wall along Grid E15.
c) Added a lintel in the existing wall along Grid E13.5.

18) S800 – Structural Details
a) Detail 12 revised.
i. Reinforcing added to the detail.
ii. Hooked dowel bar size changes.
iii. Dowels added to existing footing.

19) S802 – Structural Details
a) Detail 4 revised.
i. "Top of Ledge / See Plan" elevation mark added.
ii. "Continuous Hydrophilic Waterstop At All Construction Joints Below Grade" added.

20) S804 – Structural Details
a) Add sheet A804.
b) Add Detail 1 – Typical Reinforced CMU Wall On Concrete Foundation Wall.
c) Add Detail 2 – Typical Concrete Foundation Wall Below Slab.

VOLUME 2 MEP DRAWINGS (EXHIBIT B)

1) F201 – First Floor Plan - Fire Protection
a) Revise tie-in point of new sprinkler main piping serving new addition.
2) P201 – Partial Enlarged Underfloor Plan - Plumbing
a) Delete storm lateral as shown.
3) P203 – Partial Enlarged First Floor Plan - Plumbing
a) Delete storm lateral as shown.
b) Delete keyed note #3.
c) Revise lavatory callout in Comfort 105B from L-1 to L-2.
4) P400 – Sanitary Waste, Vent, & Storm Isometric – Plumbing
a) Revise lavatory callout in Comfort 105B from L-1 to L-2.
5) P410 – Sanitary Waste, Vent, & Storm Isometric – Plumbing
a) Revise lavatory callout in Comfort 105B from L-1 to L-2.
6) M201 – First Floor Expansion Plan - HVAC
a) Add keyed note 44 to transfer ductwork serving 105B Comfort, as shown.
b) Add keyed note 45 to supply ductwork serving 105B Comfort, as shown.
c) Relocated TG-3, as shown.
7) M302 – Enlarged Mechanical Room Plan - HVAC
a) Add keyed note 43 to ductwork, as shown.
8) E201 – Partial First Floor Plan – Power and Systems
a) Revise systems General Notes #S8 as follows;
i) Video displays shall be revised from (1) LVN-3.9 and (1) LVN-5.9 to (2) LVN-3.9 displays.
ii) Add matrix size for both video displays.

PROJECT MANUAL SPECIFICATIONS (EXHIBIT C)

1) Section 03 30 00 – Cast-In-Place Concrete
a) Revise Page 7, Line 10 (for footings).

i) 2. Minimum Compressive Strength "4000" psi at 28 days.

b) Revise Page 7, Line 16 (for foundation walls and piers).
   i) Added "and piers" to line.

c) Revise Page 7, Line 27 (for interior slabs-on-ground).
   i) 2. Minimum Compressive Strength "3500" psi at 28 days.

2) Section 03 33 00 – Architectural Concrete

a) Revise Page 4, Lines 7 through 22:

E. Mockups: Before casting architectural concrete, build mockups, using the same procedures, equipment, materials, finishing procedures, and curing procedures that will be used for producing architectural concrete, to verify selections made under Sample submittals and to demonstrate typical joints, surface finish, color, texture, tolerances, and standard of workmanship. Build mockups to comply with the following requirements, using materials indicated for the completed work:
   (i) Build mockups in the location and of the size indicated or, if not indicated, as directed by architect.
   (ii) Build mockups of typical wall of cast-in-place architectural concrete as shown on drawings, including vertical and horizontal rustication joints, and any sculptured features.
   (iii) Construct mockups to include at least two lifts having heights equal to those anticipated for construction.
   (iv) Demonstrate curing, cleaning, and protecting of cast-in-place architectural concrete, finishes, and contraction joints, as applicable.
   (v) In the presence of architect, damage part of the exposed-face surface for each finish, color, and texture, and demonstrate materials and techniques proposed for repair to match adjacent undamaged surfaces.
   (vi) In the presence of architect, demonstrate materials and techniques proposed for repair of tie holes and surface blemishes to match adjacent undamaged surfaces.
   (vii) Obtain architect's approval of mockups before casting architectural concrete.

b) Revise Page 6, Lines 10 through 16:

C. Form-Facing wood forms:
   1. Finishes: As cast.
      a. Exterior-grade rough sawn board form planks, that will provide continuous, true, and pattern architectural concrete surfaces, Douglas Fir, construction grade, or better, mill-applied release agent and edge sealed, complying with DOC PS 1.
   2. Location: Where noted on drawings.
   3. Size: 4-inch nominal height

3) Section 27 00 05 – Structured Communications Cabling

a) Revise Page 3, Line 30:
   i) Change *"Mohawk cable"* to *"Hubbell Premise Wiring".*

b) Revise Page 3, Line 33:
   i) Change *"Mohawk Cable or Equal"* to *"Hubbell Premise Wiring".*

c) Revise Page 6, Line 47:
   i) Add *"To obtain Hubbell 25-year warranty, Installation needs to be Hubbell Cable with Hubbell Connectivity."*

d) Revise Page 8, Line 37:
   i) Change *"Mohawk AdvanceNet Cable"* to *"Hubbell Next Speed."*

e) Revise Page 8, Line 38:
   i) Change *"Plenum M57193"* to *"Plenum HC6RPB."*

f) Revise Page 8, Line 39:
   i) Change *"Riser M57202"* to *"Riser HC6RRB."*

g) Revise Page 8, Line 52:
   i) Change *"Mohawk Cable"* to *"Hubbell Premise."*

h) Revise Page 8, Line 53:
   i) Change *"Singlemode Riser M9W042"* to *"Singlemode Riser HFCD1012RS."*

i) Revise Page 8, Line 54:
   i) Change *"Singlemode Plenum M9W048"* to *"Singlemode Plenum HFCD1012PS."*

j) Revise Page 9, Line 40:
   i) Change *"24 Port – P6E24U"* to *"24 Port – HP624."*

k) Revise Page 9, Line 41:
   i) Change *"48 Port – P6E48U"* to *"48 Port – HP648."*

l) Revise Page 10, Line 25:
   i) Change *"HC219CE3N"* to *"HM24C."*

CONTRACTOR QUESTIONS

1) Question: Nothing is spec'd out for paging, but we have wall mounted speakers in corridor 105A. What cable are we pulling, who's responsible for providing the speaker, what manufacturer are we using for the speakers?
   Answer: Contractor is required to provide speakers and backbox as stated in the Systems Key. Speaker wire for paging is a standard 2 conductor 12 awg wire. Plenum or non-plenum based on environment. West Penn or equal. Speaker shall be bogen MB8TSQ(VR)/MB8TSL(VR) or equal.

2) Question: Category 6A cable for Wireless Access Points? Exhibit C project specs Page 739 line item 27 Calls out for Category 6A to be used. In Exhibit B page 41 systems, system symbols, it calls out for 1 category 6 cable per Wireless Access Point. Which one are we using?
   Answer: CAT6A will be used for all wireless access ports.

3) Question: Patch Cords who's responsible for providing these. If contractor furnished, what manufacturer, color, and length?
   Answer: The City will provide patch cords.

4) Question: Plenum or non-plenum for data cables.
   Answer: Per the spec the contractor must use cable that is suitable for the environment. Plenum must be used where required. Non-plenum can be used for areas where the cable does not enter/cross a plenum environment.

5) Question: E200 print keynote S5. 2-2" EMT from MDF to new IDF. Is this run for the fiber or is the fiber supposed to be ran in separate Innerduct like the specifications call out for?
   Answer: There will be 1" innerduct inside the conduit to provide protection for the fiber. City standard is two spares.

6) Question: Protective Wire cages for access points in the Gym are we matching ceiling color with these or is it ok to leave them natural metal color?
   Answer: Match ceiling color.

7) Question: If the alternate for the solar is selected, will the combined energy consumption and the energy production be over or under 1 MW for the entire project?
   Answer: The combined energy consumption will be under 1 MW (~500 kW for geothermal and ~100 kW for solar)

8) Question: Who is the Commissioning Agent?
   Answer: Baumann Consulting

9) Question: Who is the tax consultant?
   Answer: There is not a tax consultant.

10) Question: Do they want the cameras covered with a wireguard in the gym? The wire guard will interfere with the picture of the camera. Not sure what cameras they are providing but most have an IK rating and should be able to withstand a decent impact without damaging the camera.
    Answer: Wire cages painted to match in the gym.

11) Question: Sheet C200 references a possible drain tile around the existing foundation that is to be removed, if found. Should the cost to carefully disconnect and remove this be provided as an alternate, so it can be added to the contract if it is found? If found, do you want the remaining drain tile tied into the drain tile around the addition?
    Answer: Please exclude the drain removal of drain tile. If found, the cost to remove and any connection to be handled as a Change Order.

12) Question: Should we factor in the cost to remove and replace the curb and gutter and sidewalk at the access drive where the construction entrance is located?
Answer: It is up to the contractor to protect the curb and gutter and sidewalk. If they don't and the curb sidewalk are damaged, the contractor will need to fix.

13) Question: There is a detail for 6" concrete box curb on Sheet C600. Where does this occur?
Answer: This detail was left over from a previous design and has been removed.

14) Question: On Sheet A101, the door at the southeast corner of Gymnasium 105D is not labeled. Is this Door 105D-4?
Answer: The door is labeled on sheet A500 as door 105D-4, A tag on the floor plan has been added.

15) Question: On Sheet A101, most of the backboards have wall pads centered on the walls behind them, but the two on the north wall do not. Is this correct that two backboards don't have wall pads?
Answer: The addendum adds wall pads to the north wall. The pads were left off that wall because of the bleachers, but added back since there won't always be bleachers there.

16) Question: On Sheet A500, there is a note to mount shot clocks on high school court backboards. Can you please clarify which/how many backboards receive the shot clocks?
Answer: Middle school and high school basketball courts are identified on sheet A700.

17) Question: All glazing at storefront and curtainwall is labeled as GL-2 except for the clerestory windows on the north elevation, which are labeled as GL-1. Is this correct?
Answer: GL-1 glazing is identified at the pre-function curtainwall on sheet A801.

18) Question: On A700, the notes for the base material in Pre-Function 105C are cut off. Can you please clarify which base material is on each wall?
Answer: The note has been fixed in Addendum #3.

19) Question: The finish schedule on A700 calls for carpet tile with ceramic tile base in Locker Room 111A. Was this meant to be ceramic tile flooring?
Answer: The locker room should get RB-1 base.

20) Question: Spec section 01 43 50 – Air Barrier Systems tells us that the contractor will engage a qualified consultant to perform testing and inspection prior to Installation of air barrier components. What tests are required prior to? Please clarify.
Answer: The required tests are listed in spec section 07 27 26 subsection 3.3 (B).

21) Question: Spec. Section 01 50 00 – Temporary Facilities and Controls talks about providing temp heat. Can we use the existing building gas line and if so, who pays for the consumption of this?
Answer: If the Contractor prefers the existing gas line can be used for temporary heat. The City has historic billing records and will charge the Contractor the difference during months of use. The difference will be credited back to the project.

22) Question: Spec. Section 01 50 00 – Temporary facilities and Controls refers to parking in the lower area of Warner Park Community Recreation Center as shown in the lands for work may be used for construction parking for the duration of the construction work. Please clarify where this is and what the lands for work is.
Answer: Lands for Work is a reference document issued with the bid documents. Please see document "9502 REF DOC 1 – Lands for Work". The parking location is detailed in this document.

23) Question: 01 01 73.29 – Cutting and Patching item 1.5 A/B: states we must maintain any existing warranties. Please identify what warranties are in place and who holds them.
Answer: Information not known at this time. Contractor is expected to perform cutting and

patching using standard work practices.

24) Question: 02 02 32 – Geotechnical Investigation talks about undercutting might be needed. Please clarify how undercutting if needed will be handled via bidders? Are we to carry an allowance provided by the city? Will this be handled outside for the contract since there is not enough information available to determine the extent of undercutting? Please clarify.
Answer: All undercutting to can be excluded from the base bid. Cost related to undercutting will be handled through the Change Order process as needed.

25) Question: In detail 4/S802, the cut-section appears to have a hard joint between the 2'-0" CIP and the 12" CIP wall. Should there be waterstop install at this joint due to the fact that this wall will be below grade?
Answer: Waterstop should be added for detail as shown. Contractor may choose to pour entire wall one height and eliminate the waterstop.

26) Question: On Sheet S200 along column line EH and Column lines E15 and 1, there is a cut-section 7/S800 thought this wall. It shows a CMU wall, but appears to be concrete on S200. Please clarify if a CMU wall is to be placed on the footing or a CIP Wall and what size and reinforcement.
Answer: Concrete foundation walls up to finished floor elevation is standard. CMU walls above. Detail updated to reflect.

27) Question: Column Line 1 between EH and B on Sheet S200 has a cut-section 7/S800 through this wall. It shows a CMU wall, but appears to be concrete on S200. Please clarify if a CMU wall is to be placed on the footing or a CIP Wall and what size and reinforcement.
Answer: Concrete foundation wall up to slab elevation as standard. CMU wall above. Detail should be called out as SIM.

28) Question: Detail 12/S800 is a footing and wall added to an existing wall and footing. Should these be doweled into the existing? If so, what size dowel and spacing?
Answer: Dowels are not required to existing foundation and walls.

29) Question: Detail 12/S800 does not call out any wall reinforcement. Is any required?
Answer: #4 @ 48" OC VERTICALY. (2) #5 CONTINUOUS T&B. Detail updated.

30) Question: There is no reinforcement called out for the slab on the drawings. Please clarify.
Answer: 6x6 – W1.4x W1.4 WWF for 4" slabs. 6x6 – W2.1xW2.1 WWF for 5" slab in Gym.

31) Question: Specification section 03 30 00 – Cast in place concrete calls for 4,500 PSI concrete for interior slabs, but S001 calls for 3,500 PSI concrete at interior slabs. Please clarify.
Answer: 3,500 PSI is acceptable for interior slabs.

32) Question: Detail 2/S800 calls for a 8" CIP Wall for stoops. Based on S800, they scale to be 12" CIP walls. Please clarify.
Answer: The intent is for stoop walls to be 8".

33) Question: On Sheet S200, along column line EK there is a note about existing. Is this existing or is this new? If new, please clarify top of wall and what the top of footing is at. Please also clarify what reinforcement is required here.
Answer: Wall along Grid EK should be existing. S201 captures this correctly.

34) Question: Please confirm if all concrete along column line E13.5 is new or existing. It appears that all the markings are Existing and no work is required here.
Answer: The wall along Grid E13.5 is existing. There is a new footing and foundation wall called out on the East side of existing.

35) Question: Along Column line 1 on Sheet S200, there are no cut-sections between Column Line EH and EK. Please clarify what type of wall is here and what reinforcement is required.

Answer: Concrete foundation wall below grade.

36) Question: Along Column line EK between E13.5 and 1, there is no section detail here. Please confirm wall thickness and reinforcement.
Answer: Detail 1/S800 will be cut here. TW = 100'-0".

37) Question: Sheet S002 has a W90 Cont. Footing. With (7) bars @ 12" OC T&B. Please clarify if 7 bars are required or bars should be 12" OC and what size bars.
Answer: Bars are #7 @ 12" OC each way top and bottom. Detail is correct in 4/S802. Scheduled updated.

38) Question: Stoop footing are called out to be a W24. If we reference the cut-section (2/S800) it calls for two different types of reinforcement. Please clarify what is required here.
Answer: Detail calls for 20" wide stoop footing, schedule is calling for 2'-4" wide.

39) Question: Please clarify what elevation top of slab is to be poured at.
Answer: Top of slabs should match architectural 100'-0".

40) Question: Sheet A101 calls for added blocking in wall for owner provided wall-mounted bike rack. Please clarify how much blocking is required here.
Answer: This is to be coordinated with the owner based on the bike rack that they furnish. Assume blocking at 24" and 48" heights.

41) Question: Please identify where opening 105D-4 is on sheet A101?
Answer: The tag is added as part of Addendum #3.

42) Question: Detail 1/A800 calls for a TA-01 item. What is TA-01?
Answer: The TA-01 tag will be revised as part of Addendum #3.

43) Question: Spec. Section 10 28 00 calls for Needle Disposal Cabinets to be owner furnished contractor installed. Please identify where these are and how many we are to install.
Answer: Needle disposal cabinet is located as part of Addendum #3.

44) Question: Spec. Section 10 28 00 calls for wall mounted liquid soap dispensers and paper towel dispensers. These are not called out in the drawings. Please clarify.
Answer: Section 10 28 00 does not call for liquid soap dispensers or paper towel dispensers. Soap dispensers and hand dryers are mounted to the sinks.

45) Question: DP-1 calls for an Acrovyn product. What pattern is required here.
Answer: Color and finish for DP-1 are called out on the Finish Schedule on sheet A700. DP-1 dimensions are called out on Detail 5/A801.

46) Question: Detail 12/A800 has a TA-04 and Ta-03 pointing to nothing. Please clarify.
Answer: Details removed.

47) Question: Please clarify how LDs are calculated.
Answer: Please reference response included in Addendum 2 related to Liquidated Damages.

48) Question: Specification section 08 31 13 – Access Doors currently does not list a basis of design; can you please provide?
Answer:

49) Question: Is it true that the City wants automatic door stickers to be custom and not show any branding?
Answer: Yes.

50) Question: Related to the scoreboard: there are 2-total video displays: specs show LVN-5.9 and

LVN-3.9 confirm what is to be provided.
Answer: 2 LVN-3.9's. Update the note on E201 to call for (2) LVN-3.9s and add the matrix sizes as part of Addendum #3.

51) Question: Related to the scoreboard: there was no matrix size specified. Please confirm.
Answer: LVN-2010-3.9MN- 512 X 896 is Matrix size for the smaller video board and LVN-2010-3.9MN- 512 X 1152 is Matrix size for the larger main board

52) Question: Related to the scoreboard: The specs call out for 1-BB-2107. Should 2-BB-2107 be provided?
Answer: 1 BB-2107 attached to the smaller video board to be provided.

53) Question: On E200, note 2; Is the note locking the EC in only using 3 current carrying conductors in a conduit or stating that all calculations are based on that, and proper adjustments based on the NEC would need to be made?
Answer: Note 2 on E200 is stating all of our calculations are based on 3 current carrying conductors. Proper derating adjustments based on the NEC are acceptable if they wish to have more than 3 current carrying conductors in a single conduit.

54) Question: For the fire alarm shut down and switch over. Will we be able to schedule time for certain rooms in the building to be closed off for multiple days at a time if necessary?
Answer: NFPA 25 – 15.5.2 does allow for a portion of the building to be evacuated that is affected by the system being out of service. Typically, we see this done as a fire watch but we would recommend to have this coordinated with the impairment coordinator and the AHJ.

55) Question: 1.The sink in Comfort room 105B is tagged on the plumbing drawings as a L-1 (wall hung 2 person lavatory). Should this be a single compartment drop in sink? If a single compartment sink, please provide a specification. See drawing P203.
Answer: The lavatory in Comfort Room 105B should be called out as L-2. This has been updated as part of Addendum #3.

56) Question: The lavatory in Locker Room 111A is tagged as a L-2 (wall hung single person lavatory). Should this be a L-1 or possibly an integral single bowl lavatory? Appears to be integral solid surface in on architectural drawings. See partial enlarged floor plan 2/P301 and detail 4/A800. Will need specifications for faucet and trim if other than L-1 or L-2.
Answer: The lavatory in Locker Room 111A is called out correctly. See Detail 2/A800 for information on the lavatory and counter layout.

57) Question: On the Warner Park Expansion project, we would like some clarification. is the Heat exchanger and the piping from boiler to the new mechanical room supposed to be included in the base bid. On M501 the heat exchanger and the piping are boxed into the Refer to 1/M502 for Add Alternate. We are just trying to ask, is the heat exchanger and the (2) 4" HW Pipes coming from existing boilers to the heat exchanger supposed to also be included in the base bid?
Answer: The following shall be included in the Base Bid:
- All work shown on 1/M501 shall be included as part of the Base Bid.
- Heat exchanger (HX-1)
- 4" hot water supply and return water mains between HX-1 and the existing boiler plant.
- The sequence of operation as described on M602 shall be part of the base bid.
- Refer to Section 23 05 00, page 4, LL 1 through 8 for additional information.

Add Alternate #2 shall include the following items:
- Demolition of existing boiler (B-1)
- Demolition of the 2-way control valve serving existing boiler (B-2)
- Reconfiguration of the variable primary hot water system to primary / secondary as shown on 1/M502 and 2/M502
- Addition of pump P-18.
- Associated control sequence modifications as highlighted on 3/M502.

- This highlights the differences between the sequences of operation on M602 (Base Bid) and Add Alternate #2.
-

58) Question: On page 2 line 58 of section 23 21 26 it mentions "u-bend pipe separators". I cannot provide a price if these are required. No drilling contractors will work with these as they are very difficult to use. Can I get some clarification on if these are actually required?
Answer: The u bend separators were intended to be used when grouts weren't able to properly support the u bends. With the new thermally enhanced grouts, bracing the u bends shouldn't be an issue. U bend separators are not required.

ACCEPTABLE EQUIVALENTS

11 66 23

OTHER

None

Please acknowledge this addendum on page E1 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.

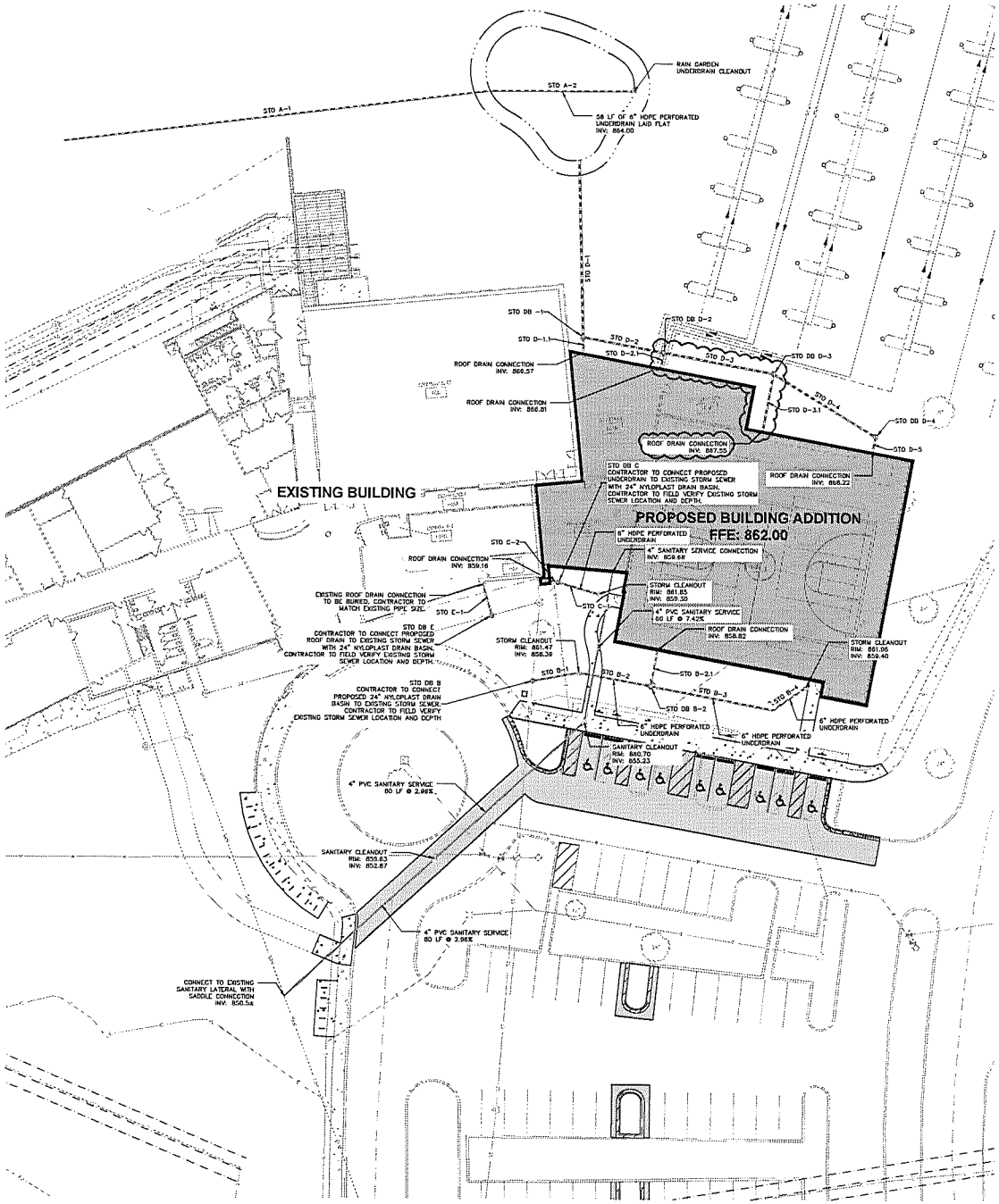
For questions regarding this bid, please contact:

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



PROPOSED STORM SEWER STRUCTURE TABLE

LABEL	RIM EL. (FT)	INVERT EL. (FT)	DEPTH (FT)	STRUCTURE DESC.	FRAME & GRATE
STO DB -1	868.95	W INV: 866.52 (10") S INV: 866.52 (8") E INV: 866.52 (8")	2.4	24 IN DB	ADS DRAIN WITH BEEHIVE GRATE
STO DB B	861.24	E INV: 858.20 (6")	3.0	24 IN DB	ADS DRAIN WITH BEEHIVE GRATE
STO DB B-2	861.31	W INV: 858.68 (6") E INV: 858.68 (6") N INV: 858.68 (8")	2.6	24 IN DB	ADS DRAIN WITH BEEHIVE GRATE
STO DB C	861.99	E INV: 859.13 (6") W INV: 859.13 (6")	2.9	24 IN DB	ADS DRAIN WITH BEEHIVE GRATE
STO DB D-2	869.23	W INV: 866.76 (8") E INV: 866.76 (8") S INV: 866.76 (6")	2.5	24 IN DB	ADS DRAIN WITH BEEHIVE GRATE
STO DB D-3	872.22	W INV: 867.42 (8") SE INV: 867.42 (8") S INV: 867.42 (6")	4.8	24 IN DB	ADS DRAIN WITH BEEHIVE GRATE
STO DB D-4	874.44	NW INV: 868.13 (8") S INV: 868.13 (8")	6.3	12 IN DB	ADS DRAIN WITH BEEHIVE GRATE
STO DB E	861.44	N INV: 858.70 (6")	2.7	24 IN DB	ADS DRAIN WITH BEEHIVE GRATE

PROPOSED STORM SEWER PIPE TABLE

LABEL	FROM	TO	LENGTH	INVERT EL. (FT)	DISCHARGE EL. (FT)	SLOPE	SIZE & MATERIAL
STO A-1	STO A-1	STO A	188'	864.00	862.00	1.19%	6 IN HDPE
STO A-2	STO A-2	STO A-1	56'	864.00	864.00	0.00%	6 IN HDPE
STO B-1	STO B-1	STO DB B	19'	858.39	858.20	1.00%	6 IN HDPE
STO B-2	STO DB B-2	STO B-1	29'	858.68	858.39	1.00%	6 IN HDPE
STO B-2.1	STO B-1.2	STO DB B-2	14'	858.82	858.68	1.00%	6 IN HDPE
STO B-3	STO B-3	STO DB B-2	49'	859.17	858.68	1.00%	6 IN HDPE
STO B-4	STO B-4	STO B-3	16'	859.40	859.17	1.50%	6 IN HDPE
STO C-1	STO C-1	STO DB C	17'	859.30	859.13	1.00%	6 IN HDPE
STO C-2	STO C-2	STO DB C	3'	859.16	859.13	1.00%	6 IN HDPE
STO D-1	STO DB -1	STO D	70'	866.52	866.00	0.75%	10 IN HDPE
STO D-1.1	STO D-1.1	STO DB -1	6'	866.57	866.52	0.75%	8 IN HDPE
STO D-2	STO DB D-2	STO DB -1	32'	866.76	866.52	0.75%	8 IN HDPE
STO D-2.1	STO D-2.1	STO DB D-2	6'	866.81	866.76	0.75%	8 IN HDPE
STO D-3	STO DB D-3	STO DB D-2	44'	867.42	866.76	1.50%	8 IN HDPE
STO D-3.1	STO D-3.1	STO DB D-3	23'	867.76	867.42	1.50%	8 IN HDPE
STO D-4	STO DB D-4	STO DB D-3	47'	868.13	867.42	1.50%	8 IN HDPE
STO D-5	STO D-5	STO DB D-4	6'	868.22	868.13	1.50%	8 IN HDPE
STO E-1	STO E-1	STO DB E	13'	858.93	858.70	2.00%	6 IN HDPE

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P: 608.848.5060

REVISED

WARNER PARK COMMUNITY RECREATION CENTER EXPANSION

1625 NORTHPORT DRIVE
MADISON, WI 53704

CITY OF MADISON PARKS DIVISION
CITY-COUNTY BUILDING, ROOM 104
210 MARTIN LUTHER KING JR. BLVD
MADISON, WI 53703

PROJECT NUMBER 223471.00

ISSUED FOR:

BID SET 05/16/2024

REVISION FOR:

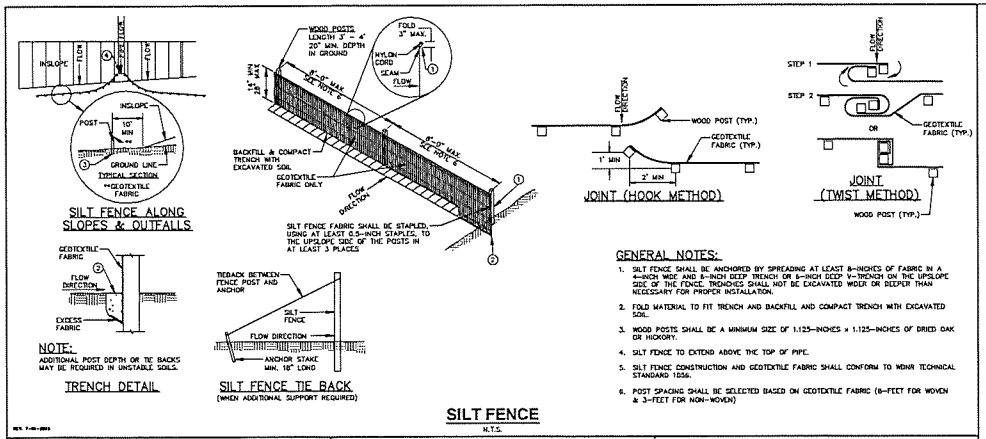
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2	ADDENDUM 3	6/18/2024

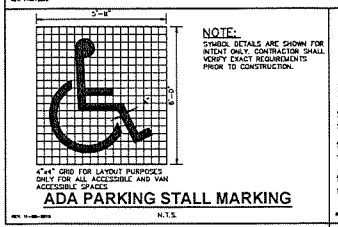
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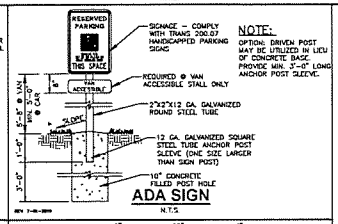
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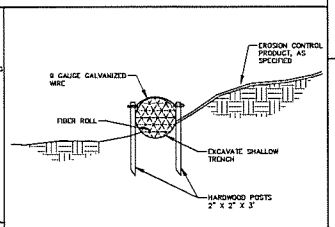
UTILITY PLAN

C500

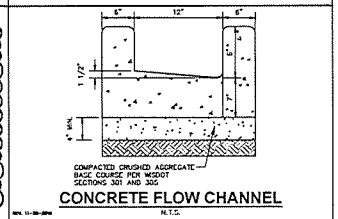


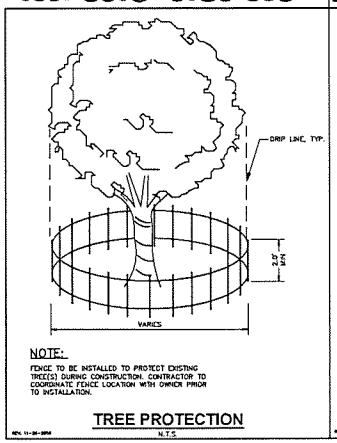


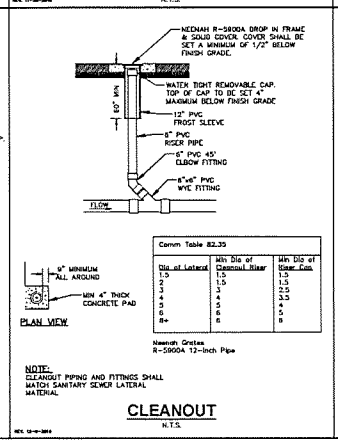


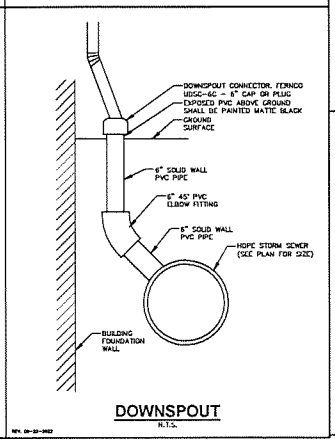


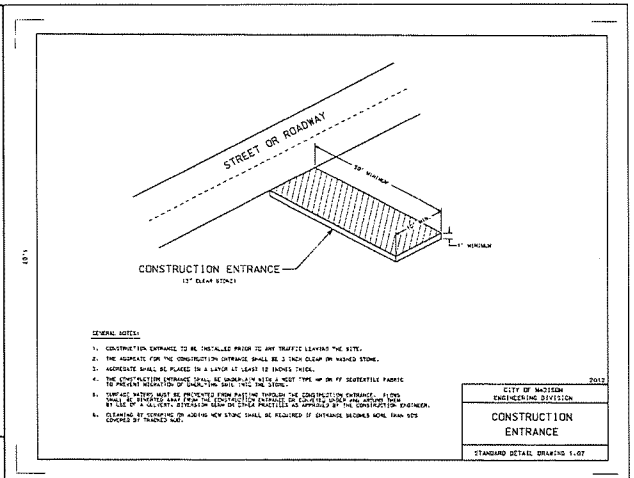
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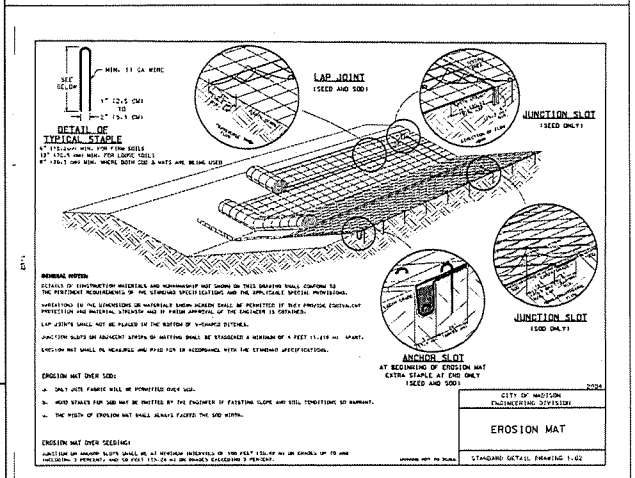


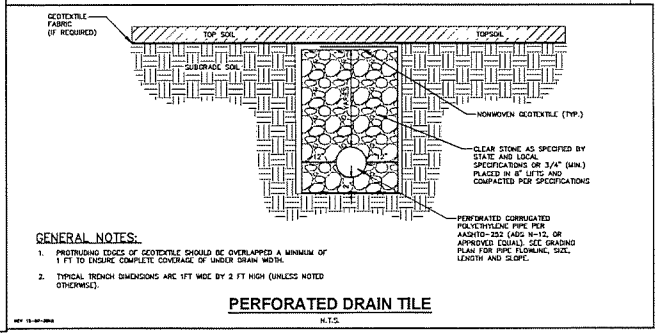












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WARNER PARK COMMUNITY RECREATION CENTER EXPANSION

1625 NORTHPORT DRIVE
MADISON, WI 53704

CITY OF MADISON PARKS DIVISION
CITY-COUNTY BUILDING, ROOM 104
210 MARTIN LUTHER KING JR. BLVD
MADISON, WI 53703

PROJECT NUMBER 223471.00

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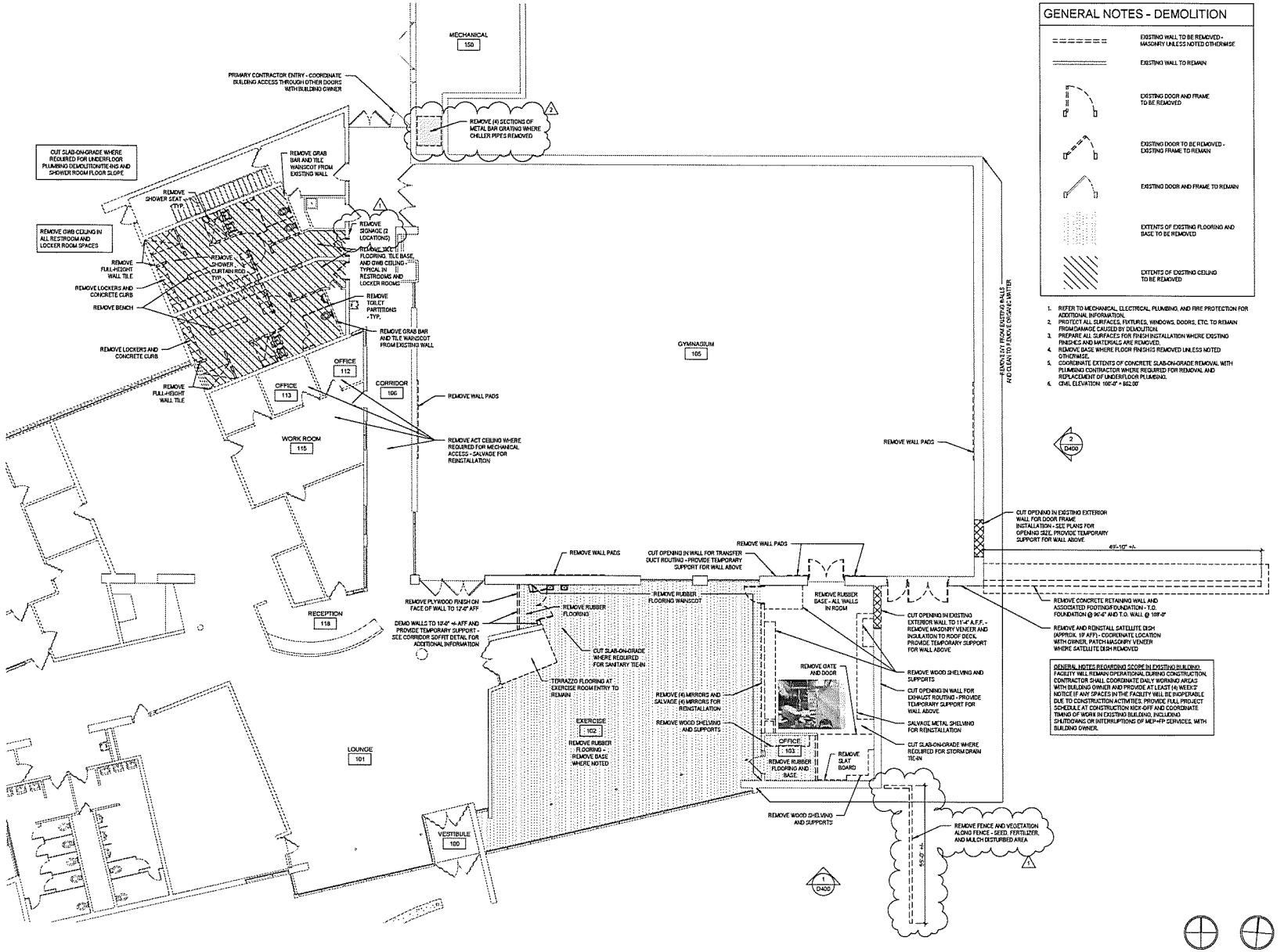
REVISION FOR:

NO.	DESCRIPTION	DATE
2	ADDENDUM 3	6/18/2024

DRAWN BY	CHO/MRA
CHECKED BY	KJY

DETAILS

C600



GENERAL NOTES - DEMOLITION

- EXISTING WALL TO BE REMOVED - MASONRY UNLESS NOTED OTHERWISE
- EXISTING WALL TO REMAIN
- EXISTING DOOR AND FRAME TO BE REMOVED
- EXISTING DOOR TO BE REMOVED - EXISTING FRAME TO REMAIN
- EXISTING DOOR AND FRAME TO REMAIN
- EXTENTS OF EXISTING FLOORING AND BASE TO BE REMOVED
- EXTENTS OF EXISTING CEILING TO BE REMOVED

1. REFER TO MECHANICAL, ELECTRICAL, PLUMBING, AND FIRE PROTECTION FOR ADDITIONAL INFORMATION.
2. PROTECT ALL SURFACES, FIXTURES, WINDOWS, DOORS, ETC. TO REMAIN FROM DAMAGE CAUSED BY DEMOLITION.
3. PREPARE ALL SURFACES FOR FINISH INSTALLATION WHERE EXISTING FINISHES AND MATERIALS ARE REMOVED.
4. REMOVE BASE WHERE FLOOR FINISHES REMOVED UNLESS NOTED OTHERWISE.
5. COORDINATE EXTENTS OF CONCRETE SLAB-ON-GRADE REMOVAL WITH PLUMBING CONTRACTOR WHERE REQUIRED FOR REMOVAL AND REPLACEMENT OF UNDERFLOOR PLUMBING.
6. CIVIL ELEVATION 100'-0" = 862.00'

GENERAL NOTES REGARDING SCOPE IN EXISTING BUILDING
FACILITY WILL REMAIN OPERATIONAL DURING CONSTRUCTION. CONTRACTOR SHALL COORDINATE DAILY WORKING AREAS WITH BUILDING OWNER AND PROVIDE AT LEAST 48 WEEKS' NOTICE IF ANY SPACES IN THE FACILITY WILL BE INOPERABLE DUE TO CONSTRUCTION ACTIVITIES. PROVIDE FULL PROJECT SCHEDULE AT CONSTRUCTION KICK-OFF AND COORDINATE TIMING OF WORK IN EXISTING BUILDING, INCLUDING SHUTDOWNS OR INTERRUPTIONS OF MEP+FP SERVICES, WITH BUILDING OWNER.

PLAN NORTH

TRUE NORTH

1 FIRST FLOOR PARTIAL DEMOLITION PLAN
SCALE: 1/8" = 1'-0"

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WARNER PARK COMMUNITY RECREATION CENTER EXPANSION

1625 NORTHPORT DRIVE
MADISON, WI 53704

CITY OF MADISON PARKS DIVISION
330 EAST LAKESIDE STREET
MADISON, WI 53715

PROJECT NUMBER 223471.00

ISSUED FOR:

BID SET	5/16/2024

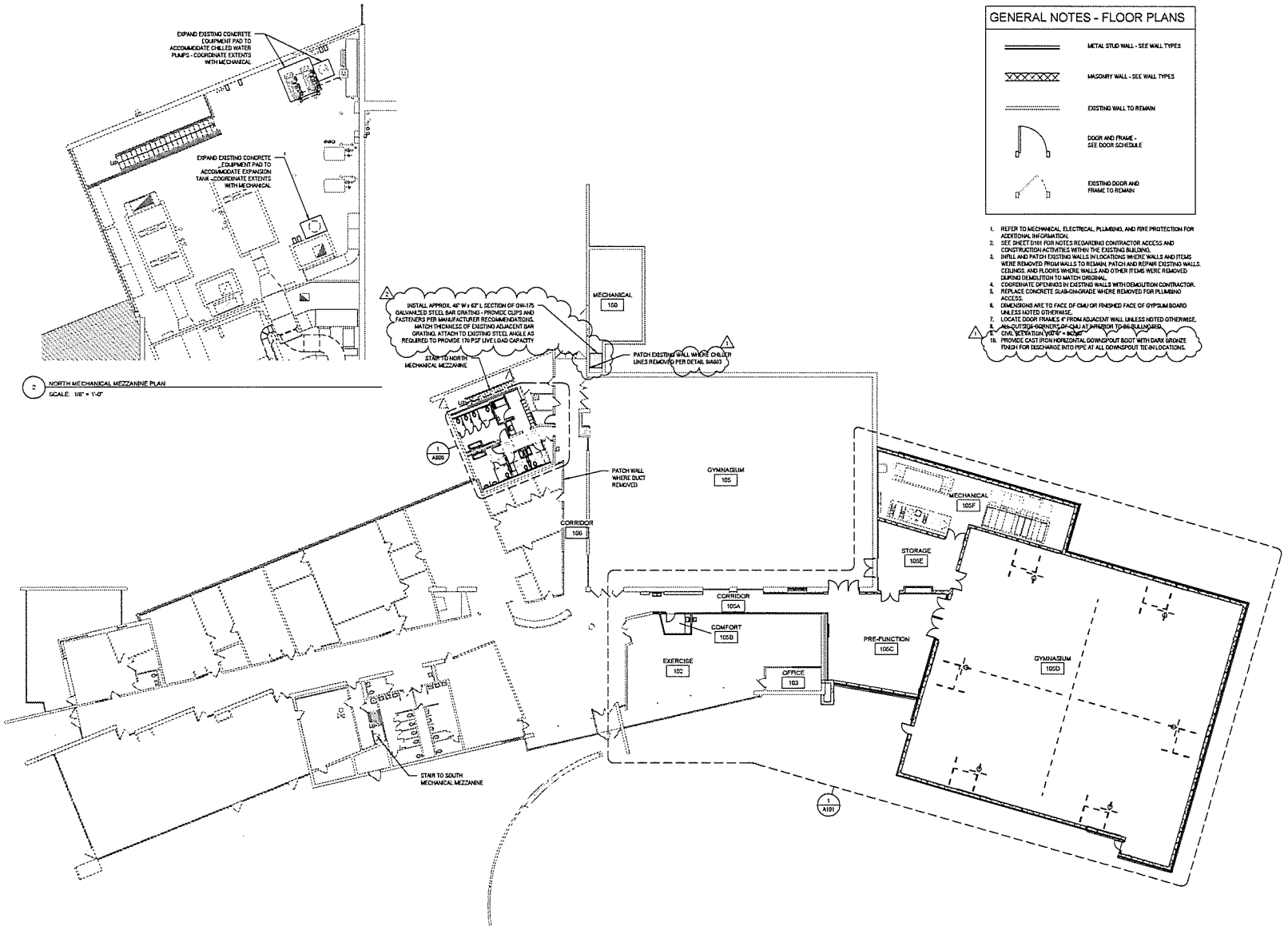
REVISION FOR:

NO.	DESCRIPTION	DATE
1	ADDENDUM #2	6/14/2024
2	ADDENDUM #3	6/18/2024

DRAWN BY	DKB
CHECKED BY	JWH

DEMOLITION PLAN

D101



1 NORTH MECHANICAL MEZZANINE PLAN
SCALE: 1/8" = 1'-0"

GENERAL NOTES - FLOOR PLANS

- METAL STUD WALL - SEE WALL TYPES
- MASONRY WALL - SEE WALL TYPES
- EXISTING WALL TO REMAIN
- DOOR AND FRAME - SEE DOOR SCHEDULE
- EXISTING DOOR AND FRAME TO REMAIN

1. REFER TO MECHANICAL, ELECTRICAL, PLUMBING, AND FIRE PROTECTION FOR ADDITIONAL INFORMATION.
2. SEE SHEET D101 FOR NOTES REGARDING CONTRACTOR ACCESS AND CONSTRUCTION ACTIVITIES WITHIN THE EXISTING BUILDING.
3. INFILL AND PATCH EXISTING WALLS IN LOCATIONS WHERE WALLS AND ITEMS WERE REMOVED FROM WALLS TO REMAIN. PATCH AND REPAIR EXISTING WALLS, CEILINGS, AND FLOORS WHERE WALLS AND OTHER ITEMS WERE REMOVED DURING DEMOLITION TO MATCH ORIGINAL.
4. COORDINATE OPENINGS IN EXISTING WALLS WITH DEMOLITION CONTRACTOR.
5. REPLACE CONCRETE SLAB-ON-GRADE WHERE REMOVED FOR PLUMBING ACCESS.
6. DIMENSIONS ARE TO FACE OF CMU OR FINISHED FACE OF GYPSUM BOARD UNLESS NOTED OTHERWISE.
7. LOCATE DOOR FRAMES 4" FROM ADJACENT WALL UNLESS NOTED OTHERWISE.
8. AN OUTSIDE CORNERS OF CMU ALL APPROX. TO BE ROUNDED.
9. CIVIL ELEVATION 100'-0" = [illegible]
10. PROVIDE CAST IRON HORIZONTAL DOWNSPOUT BOOT WITH DARK BRONZE FINISH FOR DISCHARGE INTO PIPE AT ALL DOWNSPOUT TIE-IN LOCATIONS.

1 OVERALL FIRST FLOOR PLAN
SCALE: 1/16" = 1'-0"

PLAN NORTH

TRUE NORTH

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Revisions

WARNER PARK
COMMUNITY RECREATION
CENTER EXPANSION

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MADISON, WI 53704

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330 EAST LAKESIDE STREET
MADISON, WI 53715

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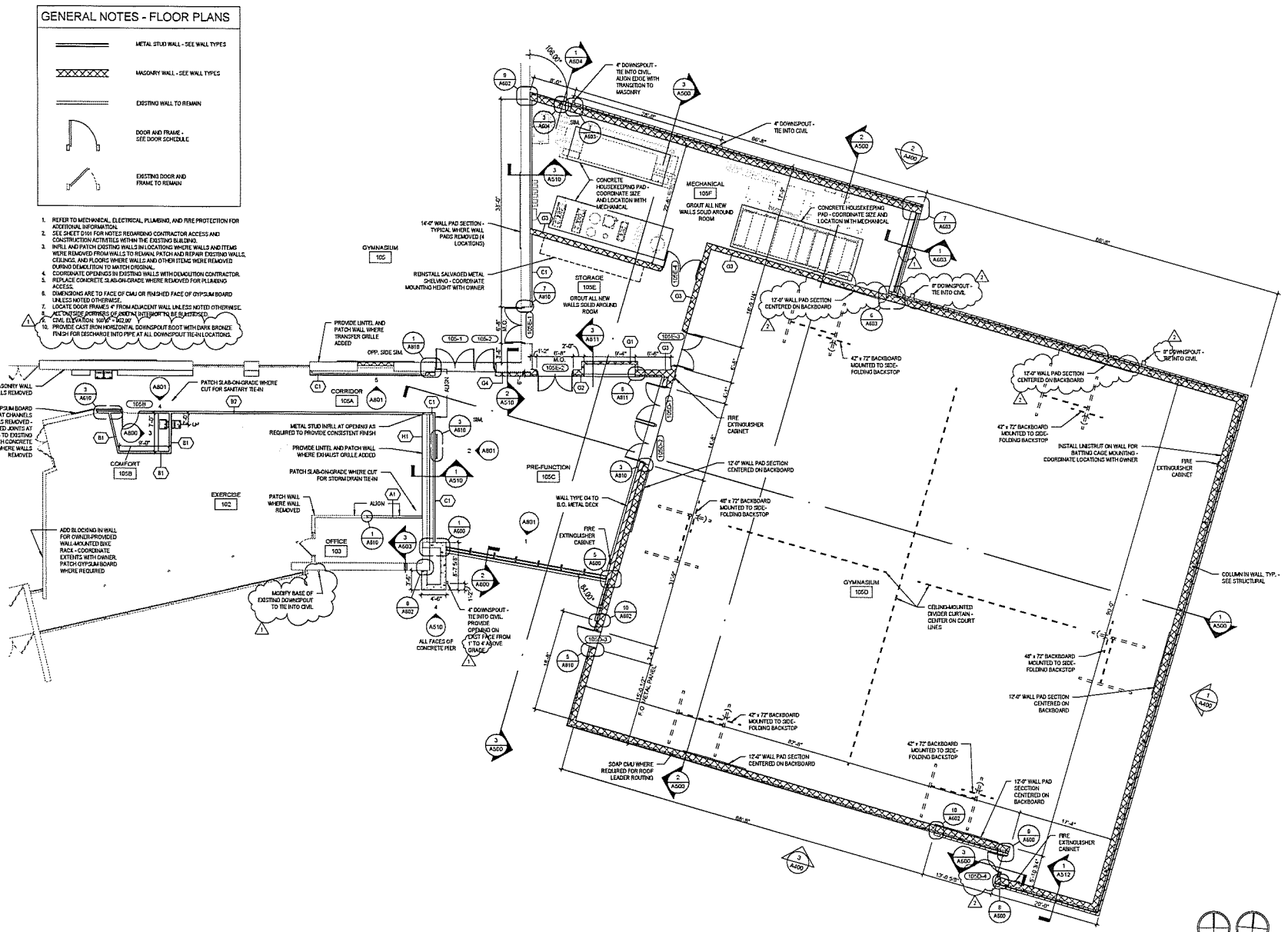
NO.	DESCRIPTION	DATE
1	ADDENDUM #2	6/14/2024
2	ADDENDUM #3	6/18/2024

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CHECKED BY JWH

OVERALL FLOOR PLAN

A100



1 ENLARGED PLAN - EXPANSION
SCALE: 1/8" = 1'-0"

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WARNER PARK COMMUNITY RECREATION CENTER EXPANSION

1625 NORTHPORT DRIVE
MADISON, WI 53704

CITY OF MADISON PARKS DIVISION
330 EAST LAKESIDE STREET
MADISON, WI 53715

PROJECT NUMBER 223471.00

ISSUED FOR:

BID SET 5/16/2024

REVISION FOR:

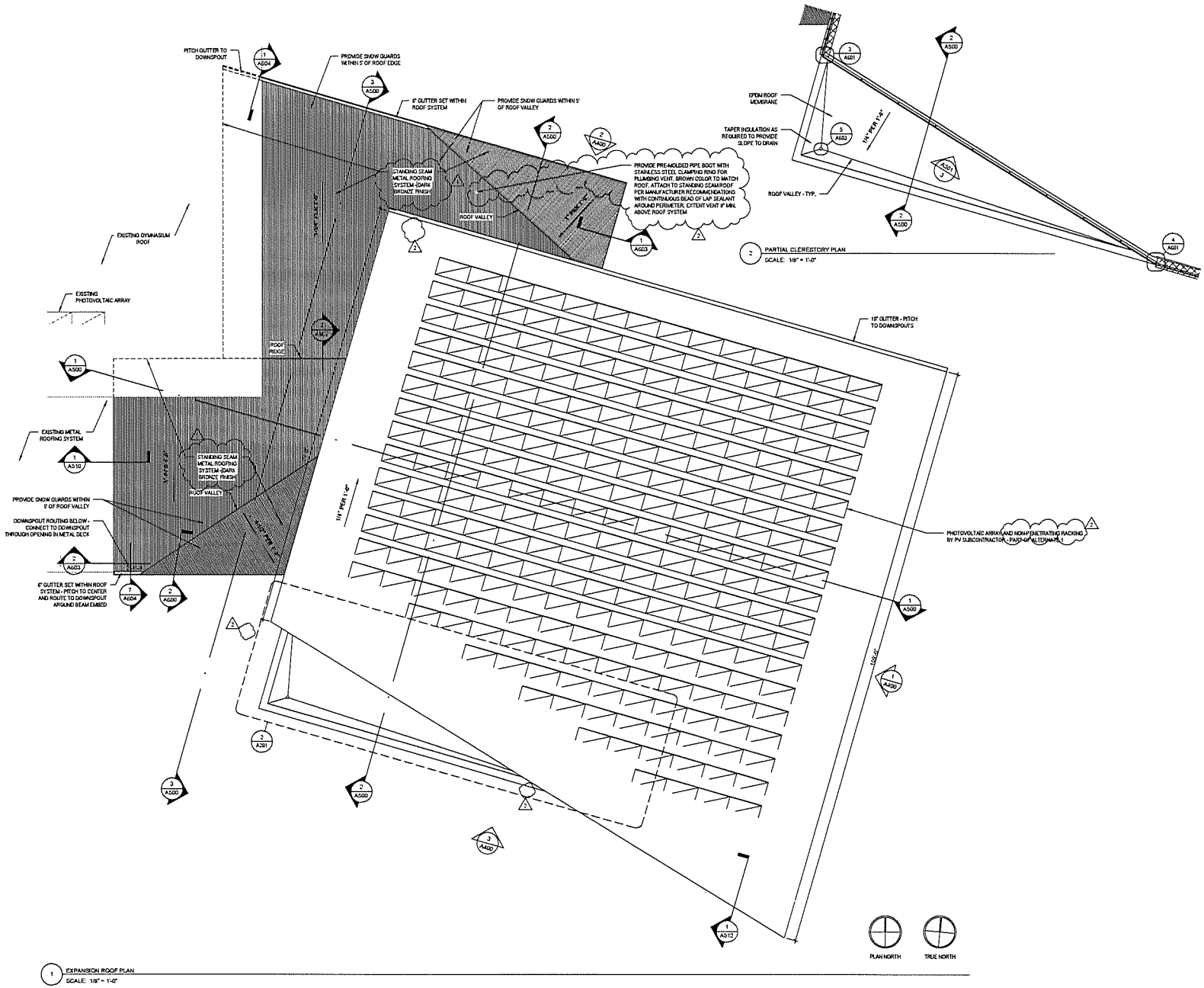
NO.	DESCRIPTION	DATE
1	ADDENDUM #2	6/14/2024
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DRAWN BY DKB

CHECKED BY JWH

EXPANSION FLOOR PLAN

A101



1 EXPANSION ROOF PLAN
SCALE: 1/8" = 1'-0"

2 PARTIAL CLERESTORY PLAN
SCALE: 1/8" = 1'-0"

Engberg Anderson ARCHITECTS

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REVISED

WARNER PARK
COMMUNITY RECREATION
CENTER EXPANSION

1625 NORTHPORT DRIVE
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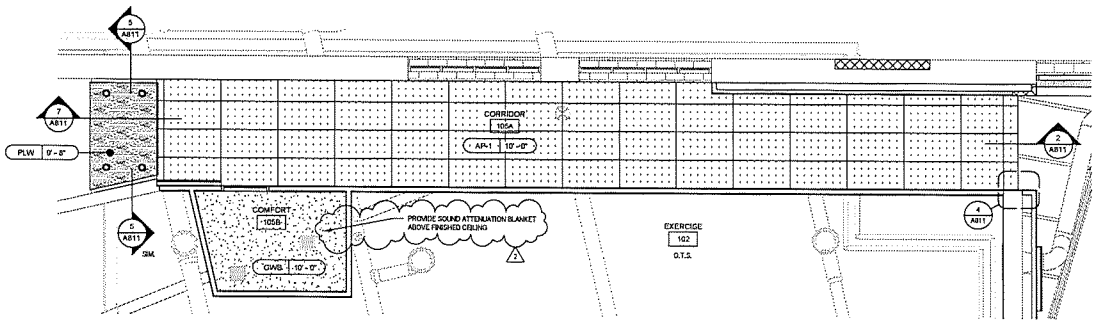
NO.	DESCRIPTION	DATE
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DRAWN BY DKB

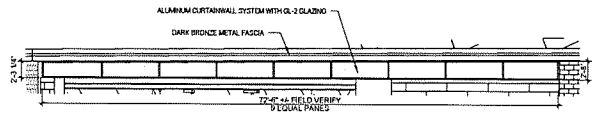
CHECKED BY JWH

EXPANSION ROOF PLAN

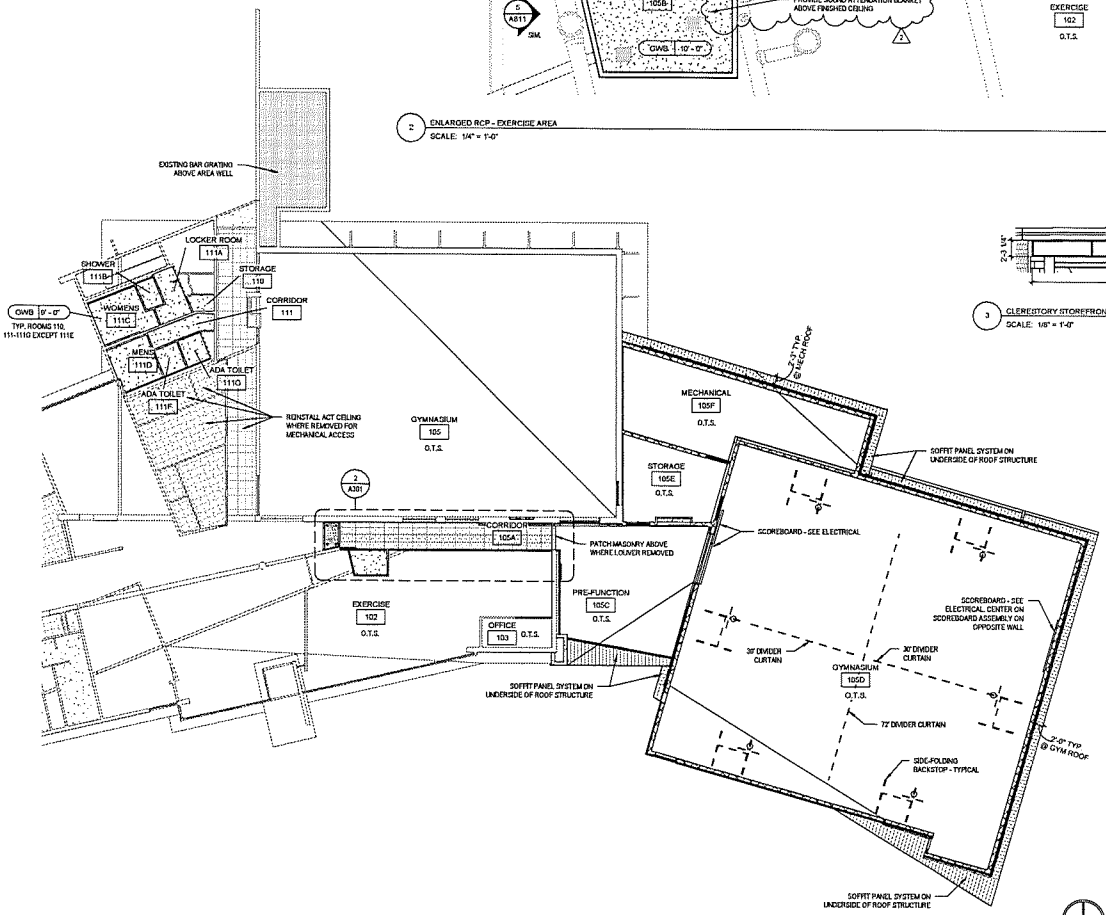
A201



2 ENLARGED RCP - EXERCISE AREA
SCALE: 1/4" = 1'-0"



3 CLERESTORY STOREFRONT ELEVATION
SCALE: 1/8" = 1'-0"



1 EXPANSION REFLECTED CEILING PLAN
SCALE: 1/16" = 1'-0"

GENERAL NOTES - REFLECTED CEILING PLANS

GYPSUM BOARD CEILING

METAL PANEL CEILING SYSTEM

PLYWOOD CEILING

1. REFER TO MECHANICAL, ELECTRICAL, PLUMBING, AND FIRE PROTECTION FOR ADDITIONAL INFORMATION.
2. PATCH AND REPAIR ANY EXISTING WALLS WHERE CEILINGS, BULKHEADS, AND OTHER ITEMS WERE REMOVED DURING DEMOLITION TO MATCH ORIGINAL.
3. ALL CEILING PATTERNS TO REMAIN AS PRESS NOTED ON RCP.
4. MOUNT B.O. SCOREBOARDS AT 12'-6" AFF.
5. PATCH EXISTING EXPOSED PLYWOOD STRUCTURE IN EXERCISE 102 AND OFFICE 103 WHERE LIGHT FIXTURES AND OTHER ITEMS REMOVED.

Engberg Anderson ARCHITECTS
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Revisions

WARNER PARK COMMUNITY RECREATION CENTER EXPANSION

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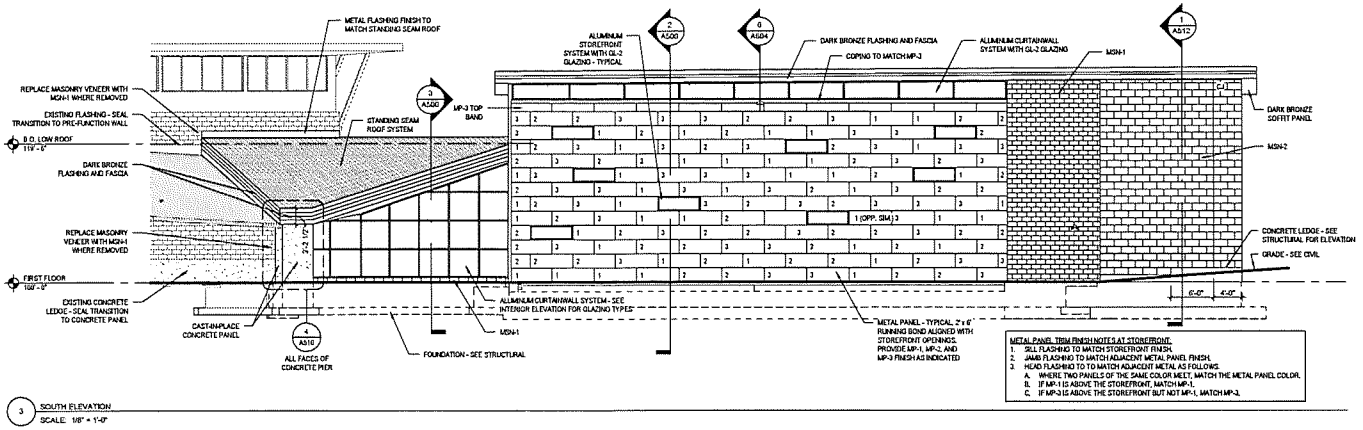
NO.	DESCRIPTION	DATE
2	ADDENDUM #3	6/18/2024

DRAWN BY DKB

CHECKED BY JWH

EXPANSION REFLECTED CEILING PLAN

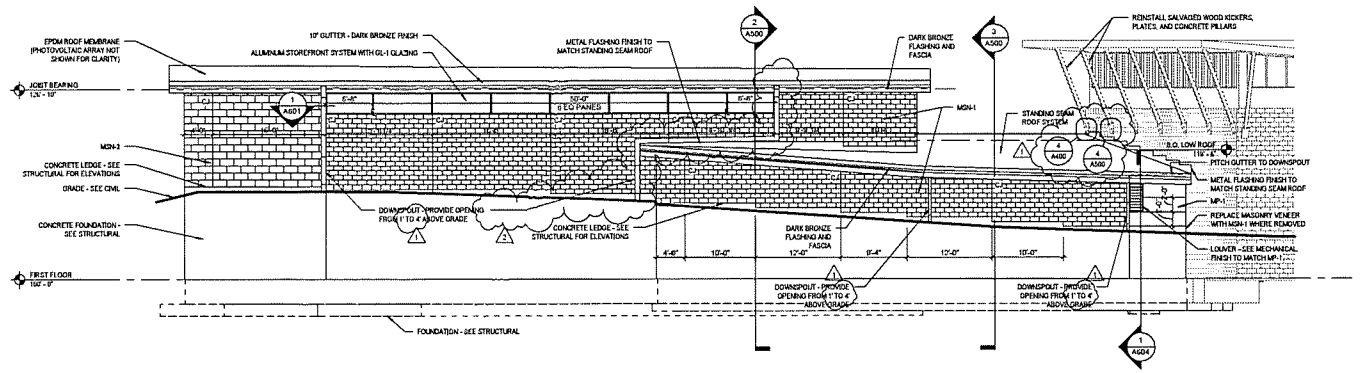
A301



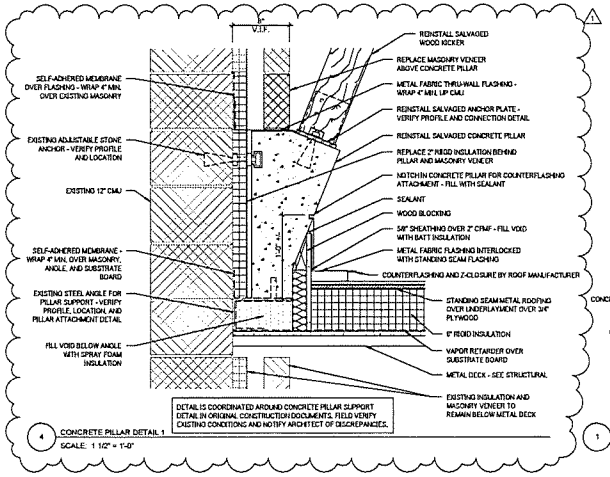
3 SOUTH ELEVATION
SCALE: 1/8" = 1'-0"

EXTERIOR FINISH LEGEND

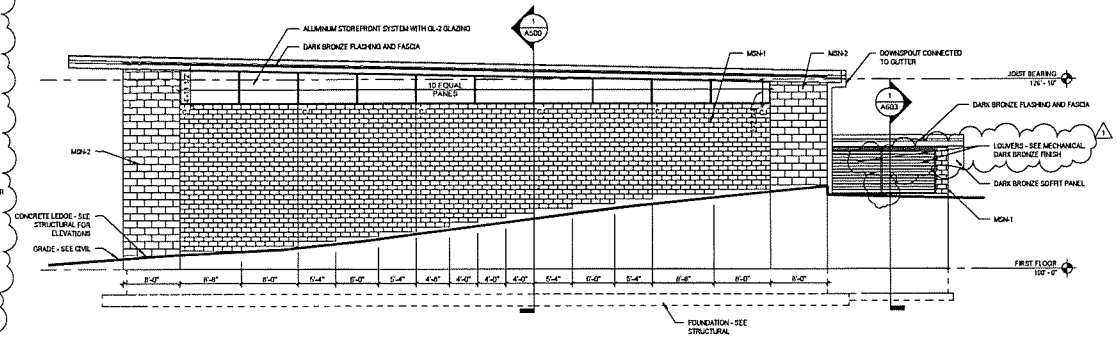
MSN-1	COUNTY MATERIALS DECORATIVE CONCRETE MASONRY COLOR: 18-1210 BISQUE (MATCHED TO EXISTING) TEXTURE: SPLITFACE 8" x 16" RUNNING BOND PATTERN
MSN-2	ARRISCRAFT THIN-CLAD RENAISSANCE UNITS COLOR: OAK RIDGE TEXTURE: SMOOTH 12" x 24" RUNNING BOND PATTERN
MP-1	DRI-DESIGN ENV METAL PANEL SYSTEM COLOR: ENV 008 CITYSCAPE 24" x 72" RUNNING BOND PATTERN
MP-2	DRI-DESIGN ENV METAL PANEL SYSTEM COLOR: DRI-065 SIERRA TAN 24" x 72" RUNNING BOND PATTERN
MP-3	DRI-DESIGN ENV METAL PANEL SYSTEM COLOR: ENV 009 SLATE GRAY 24" x 72" RUNNING BOND PATTERN



2 NORTH ELEVATION
SCALE: 1/8" = 1'-0"



4 CONCRETE PILLAR DETAIL 1
SCALE: 1 1/2" = 1'-0"



1 EAST ELEVATION
SCALE: 1/8" = 1'-0"

Engberg Anderson ARCHITECTS
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12 Ew Stew

WARNER PARK COMMUNITY RECREATION CENTER EXPANSION

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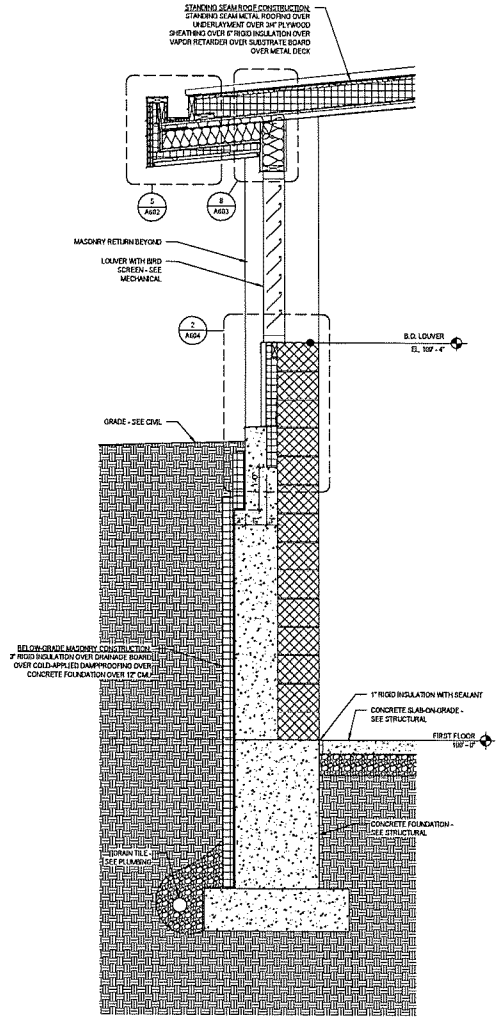
NO.	DESCRIPTION	DATE
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DRAWN BY DKB

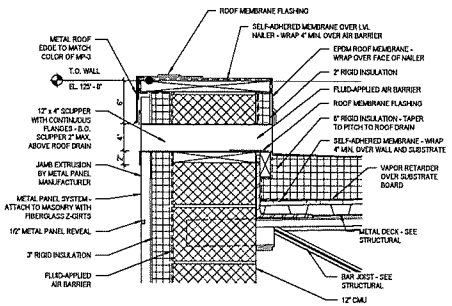
CHECKED BY JWH

EXTERIOR ELEVATIONS

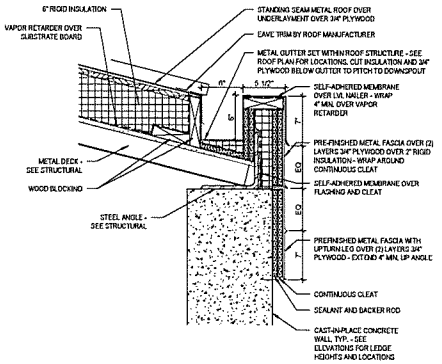
A400



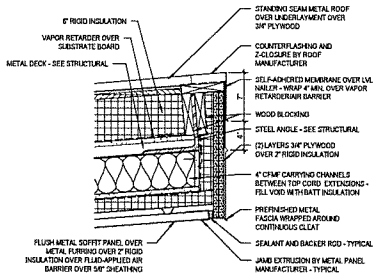
1 NORTH WALL LOUVER SECTION
SCALE: 3/4" = 1'-0"



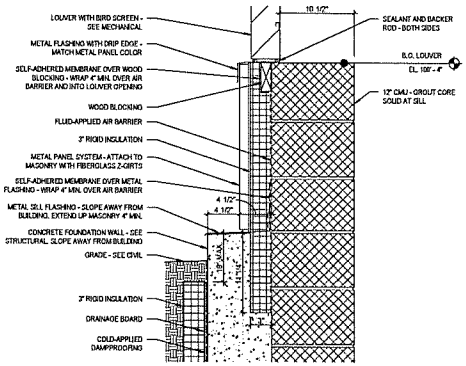
6 SCUPPER DETAIL
SCALE: 1 1/2" = 1'-0"



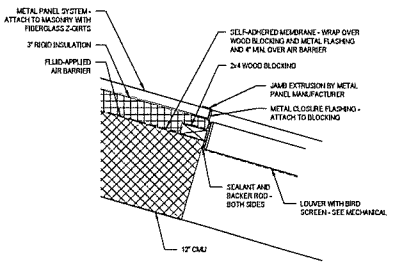
7 ROOF EDGE @ CONCRETE
SCALE: 1 1/2" = 1'-0"



4 ROOF EDGE @ MECHANICAL
SCALE: 1 1/2" = 1'-0"



2 METAL PANEL @ GRADE
SCALE: 1 1/2" = 1'-0"



3 LOUVER JAMB @ METAL PANEL
SCALE: 1 1/2" = 1'-0"

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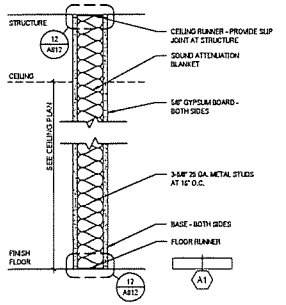
REVISION FOR:

NO.	DESCRIPTION	DATE
2	ADDENDUM #3	6/18/2024

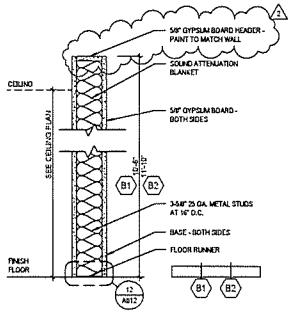
DRAWN BY	DKB
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EXTERIOR DETAILS

A604

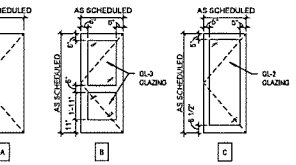


WALL TYPE A - NON RATED

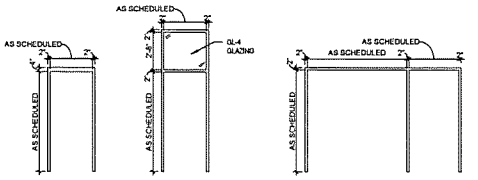


WALL TYPE B - NON RATED

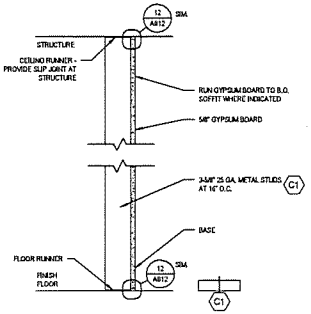
DOOR AND FRAME SCHEDULE																
	DOOR						FRAME			DETAIL						
NUMBER	TYPE	MATL	FINISH		WIDTH	HEIGHT	TYPE	MATL	FINISH	THRESH	JAMB	HEAD	LABEL	HARDWARE	REMARKS	NUMBER
105-1	B	WD	STAINED	(2)	7'-0"	7'-10"	C	HM	PAINTED	7/A612 SIM.	1/A610	2/A610		1		105-1
105-2	B	WD	STAINED		3'-0"	7'-10"	C	HM	PAINTED	7/A612 SIM.	1/A610	2/A610		2		105-2
105D	A	WD	STAINED		3'-0"	7'-0"	B	HM	PAINTED	-	3/A610	5/A610		3		105B
105D-1	B	WD	STAINED	(2)	7'-0"	7'-10"	SEE SECT	HM	PAINTED	8/A612	3/A610	4/A610		5		105D-1
105D-2	B	WD	STAINED	(2)	7'-0"	7'-10"	SEE SECT	HM	PAINTED	8/A612	3/A610	4/A610		4		105D-2
105D-3	A	INSUL. HM	PAINTED		3'-0"	7'-8"	A	INSUL. HM	PAINTED	2/A610	5/A610	6/A610		6		105D-3
105D-4	C	ALUM	DK. BRZ		7'-0"	7'-10"	SEE SECT	ALUM	DK. BRZ	2/A610	6 & 7/A600			7	PART OF STOREFRONT SYSTEM	105D-4
105E-1	A	WD	STAINED	(2)	3'-0"	7'-8"	A	HM	PAINTED	2/A610 SIM.	7/A610	8/A610		9	STC-47 DOOR ASSEMBLY	105E-1
105E-2	A	WD	STAINED	(2)	3'-0"	7'-8"	A	HM	PAINTED	7/A612	4/A610	4/A610		9	STC-47 DOOR ASSEMBLY	105E-2
105E-3	A	WD	STAINED	(2)	3'-0"	7'-8"	A	HM	PAINTED	2/A612	4/A610	4/A610		9	STC-47 DOOR ASSEMBLY	105E-3
105E-4	A	HM	PAINTED	(2)	3'-0"	7'-8"	A	HM	PAINTED	-	4/A610	4/A610		8	STC-47 DOOR ASSEMBLY	105E-4
110	A	WD	STAINED		3'-0"	7'-0"	EXIST	HM	PAINTED	4/A612				10	INSTALL DOOR ON EXISTING FRAME	110
111A	A	-	-		3'-0"	7'-0"	-	HM	PAINTED	-	-	6/A610	4/A610		FRAME ONLY	111A
111B	A	WD	STAINED		3'-0"	7'-0"	A	HM	PAINTED	3/A612	4/A610	4/A610		3		111B
111C	A	WD	STAINED		3'-0"	7'-0"	A	HM	PAINTED	3/A612	6/A610	4/A610		11		111C
111D	A	WD	STAINED		3'-0"	7'-0"	A	HM	PAINTED	3/A612	4/A610	4/A610		11		111D
111F	A	WD	STAINED		3'-0"	7'-0"	A	HM	PAINTED	3/A612	4/A610	4/A610		3		111F
111G	A	WD	STAINED		3'-0"	7'-0"	A	HM	PAINTED	3/A612	4 & 6/A610	4/A610		3		111G



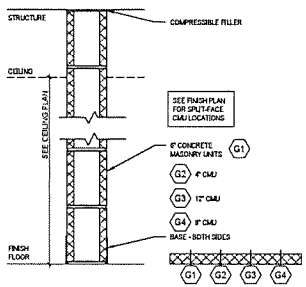
DOOR TYPES



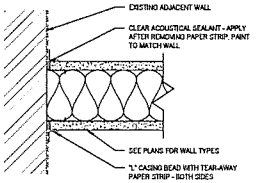
FRAME TYPES



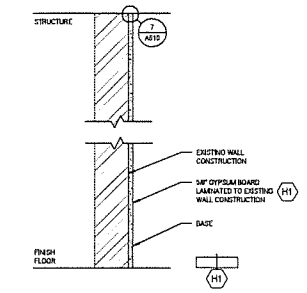
WALL TYPE C - NON RATED



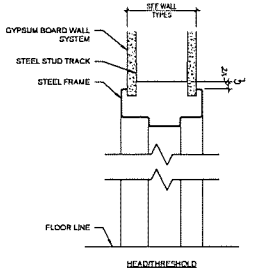
WALL TYPE G - NON RATED



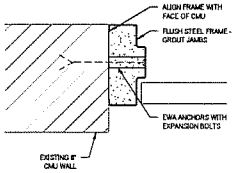
7 DISSIMILAR MATERIAL TRANSITION
SCALE: 3" = 1'-0"



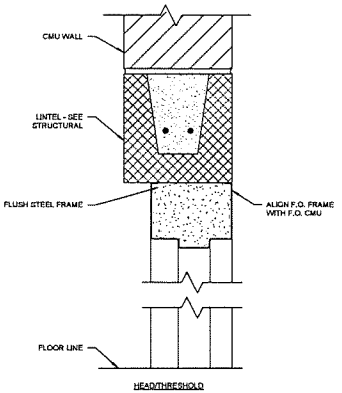
WALL TYPE H - NON RATED

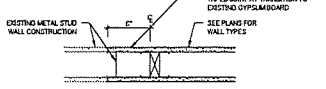


5 HM HEAD @ METAL STUDS
SCALE: 3" = 1'-0"

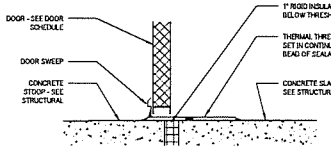


6 HM JAMB @ EXISTING CMU
SCALE: 3" = 1'-0"

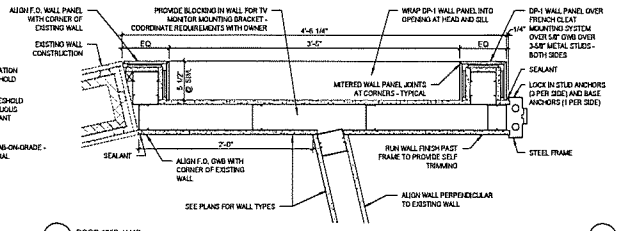




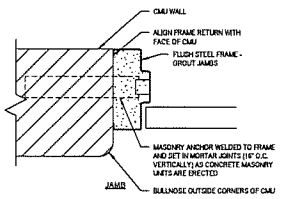
1 OFFICE WALL TRANSITION
SCALE: 1 1/2" = 1'-0"



2 EXTERIOR DOOR THRESHOLD
SCALE: 3" = 1'-0"



3 DOOR 105B JAMB
SCALE: 1 1/2" = 1'-0"



4 HM FRAME @ CMU
SCALE: 3" = 1'-0"

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WARNER PARK COMMUNITY RECREATION CENTER EXPANSION

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DRAWN BY DKB
CHECKED BY JWH

DOOR SCHEDULE & WALL TYPES

A610

FINISH SCHEDULE

RM.#	ROOM NAME	FLOORS: FINISH	BASE: FINISH	WALL FINISH: NORTH FINISH	WALL FINISH: EAST FINISH	WALL FINISH: SOUTH FINISH	WALL FINISH: WEST FINISH	CEILING: FINISH	REMARKS
102	EXERCISE	RF-1/RF-2	RF-1/RF-2	PT-1/PT-2	PT-2	EXPT-7	PT-3	OTS/EX	PAINT EXPOSED STRUCTURE AND UTILITIES TO MATCH EXISTING
103	OFFICE	RF-2	RB-1	PT-1	PT-1	PT-1	PT-1	OTS/EX	PAINT EXPOSED STRUCTURE AND UTILITIES TO MATCH EXISTING
105A	CORRIDOR	EXCPT-3/CPT-4	SEE PLAN	EXPT-4/DP-1	NA	PT-4/DP-1	NA	PLWAN-1	
105B	COMFORT	CPT-2	RB-1	PT-1	PT-6	PT-1	PT-1	GWBPT-10	
105C	PRE-FUNCTION	TZ-1/TZ-2/TZ-3	SEE PLAN	SEE PLAN	SEE PLAN	SEE PLAN	DP-1/PT-2/PT-6	OTS/PT-11	
105D	GYMNASIUM	RSF-1/RSF-2	RB-1	CMU-1	CMU-1	CMU-1	CMU-1	OTS/PT-11	PAINT HEADWALLS ABOVE STOREFRONT TO MATCH METAL DECK
105E	STORAGE	SC-1	RB-1	PT-1	PT-1	PT-1	PT-1	OTS	
105F	MECHANICAL	SC-1	RB-1	PT-1	PT-1	PT-1	PT-1	OTS	
110	STORAGE	CPT-3	RB-1	PT-1	PT-1	PT-1	PT-1	GWBPT-9	
111	CORRIDOR	CPT-1/CPT-2	RB-1	PT-2	PT-1	PT-3	PT-3	GWBPT-10	
111A	LOCKER ROOM	CPT-1/CPT-2	RB-1	PT-3/PT-1	PT-3/PT-1	PT-1	PT-1/PT-3/CT-4	GWBPT-9	SEE ELEVATIONS
111B	SHOWER	CT-2	CTB-1	SS-1	SS-1/PT-1	PT-1	SS-1/PT-1	GWBPT-9	SEE ELEVATIONS
111C	WOMENS	CT-1	CTB-1	CT-3	PT-1	CT-3/CT-4	CT-3	GWBPT-9	SEE ELEVATIONS
111D	MENS	CT-1	CTB-1	CT-3/CT-4	PT-1	CT-3	CT-3	GWBPT-9	SEE ELEVATIONS
111F	ADA TOILET	CT-1	CTB-1	PT-1	CT-3/CT-4	CT-3	PT-1	GWBPT-9	SEE ELEVATIONS
111G	ADA TOILET	CT-1	CTB-1	PT-1	PT-1	CT-3	CT-3/CT-4	GWBPT-9	SEE ELEVATIONS

GENERAL NOTES - FINISHES

- CPT-3 FLOOR FINISH
- CPT-4 FLOOR FINISH
- TZ-1 FLOOR FINISH
- TZ-2 FLOOR FINISH
- TZ-3 FLOOR FINISH

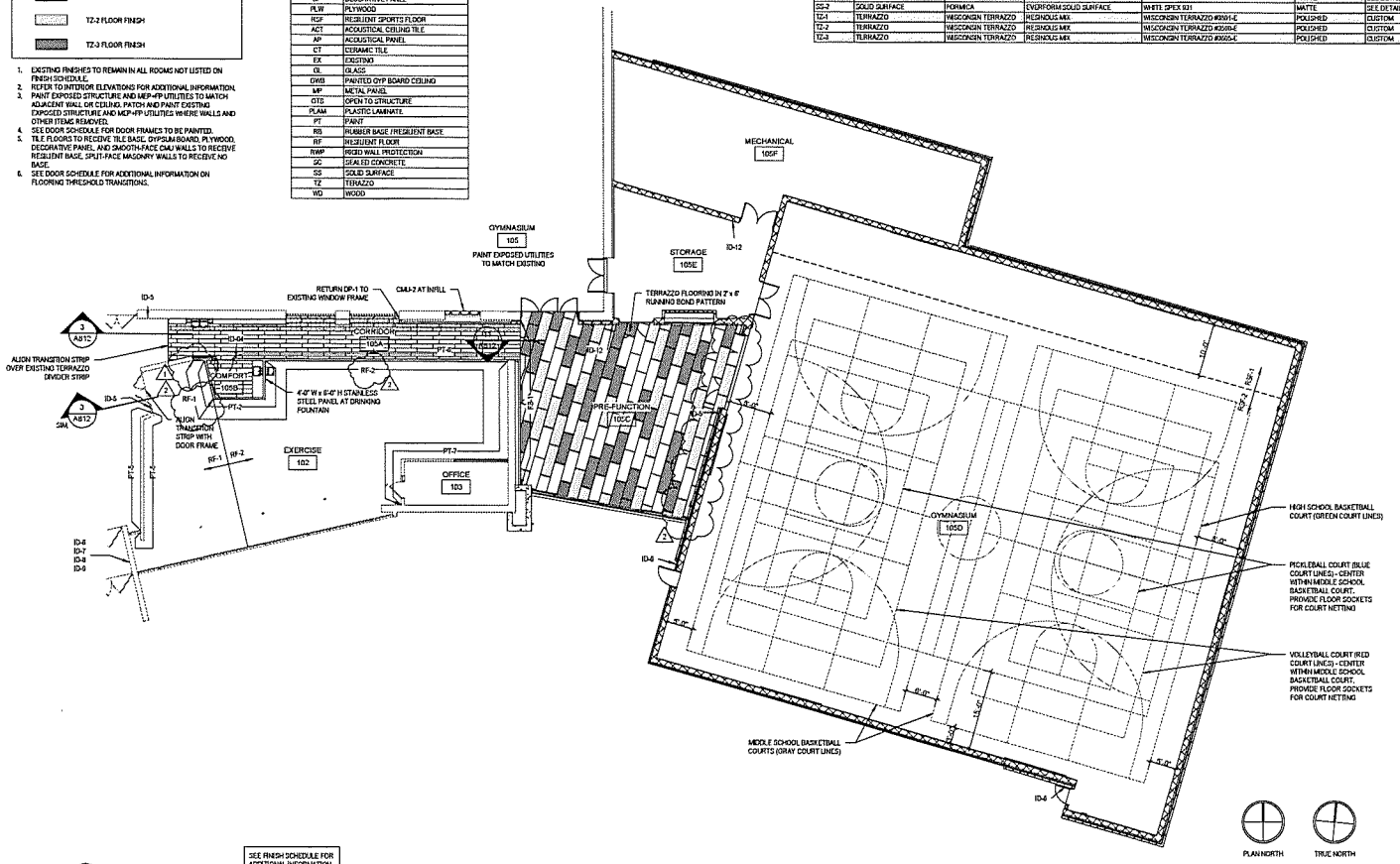
1. EXISTING FINISHES TO REMAIN IN ALL ROOMS NOT LISTED ON FINISH SCHEDULE.
2. REFER TO INTERIOR ELEVATIONS FOR ADDITIONAL INFORMATION.
3. PAINT EXPOSED STRUCTURE AND MEP-FP UTILITIES TO MATCH ADJACENT WALL OR CEILING. PATCH AND PAINT EXISTING EXPOSED STRUCTURE AND MEP-FP UTILITIES WHERE WALLS AND OTHER ITEMS REMOVED.
4. SEE DOOR SCHEDULE FOR DOOR FRAMES TO BE PAINTED.
5. TILE FLOORS TO RECEIVE TILE BASE. GYPSUM BOARD, PLYWOOD, DECORATIVE PANEL, AND SMOOTH-FACE CMU WALLS TO RECEIVE RESILIENT BASE, SPLIT-FACE MASONRY WALLS TO RECEIVE NO BASE.
6. SEE DOOR SCHEDULE FOR ADDITIONAL INFORMATION ON FLOORING THRESHOLD TRANSITIONS.

ABBREVIATIONS - FINISH

FINISH TAG	FINISH DESCRIPTION
CMU-1	CMU
CMU-2	CMU
CPT	CARPET TILE
DP	DECORATIVE PANEL
PLW	PLYWOOD
RSF	RESILIENT SPORTS FLOOR
ACT	ACOUSTICAL CEILING TILE
AP	ACOUSTICAL PANEL
CT	CERAMIC TILE
EX	EXISTING
GL	GLASS
GWB	PAINTED GYP BOARD CEILING
MP	METAL PANEL
OTS	OPEN TO STRUCTURE
PLAM	PLASTIC LAMINATE
PT	PAINT
RB	RUBBER BASE / RESILIENT BASE
RF	RESILIENT FLOOR
RWP	RIGID WALL PROTECTION
SC	SEALED CONCRETE
SS	SOLID SURFACE
TZ	TERRAZZO
WD	WOOD

FINISH KEY

TAG	PRODUCT	MANUFACTURER	COLLECTION/STYLE	COLOR	FINISH	SIZE	NOTES
AP-1	ACOUSTIC PANEL	ARKTURA	VAPOR TRAIL	ARKTURA WHITE	MATTE	24" X 48"	
CMU-1	CONCRETE MASONRY UNIT	COUNTY MATERIALS CORP.	SPLIT-FACE/SMOOTH FACE	SANDSTONE TB-314C	SMOOTH	8" X 16"	
CMU-2	CONCRETE MASONRY UNIT	COUNTY MATERIALS CORP.	PREMIER ULTRA BURNISHED	NORTH STAR 53-2233	SMOOTH	8" X 16"	
CPT-1	CARPET TILE	FORBO	FLOTEX/SEAGRASS	ALMOND 111050	STANDARD	9.5"X 39.4"	BRICK PATTERN INSTALLATION/50% OF COLOR MIX
CPT-2	CARPET TILE	FORBO	FLOTEX/SEAGRASS	CHARCOAL 111084	STANDARD	9.5"X 39.4"	BRICK PATTERN INSTALLATION/50% OF COLOR MIX
CPT-3	CARPET TILE	FORBO	FLOTEX/SEAGRASS	WALNUT 111065	STANDARD	9.5"X 39.4"	BRICK PATTERN INSTALLATION
CPT-4	CARPET TILE	FORBO	FLOTEX/SEAGRASS	LIQUORICE 111066	STANDARD	9.5"X 39.4"	BRICK PATTERN INSTALLATION
CT-1	CERAMIC TILE	DAL TILE	FABRIC ART/MODERN LINEAR	TAUPE M.62	MATTE	12" X 24"	
CT-2	CERAMIC TILE	DAL TILE	FABRIC ART/MODERN TEXTILE	TAUPE M752	MATTE	1" X 3" MOSAIC	
CT-3	CERAMIC TILE	DAL TILE	FABRIQUE	BLANC LINEN P685	MATTE	12" X 24"	
CT-4	CERAMIC TILE	DALEAR CERAMICHE	COCOON/CADENCE TILE	GLEE	MATTE	8" X 48"	
CTB-1	CERAMIC TILE BASE	DAL TILE	FABRIC ART/MODERN LINEAR	TAUPE M.62	MATTE	8" X 12"	
DP-1	DECORATIVE PANEL	ACROVYN	ACROVYN BY DESIGN METALLICS	MEDIUM BRONZE #18172	METALLIC		
PT-1	PAINT	BENJAMIN MOORE	WALL PAINT	CLOUD WHITE 967	SEMI-GLOSS	-	
PT-2	PAINT	BENJAMIN MOORE	ACCENT PAINT	EDGECOMB GRAY HC-173	SEMI-GLOSS	-	
PT-3	PAINT	SHERWIN WILLIAMS	ACCENT PAINT	REFUGE SW6228	SEMI-GLOSS	-	
PT-4	PAINT	SHERWIN WILLIAMS	ACCENT PAINT	CUREO GRAY SW3024	EGGSHELL	-	
PT-5	PAINT	SHERWIN WILLIAMS	ACCENT PAINT	STILL WATER SW6223	EGGSHELL	-	
PT-6	PAINT	SHERWIN WILLIAMS	ACCENT PAINT	INTERCOSTAL AQUA SW6226	EGGSHELL	-	
PT-7	PAINT	BENJAMIN MOORE	ACCENT PAINT	GRENADA GREEN 432	EGGSHELL	-	
PT-8	PAINT	BENJAMIN MOORE	DOOR FRAME PAINT	DEVONSHIRE GREEN 1469	SEMI-GLOSS	-	
PT-9	PAINT	SHERWIN WILLIAMS	CEILING PAINT	HIGH REFLECTIVE WHITE SW7757	SEMI-GLOSS	-	
PT-10	PAINT	SHERWIN WILLIAMS	CEILING PAINT	HIGH REFLECTIVE WHITE SW7757	FLAT	-	
PT-11	PAINT	BENJAMIN MOORE	CEILING PAINT	DUNE WHITE 968	SEMI-GLOSS	-	
RB-1	RESILIENT BASE	TARKETT	THERMOSET RUBBER	BURNT UMBER 63	SOLID	4" HIGH	
RF-1	RESILIENT FLOOR	TARKETT SPORTS	DROPZONE ELITE	DARK GREY D2502	STANDARD	48" W ROLL	24" HIGH W/ EDGE TRIM WHERE INSTALLED AS BASE
RF-2	RESILIENT FLOOR	TARKETT SPORTS	DROPZONE ELITE	MID GREY D2504	STANDARD	48" W ROLL	24" HIGH W/ EDGE TRIM WHERE INSTALLED AS BASE
RSF-1	RESILIENT SPORTS FLOOR	TARKETT SPORTS	OMNISPORTS HPL7	GOLDEN MAPLE	STANDARD	96" W ROLL	CLASS 1 SYSTEM
RSF-2	RESILIENT SPORTS FLOOR	TARKETT SPORTS	OMNISPORTS ACTIVE+	GOLDEN MAPLE	STANDARD	96" W ROLL	CLASS 2 SYSTEM
SC-1	SEALED CONCRETE	-	-	-	-	-	
SS-1	SOLID SURFACE	FORMICA	EVERFORM SOLID SURFACE	FROST 103	MATTE	SEE DETAILS	
SS-2	SOLID SURFACE	FORMICA	EVERFORM SOLID SURFACE	WHITE SPEX 931	MATTE	SEE DETAILS	
TZ-1	TERRAZZO	WISCONSIN TERRAZZO	RESINOUS MIX	WISCONSIN TERRAZZO #3001-E	POLISHED	CUSTOM	
TZ-2	TERRAZZO	WISCONSIN TERRAZZO	RESINOUS MIX	WISCONSIN TERRAZZO #3006-E	POLISHED	CUSTOM	
TZ-3	TERRAZZO	WISCONSIN TERRAZZO	RESINOUS MIX	WISCONSIN TERRAZZO #3005-E	POLISHED	CUSTOM	



SEE FINISH SCHEDULE FOR ADDITIONAL INFORMATION

1 EXPANSION FINISH PLAN
SCALE: 3/32" = 1'-0"

Engberg Anderson ARCHITECTS
MILWAUKEE | MADISON | CHICAGO

REVISION

WARNER PARK COMMUNITY RECREATION CENTER EXPANSION

1625 NORTHPORT DRIVE
MADISON, WI 53704

CITY OF MADISON PARKS DIVISION
330 EAST LAKESIDE STREET
MADISON, WI 53715

PROJECT NUMBER 223471.00

ISSUED FOR:
BID SET 5/16/2024

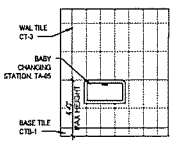
REVISION FOR:

NO.	DESCRIPTION	DATE
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2	ADDENDUM #3	6/18/2024

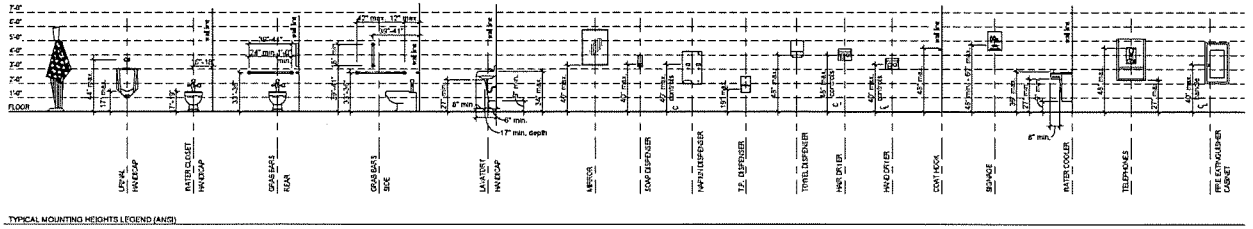
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CHECKED BY JWH

FINISH PLANS & SCHEDULE

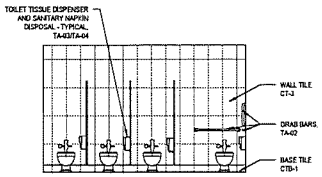
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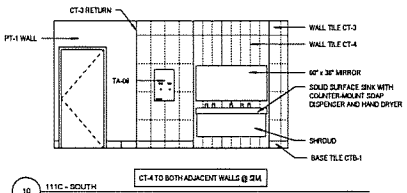
14 111F - WEST
SCALE: 1/4" = 1'-0"



TYPICAL MOUNTING HEIGHTS LEGEND (ANSI)

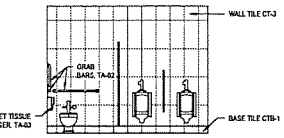


9 111C - NORTH
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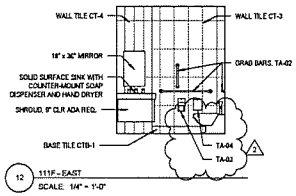


CT-4 TO BOTH ADJACENT WALLS @ 21H

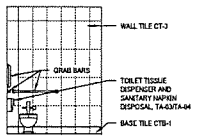
10 111C - SOUTH
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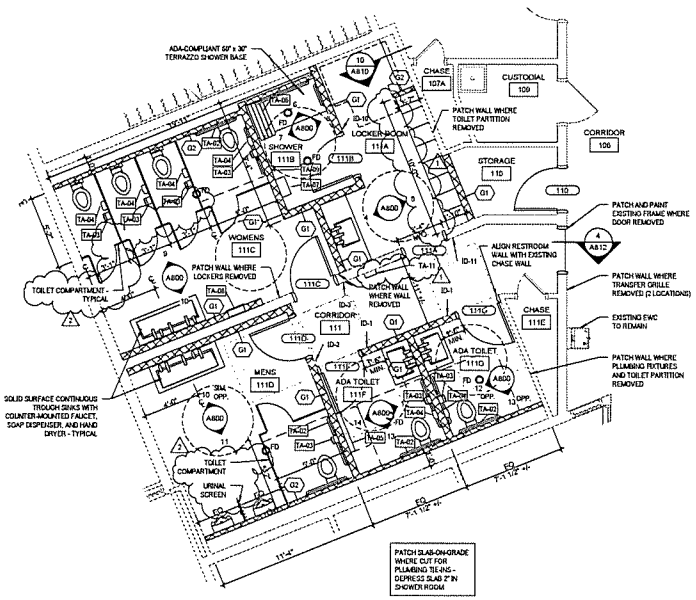
11 111D - SOUTH
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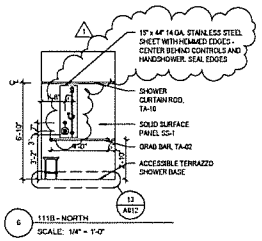
12 111F - EAST
SCALE: 1/4" = 1'-0"



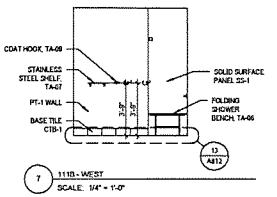
13 111F - SOUTH
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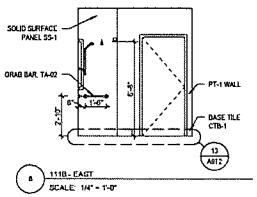
1 ENLARGED PLAN - RESTROOMS
SCALE: 1/4" = 1'-0"



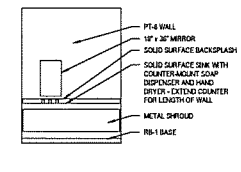
6 111B - NORTH
SCALE: 1/4" = 1'-0"



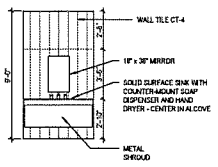
7 111B - WEST
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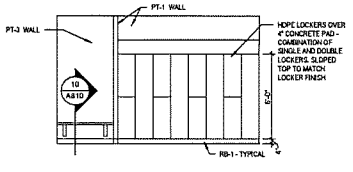
8 111B - EAST
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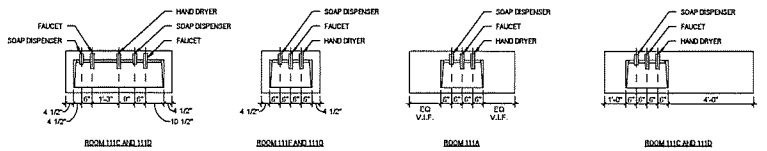
3 105B - EAST
SCALE: 1/4" = 1'-0"



4 111A - WEST
SCALE: 1/4" = 1'-0"



5 111A - EAST
SCALE: 1/4" = 1'-0"



SEE PLUMBING FOR ADDITIONAL INFORMATION

2 SINK DETAILS
SCALE: 3/8" = 1'-0"

Engberg Anderson ARCHITECTS
MILWAUKEE | MADISON | CHICAGO

1ST REVISION

WARNER PARK
COMMUNITY RECREATION
CENTER EXPANSION

1625 NORTHPORT DRIVE
MADISON, WI 53704

CITY OF MADISON PARKS DIVISION
330 EAST LAKESIDE STREET
MADISON, WI 53715

PROJECT NUMBER 223471.00

ISSUED FOR:

BID SET	5/15/2024

REVISION FOR:

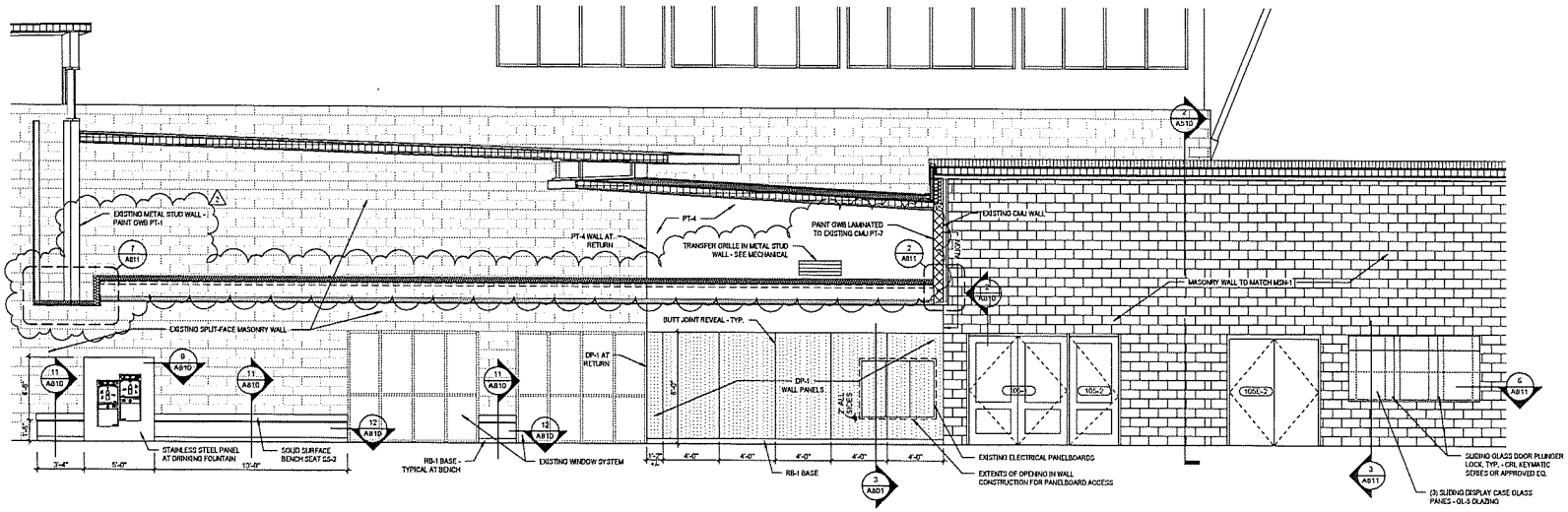
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2	ADDENDUM #3	6/18/2024

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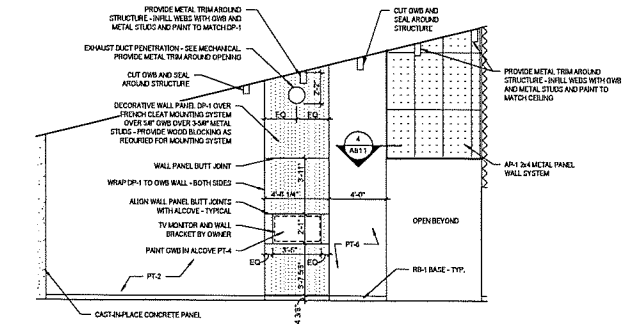
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ENLARGED PLANS &
INTERIOR ELEVATIONS

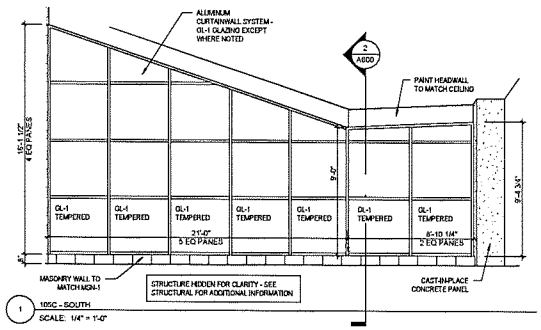
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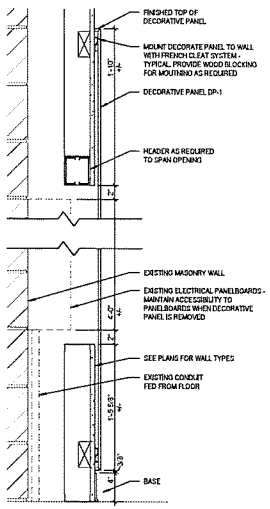
5 105A - NORTH
SCALE: 1/4" = 1'-0"



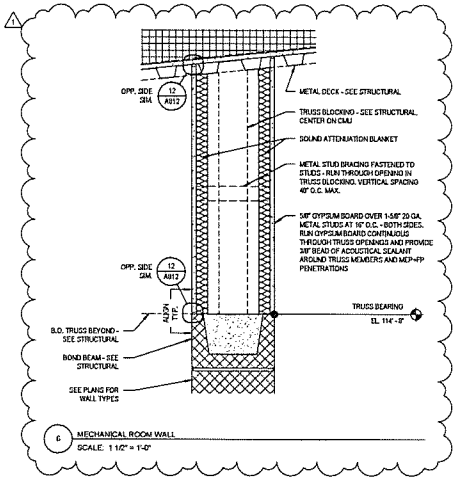
2 105C - WEST
SCALE: 1/4" = 1'-0"



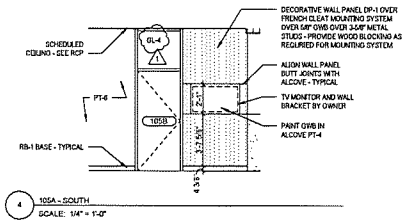
1 105C - SOUTH
SCALE: 1/4" = 1'-0"



3 WALL PANEL SECTION
SCALE: 1 1/2" = 1'-0"



6 MECHANICAL ROOM WALL
SCALE: 1 1/2" = 1'-0"



4 105A - SOUTH
SCALE: 1/4" = 1'-0"

Engberg Anderson ARCHITECTS
MILWAUKEE | MADISON | CHICAGO

REVISED

WARNER PARK
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REVISION FOR:

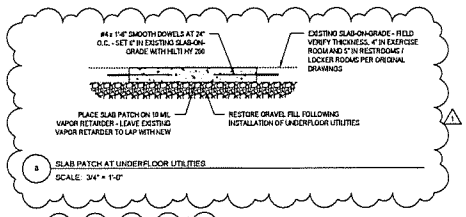
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2	ADDENDUM #3	6/18/2024

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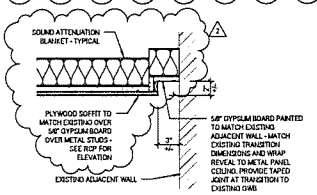
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INTERIOR ELEVATIONS

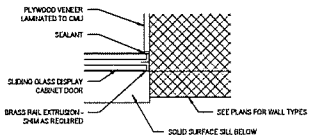
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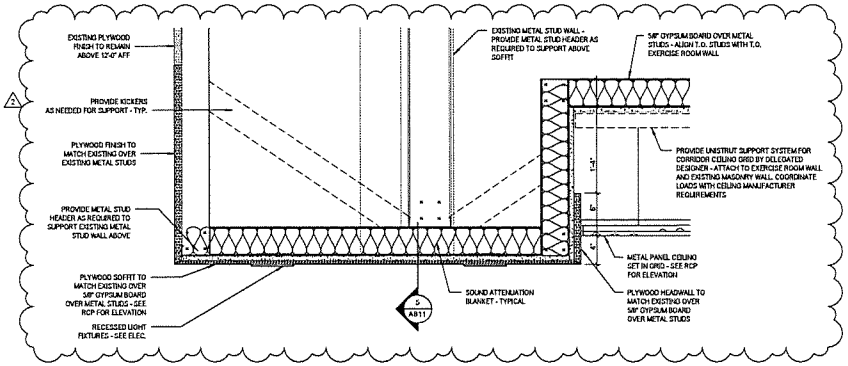
8 SLAB PATCH AT UNDERFLOOR UTILITIES
SCALE: 3/4" = 1'-0"



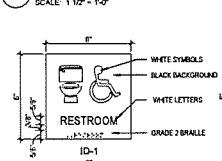
5 CORRIDOR CEILING @ PLYWOOD
SCALE: 1 1/2" = 1'-0"



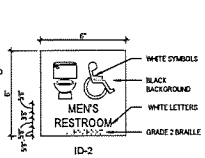
6 TROPHY CABINET JAMB
SCALE: 1 1/2" = 1'-0"



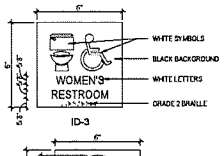
7 CORRIDOR CEILING @ EXISTING
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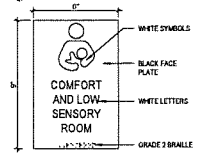
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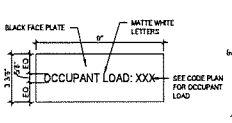
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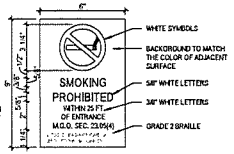
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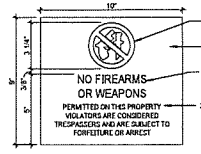
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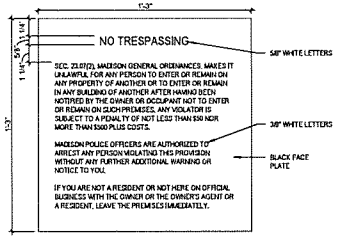
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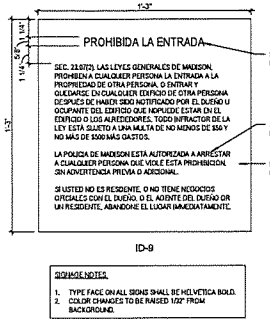
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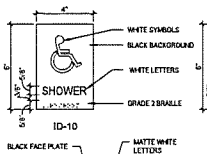
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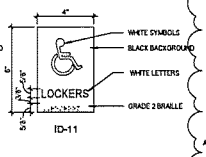
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SIGNAGE NOTES:
1. TYPE FACE ON ALL SIGNS SHALL BE HELVETICA BOLD.
2. COLOR CHANGES TO BE RAISED 1/32" FROM BACKGROUND.

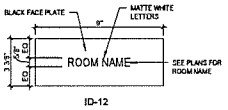
1 SIGNAGE SCHEDULE



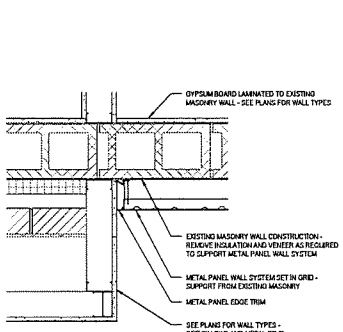
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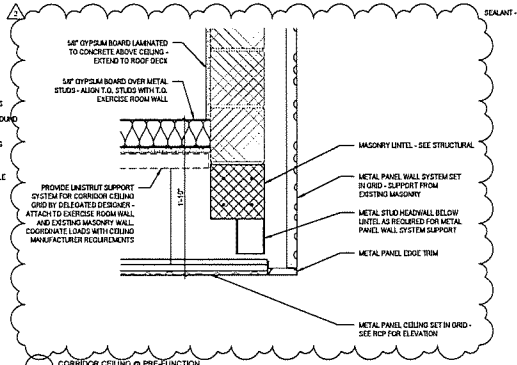
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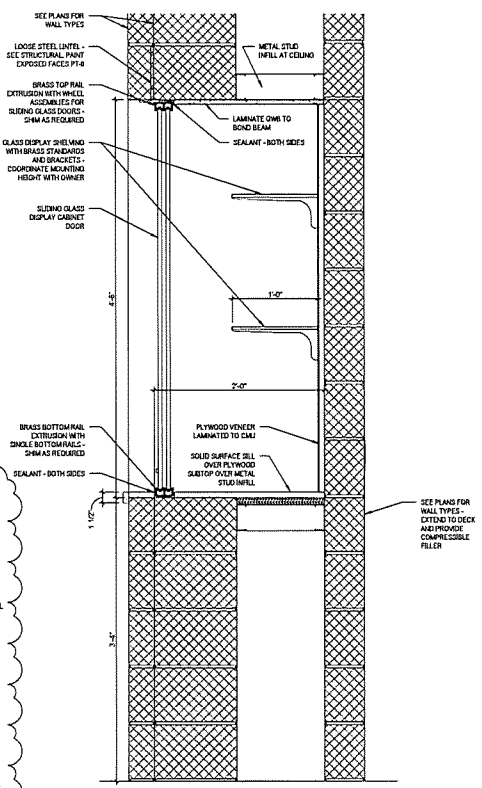
ID-12



4 CORRIDOR VERTICAL PANEL
SCALE: 1 1/2" = 1'-0"



2 CORRIDOR CEILING @ PRE-FUNCTION
SCALE: 1 1/2" = 1'-0"



3 TROPHY CABINET SECTION
SCALE: 1 1/2" = 1'-0"

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WARNER PARK
COMMUNITY RECREATION
CENTER EXPANSION

1625 NORTHPORT DRIVE
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CITY OF MADISON PARKS DIVISION
330 EAST LAKESIDE STREET
MADISON, WI 53715

PROJECT NUMBER 223471.00

ISSUED FOR:

BID SET	5/16/2024

REVISION FOR:

NO.	DESCRIPTION	DATE
1	ADDENDUM #2	6/14/2024
2	ADDENDUM #3	6/18/2024

DRAWN BY DKB

CHECKED BY JWH

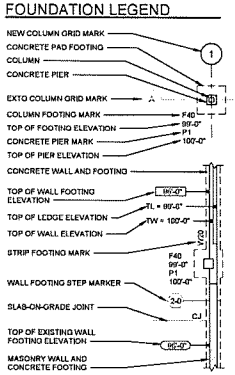
INTERIOR DETAILS

A811

ABBREVIATION LIST

AB	ANCHOR BOLT (ROD)
AHU	AIR HANDLING UNIT
ALT	ALTERNATE
ARCH	ARCHITECTURAL
BLDG	BUILDING
BRG	BEARING
BP(###)	BASE PLATE CALL-OUT
CF	COLD-FORMED
CIP	CAST-IN-PLACE
CJ	CONTROL JOINT
CL	CENTER LINE
CLR	CLEAR (DISTANCE)
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
CONC	CONCRETE
CONT	CONTINUOUS
DBA	DEFORMED BAR ANCHOR
DEMO	DEMOLITION / DEMOLISH
DIA	DIAMETER
DWG	DRAWING
EOD	EDGE OF DECK
EOS	EDGE OF SLAB
EF	EACH FACE
EJ	EXPANSION JOINT
ELEV	ELEVATION
EQ	EQUAL
EW	EACH WAY
EWEF	EACH WAY EACH FACE
EXP	EXPANSION
EXT	EXTERIOR
EXTG	EXISTING
FD	FLOOR DRAIN
FLR	FLOOR
FV	FIELD VERIFY
F(###)	FOOTING CALL-OUT
GA	GAUGE
GALV	GALVANIZED
GC	GENERAL CONTRACTOR
GLU/LAM	GLUE-LAMINATED BEAM(S)
HK	HOOK
HORIZ	HORIZONTAL
HP	HIGH POINT
HWS	HEADED WELDED STUD(S)
IF	INSIDE FACE
INT	INTERIOR
JBE	JOIST BEARING ELEVATION
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LSL	LAMINATED STRAND LUMBER
LTWT	LIGHTWEIGHT
LVL	LAMINATED VENEER LUMBER
LW	LONG WAY
MAX	MAXIMUM
MECH	MECHANICAL
MFR	MANUFACTURER
MIN	MINIMUM
MISC	MISCELLANEOUS
NA	NOT APPLICABLE
NTS	NOT TO SCALE
OC	ON CENTER
OF	OUTSIDE FACE
OPNG	OPENING
OPP	OPPOSITE
PC	PRECAST / PRESTRESSED
PCI	POUNDS PER CUBIC INCH
PDF	POUNDS PER CUBIC FOOT
PL	PLATE
PLF	POUNDS PER LINEAR FOOT
PROJ	PROJECTION
PSF	POUNDS PER CUBIC FOOT
PSI	POUNDS PER SQUARE INCH
PT	PRE (POST)-TENSIONED
P(#)	PIER CALL-OUT
RD	ROOF DRAIN
REINF	REINFORCED(ING)
RTU	ROOF TOP UNIT
SIM	SIMILAR
SOG	SLAB-ON-GRADE
SPA	SPACE(S)(ED)(ING)
SPEC	SPECIFICATION(S)
SQ	SQUARE
SS	STAINLESS STEEL
SW	SHORT WAY
TL	TOP OF LEDGE
TP	TOP OF PIER
TW	TOP OF WALL
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
VERT	VERTICAL
WP	WORKING POINT
WWF	WELDED WIRE FABRIC

FOUNDATION LEGEND



LINTEL SCHEDULE

LENGTH	SIZE AND REINFORCING	NOTE/REMARKS
0'-4"	8" W x 8" H BOND BM W/ (2) #5 BOT	SEE ARCH FOR LOCATIONS
4'-8"	8" W x 16" H BOND BM W/ (2) #5 BOT	SEE ARCH FOR LOCATIONS

NOTES:

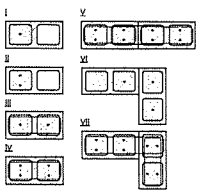
1. AT NEW WALLS, REINFORCE AT BEARING WITH (1) #5 VERT FULL HEIGHT OF WALL FROM FLOOR TO FLOOR OR FLOOR TO ROOF.
2. AT EXISTING WALLS, BEAR LINTEL ON MIN (2) COURSES GROUTED CMU.
3. AT EXTERIOR OPENINGS, PROVIDE GALV BENT PLS/16"x7 1/2"x7 1/2" x CONT TO OPENING CORNERS.
4. 8" MIN BEARING AT ENDS.

MASONRY PIER SCHEDULE

MARK	SIZE (LENGTH)	TYPE	VERTICAL REINFORCING	CLOSED LOOP TIE	COMMENTS
MP1	16"	III	(6) #6	(2) SETS OF 1/4" AT 8"	
MP2	24"	IV	(8) #6	(2) SETS OF 1/4" AT 8"	

NOTES

1. ALL REINFORCED CMU CORES ARE GROUTED SOLID.
2. RUN HORIZONTAL JOINT REINFORCING CONT. THROUGH MASONRY PIERS.
3. USE 1/4" (2) RODS AS CLOSED LOOP TIES.
4. USE BOND BEAM CMU BLOCKS OR DROP TOP CMU BLOCK AT MASONRY PIERS WITH TIES.
5. SIZE IS WALL WIDTH x LENGTH.



WALL FOOTING SCHEDULE

MARK	CONTINUOUS FOOTING DIMENSIONS WIDTH	THICKNESS	FOOTING REINFORCEMENT	REMARKS
W18	1'-6"	1'-0"	(2) #4, L, CONT	STOOP FTG
W24	2'-0"	1'-0"	(3) #5, L, CONT	
W28	2'-6"	1'-0"	(3) #6, L, CONT	
W30	3'-0"	1'-0"	(3) #6, L, CONT	
W36	3'-6"	1'-0"	(#) #X, L, CONT	
W60	5'-0"	1'-8"	(##) #7 T&B W #7 @ 12" SHORT DIRECTION	

MASONRY WALL REINFORCEMENT SCHEDULE

MARK	WALL TYPE	REINFORCEMENT VERTICAL	REINFORCEMENT HORIZONTAL	NOTES
A	12" CMU	#6 AT 16" OC	HJR AT 16" OC	BOND BEAM WITH (1) #5 AT 40" OC AND AT BOTTOM OF WALL
B	12" CMU	#6 AT 8" OC	HJR AT 16" OC	VERTICAL REINFORCING TO BE AT EXTERIOR FACE OF CMU
C	8" CMU	#6 AT 16" OC	HJR AT 16" OC	BOND BEAM WITH (1) #5 AT 40" OC AND AT BOTTOM OF WALL

NOTES:

1. SEE ARCHITECTURAL WALL TYPES FOR ADDITIONAL REQUIREMENTS.
2. REINFORCEMENT IS TO BE LOCATED IN CENTER OF WALL UNO.
3. PROVIDE CONTINUOUS BOND BEAM WITH (2) #5 AT ALL BEARING ELEVATIONS AND OVER WINDOWS DOORS AND OTHER OPENINGS UNO.
4. PROVIDE HORIZONTAL REINFORCEMENT INTO INTERSECTING WALLS AT 16" OC VERTICAL. EXTENT 30" EACH DIRECTION WITH PREFABRICATED "T" AND "L" SECTION TYP.
5. SEE GENERAL MASONRY NOTES ON SHEET S001 FOR NON LOAD BEARING WALL REINFORCEMENT REQUIREMENTS.
6. PROVIDE DOWELS TO MATCH VERTICAL REINFORCEMENT. EMBED DOWELS 30" INTO FOUNDATION WALL AND LAP 30" WITH OR MAKE CONTINUOUS WITH VERTICAL STEEL.

BASE PLATE SCHEDULE

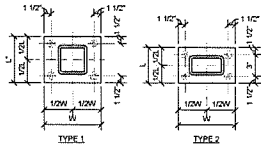
MARK	SIZE "t x 'W' x 'L'"	ANCHOR RODS	BASE PLATE TYPE	NOTES
BP1	3/4" x 9" x 0'-9"	(4) 3/4" DIA x 4"	1	TYPICAL HSS4x4x1/2
BP2	3/4" x 11" x 0'-9"	(4) 3/4" DIA x 4"	2	TYPICAL HSS5x3x5/16

BASE PLATE NOTES:

1. FASTEN STEEL COLUMN TO TOP OF CONCRETE USING (4) F1554 GR.[36] [55] [105] ANCHOR RODS OF SIZE INDICATED WITH DOUBLE NUTS AT COLUMN BASE PLATE, AND 1 1/2" GROUT AT 3/4" DIAMETER ANCHOR RODS AND 2" GROUT AT 1" DIAMETER ANCHOR RODS. SET ANCHOR RODS WITH 9" PROJECTION



BASE PLATE TYPES:



LOOSE STEEL LINTEL SCHEDULE

PROVIDE WHERE OTHER LINTELS ARE NOT SPECIFICALLY DETAILED

WALL THICK	CLEAR MASONRY OPENING WIDTH	SECTION
ALL	AT FIRE EXTINGUISHER CABINETS AND DRINKING FOUNTAINS	1/4" PLATE
4"	TO 5'-0"	ST3x6.25 3/16 1 1/2-8
4"	TO 7'-0"	PL 3/8 x 4 1/2 ON PL 3/8 x 3 1/2
4"	TO 9'-0"	PL3/8"x7 1/2" ON PL3/8"x3 1/2"
6"	TO 5'-0"	(2) L3 1/2x2 1/2x1/4 (LLV) JL
6"	TO 7'-0"	WT4x10.5
6"	TO 9'-0"	WT7x11
6"	TO 12'-0"	WT7x13 WITH PL1/2"x2" 3/16 1 1/2-8
8"	TO 5'-0"	(2) L3 1/2x3 1/2x1/4 JL
8"	TO 7'-0"	(2) L4x3 1/2x5/16 (LLV) JL
8"	TO 9'-0"	WT7x15
10"	TO 7'-0"	W8x10 WITH PL5/16"x9" 3/16 1 1/2-8
10"	TO 10'-0"	W8x15 WITH PL5/16"x9"
12"	TO 5'-0"	(3) L3 1/2x3 1/2x1/4 JLL
12"	TO 7'-0"	W8x10 WITH PL5/16"x11" 3/16 1 1/2-8
12"	TO 10'-0"	W8x15 WITH PL5/16"x11"

NOTES:

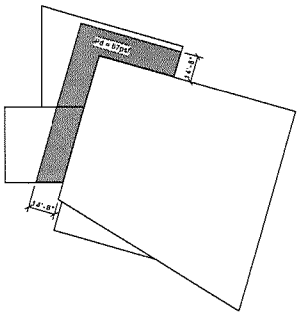
1. PROVIDE MINIMUM 8" BEARING AT EACH END OF LINTEL.
2. GROUT BLOCK CORES AND REINFORCE WITH (1) #5 VERT BELOW LINTEL BEARING.
3. CENTER LINTELS IN WALL UNLESS OTHERWISE NOTED.
4. BOTTOM PLATES UNDER WIDE FLANGE SHAPES SHALL BE EXTENDED FULL LENGTH OF LINTEL.
5. WELD LINTEL COMPONENTS INTO SINGLE UNIT.
6. NOT LINTELS ARE REQUIRED FOR 4" AND 6" NON-BEARING MASONRY WALLS WHERE GROUTED HOLLOW METAL FRAMES HAVE A HEADSPAN OF 4'-0" OR LESS.

BRICK LOOSE LINTEL SCHEDULE

MARK	SECTION	NOTE/REMARKS
W x 4'-0"	L4x4x5/16	.
6'-0" < L < 9'-0"	L6x4x3/8	.
9'-0" < L < 12'-0"	L7x4x1/2	.
12'-0" < L < 15'-0"	L8x4x3/4	.

NOTES:

1. LINTELS TO BE SHOP PAINTED WITH ZINC RICH URETHANE. SEE SPECIFICATIONS.
2. PROVIDE 4" MIN BEARING EACH END OF LINTEL UNDER 9'-0". 8" BEARING FOR LONGER LINTELS.
3. SEE ARCH FOR CONTROL JOINT LOCATIONS AND FLASHING REQUIREMENTS.



DRIFT LOAD KEY PLAN

SCALE: 1/2" = 1'-0"

Engberg Anderson ARCHITECTS

MILWAUKEE | MADISON | CHICAGO

ONEIDA Total Integrated Enterprises

www.oneida.com Job Number 223471.00

Office 608.243.6470 Fax 608.241.3814

5160 Eastpark Blvd, Suite 200,
Madison, Wisconsin 53718

Contractors are responsible for the means, methods, techniques, sequences and procedures of construction including, but not limited to, temporary supports, shoring, formwork to support equipment, curb and other simple items.

WARNER PARK COMMUNITY RECREATION CENTER EXPANSION

1625 NORTHPORT DRIVE
MADISON, WI 53704

CITY OF MADISON PARKS DIVISION
330 EAST LAKESIDE STREET
MADISON, WI 53715

PROJECT NUMBER 223471.00

ISSUED FOR:

BID SET 5/16/2024

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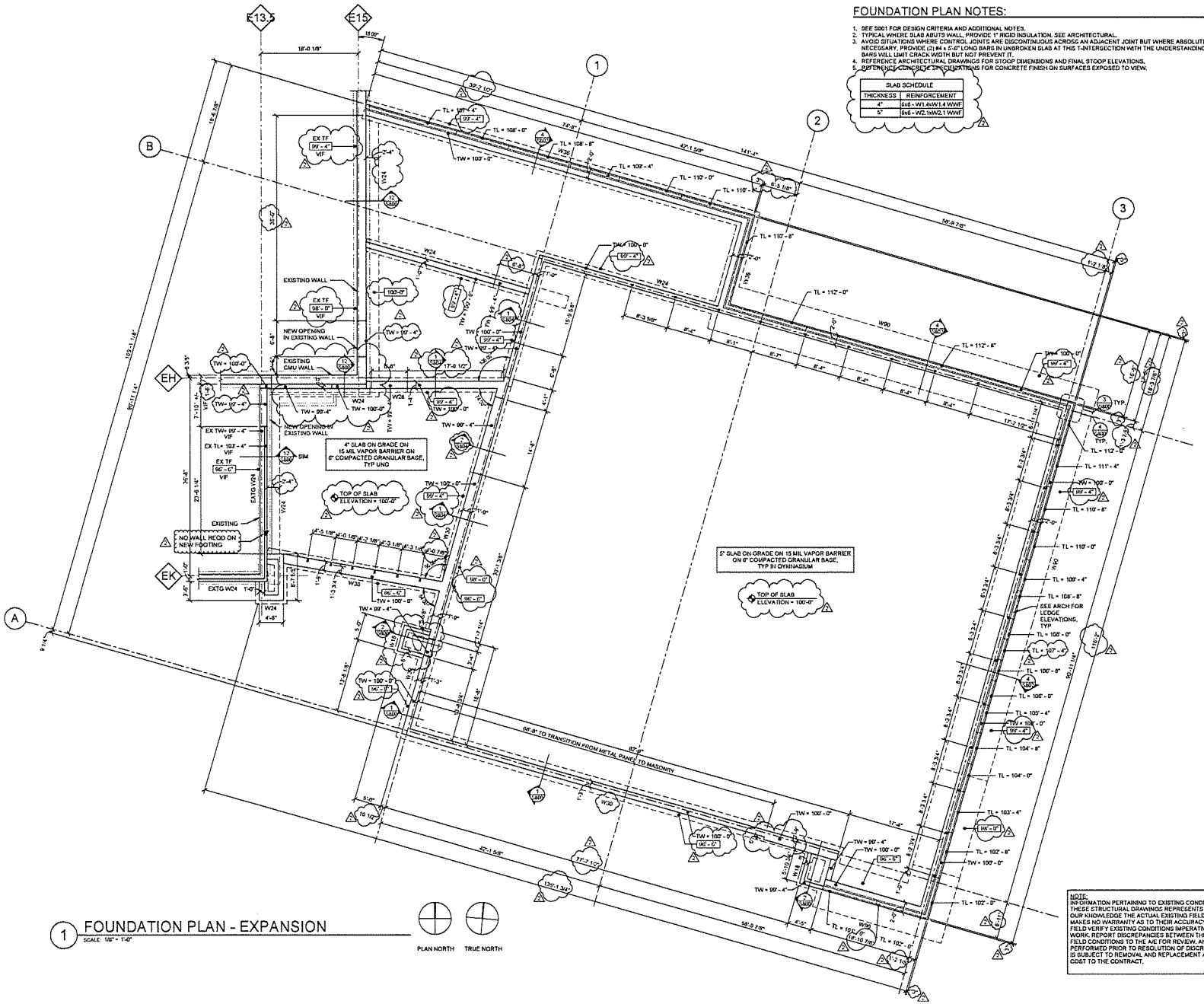
NO.	DESCRIPTION	DATE
1	ADDENDUM 2	06/14/2024
2	ADDENDUM 3	06/20/2024

DRAWN BY AWB

CHECKED BY Checker

STRUCTURAL SCHEDULES

S002



FOUNDATION PLAN NOTES:

1. SEE S001 FOR DESIGN CRITERIA AND ADDITIONAL NOTES.
2. TYPICAL WHERE SLAB ABUTS WALL, PROVIDE 1" RIGID INSULATION. SEE ARCHITECTURAL.
3. AVOID SITUATIONS WHERE CONTROL JOINTS ARE DISCONTINUOUS ACROSS AN ADJACENT JOINT BUT WHERE ABSOLUTELY NECESSARY, PROVIDE (2) #4 x 5'-0" LONG BARS IN UNBROKEN SLAB AT THIS T-INTERSECTION WITH THE UNDERSTANDING THAT BARS WILL LIMIT CRACK WIDTH BUT NOT PREVENT IT.
4. REFERENCE ARCHITECTURAL DRAWINGS FOR STOOP DIMENSIONS AND FINAL STOOP ELEVATIONS.
5. REFERENCE CONCRETE SPECIFICATIONS FOR CONCRETE FINISH ON SURFACES EXPOSED TO VIEW.

SLAB SCHEDULE	
THICKNESS	REINFORCEMENT
4"	6x6 - W1.4xW1.4 WWF
5"	6x6 - W2.1xW2.1 WWF

1 FOUNDATION PLAN - EXPANSION
SCALE: 1/8" = 1'-0"

NOTE:
INFORMATION PERTAINING TO EXISTING CONDITIONS GIVEN ON THESE STRUCTURAL DRAWINGS REPRESENTS TO THE BEST OF OUR KNOWLEDGE THE ACTUAL EXISTING FIELD CONDITIONS. OTIE MAKES NO WARRANTY AS TO THEIR ACCURACY. CONTRACTOR TO FIELD VERIFY EXISTING CONDITIONS IMPERATIVE TO THE NEW WORK. REPORT DISCREPANCIES BETWEEN THE DRAWINGS AND FIELD CONDITIONS TO THE A/E FOR REVIEW. ANY WORK PERFORMED PRIOR TO RESOLUTION OF DISCREPANCIES BY THE A/E IS SUBJECT TO REMOVAL AND REPLACEMENT AT NO ADDITIONAL COST TO THE CONTRACT.

Engberg Anderson ARCHITECTS
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Madison, Wisconsin 53718

REVISION

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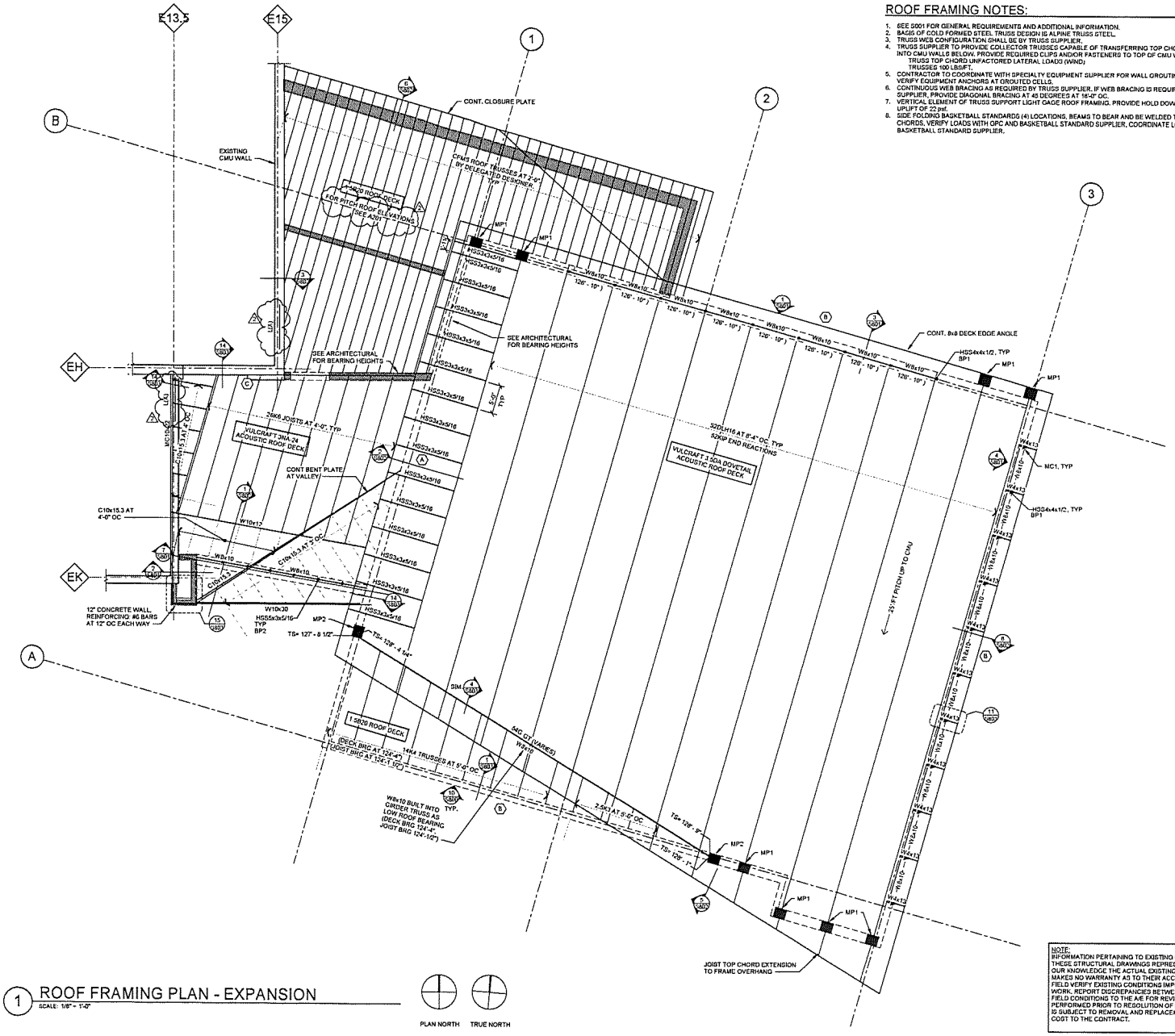
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FOUNDATION PLAN - EXPANSION

S200



ROOF FRAMING NOTES:

1. SEE S001 FOR GENERAL REQUIREMENTS AND ADDITIONAL INFORMATION.
2. BASIS OF COLD FORMED STEEL TRUSS DESIGN IS ALPINE TRUSS STEEL.
3. TRUSS WEB CONFIGURATION SHALL BE BY TRUSS SUPPLIER.
4. TRUSS SUPPLIER TO PROVIDE COLLECTOR TRUSSES CAPABLE OF TRANSFERRING TOP CHORD LATERAL LOADS INTO CMU WALLS BELOW. PROVIDE REQUIRED CLIPS AND/OR FASTENERS TO TOP OF CMU WALL/LEDGER TRUSS TOP CHORD UNFACTORED LATERAL LOADS (WIND) TRUSSES 100 LBS/FT.
5. CONTRACTOR TO COORDINATE WITH SPECIALTY EQUIPMENT SUPPLIER FOR WALL GROUTING REQUIRMENTS. VERIFY EQUIPMENT ANCHORS AT GROUTED CELLS.
6. CONTINUOUS WEB BRACING AS REQUIRED BY TRUSS SUPPLIER. IF WEB BRACING IS REQUIRED BY THE TRUSS SUPPLIER, PROVIDE DIAGONAL BRACING AT 45 DEGREES AT 16'-0" OC.
7. VERTICAL ELEMENT OF TRUSS SUPPORT LIGHT GAGE ROOF FRAMING. PROVIDE HOLD DOWN/STRAP TO RESIST UPLIFT OF 22 psf.
8. SIDE FOLDING BASKETBALL STANDARDS (4) LOCATIONS. BEAMS TO BEAR AND BE WELDED TO JOISTS BOTTOM CHORDS. VERIFY LOADS WITH GPC AND BASKETBALL STANDARD SUPPLIER. COORDINATE LOCATIONS WITH BASKETBALL STANDARD SUPPLIER.

1 ROOF FRAMING PLAN - EXPANSION
SCALE: 1/8" = 1'-0"

PLAN NORTH TRUE NORTH

NOTE:
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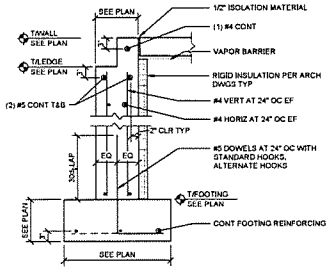
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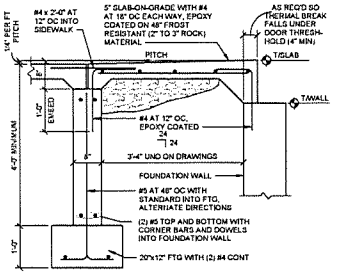
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ROOF FRAMING PLAN - EXPANSION

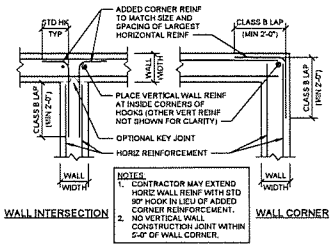
S201



1 CONCRETE FROST WALL
SCALE: 3/4" = 1'-0"

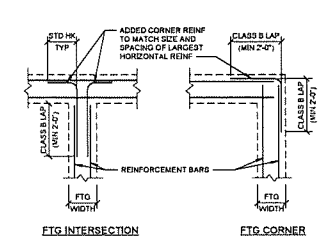


2 TYPICAL STOOP
SCALE: 3/4" = 1'-0"



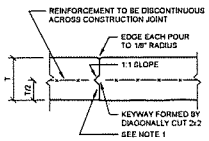
WALL INTERSECTION WALL CORNER

3 TYPICAL WALL CORNER REINFORCEMENT
SCALE: 3/4" = 1'-0"

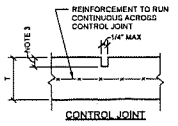


FTG INTERSECTION FTG CORNER

4 TYPICAL FOOTING CORNER REINFORCEMENT
SCALE: 3/4" = 1'-0"



CONSTRUCTION JOINT



CONTROL JOINT

GENERAL NOTES
1. SLAB-ON-GRADE CONSTRUCTION SHOULD CONFORM WITH THE RECOMMENDATIONS AND REQUIREMENTS SET FORTH IN THE LATEST RELEASE OF ACI 302 GUIDE FOR CONCRETE FLOOR AND SLAB CONSTRUCTION.
2. SEE PLANS FOR THE SLAB THICKNESS (T) AND REINFORCEMENT.
3. THE SLAB REINFORCEMENT, IF OTHER THAN WWF, SHALL BE CHAIRED BY SOIL SUPPORTED SLAB BOLSTERS.
4. REFER TO THE GENERAL NOTES, THE SPECIFICATIONS, AND THE DRAWINGS FOR SUB-FLOOR DRAINAGE SYSTEM, SUBGRADE PREPARATION, AND/OR MUD SLAB AND VAPOR RETARDER REQUIREMENTS.
5. THE SUBGRADE SHALL BE FREE OF STANDING WATER AT THE TIME OF CONCRETE PLACEMENT.

CONSTRUCTION JOINT NOTES
1. BREAK THE BOND BETWEEN NEW AND PREVIOUSLY PLACED SLABS BY SPRAYING OR BY PAINTING THE EXPOSED SIDE OF THE JOINT WITH A CURING COMPOUND, ASPHALTIC EMULSION, OR FORM OIL.

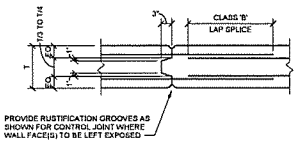
JOINT SPACING NOTES
1. UNLESS SHOWN OTHERWISE ON THE DRAWINGS, PROVIDE CONTROL AND/OR CONSTRUCTION JOINTS AT EVERY COLUMN LINE AND IN BETWEEN THE COLUMNS SUCH THAT THE JOINT SPACING DOES NOT EXCEED 36 * (SLAB THICKNESS) UNLESS SHOWN OTHERWISE. THE RESULTING PANELS SHOULD BE APPROXIMATELY SQUARE.

CONTROL JOINT NOTES
1. FOR SAW CUT CONTROL JOINTS, MAKE THE SAW CUT AS SOON AS THE SLAB IS ABLE TO SUPPORT THE WEIGHT OF WORKERS AND SAWING EQUIPMENT WITHOUT DAMAGE TO THE FINISHED SURFACE OF THE SLAB, BUT WITHIN 24 HOURS.
2. REFER TO SPECIFICATIONS REGARDING EPOXY RESIN OR ELASTOMERIC SEALANT REQUIREMENTS TO FILL CTRL JOINTS.
3. DEPTH OF SAWCUT SHOULD BE 1 1/4" IF PRODUCED USING EARLY ENTRY DRY-CUT PROCESS AND T/4 (1" MINIMUM) IF PRODUCED USING THE CONVENTIONAL WET-CUT PROCESS.

FORMED CONTROL JOINT OPTION NOTES
1. FORM CONTROL JOINTS BY INSERTING A PRE-MOLDED STRIP INTO THE FRESH CONCRETE UNTIL THE TOP SURFACE OF THE STRIP IS FLUSH WITH THE TOP SURFACE OF THE SLAB.
2. TOOL THE SLAB EDGES ROUND ON EACH SIDE OF THE INSERT, 1/8" MAXIMUM RADIUS.
3. AFTER THE CONCRETE HAS CURED, REMOVE THE INSERTS AND CLEAN THE GROOVE OF LOOSE DEBRIS.

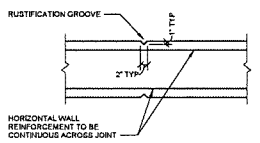
5 TYPICAL CONSTRUCTION AND CONTROL JOINTS IN SOG
SCALE: 3/4" = 1'-0"

NOTE:
MAXIMUM LENGTH OF WALL POUR BETWEEN CONSTRUCTION JOINTS LIMITED TO 60'-0"



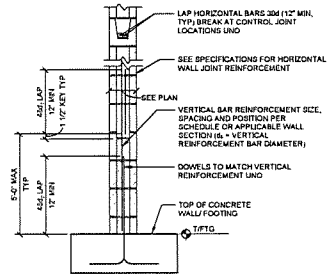
CONSTRUCTION JOINT

NOTE:
CONTROL JOINT DETAIL APPLIES AT 20'-0" OC (MAXIMUM) AT ALL WALL FACES THAT ARE TO BE LEFT EXPOSED TO VIEW



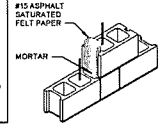
CONTROL JOINT

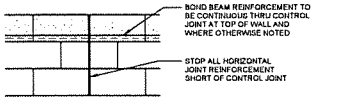
6 CONCRETE WALL JOINTS
SCALE: 3/4" = 1'-0"



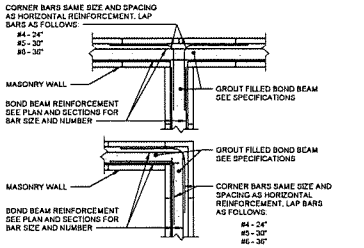
7 TYP REINF'D CMU WALL
SCALE: 3/4" = 1'-0"

CONTROL JOINTS TO BE PLACED:
1. MAXIMUM OF X'-0" OC.
2. MAXIMUM OF X'-0" FROM WALL INTERSECTIONS AND CORNERS.
3. AT ALL CHANGES IN WALL HEIGHT OR THICKNESS
4. AT CHASES AND RECESSES FOR PIPING COLUMNS FIXTURES ETC.
5. AT EXPANSION JOINTS IN ROOFS FLOOR AND FOUNDATIONS.
6. ADJACENT TO ONE SIDE OF WINDOW OR DOOR OPENINGS < 6'-0" WIDE.
7. ADJACENT TO BOTH SIDE OF WINDOW OR DOOR OPENINGS > 6'-0" WIDE.
8. AS SPECIFICALLY DETAILED ON ARCHITECTURAL DRAWINGS

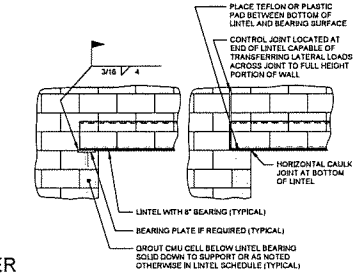




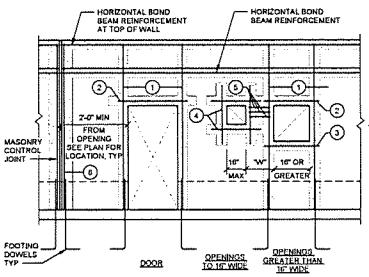
8 CMU CONTROL JOINT
SCALE: 3/4" = 1'-0"

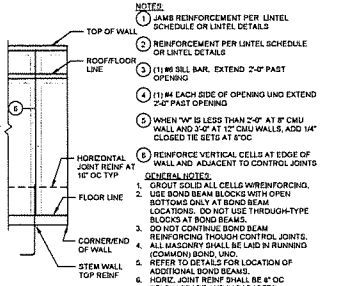


MASONRY BOND BEAM CORNER REINFORCEMENT PLAN
9
SCALE: 3/4" = 1'-0"



10 LINTEL BEARING DETAIL
SCALE: 3/4" = 1'-0"

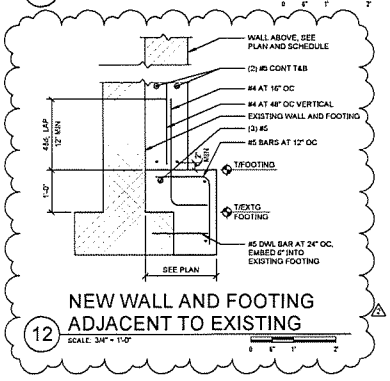




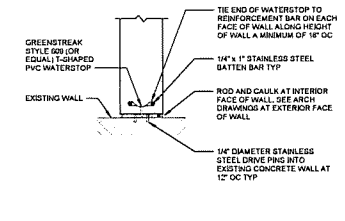
NOTES:
1. JAMB REINFORCEMENT PER LINTEL SCHEDULE OR LINTEL DETAILS
2. REINFORCEMENT PER LINTEL SCHEDULE OR LINTEL DETAILS
3. (1) #6 SILL BAR, EXTEND 2'-0" PAST OPENING
4. (1) #4 EACH SIDE OF OPENING UNO EXTEND 2'-0" PAST OPENING
5. WHEN "W" IS LESS THAN 2'-0", AT 8" CMU WALL AND 2'-0" AT 12" CMU WALLS, ADD 1/4" CLOSED TIE SETS AT 8"OC
6. REINFORCE VERTICAL CELLS AT EDGE OF WALL AND ADJACENT TO CONTROL JOINTS

GENERAL NOTES:
1. GROUT SOLID ALL CELLS W/REINFORCING.
2. USE BOND BEAM BLOCKS WITH OPEN BOTTOMS ONLY AT BOND BEAM LOCATIONS. DO NOT USE THROUGH-TYPE BLOCKS AT BOND BEAMS.
3. DO NOT CONTINUE BOND BEAM REINFORCING THOUGH CONTROL JOINTS.
4. ALL MASONRY SHALL BE LAID IN RUNNING (COMMON) BOND, UNO.
5. REFER TO DETAILS FOR LOCATION OF ADDITIONAL BOND BEAMS.
6. HORIZ. JOINT REINF SHALL BE 6" OC BELOW GRADE AND IN PARAPETS.

11 TYPICAL CMU WALL REINFORCEMENT AT OPENINGS
SCALE: 3/4" = 1'-0"



NEW WALL AND FOOTING ADJACENT TO EXISTING
12
SCALE: 3/4" = 1'-0"



13 NEW FDN TO EXISTING
SCALE: 3/4" = 1'-0"

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Madison, Wisconsin 53718

Contractors are responsible for the means, methods, techniques, sequences and procedures of construction including, but not limited to, temporary supports, shoring, bracing to support erected loads, and other similar items.

REVISED

WARNER PARK COMMUNITY RECREATION CENTER EXPANSION

1625 NORTHPORT DRIVE
MADISON, WI 53704

CITY OF MADISON PARKS DIVISION
330 EAST LAKESIDE STREET
MADISON, WI 53715

PROJECT NUMBER 223471.00

ISSUED FOR:
BID SET 5/16/2024

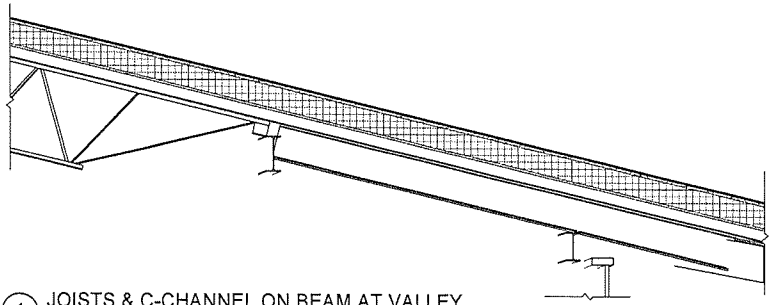
REVISION FOR:

NO.	DESCRIPTION	DATE
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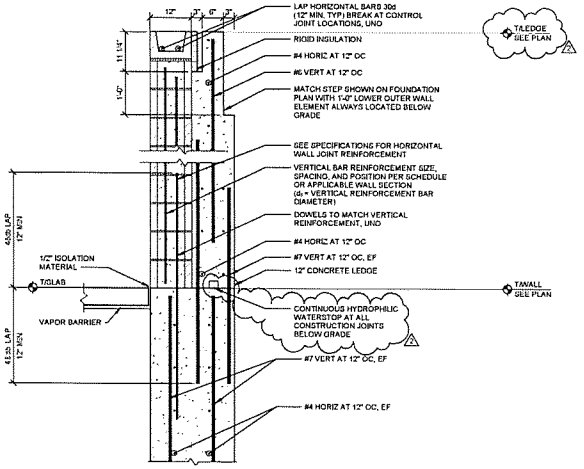
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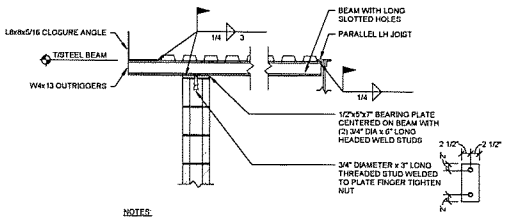
STRUCTURAL DETAILS

S800

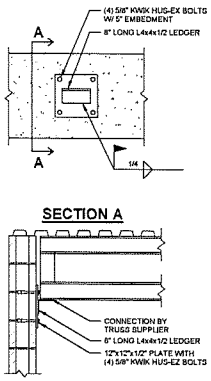


1 JOISTS & C-CHANNEL ON BEAM AT VALLEY
SCALE: 3/4" = 1'-0"

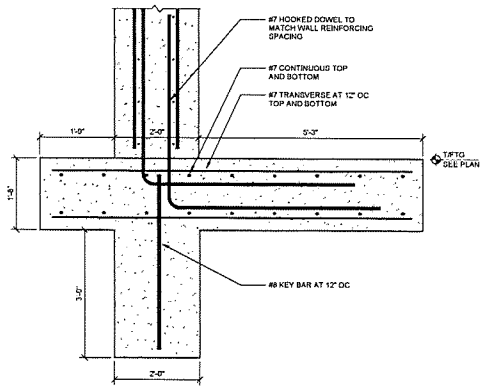




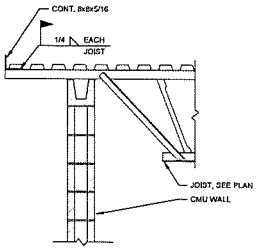
2 WEST OUTRIGGER DETAIL
SCALE: 3/4" = 1'-0"



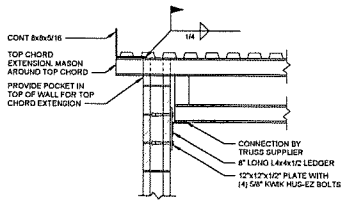
3 INTERIOR CFMS TRUSS BEARING
SCALE: 3/4" = 1'-0"



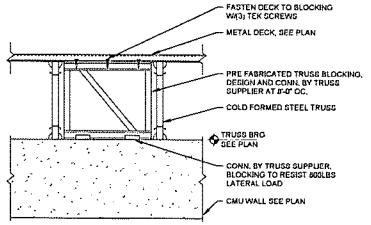
4 EXTERIOR GYM WALL SECTION
SCALE: 3/4" = 1'-0"



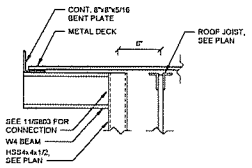
5 ROOF DECK EDGE
SCALE: 3/4" = 1'-0"



6 EXTERIOR CFMS TRUSS BEARING
SCALE: 3/4" = 1'-0"



7 TYP TRUSS BLOCKING
SCALE: 3/4" = 1'-0"



8 DECK EDGE AT EAST WALL
SCALE: 1 1/2" = 1'-0"

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CITY OF MADISON PARKS DIVISION
330 EAST LAKESIDE STREET
MADISON, WI 53715

PROJECT NUMBER 223471.00

ISSUED FOR:

BID SET	5/16/2024

REVISION FOR:

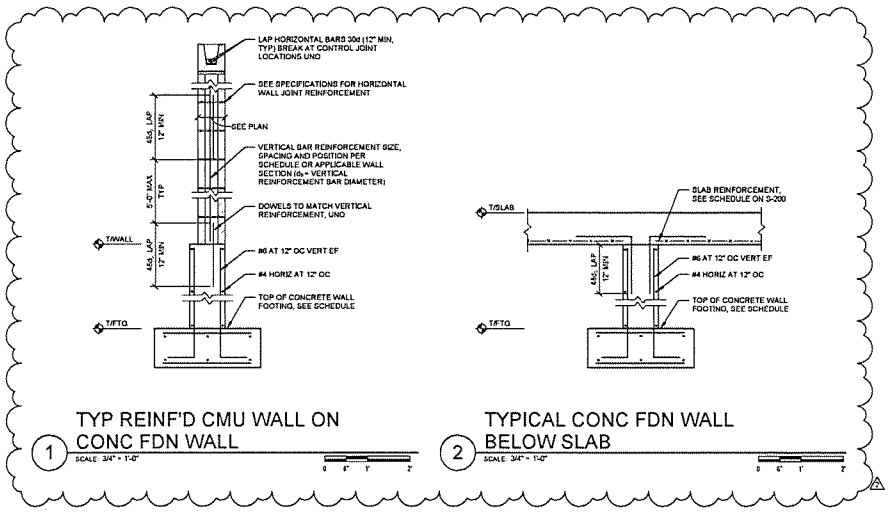
NO.	DESCRIPTION	DATE
1	ADDENDUM 2	05/14/2024
2	ADDENDUM 3	05/20/2024

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STRUCTURAL DETAILS

S802



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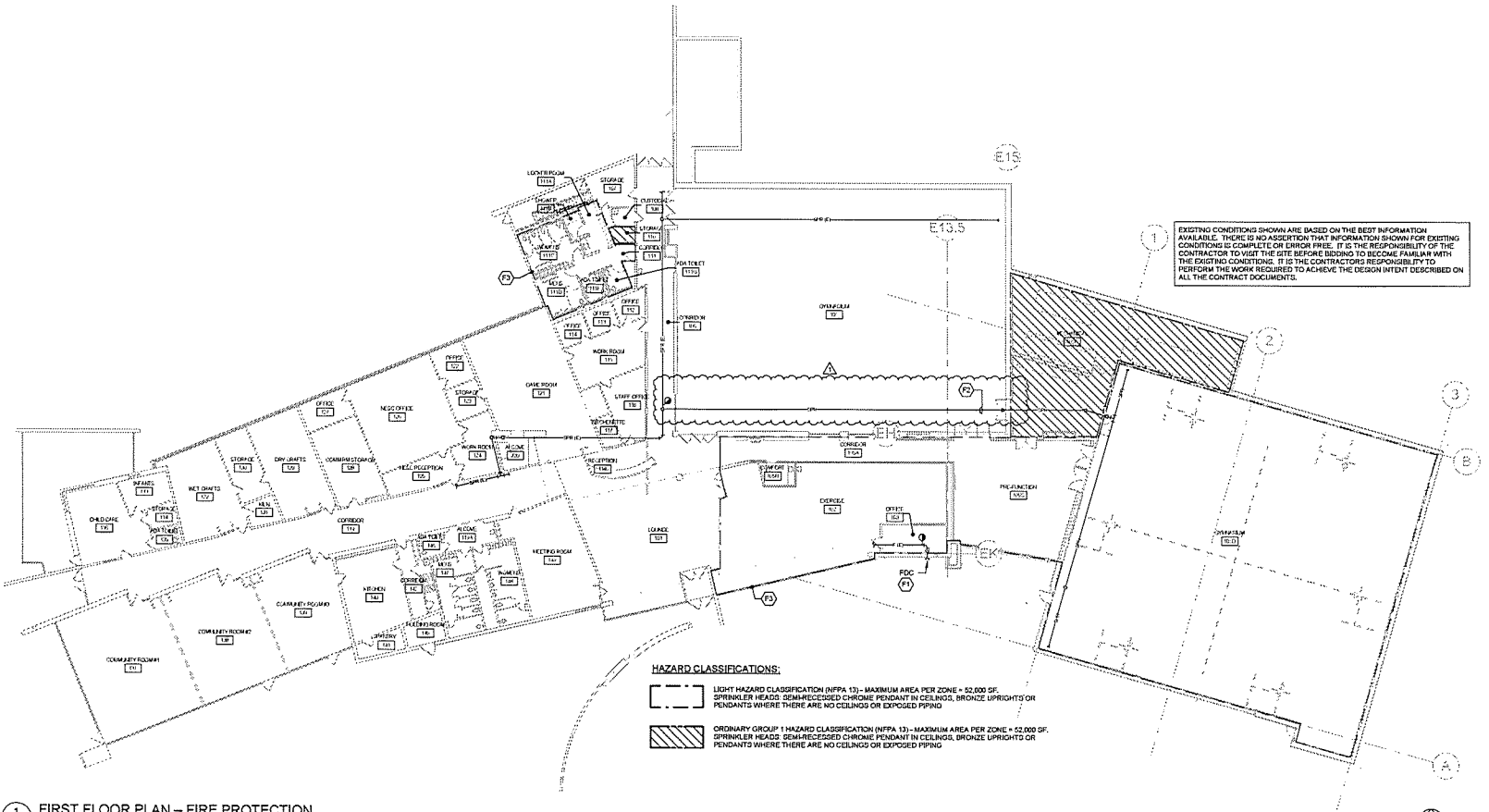
S804

KEYED NOTES
(KEYED NOTES PER PROJECT)

F1 INSTALL NEW FDC, CHECK VALVE, DRAIN VALVE AND RECONNECT TO EXISTING FIRE PROTECTION PIPING. COORDINATE EXACT LOCATION OF NEW FDC WITH OWNER TO ALLOW FOR PROPER CLEARANCE WITH OUT OBSTRUCTION REQUIRED PER LOCAL AHJ.

F2 EXTEND 3" SPRINKLER MAIN LOCATED IN EXISTING GYMNASIUM TO SERVE EXPANSION.

F3 REWORK SPRINKLER PIPING AND SPRINKLER HEADS AS REQUIRED TO PROVIDE PROPER SPRINKLER COVERAGE PER NFPA 13. NO EXISTING SPRINKLER HEADS ARE TO BE REUSED.



1 / F201 FIRST FLOOR PLAN – FIRE PROTECTION
SCALE: 1/16" = 1'-0"

Engberg Anderson ARCHITECTS
MILWAUKEE | MADISON | CHICAGO

JDR ENGINEERING, INC.
5525 NOBEL DRIVE
SUITE 110
MADISON, WI 53711
PH: 608.277.1728 FAX: 608.271.7046
JDR PROJECT NO: 23.0319

WARNER PARK COMMUNITY RECREATION CENTER EXPANSION

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MADISON, WI 53704

CITY OF MADISON PARKS DIVISION
330 EAST LAKESIDE STREET
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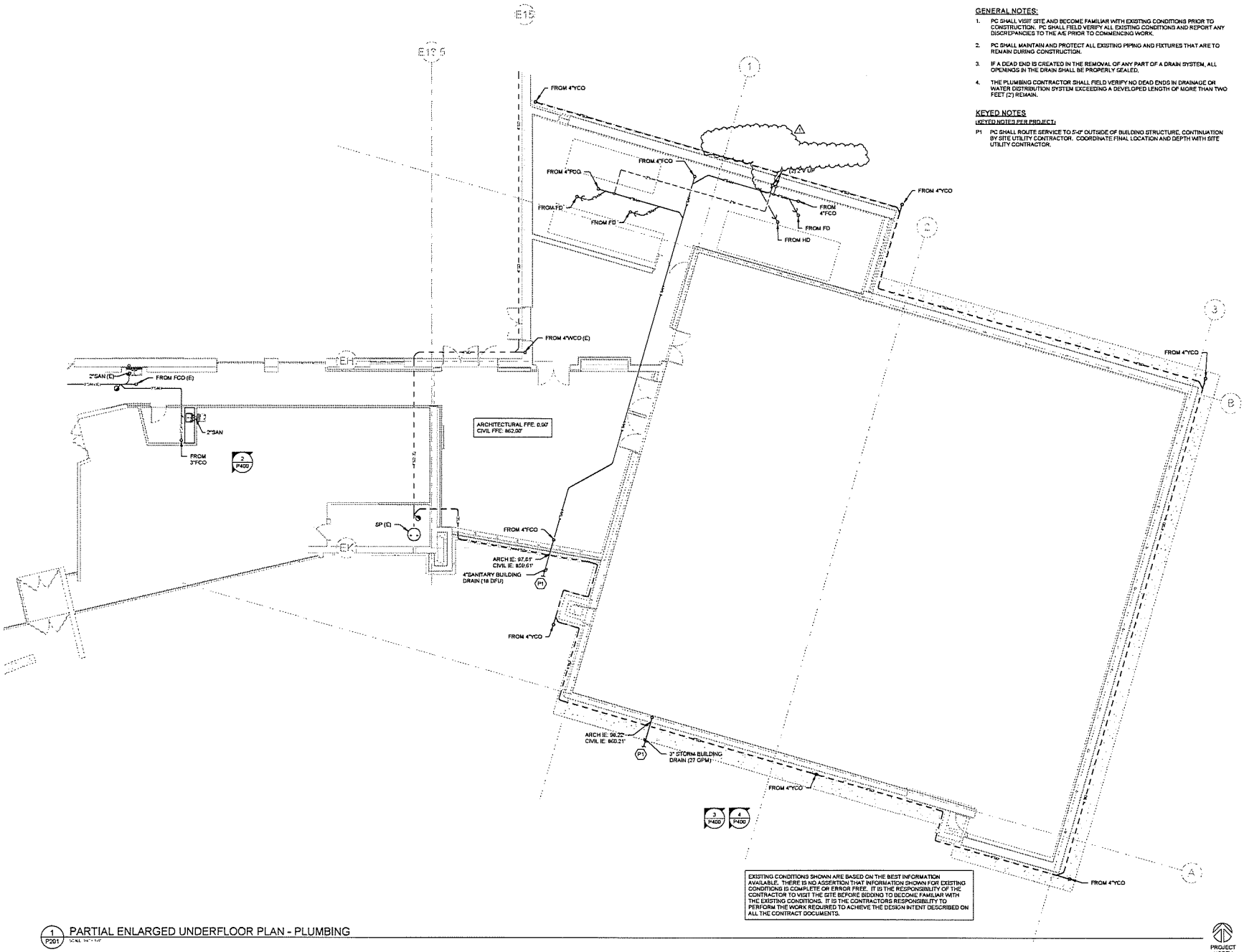
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NO.	DESCRIPTION	DATE
1	Addendum #3	6/18/2024

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CHECKED BY	JDR

FIRST FLOOR PLAN – FIRE PROTECTION

F201



1 P201 PARTIAL ENLARGED UNDERFLOOR PLAN - PLUMBING

GENERAL NOTES:

1. PC SHALL VISIT SITE AND BECOME FAMILIAR WITH EXISTING CONDITIONS PRIOR TO CONSTRUCTION. PC SHALL FIELD VERIFY ALL EXISTING CONDITIONS AND REPORT ANY DISCREPANCIES TO THE A/E PRIOR TO COMMENCING WORK.
2. PC SHALL MAINTAIN AND PROTECT ALL EXISTING PIPING AND FIXTURES THAT ARE TO REMAIN DURING CONSTRUCTION.
3. IF A DEAD END IS CREATED IN THE REMOVAL OF ANY PART OF A DRAIN SYSTEM, ALL OPENINGS IN THE DRAIN SHALL BE PROPERLY SEALED.
4. THE PLUMBING CONTRACTOR SHALL FIELD VERIFY NO DEAD ENDS IN DRAINAGE OR WATER DISTRIBUTION SYSTEM EXCEEDING A DEVELOPED LENGTH OF MORE THAN TWO FEET (2') REMAIN.

KEYED NOTES

(KEYED NOTES PER PROJECT)

P1 PC SHALL ROUTE SERVICE TO 5'-0" OUTSIDE OF BUILDING STRUCTURE. CONTINUATION BY SITE UTILITY CONTRACTOR. COORDINATE FINAL LOCATION AND DEPTH WITH SITE UTILITY CONTRACTOR.

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JDR PROJECT NO: 23.0319

WARNER PARK COMMUNITY RECREATION CENTER EXPANSION

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MADISON, WI 53704

CITY OF MADISON PARKS DIVISION
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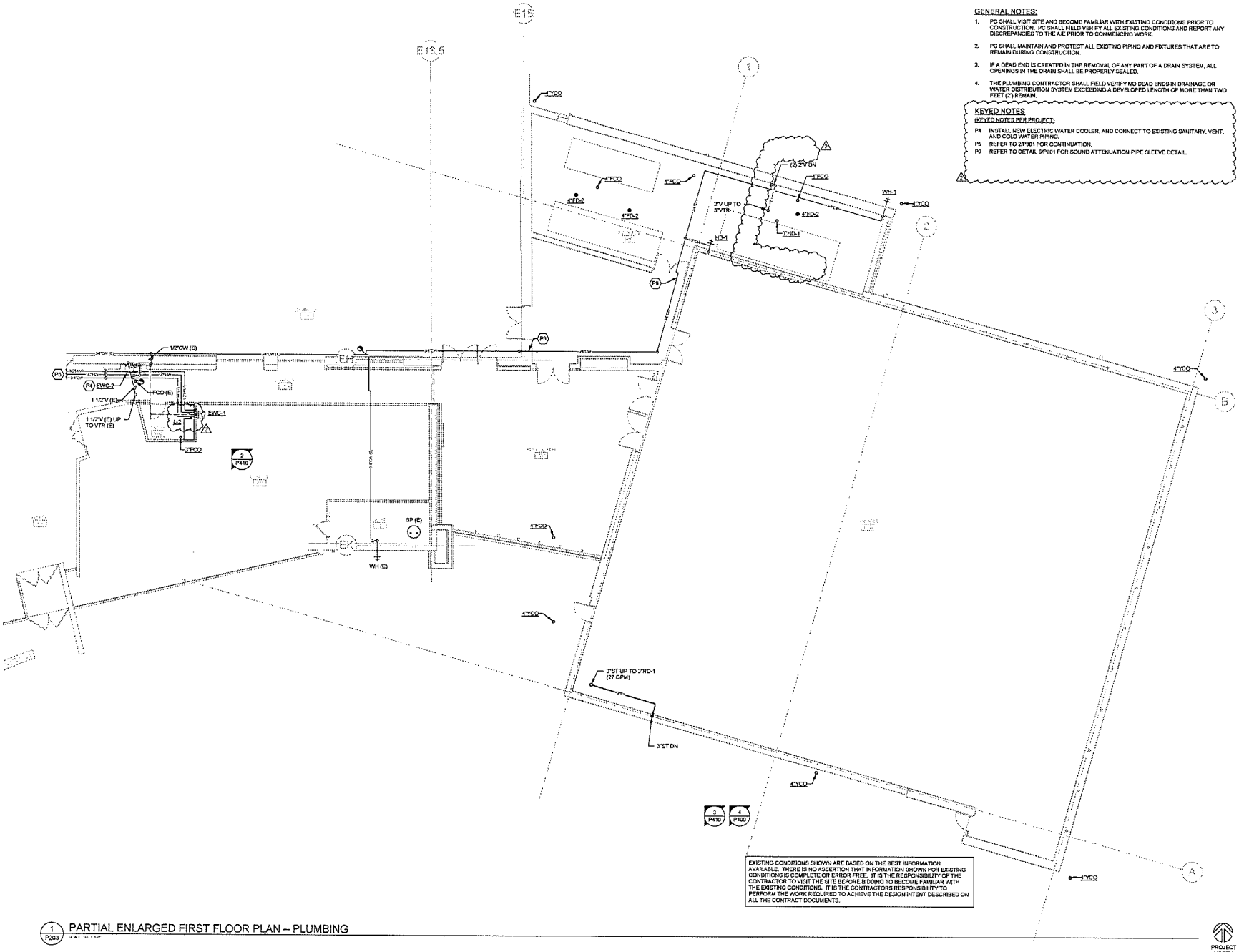
REVISION FOR:

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1	Addendum #3	5/16/2024

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PARTIAL ENLARGED UNDERFLOOR PLAN - PLUMBING

P201



GENERAL NOTES:

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4. THE PLUMBING CONTRACTOR SHALL FIELD VERIFY NO DEAD ENDS IN DRAINAGE OR WATER DISTRIBUTION SYSTEM EXCEEDING A DEVELOPED LENGTH OF MORE THAN TWO FEET (2') REMAIN.

KEYED NOTES
(KEYED NOTES PER PROJECT)

- P4 INSTALL NEW ELECTRIC WATER COOLER, AND CONNECT TO EXISTING SANITARY, VENT, AND COLD WATER PIPING.
- P5 REFER TO 2/P301 FOR CONTINUATION.
- P9 REFER TO DETAIL 6/P401 FOR SOUND ATTENUATION PIPE SLEEVE DETAIL.

EXISTING CONDITIONS SHOWN ARE BASED ON THE BEST INFORMATION AVAILABLE. THERE IS NO ASSERTION THAT INFORMATION SHOWN FOR EXISTING CONDITIONS IS COMPLETE OR ERROR FREE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VISIT THE SITE BEFORE BIDDING TO BECOME FAMILIAR WITH THE EXISTING CONDITIONS. IT IS THE CONTRACTORS RESPONSIBILITY TO PERFORM THE WORK REQUIRED TO ACHIEVE THE DESIGN INTENT DESCRIBED ON ALL THE CONTRACT DOCUMENTS.

1 P203 PARTIAL ENLARGED FIRST FLOOR PLAN – PLUMBING

PROJECT NORTH

Engberg Anderson ARCHITECTS
MILWAUKEE | MADISON | CHICAGO

JDR ENGINEERING, INC.
5525 NOBEL DRIVE
SUITE 110
MADISON, WI 53711
PH: 608.277.1738 FAX: 608.271.7046
JDR PROJECT NO: 23.0319

WARNER PARK COMMUNITY RECREATION CENTER EXPANSION

1625 NORTHPORT DRIVE
MADISON, WI 53704

CITY OF MADISON PARKS DIVISION
330 EAST LAKESIDE STREET
MADISON, WI 53715

PROJECT NUMBER 223471.00

ISSUED FOR:

BID SET	5/16/2024

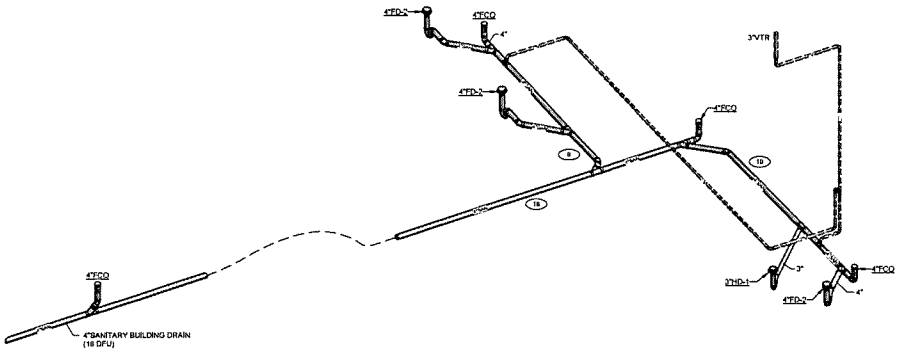
REVISION FOR:

NO.	DESCRIPTION	DATE
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2	Addendum #3	5/16/2024

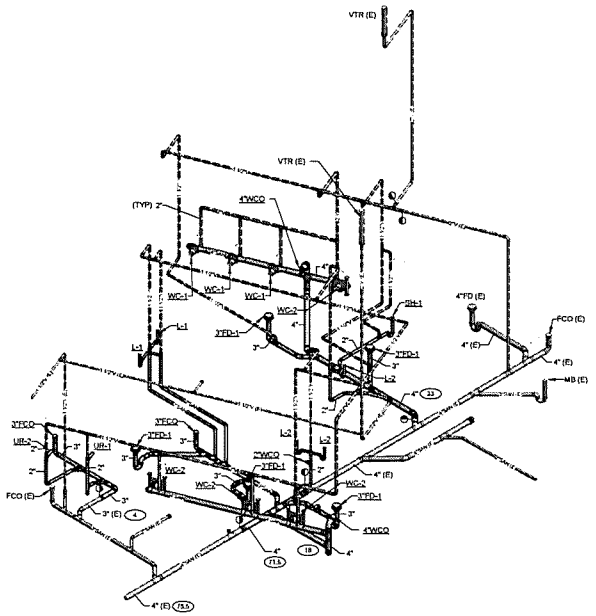
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PARTIAL ENLARGED FIRST FLOOR PLAN – PLUMBING

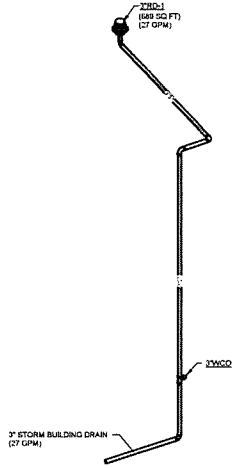
P203



3 P400 WASTE AND VENT ISOMETRIC



1 P400 WASTE AND VENT ISOMETRIC

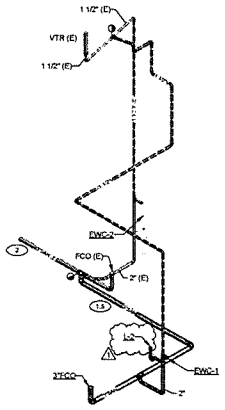


CO

6" STORM BUILDING DRAIN (179 GPM)

KEYED NOTES
(KEYED NOTES PER PROJECT)

4 P400 STORM ISOMETRIC



2 P400 WASTE AND VENT ISOMETRIC

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330 EAST LAKESIDE STREET
MADISON, WI 53715

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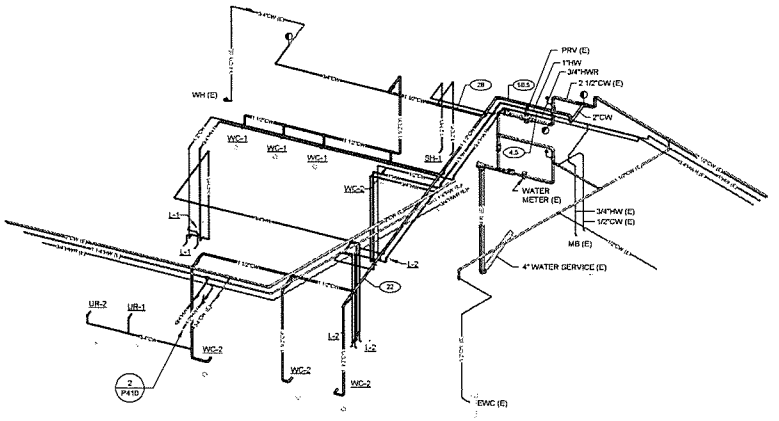
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1	Addendum #3	9/18/2024

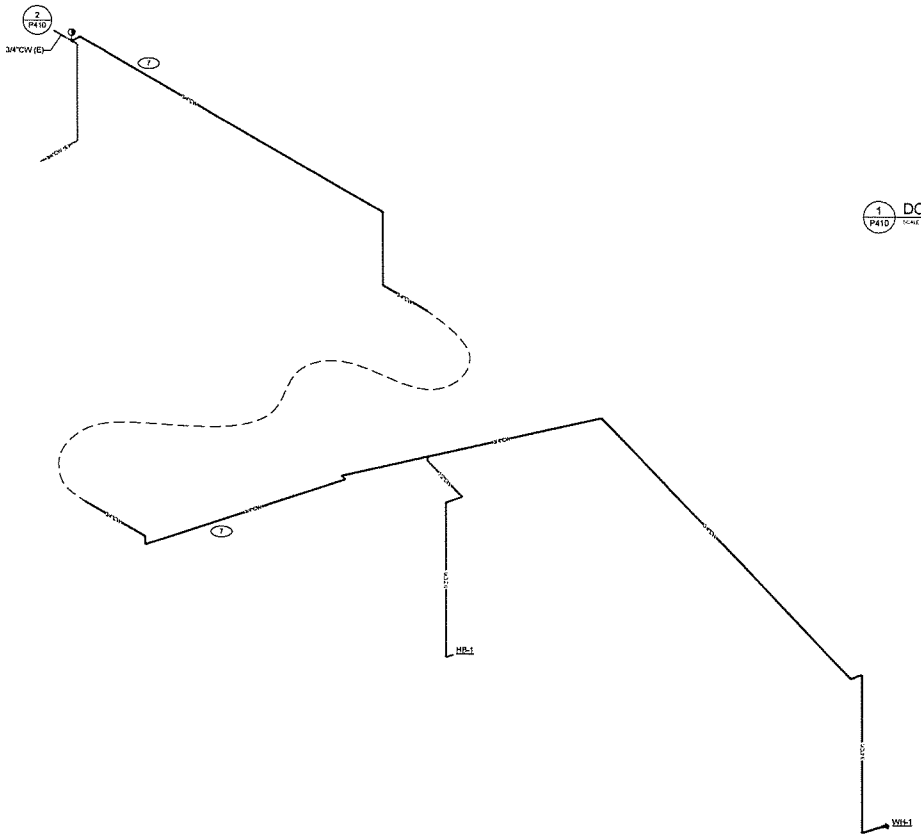
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SANITARY WASTE, VENT & STORM ISOMETRIC - PLUMBING

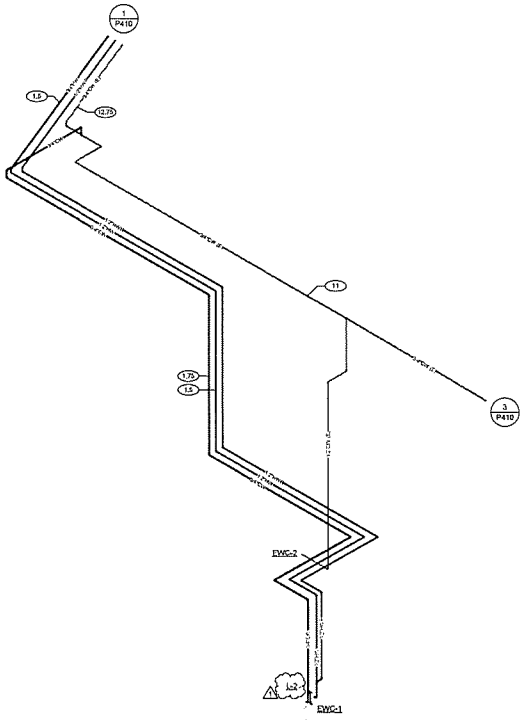
P400



1 P410 DOMESTIC WATER ISOMETRIC



3 P410 DOMESTIC WATER ISOMETRIC



2 P410 DOMESTIC WATER ISOMETRIC

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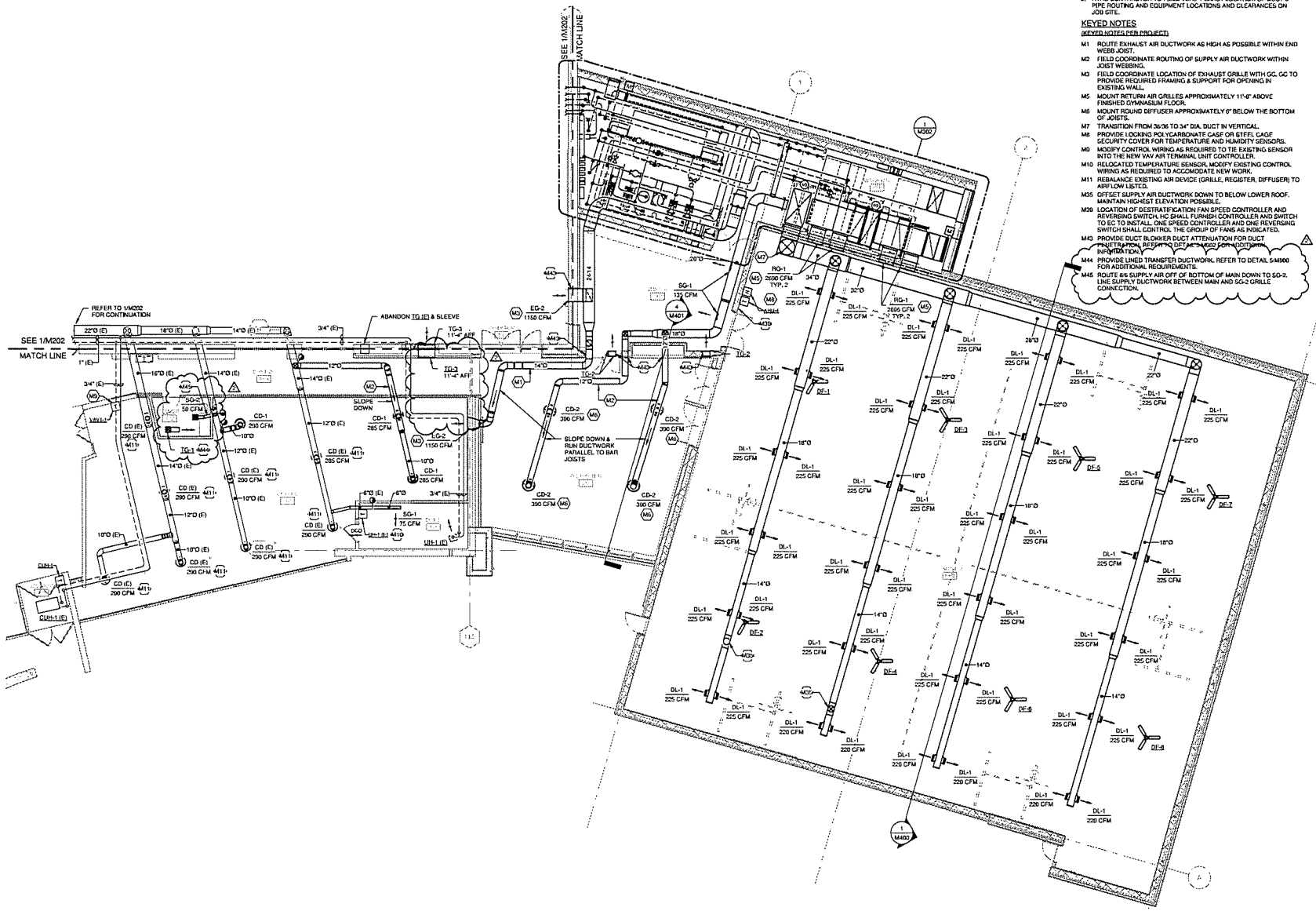
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DOMESTIC WATER
ISOMETRIC - PLUMBING

P410



1 M201 FIRST FLOOR PLAN EXPANSION - HVAC

PROJECT NORTH

GENERAL NOTES:

1. COORDINATE ALL DUCT, PIPING, AND EQUIPMENT INSTALLATION WITH JOIST LAYOUT WHERE REQUIRED.
2. HVAC CONTRACTOR TO FIELD VERIFY EXACT LOCATION OF DUCT & PIPE ROUTING AND EQUIPMENT LOCATIONS AND CLEARANCES ON JOB SITE.

KEYED NOTES

(KEYED NOTES PER PROJECT)

M1 ROUTE EXHAUST AIR DUCTWORK AS HIGH AS POSSIBLE WITHIN END WEBB JOIST.
M2 FIELD COORDINATE ROUTING OF SUPPLY AIR DUCTWORK WITHIN JOIST WEBBING.
M3 FIELD COORDINATE LOCATION OF EXHAUST GRILLE WITH GC. GC TO PROVIDE REQUIRED FRAMING & SUPPORT FOR OPENING IN EXISTING WALL.
M5 MOUNT RETURN AIR GRILLES APPROXIMATELY 11'-6" ABOVE FINISHED GYMNASIUM FLOOR.
M6 MOUNT ROUND DIFFUSER APPROXIMATELY 6" BELOW THE BOTTOM OF JOISTS.
M7 TRANSITION FROM 36/36 TO 34" DIA. DUCT IN VERTICAL.
M8 PROVIDE LOCKING POLYCARBONATE CASE OR STEEL CAGE SECURITY COVER FOR TEMPERATURE AND HUMIDITY SENSORS.
M9 MODIFY CONTROL WIRING AS REQUIRED TO TIE EXISTING SENSOR INTO THE NEW VAV AIR TERMINAL UNIT CONTROLLER.
M10 RELOCATED TEMPERATURE SENSOR. MODIFY EXISTING CONTROL WIRING AS REQUIRED TO ACCOMODATE NEW WORK.
M11 REBALANCE EXISTING AIR DEVICE (GRILLE, REGISTER, DIFFUSER) TO AIRFLOW LISTED.
M35 OFFSET SUPPLY AIR DUCTWORK DOWN TO BELOW LOWER ROOF. MAINTAIN HIGHEST ELEVATION POSSIBLE.
M39 LOCATION OF DESTRATIFICATION FAN SPEED CONTROLLER AND REVERSING SWITCH. HC SHALL FURNISH CONTROLLER AND SWITCH TO EC TO INSTALL. ONE SPEED CONTROLLER AND ONE REVERSING SWITCH SHALL CONTROL THE GROUP OF FANS AS INDICATED.
M43 PROVIDE DUCT BLOCKER DUCT ATTENUATION FOR DUCT PENETRATION. REFER TO DETAIL M400 FOR ADDITIONAL INFORMATION.
M44 PROVIDE LINED TRANSFER DUCTWORK. REFER TO DETAIL 5/M900 FOR ADDITIONAL REQUIREMENTS.
M45 ROUTE 8/6 SUPPLY AIR OFF OF BOTTOM OF MAIN DOWN TO SG-2. LINE SUPPLY DUCTWORK BETWEEN MAIN AND SG-2 GRILLE CONNECTION.

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1625 NORTHPORT DRIVE
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CITY OF MADISON PARKS DIVISION
330 EAST LAKESIDE STREET
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PROJECT NUMBER 220471.00

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1	Addendum #2	6/7/2024
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CHECKED BY RCS

FIRST FLOOR
EXPANSION PLAN - HVAC

M201

CHILLER DEMOLITION & REPLACEMENT NOTES:

1. HVAC CONTRACTOR SHALL PHASE THE DEMOLITION OF THE EXISTING CHILLER AND CHILLED WATER PLANT WITH THE INSTALLATION OF THE NEW HEAT RECOVERY CHILLER PLANT. EXISTING CHILLER AND CHILLED WATER PLANT SHALL REMAIN OPERATIONAL TO LIMIT DOWNTIME OF COOLING TO THE FACILITY.

GENERAL NOTES:

1. COORDINATE ALL DUCT, PIPING, AND EQUIPMENT INSTALLATION WITH JOIST LAYOUT WHERE REQUIRED.
2. HVAC CONTRACTOR TO FIELD VERIFY EXACT LOCATION OF DUCT & PIPE ROUTING AND EQUIPMENT LOCATIONS AND CLEARANCES ON JOB SITE.

KEYED NOTES

(KEYED NOTES PER PROJECT)

M27 4" CONCRETE EQUIPMENT PAD BY GC. HC TO COORDINATE SIZE AND LOCATION.

M28 5" GEOTHERMAL BOREFIELD MANIFOLDS. REFER TO DETAIL 3/M602 FOR ADDITIONAL REQUIREMENTS.

M29 PROVIDE 72/76 INSULATED PLENUM FOR OUTSIDE AIR INTAKE, 72/76 INSULATED PLENUM FOR RELIEF AIR, AND PROVIDE INSULATED BLANK-OFF PANELS FOR UNUSED PORTIONS OF LOUVER.

M30 COORDINATE WITH EC TO PROVIDE 120V1 POWER AND DATA CONNECTION TO TEMPERATURE CONTROL PANEL.

M31 PROVIDE CONDENSATE LOOP SEAL AND ROUTE CONDENSATE TO HUB DRAIN. CONDENSATE PIPE SIZE SHALL NOT BE SMALLER THAN UNIT CONNECTION SIZE. HUB DRAIN BY PC.

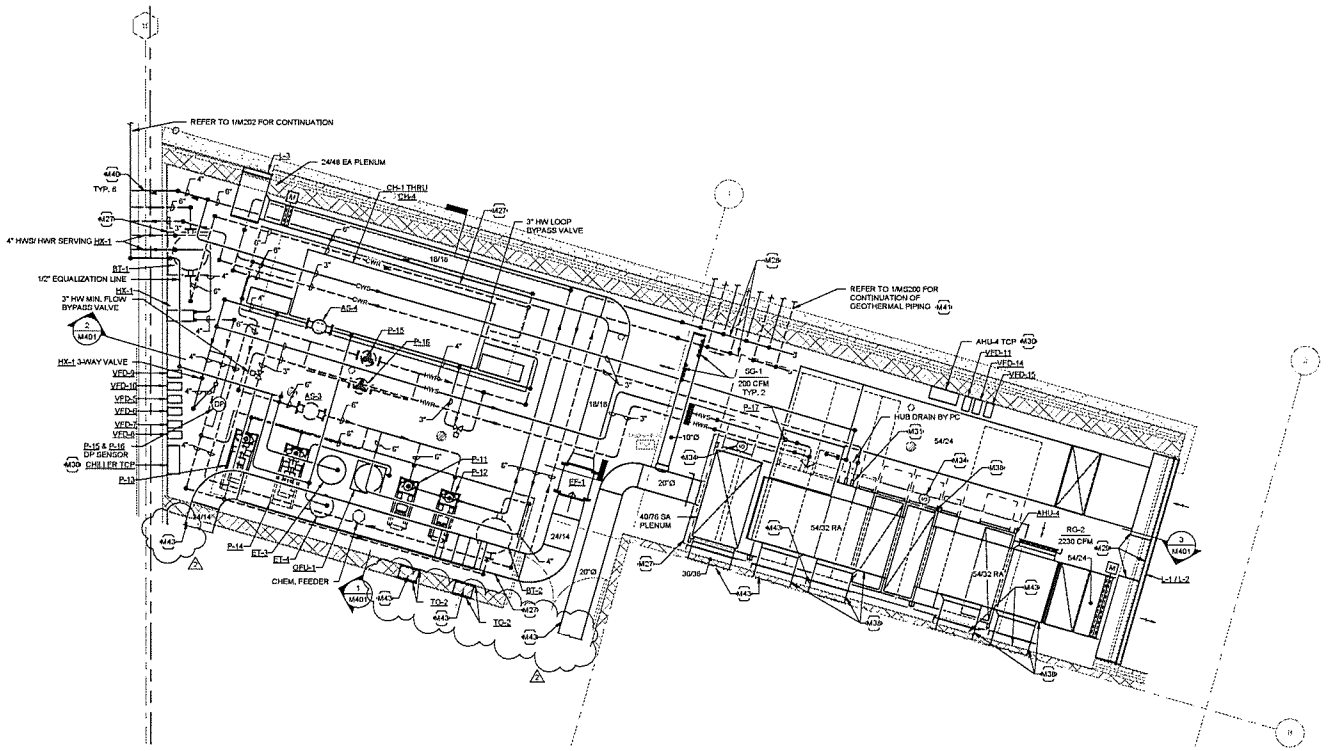
M34 DUCT MOUNTED SMOKE DETECTOR BY EC.

M38 LINE ALL RETURN AIR DUCTWORK ASSOCIATED WITH AHU-4. DUCT SIZES SHOWN ARE INSIDE DUCT DIMENSIONS.

M40 PROVIDE PIPE BLOKKER PIPE ATTENUATION FOR PIPE PENETRATION. REFER TO DETAIL 5/M602 FOR ADDITIONAL INFORMATION.

M41 FIELD COORDINATE GEOTHERMAL FIELD PIPING WITH STORM PIPING. REFER TO CIVIL PLANS FOR ADDITIONAL INFORMATION.

M43 PROVIDE DUCT BLOKKER DUCT ATTENUATION FOR DUCT PENETRATION. REFER TO DETAIL 5/M602 FOR ADDITIONAL INFORMATION.



1 M302 ENLARGED MECHANICAL ROOM PLAN - HVAC

SCALE: 1/4" = 1'-0"

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CHECKED BY	RCS

ENLARGED MECHANICAL ROOM PLAN - HVAC

M302

KEYED NOTES

KEYED NOTES PER PROJECT:

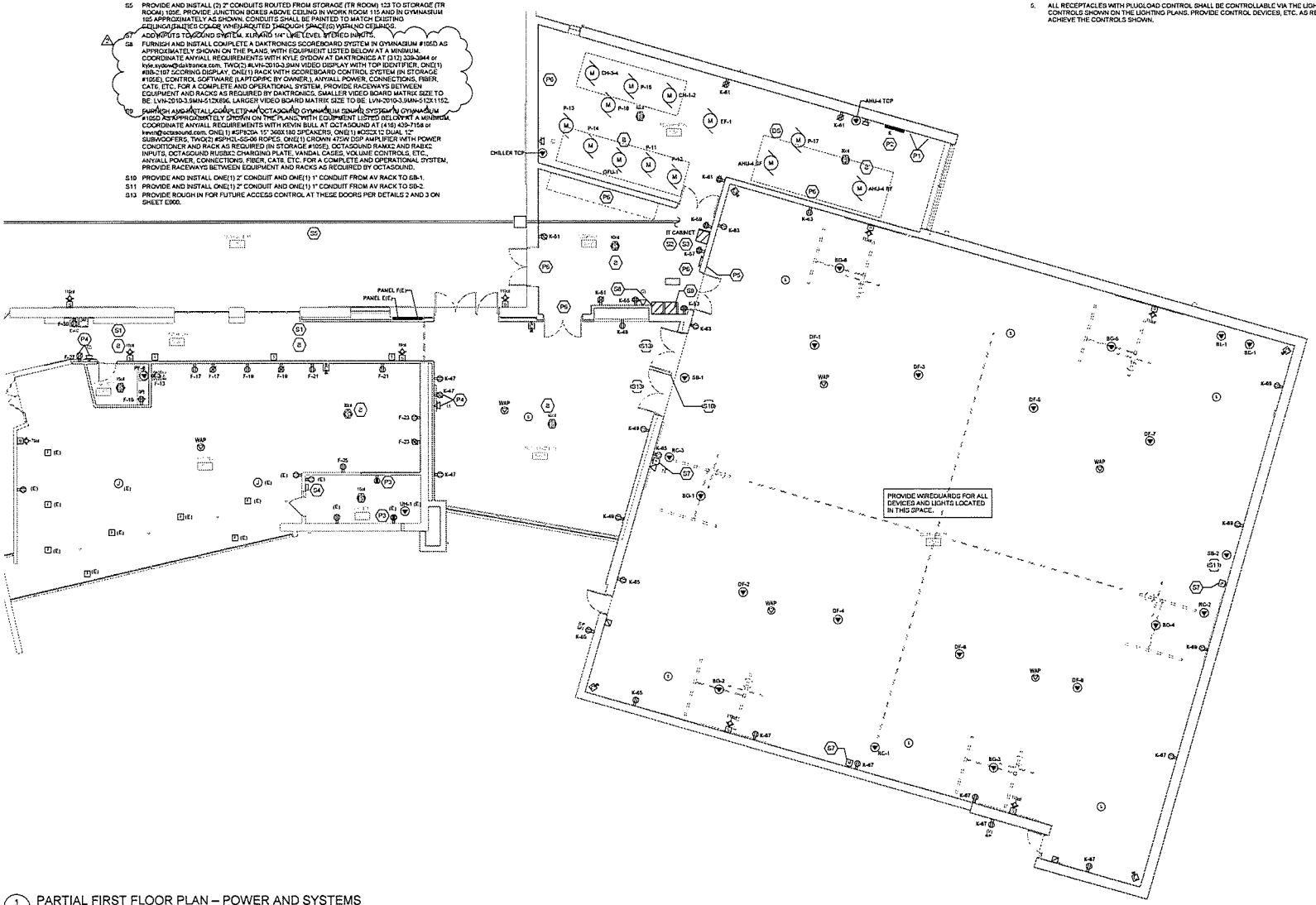
P1 LOCATE INVERTERS FOR ROOF MOUNTED PV ARRAY AT THIS LOCATION.
P2 PROVIDE AND INSTALL NEW 208Y/120V, 600A PANEL 'K'.
P3 PROVIDE AND INSTALL DUAL CONTROLLED RECEPTACLE EQUAL TO LEGRAND #WRC-20-2. PROVIDE CEILING MOUNTED RF TRANSMITTER EQUAL TO LEGRAND #WRC-TX-LM. PROVIDE ROOM CONTROLLERS AS REQUIRED.
P4 COORDINATE HEIGHT OF POWER AND DATA FOR SCREEN WITH ARCHITECT.
P5 LOCATION OF DEGTRATIFICATION FAN SPEED CONTROLLER AND REVERSING SWITCH. HC SHALL FURNISH CONTROLLER AND SWITCH TO EC TO INSTALL. REFER TO M201 FOR MORE DETAILS.
P6 PROVIDE SOUND ATTENUATION AS REQUIRED AT ANY/ALL WALL PENETRATIONS. REFER TO 10/E600 FOR MORE DETAIL.
S1 MOUNT SMOKE DETECTOR ABOVE PERFERATED CEILING.
S2 FOR CONNECTION OF TELECOM ROOMS. RUN TWELVE STRAND SINGLE MODE FIBER FROM STORAGE (TR ROOM) 123 TO STORAGE (TR ROOM) 105E. TERMINATE WITH LC CONNECTORS ON CABINET MOUNTED PATCH PANEL IN EACH TR. PROVIDE 12 LC TO LC PATCH CABLES.
S3 PROVIDE AND INSTALL NEW LOCKING IT CABINET EQUAL TO HUBBELL #HSCM836.
S4 EXTEND EXISTING PAGING FEEDS THROUGH OVERHEAD CONDUIT SYSTEM TO THIS LOCATION. CONTRACTOR SHALL CUT EXISTING UNDERGROUND FEED AND SPLICE TO NEW OVERHEAD CONDUIT SYSTEM.
S5 PROVIDE AND INSTALL (2) 2" CONDUITS ROUTED FROM STORAGE (TR ROOM) 123 TO STORAGE (TR ROOM) 105E. PROVIDE JUNCTION BOXES ABOVE CEILING IN WORK ROOM 115 AND IN GYMNASIUM 105 APPROXIMATELY AS SHOWN. CONDUITS SHALL BE PAINTED TO MATCH EXISTING CEILING/PAINTED COLOR WHEN ROUTED THROUGH SPACE(S) WITH NO CEILINGS.
S7 ADD MOTUS TO SOUND SYSTEM. SUPPLIED 1/4" LINE LEVEL MATCHED INPUTS.
S8 FURNISH AND INSTALL COMPLETE A DAKTRONICS SCOREBOARD SYSTEM IN GYMNASIUM #105D AS APPROXIMATELY SHOWN ON THE PLANS, WITH EQUIPMENT LISTED BELOW AT A MINIMUM. COORDINATE ANY/ALL REQUIREMENTS WITH KYLE SYDOW AT DAKTRONICS AT (312) 339-3944 or kyle.sydow@daktronics.com. TWO(2) #LVN-2010-3.9MM VIDEO DISPLAY WITH TOP IDENTIFIER, ONE(1) #BB-2107 SCORING DISPLAY, ONE(1) RACK WITH SCOREBOARD CONTROL SYSTEM (IN STORAGE #105E), CONTROL SOFTWARE (LAPTOP/PC BY OWNER.), ANY/ALL POWER, CONNECTIONS, FIBER, CAT6, ETC., FOR A COMPLETE AND OPERATIONAL SYSTEM. PROVIDE RACEWAYS BETWEEN EQUIPMENT AND RACKS AS REQUIRED BY DAKTRONICS. SMALLER VIDEO BOARD MATRIX SIZE TO BE: LVN-2010-3.9MM-512X896. LARGER VIDEO BOARD MATRIX SIZE TO BE: LVN-2010-3.9MM-512X1152.
S9 FURNISH AND INSTALL COMPLETE AN OCTASOUND GYMNASIUM SOUND SYSTEM IN GYMNASIUM #105D AS APPROXIMATELY SHOWN ON THE PLANS, WITH EQUIPMENT LISTED BELOW AT A MINIMUM, COORDINATE ANY/ALL REQUIREMENTS WITH KEVIN BULL AT OCTASOUND AT (416) 409-7158 or kevin@octasound.com. ONE(1) #SP8CQA 15" 360X180 SPEAKERS, ONE(1) #CCX 12 DUAL 12" SUBWOOFERS, TWO(2) #SPHCL-QS-06 ROPES, ONE(1) CROWN 4720N DSP AMPLIFIER WITH POWER CONDITIONER AND RACK AS REQUIRED (IN STORAGE #105E). OCTASOUND RAMIX AND RABIX INPUTS, OCTASOUND RUSBIX CHARGING PLATE, VANDAL CASES, VOLUME CONTROLS, ETC., ANY/ALL POWER, CONNECTIONS, FIBER, CAT6, ETC. FOR A COMPLETE AND OPERATIONAL SYSTEM. PROVIDE RACEWAYS BETWEEN EQUIPMENT AND RACKS AS REQUIRED BY OCTASOUND.
S10 PROVIDE AND INSTALL ONE(1) 2" CONDUIT AND ONE(1) 1" CONDUIT FROM AV RACK TO SB-1.
S11 PROVIDE AND INSTALL ONE(1) 2" CONDUIT AND ONE(1) 1" CONDUIT FROM AV RACK TO SB-2.
S13 PROVIDE ROUGH IN FOR FUTURE ACCESS CONTROL AT THESE DOORS PER DETAILS 2 AND 3 ON SHEET E900.

SYSTEMS GENERAL NOTES:

1. ALL LOW VOLTAGE CABLES OR CONDUCTORS OPERATING AT LESS THAN 50 VOLTS SHALL BE IN ELECTRICAL METAL TUBING (EMT) WHERE INSTALLED WITHIN WALLS OR INACCESSIBLE SPACES.
2. TV OUTLETS, VOLUME CONTROLS, TELEPHONE OUTLETS, AND DATA OUTLETS SHALL CONSIST OF A BACK BOX WITH CONDUIT STUBBED ABOVE THE ACCESSIBLE CEILING, SEE ROUGH-IN DETAIL. VERIFY SIZE OF BACK BOX REQUIRED WITH DEVICE TO BE INSTALLED. LOCATE BACK BOXES 6" FROM ADJACENT POWER RECEPTACLE INTENDED FOR COMPUTER USE.
3. ANY/ALL LOW VOLTAGE SYSTEMS, INCLUDING BUT NOT LIMITED TO THE FOLLOWING: COMMUNICATIONS, PAGING, CLOCK SYSTEM, CLASS BELLS, ETC., SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION. FIELD VERIFY ALL LOW VOLTAGE SYSTEM REQUIREMENTS AND EXTEND/MAINTAIN/REUSE AS REQUIRED. EXTEND ANY/ALL NEW COMMUNICATIONS CABLING TO EXISTING MDF/IDF AS REQUIRED. COORDINATE JACK/CABLING REQUIREMENTS AND COLORS WITH OWNER.
4. CAMERA MOUNTING SHALL BE COORDINATED WITH OWNER. VERIFY DESIRED MOUNTING HEIGHT AND CAMERA MOUNT TYPE PRIOR TO INSTALL.
5. ALL WAP LOCATIONS SHOWN ARE APPROXIMATE. CONFIRM ALL EXACT/FINAL WAP LOCATIONS WITH CITY I.T. DEPARTMENT PRIOR TO ROUGH IN. WAP MOUNTING SHALL BE COORDINATED WITH OWNER. VERIFY DESIRED MOUNTING HEIGHT AND WAP MOUNT TYPE PRIOR TO INSTALL.
6. ALL NEW CAT6 CABLING SHALL BE ROUTED TO STORAGE (TR ROOM) #105E.

POWER GENERAL NOTES:

1. REFER TO SHEET E000 FOR ALL SYMBOLS, ABBREVIATIONS, AND DETAILS.
2. THE CONTRACTOR MAY INSTALL UP TO THREE (3) CURRENT CARRYING CONDUCTORS IN A CONDUIT. LOADINGS ARE BASED ON THWN INSULATION, 40°C AMBIENT WITH DERATINGS FOR TEMPERATURE AND UP TO THREE (3) CONDUCTORS IN A CONDUIT. CONTACT THE ENGINEER FOR WIRING IN OTHER CONDITIONS.
3. VERIFY ALL MOUNTING HEIGHTS OF DEVICES ABOVE MILLWORK WITH ARCHITECTURAL PLANS.
4. NOTE THAT THIS PROJECT CONSISTS OF A COMPLETE REPLACEMENT OF THE FIRE ALARM SYSTEM AS SHOWN ON THE PLANS. ANY/ALL EXISTING FIRE ALARM DEVICES, CONTROL PANELS, ANNUNCIATOR PANELS, CABLING, ETC. SHALL BE DISCONNECTED AND REMOVED COMPLETE. REUSE OF EXISTING INFRASTRUCTURE (BOXES AND CONDUITS ONLY) IS ACCEPTABLE WHERE SIZED AND SUPPORTED PROPERLY. THE NEW VOICE FIRE ALARM SYSTEM THROUGHOUT THE BUILDING SHALL BE INSTALLED, PROGRAMMED, TESTED, COMMISSIONED, AND APPROVED BY THE LOCAL AHJ PRIOR TO DECOMMISSIONING AND REMOVING THE EXISTING FIRE ALARM SYSTEM. ANY/ALL NEW FIRE ALARM DEVICES SHALL BE RECESSED IN EXISTING WALLS/CEILINGS UNLESS INDICATED OTHERWISE. ANY AND ALL FIRE ALARM CABLING SHALL BE ENT CONDUIT AT A MINIMUM. NO FREE AIR CABLING IS ALLOWED. ANY/ALL EXISTING BOXES AND CONDUITS WITHIN THE EXISTING BUILDING THAT ARE REMOVED SHALL HAVE THE EXISTING WALLS/CEILINGS PATCHED AND PAINTED TO OWNER'S SATISFACTION. ANY/ALL NEW BOXES AND CONDUITS WITHIN THE EXISTING BUILDING THAT ARE SURFACE MOUNTED ON EXISTING WALLS/CEILINGS SHALL BE PAINTED TO OWNER'S SATISFACTION.
5. ALL RECEPTACLES WITH PLUG/LOAD CONTROL SHALL BE CONTROLLABLE VIA THE LIGHTING CONTROLS SHOWN ON THE LIGHTING PLANS. PROVIDE CONTROL DEVICES, ETC. AS REQUIRED TO ACHIEVE THE CONTROLS SHOWN.



1 / E201 PARTIAL FIRST FLOOR PLAN – POWER AND SYSTEMS

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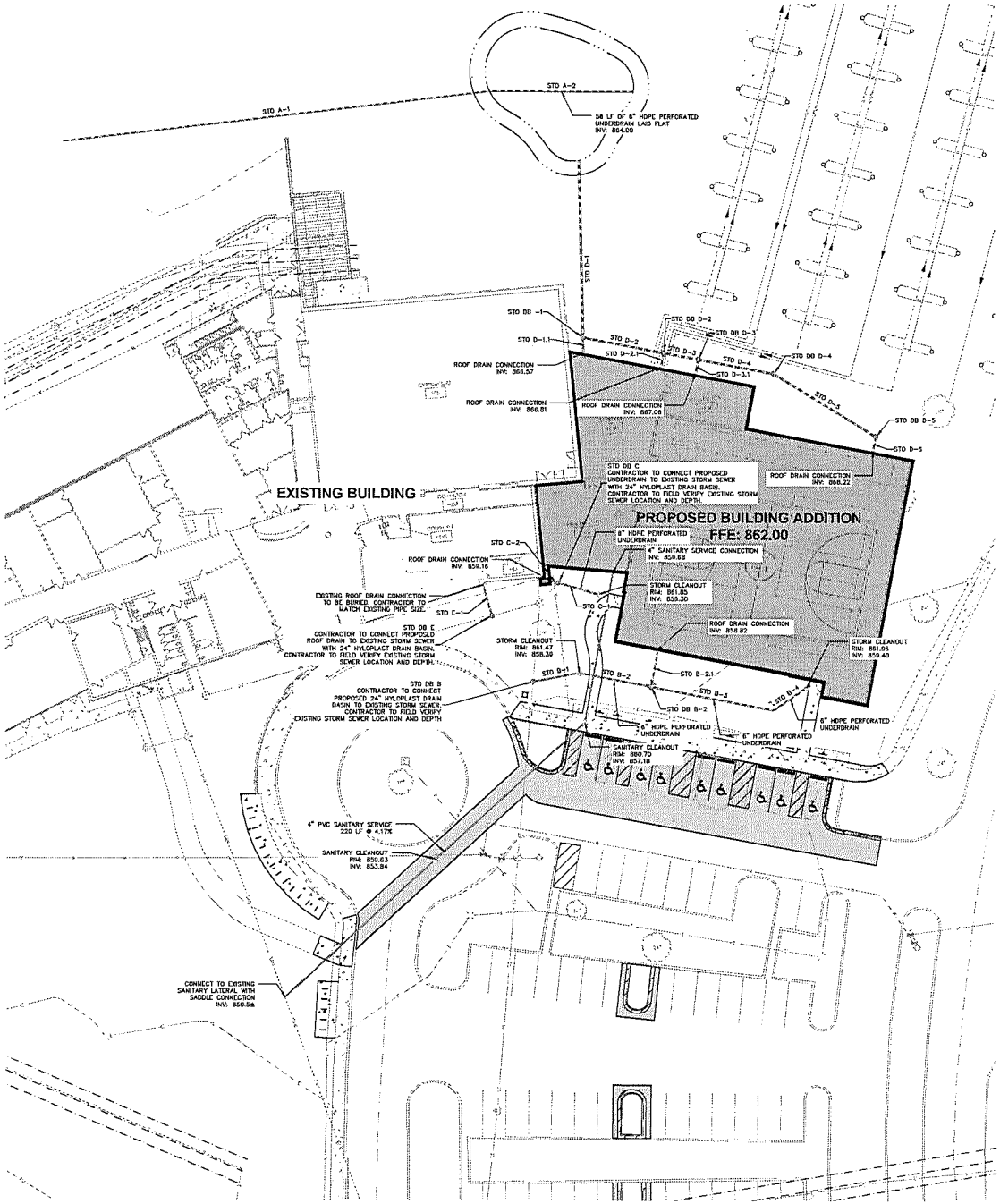
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PARTIAL FIRST FLOOR PLAN – POWER AND SYSTEMS

E201



PROPOSED STORM SEWER STRUCTURE TABLE					
LABEL	RIM EL. (FT)	INVERT EL. (FT)	DEPTH (FT)	STRUCTURE DESC.	FRAME & GRATE
STO DB -1	868.05	W INV: 858.52 (10") S INV: 858.52 (8") E INV: 858.52 (8")	2.4	24 IN DB	ADS DRAIN WITH BEEHIVE GRATE
STO DB B	861.24	E INV: 858.20 (8")	3.0	24 IN DB	ADS DRAIN WITH BEEHIVE GRATE
STO DB B-2	861.31	W INV: 858.68 (8") E INV: 858.68 (6") N INV: 858.68 (6")	2.6	24 IN DB	ADS DRAIN WITH BEEHIVE GRATE
STO DB C	861.99	E INV: 859.13 (6") W INV: 859.13 (6")	2.9	24 IN DB	ADS DRAIN WITH BEEHIVE GRATE
STO DB D-2	869.23	W INV: 866.78 (8") E INV: 866.76 (8") S INV: 866.76 (8")	2.5	24 IN DB	ADS DRAIN WITH BEEHIVE GRATE
STO DB D-3	870.14	W INV: 866.97 (8") E INV: 866.97 (8") S INV: 866.97 (8")	3.2	24 IN DB	ADS DRAIN WITH BEEHIVE GRATE
STO DB D-4	872.22	W INV: 867.42 (8") SE INV: 867.42 (8")	4.8	12 IN DB	ADS DRAIN WITH BEEHIVE GRATE
STO DB D-5	874.44	NW INV: 868.13 (8") S INV: 868.13 (8")	6.3	12 IN DB	ADS DRAIN WITH BEEHIVE GRATE
STO DB E	861.44	N INV: 858.70 (6")	2.7	24 IN DB	ADS DRAIN WITH BEEHIVE GRATE

PROPOSED STORM SEWER PIPE TABLE							
LABEL	FROM	TO	LENGTH	INVERT EL. (FT)	DISCHARGE EL. (FT)	SLOPE	SIZE & MATERIAL
STO A-1	STO A-1	STO A	188'	864.00	862.00	1.18%	6 IN HDPE
STO A-2	STO A-2	STO A-1	56'	864.00	864.00	0.00%	6 IN HDPE
STO B-1	STO D-1	STO DB B	19'	858.39	858.20	1.00%	6 IN HDPE
STO B-2	STO DB B-2	STO B-1	28'	858.68	858.39	1.00%	6 IN HDPE
STO B-2.1	STO B-1.2	STO DB B-2	14'	858.82	858.68	1.00%	6 IN HDPE
STO B-3	STO B-3	STO DB B-2	49'	859.17	858.68	1.00%	6 IN HDPE
STO B-4	STO B-4	STO B-3	16'	859.40	859.17	1.50%	6 IN HDPE
STO C-1	STO C-1	STO DB C	17'	859.30	859.13	1.00%	6 IN HDPE
STO C-2	STO C-2	STO DB C	3'	859.16	859.13	1.00%	6 IN HDPE
STO D-1	STO DB -1	STO D	70'	866.52	866.00	0.75%	10 IN HDPE
STO D-1.1	STO D-1.1	STO DB -1	6'	866.57	866.52	0.75%	8 IN HDPE
STO D-2	STO DB D-2	STO DB -1	33'	866.76	866.52	0.75%	8 IN HDPE
STO D-2.1	STO D-2.1	STO DB D-2	6'	866.81	866.76	0.75%	8 IN HDPE
STO D-3	STO DB D-3	STO DB D-2	14'	868.87	866.76	1.50%	8 IN HDPE
STO D-3.1	STO D-3.1	STO DB D-3	6'	867.06	866.97	1.50%	8 IN HDPE
STO D-4	STO DB D-4	STO DB D-3	30'	867.42	866.97	1.50%	8 IN HDPE
STO D-5	STO DB D-5	STO DB D-4	47'	868.13	867.42	1.50%	8 IN HDPE
STO D-6	STO D-6	STO DB D-5	6'	866.22	868.13	1.50%	8 IN HDPE
STO E-1	STO E-1	STO DB E	13'	858.95	858.70	2.00%	6 IN HDPE

Engberg Anderson ARCHITECTS

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JSD

MADISON REGIONAL OFFICE
161 HORIZON DRIVE, SUITE 101
VERONA, WISCONSIN 53593
P. 608.848.5060

3/26/2024

WARNER PARK COMMUNITY RECREATION CENTER EXPANSION

1625 NORTHPORT DRIVE
MADISON, WI 53704

CITY OF MADISON PARKS DIVISION
CITY-COUNTY BUILDING, ROOM 104
210 MARTIN LUTHER KING JR. BLVD
MADISON, WI 53703

PROJECT NUMBER 223471.00

ISSUED FOR:

BID SET 05/16/2024

REVISION FOR:

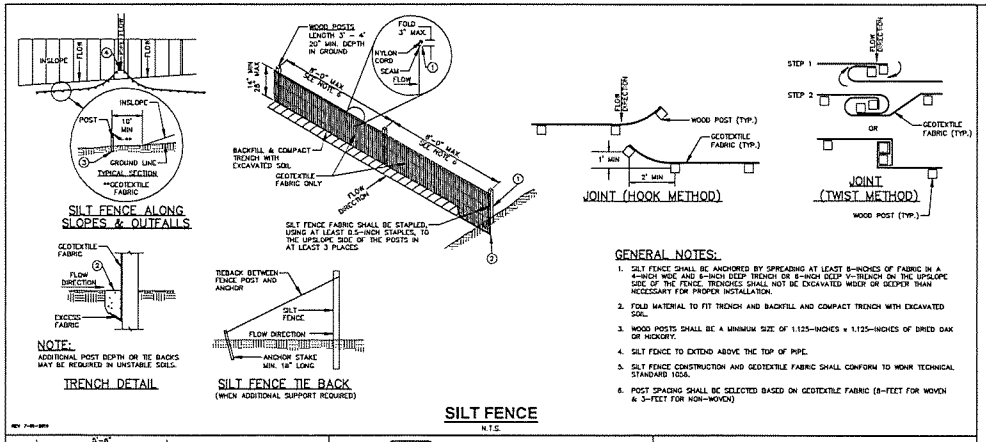
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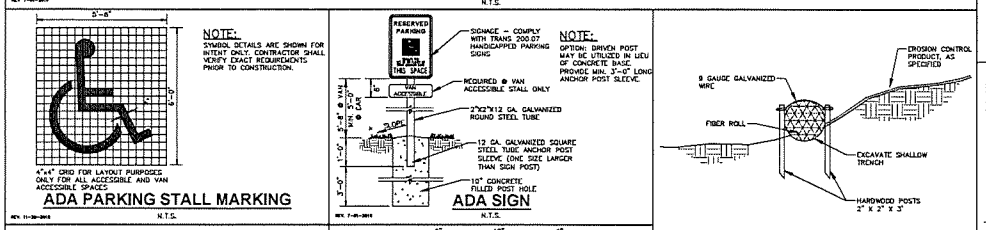
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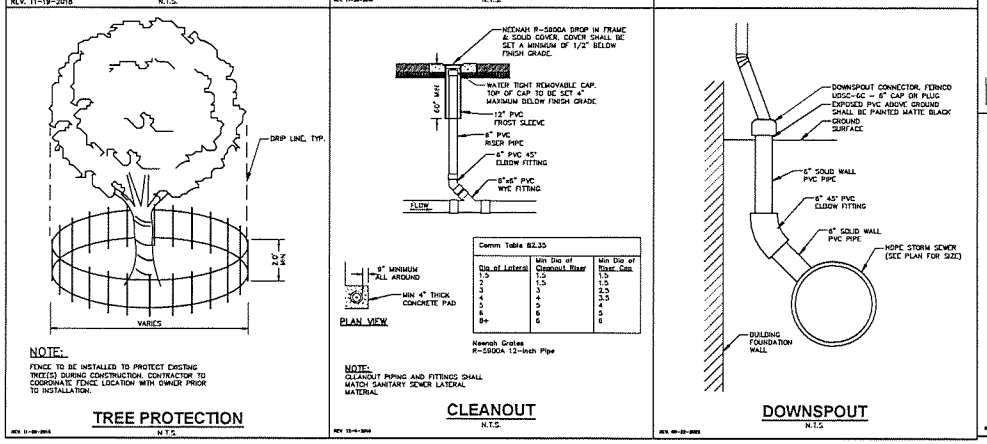
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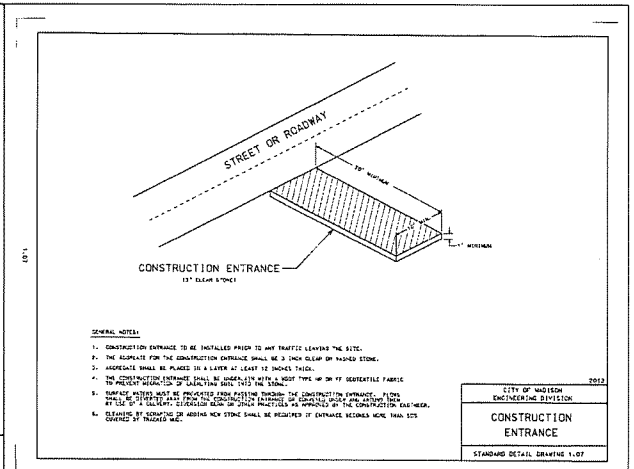
UTILITY PLAN

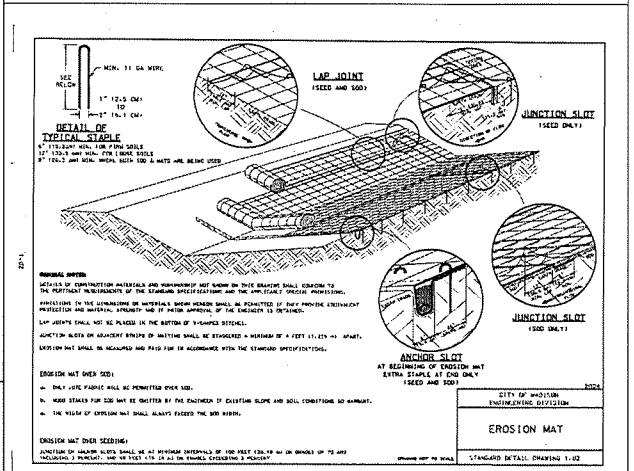
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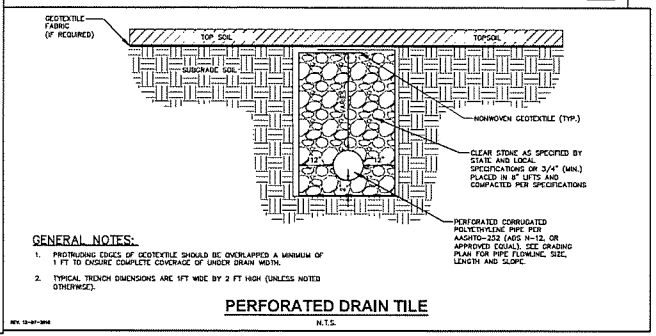












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MADISON REGIONAL OFFICE
161 HORIZON DRIVE, SUITE 101
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P: 608.848.5000

ORIGINAL

WARNER PARK COMMUNITY RECREATION CENTER EXPANSION

1625 NORTHPORT DRIVE
MADISON, WI 53704

CITY OF MADISON PARKS DIVISION
CITY-COUNTY BUILDING, ROOM 104
210 MARTIN LUTHER KING JR. BLVD
MADISON, WI 53703

PROJECT NUMBER 223471.00

ISSUED FOR

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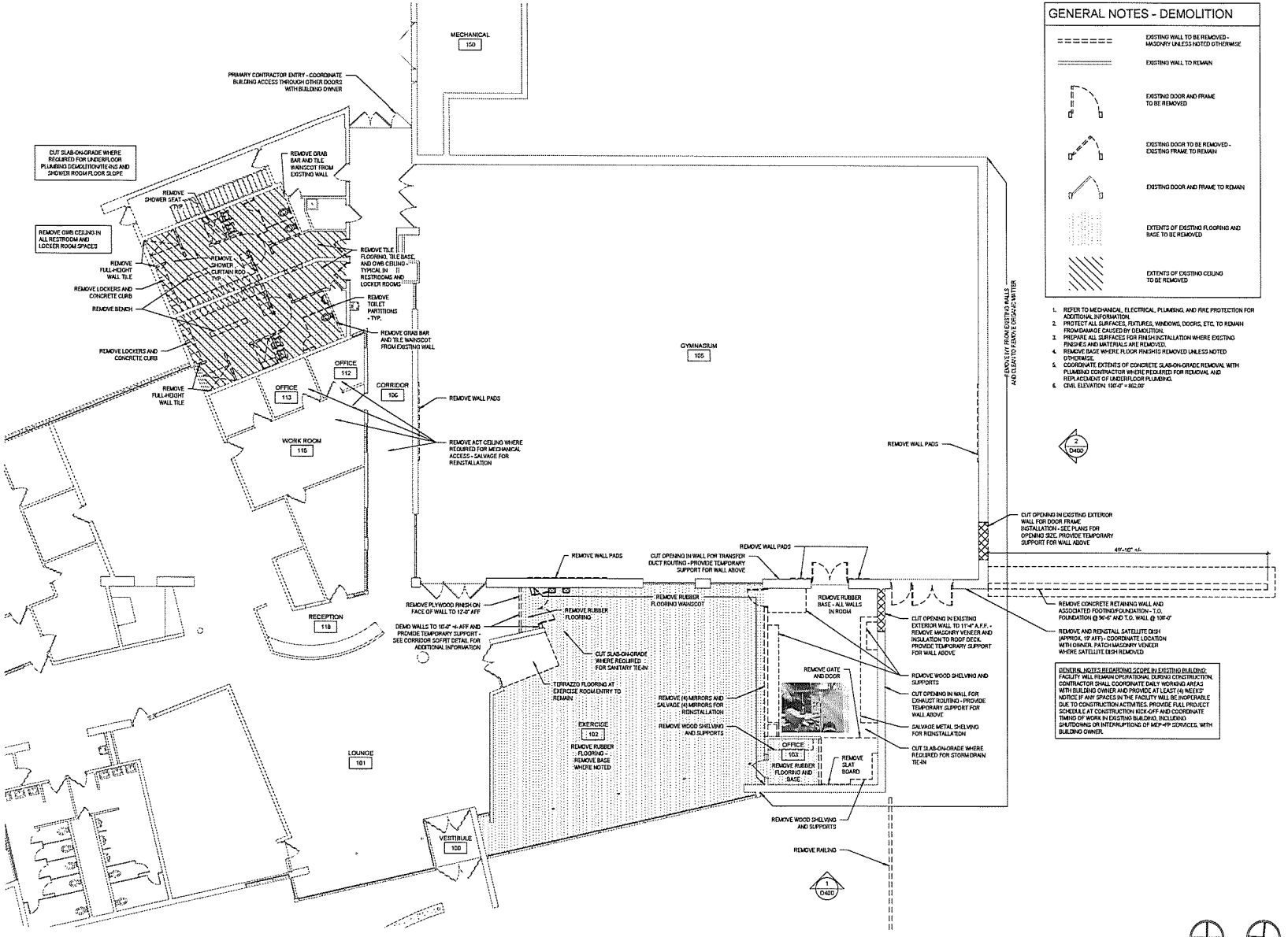
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CHECKED BY KJY

DETAILS

C600



GENERAL NOTES - DEMOLITION

- EXISTING WALL TO BE REMOVED - MASONRY UNLESS NOTED OTHERWISE
- EXISTING WALL TO REMAIN
- EXISTING DOOR AND FRAME TO BE REMOVED
- EXISTING DOOR TO BE REMOVED - EXISTING FRAME TO REMAIN
- EXISTING DOOR AND FRAME TO REMAIN
- EXTENTS OF EXISTING FLOORING AND BASE TO BE REMOVED
- EXTENTS OF EXISTING CEILING TO BE REMOVED

1. REFER TO MECHANICAL, ELECTRICAL, PLUMBING, AND FIRE PROTECTION FOR ADDITIONAL INFORMATION.
2. PROTECT ALL SURFACES, FIXTURES, WINDOWS, DOORS, ETC. TO REMAIN FROM DAMAGE CAUSED BY DEMOLITION.
3. PREPARE ALL SURFACES FOR FINISH INSTALLATION WHERE EXISTING FINISHES AND MATERIALS ARE REMOVED.
4. REMOVE BASE WHERE FLOOR FINISHES REMOVED UNLESS NOTED OTHERWISE.
5. COORDINATE EXTENTS OF CONCRETE SLAB-ON-GRADE REMOVAL WITH PLUMBING CONTRACTOR WHERE REQUIRED FOR REMOVAL AND REPLACEMENT OF UNDERFLOOR PLUMBING.
6. CIVIL ELEVATION: 100'-0" = 862.00'

GENERAL NOTES REGARDING SCOPE IN EXISTING BUILDING:
FACILITY WILL REMAIN OPERATIONAL DURING CONSTRUCTION. CONTRACTOR SHALL COORDINATE DAILY WORKING AREAS WITH BUILDING OWNER AND PROVIDE AT LEAST (4) WEEKS' NOTICE IF ANY SPACES IN THE FACILITY WILL BE INOPERABLE DUE TO CONSTRUCTION ACTIVITIES. PROVIDE FULL PROJECT SCHEDULE AT CONSTRUCTION KICK-OFF AND COORDINATE TIMING OF WORK IN EXISTING BUILDING, INCLUDING SHUTDOWNS OR INTERRUPTIONS OF MEP-FP SERVICES, WITH BUILDING OWNER.

1 FIRST FLOOR PARTIAL DEMOLITION PLAN
SCALE: 1/8" = 1'-0"

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0246 INAC

WARNER PARK COMMUNITY RECREATION CENTER EXPANSION

1625 NORTHPORT DRIVE
MADISON, WI 53704

CITY OF MADISON PARKS DIVISION
330 EAST LAKESIDE STREET
MADISON, WI 53715

PROJECT NUMBER 22347.00

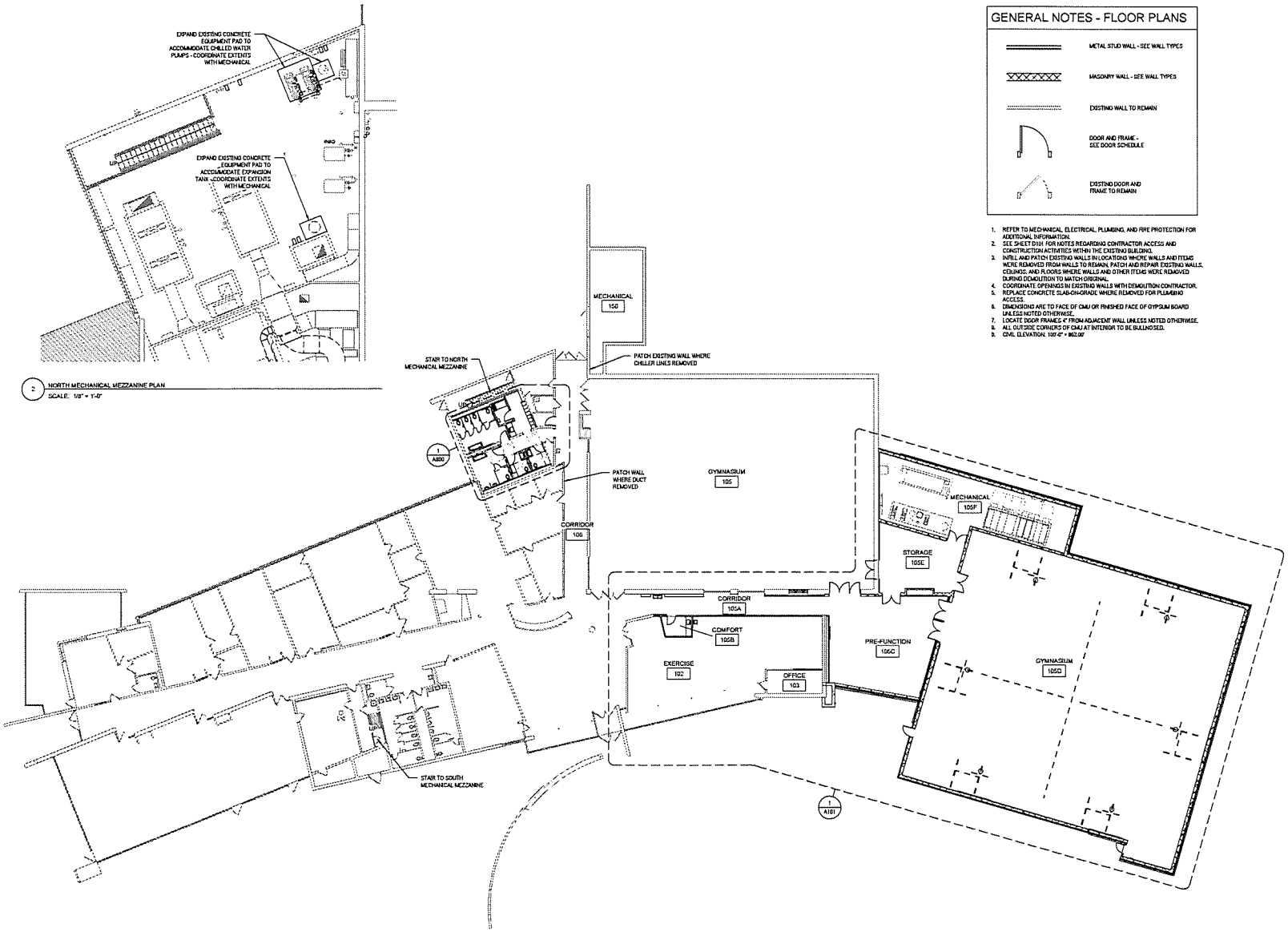
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DEMOLITION PLAN

D101



2 NORTH MECHANICAL MEZZANINE PLAN
SCALE: 1/8" = 1'-0"

1 OVERALL FIRST FLOOR PLAN
SCALE: 1/16" = 1'-0"

GENERAL NOTES - FLOOR PLANS

- METAL STUD WALL - SEE WALL TYPES
- MASONRY WALL - SEE WALL TYPES
- EXISTING WALL TO REMAIN
- DOOR AND FRAME - SEE DOOR SCHEDULE
- EXISTING DOOR AND FRAME TO REMAIN

1. REFER TO MECHANICAL, ELECTRICAL, PLUMBING, AND FIRE PROTECTION FOR ADDITIONAL INFORMATION.
2. SEE SHEET D101 FOR NOTES REGARDING CONTRACTOR ACCESS AND CONSTRUCTION ACTIVITIES WITHIN THE EXISTING BUILDING.
3. INFILL AND PATCH EXISTING WALLS IN LOCATIONS WHERE WALLS AND ITEMS WERE REMOVED FROM WALLS TO REMAIN. PATCH AND REPAIR EXISTING WALLS, CEILINGS, AND FLOORS WHERE WALLS AND OTHER ITEMS WERE REMOVED DURING DEMOLITION TO MATCH ORIGINAL.
4. COORDINATE OPENINGS IN EXISTING WALLS WITH DEMOLITION CONTRACTOR.
5. REPLACE CONCRETE SLAB-ON-GRADE WHERE REMOVED FOR PLUMBING ACCESS.
6. DIMENSIONS ARE TO FACE OF CMU OR FINISHED FACE OF GYPSUM BOARD UNLESS NOTED OTHERWISE.
7. LOCATE DOOR FRAMES 4" FROM ADJACENT WALL UNLESS NOTED OTHERWISE.
8. ALL OUTSIDE CORNERS OF CMU AT INTERIOR TO BE BULLNOSED.
9. CIVIL ELEVATION: 100'-0" = 862.00'

PLAN NORTH | TRUE NORTH

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0216 INAL

WARNER PARK COMMUNITY RECREATION CENTER EXPANSION

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MADISON, WI 53704

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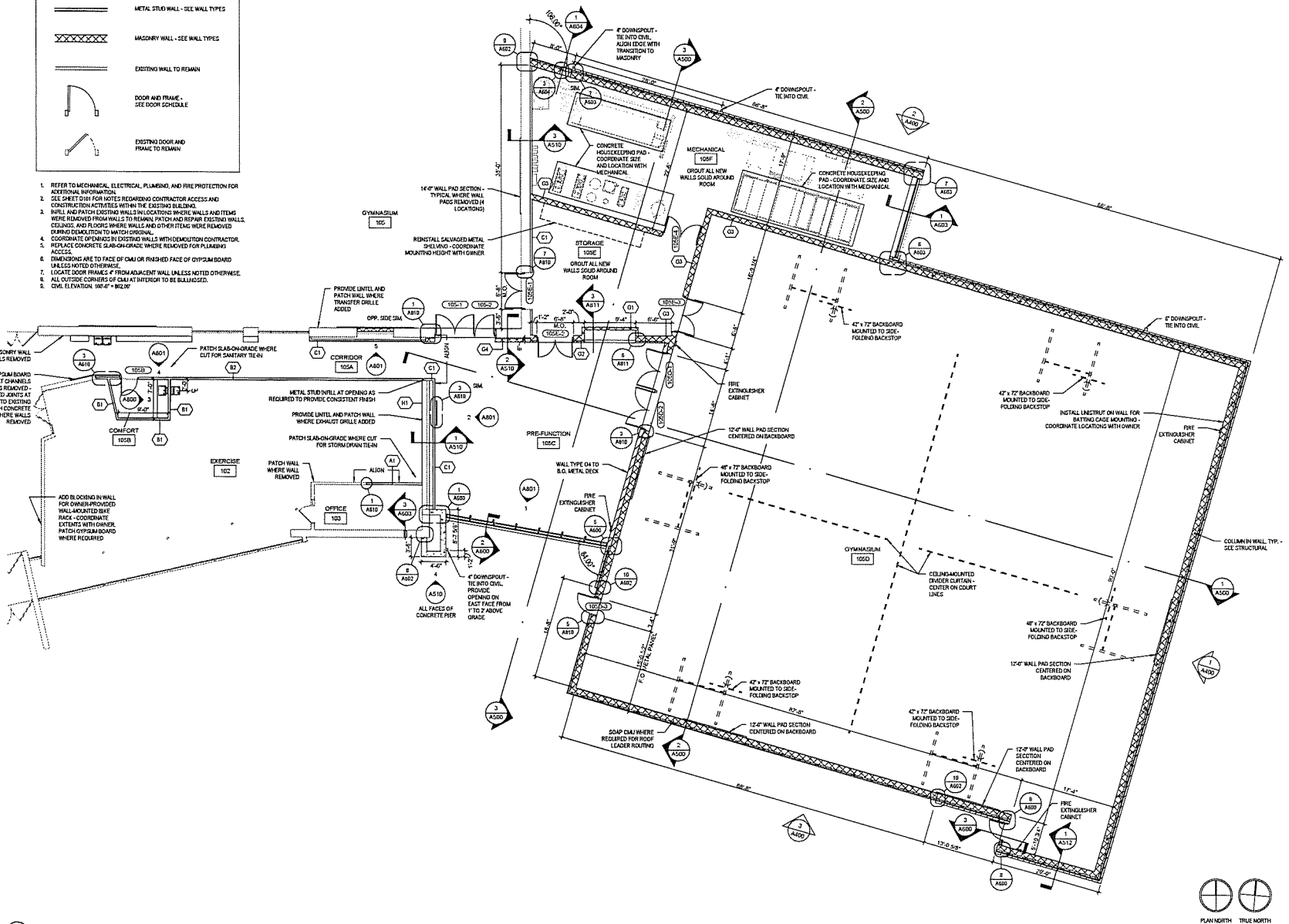
OVERALL FLOOR PLAN

A100

GENERAL NOTES - FLOOR PLANS

- METAL STUD WALL - SEE WALL TYPES
- MASONRY WALL - SEE WALL TYPES
- EXISTING WALL TO REMAIN
- DOOR AND FRAME - SEE DOOR SCHEDULE
- EXISTING DOOR AND FRAME TO REMAIN

1. REFER TO MECHANICAL, ELECTRICAL, PLUMBING, AND FIRE PROTECTION FOR ADDITIONAL INFORMATION.
2. SEE SHEET D101 FOR NOTES REGARDING CONTRACTOR ACCESS AND CONSTRUCTION ACTIVITIES WITHIN THE EXISTING BUILDING.
3. INFILL AND PATCH EXISTING WALLS IN LOCATIONS WHERE WALLS AND ITEMS WERE REMOVED FROM WALLS TO REMAIN. PATCH AND REPAIR EXISTING WALLS, CEILINGS, AND FLOORS WHERE WALLS AND OTHER ITEMS WERE REMOVED DURING DEMOLITION TO MATCH ORIGINAL.
4. COORDINATE OPENINGS IN EXISTING WALLS WITH DEMOLITION CONTRACTOR.
5. REPLACE CONCRETE SLAB-ON-GRADE WHERE REMOVED FOR PLUMBING ACCESS.
6. DIMENSIONS ARE TO FACE OF CMU OR FINISHED FACE OF GYPSUM BOARD UNLESS NOTED OTHERWISE.
7. LOCATE DOOR FRAMES 4" FROM ADJACENT WALL UNLESS NOTED OTHERWISE.
8. ALL OUTSIDE CORNERS OF CMU AT INTERIOR TO BE BULLNOSED.
9. CIVIL ELEVATION: 100'-0" = 862.00'



1 ENLARGED PLAN - EXPANSION
SCALE: 1/8" = 1'-0"

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0/24 6, 5/16

WARNER PARK COMMUNITY RECREATION CENTER EXPANSION

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MADISON, WI 53704

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330 EAST LAKESIDE STREET
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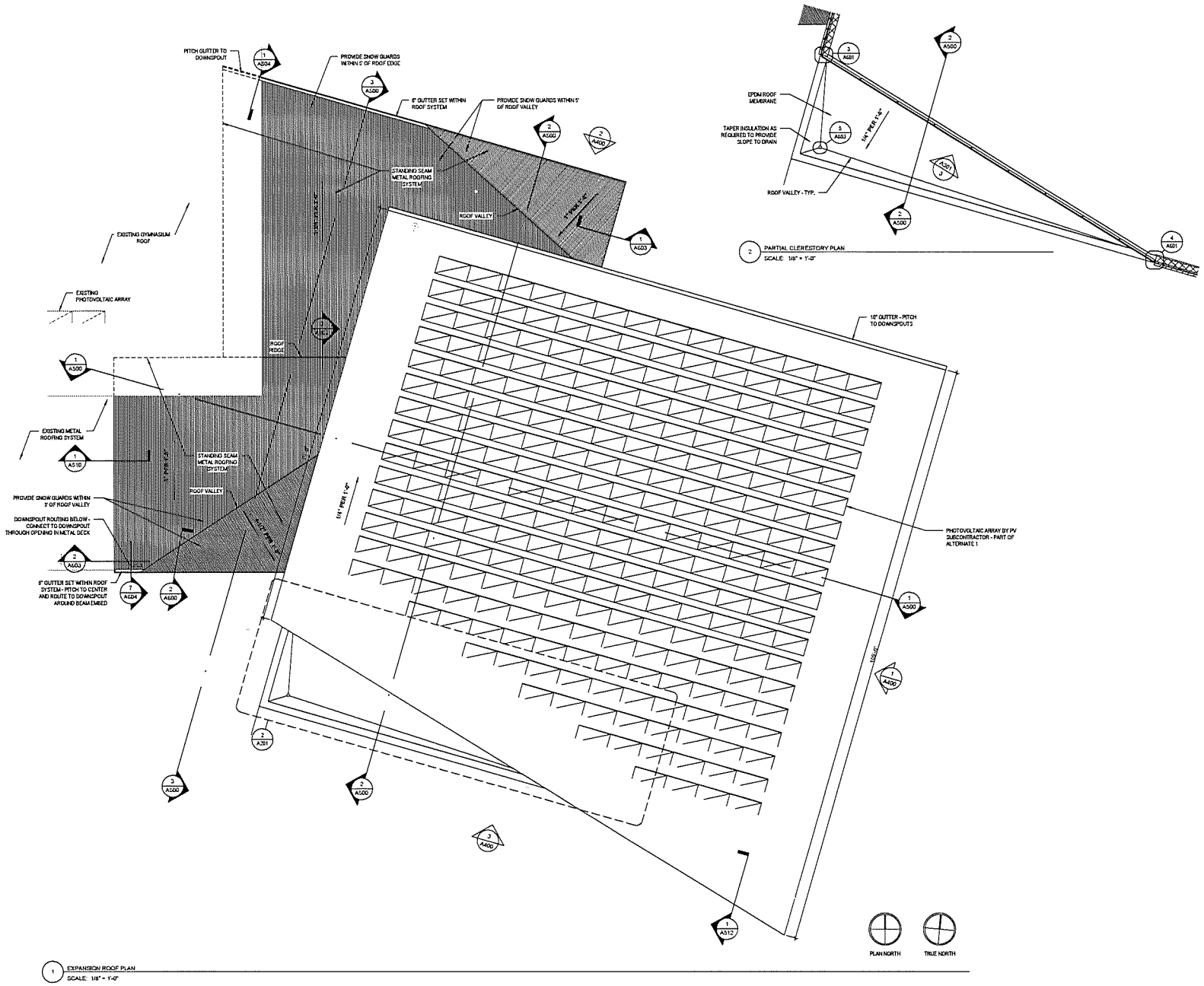
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EXPANSION FLOOR PLAN

A101



1 EXPANSION ROOF PLAN
SCALE: 1/8" = 1'-0"

2 PARTIAL CLERESTORY PLAN
SCALE: 1/8" = 1'-0"

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WARNER PARK COMMUNITY RECREATION CENTER EXPANSION

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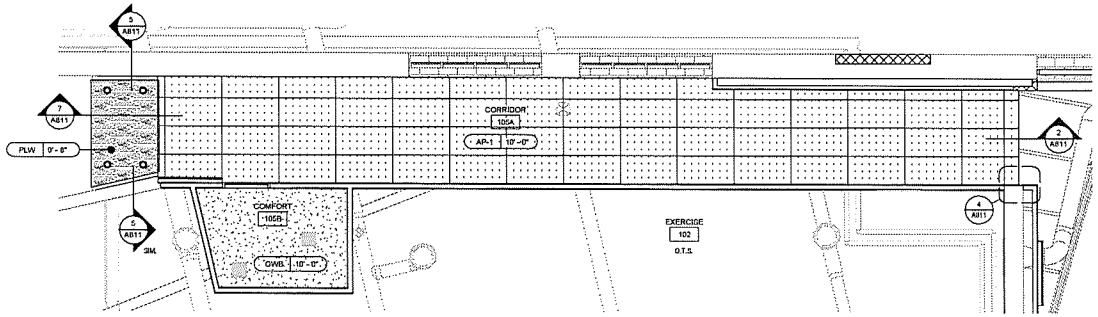
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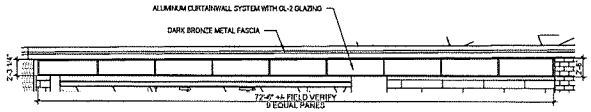
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EXPANSION ROOF PLAN

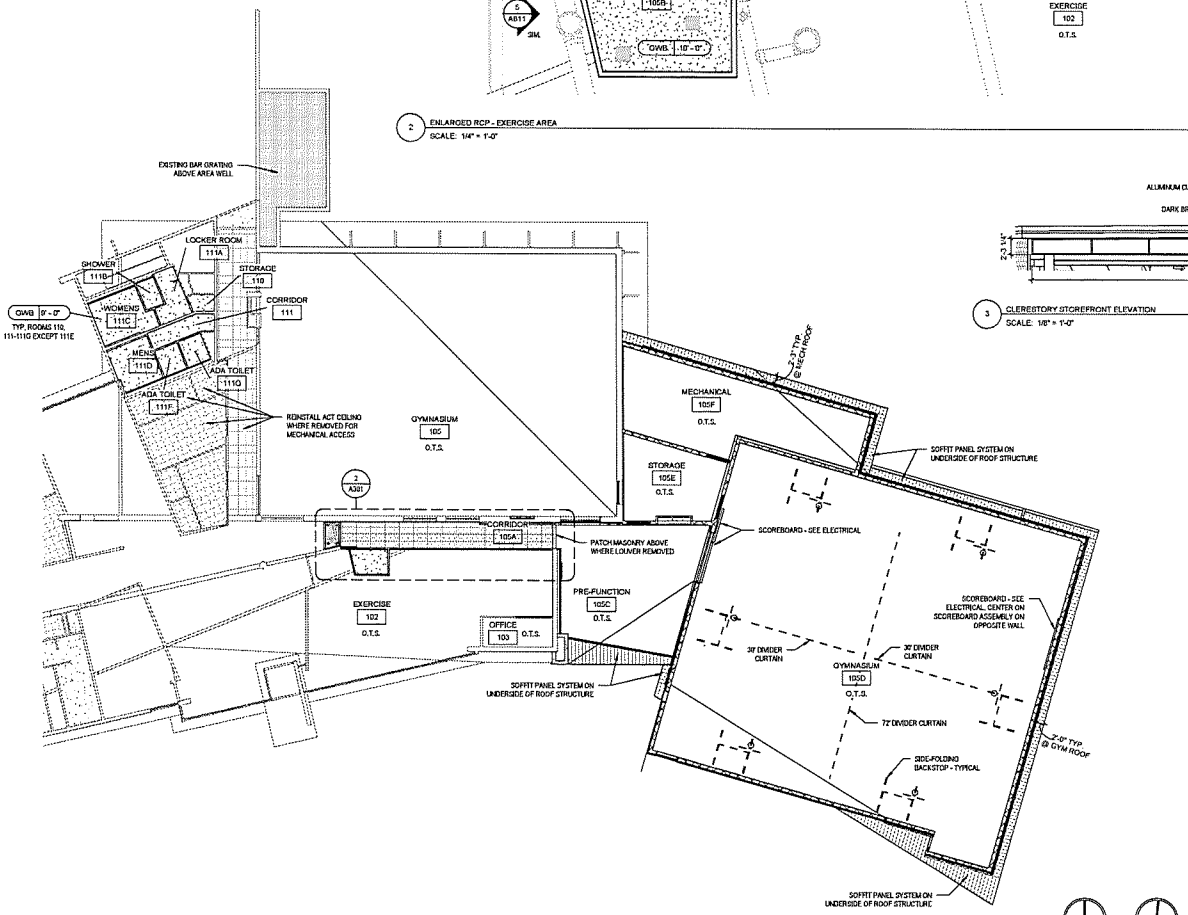
A201



2 ENLARGED RCP - EXERCISE AREA
SCALE: 1/4" = 1'-0"



3 CLERESTORY STOREFRONT ELEVATION
SCALE: 1/8" = 1'-0"



1 EXPANSION REFLECTED CEILING PLAN
SCALE: 1/16" = 1'-0"

GENERAL NOTES - REFLECTED CEILING PLANS

GYPSUM BOARD CEILING

METAL PANEL CEILING SYSTEM

PLYWOOD CEILING

1. REFER TO MECHANICAL, ELECTRICAL, PLUMBING, AND FIRE PROTECTION FOR ADDITIONAL INFORMATION.
2. PATCH AND REPAIR ANY EXISTING WALLS WHERE CEILINGS, BULKHEADS, AND OTHER ITEMS WERE REMOVED DURING DEMOLITION TO MATCH ORIGINAL.
3. ALL CEILINGS EXISTING TO REMAIN UNLESS NOTED ON RCP.
4. MOUNT B.O. SCOREBOARDS AT 12'-0" AFF.

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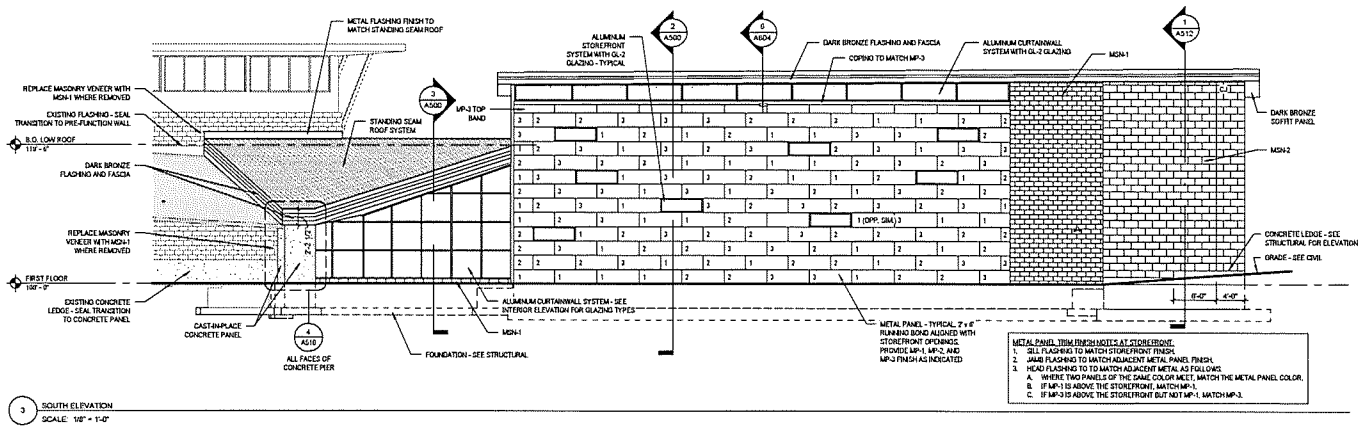
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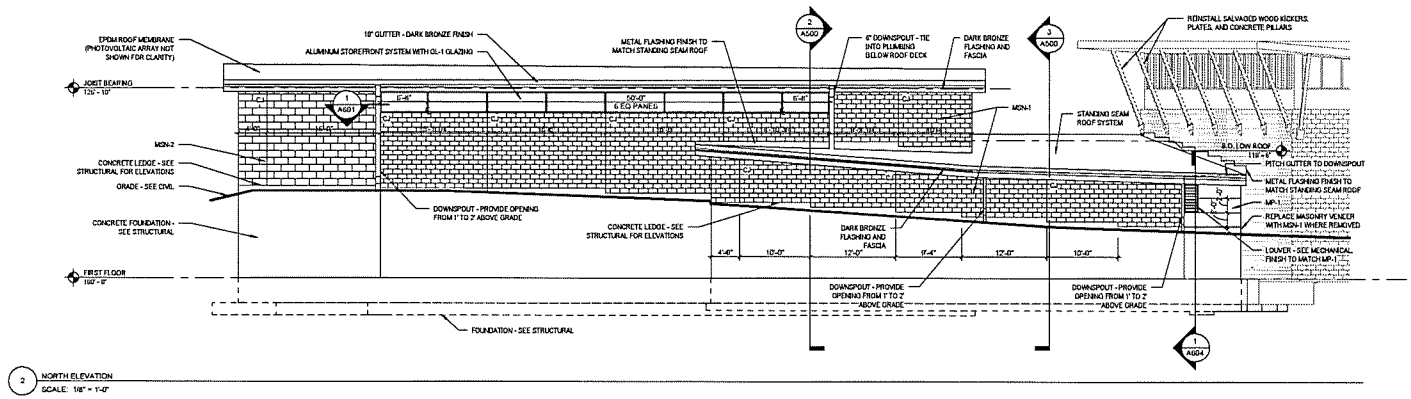
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EXPANSION REFLECTED CEILING PLAN

A301



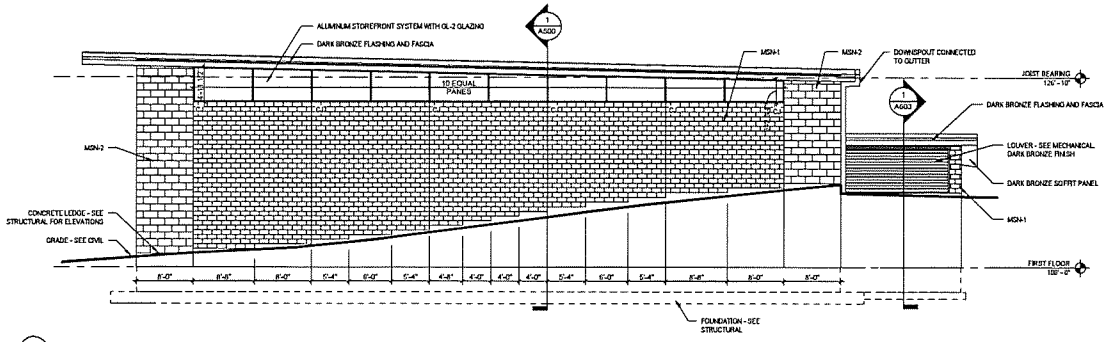
3 SOUTH ELEVATION
SCALE: 1/8" = 1'-0"



2 NORTH ELEVATION
SCALE: 1/8" = 1'-0"

EXTERIOR FINISH LEGEND

MSN-1	COUNTY MATERIALS DECORATIVE CONCRETE MASONRY COLOR: 19-1210 BISQUE (MATCHED TO EXISTING) TEXTURE: SPLITFACE 8" x 16" RUNNING BOND PATTERN
MSN-2	ARRISCRAFT THIN-CLAD RENAISSANCE UNITS COLOR: OAK RIDGE TEXTURE: SMOOTH 12" x 24" RUNNING BOND PATTERN
MP-1	DRI-DESIGN EN-V METAL PANEL SYSTEM COLOR: EN-V 808 CITY SCAPE 24" x 72" RUNNING BOND PATTERN
MP-2	DRI-DESIGN EN-V METAL PANEL SYSTEM COLOR: DRI-005 SIERRA TAN 24" x 72" RUNNING BOND PATTERN
MP-3	DRI-DESIGN EN-V METAL PANEL SYSTEM COLOR: EN-V 006 SLATE GRAY 24" x 72" RUNNING BOND PATTERN



1 EAST ELEVATION
SCALE: 1/8" = 1'-0"

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WARNER PARK
COMMUNITY RECREATION
CENTER EXPANSION

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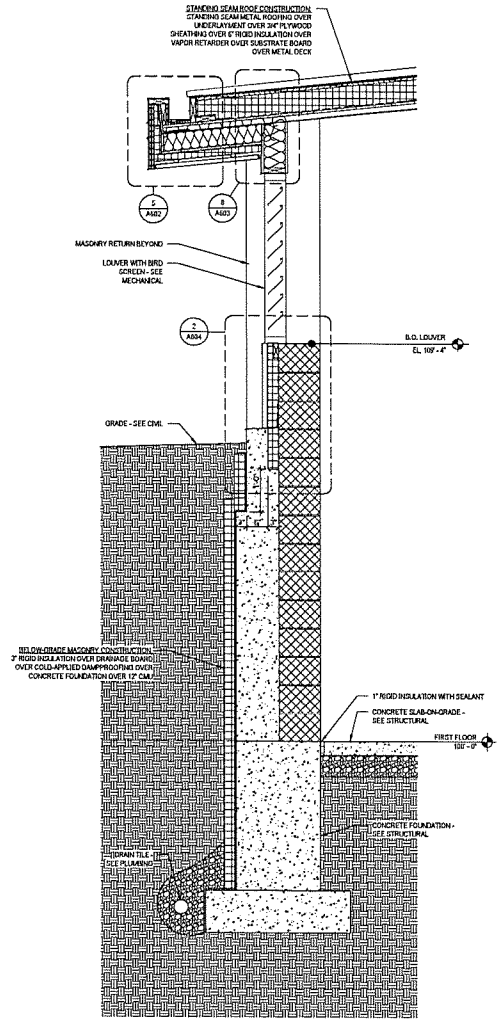
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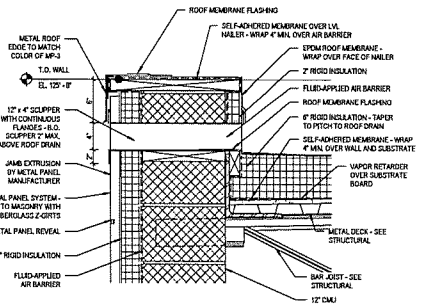
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EXTERIOR ELEVATIONS

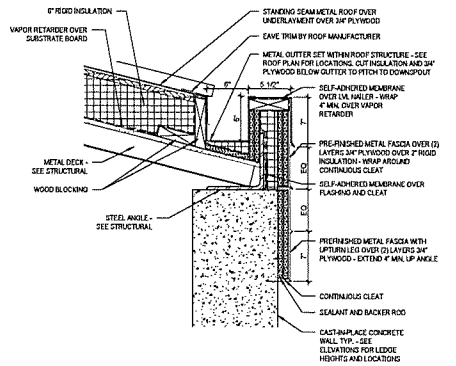
A400



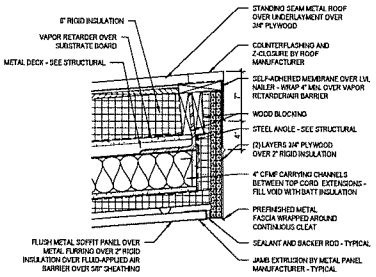
1 NORTH WALL LOUVER SECTION
SCALE: 3/4" = 1'-0"



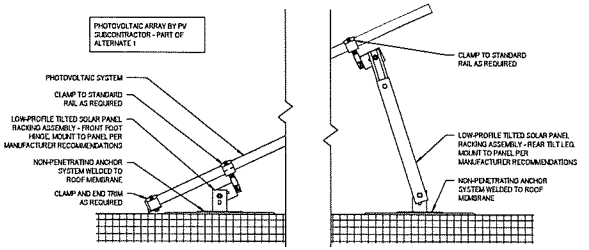
6 SCUPPER DETAIL
SCALE: 1 1/2" = 1'-0"



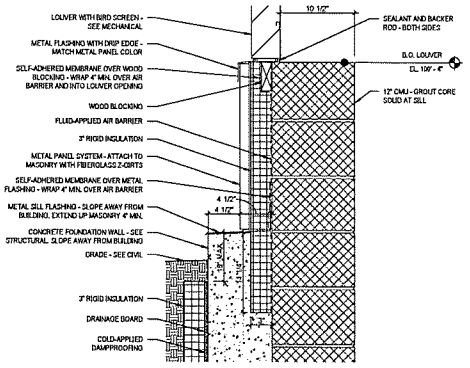
7 ROOF EDGE @ CONCRETE
SCALE: 1 1/2" = 1'-0"



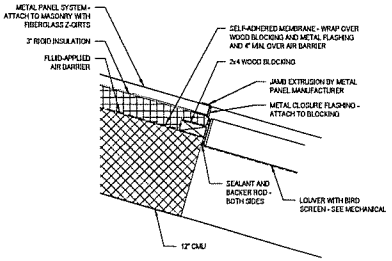
4 ROOF EDGE @ MECHANICAL
SCALE: 1 1/2" = 1'-0"



5 SOLAR PANEL MOUNTING DETAIL
SCALE: 1 1/2" = 1'-0"



2 METAL PANEL @ GRADE
SCALE: 1 1/2" = 1'-0"



3 LOUVER JAMB @ METAL PANEL
SCALE: 1 1/2" = 1'-0"

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WARNER PARK COMMUNITY RECREATION CENTER EXPANSION

1625 NORTHPORT DRIVE
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CITY OF MADISON PARKS DIVISION
330 EAST LAKESIDE STREET
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PROJECT NUMBER 223471.00

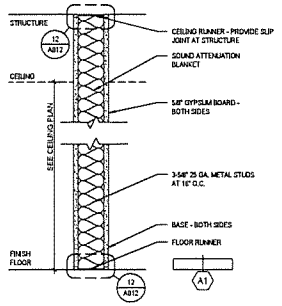
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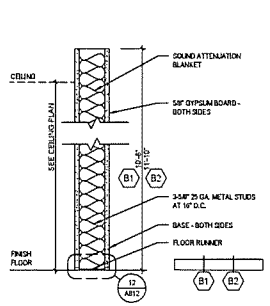
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EXTERIOR DETAILS

A604

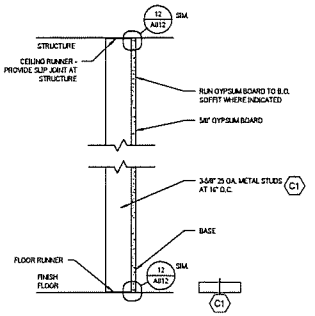


WALL TYPE A - NON RATED

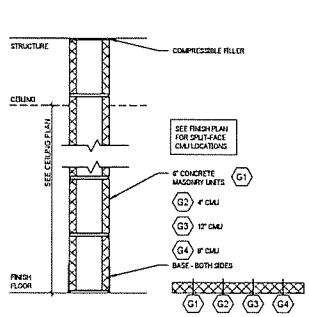


WALL TYPE B - NON RATED

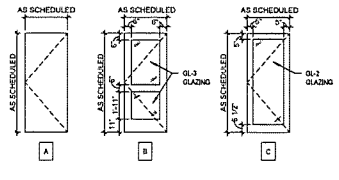
DOOR AND FRAME SCHEDULE																
	DOOR						FRAME			DETAIL						
NUMBER	TYPE	MATL	FINISH		WIDTH	HEIGHT	TYPE	MATL	FINISH	THRESH	JAMB	HEAD	LABEL	HARDWARE	REMARKS	NUMBER
105-1	B	WD	STAINED	(2)	7'-0"	7'-10"	C	HM	PAINTED	7/A812 SIM.	1/A810	2/A810		1		105-1
105-2	B	WD	STAINED		3'-6"	7'-10"	C	HM	PAINTED	7/A812 SIM.	1/A810	2/A810		2		105-2
105B	A	WD	STAINED		3'-0"	7'-0"	B	HM	PAINTED	-	3/A810	5/A810		3		105B
105D-1	B	WD	STAINED	(2)	7'-0"	7'-10"	SEE SECT	HM	PAINTED	8/A812	3/A810	4/A810		5		105D-1
105D-2	B	WD	STAINED	(2)	7'-0"	7'-10"	SEE SECT	HM	PAINTED	8/A812	3/A810	4/A810		4		105D-2
105D-3	A	INSUL HM	PAINTED		3'-0"	7'-8"	A	INSUL HM	PAINTED	2/A610	3/A810	6/A810		6		105D-3
105D-4	C	ALUM	DK BRZ		7'-0"	7'-10"	SEE SECT	ALUM	DK BRZ	2/A610	6 & 7/A600			7	PART OF STOREFRONT SYSTEM	105D-4
105E-1	A	WD	STAINED	(2)	7'-2"	7'-0"	A	HM	PAINTED	2/A810 SIM.	7/A810	8/A810		9		105E-1
105E-2	A	WD	STAINED	(2)	7'-2"	7'-0"	A	HM	PAINTED	7/A812	4/A810	4/A810		9		105E-2
105E-3	A	WD	STAINED	(2)	3'-2"	7'-8"	A	HM	PAINTED	2/A812	4/A810	4/A810		9		105E-3
105E-4	A	HM	PAINTED	(2)	7'-2"	7'-8"	A	HM	PAINTED	-	4/A810	4/A810		9		105E-4
110	A	WD	STAINED		3'-0"	7'-0"	EXIST	HM	PAINTED	4/A812				10	INSTALL DOOR IN EXISTING FRAME	110
111A	A	-	-		3'-0"	7'-0"	A	HM	PAINTED	-	6/A810	4/A810			FRAME ONLY	111A
111B	A	WD	STAINED		3'-0"	7'-0"	A	HM	PAINTED	5/A812	4/A810	4/A810		3		111B
111C	A	WD	STAINED		3'-0"	7'-0"	A	HM	PAINTED	5/A812	4/A810	4/A810		11		111C
111D	A	WD	STAINED		3'-0"	7'-0"	A	HM	PAINTED	5/A812	4/A810	4/A810		11		111D
111F	A	WD	STAINED		3'-0"	7'-0"	A	HM	PAINTED	5/A812	4/A810	4/A810		3		111F
111G	A	WD	STAINED		3'-0"	7'-0"	A	HM	PAINTED	5/A812	4 & 6/A610	4/A810		3		111G



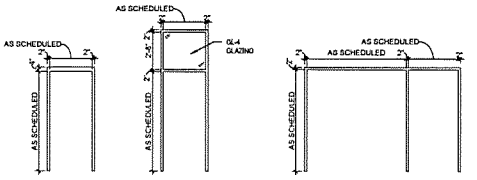
WALL TYPE C - NON RATED



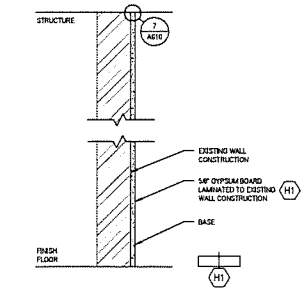
WALL TYPE G - NON RATED



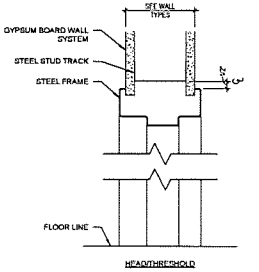
DOOR TYPES



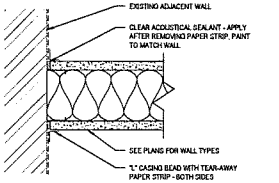
FRAME TYPES



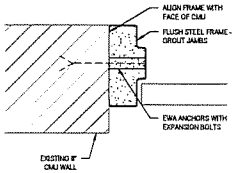
WALL TYPE H - NON RATED



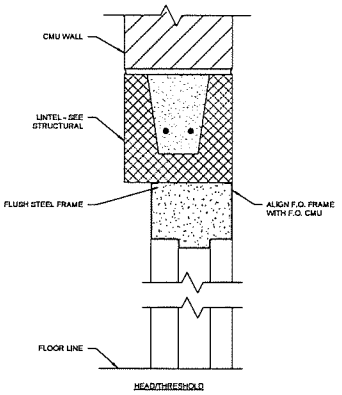
5 HM HEAD @ METAL STUDS
SCALE: 3" = 1'-0"

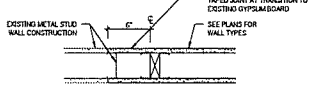


7 DISSIMILAR MATERIAL TRANSITION
SCALE: 3" = 1'-0"

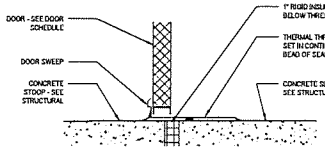


6 HM JAMB @ EXISTING CMU
SCALE: 3" = 1'-0"

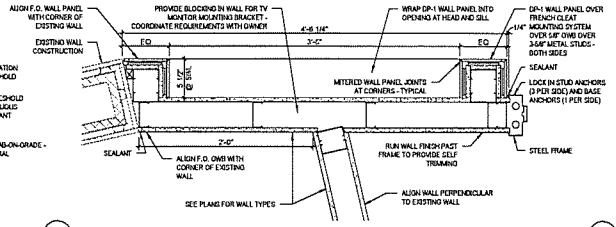




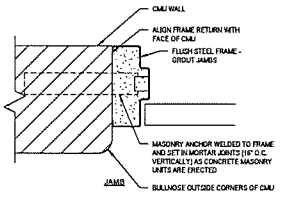
1 OFFICE WALL TRANSITION
SCALE: 1 1/2" = 1'-0"



2 EXTERIOR DOOR THRESHOLD
SCALE: 3" = 1'-0"



3 DOOR 105B JAMB
SCALE: 1 1/2" = 1'-0"



4 HM FRAME @ CMU
SCALE: 3" = 1'-0"

Engberg Anderson ARCHITECTS

MILWAUKEE | MADISON | CHICAGO

0216.WAL

WARNER PARK COMMUNITY RECREATION CENTER EXPANSION

1625 NORTHPORT DRIVE
MADISON, WI 53704

CITY OF MADISON PARKS DIVISION
330 EAST LAKESIDE STREET
MADISON, WI 53715

PROJECT NUMBER 223471.00

ISSUED FOR:

BID SET 5/10/2024

REVISION FOR:

NO. DESCRIPTION DATE

DRAWN BY DKB

CHECKED BY JWH

DOOR SCHEDULE & WALL TYPES

A610

FINISH SCHEDULE									
		FLOORS	BASE	WALL FINISH				CEILING	
RM #	ROOM NAME	FINISH	FINISH	NORTH FINISH	EAST FINISH	SOUTH FINISH	WEST FINISH	FINISH	REMARKS
102	EXERCISE	RF-1/RF-2	RB-1	PT-1/PT-2	PT-7	EXPT-7	PT-6	OTS/EX	PAINT EXPOSED STRUCTURE AND UTILITIES TO MATCH EXISTING
103	OFFICE	RF-2	RB-1	PT-1	PT-1	PT-1	PT-1	OTS/EX	PAINT EXPOSED STRUCTURE AND UTILITIES TO MATCH EXISTING
105A	CORRIDOR	EXCPT-3/CPT-4	SEE PLAN	EXPT-4/DP-1	NA	PT-4/DP-1	NA	PLWAP-1	
105B	COMFORT	CPT-3	RB-1	PT-1	PT-4	PT-1	PT-1	GWBPT-10	
105C	PRE-FUNCTION	TZ-1/TZ-2/TZ-3	SEE PLAN	SEE PLAN	SEE PLAN	SEE PLAN	DP-1/PT-2/PT-6	OTS/PT-11	
105D	GYMNASIUM	RSF-1/RSF-2	RB-1	CMU-1	CMU-1	CMU-1	CMU-1	OTS/PT-11	PAINT HEADWALLS ABOVE STOREFRONT TO MATCH METAL DECK
105E	STORAGE	SC-1	RB-1	PT-1	PT-1	PT-1	PT-1	OTS	
105F	MECHANICAL	SC-1	RB-1	PT-1	PT-1	PT-1	PT-1	OTS	
110	STORAGE	CPT-1	RB-1	PT-1	PT-1	PT-1	PT-1	GWBPT-8	
111	CORRIDOR	CPT-1/CPT-2	RB-1	PT-2	PT-1	PT-3	PT-2	GWBPT-10	
111A	LOCKER ROOM	CPT-1/CPT-2	CTB-1	PT-3/PT-1	PT-3/PT-1	PT-1	PT-1/PT-3/CT-4	GWBPT-8	SEE ELEVATIONS
111B	SHOWER	CT-2	CTB-1	SS-1	SS-1/PT-1	PT-1	SS-1/PT-1	GWBPT-8	SEE ELEVATIONS
111C	WOMENS	CT-1	CTB-1	CT-3	PT-1	CT-1/CT-4	CT-3	GWBPT-8	SEE ELEVATIONS
111D	MENS	CT-1	CTB-1	CT-1/CT-4	PT-1	CT-3	CT-3	GWBPT-8	SEE ELEVATIONS
111F	ADA TOILET	CT-1	CTB-1	PT-1	CT-1/CT-4	CT-3	PT-1	GWBPT-8	SEE ELEVATIONS
111G	ADA TOILET	CT-1	CTB-1	PT-1	PT-1	CT-3	CT-1/CT-4	GWBPT-8	SEE ELEVATIONS

GENERAL NOTES - FINISHES

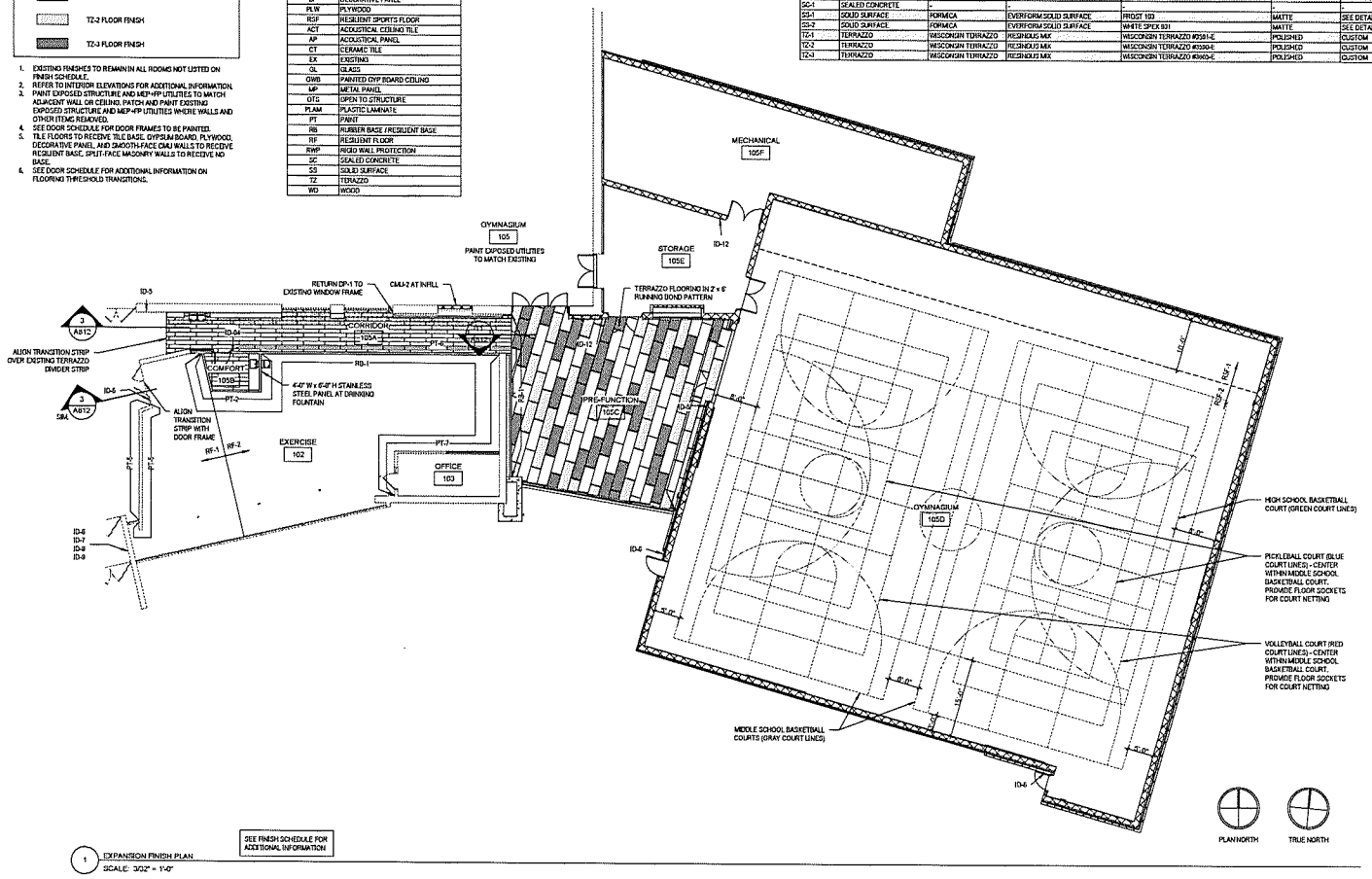
- CPT-3 FLOOR FINISH
- CPT-4 FLOOR FINISH
- TZ-1 FLOOR FINISH
- TZ-2 FLOOR FINISH
- TZ-3 FLOOR FINISH

1. EXISTING FINISHES TO REMAIN IN ALL ROOMS NOT LISTED ON FINISH SCHEDULE.
2. REFER TO INTERIOR ELEVATIONS FOR ADDITIONAL INFORMATION.
3. PAINT EXPOSED STRUCTURE AND MEP+FP UTILITIES TO MATCH ADJACENT WALL OR CEILING. PATCH AND PAINT EXISTING EXPOSED STRUCTURE AND MEP+FP UTILITIES WHERE WALLS AND OTHER ITEMS REMOVED.
4. SEE DOOR SCHEDULE FOR DOOR FRAMES TO BE PAINTED.
5. TILE FLOORS TO RECEIVE TILE BASE. GYPSUM BOARD, PLYWOOD, DECORATIVE PANEL, AND SMOOTH-FACE CMU WALLS TO RECEIVE RESILIENT BASE. SPLIT-FACE MASONRY WALLS TO RECEIVE NO BASE.
6. SEE DOOR SCHEDULE FOR ADDITIONAL INFORMATION ON FLOORING THRESHOLD TRANSITIONS.

ABBREVIATIONS - FINISH	
FINISH TAG	FINISH DESCRIPTION
CMU-1	CMU
CMU-2	CMU
CPT	CARPET TILE
DP	DECORATIVE PANEL
PLW	PLYWOOD
RSF	RESILIENT SPORTS FLOOR
ACT	ACOUSTICAL CEILING TILE
AP	ACOUSTICAL PANEL
CT	CERAMIC TILE
EX	EXISTING
GL	GLASS
GWB	PAINTED GYP BOARD CEILING
MP	METAL PANEL
OTS	OPEN TO STRUCTURE
PLAM	PLASTIC LAMINATE
PT	PAINT
RB	RUBBER BASE / RESILIENT BASE
RF	RESILIENT FLOOR
RWP	RIGID WALL PROTECTION
SC	SEALED CONCRETE
SS	SOLID SURFACE
TZ	TERAZZO
WD	WOOD

FINISH KEY

TAG	PRODUCT	MANUFACTURER	COLLECTION/STYLE	COLOR	FINISH	SIZE	NOTES
AP-1	ACOUSTIC PANEL	ARKTURA	VAPOR TRAIL	ARKTURA WHITE	MATTE	24" X 48"	
CMU-1	CONCRETE MASONRY UNIT	COUNTY MATERIALS CORP.	SPLITFACE/SMOOTHFACE	SANDSTONE 18-314C	SMOOTH	8" X 16"	
CMU-2	CONCRETE MASONRY UNIT	COUNTY MATERIALS CORP.	PREMIER ULTRA BURNISHED	NORTH STAR 63-2238	SMOOTH	8" X 16"	
CPT-1	CARPET TILE	FORBO	FLOTEX/SEAGRASS	ALMOND 111003	STANDARD	9.5"X 39.4"	BRICK PATTERN INSTALLATION/50% OF COLOR MIX
CPT-2	CARPET TILE	FORBO	FLOTEX/SEAGRASS	CHARCOAL 111004	STANDARD	9.5"X 39.4"	BRICK PATTERN INSTALLATION/50% OF COLOR MIX
CPT-3	CARPET TILE	FORBO	FLOTEX/SEAGRASS	WALNUT 111005	STANDARD	9.5"X 39.4"	BRICK PATTERN INSTALLATION
CPT-4	CARPET TILE	FORBO	FLOTEX/SEAGRASS	LIQUORICE 111006	STANDARD	9.5"X 39.4"	BRICK PATTERN INSTALLATION
CT-1	CERAMIC TILE	DAL TILE	FABRIC ART/MODERN LINEAR	TAUPE ML52	MATTE	12" X 24"	
CT-2	CERAMIC TILE	DAL TILE	FABRIC ART/MODERN TEXTILE	TAUPE MT52	MATTE	1" X 2" MOSAIC	
CT-3	CERAMIC TILE	DAL TILE	FAB'RTIQUE	GLANC LUNCH PAIL	MATTE	12" X 24"	
CT-4	CERAMIC TILE	CAESAR CERAMICHE	COCCONO/CADENCE TILE	OLLE	MATTE	8" X 48"	
CTB-1	CERAMIC TILE BASE	DAL TILE	FABRIC ART/MODERN LINEAR	TAUPE ML52	MATTE	6" X 12"	
DP-1	DECORATIVE PANEL	ACROVYN	ACROVYN BY DESIGN METALLICS	MEDIUM BRONZE #18172	METALLIC	-	
PT-1	PAINT	BENJAMIN MOORE	WALL PAINT	CLOUD WHITE 967	SEMI-GLOSS	-	
PT-2	PAINT	BENJAMIN MOORE	ACCENT PAINT	EDGECOMB GRAY HC-173	SEMI-GLOSS	-	
PT-3	PAINT	SHERWIN WILLIAMS	ACCENT PAINT	REPUDIC SW6229	SEMI-GLOSS	-	
PT-4	PAINT	SHERWIN WILLIAMS	ACCENT PAINT	CURIO GRAY SW6024	EGGSHELL	-	
PT-5	PAINT	SHERWIN WILLIAMS	ACCENT PAINT	STILL WATER SW6223	EGGSHELL	-	
PT-6	PAINT	SHERWIN WILLIAMS	ACCENT PAINT	INTERESTING AQUA SW6220	EGGSHELL	-	
PT-7	PAINT	BENJAMIN MOORE	ACCENT PAINT	ORTHODOX GREEN 432	EGGSHELL	-	
PT-8	PAINT	BENJAMIN MOORE	DOOR FRAME PAINT	DEVONSHIRE GREEN 1469	SEMI-GLOSS	-	
PT-9	PAINT	SHERWIN WILLIAMS	CEILING PAINT	HIGH REFLECTIVE WHITE SW7757	SEMI-GLOSS	-	
PT-10	PAINT	SHERWIN WILLIAMS	CEILING PAINT	HIGH REFLECTIVE WHITE SW7757	FLAT	-	
PT-11	PAINT	BENJAMIN MOORE	CEILING PAINT	CLINIC WHITE 963	SEMI-GLOSS	-	
RB-1	RESILIENT BASE	TARKETT	THERMOSET RUBBER	BURNT UMBER 63	SOLID	4" HIGH	
RF-1	RESILIENT FLOOR	TARKETT SPORTS	DROPZONE ELITE	DARK GREY DZM27	STANDARD	48" W ROLL	
RF-2	RESILIENT FLOOR	TARKETT SPORTS	DROPZONE ELITE	MED GREY DZM4	STANDARD	48" W ROLL	
RSF-1	RESILIENT SPORTS FLOOR	TARKETT SPORTS	OMNISPORTS HPL7	GOLDEN MAPLE	STANDARD	66" W ROLL	CLASS 1 SYSTEM
RSF-2	RESILIENT SPORTS FLOOR	TARKETT SPORTS	OMNISPORTS ACTIVE+	GOLDEN MAPLE	STANDARD	66" W ROLL	CLASS 3 SYSTEM
SC-1	SEALED CONCRETE	-	-	-	-	-	
SS-1	SOLID SURFACE	FORMICA	EVERFORM SOLID SURFACE	FROST 103	MATTE	SEE DETAILS	
SS-2	SOLID SURFACE	FORMICA	EVERFORM SOLID SURFACE	WHITE SPEX 931	MATTE	SEE DETAILS	
TZ-1	TERRAZZO	WISCONSIN TERRAZZO	RESINOUS MIX	WISCONSIN TERRAZZO #2581-E	POLISHED	CUSTOM	
TZ-2	TERRAZZO	WISCONSIN TERRAZZO	RESINOUS MIX	WISCONSIN TERRAZZO #3380-E	POLISHED	CUSTOM	
TZ-3	TERRAZZO	WISCONSIN TERRAZZO	RESINOUS MIX	WISCONSIN TERRAZZO #3605-E	POLISHED	CUSTOM	



1 EXPANSION FINISH PLAN
SCALE: 3/32" = 1'-0"

SEE FINISH SCHEDULE FOR ADDITIONAL INFORMATION

Engberg Anderson ARCHITECTS
MILWAUKEE | MADISON | CHICAGO

05.16.2024

WARNER PARK COMMUNITY RECREATION CENTER EXPANSION

1625 NORTHPORT DRIVE
MADISON, WI 53704

CITY OF MADISON PARKS DIVISION
330 EAST LAKESIDE STREET
MADISON, WI 53715

PROJECT NUMBER 223471.00

ISSUED FOR:

BID SET	5/16/2024

REVISION FOR:

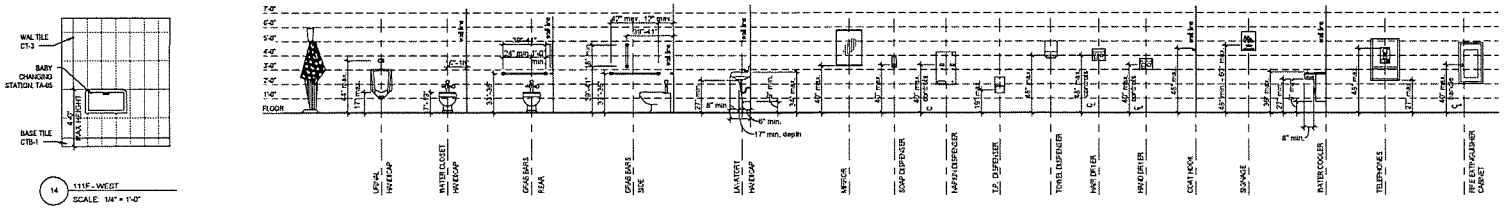
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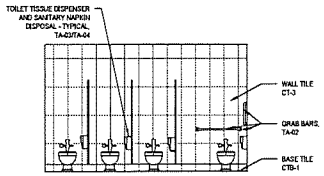
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FINISH PLANS & SCHEDULE

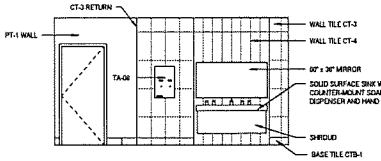
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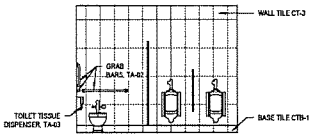
14 111F - WEST
SCALE: 1/4" = 1'-0"



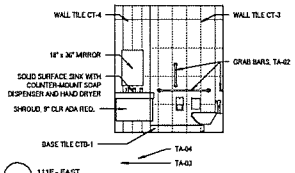
9 111C - NORTH
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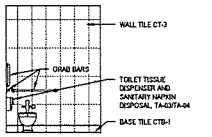
10 111C - SOUTH
SCALE: 1/4" = 1'-0"



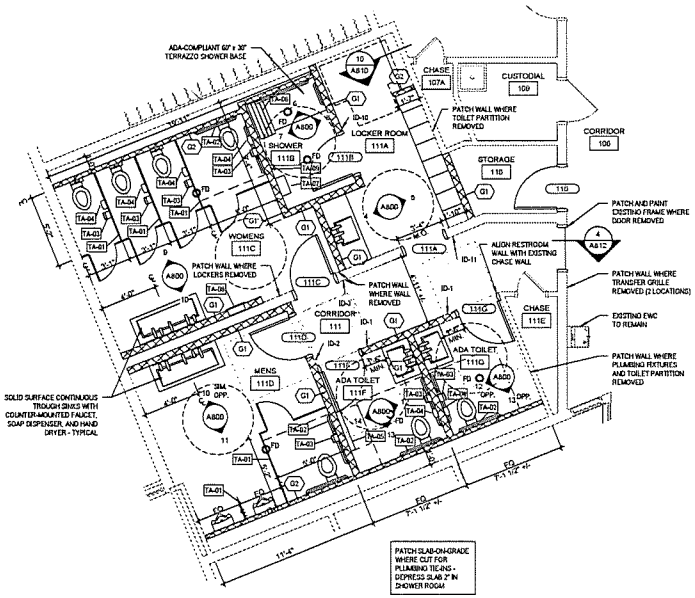
11 111D - SOUTH
SCALE: 1/4" = 1'-0"



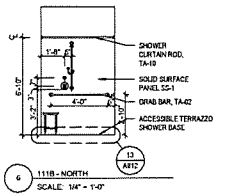
12 111F - EAST
SCALE: 1/4" = 1'-0"



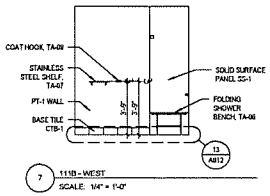
13 111F - SOUTH
SCALE: 1/4" = 1'-0"



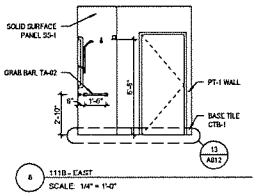
1 ENLARGED PLAN - RESTROOMS
SCALE: 1/4" = 1'-0"



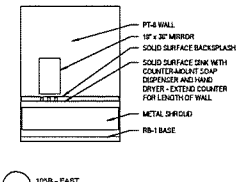
6 111B - NORTH
SCALE: 1/4" = 1'-0"



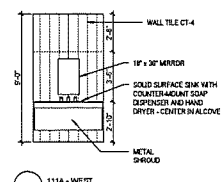
7 111B - WEST
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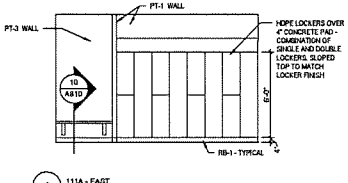
8 111B - EAST
SCALE: 1/4" = 1'-0"



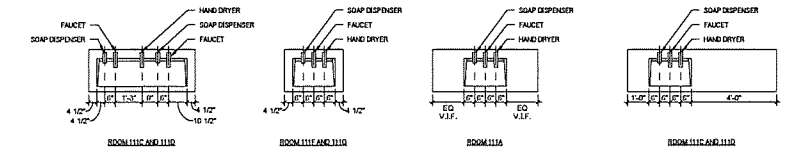
3 105B - EAST
SCALE: 1/4" = 1'-0"



4 111A - WEST
SCALE: 1/4" = 1'-0"



5 111A - EAST
SCALE: 1/4" = 1'-0"



2 SINK DETAILS
SCALE: 3/8" = 1'-0"

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MILWAUKEE | MADISON | CHICAGO

ORIGINAL

WARNER PARK COMMUNITY RECREATION CENTER EXPANSION

1625 NORTHPORT DRIVE
MADISON, WI 53704

CITY OF MADISON PARKS DIVISION
330 EAST LAKESIDE STREET
MADISON, WI 53715

PROJECT NUMBER 223471.00

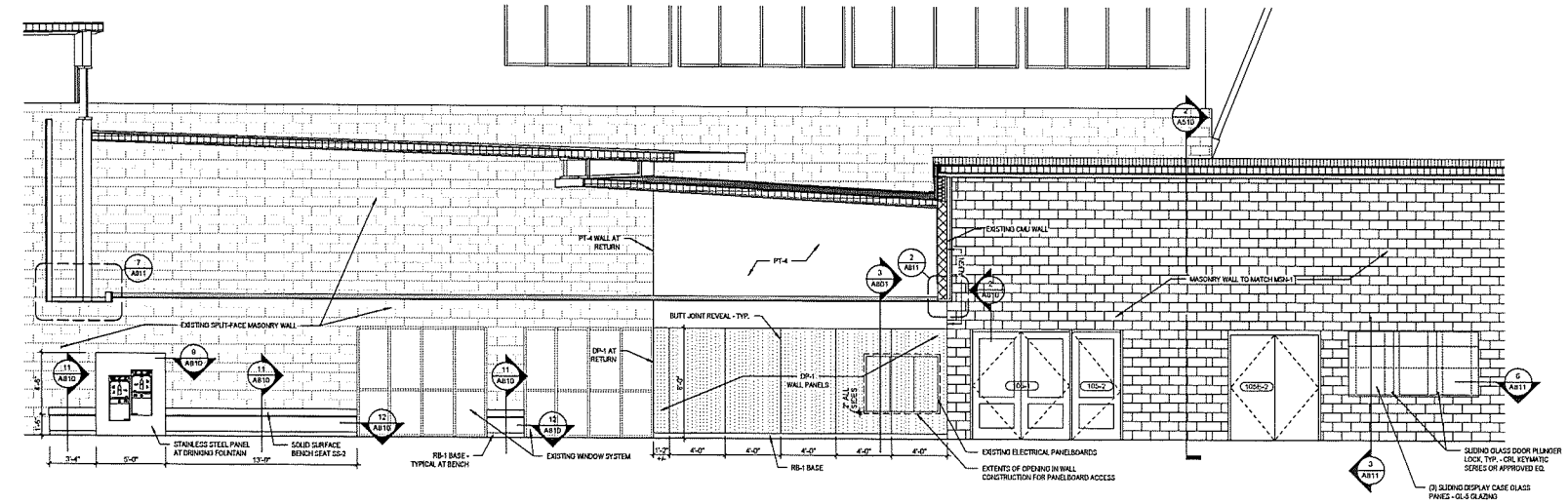
ISSUED FOR:
BID SET 5/16/2024

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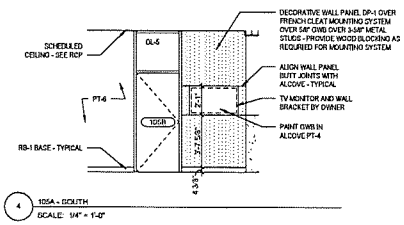
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ENLARGED PLANS & INTERIOR ELEVATIONS

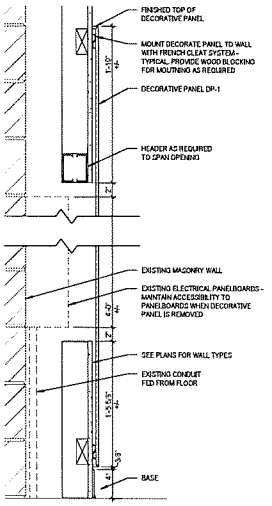
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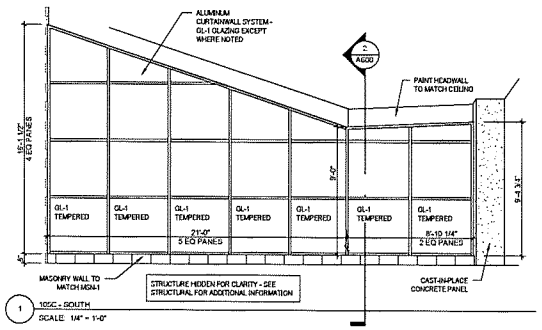
5 105A - NORTH
SCALE: 1/4" = 1'-0"



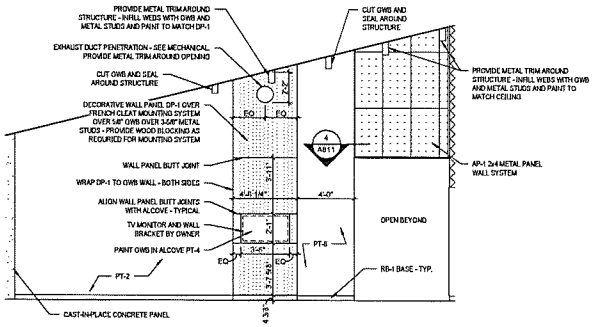
4 105A - SOUTH
SCALE: 1/4" = 1'-0"



3 WALL PANEL SECTION
SCALE: 1 1/2" = 1'-0"



1 105C - SOUTH
SCALE: 1/4" = 1'-0"



2 105C - WEST
SCALE: 1/4" = 1'-0"

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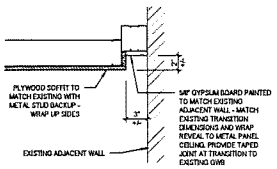
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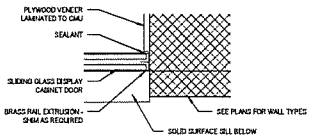
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INTERIOR ELEVATIONS

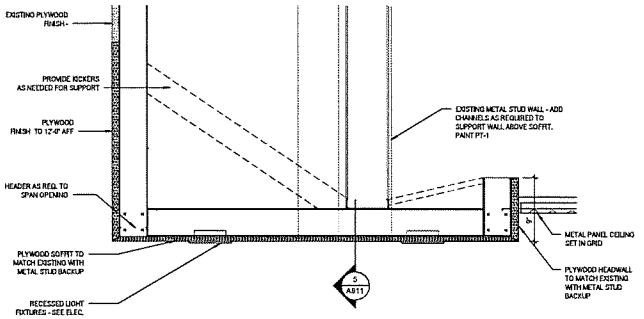
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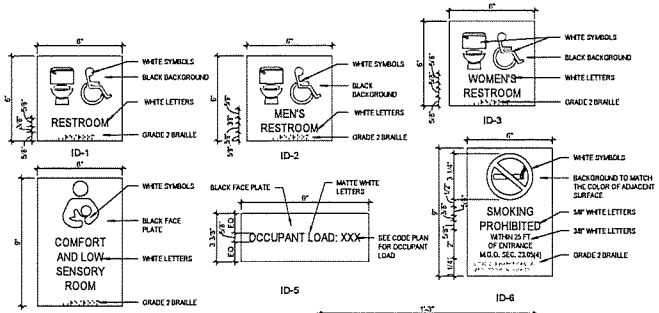
5 CORRIDOR CEILING @ PLYWOOD
SCALE: 1 1/2" = 1'-0"



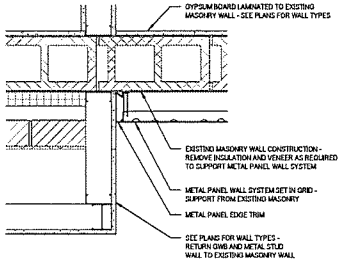
6 TROPHY CABINET JAMB
SCALE: 1 1/2" = 1'-0"



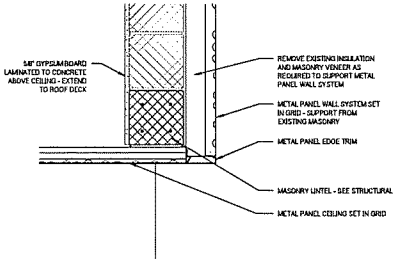
7 CORRIDOR CEILING @ EXISTING
SCALE: 1 1/2" = 1'-0"



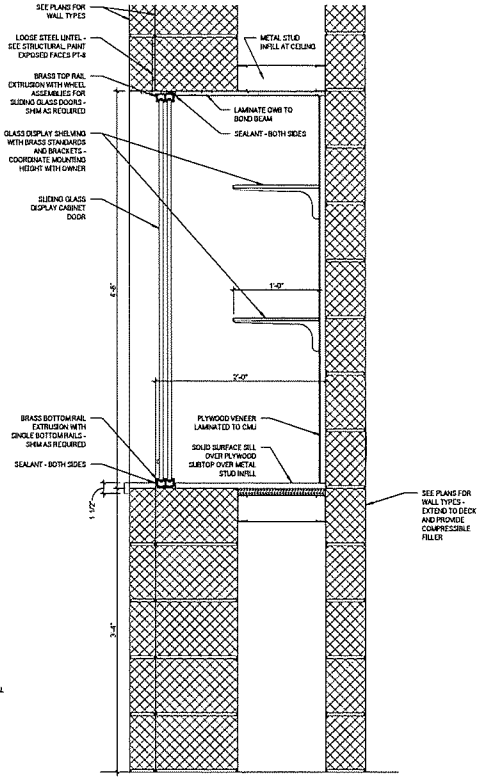
1 SIGNAGE SCHEDULE



4 CORRIDOR VERTICAL PANEL
SCALE: 1 1/2" = 1'-0"



2 CORRIDOR CEILING @ PRE-FUNCTION
SCALE: 1 1/2" = 1'-0"



3 TROPHY CABINET SECTION
SCALE: 1 1/2" = 1'-0"

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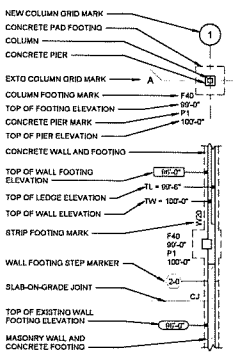
INTERIOR DETAILS

A811

ABBREVIATION LIST

AB	ANCHOR BOLT (ROD)
AHU	AIR HANDLING UNIT
ALT	ALTERNATE
ARCH	ARCHITECTURAL
BLDG	BUILDING
BRG	BEARING
BP(###)	BASE PLATE CALL-OUT
CF	COLD-FORMED
CIP	CAST-IN-PLACE
CJ	CONTROL JOINT
CL	CENTER LINE
CLR	CLEAR (DISTANCE)
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
CONC	CONCRETE
CONT	CONTINUOUS
DBA	DEFORMED BAR ANCHOR
DEMO	DEMOLITION / DEMOLISH
DIA	DIAMETER
DWG	DRAWING
EGD	EDGE OF DECK
EGS	EDGE OF SLAB
EF	EACH FACE
EJ	EXPANSION JOINT
ELEV	ELEVATION
EQ	EQUAL
EW	EACH WAY
EWEF	EACH WAY EACH FACE
EXP	EXPANSION
EXT	EXTERIOR
EXTG	EXISTING
FD	FLOOR DRAIN
FLR	FLOOR
FV	FIELD VERIFY
F(##)	FOOTING CALL-OUT
GA	GAUGE
GALV	GALVANIZED
GC	GENERAL CONTRACTOR
GLULAM	GLUE-LAMINATED BEAM(G)
HK	HOOK
HORIZ	HORIZONTAL
HP	HIGH POINT
HWS	HEADED WELDED STUD(S)
IF	INSIDE FACE
INT	INTERIOR
JBE	JOIST BEARING ELEVATION
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LSL	LAMINATED STRAND LUMBER
LTWT	LIGHTWEIGHT
LVL	LAMINATED VENEER LUMBER
LW	LONG WAY
MAX	MAXIMUM
MECH	MECHANICAL
MFR	MANUFACTURER
MIN	MINIMUM
MISC	MISCELLANEOUS
NA	NOT APPLICABLE
NTS	NOT TO SCALE
OC	ON CENTER
OF	OUTSIDE FACE
OPNG	OPENING
OPP	OPPOSITE
PC	PRECAST / PRESTRESSED
PCI	POUNDS PER CUBIC INCH
PDF	POUNDS PER CUBIC FOOT
PL	PLATE
PLF	POUNDS PER LINEAR FOOT
PROJ	PROJECTION
PSF	POUNDS PER CUBIC FOOT
PSI	POUNDS PER SQUARE INCH
PT	PRE (POST) -TENSIONED
P(##)	PIER CALL-OUT
RD	ROOF DRAIN
REINF	REINFORCED(ING)
RTU	ROOF TOP UNIT
SIM	SIMILAR
SOG	SLAB-ON-GRADE
SPA	SPAC(ED)(ED)(ING)
SPEC	SPECIFICATION(G)
SQ	SQUARE
SS	STAINLESS STEEL
SW	SHORT WAY
TL	TOP OF LEDGE
TP	TOP OF PIER
TW	TOP OF WALL
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
VERT	VERTICAL
WP	WORKING POINT
WWF	WELDED WIRE FABRIC

FOUNDATION LEGEND

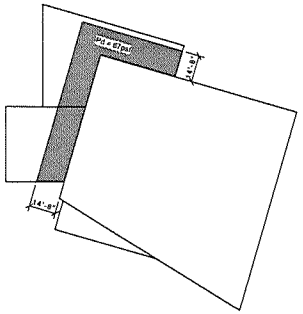


LINTEL SCHEDULE

LENGTH	SIZE AND REINFORCING	NOTE/ REMARKS
0'-4"	8" W x 8" H BOND BM W/ (2) #5 BOT	SEE ARCH FOR LOCATIONS
4'-8"	8" W x 16" H BOND BM W/ (2) #5 BOT	SEE ARCH FOR LOCATIONS

NOTES:

1. AT NEW WALLS, REINFORCE AT BEARING WITH (1) #5 VERT FULL HEIGHT OF WALL FROM FLOOR TO FLOOR OR FLOOR TO ROOF.
2. AT EXISTING WALLS, BEAR LINTEL ON MIN (2) COURSES GROUTED CMU.
3. AT EXTERIOR OPENINGS, PROVIDE GALV BENT PLS/16"x7 1/2"x7 1/2" x CONT TO OPENING CORNERS.
4. 8" MIN BEARING AT ENDS.



DRIFT LOAD KEY PLAN

SCALE: 12" = 1'-0"

WALL FOOTING SCHEDULE

MARK	CONTINUOUS FOOTING DIMENSIONS		FOOTING REINFORCEMENT	REMARKS
	WIDTH	THICKNESS		
W24	2'-4"	1'-0"	(3) #5, B, CONT	
W28	2'-8"	1'-0"	(3) #5, B, CONT	
W30	3'-0"	1'-0"	(3) #5, B, CONT	
W60	6'-0"	1'-8"	(7) @ 12" T&B, EW	

MASONRY WALL REINFORCEMENT SCHEDULE

MARK	WALL TYPE	REINFORCEMENT		NOTES
		VERTICAL	HORIZONTAL	
A	12" CMU	#6 AT 16" OC	HJR AT 16" OC	BOND BEAM WITH (1) #5 AT 40" OC AND AT BOTTOM OF WALL
B	12" CMU	#8 AT 8" OC	HJR AT 16" OC	VERTICAL REINFORCING TO BE AT EXTERIOR FACE OF CMU
C	8" CMU	#6 AT 16" OC	HJR AT 16" OC	BOND BEAM WITH (1) #5 AT 40" OC AND AT BOTTOM OF WALL

NOTES:

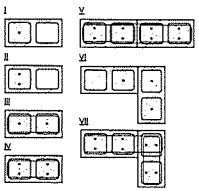
1. SEE ARCHITECTURAL WALL TYPES FOR ADDITIONAL REQUIREMENTS.
2. REINFORCEMENT IS TO BE LOCATED IN CENTER OF WALL UNO.
3. PROVIDE CONTINUOUS BOND BEAM WITH (2) #5 AT ALL BEARING ELEVATIONS AND OVER WINDOWS DOORS AND OTHER OPENINGS UNO.
4. PROVIDE HORIZONTAL REINFORCEMENT INTO INTERSECTING WALLS AT 16" OC VERTICAL, EXTENT 30" EACH DIRECTION WITH PREFABRICATED "T" AND "L" SECTION TYP.
5. SEE GENERAL MASONRY NOTES ON SHEET S001 FOR NON LOAD BEARING WALL REINFORCEMENT REQUIREMENTS.
6. PROVIDE DOWELS TO MATCH VERTICAL REINFORCEMENT. EMBED DOWELS 30" INTO FOUNDATION WALL AND LAP 30" WITH OR MAKE CONTINUOUS WITH VERTICAL STEEL.

MASONRY PIER SCHEDULE

MARK	SIZE (LENGTH)	TYPE	VERTICAL REINFORCING	CLOSED LOOP TIE	COMMENTS
MP1	16"	III	(6) #6	(2) SETS OF 1/4" AT 8"	
MP2	24"	IV	(8) #6	(2) SETS OF 1/4" AT 8"	

NOTES:

1. ALL REINFORCED CMU CORES ARE GROUTED SOLID.
2. RUN HORIZONTAL JOINT REINFORCING CONT. THROUGH MASONRY PIERS.
3. USE 1/4" (2) RODS AS CLOSED LOOP TIES.
4. USE BOND BEAM CMU BLOCKS OR DROP TOP CMU BLOCK AT MASONRY PIERS WITH TIES.
5. SIZE IS WALL WIDTH x LENGTH.



LOOSE STEEL LINTEL SCHEDULE

PROVIDE WHERE OTHER LINTELS ARE NOT SPECIFICALLY DETAILED

WALL THICK	CLEAR MASONRY OPENING WIDTH	SECTION
ALL	AT FIRE EXTINGUISHER CABINETS AND DRINKING FOUNTAINS	1/4" PLATE
4"	TO 5'-0"	ST3x6.25 3/16 1 1/2-8
4"	TO 7'-0"	PL 3/8 x 4 1/2 ON PL 3/8 x 3 1/2
4"	TO 9'-0"	PL3/8"x7 1/2" ON PL3/8"x3 1/2"
6"	TO 5'-0"	(2) L3 1/2x2 1/2x1/4 (LLV)
6"	TO 7'-0"	WT4x10.5
6"	TO 9'-0"	WT7x11
6"	TO 12'-0"	WT7x13 WITH PL1/2"x2" 3/16 1 1/2-8
8"	TO 5'-0"	(2) L3 1/2x3 1/2x1/4
8"	TO 7'-0"	(2) L4x3 1/2x5/16 (LLV)
8"	TO 9'-0"	WT7x15
10"	TO 7'-0"	W8x18 WITH PLS/16"x9" 3/16 1 1/2-8
10"	TO 10'-0"	W8x15 WITH PLS/16"x9"
12"	TO 5'-0"	(3) L3 1/2x3 1/2x 1/4
12"	TO 7'-0"	W8x18 WITH PLS/16"x11" 3/16 1 1/2-8
12"	TO 10'-0"	W8x15 WITH PLS/16"x11"

NOTES:

1. PROVIDE MINIMUM 8" BEARING AT EACH END OF LINTEL.
2. GROUT BLOCK CORES AND REINFORCE WITH (1) #5 VERT BELOW LINTEL BEARING.
3. CENTER LINTELS IN WALL UNLESS OTHERWISE NOTED.
4. BOTTOM PLATES UNDER WIDE FLANGE SHAPES SHALL BE EXTENDED FULL LENGTH OF LINTEL.
5. WELD LINTEL COMPONENTS INTO SINGLE UNIT.
6. NOT LINTELS ARE REQUIRED FOR 4" AND 6" NON-BEARING MASONRY WALLS WHERE GROUTED HOLLOW METAL FRAMES HAVE A HEADSPAN OF 4'-0" OR LESS.

BRICK LOOSE LINTEL SCHEDULE

MARK	SECTION	NOTE/ REMARKS
W ≤ 4'-0"	L4x4x5/16	.
6'-0" < L < 9'-0"	L6x4x3/8	.
9'-0" < L < 12'-0"	L7x4x1/2	.
12'-0" < L < 15'-0"	L8x4x3/4	.

NOTES:

1. LINTELS TO BE SHOP PAINTED WITH ZINC RICH URETHANE. SEE SPECIFICATIONS.
2. PROVIDE 4" MIN BEARING EACH END OF LINTEL UNDER 9'-0", 8" BEARING FOR LONGER LINTELS.
3. SEE ARCH FOR CONTROL JOINT LOCATIONS AND FLASHING REQUIREMENTS.

Engberg Anderson ARCHITECTS
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ONEIDA Total Integrated Enterprises
www.oneida-tribe.com Job Number 2023037
Office 608.243.5470 Fax 608.241.3814
5160 Eastpark Blvd, Suite 300,
Madison, Wisconsin 53718

Contractor is responsible for verifying, in the field, the project measurements and conditions of the construction including but not limited to, temporary supports, shoring, formwork to support imposed loads and other similar items.

2126 FINAL

WARNER PARK COMMUNITY RECREATION CENTER EXPANSION

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MADISON, WI 53704

CITY OF MADISON PARKS DIVISION
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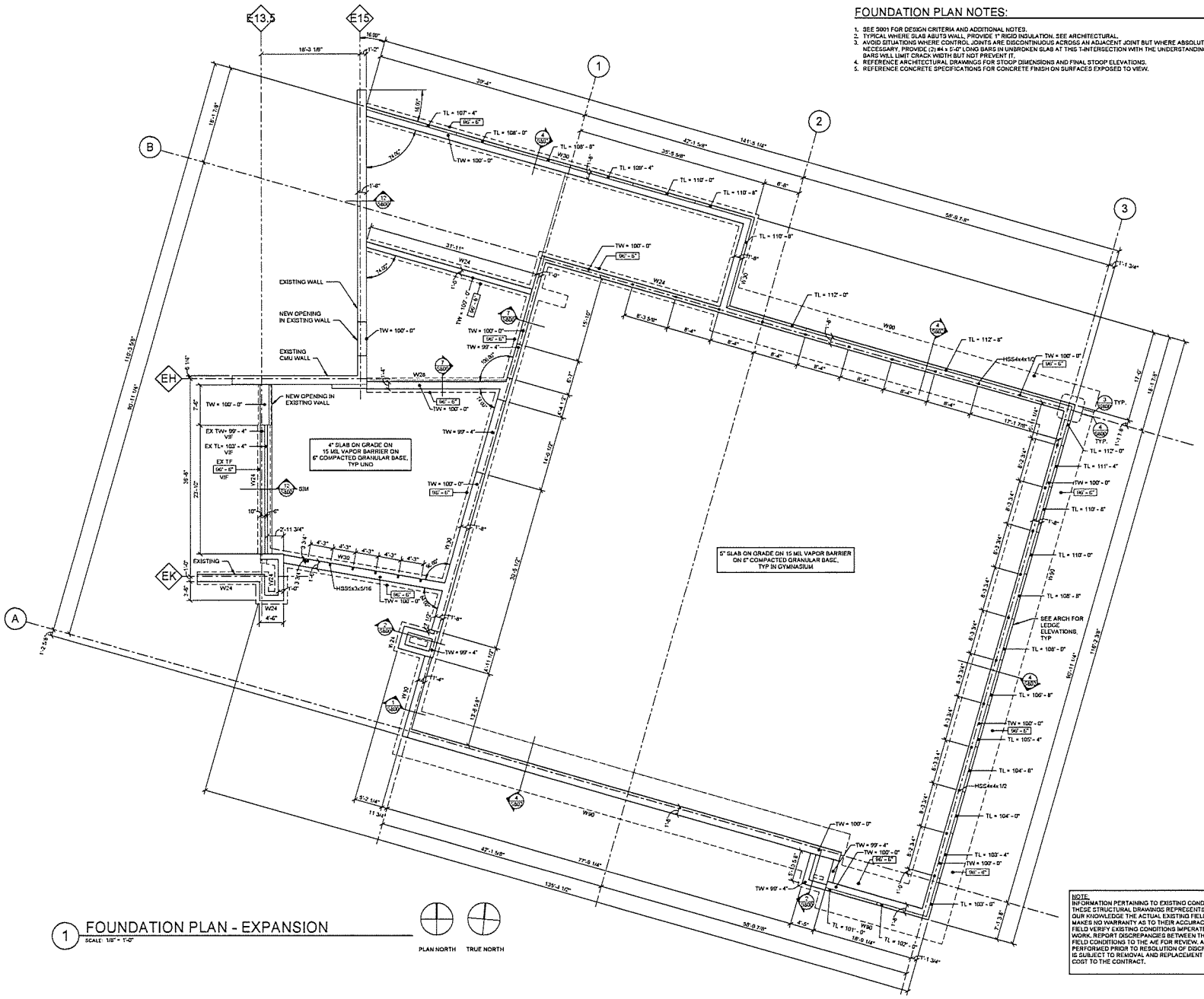
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STRUCTURAL SCHEDULES

S002



FOUNDATION PLAN NOTES:

1. SEE 3001 FOR DESIGN CRITERIA AND ADDITIONAL NOTES.
2. TYPICAL WHERE SLAB ABUTS WALL, PROVIDE 1" RIGID INSULATION. SEE ARCHITECTURAL.
3. AVOID SITUATIONS WHERE CONTROL JOINTS ARE DISCONTINUOUS ACROSS AN ADJACENT JOINT BUT WHERE ABSOLUTELY NECESSARY, PROVIDE (2) #4 x 5'-0" LONG BARS IN UNBROKEN SLAB AT THIS T-INTERSECTION WITH THE UNDERSTANDING THAT BARS WILL LIMIT CRACK WIDTH BUT NOT PREVENT IT.
4. REFERENCE ARCHITECTURAL DRAWINGS FOR STOOP DIMENSIONS AND FINAL STOOP ELEVATIONS.
5. REFERENCE CONCRETE SPECIFICATIONS FOR CONCRETE FINISH ON SURFACES EXPOSED TO VIEW.

1 FOUNDATION PLAN - EXPANSION
SCALE: 1/8" = 1'-0"

NOTE:
INFORMATION PERTAINING TO EXISTING CONDITIONS GIVEN ON THESE STRUCTURAL DRAWINGS REPRESENTS TO THE BEST OF OUR KNOWLEDGE THE ACTUAL EXISTING FIELD CONDITIONS. OTIE MAKES NO WARRANTY AS TO THEIR ACCURACY. CONTRACTOR TO FIELD VERIFY EXISTING CONDITIONS IMPERATIVE TO THE NEW WORK. REPORT DISCREPANCIES BETWEEN THE DRAWINGS AND FIELD CONDITIONS TO THE A/E FOR REVIEW. ANY WORK PERFORMED PRIOR TO RESOLUTION OF DISCREPANCIES BY THE A/E IS SUBJECT TO REMOVAL AND REPLACEMENT AT NO ADDITIONAL COST TO THE CONTRACT.

Engberg Anderson ARCHITECTS
MILWAUKEE | MADISON | CHICAGO

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Office 608.243.5415 Fax 608.243.2814
5116 Eastpark Blvd, Suite 300,
Madison, Wisconsin 53718

5.21.2024

WARNER PARK COMMUNITY RECREATION CENTER EXPANSION

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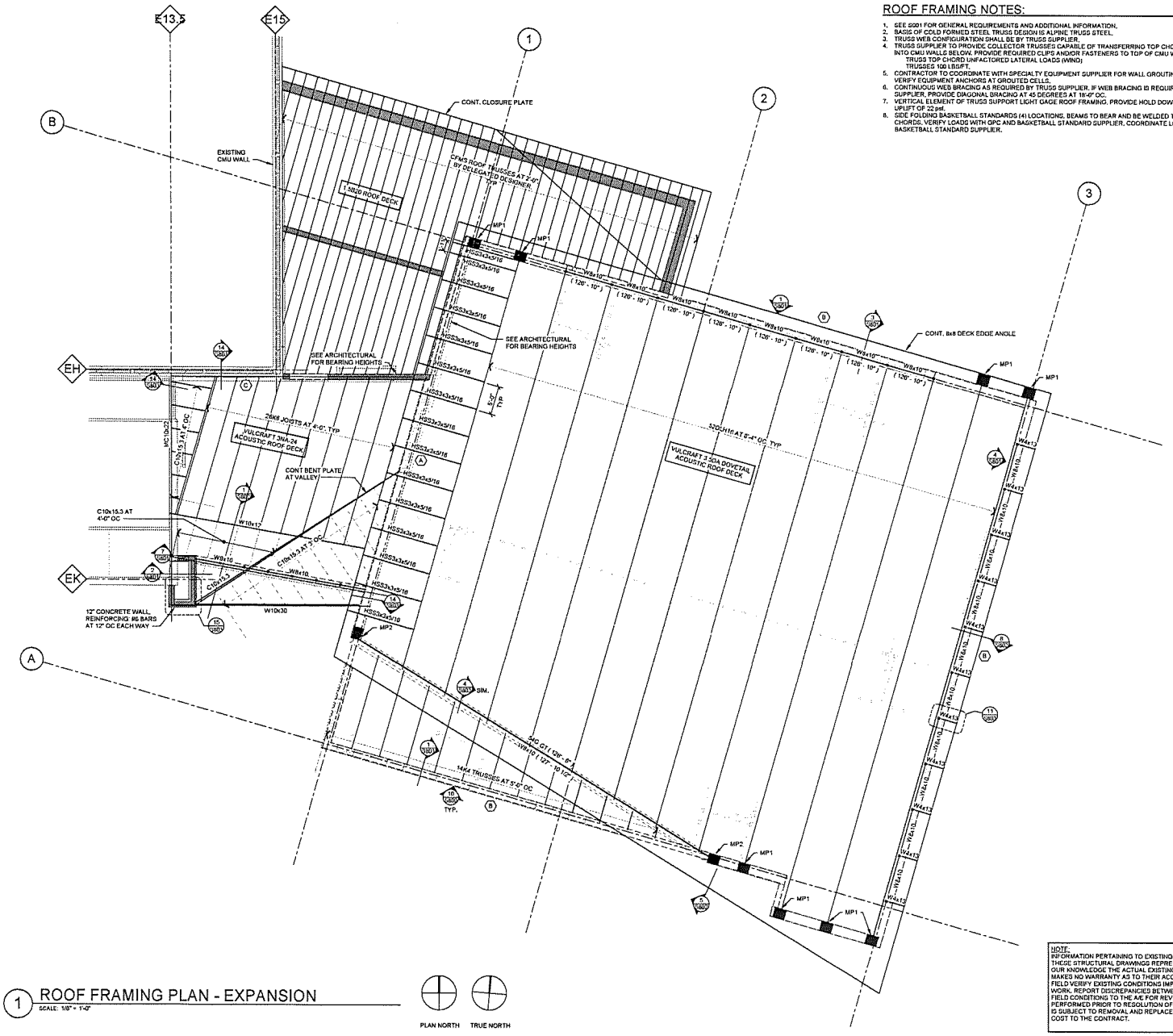
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FOUNDATION PLAN - EXPANSION

S200



ROOF FRAMING NOTES:

1. SEE S001 FOR GENERAL REQUIREMENTS AND ADDITIONAL INFORMATION.
2. BASIS OF COLD FORMED STEEL TRUSS DESIGN IS ALPINE TRUSS STEEL.
3. TRUSS WEB CONFIGURATION SHALL BE BY TRUSS SUPPLIER.
4. TRUSS SUPPLIER TO PROVIDE COLLECTOR TRUSSES CAPABLE OF TRANSFERRING TOP CHORD LATERAL LOADS INTO CMU WALLS BELOW. PROVIDE REQUIRED CLIPS AND/OR FASTENERS TO TOP OF CMU WALL/EDGER
   TRUSS TOP CHORD UNFACTORED LATERAL LOADS (WIND)
   TRUSSES 100 LBS/LIN FT.
5. CONTRACTOR TO COORDINATE WITH SPECIALTY EQUIPMENT SUPPLIER FOR WALL GROUTING REQUIRMENTS. VERIFY EQUIPMENT ANCHORS AT GROUTED CELLS.
6. CONTINUOUS WEB BRACING AS REQUIRED BY TRUSS SUPPLIER. IF WEB BRACING IS REQUIRED BY THE TRUSS SUPPLIER, PROVIDE DIAGONAL BRACING AT 45 DEGREES AT 16'-0" OC.
7. VERTICAL ELEMENT OF TRUSS SUPPORT LIGHT GAGE ROOF FRAMING. PROVIDE HOLD DOWN/STRAP TO RESIST UPLIFT OF 22 psf.
8. SIDE FOLDING BASKETBALL STANDARDS (4) LOCATIONS. BEAMS TO BEAR AND BE WELDED TO JOISTS BOTTOM CHORDS. VERIFY LOADS WITH GPC AND BASKETBALL STANDARD SUPPLIER. COORDINATE LOCATIONS WITH BASKETBALL STANDARD SUPPLIER.

1 ROOF FRAMING PLAN - EXPANSION
SCALE: 1/8" = 1'-0"

PLAN NORTH TRUE NORTH

NOTE:
INFORMATION PERTAINING TO EXISTING CONDITIONS GIVEN ON THESE STRUCTURAL DRAWINGS REPRESENTS TO THE BEST OF OUR KNOWLEDGE THE ACTUAL EXISTING FIELD CONDITIONS. ETRE MAKES NO WARRANTY AS TO THEIR ACCURACY. CONTRACTOR TO FIELD VERIFY EXISTING CONDITIONS IMPERATIVE TO THE NEW WORK. REPORT DISCREPANCIES BETWEEN THE DRAWINGS AND FIELD CONDITIONS TO THE A/E FOR REVIEW. ANY WORK PERFORMED PRIOR TO RESOLUTION OF DISCREPANCIES BY THE A/E IS SUBJECT TO REMOVAL AND REPLACEMENT AT NO ADDITIONAL COST TO THE CONTRACT.

Engberg Anderson ARCHITECTS
MILWAUKEE | MADISON | CHICAGO

ONEIDA Total Integrated Enterprises
www.oneida-tribe.com Job Number 2021L07
Office 608.243.5470 Fax 608.241.2614
5100 Eastpark Blvd, Suite 300,
Madison, Wisconsin 53718

Contractors are responsible for the means, methods, techniques, sequences and procedures of construction including, but not limited to, temporary supports, shoring, bracing to protect impacted walls and other similar items.

05/16/2024

WARNER PARK COMMUNITY RECREATION CENTER EXPANSION

1625 NORTHPORT DRIVE
MADISON, WI 53704

CITY OF MADISON PARKS DIVISION
330 EAST LAKESIDE STREET
MADISON, WI 53715

PROJECT NUMBER 223471.00

ISSUED FOR:

BID SET	5/16/2024

REVISION FOR:

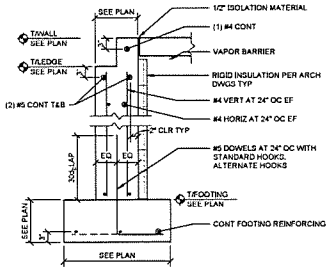
NO.	DESCRIPTION	DATE

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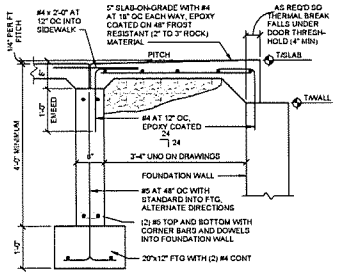
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ROOF FRAMING PLAN - EXPANSION

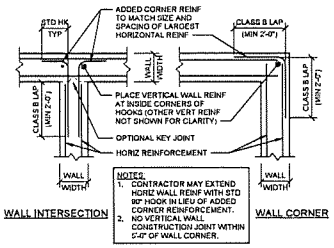
S201



1 CONCRETE FROST WALL
SCALE: 3/4" = 1'-0"

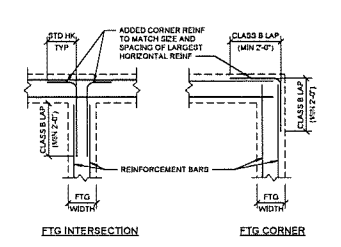


2 TYPICAL STOOP
SCALE: 3/4" = 1'-0"



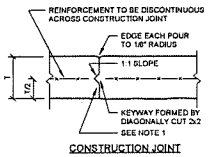
WALL INTERSECTION WALL CORNER

3 TYPICAL WALL CORNER REINFORCEMENT
SCALE: 3/4" = 1'-0"

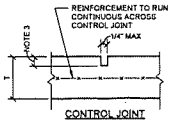


FTG INTERSECTION FTG CORNER

4 TYPICAL FOOTING CORNER REINFORCEMENT
SCALE: 3/4" = 1'-0"



CONSTRUCTION JOINT



CONTROL JOINT

GENERAL NOTES
1. SLAB-ON-GRADE CONSTRUCTION SHOULD CONFORM WITH THE RECOMMENDATIONS AND REQUIREMENTS SET FORTH IN THE LATEST RELEASE OF ACI 302 GUIDE FOR CONCRETE FLOOR AND SLAB CONSTRUCTION.
2. SEE PLANS FOR THE SLAB THICKNESS (T) AND REINFORCEMENT.
3. THE SLAB REINFORCEMENT, IF OTHER THAN WWF, SHALL BE CHAIRED BY SOIL SUPPORTED SLAB BOLSTERS.
4. REFER TO THE GENERAL NOTES, THE SPECIFICATIONS, AND THE DRAWINGS FOR SUB-FLOOR DRAINAGE SYSTEM, SUBGRADE PREPARATION, AND/OR MUD SLAB AND VAPOR RETARDER REQUIREMENTS.
5. THE SUBGRADE SHALL BE FREE OF STANDING WATER AT THE TIME OF CONCRETE PLACEMENT.

CONSTRUCTION JOINT NOTES
1. BREAK THE BOND BETWEEN NEW AND PREVIOUSLY PLACED SLABS BY SPRAYING OR BY PAINTING THE EXPOSED SIDE OF THE JOINT WITH A CURING COMPOUND, ASPHALTIC EMULSION, OR FORM OIL.

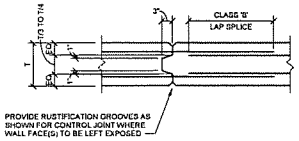
JOINT SPACING NOTES
1. UNLESS SHOWN OTHERWISE ON THE DRAWINGS, PROVIDE CONTROL AND/OR CONSTRUCTION JOINTS AT EVERY COLUMN LINE AND IN BETWEEN THE COLUMNS SUCH THAT THE JOINT SPACING DOES NOT EXCEED 36 * (SLAB THICKNESS) UNLESS SHOWN OTHERWISE. THE RESULTING PANELS SHOULD BE APPROXIMATELY SQUARE.

CONTROL JOINT NOTES
1. FOR SAW CUT CONTROL JOINTS, MAKE THE SAW CUT AS SOON AS THE SLAB IS ABLE TO SUPPORT THE WEIGHT OF WORKERS AND SAWING EQUIPMENT WITHOUT DAMAGE TO THE FINISHED SURFACE OF THE SLAB, BUT WITHIN 24 HOURS.
2. REFER TO SPECIFICATIONS REGARDING EPOXY RESIN OR ELASTOMERIC SEALANT REQUIREMENTS TO FILL CTRL JOINTS.
3. DEPTH OF SAWCUT SHOULD BE 1 1/4" IF PRODUCED USING EARLY ENTRY DRY-CUT PROCESS AND T/4 (1" MINIMUM) IF PRODUCED USING THE CONVENTIONAL WET-CUT PROCESS.

FORMED CONTROL JOINT OPTION NOTES
1. FORM CONTROL JOINTS BY INSERTING A PRE-MOLDED STRIP INTO THE FRESH CONCRETE UNTIL THE TOP SURFACE OF THE STRIP IS FLUSH WITH THE TOP SURFACE OF THE SLAB.
2. TOOL THE SLAB EDGES ROUND ON EACH SIDE OF THE INSERT, 1/8" MAXIMUM RADIUS.
3. AFTER THE CONCRETE HAS CURED, REMOVE THE INSERTS AND CLEAN THE GROOVE OF LOOSE DEBRIS.

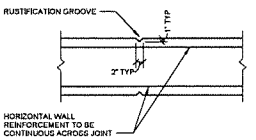
5 TYPICAL CONSTRUCTION AND CONTROL JOINTS IN SOG
SCALE: 3/4" = 1'-0"

NOTE:
MAXIMUM LENGTH OF WALL POUR BETWEEN CONSTRUCTION JOINTS LIMITED TO 60'-0"



CONSTRUCTION JOINT

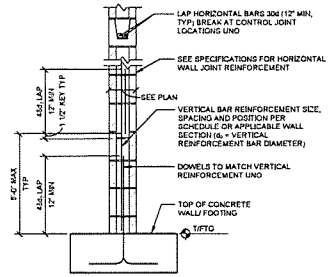
NOTE:
CONTROL JOINT DETAIL APPLIES AT 20'-0" OC (MAXIMUM) AT ALL WALL FACES THAT ARE TO BE LEFT EXPOSED TO VIEW



CONTROL JOINT

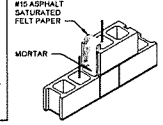
6 CONCRETE WALL JOINTS
SCALE: 3/4" = 1'-0"

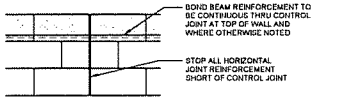
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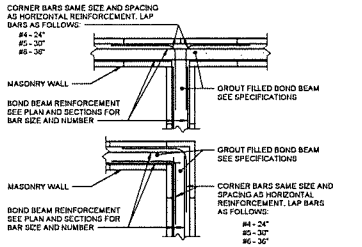
7 TYP REINF'D CMU WALL
SCALE: 3/4" = 1'-0"

CONTROL JOINTS TO BE PLACED:
1. MAXIMUM OF X'-XX" OC.
2. MAXIMUM OF X'-XX" FROM WALL INTERSECTIONS AND CORNERS.
3. AT ALL CHANGES IN WALL HEIGHT OR THICKNESS
4. AT CHASES AND RECESSES FOR PIPING COLUMNS FIXTURES ETC.
5. AT EXPANSION JOINTS IN ROOFS FLOOR AND FOUNDATIONS.
6. ADJACENT TO ONE SIDE OF WINDOW OR DOOR OPENINGS < 6'-0" WIDE.
7. ADJACENT TO BOTH SIDE OF WINDOW OR DOOR OPENINGS > 6'-0" WIDE.
8. AS SPECIFICALLY DETAILED ON ARCHITECTURAL DRAWINGS



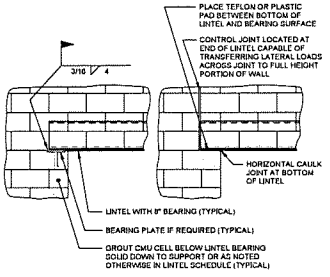


8 CMU CONTROL JOINT
SCALE: 3/4" = 1'-0"

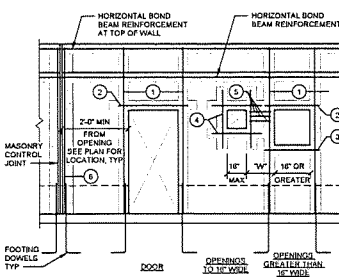


MASONRY BOND BEAM CORNER REINFORCEMENT PLAN

9
SCALE: 3/4" = 1'-0"



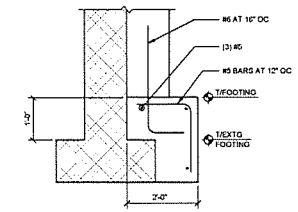
10 LINTEL BEARING DETAIL
SCALE: 3/4" = 1'-0"



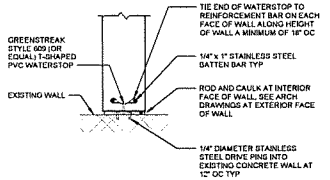
NOTES:
1. JAMB REINFORCEMENT PER LINTEL SCHEDULE OR LINTEL DETAILS
2. REINFORCEMENT PER LINTEL SCHEDULE OR LINTEL DETAILS
3. (1) #6 SILL BAR, EXTEND 2'-0" PAST OPENING
4. (1) #4 EACH SIDE OF OPENING UNO EXTEND 2'-0" PAST OPENING
5. WHEN "W" IS LESS THAN 2'-0" AT 8" CMU WALL AND 2'-0" AT 12" CMU WALLS, ADD 1/4" CLOSED TIE SETS AT 8"OC
6. REINFORCE VERTICAL CELLS AT EDGE OF WALL AND ADJACENT TO CONTROL JOINTS

GENERAL NOTES:
1. GROUT SOLID ALL CELLS W/REINFORCING.
2. USE BOND BEAM BLOCKS WITH OPEN BOTTOMS ONLY AT BOND BEAM LOCATIONS. DO NOT USE THROUGH-TYPE BLOCKS AT BOND BEAMS.
3. DO NOT CONTINUE BOND BEAM REINFORCING THOUGH CONTROL JOINTS.
4. ALL MASONRY SHALL BE LAID IN RUNNING (COMMON) BOND, UNO.
5. REFER TO DETAILS FOR LOCATION OF ADDITIONAL BOND BEAMS.
6. HORIZ. JOINT REINF SHALL BE 8" OC BELOW GRADE AND IN PARAPETS.

11 TYPICAL CMU WALL REINFORCEMENT AT OPENINGS
SCALE: 3/4" = 1'-0"



12 NEW WALL AND FOOTING ADJACENT TO EXISTING
SCALE: 3/4" = 1'-0"



13 NEW FDN TO EXISTING
SCALE: 3/4" = 1'-0"

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03/15/2024 AWB

WARNER PARK COMMUNITY RECREATION CENTER EXPANSION

1625 NORTHPORT DRIVE
MADISON, WI 53704

CITY OF MADISON PARKS DIVISION
330 EAST LAKESIDE STREET
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PROJECT NUMBER 223471.00

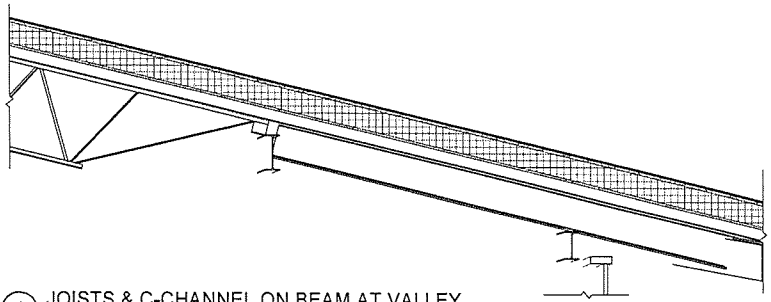
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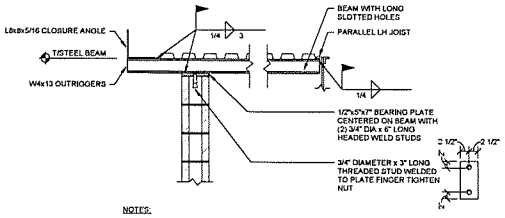
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STRUCTURAL DETAILS

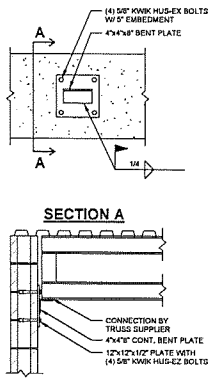
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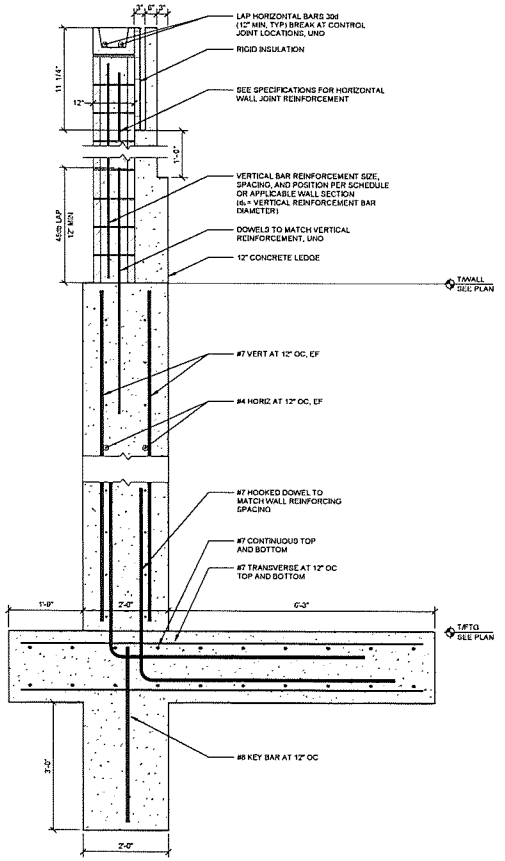
1 JOISTS & C-CHANNEL ON BEAM AT VALLEY
SCALE: 3/4" = 1'-0"



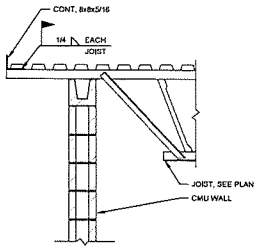
2 WEST OUTRIGGER DETAIL
SCALE: 3/4" = 1'-0"



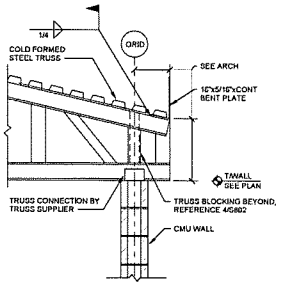
3 CFMS TRUSS BEARING
SCALE: 3/4" = 1'-0"



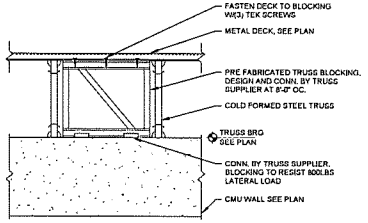
4 EXTERIOR GYM WALL SECTION
SCALE: 3/4" = 1'-0"



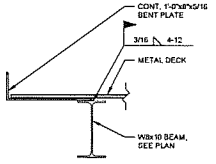
5 ROOF DECK EDGE
SCALE: 3/4" = 1'-0"



6 LT GAGE BRACING
SCALE: 3/4" = 1'-0"



7 TYP TRUSS BLOCKING
SCALE: 3/4" = 1'-0"



8 DECK EDGE AT EAST WALL
SCALE: 1 1/2" = 1'-0"

Engberg Anderson ARCHITECTS
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Madison, Wisconsin 53718

8216 mp

WARNER PARK COMMUNITY RECREATION CENTER EXPANSION

1625 NORTHPORT DRIVE
MADISON, WI 53704

CITY OF MADISON PARKS DIVISION
330 EAST LAKESIDE STREET
MADISON, WI 53715

PROJECT NUMBER 223471.00

ISSUED FOR:
BID SET 5/16/2024

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STRUCTURAL DETAILS

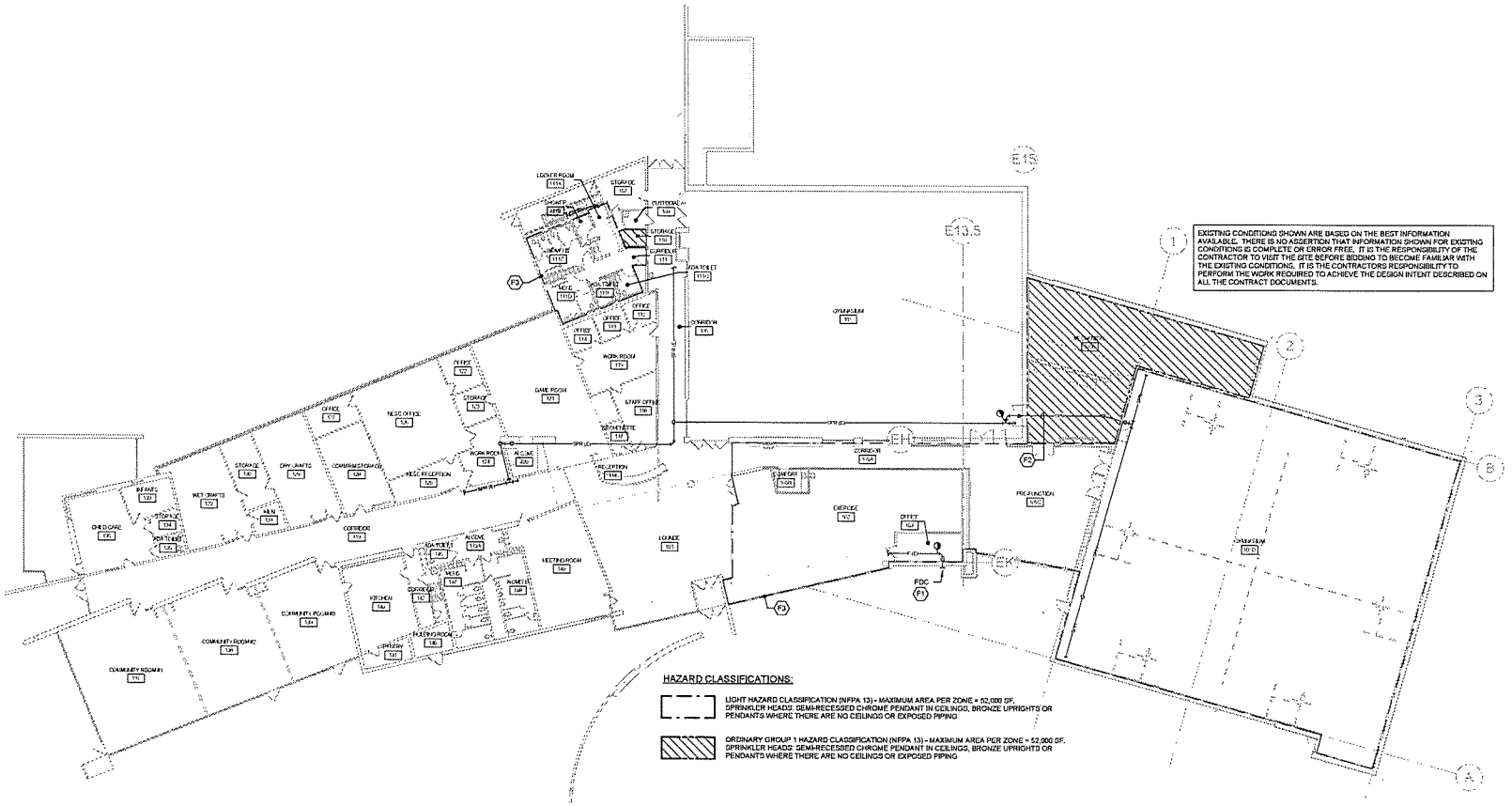
S802

KEYED NOTES
(KEYED NOTES PER PROJECT)

F1 INSTALL NEW FDC, CHECK VALVE, DRAIN VALVE AND RECONNECT TO EXISTING FIRE PROTECTION PIPING. COORDINATE EXACT LOCATION OF NEW FDC WITH OWNER TO ALLOW FOR PROPER CLEARANCE WITH OUT OBSTRUCTION REQUIRED PER LOCAL AHJ.

F2 EXTEND 3" SPRINKLER MAIN LOCATED IN EXISTING GYMNASIUM TO SERVE EXPANSION.

F3 REWORK SPRINKLER PIPING AND SPRINKLER HEADS AS REQUIRED TO PROVIDE PROPER SPRINKLER COVERAGE PER NFPA 13. NO EXISTING SPRINKLER HEADS ARE TO BE REUSED.



1 F201 FIRST FLOOR PLAN – FIRE PROTECTION
SCALE: 1/16" = 1'-0"

Engberg Anderson ARCHITECTS
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JDR ENGINEERING, INC.
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MADISON, WI 53711
PH: 608.277.1728 FAX: 608.277.1046
JDR PROJECT NO: 23.0319

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WARNER PARK
COMMUNITY RECREATION
CENTER EXPANSION

1625 NORTHPORT DRIVE
MADISON, WI 53704

CITY OF MADISON PARKS DIVISION
330 EAST LAKESIDE STREET
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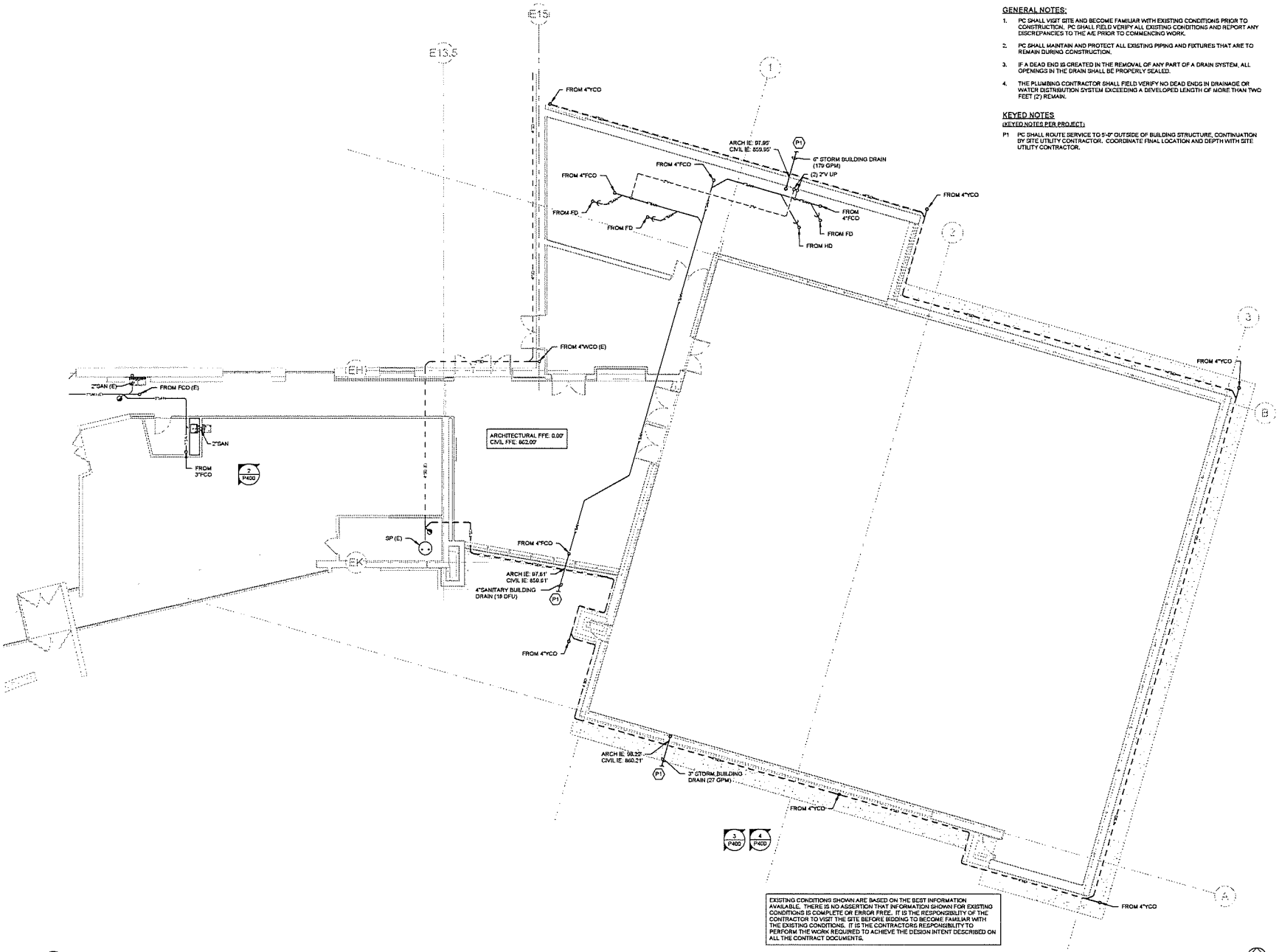
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NO.	DESCRIPTION	DATE

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CHECKED BY	JDR

FIRST FLOOR PLAN –
FIRE PROTECTION

F201



EXISTING CONDITIONS SHOWN ARE BASED ON THE BEST INFORMATION AVAILABLE. THERE IS NO ASSERTION THAT INFORMATION SHOWN FOR EXISTING CONDITIONS IS COMPLETE OR ERROR FREE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VISIT THE SITE BEFORE BIDDING TO BECOME FAMILIAR WITH THE EXISTING CONDITIONS. IT IS THE CONTRACTORS RESPONSIBILITY TO PERFORM THE WORK REQUIRED TO ACHIEVE THE DESIGN INTENT DESCRIBED ON ALL THE CONTRACT DOCUMENTS.

1 P201 PARTIAL ENLARGED UNDERFLOOR PLAN - PLUMBING

PROJECT NORTH

GENERAL NOTES:

1. PC SHALL VISIT SITE AND BECOME FAMILIAR WITH EXISTING CONDITIONS PRIOR TO CONSTRUCTION. PC SHALL FIELD VERIFY ALL EXISTING CONDITIONS AND REPORT ANY DISCREPANCIES TO THE A/E PRIOR TO COMMENCING WORK.
2. PC SHALL MAINTAIN AND PROTECT ALL EXISTING PIPING AND FIXTURES THAT ARE TO REMAIN DURING CONSTRUCTION.
3. IF A DEAD END IS CREATED IN THE REMOVAL OF ANY PART OF A DRAIN SYSTEM, ALL OPENINGS IN THE DRAIN SHALL BE PROPERLY SEALED.
4. THE PLUMBING CONTRACTOR SHALL FIELD VERIFY NO DEAD ENDS IN DRAINAGE OR WATER DISTRIBUTION SYSTEM EXCEEDING A DEVELOPED LENGTH OF MORE THAN TWO FEET (2') REMAIN.

KEYED NOTES

(KEYED NOTES PER PROJECT)

P1 PC SHALL ROUTE SERVICE TO 5'-0" OUTSIDE OF BUILDING STRUCTURE. CONTINUATION BY SITE UTILITY CONTRACTOR. COORDINATE FINAL LOCATION AND DEPTH WITH SITE UTILITY CONTRACTOR.

Engberg Anderson ARCHITECTS
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PH: 608.277.7728 FAX: 608.271.7046
JDR PROJECT NO: 23.0319

03.26.2024

WARNER PARK
COMMUNITY RECREATION
CENTER EXPANSION

1625 NORTHPORT DRIVE
MADISON, WI 53704

CITY OF MADISON PARKS DIVISION
330 EAST LAKESIDE STREET
MADISON, WI 53715

PROJECT NUMBER 22347.00

ISSUED FOR

BID SET	5/16/2024

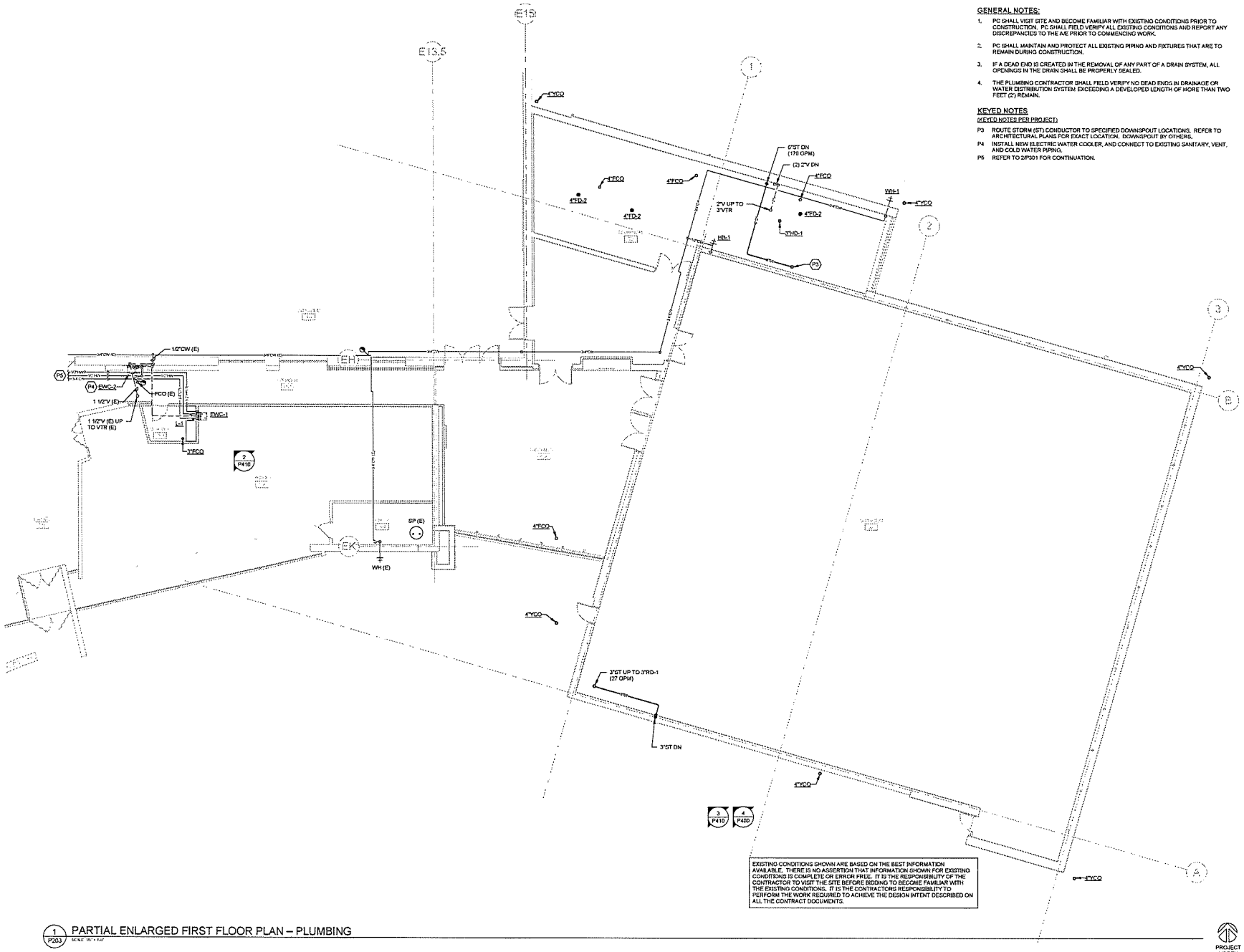
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PARTIAL ENLARGED
UNDERFLOOR PLAN -
PLUMBING

P201



GENERAL NOTES:

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KEYED NOTES
(KEYED NOTES PER PROJECT)

P3 ROUTE STORM (ST) CONDUCTOR TO SPECIFIED DOWNSPOUT LOCATIONS. REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATION. DOWNSPOUT BY OTHERS.
P4 INSTALL NEW ELECTRIC WATER COOLER, AND CONNECT TO EXISTING SANITARY, VENT, AND COLD WATER PIPING.
P5 REFER TO 2/P301 FOR CONTINUATION.

EXISTING CONDITIONS SHOWN ARE BASED ON THE BEST INFORMATION AVAILABLE. THERE IS NO ASSERTION THAT INFORMATION SHOWN FOR EXISTING CONDITIONS IS COMPLETE OR ERROR FREE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VISIT THE SITE BEFORE BIDDING TO BECOME FAMILIAR WITH THE EXISTING CONDITIONS. IT IS THE CONTRACTORS RESPONSIBILITY TO PERFORM THE WORK REQUIRED TO ACHIEVE THE DESIGN INTENT DESCRIBED ON ALL THE CONTRACT DOCUMENTS.

1 / P203 PARTIAL ENLARGED FIRST FLOOR PLAN – PLUMBING

PROJECT NORTH

Engberg Anderson ARCHITECTS
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JDR PROJECT NO: 23.0319

WARNER PARK
COMMUNITY RECREATION
CENTER EXPANSION

1625 NORTHPORT DRIVE
MADISON, WI 53704

CITY OF MADISON PARKS DIVISION
330 EAST LAKESIDE STREET
MADISON, WI 53715

PROJECT NUMBER 223471.00

ISSUED FOR:

BID SET	5/16/2024

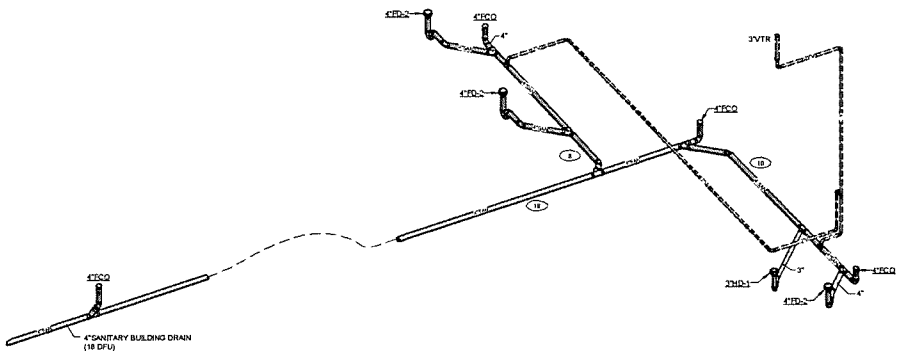
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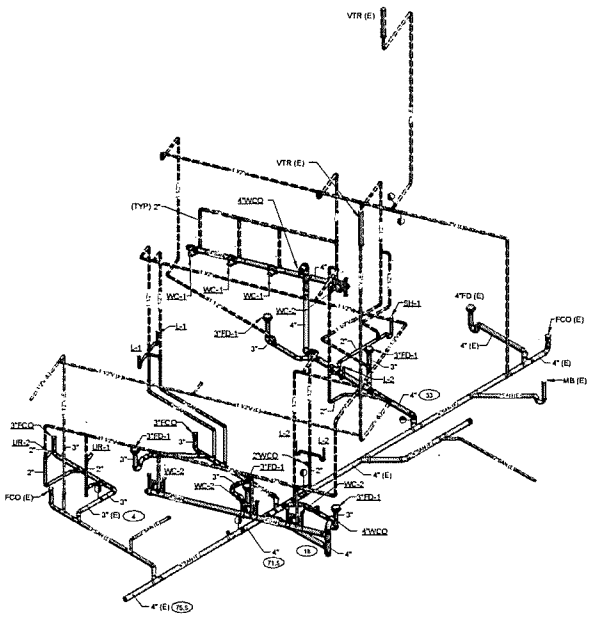
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PARTIAL ENLARGED
FIRST FLOOR PLAN –
PLUMBING

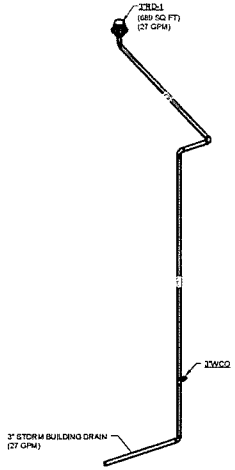
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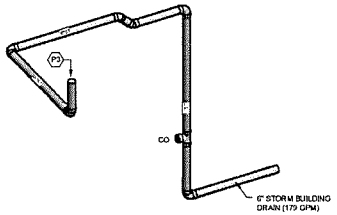


3 P400 WASTE AND VENT ISOMETRIC



1 P400 WASTE AND VENT ISOMETRIC



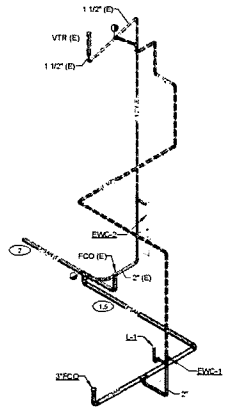


KEYED NOTES

(KEYED NOTES PER PROJECT)

P3 ROUTE STORM (ST) CONDUCTOR TO SPECIFIED DOWNSPOUT LOCATIONS. REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATION. DOWNSPOUT BY OTHERS.

4 P400 STORM ISOMETRIC



2 P400 WASTE AND VENT ISOMETRIC

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5/21/2024

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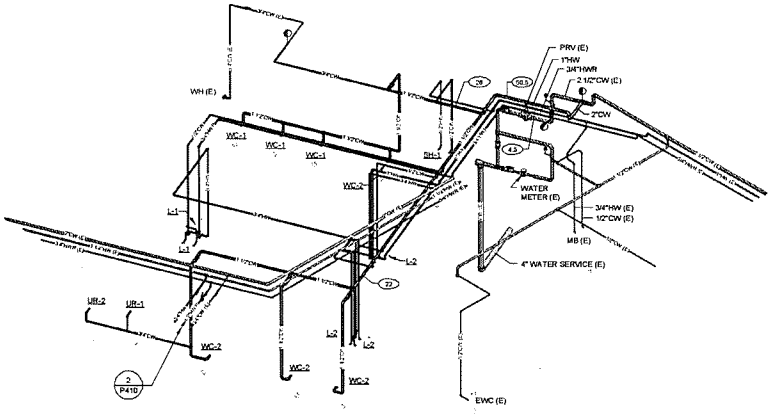
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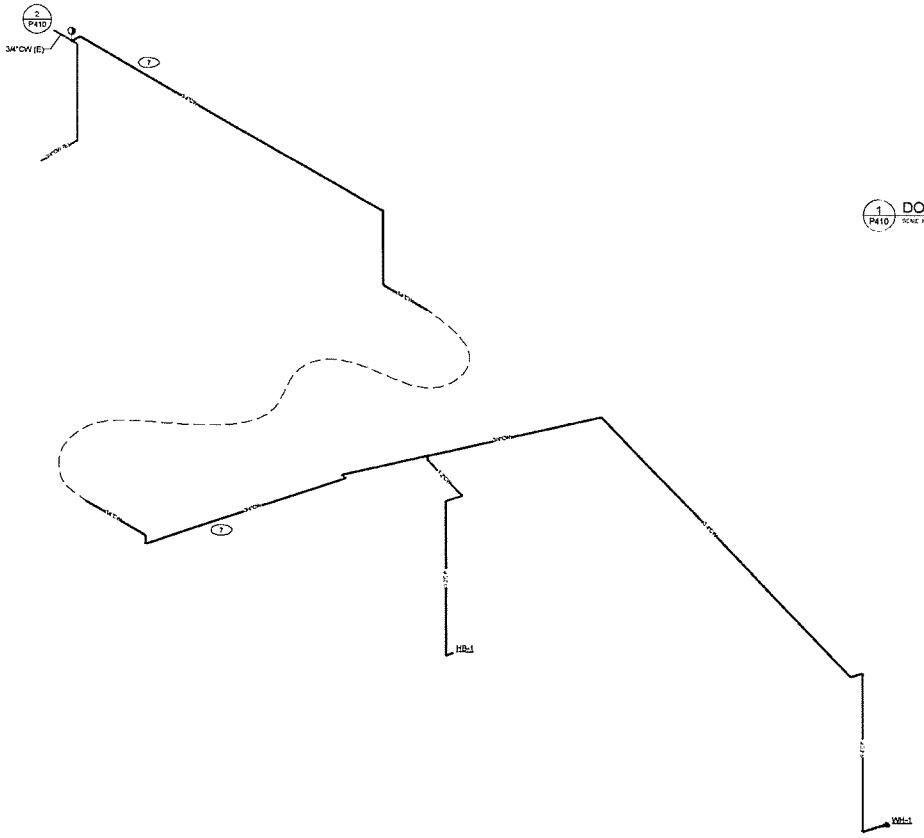
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SANITARY WASTE, VENT & STORM ISOMETRIC - PLUMBING

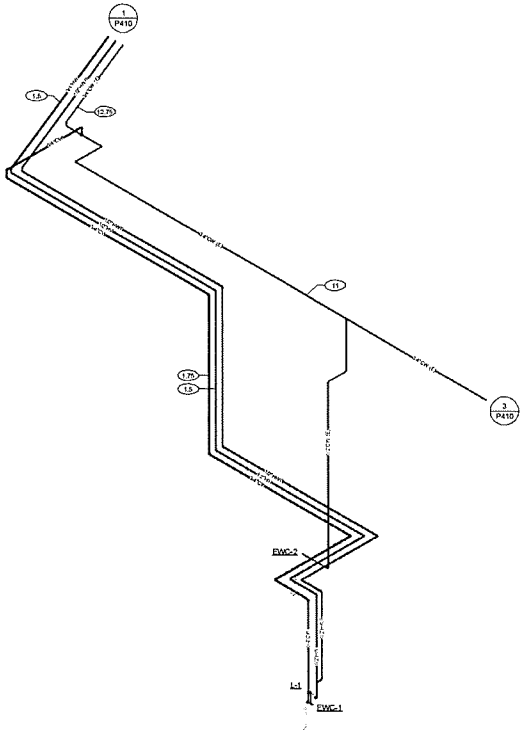
P400



1 P410 DOMESTIC WATER ISOMETRIC
SCALE: NONE



3 P410 DOMESTIC WATER ISOMETRIC
SCALE: NONE



2 P410 DOMESTIC WATER ISOMETRIC
SCALE: NONE

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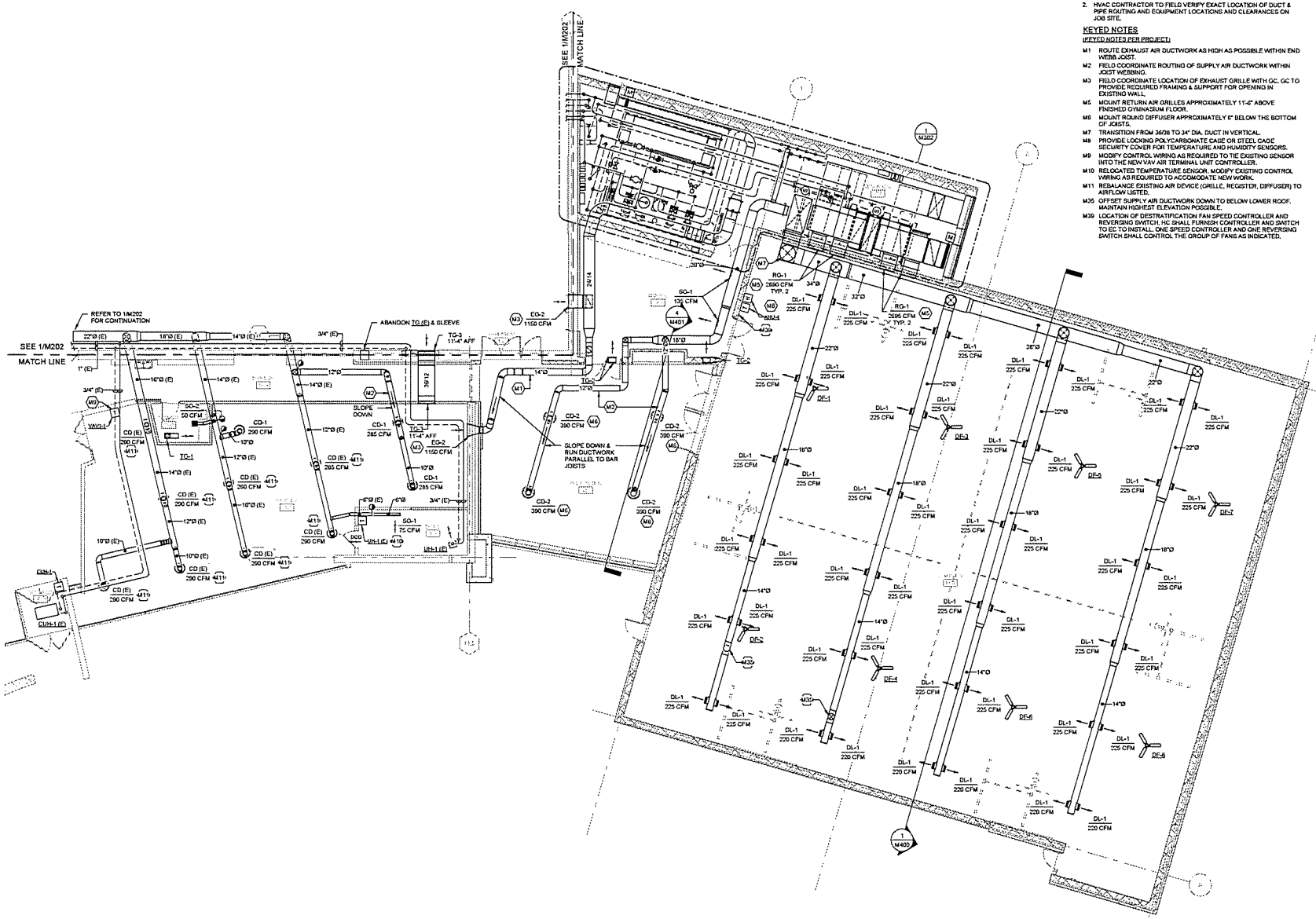
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DOMESTIC WATER
ISOMETRIC - PLUMBING

P410



1 M201 FIRST FLOOR PLAN EXPANSION - HVAC

PROJECT NORTH

GENERAL NOTES:

1. COORDINATE ALL DUCT, PIPING, AND EQUIPMENT INSTALLATION WITH JOIST LAYOUT WHERE REQUIRED.
2. HVAC CONTRACTOR TO FIELD VERIFY EXACT LOCATION OF DUCT & PIPE ROUTING AND EQUIPMENT LOCATIONS AND CLEARANCES ON JOB SITE.

KEYED NOTES

(KEYED NOTES PER PROJECT)

- M1 ROUTE EXHAUST AIR DUCTWORK AS HIGH AS POSSIBLE WITHIN END WEBB JOIST.
- M2 FIELD COORDINATE ROUTING OF SUPPLY AIR DUCTWORK WITHIN JOIST WEBBING.
- M3 FIELD COORDINATE LOCATION OF EXHAUST GRILLE WITH GC. GC TO PROVIDE REQUIRED FRAMING & SUPPORT FOR OPENING IN EXISTING WALL.
- M5 MOUNT RETURN AIR GRILLES APPROXIMATELY 11'-6" ABOVE FINISHED GYMNASIUM FLOOR.
- M6 MOUNT ROUND DIFFUSER APPROXIMATELY 6" BELOW THE BOTTOM OF JOISTS.
- M7 TRANSITION FROM 36X8 TO 24" DIA. DUCT IN VERTICAL.
- M8 PROVIDE LOCKING POLYCARBONATE CASE OR STEEL CAGE SECURITY COVER FOR TEMPERATURE AND HUMIDITY SENSORS.
- M9 MODIFY CONTROL WIRING AS REQUIRED TO TIE EXISTING SENSOR INTO THE NEW VAV AIR TERMINAL UNIT CONTROLLER.
- M10 RELOCATED TEMPERATURE SENSOR. MODIFY EXISTING CONTROL WIRING AS REQUIRED TO ACCOMODATE NEW WORK.
- M11 REBALANCE EXISTING AIR DEVICE (GRILLE, REGISTER, DIFFUSER) TO AIRFLOW LISTED.
- M35 OFFSET SUPPLY AIR DUCTWORK DOWN TO BELOW LOWER ROOF. MAINTAIN HIGHEST ELEVATION POSSIBLE.
- M39 LOCATION OF DESTRATIFICATION FAN SPEED CONTROLLER AND REVERSING SWITCH. HC SHALL FURNISH CONTROLLER AND SWITCH TO EC TO INSTALL. ONE SPEED CONTROLLER AND ONE REVERSING SWITCH SHALL CONTROL THE GROUP OF FANS AS INDICATED.

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WARNER PARK COMMUNITY RECREATION CENTER EXPANSION

1625 NORTHPORT DRIVE
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CITY OF MADISON PARKS DIVISION
330 EAST LAKESIDE STREET
MADISON, WI 53715

PROJECT NUMBER 223471.00

ISSUED FOR:

BID SET 05/16/2024

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FIRST FLOOR EXPANSION PLAN - HVAC

M201

CHILLER DEMOLITION & REPLACEMENT NOTES:

1. HVAC CONTRACTOR SHALL PHASE THE DEMOLITION OF THE EXISTING CHILLER AND CHILLED WATER PLANT WITH THE INSTALLATION OF THE NEW HEAT RECOVERY CHILLER PLANT. EXISTING CHILLER AND CHILLED WATER PLANT SHALL REMAIN OPERATIONAL TO LIMIT DOWNTIME OF COOLING TO THE FACILITY.

GENERAL NOTES:

1. COORDINATE ALL DUCT, PIPING, AND EQUIPMENT INSTALLATION WITH JOIST LAYOUT WHERE REQUIRED.
2. HVAC CONTRACTOR TO FIELD VERIFY EXACT LOCATION OF DUCT & PIPE ROUTING AND EQUIPMENT LOCATIONS AND CLEARANCES ON JOB SITE.

KEYED NOTES

(KEYED NOTES PER PROJECT)

M27 4" CONCRETE EQUIPMENT PAD BY GC. HC TO COORDINATE SIZE AND LOCATION.

M28 6" GEOTHERMAL BOREFIELD MANIFOLDS. REFER TO DETAIL 3/M902 FOR ADDITIONAL REQUIREMENTS.

M29 PROVIDE 72/76 INSULATED PLENUM FOR OUTSIDE AIR INTAKE, 72/76 INSULATED PLENUM FOR RELIEF AIR, AND PROVIDE INSULATED BLANK-OFF PANELS FOR UNUSED PORTIONS OF LOUVER.

M30 COORDINATE WITH EC TO PROVIDE 120V POWER AND DATA CONNECTION TO TEMPERATURE CONTROL PANEL.

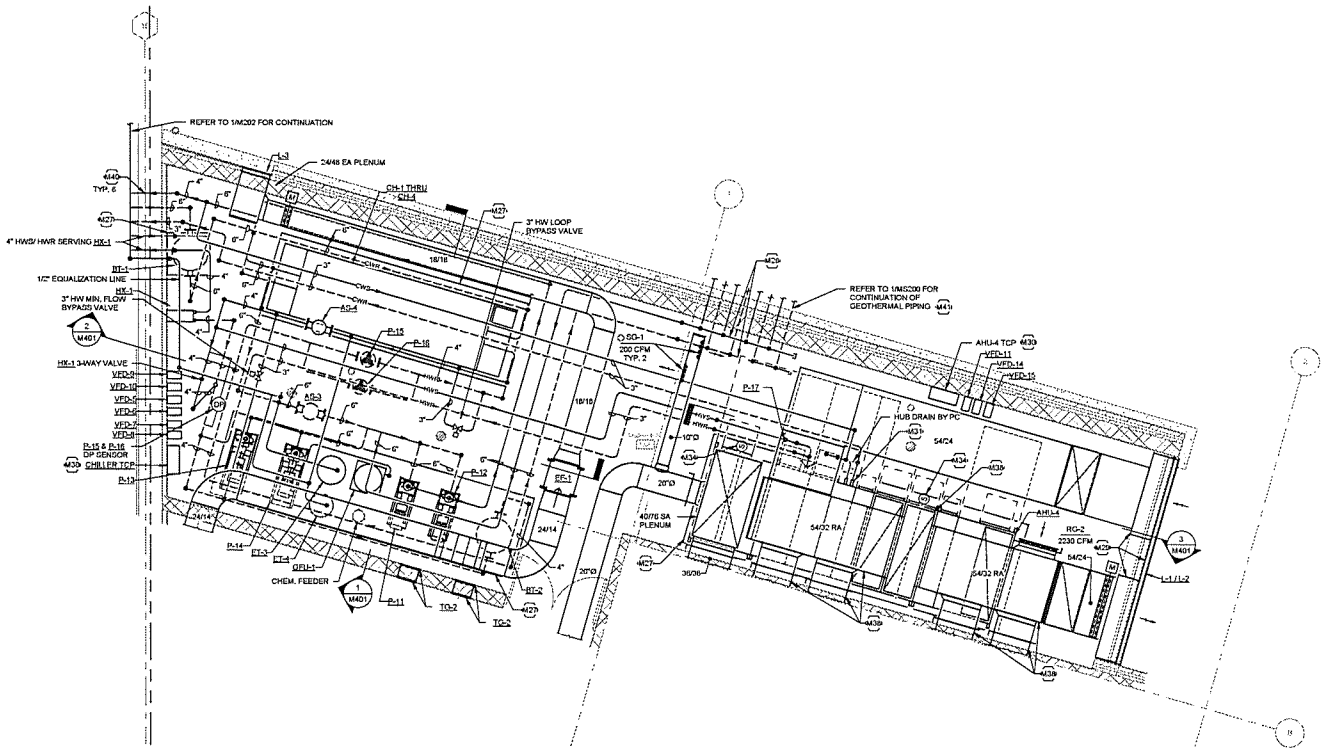
M31 PROVIDE CONDENSATE LOOP SEAL AND ROUTE CONDENSATE TO HUB DRAIN. CONDENSATE PIPE SIZE SHALL NOT BE SMALLER THAN UNIT CONNECTION SIZE. HUB DRAIN BY PC.

M34 DUCT MOUNTED SMOKE DETECTOR BY EC.

M38 LINE ALL RETURN AIR DUCTWORK ASSOCIATED WITH AHU-4. DUCT SIZES SHOWN ARE INSIDE DUCT DIMENSIONS.

M40 PROVIDE PIPE BLOKKER PIPE ATTENUATION. REFER TO DETAIL 5/M902 FOR ADDITIONAL INFORMATION.

M41 FIELD COORINATE GEOTHERMAL FIELD PIPING WITH STORM PIPING. REFER TO CIVIL PLANS FOR ADDITIONAL INFORMATION.



1 M302 ENLARGED MECHANICAL ROOM PLAN - HVAC

SCALE: 1/4"=1'-0"

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WARNER PARK COMMUNITY RECREATION CENTER EXPANSION

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MADISON, WI 53715

PROJECT NUMBER 223471.00

ISSUED FOR:

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ENLARGED MECHANICAL ROOM PLAN - HVAC

M302

KEYED NOTES

(KEYED NOTES PER PROJECT)

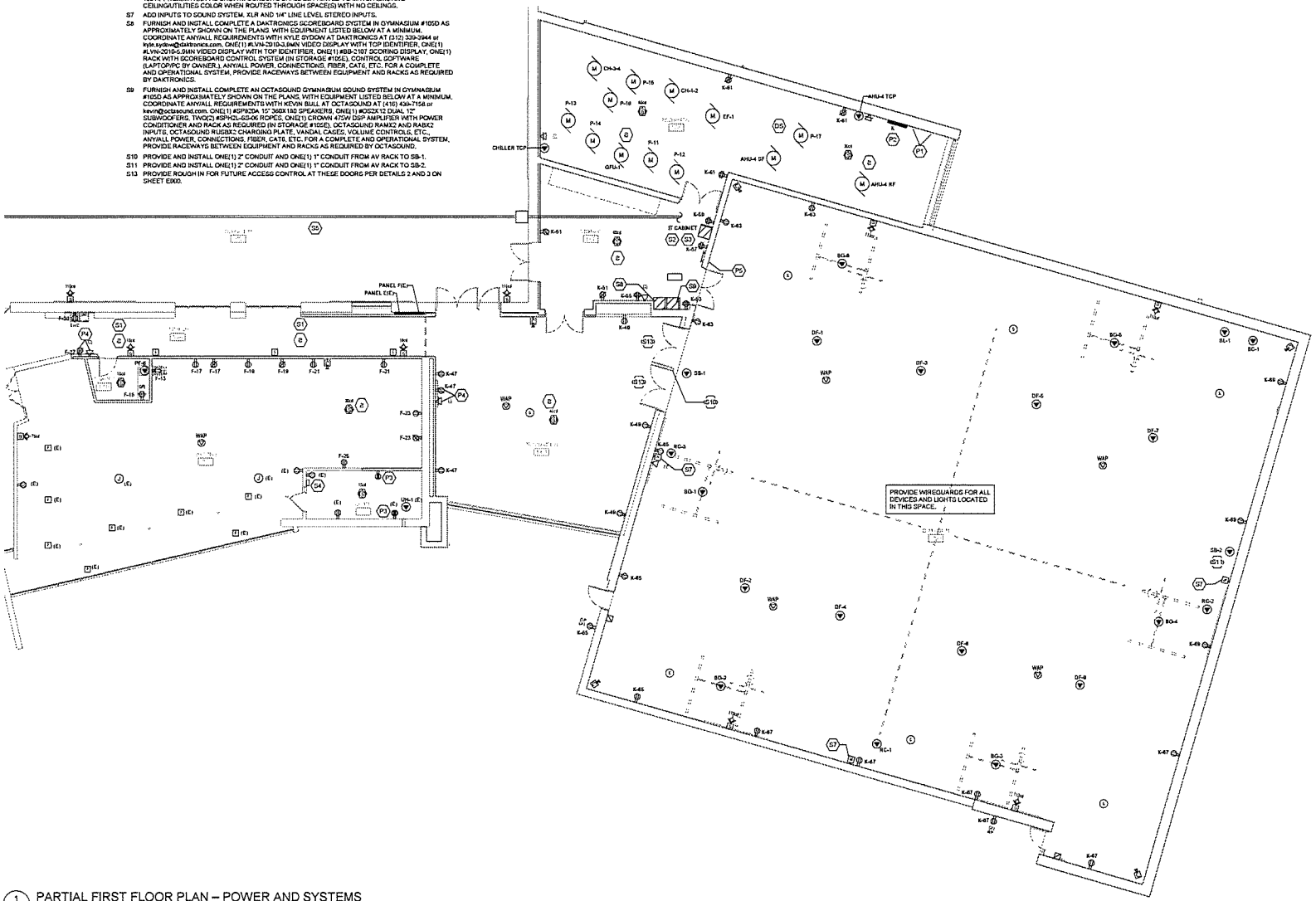
- P1 LOCATE INVERTERS FOR ROOF MOUNTED PV ARRAY AT THIS LOCATION.
- P2 PROVIDE AND INSTALL NEW 208Y/120V, 600A PANEL 'K'.
- P3 PROVIDE AND INSTALL DUAL CONTROLLED RECEPTACLE EQUAL TO LEGRAND #WRC-2D-2. PROVIDE CEILING MOUNTED RF TRANSMITTER EQUAL TO LEGRAND #WRC-TX-LM. PROVIDE ROOM CONTROLLERS AS REQUIRED.
- P4 COORDINATE HEIGHT OF POWER AND DATA FOR SCREEN WITH ARCHITECT.
- P5 LOCATION OF DESTRATIFICATION FAN SPEED CONTROLLER AND REVERSING SWITCH. HC SHALL FURNISH CONTROLLER AND SWITCH TO EC TO INSTALL. REFER TO M201 FOR MORE DETAILS.
- S1 MOUNT SMOKE DETECTOR ABOVE PERFERATED CEILING.
- S2 FOR CONNECTION OF TELECOM ROOMS, RUN TWELVE STRAND SINGLE MODE FIBER FROM STORAGE (TR ROOM) 123 TO STORAGE (TR ROOM) 105E. TERMINATE WITH LC CONNECTORS ON CABINET MOUNTED PATCH PANEL IN EACH TR. PROVIDE 12 LC TO LC PATCH CABLES.
- S3 PROVIDE AND INSTALL NEW LOCKING IT CABINET EQUAL TO HUBBELL #HSC4836.
- S4 EXTEND EXISTING PAGING FEEDS THROUGH OVERHEAD CONDUIT SYSTEM TO THIS LOCATION. CONTRACTOR SHALL CUT EXISTING UNDERGROUND FEED AND SPLICE TO NEW OVERHEAD CONDUIT SYSTEM.
- S5 PROVIDE AND INSTALL (2) 2" CONDUITS ROUTED FROM STORAGE (TR ROOM) 123 TO STORAGE (TR ROOM) 105E. PROVIDE JUNCTION BOXES ABOVE CEILING IN WORK ROOM 110 AND IN GYMNASIUM 103 APPROXIMATELY AS SHOWN. CONDUITS SHALL BE PAINTED TO MATCH EXISTING CEILING/UTILITIES COLOR WHEN ROUTED THROUGH SPACE(S) WITH NO CEILINGS.
- S7 ADD INPUTS TO SOUND SYSTEM. XLR AND 1/4" LINE LEVEL STEREO INPUTS.
- S8 FURNISH AND INSTALL COMPLETE A DAKTRONICS SCOREBOARD SYSTEM IN GYMNASIUM #105D AS APPROXIMATELY SHOWN ON THE PLANS WITH EQUIPMENT LISTED BELOW AT A MINIMUM. COORDINATE ANY/ALL REQUIREMENTS WITH KYLE SYDOW AT DAKTRONICS AT (212) 339-3944 or kyle.sydow@daktronics.com. ONE(1) #LVH-2010-3.9MN VIDEO DISPLAY WITH TOP IDENTIFIER, ONE(1) #LVH-2010-5.9MN VIDEO DISPLAY WITH TOP IDENTIFIER, ONE(1) #BB-2107 SCORING DISPLAY, ONE(1) RACK WITH SCOREBOARD CONTROL SYSTEM (IN STORAGE #105E), CONTROL SOFTWARE (LAPTOP/PC BY OWNER), ANY/ALL POWER, CONNECTIONS, FIBER, CAT6, ETC. FOR A COMPLETE AND OPERATIONAL SYSTEM, PROVIDE RACEWAYS BETWEEN EQUIPMENT AND RACKS AS REQUIRED BY DAKTRONICS.
- S9 FURNISH AND INSTALL COMPLETE AN OCTASOUND GYMNASIUM SOUND SYSTEM IN GYMNASIUM #105D AS APPROXIMATELY SHOWN ON THE PLANS, WITH EQUIPMENT LISTED BELOW AT A MINIMUM. COORDINATE ANY/ALL REQUIREMENTS WITH KEVIN BULL AT OCTASOUND AT (414) 434-7158 or kevin@octasound.com. ONE(1) #SPK20A 10" 360X180 SPEAKERS, ONE(1) #DS2X12 DUAL 12" SUBWOOFERS, TWO(2) #SPH2L-SS-06 ROPES, ONE(1) CROWN 4/3W DSP AMPLIFIER WITH POWER CONDITIONER AND RACK AS REQUIRED (IN STORAGE #105E), OCTASOUND RAMX2 AND RABX2 INPUTS, OCTASOUND RUSBX2 CHARGING PLATE, VANDAL CAGES, VOLUME CONTROLS, ETC., ANY/ALL POWER, CONNECTIONS, FIBER, CAT6, ETC. FOR A COMPLETE AND OPERATIONAL SYSTEM, PROVIDE RACEWAYS BETWEEN EQUIPMENT AND RACKS AS REQUIRED BY OCTASOUND.
- S10 PROVIDE AND INSTALL ONE(1) 2" CONDUIT AND ONE(1) 1" CONDUIT FROM AV RACK TO SB-1.
- S11 PROVIDE AND INSTALL ONE(1) 2" CONDUIT AND ONE(1) 1" CONDUIT FROM AV RACK TO SB-2.
- S12 PROVIDE ROUGH IN FOR FUTURE ACCESS CONTROL AT THESE DOORS PER DETAILS 2 AND 3 ON SHEET E000.

SYSTEMS GENERAL NOTES:

1. ALL LOW VOLTAGE CABLES OR CONDUCTORS OPERATING AT LESS THAN 50 VOLTS SHALL BE IN ELECTRICAL METAL TUBING (EMT) WHERE INSTALLED WITHIN WALLS OR INACCESSIBLE SPACES.
2. TV OUTLETS, VOLUME CONTROLS, TELEPHONE OUTLETS, AND DATA OUTLETS SHALL CONSIST OF A BACK BOX WITH CONDUIT STUBBED ABOVE THE ACCESSIBLE CEILING. SEE ROUGH-IN DETAIL. VERIFY SIZE OF BACK BOX REQUIRED WITH DEVICE TO BE INSTALLED. LOCATE BACK BOXES 6" FROM ADJACENT POWER RECEPTACLE INTENDED FOR COMPUTER USE.
3. ANY/ALL LOW VOLTAGE SYSTEMS, INCLUDING BUT NOT LIMITED TO THE FOLLOWING: COMMUNICATIONS, PAGING, CLOCK SYSTEM, CLASS BELLS, ETC., SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION. FIELD VERIFY ALL LOW VOLTAGE SYSTEM REQUIREMENTS AND EXTEND/MAINTAIN/REUSE AS REQUIRED. EXTEND ANY/ALL NEW COMMUNICATIONS CABLING TO EXISTING MDF/IDF AS REQUIRED. COORDINATE JACK/CABLING REQUIREMENTS AND COLORS WITH OWNER.
4. CAMERA MOUNTING SHALL BE COORDINATED WITH OWNER. VERIFY DESIRED MOUNTING HEIGHT AND CAMERA MOUNT TYPE PRIOR TO INSTALL.
5. ALL WAP LOCATIONS SHOWN ARE APPROXIMATE. CONFIRM ALL EXACT/FINAL WAP LOCATIONS WITH CITY I.T. DEPARTMENT PRIOR TO ROUGH IN. WAP MOUNTING SHALL BE COORDINATED WITH OWNER. VERIFY DESIRED MOUNTING HEIGHT AND WAP MOUNT TYPE PRIOR TO INSTALL.
6. ALL NEW CAT6 CABLING SHALL BE ROUTED TO STORAGE (TR ROOM) #105E.

POWER GENERAL NOTES:

1. REFER TO SHEET E000 FOR ALL SYMBOLS, ABBREVIATIONS, AND DETAILS.
2. THE CONTRACTOR MAY INSTALL UP TO THREE (3) CURRENT CARRYING CONDUCTORS IN A CONDUIT. LOADINGS ARE BASED ON THWN INSULATION, 40°C AMBIENT WITH DERATINGS FOR TEMPERATURE AND UP TO THREE (3) CONDUCTORS IN A CONDUIT. CONTACT THE ENGINEER FOR WIRING IN OTHER CONDITIONS.
3. VERIFY ALL MOUNTING HEIGHTS OF DEVICES ABOVE MILLWORK WITH ARCHITECTURAL PLANS.
4. NOTE THAT THIS PROJECT CONSISTS OF A COMPLETE REPLACEMENT OF THE FIRE ALARM SYSTEM AS SHOWN ON THE PLANS. ANY/ALL EXISTING FIRE ALARM DEVICES, CONTROL PANELS, ANNUNCIATOR PANELS, CABLING, ETC. SHALL BE DISCONNECTED AND REMOVED COMPLETE. REUSE OF EXISTING INFRASTRUCTURE (BOXES AND CONDUITS ONLY) IS ACCEPTABLE WHERE SIZED AND SUPPORTED PROPERLY. THE NEW VOICE FIRE ALARM SYSTEM THROUGHOUT THE BUILDING SHALL BE INSTALLED, PROGRAMMED, TESTED, COMMISSIONED, AND APPROVED BY THE LOCAL AHJ PRIOR TO DECOMMISSIONING AND REMOVING THE EXISTING FIRE ALARM SYSTEM. ANY/ALL NEW FIRE ALARM DEVICES SHALL BE RECESSED IN EXISTING WALLS/CEILINGS UNLESS INDICATED OTHERWISE. ANY AND ALL FIRE ALARM CABLING SHALL BE EMT CONDUIT AT A MINIMUM. NO FREE AIR CABLING IS ALLOWED.
5. ALL RECEPTACLES WITH PLUGLOAD CONTROL SHALL BE CONTROLLABLE VIA THE LIGHTING CONTROLS SHOWN ON THE LIGHTING PLANS. PROVIDE CONTROL DEVICES, ETC. AS REQUIRED TO ACHIEVE THE CONTROLS SHOWN.



1 E201 PARTIAL FIRST FLOOR PLAN – POWER AND SYSTEMS

SCALE: 1/8" = 1'-0"

Engberg Anderson ARCHITECTS

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D.R.'s 16, 2024

WARNER PARK COMMUNITY RECREATION CENTER EXPANSION

1625 NORTHPORT DRIVE
MADISON, WI 53704

CITY OF MADISON PARKS DIVISION
330 EAST LAKESIDE STREET
MADISON, WI 53715

PROJECT NUMBER 223471.00

ISSUED FOR:

BID SET 5/16/2024

REVISION FOR:

NO. DESCRIPTION DATE

DRAWN BY JDR

CHECKED BY JDR

PARTIAL FIRST FLOOR PLAN – POWER AND SYSTEMS

E201

SECTION 03 30 00
CAST-IN-PLACE CONCRETE

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PART 1 - GENERAL

1.1 SUMMARY

A. In general, the work includes the following:
   1. 1. Footings
   2. Stoops (at doors)
   3. Aprons (at overhead doors, including concrete infill between stoops and aprons)
   4. Cast-in-place concrete work
   5. Interior slabs on grade
   6. Vapor retarder (barrier)
   7. Recessed slab, below-slab drain containment and other concrete work below the floor slabs.
   8. Floor trenches or utility trenches
   9. Cast-in-place concrete, including concrete materials, mixture design, placement procedures, and finishes.

B. Related Requirements:

1. Section 031000 "Concrete Forming and Accessories" for form-facing materials, form liners, insulating concrete forms, and waterstops.
2. Section 032000 "Concrete Reinforcing" for steel reinforcing bars and welded-wire reinforcement.
3. Section 079200 "Joint Sealant"
4. Section 321313 "Concrete Paving" for concrete pavement and walks.

1.2 DEFINITIONS

A. Cementitious Materials: Portland cement alone or in combination with one or more of the following: blended hydraulic cement, fly ash, slag cement, other pozzolans, and silica fume; materials subject to compliance with requirements.

B. Water/Cement Ratio (w/cm): The ratio by weight of water to cementitious materials.

1.3 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at **Project site**.

1. Require representatives of each entity directly concerned with cast-in-place concrete to attend, including the following:
   a. Contractor's superintendent.
   b. Independent testing agency responsible for concrete design mixtures.
   c. Ready-mix concrete manufacturer.
   d. Concrete Subcontractor.
2. Review the following:
   a. Construction joints, control joints, isolation joints, and joint-filler strips.
   b. Semirigid joint fillers.
   c. Vapor-retarder installation.
   d. Anchor rod and anchorage device installation tolerances.
   e. Cold and hot weather concreting procedures.
   f. Concrete finishes and finishing.
   g. Curing procedures.
   h. Forms and form-removal limitations.
   i. Methods for achieving specified floor and slab flatness and levelness.
   j. Floor and slab flatness and levelness measurements.
   k. Concrete repair procedures.
   l. Concrete protection.
   m. Initial curing and field curing of field test cylinders (ASTM C31/C31M.)
   n. Protection of field cured field test cylinders.

1.4 ACTION SUBMITTALS

A. Product Data: For each of the following.

1. Portland cement.
2. Fly ash.
3. Slag cement.
4. Aggregates.
5. Admixtures:
   a. Include limitations of use, including restrictions on cementitious materials, supplementary cementitious materials, air entrainment, aggregates, temperature at time of concrete placement, relative humidity at time of concrete placement, curing conditions, and use of other admixtures.
6. Fiber reinforcement.
7. Vapor retarders.
8. Floor and slab treatments.
9. Liquid floor treatments.
10. Curing materials.
    a. Include documentation from color pigment manufacturer, indicating that proposed methods of curing are recommended by color pigment manufacturer.
11. Joint fillers.
12. Repair materials.

B. Design Mixtures: For each concrete mixture, include the following:

1. Mixture identification.
2. Minimum 28-day compressive strength.

3. Durability exposure class.
4. Maximum w/cm.
5. Slump limit.
6. Air content.
7. Nominal maximum aggregate size.
8. Indicate amounts of mixing water to be withheld for later addition at Project site if permitted.
9. Intended placement method.
10. Submit alternate design mixtures when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments.

C. Shop Drawings:
1. Construction Joint Layout: Indicate proposed construction joints required to construct the structure.
a. Location of construction joints is subject to approval of the Architect.

D. Samples: For **vapor retarder**.

E. Concrete Schedule: For each location of each Class of concrete indicated in "Concrete Mixtures" Article, including the following:
1. Concrete Class designation.
2. Location within Project.
3. Exposure Class designation.
4. Formed Surface Finish designation and final finish.
5. Final finish for floors.
6. Curing process.
7. Floor treatment if any.

1.5 INFORMATIONAL SUBMITTALS

A. Material Certificates: For each of the following, signed by manufacturers:
1. Cementitious materials.
2. Admixtures.
3. Fiber reinforcement.
4. Curing compounds.
5. Floor and slab treatments.
6. Bonding agents.
7. Adhesives.
8. Vapor retarders.
9. Semirigid joint filler.
10. Joint-filler strips.
11. Repair materials.

B. Material Test Reports: For the following, from a qualified testing agency:
1. Portland cement.
2. Fly ash.
3. Slag cement.
4. Aggregates.
5. Admixtures:

C. Floor surface flatness and levelness measurements report, indicating compliance with specified tolerances.

D. Research Reports:
1. For concrete admixtures in accordance with ICC's Acceptance Criteria AC198.
2. For sheet vapor retarder/termite barrier, showing compliance with ICC AC380.

E. Preconstruction Test Reports: For each mix design.

F. Field quality-control reports.

G. Minutes of preinstallation conference.

1.6 QUALITY ASSURANCE

A. Laboratory Testing Agency Qualifications: A testing agency qualified in accordance with ASTM C1077 and ASTM E329 for testing indicated and employing an ACI-certified Concrete Quality Control Technical Manager.
1. Personnel performing laboratory tests to be an ACI-certified Concrete Strength Testing Technician and Concrete Laboratory Testing Technician, Grade I. Testing agency laboratory supervisor to be an ACI-certified Concrete Laboratory Testing Technician, Grade II.

B. Field Quality-Control Testing Agency Qualifications: An independent agency, **acceptable to authorities having jurisdiction,** qualified in accordance with ASTM C1077 and ASTM E329 for testing indicated.

1. Personnel conducting field tests to be qualified as an ACI Concrete Field-Testing Technician, Grade 1, in accordance with ACI CPP 610.1 or an equivalent certification program.

C. Mockups: Before casting architectural concrete, build mockups, using the same procedures, equipment, materials, finishing procedures, and curing procedures that will be used for producing architectural concrete, to verify selections made under Sample submittals and to demonstrate typical joints, surface finish, color, texture, tolerances, and standard of workmanship. Build mockups to comply with the following requirements, using materials indicated for the completed work:
   1. Build mockups in the location and of the size indicated or, if not indicated, as directed by architect.
   2. Build mockups of typical wall of cast-in-place architectural concrete as shown on drawings, including vertical and horizontal rustication joints, and any sculptured features.
   3. Construct mockups to include at least two lifts having heights equal to those anticipated for construction.
   4. Demonstrate curing, cleaning, and protecting of cast-in-place architectural concrete, finishes, and contraction joints, as applicable.
   5. In presence of architect, damage part of the exposed-face surface for each finish, color, and texture, and demonstrate materials and techniques proposed for repair to match adjacent undamaged surfaces.
   6. In presence of architect, demonstrate materials and techniques proposed for repair of tie holes and surface blemishes to match adjacent undamaged surfaces.
   7. Obtain architect's approval of mockups before casting architectural concrete.

1.7 PRECONSTRUCTION TESTING

A. Preconstruction Testing Service: Engage a qualified testing agency to perform preconstruction testing on each concrete mixture.
   1. Include the following information in each test report:
      a. Admixture dosage rates.
      b. Slump.
      c. Air content.
      d. Seven-day compressive strength.
      e. 28-day compressive strength.
      f. Permeability.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Comply with ASTM C94/C94M and ACI 301.

1.9 FIELD CONDITIONS

A. Cold-Weather Placement: Comply with ACI 301 and ACI 306.1 and as follows.
   1. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures.
   2. When average high and low temperature is expected to fall below 40 deg F for three successive days, maintain delivered concrete mixture temperature within the temperature range required by ACI 301.
   3. Do not use frozen materials or materials containing ice or snow.
   4. Do not place concrete in contact with surfaces less than 35 deg F, other than reinforcing steel.
   5. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators unless otherwise specified and approved in mixture designs.

B. Hot-Weather Placement: Comply with ACI 301 and ACI 305.1, and as follows:
   1. Maintain concrete temperature at time of discharge to not exceed 95 deg F.
   2. Fog-spray forms, steel reinforcement, and subgrade just before placing concrete. Keep subgrade uniformly moist without standing water, soft spots, or dry areas.

1.10 WARRANTY

A. Manufacturer's Warranty: Manufacturer agrees to furnish replacement sheet vapor retarder/termite barrier material and accessories for sheet vapor retarder/ termite barrier and accessories that do not comply with requirements or that fail to resist penetration by termites within specified warranty period.
   1. Warranty Period: 10 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 CONCRETE, GENERAL

A. ACI Publications: Comply with ACI 301 unless modified by requirements in the Contract Documents.

2.2 FORM-FACING MATERIALS

A. Form-Facing wood forms:
   1. Finishes: As cast.
      a. Exterior-grade rough sawn board form planks, that will provide continuous, true, and pattern architectural concrete surfaces, Douglas Fir, construction grade, or better, mill-applied release agent and edge sealed, complying with DOC PS 1.
   2. Location: Where noted on drawings.
   3. Size: 4-inch nominal height

2.3 CONCRETE MATERIALS

A. Source Limitations:
   1. Obtain all concrete mixtures from a single ready-mixed concrete manufacturer for entire Project.
   2. Obtain each type or class of cementitious material of the same brand from the same manufacturer's plant.
   3. Obtain aggregate from single source.
   4. Obtain each type of admixture from a single source from single manufacturer.

B. Cementitious Materials:
   1. Portland Cement: ASTM C150/C150M, **Type I/II, gray**.
   2. Fly Ash: ASTM C618, Class C or F.

C. Normal-Weight Aggregates: ASTM C33/C33M, **Class 3S** coarse aggregate or better, graded. Provide aggregates from a single source.
   1. Maximum Coarse-Aggregate Size: **1-1/2 inches** nominal.
   2. Fine Aggregate: Free of materials with deleterious reactivity to alkali in cement.

D. Air-Entraining Admixture: ASTM C260/C260M.

E. Chemical Admixtures: Certified by manufacturer to be compatible with other admixtures that do not contribute water-soluble chloride ions exceeding those permitted in hardened concrete. Do not use calcium chloride or admixtures containing calcium chloride **in steel-reinforced concrete**.

   1. Water-Reducing Admixture: ASTM C494/C494M, Type A.
   2. Retarding Admixture: ASTM C494/C494M, Type B.
   3. Water-Reducing and -Retarding Admixture: ASTM C494/C494M, Type D.
   4. High-Range, Water-Reducing Admixture: ASTM C494/C494M, Type F.
   5. High-Range, Water-Reducing and -Retarding Admixture: ASTM C494/C494M, Type G.
   6. Plasticizing and Retarding Admixture: ASTM C1017/C1017M, Type II.
   7. Set-Accelerating Corrosion-Inhibiting Admixture: Commercially formulated, anodic inhibitor or mixed cathodic and anodic inhibitor; capable of forming a protective barrier and minimizing chloride reactions with steel reinforcement in concrete and complying with ASTM C494/C494M, Type C.
   8. Non-Set-Accelerating Corrosion-Inhibiting Admixture: Commercially formulated, non-set-accelerating, anodic inhibitor or mixed cathodic and anodic inhibitor; capable of forming a protective barrier and minimizing chloride reactions with steel reinforcement in concrete.

F. Superplasticizer shall be used in all interior flatwork and any pumped concrete unless otherwise approved in writing by the Architect. All concrete with W/C of 0.48 or less, and where pumping equipment is used, requires this admixture. In general, concrete shall be delivered to the site with a slump of 3" to 3 ½". Admixture shall be site added in lieu of any additional water.

G. Water and Water Used to Make Ice: ASTM C94/C94M, potable **or complying with ASTM C1602/C1602M, including all limits listed in Table 2 and the requirements of paragraph 5.4**

2.4 FIBER REINFORCEMENT

A. Synthetic Macro-Fiber: Synthetic macro-fibers engineered and designed for use in concrete, complying with ASTM C1116/C1116M, Type III, [**1 to 2-1/4 inches**] <**Insert dimensions**> long.

2.5 VAPOR RETARDERS

A. Sheet Vapor Retarder, Class A: ASTM E1745, Class A; not less than 15 mils thick. Include manufacturer's recommended adhesive or pressure-sensitive tape.

2.6 LIQUID FLOOR TREATMENTS (SC-1)

A. Penetrating Liquid Floor Treatment: Clear, chemically reactive, waterborne solution of inorganic silicate or siliconate materials and proprietary components; odorless; that penetrates, hardens, and densifies concrete surfaces.
   1. Provide Prosoco SLX100 Water and Oil Repellant or equal.

2.7 CURING MATERIALS (SC-2)

A. Evaporation Retarder: Waterborne, monomolecular film forming, manufactured for application to fresh concrete.
B. Absorptive Cover: AASHTO M 182, Class 2, burlap cloth made from jute or kenaf, weighing approximately 9 oz./sq. yd. when dry.
C. Moisture-Retaining Cover: ASTM C171, polyethylene film burlap-polyethylene sheet.
   1. Color:
      a. Ambient Temperature Below 50 deg F: Black.
      b. Ambient Temperature between 50 deg F and 85 deg F: Any color.
      c. Ambient Temperature Above 85 deg F: White.
D. Water: Potable or complying with ASTM C1602/C1602M.
E. Clear, Waterborne, Membrane-Forming, Curing and Sealing Compound: ASTM C1315, Type 1, Class A.

2.8 RELATED MATERIALS

A. Expansion- and Isolation-Joint-Filler Strips: **ASTM D1751, asphalt-saturated cellulosic fiber.**
B. Epoxy Bonding Adhesive: ASTM C881, two-component epoxy resin, capable of humid curing and bonding to damp surfaces, of class suitable for application temperature and of grade and class to suit requirements, and as follows:
   1. **Types I and II, nonload bearing**, for bonding hardened or freshly mixed concrete to hardened concrete.

2.9 REPAIR MATERIALS

A. Repair Underlayment: Cement-based, polymer-modified, self-leveling product that can be applied in thicknesses from 1/8 inch and that can be feathered at edges to match adjacent floor elevations.
   1. Cement Binder: ASTM C150/C150M portland cement or hydraulic or blended hydraulic cement, as defined in ASTM C219.
   2. Primer: Product of underlayment manufacturer recommended for substrate, conditions, and application.
   3. Aggregate: Well-graded, washed gravel, 1/8 to 1/4 inch or coarse sand, as recommended by underlayment manufacturer.
   4. Compressive Strength: Not less than **5000 psi** at 28 days when tested in accordance with ASTM C109/C109M.
B. Repair Overlayment: Cement-based, polymer-modified, self-leveling product that can be applied in thicknesses from 1/4 inch and that can be filled in over a scarified surface to match adjacent floor elevations.
   1. Cement Binder: ASTM C150/C150M portland cement or hydraulic or blended hydraulic cement, as defined in ASTM C219.
   2. Primer: Product of topping manufacturer recommended for substrate, conditions, and application.
   3. Aggregate: Well-graded, washed gravel, 1/8 to 1/4 inch or coarse sand as recommended by topping manufacturer.
   4. Compressive Strength: Not less than **5000 psi** at 28 days when tested in accordance with ASTM C109/C109M.

2.10 CONCRETE MIXTURES, GENERAL

A. Prepare design mixtures for each type and strength of concrete, proportioned on the basis of laboratory trial mixture or field test data, or both, in accordance with ACI 301.
   1. Use a qualified testing agency for preparing and reporting proposed mixture designs, based on laboratory trial mixtures.

B. Cementitious Materials: Limit percentage, by weight, of cementitious materials other than portland cement in concrete as follows:
   1. Fly Ash or Other Pozzolans: 20 percent by mass.
   2. Slag Cement: 35 percent by mass.

C. Admixtures: Use admixtures in accordance with manufacturer's written instructions.
1. Use **water-reducing** admixture in concrete, as required, for placement and workability.
2. Use water-reducing and -retarding admixture when required by high temperatures, low humidity, or other adverse placement conditions.
3. Use water-reducing admixture in **pumped concrete, concrete for heavy-use industrial slabs**.

2.11 CONCRETE MIXTURES

A. Class **A**: Normal-weight concrete used for footings.
1. Exposure Class: ACI 318 **F1-S0-W0-C0**.
2. Minimum Compressive Strength **4000 psi** at 28 days.
3. Maximum w/cm: 0.55.
4. Slump Limit: **4 inches, plus or minus 1 inch**.
5. Air Content:
a. Exposure Class F1: **4.5 percent, plus or minus 1.5 percent at point of delivery for concrete containing 1-1/2-inch nominal maximum aggregate size**.

B. Class **B**: Normal-weight concrete used for foundation walls and piers.
1. Exposure Class: ACI 318 **F1-S0-W0-C0**.
2. Minimum Compressive Strength: **4000 psi** at 28 days.
3. Maximum w/cm: **0.45**
4. Slump Limit: **4 inches, plus or minus 1 inch**.
5. Air Content:
a. Exposure Class F1: **5.0 percent, plus or minus 1.5 percent at point of delivery for concrete containing 3/4-inch nominal maximum aggregate size**
6. Limit water-soluble, chloride-ion content in hardened concrete to **1.00** percent by weight of cement.

C. Class **C**: Normal-weight concrete used for interior slabs-on-ground.
1. Exposure Class: ACI 318 **F0-S0-W0-C0**.
2. Minimum Compressive Strength: **3500 psi** at 28 days.
3. Maximum w/cm: **0.40**.
4. Slump Limit: **5 inches, plus or minus 1 inch**.
5. Air Content:
a. Do not use an air-entraining admixture or allow total air content to exceed 3 percent for concrete used in trowel-finished floors.
6. Synthetic Macro-Fiber: Where indicated on plans, uniformly disperse in concrete mixture at manufacturer's recommended rate, but not less than a rate of **5 lb/cu. yd.**.

2.12 CONCRETE MIXING

A. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete in accordance with ASTM C94/C94M, and furnish batch ticket information.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verification of Conditions:
1. Before placing concrete, verify that installation of concrete forms, accessories, and reinforcement, and embedded items is complete and that required inspections have been performed.
2. Do not proceed until unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Provide reasonable auxiliary services to accommodate field testing and inspections, acceptable to testing agency, including the following:
1. Daily access to the Work.
2. Incidental labor and facilities necessary to facilitate tests and inspections.
3. Secure space for storage, initial curing, and field curing of test samples, including source of water and continuous electrical power at Project site during site curing period for test samples.
4. Security and protection for test samples and for testing and inspection equipment at Project site.

3.3 INSTALLATION OF EMBEDDED ITEMS

A. Place and secure anchorage devices and other embedded items required for adjoining Work that is attached to or supported by cast-in-place concrete.
   1. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
   2. Install anchor rods, accurately located, to elevations required and complying with tolerances in Section 7.5 of ANSI/AISC 303.

3.4 INSTALLATION OF VAPOR RETARDER

A. Sheet Vapor Retarders: Place, protect, and repair sheet vapor retarder in accordance with ASTM E1643 and manufacturer's written instructions.
   1. Install vapor retarder with longest dimension parallel with direction of concrete pour.
   2. Face laps away from exposed direction of concrete pour.
   3. Lap vapor retarder over footings and grade beams not less than 6 inches, sealing vapor retarder to concrete.
   4. Lap joints 6 inches and seal with manufacturer's recommended tape.
   5. Terminate vapor retarder at the top of floor slabs, grade beams, and pile caps, sealing entire perimeter to floor slabs, grade beams, foundation walls, or pile caps.
   6. Seal penetrations in accordance with vapor retarder manufacturer's instructions.
   7. All overlapped conditions and terminations shall be sealed off and taped in a watertight manner.
   8. Protect vapor retarder during placement of reinforcement and concrete.
      a. Repair damaged areas by patching with vapor retarder material, overlapping damages area by 6 inches on all sides, and sealing to vapor retarder.

B. Bituminous Vapor Retarders: Place, protect, and repair bituminous vapor retarder in accordance with manufacturer's written instructions.

3.5 JOINTS

A. Construct joints true to line, with faces perpendicular to surface plane of concrete.

B. Construction Joints: Coordinate with floor slab pattern and concrete placement sequence.
   1. Install so strength and appearance of concrete are not impaired, at locations indicated on Drawings or as approved by Architect.
   2. Place joints perpendicular to main reinforcement.
      a. Continue reinforcement across construction joints unless otherwise indicated.
      b. Do not continue reinforcement through sides of strip placements of floors and slabs.
   3. Locate horizontal joints in walls and columns at underside of floors, slabs, beams, and girders and at the top of footings or floor slabs.
   4. Use a bonding agent at locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.
   5. Use epoxy-bonding adhesive at locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.

C. Control Joints in Slabs-on-Ground: Form weakened-plane control joints, sectioning concrete into areas as indicated. Construct control joints for a depth equal to at least **one-fourth** of concrete thickness as follows:
   1. Sawed Joints: Form control joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut 1/8-inch- wide joints into concrete when cutting action does not tear, abrade, or otherwise damage surface and before concrete develops random cracks.

D. Isolation Joints in Slabs-on-Ground: After removing formwork, install joint-filler strips at slab junctions with vertical surfaces, such as column pedestals, foundation walls, grade beams, and other locations, as indicated.
   1. Extend joint-filler strips full width and depth of joint, terminating flush with finished concrete surface unless otherwise indicated on Drawings.
   2. Terminate full-width joint-filler strips not less than 1/2 inch or more than 1 inch below finished concrete surface, where joint sealants, specified in Section 079200 "Joint Sealants," are indicated.

3.6 CONCRETE PLACEMENT

A. Before placing concrete, verify that installation of formwork, reinforcement, embedded items, and vapor retarder is complete and that required inspections are completed.
   1. Immediately prior to concrete placement, inspect vapor retarder for damage and deficient installation, and repair defective areas.
   2. Provide continuous inspection of vapor retarder during concrete placement and make necessary repairs to damaged areas as Work progresses.

B. Notify Architect and testing and inspection agencies 24 hours prior to commencement of concrete placement.

C. Do not add water to concrete during delivery, at Project site, or during placement unless approved by Architect in writing, but not to exceed the amount indicated on the concrete delivery ticket.

D. Before test sampling and placing concrete, water may be added at Project site, subject to limitations of ACI 301, but not to exceed the amount indicated on the concrete delivery ticket.

E. Deposit concrete continuously in one layer or in horizontal layers of such thickness that no new concrete is placed on concrete that has hardened enough to cause seams or planes of weakness.
   1. If a section cannot be placed continuously, provide construction joints as indicated.
   2. Deposit concrete to avoid segregation.
   3. Deposit concrete in horizontal layers of depth not to exceed formwork design pressures and in a manner to avoid inclined construction joints.
   4. Consolidate placed concrete with mechanical vibrating equipment in accordance with ACI 301.
      a. Do not use vibrators to transport concrete inside forms.
      b. Insert and withdraw vibrators vertically at uniformly spaced locations to rapidly penetrate placed layer and at least 6 inches into preceding layer.
      c. Do not insert vibrators into lower layers of concrete that have begun to lose plasticity.
      d. At each insertion, limit duration of vibration to time necessary to consolidate concrete, and complete embedment of reinforcement and other embedded items without causing mixture constituents to segregate.

F. Deposit and consolidate concrete for floors and slabs in a continuous operation, within limits of construction joints, until placement of a panel or section is complete.
   1. Do not place concrete floors and slabs in a checkerboard sequence.
   2. Consolidate concrete during placement operations, so concrete is thoroughly worked around reinforcement and other embedded items and into corners.
   3. Maintain reinforcement in position on chairs during concrete placement.
   4. Screed slab surfaces with a straightedge and strike off to correct elevations.
   5. Level concrete, cut high areas, and fill low areas.
   6. Slope surfaces uniformly to drains where required.
   7. Begin initial floating using bull floats or darbies to form a uniform and open-textured surface plane, before excess bleedwater appears on the surface.
   8. Do not further disturb slab surfaces before starting finishing operations.

G. After floating, begin first trowel finish operation using a power-driven trowel. Begin final troweling when surface produces a ringing sound as trowel is moved over surface. Consolidate concrete surface by final hang-troweling operation, free of trowel marks, uniform in texture and appearance, and with a level surface plane so that depressions between high spots do not exceed tolerances listed below. Grind smoot defects which would telegraph through applied floor covering system only in acceptable to Architect.
   1. Finish tolerances:
      a. All locations except as noted:
         1) specified overall $F_F = 50$
         2) specified overall $F_L = 35$
         3) specified local $F_F = 30$
         4) specified local $F_L = 20$

3.7 FINISHING FORMED SURFACES

A. As-Cast Surface Finishes:
   1. ACI 301 Surface Finish SF-1.0: As-cast concrete texture imparted by form-facing material.
      a. Patch voids larger than 1-1/2 inches wide or 1/2 inch deep.
      b. Remove projections larger than 1 inch.
      c. Tie holes do not require patching.
      d. Surface Tolerance: ACI 117 Class D.
      e. Apply to concrete surfaces **not exposed to public view**.
   2. ACI 301 Surface Finish SF-2.0: As-cast concrete texture imparted by form-facing material, arranged in an orderly and symmetrical manner with a minimum of seams.
      a. Patch voids larger than 3/4 inch wide or 1/2 inch deep.
      b. Remove projections larger than 1/4 inch.
      c. Patch tie holes.
      d. Surface Tolerance: ACI 117 Class B.

e. Locations: Apply to concrete surfaces **exposed to public view**.

3. ACI 301 Surface Finish SF-3.0:
   a. Patch voids larger than 3/4 inch wide or 1/2 inch deep.
   b. Remove projections larger than 1/8 inch.
   c. Patch tie holes.
   d. Surface Tolerance: ACI 117 Class A.
   e. Locations: Apply to concrete surfaces **exposed to public view**.

3.8 FINISHING FLOORS AND SLABS

A. Comply with ACI 302.1R recommendations for screeding, restraightening, and finishing operations for concrete surfaces. Do not wet concrete surfaces.

B. Float Finish:
   1. When bleedwater sheen has disappeared and concrete surface has stiffened sufficiently to permit operation of specific float apparatus, consolidate concrete surface with power-driven floats or by hand floating if area is small or inaccessible to power-driven floats.
   2. Repeat float passes and restraightening until surface is left with a uniform, smooth, granular texture and complies with ACI 117 tolerances for conventional concrete.
   3. Apply float finish to surfaces **to receive trowel finish**.

C. Trowel Finish:
   1. After applying float finish, apply first troweling and consolidate concrete by hand or power-driven trowel.
   2. Continue troweling passes and restraighten until surface is free of trowel marks and uniform in texture and appearance.
   3. Grind smooth any surface defects that would telegraph through applied coatings or floor coverings.
   4. Do not add water to concrete surface.
   5. Do not apply hard-troweled finish to concrete, which has a total air content greater than 3 percent.
   6. Apply a trowel finish to surfaces **exposed to view**.
   7. Finish surfaces to the following tolerances, in accordance with ASTM E1155, for a randomly trafficked floor surface:
      a. Slabs on Ground:
         1) Finish and measure surface so gap at any point between concrete surface and an unleveled, freestanding, 10-ft.- long straightedge resting on two high spots and placed anywhere on the surface does not exceed **1/8 inch**.

3.9 INSTALLATION OF MISCELLANEOUS CONCRETE ITEMS

A. Filling In:
   1. Fill in holes and openings left in concrete structures after Work of other trades is in place unless otherwise indicated.
   2. Mix, place, and cure concrete, as specified, to blend with in-place construction.
   3. Provide other miscellaneous concrete filling indicated or required to complete the Work.

B. Curbs: Provide monolithic finish to interior curbs by stripping forms while concrete is still green and by steel-troweling surfaces to a hard, dense finish with corners, intersections, and terminations slightly rounded.

C. Equipment Bases and Foundations:
   1. Coordinate sizes and locations of concrete bases with actual equipment provided.
   2. Construct concrete bases **4 inches** high unless otherwise indicated on Drawings, and extend base not less than 6 inches in each direction beyond the maximum dimensions of supported equipment unless otherwise indicated on Drawings, or unless required for seismic anchor support.
   3. Minimum Compressive Strength: **3000 psi** at 28 days.
   4. Install dowel rods to connect concrete base to concrete floor. Unless otherwise indicated, install dowel rods on 18-inch centers around the full perimeter of concrete base.
   5. For supported equipment, install epoxy-coated anchor bolts that extend through concrete base and anchor into structural concrete substrate.
   6. Prior to pouring concrete, place and secure anchorage devices.
      a. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
      b. Cast anchor-bolt insert into bases.
      c. Install anchor bolts to elevations required for proper attachment to supported equipment.

D. Steel Pan Stairs: Provide concrete fill for steel pan stair treads, landings, and associated items.
   1. Cast-in inserts and accessories, as shown on Drawings.

2. Screed, tamp, and trowel finish concrete surfaces.

3.10 CONCRETE CURING

A. Protect freshly placed concrete from premature drying and excessive cold or hot temperatures.
   1. Comply with ACI 301 and ACI 306.1 for cold weather protection during curing.
   2. Comply with ACI 301 and ACI 305.1 for hot-weather protection during curing.
   3. Maintain moisture loss no more than 0.2 lb/sq. ft. x h, calculated in accordance with ACI 305.1, before and during finishing operations.

B. Curing Formed Surfaces: Comply with ACI 308.1 as follows:
   1. Cure formed concrete surfaces, including underside of beams, supported slabs, and other similar surfaces.
   2. Cure concrete containing color pigments in accordance with color pigment manufacturer's instructions.
   3. If forms remain during curing period, moist cure after loosening forms.
   4. If removing forms before end of curing period, continue curing for remainder of curing period, as follows:
      a. Continuous Fogging: Maintain standing water on concrete surface until final setting of concrete.
      b. Continuous Sprinkling: Maintain concrete surface continuously wet.
      c. Absorptive Cover: Pre-dampen absorptive material before application; apply additional water to absorptive material to maintain concrete surface continuously wet.
      d. Water-Retention Sheeting Materials: Cover exposed concrete surfaces with sheeting material, taping, or lapping seams.
      e. Membrane-Forming Curing Compound: Apply uniformly in continuous operation by power spray or roller in accordance with manufacturer's written instructions.
         1) Recoat areas subject to heavy rainfall within three hours after initial application.
         2) Maintain continuity of coating and repair damage during curing period.

C. Curing Unformed Surfaces: Comply with ACI 308.1 as follows:
   1. Begin curing immediately after finishing concrete.
   2. Interior Concrete Floors:
      a. Floors to Receive Floor Coverings Specified in Other Sections: Contractor has option of the following:
         1) Absorptive Cover: As soon as concrete has sufficient set to permit application without marring concrete surface, install prewetted absorptive cover over entire area of floor.
            a) Lap edges and ends of absorptive cover not less than 12 inches.
            b) Maintain absorptive cover water saturated, and in place, for duration of curing period, but not less than seven days.
         2) Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12 inches, and sealed by waterproof tape or adhesive.
            a) Immediately repair any holes or tears during curing period, using cover material and waterproof tape.
            b) Cure for not less than seven days.
         3) Ponding or Continuous Sprinkling of Water: Maintain concrete surfaces continuously wet for not less than seven days, utilizing one, or a combination of, the following:
            a) Water.
            b) Continuous water-fog spray.
      b. Floors to Receive Penetrating Liquid Floor Treatments: Contractor has option of the following:
         1) Absorptive Cover: As soon as concrete has sufficient set to permit application without marring concrete surface, install prewetted absorptive cover over entire area of floor.
            a) Lap edges and ends of absorptive cover not less than 12 inches.
            b) Maintain absorptive cover water saturated, and in place, for duration of curing period, but not less than seven days.
         2) Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12 inches, and sealed by waterproof tape or adhesive.
            a) Immediately repair any holes or tears during curing period, using cover material and waterproof tape.
            b) Cure for not less than seven days.
         3) Ponding or Continuous Sprinkling of Water: Maintain concrete surfaces continuously wet for not less than seven days, utilizing one, or a combination of, the following:
            a) Water.

b) Continuous water-fog spray.

c. Floors to Receive Polished Finish: Contractor has option of the following:
1) Absorptive Cover: As soon as concrete has sufficient set to permit application without marring concrete surface, install prewetted absorptive cover over entire area of floor.
a) Lap edges and ends of absorptive cover not less than 12 inches.
b) Maintain absorptive cover water saturated, and in place, for duration of curing period, but not less than seven days.
2) Ponding or Continuous Sprinkling of Water: Maintain concrete surfaces continuously wet for not less than seven days, utilizing one, or a combination of, the following:
a) Water.
b) Continuous water-fog spray.

d. Floors to Receive Chemical Stain:
1) As soon as concrete has sufficient set to permit application without marring concrete surface, install curing paper over entire area of floor.
2) Install curing paper square to building lines, without wrinkles, and in a single length without end joints.
3) Butt sides of curing paper tight; do not overlap sides of curing paper.
4) Leave curing paper in place for duration of curing period, but not less than 28 days.

e. Floors to Receive Urethane Flooring:
1) As soon as concrete has sufficient set to permit application without marring concrete surface, install prewetted absorptive cover over entire area of floor.
2) Rewet absorptive cover and cover immediately with polyethylene moisture-retaining cover with edges lapped 6 inches and sealed in place.
3) Secure polyethylene moisture-retaining cover in place to prohibit air from circulating under polyethylene moisture-retaining cover.
4) Leave absorptive cover and polyethylene moisture-retaining cover in place for duration of curing period, but not less than 28 days.

f. Floors to Receive Curing Compound:
1) Apply uniformly in continuous operation by power spray or roller in accordance with manufacturer's written instructions.
2) Recoat areas subjected to heavy rainfall within three hours after initial application.
3) Maintain continuity of coating, and repair damage during curing period.
4) Removal: After curing period has elapsed, remove curing compound without damaging concrete surfaces by method recommended by curing compound manufacturer **unless manufacturer certifies curing compound does not interfere with bonding of floor covering used on Project.**

g. Floors to Receive Curing and Sealing Compound:
1) Apply uniformly to floors and slabs indicated in a continuous operation by power spray or roller in accordance with manufacturer's written instructions.
2) Recoat areas subjected to heavy rainfall within three hours after initial application.
3) Repeat the process 24 hours later and apply a second coat. Maintain continuity of coating, and repair damage during curing period.

3.11 TOLERANCES

A. Conform to ACI 117.

3.12 APPLICATION OF LIQUID FLOOR TREATMENTS

A. Penetrating Liquid Floor Treatment: Prepare, apply, and finish penetrating liquid floor treatment in accordance with manufacturer's written instructions.
1. Remove curing compounds, sealers, oil, dirt, laitance, and other contaminants and complete surface repairs.
2. Do not apply to concrete that is less than **14** days' old.
3. Apply liquid until surface is saturated, scrubbing into surface until a gel forms; rewet; and repeat brooming or scrubbing.
4. Rinse with water; remove excess material until surface is dry.
5. Apply a second coat in a similar manner if the surface is rough or porous.

3.13 JOINT FILLING

A. Prepare, clean, and install joint filler in accordance with manufacturer's written instructions.

1. Defer joint filling until concrete has aged at least **six** month(s).
2. Do not fill joints until construction traffic has permanently ceased.

B. Remove dirt, debris, saw cuttings, curing compounds, and sealers from joints; leave contact faces of joints clean and dry.

C. Install semirigid joint filler full depth in saw-cut joints and at least 2 inches deep in formed joints.

D. Overfill joint, and trim joint filler flush with top of joint after hardening.

3.14 CONCRETE SURFACE REPAIRS

A. Defective Concrete:
1. Repair and patch defective areas when approved by Architect.
2. Remove and replace concrete that cannot be repaired and patched to Architect's approval.

B. Patching Mortar: Mix dry pack patching mortar, consisting of 1 part portland cement to 2-1/2 parts fine aggregate passing a No. 16 sieve, using only enough water for handling and placing.

C. Repairing Formed Surfaces: Surface defects include color and texture irregularities, cracks, spalls, air bubbles, honeycombs, rock pockets, fins and other projections on the surface, and stains and other discolorations that cannot be removed by cleaning.
1. Immediately after form removal, cut out honeycombs, rock pockets, and voids more than 1/2 inch in any dimension to solid concrete.
   a. Limit cut depth to 3/4 inch.
   b. Make edges of cuts perpendicular to concrete surface.
   c. Clean, dampen with water, and brush-coat holes and voids with bonding agent.
   d. Fill and compact with patching mortar before bonding agent has dried.
   e. Fill form-tie voids with patching mortar or cone plugs secured in place with bonding agent.
2. Repair defects on surfaces exposed to view by blending white portland cement and standard portland cement, so that, when dry, patching mortar matches surrounding color.
   a. Patch a test area at inconspicuous locations to verify mixture and color match before proceeding with patching.
   b. Compact mortar in place and strike off slightly higher than surrounding surface.
3. Repair defects on concealed formed surfaces that will affect concrete's durability and structural performance as determined by Architect.

D. Repairing Unformed Surfaces:
1. Test unformed surfaces, such as floors and slabs, for finish, and verify surface tolerances specified for each surface.
   a. Correct low and high areas.
   b. Test surfaces sloped to drain for trueness of slope and smoothness; use a sloped template.
2. Repair finished surfaces containing surface defects, including spalls, popouts, honeycombs, rock pockets, crazing, and cracks in excess of 0.01 inch wide or that penetrate to reinforcement or completely through unreinforced sections regardless of width, and other objectionable conditions.
3. After concrete has cured at least 14 days, correct high areas by grinding.
4. Correct localized low areas during, or immediately after, completing surface-finishing operations by cutting out low areas and replacing them with patching mortar.
   a. Finish repaired areas to blend into adjacent concrete.
5. Correct other low areas scheduled to remain exposed with repair topping.
   a. Cut out low areas to ensure a minimum repair topping depth of 1/4 inch to match adjacent floor elevations.
   b. Prepare, mix, and apply repair topping and primer in accordance with manufacturer's written instructions to produce a smooth, uniform, plane, and level surface.
6. Repair defective areas, except random cracks and single holes 1 inch or less in diameter, by cutting out and replacing with fresh concrete.
   a. Remove defective areas with clean, square cuts, and expose steel reinforcement with at least a 3/4-inch clearance all around.
   b. Dampen concrete surfaces in contact with patching concrete and apply bonding agent.
   c. Mix patching concrete of same materials and mixture as original concrete, except without coarse aggregate.
   d. Place, compact, and finish to blend with adjacent finished concrete.
   e. Cure in same manner as adjacent concrete.
7. Repair random cracks and single holes 1 inch or less in diameter with patching mortar.

a. Groove top of cracks and cut out holes to sound concrete, and clean off dust, dirt, and loose particles.
b. Dampen cleaned concrete surfaces and apply bonding agent.
c. Place patching mortar before bonding agent has dried.
d. Compact patching mortar and finish to match adjacent concrete.
e. Keep patched area continuously moist for at least 72 hours.

E. Perform structural repairs of concrete, subject to Architect's approval, using epoxy adhesive and patching mortar.

F. Repair materials and installation not specified above may be used, subject to Architect's approval.

3.15 FIELD QUALITY CONTROL

A. Testing Agency: **Engage** a qualified testing and inspecting agency to perform tests and inspections and to submit reports.

1. Testing agency to be responsible for providing curing container for composite samples on Site and verifying that field-cured composite samples are cured in accordance with ASTM C31/C31M.
2. Testing agency to immediately report to Architect, Contractor, and concrete manufacturer any failure of Work to comply with Contract Documents.
3. Testing agency to report results of tests and inspections, in writing, to Owner, Architect, Contractor, and concrete manufacturer within 48 hours of inspections and tests.
   a. Test reports to include reporting requirements of ASTM C31/C31M, ASTM C39/C39M, and ACI 301, including the following as applicable to each test and inspection:
      1) Project name.
      2) Name of testing agency.
      3) Names and certification numbers of field and laboratory technicians performing inspections and testing.
      4) Name of concrete manufacturer.
      5) Date and time of inspection, sampling, and field testing.
      6) Date and time of concrete placement.
      7) Location in Work of concrete represented by samples.
      8) Date and time sample was obtained.
      9) Truck and batch ticket numbers.
      10) Design compressive strength at 28 days.
      11) Concrete mixture designation, proportions, and materials.
      12) Field test results.
      13) Information on storage and curing of samples before testing, including curing method and maximum and minimum temperatures during initial curing period.
      14) Type of fracture and compressive break strengths at seven days and 28 days.

B. Batch Tickets: For each load delivered, submit three copies of batch delivery ticket to testing agency, indicating quantity, mix identification, admixtures, design strength, aggregate size, design air content, design slump at time of batching, and amount of water that can be added at Project site.

C. Concrete Tests: Testing of composite samples of fresh concrete obtained in accordance with ASTM C 172/C 172M to be performed in accordance with the following requirements:

1. Testing Frequency: Obtain one composite sample for each day's pour of each concrete mixture exceeding 5 cu. yd., but less than 25 cu. yd., plus one set for each additional 50 cu. yd. or fraction thereof.
   a. When frequency of testing provides fewer than five compressive-strength tests for each concrete mixture, testing to be conducted from at least five randomly selected batches or from each batch if fewer than five are used.
2. Slump: ASTM C143/C143M:
   a. One test at point of placement for each composite sample, but not less than one test for each day's pour of each concrete mixture.
   b. Perform additional tests when concrete consistency appears to change.
3. Air Content: ASTM C231/C231M pressure method, for normal-weight concrete.
   a. One test for each composite sample, but not less than one test for each day's pour of each concrete mixture.
4. Concrete Temperature: ASTM C1064/C1064M:
   a. One test hourly when air temperature is 40 deg F and below or 80 deg F and above, and one test for each composite sample.
5. Compression Test Specimens: ASTM C31/C31M:

a. Cast and laboratory cure two sets of **two** 6-inch by 12-inch or 4-inch by 8-inch cylinder specimens for each composite sample.

6. Compressive-Strength Tests: ASTM C39/C39M.
   a. Test one set of **two** laboratory-cured specimens at seven days and one set of two specimens at 28 days.
   b. A compressive-strength test to be the average compressive strength from a set of two specimens obtained from same composite sample and tested at age indicated.
7. When strength of field-cured cylinders is less than 85 percent of companion laboratory-cured cylinders, Contractor to evaluate operations and provide corrective procedures for protecting and curing in-place concrete.
8. Strength of each concrete mixture will be satisfactory if every average of any three consecutive compressive-strength tests equals or exceeds specified compressive strength, and no compressive-strength test value falls below specified compressive strength by more than 500 psi if specified compressive strength is 5000 psi, or no compressive strength test value is less than 10 percent of specified compressive strength if specified compressive strength is greater than 5000 psi.
9. Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be permitted by Architect but will not be used as sole basis for approval or rejection of concrete.
10. Additional Tests:
    a. Testing and inspecting agency to make additional tests of concrete when test results indicate that slump, air entrainment, compressive strengths, or other requirements have not been met, as directed by Architect.
    b. Testing and inspecting agency may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C42/C42M or by other methods as directed by Architect.
       1) Acceptance criteria for concrete strength to be in accordance with ACI 301, Section 1.6.6.3.
11. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.
12. Correct deficiencies in the Work that test reports and inspections indicate do not comply with the Contract Documents.

D. Measure floor and slab flatness and levelness in accordance with ASTM E1155 within **24** hours of completion of floor finishing and promptly report test results to Architect.

3.16 PROTECTION

A. Protect concrete surfaces as follows:
1. Protect from petroleum stains.
2. Diaper hydraulic equipment used over concrete surfaces.
3. Prohibit vehicles from interior concrete slabs.
4. Prohibit use of pipe-cutting machinery over concrete surfaces.
5. Prohibit placement of steel items on concrete surfaces.
6. Prohibit use of acids or acidic detergents over concrete surfaces.
7. Protect liquid floor treatment from damage and wear during the remainder of construction period. Use protective methods and materials, including temporary covering, recommended in writing by liquid floor treatments installer.
8. Protect concrete surfaces scheduled to receive surface hardener or polished concrete finish using Floor Slab Protective Covering.

END OF SECTION

SECTION 03 33 00
ARCHITECTURAL CONCRETE

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PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Cast-in-place architectural concrete, including form facings, reinforcement accessories, concrete materials, concrete mixtures, concrete placement, and concrete finishes.
2. Requirements in Section 033000 "Cast-in-Place Concrete" apply to this Section.

1.2 DEFINITIONS

A. Cast-in-Place Architectural Concrete: Concrete that is exposed to view, is designated as architectural concrete, and that requires special concrete materials, formwork, placement, or finishes to obtain specified architectural appearance.

B. Cementitious Materials: Portland cement alone or in combination with one or more of the following: blended hydraulic cement, fly ash, slag cement, other pozzolans, and silica fume; materials subject to compliance with requirements.

C. Water/Cement Ratio (w/cm): The ratio by weight of water to cementitious materials.

1.3 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at **Project site**.

1. Require representatives of each entity directly concerned with cast-in-place architectural concrete to attend, including the following:

a. Contractor's superintendent.
b. Independent testing agency responsible for concrete design mixtures.
c. Ready-mix concrete manufacturer.
d. Cast-in-place architectural concrete Subcontractor.

2. Review the following:
a. Construction joints, control joints, isolation joints, and joint-filler strips.
b. Reinforcement accessory installation.
c. Cold- and hot-weather concreting procedures.
d. Concrete finishes and finishing.
e. Curing procedures.
f. Forms and form-removal limitations.
g. Shoring and reshoring procedures.
h. Concrete repair procedures.
i. Protection of cast-in-place architectural concrete.
j. Initial curing and field curing of field test cylinders (ASTM C31/C31M).
k. Protection of field-cured field test cylinders.

1.4 ACTION SUBMITTALS

A. Product Data: For each of the following:
1. Form-facing panels.
2. Form liners.
3. Form joint tape.
4. Form joint sealant.
5. Wood sealer.
6. Form-release agent.
7. Surface retarder.
8. Form ties.
9. Bar supports.
10. Portland cement.
11. Fly ash.
12. Slag cement.
13. Aggregates.
14. Admixtures:
a. Include limitations of use, including restrictions on cementitious materials, supplementary cementitious materials, air entrainment, aggregates, temperature at time of concrete placement, relative humidity at time of concrete placement, curing conditions, and use of other admixtures.
15. Repair materials.

B. Design Mixtures: For each concrete mixture, include the following:
1. Mixture identification.
2. Minimum 28-day compressive strength.
3. Durability exposure class.
4. Maximum w/cm.
5. Slump limit.
6. Air content.
7. Nominal maximum aggregate size.
8. Amounts of mixing water to be withheld for later addition at Project site if permitted.
9. Intended placement method.
10. Alternative design mixtures when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments.

C. Shop Drawings:
1. Formwork: Prepared by, and signed and sealed by, a qualified professional engineer responsible for their preparation, detailing fabrication, assembly, and support of forms.
a. Show formwork construction, including form-liner layout, form-liner termination details, dimensioned locations of form-facing material joints, rustications, construction and contraction joints, form joint-sealant details, form-tie locations and patterns, inserts and embedments, cutouts, cleanout panels, and other items that visually affect cast-in-place architectural concrete.
b. ct cast-in-place architectural concrete.

1) Indicate proposed schedule and sequence of stripping of forms, shoring removal, and reshoring installation and removal.
2) Location of construction joints is subject to approval of Architect.

D. Samples for Verification: Architectural concrete Samples, cast vertically, approximately 18 by 18 by 2 inches (450 by 450 by 50 mm), of finishes, colors, and textures to match design reference sample. Include Sample sets showing the full range of variations expected in these characteristics.

1.5 INFORMATIONAL SUBMITTALS

A. Qualification Data: For the following:
1. Installer: Include copies of applicable ACI certificates.
2. Ready-mixed concrete manufacturer.

B. Material Certificates: For each of the following:
1. Cementitious materials.
2. Admixtures.
3. Form materials and form-release agents.
4. Repair materials.

C. Material Test Reports: For the following, by a qualified testing agency:
1. Portland cement.
2. Fly ash.
3. Slag cement.
4. Aggregates.

D. Research Reports: For concrete admixtures in accordance with ICC AC198.

E. Preconstruction Test Reports: For each mix design.

F. Concrete Repair: Submit a written, detailed description of materials, methods, equipment, and sequence of operations to be used for repairing architectural concrete, including protection of surrounding materials and Project site.
1. If materials and methods other than those indicated are proposed for any repairs to architectural concrete, add a written description of such materials and methods, including evidence of successful use on comparable projects, and demonstrations to show their effectiveness for this Project and Installer's ability to use such materials and methods properly.
2. Project and Installer's ability to use such materials and methods properly.

G. Minutes of preinstallation conference.

1.6 QUALITY ASSURANCE

A. Ready-Mixed Concrete Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C94/C94M requirements for production facilities and equipment.
1. Manufacturer certified in accordance with NRMCA's "Certification of Ready Mixed Concrete Production Facilities."

B. Installer Qualifications: An experienced cast-in-place architectural concrete installer, as evidenced by not less than five consecutive years' experience, specializing in installing cast-in-place architectural concrete similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.
1. Provide written evidence of qualifications and experience.
2. Include locations, descriptions, and photographs of completed projects, including name of architect, substantiating the quality of the installer's experience.

C. Laboratory Testing Agency Qualifications: A testing agency qualified in accordance with ASTM C1077 and ASTM E329 for testing indicated and employing an ACI-certified Concrete Quality Technical Manager.
1. Personnel performing laboratory tests to be an ACI-certified Concrete Strength Testing Technician and Concrete Laboratory Testing Technician, Level I.
2. Testing agency laboratory supervisor to be an ACI-certified Concrete Laboratory Testing Technician, Level II.

D. Field Sample Panels: After approval of verification sample and before casting architectural concrete, produce field sample panels to demonstrate the approved range of selections made under Sample submittals. Produce a minimum of three sets of full-scale panels, cast vertically, approximately 48 by 48 by 6 inches (1200 by 1200 by 150 mm) minimum, to demonstrate the expected range of finish, color, and texture variations.
1. Locate panels as indicated or, if not indicated, as directed by Architect.
2. Demonstrate methods of curing, aggregate exposure, wood sealers, and coatings, as applicable.

3. In presence of Architect, damage part of an exposed-face surface for each finish, color, and texture, and demonstrate materials and techniques proposed for repair of tie holes and surface blemishes to match adjacent undamaged surfaces.
4. Maintain field sample panels during construction in an undisturbed condition as a standard for judging the completed Work.
5. Demolish and remove field sample panels when directed.

E. Mockups: Before casting architectural concrete, build mockups, using the same procedures, equipment, materials, finishing procedures, and curing procedures that will be used for producing architectural concrete, to verify selections made under Sample submittals and to demonstrate typical joints, surface finish, color, texture, tolerances, and standard of workmanship. Build mockups to comply with the following requirements, using materials indicated for the completed work:
1. Build mockups in the location and of the size indicated or, if not indicated, as directed by architect.
2. Build mockups of typical wall of cast-in-place architectural concrete as shown on drawings, including vertical and horizontal rustication joints, and any sculptured features.
3. Construct mockups to include at least two lifts having heights equal to those anticipated for construction.
4. Demonstrate curing, cleaning, and protecting of cast-in-place architectural concrete, finishes, and contraction joints, as applicable.
5. In the presence of architect, damage part of the exposed-face surface for each finish, color, and texture, and demonstrate materials and techniques proposed for repair to match adjacent undamaged surfaces.
6. In the presence of architect, demonstrate materials and techniques proposed for repair of tie holes and surface blemishes to match adjacent undamaged surfaces.
7. Obtain architect's approval of mockups before casting architectural concrete.

1.7 PRECONSTRUCTION TESTING

A. Preconstruction Testing Service: Engage a qualified testing agency to perform preconstruction testing on concrete mixtures.
1. Include the following information in each test report:
a. Admixture dosage rates.
b. Slump.
c. Air content.
d. Seven-day compressive strength.
e. 28-day compressive strength.
f. Permeability.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Comply with ASTM C94/C94M and ACI 301 (ACI 301M).

1.9 FIELD CONDITIONS

A. Cold-Weather Placement: Comply with Section 033000 "Cast-in-Place Concrete."
B. Hot-Weather Placement: Comply with Section 033000 "Cast-in-Place Concrete."

PART 2 - PRODUCTS

2.1 CONCRETE, GENERAL

A. ACI Publications: Comply with ACI 301 (ACI 301M) unless modified by requirements in the Contract Documents.

2.2 FORM-FACING MATERIALS

A. Comply with Section 031000 "Concrete Forming and Accessories" for formwork and other form-facing material requirements, and as specified in this Section.
Source Limitations: Obtain each type of form-facing material from single source from single manufacture

B. Form-Facing wood forms:
1. Finishes: As cast.

a. Exterior-grade rough sawn board form planks, that will provide continuous, true, and pattern architectural concrete surfaces, Douglas Fir, construction grade, or better, mill-applied release agent and edge sealed, complying with DOC PS 1.

2. Location: Where noted on drawings.

3. Size: 4-inch nominal height

2.3 REINFORCEMENT ACCESSORIES

A. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars and welded-wire fabric in place.

1. Manufacture bar supports in accordance with CRSI's "Manual of Standard Practice."
2. Where legs of wire bar supports contact forms, use **gray, all-plastic** bar supports.

2.4 CONCRETE MATERIALS

A. Cementitious Materials:

1. Portland Cement: ASTM C150/C150M, **Type I/IIgray**.
2. Fly Ash: **ASTM C618, Class C or Class F**.

B. Normal-Weight Aggregates: ASTM C33/C33M, **Class 5S** coarse aggregate or better, graded. Provide aggregates from single source from single manufacturer.

1. Maximum Coarse-Aggregate Size: **1 inch (25 mm)**.
2. Gradation: **Uniformly** graded.

C. Normal-Weight Fine Aggregate: **ASTM C33/C33M**, manufactured or natural sand, free of materials with deleterious reactivity to alkali in cement, from same source for entire Project.

D. Air-Entraining Admixture: As specified in Section 033000 "Cast-in-Place Concrete."

E. Chemical Admixtures: As specified in Section 033000 "Cast-in-Place Concrete," and certified by manufacturer to be compatible with other admixtures and that do not contribute water-soluble chloride ions exceeding those permitted in hardened concrete. Do not use calcium chloride or admixtures containing calcium chloride.

F. Water and Water Used to Make Ice: ASTM C94/C94M, potable.

2.5 CURING MATERIALS

A. Comply with Section 03 30 00 "Cast-in-Place Concrete."

1. For integrally colored concrete, curing materials to be approved by color pigment manufacturer.
2. For concrete indicated to be sealed, curing materials to be compatible with sealer.

2.6 REPAIR MATERIALS

A. Bonding Agent: ASTM C1059/C1059M, Type II, nonredispersible, acrylic emulsion or styrene butadiene.

2.7 CONCRETE MIXTURES, GENERAL

A. Obtain each color, size, type, and variety of concrete mixture from single manufacturer with resources to provide cast-in-place architectural concrete of consistent quality in appearance and physical properties.

B. Prepare design mixtures for each type and strength of cast-in-place architectural concrete proportioned on basis of laboratory trial mixture or field test data, or both, in accordance with ACI 301 (ACI 301M).

1. Use a qualified independent testing agency for preparing and reporting proposed concrete mixture designs, based on laboratory trial mixtures.

C. Admixtures: Use admixtures in accordance with manufacturer's written instructions.

2.8 CONCRETE MIXTURES

A. Class **K**: Normal-weight concrete.

1. Exposure Class: ACI 318 (ACI 318M) **F1**.
2. Minimum Compressive Strength: **4000 psi (27.6 MPa)** at 28 days.
3. Maximum w/cm: 0.45.
4. Slump Limit: **4 inches (100 mm), plus or minus 1 inch (25 mm)**.
5. Air Content:
   a. Exposure Class F1: **5.0 percent, plus or minus 1.5 percent at point of delivery for concrete containing 3/4-inch (19-mm) nominal maximum aggregate size**.
6. Limit water-soluble, chloride-ion content in hardened concrete to **1.00** percent by weight of cement.

2.9 CONCRETE MIXING

A. **Ready-Mixed** Architectural Concrete: Measure, batch, mix, and deliver concrete in accordance with ASTM C94/C94M, and furnish batch ticket information.

1. Clean equipment used to mix and deliver cast-in-place architectural concrete to prevent contamination from other concrete.
2. For mixer capacity of 1 cu. yd. (0.76 cu. m) or smaller, continue mixing at least 1-1/2 minutes, but not more than five minutes after ingredients are in mixer, before any part of batch is released.
3. For mixer capacity larger than 1 cu. yd. (0.76 cu. m), increase mixing time by 15 seconds for each additional 1 cu. yd. (0.76 cu. m).
4. Provide batch ticket for each batch discharged and used in the Work, indicating Project identification name and number, date, mixture type, mixture time, quantity, and amount of water added. Record approximate location of final deposit in structure.

C. Form-Facing wood forms:
   1. Finishes: As cast.
      a. Exterior-grade rough sawn board form planks, that will provide continuous, true, and pattern architectural concrete surfaces, Douglas Fir, construction grade, or better, mill-applied release agent and edge sealed, complying with DOC PS 1.
   2. Location: Where noted on drawings.
   3. Size: 4-inch nominal height

PART 3 - EXECUTION

3.1 INSTALLATION OF FORMWORK

A. Comply with Section 031000 "Concrete Forming and Accessories" for formwork, embedded items, and shoring and reshoring, and as specified in this Section.
B. Limit deflection of form-facing panels to not exceed ACI 301 (ACI 301M) requirements.
C. Limit cast-in-place architectural concrete surface irregularities, as follows:
   1. Surface Finish-1.0: ACI 117 (ACI 117M) Class D, 1 inch (25 mm).
   2. Surface Finish-2.0: ACI 117 (ACI 117M) Class B, 1/4 inch (6 mm).
   3. Surface Finish-3.0: ACI 117 (ACI 117M) Class A, 1/8 inch (3.0 mm).
D. Construct forms to result in cast-in-place architectural concrete that complies with ACI 117 (ACI 117M).
E. Seal form joints, chamfers, rustication joints, and penetrations at form ties with form joint tape or form joint sealant to prevent cement paste leakage.
   1. Provide closure backing materials if indented rustication is used over a ribbed form line, and seal joint between rustication strip and form with joint sealant.
F. **Chamfer** exterior corners and edges of cast-in-place architectural concrete.
G. Coat contact surfaces of wood rustications and chamfer strips with wood sealer before placing reinforcement, anchoring devices, and embedded items.
H. Coat contact surfaces of forms with form-release agent, in accordance with manufacturer's written instructions, before placing reinforcement, anchoring devices, and embedded items.

3.2 INSTALLATION OF REINFORCEMENT AND ACCESSORIES

A. Comply with Section 032000 "Concrete Reinforcing" for fabricating and installing steel reinforcement and accessories.

3.3 JOINTS

A. Construction Joints: Install construction joints true to line, with faces perpendicular to surface plane of cast-in-place architectural concrete, so strength and appearance of concrete are not impaired, at locations indicated or as approved by Architect.
   1. Place joints perpendicular to main reinforcement. Continue reinforcement across construction joints unless otherwise indicated.
   2. Form keyed joints as indicated. **Embed keys at least 1-1/2 inches (38 mm) into concrete.** Align construction joint within rustications attached to form-facing material.
   3. Locate joints for beams, slabs, joists, and girders at third points of spans. Offset joints in girders a minimum distance of twice the beam width from a beam-girder intersection.
   4. Locate horizontal joints in walls and columns at underside of floors, slabs, beams, and girders and at top of footings or floor slabs.
   5. Space vertical joints in walls **as indicated on Drawings**. Unless otherwise indicated on Drawings, locate joints beside piers integral with walls, near corners, and in concealed locations where possible.

6. Use **bonding agent** at locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.

B. Contraction Joints: Form weakened-plane contraction joints true to line, with faces perpendicular to surface plane of cast-in-place architectural concrete, so strength and appearance of concrete are not impaired, at locations indicated on Drawings or as approved by Architect.

3.4 CONCRETE PLACEMENT

A. Comply with Section 033000 "Cast-in-Place Concrete."

3.5 FINISHING FORMED SURFACES

A. Comply with Section 033000 "Cast-in-Place Concrete."

B. Architectural Concrete Finish: Match Architect's design reference sample, identified and described as indicated, to satisfaction of Architect.

C. As-Cast Surface Finishes: Comply with Section 033000 "Cast-in-Place Concrete" for the following:
1. ACI 301 (ACI 301M) Surface Finish-1.0 (SF-1.0).
2. ACI 301 (ACI 301M) Surface Finish-2.0 (SF-2.0).
3. ACI 301 (ACI 301M) Surface Finish-3.0 (SF-3.0).

D. Final Concrete Finish: Comply with Section 033000 "Cast-in-Place Concrete" for the following:
1. Smooth-rubbed finish.

E. Form-Liner Finish: Produce a textured surface free of pockets, streaks, and honeycombs, and of uniform appearance, color, and texture.

F. Maintain uniformity of architectural concrete finishes over construction joints unless otherwise indicated.

3.6 CONCRETE CURING

A. Comply with Section 033000 "Cast-in-Place Concrete" using identical curing procedures to that used for **field sample panels**.

3.7 REPAIR

A. Comply with ACI 301 (ACI 301M).

B. Repair damaged finished surfaces of cast-in-place architectural concrete when repairing is approved by Architect.

C. Match repairs to color, texture, and uniformity of surrounding surfaces and to repairs on approved **field sample panels**.

D. Remove and replace cast-in-place architectural concrete that cannot be repaired to Architect's approval.

3.8 FIELD QUALITY CONTROL

A. Comply with Section 033000 "Cast-in-Place Concrete."

3.9 CLEANING

A. Clean cast-in-place architectural concrete surfaces after finish treatment to remove stains, markings, dust, and debris.

B. Wash and rinse surfaces in accordance with concrete finish applicator's written instructions.
1. Protect other Work from staining or damage due to cleaning operations.
2. Do not use cleaning materials or processes that could change the appearance of cast-in-place architectural concrete finishes.

3.10 PROTECTION

A. Protect corners, edges, and surfaces of cast-in-place architectural concrete from damage; use guards and barricades.

B. Protect cast-in-place architectural concrete from staining, laitance, and contamination during remainder of construction period.

3.11 FINAL ACCEPTANCE

A. Final acceptance of completed architectural concrete Work will be determined by Architect by comparing approved **design reference sample** with installed Work, when viewed at a distance of **20 feet (6 m)**.

END OF SECTION

SECTION 27 00 05
STRUCTURED COMMUNICATIONS CABLING

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PART 1 – GENERAL

1.1. SCOPE OF WORK

A. This Document specifies the City of Madison for product design, performance, and quality assurance, and contractor responsibilities for execution of work to install a complete Category 6 structured cabling system. Execution of work includes delivery and storage of materials, preparation, installation, field-testing, and project completion tasks. System certification and warranty submittal requirements for completed work and future moves, additions and changes (MAC's) are also specified in this document. Compliance to applicable codes, standards and regulations is required for all construction work performed.

1.2. SUMMARY

A. Section includes products and execution requirements pertaining to Division 27 systems. Copper and fiber backbone and horizontal cabling along with support systems are covered under this document.

B. Product specifications, general design considerations, and installation guidelines are provided in this document. Quantities for all cabling products shall be provided as required to complete cabling to all work areas as shown on floor plans.

C. The Approved Contractor shall furnish, supply and install a complete Category 6 cabling infrastructure specified in the contract documents.

D. The Approved Contractor shall furnish, supply and install a complete Category 6 cabling infrastructure specified in the contract documents.

E. Work shall include all detailed execution requirements, such as preparation, installation, system certification, and project closeout activities according to the contract.

F. Substitutions: No substituted products shall be installed except with written approval by Owner.

1.3. DATA AND VOICE COMMUNICATIONS CONTRACT WORK

A. General
1. Furnish all labor, materials, tools, equipment and services for the installation in accordance with general provisions of specifications and the Contract Drawings.
2. Report percentage of work completed on a monthly basis.
3. Completely coordinate with work of all other trades.
4. Provide all supplementary or miscellaneous items, appurtenances and devices incidental to or necessary for a sound, secure and complete installation, whether or not specifically indicated in the Contract Documents.
5. Provide labor for testing horizontal and backbone cabling.
6. Provide Firestopping.
7. Provide Telecommunications grounding and bonding.

B. Provide complete installation for Structured Telecommunications Cabling System including but not limited to:
1. Category 6 and 6A UTP horizontal cables.
2. Singlemode optical fiber backbone cables.
3. Work area telecommunication outlets.
4. Wall mounted voice outlets.
5. Equipment mounting racks and rack enclosures.
6. Category 6 and 6A modular patch panels.
7. Optical fiber patch panels.
8. Optical fiber LC connectors.
9. Wire management panels.
10. Field testing.
11. Firestopping.

1.3. SUBMITTALS

A. Submittals shall be complete and at one time. Partial submittals will not be considered.

B. Material lists, schedule of values, lists of subcontractors, and proof of Contractor qualifications shall be provided to Engineer upon request and shall follow the guidelines as stated in the General Requirements (Division 1 of the specification).

C. Shop drawings shall be submitted. All communication system shop drawings shall include:
1. Manufacturer's data (specifications, "cut sheets").
2. Wiring diagrams for all installed cabling.
3. Equipment rack/cabinet layouts.
4. Proposed labeling schemes and labeling method.
5. List of cabling distances (typical and maximum) for all structured cabling
6. Submit copies of certifications for all technicians and the project manager who will support this project. The certifications shall include:
   a. Structured Cabling and termination equipment installation certifications for copper and optical fiber connectivity and cabling.
   b. Approved manufacturer classes satisfactorily completed.
7. Contractor shall submit a test plan that defines the tests required to ensure that the system meets technical, operational, and performance specifications 45 days prior to proposed test date.
8. Work shall not proceed without the Owner's approval of the submitted items.

D. Drawings & Inspection of Site:
1. Communications floor plan drawings are to scale and typically are not dimensioned. The Contractor shall not scale drawings for equipment placement and clearances. Dimensions given on drawings shall always take precedence over scaled drawings.
2. Any existing wires, utilities, or equipment shown on the drawings are shown for general information and to the best knowledge of the Engineer. The Contractor shall field verify all existing wires, utilities, or equipment.
3. The Contractor shall field verify distances and equipment placements coordinating locations with other trades, construction managers, and general Contractor prior to installation.
4. The Contractor shall review all site conditions prior to submitting a bid on this project. Any obvious discrepancies between the site conditions and bidding documents shall be brought to the attention of the Engineer at the time of bidding so clarification can be made by addendum.

5. Change order requests for additional costs related to the contractors misunderstanding related to the amount of work involved and lack of knowledge related to the site conditions will not be allowed.

E. Test Reports: Submit copies of complete reports of all testing performed to the General Contractor, with copies to the Architect's Electrical Engineer upon completion of job.

1.5. APPROVED CONTRACTOR QUALIFICATIONS

A. The Contractor shall have experience in the installation and testing of similar systems as specified herein and shall have completed at least two projects of similar size and scope within the last 24 months. The Contractor shall provide references upon request (including the project name, address, date of implementation, client name, title, telephone number, and project description."

B. All members of the installation team must be certified by the manufacturer as having completed the necessary training to complete their part of the installation. All personnel shall be adequately trained in the used of such tools and equipment as required.

C. The Contractor bidding on communication systems specified herein shall be certified by the connectivity Manufacturer to install, service, and warranty the specified product prior to the time of bid and throughout the duration of the installation. Manufacturer certifications shall not be project specific and should be valid for any and all projects completed by Contractor.

D. The Contractor shall own and maintain tools, installation equipment, and test equipment necessary for successful installation and testing of optical and Category 6 & 6A premise distribution systems.

E. The Owner reserves the right to require the Contractor to remove from the project any such employee the Owner deems to be incompetent, careless or insubordinate.

F. The Contractor must maintain a state Contractor's license as required by the state.

1.6. APPROVED PRODUCT MANUFACTURERS

A. The manufacturer of the Connectivity products specified in this document, as required for construction of the cabling Infrastructure per contract documents shall be:

1. Hubbell Premise Wiring

B. The manufacturer of the Cabling products specified in this document, as required for construction of the copper cable Infrastructure per contract documents shall be:

1. Mohawk cable

C. The manufacturer of the fiber optic cabling products specified in this document, as required for construction of the Fiber Optic cable per contract documents shall be:

1. Mohawk Cable or Equal

D. Product substitutions are permitted under the conditions stated below. (1.7 A).

1.7. PRODUCT SUBSTITUTIONS

A. Product substitutions from other manufacturers shall require the approval of the owner or owner's representative.

1.8. QUALITY ASSURANCE

A. Installed category 6 balanced UTP and fiber cabling systems, pathways and distribution facilities shall adhere to manufacturer's instructions, contract drawings and specifications, and applicable codes, standards and regulations.

B. Installed category 6 balanced UTP cabling systems and field test results shall strictly adhere to requirements of ANSI/TIA/EIA-568-C.0 and ANSI/TIA/EIA-568-C.2.

C. Installed optical fiber cabling systems and field test results shall strictly adhere to requirements of ANSI/TIA/EIA-568-C.0 and ANSI/TIA/EIA-568C.3.

D. Where applicable, all equipment, components, accessories and hardware shall be UL listed for the intended purpose of the installation.

E. Installed products shall be manufactured by an ISO 9001 certified facility.

F. Installed products shall be free from defects in material or workmanship from the manufacturer and shall be of the quality indicated.

G. All methods of construction that are not specified in the contract documents shall be subject to control and approval by the Owner or Owner's Representative.

H. Installed products shall be lot-traceable by date code.

I. All critical internal manufacturing operations for installed products shall have documented in-process inspection and testing according to ISO9001.

1.9. DRAWINGS

A. Approved or preliminary contract drawings furnished at the time of bid solicitation shall serve as the basis for product selection, creation of bills of material, and determination of labor content.

B. Changes, additions, or deletions to contract drawings prior to awarding of the contract, shall require an amendment to the original bid.

C. Prior to submitting the bid, in reviewing the contract drawings, the Approved Contractor shall:

1. Request the attention of the Engineer, Owner, or Design Agency to clarify any materials, apparatus or work believed to be incorrect, inadequate, omitted, or in violation of applicable codes, standards or regulations.
2. Note any contingencies related to unknown aspects of any drawings or specifications.

D. Contract drawings, prior to execution of the project shall be formally approved and released by the Engineer or Design Agency and shall be approved by the Owner or Owner's Representative.

E. Execution of work shall be according to approved drawings, in addition to applicable specifications and contractual obligations.

1.10. APPLICABLE STANDARDS, CODES, AND REGULATIONS

A. Installation Standards: Cable installation shall comply with the following:

1. American National Standards Institute, (ANSI)
2. ANSI/TIA-568-C.0, "Generic Telecommunications Cabling for Customer Premises", published 2009
3. ANSI/TIA-568-C.1, "Commercial Building Telecommunications Cabling Standard", published 2009
4. ANSI/TIA-568-C.2, "Balanced Twisted-Pair Telecommunication Cabling and Components Standard", published 2009
5. ANSI/TIA-568-C.3, "Optical Fiber Cabling Components Standard", published 2008, errata issued in October, 2008
6. ANSI/TIA-568-C.4, "Coaxial Cabling Component Standard" Published 2010
7. ANSITIA/EIA-569-B, Commercial Building Standards for Telecommunications Pathways and Spaces, 2003.
8. ANSI/TIA-607-B, Commercial Building Grounding and Bonding Requirements for Telecommunications, 2010.
9. ANSI/TIA/EIA-942, Telecommunications Infrastructure for Data Centers, 2004.
10. ANSI/ICEA S-83-596, Fiber Optic Premises Distribution Cable, 2001.
11. ANSI/TIA/EIA-598, Color Coding of Optical Fiber Cables, 2001
12. ANSI/ICEA S-87-640, Fiber Optic Outside Plant Distribution Cable, 1999.
13. ANSI/TIA/EIA-492AAAC, Detail Specification for 850nm Laser-Optimized 50um Core Diameter/125 um Cladding Diameter Class 1A Graded Index Multimode Optical Fibers, 2003.
14. ANSI/TIA/EIA-492CAAA, Detail Specification for Class Iva Dispersion-Unshifted Singlemode Optical fibers, 2002.
15. ANSI/TIA/EIA-758: Customer-Owned Outside Plant Telecommunications Cabling Standard, 2004.
16. ANSI/TIA/EIA-526-7, Optical Power Loss Measurements of Installed Singlemode Fiber Plant: OFSTP-7, 2002.
17. ANSI/TIA/EIA-526-14-A, Optical Power Loss Measurements of Installed Multimode Fiber Plant: OFSTP-14A, 2003.
18. ANSI/TIA/EIA-TSB-125, Guidelines for Maintaining Optical Fiber Polarity Through Reverse-Pair Positioning, 2001.
19. ANSI/TIA/EIA-TSB-140, Additional Guidelines for Field Testing Length, Loss, and Polarity of Optical Fiber Cabling Systems, 2004.
20. ANSI/TIA/EIA-606-A, Administration Standard for Commercial Telecommunications Infrastructure, 2002.
21. ANSI/EIA-310-D, Cabinets, Racks, Panels, and Associated Equipment, 1992.
22. ANSI/TIA/EIA-604 (Series), FOCIS Fiber Optic Connector Intermateability Standard, 2000-2003.
23. National Fire Protection Association, Inc., NFPA 70
24. National Electric Code (NEC), 2005.
25. NEC Article 250: Grounding
26. NEC Article 386: Surface Metal Raceways
27. NEC Article 388: Surface Non-Metallic Raceways
28. NEC Article 800: Communications Circuits
29. NEC Article 770: Optical Fiber Cables and Raceway
30. Underwriter's Laboratory, Inc. (UL)
31. UL-5A: Standard for Non-Metallic Raceways and Fittings
32. UL-5: Standard for Surface Metal Raceways and Fittings

33. UL-5C: Standard for Surface Raceways and Fittings for Use with Data, Signal, and Control Circuits
34. UL-50: Standard for Enclosures for Electrical Equipment
35. UL-94-V0: Tests for Flammability of Plastic Materials
36. UL-498: Attachment Plugs and Receptacles
37. UL-1479: Fire Tests of Through-penetration Firestops (in Accordance with ASTM E814).
38. UL-1863: Standard for Safety of Communications Circuit Accessories
39. National Electrical Manufacturer's Association (NEMA)
40. ANSI/NEMA WD-6-2002: Wiring Devices – Dimensional Requirements
41. NEMA 250-2003: Enclosures for Electrical Equipment
42. ISO/IEC 11801, Ed. 2:2002, Information Technology – Generic Cabling for Customer Premises, 2002.
43. ISO/IEC 18010, Information Technology – Pathways and Spaces for Customer Premises Cabling, 2005.
44. ISO/IEC 14763-1, Information Technology – Implementation and Operation of Customer Premises Cabling – Part 1: Administration, 2004.
45. CSA C22.1-06, Canadian Electric Code (CEC), 2006
46. Federal Communications Commission (FCC) Title 47, Code of Federal Regulations, Part 68: Connection of Terminal Equipment to the Telephone Network, 1998.
47. U.S. Public Law 336. 101st Congress, ADA: Americans with Disabilities Act of 1992.
48. IEEE 802.3af, Data Terminal Equipment (DTE) Power Over Media Dependent Interface (MDI), 2003.
49. IEEE 802.3at (current draft), Data Terminal Equipment (DTE) Enhanced Power Over Media Dependent Interface (MDI).
50. IEEE 802.3ae, Specification for 10 Gbit/s Ethernet Operation over Optical Fiber.
51. Telecommunications Distribution Methods Manual, 11th Ed., Building Industry Consulting Services International (BICSI), 2006.
52. Information Transport Systems Installation Manual, 4th Ed., Building Industry Consulting Services International (BICSI), 2004.

B. This document is not a substitute for any code, standard or regulation. The Approved Contractor must be aware of local codes that may impact the bid submittal or execution of the project. The current revision of any applicable code, standard, or regulation shall take precedence at the point of project execution, unless otherwise recognized by local authorities. Applicable standards or codes that affect construction, which are listed as normative references within any governing document, are also the responsibility of the Approved Contractor for compliance.

C. Materials
1. All materials shall be UL or ETL listed and verified and shall be marked as such.
2. Products shall be regularly catalogued items of the manufacturer and shall be supplied as a complete unit in accordance with the manufacturer's standard specifications with any optional items required for proper installation unless otherwise noted.
3. Material shall be delivered to the site in the original packing.

1.11. MAINTENANCE

A. All materials used on this project shall be new. Used and refurbished equipment is not permitted unless approved by CITY OF MADISON. Provide equipment to site in original packaging whenever practical.

B. The Contractor is responsible for scheduling all deliveries and providing proper receipt, handling, and storage of all materials. Protect all equipment from physical damages (dents, scratches, dust, water, paint, chemicals, and temperature extremes) and vandalism, or theft. The Contractor shall replace any damaged or stolen equipment. The Contractor is responsible for all equipment until final project acceptance by Owner.

C. Maintenance of the cabling infrastructure is to be done by authorized personnel only or void of manufacturer's warranty may result. It is the responsibility of the owner or end user to utilize a certified installer to maintain warranty coverage on existing or new cabling infrastructure.

D. The telecommunications contractor shall furnish a quotation for time and material to perform maintenance and repairs. The owner has the first right of refusal of selecting suitable contractor or qualified internal personnel to perform maintenance and repairs on structured cabling.

E. Additions of new cabling, either horizontal or backbone, shall be completed, tested, and documented into permanent building records. New cabling installations intended to be covered by the manufacturer's warranty shall adhere to the documentation submittal and system certification provisions stated above.

F. The Contractor is responsible for cleaning the worksite every business day and remove debris from the facility.

1.12. DOCUMENTATION

A. TEST RESULTS

1. All test results are to be saved electronically on CD. Test documentation submitted on disk shall be clearly marked on the cover with the words "Project Test Documentation", the project name, and the date of completion (month and year). For multiple buildings, the building name, including floor or wing I.D. should also be included on the test results disk.
2. File names of the test results recorded for each link shall match the official identification. Test results shall include a complete record for each link, including type of test, cable type, cable/port I.D., measurement direction, reference setup, date, and technician's name(s).
3. The test equipment name, manufacturer, model number, serial number, software version and last calibration date shall also be provided in the test results documentation.
4. When repairs and re-tests are performed, the problem cause and corrective action taken shall be noted, and both the failed and passed test data shall be documented.
5. The owner, engineer, lead project manager, or owner's representative reserve the right to request verification of test results with a re-test of installed cables, on a sampling basis. Re-testing shall be at the expense of the installer unless otherwise noted in the contract documents.

B. AS BUILT DRAWINGS
1. Deviations from the approved drawings, whether or not a change order is submitted, shall be clearly denoted as built on the working hard copy drawing by the telecommunications contractor. As-built drawings shall be returned promptly to the owner or design agent for completion of drafting revisions to the original design. See "Documentation – Change Orders" below. Manufacturer's warranty registrations may also require as-built drawings.
2. Floor plan drawings shall at minimum include detailed cable and pathway layouts, exact locations of workstation outlets, and cable distribution hardware locations. Workstation outlets shall have alphanumeric identifiers on the drawings as specified by the end user or owner.

C. CHANGE ORDERS
1. Any deviation from the approved contract drawings or specifications shall be submitted as a written change order.
2. Execution of work, to perform changes, shall not proceed without prior written approval. Any changes done without written approval will be at no cost to CITY OF MADISON. If the work is shown to be incorrect the contractor will have to correct the problem at no cost to CITY OF MADISON.
3. Significant changes may require a written quotation of additional labor and materials from the telecommunications contractor.
4. It is the responsibility of the owner or owner's representative to bear the added cost of any substantial cabling system design changes. The contractor will not proceed with any change orders without written approval by the owner's representative. Any changes not approved by the owner's representative will be responsibility of the contractor and at no cost to CITY OF MADISON.
5. Field changes that are completed without issuance of revised drawings shall be clearly denoted on the working as-built drawing. Refer to "As-Built Drawings" above.

D. PUNCH LISTS AND CORRECTIVE ACTION
1. As required in the contract documents, the telecommunications contractor shall correct punch-lists items determined to be in violation of drawings, specifications, codes, standards or regulations.
2. The contractor shall be responsible for timely re-work of faulty cabling or hardware installations.
3. The owner reserves the right to withhold final payment until punch list items are resolved satisfactorily.

1.13. WARRANTY

A. THE CITY OF MADISON requires a Permanent Link warranty for the project. Manufacturer requires Permanent Link Test.

B. The length of the extended warranty shall be a minimum of twenty-five (25) years.

C. Warranty covering all components, equipment and workmanship shall be submitted in writing with system documentation.

D. The warranty period shall begin on the system's first use by the owner.

E. Should the cabling system fail to perform its expected operation within this warranty period due to inferior or faulty material and/or workmanship, the contractor shall promptly make all required corrections without cost to the Owner.

F. Upon Completion of the project the Telecommunication Contractor shall forward the signed Warranty Registration Form and warranty certificate to the Owner.

G. The manufacturer warrants category 6 cabling, category 6A cabling, optical fiber cabling and connecting components free of defects in material or workmanship.

H. Category 6, category 6A and optical fiber cabling and components are warranted to perform the intended application upon completion of proper installation and testing.
I. Warranty coverage includes application assurance and compliance to applicable performance specifications.
J. Installed category 6 and 6A cabling systems may be granted a full Channel warranty under the conditions stated below.
1. A certified installer registered who has completed a Manufacturer's training program performs the construction.
2. Contractors performing the certified installation are properly registered in the Manufacturer's warranty program.
3. The channel components are supplied entirely by one Manufacturer, including patch cords.
4. Cable used in the installation is qualified and recognized by Connectivity Manufacturer.
5. Installed link systems are properly documented and tested with a "PASS" result. The county requires a link test and the use of manufacturer patch cords to receive a channel warranty.
6. Field test equipment used for category 6 cabling is minimum level III classification and complies with TIA/EIA-568-B.2 requirements.
7. Required test results, stored on a CD, and project documentation including as-built drawings, are to be submitted to the Manufacturer by the registered contractor.

1.14. MOVES, ADDS AND CHANGES

A. Moves, additions and changes initiated by the owner, end user, project manager, or design agent, which are beyond the scope of work in the original contract, shall require a revised quotation by the telecommunications contractor.
B. It is the responsibility of the owner or owner's representative to bear the added cost of any substantial cabling system design changes.
C. Moves, additions and changes shall either be issued in revised drawings, or otherwise shall be clearly denoted on as-built drawings.
D. Moves, additions and changes that affect installations covered in a manufacturer's warranty shall be performed by a certified contractor that is properly registered in the manufacturer's warranty program.

1.15. CLEANUP

A. The communications Contractor shall clean up all debris related to this work on a regular basis leaving the job site in a clean, safe condition.
B. Protect all equipment from damage during construction. Equipment not protected shall be replaced at the Contractor's expense.

PART 2 - PRODUCTS

2.1. WORK AREA CONNECTORS

A. Category 6 Jacks
1. Jacks shall be standard 8-position, RJ-45 style, un-keyed, FCC compliant.
2. Jacks shall be designed for 4-pair, 100 ohm balanced unshielded twisted pair (UTP) cable.
3. Jacks shall terminate 26-22 AWG solid or stranded conductors.
4. Jacks shall include a dust cap for wire retention.
5. Jacks shall accept FCC compliant 6 position plugs.
6. Jacks shall have attached wiring instruction labels to permit either T568A or T568B wiring configurations.
7. Category 6 jacks shall be backward compatible with existing Category 3, 5, and 5e cabling systems for fit, form, and function.
8. Jacks shall be manufactured in the USA.
9. Category 6 jacks shall meet or exceed Category 6 transmission requirements for connecting hardware, as specified in ANSI/TIA/EIA-568-C.2, Transmission Performance Specifications for 4-Pair 100 ohm.
10. Jacks shall be UL LISTED and CSA certified.
11. Colors to specified by end user
12. Category 6 modular jacks, as specified in the Contract Documents, shall be:
a. Hubbell
b. HXJ6EI (Category 6 – Ivory)

2.2. FACE PLATES

A. Rear loading w/designation window

1. Faceplates shall be constructed of high impact, UL94 V-0 rated thermoplastic.
2. Faceplates shall be compatible with standard NEMA openings and boxes.
3. Faceplates shall be 2.75" W x 4.5" H (69.8 mm x 114.3 mm) for single gang and 4.5" X 4.5" (114.3 X 114.3 mm) for double gang.
4. Port size in each faceplate shall fit the Category 6 Modular Jack or Snap-Fit fiber optic, audio, and video modules for multimedia applications.
5. Faceplates shall be provided with clear plastic and color-matched label field covers. Faceplates shall provide for ANSI/TIA/EIA-606-A compliant workstation outlet labeling.
6. #6-32 pan head Phillips/slotted mounting screws shall be included with each faceplate.
7. Faceplates shall be UL LISTED and CSA certified.
8. Work area faceplates, as specified in the Contract Documents, shall be:
   a. Hubbell (IFP Series)
   b. IFP14ei (4-Port Ivory)

2.3. CABLE

A. Category 6 UTP

1. Plenum - Cable construction shall be four twisted pairs of 23 AWG insulated solid conductors, with a ripcord, surrounded by a tight outer jacket.
2. Non-plenum - Cable construction shall be four twisted pairs of 24 AWG insulated solid conductors, with a ripcord, surrounded by a tight outer jacket.
3. NO minimum compliant cable will be accepted. The facility requires additional bandwidth.
4. Ripcord shall be directly underneath the outer jacket.
5. Cable shall be marked with Manufacturer and pertinent information. UL, ETL, or CSA agency certification or verification markings shall be marked on the cable jacket according to the certifying agency's requirements.
6. Color coding of the pairs shall be as follows:
   a. Pair 1: White/Blue; Blue
   b. Pair 2: White/Orange; Orange
   c. Pair 3: White/Green/Green
   d. Pair 4: White/Brown/Brown
7. Plenum or Riser rated jackets
8. Cable shall be supplied in 1000 ft spools or 1000 ft Reelex boxes.
9. Cable shall exceed Category 6 transmission requirements specified in ANSI/TIA/EIA-568-C.2.
10. Cable shall be UL and C (UL) listed.
11. Cable shall exceed the requirements of TIA/TSB-155: 10 Gb/s Ethernet Operation over 37 Meters Channel Length.
12. Category 6 UTP horizontal distribution cable, as specified in the Contract Documents, shall be:
    a. Mohawk AdvanceNet Cable
    b. Plenum M57193
    C. Riser M57202

B. Backbone distribution cable – Fiber Optic

1. Singlemode fiber backbone distribution cable shall be available in multi-strand constructions for intra-building applications.
2. OFNR or OFNP will be determined at each site. The contractor will be responsible to assure that the proper type of jacketing is being used. Failure to meet the local code will be cause for replacement of cable at no expense to CITY OF MADISON.
3. Singlemode fiber shall be dispersion un-shifted fiber in compliance with ANSI/TIA/EIA-492CAAA.
4. Intra-building fiber distribution cable design shall be according to ANSI/ICEA S-83-596.
5. Singlemode backbone fiber distribution cable, when installed, shall exceed the performance requirements of ANSI/TIA/EIA-568-C.3.
6. Singlemode optical fiber Backbone Fiber distribution cable, as specified in the Contract Documents, shall be:
   a. Mohawk Cable or equal
   b. Singlemode Riser M9W042 (12 Strand) unless otherwise specified by the City of Madison.
   C. Singlemode Plenum M9W048 (12 Strand) unless otherwise specified by the City of Madison.

2.4. CONNECTORS – FIBER OPTIC

A. Pre-polished fiber connector basic design shall be a factory pre-polished lc-style optical fiber connector with a zirconium ceramic ferrule.

B. Index-matching gel is factory-injected into the cleaved fiber stub splice to minimize connector insertion loss.
C. LC Singlemode factory pre-polished connectors shall HAVE pre-installed fibers.
D. Connector materials shall be designed with thermal stability to comply with environmental requirements of ANSI/TIA/EIA-568-B.3 and Telcordia GR-1081-CORE.
E. Pre-polished lc connectors shall require no field polishing AND REQUIRE NO ADHESIVES FOR TERMINATION.
F. Connector design and termination technique shall be independent of cable type or manufacturer, and shall be compatible for either 900 micron buffer or 250 micron buffer distribution cables.
G. Pre-polished LC fiber connectors, when properly installed onto qualified cable, shall meet the 10 Gb/s Ethernet performance requirements of IEEE802.3.
H. LC fiber connectors, properly installed onto qualified cable, shall exceed the mechanical and environmental performance requirements of ANSI/TIA/EIA-568-C.3.
I. Optical fiber horizontal distribution cable, as specified in the Contract Documents, shall be:
1. Hubbell ProClick
2. Singlemode LC – FCLC900KSM12
3. AFL (Fast)
4. Singlemode LC- fast-LC-SM

2.5. PATCH PANELS – CATEGORY 6

A. Category 6 patch panels shall be standard 8-position, RJ-45 style, un-keyed, FCC-compliant receptacle, in 24- and 48-port configurations.
B. Panel frames shall be black powder coated 14-gage steel with rolled edges top and bottom for proper stiffness.
C. Panels shall accommodate a minimum of 24 ports for each rack mount unit (1 RMU = 1.75 in.). 48 ports are recommended.
D. Panels shall be designed for 4-pair, 100 ohm balanced unshielded twisted pair (UTP) cable.
E. Panels shall terminate 26-22 AWG solid conductors.
F. Panels shall have individual port identification numbers on the front and rear of the panel. Panels shall have the Category 6 designation, visible from the front when installed.
G. Printed circuit boards shall be fully enclosed front and rear for physical protection.
H. Panel contacts shall accept a minimum of 2000 mating cycles without degradation of electrical or mechanical performance.
I. Panel termination method shall follow the industry standard 110 IDC punch-down, using a standard 110 impact termination tool.
J. Category 6 panels shall be backward compatible with existing Category 3, 5, and 5e cabling systems for fit, form, and function.
K. Category 6 patch panels, when installed, shall exceed the link or channel performance requirements of ANSI/TIA/EIA-568-C.2.
L. Category 6 patch panels shall be able to accommodate 10G in a 37 meter channel per TSB-155.
M. Category 6 patch panels, as specified in the Contract Documents, shall be:
1. Hubbell (NEXTSPEED 6 Series)
2. 24 Port - P6E24U
3. 48 Port - P6E48U

2.6. CABINET – WALL MOUNT

A. Rack material shall be welded steel construction with a durable black polyurethane powder coat finish.
B. Installed racks shall have a static load capacity of 300 Lbs.
C. Cabinet shall be 48-inch high, 23-inch wide and 30-inch depth.
D. Tapped holes in the vertical rails for mounting of panels shall be #12-24 thread size. Coating shall not interfere with thread fit.
E. Cabinet shall have a capacity of 26 RMU.
F. Cabinet consist of: Cabinet & mounts to secure the cabinet, a vertical Electrical 20 amp Outlet strip (Minimum 6 receptacles) with Mounting Brackets.
G. Wall mount cabinet and accessories, as specified in the Contract Documents, shall be:
1. Hubbell (XHW series)
2. Hubbell HSQ4836

2.7. CABLE MANAGEMENT –VERTICAL CABLE MANAGEMENT – NOT USED ON THIS PROJECT

A. Z-channel design offers:
1. Airflow

2. Minimizes weight
3. Maximum cable capacity with unobstructed access to cable

B. Snap in Spools with ability to put them where they will do the most good.

C. Rear cable management allows cable to be run on both left and right sides, while leaving the area behind the electronics and patch panels open for increased airflow.

D. Construction:
1. Cold Rolled steel z-channels
2. Cold rolled steel covers

E. Mounts to 84" Equipment racks

F. Channel width: 6"W

G. Vertical Cable Management and accessories, as specified in the Contract Documents, shall be:
1. Hubbell (NEXTFRAME series)
2. VS76

2.8. CABLE MANAGEMENT –HORIZONTAL CABLE MANAGEMENT

A. Horizontal management will be constructed of 14 ga cold-rolled steel (CRS)

B. Finish shall be a Durable, black powder coat.

C. Size: 2RU

D. Front Ring Depth: 3.5"

E. All steel construction - rugged, non-flammable, no fasteners to wear or break, no fingers to fuss with.

F. Modular components easily configured in field to adapt to demanding applications.

G. Hinged Front Cover - Locks in place when completely open to prevent cover from being removed or lost.

H. Horizontal Cable Management and accessories, as specified in the Contract Documents, shall be:
1. Hubbell (NEXTFRAME series)
2. HC219CE3N

I. Enclosures – fiber rack mount
1. Rack-mounted, powder coated formed cold rolled steel enclosure.
2. Swing-out or pull-out inner tray shall provide access to inner cables and connections, and maintain proper cable bend radius throughout the range of motion.
3. Fiber rack-mount enclosures shall be a 19-inch formed/welded and powder coated modular design, sized according to the cable installation.
4. Fiber rack-mount enclosures may serve as a main, horizontal, or intermediate cross connect facility.
5. Panel mounting brackets shall be configurable to either 19" or 23" racks per ANSI/EIA-310-D.
6. Enclosure chassis shall have two mounting bracket locations for either flush mount or center mount on the rack.
7. Inner tray shall have a threaded mounting boss to accept a mounting stud for splice trays. Splice tray capacity shall be (2) 10" splice trays, each with 24-splice capacities (48 splices total). Splice tray mounting boss shall also accept a stud for mounting 1-RMU blown fiber adapter brackets.
8. Inner tray mounting posts for modular panels shall also accept 12-fiber MTP-style cassettes for "plug & play" installations.
9. Inner tray shall have rear cable tie-down features to accept various diameter backbone cables entering the enclosure.
10. Enclosures shall be constructed of 16 gage cold rolled steel (CRS)
11. Fiber rack-mount enclosures and accessories, as specified in the Contract Documents, shall be:
a. Clearfield – Fieldsmart fiber crossover distribution system.

J. Adapter panels – optical fiber
1. Optical fiber Adapter panels shall be a modular design powder coated stamped metal construction.
2. ADAPTER PANELS SHALL BE LC.
3. High or low-density versions.
4. Adapter panels shall have quick-release snap fasteners to fit directly into fiber enclosures.
5. Fiber patch panels, as specified in the Contract Documents, shall be:
a. Clearfield – Clearview class patch only cassette.

2.9. INNER-DUCT

A. Fiber Optic Cable shall be installed with Innerduct for protection of fiber cables in a shared pathway.

B. The inner duct will be rated for the environment that it is being installed in. Plenum and riser rated.

C. Three inner Ducts will be run between closets. One for current installation, two spare for future applications.

D. Size: 1" CORRUGATED
E. Flexible & Lightweight for ease of handling
F. Pre-threaded with pull line

PART 3 - EXECUTION

3.1. APPROVED CONTRACTOR RESPONSIBILITIES

A. The Approved Contractor shall assume the following responsibilities:
1. Execute construction in accordance with contract drawings and specifications.
2. Adhere to project schedules and job site rules.
3. Adhere to the quality, regulatory, logistics, and documentation requirements.
4. Adhere to the product requirements outlined in PART 2 above.
5. Adhere to the Execution guidelines outlined below.
6. Furnish the cabling system certification and warranty provisions outlined in this specification section.

3.2. DELIVERY, STORAGE AND HANDLING LOGISTICS

A. Materials delivered to the construction site shall be stored in a dry, secure area, preferably indoors. Storage temperature of materials shall adhere to manufacturer's recommendations. Movement of packaged materials shall be in a manner to avoid damage of contents. On-site storage, either indoors or trailer, shall have permission by the owner, and shall not interfere with other construction activity.
B. Installation of category 6 cable shall be within the recommended temperature range specified by the manufacturer. Cable installation temperature above 50F is recommended.

3.3. PREPARATION

A. Cable pathways and Firestops
1. Cable pathways, including conduit, cable tray, ladder rack, raceway, slots, sleeves, etc. shall be located and mounted according to contract drawings and manufacturer's instructions. Pathways shall not be installed in wet areas.
2. Cable pathway fill ratio, bend radius, run length, number of bends, and proximity to EMI sources shall be in accordance with ANSI/TIA/EIA-569-B. Maximum cable count of the initial installation shall not exceed 40% fill ratio in any pathway.
3. In accordance with NEC 2005, power wiring and communications cabling shall not share the same pathway or outlet unless separated by a physical barrier.
4. Cable pathways shall be secured to a structural member of the building, or permanent wall studs. Wall surfaces for raceway mounting should be finished complete.
5. Metallic pathways shall be electrically continuous, free of sharp edges, and properly bonded to an approved ground. EMI sources such as ballasts, motors, and bus conductors shall be avoided by using proper separation distances.
6. Pathways that penetrate fire-rated barriers shall be fire stopped according to local codes and recognized practices. Fire stop materials or devices shall be qualified to UL-1479, in accordance with ASTM E814. Fire stop method shall have P.E. approval.
7. Core drilling of holes for fire-rated poke-through outlet devices shall have approval by a structural engineer or P.E. on the contract drawings prior to start of work.
8. Pathways for vertical cable runs, such as slots and sleeves, shall be installed in the proper location in accordance with applicable codes and standards.

B. Telecommunications rooms and equipment rooms
1. Telecommunications room (TR) layout, location and design shall be in accordance with the guidelines of ANSI/TIA/EIA-569-B. TR's on each floor of the building should be centrally located and vertically aligned to simplify backbone cable and pathway routing. TR's shall not be installed in wet areas, or near EMI sources or caustic chemicals.
2. Layout of rack, cabinet or enclosure locations shall be according to contract drawings.
3. Racks and cabinets shall be secured to the floor using proper anchors and fasteners.
4. Mount and assemble racks, cabinets, brackets and enclosures per manufacturer's instructions. Mount patch panels and cable management accessories in the specified locations.
5. Adjoining pathways (ladder rack, cable tray, etc.) shall be properly secured and positioned to allow adequate bend radius of cables entering the rack or cabinet.

C. Wall outlets and recessed wall boxes

1. Wall outlet and cable drop pathway location shall be according to contract drawings. Guidelines from ANSI/TIA/EIA-569-B should be followed for location with electrical outlets and outlet height above finished floor.
2. Outlet boxes shall be fastened securely to a wall stud or structural element, in a manner to permit flush mounting of the faceplate with the finished wall.
3. Multi-connect boxes shall be installed in a manner to comply with separation rules for power and communications wiring in close proximity.
4. Refer to specific manufacturer's recommendations for wall outlet selection, cable deployment, and termination of jacks into faceplates.

D. Surface housings and MUTOA outlets

1. Raceway or conduit should be deployed to the surface housing location. For through-wall cable entry, cut the wall opening to match the opening in the housing base.
2. Lay out mounting holes onto the desired wall location. For wallboard, concrete or cinder block walls, drill to the proper depth and install anchors.
3. Always use proper wall anchors. Installing mounting screws directly into wallboard without using anchors can cause screw pullout and detachment of the surface housing. Mounting the base plate to studs is recommended.
4. Mount base plate of surface box or MUTOA to outlet location using proper fasteners. Note: furniture and wall outlet applications require mounting of base plate prior to cable pulling and connector termination.
5. Install cover onto base plate.
6. Refer to detailed manufacturer's guidelines for cable deployment and termination of jacks into surface housings. Due to the larger size of category 6 cables, proper cable bend radius must be maintained. Certain restrictions may apply when dressing category 6 cabling into surface housings.

3.4. INSTALLATION

A. Cable Support

1. This Contractor shall install all supports for cables specified in this section. Traditional Ladder rack will be used in each telecommunications room, basket tray and j-hooks will be used in the horizontal.
2. Cable supports shall be spaced randomly, but no further than 5'-0" apart.
3. Inner-ducts will be run between each closet or telecommunications room. One for current installation with three multi cells for future installations or changes. In each telecommunications room the inner-ducts entering the space will be combined, in a size appropriate metallic box that is mounted on the wall. The combined inner ducts will then be routed to the rack and the fiber bay.
4. Provide all additional cable management products, sleeves or conduit raceways as required to protect exposed cabling and complete the installation of cables in a neat manner.
5. A horizontal conduit system consists of conduits radiating from the telecommunications room to the workstation outlets in the floor, walls, ceilings, and columns of a building. When using a conduit distribution system utilize the most direct route following the building lines.
6. The size and number of conduits or sleeves used for backbone pathways depends on the usable floor space served by the backbone system. at least three 4 trade size sleeves are recommended.
7. Conduit is only required if building codes or environmental conditions necessitate it. Rigid or EMT metal conduits are deemed suitable for building installation. Adequate planning should allow for a minimum of one 1-inch conduits to each workstation location if code requires conduit for voice and data cables.
8. Conduit fill ratios shall not exceed 40%; contact your cable manufacturer to get recommendation on fill rates.
9. No conduit run should be designed with more than two (2), 90 degree bends between pull points or pull boxes. If a run requires more than two 90 degree bends, install a pull box.
    a. Exceptions:
        i. The total run is not longer than 33 feet.
        ii. The conduit size is increased to next trade size.
        iii. One of the bends is located within 12 inches of the cable end.
10. All conduits will be equipped with a contiguous length of plastic or nylon pull string with a minimum rating of 200 lbs. (90 Kg)
11. A conduit run should not be designed with continuous closed sections longer than 100 ft without pull points or pull boxes installed.
12. All conduits should terminate above or in the installed ladder racks and allow for proper cable racking. Cable waterfalls should be considered in areas that have excessive distance between the conduit and ladder rack.

13. Trays and conduits located within the ceiling shall protrude into the room a distance of 1 to 2 in without a bend and above 8 ft high. Clear, unobstructed access to the ladder rack and conduits shall be provided within telecommunications rooms.
14. Conduits entering through the floor shall terminate at least two (2) inches above the finished floor
15. Locate slot/sleeve systems in places where pulling and termination will be easy.
16. If possible, locate sleeves, slots, and/or conduits on the left side of the room; this placement enhances the use of wall space from left to right.
17. When possible, entrance conduit and distribution conduit/cable tray should enter and exit on the same wall; if this is not possible, ladder rack inside the room should be provided for distribution from wall to wall.
18. All floor penetrations shall be core drilled with a maximum 1/4 inch size greater than the exterior dimension of the riser conduit.
19. Conduits entering through a wall shall be reamed and bushed, and terminated as close as practicable to the terminating rack or wall.
20. Terminating above a suspended ceiling must terminate not less 3 inches above finished ceiling and finished with bushing opening.
21. All conduit will be labeled for easy identification.
22. All floor penetrations shall be at columns, exterior walls or in equipment rooms.
23. Cables shall be supported at height of bottom flange of structural beams using a rigid support method (i.e. threaded rod, beam clamps, etc.).
24. Do not support cables from ductwork, sprinkler piping, water piping, waste piping, conduit, ceiling wire, or other system supports.
25. The conduits or sleeve will be installed per TIA/EIA-569-B and seal all penetration with approved fire stop product.
26. Provide independent support system for each low voltage cabling system.

B. Cable

1. Category 6 cable will be run for data. Category 6A will be run to all Wireless access points. Category 6 Gelled filled cable will be run in the backbone for all communications applications. Certain environments may require the use of different cables and/or cable jackets.
2. **All Terminations will utilize T568B wiring in THE CITY OF MADISON facility.** Any Contractor not complying with this wiring requirement will fix the problem at no cost to CITY OF MADISON.
3. Maximum cable lengths to be 295 feet (90 m) including service loop. Provide all necessary installation materials, tools and equipment to perform insulation displacement type terminations at all communications outlets, patch panels.
4. All communications cabling that has become abandoned as part of new renovation projects, previous renovation projects, or temporary communication cables used during the construction process shall be completely removed.
5. Refer to detailed manufacturer's guidelines for deployment of category 6 cable. Certain restrictions apply, and specific techniques are recommended.
6. All cabling shall be installed in accordance with manufacturers' written bend radius and pulling tensions. General industry guidelines recommend the following bend radius and pulling tensions:
   a. Tensile loading on a single 4-pair copper UTP cable shall not exceed 25 lbf.
7. Bend radius of a single 4-pair copper UTP cable shall not exceed 4 times the diameter of the cable.
8. Bend radius of multi-pair copper UTP and optical fiber cable shall not exceed 10 times the diameter of the cable.
9. All conduits and conduit sleeves shall have bushings or grommets shall be installed prior to the installation of communications cables to avoid damage and abrasions to cable sheathing and insulation. If bushings have are installed by the electrical Contractor, the communications cabling contract shall furnish and install bushings prior to pulling communications cabling.
10. Horizontal cable length for 4-pair copper UTP cables shall not exceed 295 feet. Prior to bidding and installation, the contactor shall review the drawings and verify no cable run exceeds 295 feet and notify the communications designer of cable runs that may exceed 295 feet.
11. Splices are not permitted in any voice or data cable unless other specified or shown on drawings.
12. Avoid placing copper cables near sources of extreme heat (i.e. boilers, radiators, heat coils).
13. Maintain cable twists for all UTP cables. For terminations cable sheathing shall be stripping back no more than ½" back from termination point for all Category 6 cables.
14. All cables shall be supported by cable tray, cable runway, or J-hooks. When large quantities of cables leave trays or runways, cables shall be supported by drop-outs or cable support hardware manufactured

specifically for the purpose of supporting cables. J-hooks shall be installed a minimum of every 5 feet and cabling shall maintain minimal deflection and strain (less than 12" deflection). Cables shall not be supported from ceiling grid wires. Cables shall not run above iron joists.

15. All cables shall be separated and bundled into like groups.
16. Service loops shall be provided at both ends of installed horizontal and backbone cabling. A 12" service loop shall be installed in the ceiling space near workstation outlets (excessive cable shall not be coiled in outlet boxes). A 10' service loop shall be provided in communication rooms and shall be installed to allow for future equipment rack/cabinet relocations without the need to re-terminate patch panels; the 10' service loop shall be neatly bundled and secured in ceiling space with large D-rings or place in cable trays. Cable slack and service coils shall be stored properly above the ceiling or under the access floor. A "figure-eight" service loop is recommended for category 6 cabling to reduce EMI coupling. Loose, random bundling is recommended.
17. Any cabling installing in equipment rooms shall be neatly placed in cabling trays, cabling runways, or horizontal and vertical rack/cabinet cable managers.
18. Velcro straps shall be utilized in the TR and inside TC enclosures for all cable bundling. Tie wraps shall be prohibited in the telecommunication rooms.
19. Separation: Maintain the following distances between cables, other system cables and other building systems:
    a. One (1) foot from Fluorescent Light.
    b. One (1) foot from power cable in parallel.
    c. One (1) foot from electrical conduits, other systems cables or other electrical equipment.
    d. Four (4) feet from motors or transformers
    e. Three (3) feet from hot water piping or other mechanical equipment.
    f. Ten (10) Feet from Bus Conductors or high-current branch circuits.
20. All low voltage cables shall be run parallel or at right angles to building structural framework. Do not run cables diagonally across ceiling space without written authorization by the Architect's Electrical Engineer or CITY OF MADISON Representative.
21. Communications cabling that must cross power cables or conduit shall cross at a 90-degree angle, and shall not make physical contact.
22. Fire seal around all cables running through rated floors and walls. Firestop all cables and pathways that penetrate fire-rated barriers using approved methods and according to local codes.
23. Leave spare pull string with every outlet installed.
24. Do not install cable in wet areas, or in proximity to hot water pipes or boilers.
25. Cable ends for termination shall be clean and free from crush marks, cuts, or kinks left from pulling operations. Installed cable jackets shall have no abrasions with exposed conductor insulation or bare copper "shiners". The installer is responsible to replace damaged cables.
26. Backbone cables shall be installed and bundled separately from horizontal distribution cables. Backbone and horizontal cable bundles shall be loose and random.
27. Backbone cables spanning more than three floors shall be supported at the top of the cable run with a wire mesh grip and on alternating floors, unless otherwise specified by local codes or manufacturer's guidelines.
28. Vertical runs of backbone cables entering each TR shall be securely fastened along a properly prepared wall in the TR on each floor. Use of cable ladder is recommended.

C. Communications Infrastructure
1. Maximum cable lengths to be 295 feet (90 m) including service loop. Provide all necessary installation materials, tools and equipment.
2. Support and secure cables at patch panels using rear cable management bracket, spools or management device.
3. Cross-connects shall be completed as per construction schedule.

D. Optical Fiber Cable:
1. Inner-ducts of the proper rating will be run between each closet.
2. Cables for direct burial, aerial, or other outside applications shall be designed specifically for the intended purpose.
3. All optical fiber installations shall be installed using open cabling methods. Limit cable-bending radius to 20 times the cable diameter during installation, and 10 times the diameter after installation. Provide all required tools, materials, consumables, and equipment necessary for field mounting of LC connectors.
4. Do not exceed the maximum pull tension specified by the cable manufacturer. Use appropriate lubricants as required to reduce pulling friction. Avoid kinking and twisting of cables during installation.

5. Label each end of each cable as to source and destination. Terminate optical fibers in consistent, consecutive manner at each end. Place all material in inner-duct between Label Optical Fiber raceway cable with yellow "Caution - Optical Fiber Cable" tags every 10 feet. Leave 10 feet of slack at each fiber termination point. Neatly coil slack optical fiber cable on top of rack above optical fiber patch panel enclosure at each rack location.
6. Optical fiber cable terminations shall utilize enclosures and components in quantities consistent with the required fiber counts at each end of each segment.
7. During optical fiber connector termination, visually inspect all terminations with a 200 or 400-power microscope.
8. Follow all of the connector manufacturer's recommendations.
9. Unacceptable flaws in the terminations will include, but not limited to, scratches, full or partial cracks, bubbles, pits, epoxy residual, dirt, dust, oil, moisture, grinding and sanding debris. The acceptable termination will show a connector tip that is free of all imperfections in 100% of the core and 80% of the cladding. All unacceptable connectors shall be inspected after rework.
10. During installation of optical fiber cable do not allow pulling tension to exceed cable manufacturer's specification for the cable being installed. Only the strength member of the cable shall be subjected to the pulling tension.
11. Clean all optical fiber connector tips prior to inserting them into matting receptacles or bulkheads. Install all dust covers.
12. Using approved methods, pull cable into conduit, or place into raceway or cable tray as specified. A pull cord (nylon; 1/8" minimum) shall be co-installed with all cable installed in any conduit.
13. Where cables are installed in air return plenum, riser rated cable shall be installed in metallic conduit.
14. Backbone and horizontal cables shall be installed and bundled separately in any pathway.
15. Cables above ceilings or below access floors shall be installed in cable tray or open-top cable hangers.
16. Cable slack and service coils shall be stored properly above the ceiling or under the access floor. Pathway fill ratio in conduit, tray, raceway, etc. shall not exceed 40% of pathway cross-sectional area.
17. A service coil of at least 1 meter is recommended within workstation outlets, and at least 2 meters is recommended for telecommunications enclosures. Main trunk and OSP cables shall also have a large diameter service coil in the specified location.
18. Recommended maximum spacing of cable supports above the ceiling is 60 in.
19. Backbone cables spanning more than three floors shall be securely attached at the top of the cable run with a wire mesh grip and on alternating floors or as required by local codes.
20. Vertical runs of cable shall be supported to messenger strand, cable ladder, or other approved structure to support the weight of the cable. Do not exceed maximum cable vertical rise limits.
21. Cables that are damaged during installation shall be replaced by the contractor.

E. RACKS AND ENCLOSURES:
1. Freestanding equipment racks and enclosures shall be protected free of all dust, debris and other environmental elements during construction until substantial completion walk-through.
2. Each rack, enclosure shall have a dedicated #6 AWG ground wire to a grounding buss bar or building ground as defined by NEC.
3. Secure racks and enclosures to floor using rack installation kit.

F. CATEGORY 6 JACKS
1. Refer to specific manufacturer's guidelines for termination of jacks and dressing category 6 cables inside wall outlets and surface housings. Due to the larger size of category 6 cable, service coils in outlet boxes and surface housings are not recommended.
2. Terminate jacks according to manufacturer's instructions.
3. All jack will be wired utilizing T568B.
4. To assure 10GBase-T performance, maintain wiring pair twists as close as possible to the point of termination. Also minimize the length of exposed pairs from the jacket to the IDC termination point during installation.
5. The length of wiring pair un-twist in each termination shall be less than 0.5 inches (13 mm).
6. Jacks shall be properly mounted in plates, frames, or housings with dust caps fully installed over IDC contacts.
7. Horizontal cables extending from mounted jacks shall maintain a minimum bend radius of at least 4 times the cable diameter, unless space is restricted. Note: Refer to specific manufacturer's recommendations for restricted cable bend radius.
8. Cable terminations shall minimize tensile or bending strain on IDC contacts after assembly of faceplate or housing to the wall outlet.

G. CATEGORY 6 PATCH PANELS
1. Properly mount patch panels into the designated rack, cabinet, or bracket locations with the #12-24 screws provided.
2. Terminate cables behind the patch panel according to manufacturer's instructions.
3. To assure performance, maintain wiring pair twists as close as possible to the point of termination. Also minimize the length of exposed pairs from the jacket to the ICD termination point during installation.
4. The length of wiring pair un-twist in each termination shall be less than 0.5 inches (13 mm), and shall be kept to a minimum.
5. Each terminated and dressed cable shall be maintained perpendicular to the rear cover using the recommended cable management hardware.
6. Horizontal or backbone cables extending from the rear panel terminations shall maintain a minimum bend radius of at least 4 times the cable diameter.
7. Cable terminations shall have minimal tensile or bending strain on panel IDC contacts in each installed location.
8. Panels shall be properly labeled on the front and back with the cable number and port connections for each port.

H. Harsh Environment Housing and Connectivity
1. Mount connector housing from front of device but Install Gasket or optional Protective Cap before mounting connector housing into device.
2. Secure connector housing to device using supplied plastic nut. Tighten nut with 6-7 inch/pounds of torque.
3. Ensure that mounting surface is clean and free of debris.
4. Installing the jack into the mounted connector housing.
5. Install the terminated jack into the mounted connector housing by tilting the jack and securing the fixed latch in the connector opening. Rotate the jack, securing the spring latch.
6. Clean and remove any obstructions from the surface that the wall plate assembly will be installed against.
7. Place washers provided with HI Impact series plates onto screws. Align rubber gasket on back side of plate prior to installing to box/wall by placing screws through plate and rubber gasket.
8. Secure the wall plate assembly to box/wall by tightening screws with 5 inch/pounds of torque.
9. Attach patch cords and field term plug assemblies (sold separately) to the mounted connector.

I. OPTICAL FIBER CONNECTORS, HORIZONTAL AND BACKBONE
1. Installed fiber connectors shall have proper cable support, routing and strain relief.
2. Installed connectors shall be inspected 100% for polish quality, and contamination.
3. Fusion splices for pigtail connections shall be protected in a suitable enclosure.

J. GROUNDING and BONDING SYSTEMS: Basic Guidelines
1. Telecommunications grounding and bonding system shall be installed in accordance with NEC requirements, and per the guidelines of ANSI J-STD-607-A.
2. The Telecommunications Main Grounding Buss Bar (TMGB) shall be bonded to the building main electrical service ground (Grounding Electrode Conductor or GEC), using approved lugs or exothermic weld methods. Bonding to the GEC or TMGB with sheet metal screws is prohibited.
3. The Telecommunications Bonding Backbone shall be a minimum 6 AWG copper wire conductor. A Telecommunications Grounding Buss Bar (TGB) shall be installed in the TR on each floor, and shall be bonded to the TBB. All metal racks, cabinets, pathway and enclosures shall be bonded to the TGB.
4. Telecommunications equipment shall be grounded according to manufacturer's instructions and in accordance with applicable codes.
5. All metallic pathways, including conduit, raceway ladder or cable trays shall be electrically continuous and shall be bonded to ground on each end.
6. OSP cable entering the building or backbone cables having metal sheaths shall have isolation protection. Isolation protectors shall be bonded to the TMGB.

3.5. LABELING

A. General:
1. **All labels shall be permanent, machine generated labels produced by a labeling machine**. Labels shall be a permanent polyester material clear in color with label lettering black in color. No hand written labels will be accepted.
2. Labeling information will be reviewed at Pre-Install Meeting, and the Owner shall approve the labeling scheme prior to the installation of any cabling.

3. Surfaces shall be cleaned before attaching labels. All labels shall be attached firmly and vertically plumb on equipment, faceplates, patch panels termination blocks, etc.
4. All labeling of cables, equipment, and components shall be included in as-built documentation, floor plan drawings, and schematic deigns.

B. Cabling
1. All structured cables (horizontal and backbone) shall be labeled at both ends within 6" of cable termination point. Where voice backbone cables extend behind termination blocks, cable labels shall be placed at a location on the cable where the labels are visible from the front of the termination blocks.
2. Labels shall have an adhesive backing and shall wrap completely around the circumference of the cable jacket. Label and lettering sizes shall be of appropriate size in regard to cable diameter.

C. Equipment Racks, Termination Hardware, and Faceplates
1. LABELING SCHEME TO BE SPECIFIED BY OWNER.

3.6. TESTING

A. Category 6 and 6A Cable Testing
1. Permanent Link Testing shall be completed on all horizontal (station) cables. The Contractor will be responsible to supply a Channel warranty, but CITY OF MADISON is requiring that the contractor supply all manufacturer patch cords per the contract.
2. Category 6 and 6A cabling systems shall be tested as an installed horizontal permanent link configuration. Jacks and faceplates shall be assembled complete and properly mounted into outlet boxes. Panels shall be terminated complete and fully dressed in proper cable management.
3. All wiring shall be certified to meet or exceed the specifications as set forth in TIA-568C for Category 6 requirements for permanent link. All test will be performed to 250MHz.
4. Field Testing shall include the following parameters for each pair of each cable installed:
   a. Name of the person performing the test.
   b. Test equipment manufacturer and model number.
   c. Cable I.D. The test sheets will be in numerical order by cable ID.
   d. Date of test.
   e. Wire map (pin to pin connectivity and polarity check)
   f. Length (in feet)
   g. Insertion Loss.
   h. Near End Crosstalk (NEXT).
   i. Power Sum Near End Crosstalk (PSNEXT).
   k. Equal-Level Far End Crosstalk (ELFEXT).
   l. Power Sum Equal-Level Far End Crosstalk (PSELFEXT).
   m. Return Loss.
   n. Delay Skew.
   o. Attenuation to Crosstalk ratio (ACR).
5. A "PASS" indication shall be obtained for each link, using at minimum a level III tester that complies with TIA/EIA-568-B.2 field test requirements.
6. Record test results for each cable and turn over to the General Contractor Upon completion of the job. Correct malfunctions when detected, and re-test to demonstrate compliance. Note: Test equipment shall be a Type III cable Tester.

B. Optical Fiber Testing:
1. Test procedures shall be as described by the TIA/EIA-568-B: Commercial Building Telecommunications Cabling Standard, Parts 2 and 3 and TIA/EIA-526-14-A-1998 - Optical Power Loss Measurements of Installed Multimode Fiber Cable Plant-OFSTP-14A
2. Preinstallation Testing:
   a. Test each conductor of every optical fiber cable on the reel with a light source and a power meter.
   b. Obtain the cable manufacturer power meter test results for each real used on the project. Using the attached Optical Fiber Test Form record the readings and the manufacturer's reel number. Prior to completion of project, turn over the completed optical fiber test form, optical fiber cable reel ID tags and optical fiber cable manufacturer's test results.
3. Acceptance Testing:
   a. Each terminated fiber strand in the horizontal or backbone infrastructure shall be tested individually as a permanent link. A fiber permanent link is defined as a length of individual fiber strand with a connector terminated on each end.

b. Testing for multimode shall be at 850 and 1300 nanometers. Total link insertion loss (dB) shall be within the specified link loss budget.

c. Tier 1 testing for each installed singlemode link shall be performed as an optical power insertion loss measurement, as defined by ANSI/TIA/EIA-526-7. Testing for singlemode shall be at 1310 and 1550 nanometers. Total link insertion loss (dB) shall be within the specified link loss budget.

d. Tier 2 testing, if required for each installed singlemode or multimode link, shall be performed as an OTDR measurement, as defined in TIA-TSB-140. We require Tier 2 testing on all fibers installed in the facility for future troubleshooting.

e. Multimode optical fiber attenuation shall be tested on all individual fibers of each cable segment using an LED light source and power meter to determine the actual loss. These tests shall be performed at the 850nm and 1300nm windows in both directions. Test set up and performance shall be in accordance with ANSI/TIA/EIA-526-14A, Method B.

f. A reference power measurement shall be obtained by connecting one end of test jumper 1 to the light source and the other end to the power meter. After recording the reference power measurement, test jumper 1 shall be disconnected from the power meter without disturbing the light source and attached to the cable plant. The power meter shall be moved to the far end of the cable plant and attached to the cable plant with test 2.

g. Readings must not be higher than the "Optimal Attenuation Loss." The OAL will be calculated using the manufacturer's factory certified test results, (db/km) converted to the actual installed lengths plus the manufacturer's best published attenuation losses for the connector and/or splice installed on this project. (0.30+/-0.30 for Connectors and 0.10 for splices). The construction manager shall use the OAL for comparison with the end to end power loss test results prior to acceptance.

h. Test Results: Must be completed and turned over to the General Contractor prior to active equipment installation. Specific due dates for optical fiber will be established at pre-install meeting.

END OF SECTION

The General Contractor shall be responsible for the sequencing of the project.

The Contractor shall review all other specifications within the construction documents and Additional Reference Documents for other requirements and coordination of work associated with this contract.

Periodically there will be request for tours of the park shelter during construction by Engineering or Parks Division staff. Generally, the tours will be scheduled on one day per week (typically Friday) from 1-2 PM. Contractor shall accommodate these tour requests.

SECTION 107.2: PROTECTION AND RESTORATION OF PROPERTY
The Contractor shall be responsible for the protection and restoration of all new and existing work according to Specification 01 76 00 – PROTECTING INSTALLED CONSTRUCTION.

SECTION 108.2: PERMITS AND LICENSING
The Contractor shall be required to apply and obtain all permits or licenses that may be required by these contract documents regardless of ordinance, statute, or other regulatory requirement. The City of Madison will pay for all City of Madison required Permits.

The Contractor shall obtain and pay for permits and private utility installation fees for this project unless otherwise provided. These costs will include, but may not be limited to, gas service/meter set, electric, telephone, and water service/meter set.

The Contractor shall be responsible for compliance with all required permits including the City of Madison Erosion Control permit and the Wisconsin Department of Natural Resources WRAPP Storm Water NOI permit.

The Contractor shall be responsible for any fines issued due to non-compliance with the project permits.

SECTION 109.7: TIME OF COMPLETION
Work shall only begin after the contract is completely executed and the start work letter is received. It is anticipated that the start work letter shall be issued on or about August 12, 2024 and the pre-construction meeting and site mobilization would follow

The Contractor shall have reached a level of Substantial Completion/Certificate of Occupancy **NO LATER THAN December 31, 2025.** ~~The total time for completion of contract shall be twelve (12) months from the actual start of onsite construction work.~~ This shall include all minor punch list items, final inspections and all final copies of contract deliverables completed with the appropriate agency. All long lead time materials shall be ordered as needed in advance of onsite construction work in order to maintain the contracted schedule. The Contractor shall notify the City Construction Manager four (4) weeks in advance of the selected onsite construction start date.

The Contractor shall review Specifications 01 29 76 Progress Payment Procedures and 01 77 00 Closeout Procedures and be completely familiar with the progress payment milestones and definitions related to construction closeout and contract closeout.

SECTION 109.9: LIQUIDATED DAMAGES
The fixed, agreed upon, liquidated damages for failure to complete all work within the Contract Time, shall be calculated in accordance with Article 109 of Standard Specifications, per working day.

3.4. SUBSTITUTION REQUEST FORM

For Pre-bid Substitution Requests all text boxes on this form are required information for a complete request.

Substitution Request

Today's Date:	6-20-24
Project Title:	Warner Park Community Recreation Center Exp.
Project Number:	17196-51-140
Contract Number:	905

By completing and submitting this form for review the General Contractor affirms that all of the following statements are correct:

1. The General Contractor affirms that this request is in compliance with the requirements described in *Specification 01 25 13 Product Substitution Procedures.*
2. The function, appearance, and quality of the proposed substitution are equal or superior to the specified item.
3. The proposed substitution does not affect dimensions shown on the drawings.
4. The proposed substitution will have no adverse affects on other trades, the construction schedule, or any specified warranty requirements.
5. Maintenance and service parts will be locally available for the proposed substitution. (GC shall provide supporting documentation in the attachments section below.)
6. The General Contractor shall be responsible for any and all costs associated with this substitution request if approved. This includes but is not to limited to fees for building design, engineering design fees, detailing fees, plan review fees, construction costs, and inspection fees.

GC Substitution Request:

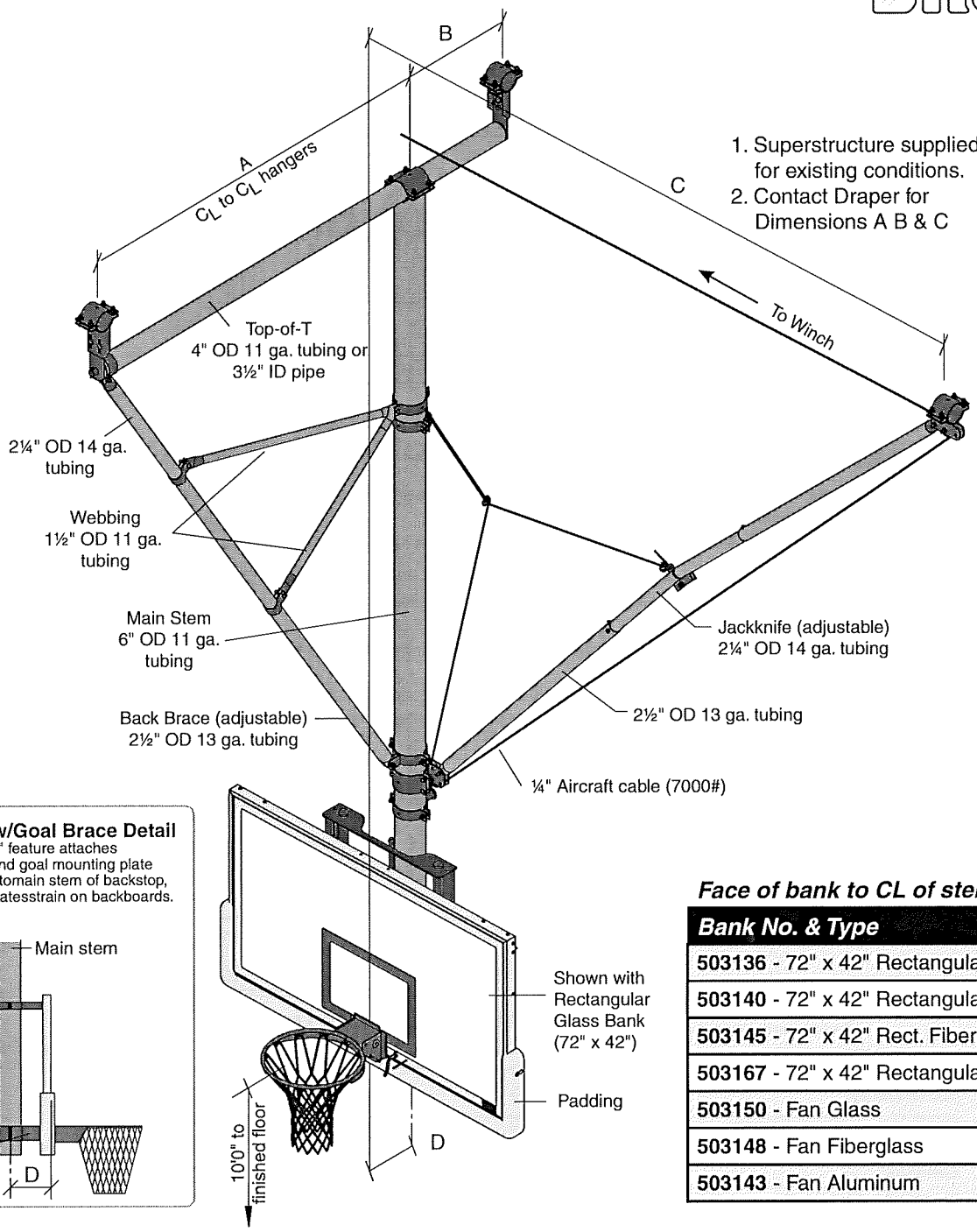
General Title:	Athletic Equipment - Draper
Related Specification:	11 66 23-1 & 11 66 53 1
Reason for Substitution:	Request Draper Athletic Equipment as alternate to BOD-Porter Equipment
Proposed Substitution: (Include Name, Model, etc.)	Draper Athletic Equipment All basketball equipment, volleyball, & divider.

Submitted By:	Eric Hasloq
Phone:	608-469-9484
Company:	H2I Group
Email:	ehaslow@h2igroup.com

END OF SECTION

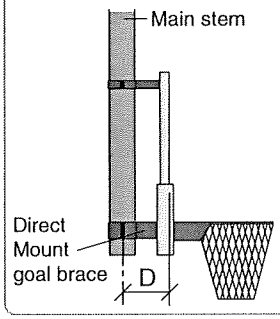
EZ Fold® TBS-26-B

Basketball Backstop— Ceiling-Suspended, Side-Folding - with Front Brace



Side View/Goal Brace Detail

"Goal Brace" feature attaches directly behind goal mounting plate and directly tomain stem of backstop, which eliminatesstrain on backboards.



Face of bank to CL of stem

Bank No. & Type	Dim C
503136 - 72" x 42" Rectangular Glass	11 ¼"
503140 - 72" x 42" Rectangular Wood	10 9/16"
503145 - 72" x 42" Rect. Fiberglass	10 ½"
503167 - 72" x 42" Rectangular Steel	10 ½"
503150 - Fan Glass	11"
503148 - Fan Fiberglass	10 ½"
503143 - Fan Aluminum	10 3/16"

Draper offers a 25-year limited warranty on the EZ Fold basketball backstop structure. No other basketball backstop manufacturer offers you this protection. For a copy of the EZ Fold backstop warranty in its entirety, contact Draper, Inc.

411 S. Pearl St., Spiceland, IN 47385 USA ▮ 765-987-7999
www.draperinc.com ▮ fax 765-987-7142

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PROJECT: _____

_____

ARCHITECT: _____

CONTRACTOR: _____

SUPPLIER: _____

DATE: _____ REVISED: _____

EZ Fold® TBS-26-B

Basketball Backstop— Ceiling-Suspended, Side-Folding - with Front Brace

Specifications—

Ceiling-Suspended, Side-Folding Backstop (For All Heights)

Product Description

Basketball backstop shall be the EZ FOLD Model TBS-26B, ceiling-suspended, side-folding by Draper, Inc. of Spiceland, IN.

Backstops shall be a bolt-together main frame constructed from steel mechanical tubing to form a rigid tetrahedral "T" design. The main stem (center strut) shall be 6" OD 11-gauge steel tubing, the top of the "T" shall be 4" OD 11-gauge steel tubing or 3½" I.D. pipe (above 32'5"). The front brace shall be constructed of 2½" OD 13-gauge (outer) steel tubing and 2¼" OD 14-gauge (inner) steel tubing. Main frame shall include 2 or 4, 1¼" OD 11-gauge steel tubing members (webbing) X bracing the rear brace to main stem. The main stem shall be of sufficient length to allow plus or minus 6" height adjustment of either fan or rectangular banks.

The folding side brace shall be jackknife type, fully adjustable, self-locking in the down position and constructed of 2½" OD 13-gauge (outer) steel tubing and 2¼" OD 14-gauge (inner) steel tubing.

The backstop shall be supported from 4" OD 11-gauge steel mechanical tubing (as shown on plans) anchored to roof structure by means of heavy steel support hangers. Superstructure tubes shall be reinforced with bridging and/or bracing when truss centers exceed 8'0".

Pivot or hinge joint (pin height) for folding shall not exceed 15" from roof structure except when required by architect for coordination with other trades. The main backstop frame shall pivot on 1¼" minimum solid steel shaft secured in a milled bearing hole in ½" minimum steel plate hangers to insure accurate positioning of bank.

The bank shall be attached to the 6" OD main stem by heavy-duty bank hangers. Hangers shall be constructed of 2¼" OD 14-gauge steel tubing and ¼" x 2" flat steel plate with slotted holes for lateral adjustment. All glass banks shall have one upper bank hanger and include a goal brace which attaches directly to the goal mounting plate and directly to the 6" main stem of the backstop to eliminate any strain on the bank and help prevent glass breakage. This direct mount feature shall conform to NCAA recommendation No. 5-F (dated Mar. 1982) which states that the design of the unit shall transfer the load on the goal directly to the backboard support so as to minimize stress to the glass backboard.

Backstop is raised or lowered by a ¼" (6.35 mm) aircraft cable, certified minimum break strength of 7,000 pounds (3178 kg), operating over aluminum alloy sheaves with bronze oilite bearings that do not require lubrication.

Backstop shall have a black or white powder coat finish. Other colors optionally available: contact Draper for details.

Operation: Backstop shall be operated by 503085 motorized winch or 503086 manually operated winch (on units up to 28'). For complete specifications, see separate sheets.

Options

Backstop can be provided with any of several different styles of backboards, goals and padding. Specify types desired. See separate sheets.

Accessories

Smart Gym Control System. For group control of Basketball Backstops with Electric Winches, Electric Divider Curtains, Electric Height Adjusters and other Auxiliary Devices. For complete specifications, see separate sheet.

503060 EZ Power Wireless Remote Control. For remote control operation of electric winch. For complete specifications, see separate sheet.

503029 Posilok™—Safety belt to automatically lock basketball backstop in position due to a sudden surge of speed created by a possible malfunction of the hoisting apparatus. For complete specifications, see separate sheet.

503049— Portable Operator—To operate manual winch with heavy-duty electric drill. For complete specifications, see separate sheet.

Height Adjusters (see separate sheets):

503093— For motorized 8'-10' Height Adjustment of rectangular bank.

503097— For motorized 8'-10' Height Adjustment of fan bank.

503095— For motorized 8'-10' Height Adjustment of rectangular bank with wireless remote control.

503098— For motorized 8'-10' Height Adjustment of fan bank with wireless remote control.

503096— For motorized 8'-10' Height Adjustment of rectangular bank with EZ Stick Power Wand.

503099— For motorized 8'-10' Height Adjustment of fan bank with EZ Stick Power Wand.

503092— For manual 8'-10' height adjustment of rectangular backboards.

503094— For manual 8'-10' height adjustment of fan backboards.

503003—Portable Height Adjuster Operator—Speed controlled battery powered operator for manual height adjusters. For complete specifications, see separate sheet.

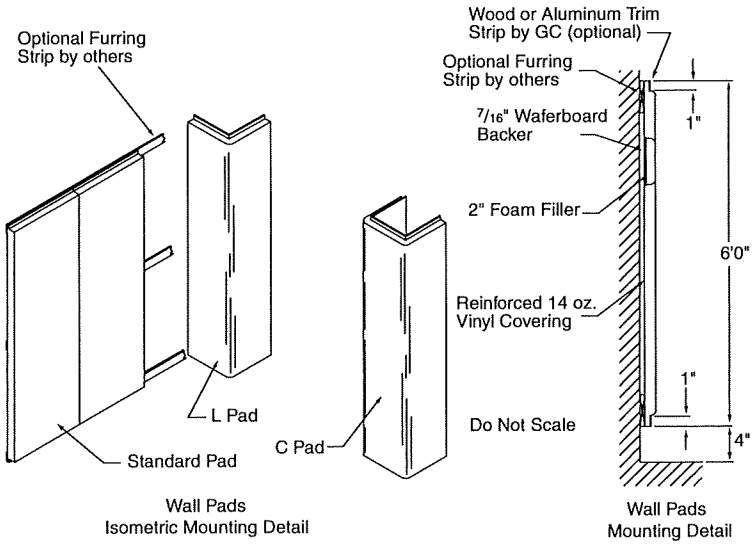
LEED® Submittal Information

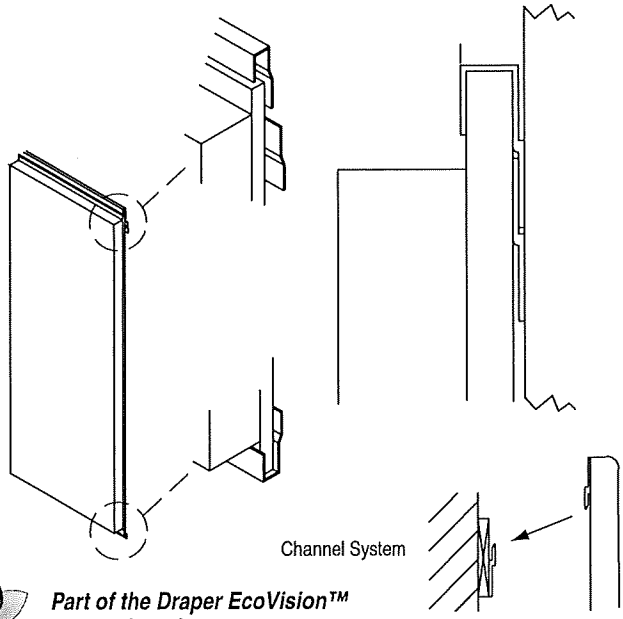
Credit	Measure	
MRc4 – Recycled Content	Post Consumer Average 51.21%	Post Industrial 0%
MRc5 – Regional Materials	Raw materials are commodity items from multiple sources so extraction point cannot be determined. Final Manufacturing/Assembly in Spiceland, IN 47385.	

Downloadable 3-part specifications are available at www.draperinc.com.

EcoVision™ Wall Pads

by DRAPER





Selections—EcoVision Wall Protection Pads

Size/Quantity

____ Standard size: 2' x 6' (610 x 1828 mm)
____ L shape: ____ x ____ x ____ (high)
____ C shape: ____ x ____ x ____ x ____ (high)

Pads can be custom fabricated to sizes and shapes required to accommodate structural elements, wall openings, and other project conditions. Maximum size is 4' x 8' (1.2 x 2.4 m). Supply drawing for non-rectangular pads.

Foam options

☐ 2" (50 mm) thick polyurethane filler (3.5 lbs. density)—***standard***
☐ 1½" (38 mm) thick polyurethane filler (3.5 lbs. density)
☐ 2" (50 mm) thick polyurethane filler (6 lbs. density)

Select Color:

☐ Red	☐ Maroon	☐ White
☐ Dark Blue	☐ Marine Blue	☐ Purple
☐ Forest Green	☐ Kelly Green	☐ Orange
☐ Beige	☐ Yellow	☐ Grey
☐ Navy Blue	☐ Black	

Select Mounting Option:

☐ 1" Fabric-wrapped mounting flanges at panel top and bottom—***standard***
☐ Z-clip at top and 1" flange at bottom
☐ Z-clips at top and bottom (no flanges)
☐ Channel System

EcoVision™ *Part of the Draper EcoVision™ range of products*

EcoVision Wall Pad Specifications

General: Wall Pads as shown on plans shall be EcoVision Wall Pads as manufactured by Draper, Inc., Spiceland, Indiana. Bidder is responsible for verification of job conditions and dimensions.

Construction: Panels shall consist of (2"/1½") thick polyurethane foam bonded to a 7/16" thick waferboard backer and covered with a 14 oz. vinyl covering. Vinyl cover shall be coated polyester fabric with leather grain embossed pattern. Vinyl to have average weight of 14 oz. per square yard, breaking strength of 350 PSI, tear resistance of 65 pounds and be rated as self extinguishing in accordance with California State Fire Code F-230 and Class A Rated in accordance with requirements of NFPA-101.

Vinyl to be resistant to rot, mildew, fungus and ultraviolet light and is available in Red, Dark Blue, Marine Blue, Beige, Grey, Black, Forest Green, Kelly Green, Maroon, Orange, Yellow, White, Purple and Navy Blue.

Panel front and edges shall be vinyl wrapped and securely stapled to the wood backer so that the backer is not exposed on front or four sides.

UL GREENGUARD PRODUCT CERTIFIED FOR LOW CHEMICAL EMISSIONS UL.COM/GG UL 2818 GOLD

Certifications: Entire wall pad assembly shall have been submitted to indoor air quality evaluation (IAQ) evaluation in accordance with UL 2811 test method to show compliance with emissions limits on UL 2818 Section 7.1 and 7.2. Materials are tested in accordance with ANSI/BIFMA M7.1-2011 and determined to comply with ANSI/BIFMA X7.1-2011 and ANSI/BIFMA e3-2014e credit 7.6.1, 7.6.2 and 7.6.3. Wall Pads Assembly shall qualify as low emitting and found to meet all the requirements for UL GREENGUARD GOLD certification. Material has emissions of total volatile organic compounds of < 0.22 mg/m3, formaldehyde < 0.0135 ppm, total aldehydes < 0.043 ppm, individual volatile organic compounds < 1/1000 TLV and < ½ chronic REL and total phthalates < 0.01 mg/m3.

LEED® Submittal Information

Credit	Measure	
MRc4 — Recycled Content	Post Consumer Average 12.4%	Post Industrial 0%
MRc5 — Regional Materials	Product Manufactured in Spiceland, IN 47385	
EQ4.4 — Composite Wood & Agrifiber Products	Urea Formaldehyde Free	

PROJECT: _____

_____

ARCHITECT: _____

CONTRACTOR: _____

SUPPLIER: _____

DATE: _____ REVISED: _____

DRAPER
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www.draperinc.com ▮ fax 765-987-7142
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EcoVision Wall Pads by Draper

Stage Mats

Size/Quantity

____ L shape: 6" x ____ x ____ (high)

Foam

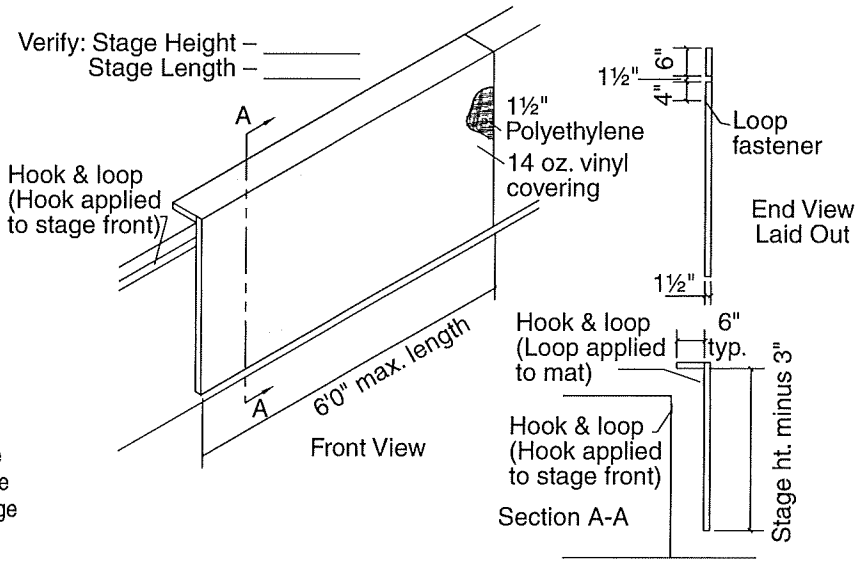
1½" (38 mm) thick polyethylene filler

Vinyl Covering

Solid vinyl coated polyester fabric with embossed pattern. Weight: 14 ounces per SY. Breaking strength: 350 PSI. Tear resistance: 65 lbs. Resistant to rot, mildew, and ultraviolet light. Flammability: Rated self extinguishing in accordance with California State Fire Code F-230 and Class A Rated in accordance with requirements of NFPA-101.

Select Color:

- ☐ Red
- ☐ Dark Blue
- ☐ Forest Green
- ☐ Beige
- ☐ Navy Blue
- ☐ Maroon
- ☐ Marine Blue
- ☐ Kelly Green
- ☐ Yellow
- ☐ Black
- ☐ White
- ☐ Purple
- ☐ Orange
- ☐ Grey



Removable Mats for Wall Protection

Size/Quantity

____ mats, (width, 2' increments) ____ x ____ (high)

Foam

1½" (38 mm) thick polyethylene filler

Vinyl Covering

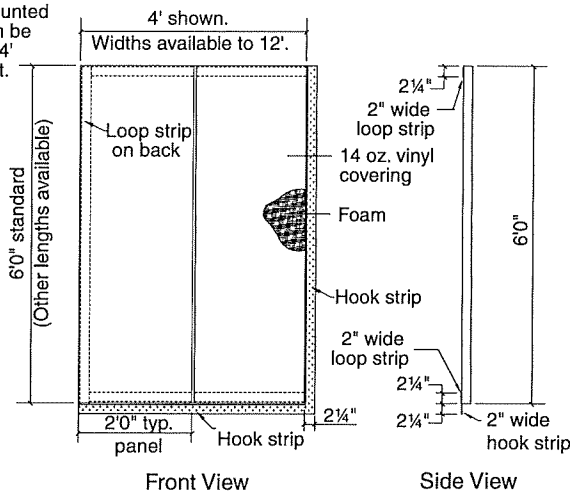
Solid vinyl coated polyester fabric with embossed pattern. Weight: 14 oz./sq. yd. Breaking strength: 350 PSI. Tear resistance: 65 lbs. Resistant to rot, mildew, and ultraviolet light. Flammability: Rated self extinguishing in accordance with California State Fire Code F-230 and Class A Rated in accordance with requirements of NFPA-101.

Select Color:

- ☐ Red
- ☐ Dark Blue
- ☐ Forest Green
- ☐ Beige
- ☐ Navy Blue
- ☐ Maroon
- ☐ Marine Blue
- ☐ Kelly Green
- ☐ Yellow
- ☐ Black
- ☐ White
- ☐ Purple
- ☐ Orange
- ☐ Grey

Removable Folding Mat
(Hook & Loop Attachment)

Optional: 2" Hook strips mounted on 2¼" aluminum strips can be supplied for wall mounting. 4' supplied with each 2' of mat.



Hook & Loop Options:

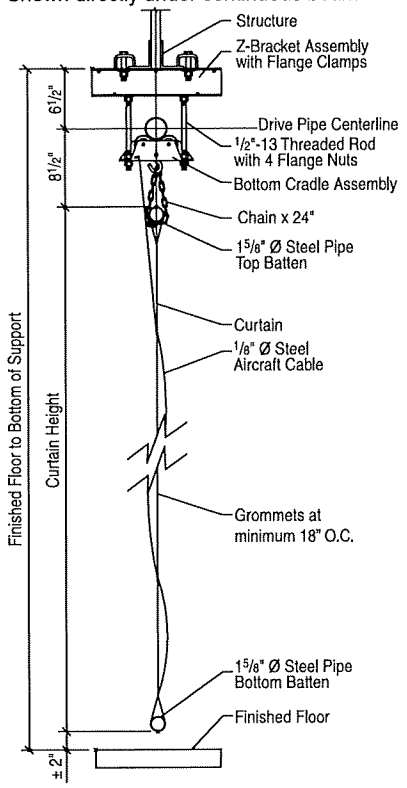
- ☐ Hook & Loop on 2 sides
- ☐ Hook & Loop on 4 sides
- ☐ 2" Hook strips mounted on 2¼" aluminum strips

Fold-Up Divider

Electrically Operated Gym Divider Curtain

Section Drawing

Shown directly under continuous beam



GREENGUARD GOLD

EcoVision™

Part of the Draper EcoVision™ range of products

Please Mark Appropriate Selections

Select Solid Vinyl Weight and Color

Specify Height of Vinyl: _____

☐ 18 oz. **(circle one)**

White	Marine Blue	Forest Green	Yellow	Orange
Purple	Black	Red	Dark Blue	Maroon
Beige	Grey	Navy		

☐ 22 oz. **(circle one)**

Red	Dark Blue	Grey

Select Mesh Color (circle one)

White	Red	Blue	Yellow	Black	Grey

Specify Width

Opening Width: _____

Divider Curtain Width: _____

Specify Height

Height (floor to attachment): Low Point: _____ High Point: _____

Obstructions (clarify on page two in NOTES): _____

Building Structure in Relation to Curtain

☐ Directly under continuous beam

☐ Between two beams. Distance between beams: _____

Distance between beam and curtain: _____

☐ Right Angle to beams. Spacing between beams: _____

Building Structure for Curtain Support

Beam flange width: _____

Beam flange thickness: _____

Options for Fold-Up Divider

☐ Padded bottom batten

☐ Wireless remote control (see separate submittal sheet)

☐ Smart Gym Wall Touch Pad Control (see separate submittal sheet)

☐ EZ Pad Group Control System (see separate submittal sheet)

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Specifications—Fold-Up Gym Divider

Gym Divider as shown on plans shall be Fold-Up as manufactured by Draper, Inc., Spiceland, IN. Bidder is responsible for verification of job conditions and dimensions.

Lower section of curtain shall be solid vinyl coated polyester (avg. 18 oz. or 22 oz. per square yard as required). Flammability rated as self extinguishing by the California State Fire Code and Class A Rated in accordance with requirements of NFPA-101. All seams to be electronically welded with a 1" full contact weld. Outer edge hems shall be triple turned with double welds. A pocket shall be formed along the bottom edge of the curtain to accommodate a 1⅝" diameter round batten for curtain support.

Upper section of curtain shall be avg. 9 oz. per square yard vinyl coated polyester mesh. Flammability rated as self extinguishing by the California State Fire Code and Class A Rated in accordance with requirements of NFPA-101. Color shall be chosen from standard offering as specified by the owner. Use vinyl fabric, in triple thickness and double welded to the top edge of the mesh, to form a 6" wide pocket to accommodate a 1⅝" diameter round batten for curtain support.

Draper 18 oz. Divider Curtain Vinyl and Divider Curtain Mesh has achieved GREENGUARD GOLD Certification. GREENGUARD Certified products are certified to GREENGUARD standards for low chemical emissions into indoor air during product usage. For more information, visit ul.com/gg.

Suspension from roof support member must be accomplished with clamp type malleable or heavy gauge stamped lug fitting furnished by the manufacturer. Hoist lines shall be ⅛" diameter steel aircraft cable (2000 lb. break strength), spaced maximum 10'0" on center. Each line shall be attached to the bottom tube batten and run through grommets located approximately 18" on center for attachment heights 30' and below, 24" for attachment heights between 30' 1" and 40' and 30" for attachment heights above 40'. Each hoisting line shall terminate at the top of the curtain and attach to a drive pipe. The drive pipe shall rotate in drive pipe support assembly located a maximum of 10'-0" on center. Hoisting mechanism shall not rely on single cable support of the divider when in stored position.

Drive pipe power mechanism shall consist of a ¾ H.P., 110-120 volt, 60 cycle, single phase reversible capacitor motor with built-in thermal overload protection. The motor and load holding worm gear reducer shall provide speed reduction in the winch. Remote control operation to include integral limit switch to control the upper and lower limit of the curtain travel. Key lock, three position, momentary contact wall switch with safety delay included. Switch unit shall include a general purpose switch box wall plate. Key switch or controls to be in full view of both sides of curtain during operation.

Optional Group Control System. See separate sheet for details.

Optional Wireless Remote Control. See separate sheet for details.

LEED® Submittal Information

Credit	Measure	
MRc4 – Recycled Content	Post Consumer Average 23.48%	Post Industrial 0%
MRc5 – Regional Materials	Raw materials are commodity items with multiple sources so extraction point cannot be determined. Final manufacturing/assembly in Spiceland, IN 47385	

Considerations for Fold-Up Divider

1. Divider can be made virtually any size, but cannot be cutout for bleachers. Allow more space for walking around the ends of the divider. A minimum of 6 inches of clearance is required between vertical edges and fixed objects.
2. Stored dimension, from the bottom of beam to the bottom of the divider, shall be three feet or less with a level direct attachment.

PROJECT: _____

_____

ARCHITECT: _____

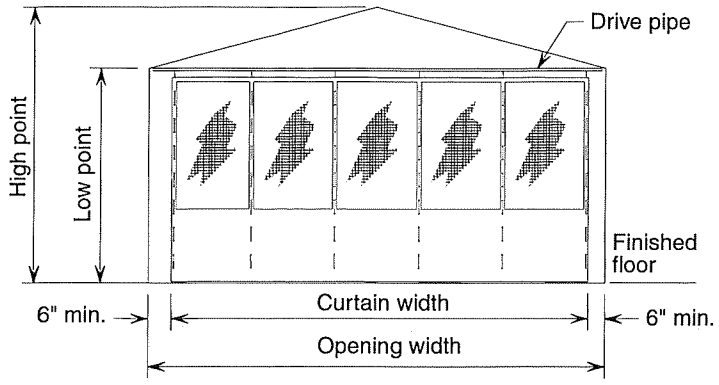
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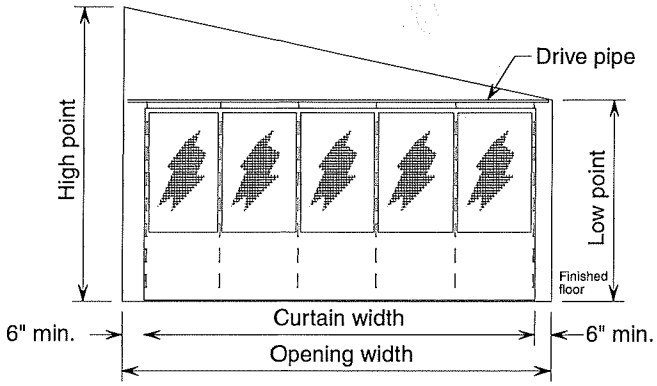
SUPPLIER: _____

DATE: _____ REVISED: _____

Fold–Up Divider by Draper

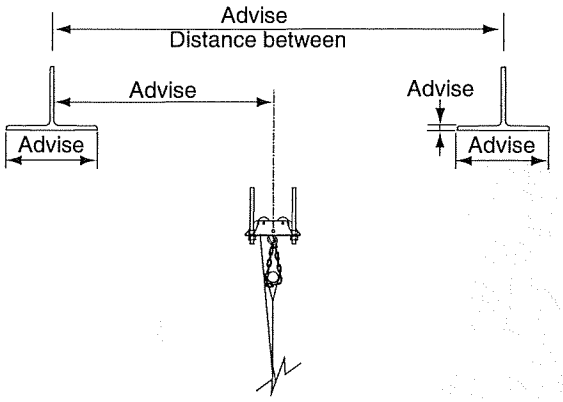
Height and width



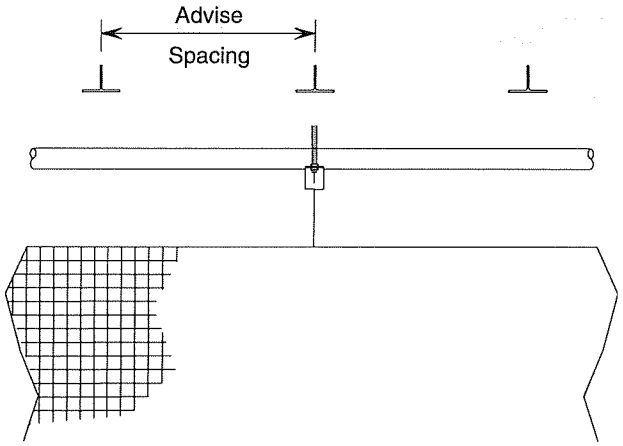


Structural relations

Between two beams

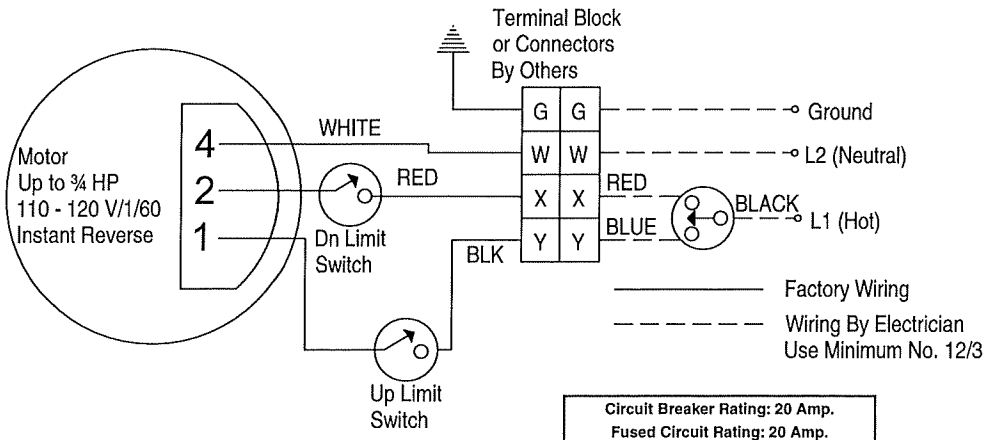


Right angle to beams



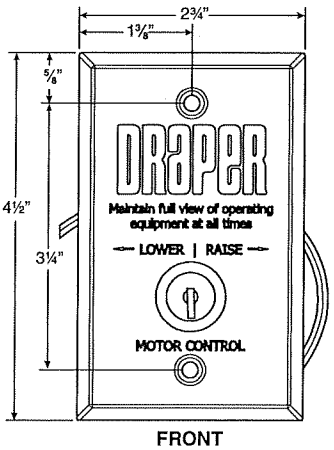
Notes:

Wiring Diagram

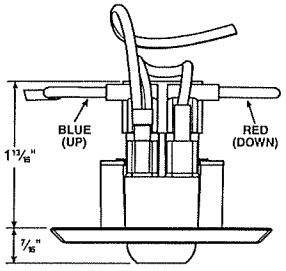


Circuit Breaker Rating: 20 Amp.	
Fused Circuit Rating: 20 Amp.	
Full Load Amperage: 9.8 Amp	
Recommended Minimum Wire Size	
90' Maximum Run	12 AWG
91' to 140' Run	10 AWG
140' to 225' Run	8 AWG
Wire size recommendations based on ¾ HP Motor, 3% voltage drop, copper wire and are calculated using standard wire size calculation methods	
Size of wall masonry boxes required for single and key switches All Boxes: 2" (w) x 3 ¾" (h) x 2 ½" (d)	

Key Switch



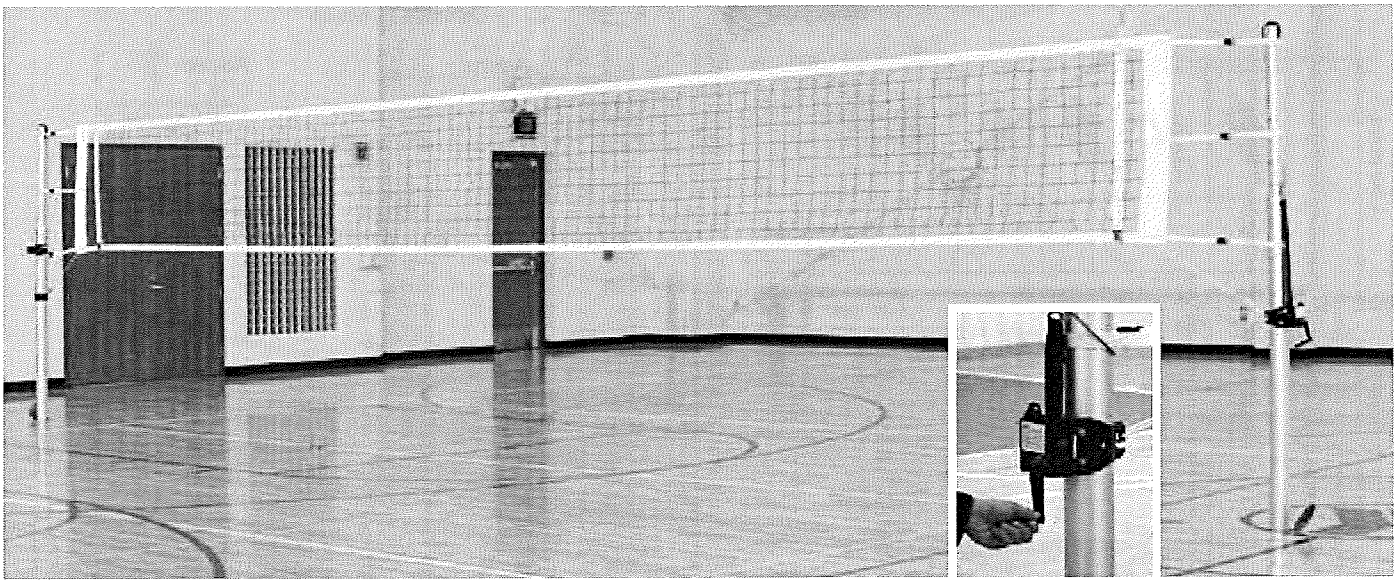
FRONT



TOP

VOLLEYBALL Power Volleyball System (PVS)

HEAVY DUTY TENSIONING WINCH, PRECISE ADJUSTMENT, SINGLE OR PAIRED SYSTEMS



Product: Power Volleyball System. Blue Water YMCA, Port Huron, MI. Architect: TMP Associates, Inc., Bloomfield Hills, MI
Photography: Jill Brososky, Jeff Bell Photography, Ft. Wayne, IN

- Built for a lifetime of intense use, featuring heavy-duty construction with an all-aluminum floor-sleeve type system. Highly maneuverable, lightweight, and easy to handle for an easy one-person setup. The heavy-duty tensioning winch provides a self-locking, worm gear mechanism with a high tensile strength nylon strap and heavy-duty snap for safe connection to the net-top cable. It easily adjusts to all competition heights, and includes a folding handle for added security and player safety. Can be hung on a wall with hooks, stored on optional transporter, or tucked away in a closet.

PART NOS.
SINGLE PVS: 500001
DOUBLE PVS: 500002

FEATURES:

- Meets all NFHS, USA Volleyball, NCAA, and FIVB requirements for competition equipment.
- Height adjustment from 6'1" to 8'4" (1.85 m to 2.54 m) in 1" (25 mm) increments; uses precise mechanical pin adjustment.
- Rope tensioner holds bottom of the net taut.
- Secure cast-in-place 3-½" (89 mm) ID floor sleeves with choice of flush cover plates.
- An adjustable rubber protective bumper on each upright offers fine adjustments and protection of your court.
- Clear anodized aluminum finish.

OPTIONS:

- **500001** Includes one pair of uprights, net, and combination antennae/ boundary markers. Power winch located on outside of one upright. Second upright equipped with cable anchor collar.
- **500002** Two court system includes two nets, two rope tensioners, three uprights, and two pairs of combination antenna/boundary markers. Power winch is located on outside of two posts. Center upright is equipped with double top pulleys and adjustable cable anchor collar for attaching two nets.

SUPPORTING DOCUMENTS

All instructions, technical drawings and other supporting documents are located at: *draperinc.com/documents.aspx*

POWER VOLLEYBALL NET

Official competition net is 32' x 39-⅜" (975 cm x 100 cm). Netting is 4" (102 mm) square #36 black nylon cord with vinyl-coated polyester hem double stitched around entire perimeter of net. Top hem has a 42' 6" (12.95 m) long galvanized aircraft cable with a nylon coating for top tensioning. Bottom of net has a braided white nylon rope for bottom tensioning. Each side of the net is equipped with three polypropylene tension straps with buckles.

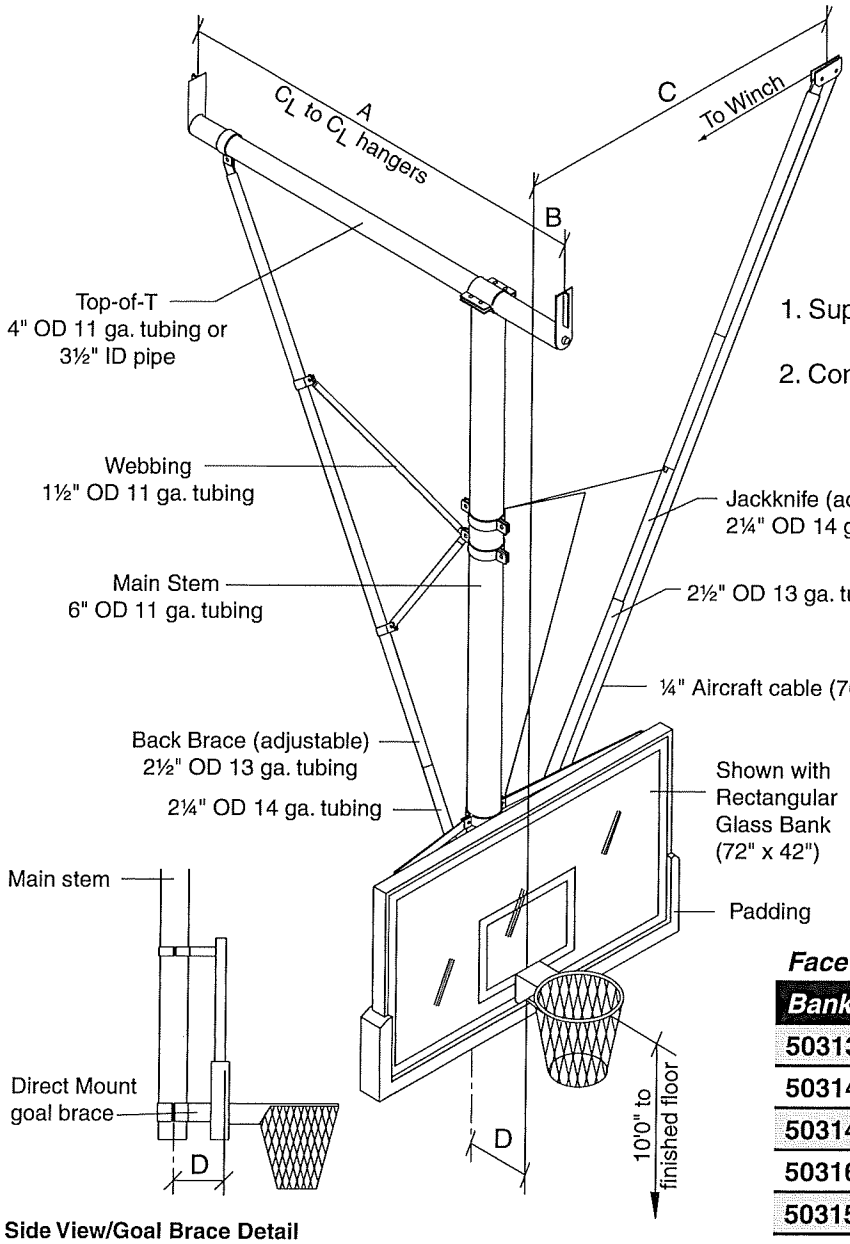
For more information on this product visit:
draperinc.com/gymequipment/volleyball.aspx

DRAPER

Draper, Inc. | 411 S. Pearl St. Spiceland, IN 47385
draperinc.com | 765.987.7999 | 800.238.7999
© 2019 All Rights Reserved | Form: GYM VB PVS 19

EZ Fold® TBS-26-B

Basketball Backstop— Ceiling-Suspended, Side-Folding - with Rear Brace



1. Superstructure supplied for existing conditions.
2. Contact Draper for Dimensions A B & C

Side View/Goal Brace Detail
"Goal Brace" feature attaches directly behind goal mounting plate and directly to main stem of backstop, which eliminates strain on backboards.

Face of bank to CL of stem

Bank No. & Type	*Dim C*
503136 - 72" x 42" Rectangular Glass	11 ¼"
503140 - 72" x 42" Rectangular Wood	10 9/16"
503145 - 72" x 42" Rect. Fiberglass	10 ½"
503167 - 72" x 42" Rectangular Steel	10 ½"
503150 - Fan Glass	11"
503148 - Fan Fiberglass	10 ½"
503143 - Fan Aluminum	10 3/16"

Draper offers a 25-year limited warranty on the EZ Fold basketball backstop structure. No other basketball backstop manufacturer offers you this protection. For a copy of the EZ Fold backstop warranty in its entirety, contact Draper, Inc.

411 S. Pearl St., Spiceland, IN 47385 USA ▮ 765-987-7999
www.draperinc.com ▮ fax 765-987-7142

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PROJECT: _____

_____

ARCHITECT: _____

CONTRACTOR: _____

SUPPLIER: _____

DATE: _____ REVISED: _____

EZ Fold® TBS-26-B

Basketball Backstop—Ceiling-Suspended, Side-Folding - with Rear Brace

Specifications—EZ Fold TBS-26-B

Ceiling-Suspended, Side-Folding Backstop (For All Heights)

Product Description

Basketball backstop shall be the EZ FOLD Model TBS-26B, ceiling-suspended, side-folding by Draper, Inc. of Spiceland, IN.

Backstops shall be a bolt-together main frame constructed from steel mechanical tubing to form a rigid tetrahedral "T" design. The main stem (center strut) shall be 6" OD 11-gauge steel tubing, the top of the "T" shall be 4" OD 11-gauge steel tubing or 3½" I.D. pipe (above 32'5"). The rear brace shall be constructed of 2½" OD 13-gauge (outer) steel tubing and 2¼" OD 14-gauge (inner) steel tubing. Main frame shall include 2 or 4, 1¼" OD 11-gauge steel tubing members (webbing) X bracing the rear brace to main stem. The main stem shall be of sufficient length to allow plus or minus 6" height adjustment of either fan or rectangular banks.

The folding side brace shall be jackknife type, fully adjustable, self-locking in the down position and constructed of 2½" OD 13-gauge (outer) steel tubing and 2¼" OD 14-gauge (inner) steel tubing.

The backstop shall be supported from 4" OD 11-gauge steel mechanical tubing (as shown on plans) anchored to roof structure by means of heavy steel support hangers. Superstructure tubes shall be reinforced with bridging and/or bracing when truss centers exceed 8'0".

Pivot or hinge joint (pin height) for folding shall not exceed 15" from roof structure except when required by architect for coordination with other trades. The main backstop frame shall pivot on 1¼" minimum solid steel shaft secured in a milled bearing hole in ½" minimum steel plate hangers to insure accurate positioning of bank.

The bank shall be attached to the 6" OD main stem by heavy-duty bank hangers. Hangers shall be constructed of 2¼" OD 14-gauge steel tubing and ¼" x 2" flat steel plate with slotted holes for lateral adjustment. All glass banks shall have one upper bank hanger and include a goal brace which attaches directly to the goal mounting plate and directly to the 6" main stem of the backstop to eliminate any strain on the bank and help prevent glass breakage. This direct mount feature shall conform to NCAA recommendation No. 5-F (dated Mar. 1982) which states that the design of the unit shall transfer the load on the goal directly to the backboard support so as to minimize stress to the glass backboard.

Backstop is raised or lowered by a ¼" (6.35 mm) aircraft cable, certified minimum break strength of 7,000 pounds (3178 kg), operating over aluminum alloy sheaves with bronze oilite bearings that do not require lubrication.

Backstop shall have a black or white powder coat finish. Other colors optionally available: contact Draper for details.

Operation: Backstop shall be operated by 503085 motorized winch or 503086 manually operated winch (on units up to 28'). For complete specifications, see separate sheets.

Options

Backstop can be provided with any of several different styles of backboards, goals and padding. Specify types desired. See separate sheets.

Accessories

Smart Gym Control System. For group control of Basketball Backstops with Electric Winches, Electric Divider Curtains, Electric Height Adjusters and other Auxiliary Devices. For complete specifications, see separate sheet.

503060 EZ Power Wireless Remote Control. For remote control operation of electric winch. For complete specifications, see separate sheet.

503029 Posilok™—Safety belt to automatically lock basketball backstop in position due to a sudden surge of speed created by a possible malfunction of the hoisting apparatus. For complete specifications, see separate sheet.

503049— Portable Operator—To operate manual winch with heavy-duty electric drill. For complete specifications, see separate sheet.

Height Adjusters (see separate sheets):

503093— For motorized 8'-10' Height Adjustment of rectangular bank.

503097— For motorized 8'-10' Height Adjustment of fan bank.

503095— For motorized 8'-10' Height Adjustment of rectangular bank with wireless remote control.

503098— For motorized 8'-10' Height Adjustment of fan bank with wireless remote control.

503096— For motorized 8'-10' Height Adjustment of rectangular bank with EZ Stick Power Wand.

503099— For motorized 8'-10' Height Adjustment of fan bank with EZ Stick Power Wand.

503092— For manual 8'-10' height adjustment of rectangular backboards.

503094— For manual 8'-10' height adjustment of fan backboards.

503003—Portable Height Adjuster Operator—Speed controlled battery powered operator for manual height adjusters. For complete specifications, see separate sheet.

LEED® Submittal Information

Credit	Measure	
MRc4 – Recycled Content	Post Consumer Average 51.21%	Post Industrial 0%
MRc5 – Regional Materials	Raw materials are commodity items from multiple sources so extraction point cannot be determined. Final Manufacturing/Assembly in Spiceland, IN 47385.	

Downloadable 3-part specifications are available at www.draperinc.com.

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

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

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

Deputy Division Manager
Kathleen M. Cryan

Principal Engineer 2
John S. Fahrney, P.E.
Janet Schmidt, P.E.

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

Financial Manager
Steven B. Danner-Rivers

JUNE 25, 2024

ADDENDUM NO. 04

CONTRACT NO. 9502
WARNER PARK COMMUNITY RECREATION CENTER EXPANSION

This addendum is issued to modify, explain or correct the original Drawings, Specifications, or Contract Documents marked as ***Warner Park Community Recreation Center Expansion, City of Madison, Contract #9502, as issued on May 17, 2024*** and is hereby made a part of the contract documents.

Please attach these Addendum documents to the Bid Proposal document, Volume 1 Architectural Drawings (Exhibit A), Volume 2 MEP Drawings (Exhibit B), and Project Manual (Exhibit C) in your possession.

BID PROPOSAL DOCUMENT

1) Section 109.7: TIME OF COMPLETION updated to remove "on or about August 12, 2024" and replace with "by early September 2024."
2) Section 109.7: TIME OF COMPLETION updated to remove "December 31, 2025" and replace with "January 16, 2026."

CONTRACT

None

VOLUME 1 ARCHITECTURAL DRAWINGS (EXHIBIT A)

1) A700 – Finish Plans & Schedule
   a) Finish Key: Add notes for SS-1 and SS-2. Add SS-3.
2) A800 – Enlarged Plans & Interior Elevations
   a) Detail 2: Revise room callout. Revise Notes callout and add Note #2.
3) A810 – Interior Details
   a) Detail 8: Revise note at reinstallation of masonry courses above opening.
4) S201 – Roof Framing Plan – Expansion
   a) Added new lintel in existing wall on Grid E13.5 as "W8x21 + ¼"x0'-7" BOTTOM PL LINTEL (REMOVE EXISTING BRICK PER ARCH)".
   b) Added new lintel in existing wall on Grid E15 as "W12x19+5/16"x1'-7" BOTTOM PL W/ ¼" GUSSETS @ 24" OC LINTEL".

VOLUME 2 MEP DRAWINGS (EXHIBIT B)

None

PROJECT MANUAL SPECIFICATIONS (EXHIBIT C)

1) Section 08 80 00 – Glazing

a) Add Page 2, Line 50:
   i) f. Advanced Glazings, Ltd.
b) Revise Page 5, Line 34:
   i) a. SHGC: 0.34 max.
c) Revise Page 5, Line 35:
   i) b. VLT: 0.51 min.

CONTRACTOR QUESTIONS

1) Question: The spaces in room 105B and 111A will require custom sinks and not the specified L-2 as L-2 is a wall hung lavatory that measures 30" x 22. The dimensions in detail 2/A800 do not exactly match the specified L-1 and L-2. I am assuming +/- a few inches will be acceptable and that those sinks do not need to be custom.
   Answer: Sinks are to be furnished by the plumbing contractor with dimensions as indicated on Detail 2/A800.
2) Question: The specifications list the approved manufacturers as Cardinal Glass Industries, Guardian Glass, Pilkington North America, Saint-Gobain Glass, and Viracon. However, glass type GL-2 is based on Solera S R5+Aerogel, manufactured by Advanced Glazings Ltd. (not an approved manufacturer). The approved manufacturers are stating that the Solera S R5+Aerogel is a proprietary product that they do not know the makeup of and therefore cannot provide a comparable product to quote. Is there a basis of design from one of the approve manufacturers that can be used instead, or should Advanced Glazings Ltd. be added as an approved manufacturer?
   Answer: Advanced Glazings, Ltd. should be added as an approved manufacturer. The SHGC and VLT% are acceptable, but the U-factor should be a maximum of 0.20 as specified.

ACCEPTABLE EQUIVALENTS

None

OTHER

None

Please acknowledge this addendum on page E1 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, please contact:

Drew Kemp-Baird, RA
Engberg Anderson
PH: (608) 250-0100
Email: drewkb@engberganderson.com

Maria Delestre
PH: (608) 243-5891
Email: mdelestre@cityofmadison.com

Amy Scanlon
PH: (608) 267-0743
Email: ascanlon@cityofmadison.com

for

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

The General Contractor shall be responsible for the sequencing of the project.

The Contractor shall review all other specifications within the construction documents and Additional Reference Documents for other requirements and coordination of work associated with this contract.

Periodically there will be request for tours of the park shelter during construction by Engineering or Parks Division staff. Generally, the tours will be scheduled on one day per week (typically Friday) from 1-2 PM. Contractor shall accommodate these tour requests.

SECTION 107.2: PROTECTION AND RESTORATION OF PROPERTY
The Contractor shall be responsible for the protection and restoration of all new and existing work according to Specification 01 76 00 – PROTECTING INSTALLED CONSTRUCTION.

SECTION 108.2: PERMITS AND LICENSING
The Contractor shall be required to apply and obtain all permits or licenses that may be required by these contract documents regardless of ordinance, statute, or other regulatory requirement. The City of Madison will pay for all City of Madison required Permits.

The Contractor shall obtain and pay for permits and private utility installation fees for this project unless otherwise provided. These costs will include, but may not be limited to, gas service/meter set, electric, telephone, and water service/meter set.

The Contractor shall be responsible for compliance with all required permits including the City of Madison Erosion Control permit and the Wisconsin Department of Natural Resources WRAPP Storm Water NOI permit.

The Contractor shall be responsible for any fines issued due to non-compliance with the project permits.

SECTION 109.7: TIME OF COMPLETION
Work shall only begin after the contract is completely executed and the start work letter is received. It is anticipated that the start work letter shall be issued ~~on or about August 12, 2024~~ by early September 2024 and the pre-construction meeting and site mobilization would follow.

The Contractor shall have reached a level of Substantial Completion/Certificate of Occupancy **NO LATER THAN ~~December 31, 2025~~ January 16, 2026.** This shall include all minor punch list items, final inspections and all final copies of contract deliverables completed with the appropriate agency. All long lead time materials shall be ordered as needed in advance of onsite construction work in order to maintain the contracted schedule. The Contractor shall notify the City Construction Manager four (4) weeks in advance of the selected onsite construction start date.

The Contractor shall review Specifications 01 29 76 Progress Payment Procedures and 01 77 00 Closeout Procedures and be completely familiar with the progress payment milestones and definitions related to construction closeout and contract closeout.

SECTION 109.9: LIQUIDATED DAMAGES
The fixed, agreed upon, liquidated damages for failure to complete all work within the Contract Time, shall be calculated in accordance with Article 109 of Standard Specifications, per working day.

FINISH SCHEDULE

RM #	ROOM NAME	FLOORS	BASE	WALL FINISH NORTH	WALL FINISH EAST	WALL FINISH SOUTH	WALL FINISH WEST	CEILING	REMARKS
		FINISH	FINISH	FINISH	FINISH	FINISH	FINISH	FINISH	
102	EXERCISE	RF-1/RF-2	RF-1/RF-2	PT-1/PT-2	PT-7	EXPT-7	PT-5	GTS/EX	PAINT EXPOSED STRUCTURE AND UTILITIES TO MATCH EXISTING
103	OFFICE	RF-2	RB-1	PT-1	PT-1	PT-1	PT-1	GTS/EX	PAINT EXPOSED STRUCTURE AND UTILITIES TO MATCH EXISTING
105A	CORRIDOR	EXCPT-3/CPT-4	SEE PLAN	EXPT-4/DP-1	NA	PT-4/DP-1	NA	PLYWP-1	
105B	COMFORT	CPT-3	RB-1	PT-1	PT-6	PT-1	PT-1	GWB/PT-10	
105C	PRE-FUNCTION	TZ-1/TZ-2/TZ-3	SEE PLAN	SEE PLAN	SEE PLAN	SEE PLAN	DP-1/PT-2/PT-6	GTS/PT-11	BRICK PATTERN INSTALLATION/50% OF COLOR MIX
105D	GYMNASIUM	RSF-1/RSF-2	RB-1	CMU-1	CMU-1	CMU-1	CMU-1	GTS/PT-11	BRICK PATTERN INSTALLATION
105E	STORAGE	SC-1	RB-1	PT-1	PT-1	PT-1	PT-1	GTS	PAINT HEADWALLS ABOVE STOREFRONT TO MATCH METAL DECK
105F	MECHANICAL	SC-1	RB-1	PT-1	PT-1	PT-1	PT-1	GTS	
110	STORAGE	CPT-1	RB-1	PT-1	PT-1	PT-1	PT-1	GWB/PT-9	
111	CORRIDOR	CPT-1/CPT-2	RB-1	PT-2	PT-1	PT-3	PT-2	GWB/PT-10	
111A	LOCKER ROOM	CPT-1/CPT-2	RB-1	PT-3/PT-1	PT-3/PT-1	PT-1	PT-1/PT-3/CT-4	GWB/PT-9	SEE ELEVATIONS
111B	SHOWER	CT-3	CTB-1	SS-1	SS-1/PT-1	PT-1	SS-1/PT-1	GWB/PT-9	SEE ELEVATIONS
111C	WOMENS	CT-1	CTB-1	CT-3	PT-1	CT-3/CT-4	CT-3	GWB/PT-9	SEE ELEVATIONS
111D	MENS	CT-1	CTB-1	CT-3/CT-4	PT-1	CT-3	CT-3	GWB/PT-9	SEE ELEVATIONS
111F	ADA TOILET	CT-1	CTB-1	PT-1	CT-3/CT-4	CT-3	PT-1	GWB/PT-9	SEE ELEVATIONS
111G	ADA TOILET	CT-1	CTB-1	PT-1	PT-1	CT-3	CT-3/CT-4	GWB/PT-9	SEE ELEVATIONS

GENERAL NOTES - FINISHES

- CPT-3 FLOOR FINISH
- CPT-4 FLOOR FINISH
- TZ-1 FLOOR FINISH
- TZ-2 FLOOR FINISH
- TZ-3 FLOOR FINISH

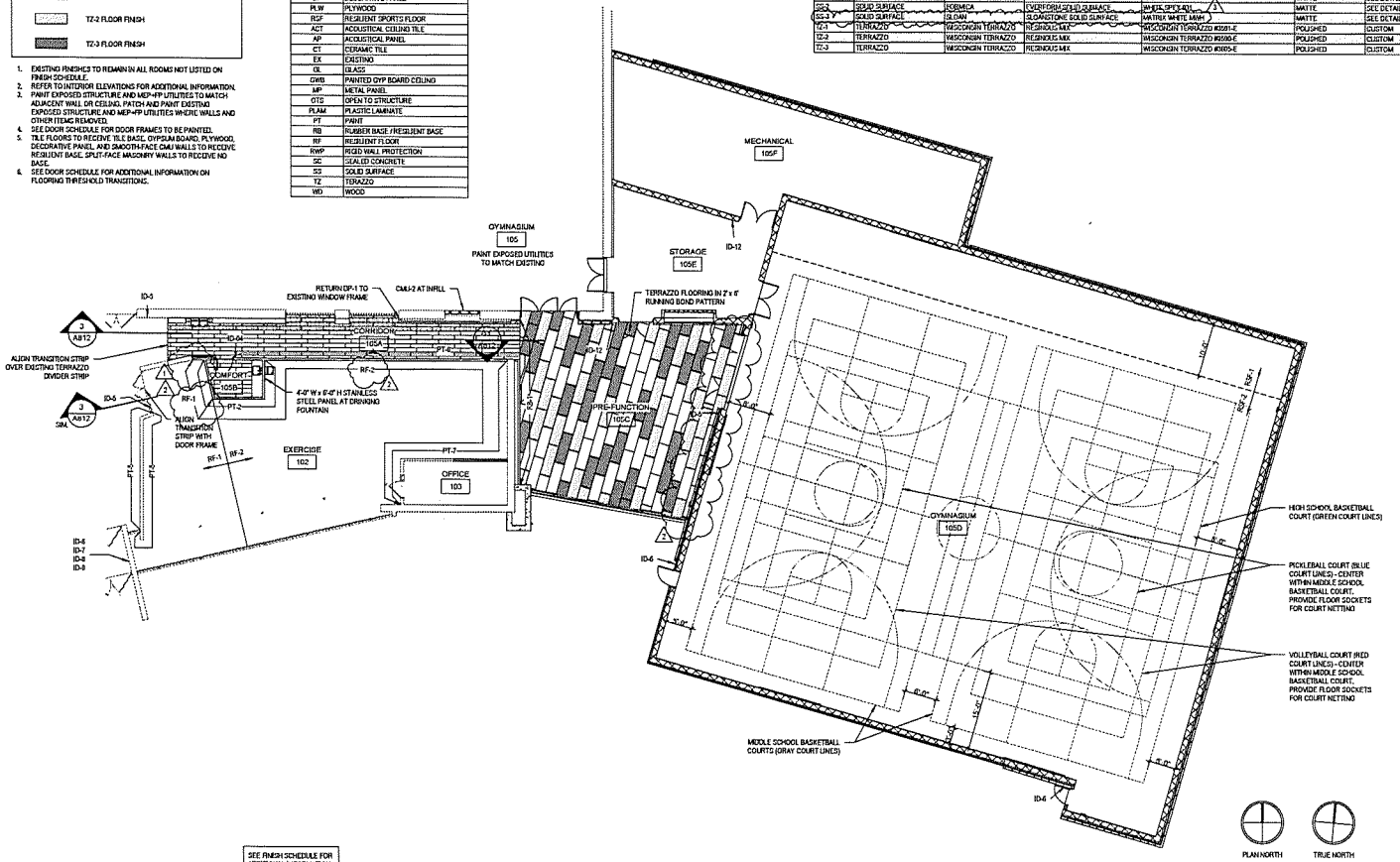
1. EXISTING FINISHES TO REMAIN IN ALL ROOMS NOT LISTED ON FINISH SCHEDULE.
2. REFER TO INTERIOR ELEVATIONS FOR ADDITIONAL INFORMATION.
3. PAINT EXPOSED STRUCTURE AND MEP+FP UTILITIES TO MATCH ADJACENT WALL OR CEILING. PATCH AND PAINT EXISTING EXPOSED STRUCTURE AND MEP+FP UTILITIES WHERE WALLS AND OTHER ITEMS REMOVED.
4. SEE DOOR SCHEDULE FOR DOOR FRAMES TO BE PAINTED.
5. TILE FLOORS TO RECEIVE TILE BASE, GYPSUM BOARD, PLYWOOD, DECORATIVE PANEL, AND SMOOTH-FACE CMU WALLS TO RECEIVE RESILIENT BASE. SPLIT-FACE MASONRY WALLS TO RECEIVE NO BASE.
6. SEE DOOR SCHEDULE FOR ADDITIONAL INFORMATION ON FLOORING THRESHOLD TRANSITIONS.

ABBREVIATIONS - FINISH

FINISH TAG	FINISH DESCRIPTION
CMU-1	CMU
CMU-2	CMU
CPT	CARPET TILE
DP	DECORATIVE PANEL
PLW	PLYWOOD
RSF	RESILIENT SPORTS FLOOR
ACT	ACOUSTICAL CEILING TILE
AP	ACOUSTICAL PANEL
CT	CERAMIC TILE
EX	EXISTING
GL	GLASS
GWB	PAINTED GYP BOARD CEILING
MP	METAL PANEL
GTS	OPEN TO STRUCTURE
PLAM	PLASTIC LAMINATE
PT	PAINT
RB	RUBBER BASE / RESILIENT BASE
RF	RESILIENT FLOOR
RWP	RIGID WALL PROTECTION
SC	SEALED CONCRETE
SS	SOLID SURFACE
TZ	TERAZZO
WD	WOOD

FINISH KEY

TAG	PRODUCT	MANUFACTURER	COLLECTION/STYLE	COLOR	FINISH	SIZE	NOTES
AP-1	ACOUSTIC PANEL	ARKTURA	VAPOR TRAIL	ARKTURA WHITE	MATTE	24" X 48"	
CMU-1	CONCRETE MASONRY UNIT	COUNTY MATERIALS CORP.	SPLITFACE/SMOOTHFACE	SANDSTONE 18-314C	SMOOTH	8" X 16"	
CMU-2	CONCRETE MASONRY UNIT	COUNTY MATERIALS CORP.	PREMIER ULTRA BURNISHED	NORTH STAR 63-ZZZB	SMOOTH	8" X 16"	
CPT-1	CARPET TILE	FORBO	FLOTEX/SEAGRASS	ALMOND 111002	STANDARD	9.5"X 39.4"	BRICK PATTERN INSTALLATION/50% OF COLOR MIX
CPT-2	CARPET TILE	FORBO	FLOTEX/SEAGRASS	CHARCOAL 111004	STANDARD	9.5"X 39.4"	BRICK PATTERN INSTALLATION/50% OF COLOR MIX
CPT-3	CARPET TILE	FORBO	FLOTEX/SEAGRASS	WALNUT 111005	STANDARD	9.5"X 39.4"	BRICK PATTERN INSTALLATION
CPT-4	CARPET TILE	FORBO	FLOTEX/SEAGRASS	LIQUORICE 111006	STANDARD	9.5"X 39.4"	BRICK PATTERN INSTALLATION
CT-1	CERAMIC TILE	DAL TILE	FABRIC ART/MODERN LINEAR	TAUPE M.52	MATTE	12" X 24"	
CT-2	CERAMIC TILE	DAL TILE	FABRIC ART/MODERN TEXTILE	TAUPE MT52	MATTE	1" X 3" MOSAIC	
CT-3	CERAMIC TILE	DAL TILE	FABRIQUE	BLANC LINEN P685	MATTE	12" X 24"	
CT-4	CERAMIC TILE	CAESAR CERAMICHE	COCOONCASAONCE TILE	OLEE	MATTE	8" X 48"	
CTB-1	CERAMIC TILE BASE	DAL TILE	FABRIC ART/MODERN LINEAR	TAUPE M.52	MATTE	6" X 12"	
DP-1	DECORATIVE PANEL	ACROVYN	ACROVYN BY DESIGN METALLICS	MEDIUM BRONZE #1817.2	METALLIC		
PT-1	PAINT	BENJAMIN MOORE	WALL PAINT	CLOUD WHITE 967	SEMI-GLOSS	-	
PT-2	PAINT	BENJAMIN MOORE	ACCENT PAINT	EDGECOMB GRAY HC-173	SEMI-GLOSS	-	
PT-3	PAINT	SHERWIN WILLIAMS	ACCENT PAINT	REFUGE SW6228	SEMI-GLOSS	-	
PT-4	PAINT	SHERWIN WILLIAMS	ACCENT PAINT	CLIMB GRAY SW9024	EGGSHELL	-	
PT-5	PAINT	SHERWIN WILLIAMS	ACCENT PAINT	STILL WATER SW6223	EGGSHELL	-	
PT-6	PAINT	SHERWIN WILLIAMS	ACCENT PAINT	INTERESTING AQUA SW6230	EGGSHELL	-	
PT-7	PAINT	BENJAMIN MOORE	ACCENT PAINT	GRENADA GREEN 432	EGGSHELL	-	
PT-8	PAINT	BENJAMIN MOORE	DOOR FRAME PAINT	DEVONSHIRE GREEN 1469	SEMI-GLOSS	-	
PT-9	PAINT	SHERWIN WILLIAMS	CEILING PAINT	HIGH REFLECTIVE WHITE SW7757	SEMI-GLOSS	-	
PT-10	PAINT	SHERWIN WILLIAMS	CEILING PAINT	HIGH REFLECTIVE WHITE SW7757	FLAT	-	
PT-11	PAINT	BENJAMIN MOORE	CEILING PAINT	DUNE WHITE 968	SEMI-GLOSS	-	
RB-1	RESILIENT BASE	TARKETT	THERMOSET RUBBER	BURNT UMBER 63	SOLID	4" H/6H	
RF-1	RESILIENT FLOOR	TARKETT SPORTS	DROPZONE ELITE	DARK GREY D2502	STANDARD	48" W ROLL	24" HIGH W/ EDGE TRIM WHERE INSTALLED AS BASE
RF-2	RESILIENT FLOOR	TARKETT SPORTS	DROPZONE ELITE	MED GREY D2504	STANDARD	48" W ROLL	24" HIGH W/ EDGE TRIM WHERE INSTALLED AS BASE
RSF-1	RESILIENT SPORTS FLOOR	TARKETT SPORTS	OMNISPORTS HPLT	GOLDEN MAPLE	STANDARD	66" W ROLL	CLASS 1 SYSTEM
RSF-2	RESILIENT SPORTS FLOOR	TARKETT SPORTS	OMNISPORTS ACTIVE+	GOLDEN MAPLE	STANDARD	66" W ROLL	CLASS 2 SYSTEM
SC-1	SEALED CONCRETE	-	-	-	-	-	-
SS-1	SOLID SURFACE	FORMICA	EVERFORM SOLID SURFACE	FROST 103	MATTE	SEE DETAILS	SHOWER WALLS
SS-2	SOLID SURFACE	FORMICA	EVERFORM SOLID SURFACE	WHITE SPICE 401	MATTE	SEE DETAILS	SILLS AND BENCHES
SS-3	SOLID SURFACE	SLOAN	SLOANSTONE SOLID SURFACE	MATRIX WHITE MWH	MATTE	SEE DETAILS	SLOAN SINKS
TZ-1	TERRAZZO	WISCONSIN TERRAZZO	RESINOUS MIX	WISCONSIN TERRAZZO #3501-E	POLISHED	CUSTOM	
TZ-2	TERRAZZO	WISCONSIN TERRAZZO	RESINOUS MIX	WISCONSIN TERRAZZO #3500-E	POLISHED	CUSTOM	
TZ-3	TERRAZZO	WISCONSIN TERRAZZO	RESINOUS MIX	WISCONSIN TERRAZZO #3505-E	POLISHED	CUSTOM	



SEE FINISH SCHEDULE FOR ADDITIONAL INFORMATION

1 EXPANSION FINISH PLAN
SCALE: 3/32" = 1'-0"

Engberg Anderson ARCHITECTS
MILWAUKEE | MADISON | CHICAGO

REVISION

WARNER PARK COMMUNITY RECREATION CENTER EXPANSION

1625 NORTHPORT DRIVE
MADISON, WI 53704

CITY OF MADISON PARKS DIVISION
330 EAST LAKESIDE STREET
MADISON, WI 53715

PROJECT NUMBER 223471.00

ISSUED FOR:
BID SET 5/16/2024

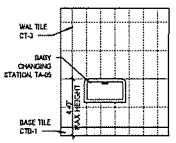
REVISION FOR:

NO.	DESCRIPTION	DATE
1	ADDENDUM #2	6/14/2024
2	ADDENDUM #3	6/18/2024
3	ADDENDUM #4	6/24/2024

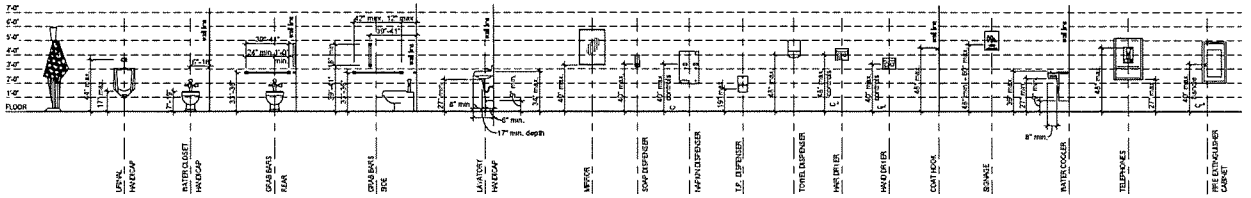
DRAWN BY DKB
CHECKED BY JWH

FINISH PLANS & SCHEDULE

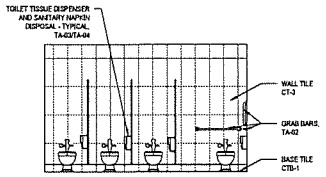
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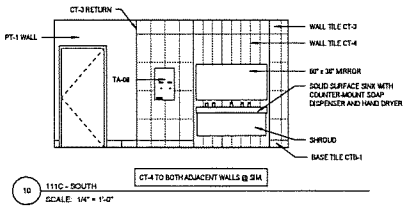
14 111F - WEST
SCALE: 1/4" = 1'-0"



TYPICAL MOUNTING HEIGHTS LEGEND (ANSI)

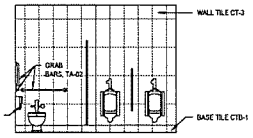


9 111C - NORTH
SCALE: 1/4" = 1'-0"

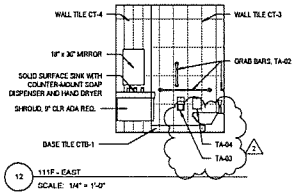


CT-4 TO BOTH ADJACENT WALLS @ 3'-4"

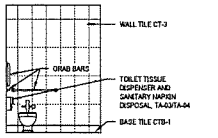
10 111C - SOUTH
SCALE: 1/4" = 1'-0"



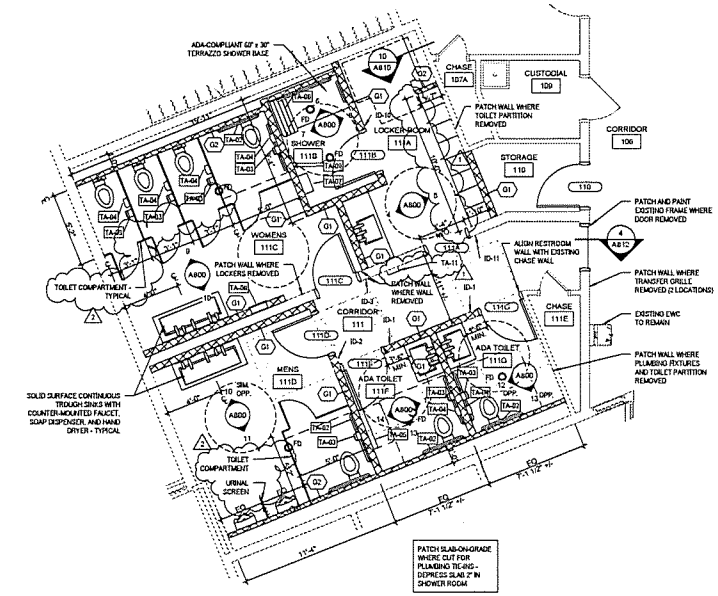
11 111D - SOUTH
SCALE: 1/4" = 1'-0"



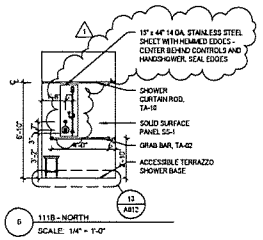
12 111F - EAST
SCALE: 1/4" = 1'-0"



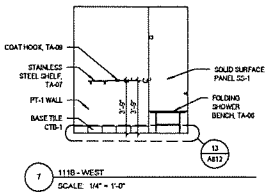
13 111F - SOUTH
SCALE: 1/4" = 1'-0"



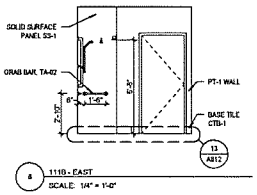
1 ENLARGED PLAN - RESTROOMS
SCALE: 1/4" = 1'-0"



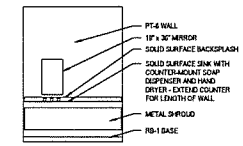
6 111B - NORTH
SCALE: 1/4" = 1'-0"



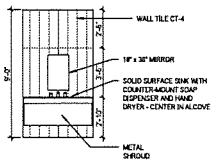
7 111B - WEST
SCALE: 1/4" = 1'-0"



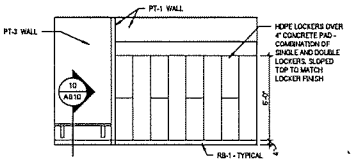
8 111D - EAST
SCALE: 1/4" = 1'-0"



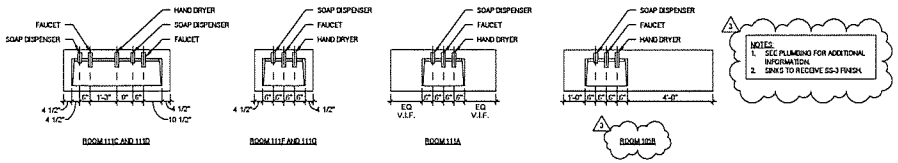
3 105B - EAST
SCALE: 1/4" = 1'-0"



4 111A - WEST
SCALE: 1/4" = 1'-0"



5 111A - EAST
SCALE: 1/4" = 1'-0"



2 SINK DETAILS
SCALE: 3/8" = 1'-0"

Engberg Anderson ARCHITECTS

MILWAUKEE | MADISON | CHICAGO

Revision

WARNER PARK COMMUNITY RECREATION CENTER EXPANSION

1625 NORTHPORT DRIVE
MADISON, WI 53704

CITY OF MADISON PARKS DIVISION
330 EAST LAKESIDE STREET
MADISON, WI 53715

PROJECT NUMBER 223471.00

ISSUED FOR:

BID SET	5/16/2024

REVISION FOR:

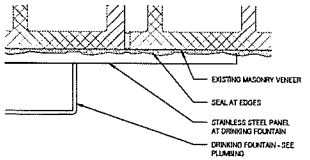
NO.	DESCRIPTION	DATE
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DRAWN BY DKB

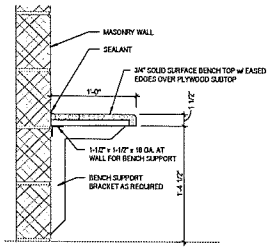
CHECKED BY JWH

ENLARGED PLANS & INTERIOR ELEVATIONS

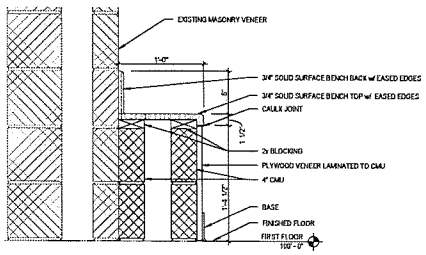
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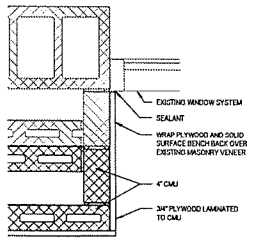
9 CORRIDOR STAINLESS STEEL
SCALE: 3" = 1'-0"



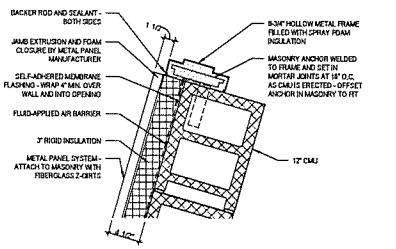
10 LOCKER ROOM BENCH
SCALE: 1 1/2" = 1'-0"



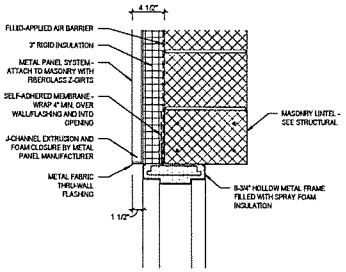
11 CORRIDOR BENCH SECTION
SCALE: 1 1/2" = 1'-0"



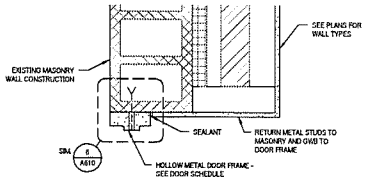
12 CORRIDOR BENCH JAMB
SCALE: 1 1/2" = 1'-0"



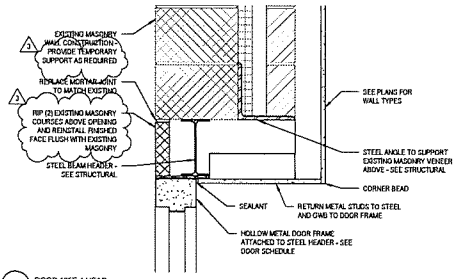
5 DOOR 105D-3 JAMB
SCALE: 1 1/2" = 1'-0"



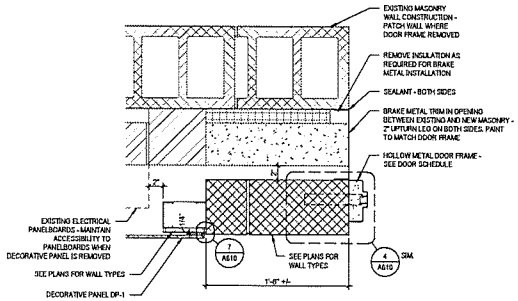
6 DOOR 105D-3 HEAD
SCALE: 1 1/2" = 1'-0"



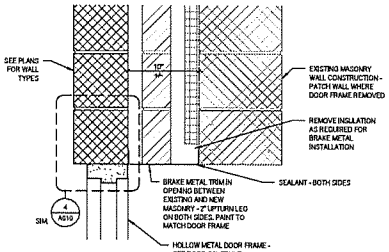
7 DOOR 105E-1 JAMB
SCALE: 1 1/2" = 1'-0"



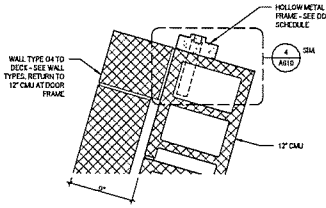
8 DOOR 105E-1 HEAD
SCALE: 1 1/2" = 1'-0"



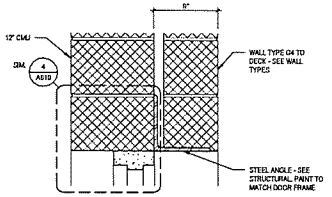
1 105-1 & 105-2 JAMB
SCALE: 1 1/2" = 1'-0"



2 105-1 & 105-2 HEAD
SCALE: 1 1/2" = 1'-0"



3 105D-1 & 105D-2 JAMB
SCALE: 1 1/2" = 1'-0"



4 105D-1 & 105D-2 HEAD
SCALE: 1 1/2" = 1'-0"

Engberg Anderson ARCHITECTS
MILWAUKEE | MADISON | CHICAGO

REVISION

WARNER PARK
COMMUNITY RECREATION
CENTER EXPANSION

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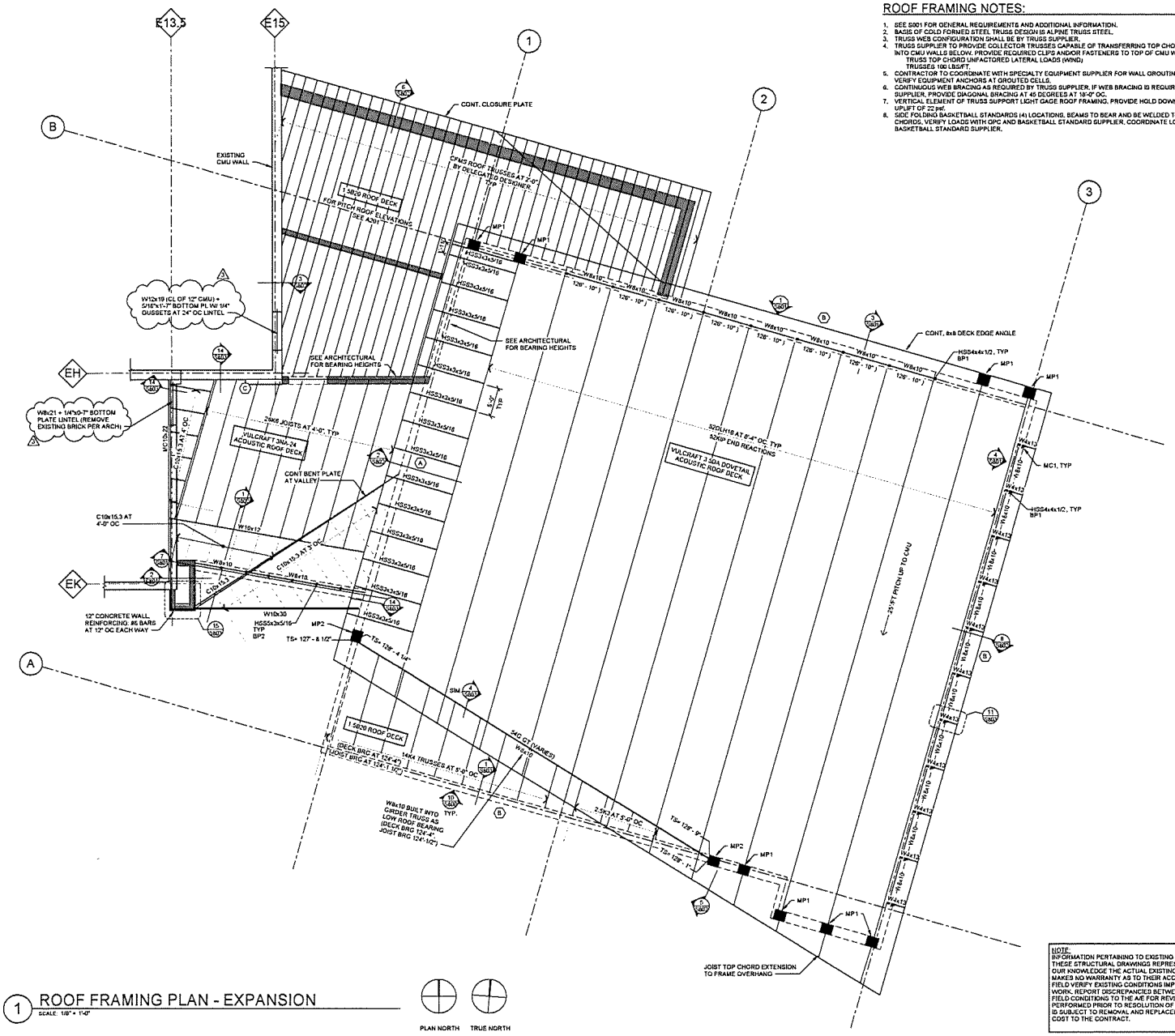
REVISION FOR:

NO.	DESCRIPTION	DATE
3	ADDENDUM #4	6/24/2024

DRAWN BY DKB
CHECKED BY JWH

INTERIOR DETAILS

A810



ROOF FRAMING NOTES:

1. SEE S001 FOR GENERAL REQUIREMENTS AND ADDITIONAL INFORMATION.
2. BASIS OF COLD FORMED STEEL TRUSS DESIGN IS ALPINE TRUSS STEEL.
3. TRUSS WEB CONFIGURATION SHALL BE BY TRUSS SUPPLIER.
4. TRUSS SUPPLIER TO PROVIDE COLLECTOR TRUSSES CAPABLE OF TRANSFERRING TOP CHORD LATERAL LOADS INTO CMU WALLS BELOW. PROVIDE REQUIRED CLIPS AND/OR FASTENERS TO TOP OF CMU WALL/LEDGER TRUSS TOP CHORD UNFACTORED LATERAL LOADS (WIND)
   TRUSSES: 100 LBS/FT.
5. CONTRACTOR TO COORDINATE WITH SPECIALTY EQUIPMENT SUPPLIER FOR WALL GROUTING REQUIREMENTS. VERIFY EQUIPMENT ANCHORS AT GROUTED CELLS.
6. CONTINUOUS WEB BRACING AS REQUIRED BY TRUSS SUPPLIER. IF WEB BRACING IS REQUIRED BY THE TRUSS SUPPLIER, PROVIDE DIAGONAL BRACING AT 45 DEGREES AT 18'-0" OC.
7. VERTICAL ELEMENT OF TRUSS SUPPORT LIGHT GAGE ROOF FRAMING. PROVIDE HOLD DOWN/STRAP TO RESIST UPLIFT OF 22 psf.
8. SIDE FOLDING BASKETBALL STANDARDS (4) LOCATIONS. BEAMS TO BEAR AND BE WELDED TO JOISTS BOTTOM CHORDS. VERIFY LOADS WITH OPC AND BASKETBALL STANDARD SUPPLIER. COORDINATE LOCATIONS WITH BASKETBALL STANDARD SUPPLIER.

1 ROOF FRAMING PLAN - EXPANSION
SCALE: 1/8" = 1'-0"

PLAN NORTH TRUE NORTH

NOTE:
INFORMATION PERTAINING TO EXISTING CONDITIONS GIVEN ON THESE STRUCTURAL DRAWINGS REPRESENTS TO THE BEST OF OUR KNOWLEDGE THE ACTUAL EXISTING FIELD CONDITIONS. GTE MAKES NO WARRANTY AS TO THEIR ACCURACY. CONTRACTOR TO FIELD VERIFY EXISTING CONDITIONS IMPERATIVE TO THE NEW WORK. REPORT DISCREPANCIES BETWEEN THE DRAWINGS AND FIELD CONDITIONS TO THE A/E FOR REVIEW. ANY WORK PERFORMED PRIOR TO RESOLUTION OF DISCREPANCIES BY THE A/E IS SUBJECT TO REMOVAL AND REPLACEMENT AT NO ADDITIONAL COST TO THE CONTRACT.

Engberg Anderson ARCHITECTS
MILWAUKEE | MADISON | CHICAGO

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REVISION

WARNER PARK COMMUNITY RECREATION CENTER EXPANSION

1625 NORTHPORT DRIVE
MADISON, WI 53704

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330 EAST LAKESIDE STREET
MADISON, WI 53715

PROJECT NUMBER 223471.00

ISSUED FOR:

BID SET	5/16/2024

REVISION FOR:

NO.	DESCRIPTION	DATE
1	ADDENDUM 2	06/14/2024
2	ADDENDUM 3	06/20/2024
3	ADDENDUM 4	06/24/2024

DRAWN BY AWB

CHECKED BY Checker

ROOF FRAMING PLAN - EXPANSION

S201

FINISH SCHEDULE

RM #	ROOM NAME	FLOORS FINISH	BASE FINISH	WALL FINISH NORTH FINISH	WALL FINISH EAST FINISH	WALL FINISH SOUTH FINISH	WALL FINISH WEST FINISH	CEILING FINISH	REMARKS
102	EXERCISE	RF-1/RF-2	RB-1	PT-1/PT-2	PT-7	EXPT-7	PT-5	OTS/EX	PAINT EXPOSED STRUCTURE AND UTILITIES TO MATCH EXISTING
103	OFFICE	RF-2	RB-1	PT-1	PT-1	PT-1	PT-1	OTS/EX	PAINT EXPOSED STRUCTURE AND UTILITIES TO MATCH EXISTING
105A	CORRIDOR	EXCPT-3/CPT-4	SEE PLAN	EXPT-4/DP-1	NA	PT-4/DP-1	NA	PLWAP-1	
105B	COMFORT	CPT-3	RB-1	PT-1	PT-6	PT-1	PT-1	GWB/PT-10	
105C	PRE-FUNCTION	TZ-1/TZ-2/TZ-3	SEE PLAN	SEE PLAN	SEE PLAN	SEE PLAN	DP-1/PT-3/PT-6	OTS/PT-11	
105D	GYMNASIUM	RSF-1/RSF-2	RB-1	CMU-1	CMU-1	CMU-1	CMU-1	OTS/PT-11	PAINT HEADWALLS ABOVE STOREFRONT TO MATCH METAL DECK
105E	STORAGE	SC-1	RB-1	PT-1	PT-1	PT-1	PT-1	OTS	
105F	MECHANICAL	SC-1	RB-1	PT-1	PT-1	PT-1	PT-1	OTS	
110	STORAGE	CPT-1	RB-1	PT-1	PT-1	PT-1	PT-1	GWB/PT-9	
111	CORRIDOR	CPT-1/CPT-2	RB-1	PT-2	PT-1	PT-3	PT-2	GWB/PT-10	
111A	LOCKER ROOM	CPT-1/CPT-2	CTB-1	PT-3/PT-1	PT-3/PT-1	PT-1	PT-1/PT-3/CT-4	GWB/PT-9	SEE ELEVATIONS
111B	SHOWER	CT-2	CTB-1	2S-1	2S-1/PT-1	PT-1	2S-1/PT-1	GWB/PT-9	SEE ELEVATIONS
111C	WOMENS	CT-1	CTB-1	CT-2	PT-1	CT-2/CT-4	CT-3	GWB/PT-9	SEE ELEVATIONS
111D	MENS	CT-1	CTB-1	CT-3/CT-4	PT-1	CT-3	CT-3	GWB/PT-9	SEE ELEVATIONS
111F	ADA TOILET	CT-1	CTB-1	PT-1	CT-3/CT-4	CT-3	PT-1	GWB/PT-9	SEE ELEVATIONS
111G	ADA TOILET	CT-1	CTB-1	PT-1	PT-1	CT-3	CT-3/CT-4	GWB/PT-9	SEE ELEVATIONS

GENERAL NOTES - FINISHES

- CPT-3 FLOOR FINISH
- CPT-4 FLOOR FINISH
- TZ-1 FLOOR FINISH
- TZ-2 FLOOR FINISH
- TZ-3 FLOOR FINISH

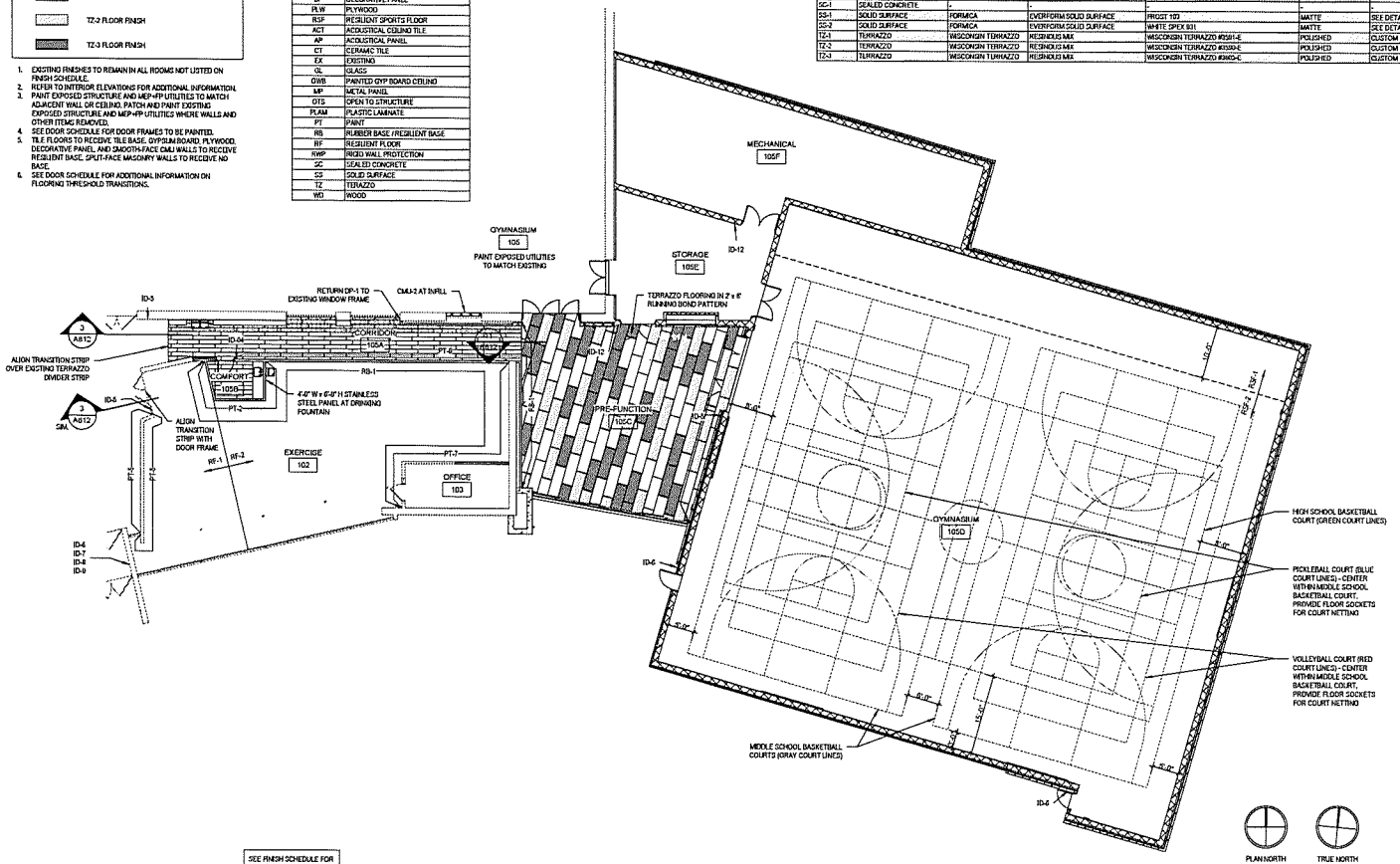
1. EXISTING FINISHES TO REMAIN IN ALL ROOMS NOT LISTED ON FINISH SCHEDULE.
2. REFER TO INTERIOR ELEVATIONS FOR ADDITIONAL INFORMATION.
3. PAINT EXPOSED STRUCTURE AND MEP+FP UTILITIES TO MATCH ADJACENT WALL OR CEILING. PATCH AND PAINT EXISTING EXPOSED STRUCTURE AND MEP+FP UTILITIES WHERE WALLS AND OTHER ITEMS REMOVED.
4. SEE DOOR SCHEDULE FOR DOOR FRAMES TO BE PAINTED.
5. TILE FLOORS TO RECEIVE TILE BASE. GYPSUM BOARD, PLYWOOD, DECORATIVE PANEL, AND SMOOTH-FACE CMU WALLS TO RECEIVE RESILIENT BASE. SPLIT-FACE MASONRY WALLS TO RECEIVE NO BASE.
6. SEE DOOR SCHEDULE FOR ADDITIONAL INFORMATION ON FLOORING THRESHOLD TRANSITIONS.

ABBREVIATIONS - FINISH

FINISH TAG	FINISH DESCRIPTION
CMU-1	CMU
CMU-2	CMU
CPT	CARPET TILE
DP	DECORATIVE PANEL
PLW	PLYWOOD
RSF	RESILIENT SPORTS FLOOR
ACT	ACOUSTICAL CEILING TILE
AP	ACOUSTICAL PANEL
CT	CERAMIC TILE
EX	EXISTING
GL	GLASS
GWB	PAINTED GYP BOARD CEILING
MP	METAL PANEL
OTS	OPEN TO STRUCTURE
PLAM	PLASTIC LAMINATE
PT	PAINT
RB	RUBBER BASE / RESILIENT BASE
RF	RESILIENT FLOOR
RWP	RIGID WALL PROTECTION
SC	SEALED CONCRETE
SS	SOLID SURFACE
TZ	TERAZZO
WD	WOOD

FINISH KEY

TAG	PRODUCT	MANUFACTURER	COLLECTION/STYLE	COLOR	FINISH	SIZE	NOTES
AP-1	ACOUSTIC PANEL	ARKTURA	VAPOR TRAIL	ARKTURA WHITE	MATTE	24" X 48"	
CMU-1	CONCRETE MASONRY UNIT	COUNTY MATERIALS CORP.	SPLITFACE/SMOOTHFACE	SANDSTONE 19-314C	SMOOTH	8" X 16"	
CMU-2	CONCRETE MASONRY UNIT	COUNTY MATERIALS CORP.	PREMIER ULTRA BURNISHED	NORTH STAR 53-2228	SMOOTH	8" X 16"	
CPT-1	CARPET TILE	FORBO	FLOTEX/SEAGRASS	ALMOND 111003	STANDARD	9.5"X 39.4"	BRICK PATTERN INSTALLATION/50% OF COLOR MIX
CPT-2	CARPET TILE	FORBO	FLOTEX/SEAGRASS	CHARCOAL 111004	STANDARD	9.5"X 39.4"	BRICK PATTERN INSTALLATION/50% OF COLOR MIX
CPT-3	CARPET TILE	FORBO	FLOTEX/SEAGRASS	WALNUT 111005	STANDARD	9.5"X 39.4"	BRICK PATTERN INSTALLATION
CPT-4	CARPET TILE	FORBO	FLOTEX/SEAGRASS	LIQUORICE 111006	STANDARD	9.5"X 39.4"	BRICK PATTERN INSTALLATION
CT-1	CERAMIC TILE	DAL TILE	FABRIC ART/MODERN LINEAR	TAUPE M.62	MATTE	12" X 24"	
CT-2	CERAMIC TILE	DAL TILE	FABRIC ART/MODERN TEXTILE	TAUPE MT62	MATTE	1" X 3" MOSAIC	
CT-3	CERAMIC TILE	DAL TILE	FADRIQUE	BLANC LINEN PW85	MATTE	12" X 24"	
CT-4	CERAMIC TILE	CAESAR CERAMICHE	COCOON/CADENCE TILE	CLEE	MATTE	8" X 48"	
CTB-1	CERAMIC TILE BASE	DAL TILE	FABRIC ART/MODERN LINEAR	TAUPE M.62	MATTE	6" X 12"	
DP-1	DECORATIVE PANEL	ACROVYN	ACROVYN BY DESIGN METALLICS	MEDIUM BRONZE #19172	METALLIC	-	
PT-1	PAINT	BENJAMIN MOORE	WALL PAINT	CLOUD WHITE 967	SEMI-GLOSS	-	
PT-2	PAINT	BENJAMIN MOORE	ACCENT PAINT	EDGECOMB GRAY HC-173	SEMI-GLOSS	-	
PT-3	PAINT	SHERWIN WILLIAMS	ACCENT PAINT	REPOSE SW6219	SEMI-GLOSS	-	
PT-4	PAINT	SHERWIN WILLIAMS	ACCENT PAINT	CURIO GRAY SW6024	EGGSHELL	-	
PT-5	PAINT	SHERWIN WILLIAMS	ACCENT PAINT	STILL WATER SW6223	EGGSHELL	-	
PT-6	PAINT	SHERWIN WILLIAMS	ACCENT PAINT	INTERESTING AQUA SW6220	EGGSHELL	-	
PT-7	PAINT	BENJAMIN MOORE	ACCENT PAINT	GRENADA GREEN 432	EGGSHELL	-	
PT-8	PAINT	BENJAMIN MOORE	DOOR FRAME PAINT	DEVONSHIRE GREEN 1449	SEMI-GLOSS	-	
PT-9	PAINT	SHERWIN WILLIAMS	CEILING PAINT	HIGH REFLECTIVE WHITE SW7757	SEMI-GLOSS	-	
PT-10	PAINT	SHERWIN WILLIAMS	CEILING PAINT	HIGH REFLECTIVE WHITE SW7757	FLAT	-	
PT-11	PAINT	BENJAMIN MOORE	CEILING PAINT	DUNE WHITE K68	SEMI-GLOSS	-	
RB-1	RESILIENT BASE	TARKETT	THERMOSET RUBBER	BURNT UMBER 63	SOLID	4"H/6H	
RF-1	RESILIENT FLOOR	TARKETT SPORTS	DROPZONE ELITE	DARK GREY D2502	STANDARD	48" W ROLL	
RF-2	RESILIENT FLOOR	TARKETT SPORTS	DROPZONE ELITE	MED GREY D2504	STANDARD	48" W ROLL	
RSF-1	RESILIENT SPORTS FLOOR	TARKETT SPORTS	OMNISPORTS HPL7	GOLDEN MAPLE	STANDARD	80" W ROLL	CLASS 1 SYSTEM
RSF-2	RESILIENT SPORTS FLOOR	TARKETT SPORTS	OMNISPORTS ACTIVE+	GOLDEN MAPLE	STANDARD	60" W ROLL	CLASS 3 SYSTEM
SC-1	SEALED CONCRETE	-	-	-	-	-	
SS-1	SOLID SURFACE	FORMICA	EVERFORM SOLID SURFACE	FROST 103	MATTE	SEE DETAILS	
SS-2	SOLID SURFACE	FORMICA	EVERFORM SOLID SURFACE	WHITE SPICK 931	MATTE	SEE DETAILS	
TZ-1	TERRAZZO	WISCONSIN TERRAZZO	RESINOUS MIX	WISCONSIN TERRAZZO #2581-E	POLISHED	CUSTOM	
TZ-2	TERRAZZO	WISCONSIN TERRAZZO	RESINOUS MIX	WISCONSIN TERRAZZO #3593-E	POLISHED	CUSTOM	
TZ-3	TERRAZZO	WISCONSIN TERRAZZO	RESINOUS MIX	WISCONSIN TERRAZZO #3605-C	POLISHED	CUSTOM	



1 EXPANSION FINISH PLAN
SCALE: 3/32" = 1'-0"

SEE FINISH SCHEDULE FOR ADDITIONAL INFORMATION

Engberg Anderson ARCHITECTS
MILWAUKEE | MADISON | CHICAGO

ORIGINAL

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COMMUNITY RECREATION
CENTER EXPANSION

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CITY OF MADISON PARKS DIVISION
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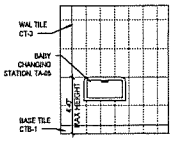
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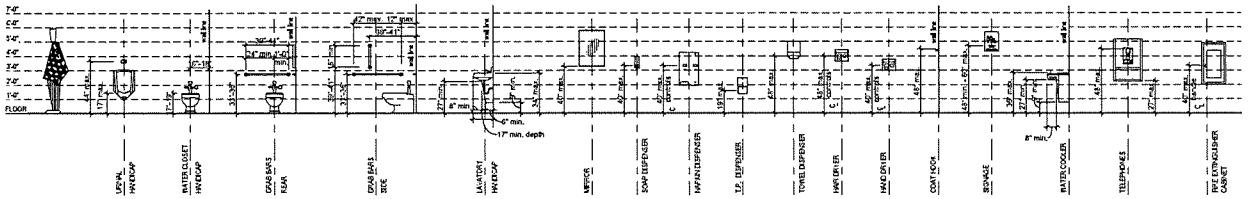
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FINISH PLANS & SCHEDULE

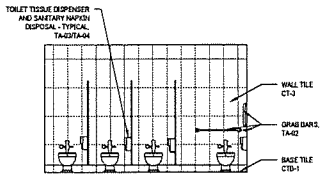
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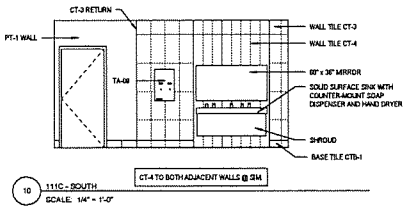
14 111F - WEST
SCALE: 1/4" = 1'-0"



TYPICAL MOUNTING HEIGHTS LEGEND (ANSI)

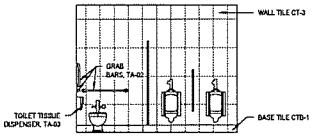


9 111C - NORTH
SCALE: 1/4" = 1'-0"

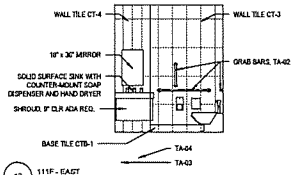


CT-4 TO BOTH ADJACENT WALLS @ SIM.

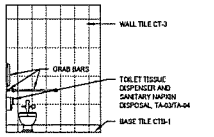
10 111C - SOUTH
SCALE: 1/4" = 1'-0"



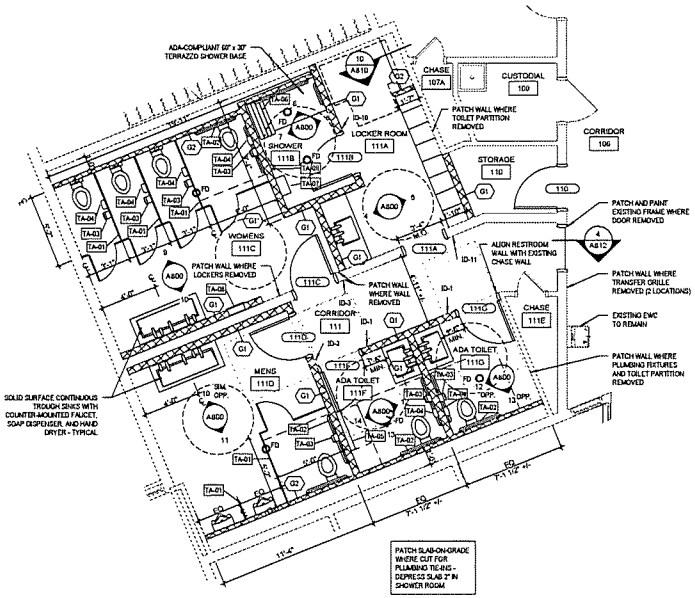
11 111D - SOUTH
SCALE: 1/4" = 1'-0"



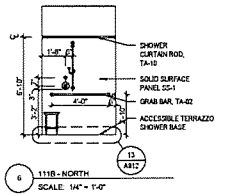
12 111F - EAST
SCALE: 1/4" = 1'-0"



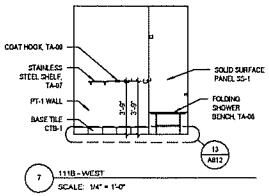
13 111F - SOUTH
SCALE: 1/4" = 1'-0"



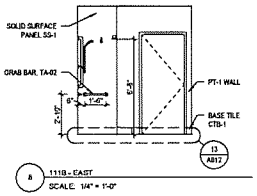
1 ENLARGED PLAN - RESTROOMS
SCALE: 1/4" = 1'-0"



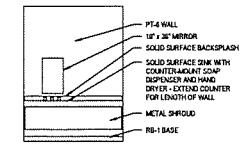
6 111B - NORTH
SCALE: 1/4" = 1'-0"



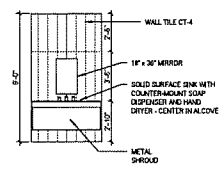
7 111B - WEST
SCALE: 1/4" = 1'-0"



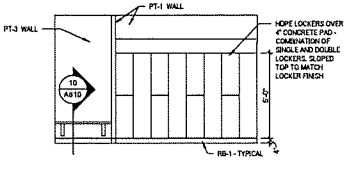
8 111B - EAST
SCALE: 1/4" = 1'-0"



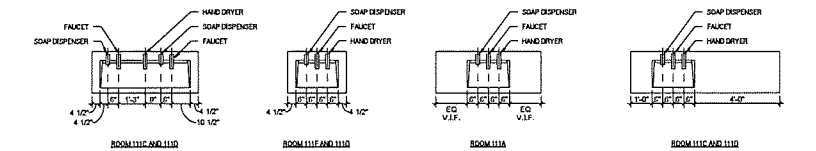
3 105B - EAST
SCALE: 1/4" = 1'-0"



4 111A - WEST
SCALE: 1/4" = 1'-0"



5 111A - EAST
SCALE: 1/4" = 1'-0"



SEE PLUMBING FOR ADDITIONAL INFORMATION

2 SINK DETAILS
SCALE: 3/8" = 1'-0"

Engberg Anderson ARCHITECTS

MILWAUKEE | MADISON | CHICAGO

Original

WARNER PARK COMMUNITY RECREATION CENTER EXPANSION

1625 NORTHPORT DRIVE
MADISON, WI 53704

CITY OF MADISON PARKS DIVISION
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MADISON, WI 53715

PROJECT NUMBER 223471.00

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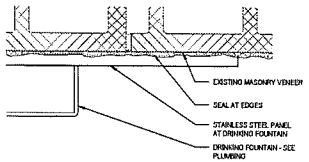
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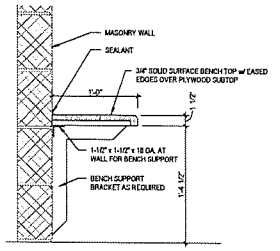
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ENLARGED PLANS & INTERIOR ELEVATIONS

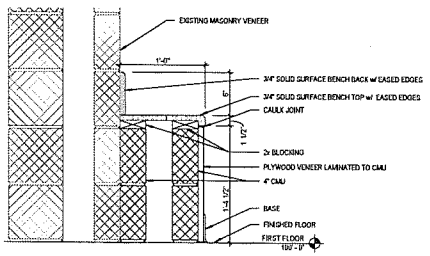
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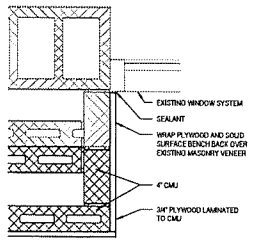
9 CORRIDOR STAINLESS STEEL
SCALE: 3" = 1'-0"



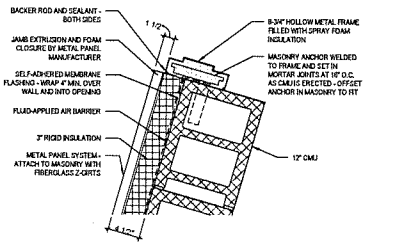
10 LOCKER ROOM BENCH
SCALE: 1 1/2" = 1'-0"



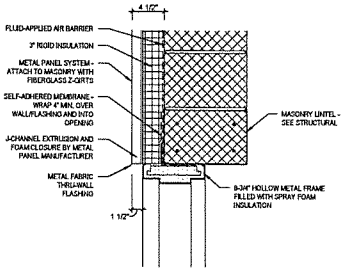
11 CORRIDOR BENCH SECTION
SCALE: 1 1/2" = 1'-0"



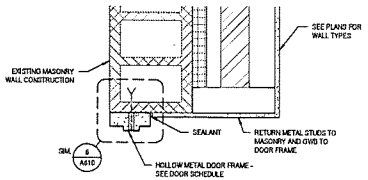
12 CORRIDOR BENCH JAMB
SCALE: 1 1/2" = 1'-0"



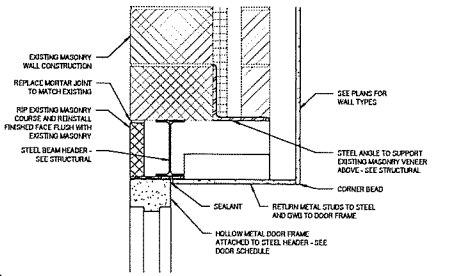
5 DOOR 105D-3 JAMB
SCALE: 1 1/2" = 1'-0"



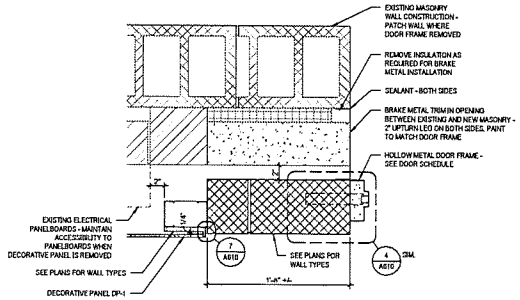
6 DOOR 105D-3 HEAD
SCALE: 1 1/2" = 1'-0"



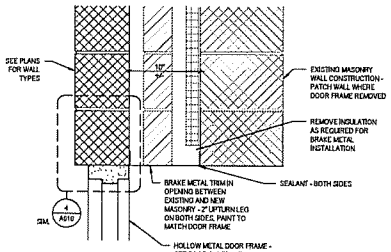
7 DOOR 105E-1 JAMB
SCALE: 1 1/2" = 1'-0"



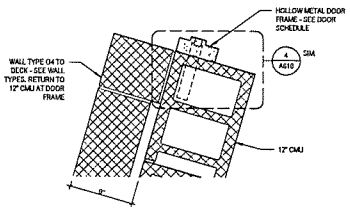
8 DOOR 105E-1 HEAD
SCALE: 1 1/2" = 1'-0"



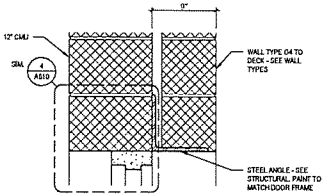
1 105-1 & 105-2 JAMB
SCALE: 1 1/2" = 1'-0"



2 105-1 & 105-2 HEAD
SCALE: 1 1/2" = 1'-0"



3 105D-1 & 105D-2 JAMB
SCALE: 1 1/2" = 1'-0"



4 105D-1 & 105D-2 HEAD
SCALE: 1 1/2" = 1'-0"

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ORIGINAL

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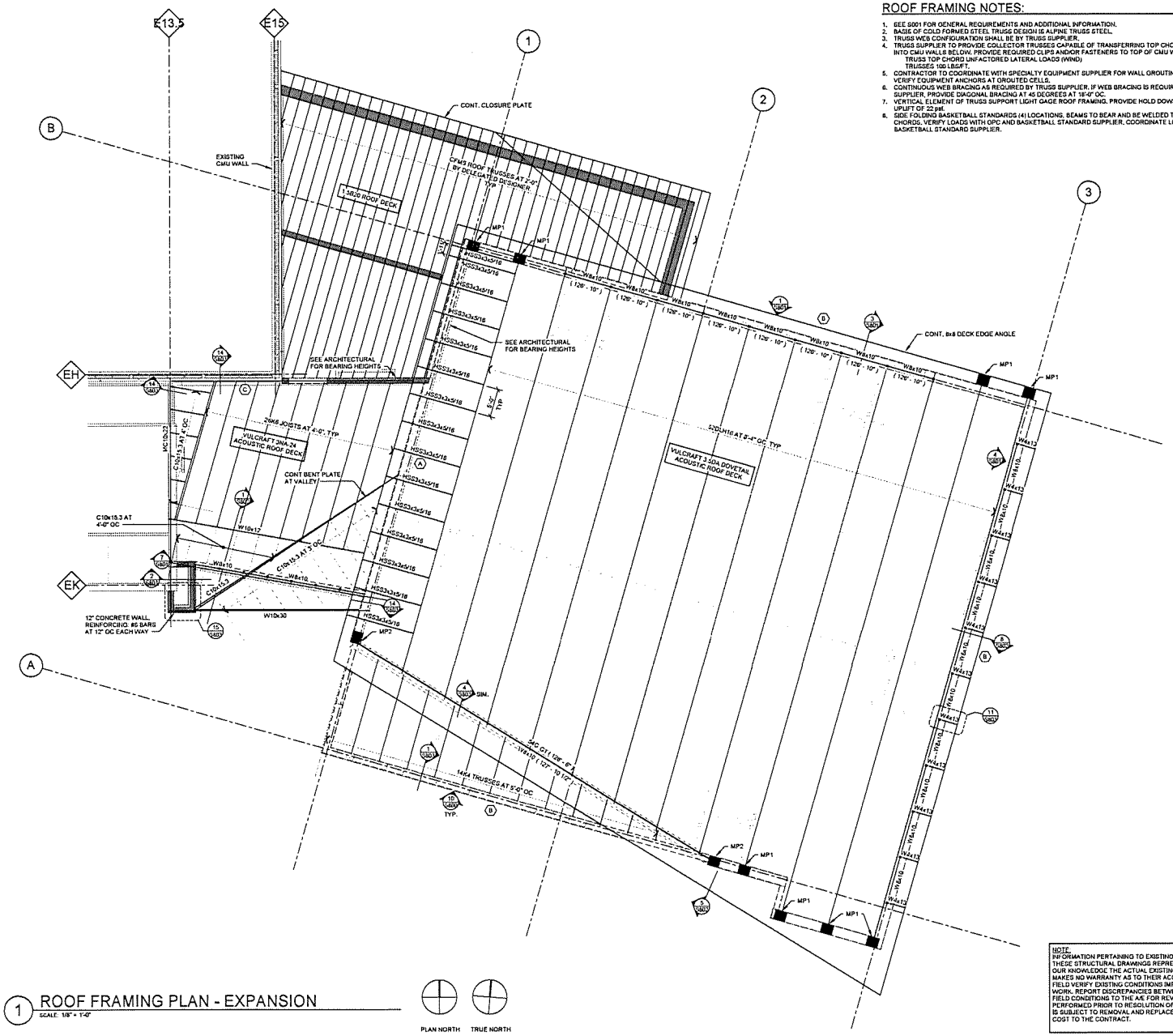
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INTERIOR DETAILS

A810

ROOF FRAMING NOTES:

1. SEE S001 FOR GENERAL REQUIREMENTS AND ADDITIONAL INFORMATION.
2. BASIS OF COLD FORMED STEEL TRUSS DESIGN IS ALPINE TRUSS STEEL.
3. TRUSS WEB CONFIGURATION SHALL BE BY TRUSS SUPPLIER.
4. TRUSS SUPPLIER TO PROVIDE COLLECTOR TRUSSES CAPABLE OF TRANSFERRING TOP CHORD LATERAL LOADS INTO CMU WALLS BELOW. PROVIDE REQUIRED CLIPS AND/OR FASTENERS TO TOP OF CMU WALL/LEDGER
   TRUSS TOP CHORD UNFACTORED LATERAL LOADS (WIND)
   TRUSSES 100 LBS/FT.
5. CONTRACTOR TO COORDINATE WITH SPECIALTY EQUIPMENT SUPPLIER FOR WALL GROUTING REQUIRMENTS. VERIFY EQUIPMENT ANCHORS AT GROUTED CELLS.
6. CONTINUOUS WEB BRACING AS REQUIRED BY TRUSS SUPPLIER. IF WEB BRACING IS REQUIRED BY THE TRUSS SUPPLIER, PROVIDE DIAGONAL BRACING AT 45 DEGREES AT 16'-0" OC.
7. VERTICAL ELEMENT OF TRUSS SUPPORT LIGHT GAGE ROOF FRAMING. PROVIDE HOLD DOWN/STRAP TO RESIST UPLIFT OF 22 psf.
8. SIDE FOLDING BASKETBALL STANDARDS (4) LOCATIONS. BEAMS TO BEAR AND BE WELDED TO JOISTS BOTTOM CHORDS. VERIFY LOADS WITH OPC AND BASKETBALL STANDARD SUPPLIER. COORDINATE LOCATIONS WITH BASKETBALL STANDARD SUPPLIER.



1 ROOF FRAMING PLAN - EXPANSION
SCALE: 1/8" = 1'-0"

PLAN NORTH TRUE NORTH

NOTE:
INFORMATION PERTAINING TO EXISTING CONDITIONS GIVEN ON THESE STRUCTURAL DRAWINGS REPRESENTS TO THE BEST OF OUR KNOWLEDGE THE ACTUAL EXISTING FIELD CONDITIONS. OTE MAKES NO WARRANTY AS TO THEIR ACCURACY. CONTRACTOR TO FIELD VERIFY EXISTING CONDITIONS IMPERATIVE TO THE NEW WORK. REPORT DISCREPANCIES BETWEEN THE DRAWINGS AND FIELD CONDITIONS TO THE A/E FOR REVIEW. ANY WORK PERFORMED PRIOR TO RESOLUTION OF DISCREPANCIES BY THE A/E IS SUBJECT TO REMOVAL AND REPLACEMENT AT NO ADDITIONAL COST TO THE CONTRACT.

Engberg Anderson ARCHITECTS
MILWAUKEE | MADISON | CHICAGO

ONEIDA Total Integrated Enterprises
Office 608.243.5470 Fax 608.241.3914
5100 Eastpark Blvd. Suite 300,
Madison, Wisconsin 53718

Limited to the responsibility for the means, methods, techniques, sequences and procedures of construction, including but not limited to: temporary supports, shoring, formwork, required tests, and other similar items.

O, RGINAL

WARNER PARK COMMUNITY RECREATION CENTER EXPANSION

1625 NORTHPORT DRIVE
MADISON, WI 53704

CITY OF MADISON PARKS DIVISION
330 EAST LAKESIDE STREET
MADISON, WI 53715

PROJECT NUMBER 223471.00

ISSUED FOR
BID SET 5/16/2024

REVISION FOR
NO. DESCRIPTION DATE

DRAWN BY AWB
CHECKED BY Checker

ROOF FRAMING PLAN - EXPANSION

S201

SECTION 08 80 00
GLAZING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Glass products.
   2. Laminated glass.
   3. Insulating glass.
   4. Glazing sealants.
   5. Glazing tapes.
   6. Miscellaneous glazing materials.

1.2 COORDINATION

A. Coordinate glazing channel dimensions to provide necessary bite on glass, minimum edge and face clearances, and adequate sealant thicknesses, with reasonable tolerances to achieve proper safety margins for glazing retention under each design load case, load case combination, and service condition.

1.3 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product.
B. Sustainable Design Submittals:
   1. Product Data: For sealants, indicating VOC content.
   2. Laboratory Test Reports: For sealants, indicating compliance with requirements for low-emitting materials.
C. Glass Samples: For each type of glass product other than clear monolithic vision glass; 12 inches square.
D. Delegated Design Submittal: For glass indicated to comply with performance requirements and design criteria, including analysis data signed and sealed by qualified professional engineer responsible for their preparation.

1.5 INFORMATIONAL SUBMITTALS

A. Product Certificates: For glass.
B. Product test reports.
C. Preconstruction adhesion and compatibility test report.
D. Sample warranties.

1.6 QUALITY ASSURANCE

A. Sealant Testing Agency Qualifications: An independent testing agency qualified according to ASTM C1021 to conduct the testing indicated.

1.7 WARRANTY

A. Manufacturer's Special Warranty for Coated-Glass Products: Manufacturer agrees to replace coated-glass units that deteriorate within specified warranty period. Deterioration of coated glass is defined as defects developed from normal use that are not attributed to glass breakage or to maintaining and cleaning coated glass contrary to manufacturer's written instructions. Defects include peeling, cracking, and other indications of deterioration in coating.
   1. Warranty Period: 10 years from date of Substantial Completion.
B. Manufacturer's Special Warranty for Laminated Glass: Manufacturer agrees to replace laminated-glass units that deteriorate within specified warranty period. Deterioration of laminated glass is defined as defects developed from normal use that are not attributed to glass breakage or to maintaining and cleaning laminated glass contrary to manufacturer's written instructions. Defects include edge separation, delamination materially obstructing vision through glass, and blemishes exceeding those allowed by referenced laminated-glass standard.
   1. Warranty Period: 10 years from date of Substantial Completion.
C. Manufacturer's Special Warranty for Insulating Glass: Manufacturer agrees to replace insulating-glass units that deteriorate within specified warranty period. Deterioration of insulating glass is defined as failure of hermetic seal under normal use that is not attributed to glass breakage or to maintaining and cleaning insulating glass contrary to manufacturer's written instructions. Evidence of failure is obstruction of vision by dust, moisture, or film on interior surfaces of glass.
   1. Warranty Period: 10 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Delegated Design: Engage a qualified professional engineer, as defined in Section 01 40 00 "Quality Requirements," to design glazing.
B. Structural Performance: Glazing shall withstand the following design loads within limits and under conditions indicated determined in accordance with the IBC and ASTM E1300:

1. Design Wind Pressures: As indicated on Drawings.
2. Design Snow Loads: As indicated on Drawings.
3. Thermal Loads: Design glazing to resist thermal stress breakage induced by differential temperature conditions and limited air circulation within individual glass lites and insulated glazing units.

C. Windborne-Debris-Impact Resistance: Exterior glazing shall pass ASTM E1886 missile-impact and cyclic-pressure tests in accordance with ASTM E1996 for Wind Zone 1 for basic protection.
1. Large-Missile Test: For glazing located within 30 feet of grade.
2. Small-Missile Test: For glazing located between 30 feet and 60 feet above grade.

D. Safety Glazing: Where safety glazing is indicated, provide glazing that complies with 16 CFR 1201, Category II.

E. Thermal and Optical Performance Properties: Provide glass with performance properties specified, as indicated in manufacturer's published test data, based on procedures indicated below:
1. U-Factors: Center-of-glazing values, in accordance with NFRC 100 and based on most current non-beta version of LBL's WINDOW computer program, expressed as Btu/sq. ft. x h x deg F.
2. SHGC and Visible Transmittance: Center-of-glazing values, in accordance with NFRC 200 and based on most current non-beta version of LBL's WINDOW computer program.
3. Visible Reflectance: Center-of-glazing values, in accordance with NFRC 300.

F. Acoustic Performance:
1. Exterior Glazing: 28 OITC min.
2. Interior Glazing: 35 STC min.

2.2 GLASS PRODUCTS, GENERAL

A. Glazing Publications: Comply with published recommendations of glass product manufacturers and organizations below unless more stringent requirements are indicated. See these publications for glazing terms not otherwise defined in this Section or in referenced standards.
1. NGA Publications: "Laminated Glazing Reference Manual" and "Glazing Manual."
2. AAMA Publications: AAMA GDSG-1, "Glass Design for Sloped Glazing," and AAMA TIR A7, "Sloped Glazing Guidelines."
3. IGMA Publication for Sloped Glazing: IGMA TB-3001, "Guidelines for Sloped Glazing."
4. IGMA Publication for Insulating Glass: SIGMA TM-3000, "North American Glazing Guidelines for Sealed Insulating Glass Units for Commercial and Residential Use."

B. Safety Glazing Labeling: Where safety glazing is indicated, permanently mark glazing with certification label of the SGCC or another certification agency acceptable to authorities having jurisdiction. Label shall indicate manufacturer's name, type of glass, thickness, and safety glazing standard with which glass complies.

C. Insulating-Glass Certification Program: Permanently marked either on spacers or on at least one component lite of units with appropriate certification label of the IGCC.

D. Thickness: Where glass thickness is indicated, it is a minimum. Provide glass that complies with performance requirements and is not less than thickness indicated.

E. Strength: Where annealed float glass is indicated, provide annealed float glass, heat-strengthened float glass, or fully tempered float glass as needed to comply with "Performance Requirements" Article. Where heat-strengthened float glass is indicated, provide heat-strengthened float glass or fully tempered float glass as needed to comply with "Performance Requirements" Article. Where fully tempered float glass is indicated, provide fully tempered float glass.

2.3 GLASS PRODUCTS

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
a. Cardinal Glass Industries, Inc.
b. Guardian Glass LLC.
c. Pilkington North America; NSG Group.
d. Saint-Gobain Glass Corp.
e. Viracon.
f. Advanced Glazings, Ltd.

B. Clear Annealed Float Glass: ASTM C1036, Type I, Class 1 (clear), Quality-Q3.

C. Low-Iron Annealed Float Glass: ASTM C1036, Type I, Class I (clear), Quality-Q3; and with visible light transmission of not less than 91 percent.

D. Tinted Annealed Float Glass: ASTM C1036, Type I, Class 2 (tinted), Quality-Q3.

E. Fully Tempered Float Glass: ASTM C1048, Kind FT (fully tempered), Condition A (uncoated) unless otherwise indicated, Type I, Class 1 (clear) or Class 2 (tinted) as indicated, Quality-Q3.

F. Heat-Strengthened Float Glass: ASTM C1048, Kind HS (heat strengthened), Type I, Condition A (uncoated) unless otherwise indicated, Type I, Class 1 (clear) or Class 2 (tinted) as indicated, Quality-Q3.

G. Reflective- and Low-E-Coated Vision Glass: ASTM C1376.
H. Ceramic-Coated Vision Glass: ASTM C1048, Condition C, Type I, Class 1 (clear) or Class 2 (tinted) as indicated, Quality-Q3; and complying with Specification No. 95-1-31 in NGA's "Engineering Standards Manual."
I. Ceramic-Coated Spandrel Glass: ASTM C1048, Type I, Condition B, Quality-Q3.
J. Silicone-Coated Spandrel Glass: ASTM C1048, Type I, Condition C, Quality-Q3.
K. Reflective- and Low-E-Coated Spandrel Glass: ASTM C1376, Kind CS.

2.4 LAMINATED GLASS

A. Laminated Glass: ASTM C1172. Use materials that have a proven record of no tendency to bubble, discolor, or lose physical and mechanical properties after fabrication and installation.
1. Construction: Laminate glass with polyvinyl butyral interlayer, ionoplast interlayer, or cast-in-place and cured-transparent-resin interlayer to comply with interlayer manufacturer's written instructions.
2. Interlayer Thickness: Provide thickness not less than that indicated and as needed to comply with requirements.
3. Interlayer Color: Clear unless otherwise indicated.

2.5 INSULATING GLASS

A. Insulating-Glass Units: Factory-assembled units consisting of sealed lites of glass separated by a dehydrated interspace, qualified in accordance with ASTM E2190.
1. Sealing System: Dual seal, with manufacturer's standard primary and secondary sealants.
2. Perimeter Spacer: Manufacturer's standard spacer material and construction.
3. Desiccant: Molecular sieve or silica gel, or a blend of both.

2.6 GLAZING SEALANTS

A. General:
1. Compatibility: Compatible with one another and with other materials they contact, including glass products, seals of insulating-glass units, and glazing channel substrates, under conditions of service and application, as demonstrated by sealant manufacturer based on testing and field experience.
2. Suitability: Comply with sealant and glass manufacturers' written instructions for selecting glazing sealants suitable for applications indicated and for conditions existing at time of installation.
3. Verify sealant complies with the testing and product requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."
4. Colors of Exposed Glazing Sealants: As selected by Architect from manufacturer's full range of industry colors.

B. Neutral-Curing Silicone Glazing Sealant, Class 100/50: Complying with ASTM C920, Type S, Grade NS, Use NT.

2.7 GLAZING TAPES

A. Back-Bedding Mastic Glazing Tapes: Preformed, butyl-based, 100 percent solids elastomeric tape; nonstaining and nonmigrating in contact with nonporous surfaces; with or without spacer rod as recommended in writing by tape and glass manufacturers for application indicated; and complying with ASTM C1281 and AAMA 800 for products indicated below:
1. AAMA 804.3 tape, where indicated.
2. AAMA 806.3 tape, for glazing applications in which tape is subject to continuous pressure.
3. AAMA 807.3 tape, for glazing applications in which tape is not subject to continuous pressure.

2.8 MISCELLANEOUS GLAZING MATERIALS

A. Cleaners, Primers, and Sealers: Types recommended by sealant or gasket manufacturer.
B. Setting Blocks:
1. Type recommended in writing by sealant or glass manufacturer.
C. Spacers:
1. Type recommended in writing by sealant or glass manufacturer.
D. Edge Blocks:
1. Type recommended in writing by sealant or glass manufacturer.
E. Cylindrical Glazing Sealant Backing: ASTM C1330, Type O (open-cell material), of size and density to control glazing sealant depth and otherwise produce optimum glazing sealant performance.

PART 3 - EXECUTION

3.1 GLAZING, GENERAL

A. Comply with combined written instructions of manufacturers of glass, sealants, gaskets, and other glazing materials, unless more stringent requirements are indicated, including those in referenced glazing publications.
B. Protect glass edges from damage during handling and installation. Remove damaged glass from Project site and legally dispose of off Project site. Damaged glass includes glass with edge damage or other imperfections that, when installed, could weaken glass, impair performance, or impair appearance.

C. Apply primers to joint surfaces where required for adhesion of sealants, as determined by preconstruction testing.

D. Install setting blocks in sill rabbets, sized and located to comply with referenced glazing publications, unless otherwise required by glass manufacturer. Set blocks in thin course of compatible sealant suitable for heel bead.

E. Do not exceed edge pressures stipulated by glass manufacturers for installing glass lites.

F. Provide spacers for glass lites where length plus width is larger than 50 inches.

G. Provide edge blocking where indicated or needed to prevent glass lites from moving sideways in glazing channel, as recommended in writing by glass manufacturer and in accordance with requirements in referenced glazing publications.

3.2 TAPE GLAZING

A. Position tapes on fixed stops so that, when compressed by glass, their exposed edges are flush with or protrude slightly above sightline of stops.

B. Install tapes continuously, but not necessarily in one continuous length. Do not stretch tapes to make them fit opening.

C. Cover vertical framing joints by applying tapes to heads and sills first, then to jambs. Cover horizontal framing joints by applying tapes to jambs, then to heads and sills.

D. Place joints in tapes at corners of opening with adjoining lengths butted together, not lapped. Seal joints in tapes with compatible sealant approved by tape manufacturer.

E. Apply heel bead of elastomeric sealant.

F. Center glass lites in openings on setting blocks, and press firmly against tape by inserting dense compression gaskets formed and installed to lock in place against faces of removable stops. Start gasket applications at corners and work toward centers of openings.

G. Apply cap bead of elastomeric sealant over exposed edge of tape.

3.3 GASKET GLAZING (DRY)

A. Cut compression gaskets to lengths recommended by gasket manufacturer to fit openings exactly, with allowance for stretch during installation.

B. Insert soft compression gasket between glass and frame or fixed stop so it is securely in place with joints miter cut and bonded together at corners.

C. Installation with Drive-in Wedge Gaskets: Center glass lites in openings on setting blocks, and press firmly against soft compression gasket by inserting dense compression gaskets formed and installed to lock in place against faces of removable stops. Start gasket applications at corners and work toward centers of openings. Compress gaskets to produce a weathertight seal without developing bending stresses in glass. Seal gasket joints with sealant recommended in writing by gasket manufacturer.

D. Installation with Pressure-Glazing Stops: Center glass lites in openings on setting blocks, and press firmly against soft compression gasket. Install dense compression gaskets and pressure-glazing stops, applying pressure uniformly to compression gaskets. Compress gaskets to produce a weathertight seal without developing bending stresses in glass. Seal gasket joints with sealant recommended in writing by gasket manufacturer.

E. Install gaskets so they protrude past face of glazing stops.

3.4 SEALANT GLAZING (WET)

A. Install continuous spacers, or spacers combined with cylindrical sealant backing, between glass lites and glazing stops to maintain glass face clearances and to prevent sealant from extruding into glass channel and blocking weep systems until sealants cure. Secure spacers or spacers and backings in place and in position to control depth of installed sealant relative to edge clearance for optimum sealant performance.

B. Force sealants into glazing channels to eliminate voids and to ensure complete wetting or bond of sealant to glass and channel surfaces.

C. Tool exposed surfaces of sealants to provide a substantial wash away from glass.

3.5 CLEANING AND PROTECTION

A. Immediately after installation, remove nonpermanent labels and clean surfaces.

B. Protect glass from contact with contaminating substances resulting from construction operations. Examine glass surfaces adjacent to or below exterior concrete and other masonry surfaces at frequent intervals during construction, but not less than once a month, for buildup of dirt, scum, alkaline deposits, or stains.

1. If, despite such protection, contaminating substances do contact with glass, remove substances immediately as recommended in writing by glass manufacturer. Remove and replace glass that cannot be cleaned without damage to coatings.

C. Remove and replace glass that is damaged during construction period.

3.6 MONOLITHIC GLASS SCHEDULE

A. Clear Glass Type **GL-4**:

1. Annealed float glass. Provide fully tempered where safety glazing is required as noted in drawings.
2. Minimum Thickness: 6 mm.

3.7 LAMINATED GLASS SCHEDULE

A. Clear Laminated Glass Type **GL-3**:

1. Two plies of annealed float glass.
2. Minimum Thickness of Each Glass Ply: 3 mm.
3. Interlayer Thickness: 0.030 inch min.
4. Safety glazing required.

3.8 INSULATING GLASS SCHEDULE

A. Clear With Applied Membrane Insulating Glass Type **GL-2**:

1. Provide fully tempered where safety glazing is required as noted in drawings.
2. Basis-of-Design Product: Solera, Solera S R5+Aerogel.
3. Applied Membrane: Light Diffusing Veil (by Solera).
4. Overall Unit Thickness: 1 inch.
5. Minimum Thickness of Each Glass Lite: 6 mm.
6. Outdoor Lite: Annealed float glass.
7. Interspace Content: Aerogel.
8. Indoor Lite: Annealed float glass.
9. Safety glazing required.
10. Panel Characteristics:
    a. SHGC: 0.37 max.
    b. VLT: 0.35 min.
    c. U-factor: 0.20 max.

B. Low-E&Ceramic-Coated, Insulating Vision Glass Type **GL-1**:

1. Provide fully tempered where safety glazing is required as noted in drawings.
2. Basis-of-Design Product: Viracon, 51767 Bird Friendly glass.
3. Ceramic Coating Color and Pattern: 1% coverage, 1/4" dot, 2x2, staggered in warm grey.
4. Overall Unit Thickness: 1 inch.
5. Minimum Thickness of Each Glass Lite: 6 mm.
6. Outdoor Lite: Clear heat-strengthened float glass.
7. Interspace Content: Argon.
8. Indoor Lite: Clear heat-strengthened float glass.
9. Ceramic Coating Location: Second surface.
10. Low-E Coating: Pyrolytic or sputtered on third surface.
11. Panel Characteristics:
    a. SHGC: 0.34 max.
    b. VLT: 0.51 min.
    c. U-factor: 0.20 max.

END OF SECTION

SECTION E: BIDDERS ACKNOWLEDGEMENT

WARNER PARK COMMUNITY RECREATION CENTER EXPANSION
CONTRACT NO. 9502

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 - 2024 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 4 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 Vogel Bros. Building Co. (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 _____; an individual trading as _____; of the City of _____ State of _____~~; 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 MATTHEW SCHULTZ

Vice President
TITLE, IF ANY

Sworn and subscribed to before me this
27th day of June, 2024.

(Notary Public or other officer authorized to administer oaths)
My Commission Expires 5/27/2028

ELIZABETH R BALLWEG NOTARY PUBLIC STATE OF WISCONSIN

Bidders shall not add any conditions or qualifying statements to this Proposal.

Section F: Best Value Contracting (BVC) Fillable Online Form

Best Value Contracting

1. The Contractor shall indicate the non-apprenticeable trades used on this contract.

All other trades not identified below.

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

WARNER PARK COMMUNITY RECREATION CENTER EXPANSION
CONTRACT NO. 9502

Small 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: Vogel Bros. Building Co.

Address: 5460 Fen Oak Drive, Madison, WI 53718

Telephone Number: 608.241.5454 Fax Number: _____

Contact Person/Title: Nick Schuch, Lead Estimator

Prime Bidder Certification

I, Matthew Schultz (Name), Vice President (Title) of Vogel Bros. Building Co. (Company) certify that the information contained in this SBE Compliance Report is true and correct to the best of my knowledge and belief.

Witness' Signature

Bidder's Signature

6/27/2024
Date

Vogel Bros. Building Co. to continue verifying SBE subcontractors and suppliers upon final scoping.

WARNER PARK COMMUNITY RECREATION CENTER EXPANSION
CONTRACT NO. 9502

Small Business Enterprise Compliance Report

Summary Sheet

SBE Subcontractors Who Are NOT Suppliers

Name(s) of SBEs Utilized	Type of Work	% of Total Bid Amount
		%
		%
		%
		%
		%
		%
		%
		%
		%
		%
		%
		%
		%

Subtotal SBE who are NOT suppliers: 0 %

SBE Subcontractors Who Are Suppliers

Name(s) of SBEs Utilized	Type of Work	% of Total Bid Amount
		%
		%
		%
		%
		%
		%

Subtotal Contractors who are suppliers: 0 % x 0.6 = 0 % (discounted to 60%)

Total Percentage of SBE Utilization: 0 %.

WARNER PARK COMMUNITY RECREATION CENTER EXPANSION

CONTRACT NO. 9502
DATE: 6/27/24

Vogel Bros. Building Co.

Item	Quantity	Price	Extension
Section B: Proposal Page			
90000 - WARNER PARK COMMUNITY RECREATION CENTER EXPANSION BASE BID - Lump Sum	1.00	$8,457,300.00	$8,457,300.00
Section B: Proposal Page Alternates			
90001 - ALTERNATE NO. 1 - PROVIDE ALL WORK TO FURNISH AND INSTALL THE ROOF MOUNTED SOLAR PHOTOVOLTAIC SYSTEM AS SHOWN ON DRAWING SHEET(S) A201, E601 AND IN SPECIFICATION SECTIONS 26 31 00 - Lump Sum	1.00	$278,700.00	$278,700.00
90002 - ALTERNATE NO. 2 - PROVIDE ALL WORK TO PROVIDE BUILDING HEATING LOAD ENTIERELY THROUGH HEAT RECOVERY CHILLER AND RELYING ON THE EXISTING BOILER AS EMERGENCY BACKUP AS SHOWN ON DRAWING SHEET(S) M502, M800, MS200, AND E800 - Lump Sum	1.00	$333,900.00	$333,900.00
3 Items	Totals		$9,069,900.00
	Alternate Items 1		

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 per cent (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:

WARNER PARK COMMUNITY RECREATION CENTER EXPANSION
CONTRACT NO. 9502

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

Vogel Bros. Building Co.
Name of Principal

By

6/27/2024
Date

MATTHEW SCHULTZ, VICE PRESIDENT
Name and Title

Seal SURETY

Liberty Mutual Insurance Company
Name of Surety

By

6/27/2024
Date

Bradley S. Babcock, Attorney-in-Fact
Name and Title

This certifies that I have been duly licensed as an agent for the above company in Wisconsin under National Provider No. 9070604 for the year 2024, 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.

6/27/2024
Date

Agent Signature

1533 Wisconsin Avenue
Address

Grafton, WI 53024
City, State and Zip Code

262-204-8448
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.

This Power of Attorney limits the acts of those named herein, and they have no authority to bind the Company except in the manner and to the extent herein stated.

Liberty Mutual Insurance Company
The Ohio Casualty Insurance Company
West American Insurance Company

Certificate No: **8209220-984216**

POWER OF ATTORNEY

KNOWN ALL PERSONS BY THESE PRESENTS: That The Ohio Casualty Insurance Company is a corporation duly organized under the laws of the State of New Hampshire, that Liberty Mutual Insurance Company is a corporation duly organized under the laws of the State of Massachusetts, and West American Insurance Company is a corporation duly organized under the laws of the State of Indiana (herein collectively called the "Companies"), pursuant to and by authority herein set forth, does hereby name, constitute and appoint, Bradley S. Babcock, Kimberly L. Babcock

all of the city of Grafton state of WI each individually if there be more than one named, its true and lawful attorney-in-fact to make, execute, seal, acknowledge and deliver, for and on its behalf as surety and as its act and deed, any and all undertakings, bonds, recognizances and other surety obligations, in pursuance of these presents and shall be as binding upon the Companies as if they have been duly signed by the president and attested by the secretary of the Companies in their own proper persons.

IN WITNESS WHEREOF, this Power of Attorney has been subscribed by an authorized officer or official of the Companies and the corporate seals of the Companies have been affixed thereto this 6th day of January, 2023.

Liberty Mutual Insurance Company
The Ohio Casualty Insurance Company
West American Insurance Company

By: _____
David M. Carey, Assistant Secretary

State of PENNSYLVANIA
County of MONTGOMERY ss

On this 6th day of January, 2023 before me personally appeared David M. Carey, who acknowledged himself to be the Assistant Secretary of Liberty Mutual Insurance Company, The Ohio Casualty Company, and West American Insurance Company, and that he, as such, being authorized so to do, execute the foregoing instrument for the purposes therein contained by signing on behalf of the corporations by himself as a duly authorized officer.

IN WITNESS WHEREOF, I have hereunto subscribed my name and affixed my notarial seal at Plymouth Meeting, Pennsylvania, on the day and year first above written.

Commonwealth of Pennsylvania - Notary Seal
Teresa Pastella, Notary Public
Montgomery County
My commission expires March 28, 2025
Commission number 1126044
Member, Pennsylvania Association of Notaries

By: _____
Teresa Pastella, Notary Public

This Power of Attorney is made and executed pursuant to and by authority of the following By-laws and Authorizations of The Ohio Casualty Insurance Company, Liberty Mutual Insurance Company, and West American Insurance Company which resolutions are now in full force and effect reading as follows:

ARTICLE IV – OFFICERS: Section 12. Power of Attorney.
Any officer or other official of the Corporation authorized for that purpose in writing by the Chairman or the President, and subject to such limitation as the Chairman or the President may prescribe, shall appoint such attorneys-in-fact, as may be necessary to act in behalf of the Corporation to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations. Such attorneys-in-fact, subject to the limitations set forth in their respective powers of attorney, shall have full power to bind the Corporation by their signature and execution of any such instruments and to attach thereto the seal of the Corporation. When so executed, such instruments shall be as binding as if signed by the President and attested to by the Secretary. Any power or authority granted to any representative or attorney-in-fact under the provisions of this article may be revoked at any time by the Board, the Chairman, the President or by the officer or officers granting such power or authority.

ARTICLE XIII – Execution of Contracts: Section 5. Surety Bonds and Undertakings.
Any officer of the Company authorized for that purpose in writing by the chairman or the president, and subject to such limitations as the chairman or the president may prescribe, shall appoint such attorneys-in-fact, as may be necessary to act in behalf of the Company to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations. Such attorneys-in-fact subject to the limitations set forth in their respective powers of attorney, shall have full power to bind the Company by their signature and execution of any such instruments and to attach thereto the seal of the Company. When so executed such instruments shall be as binding as if signed by the president and attested by the secretary.

Certificate of Designation – The President of the Company, acting pursuant to the Bylaws of the Company, authorizes David M. Carey, Assistant Secretary to appoint such attorneys-in-fact as may be necessary to act on behalf of the Company to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations.

Authorization – By unanimous consent of the Company's Board of Directors, the Company consents that facsimile or mechanically reproduced signature of any assistant secretary of the Company, wherever appearing upon a certified copy of any power of attorney issued by the Company in connection with surety bonds, shall be valid and binding upon the Company with the same force and effect as though manually affixed.

I, Renee C. Llewellyn, the undersigned, Assistant Secretary, The Ohio Casualty Insurance Company, Liberty Mutual Insurance Company, and West American Insurance Company do hereby certify that the original power of attorney of which the foregoing is a full, true and correct copy of the Power of Attorney executed by said Companies, is in full force and effect and has not been revoked.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed the seals of said Companies this 27th day of June, 2024.

By: _____
Renee C. Llewellyn, Assistant Secretary

Not valid for mortgage, note, loan, letter of credit, currency rate, interest rate or residual value guarantees.

For bond and/or Power of Attorney (POA) verification inquiries, please call 610-832-8240 or email HOSUR@libertymutual.com.

SECTION H: AGREEMENT

THIS AGREEMENT made this 23rd day of August in the year Two Thousand and Twenty-Four between **VOGEL BROS. BUILDING CO.** hereinafter called the Contractor, and the City of Madison, a Wisconsin municipal corporation, hereinafter called the City.

WHEREAS, the Common Council of the City of Madison ("Council") under the provisions of a resolution adopted on **AUGUST 6, 2024**, and by virtue of authority vested in the Council, has awarded to the Contractor the work of performing certain public 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 and 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:

WARNER PARK COMMUNITY RECREATION CENTER EXPANSION
CONTRACT NO. 9502

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 **NINE MILLION SIXTY-NINE THOUSAND NINE HUNDRED AND NO/100** (**$9,069,900.00**) Dollars being the amount bid by such Contractor and which was awarded 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, shall be provided to the City by the opening date of advertisement and with sufficient time for the City to notify candidates and make a timely referral. The Contractor agrees to interview and consider candidates referred by the Affirmative Action Division, or an organization designated by the 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 ten thousand 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.

WARNER PARK COMMUNITY RECREATION CENTER EXPANSION
CONTRACT NO. 9502

IN WITNESS WHEREOF, the Contractor has hereunto set his/her hand and seal and the City has caused this contract to be executed by its Mayor and City Clerk on the dates written below.

Countersigned:

8/12/24
Witness Date

8/12/24
Witness Date

VOGEL BROS. BUILDING CO.
Company Name

President Date

8/12/24
Secretary Date

CITY OF MADISON

Satya Rhodes-Conway, Mayor — 08/23/2024 Date

Maribeth Witzel-Behl, City Clerk — 08/15/2024 Date

Provisions have been made to pay the liability that will accrue under this contract.

David P. Schmiedicke, Finance Director — 8/19/2024 Date

Approved as to form:

Michael Haas, City Attorney — 8/20/2024 Date

Execution of this Agreement by City was authorized by Resolution Enactment No. RES -24-00488, ID No. 84340, adopted by the Common Council of the City of Madison on August 6, 2024.

Bond No: 354229707

SECTION I: PAYMENT AND PERFORMANCE BOND

LET ALL KNOW BY THESE DOCUMENTS PRESENTED, that we **VOGEL BROS. BUILDING CO.** as principal, and Liberty Mutual Insurance Company Company of Massachuesetts as surety, are held and firmly bound unto the City of Madison, Wisconsin, in the sum of **NINE MILLION SIXTY-NINE THOUSAND NINE HUNDRED AND NO/100** (**$9,069,900.00**) 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:

WARNER PARK COMMUNITY RECREATION CENTER EXPANSION
CONTRACT NO. 9502

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 9th day of August, 2024

Countersigned:

Witness

Secretary

VOGEL BROS. BUILDING CO.
Company Name (Principal)

President

VOGEL BROS. BUILDING CO. CORPORATE SEAL MADISON, WISCONSIN

Liberty Mutual Insurance Company
Surety

☐ Salary Employee ☒ Commission

By
Attorney-in-Fact Bradley S. Babcock

LIBERTY MUTUAL INSURANCE COMPANY INCORPORATED BOSTON MASSACHUSETTS 1912 5349

This certifies that I have been duly licensed as an agent for the above company in Wisconsin under National Producer Number 9070604 for the year 2024, and appointed as attorney-in-fact, with authority to execute this payment and performance bond which power of attorney has not been revoked.

8/9/2024
Date

Agent Signature Bradley S. Babcock

The foregoing Bond has been approved as to form:

8/20/2024	Michael Haas
Date	City Attorney

This Power of Attorney limits the acts of those named herein, and they have no authority to bind the Company except in the manner and to the extent herein stated.

Liberty Mutual Insurance Company
The Ohio Casualty Insurance Company
West American Insurance Company

Certificate No: **8209220-984216**

POWER OF ATTORNEY

KNOWN ALL PERSONS BY THESE PRESENTS: That The Ohio Casualty Insurance Company is a corporation duly organized under the laws of the State of New Hampshire, that Liberty Mutual Insurance Company is a corporation duly organized under the laws of the State of Massachusetts, and West American Insurance Company is a corporation duly organized under the laws of the State of Indiana (herein collectively called the "Companies"), pursuant to and by authority herein set forth, does hereby name, constitute and appoint, Bradley S. Babcock, Kimberly L. Babcock

all of the city of Grafton state of WI each individually if there be more than one named, its true and lawful attorney-in-fact to make, execute, seal, acknowledge and deliver, for and on its behalf as surety and as its act and deed, any and all undertakings, bonds, recognizances and other surety obligations, in pursuance of these presents and shall be as binding upon the Companies as if they have been duly signed by the president and attested by the secretary of the Companies in their own proper persons.

IN WITNESS WHEREOF, this Power of Attorney has been subscribed by an authorized officer or official of the Companies and the corporate seals of the Companies have been affixed thereto this 6th day of January, 2023.

Liberty Mutual Insurance Company
The Ohio Casualty Insurance Company
West American Insurance Company

By: _____
David M. Carey, Assistant Secretary

State of PENNSYLVANIA
County of MONTGOMERY ss

On this 6th day of January, 2023 before me personally appeared David M. Carey, who acknowledged himself to be the Assistant Secretary of Liberty Mutual Insurance Company, The Ohio Casualty Company, and West American Insurance Company, and that he, as such, being authorized so to do, execute the foregoing instrument for the purposes therein contained by signing on behalf of the corporations by himself as a duly authorized officer.

IN WITNESS WHEREOF, I have hereunto subscribed my name and affixed my notarial seal at Plymouth Meeting, Pennsylvania, on the day and year first above written.

Commonwealth of Pennsylvania - Notary Seal
Teresa Pastella, Notary Public
Montgomery County
My commission expires March 28, 2025
Commission number 1126044
Member, Pennsylvania Association of Notaries

By: _____
Teresa Pastella, Notary Public

This Power of Attorney is made and executed pursuant to and by authority of the following By-laws and Authorizations of The Ohio Casualty Insurance Company, Liberty Mutual Insurance Company, and West American Insurance Company which resolutions are now in full force and effect reading as follows:

ARTICLE IV – OFFICERS: Section 12. Power of Attorney.
Any officer or other official of the Corporation authorized for that purpose in writing by the Chairman or the President, and subject to such limitation as the Chairman or the President may prescribe, shall appoint such attorneys-in-fact, as may be necessary to act in behalf of the Corporation to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations. Such attorneys-in-fact, subject to the limitations set forth in their respective powers of attorney, shall have full power to bind the Corporation by their signature and execution of any such instruments and to attach thereto the seal of the Corporation. When so executed, such instruments shall be as binding as if signed by the President and attested to by the Secretary. Any power or authority granted to any representative or attorney-in-fact under the provisions of this article may be revoked at any time by the Board, the Chairman, the President or by the officer or officers granting such power or authority.

ARTICLE XIII – Execution of Contracts: Section 5. Surety Bonds and Undertakings.
Any officer of the Company authorized for that purpose in writing by the chairman or the president, and subject to such limitations as the chairman or the president may prescribe, shall appoint such attorneys-in-fact, as may be necessary to act in behalf of the Company to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations. Such attorneys-in-fact subject to the limitations set forth in their respective powers of attorney, shall have full power to bind the Company by their signature and execution of any such instruments and to attach thereto the seal of the Company. When so executed such instruments shall be as binding as if signed by the president and attested by the secretary.

Certificate of Designation – The President of the Company, acting pursuant to the Bylaws of the Company, authorizes David M. Carey, Assistant Secretary to appoint such attorneys-in-fact as may be necessary to act on behalf of the Company to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations.

Authorization – By unanimous consent of the Company's Board of Directors, the Company consents that facsimile or mechanically reproduced signature of any assistant secretary of the Company, wherever appearing upon a certified copy of any power of attorney issued by the Company in connection with surety bonds, shall be valid and binding upon the Company with the same force and effect as though manually affixed.

I, Renee C. Llewellyn, the undersigned, Assistant Secretary, The Ohio Casualty Insurance Company, Liberty Mutual Insurance Company, and West American Insurance Company do hereby certify that the original power of attorney of which the foregoing is a full, true and correct copy of the Power of Attorney executed by said Companies, is in full force and effect and has not been revoked.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed the seals of said Companies this 9th day of August, 2024.

By: _____
Renee C. Llewellyn, Assistant Secretary

LMS-12873 LMIC OCIC WAIC Multi Co 02/21

Not valid for mortgage, note, loan, letter of credit, currency rate, interest rate or residual value guarantees.

For bond and/or Power of Attorney (POA) verification inquiries, please call 610-832-8240 or email HOSUR@libertymutual.com.