RUSH

Contract Routing Form

ROUTING: Urgent Rush printed on: 08/14/2018

Contract between: Joe Daniels Construction CO Inc
and Dept. or Division: Engineering Division
Name/Phone Number:

Project: Olbrich Botanical Gardens Expansion Project 1

Contract No.: 8162 File No.: 52470
Enactment No.: RES-18-00588 Enactment Date: 08/10/2018
Dollar Amount: 9,522,600.00

(Please DATE before routing)

Signatures Required	Date Received	Date Signed
City Clerk	8-14-18	8-14-18
Director of Civil Rights	8-14-18	8.16.18 FNJ
Risk Manager	8.16.18	8.16.18 mcl
Finance Director	8.16.18	8/16/18 MCR
City Attorney #910	8-17-2018	8/20/18 PAL
Mayor	8-20-18	8.20.2018

Please return signed Contracts to the City Clerk's Office
Room 103, City-County Building for filing.

Original + 2 Copies

08/14/2018 08:55:48 enjls - Randy Wiesner 267-8679

RUSH

Dis Rights: (OK) / N/A / Problem - Hold
Prev Wage: (AA) / Agency / No
Contract Value: 9,522,600.00
AA Plan: Approved
Amendment / Addendum # _____
Type: POS / Dvlp / Sbdv / Gov't /
Grant / (PW) / Goal / Loan / Agrmt

City of Madison

City of Madison
Madison, WI 53703
www.cityofmadison.com

Master

File Number: 52470

File ID:	52470	**File Type:**	Resolution	**Status:**	Passed
Version:	1	**Reference:**		**Controlling Body:**	BOARD OF PUBLIC WORKS
Lead Referral:	BOARD OF PUBLIC WORKS	**Cost:**		**File Created Date :**	07/16/2018
File Name:	Awarding Public Works Contract No. 8162, Olbrich Botanical Gardens Expansion Project 1.			**Final Action:**	08/07/2018
Title:	Awarding Public Works Contract No. 8162, Olbrich Botanical Gardens Expansion Project 1. (6th AD)				
Notes:	Randy W.				
Code Sections:				**CC Agenda Date:**	08/07/2018
Indexes:				**Agenda Number:**	56.
Sponsors:	BOARD OF PUBLIC WORKS			**Effective Date:**	08/10/2018
Attachments:	Contract 8162.pdf			**Enactment Number:**	RES-18-00588
Author:	Rob Phillips, City Engineer			**Hearing Date:**	
Entered by:	mhacker@cityofmadison.com			**Published Date:**	

Approval History

Version	Date	Approver	Action
1	07/27/2018	Elizabeth York	Approve

History of Legislative File

Ver-sion:	Acting Body:	Date:	Action:	Sent To:	Due Date:	Return Date:	Result:
1	Engineering Division	07/16/2018	Refer	BOARD OF PUBLIC WORKS	07/25/2018	07/25/2018	

Action Text: This Resolution was Refer to the BOARD OF PUBLIC WORKS due back on 7/25/2018
Notes:

SDR

1	BOARD OF PUBLIC WORKS	07/25/2018	RECOMMEND TO COUNCIL TO ADOPT UNDER SUSPENSION OF RULES 2.04, 2.05, 2.24, & 2.25 - REPORT OF OFFICER	Pass

Action Text: Rob Phillips, City Engineer, presented the bids. A motion was made by Johnson, seconded by Clausius, to RECOMMEND TO COUNCIL TO ADOPT UNDER SUSPENSION OF RULES 2.04, 2.05, 2.24, & 2.25 - REPORT OF OFFICER. The motion passed by voice vote/other.

Notes:

1	COMMON COUNCIL	08/07/2018	Adopt Under Suspension of Rules 2.04, 2.05, 2.24, and 2.25	Pass

Action Text: A motion was made by Baldeh, seconded by Carter, to Adopt Under Suspension of Rules 2.04, 2.05, 2.24, and 2.25. The motion passed by voice vote/other.

Notes:

Text of Legislative File 52470

Fiscal Note

The proposed resolution authorizes the award of Public Works Contract No. 8162, Olbrich Botanical Gardens Expansion Project 1. The total estimated cost of the project is $10,284,400. Funding for this contract is available in the Olbrich Botanical Complex project (Munis project 17193), the Energy Improvements project (Munis project 11799), and the Garver at Olbrich Botanical project (Munis project 17168).

Title

Awarding Public Works Contract No. 8162, Olbrich Botanical Gardens Expansion Project 1. (6th AD)

Body

BE IT RESOLVED, that the following low bids for miscellaneous improvements be accepted and that the Mayor and City Clerk be and are hereby authorized and directed to enter into a contract with the low bidders contained herein, subject to the Contractor's compliance with Section 39.02 of the Madison General Ordinances concerning compliance with the Affirmative Action provisions **and subject to the Contractor's compliance with Section 33.07 of the Madison General Ordinances regarding Best Value Contracting:**

BE IT FURTHER RESOLVED, that the funds be encumbered to cover the cost of the projects contained herein.

See attached document (Contract No. 8162) for itemization of bids.

PROJECT	CONTRACTOR	AMOUNT OF BID

CONTRACT NO. 8162
OLBRICH BOTANICAL GARDENS EXPANSION PROJECT 1

JOE DANIELS CONSTRUCTION CO., INC. $9,522,600.00

Acct. No. 17193-51-140:54210(90924)	$9,473,000.00
Contingency 8±	757,840.00
Sub-Total	$10,230,840.00
Acct. No. 11799-401-140:54210(90924)	$39,300.00
Contingency 8±	3,140.00
Sub-Total	$42,440.00
Acct. No. 17133-51-140:54210(90924)	$10,300.00
Contingency 8±	820.00
Sub-Total	$11,120.00
GRAND TOTAL	$10,284,400.00

Jurisdiction: Wisconsin

Demographics

Company Name: Cincinnati Insurance Company, The
Short Name:
SBS Company Number: 54220104
NAIC CoCode: 10677
FEIN: 31-0542366
Domicile Type: Foreign
State of Domicile: Ohio
Country of Domicile: United States
NAIC Group Number: 244 - CINCINNATI FIN GRP
Organization Type: Stock
Date of Incorporation: 08/02/1950
Merger Flag: No

Address

Business Address
6200 S GILMORE RD
FAIRFIELD, OH 45014-5141
United States
Mailing Address
PO BOX 145496
CINCINNATI, OH 45250
United States
Statutory Home Office Address
6200 S GILMORE RD
FAIRFIELD, OH 45014-5141
United States
Main Administrative Office Address
6200 S GILMORE RD
FAIRFIELD, OH 45014-5141
United States

Phone, E-mail, Website

Phone

Type	Number
Fax Phone	(513) 603-5500
Business Primary Phone	(513) 870-2000

Email
No results found.
Website
No results found.

Company Type

Company Type: Property and Casualty
Status: Active
Status Reason:

© 2018 National Association of Insurance Commissioners. All rights reserved.

Effective Date: 10/01/1974
Legacy State ID: 112170
Issue Date: 10/01/1974
Approval Date:
File Date:
Articles of Incorporation Received: No
Article No:
COA Number:

Appointments

Export to Excel

patrick mck

Licensee Name	License Number	NPN	License Type	Line of Authority	Appointment Date	Effective Date	Expiration Date
PATRICK MCKENNA	650765	650765	Intermediary (Agent) Individual	Casualty	08/17/2007	03/16/2018	03/15/2019
PATRICK MCKENNA	650765	650765	Intermediary (Agent) Individual	Property	08/17/2007	03/16/2018	03/15/2019

First Previous 1 Next Last

Line Of Business

Filter

Line of Business	Citation Type	Effective Date
Aircraft	Aircraft	10/01/1974
Automobile	Automobile	10/01/1974
Disability Insurance	Disability Insurance	10/01/1974
Fidelity Insurance	Fidelity Insurance	10/01/1974
Workers Compensation Insurance	Workers Compensation Insurance	10/01/1974
Liability and Incidental Medical Expense Insurance (other than automobile)	Liability and Incidental Medical Expense Insurance (other than automobile)	10/01/1974
Miscellaneous	Miscellaneous	10/01/1974
Ocean Marine Insurance	Ocean Marine Insurance	10/01/1974
Surety Insurance	Surety Insurance	10/01/1974
Fire, Inland Marine and Other Property Insurance	Fire, Inland Marine and Other Property Insurance	10/01/1974

First Previous 1 Next Last

Contact

© 2018 National Association of Insurance Commissioners. All rights reserved.

Contact Type	Preferred Name	Name	E-mail	Phone	Address
Registered Agent for Service of Process		MICHAEL MURRAY			**Other** KASDORF LEWIS & SWIETLIK SC 1 PARK PLZ 11270 W PARK PL 5TH FL MILWAUKEE, WI 53224 United States

First Previous 1 Next Last

Company Merger

No results found.

Name Change History

Filter

Previous Name	New Name	Effective Date
	Cincinnati Insurance Company, The	

First Previous 1 Next Last

© 2018 National Association of Insurance Commissioners. All rights reserved.

Viste, Doran

From: Pat McKenna <Pat.McKenna@hausmann-johnson.com>
Sent: Monday, August 20, 2018 10:30 AM
To: Viste, Doran
Subject: RE: Payment and Performance Bond--Joe Daniels Construction

Doran,

I apologize, I was out and just got your messages. Yes, that is fine. We used the old Wisconsin license number, in error. You have my permission to correct it to the NPN of 259408.

Pat

Pat McKenna CPCU, AFSB • Principal & Assistant Vice President - Surety
Hausmann-Johnson Insurance • **w.** www.hausmann-johnson.com
p: 608-252-8661 • **f.** 608 257 4324
e. Pat.McKenna@hausmann-johnson.com

From: Viste, Doran [mailto:DViste@cityofmadison.com]
Sent: Monday, August 20, 2018 10:27 AM
To: Pat McKenna <Pat.McKenna@hausmann-johnson.com>
Subject: Payment and Performance Bond--Joe Daniels Construction
Importance: High

Pat,

I am the Assistant City Attorney with the City of Madison who is reviewing the public works contract between the City and Joe Daniels Construction for the Olbrich Botanical Gardens Expansion Project to make sure everything is in order. Unfortunately, in looking at the Payment and Performance Bond that you executed, I noted an error that needs to be corrected. Specifically, in your signature block it notes that your NPN is 259408. However, according to the NAIC, your number is 650765. Rather than require a new payment and performance bond to be executed, I am looking for your written authorization to change the number on the payment and performance bonds. I would then be able to authorize the form of this contract and move it on for execution. Replying to this e-mail to the effect that you are OK with this change is fine for my purposes.

I have been told this Joe Daniels wants to have this executed by Wednesday—so I think they are waiting to start work. Hence, please consider this matter somewhat urgent. Thanks.

Please let me know if you have any questions.

Doran Viste
Assistant City Attorney
Office of the City Attorney
210 Martin Luther King, Jr. Blvd., Room 401
Madison, WI 53703-3345
Phone: (608) 266-4511
Fax: (608) 267-8715
e-mail: DViste@cityofmadison.com

$9,522,600.00
FILE

BID OF JOE DANIELS CONSTRUCTION CO., INC.

2018

PROPOSAL, CONTRACT, BOND AND SPECIFICATIONS

FOR

OLBRICH BOTANICAL GARDENS EXPANSION PROJECT 1

CONTRACT NO. 8162

MUNIS NO. 17193

IN

MADISON, DANE COUNTY, WISCONSIN

AWARDED BY THE COMMON COUNCIL
MADISON, WISCONSIN ON **AUGUST 7, ,2018**

CITY ENGINEERING DIVISION
1600 EMIL STREET
MADISON, WISCONSIN 53713

https://bidexpress.com/login

OLBRICH BOTANICAL GARDENS EXPANSION PROJECT 1
CONTRACT NO. 8162

INDEX

SECTION A: ADVERTISEMENT FOR BIDS AND INSTRUCTIONS TO BIDDERS A-1

SECTION B: PROPOSAL SECTION B-1

SECTION C: SMALL BUSINESS ENTERPRISE C-1

SECTION D: SPECIAL PROVISIONS D-1

SECTION E: BIDDER'S ACKNOWLEDGEMENT E-1

SECTION F: BEST VALUE CONTRACTING F-1

SECTION G: BID BOND G-1

SECTION H: AGREEMENT H-1

SECTION I: PAYMENT AND PERFORMANCE BOND I-1

EXHIBITS AVAILABLE IN BID EXPRESS:

- Exhibit A: General (G-Series sheets)
- Exhibit B: Architectural Existing, includes all of the following Record Drawings:
  - 1970s Building set
  - 1980s Building Set
  - 2015 Restroom Addition
  - 2015 Roof Replacement
  - 2017 Site Survey for this project
- Exhibit C: Arch Demo (AD-Series)
- Exhibit D: Civils (C-Series)
- Exhibit E: Landscape (L-Series)
- Exhibit F: Architectural (A-Series)
- Exhibit G: Structural (S-Series)
- Exhibit H: Greenhouse (GH-Series)
- Exhibit I: Greenhouse Radiant Heating (H-Series)
- Exhibit J: Mechanical (M-Series, and includes mechanical demo)
- Exhibit K: Plumbing (P-Series includes plumbing demo)
- Exhibit L: Irrigation (I-Series)
- Exhibit M: Fire Protection (F-Series)
- Exhibit N: Electrical and Lighting (E-Series)
- Exhibit O: Technology (T-Series)
- Exhibit P: Project Manual Volume I
- Exhibit Q: Project Manual Volume II

This Proposal, and Agreement have
been prepared by:

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

Robert F. Phillips, P.E., City Engineer

RFP: rw

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:	OLBRICH BOTANICAL GARDENS EXPANSION PROJECT 1
CONTRACT NO.:	8162
SBE GOAL	8%
BID BOND	5%
SBE PRE BID MEETING (1:00 P.M.)	JUNE 22, 2018 OR JULY 6, 2018
PRE BID CONFERENCE (9:30 A.M.)	JUNE 13, 2018 OR JUNE 27, 2018
PREQUALIFICATION APPLICATION DUE (2:00 P.M.)	JULY 5, 2018
BID SUBMISSION (2:00 P.M.)	JULY 12, 2018
BID OPEN (2:30 P.M.)	JULY 12, 2018
PUBLISHED IN WSJ	MAY 31, JUNE 7,14, 21, & 28

SBE PRE BID MEETING: General Contractors submitting bids for this contract are strongly urged to attend one of the SBE Meetings noted above. The Affirmative Action Representative on hand will be able to answer your questions and provide assistance in filling out the various SBE forms.

PRE-BID CONFERENCE: The City of Madison is conducting two (2) Pre-Bid Walk through sessions at Olbrich Botanical Gardens, 3330 Atwood Ave., 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.

These are the only times contractors shall be allowed access to non-public areas of the project area. You may review Public Areas at any time during normal operating hours.

1. Wednesday June 13, 2018 from 9:30AM to 11:00AM, meeting is tentatively scheduled to begin in "The Commons".
2. Wednesday June 27, 2018 from 9:30AM to 11:00AM, meeting is tentatively scheduled to begin in "The Commons".

Staff from MSR Design, City Project Manager, and City Construction Manager will be on hand to take questions related to the plans and specifications. Questions shall be recorded and responded to in the form of a published addendum.

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

- See the contract contact information at the end of Section D-Special Provisions for names and email addresses.
- Emails shall have "**Contract 8162 - Request for Substitution**" in the subject line.

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

- All requests for substitution shall meet one of the three criteria in Section 1.1.B of the specification. Requests that do not meet the criteria will not be considered.
- All requests for substitution shall be complete in a single PDF document as described in Section 3.1 of the Specification. Requests that do not provide sufficient information, multiple documents, etc. will not be considered.
- Sales solicitations (including solicitations of products or equipment that are not in the plans and specifications) and requests to other than the Project Architect and City Project Manager will not be considered.

The **deadline** for receiving substitution requests shall be **6:00PM on Friday, June 22, 2018**. No additional substitution requests will be received after this deadline.

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

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

- See the contract contact information at the end of Section D-Special Provisions for names and email addresses.
- Emails shall have "**Contract 8162 - Questions and Clarifications**" in the subject line.

The **deadline** for receiving questions and clarifications shall be **6:00PM on Wednesday, June 27, 2018**. No additional questions or requests for clarifications will be received after this deadline.

All responses shall be published in the form of an addendum.

PUBLISHING ADDENDUMS: The City of Madison shall publish bidding addenda as needed during the bidding period. The last addenda (if needed) shall be published on or about 4:00PM, Tuesday, July 3, 2018 to give all contractors sufficient time to review the addenda before bids are due. The City of Madison reminds all General Contractors you that you must acknowledge having read all addenda when submitting your bid. Failure to acknowledge all addenda shall disqualify your bid.

PREQUALIFICATION APPLICATION: Forms are available on our website, www.cityofmadison.com/business/pw/forms.cfm. 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.

THE BID OPENING is at 1600 EMIL ST., MADISON, WI 53713.

STANDARD SPECIFICATIONS

The City of Madison's Standard Specifications for Public Works Construction - 2018 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/Business/PW/specs.cfm.

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

SECTION 102.1: PRE-QUALIFICATION OF BIDDERS

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

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

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

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

SECTION 102.4 PROPOSAL

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

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

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

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

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

SECTION 102.5: BID DEPOSIT (PROPOSAL GUARANTY)

All bids, sealed or electronic, must be accompanied with a Bid Bond equal to at least 5% of the bid or a Certificate of Annual/Biennial Bid Bond or certified check, payable to the City Treasurer. Bid deposit of the successful bidders shall be returned within forty-eight (48) hours following execution of the contract and bond as required.

MINOR DISCREPENCIES

Bidder is responsible for submitting all forms necessary for the City to determine compliance with State and City bidding requirements. 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 ☐ 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/dcr/aaTBDir.cfm.

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/dcr/aaTBDir.cfm. 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

OLBRICH BOTANICAL GARDENS EXPANSION PROJECT 1
CONTRACT NO. 8162

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 102.8 EXAMINATION OF SITES OF WORK

The City of Madison is conducting two (2) Pre-Bid Walk through sessions at Olbrich Botanical Gardens, 3330 Atwood Ave., 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.

These are the only times contractors shall be allowed access to non-public areas of the project area. You may review Public Areas at any time during normal operating hours.

1. Wednesday June 13, 2018 from 9:30AM to 11:00AM, meeting is tentatively scheduled to begin in "The Commons".
2. Wednesday June 27, 2018 from 9:30AM to 11:00AM, meeting is tentatively scheduled to begin in "The Commons".

Staff from MSR Design, City Project Manager, and City Construction Manager will be on hand to take questions related to the plans and specifications. Questions shall be recorded and responded to in the form of a published addendum.

SECTION 102.12 BEST VALUE CONTRACTING

This Contract shall be considered a Best Value Contract if the Contractor's bid is equal to or greater than $61,000 for a single trade contract; or equal to or greater than $297,500 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 (1600 Emil St) prior to **12:00pm on Thursday, August 9, 2018.** Delays in turning in the required completed contract documents will not adjust the project completion date.

Payment and Performance Bonds shall be dated no sooner than Wednesday August 8, 2018.

ARTICLE 104 SCOPE OF WORK

This contract is for work being done at Olbrich Botanical Gardens, 3330 Atwood Ave. Madison as described below and as per the plans and specifications:

1. The Learning Center is a two story structure of approximately 9200 square feet.
    a. The first floor will contain a single large open classroom that can be partitioned into 2 or 3 separate classrooms as needed; an outdoor learning space; mechanical space; elevator; and stair.
        i. Selective demolition of the existing Lobby exterior wall will provide connecting access to the Learning Center.
    b. The second floor will contain the Learning Center staff offices as well as a public observation deck accessible by the interior stair or an exterior stair.

c. A 60,000-gallon concrete cistern below the first floor will collect rainwater as part of the Storm Water Management requirements for this project. The rainwater will be recycled as plant water for the Conservatory and Greenhouse providing approximately 90% of the annual indoor watering needs.
d. Due to existing soil conditions the foundation will be set on helical piers.
e. Much of the garden paths and patios will need to be relocated due to the construction or construction access.

2. The existing Greenhouse, slab, and foundation will be demolished and removed.
3. A new Greenhouse of approximately 11,000 square feet shall be constructed in approximately the same location as the existing structure.
    a. The greenhouse will be divided into 4 different growing zones (Production, Tropical, Intermediate Orchid, Cool Orchid) of different sizes.
4. The entire existing Olbrich Botanical Gardens campus will receive fire protection upgrades through sprinklering and rated doors as indicated in the plans and specifications.
5. The Olbrich Botanical Gardens Horticultural Staff will be responsible for all landscaping associated with this contract. The Contractor shall be responsible for striping, stockpiling, and returning topsoil to the construction area.

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.

In addition, the Contractor shall include all costs of disposal, equipment rental, utility service installations, and any other costs whatsoever which may be required for execution of this contract. Costs of required permits shall be covered by the City of Madison. See specification 00 31 46 for more information.

SECTION 104.1 LANDS FOR WORK

Demolition and Construction activities shall be limited to the Olbrich Botanical Gardens Campus located at 3330 Atwood Ave. in Madison, WI. The City of Madison Parks Division has identified specific areas of adjacent and nearby park property for contractor vehicle parking, contractor field office location, material storage and top soil stock pile. Review sheet G001 of the plan set for locations.

The contractor shall be restricted to keeping all work within the indicated construction limits to minimize impact on public access to the botanical gardens which will remain open.

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 Specification, 2018 Edition
- These Special Provisions
- All Addendums to the bidding documents
- Any supplemental instructions, details, or specifications issued during the course of the contract.
- Exhibit A: General (G-Series sheets)
- Exhibit B: Architectural Existing, includes all of the following Record Drawings:
    - 1970s Building set
    - 1980s Building Set
    - 2015 Restroom Addition
    - 2015 Roof Replacement
    - 2017 Site Survey for this project
- Exhibit C: Arch Demo (AD-Series)
- Exhibit D: Civils (C-Series)
- Exhibit E: Landscape (L-Series)
- Exhibit F: Architectural (A-Series)
- Exhibit G: Structural (S-Series)
- Exhibit H: Greenhouse (GH-Series)
- Exhibit I: Greenhouse Radiant Heating (H-Series)

- Exhibit J: Mechanical (M-Series, and includes mechanical demo)
- Exhibit K: Plumbing (P-Series includes plumbing demo)
- Exhibit L: Irrigation (I-Series)
- Exhibit M: Fire Protection (F-Series)
- Exhibit N: Electrical and Lighting (E-Series)
- Exhibit O: Technology (T-Series)
- Exhibit P: Project Manual Volume I
- Exhibit Q: Project Manual Volume II

SECTION 105.5 INSPECTION OF WORK

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

The Contractor shall provide access to all of the work associated with this contract to the staff and consultants of the Architectural design team (MSR) and the staff and consultants of the City design team.

SECTION 105.6 CONTRACTORS RESPONSIBILITY FOR WORK

The Contractor shall not take advantage of any discrepancy in the plans or specifications. This shall include but not be limited to apparent errors, omissions, and interpretations involving codes, regulations, and standards.

Any Contractor who identifies such a discrepancy during the bidding process shall notify the Project Architect and the City Project Manager of the discrepancy prior to the "Questions and Clarifications Deadline" as noted in Section A of the bid documents.

Review Specification 01 31 13 Project Coordination for additional responsibilities.

SECTION 105.9 SURVEY, POINTS, AND INSTRUCTIONS

The Contractor shall be responsible for establishing all survey staking, reference points and bench marks required to complete this contract.

Review Specification 01 31 23 Survey and Layout Data for additional information.

SECTION 105.12 COOPERATION BY THE CONTRACTOR

The Contractor shall be responsible for all temporary facilities including heat, toilet facilities, etc. as needed. Temporary facilities shall include any fuel or service required to operate or maintain the temporary facility. Review Specification 01 50 00 Temporary Facilities and Controls.

The Contractor shall review the site plans for site constraints and adjust his/her bid according to those constraints.

Olbrich Botanical Gardens (OBG) shall remain fully operational during the execution of this contract. The facility is open to the public beginning at 9 a.m. daily as well as providing rental facilities for weddings, banquets, seminars, and other similar functions. In addition, OBG schedules several public and private events annually.

The Lobby is the central hub of the OBG Campus for the visiting public as well as for staff. The Contractor shall be responsible for providing a temporary wall within the Lobby during the demolition and construction phase. The temporary wall shall be well constructed, insulated, sealed, and finished on the Lobby side. The Contractor shall ensure the Lobby stays weather proof at all times including while the roof is removed. The Contractor shall immediately respond to any leaking issues as necessary to keep the Lobby clean and hazard free for public and staff.

The Headhouse is the primary support facility for the Greenhouse and Conservatory plants as well as the work space for much of the OBG staff and volunteers. The main drive through aisle shall be kept clear of construction equipment and materials at all times unless coordinated at least 3 working days in advance.

During the winter all doors shall be kept closed except when bringing materials in or out. Temporary walls covered in plastic and exhaust fans shall be required to keep dust and debris out of the Headhouse.

The following is a list of OBG scheduled events that will occur during the execution of this contract. Some of these events may impact the construction schedule or access to certain areas (see Section 105.13 below).

- The following major events have been scheduled during the execution of this contract:
  - GLEAM; runs from September 1 - October 27, 2018 primarily Wednesday-Saturday evenings
  - The Annual Holiday Train Show in the Atrium (referred to as the "1970s Building" in the plan set)
    - Setup begins Monday November 12, 2018
    - Show runs November 30 - December 31, 2018
    - Teardown completed by Monday January 7, 2019
  - The Conservatory is closed for annual maintenance from March 25 - April 5, 2019
  - Annual Plant Sale in the parking lot May 6-10, 2019
  - Rhapsody in Bloom, setup and event, June 10-17, 2019
  - Blooming Butterflies, setup and event, July 15 - August 14, 2019
  - GLEAM; runs from August 24 - October 26, 2019 primarily Wednesday-Saturday evenings
- "The Commons" has internal and external reservations on a continuing basis in half day, full day, and evening blocks of time.
  - The Contractor shall coordinate access to the Commons with the Project Manager and OBG Staff as far out as possible to avoid conflicts with scheduling.
  - The Contractor shall maintain a high degree of work area cleanliness in this area at all times. At the end of each work period materials and equipment shall be neatly consolidated to the minimum footprint possible, secured, and roped off from general access.
- The 1970's Building is a 2-story structure that will be used as follows during the contract:
  - The 2nd floor conference room is used on a continuing basis in half day, full day, and evening blocks of time. The Contractor shall coordinate access to the 1970's Building area as far out as possible to avoid conflicts with scheduling.
  - The lower level will be used as the temporary public access to the garden after November 5, 2018 through the end of construction to keep the public away from the immediate construction zone.
  - The Contractor shall maintain a high degree of work area cleanliness in this area at all times. At the end of each work period materials and equipment shall be neatly consolidated to the minimum footprint possible, secured, and roped off from general access.

OBG and the City Project Manager may let additional contracts with local artisans and other contractors to perform certain work during the execution of this contract. The Contractor shall cooperate and schedule with these contractors as needed. Review Section 02 41 19 Selective Demo and Other Owner Work for additional information.

SECTION 105.13 Order of Completion

The Contractor shall be responsible for all means and methods associated with scheduling the completion of work related with this contract and shall plan their work and scheduling as needed to accommodate the following Owner requirements:

- The fiber optic line from the existing data closet to the Garver Cottage (Horticultural Staff offices) must be relocated prior to the demolition of the existing greenhouse. Shutdowns for splicing the new line to the existing line are acceptable. The Contractor shall notify the Owner a minimum of 3 working days in advance of the shutdown. The duration of the shutdown shall be as short as practical.
- The existing irrigation system must remain operational until October 15, 2018 and be back in operation by May 1, 2019. Shutdowns for temporary re-location of the main is acceptable. The

Contractor shall notify the Owner a minimum of 3 working days in advance of the shutdown. The duration of the shutdown shall be as short as practical.

- Areas indicated on Civil sheet C200 must remain operational and accessible until November 5, 2018 to accommodate pre-programmed events.
    - OBG is adjusting their 2019 programming to accommodate the construction activities and will access the gardens through the 1970's Building.
- The 1970s Building will not be available for any work during the Holiday Train Show (see Section 105.12).
- The Bolz Conservatory shall be accessible during construction. It is recommended that the contractor use the 2-week annual maintenance period (see Section 105.12) above for replacing the existing doors with the fire rated doors.
- The Bolz Conservatory and Headhouse will not be accessible during the Blooming Butterflies event (see Section 105.12).
- Work in and above "The Commons" must be coordinated with OBG during the pre-construction meeting. This space is used on a regular basis for portions of the day, all day, luncheons and evening classes. It will be preferred that the contractor plan to do all work in and above the commons when large blocks of time are available or only internal events have been scheduled.
- The Contractor shall coordinate with the Project Manager and OBG Staff for work planned in other areas (including but not limited to Rest Rooms, Gift Shop, Library, and Administrative Offices). Coordination shall be a minimum of 2-weeks in advance of when the space will be needed.

SECTION 105.15 Substantial Completion

The Contractor shall refer to Specification 01 77 00 Closeout Procedures for definitions and procedures related to Substantial Completion.

SECTION 107.6 Dustproofing (Particulate Matter Control)

The Contractor shall be responsible for complying with all Madison General Ordinances associated with controlling Particulate Matter.

Concrete, paver, stone, mortar, tile, or other similar material that produces fine dust or silica dust shall be wet cut whenever possible. Where wet cutting is not practical high quality vacuums shall be used to capture the dust immediately during cutting operations. All residue shall be cleaned immediately after cutting operations are complete.

Air intake louvers in the vicinity shall be filter protected during cutting operations.

SECTION 107.13 Tree Protection Specifications

The Contractor shall review this section of the City Standard Specifications for Public Works and the amendments noted in Section 3.3 of Specification 01 76 00 Protecting Installed Construction.

SECTION 108.2 PERMITS AND LICENSING

The Contractor shall be responsible for all applications of permits (and providing any required attachments) that may be required for the execution of this contract.

- The Contractor shall work with all sub-contractors to know which applications are being made, to what agency, and when.
- The Contractor shall provide the City Project Manager with all of the following;
    - Notification of what application is being made, to what agency and when.
    - Cost of the application fee or completed permit fee
    - A copy of the completed permit

The City of Madison upon submitted application or completed review shall pay for all fees associated with the fee/permit.

Where a fee covers initial inspections associated with the permit the Contractor shall be responsible for paying for any fees associated with re-inspections.

The Project Manager through the Parking Lot and Site Review process has already secured the following Permits:

- City of Madison Erosion Control Permit
- City of Madison Storm Water Management Permit
- Wisconsin Department of Natural Resources (WDNR) NR216 Permit

The Contractor shall be responsible for notifying City Engineering of all information required to complete the above mentioned permits.

SECTION 109.7 TIME OF COMPLETION

Work shall begin only 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 30, 2018.

The Contractor shall review Specification 01 29 76 Progress Payment Procedures, Specification 01 77 00 Closeout Procedures, and be completely familiar with the progress payment milestones and definitions related to Construction Closeout and Contract Closeout.

The Contractor shall have reached a level of **Construction Closeout** - NO LATER THAN Friday **September 20, 2019**. This milestone by definition of the specifications includes Owner Occupancy of all spaces.

ARTICLE 210 EROSION CONTROL

See City of Madison Standard Specifications for Public Works Contracts Article 210 for more complete information.

The Contractor shall include all costs for the materials, installation, maintenance, and removal of all storm water management Best Management Practices (BMP) to be used during the execution of this contract with his/her base bid.

The Contractor shall be required to perform all required inspections, reporting, corrective actions, and fines associated with the requirements of the permits and City of Madison Ordinances.

NON STANDARD BID ITEMS

BID ITEM 90001 – Construction of the Learning Center and Greenhouse

DESCRIPTION: BID ITEM 90001 shall include all demolition, selective demolition, construction of structures, construction of hardscape features, installation of fire protection items and other related work except as noted by other bid items or alternates.

This shall include all labor, equipment, materials, and permits required to complete this contract to plans and specifications.

METHOD OF MEASUREMENT: BID ITEM 90001 shall be measured as LUMP SUM of the entire contract as indicated in the plans and specifications.

BASIS OF PAYMENT: BID ITEM 90001 shall be paid at the contract unit price. Partial payments may be authorized by the Project Manager at the request of the Contractor. All partial payments shall be subject to standard City of Madison contract retainage procedures.

BID ITEM 90002 – PV Solar Equipment

DESCRIPTION: Bid Item 90002 shall include all labor, equipment, materials, and permits required to complete the PV solar panel installation indicated in the plans and specifications.

METHOD OF MEASUREMENT: Bid Item 90002 shall be measured as LUMP SUM of the entire contract as indicated in the plans and specifications.

BASIS OF PAYMENT: Bid Item 90002 shall be paid at the contract unit price. Partial payments may be authorized by the Project Manager at the request of the contractor. All partial payments shall be subject to standard City of Madison contract retainage procedures.

BID ITEM 90003 – Fire Hydrant

DESCRIPTION: Bid Item 90003 shall include all labor, equipment, materials, and permits required to complete the installation of the fire hydrant to be located in the Sugar Ave. right-of-way indicated in the plans and specifications.

METHOD OF MEASUREMENT: Bid Item 90003 shall be measured as LUMP SUM of the entire contract as indicated in the plans and specifications.

BASIS OF PAYMENT: Bid Item 90003 shall be paid at the contract unit price. Partial payments may be authorized by the Project Manager at the request of the contractor. All partial payments shall be subject to standard City of Madison contract retainage procedures.

POINTS OF CONTACT

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

Randy Wiesner
PH: (608) 267-8679
Email: RWiesner@cityofmadison.com
210 Martin Luther King Jr Blvd
Room 115
Madison, WI 53703

The Project Architect for Meyer, Scherer, Rockcastle Ltd. (MSR Design) for this contract is:

Stephen Bellairs
PH: (612) 315-0246
Email: stephen@msrdesign.com
710 S. 2nd St., 8th Fl.
Minneapolis, MN 55401

Department of Public Works
Engineering Division
Robert F. Phillips, 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
Gregory T. Fries, P.E.
Kathleen M. Cryan

Principal Engineer 2
Christopher J. Petykowski, P.E.
John S. Fahrney, P.E.

Principal Engineer 1
Christina M. Bachmann, P.E.
Mark D. Moder, P.E.
Janet Schmidt, P.E.

Facilities & Sustainability
Jeanne E. Hoffman, Manager
Bryan Cooper, Principal Architect

Mapping Section Manager
Eric T. Pederson, P.S.

Financial Manager
Steven B. Danner-Rivers

June 20, 2018

NOTICE OF ADDENDUM
ADDENDUM NO. 1

CONTRACT NO. 8162, PROJECT NO. 17193
Olbrich Botanical Gardens Expansion Project 1

This addendum is issued to modify, explain or correct the original Drawings, Specifications, or Contract Documents marked as ***Olbrich Botanical Gardens Expansion Project 1, City of Madison Project 17193, Contract #8162, as issued on June 1, 2018*** and is hereby made a part of the contract documents. This addendum consists of three (3) pages and the referenced exhibits.

Please acknowledge this addendum on page E1 of the contract documents and/or in Section E: Bidder's Acknowledgement on Bid Express.

An electronic version of these documents can be found on the Bid Express web site at:
http://www.bidexpress.com

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

For questions regarding this bid, contact:

Randy Wiesner
City of Madison Engineering
Phone: 608-267-8679
Fax: 608-264-9275
Email: RWiesner@cityofmadison.com

Sincerely,

Robert F. Phillips, P.E., City Engineer

Cc: Greg Fries

1. **GENERAL CONTRACT CONDITIONS**
   A. Contract Tab A; Advertisement for Bids and Instructions to Bidders; The SBE Pre-Bid Meeting paragraph has been corrected to read as follows:

      Representatives of the Affirmative Action Department will be present to discuss the Small Business Enterprise requirements at 1600 Emil Street, Madison Wisconsin.

      General Contractors submitting bids for this contract are strongly urged to attend one of the SBE Meetings noted above

   B. Contract Tab D – Special Provisions; ADD to section 102.4 the following information:

      The bidder shall completely fill out the "SUPPLEMENTAL UNIT PRICES WORKSHEET" and submit it with all other required bid documents.

2. **GENERAL QUESTIONS AND ANSWERS**

   This section is not used.

3. **ACCEPTABLE EQUIVALENTS**

   This section is not used.

4. **SPECIFICATIONS**

   This section is not used.

5. **DRAWINGS**
   A. Cover Sheet; Now includes City of Madison Public Works authorization information.
   B. The following sheets have been modified and are provided as "**Exhibit Q_Arch – Bid Addendum 1.pdf**" on Bid Express
      i. Sheet G000; Sheet index updated
         - Sheet GH6.6 was deleted
         - Sheet GH6.8 was renumbered to be GH8.2
      ii. G051; Added missing sheet to the plan set
      iii. G052; Added missing sheet to the plan set
      iv. A201; Added material tags to drawing 2
      v. A202;
         - Added notes to drawing 1
         - Added material tags to drawing 3
      vi. A351; Updated drawing numbers throughout sheet
      vii. A352; Added material tags to drawing 4
      viii. A353; Updated details and notes to drawings 1, 2, and 3
      ix. A354; Updated drawing numbers throughout sheet
      x. A355; Updated drawing numbers throughout sheet
      xi. A356; Added notes to drawing 6
      xii. A357;
         - Updated drawing numbers throughout sheet
         - Updated details and notes to drawings 3, 6, and 7
      xiii. A401; Added drawing 12 to the sheet
      xiv. A402; Updated details and notes to drawings 2, 3, 4, 5, and 6
      xv. A403;
         - Updated drawing numbers throughout sheet
         - Updated details and notes to drawings 2, and 9
         - Added drawings 10 and 11 to the sheet
      xvi. A501; Updated details and added material tags to drawings 1 and 5

xvii. A552; Updated details and added dimensions to drawings 1, 5 and 7
xviii. A601; Updates to the door schedule
xix. A801; Extended the length of the millwork on drawing 1
xx. A802; Extended the length of the millwork on drawings 1 and 2

C. The following sheets have been modified and are provided as "**Exhibit R_Structural – Bid Addendum 1.pdf**" on Bid Express
   i. S002; Revision to the Pile Cap Schedule
   ii. S102; Revisions to grade beam locations at east side of Outdoor Classroom
   iii. S103;
      - Revisions to railing support details 4 and 5
      - Revisions to railing supports on plan, per architect coordination
      - Revisions to railing support keynotes
      - Revision to edge of deck dimension at elevator shaft near grid D
   iv. S301; Revision to detail 10 per coordination with architect

D. The following sheets have been modified and are provided as "**Exhibit S_Mechanical – Bid Addendum 1.pdf**" on Bid Express
   i. M101; Added keyed notes

E. The following sheets have been modified and are provided as "**Exhibit T_Plumbing – Bid Addendum 1.pdf**" on Bid Express
   i. P100; Added/relocated storm drain piping
   ii. P101;
      - Added/relocated storm drain piping
      - Added sanitary drain piping for 2nd floor FD
   iii. P102; Relocated roof drain
   iv. P112; Added hose bibb to Greenhouse
   v. P201; Added FD to drawing 1
   vi. P401; Updates to the Plumbing Fixture Schedule

6. **PROPOSAL**

This section is not used.

End of Contract 8162 Addendum 1

PLUMBING FIXTURE SCHEDULE

MARK	FIXTURE	MANUFACTURER	MODEL	MOUNT	ROUGH-IN SCHEDULE COLD	HOT	WASTE	VENT	FITTINGS AND REMARKS
WC-1A	MANUAL FLUSH VALVE WATER CLOSET	ZURN	Z5615-BWL	WALL	1-1/2"	-	4"	2"	WITH 1.28GPF MANUAL VALVE MODEL Z6000PL-HET, ELONGATED OPEN FRONT SEAT, Z1201 OR Z1202 EZCARRY CARRIER, WHERE TAGGED WC-1A, UNIT SHALL BE INSTALLED TO A.D.A. HEIGHT.
L-1A	WALL HUNG LAVATORY	AMERICAN STANDARD	0924.001EC	WALL	3/4"	3/4"	2"	1-1/2"	INCLUDE 28999-XL-ANS HARD-WIRED FAUCET WITH 0.35 GPM VANDAL-RESISTANT NON-AERATED OUTLET. PROVIDE POINT OF USE MIXING VALVE, ASSE 1070 APPROVED.
S-1	LEARNING CENTER CLASSROOM SINK	ELKAY	EFRU191610	UNDERMOUNT	3/4"	3/4"	2"	2"	PROVIDE ELKAY LKD2432C 8" CENTERSET, CONCEALED DECK MOUNT FAUCET WITH 1.5 GPM FLOW RATE. PROVIDE POINT OF USE MIXING VALVE, ASSE 1070 APPROVED.
S-2	LEARNING CENTER CLASSROOM SINK	ELKAY	ELUHAD3121255PD	UNDERMOUNT	3/4"	3/4"	2"	2"	PROVIDE ELKAY LK3736C SENSOR OPERATED AT 0.5 GPM FLOW. PROVIDE POINT OF USE MIXING VALVE, ASSE 1070 APPROVED.
MS-1	MOP SINK	MUSTEE	63A	FLOOR	3/4"	3/4"	3"	1 1/2"	PROVIDE #3 BRM SERVICE FAUCET, #5 709 HOSE AND HOSE HOLDER, #5 890 MOP HANGER, AND #7 2424 WALL GUARDS.
DF-1	BI-LEVEL WITH BOTTLE FILLER	ELKAY	LZWSL8PMSNK	WALL	3/4"	-	2"	1-1/2"	INSTALL TO COMPLY WITH A.D.A. REQUIREMENTS. PROVIDE FILTER. PROVIDE TWO ADDITIONAL FILTERS FOR REPLACEMENT.
HB-1	NON-FREEZELESS WALL FAUCET	WOODFORD	161P	WALL	3/4"	-	-	-	ANTI-SIPHON WALL FAUCET WITH INTEGRAL CHECK AND ATMOSPHERIC VENT.
HB-2	FREEZELESS WALL HYDRANT	WOODFORD	67	EXT. WALL	3/4"	-	-	-	ANTI-SIPHON, CHROME FINISH, EXPOSED WITH OPERATING KEY.

1

FLOOR AND ROOF DRAIN SCHEDULE

MARK	FIXTURE	MANUFACTURER	MODEL	MOUNT	ROUGH-IN SCHEDULE WASTE	VENT	FITTINGS AND REMARKS
FD-1	FLOOR DRAIN	ZURN	Z5415-BWL	FLOOR	3"	2"	PROVIDE 3" OUTLET. WHERE FUNNELS ARE INDICATED ON PLAN, PROVIDE ZURN OVAL FUNNEL. FIELD WELDING OF FUNNELS TO STRAINERS IS NOT ALLOWED.
FS-1	FLOOR SINK	ZURN	Z1900	FLOOR	4"	2"	12X12X4 PORCELAIN ENAMEL CAST IRON FLOOR SINK. PROVIDE WITH LOOSE SET 3/4" GRATE, ALUMINUM DOME BOTTOM STRAINER.
TD-1	TRENCH SYSTEM	ACO DRAIN	K100	FLOOR	-	-	UNIT SHALL BE MODULAR TRENCH DRAIN SYSTEM. PROVIDE SLOTTED STEEL, SEAMLESS LOCKING, HD SLIP AND ADA COMPLIANT GRATE. PROVIDE GRATE REMOVAL TOOL (TOTAL OF 4). TRENCH DRAIN CLEANING TOOL (TOTAL OF 4). ALL PARTS SHALL BE LEED CERTIFIED.
CB-1	CATCH BASIN	ACO DRAIN	K2-900G	FLOOR	6"	SEE PLAN	INLINE CATCH BASIN WITH 6" OUTLET AT 25.19' INVERT. INCLUDE INLINE TRASH BUCKET.
RD-1	ROOF DRAIN	ZURN	Z100	ROOF	SEE PLAN	-	WITH PLAIN BRONZE DOME.
ORD-1	OVERFLOW ROOF DRAIN	ZURN	Z199	ROOF	SEE PLAN	-	WITH PLAIN BRONZE DOME.
AD-1	AREA DRAIN	ZURN	Z550	ROOF	SEE PLAN	-	WITH DURA-COATED CAST IRON BODY AND TOP. INCLUDE SECONDARY STRAINER AND SEDIMENT BUCKET.
AD-2	AREA DRAIN	ZURN	Z1730	ROOF	SEE PLAN	-	STAINLESS STEEL CONSTRUCTION.

EXPANSION TANK SCHEDULE

EXPANSION TANK #	SYSTEM	LOCATION	SIZE HEIGHT (IN)	SIZE DIAMETER (IN)	CAPACITY ACCEPT. VOLUME (GAL.)	CAPACITY TANK VOLUME (GAL)	PRE-CHARGE (PSIG)	MAXIMUM PRESSURE IN TANK (PSI)	SYSTEM WATER VOLUME (GAL)	SYSTEM CONNECTION SIZE (IN)	MANUFACTURER	MODEL	NOTES
ET-2	HOT WATER	FOG PUMP ROOM 35	11	8	1.46	2.1	20	150	104	3/4	WATTS	PLR-5	1,2

NOTES
1. PER DETAIL 2/P401.
2. INSTALL PER MANUFACTURER'S RECOMMENDATIONS.

SUMP PUMP SCHEDULE

Type Num	MARK	DESCRIPTION	MANUFACTURER	SUMP MODE NUMBER	SUMP SIZE	STANDARD CONNECTIONS	ELECTRICAL H.P.	ELECTRICAL VOLTS	ELECTRICAL PHASE	CHECK VALVE	GPM	CORD LENGTH	NOTES
SUMP	SP-1	POLY BASIN WITH SEALED STEEL COVER	WEIL	1411-OSS	30" x 120"	2"	1/2	115	1	2"	50 @ 15'	20'	1,2,3,4
SUMP	SP-2	POLY BASIN WITH SEALED STEEL COVER	WEIL	1418	30" x 144"	2"	1/2	115	1	2"	29 @ 15'	20'	1,2,3,5

NOTES:
1. AUTOMATIC VERTICAL FLOAT SWITCH.
2. SEE DETAIL 6/P301 AND 7/P301.
3. PROVIDE WITH LOCAL CONTROL PANEL FROM MANUFACTURER; NO CONNECTION TO B.A.S.
4. SIMPLEX INSTALLATION.
5. DUPLEX INSTALLATION.

CIRCULATION PUMP SCHEDULE

MARK	SERVICE	MAXIMUM WORKING PRESSURE (PSI)	MAXIMUM OPERATING TEMP (°F)	ELECTRICAL CHAR.	HP	FLANGE SIZE (IN.)	FLOW (GPM)	HEAD (FT)	MANUFACTURER & MODEL NO.	NOTES
P-6	GREENHOUSE HEATING TABLE	175	230	115/1/60	1/12	3/4	5.5	5.0	BELL AND GOSSETT, ECOCIRC XL 20-35	1,2,3
P-7	GREENHOUSE MISTING TABLE	175	250	208/1/60	1/2	2.0	11	75	BELL AND GOSSETT, ECOCIRC XL 20-140	1,2,3

NOTES:
1. STAINLESS STEEL IMPELLER.
2. SEE DETAIL 8/P301.
3. DISCONNECT BY ELECTRICAL CONTRACTOR.

TANKLESS GAS WATER HEATER SCHEDULE

MARK	LOCATION	TEMPERATURE RISE (DEG F)	MBH INPUT	AIR INTAKE (IN.)	FLUE EXHAUST	MANUFACTURER	MODEL	NOTES
WH-2	GREENHOUSE	70	199	2	2	BOSCH	T9500	1,2,3

NOTES:
1. UNIT SHALL BE OUTDOOR RATED.
2. PROVIDE CONCENTRIC VENT TERMINATION.
3. INSTALL PER MANUFACTURER'S WRITTEN INSTRUCTIONS.

MIXING VALVE SCHEDULE

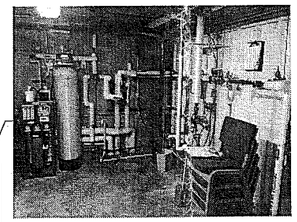
MARK	LOCATION	FLOW (GPM)	INLETS & OUTLETS (IN)	MANUFACTURER & MODEL NO.	NOTES
MV-1	HEADHOUSE	50	1 1/4, 1 1/2	LAWLER, 800	1

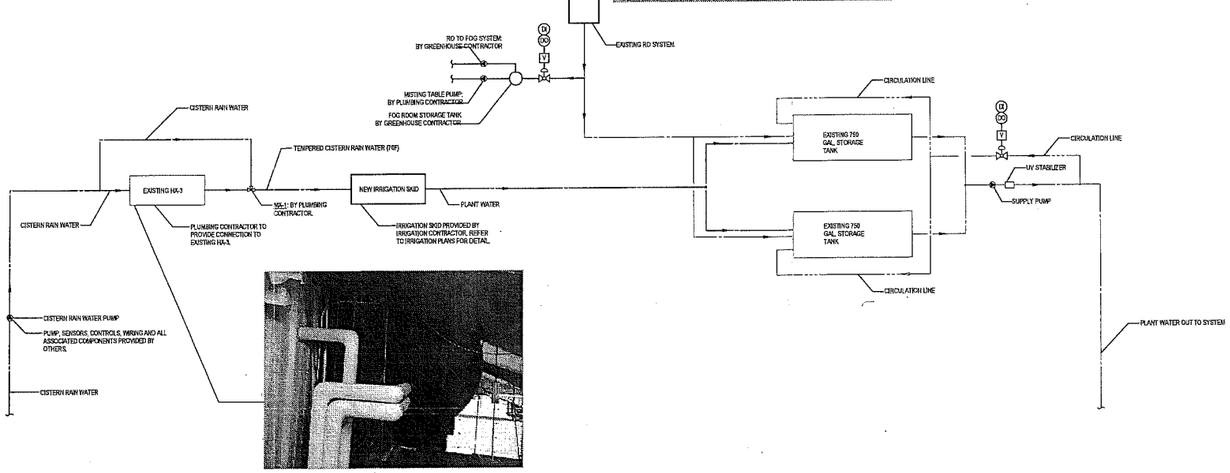
NOTES:
1. INSTALL PER MANUFACTURER'S RECOMMENDATIONS.

RO/RAIN WATER SYSTEM DESIGN INTENT:
1) IF RAIN WATER IS AVAILABLE IN THE CISTERN, CISTERN RAIN WATER SHALL BE USED AS PRIMARY SOURCE OF WATER.
   a) CISTERN RAIN WATER PUMP SHALL TURN ON WHEN THE WATER LEVEL IN THE EXISTING STORAGE TANKS REACHES LOWER LIMIT. CISTERN RAIN WATER PUMP SHALL TURN OFF WHEN THE WATER LEVEL IN THE EXISTING STORAGE TANKS REACHES UPPER LIMIT.
   b) THE RAIN WATER SHALL BE ROUTED FROM THE CISTERN RAIN WATER PUMP TO AN EXISTING SOLAR THERMAL HEAT EXCHANGER.
   c) A THERMOSTATIC MIXING VALVE SHALL BE PROVIDED DOWNSTREAM OF SOLAR THERMAL HEAT EXCHANGER AS SHOWN ON SCHEMATIC DIAGRAM. THE MIXING VALVE SHALL BE SET TO DISCHARGE 70F TEMPERED WATER.
   d) THE TEMPERED WATER SHALL PASS THROUGH AN IRRIGATION SKID TO FILTER RAIN WATER. ONCE RAIN WATER PASSES THE FILTRATION SYSTEM, IT BECOMES PLANT WATER. PLANT WATER FROM OUTLET OF IRRIGATION SKID SHALL BE ROUTED TO EXISTING STORAGE TANKS.
   e) PLANT WATER SHALL FILL STORAGE TANKS TO UPPER LIMIT.
   f) IF THERE IS DEMAND OUT IN THE SYSTEM (A VALVE OPENS), THE SUPPLY PUMP SHALL DRAW PLANT WATER FROM BOTH EXISTING STORAGE TANKS TO PROVIDE SYSTEM PRESSURIZATION; SIMULTANEOUSLY, A 2-POSITION VALVE ON THE CIRCULATION LINE SHALL BE CLOSED. IF THERE IS NO DEMAND OUT IN THE SYSTEM (NO VALVE IS OPEN), THE 2-POSITION VALVE ON THE CIRCULATION LINE SHALL OPEN TO ALLOW CIRCULATION OF PLANT WATER BETWEEN THE EXISTING STORAGE TANKS.
2) IF NO RAIN WATER IS AVAILABLE IN THE CISTERN, RO WATER SHALL BE USED AS PRIMARY SOURCE OF WATER.
   a) RO WATER SHALL FILL EXISTING STORAGE TANKS WHEN THE WATER LEVELS IN THE TANKS REACHES LOWER LIMIT.
   b) IF THERE IS DEMAND OUT IN THE SYSTEM (A VALVE OPENS), THE SUPPLY PUMP SHALL DRAW RO WATER FROM BOTH EXISTING STORAGE TANKS TO PROVIDE SYSTEM PRESSURIZATION; SIMULTANEOUSLY, A 2-POSITION VALVE ON THE CIRCULATION LINE SHALL BE CLOSED. IF THERE IS NO DEMAND OUT IN THE SYSTEM (NO VALVE IS OPEN), THE 2-POSITION VALVE ON THE CIRCULATION LINE SHALL OPEN TO ALLOW CIRCULATION OF RO WATER BETWEEN THE EXISTING STORAGE TANKS.
   c) IF THERE IS DEMAND OUT IN THE SYSTEM (A VALVE OPENS), THE SUPPLY PUMP SHALL DRAW PLANT WATER FROM BOTH EXISTING STORAGE TANKS TO PROVIDE SYSTEM PRESSURIZATION; SIMULTANEOUSLY, A 2-POSITION VALVE ON THE CIRCULATION LINE SHALL BE CLOSED. IF THERE IS NO DEMAND OUT IN THE SYSTEM (NO VALVE IS OPEN), THE 2-POSITION VALVE ON THE CIRCULATION LINE SHALL OPEN TO ALLOW CIRCULATION OF PLANT WATER BETWEEN THE EXISTING STORAGE TANKS.

MISTING AND FOG SYSTEMS DESIGN INTENT:
1) A NEW RO WATER STORAGE TANK SHALL BE PLACED IN THE FOG ROOM. WHEN RO WATER LEVEL IN THE TANK REACHES LOWER LIMIT, A 2-POSITION VALVE SHALL OPEN TO ALLOW FLOW OF RO WATER INTO THE STORAGE TANK. WHEN RO WATER LEVEL IN THE TANK REACHES UPPER LIMIT, A 2-POSITION VALVE SHALL CLOSE TO RESTRICT FLOW OF RO WATER INTO THE STORAGE TANK.
2) MISTING AND FOG SYSTEM SHALL CONNECT SEPARATELY TO THE STORAGE TANK. MISTING AND FOG SYSTEM SHALL NOT TEE-OFF FROM THE SAME LINE.
3) FOG PUMP, ASSOCIATED COMPONENTS AND FOG LINE DOWNSTREAM OF FOG PUMP PROVIDED BY GREENHOUSE CONTRACTOR.

NOTE:
THE FOG AND MISTING SYSTEMS SHALL RECEIVE RO WATER AT ALL TIMES.





2 RAIN/RO WATER SCHEMATIC
NOT TO SCALE

MSR 710 South 2nd Street, 8th Floor Minneapolis, Minnesota 55401-2202
Architecture Interiors and Urban Design
612 375 0336 tel
612 342 2216 fax
www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201
Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
333 South Paterson Street, Suite 1
Madison, WI 53703
608.251.3600 tel

Structural Engineer, Technology and A/V
IMEG Corp.
1600 Demeny Way, Suite 200
Madison, WI 53562
608.222.9600 tel

MEP Engineer
MEP Associates, LLC
650 Blue Gentian Road, Suite 175
Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
575 Bandemere Ave W
St. Paul, MN 55103
651.251.1810 tel

Greenhouse Design
Rough Brothers, Inc.
5513 Vine Street
Cincinnati, OH 45217
513.242.6310 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Engineer under the Laws of the State of Wisconsin.
ENGINEER SEAL

Signature:
Print Name: Larry Nemer
Date: JUNE 4, 2018 License No.: E-30240

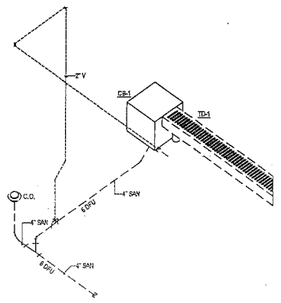
ISSUE MARK	DATE	DESCRIPTION
	09.08.2017	SCHEMATIC DESIGN SUBMISSION
	12.08.2017	DD PROGRESS SET
	01.19.2018	DESIGN DEVELOPMENT SUBMISSION
	03.12.2018	CDC SUBMISSION
	03.30.2018	70% CD PRICING ISSUE
	05.04.2018	90% CONSTRUCTION DOCUMENTS
	06.01.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE
1	06.11.2018	BID ADDENDUM 1

PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: MSR CHECKED BY: MSR

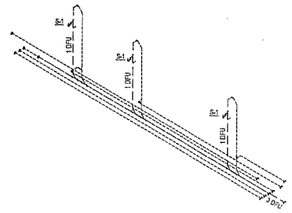
PLUMBING SCHEDULES AND RAIN/RO SCHEMATIC

P401

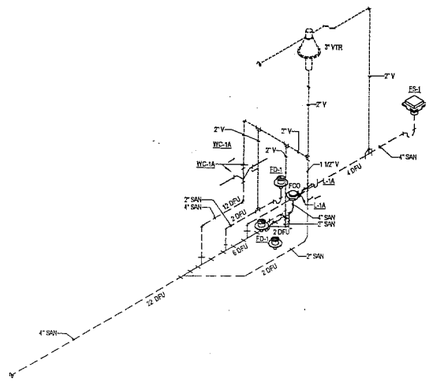
REVISED



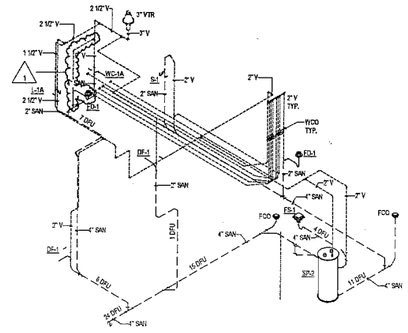
4 TYPICAL TRENCH DRAIN SANITARY RISER



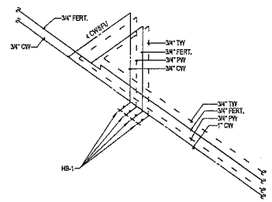
3 TYPICAL S-1 SANITARY RISER



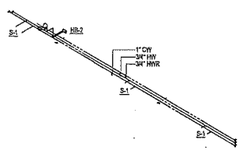
2 TOILET 104 & 105 SANITARY RISER



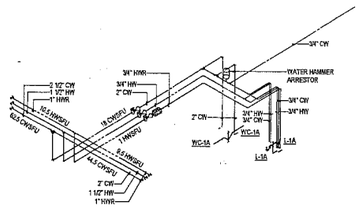
1 MECH ROOM & TOILET 202 SANITARY RISER



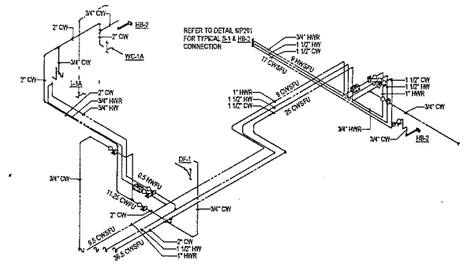
8 TYPICAL HOSE BIBB WATER SUPPLY RISER



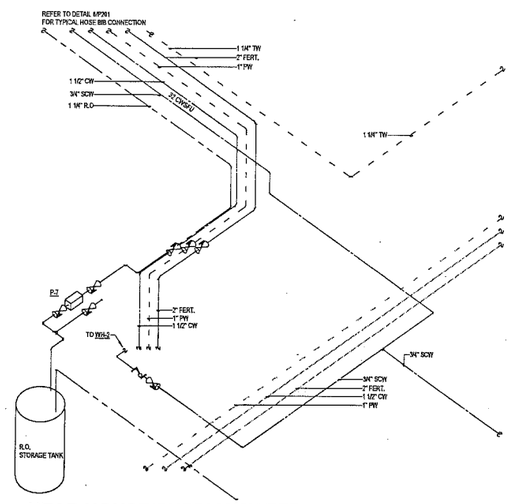
7 TYPICAL S-1 SUPPLY WATER RISER



6 TOILET 104 & 105 SUPPLY WATER RISER



5 MECH ROOM & TOILET 202 SUPPLY WATER RISER



9 HEAD HOUSE SUPPLY WATER

MSR
710 South 2nd Street, 8th Floor
Minneapolis, Minnesota 55401-2262
Architecture Interiors and Urban Design
612.375.0336 tel
612.342.2216 fax
www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201
Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
303 South Paterson Street, Suite 1
Madison, WI 53703
608.251.3600 tel

Structural Engineer, Technology and A/V
IMEG Corp.
1800 Deming Way, Suite 200
Middleton, WI 53562
608.223.9605 tel

MEP Engineer
MEP Associates, LLC
850 Blue Gentian Road, Suite 175
Eagan, MN 55121
651.379.9126 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
575 Minnehaha Ave West
St. Paul, MN 55103
651.251.1010 tel

Greenhouse Design
Rough Brothers, Inc.
5513 Vine Street
Cincinnati, OH 45217
513.242.0310 tel

Olbrich Botanical Gardens
Expansion Phase 1
BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Engineer under the Laws of the State of Wisconsin.
ENGINEER SEAL

Signature:
Print Name: Larry Nestor
Date: JUNE 4, 2018 License No: E-35240

ISSUE		
MARK	DATE	DESCRIPTION
	06.09.2017	SCHEMATIC DESIGN SUBMISSION
	12.08.2017	DD PRICING SET
	01.19.2018	DESIGN DEVELOPMENT SUBMISSION
	01.17.2018	UDC SUBMISSION
	03.31.2018	75% DD PRICING ISSUE
	05.04.2018	100% CONSTRUCTION DOCUMENTS
	05.01.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE
1	06.11.2018	BID ADDENDUM 1

PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: MSR CHECKED BY: MSR

PLUMBING RISER DIAGRAM

P201

REVISED

MATERIAL / PRODUCT ID LIST with Spec Data

ID	Short Name	Section	Spec Data
ACSL-1	ACOUSTICAL CEILING SYSTEM	09 5113	MFR: Armstrong; PRODUCT: Optima, Plant Based; EDGE: Tegular; SUSPENSION:; PANEL SIZE: 24" x 24" x 1"; COLOR: White; GRID: 9/16", White;
ACSL-2	ACOUSTICAL CEILING SYSTEM	09 5113	MFR: Armstrong; PRODUCT: Optima, Plant Based; EDGE: Tegular; MODEL: 536FPI; PANEL SIZE: 24" x 600" x 1"; COLOR: White; GRID: 9/16", White;
AXFL-1	ACCESS FLOORING	09 6800	MFR: Tate; PRODUCT: CorrCore 1000; PANEL SIZE: 24" x 24"; THICKNESS: 1 5/8"; UNDERSTRUCTURE: Pre-lock;
AXFL-2	ACCESS FLOORING	09 6800	MFR: Tate; PRODUCT: STONEWORKS: Classic Concrete; PANEL SIZE: 24" x 24"; THICKNESS: 1 5/8"; FINISH: Prosoco Concrete Protector WB; UNDERSTRUCTURE: Bolted Stringer;
CGT-1	CONCRETE COUNTERTOP	12 3613	PRODUCT: Concrete Countertop; COLOR: TBD; FINISH: Smooth Troweled; EDGE: Eased; SEALER: Clear; Matte; THICKNESS: See Drawings; SPLASHES: See Drawings; JOINT TYPE: Grouted, 1/16"; CUTOUTS: Sink with Drainboard and Faucet;
CFSF	COLD-FORMED STEEL FRAMING - SEE STRUCTURAL	05 4000	PRODUCT: Cold-formed Steel Studs and Furring;
CMU	CONCRETE MASONRY UNIT - SEE STRUCTURAL	04 2200	PRODUCT: Concrete Masonry Units;
CMU-2	CONCRETE MASONRY UNIT - VENEER	04 2200	PRODUCT: Concrete Masonry Units; FINISH: Burnished; COLOR: Mn Sel Dark Grey/Black;
CONC-1	SEALED CONCRETE FINISH - SEE STRUCTURAL	03 3500	PRODUCT: Penetrating Liquid Densifier and Sealer;
CONC-2	POLISHED CONCRETE FINISH	03 3543	POLISH: Level 1; Matte finish, 100 grit; FINISH: Penetrating Liquid Densifier and Sealer; FINISH ADDITIVE: Increte Shur-Gro or HTC Superfloor;
CPT-1	CARPET TILE FLOORING - PLANK	09 6813	MFR: Mohawk; STYLE: Lichen, Mezzo Bloom; COLOR: Iceland Moss
CPT-2	CARPET TILE FLOORING - PLANK	09 6813	MFR: Mohawk; STYLE: Lichen, Mezzo Bloom; COLOR: Iceland Moss
ELEV	HYDRAULIC/MRL ELEVATOR	14 2400	MFR: Otis (or ThyssenKrupp); STYLE: Machine-Roomless Hydraulic; MODEL: Hydrofit (or Evolution MRL); CAB TYPE: Passenger; CAPACITY (lbs): 3,000; SPEED (fpm, even): 100; OPENING: Front, Right Hand; CAB ENTRANCE: 1 Speed, Satin Stainless Steel; OPERATING PANEL: Satin Stainless Steel; CAR PANELS: Custom Laminate, PLAM-4; HANDRAIL: Flat Bar 2W, Satin Stainless Steel; BUMPER RAIL: Solid Bar, Satin Stainless Steel; FLOORING: 2" Recessed Tile Pan Filled With; CEILING: Manufacturer's Standard Finish; HALL ENTRANCE: Clear(s) SW-4; FIXTURES: Class C, Satin Stainless Steel; BUTTONS: Flush, Illuminated Hub;
FAS	FALL ARREST SYSTEM	11 2700	PRODUCT: TBD
FEC	FIRE EXTINGUISHER CABINET	10 4113	MFR: JL Industries (or Larsen); MODEL: Embassy (or Cayuga); STYLE: Recessed Trimless; DOOR: Solid; COLOR: TBD;
GSD	GYPSUM BOARD	09 2900	PRODUCT: Paper-faced Gypsum Board
GDRL-1	DECORATIVE METAL GUARDRAIL	05 7300	PRODUCT: Custom Steel Guardrail; FINISH: PT-4B, UNO;
GL-1	CLEAR ANNEALED GLASS	08 8000	PRODUCT: Annealed Glass; COLOR: Clear; THICKNESS: 1/4"; typ.at; T indicates Tempered
GLSD-1A	GLASS MARKERBOARD - WHITE	10 1100	MFR: Glass Graphics®, LLC; STYLE: WyldWall; COLOR: White, Magnetic Finish;
HDRL-1	DECORATIVE METAL HANDRAIL	05 7300	PRODUCT: Stainless Steel Tubing; FINISH: Satin, No 4 Finish; PROFILE: 1 1/2" Diameter;
IGU-1	INSULATED GLASS UNIT	08 8000	MFR: Central Glass; PRODUCT: Double Pane; COLOR: Clear; UNIT THICKNESS: 1"; FULL: Argon; HWINDOW: Solar Control; CARDINAL: LoE366Z; U-VALUE (MAX): 0.25; VLT (MIN): 63%; SHGC (MAX): 0.27; T indicates Tempered
INSUL-1	ACOUSTICAL INSULATION	09 2900	PRODUCT: Unbleach Mineral Wool Blanket Insulation;
INSUL-2	BELOW GRADE INSULATION	07 2100	PRODUCT: Expanded Polystyrene Foam (EPS); TYPE: IX, 25 psi; R-VALUE: 4.2/inch;
INSUL-3	CONTINUOUS WALL INSULATION	07 2100	PRODUCT: Polyisocyanurate Foam; BOD: Hunter Panels, Xci CG; FACER: Glass Fiber Mat; FURRING SYSTEM: TBF;
INSUL-4	SPRAY FOAM INSULATION	07 2119	PRODUCT: Water-down, Closed-cell Spray Polyurethane Foam; BOD: Icynene, ProSeal Eco; DENSITY: 2.2 pounds, Closed-cell; BLOWING AGENT: Water; R-VALUE: 4/inch; VAPOR BARRIER: 2.4 w/ch;
INSUL-5	VENTILATED NAILBASE INSULATION	07 2100	PRODUCT: Ventilated Nailbase Insulation; BOD: GAF, ThermaCat L; SHEATHING: 1/2" Plywood; AIRSPACE: 1"; INSULATION: Polyisocyanurate; PANEL THICKNESS (I 1/2":; R-VALUE: 30;
LDR-1	WALL-MOUNTED LADDER	05 5000	PRODUCT: Wall-mounted Access Ladder; WIDTH: 18"; RUNGS: 1" Square; MATERIAL: Steel; FINISH: Factory Primed, Field Painted;
LDR-2	WALL-MOUNTED LADDER, EXTERIOR	05 5000	PRODUCT: Wall-mounted Access Ladder; WIDTH: 18"; RUNGS: 1" Square; MATERIAL: Galvanized Steel, FINISH: Factory Primed, Field Painted;
LVR-1	LOUVER	08 9113	MFR: Greenheck; MODEL: ESD-202; TYPE: Drainable; DEPTH: 2 inches; FREE AREA (MAX): 36%; COLOR: ;
LVR-2	ACOUSTICAL LOUVER	03 9113	MFR: Greenheck; MODEL: AFS-120; TYPE: Acoustical, Sightproof; DEPTH: 12 inches; FREE AREA (MAX): 27%; COLOR: ;
MA-1	MILLWORK ACCESSORY - PULL	06 4116	MFR: Rocky 817 Hardware; STYLE: Cityscape Collection; PRODUCT NUMBER: PSC048-128;
MA-4	MILLWORK ACCESSORY - COAT ROD	06 4116	MFR: Knape and Vogt; STYLE: Closet-Pro Regular-Duty Adjustable Closet Rod w/ Fixed Flange; PRODUCT NUMBER: RP0022-48/72;
MA-5	MILLWORK ACCESSORY - PAPER TOWEL DISPENSER	06 4116	MFR: Bobrick; STYLE: TrimLineSeries; PRODUCT NUMBER: B-526;
MA-6	MILLWORK ACCESSORY - BOOT TRAY	06 4116	MFR: Ultra; STYLE: Boot Tray; PRODUCT NUMBER: H-2562;
MA-7	MILLWORK ACCESSORY - WASTE BIN	06 4116	MFR: Knape and Vogt; STYLE: Soft Close, Top-Mount Waste and Recycling Bins; PRODUCT NUMBER: TSC15-I-33PT;
MCP-1	METAL COMPOSITE PANEL	07 4313.23	MFR: 3A Composites USA, Inc.; PRODUCT: Alucobond Plus, FR Core; THICKNESS: 4 mm SYSTEM: Reinscreen II, Insulation Outboard; FINISH: Classic Colors; COLOR: TBD (Dusty Charcoal or Fresco Black);
MP-1	METAL PANEL - STANDING SEAM - COPPER	07 4113.16	PRODUCT: Standing Seam Metal Wall Panels; METAL: Copper; FINISH: M-I, Non-Patinated; WEIGHT: 20 oz; PANEL WIDTH: 6 inches; SEAM HEIGHT: 1 inch; UNDERLAYMENT: WRB with Slip Sheet;
MP-2	METAL PANEL - BLACKENED STEEL	05 5000	PRODUCT: Steel Plate Interior Wall Panels; THICKNESS: 1/4"; FINISH: Prisco Steel Technology; FASTENERS: Countersunk Black Oxide Screws;
MS-1	METAL FAN STAIR - INTERIOR	05 5113	PRODUCT: Metal Stair; TREADS: Precast Concrete Tread; MFR: Tectura Design by Waxlax Tile, Inc.; TYPE: C-30, Tread with Sailing Bed; FINISH: TBD; SAFETY: Carborundum Strips;
MS-2	METAL PAN STAIR - EXTERIOR	05 5113	PRODUCT: Metal Stair; TREADS: Precast Concrete Tread; MFR: Tectura Design by Waxlax Tile, Inc.; TYPE: C-60, Self-supporting Flat Tread; COLOR: TBD; SAFETY: Carborundum Strips;
NSAF	NON-STRUCTURAL METAL FRAMING	09 2216	PRODUCT: Non-Structural Metal Studs and Furring
OP-1	OPERABLE PARTITION	10 2239	MFR: Modernfold; MODEL: Acousti-Seal 932; NRC: 0.65 (Perforated Panels); STC: 54; PANEL FINISH: Fabric; MFR: Carnegie; STYLE: XOREL, SLEET EMBROIDER; COLOR: 6299-630;
PLAM-1	PLASTIC LAMINATE	06 4116	MFR: WILSONART; STYLE: STANDARD LAMINATE; COLOR: CRISP LINEN, 4942-38;
PLAM-2	PLASTIC LAMINATE	06 4116	MFR: WILSONART; STYLE: TRACELESS; COLOR: CHARCOAL VELVET, 15504-31;
PLAM-3	PLASTIC LAMINATE	06 4116	MFR: WILSONART; STYLE: TRACELESS COLOR: SNOW WHITE VELVET, 15501-31;

MATERIAL / PRODUCT ID LIST with Spec Data

ID	Short Name	Section	Spec Data
PLAM-4	PLASTIC LAMINATE - ELEV-1	06 4116	MFR: WILSONART; STYLE: STANDARD LAMINATE; COLOR: Dove Grey, D12-60; Matte;
PT-1_	INTERIOR PAINT - FLAT	09 9123	PRODUCT: Interior Paint; SHEEN: Flat;
PT-2_	INTERIOR PAINT - EGGSHELL	09 9123	PRODUCT: Interior Paint; SHEEN: Eggshell;
PT-3_	HIGH-PERFORMANCE INTERIOR PAINT - SEMI-GLOSS	09 9123	PRODUCT: Interior Paint; SHEEN: Semi-Gloss;
PT-4_	HIGH-PERFORMANCE EXTERIOR PAINT - SEMI-GLOSS	09 9113	PRODUCT: Exterior Paint; SHEEN: Semi-Gloss;
PT-5_	EXTERIOR DECKCOAT		PRODUCT: Exterior Penetrating; SHEEN: Semi-Gloss;
PT-_A	PAINT COLOR - WHITE	09 9123	MFR: BENJAMIN MOORE; STYLE: OC-17; COLOR: CAPITOL WHITE;
PT-_B	PAINT COLOR - CHARCOAL	09 9123	MFR: BENJAMIN MOORE; STYLE: 2124-10; COLOR: WROUGHT IRON;
PT-_C	PAINT COLOR - ACCENT COLOR	09 9123	MFR: Sherwin Williams; STYLE: SW 7617; COLOR: Mediterranean;
PVR-1	PEDESTAL PAVER SYSTEM - CONCRETE	07 7600	PRODUCT: Concrete Pavers on Pedestals; MFR: Wausau Tile; MODULE: 24" x 24"; THICKNESS: 2"; COLOR: TBD;
PVR-2	PEDESTAL PAVER SYSTEM - WOOD	07 7600	PRODUCT: Wood Slat Pavers on Pedestals; MFR: Bison Innovative Products; MODEL: WT-FSC-100%-CUMARU-24; MODULE: 24" x 24"; SPECIES: Cumaru, FSC; FINISH: Unsealed;
PWD-1	CONCEALED PLYWOOD BACKING	06 1000	PRODUCT: Concealed Plywood Back-up Panel; GRADE: DOC PS 1, Exposure 1, C-D Plugged, FRT; THICKNESS: 3/4";
RA-1	ROOF ANCHOR FOR PV RACKING	07 5323	MFR: Anchor Products; PRODUCT: Anchor 2000 EPDM
REVEAL-1	5/8" GYPSUM REVEAL TRIM	09 2116	MFR: Fry Reglet Corporation; MODEL: TD4-625-1125; FINISH: Factory Paint;
RFNG-1	EPDM ROOFING SYSTEM	07 5323	MFR: Firestone or GenFlex; MEMBRANE: EPDM, 90 mil, Black; INSTALLATION: Fully adhered; COVER BOARD: High Density Polyisocyanurate;
RFNG-2	METAL ROOFING SYSTEM	07 4113.16	PRODUCT: Standing Seam Metal Roofing; SEAM TYPE: Double lock; METAL: 16 ounce, Cluster-lock Copper; FINISH: M-I, Non-patinated; UNDERLAYMENT: Synthetic Roofing Felt, GAF Deck Armor; ICE/WATER: Self-adhering, High Temp Sheet; SLIP SHEET: Rosh Roofer;
RFNG-3	EPDM FLASHING	07 5323	MFR: Firestone or GenFlex; MEMBRANE: Cured EPDM, 60 mil, Black, Self-adhered; INSTALLATION: Fully adhered;
RH	ROOF HATCH	07 7200	PRODUCT: Single Leaf Insulated Roof Hatch; SIZE: 30" x 36"; MATERIAL: Aluminum; FINISH: Mill Finish;
RSIC-1	RESILIENT SOUND ISOLATION CLIP	05 2216	MFR: PAC International Inc. MODEL: RSIC-1;
SHELF-1	SHELVING SYSTEM STANDARD 84"H	06 4116	MFR: Eaton; MODEL: PILVCH84; SIZE: 84"H; COLOR: Arctic White
SHELF-2	SHELVING SYSTEM SHELF AND BRACKET	06 4116	MFR: Eaton; MODEL: RQS18A; SIZE: 30"W x 16"D; COLOR: Arctic White;
SHELF-3	SHELVING SYSTEM SHELF AND BRACKET	06 4116	MFR: Eaton; MODEL: RQS18A; SIZE: 30"W x 16"D; COLOR: Arctic White;
SHELF-4	SHELVING SYSTEM STANDARD 30"H	06 4116	MFR: Eaton; MODEL: PILWCH30; SIZE: 30"H; COLOR: Arctic White;
SHTG-1	GYPSUM SHEATHING	09 1000	PRODUCT: Exterior Gypsum Sheathing; TYPE: Type X, Glass Mat Faced; THICKNESS: 5/8";
SHTG 2	PLYWOOD SHEATHING	06 1600	PRODUCT: Exterior Plywood Sheathing; GRADE: DOC PS1, Exterior, FRT; SPAN RATING: 32/16; THICKNESS: 1/2";
SMF-1	SHEET METAL FLASHING - COPPER	07 6200	PRODUCT: Copper Sheet; FINISH: M-II, Non-Patinated; WEIGHT: 20 oz, UNO; GUTTERS: Match Existing Profile; DOWNSPOUTS: Formed Round, 6" D; UNDERLAYMENT: Self-Adhering, High-Temp Sheet;
SMF-2	SHEET METAL FLASHING - GRAY/BLACK	07 6200	PRODUCT: Coated Aluminum Sheet; THICKNESS: 0.040", UNO; COLOR: Match WDW-1 and MCP-1;
SSF-1	SOLID SURFACE	12 3661	MFR: CAESARSTONE; STYLE: 4120; COLOR: RAVEN;
SSF-2	SOLID SURFACE	12 3661	MFR: CAESARSTONE; STYLE: 6141; COLOR: OCEAN FOAM;
STN-1	STONE VENEER	04 4313.13	MFR: Buechel Stone Corp; PRODUCT: Full Bed Veneer; COLOR: Indiana Buff (or Texas Creme); TEXTURE: Resaw; WEEP SYSTEM: Masonry Technology, Inc.;
STN-2	CUT STONE TRIM	04 4313.13	MFR: Buechel Stone Corp; PRODUCT: Cut Limestone Shapes; COLOR: Indiana Buff (or Texas Creme); TEXTURE: Smooth;
TA-04	TOILET TISSUE DISPENSER JUMBO ROLL (OFCI)	10 2800	MFR: TBD by Owner; STYLE: ; COLOR: ;
TA-05	PAPER TOWEL (FOLDED) DISPENSER	10 2800	MFR: Bobrick; MODEL: B-262; FINISH: Satin Stainless Steel;
TA-06	PAPER TOWEL (ROLL) DISPENSER (OFCI)	10 2800	MFR: TBD by Owner; STYLE: ; COLOR: ;
TA-11	LIQUID SOAP DISPENSER (OFCI)	10 2500	MFR: TBD by Owner; STYLE: ; COLOR: ;
TA-12	GRAB BAR	10 2800	MFR: Bobrick; MODEL: B-6806; FINISH: Satin Stainless Steel; DIAMETER: 1 1/2"; LENGTH: See Drawings;
TA-14	SANITARY NAPKIN DISPOSAL UNIT	10 2800	MFR: Bobrick; MODEL: B-270; FINISH: Satin Stainless Steel;
TA-17	MIRROR UNIT (FRAMED)	10 2800	MFR: DESIGN WITHIN REACH; STYLE: LUCIANO MIRROR, SMALL; COLOR: BLACK;
TA-19	HOOK	10 2800	MFR: Bobrick; MODEL: B-5116; FINISH: Satin Nickel;
TA-24	DIAPER-CHANGING STATION	10 2800	MFR: Koala Kare; MODEL: KB110-SSRE; FINISH: Satin Stainless Steel;
TBF	THERMAL BREAK FRAMING	07 2100	MFR: Advanced Architectural Products; PRODUCT: SMARTtec; MODEL: GREEN-it;
TBM	THERMAL BREAK MATERIAL - SEE STRUCTURAL	GEN NOTES	MFR: Fabreeka or Armatherm; PRODUCT: Structural Thermal Break Material;
TL-1	CERAMIC TILE	09 3013	MFR: FIRESEAT TILE; STYLE: ARABLE; COLOR: CUSTOM - SPRUCE, HUNTER, LIMON, CARBON;
TL-2	CERAMIC TILE (OFCI)	09 3013	MFR: OFCI; STYLE: 4"X4"; COLOR: N/A;
TL-3	CERAMIC TILE WALL BASE (OFCI)	09 3013	MFR: OFCI; STYLE: 4" x 6", COVE BASE COLOR: N/A;
TLBD	TILE BACKER BOARD	09 2900	PRODUCT: Cement Board
TLFL-1	TILE FLOORING	09 3013	MFR: MOSA; STYLE: SELECTION ONE, 12X24; COLOR: 1184 V;
TLFL-2	TILE FLOORING	09 3013	MFR: Ameritech Crest; STYLE: Quarry Naturals; COLOR: Shadow Gray NHS; SIZE: 6x6;
TREAD-1	ARCHITECTURAL PRECAST CONCRETE TREAD BONDED TO BENT STEEL RISERS	05 5100	
TREAD-2	WAUSAU PRECAST STAIR TREAD C-60 SELF-SUPPORTING FLAT TREAD	05 5100	MAY THICKNESS 3 1/2"
TS-1	STAINLESS STEEL TRELLIS SYSTEM	05 9443	MFR: Jakob, Inc.; PRODUCT: Wire Guide System; MATERIAL: Type 316 Stainless Steel; ROPE TOP: Swaged Radius Head; ROPE BOTTOM: Swaged Greenguide Eye; TENSIONING: Turnbuckle; MOUNTING: GreenGuide Spacer;
TWF	THRU-WALL FLASHING AND DRIP EDGE	07 2715	MFR: 3M; PRODUCT: 3016TWF; TYPE: Drain Applied; DRIP EDGE: Stainless Steel
VB	UNDERSLAB VAPOR BARRIER	03 3000	MFR: Stego Industries; PRODUCT: ASTM E1745, Class A; THICKNESS: 10-mil min.;
WAVB	WATER-AIR-VAPOR BARRIER MEMBRANE	07 2715	MFR: 3M; PRODUCT: 3015; TYPE: Sheet-Applied; VAPOR Impct: 0.1 US perm; AIR Imact: 0.004 CFM/sf at 1.57 lb/sf;
WB-1	RUBBER WALL BASE	09 6513	MFR: JOHNSONITE; STYLE: TRADITIONAL WALL BASE; COLOR: 60 BUNNY UMBER B;
WS-2	STEEL WALL BASE	05 5000	PRODUCT: Steel Plate Interior Wall Base; THICKNESS: 1/8"; FINISH: Satin Finish by Birchwood Technologies; ADHESIVE: Low VOC;
WD-1	ACETYLATED WOOD	06 2013	MFR: Accoya Technologies PLC; PRODUCT: Accoya Wood; SPECIES: Radiata Pine;
WD-2	INTERIOR FINISH WOOD	06 2023	PRODUCT: Reclaimed Wood for Interior Trim; SPECIES: Ash; FINISH: Clear;
WD-3	INTERIOR FINISH WOOD VENEER	06 2023	PRODUCT: Wood Veneer; SPECIES: Ash; FINISH: Clear;

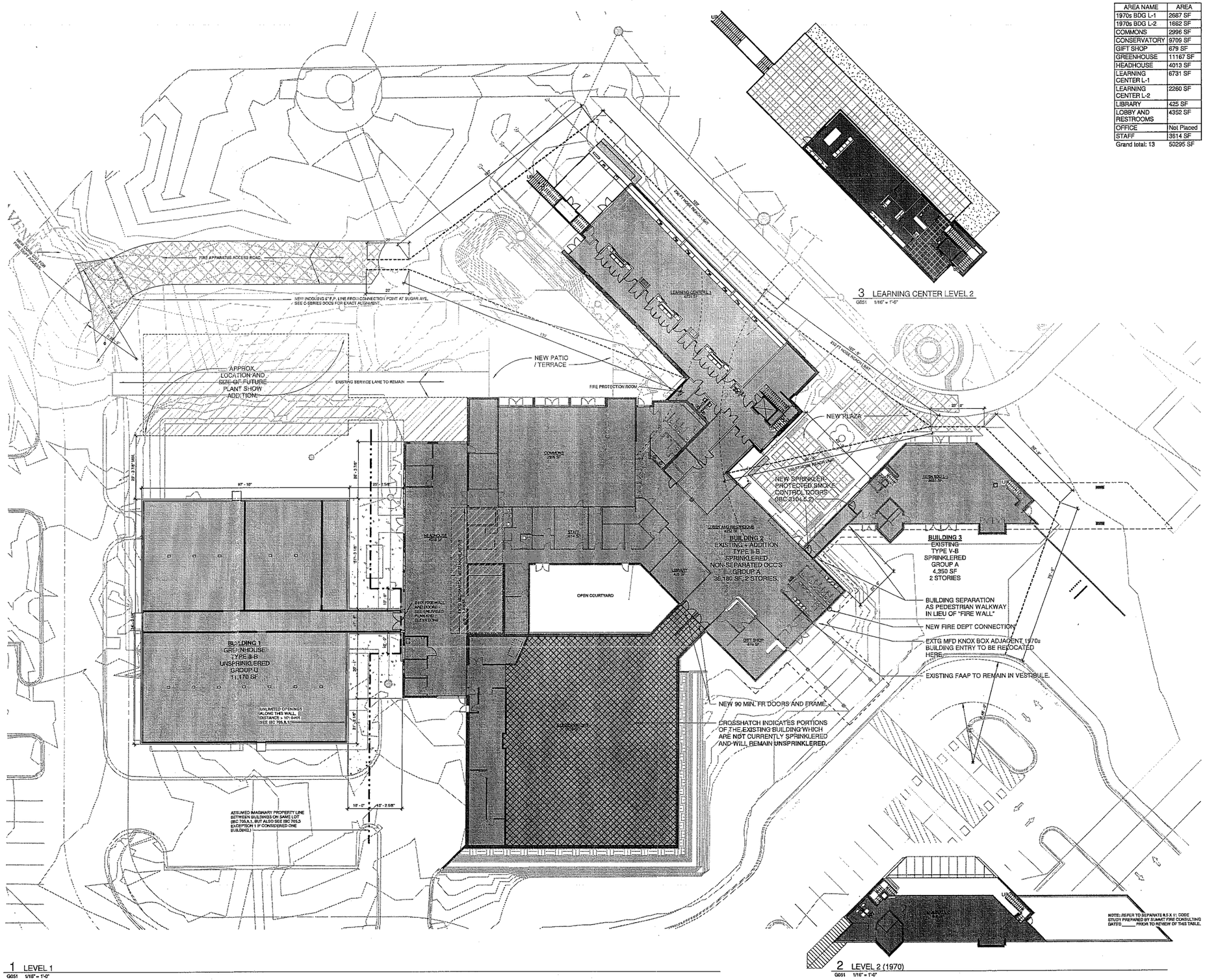
MATERIAL / PRODUCT ID LIST with Spec Data

ID	Short Name	Section	Spec Data
WDCL-1	WOOD CEILING SYSTEM	09 5428	MFR: Armstrong; PRODUCT: Woodworks Grille; PANEL TYPE: 736SQ; SLAT SIZE: 5/8" x 2 1/4"; SLATS PER PANEL: 8; PANEL SIZE: 12"W x 2'-9"H; PANEL LENGTH: Custom, See Drawings; FINISH: Gotik Maple; GRID: Heavy Duty Prelude XL; GRID COLOR: Black; INFILL PRODUCT: Backcustic; INFILL TYPE: 5822; INFILL COLOR: Basik (Matte);
WDW-1	ALUMINUM WOOD WINDOW	08 5200	MFR: H-Window; TYPE: Fixed Set; IGU: Confirm SP or 2P; SPECIES: Reclaimed Ash furnished by Owner; WD FINISH: Clear sealer; AL FINISH: Painted; COLOR: TBD, match MCP-1 and SMF-2; GLAZING: Nordic Guttering Heavy Commercial Doors; THICKNESS: 2 1/4";
WF-1	WINDOW FILM, PR-VINZY	08 8733	MFR: 3M; PRODUCT: Fasara Glass Finish; PATTERN: Mistyr White (Milano), SH2MAML;
WP-1	WATERPROOFING MEMBRANE	07 1416	MFR: ICP/Grace; PRODUCT: Procor;
WRB	WATER-RESISTIVE BARRIER	07 2500	PRODUCT: Single Layer #15 Asphalt Felt; TYPE: ASTM D226, Type I; SLIP SHEET: Rosh Paper;
WT-1A	ROLLER WINDOW SHADE, MOTORIZED	12 2413	MFR: Hunter Douglas; TYPE: Motorized, Single; SHADING: 5% Openness; COLOR: GreenScreen Evolve H03505, Shale;
WT-2A	ROLLER WINDOW SHADE, MANUAL	12 2413	MFR: Hunter Douglas; TYPE: Manual, Single; SHADING: 5% Openness; COLOR: GreenScreen Evolve H03505, Shale;

SHT NO	SHEET NAME
GENERAL	
G000	SHEET INDEX, GENERAL NOTES AND MATERIALS
G001	SITE CONTEXT AND SYMBOLS
G002	TYPES AND SYSTEMS
G051	CODE PLAN - OVERALL APPROACH
G052	CODE PLAN AND ANALYSIS
ARCHITECTURAL DEMOLITION	
AD100	SITE DEMOLITION PLAN
AD101	DEMOLITION PLANS
AD121	REFLECTED CEILING PLAN - DEMOLITION
CIVIL	
C100	EXISTING CONDITIONS PLAN
C200	DEMOLITION PLAN
C300	SITE PLAN
C400	GRADING & EROSION CONTROL PLAN
C500	UTILITY PLAN
C501	SITE STAKEOUT DETAIL
C600	CONSTRUCTION DETAILS - 1
C601	CONSTRUCTION DETAILS - 2
C602	CONSTRUCTION DETAILS - 3
C603	CONSTRUCTION DETAILS - 4
LANDSCAPE	
L001	HARDSCAPE PLAN
L002	HARDSCAPE DETAILS
L003	GRADING PLAN
ARCHITECTURAL	
A001	ARCHITECTURAL SITE PLAN
A101	LEARNING CENTER FLOOR PLAN - LEVEL 1
A102	LEARNING CENTER FLOOR PLAN - LEVEL 2
A103	LEARNING CENTER ROOF PLAN
A111	GREENHOUSE - HEADHOUSE FLOOR + ROOF PLAN
A112	GREENHOUSE - HEADHOUSE SECTION AND ELEVATION
A121	REFLECTED CEILING PLAN - LEVEL 1 - EXTG + NEW
A122	REFLECTED CEILING PLAN - LEVEL 1 + 2 - EXTG + NEW
A131	REFLECTED CEILING PLAN - LEVEL 1 - EXISTING
A132	EXISTING BUILDING REFERENCE DRAWINGS
A151	TOILET ROOM PLANS AND ELEVATIONS
A152	TOILET ROOM PLANS AND ELEVATIONS
A191	ENLARGED PLANS AND SECTIONS
A301	EXTERIOR ELEVATIONS
A302	EXTERIOR ELEVATIONS
A351	BUILDING SECTIONS
A301	WALL SECTIONS
A351	EXTERIOR DETAILS
A352	EXTERIOR DETAILS
A353	EXTERIOR DETAILS
A354	EXTERIOR DETAILS
A355	EXTERIOR DETAILS
A356	EXTERIOR DETAILS
A357	EXTERIOR DETAILS
A358	EXTERIOR DETAILS - COPPER ROOFING
A401	VERTICAL CIRCULATION
A402	VERTICAL CIRCULATION DETAILS
A403	VERTICAL CIRCULATION DETAILS
A501	INTERIOR ELEVATIONS
A502	INTERIOR ELEVATIONS
A503	INTERIOR ELEVATIONS
A551	INTERIOR DETAILS
A552	INTERIOR DETAILS
A601	DOOR SCHEDULE, TYPES AND DETAILS
A651	WINDOW TYPES
A701	FINISH PLANS
A801	MILLWORK PLANS
A802	LEVEL 1 MILLWORK
A803	LEVEL 1 MILLWORK
A804	LEVEL 2 MILLWORK
A851	MILLWORK DETAILS
A852	MILLWORK DETAILS
A901	FURNITURE PLANS - ISSUED FOR REFERENCE ONLY
STRUCTURAL	
S001	GENERAL NOTES
S002	SYMBOLS AND ABBREVIATIONS
S100	LEARNING CENTER HELICAL PILE PLAN
S102	LEARNING CENTER FOUNDATION PLAN
S103	LEARNING CENTER LEVEL 2 FRAMING PLAN
S104	LEARNING CENTER ROOF FRAMING PLAN
S111	GREENHOUSE FOUNDATION PLAN
S112	GREENHOUSE ROOF FRAMING PLAN
S201	FOUNDATION DETAILS
S202	FOUNDATION DETAILS
S203	FOUNDATION DETAILS
S301	FRAMING DETAILS
S302	FRAMING DETAILS
GREENHOUSE	
GH1	GREENHOUSE POST PLAN
GH2	GREENHOUSE SIDEWALL ELEVATIONS
GH2.1	GREENHOUSE CORRIDOR PARTITION ELEVATIONS
GH3	GREENHOUSE GABLE ELEVATIONS
GH3.1	GREENHOUSE GABLE PARTITIONS
GH4	GREENHOUSE TRUSS SECTION
GH4.1	GREENHOUSE TRUSS DETAILS
GH5	GREENHOUSE FOUNDATION PLAN
GH5.1	GREENHOUSE POST AND BASE ANCHOR DETAILS
GH6	GREENHOUSE EQUIPMENT PLAN
GH6.1	GREENHOUSE BENCH PLAN
GH6.2	GREENHOUSE EQUIPMENT SECTIONS
GH6.3	GREENHOUSE CONTROL (GROWING AREA)
GH6.4	GREENHOUSE CONTROL (CORRIDOR)
GH6.5	GREENHOUSE CONTROL (CONSERVATORY)
GH7	GREENHOUSE RIDGE SECTION
GH8	TYPICAL GREENHOUSE SIDEWALL SECTION
GH8.1	TYPICAL GREENHOUSE PARTITION SECTION
GH8.2	TYPICAL GREENHOUSE DOOR DETAILS
GH9	GREENHOUSE ROOF TO GABLE SECTION
GH10	GREENHOUSE DOOR SCHEDULE
GH11	GREENHOUSE CLOSURE DETAILS

SHT NO	SHEET NAME
GREENHOUSE MEP/FP	
H1	GREENHOUSE HEATING SYSTEM NOTES + SCHEDULES
H2	GREENHOUSE HEATING SYSTEM LAYOUT
H2A	GREENHOUSE HEATING SYSTEM PEX MANIFOLD BOX
H3	GREENHOUSE HEATING SYSTEM PEX LAYOUT
H3A	GREENHOUSE HEATING SYSTEM PEX DETAILS
H4	GREENHOUSE UPPER & LOWER FIN TUBE LAYOUT
H4A	GREENHOUSE SNOW MELT FIN TUBE LAYOUT
H4B	FIN TUBE DETAILS
H4C	FIN TUBE COVERS AND INSULATION DETAILS
H5	TROPICAL GHSE A PIPING ELEVATION
H5A	TROPICAL GHSE B PIPING ELEVATION
H5B	ORCHID INT GHSE A PIPING ELEVATION
H5C	ORCHID INT GHSE B PIPING ELEVATION
H5E	PRODUCTION GHSE A PIPING ELEVATION
H6	MIXING VALVE DETAILS
H6A	ZONE CONTROL VALVE DETAILS
H7	BENCHTOP HEATING LAYOUT
H7A	BENCHTOP HEATING DETAILS
MECHANICAL	
M001	MECHANICAL TITLE SHEET
M2111	GREENHOUSE MECHANICAL PIPING DEMO PLAN
M2131	COMMONS AREA MECHANICAL DEMOLITION PLAN
M101	LEARNING CENTER MECHANICAL DUCTWORK PLAN
M102	LEARNING CENTER MECHANICAL PIPING PLAN
M103	LEARNING CENTER RADIANT HEAT AND COOL
M111	GREENHOUSE MECHANICAL PIPING PLAN
M112	ENLARGED PLANS AND SECTIONS
M113	ENLARGED PLANS AND SECTIONS
M131	COMMONS AREA MECHANICAL PIPING PLAN
M201	MECHANICAL DETAILS
M202	MECHANICAL DETAILS
M301	MECHANICAL SCHEDULES
M302	MECHANICAL SCHEDULES
M350	MECHANICAL CONTROLS SCHEMATICS
M481	MECHANICAL CONTROL SCHEMATICS
M482	MECHANICAL CONTROL SCHEMATICS
PLUMBING	
P000	PLUMBING TITLE SHEET
P0111	GREENHOUSE PLUMBING DEMO PLAN - BELOW GRADE
P0112	GREENHOUSE PLUMBING DEMO PLAN - ABOVE GRADE
P0131	COMMONS AREA PLUMBING DEMO PLAN
P100	LEARNING CENTER PLUMBING PLAN - BELOW GRADE
P101	LEARNING CENTER PLUMBING PLAN - ABOVE GRADE
P102	LEARNING CENTER PLUMBING ROOF PLAN
P111	GREENHOUSE PLUMBING PLAN - BELOW GRADE
P112	GREENHOUSE PLUMBING PLAN - ABOVE GRADE
P131	COMMONS AREA PLUMBING PLAN
P201	PLUMBING RISER DIAGRAM
P301	PLUMBING DETAILS & SCHEDULES
P401	PLUMBING SCHEDULES AND RAINWATER SCHEMATIC
IRRIGATION	
I100	IRRIGATION PUMP SKID
I101	IRRIGATION DEMO AND QUICK COUPLER PLAN
FIRE PROTECTION	
F000	SITE PLAN, GENERAL NOTES, DETAILS
F100	FIRE PROTECTION LEVEL 1
F101	FIRE PROTECTION PLAN EXTG BUILDING
F102	FIRE PROTECTION LEVEL 2 - NEW ADDITION
F103	FIRE PROTECTION 1970s BUILDING
ELECTRICAL	
E000	ELECT

AREA NAME	AREA
1970s BDG L-1	2687 SF
1970s BDG L-2	1662 SF
COMMONS	2996 SF
CONSERVATORY	9709 SF
GIFT SHOP	679 SF
GREENHOUSE	11167 SF
HEADHOUSE	4013 SF
LEARNING CENTER L-1	6731 SF
LEARNING CENTER L-2	2260 SF
LIBRARY	425 SF
LOBBY AND RESTROOMS	4352 SF
OFFICE	Not Placed
STAFF	3814 SF
Grand total: 13	50295 SF



3 LEARNING CENTER LEVEL 2
G051 1/16" = 1'-0"

1 LEVEL 1
G051 1/16" = 1'-0"

2 LEVEL 2 (1970)
G051 1/16" = 1'-0"

MSR
710 South 2nd Street, 6th Floor
Minneapolis, Minnesota 55401-2282
Architecture Interiors and Urban Design
612 375 0336 tel
612 342 2216 fax
www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201
Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
303 South Paterson Street, Suite 1
Madison, WI 53703
608.251.3600 tel

Structural Engineer, Technology and AV
IMEG Corp.
1800 Deming Way, Suite 200
Middleton, WI 53562
608.203.9600 tel

MEP Engineer
MEP Associates, LLC
860 Blue Gentian Road, Suite 175
Eagan, MN 55121
651.379.9122 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
575 Minnesota Ave West
St. Paul, MN 55103
651 251 1990 tel

Greenhouse Design
Rough Brothers, Inc.
5510 Vine Street
Cincinnati, OH 45217
513.242.0310 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin.
ARCHITECT SEAL

WISCONSIN
DANIEL JACK POLING
A-9984
MINNEAPOLIS, MN
ARCHITECT

Signature: _____
Print Name: Jack Poling
Date: JUNE 4, 2018 License No: A-9984

ISSUE NUMB.	DATE	DESCRIPTION
	09.29.2017	SCHEMATIC DESIGN SUBMISSION
	12.04.2017	DD PRICING SET
	01.10.2018	DESIGN DEVELOPMENT SUBMISSION
	01.17.2018	UDC SUBMISSION
	03.30.2018	70% CD PRICING ISSUE
	04.06.2018	PARKING LOT AND SITE PLAN SUBMISSION
	05.07.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE

PROJECT NO. 2017016
PROJECT PHASE: BID DOCUMENTS
DRAWN BY: MSR CHECKED BY: MSR

CODE PLAN - OVERALL APPROACH

EXHIBIT A
G051

REVISED

BASIS OF CALCULATIONS Per IBC 2015 Ch 29

space name	floor area (sf)	use classification	occupancy rate (1 per)	total occupants (rounded up)
A-3 OCCUPANCIES				
Lobby	3,212	A-3	15	215
Kohl Conservatory *	10,110	A-3 / U	65.66	154
Commons	1,995	A-3	15	133
Library	443	A-3	125	4
	* Kohl Conservatory winter occupancy policy is max. 250 people			
total A-3 occupancy	15,760			605
B OCCUPANCIES (WCL, LEARNING CENTER STAFF)				
Offices	8,295	B	100	83
Conference Rooms (1970s)	950	B	15	64
Kitchen (accessory)	325	B	200	2
total B occupancy	4,574			99
EDUCATION OCCUPANCIES				
Learning Center (based on 3 classrooms and hallway)	4,666	E	20	234
total E occupancy	4,666			234
M OCCUPANCIES				
Retail Store (Mercantile)	544	M	60	10
total M occupancy	544			10
U OCCUPANCIES				
Greenhouse	10,996	U	300	37
Headhouse	3,727	U	300	11
total U occupancy	14,723			48
S-1 OCCUPANCIES				
Storage	1,321	S-1	300	5
Mechanical	2,381	S-1	300	8
total S-1 occupancy	3,702			13

FIXTURE CALCULATIONS

Plumbing fixtures required based on occupancy type

A-3 Use — male: 301 persons, 1 fixt per 500; female: 301, 1 fixt per 500

	male: # persons / 1 fixt per	male: total	female: # persons / 1 fixt per	female: total	total
WC	325 / 300	1.00	65 / 200	0.00	8.00
Lav	300 / 200	2.00	200 / 200	2.00	4.00
DF	500				1.00

B Use — male: 50 persons, 1 fixt per 100; female: 50, 1 fixt per 100

	male: # persons / 1 fixt per	male: total	female: # persons / 1 fixt per	female: total	total
WC	25 / 100	2.00	25 / 100	2.00	4.00
Lav	40 / 100	2.00	40 / 100	2.00	4.00
DF	100				1.00

E Use — male: 117 persons, 1 fixt per 50; female: 117, 1 fixt per 50

	male: # persons / 1 fixt per	male: total	female: # persons / 1 fixt per	female: total	total
WC	50 / 50	1.00	50 / 50	1.00	6.00
Lav	50 / 50	1.00	50 / 50	1.00	6.00
DF	100				1.00

M Use — unisex: 10 persons, 1 fixt per

	# persons / 1 fixt per	total	
WC	500 / 500	1.00	1.00
Lav	750 / 750	1.00	[shared with public per IBC 2902.2 Exc 3] 1.00
DF	1000		

U Use — unisex: 48 persons, 1 fixt per

	# persons / 1 fixt per	total	
WC	100 / 100	1.00	
Lav	100 / 100	1.00	[shared with staff] 1.00
DF	500		1.00

S-1 Use — unisex: 13 persons, 1 fixt per

	# persons / 1 fixt per	total	
WC	100 / 100	1.00	
Lav	100 / 100	1.00	[shared with staff per IBC 2902.2 Exc 7] 1.00
DF	1000		

Public Fixtures Req'd (incl. staff)

	male	female	total
WCs	4.00	8.00	12.00
Lavs	3.00	5.00	10.00

Staff Fixtures Req'd

	male	female	total
WCs	2.00	2.00	4.00
Lavs	2.00	2.00	4.00

Total Occupants w/1 exception: 1,006

TOTAL FIXTURES REQUIRED

	male	female	total
WCs	6.00	10.00	16.00
Lavs	7.00	7.00	14.00
Sinks			4.00

Fixtures Provided (E-1, E, M, exstg and new)

	male: Public	male: Staff	female	NEW unisex	total
WCs	10	2	11	1	24
Lavs	6	2	7	2	17

Fixtures Provided (B, exstg and new)

	male: Staff	female	NEW unisex	total
WCs	2	3	1	6
Lavs	2	1	1	4

TOTAL FIXTURES PROVIDED

	male: Staff	female	NEW unisex	total
WCs	12	17	3	32
Lavs	8	8	3	19
Sinks				5.00

Note that new unisex WCs added with this project are not required to meet required fixture count.

BUILDING CODE SUMMARY

NOTE: REFER TO SEPARATE 8.5 X 11 CODE STUDY PREPARED BY SUMMIT FIRE CONSULTING DATED _____ PRIOR TO REVIEW OF THIS TABLE.

APPLICABLE CODES
2015 International Building Code, as modified by City of Madison
2015 International Energy Conservation Code, as modified by City of Madison
2015 International Existing Building Code, as modified by City of Madison
2015 International Mechanical Code, as modified by City of Madison
2015 International Fuel Gas Code, as modified by City of Madison
2015 International Fire Code, as modified by City of Madison

PROPOSED BUILDING SUMMARY
Two new additions to existing facility including Learning Center and Greenhouse
Type of Construction (new contained on):
- Building 1 (Existing facility and new Learning Center): II-B
- Building 2 (Portion of existing facility known as the "1970s Building"): V-B
- Building 3 (New Greenhouse): II-B
Automatic Sprinkler System: Provided at new and existing building (except Conserv.)
- Existing Facility: Sprinklered except for Conservatory (missing system in Conserv.)
- Building 1 (Existing facility and new Learning Center): Provided at new construction and existing (except Conserv.)
- Building 2 (Portion of existing facility known as the "1970s Building"): Fully Sprinklered
- Building 3 (New Greenhouse): Nonsprinklered
Building Height: 2 stories; 24 feet (Learning Center Addition); 1 story (Greenhouse)
Building Area: See "BUILDING AREA" Schedules

USE AND OCCUPANCY CLASSIFICATION (Chapter 3)
Assembly Use, including Library (Section 303.4) and Gift Shop (M) (Section 309): A-3
Business Use, including accessory storage and conference spaces (Section 304.1): B
Education (Section 305), including adult education (B): E
Utility and Miscellaneous Use (Section 312): U

GENERAL BUILDING HEIGHTS AND AREA
Building Height - Allowable
- Height limitations for II-B (Learning Center): (Table 504.3 and 504.4): 2 stories; 55 feet
- Height limitations for II-B (Greenhouse): (Table 504.3 and 504.4): 1 Story; 40 feet
- Automatic sprinkler system increase (Section 506.2): 1 story; 20 feet
- Total allowable Building Height (for II-B Learning Center): 3 stories; 75 feet
- Total allowable Building Height (for II-B Greenhouse): 2 stories; 60 feet

- Area limitation for A-3 (Table 506.2): 9,500 sf (All)
- Area limitation for U (Table 506.2): 8,500 sf (At for Greenhouse)
  B = .75 (Greenhouse)
  S = .5 (Learning Center + Existing Building)
- Automatic sprinkler increase (Section 506.2.4): Is = 2 (Learning Center only)
- Allowable area per story (Section 506.1) As=At+[At/f100]-[At/a100]: 8,500 sf per story (Greenhouse)
- Allowable area per story (Section 506.1) As=At+[At/f100]-[At/a100]: 15,675 sf per story (Learning Center + Existing)
- Total allowable building area, Single occupancy (Section 506.4) Aa = Number of Stories: 24,175 sf

- Storage rooms over 100 sq ft: 1 HR or provide automatic fire extinguishing system

TYPES OF CONSTRUCTION (Chapter 6)
Fire-Resistance Rating Requirements for Building Elements (Table 601)
- Structural frame: 0 HR Learning Center and Greenhouse
- Bearing walls (Exterior): 0 HR Learning Center and 0 HR Greenhouse
- Bearing walls (Interior): 0 HR Learning Center and Greenhouse
- Nonbearing walls and partitions (Exterior): 0 HR Learning Center and Greenhouse
- Nonbearing walls and partitions (Interior): 0 HR Learning Center and Greenhouse
- Floor construction (including supporting beams and joists): 0 HR Learning Center and Greenhouse
- Roof construction (including supporting beams and joists): 0 HR Learning Center and Greenhouse

Fire-Resistance Rating Requirements for Exterior Walls (Table 602)
* What is your fire separation distance? Fill-in per table 602*: No Rating

FIRE-RESISTANCE RATED CONSTRUCTION (Chapter 7): Applicable to Headhouse wall at link to Greenhouse only
Maximum Area of Exterior Wall Openings (Table 705.8)
- Fire separation distance: 32 feet
- Degree of Opening Protection: 25% for Nonsprinklered
- allowable: 8 ft (floor to dth at link)

Vertical Opening Protection (Section 713)
Shaft Enclosures: Required (Section 713.4) except as noted below: 1HR rated shafts required.

Elevator Lobby (Section 713.14.1)
Not Required with shaft enclosure connecting 3 stories or less.

MEANS OF EGRESS (Chapter 10)
Occupant Load (Section 1004): fewer than 500 occupants for Learning Center and fewer than 50 occupants for Greenhouse
- See Code Plans for Occupant Loads for each story and space

Egress Width (Section 1005.3)
Capacity Factor with Automatic Sprinkler System and an Emergency voice/alarm communication system
- Stairways (Section 1005.3.1, Exception): 0.2 inch per occupant
- Other egress components (Section 1005.3.2, Exception): 0.15 inch per occupant

Common Path of Egress Travel (Section 1006.2.1)
Common path of egress travel shall not exceed the following distances: SEE TABLE
- Typical Occupancies with Automatic sprinkler system: 75 feet
- Group B and S Occupancies: 100 feet

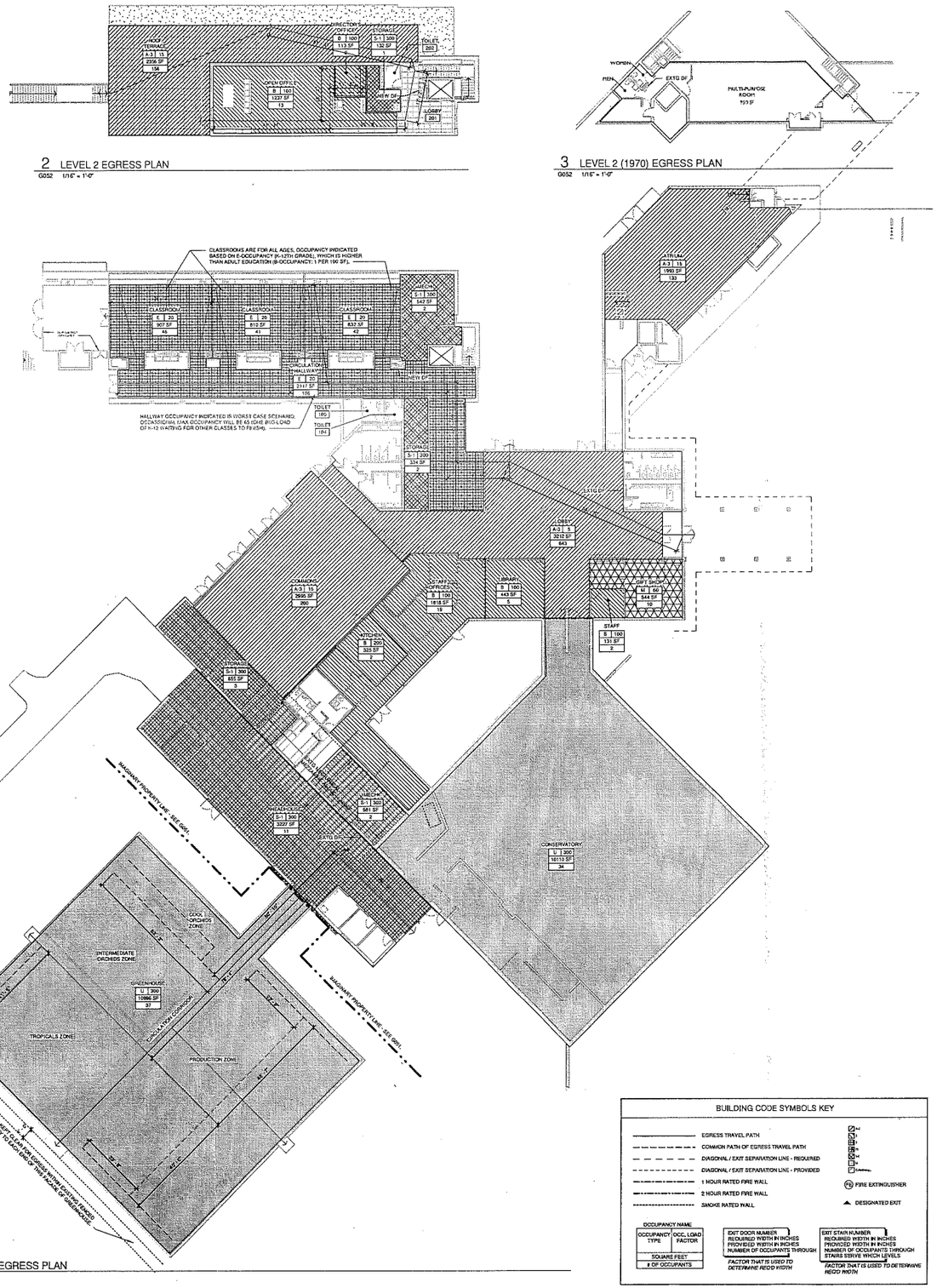
Exit and Exit Access Doorways (Section 1006 and Table 1006.3.2(2)
Provide not less than 2 exit doorways from spaces where the following values are exceeded:
- Occupant Load for Group A or B Occupancies: 49 occupants
- Occupant Load for Group S Occupancies: 29 occupants
- Common path of egress travel for Occupancies listed above: See 1006.2.1 above
Provide not less than 3 exit doorways from spaces with an occupant load of: 501 to 1,000 occupants
Provide not less than 4 exit doorways from spaces with an occupant load of: More than 1,000 occupants

Exit or Exit Access Doorway Arrangement (Section 1007.1.1)
Where multiple doorways are required, not less than 2 shall be located as follows:
- Separation distance as measured along maximum overall diagonal dimension: 1/2 of diagonal
- Exception 2: Separation Distance along diagonal with Automatic Sprinkler System: 1/3 of diagonal

Exit Access Travel Distance (Section 1017)
Exit access travel distance shall not exceed the following values (Table 1017.2):
- Group A and S-1 Occupancies with Automatic Sprinkler System: 250 feet
- Group B Occupancies with Automatic sprinkler system: 300 feet

Corridors (Section 1020)
Corridor Fire-Resistance Rating (Table 1020.1)
- Group A, B, and S Occupancies with Automatic sprinkler system: 0 HRS
Minimum Corridor Width (Table 1020.2)
- All occupancies unless noted below: 44 inches
- Access to mechanical, plumbing, or electrical equipment: 24 inches
- Spaces with occupant load less than 50: 36 inches
Dead ends in Corridors shall not exceed the following length (Section 1020.4): 20 feet
- Exception 2: In Group B and S occupancies with Automatic Sprinkler System: 50 feet
- Where corridor length is less than 2.5 times the corridor width:

Number of Exits and Exit Configuration (Sections 1006, 1022 to 1027)
Provide not less than 2 exits from all stories except where occupant load does not exceed:
- Group A or B Occupancies on First story or Basement: 49 occupants
- Group S Occupancies on First story or Basement: 29 occupants
- Group B or S Occupancies on Second story: 29 occupants
Provide not less than 2 exits from all stories except where travel distance does not exceed:
- Group A Occupancies on First story or Basement: 75 feet
- Group B or S Occupancies on First story or Basement with Automatic sprinkler system: 100 feet



2 LEVEL 2 EGRESS PLAN
G052 1/16" = 1'-0"

3 LEVEL 2 (1970) EGRESS PLAN
G052 1/16" = 1'-0"

1 LEVEL 1 EGRESS PLAN
G052 1/16" = 1'-0"

BUILDING CODE SYMBOLS KEY

- EGRESS TRAVEL PATH
- COMMON PATH OF EGRESS TRAVEL PATH
- DIAGONAL / EXIT SEPARATION LINE - REQUIRED
- DIAGONAL / EXIT SEPARATION LINE - PROVIDED
- 1 HOUR RATED FIRE WALL
- 2 HOUR RATED FIRE WALL
- SMOKE RATED WALL
- FE FIRE EXTINGUISHER
- DESIGNATED EXIT

OCCUPANCY NAME
OCCUPANCY TYPE | OCC. LOAD FACTOR
SQUARE FEET
OF OCCUPANTS

EXIT DOOR NUMBER
REQUIRED WIDTH IN INCHES
PROVIDED WIDTH IN INCHES
NUMBER OF OCCUPANTS THROUGH
FACTOR THAT IS USED TO DETERMINE REQD WIDTH

EXIT STAIR NUMBER
REQUIRED WIDTH IN INCHES
PROVIDED WIDTH IN INCHES
NUMBER OF OCCUPANTS THROUGH STAIRS SERVE WHICH LEVELS
FACTOR THAT IS USED TO DETERMINE REQD WIDTH

MSR 710 South 2nd Street, 6th Floor Minneapolis Minnesota 55401-2282
Architecture Interiors and Urban Design 612 372 0336 tel 612 342 2216 fax www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201 Madison, WI 53717
608 826 0532 tel

Landscape Architect
Ken Saiki Design, Inc.
302 South Paterson Street, Suite 1 Madison, WI 53703
608 251 3600 tel

Structural Engineer, Technology and A/V
IMEG Corp.
1800 Deming Way, Suite 200 Middleton, WI 53562
608 223 9600 tel

MEP Engineer
MEP Associates, LLC
860 Blue Gentian Road, Suite 175 Eagan, MN 55121
651 379 9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
575 Mendelssohn Ave West St Paul, MN 55103
651 251 1800 tel

Greenhouse Design
Rough Brothers, Inc.
5513 Vine Street Cincinnati, OH 45217
513 242 0310 tel

Revised

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin.
ARCHITECT SEAL

WISCONSIN DANIEL JACK POLING A-5934 MINNEAPOLIS, MN ARCHITECT

Signature: _____
Print Name: Jack Poling
Date: JUNE 4, 2018 License No.: A-5934

ISSUE NUMBER	DATE	DESCRIPTION
	02.23.2017	SCHEMATIC DESIGN SUBMISSION
	12.06.2017	DD PRICING SET
	01.10.2018	DESIGN DEVELOPMENT SUBMISSION
	01.17.2018	LDC SUBMISSION
	03.30.2018	70% DD PRICING ISSUE
	04.06.2018	PARKING LOT AND SITE PLAN SUBMISSION
	06.01.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE

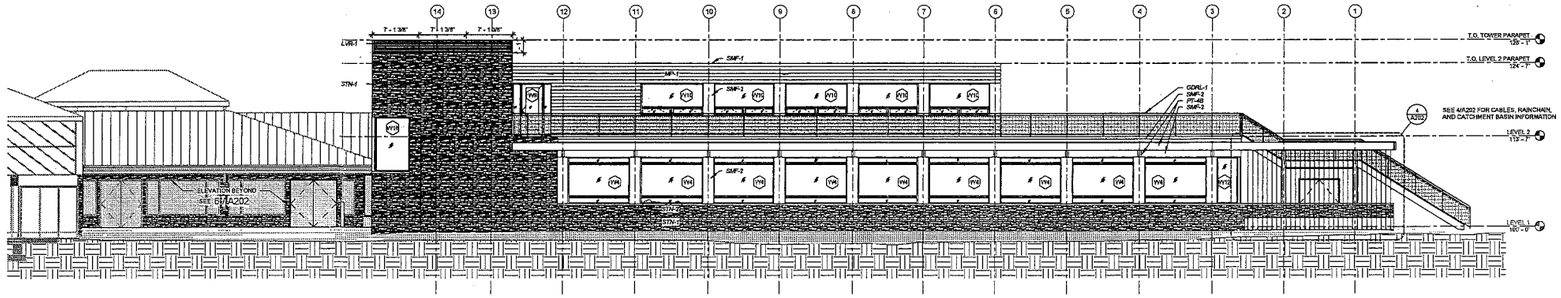
PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: MSR CHECKED BY: MSR

CODE PLAN AND ANALYSIS

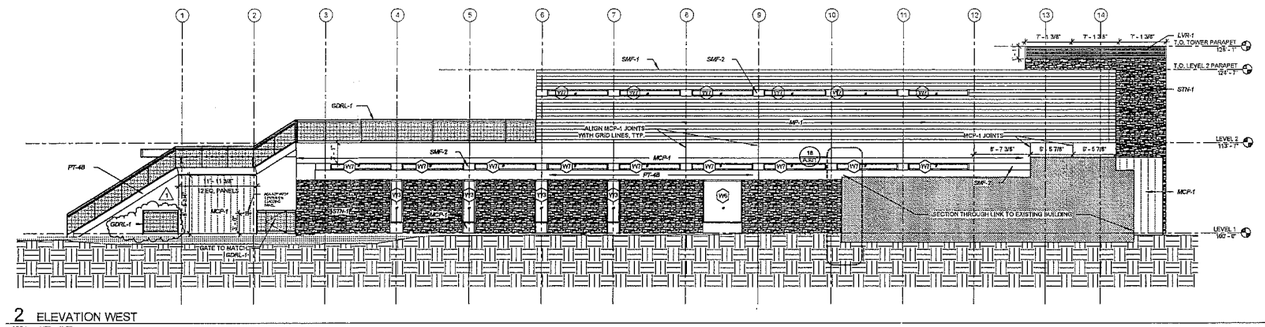
EXHIBIT A
G052

EXTERIOR MATERIALS LIST

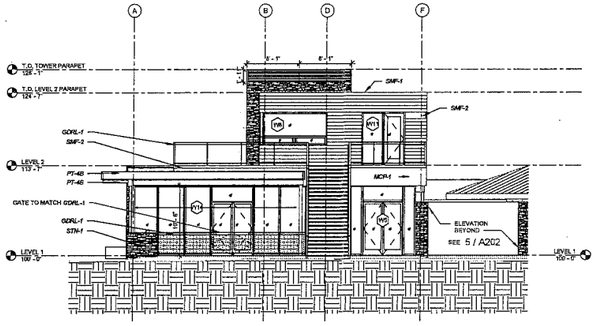
ACM-1	METAL PANEL - BLACK
GDRL-1	GUARD RAIL - STEEL STRUCTURE, WOVEN METAL MESH PANEL, WOOD TOP RAIL
LVR-1	LOUVER - BLACK
LVR-2	ACOUSTIC LOUVER - BLACK
MP-1	COPPER SIDING, HORIZONTAL ORIENTATION, 6" TYP, PANEL HEIGHT
PT-4B	HIGH PERFORMANCE EXTERIOR PAINT - SEMI-GLASS - BLACK
SMF-1	SHEET METAL FLASHING - COPPER
SMF-2	SHEET METAL FLASHING - BLACK
STN-1	STONE VENEER - LIMESTONE TO MATCH EXISTING STONE



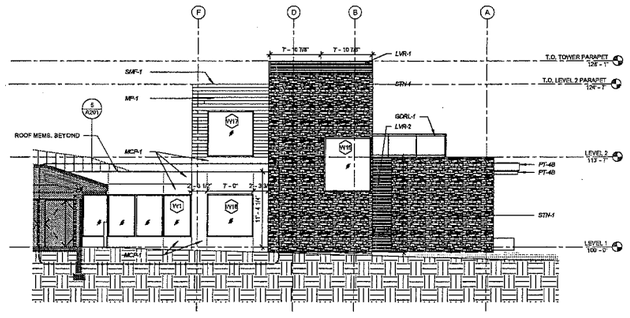
1 ELEVATION EAST
A201 1/8" = 1'-0"



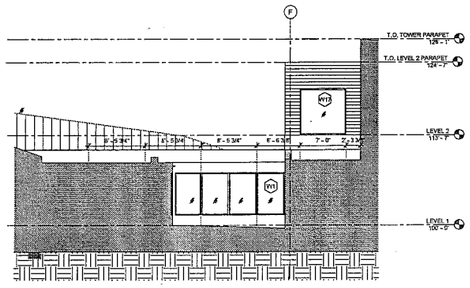
2 ELEVATION WEST
A201 1/8" = 1'-0"



3 ELEVATION NORTH
A201 1/8" = 1'-0"



4 ELEVATION SOUTH
A201 1/8" = 1'-0"



5 ELEVATION SOUTH LINK
A201 1/8" = 1'-0"

MSR 710 South 2nd Street, 8th Floor Minneapolis, Minnesota 55401-2282
Architecture, Interiors and Urban Design: 612 375 0836 tel, 612 342 2314 fax, www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201
Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
323 South Fairchild Street, Suite 1
Madison, WI 53703
608.251.3000 tel

Structural Engineer, Technology and AV
IMEG Corp.
1800 Deming Way, Suite 200
Middleton, WI 53562
608.223.0600 tel

MEP Engineer
MEP Associates, LLC
850 Blue Gentian Road, Suite 175
Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
525 Memorial Ave W #1
St. Paul, MN 55102
651.291.1880 tel

Greenhouse Design
Rough Brothers, Inc.
5612 Vine Street
Cincinnati, OH 45217
513.242.6310 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specifications or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin.
ARCHITECT SEAL

WISCONSIN
DANIEL JACK POLING
A-8994
MINNEAPOLIS, MN
ARCHITECT

Signature:
Print Name: Jack Poling
Date: JUNE 4, 2018 License No: A-8994

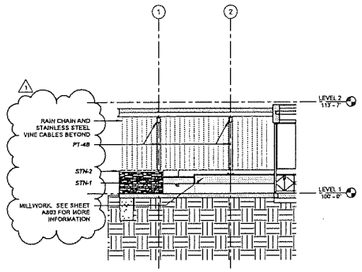
MARK	DATE	DESCRIPTION
	09.23.2017	SCHEMATIC DESIGN SUBMISSION
	12.04.2017	DD PRICING SET
	01.19.2018	DESIGN DEVELOPMENT SUBMISSION
	01.17.2018	HDC SUBMISSION
	03.30.2018	100% CD PRICING ISSUE
	04.05.2018	PARKING LOT AND SITE PLAN SUBMISSION
	06.01.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE
1	06.05.2018	BID ADDENDUM 1

PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: MSR CHECKED BY: MSR

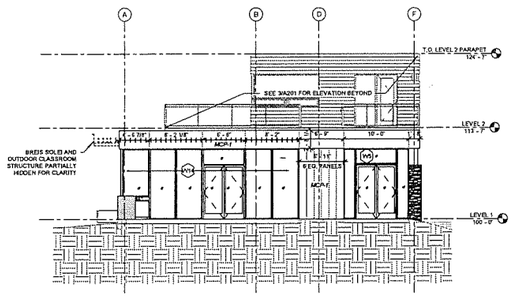
EXTERIOR ELEVATIONS

EXHIBIT F
A201

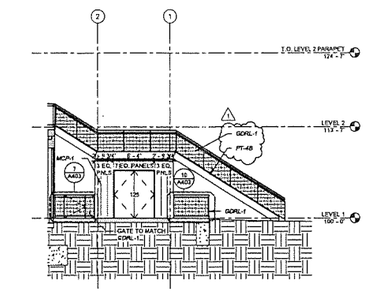
REVISED



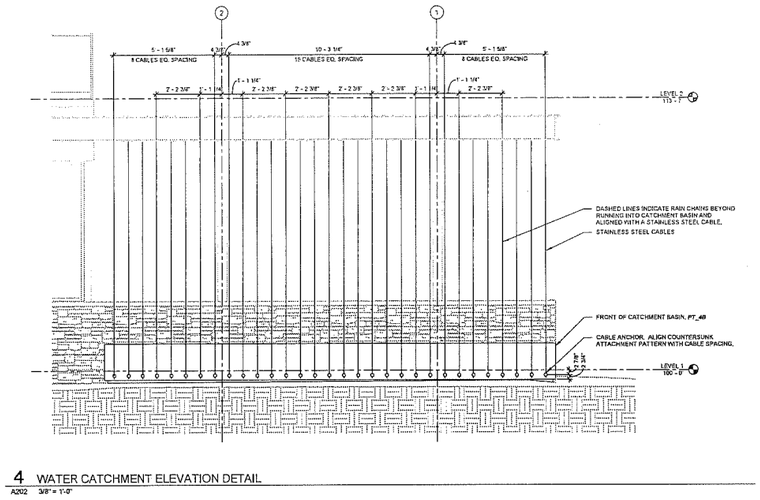
1 OUTDOOR CLASSROOM EAST ELEVATION
A202 1/8" = 1'-0"



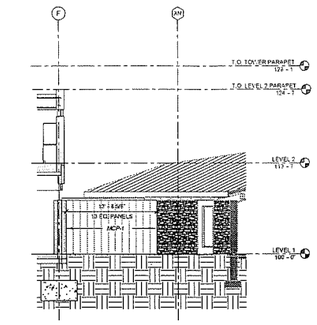
2 OUTDOOR CLASSROOM NORTH ELEVATION
A202 1/8" = 1'-0"



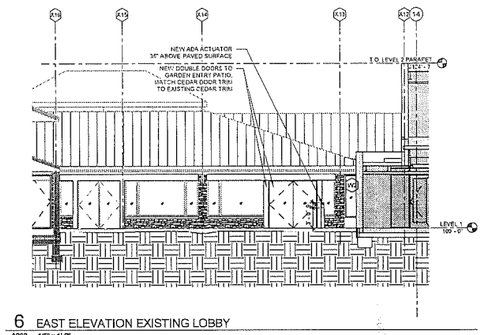
3 OUTDOOR CLASSROOM WEST ELEVATION
A202 1/8" = 1'-0"



4 WATER CATCHMENT ELEVATION DETAIL
A202 3/8" = 1'-0"



5 EXTERIOR SOUTH ELEVATION WALL
A202 1/8" = 1'-0"



6 EAST ELEVATION EXISTING LOBBY
A202 1/8" = 1'-0"

REVISED

MSR
710 South 2nd Street, 6th Floor
Minneapolis, Minnesota 55401-2282
Architecture 612 375 0336 tel
Interiors and 612 342 2216 fax
Urban Design www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201
Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
303 South Paterson Street, Suite 1
Madison, WI 53703
608.251.3600 tel

Structural Engineer, Technology and AV
IMEG Corp.
1800 Deming Way, Suite 200
Middleton, WI 53562
608.223.9600 tel

MEP Engineer
MEP Associates, LLC
402 Blue Gentian Road, Suite 175
Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
575 Aldrentcha Ave West
St. Paul, MN 55107
651.251.1880 tel

Greenhouse Design
Rough Brothers, Inc.
5613 Vine Street
Cincinnati, OH 45217
513.242.8310 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin.
ARCHITECT SEAL

WISCONSIN
DANIEL JACK POLING
A-5504
MINNEAPOLIS, MN
ARCHITECT

Signature: _____
Print Name: Jack Poling
Date: JUNE 4, 2018 License No: A-5504

Initial

MARK	DATE	DESCRIPTION
	08.25.2017	SCHEMATIC DESIGN SUBMISSION
	12.08.2017	DD PRICING SET
	01.10.2018	DESIGN DEVELOPMENT SUBMISSION
	01.17.2018	UDC SUBMISSION
	03.30.2018	75% CD PRICING ISSUE
	04.05.2018	PARKING LOT AND SITE PLAN SUBMISSION
	05.01.2018	BID ISSUE
	05.04.2018	PERMIT ISSUE
1	05.09.2018	BID ADDENDUM 1

PROJECT NO. 2017016

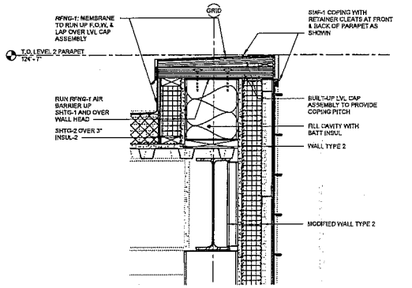
PROJECT PHASE BID DOCUMENTS

DRAWN BY: MSR CHECKED BY: MSR

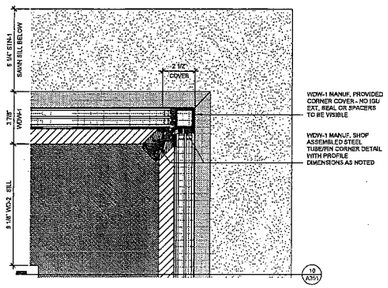
EXTERIOR ELEVATIONS

EXHIBIT F

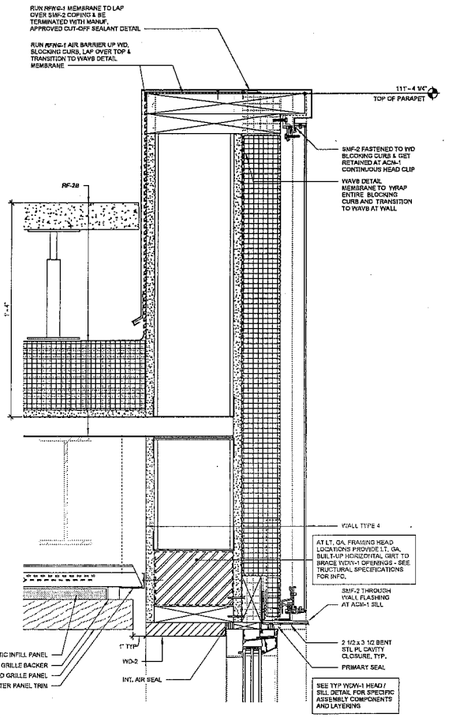
A202



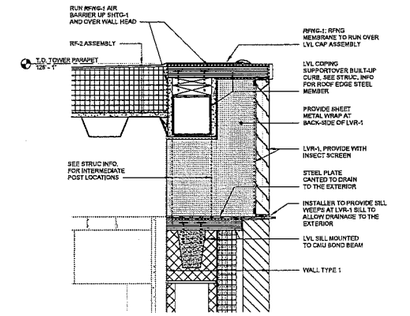
1 SECTION DETAIL - WALL TYPE 2 PARAPET
A351 1 1/2" = 1'-0"



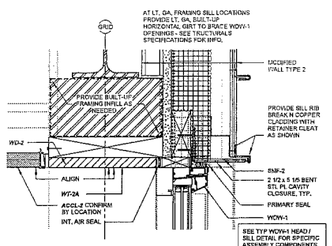
2 PLAN DETAIL - WDW-1 CORNER AT STAIR
A351 3" = 1'-0"



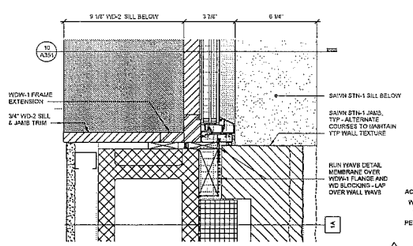
6 SECTION DETAIL - LOWER TOWER LOBBY - ROOF EDGE
A351 3" = 1'-0"



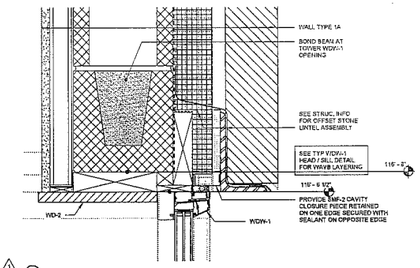
3 SECTION DETAIL - TOWER WALL AT LVR-1
A351 1 1/2" = 1'-0"



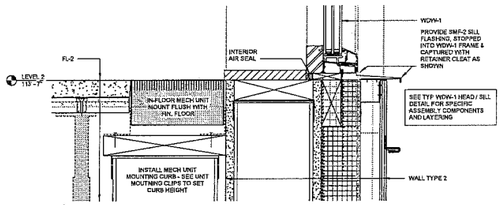
4 SECTION DETAIL - HEAD AT E. WALL ENTRY
A351 3" = 1'-0"



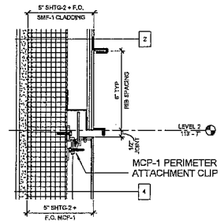
5 PLAN DETAIL - WDW-1 JAMB AT STAIR
A351 3" = 1'-0"



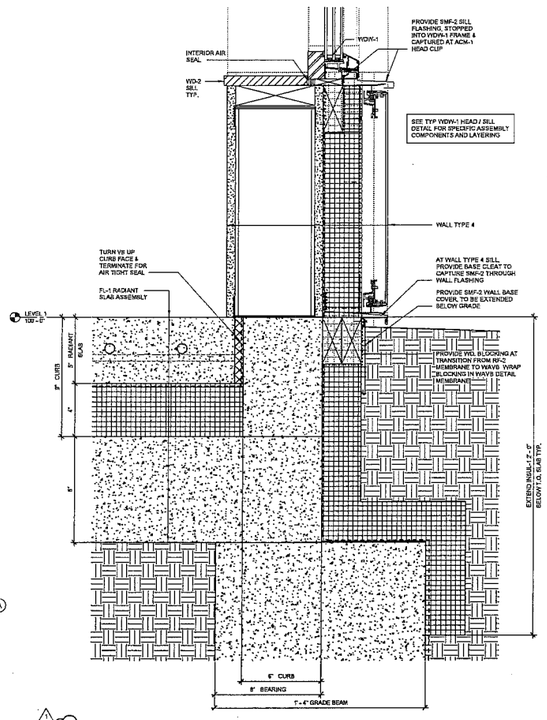
7 SECTION DETAIL - WDW-1 HEAD AT TOWER WALL
A351 3" = 1'-0"



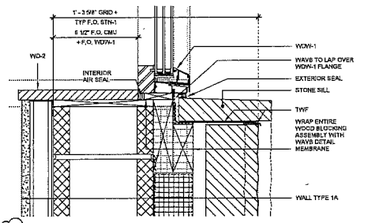
8 DETAIL SECTION - WDW-1 SILL AT FL-2
A351 3" = 1'-0"



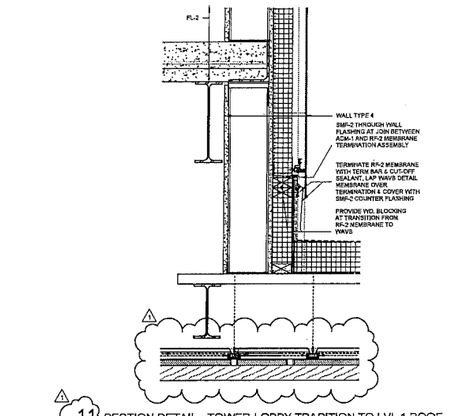
9 TYP WALL 2 + WALL 4 TRANSITION
A351 3" = 1'-0"



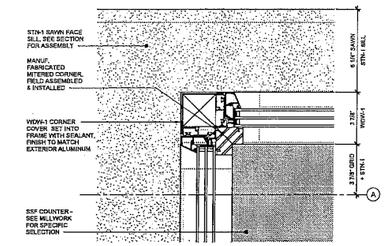
13 SECTION DETAIL - TOWER LOBBY WALL BASE
A351 3" = 1'-0"



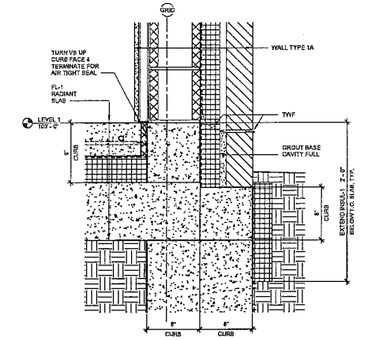
10 SECTION DETAIL - SILL AT TOWER WALL
A351 3" = 1'-0"



11 SECTION DETAIL - TOWER LOBBY TRASITION TO LVL 1 ROOF
A351 1 1/2" = 1'-0"



12 PLAN DETAIL - WDW-1 CORNER AT CLASSROOM 3
A351 3" = 1'-0"



14 SECTION DETAIL - E.WALL AT MECH - BASE
A351 1 1/2" = 1'-0"

MSR 710 South 2nd Street, 8th Floor Minneapolis, Minnesota 55401-2282
Architecture Interiors and Urban Design 612 375 0396 tel 612 342 2316 fax www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201 Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
303 South Paterson Street, Suite 1 Madison, WI 53703
608.251.3600 tel

Structural Engineer, Technology and AV
IMEG Corp.
1830 Deming Way, Suite 200 Middleton, WI 53562
608.223.9600 tel

MEP Engineer
MEP Associates, LLC
850 Blue Gentian Road, Suite 175 Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
575 Aldrewhaha Ave W Inc St. Paul, MN 55103
651.291.1880 tel

Greenhouse Design
Rough Brothers, Inc.
5513 Vine Street Cincinnati, OH 45217
513.242.0310 tel

Olbrich Botanical Gardens
Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin.
ARCHITECT SEAL

WISCONSIN DANIEL JACK POLING A-6984 MINNEAPOLIS, MN ARCHITECT

Signature:
Print Name: Jack Poling
Date: JUNE 4, 2018 License No: A-6984

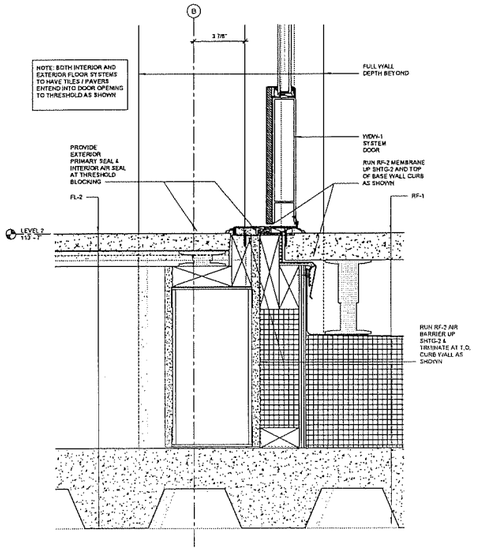
MARK	DATE	DESCRIPTION
	09.25.2017	SCHEMATIC DESIGN SUBMISSION
	12.08.2017	DD PRICING SET
	01.16.2018	DESIGN DEVELOPMENT SUBMISSION
	03.17.2018	UDC SUBMISSION
	03.30.2018	75% CD PRICING ISSUE
	04.05.2018	PARKING LOT AND SITE PLAN SUBMISSION
	04.01.2018	BID REVIEW
	05.04.2018	PERMIT ISSUE
1	06.04.2018	BID ADDENDUM 1

PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: MSR CHECKED BY: MSR

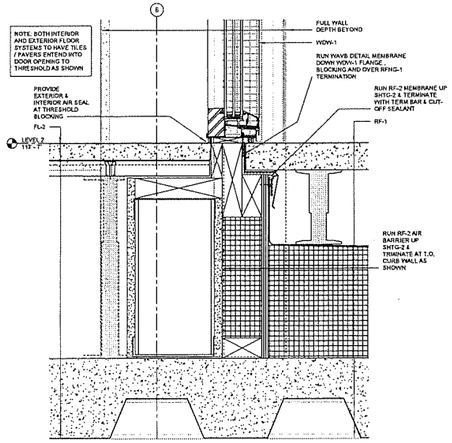
EXTERIOR DETAILS

EXHIBIT F
A351

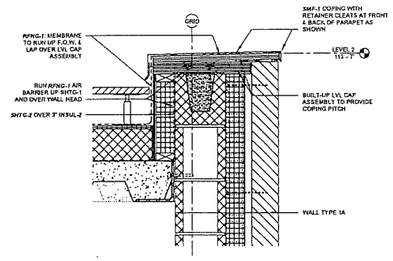
REVISED



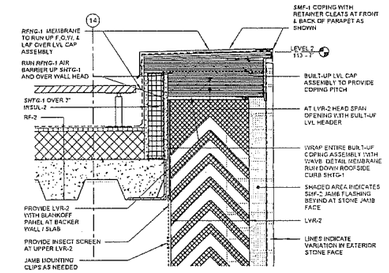
1 SECTION DETAIL - SILL AT E. WALL ENTRY
A352 3" = 1'-0"



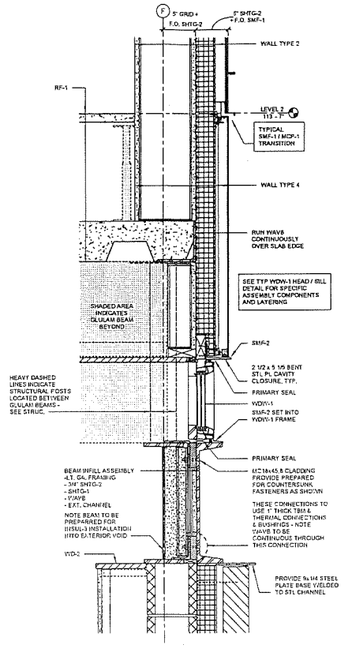
2 SECTION DETAIL - WDW-1 SILL AT N. WALL
A352 3" = 1'-0"



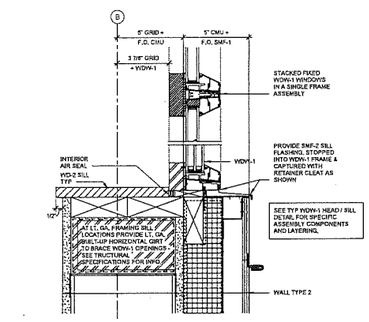
3 SECTION DETAIL - PARAPET AT E. MECHANICAL WALL
A352 1 1/2" = 1'-0"



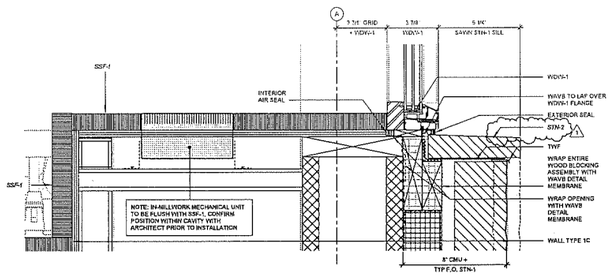
5 SECTION DETAIL - PARAPET AT LVR-2
A352 1 1/2" = 1'-0"



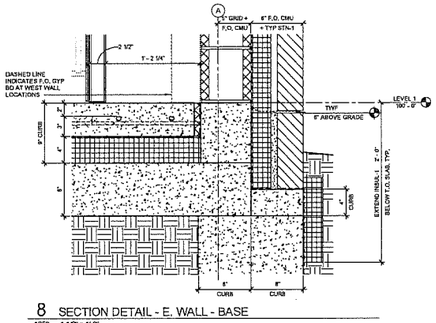
6 SECTION DETAIL - LVL1 TO LVL2 TRANSITION
A352 1 1/2" = 1'-0"



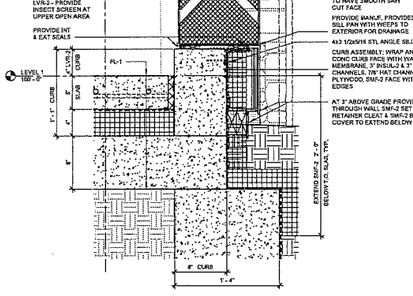
7 SECTION DETAIL - STACKED WDW-1 AT CLASSROOM
A352 3" = 1'-0"



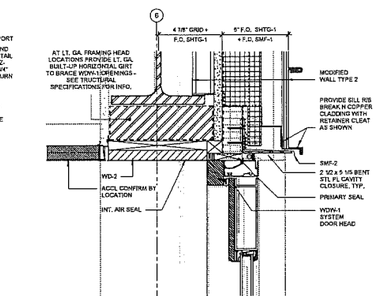
4 SECTION DETRAIL - WDW-1 DEEP SILL / MECH CAVITY AT CLASSROOM
A352 3" = 1'-0"



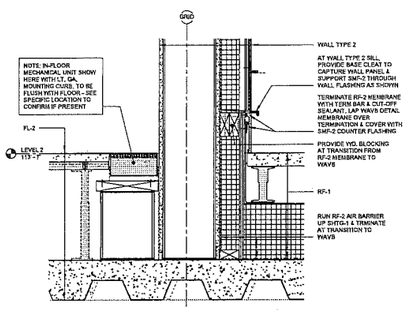
8 SECTION DETAIL - E. WALL - BASE
A352 1 1/2" = 1'-0"



9 SECTION DETAIL - SILL AT LVR-2
A352 1 1/2" = 1'-0"

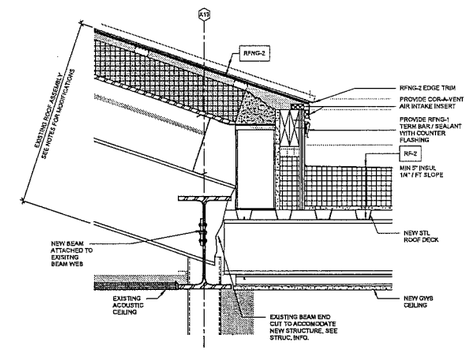


10 SECTION DETAIL - DOOR HEAD
A352 3" = 1'-0"



11 SECTION DETAIL - LEVEL 2 - WALL TYPE 2 BASE
A352 1 1/2" = 1'-0"

12 SECTION DETAIL - RAILING EDGE AT EAST ROOF DECK
A352 1 1/2" = 1'-0"



13 ROOF CONNECTION AT TYPICAL OVERHANG (1992)
A352 1 1/2" = 1'-0"

MSR
710 South 2nd Street, 6th Floor
Minneapolis, Minnesota 55401-2282
Architecture, Interiors and Urban Design
612 375 0336 tel
612 342 2316 fax
www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201
Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
323 South Paterson Street, Suite 1
Madison, WI 53703
608.251.3600 tel

Structural Engineer, Technology and AV
IMEG Corp.
1600 Deming Way, Suite 200
Middleton, WI 53562
608.222.9600 tel

MEP Engineer
MEP Associates, LLC
660 Blue Gentian Road, Suite 175
Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
575 Minnesota Ave West
St. Paul, MN 55103
651.251.1480 tel

Greenhouse Design
Rough Brothers, Inc.
5513 Vine Street
Cincinnati, OH 45217
513.242.0310 tel

Olbrich Botanical Gardens
Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin.
ARCHITECT SEAL

WISCONSIN
DANIEL JACK POLING
A-8084
MINNEAPOLIS, MN
ARCHITECT

Signature
Print Name: Jack Poling
Date: JUNE 4, 2018 License No.: A-8084

MARK	DATE	DESCRIPTION
	05.29.2017	SCHEMATIC DESIGN SUBMISSION
	12.04.2017	DD PRICING SET
	01.12.2018	DESIGN DEVELOPMENT SUBMISSION
	01.17.2018	MDC SUBMISSION
	01.30.2018	70% DD PRICING ISSUE
	04.04.2018	PARKING LOT AND SITE PLAN SUBMISSION
	04.01.2018	BID ISSUE
	04.04.2018	PERMIT ISSUE
1	06.08.2018	BID ADDENDUM 1

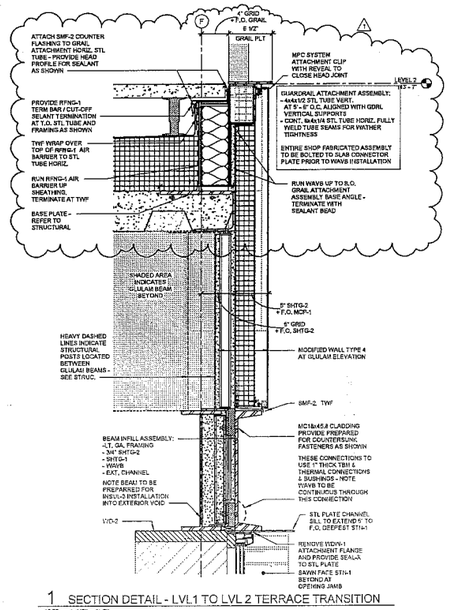
PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: MSR CHECKED BY: MSR

EXTERIOR DETAILS

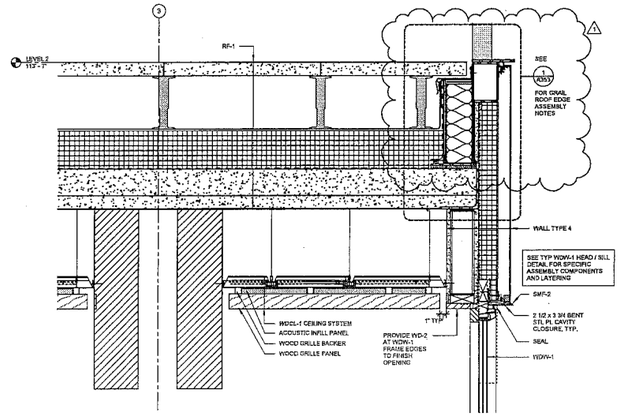
EXHIBIT F
A352

REVISED

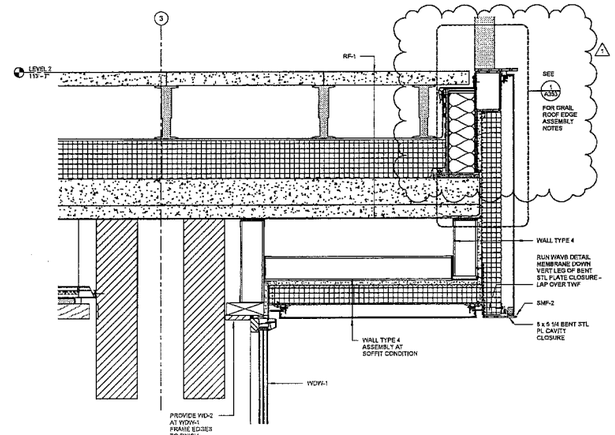
Entry 2017 Copyright Mead & Hunt, Inc. S:\Projects\8162\CAD\Arch\Sheets\A352 Exterior Elevations.dwg



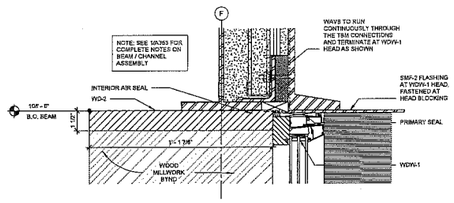
1 SECTION DETAIL - LVL1 TO LVL 2 TERRACE TRANSITION
A353 1 1/2" = 1'-0"



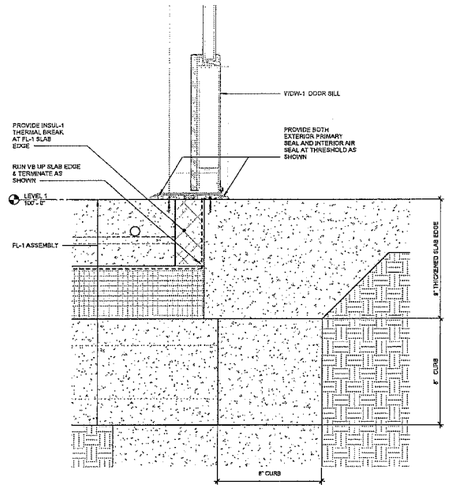
2 SECTION DETAIL - ROOF EDGE AT OUTDOOR CLASSROOM
A353 1 1/2" = 1'-0"



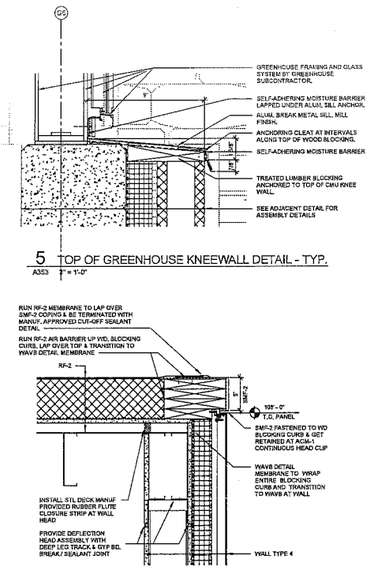
3 SECTION DETAIL - DOOR 110 - HEAD ASSEMBLY
A353 1 1/2" = 1'-0"



4 SECTION DETAIL - WDW-1 HEAD AT E. WALL BEAM
A353 3" = 1'-0"

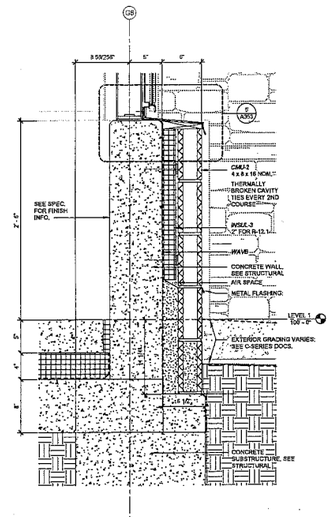


7 SECTION DETAIL - WDW-1 SYSTEM DOOR SILL AT OUTDOOR CLASSROOM
A353 3" = 1'-0"

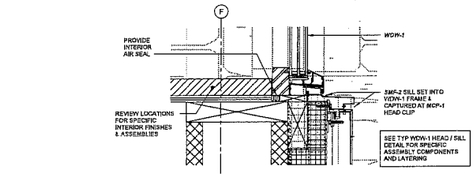


5 TOP OF GREENHOUSE KNEEWALL DETAIL - TYP.
A353 1" = 1'-0"

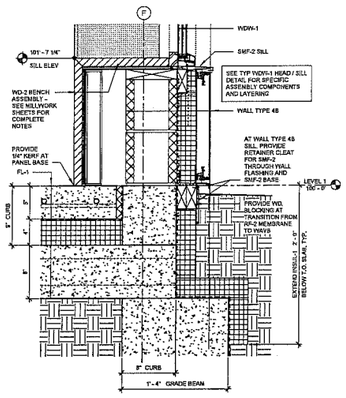
8 SECTION DETAIL - N. LINK - WALL HEAD
A353 1 1/2" = 1'-0"



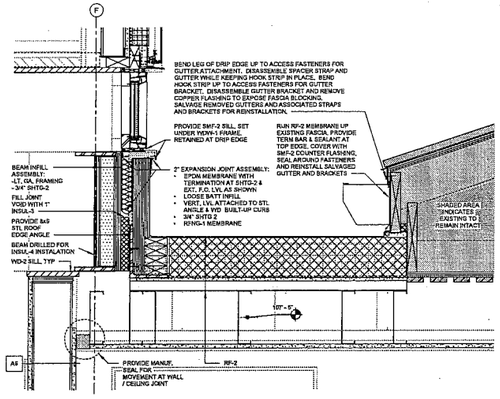
9 TYPICAL EXTERIOR KNEEWALL DETAIL
A353 1 1/2" = 1'-0"



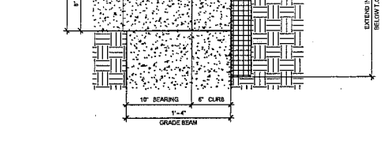
6 DETAIL SECTION - W. WALL WDW-1 / WALL TYPE 4B - SILL
A353 3" = 1'-0"



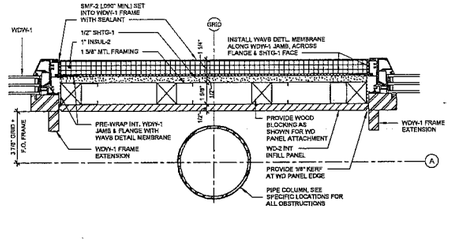
10 SECTION DETAIL - W. WALL - BASE
A353 1 1/2" = 1'-0"



11 SECTION DETAIL - ROOF AT LINK TO EDUCATION BLDG
A353 1 1/2" = 1'-0"



12 SECTION DETAIL - N. LINK WALL - BASE
A353 1 1/2" = 1'-0"



13 PLAN DETAIL - CLASSROOM - INFILL PANEL AT WDW-1
A353 3" = 1'-0"

MSR 710 South 2nd Street, 6th Floor Minneapolis, Minnesota 55401-2282
Architecture, Interiors and Urban Design: 612 375 0836 tel, 612 342 2216 fax, www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201
Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
303 South Paterson Street, Suite 1
Madison, WI 53703
608.251.3600 tel

Structural Engineer, Technology and A/V
IMEG Corp.
1800 Deming Way, Suite 200
Middleton, WI 53562
608.223.9600 tel

MEP Engineer
MEP Associates, LLC
660 Blue Gentian Road, Suite 175
Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
375 Alondra Ave West
St. Paul, MN 55163
651.251.1850 tel

Greenhouse Design
Rough Brothers, Inc.
5613 Vine Street
Cincinnati, OH 45217
513.242.6510 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin.
ARCHITECT SEAL

WISCONSIN DANIEL JACK POLING A-6984 MINNEAPOLIS, MN ARCHITECT

Signature:
Print Name: Jack Poling
Date: JUNE 4, 2018 License No: A-6984

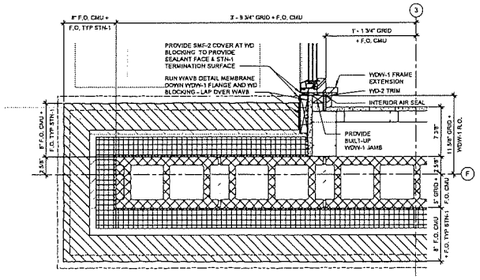
MARK	DATE	DESCRIPTION
	09.25.2017	SCHEMATIC DESIGN SUBMISSION
	12.04.2017	DD PRICING SET
	01.12.2018	DESIGN DEVELOPMENT SUBMISSION
	03.12.2018	CDC SUBMISSION
	03.30.2018	100% DD PRICING ISSUE
	04.05.2018	PLANNING LOC AND SITE PLAN SUBMISSION
	05.01.2018	50% CD SUBMISSION
	05.01.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE
1	06.06.2018	BID ADDENDUM 1

PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: MSR CHECKED BY: MSR

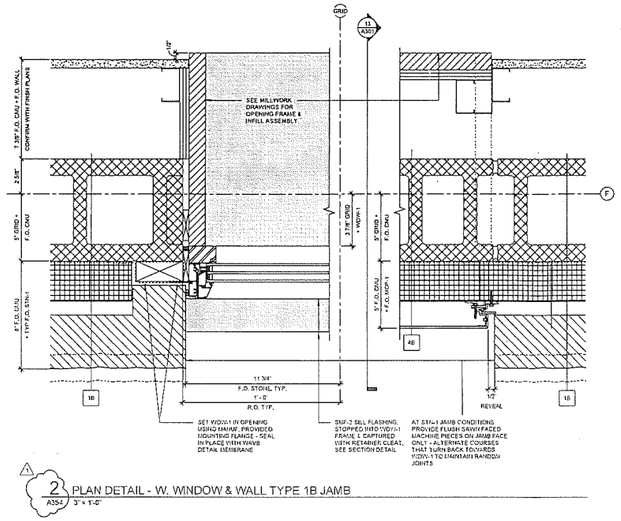
EXTERIOR DETAILS

EXHIBIT F
A353

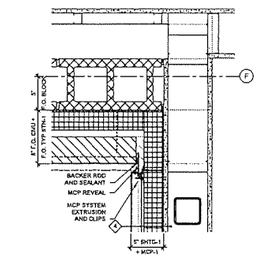
REVISED



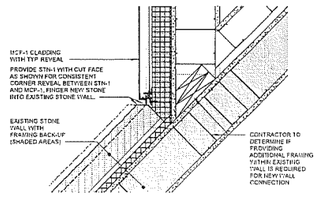
1 PLAN DETAIL - STONE JAMB AT DOOR 110
A354 1 1/2" = 1'-0"



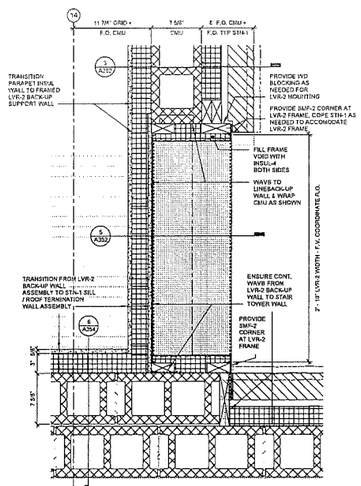
2 PLAN DETAIL - W. WINDOW & WALL TYPE 1B JAMB
A354 3" = 1'-0"



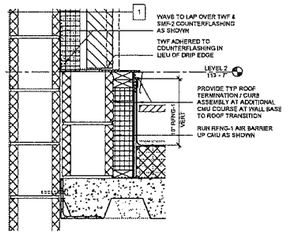
3 PLAN DETAIL - WALL TYPE 1C / 4A CORNER
A354 1 1/2" = 1'-0"



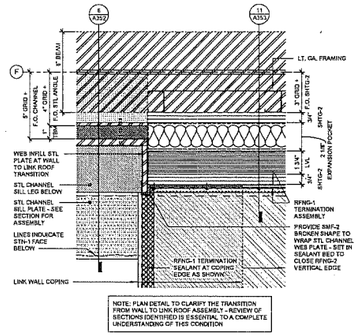
4 PLAN DETAIL - WALL TYPE 1 - WALL TYPE 4 ANGLED TRANSITION
A354 1 1/2" = 1'-0"



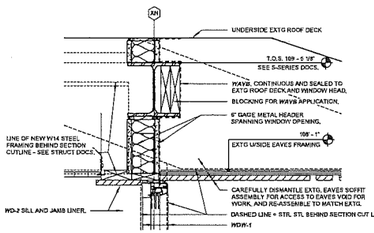
5 PLAN DETAIL - LVR-2 JAMB AT ROOF
A354 1 1/2" = 1'-0"



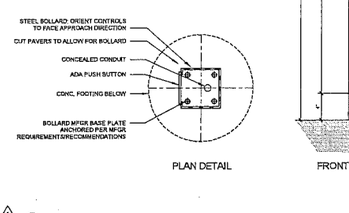
6 SECTION DETAIL - WALL TYPE 1 SILL AT MECH ROOM ROOF
A354 1 1/2" = 1'-0"

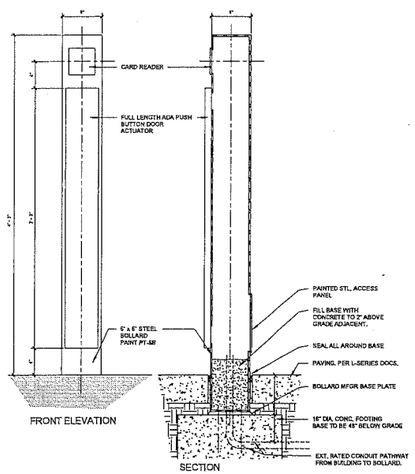


7 PLAN DETAIL - W. WALL CHANNEL TO LINK ROOF TRANSITION
A354 3" = 1'-0"

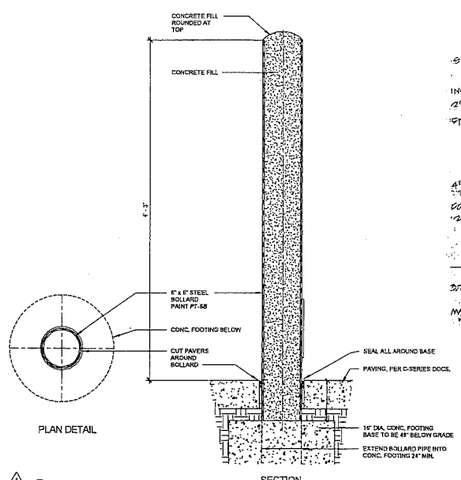


8 ROOF EDGE DETAIL AT JUNCTION WITH EXTG LOBBY
A354 1 1/2" = 1'-0"

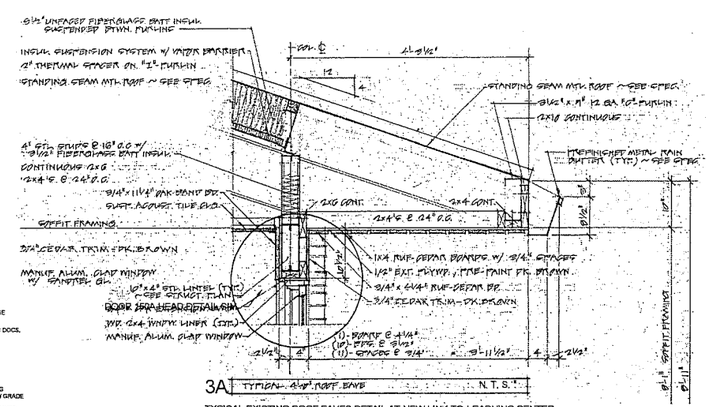




9 EXTERIOR BOLLARD FOR ADA OPERATOR / CARD READER
A354 1 1/2" = 1'-0"



10 EXTERIOR STEEL BOLLARD
A354 1 1/2" = 1'-0"



TYPICAL EXISTING ROOF EAVES DETAIL AT NEW LINK TO LEARNING CENTER. REFER TO A358 FOR COPPER ROOF FINISH MODIFICATIONS MADE IN 2012.

MSR 710 South 2nd Street, 6th Floor Minneapolis, Minnesota 55401-2282
Architecture, Interiors and Urban Design
612 375 0336 tel
612 342 2216 fax
www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201
Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
303 South Paterson Street, Suite 1
Madison, WI 53703
608.251.3600 tel

Structural Engineer, Technology and A/V
IMEG Corp.
1820 Deming Way, Suite 200
Middleton, WI 53562
608.227.9600 tel

MEP Engineer
MEP Associates, LLC
660 Blue Gentian Road, Suite 135
Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
570 Asbury Ave West
St. Paul, MN 55102
651.251.1810 tel

Greenhouse Design
Rough Brothers, Inc.
5613 Vine Street
Cincinnati, OH 45217
513.242.6316 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin.
ARCHITECT SEAL

WISCONSIN
DANIEL JACK POLING
A-8394
MINNEAPOLIS, MN
ARCHITECT

Signature:
Print Name: Jack Poling
Date: JUNE 4, 2018 License No.: A-8394

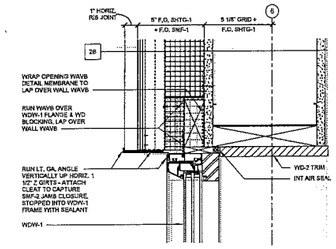
MARK	DATE	DESCRIPTION
	05.25.2017	SCHEMATIC DESIGN SUBMISSION
	12.08.2017	DD PRICING SET
	01.10.2018	DESIGN DEVELOPMENT SUBMISSION
	01.17.2018	MDC SUBMISSION
	03.30.2018	70% CD PRICING ISSUE
	04.05.2018	PARKING LOT AND SITE PLAN SUBMISSION
	05.01.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE
1	06.08.2018	BID ADDENDUM 1

PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: MSR CHECKED BY: MSR

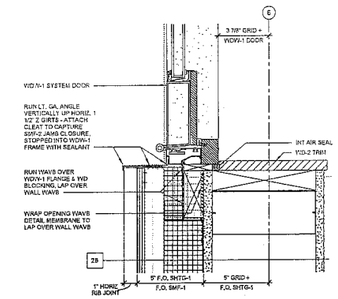
EXTERIOR DETAILS

EXHIBIT F
A354

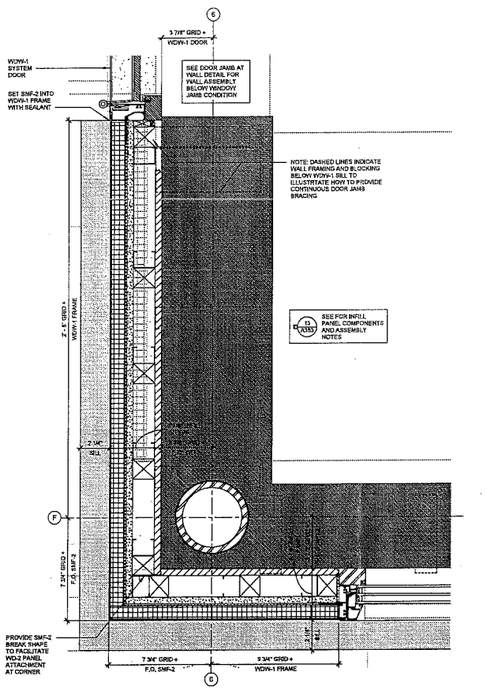
REVISED



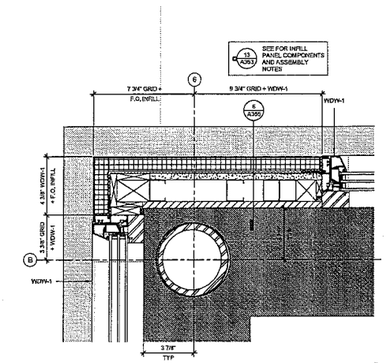
1 A355 PLAN DETAIL - WDW-1 JAMB @ WALL TYPE 2
3" = 1'-0"



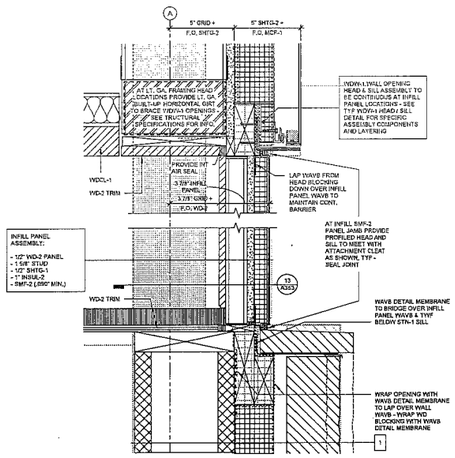
2 A355 PLAN DETAIL - WDW-1 DOOR JAMB @ WALL TYPE 2
3" = 1'-0"



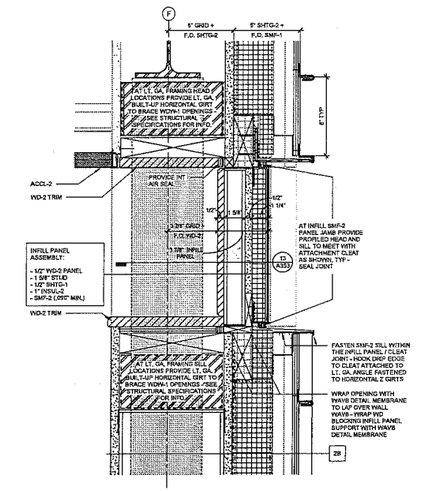
3 A355 PLAN DETAIL - LEVEL 2 W. WALL WDW-1 CLERESTORY JAMB
3" = 1'-0"



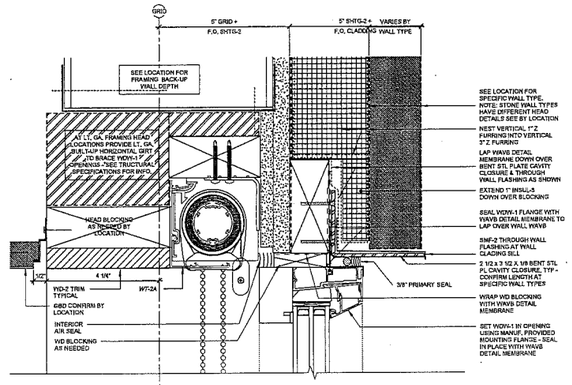
4 A355 PLAN DETAIL - LEVEL 2 NE CORNER WDW-1 - INFILL PANEL
3" = 1'-0"



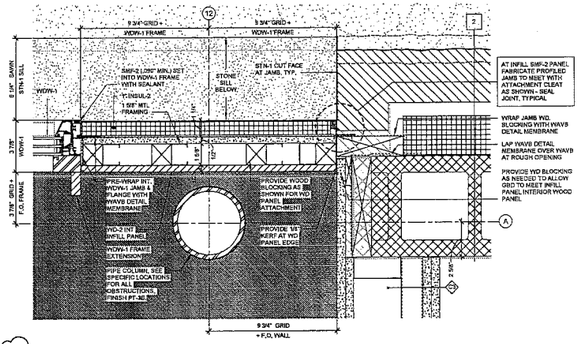
5 A355 SECTION DETAIL - WDW-1 INFIL PANEL AT COLUMN
3" = 1'-0"



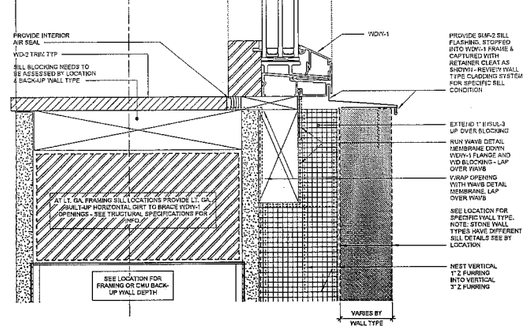
6 A355 SECTION DETAIL - WDW-1 INFILL PANEL AT WALL TYPE 2
3" = 1'-0"

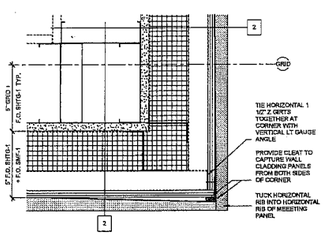


7 A355 SECTION DETAIL - TYP WDW-1 HEAD & SILL ASSEMBLIES
6" = 1'-0"



8 A355 PLAN DETAIL - WDW-1 INFILL PANEL TO WALL TYPE 1 CORNER
3" = 1'-0"





9 A355 PLAN DETAIL - WALL TYPE 2 CORNER
3" = 1'-0"

MSR 710 South 2nd Street, 6th Floor Minneapolis, Minnesota 55401-2282
Architecture Interiors and Urban Design 612.375.0536 tel 612.342.2216 fax www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201 Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
353 South Paterson Street, Suite 1 Madison, WI 53703
608.251.3600 tel

Structural Engineer, Technology and AV
IMEG Corp.
1600 Deming Way, Suite 200 Middleton, WI 53562
608.223.9000 tel

MEP Engineer
MEP Associates, LLC
880 Blue Gentian Road, Suite 175 Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
375 Minnesota Ave West St. Paul, MN 55103
651.251.1660 tel

Greenhouse Design
Rough Brothers, Inc.
5513 Vine Street Cincinnati, OH 45217
513.242.0310 tel

Olbrich Botanical Gardens
Expansion Phase 1
BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin. ARCHITECT SEAL

WISCONSIN DANIEL JACK POLING A-5594 MINNEAPOLIS, MN ARCHITECT

Signature: Jack Poling
Print Name: Jack Poling
Date: JUNE 4, 2018 License No.: A-5594

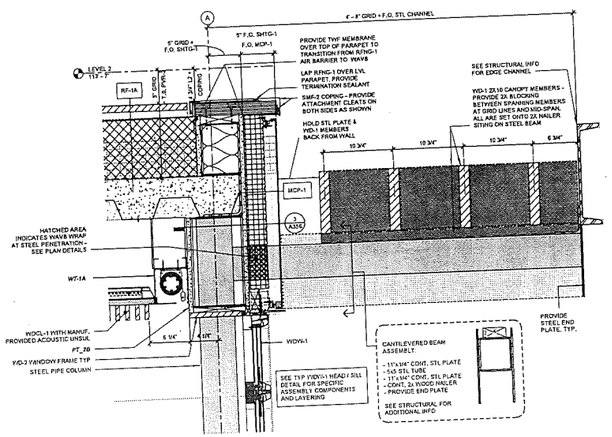
MARK	DATE	DESCRIPTION
	01.20.2017	SCHEMATIC DESIGN SUBMISSION
	12.08.2017	DD PRICING SET
	01.12.2018	CD/90% DEVELOPMENT SUBMISSION
	01.17.2018	HDC SUBMISSION
	03.30.2018	75% CD PRICING ISSUE
	04.05.2018	PARKING LOT AND SITE PLAN SUBMISSION
	05.01.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE
1	06.08.2018	BID ADDENDUM 1

PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: MSR CHECKED BY: MSR

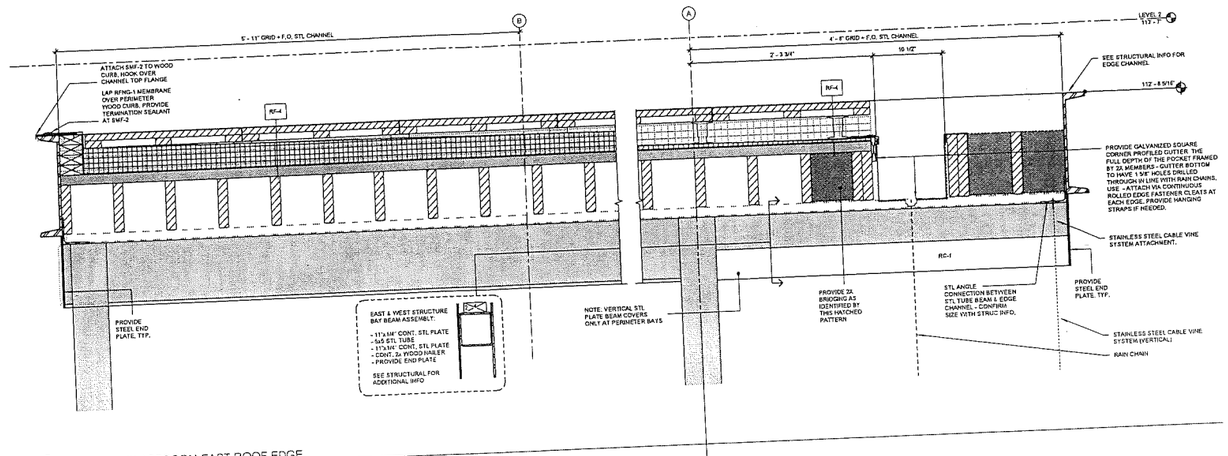
EXTERIOR DETAILS

EXHIBIT F
A355

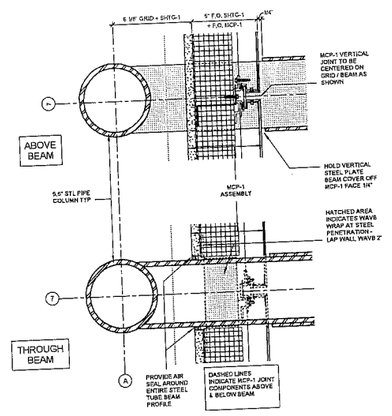
REVISED



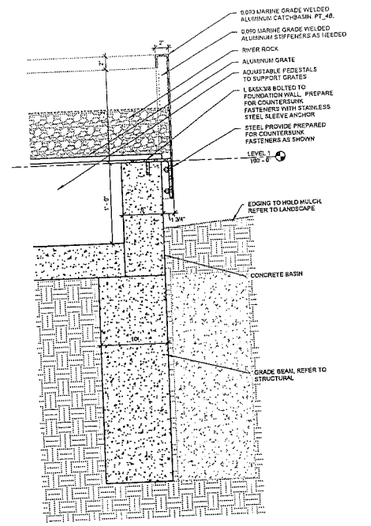
1 SECTION DETAIL - OVERHANG AT EAST CLASSROOM WALL
A356 1 1/2" = 1'-0"



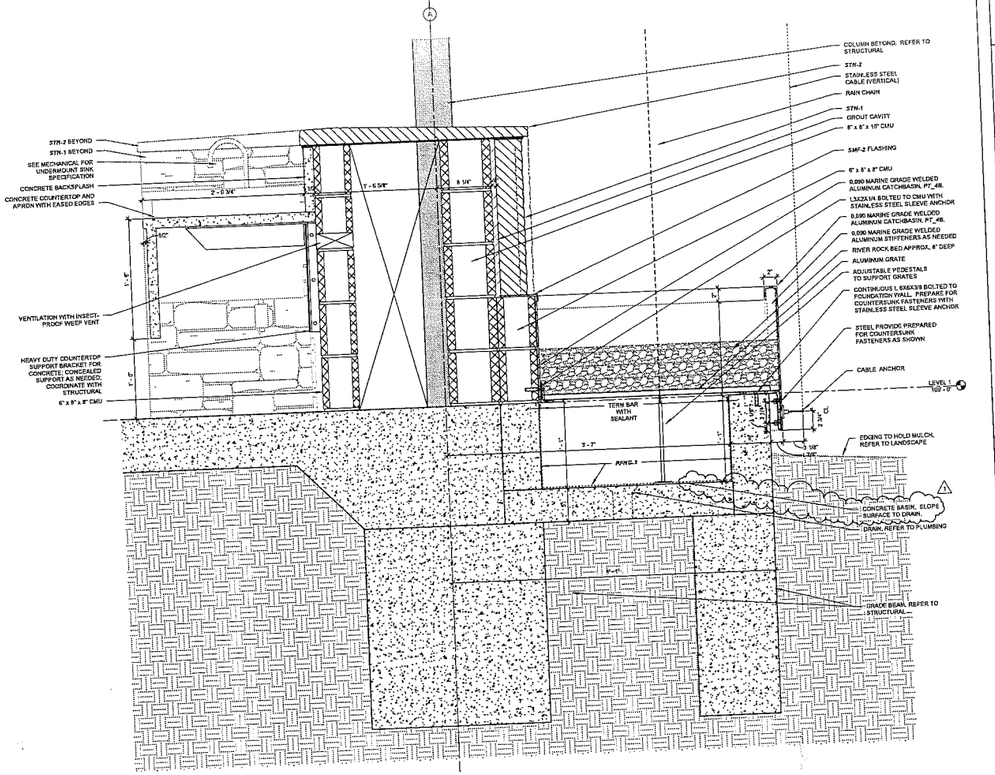
2 OUTDOOR CLASSROOM EAST ROOF EDGE
A356 1 1/2" = 1'-0"



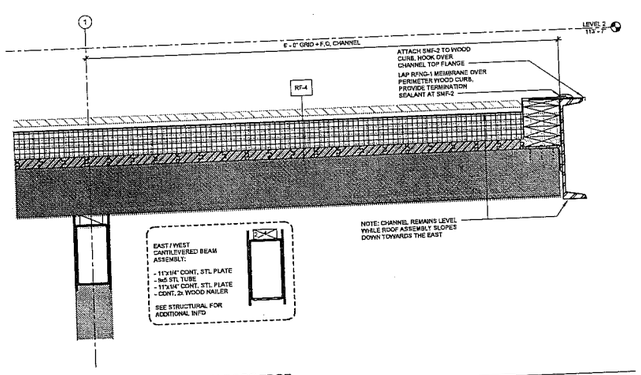
3 BEAM PENETRATION AT E WALL CANOPY
A356 3" = 1'-0"



4 SECTION DETAIL - WATER CATCHMENT N/S WALL
A356 1 1/2" = 1'-0"



6 SECTION DETAIL - OUTDOOR CLASSROOM AT WATER CATCHMENT FEATURE
A356 1 1/2" = 1'-0"



5 OUTDOOR CLASSROOM NORTH ROOF EDGE
A356 1 1/2" = 1'-0"

MSR 710 South 2nd Street, 8th Floor Minneapolis, Minnesota 55401-2282
Architecture, Interiors and Urban Design. tel 612 375 0536 tel 612 342 2216 fax www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201 Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
303 South Paterson Street, Suite 1 Madison, WI 53703
608.251.3600 tel

Structural Engineer, Technology and A/V
IMEG Corp.
1800 Deming Way, Suite 200 Middleton, WI 53562
608.223.9600 tel

MEP Engineer
MEP Associates, LLC
859 Blue Gentian Road, Suite 170 Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
535 Cleveland Ave West St. Paul, MN 55102
651.251.1850 tel

Greenhouse Design
Rough Brothers, Inc.
5513 Vine Street Cincinnati, OH 45217
513.242.0310 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin.
ARCHITECT SEAL

WISCONSIN DANIEL JACK POLING A-6694 MINNEAPOLIS, MN ARCHITECT

Signature:
Print Name: Jack Poling
Date: JUNE 4, 2015 License No: A-6694

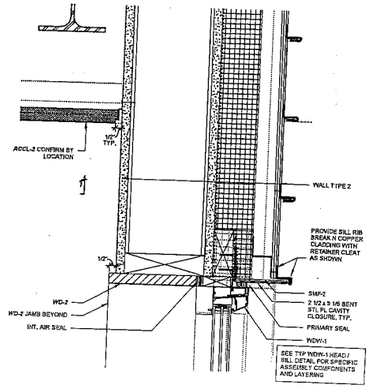
ISSUE	DATE	DESCRIPTION
	09.29.2017	SCHEMATIC DESIGN SUBMISSION
	12.08.2017	DD PRICING SET
	01.10.2018	DESIGN DEVELOPMENT SUBMISSION
	05.17.2018	CDDC SUBMISSION
	03.30.2018	100% CD PRICING ISSUE
	04.06.2018	PARKING LOT AND SITE PLAN SUBMISSION
	06.01.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE
1	06.08.2018	BID ADDENDUM 1

PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: MSR CHECKED BY: MSR

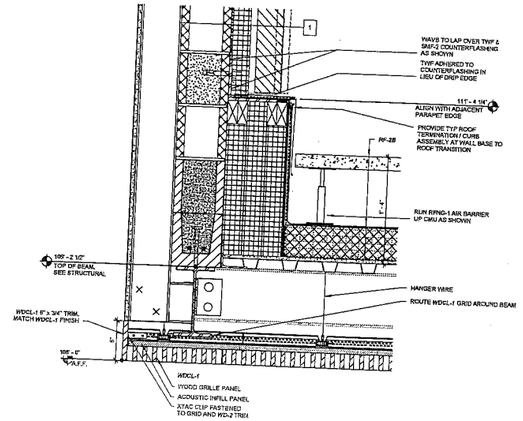
EXTERIOR DETAILS

EXHIBIT F
A356

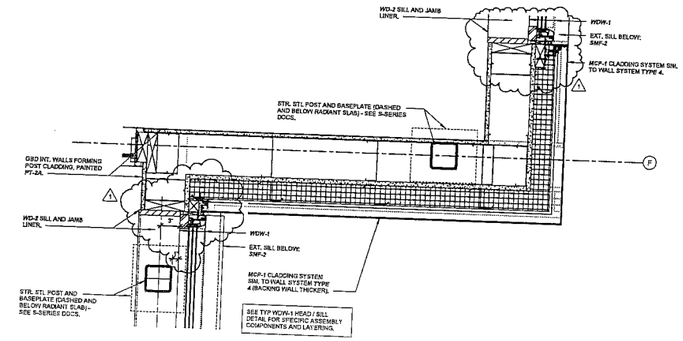
REVISED



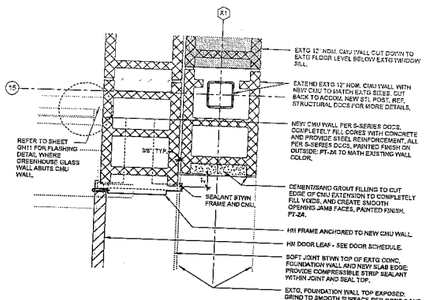
1 SECTION DETAIL - SOUTH WINDOW HEAD
A357 3" = 1'-0"



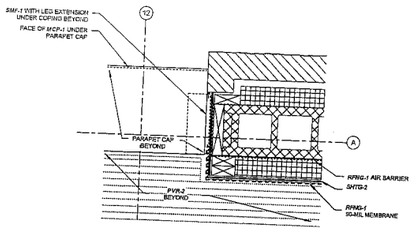
2 SECTION DETAIL - WOOD CEILING AND ROOF DRAIN AT BOTTOM OF STAIR
A357 1 1/2" = 1'-0"



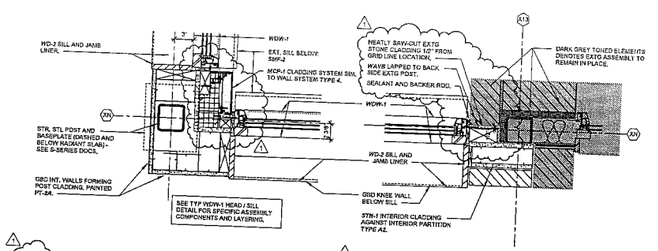
3 PLAN DETAIL - SOUTH CORRIDOR WINDOW JAMB AND LINK ENTRY
A357 1 1/2" = 1'-0"



4 HEADHOUSE DOOR JAMB TO NEW GREENHOUSE
A357 1 1/2" = 1'-0"

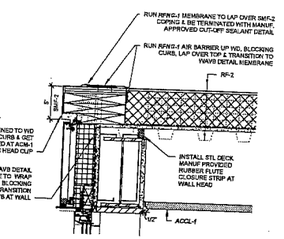


5 PLAN DETAIL - PARAPET AT GRID 12
A357 1 1/2" = 1'-0"

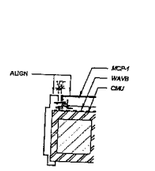


6 PLAN DETAIL - LINK CORNER JAMB
A357 1 1/2" = 1'-0"

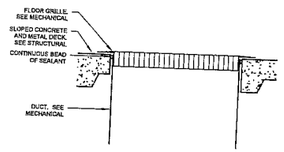
7 PLAN DETAIL - LINK JUNCTION AT PIER X13-XN
A357 1 1/2" = 1'-0"



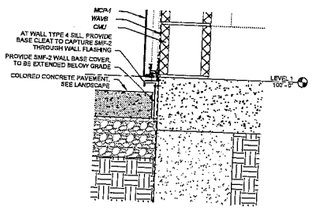
11 SECTION DETAIL - LINK WINDOW HEAD
A357 1 1/2" = 1'-0"



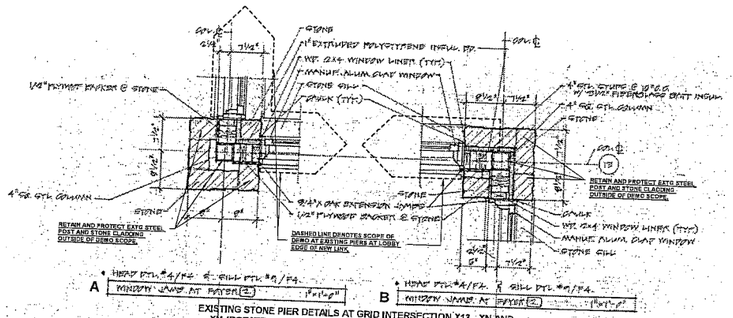
8 PLAN DETAIL - OUTDOOR STORAGE DOOR JAMB
A357 1 1/2" = 1'-0"



9 SECTION DETAIL - DUCT SEAL TO PLENUM FLOOR
A357 1 1/2" = 1'-0"



10 SECTION DETAIL - EXTERIOR STAIR AND STORAGE W.WALL BASE
A357 1 1/2" = 1'-0"



EXISTING LOBBY PIER DETAILS (FROM 1990s RECORD SET)

MSR 710 South 2nd Street, 8th Floor Minneapolis, Minnesota 55401-2282
Architecture, Interiors and Urban Design: 612 375 0936 tel, 612 342 2216 fax, www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201
Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
333 South Paterson Street, Suite 1
Madison, WI 53703
608.251.3600 tel

Structural Engineer, Technology and A/V
IMEG Corp.
1900 Deming Way, Suite 200
Middleton, WI 53562
608.223.9600 tel

MEP Engineer
MEP Associates, LLC
650 Blue Gentian Road, Suite 175
Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
575 Minnesota Ave West
St. Paul, MN 55103
651.293.1869 tel

Greenhouse Design
Rough Brothers, Inc.
5613 Vine Street
Cincinnati, OH 45217
513.242.0399 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin.
ARCHITECT SEAL

WISCONSIN DANIEL JACK POLING A-5084 MINNEAPOLIS, MN ARCHITECT

Signature:
Print Name: Jack Poling
Date: JUNE 4, 2018 License No: A-5084

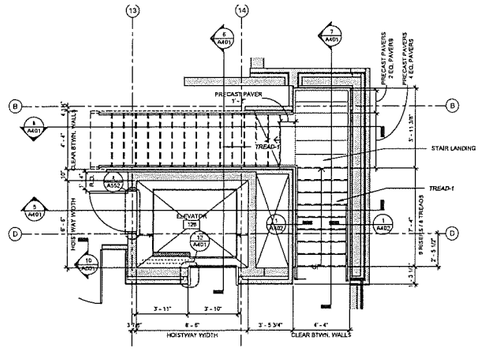
IMAGE	DATE	DESCRIPTION
	09.29.2017	SCHEMATIC DESIGN SUBMISSION
	12.05.2017	DD PRICING SET
	01.10.2018	DESIGN DEVELOPMENT SUBMISSION
	03.12.2018	CDC SUBMISSION
	03.30.2018	75% CD PRICING ISSUE
	04.06.2018	PARKING LOT AND SITE PLAN SUBMISSION
	04.01.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE
1	06.06.2018	BID ADDENDUM 1

PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: MSR CHECKED BY: MSR

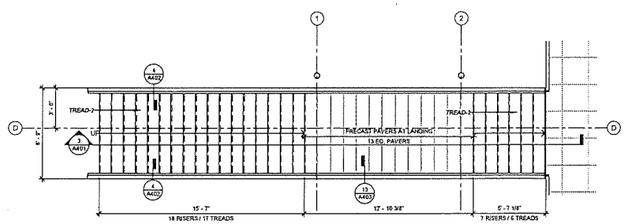
EXTERIOR DETAILS

EXHIBIT F
A357

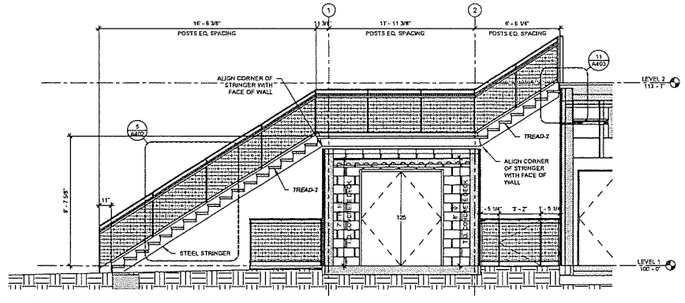
REVISED



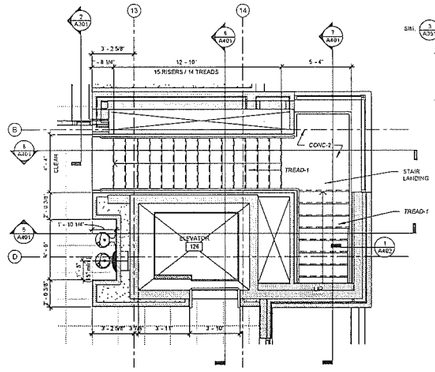
1 STAIR MS-1 PLAN LEVEL 1
A401 1/4" = 1'-0"



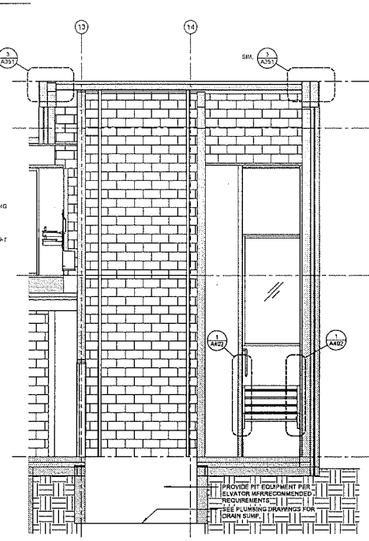
2 STAIR MS-2 PLAN LEVEL 1
A401 1/4" = 1'-0"



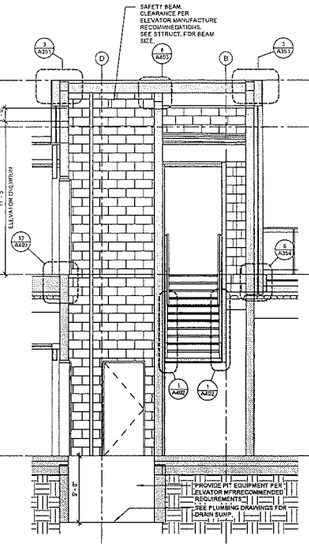
3 EXTERIOR STAIR SECTION N-S
A401 1/4" = 1'-0"



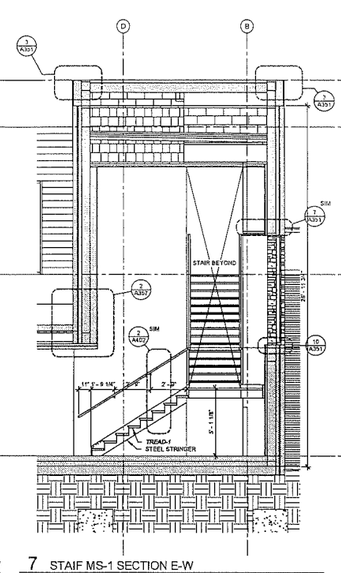
4 STAIR MS-1 PLAN LEVEL 2
A401 1/4" = 1'-0"



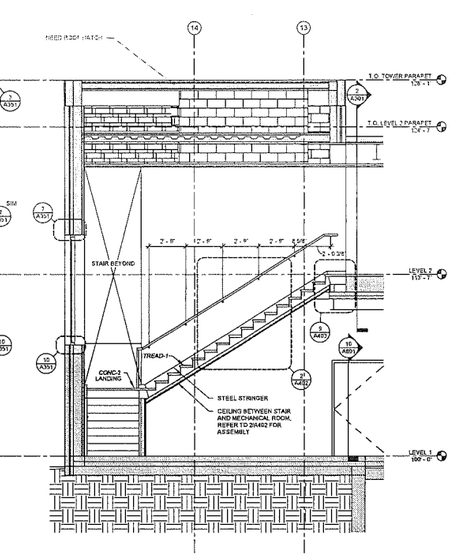
5 STAIR MS-1 AND ELEVATOR SHAFT SECTION N-S
A401 1/4" = 1'-0"



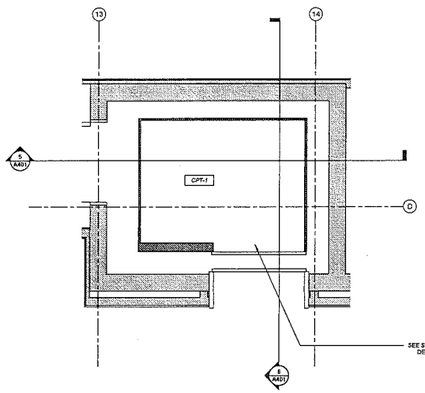
6 STAIR MS-1 AND ELEVATOR SHAFT SECTION E-W
A401 1/4" = 1'-0"



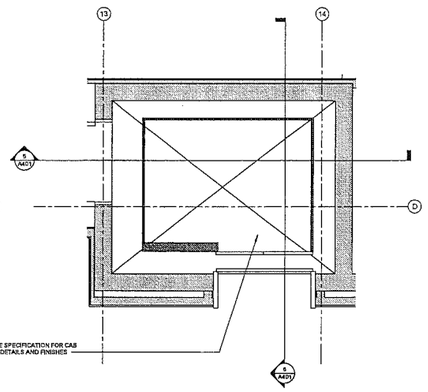
7 STAIF MS-1 SECTION E-W
A401 1/4" = 1'-0"



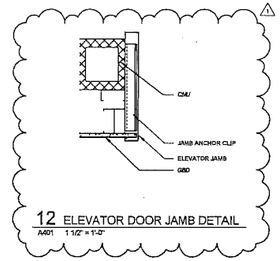
8 STAIR MS-1 SECTION N-S
A401 1/4" = 1'-0"



9 ELEVATOR CAB FLOOR PLAN
A401 1/2" = 1'-0"



10 ELEVATOR CAB REFLECTED CEILING PLAN
A401 1/2" = 1'-0"



12 ELEVATOR DOOR JAMB DETAIL
A401 1 1/2" = 1'-0"

MSR 710 South 2nd Street, 6th Floor Minneapolis, Minnesota 55401-2282
Architecture, Interiors and Urban Design. ph. 612 375 0336 tel 612 342 2216 fax www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201 Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
333 South Paterson Street, Suite 1 Madison, WI 53703
608.251.3600 tel

Structural Engineer, Technology and AV
IMEG Corp.
1800 Deming Way, Suite 200 Middleton, WI 53562
608.223.3600 tel

MEP Engineer
MEP Associates, LLC
850 East Gordon Road, Suite 175 Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
525 Kennedy Ave West St. Paul, MN 55107
651.251.1850 tel

Greenhouse Design
Rough Brothers, Inc.
5512 Vine Street Cincinnati, OH 45217
513.242.0310 tel

Olbrich Botanical Gardens
Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin. ARCHITECT SEAL:

WISCONSIN DANIEL JACK POLING A-5884 MINNEAPOLIS, MN ARCHITECT

Signature: _____
Print Name: Jack Poling
Date: JUNE 4, 2018 License No: A-5884

ISSUES

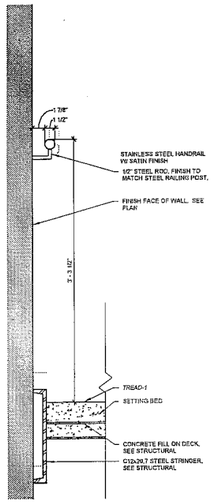
NUMBER	DATE	DESCRIPTION
	09.29.2017	SCHEMATIC DESIGN SUBMISSION
	12.08.2017	DD PRICING SET
	01.10.2018	DESIGN DEVELOPMENT SUBMISSION
	03.17.2018	ADC SUBMISSION
	03.30.2018	100% DD PRICING ISSUE
	04.06.2018	PARKING LOT AND SITE PLAN SUBMISSION
	05.01.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE
1	06.08.2018	BID ADDENDUM 1

PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: MSR CHECKED BY: MSR

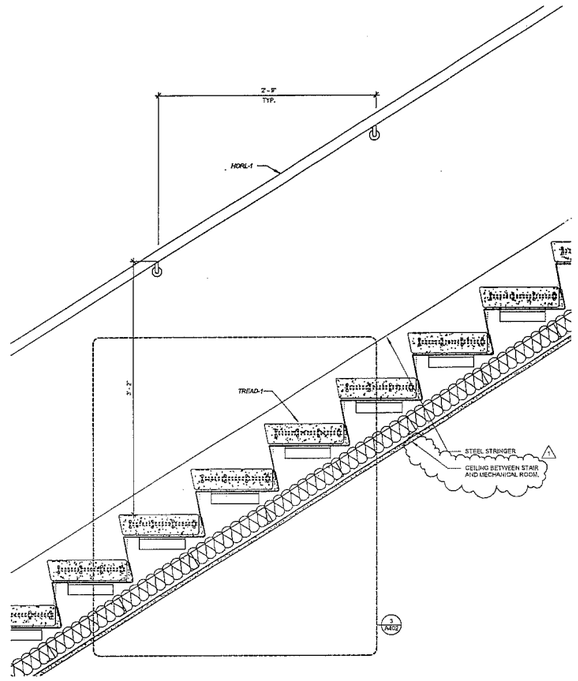
VERTICAL CIRCULATION

EXHIBIT F
A401

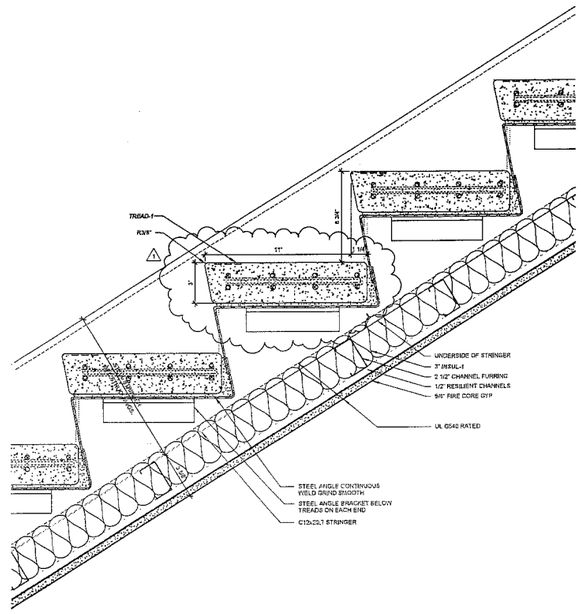
ISSUED



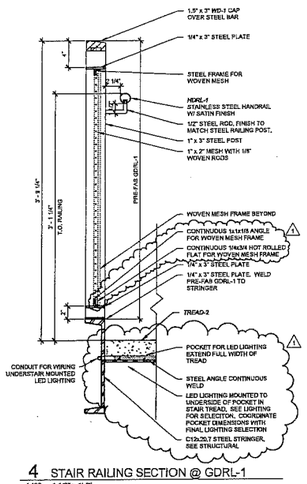
1 STAIR RAILING SECTION @ HDRL-1
A402 1 1/2" = 1'-0"



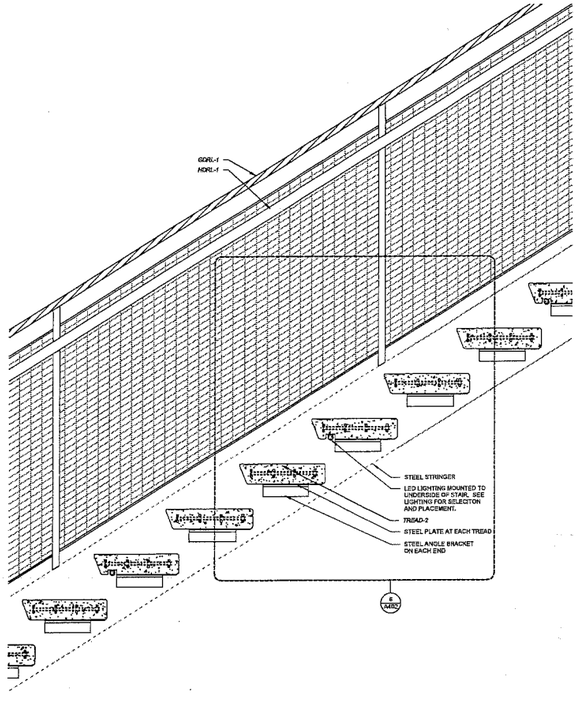
2 STAIR RAILING SECTION @ MS-1
A402 1 1/2" = 1'-0"



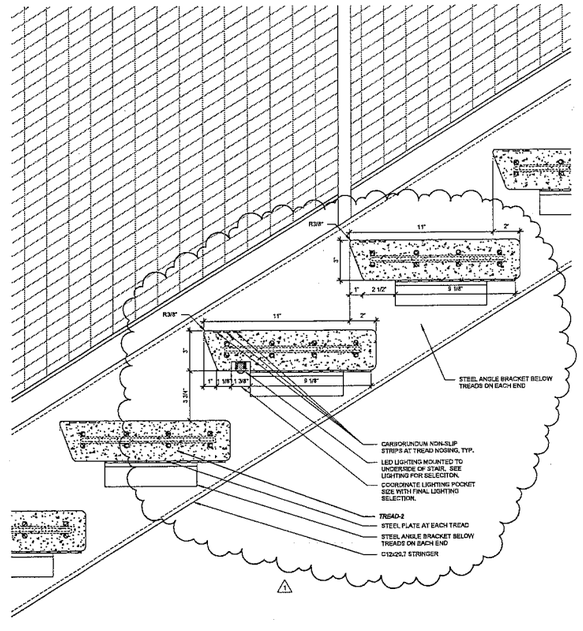
3 STAIR TREAD SECTION DETAIL @ MS-1
A402 3" = 1'-0"



4 STAIR RAILING SECTION @ GDRL-1
A402 1 1/2" = 1'-0"



5 STAIR TREAD SECTION @ MS-2
A402 1 1/2" = 1'-0"



6 STAIR STREAD SECTION DETAIL @ MS-2
A402 3" = 1'-0"

MSR 710 South 2nd Street, 5th Floor Minneapolis, Minnesota 55401-3282
Architecture, Interiors and Urban Design
612.375.0536 tel
612.342.2314 fax
www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201
Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
303 South Paterson Street, Suite 1
Madison, WI 53703
608.251.3600 tel

Structural Engineer, Technology and AV
IMEG Corp.
1500 Deming Way, Suite 200
Middleton, WI 53562
608.223.9600 tel

MEP Engineer
MEP Associates, LLC
550 Blue Gentian Road, Suite 175
Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
570 Asbury Ave West
St. Paul, MN 55107
651.293.1660 tel

Greenhouse Design
Rough Brothers, Inc.
5513 West Street
Cincinnati, OH 45217
513.242.0310 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin.
ARCHITECT SEAL

WISCONSIN
DANIEL JACK POLING
A-5994
MINNEAPOLIS, MN
ARCHITECT

Signature:
Print Name: Jack Poling
Date: JUNE 4, 2018 License No: A-5994

MARK	DATE	DESCRIPTION
	09.29.2017	SCHEMATIC DESIGN SUBMISSION
	12.01.2017	DD PRICING SET
	01.12.2018	DESIGN DEVELOPMENT SUBMISSION
	01.17.2018	UDC SUBMISSION
	03.30.2018	NON-DD PRICING ISSUE
	04.06.2018	PLANNING DEPT AND SITE PLAN SUBMISSION
	06.01.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE
1	06.04.2018	BID ADDENDUM 1

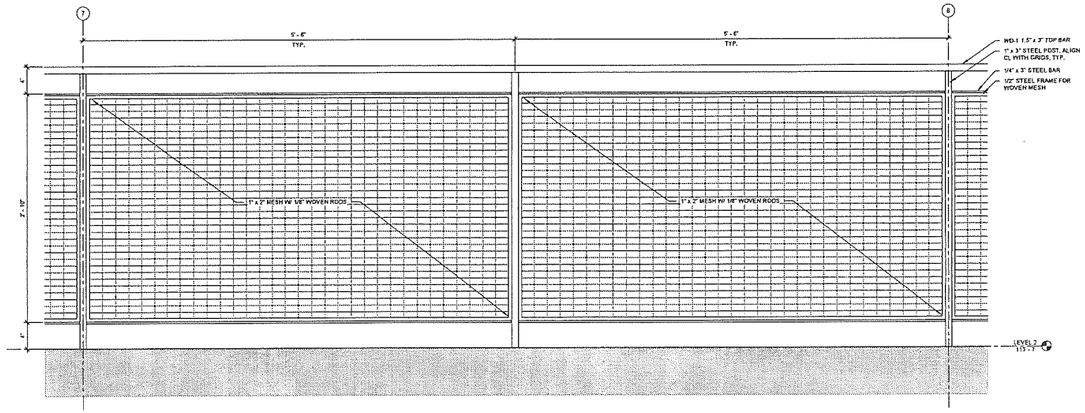
PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: MSR CHECKED BY: MSR

VERTICAL CIRCULATION DETAILS

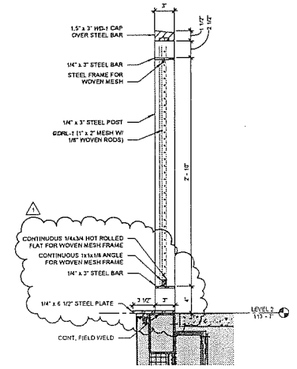
EXHIBIT F

A402

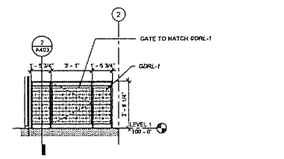
REVISED



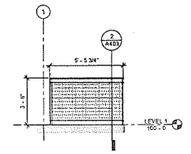
1 GDRL-1 - TYPICAL ELEVATION
A403 1 1/2" = 1'-0"



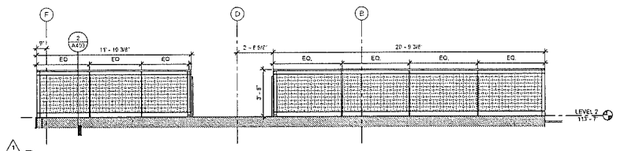
2 RAILING SECTION @ GDRL-1
A403 1 1/2" = 1'-0"



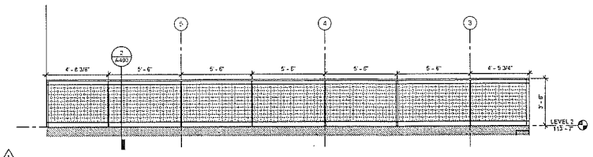
3 OUTDOOR CLASSROOM WEST GATE ELEVATION - GDRL-1
A403 1/4" = 1'-0"



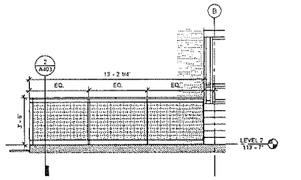
4 OUTDOOR CLASSROOM WEST RAILING ELEVATION - GDRL-1
A403 1/4" = 1'-0"



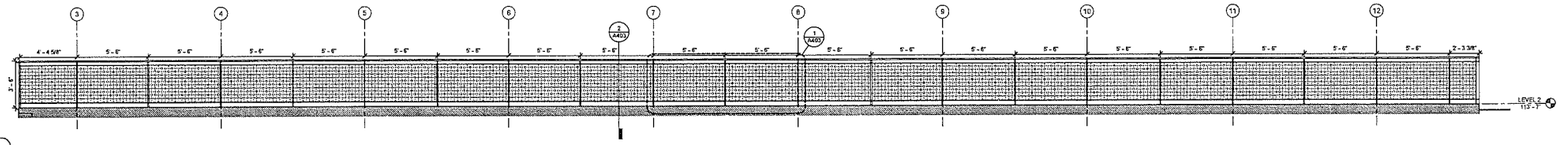
5 EXTERIOR PATIO RAILING NORTH ELEVATION - GDRL-1
A403 1/4" = 1'-0"



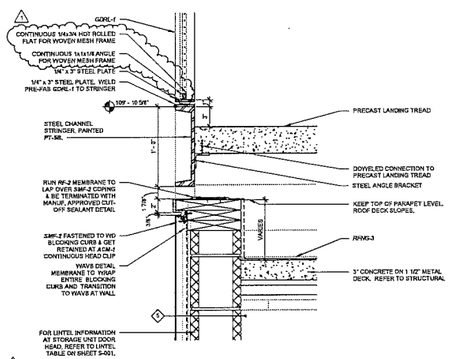
6 EXTERIOR PATIO RAILING WEST ELEVATION - GDRL-1
A403 1/4" = 1'-0"



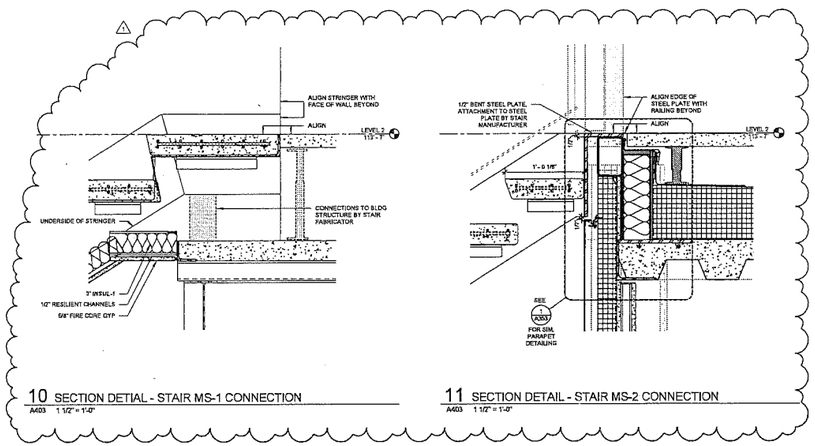
7 EXTERIOR PATIO SOUTH RAILING ELEVATION - GDRL-1
A403 1/4" = 1'-0"



8 EXTERIOR PATIO RAILING EAST ELEVATION - GDRL-1
A403 1/4" = 1'-0"

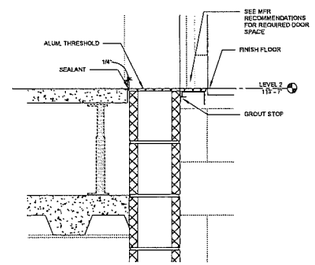


9 SECTION DETAIL - EXTERIOR STAIR AND STORAGE W.WALL
A403 1 1/2" = 1'-0"

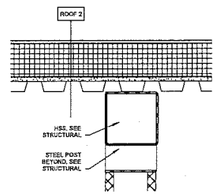


10 SECTION DETIAL - STAIR MS-1 CONNECTION
A403 1 1/2" = 1'-0"

11 SECTION DETAIL - STAIR MS-2 CONNECTION
A403 1 1/2" = 1'-0"



12 ELEVATOR DOOR THRESHOLD AT L-2
A403 1 1/2" = 1'-0"



13 ELEVATOR SHAFT ROOF DETAIL
A403 1 1/2" = 1'-0"

REVISED

MSR 710 South 2nd Street, 6th Floor Minneapolis, Minnesota 55401-2282
Architecture, Interiors and Urban Design. 612 375 0134 tel 612 342 2216 fax www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201 Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
303 South Paterson Street, Suite 1 Madison, WI 53703
608.251.3600 tel

Structural Engineer, Technology and A/V
IMEG Corp.
1800 Deming Way, Suite 200 Middleton, WI 53562
608.223.9600 tel

MEP Engineer
MEP Associates, LLC
450 Blue Gentian Road, Suite 175 Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
575 Aldrmatics Ave West St. Paul, MN 55103
651.251.1880 tel

Greenhouse Design
Rough Brothers, Inc.
5613 Vine Street Cincinnati, OH 45217
513.242.8310 tel

Olbrich Botanical Gardens
Expansion Phase 1
BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin.
ARCHITECT SEAL

WISCONSIN DANIEL JACK POLING A-8984 MINNEAPOLIS, MN ARCHITECT

Signature: Daniel Poling
Print Name: Jack Poling
Date: JUNE 4, 2018 License No.: A-8984

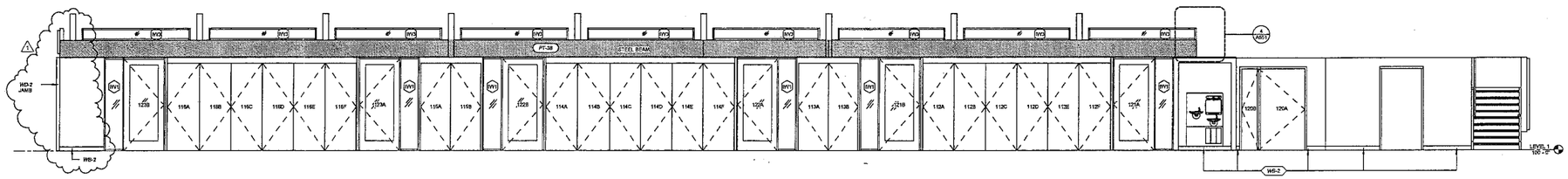
MARK	DATE	DESCRIPTION
	09.29.2017	SCHEMATIC DESIGN SUBMISSION
	12.08.2017	DD PRICING SET
	01.12.2018	DESIGN DEVELOPMENT SUBMISSION
	01.17.2018	UDC SUBMISSION
	03.30.2018	100% DD PRICING ISSUE
	04.04.2018	PARKING LOT AND SITE PLAN SUBMISSION
	05.01.2018	BID ISSUE
	05.04.2018	PERMIT ISSUE
1	05.04.2018	BID ADDENDUM 1

PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: MSR CHECKED BY: MSR

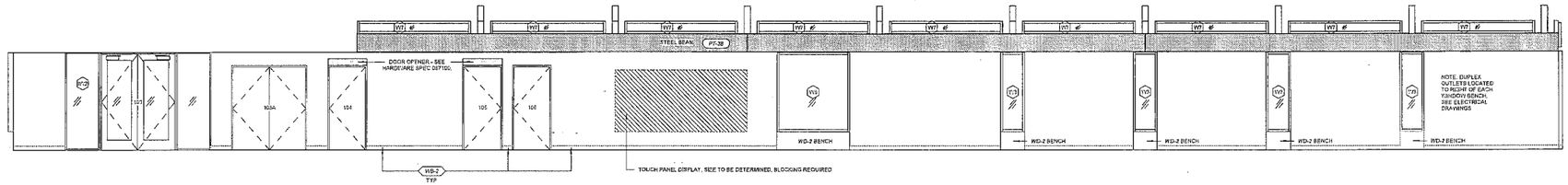
Drawing 2017 Copyright Notice: Without Authorization, Use, Reproduction, Or Modification Is Prohibited.

VERTICAL CIRCULATION DETAILS

EXHIBIT F
A403

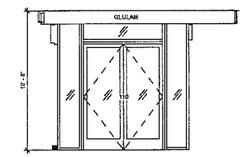


1 CIRCULATION 110 EAST ELEVATION
A501 1/4" = 1'-0"

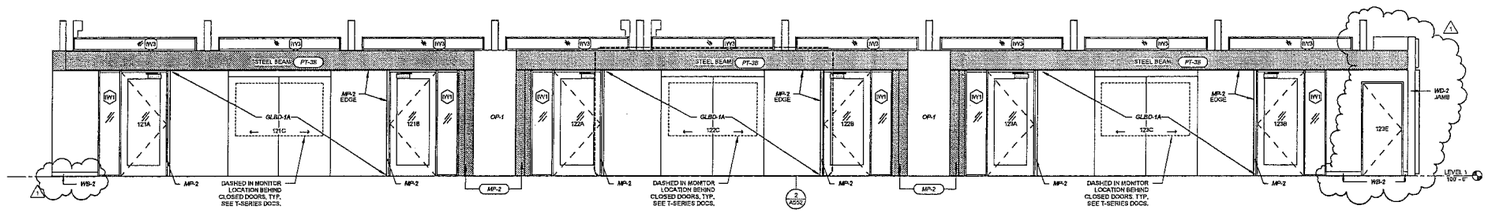


2 CIRCULATION 110 WEST ELEVATION
A501 1/4" = 1'-0"

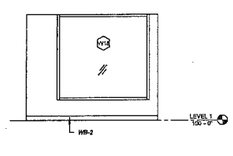
3 CLASSROOMS 121, 122 & 123 EAST ELEVATION
A501 1/4" = 1'-0"



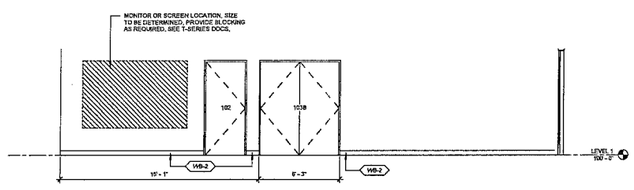
4 CIRCULATION 110 NORTH ELEVATION
A501 1/4" = 1'-0"



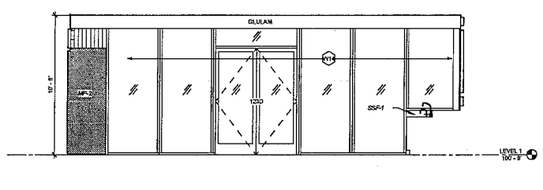
5 CLASSROOMS 121, 122 & 123 WEST ELEVATION
A501 1/4" = 1'-0"



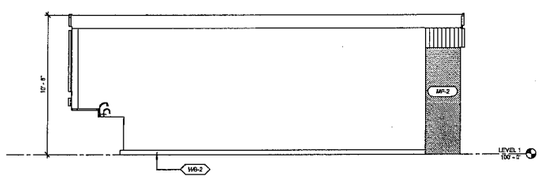
6 CIRCULATION 110 SOUTH ELEVATION
A501 1/4" = 1'-0"



7 LINK 110 NORTH ELEVATION
A501 1/4" = 1'-0"



8 CLASSROOM 123 NORTH ELEVATION
A501 1/4" = 1'-0"



9 CLASSROOM 121 SOUTH ELEVATION
A501 1/4" = 1'-0"

MSR
710 South 2nd Street, 6th Floor
Minneapolis, Minnesota 55401-2282
Architecture 612.375.0836 tel
Interiors and 612.342.2216 fax
Urban Design www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201
Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
300 South Paterson Street, Suite 1
Madison, WI 53703
608.251.3600 tel

Structural Engineer, Technology and AV
IMEG Corp.
1830 Deming Way, Suite 200
Middleton, WI 53562
608.223.9000 tel

MEP Engineer
MEP Associates, LLC
880 Blue Gentian Road, Suite 175
Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
575 Minnesota Ave West
St. Paul, MN 55103
651.251.1650 tel

Greenhouse Design
Rough Brothers, Inc.
5613 Vine Street
Cincinnati, OH 45217
513.242.0310 tel

Olbrich Botanical Gardens
Expansion Phase 1
BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin.
ARCHITECT SEAL

WISCONSIN
DANIEL JACK POLING
A-5994
MINNEAPOLIS, MN
ARCHITECT

Signature:
Print Name: Jack Poling
Date: JUNE 4, 2018 License No. A-5994

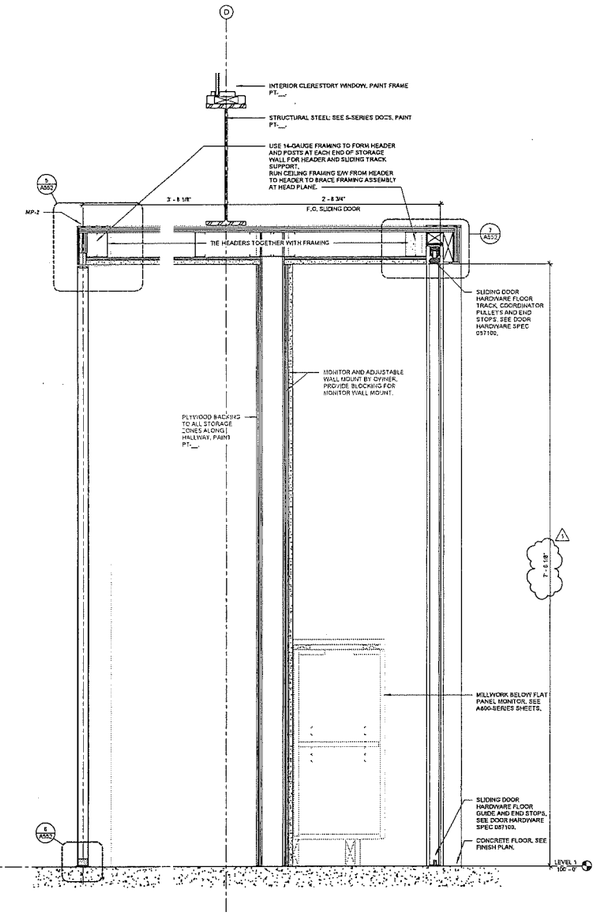
MARK	DATE	DESCRIPTION
	09.29.2017	SCHEMATIC DESIGN SUBMISSION
	12.04.2017	DD PRICING SET
	01.12.2018	DESIGN DEVELOPMENT SUBMISSION
	01.17.2018	CDD SUBMISSION
	03.30.2018	70% CD PRICING ISSUE
	04.05.2018	PARKING LOT AND SITE PLAN SUBMISSION
	04.01.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE
1	06.04.2018	BID ADDENDUM 1

PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: MSR CHECKED BY: MSR

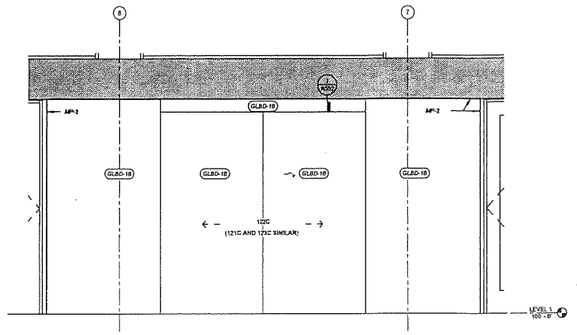
INTERIOR ELEVATIONS

EXHIBIT F
A501

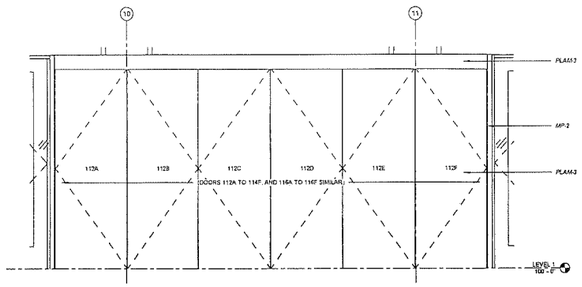
REVISED



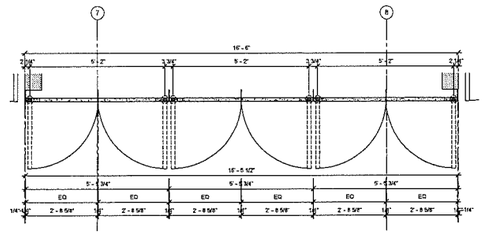
1 ENLARGED SECTION THROUGH HALLWAY / CLASSROOM STORAGE WALL
A552 1 1/2" = 1'-0"



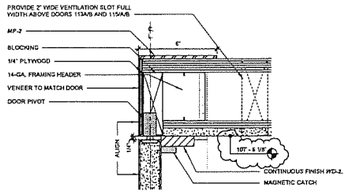
2 EAST ELEVATION DETAIL OF CLASSROOMS 121, 122 & 123 PRESENTATION NICHE
A552 1/2" = 1'-0"



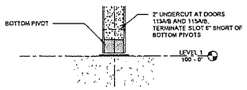
3 WEST ELEVATION DETAIL OF HALLWAY 110 STORAGE
A552 1/2" = 1'-0"



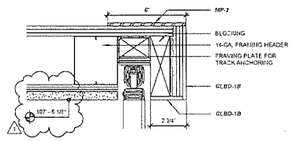
4 ENLARGED PLAN AT TYPICAL HALLWAY 110 STORAGE DOORS
A552 1/2" = 1'-0"



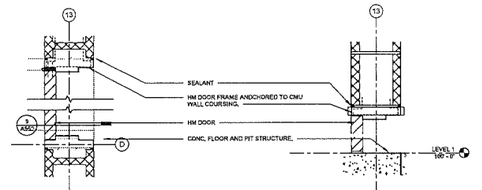
5 SECTION DETAIL - HALLWAY STORAGE DOOR HEAD
A552 3" = 1'-0"



6 SECTION DETAIL - HALLWAY STORAGE DOOR SILL
A552 3" = 1'-0"

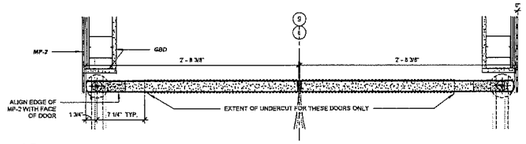


7 SECTION DETAIL - CLASSROOM SLIDING DOOR HEAD
A552 3" = 1'-0"

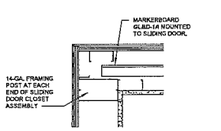


8 PLAN DETAIL - DOOR 120C JAMB
A552 1 1/2" = 1'-0"

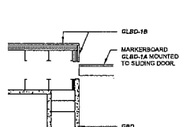
9 SECTION DETAIL - DOOR 120 C HEAD
A552 1 1/2" = 1'-0"



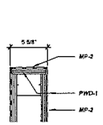
10 ENLARGED PLAN AT HALLWAY CLOSET DOUBLE DOORS 113A/B AND 115A/B
A552 1 1/2" = 1'-0"



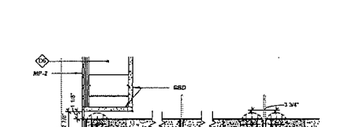
11 PLAN DETAIL AT PRES. CORNER
A552 1 1/2" = 1'-0"



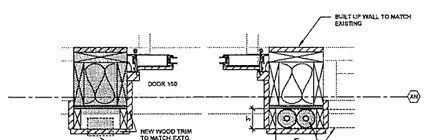
12 PLAN DETAIL AT PRES. POCKET DOOR
A552 1 1/2" = 1'-0"



13 MOVABLE PARTITION POCKET EDGE
A552 1 1/2" = 1'-0"



14 PLAN DETAIL AT HALLWAY STORAGE CORNER
A552 1 1/2" = 1'-0"



15 PLAN DETAIL - DOOR 150A JAMBS
A552 1 1/2" = 1'-0"

MSR 710 South 2nd Street, 6th Floor Minneapolis, Minnesota 55401-2282
Architecture, Interiors and Urban Design: 612.375.0336 tel, 612.342.2216 fax, www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201
Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
303 South Paterson Street, Suite 1
Madison, WI 53703
608.251.3600 tel

Structural Engineer, Technology and A/V
IMEG Corp.
1830 Deming Way, Suite 200
Madison, WI 53562
608.223.9600 tel

MEP Engineer
MEP Associates, LLC
850 Blue Gentian Road, Suite 170
Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
575 Aldrich Ave N
St. Paul, MN 55107
651.251.1610 tel

Greenhouse Design
Rough Brothers, Inc.
5513 Vine Street
Cincinnati, OH 45217
513.242.8310 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin.
ARCHITECT SEAL

WISCONSIN DANIEL JACK POLING A-8394 MINNEAPOLIS, MN ARCHITECT

Signature: _____
Print Name: Jack Poling
Date: JUNE 4, 2018 License No: A-8394

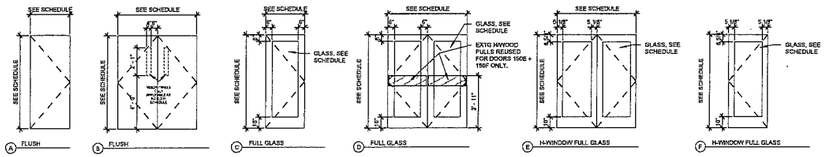
ISSUE	DATE	DESCRIPTION
	05.29.2017	SCHEMATIC DESIGN SUBMISSION
	12.08.2017	30 PRICING SET
	01.18.2018	DESIGN DEVELOPMENT SUBMISSION
	01.17.2018	UDC SUBMISSION
	03.30.2018	50% CD PRICING ISSUE
	04.05.2018	PARKING LOT AND SITE PLAN SUBMISSION
	06.01.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE
1	06.04.2018	BID ADDENDUM 1

PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: MSR CHECKED BY: MSR

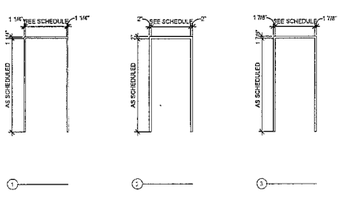
INTERIOR DETAILS

EXHIBIT F
A552

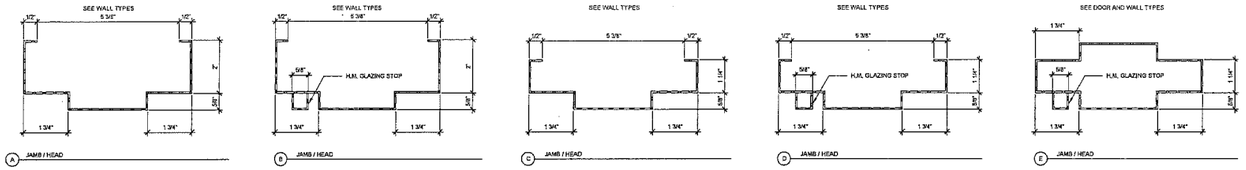
REVISED



1 DOOR TYPES
A601 1/4" = 1'-0"

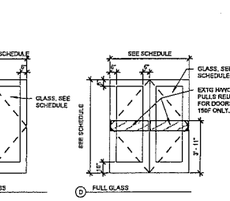


2 FRAME TYPES
A601 1/4" = 1'-0"



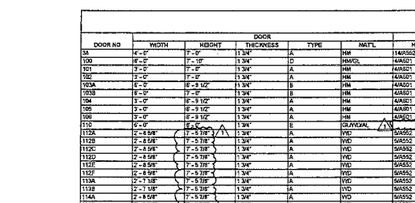
3 H.M. FRAME PROFILES
A601 3" = 1'-0"

4 TYPICAL H.M. FRAME HEAD PROFILES
A601 3" = 1'-0"

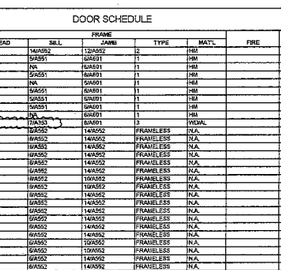


5 TYPICAL DEEP H.M. FRAME HEAD PROFILE
A601 3" = 1'-0"

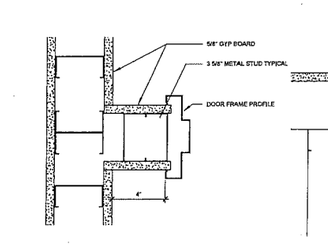
6 TYPICAL H.M. FRAME JAMB PROFILE
A601 3" = 1'-0"



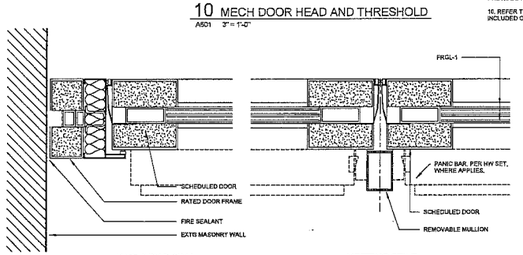
9 MECH ROOM DOOR DETAILS
A601 3" = 1'-0"



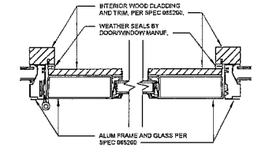
8 H-WIN "NORDIC" DOOR JAMB DETAIL
A601 3" = 1'-0"



7 TYPICAL H.M. FRAME INSTALLATION AT PERPENDICULAR WALL OR CORNER
A601 3" = 1'-0"



11 FIRE RATED GLASS DOOR JAMB DETAILS
A601 3" = 1'-0"

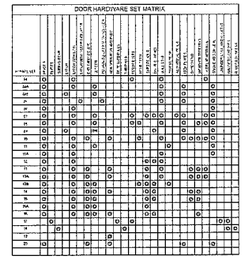


10 MECH DOOR HEAD AND THRESHOLD
A501 3" = 1'-0"

DOOR SCHEDULE

DOOR NO	DOOR WIDTH	DOOR HEIGHT	DOOR THICKNESS	DOOR TYPE	DOOR MATL	FRAME HEAD	FRAME SILL	FRAME JAMB	FRAME TYPE	FRAME MATL	FIRE	HDWR	COMMENTS
36	4'-0"	7'-0"	1 3/4"	A	HM	16A5052	16A552	12A552	12	HM		04A	
100	8'-0"	7'-10"	1 3/4"	D	HMWD	4A601	5A551	6A551	1	HM		13B	
101	3'-0"	7'-0"	1 3/4"	A	HM	4A601	NA	5A551	1	HM		04A	
102	3'-0"	7'-0"	1 3/4"	A	HM	4A601	5A551	6A551	1	HM		02	
103A	6'-0"	8'-0 1/2"	1 3/4"	B	HM	4A601	NA	5A601	1	HM		04	
103B	6'-0"	7'-0"	1 3/4"	B	HM	4A601	5A551	6A551	1	HM		04	
104	3'-0"	8'-0 1/2"	1 3/4"	A	HM	4A601	5A551	6A551	1	HM		05	
105	3'-0"	8'-0 1/2"	1 3/4"	A	HM	4A601	5A551	6A551	1	HM		05	
106	3'-0"	8'-0 1/2"	1 3/4"	A	HM	4A601	NA	6A551	1	HM		04A	
112	6'-0"	8'-0"	1 3/4"	B	GLW/GAL	16A552	NA	6A601	3	HMWDAL		13A	H-WINDOW - DOUBLE DOOR
112A	2'-8 5/8"	7'-5 7/8"	1 3/4"	A	WD	5A552	6A552	14A552	FRAMELESS	N.A.		17	CLOSET DOORS - PIVOT HARDWARE
112B	2'-8 5/8"	7'-5 7/8"	1 3/4"	A	WD	5A552	6A552	14A552	FRAMELESS	N.A.		17	CLOSET DOORS - PIVOT HARDWARE
112C	2'-8 5/8"	7'-5 7/8"	1 3/4"	A	WD	5A552	6A552	14A552	FRAMELESS	N.A.		17	CLOSET DOORS - PIVOT HARDWARE
112D	2'-8 5/8"	7'-5 7/8"	1 3/4"	A	WD	5A552	6A552	14A552	FRAMELESS	N.A.		17	CLOSET DOORS - PIVOT HARDWARE
112E	2'-8 5/8"	7'-5 7/8"	1 3/4"	A	WD	5A552	6A552	14A552	FRAMELESS	N.A.		17	CLOSET DOORS - PIVOT HARDWARE
112F	2'-8 5/8"	7'-5 7/8"	1 3/4"	A	WD	5A552	6A552	14A552	FRAMELESS	N.A.		17	CLOSET DOORS - PIVOT HARDWARE
113A	2'-7 1/8"	7'-5 7/8"	1 3/4"	A	WD	5A552	6A552	15A552	FRAMELESS	N.A.		17	CLOSET DOORS - PIVOT HARDWARE, UNDERCUT 2"
113B	2'-7 1/8"	7'-5 7/8"	1 3/4"	A	WD	5A552	6A552	15A552	FRAMELESS	N.A.		17	CLOSET DOORS - PIVOT HARDWARE, UNDERCUT 2"
114A	2'-8 5/8"	7'-5 7/8"	1 3/4"	A	WD	5A552	6A552	14A552	FRAMELESS	N.A.		17	CLOSET DOORS - PIVOT HARDWARE
114B	2'-8 5/8"	7'-5 7/8"	1 3/4"	A	WD	5A552	6A552	14A552	FRAMELESS	N.A.		17	CLOSET DOORS - PIVOT HARDWARE
114C	2'-8 5/8"	7'-5 7/8"	1 3/4"	A	WD	5A552	6A552	14A552	FRAMELESS	N.A.		17	CLOSET DOORS - PIVOT HARDWARE
114D	2'-8 5/8"	7'-5 7/8"	1 3/4"	A	WD	5A552	6A552	14A552	FRAMELESS	N.A.		17	CLOSET DOORS - PIVOT HARDWARE
114E	2'-8 5/8"	7'-5 7/8"	1 3/4"	A	WD	5A552	6A552	14A552	FRAMELESS	N.A.		17	CLOSET DOORS - PIVOT HARDWARE
114F	2'-8 5/8"	7'-5 7/8"	1 3/4"	A	WD	5A552	6A552	14A552	FRAMELESS	N.A.		17	CLOSET DOORS - PIVOT HARDWARE
115A	2'-7 1/8"	7'-5 7/8"	1 3/4"	A	WD	5A552	6A552	15A552	FRAMELESS	N.A.		17	CLOSET DOORS - PIVOT HARDWARE
115B	2'-7 1/8"	7'-5 7/8"	1 3/4"	A	WD	5A552	6A552	15A552	FRAMELESS	N.A.		17	CLOSET DOORS - PIVOT HARDWARE
116A	2'-8 5/8"	7'-5 7/8"	1 3/4"	A	WD	5A552	6A552	14A552	FRAMELESS	N.A.		17	CLOSET DOORS - PIVOT HARDWARE
116B	2'-8 5/8"	7'-5 7/8"	1 3/4"	A	WD	5A552	6A552	14A552	FRAMELESS	N.A.		17	CLOSET DOORS - PIVOT HARDWARE
116C	2'-8 5/8"	7'-5 7/8"	1 3/4"	A	WD	5A552	6A552	14A552	FRAMELESS	N.A.		17	CLOSET DOORS - PIVOT HARDWARE
116D	2'-8 5/8"	7'-5 7/8"	1 3/4"	A	WD	5A552	6A552	14A552	FRAMELESS	N.A.		17	CLOSET DOORS - PIVOT HARDWARE
116E	2'-8 5/8"	7'-5 7/8"	1 3/4"	A	WD	5A552	6A552	14A552	FRAMELESS	N.A.		17	CLOSET DOORS - PIVOT HARDWARE
116F	2'-8 5/8"	7'-5 7/8"	1 3/4"	A	WD	5A552	6A552	14A552	FRAMELESS	N.A.		17	CLOSET DOORS - PIVOT HARDWARE
120A	4'-0"	7'-0"	1 3/4"	A	HM	12A601	12A601	6A601	2	HM		07	
120B	7'-0"	7'-0"	1 3/4"	A	HM	12A601	12A601	6A601	2	HM		07	
120C	3'-0"	7'-0"	1 3/4"	A	HM	6A552	NA	6A552	2	HM		06	
121A	3'-0"	7'-10 3/8"	1 3/4"	C	HMWDL	4A601	NA	5A4351	1	HM		11	
121B	3'-6"	7'-10 3/8"	1 3/4"	C	HMWDL	4A601	NA	5A4351	1	HM		11	
121C	7'-10"	7'-5 1/8"	1 5/8"	B	HMWDL-BO-1A	11A552	NA	6A552	FRAMELESS	N.A.		14	SLIDING MARKERBOARD POCKET DOORS
122A	3'-6"	7'-10 3/8"	1 3/4"	C	HMWDL	4A601	NA	11A4351	1	HM		11	
122B	3'-6"	7'-10 3/8"	1 3/4"	C	HMWDL	4A601	NA	11A4351	1	HM		11	
122C	7'-10"	7'-5 1/8"	1 5/8"	B	HMWDL-BO-1A	11A552	NA	6A552	FRAMELESS	N.A.		14	SLIDING MARKERBOARD POCKET DOORS
123A	3'-6"	7'-10 3/8"	1 3/4"	C	HMWDL	4A601	NA	11A4351	1	HM		11	
123B	3'-0"	7'-10 3/8"	1 3/4"	C	HMWDL	4A601	NA	11A4351	1	HM		11	
123C	7'-10"	7'-5 1/8"	1 5/8"	B	HMWDL-BO-1A	11A552	NA	6A552	FRAMELESS	N.A.		14	SLIDING MARKERBOARD POCKET DOORS
123D	6'-0"	8'-0"	1 3/4"	E	GLW/GAL	16A552	NA	6A601	3	HMWDAL		13	H-WINDOW - DOUBLE DOOR
123E	3'-0"	7'-0"	1 3/4"	A	HM	12A601	NA	6A601	1	HM		04B	
125	6'-0"	7'-0"	1 3/4"	B	HM	16A601	NA	6A601	1	HM		05	
150A	7'-0 3/4"	7'-0"	1 3/4"	B	GLW/GAL	16A754	NA	15A754	2	HMWDAL		13	MATCH EXISTING ENTRY DOOR
150C	3'-1"	7'-9"	1 3/4"	C	GLHM	4A601	NA	6A601	2	HM	SMOKE ONLY	09	
150D	3'-1"	7'-9"	1 3/4"	C	GLHM	4A601	NA	6A601	2	HM	SMOKE ONLY	09	
150E	6'-10"	8'-6"	1 3/4"	D	HMWD MIN GL	11A601	NA	11A601	2	FRDK-1	1.5-HR RATED	29	REFER TO SPEC SECTION 084410
150F	6'-10"	8'-6"	1 3/4"	D	HMWD MIN GL	11A601	NA	11A601	2	FRDK-1	1.5-HR RATED	29	REFER TO SPEC SECTION 084410
201A	3'-0"	7'-10 3/4"	1 3/4"	C	GLHM	4A601	NA	6A601	1	HM		15A	
201B	3'-0"	7'-10"	1 3/4"	F	GLW/GAL	16A552	NA	6A551	3	WDAL		14	H-WINDOW - SINGLE DOOR
202	3'-0"	7'-0"	1 3/4"	A	HM	5A551	NA	6A601	1	HM		05	
210	3'-0"	8'-10"	1 3/4"	F	WOOD	16A552	NA	6A551	1	WDAL		15	H-WINDOW - SINGLE DOOR
211	3'-0"	7'-0"	1 3/4"	A	HM	5A601	NA	6A601	1	HM		04B	
213	3'-0"	9'-10"	1 3/4"	C	HMWDL	4A601	NA	9A601	1	HM		11A	CLASSROOM DOOR
SH01	6'-0"	10'-0"	1 3/4"	E	WD	14A552 sim	16A551	15A552 sim	2	WD	3-HR RATED	16	INCLUDE 16"WIDTH PANELS, MAX 10.5 BY 4 INCHES

DOOR HARDWARE SET MATRIX



DOOR SCHEDULE GENERAL NOTES

1. COORDINATE DEPTH OF FRAMING AND OVER DOOR WITH HARDWARE REQUIREMENTS, INCLUDING HARDWARE ANCHORING REQUIREMENTS.
2. ALL NEW EXTERIOR DOORS TO BE INSULATED AND THERMALLY-BROKEN, INCLUDING THRESHOLD STRIPS.
3. ALL H.M. DOORS AND FRAMES TO BE FIELD PAINTED PT-3B, FOR ALL OTHER HM-TYPE DOORS AND FRAME DETAILS, REFER TO SPECIFICATION SECTION 081113.
4. ALL WOOD CLOSET DOORS TO BE FINISHED WITH PLAM-3, UNLESS NOTED OTHERWISE.
5. ALL WOOD CLAD EXTERIOR DOORS ARE SELF-FINISHED BY MANUFACTURER, FOR ALL OTHER WOOD CLAD EXTERIOR DOOR AND FRAME DETAILS, REFER TO SPECIFICATION SECTION 085200.
6. FOR ALL GLASS DOORS, REFER TO GLASS SPECIFICATION 088000, AND THE MATERIALS LIST ON SHEET G002.
7. FOR DOOR HARDWARE SETS, REFER TO SPECIFICATION SECTION 087100.
8. REFER TO T-SERIES DRAWINGS AND DOCUMENTS FOR CARD READER AND DOOR MONITORING REQUIREMENTS, DETAILS AND GENERAL LOCATIONS.
9. CARD READER LOCATIONS ON T-SERIES DRAWINGS ARE INDICATIVE AND REQUIRE PRECISE LOCATING IN THE FIELD WITH OWNER INPUT AND APPROVAL.
10. REFER TO OTHER DETAIL SHEETS IN THIS A-SERIES SET FOR DOOR DETAILS NOT INCLUDED ON THIS SHEET.

MSR
710 South 2nd Street, 6th Floor
Minneapolis, Minnesota 55401-2221
Architecture, Interiors and Urban Design
612 375 0936 tel
612 342 2316 fax
www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201
Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
303 South Paterson Street, Suite 1
Madison, WI 53703
608.251.3429 tel

Structural Engineer, Technology and A/V
IMEG Corp.
1550 Deming Way, Suite 200
Middleton, WI 53562
608.223.9500 tel

MEP Engineer
MEP Associates, LLC
460 Blue Garden Road, Suite 170
Eagan, MN 55121
651.329.5120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
570 Asbury Ave West
St. Paul, MN 55103
651.291.1630 tel

Greenhouse Design
Rough Brothers, Inc.
5513 Vine Street
Cincinnati, OH 45217
513.242.0310 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin.
ARCHITECT SEAL

WISCONSIN
DANIEL JACK POLING
A-5594
MINNEAPOLIS, MN
ARCHITECT

Signature
Print Name: Jack Poling
Date: JUNE 4, 2018 License No: A-5594

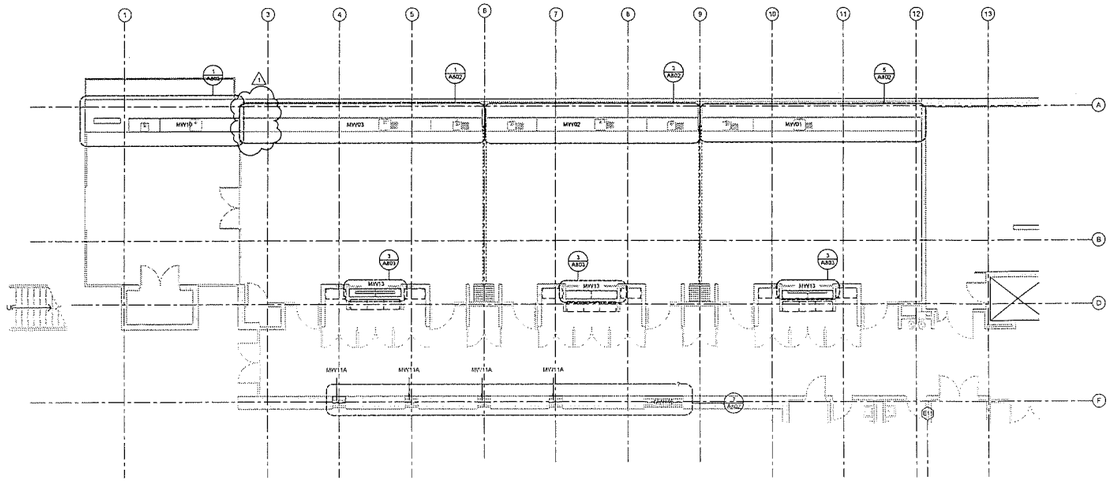
MARK	DATE	DESCRIPTION
	06.29.2017	SCHEMATIC DESIGN SUBMISSION
	12.08.2017	DD PRICING SET
	01.12.2018	DESIGN DEVELOPMENT SUBMISSION
	01.17.2018	CDC SUBMISSION
	03.30.2018	70% CD PRICING ISSUE
	04.06.2018	PARKING LOT AND SITE PLAN SUBMISSION
	05.01.2018	BID ISSUE
	05.04.2018	PERMIT ISSUE
1	05.08.2018	BID ADDENDUM 1

PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: MSR CHECKED BY: MSR

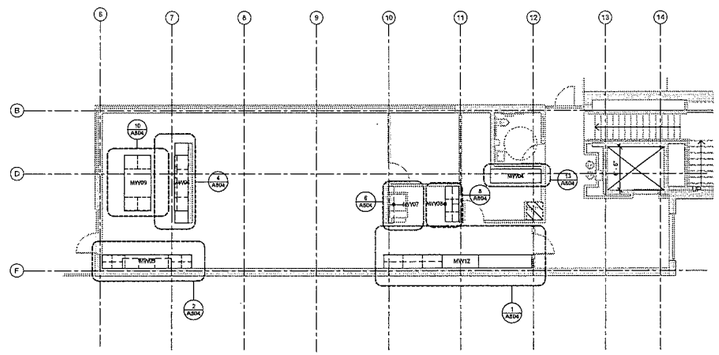
DOOR SCHEDULE, TYPES AND DETAILS

EXHIBIT F
A601

REVISED



1 LEVEL 1 MILLWORK
A801 1/8" = 1'-0"



2 LEVEL 2 MILLWORK
A801 1/8" = 1'-0"

MILLWORK SCHEDULE

MARK	DESCRIPTION	COUNT	COMMENTS
MW01	CLASSROOM 1 121 COUNTERTOP	1	
MW02	CLASSROOM 1 123 COUNTERTOP	1	
MW04	STORAGE 221 COUNTER	1	
MW05	OFFICE 210 STORAGE	1	
MW06	OFFICE 210 STORAGE	1	
MW07	COPY 212 STORAGE	1	
MW08	COPY 213 PAPER STORAGE	1	
MW09	OFFICE 210 WORKCOUNTER	1	
MW10	OUTDOOR CLASSROOM 124 COUTHERTOP	1	
MW11A	CIRCULATION 110 WINDOW SEAT A	3	
MW11B	CIRCULATION 110 WINDOW SEAT B	4	
MW12	OFFICE 210 STORAGE	1	
MW13		1	
		3	

MILLWORK GENERAL NOTES

1. REFER TO PROJECT MANUAL SPECIFICATION FOR KEY TO FINISH CODES. MILLWORK ACCESSORIES (made) by CONTRACT (I.E. CABINET HARDWARE, BRACKETS, GROMMETS, ETC).

2. APPLIANCES PROVIDED AND INSTALLED BY GC. VERIFY ALL DIMENSIONS AND CLEARANCES REQUIRED PRIOR TO MILLWORK FABRICATION. COORDINATE ELECTRICAL REQUIREMENTS AND EXACT OUTLET LOCATIONS W/ INSTALLATION GUIDELINES FROM APPLIANCE MANUFACTURERS. SEE ELECTRICAL SHEETS.

3. SEE MECHANICAL FOR PLUMBING FIXTURES. COORDINATE PRIOR TO FABRICATION AND INSTALLATION. PROVIDE BLOCKING IN WALLS FOR WALL-MOUNTED PLUMBING FIXTURES. COORDINATE W/ GC, TYP.

4. COORDINATE POWER & DATA LOCATIONS WITHIN MILLWORK W/ ELECTRICAL, TYP.

5. SEE LIGHTING DRAWINGS FOR UNDERCABINET LIGHTING LOCATIONS & FIXTURE TYPES. COORDINATE W/ ELECTRICAL, TYP.

6. VERIFY DIMENSIONS W/ SIDE CONDITIONS, TYP.

7. VERIFY ALL DIMENSIONS & CLEARANCES REQUIRED FOR OWNER SUPPLIED FURNISHINGS & EQUIPMENT W/ MILLWORK I.E. FILE CABINETS, PRINTERS, COPIERS, ETC.) WITH OWNER PRIOR TO FABRICATION.

8. PROVIDE BLOCKING IN WALLS FOR ALL WALL-MOUNTED MILLWORK. COORDINATE W/ GC, TYP.

9. FLOOR FINISHES TO EXTEND BENEATH MILLWORK UNLESS NOTED OTHERWISE.

10. INSTALL RUBBER BUMPER AT ALL CABINET DOOR LOCATIONS TO DAMPEN SOUND OF DOOR SHUTTING. TYP.

11. PROVIDE 20% ATTIC STOCK OF INTERIOR CABINET SHELVES FOR BASE UNITS BY SIZE.

MSR
710 South 2nd Street, 6th Floor
Minneapolis, Minnesota 55401-2282
Architecture 612 375 0336 tel
Interiors and 612 342 2336 fax
Urban Design www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201
Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
303 South Paterson Street, Suite 1
Madison, WI 53703
608.251.3600 tel

Structural Engineer, Technology and AV
IMEG Corp.
1800 Deming Way, Suite 200
Middleton, WI 53562
608.222.9600 tel

MEP Engineer
MEP Associates, LLC
660 Blue Gentian Road Suite 175
Eagan, MN 55121
651.379.9420 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
525 Manitoba Ave Wzrd
St. Paul, MN 55103
651.251.1835 tel

Greenhouse Design
Rough Brothers, Inc.
5513 Vine Street
Cincinnati, OH 45217
513.242.0310 tel

Olbrich Botanical Gardens
Expansion Phase 1
BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin.
ARCHITECT SEAL

WISCONSIN
DANIEL JACK POLING
A-5594
MINNEAPOLIS, MN
ARCHITECT

Signature:
Print Name: Jack Poling
Date: JUNE 4, 2018 License No: A-5594

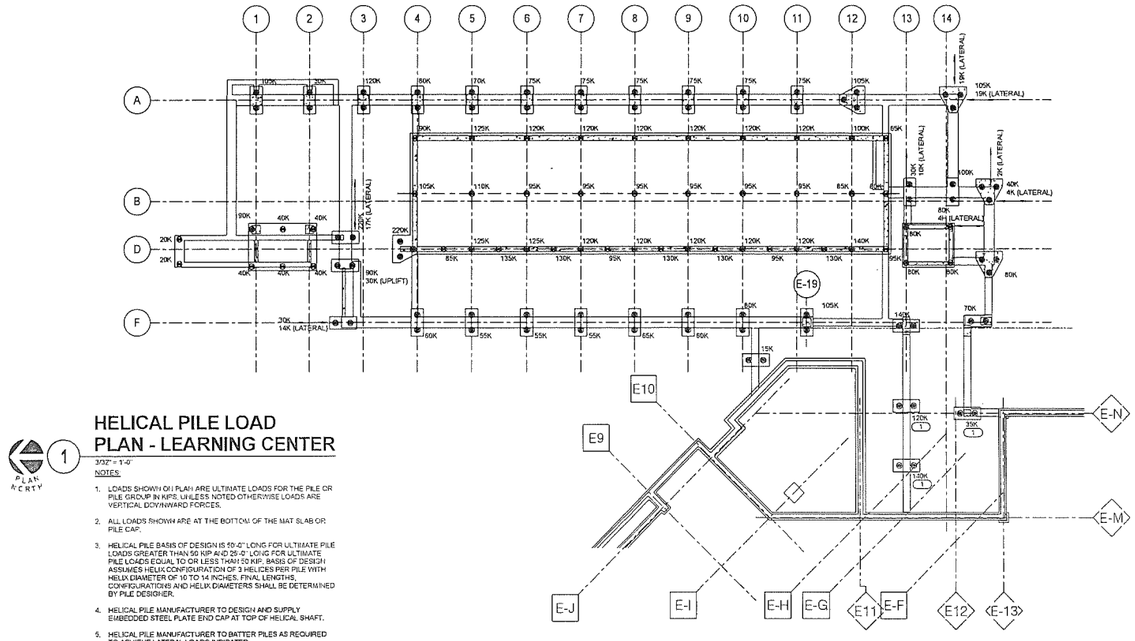
ISSUE MARK	DATE	DESCRIPTION
	05.29.2017	SCHEMATIC DESIGN SUBMISSION
	12.08.2017	CD PRICING SET
	01.10.2018	DESIGN DEVELOPMENT SUBMISSION
	01.17.2018	UDC SUBMISSION
	03.30.2018	70% CD PRICING ISSUE
	04.06.2018	PARKING LOT AND SITE PLAN SUBMISSION
	06.01.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE
1	06.08.2018	BID ADDENDUM 1

PROJECT NO: 2017016
PROJECT PHASE: BID DOCUMENTS
DRAWN BY: MSR CHECKED BY: MSR

MILLWORK PLANS

EXHIBIT F
A801

REVISED



HELICAL PILE LOAD PLAN - LEARNING CENTER

1 PLAN NORTH

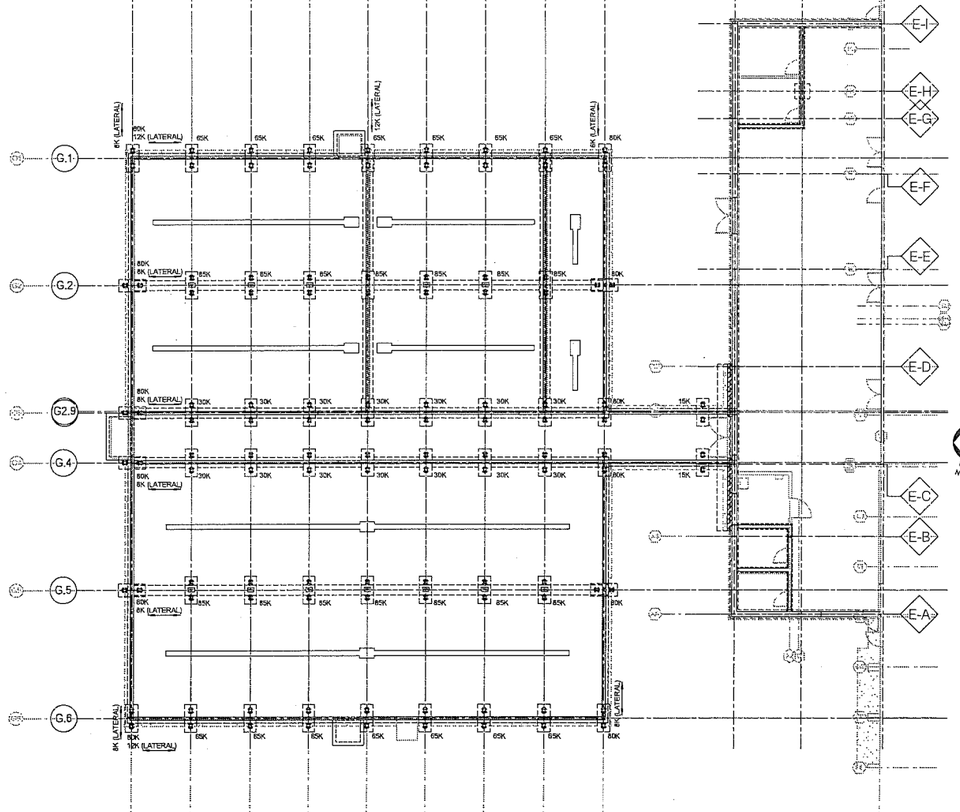
3/32" = 1'-0"

NOTES:

1. LOADS SHOWN ON PLAN ARE ULTIMATE LOADS FOR THE PILE OR PILE GROUP IN KIPS, UNLESS NOTED OTHERWISE LOADS ARE VERTICAL DOWNWARD FORCES.
2. ALL LOADS SHOWN ARE AT THE BOTTOM OF THE MAT SLAB OR PILE CAP.
3. HELICAL PILE BASIS OF DESIGN IS 50'-0" LONG FOR ULTIMATE PILE LOADS GREATER THAN 99 KIP AND 25'-0" LONG FOR ULTIMATE PILE LOADS EQUAL TO OR LESS THAN 50 KIP. BASIS OF DESIGN ASSUMES HELIX CONFIGURATION OF 3 HELICES PER PILE WITH HELIX DIAMETER OF 10 TO 14 INCHES. FINAL LENGTHS, CONFIGURATIONS AND HELIX DIAMETERS SHALL BE DETERMINED BY PILE DESIGNER.
4. HELICAL PILE MANUFACTURER TO DESIGN AND SUPPLY EMBEDDED STEEL PLATE END CAP AT TOP OF HELICAL SHAFT.
5. HELICAL PILE MANUFACTURER TO BATTER PILES AS REQUIRED TO ACHIEVE LATERAL LOADS INDICATED.

KEYNOTES:

(1) EXPECT A DENSE ASPHALT LAYER AT 12'-0" BELOW EXISTING GRADE.



HELICAL PILE LOAD PLAN - GREEN HOUSE

2 PLAN NORTH

3/32" = 1'-0"

NOTES:

1. LOADS SHOWN ON PLAN ARE ULTIMATE LOADS FOR THE PILE GROUP IN KIPS, UNLESS NOTED OTHERWISE LOADS ARE VERTICAL DOWNWARD FORCES.
2. ALL LOADS SHOWN ARE AT THE BOTTOM OF THE PILE CAP.
3. HELICAL PILE BASIS OF DESIGN IS 50'-0" LONG FOR ULTIMATE PILE LOADS GREATER THAN 50KIP AND 25'-0" LONG FOR ULTIMATE PILE LOADS EQUAL TO OR LESS THAN 50 KIP. BASIS OF DESIGN ASSUMES HELIX CONFIGURATION OF 3 HELICES PER PILE WITH HELIX DIAMETER OF 10 TO 14 INCHES. FINAL LENGTHS, CONFIGURATION, AND HELIX DIAMETERS SHALL BE DETERMINED BY PILE DESIGNER.
4. HELICAL PILE MANUFACTURER TO DESIGN AND SUPPLY EMBEDDED STEEL PLATE END CAP AT TOP OF HELICAL SHAFT.
5. HELICAL PILE MANUFACTURER TO BATTER PILES AS REQUIRED TO ACHIEVE LATERAL LOADS INDICATED.
6. EXPECT AN 8" GRAVEL LAYER ABOUT 18" BELOW EXISTING GRADE THROUGHOUT THE GREENHOUSE FOOTPRINT.

STRUCTURAL ABBREVIATIONS LIST

#	NUMBER
@	AT
°	DEGREES
ø	DIAMETER
AHU	AIR-HANDLING UNIT
APPROX	APPROXIMATE, -LY
ARCH	ARCHITECT, -URE, -LY
B.O.	BOTTOM OF
bf	BEAM FLANGE WIDTH
BM	BEAM
BP	BASE PLATE
BRG	BEARING
CFSF	COLD FORM STEEL FRAMING
CJ	CONTROL JOINT
CL	CLEAR
CMU	CONCRETE MASONRY UNIT
CONC	CONCRETE
CONST	CONSTRUCTION
CONT	CONTINUOUS
D	DEPTH
DBL	DOUBLE
DEG	DEGREE
DIM	DIMENSION
DL	DEAD LOAD
DTL	DETAIL
DWG	DRAWING
EA	EACH
EF	EACH FACE
EJ	EXPANSION JOINT
EL	ELEVATION
ELEC	ELECTRICAL
EMBED	EMBEDDED
EOD	EDGE OF DECK
EOS	EDGE OF SLAB
EQ	EQUAL
EQUIP	EQUIPMENT
EW	EACH WAY
EXIST, (E)	EXISTING
EXP	EXPANSION
EXT	EXTERIOR
f'c	CONCRETE COMPRESSIVE STRENGTH
FDN	FOUNDATION
FIN	FINISHED
FL	FLOOR
FT	FOOT
FTG	FOOTING
Fy	YIELD STRESS
GA	GAGE OR GAUGE
GALV	GALVANIZED
GB	GRADE BEAM
GC	GENERAL CONTRACTOR
GYP	GYPSUM
HDG	HOT-DIPPED GALVANIZED
HORZ	HORIZONTAL
HVAC	HEATING, VENTILATION, AIR CONDITIONING
HWS	HEADED, WELDED STUD
IN	INCH
INT	INTERIOR
JST	JOIST
JT	JOINT
K, KIP	KILOPOUND (1,000 POUNDS)
KO	KNOCK-OUT
KSF	KIPS PER SQUARE FOOT
L	LENGTH
LB	POUND
LF	LINEAR FOOT
LL	LIVE LOAD
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LSH	LONG SIDE HORIZONTAL
LSV	LONG SIDE VERTICAL
LONG	LONGITUDINAL
M/E	MECHANICAL/ELECTRICAL
MAX	MAXIMUM
MECH	MECHANICAL
MEZZ	MEZZANINE
MIN	MINIMUM
MISC	MISCELLANEOUS
MK	MARK
N	NORTH
#	LENGTH (AS PLATES)
NIC	NOT IN CONTRACT
NO	NUMBER
NTS	NOT TO SCALE
OC	ON CENTER
OPNG	OPENING
OPP	OPPOSITE
PAF	POWER ACTUATED FASTENER
PC	PRECAST
PCF	POUNDS PER CUBIC FOOT
PL	PLATE
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PVC	POLYVINYL CHLORIDE
R	RADIUS
RD	ROOF DRAIN
REINF	REINFORCING, -MENT, -ED
REQ'D	REQUIRED
REF	REFERENCE, REFER TO
RTU	ROOF-TOP UNIT
SC	TC WITH CLASS A FAYING SURFACE
SCHED	SCHEDULE
SIM	SIMILAR
SL	SNOW LOAD
SP	SPACE(S)
SPEC	SPECIFICATION(S)
SPEC'D	SPECIFIED
SQ	SQUARE
STD	STANDARD
STIFF	STIFFENER
T.O.	TOP OF
TC	PRE-TENSIONED BOLT
TEMP	TEMPERATURE
tf	BEAM FLANGE THICKNESS
TRANS	TRANSVERSE
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
VERT	VERTICAL
VIF	VERIFY IN FIELD
VWA	VERIFY WITH ARCHITECTURAL DRAWINGS
WP	WORKING POINT
WT	WEIGHT
WWR	WELDED WIRE REINFORCING
YD	YARD

STRUCTURAL DRAWING SYMBOLS

MASONRY HATCHING

STEEL HATCHING

MISCELLANEOUS HATCH

CONCRETE HATCHING

EARTH HATCHING

CENTERLINE OR GRID — HIDDEN

1 — PLAN OR DETAIL NUMBER
View Name — PLAN OR DETAIL NAME
1/8" = 1'-0" — SCALE OF PLAN OR DETAIL

1 / S1 — DETAIL REFERRED TO BY SECTION CUT
SHEET DETAIL IS LOCATED ON

REVISION TRIANGLE - NUMBER INDICATES REVISION NUMBER

ELEVATION MARK

INDICATES CHANGE OF SLAB ELEVATION

COLUMN DESIGNATION
BASE PLATE MARK
FOOTING MARK (TOP ELEVATION)
PIER MARK (TOP ELEVATION)

LOWER ELEVATION — UPPER ELEVATION — INDICATES STEP IN T/CONTINUOUS FOOTING
LOWER ELEVATION — UPPER ELEVATION — INDICATES STEP IN T/FOUNDATION WALL

OPEN — FLOOR SLAB OR ROOF DECK OPENING

FLOOR AND/OR ROOF DECK ORIENTATION (DIRECTION OF SPAN)
INDICATES DIRECTION OF DECK EXTENTS. DECK SHALL TERMINATE AT THE EDGE OF SLAB SHOWN ON THE DRAWINGS UNLESS NOTED OTHERWISE

BRACED FRAME ELEVATION
BRACED FRAME SYMBOL

BEAM SPLICE

BEAM SIZE
NUMBER OF SHEAR STUDS PER FOOT
AMOUNT OF BEAM CAMBER
TOP OF STEEL ELEVATION

REQUIRED UNFACTORED CONNECTION REACTION (KIPS) - SUPERCEDES TABULATED VALUES
REQUIRED UNFACTORED CONNECTION REACTION (KIPS) - SUPERCEDES TABULATED VALUES
REQUIRED UNFACTORED CONNECTION REACTION (KIPS) - SUPERCEDES TABULATED VALUES

BEAM TO COLUMN MOMENT (FULLY RESTRAINED) CONNECTION - REFER TO DETAIL
BEAM THROUGH BEAM MOMENT (FULLY RESTRAINED) CONNECTION - REFER TO DETAIL
BEAM TO COLUMN MOMENT (PARTIALLY RESTRAINED) CONNECTION - REFER TO DETAIL
BEAM TO COLUMN KICKER (BELOW) - REFER TO DETAIL
BEAM TO SLAB KICKER (BELOW) - REFER TO DETAIL
BEAM BEARING ON WALL - REFER TO DETAIL FOR BEAM POCKET CONDITION

INDICATES COLUMN BEARING ON CONCRETE FOUNDATION WALL, GRADE BEAM, OR PIER
INDICATES COLUMN FRAMING ATOP BEAM - REFER TO DETAIL
INDICATES COLUMN FRAMING TO UNDERSIDE OF BEAM - REFER TO DETAIL

PILE CAP SCHEDULE

MARK	DEPTH	BOTTOM BARS: SHORT BARS	BOTTOM BARS: LONG BARS	TOP BARS: SHORT BARS	TOP BARS: LONG BARS	PILES	REMARKS
PC2	2'-0"	(5) #6	(4) #6	(5) #6	(3) #6	2	-
PC3	2'-0"	(7) #6, 3 WAYS		(5) #6, 3 WAYS		3	-

NOTES:

1. REFER TO S202 FOR PILE CAP DETAILS.

GRADE BEAM SCHEDULE

MARK	WIDTH	BOTTOM ELEVATION	BOTTOM BARS	TOP BARS	SIDE BARS	STIRRUPS	REMARKS
GB1	2'-2"	+99'-0"	(4) #7	(4) #8	#5 @ 12" OC	#4 @ 12" OC	-
GB2	1'-0"	+65'-0"	(2) #5	(2) #5	#5 @ 12" OC	#4 @ 12" OC	-
GB3	2'-0"	+98'-0"	(4) #9	(4) #9	#5 @ 12" OC	#4 @ 12" OC	-
GB4	2'-0"	+99'-0"	(4) #8	(3) #8	#5 @ 12" OC	#4 @ 12" OC	-
GB5	1'-0"	+98'-0"	(2) #8	(2) #8	#5 @ 12" OC	#4 @ 18" OC	-
GB6	1'-6"	+98'-0"	(3) #8	(3) #8	#5 @ 12" OC	#4 @ 12" OC	-
GB7	2'-0"	+97'-3"	(3) #7	(3) #7	#5 @ 12" OC	#4 @ 6" OC	-
GB8	1'-3"	+97'-7"	(3) #7	(3) #7	-	#4 @ 4" OC	-
GB9	1'-2 1/2"	+95'-5"	(3) #8	(3) #8	#5 @ 12" OC	#4 @ 12" OC	-
GB10	2'-3"	+96'-0"	(4) #7	(4) #8	#5 @ 12" OC	#4 @ 12" OC	-
GB11	1'-6"	+96'-8"	(3) #8	(3) #8	#5 @ 12" OC	#4 @ 12" OC	-
GB12	2'-2"	+95'-0"	(4) #9	(4) #9	#5 @ 12" OC	#4 @ 12" OC	-

NOTES:

1. MAINTAIN MINIMUM DEPTH OF 4'-0" FROM FINISH GRADE TO BOTTOM OF GRADE BEAM ELEVATION, STEP BOTTOM AS REQUIRED.

IMEG — 1000 DEMING WAY, SUITE 200, MIDDLETON, WI 53562, 608.836.8400, FAX 608.836.8410, WWW.IMEGCORP.COM, PROJECT # 13140.00

IMEG CORP. RESERVES PROPRIETARY RIGHTS, INCLUDING COPYRIGHTS, TO THIS DRAWING AND THE DATA SHOWN THEREON, SAID DRAWINGS AND/OR DATA ARE THE EXCLUSIVE PROPERTY OF IMEG CORP AND SHALL NOT BE USED OR REPRODUCED FOR ANY OTHER PROJECT WITHOUT THE EXPRESS WRITTEN APPROVAL AND PARTICIPATION OF IMEG CORP. © 2016 IMEG CORP.

REFERENCE SCALE INFINITES: 0 1 2 3

MSR — 710 South 2nd Street, 8th Floor, Minneapolis, Minnesota 55401-2282
Architecture, Interiors and Urban Design — 612 375 0336 tel, 612 342 2216 fax, www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201, Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
303 South Paterson Street, Suite 1, Madison, WI 53703
608.251.3600 tel

Structural Engineer, Technology and A/V
IMEG Corp.
1000 Deming Way, Suite 200, Middleton, WI 53562
608.223.9600 tel

MEP Engineer
MEP Associates, LLC
810 Blue Gentian Road, Suite 175, Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
575 Aldrich Ave West, St. Paul, MN 55103
651.251.1660 tel

Greenhouse Design
Rough Brothers, Inc.
5513 Vine Street, Cincinnati, OH 45217
513.242.0310 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin. ARCHITECT SEAL

WISCONSIN — DANIEL JACK POLING — A-9094 — MINNEAPOLIS, MN — ARCHITECT

Signature
Print Name:
Date: JUNE 1, 2018 License No.

ISSUE		
MARK	DATE	DESCRIPTION
	12.08.2017	DD PRICING SET
	01.10.2018	DESIGN DEVELOPMENT SUBMISSION
	03.30.2018	70% CD SUBMISSION
	05.04.2018	90% CONSTRUCTION DOCUMENTS
	06.01.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE
1	06.11.2018	BID ADDENDUM 1

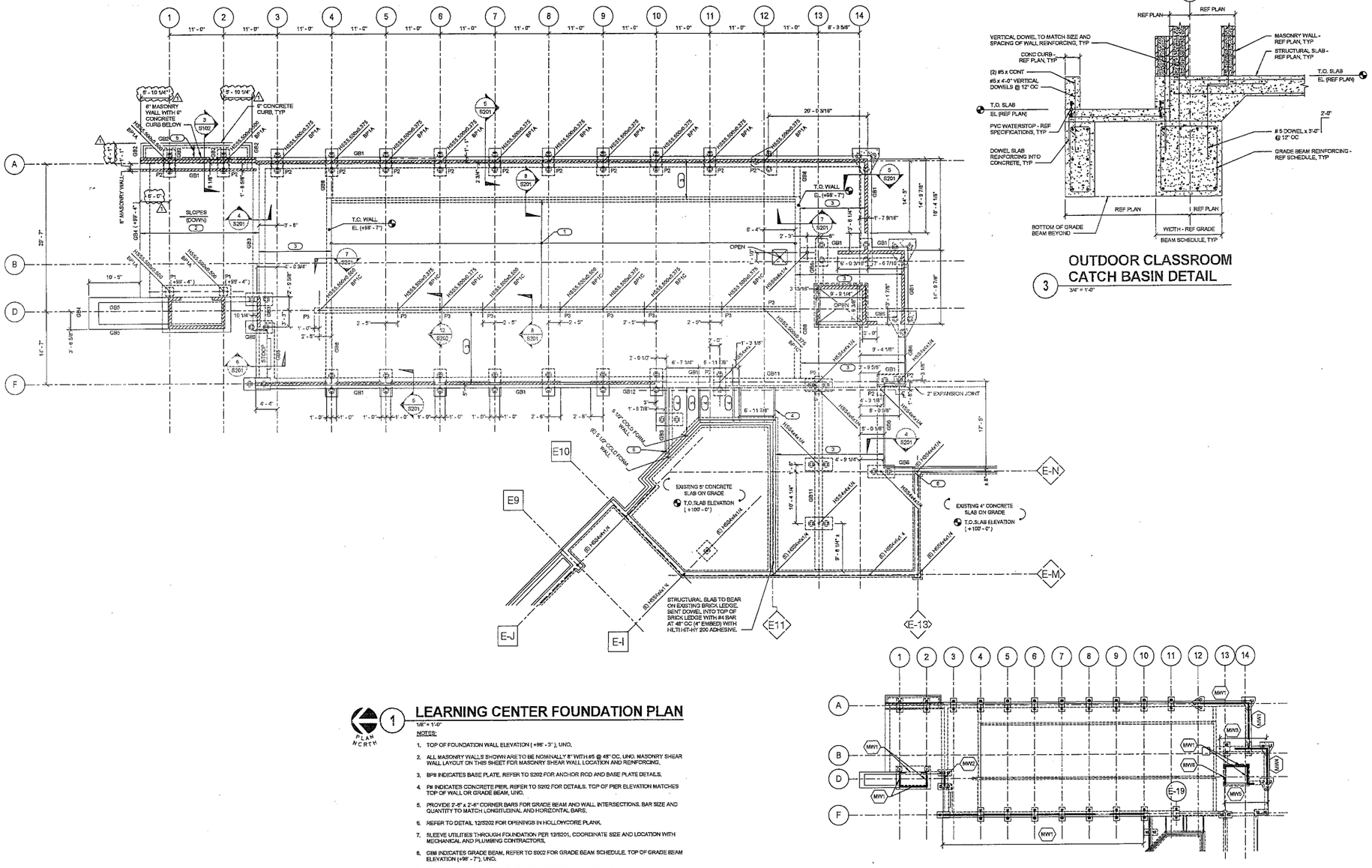
PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: SIDBHO CHECKED BY: ABBPER

SYMBOLS AND ABBREVIATIONS

EXHIBIT G

S002

REVISED



OUTDOOR CLASSROOM CATCH BASIN DETAIL

3 — 3/4" = 1'-0"

1 LEARNING CENTER FOUNDATION PLAN

1/8" = 1'-0"

PLAN NORTH

NOTES:

1. TOP OF FOUNDATION WALL ELEVATION (+98'-3"), UNO.
2. ALL MASONRY WALLS SHOWN ARE TO BE NOMINALLY 8" WITH #5 @ 48" OC, UNO. MASONRY SHEAR WALL LAYOUT ON THIS SHEET FOR MASONRY SHEAR WALL LOCATION AND REINFORCING.
3. BP# INDICATES BASE PLATE. REFER TO S202 FOR ANCHOR ROD AND BASE PLATE DETAILS.
4. P# INDICATES CONCRETE PIER. REFER TO S202 FOR DETAILS. TOP OF PIER ELEVATION MATCHES TOP OF WALL OR GRADE BEAM, UNO.
5. PROVIDE 2'-6" x 2'-6" CORNER BARS FOR GRADE BEAM AND WALL INTERSECTIONS. BAR SIZE AND QUANTITY TO MATCH LONGITUDINAL AND HORIZONTAL BARS.
6. REFER TO DETAIL 12/S202 FOR OPENINGS IN HOLLOWCORE PLANK.
7. SLEEVE UTILITIES THROUGH FOUNDATION PER 12/S201. COORDINATE SIZE AND LOCATION WITH MECHANICAL AND PLUMBING CONTRACTORS.
8. GB# INDICATES GRADE BEAM. REFER TO S002 FOR GRADE BEAM SCHEDULE. TOP OF GRADE BEAM ELEVATION (+98'-7"), UNO.
9. REFER TO DETAILS 1, 2 AND 3 ON S201 FOR STRUCTURAL SLAB DETAILS.

KEYNOTES:

1. SLAB ON INSULATION ON PRECAST PLANK WITH TOPPING:
   5" CONCRETE TOPPING SLAB WITH 6x6 - W2.1xW2.1 WWR. TOP OF SLAB = (+100'-0")
   4" ASTM D6947 EPS 12 BY GEOFOAM OR EQUIVALENT
   2" COMPOSITE CONCRETE TOPPING SLAB WITH 6x6 - W1.4xW1.4 WWR
   10" HOLLOWCORE SLAB. THE HOLLOWCORE SLAB IS TO BE DESIGNED FOR 65 PSF SUPERIMPORED DEAD LOAD (EXCLUDES 2" COMPOSITE TOPPING) AND 100 PSF SUPERIMPOSED LIVE LOAD. HOLLOWCORE TO BE DESIGNED WITH APPROPRIATE CLEAR COVER TO PROTECT AGAINST WATER MOISTURE EXPOSURE AT BOTTOM OF THE PLANK.
2. 8" STRUCTURAL SLAB WITH #5 @ 16" OC TOP AND BOTTOM AND #4 @ 12" OC TEMPERATURE REINFORCING. TOP OF SLAB = (+100'-0"). SLAB IS TO BE SLOPED PER ARCHITECTURAL DRAWINGS. THICKNESS OF SLAB IS TO BE CONSTANT THROUGHOUT.
3. SLAB ON INSULATION ON STRUCTURAL SLAB:
   5" CONCRETE TOPPING SLAB WITH 6x6 - W2.1xW2.1 WWR. TOP OF SLAB = (+100'-0")
   4" ASTM D6947 EPS 12 BY GEOFOAM OR EQUIVALENT
   8" STRUCTURAL SLAB WITH #5 @ 12" OC TOP AND BOTTOM AND #4@12" OC TEMPERATURE REINFORCING.
4. COLD FORM BEARING WALL. WALL TO BE DESIGNED FOR 150LB DEAD LOAD AND 65LB SNOW LOAD. CONCRETE CURB BETWEEN TOP OF STRUCTURAL SLAB AND BOTTOM OF TOPPING SLAB TO BE PROVIDED AT EACH WALL LOCATION.
5. 5" STRUCTURAL SLAB WITH #4 @ 12" OC EACH WAY. TOP OF SLAB = (+99'-0").
6. DOWEL REINFORCING OF GRADE BEAM INTO EXISTING PIER AND ANCHOR WITH HILTI HIT-HY 270 (4" EMBED).

2 MASONRY SHEAR WALL LAYOUT

1/16" = 1'-0"

MASONRY WALL REINFORCING SCHEDULE

MARK	VERTICAL	HORIZONTAL	END ZONES	NOTES
MWY1	#5 @ 48" OC	-	(1) CELL WITH (1) #5	-
MWY2	#5 @ 24" OC	-	(2) CELLS WITH (1) #5 EACH CELL	-
MWY3	REFER TO 4/S104			-
MWY4	REFER TO 3/S104			-
MWY5	REFER TO 2/S104			-
MWY6	REFER TO 5/S104			-

NOTES:

1. TYPICAL HORIZONTAL REINFORCING IS AS PER SPECIFICATIONS. IT IS INTENDED TO BE 'DUROWAL - LADDER TYPE' OR EQUIVALENT.
2. REINFORCED CORES ARE ALWAYS GROUTED.
3. REFER TO S/S301 FOR TYPICAL MASONRY OPENING AND END ZONE DETAIL.
4. END ZONE REINFORCEMENT CONTROL OVER TYPICAL VERTICAL REINFORCEMENT. TYPICAL VERTICAL REINFORCEMENT APPLIES BETWEEN END ZONES.
5. PROVIDE BOND BEAM WITH (2) #5 AT EACH LEVEL, UNLESS NOTED OTHERWISE IN DETAILS.

IMEG
1800 DEMING WAY, SUITE 200
MIDDLETON, WI 53562
608.223.9600 FAX: 608.824.9415
www.imegcorp.com
PROJECT # 17140004.00

IMEG CORP. RESERVES PROPRIETARY RIGHTS, INCLUDING COPYRIGHTS, TO THIS DRAWING AND THE DATA CONTAINED HEREIN. THIS DRAWING AND DATA ARE NOT TO BE USED IN WHOLE OR IN PART BY ANY PERSON OR ENTITY FOR ANY PURPOSE WITHOUT THE WRITTEN CONSENT OF IMEG CORP. AND SHALL NOT BE REPRODUCED FOR ANY OTHER PROJECT WITHOUT THE EXPRESS WRITTEN APPROVAL AND PARTICIPATION OF IMEG CORP. © 2018 IMEG CORP.

REFERENCE SCALE IN INCHES
0 1 2 3

MSR
710 South 2nd Street, 6th Floor
Minneapolis, Minnesota 55401-2282
Architecture Interiors and Urban Design
612.375.0336 tel
612.342.2216 fax
www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201
Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
303 South Paterson Street, Suite 1
Madison, WI 53703
608.251.3600 tel

Structural Engineer, Technology and A/V
IMEG Corp.
1800 Deming Way, Suite 200
Middleton, WI 53562
608.223.9600 tel

MEP Engineer
MEP Associates, LLC
562 Blue Gentian Road, Suite 170
Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
575 Marconi Ave West
St. Paul, MN 55103
651.251.1600 tel

Greenhouse Design
Rough Brothers, Inc.
5513 Vine Street
Cincinnati, OH 45217
513.242.6010 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin.
ARCHITECT SEAL: WISCONSIN DANIEL JACK POLING A-6288 MINNEAPOLIS, MN ARCHITECT

Signature:
Print Name:
Date: JUNE 1, 2018 License No:

ISSUE	DATE	DESCRIPTION
	12.06.2017	CD PRICING SET
	01.10.2018	DESIGN DEVELOPMENT SUBMISSION
	03.30.2018	75% CD SUBMISSION
	05.04.2018	90% CONSTRUCTION DOCUMENTS
	05.11.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE
1	05.11.2018	BID ADDENDUM 1

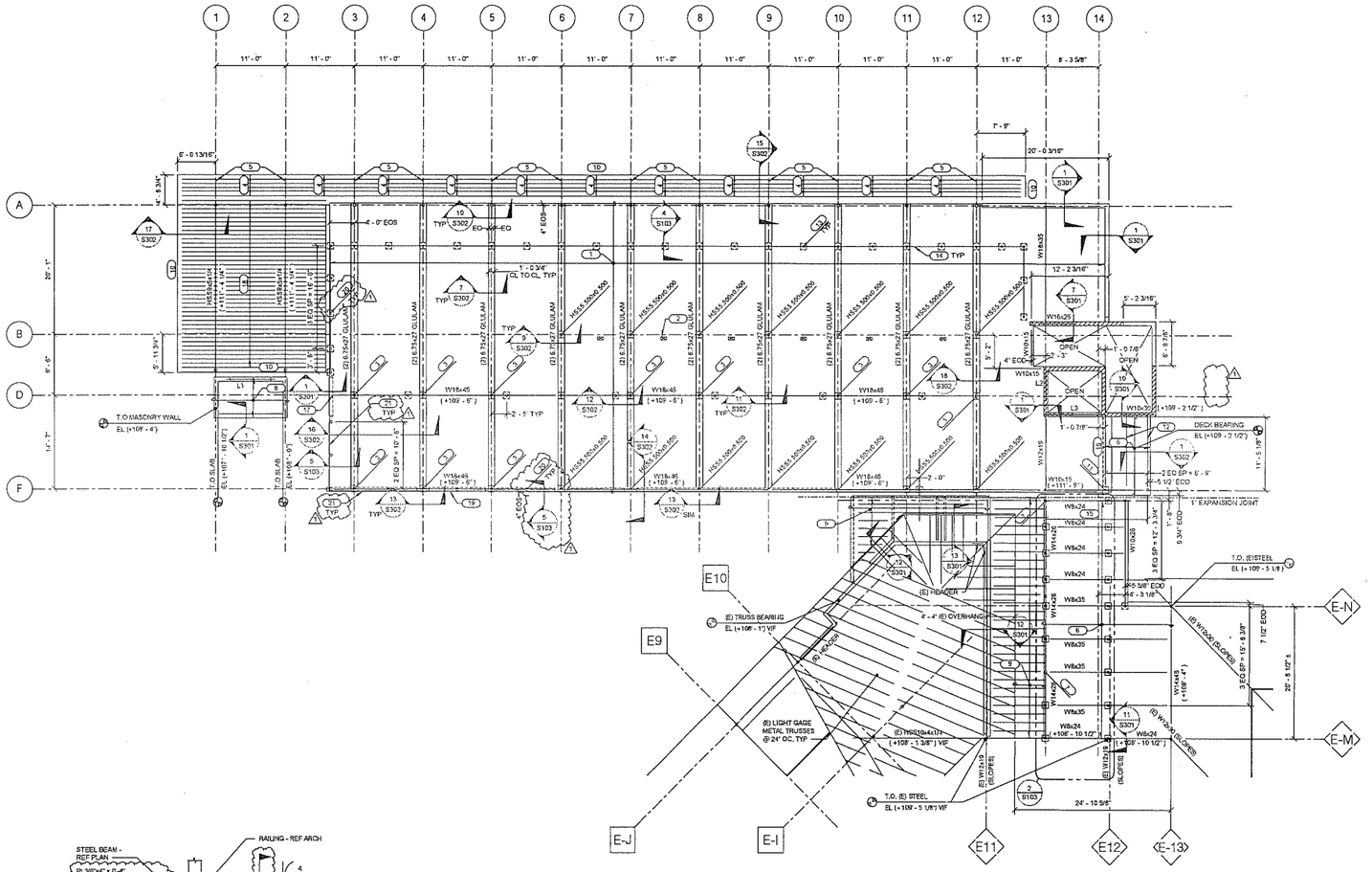
PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: SIDBHO DESIGNED BY: ABBPER

LEARNING CENTER FOUNDATION PLAN

EXHIBIT G

S102

REVISED



1 LEARNING CENTER LEVEL 2 FRAMING PLAN

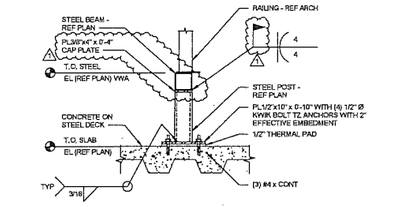
1/8" = 1'-0"

NOTES:

1. REFER TO 6/S302 FOR TYPICAL SHEAR CONNECTION.
2. LH INDICATES LINTEL, IN STRUCTURAL MASONRY WALL - REFER TO 9/S301 FOR SCHEDULE.
3. FOR LINTELS IN NON-STRUCTURAL WALLS, REFER TO GENERAL NOTES FOR SCHEDULE.

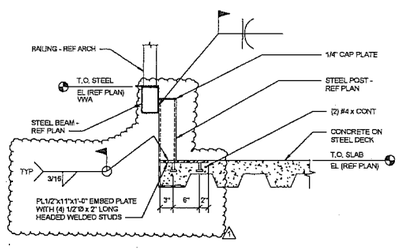
KEYNOTES:

1. 3" NORMAL - WEIGHT CONCRETE ON 3" (18 GA) COMPOSITE STEEL DECK, 2 SPAN MINIMUM, WITH 6x6 - W2.1xW2.1 WWR, TOTAL THICKNESS = 6", TOP OF SLAB ELEVATION = { +112' - 3" }. FASTENING = 36/4 (3) @ STEEL FRAMING USE 5/8" PUDDLE WELDS AND WELDED SIDELAPS @ GLULAM FRAMING, USE #10 TRUGRIP LAG SCREWS FOR SUPPORT FASTENERS (1 1/4") MIN EMBED AND WELDED SIDELAPS.
2. FLOOR PENETRATION - REFER TO 9/S301 FOR DETAIL.
3. HSS5.500x0.375 POST FROM TOP OF STEEL BEAM TO BOTTOM OF DECK, REFER TO DETAIL 12/S302.
4. 2x8 @ 8" OC MAX, TOP OF BEAM = { +112' - 1" }, REFER TO ARCHITECTURAL DRAWINGS FOR EXACT SPACING.
5. HSS5x5x3/8 OUTRIGGER (GALV), TOP OF STEEL ELEVATION = { +111' - 4 1/4" }.
6. 1 1/2" (20 GA) STEEL DECK, 2 SPAN MINIMUM, FASTENING = 36/4 (1) WITH 5/8" PUDDLE WELDS AND #10 SIDELAP SCREWS, DECK BEARING = { +108' - 10 1/2" }, UNO.
7. COLUMN EXTENDS TO POP UP ROOF ABOVE.
8. 3" NORMAL - WEIGHT CONCRETE ON 2" (20 GA) CONFORM DECK, 1 SPAN, WITH 6x6 - W1.4xW1.4 WWR, TOTAL THICKNESS = 5".
9. 1 1/2" (22GA) TYPE B ROOF DECK, SUPPORTED BY 6" COLD FORM JOISTS AT 16" OC, REFER TO LOADS ON 6/S104, DECK BEARING = { +107' - 9" }.
10. C15x33.9 x CONT { +112' - 8 1/2" }.
11. HSS3x3x1/4 POST FROM { +108' - 10" } TO { +110' - 9" }, REFER TO DETAILS 3 AND 4/S302.
12. W8x15, TOP OF STEEL ELEVATION = { +109' - 2 1/2" }.
13. HSS4x0.313 POST (GALV), POSTS TO BE CENTERED UNDER VERTICAL POSTS OF GUARD RAIL AT 5' - 6" OC MAX, REFER TO ARCHITECTURAL DRAWING FOR EXACT LOCATION OF GUARD RAIL POSTS.
14. HSS4x4x1/4(GALV) x CONTINUOUS RAILING SUPPORT, TOP OF STEEL ELEVATION = { +113' - 7" }.
15. W10x26 { +109' - 2 1/2" } TRANSFER BEAM
16. W12x19 { +111' - 9" } - EOS = 1'-0" W8x15 { +109' - 2 1/2" } - EOD = 4 1/2" REFER TO DETAIL 17/S301.
17. REFER TO 5/S301 SIM FOR BEAM BEARING ON MASONRY DETAIL.
18. 2x TONGUE AND GROOVE WOOD DECK WITH CONTROLLED RANDOM LAY-UP OVER 2x8 ACCOYA @ 8" OC MAX, TOP OF BEAM = { +112' - 1" }, REFER TO ARCHITECTURAL DRAWINGS FOR EXACT SPACING.
19. C15x33.9 x CONT { +109' - 6" }, VERIFY EXTENTS WITH ARCHITECT.
20. HSS4x4x3/8 POST (GALV), POSTS TO BE CENTERED UNDER VERTICAL POSTS OF GUARD RAIL AT 5'-6" OC MAX, REFER TO ARCHITECTURAL DRAWING FOR EXACT LOCATION OF GUARD RAIL POSTS.
21. HSS6x4x1/4 (LSV) (GALV) x CONTINUOUS RAILING SUPPORT, TOP OF STEEL ELEVATION = { +113' - 7" }.



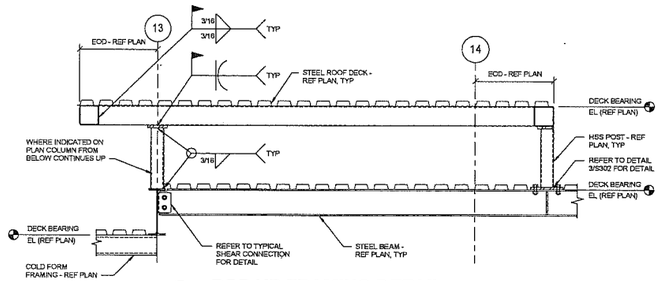
4 RAILING SUPPORT DETAIL

1" = 1'-0"



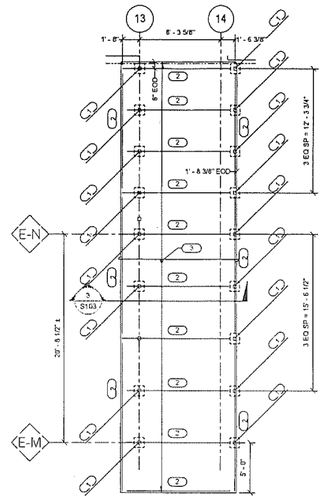
5 RAILING SUPPORT DETAIL

1" = 1'-0"



3 POP UP FRAMING DETAIL

3/4" = 1'-0"



2 POP UP FRAMING PLAN

3/16" = 1'-0"

KEYNOTES:

1. HSS4x4x1/4 POST, DOWN TO ROOF BELOW.
2. HSS6x6x1/4 BEAM.
3. 1 1/2" (20GA) STEEL DECK, 2 SPAN MINIMUM, FASTENING = 36/4 (1) WITH 5/8" PUDDLE WELD AND #10 SIDESLAP SCREWS. DECK BEARING = { +110' - 11" }

REVISED

MSR 710 South 2nd Street, 8th Floor Minneapolis, Minnesota 55401-2182
Architecture Interiors and Urban Design
612 375 0336 tel
612 342 2216 fax
www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201 Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
380 South Paterson Street, Suite 1 Madison, WI 53703
608.251.3600 tel

Structural Engineer, Technology and A/V
IMEG Corp.
1809 Deming Way, Suite 200 Middleton, WI 53562
608.223.9000 tel

MEP Engineer
MEP Associates, LLC
650 Blair Gerban Road Suite 175 Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
575 Minnesota Ave West St. Paul, MN 55103
651.251.9180 tel

Greenhouse Design
Rough Brothers, Inc.
5543 Vine Street Cincinnati, OH 45217
513.242.6310 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin.
ARCHITECT SEAL

WISCONSIN DANIEL JACK POLING A-8894 MINNEAPOLIS, MN ARCHITECT

Signature:
Print Name:
Date: JUNE 1, 2018 License No:

ISSUE INDEX	DATE	DESCRIPTION
	12.08.2017	DD PRICING SET
	01.19.2018	DESIGN DEVELOPMENT SUBMISSION
	03.30.2018	TSPA CD SUBMISSION
	05.04.2018	90% CONSTRUCTION DOCUMENTS
	06.01.2018	BID ISSUE
	06.04.2018	REPAINT ISSUE
1	06.11.2018	BID ADDENDUM 1

PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: SIDBHO CHECKED BY: ABBPER

LEARNING CENTER LEVEL 2 FRAMING PLAN

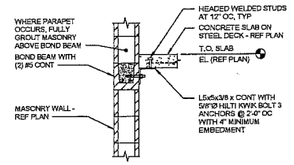
EXHIBIT G

S103

IMEG 1809 DEMING WAY, SUITE 200 MIDDLETON, WISCONSIN 608.223.9000 www.imegconsulting.com PROJECT # 17A00128

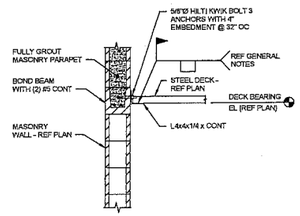
IMEG CORP RESERVES PROPRIETARY RIGHTS, INCLUDING COPYRIGHTS, TO THIS DRAWING AND THE DATA SHOWN THEREON, AND DRAWING AND/OR DATA ARE THE EXCLUSIVE PROPERTY OF IMEG CORP AND SHALL NOT BE USED OR REPRODUCED FOR ANY OTHER PROJECT WITHOUT THE EXPRESS WRITTEN APPROVAL AND PARTICIPATION OF IMEG CORP. © 2018 IMEG CORP.

REFERENCE SCALE IN INCHES
0 1 2 3



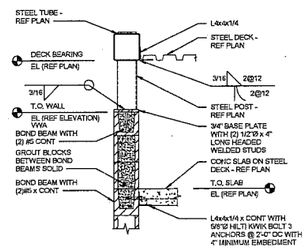
1 TYPICAL DECK SUPPORT AT MASONRY

3/4" = 1'-0"



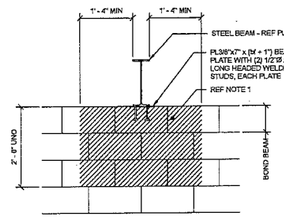
2 ROOF DECK SUPPORT AT MASONRY

3/4" = 1'-0"



3 LOUVER FRAMING DETAIL

3/4" = 1'-0"

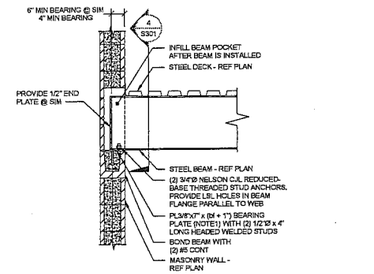


4 TYPICAL BEAM BEARING ON MASONRY

3/4" = 1'-0"

NOTES:

1. IN SHADED AREA, FILL ALL CORES IN WALL WITH GROUT MINIMUM AT CORNER CONDITION 1'-4", EACH WAY.

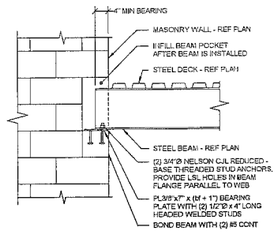


5 TYPICAL BEAM BEARING ON MASONRY

3/4" = 1'-0"

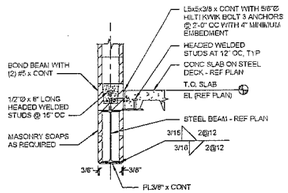
NOTES:

1. AT SIM, PROVIDE 3/8"x7" x 0'-9" BEARING PLATE.



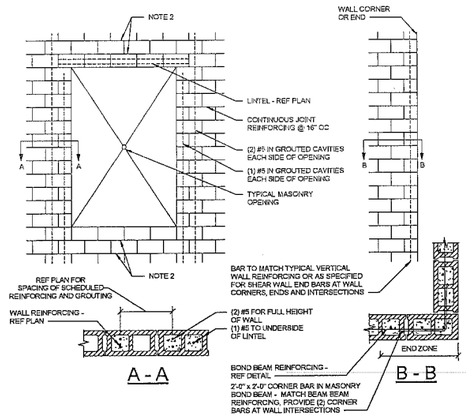
6 TYPICAL BEAM BEARING ON MASONRY

3/4" = 1'-0"



7 BEAM SUPPORTING CMU WALL DETAIL

3/4" = 1'-0"



A - A

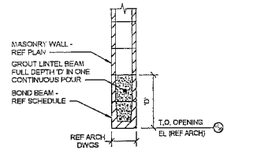
B - B

8 TYPICAL MASONRY WALL DETAIL

NO SCALE

NOTES:

1. REFER TO ARCHITECTURAL ELEVATIONS FOR MASONRY CONTROL JOINT LOCATIONS.
2. TWO COURSES OF JOINT REINFORCING ARE REQUIRED ABOVE THE LINTEL AND BELOW THE SILL AND SHALL EXTEND A MINIMUM OF 24 INCHES PAST THE OPENING.



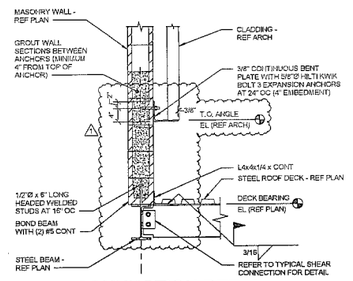
9 LINTEL DETAIL

3/4" = 1'-0"

NOTES:

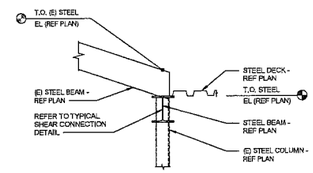
1. SHORE MASONRY UNTIL GROUT FOR LINTEL HAS REACHED ITS SPECIFIED STRENGTH.
2. BOND BEAM SHOULD EXTEND 8" PAST OPENING.

TYPE	DEPTH	REINFORCING
L1	24"	(2) #5
L2	16"	(2) #5
L3	32"	(2) #5



10 CONNECTION DETAIL

3/4" = 1'-0"

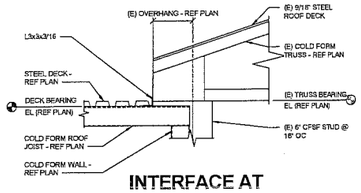


11 INTERFACE AT EXISTING DETAIL

3/4" = 1'-0"

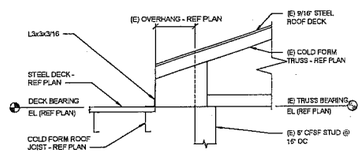
NOTES:

1. EXISTING OVERHANG DEMOLISHED.



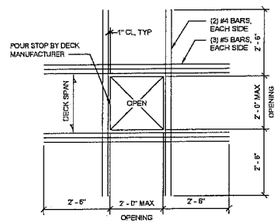
12 INTERFACE AT EXISTING DETAIL

3/4" = 1'-0"



13 INTERFACE AT EXISTING DETAIL

3/4" = 1'-0"

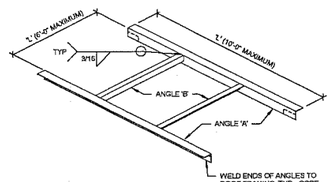


14 TYPICAL FLOOR PENETRATION

1/2" = 1'-0"

NOTES:

1. USE ABOVE FRAMING AT ALL OPENINGS EXCEEDING 1'-0" UNO.
2. REFERENCE ARCHITECTURAL AND MECHANICAL DRAWINGS FOR SIZE AND LOCATION OF ALL OPENINGS.
3. ROOF OPENING FRAMING NOT REQUIRED AT SIDE DISCHARGE ROOF DRAINS. COORDINATE WITH MECHANICAL CONTRACTOR.



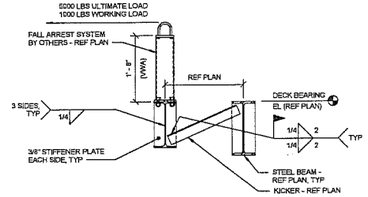
'L'	ANGLE 'A'	ANGLE 'B'
UP TO 1'-0"	NONE - SUMP PAN ONLY	NONE - SUMP PAN ONLY
1'-1" TO 4'-0"	L4x4x1/4	L4x4x1/4
4'-7" TO 6'-0"	L4x4x5/16	L4x4x1/4
6'-1" TO 8'-0"	L4x4x3/8	-
8'-1" TO 10'-0"	L6x4x3/8 (LLV)	-

15 DECK OPENING FRAMING DETAIL

3/4" = 1'-0"

NOTES:

1. USE ABOVE FRAMING AT ALL OPENINGS EXCEEDING 1'-0" UNO.
2. REFERENCE ARCHITECTURAL AND MECHANICAL DRAWINGS FOR SIZE AND LOCATION OF ALL OPENINGS.
3. ROOF OPENING FRAMING NOT REQUIRED AT SIDE DISCHARGE ROOF DRAINS. COORDINATE WITH MECHANICAL CONTRACTOR.

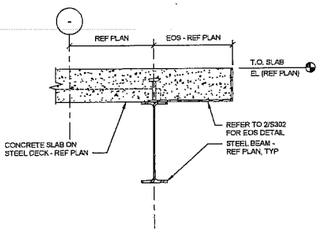


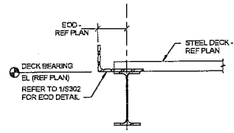
16 FALL ARREST SUPPORT DETAIL

3/4" = 1'-0"

NOTES:

1. DECK NOT SHOWN FOR CLARITY.
2. STEEL FABRICATOR TO COORDINATE LOCATION OF ANCHORS WITH FALL ARREST SYSTEM PROVIDED.





17 FRAMING DETAIL

1 1/2" = 1'-0"

18 COLLECTOR DETAIL

3/4" = 1'-0"

NOTES:

1. FASTEN DECK TO ANGLE AND PLATE. REFER TO PLAN FOR DECK FASTENING.

MSR 710 South 2nd Street, 8th Floor Minneapolis, Minnesota 55401-2182
Architecture Interiors and Urban Design
612 375 0736 tel
612 342 2216 fax
www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201
Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
323 South Pickney Street, Suite 1
Madison, WI 53703
608.251.3100 tel

Structural Engineer, Technology and AV
IMEG Corp.
1600 Deming Way, Suite 200
Middleton, WI 53562
608.223.9600 tel

MEP Engineer
MEP Associates, LLC
860 Blue Gentian Road, Suite 175
Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
575 Bunkshaba Ave West
St. Paul, MN 55102
651.291.1900 tel

Greenhouse Design
Rough Brothers, Inc.
6513 Vine Street
Cincinnati, OH 45217
513.242.6310 tel

Olbrich Botanical Gardens
Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin.
ARCHITECT SEAL

WISCONSIN
DANIEL JACK POLING
A-6894
MINNEAPOLIS, MN
ARCHITECT

Signature:
Print Name:
Date: JUNE 1, 2018 License No:

ISSUE		
NUM.	DATE	DESCRIPTION
	12.04.2017	DD PRICING SET
	03.16.2018	DESIGN DEVELOPMENT SUBMISSION
	03.30.2018	100% CD SUBMISSION
	05.04.2018	95% CONSTRUCTION DOCUMENTS
	06.01.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE
1	06.11.2018	BID ADDENDUM 1

PROJECT NO. 2017016

PROJECT PHASE BID DOCUMENTS

DRAWN BY: SIDBHO
CHECKED BY: ABBPER

FRAMING DETAILS

EXHIBIT G

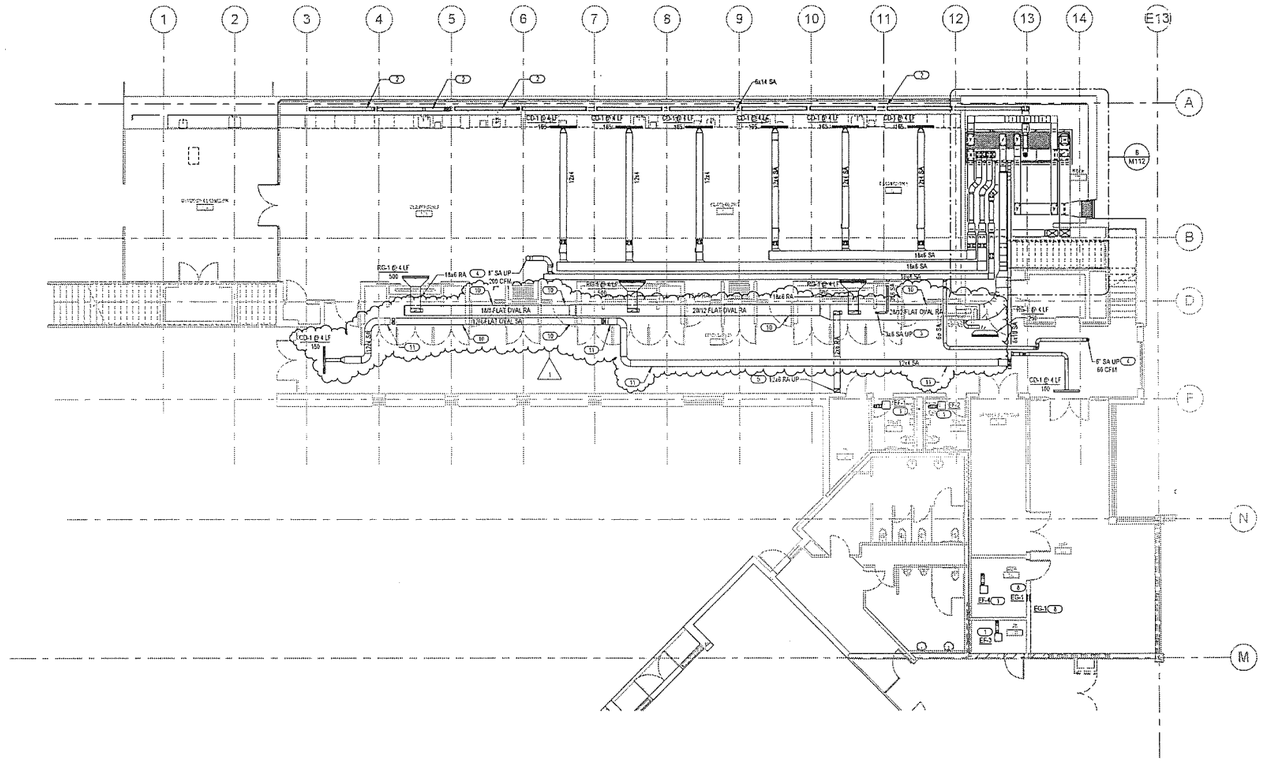
S301

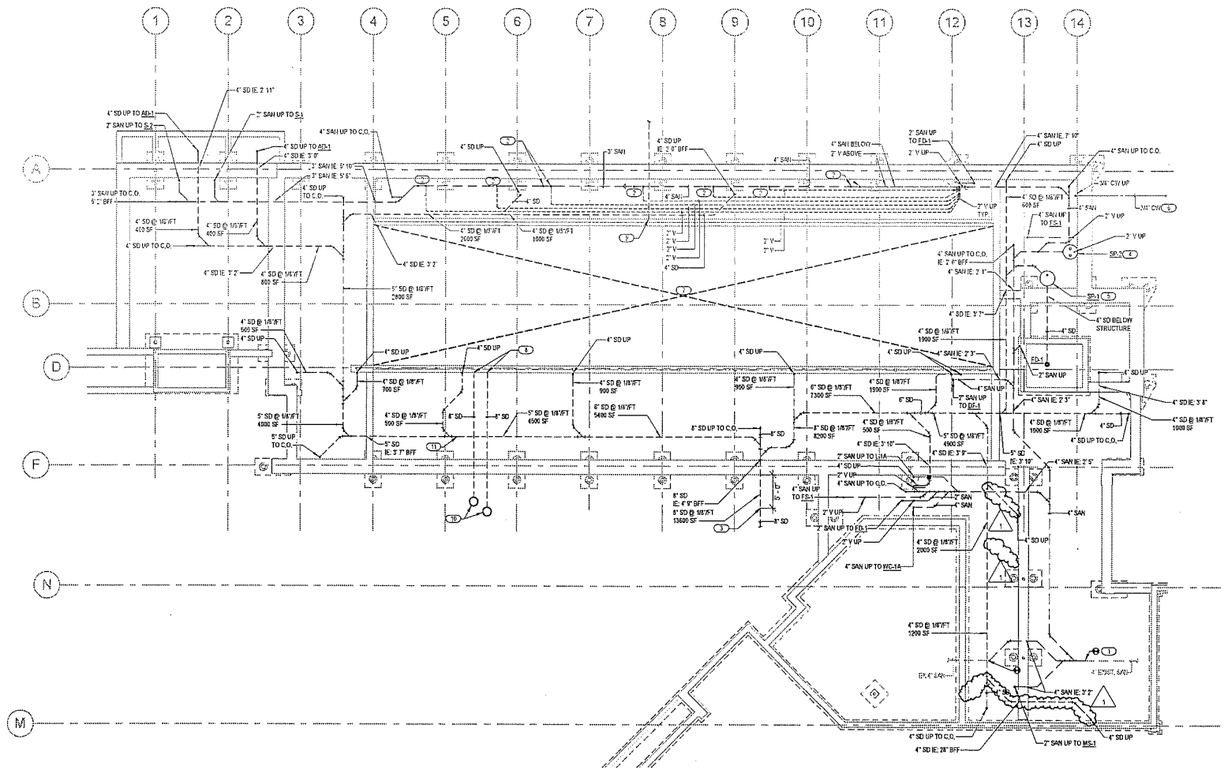
IMEG 1600 DEMING WAY, SUITE 200 MIDDLETON, WI 53562 608.223.9600 FAX 608.831.9415 www.imegcorp.com PROJECT # 17M00LAB

THESE COMP REPRESENTS PROPRIETARY RIGHTS, INCLUDING COPYRIGHTS, TO THE DRAWINGS AND THE DATA SHOWN THEREON. SAID DRAWINGS AND/OR DATA ARE THE EXCLUSIVE PROPERTY OF IMEG CORP AND SHALL NOT BE USED OR REPRODUCED FOR ANY OTHER PROJECT WITHOUT THE EXPRESS WRITTEN APPROVAL AND PARTICIPATION OF IMEG CORP. © 2018 IMEG CORP.

REFERENCE SCALE IN INCHES 0 1 2 3

ISSUED


1
2
3
4
5
6
7
8
9
10
11
12
13
14
E13
A
B
D
F
N
M
6x14 SA
18x6 SA
16x6 RA
1" SA UP
200 CFM
160 FLAT OVAL SA
28x12 FLAT OVAL SA
12x4 SA
12x4 RA
8" SA UP
60 CFM
RG-1 @ 4 LF
500
CD-1 @ 4 LF
150
CD-1 @ 4 LF
100
EF-1
EF-2
EF-3
EF-4
EF-5
EF-6
EF-7
EF-8
EF-9
EF-10
EF-11
EF-12
EF-13
EF-14
EF-15
EF-16
EF-17
EF-18
EF-19
EF-20
EF-21
EF-22
EF-23
EF-24
EF-25
EF-26
EF-27
EF-28
EF-29
EF-30
EF-31
EF-32
EF-33
EF-34
EF-35
EF-36
EF-37
EF-38
EF-39
EF-40



1 LEARNING CENTER PLUMBING PLAN - BELOW GRADE

1/8" = 1'-0"

GENERAL NOTES

1. FOR PLUMBING NOTES, LEGENDS AND ABBREVIATION, REFER TO P001.
2. WATER CISTERN BELOW NEW LEARNING CENTER, SEE CIVIL PLANS. PLUMBING CONTRACTOR SHALL COORDINATE ALL WORK.
3. RADIANT SLAB USED IN NEW LEARNING CENTER AREA. PLUMBING CONTRACTOR SHALL COORDINATE ALL BELOW GRADE WORK.
4. ALL BELOW GRADE PIPING SHALL BE HUNG FROM THE FLOOR STRUCTURE.

KEYED NOTES

1. CONNECT TO EXIST. 4" SANITARY IN THIS LOCATION. EXIST. SANITARY INVERT IS 40" BFF. CONTRACTOR SHALL FIELD VERIFY PRIOR TO START OF CONSTRUCTION.
2. ISLAND VENT PER DETAIL, 1/P301.
3. 8" STORM EXITS AT THIS POINT. INVERT ELEVATION IS 56" BFF. PLUMBING CONTRACTOR SHALL PROVIDE PIPE WITHIN 5' 0" FROM THE EXTERIOR OF BUILDING. CONTINUATION BY SITE CONTRACTOR. REFER TO CIVIL PLANS.
4. SANITARY SUMP, SP-2, SEE DETAIL, 7/P301. 4" SAN INLET IE AT 99" BFF, SANITARY OUTLET IE AT 73" BFF. PROVIDE VISUAL OR AUDIBLE ALARM SYSTEM WITH MANUAL RESET.
5. STORM SUMP, SP-1, SEE DETAIL, 6/P301. 4" SD INLET IE AT 90" BFF, SD OUTLET IE AT 42" BFF. PROVIDE VISUAL OR AUDIBLE ALARM SYSTEM WITH MANUAL RESET.
6. 3/4" CW LINE, BELOW GRADE, ROUTE TO EXISTING DRINKING FOUNTAIN. PIPE INVERT SHALL BE 24" BFF.
7. RAINWATER CISTERN BELOW GRADE IN THIS AREA. REFER TO CIVIL AND STRUCTURAL PLANS. COORDINATE ALL PIPING BELOW GRADE.
8. 8" SD FROM EXTERIOR INTO CISTERN SYSTEM. 8" SD INVERT ELEVATION AT 42" BFF. STORM DRAIN SLOPE SHALL BE 1.00%.
9. 12" SD FROM CISTERN SYSTEM TO EXTERIOR. 12" SD INVERT ELEVATION AT 46" BFF. STORM DRAIN SLOPE SHALL BE 1% 35%. PLUMBING CONTRACTOR SHALL PROVIDE STORM DRAIN PIPE WITHIN 5' 0" FROM EXTERIOR OF BUILDING. COORDINATE WITH SITE/CIVIL CONTRACTOR PRIOR TO START OF CONSTRUCTION.
10. STORM MANHOLE PROVIDED BY SITE CONTRACTOR. PLUMBING CONTRACTOR SHALL PROVIDE STORM DRAIN PIPE WITHIN 5'0" FROM EXTERIOR OF BUILDING. COORDINATE WITH SITE/CIVIL CONTRACTOR PRIOR TO START OF CONSTRUCTION.
11. CONTRACTOR SHALL DROP 5" SD TO ROUTE PIPE UNDERNEATH (2) 8" SD.

REVISED

MSR
710 South 2nd Street, 8th Floor
Minneapolis, Minnesota 55401-2262
Architecture
Interiors and
Urban Design
612 375 0336 tel
612 342 2216 fax
www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201
Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
303 South Paterson Street, Suite 1
Madison, WI 53703
608.251.3600 tel

Structural Engineer, Technology and A/V
IMEG Corp.
1800 Deming Way, Suite 200
Middleton, WI 53562
608.223.9600 tel

MEP Engineer
MEP Associates, LLC
650 Blue Gentian Road, Suite 175
Eagan, MN 55121
651.379.9100 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
575 Aldenhetha Ave West
St. Paul, MN 55102
651.254.1800 tel

Greenhouse Design
Rough Brothers, Inc.
5513 Vine Street
Cincinnati, OH 45217
513.242.0310 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Engineer under the Laws of the State of Wisconsin. ENGINEER SEAL

Signature:
Print Name: Larry Nemer
Date: JUNE 4, 2018 License No.: E-30240

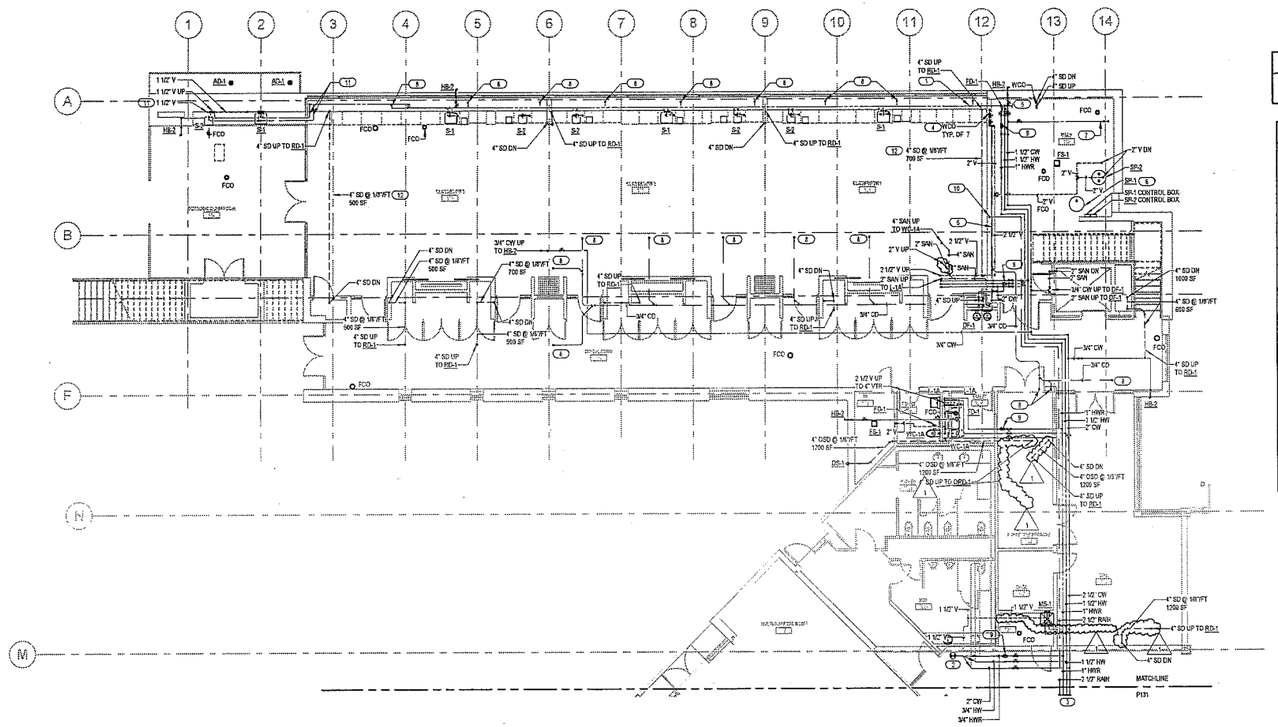
ISSUE

MARK	DATE	DESCRIPTION
	09.09.2017	SCHEMATIC DESIGN SUBMISSION
	12.08.2017	DD PRICING SET
	01.10.2018	DESIGN DEVELOPMENT SUBMISSION
	03.17.2018	UDC SUBMISSION
	03.31.2018	90% CD PRICING ISSUE
	05.04.2018	90% CONSTRUCTION DOCUMENTS
	05.01.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE
1	06.11.2018	BID ADDENDUM 1

PROJECT NO. 2017015
PROJECT PHASE BID DOCUMENTS
DRAWN BY: MSR CHECKED BY: MSR

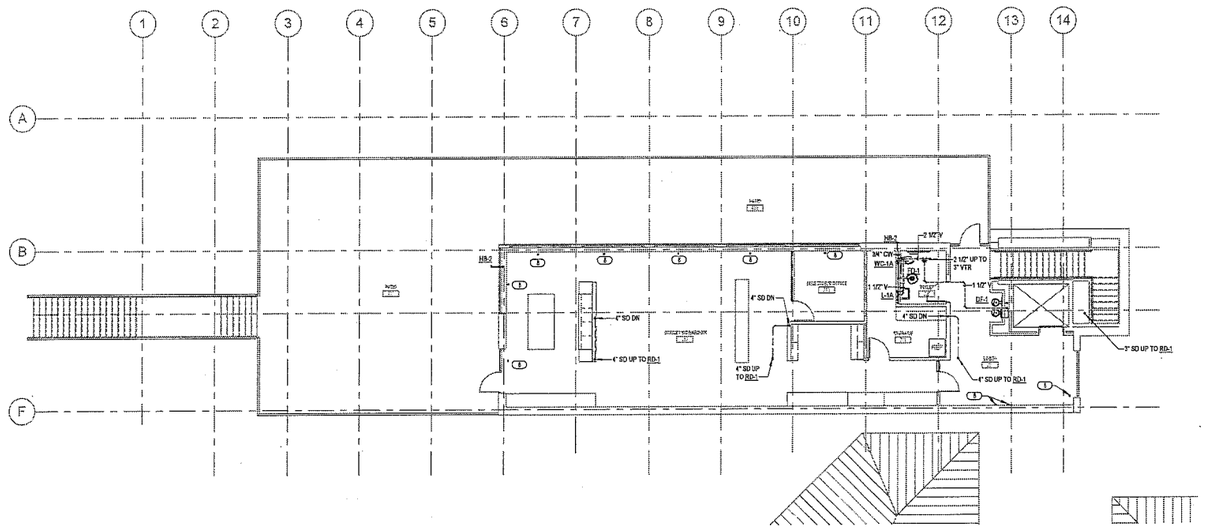
LEARNING CENTER PLUMBING PLAN - BELOW GRADE

P100



1 LEARNING CENTER PLUMBING PLAN LEVEL 1

1/8" = 1'-0"



2 LEARNING CENTER PLUMBING PLAN LEVEL 2

1/8" = 1'-0"

GENERAL NOTES

1. REFER TO MECHANICAL PLANS FOR IN-FLOOR PIPING. COORDINATE ALL BELOW GRADE PIPING.

KEYED NOTES

1. ROUTE WATER PIPING IN CABINETRY/CHASE, COORDINATE WITH MECHANICAL DUCTWORK. REFER TO ARCHITECTURAL DETAIL, ISOMETRIC AND MECHANICAL SECTION VIEW.
2. CONNECT NEW 2" CW, 3/4" HW, AND 3/4" HWR TO EXISTING 2", 3/4 HW, AND 1/2 HWR THIS AREA.
3. REFER TO P131 FOR CONTINUATION.
4. WALL CLEANOUTS TO BE ON MECHANICAL ROOM SIDE OF WALL. REFER TO RISER DIAGRAM P201 AND DETAIL 1/P301.
5. ROUTE 3/4" CD TO FD-1.
6. REFER TO DETAIL 6/P301 FOR SP-1 PIPING AND ASSOCIATED COMPONENTS.
7. 3/4" CW DOWN TIGHT TO WALL AND TO BELOW GRADE. SEE P100 FOR CONTINUATION. AT BASE OF DROP, INCLUDE QUICK DISCONNECT WITH SHUT-OFF VALVE, AND SHUT-OFF IMMEDIATELY UPSTREAM OF QUICK DISCONNECT TO ALLOW FOR COMPRESSED AIR CONNECTION AND WINTER BLOW-OUT OF LINE.
8. ROUTE 3/4" CD UP TO RECESSED FAN COIL UNIT.
9. HWR BALANCE VALVE SET TO 0.5 GPM. INSTALL ACCESSIBLE.
10. 2 1/2" RAINWATER PIPE UP FROM CISTERN SUMP PUMP, BELOW, CONTRACTOR SHALL CONNECT TO PUMPS (VALVING BY OTHERS). PENETRATE FLOOR WITH LINKSEAL, AND ROUTE AS SHOWN.
11. 3/4" CW AND 3/4" HW OUT THROUGH EXTERIOR WALL, IN CABINETRY, INTERIOR, TO EXTERIOR SINK STRUCTURE. AT EXT, INCLUDE QUICK DISCONNECT WITH SHUT-OFF VALVE, AND SHUT-OFF IMMEDIATELY UPSTREAM OF QUICK DISCONNECT TO ALLOW FOR COMPRESSED AIR CONNECTION AND WINTER BLOW-OUT OF LINE.
12. OUTDOOR CLASSROOM VENT SHALL BE COPPER, TERMINATE VENT 12" BELOW DECK. DO NOT PENETRATE DECK/ROOF.
13. ROUTE PIPING BETWEEN GLUE LAM.

MSR 710 South 2nd Street, 8th Floor Minneapolis, Minnesota 55401-2282
Architecture, Interiors and Urban Design
612.375.0336 tel
612.342.2216 fax
www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201
Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
323 South Paterson Street, Suite 1
Madison, WI 53703
608.251.3400 tel

Structural Engineer, Technology and AV
IMEG Corp.
1600 Deming Way, Suite 200
Middleton, WI 53562
608.203.9600 tel

MEP Engineer
MEP Associates, LLC
800 Blue Gentian Road, Suite 175
Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
575 Minnesota Ave West
St. Paul, MN 55103
651.251.1655 tel

Greenhouse Design
Rough Brothers, Inc.
5513 Vine Street
Cincinnati, OH 45217
513.242.0310 tel

Olbrich Botanical Gardens
Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Engineer under the Laws of the State of Wisconsin.
ENGINEER SEAL

Signature: _____
Print Name: Larry Nesser
Date: JUNE 6, 2018 License No.: E-35249

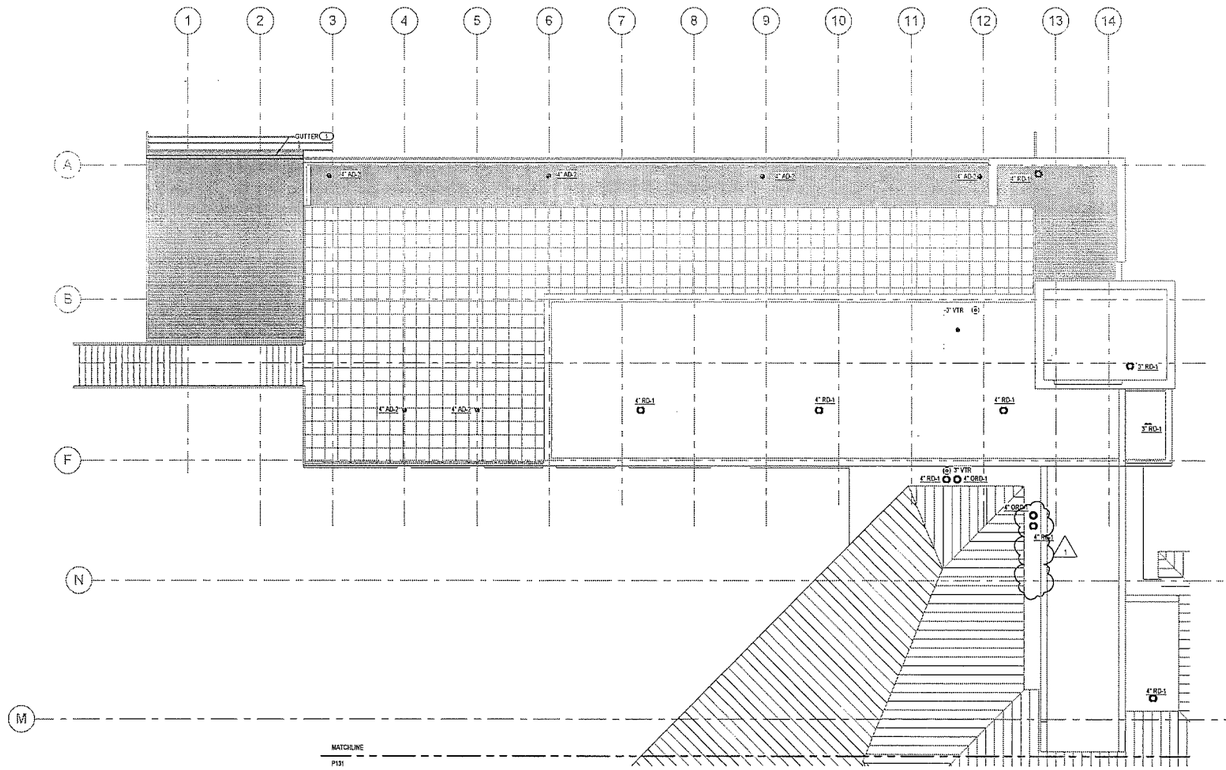
ISSUE MARK	DATE	DESCRIPTION
	06.09.2017	SCHEMATIC DESIGN SUBMISSION
	12.04.2017	DD PRICING SET
	01.19.2018	DESIGN DEVELOPMENT SUBMISSION
	03.17.2018	SUDC SUBMISSION
	03.31.2018	100% DD PRICING ISSUE
	05.04.2018	100% CONSTRUCTION DOCUMENTS
	06.01.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE
1	06.11.2018	BID ADDENDUM 1

PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: MSR CHECKED BY: MSR

LEARNING CENTER PLUMBING PLAN - ABOVE GRADE

P101

REVISED



1 LEARNING CENTER PLUMBING ROOF PLAN

1/8" = 1'-0"

GENERAL NOTES

1. REFER TO P000 FOR GENERAL NOTES, LEGENDS AND ABBREVIATION.
2. ALL OVERFLOW ROOF DRAINAGE IS BY SCUPPER/GUTTER. REFER TO ARCHITECTURAL PLANS.

KEYED NOTES

1 GUTTER PROVIDED BY ARCHITECT. REFER TO ARCHITECTURAL PLANS.

MSR
710 South 2nd Street, 8th Floor
Minneapolis, Minnesota 55401-2282
Architecture Interiors and Urban Design
612.375.0336 tel
612.342.2216 fax
www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201
Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
303 South Paterson Street, Suite 1
Madison, WI 53703
608.251.3690 tel

Structural Engineer, Technology and A/V
IMEG Corp.
1600 Deming Way, Suite 200
Middleton, WI 53562
608.223.9690 tel

MEP Engineer
MEP Associates, LLC
810 Blue Gentian Road, Suite 175
Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
570 Asbury Ave West
St. Paul, MN 55103
651.291.1660 tel

Greenhouse Design
Rough Brothers, Inc.
5513 Vine Street
Cincinnati, OH 45217
513.242.6010 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Engineer under the Laws of the State of Wisconsin.
ENGINEER SEAL

Signature: _____

Print Name: Larry Nasser

Date: JUNE 6, 2018 License No: E-31240

IMAGE		
MARK	DATE	DESCRIPTION
	09.05.2017	SCHEMATIC DESIGN SUBMISSION
	12.08.2017	DD PRICING SET
	01.19.2018	DESIGN DEVELOPMENT SUBMISSION
	01.17.2018	VDC SUBMISSION
	03.31.2018	50% CD PRICING ISSUE
	05.04.2018	90% CONSTRUCTION DOCUMENTS
	06.01.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE
1	06.11.2018	BID ADDENDUM 1

PROJECT NO. 2017016

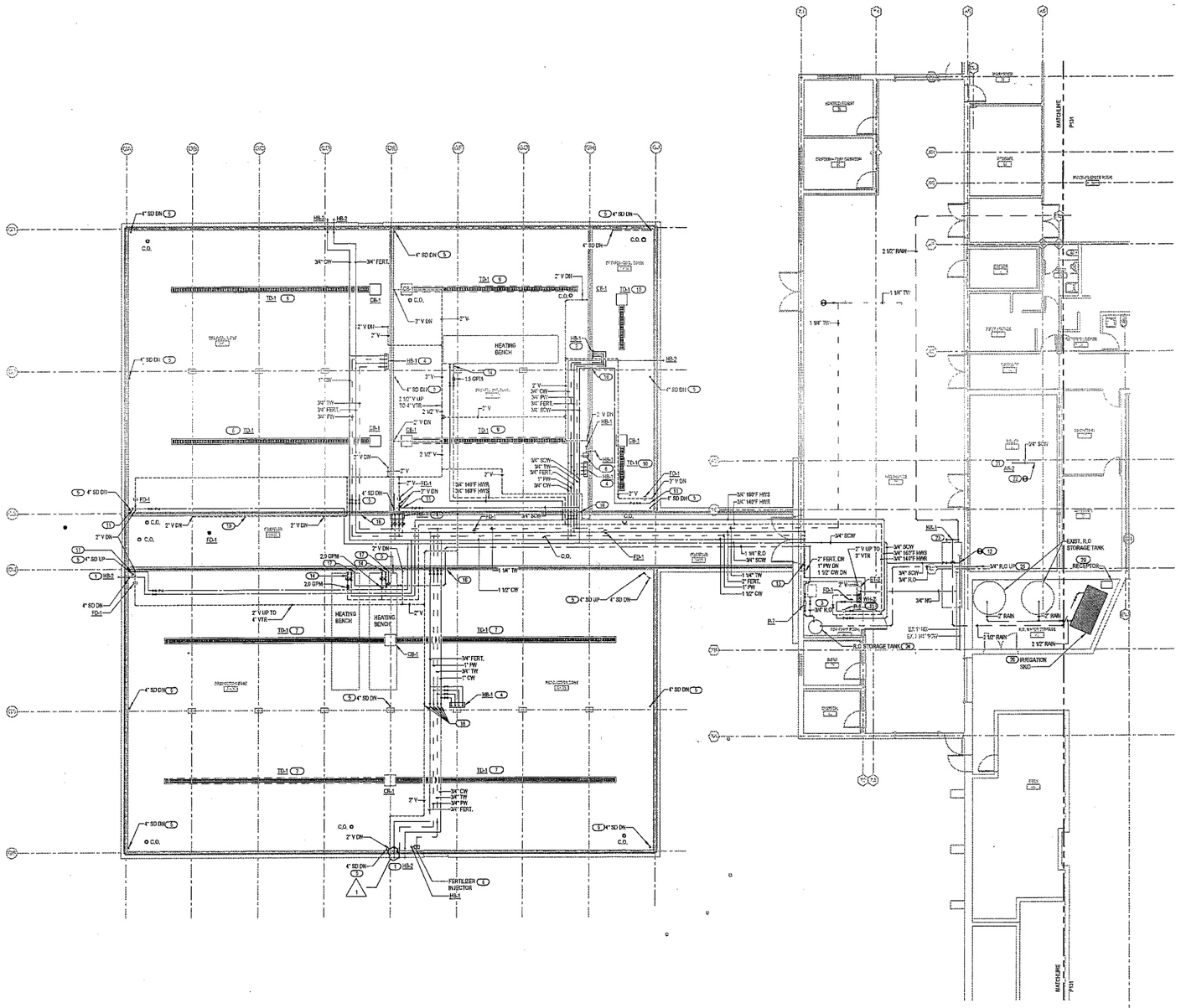
PROJECT PHASE: BID DOCUMENTS

DRAWN BY: MSR CHECKED BY: MSR

LEARNING CENTER PLUMBING ROOF PLAN

P102

REVISED



1 GREENHOUSE PLUMBING PLAN - ABOVE GRADE

1/8" = 1'-0"

GENERAL NOTES

A. FOR PLUMBING NOTES, LEGENDS AND ABBREVIATION, REFER TO P001.
B. RADIANT SLAB USED IN NEW GREENHOUSE AREA. PLUMBING CONTRACTOR SHALL COORDINATE ALL BELOW GRADE WORK.
C. ALL ABOVE GRADE PIPE PENETRATION SHALL BE THROUGH ALUMINUM PENETRATION PANEL.
D. ALL HOSE BE SHALL BE PROVIDED WITH LABELED TAGS, PER SPECIFICATIONS.

KEYED NOTES

1. PLUMBING CONTRACTOR SHALL PROVIDE HB-2 (TOTAL OF 3).
2. CONTRACTOR SHALL PROVIDE INTERIOR HOSE BIBB, HB-1, FOR FERTILIZER , TEMPERED WATER AND R.O LINE (TOTAL OF 3).
3. PLUMBING CONTRACTOR SHALL PROVIDE VALVED AND CAPPED 3/4" R.O WATER.
4. CONTRACTOR SHALL PROVIDE INTERIOR HOSE BIBB, HB-1, FOR COLD WATER, TEMPERED WATER, FERTILIZER AND R.O LINE (TOTAL OF 4).
5. PLUMBING CONTRACTOR SHALL CONNECT TO ROOF DRAIN. ROOF DRAIN BY GREENHOUSE CONTRACTOR, REFER TO DETAIL 9/P301.
6. FERTILIZER INJECTION SYSTEM. PLUMBING CONTRACTOR SHALL ROUTE INDICATED LINE DOWN TO 3'-0" AFF. INJECTOR ASSEMBLY IS FURNISHED BY GREENHOUSE CONTRACTOR. PLUMBING CONTRACTOR SHALL INSTALL ON WALL PER DETAIL. PLUMBING CONTRACTOR SHALL PROVIDE BACKFLOW PREVENTER UPSTREAM OF DOSATRON AND HOSE BIBB DOWNSTREAM OF DOSATRON. SEE DETAIL 4/P301.
7. TRENCH DRAIN SHALL BE 40'-0" LONG.
8. TRENCH DRAIN SHALL BE 35'-0" LONG.
9. TRENCH DRAIN SHALL BE 30'-0" LONG.
10. TRENCH DRAIN SHALL BE 6'-0" LONG.
11. PROVIDE VALVED AND CAPPED 3/4" SOFT COLD WATER FOR CONNECTION TO EVAPORATIVE COOLER. PLUMBING CONTRACTOR SHALL PROVIDE BACKFLOW PREVENTER.
12. CONNECT TO 1 1/4" SCW IN THIS AREA. PROVIDE BACK FROM PREVENTER.
13. PROVIDE SHUT-OFF VALVES ON WALL. REFER TO RISER DIAGRAM, P201. PIPING SHALL PENETRATE THROUGH ALUMINUM PENETRATION PANEL.
14. DROP HWSR DOWN ALONG WALL. TERMINATE WITH VALVE AND TREADED CONNECTION. PROVIDE FLEXIBLE CONNECTOR 18" LONG WITH TREADED ENDS. AT TABLE, CONNECT TO TABLE HEATING SYSTEM. BALANCE TO INDICATED GPM. BENCH HEATING SYSTEM, 3-WAY VALVE AND OTHER ASSOCIATED COMPONENTS ARE PROVIDED BY GREENHOUSE CONTRACTOR.
15. REFER TO DETAIL 2/P301 FOR VR-HZ PIPING AND ASSOCIATED COMPONENTS. PROVIDE CONCENTRIC VENT.
16. ALL PIPES IN THIS AREA SHALL PENETRATE THROUGH ALUMINUM PANEL.
17. DROP R.O WATER DOWN ALONG WALL. TERMINATE WITH VALVE AND TREADED CONNECTION. PROVIDE FLEXIBLE CONNECTOR 18" LONG WITH TREADED ENDS. AT TABLE, CONNECT TO BENCHTOP IRRIGATION SYSTEM.
18. INDICATED LINES SHALL BE BELOW BLACKOUT CURTAIN. COORDINATE WORK WITH GREENHOUSE CONTRACTOR.
19. VENT SHALL RUN AT KNEE HEIGHT. VENT SHALL NOT OBSTRUCT CORRIDOR SCREEN.
20. PROVIDE 4" PIPE CONNECTION TO IRRIGATION SKID IN T-BS LOCATION. ROUTE TO, AND ELBOW DOWN INTO, CONCRETE RECEPTOR. RECEPTOR SHALL BE CAST CONCRETE, BY PLUMBING CONTRACTOR, 24"x24"x6" HIGH, WITH 4" OUTLET, ROUTED AS SHOWN, FLAT, ALONG FLOOR.
21. ROUTE 3/4" DOMESTIC SOFT COLD WATER TO CHILLED WATER FILL AT AIR SEPARATOR. SEE MECHANICAL. PROVIDE SHUT-OFF AND BACKFLOW PREVENTER TYPE ASSE 1013 AS WATTS 009.
22. CONNECT NEW 3/4" DOMESTIC SOFT COLD WATER TO EXISTING 3/4" DOMESTIC SOFT COLD WATER FILL LINE IN AREA OF EXISTING BOILER EXPANSION TANKS.
23. CONNECT 2 1/2" RAINWATER TO EXISTING CAPPED (FOR FUTURE) HEAT EXCHANGER, HX-3, AND SOLAR STORAGE TANK. BRING 2 1/2" RAINWATER OUT, AND ROUTE AS SHOWN.
24. R.O WATER STORAGE TANK PROVIDED BY GREENHOUSE CONTRACTOR.
25. CONNECT 3/4" NEW R.O WATER TO EXISTING R.O SYSTEM. EXISTING R.O SYSTEM LOCATED IN MEZZANINE.
26. IRRIGATION SKID PROVIDED BY IRRIGATION CONTRACTOR. PLUMBING CONTRACTOR SHALL PROVIDE VALVED AND CAPPED 2 1/2 RAIN WATER AS SHOWN ON PLAN.

MSR
710 South 2nd Street, 6th Floor
Minneapolis, Minnesota 55401-2262
Architecture, Interiors and Urban Design
612.375.0336 tel
612.342.2216 fax
www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201
Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
303 South Paterson Street, Suite 1
Madison, WI 53703
608.251.3600 tel

Structural Engineer, Technology and AV
IMEG Corp.
1650 Deming Way, Suite 209
Middleton, WI 53562
608.223.9500 tel

MEP Engineer
MEP Associates, LLC
850 Blue Gentian Road, Suite 175
Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
575 Mendelssohn Ave West
St. Paul, MN 55103
651.291.1560 tel

Greenhouse Design
Rough Brothers, Inc.
5553 Vine Street
Cincinnati, OH 45217
513.242.0310 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Engineer under the Laws of the State of Wisconsin. ENGINEER SEAL

Signature:
Print Name: Larry Nemer
Date: JUNE 4, 2018 License No.: E-32249

ISSUE NUMBER	DATE	DESCRIPTION
	09.09.2017	SCHEMATIC DESIGN SUBMISSION
	11.08.2017	100 PRICING SET
	01.10.2018	DESIGN DEVELOPMENT SUBMISSION
	03.17.2018	LDC SUBMISSION
	03.31.2018	100% CD PRICING ISSUE
	05.04.2018	100% CONSTRUCTION DOCUMENTS
	05.21.2018	BID ISSUE
	05.24.2018	PERMIT ISSUE
1	05.11.2018	BID ADDENDUM 1

PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: MSR CHECKED BY: MSR

Drawing CAD Copyright Mark, Saiki & Associates, Inc.

GREENHOUSE PLUMBING PLAN - ABOVE GRADE

P112

REVISED

MATERIAL / PRODUCT ID LIST with Spec Data

ID	Short Name	Section	Spec Data
ACOU-1	ACOUSTICAL CEILING SYSTEM	09 5113	MFR: Armstrong; PRODUCT: Optima, Plant Based; EDGE: Tegular; MODEL: 2729FB; PANEL SIZE: 24' x 24' x 1'; COLOR: White; GRID: 9/16', White;
ACOU-2	ACOUSTICAL CEILING SYSTEM	09 5113	MFR: Armstrong; PRODUCT: Optima, Plant Based; EDGE: Tegular; MODEL: 2729FB; PANEL SIZE: 24' x 60' x 1'; COLOR: White; GRID: 9/16', White;
ADT-1	ACCESS FLOORING	09 6900	MFR: Tate; PRODUCT: CoreCare 1000; PANEL SIZE: 24' x 24'; THICKNESS: 1 5/8'; UNDERSTRUCTURE: Pinnacle;
ADT-2	ACCESS FLOORING	09 6900	MFR: Tate; PRODUCT: STONEWORKS: Classic Concrete; PANEL SIZE: 24' x 24'; THICKNESS: 1 5/16'; FINISH: Pinnacle Concrete Protector WB; UNDERSTRUCTURE: Ballast Stringer;
CT-1	CONCRETE COUNTERTOP	12 3613	PRODUCT: Concrete Countertop COLOR: TBD FINISH: Smooth Troweled; EDGE: Eased; SEALER: Clear, Matte; THICKNESS: See Drawings SPLASHES: See Drawings JOINT TYPE: Grouted, 1/16"; CUTOUTS: Sink with Drainboard and Faucets
CF SF	COLD-FORMED STEEL FRAMING - SEE STRUCTURAL	05 4000	PRODUCT: Galvanized Steel Studs and Furring;
CMU	CONCRETE MASONRY UNIT - SEE STRUCTURAL	04 2200	PRODUCT: Concrete Masonry Units;
CMU-2	CONCRETE MASONRY UNIT - VENEER	04 2200	PRODUCT: Concrete Masonry Units; FINISH: Burnished; COLOR: MS Sill Dark Grey/Black;
CONC-1	SEALED CONCRETE FINISH - SEE STRUCTURAL	03 3000	PRODUCT: Ferrofinish Liquid Densifier and Sealer;
CONC-2	POLISHED CONCRETE FINISH	03 3543	POLISH, Level 1: Matte finish, 100 grit; FINISH: Ferrofinish Liquid Densifier and Sealer; FINISH ADDITIVE: Increase Shut-Grip or HTC Supershoe;
CPT-1	CARPET TILE FLOORING - FLANK	09 6813	MFR: Mohawk; STYLE: Lichen Moire Bloom; COLOR: Iceland Moss
CPT-2	CARPET TILE FLOORING - FLANK	09 6813	MFR: Mohawk; STYLE: Lichen Moire Bloom; COLOR: Iceland Moss
ELEV	HYDRAULIC RAM ELEVATOR	14 2410	MFR: Otis or ThyssenKrupp; STYLE: Maximo-Roomless Hydraulic; MODEL: Hydrelift or Endura MRL; CAB TYPE: Passenger; CAPACITY (lbs): 3,000 SPEED (fpm, min): 100 OPENING: Front, Right Hand; CAB ENTRANCE: 1-Speed, Satin Stainless Steel; OPERATING PANEL: Satin Stainless Steel; CAR PANELS: Custom Laminate, Walnut; CAR DOORS: 1-Speed, Satin Stainless Steel; BUMPER RAIL: Solid Bar, Satin Stainless Steel; CEILING: LED Fixtures-LL Painted White; FLOORING: Custom, See Finish Plan; WALL ENTRANCE: Charcoal EVH; FIXTURES: Classic Satin Stainless Steel; BUTTONS: Flush, Illuminated Hills;
FAS	FALL ARREST SYSTEM	11 2400	PRODUCT: TBD;
FEC	FIRE EXTINGUISHER CABINET	10 4413	MFR: JL Industries (or Larsen); MODEL: Embassy (or Ocult) STYLE: Recessed Trimless; DOOR: Solid; COLOR: TBD;
GBD	GYPSUM BOARD	09 2900	PRODUCT: Fibershield Gypsum Board;
GDRL-1	DECORATIVE METAL GUARDRAIL	05 7300	PRODUCT: Custom Steel Guardrail; FINISH: PT-4B, UNO;
GL-1	CLEAR ANNEALED GLASS	08 8000	PRODUCT: Annealed Glass; COLOR: Clear; THICKNESS: 1/4", typical; T indicates Tempered
GLBD-1A	GLASS CHALKBOARD - WHITE	10 1100	MFR: Glass Chalkboards, LLC; STYLE: Wallzyme; COLOR: White, Magnetic Finish;
HDRL-1	DECORATIVE METAL HANDRAIL	05 7309	PRODUCT: Stainless Steel Tubing; FINISH: Satin, No.4 Finish; PROFILE: 1 1/2" Diameter;
IGU-1	INSULATED GLASS UNIT	08 8000	MFR: Cardinal IG4x; PRODUCT: Double-Pane; COLOR: Clear; UNIT THICKNESS: 1"; FILL: Argon; HARDCOAT: Solar Control; CARDINAL: LoE3-366; U-VALUE (MAX): 0.25; VLT (MIN): 62%; SHGC (MAX): 0.27; T indicates Tempered
INSUL-1	ACOUSTICAL INSULATION	09 2900	PRODUCT: Unfaced Mineral Wool Blanket Insulation;
INSUL-2	BELOW GRADE INSULATION	07 2100	PRODUCT: Expanded Polystyrene Foam (EPS); TYPE: IX, 25-psi; R-VALUE: 4.2/inch
INSUL-3	CONTINUOUS WALL INSULATION	07 2100	PRODUCT: Polyisocyanurate Foam; BOD: Hunter Panels, 40 OG; FACER: Glass Fiber-Mat; PERIMETER: 1'-10"
INSUL-4	SPRAY FOAM INSULATION	07 2119	PRODUCT: Water-Blown, Closed-cell Spray Polyurethane Foam; BOD: Icynene, ProSeal Evo; DENSITY: 2.2 pcf, Closed-cell; BLOWING AGENT: Water; R-VALUE: 4.9/inch; VAPOR BARRIER: 2.4 inch;
INSUL-5	VENTILATED NAILBASE INSULATION	07 2100	PRODUCT: Vertically Nailbase Insulation; BOD: GAF, ThermaCal 1; SHEATHING: 1/2" Ply sheet; AIRSPACE: 1"; INSULATION: Polyisocyanurate; PANEL THICKNESS: 6 1/2"; R-VALUE: 35;
LDR-1	WALL-MOUNTED LADDER	05 5000	PRODUCT: Unistrut Access Ladder; WIDTH: 18"; RUNGS: 1" Square; MATERIAL: Steel; FINISH: Factory Primed, Field Painted;
LDR-2	WALL-MOUNTED LADDER, EXTERIOR	05 5000	PRODUCT: Wall-mounted Access Ladder; WIDTH: 18"; RUNGS: 1" Square; MATERIAL: Galvanized Steel; FINISH: Factory Primed, Field Painted;
LVR-1	LOUVER	08 9119	MFR: Greenheck; MODEL: ESD-202; TYPE: Drainable; DEPTH: 2 inches; FREE AREA (4x4): 39%; COLOR: ;
LVR-2	ACOUSTICAL LOUVER	08 9119	MFR: Greenheck; MODEL: AFS-120; TYPE: Acoustical, Sightproof; DEPTH: 12 inches; FREE AREA (4x4): 27%; COLOR: ;
MA-1	MILLWORK ACCESSORY - PULL	06 4116	MFR: Stubbs 917 Hardware; STYLE: Cityscape Collection; PRODUCT NUMBER: P20418-128;
MA-4	MILLWORK ACCESSORY - COAT ROD	06 4116	MFR: Knape and Vogt; STYLE: Closet-Pro Regular-Duty Adjustable Closet Rod w/ Fixed Flange; PRODUCT NUMBER: RP0022-48/72;
MA-5	MILLWORK ACCESSORY - PAPER TOWEL DISPENSER	06 4116	MFR: Bobrick; STYLE: TrimLine Series; PRODUCT NUMBER: B-42R;
MA-6	MILLWORK ACCESSORY - SOAP TRAY	06 4116	MFR: Ukinox; STYLE: Bold Tray; PRODUCT NUMBER: H-2082;
MA-7	MILLWORK ACCESSORY - WASTE BIN	06 4116	MFR: Knape and Vogt; STYLE: Soft Close, Top-Mount Waste with Recycling Bins; PRODUCT NUMBER: TSC15-3-SP1;
MCP-1	METAL COMPOSITE PANEL	07 4213.23	MFR: 3A Composites USA, Inc.; PRODUCT: Alucobond Plus, FR Core; THICKNESS: 4 mm; SYSTEM: Rainscreen II, Insulation Outboard; FINISH: Classic Colors; COLOR: TBD (Dusty Charcoal or Fauxx Black);
MR-1	METAL PANEL - STANDING SEAM - COPPER	07 4113.19	PRODUCT: Standing Seam Metal Wall Panels; METAL: Copper; FINISH: Mill, Non-Patinated; WEIGHT: 20 oz; PANEL WIDTH: 8 inches; SEAM HEIGHT: 1 inch; UNDERLAYMENT: WRB with Slip Sheet;
MR-2	METAL PANEL - BLACKENED STEEL	05 5500	PRODUCT: Steel Plate Interior Wall Panels; THICKNESS: 5/8"; FINISH: Presto Black by Sunbrand Technologies; FASTENERS: Counter-sunk, Black Oxide Screws;
MS-1	METAL PAN STAIR - INTERIOR	05 5113	PRODUCT: Metal Stair; TREADS: Precast Concrete Treac; MFR: Tectura Design by Wausau Tile, Inc.; TYPE: CJG, Tread with Setting Bed FINISH: TBD; SAFETY: Carborundum Stairs;
MS-2	METAL PAN STAIR - EXTERIOR	05 5113	PRODUCT: Metal Stair; TREADS: Precast Concrete Treac; MFR: Tectura Design by Wausau Tile, Inc.; TYPE: CJG, Self-supporting Flat Tread; COLOR: TBD; SAFETY: Carborundum Stairs;
NSMF	NON-STRUCTURAL METAL FRAMING	09 2216	PRODUCT: Non-Structural Metal Studs and Furring
OP-1	OPERABLE PARTITION	10 2239	MFR: Modernfold; MODEL: Acousti-Seal 932; NRC: 0.65 (Perforated Panels); STC: 54; PANEL FINISH: Fabric; MFR: CARNEGIE; STYLE: XORD_ SLEET EMBROIDER; COLOR: 6259-020;
PLAM-1	PLASTIC LAMINATE	06 4116	MFR: WILSONART; STYLE: STANDARD LAMINATE; COLOR: CRISP LINEN, 4942-38;
PLAM-2	PLASTIC LAMINATE	06 4116	MFR: WILSONART; STYLE: TRACELESS; COLOR: CHARCOAL VELVET, 1950A-31;
PLAM-3	PLASTIC LAMINATE	06 4116	MFR: WILSONART; STYLE: TRACELESS COLOR: SNOW WHITE VELVET, 1950I-31;

MATERIAL / PRODUCT ID LIST with Spec Data

ID	Short Name	Section	Spec Data
PLAM-4	PLASTIC LAMINATE - ELEV-1	06 4116	MFR: WILSONART; STYLE: STANDARD LAMINATE; COLOR: Dove Grey, D05-60, Matte;
PT-1	INTERIOR PAINT - FLAT	09 9123	PRODUCT: Interior Paint; SHEEN: Flat;
PT-2	INTERIOR PAINT - EGGSHELL	09 9123	PRODUCT: Interior Paint; SHEEN: Eggshell;
PT-3	HIGH-PERFORMANCE INTERIOR PAINT - SEMI-GLOSS	09 9123	PRODUCT: Interior Paint; SHEEN: Semi-Gloss;
PT-4	HIGH-PERFORMANCE EXTERIOR PAINT - SEMI-GLOSS	09 9113	PRODUCT: Exterior Paint; SHEEN: Semi-Gloss;
PT-5	EXTERIOR POWDERCOAT		PRODUCT: Exterior Powdercoat; SHEEN: Semi-Gloss;
PT-_A	PAINT COLOR - WHITE	09 9123	MFR: BENJAMIN MOORE; STYLE: OC-17; COLOR: CAPITOL WHITE;
PT-_B	PAINT COLOR - CHARCOAL	09 9123	MFR: BENJAMIN MOORE; STYLE: 2124-10; COLOR: WROUGHT IRON;
PT-_C	PAINT COLOR - ACCENT COLOR	09 9123	MFR: Sherwin Williams; STYLE: SW 7637; COLOR: Mediterranean;
PVR-1	PEDESTAL PAVER SYSTEM - CONCRETE	07 7600	PRODUCT: Concrete Pavers on Pedestals; MFR: Pretile or Bison; MODULE: 24" x 24"; THICKNESS: 2"; COLOR: TBD;
PVR-2	PEDESTAL PAVER SYSTEM - WOOD	07 7600	PRODUCT: Wood Slat Panels on Pedestals; MFR: Bison Innovative Products; MODEL: WH-FSC-100%CUMARU-2K; MODULE: 24" x 24"; SPECIES: Cumaru FSC; FINISH: Unsealed;
PWD-1	CONCEALED PLYWOOD BACKING	06 1000	PRODUCT: Concealed Plywood Backing Panels; GRADE: DOC PS 1, Exposure 1, C-D Plugged, FNT; THICKNESS: 3/4";
RA-1	ROOF ANCHOR FOR PV RACKING	07 5523	MFR: Another Products; PRODUCT: UAnchor 2000 EPDM;
REVEAL-1	5/8" GYPSUM REVEAL TRIM	092116	MFR: Fry Reglet Corporation; MODEL: DRS-125; FINISH: Aluminum, Black
RFNG-1	EPDM ROOFING SYSTEM	07 5323	MFR: Firestone or Carlisle; MEMBRANE: EPDM, 90-mil, Black; INSTALLATION: Fully-adhered; COVER BOARD: High-Density Polyisocyanurate;
RFNG-2	METAL ROOFING SYSTEM	07 4113.16	PRODUCT: Standing Seam Metal Roofing; SEAM TYPE: Double-lock; METAL: 16 ounce, Quarter-hard Copper; FINISH: Mill, Non-painted; UNDERLAYMENT: Synthetic Roofing Felt; GAF Deck Armor; ICE/WATER: Self-Adhering, High-Temp Sheet; SLIP SHEET: Rosin Paper;
RFNG-3	EPDM FLASHING	07 5323	MFR: Firestone or Carlisle; MEMBRANE: Cured EPDM, 60-mil, Black, Self-adhered; INSTALLATION: Fully-adhered;
RH	ROOF HATCH	07 7200	PRODUCT: Single-Leaf Insulated Roof Hatch; SIZE: 30" x 30"; MATERIAL: Aluminum; FINISH: Mill Finish;
RSC-1	RESILIENT SOUND ISOLATION CLIP	09 2216	MFR: PAC International, Inc; MODEL: RSIC-1;
SHELF-1	SHELVING SYSTEM STANDARD 24" H	06 4116	MFR: Ezley; MODEL: FILVHCW4; SIZE: 84"H; COLOR: Arctic White;
SHELF-2	SHELVING SYSTEM SHELF AND BRACKET	06 4116	MFR: Ezley; MODEL: EW3015A; SIZE: 30"H x 15"D; COLOR: Arctic White;
SHELF-3	SHELVING SYSTEM SHELF AND BRACKET	06 4116	MFR: Ezley; MODEL: EW3015A; SIZE: 30"H x 15"D; COLOR: Arctic White;
SHELF-4	SHELVING SYSTEM STANDARD 36" H	06 4116	MFR: Ezley; MODEL: FILVHCW36; SIZE: 36"H; COLOR: Arctic White;
SHTG-1	GYPSUM SHEATHING	06 1600	PRODUCT: Exterior Gypsum Sheathing; TYPE: Type X, Glass-Mat Faced; THICKNESS: 5/8";
SHTG-2	PLYWOOD SHEATHING	06 1600	PRODUCT: Exterior Plywood Sheathing; GRADE: DOC PS1, Exterior, FRT; SPAN RATING: 32/16; THICKNESS: 1/2";
SMF-1	SHEET METAL FLASHING - COPPER	07 6200	PRODUCT: Copper Sheet; FINISH: Mill, Non-Patinated; WEIGHT: 20 oz; UNO; OUTERS: Match Building Profile; DOWNSPOUTS: Formed Round, 5" D; INSTALLATMENT: Self-Adhering, High-Temp Sheet;
SMF-2	SHEET METAL FLASHING - GRAY/BLACK	07 6200	PRODUCT: Coated Aluminum Sheet; THICKNESS: 0.040" UNO COLOR: TBD. Match WDW-1 and MCP-1;
SSF-1	SOLID SURFACE	12 3661	MFR: CAESARSTONE; STYLE: 6 Series; COLOR: RAVEN;
SSF-2	SOLID SURFACE	12 3661	MFR: CAESARSTONE; STYLE: 6141; COLOR: OCEAN FOAM;
STN-1	STONE VENEER	04 4313.13	MFR: Buechel Stone Corp; PRODUCT: Cut Limestone Shapes; COLOR: Indiana Buff (or Texas Creme); TEXTURE: Smooth;
STN-2	CUT STONE TRIM	04 4313.13	MFR: TBD by Owner; STYLE: ; COLOR: ;
TA-05	PAPER TOWEL (FOLDED) DISPENSER	10 2800	MFR: Bobrick; MODEL: B-262; FINISH: Satin Stainless Steel;
TA-06	PAPER TOWEL (ROLL) DISPENSER (OPCI)	10 2800	MFR: TBD by Owner; STYLE: ; COLOR: ;
TA-11	LIQUID SOAP DISPENSER (OPCI)	10 2800	MFR: TBD by Owner; STYLE: ; COLOR: ;
TA-12	GRAB BAR	10 2800	MFR: Bobrick; MODEL: B-6806; FINISH: Satin Stainless Steel; DIAMETER: 1 1/2"; LENGTH: See Drawings;
TA-14	SANITARY-NAPKIN DISPOSAL UNIT	10 2800	MFR: Bobrick; MODEL: B-270; FINISH: Satin Stainless Steel;
TA-17	MIRROR UNIT (FRAMED)	10 2800	MFR: DESIGN WITHIN REACH; STYLE: LUCIANO MIRROR, SMALL; COLOR: BLACK;
TA-19	HOOK	10 2800	MFR: Bobrick; MODEL: B-2116; FINISH: Satin Nickel;
TA-24	DIAPER-CHANGING STATION	10 2400	MFR: Koala Kare; MODEL: KB119-SSRE; FINISH: Satin Stainless Steel;
TBP	THERMAL BREAK FRAMING	07 2100	MFR: Advanced Architectural Products; PRODUCT: SMARTie; MODEL: GREENjet;
TBM	THERMAL BREAK MATERIAL - SEE STRUCTURAL	GEN NOTES	MFR: Dow; PRODUCT: Structural Thermal Break Material;
TL-1	CERAMIC TILE	09 3013	MFR: FIRESCAPE TILE; STYLE: ARNULF; COLOR: CUSTOM - SPRUCE, HUNTER, LIMON, CARBON;
TL-2	CERAMIC TILE (OPCI)	09 3013	MFR: OPCI; STYLE: 4"X4"; COLOR: TBD;
TL-3	CERAMIC TILE WALL BASE (OPCI)	09 3013	MFR: OPCI; STYLE: 4" x 6", COVE BASE COLOR: TBD;
TLBD	TILE BACKER BOARD	09 2900	PRODUCT: Cement Board
TLFL-1	TILE FLOORING	09 3013	MFR: MSISA; STYLE: SELECTION CINE, 12X24; COLOR: 1104 V;
TLFL-2	TILE FLOORING	09 3013	MFR: American Olean; STYLE: Quarry Naturals; COLOR: Shadow Gray (NA3; SIZE: 8x8;
TREAD-1	ARCHITECTURAL PRECAST CONCRETE TREAD SUNKEN TO BERT STEEL INSERTS	05 5199	
TREAD-2	TWO-SIDED PRECAST STAIR TREAD C-40 SELF-SUPPORTING FLAT TREAD	05 5199	MIN THICKNESS 3 1/2"
TS-1	STAINLESS STEEL TRELLIS SYSTEM	05 3443	MFR: Jakob, INC; PRODUCT: GreenGuide System; MATERIAL: Type 316 Stainless Steel; ROPE: TOP: Swaged Radius Head; ROPE BOTTOM: Swaged GreenGuide Eye; TENSIONING: Turnbuckle; MOUNTING: GreenGuide Spacer;
TWF	THRU-WALL FLASHING AND DRIP EDGE	07 2715	MFR: 3M; PRODUCT: 3615TWF; TYPE: Sheet-Applied; DRIP EDGE: Stainless Steel
VB	UNDERSLAB VAPOR BARRIER	03 3000	MFR: Stego or Raven; PRODUCT: ASTM E1745, Class A; THICKNESS: 10-mil min.;
WAWB	WATER-AIR-VAPOR BARRIER MEMBRANE	07 2715	MFR: 3M; PRODUCT: 3015; TYPE: Sheet-Applied; VAPOR (max): 0.1 US perm; AIR (max): 0.004 CFM/sf at 1.57 lb/sf;
WB-1	RUBBER WALL BASE	09 6513	MFR: JOHNSONITE; STYLE: TRADITIONAL WALL BASE; COLOR: 63 BURNT UMBER B;
WB-2	STEEL WALL BASE	05 5000	PRODUCT: Sheet Plate Interior Wall Base; THICKNESS: 5/8"; STYLE: 4 COVE; COLOR: RAVEN;
WD-1	ACETYLATED WOOD	06 2013	MFR: CAESARSTONE; STYLE: 6 Series; COLOR: RAVEN;
WD-2	INTERIOR FINISH WOOD	06 2023	MFR: Accoya Technologies PLC; PRODUCT: Accoya Wood; SPECIES: Radiata Pine;
WD-3	INTERIOR FINISH WOOD VENEER	06 2023	PRODUCT: Reclaimed Wood for Interior Trim; SPECIES: Ash; FINISH: Clear;

MATERIAL / PRODUCT ID LIST with Spec Data

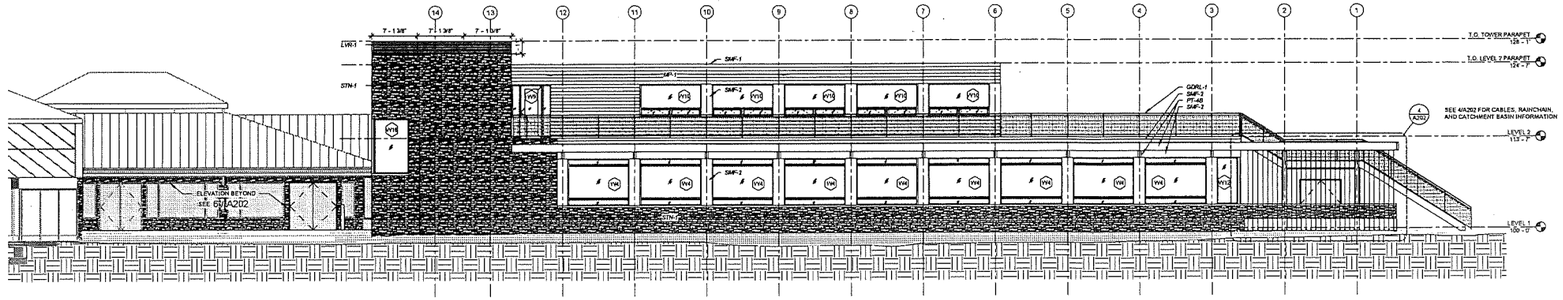
ID	Short Name	Section	Spec Data
WDCL-1	WOOD CEILING SYSTEM	09 5426	MFR: Armstrong; PRODUCT: Woodworks Grille; PANEL TYPE: 72X60; SLAT SIZE: 5/8" x 2 1/4"; SLATS PER PANEL: 8 PANEL SIZE: 12"W x 2 3/4"H; PANEL LENGTH: Custom, See Drawings; FINISH: Eclipse Metallic; GRID: Heavy-Duty Prelude XL; GRID COLOR: Black; INFILL PRODUCT: Backcloud; INFILL TYPE: 5820; INFILL COLOR: Black (Matte);
WDW-1	ALUMINUM WOOD WINDOW	08 5200	MFR: Weiland; TYPE: Direct Set; SQU: Earlex 3P or 2P; SPECTEC: Reclaimed Ash furnished by Owner; WD FINISH: Clear sealer; AL FINISH: Painted; COLOR: TBD, match MCP-1 and SHT-2; DOORS: Hardy Outswing Heavy Commercial Doors; THICKNESS: 2 1/4";
WF-1	WINDOW FILM, PRIVACY	08 8733	MFR: 3M; PRODUCT: Fasara Glass Finish; PATTERN: Mist White (Milano), SH2MAML;
WP-1	WATERPROOFING MEMBRANE	07 1416	MFR: CCW Corp.; PRODUCT: Primer;
WRB	WATER-RESISTIVE BARRIER	07 2500	PRODUCT: Single Layer #15 Asphalt Felt; TYPE: ASTM D226, Type I; SLIP SHEET: Rosin Paper;
WT-1A	ROLLER WINDOW SHADE, MOTORIZED	12 2413	MFR: Hunter Douglas; TYPE: Motorized, Single; SHADING: 5% Openness; COLOR: GreenScreen Ebony HD1505, Shale;
WT-2A	ROLLER WINDOW SHADE, MANUAL	12 2413	MFR: Hunter Douglas; TYPE: Manual, Single; SHADING: 5% Openness; COLOR: GreenScreen Ebony HD1505, Shale;

SHT NO	SHEET NAME
GENERAL	
G000	SHEET INDEX, GENERAL NOTES AND MATERIALS
G001	SITE CONTEXT AND SYMBOLS
G003	CODE PLAN - OVERALL APPROACH
G052	EGRESS PLAN AND ANALYSIS
ARCHITECTURAL DEMOLITION	
AD1100	SITE DEMOLITION PLAN
AD1101	DEMOLITION PLANS
AD1115	REFLECTED CEILING PLAN - DEMOLITION
CIVIL	
C100	EXISTING CONDITIONS PLAN
C200	DEMOLITION PLAN
C300	SITE PLAN
C400	GRADING & EROSION CONTROL PLAN
C500	UTILITY PLAN
C501	LIFT STATION DETAIL
C900	CONSTRUCTION DETAILS - 1
C901	CONSTRUCTION DETAILS - 2
C902	CONSTRUCTION DETAILS - 3
C903	CONSTRUCTION DETAILS - 4
LANDSCAPE	
L001	HARDSCAPE PLAN
L002	HARDSCAPE DETAILS
L003	GRADING PLAN
ARCHITECTURAL	
A001	ARCHITECTURAL SITE PLAN
A100	LEARNING CENTER FLOOR PLAN - LEVEL 1
A102	LEARNING CENTER FLOOR PLAN - LEVEL 2
A103	LEARNING CENTER ROOF PLAN
A111	GREENHOUSE - HEADHOUSE FLOOR + ROOF PLAN
A112	GREENHOUSE - HEADHOUSE SECTION AND ELEVATION
A121	REFLECTED CEILING PLAN - LEVEL 1 - EXTG + NEW
A122	REFLECTED CEILING PLAN - LEVEL 1 + 2 - EXTG + NEW
A131	REFLECTED CEILING PLAN - LEVEL 1 - EXISTING
A132	EXISTING BUILDING REFERENCE DRAWINGS
A151	TOILET ROOM PLANS AND ELEVATIONS
A152	TOILET ROOM PLANS AND ELEVATIONS
A191	ENLARGED PLANS AND SECTIONS
A201	EXTERIOR ELEVATIONS
A202	EXTERIOR ELEVATIONS
A251	BUILDING SECTIONS
A301	WALL SECTIONS
A351	EXTERIOR DETAILS
A352	EXTERIOR DETAILS
A353	EXTERIOR DETAILS
A354	EXTERIOR DETAILS
A355	EXTERIOR DETAILS
A356	EXTERIOR DETAILS
A357	EXTERIOR DETAILS
A358	EXTERIOR DETAILS - COPPER ROOFING
A401	VERTICAL CIRCULATION
A402	VERTICAL CIRCULATION DETAILS
A403	VERTICAL CIRCULATION DETAILS
A501	INTERIOR ELEVATIONS
A502	INTERIOR ELEVATIONS
A503	INTERIOR ELEVATIONS
A551	INTERIOR DETAILS
A552	INTERIOR DETAILS
A601	DOOR SCHEDULE, TYPES AND DETAILS
A651	WINDOW TYPES
A701	FINISH PLANS
A801	MILLWORK PLANS
A802	LEVEL 1 MILLWORK
A803	LEVEL 1 MILLWORK
A804	LEVEL 2 MILLWORK
A851	MILLWORK DETAILS
A852	MILLWORK DETAILS
A951	FURNITURE PLANS - ISSUED FOR REFERENCE ONLY
STRUCTURAL	
S001	GENERAL NOTES
S002	SYMBOLS AND ABBREVIATIONS
S101	LEARNING CENTER HELICAL PILE PLAN
S102	LEARNING CENTER FOUNDATION PLAN
S103	LEARNING CENTER LEVEL 2 FRAMING PLAN
S104	LEARNING CENTER ROOF FRAMING PLAN
S111	GREENHOUSE FOUNDATION PLAN
S112	GREENHOUSE ROOF FRAMING PLAN
S201	FOUNDATION DETAILS
S202	FOUNDATION DETAILS
S203	FOUNDATION DETAILS
S301	FRAMING DETAILS
S302	FRAMING DETAILS
GREENHOUSE	
GH1	GREENHOUSE POST PLAN
GH2	GREENHOUSE SIDEWALL ELEVATIONS
GH2.1	GREENHOUSE COMMON PARTITION ELEVATIONS
GH3	GREENHOUSE GABLE ELEVATIONS
GH3.1	GREENHOUSE GABLE PARTITIONS
GH4	GREENHOUSE TRUSS SECTION
GH5.1	GREENHOUSE TRUSS DETAILS
GH5.2	GREENHOUSE FOUNDATION PLAN
GH5.3	GREENHOUSE POST AND BASE ANCHOR DETAILS
GH6	GREENHOUSE EQUIPMENT PLAN
GH6.1	GREENHOUSE BENCH PLAN
GH6.2	GREENHOUSE EQUIPMENT SECTIONS
GH6.3	GREENHOUSE CONTROL (GROWING AREA)
GH6.4	GREENHOUSE CONTROL (CONDENSOR)
GH6.5	GREENHOUSE CONTROL (CONSERVATORY)
GH6.6	GREENHOUSE CONTROL (INTERCONNECT)
GH6.8	TYPICAL GREENHOUSE COOL CELL DETAILS
GH7	GREENHOUSE RIDGE SECTION
GH8	TYPICAL GREENHOUSE SIDEWALL SECTION
GH8.1	TYPICAL GREENHOUSE PARTITION SECTION
GH9	GREENHOUSE ROOF TO GABLE SECTION
GH10	GREENHOUSE DOOR SCHEDULE
GH11	GREENHOUSE CLOSURE DETAILS

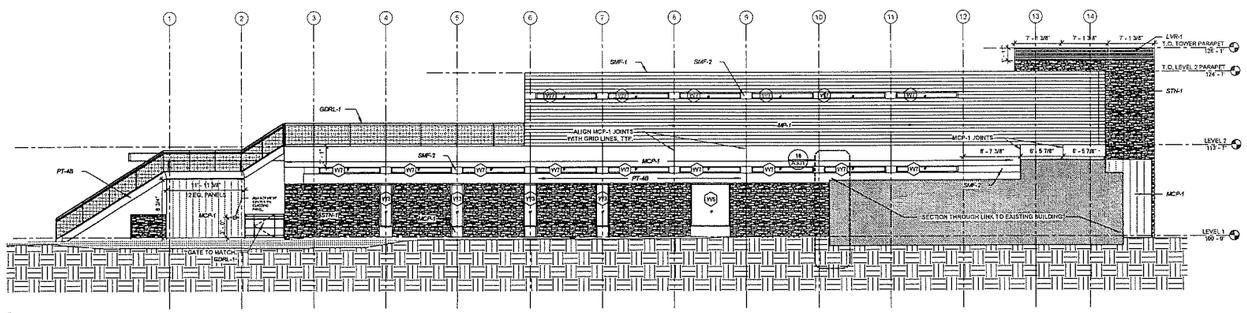
SHT NO	SHEET NAME
GREENHOUSE HEATING	
H1	GREENHOUSE HEATING SYSTEM NOTES & SCHEDULES
H2	GREENHOUSE HEATING SYSTEM PLAN LAYOUT
H3A	GREENHOUSE HEATING SYSTEM PEX MANIFOLD BOX
H3	GREENHOUSE HEATING SYSTEM PEX LAYOUT
H4A	GREENHOUSE HEATING SYSTEM PEX DETAILS
H4	GREENHOUSE UPPER & LOWER PIN TUBE LAYOUT
H4A	GREENHOUSE SNOW MELT PIN TUBE LAYOUT
H4B	PIN TUBE DETAILS
H4C	PIN TUBE COVER AND INSULATION DETAILS
H5	TROPICAL GHSE & PIPING ELEVATION
H5A	TROPICAL GHSE & PIPING ELEVATION
H5B	ORCHID INT GHSE & PIPING ELEVATION
H5C	ORCHID INT GHSE & PIPING ELEVATION
H6	PRODUCTION GHSE & PIPING ELEVATION
H6	MIXING VALVE DETAILS
H6A	ZONE CONTROL VALVE DETAILS
H7	BENCHTOP HEATING LAYOUT
H7A	BENCHTOP HEATING DETAILS
MECHANICAL	
M001	MECHANICAL TITLE SHEET
MD1111	GREENHOUSE MECHANICAL PIPING DEMO PLAN
MD1112	COMMONS AREA MECHANICAL DEMOLITION PLAN
MD131	LEARNING CENTER MECHANICAL DEMOLITION PLAN
M101	LEARNING CENTER MECHANICAL DUCTWORK PLAN
M102	LEARNING CENTER MECHANICAL PIPING PLAN
M103	LEARNING CENTER ROOFTOP HEAT AND COOL
M111	GREENHOUSE MECHANICAL PIPING PLAN
M112	ENLARGED PLANS AND SECTIONS
M113	ENLARGED PLANS AND SECTIONS
M131	COMMONS AREA MECHANICAL PIPING PLAN
M201	MECHANICAL DETAILS
M202	MECHANICAL DETAILS
M301	MECHANICAL SCHEDULES
M302	MECHANICAL SCHEDULES
M303	MECHANICAL CONTROLS SCHEMATICS
M401	MECHANICAL CONTROL SCHEMATICS
M402	MECHANICAL CONTROL SCHEMATICS
PLUMBING	
P000	PLUMBING TITLE SHEET
PD131	GREENHOUSE PLUMBING DEMO PLAN - BELOW GRADE
PD132	GREENHOUSE PLUMBING DEMO PLAN - ABOVE GRADE
PD133	COMMONS AREA PLUMBING DEMO PLAN
P100	LEARNING CENTER PLUMBING PLAN - BELOW GRADE
P101	LEARNING CENTER PLUMBING PLAN - ABOVE GRADE
P102	LEARNING CENTER PLUMBING ROOF PLAN
P111	GREENHOUSE PLUMBING PLAN - BELOW GRADE
P112	GREENHOUSE PLUMBING PLAN - ABOVE GRADE
P131	COMMONS AREA PLUMBING PLAN
P201	PLUMBING RISER DIAGRAM
P301	PLUMBING DETAILS & SCHEDULES
P401	PLUMBING SCHEDULES AND MANIFOLD SCHEMATIC
IRRIGATION	
I100	IRRIGATION PUMP SKID
I101	IRRIGATION DEMO AND QUICK COUPLER PLAN
FIRE PROTECTION	
F000	SITE PLAN, GENERAL NOTES, DETAILS
F100	FIRE PROTECTION LEVEL 1
F101	FIRE PROTECTION PLAN EXTG BUILDING
F102	FIRE PROTECTION LEVEL 2 - NEW ADDITION
F103	FIRE PROTECTION 1970s BUILDING
ELECTRICAL	
E000	ELECTRICAL TITLE SHEET
ED100	LOBBY LIGHTING DEMOLITION
ED110	GREENHOUSE ELECTRICAL DEMO PLAN
E001	SITE LANDSCAPE POWER PLAN
E002	SECOND FLOOR EXT

EXTERIOR MATERIALS LIST

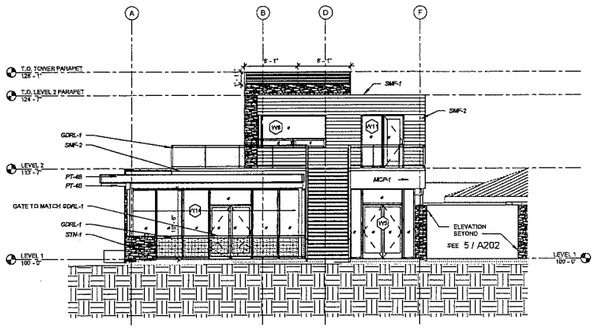
ACM-1	METAL PANEL - BLACK
GDRL-1	GUARD RAIL - STEEL STRUCTURE, WOVEN METAL MESH PANEL, WOOD TOP RAIL
LVR-1	LOUVER - BLACK
LVR-2	ACOUSTIC LOUVER - BLACK
MP-1	COPPER SIDING, HORIZONTAL ORIENTATION, 6" TYP. PANEL HEIGHT
PT-4B	HIGH PERFORMANCE EXTERIOR PAINT - SEMI-GLASS - BLACK
SMF-1	SHEET METAL FLASHING - COPPER
SMF-2	SHEET METAL FLASHING - BLACK
STN-1	STONE VENEER - LIMESTONE TO MATCH EXISTING STONE



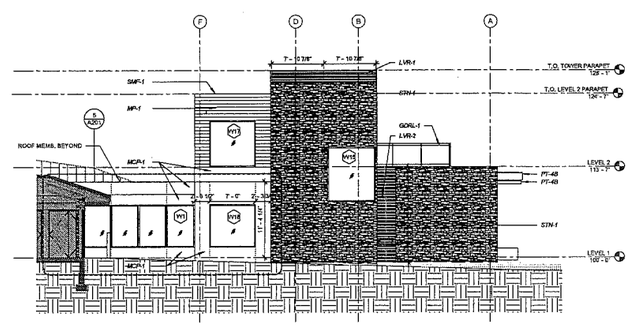
1 ELEVATION EAST
A201 1/8" = 1'-0"



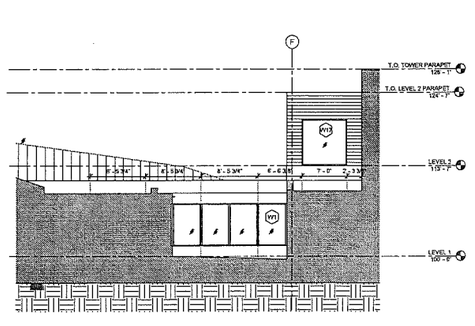
2 ELEVATION WEST
A201 1/8" = 1'-0"



3 ELEVATION NORTH
A201 1/8" = 1'-0"



4 ELEVATION SOUTH
A201 1/8" = 1'-0"



5 ELEVATION SOUTH LINK
A201 1/8" = 1'-0"

MSR 710 South 2nd Street, 6th Floor Minneapolis, Minnesota 55401-2282
Architecture, Interiors and Urban Design: 612 375 0336 tel, 612 342 2214 fax, www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201
Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
303 South Paterson Street, Suite 1
Madison, WI 53703
608.251.3600 tel

Structural Engineer, Technology and A/V
IMEG Corp.
1800 Deming Way, Suite 200
Middleton, WI 53562
608.222.9600 tel

MEP Engineer
MEP Associates, LLC
660 Blue Gentian Road, Suite 175
Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineers and Code Consultant
Summit Fire Consulting
525 Aldrich Ave North
St. Paul, MN 55103
651.251.1880 tel

Greenhouse Design
Rough Brothers, Inc.
5513 Vine Street
Cincinnati, OH 45217
513.242.6010 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin.
ARCHITECT SEAL

WISCONSIN
DANIEL JACK POLING
A-5594
MINNEAPOLIS, MN
ARCHITECT

Signature: Daniel Poling
Print Name: Jack Poling
Date: JUNE 4, 2018 License No.: A-5594

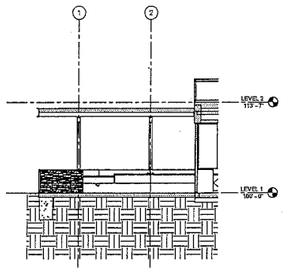
MARK	DATE	DESCRIPTION
	08.23.2017	SCHEMATIC DESIGN SUBMISSION
	12.05.2017	DD PRICING SET
	01.19.2018	DESIGN DEVELOPMENT SUBMISSION
	01.17.2018	LDC SUBMISSION
	03.30.2018	75% CD PRICING ISSUE
	04.06.2018	PARKING LOT AND SITE PLAN SUBMISSION
	05.04.2018	95% CD SUBMISSION
	06.01.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE

PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: MSR CHECKED BY: MSR

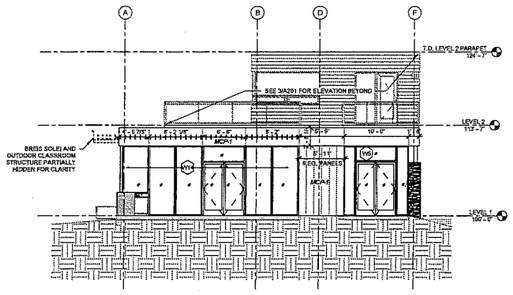
EXTERIOR ELEVATIONS

EXHIBIT F
A201

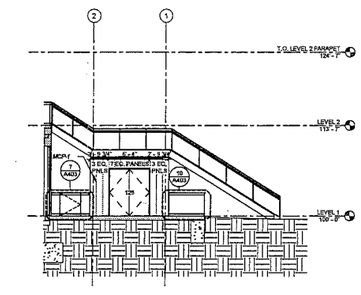
DD/BP/MC



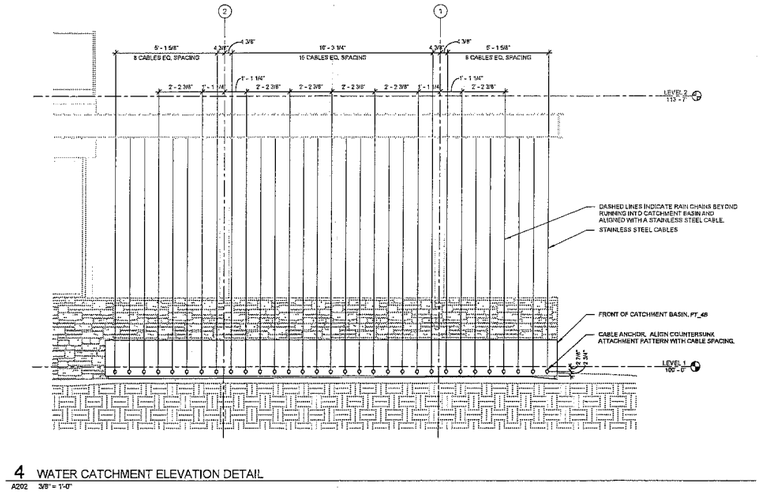
1 OUTDOOR CLASSROOM EAST ELEVATION
A202 1/8" = 1'-0"



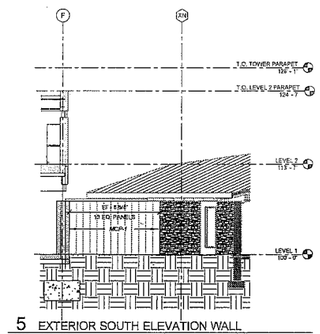
2 OUTDOOR CLASSROOM NORTH ELEVATION
A202 1/8" = 1'-0"



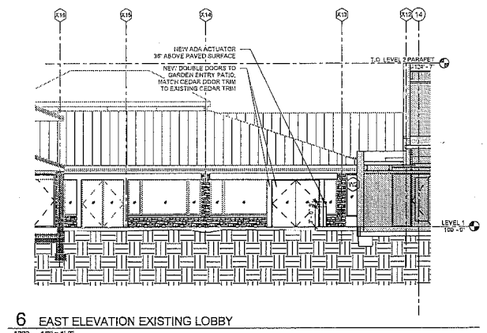
3 OUTDOOR CLASSROOM WEST ELEVATION
A202 1/8" = 1'-0"



4 WATER CATCHMENT ELEVATION DETAIL
A202 3/8" = 1'-0"



5 EXTERIOR SOUTH ELEVATION WALL
A202 1/8" = 1'-0"



6 EAST ELEVATION EXISTING LOBBY
A202 1/8" = 1'-0"

MSR
710 South 2nd Street, 6th Floor
Minneapolis, Minnesota 55401-2282
Architecture, Interiors and Urban Design
612.375.0336 tel
612.342.2336 fax
www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201
Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
303 South Paterson Street, Suite 1
Madison, WI 53703
608.251.3600 tel

Structural Engineer, Technology and AV
IMEG Corp.
1550 Deming Way, Suite 200
Middleton, WI 53562
608.223.9600 tel

MEP Engineer
MEP Associates, LLC
850 Blue Gentian Road, Suite 175
Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
575 Minnehaha Ave West
St. Paul, MN 55103
651.254.1460 tel

Greenhouse Design
Rough Brothers, Inc.
5613 Vine Street
Cincinnati, OH 45217
513.242.5310 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin.
ARCHITECT SEAL

WISCONSIN
DANIEL JACK POLING
A-5994
MINNEAPOLIS, MN
ARCHITECT

Signature:
Print Name: Jack Poling
Date: JUNE 4, 2018 License No: A-5994

MARK	DATE	DESCRIPTION
	10.25.2017	SCHEMATIC DESIGN SUBMISSION
	12.06.2017	DD PRICING SET
	01.10.2018	DESIGN DEVELOPMENT SUBMISSION
	01.17.2018	LUDC SUBMISSION
	03.30.2018	70% CD PRICING ISSUE
	04.06.2018	PARKING LOT AND SITE PLAN SUBMISSION
	05.04.2018	90% CD SUBMISSION
	06.01.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE

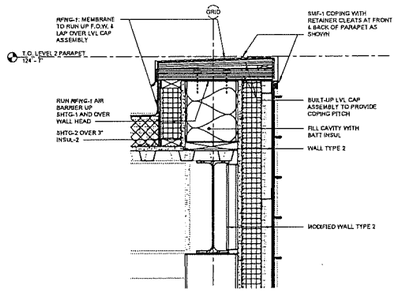
PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: MSR
CHECKED BY: MSR

Drawing 2017 Copyright Mortenson, Venturedale Architects, Inc.

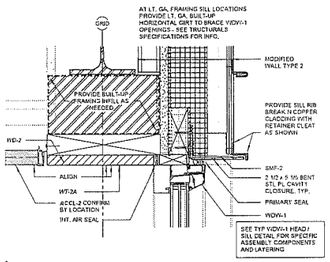
EXTERIOR ELEVATIONS

EXHIBIT F
A202

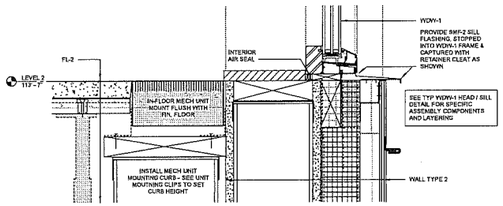
Drawing and Design Property of Mortenson, Venturedale Architects, Inc. 2018/06/04 3:47:17 PM P:\Projects\2017\2017016\Drawings\Arch\A202 Exterior Elevations.dwg



1 SECTION DETAIL - WALL TYPE 2 PARAPET
A351 1 1/2" = 1'-0"

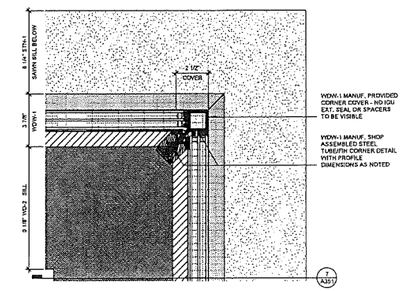


4 SECTION DETAIL - HEAD AT E. WALL ENTRY
A351 3" = 1'-0"

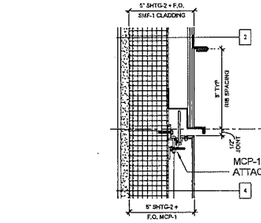


6 DETAIL SECTION - WDW-1 SILL AT FL-2
A351 3" = 1'-0"

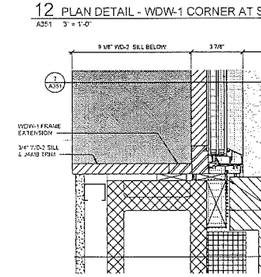
8 SECTION DETAIL - TOWER LOBBY TRASITION TO LVL 1 ROOF
A351 1 1/2" = 1'-0"



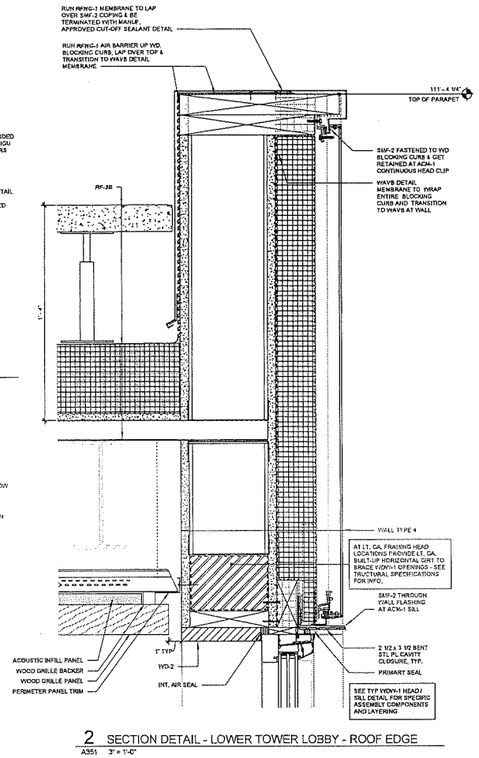
12 PLAN DETAIL - WDW-1 CORNER AT STAIR
A351 3" = 1'-0"



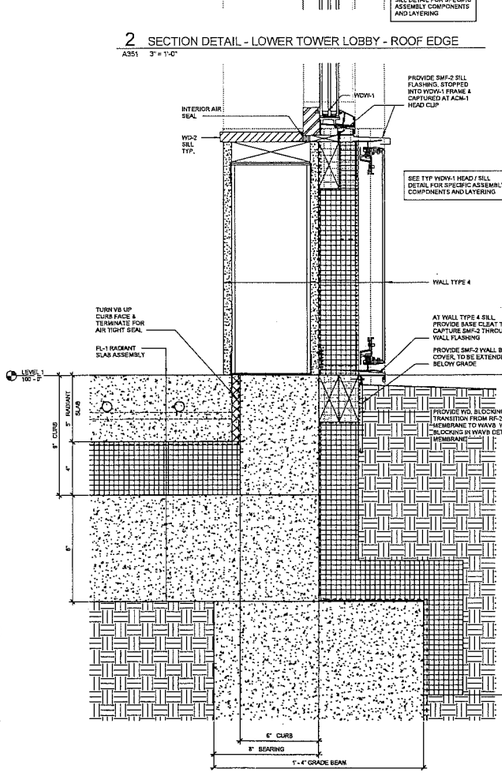
11 TYP WALL 2 + WALL 4 TRANSITION
A351 3" = 1'-0"



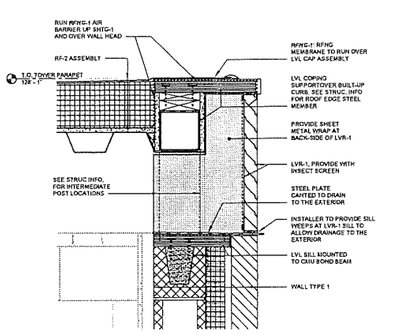
13 PLAN DETAIL - WDW-1 JAMB AT STAIR
A351 3" = 1'-0"



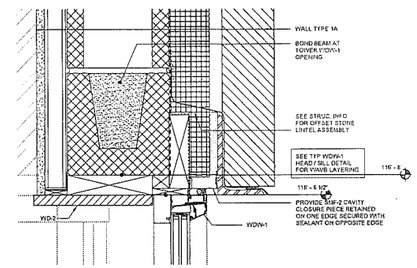
2 SECTION DETAIL - LOWER TOWER LOBBY - ROOF EDGE
A351 3" = 1'-0"



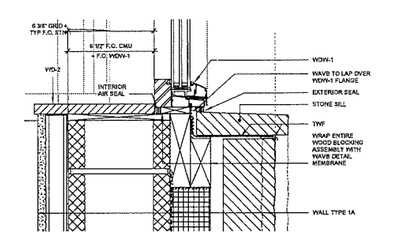
9 SECTION DETAIL - TOWER LOBBY WALL BASE
A351 3" = 1'-0"



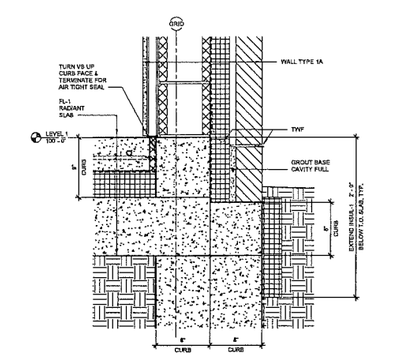
3 SECTION DETAIL - TOWER WALL AT LVR-1
A351 1 1/2" = 1'-0"



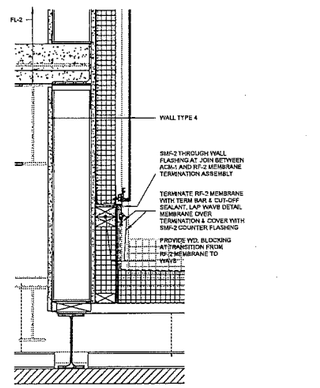
5 SECTION DETAIL - WDW-1 HEAD AT TOWER WALL
A351 3" = 1'-0"

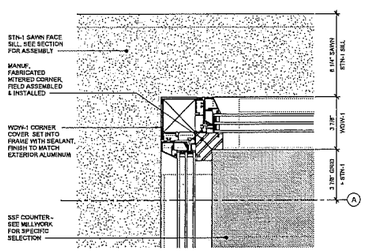


7 SECTION DETAIL - SILL AT TOWER WALL
A351 3" = 1'-0"



10 SECTION DETAIL - E.WALL AT MECH - BASE
A351 1 1/2" = 1'-0"





14 PLAN DETAIL - WDW-1 CORNER AT CLASSROOM 3
A351 3" = 1'-0"

MSR 710 South 2nd Street, 6th Floor Minneapolis, Minnesota 55401-2282
Architecture Interiors and Urban Design
ph 612 375 0396 tel
612 342 2014 fax
www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201
Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
303 South Paterson Street, Suite 1
Madison, WI 53703
608.251.3400 tel

Structural Engineer, Technology and A/V
IMEG Corp.
1800 Deming Way, Suite 200
Middleton, WI 53562
608.223.3600 tel

MEP Engineer
MEP Associates, LLC
650 Blue Gentian Road, Suite 175
Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
525 Aberdeen Ave West
St. Paul, MN 55107
651.251.1850 tel

Greenhouse Design
Rough Brothers, Inc.
5513 Vine Street
Cincinnati, OH 45217
513.242.0310 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin.
ARCHITECT SEAL

WISCONSIN
DANIEL JACK POLING
A-5994
MINNEAPOLIS, MN
ARCHITECT

Signature
Print Name: Jack Poling
Date: JUNE 4, 2018 License No.: A-5994

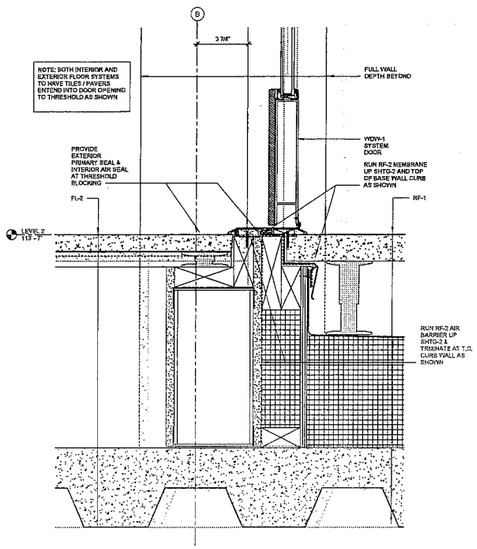
ISSUE		
MARK	DATE	DESCRIPTION
	09.29.2017	SCHEMATIC DESIGN SUBMISSION
	12.08.2017	CD PRICING SET
	01.15.2018	DESIGN DEVELOPMENT SUBMISSION
	01.17.2018	UDC SUBMISSION
	03.30.2018	100% CD PRICING ISSUE
	04.06.2018	PARKING LOT AND SITE PLAN SUBMISSION
	05.04.2018	100% CD SUBMISSION
	06.01.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE

PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: MSR CHECKED BY: MSR

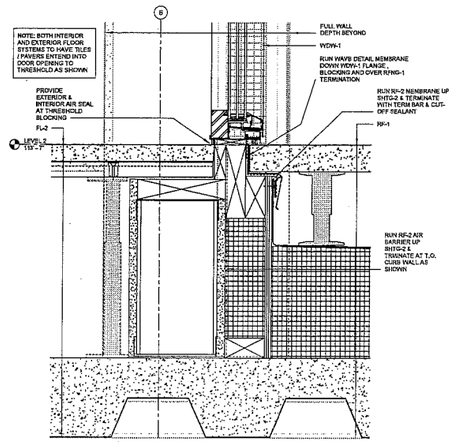
EXTERIOR DETAILS

EXHIBIT F
A351

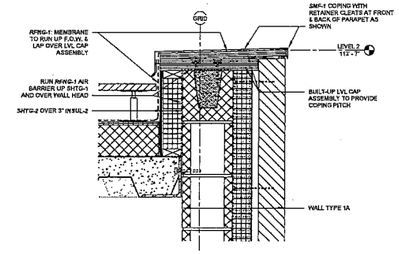
OPG/1/1MC



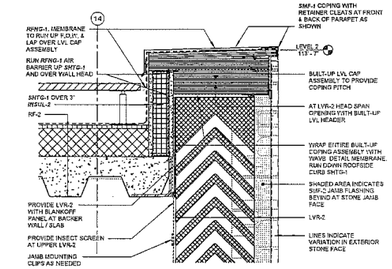
1 SECTION DETAIL - SILL AT E. WALL ENTRY
A352 3" = 1'-0"



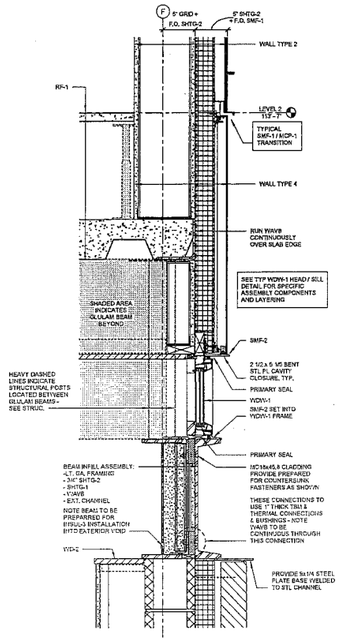
2 SECTION DETAIL - WDW-1 SILL AT N. WALL
A352 3" = 1'-0"



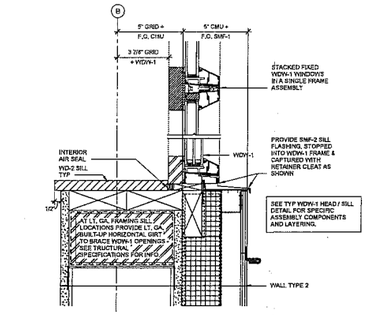
3 SECTION DETAIL - PARAPET AT E. MECHANICAL WALL
A352 1 1/2" = 1'-0"



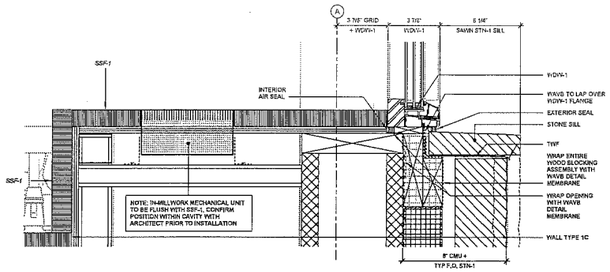
5 SECTION DETAIL - PARAPET AT LVR-2
A352 1 1/2" = 1'-0"



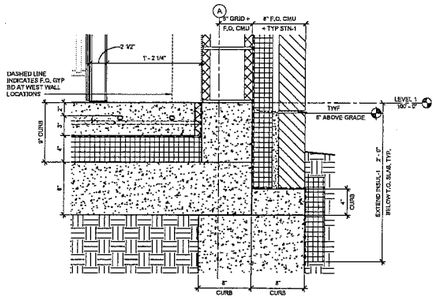
6 SECTION DETAIL - LVL1 TO LVL2 TRANSITION
A352 1 1/2" = 1'-0"



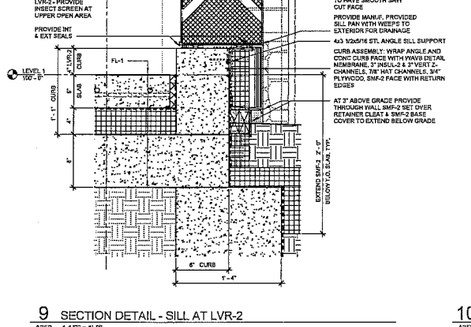
7 SECTION DETAIL - STACKED WDW-1 AT CLASSROOM
A352 3" = 1'-0"



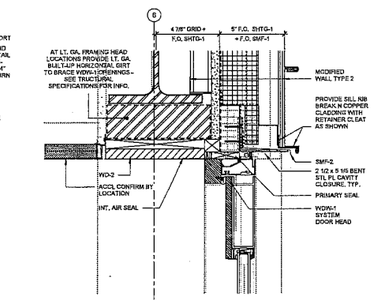
4 SECTION DETAIL - WDW-1 DEEP SILL / MECH CAVITY AT CLASSROOM
A352 3" = 1'-0"



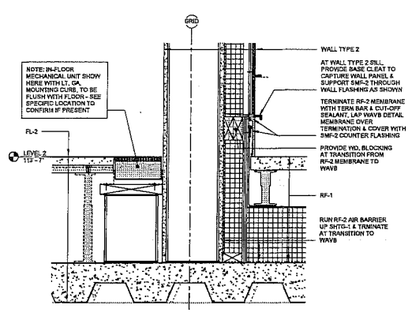
8 SECTION DETAIL - E. WALL - BASE
A352 1 1/2" = 1'-0"



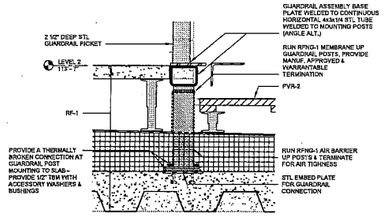
13 ROOF CONNECTION AT TYPICAL OVERHANG (1992)
A352 1 1/2" = 1'-0"



10 SECTION DETAIL - DOOR HEAD
A352 3" = 1'-0"



11 SECTION DETAIL - LEVEL 2 - WALL TYPE 2 BASE
A352 1 1/2" = 1'-0"



12 SECTION DETAIL - RAILING EDGE AT EAST ROOF DECK
A352 1 1/2" = 1'-0"

9 SECTION DETAIL - SILL AT LVR-2
A352 1 1/2" = 1'-0"

MSR 710 South 2nd Street, 8th Floor Minneapolis, Minnesota 55401-2202
Architecture, Interiors and Urban Design. 612 375 0336 tel 612 342 2216 fax www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201 Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
303 South Paterson Street, Suite 1 Madison, WI 53703
608.251.3600 tel

Structural Engineer, Technology and A/V
IMEG Corp.
1600 Deming Way, Suite 200 Middleton, WI 53562
608.223.3600 tel

MEP Engineer
MEP Associates, LLC
659 Blue Gentian Road, Suite 175 Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
575 Roselawn Ave W Unit St. Paul, MN 55107
651.251.1550 tel

Greenhouse Design
Rough Brothers, Inc.
5813 Vine Street Cincinnati, OH 45217
513.242.0310 tel

Olbrich Botanical Gardens
Expansion Phase 1
BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin.
ARCHITECT SEAL

WISCONSIN DANIEL JACK POLING A-3094 MINNEAPOLIS, MN ARCHITECT

Signature:
Print Name: Jack Poling
Date: JUNE 4, 2018 License No: A-3094

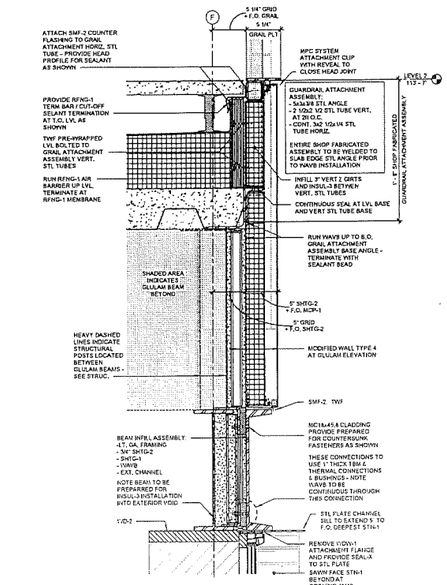
MARK	DATE	DESCRIPTION
	09.29.2017	SCHEMATIC DESIGN SUBMISSION
	12.06.2017	DD PRICING SET
	01.19.2018	DESIGN DEVELOPMENT SUBMISSION
	01.17.2018	NOC SUBMISSION
	03.30.2018	70% CD PRICING ISSUE
	04.06.2018	PARKING LOT AND SITE PLAN SUBMISSION
	05.04.2018	100% CD SUBMISSION
	06.01.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE

PROJECT NO: 2017016
PROJECT PHASE: BID DOCUMENTS
DRAWN BY: MSR CHECKED BY: MSR

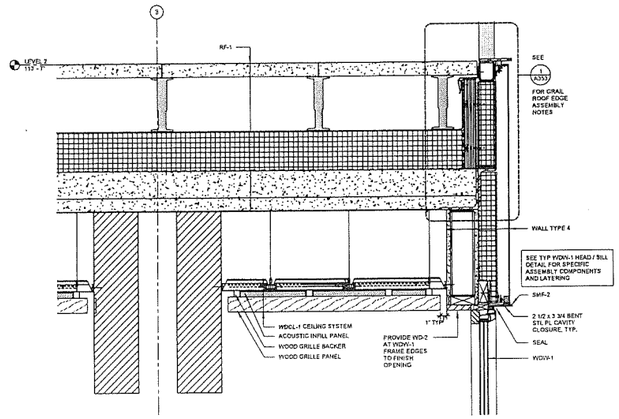
EXTERIOR DETAILS

EXHIBIT F
A352

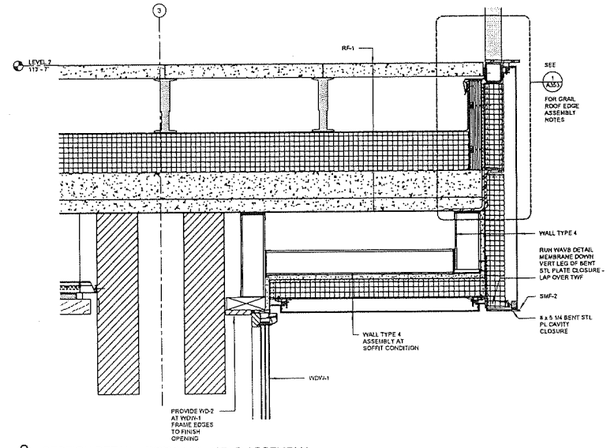
6/26/18 MMC



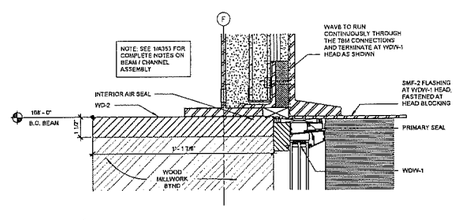
1 SECTION DETAIL - LVL1 TO LVL 2 TERRACE TRANSITION
A353 1 1/2" = 1'-0"



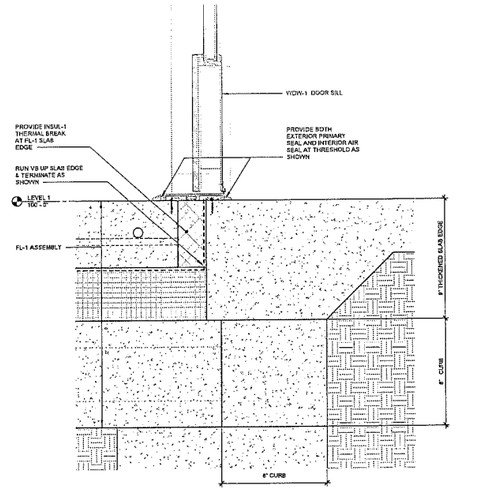
2 SECTION DETAIL - ROOF EDGE AT OUTDOOR CLASSROOM
A353 1 1/2" = 1'-0"



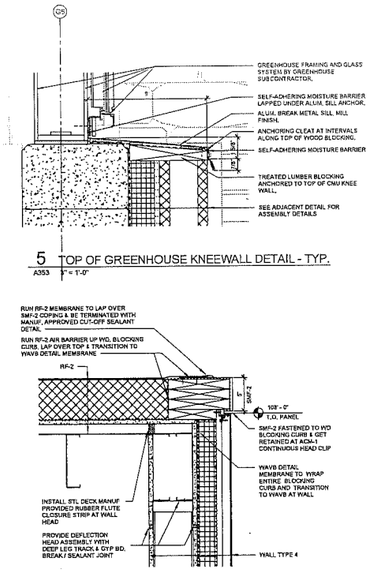
3 SECTION DETAIL - DOOR 110 - HEAD ASSEMBLY
A353 1 1/2" = 1'-0"



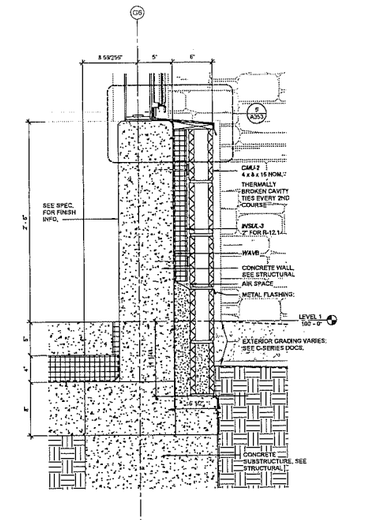
4 SECTION DETAIL - WDW-1 HEAD AT E. WALL BEAM
A353 3" = 1'-0"



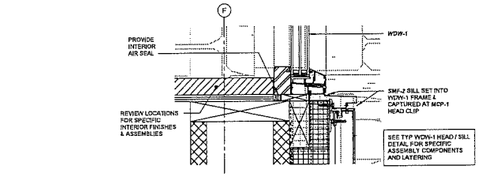
7 SECTION DETAIL - WDW-1 SYSTEM DOOR SILL AT OUTDOOR CLASSROOM
A353 3" = 1'-0"



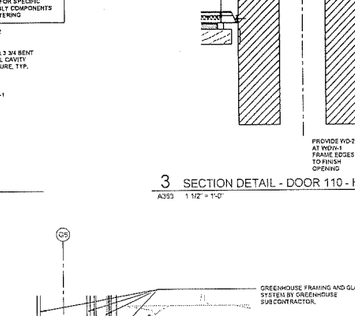
5 TOP OF GREENHOUSE KNEEWALL DETAIL - TYP.
A353 1" = 1'-0"



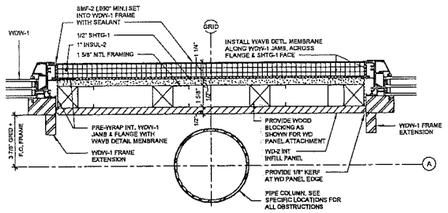
9 TYPICAL EXTERIOR KNEEWALL DETAIL
A353 1 1/2" = 1'-0"



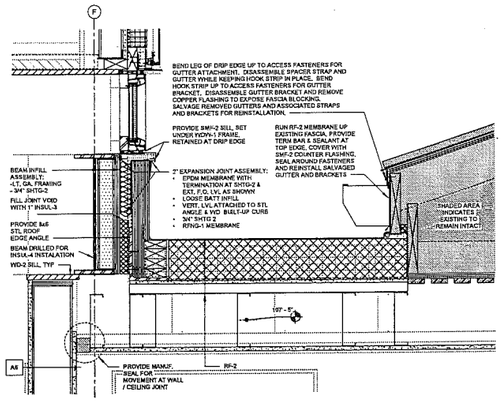
6 DETAIL SECTION - W. WALL WDW-1 / WALL TYPE 4B - SILL
A353 3" = 1'-0"



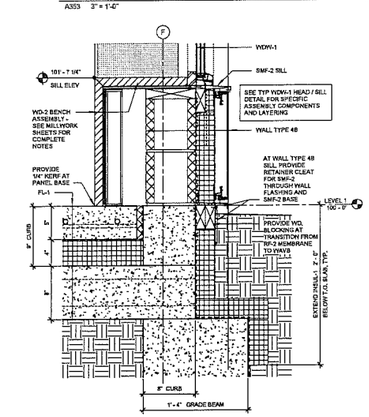
12 SECTION DETAIL - N. LINK WALL - BASE
A353 1 1/2" = 1'-0"



13 PLAN DETAIL - CLASSROOM - INFILL PANEL AT WDW-1
A353 3" = 1'-0"



11 SECTION DETAIL - ROOF AT LINK TO EDUCATION BLDG
A353 1 1/2" = 1'-0"



10 SECTION DETAIL - W. WALL - BASE
A353 1 1/2" = 1'-0"

MSR
710 South 2nd Street, 6th Floor
Minneapolis, Minnesota 55401-2282
Architecture tel 2 373 0936 tel
Interiors and fax 612 342 2216 fax
Urban Design www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201
Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
303 South Paterson Street, Suite 1
Madison, WI 53703
608.251.3600 tel

Structural Engineer, Technology and A/V
IMEG Corp.
1600 Deming Way, Suite 200
Middleton, WI 53562
608.223.3600 tel

MEP Engineer
MEP Associates, LLC
605 Blue Garden Road, Suite 175
Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
525 Minnehaha Ave W Ave
St. Paul, MN 55103
651.251.1650 tel

Greenhouse Design
Rough Brothers, Inc.
5613 Vine Street
Cincinnati, OH 45217
513.242.0310 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin.
ARCHITECT SEAL

WISCONSIN
DANIEL JACK POLING
A-5984
MINNEAPOLIS, MN
ARCHITECT

Signature:
Print Name: Jack Poling
Date: JUNE 4, 2018 License No: A-5984

MARK	DATE	DESCRIPTION
	09.29.2017	SCHEMATIC DESIGN SUBMISSION
	12.06.2017	DD PRICING SET
	01.19.2018	DESIGN DEVELOPMENT SUBMISSION
	01.17.2018	UDC SUBMISSION
	03.30.2018	70% CD PRICING ISSUE
	04.16.2018	PARKING LOT AND SITE PLAN SUBMISSION
	05.04.2018	90% CD SUBMISSION
	06.01.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE

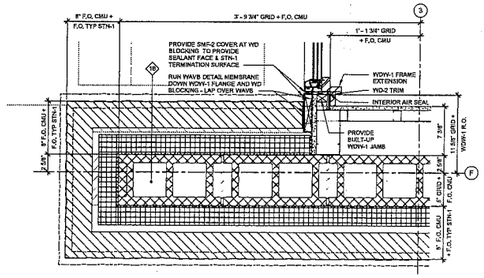
PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: MSR CHECKED BY: MSR

EXTERIOR DETAILS

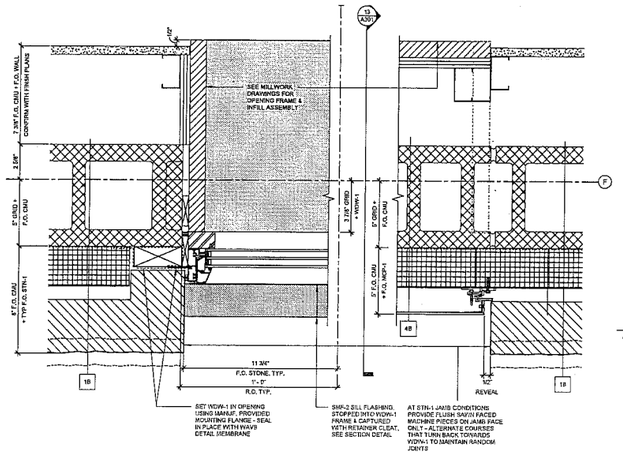
EXHIBIT F
A353

ORIGINAL

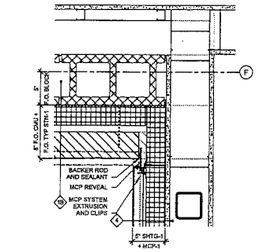
Some CAD drawings may have been modified for bidding purposes. ERRORS OR DELETIONS F:\Projects\2017\2017016.pln



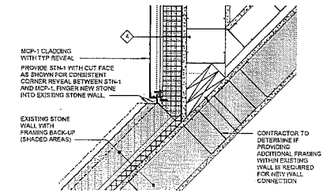
7 PLAN DETAIL - STONE JAMB AT DOOR 110
A354 1 1/2" = 1'-0"



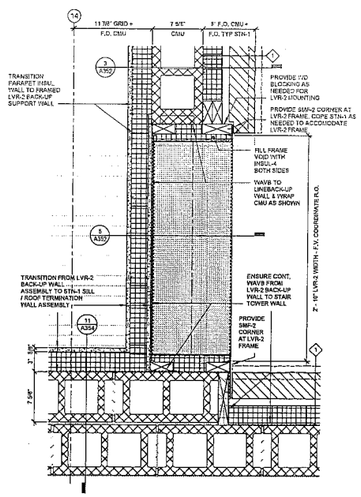
5 PLAN DETAIL - W. WINDOW & WALL TYPE 1B JAMB
A354 3" = 1'-0"



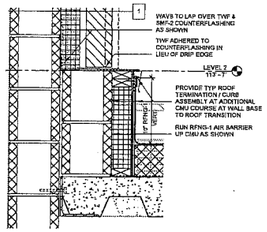
4 PLAN DETAIL - WALL TYPE 1C / 4A CORNER
A354 1 1/2" = 1'-0"



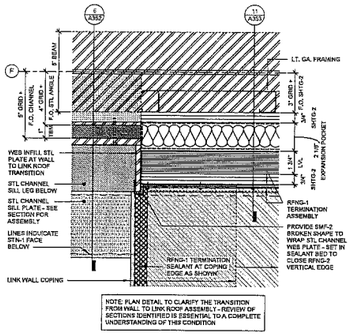
9 PLAN DETAIL - WALL TYPE 1 - WALL TYPE 4 ANGLED TRANSITION
A354 1 1/2" = 1'-0"



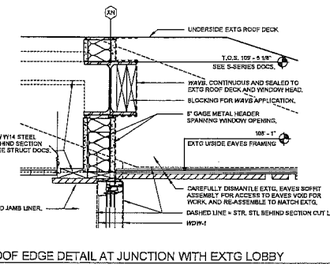
6 PLAN DETAIL - LVR-2 JAMB AT ROOF
A354 1 1/2" = 1'-0"



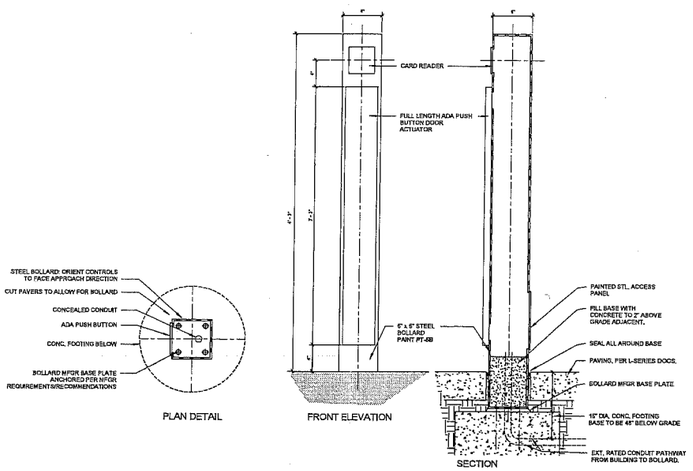
11 SECTION DETAIL - WALL TYPE 1 SILL AT MECH ROOM ROOF
A354 1 1/2" = 1'-0"



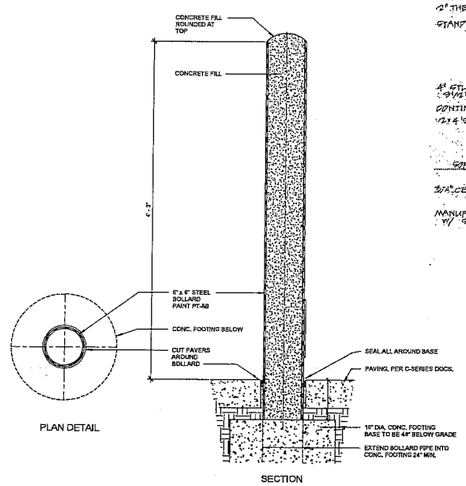
8 PLAN DETAIL - W. WALL CHANNEL TO LINK ROOF TRANSITION
A354 3" = 1'-0"



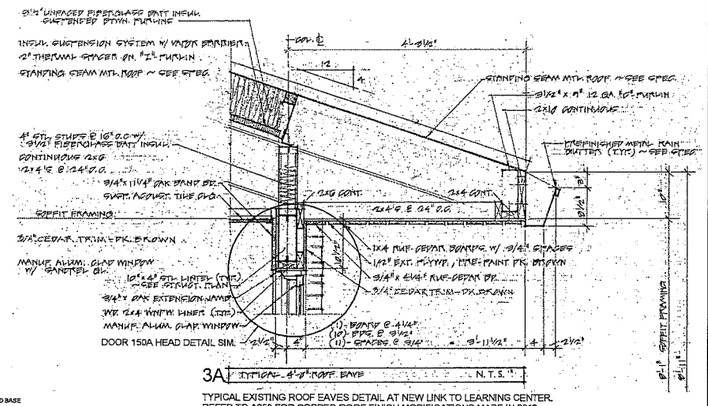
3 ROOF EDGE DETAIL AT JUNCTION WITH EXTG LOBBY
A354 1 1/2" = 1'-0"



1 EXTERIOR BOLLARD FOR ADA OPERATOR / CARD READER
A354 1 1/2" = 1'-0"



2 EXTERIOR STEEL BOLLARD
A354 1 1/2" = 1'-0"



TYPICAL EXISTING ROOF EAVES DETAIL AT NEW LINK TO LEARNING CENTER. REFER TO A358 FOR COPPER ROOF FINISH MODIFICATIONS MADE IN 2012.

MSR 710 South 2nd Street, 6th Floor Minneapolis, Minnesota 55401-2282
Architecture, Interiors and Urban Design 612.375.0336 tel 612.342.2216 fax www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201 Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
333 South Paterson Street, Suite 1 Madison, WI 53703
608.251.3600 tel

Structural Engineer, Technology and AV
IMEG Corp.
1500 Deming Way, Suite 200 Middleton, WI 53562
608.223.9600 tel

MEP Engineer
MEP Associates, LLC
450 Blue Gentian Road, Suite 175 Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
575 Mounteria Ave West St. Paul, MN 55103
651.251.1660 tel

Greenhouse Design
Rough Brothers, Inc.
5613 Vine Street Cincinnati, OH 45217
513.242.6310 tel

Olbrich Botanical Gardens
Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin.
ARCHITECT SEAL

WISCONSIN DANIEL JACK POLING A-8584 MINNEAPOLIS, MN ARCHITECT

Signature:
Print Name: Jack Poling
Date: 6/12/2018 License No.: A-8584

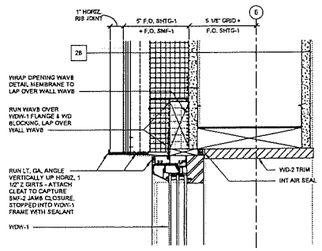
Mark	Date	Description
	09.29.2017	SCHEMATIC DESIGN SUBMISSION
	12.29.2017	DD PRICING SET
	01.19.2018	DESIGN DEVELOPMENT SUBMISSION
	03.12.2018	LUDC SUBMISSION
	03.30.2018	70% CD PRICING ISSUE
	04.06.2018	PARKING LOT AND SITE PLAN SUBMISSION
	05.04.2018	90% CD SUBMISSION
	06.01.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE

PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: MSR CHECKED BY: MSR

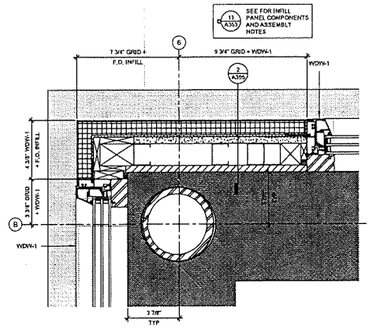
EXTERIOR DETAILS

EXHIBIT F
A354

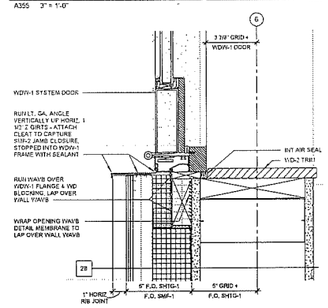
ORIGINAL



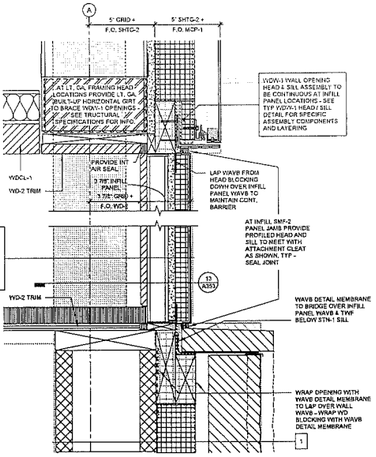
8 PLAN DETAIL - WDW-1 JAMB @ WALL TYPE 2
A355 3" = 1'-0"



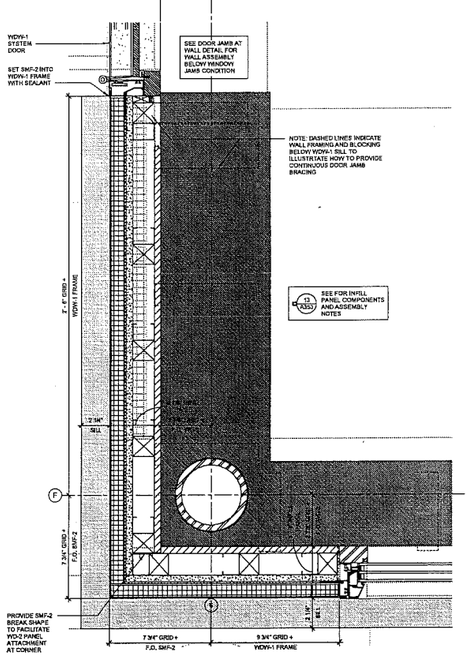
5 PLAN DETAIL - LEVEL 2 NE CORNER WDW-1 - INFILL PANEL
A355 3" = 1'-0"



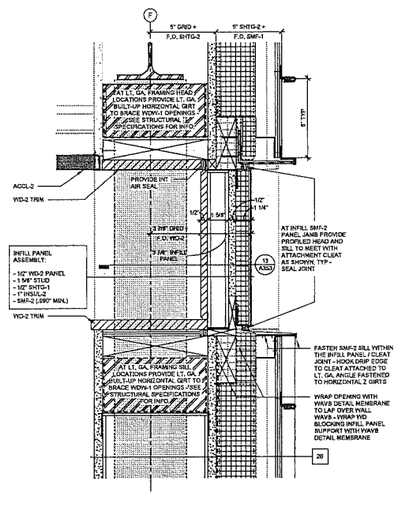
7 PLAN DETAIL - WDW-1 DOOR JAMB @ WALL TYPE 2
A355 3" = 1'-0"



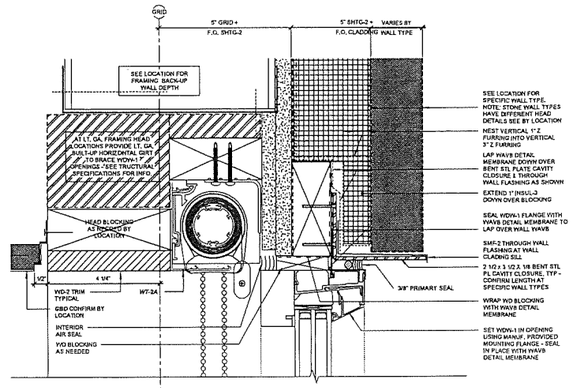
6 SECTION DETAIL - WDW-1 INFIL PANEL AT COLUMN
A355 3" = 1'-0"



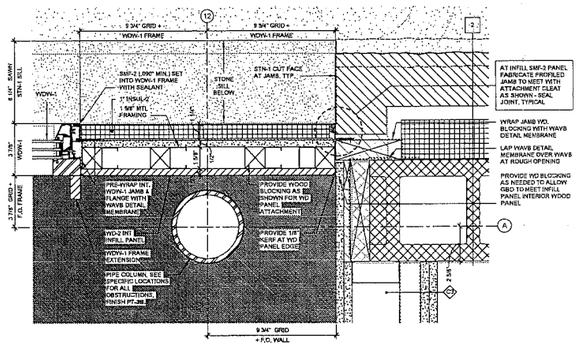
1 PLAN DETAIL - LEVEL 2 W. WALL WDW-1 CLERESTORY JAMB
A355 3" = 1'-0"



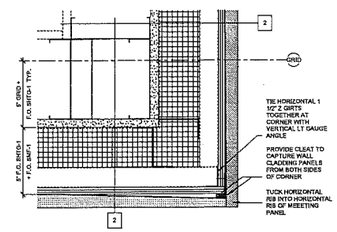
2 SECTION DETAIL - WDW-1 INFILL PANEL AT WALL TYPE 2
A355 3" = 1'-0"



9 SECTION DETAIL - TYP WDW-1 HEAD & SILL ASSEMBLIES
A356 6" = 1'-0"



3 PLAN DETAIL - WDW-1 INFILL PANEL TO WALL TYPE 1 CORNER
A355 3" = 1'-0"



4 PLAN DETAIL - WALL TYPE 2 CORNER
A355 3" = 1'-0"

MSR 710 South 2nd Street, 6th Floor Minneapolis, Minnesota 55401-2282
Architecture, Interiors and Urban Design
tel 3 375 0536 tel
612 342 2216 fax
www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201
Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
303 South Paterson Street, Suite 1
Madison, WI 53703
608.251.3600 tel

Structural Engineer, Technology and A/V
IMEG Corp.
1800 Deming Way, Suite 200
Middleton, WI 53562
608.223.3600 tel

MEP Engineer
MEP Associates, LLC
860 Blue Gentian Road, Suite 175
Eagan, MN 55121
651.379.5120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
575 Minnehaha Ave West
St. Paul, MN 55103
651.251.1850 tel

Greenhouse Design
Rough Brothers, Inc.
5513 Vine Street
Cincinnati, OH 45217
513.242.0310 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin.
ARCHITECT SEAL

WISCONSIN DANIEL JACK POLING A-6084 MINNEAPOLIS, MN ARCHITECT

Signature:
Print Name: Jack Poling
Date: JUNE 4, 2018 License No.: A-6084

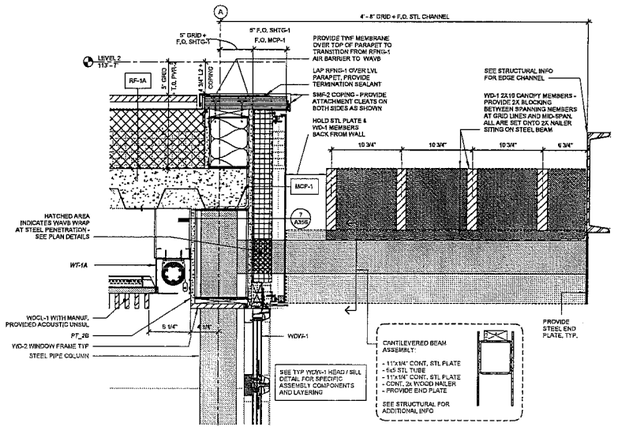
ISSUE		
MARK	DATE	DESCRIPTION
	09.29.2017	SCHEMATIC DESIGN SUBMISSION
	12.08.2017	DD PRICING SET
	01.19.2018	DESIGN DEVELOPMENT SUBMISSION
	03.17.2018	UDC SUBMISSION
	03.30.2018	70% CD PRICING ISSUE
	04.06.2018	PARKING LOT AND SITE PLAN SUBMISSION
	05.04.2018	90% CD SUBMISSION
	05.21.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE

PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: MSR CHECKED BY: MSR

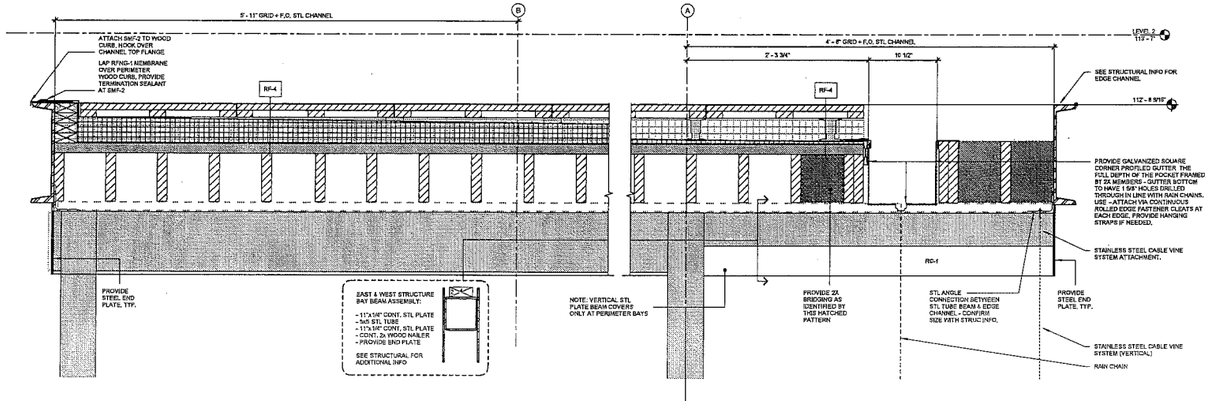
EXTERIOR DETAILS

EXHIBIT F
A355

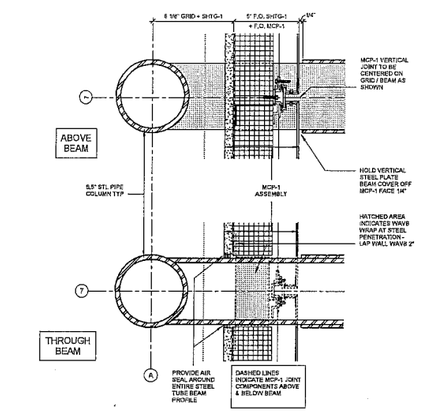
DESIGNAC



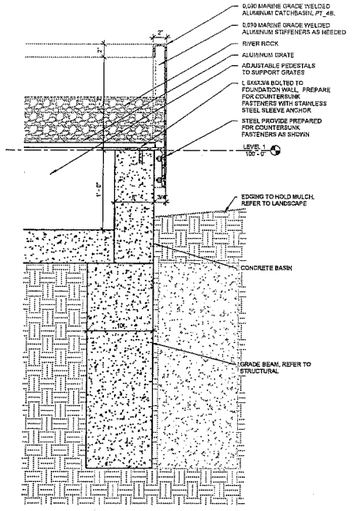
4 SECTION DETAIL - OVERHANG AT EAST CLASSROOM WALL
A356 1 1/2" = 1'-0"



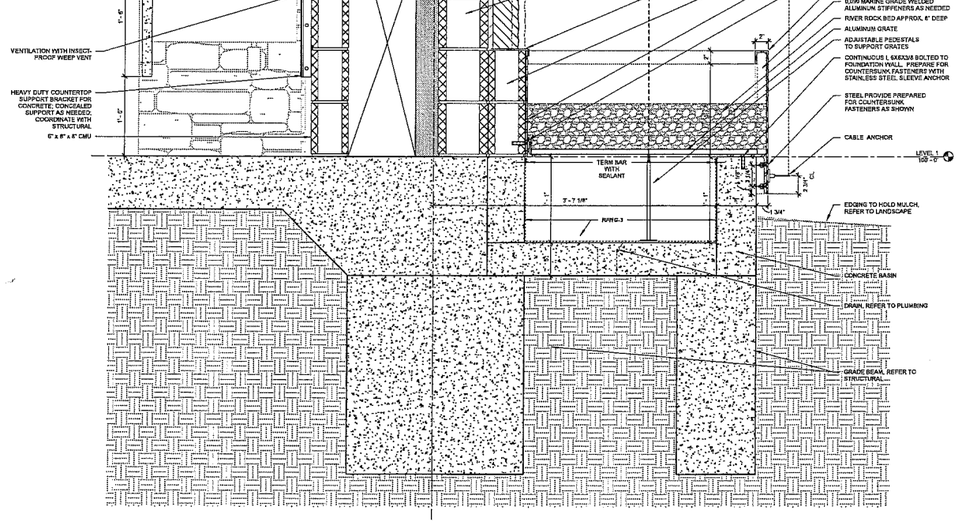
1 OUTDOOR CLASSROOM EAST ROOF EDGE
A356 1 1/2" = 1'-0"



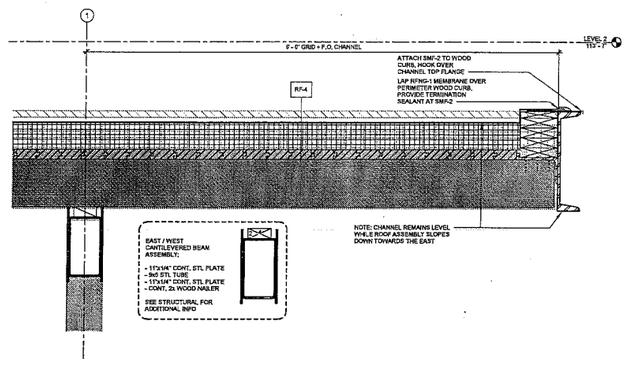
7 BEAM PENETRATION AT E WALL CANOPY
A356 3" = 1'-0"



5 SECTION DETAIL - WATER CATCHMENT N/S WALL
A356 1 1/2" = 1'-0"



2 SECTION DETAIL - OUTDOOR CLASSROOM AT WATER CATCHMENT FEATURE
A356 1 1/2" = 1'-0"



3 OUTDOOR CLASSROOM NORTH ROOF EDGE
A356 1 1/2" = 1'-0"

MSR
710 South 2nd Street, 6th Floor
Minneapolis, Minnesota 55401-2282
Architecture, Interiors and Urban Design
612 375 0336 tel
612 342 2316 fax
www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201
Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
303 South Paterson Street, Suite 1
Madison, WI 53703
608.251.3600 tel

Structural Engineer, Technology and AV
IMEG Corp.
1600 Deming Way, Suite 200
Madison, WI 53562
608.223.9600 tel

MEP Engineer
MEP Associates, LLC
450 Blue Gentian Road, Suite 175
Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
525 Minnesota Ave West
St. Paul, MN 55103
651.251.1810 tel

Greenhouse Design
Rough Brothers, Inc.
5513 Vine Street
Cincinnati, OH 45217
513.242.0310 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin.
ARCHITECT SEAL

WISCONSIN
DANIEL JACK POLING
A-5094
MINNEAPOLIS, MN
ARCHITECT

Signature: _____
Print Name: Jack Poling
Date: JUNE 4, 2018 License No.: A-5094

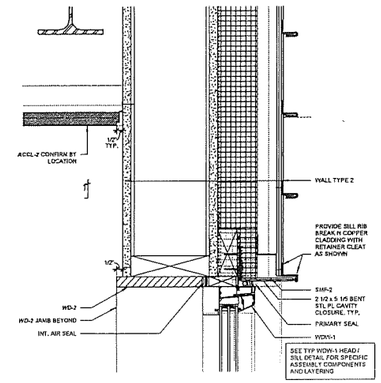
MARK	DATE	DESCRIPTION
	09.25.2017	SCHEMATIC DESIGN SUBMISSION
	12.08.2017	DD PRICING SET
	01.12.2018	DESIGN DEVELOPMENT SUBMISSION
	01.17.2018	LDC SUBMISSION
	03.30.2018	100% CD PRICING SET
	04.02.2018	PARKING LOT AND SITE PLAN SUBMISSION
	05.04.2018	50% CD SUBMISSION
	06.01.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE

PROJECT NO.: 2017016
PROJECT PHASE: BID DOCUMENTS
DRAWN BY: MSR
CHECKED BY: MSR

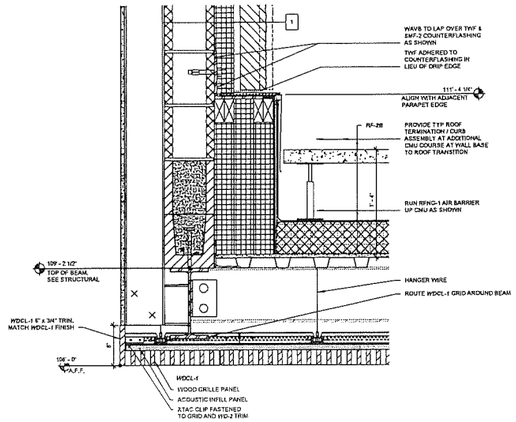
EXTERIOR DETAILS

EXHIBIT F
A356

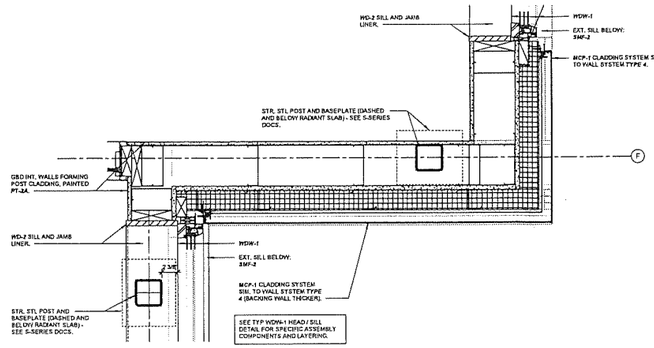
02.16.18



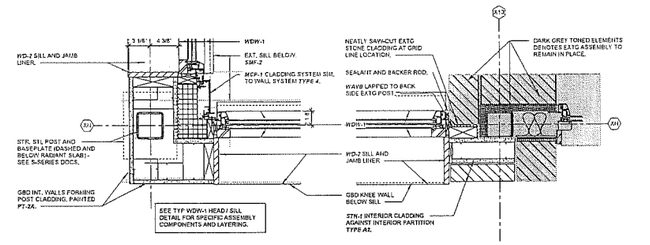
1 SECTION DETAIL - SOUTH WINDOW HEAD
A357 3" = 1'-0"



2 SECTION DETAIL - WOOD CEILING AND ROOF DRAIN AT BOTTOM OF STAIR
A357 1 1/2" = 1'-0"

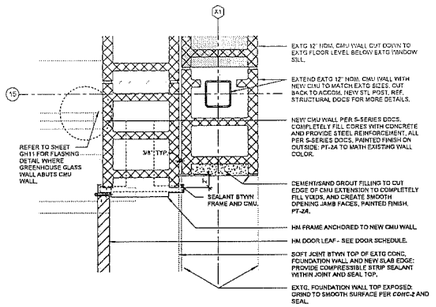


9 PLAN DETAIL - SOUTH CORRIDOR WINDOW JAMB AND LINK ENTRY
A357 1 1/2" = 1'-0"

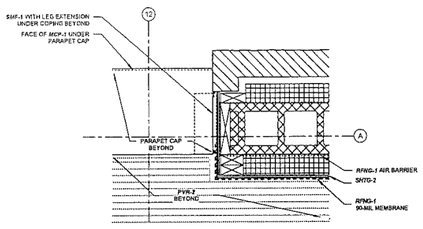


10 PLAN DETAIL - LINK CORNER JAMB
A357 1 1/2" = 1'-0"

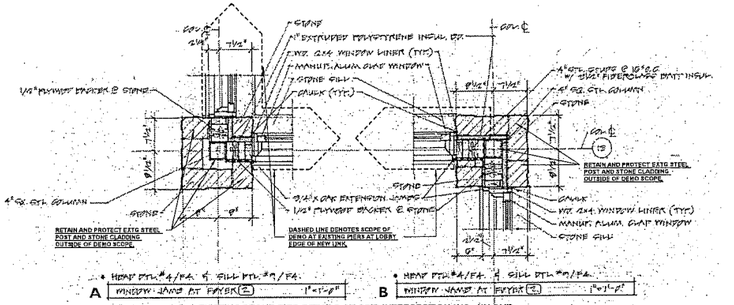
11 PLAN DETAIL - LINK JUNCTION AT PIER X13-XN
A357 1 1/2" = 1'-0"



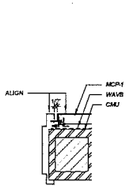
14 HEADHOUSE DOOR JAMB TO NEW GREENHOUSE
A357 1 1/2" = 1'-0"



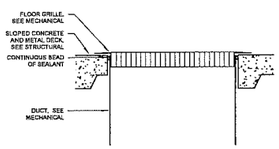
5 PLAN DETAIL - PARAPET AT GRID 12
A357 1 1/2" = 1'-0"



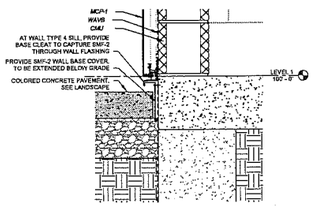
EXISTING LOBBY PIER DETAILS (FROM 1990s RECORD SET)



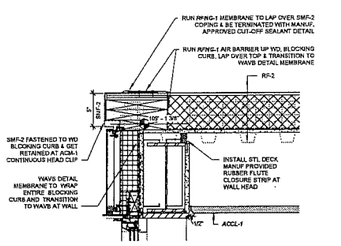
4 PLAN DETAIL - OUTDOOR STORAGE DOOR JAMB
A357 1 1/2" = 1'-0"



15 SECTION DETAIL - DUCT SEAL TO PLENUM FLOOR
A357 1 1/2" = 1'-0"



3 SECTION DETAIL - EXTERIOR STAIR AND STORAGE W.WALL BASE
A357 1 1/2" = 1'-0"



6 SECTION DETAIL - LINK WINDOW HEAD
A357 1 1/2" = 1'-0"

MSR 710 South 2nd Street 6th Floor Minneapolis, Minnesota 55401-2282
Architecture tel 375 03 ml
Interiors and Land Design fax 612 342 2216
www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201
Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
302 South Paterson Street, Suite 1
Madison, WI 53703
608.251.3600 tel

Structural Engineer, Technology and A/V
IMEG Corp.
1600 Demeq Way, Suite 200
Madison, WI 53562
608.223.9600 tel

MEP Engineer
MEP Associates, LLC
820 Bde Maka Ska, Suite 175
Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
575 Aldrich Ave North
St. Paul, MN 55405
651.251.1880 tel

Geotechnical Design
Rough Brothers, Inc.
5619 Vine Street
Cincinnati, OH 45217
513.242.6310 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin.
ARCHITECT SEAL

WISCONSIN DANIEL JACK POLING A-5094 MINNEAPOLIS, MN ARCHITECT

Signature:
Print Name: Jack Poling
Date: JUNE 4, 2018 License No.: A-5094

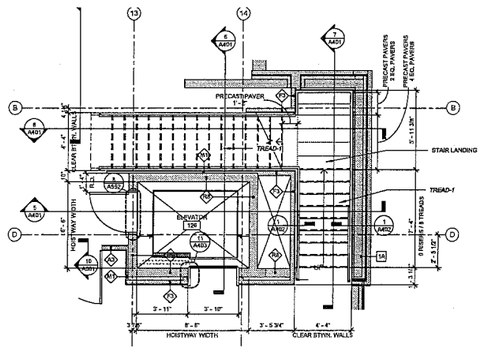
MARK	DATE	DESCRIPTION
	10.25.2017	SCHEMATIC DESIGN SUBMISSION
	12.08.2017	CD PRICING SET
	01.10.2018	DESIGN DEVELOPMENT SUBMISSION
	01.17.2018	HDC SUBMISSION
	03.30.2018	100% CD PRICING ISSUE
	04.06.2018	PARKING LOT AND SITE PLAN SUBMISSION
	05.04.2018	100% CD SUBMISSION
	06.01.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE

PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: MSR CHECKED BY: MSR

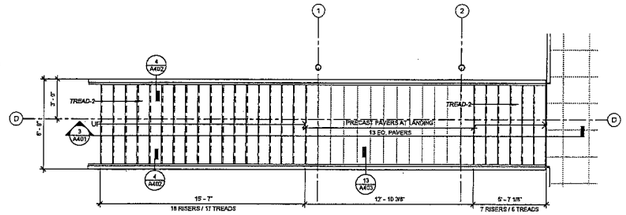
EXTERIOR DETAILS

EXHIBIT F
A357

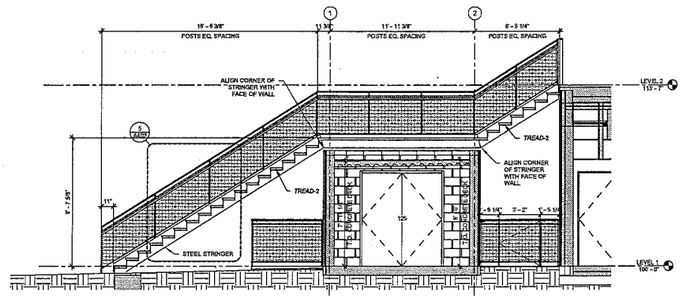
Drawing A357 Copyright Mead & Hunt, Inc. 2018 C:\Projects\8162\CAD\Arch\A357.dwg 6/4/2018 2:54:47 PM



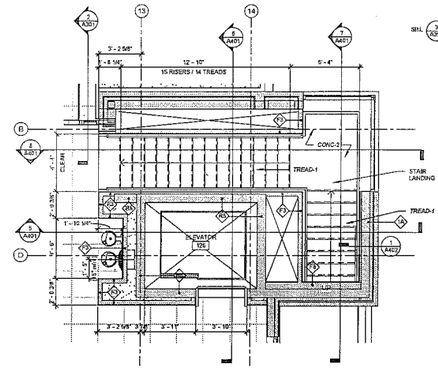
1 STAIR MS-1 PLAN LEVEL 1
A401 1/4" = 1'-0"



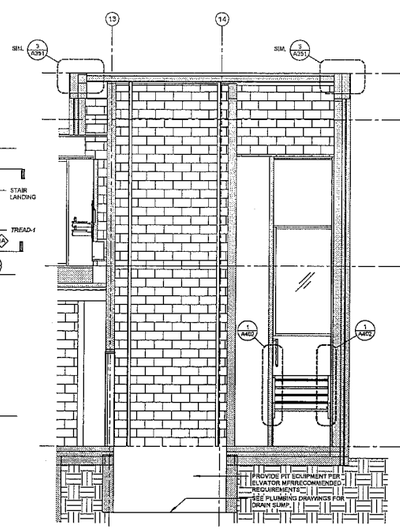
2 STAIR MS-2 PLAN LEVEL 1
A401 1/4" = 1'-0"



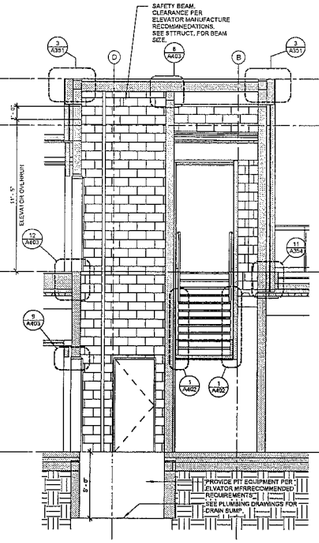
3 EXTERIOR STAIR SECTION N-S
A401 1/4" = 1'-0"



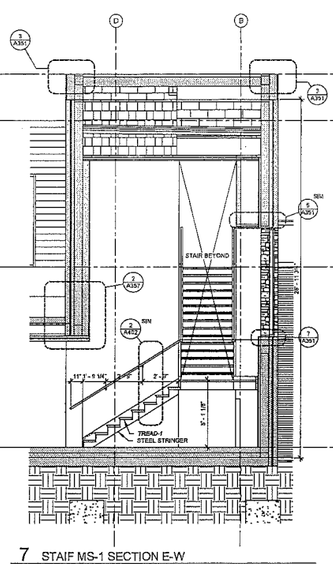
4 STAIR MS-1 PLAN LEVEL 2
A401 1/4" = 1'-0"



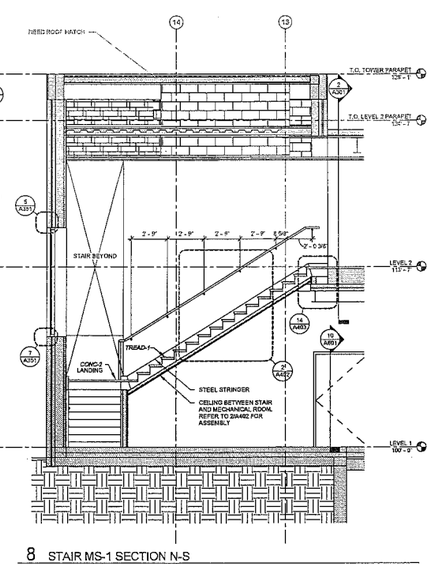
5 STAIR MS-1 AND ELEVATOR SHAFT SECTION N-S
A401 1/4" = 1'-0"



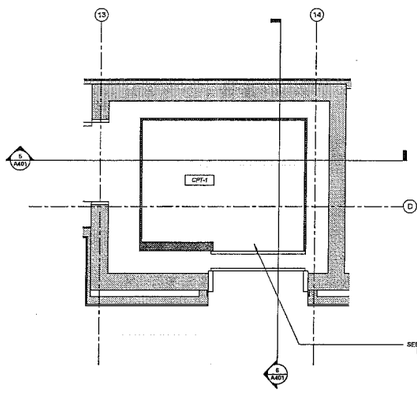
6 STAIR MS-1 AND ELEVATOR SHAFT SECTION E-W
A401 1/4" = 1'-0"



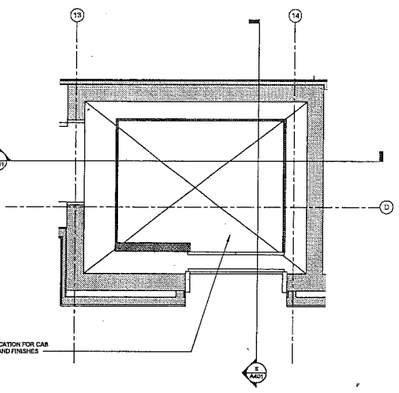
7 STAIF MS-1 SECTION E-W
A401 1/4" = 1'-0"



8 STAIR MS-1 SECTION N-S
A401 1/4" = 1'-0"



10 ELVATOR CAB FLOOR PLAN
A401 1/2" = 1'-0"



9 ELVATOR CAB REFLECTED CEILING PLAN
A401 1/2" = 1'-0"

MSR 710 South 2nd Street, 6th Floor Minneapolis, Minnesota 55401-2282
Architecture 612.375.0536 tel
Interiors and 612.342.2314 fax
Urban Design www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201
Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
323 South Paterson Street, Suite 1
Madison, WI 53703
608.251.3600 tel

Structural Engineer, Technology and AV
IMEG Corp.
1500 Deming Way, Suite 200
Middleton, WI 53562
608.223.9600 tel

MEP Engineer
MEP Associates, LLC
660 Blue Gentian Road, Suite 175
Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
575 Minnesota Ave West
St. Paul, MN 55103
651.251.1882 tel

Greenhouse Design
Rough Brothers, Inc.
5613 Vine Street
Cincinnati, OH 45217
513.242.6910 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin. ARCHITECT SEAL

WISCONSIN DANIEL JACK POLING A-8994 MINNEAPOLIS, MN ARCHITECT

Signature:
Print Name: Jack Poling
Date: JUNE 4, 2018 License No.: A-8994

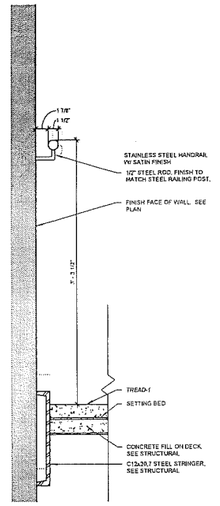
MARK	DATE	DESCRIPTION
	09.29.2017	SCHEMATIC DESIGN SUBMISSION
	12.08.2017	DD PRICING SET
	01.19.2018	DESIGN DEVELOPMENT SUBMISSION
	03.17.2018	UDC SUBMISSION
	03.30.2018	70% CD PRICING ISSUE
	04.06.2018	PARKING LOT AND SITE PLAN SUBMISSION
	05.04.2018	100% CD SUBMISSION
	06.01.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE

PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: MSR CHECKED BY: MSR

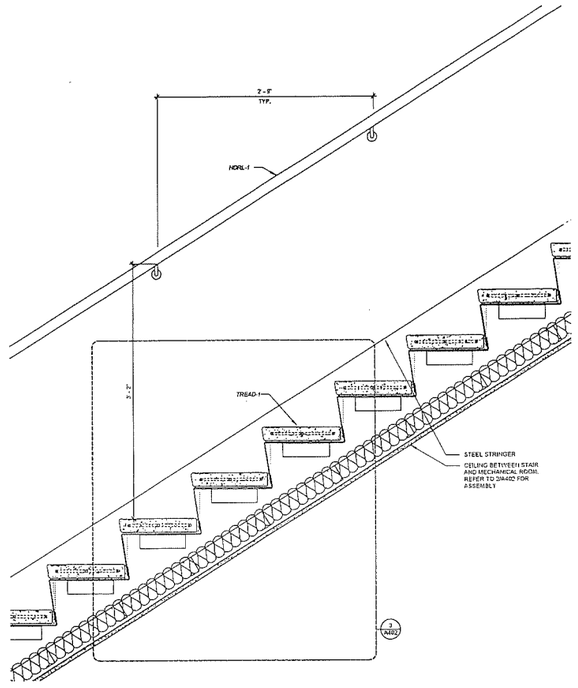
VERTICAL CIRCULATION

EXHIBIT F
A401

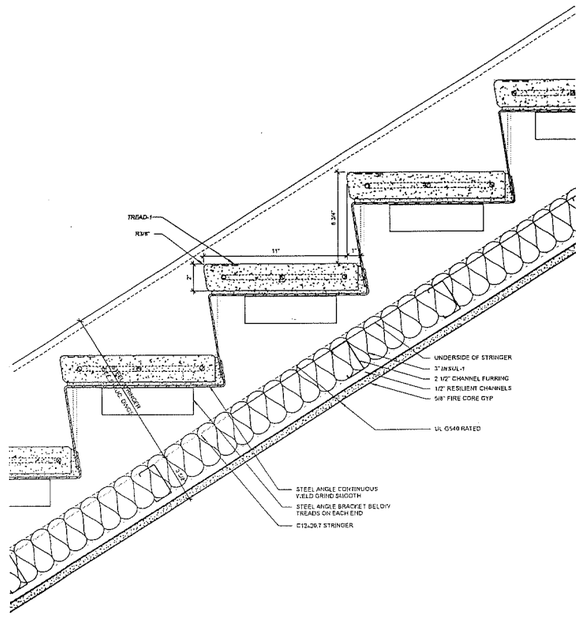
DRAWING



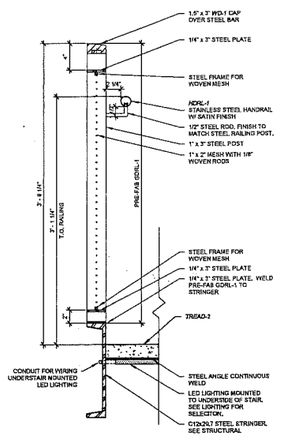
1 STAIR RAILING SECTION @ HDRL-1
A402 1 1/2" = 1'-0"



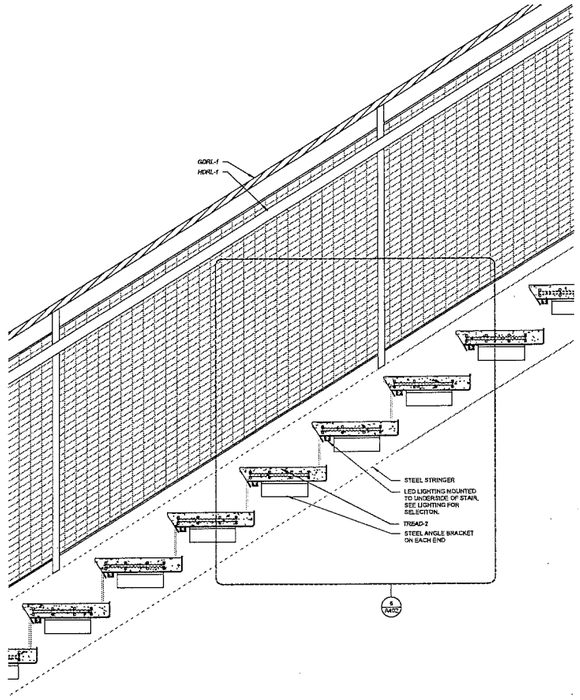
2 STAIR RAILING SECTION @ MS-1
A402 1 1/2" = 1'-0"



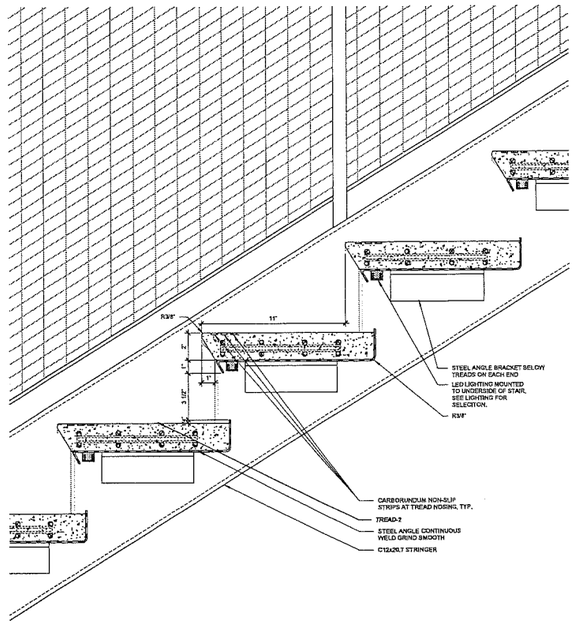
3 STAIR TREAD SECTION DETAIL @ MS-1
A402 3" = 1'-0"



4 STAIR RAILING SECTION @ GDRL-1
A402 1 1/2" = 1'-0"



5 STAIR TREAD SECTION @ MS-2
A402 1 1/2" = 1'-0"



6 STAIR STREAD SECTION DETAIL @ MS-2
A402 3" = 1'-0"

MSR 310 South 2nd Street 8th Floor Minneapolis, Minnesota 55401-2282
Architecture 612.375.0936 tel
Interiors and 612.342.2214 fax
Urban Design www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201
Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
323 South Paterson Street, Suite 1
Madison, WI 53703
608.251.3400 tel

Structural Engineer, Technology and A/V
IMEG Corp.
1650 Deming Way, Suite 200
Middleton, WI 53562
608.223.9600 tel

MEP Engineer
MEP Associates, LLC
850 Blue Gentian Road, Suite 175
Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
575 Minnehaha Ave West
St. Paul, MN 55103
651.251.1855 tel

Greenhouse Design
Rough Brothers, Inc.
5513 West Street
Cincinnati, OH 45217
513.242.6510 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin.
ARCHITECT SEAL

WISCONSIN
DANIEL JACK POLING
A-5994
MINNEAPOLIS, MN
ARCHITECT

Signature:
Print Name: Jack Poling
Date: JUNE 4, 2018 License No: A-5994

MARK	DATE	DESCRIPTION
	10.20.2017	SCHEMATIC DESIGN SUBMISSION
	12.04.2017	DD PRICING SET
	01.16.2018	DESIGN DEVELOPMENT SUBMISSION
	01.17.2018	UDC SUBMISSION
	03.30.2018	70% CD PRICING ISSUE
	04.06.2018	PARKING LOT AND SITE PLAN SUBMISSION
	05.04.2018	95% CD SUBMISSION
	05.21.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE

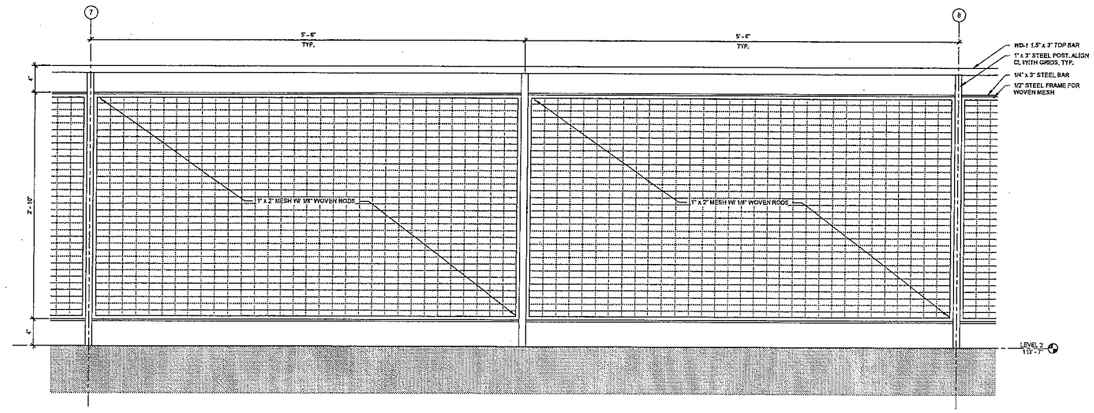
PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: MSR
CHECKED BY: MSR

VERTICAL CIRCULATION DETAILS

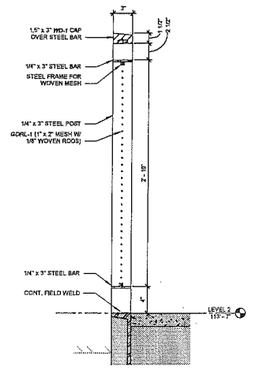
EXHIBIT F

A402

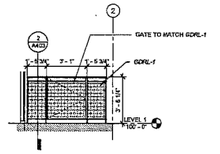
Opening Note



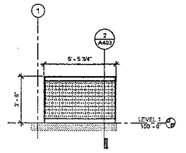
1 GDRL-1 - TYPICAL ELEVATION
A403 1 1/2" = 1'-0"



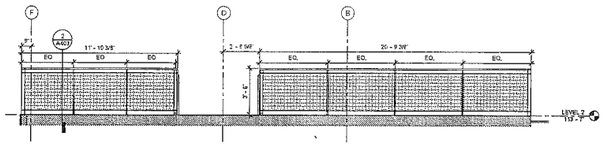
2 RAILING SECTION @ GDRL-1
A403 1 1/2" = 1'-0"



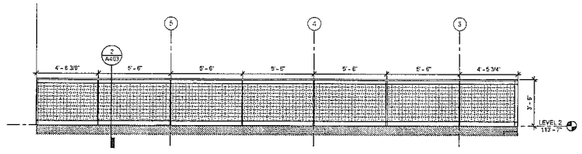
7 OUTDOOR CLASSROOM WEST GATE ELEVATION - GDRL-1
A403 1/4" = 1'-0"



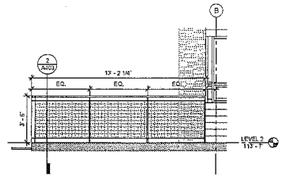
10 OUTDOOR CLASSROOM WEST RAILING ELEVATION - GDRL-1
A403 1/4" = 1'-0"



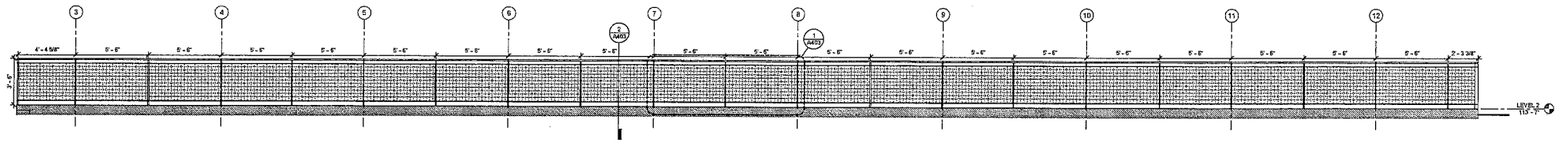
3 EXTERIOR PATIO RAILING NORTH ELEVATION - GDRL-1
A403 1/4" = 1'-0"



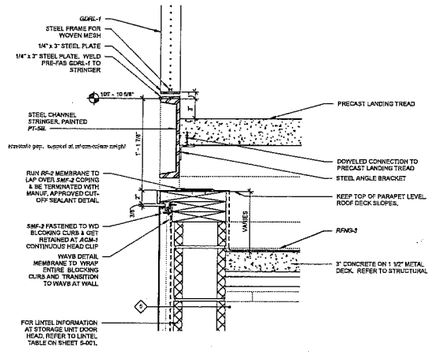
4 EXTERIOR PATIO RAILING WEST ELEVATION - GDRL-1
A403 1/4" = 1'-0"



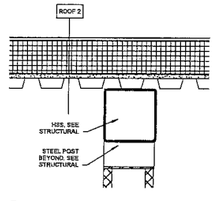
5 EXTERIOR PATIO SOUTH RAILING ELEVATION - GDRL-1
A403 1/4" = 1'-0"



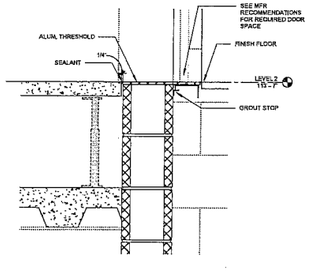
6 EXTERIOR PATIO RAILNG EAST ELEVATION - GDRL-1
A403 1/4" = 1'-0"



13 SECTION DETAIL - EXTERIOR STAIR AND STORAGE W.WALL
A403 1 1/2" = 1'-0"



8 ELEVATOR SHAFT ROOF DETAIL
A403 1 1/2" = 1'-0"



12 ELEVATOR DOOR THRESHOLD AT L-2
A403 1 1/2" = 1'-0"

MSR 710 South 2nd Street, 6th Floor Minneapolis, Minnesota 55401-2282
Architecture 612 375 0336 tel
Interiors and Urban Design 612 342 2216 fax
www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201
Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
353 South Paterson Street, Suite 1
Madison, WI 53703
608.251.3600 tel

Structural Engineer, Technology and A/V
IMEG Corp.
1500 Deming Way, Suite 200
Middleton, WI 53562
608.223.9600 tel

MEP Engineer
MEP Associates, LLC
860 Blue Gentian Road, Suite 175
Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
570 Nineteenth Ave West
St. Paul, MN 55107
651.251.1610 tel

Greenhouse Design
Rough Brothers, Inc.
5510 Vine Street
Cincinnati, OH 45217
513.242.0310 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin.
ARCHITECT SEAL

WISCONSIN DANIEL JACK POLING A-5004 MINNEAPOLIS, MN ARCHITECT

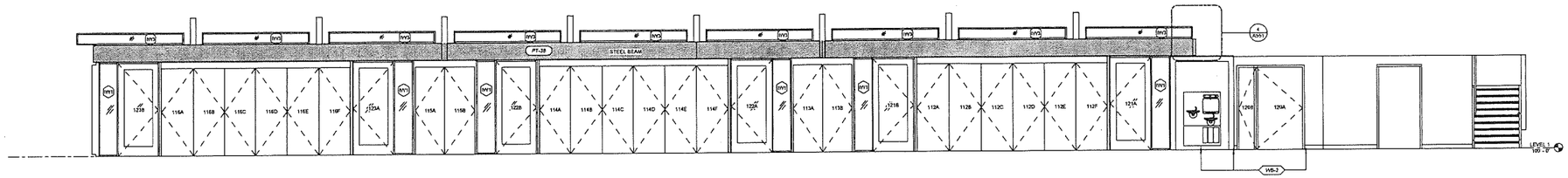
Signature:
Print Name: Jack Poling
Date: JUNE 4, 2018 License No.: A-5004

ISSUE	DATE	DESCRIPTION
	09.29.2017	SCHEMATIC DESIGN SUBMISSION
	12.04.2017	CD PRICING SET
	01.10.2018	DESIGN DEVELOPMENT SUBMISSION
	01.17.2018	UDC SUBMISSION
	03.30.2018	75% CD PRICING ISSUE
	04.06.2018	PARKING LOT AND SITE PLAN SUBMISSION
	05.04.2018	100% CD SUBMISSION
	06.01.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE

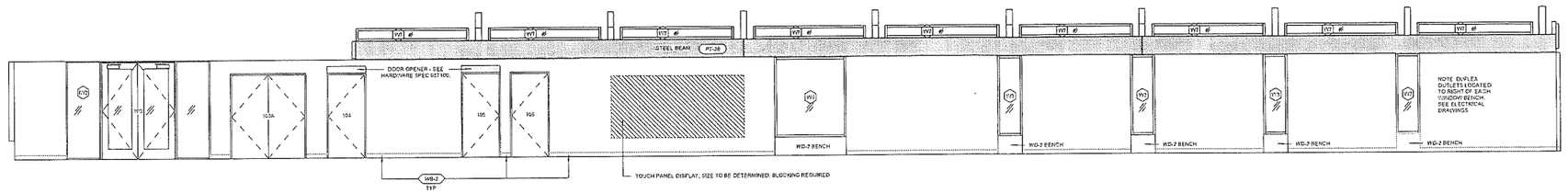
PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: MSR CHECKED BY: MSR

VERTICAL CIRCULATION DETAILS

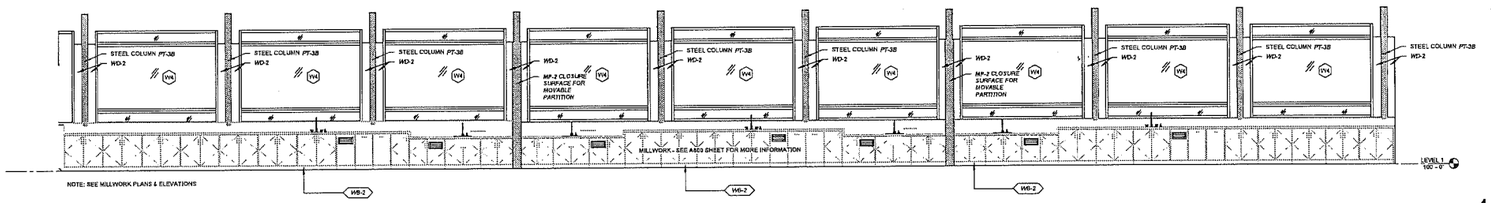
EXHIBIT F
A403



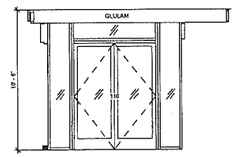
1 CIRCULATION 110 EAST ELEVATION
A501 1/4" = 1'-0"



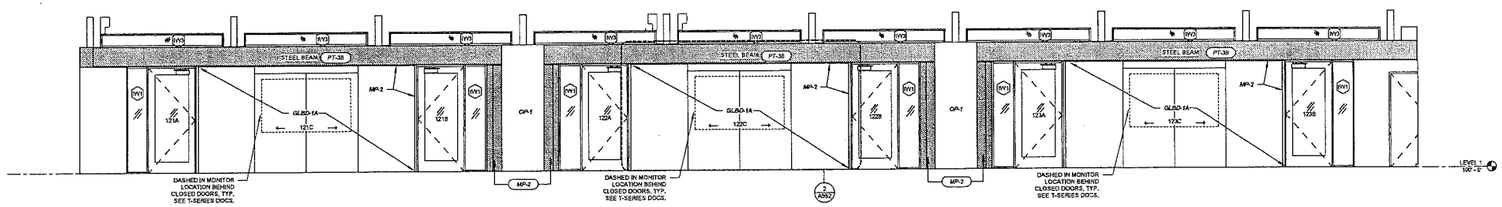
2 CIRCULATION 110 WEST ELEVATION
A501 1/4" = 1'-0"



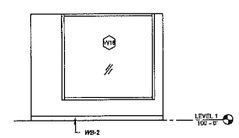
3 CLASSROOMS 121, 122 & 123 EAST ELEVATION
A501 1/4" = 1'-0"



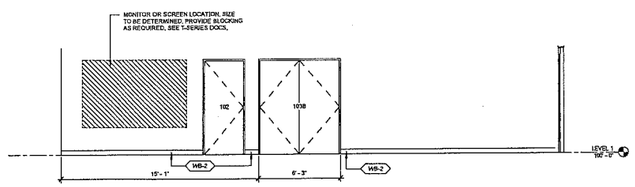
4 CIRCULATION 110 NORTH ELEVATION
A501 1/4" = 1'-0"



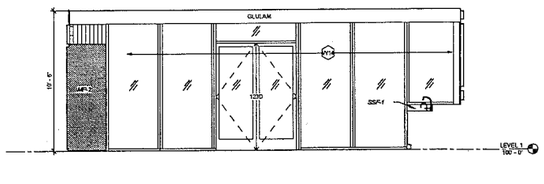
5 CLASSROOMS 121, 122 & 123 WEST ELEVATION
A501 1/4" = 1'-0"



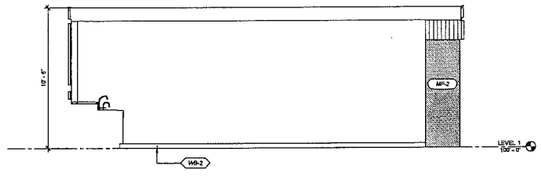
6 CIRCULATION 110 SOUTH ELEVATION
A501 1/4" = 1'-0"



7 LINK 110 NORTH ELEVATION
A501 1/4" = 1'-0"



8 CLASSROOM 123 NORTH ELEVATION
A501 1/4" = 1'-0"



9 CLASSROOM 121 SOUTH ELEVATION
A501 1/4" = 1'-0"

MSR 710 South 2nd Street, 1st Floor Minneapolis, Minnesota 55401-2282
Architecture 612 375 0134 tel
Interiors and Urban Design 612 342 2146 fax
www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201
Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
303 South Paterson Street, Suite 1
Madison, WI 53703
608.251.3600 tel

Structural Engineer, Technology and A/V
IMEG Corp.
1600 Demingway, Suite 200
Middleton, WI 53562
608.223.9600 tel

MEP Engineer
MEP Associates, LLC
860 Blue Gentian Road, Suite 175
Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
575 Cleveland Ave West
St. Paul, MN 55101
651.251.1830 tel

Greenhouse Design
Rough Brothers, Inc.
5513 Vine Street
Cincinnati, OH 45217
513.242.0310 tel

Olbrich Botanical Gardens
Expansion Phase 1
BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin.
ARCHITECT SEAL

WISCONSIN
DANIEL JACK POLING
A-8994
MINNEAPOLIS, MN
ARCHITECT

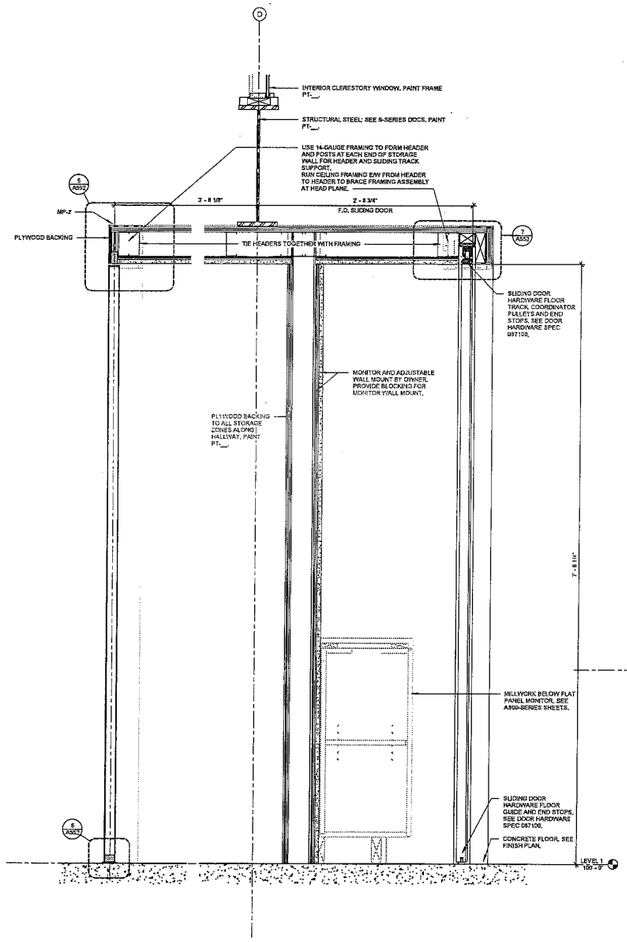
Signature:
Print Name: Jack Poling
Date: JUNE 4, 2018 License No.: A-8994

MARK	DATE	DESCRIPTION
	03.29.2017	SCHEMATIC DESIGN SUBMISSION
	12.08.2017	CD PRICING SET
	01.19.2018	DESIGN DEVELOPMENT SUBMISSION
	01.17.2018	LDC SUBMISSION
	03.30.2018	70% CD PRICING ISSUE
	04.06.2018	PARKING LOT AND SITE PLAN SUBMISSION
	05.04.2018	100% CD SUBMISSION
	04.01.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE

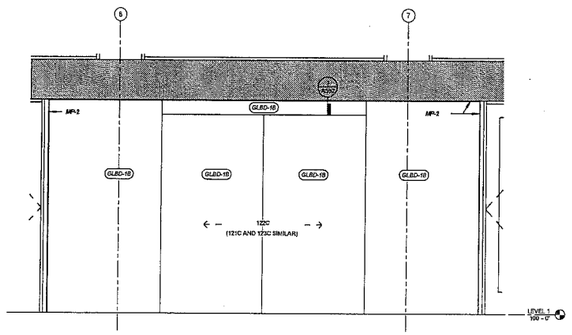
PROJECT NO. 2017016
PROJECT PHASE: BID DOCUMENTS
DRAWN BY: MSR CHECKED BY: MSR

INTERIOR ELEVATIONS

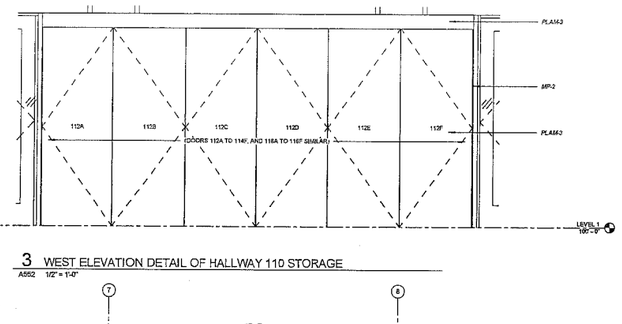
EXHIBIT F
A501



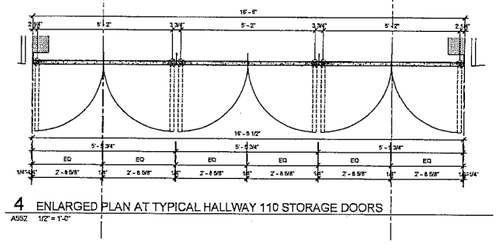
1 ENLARGED SECTION THROUGH HALLWAY / CLASSROOM STORAGE WALL
A552 1 1/2" = 1'-0"



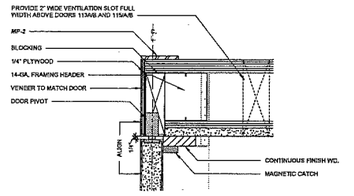
2 EAST ELEVATION DETAIL OF CLASSROOMS 121, 122 & 123 PRESENTATION NICHE
A552 1/2" = 1'-0"



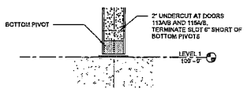
3 WEST ELEVATION DETAIL OF HALLWAY 110 STORAGE
A552 1/2" = 1'-0"



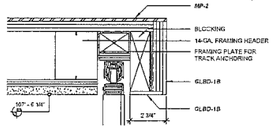
4 ENLARGED PLAN AT TYPICAL HALLWAY 110 STORAGE DOORS
A552 1/2" = 1'-0"



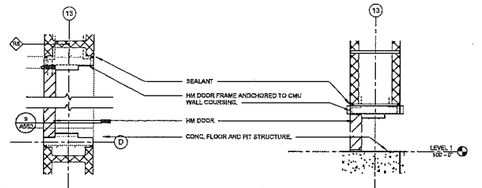
5 SECTION DETAIL - HALLWAY STORAGE DOOR HEAD
A552 3" = 1'-0"



6 SECTION DETAIL - HALLWAY STORAGE DOOR SILL
A552 3" = 1'-0"

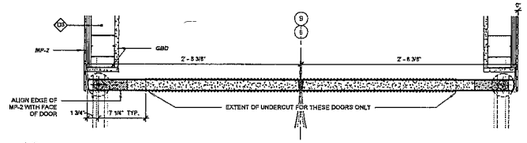


7 SECTION DETAIL - CLASSROOM SLIDING DOOR HEAD
A552 3" = 1'-0"

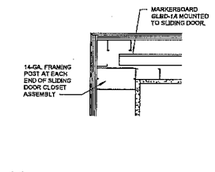


8 PLAN DETAIL - DOOR 120C JAMB
A552 1 1/2" = 1'-0"

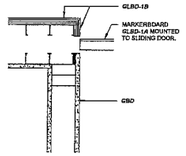
9 SECTION DETAIL - DOOR 120 C HEAD
A552 1 1/2" = 1'-0"



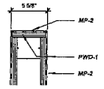
10 ENLARGED PLAN AT HALLWAY CLOSET DOUBLE DOORS 113A/B AND 115A/B
A552 1 1/2" = 1'-0"



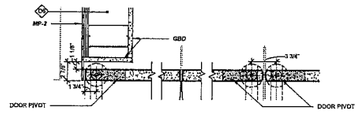
11 PLAN DETAIL AT PRES. CORNER
A552 1 1/2" = 1'-0"



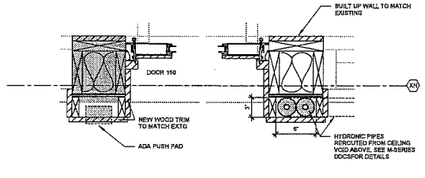
12 PLAN DETAIL AT PRES. POCKET DOOR
A552 1 1/2" = 1'-0"



13 MOVABLE PARTITION POCKET EDGE
A552 1 1/2" = 1'-0"



14 PLAN DETAIL AT HALLWAY STORAGE CORNER
A552 1 1/2" = 1'-0"



15 PLAN DETAIL - DOOR 150A JAMBS
A552 1 1/2" = 1'-0"

MSR 710 South 2nd Street, 8th Floor Minneapolis, Minnesota 55401-2282
Architecture Interiors and Urban Design
612.375.0936 tel
612.342.2216 fax
www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201 Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
303 South Paterson Street, Suite 1 Madison, WI 53703
608.251.3600 tel

Structural Engineer, Technology and A/V
IMEG Corp.
1600 Deming Way, Suite 200 Madison, WI 53562
608.223.9600 tel

MEP Engineer
MEP Associates, LLC
660 Blue Gentian Road, Suite 175 Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
575 Minnehaha Ave West St. Paul, MN 55103
651.251.1880 tel

Greenhouse Design
Rough Brothers, Inc.
5513 Vine Street Cincinnati, OH 45217
513.242.6030 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin.
ARCHITECT SEAL

WISCONSIN DANIEL JACK POLING A-5084 MINNEAPOLIS, MN ARCHITECT

Signature:
Print Name: Jack Poling
Date: JUNE 4, 2018 License No: A-5084

MARK	DATE	DESCRIPTION
	09.29.2017	SCHEMATIC DESIGN SUBMISSION
	12.04.2017	DD PRICING SET
	01.16.2018	DESIGN DEVELOPMENT SUBMISSION
	01.17.2018	UDC SUBMISSION
	02.16.2018	70% CD PRICING ISSUE
	04.06.2018	PARKING LOT AND SITE PLAN SUBMISSION
	05.04.2018	90% CD SUBMISSION
	06.01.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE

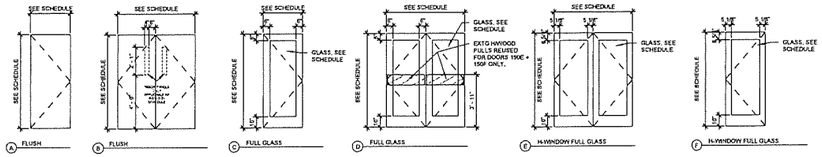
PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: MSR CHECKED BY: MSR

INTERIOR DETAILS

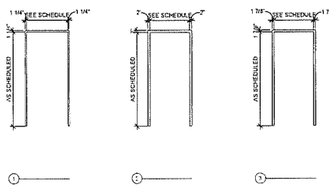
EXHIBIT F
A552

OLG WAC

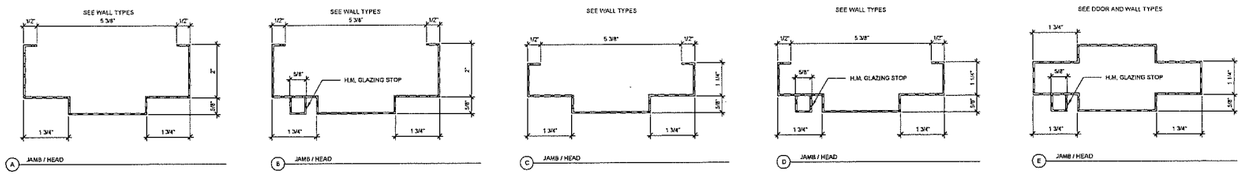
Revit 2018 Single-User License Autodesk, Inc. All rights reserved. Autodesk Docs://8162_Olbrich_Central



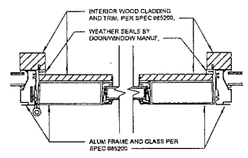
1 DOOR TYPES
A601 1/4" = 1'-0"



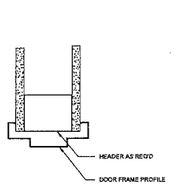
2 FRAME TYPES
A601 1/4" = 1'-0"



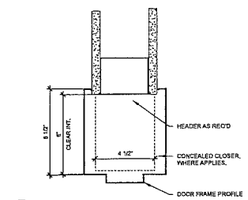
3 H.M. FRAME PROFILES
A601 6" = 1'-0"



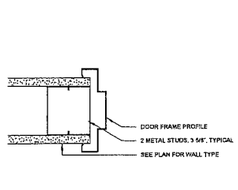
8 H-WIN "NORDIC" DOOR JAMB DETAIL
A601 3" = 1'-0"



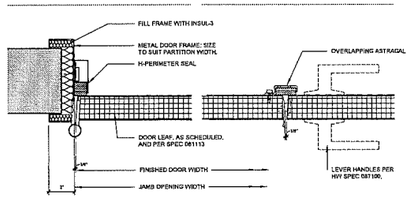
4 TYPICAL H.M. FRAME HEAD PROFILES
A601 3" = 1'-0"



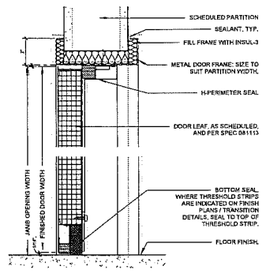
5 TYPICAL DEEP H.M. FRAME HEAD PROFILE
A601 3" = 1'-0"



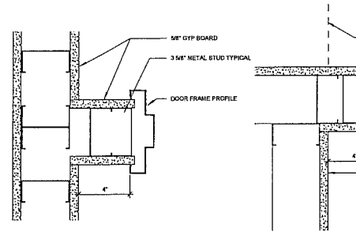
6 TYPICAL H.M. FRAME JAMB PROFILE
A601 3" = 1'-0"



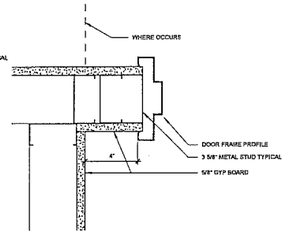
9 MECH ROOM DOOR DETAILS
A601 3" = 1'-0"

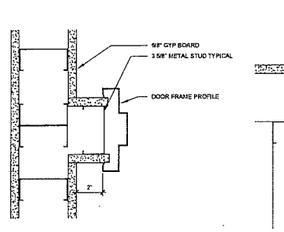


10 MECH DOOR HEAD AND THRESHOLD
A601 3" = 1'-0"

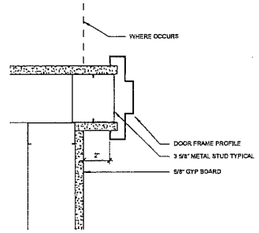


A: TYPICAL CONDITION

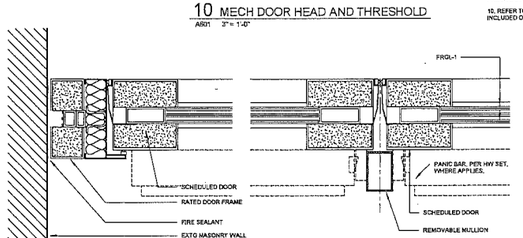




B: SELECT CONDITIONS NOTED ON SCHEDULE



7 TYPICAL H.M. FRAME INSTALLATION AT PERPENDICULAR WALL OR CORNER
A601 3" = 1'-0"



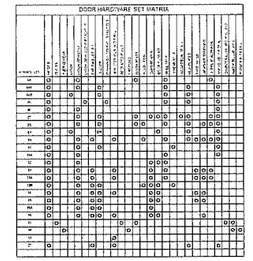
JAMB (HEAD SIM.) MEETING STILE

11 FIRE RATED GLASS DOOR JAMB DETAILS
A601 3" = 1'-0"

DOOR SCHEDULE

DOOR NO	DOOR WIDTH	DOOR HEIGHT	DOOR THICKNESS	DOOR TYPE	DOOR MAT'L	FRAME HEAD	FRAME SILL	FRAME JAMB	FRAME TYPE	FRAME MAT'L	FIRE	HDWR	COMMENTS
98	4' - 0"	7' - 0"	1 3/4"	A	HM	14A602	14A602	12A602	2	HM		06A	
100	6' - 0"	7' - 10"	1 3/4"	D	HM/GL	4A601	5A601	6A601	1	HM		13B	
101	3' - 0"	7' - 0"	1 3/4"	A	HM	4A601	NA	6A601	1	HM		06A	
102	3' - 0"	7' - 0"	1 3/4"	A	HM	4A601	5A601	6A601	1	HM		12	
103A	6' - 0"	6' - 9 1/2"	1 3/4"	B	HM	4A601	NA	6A601	1	HM		04	
103B	6' - 0"	7' - 0"	1 3/4"	B	HM	4A601	5A601	6A601	1	HM		04	
104	3' - 0"	6' - 9 1/2"	1 3/4"	A	HM	4A601	5A601	6A601	1	HM		05	
105	3' - 0"	6' - 9 1/2"	1 3/4"	A	HM	4A601	5A601	6A601	1	HM		05	
106	3' - 0"	8' - 9 1/2"	1 3/4"	A	HM	4A601	NA	6A601	1	HM		04A	
110	6' - 0"	8' - 0"	1 3/4"	E	GL/WD/AL	1A654	6A653	8A601	3	WD/AL		13A	H-WINDOW - DOUBLE DOOR
112A	2' - 6 5/8"	7' - 5 1/2"	1 3/4"	A	WD	5A652	8A652	1A/4A52	FRAMELESS	N.A.		17	CLOSET DOORS - PIVOT HARDWARE
112B	2' - 6 5/8"	7' - 5 1/2"	1 3/4"	A	WD	5A652	8A652	1A/4A52	FRAMELESS	N.A.		17	CLOSET DOORS - PIVOT HARDWARE
112C	2' - 6 5/8"	7' - 5 1/2"	1 3/4"	A	WD	5A652	8A652	1A/4A52	FRAMELESS	N.A.		17	CLOSET DOORS - PIVOT HARDWARE
112D	2' - 6 5/8"	7' - 5 1/2"	1 3/4"	A	WD	5A652	8A652	1A/4A52	FRAMELESS	N.A.		17	CLOSET DOORS - PIVOT HARDWARE
112E	2' - 6 5/8"	7' - 5 1/2"	1 3/4"	A	WD	5A652	8A652	1A/4A52	FRAMELESS	N.A.		17	CLOSET DOORS - PIVOT HARDWARE
112F	2' - 6 5/8"	7' - 5 1/2"	1 3/4"	A	WD	5A652	8A652	1A/4A52	FRAMELESS	N.A.		17	CLOSET DOORS - PIVOT HARDWARE
113A	2' - 7 1/8"	7' - 5 1/2"	1 3/4"	A	WD	5A652	8A652	1BA652	FRAMELESS	N.A.		17	CLOSET DOORS - PIVOT HARDWARE, UNDERCUT 2"
113B	2' - 7 1/8"	7' - 5 1/2"	1 3/4"	A	WD	5A652	8A652	1BA652	FRAMELESS	N.A.		17	CLOSET DOORS - PIVOT HARDWARE, UNDERCUT 2"
114A	2' - 6 5/8"	7' - 5 1/2"	1 3/4"	A	WD	5A652	8A652	1A/4A52	FRAMELESS	N.A.		17	CLOSET DOORS - PIVOT HARDWARE
114B	2' - 6 5/8"	7' - 5 1/2"	1 3/4"	A	WD	5A652	8A652	1A/4A52	FRAMELESS	N.A.		17	CLOSET DOORS - PIVOT HARDWARE
114C	2' - 6 5/8"	7' - 5 1/2"	1 3/4"	A	WD	5A652	8A652	1A/4A52	FRAMELESS	N.A.		17	CLOSET DOORS - PIVOT HARDWARE
114D	2' - 6 5/8"	7' - 5 1/2"	1 3/4"	A	WD	5A652	8A652	1A/4A52	FRAMELESS	N.A.		17	CLOSET DOORS - PIVOT HARDWARE
114E	2' - 6 5/8"	7' - 5 1/2"	1 3/4"	A	WD	5A652	8A652	1A/4A52	FRAMELESS	N.A.		17	CLOSET DOORS - PIVOT HARDWARE
114F	2' - 6 5/8"	7' - 5 1/2"	1 3/4"	A	WD	5A652	8A652	1A/4A52	FRAMELESS	N.A.		17	CLOSET DOORS - PIVOT HARDWARE
115A	2' - 7 1/8"	7' - 5 1/2"	1 3/4"	A	WD	5A652	8A652	1BA652	FRAMELESS	N.A.		17	CLOSET DOORS - PIVOT HARDWARE
115B	2' - 7 1/8"	7' - 5 1/2"	1 3/4"	A	WD	5A652	8A652	1BA652	FRAMELESS	N.A.		17	CLOSET DOORS - PIVOT HARDWARE
116A	2' - 2 5/8"	7' - 5 1/2"	1 3/4"	A	WD	5A652	8A652	1A/4A52	FRAMELESS	N.A.		17	CLOSET DOORS - PIVOT HARDWARE
116B	2' - 6 5/8"	7' - 5 1/2"	1 3/4"	A	WD	5A652	8A652	1A/4A52	FRAMELESS	N.A.		17	CLOSET DOORS - PIVOT HARDWARE
116C	2' - 6 5/8"	7' - 5 1/2"	1 3/4"	A	WD	5A652	8A652	1A/4A52	FRAMELESS	N.A.		17	CLOSET DOORS - PIVOT HARDWARE
116D	2' - 6 5/8"	7' - 5 1/2"	1 3/4"	A	WD	5A652	8A652	1A/4A52	FRAMELESS	N.A.		17	CLOSET DOORS - PIVOT HARDWARE
116E	2' - 6 5/8"	7' - 5 1/2"	1 3/4"	A	WD	5A652	8A652	1A/4A52	FRAMELESS	N.A.		17	CLOSET DOORS - PIVOT HARDWARE
116F	2' - 6 5/8"	7' - 5 1/2"	1 3/4"	A	WD	5A652	8A652	1A/4A52	FRAMELESS	N.A.		17	CLOSET DOORS - PIVOT HARDWARE
120A	4' - 0"	7' - 0"	1 3/4"	A	HM	18A601	20A601	9A601	2	HM		07	
120B	1' - 0"	7' - 0"	1 3/4"	A	HM	18A601	20A601	9A601	2	HM		07	
120C	3' - 0"	7' - 0"	1 3/4"	A	HM	8A652	14A652	12A652	2	HM		06	
121A	3' - 0"	7' - 10 3/4"	1 3/4"	C	HM/GL	4A601	NA	19A551	1	HGL		11	
121B	3' - 0"	7' - 10 3/4"	1 3/4"	C	HM/GL	4A601	NA	19A551	1	HGL		11	
121C	7' - 10"	7' - 5 1/2"	1 5/8"	B	HM/GL/LED-1A	3A652	NA	5A652	FRAMELESS	N.A.		18	SLIDING MARKERBOARD POCKET DOORS
122A	3' - 0"	7' - 10 3/4"	1 3/4"	C	HM/GL	4A601	NA	19A551	1	HGL		11	
122B	3' - 0"	7' - 10 3/4"	1 3/4"	C	HM/GL	4A601	NA	19A551	1	HGL		11	
122C	7' - 10"	7' - 5 1/2"	1 5/8"	B	HM/GL/LED-1A	3A652	NA	5A652	FRAMELESS	N.A.		18	SLIDING MARKERBOARD POCKET DOORS
123A	3' - 0"	7' - 10 3/4"	1 3/4"	C	HM/GL	4A601	NA	19A551	1	HGL		11	
123B	3' - 0"	7' - 10 3/4"	1 3/4"	C	HM/GL	4A601	NA	19A551	1	HGL		11	
123C	7' - 10"	7' - 5 1/2"	1 5/8"	B	HM/GL/LED-1A	11A652	NA	5A652	FRAMELESS	N.A.		18	SLIDING MARKERBOARD POCKET DOORS
127D	6' - 2"	8' - 0"	1 3/4"	E	GL/WD/AL	1A654	6A653	8A601	3	WD/AL		13	H-WINDOW - DOUBLE DOOR
127E	3' - 0"	7' - 0"	1 3/4"	A	HM	4A601	NA	6A601	1	HM		04B	
129	6' - 0"	7' - 0"	1 3/4"	B	HM	4A/5A7 SIM.	NA	4A/5A7 SIM.	1	HM		06	
156A	3' - 0 1/4"	7' - 0"	1 3/4"	E	GL/WD/AL	3AA734	11A653	15A652	2	WD/AL		13	MATCH EXISTING ENTRY DOOR
156C	3' - 1"	7' - 1"	1 3/4"	C	GL/ALN	4A601	NA	6A601	3	HGL	SMOKE ONLY	09	
156D	3' - 1"	7' - 1"	1 3/4"	C	GL/ALN	4A601	NA	6A601	3	HGL	SMOKE ONLY	09	
156E	6' - 10"	8' - 6"	1 3/4"	D	HM/WD 45M GL	13A661	NA	15A601	2	FRGL-1	1.5-HR RATED	29	REFER TO SPEC SECTION 084416
156F	6' - 10"	8' - 6"	1 3/4"	D	HM/WD 45M GL	11A661	NA	15A601	3	FRGL-1	1.5-HR RATED	29	REFER TO SPEC SECTION 084416
201A	3' - 0"	7' - 10 3/4"	1 3/4"	C	GL/ALN	5A661	10A661	7EA691	1	HGL		11A	
201B	3' - 0"	7' - 10"	1 3/4"	F	GL/WD/AL	1A654	10A654	6A691	3	WD/AL		14	H-WINDOW - SINGLE DOOR
202	3' - 0"	7' - 0"	1 3/4"	A	HM	4A691	5A691	5A691	1	HM		05	
210	3' - 0"	7' - 10"	1 3/4"	F	WOOD	1A654	10A654	6A691	1	WD/AL		15	H-WINDOW - SINGLE DOOR
211	3' - 0"	7' - 0"	1 3/4"	A	HM	4A601	5A651	5A691	1	HM		04B	
213	3' - 0"	7' - 10"	1 3/4"	C	HM/GL	4A601	NA	6A691	3	HM		11A	GLASS DOOR LOCK
15H01	5' - 0"	10' - 0"	1 3/4"	B	HM	14A602 V.I.N.	17A313	12A652 V.I.N.	2	HM	1-HR RATED	16	INCLUDE VISION PANELS. FINAL NO SIDELIGHTS

DOOR HARDWARE SET MATRIX



DOOR SCHEDULE GENERAL NOTES

1. COORDINATE DEPTH OF FRAMING AND OVER DOOR WITH HARDWARE REQUIREMENTS, INCLUDING HARDWARE ANCHORING REQUIREMENTS.
2. ALL NEW EXTERIOR DOORS TO BE INSULATED AND THERMALLY-BROKEN, INCLUDING THRESHOLD STRIPS.
3. ALL H.M. DOORS AND FRAMES TO BE FIELD PAINTED PT-3B, FOR ALL OTHER HM-TYPE DOORS AND FRAME DETAILS, REFER TO SPECIFICATION SECTION 051113.
4. ALL WOOD CLOSET DOORS TO BE FINISHED WITH PLAM-2, UNLESS NOTED OTHERWISE.
5. ALL WOOD CLAD EXTERIOR DOORS ARE SELF-FINISHED BY MANUFACTURER, FOR ALL OTHER WOOD CLAD EXTERIOR DOOR AND FRAME DETAILS, REFER TO SPECIFICATION SECTION 064200.
6. FOR ALL GLASS DOORS, REFER TO GLASS SPECIFICATION 088000, AND THE MATERIALS LIST ON SHEET G002.
7. FOR DOOR HARDWARE SETS, REFER TO SPECIFICATION SECTION 087100.
8. REFER TO T-SERIES DRAWINGS AND DOCUMENTS FOR CARD READER AND DOOR MONITORING REQUIREMENTS, DETAILS AND GENERAL LOCATIONS.
9. CARD READER LOCATIONS ON T-SERIES DRAWINGS ARE INDICATIVE AND REQUIRE PRECISE LOCATING IN THE FIELD WITH OWNER INPUT AND APPROVAL.
10. REFER TO OTHER DETAIL SHEETS ON THIS A-SERIES SET FOR DOOR DETAILS NOT INCLUDED ON THIS SHEET.

MSR
710 South 2nd Street, 6th Floor
Minneapolis, Minnesota 55401-2282
Architecture, Interiors and Urban Design
612.375.0336 tel
612.342.2336 fax
www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201
Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
303 South Paterson Street, Suite 1
Madison, WI 53703
608.251.3600 tel

Structural Engineer, Technology and A/V
IMEG Corp.
1800 Deming Way, Suite 200
Middleton, WI 53562
608.223.9600 tel

MEP Engineer
MEP Associates, LLC
800 Bliss Groton Road, Suite 135
Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
575 Aldenvale Ave W Unit
St. Paul, MN 55107
651.251.1860 tel

Greenhouse Design
Rough Brothers, Inc.
5513 Vine Street
Cincinnati, OH 45217
513.242.0310 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin, ARCHITECT SEAL

WISCONSIN DANIEL JACK POLING A-5584 MINNEAPOLIS, MN ARCHITECT

Signature:
Print Name: Jack Poling
Date: JUNE 4, 2018 License No: A-5584

ISSUE	DATE	DESCRIPTION
	09.29.2017	SCHEMATIC DESIGN SUBMISSION
	12.04.2017	DD PRICING SET
	01.19.2018	DESIGN DEVELOPMENT SUBMISSION
	01.17.2018	UDC SUBMISSION
	01.30.2018	100% DD PRICING ISSUE
	04.06.2018	PARKING LOT AND SITE PLAN SUBMISSION
	05.04.2018	100% CD'S SUBMISSION
	06.01.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE

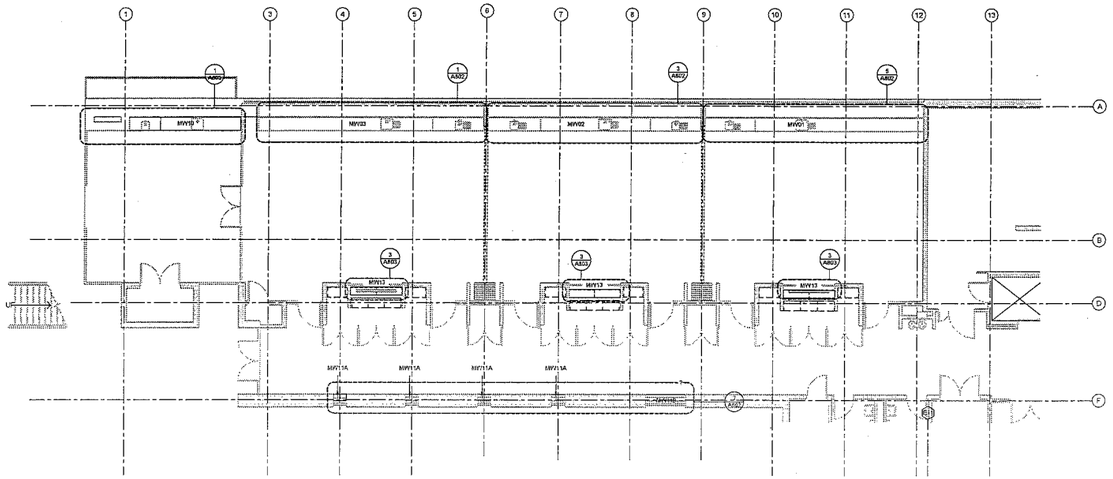
PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: MSR CHECKED BY: MSR

DOOR SCHEDULE, TYPES AND DETAILS

EXHIBIT F
A601

06/4/18

Architectural Interiors Urban Design 612.375.0336 612.342.2336 www.msrdesign.com



1 LEVEL 1 MILLWORK
A501 1/8" = 1'-0"

MILLWORK SCHEDULE			
MARK	DESCRIPTION	COUNT	COMMENTS
MWV01	CLASSROOM 1 121 COUNTERTOP	1	
MWV03	CLASSROOM 3 123 COUNTERTOP	1	
MWV04	STORAGE 221 COUNTER	1	
MWV05	OFFICE 210 STORAGE	1	
MWV06	OFFICE 210 STORAGE	1	
MWV07	COPY 210 STORAGE	1	
MWV08	COPY 210 PAPER STORAGE	1	
MWV09	OFFICE 210 WORKCOUNTER	1	
MWV10	OUTDOOR CLASSROOM 124 COUNTERTOP	1	
MWV11A	CIRCULATION 110 WINDOW SEAT A	1	
MWV11B	CIRCULATION 110 WINDOW SEAT B	1	
MWV12	OFFICE 210 STORAGE	1	
MWV13		11	
		3	

MILLWORK GENERAL NOTES

1. REFER TO PROJECT MANUAL SPECIFICATION FOR KEY TO FINISH CODES. MILLWORK ACCESSORIES (mi-e) IN CONTRACT (I.E. CABINET HARDWARE, BRACKETS, ORGANIZERS, ETC).

2. APPLIANCES PROVIDED AND INSTALLED BY GC. VERIFY ALL DIMENSIONS AND CLEARANCES REQUIRED PRIOR TO MILLWORK FABRICATION. COORDINATE ELECTRICAL REQUIREMENTS AND EXACT OUTLET LOCATIONS W/ INSTALLATION GUIDELINES FROM APPLIANCE MANUFACTURERS. SEE ELECTRICAL SHEETS.

3. SEE MECHANICAL FOR PLUMBING FIXTURES. COORDINATE PRIOR TO FABRICATION AND INSTALLATION. PROVIDE BLOCKING IN WALLS FOR WALL-MOUNTED PLUMBING FIXTURES. COORDINATE W/ GC, TYP.

4. COORDINATE POWER & DATA LOCATIONS WITHIN MILLWORK W/ ELECTRICAL, TYP.

5. SEE LIGHTING DRAWINGS FOR UNDERCABINET LIGHTING LOCATIONS & FIXTURE TYPES. COORDINATE W/ ELECTRICAL, TYP.

6. VERIFY DIMENSIONS W/ SIDE CONDITIONS, TYP.

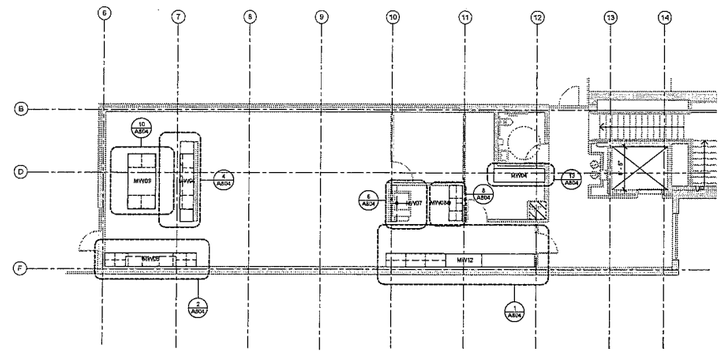
7. VERIFY ALL DIMENSIONS & CLEARANCES REQUIRED FOR OWNER SUPPLIED FURNISHINGS & EQUIPMENT W/ MILLWORK, I.E. FILE CABINETS, PRINTERS, COPIERS, ETC.; WITH OWNER PRIOR TO FABRICATION.

8. PROVIDE BLOCKING IN WALLS FOR ALL WALL-MOUNTED MILLWORK. COORDINATE W/ GC, TYP.

9. FLOOR FINISHES TO EXTEND BENEATH MILLWORK, UNLESS NOTED OTHERWISE.

10. INSTALL RUBBER BUMPER AT ALL CABINET DOOR LOCATIONS TO DAMPEN SOUND OF DOOR SHUTTING, TYP.

11. PROVIDE 20% ATTIC STOCK OF INTERIOR CABINET SHELVES FOR BASE UNITS BY SIZE.



2 LEVEL 2 MILLWORK
A801 1/8" = 1'-0"

MSR 710 South 2nd Street, 6th Floor Minneapolis, Minnesota 55401-2282
Architecture Interiors and Urban Design. 612.375.0936 tel 612.342.2316 fax www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201 Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
303 South Paterson Street, Suite 1 Madison, WI 53703
608.251.3600 tel

Structural Engineer, Technology and A/V
IMEG Corp.
1800 Deming Way, Suite 200 Middleton, WI 53562
608.223.9600 tel

MEP Engineer
MEP Associates, LLC
650 Blue Gentian Road, Suite 175 Eagan, MN 55121
651.379.0120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
570 Asbury Ave West St. Paul, MN 55118
651.251.1650 tel

Greenhouse Design
Rough Brothers, Inc.
9512 Vine Street Cincinnati, OH 45217
513.242.0310 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin. ARCHITECT SEAL

WISCONSIN DANIEL JACK POLING A-9554 MINNEAPOLIS, MN ARCHITECT

Signature:
Print Name: Jack Poling
Date: JUNE 4, 2018 License No: A-9554

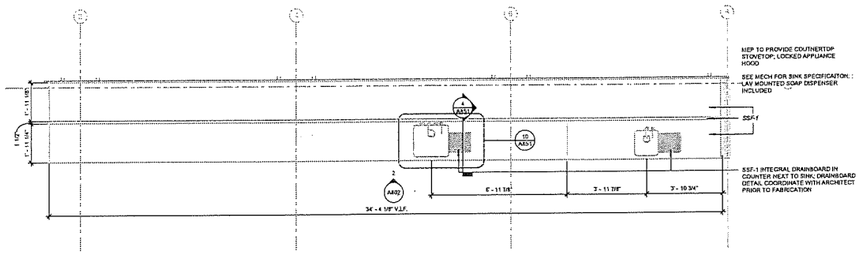
ISSUE DATE	DESCRIPTION
05.23.2017	SCHEMATIC DESIGN SUBMISSION
10.06.2017	DD PRICING SET
01.19.2018	DESIGN DEVELOPMENT SUBMISSION
03.12.2018	UDC SUBMISSION
03.30.2018	70% CD PRICING ISSUE
04.06.2018	PARKING LOT AND SITE PLAN SUBMISSION
05.04.2018	90% CD SUBMISSION
05.01.2018	BIDISSUE
05.04.2018	PERMIT ISSUE

PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: MSR CHECKED BY: MSR

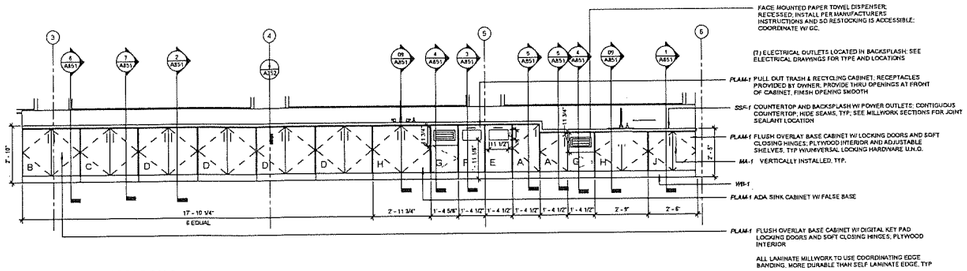
MILLWORK PLANS

EXHIBIT F
A801

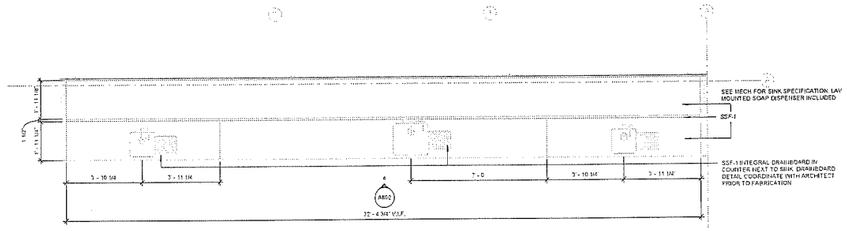
OPEN HOUSE



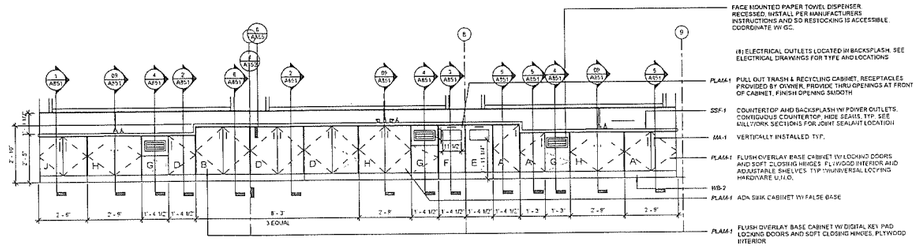
1 MW03 PLAN @ CLASSROOM 3 SINK COUNTER
A802 3/8" = 1'-0"



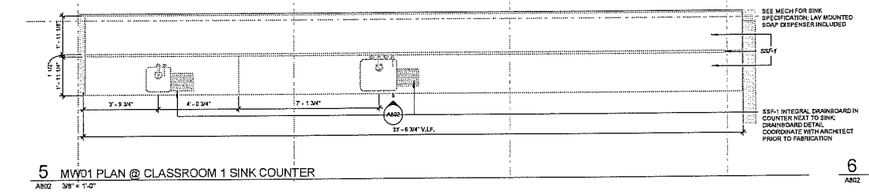
2 MW03 FRONT ELEV @ CLASSROOM 3
A802 3/8" = 1'-0"



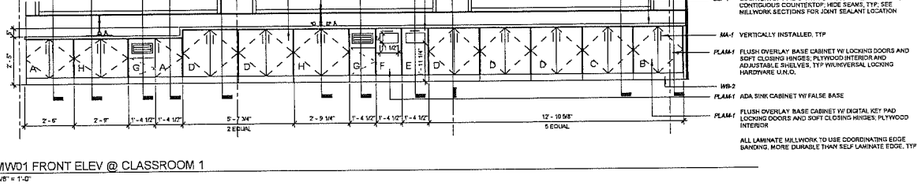
3 MW02 PLAN @ CLASSROOM 2 SINK COUNTER
A802 3/8" = 1'-0"



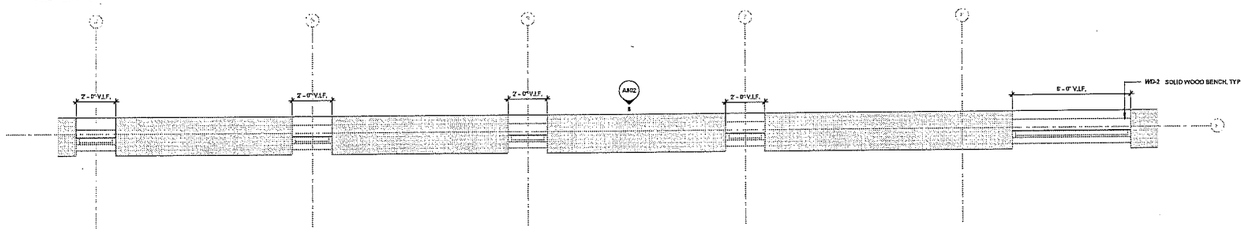
4 MW02 FRONT ELEV @ CLASSROOM 2
A802 3/8" = 1'-0"



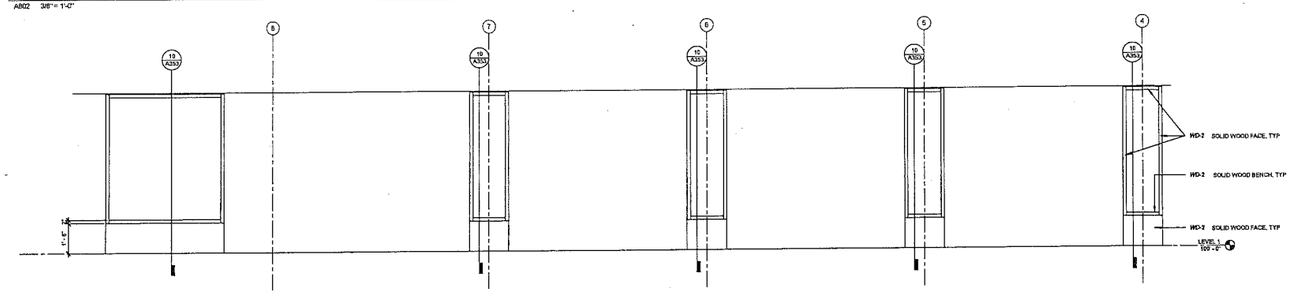
5 MW01 PLAN @ CLASSROOM 1 SINK COUNTER
A802 3/8" = 1'-0"



6 MW01 FRONT ELEV @ CLASSROOM 1
A802 3/8" = 1'-0"



7 MW11 PLAN @ CORRIDOR WINDOW SEATS
A802 3/8" = 1'-0"



8 MW11 FRONT ELEV @ CORRIDOR WINDOW SEATS
A802 3/8" = 1'-0"

BASE CABINET INTERIOR TYPE KEY

A = 2 DRAWER
B = 3 DRAWER
C = 4 DRAWER
D = ADJUSTABLE SHELVING
E = PULL OUT TRASH
F = PULL OUT RECYCLING
G = PAPER TOWEL DISPENSER AND STORAGE
H = SINK
J = NO DRAWER OR SHELF DUE TO MECH UNIT ACCESS

MSR 710 South 2nd Street, 6th Floor · Minneapolis, Minnesota 55401-2282
Architecture 612 375 0536 tel
Interiors and Urban Design 612 342 2346 fax
www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201
Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
323 South Paterson Street, Suite 1
Madison, WI 53703
608.251.3600 tel

Structural Engineer, Technology and A/V
IMEG Corp.
1800 Deming Way, Suite 200
Middleton, WI 53562
608.223.9600 tel

MEP Engineer
MEP Associates, LLC
450 Blue Garden Road, Suite 175
Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
575 Minnehaha Ave West
St. Paul, MN 55102
651.251.1800 tel

Greenhouse Design
Rough Brothers, Inc.
5513 Vine Street
Cincinnati, OH 45217
513.242.0510 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin.
ARCHITECT SEAL

WISCONSIN
DANIEL JACK POLING
A-6984
MINNEAPOLIS, MN
ARCHITECT

Signature:
Print Name: Jack Poling
Date: JUNE 4, 2018 License No: A-6984

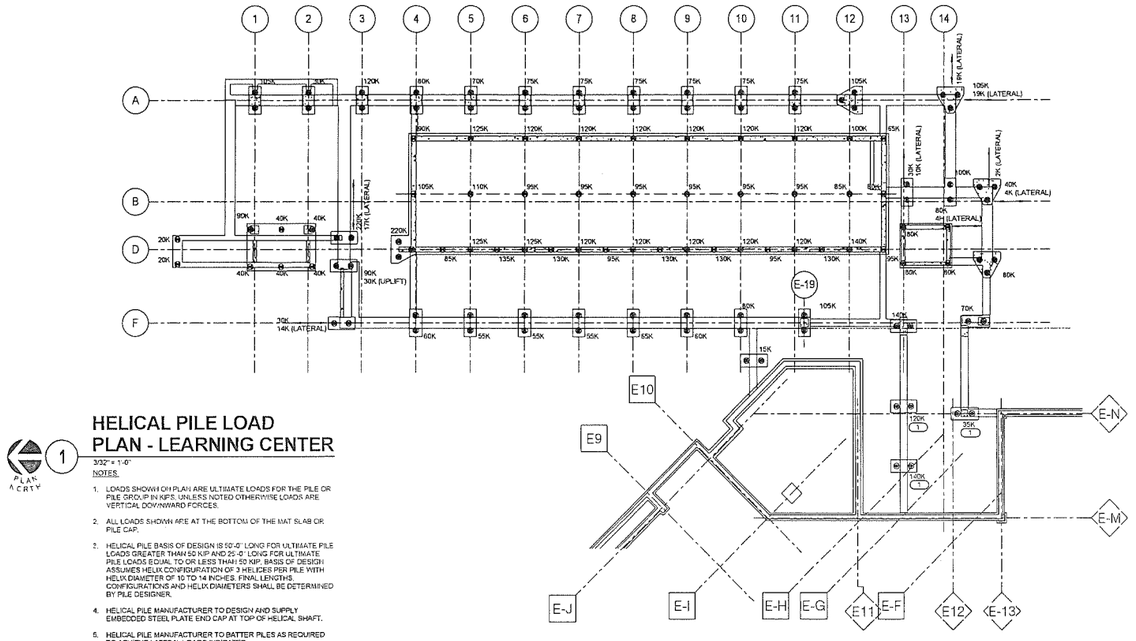
ISSUE		
MARK	DATE	DESCRIPTION
	04.23.2017	SCHEMATIC DESIGN SUBMISSION
	12.06.2017	DD PRICING SET
	01.10.2018	DESIGN DEVELOPMENT SUBMISSION
	01.17.2018	LDC SUBMISSION
	03.30.2018	70% CD PRICING ISSUE
	04.06.2018	PARKING LOT AND SITE PLAN SUBMISSION
	05.04.2018	90% CD SUBMISSION
	05.11.2018	BID ISSUE
	05.04.2018	PERMIT ISSUE

PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: MSR CHECKED BY: MSR

LEVEL 1 MILLWORK

EXHIBIT F
A802

01/9/19 MM



HELICAL PILE LOAD PLAN - LEARNING CENTER

1 PLAN NORTH

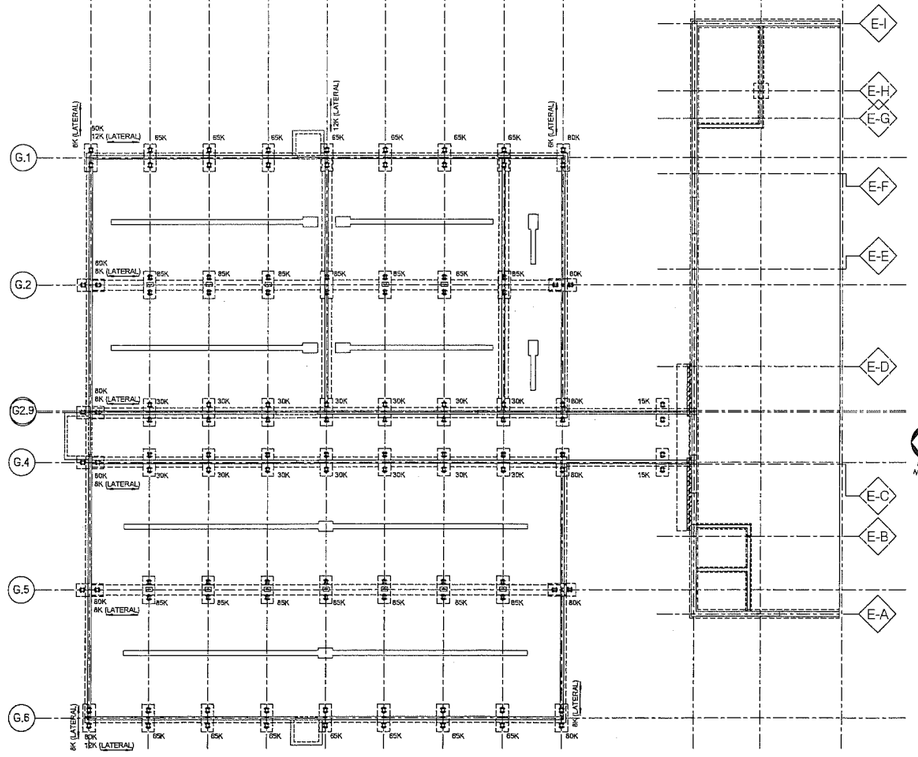
3/32" = 1'-0"

NOTES:

1. LOADS SHOWN ON PLAN ARE ULTIMATE LOADS FOR THE PILE OR PILE GROUP IN KIPS, UNLESS NOTED OTHERWISE LOADS ARE VERTICAL DOWNWARD FORCES.
2. ALL LOADS SHOWN ARE AT THE BOTTOM OF THE MAT SLAB OR PILE CAP.
2. HELICAL PILE BASIS OF DESIGN IS 50'-0" LONG FOR ULTIMATE PILE LOADS GREATER THAN 50 KIP AND 25'-0" LONG FOR ULTIMATE PILE LOADS EQUAL TO OR LESS THAN 50 KIP. BASIS OF DESIGN ASSUMES HELIX CONFIGURATION OF 3 HELICES PER PILE WITH HELIX DIAMETER OF 10 TO 14 INCHES. FINAL LENGTHS, CONFIGURATIONS AND HELIX DIAMETERS SHALL BE DETERMINED BY PILE DESIGNER.
4. HELICAL PILE MANUFACTURER TO DESIGN AND SUPPLY EMBEDDED STEEL PLATE END CAP AT TOP OF HELICAL SHAFT.
5. HELICAL PILE MANUFACTURER TO BATTER PILES AS REQUIRED TO ACHIEVE LATERAL LOADS INDICATED.

KEYNOTES:

1 EXPECT A DENSE ASPHALT LAYER AT 12'-0" BELOW EXISTING GRADE.



HELICAL PILE LOAD PLAN - GREEN HOUSE

2 PLAN NORTH

3/32" = 1'-0"

NOTES:

1. LOADS SHOWN ON PLAN ARE ULTIMATE LOADS FOR THE PILE GROUP IN KIPS, UNLESS NOTED OTHERWISE LOADS ARE VERTICAL DOWNWARD FORCES.
2. ALL LOADS SHOWN ARE AT THE BOTTOM OF THE PILE CAP.
3. HELICAL PILE BASIS OF DESIGN IS 50'-0" LONG FOR ULTIMATE PILE LOADS GREATER THAN 50KIP AND 25'-0" LONG FOR ULTIMATE PILE LOADS EQUAL TO OR LESS THAN 50 KIP. BASIS OF DESIGN ASSUMES HELIX CONFIGURATION OF 3 HELICES PER PILE WITH HELIX DIAMETER OF 10 TO 14 INCHES. FINAL LENGTHS, CONFIGURATION, AND HELIX DIAMETERS SHALL BE DETERMINED BY PILE DESIGNER.
4. HELICAL PILE MANUFACTURER TO DESIGN AND SUPPLY EMBEDDED STEEL PLATE END CAP AT TOP OF HELICAL SHAFT.
5. HELICAL PILE MANUFACTURER TO BATTER PILES AS REQUIRED TO ACHIEVE LATERAL LOADS INDICATED.
6. EXPECT AN 8" GRAVEL LAYER ABOUT 18" BELOW EXISTING GRADE THROUGHOUT THE GREENHOUSE FOOTPRINT.

STRUCTURAL ABBREVIATIONS LIST

#	NUMBER
@	AT
°	DEGREES
Ø	DIAMETER
AHU	AIR-HANDLING UNIT
APPROX.	APPROXIMATE -LY
ARCH	ARCHITECT -URE, -LY
B.O.	BOTTOM OF
b'	BEAM FLANGE WIDTH
BM	BEAM
BP	BASE PLATE
BRG	BEARING
CFSF	COLD FORM STEEL FRAMING
CJ	CONTROL JOINT
CL	CLEAR
CMU	CONCRETE MASONRY UNIT
CONC	CONCRETE
CONST	CONSTRUCTION
CONT	CONTINUOUS
D	DEPTH
DBL	DOUBLE
DEG	DEGREE
DIM	DIMENSION
DL	DEAD LOAD
DTL	DETAIL
DWG	DRAWING
EA	EACH
EF	EACH FACE
EJ	EXPANSION JOINT
EL	ELEVATION
ELEC	ELECTRICAL
EMBED	EMBEDDED
EOD	EDGE OF DECK
EOS	EDGE OF SLAB
EQ	EQUAL
EQUIP	EQUIPMENT
EW	EACH WAY
EXIST. (E)	EXISTING
EXP	EXPANSION
EXT	EXTERIOR
f'c	CONCRETE COMPRESSIVE STRENGTH
FDN	FOUNDATION
FIN	FINISHED
FL	FLOOR
FT	FOOT
FTG	FOOTING
Fy	YIELD STRESS
GA	GAGE OR GAUGE
GALV	GALVANIZED
GB	GRADE BEAM
GC	GENERAL CONTRACTOR
GYP	GYPSUM
HDG	HOT-DIPPED GALVANIZED
HORIZ.	HORIZONTAL
HVAC	HEATING, VENTILATION, AIR CONDITIONING
HWS	HEADED, WELDED STUD
IN	INCH
INT	INTERIOR
JST	JOIST
JT	JOINT
K, KIP	KILOPOUND (1,000 POUNDS)
KO	KNOCK-OUT
KSF	KIPS PER SQUARE FOOT
L	LENGTH
LB	POUND
LF	LINEAR FOOT
LL	LIVE LOAD
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LSH	LONG SIDE HORIZONTAL
LSV	LONG SIDE VERTICAL
LONG	LONGITUDINAL
M/E	MECHANICAL/ELECTRICAL
MAX	MAXIMUM
MECH	MECHANICAL
MEZZ	MEZZANINE
MIN	MINIMUM
MISC	MISCELLANEOUS
MK	MARK
N	NORTH
N'	LENGTH (AS PLATES)
NIC	NOT IN CONTRACT
NO	NUMBER
NTS	NOT TO SCALE
OC	ON CENTER
OPNG	OPENING
OPP	OPPOSITE
PAF	POWER ACTUATED FASTENER
PC	PRECAST
PCF	POUNDS PER CUBIC FOOT
PL	PLATE
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PVC	POLYVINYL CHLORIDE
R	RADIUS
RD	ROOF DRAIN
REINF	REINFORCING, -MENT, -ED
REQ'D	REQUIRED
REF	REFERENCE, REFER TO
RTU	ROOF-TOP UNIT
SC	TC WITH CLASS A FAYING SURFACE
SCHED	SCHEDULE
SIM	SIMILAR
SL	SNOW LOAD
SP	SPACE(S)
SPEC	SPECIFICATION(S)
SPEC'D	SPECIFIED
SQ	SQUARE
STD	STANDARD
STIFF	STIFFENER
T.O.	TOP OF
TC	PRE-TENSIONED BOLT
TEMP	TEMPERATURE
tf	BEAM FLANGE THICKNESS
TRANS	TRANSVERSE
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
VERT	VERTICAL
VIF	VERIFY IN FIELD
VWA	VERIFY WITH ARCHITECTURAL DRAWINGS
WP	WORKING POINT
WT	WEIGHT
WWR	WELDED WIRE REINFORCING
YD	YARD

STRUCTURAL DRAWING SYMBOLS

MASONRY HATCHING
STEEL HATCHING
MISCELLANEOUS HATCH
CONCRETE HATCHING
EARTH HATCHING
CENTERLINE OR GRID — HIDDEN
PLAN OR DETAIL NUMBER
PLAN OR DETAIL NAME
1 View Name 1/8" = 1'-0"
SCALE OF PLAN OR DETAIL
DETAIL REFERRED TO BY SECTION CUT
S1 SHEET DETAIL IS LOCATED ON
REVISION TRIANGLE - NUMBER INDICATES REVISION NUMBER
ELEVATION MARK
INDICATES CHANGE OF SLAB ELEVATION
COLUMN DESIGNATION
BARE PLATE MARK
FOOTING MARK (TOP ELEVATION)
PIER MARK (TOP ELEVATION)
LOWER ELEVATION
UPPER ELEVATION
INDICATES STEP IN T/CONTINUOUS FOOTING
INDICATES STEP IN T/FOUNDATION WALL
OPEN FLOOR SLAB OR ROOF DECK OPENING
FLOOR AND/OR ROOF DECK ORIENTATION (DIRECTION OF SPAN)
INDICATES DIRECTION OF DECK EXTENTS. DECK SHALL TERMINATE AT THE EDGE OF SLAB SHOWN ON THE DRAWINGS UNLESS NOTED OTHERWISE
BRACED FRAME ELEVATION
BRACED FRAME SYMBOL
BEAM SPLICE
BEAM SIZE
NUMBER OF SHEAR STUDS PER FOOT
AMOUNT OF BEAM CAMBER
TOP OF STEEL ELEVATION
REQUIRED UNFACTORED CONNECTION REACTION (KIPS) - SUPERCEDES TABULATED VALUES
REQUIRED UNFACTORED CONNECTION REACTION (KIPS) - SUPERCEDES TABULATED VALUES
REQUIRED UNFACTORED CONNECTION REACTION (KIPS) - SUPERCEDES TABULATED VALUES
BEAM TO COLUMN MOMENT (FULLY RESTRAINED) CONNECTION - REFER TO DETAIL
BEAM THROUGH BEAM MOMENT (FULLY RESTRAINED) CONNECTION - REFER TO DETAIL
BEAM TO COLUMN MOMENT (PARTIALLY RESTRAINED) CONNECTION - REFER TO DETAIL
BEAM TO COLUMN KICKER (BELOW) - REFER TO DETAIL
BEAM TO SLAB KICKER (BELOW) - REFER TO DETAIL
BEAM BEARING ON WALL - REFER TO DETAIL FOR BEAM POCKET CONDITION
INDICATES COLUMN BEARING ON CONCRETE FOUNDATION WALL, GRADE BEAM, OR PIER
INDICATES COLUMN FRAMING ATOP BEAM - REFER TO DETAIL
INDICATES COLUMN FRAMING TO UNDERSIDE OF BEAM - REFER TO DETAIL

PILE CAP SCHEDULE

MARK	DEPTH	BOTTOM BARS		TOP BARS		PILES	REMARKS
		SHORT BARS	LONG BARS	SHORT BARS	LONG BARS		
PC2	2' - 0"	(5) #6	(3) #6	(5) #6	(3) #6	2	-
PC3	2' - 0"	(5) #6, 3 WAYS		(5) #6, 3 WAYS		3	-

NOTES:

1. REFER TO S202 FOR PILE CAP DETAILS.

GRADE BEAM SCHEDULE

MARK	WIDTH	BOTTOM ELEVATION	BOTTOM BARS	TOP BARS	SIDE BARS	STIRRUPS	REMARKS
GB1	2' - 2"	+96' - 0"	(4) #7	(4) #6	#5 @ 12" OC	#4 @ 12" OC	-
GB2	1' - 0"	+96' - 0"	(2) #5	(2) #5	#5 @ 12" OC	#4 @ 12" OC	-
GB3	1' - 6"	+96' - 0"	(4) #9	(4) #9	#5 @ 12" OC	#4 @ 12" OC	-
GB4	2' - 0"	+96' - 0"	(4) #8	(3) #8	#5 @ 12" OC	#4 @ 12" OC	-
GB5	1' - 0"	+97' - 0"	(2) #8	(2) #8	#5 @ 12" OC	#4 @ 18" OC	-
GB6	1' - 6"	+99' - 0"	(3) #8	(3) #8	#5 @ 12" OC	#4 @ 12" OC	-
GB7	2' - 0"	+97' - 3"	(3) #7	(3) #7	#5 @ 12" OC	#4 @ 6" OC	-
GB8	1' - 3"	+97' - 7"	(3) #7	(3) #7	-	#4 @ 4" OC	-
GB9	1' - 2 1/2"	+95' - 0"	(3) #8	(3) #8	#5 @ 12" OC	#4 @ 12" OC	-
GB10	2' - 3"	+96' - 0"	(4) #7	(4) #6	#5 @ 12" OC	#4 @ 12" OC	-
GB11	1' - 6"	+96' - 6"	(3) #8	(3) #8	#5 @ 12" OC	#4 @ 12" OC	-
GB12	2' - 2"	+95' - 0"	(4) #9	(4) #9	#5 @ 12" OC	#4 @ 12" OC	-

NOTES:

1. MAINTAIN MINIMUM DEPTH OF 4' - 0" FROM FINISH GRADE TO BOTTOM OF GRADE BEAM ELEVATION. STEP BOTTOM AS REQUIRED.

IMEG
1900 DENING WAY, SUITE 200
MIDDLETON, WI 53562
608.824.5800 tel 608.824.5815
www.imegcorp.com
IMEG PROJECT # 170100.00

IMEG CORP. RETAINS ALL PROPRIETARY RIGHTS, INCLUDING COPYRIGHTS, TO THIS DRAWING AND THE DATA SHOWN THEREON, AND DRAWINGS AND/OR DATA ARE THE EXCLUSIVE PROPERTY OF IMEG CORP. AND SHALL NOT BE USED OR REPRODUCED FOR ANY OTHER PROJECT WITHOUT THE EXPRESS WRITTEN APPROVAL AND PARTICIPATION OF IMEG CORP. © 2018 IMEG CORP.

REFERENCE SCALE INCHES
0 1 2 3

MSR
710 South 2nd Street, 8th Floor
Minneapolis, Minnesota 55401-2262
Architecture, Interiors and Urban Design
612 375 0336 tel
612 342 2216 fax
www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201
Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
303 South Paterson Street, Suite 1
Madison, WI 53703
608.251.3600 tel

Structural Engineer, Technology and A/V
IMEG Corp.
1900 Deming Way, Suite 200
Middleton, WI 53562
608.223.9600 tel

MEP Engineer
MEP Associates, LLC
860 Blue Gentian Road, Suite 175
Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
375 Jackson Ave West
St. Paul, MN 55103
651.251.1610 tel

Greenhouse Design
Rough Brothers, Inc.
5513 Vine Street
Cincinnati, OH 45217
513.242.0310 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin.
ARCHITECT SEAL

WISCONSIN DANIEL JACK POLING A-5934 MINNEAPOLIS, MN ARCHITECT

Signature:
Print Name:
Date: JUNE 1, 2018 License No:

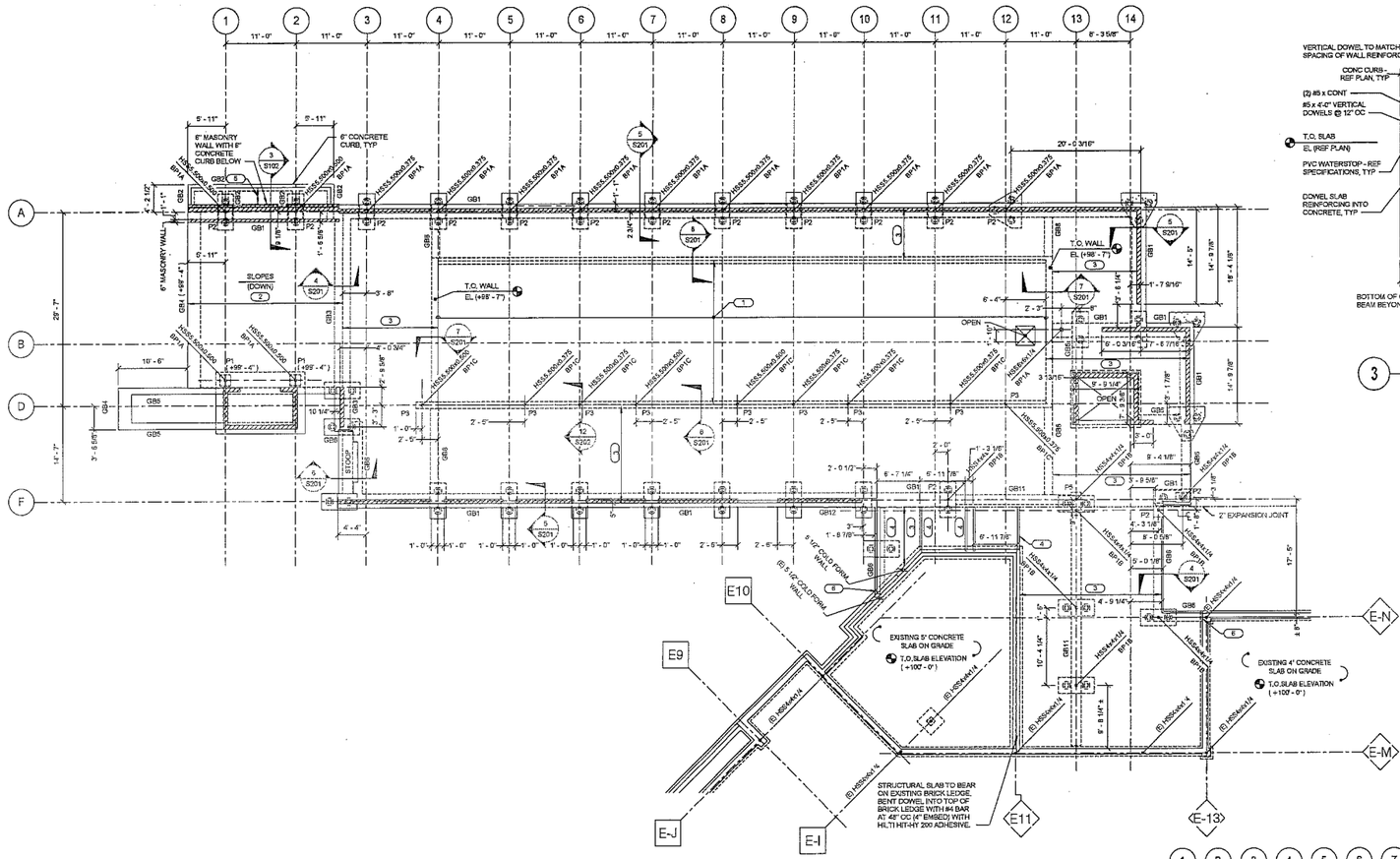
ISSUE		
NUM.	DATE	DESCRIPTION
	11.06.2017	CD PRICING SET
	01.19.2018	DESIGN DEVELOPMENT SUBMISSION
	03.30.2018	100% CD SUBMISSION
	05.04.2018	BOV CONSTRUCTION DOCUMENTS
	06.01.2018	BID SET-B
	06.04.2018	PERMIT ISSUE

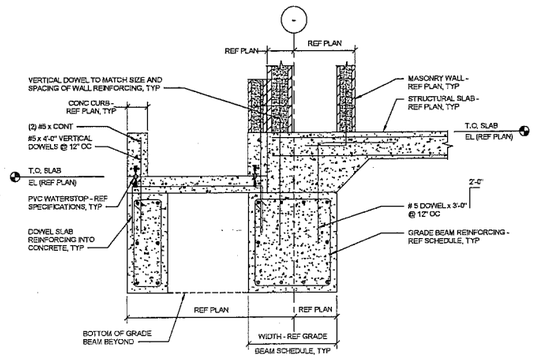
PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: SIDBHO CHECKED BY: ABBPER

SYMBOLS AND ABBREVIATIONS

EXHIBIT G

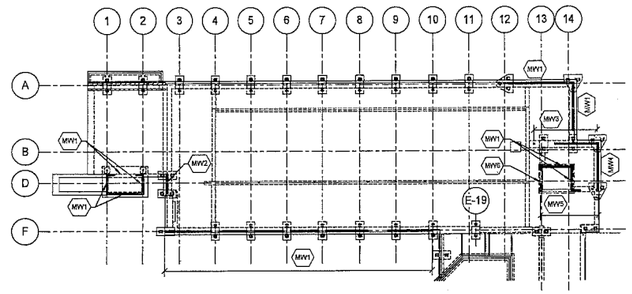
S002





OUTDOOR CLASSROOM CATCH BASIN DETAIL

3 — 3/4" = 1'-0"



LEARNING CENTER FOUNDATION PLAN

1/8" = 1'-0"

PLAN NORTH

NOTES:

1. TOP OF FOUNDATION WALL ELEVATION (+98' - 3"), UNO.
2. ALL MASONRY WALLS SHOWN ARE TO BE NOMINALLY 8" WITH #5 @ 48" OC, UNO. MASONRY SHEAR WALL LAYOUT ON THIS SHEET FOR MASONRY SHEAR WALL LOCATION AND REINFORCING.
3. BP# INDICATES BASE PLATE. REFER TO S202 FOR ANCHOR ROD AND BASE PLATE DETAILS.
4. F# INDICATES CONCRETE PIER. REFER TO S202 FOR DETAILS. TOP OF PIER ELEVATION MATCHES TOP OF WALL OR GRADE BEAM, UNO.
5. PROVIDE 2'-6" x 2'-6" CORNER BARS FOR GRADE BEAM AND WALL INTERSECTIONS. BAR SIZE AND QUANTITY TO MATCH LONGITUDINAL AND HORIZONTAL BARS.
6. REFER TO DETAIL 12/S202 FOR OPENINGS IN HOLLOWCORE PLANK.
7. SLEEVE UTILITIES THROUGH FOUNDATION PER 12/S201. COORDINATE SIZE AND LOCATION WITH MECHANICAL AND PLUMBING CONTRACTORS.
8. GB# INDICATES GRADE BEAM. REFER TO S002 FOR GRADE BEAM SCHEDULE. TOP OF GRADE BEAM ELEVATION (+98' - 7"), UNO.
9. REFER TO DETAILS 1, 2 AND 3 ON S201 FOR STRUCTURAL SLAB DETAILS.

KEYNOTES:

1. SLAB ON INSULATION ON PRECAST PLANK WITH TOPPING:
   5" CONCRETE TOPPING SLAB WITH 6x6 - W2.1xW2.1 WWR. TOP OF SLAB = (+100' - 0")
   4" ASTM D6817 EPS 12 BY GEOFOAM OR EQUIVALENT
   2" COMPOSITE CONCRETE TOPPING SLAB WITH 6x6 - W1.4xW1.4 WWR
   10" HOLLOWCORE SLAB. THE HOLLOWCORE SLAB IS TO BE DESIGNED FOR 65 PSF SUPERIMPOSED DEAD LOAD (EXCLUDES 2" COMPOSITE TOPPING) AND 100 PSF SUPERIMPOSED LIVE LOAD. HOLLOWCORE TO BE DESIGNED WITH APPROPRIATE CLEAR COVER TO PROTECT AGAINST WATER MOISTURE EXPOSURE AT BOTTOM OF THE PLANK.
2. 8" STRUCTURAL SLAB WITH #6 @ 16" OC TOP AND BOTTOM AND #4 @ 12" OC TEMPERATURE REINFORCING. TOP OF SLAB = (+100' - 0"). SLAB IS TO BE SLOPED PER ARCHITECTURAL DRAWINGS. THICKNESS OF SLAB IS TO BE CONSTANT THROUGHOUT.
3. SLAB ON INSULATION ON STRUCTURAL SLAB:
   5" CONCRETE TOPPING SLAB WITH 6x6 - W2.1xW2.1 WWR. TOP OF SLAB = (+100' - 0")
   4" ASTM D6817 EPS 12 BY GEOFOAM OR EQUIVALENT
   8" STRUCTURAL SLAB WITH #6 @ 12" OC TOP AND BOTTOM AND #4@12" OC TEMPERATURE REINFORCING.
4. COLD FORM BEARING WALL. WALL TO BE DESIGNED FOR 150LB DEAD LOAD AND 65LB SNOW LOAD. CONCRETE CURB BETWEEN TOP OF STRUCTURAL SLAB AND BOTTOM OF TOPPING SLAB TO BE PROVIDED AT EACH WALL LOCATION.
5. 5" STRUCTURAL SLAB WITH #4 @ 12" OC EACH WAY, TOP OF SLAB = (+99' - 0").
6. DOWEL REINFORCING OF GRADE BEAM INTO EXISTING PIER AND ANCHOR WITH HILTI HIT-HY 270 (4" EMBED).

MASONRY SHEAR WALL LAYOUT

2 — 1/16" = 1'-0"

MASONRY WALL REINFORCING SCHEDULE				
MARK	VERTICAL	HORIZONTAL	END ZONES	NOTES
MW1	#5 @ 48" OC	-	(1) CELL WITH (1) #5	-
MW2	#5 @ 24" OC	-	(2) CELLS WITH (1) #5 EACH CELL	-
MW3	REFER TO 4/S104			-
MW4	REFER TO 3/S104			-
MW5	REFER TO 2/S104			-
MW6	REFER TO 5/S104			-

NOTES:

1. TYPICAL HORIZONTAL REINFORCING IS AS PER SPECIFICATIONS. IT IS INTENDED TO BE "DUROWAL - LADDER TYPE" OR EQUIVALENT.
2. REINFORCED CORES ARE ALWAYS GROUTED.
3. REFER TO S/S301 FOR TYPICAL MASONRY OPENING AND END ZONE DETAIL.
4. END ZONE REINFORCEMENT CONTROL OVER TYPICAL VERTICAL REINFORCEMENT. TYPICAL VERTICAL REINFORCEMENT APPLIES BETWEEN END ZONES.
5. PROVIDE BOND BEAM WITH (2) #5 AT EACH LEVEL, UNLESS NOTED OTHERWISE IN DETAILS.

IMEG
1800 DEMING WAY, SUITE 200
MIDDLETON, WI 53562
608.203.9600 FAX: 608.836.9615
www.imegcorp.com
PROJECT # 170400LAN

IMEG CORP. RESERVES PROPRIETARY RIGHTS, INCLUDING COPYRIGHTS, TO THE DRAWING AND THE DATA, WORK, DESIGN, AND GRAPHIC WORK DATA ARE THE EXCLUSIVE PROPERTY OF IMEG CORP AND SHALL NOT BE USED OR REPRODUCED FOR ANY OTHER PROJECT WITHOUT THE EXPRESS WRITTEN APPROVAL AND PARTICIPATION OF IMEG CORP. © 2018 IMEG CORP.

REFERENCE SCALE IN INCHES
0 1 2 3

MSR
710 South 2nd Street, 8th Floor
Minneapolis, Minnesota 55401-2282
Architecture, Interiors and Urban Design
612.375.0336 tel
612.342.2216 fax
www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201
Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
303 South Paterson Street, Suite 1
Madison, WI 53703
608.251.3600 tel

Structural Engineer, Technology and AV
IMEG Corp.
1800 Deming Way, Suite 200
Middleton, WI 53562
608.203.9600 tel

MEP Engineer
MEP Associates, LLC
892 Silver Cowback Road, Suite 175
Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
575 Minnehaha Ave West
St. Paul, MN 55103
651.251.1400 tel

Greenhouse Design
Rough Brothers, Inc.
5513 Vine Street
Cincinnati, OH 45217
513.242.0310 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin.
ARCHITECT SEAL

WISCONSIN
DANIEL JACK POLING
A-5804
MINNEAPOLIS, MN
ARCHITECT

Signature:
Print Name: DANIEL POLING
Date: JUNE 1, 2018 License Nr.:

ISSUE		
MARK	DATE	DESCRIPTION
	12.08.2017	GD PRICING SET
	01.19.2018	DESIGN DEVELOPMENT SUBMISSION
	03.30.2018	75% CD SUBMISSION
	05.04.2018	100% CONSTRUCTION DOCUMENTS
	06.01.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE

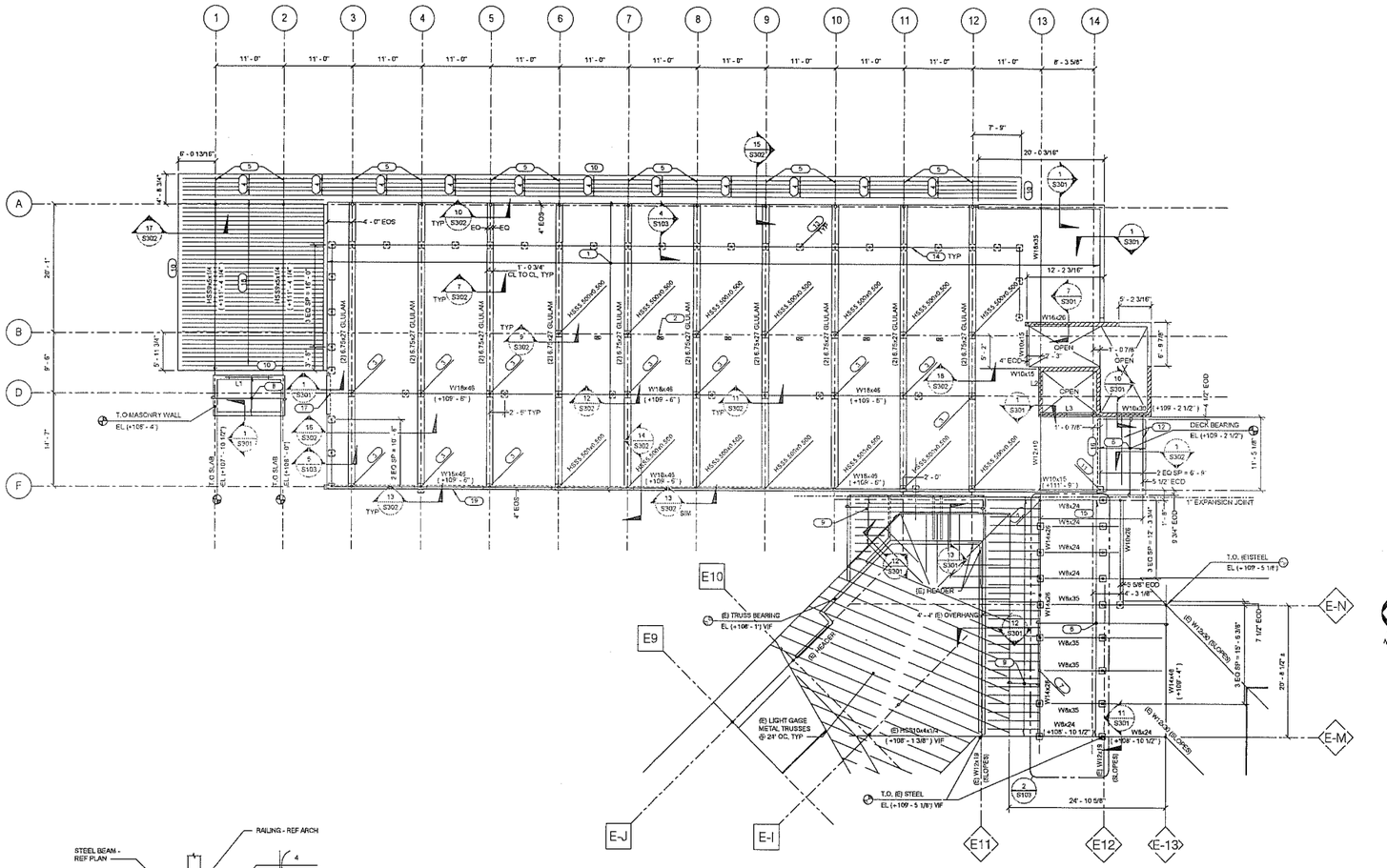
PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: SIDBHO
CHECKED BY: ABBPER

LEARNING CENTER FOUNDATION PLAN

EXHIBIT G

S102

ORIGINAL



2 POP UP FRAMING PLAN

3/16" = 1'-0"

KEYNOTES:

1. HSS4x4x1/4 POST, DOWN TO ROOF BELOW.
2. HSS6x6x1/4 BEAM.
3. 1 1/2" (20GA) STEEL DECK, 2 SPAN MINIMUM. FASTENING = 36/4 (1) WITH 5/8" PUDDLE WELD AND #10 SIDESLAP SCREWS. DECK BEARING = (+110' - 11")

1 LEARNING CENTER LEVEL 2 FRAMING PLAN

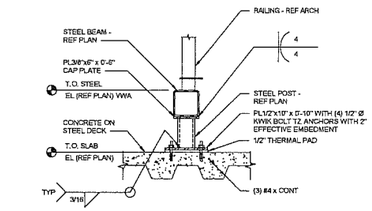
1/8" = 1'-0"

NOTES:

1. REFER TO 6/S302 FOR TYPICAL SHEAR CONNECTION.
2. L# INDICATES LINTEL IN STRUCTURAL MASONRY WALL - REFER TO 9/S301 FOR SCHEDULE.
3. FOR LINTELS IN NON-STRUCTURAL WALLS, REFER TO GENERAL NOTES FOR SCHEDULE.

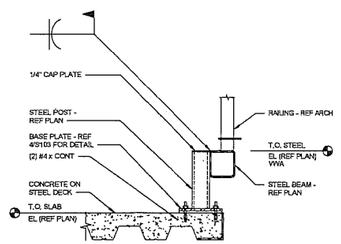
KEYNOTES:

1. 3" NORMAL - WEIGHT CONCRETE ON 3" (18 GA) COMPOSITE STEEL DECK, 2 SPAN MINIMUM, WITH 6x6 - W2.1xW2.1 WWR, TOTAL THICKNESS = 6". TOP OF SLAB ELEVATION = (+112' - 3"). FASTENING = 36/4 (3) @ STEEL FRAMING USE 5/8" PUDDLE WELDS AND WELDED SIDELAPS @ GLULAM FRAMING, USE #10 TRUSRIP LAG SCREWS FOR SUPPORT FASTENERS (1 1/4") MIN EMBED AND WELDED SIDELAPS.
2. FLOOR PENETRATION - REFER TO 9/S301 FOR DETAIL.
3. HSS5.563x0.375 POST FROM TOP OF STEEL BEAM TO BOTTOM OF DECK. REFER TO DETAIL 12/S302.
4. 2x8 @ 8" OC MAX. TOP OF BEAM = (+112' - 1"). REFER TO ARCHITECTURAL DRAWINGS FOR EXACT SPACING.
5. HSS5x5x3/8 OUTRIGGER (GALV). TOP OF STEEL ELEVATION = (+111' - 4 1/4").
6. 1 1/2" (20 GA) STEEL DECK, 2 SPAN MINIMUM, FASTENING = 36/4 (1) WITH 5/8" PUDDLE WELDS AND #10 SIDELAP SCREWS. DECK BEARING = (+108' - 10 1/2"), LNO.
7. COLUMN EXTENDS TO POP UP ROOF ABOVE.
8. 3" NORMAL - WEIGHT CONCRETE ON 2" (20 GA) CONFORM DECK, 1 SPAN, WITH 6x6 - W1.4xW1.4 WWR. TOTAL THICKNESS = 5".
9. 1 1/2" (22GA) TYPE B ROOF DECK SUPPORTED BY 6" COLD FORM JOISTS AT 16" OC. REFER TO LOADS ON 6/S104. DECK BEARING = (+107' - 5").
10. C15x33.9 x CONT (+112' - 8 1/2").
11. HSS3x3x1/4 POST FROM (+108' - 10") TO (+110' - 9"). REFER TO DETAILS 3 AND 4/S302.
12. W8x15. TOP OF STEEL ELEVATION = (+109' - 2 1/2").
13. HSS4x0.313 POST (GALV). POSTS TO BE CENTERED UNDER VERTICAL POSTS OF GUARD RAIL AT 5' - 6" OC MAX. REFER TO ARCHITECTURAL DRAWING FOR EXACT LOCATION OF GUARD RAIL POSTS.
14. HSS6x6x5/8 (GALV) x CONTINUOUS RAILING SUPPORT. TOP OF STEEL ELEVATION = (+113' - 5").
15. W10x26 (+109' - 2 1/2") TRANSFER BEAM
16. W12x19 (+111' - 9") - EOS = 1'-0"
W8x15 (+109' - 2 1/2") - EOD = 4 1/2"
REFER TO DETAIL 17/S301.
17. REFER TO 5/S301. SIM FOR BEAM BEARING ON MASONRY DETAIL.
18. 2x TONGUE AND GROOVE WOOD DECK WITH CONTROLLED RANDOM LAY-UP OVER 2x6 ACCOYA @ 8" OC MAX. TOP OF BEAM = (+112' - 1"). REFER TO ARCHITECTURAL DRAWINGS FOR EXACT SPACING.
19. C15x33.9 x CONT (+109' - 6"). VERIFY EXTENTS WITH ARCHITECT.



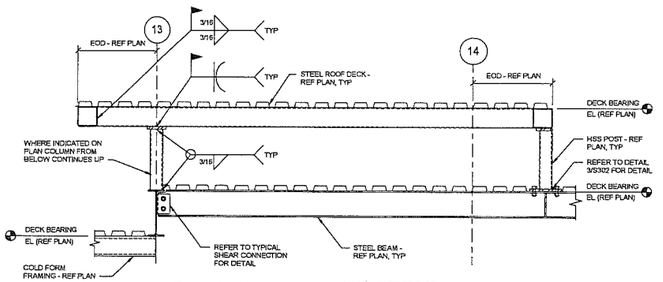
4 RAILING SUPPORT DETAIL

1" = 1'-0"



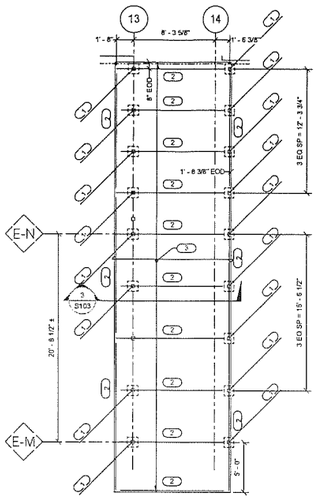
5 RAILING SUPPORT DETAIL

1" = 1'-0"



3 POP UP FRAMING DETAIL

3/4" = 1'-0"



MSR 710 South 2nd Street, 8th Floor Minneapolis, Minnesota 55401-2262
Architecture Interiors and Urban Design 612 375 0336 tel 612 343 2216 fax www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201 Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
323 South Fairchild Street, Suite 1 Madison, WI 53703
608.251.3600 tel

Structural Engineer, Technology and A/V
IMEG Corp.
1800 Deming Way, Suite 200 Middleton, WI 53562
608.223.9600 tel

MEP Engineer
MEP Associates, LLC
860 Blue Gentian Road, Suite 175 Eagan, MN 55121
651.379.9129 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
525 Minnehaha Ave West St. Paul, MN 55103
651.251.1610 tel

Greenhouse Design
Rough Brothers, Inc.
5510 Vine Street Cincinnati, OH 45217
513.242.0310 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin. ARCHITECT SEAL

WISCONSIN DANIEL JACK POLING A-6094 MINNEAPOLIS, MN ARCHITECT

Signature
Print Name:
Date: JUNE 1, 2018 License No.:

ISSUE	DATE	DESCRIPTION
	12.08.2017	DD PRICING SET
	01.15.2018	DESIGN DEVELOPMENT SUBMISSION
	01.30.2018	70% CD SUBMISSION
	05.04.2018	90% CONSTRUCTION DOCUMENTS
	06.01.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE

PROJECT NO. 2017015
PROJECT PHASE BID DOCUMENTS
DRAWN BY: SIDBHO CHECKED BY: ABBPER

LEARNING CENTER LEVEL 2 FRAMING PLAN

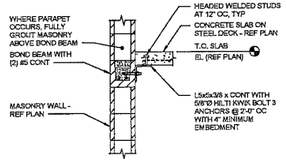
EXHIBIT G

S103

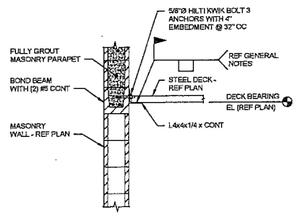
IMEG 1800 DEMING WAY, SUITE 200 MIDDLETON, WI 53562 608.223.9600 FAX 608.831.3415 www.imegcorp.com PROJECT # 17000018.00

IMEG CORP. RETAINS ALL PROPRIETARY RIGHTS, INCLUDING COPYRIGHTS, TO THIS DRAWING AND THE DATA SHOWN THEREON, AND DRAWINGS AND/OR DATA ARE THE EXCLUSIVE PROPERTY OF IMEG CORP AND SHALL NOT BE USED OR REPRODUCED FOR ANY OTHER PROJECT WITHOUT THE EXPRESS WRITTEN APPROVAL AND PARTICIPATION OF IMEG CORP. © 2018 IMEG CORP.

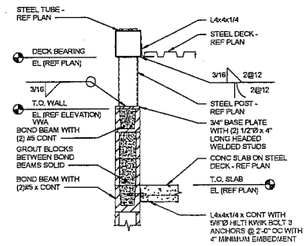
REFERENCE SCALE INCHES 0 1 2 3



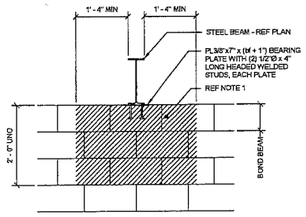
1 TYPICAL DECK SUPPORT AT MASONRY
3/4" = 1'-0"



2 ROOF DECK SUPPORT AT MASONRY
3/4" = 1'-0"

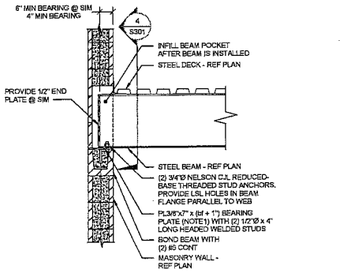


3 LOUVER FRAMING DETAIL
3/4" = 1'-0"



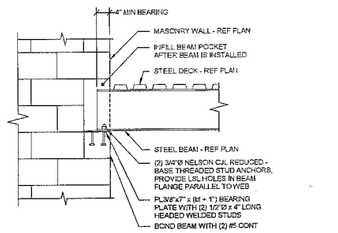
4 TYPICAL BEAM BEARING ON MASONRY
3/4" = 1'-0"

NOTES:
1. IN SHADED AREA, FILL ALL CORES IN WALL WITH GROUT MINIMUM AT CORNER CONDITION, 1'-4", EACH WAY.

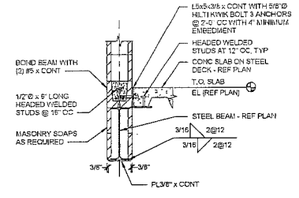


5 TYPICAL BEAM BEARING ON MASONRY
3/4" = 1'-0"

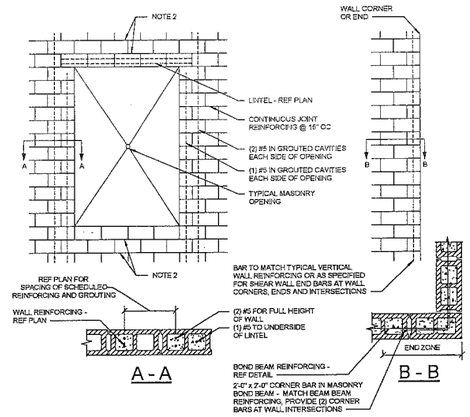
NOTES
1. AT SIM, PROVIDE 3/8"X7" x 0'-9" BEARING PLATE.



6 TYPICAL BEAM BEARING ON MASONRY
3/4" = 1'-0"

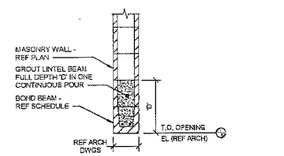


7 BEAM SUPPORTING CMU WALL DETAIL
3/4" = 1'-0"



8 TYPICAL MASONRY WALL DETAIL
NO SCALE

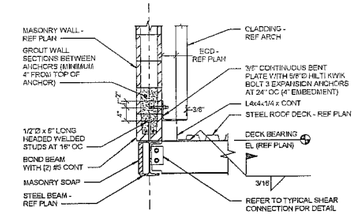
NOTES:
1. REFER TO ARCHITECTURAL ELEVATIONS FOR MASONRY CONTROL JOINT LOCATIONS.
2. TWO COURSES OF JOINT REINFORCING ARE REQUIRED ABOVE THE LINTEL AND BELOW THE SILL AND SHALL EXTEND A MINIMUM OF 24 INCHES PAST THE OPENING.



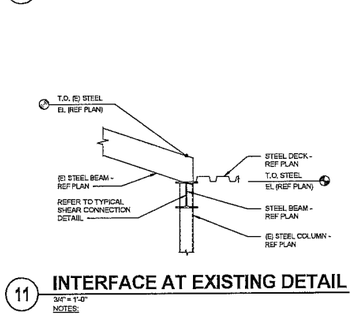
TYPE	DEPTH	REINFORCING
L1	24"	(2) #5
L2	16"	(2) #5
L3	32"	(2) #5

9 LINTEL DETAIL
3/4" = 1'-0"

NOTES:
1. SHORE MASONRY UNTIL GROUT FOR LINTEL HAS REACHED ITS SPECIFIED STRENGTH.
2. BOND BEAM SHOULD EXTEND 8" PAST OPENING.

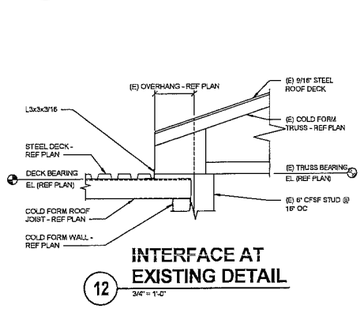


10 CONNECTION DETAIL
3/4" = 1'-0"

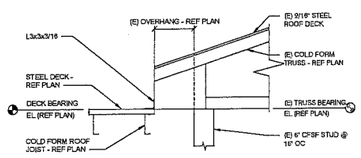


11 INTERFACE AT EXISTING DETAIL
3/4" = 1'-0"

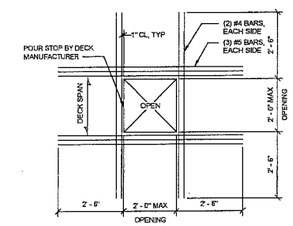
NOTES:
1. EXISTING OVERHANG DEMOLISHED.



12 INTERFACE AT EXISTING DETAIL
3/4" = 1'-0"

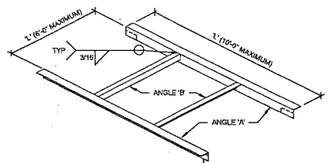


13 INTERFACE AT EXISTING DETAIL
3/4" = 1'-0"



14 TYPICAL FLOOR PENETRATION
1/2" = 1'-0"

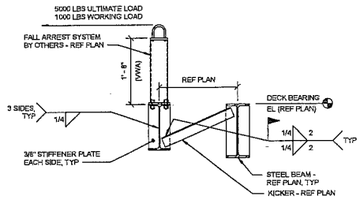
NOTES:
1. USE ABOVE FRAMING AT ALL OPENINGS EXCEEDING 1'-0" UNO.
2. REFERENCE ARCHITECTURAL AND MECHANICAL DRAWINGS FOR SIZE AND LOCATION OF ALL OPENINGS.
3. ROOF OPENING FRAMING NOT REQUIRED AT SIDE DISCHARGE ROOF DRAINS. COORDINATE WITH MECHANICAL CONTRACTOR.



'L'	ANGLE 'A'	ANGLE 'B'
UP TO 1'-0"	NONE - SUMP PAN ONLY	NONE - SUMP PAN ONLY
1'-1" TO 4'-0"	L4x4x1/4	L4x4x1/4
4'-7" TO 5'-0"	L4x4x5/16	L4x4x1/4
5'-1" TO 8'-0"	L4x4x3/8	-
8'-1" TO 10'-0"	L6x4x3/8 (LLV)	-

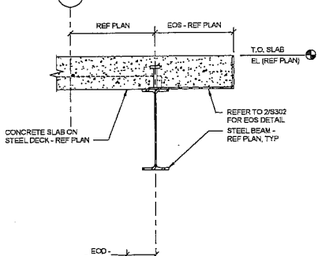
15 DECK OPENING FRAMING DETAIL
3/4" = 1'-0"

NOTES:
1. USE ABOVE FRAMING AT ALL OPENINGS EXCEEDING 1'-0" UNO.
2. REFERENCE ARCHITECTURAL AND MECHANICAL DRAWINGS FOR SIZE AND LOCATION OF ALL OPENINGS.
3. ROOF OPENING FRAMING NOT REQUIRED AT SIDE DISCHARGE ROOF DRAINS. COORDINATE WITH MECHANICAL CONTRACTOR.

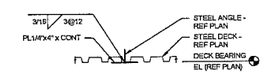


16 FALL ARREST SUPPORT DETAIL
3/4" = 1'-0"

NOTES:
1. DECK NOT SHOWN FOR CLARITY.
2. STEEL FABRICATOR TO COORDINATE LOCATION OF ANCHORS WITH FALL ARREST SYSTEM PROVIDED.



17 FRAMING DETAIL
1 1/2" = 1'-0"



18 COLLECTOR DETAIL
3/4" = 1'-0"

NOTES:
1. FASTEN DECK TO ANGLE AND PLATE. REFER TO PLAN FOR DECK FASTENING.

IMEG 1930 DEMING WAY, SUITE 200 MADISON, WI 53717 608.833.1440 FAX 608.833.1455 WWW.IMEG.NET PROJECT #: 7M0008.00

IMEG CORP. RESERVES PROPRIETARY RIGHTS, INCLUDING COPYRIGHTS, TO THIS DRAWING AND THE DATA SHOWN THEREON, AND DRAWING AND/OR DATA ARE THE EXCLUSIVE PROPERTY OF IMEG CORP. AND SHALL NOT BE USED OR REPRODUCED FOR ANY OTHER PROJECT WITHOUT THE EXPRESS WRITTEN APPROVAL AND PARTICIPATION OF IMEG CORP. © 2016 IMEG CORP.

REFERENCE SCALE IN INCHES
0 1 2 3

MSR 710 South 2nd Street, 8th Floor Minneapolis, Minnesota 55401-2282
Architecture 612.375.0336 tel
Interiors and Urban Design 612.340.2216 fax
www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201 Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
303 South Paterson Street, Suite 1 Madison, WI 53703
608.251.3600 tel

Structural Engineer, Technology and AV
IMEG Corp.
1930 Deming Way, Suite 200 Middleton, WI 53562
608.833.1440 tel

MEP Engineer
MEP Associates, LLC
840 Blue Gentian Road, Suite 175 Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
575 Minnesota Ave West SL Paul, MN 55103
651.251.1150 tel

Greenhouse Design
Rough Brothers, Inc.
5513 Vine Street Cincinnati, OH 45217
513.242.0310 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin.
ARCHITECT SEAL

WISCONSIN DANIEL JACK POLING A-8994 MINNEAPOLIS, MN ARCHITECT

Signature:
Print Name:
Date: JUNE 1, 2018 License No:

MARK	DATE	DESCRIPTION
	12.08.2017	DD PRICING SET
	01.15.2018	DESIGN DEVELOPMENT SUBMISSION
	03.30.2018	75% CD SUBMISSION
	05.04.2018	100% CONSTRUCTION DOCUMENTS
	06.01.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE

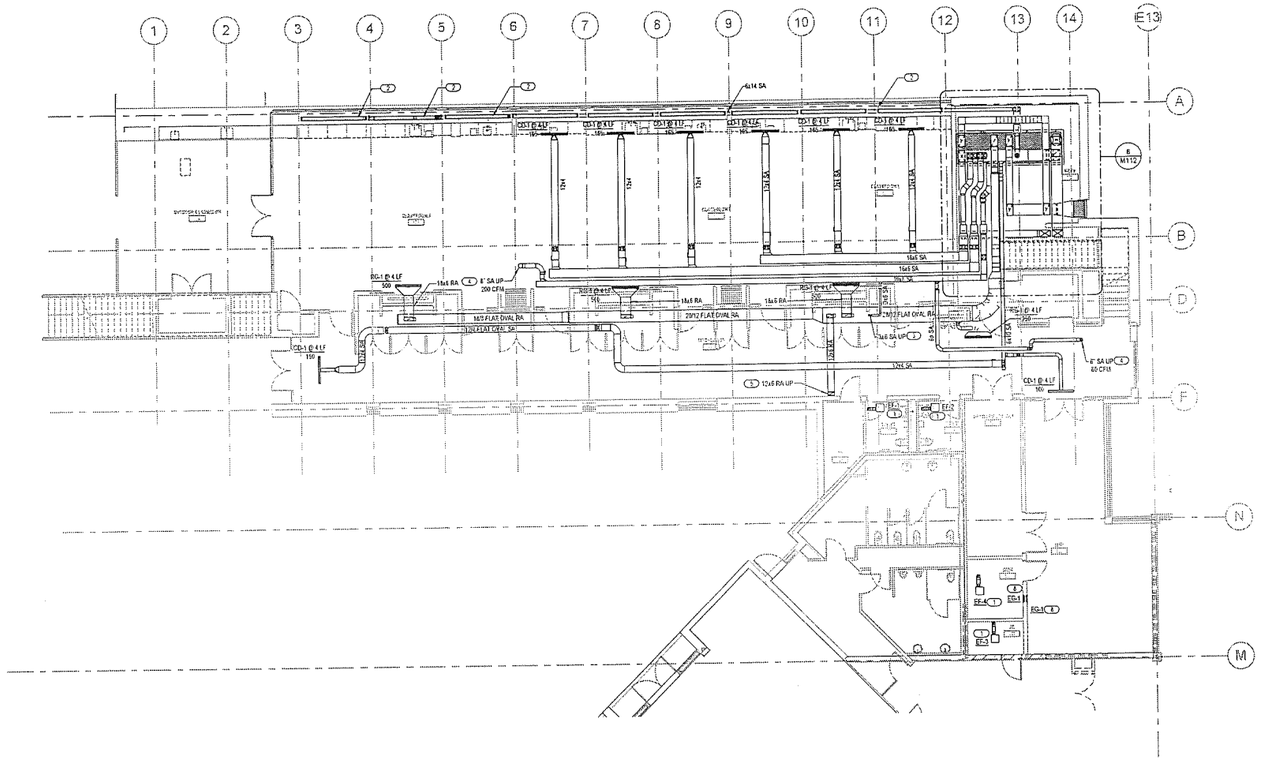
PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: SIDBHO CHECKED BY: ABBPER

FRAMING DETAILS

EXHIBIT G

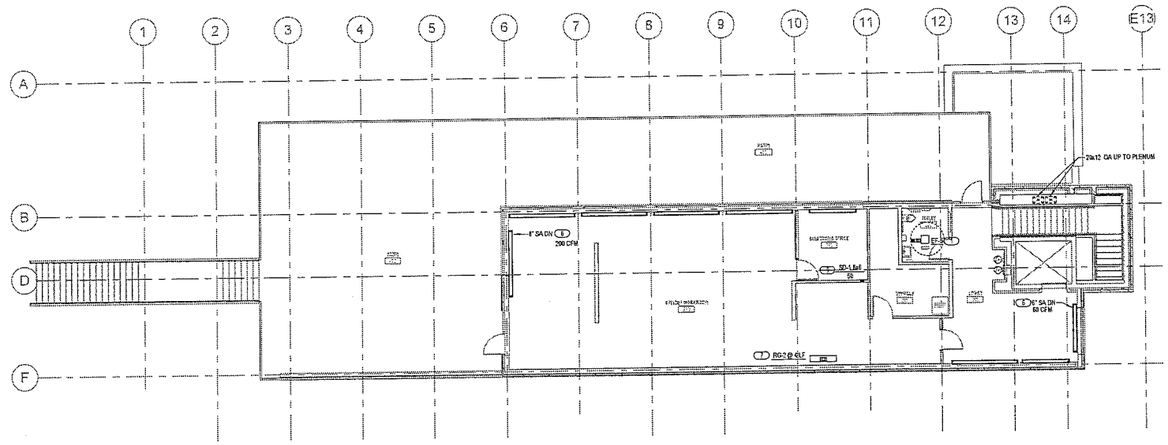
S301

ORIGINAL



1 LEARNING CENTER MECHANICAL DUCT PLAN LEVEL 1

1/8" = 1'-0"



2 LEARNING CENTER MECHANICAL DUCT PLAN LEVEL 2

1/8" = 1'-0"

GENERAL NOTES

A. FOR MECHANICAL NOTES, LEGENDS AND ABBREVIATION, REFER TO M001.

KEYED NOTES

1. EXHAUST FAN SHALL BE PROVIDED WITH GOOSENECK TERMINATION AT ROOF. PROVIDE BIRD SCREEN.
2. ROUTE SUPPLY AIR DUCTWORK IN WALL CAVITY. SUPPLY AIR DUCTWORK, 165 CFM, SHALL CONNECT TO ALL RFC-10 IN CLASSROOM 3, EACH RFC-10 SHALL HAVE 8" DIAMETER INLET. SEE ALSO M102.
3. ROUTE SUPPLY AIR DUCTWORK IN RAISED FLOOR CAVITY, 3x6 SUPPLY AIR DUCTWORK SHALL CONNECT TO RFC ABOVE.
4. ROUTE SUPPLY AIR DUCTWORK UP TO RFC ABOVE. SEE 2M101 FOR CONTINUATION. SEE ALSO M102.
5. ROUTE RETURN AIR DUCTWORK UP. SEE 2M101 FOR CONTINUATION.
6. CONNECT SUPPLY DUCTWORK TO RFC.
7. RETURN GRILLE SET VERTICALLY AT TOE SPACE. SEE ARCHITECTURAL PLAN. CONNECT 8" RETURN DUCTWORK TO RG-2.
8. PROVIDE GRILLE AT LINK SIDE OF WALL, HIGH. CONNECT TO GRILLE ON DATA ROOM SIDE, LOW, WITH 8"x3" DUCT IN STUD SPACE.
9. INSTALL 6x6 SA DIFFUSER IN WALL, APPROXIMATELY 5' ABOVE FINISHED FLOOR, ANGLE BLADES TO OBSTRUCT VIEW INTO DUCT.

MSR
710 South 2nd Street, 8th Floor
Minneapolis, Minnesota 55401-2182
Architecture Interiors and Urban Design
612 375 0336 tel
612 341 2216 fax
www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201
Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
303 South Paterson Street, Suite 1
Madison, WI 53703
608.251.3600 tel

Structural Engineer, Technology and A/V
IMEG Corp.
1809 Deming Way, Suite 200
Middleton, WI 53562
608.223.9660 tel

MEP Engineer
MEP Associates, LLC
660 Blue Gentian Road, Suite 175
Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
525 Hamline Ave West
St. Paul, MN 55103
651.251.1900 tel

Greenhouse Design
Rough Brothers, Inc.
5613 Vine Street
Cincinnati, OH 45217
513.242.0310 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Engineer under the Laws of the State of Wisconsin.
ENGINEER SEAL

LARRY J. NIELSEN E-30240 MADISON, WISCONSIN

Signature:
Print Name: Larry Nielsen
Date: JUNE 4, 2018 License No: E-30240

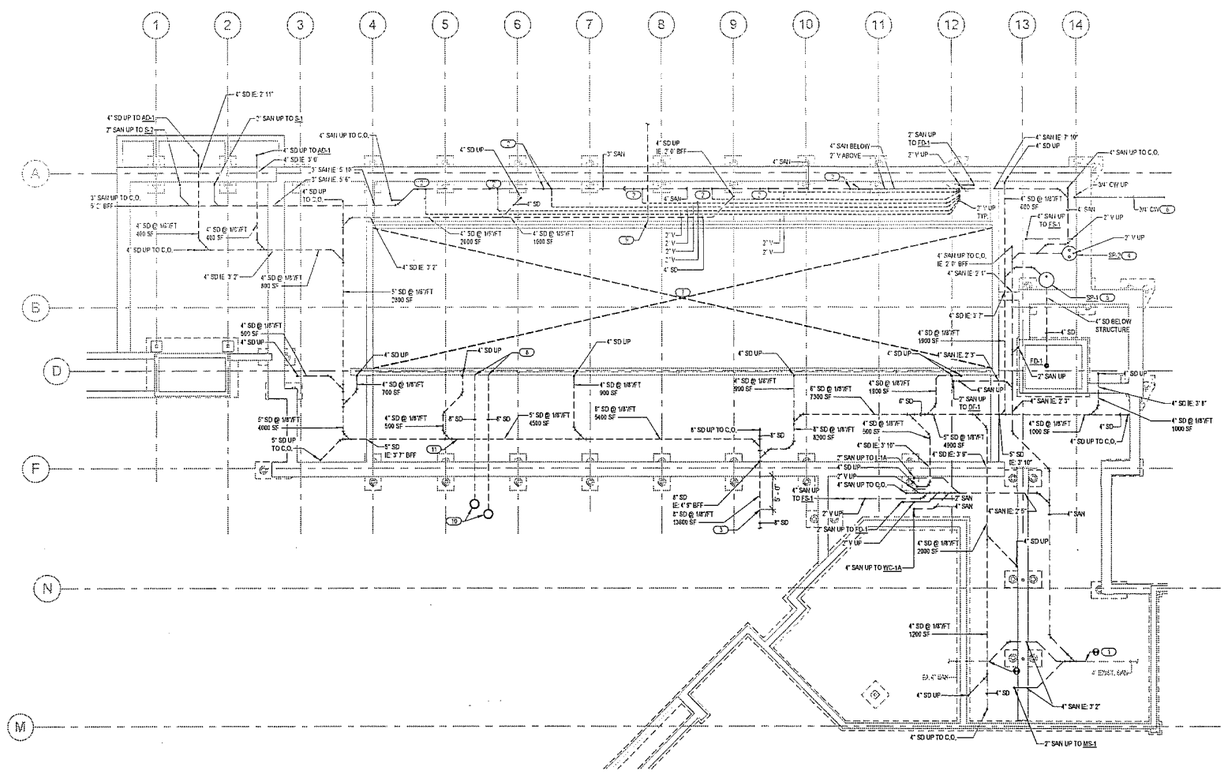
ISSUE		
NUMB.	DATE	DESCRIPTION
	03.03.2017	SCHEMATIC DESIGN SUBMISSION
	12.08.2017	DD PRICING SET
	01.10.2018	DESIGN DEVELOPMENT SUBMISSION
	01.17.2018	LDC SUBMISSION
	03.31.2018	70% CD PRICING ISSUE
	05.04.2018	90% CONSTRUCTION DOCUMENTS
	06.01.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE

PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: MSR CHECKED BY: MSR

LEARNING CENTER MECHANICAL DUCTWORK PLAN

EXHIBIT J
M101

ORIGINAL



1 LEARNING CENTER PLUMBING PLAN - BELOW GRADE

1/8" = 1'-0"

GENERAL NOTES

1. FOR PLUMBING NOTES, LEGENDS AND ABBREVIATION, REFER TO P001.
2. WATER CISTERN BELOW NEW LEARNING CENTER. SEE CIVIL PLANS. PLUMBING CONTRACTOR SHALL COORDINATE ALL WORK.
3. RADIANT SLAB USED IN NEW LEARNING CENTER AREA. PLUMBING CONTRACTOR SHALL COORDINATE ALL BELOW GRADE WORK.
4. ALL BELOW GRADE PIPING SHALL BE HUNG FROM THE FLOOR STRUCTURE.

KEYED NOTES

1. CONNECT TO EXIST. 4" SANITARY IN THIS LOCATION. EXIST. SANITARY INVERT IS 40" BFF. CONTRACTOR SHALL FIELD VERIFY PRIOR TO START OF CONSTRUCTION.
2. ISLAND VENT PER DETAIL, 1/P301.
3. 8" STORM EXITS AT THIS POINT. INVERT ELEVATION IS 56" BFF. PLUMBING CONTRACTOR SHALL PROVIDE PIPE WITHIN 5' 0" FROM THE EXTERIOR OF BUILDING. CONTINUATION BY SITE CONTRACTOR. REFER TO CIVIL PLANS.
4. SANITARY SUMP, SP-2, SEE DETAIL, 7/P301, 4" SAN INLET IE AT 99" BFF, SANITARY OUTLET IE AT 23" BFF, PROVIDE VISUAL OR AUDIBLE ALARM SYSTEM WITH MANUAL RESET.
5. STORM SUMP, SP-1, SEE DETAIL, 6/P301, 4" SD INLET IE AT 95" BFF, SD OUTLET IE AT 42" BFF, PROVIDE VISUAL OR AUDIBLE ALARM SYSTEM WITH MANUAL RESET.
6. 3/4" CW LINE, BELOW GRADE, ROUTE TO EXISTING DRINKING FOUNTAIN. PIPE INVERT SHALL BE 24" BFF.
7. RAINWATER CISTERN BELOW GRADE IN THIS AREA. REFER TO CIVIL AND STRUCTURAL PLANS. COORDINATE ALL PIPING BELOW GRADE.
8. 8" SD FROM EXTERIOR INTO CISTERN SYSTEM. 8" SD INVERT ELEVATION AT 42" BFF. STORM DRAIN SLOPE SHALL BE 1.04%.
9. 12" SD FROM CISTERN SYSTEM TO EXTERIOR. 12" SD INVERT ELEVATION AT 46" BFF. STORM DRAIN SLOPE SHALL BE 11.35%. PLUMBING CONTRACTOR SHALL PROVIDE STORM DRAIN PIPE WITHIN 5'0" FROM EXTERIOR OF BUILDING. COORDINATE WITH SITE/CIVIL CONTRACTOR PRIOR TO START OF CONSTRUCTION.
10. STORM MANHOLE PROVIDED BY SITE CONTRACTOR. PLUMBING CONTRACTOR SHALL PROVIDE STORM DRAIN PIPE WITHIN 5'0" FROM EXTERIOR OF BUILDING. COORDINATE WITH SITE/CIVIL CONTRACTOR PRIOR TO START OF CONSTRUCTION.
11. CONTRACTOR SHALL DROP 5" SD TO ROUTE PIPE UNDERNEATH (2) 8" SD.

MSR
710 South 2nd Street, 8th Floor
Minneapolis, Minnesota 55401-2282
Architecture, Interiors and Urban Design
612 375 0336 tel
612 342 2216 fax
www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201
Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
303 South Paterson Street, Suite 1
Madison, WI 53703
608.251.3600 tel

Structural Engineer, Technology and A/V
IMEG Corp.
1820 Deming Way, Suite 200
Middleton, WI 53562
608.223.9500 tel

MEP Engineer
MEP Associates, LLC
650 Blue Gentian Road, Suite 175
Eagan, MN 55121
651.379.9159 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
575 Minnehaha Ave West
St. Paul, MN 55103
651.291.1867 tel

Greenhouse Design
Rough Brothers, Inc.
5513 Vine Street
Cincinnati, OH 45217
513.242.0310 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Engineer under the Laws of the State of Wisconsin.
ENGINEER SEAL

WISCONSIN
LARRY J. NIELSEN
E-30240
MECHANICAL ENGINEER

Signature:
Print Name: Larry Nielsen
Date: JUNE 4, 2018 License No: E-30240

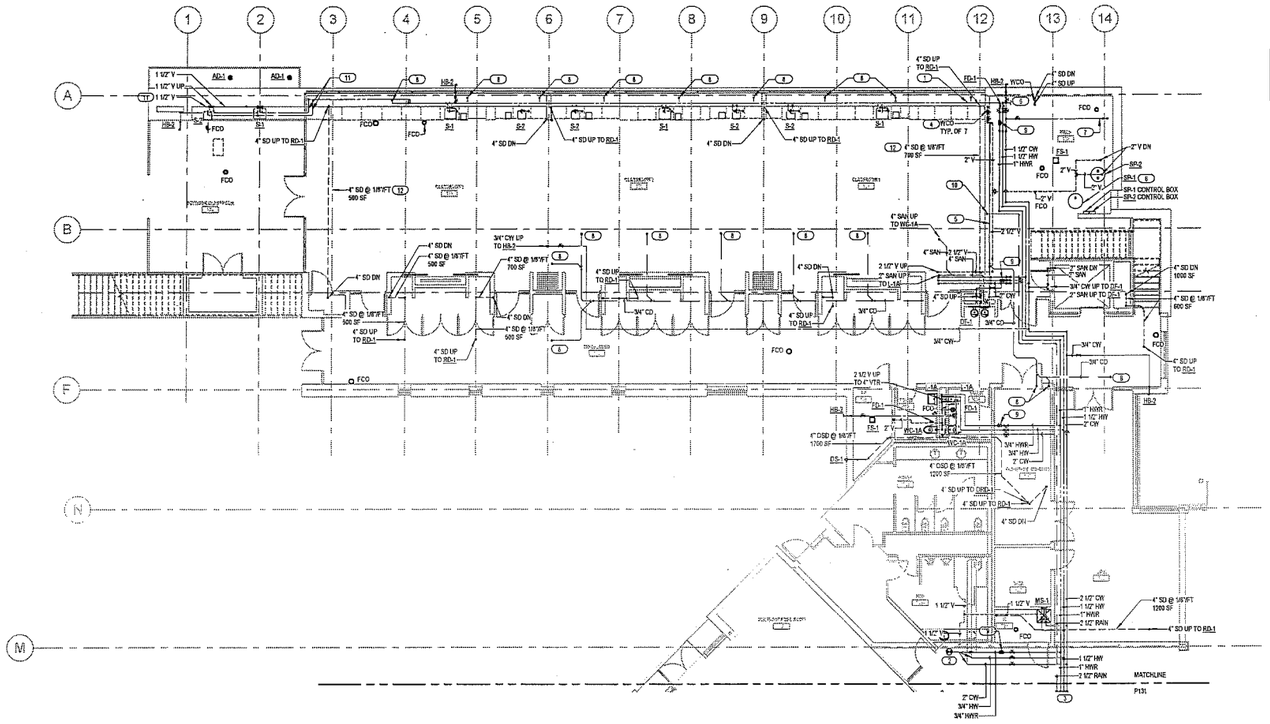
ISSUE		
MARK	DATE	DESCRIPTION
	09.29.2017	SCHEMATIC DESIGN SUBMISSION
	12.04.2017	DD PRICING SET
	01.19.2018	DESIGN DEVELOPMENT SUBMISSION
	01.17.2018	UDC SUBMISSION
	03.31.2018	70% DD PRICING ISSUE
	05.04.2018	90% CONSTRUCTION DOCUMENTS
	05.07.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE

PROJECT NO. 2017015
PROJECT PHASE BID DOCUMENTS
DRAWN BY: MSR CHECKED BY: MSR

LEARNING CENTER PLUMBING PLAN - BELOW GRADE

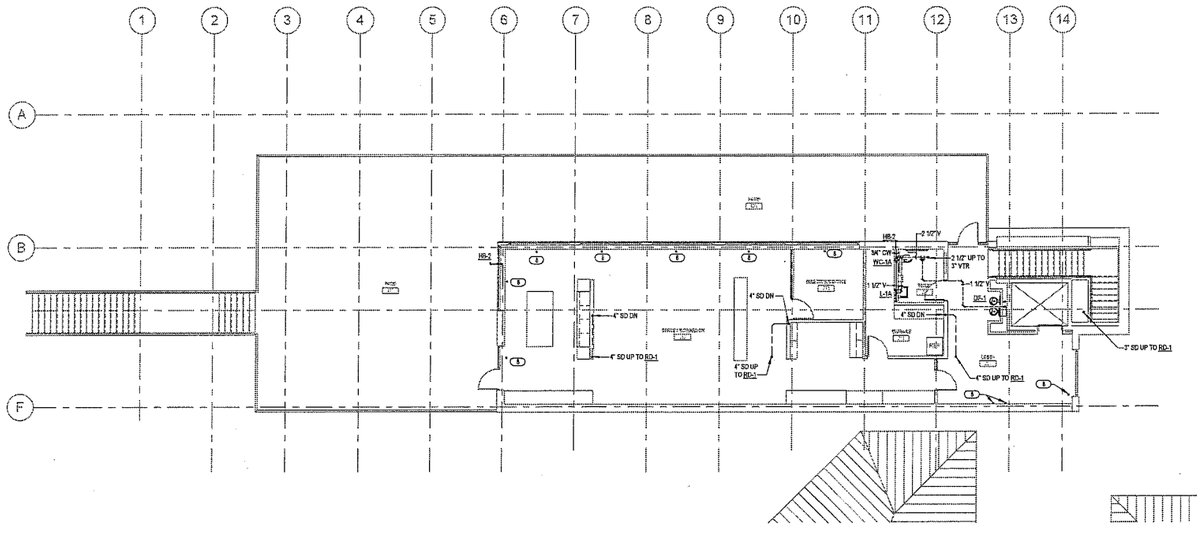
EXHIBIT K
P100

06/04/18



1 LEARNING CENTER PLUMBING PLAN LEVEL 1

1/8" = 1'-0"



2 LEARNING CENTER PLUMBING PLAN LEVEL 2

1/8" = 1'-0"

GENERAL NOTES

1. REFER TO MECHANICAL PLANS FOR IN-FLOOR PIPING. COORDINATE ALL BELOW GRADE PIPING.

KEYED NOTES

1. ROUTE WATER PIPING IN CABINETRY/CHASE. COORDINATE WITH MECHANICAL DUCTWORK. REFER TO ARCHITECTURAL DETAIL, ISOMETRIC AND MECHANICAL SECTION VIEW.
2. CONNECT NEW 2" CW, 3/4" HW, AND 3/4" HWR TO EXISTING 2", 3/4 HW, AND 1/2 HWR THIS AREA.
3. REFER TO P131 FOR CONTINUATION.
4. WALL CLEANOUTS TO BE ON MECHANICAL ROOM SIDE OF WALL. REFER TO RISER DIAGRAM P201 AND DETAIL 1/P301.
5. ROUTE 3/4" CD TO FD-1.
6. REFER TO DETAIL 6/P301 FOR SP-1 PIPING AND ASSOCIATED COMPONENTS.
7. 3/4" CW DOWN TIGHT TO WALL AND TO BELOW GRADE. SEE P100 FOR CONTINUATION. AT BASE OF DROP, INCLUDE QUICK DISCONNECT WITH SHUT-OFF VALVE, AND SHUT-OFF IMMEDIATELY UPSTREAM OF QUICK DISCONNECT TO ALLOW FOR COMPRESSED AIR CONNECTION AND WINTER BLOW-OUT OF LINE.
8. ROUTE 3/4" CD UP TO RECESSED FAN COIL UNIT.
9. HWR BALANCE VALVE SET TO 0.5 GPM, INSTALL ACCESSIBLE.
10. 2 1/2" RAINWATER PIPE UP FROM CISTERN SUMP PUMP. BELOW, CONTRACTOR SHALL CONNECT TO PUMPS (VALVING BY OTHERS). PENETRATE FLOOR WITH LINKSEAL AND ROUTE AS SHOWN.
11. 3/4" CW AND 3/4" HW OUT THROUGH EXTERIOR WALL IN CABINETRY, INTERIOR, TO EXTERIOR SINK STRUCTURE. AT EXT; INCLUDE QUICK DISCONNECT WITH SHUT-OFF VALVE, AND SHUT-OFF IMMEDIATELY UPSTREAM OF QUICK DISCONNECT TO ALLOW FOR COMPRESSED AIR CONNECTION AND WINTER BLOW-OUT OF LINE.
12. OUTDOOR CLASSROOM VENT SHALL BE COPPER. TERMINATE VENT 12" BELOW DECK. DO NOT PENETRATE DECK/ROOF.
13. ROUTE PIPING BETWEEN GLUE LAM.

MSR 710 South 2nd Street, 8th Floor Minneapolis, Minnesota 55401-2202
Architecture, Interiors and Urban Design
612 375 0336 tel
612 342 2216 fax
www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201
Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
303 South Paterson Street, Suite 1
Madison, WI 53703
608.251.3400 tel

Structural Engineer, Technology and AV
IMEG Corp.
1630 Deming Way, Suite 200
Middleton, WI 53562
608.223.9600 tel

MEP Engineer
MEP Associates, LLC
852 Blue Gentian Road, Suite 175
Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
575 Aberdeen's Ave West
St. Paul, MN 55126
651.251.1850 tel

Greenhouse Design
Rough Brothers, Inc.
5513 Vine Street
Cincinnati, OH 45217
513.242.0310 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Engineer under the laws of the State of Wisconsin.
ENGINEER SEAL

LARRY J. NIELSEN E-30240 DATE SIGNED

Signature:
Print Name: Larry Nielsen
Date: JUNE 4, 2018 License No: E-30240

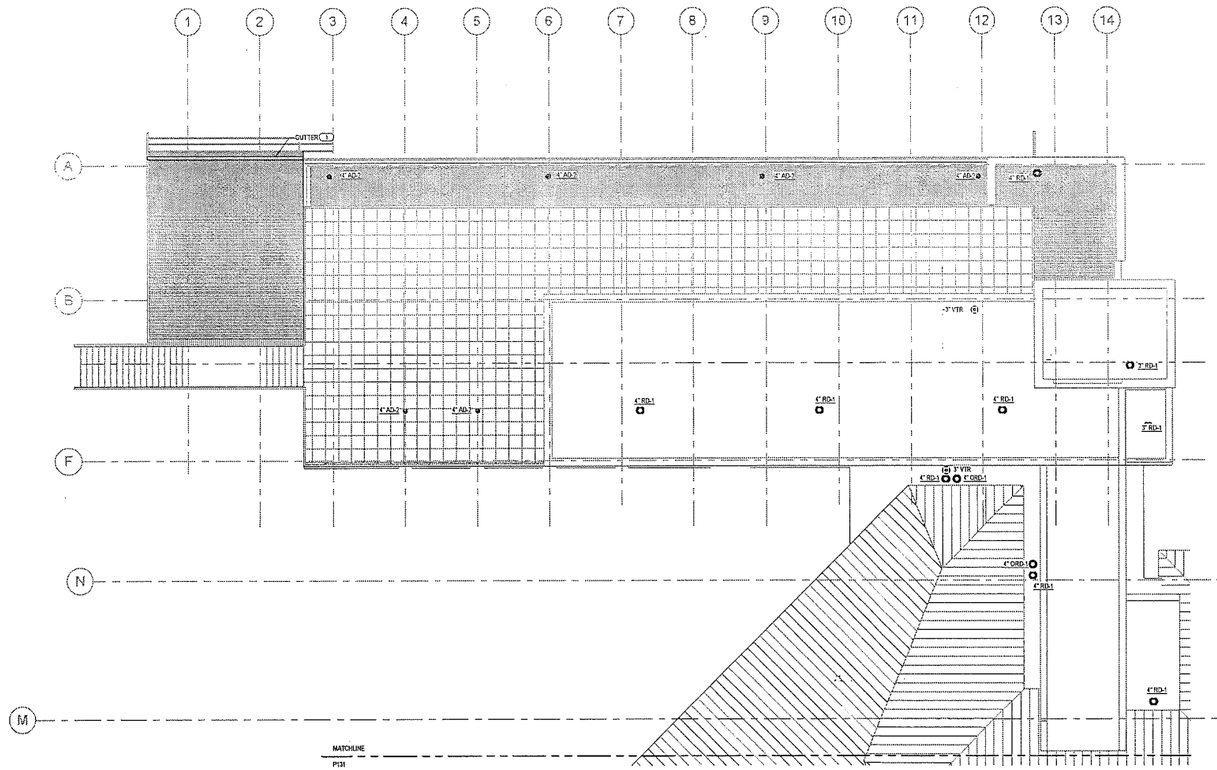
ISSUE

INDEX	DATE	DESCRIPTION
	10.09.2017	SCHEMATIC DESIGN SUBMISSION
	12.04.2017	CD PRICING SET
	01.10.2018	DESIGN DEVELOPMENT SUBMISSION
	01.17.2018	UDC SUBMISSION
	05.31.2018	70% CD PRICING ISSUE
	05.04.2018	100% CONSTRUCTION DOCUMENTS
	06.01.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE

PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: MSR CHECKED BY: MSR

LEARNING CENTER PLUMBING PLAN - ABOVE GRADE

EXHIBIT K
P101



GENERAL NOTES

1. REFER TO P000 FOR GENERAL NOTES, LEGENDS AND ABBREVIATION.
2. ALL OVERFLOW ROOF DRAINAGE IS BY SCUPPER/GUTTER. REFER TO ARCHITECTURAL PLANS.

KEYED NOTES

1. GUTTER PROVIDED BY ARCHITECT, REFER TO ARCHITECTURAL PLANS.

1 LEARNING CENTER PLUMBING ROOF PLAN

1/8" = 1'-0"

MSR
710 South 2nd Street, 6th Floor
Minneapolis, Minnesota 55401-2282
Architecture, Interiors and Urban Design
612 375 0336 tel
612 342 2216 fax
www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201
Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
303 South Paterson Street, Suite 1
Madison, WI 53703
608.251.3600 tel

Structural Engineer, Technology and AV
IMEG Corp.
1650 Deming Way, Suite 200
Middleton, WI 53562
608.223.9600 tel

MEP Engineer
MEP Associates, LLC
660 Blair Gateway Road, Suite 175
Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
525 Cleveland Ave West
St. Paul, MN 55102
651.251.1880 tel

Greenhouse Design
Rough Brothers, Inc.
5513 Vine Street
Cincinnati, OH 45217
513.242.0310 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Engineer under the Laws of the State of Wisconsin.
ENGINEER SEAL

WISCONSIN
LARRY J. NELSEN
E-30240
REGISTERED PROFESSIONAL ENGINEER

Signature
Print Name: Larry Nelsen
Date: JUNE 4, 2018 License No: E-30240

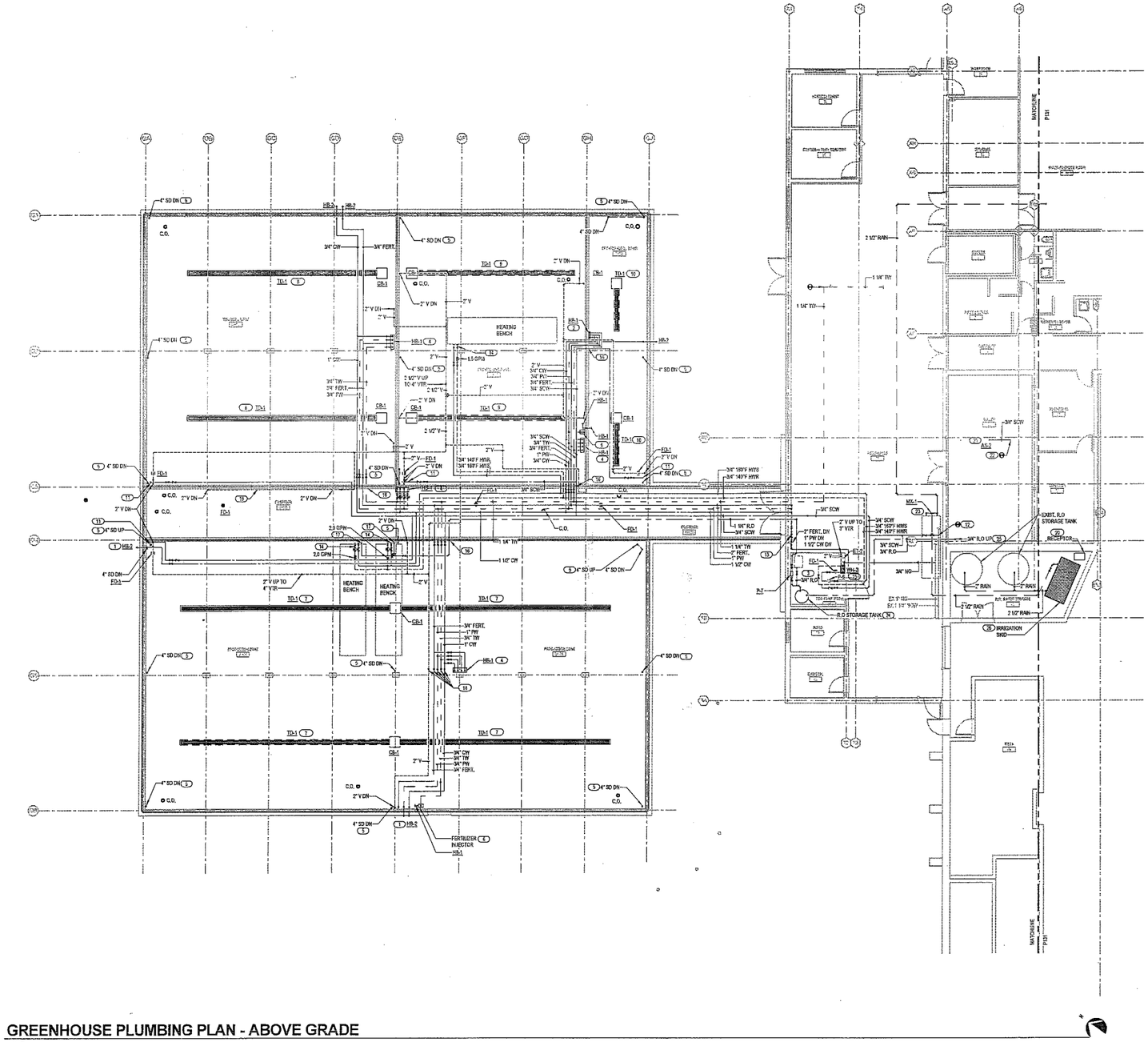
ISSUE	DATE	DESCRIPTION
	05/09/2017	SCHEMATIC DESIGN SUBMISSION
	12/08/2017	DD PRICING SET
	01/10/2018	DESIGN DEVELOPMENT SUBMISSION
	01/17/2018	UDC SUBMISSION
	03/31/2018	75% CD PRICING ISSUE
	05/04/2018	90% CONSTRUCTION DOCUMENTS
	06/01/2018	BID ISSUE
	06/04/2018	PERMIT ISSUE

PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: MSR CHECKED BY: MSR

LEARNING CENTER PLUMBING ROOF PLAN

EXHIBIT K
P102

ORIGINAL



1 GREENHOUSE PLUMBING PLAN - ABOVE GRADE

1/8" = 1'-0"

GENERAL NOTES

A. FOR PLUMBING NOTES, LEGENDS AND ABBREVIATION, REFER TO P001.
B. RADIANT SLAB USED IN NEW GREENHOUSE AREA. PLUMBING CONTRACTOR SHALL COORDINATE ALL BELOW GRADE WORK.
C. ALL ABOVE GRADE PIPE PENETRATION SHALL BE THROUGH ALUMINUM PENETRATION PANEL.
D. ALL HOSE BE SHALL BE PROVIDED WITH LABELED TAGS, PER SPECIFICATIONS.

KEYED NOTES

1. PLUMBING CONTRACTOR SHALL PROVIDE HB-2 (TOTAL OF 3).
2. CONTRACTOR SHALL PROVIDE INTERIOR HOSE BIBB, HB-1, FOR FERTILIZER , TEMPERED WATER AND R.O LINE (TOTAL OF 3).
3. PLUMBING CONTRACTOR SHALL PROVIDE VALVED AND CAPPED 3/4" R.O WATER.
4. CONTRACTOR SHALL PROVIDE INTERIOR HOSE BIBB, HB-1, FOR COLD WATER, TEMPERED WATER, FERTILIZER AND R.O LINE (TOTAL OF 4).
5. PLUMBING CONTRACTOR SHALL CONNECT TO ROOF DRAIN. ROOF DRAIN BY GREENHOUSE CONTRACTOR, REFER TO DETAIL 5/P301.
6. FERTILIZER INJECTION SYSTEM. PLUMBING CONTRACTOR SHALL ROUTE INDICATED LINE DOWN TO 2'-0" AFF. INJECTOR ASSEMBLY IS FURNISHED BY GREENHOUSE CONTRACTOR. PLUMBING CONTRACTOR SHALL INSTALL ON WALL, PER DETAIL. PLUMBING CONTRACTOR SHALL PROVIDE BACKFLOW PREVENTER UPSTREAM OF DOSATRON, AND HOSE BIBB DOWNSTREAM OF DOSATRON, SEE DETAIL 4/P301.
7. TRENCH DRAIN SHALL BE 40' 0" LONG.
8. TRENCH DRAIN SHALL BE 35' 0" LONG.
9. TRENCH DRAIN SHALL BE 30' 0" LONG.
10. TRENCH DRAIN SHALL BE 6' 0" LONG.
11. PROVIDE VALVED AND CAPPED 3/4" SOFT COLD WATER FOR CONNECTION TO EVAPORATIVE COOLER, PLUMBING CONTRACTOR SHALL PROVIDE BACKFLOW PREVENTER.
12. CONNECT TO 1 1/4" SCW IN THIS AREA, PROVIDE BACK FROM PREVENTER.
13. PROVIDE SHUT-OFF VALVES ON WALL, REFER TO RISER DIAGRAM, P201, PIPING SHALL PENETRATE THROUGH ALUMINUM PENETRATION PANEL.
14. DROP HWS/R DOWN ALONG WALL, TERMINATE WITH VALVE AND TREADED CONNECTION, PROVIDE FLEXIBLE CONNECTOR 18" LONG WITH TREADED ENDS. AT TABLE, CONNECT TO TABLE HEATING SYSTEM, BALANCE TO INDICATED GPM, BENCH HEATING SYSTEM, 3-WAY VALVE AND OTHER ASSOCIATED COMPONENTS ARE PROVIDED BY GREENHOUSE CONTRACTOR.
15. REFER TO DETAIL 2/P301 FOR WH-2 PIPING AND ASSOCIATED COMPONENTS. PROVIDE CONCENTRIC VENT.
16. ALL PIPES IN THIS AREA SHALL PENETRATE THROUGH ALUMINUM PANEL.
17. DROP R.O WATER DOWN ALONG WALL, TERMINATE WITH VALVE AND TREADED CONNECTION, PROVIDE FLEXIBLE CONNECTOR 18" LONG WITH TREADED ENDS. AT TABLE, CONNECT TO BENCHTOP IRRIGATION SYSTEM.
18. INDICATED LINES SHALL BE BELOW BLACKOUT CURTAIN. COORDINATE WORK WITH GREENHOUSE CONTRACTOR.
19. VENT SHALL RUN AT KNEE HEIGHT. VENT SHALL NOT OBSTRUCT CORRIDOR SCREEN.
20. PROVIDE 4" PIPE CONNECTION TO IRRIGATION SKID IN THIS LOCATION. ROUTE TO, AND ELBOW DOWN INTO, CONCRETE RECEPTOR. RECEPTOR SHALL BE CAST CONCRETE, BY PLUMBING CONTRACTOR, 24"x24"x6" HIGH, WITH 4" OUTLET, ROUTED AS SHOWN, FLAT, ALONG FLOOR.
21. ROUTE 3/4" DOMESTIC SOFT COLD WATER TO CHILLED WATER FILL AT AIR SEPARATOR, SEE MECHANICAL. PROVIDE SHUT-OFF AND BACKFLOW PREVENTER TYPE ASSE 1013 AS WATTS 009.
22. CONNECT NEW 3/4" DOMESTIC SOFT COLD WATER TO EXISTING 3/4" DOMESTIC SOFT COLD WATER FILL LINE IN AREA OF EXISTING BOILER EXPANSION TANKS.
23. CONNECT 2 1/2" RAINWATER TO EXISTING CAPPED (FOR FUTURE) HEAT EXCHANGER, HX-3, AND SOLAR STORAGE TANK. BRING 2 1/2" RAINWATER OUT, AND ROUTE AS SHOWN.
24. R.O WATER STORAGE TANK PROVIDED BY GREENHOUSE CONTRACTOR.
25. CONNECT 3/4" NEW R.O WATER TO EXISTING R.O SYSTEM. EXISTING R.O SYSTEM LOCATED IN MEZZANINE.
26. IRRIGATION SKID PROVIDED BY IRRIGATION CONTRACTOR. PLUMBING CONTRACTOR SHALL PROVIDE VALVED AND CAPPED 2 1/2 RAIN WATER AS SHOWN ON PLAN.

MSR 710 South 2nd Street, 8th Floor Minneapolis, Minnesota 55401-2282
Architecture Interiors and Urban Design
612.375.0336 tel
612.342.2216 fax
www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201 Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
223 South Patterson Street, Suite 1 Madison, WI 53703
608.251.3620 tel

Structural Engineer, Technology and AV
IMEG Corp.
1600 Deming Way, Suite 200 Middleton, WI 53562
608.223.9503 tel

MEP Engineer
MEP Associates, LLC
860 Blue Gentian Road, Suite 170 Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
975 Arkwright Ave West St. Paul, MN 55103
651.251.1850 tel

Greenhouse Design
Rough Brothers, Inc.
5543 Vine Street Cincinnati, OH 45217
513.242.9310 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Engineer under the Laws of the State of Wisconsin. ENGINEER SEAL

WISCONSIN LARRY J. NEUSER E-30240 REGISTERED PROFESSIONAL ENGINEER

Signature:
Print Name: Larry Neuser
Date: JUNE 4, 2018 License No: E-30240

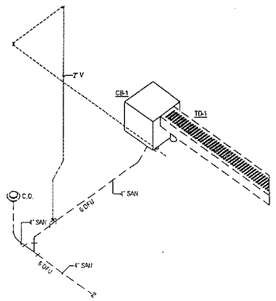
ISSUE INDEX	DATE	DESCRIPTION
	09.05.2017	SCHEMATIC DESIGN SUBMISSION
	12.04.2017	DD PRICING SET
	01.19.2018	DESIGN DEVELOPMENT SUBMISSION
	03.17.2018	UDC SUBMISSION
	05.31.2018	100% DD PRICING ISSUE
	06.04.2018	90% CONSTRUCTION DOCUMENTS
	06.01.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE

PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: MSR CHECKED BY: MSR

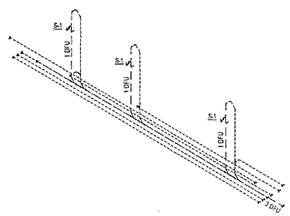
GREENHOUSE PLUMBING PLAN - ABOVE GRADE

EXHIBIT K
P112

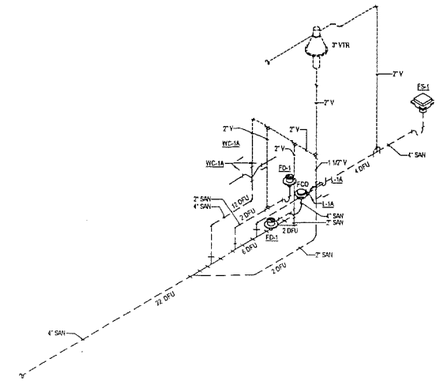
ORIGINAL



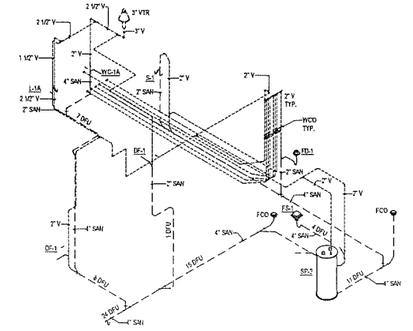
4 TYPICAL TRENCH DRAIN SANITARY RISER



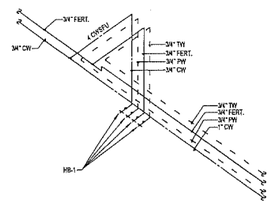
3 TYPICAL S-1 SANITARY RISER



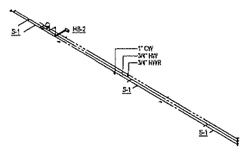
2 TOILET 386 & 387 SANITARY RISER



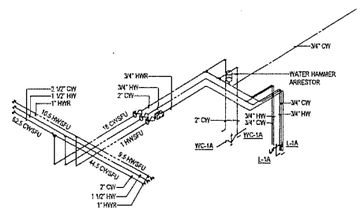
1 MECH ROOM & TOILET 401SANITARY RISER



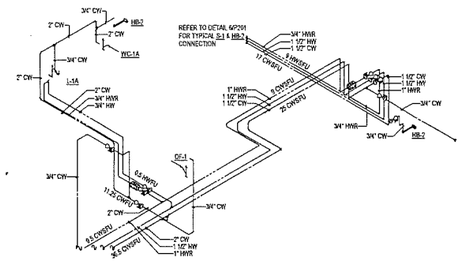
8 TYPICAL HOSE BIBB WATER SUPPLY RISER



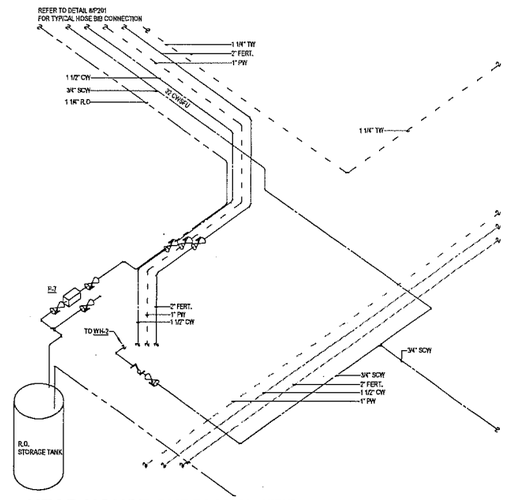
7 TYPICAL S-1 SUPPLY WATER RISER



6 TOILET 386 & 387 SUPPLY WATER RISER



5 MECH ROOM & TOILET 401 SUPPLY WATER RISER



9 HEAD HOUSE SUPPLY WATER

MSR 710 South 2nd Street, 8th Floor Minneapolis, Minnesota 55401-2282
Architecture Interiors and Urban Design
612 375 0336 tel
612 342 2216 fax
www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201
Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
303 South Paterson Street, Suite 1
Madison, WI 53703
608.251.3600 tel

Structural Engineer, Technology and A/V
IMEG Corp.
1800 Deming Way, Suite 200
Middleton, WI 53562
608.223.9580 tel

MEP Engineer
MEP Associates, LLC
592 Bob Gerdan Road, Suite 175
Eagan, MN 55121
651.379.8130 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
575 Aldenmere Ave West
St Paul, MN 55103
651.251.1660 tel

Greenhouse Design
Rough Brothers, Inc.
5513 Vine Street
Cincinnati, OH 45217
513.242.0310 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Engineer under the Laws of the State of Wisconsin.
ENGINEER SEAL

STATE OF WISCONSIN
LARRY J. NIEMER
E-30240
MECHANICAL ENGINEER

Signature:
Print Name: Larry Niemer
Date: JUNE 4, 2018 License No: E-30240

ISSUE	DATE	DESCRIPTION
	09.09.2017	SCHEMATIC DESIGN SUBMISSION
	12.08.2017	DD PRICING SET
	01.10.2018	DESIGN DEVELOPMENT SUBMISSION
	01.17.2018	CDC SUBMISSION
	03.31.2018	75% CD PRICING ISSUE
	05.04.2018	90% CONSTRUCTION DOCUMENTS
	05.01.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE

PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: MSR CHECKED BY: MSR

PLUMBING RISER DIAGRAM

EXHIBIT K
P201

ORIGINAL

PLUMBING FIXTURE SCHEDULE

MARK	FIXTURE	MANUFACTURER	MODEL	MOUNT	ROUGH-IN SCHEDULE COLD	HOT	WASTE	VENT	FITTINGS AND REMARKS
WC-1A	MANUAL FLUSH VALVE WATER CLOSET	ZURN	Z5615-BWL	WALL	1-1/2"	-	4"	2"	WITH 1.28GPF MANUAL VALVE MODEL Z6000SP-LHET, ELONGATED OPEN FRONT SEAT, Z1200 OR Z1300 EZCARRY CARRIER. WHERE TAGGED WC-1A, UNIT SHALL BE INSTALLED TO A.D.A. HEIGHT
L-1A	WALL HUNG LAVATORY	AMERICAN STANDARD	0424.001EC	WALL	3/4"	3/4"	2"	1-1/2"	INCLUDE Z6956-XL-HHS HARD-WIRED FAUCET WITH 0.35 GPM VANDAL-RESISTANT NON-ASPIRATED OUTLET
S-1	LEARNING CENTER CLASSROOM SINK	ELKAY	EFRU191640	UNDERMOUNT	3/4"	3/4"	2"	2"	PROVIDE ELKAY LKDX2432 8" CENTERSET, CONCEALED DECK MOUNT FAUCET WITH 1.5 GPM FLOW RATE.
S-2	LEARNING CENTER CLASSROOM SINK	ELKAY	ELUHAD221255PD	UNDERMOUNT	3/4"	3/4"	2"	2"	PROVIDE ELKAY LK3716C SENSOR OPERATED AT 0.5 GPM FLOW.
MS-1	MOP SINK	MUSTEE	63N	FLOOR	3/4"	3/4"	2"	1 1/2"	PROVIDE 65.600A SERVICE FAUCET, 67.700 HOSE AND HOSE HOLDER, 65.600 MOP HANGER, AND 67.2424 WALL GUARDS.
DF-1	94-LEVEL WITH BOTTLE FILLER	ELKAY	LZWS-LRPBM36K	WALL	3/4"	-	2"	1-1/2"	INSTALL TO COMPLY WITH A.D.A. REQUIREMENTS. PROVIDE FILTER. PROVIDE TWO ADDITIONAL FILTERS FOR REPLACEMENT.
HB-1	NON-FREEZO, SSS WALL FAUCET	WOODFORD	19HP	WALL	3/4"	-	-	-	ANTI-SIPHON WALL FAUCET WITH INTEGRAL CHECK AND ATMOSPHERIC VENT.
HB-2	FREEZELESS WALL HYDRANT	WOODFORD	67	EXT. WALL	3/4"	-	-	-	ANTI-SIPHON, CHROME FINISH, EXPOSED WITH OPERATING KEY.

FLOOR AND ROOF DRAIN SCHEDULE

MARK	FIXTURE	MANUFACTURER	MODEL	MOUNT	ROUGH-IN SCHEDULE WASTE	VENT	FITTINGS AND REMARKS
FD-1	FLOOR DRAIN	ZURN	Z5015-BWL	FLOOR	3"	2"	PROVIDE 3" OUTLET. WHERE FUNNELS ARE INDICATED ON PLAN, PROVIDE 3"DIA OVAL FUNNEL. FIELD WELDING OF FUNNELS TO STRAINER IS NOT ALLOWED.
FS-1	FLOOR SINK	ZURN	Z1900	FLOOR	4"	2"	12X12X6" PORCELAIN ENAMEL CAST IRON FLOOR SINK. PROVIDE WITH LOOSE SET 24" GRATE, ALUMINUM DOME BOTTOM STRAINER.
TD-1	TRENCH SYSTEM	ACO DRAIN	K100	FLOOR	-	-	UNIT SHALL BE MODULAR TRENCH DRAIN SYSTEM. PROVIDE SLOTTED STEEL, BOLTLESS LOCKING, NO SLIP AND ADA COMPLIANT GRATE. PROVIDE GRATE REMOVAL TOOL (TOTAL OF 4). TRENCH DRAIN CLEANING TOOL (TOTAL OF 4). ALL PARTS SHALL BE LEED CERTIFIED.
CB-1	CATCH BASIN	ACO DRAIN	K3-912G	FLOOR	6"	SEE PLAN	INLINE CATCH BASIN WITH 6" OUTLET AT 23.19' INVERT. INCLUDE INLINE TRASH BUCKET.
RD-1	ROOF DRAIN	ZURN	Z100	ROOF	SEE PLAN	-	WITH PLAIN BRONZE DOME.
ORD-1	OVERFLOW ROOF DRAIN	ZURN	Z199	ROOF	SEE PLAN	-	WITH PLAIN BRONZE DOME.
AD-1	AREA DRAIN	ZURN	Z542	ROOF	SEE PLAN	-	WITH DURA-COATED CAST IRON BODY AND TOP. INCLUDE SECONDARY STRAINER AND SEDIMENT BUCKET.
AD-2	AREA DRAIN	ZURN	Z1730	ROOF	SEE PLAN	-	STAINLESS STEEL CONSTRUCTION.

EXPANSION TANK SCHEDULE

EXPANSION TANK #	SYSTEM	LOCATION	SIZE HEIGHT (IN)	SIZE DIAMETER (IN)	CAPACITY ACCEPT. VOLUME (GAL.)	CAPACITY TANK VOLUME (GAL)	PRE-CHARGE (PSIG)	MAXIMUM PRESSURE IN TANK (PSI)	SYSTEM WATER VOLUME (GAL)	SYSTEM CONNECTION SIZE (IN)	MANUFACTURER	MODEL	NOTES
ET-2	HOT WATER	FOG PUMP ROOM 35	11	8	1.48	2.1	70	150	18.8	3/4	WATTS	PLT-5	1,2

NOTES:
1. PER DETAIL 6P901.
2. INSTALL PER MANUFACTURER'S RECOMMENDATIONS.

SUMP PUMP SCHEDULE

Type Mark	MARK	DESCRIPTION	MANUFACTURER	SUMP MODEL NUMBER	SUMP SIZE	STANDARD CONNECTIONS	ELECTRICAL H.P.	VOLTS	PHASE	CHECK VALVE	GPM	CORD LENGTH	NOTES
SUMP	SP-1	POLY BASIN WITH SEALED STEEL COVER	WEIL	1411-DSS	30" x 120"	2"	1/2	115	1	2"	56 @ 15'	25'	1,2,3,4
SUMP	SP-2	POLY BASIN WITH SEALED STEEL COVER	WEIL	1405	36" x 144"	2"	1/2	115	1	2"	29 @15'	25'	1,2,3,5

NOTES:
1. AUTOMATIC VERTICAL FLOAT SWITCH.
2. SEE DETAIL 6P901 AND 7P901.
3. PROVIDE WITH LOCAL CONTROL PANEL FROM MANUFACTURER; NO CONNECTION TO B.A.S.
4. SIMPLEX INSTALLATION.
5. DUPLEX INSTALLATION.

CIRCULATION PUMP SCHEDULE

MARK	SERVICE	MAXIMUM WORKING PRESSURE (PSI)	MAXIMUM OPERATING TEMP (°F)	ELECTRICAL CHAR.	H.P.	FLANGE SIZE (IN)	FLOW (GPM)	HEAD (FT)	MANUFACTURER & MODEL NO.	NOTES
P-6	GREENHOUSE HEATING TABLE	175	250	115/1/60	1/12	3/4	5.5	5.0	BELLAND GOSSETT, ECOCIRC XL 20-55	1,2,3
P-7	GREENHOUSE MISTING TABLE	175	250	208/1/60	1/2	2.0	11	7.5	BELLAND GOSSETT, ECOCIRC XL 25-145	1,2,3

NOTES:
1. STAINLESS STEEL IMPELLER.
2. SEE DETAIL 6P901.
3. DISCONNECT BY ELECTRICAL CONTRACTOR.

TANKLESS GAS WATER HEATER SCHEDULE

MARK	LOCATION	TEMPERATURE RISE (DEG F)	HIGH INPUT	AIR INTAKE (IN.)	FLUE EXHAUST	MANUFACTURER	MODEL	NOTES
WH-2	GREENHOUSE	29	190	2	2	BOSCH	TR999	1,2,3

NOTES:
1. UNIT SHALL BE OUTDOOR RATED.
2. PROVIDE CONCENTRIC VENT TERMINATION.
3. INSTALL PER MANUFACTURER'S WRITTEN INSTRUCTIONS.

MIXING VALVE SCHEDULE

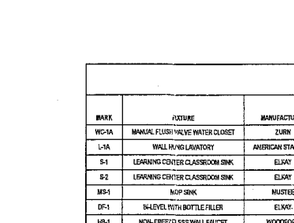
MARK	LOCATION	FLOW (GPM)	INLETS & OUTLETS (IN)	MANUFACTURER & MODEL NO.	NOTES
MV-1	HEADHOUSE	50	1 1/4, 1 1/2	LAWLER, 803	1

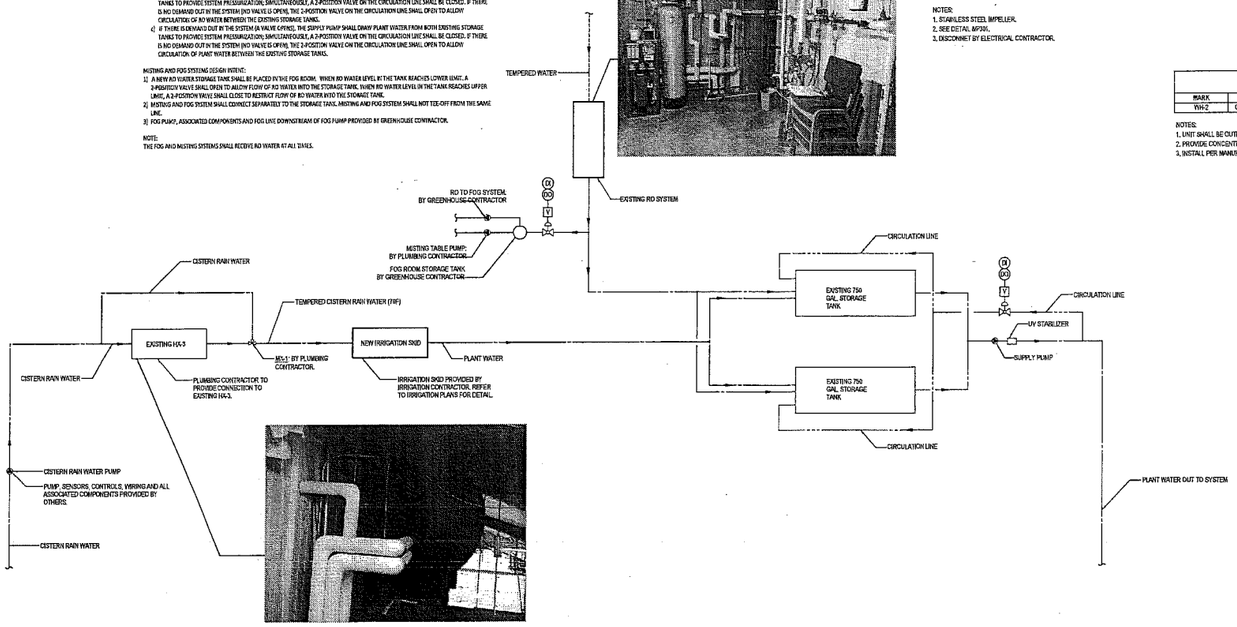
NOTES:
1. INSTALL PER MANUFACTURER'S RECOMMENDATIONS.

RO/RAIN WATER SYSTEM DESIGN INTENT:
1) IF RAIN WATER IS AVAILABLE IN THE CISTERN; CISTERN RAIN WATER SHALL BE USED AS PRIMARY SOURCE OF WATER.
   a) CISTERN RAIN WATER PUMP SHALL TURN ON WHEN THE WATER LEVEL IN THE EXISTING STORAGE TANKS REACHES LOWER LIMIT. CISTERN RAIN WATER PUMP SHALL TURN OFF WHEN THE WATER LEVEL IN THE EXISTING STORAGE TANKS REACHES UPPER LIMIT.
   b) THE RAIN WATER SHALL BE ROUTED FROM THE CISTERN RAIN WATER PUMP TO AN EXISTING SOLAR THERMAL HEAT EXCHANGER.
   c) A THERMOSTATIC MIXING VALVE SHALL BE PROVIDED DOWNSTREAM OF SOLAR THERMAL HEAT EXCHANGER AS SHOWN ON SCHEMATIC DIAGRAM. THE MIXING VALVE SHALL BE SET TO DISCHARGE 70F TEMPERED WATER.
   d) THE TEMPERED WATER SHALL PASS THROUGH AN IRRIGATION SKID TO FILTER RAIN WATER. ONCE RAIN WATER PASSES THE FILTRATION SYSTEM, IT BECOMES PLANT WATER. PLANT WATER FROM OUTLET OF IRRIGATION SKID SHALL BE ROUTED TO EXISTING STORAGE TANKS.
   e) PLANT WATER SHALL FILL STORAGE TANKS TO UPPER LIMIT.
   f) IF THERE IS DEMAND OUT IN THE SYSTEM (A VALVE OPENS), THE SUPPLY PUMP SHALL DRAW PLANT WATER FROM BOTH EXISTING STORAGE TANKS TO PROVIDE SYSTEM PRESSURIZATION; SIMULTANEOUSLY, A 2-POSITION VALVE ON THE CIRCULATION LINE SHALL BE CLOSED. IF THERE IS NO DEMAND OUT IN THE SYSTEM (NO VALVE IS OPEN), THE 2-POSITION VALVE ON THE CIRCULATION LINE SHALL OPEN TO ALLOW CIRCULATION OF PLANT WATER BETWEEN THE EXISTING STORAGE TANKS.
2) IF NO RAIN WATER IS AVAILABLE IN THE CISTERN; RO WATER SHALL BE USED AS PRIMARY SOURCE OF WATER.
   a) RO WATER SHALL FILL EXISTING STORAGE TANKS WHEN THE WATER LEVEL IN THE TANKS REACHES LOWER LIMIT.
   b) IF THERE IS DEMAND OUT IN THE SYSTEM (A VALVE OPENS), THE SUPPLY PUMP SHALL DRAW RO WATER FROM BOTH EXISTING STORAGE TANKS TO PROVIDE SYSTEM PRESSURIZATION; SIMULTANEOUSLY, A 2-POSITION VALVE ON THE CIRCULATION LINE SHALL BE CLOSED. IF THERE IS NO DEMAND OUT IN THE SYSTEM (NO VALVE IS OPEN), THE 2-POSITION VALVE ON THE CIRCULATION LINE SHALL OPEN TO ALLOW CIRCULATION OF RO WATER BETWEEN THE EXISTING STORAGE TANKS.
   c) IF THERE IS DEMAND OUT IN THE SYSTEM (A VALVE OPENS), THE SUPPLY PUMP SHALL DRAW PLANT WATER FROM BOTH EXISTING STORAGE TANKS TO PROVIDE SYSTEM PRESSURIZATION; SIMULTANEOUSLY, A 2-POSITION VALVE ON THE CIRCULATION LINE SHALL BE CLOSED. IF THERE IS NO DEMAND OUT IN THE SYSTEM (NO VALVE IS OPEN), THE 2-POSITION VALVE ON THE CIRCULATION LINE SHALL OPEN TO ALLOW CIRCULATION OF PLANT WATER BETWEEN THE EXISTING STORAGE TANKS.

MISTING AND FOG SYSTEMS DESIGN INTENT:
1) A NEW RO WATER STORAGE TANK SHALL BE PLACED IN THE FOG ROOM. WHEN RO WATER LEVEL IN THE TANK REACHES LOWER LIMIT, A 2-POSITION VALVE SHALL OPEN TO ALLOW FLOW OF RO WATER INTO THE STORAGE TANK. WHEN RO WATER LEVEL IN THE TANK REACHES UPPER LIMIT, A 2-POSITION VALVE SHALL CLOSE TO RESTRICT FLOW OF RO WATER INTO THE STORAGE TANK.
2) MISTING AND FOG SYSTEM SHALL CONNECT SEPARATELY TO THE STORAGE TANK. MISTING AND FOG SYSTEM SHALL NOT TEE-OFF FROM THE SAME LINE.
3) FOG PUMP, ASSOCIATED COMPONENTS AND FOG LINE DOWNSTREAM OF FOG PUMP PROVIDED BY GREENHOUSE CONTRACTOR.

NOTE:
THE FOG AND MISTING SYSTEMS SHALL RECEIVE NO WATER AT ALL TIMES.





2 RAIN/RO WATER SCHEMATIC

NOT TO SCALE

MSR 710 South 2nd Street, 8th Floor Minneapolis, Minnesota 55401-2262
Architecture Interiors and Urban Design
612 375 0334 tel
612 342 2216 fax
www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201 Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
203 South Paterson Street, Suite 1 Madison, WI 53703
608.251.3000 tel

Structural Engineer, Technology and AV
IMEG Corp.
1800 Deming Way, Suite 200 Middleton, WI 53562
608.223.9600 tel

MEP Engineer
MEP Associates, LLC
850 Blue Gentian Road, Suite 175 Eagan, MN 55121
651.379.8120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
525 Aberdeen's Ave West St. Paul, MN 55102
651.291.1990 tel

Greenhouse Design
Rough Brothers, Inc.
5613 Vine Street Cincinnati, OH 45217
513.242.0310 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Engineer under the Laws of the State of Wisconsin.
ENGINEER SEAL

Signature:
Print Name: LARRY HEENAN
Date: JUNE 4, 2018 License No: E-29240

ISSUE MARK	DATE	DESCRIPTION
	09.08.2017	SCHEMATIC DESIGN SUBMISSION
	12.08.2017	DD PRICING SET
	01.19.2018	DESIGN DEVELOPMENT SUBMISSION
	01.17.2018	UDC SUBMISSION
	03.31.2018	75% CD PRICING ISSUE
	05.04.2018	90% CONSTRUCTION DOCUMENTS
	05.21.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE

PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: MSR CHECKED BY: MSR

PLUMBING SCHEDULES AND RAIN/RO SCHEMATIC

EXHIBIT K
P401

08/16/18

Department of Public Works
Engineering Division
Robert F. Phillips, 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
Gregory T. Fries, P.E.
Kathleen M. Cryan

Principal Engineer 2
Christopher J. Petykowski, P.E.
John S. Fahrney, P.E.

Principal Engineer 1
Christina M. Bachmann, P.E.
Mark D. Moder, P.E.
Janet Schmidt, P.E.

Facilities & Sustainability
Jeanne E. Hoffman, Manager
Bryan Cooper, Principal Architect

Mapping Section Manager
Eric T. Pederson, P.S.

Financial Manager
Steven B. Danner-Rivers

June 27, 2018

NOTICE OF ADDENDUM
ADDENDUM NO. 2

CONTRACT NO. 8162, PROJECT NO. 17193
Olbrich Botanical Gardens Expansion Project 1

This addendum is issued to modify, explain or correct the original Drawings, Specifications, or Contract Documents marked as ***Olbrich Botanical Gardens Expansion Project 1, City of Madison Project 17193, Contract #8162, as issued on June 1, 2018*** and is hereby made a part of the contract documents. This addendum consists of six (6) pages and the referenced exhibits.

Please acknowledge this addendum on page E1 of the contract documents and/or in Section E: Bidder's Acknowledgement on Bid Express.

An electronic version of these documents can be found on the Bid Express web site at: http://www.bidexpress.com

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

For questions regarding this bid, contact:

Randy Wiesner
City of Madison Engineering
Phone: 608-267-8679
Fax: 608-264-9275
Email: RWiesner@cityofmadison.com

Sincerely,

Robert F. Phillips, P.E., City Engineer

Cc: Greg Fries

1. **GENERAL CONTRACT CONDITIONS**

A. General contractors must be prequalified for their bid to be accepted and opened. If your pre-qualification expires during the execution of the contract you will be required to renew prior to the expiration date but it is not required that you renew before the prequalification date for this bid.

B. Exhibit-AL_Bid Submittal Checklist for Contractor has been included as a worksheet for all bidding General Contractors. The checklist comprises a list of all required documents that must be submitted for your bid to be considered. The GC shall review each form thoroughly to ensure all required information is provided with the completed bid packet.

2. **GENERAL CLARIFICATIONS, QUESTIONS AND ANSWERS**

A. *Q:* On page D-2 of part D in the special provisions it's stated that OBG horticultural staff will be responsible for all landscaping. As clarified in the meeting, any underground piping, irrigation, and brick/stone paver work is the responsibility of the GC. Fine grading, mulching, edging, plantings, etc. will be by the OBG staff.
A: The contractor shall be responsible for all hardscape construction including but not limited to underground piping, irrigation, sleeving, brick/stone paver work, stone ledge walls, and transporting/placing topsoil back into the designated landscaping areas. OBG Staff will be responsible for adding soil amenities, fine grading, plants and mulch.

B. *Q:* Regarding the Supplemental Unit Price Worksheet.
A: Several questions have been asked about the worksheet. All will be answered in a future addendum.

C. *Q:* Regarding the required SBE forms.
A: Questions regarding the submission deadline for these documents will be answered in a future addendum.

D. *Q:* Drawing G001 defines a total of (15) parking stalls to be used by the contractor during construction. It was discussed at the pre-bid meeting that the asphalt paved area to the west of the new greenhouse (within the gated area) is also available as a contractor area during construction; however, it is critical to leave access and availability to OBG for deliveries.
A: See revisions on sheet G001 for clarifications.

E. *Q:* It was discussed that with coordination of the OBG staff, other short term staging or material lay-down areas could be designated on the property such as the parking lot.
A: Additional short term staging can be coordinated with OBG staff. Contractor shall provide an RFI 2 weeks in advance to give City Project Manager time to review with OBG staff. Contractors RFI shall include all of the following: diagram indicating proposed space requirements, duration of the request and what space is to be used for. Contractor shall be responsible for providing fencing as necessary. Approval will be based solely on OBG event parking needs for the time of the request.

F. *Q:* Drawings G051 & G052 are called out on the sheet index on drawing G000, but do not seem to be issued with the documents. Please provide these drawing sheets.
A: These drawings were provided as part of Addendum 1.

G. *Q:* A001 shows (3)ea bollards and C300 shows (4)ea bollards. Which quantity is to be included with the bid?
A: A001 shows four (4) bollards, and are per the C-Series docs, so four (4) should be priced.

H. *Q:* Drawing A101, room 101 JC. Should the west wall with the door opening have F3 furring and window infill similar to the north wall?
A: Yes, and we have amended sheet A101 indicating this, as well as the scope of exterior stone veneer demo on AD101.

I. *Q:* Sheet A102 shows the guardrail extending along gridline F to enclose the patio. Referencing the structural drawings, sheet S103, there is no railing support detail called out along this gridline. Please clarify what is required structurally.
A: 5/S103 was to cover this as a typical condition. Section cut has been added for clarity.

J. *Q:* Please provide a section thru the existing gutter/fascia condition where the new 2-HR, 12" CMU wall is shown at elevation 1/A112.
A: Refer to details 3/A3.2 and 1/A8.0 from the 2012 OBG Roof Replacement record drawings included with Exhibit B (pages 127 and 128 of this pdf file).

K. ***Q:*** Detail 1/A202 shows stone veneer to the left of column line 1. Please provide a section thru this work to clarify the wall construction.
A: See details on A359.

L. ***Q:*** Details on A356 show an aluminum grate, catch basin and rain chains. There is no specification provided for this work. Please provide.
A: See these items now specified at detail 6/A356 and on the materials list on sheet G000, and in spec updates 055000 and 059443.

M. ***Q:*** See detail 2/A356, please confirm no bond beam is required below the stone cap at the exterior classroom.
A: Confirmed. If the masonry subcontractor would prefer a concrete base can be cast below the stone cap as long as it is not visible around the edges.

N. ***Q:*** Detail 1/A358 calls out dormer roofing to be RF-3. Please clarify as this product is not on the material product list on G000.
A: RF-3 is a roof assembly reference as detailed on sheet G002 (to the lower right).

O. ***Q:*** Detail 1/A401 calls out precast pavers at the landing. Other details on this sheet call it out to be conc-2 (polished concrete). Please confirm what we are to provide on the landing, polished concrete or precast pavers. Also if they are pavers please confirm if they are to match tread type-1 that is at the same stair.
A: It should be polished concrete. The incorrect tags have been amended.

P. ***Q:*** Detail 2/A401 calls out precast pavers at the stair landing. Please clarify what material it is and who is to supply it (Wausau tile product or re used landscape pavers or something different).
A: It is intended to be precast per ***TREAD-2***, precast by Wausau.

Q. ***Q:*** Detail 5/A501 shows metal panels at the operable panel pockets. Please provide a cut section of this showing what elevation the MP-2 goes to and what is above it/how it terminates for all 3 walls surrounding the pocket.
A: Refer to additional information added to detail 7/A552.

R. ***Q:*** What is material above MP-2 at elevations 8 and 9/A501?
A: The material is the edges of the OP-1 panels when folded into the niches.

S. ***Q:*** Detail 18/A551 shows calls for MP-2 on the walls per elevation 3/A501 it is unclear what height it is to extend to. Please clarify.
A: Refer to additional information added to detail 5/A551, 18/A551, and 7/A552.

T. ***Q:*** Detail 20/A551 (also wall type A6 at this location) at the operable panel pocket does not have MP-2 called out on it. Please confirm that it needs to be provided at this location.
A: Yes, MP-2 is required here too. The detail note has been amended.

U. ***Q:*** Details 5 and 7 on A552 show a small trim piece of MP-2 on top of the classroom storage walls. Is this piece required? If so provide dimension for width and clarify if side walls also are to receive this trim as well.
A: Yes, this is required for consistency and durability. See detail 7/A552 for dimension.

V. ***Q:*** Please clarify if storage rooms behind operable panel pockets are to receive the same trim as in item 'O' above (5/A552).
A: Yes, confirmed.

W. ***Q:*** Sheet A701 calls out MP-2 panels between the two toilet rooms that open into circulation 110. Corresponding elevation (2/A501) does not show any MP-2 panels at this location. Please clarify what we are to provide.
A: Provide PT-2A. See revised drawing A701.

X. ***Q:*** Sheet A701 calls for wall base WB-1 in circulation 110, link 100 and adjoining classrooms. Elevations on A501 call out the base to be WB-2 for all these rooms. Please clarify what base we are to provide.
A: Provide WB-01 in these areas. The WB-2 product is no longer in the project. A501 is revised and re-issued.

Y. ***Q:*** Section 05 12 23 – Structural Steel specifies AESS (Architecturally Exposed Structural Steel) steel and states to provide it at locations identified on the drawings. In reviewing the drawings there are no callouts for AESS steel on the architectural drawings or structural drawings. Please clarify what steel on the project is to be deemed AESS.
A: AESS scope has been identified on amended S-Series drawings (for structural steel) and A-Series drawing (for stair stringers).

Z. ***Q:*** Please provide the location of the trellis system specified in section 05 94 43; it does not appear to be identified on the drawings. Are the cables at detail 4/A202 intended to be the trellis?
A: Yes, the cables are intended to be the trellis. See 4/A202, and section details 2 and 6 on A356.

AA. ***Q:*** Sheet S103 specifically calls out note 5 to be galvanized but stays silent on the other notes, beams, columns, etc. that are at the exterior canopy. Please confirm that all the exterior steel at the canopy are on the North and West side are to be galvanized.
A: Exterior steel is to be AESS. See Addendum 2 for updated finish notes.

BB. ***Q:*** Sheet S103 cuts detail 14/S302 along gridline F. This detail shows a stub column that stops at the metal deck. Per the plans this location and others along gridline F are columns that extend up to the roof above second floor (more than just stubs). Please clarify what the correct detail is to follow at this location and indicate if there are any special attachment requirements for the columns to the beams.
A: Column is to continue through the floor slab with Headed welded stud attachments at the sides. See Addendum 2 for updates to details 13 & 14/S302.

CC. ***Q:*** Along grid line ~2.5 on S103 it callouts out rail support detail 5/S103. This is different than the associated architectural detail at this location (1/A353). Please clarify which detail is to be used and modify the other.
A: Rail detail has been coordinated and updated. See addendum 1 for revised detail.

DD. ***Q:*** Sheet S103 note 4 states to provide 2x8 canopy members at 8" O.C. Detail 4/A356 calls out 2x10 canopy members at 10-3/4" spacing (other details on this page seem to line up with structural note). Please confirm that we are to use 2x8 members at 8" OC.
A: S103 is revised to indicate 2x10s along the east elevation overhang, and 2x8s for the roof joists over the outdoor classroom, per the arch drawings (which did not need to change).

EE. ***Q:*** Note 10 on 1/S104 calls out detail 9/S301 for floor penetrations. This particular detail shows a masonry bond beam. Please clarify what detail we are to follow.
A: Detail reference has been revised to call out 14/S301.

FF. ***Q:*** Detail 14/S302 is the structural detail that mirrors the architectural detail 6/A352. The architectural version shows a plate on the bottom of a MC 18x45.8 Channel while the structural calls out a C15x33.9 channel with no plate (note 19/S103). Please confirm which detail is correct and modify the other.
A: Structural keynote 19 on 1/S103 has been updated to call out MC18x42.7. The plate is miscellaneous metals and thus not called out on structural drawings but should be provided per architectural detail.

GG. ***Q:*** Detail 15/S302 shows field welding of exterior exposed steel which is galvanized per note 5 on S103. Please confirm if this steel is to AESS. If it is AESS please provide a different connection detail since field welding of galvanized AESS steel is not permitted.
A: Yes this is to be AESS instead of galvanized. Detail has been updated to avoid field welding.

HH. ***Q:*** Whose scope is the SMF-2 in between the glazing?
A: It's up to the bidding GCs and how they allocated that scope, which is in spec 076200.

II. ***Q:*** Please clarify what O.C. the greengirt system should be under MP-1 and MCP-1? Is 16" o.c. under the MCP-1 and 24" o.c. Under the MP-1 acceptable.
A: It should be based on the system span limitations / requirements for girt spacing.

JJ. ***Q:*** For Section 074113.19 MP-1 a 1" high 6" o.c. single lock panel cannot be found. Can you specify exactly the panel name and manufacture that fit your criteria. In order to get the hem you might need to go to a double lock and the smallest depth of that panel usually comes in 1-1/2". Once you get those two options picked out you will need to see if a 6" width can be made.
A: We understand this cannot be done by roll-forming the panels on site. The intent, per the spec language in 2.1 D is to use factory brake formed panels with a coverage of 6" and standing seams 1" high.

KK. ***Q:*** Spec Section 31 26 00 Helical Piles. Is a load test required?
A: Testing is not required, but it can be used to reduce the required minimum design safety factor. Helical Piles specifications have been updated to clarify this.

LL. ***Q:*** Spec Section 31 26 00 Helical Piles: 100 kip or 120 kip ultimate load?
A: The ultimate loads that the helical pile designers are to design to are noted in the Helical Pile Load Plans on S002. For testing, if they choose to perform testing, the helical designer should use the maximum ultimate load from each structure (greenhouse and learning center).

MM. *Q:* Spec Section 13 34 13 Greenhouse: Are Rough Brothers acceptable greenhouse manufacturer?
A: Yes, their design is the BOD, and for complete clarity their name was added to the list of pre-approved manufacturers with Addendum 2.

NN. *Q:* Spec Section 11 24 00 Fall Protection. Is there a Basis of Design product specified?
A: No, 11 24 00 is a performance spec. However, the products reviewed during design included fall arrest systems by DBI Sala and Linear Access Solutions.

OO. *Q:* Is there a SketchUp model available for our use? If so, how so we obtain a copy?
A: There is only a very early sketchup model available from early design phases and it will not be accurate enough to be any use to anyone at this point.

PP. *Q:* What type of veneer is needed for the wood doors?
A: The only wood doors in the project are composite wood clad alum doors from H-Window (or equal, per spec 085200). The wood being used for those doors is solid and species is Ash – reclaimed Ash being provided via a City of Madison reclamation program.

QQ. *Q:* Can you verify that openings 110, 123D, 150A, 201B and 210 are all Aluminum doors with Aluminum Frames?
A: No, these doors are wood clad alum patio doors from H-Windows, per spec 085200.

RR. *Q:* Door openings 150E and 150F are listed to refer to spec section 08 44 10 - Fire Rated Curtain Wall - It shows it listed as a hollow metal door with aluminum specs - we will treat this as an aluminum door and aluminum frame system to be supplied by others, unless advised of a revision to a hollow metal door and hollow metal frame system.
A: Alum door with alum frame is acceptable, per the BOD in the specs. The Safti-First system for this fire rated glass partition system uses a hollow metal door, referred to as a temperature rise builder-series door, which is a hollow metal door type, as part of their assembly, even though the frame aspects are based on an aluminum frame. This is also acceptable.

SS. *Q:* Hardware set group numbers 07, 09 and 12 call for Electronic power transfers for the doors but do not call for electric hardware (locks or strikes) ... can you verify if the EPT's are not needed or if there is a modified hardware group set coming out to reflect hardware for the EPT to power?
A: Door hardware sets 07 and 12 have been amended to show an electrified latch. Door hardware set 12 does not need an electrified latchset but does have an electrified closer, per that hardware spec, which is to be coordinated to close when the fire alarm is activated. The latch set of hardware set 12 is manual.

TT. *Q:* Can it be verified how many pairs of hardware sets # 19 are needed to be added to the hardware quote?
A: Per hardware spec 087100, provide for four door openings (with one pair of touchless pads per opening, one each side of the doors).

UU. *Q:* Wood door specs and plan sheet A654 were not included in the project package. Were these left out or are they still being worked on?
A: All references to exterior wood doors relate to H-Windows products under spec 085200. Sheet A654 is not required. We have amended the door schedule on sheet A601 so that the wood closet doors are now hollow metal.

VV. *Q:* Is there is a window schedule or direction on what windows are new and what type of materials are needed for the windows ... Hollow metal or Aluminum?
A: All exterior windows are by H-Windows (spec 085200), and interior windows are hollow metal.

WW. *Q:* All of the frames are shown as standard 3 sided door frames, while on the plans I am seeing some openings with sidelights. Are the frame types on plan page (2)A601 shown correctly and sidelights or transoms will be supplied by others or existing, or incorrectly and a revision will be coming out?
A: An note has been added to sheet A601 referencing the interior elevations and interior windows for confirmation of the existance of sidelights on door frames affected by this. Each door with a sidelight has been noted on the door schedule referencing sheet A651, and door numbers have been added to doors shown on sheet A651, the interior and exterior window elevations sheet.

XX. *Q:* In the Architectural drawing they were calling out insulation type 1 which is mineral wool for the exterior foundation walls, can verify the correct insulation type?
A: The drawing notes have been updated to show this as INSUL-2 as part of this addendum.

YY. *Q:* The structural details on the exterior foundation walls on the learning center are not matching

up with the details for the wall cuts in architectural plans for the same walls. Can you verify which details or set of plans I should follow?

A: The intent is clarified with notes on the structural and architectural details at grade with this addendum. All CMU coursing needs to start at Level 1 finished slab level.

ZZ. *Q:* The demolition plans states to remove existing hardscape donor pavers and to salvage them for future use. They are pointing five arrows towards the 1970's building and further down the path they state to remove existing tram and pedestrian path. According to the pictures where they want to salvage is big slabs of exposed aggregate and where they want us to demo is they hardscape pavers. Am I looking at this wrong or is it labeled wrong?

A: The notes associated with the arrows generally indicate scope of work within the area. It is up to the GC to visit the site to quantify each type of paver/pavement and the associated work for their removal. Donor pavers are similar to the other small pavers being removed, cleaned, and palletized. It is the responsibility of the GC to segregate donor pavers from the other pavers so the owner may reinstall them elsewhere within the gardens. From our site visits it is apparent that there are very few donor pavers in the construction zone of the garden, but this should be verified on site by each bidding GC.

AAA. *Q:* S101 calls for an earth retention system. Can you clarify where it is needed?

A: The earth retention system is called for in case it is required due to excavation for the pile caps. The earth retention note on S101 has been updated to clarify this.

3. **ACCEPTABLE EQUIVALENTS**
   - A. REW Supply Ltd.; Section 06 18 00, Glued Laminated Construction.
   - B. Tegan Marketing, Inc.; Section 095426, ACGI Acoustical Wood Ceilings.

4. **SPECIFICATIONS**
   - A. Exhibit-AA_055000 Metal Fabrications.
   - B. Exhibit-AB_059443 Stainless Steel Trellis.
   - C. Exhibit-AC_061800 Glued Laminated Construction.
   - D. Exhibit-AD_062023 Interior Finish Carpentry.
   - E. Exhibit-AE_074113.16 Standing Seam Metal Roof Panels.
   - F. Exhibit-AF_074113.19 Standing Seam Metal Wall Panels.
   - G. Exhibit-AG_085200 Aluminum-Wood Composite Window Walls.
   - H. Exhibit-AH_087100 Door Hardware.
   - I. Exhibit-AI_095426 Acoustical Wood Ceiling.
   - J. Exhibit-AJ_133413 Greenhouse and Greenhouse Equipment.
   - K. Exhibit-AK_312600 - Steel Helical Piles.

5. **DRAWINGS**
   - A. Exhibit-U_Arch – Bid Addendum 2, consisting of the following sheets:
     1. G000, G001
     2. AD101
     3. A101, A102, A103, A202, A351, A352, A353, A356, A359, A401, A501, A551, A552, A601, A651, A701
   - B. Exhibit-V_Structural – Bid Addendum 2 consisting of the following sheets: S002, S101, S102, S103, S104, S201, S302
   - C. Exhibit-W_Technology – Bid Addendum 2 consisting of the following sheet: T401
   - D. Exhibit-X_Plumbing – Bid Addendum 2 consisting of the following sheets: P101
   - E. Exhibit-Y_Mechanical – Bid Addendum 2 consisting of the following sheets: M102
   - F. Exhibit-Z_Greenhouse – Bid Addendum 2 consisting of the following sheets: GH1, GH2, GH6

6. **PROPOSAL**
   - A. This section is not used.

End of Contract 8162 Addendum 2

MATERIAL / PRODUCT ID LIST with Spec Data

ID	Short Name	Section	Spec Data
ACOU-1	ACOUSTICAL CEILING SYSTEM	09 5113	MFR: Armstrong; PRODUCT: Optima, Plank Based; EDGE: Tegular; PANEL: 2x2 PB; PANEL SIZE: 24" x 24" x 1"; COLOR: White; GRID: 9/16", White;
ACOU-2	ACOUSTICAL CEILING SYSTEM	09 5113	MFR: Armstrong; PRODUCT: Optima, Plank Based; EDGE: Tegular; PANEL: 2x2 PB; PANEL SIZE: 24" x 60" x 1"; COLOR: White; GRID: 9/16", White;
AKFL-1	ACCESS FLOORING	09 6900	MFR: Tate; PRODUCT: CoreCore 1000; PANEL SIZE: 24" x 24"; GUTTERS: 1 5/8"; UNDERSTRUCTURE: Pedestal;
AKFL-2	ACCESS FLOORING	09 6900	MFR: Tate; PRODUCT: STONEWORKS: Cased Concrete; PANEL SIZE: 24" x 24"; THICKNESS: 1 1/4"; FINISH: Pittsburgh Concrete Protector WB; UNDERSTRUCTURE: Bolted Stringer;
CCT-1	CONCRETE COUNTERTOP	12 3613	PRODUCT: Concrete Countertop; COLOR: TBD; FINISH: Smooth Troweled; EDGE: TBD; FAUCETS: Clear, Matte, THICKNESS: See Drawings; SPLASHES: See Drawings; JOINT TYPE: Grouted, 1/16"; CUTOUTS: Sink with Drainboard and Faucet;
CFSF	COLD-FORMED STEEL FRAMING - SEE STRUCTURAL	05 4000	PRODUCT: Cold-formed Steel Studs and Furring;
CMU	CONCRETE MASONRY UNIT - SEE STRUCTURAL	04 2200	PRODUCT: Concrete Masonry Unit;
CMU-2	CONCRETE MASONRY UNIT - VENEER	04 2200	PRODUCT: Concrete Masonry Unit; FINISH: Burnished; COLOR: Mix Std Dark Gray/Black
CONC-1	SEALED CONCRETE FINISH - SEE STRUCTURAL	03 3000	PRODUCT: Penetrating Liquid Densifier and Sealer;
CONC-2	POLISHED CONCRETE FINISH	03 3543	POLISH: Level 1: Matte finish; 100 grit; FINISH: Penetrating Liquid Densifier and Sealer; FINISH ADDITIVE: Increase Stain Grip or MTC Superfloor;
CPT-1	CARPET TILE FLOORING - PLANK	09 6813	MFR: Mohawk; STYLE: Lichen, Moss Bloom; COLOR: Iceland Moss
CPT-2	CARPET TILE FLOORING - PLANK	09 6813	MFR: Mohawk; STYLE: Lichen Moss Bloom; COLOR: Iceland Moss
ELEV	HYDRAULIC MRL ELEVATOR	14 2410	MFR: Otis or ThyssenKrupp; STYLE: Machine-Roomless Hydraulic; MODEL: Hydrofit or Ensiture MRL; CAR TYPE: Passenger; CAPACITY (lbs): 3,500; SPEED (fpm, nom): 100; OPENING: Front, Right Hand; CAB ENTRANCE: 1-Speed, Satin Stainless Steel; OPERATING PANEL: Satin Stainless Steel; CAR PANELS: Custom Lam nate, PLAM-4; HANDRAIL: Flat Bar 2"W, Satin Stainless Steel; BUMPER RAIL: Solid Bar, Satin Stainless Steel; CEILING, LED Perimeter Lt, Pa ated Wht; FLOORING: Owner, See Finish Plan; HALL ENTRANCE: Charcoal EM-4; FIXTURES: Class c, Satin Stainless Steel; BUTTONS: Flush Illum ated Hole;
FAS	FALL ARREST SYSTEM	11 2400	PRODUCT: TBD
FEC	FIRE EXTINGUISHER CABINET	10 4413	MFR: JL Industries (or Larsen); MODEL: Embassy (or Occuli); STYLE: Recessed Tuxedo; DOOR: Solid; COLOR: TBD;
GBD	GYPSUM BOARD	09 2900	PRODUCT: Paper-faced Gypsum Board;
GDRL-1	DECORATIVE METAL GUARDRAIL	05 7300	PRODUCT: Custom Steel Guardrail; FINISH: PT-4E, LIND;
GL-1	CLEAR ANNEALED GLASS	08 8000	PRODUCT: Annealed Glass; COLOR: Clear; THICKNESS: 1/4", typ.ca ; T ed ass Tempered
GLBD-1A	GLASS MARKERBOARD - WHITE	10 1100	MFR: Clarus Glassboards, LLC.; STYLE: WaxWrite; COLOR: White, Magnetic Perish;
HDRL-1	DECORATIVE METAL HANDRAIL	05 7300	PRODUCT: Stainless Steel Tubing; FINISH: Satin, No. 4 Polish; PROFILE: 1 1/2" Diameter;
IGU-1	INSULATED GLASS UNIT	08 8000	MFR: Cardinal Glass; PRODUCT: Double-Pane; COLOR: Clear; UNIT THICKNESS: 1"; FILL: Argon; H WINDOW: Solar Control; CARDINAL: LoE3366; U-VALUE (MAX): 0.25; VLT (MIN): 83%; SHGC (MAX): 0.27; T ndicates Tempered
INSUL-1	ACOUSTICAL INSULATION	09 2900	PRODUCT: Unfaced Mineral Wool Blanket Insulation;
INSUL-2	BELOW GRADE INSULATION	07 2100	PRODUCT: Expanded Polystyrene Foam (EPS); TYPE: IX, 25-psi; R-VALUE: 4.0/inch;
INSUL-3	CONTINUOUS WALL INSULATION	07 2100	PRODUCT: Polyisocyanurate Foam; BOD: Huntsman Corp.; FACER: Glass-Fiber-Mat; FURRING SYSTEM: TBD;
INSUL-4	SPRAY FOAM INSULATION	07 2119	PRODUCT: Water-blown, Closed-cell Spray Polyurethane Foam; BOD: Icynene, ProSeal 600; DENSITY: 2.2 pounds / Closed cell; BLOWING AGENT: Water; R-VALUE: 6 /inch; VAPOR BARRIER: 2.4 mil;
INSUL-5	VENTILATED NAILBASE INSULATION	07 2100	PRODUCT: Ventilated Nailbase Insulation; BOD: GAF, ThermaGal 1; SHEATHING: 1/2" Plywood; AIRSPACE: 1"; INSULATION: Polyisocyanurate; PANEL THICKNESS: 6 1/2"; R-VALUE: 30;
LDR-1	WALL-MOUNTED LADDER	05 5000	PRODUCT: Wall-mounted Access Ladder; WIDTH: 18"; RUNGS: 1" Square; MATERIAL: Steel FINISH: Factory Primed, Field Painted;
LDR-2	WALL-MOUNTED LADDER, EXTERIOR	05 5000	PRODUCT: Wall-mounted Access Ladder; WIDTH: 18"; RUNGS: 1" Square; MATERIAL: Galvanized Steel; FINISH: Factory-Primed, Field Painted;
LVR-1	LOUVER	08 9119	MFR: Greenheck; MODEL: ESD-592; TYPE: Drainable; DEPTH: 2 nches; FREE AREA (ea): 38%; COLOR: ;
LVR-2	ACOUSTICAL LOUVER	08 9119	MFR: Greenheck; MODEL: AFS-120; TYPE: Acoustical, Sightproof; DEPTH: 12 inches; FREE AREA (ea): 27%; COLOR: ;
MA-1	MILLWORK ACCESSORY - PULL	06 4116	MFR: Stubbs 617 Hardware ; STYLE: Cynosure Collection; PRODUCT NUMBER: P20044B-128;
MA-4	MILLWORK ACCESSORY - COAT ROD	06 4116	MFR: Knape and Vogt; STYLE: Closet-Pro Regular-Duty Adjustable Closet Rod w/ Fixed Flange; PRODUCT NUMBER: RP0022-48/72;
MA-5	MILLWORK ACCESSORY - PAPER TOWEL DISPENSER	06 4116	MFR: Bobrick; STYLE: ToolLineSeries; PRODUCT NUMBER: B-526;
MA-6	MILLWORK ACCESSORY - BOOT TRAY	06 4116	MFR: Ume ; STYLE: Boot Tray; PRODUCT NUMBER: H-2952;
MA-7	MILLWORK ACCESSORY - WASTE BIN	06 4116	MFR: Knape and Vogt; STYLE: Soft Close, Top-Mount Waste and Recycling Bins; PRODUCT NUMBER: TSC15-1-2SFT;
MDP-1	METAL COMPOSITE PANEL	07 4213.23	MFR: 3A Composites USA, Inc.; PRODUCT: Alucobond Plus, FR Core; THICKNESS: 4 mm; SYSTEM: Rainscreen & Insulation Outboard; FINISH: Classic Colors; COLOR: TBD Dusty Charcoal or Fusion Black();
MP-1	METAL PANEL - STANDING SEAM - COPPER	07 4113.19	PRODUCT: Standing Seam Metal Wall Panels; METAL: Copper; FINISH: M3, Non-Patinated; WEIGHT: 20 oz; PANEL WIDTH: 6 inches; SEAM HEIGHT: 1 inch; UNDERLAYMENT: WRB with Slip Sheet;
MP-2	METAL PANEL - BLACKENED STEEL	05 5000	PRODUCT: Steel Pans Interior Wall Panels; THICKNESS: 14"; FINISH: Pressb Black by Bucknwod Technologies; FASTENERS: Counter-sunk Black Oxide Screws;
MS-1	METAL PAN STAIR - INTERIOR	05 5113	PRODUCT: Metal Stair; TREADS: Precast Concrete Tread, MFR: Textura Design by Wausau Tile, Inc.; TYPE: C-30, Tread with Setting Bed FINISH: TBD; SAFETY: Carborundum Shoe;
MS-2	METAL PAN STAIR - EXTERIOR	05 5113	PRODUCT: Metal Stair; TREADS: Precast Concrete Tread, MFR: Textura Design by Wausau Tile, Inc.; TYPE: C-60, Self-supporting Flat Tread, COLOR: TBD; SAFETY: Carborundum Strips;
NSMF	NON-STRUCTURAL METAL FRAMING	09 2216	PRODUCT: Non-Structural Metal Studs and Furring;
OP-1	OPERABLE PARTITION	10 2239	MFR: Modernfold; MODEL: Acous-Seal Shoji Screen; NRC: 0.60 (Perforated Panels); STC: 64; PANEL FINISH: Fabric; MFR: CAINWORK; STYLE: XORIEL, SLEET EMBROIDER; COLOR: 6099-605;
PLAM-1	PLASTIC LAMINATE	06 4116	MFR: WILSONART; STYLE: STANDARD LAMINATE; COLOR: CRISP LINEN, 4942-58;
PLAM-2	PLASTIC LAMINATE	06 4116	MFR: WILSONART; STYLE: TRACELESS; COLOR: CHARCOAL VELVET, 15504-31;
PLAM-3	PLASTIC LAMINATE	06 4116	MFR: WILSONART; STYLE: TRACELESS COLOR: SNOW WHITE VELVET, 15501-31;

MATERIAL / PRODUCT ID LIST with Spec Data

ID	Short Name	Section	Spec Data
PLAM-4	PLASTIC LAMINATE - ELEV-1	06 4116	MFR: WILSONART; STYLE: STANDARD LAMINATE; COLOR: Dove Grey, D82-60, Matte;
PT-1_	INTERIOR PAINT - FLAT	09 9123	PRODUCT: Interior Paint; SHEEN: Flat;
PT-2_	INTERIOR PAINT - EGGSHELL	09 9123	PRODUCT: Interior Paint; SHEEN: Eggshell;
PT-3_	HIGH-PERFORMANCE INTERIOR PAINT - SEMI-GLOSS	09 9123	PRODUCT: Interior Paint; SHEEN: Semi-Gloss;
PT-4_	HIGH-PERFORMANCE EXTERIOR PAINT - SEMI-GLOSS	09 9113	PRODUCT: Exterior Paint; SHEEN: Semi-Gloss;
PT-5_	EXTERIOR POWDERCOAT	09 9123	PRODUCT: Exterior Powdercoat; SHEEN: Semi-Gloss;
PT-_A	PAINT COLOR - WHITE	09 9123	MFR: BENJAMIN MOORE; STYLE: OW-18; COLOR: CAPITOL WHITE;
PT-_B	PAINT COLOR - CHARCOAL	09 9123	MFR: BENJAMIN MOORE; STYLE: 2124-10; COLOR: WRIGHT IRON;
PT-_C	PAINT COLOR - ACCENT COLOR	09 9123	MFR: Sherwin Williams; STYLE: SW 7617; COLOR: Mediterranean;
PVR-1	PEDESTAL PAVER SYSTEM - CONCRETE	07 7800	PRODUCT: Concrete Pavers on Pedestals; MFR: Wausau Stone; MODULE: 24" x 24"; THICKNESS: 2"; COLOR: TBD;
PVR-2	PEDESTAL PAVER SYSTEM - WOOD	07 7800	PRODUCT: Wood Slat Pavers on Pedestals; MFR: Bison Innovative Products; MODEL: WF-PED-100N-CUMARU-24; MODULE: 24" x 24"; SPECIES: Cumaru, FSC; FINISH: Unsealed;
PWD-1	CONCEALED PLYWOOD BACKING	06 1000	PRODUCT: Concealed Plywood Backing Panels; GRADE: DOC PS 1, Exposure 1, C-D Plugged, FRT; THICKNESS: 3/4";
RA-1	ROOF ANCHOR FOR PV RACKING	07 5320	MFR: Anchor Products; PRODUCT: UNIRACK 2000 EPDM
RC-1	RAIN CHAIN	05 5440	MFR: SEO Rain Chain; MODEL: Chamonix; COLOR: Silver; LENGTH: 12 feet; ATTACHMENT: Hook-up Metal Fancy and Wire
REVEAL-1	5/8" GYPSUM REVEAL TRIM	092116	MFR: Fry Reglet Corporation; MODEL: ITEM-625-1125; FINISH: Aluminum, Bach
RFNG-1	EPDM ROOFING SYSTEM	07 5323	MFR: Firestone or Carlisle; MEMBRANE: EPDM, 60 mil, Black; INSTALLATION: Fully adhered DOVER BOARD: High Density Pav ioc oard/s ate;
RFNG-2	METAL ROOFING SYSTEM	07 4113.16	PRODUCT: Standing Seam Metal Roofing; SEAM TYPE: Double lock; METAL: 16 ounce, Quarter hard Copper; FINISH: Mill, Non-patinated; UNDERLAYMENT: Synthetic Roofing Felt, GAF Deck Armor; EDGEWATER: Self-Adhering, High Temp Sheet; SLIP SHEET: Roo n Paper;
RFNG-3	EPDM FLASHING	07 5323	MFR: Firestone or Carlisle; MEMBRANE: Cured EPDM, 60 mil, Black, Self adhered; INSTALLATION: Fully adhered;
Rm	ROOF HATCH	07 7200	PRODUCT: Single-Leaf Insulated Roof Hatch; SIZE: 36" x 36"; MATERIAL: Aluminum; FINISH: Mill Finish;
RSIC-1	RESILIENT SOUND ISOLATION CLIP	09 2216	MFR: PAC International, Inc; MODEL: RSIC-1
SHELF-1	SHELVING SYSTEM STANDARD 84"H	06 4115	MFR: Eaton; MODEL: PLWCH84; SIZE: 84"H; COLOR: Arctic White
SHELF-2	SHELVING SYSTEM SHELF AND BRACKET	06 4115	MFR: Eaton; MODEL: WD618A; SIZE: 36"W x 18"D; COLOR: Arctic White
SHELF-3	SHELVING SYSTEM SHELF AND BRACKET	06 4115	MFR: Eaton; MODEL: WD318A; SIZE: 36"W x 18"D; COLOR: Arctic White
SHELF-4	SHELVING SYSTEM STANDARD 30"H	06 4115	MFR: Eaton; MODEL: PLWCH30; SIZE: 30"H; COLOR: Arctic White
SHTG-1	GYPSUM SHEATHING	06 1600	PRODUCT: Exterior Gypsum Sheathing; TYPE: Type X, Glass-Mat Faced; THICKNESS: 5/8";
SHTG-2	PLYWOOD SHEATHING	06 1600	PRODUCT: Exterior Plywood Sheathing; GRADE: DOC PS1, Exterior, FRT; SPAN RATING: 32/16; THICKNESS: 1/2";
SMF-1	SHEET METAL FLASHING - COPPER	07 6200	PRODUCT: Copper Sheet; FINISH: M3, Non-Patinated; WEIGHT: 20 oz, UNO GUTTERS: Match Existing Profile; DOWNSPOUTS: Formed Round, 6" D; UNDERLAYMENT: Self-Adhering, High-Temp Sheet;
SMF-2	SHEET METAL FLASHING - GRAY/BLACK	07 6200	PRODUCT: Colored Aluminum Sheet; FINISH: Kynar 500, UNO; COLOR: TBD, Match WDW-1 and MCP-1;
SSF-1	SOLID SURFACE	12 3661	MFR: CAESARSTONE; STYLE: 4100 COLOR: RAVEN;
SSF-2	SOLID SURFACE	12 3661	MFR: CAESARSTONE; STYLE: 5141; COLOR: OCEAN FOAM;
STN-1	STONE VENEER	04 4313.13	MFR: Boxerbul Stone Corp; PRODUCT: Full Bed Veneer; COLOR: Fixed by Le Nukez; TEXTURE: Rustic; WEEP SYSTEM: Masonry Technology, Inc.;
STN-2	CUT STONE TRIM	04 4313.13	MFR: Boxerbul Stone Corp; PRODUCT: Cut Limestone Shapes; COLOR: Indiana Buff (in Texas Creme); TEXTURE: Smooth;
TA-04	TOILET TISSUE DISPENSER JUMBO-ROLL (OFCI)	10 2800	MFR: TBD by Owner; STYLE: ; COLOR: ;
TA-05	PAPER TOWEL (FOLDED) DISPENSER	10 2800	MFR: Bobrick; MODEL: B-526; FINISH: Satin Stainless Steel;
TA-06	PAPER TOWEL (ROLL) DISPENSER (OFCI)	10 2800	MFR: TBD by Owner; STYLE: ; COLOR: ;
TA-11	LIQUID-SOAP DISPENSER (OFCI)	10 2800	MFR: TBD by Owner; STYLE: ; COLOR: ;
TA-12	GRAB BAR	10 2800	MFR: Bobrick; MODEL: B-6806; FINISH: Satin Stainless Steel; DIAMETER: 1 1/2"; LENGTH: See Drawings;
TA-14	SANITARY-NAPKIN DISPOSAL UNIT	10 2800	MFR: Bobrick; MODEL: B-270; FINISH: Satin Stainless Steel;
TA-17	MIRROR UNIT (FRAMED)	10 2800	MFR: DESIGN WITHIN REACH; STYLE: LUCIANO MIRROR, SMALL; COLOR: BLACK
TA-19	HOOK	10 2800	MFR: Bobrick; MODEL: B-2116; FINISH: Satin Nickel;
TA-24	DIAPER-CHANGING STATION	10 2800	MFR: Koala Kare; MODEL: KB110-SSRE; FINISH: Satin Stainless Steel;
TBF	THERMAL BREAK FRAMING	07 2100	MFR: Advanced Architectural Products; PRODUCT: SMARTfc; MODEL: GREENsert
TBM	THERMAL BREAK MATERIAL - SEE STRUCTURAL	ISEN NOTES	MFR: Fabreseca or Armacell; PRODUCT: Structural Thermal Break Material;
TL-1	CERAMIC TILE	09 3013	MFR: FIRECLAY TILE; STYLE: 1 MILLWORK COLOR: CUSTOM - SPRUCE, HUNTER, LIMON, CARBON
TL-2	CERAMIC TILE (OFCI)	09 3013	MFR: DITEC; STYLE: 4"x4" COLOR: N/A;
TL-3	CERAMIC TILE WALL BASE (OFCI)	09 3013	MFR: DITEC; STYLE: 4" x 4", COVE BASE COLOR: N/A;
TLBD	TILE BACKER BOARD	09 2900	PRODUCT: Cement Board;
TLFL-1	TILE FLOORING	09 3013	MFR: MOSA; STYLE: SELECTION ONE, 12X24; COLOR: 1104 V;
TLFL-2	TILE FLOORING	09 3013	MFR: American Olean; STYLE: Quarry Naturals; COLOR: Shadow Gray N46; SIZE: 6x6;
TREAD-1	ARCHITECTURAL PRECAST CONCRETE TREAD BONDED TO BENT STEEL RISERS	05 5100	MAIN THICKNESS 3 1/2"
TREAD-2	WAUSAU PRECAST STAIR TREAD C-60 SELF-SUPPORTING FLAT TREAD	05 5100	MAIN THICKNESS 3 1/2"
TS-1	STAINLESS STEEL TRELLIS SYSTEM	05 9443	MFR: Janco, Inc.; PRODUCT: GreenGuide System; MATERIAL: Type 316 Stainless Steel; ROPE TOP: Swaged Radius Head; ROPE BOTTOM: Swaged GreenGuide Eye; TENSIONING: Turnbuckle; MOUNTING: GreenGuide Spacer;
TWF	THRU-WALL FLASHING AND DRIP EDGE	07 2715	MFR: 3M; PRODUCT: 3015WF; TYPE: Sheet-Applied; DRIP EDGE: Stainless Steel
VB	UNDERSLAB VAPOR BARRIER	03 3000	MFR: Stego or Raven; PRODUCT: ASTM E1745, Class A; THICKNESS: 10 mil (min.);
WAWB	WATER-AIR-VAPOR BARRIER MEMBRANE	07 2715	MFR: 3M PRODUCT: 3015; TYPE: Sheet-Applied; MPOR (max): 0.1 US perm; AIR (max): 0.004 CFM/sf at 1.57 lb/sf;
WB-1	RUBBER WALL BASE	09 6513	MFR: JOHNSONITE; STYLE: TRADITIONAL WALL BASE; COLOR: 60 BURNT UMBER B;
WD-1	ACETYLATED WOOD	06 0813	MFR: Accoya Technologies PLC; PRODUCT: Accoya Wood; SPECIES: Radiata Pine;
WD-2	INTERIOR FINISH WOOD	06 2023	PRODUCT: Reclaimed Wood for Interior Trim; SPECIES: Ash; FINISH: Clear;
WD-3	INTERIOR FINISH WOOD VENEER	06 2023	PRODUCT: Wood Veneer; SPECIES: Ash; FINISH: Clear;

MATERIAL / PRODUCT ID LIST with Spec Data

ID	Short Name	Section	Spec Data
WDCL-1	WOOD CEILING SYSTEM	09 5436	MFR: Armstrong; PRODUCT: Woodworks Grille; PANEL TYPE: 726BBO; SLAT SIZE: 5/8" x 2 1/4"; SLATS PER PANEL: 8; PANEL SIZE: 12"W x 2 3/4"H; PANEL LENGTH: Custom, See Drawings; FINISH: Grille Maple; GRID: Heavy-Duty Prelude XL; GRID COLOR: Black; INFILL PRODUCT: BioAcoustic; INFILL TYPE: 1582S; INFILL COLOR: Black (Matte);
WDW-1	ALUMINUM/WOOD WINDOW	08 5200	MFR: Pella; TYPE: Direct Set; IGU: Conform 3P in 2P; SPECIES: Radiata pine kiln kumashed by Owner; WD FINISH: Clear sealer; AL FINISH: Painted; COLOR: TBD, match MCP-1 and SMF-2; DOORS: Nordic Cutaway Heavy Commercial Door; THICKNESS: 2 1/4";
WFI-1	WINDOW FILM, PRIVACY	08 8733	MFR: 3M; PRODUCT: Fasara Glass Finish; PATTERN: Mikey Wave (Milano), SHOMAML;
WPR-1	WATERPROOFING MEMBRANE	07 1416	MFR: GCP Applied; PRODUCT: Procor;
WRB	WATER-RESISTIVE BARRIER	07 2500	PRODUCT: Single-Layer #15 Asphalt Felt, TYPE: ASTM D226, Type I, SLIP SHEET: Rosen Paper;
WT-1A	ROLLER WINDOW SHADE, MOTORIZED	12 2413	MFR: Hunter Douglas; TYPE: Motorized, Single; SHADING: 5% Openness; COLOR: GreenScreen Evolve HD3500, Shale;
WT-2A	ROLLER WINDOW SHADE, MANUAL	12 2413	MFR: Hunter Douglas; TYPE: Manual, Single; SHADING: 5% Openness; COLOR: GreenScreen Evolve HD3500, Shale;

SHT NO	SHEET NAME
GENERAL	
G000	SHEET INDEX, GENERAL NOTES AND MATERIALS
G001	SITE CONTEXT AND SYMBOLS
G002	TYPICAL ASSEMBLIES
G051	CODE PLAN - OVERALL APPROACH
G052	CODE PLAN AND ANALYSIS
ARCHITECTURAL DEMOLITION	
AD100	SITE DEMOLITION PLAN
AD101	DEMOLITION PLANS
AD121	REFLECTED CEILING PLAN - DEMOLITION
CIVIL	
C100	EXISTING CONDITIONS PLAN
C200	DEMOLITION PLAN
C300	SITE PLAN
C400	GRADING & EROSION CONTROL PLAN
C500	UTILITY PLAN
C501	LIFT STATION DETAIL
C600	CONSTRUCTION DETAILS - 1
C601	CONSTRUCTION DETAILS - 2
C602	CONSTRUCTION DETAILS - 3
C603	CONSTRUCTION DETAILS - 4
LANDSCAPE	
L001	HARDSCAPE PLAN
L002	HARDSCAPE DETAILS
L003	GRADING PLAN
ARCHITECTURAL	
A001	ARCHITECTURAL SITE PLAN
A101	LEARNING CENTER FLOOR PLAN - LEVEL 1
A102	LEARNING CENTER FLOOR PLAN - LEVEL 2
A103	LEARNING CENTER ROOF PLAN
A111	GREENHOUSE - HEADHOUSE FLOOR + ROOF PLAN
A112	GREENHOUSE - HEADHOUSE SECTION AND ELEVATION
A121	REFLECTED CEILING PLAN - LEVEL 1 - EXTG + NEW
A122	REFLECTED CEILING PLAN - LEVEL 1 + 2 - EXTG + NEW
A131	REFLECTED CEILING PLAN - LEVEL 1 - EXISTING
A132	EXISTING BUILDING REFERENCE DRAWINGS
A151	TOILET ROOM PLANS AND ELEVATIONS
A152	TOILET ROOM PLANS AND ELEVATIONS
A191	ENLARGED PLANS AND SECTIONS
A201	EXTERIOR ELEVATIONS
A202	EXTERIOR ELEVATIONS
A251	BUILDING SECTIONS
A301	WALL SECTIONS
A351	EXTERIOR DETAILS
A352	EXTERIOR DETAILS
A353	EXTERIOR DETAILS
A354	EXTERIOR DETAILS
A355	EXTERIOR DETAILS
A356	EXTERIOR DETAILS
A357	EXTERIOR DETAILS
A358	EXTERIOR DETAILS - COPPER ROOFING
A359	EXTERIOR DETAILS 3
A401	VERTICAL CIRCULATION
A402	VERTICAL CIRCULATION DETAILS
A403	VERTICAL CIRCULATION DETAILS
A501	INTERIOR ELEVATIONS
A502	INTERIOR ELEVATIONS
A503	INTERIOR ELEVATIONS
A551	INTERIOR DETAILS
A552	INTERIOR DETAILS
A601	DOOR SCHEDULE, TYPES AND DETAILS
A651	WINDOW TYPES
A701	FINISH PLANS
A801	MILLWORK PLANS
A802	LEVEL 1 MILLWORK
A803	LEVEL 1 MILLWORK
A804	LEVEL 2 MILLWORK
A851	MILLWORK DETAILS
A852	MILLWORK DETAILS
A991	FURNITURE PLANS - ISSUED FOR REFERENCE ONLY
STRUCTURAL	
S001	GENERAL NOTES
S002	SYMBOLS AND ABBREVIATIONS
S101	LEARNING CENTER HELICAL PILE PLAN
S102	LEARNING CENTER FOUNDATION PLAN
S103	LEARNING CENTER LEVEL 1 FRAMING PLAN
S104	LEARNING CENTER ROOF FRAMING PLAN
S111	GREENHOUSE FOUNDATION PLAN
S112	GREENHOUSE ROOF FRAMING PLAN
S201	FOUNDATION DETAILS
S202	FOUNDATION DETAILS
S203	FOUNDATION DETAILS
S301	FRAMING DETAILS
S302	FRAMING DETAILS
GREENHOUSE	
GH1	GREENHOUSE POST PLAN
GH2	GREENHOUSE SIDEWALL ELEVATIONS
GH2.1	GREENHOUSE CORRIDOR PARTITION ELEVATIONS
GH3	GREENHOUSE GABLE ELEVATIONS
GH3.1	GREENHOUSE GABLE PARTITIONS
GH4	GREENHOUSE TRUSS SECTION
GH4.1	GREENHOUSE TRUSS DETAILS
GH5	GREENHOUSE FOUNDATION PLAN
GH5.1	GREENHOUSE POST AND BASE ANCHOR DETAILS
GH6	GREENHOUSE EQUIPMENT PLAN
GH6.1	GREENHOUSE BENCH PLAN
GH6.2	GREENHOUSE EQUIPMENT SECTIONS
GH6.3	GREENHOUSE CONTROL (SENDING AREA)
GH6.4	GREENHOUSE CONTROL (CORRIDOR)
GH6.5	GREENHOUSE CONTROL (CONSERVATORY)
GH7	GREENHOUSE FROGE SECTION
GH8	TYPICAL GREENHOUSE SIDEWALL SECTION
GH8.1	TYPICAL GREENHOUSE PARTITION SECTION
GH8.2	TYPICAL GREENHOUSE COOL CELL DETAILS
GH9	GREENHOUSE ROOF TO GABLE SECTION
GH10	GREENHOUSE DOOR SCHEDULE
GH11	GREENHOUSE CLOSURE DETAILS

SHT NO	SHEET NAME
GREENHOUSE HEATING	
H1	GREENHOUSE HEATING SYSTEM NOTES & SCHEDULES
H2	GREENHOUSE HEATING SYSTEM LAYOUT
H2A	GREENHOUSE HEATING SYSTEM PEX MANIFOLD BOX
H3	GREENHOUSE HEATING SYSTEM PEX LAYOUT
H3A	GREENHOUSE HEATING SYSTEM PEX DETAILS
H4	GREENHOUSE UPPER & LOWER FIN TUBE LAYOUT
H4A	GREENHOUSE SNOW MELT FIN TUBE LAYOUT
H4B	FIN TUBE DETAILS
H4C	FIN TUBE COVER AND INSULATION DETAILS
H5	TROPICAL GH5E A PIPING ELEVATION
H5A	TROPICAL GH5E B PIPING ELEVATION
H5B	ORCHID INT GH5E A PIPING ELEVATION
H5C	ORCHID INT GH5E B PIPING ELEVATION
H5D	PRODUCTION GH5E A PIPING ELEVATION
H6	MIXING VALVE DETAILS
H6A	ZONE CONTROL VALVE DETAILS
H7	BENCHTOP HEATING LAYOUT
H7A	BENCHTOP HEATING DETAILS
MECHANICAL	
M001	MECHANICAL TITLE SHEET
M011	GREENHOUSE MECHANICAL PIPING DEMO PLAN
M012	GREENHOUSE MECHANICAL DEMOLITION PLAN
M101	LEARNING CENTER MECHANICAL DUCTWORK PLAN
M102	LEARNING CENTER MECHANICAL PIPING PLAN
M103	LEARNING CENTER RADIANT HEAT AND COOL
M111	GREENHOUSE MECHANICAL PIPING PLAN
M112	ENLARGED PLANS AND SECTIONS
M113	ENLARGED PLANS AND SECTIONS
M120	COMMONS AREA MECHANICAL PIPING PLAN
M201	MECHANICAL DETAILS
M202	MECHANICAL DETAILS
M301	MECHANICAL SCHEDULES
M302	MECHANICAL SCHEDULES
M303	MECHANICAL CONTROLS SCHEMATICS
M401	MECHANICAL CONTROL SCHEMATICS
M402	MECHANICAL CONTROL SCHEMATICS
PLUMBING	
P000	PLUMBING TITLE SHEET
PD111	GREENHOUSE PLUMBING DEMO PLAN - BELOW GRADE
PD112	GREENHOUSE PLUMBING DEMO PLAN - ABOVE GRADE
PD131	COMMONS AREA PLUMBING DEMO PLAN
P100	LEARNING CENTER PLUMBING PLAN - BELOW GRADE
P101	LEARNING CENTER PLUMBING PLAN - ABOVE GRADE
P102	LEARNING CENTER PLUMBING ROOF PLAN
P111	GREENHOUSE PLUMBING PLAN - BELOW GRADE
P112	GREENHOUSE PLUMBING PLAN - ABOVE GRADE
P131	COMMONS AREA PLUMBING PLAN
P201	PLUMBING RISER DIAGRAM
P301	PLUMBING DETAILS & SCHEDULES
P401	PLUMBING SCHEDULES AND RAINWSI SCHEMATIC
IRRIGATION	
I100	IRRIGATION PUMP SKID
I101	IRRIGATION DEMO AND QUICK COUPLER PLAN
FIRE PROTECTION	
F000	SITE PLAN, GENERAL NOTES, DETAILS
F100	FIRE PROTECTION LEVEL 1
F101	FIRE PROTECTION PLAN EXTG BUILDING
F102	FIRE PROTECTION LEVEL 2 - NEW ADDITION
F103	FIRE PROTECTION 1970s BUILDING
ELECTRICAL	
E000	ELECTRICAL TITLE SHEET
ED100	LOBBY LIGHTING DEMOLITION
ED110	GREENHOUSE ELECTRICAL DEMO PLAN
E001	SITE LANDSCAPE POWER PLAN
E002	SECOND FLOOR EXTERIOR LIGHTING PLAN
E101	LEARNING CENTER LIGHTING PLAN
E102	LEARNING CENTER POWER PLAN
E103	LEARNING CENTER FIRE DETECTION PLAN
E104	LEARNING CENTER ROOF AND BELOW GRADE POWER PLAN
E111	GREENHOUSE LIGHTING PLAN
E112	GREENHOUSE POWER PLAN
E113	GREENHOUSE FIRE DETECTION PLAN
E400	ONE-LINE DIAGRAM AND SCHEDULES
E410	ELECTRICAL GREENHOUSE SCHEDULES
E500	ELECTRICAL DETAILS
TECHNOLOGY	
T000	TECHNOLOGY COVER SHEET
T0001	SITE DEMOLITION PLAN - TECHNOLOGY
T001	SITE PLAN - TECHNOLOGY
T101	LEARNING CENTER FLOOR PLAN - LEVEL 1 - TECHNOLOGY
T102	LEARNING CENTER ROOF PLAN - TECHNOLOGY
T111	GREENHOUSE FLOOR PLAN - LEVEL 1 - TECHNOLOGY
T200	ENLARGED PLANS - TECHNOLOGY
T300	DETAILS - TECHNOLOGY
T400	RISER DIAGRAMS - TECHNOLOGY
T401	RISER DIAGRAMS - TECHNOLOGY
T500	SCHEDULES - TECHNOLOGY

GENERAL NOTES - ALL DRAWINGS

1. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO SUBMITTING A BID AND VERIFY EXISTING CONDITIONS AND SCOPE OF WORK.

2. DRAWINGS ARE BASED ON ORIGINAL RECORD DRAWINGS FOR THE EXISTING BU

DRAFTING SYMBOLS

- SM / A101 — MULTI - ELEVATION REFERENCE
- SM / A101 — ELEVATION REFERENCE
- SM / A101 — SECTION REFERENCE
- 1 / SM / A101 — DETAIL REFERENCE
- SM / 1 / A101 — DETAIL REFERENCE
- 1 — WALL TYPE
- 101 — PARTITION TYPE
- 101 — DOOR TYPE
- W3 — WINDOW TYPE
- 1 — REVISION
- DESIGN BY — KEYNOTE
- D — GRID LINE
- Name / Elevation — LEVEL MARKER
- Room name / 101 — ROOM NAME
- ROOM NUMBER
- NORTH SYMBOL
- DRAWING NUMBER
- DRAWING TITLE
- 1 VIEW NAME / A101 1/8" = 1'-0" — SCALE
- SHEET NUMBER

ABBREVIATIONS

A
- AE Architect and/or Engineer
- AB Anchor Bolt
- ABV Above
- AC Air Conditioning
- ACPL Acoustic Floor
- ACOUS Acoustical
- ACT Acoustical Ceiling Tile
- AD Access Door
- ADDL Additional
- ADJ Adjacent
- ADJST Adjustable
- ADMIN Administration
- AFF Above Finish Floor
- ALT Alternate
- ALUM Aluminum
- AMEND Amendment
- AND Anchor
- AP Access Panel
- APC Architectural Precast Concrete
- APPROX Approximately
- ARCH Architecture
- AUTO Automatic
- AV Audio Visual
- AVG Average
- AWT Accoutical Wall Treatment

B
- B&S Ballast and Bulkhaped
- BA Building Accessory
- BD Board
- BIT Bituminous
- BL Brick Ledge
- BLDG Building
- BLKG Blocking
- BM Beam or Bench Mark
- BO By Owner
- BOF Bottom of Footing
- BOS Bottom of Slab
- BOS Bottom of Steel
- BOT Bottom
- BPL Bearing Plate
- BR Brick
- BRG Brick Course
- BRS Bracing
- BSMT Basement
- BTWN Between
- BUR Built-up Roof

C
- C Course
- C/C Center to Center
- CAB Cabinet
- CANT Cantilever
- CAT Category
- CB Catch Basin
- CE Civil Engineer
- CEM Cement
- CER Ceramic
- CF Cubic Feet
- CFS Cubic Feet per Second
- CG Corner Guard
- CHNL Channel
- CI Cast-Iron
- CIP Cast-in-Place
- CLR Clear
- CJ Control Joint
- CL Centerline
- CLG Ceiling
- CLO Closet
- CLR Clearance
- CMU Concrete Masonry
- CNJ Construction Masonry Unit
- CO Cased Opening
- COD Closet Door

C
- COL Column
- COM Communication
- COMP Composite
- COMPR Compressible
- CONC Concrete
- COND Condition
- CONF Conference
- CONN Connection
- CONST Construction
- CONT Continue (ious) (inion
- CORR Corridor
- CPT Carpet
- CSK Countersunk
- ST Ceramic Tile
- CTR Center
- CU Cubic
- CUH Cabinet Unit Heater
- CW Cold Water
- CW Curtain Wall

D
- DBL Double
- DEG Degree
- DEMO Demolition
- DEPT Department
- DF Drinking Fountain
- DIA Diameter
- DIAG Diagonal
- DIFF Diffuser
- DIM Dimension
- DISP Dispenser
- DIST Distribution
- DIV Division or Divider
- DL Dead Load
- DN Down
- DO Door Opening
- DS Downspout
- DTL Detail
- DW Dishwasher
- DWG Drawing
- DWL Dowel
- DWTR Dumbwaiter

E
- E East
- EA Each
- EF Exhaust Fan
- EGEN Emergency Generator
- EIFS Exterior Insulation & Finish System
- EJ Expansion Joint
- EL Elevation
- ELEC Electrical
- ELEV Elevator
- EMER Emergency
- ET.TR. Easement
- EO Electrical Outlet
- EOS Edge of Slab
- EPD Electric Propylen Dien Monomer
- EQ Equal
- EQUIP Equipment
- ESTB Established
- EW Each Way
- EWC Electric Water Cooler
- EXC Excavation/Excavate
- EXH Exhaust
- EXIST/EXTG Existing
- EXP Expansion
- EXT External

F
- FEC Fire Extinguisher Cabinet
- FF Finished Face, Face of Wall
- FFE Finish Floor Elevation
- FFL Finish Floor Level
- FHC Fire Hose Cabinet
- FIN Fire
- FIXT Fixture
- FLASH Flashing
- FLEX Flexible
- FLR Floor(ing)
- FLUOR Fluorescent
- FN Fence
- FND Foundation
- FO Finished Opening
- FOC Face of Concrete
- FOM Face Masonry
- FOS Face of Studs / Steel
- FP Fireproofing
- FPL Fireplace
- FRP Fiberglass Reinforce Plastic Panel
- FRT Fire Retardant Treated
- FT Foot or Feet
- FTG Footing
- FTR Fire Tube Radiation / Radiator
- FUR Furring
- FT Future
- FWC Fabric Wall Covering

G
- G Gas
- GA Gauge
- GAL Gallon
- GALV Galvanized
- GAR Garage
- GB Grab Bar
- GC General Contractor
- GEN General
- GEOTEX Geotextile
- GFRP Glasfiber Fiberglass Reinforce Panel
- GL Glazing
- GLU Glue Laminated
- GYP Gypsum
- GWB Gypsum Wall Board

H
- H High
- HB Home Elb
- HC Handicap
- HDR Header
- HDWD Hardwood
- HDWR Hardware
- HM Hollow Metal
- HOR Horizontal
- HR Hour(s)
- HT Height
- HTR Heater
- HVAC Heating / Ventilation / Air Conditioning
- HYD Hydrant
- HW Hot Water
- HWH Hot Water Heater

I
- ID Inside Diameter
- IN Inch
- INCL Including
- INFO Information
- INSUL Insulation
- INT Interior

J
- JAN Janitor
- JBOX Junction Box
- JC Jonson's Cloret
- JST Joist
- JT Joint

K
- KIT Kitchen
- KO Knockout

L
- L Long, Length
- LAB Laboratory
- LAM Laminate, Lamination
- LAV Lavatory
- LB Pound
- LCD Linear Ceiling Diffuser
- LF Linear Foot
- LH Left Hand
- LHR Left Hand Reverse
- LIN Linear
- LINO Linoleum
- LL Live Load
- LOC Location
- LONG Longitudinal
- LTG Lighting
- LVR Louver

M
- MAS Masonry
- MAT Walk Off Mat
- MATL Material
- MAX Maximum
- MC Medicine Cabinet
- MDF Medium Density Fiberboard
- MDO Medium Density Overlay
- MECH Mechanical
- MEMB Membrane
- MEZZ Mezzanine
- MFR Manufacturer
- MH Manhole
- MIN Minimum
- MISC Miscellaneous
- MO Masonry Opening
- MR Moisture Resistant
- MTD Mounted
- MTL Metal
- MUL Mullion
- MW Millwork
- MWA Millwork Accessory

N
- N North
- NA Not Applicable
- NIC Not in Contract
- NO Number
- NOM Nominal
- NRC Noise Reduction Coefficient
- NTS Not to Scale

O
- OA Overall
- OC On Center
- OCD Overhead Coiling Door
- OD Outside Diameter
- OFCI Owner Furnished - Contractor Installed
- OFOI Owner Furnished - Owner Installed
- OH Overhead
- OHD Overhead Door
- OP Operable Partition
- OPG Opening
- OPP Opposite
- OPT Optional
- ORD Overflow Roof Drain

P
- PA Public Address
- PAR Parallel
- PBD Partical Board
- PC Precast Concrete
- PERM Perimeter
- PERP Perpendicular
- PFN Pre-Formed
- PFN Pre-Finished
- PKG Parking
- PL Plate
- PL Property Line
- PLAM Plastic Laminate
- PLAS Plaster
- PLBG Plumbing
- PLF Lineal Foot per Linear Foot
- PLYWD Plywood
- PNL Panel
- PR Pair
- PREFAB Prefabricated
- PRELIM Preliminary
- PROJ Projection
- PSF Pound per Square Inch
- PT Paint
- PTN Partition
- PVC Polyvinyl Chlorize

Q
- QT Quarry Tile
- QTR Quarter
- QTY Quantity

R
- R Radius
- RA Return Air
- RAD Radiator
- RB Rubber Base
- RCP Reflected Ceiling Plan
- RD Roof Drain
- REC Recessed
- RECT Rectangular
- REF Reference
- REF Refrigerator
- REG Register
- REINF Reinforce (ment) (ing)
- REQD Required
- RF Fireproof
- RFB Resilient Floor
- RHR Right Hand
- RFP Roof Hatch
- RH Right Hand
- RHR Right Hand Reverse
- RM Room
- RND Round
- RO Rough Opening
- ROW Right of Way
- RT Rubber Tile
- RWL Rain Water Leader

S
- S South
- SA Supply Air
- SAN Sanitary
- SC Solid Core
- SCHED Schedule
- SD Storm Drain
- SECT Section
- SF Square Feet
- SFRMT Stairwell
- SHR Shower
- SHT Sheet
- SHTG Sheathing
- SIM Similar
- SLNT Sealant
- SM Surface Mount
- SMTL Sheet Metal
- SOG Slab on Grade
- SPKR Speakering
- SPEC Specifications
- SS Stainless Steel

S
- SSF Solid Surface
- SSK Service Sink
- ST Stone Tile
- STC Sound Transmission Coefficient
- STD Standard
- STL Steel
- STN Stone
- STOR Storage
- STRUCT Structural
- SUSPL Suspended
- SUSP Suspension
- SYM Symmetry, Symmetrical
- SYS System

T
- T Tread
- TAG Tongue & Grooved
- TAN Tangent
- TBD To Be Determined
- TD Trench Drain
- TEMP Temporary
- TERR Terrazzo
- THK Thickness(s)
- THRES Threshold
- TOB Top of Beam
- TOC Top of Concrete or Curb
- TOD Top of Deck
- TOF Top of Footing
- TOJ Top of Joist
- TOM Top of Masonry
- TOP Topping
- TOS Top of Slab
- TOS Top of Steel
- TOW Top of Wall
- TRTD Treated
- TS Tube Steel
- TYP Typical

U
- UC Undercut
- UFIN Unfinished
- UG Underground
- UNO Unless Noted Otherwise
- UPH Upholstery
- UR Urinal
- UTIL Utility

V
- VAR Varies
- VB Vapor Barrier
- VCT Vinyl Composition Tile
- VERT Vertical
- VEST Vestibule
- VIN Vinyl
- VNR Veneer
- VR Vapor Retarder
- VT Vinyl Tile
- VWC Vinyl Wall Covering

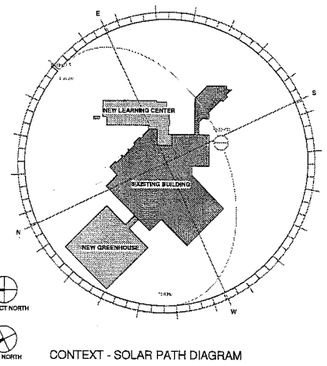
W
- W Width
- W Water, Wash
- W/ With
- WD Without
- WC Water Closet
- WD Wood
- WDW Wooden
- WF Wide Flange
- WG Wall Guard
- WHTR Water Heater
- WP Waterproofing
- WR Washer Receptacle
- WS Wooden Stripping
- WSCT Wainscot
- WT Window Treatment

SITE DEMO AND NEW WORK NOTES

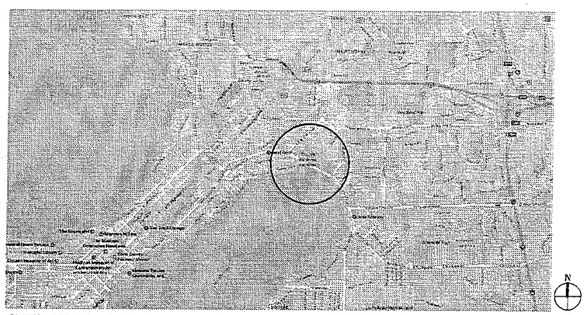
1. ALL WORK OUTSIDE OF PROPERTY LINE WILL BE BY CITY OF MADISON UNLESS NOTED OTHERWISE.
2. NOTIFY OWNER AND/OR OBG AND ARCHITECT OF ANY INCONSISTENCIES BETWEEN DRAWINGS AND ACTUAL CONDITIONS DISCOVERED DURING DEMO ON NEW WORK.
3. NOTIFY ALL RELEVANT UTILITY COMPANIES AND OBG PRIOR TO EXCAVATION OR BELOW-GRADE WORK, DETERMINE EXACT LOCATION AND DEPTH OF BELOW-GRADE UTILITIES PRIOR TO COMMENCING WORK.
4. GENERAL CONTRACTOR SHALL REPLACE EXISTING MATERIAL DAMAGED DURING DEMO OR NEW CONSTRUCTION OPERATIONS TO CITY OF MADISON STANDARDS.
5. REFER TO C100 FOR ADDITIONAL SITE DEMOLITION AND PROTECTION SCOPE.
6. REFER TO C-SERIES FOR CIVIL ENGINEERING, L-SERIES FOR LANDSCAPE AND GRADING, AND I-SERIES SHEETS FOR IRRIGATION WORK SCOPE.
7. TREES TO BE RETAINED AND PROTECTED BY CONTRACTOR SHALL INCLUDE ALL OF THE FOLLOWING BRANCHES AND LIMBS: TREE TRUNK; ALL ROOTS AND ROOT STRUCTURE. CONTRACTOR SHALL BE REQUIRED TO CONTACT THE STAFF HORTICULTURALIST BEFORE CUTTING OR TRIMMING ANY BRANCHES OR ROOTS. CONTRACTOR SHALL USE EXTREME CAUTION WHEN REMOVING EXISTING CONCRETE SLABS, AND SHALL PROTECT ALL EXPOSED ROOT SYSTEMS WHILL BACKFILLING AND INSTALLING NEW PAVERS AS NECESSARY.
8. CITY OF MADISON PARKS DIVISION WILL REMOVE TREES PRIOR TO CONSTRUCTION COMMENCEMENT DATE (EXCLUDING STUMP REMOVAL).
9. OLBRICH STAFF WILL REMOVE ALL EXISTING BENCHES, PORTABLE PLANTERS, LANDSCAPE FENCING, FEATURE LIGHTING AT GRADE AND OTHER MOVEABLE FEATURES PRIOR TO CONSTRUCTION COMMENCEMENT DATE.
10. EXISTING FIBER OPTIC LINE (LOCATION INDICATED IS APPROXIMATE) CONNECTS EXISTING P.O. PANEL IN CLOSET (NOF-1) IN STAFF OFFICES ZONE TO GARVER COTTAGE. LINE MUST REMAIN ACTIVE AS EITHER TEMPORARY OR NEW PERMANENT LINE WITH MINIMAL LOSS OF SERVICE. SC TO PROVIDE OBG STAFF MINIMUM 5 WORKING DAYS NOTICE FOR ANY LOSS OF SERVICE. LOSS OF SERVICE NOT TO EXCEED 48 HOURS ON ANY TWO DAYS OF THE WEEK (MON THRU SUN). SEE T-SERIES DOCS FOR MORE DETAILS.
11. ALL WORK SHALL BE DONE IN ACCORDANCE WITH CITY OF MADISON STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION.
12. THE CONTRACTOR SHALL PERFORM STREET SWEEPING ON ALL STREETS OR PAVED SURFACES OUTSIDE OF THE CONSTRUCTION LIMITS THAT ARE AFFECTED BY CONSTRUCTION EQUIPMENT, HAULING OR RELATED CONSTRUCTION ACTIVITIES THAT RESULT IN MUD TRACKING OR SILTATION. STREET SWEEPING SHALL REMOVE ALL LOOSE MATERIAL TO THE SATISFACTION OF THE CONSTRUCTION ENGINEER. ALL AFFECTED STREETS OR PAVED SURFACES BEYOND THE CONSTRUCTION LIMITS SHALL BE CLEAN AT THE END OF EACH WORK DAY.
13. A SILT SOCK SHALL BE INSTALLED AROUND THE PERIMETER OF THE CONSTRUCTION LIMITS TO PROTECT DOWN-SLOPE AREAS FROM SEDIMENT-LADEN RUNOFF GENERATED FROM DISTURBED WORK AREAS PER CITY OF MADISON SPEC 210.5(5).
14. PROVIDE INLET PROTECTION PER SPEC 210.5(6) AND WISCONSIN DNR TECHNICAL STANDARD No. 1060, TYPE D.
15. IN REMOVING PAVEMENT, CURB, CUTTER, SIDEWALK, CROSSWALKS, DRIVEWAYS, STEPS AND SIMILAR STRUCTURES, WHERE PORTIONS OF THE EXISTING STRUCTURE IS TO BE LEFT IN THE SURFACE OF THE FINISHED WORK, THE STRUCTURE TO BE REMOVED IS TO BE SAW CUT TO FULL DEPTH AND SHOWN TO A TRUE LINE WITH A FACE PARALLEL WITH THE SURFACE OF THE STRUCTURE TO REMAIN, SUFFICIENT REMOVAL SHALL BE MADE TO PROVIDE FOR PROPER JOINTS AND CONNECTIONS TO THE NEW WORK, ENSURE THAT ALL NECESSARY SAW CUTS ARE CLEAN AND SMOOTH, AND DO NOT RESULT IN A CHIPPED EDGE OR CRUMBLING EDGE.
16. THE EXISTING FACILITY SHALL REMAIN IN OPERATION DURING CONSTRUCTION ACTIVITIES, EXCEPT FOR WITHIN THE CONSTRUCTION ZONE. CONSTRUCTION FENCING SHALL ALLOW FOR CONSTRUCTION-RELATED ENTRY AND EGRESS AND FOR EMERGENCY EXITING FOR BUILDING OCCUPANTS. ACCESS INTO THE SITE OR BUILDING THROUGH CONSTRUCTION FENCING FOR ANYTHING OTHER THAN CONSTRUCTION-RELATED REASONS SHALL NOT BE ALLOWED.
17. ANY SCS/URCONTRACTOR SITE OPERATIONAL AND LOGISTICS INFORMATION SHOWN ON ANY SITE PLAN DRAWINGS IS TO BE VERIFIED FOR CONTENT AND SCOPE WITH CITY ENGINEERING AND OLBRICH STAFF PRIOR TO CONSTRUCTION OPERATIONS COMMENCING.
18. COPPER ROOFING AND ROOF ACCESSORIES TO BE CAREFULLY REMOVED, DISASSEMBLE AND SALVAGE EXISTING GUTTERS, DOWNSPOUTS, SNOW GUARDS, AND ASSOCIATED FITTINGS/HARDWARE FOR REINSTALLATION TO THE GREATEST EXTENT POSSIBLE. IN REMOVING OF EXISTING STANDING SEAM ROOF PANELS, USE MECHANICAL SEAM CUTTER TO REMOVE FOLDED SEAM AND DISENGAGE FASTENING CLIPS. REMOVE ROOFING PANELS, FULLY INTACT TO THE GREATEST EXTENT POSSIBLE, AND STOCKPILE SEPARATELY IN A LOCATION DESIGNATED BY OWNER FOR OWNER DISPOSAL. DISPOSAL OF REMAINING DEMOLITION WASTE BY CONTRACTOR.

WALL AND PARTITION KEY

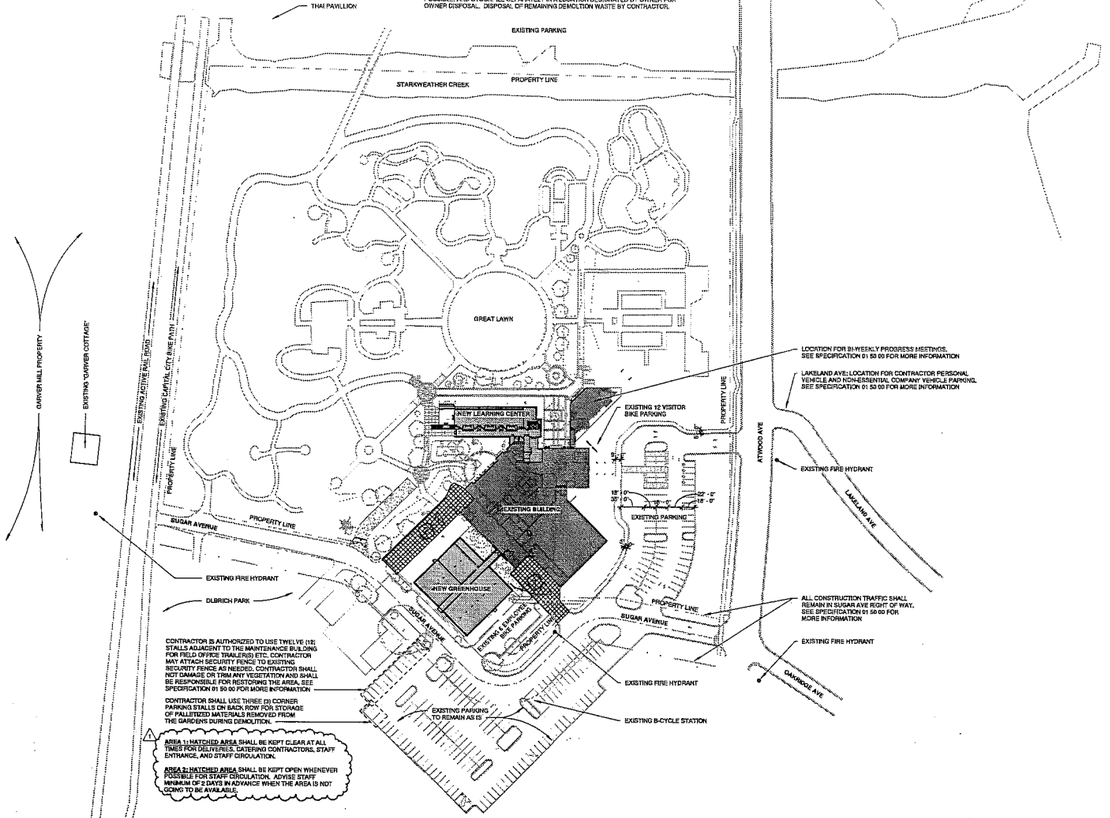
- NEW WALLS AND PARTITIONS
- EXISTING WALLS AND PARTITIONS
- WALLS AND PARTITIONS TO BE REMOVED
- 1 HOUR RATED FIRE WALL
- 2 HOUR RATED FIRE WALL



CONTEXT - SOLAR PATH DIAGRAM



OLBRICH BOTANICAL GARDENS - LOCATION PLAN



1 CONTEXT - SITE CONTEXT PLAN
G001 1" = 80'-0"

MSR 710 South 2nd Street, 8th Floor Minneapolis, Minnesota 55401-2282
Architecture, Interiors and Urban Design: 612 375 0336 tel; 612 342 2216 fax; www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201
Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
303 South Paterson Street, Suite 1
Madison, WI 53703
608.251.3600 tel

Structural Engineer, Technology and AV
IMEG Corp.
1800 Deming Way, Suite 200
Middleton, WI 53562
608.223.9400 tel

MEP Engineer
MEP Associates, LLC
860 Blue Gentian Road, Suite 175
Eagan, MN 55121
651.379.5120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
5750 Hemlehale Ave West
St. Paul, MN 55103
651.251.1880 tel

Greenhouse Design
Rough Brothers, Inc.
5533 Vine Street
Cincinnati, OH 45217
513.242.0310 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin. ARCHITECT SEAL:

WISCONSIN — DANIEL JACK POLING — A-6994 — MINNEAPOLIS, MN — ARCHITECT

Signature:
Print Name: Jack Poling
Date: JUNE 4, 2018 License No.: A-6994

ISSUE MARK	DATE	DESCRIPTION
	09.29.2017	SCHEMATIC DESIGN SUBMISSION
	12.08.2017	DD PRICING SET
	01.10.2018	DESIGN DEVELOPMENT SUBMISSION
	01.17.2018	UDC SUBMISSION
	03.30.2018	70% CD PRICING ISSUE
	04.06.2018	PARKING LOT AND SITE PLAN SUBMISSION
	05.01.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE
1	06.22.2018	BID ADDENDUM 2

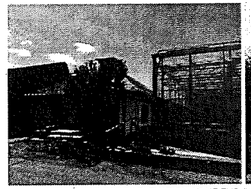
PROJECT NO. 2017016
PROJECT PHASE: BID DOCUMENTS
DRAWN BY: MSR CHECKED BY: MSR

Drawing (MSR) Copyright Myers, Saiki & Rabenstein, Ltd.

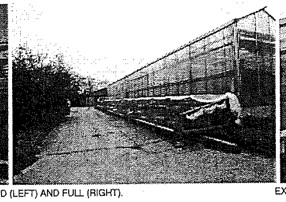
SITE CONTEXT AND SYMBOLS

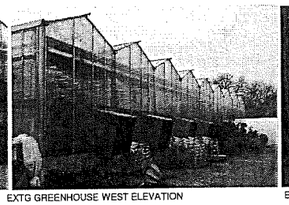
EXHIBIT A
G001

REVISED

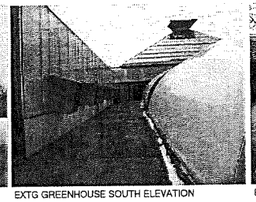


EXTG GREENHOUSE NORTH ELEVATION AT NE END (LEFT) AND FULL (RIGHT).

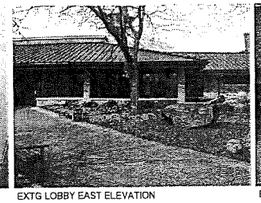




EXTG GREENHOUSE WEST ELEVATION



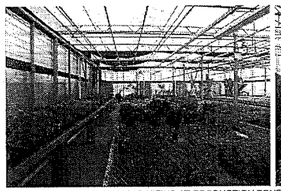
EXTG GREENHOUSE SOUTH ELEVATION

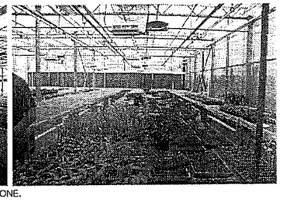


EXTG LOBBY EAST ELEVATION

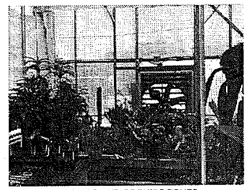
EXTG 1970s BDG LINK DOOR AND WINDOW

EXTG GREENHOUSE SW CORNER AND LINK TO HEADHOUSE, LINK GABLE AT HEADHOUSE, AND INTERIOR CORRIDOR.

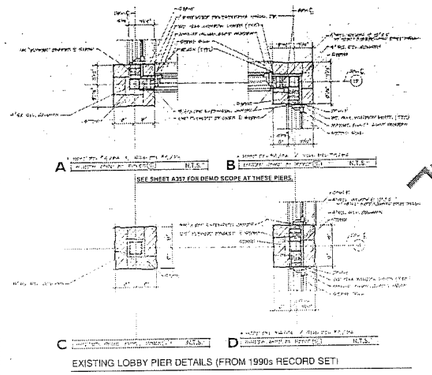




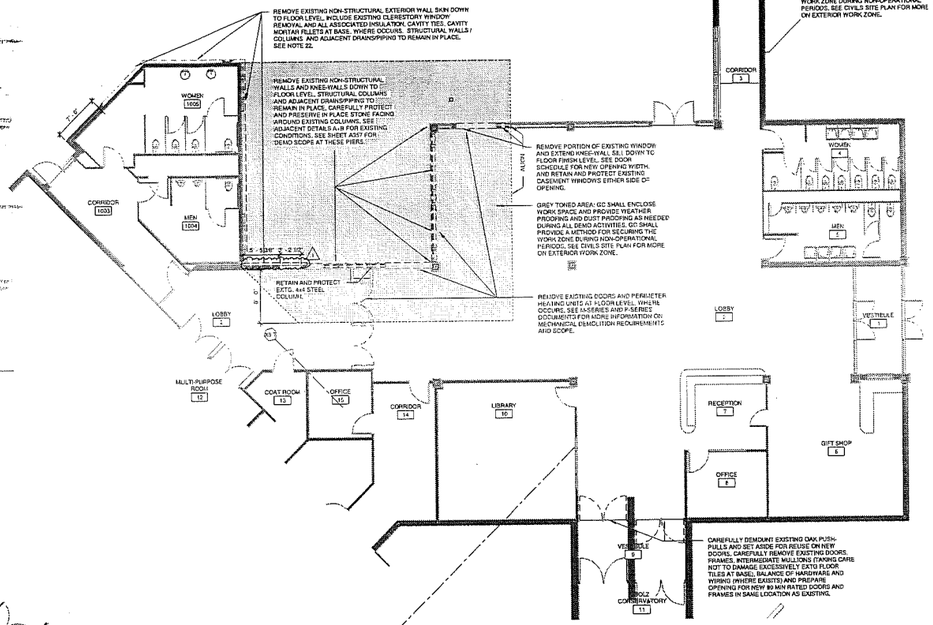
EXTG GREENHOUSE INTERIOR VIEWS AT PRODUCTION ZONE.



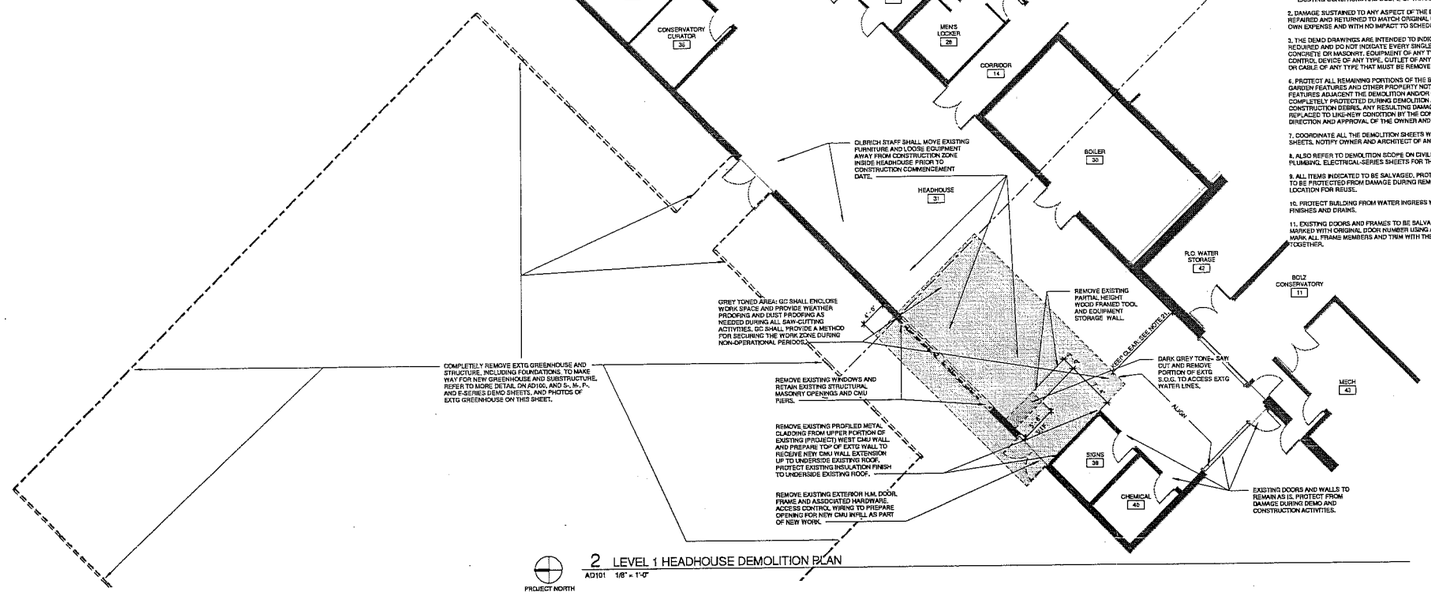
EXTG GREENHOUSE INTERIOR VIEWS AT TROPICALS AND ORCHIDS ZONES.



EXISTING LOBBY PIER DETAILS (FROM 1990s RECORD SET)



1 LEVEL 1 LOBBY DEMOLITION PLAN
AD101 1/8" = 1'-0"



2 LEVEL 1 HEADHOUSE DEMOLITION PLAN
AD101 1/8" = 1'-0"

PROJECT NORTH

GENERAL NOTES - ALL DEMOLITION DRAWINGS

1. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO SUBMITTING A BID AND VERIFY EXISTING CONDITIONS AND SCOPE OF WORK.
2. DAMAGE SUSTAINED TO ANY ASPECT OF THE EXISTING CONDITIONS SHALL BE REPAIRED AND RETURNED TO MATCH ORIGINAL CONDITIONS AT THE CONTRACTOR'S OWN EXPENSE AND WITH NO IMPACT TO SCHEDULE.
3. THE DEMO DRAWINGS ARE INTENDED TO INDICATE THE SCOPE OF WORK REQUIRED AND DO NOT INDICATE EVERY SINGLE PIECE OF SECONDARY STEEL, CONCRETE OR MASONRY, EQUIPMENT OR ANY TYPE, HARDWARE OF ANY TYPE, CONTROL DEVICE OF ANY TYPE, OUTLET OF ANY TYPE, BOX, FACE PLATES, CONDUIT, OR CABLE OF ANY TYPE THAT MUST BE REMOVED.
4. PROTECT ALL REMAINING PORTIONS OF THE BUILDING, LANDSCAPING, EXISTING GARDEN FEATURES AND OTHER PROPERTY NOT SCHEDULED FOR DEMOLITION. ANY FEATURES ADJACENT TO THE DEMOLITION AND/OR CONSTRUCTION ZONE SHALL BE COMPLETELY PROTECTED DURING DEMOLITION AND KEPT FREE FROM CONSTRUCTION DEBRIS. ANY RESULTING DAMAGE SHALL BE REPAIRED OR REPLACED TO LIKE-NEW CONDITION BY THE CONTRACTOR RESPONSIBLE UNDER THE DIRECTION AND APPROVAL OF THE OWNER AND ARCHITECT.
5. COORDINATE ALL THE DEMOLITION SHEETS WITH ALL NEW CONSTRUCTION SHEETS. NOTIFY OWNER AND ARCHITECT OF ANY DISCREPANCIES.
6. ALSO REFER TO DEMOLITION SCOPE ON CIVILS, STRUCTURAL, MECHANICAL, PLUMBING, ELECTRICAL-SERIES SHEETS FOR THE FULL SCOPE OF DEMOLITION.
7. ALL ITEMS INDICATED TO BE SALVAGED, PROTECTED AND SET ASIDE FOR REUSE TO BE PROTECTED FROM DAMAGE DURING REMOVAL. STORE IN PROTECTED LOCATION FOR REUSE.
8. PROTECT BUILDING FROM WATER INGRESS WHEN REMOVING WALLS, ROOF FINISHES AND DRAINS.
9. EXISTING DOORS AND FRAMES TO BE SALVAGED AND RE-INSTALLED TO BE MARKED WITH ORIGINAL DOOR NUMBER USING A REMOVABLE, NON-DAMAGING, TAG. MARK ALL FRAME MEMBERS AND TRIM WITH THE SAME NUMBER AND BUNDLE TOGETHER.
10. ROOF FINISH AND/OR DECK DEMO FOR NEW EQUIPMENT/OPENINGS TO BE DETERMINED BASED ON NEW CONSTRUCTION DRAWINGS AND FINAL EQUIPMENT SELECTIONS.
11. EXISTING WINDOW BLINDS/TREATMENTS TO BE REMOVED INCLUDING ATTACHMENT AND SUPPORT COMPONENTS.
12. REFER TO DEMOLITION SPECIFICATIONS IN DIVISION 2, AND THE DEMOLITION SECTIONS OF ALL OTHER SPECIFICATIONS WHERE APPLICABLE.
13. COORDINATE SCOPE OF WORK WITH ALL OTHER CONTRACTORS AND THE OWNER AT THE PROJECT SITE. SCHEDULE REMOVAL OF EQUIPMENT AND TECHNOLOGY SERVICE TO AVOID CONFLICTS.
14. PROVIDE INTERIOR AND EXTERIOR SHORING, BRACING, OR SUPPORT AS REQUIRED TO PREVENT MOVEMENT, SETTLEMENT, OR COLLAPSE OF ADJACENT CONSTRUCTION SCHEDULED TO REMAIN.
15. SALVAGED STONE IS TO BE PALLETTED, COVERED AND PROTECTED FOR RE-USE ON THE PROJECT OR BY THE OWNER.
16. REMOVE ALL EXISTING ELECTRICAL/COMMUNICATIONS DEVICES, EQUIPMENT, AND LIGHTING, IN THE ZONES OF DEMOLITION ONLY. REMOVAL SHALL INCLUDE ALL ASSOCIATED RACEWAY, CONDUCTORS AND SUPPORTS. ALL EQUIPMENT REMOVED SHALL BE OFFERED TO THE OWNER AND DISPOSED IF THE OWNER CHOOSES TO NOT RECEIVE.
17. WHERE FINISHES ARE INDICATED TO BE REMOVED, REMOVE MEANS REMOVAL OF GLUES AND ADHESIVES LAID OVER EXISTING SUBSTRATES. U.N.O.
18. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL DROP CLOTHS, PROTECTION TO EXISTING FURNISHINGS INCLUDING LIBRARY COLLECTION AND GIFT SHOP DISPLAYS AND GOODS, LOBBY DESK, ETC. DURING WORK IN EXISTING AREAS.
19. GC SHALL PROVIDE THROUGH ACCESS LANE FOR OBG GARDEN VEHICLES AND STAFF. ANY REQUIRED SHUT DOWN OF CLEAR LANE MUST BE COORDINATED WITH OBG STAFF MINIMUM OF 3 WORKING DAYS IN ADVANCE OF SHUTDOWN.
20. EXTG STONE REMOVED THAT IS NOT RE-USED SHALL BE CLEANED, PALLETIZED, SHRINK-WRAPPED AND MOVED TO A STORAGE LOCATION ON SITE TO BE DETERMINED BY OBG STAFF.

WALL AND PARTITION KEY

- NEW WALLS AND PARTITIONS
- EXISTING WALLS AND PARTITIONS
- WALLS AND PARTITIONS TO BE REMOVED
- 1 HOUR RATED FIRE WALL
- 2 HOUR RATED FIRE WALL

MSR 710 South 2nd Street, 6th Floor Minneapolis, Minnesota 55401-2282
Architecture 612.375.0036 tel
Interiors and Urban Design 612.342.2216 fax
www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201
Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
303 South Paterson Street, Suite 1
Madison, WI 53703
608.251.3400 tel

Structural Engineer, Technology and AV
IMEG Corp.
1600 Demag Way, Suite 200
Madison, WI 53562
608.223.9600 tel

MEP Engineer
MEP Associates, LLC
800 Blue Gentian Road, Suite 175
Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
575 Minnehaha Ave West
St Paul, MN 55103
651.251.1800 tel

Greenhouse Design
Rough Brothers, Inc.
5513 West Street
Cincinnati, OH 45217
513.242.6310 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin.
ARCHITECT SEAL

WISCONSIN DANIEL JACK POLING A-5984 MINNEAPOLIS, MN ARCHITECT

Signature:
Print Name: Jack Poling
Date: JUNE 4, 2018 License No.: A-5984

ISSUE MARK	DATE	DESCRIPTION
	09.29.2017	SCHEMATIC DESIGN SUBMISSION
	12.06.2017	BID PRICING SET
	01.10.2018	DESIGN DEVELOPMENT SUBMISSION
	01.17.2018	CDOC SUBMISSION
	03.30.2018	70% CD PRICING ISSUE
	04.06.2018	PARKING LOT AND SITE PLAN SUBMISSION
	05.01.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE
1	06.22.2018	BID ADDENDUM 2

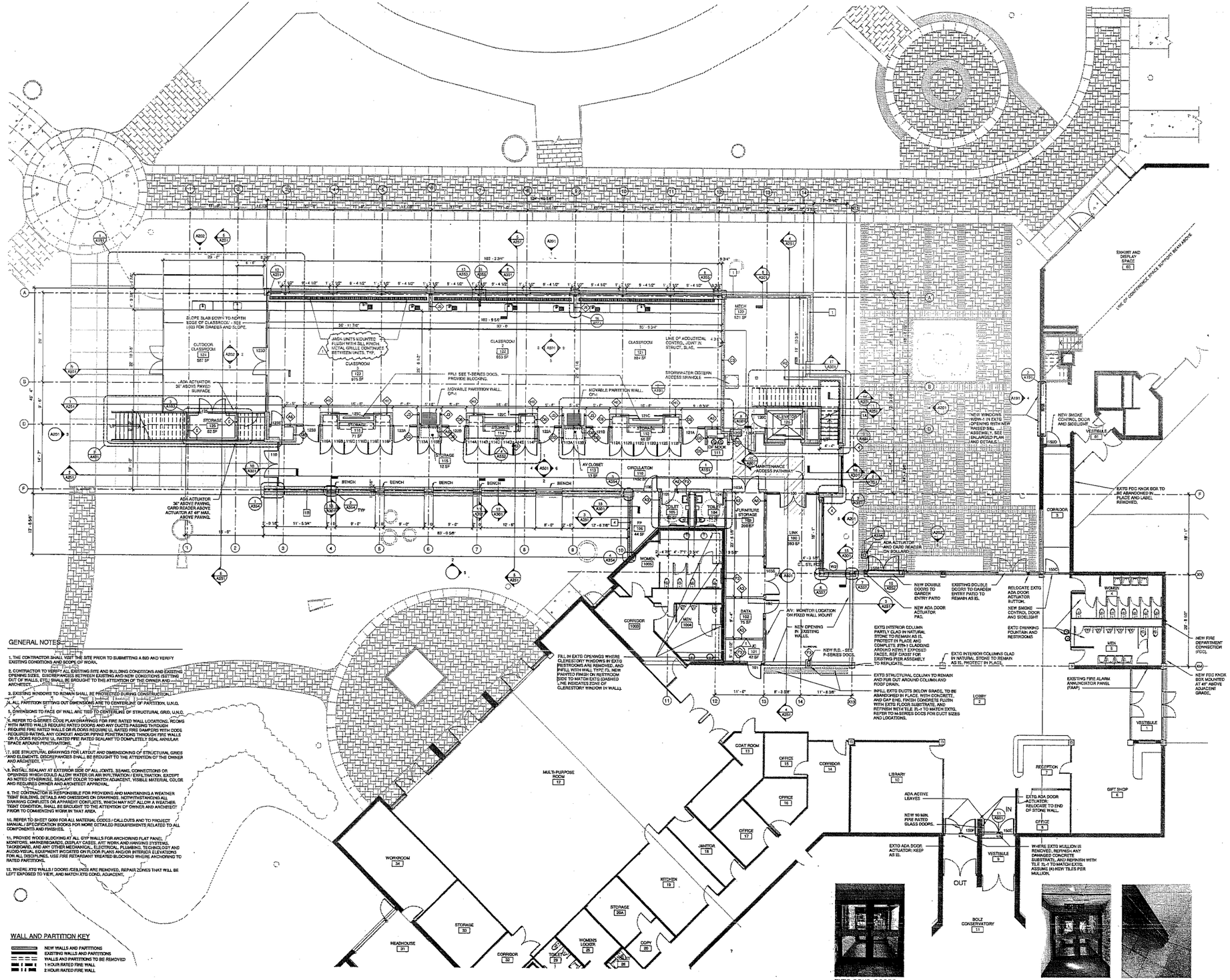
PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: MSR CHECKED BY: MSR

DEMOLITION PLANS

EXHIBIT C
AD101

REVISED

Architectural Work Copyright MSR Design, Rough Brothers, Inc., Vierbicher, Ken Saiki Design, IMEG, MEP Associates, Summit Fire Consulting, Inc.



MSR
710 South 2nd Street, 6th Floor
Minneapolis, Minnesota 55401–2282
Architecture
Interiors and
Urban Design
612.375.0336 tel
612.342.2216 fax
www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201
Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
302 South Paterson Street, Suite 1
Madison, WI 53703
608.251.3600 tel

Structural Engineer, Technology and AV
IMEG Corp.
1800 Deming Way, Suite 200
Middleton, WI 53562
608.223.3600 tel

MEP Engineer
MEP Associates, LLC
560 Blue Gentian Road, Suite 175
Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
570 Asbbury Ave West
St Paul, MN 55103
651.251.1800 tel

Greenhouse Design
Rough Brothers, Inc.
5510 West Street
Cincinnati, OH 45217
513.242.0310 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin.
ARCHITECT SEAL
WISCONSIN
DANIEL JACK POLING
A-5994
MINNEAPOLIS, MN
ARCHITECT

Signature:
Print Name: Jack Poling
Date: JUNE 4, 2018 License No.: A-5994

ISSUE Mark	DATE	DESCRIPTION
	05.25.2017	SCHEMATIC DESIGN SUBMISSION
	12.06.2017	DD PRICING SET
	01.19.2018	DESIGN DEVELOPMENT SUBMISSION
	01.17.2018	LDC SUBMISSION
	03.30.2018	70% CD PRICING ISSUE
	04.06.2018	PARKING LOT AND SITE PLAN SUBMISSION
	06.01.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE
1	06.07.2018	BID ADDENDUM 1

PROJECT NO. 2017016
PROJECT PHASE: BID DOCUMENTS
DRAWN BY: MSR CHECKED BY: MSR

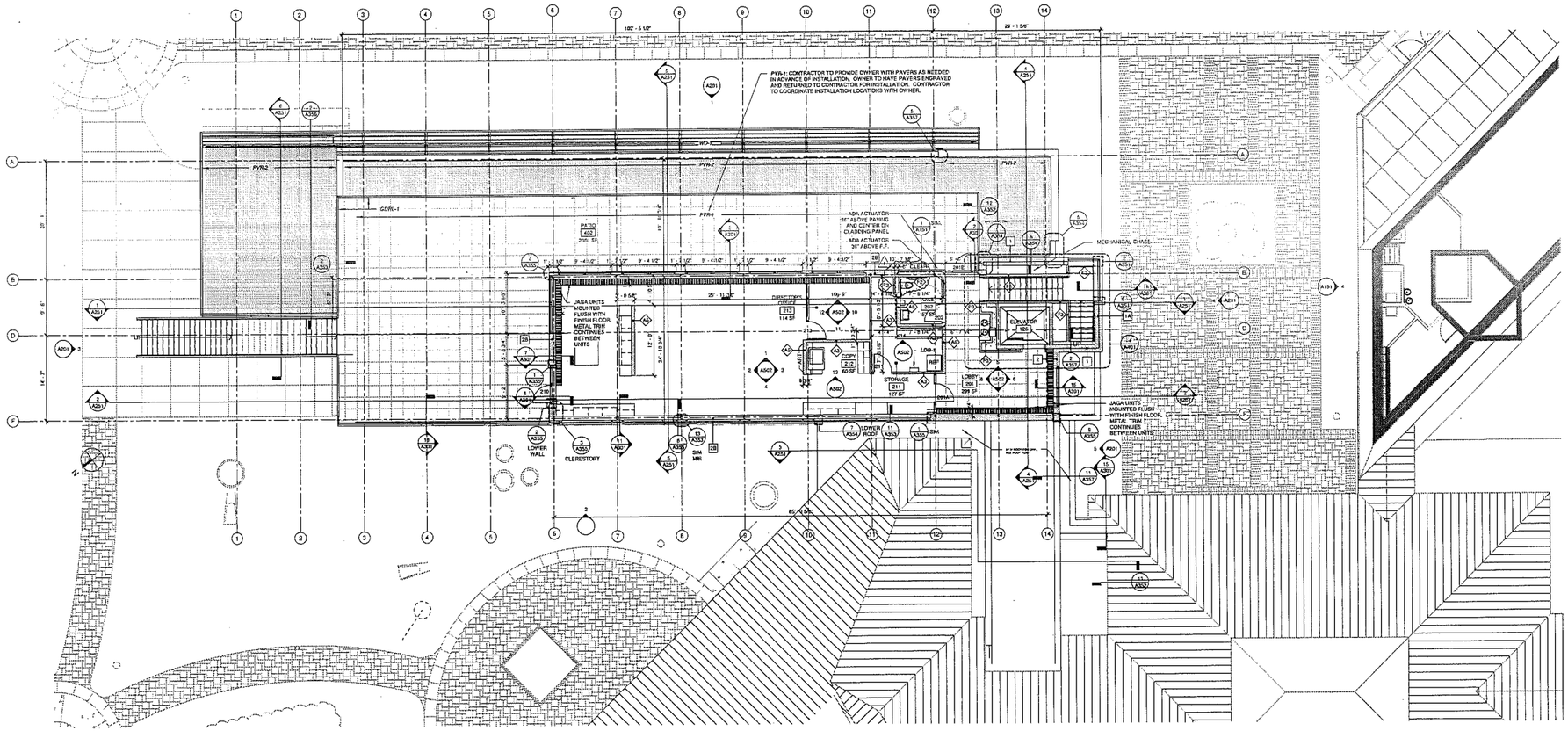
LEARNING CENTER FLOOR PLAN - LEVEL 1

EXHIBIT F
A101

REVISED

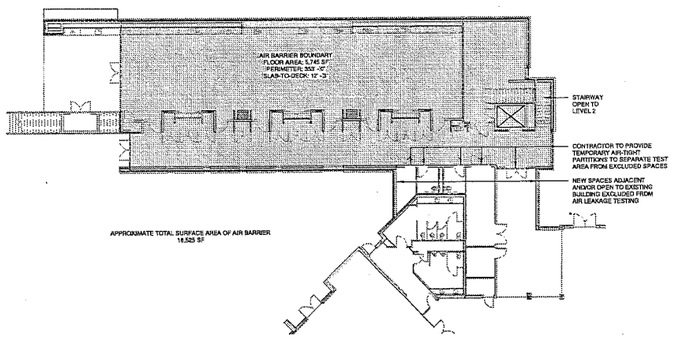
WALL AND PARTITION KEY

NEW WALLS AND PARTITIONS
EXISTING WALLS AND PARTITIONS
WALLS AND PARTITIONS TO BE REMOVED
1 HOUR RATED FIRE WALL
2 HOUR RATED FIRE WALL

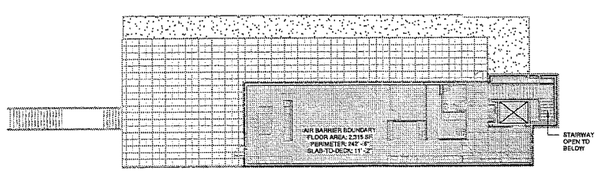


1 LEVEL 2 PLAN
A102 1/8" = 1'-0"

PROJECT NORTH



2 LEVEL 1 AIR LEAKAGE BOUNDARY
A102 1/16" = 1'-0"



3 LEVEL 2 AIR LEAKAGE BOUNDARY
A102 1/16" = 1'-0"

GENERAL NOTES

1. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO SUBMITTING A BID AND VERIFY EXISTING CONDITIONS AND SCOPE OF WORK.

2. CONTRACTOR TO VERIFY ALL EXISTING SITE AND BUILDING CONDITIONS AND EXISTING OPENING SIZES. DISCREPANCIES BETWEEN EXISTING AND NEW CONDITIONS (SETTING OUT OF WALLS, ETC.) SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER AND ARCHITECT.

3. EXISTING WINDOWS TO REMAIN SHALL BE PROTECTED DURING CONSTRUCTION.

4. ALL PARTITION SETTING OUT DIMENSIONS ARE TO CENTERLINE OF PARTITION, U.N.O.

5. DIMENSIONS TO FACE OF WALL ARE TIED TO CENTERLINE OF STRUCTURAL GRID, U.N.O.

6. REFER TO G-SERIES CODE PLAN DRAWINGS FOR FIRE RATED WALL LOCATIONS, ROOMS WITH RATED WALLS REQUIRE RATED DOORS AND ANY DUCTS PASSING THROUGH REQUIRE FIRE RATED WALLS OR FLOORS REQUIRE UL RATED FIRE DAMPERS WITH CODE REQUIRED RATING. ANY CONDUIT AND/OR PIPING PENETRATIONS THROUGH FIRE WALLS OR FLOORS REQUIRE UL RATED FIRE RATED SEALANT TO COMPLETELY SEAL ANNULAR SPACE AROUND PENETRATIONS.

7. SEE STRUCTURAL DRAWINGS FOR LAYOUT AND DIMENSIONING OF STRUCTURAL GRIDS AND ELEMENTS. DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER AND ARCHITECT.

8. INSTALL SEALANT AT EXTERIOR SIDE OF ALL JOINTS, SEAMS, CONNECTIONS OR OPENINGS WHICH COULD ALLOW WATER OR AIR INFILTRATION / EXFILTRATION, EXCEPT AS NOTED OTHERWISE. SEALANT COLOR TO MATCH ADJACENT, VISIBLE MATERIAL COLOR AND REQUIRES OWNER AND ARCHITECT APPROVAL.

9. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING AND MAINTAINING A WEATHER TIGHT BUILDING. DETAILS AND DIMENSIONS ON DRAWINGS, NOTWITHSTANDING ALL DRAWING CONFLICTS OR APPARENT CONFLICTS, WHICH MAY NOT ALLOW A WEATHER TIGHT CONDITION, SHALL BE BROUGHT TO THE ATTENTION OF OWNER AND ARCHITECT PRIOR TO COMMENCING WORK IN THAT AREA.

10. REFER TO SHEET G000 FOR ALL MATERIAL CODES / CALLOUTS AND TO PROJECT MANUAL / SPECIFICATION BOOKS FOR MORE DETAILED REQUIREMENTS RELATED TO ALL COMPONENTS AND FINISHES.

11. PROVIDE WOOD BLOCKING AT ALL GYP WALLS FOR ANCHORING FLAT PANEL MONITORS, MARKERBOARDS, DISPLAY CASES, ART WORK AND HANGING SYSTEMS, TACKBOARD, AND ANY OTHER MECHANICAL, ELECTRICAL, PLUMBING, TECHNOLOGY AND AUDIO-VISUAL EQUIPMENT INDICATED ON FLOOR PLANS AND/OR INTERIOR ELEVATIONS FOR ALL DISCIPLINES. USE FIRE RETARDANT TREATED BLOCKING WHERE ANCHORING TO RATED PARTITIONS.

12. WHERE XTG WALLS / DOORS /CEILINGS ARE REMOVED, REPAIR ZONES THAT WILL BE LEFT EXPOSED TO VIEW, AND MATCH XTG COND. ADJACENT.

MSR 710 South 2nd Street, 8th Floor Minneapolis Minnesota 55401-2282
Architecture Interiors and Urban Design
612 375 0336 tel
612 342 2216 fax
www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201
Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
303 South Paterson Street, Suite 1
Madison, WI 53703
608.251.3600 tel

Structural Engineer, Technology and AV
IMEG Corp.
1830 Deming Way, Suite 200
Middleton, WI 53562
608.223.9600 tel

MEP Engineer
MEP Associates, LLC
860 Blue Gentian Road, Suite 175
Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
375 Minnesota Ave West
St. Paul, MN 55102
651 251 1853 tel

Greenhouse Design
Rough Brothers, Inc.
5513 Vine Street
Cincinnati, OH 45217
513 242 6310 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin.
ARCHITECT SEAL

WISCONSIN
DANIEL JACK POLING
A-6984
MINNEAPOLIS, MN
ARCHITECT

Signature:
Print Name: Jack Poling
Date: JUNE 4, 2018 License No.: A-6984

ISSUE DATE	DESCRIPTION
09.29.2017	SCHEMATIC DESIGN SUBMISSION
12.06.2017	DD PRICING SET
01.10.2018	DESIGN DEVELOPMENT SUBMISSION
01.17.2018	DDC SUBMISSION
03.30.2018	70% CD PRICING ISSUE
04.06.2018	PARKING LOT AND SITE PLAN SUBMISSION
06.01.2018	BID ISSUE
06.04.2018	PERMIT ISSUE
1 06.20.2018	BID ADDENDUM 2

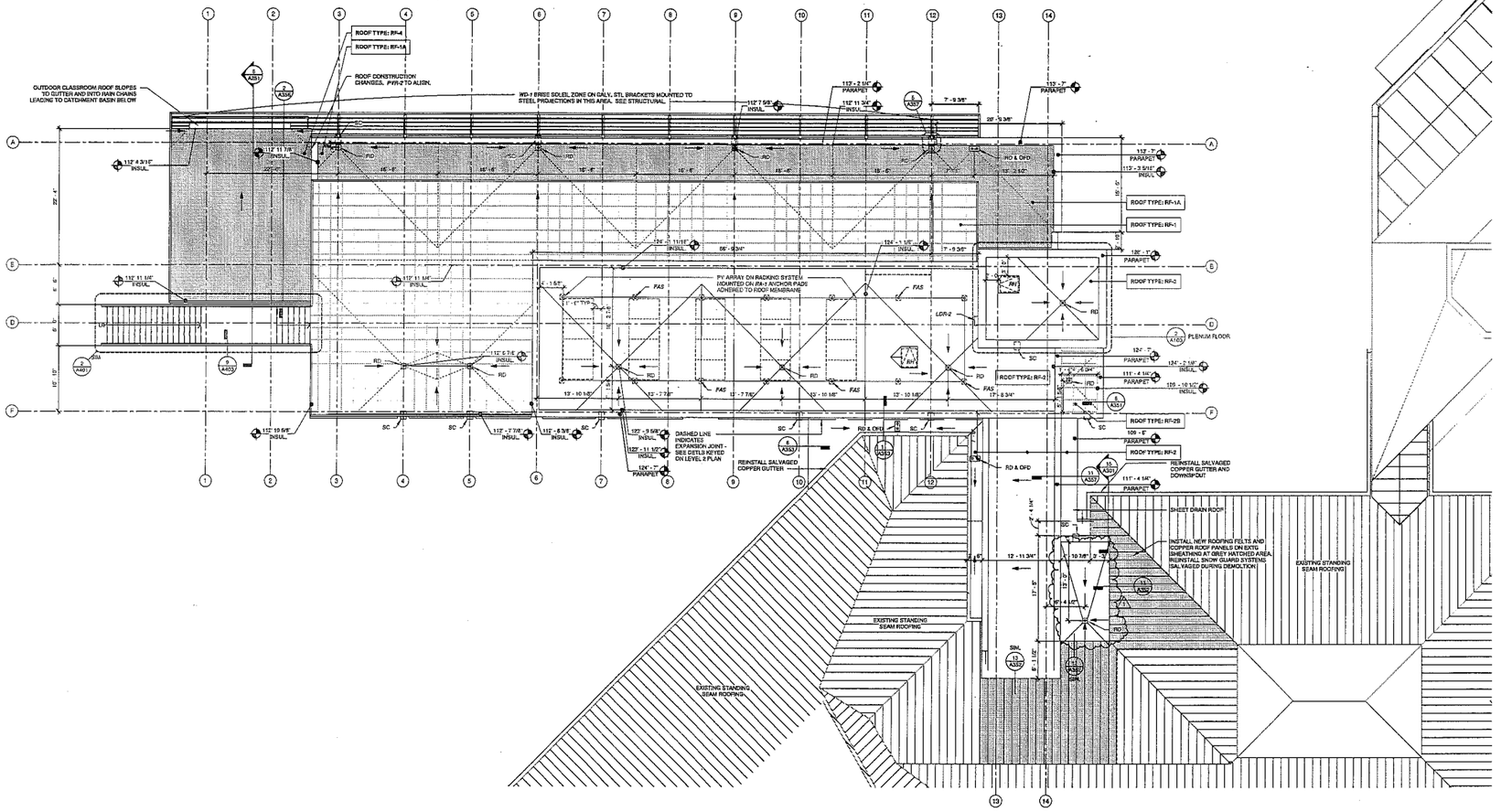
PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: MSR CHECKED BY: MSR

LEARNING CENTER FLOOR PLAN - LEVEL 2

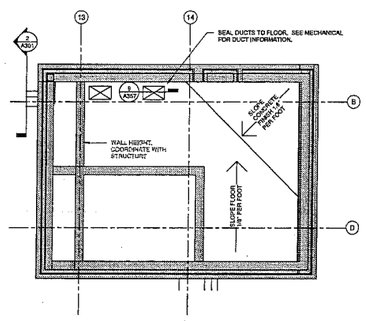
EXHIBIT F
A102

REVISED

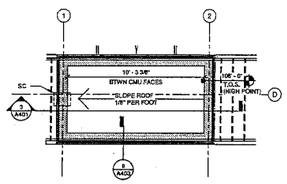
Drawings and Specifications as instruments of service are and shall remain the property of MSR. These documents are not to be changed or copied in any form or manner whatsoever nor are they to be assigned to any third party without first obtaining the expressed written permission and consent of MSR.



1 ROOF PLAN
A103 1/8" = 1'-0"



2 ROOF PLAN - PLENUM FLOOR
A103 1/4" = 1'-0"



3 OUTDOOR CLASSROOM ROOF PLAN
A103 1/4" = 1'-0"

ROOF PLAN NOTES

1. ALL SLOPED INSULATION LINES SHOWN DASHED OCCUR UNDERNEATH FINISH SURFACE OF PAVERS.

2. FOR NEW COPPER ROOF DETAILS REFER TO SHEET A358 FOR DETAILS FROM 2012 RECORD SET WHEN EXISTING FACILITY WAS RE-ROOFED. NEW COPPER ROOF DETAILS TO FOLLOW THE SAME DETAIL PRINCIPLES AND TO COORDINATE WITH AS-BUILT CONDITIONS.

3. REFER TO SHEET G002 FOR ROOF TYPES AND SYSTEMS, AND RELATED SPECIFICATIONS.

4.PROTECT ALL REMAINING PORTIONS OF THE BUILDING ROOFS AND ADJACENT FEATURES NOT SCHEDULED FOR DEMOLITION. THESE AREAS SHALL BE COMPLETELY PROTECTED DURING DEMOLITION AND REMOVAL OF DEBRIS. ANY RESULTING DAMAGE SHALL BE REPAIRED OR REPLACED TO LIKE-NEW CONDITION BY THE CONTRACTOR RESPONSIBLE UNDER THE DIRECTION AND APPROVAL OF THE OWNER AND ARCHITECT.

5. THE MEANING OF "PREPARE AREAS" OF DEMOLITION AND REMOVAL FOR NEW COMPONENTS/FINISHES IS THAT IT IS TO BE LEFT CLEAR OF DEBRIS, DUST, LOOSE MATERIAL, NAILS, SCREWS, ANCHORS, REINFORCEMENT AND ALL OTHER FIXING TYPES, AND IN A SOUND MANNER, SUITABLE AS A SUBSTRATE FOR SUBSEQUENT PREPARATION AND FINISHING BY OTHER TRADES. REFER TO SPECIFICATIONS FOR APPLICABLE TRADES IN AREAS WHERE DEMOLITION AFFECTS EXISTING WALLS / CEILINGS / UNDERSIDE FLOOR DECKS TO REMAIN.

6. PROVIDE INTERIOR AND EXTERIOR SHORING, BRACING, OR SUPPORT AS REQUIRED TO PREVENT MOVEMENT, SETTLEMENT, OR COLLAPSE OF ADJACENT CONSTRUCTION SCHEDULED TO REMAIN. SEE STRUCTURAL DOCUMENTS FOR FURTHER DETAILS.

REVISED

MSR
710 South 2nd Street, 6th Floor
Minneapolis, Minnesota 55401–2282
Architecture Interiors and Urban Design
612 375 0336 tel
612 342 2216 fax
www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201
Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
303 South Paterson Street, Suite 1
Madison, WI 53703
608.251.3600 tel

Structural Engineer, Technology and A/V
IMEG Corp.
1800 Deming Way, Suite 200
Middleton, WI 53562
608.203.9600 tel

MEP Engineer
MEP Associates, LLC
860 Blue Gentian Road, Suite 175
Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
575 Minnehaha Ave West
St. Paul, MN 55103
651.291.1560 tel

Greenhouse Design
Rough Brothers, Inc.
5512 Vine Street
Cincinnati, OH 45217
513.242.6316 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin.
ARCHITECT SEAL

WISCONSIN
DANIEL JACK POLING
A-8564
MINNEAPOLIS, MN
ARCHITECT

Signature:
Print Name: Jack Poling
Date: JUNE 4, 2018 License No.: A-8564

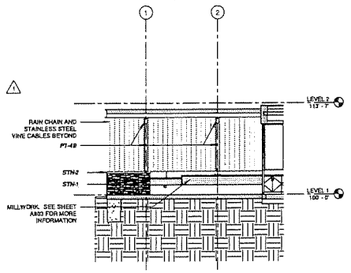
ISSUE		
MARK	DATE	DESCRIPTION
	06.26.2017	SCHEMATIC DESIGN SUBMISSION
	12.05.2017	DD PRICING SET
	01.19.2018	DESIGN DEVELOPMENT SUBMISSION
	01.17.2018	CDD SUBMISSION
	03.30.2018	70% DD PRICING ISSUE
	04.06.2018	PARKING LOT AND SITE PLAN SUBMISSION
	06.01.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE
1	06.22.2018	BID ADDENDUM 2

PROJECT NO. 2017016
PROJECT PHASE: BID DOCUMENTS
DRAWN BY: MSR CHECKED BY:

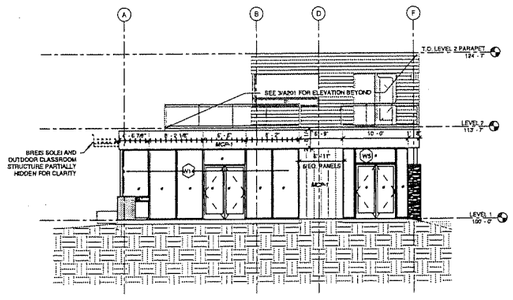
Drawing (PDF) Copyright Plans, Specs & Renderings, Ltd.

LEARNING CENTER ROOF PLAN

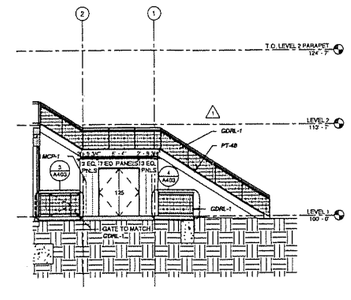
EXHIBIT F
A103



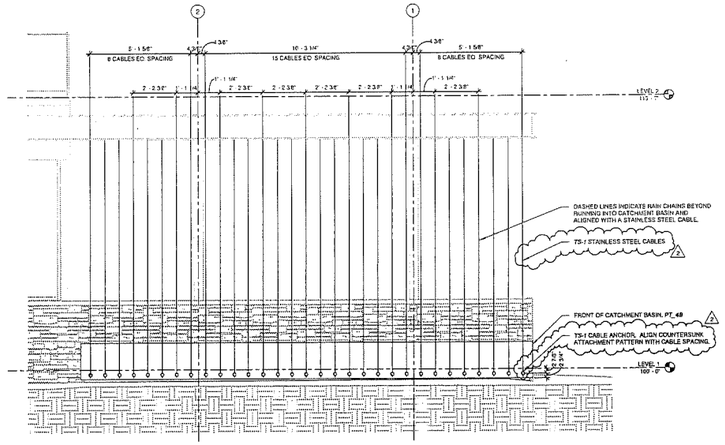
1 OUTDOOR CLASSROOM EAST ELEVATION
A202 1/8" = 1'-0"



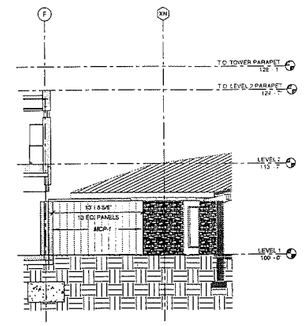
2 OUTDOOR CLASSROOM NORTH ELEVATION
A202 1/8" = 1'-0"



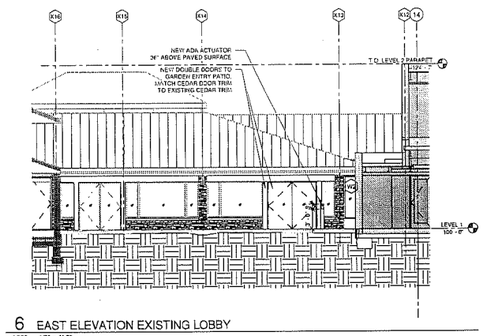
3 OUTDOOR CLASSROOM WEST ELEVATION
A202 1/8" = 1'-0"



4 WATER CATCHMENT ELEVATION DETAIL
A202 3/8" = 1'-0"



5 EXTERIOR SOUTH ELEVATION WALL
A202 1/8" = 1'-0"



6 EAST ELEVATION EXISTING LOBBY
A202 1/8" = 1'-0"

REVISED

MSR 710 South 2nd Street, 8th Floor Minneapolis Minnesota 55401-2282
Architecture Interiors and Urban Design
612 375 0336 tel
612 342 2214 fax
www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201 Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
302 South Paterson Street, Suite 1 Madison, WI 53703
608.251.3600 tel

Structural Engineer, Technology and AV
IMEG Corp.
1800 Deming Way, Suite 200 Middleton, WI 53562
608.203.9600 tel

MEP Engineer
MEP Associates, LLC
860 Blue Gentian Road, Suite 175 Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
575 Minnesota Ave West St. Paul, MN 55107
651.251.1801 tel

Greenhouse Design
Rough Brothers, Inc.
5513 Vine Street Cincinnati, OH 45217
513.242.8313 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin.
ARCHITECT SEAL

WISCONSIN DANIEL JACK POLING A-6984 MINNEAPOLIS, MN ARCHITECT

Signature: _____
Print Name: Jack Poling
Date: JUNE 4, 2018 License No.: A-6984

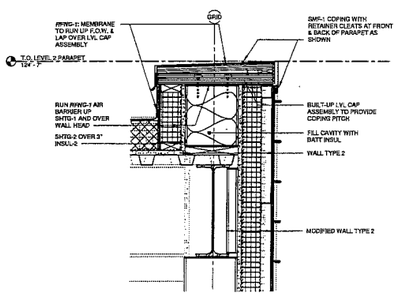
ISSUE:

MARK	DATE	DESCRIPTION
	09.29.2017	SCHEMATIC DESIGN SUBMISSION
	12.08.2017	DD PRICING SET
	01.10.2018	DESIGN DEVELOPMENT SUBMISSION
	01.17.2018	UDC SUBMISSION
	03.30.2018	70% CD PRICING ISSUE
	04.06.2018	PARKING LOT AND SITE PLAN SUBMISSION
	06.01.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE
1	06.08.2018	BID ADDENDUM 1
2	06.22.2018	BID ADDENDUM 2

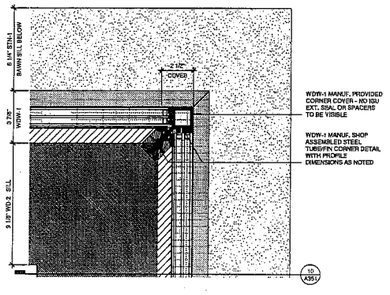
PROJECT NO.: 2017016
PROJECT PHASE: BID DOCUMENTS
DRAWN BY: MSR CHECKED BY: MSR

EXTERIOR ELEVATIONS

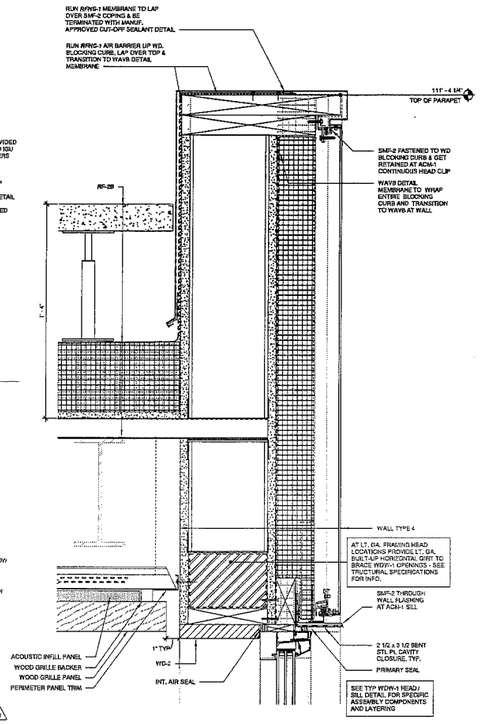
EXHIBIT F
A202



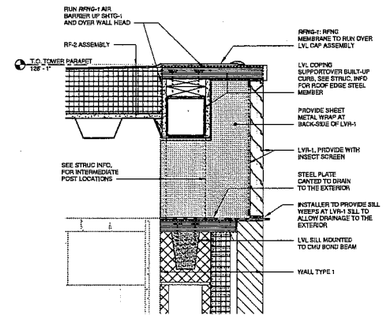
1 SECTION DETAIL - WALL TYPE 2 PARAPET
A351 1 1/2" = 1'-0"



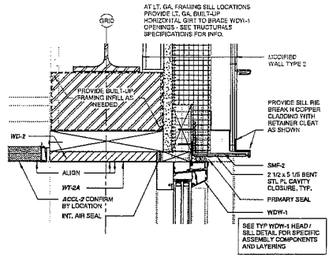
2 PLAN DETAIL - WDW-1 CORNER AT STAIR
A351 3" = 1'-0"



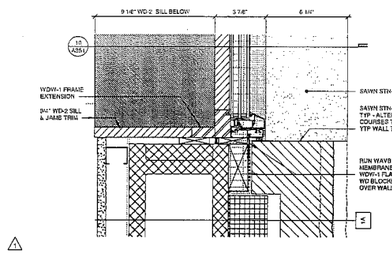
6 SECTION DETAIL - LOWER TOWER LOBBY - ROOF EDGE
A351 3" = 1'-0"



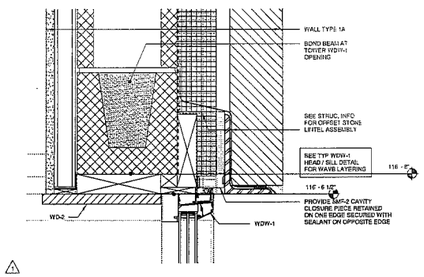
3 SECTION DETAIL - TOWER WALL AT LVR-1
A351 1 1/2" = 1'-0"



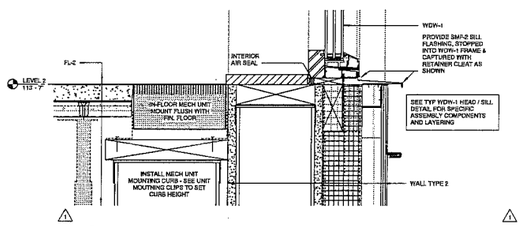
4 SECTION DETAIL - HEAD AT E. WALL ENTRY
A351 3" = 1'-0"



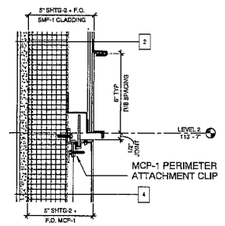
5 PLAN DETAIL - WDW-1 JAMB AT STAIR
A351 3" = 1'-0"



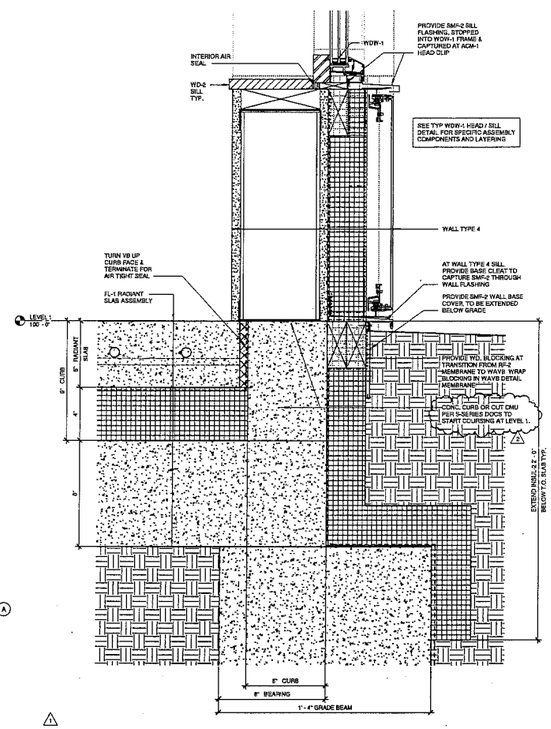
7 SECTION DETAIL - WDW-1 HEAD AT TOWER WALL
A351 3" = 1'-0"



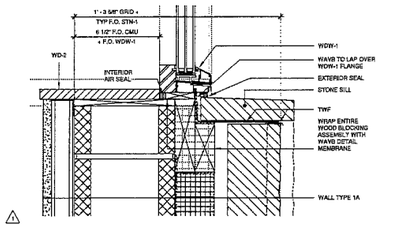
8 DETAIL SECTION - WDW-1 SILL AT FL-2
A351 3" = 1'-0"



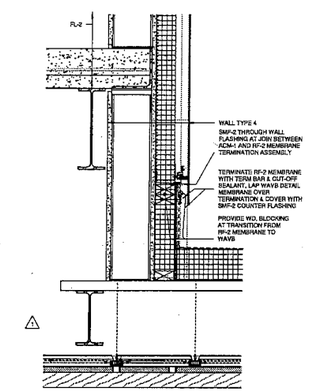
9 TYP WALL 2 + WALL 4 TRANSITION
A351 3" = 1'-0"



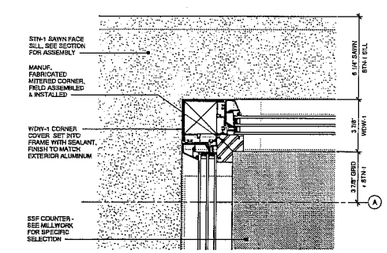
13 SECTION DETAIL - TOWER LOBBY WALL BASE
A351 3" = 1'-0"



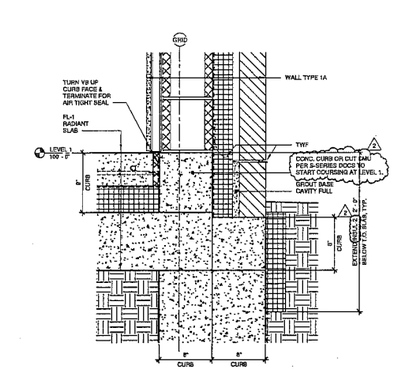
10 SECTION DETAIL - SILL AT TOWER WALL
A351 3" = 1'-0"



11 SECTION DETAIL - TOWER LOBBY TRASITION TO LVL 1 ROOF
A351 1 1/2" = 1'-0"



12 PLAN DETAIL - WDW-1 CORNER AT CLASSROOM 3
A351 3" = 1'-0"



14 SECTION DETAIL - E.WALL AT MECH - BASE
A351 1 1/2" = 1'-0"

REVISED

MSR 710 South 2nd Street, 6th Floor Minneapolis, Minnesota 55401–2282
Architecture 612.375.0336 tel
Interiors and 612.342.2216 fax
Urban Design www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201
Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
303 South Paterson Street, Suite 1
Madison, WI 53703
608.251.3600 tel

Structural Engineer, Technology and AV
IMEG Corp.
1800 Deming Way, Suite 200
Middleton, WI 53562
608.833.9600 tel

MEP Engineer
MEP Associates, LLC
669 Blue Gentian Road, Suite 175
Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
575 Mendelssohn Ave West
St. Paul, MN 55103
651.251.1550 tel

Greenhouse Design
Rough Brothers, Inc.
5513 Vine Street
Cincinnati, OH 45217
513.242.6310 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin.
ARCHITECT SEAL.

WISCONSIN
DANIEL JACK POLING
A-5504
MINNEAPOLIS, MN
ARCHITECT

Signature:
Print Name: Jack Poling
Date: JUNE 4, 2018 License No.: A-5504

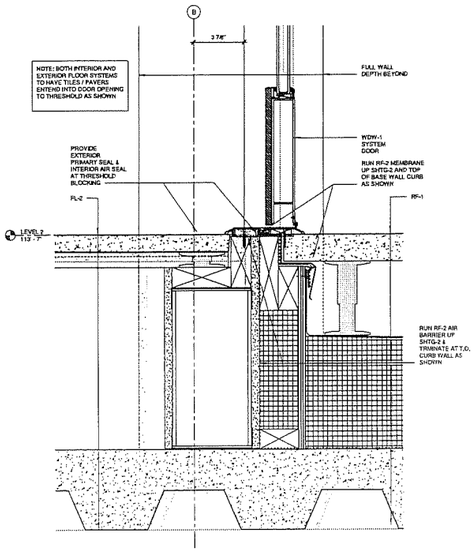
ISSUE

MARK	DATE	DESCRIPTION
	09.29.2017	SCHEMATIC DESIGN SUBMISSION
	12.08.2017	DD PRICING SET
	01.10.2018	DESIGN DEVELOPMENT SUBMISSION
	01.17.2018	LDC SUBMISSION
	03.30.2018	70% CD PRICING ISSUE
	04.06.2018	PARKING LOT AND SITE PLAN SUBMISSION
	06.01.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE
1	06.08.2018	BID ADDENDUM 1
2	06.22.2018	BID ADDENDUM 2

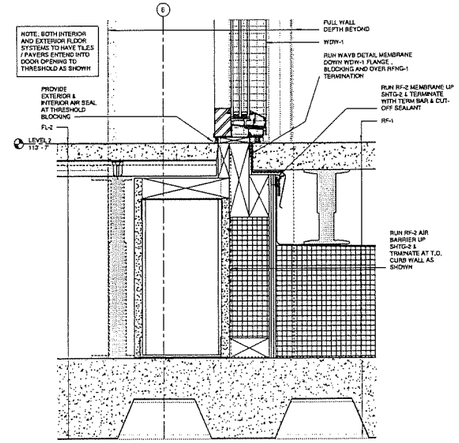
PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: MSR CHECKED BY: MSR

EXTERIOR DETAILS

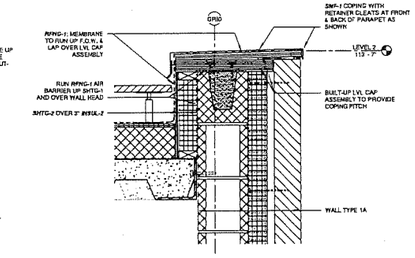
EXHIBIT F
A351



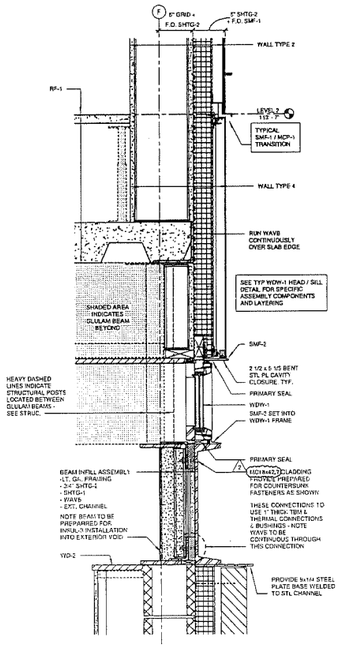
1 SECTION DETAIL - SILL AT E. WALL ENTRY
A352 3" = 1'-0"



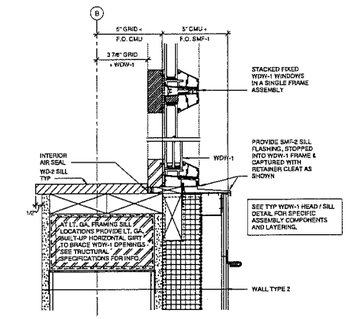
2 SECTION DETAIL - WDW-1 SILL AT N. WALL
A352 3" = 1'-0"



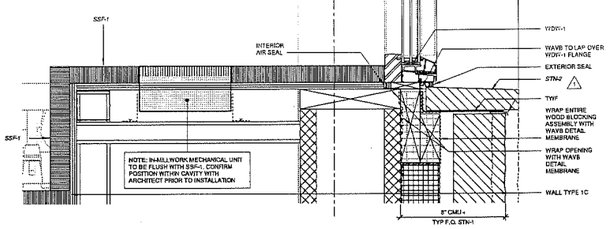
3 SECTION DETAIL - PARAPET AT E. MECHANICAL WALL
A352 1 1/2" = 1'-0"



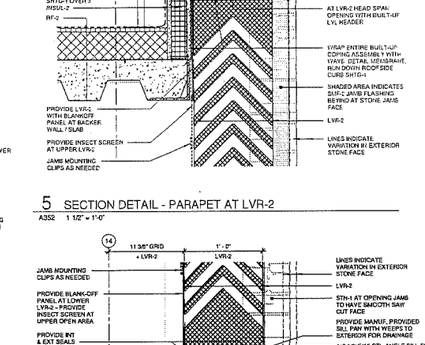
6 SECTION DETAIL - LVL1 TO LVL2 TRANSITION
A352 1 1/2" = 1'-0"



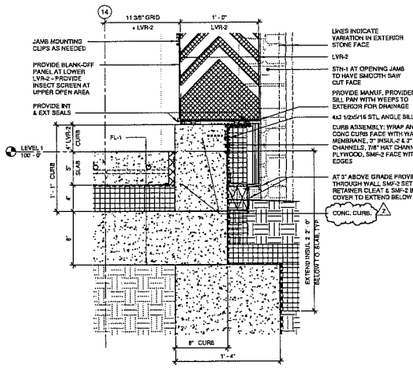
7 SECTION DETAIL - STACKED WDW-1 AT CLASSROOM
A352 3" = 1'-0"



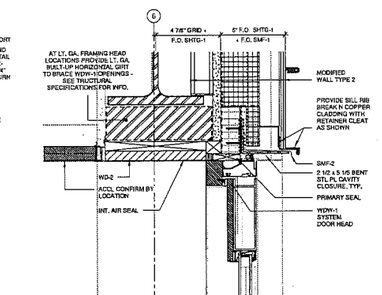
4 SECTION DETRAIL - WDW-1 DEEP SILL / MECH CAVITY AT CLASSROOM
A352 3" = 1'-0"



5 SECTION DETAIL - PARAPET AT LVR-2
A352 1 1/2" = 1'-0"

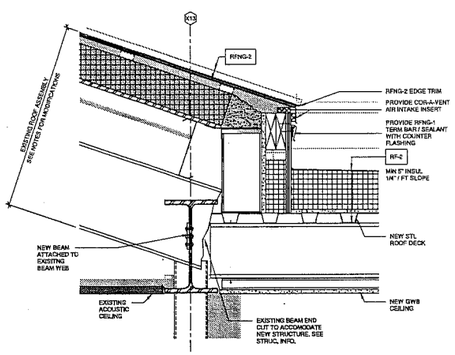


9 SECTION DETAIL - SILL AT LVR-2
A352 1 1/2" = 1'-0"

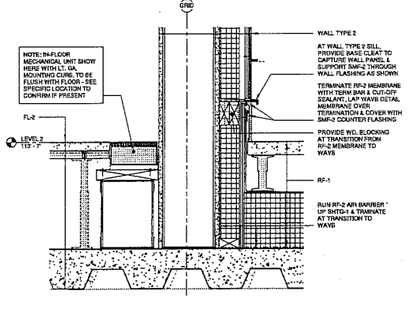


10 SECTION DETAIL - DOOR HEAD
A352 3" = 1'-0"

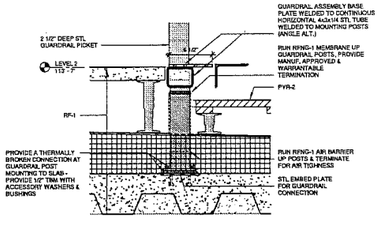
8 SECTION DETAIL - E. WALL - BASE
A352 1 1/2" = 1'-0"



13 ROOF CONNECTION AT TYPICAL OVERHANG (1992)
A352 1 1/2" = 1'-0"



11 SECTION DETAIL - LEVEL 2 - WALL TYPE 2 BASE
A352 1 1/2" = 1'-0"



12 SECTION DETAIL - RAILING EDGE AT EAST ROOF DECK
A352 1 1/2" = 1'-0"

MSR 710 South 2nd Street, 6th Floor Minneapolis Minnesota 55401-2282
Architecture Interiors and Urban Design
612 375 0736 tel
612 342 2216 fax
www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201
Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
303 South Paterson Street, Suite 1
Madison, WI 53703
608.251.3600 tel

Structural Engineer, Technology and AV
IMEG Corp.
1800 Deming Way, Suite 200
Middleton, WI 53562
608.223.9600 tel

MEP Engineer
MEP Associates, LLC
860 Blue Gentian Road, Suite 175
Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
575 Minnesota Ave West
St. Paul, MN 55103
651.251.1800 tel

Greenhouse Design
Rough Brothers, Inc.
5510 Vine Street
Cincinnati, OH 45217
513.242.0310 tel

Olbrich Botanical Gardens
Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin.
ARCHITECT SEAL

WISCONSIN
DANIEL JACK POLING
A-6364
MINNEAPOLIS, MN
ARCHITECT

Signature:
Print Name: Jack Poling
Date: JUNE 4, 2018 License No.: A-6364

ISSUE		
NUMB.	DATE	DESCRIPTION
	06.20.2017	SCHEMATIC DESIGN SUBMISSION
	12.06.2017	SD PRICING SET
	01.16.2018	DESIGN DEVELOPMENT SUBMISSION
	01.17.2018	CDC SUBMISSION
	03.30.2018	70% DD PRICING ISSUE
	04.06.2018	PARKING LOT AND SITE PLAN SUBMISSION
	04.01.2018	100 ISSUE
	04.04.2018	PERMIT ISSUE
1	04.06.2018	BID ADDENDUM 1
2	04.22.2018	BID ADDENDUM 2

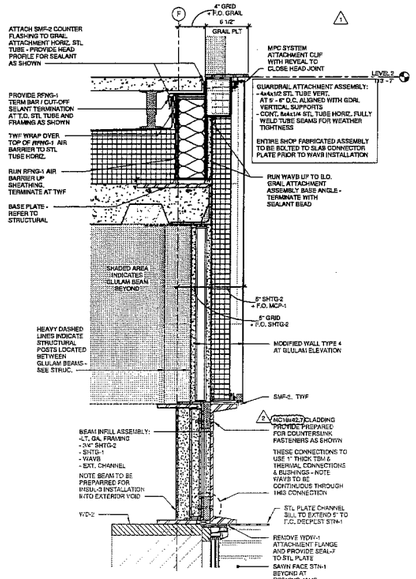
PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: MSR CHECKED BY: MSR

EXTERIOR DETAILS

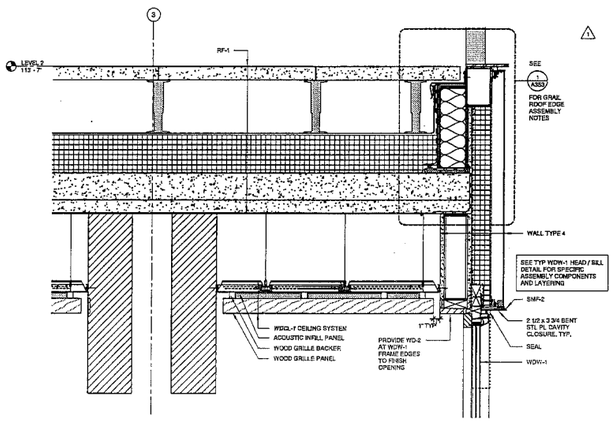
EXHIBIT F
A352

REVISED

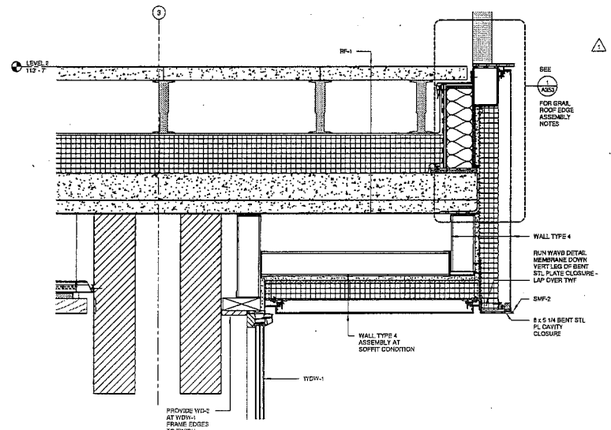
Drawing Set Copyright Notice: Drawings and Specifications as instruments of service are and shall remain the property of the Architect whether the project for which they are made is executed or not. They are not to be used by the Owner on other projects or extensions to this project except by agreement in writing and with appropriate compensation to the Architect. Visual contact with these drawings or specifications shall constitute prima facie evidence of the acceptance of these restrictions.



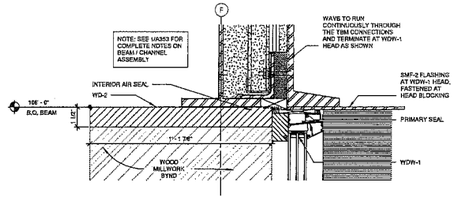
1 SECTION DETAIL - LVL1 TO LVL 2 TERRACE TRANSITION
A353 1 1/2" = 1'-0"



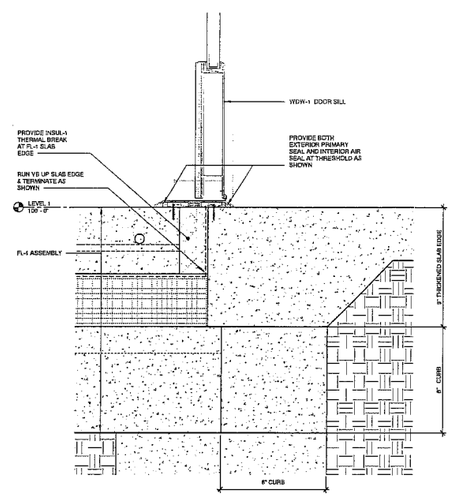
2 SECTION DETAIL - ROOF EDGE AT OUTDOOR CLASSROOM
A353 1 1/2" = 1'-0"



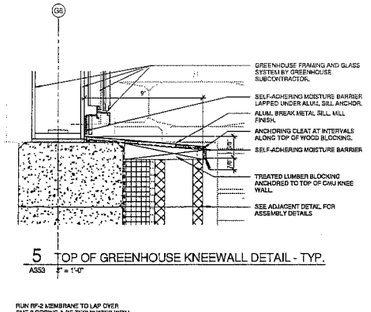
3 SECTION DETAIL - DOOR 110 - HEAD ASSEMBLY
A353 1 1/2" = 1'-0"



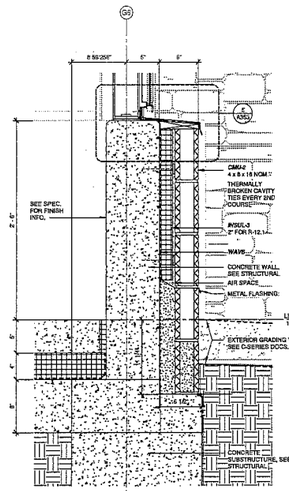
4 SECTION DETAIL - WDW-1 HEAD AT E. WALL BEAM
A353 3" = 1'-0"



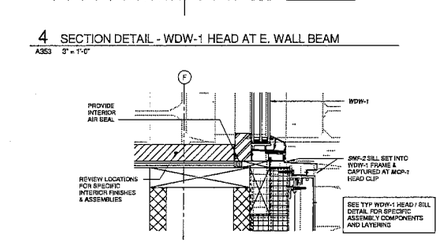
7 SECTION DETAIL - WDW-1 SYSTEM DOOR SILL AT OUTDOOR CLASSROOM
A353 3" = 1'-0"



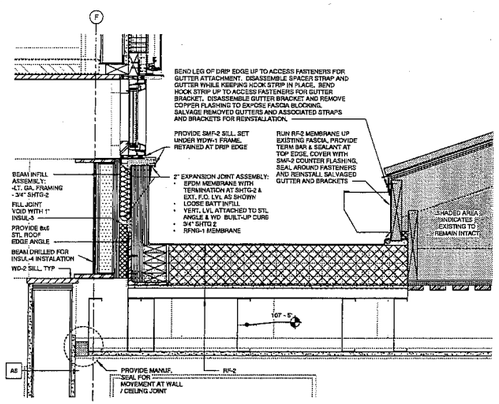
5 TOP OF GREENHOUSE KNEEWALL DETAIL - TYP.
A353 3" = 1'-0"



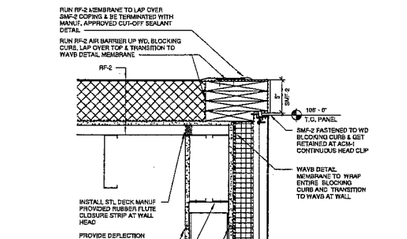
9 TYPICAL EXTERIOR KNEEWALL DETAIL
A353 1 1/2" = 1'-0"



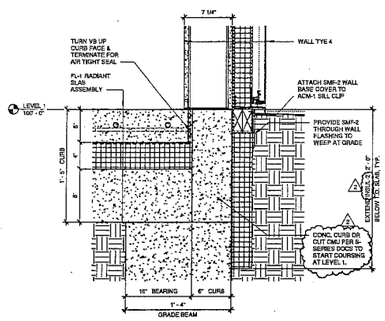
10 SECTION DETAIL - W. WALL - BASE
A353 1 1/2" = 1'-0"



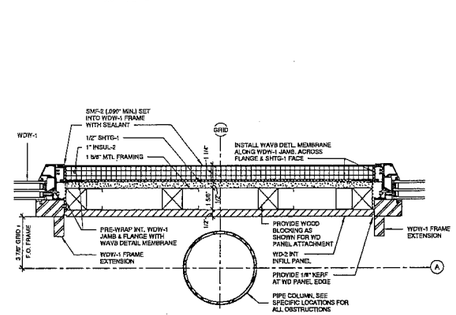
11 SECTION DETAIL - ROOF AT LINK TO EDUCATION BLDG
A353 1 1/2" = 1'-0"



8 SECTION DETAIL - N. LINK - WALL HEAD
A353 1 1/2" = 1'-0"



12 SECTION DETAIL - N. LINK WALL - BASE
A353 1 1/2" = 1'-0"



13 PLAN DETAIL - CLASSROOM - INFILL PANEL AT WDW-1
A353 3" = 1'-0"

MSR
710 South 2nd Street, 6th Floor
Minneapolis, Minnesota 55401-2282
Architecture, Interiors and Urban Design
612.375.0336 tel
612.340.2216 fax
www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201
Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
303 South Paterson Street, Suite 1
Madison, WI 53703
608.251.3600 tel

Structural Engineer, Technology and AV
IMEG Corp.
1800 Deming Way, Suite 200
Middleton, WI 53562
608.223.9600 tel

MEP Engineer
MEP Associates, LLC
860 Blue Gentian Road, Suite 175
Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
575 Minnehaha Ave West
St. Paul, MN 55103
651.251.1600 tel

Greenhouse Design
Rough Brothers, Inc.
5510 Vine Street
Cincinnati, OH 45217
513.242.0310 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin.
ARCHITECT SEAL

WISCONSIN
DANIEL JACK POLING
A-5004
MINNEAPOLIS, MN
ARCHITECT

Signature:
Print Name: Jack Poling
Date: JUNE 4, 2018 License No.: A-5004

MARK	DATE	DESCRIPTION
	09.28.2017	SCHEMATIC DESIGN SUBMISSION
	12.06.2017	SDD PRICING SET
	01.16.2018	DESIGN DEVELOPMENT SUBMISSION
	01.17.2018	NDC SUBMISSION
	03.30.2018	70% CD PRICING SET
	04.06.2018	PARKING LOT AND SITE PLAN SUBMISSION
	04.04.2018	100% CD SUBMISSION
	04.01.2018	BID ISSUE
	04.04.2018	REPRINT ISSUE
1	06.06.2018	BID ADDENDUM 1
2	06.22.2018	BID ADDENDUM 2

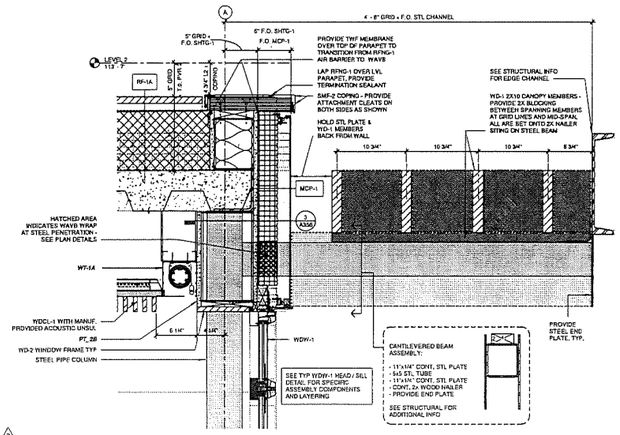
PROJECT NO. 2017016
PROJECT PHASE: BID DOCUMENTS
DRAWN BY: MSR CHECKED BY: MSR

EXTERIOR DETAILS

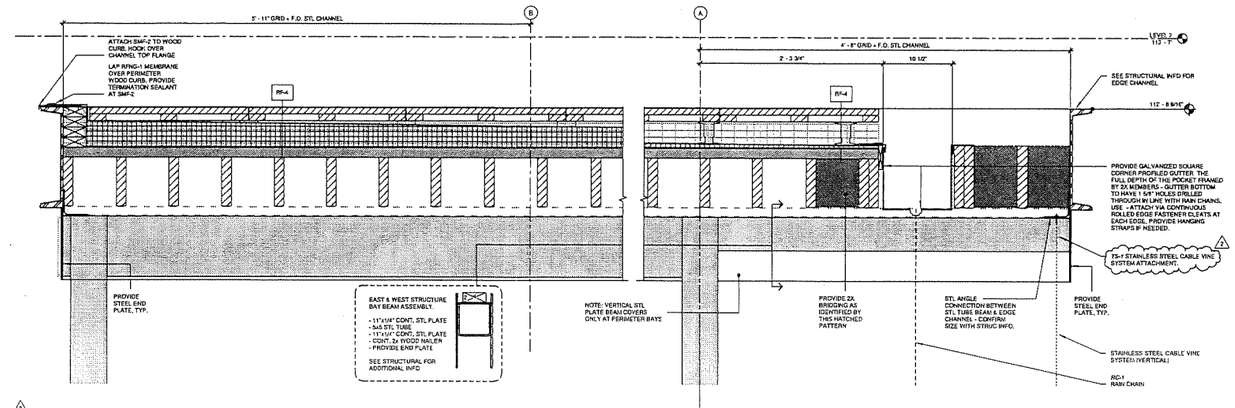
EXHIBIT F
A353

REVISED

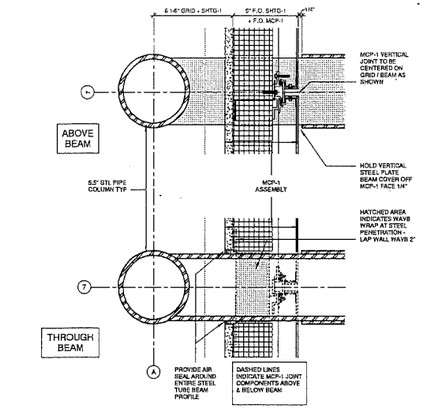
Revised 06/22/18 BID Addendum 2
Revised 06/06/18 BID Addendum 1
Revised 04/04/18 REPRINT ISSUE
Revised 04/01/18 BID ISSUE
Revised 03/30/18 70% CD PRICING SET
Revised 01/16/18 DESIGN DEVELOPMENT SUBMISSION
Revised 12/06/17 SDD PRICING SET
Revised 09/28/17 SCHEMATIC DESIGN SUBMISSION



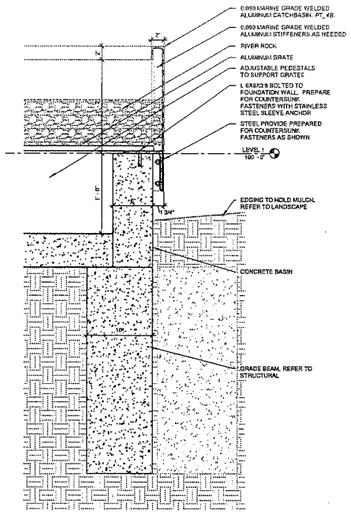
1 SECTION DETAIL - OVERHANG AT EAST CLASSROOM WALL
A356 1 1/2" = 1'-0"



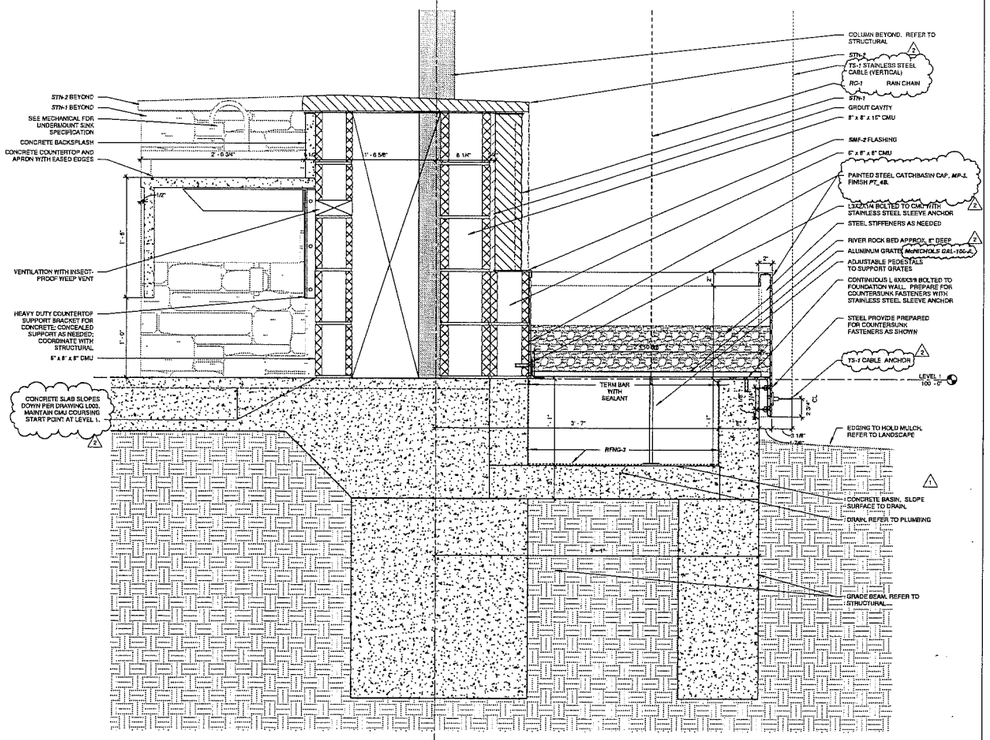
2 OUTDOOR CLASSROOM EAST ROOF EDGE
A356 1 1/2" = 1'-0"



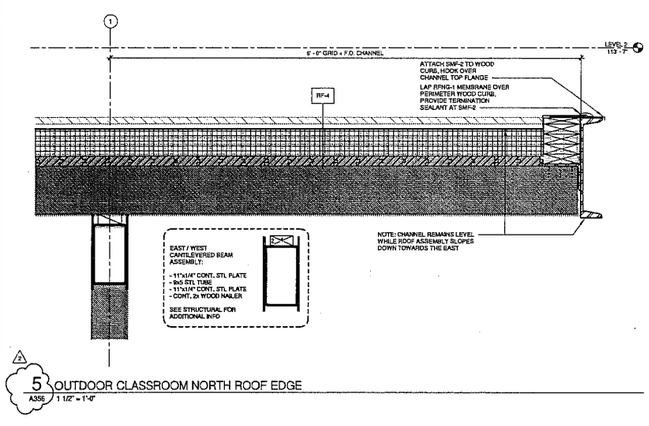
3 BEAM PENETRATION AT E WALL CANOPY
A356 3" = 1'-0"



4 SECTION DETAIL - WATER CATCHMENT N/S WALL
A356 1 1/2" = 1'-0"



6 SECTION DETAIL - OUTDOOR CLASSROOM AT WATER CATCHMENT FEATURE AND COUNTERTOP
A356 1 1/2" = 1'-0"



5 OUTDOOR CLASSROOM NORTH ROOF EDGE
A356 1 1/2" = 1'-0"

MSR 710 South 2nd Street, 8th Floor Minneapolis, Minnesota 55401-2282
Architecture 612 375 0336 tel
Interiors and Urban Design 612 342 2216 fax
www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201 Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
303 South Paterson Street, Suite 1 Madison, WI 53703
608.251.3600 tel

Structural Engineer, Technology and A/V
IMEG Corp.
1800 Deming Way, Suite 200 Middleton, WI 53562
608.223.9600 tel

MEP Engineer
MEP Associates, LLC
860 Blue Gentian Road, Suite 175 Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Codes Consultant
Summit Fire Consulting
575 Minnesota Ave West St. Paul, MN 55103
651.251.1800 tel

Greenhouse Design
Rough Brothers, Inc.
5510 Vine Street Cincinnati, OH 45217
513.242.0310 tel

Olbrich Botanical Gardens
Expansion Phase 1
BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin.
ARCHITECT SEAL

WISCONSIN DANIEL JACK POLING A-6984 MINNEAPOLIS, MN ARCHITECT

Signature:
Print Name: Jack Poling
Date: JUNE 4, 2018 License No.: A-6984

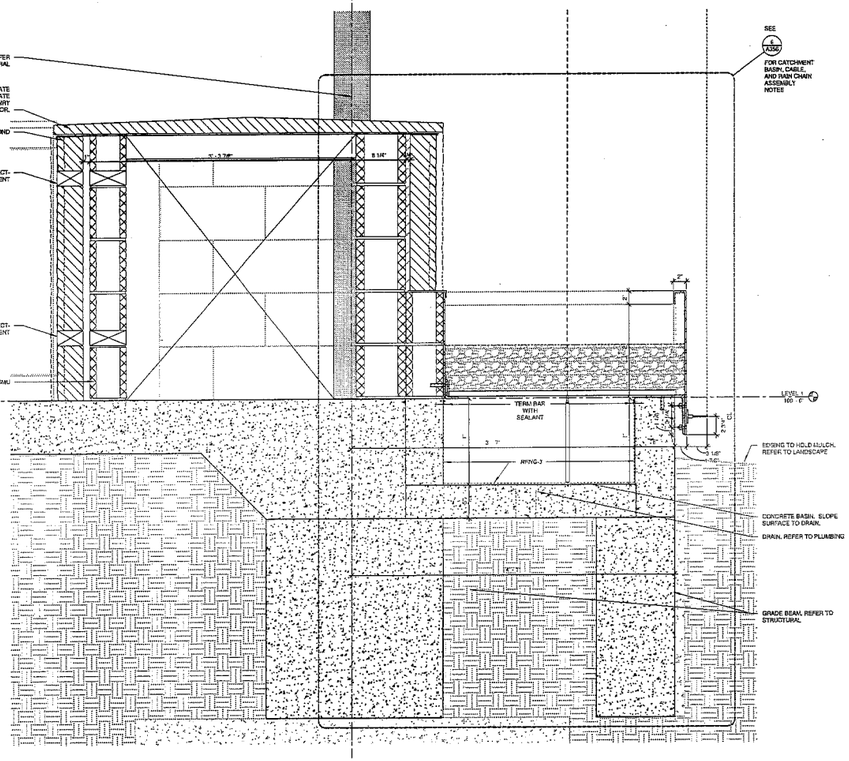
MARK	DATE	DESCRIPTION
	09.29.2017	SCHEMATIC DESIGN SUBMISSION
	12.06.2017	CD PRICING SET
	01.16.2018	DESIGN DEVELOPMENT SUBMISSION
	01.17.2018	LDC SUBMISSION
	03.30.2018	70% CD PRICING ISSUE
	04.06.2018	PARKING LOT AND SITE PLAN SUBMISSION
	06.01.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE
1	06.20.2018	BID ADDENDUM 1
2	06.22.2018	BID ADDENDUM 2

PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: MSR CHECKED BY: MSR

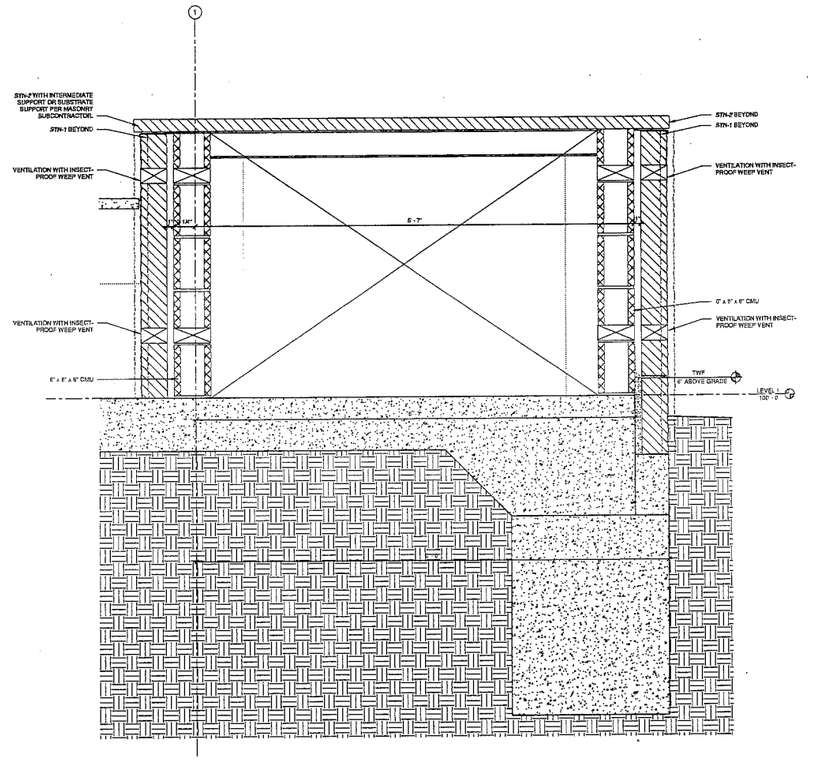
EXTERIOR DETAILS

EXHIBIT F
A356

REVISED



1 SECTION DETAIL - OUTDOOR CLASSROOM AT WATER CATCHMENT FEATURE
A359 1 1/2" = 1'-0"



2 SECTION DETAIL - OUTDOOR CLASSROOM AT STONE LEDGE
A359 1 1/2" = 1'-0"

MSR 710 South 2nd Street, 8th Floor Minneapolis, Minnesota 55401-2282
Architecture Interiors and Urban Design
612 375 0336 tel
612 342 2216 fax
www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201 Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
323 South Patterson Street, Suite 1 Madison, WI 53703
608.251.3500 tel

Structural Engineer, Technology and AV
IMEG Corp.
1830 Deming Way, Suite 200 Middleton, WI 53562
608.203.9660 tel

MEP Engineer
MEP Associates, LLC
859 Blue Gentian Road, Suite 175 Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
575 Mewhaha Ave West St. Paul, MN 55103
651.251.1801 tel

Greenhouse Design
Rough Brothers, Inc.
5513 Vine Street Cincinnati, OH 45217
513.242.0310 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin.
ARCHITECT SEAL

WISCONSIN DANIEL JACK POLING A-8364 MINNEAPOLIS, MN ARCHITECT

Signature:
Print Name: Jack Poling
Date: JUNE 4, 2018 License No.: A-8364

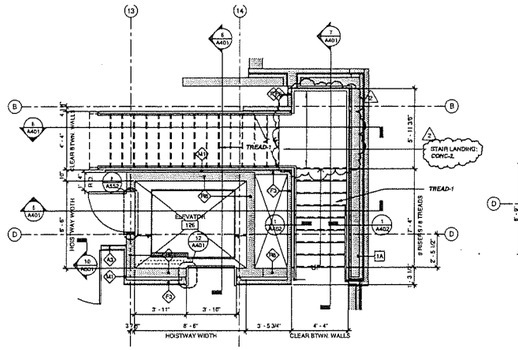
MARK	DATE	DESCRIPTION
1	06.22.2018	BID ADDENDUM 2

PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: MSR CHECKED BY: MSR

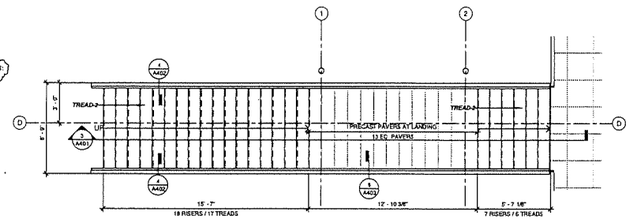
EXTERIOR DETAILS

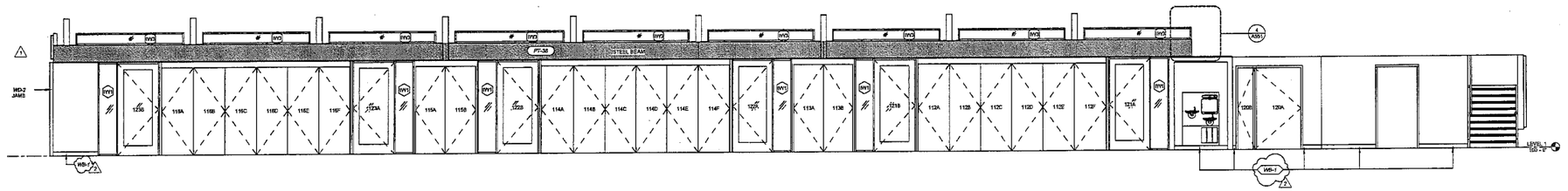
EXHIBIT F
A359

REVISED (NEW)

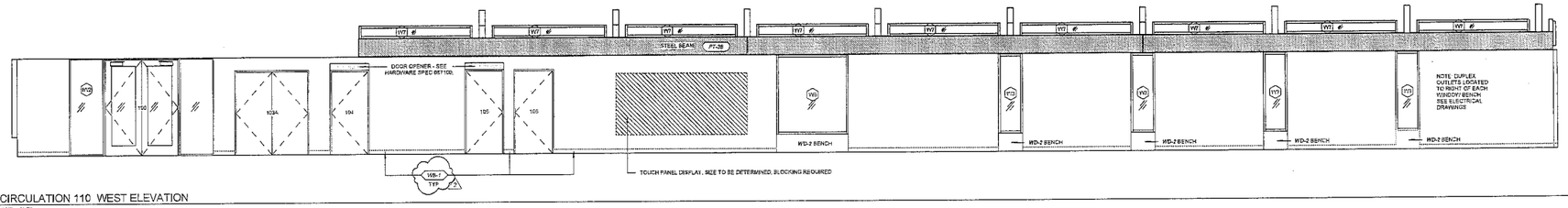


1 STAIR MS-1 PLAN LEVEL 1
A401 1/4" = 1'-0"

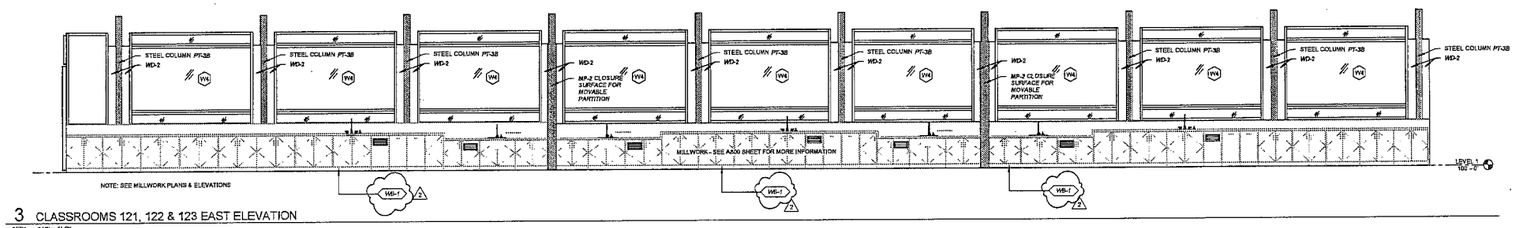

TREAD-2
TRIP EDGE
TRIP EDGE
TRIP EDGE



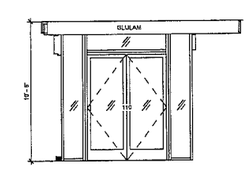
1 CIRCULATION 110 EAST ELEVATION
A501 1/4" = 1'-0"



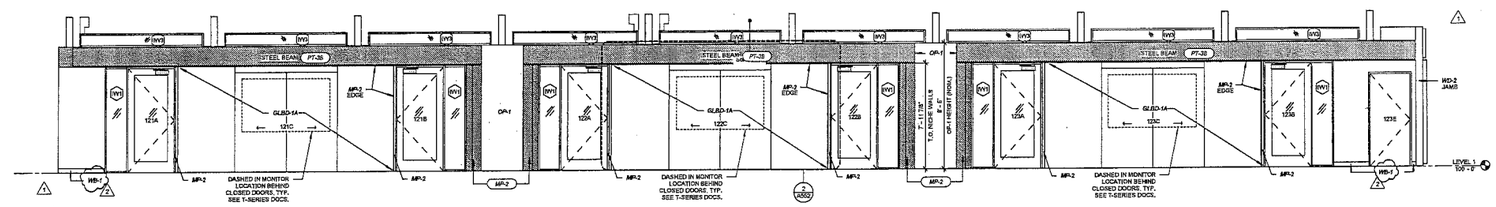
2 CIRCULATION 110 WEST ELEVATION
A501 1/4" = 1'-0"



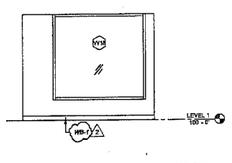
3 CLASSROOMS 121, 122 & 123 EAST ELEVATION
A501 1/4" = 1'-0"



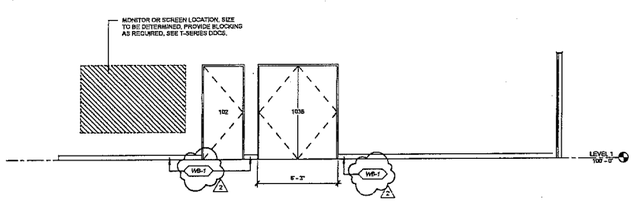
4 CIRCULATION 110 NORTH ELEVATION
A501 1/4" = 1'-0"



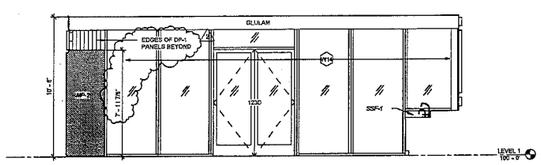
5 CLASSROOMS 121, 122 & 123 WEST ELEVATION
A501 1/4" = 1'-0"



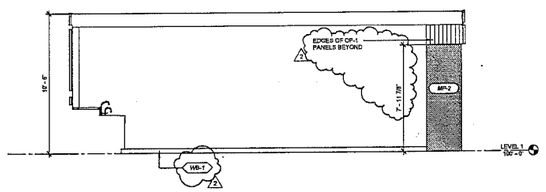
6 CIRCULATION 110 SOUTH ELEVATION
A501 1/4" = 1'-0"



7 LINK 110 NORTH ELEVATION
A501 1/4" = 1'-0"



8 CLASSROOM 123 NORTH ELEVATION
A501 1/4" = 1'-0"



9 CLASSROOM 121 SOUTH ELEVATION
A501 1/4" = 1'-0"

MSR
710 South 2nd Street, 6th Floor
Minneapolis, Minnesota 55401-2282
Architecture, Interiors and Urban Design
612.375.0536 tel
612.342.2216 fax
www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201
Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
323 North Paterson Street, Suite 1
Madison, WI 53703
608.251.3600 tel

Structural Engineer, Fire Protection and AHJ
IMEG Corp.
1800 Deming Way, Suite 200
Middleton, WI 53562
608.223.9600 tel

MEP Engineer
MEP Associates, LLC
850 Blue Gentian Road, Suite 170
Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
375 Minnehaha Ave West
St. Paul, MN 55103
651.251.1880 tel

Construction Design
Rough Brothers, Inc.
5513 Vine Street
Cincinnati, OH 45217
513.242.0310 tel

Olbrich Botanical Gardens
Expansion Phase 1
BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin.
ARCHITECT SEAL

WISCONSIN
DANIEL JACK POLING
A-8394
MINNEAPOLIS, MN
ARCHITECT

Signature:
Print Name: Jack Poling
Date: JUNE 6, 2018 License No: A-8394

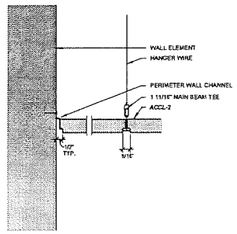
MARK	DATE	DESCRIPTION
	08.29.2017	SCHEMATIC DESIGN SUBMISSION
	12.08.2017	DCI PRICING SET
	01.12.2018	DESIGN DEVELOPMENT SUBMISSION
	01.17.2018	UDC SUBMISSION
	03.30.2018	70% CD PRICING ISSUE
	04.06.2018	PARKING LOT AND SITE PLAN SUBMISSION
	04.01.2018	BID ISSUE
	00.04.2018	PERMIT ISSUE
1	06.08.2018	BID ADDENDUM 1
2	06.22.2018	BID ADDENDUM 2

PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: MSR CHECKED BY: MSR

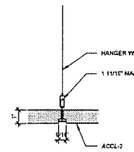
INTERIOR ELEVATIONS

EXHIBIT F
A501

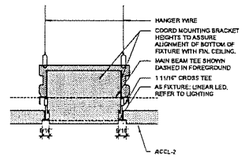
REVISED



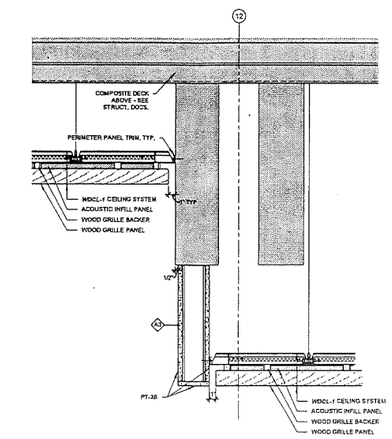
1 ACCL-2 CEILING DETAIL - WALL EDGE TYP
A551 3" = 1'-0"



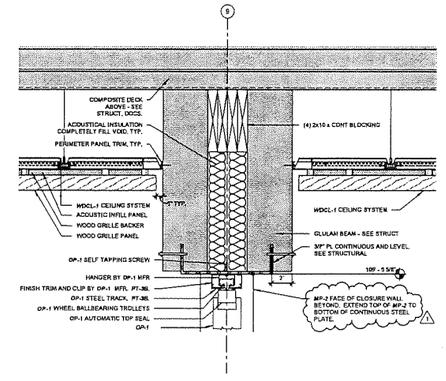
2 ACCL-2 CEILING DETAIL - SEAM TYP
A551 3" = 1'-0"



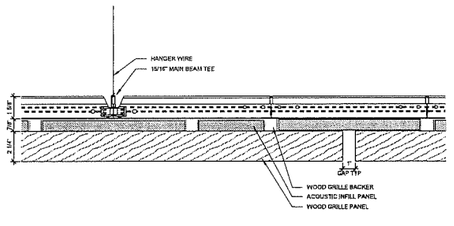
3 ACCL-2 CEILING DETAIL - LED FIXTURE
A551 3" = 1'-0"



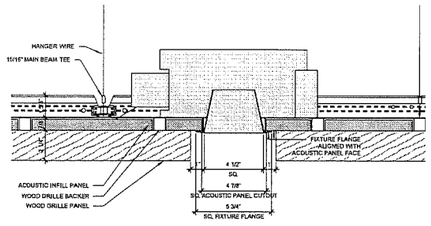
4 SECTION DETAIL - WOOD CEILING HEIGHT CHANGE
A551 1 1/2" = 1'-0"



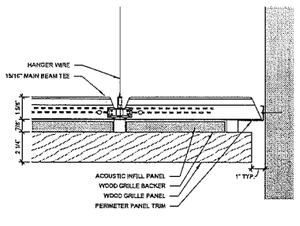
5 MOVABLE PARTITION HEAD DETAIL
A551 1 1/2" = 1'-0"



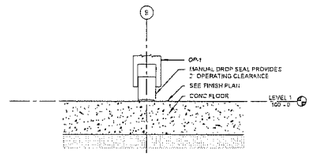
6 WDCL-1 CEILING DETAIL - SEAM TYP
A551 3" = 1'-0"



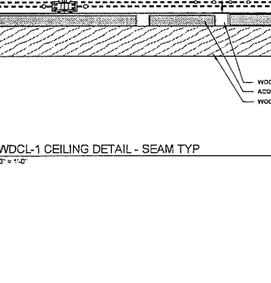
7 WDCL-1 CEILING DETAIL - LIGHT FIXTURE
A551 3" = 1'-0"



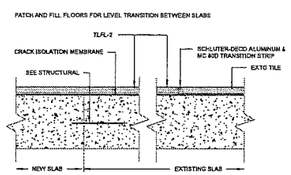
8 WDCL-1 CEILING DETAIL - WALL EDGE
A551 3" = 1'-0"



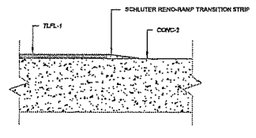
9 MOVABLE PARTITION BASE DETAIL
A551 1 1/2" = 1'-0"



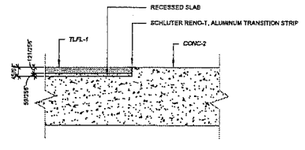
10 TRANSITION DETAIL: CONC-2 TO CPT
A551 3" = 1'-0"



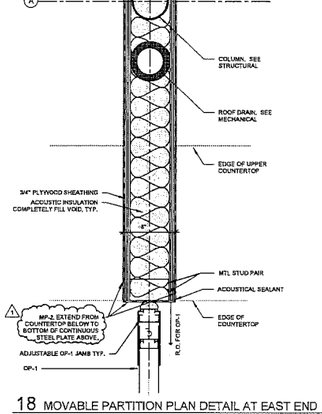
11 TRANSITION DETAIL NEW TILE TO EXISTING TILE
A551 3" = 1'-0"



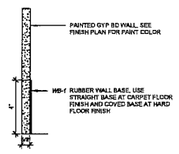
12 TRANSITION DETAIL: CONC-2 TO TILE
A551 3" = 1'-0"



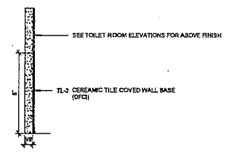
13 TRANSITION DETAIL: CONT-2 TO TILE (ALT)
A551 3" = 1'-0"



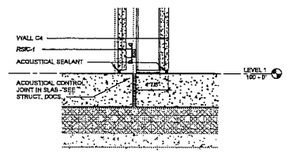
18 MOVABLE PARTITION PLAN DETAIL AT EAST END
A551 1 1/2" = 1'-0"



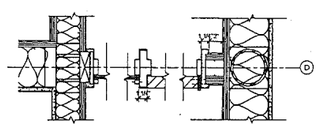
14 WALL BASE 1
A551 3" = 1'-0"



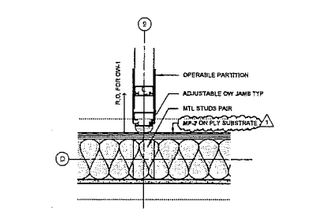
16 CERAMIC TILE WALL BASE 3
A551 3" = 1'-0"



17 DETAIL AT ACOUSTICAL CONTROL JOINT IN FLOOR
A551 1 1/2" = 1'-0"



19 PLAN DETAIL AT TYPICAL CLASSROOM DOOR
A551 1 1/2" = 1'-0"



20 MOVABLE PARTITION PLAN DETAIL AT HALLWAY END
A551 1 1/2" = 1'-0"

MSR
310 South 2nd Street, 8th Floor
Minneapolis, Minnesota 55401-2282
Architecture, Interiors, and Urban Design
612 375 0336 tel
612 342 2214 fax
www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201
Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
323 South Peterson Street, Suite 1
Madison, WI 53703
608.251.3600 tel

Structural Engineer, Technology and A/V
IMEG Corp.
1600 Deming Way, Suite 200
Middleton, WI 53562
608.827.9600 tel

MEP Engineer
MEP Associates, LLC
860 Blue Gentian Road, Suite 170
Eagan, MN 55121
651.379.9129 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
575 Aldrich Avenue North
St. Paul, MN 55128
651.251.1850 tel

Greenhouse Design
Rough Brothers, Inc.
5533 Wire Street
Cincinnati, OH 45227
513.242.0310 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin.
ARCHITECT SEAL:

WISCONSIN
DANIEL JACK POLING
A-5994
MINNEAPOLIS, MN
ARCHITECT

Signature:
Print Name: Jack Poling
Date: JUNE 4, 2018 License No.: A-5994

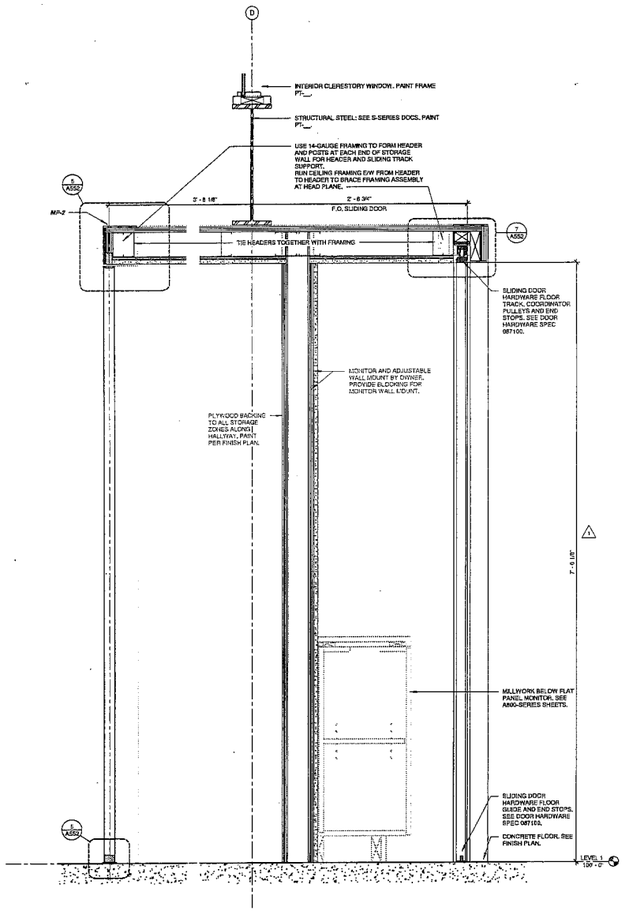
MARK	DATE	DESCRIPTION
	05.29.2017	SCHEMATIC DESIGN SUBMISSION
	12.08.2017	DD PRICING SET
	01.10.2018	DESIGN DEVELOPMENT SUBMISSION
	01.17.2018	UDC SUBMISSION
	03.30.2018	70% CD PRICING ISSUE
	04.06.2018	PARKING LOT AND SITE PLAN SUBMISSION
	05.01.2018	BID ISSUE
	05.04.2018	PERMIT ISSUE
1	06.22.2018	BID ADDENDUM 2

PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: MSR CHECKED BY: MSR

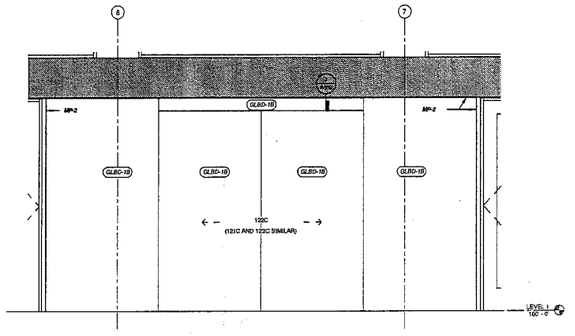
INTERIOR DETAILS

EXHIBIT F
A551

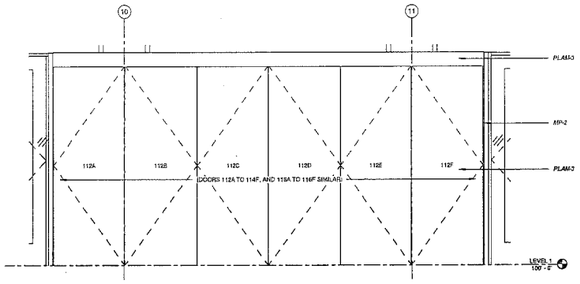
REVISED



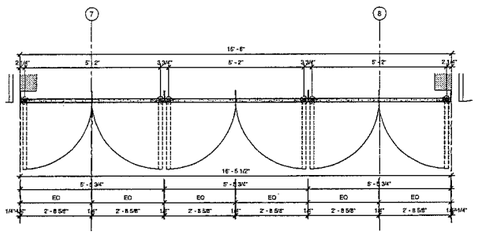
1 ENLARGED SECTION THROUGH HALLWAY / CLASSROOM STORAGE WALL
A552 1 1/2" = 1'-0"



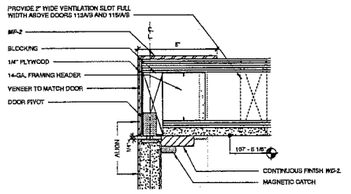
2 EAST ELEVATION DETAIL OF CLASSROOMS 121, 122 & 123 PRESENTATION NICHE
A552 1/2" = 1'-0"



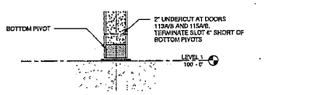
3 WEST ELEVATION DETAIL OF HALLWAY 110 STORAGE
A552 1/2" = 1'-0"



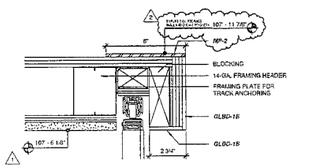
4 ENLARGED PLAN AT TYPICAL HALLWAY 110 STORAGE DOORS
A552 1/2" = 1'-0"



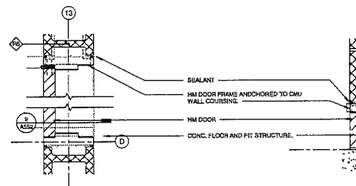
5 SECTION DETAIL - HALLWAY STORAGE DOOR HEAD
A552 3" = 1'-0"



6 SECTION DETAIL - HALLWAY STORAGE DOOR SILL
A552 3" = 1'-0"

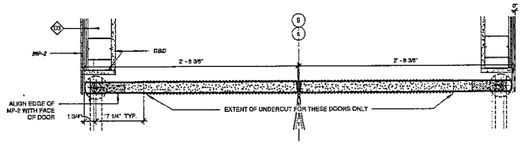


7 SECTION DETAIL - CLASSROOM SLIDING DOOR HEAD
A552 3" = 1'-0"

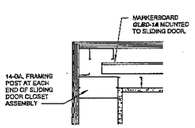


8 PLAN DETAIL - DOOR 120C JAMB
A552 1 1/2" = 1'-0"

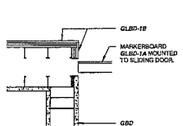
9 SECTION DETAIL - DOOR 120 C HEAD
A552 1 1/2" = 1'-0"



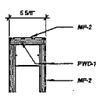
10 ENLARGED PLAN AT HALLWAY CLOSET DOUBLE DOORS 113A/B AND 115A/B
A552 1 1/2" = 1'-0"



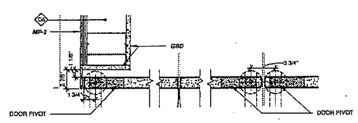
11 PLAN DETAIL AT PRES. CORNER
A552 1 1/2" = 1'-0"



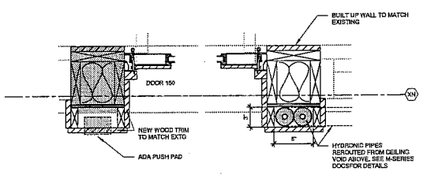
12 PLAN DETAIL AT PRES. POCKET DOOR
A552 1 1/2" = 1'-0"



13 MOVABLE PARTITION POCKET EDGE
A552 1 1/2" = 1'-0"



14 PLAN DETAIL AT HALLWAY STORAGE CORNER
A552 1 1/2" = 1'-0"



15 PLAN DETAIL - DOOR 150A JAMBS
A552 1 1/2" = 1'-0"

MSR
710 South 2nd Street, 8th Floor
Minneapolis, Minnesota 55401-2282
Architecture, Interiors and Urban Design
612 375 0336 tel
612 342 2216 fax
www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201
Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
303 South Paterson Street, Suite 1
Madison, WI 53703
608.251.2600 tel

Structural Engineer, Technology and A/V
IMEG Corp.
1800 Deming Way, Suite 200
Middleton, WI 53562
608.223.9600 tel

MEP Engineer
MEP Associates, LLC
660 Blue Gentian Road, Suite 175
Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
575 Minnehaha Ave West
St. Paul MN 55103
651.251.1850 tel

Greenhouse Design
Rough Brothers, Inc.
5513 Vine Street
Cincinnati, OH 45217
513.242.6310 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin.
ARCHITECT SEAL

WISCONSIN
DANIEL JACK POLING
A-9384
MINNEAPOLIS, MN
ARCHITECT

Signature:
Print Name: Jack Poling
Date: JUNE 4, 2018 License No.: A-9384

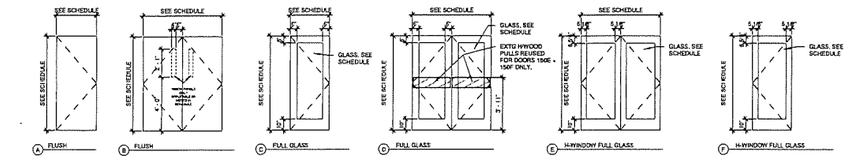
ISSUE MARK	DATE	DESCRIPTION
	09.29.2017	SCHEMATIC DESIGN SUBMISSION
	12.04.2017	DD/PRICING SET
	01.10.2018	DESIGN DEVELOPMENT SUBMISSION
	01.17.2018	UDC SUBMISSION
	03.30.2018	75% CD PRICING ISSUE
	04.06.2018	PARKING LOT AND SITE PLAN SUBMISSION
	06.01.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE
1	06.08.2018	BID ADDENDUM 1
2	06.20.2018	BID ADDENDUM 2

PROJECT NO.: 2017016
PROJECT PHASE: BID DOCUMENTS
DRAWN BY: MSR CHECKED BY: MSR

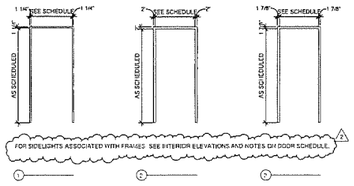
INTERIOR DETAILS

EXHIBIT F
A552

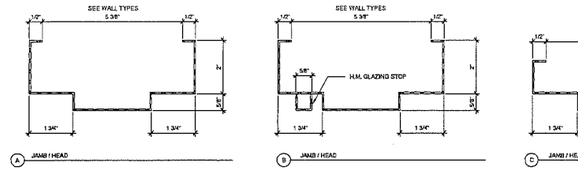
REVISED



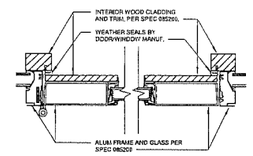
1 DOOR TYPES
A601 1/4" = 1'-0"



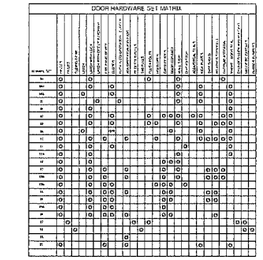
2 FRAME TYPES
A601 1/4" = 1'-0"



3 H.M. FRAME PROFILES
A601 6" = 1'-0"



8 H-WIN "NORDIC" DOOR JAMB DETAIL
A601 3" = 1'-0"



DOOR HARDWARE SET MATRIX

NOTES:
1. REFER TO DOOR HARDWARE SCHEDULE IN SPEC SECTION 08 71 00 FOR PROJECT DETAILS OF HARDWARE SETS.
2. PROVIDE PIVOTS, TRANSFER DEVICES, AND WIRING DIAGRAMS FOR ALL DOOR HEADER PIVOTED SURFACE DOOR AND DOOR CONTROLLED DEVICES.
3. DOUBLE LEATHER STOPS TO MAKE WEATHER TITLE SEALS. PROVIDE AS PART OF HARDWARE PROVISIONAL.
4. ALL NEW DOOR OPENINGS SHALL BE PROVIDED WITH DOOR STOPS AS SHOWN ON DOOR SCHEDULE.
5. ALL NEW DOOR OPENINGS SHALL BE PROVIDED WITH DOOR STOPS AS SHOWN ON DOOR SCHEDULE.
6. ALL NEW DOOR OPENINGS SHALL BE PROVIDED WITH DOOR STOPS AS SHOWN ON DOOR SCHEDULE.
7. ALL NEW DOOR OPENINGS SHALL BE PROVIDED WITH DOOR STOPS AS SHOWN ON DOOR SCHEDULE.
8. ALL NEW DOOR OPENINGS SHALL BE PROVIDED WITH DOOR STOPS AS SHOWN ON DOOR SCHEDULE.
9. ALL NEW DOOR OPENINGS SHALL BE PROVIDED WITH DOOR STOPS AS SHOWN ON DOOR SCHEDULE.
10. ALL NEW DOOR OPENINGS SHALL BE PROVIDED WITH DOOR STOPS AS SHOWN ON DOOR SCHEDULE.

DOOR SCHEDULE GENERAL NOTES

1. COORDINATE DEPTH OF FRAMING AND OVER DOOR WITH HARDWARE REQUIREMENTS, INCLUDING HARDWARE ANCHORING REQUIREMENTS.

2. ALL NEW EXTERIOR DOORS TO BE INSULATED AND THERMALLY-BROKEN, INCLUDING THRESHOLD STRIPS.

3. ALL H.M. DOORS AND FRAMES TO BE FIELD PAINTED (PLAM-3) (UNO) FOR ALL OTHER HM-TYPE DOORS AND FRAME DETAILS, REFER TO SPECIFICATION SECTION 081113.

4. ALL H.M. CLOSET DOORS IN CIRCULATION SPACE, 110 TO BE FINISHED WITH PLAM-3, UNLESS NOTED OTHERWISE.

5. ALL WOOD CLAD FRAMES AND WOOD CLAD EXTERIOR DOORS ARE SELF-FINISHED BY MANUFACTURER, REFER TO SPECIFICATION SECTION 085200.

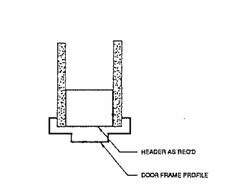
6. FOR ALL GLASS DOORS, REFER TO GLASS SPECIFICATION 088000, AND THE MATERIALS LIST ON SHEET G002.

7. FOR DOOR HARDWARE SETS, REFER TO SPECIFICATION SECTION 087100.

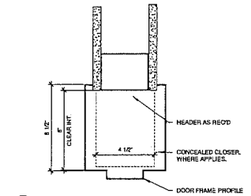
8. REFER TO T-SERIES DRAWINGS AND DOCUMENTS FOR CARD READER AND DOOR MONITORING REQUIREMENTS, DETAILS AND GENERAL LOCATIONS.

9. CARD READER LOCATIONS ON T-SERIES DRAWINGS ARE INDICATIVE AND REQUIRE PRECISE LOCATING IN THE FIELD WITH OWNER INPUT AND APPROVAL.

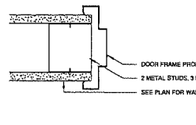
10. REFER TO OTHER DETAIL SHEETS IN THIS A-SERIES SET FOR DOOR DETAILS NOT INCLUDED ON THIS SHEET.



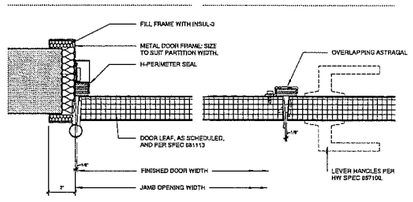
4 TYPICAL H.M. FRAME HEAD PROFILES
A601 3" = 1'-0"



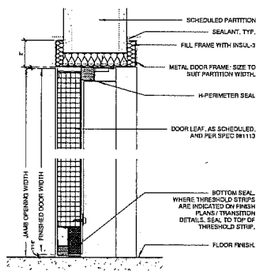
5 TYPICAL DEEP H.M. FRAME HEAD PROFILE
A601 3" = 1'-0"



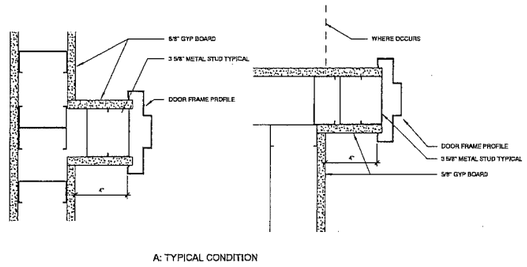
6 TYPICAL H.M. FRAME JAMB PROFILE
A601 3" = 1'-0"



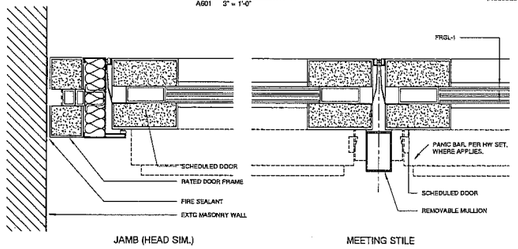
9 MECH ROOM DOOR DETAILS
A601 3" = 1'-0"



10 MECH DOOR HEAD AND THRESHOLD
A601 3" = 1'-0"



7 TYPICAL H.M. FRAME INSTALLATION AT PERPENDICULAR WALL OR CORNER
A601 3" = 1'-0"



11 FIRE RATED GLASS DOOR JAMB DETAILS
A601 3" = 1'-0"

DOOR SCHEDULE

DOOR NO	WIDTH	HEIGHT	DOOR THICKNESS	TYPE	MAT'L	FRAME HEAD	FRAME SILL	FRAME JAMB	FRAME TYPE	FRAME MAT'L	FIRE	HDWR	COMMENTS
35	4' - 0"	7' - 0"	1 3/4"	A	HM	14A552	13A552	13A552	2	HM		04A	
100	6' - 0"	7' - 10"	1 3/4"	D	HM GL	4A601	5A551	5A601	1	HM		12B	1 FRAME WITH SIDELIGHTS - SEE SHEET A551 FOR DETAILS
101	3' - 0"	7' - 0"	1 3/4"	A	HM	4A601	NA	5A601	1	HM		04A	
102	3' - 0"	7' - 0"	1 3/4"	A	HM	4A601	NA	5A551	1	HM		12	
103A	6' - 0"	8' - 9 1/2"	1 3/4"	B	HM	4A601	NA	5A601	1	HM		04	
103B	6' - 0"	7' - 0"	1 3/4"	B	HM	4A601	5A551	5A601	1	HM		04	
104	3' - 0"	8' - 9 1/2"	1 3/4"	A	HM	4A601	5A551	5A601	1	HM		05	
105	3' - 0"	8' - 9 1/2"	1 3/4"	A	HM	4A601	5A551	5A601	1	HM		05	
106	3' - 0"	8' - 9 1/2"	1 3/4"	A	HM	4A601	NA	5A601	1	HM		04A	
110	6' - 0"	8' - 9"	1 3/4"	E	GL/WDAL		7A353	8A601	3	WD/AL		13A	H-WINDOW - DOUBLE DOOR WITH SIDELIGHTS - SEE SHEET A551 FOR DETAILS
112A	2' - 8 5/8"	7' - 5 7/8"	1 3/4"	A	H/M (FLAM-2)	5A552	5A552	14A552	FRAMELESS	N.A.		17	CLOSET DOORS - PIVOT HARDWARE
112B	2' - 8 5/8"	7' - 5 7/8"	1 3/4"	A	H/M (FLAM-2)	5A552	5A552	14A552	FRAMELESS	N.A.		17	CLOSET DOORS - PIVOT HARDWARE
112C	2' - 8 5/8"	7' - 5 7/8"	1 3/4"	A	H/M (FLAM-2)	5A552	5A552	14A552	FRAMELESS	N.A.		17	CLOSET DOORS - PIVOT HARDWARE
112D	2' - 8 5/8"	7' - 5 7/8"	1 3/4"	A	H/M (FLAM-2)	5A552	5A552	14A552	FRAMELESS	N.A.		17	CLOSET DOORS - PIVOT HARDWARE
112E	2' - 8 5/8"	7' - 5 7/8"	1 3/4"	A	H/M (FLAM-2)	5A552	5A552	14A552	FRAMELESS	N.A.		17	CLOSET DOORS - PIVOT HARDWARE
112F	2' - 8 5/8"	7' - 5 7/8"	1 3/4"	A	H/M (FLAM-2)	5A552	5A552	14A552	FRAMELESS	N.A.		17	CLOSET DOORS - PIVOT HARDWARE
113A	2' - 7 1/8"	7' - 5 7/8"	1 3/4"	A	H/M (FLAM-2)	5A552	5A552	10A552	FRAMELESS	N.A.		17	CLOSET DOORS - PIVOT HARDWARE, UNDERCUT 3"
113B	2' - 7 1/8"	7' - 5 7/8"	1 3/4"	A	H/M (FLAM-2)	5A552	5A552	10A552	FRAMELESS	N.A.		17	CLOSET DOORS - PIVOT HARDWARE, UNDERCUT 3"
114A	2' - 8 5/8"	7' - 5 7/8"	1 3/4"	A	H/M (FLAM-2)	5A552	5A552	14A552	FRAMELESS	N.A.		17	CLOSET DOORS - PIVOT HARDWARE
114B	2' - 8 5/8"	7' - 5 7/8"	1 3/4"	A	H/M (FLAM-2)	5A552	5A552	14A552	FRAMELESS	N.A.		17	CLOSET DOORS - PIVOT HARDWARE
114C	2' - 8 5/8"	7' - 5 7/8"	1 3/4"	A	H/M (FLAM-2)	5A552	5A552	14A552	FRAMELESS	N.A.		17	CLOSET DOORS - PIVOT HARDWARE
114D	2' - 8 5/8"	7' - 5 7/8"	1 3/4"	A	H/M (FLAM-2)	5A552	5A552	14A552	FRAMELESS	N.A.		17	CLOSET DOORS - PIVOT HARDWARE
114E	2' - 8 5/8"	7' - 5 7/8"	1 3/4"	A	H/M (FLAM-2)	5A552	5A552	14A552	FRAMELESS	N.A.		17	CLOSET DOORS - PIVOT HARDWARE
114F	2' - 8 5/8"	7' - 5 7/8"	1 3/4"	A	H/M (FLAM-2)	5A552	5A552	14A552	FRAMELESS	N.A.		17	CLOSET DOORS - PIVOT HARDWARE
115A	2' - 7 1/8"	7' - 5 7/8"	1 3/4"	A	H/M (FLAM-2)	5A552	5A552	10A552	FRAMELESS	N.A.		17	CLOSET DOORS - PIVOT HARDWARE
115B	2' - 7 1/8"	7' - 5 7/8"	1 3/4"	A	H/M (FLAM-2)	5A552	5A552	10A552	FRAMELESS	N.A.		17	CLOSET DOORS - PIVOT HARDWARE
116A	2' - 8 5/8"	7' - 5 7/8"	1 3/4"	A	H/M (FLAM-2)	5A552	5A552	14A552	FRAMELESS	N.A.		17	CLOSET DOORS - PIVOT HARDWARE
116B	2' - 8 5/8"	7' - 5 7/8"	1 3/4"	A	H/M (FLAM-2)	5A552	5A552	14A552	FRAMELESS	N.A.		17	CLOSET DOORS - PIVOT HARDWARE
116C	2' - 8 5/8"	7' - 5 7/8"	1 3/4"	A	H/M (FLAM-2)	5A552	5A552	14A552	FRAMELESS	N.A.		17	CLOSET DOORS - PIVOT HARDWARE
116D	2' - 8 5/8"	7' - 5 7/8"	1 3/4"	A	H/M (FLAM-2)	5A552	5A552	14A552	FRAMELESS	N.A.		17	CLOSET DOORS - PIVOT HARDWARE
116E	2' - 8 5/8"	7' - 5 7/8"	1 3/4"	A	H/M (FLAM-2)	5A552	5A552	14A552	FRAMELESS	N.A.		17	CLOSET DOORS - PIVOT HARDWARE
116F	2' - 8 5/8"	7' - 5 7/8"	1 3/4"	A	H/M (FLAM-2)	5A552	5A552	14A552	FRAMELESS	N.A.		17	CLOSET DOORS - PIVOT HARDWARE
120A	4' - 0"	7' - 0"	1 3/4"	A	HM	10A601	10A601	8A601	2	HM		07	
120B	3' - 0"	7' - 0"	1 3/4"	A	HM	10A601	10A601	8A601	2	HM		07	
120C	3' - 0"	7' - 0"	1 3/4"	A	HM	8A552		8A552	2	HM		06	2
121A	3' - 0"	7' - 10 3/8"	1 3/4"	C	HM GL	4A601	NA	19A551	1	HM		11	1 FRAME WITH SIDELIGHT - SEE SHEET A551 FOR DETAILS
121B	3' - 0"	7' - 10 3/8"	1 3/4"	C	HM GL	4A601	NA	19A551	1	HM		11	1 FRAME WITH SIDELIGHT - SEE SHEET A551 FOR DETAILS
121C	7' - 10"	7' - 6 1/8"	1 5/8"	E	HM GLBD-1A	7A552	NA	5A552	FRAMELESS	H.A.		18	2 SIDELIGHT WITH DOOR - SEE SHEET A551 FOR DETAILS
122A	3' - 6"	7' - 10 3/8"	1 3/4"	C	HM GL	4A601	NA	19A551	1	HM		11	1 FRAME WITH SIDELIGHT - SEE SHEET A551 FOR DETAILS
122B	3' - 0"	7' - 10 3/8"	1 3/4"	C	HM GL	4A601	NA	19A551	1	HM		11	1 FRAME WITH SIDELIGHT - SEE SHEET A551 FOR DETAILS
122C	7' - 10"	7' - 6 1/8"	1 5/8"	E	HM GLBD-1A	7A552	NA	5A552	FRAMELESS	H.A.		18	2 SIDELIGHT WITH DOOR - SEE SHEET A551 FOR DETAILS
123A	3' - 6"	7' - 10 3/8"	1 3/4"	C	HM GL	4A601	NA	19A551	1	HM		11	1 FRAME WITH SIDELIGHT - SEE SHEET A551 FOR DETAILS
123B	3' - 0"	7' - 10 3/8"	1 3/4"	C	HM GL	4A601	NA	19A551	1	HM		11	1 FRAME WITH SIDELIGHT - SEE SHEET A551 FOR DETAILS
123C	7' - 10"	7' - 6 1/8"	1 5/8"	E	HM GLBD-1A	7A552	NA	5A552	FRAMELESS	H.A.		18	2 SIDELIGHT WITH DOOR - SEE SHEET A551 FOR DETAILS
125D	6' - 2"	8' - 0"	1 3/4"	E	GL/WDAL	7A353		8A601	3	WD/AL		13	H-WINDOW - DOUBLE DOOR WITH SIDELIGHTS - SEE SHEET A551 FOR DETAILS
125E	3' - 0"	7' - 0"	1 3/4"	A	HM	4A601		5A601	1	HM		04B	
125	6' - 0"	7' - 0"	1 3/4"	E	HM	8A435T		8A435T	1	HM		08	
150A	7' - 0 1/4"	7' - 0"	1 3/4"	B	GL/WDAL	13A357M		19A552	2	WD/AL		13	MATCH EXISTING HARDWOOD
150C	3' - 1"	7' - 4"	1 3/4"	C	GL/HM	4A601	NA	8A601	2	HM	SMOKE ONLY	09	2 FRAME WITH SIDELIGHT - SEE SHEET A551 FOR DETAILS
150D	3' - 1"	7' - 4"	1 3/4"	C	GL/HM	4A601	NA	8A601	2	HM	SMOKE ONLY	09	2 FRAME WITH SIDELIGHT - SEE SHEET A551 FOR DETAILS
150G	6' - 10"	8' - 4"	1 3/4"	G	WD SLIDING/GL	11A601	NA	11A601	2	FRDR-1	1.5 HR RATED	20	1 DOUBLE SLIDING DOOR - SEE SHEET A551 FOR DETAILS
150T	6' - 10"	8' - 4"	1 3/4"	D	WD SLIDING/GL	11A601	NA	11A601	2	FRDR-1	1.5 HR RATED	20	1 DOUBLE SLIDING DOOR - SEE SHEET A551 FOR DETAILS
201A	3' - 0"	7' - 10 3/4"	1 3/4"	C	GL/HM	4A601	5A551	3EA601	1	HM		15A	2 FRAME WITH SIDELIGHT - SEE SHEET A551 FOR DETAILS
201B	2' - 0"	7' - 10"	1 3/4"	I	GL/WDAL	10A552	11A352	2A353	1	WD/AL		14	1 H-WINDOW - SINGLE DOOR WITH SIDELIGHT - SEE SHEET A551 FOR DETAILS
202	3' - 0"	7' - 0"	1 3/4"	A	HM	4A601	5A551	8A601	1	HM		05	3'-2"
210	3' - 0"	7' - 10"	1 3/4"	I	GL/WDAL	10A552	11A352	2A355	1	WD/AL		15	1 H-WINDOW - SINGLE DOOR WITH SIDELIGHT - SEE SHEET A551 FOR DETAILS
211	3' - 0"	7' - 0"	1 3/4"	A	HM	4A601	5A551	6A601	1	HM		04E	
213	3' - 0"	7' - 10"	1 3/4"	C	HM GL	4A601	NA	6A601	1	HM		11A	1 CLASSROOM DOOR - FRAME WITH SIDELIGHT - SEE SHEET A551 FOR DETAILS
EH51	6' - 0"	10' - 0"	1 3/4"	E	HM	14A552 s.m.	7A355	12A552 s.m.	2	HM	2 HR RATED	16	1 DOUBLE DOOR FRAMES, EMT, BOLTED CORNERS

MSR 710 South 2nd Street, 5th Floor Minneapolis, Minnesota 55401-2282
Architecture, Interiors and Urban Design: 612 375 0536 tel; 612 342 2216 fax; www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201
Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
353 South Paterson Street, Suite 1
Madison, WI 53703
608.251.3600 tel

Structural Engineer, Technology and A/V
IMEG Corp.
1650 Deming Way, Suite 200
Middleton, WI 53562
608.223.9600 tel

MEP Engineer
MEP Associates, LLC
160 Blue Green Road, Suite 175
Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
575 St Anthony Ave West
St. Paul MN 55103
651 251 1880 tel

Greenhouse Design
Rough Brothers, Inc.
5513 Vine Street
Cincinnati, OH 45217
513 242 8310 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin.
ARCHITECT SEAL

WISCONSIN
DANIEL JACK POLING
A-9984
MINNEAPOLIS, MN
ARCHITECT

Signature:
Print Name: Jack Poling
Date: JUNE 4, 2018 License No: A-9984

MARK	DATE	DESCRIPTION
	05.29.2017	SCHEMATIC DESIGN SUBMISSION
	12.08.2017	DD PRICING SET
	01.10.2018	DESIGN DEVELOPMENT SUBMISSION
	01.17.2018	UDC SUBMISSION
	03.30.2018	70% DD PRICING ISSUE
	04.06.2018	PARKING LOT AND SITE PLAN SUBMISSION
	06.01.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE
1	06.06.2018	BID ADDENDUM 1
2	06.20.2018	BID ADDENDUM 2

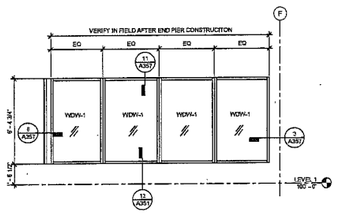
PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: MSR CHECKED BY: MSR

DOOR SCHEDULE, TYPES AND DETAILS

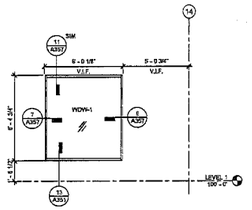
EXHIBIT F
A601

REVISED

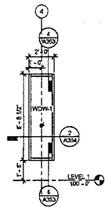
Drawings and Specifications as instruments of service are and shall remain the property of MSR Design whether the project for which they are made is executed or not. They are not to be used by the owner or others on extensions of this project or on any other project without written agreement with MSR Design and specific authorization. Visual contact with these drawings or specifications shall constitute prima facie evidence of the acceptance of these restrictions. © MSR Design



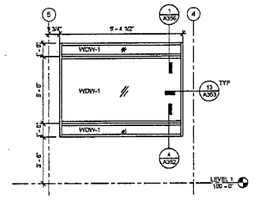
1 W1
A651 1/4" = 1'-0"



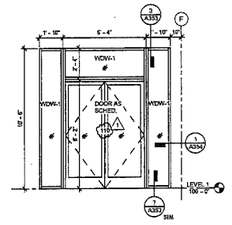
2 W2
A651 1/4" = 1'-0"



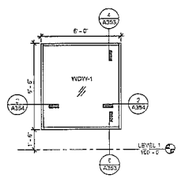
3 W3
A651 1/4" = 1'-0"



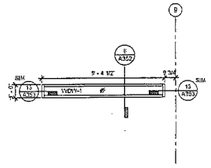
4 W4
A651 1/4" = 1'-0"



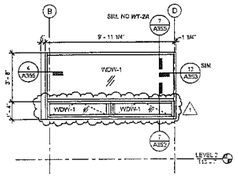
5 W5
A651 1/4" = 1'-0"



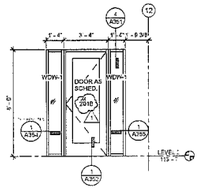
6 W6
A651 1/4" = 1'-0"



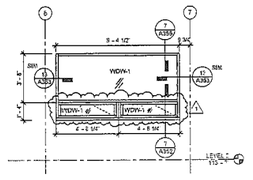
7 W7
A651 1/4" = 1'-0"



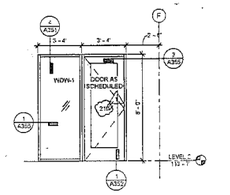
8 W8
A651 1/4" = 1'-0"



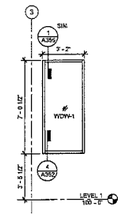
9 W9
A651 1/4" = 1'-0"



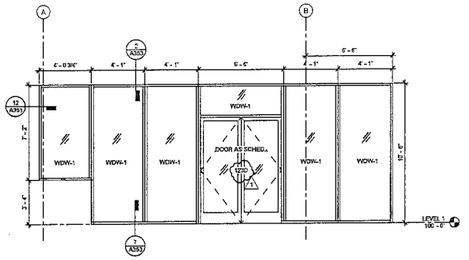
10 W10
A651 1/4" = 1'-0"



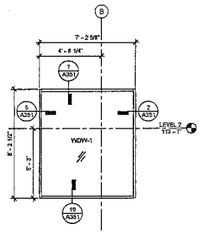
11 W11
A651 1/4" = 1'-0"



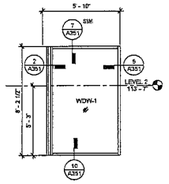
12 W12
A651 1/4" = 1'-0"



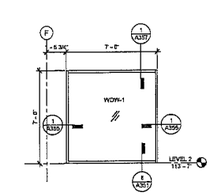
14 W14
A651 1/4" = 1'-0"



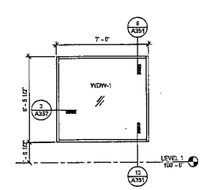
15 W15
A651 1/4" = 1'-0"



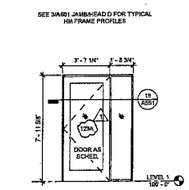
16 W16
A651 1/4" = 1'-0"



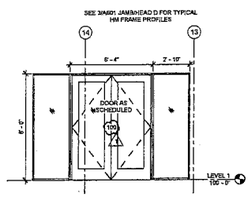
17 W17
A651 1/4" = 1'-0"



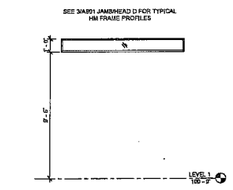
18 W18
A651 1/4" = 1'-0"



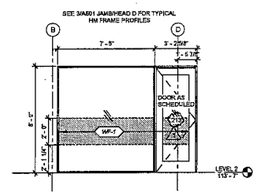
IW1 IW1
A651 1/4" = 1'-0"



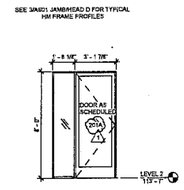
IW2 IW2
A651 1/4" = 1'-0"



IW3 IW3
A651 1/4" = 1'-0"



IW4 IW4
A651 1/4" = 1'-0"



IW5 IW5
A651 1/4" = 1'-0"

MSR
710 South 2nd Street, 6th Floor
Minneapolis, Minnesota 55401-2282
Architecture, Interiors and Urban Design
612 375 0936 tel
612 262 2246 fax
www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201
Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
323 South Paterson Street, Suite 1
Madison, WI 53703
608.251.3600 tel

Structural Engineer, Technology and AV
IMEG Corp.
1600 Deming Way, Suite 260
Middleton, WI 53562
608.223.9600 tel

MEP Engineer
MEP Associates, LLC
860 Blue Gentian Road, Suite 175
Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
575 Minnesota Ave W Ave
St. Paul, MN 55107
651.251.1880 tel

Greenhouse Design
Rough Brothers, Inc.
5910 Vine Street
Cincinnati, OH 45216
513.242.0310 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin.
ARCHITECT SEAL

WISCONSIN
DANIEL JACK POLING
A-5084
MINNEAPOLIS, MN
ARCHITECT

Signature: _____
Print Name: Jack Poling
Date: JUNE 4, 2018 License No.: A-5084

ISSUE

MARK	DATE	DESCRIPTION
	05.25.2017	SCHEMATIC DESIGN SUBMISSION
	12.08.2017	CD PRICING SET
	01.12.2018	DESIGN DEVELOPMENT SUBMISSION
	01.17.2018	HDC SUBMISSION
	03.30.2018	75% CD PRICING ISSUE
	04.06.2018	PARKING LOT AND SITE PLAN SUBMISSION
	06.01.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE
1	06.22.2018	BID ADDENDUM 2

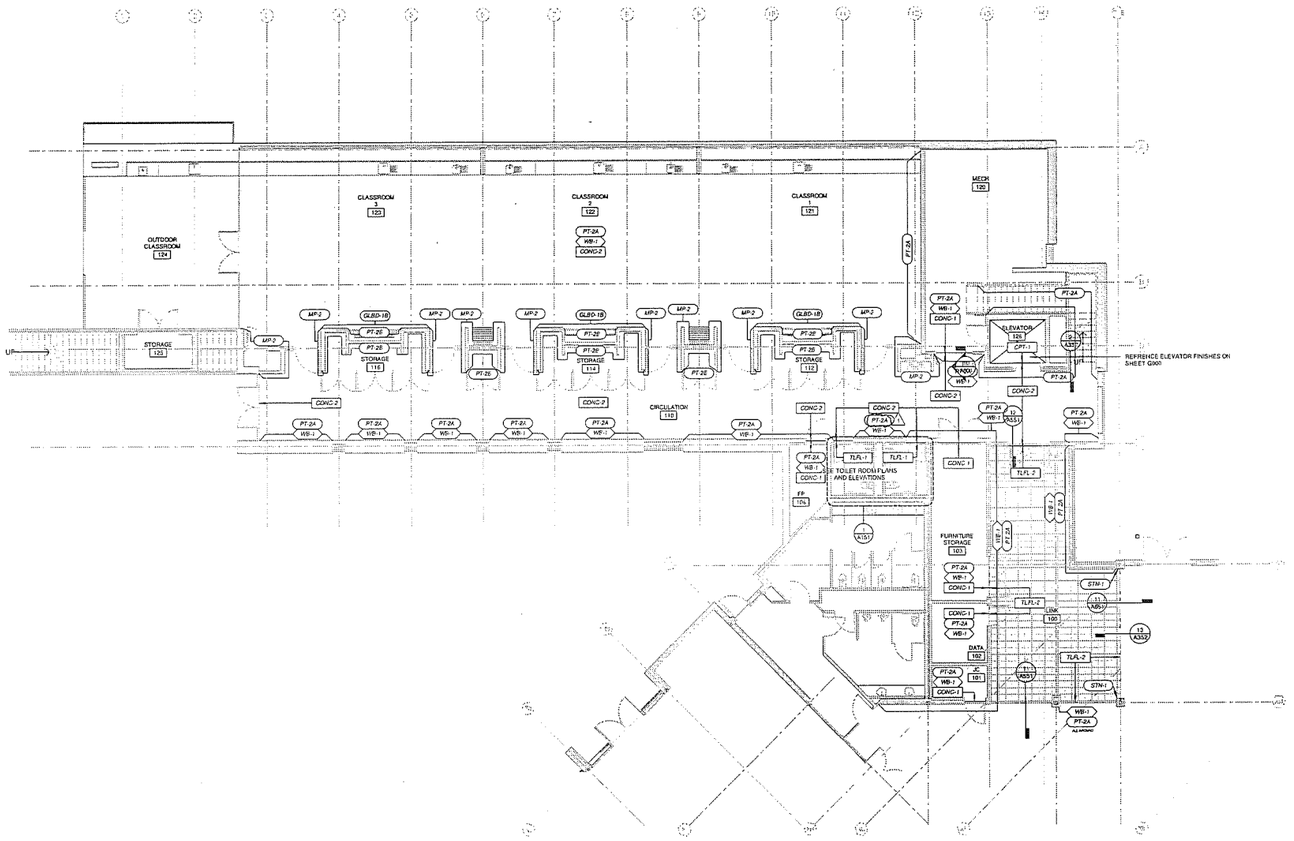
PROJECT NO: 2017016
PROJECT PHASE: BID DOCUMENTS
DRAWN BY: MSR
CHECKED BY: MSR

WINDOW TYPES

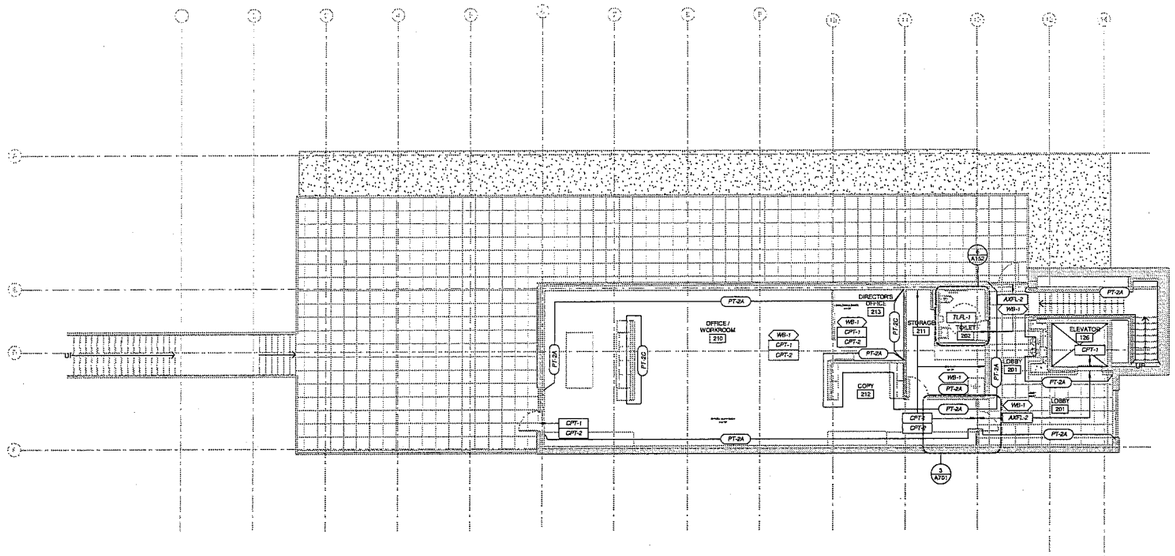
EXHIBIT F
A651

REVISED

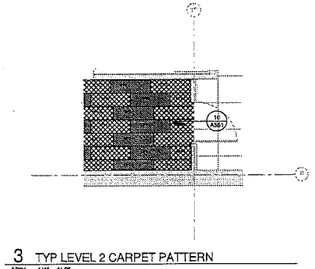
Drawings and Specifications as Instruments of Service
©2018 MSR



1 LEVEL 1 FINISH PLAN
A701 1/8" = 1'-0"



2 LEVEL 2 FINISH PLAN
A701 1/8" = 1'-0"



3 TYP LEVEL 2 CARPET PATTERN
A701 1/4" = 1'-0"

FINISH PLAN KEY

FLOOR FINISH: CPT-EA (STYLE COLOR) | WALL FINISH: PT-EA (STYLE / FINISH COLOR) | WALL BASE: WB-1 (STYLE)

NOTES:

1. SEE PROJECT MANUAL SPECIFICATION FOR KEY TO FINISH CODES AND INSTALLATION INSTRUCTIONS.
2. COORDINATE EXTENT OF FLOOR AND WALL FINISHES WITH MILLWORK DRAWINGS. FLOOR FINISHES TO EXTEND BENEATH MILLWORK U.N.O FINISH AND PRIME ALL WALLS BEHIND MILLWORK U.N.O
3. SEE SHEETS A151 FOR RESTROOM ELEVATIONS SHOWING WALL TILE PATTERNS & PAINT LOCATIONS ABOVE. USE SCHLUTER-SCHIENE (OR EQUAL) ANODIZED ALUMINUM EDGE PROTECTION AT EXPOSED TILE LOCATIONS WITHIN RESTROOMS AND SCHLUTER-JOLLY (OR EQUAL) ANODIZED ALUMINUM EDGE PROTECTION AT EXPOSED TILE AT ALL OTHER LOCATIONS. TYP.
4. ALL GWB CEILINGS TO BE PAINTED PT-1A U.N.O.
5. EXPOSED CEILING & MECHANICAL IN STAFF AREAS TO BE PAINTED PT-1A.
6. ALL ELECTRICAL ROOMS, JANITOR'S CLOSETS AND MECHANICAL ROOMS TO BE PAINTED PT-2A U.N.O.
7. FOR WB-1 BASE, USE STRAIGHT BASE AT CARPETED AREAS AND COVED BASE AT HARD FLOORING SURFACES. SEE MILLWORK PLANS FOR EXTENT AND INSTALLATION INFO.
8. SEE RCP FOR SHADE LOCATION AND FINISHES.
9. INSTALLER RESPONSIBLE FOR FIELD VERIFYING ALL QUANTITIES, DIMENSIONS AND CONDITIONS FOR WINDOW TREATMENTS. ALL SHADES SHALL BE FULL WIDTH WITH NO SEAMS OR BATTENS. INSTALLER RESPONSIBLE FOR SUBMITTING SHOP DRAWINGS FOR APPROVAL.
10. WHEN MORE THAN ONE WALL FINISH CODE IS LISTED AT WALLS ON FINISH PLANS, SEE INTERIOR ELEVATIONS FOR MATERIAL AND OR PAINT COLOR TRANSITIONS.
11. SEE SPECIFICATIONS FOR INTERIOR FINISHES OF ELEVATOR CAB.

REVISED

MSR
710 South 2nd Street, 6th Floor
Minneapolis, Minnesota 55401-2282
Architecture Interiors and Urban Design
612 375 0336 tel
612 342 2216 fax
www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201
Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
323 South Paterson Street, Suite 1
Madison, WI 53703
608.251.3650 tel

Structural Engineer, Technology and A/V
IMEG Corp.
1600 Deming Way, Suite 200
Madison, WI 53562
608.223.9600 tel

MEP Engineer
MEP Associates, LLC
560 Blue Garrison Road, Suite 175
Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
575 Minnesota Ave West
St. Paul, MN 55102
651.251.1881 tel

Greenhouse Design
Rough Brothers, Inc.
5513 Vine Street
Cincinnati, OH 45217
513.242.0310 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin.
ARCHITECT SEAL

WISCONSIN
DANIEL JACK POLING
A-9394
MINNEAPOLIS, MN
ARCHITECT

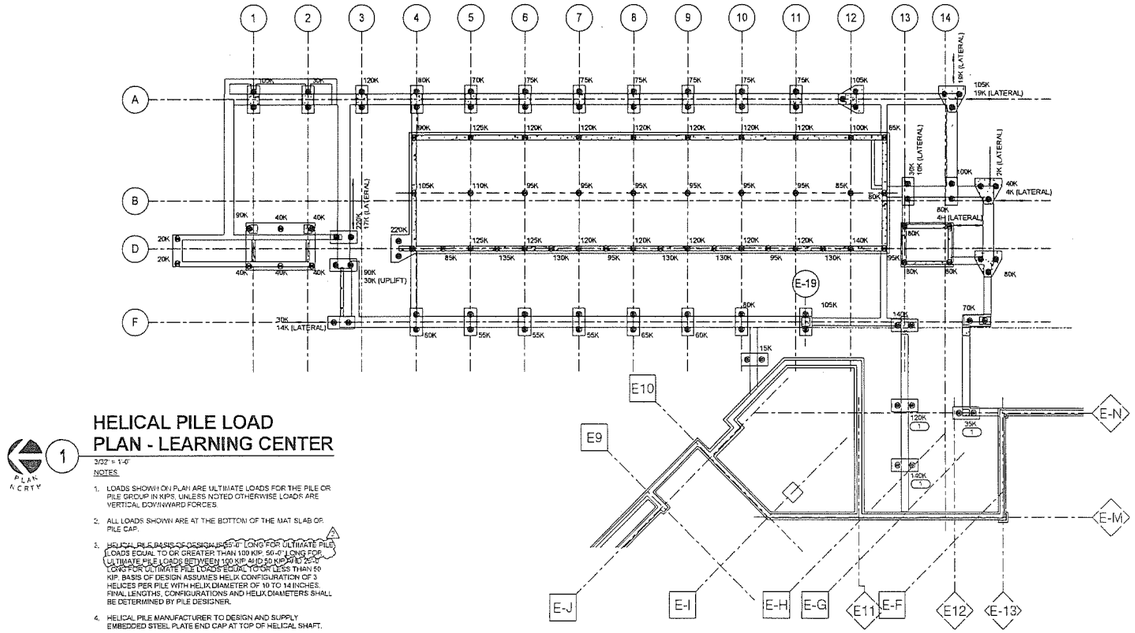
Signature:
Print Name: Jack Poling License No.: A-9394
Date: JUNE 1, 2018

MARK	DATE	DESCRIPTION
	09.29.2017	SCHEMATIC DESIGN SUBMISSION
	12.06.2017	DD PRICING SET
	01.12.2018	DESIGN DEVELOPMENT SUBMISSION
	01.17.2018	LDC SUBMISSION
	03.30.2018	70% CD PRICING ISSUE
	04.06.2018	PARKING LOT AND SITE PLAN SUBMISSION
	06.01.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE
1	06.22.2018	BID ADDENDUM 2

PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: MSR CHECKED BY: MSR

FINISH PLANS

EXHIBIT F
A701



HELICAL PILE LOAD PLAN - LEARNING CENTER

1 PLAN NORTH

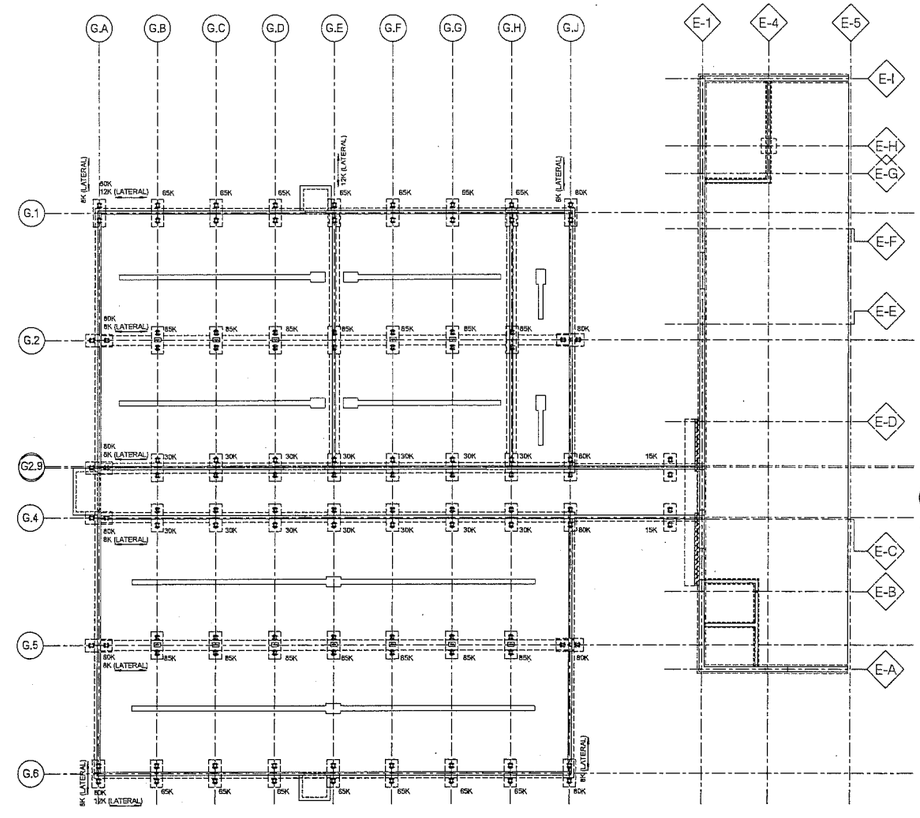
3/32" = 1'-0"

NOTES:

1. LOADS SHOWN ON PLAN ARE ULTIMATE LOADS FOR THE PILE OR PILE GROUP IN KIPS. UNLESS NOTED OTHERWISE LOADS ARE VERTICAL DOWNWARD FORCES.
2. ALL LOADS SHOWN ARE AT THE BOTTOM OF THE MAT SLAB OF PILE CAP.
3. HELICAL PILE BASIS OF DESIGN IS 50'-0" LONG FOR ULTIMATE PILE LOADS EQUAL TO OR GREATER THAN 100 KIP AND 25'-0" LONG FOR ULTIMATE PILE LOADS EQUAL TO OR LESS THAN 50 KIP. BASIS OF DESIGN ASSUMES HELIX CONFIGURATION OF 3 HELICES PER PILE WITH HELIX DIAMETER OF 10 TO 14 INCHES. FINAL LENGTHS, CONFIGURATIONS AND HELIX DIAMETERS SHALL BE DETERMINED BY PILE DESIGNER.
4. HELICAL PILE MANUFACTURER TO DESIGN AND SUPPLY EMBEDDED STEEL PLATE END CAP AT TOP OF HELICAL SHAFT.
5. HELICAL PILE MANUFACTURER TO BATTER PILES AS REQUIRED TO ACHIEVE LATERAL LOADS INDICATED.

KEYNOTES:

1. EXPECT A DENSE ASPHALT LAYER AT 12'-0" BELOW EXISTING GRADE.



HELICAL PILE LOAD PLAN - GREEN HOUSE

2 PLAN NORTH

3/32" = 1'-0"

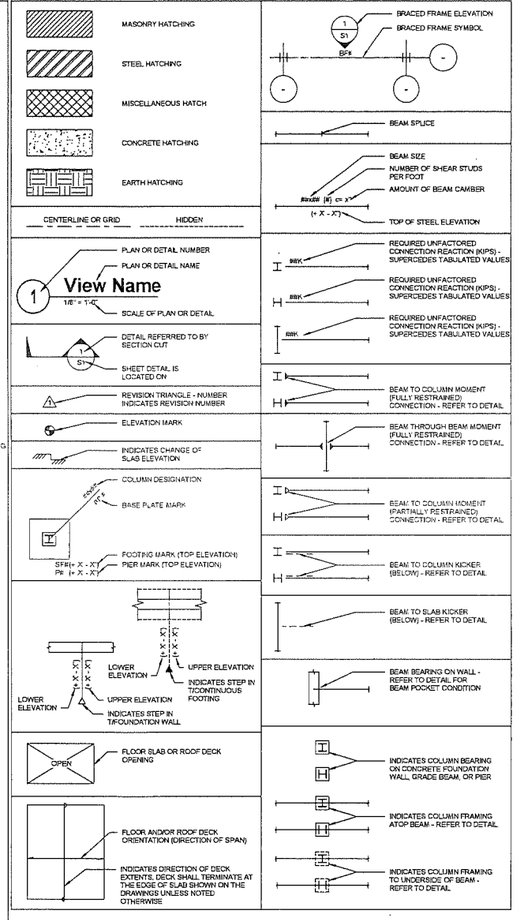
NOTES:

1. LOADS SHOWN ON PLAN ARE ULTIMATE LOADS FOR THE PILE GROUP IN KIPS. UNLESS NOTED OTHERWISE LOADS ARE VERTICAL DOWNWARD FORCES.
2. ALL LOADS SHOWN ARE AT THE BOTTOM OF THE PILE CAP.
3. HELICAL PILE BASIS OF DESIGN IS 50'-0" LONG FOR ULTIMATE PILE LOADS GREATER THAN 100KIP AND 25'-0" LONG FOR ULTIMATE PILE LOADS EQUAL TO OR LESS THAN 50 KIP. BASIS OF DESIGN ASSUMES HELIX CONFIGURATION OF 3 HELICES PER PILE WITH HELIX DIAMETER OF 10 TO 14 INCHES. FINAL LENGTHS, CONFIGURATION, AND HELIX DIAMETERS SHALL BE DETERMINED BY PILE DESIGNER.
4. HELICAL PILE MANUFACTURER TO DESIGN AND SUPPLY EMBEDDED STEEL PLATE END CAP AT TOP OF HELICAL SHAFT.
5. HELICAL PILE MANUFACTURER TO BATTER PILES AS REQUIRED TO ACHIEVE LATERAL LOADS INDICATED.
6. EXPECT AN 8" GRAVEL LAYER ABOUT 18" BELOW EXISTING GRADE THROUGHOUT THE GREENHOUSE FOOTPRINT.

STRUCTURAL ABBREVIATIONS LIST

#	NUMBER
@	AT
°	DEGREES
ø	DIAMETER
AHU	AIR-HANDLING UNIT
APPROX	APPROXIMATE -LY
ARCH	ARCHITECT, -URE, -LY
B.O.	BOTTOM OF
bf	BEAM FLANGE WIDTH
BM	BEAM
BP	BASE PLATE
BRG	BEARING
CFSF	COLD FORM STEEL FRAMING
CJ	CONTROL JOINT
CL	CLEAR
CMU	CONCRETE MASONRY UNIT
CONC	CONCRETE
CONST	CONSTRUCTION
CONT	CONTINUOUS
D	DEPTH
DBL	DOUBLE
DEG	DEGREE
DIM	DIMENSION
DL	DEAD LOAD
DTL	DETAIL
DWG	DRAWING
EA	EACH
EF	EACH FACE
EJ	EXPANSION JOINT
EL	ELEVATION
ELEC	ELECTRICAL
EMBED	EMBEDDED
EOD	EDGE OF DECK
EOS	EDGE OF SLAB
EQ	EQUAL
EQUIP	EQUIPMENT
EW	EACH WAY
EXIST. (E)	EXISTING
EXP	EXPANSION
EXT	EXTERIOR
f'c	CONCRETE COMPRESSIVE STRENGTH
FDN	FOUNDATION
FIN	FINISHED
FL	FLOOR
FT	FOOT
FTG	FOOTING
Fy	YIELD STRESS
GA	GAGE OR GAUGE
GALV	GALVANIZED
GB	GRADE BEAM
GC	GENERAL CONTRACTOR
GYP	GYPSUM
HDG	HOT-DIPPED GALVANIZED
HORIZ	HORIZONTAL
HVAC	HEATING VENTILATION AIR CONDITIONING
HWS	HEADED, WELDED STUD
IN	INCH
INT	INTERIOR
JST	JOIST
JT	JOINT
K, KIP	KILOPOUND (1,000 POUNDS)
KO	KNOCK-OUT
KSF	KIPS PER SQUARE FOOT
L	LENGTH
LB	POUND
LF	LINEAR FOOT
LL	LIVE LOAD
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LSH	LONG SIDE HORIZONTAL
LSV	LONG SIDE VERTICAL
LONG	LONGITUDINAL
ME	MECHANICAL/ELECTRICAL
MAX	MAXIMUM
MECH	MECHANICAL
MEZZ	MEZZANINE
MIN	MINIMUM
MISC	MISCELLANEOUS
MK	MARK
N	NORTH
N	LENGTH (AS PLATES)
NIC	NOT IN CONTRACT
NO	NUMBER
NTS	NOT TO SCALE
OC	ON CENTER
OPNG	OPENING
OPP	OPPOSITE
PAF	POWER ACTUATED FASTENER
PC	PRECAST
PCF	POUNDS PER CUBIC FOOT
PL	PLATE
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PVC	POLYVINYL CHLORIDE
R	RADIUS
RD	ROOF DRAIN
REINF	REINFORCING, -MENT, -ED
REQ'D	REQUIRED
REF	REFERENCE, REFER TO
RTU	ROOF-TOP UNIT
SC	TC WITH CLASS A FAYING SURFACE
SCHED	SCHEDULE
SIM	SIMILAR
SL	SNOW LOAD
SP	SPACE(S)
SPEC	SPECIFICATION(S)
SPEC'D	SPECIFIED
SQ	SQUARE
STD	STANDARD
STIFF	STIFFENER
T.O.	TOP OF
TC	PRETENSIONED BOLT
TEMP	TEMPERATURE
tf	BEAM FLANGE THICKNESS
TRANS	TRANSVERSE
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
VERT	VERTICAL
VIF	VERIFY IN FIELD
VWA	VERIFY WITH ARCHITECTURAL DRAWINGS
WP	WORKING POINT
WT	WEIGHT
WWR	WELDED WIRE REINFORCING
YD	YARD

STRUCTURAL DRAWING SYMBOLS



PILE CAP SCHEDULE

MARK	DEPTH	BOTTOM BARS		TOP BARS		PILES	REMARKS
		SHORT BARS	LONG BARS	SHORT BARS	LONG BARS		
PC2	2' - 0"	(6) #6	(4) #6	(5) #6	(3) #6	2	-
PC3	2' - 0"	(7) #6, 3 WAYS		(5) #6, 3 WAYS		3	-

NOTES:

1. REFER TO S202 FOR PILE CAP DETAILS.

GRADE BEAM SCHEDULE

MARK	WIDTH	BOTTOM ELEVATION	BOTTOM BARS	TOP BARS	SIDE BARS	STIRRUPS	REMARKS
GB1	2' - 2"	+96' - 0"	(4) #7	(4) #6	#5 @ 12" OC	#4 @ 12" OC	-
GB2	1' - 0"	+96' - 0"	(2) #5	(2) #5	#5 @ 12" OC	#4 @ 12" OC	-
GB3	2' - 6"	+96' - 0"	(4) #9	(4) #9	#5 @ 12" OC	#4 @ 12" OC	-
GB4	2' - 0"	+96' - 0"	(4) #8	(3) #8	#5 @ 12" OC	#4 @ 12" OC	-
GB5	1' - 0"	+96' - 0"	(2) #8	(2) #8	#5 @ 12" OC	#4 @ 18" OC	-
GB6	1' - 6"	+96' - 0"	(3) #8	(3) #8	#5 @ 12" OC	#4 @ 12" OC	-
GB7	2' - 0"	+97' - 3"	(3) #7	(3) #7	#5 @ 12" OC	#4 @ 6" OC	-
GB8	1' - 3"	+97' - 7"	(3) #7	(3) #7	-	#4 @ 4" OC	-
GB9	1' - 2 1/2"	+95' - 0"	(3) #8	(3) #8	#5 @ 12" OC	#4 @ 12" OC	-
GB10	2' - 3"	+96' - 0"	(4) #7	(4) #6	#5 @ 12" OC	#4 @ 12" OC	-
GB11	1' - 6"	+96' - 8"	(3) #8	(3) #8	#5 @ 12" OC	#4 @ 12" OC	-
GB12	2' - 2"	+95' - 0"	(4) #9	(4) #9	#5 @ 12" OC	#4 @ 12" OC	-

NOTES:

1. MAINTAIN MINIMUM DEPTH OF 4' - 0" FROM FINISH GRADE TO BOTTOM OF GRADE BEAM ELEVATION. STEP BOTTOM AS REQUIRED.

IMEG 1900 DENTON WAY, SUITE 200 MIDDLETON, WI 53562 608.203.2486 FAX: 866.818.4415 www.imegcorp.com PROJECT # 17M0128.00

IMEG CORP. RECEIVES PROPRIETARY RIGHTS, INCLUDING COPYRIGHTS, TO THIS DRAWING AND THE DATA SHOWN THEREON. AND DRAWING AND DATA ARE THE EXCLUSIVE PROPERTY OF IMEG CORP AND SHALL NOT BE USED OR REPRODUCED FOR ANY OTHER PROJECT WITHOUT THE EXPRESS WRITTEN APPROVAL AND PARTICIPATION OF IMEG CORP. © 2018 IMEG CORP.

REFERENCE SCALE IN INCHES

MSR 710 South 2nd Street, 8th Floor Minneapolis, Minnesota 55401-2282
Architecture 612 375 0336 tel
Interiors and 612 342 2216 fax
Urban Design www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201
Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
303 South Paterson Street, Suite 1
Madison, WI 53703
608.251.3600 tel

Structural Engineer, Technology and A/V
IMEG Corp.
1820 Deming Way, Suite 200
Middleton, WI 53562
608.203.9600 tel

MEP Engineer
MEP Associates, LLC
860 Blue Gentian Road, Suite 175
Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
575 Kiesenbrink Ave West
St. Paul, MN 55102
651.251.1910 tel

Greenhouse Design
Rough Brothers, Inc.
5533 Vine Street
Cincinnati, OH 45217
513.242.0310 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin.
ARCHITECT SEAL

WISCONSIN DANIEL JACK POLING A-9384 MINNEAPOLIS, MN ARCHITECT

Signature:
Print Name:
Date: JUNE 1, 2018 License No.

ISSUE MARK	DATE	DESCRIPTION
	12.08.2017	DD PRICING SET
	01.10.2018	DESIGN DEVELOPMENT SUBMISSION
	03.30.2018	100% CD SUBMISSION
	05.04.2018	90% CONSTRUCTION DOCUMENTS
	06.01.2018	BID ISSUE
	05.04.2018	PERMIT ISSUE
1	05.11.2018	ADDENDUM 1
2	06.22.2018	ADDENDUM 2

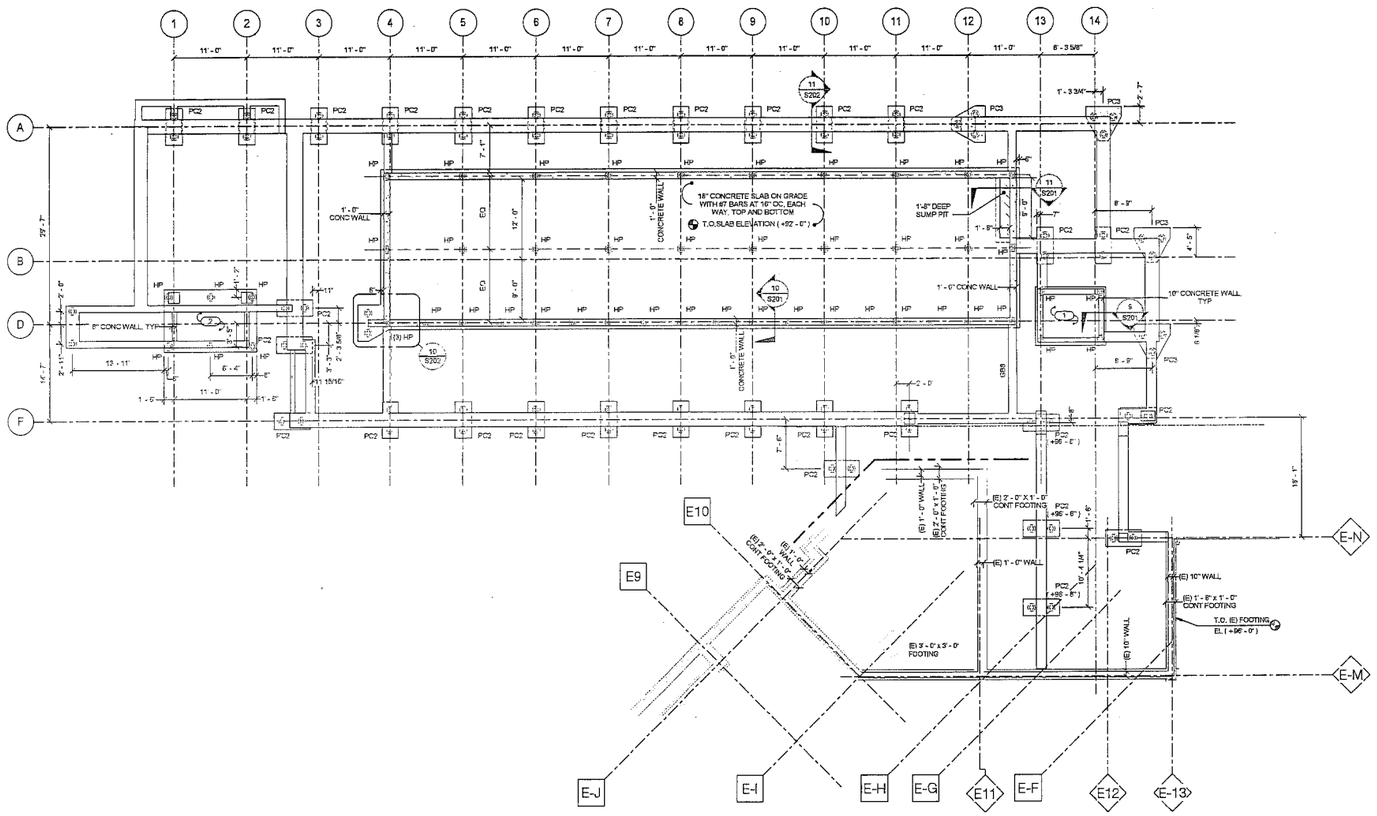
PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: SIDBHO CHECKED BY: ABBPER

SYMBOLS AND ABBREVIATIONS

EXHIBIT G

S002

REVISED



1 LEARNING CENTER HELICAL PILE PLAN

PLAN NORTH

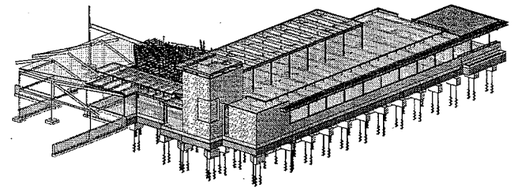
1/8" = 1'-0"

NOTES:

1. PC# INDICATES PILE CAP. REFER TO S002 FOR SCHEDULE AND LOADS, REFER TO S202 FOR DETAILS. TOP OF PILE CAP ELEVATION (+96' - 0"), UNO.
2. SLEEVE UTILITIES THROUGH FOUNDATION PER 12/6201. COORDINATE SIZE AND LOCATION WITH MECHANICAL AND PLUMBING CONTRACTORS.
3. ----- INDICATES APPROXIMATE LOCATION OF EARTH RETENTION SYSTEM (IF EXCAVATION FOR INSTALLATION OF PILE CAP EXTENDS OUT TO UNDERMINE THE EXISTING FOOTING. CONTRACTOR TO PROVIDE EARTH RETENTION SYSTEM DESIGN FOR INSTALLATION AND NOT DISTURB THE EXISTING FOUNDATIONS. GEOTECHNICAL REPORT WILL BE PROVIDED. COORDINATE DRAIN TILE INSTALLATION WITH LOCATION OF EARTH RETENTION SYSTEM. CONTRACTOR OPTION TO USE EARTH RETENTION SYSTEM AS FORMWORK.
4. HP INDICATES HELICAL PILE UNDER MAT SLAB. REFER TO S002 FOR LOADS.
5. CISTERN MAT SLAB AND CISTERN WALLS TO HAVE XYPEX ADDITIVE IN CONCRETE.

KEYNOTES:

1. ELEVATOR PIT SLAB: 18" CONCRETE MAT SLAB WITH #7 @ 18" OC BOTH DIRECTIONS, TOP AND BOTTOM. TOP OF SLAB ELEVATION (+95' - 0"). COORDINATE PIT DEPTH WITH SELECTED ELEVATOR.
2. 18" CONCRETE MAT SLAB WITH #7 @ 18" OC BOTH DIRECTIONS, TOP AND BOTTOM. TOP OF SLAB ELEVATION (+96' - 0").



3D VIEW

IMEG CORP. 5500 DENTON HWY., SUITE 200 ROCKFORD, TX 76262 PH: 254.399.9696 FAX: 866.815.9615 www.imegcorp.com PROJECT #: 2170010.00

IMEG CORP. RETAINS ALL PROPRIETARY RIGHTS, INCLUDING COPYRIGHTS, TO THE DRAWINGS AND THE DATA SHOWN THEREON, AND GRAPHICS WHICH DATA ARE THE EXCLUSIVE PROPERTY OF IMEG CORP AND SHALL NOT BE USED OR REPRODUCED FOR ANY OTHER PROJECT WITHOUT THE EXPRESS WRITTEN APPROVAL AND PARTICIPATION OF IMEG CORP. © 2018 IMEG CORP.

REFERENCE SCALE INCHES

0 1 2 3

MSR 710 South 2nd Street, 8th Floor Minneapolis, Minnesota 55401-2282
Architecture Interiors and Urban Design 612.375.0336 tel 612.342.2216 fax www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201 Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
303 South Paterson Street, Suite 1 Madison, WI 53703
608.251.3600 tel

Structural Engineer, Technology and AV
IMEG Corp.
1600 Deming Way, Suite 200 Middleton, WI 53562
608.203.9600 tel

MEP Engineer
MEP Associates, LLC
655 Blue Cypress Road, Suite 175 Eagan, MN 55121
651.379.9129 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
575 Bandanna Ave West St. Paul, MN 55103
651.251.1990 tel

Greenhouse Design
Rough Brothers, Inc.
5513 Vine Street Cincinnati, OH 45217
513.242.2310 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin.
ARCHITECT SEAL

WISCONSIN DANIEL JACK POLING A-5094 MINNEAPOLIS, MN ARCHITECT

Signature:
Print Name:
Date: JUNE 1, 2018 License No:

MARK	DATE	DESCRIPTION
	12.05.2017	CD PRICING SET
	01.19.2018	DESIGN DEVELOPMENT SUBMISSION
	03.30.2018	75% CD SUBMISSION
	05.04.2018	90% CONSTRUCTION DOCUMENTS
	05.01.2018	BID ISSUE
	05.04.2018	PERMIT ISSUE
2	06.22.2018	ADDENDUM 2

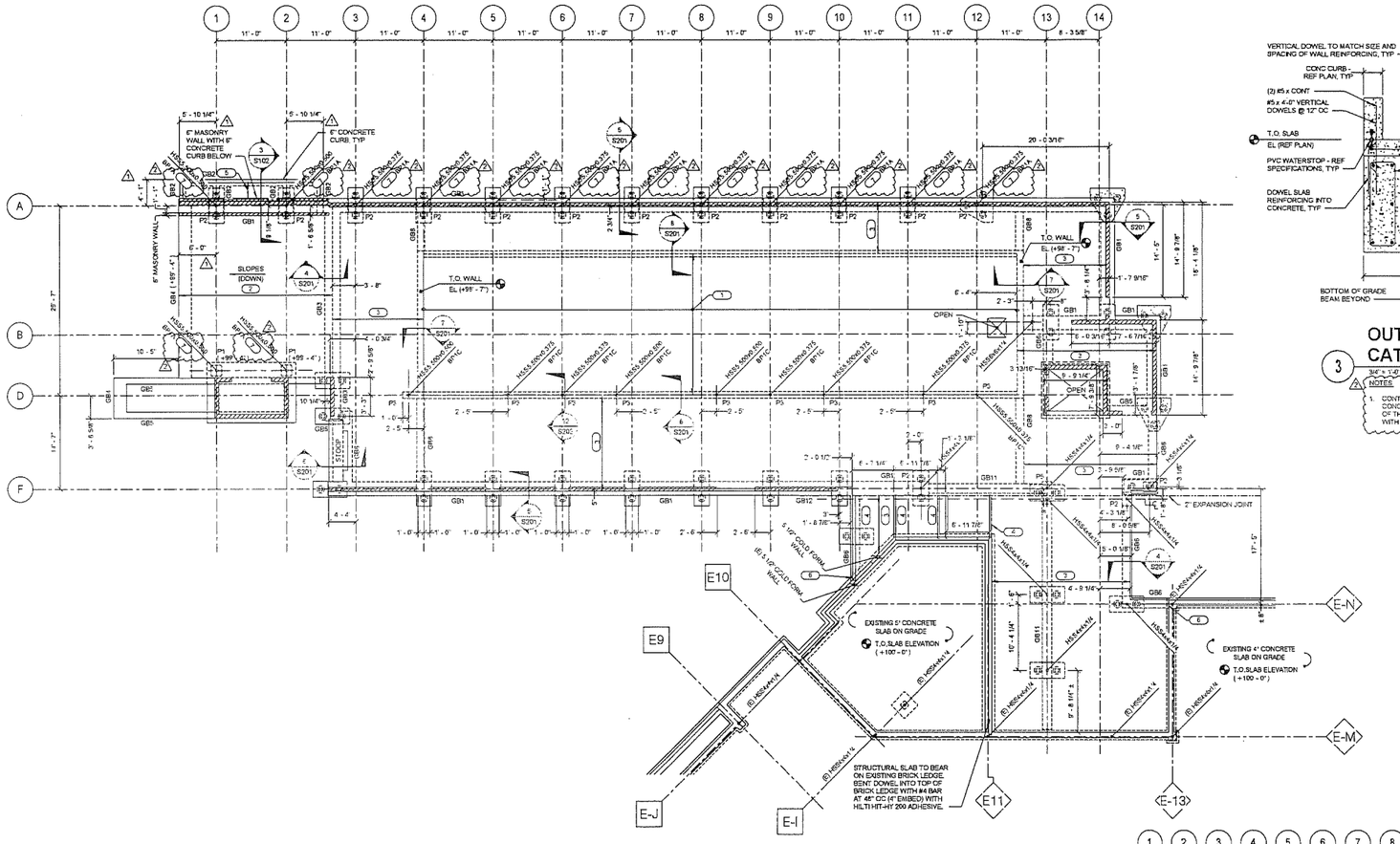
PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: SIDB/HO CHECKED BY: ABBPER

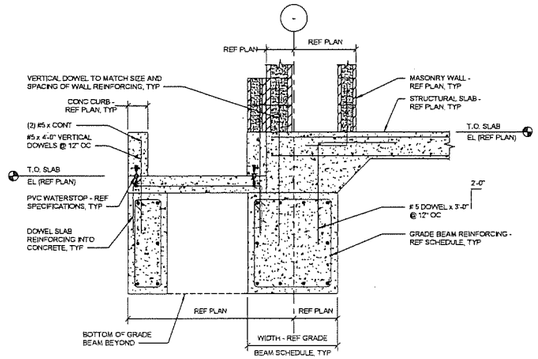
LEARNING CENTER HELICAL PILE PLAN

EXHIBIT G

S101

REVISED





OUTDOOR CLASSROOM CATCH BASIN DETAIL

3 — 3/4" = 1'-0"

NOTES

1. CONTRACTOR OPTION TO CUT BLOCK OR POUR CONCRETE CURB TO MAINTAIN COURSING AT THE TOP OF THE INTERIOR FINISH FLOOR. VERIFY ALL COURSING WITH ARCHITECTURAL DRAWINGS.

1 LEARNING CENTER FOUNDATION PLAN

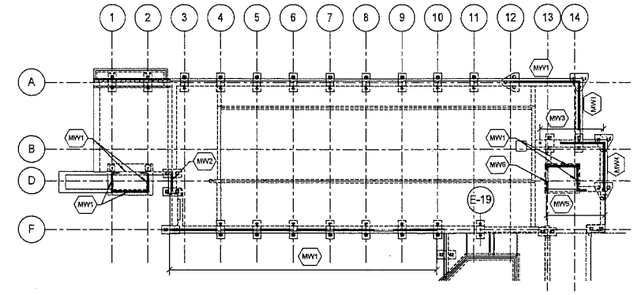
1/8" = 1'-0"

NOTES:

1. TOP OF FOUNDATION WALL ELEVATION (+98' - 3"), UNO.
2. ALL MASONRY WALLS SHOWN ARE TO BE NOMINALLY 8" WITH #5 @ 48" OC, UNO. MASONRY SHEAR WALL LAYOUT ON THIS SHEET FOR MASONRY SHEAR WALL LOCATION AND REINFORCING.
3. BPW INDICATES BASE PLATE. REFER TO S202 FOR ANCHOR ROD AND BASE PLATE DETAILS.
4. PW INDICATES CONCRETE PIER. REFER TO S202 FOR DETAILS. TOP OF PIER ELEVATION MATCHES TOP OF WALL OR GRADE BEAM, UNO.
5. PROVIDE 2'-6" x 2'-6" CORNER BARS FOR GRADE BEAM AND WALL INTERSECTIONS. BAR SIZE AND QUANTITY TO MATCH LONGITUDINAL AND HORIZONTAL BARS.
6. REFER TO DETAIL 12/S202 FOR OPENINGS IN HOLLOWCORE PLANK.
7. SLEEVE UTILITIES THROUGH FOUNDATION PER 12/S291. COORDINATE SIZE AND LOCATION WITH MECHANICAL AND PLUMBING CONTRACTORS.
8. GBx INDICATES GRADE BEAM. REFER TO S002 FOR GRADE BEAM SCHEDULE. TOP OF GRADE BEAM ELEVATION (+98' - 7"), UNO.
9. REFER TO DETAILS 1, 2 AND 3 ON S201 FOR STRUCTURAL SLAB DETAILS.

KEYNOTES:

1. SLAB ON INSULATION ON PRECAST PLANK WITH TOPPING
   5" CONCRETE TOPPING SLAB WITH 6x6 - W2.1xW2.1 WWR. TOP OF SLAB = (+100' - 0")
   4" ASTM D6947 EPS 12 BY GEOFOAM OR EQUIVALENT
   2" COMPOSITE CONCRETE TOPPING SLAB WITH 6x6 - W1.4xW1.4 WWR
   10" HOLLOWCORE SLAB. THE HOLLOWCORE SLAB IS TO BE DESIGNED FOR 65 PSF SUPERIMPOSED DEAD LOAD (EXCLUDES 2" COMPOSITE TOPPING) AND 100 PSF SUPERIMPOSED LIVE LOAD. HOLLOWCORE TO BE DESIGNED WITH APPROPRIATE CLEAR COVER TO PROTECT AGAINST WATER MOISTURE EXPOSURE AT BOTTOM OF THE PLANK.
2. 8" STRUCTURAL SLAB WITH #6 @ 12" OC TOP AND BOTTOM AND #4 @ 12" OC TEMPERATURE REINFORCING. TOP OF SLAB = (+100' - 0"). SLAB IS TO BE SLOPED PER ARCHITECTURAL DRAWINGS. THICKNESS OF SLAB IS TO BE CONSTANT THROUGHOUT.
3. SLAB ON INSULATION ON STRUCTURAL SLAB:
   5" CONCRETE TOPPING SLAB WITH 6x6 - W2.1xW2.1 WWR. TOP OF SLAB = (+100' - 0")
   4" ASTM D6947 EPS 12 BY GEOFOAM OR EQUIVALENT
   8" STRUCTURAL SLAB WITH #6 @ 12" OC TOP AND BOTTOM AND #4@12" OC TEMPERATURE REINFORCING.
4. COLD FORM BEARING WALL. WALL TO BE DESIGNED FOR 150LB DEAD LOAD AND 550LB SNOW LOAD. CONCRETE CURB BETWEEN TOP OF STRUCTURAL SLAB AND BOTTOM OF TOPPING SLAB TO BE PROVIDED AT EACH WALL LOCATION.
5. 5" STRUCTURAL SLAB WITH #4 @ 12" OC EACH WAY. TOP OF SLAB = (+99' - 9").
6. DOWEL REINFORCING OF GRADE BEAM INTO EXISTING PIER AND ANCHOR WITH HILTI HIT-HY 270 (4" EMBED).
7. CATEGORY 3 AESS FINISH - REFER TO SPECIFICATION.



2 MASONRY SHEAR WALL LAYOUT

1/16" = 1'-0"

MASONRY WALL REINFORCING SCHEDULE

MARK	VERTICAL	HORIZONTAL	END ZONES	NOTES
MW1	#5 @ 48" OC	-	(1) CELL WITH (1) #5	-
MW2	#5 @ 24" OC	-	(2) CELLS WITH (1) #5 EACH CELL	-
MW3	REFER TO 4/S104			-
MW4	REFER TO 3/S104			-
MW5	REFER TO 2/S104			-
MW6	REFER TO 5/S104			-

NOTES:

1. TYPICAL HORIZONTAL REINFORCING IS AS PER SPECIFICATIONS, IT IS INTENDED TO BE "DUROWAL - LADDER TYPE" OR EQUIVALENT.
2. REINFORCED CORES ARE ALWAYS GROUTED.
3. REFER TO 8/S301 FOR TYPICAL MASONRY OPENING AND END ZONE DETAIL.
4. END ZONE REINFORCEMENT CONTROL OVER TYPICAL VERTICAL REINFORCEMENT. TYPICAL VERTICAL REINFORCEMENT APPLIES BETWEEN END ZONES.
5. PROVIDE BOND BEAM WITH (2) #5 AT EACH LEVEL, UNLESS NOTED OTHERWISE IN DETAILS.

IMEG
1400 DEMING WAY, SUITE 200
MADISON, WI 53562
608.251.3600 FAX: 608.836.3615
www.imegcorp.com
PROJECT # 17W4000.00

IMEG CORP. RESERVES PROPRIETARY RIGHTS, INCLUDING COPYRIGHTS, TO THE CONCEPTS, DESIGNS, DRAWINGS, AND SPECIFICATIONS. ALL DRAWINGS ARE THE EXCLUSIVE PROPERTY OF IMEG CORP. AND SHALL NOT BE USED OR REPRODUCED FOR ANY OTHER PROJECT WITHOUT THE EXPRESS WRITTEN APPROVAL AND PARTICIPATION OF IMEG CORP. © 2018 IMEG CORP.

REFERENCE SCALE INCHES
0 1 2 3

MSR
710 South 2nd Street, 8th Floor
Minneapolis, Minnesota 55401-2282
Architecture, Interiors and Urban Design
612 375 0336 tel
612 342 2216 fax
www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201
Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
303 South Paterson Street, Suite 1
Madison, WI 53703
608.251.3600 tel

Structural Engineer, Technology and A/V
IMEG Corp.
1400 Deming Way, Suite 200
Middleton, WI 53562
608.323.9600 tel

MEP Engineer
MEP Associates, LLC
850 Blue Gentian Road Suite 175
Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
575 Memorial Ave West
St Paul, MN 55102
651.251.1880 tel

Greenhouse Design
Rough Brothers, Inc.
5510 West Street
Cincinnati, OH 45217
513.242.6010 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin.
ARCHITECT SEAL

WISCONSIN
DANIEL JACK POLING
A-5594
MINNEAPOLIS, MN
ARCHITECT

Signature:
Print Name:
Date: JUNE 1, 2018 License No.

ISSUE MARK	DATE	DESCRIPTION
	12.06.2017	DD PRICING SET
	01.19.2018	DESIGN DEVELOPMENT SUBMISSION
	03.30.2018	75% CD SUBMISSION
	05.04.2018	100% CONSTRUCTION DOCUMENTS
	06.01.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE
1	06.11.2018	ADDENDUM 1
2	06.22.2018	ADDENDUM 2

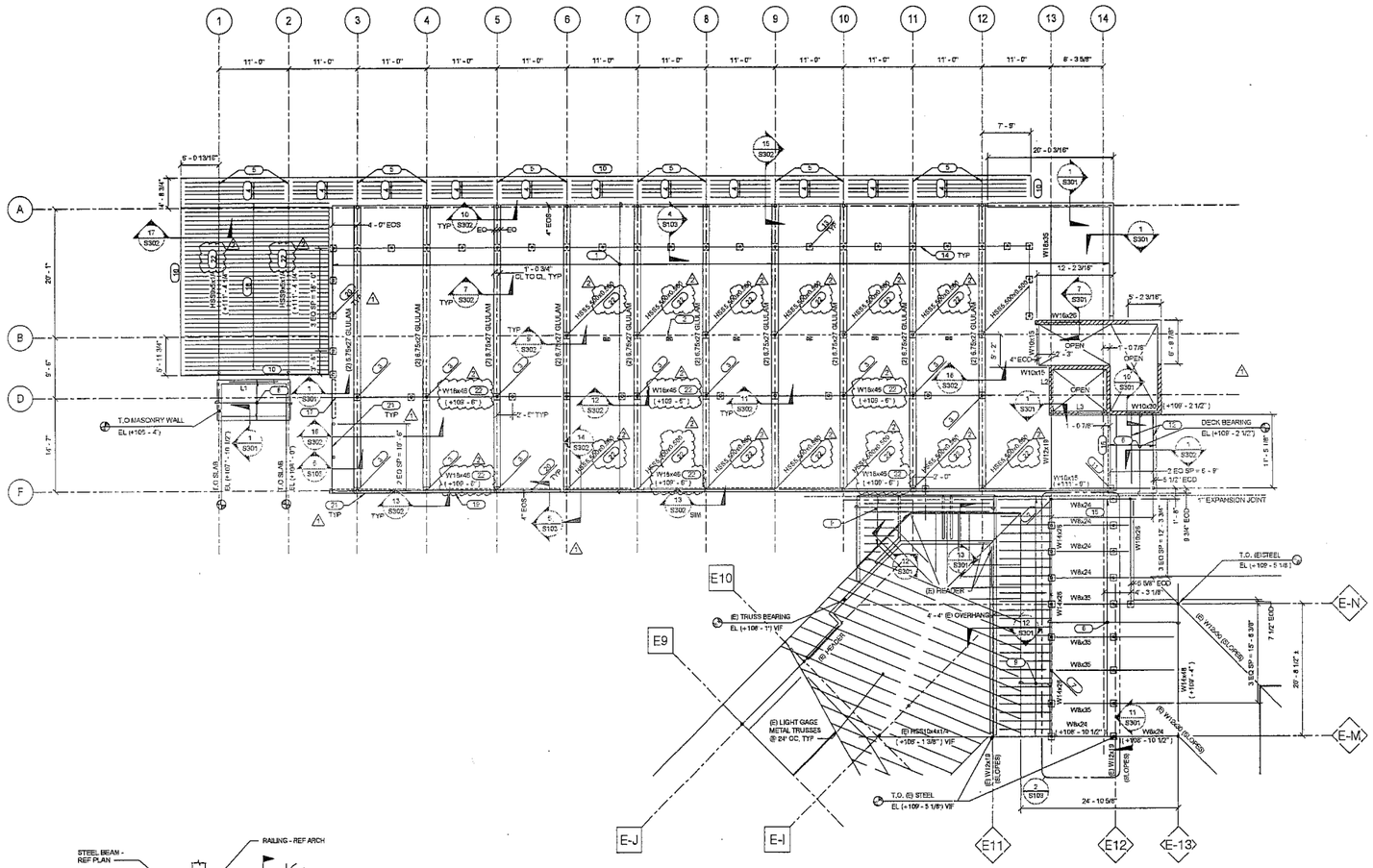
PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: SIDBHO CHECKED BY: ABBPER

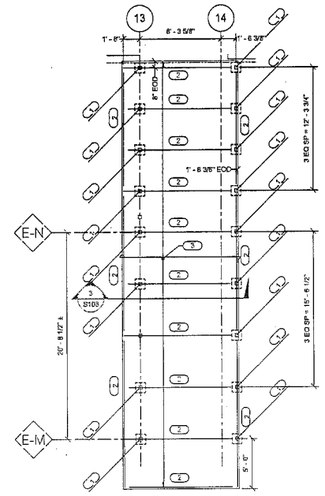
LEARNING CENTER FOUNDATION PLAN

EXHIBIT G

S102

REVISED



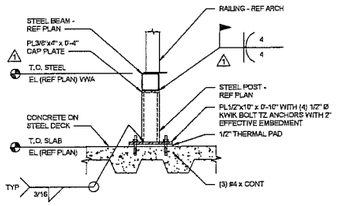


2 POP UP FRAMING PLAN

3/16" = 1'-0"

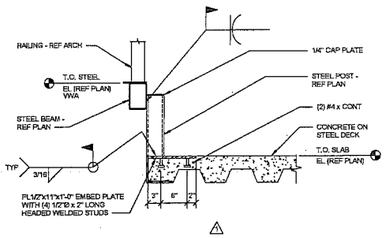
KEYNOTES:

1. HSS4x4x1/4 POST, DOWN TO ROOF BELOW.
2. HSS6x6x1/4 BEAM.
3. 1 1/2" (20GA) STEEL DECK, 2 SPAN MINIMUM. FASTENING = 28/4 (1) WITH 5/8" PUDDLE WELD AND #10 SIDESLAP SCREWS. DECK BEARING = (+110' - 11")



4 RAILING SUPPORT DETAIL

1" = 1'-0"



5 RAILING SUPPORT DETAIL

1" = 1'-0"

1 LEARNING CENTER LEVEL 2 FRAMING PLAN

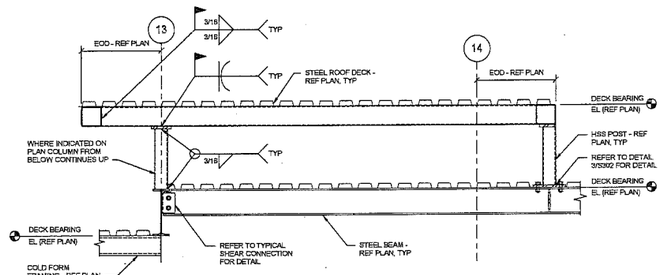
1/8" = 1'-0"

NOTES:

1. REFER TO 6/S302 FOR TYPICAL SHEAR CONNECTION.
2. L# INDICATES LINTEL IN STRUCTURAL MASONRY WALL - REFER TO 9/S301 FOR SCHEDULE.
3. FOR LINTELS IN NON-STRUCTURAL WALLS, REFER TO GENERAL NOTES FOR SCHEDULE.

KEYNOTES:

1. 3" NORMAL - WEIGHT CONCRETE ON 3" (18 GA) COMPOSITE STEEL DECK, 2 SPAN MINIMUM, WITH 6x6 - W2.1xW2.1 WWR. TOTAL THICKNESS = 6". TOP OF SLAB ELEVATION (+112' - 9"). FASTENING = 36/4 (3) @ STEEL FRAMING USE 5/8" PUDDLE WELDS AND WELDED SIDELAPS @ GLULAM FRAMING, USE #10 TRUGRIP LAG SCREWS FOR SUPPORT FASTENERS (1 1/4") MIN EMBED AND WELDED SIDELAPS.
2. FLOOR PENETRATION - REFER TO 14/S301 FOR DETAIL.
3. HSS5.563x0.375 POST FROM TOP OF STEEL BEAM TO BOTTOM OF DECK. REFER TO DETAIL 12/S302.
4. 2x10 ACCOYA @ 10 3/4" OC, TOP OF BEAM = (+112' - 3"). REFER TO ARCHITECTURAL DRAWINGS FOR EXACT SPACING.
5. HSS3x3x1/4 OUTRIGGER, CATEGORY 3 AESS FINISH - REFER TO SPECIFICATION, VERIFY EXTENTS WITH ARCHITECT. TOP OF STEEL ELEVATION = (+111' - 6 1/4").
6. 1 1/2" (20 GA) STEEL DECK, 2 SPAN MINIMUM, FASTENING = 36/4 (1) WITH 5/8" PUDDLE WELDS AND #10 SIDELAP SCREWS. DECK BEARING = (+108' - 10 1/2"), UNO.
7. COLUMN EXTENDS TO POP UP ROOF ABOVE.
8. 3" NORMAL - WEIGHT CONCRETE ON 2" (20 GA) CONFORM DECK, 1 SPAN, WITH 6x6 - W1.4xW1.4 WWR. TOTAL THICKNESS = 5".
9. 1 1/2" (22GA) TYPE B ROOF DECK SUPPORTED BY 6" COLD FORM JOISTS AT 16" OC. REFER TO LOADS ON 6/S104. DECK BEARING = (+107' - 9").
10. C8x30.5 x CONT (+112' - 8 1/2") CATEGORY 3 AESS FINISH - REFER TO SPECIFICATION, VERIFY EXTENTS WITH ARCHITECT.
11. HSS3x3x1/4 POST FROM (+108' - 10") TO (+110' - 9"). REFER TO DETAILS 3 AND 4/S302.
12. W8x15, TOP OF STEEL ELEVATION = (+109' - 2 1/2").
13. HSS4x0.313 POST (GALV). POSTS TO BE CENTERED UNDER VERTICAL POSTS OF GUARD RAIL AT 5' - 6" OC MAX. REFER TO ARCHITECTURAL DRAWING FOR EXACT LOCATION OF GUARD RAIL POSTS.
14. HSS4x4x1/4 (GALV) x CONTINUOUS RAILING SUPPORT, TOP OF STEEL ELEVATION = (+113' - 7").
15. W10x26 (+109' - 2 1/2") TRANSFER BEAM
16. W12x19 (+111' - 9") - EOS = 1'-0"
    W8x15 (+109' - 2 1/2") - EOD = 4 1/2"
    REFER TO DETAIL 17/S301.
17. REFER TO 5/S301 SIM FOR BEAM BEARING ON MASONRY DETAIL.
18. 2x TONGUE AND GROVE WOOD DECK WITH CONTROLLED RANDOM LAY-UP OVER 2x6 ACCOYA @ 6" OC MAX. TOP OF BEAM = (+112' - 0"). REFER TO ARCHITECTURAL DRAWINGS FOR EXACT SPACING. EACH PIECE OF WOOD DECK TO BE FASTENED AT EACH JOIST WITH (1) 16d NAIL TOENAILED INTO THE TOUNGE AND (2) 16d FACE NAILS.
19. MC18x42.7 X CONT (+109' - 5") CATEGORY 3 AESS FINISH - REFER TO SPECIFICATION, VERIFY EXTENTS WITH ARCHITECT.
20. HSS4x4x3/8 POST (GALV). POSTS TO BE CENTERED UNDER VERTICAL POSTS OF GUARD RAIL AT 5'-6" OC MAX. REFER TO ARCHITECTURAL DRAWING FOR EXACT LOCATION OF GUARD RAIL POSTS.
21. HSS9x4x1/4 (LSV) (GALV) x CONTINUOUS RAILING SUPPORT, TOP OF STEEL ELEVATION = (+113' - 7").
22. CATEGORY 3 AESS FINISH - REFER TO SPECIFICATION.



3 POP UP FRAMING DETAIL

3/4" = 1'-0"

MSR 710 South 2nd Street, 8th Floor Minneapolis, Minnesota 55401-2282
Architecture Interiors and Urban Design 612.375.0336 tel 612.342.2216 fax www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201 Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
303 South Paterson Street, Suite 1 Madison, WI 53703
608.251.3600 tel

Structural Engineer, Technology and A/V
IMEG Corp.
1600 Deming Way, Suite 200 Middleton, WI 53562
608.223.9600 tel

MEP Engineer
MEP Associates, LLC
860 Blue Gentian Road, Suite 175 Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
575 Nemadji Ave West St. Paul, MN 55103
651.291.1550 tel

Greenhouse Design
Rough Brothers, Inc.
5143 Vine Street Cincinnati, OH 45217
513.242.5010 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin.
ARCHITECT SEAL

WISCONSIN DANIEL JACK POLING A-5294 MINNEAPOLIS, MN ARCHITECT

Signature:
Print Name:
Date: JUNE 1, 2018 License No:

ISSUE		
NUMB	DATE	DESCRIPTION
	12.04.2017	DD PRICING SET
	01.10.2018	DESIGN DEVELOPMENT SUBMISSION
	03.16.2018	100% DD SUBMISSION
	05.04.2018	100% CONSTRUCTION DOCUMENTS
	06.01.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE
1	06.11.2018	ADDENDUM 1
2	06.22.2018	ADDENDUM 2

PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY SJD/BHO CHECKED BY ABS/PER

Drawing [2017] Copyright Ninen, Solomon & Associates, SC

LEARNING CENTER LEVEL 2 FRAMING PLAN

EXHIBIT G

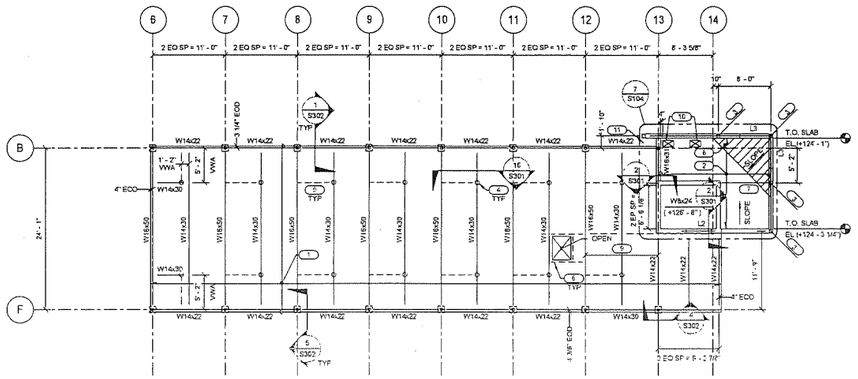
S103

REVISED

IMEG 1600 DEMING WAY, SUITE 200 MIDDLETON, WI 53562 608.223.9600 FAX: 608.836.1818 www.imegcorp.com PROJECT # 17161.00.00

IMEG CORP. RETAINS ALL PROPRIETARY RIGHTS, INCLUDING COPYRIGHTS, TO THIS DRAWING AND THE DATA SHOWN THEREON. AND DRAWING AND/OR DATA ARE THE EXCLUSIVE PROPERTY OF IMEG CORP AND SHALL NOT BE USED OR REPRODUCED FOR ANY OTHER PROJECT WITHOUT THE EXPRESS WRITTEN APPROVAL AND PARTICIPATION OF IMEG CORP. © 2018 IMEG CORP.

REFERENCE SCALE: 3 INCHES 0 1 2 3



1 LEARNING CENTER ROOF FRAMING PLAN

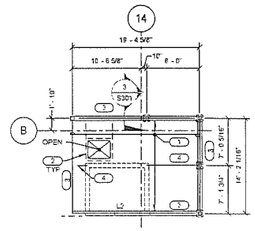
1/8" = 1'-0"

NOTES

1. REFER TO 6/S302 FOR TYPICAL SHEAR CONNECTION.
2. ● INDICATES ASTM F1852 BOLT WITH A CLASS A FAYING SURFACE IS TO BE PROVIDED IN SHEAR CONNECTION.
3. LF INDICATES LINTEL IN STRUCTURAL MASONRY WALL - REFER TO 9/S301 FOR SCHEDULE.
4. FOR LINTELS IN NON-STRUCTURAL WALLS, REFER TO GENERAL NOTES FOR SCHEDULE.

KEYNOTES

1. 1 1/2" (20 GA) STEEL DECK, 2 SPAN MINIMUM, FASTENING = 36/4 (1) WITH 5/8" PUDDLE WELDS AND #10 SIDELAP SCREWS, DECK BEARING ELEVATION (+123' - 3 1/2"), UNO.
2. 3" NORMAL - WEIGHT CONCRETE ON 2" (20 GA) CONFORM DECK, 1 SPAN, WITH 6x6 - W1.4xW1.4 WWR, TOTAL THICKNESS = 5". SEE PLAN FOR ELEVATIONS.
3. HSS6x6x5/16 POSTS.
4. FALL ARREST POST BY OTHERS. HOLES FOR ANCHORING OF POSTS TO BE PROVIDED. STEEL FABRICATOR TO COORDINATE WITH FALL ARREST SYSTEM PROVIDED.
5. L4x4x1/4 KICKER.
6. PROVIDE ANGLE FRAMING AROUND OPENINGS IN ROOF DECK PER 15/S301.
7. L6x5x3/8, MINIMUM 4" BEARING ON GROUTED MASONRY BLOCK EACH END.
8. PROVIDE CONCRETE BUILD UP TO FORM SLOPE. REFER TO ARCHITECTURAL DRAWINGS FOR SLOPE REQUIREMENTS. MAXIMUM BUILD UP EQUAL TO 2".
9. CONTINUE DECK EDGE ANGLE PAST END OF MASONRY WALL. AFTER MASONRY WALL ENDS PROVIDE PLATE ON BACK SIDE OF ANGLE, REFER TO DETAIL 18/301.
10. FLOOR PENETRATION - REFER TO 14/S301 FOR DETAIL.
11. L6x4x3/8 (LLV), PROVIDE 4" BEARING OF HORIZONTAL LEG EACH END AND WELD TO BEARING.

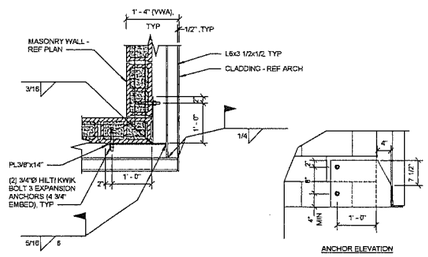


7 PLENUM ROOF

1/8" = 1'-0"

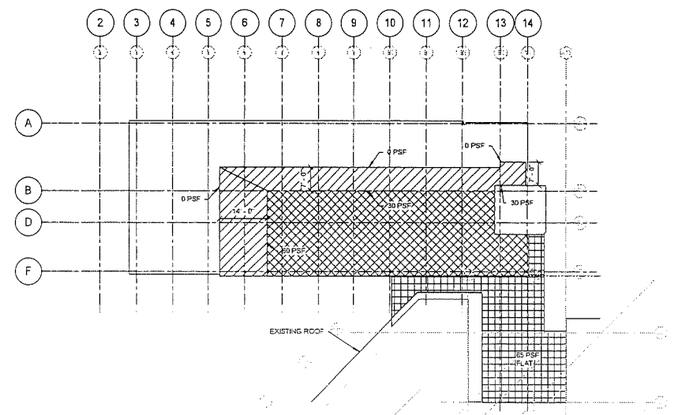
KEYNOTES

1. 1 1/2" (20 GA) STEEL DECK, FASTENING = 36/4 (1) WITH 5/8" PUDDLE WELDS AND #10 SIDELAP SCREWS. DECK BEARING ELEVATION (+123" - 3 1/2"), UNO.
2. PROVIDE ANGLE FRAMING AROUND OPENINGS PER 15/S301.
3. HSS8x8x1/4 (+123" - 11 1/2").
4. L6x6x3/8 (+123" - 3 1/2"), MINIMUM 4" BEARING ON GROUTED BLOCK EACH END.



8 LINTEL SUPPORT

3/4" = 1'-0"

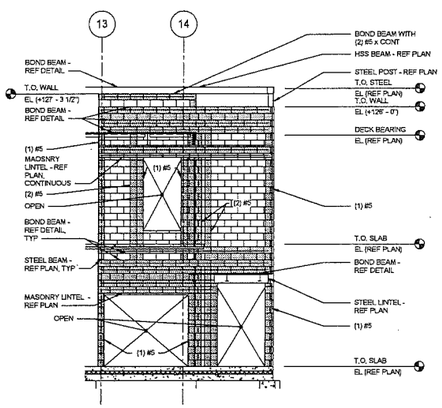


6 LEARNING CENTER ROOF LOAD PLAN

1/16" = 1'-0"

NOTES

1. ALL INDICATED LOADS ARE IN ADDITION TO THE FOLLOWING DESIGN LOADS
   ROOF DEAD LOAD = 25 PSF
   SNOW LOAD = SEE S001.
2. ▨ INDICATES TAPERED SNOW DRIFT LOAD.
3. ▦ INDICATES FLAT SNOW DRIFT LOAD.
4. ▩ INDICATES ROOF SUPPORTING SOLAR PANELS, DESIGN DEAD LOAD = 10 PSF.

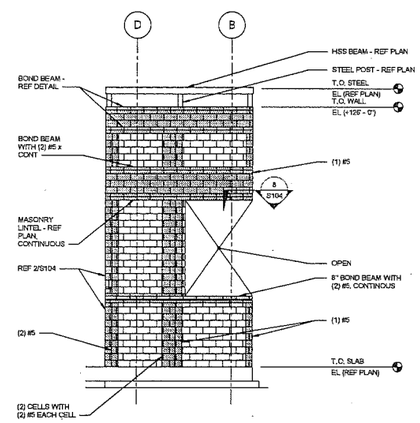


2 MASONRY SHEAR WALL ELEVATION - WEST FACE

3/16" = 1'-0"

NOTES:

1. ELEVATION SHOWN IS LOOKING EAST.
2. REFER TO DETAILS 4, 5, AND 8/S301 FOR TYPICAL BEAM BEARING AT THE END OF STEEL LINTELS.
3. REFER TO 8/S301 FOR CONDITIONS NOT COVERED BY ELEVATION.

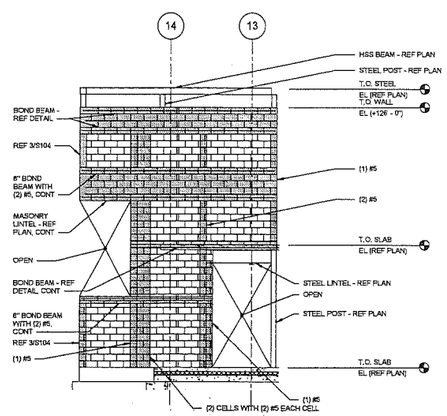


3 MASONRY SHEAR WALL ELEVATION - SOUTH FACE

3/16" = 1'-0"

NOTES:

1. ELEVATION SHOWN IS LOOKING NORTH.
2. REFER TO DETAILS 4, 5, AND 8/S301 FOR TYPICAL BEAM BEARING AT THE END OF STEEL LINTELS.
3. REFER TO 8/S301 FOR CONDITIONS NOT COVERED BY ELEVATION.

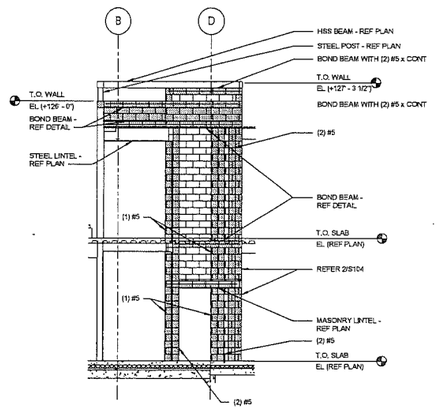


4 MASONRY SHEAR WALL ELEVATION - EAST FACE

3/16" = 1'-0"

NOTES:

1. ELEVATION SHOWN IS LOOKING WEST.
2. REFER TO DETAILS 4, 5, AND 8/S301 FOR TYPICAL BEAM BEARING AT THE END OF STEEL LINTELS.
3. REFER TO 8/S301 FOR CONDITIONS NOT COVERED BY ELEVATION.



5 MASONRY SHEAR WALL ELEVATION - NORTH FACE

3/16" = 1'-0"

NOTES:

1. ELEVATION SHOWN IS LOOKING SOUTH.
2. REFER TO DETAILS 4, 5, AND 8/S301 FOR TYPICAL BEAM BEARING AT THE END OF STEEL LINTELS.
3. REFER TO 8/S301 FOR CONDITIONS NOT COVERED BY ELEVATION.

IMEG CORP. RESERVED PROPRIETARY RIGHTS, INCLUDING COPYRIGHTS, TO THIS DRAWING AND TO ITS CONTENTS WHICH, IN WHOLE OR IN PART, ARE EXCLUSIVELY THE PROPERTY OF IMEG CORP. AND SHALL NOT BE USED OR REPRODUCED FOR ANY OTHER PROJECT WITHOUT THE EXPRESS WRITTEN APPROVAL AND PARTICIPATION OF IMEG CORP. © 2018 IMEG CORP.

REVISED

MSR
710 South 2nd Street, 8th Floor
Minneapolis, Minnesota 55401-2682
Architecture Interiors and Urban Design
612 375 0334 tel
612 342 2216 fax
www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201
Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
323 South Paterson Street, Suite 1
Madison, WI 53703
608.251.3600 tel

Structural Engineer, Technology and A/V
IMEG Corp.
1800 Deming Way, Suite 200
Middleton, WI 53562
608.833.9600 tel

MEP Engineer
MEP Associates, LLC
850 Bur Oaks Road Suite 170
Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
525 Memorial Ave West
St. Paul MN 55102
651.291.1889 tel

Greenhouse Design
Rough Brothers, Inc.
6513 Vine Street
Cincinnati, OH 45216
513.242.0310 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin.
ARCHITECT SEAL

WISCONSIN
DANIEL JACK POLING
A-5204
MINNEAPOLIS, MN
ARCHITECT

Signature
Print Name
Date JUNE 1, 2018 License No.

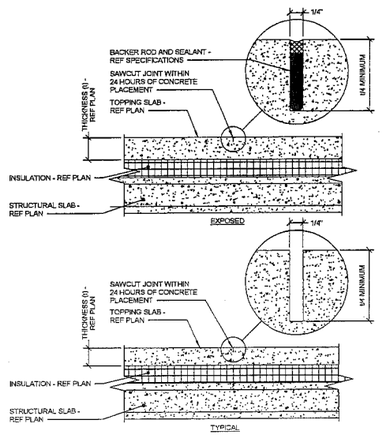
ISSUE		
NUMB.	DATE	DESCRIPTION
	12.06.2017	DD PRICING SET
	01.19.2018	DESIGN DEVELOPMENT SUBMISSION
	03.30.2018	70% CD SUBMISSION
	05.04.2018	90% CONSTRUCTION DOCUMENTS
	06.01.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE
2	06.22.2018	ADDENDUM 2

PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: SIDSHO
CHECKED BY: ABEPER

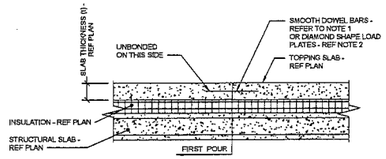
LEARNING CENTER ROOF FRAMING PLAN

EXHIBIT G

S104

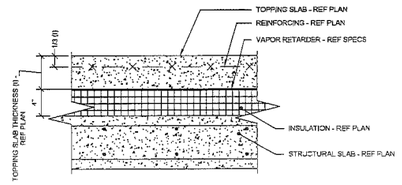


1 TYPICAL TOPPING SLAB CONTROL JOINT
1" = 1'-0"

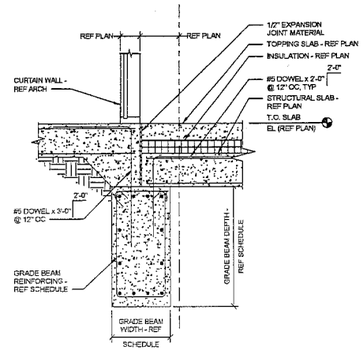


2 TYPICAL TOPPING SLAB CONSTRUCTION JOINT
3/4" = 1'-0"

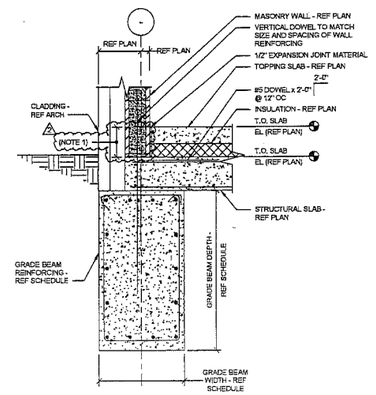
NOTES:
1. 3/4"Ø X 1'-2" SMOOTH DOWEL BARS AT 12" OC.
2. 1/4"x4 1/2"x4 1/2" DIAMOND LOAD PLATES AT 18" OC.
3. DOWEL BAR AT TOPPING SLAB CONSTRUCTION JOINT NOT REQUIRED IN THE CLASSROOM.



3 TYPICAL TOPPING SLAB SECTION
1 1/2" = 1'-0"

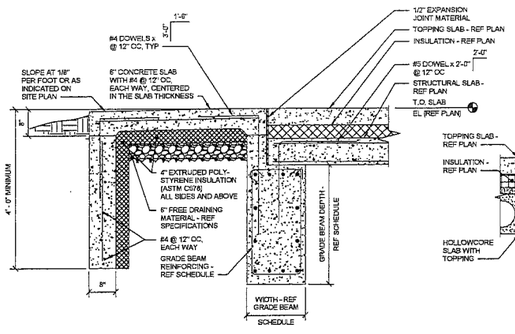


4 CURTAIN WALL CURB DETAIL
3/4" = 1'-0"



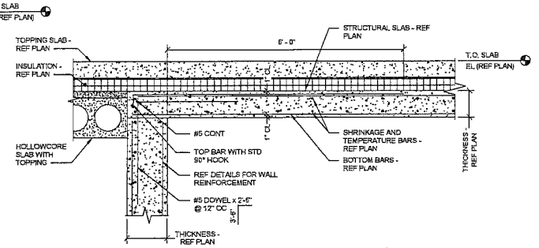
5 EXTERIOR WALL DETAIL
3/4" = 1'-0"

NOTES:
1. CONTRACTOR OPTION TO CUT BLOCK OR POUR CONCRETE CURB TO MAINTAIN COURSING AT TOP OF THE FINISH FLOOR. VERIFY ALL COURSING WITH ARCHITECTURAL DRAWINGS.

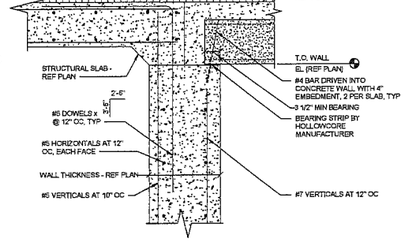


6 TYPICAL STOOP SECTION
3/4" = 1'-0"

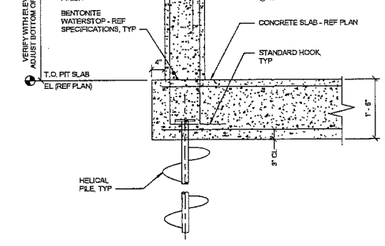
NOTES:
1. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT STOOP LAYOUT AND LOCATIONS.
2. REFER TO TYPICAL FOUNDATION WALL DETAIL FOR INFORMATION NOT SHOWN.



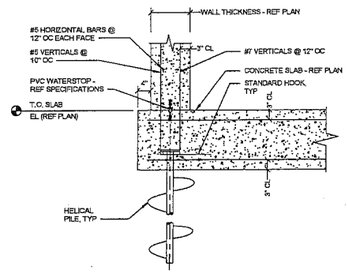
7 TYPICAL ONE WAY SECTION
3/4" = 1'-0"



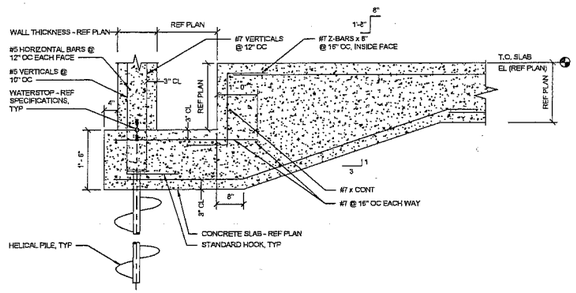
8 HOLLOW CORE BEARING DETAIL
1" = 1'-0"



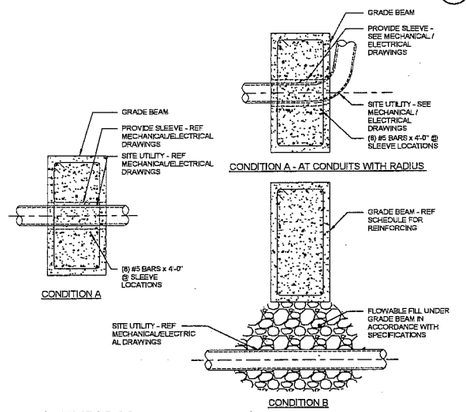
9 ELEVATOR PIT SECTION
3/4" = 1'-0"



10 WALL BEARING ON MAT SLAB DETAIL
3/4" = 1'-0"



11 SUMP PIT IN MAT SLAB DETAIL
3/4" = 1'-0"



12 TYPICAL FOUNDATION DETAILS AT SITE UTILITIES
3/4" = 1'-0"

NOTES:
1. SEE MECHANICAL AND ELECTRICAL DRAWINGS FOR ALL LOCATIONS, ELEVATIONS, ETC, OF SITE UTILITIES. CONTRACTOR SHALL NOTIFY ENGINEER SHOULD SUCH A CONDITION ARISE AND AWAIT FURTHER INSTRUCTIONS.

IMEG
1400 DEMING PKWY, SUITE 200
MIDDLETON, WI 53562
608.203.9500 tel 608.218.9615 fax
www.imegcorp.com
PROJECT # 17W0013.00

IMEG CORP. RETAINS ALL PROPRIETARY RIGHTS, INCLUDING COPYRIGHTS, TO THIS DRAWING AND THE DATA, SHOWN THEREON, AND DRAWING AND/OR DATA ARE THE EXCLUSIVE PROPERTY OF IMEG CORP. AND SHALL NOT BE USED OR REPRODUCED FOR ANY OTHER PROJECT WITHOUT THE EXPRESS WRITTEN APPROVAL AND PARTICIPATION OF IMEG CORP. © 2018 IMEG CORP.

REFERENCE SCALE INCHES
0 1 2 3

MSR
710 South 2nd Street, 8th Floor
Minneapolis, Minnesota 55401-2282
Architecture, Interiors and Urban Design
612.375.0336 tel
612.342.2210 fax
www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201
Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
323 South Paterson Street, Suite 1
Madison, WI 53703
608.251.3900 tel

Structural Engineer, Technology and A/V
IMEG Corp.
1400 Deming Way, Suite 200
Middleton, WI 53562
608.203.9500 tel

MEP Engineer
MEP Associates, LLC
892 Blue Gentian Road, Suite 175
Eagan, MN 55121
651.379.9129 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
375 Minnesota Ave West
St. Paul, MN 55103
651.251.1910 tel

Greenhouse Design
Rough Brothers, Inc.
5510 Vine Street
Cincinnati, OH 45217
513.242.6310 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin.
ARCHITECT SEAL

WISCONSIN
DANIEL JACK POLING
A-5934
MINNEAPOLIS, MN
ARCHITECT

Signature:
Print Name:
Date: JUNE 1, 2018 License No:

ISSUE MARK	DATE	DESCRIPTION
	12.04.2017	50 PERCENT SET
	01.19.2018	DESIGN DEVELOPMENT SUBMISSION
	03.30.2018	75% CD SUBMISSION
	05.04.2018	90% CONSTRUCTION DOCUMENTS
	05.01.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE
2	06.22.2018	ADDENDUM 2

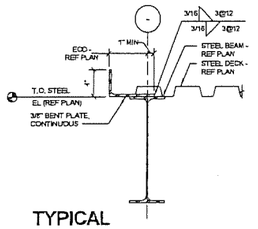
PROJECT NO. 2017015
PROJECT PHASE BID DOCUMENTS
DRAWN BY: SIDBHO CHECKED BY: ABBPER

FOUNDATION DETAILS

EXHIBIT G

S201

REVISED

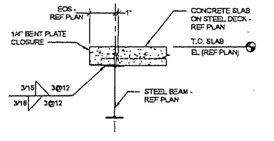


1 TYPICAL CLOSURE PLATE DETAIL

1 1/2" = 1'-0"

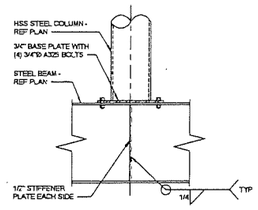
NOTES:

1. REFER TO PLAN FOR DECK ORIENTATION.



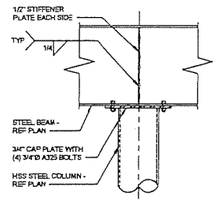
2 TYPICAL SLAB EDGE DETAIL

3/4" = 1'-0"



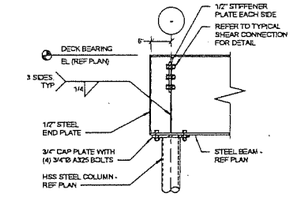
3 COLUMN BEARING ON BEAM

3/4" = 1'-0"



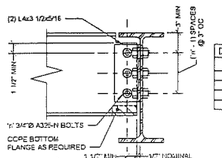
4 BEAM BEARING ON COLUMN

3/4" = 1'-0"

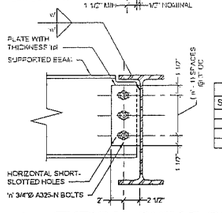


5 TYPICAL ROOF MOMENT CONNECTION

3/4" = 1'-0"



DOUBLE ANGLE CONNECTION TABLE	
SUPPORTED BEAM	'n'
W8 W10	2
W12 W14	3
W16	4
W18	5



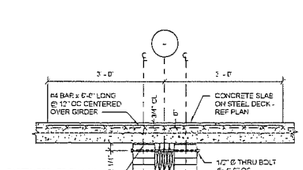
KNIFE PLATE CONNECTION TABLE			
SUPPORTED BEAM	'tpl'	'n'	'w'
W8 W10	1/4"	2	3/8"
W12 W14	5/16"	3	1/2"
W16	5/16"	4	1/2"
W18	5/16"	5	1/2"

6 TYPICAL SHEAR CONNECTION

1 1/2" = 1'-0"

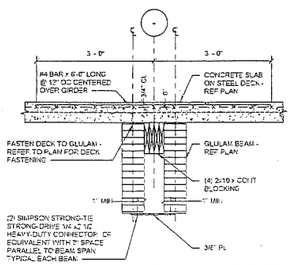
NOTES:

1. BOTH DOUBLE ANGLE AND KNIFE PLATE CONNECTION CONFIGURATIONS ARE ACCEPTABLE. UNLESS NOTED OTHERWISE, FABRICATOR AND DETAILER SHALL SELECT WHICH OPTION IS BEST SUITED FOR THEIR FABRICATION PROCESS AND THE ANTICIPATED ERECTION PROCEDURES.
2. DETAIL TO BE SIMILAR AT CONNECTIONS TO WIDE FLANGE OR HSS COLUMNS.
3. UNLESS NOTED OTHERWISE, PROVIDE SHEAR CONNECTIONS AS INDICATED BY THIS DETAIL.
4. DETAILER IS RESPONSIBLE FOR FULLY DEVELOPING GEOMETRY AND DIMENSIONAL INFORMATION REQUIRED TO FABRICATE.
5. WHERE TYPICAL SHEAR CONNECTION DETAIL IS NOT APPLICABLE, FABRICATOR SHALL SELECT AND DETAIL ALTERNATE CONNECTION CAPABLE OF DEVELOPING EQUAL STRENGTH. ALTERNATE CONNECTION SHALL BE SELECTED IN ACCORDANCE WITH AISC ASD CONNECTION TABLES.
6. WHERE BEAMS FRAME INTO EXISTING COLUMNS USE THE KNIFE PLATE CONNECTION WITH A FIELD WELD TO EXISTING COLUMN.



7 TYPICAL GLULAM BEAM DETAIL

3/4" = 1'-0"

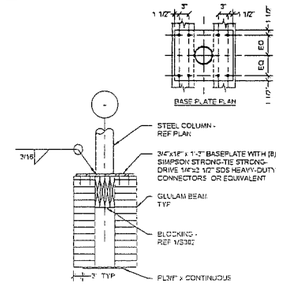


8 PARTITION SUPPORT DETAIL

3/4" = 1'-0"

NOTES

1. CONNECTION SHOWN IS DESIGNED TO SUPPORT 1000 LB POINT LOAD FROM THE OPERABLE PARTION.

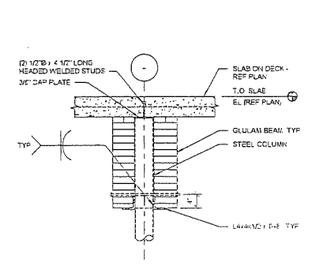


9 FRAMING DETAIL

3/4" = 1'-0"

NOTES

1. CONCRETE DECK NOT SHOWN FOR CLARITY.

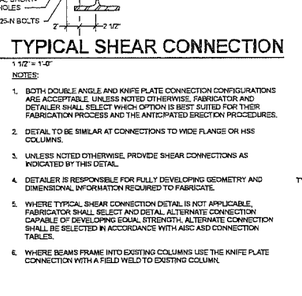


10 FRAMING DETAIL

3/4" = 1'-0"

NOTES

1. BLOCKING BETWEEN GLULAMS IS NOT SHOWN FOR CLARITY.

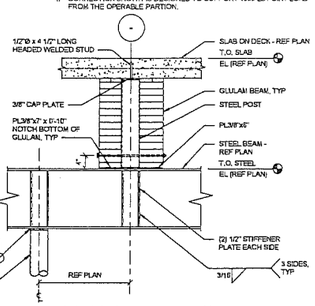


11 FRAMING DETAIL

3/4" = 1'-0"

NOTES

1. BLOCKING BETWEEN GLULAMS IS NOT SHOWN FOR CLARITY.

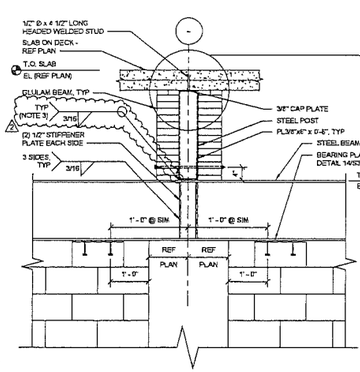


12 FRAMING DETAIL

3/4" = 1'-0"

NOTES

1. BLOCKING BETWEEN GLULAMS IS NOT SHOWN FOR CLARITY.

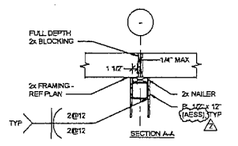


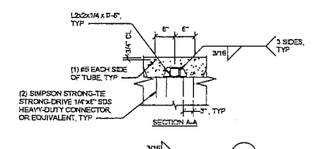
13 FRAMING DETAIL

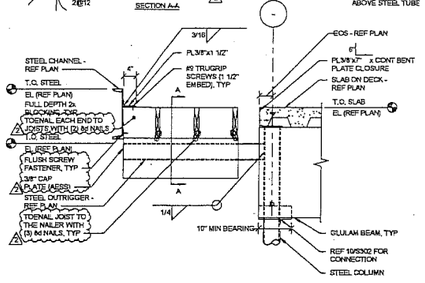
3/4" = 1'-0"

NOTES:

1. NO OPENING BELOW POST BEARING AT SIM.
2. BLOCKING BETWEEN GLULAMS IS NOT SHOWN FOR CLARITY.
3. AT 2ND FLOOR COLUMN TO BEAM CONNECTION FIELD WELD AROUND.





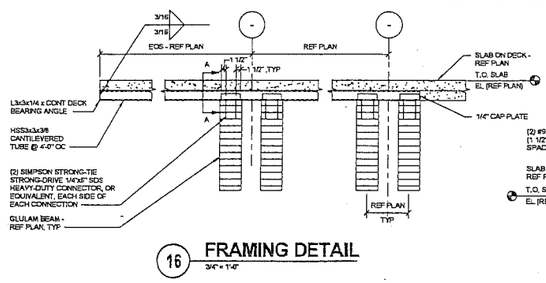


15 FRAMING DETAIL

3/4" = 1'-0"

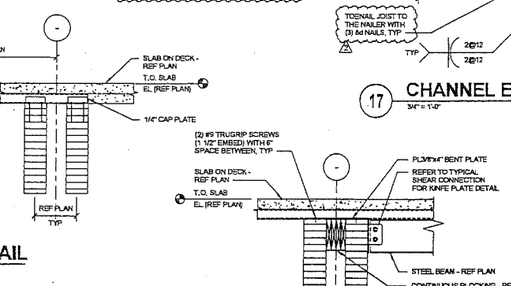
NOTES:

1. ALL WELDS TO BE SEAL WELDED AND VENT HOLES TO BE PLUGGED.



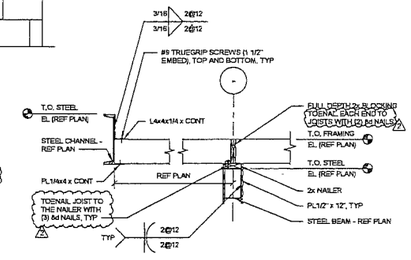
16 FRAMING DETAIL

3/4" = 1'-0"



18 SHEAR CONNECTION TO GLULAM

3/4" = 1'-0"



17 CHANNEL EDGE DETAIL

3/4" = 1'-0"

IMEG
1998 DEMING WAY, SUITE 200
MIDDLETON, WI 53562
PH.608.824.6000 FAX.608.824.6015
www.imegcorp.com
PROJECT # 170078.00

IMEG CORP. RETAINS ALL COPYRIGHTS, INCLUDING COPYRIGHTS, TO THE DRAWING AND THE DATA SHOWN THEREON, AND DRAWING AND/OR DATA ARE NOT TO BE USED IN WHOLE OR IN PART FOR ANY PURPOSE NOT SPECIFICALLY APPROVED IN WRITING BY IMEG CORP. WITHOUT THE EXPRESS WRITTEN APPROVAL AND PARTICIPATION OF IMEG CORP. © 2013 IMEG CORP.

REFERENCE SCALE IN INCHES

0 1 2 3

MSR
710 South 2nd Street, 8th Floor
Minneapolis, Minnesota 55401-2283
Architecture, Interiors and Urban Design
612 375 0336 tel
612 342 2216 fax
www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201
Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
303 South Paterson Street, Suite 1
Madison, WI 53703
608.251.3600 tel

Structural Engineer, Technology and A/V
IMEG Corp.
1400 Deming Way, Suite 200
Madison, WI 53562
608.223.9500 tel

MEP Engineer
MEP Associates, LLC
810 Bon Garrison Road, Suite 101
Eagan, MN 55121
651.327.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
525 Aldrich Ave North
St. Paul, MN 55401
651.291.1339 tel

Greenhouse Design
Rough Brothers, Inc.
5613 Vine Street
Cincinnati, OH 45217
513.242.0310 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin.
ARCHITECT SEAL

WISCONSIN
DANIEL JACK POLING
A-8284
MINNEAPOLIS, MN
ARCHITECT

Signature
Print Name
Date: JUNE 1, 2018 License No:

MARK	DATE	DESCRIPTION
	12.04.2017	DD PRICING SET
	01.15.2018	DESIGN DEVELOPMENT SUBMISSION
	02.23.2018	70% CD SUBMISSION
	05.04.2018	90% CONSTRUCTION DOCUMENTS
	05.01.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE
2	06.22.2018	ADDENDUM 2

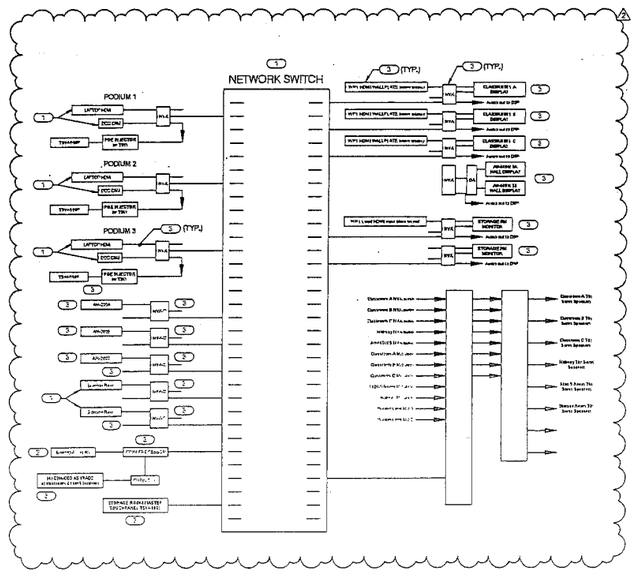
PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: SIDBHO CHECKED BY: ABBPER

FRAMING DETAILS

EXHIBIT G

S302

REVISED

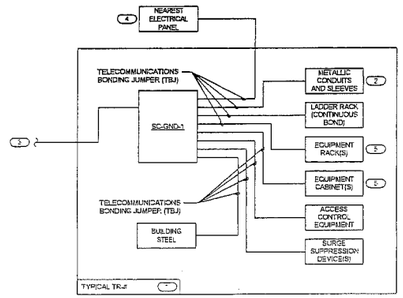


1 CLASSROOM AV RISER DIAGRAM

NO SCALE

NOTES:
1. THIS RISER IS DIAGRAMMATIC AND MAY NOT SHOW ACTUAL ROUTING OR QUANTITIES OF MATERIALS. THIS RISER IS SHOWN FOR CLARIFICATION OF CONNECTION LOCATIONS AND CABLE TYPES. DEVICES SHOWN ARE TYPICAL OF THE DEVICES IN THE AREA SHOWN. REFER TO FLOOR PLANS FOR ACTUAL QUANTITIES OF DEVICES.
2. REFER TO GENERAL TECHNOLOGY EQUIPMENT SCHEDULE ON T500 FOR ADDITIONAL INFORMATION.

KEYNOTES:
1. OWNER FURNISHED OWNER INSTALLED.
2. OWNER FURNISHED CONTRACTOR INSTALLED.
3. CONTRACTOR FURNISHED CONTRACTOR INSTALLED.

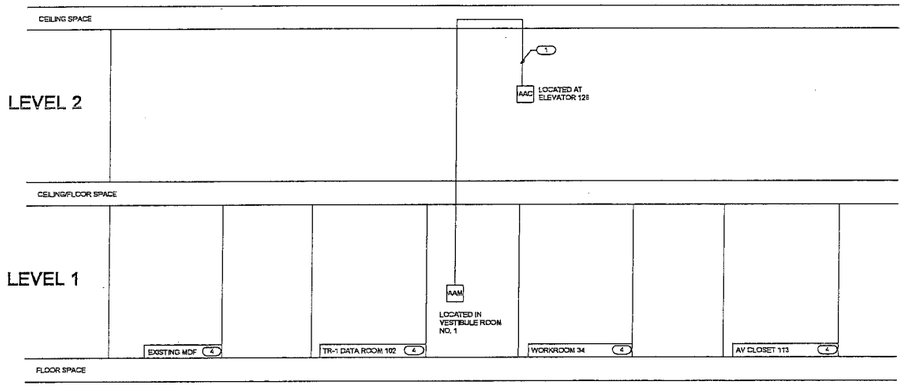


2 TYPICAL TELECOM ROOM BONDING FLOW DIAGRAM

NO SCALE

NOTES:
1. THIS FLOW DIAGRAM IS DIAGRAMMATIC AND MAY NOT SHOW ACTUAL ROUTING OR QUANTITIES OF MATERIALS. THIS FLOW DIAGRAM IS SHOWN FOR CLARIFICATION OF CONNECTION LOCATIONS AND CONDUCTOR TYPE. ALL CONNECTIONS AND SYSTEM DEVICES SHOWN ARE TYPICAL AND NOT REPRESENTATIVE OF ACTUAL PROJECT QUANTITIES. REFER TO FLOOR PLANS AND ENLARGED FLOOR PLANS FOR ACTUAL QUANTITIES AND LOCATIONS OF DEVICES AND MORE SPECIFIC ROUTING INFORMATION. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. ALL CONDUCTORS IN THE TECHNOLOGY BONDING SYSTEM SHALL BE MINIMUM SIZE OF 3/0 AWG PLENUM RATED COPPER GREEN OR MARKED WITH A DISTINCTIVE GREEN COLOR UNLESS CONDUCTOR LENGTH IS LESS THAN 66 FEET. REFER TO BONDING CONDUCTOR SIZING SCHEDULE FOR SIZING CRITERIA FOR CONDUCTORS LESS THAN 66 FEET IN LENGTH. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
3. ALL BONDING CONDUCTORS AND BONDING JUMPERS SHALL BE CONNECTED BY COMPRESSION LUGS, EXOTHERMIC WELDING, OR IRREVERSIBLE COMPRESSION CONNECTORS. SOLDER IS NOT AN ACCEPTABLE MEANS OF CONNECTION. SHEET METAL SCREWS SHALL NOT BE USED TO CONNECT COMMUNICATIONS BONDING CONDUCTORS TO EQUIPMENT. WHERE NECESSARY, REMOVE PAINT AND/OR USE PAINT-PIERCING WASHERS TO PROVIDE PROPER ELECTRICAL BOND AT ALL CONNECTIONS.
4. REFER TO 27/7300 FOR BONDING BUS BAR DETAIL AND ADDITIONAL INFORMATION AND REQUIREMENTS FOR BC-GND-1.

KEYNOTES:
1. REFER TO TELECOM ROOM REFERENCES SCHEDULE ON DRAWING T000 FOR TELECOMMUNICATIONS ROOM NUMBER AND LOCATION INFORMATION.
2. INCLUDES HORIZONTAL AND VERTICAL CONDUIT SLEEVES FOR TECHNOLOGY CABLING.
3. BONDING CONDUCTOR FOR TELECOMMUNICATIONS (BCT), TO EXISTING ELECTRICAL ENTRANCE INTERSYSTEM BONDING TERMINATION. REFER TO 4/7400 FOR TECHNOLOGY BONDING RISER DIAGRAM FOR CONTINUATION AND ADDITIONAL INFORMATION AND REQUIREMENTS.
4. REFER TO THE ELECTRICAL DRAWINGS FOR LOCATION.
5. PROVIDE BC-GND-2 RACK MOUNT TECHNOLOGY BONDING BUSBAR AT EACH EQUIPMENT RACK.



3 AREA OF RESCUE RISER DIAGRAM

NO SCALE

NOTES:
1. THIS RISER IS DIAGRAMMATIC AND MAY NOT SHOW ACTUAL ROUTING OR QUANTITIES OF MATERIALS. THIS RISER IS SHOWN CLARIFICATION OF CONNECTION LOCATIONS AND CABLE TYPES. DEVICES SHOWN ARE TYPICAL OF THE DEVICES IN THE AREA SHOWN. REFER TO FLOOR PLANS FOR ACTUAL QUANTITIES OF DEVICES AND MORE SPECIFIC ROUTING INFORMATION. REFER TO SPECIFICATIONS ADDITIONAL REQUIREMENTS.

KEYNOTES:
1. ONE (1) 18 GAUGE 2-CONDUCTOR CABLE, PLENUM RATED. REFER TO SPECIFICATIONS FOR REQUIREMENTS.

IMEG
IMEG CORP. RESERVES PROPRIETARY RIGHTS, INCLUDING COPYRIGHTS, TO THIS DRAWING AND THE DATA SHOWN THEREON. SAID DRAWING AND/OR DATA ARE NOT TO BE USED IN WHOLE OR IN PART FOR ANY PURPOSE NOT RESERVED TO IMEG CORP. WITHOUT THE EXPRESS WRITTEN APPROVAL AND PARTICIPATION OF IMEG CORP.
© 2018 IMEG CORP.

MSR 710 South 2nd Street, 8th Floor Minneapolis, Minnesota 55401-2260
Architecture, Interiors and Urban Design 612.375.0336 tel 612.342.2216 fax www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201 Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
323 South Paterson Street, Suite 1 Madison, WI 53703
608.251.3600 tel

Structural Engineer, Technology and A/V
IMEG Corp.
1830 Deming Way, Suite 200 Middleton, WI 53562
608.223.9600 tel

MEP Engineer
MEP Associates, LLC
660 Blue Gentian Road, Suite 175 Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
575 Minnesota Ave West St. Paul, MN 55102
651.251.1855 tel

Commissioning Group
Rough Brothers, Inc.
5510 Vine Street Cincinnati, OH 45217
513.242.0310 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin. ARCHITECT SEAL

WISCONSIN DANIEL JACK POLING A-5364 MINNEAPOLIS, MN ARCHITECT

Signature:
Print Name: Jack Poling
Date: JUNE 4, 2018 License No.: A-5364

MARK	DATE	DESCRIPTION
	01.16.2018	DESIGN DEVELOPMENT SUBMISSION
	03.30.2018	70% CD SUBMISSION
	05.04.2018	90% CD SUBMISSION
	05.21.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE
2	06.22.2018	ADDENDUM 2

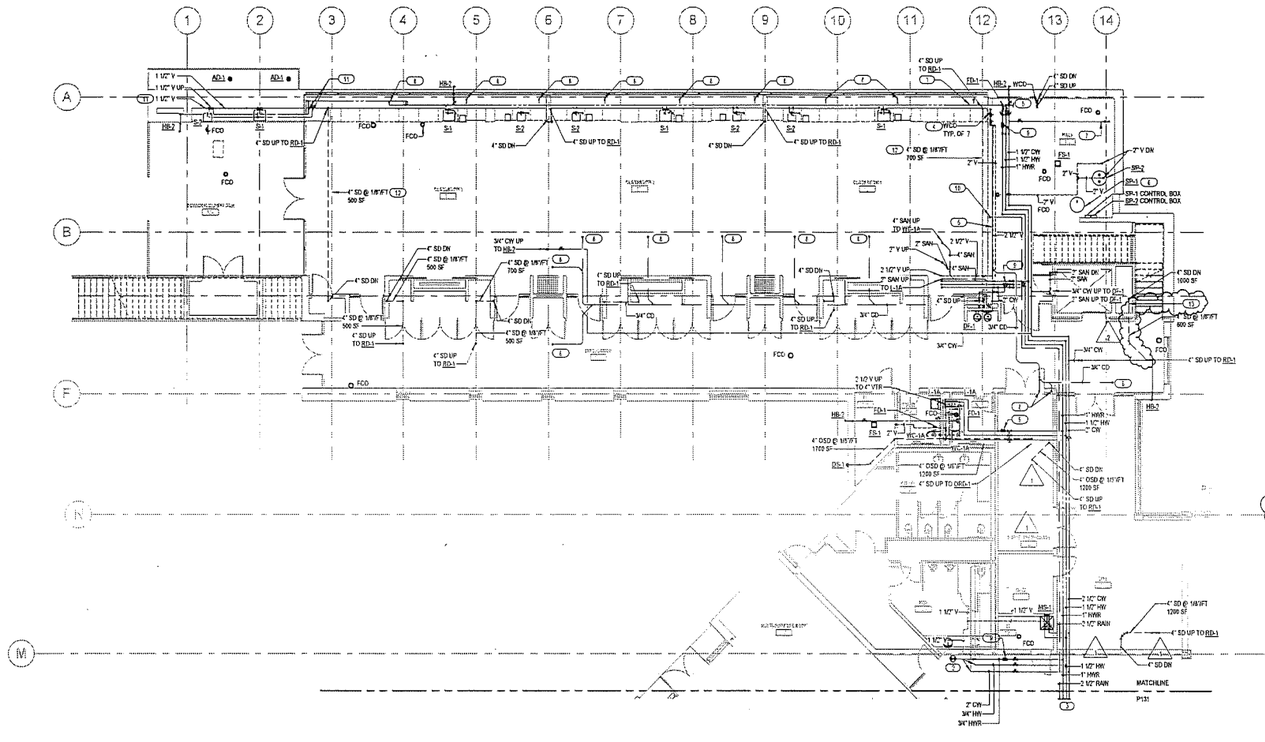
PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY BHASON CHECKED BY DONPAU

RISER DIAGRAMS - TECHNOLOGY

EXHIBIT O

T401

REVISED



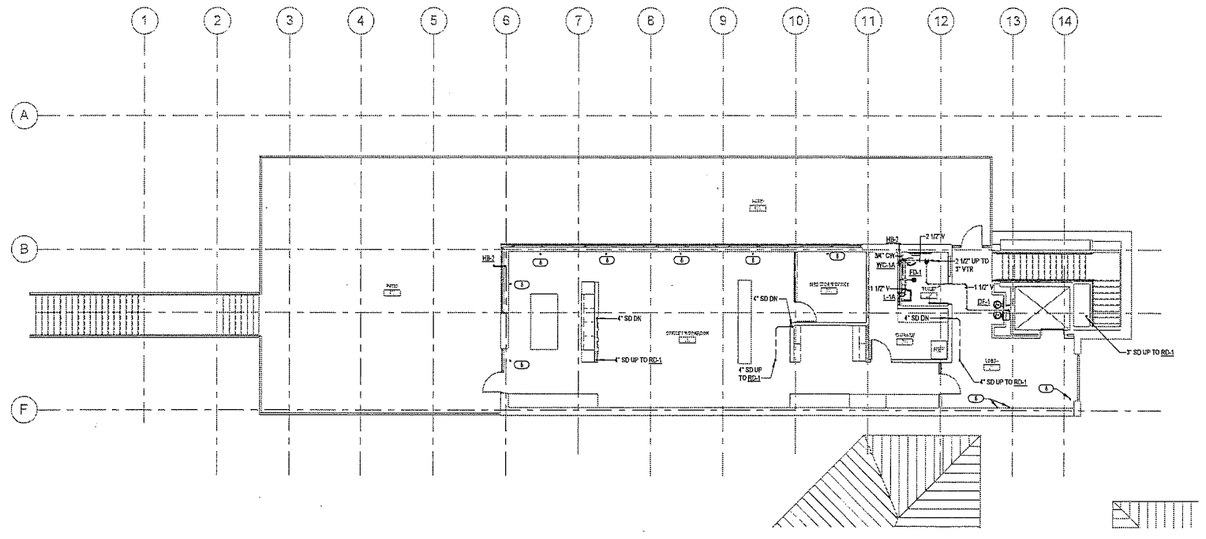
1 LEARNING CENTER PLUMBING PLAN LEVEL 1
1/8" = 1'-0"

GENERAL NOTES

1. REFER TO MECHANICAL PLANS FOR IN-FLOOR PIPING. COORDINATE ALL BELOW GRADE PIPING.

KEYED NOTES

1. ROUTE WATER PIPING IN CABINETRY/CHASE. COORDINATE WITH MECHANICAL DUCTWORK. REFER TO ARCHITECTURAL DETAIL, ISOMETRIC AND MECHANICAL SECTION VIEW.
2. CONNECT NEW 2" CW, 3/4" HW, AND 3/4" HWR TO EXISTING 2", 3/4 HW, AND 1/2 HWR THIS AREA.
3. REFER TO P131 FOR CONTINUATION.
4. WALL CLEANOUTS TO BE ON MECHANICAL ROOM SIDE OF WALL. REFER TO RISER DIAGRAM P201 AND DETAIL 6/P301.
5. ROUTE 3/4" CD TO FD-1.
6. REFER TO DETAIL 6/P301 FOR SP-1 PIPING AND ASSOCIATED COMPONENTS.
7. 3/4" CW DOWN TIGHT TO WALL AND TO BELOW GRADE. SEE P100 FOR CONTINUATION. AT BASE OF DROP, INCLUDE QUICK DISCONNECT WITH SHUT-OFF VALVE, AND SHUT-OFF IMMEDIATELY UPSTREAM OF QUICK DISCONNECT TO ALLOW FOR COMPRESSED AIR CONNECTION AND WINTER BLOW-OUT OF LINE.
8. ROUTE 3/4" CD UP TO RECESSED FAN COIL UNIT.
9. HWR BALANCE VALVE SET TO 0.5 GPM. INSTALL ACCESSIBLE.
10. 2 1/2" RAINWATER PIPE UP FROM CISTERN SUMP PUMP. BELOW-CONTRACTOR SHALL CONNECT TO PUMPS (VALVING BY OTHERS). PENETRATE FLOOR WITH LINKSEAL, AND ROUTE AS SHOWN.
11. 3/4" CW AND 3/4" HW OUT THROUGH EXTERIOR WALL IN CABINETRY, INTERIOR TO EXTERIOR SHR STRUCTURE. AT EXIT, INCLUDE QUICK DISCONNECT WITH SHUT-OFF VALVE, AND SHUT-OFF IMMEDIATELY UPSTREAM OF QUICK DISCONNECT TO ALLOW FOR COMPRESSED AIR CONNECTION AND WINTER BLOW-OUT OF LINE.
12. OUTDOOR CLASSROOM VENT SHALL BE COPPER. TERMINATE VENT 12" BELOW DECK. DO NOT PENETRATE DECK/ROOF.
13. ROUTE PIPING BEYOND BUILDING WALL.
14. CONTRACTOR SHALL CONNECT INDICATED STORM DRAIN TO VERTICAL STORM DRAIN IN CHASE.



2 LEARNING CENTER PLUMBING PLAN LEVEL 2
1/8" = 1'-0"

REVISED

MSR 710 South 2nd Street, 8th Floor Minneapolis, Minnesota 55401-2382
Architecture, Interiors and Urban Design: 612 375 0336 tel, 612 342 2216 fax, www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201
Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
333 South Paterson Street, Suite 1
Madison, WI 53703
608.251.3600 tel

Structural Engineer, Technology and A/V
IMEG Corp.
1830 Deming Way, Suite 200
Middleton, WI 53562
608.223.9600 tel

MEP Engineer
MEP Associates, LLC
860 Blue Gentian Road, Suite 170
Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
575 Aldrovanda Ave West
St. Paul, MN 55103
651.251.1550 tel

Greenhouse Design
Rough Brothers, Inc.
5513 Vine Street
Cincinnati, OH 45217
513.242.0310 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Engineer under the Laws of the State of Wisconsin.
ENGINEER SEAL

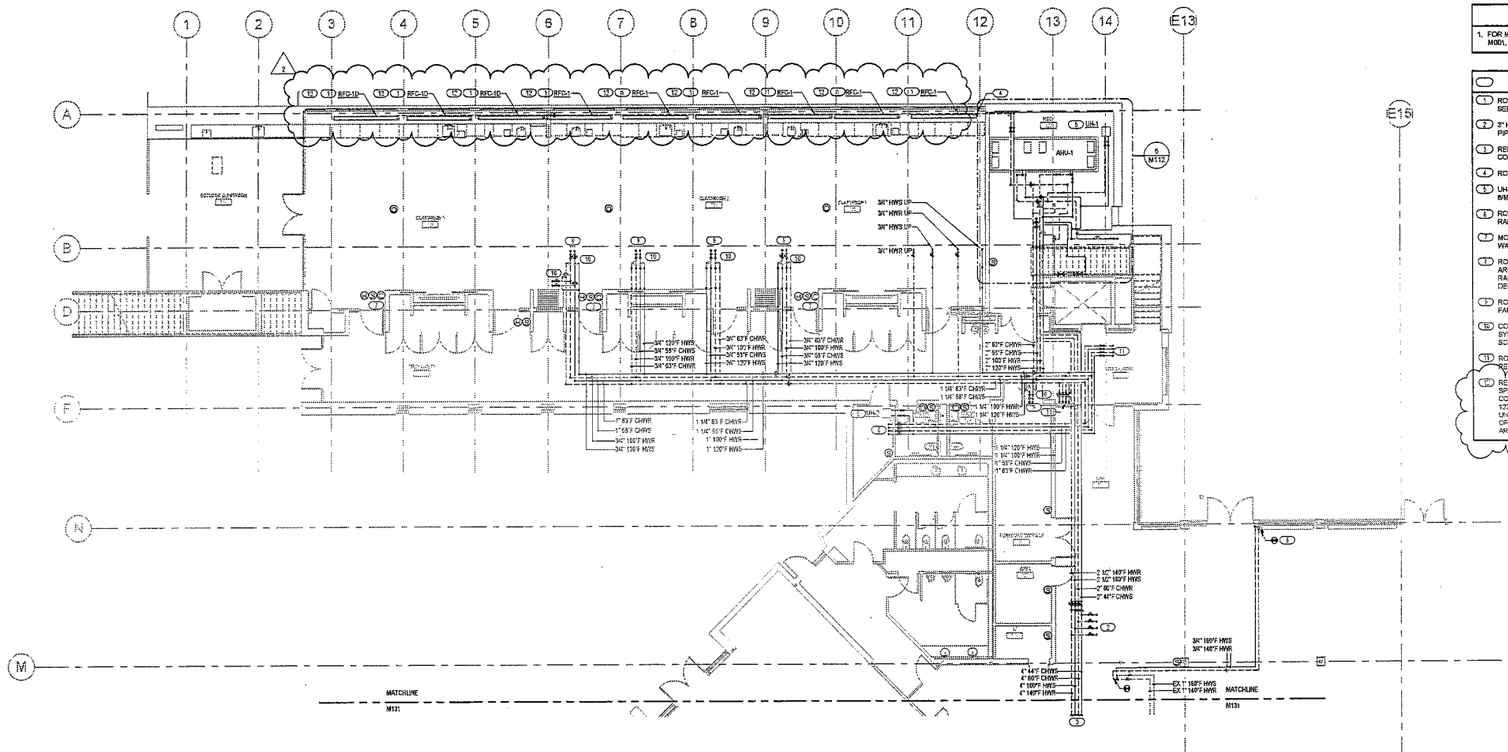
Signature:
Print Name: Larry Nesser
Date: JUNE 4, 2018 License No.: E-30240

ISSUE		
ISSUE	DATE	DESCRIPTION
	09.09.2017	SCHEMATIC DESIGN SUBMISSION
	12.08.2017	DD PRICING SET
	01.16.2018	DESIGN DEVELOPMENT SUBMISSION
	01.17.2018	LDC SUBMISSION
	03.31.2018	70% CD PRICING ISSUE
	05.04.2018	90% CONSTRUCTION DOCUMENTS
	06.01.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE
1	06.11.2018	ADDENDUM 1
2	06.22.2018	ADDENDUM 2

PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: MSR CHECKED BY: MSR

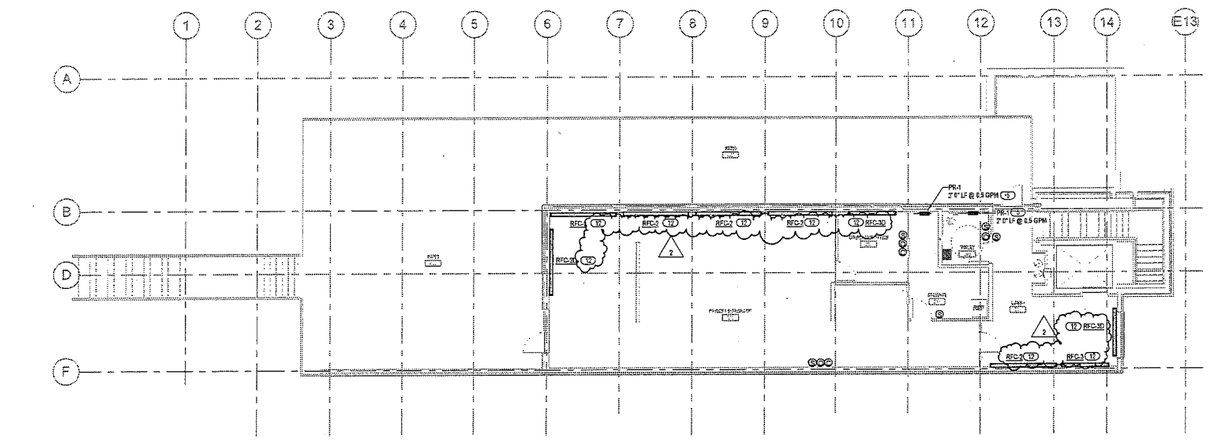
LEARNING CENTER PLUMBING PLAN - ABOVE GRADE

P101



1 LEARNING CENTER MECHANICAL PIPING PLAN LEVEL 1

1/8" = 1'-0"



2 LEARNING CENTER MECHANICAL PIPING PLAN LEVEL 2

1/8" = 1'-0"

GENERAL NOTES

1. FOR MECHANICAL NOTES, LEGENDS AND ABBREVIATION, REFER TO M001.

KEYED NOTES

1. ROUTE 3/4" CHWS, 3/4" CHWR PIPE TO RECESSED FAN COIL UNIT, SEE ALSO 2/M102.
2. 3" HWS, 3" HWR, 3" CHWS, AND 3" CHWR FOR FUTURE EXPANSION, PIPING SHALL BE CAPPED AND VALVED.
3. REFER TO COMMONS AREA MECHANICAL PIPING PLAN, M131, FOR CONTINUATION.
4. ROUTE 1 1/2" CHWS, AND 1 1/2" CHWR IN WALL CAVITY.
5. UH-1, UH-2, PR-1, AND PR-2 SHALL BE PIPED PER DETAIL 10/M202 & 8/M201.
6. ROUTE 1" HWS, 1" HWR, 1" CHWS, 1" CHWR PIPE DOWN TO RADIANT MANIFOLD.
7. MOUNT THERMOSTAT, HUMIDITY SENSOR, AND CO2 SENSOR ON WALL.
8. ROUTE HWS AND HWR DOWN IN DOOR COLUMN. SEE ARCHITECTURAL DETAIL. CONNECT TO EXISTING FIN TUBE RADIATION SUPPLY AND RETURN IN THIS AREA. CUT DURING DEMOLITION PHASE.
9. ROUTE 3/4" CHWS/HWS AND 3/4" CHWR/HWR PIPE TO RECESSED FAN COIL UNIT, ABOVE. SEE ALSO 2/M102.
10. CONTRACTOR SHALL CONVERT 4-PIPE SYSTEM INTO 2-PIPE SYSTEM VIA 3-WAY MODULATING VALVE. REFER TO CONTROLS SCHEMATIC 3/M303.
11. ROUTE 3/4" HWS, 3/4" HWR, 3/4" CHWS, 3/4" CHWR PIPE TO RECESSED FAN COIL UNIT. SEE ALSO 2/M102.
12. RECESSED FAN COIL UNITS SHALL BE INSTALLED EQUALLY SPACED. PROVIDE CONTINUOUS GRILLE BETWEEN RECESSED FAN COIL UNITS. RECESSED FAN COIL UNIT GRILLE IN CLASSROOM 121 127, AND 123 SHALL BE END ALUMINUM. RECESSED FAN COIL UNIT GRILLE IN LOBBY 201, AND OFFICE 215, AND DIRECTOR OFFICE 213 SHALL BE SHALAU NATURE. REFER TO ARCHITECTURAL PLANS.

MSR 710 South 2nd Street, 8th Floor Minneapolis, Minnesota 55401-2280
Architecture Interiors and Urban Design 612.375.0336 tel 612.342.2216 fax www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201 Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
303 South Paterson Street, Suite 1 Madison, WI 53703
608.251.3600 tel

Structural Engineer, Technology and AV
IMEG Corp.
1500 Deming Way, Suite 200 Middleton, WI 53562
608.222.9600 tel

MEP Engineer
MEP Associates, LLC
860 Blue Gentian Road, Suite 170 Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
575 Mendenhall Ave West St. Paul, MN 55103
651.251.1850 tel

Greenhouse Design
Rough Brothers, Inc.
5513 Vine Street Cincinnati, OH 45217
513.242.0310 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Engineer under the Laws of the State of Wisconsin.
ENGINEER SEAL

Signature:
Print Name: Larry Nemer
Date: JUNE 4, 2018 License No.: E-30240

ISSUE MARK	DATE	DESCRIPTION
1	09.08.2017	SCHEMATIC DESIGN SUBMISSION
	12.08.2017	IDD PRICING SET
	01.10.2018	DESIGN DEVELOPMENT SUBMISSION
	01.17.2018	UDC SUBMISSION
	03.31.2018	75% DD PRICING ISSUE
	05.04.2018	75% CONSTRUCTION DOCUMENTS
	05.01.2018	BID ISSUE
	05.30.2018	PERMIT ISSUE
	06.11.2018	ADDENDUM 1
	06.22.2018	ADDENDUM 2

PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: MSR CHECKED BY: MSR

LEARNING CENTER MECHANICAL PIPING PLAN

M102

REVISED

GOVERNING CODE:
INTERNATIONAL BUILDING CODE 2015

DESIGN LOADS:
DEAD LOAD _____ 10 PSF
LIVE LOAD _____ 12 PSF
GROUND SNOW ____ 30 PSF IMPORTANCE FACTOR 1.0
WIND LOAD _____ 115 MPH EXPOSURE 'B', IMPORTANCE FACTOR 1.0
SEISMIC LOAD ____ S_{ds} = 0.090
S_{d1} = 0.074
SITE CLASS = D

CODES & SPECIFICATIONS:
STRUCTURE IS DESIGNED IN ACCORDANCE WITH:
THE ALUMINUM ASSOCIATION "SPECIFICATIONS FOR ALUMINUM STRUCTURES".

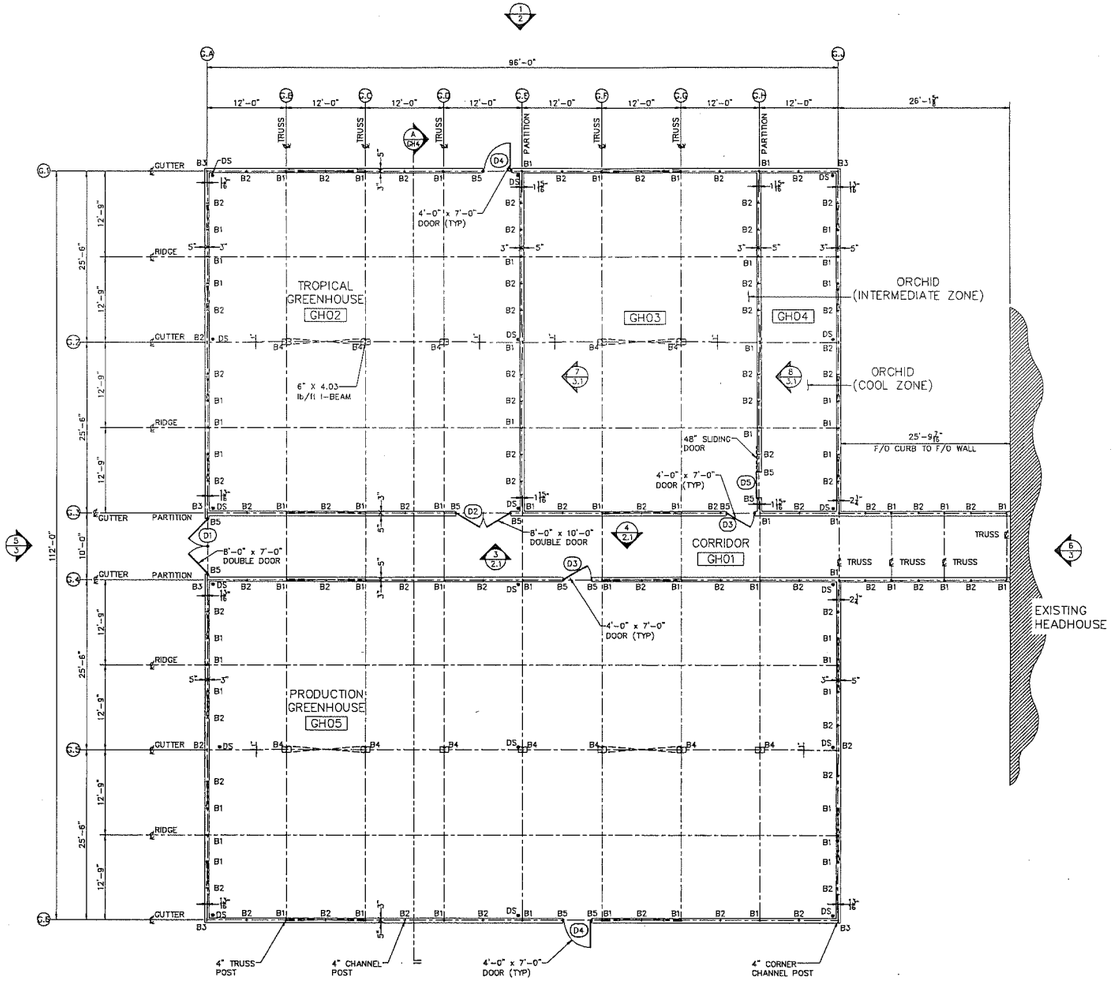
1. GENERAL NOTES:
   A. ALUMINUM SURFACES IN CONTACT WITH MASONRY TO RECEIVE A HEAVY COAT OF CLEAR POLYURETHANE COATING.
   B. CAULKING TO BE G.E. SILGLAZE II 2809.
2. STRUCTURAL ALUMINUM:
   A. ALL DETAILING, FABRICATION, AND ERECTION SHALL CONFORM TO THE LATEST EDITION OF THE SPECIFICATIONS FOR ALUMINUM STRUCTURES.
   B. FIELD CONNECTIONS TO BE BOLTED.
3. MATERIALS:
   A. ALUMINUM SHAPES: ALLOY 6061-T6 & 6063-T6.
   B. ALUMINUM PLATE: ALLOY 6061-T6
   C. ALUMINUM SHEET: ALLOY 5052-H32.
   D. ALL BOLTS ¼" DIA. AND LARGER TO BE GALVANIZED ASME J429 GRADE 5.
   E. ALL BOLTS 5/16" AND SMALLER TO BE STAINLESS STEEL.
   F. ALL SHEET METAL SCREWS TO BE STAINLESS STEEL.
   G. ALL #8 AND #10 TEK SCREWS TO BE STAINLESS STEEL.
   H. ALL #12 TEK SCREWS TO BE GALVANIZED.
4. ANCHOR BOLTS:
   A. ANCHOR BOLTS TO BE 316 STAINLESS THREADED ROD, SET WITH EPOXY IN FIELD DRILLED HOLES IN EXISTING KNEEWALL. ROD DIAMETER, LENGTH AND EMBEDMENT AS SPECIFIED ON ROUGH BROTHERS SHEET GH5.1.
   B. EPOXY ANCHORS TO BE INSTALLED PER MANUFACTURER'S INSTRUCTIONS SUPPLIED WITH THE EPOXY CARTRIDGE.

GLAZING: 1
   A. GREENHOUSE ROOF GLASS (FULL LITES 23 15/16" x 25') TO BE ¼" LAMINATED. CONSISTING OF 2 LAYERS OF ⅛" CLEAR ANNEALED GLASS WITH AN .030" CLEAR POLYVINYL BUTYRAL INNER LAYER. ROOF GLASS AT RIDGE AND DR VENT HEADER TO BE FIELD CUT..
   B. CORRIDOR ROOF GLASS (FULL LITES 23 15/16" X 25') TO BE ¼" LAMINATED, CONSISTING OF 2 LAYERS OF ⅛" CLEAR ANNEALED GLASS WITH AN .030" 65% WHITE POLYVINYL BUTYRAL INNER LAYER. ROOF GLASS AT RIDGE AND OR VENT HEADER TO BE FIELD CUT.
   C. SIDEWALL AND GABLE GLAZING (FULL LITES 24" x 25') TO BE ⅛" CLEAR TEMPERED GLASS. ODD SHAPE GLASS AT TOP OF GABLES SHALL BE FIELD CUT FROM ⅛" CLEAR ANNEALED GLASS.
   D. ALL GLASS TO BE SET IN ELASTIC ROPE PUTTY, LAID WITH A ⅛" LAP.
   E. ROOF GLASS TO BE TOP SEALED WITH BUTYL ELASTIC GLAZING COMPOUND.
5. ALUMINUM FINISH:
   A. ALL ALUMINUM TO BE MILL FINISH.
7. SCREENS:
   A. ALL ROOF VENTS TO HAVE 16 X 18 ALUMINUM MESH INSECT SCREEN WITH 5/16" x 7/8" EXTRUDED ALUMINUM, MILL FINISH FRAME WITH BRUSH SEALS AT VENT OPERATOR PENETRATIONS.
   B. EVAPORATIVE COOLING PAD SYSTEMS IN COORIDOR TO HAVE 16 X 18 ALUM. MESH INSECT SCREEN.
   C. LOUVER IN COORIDOR TO HAVE 16 X 18 ALUM. MESH INSECT SCREEN.
   D. INSULATED DAMPERS OVER EVAPORATIVE COOLING PAD SYSTEM IN THE PRODUCTION ZONE TO HAVE 16 X 18 ALUM. MESH SCREEN BOX.
8. VENTS:
   A. ROOF VENTS TO BE 36" WITH 42" STRAIGHT ALUMINUM/STEEL RACK AND PINION OPERATORS.
9. WORK BY OTHERS:
   A. ALL COUNTERFLASHING TO BE FURNISHED AND INSTALLED BY SHEET METAL CONTRACTOR.
   B. ALL PLUMBING AND GUTTER DOWNSPOUT PIPING TO BE FURNISHED AND INSTALLED BY PLUMBING CONTRACTOR.
   C. ALL ELECTRICAL WORK INCLUDING WIRING, CONDUIT, PANELS AND LIGHTS TO BE FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR.
   D. ALL MASONRY AND CONCRETE WORK TO BE BY MASONRY CONTRACTOR.
   E. SEALING OF ALL PIPING AND CONDUIT PENETRATIONS THROUGH GREENHOUSE GLAZING TO BE PERFORMED BY THE RESPECTIVE TRADE CONTRACTOR INSTALLING THE GIVEN PIPE OR CONDUIT.

DRAWING INDEX

DWG NO.	DRAWING DESCRIPTION
GH1	POST PLAN LAYOUT
GH2	SIDEWALL ELEVATIONS
GH2.1	CORRIDOR PARTITION ELEVATIONS
GH3	GABLE ELEVATIONS
GH3.1	GABLE PARTITIONS
GH4	TRUSS SECTION
GH4.1	TRUSS DETAILS
GH5	FOUNDATION PLAN
GH5.1	POST BASE ANCHOR DETAILS
GH6	EQUIPMENT PLAN
GH6.1	BENCH PLAN
GH6.2	EQUIPMENT SECTIONS
GH6.3	GREENHOUSE ONE LINE POWER DIAGRAM
GH6.4	CORRIDOR ONE LINE POWER DIAGRAM
GH6.5	INTERCONNECTION DIAGRAM
GH7	RIDGE SECTION
GH8	TYPICAL SIDEWALL SECTION
~~GH8.1~~	~~TYPICAL PARTITION SECTION~~
GH8.2	TYPICAL GREENHOUSE COOL CELL DETAILS
~~GH9~~	~~ROOF TO GABLE SECTION~~
GH10	DOOR DETAILS
GH11	CLOSURE DETAILS

1



2/2 POST PLAN LAYOUT
SCALE: ⅛" = 1'-0"

TRUE PLAN

ENGINEERING NOTE:
ENGINEER'S SEAL APPLIES TO DESIGN OF STRUCTURAL COMPONENTS ONLY

REVISED

MSR 710 South 2nd Street, 8th Floor Minneapolis, Minnesota 55401-2282
Architecture 612 375 0536 tel
Interiors and Urban Design 612 342 2216 fx
www.msrdesigns.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201 Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
303 South Paterson Street, Suite 1 Madison, WI 53703
608.251.3800 tel

Structural Engineer, Technology and A/V
IMEG Corp.
1800 Deming Way, Suite 200 Middleton, WI 53562
608.223.9600 tel

MEP Engineer
MEP Associates, LLC
800 Blue Gentian Road, Suite 175 Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
575 Cleveland Ave West St. Paul, MN 55102
651.291.1880 tel

Greenhouse Design
Rough Brothers, Inc.
5512 Vine Street Cincinnati, OH 45217
513.242.6310 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin.
ARCHITECT SEAL

WISCONSIN DANIEL JACK POLING A-8384 MINNEAPOLIS, MN ARCHITECT

Signature:
Print Name: Jack Poling
Date: MAY 4, 2018 License No.: A-8384

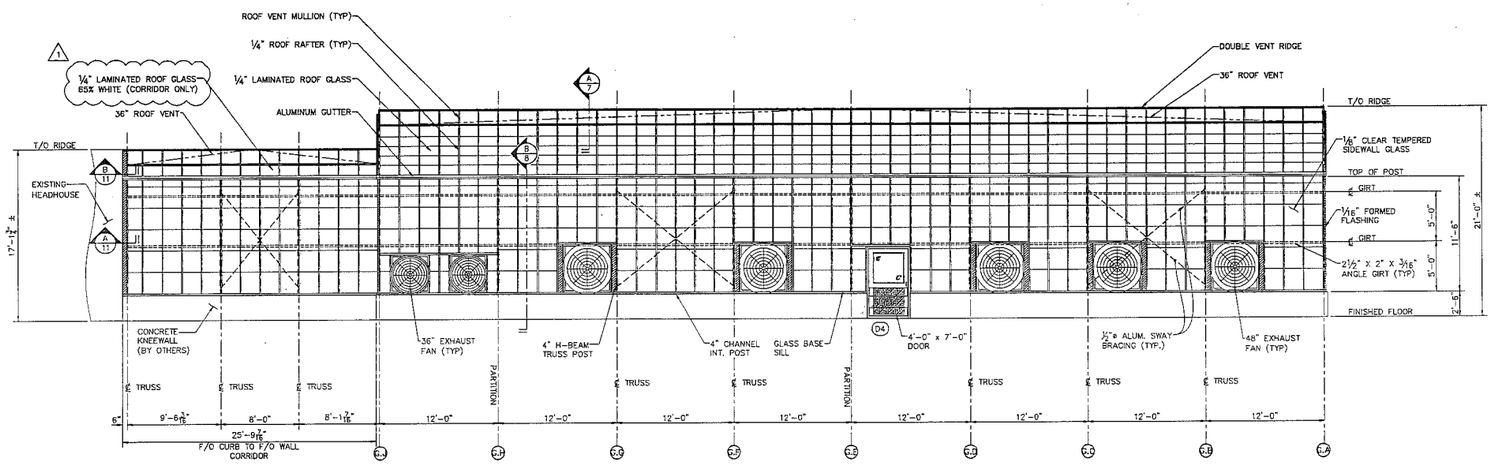
MARK	Mo/Yr	DESCRIPTION
	09.29.2017	SCHEMATIC DESIGN SUBMISSION
	12.04.2017	50% PRICING SET
	01.10.2018	DESIGN DEVELOPMENT SUBMISSION
	01.17.2018	VDC SUBMISSION
	03.30.2018	75% CD PRICING ISSUE
	04.06.2018	PARKING LOT AND SITE PLAN SUBMISSION
	05.04.2018	90% CD SUBMISSION
	05.01.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE
1	06.22.2018	BID ADDENDUM 2

PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: TLB CHECKED BY: SW

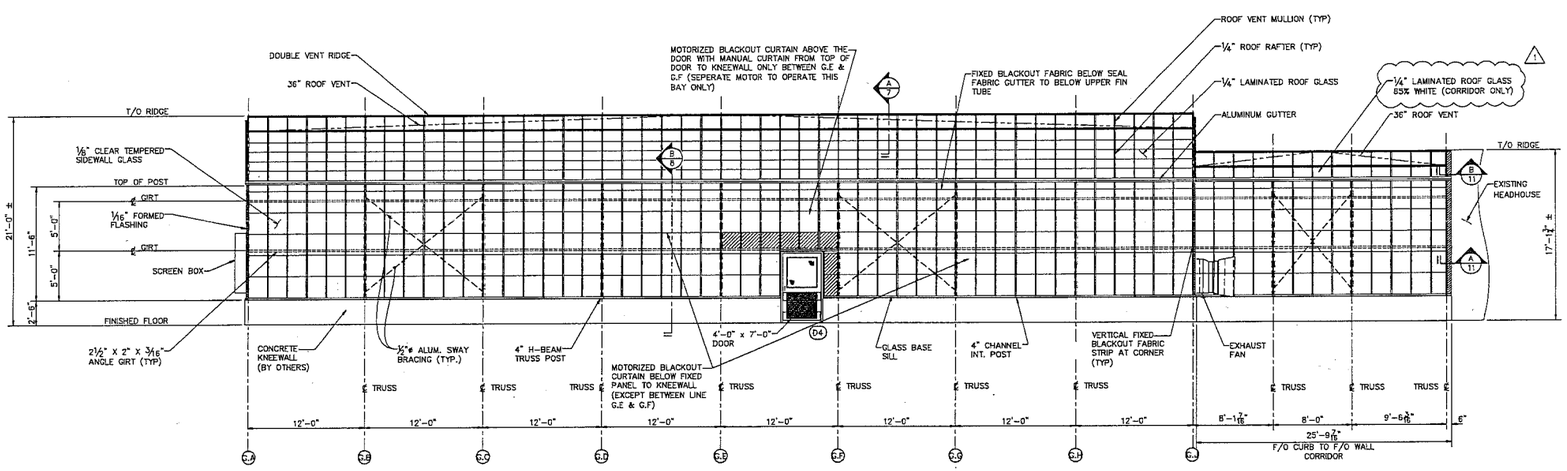
Drawing ©2017 Design/Build Group, Bohren & Associates, LLC

GREENHOUSE POST PLAN LAYOUT

EXHIBIT H
GH1



NORTH SIDEWALL ELEVATION (1)
SCALE: 3/16"=1'-0"



SOUTH SIDEWALL ELEVATION (2)
SCALE: 3/16"=1'-0"

ENGINEERING NOTE:
ENGINEER'S SEAL APPLIES TO DESIGN OF STRUCTURAL COMPONENTS ONLY

MSR
710 South 2nd Street, 8th Floor
Minneapolis, Minnesota 55401-2282
Architecture Interiors and Urban Design
612 375 0336 tel
612 342 2216 fax
www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201
Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
303 South Paterson Street, Suite 1
Madison, WI 53703
608.251.3600 tel

Structural Engineer, Technology and AV
IMEG Corp.
1800 Deming Way, Suite 200
Middleton, WI 53562
608.223.9600 tel

MEP Engineer
MEP Associates, LLC
660 Blue Gentian Road, Suite 175
Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
570 Asbury Ave West
St. Paul, MN 55102
651.251.1500 tel

Greenhouse Design
Rough Brothers, Inc.
5513 Vine Street
Cincinnati, OH 45217
513.242.8310 tel

Olbrich Botanical Gardens
Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin.
ARCHITECT SEAL:

WISCONSIN
DANIEL JACK POLING
A-5084
MINNEAPOLIS, MN
ARCHITECT

Signature:
Print Name: JACK Poling
Date: MAY 4, 2018 License No: A-5084

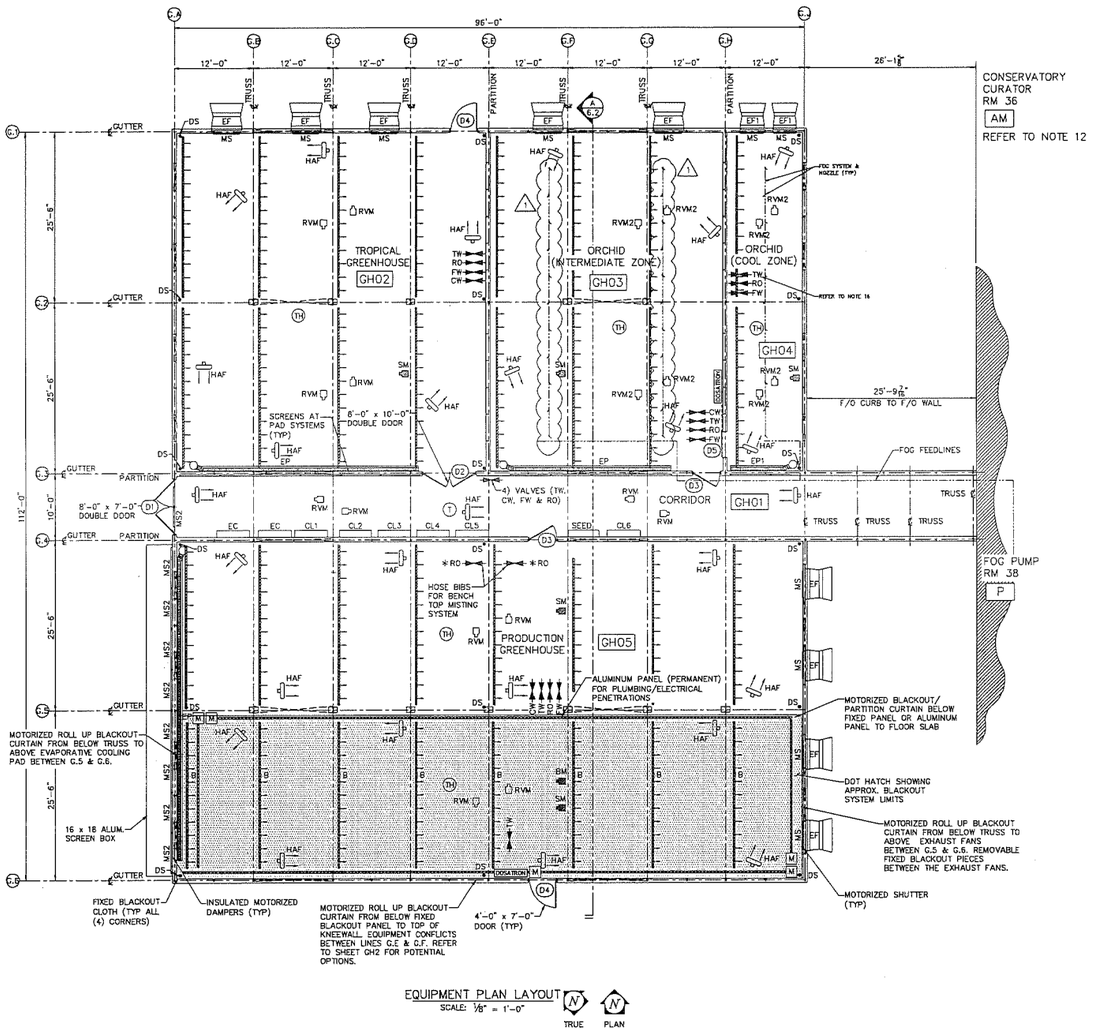
MARK	DATE	DESCRIPTION
	09.29.2017	SCHEMATIC DESIGN SUBMISSION
	10.06.2017	DD PRICING SET
	01.10.2018	DESIGN DEVELOPMENT SUBMISSION
	01.17.2018	LDC SUBMISSION
	03.30.2018	70% CD PRICING ISSUE
	04.06.2018	PARKING LOT AND SITE PLAN SUBMISSION
	05.04.2018	90% CD SUBMISSION
	05.01.2018	ISD ISSUE
	05.04.2018	PERMIT ISSUE
1	05.22.2018	BID ADDENDUM 2

PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: TLB CHECKED BY: SW

GREENHOUSE SIDEWALL ELEVATIONS

EXHIBIT H
GH2

REVISED



EQUIPMENT PLAN LAYOUT
SCALE: ⅛" = 1'-0"

TRUE PLAN

EQUIPMENT SCHEDULE – BASIS OF DESIGN							
SYMBOL	QTY.	DESCRIPTION	HP	VOLT	PH	AMP	RPM
RVM	12	ROOF VENT MOTOR, LOCK EWA 12, WITH OPEN/CLOSE LIMIT SWITCH. 150Nm	0.3	208	3	1.7	3.8
RVM2	8	ROOF VENT MOTOR, LOCK EWA 10, 50 Nm, WITH OPEN/CLOSE LIMIT SWITCH	0.15	208	3	.9	4.6
SM	5	ROOF SHADE MOTOR, LOCK EWA 10, 90Nm	0.15	208	3	1.0	4.6
BM	1	BLACKOUT SYSTEM MOTOR, LOCK EWA 10, 90NM	0.15	208	3	1.0	4.6
1	5	MOTORIZED SUSPENDED ROOF SHADE/HEAT RETENTION CURTAIN SYSTEM, W/TREVIRA CS FLAME RETARDANT SHADE FABRIC WITH 50%–60% LIGHT REDUCTION, 50% ENERGY SAVINGS.	–	–	–	–	–
B	1	MOTORIZED CABLE/DRAG ROOF BLACKOUT CURTAIN SYSTEM, W/OBSCURA 10075FR AB+BW FABRIC, W/99% LIGHT REDUCTION, AND 75% ENERGY SAVINGS.	–	–	–	–	–
M	5	MOTORIZED VERTICAL BLACKOUT CURTAIN SYSTEM, WITH A RMA20.0512 TUBE MOTOR, W/SNYDER WEATHERSPAN 500 130Z.	.375	120	–	2.3	12
HAF	27	12" WK12 SCHAEFER HAF FAN	1/10	115	1	1.3	1725
EF	9	48" MUNTERS DRIVE EXHAUST FAN WITH FIBERGLASS HOUSING; VX48DF21C–224–HR	1½	208	3	6.0	649
EF1	2	36" MUNTERS DRIVE EXHAUST FAN WITH FIBERGLASS HOUSING; VX36DF21C–224–HR	3/4	208	3	3.3	876
MS	11	GREENHECK INSULATED MOTORIZED ALUMINUM SHUTTERS WITH HINGES AT EXHAUST FANS WITH BELIMO ACTUATORS	–	120	1	0.28	–
MS2	9	72" X 72" GREENHECK INSULATED MOTORIZED ALUMINUM SHUTTERS WITH (2) BELIMO ACTUATORS FOR PRODUCTION EVAPORATIVE COOLING PAD SYSTEM AND OVER THE WEST GABLE DOOR	–	120	1	0.28	–
EP	3	6'–0" TALL EVAPORATIVE COOLING PAD SYSTEM W/ PVC RETURN GUTTER, PLUMBING KIT, RESERVOIR TANK AND SUBMERSIBLE PUMP, TROPICAL AND PRODUCTION SYSTEMS EC:1122 PUMP, SUBMERS (LITTLE GIANT 509207)	9/10	115	1	13.0	–
EP1	1	6'–0" TALL EVAPORATIVE COOLING PAD SYSTEM W/ PVC RETURN GUTTER, PLUMBING KIT, RESERVOIR TANK AND SUBMERSIBLE PUMP, ORCHID SYSTEMS: EC1316; PUMP, SUMBERS (LITTLE GIANT 506610/506801)	½	115	1	5.0	–
TH	5	ENVIRONMENTAL CONTROL SYSTEM – ASPIRATED TEMPERATURE/HUMIDITY SENSOR	–	–	–	–	–
T	1	ENVIRONMENTAL CONTROL SYSTEM – TEMPERATURE SENSOR	–	–	–	–	–
• DS	18	4" DOWNSPOUT PIPING (BY PLUMBING CONTRACTOR) ESTIMATED LOCATIONS SHOWN	–	–	–	–	–
CL1–CL6	6	GREENHOUSE CONTROL PANELS	–	–	–	–	–
EC	2	ELECTRICAL PANEL (BY ELECTRICIAN)	–	–	–	–	–
SEED	1	SEED INTERFACE PANEL FOR WADSWORTH SYSTEM	–	–	–	–	–
P	1	FOG PUMP, 0.3 GPM, 1000 psi, LOCATION RM 38	¾	208	3	–	1725
	2	FOG ZONE 3–WAY VALVE WITH ZONE CONTROL PANEL, LOCATION TBD	–	24	–	–	–
	---	FOG SYSTEM LINES AND NOZZLES	–	–	–	–	–
DOSATRON	2	FERTILIZER INJECTOR WITH MONITOR SYSTEM, DOSATRON 14MZ2, 14 GPM–1:500 – 1:50	–	115	–	–	–

EQUIPMENT NOTES:

1. ALL ELECTRICAL WIRING (LINE & LOW VOLTAGE), CONDUIT, CIRCUIT PANELS, OUTLETS, LIGHTING (NON–HPS, HPS, LED) SHALL BE PROVIDED AND INSTALLED BY ELECTRICAL CONTRACTOR.
2. ALL PLUMBING WORK INCLUDING HOSE BIBS, FLOOR DRAINS, AND DOWNSPOUT PIPING SHALL BE PROVIDED AND INSTALLED BY PLUMBING CONTRACTOR.
3. ALL FIRE PROTECTION SHALL BE PROVIDED AND INSTALLED BY OTHERS & ALLOW FOR RIGHT OF WAY FOR SHADE SYSTEM.
4. ROOF SHADE SYSTEM & BLACKOUT SYSTEMS MUST HAVE TRAVEL RIGHT OF WAY. DO NOT MOUNT OR INSTALL LIGHTS, CONDUIT, PIPING, J–BOXES, DISCONNECT SWITCHES OR ANY PIECE OF EQUIPMENT IN ANY WAY THAT WILL INTERFERE WITH THE TRAVEL OF EACH SHADE CURTAIN SYSTEM.
5. SEE SHEET GH6.1 FOR BENCH PLAN.
6. REFER TO SHEETS GH6.3–GH6.5 FOR WADSWORTH CONTROL SYSTEMS.
7. HWR/HWS TEMP SENSORS AT MAIN CONNECTIONS IN CORRIDOR FOR MONITORING TEMPERATURES THROUGH THE SEED CONTROL SYSTEM.
8. TEMPERATURE PROBES FOR EACH FLOOR HEAT VALVE FOR MONITORING TEMPERATURES THROUGH THE SEED CONTROL SYSTEM.
9. PAR LIGHT SENSORS IN EACH ZONE (LED LIGHTS BY ELECTRICAL CONTRACTOR).
10. COMPUTER STATION FOR CONTROL SYSTEM SHALL BE PROVIDED BY OTHERS AND LOCATED IN CONSERVATORY CURATOR RM 36.
11. GREENHOUSE CONTROL SYSTEM SOFTWARE SHALL BE BY WADSWORTH CONTROL SYSTEMS.
12. ALARM MANAGER PROVIDED WITH CONSERVATORY PORTION OF THE CONTROL SYSTEM IN CONSERVATORY CURATOR RM 36.
13. GREENHOUSE CONTROL SYSTEM WEATHER STATION SHALL BE PROVIDED WITH THE CONSERVATORY PORTION OF THE CONTROL SYSTEM AND SHALL BE CONNECTED THROUGH THE NETWORK.
14. EVAPORATIVE COOLING SYSTEM REQUIRES SUPPLY LINE WITH MANUAL SHUT OFF VALVE AT EACH TANK AND FLOOR DRAIN TO BE PROVIDED BY PLUMBING CONTRACTOR. SYSTEM APPROX. FLOW RATES ARE AS FOLLOWS: PRODUCTION G'HSE.–38 GPM, TROPICAL G'HSE.–27 GPM, ORCHID INTERM.–23 GPM, ORCHID COOL–9 GPM.
15. FOG SYSTEM SHALL INCLUDE FOG PUMP, ZONE VALVES, FEED LINES FROM PUMP TO FOG LINES WITH NOZZLES TO GH03 & GH04. 1
16. FOG SYSTEM SHALL PROVIDE 50 TO 70% HUMIDITY; 0.3 GPM @ 30–60 PSI, A 3/4" DIA. RO INLET CONNECTION SHALL BE PROVIDED TO THE FOG PUMP BY PLUMBING CONTRACTOR, ALONG WITH A FLOOR DRAIN.
17. FERTILIZER INJECTOR BY–PASS SYSTEM REQUIRES TEMPERED WATER, BACKFLOW PREVENTER, SHUT OFF VALVE AND 115V OUTLET PROVIDED BY PLUMBING & ELECTRICAL CONTRACTOR.
18. FERTILIZER INJECTOR (TW) LINE SHALL BE PROVIDED FROM INJECTOR IN INTERMEDIATE ORCHID ZONE TO COOL ORCHID ZONE FOR HOSE ATTACHMENT BY PLUMBING CONTRACTOR.
19. SUPPLY & RETURN LINES FOR FIN TUBE HEATING SYSTEM SHALL BE BROUGHT INTO THE GREENHOUSE CORRIDOR BY MECHANICAL CONTRACTOR WITH A FLANGED CONNECTION AND A BALL VALVE. BOILER BY MECHANICAL CONTRACTOR. FOR G'HSE HEATING SYSTEMS, REFER TO THE 'H' SERIES DRAWINGS.
20. PORTABLE GENERATOR FOR HOOK UP SHALL BE PROVIDED BY ELECTRICAL CONTRACTOR TO SUPPORT ALL THE GREENHOUSE EQUIPMENT IN THE EVENT OF A POWER OUTAGE.
21. ELECTRICAL CONTRACTOR TO PROVIDE AND INSTALL HPS SUPPLEMENTAL LIGHTING IN THE TROPICAL AND ORCHID ZONES AND LED SUPPLEMENTAL LIGHTING IN THE PRODUCTION ZONES AND UNISTRUT FOR HANGING FROM THE GREENHOUSE STRUCTURE. REFER TO E–SERIES DRAWINGS. ALL GH SUPPLEMENTAL LIGHTING SHALL BE CONTROLLED BY SEED CONTROL SYSTEM.

ROOM SQUARE FOOTAGE	
ROOM	SQUARE FEET
TROPICAL GREENHOUSE	2,450 +/–
ORCHIDS (COOL ZONE)	605 +/–
ORCHIDS (WARM ZONE)	1,840 +/–
PRODUCTION GREENHOUSE	4,900 +/–

HOSE BIB IDS (WATER SUPPLY BY PLUMBING CONTRATOR)		
SYMBOL	QTY.	DESCRIPTION
TW	6	TEMPERED WATER
RO	7	REVERSE OSMOSIS WATER
FW	6	FERTILIZED WATER
CW	4	COLD WATER

* RO WATER COULD CAUSE DAMAGE TO FILTERS AND SOLENOID VALVES. OBG TO BE RESPONSIBLE FOR PROPER MAINTENANCE OF SYSTEM AFTER RO WATER HAS BEEN USED.

MSR 710 South 2nd Street, 8th Floor Minneapolis, Minnesota 55401–2182
Architecture 612.375.0226 tel
Interiors and Urban Design 612.343.2216 fax
www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201 Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
303 South Paterson Street, Suite 1 Madison, WI 53703
608.251.3600 tel

Structural Engineer, Technology and AV
IMEG Corp.
1800 Demarg Way, Suite 200 Middleton, WI 53562
608.223.9600 tel

MEP Engineer
MEP Associates, LLC
810 Blue Gentian Road, Suite 170 Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
575 Minnehaha Ave West St. Paul, MN 55102
651.291.1839 tel

Greenhouse Design
Rough Brothers, Inc.
6553 Vine Street Cincinnati, OH 45217
513.242.0310 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin.
ARCHITECT SEAL

WISCONSIN DANIEL JACK POLING A-8984 MINNEAPOLIS, MN ARCHITECT

Signature:
Print Name: Jack Poling
Date: MAY 4, 2018 License No: A-8984

ISSUE		
MARK	DATE	DESCRIPTION
	09.29.2017	SCHEMATIC DESIGN SUBMISSION
	12.08.2017	DD PRICING SET
	01.10.2018	DESIGN DEVELOPMENT SUBMISSION
	01.17.2018	UDC SUBMISSION
	03.30.2018	70% CD PRICING ISSUE
	04.06.2018	PARKING LOT AND SITE PLAN SUBMISSION
	05.04.2018	90% CD SUBMISSION
	06.01.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE
1	06.22.2018	BID ADDENDUM 2

PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: TLB CHECKED BY: SW

Drawing SET Copyright Plan Source Resources, LLC 10/2018 12:52:06 P:\Projects\8162\Arch\Exhibits\

GREENHOUSE EQUIPMENT PLAN

EXHIBIT H
GH6

REVISED

MATERIAL / PRODUCT ID LIST with Spec Data

ID	Short Name	Section	Spec Data
ACOU-1	ACOUSTICAL CEILING SYSTEM	09 5113	MFR: Armstrong; PRODUCT: Optima, Plant Based; EDGE: Tegular; MODEL: 3251PB; PANEL SIZE: 24' x 24' x 1'; COLOR: White; GRID: 9/16', White;
ACOU-2	ACOUSTICAL CEILING SYSTEM	09 5113	MFR: Armstrong; PRODUCT: Optima, Plant Based; EDGE: Tegular; MODEL: 3390PB; PANEL SIZE: 24' x 60' x 1'; COLOR: White; GRID: 9/16', White;
AAFL-1	ACCESS FLOORING	09 6800	MFR: Tate; PRODUCT: CoreCore 1000; PANEL SIZE:24' x 24'; THICKNESS: 1 5/8'; UNDERSTRUCTURE: Pedestal;
AAFL-2	ACCESS FLOORING	09 6800	MFR: Tate; PRODUCT: #TDHEVWCRUS: Cleaver Concrete; PANEL SIZE: 24' x 24'; THICKNESS: 1 5/16'; FINISH: Pressure Concrete Protector WB; UNDERSTRUCTURE: Bolted Stringer;
CCT-1	CONCRETE COUNTERTOP	12 3613	PRODUCT: Concrete Countertop; COLOR: TBD; FINISH: Smooth Trowel; EDGE: Eased; SEALER: Clear, Matte; THICKNESS: See Drawings; SPLASHES: See Drawings; JOINT TYPE: Grouted, 1/8'; CUTOUT'S: Sink with Drainboard and Faucets;
CFSF	COLD-FORMED STEEL FRAMING - SEE STRUCTURAL	05 4000	PRODUCT: Cold-formed Steel Studs and Furring
CMU	CONCRETE MASONRY UNIT - SEE STRUCTURAL	04 2200	PRODUCT: Concrete Masonry Units
CMU-2	CONCRETE MASONRY UNIT - VENEER	04 2200	PRODUCT: Concrete Masonry Units; FINISH: Burnished; COLOR: MR Std Dark Grey/Black;
CONC-1	SEALED CONCRETE FINISH - SEE STRUCTURAL	03 3050	PRODUCT: Penetrating Liquid Densifier and Sealer;
CONC-2	POLISHED CONCRETE FINISH	03 3543	POLISH: Level 1: Matte finish, 100 grit FINISH: Penetrating Liquid Densifier and Sealer; FINISH ADDITIVE: Increm Smut-Grip or MTC Suretrofloor;
CPT-1	CARPET TILE FLOORING - FLANK	09 6813	MFR: Interface; STYLE: Lichen, Neatni Bloom, COLOR: Iceland Moss
CPT-2	CARPET TILE FLOORING - FLANK	09 6813	MFR: Interface; STYLE: Lichen, Neatni Bloom, COLOR: Iceland Moss
ELE-1	HYDRAULIC ENL ELEVATOR	14 2410	MFR: Otis or ThyssenKrupp; STYLE: Machine-Roomless Hydraulic MODEL: HydroFlow Endura MRL; CAR TYPE: Passenger; CAPACITY (lbs): 3,000 SPEED (fpm, min): 100 OPENING: Front, Right Hand; CAB ENTRANCE: 1-Speed, Satin Stainless Steel; OPERATING PANEL: Satin Stainless Steel CAR PANELS: Custom Laminate: PLAM-2; CAR DOORS: Satin Stainless Steel, Stainless Steel HANDRAIL: Back Pc - Satin Stainless Steel CEILING: LED Perimeter Lit, Painted White FLOORING: Custom: See Finish Plan HALL ENTRANCE: Chemeal EW-4 FIXTURES: Classic: Satin Stainless Steel BUTTONS: Flush, Illuminated Hall;
FAS	FALL ARREST SYSTEM	11 2400	PRODUCT: TBD
FEC	FIRE EXTINGUISHER CABINET	10 4413	MFR: JL Industries (or Larsen); MODEL: Extensity (or Occult) STYLE: Recessed Trimless DOOR: Solid; COLOR: TBD
GB-1	GYPSUM BOARD	09 2900	PRODUCT: Fabricated Gypsum Board
GDAL-1	DECORATIVE METAL GUARDRAIL	05 7300	PRODUCT: Custom Steel Guardrail FINISH: PT-4B, UNO
GL-1	CLEAR ANNEALED GLASS	08 0800	PRODUCT: Annealed Glass COLOR: Clear; THICKNESS: 1/4', typical T indicates Tempered
GLBD-1A	GLASS MARKERBOARD - WHITE	10 1100	MFR: Glass Gardeworks, LLC; STYLE: Wall2Wall, COLOR: White, Magnetic Finish;
HDRL-1	DECORATIVE METAL HANDRAIL	05 7300	PRODUCT: Stainless Steel Tubing FINISH: Satin, No.4 Finish, PROFILE: 1 ½" Diameter;
IGU-1	INSULATED GLASS UNIT	08 8000	MFR: Cardinal Glass; PRODUCT: Double-Pane; COLOR: Clear; UNIT THICKNESS: 1'; FILL: Argon; ALHANDOW: Solar Control; CARDINAL: LoE366/2; U-VALUE (MAX): 0.25; VLT (MIN): 63%; SHGC (MAX): 0.27; T indicates Tempered
INSUL-1	ACOUSTICAL INSULATION	09 2900	PRODUCT: Unfaced Mineral Wool Blanket Insulation;
INSUL-2	BELOW GRADE INSULATION	07 2100	PRODUCT: Expanded Polystyrene Foam (EPS); TYPE: IX, 25-psi' R-VALUE: 4.2/inch;
INSUL-3	CONTINUOUS WALL INSULATION	07 2100	PRODUCT: Polyisocyanurate Foam; SOD: Hunter Panels, JM CO; FACER: Glass-Fibre-Mat; TURNING SYSTEM: 1/8';
INSUL-4	SPRAY FOAM INSULATION	07 2119	PRODUCT: Water-blown, Closed-cell Spray Polyurethane Foam; SOD: Icynene, ProSeal Esc; DENSITY: 2.2 pounds, Closed-cell. BLOWING AGENT: Water; R-VALUE: 4.8/inch; VAPOR BARRIER: 2.4 mm;
INSUL-5	VENTILATED NAILBASE INSULATION	07 2100	PRODUCT: Ventilated Nailbase Insulation; SOD: GAF, ThermaCal 1; SHEATHING: 1/2" Plywood; AIRSPACE: 1"; INSULATION: Polyisocyanurate; PANEL THICKNESS: 6 1/2"; R-VALUE: 30;
LDR-1	WALL-MOUNTED LADDER	05 5000	PRODUCT: Wall-mounted Access Ladder; WIDTH: 18"; RUNGS: 1" Square; MATERIAL: Steel FINISH: Factory Primed, Field Painted;
LDR-2	WALL-MOUNTED LADDER, EXTERIOR	05 5000	PRODUCT: Wall-mounted Access Ladder; WIDTH: 18"; RUNGS: 1" Square; MATERIAL: Galvanized Steel, FINISH: Factory Primed, Field Painted;
LVR-1	LOUVER	08 9119	MFR: Greenheck; MODEL: ESD-262; TYPE: Drainable; DEPTH: 2 inches; FREE AREA (Min): 38%; COLOR; ;
LVR-2	ACOUSTICAL LOUVER	08 9119	MFR: Greenheck; MODEL: AFS-120; TYPE: Acoustical, Sightproof, DEPTH: 12 inches; FREE AREA (Min): 27%; COLOR; ;
MA-1	MILLWORK ACCESSORY - PULL	06 4116	MFR: Stubbs 917 Hardware, STYLE: Chrysalis Collection; PRODUCT NUMBER: P704MB-128;
MA-4	MILLWORK ACCESSORY - COAT ROD	06 4116	MFR: Knape and Vogt; STYLE: Closet-Pro Regular-Duty Adjustable Closet Rod w/ Fused Flange; PRODUCT NUMBER: RM022-4972;
MA-5	MILLWORK ACCESSORY - PAPER TOWEL DISPENSER	06 4116	MFR: Bobrick; STYLE: TrimLine Series; PRODUCT NUMBER: B-626;
MA-6	MILLWORK ACCESSORY - BOOT TRAY	06 4116	MFR: Ware STYLE: Boot Tray; PRODUCT NUMBER: H-2662;
MA-7	MILLWORK ACCESSORY - WASTE BIN	06 4116	MFR: Knape and Vogt; STYLE: Soft Close, Top-Mount Waste w/o Recycling Bins; PRODUCT NUMBER: TE30S-A35FT;
MCP-1	METAL COMPOSITE PANEL	07 4213.23	MFR: 3A Composites USA, Inc.; PRODUCT: Aluminest Plus, FR Core; THICKNESS: 4 mm SYSTEM: Rainscreen/I.S. Insulation Outboard; FINISH: Classic Colors; COLOR: TBD (Dusty Charcoal or Fusion Black);
MP-1	METAL PANEL - STANDING SEAM - COPPER	07 4113.19	PRODUCT: Standing Seam Metal Wall Panels, METAL: Copper; FINISH: Mill, Non-Patinated; WEIGHT: 20 oz.; PANEL WIDTH: Brochier; SEAM HEIGHT: 1 inch; UNDERLAYMENT: WRB with Slip Sheet;
MP-2	METAL PANEL - BLACKENED STEEL	05 5000	PRODUCT: Standing Seam Metal Vinyl Panels; THICKNESS: 24'; FINISH: Prefin Black by Berkhowed Technologies; FASTENERS: Counter-sunk Black Oxide Screws;
MS-1	METAL PAN STAIR - INTERIOR	05 5113	PRODUCT: Metal Stair; TREADS: Precast Concrete Treed; MFR: Texture Design by Wausau Tile, Inc.; TYPE: C-30, Treed with Setting Bed FINISH: TBD; SAFETY: Contrasturn Stripe;
MS-2	METAL PAN STAIR - EXTERIOR	05 5113	PRODUCT: Metal Stair; TREADS: Precast Concrete Treed; MFR: Texture Design by Wausau Tile, Inc.; TYPE: C-60, Self-supporting Flat Treed; COLOR: TBD; SAFETY: Contrasturn Stripe;
NSMF	NON-STRUCTURAL METAL FRAMING	09 2216	PRODUCT: Non-Structural Metal Studs and Furring
OP-1	OPERABLE PARTITION	10 2239	MFR: Modernfold; MODEL: Acousti-Seal 932, NRC: 0.55 (Perforated Panels); STC: 54; PANEL FINISH: Fabric; MFR: CARNEGIE; STYLE: XORSL, SLEET EMBROIDER; COLOR: 6299-820;
PLAM-1	PLASTIC LAMINATE	06 4116	MFR: WILSONART; STYLE: STANDARD LAMINATE; COLOR: CRISP LINEN, 4943-38;
PLAM-2	PLASTIC LAMINATE	06 4116	MFR: WILSONART; STYLE: TRACELESS; COLOR: CHARCOAL VELVET, 1550M-31;
PLAM-3	PLASTIC LAMINATE	06 4116	MFR: WILSONART; STYLE: TRACELESS COLOR: SNOW WHITE VELVET, 1550T-31;

MATERIAL / PRODUCT ID LIST with Spec Data

ID	Short Name	Section	Spec Data
PLAM-4	PLASTIC LAMINATE - ELEV-1	06 4116	MFR: WILSONART; STYLE: STANDARD LAMINATE, COLOR: Dove Grey, 2324-60, Matte
PT-1	INTERIOR PAINT - FLAT	09 9123	PRODUCT: Interior Paint; SHEEN: Flat
PT-2	INTERIOR PAINT - EGGSHELL	09 9123	PRODUCT: Interior Paint; SHEEN: Eggshell
PT-3	HIGH-PERFORMANCE INTERIOR PAINT - SEMI-GLOSS	09 9123	PRODUCT: Interior Paint; SHEEN: Semi-Gloss
PT-4	HIGH-PERFORMANCE EXTERIOR PAINT - SEMI-GLOSS	09 9113	PRODUCT: Exterior Paint; SHEEN: Semi-Gloss
PT-5	EXTERIOR POWDERCOAT		PRODUCT: Exterior Powdercoat; SHEEN: Semi-Gloss
PT-_A	PAINT COLOR - WHITE	09 9123	MFR: BENJAMIN MOORE; STYLE: OC-10 COLOR: CAPITOL WHITE
PT-_B	PAINT COLOR - CHARCOAL	09 9123	MFR: BENJAMIN MOORE; AL FINISH: 2124-10 COLOR: WROUGHT IRON
PT-_C	PAINT COLOR - ACCENT COLOR	09 9123	MFR: Sherwin Williams; STYLE: SW 7617; COLOR: Wedgewood;
PVB-1	PEDESTAL PAVER SYSTEM - CONCRETE	07 7800	PRODUCT: Concrete Pavers on Pedestals; MFR: Wausau Tile; MODULE: 24' x 24'; THICKNESS: 2'; COLOR: TBD
PVB-2	PEDESTAL PAVER SYSTEM - WOOD	07 7800	PRODUCT: Wood Slat Pavers on Pedestals; MFR: Bison Innovative Products; MODEL: WS-FSO-100N--CUMARU-2K; MODULE: 24' x 24'; SPECIES: Cumaru, FSC; FINISH: Unoiled;
PWD-1	CONCEALED PLYWOOD BACKING	06 1000	PRODUCT: Concealed Plywood backing Panels GRADE, DOC PS 1, Exposure 1, C-D Plugged, FRT; THICKNESS: 3/4";
RA-1	ROOF ANCHOR FOR PV RACKING	07 5523	MFR: Anstar Products PRODUCT: QuikAnchor 2000 EPDM;
REVEAL-1	5/8" GYPSUM REVEAL TRIM	092116	MFR: Pro Trim Corporation, MODEL:TDM-025-1125 FINISH: Aluminum, Black
RFNG-1	EPDM ROOFING SYSTEM	07 5323	MFR: Firestone or Carlisle; MEMBRANE: EPDM, 60mil., Black; INSTALLATION: Fully adhered COVER BOARD: High-Density Polyisocyanurate
RFNG-2	METAL ROOFING SYSTEM	01 4112.16	PRODUCT: Standing Seam Metal Roofing SEAM TYPE: Double-lock; METAL: 16 ounce, Custer-hard Copper, FINISH: Mill, Non-patinated UNDERLAYMENT: Synthetic Roofing Felt; GAF Deck Armor ICE DAM/EAVE: Self-adhered, High-Temp Sheet SLIP SHEET: Rosin Paper;
RFNG-3	EPDM FLASHING	07 5323	MFR: Firestone or Carlisle; MEMBRANE: Cured EPDM, 60mil, Black, Self-adhered INSTALLATION: Fully adhered
RH	ROOF HATCH	07 7200	PRODUCT: Scissor-Lift Insulated Roof Hatch, SIZE: 30' x 36'; MATERIAL: Aluminum, FINISH: Mill Finish;
RSIC-1	RESILIENT SOLID INSULATION CLIP	09 2216	MFR: PAC International, Inc. MODEL: RSIC-1
SHELF-1	SHELVING SYSTEM, STANDARD 24 H	09 4116	MFR: Elfrey; MODEL: PLWCH24; SIZE: 84"H COLOR: Arctic White
SHELF-2	SHELVING SYSTEM, SHELF AND BRACKET	09 4116	MFR: Elfrey; MODEL: BA3018A, SIZE: 30"W x 18"D COLOR: Arctic White
SHELF-2	SHELVING SYSTEM, SHELF AND BRACKET	09 4116	MFR: Elfrey; MODEL: BA3018A, SIZE: 30"W x 18"D COLOR: Arctic White
SHELF-4	SHELVING SYSTEM, STANDARD 30 H	09 4116	MFR: Elfrey; MODEL: PLWCH30, SIZE: 36"H COLOR: Arctic White
SHTG-1	GYPSUM SHEATHING	09 2600	PRODUCT: Exterior Gypsum Sheathing TYPE: Type X, Glass-Mat Faced; THICKNESS: 5/8"
SHTG-2	PLYWOOD SHEATHING	01 1600	PRODUCT: Exterior Plywood Sheathing, GRADE: DOC PS1, Exterior, FRT; SPAN RATING: 32/16 THICKNESS: 1/2"
SMF-1	SHEET METAL FLASHING - COPPER	07 6200	PRODUCT: Copper Sheet, FINISH: Mill, Non-Patinated; WEIGHT: 20 oz. UNO; GUTTERS: Match Existing Profile, DOWNSPOUTS: Formed Round, 5" D; UNDERLAYMENT: Self-Adhering, High-Temp Sheet;
SMF-2	SHEET METAL FLASHING - GRAY/BLACK	07 6200	PRODUCT: Colored Aluminum Sheet, THICKNESS: 0.040", UNO FINISH: Mill Finish HDPVF and MDP-1;
SSF-1	SOLID SURFACE	12 3661	MFR: CAESARSTONE; STYLE: 4120; COLOR: RAVEN
SSF-2	SOLID SURFACE	12 3661	MFR: CAESARSTONE; STYLE: 5141; COLOR: OCEAN FOAM;
STN-1	STONE VENEER	04 4313.13	MFR: Buechtel Stone Corp; PRODUCT: Cut Limestone Stripes; COLOR: Ironwood Buff (or Texas Cream) TEXTURE: Smooth
STN-2	CUT STONE TRIM	04 4313.13	MFR: Buechtel Stone Corp; PRODUCT: Cut Limestone Stripes; COLOR: Ironwood Buff (or Texas Cream) TEXTURE: Smooth
TA-04	TOILET TISSUE DISPENSER, JUMBO/ROLL (OFCI)	10 2800	MFR: TBD by Owner; STYLE: ; COLOR: ;
TA-05	PAPER TOWEL (FOLDED) DISPENSER	10 2800	MFR: Bobrick; MODEL: B-626; FINISH: Satin Stainless Steel
TA-06	PAPER TOWEL (ROLL) DISPENSER (OFCI)	10 2800	MFR: TBD by Owner; STYLE: ; COLOR: ;
TA-11	LIQUID-SOAP DISPENSER (OFCI)	10 2800	MFR: TBD by Owner; STYLE: ; COLOR: ;
TA-12	GRAB BAR	10 2800	MFR: Bobrick; MODEL: B-6806 FINISH: Satin Stainless Steel; DIAMETER: 1 1/2"; LENGTH: See Drawings;
TA-14	SANITARY-NAPKIN DISPOSAL UNIT	10 2800	MFR: Bobrick; MODEL: B-270; FINISH: Satin Stainless Steel,
TA-17	MIRROR UNIT (FRAMED)	10 2800	MFR: DESIGN WITHIN REACH; STYLE: LUCANO MIRROR, SMALL; COLOR: BLACK;
TA-19	HOOK	10 2800	MFR: Bobrick; MODEL: B-2116; FINISH: Satin Nickel;
TA-24	DIAPER-CHANGING STATION	10 2800	MFR: Koala Kare; MODEL: KB110-SSRE; FINISH: Satin Stainless Steel;
TBF	THERMAL BREAK FRAMING	07 2100	MFR: Advanced Architectural Products; PRODUCT: SMARTie; MODEL: GREENie;
TBN	THERMAL BREAK MATERIAL - SEE STRUCTURAL	GEN NOTES	MFR: Fabreeka or Armatherm; PRODUCT: Structural Thermal Break Material
TL-1	CERAMIC TILE	09 3013	MFR: FIRECLAY TILE; STYLE: ARABLE; COLOR: CUSTOM – SPRUCE, HUNTER, UNION, CARBON
TL-2	CERAMIC TILE (OFCI)	09 3013	MFR: DPC; STYLE: 4'X4' COLOR: N/A
TL-3	CERAMIC TILE WALL BASE (OFCI)	09 3013	MFR: DPC; STYLE: 4' x 4', COVE BASE COLOR: N/A
TLBD	TILE BACKER BOARD	09 2906	PRODUCT: Cement Board
TLFL-1	TILE FLOORING	01 3013	MFR: MSI; STYLE: SELECTION ONE, 12X24; COLOR: 1104 Y;
TLFL-2	TILE FLOORING	09 3013	MFR: Ameritex Glass; STYLE: Quarry Heavenly; COLOR: Shadow Gray 1N4; SIZE: 4x8;
TREAD-1	ARCHITECTURAL PRECAST CONCRETE TREAD BONDED TO BENT STEEL RISERS	05 5100	
TREAD-2	FABRICATED PRECAST STAIR TREAD C-60 SELF-SUPPORTING FLAT TREAD	05 5100	MIN THICKNESS 3 1/2"
TS-1	STAINLESS STEEL TRELLIS SYSTEM	05 5443	MFR: Cable Decor; PRODUCT: Cable Guide System; MATERIAL: Type 316 Stainless Steel, ROPE TOP: Swaged Round Radius Head; ROPE BOTTOM: Swaged Open/Jaw Eye; TENSIONING: Turnbuckle, MOUNTING: Greenscape Spacer;
TWF	THRU-WALL FLASHING AND DRIP EDGE	07 2715	MFR: 3M; PRODUCT: 3015THF; TYPE: Sheet-Applied, DRIP EDGE: Stainless Steel
VB	UNDERSLAB VAPOR BARRIER	03 3000	MFR: Stego or Raven; PRODUCT: ASTM E1745, Class A; THICKNESS: 15mil thick;
WRWB	WATER-AIR-VAPOR BARRIER MEMBRANE	07 2715	MFR: 3M; PRODUCT: 3015; TYPE: Sheet-Applied, VAPOR (max): 0.1 US perm; AIR (max): 0.004 CFM/sf at 1.57 lb/sf.
WB-1	RUBBER WALL BASE	09 6513	MFR: JOHNSONITE; STYLE: TRADITIONAL WALL BASE; COLOR: #3 BURNT UMBER B;
WB-2	STEEL WALL BASE	05 5000	PRODUCT: Steel Plate Interior Wall Base, THICKNESS: 1/4"; FINISH: Prefin Black by Berkhowed Technologies; ADHESIVE: Low VOC;
WD-1	ACETYLATED WOOD	01 2013	MFR: Accoya Technologies PLC, PRODUCT: Accoya Wood, SPECIES: Radiata Pine;
WD-2	INTERIOR FINISH WOOD	06 2023	PRODUCT: Reclaimed Wood for Interior Trim; SPECIES: Ash; FINISH: Clear;
WD-3	INTERIOR FINISH WOOD VENEER	06 2023	PRODUCT: Wood Veneer; SPECIES: Ash; FINISH: Clear;

MATERIAL / PRODUCT ID LIST with Spec Data

ID	Short Name	Section	Spec Data
WOD-1	WOOD CEILING SYSTEM	09 5426	MFR: Armstrong; PRODUCT: Woodworks Grille; PANEL TYPE: 7736WG; SLAT SIZE: 5/8" x 2 1/4"; SLATS PER PANEL: 8 PANEL SIZE: 12"W x 2 9/4"H; PANEL LENGTH: Custom, See Drawings; FINISH: Grille Maple; GRID: Heavy-Duty Prelude XL; GRID COLOR: Black; INFILL PRODUCT: SoftZone; INFILL TYPE: 6423; INFILL COLOR: Black (Matte);
WDW-1	ALUMINUM/WOOD WINDOW	08 5200	MFR: Innovation; TYPE: Direct Set; IGU: Carbon SP or 2P; SPECIES: Reclaimed Ash furnished by Owner; WD FINISH: Clear sealer; AL FINISH: Painted; COLOR: TBD, match MCP-1 and SMF-2; COORD: Notes: Outswing Heavy Commercial Doors; THICKNESS: 2 1/4";
WH-1	WINDOW FILM, PRIVACY	08 8753	MFR: 3M; PRODUCT: Fasara Glass Finish, PATTERN: Milky White (Matte), SH2MAML;
WP-1	WATERPROOFING MEMBRANE	07 1416	MFR: GCP/Grace; PRODUCT: Preprufe;
WRB	WATER-RESISTIVE BARRIER	07 2500	PRODUCT: Single Layer #15 Asphalt Felt; TYPE: ASTM D226 Type I; SLIP SHEET: Rosin Paper;
WS-1A	ROLLER WINDOW SHADE, MOTORIZED	12 2413	MFR: Hunter Douglas; TYPE: Motorized, Single, SHADING: 5% Openness; COLOR: GreenScreen Evolve HD3305, Shale;
WS-2A	ROLLER WINDOW SHADE, MANUAL	12 2413	MFR: Hunter Douglas; TYPE: Manual, Single; SHADING: 5% Openness; COLOR: GreenScreen Evolve HD3305, Shale;

SHT NO	SHEET NAME
GENERAL	
G100	SHEET INDEX, GENERAL NOTES AND MATERIALS
G201	SITE CONTEXT AND SYMBOLS
G002	TYPES AND SYSTEMS
G251	CODE PLAN - OVERALL APPROACH
G252	CODE PLAN AND ANALYSIS
ARCHITECTURAL DEMOLITION	
AD100	SITE DEMOLITION PLAN
AD101	ROOF DEMOLITION PLAN
AD121	REFLECTED CEILING PLAN - DEMOLITION
CIVIL	
C100	EXISTING CONDITIONS PLAN
C200	DEMOLITION PLAN
C300	SITE PLAN
C400	GRADING & EROSION CONTROL PLAN
C500	UTILITY PLAN
C501	LIFT STATION DETAIL
C600	CONSTRUCTION DETAILS - 1
C601	CONSTRUCTION DETAILS - 2
C602	CONSTRUCTION DETAILS - 3
C603	CONSTRUCTION DETAILS - 4
LANDSCAPE	
L001	HARDSCAPE PLAN
L002	HARDSCAPE DETAILS
L003	GRADING PLAN
ARCHITECTURAL	
A000	ARCHITECTURAL SITE PLAN
A100	LEARNING CENTER FLOOR PLAN - LEVEL 1
A101	LEARNING CENTER FLOOR PLAN - LEVEL 2
A103	LEARNING CENTER ROOF PLAN
A111	GREENHOUSE - HEADHOUSE FLOOR + ROOF PLAN
A112	GREENHOUSE - HEADHOUSE SECTION AND ELEVATION
A121	REFLECTED CEILING PLAN - LEVEL 1 - EXTG + NEW
A122	REFLECTED CEILING PLAN - LEVEL 1 + 2 - EXTG + NEW
A131	REFLECTED CEILING PLAN - LEVEL 1 - EXISTING
A132	EXISTING BUILDING REFERENCE DRAWINGS
A151	TOILET ROOM PLANS AND ELEVATIONS
A152	TOILET ROOM PLANS AND ELEVATIONS
A191	ENLARGED PLANS AND SECTIONS
A201	EXTERIOR ELEVATIONS
A202	EXTERIOR ELEVATIONS
A251	BUILDING SECTIONS
A301	WALL SECTIONS
A351	EXTERIOR DETAILS
A352	EXTERIOR DETAILS
A353	EXTERIOR DETAILS
A354	EXTERIOR DETAILS
A355	EXTERIOR DETAILS
A356	EXTERIOR DETAILS
A357	EXTERIOR DETAILS
A358	EXTERIOR DETAILS – COPPER ROOFING
A401	VERTICAL CIRCULATION
A402	VERTICAL CIRCULATION DETAILS
A403	VERTICAL CIRCULATION DETAILS
A501	INTERIOR ELEVATIONS
A502	INTERIOR ELEVATIONS
A503	INTERIOR ELEVATIONS
A551	INTERIOR DETAILS
A552	INTERIOR DETAILS
A601	DOOR SCHEDULE, TYPES AND DETAILS
A651	WINDOW TYPES
A701	FINISH PLANS
A801	MILLWORK PLANS
A850	LEVEL 1 MILLWORK
A853	LEVEL 1 MILLWORK
A854	LEVEL 2 MILLWORK
A951	MILLWORK DETAILS
A952	MILLWORK DETAILS
A961	FURNITURE PLANS - ISSUED FOR REFERENCE ONLY
STRUCTURAL	
S001	GENERAL NOTES
S002	SYMBOLS AND ABBREVIATIONS
S101	LEARNING CENTER HELICAL PILE PLAN
S102	LEARNING CENTER FOUNDATION PLAN
S103	LEARNING CENTER LEVEL 2 FRAMING PLAN
S104	LEARNING CENTER ROOF FRAMING PLAN
S111	GREENHOUSE FOUNDATION PLAN
S112	GREENHOUSE ROOF FRAMING PLAN
S201	FOUNDATION DETAILS
S202	FOUNDATION DETAILS
S203	FOUNDATION DETAILS
S301	FRAMING DETAILS
S302	FRAMING DETAILS
GREENHOUSE	
GH1	GREENHOUSE POST PLAN
GH2	GREENHOUSE SIDEWALL ELEVATIONS
GH2.1	GREENHOUSE CORRIDOR PARTITION ELEVATIONS
GH3	GREENHOUSE GABLE ELEVATIONS
GH3.1	GREENHOUSE GABLE PARTITIONS
GH4	GREENHOUSE TRUSS SECTION
GH4.1	GREENHOUSE TRUSS DETAILS
GH5	GREENHOUSE FOUNDATION PLAN
GH5.1	GREENHOUSE POST AND BASE ANCHOR DETAILS
GH6	GREENHOUSE EQUIPMENT PLAN
GH6.1	GREENHOUSE BENCH PLAN
GH6.2	GREENHOUSE EQUIPMENT SECTIONS
GH6.3	GREENHOUSE CONTROL GROWING AREA
GH6.4	GREENHOUSE CONTROL (CORRIDOR)
GH6.5	GREENHOUSE CONTROL (EQUIPMENT)
GH6.6	GREENHOUSE CONTROL (ENTERCONNECT)
GH6.7	TYPICAL GREENHOUSE COOL CELL DETAILS
GH7	GREENHOUSE RIDGE SECTION
GH8	TYPICAL GREENHOUSE SIDEWALL SECTION
GH8.1	TYPICAL GREENHOUSE PARTITION SECTION
GH9	GREENHOUSE ROOF TO GABLE SECTION
GH10	GREENHOUSE DOOR SCHEDULE
GH11	GREENHOUSE CLOSURE DETAILS

SHT NO	SHEET NAME
GREENHOUSE HEATING	
H1	GREENHOUSE HEATING SYSTEM NOTES & SCHEDULES
H2	GREENHOUSE HEATING SYSTEM DESIGN CALCS
H3A	GREENHOUSE HEATING SYSTEM PEX MANIFOLD BOX
H3	GREENHOUSE HEATING SYSTEM PEX LAYOUT
H3A	GREENHOUSE HEATING SYSTEM PEX DETAILS
H4	GREENHOUSE UPPER & LOWER PIN TUBE LAYOUT
H4A	GREENHOUSE SNOW MELT PIN TUBE LAYOUT
H5	PIN TUBE DETAILS
H6	PIN TUBE COVER AND INSULATION DETAILS
H5	TROPICAL GHSE & PIPING ELEVATION
H5A	TROPICAL GHSE & PIPING ELEVATION
H5B	ORCHID INT GHSE & PIPING ELEVATION
H5C	ORCHID INT GHSE & PIPING ELEVATION
H6	PRODUCTION GHSE & PIPING ELEVATION
H6	MIXING VALVE DETAILS
H6A	ZONE CONTROL VALVE DETAILS
H7	BENCHTOP HEATING LAYOUT
H7A	BENCHTOP HEATING DETAILS
MECHANICAL	
M001	MECHANICAL TITLE SHEET
MD111	GREENHOUSE MECHANICAL PIPING DEMO PLAN
MD131	COMMONS AREA MECHANICAL DEMOLITION PLAN
M101	LEARNING CENTER MECHANICAL DUCTWORK PLAN
M102	LEARNING CENTER MECHANICAL PIPING PLAN
M103	LEARNING CENTER RADIANT HEAT AND COOL
M111	GREENHOUSE MECHANICAL PIPING PLAN
M112	ENLARGED PLANS AND SECTIONS
M113	ENLARGED PLANS AND SECTIONS
M131	COMMONS AREA MECHANICAL PIPING PLAN
M201	MECHANICAL DETAILS
M202	MECHANICAL DETAILS
M301	MECHANICAL SCHEDULES
M302	MECHANICAL SCHEDULES
M303	MECHANICAL CONTROLS SCHEMATICS
M401	MECHANICAL CONTROL SCHEMATICS
M402	MECHANICAL CONTROL SCHEMATICS
PLUMBING	
P000	PLUMBING TITLE SHEET
PD111	GREENHOUSE PLUMBING DEMO PLAN - BELOW GRADE
PD112	GREENHOUSE PLUMBING DEMO PLAN - ABOVE GRADE
PD131	COMMONS AREA PLUMBING DEMO PLAN
P106	LEARNING CENTER PLUMBING PLAN - BELOW GRADE
P107	LEARNING CENTER PLUMBING PLAN - ABOVE GRADE
P302	LEARNING CENTER PLUMBING ROOF PLAN
P111	GREENHOUSE PLUMBING PLAN - BELOW GRADE
P112	GREENHOUSE PLUMBING PLAN - ABOVE GRADE
P131	COMMONS AREA PLUMBING PLAN
P301	PLUMBING RISER DIAGRAM
P351	PLUMBING DETAILS & SCHEDULES
P401	PLUMBING SCHEDULES AND RAINWTR SCHEMATIC
IRRIGATION	
I100	IRRIGATION PUMP SHED
I101	IRRIGATION DEMO AND QUICK COUPLER PLAN
FIRE PROTECTION	
FP00	SITE PLAN, GENERAL NOTES, DETAILS
FP00	FIRE PROTECTION LEVEL 1
FP01	FIRE PROTECTION PLAN EXTG BUILDING
FP02	FIRE PROTECTION LEVEL 2 - NEW ADDITION
FP03	FIRE PROTECTION 1970S BUILDING
ELECTRICAL	
E000	ELECTRICAL TITLE SHEET
E0100	LOBBY LIG

DRAFTING SYMBOLS

- MULTI - ELEVATION REFERENCE — SIM / A101
- ELEVATION REFERENCE — SIM / A101
- SECTION REFERENCE — SIM / A101
- DETAIL REFERENCE — SIM / A101
- DETAIL REFERENCE — SIM / A101
- WALL TYPE — 1
- PARTITION TYPE — A
- DOOR TYPE — 101
- WINDOW TYPE — W1
- REVISION — 1 (CLOUD ONLY)
- KEYNOTE — 1
- GRID LINE — D
- LEVEL MARKER — Name (Optional) / Elevation
- ROOM NAME — Room name / 101
- NORTH SYMBOL
- DRAWING NUMBER
- DRAWING TITLE
- 1 VIEW NAME — A101 1/8" = 1'-0" — SCALE / SHEET NUMBER

ABBREVIATIONS

A		C		F		K		P	
A/E	Architect and/or Engineer	CCL	Column	FEC	Fire Extinguisher Cabinet	KIT	Kitchen	PERP	Perpendicular
AB	Anchor Bolt	COM	Communication	FF	Finished Face, Face of Wall	KO	Knockout	PFN	Pre-Painted
ABV	Above	COMP	Composite	FFE	Finish Floor Elevation			PPN	Pre-Painted
AC	Air Conditioning	COMPR	Compressible	FFL	Finish Floor Level	L		PKG	Packing
ACPL	Access Floor	CONC	Concrete	FHC	Fire Hose Cabinet	L	Long, Length	PL	Plate
ACOUS	Acoustical	COND	Condition	FIN	Finish	LAB	Laboratory	PL	Property Line
ACT	Acoustical Ceiling Tile	CONF	Conference	FIXT	Fixture	LAM	Laminate, Laminated	PLAM	Plastic Laminate
AD	Access Door	CONN	Connection	FLASH	Flashing	LAV	Lavatory	PLAS	Plaster
ADDL	Additional	CONST	Construction	FLEX	Flexible	LB	Pound	PLBG	Plumbing
ADJ	Adjacent	CONT	Carpet (over) (stone)	FLR	Floor(ing)	LCD	Linear Ceiling Diffuser	PLF	Pounds per Linear Foot
ADJST	Adjustable	CORR	Corridor	FLUOR	Fluorescent	LF	Linear Foot	PLYWD	Plywood
ADMIN	Administration	CPT	Carpet	FN	Fence	LH	Left Hand	PNL	Panel
AFF	Above Finish Floor	CTR	Countersunk	FND	Foundation	LHR	Left Hand Reverse	PR	Pair
ALT	Alternate	CT	Ceramic Tile	FO	Finished Opening	LIN	Linear	PREFAB	Prefabricated
ALUM	Aluminum	CTR	Center	FOC	Face of Concrete	LINO	Linoleum	PREUM	Prelacquered
AMEND	Amendment	CU	Cubic	FOM	Face of Masonry	LL	Live Load	PVDJ	Polysulfone
ANC	Anchor	CUH	Cubic Unit Heater	FOS	Face of Studs / Steel	LOC	Location	PSI	Pound per Square Inch
APC	Access Panel	CW	Cold Water	FP	Fireproofing	LONG	Longitudinal	PT	Paint
APP	Architectural Precast Concrete	CW	Curtain Wall	FPL	Fireplace	LTG	Lighting	PTN	Partition
APPROX	Approximately			FRP	Fiberglass Reinforce Plastic Panel	LVR	Louver	PVC	Polyvinyl Chloride
ARCH	Architect	D		FRT	Fire Retardant Treated				
ASTD	Astronaut	DBL	Double	FT	Foot or Feet	M		Q	
AV	Audio Visual	DEG	Degree	FTG	Footing	MAS	Masonry	QT	Quarry Tile
AVG	Average	DEMO	Demolition	FTR	Fine Tube Radiation / Radiator	MAT	Walk Off Mat	QTR	Quarter
AWT	Architectural Wall Treatment	DEPT	Department	FUR	Furring	MATL	Material	QTY	Quantity
		DF	Drinking Fountain	FUT	Future	MAX	Maximum		
B		DIA	Diameter	FWC	Fabric Wall Covering	MC	Medicine Cabinet	R	
BAB	Balled and Burlapped	DIAG	Diagonal			MDF	Medium Density Fiberboard	R	Radius
BA	Building Accessory	DIFF	Diffuser	G		MDO	Medium Density Overlay	RA	Return Air
BD	Board	DN	Dimension	G	Gas	MECH	Mechanical	RAD	Radiator
BIT	Bituminous	DISP	Dispenser	GA	Gauge	MEMB	Membrane	RB	Rubber Base
BL	Beds Large	DIST	Distribution	GAL	Gallon	MEZZ	Mezzanine	RCP	Reflected Ceiling Plan
BLDG	Building	DIV	Division or Divider	GALV	Galvanized	MFR	Manufacturer	RD	Roof Drain
BLKG	Blocking	DL	Dead Load	GAR	Garage	MH	Manhole	RECC	Recessed
BM	Beam or Bench Mark	DN	Down	GB	Grab Bar	MIN	Minimum	RECT	Rectangular
BO	By Owner	DR	Door	GC	Gas Cock or Condenser	MISC	Miscellaneous	RSF	Resilient Sheet
BOF	Bottom of Footing	DS	Downspout	GEN	General	MO	Masonry Opening	REF	Refrigerator
BOS	Bottom of Slab	DTL	Detail	GEN	Generator	MR	Moisture Resistant	REINF	Reinforce (ment) (ing)
BOS	Bottom of Steel	DW	Dishwasher	GFRP	Gypsum Fiberglass Residence Panel	MTD	Mounted	REQD	Required
BOT	Bottom	DWG	Drawing	GL	Glazing	MTL	Metal	REV	Revised, Reverse
BPL	Bearing Plate	DWL	Dowel	GLU	Glue Laminated	MUL	Mullion	RF	Resilient Floor
BR	Brick	DWTR	Dishwasher	GYP	Gypsum	MW	Millwork	RFH	Roof Hatch
BRC	Brick Course			GWB	Gypsum Wall Board	MWA	Millwork Accessory	RFV	Roof Vent
BSG	Bearing	E						RH	Right Hand
BSMT	Basement	E	East	H		N		RHR	Right Hand Reverse
BTWN	Between	EA	Each	H	High	N	North	RM	Room
BUR	Built-up Roof	EF	Exhaust Fan	HB	Hose Bib	NA	Not Applicable	RND	Round
		EFSN	Emergency Generator	HC	Handicap	NIC	Not in Contract	RO	Rough Opening
C		EIFS	Exterior Insulation & Finish System	HDWD	Hardwood	NO	Number	ROW	Right of Way
C	Courtesy	EJ	Expansion Joint	HDWR	Hardware	NOM	Nominal	RR	Rubber Tile
C/C	Center to Center	EL	Elevation	HM	Hollow Metal	NRC	Noise Reduction Coefficient	RWL	Rain Water Leader
CAB	Cabinet	ELEC	Electrical	HOR	Horizontal	NTS	Not to Scale		
CANT	Cantilever	ELEV	Elevator	HR	Handrail			S	
CAT	Category	EM	Emergency	HT	Height	O		S	South
CB	Catch Basin	E MEP	Electrical Mech	HTR	Heater	OA	Overall	SA	Supply Air
CE	Civil Engineer	EO	Electrical Outlet	HVAC	Heating / Ventilation / Air Conditioning	OC	On Center	SAN	Sanitary
CEM	Cement	EQ	Equal	HYD	Hydrant	OCD	Overhead Coiling Door	SC	Solid Core
CER	Ceramic	EPD	Elevated Propylen Diene Monomer	HYG	Hygrometer	OD	Outside Diameter	SCHED	Schedule
CF	Cubic Feet	EQ	Equal	HW	Hot Water	OFCI	Owner Furnished - Contractor Installed	SD	Sloped Drain
CFCI	Cubic Feet per Second	EQUIP	Equipment	HWH	Hot Water Heater	OFOI	Owner Furnished - Owner Installed	SECT	Section
CG	Corner Guard	ESTB	Established			OH	Overhead	SF	Square Foot
CHNL	Channel	EW	Each Way	I		OHD	Overhead Door	SFRMT	Sheetrock
CI	Castalron	EWC	Electric Water Cooler	ID	Inside Diameter	OP	Opposite Portion	SHR	Shower
CIP	Castalron Place	EXC	Excavate(ion), Excavation	IN	Inch	OPG	Opening	SHT	Sheet
CIR	Circle	EXH	Exhaust	INCL	Including	OPP	Opposite	SHTG	Sheathing
CJ	Control Joint	EXIST/EX	Existing	INFO	Information	OPT	Optional	SIM	Similar
CL	Centerline	EXP	Expansion	INSUL	Insulation	OVD	Overflow Roof Drain	SLNT	Sealant
CLNG	Ceiling	EXT	Exterior	INT	Interior			SMD	Surface Mount
CLO	Closet					P		SMTL	Sheet Metal
CLR	Clear(ance)	F		J		PA	Public Address	SOG	Slab on Grade
CM	Construction Manager	FA	Fire Alarm	JAN	Janitor	PAR	Parallel	SR	Seal(ing)
CMU	Concrete Masonry Unit	FBK	Face of Brick	JBOX	Junction Box	PBD	Particle Board	SPEC	Specification(s)
CO	Cased Opening	FC	Face	JC	Janitor's Closet	PC	Precast Concrete	SQ	Square
CO	Clean Out	FD	Floor Drain	JST	Joist	PERIM	Perimeter	SS	Stainless Steel
		FE	Fire Extinguisher	JT	Joint				

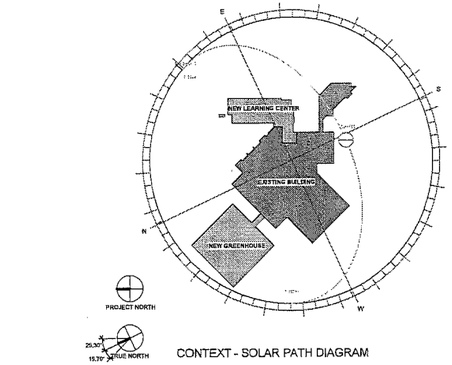
		T	
SSF	Solid Surface	T&G	Tongue & Grooved
SSK	Service Sink	TAN	Tangent
ST	Stone Tile	TBD	To Be Determined
STC	Sound Transmission Coefficient	TD	Trench Drain
STD	Standard	TEMP	Temporary
STL	Steel	TERR	Terrazzo
STN	Stained	THK	Thick(ness)
STOR	Storage	THRES	Threshold
STRUCT	Structural	TOB	Top of Beam
SUBFL	Subflooring	TOC	Top of Concrete or Curb
SUSP	Suspended	TOD	Top of Deck
SYM	Symbol, Symmetrical	TOF	Top of Footing
SYS	System	TOJ	Top of Joist
		TOM	Top of Masonry
T		TOP	Topping
T&G	Tongue & Grooved	TOS	Top of Slab
TAN	Tangent	TOS	Top of Steel
TBD	To Be Determined	TOW	Top of Wall
TD	Trench Drain	TRTD	Treated
TEMP	Temporary	TS	Tube Steel
TERR	Terrazzo	TYP	Typical
THK	Thick(ness)		
THRES	Threshold	U	
TOB	Top of Beam	UC	Undercut
TOC	Top of Concrete or Curb	UFIN	Unfinished
TOD	Top of Deck	UG	Underground
TOF	Top of Footing	UNO	Unless Noted Otherwise
TOJ	Top of Joist	UPH	Upholstery
TOM	Top of Masonry	UR	Urinal
TOP	Topping	UTIL	Utility
TOS	Top of Slab		
TOS	Top of Steel	V	
TOW	Top of Wall	VAR	Varies
TRTD	Treated	VB	Vapor Barrier
TS	Tube Steel	VCT	Vinyl Composition Tile
TYP	Typical	VERT	Vertical
		VEST	Vestibule
U		VIN	Vinyl
UC	Undercut	VNR	Veneer
UFIN	Unfinished	VR	Vapor Retarder
UG	Underground	VT	Vinyl Tile
UNO	Unless Noted Otherwise	VWC	Vinyl Wall Covering
UPH	Upholstery		
UR	Urinal	W	
UTIL	Utility	W	West
		W	Wide, Width
V		W	With
VAR	Varies	WD	Wood
VB	Vapor Barrier	WDW	Window
VCT	Vinyl Composition Tile	WF	Wide Flange
VERT	Vertical	WG	Wall Guard
VEST	Vestibule	WHTR	Water Heater
VIN	Vinyl	WP	Waterproofing
VNR	Veneer	WR	Water Resistant
VR	Vapor Retarder	WS	Weather (Stripping)
VT	Vinyl Tile	WSCT	Wainscot
VWC	Vinyl Wall Covering	WT	Weather Treatment

SITE DEMO AND NEW WORK NOTES

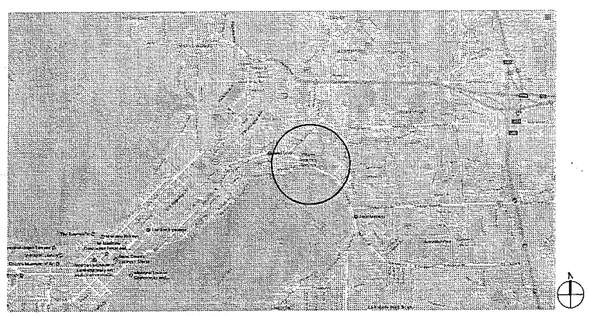
1. ALL WORK OUTSIDE OF PROPERTY LINE WILL BE BY CITY OF MADISON UNLESS NOTED OTHERWISE.
2. NOTIFY OWNER AND/OR OBG AND ARCHITECT OF ANY INCONSISTENCIES BETWEEN DRAWINGS AND ACTUAL CONDITIONS DISCOVERED DURING DEMO OR NEW WORK.
3. NOTIFY ALL RELEVANT UTILITY COMPANIES AND OBG PRIOR TO EXCAVATION OR BELOW-GRADE WORK, DETERMINE EXACT LOCATION AND DEPTH OF BELOW-GRADE UTILITIES PRIOR TO COMMENCING WORK.
4. GENERAL CONTRACTOR SHALL REPLACE EXISTING MATERIAL DAMAGED DURING DEMO OR NEW CONSTRUCTION OPERATIONS TO CITY OF MADISON STANDARDS.
5. REFER TO C100 FOR ADDITIONAL SITE DEMOLITION AND PROTECTION SCOPE.
6. REFER TO C-SERIES FOR CIVIL ENGINEERING, L-SERIES FOR LANDSCAPE AND ARCHITECTURAL, AND I-SERIES SHEETS FOR IRRIGATION NEW WORK SCOPE.
7. TREES TO BE RETAINED AND PROTECTED BY CONTRACTOR SHALL INCLUDE ALL OF THE FOLLOWING: BRANCHES AND LIMBS, TREE TRUNK, ALL ROOTS AND ROOT SYSTEMS. CONTRACTOR SHALL BE REQUIRED TO CONTACT THE STAFF HORTICULTURALIST BEFORE CUTTING OR TRIMMING ANY BRANCHES OR ROOTS. CONTRACTOR SHALL USE EXTREME CAUTION WHEN REMOVING EXISTING CONCRETE SLABS, AND SHALL PROTECT ALL EXPOSED ROOT SYSTEMS WHILE BACKFILLING AND INSTALLING NEW PAVERS AS NECESSARY.
8. CITY OF MADISON PARKS DIVISION WILL REMOVE TREES PRIOR TO CONSTRUCTION COMMENCEMENT DATE (EXCLUDING STUMP REMOVAL).
9. OLBRICH STAFF WILL REMOVE ALL EXISTING BENCHES, PORTABLE PLANTERS, LANDSCAPE FENCING, FEATURE LIGHTING AT GRADE AND OTHER MOVEABLE FEATURES PRIOR TO CONSTRUCTION COMMENCEMENT DATE.
10. EXISTING FIBER OPTIC LINE LOCATION INDICATED IS APPROXIMATE) CONNECTS EXISTING I/O PANEL IN CLOSET 1 (NORTH-WEST) IN STAFF OFFICES ZONE TO GARVER COTTAGE. WHILE THIS LINE IS ACTIVE, PROVIDE TEMPORARY OR NEW PERMANENT LINE WITH ZERO LOSS OF SERVICE. GC TO PROVIDE OBG STAFF MINIMUM 3 UNINTERRUPTED HOURS NOTICE FOR ANY LOSS OF SERVICE. LOSS OF SERVICE NOT TO EXCEED 48 HOURS ON ANY TWO DAYS OF THE WEEK (MON THRU SUN). SEE T-SERIES DOCS FOR MORE DETAILS.
11. ALL WORK SHALL BE DONE IN ACCORDANCE WITH CITY OF MADISON STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION.
12. THE CONTRACTOR SHALL PERFORM STREET SWEEPING ON ALL STREETS OR PAVED SURFACES OUTSIDE OF THE CONSTRUCTION LIMITS THAT ARE AFFECTED BY CONSTRUCTION EQUIPMENT, HAULING OR RELATED CONSTRUCTION ACTIVITIES THAT RESULT IN MUD TRACKING OR SILTATION. STREET SWEEPING SHALL REMOVE ALL LOOSE MATERIAL TO THE SATISFACTION OF THE CONSTRUCTION ENGINEER. ALL AFFECTED STREETS OR PAVED SURFACES BEYOND THE CONSTRUCTION LIMITS SHALL BE CLEAN AT THE END OF EACH WORK DAY.
13. A SILT SOCK SHALL BE INSTALLED AROUND THE PERIMETER OF THE CONSTRUCTION LIMITS TO PROTECT DOWN-SLOPE AREAS FROM SILT-LADEN RUNOFF GENERATED FROM DISTURBED WORK AREAS PER CITY OF MADISON SPW SPEC 210.5(b).
14. PROVIDE INLET PROTECTIONPER SPW SPEC 210.5(c) AND WISCONSIN DNR TECHNICAL STANDARD No. 1056, TYPE D.
15. IN REMOVING PAVEMENT, CURB, GUTTER, SIDEWALK, CROSSWALKS, DRIVEWAYS, STEPS AND SIMILAR STRUCTURES, WHERE PORTIONS OF THE EXISTING STRUCTURE IS TO BE LEFT IN THE SURFACE OF THE FINISHED WORK, THE STRUCTURE TO BE REMOVED IS TO BE SAW CUT TO FULL DEPTH AND CHIPPED TO A TRUE LINE WITH A FACE PARALLEL WITH THE SURFACE OF THE STRUCTURE TO REMAIN. SUFFICIENT REMOVAL SHALL BE MADE TO PROVIDE FOR PROPER GRADES AND CONNECTIONS TO THE NEW WORK, ENSURE THAT ALL NECESSARY SAW CUTS ARE CLEAN AND SMOOTH AND DO NOT RESULT IN A COMPROMISED OR CRUMBLING EDGE.
16. THE EXISTING FACILITY SHALL REMAIN IN OPERATION DURING CONSTRUCTION ACTIVITIES. EXCEPT FOR WITHIN THE CONSTRUCTION ZONE, CONSTRUCTION FENCING SHALL ALLOW FOR CONSTRUCTION-RELATED ENTRY AND EGRESS AND FOR UNIMPEDED EATING FOR BUILDING OCCUPANTS. ACCESS INTO THE SITE OR BUILDING THROUGH CONSTRUCTION FENCING FOR ANYTHING OTHER THAN CONSTRUCTION-RELATED REASONS SHALL NOT BE ALLOWED.
17. ANY GC/SUBCONTRACTOR SITE OPERATIONAL AND LOGISTICS INFORMATION SHOWN ON ANY SITE PLAN DRAWINGS IS TO BE VERIFIED FOR CONTENT AND SCOPE WITH CITY ENGINEERING AND OLBRICH STAFF PRIOR TO CONSTRUCTION OPERATIONS COMMENCING.
18. COPPER ROOFING AND ROOF ACCESSORIES TO BE CAREFULLY REMOVED, DISASSEMBLE AND SALVAGE EXISTING GUTTERS, DOWNSPOUTS, SNOW GUARDS, AND ASSOCIATED FITTINGS/HARDWARE FOR REINSTALLATION TO THE GREATEST EXTENT POSSIBLE. IN REMOVING OF EXISTING STANDING SEAM ROOF PANELS, USE MECHANICAL SEAM CUTTER TO REMOVE FOLDED SEAM AND DISENGAGE FASTENING CLIPS. REMOVE ROOFING PANELS, FULLY INTACT TO THE GREATEST EXTENT POSSIBLE, AND STOCKPILE SEPARATELY IN A LOCATION DESIGNATED BY OWNER FOR OWNER DISPOSAL. DISPOSAL OF REMAINING DEMOLITION WASTE BY CONTRACTOR.

WALL AND PARTITION KEY

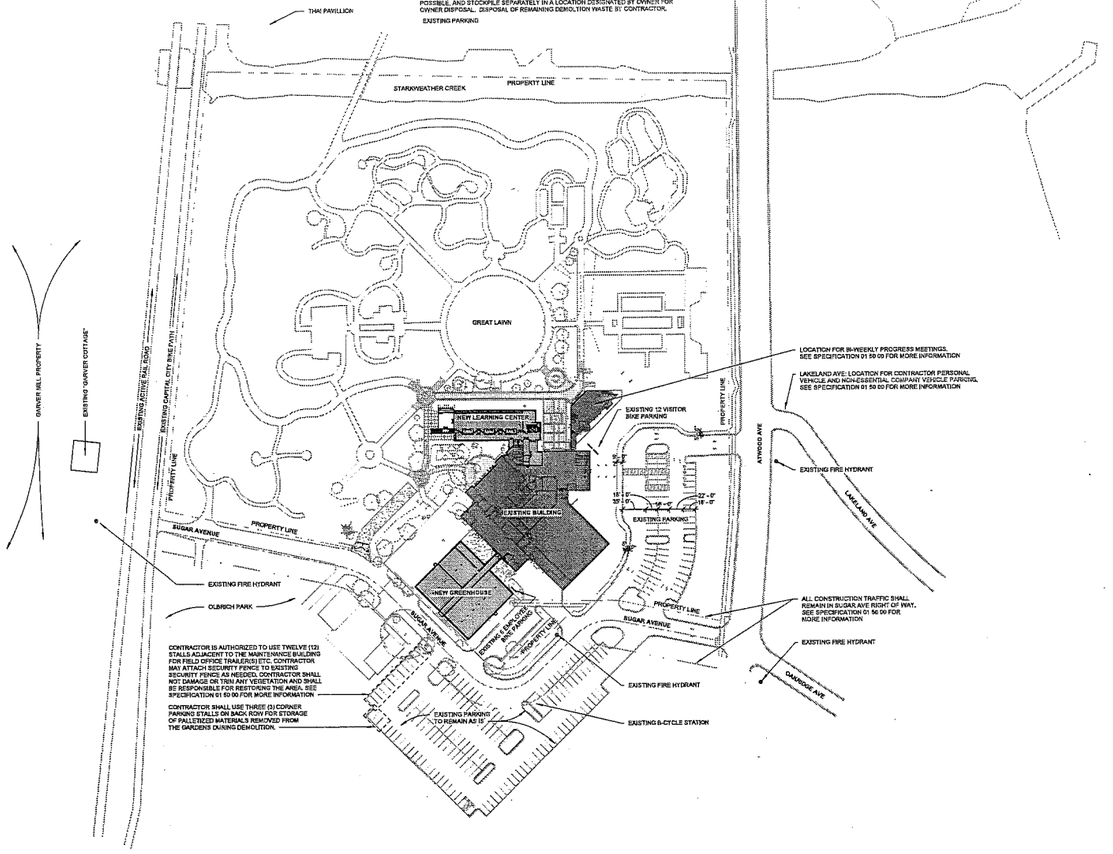
- NEW WALLS AND PARTITIONS
- EXISTING WALLS AND PARTITIONS
- WALLS AND PARTITIONS TO BE REMOVED
- 1 HOUR RATED FIRE WALL
- 2 HOUR RATED FIRE WALL



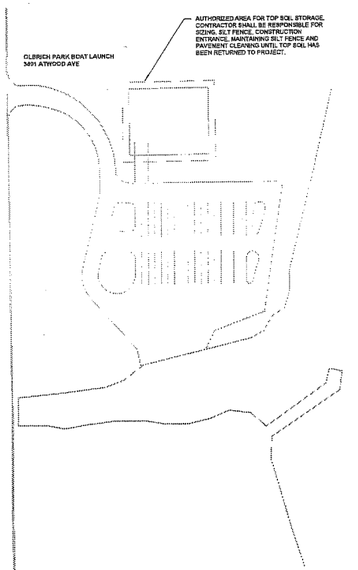
CONTEXT - SOLAR PATH DIAGRAM



OLBRICH BOTANICAL GARDENS - LOCATION PLAN



1 CONTEXT - SITE CONTEXT PLAN
G001 1" = 80'-0"



MSR
710 South 2nd Street, 5th Floor
Minneapolis, Minnesota 55401-2282
Architecture, Interiors and Urban Design
612 375 0336 tel
612 342 2216 fax
www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201
Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
323 South Patterson Street, Suite 1
Madison, WI 53703
608.251.3600 tel

Structural Engineer, Technology and A/V
IMEG Corp.
1800 Deming Way, Suite 200
Middleton, WI 53562
608.223.9680 tel

MEP Engineer
MEP Associates, LLC
860 Blue Gentian Road, Suite 175
Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
575 Minnesota Ave West
St. Paul, MN 55107
651.251.1650 tel

Greenhouse Design
Rough Brothers, Inc.
9513 Vine Street
Cincinnati, OH 45217
513.242.0310 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin.
ARCHITECT SEAL

WISCONSIN — DANIEL JACK POLING — A-6394 — MINNEAPOLIS, MN — ARCHITECT

Signature:
Print Name: Jack Poling
Date: JUNE 4, 2018 License No. A-6394

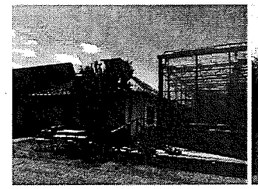
MARK	DATE	DESCRIPTION
	09.22.2017	SCHEMATIC DESIGN SUBMISSION
	12.04.2017	DD PRICING SET
	01.10.2018	DESIGN DEVELOPMENT SUBMISSION
	01.17.2018	UDC SUBMISSION
	03.30.2018	75% CD PRICING ISSUE
	04.06.2018	PARKING LOT AND SITE PLAN SUBMISSION
	05.04.2018	90% CD SUBMISSION
	05.01.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE

PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: MSR CHECKED BY: MSR

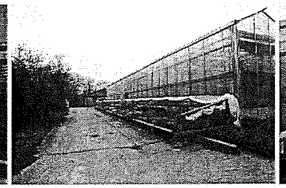
SITE CONTEXT AND SYMBOLS

EXHIBIT A
G001

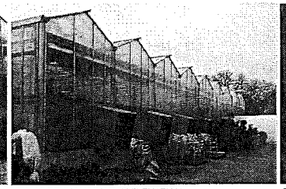
06/04/2018



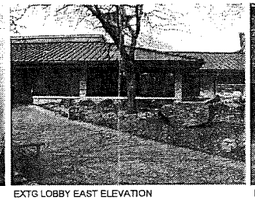
EXTG GREENHOUSE NORTH ELEVATION AT NE END (LEFT) AND FULL (RIGHT).



EXTG GREENHOUSE WEST ELEVATION

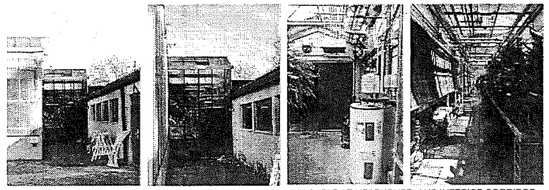


EXTG GREENHOUSE SOUTH ELEVATION

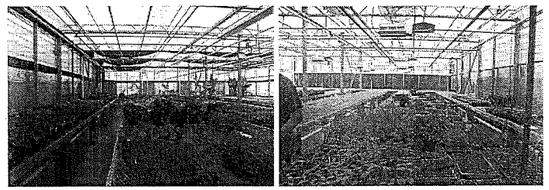


EXTG LOBBY EAST ELEVATION

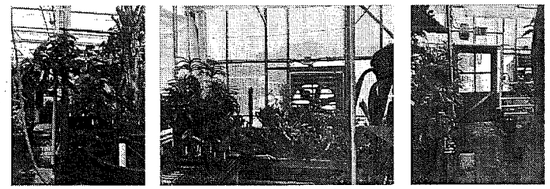
EXTG 1970s BDG LINK DOOR AND WINDOW



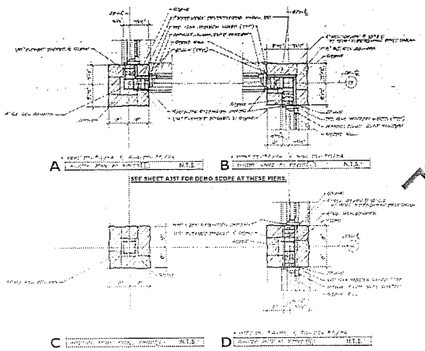
EXTG GREENHOUSE SW CORNER AND LINK TO HEADHOUSE, LINK GABLE AT HEADHOUSE, AND INTERIOR CORRIDOR.



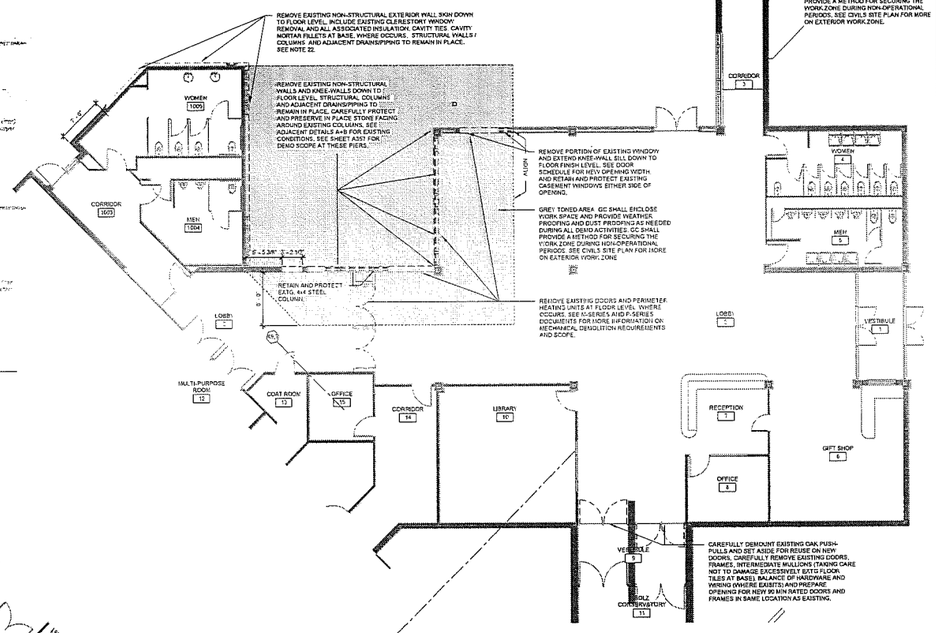
EXTG GREENHOUSE INTERIOR VIEWS AT PRODUCTION ZONE.



EXTG GREENHOUSE INTERIOR VIEWS AT TROPICALS AND ORCHIDS ZONES.



EXISTING LOBBY PIER DETAILS (FROM 1950s RECORD SET)



1 LEVEL 1 LOBBY DEMOLITION PLAN
AD101 1/8" = 1'-0"

2 LEVEL 1 HEADHOUSE DEMOLITION PLAN
AD101 1/8" = 1'-0"

GENERAL NOTES - ALL DEMOLITION DRAWINGS

1. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO SUBMITTING A BID AND VERIFY EXISTING CONDITIONS AND SCOPE OF WORK.
2. DAMAGE SUSTAINED TO ANY ASPECT OF THE EXISTING CONDITIONS SHALL BE REPAIRED AND RETURNED TO MATCH ORIGINAL CONDITIONS AT THE CONTRACTOR'S OWN EXPENSE AND WITH NO IMPACT TO SCHEDULE.
3. THE DEMO DRAWINGS ARE INTENDED TO INDICATE THE SCOPE OF WORK REQUIRED AND DO NOT INDICATE EVERY SINGLE PIECE OF SECONDARY STEEL, CONCRETE OR MASONRY, EQUIPMENT OF ANY TYPE, HARDWARE OF ANY TYPE, CONTROL DEVICE OF ANY TYPE, OUTLET OF ANY TYPE, BOX, FACE PLATES, CONDUIT, OR CABLE OF ANY TYPE THAT MUST BE REMOVED.
4. PROTECT ALL REMAINING PORTIONS OF THE BUILDING, LANDSCAPING, EXISTING GARDEN FEATURES AND OTHER PROPERTY NOT SCHEDULED FOR DEMOLITION. ANY FEATURES ADJACENT THE DEMOLITION AND/OR CONSTRUCTION ZONE SHALL BE COMPLETELY PROTECTED DURING DEMOLITION AND KEPT FREE FROM CONSTRUCTION DEBRIS. ANY RESULTING DAMAGE SHALL BE REPAIRED OR REPLACED TO LIKE-NEW CONDITION BY THE CONTRACTOR RESPONSIBLE UNDER THE DIRECTION AND APPROVAL OF THE OWNER AND ARCHITECT.
7. COORDINATE ALL THE DEMOLITION SHEETS WITH ALL NEW CONSTRUCTION SHEETS. NOTIFY OWNER AND ARCHITECT OF ANY DISCREPANCIES.
8. ALSO REFER TO DEMOLITION SCOPE ON CIVIL, STRUCTURAL, MECHANICAL, PLUMBING, ELECTRICAL-TENDER SHEETS FOR THE FULL SCOPE OF DEMOLITION.
9. ALL ITEMS INDICATED TO BE SALVAGED, PROTECTED AND SET ASIDE FOR REUSE TO BE PROTECTED FROM DAMAGE DURING REMOVAL. STORE IN PROTECTED LOCATION FOR REUSE.
10. PROTECT BUILDING FROM WATER INGRESS WHEN REMOVING WALLS, ROOF FINISHES AND DRAINS.
11. EXISTING DOORS AND FRAMES TO BE SALVAGED AND RE-INSTALLED TO BE MARKED WITH ORIGINAL DOOR NUMBER USING A REMOVABLE, NON-DAMAGING, TAG. MARK ALL FRAME MEMBERS AND TRIM WITH THE SAME NUMBER AND BUNDLE TOGETHER.
12. ROOF FINISH AND/OR DECK DEMO FOR NEW EQUIPMENT/OPENINGS TO BE DETERMINED BASED ON NEW CONSTRUCTION DRAWINGS AND FINAL EQUIPMENT SELECTIONS.
13. EXISTING WINDOW BLINDS/TREATMENTS TO BE REMOVED INCLUDING ATTACHMENT AND SUPPORT COMPONENTS.
14. REFER TO DEMOLITION SPECIFICATIONS IN DIVISION 2, AND THE DEMOLITION SECTIONS OF ALL OTHER SPECIFICATIONS WHERE APPLICABLE.
15. COORDINATE SCOPE OF WORK WITH ALL OTHER CONTRACTORS AND THE OWNER AT THE PROJECT SITE. SCHEDULE REMOVAL OF EQUIPMENT AND TECHNOLOGY SERVICE TO AVOID CONFLICTS.
16. PROVIDE INTERIOR AND EXTERIOR SHORING, BRACING, OR SUPPORT AS REQUIRED TO PREVENT MOVEMENT, SETTLEMENT, OR COLLAPSE OF ADJACENT CONSTRUCTION SCHEDULED TO REMAIN.
17. SALVAGED STONE IS TO BE PALLETTED, COVERED AND PROTECTED FOR RE-USE ON THE PROJECT OR BY THE OWNER.
18. REMOVE ALL EXISTING ELECTRICAL/COMMUNICATIONS DEVICES, EQUIPMENT, AND LIGHTING, IN THE ZONES OF DEMOLITION ONLY. REMOVAL SHALL INCLUDE ALL ASSOCIATED RACEWAY, CONDUCTORS AND SUPPORTS. ALL EQUIPMENT REMOVED SHALL BE OFFERED TO THE OWNER AND DISPOSED IF THE OWNER CHOOSES TO NOT RECEIVE.
19. WHERE FINISHES ARE INDICATED TO BE REMOVED, REMOVE MEANS REMOVAL OF GLUES AND ADHESIVES LAID OVER EXISTING SUBSTRATES, U.N.O.
20. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL DROP CLOTHS, PROTECTION TO EXISTING FURNISHINGS INCLUDING LIBRARY COLLECTION AND GIFT SHOP DISPLAYS AND GOODS, LOBBY DESK, ETC. DURING WORK IN EXISTING AREAS.
21. GC SHALL PROVIDE THROUGH ACCESS LANE FOR OBG GARDEN VEHICLES AND STAFF. ANY REQUIRED SHUT DOWN OF CLEAR LANE MUST BE COORDINATED WITH OBG STAFF MINIMUM OF 3 WORKING DAYS IN ADVANCE OF SHUTDOWN.
22. EXTG STONE REMOVED THAT IS NOT RE-USED SHALL BE CLEANED, PALLETIZED, SHRINKWRAPPED AND MOVED TO A STORAGE LOCATION ON SITE TO BE DETERMINED BY OBG STAFF.

WALL AND PARTITION KEY

- NEW WALLS AND PARTITIONS
- EXISTING WALLS AND PARTITIONS
- WALLS AND PARTITIONS TO BE REMOVED
- 1 HOUR RATED FIRE WALL
- 2 HOUR RATED FIRE WALL

MSR
710 South 2nd Street, 6th Floor
Minneapolis, Minnesota 55401-2223
Architecture, Interiors and Urban Design
612.375.0194 tel
612.342.2214 fax
www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201
Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
343 South Paterson Street, Suite 1
Madison, WI 53703
608.251.3600 tel

Structural Engineer, Technology and AV
IMEG Corp.
1600 Deming Way, Suite 200
Middleton, WI 53562
608.223.9600 tel

MEP Engineer
MEP Associates, LLC
650 Blue Gentian Road, Suite 175
Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
575 Aldrich Ave N
St. Paul, MN 55128
651.251.1880 tel

Greenhouse Design
Rough Brothers, Inc.
5513 Vine Street
Cincinnati, OH 45217
513.242.0310 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin.
ARCHITECT SEAL

WISCONSIN
DANIEL JACK POLING
A-6364
MINNEAPOLIS, MN
ARCHITECT

Signature
Print Name: Jack Poling
Date: JUNE 4, 2018 License No.: A-6364

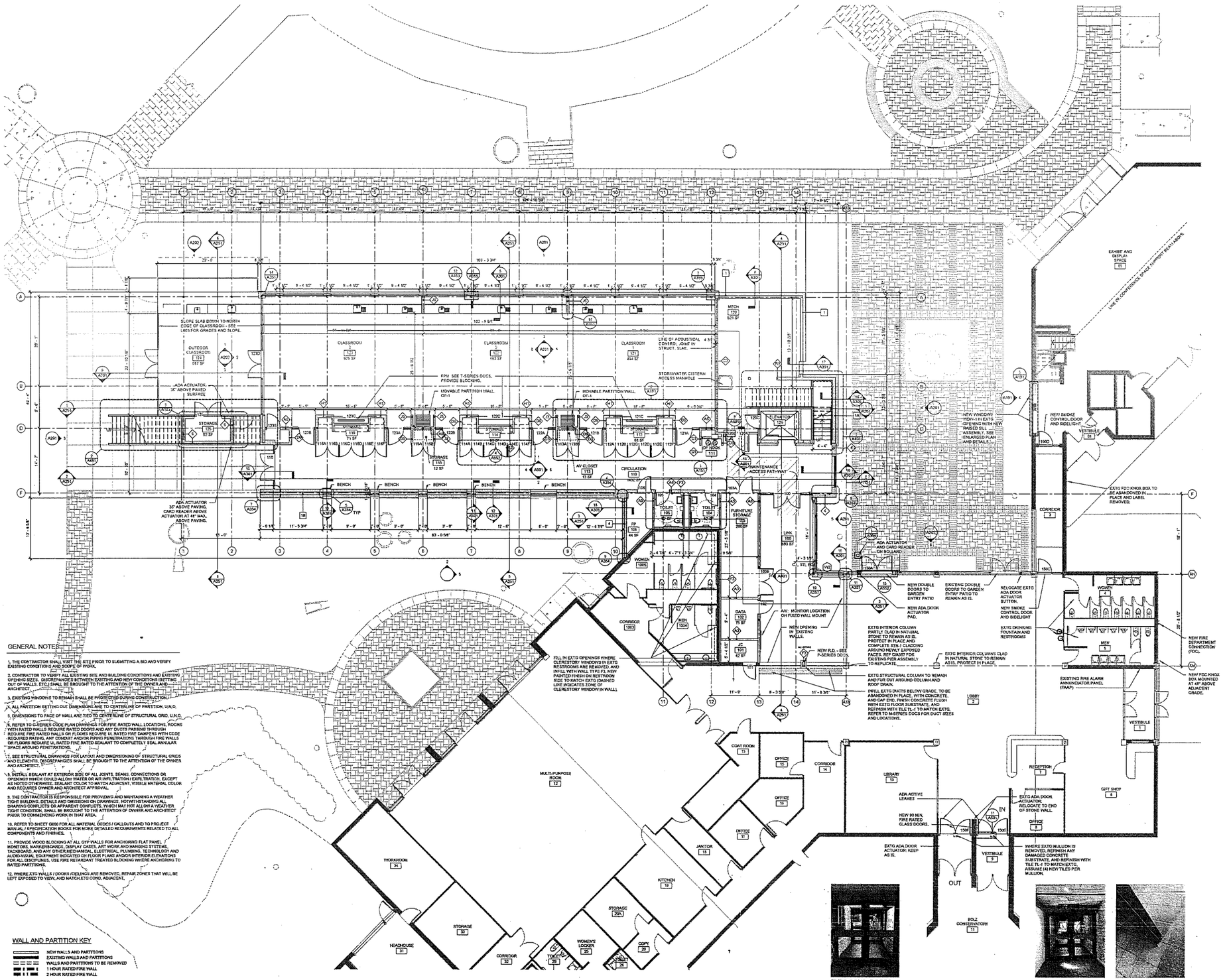
MARK	DATE	DESCRIPTION
	05.29.2017	SCHEMATIC DESIGN SUBMISSION
	12.04.2017	DD PRICING SET
	01.19.2018	DESIGN DEVELOPMENT SUBMISSION
	01.17.2018	UDC SUBMISSION
	01.30.2018	70% DD PRICING ISSUE
	04.06.2018	PARKING LOT AND SITE PLAN SUBMISSION
	05.04.2018	90% DD SUBMISSION
	05.21.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE

PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: MSR CHECKED BY: MSR

DEMOLITION PLANS

EXHIBIT C
AD101

ORIGINAL



EXTG CONS. DOORS (OUT): REUSE EXTG WOOD PULLS

EXTG CONS. DOORS (IN): REUSE EXTG WOOD PULLS

EXTG CONS. DOOR MULLION AT FLOOR

GENERAL NOTES:

1. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO SUBMITTING A BID AND VERIFY EXISTING CONDITIONS AND SCOPE OF WORK.
2. CONTRACTOR TO VERIFY ALL EXISTING SITE AND BUILDING CONDITIONS AND EXISTING OPENING SIZES. DISCREPANCIES BETWEEN EXISTING AND NEW CONDITIONS (SETTING OUT OF WALLS, ETC.) SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER AND ARCHITECT.
3. EXISTING WINDOWS TO REMAIN SHALL BE PROTECTED DURING CONSTRUCTION.
4. ALL PARTITION SETTING OUT DIMENSIONS ARE TO CENTERLINE OF PARTITION, U.N.O.
5. DIMENSIONS TO FACE OF WALL ARE TIED TO CENTERLINE OF STRUCTURAL GRID, U.N.O.
6. REFER TO G-SERIES CODE PLAN DRAWINGS FOR FIRE RATED WALL LOCATIONS. ROOMS WITH RATED WALLS REQUIRE RATED DOORS AND ANY DUCTS PASSING THROUGH REQUIRE FIRE RATED WALLS OR FLOORS REQUIRE UL RATED FIRE DAMPERS WITH CODE REQUIRED RATING. ANY CONDUIT AND/OR PIPING PENETRATIONS THROUGH FIRE WALLS OR FLOORS REQUIRE UL RATED FIRE RATED SEALANT TO COMPLETELY SEAL ANNULAR SPACE AROUND PENETRATIONS.
7. SEE STRUCTURAL DRAWINGS FOR LAYOUT AND DIMENSIONING OF STRUCTURAL GRIDS AND ELEMENTS. DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER AND ARCHITECT.
8. INSTALL SEALANT AT EXTERIOR SIDE OF ALL JOINTS, SEAMS, CONNECTIONS OR OPENINGS WHICH COULD ALLOW WATER OR AIR INFILTRATION / EXFILTRATION, EXCEPT AS NOTED OTHERWISE. SEALANT COLOR TO MATCH ADJACENT, VISIBLE MATERIAL COLOR AND REQUIRES OWNER AND ARCHITECT APPROVAL.
9. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING AND MAINTAINING A WEATHER TIGHT BUILDING. DETAILS AND DIMENSIONS ON DRAWINGS, NOTWITHSTANDING ALL DRAWING CONFLICTS OR APPARENT CONFLICTS, WHICH MAY NOT ALLOW A WEATHER TIGHT CONDITION, SHALL BE BROUGHT TO THE ATTENTION OF OWNER AND ARCHITECT PRIOR TO COMMENCING WORK IN THAT AREA.
10. REFER TO SHEET G0090 FOR ALL MATERIAL CODES / CALLOUTS AND TO PROJECT MANUAL / SPECIFICATION BOOKS FOR MORE DETAILED REQUIREMENTS RELATED TO ALL COMPONENTS AND FINISHES.
11. PROVIDE WOOD BLOCKING AT ALL GYP WALLS FOR ANCHORING FLAT PANEL MONITORS, MARKERBOARDS, DISPLAY CASES, ART WORK AND HANGING SYSTEMS, TACKBOARD, AND ANY OTHER MECHANICAL, ELECTRICAL, PLUMBING, TECHNOLOGY AND AUDIO-VISUAL EQUIPMENT INDICATED ON FLOOR PLANS AND/OR INTERIOR ELEVATIONS FOR ALL DISCIPLINES. USE FIRE RETARDANT TREATED BLOCKING WHERE ANCHORING TO RATED PARTITIONS.
12. WHERE EXTG WALLS / DOORS / CEILINGS ARE REMOVED, REPAIR ZONES THAT WILL BE LEFT EXPOSED TO VIEW, AND MATCH EXTG COND. ADJACENT.

WALL AND PARTITION KEY

- NEW WALLS AND PARTITIONS
- EXISTING WALLS AND PARTITIONS
- WALLS AND PARTITIONS TO BE REMOVED
- 1 HOUR RATED FIRE WALL
- 2 HOUR RATED FIRE WALL

1 LEVEL 1 PLAN
A101 1/8" = 1'-0"

MSR 710 South 2nd Street, 6th Floor Minneapolis, Minnesota 55401-2281
Architecture Interiors, and Urban Design 612.375.0136 tel 612.342.2216 fax www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201 Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
303 South Paterson Street, Suite 1 Madison, WI 53703
608.251.3600 tel

Structural Engineer, Technology and AV
IMEG Corp.
1650 Deming Way, Suite 200 Middleton, WI 53562
608.223.9600 tel

MEP Engineer
MEP Associates, LLC
600 Blue Gentian Road, Suite 175 Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
575 Bienvenida Ave West St. Paul, MN 55107
651.251.1880 tel

Greenhouse Design
Rough Brothers, Inc.
5513 Vine Street Cincinnati, OH 45217
513.242.0310 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin.
ARCHITECT SEAL

WISCONSIN DANIEL JACK POLING A-5084 MINNEAPOLIS MN ARCHITECT

Signature:
Print Name: Jack Poling
Date: JUNE 4, 2018 License No.: A-5084

ISSUE

IMAGE	DATE	DESCRIPTION
	09.29.2017	SCHEMATIC DESIGN SUBMISSION
	12.08.2017	DD PRICING SET
	01.19.2018	DESIGN DEVELOPMENT SUBMISSION
	01.17.2018	LNDC SUBMISSION
	03.30.2018	100% CD PRICING ISSUE
	04.06.2018	PARKING LOT AND SITE PLAN SUBMISSION
	05.04.2018	90% CD SUBMISSION
	06.01.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE

PROJECT NO. 2017016
PROJECT PHASE: BID DOCUMENTS
DRAWN BY: MSR CHECKED BY: MSR

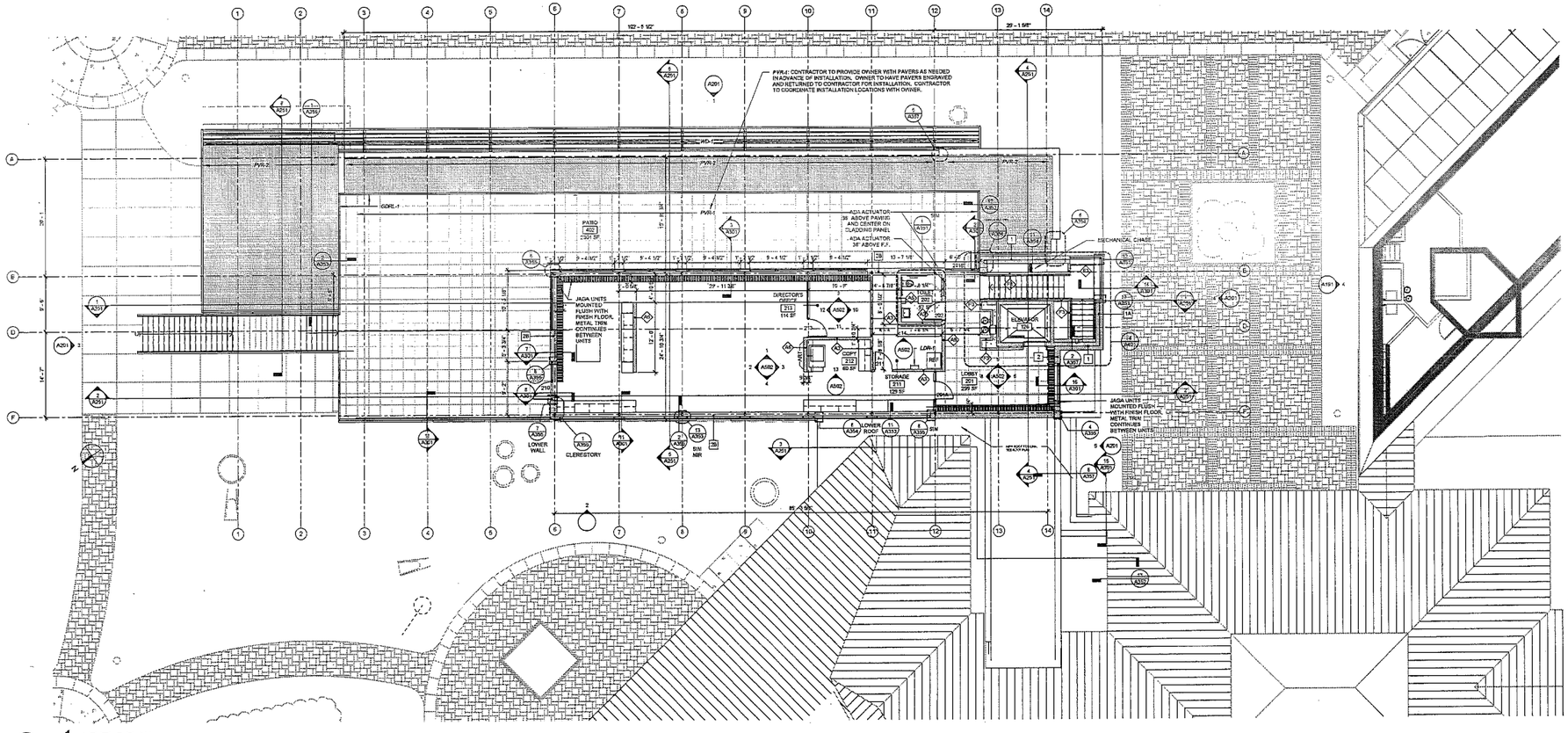
LEARNING CENTER FLOOR PLAN - LEVEL 1

EXHIBIT F
A101

ORIG MAC

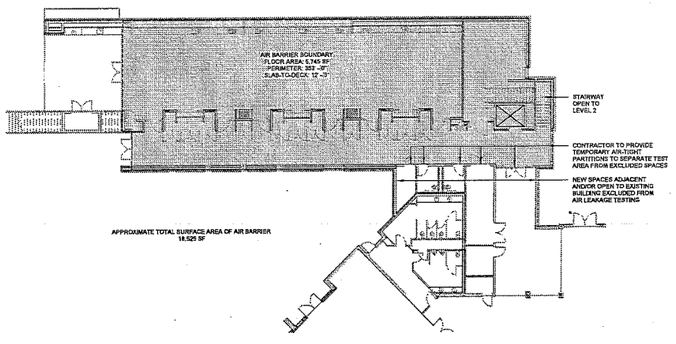
WALL AND PARTITION KEY

NEW WALLS AND PARTITIONS
EXISTING WALLS AND PARTITIONS
WALLS AND PARTITIONS TO BE REMOVED
1 HOUR RATED FIRE WALL
2 HOUR RATED FIRE WALL

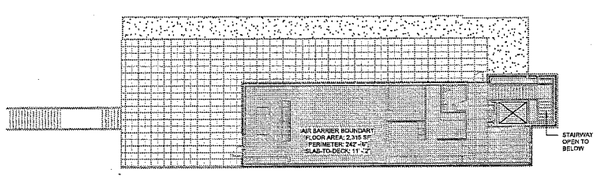


1 LEVEL 2 PLAN
A102 1/8" = 1'-0"

PROJECT NORTH



2 LEVEL 1 AIR LEAKAGE BOUNDARY
A102 1/16" = 1'-0"



3 LEVEL 2 AIR LEAKAGE BOUNDARY
A102 1/16" = 1'-0"

GENERAL NOTES

1. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO SUBMITTING A BID AND VERIFY EXISTING CONDITIONS AND SCOPE OF WORK.

2. CONTRACTOR TO VERIFY ALL EXISTING SITE AND BUILDING CONDITIONS AND EXISTING OPENING SIZES. DISCREPANCIES BETWEEN EXISTING AND NEW CONDITIONS (SETTING OUT OF WALLS, ETC.) SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER AND ARCHITECT.

3. EXISTING WINDOWS TO REMAIN SHALL BE PROTECTED DURING CONSTRUCTION.

4. ALL PARTITION SETTING OUT DIMENSIONS ARE TO CENTERLINE OF PARTITION, U.N.O.

5. DIMENSIONS TO FACE OF WALL ARE TIED TO CENTERLINE OF STRUCTURAL GRID, U.N.O.

6. REFER TO G-SERIES CODE PLAN DRAWINGS FOR FIRE RATED WALL LOCATIONS. ROOMS WITH RATED WALLS REQUIRE RATED DOORS AND ANY DUCTS PASSING THROUGH REQUIRE FIRE RATED WALLS OR FLOORS REQUIRE UL RATED FIRE DAMPERS WITH CODE REQUIRED RATING. ANY CONDUIT AND/OR PIPING PENETRATIONS THROUGH FIRE WALLS OR FLOORS REQUIRE UL RATED FIRE RATED SEALANT TO COMPLETELY SEAL ANNULAR SPACE AROUND PENETRATIONS.

7. SEE STRUCTURAL DRAWINGS FOR LAYOUT AND DIMENSIONING OF STRUCTURAL GRIDS AND ELEMENTS. DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER AND ARCHITECT.

8. INSTALL SEALANT AT EXTERIOR SIDE OF ALL JOINTS, SEAMS, CONNECTIONS OR OPENINGS WHICH COULD ALLOW WATER OR AIR INFILTRATION / EXFILTRATION, EXCEPT AS NOTED OTHERWISE. SEALANT COLOR TO MATCH ADJACENT, VISIBLE MATERIAL COLOR AND REQUIRES OWNER AND ARCHITECT APPROVAL.

9. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING AND MAINTAINING A WEATHER TIGHT BUILDING. DETAILS AND OMISSIONS ON DRAWINGS, NOTWITHSTANDING ALL DRAWING CONFLICTS OR APPARENT CONFLICTS, WHICH MAY NOT ALLOW A WEATHER TIGHT CONDITION, SHALL BE BROUGHT TO THE ATTENTION OF OWNER AND ARCHITECT PRIOR TO COMMENCING WORK IN THAT AREA.

10. REFER TO SHEET G000 FOR ALL MATERIAL CODES / CALLOUTS AND TO PROJECT MANUAL / SPECIFICATION BOOKS FOR MORE DETAILED REQUIREMENTS RELATED TO ALL COMPONENTS AND FINISHES.

11. PROVIDE WOOD BLOCKING AT ALL GYP WALLS FOR ANCHORING FLAT PANEL MONITORS, MARKERBOARDS, DISPLAY CASES, ART WORK AND HANGING SYSTEMS, TACKBOARDS, AND ANY OTHER MECHANICAL, ELECTRICAL, PLUMBING, TECHNOLOGY AND AUDIO-VISUAL EQUIPMENT INDICATED ON FLOOR PLANS AND/OR INTERIOR ELEVATIONS FOR ALL DISCIPLINES. USE FIRE RETARDANT TREATED BLOCKING WHERE ANCHORING TO RATED PARTITIONS.

12. WHERE XTG WALLS / DOORS /CEILINGS ARE REMOVED, REPAIR ZONES THAT WILL BE LEFT EXPOSED TO VIEW, AND MATCH XTG CONDI. ADJACENT.

MSR 710 South 2nd Street, 6th Floor Minneapolis, Minnesota 55401-2282
Architecture, Interiors and Urban Design. 612 375 0536 tel 612 342 2216 fax www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201 Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
323 South Paterson Street, Suite 1 Madison, WI 53703
608.251.3600 tel

Structural Engineer, Technology and AV
IMEG Corp.
1800 Deming Way, Suite 200 Middleton, WI 53562
608.223.9600 tel

MEP Engineer
MEP Associates, LLC
859 Bee Cavern Road, Suite 175 Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
575 Minnesota Ave West St. Paul, MN 55107
651.251.1882 tel

Greenhouse Design
Rough Brothers, Inc.
5513 Vine Street Cincinnati OH 45217
513.242.6310 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin.
ARCHITECT SEAL

WISCONSIN
DANIEL JACK PCLING
A-5094
MINNEAPOLIS, MN
ARCHITECT

Signature:
Print Name: Jack Pcling
Date: JUNE 4, 2018 License No.: A-5094

MARK	DATE	DESCRIPTION
	09.29.2017	SCHEMATIC DESIGN SUBMISSION
	12.06.2017	CD PRICING SET
	01.19.2018	DESIGN DEVELOPMENT SUBMISSION
	01.17.2018	UDC SUBMISSION
	03.30.2018	75% CD PRICING ISSUE
	04.02.2018	PARKING LOT AND SITE PLAN SUBMISSION
	05.04.2018	95% CD SUBMISSION
	05.07.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE

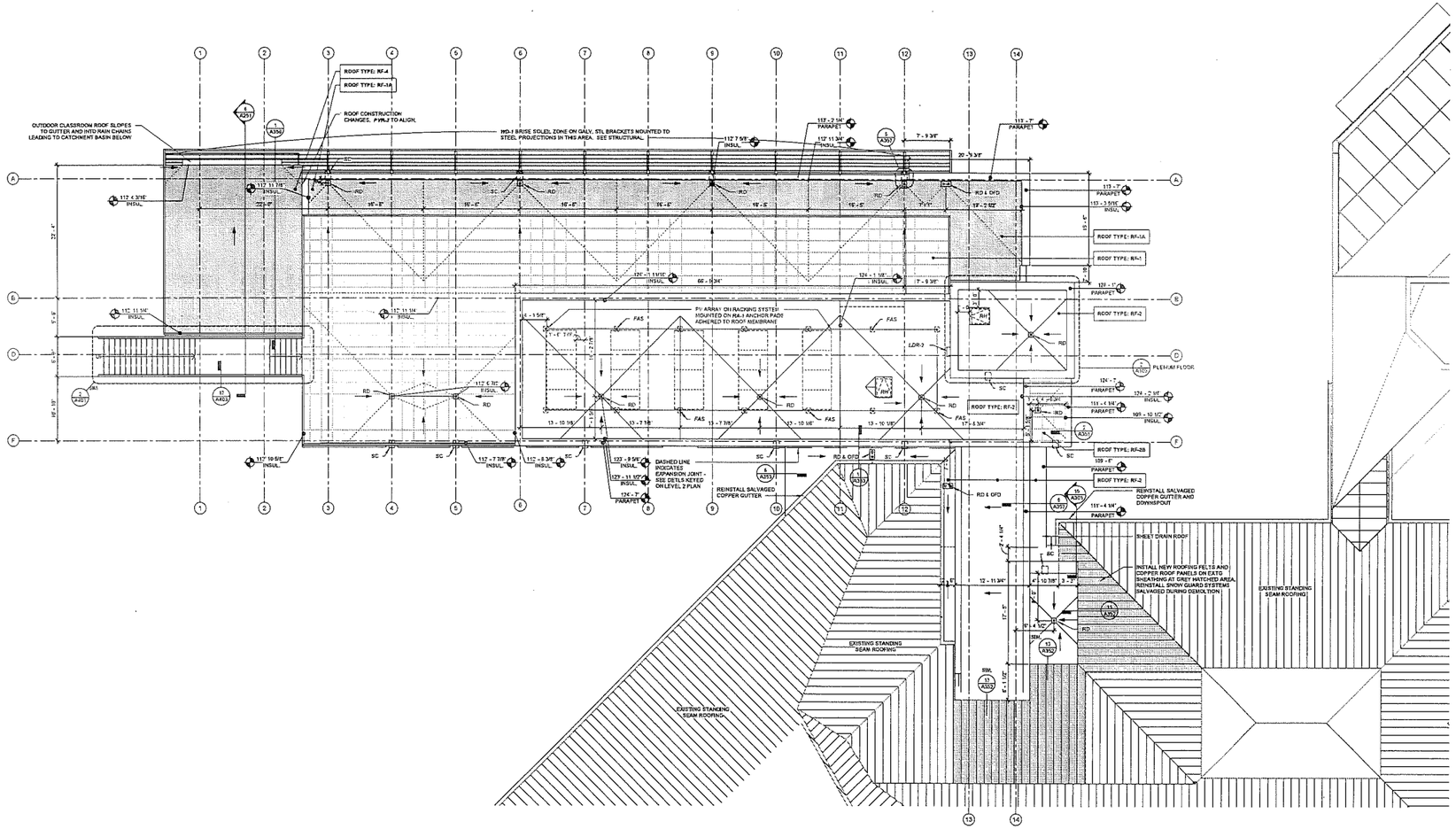
PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: MSR CHECKED BY: MSR

LEARNING CENTER FLOOR PLAN - LEVEL 2

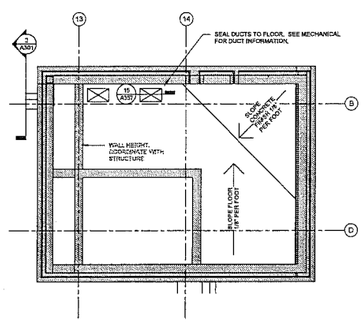
EXHIBIT F

A102

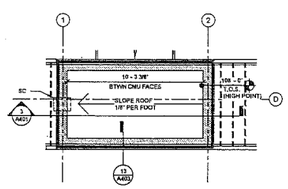
6/26/18



1 ROOF PLAN
A103 1/8" = 1'-0"



2 ROOF PLAN - PLENUM FLOOR
A103 1/4" = 1'-0"



3 OUTDOOR CLASSROOM ROOF PLAN
A103 1/4" = 1'-0"

ROOF PLAN NOTES

1. ALL SLOPED INSULATION LINES SHOWN DASHED OCCUR UNDERNEATH FINISH SURFACE OF PAVERS.

2. FOR NEW COPPER ROOF DETAILS REFER TO SHEET A504 FOR DETAILS FROM 2012 RECORD SET WHEN EXISTING FACILITY WAS RE-ROOFED. NEW COPPER ROOF DETAILS TO FOLLOW THE SAME DETAIL PRINCIPLES AND TO COORDINATE WITH AS-BUILT CONDITIONS.

3. REFER TO SHEET G002 FOR ROOF TYPES AND SYSTEMS, AND RELATED SPECIFICATIONS.

4. PROTECT ALL REMAINING PORTIONS OF THE BUILDING ROOFS AND ADJACENT FEATURES NOT SCHEDULED FOR DEMOLITION. THESE AREAS SHALL BE COMPLETELY PROTECTED DURING DEMOLITION AND REMOVAL OF DEBRIS. ANY RESULTING DAMAGE SHALL BE REPAIRED OR REPLACED TO LIKE-NEW CONDITION BY THE CONTRACTOR RESPONSIBLE UNDER THE DIRECTION AND APPROVAL OF THE OWNER AND ARCHITECT.

5. THE MEANING OF "PREPARE AREAS" OF DEMOLITION AND REMOVAL FOR NEW COMPONENTS/FINISHES IS THAT IT IS TO BE LEFT CLEAN OF DEBRIS, DUST, LOOSE MATERIAL, NAILS, SCREWS, ANCHORS, REINFORCEMENT AND ALL OTHER FIXING TYPES, AND IN A SOUND MANNER, SUITABLE AS A SUBSTRATE FOR SUBSEQUENT PREPARATION AND FINISHING BY OTHER TRADES. REFER TO SPECIFICATIONS FOR APPLICABLE TRADES IN AREAS WHERE DEMOLITION AFFECTS EXISTING WALLS / CEILINGS / UNDERSIDE FLOOR DECKS TO REMAIN.

6. PROVIDE INTERIOR AND EXTERIOR SHORING, BRACING, OR SUPPORT AS REQUIRED TO PREVENT MOVEMENT, SETTLEMENT, OR COLLAPSE OF ADJACENT CONSTRUCTION SCHEDULED TO REMAIN. SEE STRUCTURAL DOCUMENTS FOR FURTHER DETAILS.

MSR 710 South 2nd Street, 6th Floor Minneapolis, Minnesota 55401-2282
Architecture 612 375 0596 tel
Interiors and 612 342 2314 fax
Urban Design www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201
Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
303 South Paterson Street, Suite 1
Madison, WI 53703
608.251.3600 tel

Structural Engineer, Technology and AV
IMEG Corp.
1600 Demeng Way, Suite 200
Madison, WI 53562
608.223.9009 tel

MEP Engineer
MEP Associates, LLC
650 Blue Gentian Road, Suite 175
Eagan, MN 55121
651.379.9126 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
575 Minnesota Ave West
St. Paul, MN 55102
651.291.1849 tel

Commissioning Design
Rough Brothers, Inc.
5513 Vine Street
Cincinnati, OH 45217
513.242.0310 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin.
ARCHITECT SEAL

WISCONSIN
DANIEL JACK POLING
A-5394
MINNEAPOLIS, MN
ARCHITECT

Signature: Daniel Poling
Print Name: Jack Poling
Date: 11/16/18 License No.: A-5394

MARK	DATE	DESCRIPTION
	08.29.2017	SCHEMATIC DESIGN SUBMISSION
	10.06.2017	DD PRICING SET
	01.19.2018	DESIGN DEVELOPMENT SUBMISSION
	03.17.2018	100% SUBMISSION
	07.30.2018	100% CD PRICING ISSUE
	08.06.2018	PARKING LOT AND SITE PLAN SUBMISSION
	08.06.2018	90% CD SUBMISSION
	08.31.2018	BID ISSUE
	09.04.2018	PERMIT ISSUE

PROJECT NO. 2017015
PROJECT PHASE BID DOCUMENTS
DRAWN BY: MSR CHECKED BY: MSR

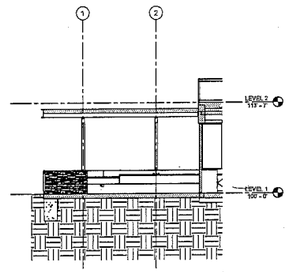
Drawing © 2017 Copyright Notice: Ehlers & Associates, Inc.

LEARNING CENTER ROOF PLAN

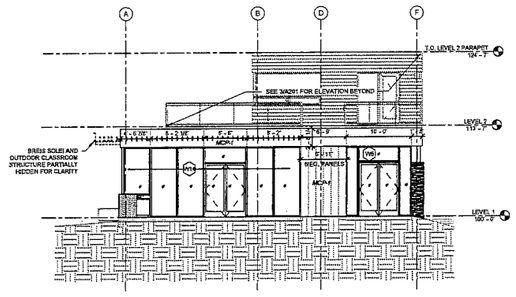
EXHIBIT F
A103

ORIGINAL

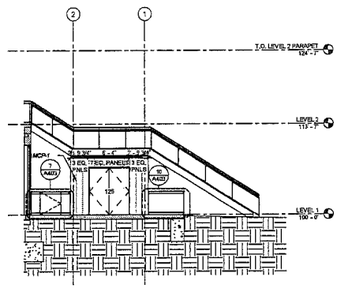
Drawing File Name: C:\Users\jpoling\Documents\8162_Central_Atwood_R19_jpoling.rvt 11/16/2018 3:12:13 PM



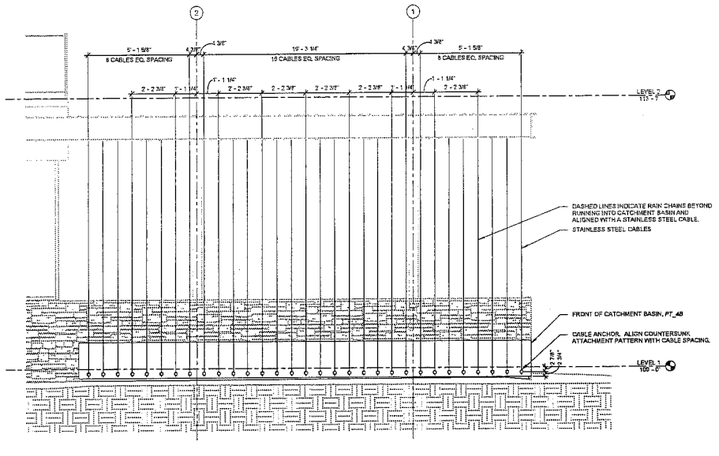
1 OUTDOOR CLASSROOM EAST ELEVATION
A202 1/8" = 1'-0"



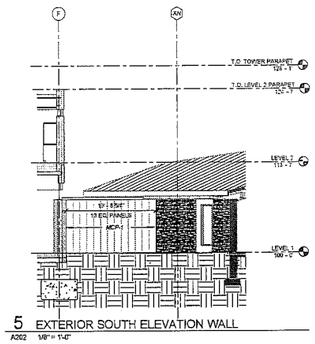
2 OUTDOOR CLASSROOM NORTH ELEVATION
A202 1/8" = 1'-0"



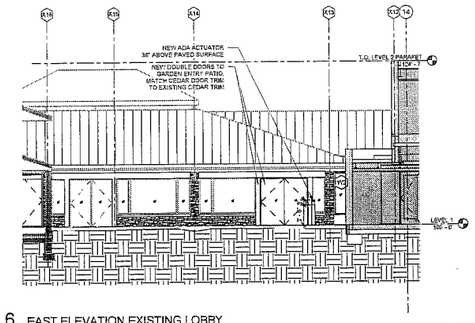
3 OUTDOOR CLASSROOM WEST ELEVATION
A202 1/8" = 1'-0"



4 WATER CATCHMENT ELEVATION DETAIL
A202 3/8" = 1'-0"



5 EXTERIOR SOUTH ELEVATION WALL
A202 1/8" = 1'-0"



6 EAST ELEVATION EXISTING LOBBY
A202 1/8" = 1'-0"

ORIGINAL

MSR 719 South 2nd Street, 5th Floor Minneapolis, Minnesota 55401-2282
Architecture, Interiors and Urban Design: ph 612 375 0536 tel, 612 262 2246 fax, www.msrdesign.com

Civil Engineer:
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201 Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
303 South Paterson Street, Suite 1 Madison, WI 53703
608.251.3600 tel

Structural Engineer, Technology and AV
IMEG Corp.
1830 Deming Way, Suite 200 Middleton, WI 53562
608.223.9600 tel

MEP Engineer
MEP Associates, LLC
850 Blue Gentian Road, Suite 175 Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
575 Aldrich Ave N (mail) St. Paul, MN 55128
651.251.1850 tel

Greenhouse Design
Rough Brothers, Inc.
5513 Vine Street Cincinnati, OH 45217
513.242.6310 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin.
ARCHITECT SEAL

WISCONSIN DANIEL JACK POLING A-8584 MINNEAPOLIS, MN ARCHITECT

Signature: _____
Print Name: Jack Poling
Date: JUNE 6, 2011 License No: A-8584

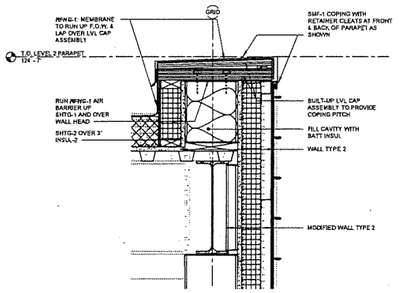
MARK	DATE	DESCRIPTION
	05.25.2017	SCHEMATIC DESIGN SUBMISSION
	12.08.2017	DD PRICING SET
	01.12.2018	DESIGN DEVELOPMENT SUBMISSION
	01.17.2018	LUDC SUBMISSION
	03.30.2018	70% CD PRICING ISSUE
	04.06.2018	PARKING LOT AND SITE PLAN SUBMISSION
	05.04.2018	100% CD SUBMISSION
	06.01.2018	BID ISSUE
	09.04.2018	PERMIT ISSUE

PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: MSR CHECKED BY: MSR

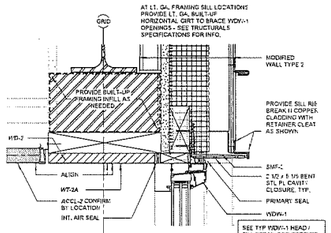
Drawing © 2017 Copyright Mortenson, Rough & Brothers, Inc.

EXTERIOR ELEVATIONS

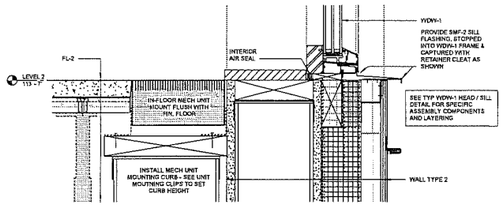
EXHIBIT F
A202



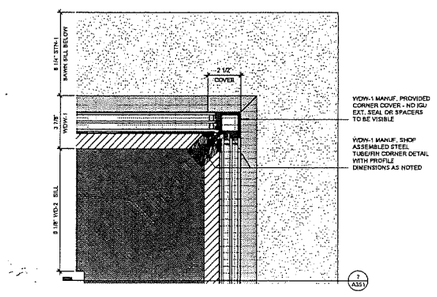
1 SECTION DETAIL - WALL TYPE 2 PARAPET
A351 1 1/2" = 1'-0"



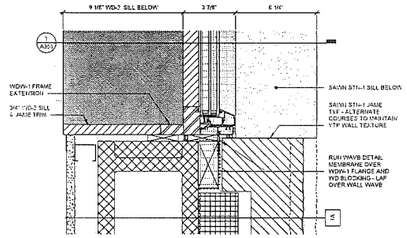
4 SECTION DETAIL - HEAD AT E. WALL ENTRY
A351 3" = 1'-0"



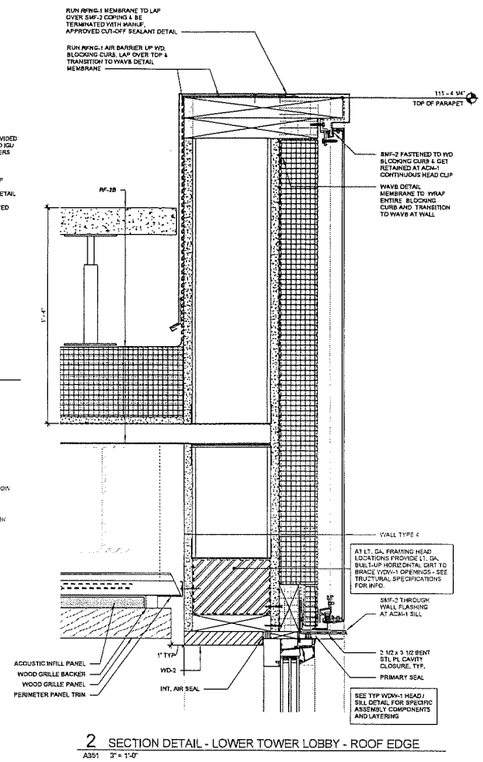
6 DETAIL SECTION - WDW-1 SILL AT FL-2
A351 3" = 1'-0"



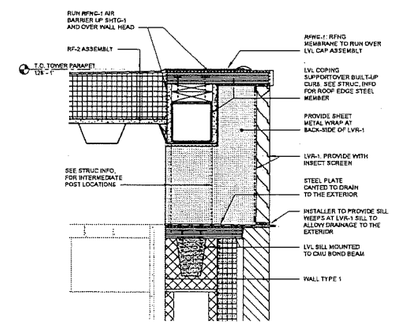
12 PLAN DETAIL - WDW-1 CORNER AT STAIR
A351 3" = 1'-0"



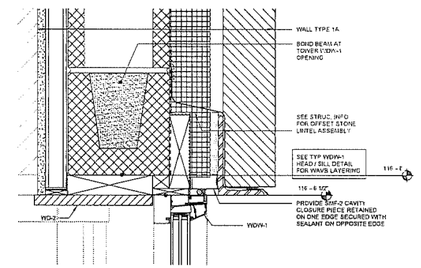
13 PLAN DETAIL - WDW-1 JAMB AT STAIR
A351 3" = 1'-0"



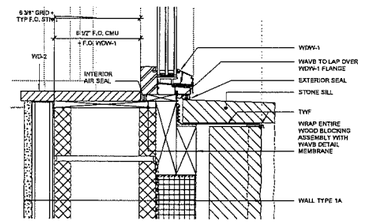
2 SECTION DETAIL - LOWER TOWER LOBBY - ROOF EDGE
A351 3" = 1'-0"



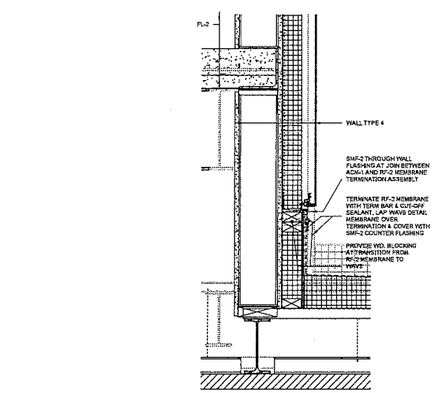
3 SECTION DETAIL - TOWER WALL AT LVR-1
A351 1 1/2" = 1'-0"



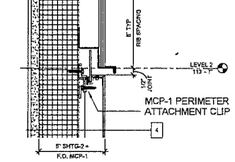
5 SECTION DETAIL - WDW-1 HEAD AT TOWER WALL
A351 3" = 1'-0"



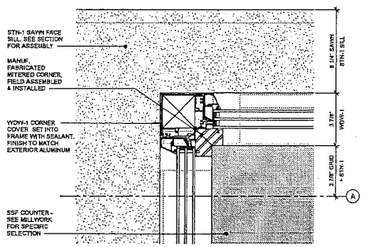
7 SECTION DETAIL - SILL AT TOWER WALL
A351 3" = 1'-0"



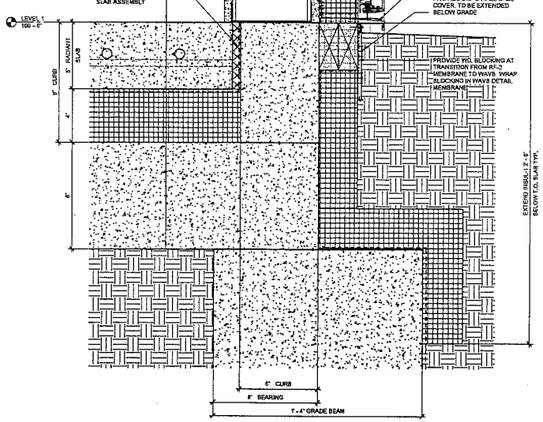
8 SECTION DETAIL - TOWER LOBBY TRASITION TO LVL 1 ROOF
A351 1 1/2" = 1'-0"



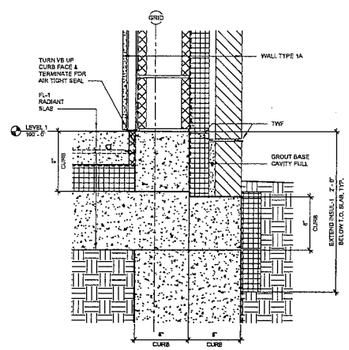
11 TYP WALL 2 + WALL 4 TRANSITION
A351 3" = 1'-0"



14 PLAN DETAIL - WDW-1 CORNER AT CLASSROOM 3
A351 3" = 1'-0"



9 SECTION DETAIL - TOWER LOBBY WALL BASE
A351 3" = 1'-0"



10 SECTION DETAIL - E.WALL AT MECH - BASE
A351 1 1/2" = 1'-0"

MSR
710 South 2nd Street, 6th Floor
Minneapolis, Minnesota 55401-2262
Architecture 612.375.0536 tel
Interiors and 612.342.2216 fax
Urban Design www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201
Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
323 South Paterson Street, Suite 1
Madison, WI 53703
608.251.3000 tel

Structural Engineer, Technology and A/V
IMEG Corp.
1800 Deming Way, Suite 200
Middleton, WI 53562
608.223.9600 tel

MEP Engineer
MEP Associates, LLC
660 Blue Gentian Road, Suite 175
Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
575 Minnehaha Ave West
St. Paul, MN 55103
651.291.1880 tel

Greenhouse Design
Rough Brothers, Inc.
5613 Vine Street
Cincinnati OH 45217
513.242.0310 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin.
ARCHITECT SEAL

WISCONSIN
DANIEL JACK POLING
A-6594
MINNEAPOLIS, MN
ARCHITECT

Signature:
Print Name: Jack Poling
Date: JUNE 4, 2018 License No.: A-6594

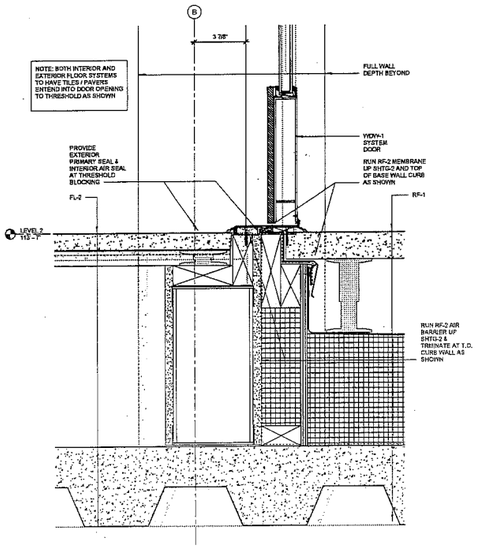
MARK	DATE	DESCRIPTION
	09.29.2017	SCHEMATIC DESIGN SUBMISSION
	12.08.2017	SDD PRICING SET
	01.19.2018	DESIGN DEVELOPMENT SUBMISSION
	03.17.2018	UDC SUBMISSION
	03.30.2018	100% CD PRICING ISSUE
	04.04.2018	PARKING LOT AND SITE PLAN SUBMISSION
	05.04.2018	100% CD SUBMISSION
	05.21.2018	BID ISSUE
	06.04.2018	STREET ISSUE

PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: MSR CHECKED BY: MSR

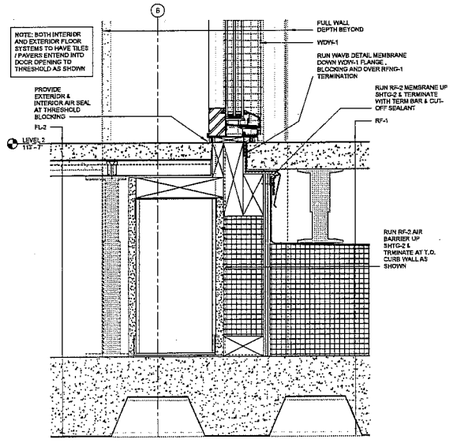
EXTERIOR DETAILS

EXHIBIT F
A351

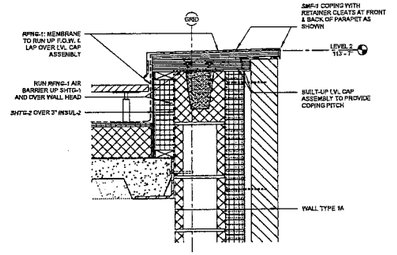
5/21/18



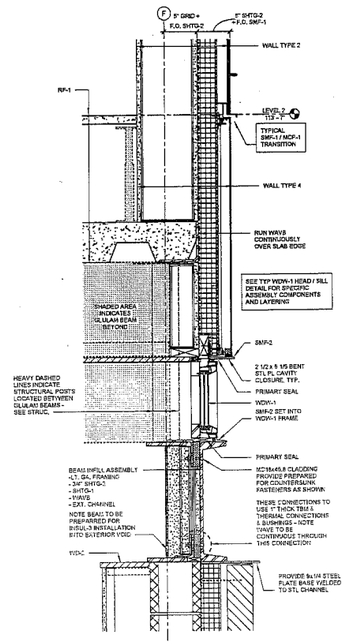
1 SECTION DETAIL - SILL AT E. WALL ENTRY
A352 3" = 1'-0"



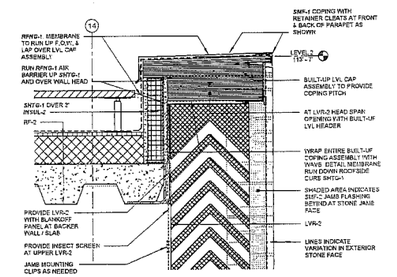
2 SECTION DETAIL - WDW-1 SILL AT N. WALL
A352 3" = 1'-0"



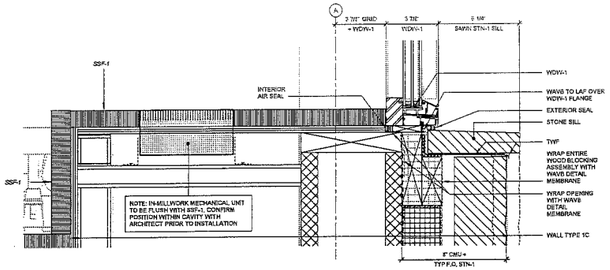
3 SECTION DETAIL - PARAPET AT E. MECHANICAL WALL
A352 1 1/2" = 1'-0"



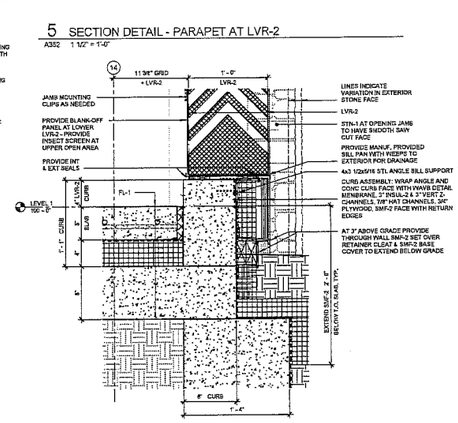
6 SECTION DETAIL - LVL1 TO LVL2 TRANSITION
A352 1 1/2" = 1'-0"



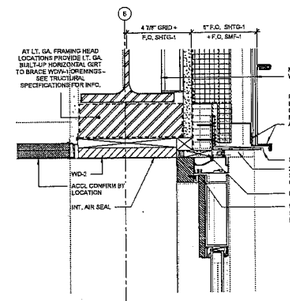
5 SECTION DETAIL - PARAPET AT LVR-2
A352 1 1/2" = 1'-0"



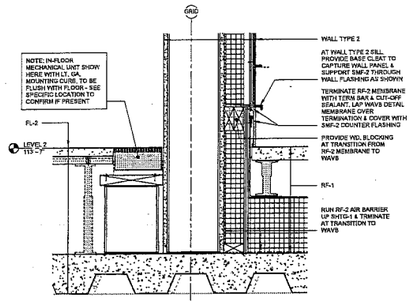
4 SECTION DETRAIL - WDW-1 DEEP SILL / MECH CAVITY AT CLASSROOM
A352 3" = 1'-0"



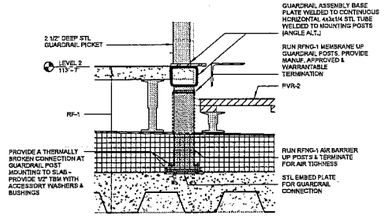
9 SECTION DETAIL - SILL AT LVR-2
A352 1 1/2" = 1'-0"



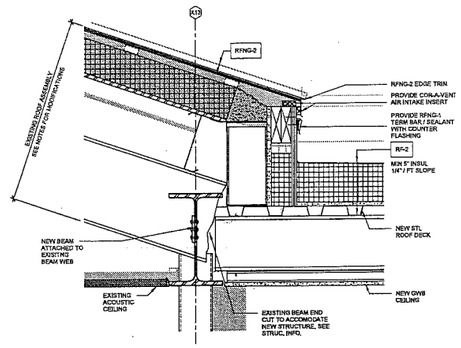
10 SECTION DETAIL - DOOR HEAD
A352 3" = 1'-0"



11 SECTION DETAIL - LEVEL 2 - WALL TYPE 2 BASE
A352 1 1/2" = 1'-0"



12 SECTION DETAIL - RAILING EDGE AT EAST ROOF DECK
A352 1 1/2" = 1'-0"



13 ROOF CONNECTION AT TYPICAL OVERHANG (1992)
A352 1 1/2" = 1'-0"

MSR 710 South 2nd Street, 6th Floor Minneapolis, Minnesota 55401-2282
Architecture 612.375.0336 tel
Interiors and Urban Design 612.342.2214 fax
www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201
Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
323 South Paterson Street, Suite 1
Madison, WI 53703
608.251.3600 tel

Structural Engineer, Technology and A/V
IMEG Corp.
1500 Deming Way, Suite 200
Madison, WI 53562
608.229.9600 tel

MEP Engineer
MEP Associates, LLC
650 Blair Station Road, Suite 175
Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
570 Asbestos Ave West
St. Paul, MN 55102
651.251.1555 tel

Greenhouse Design
Rough Brothers, Inc.
5512 Vine Street
Cincinnati, OH 45217
513.242.0310 tel

Olbrich Botanical Gardens
Expansion Phase 1
BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin.
ARCHITECT SEAL

WISCONSIN DANIEL JACK POLING A-5084 MINNEAPOLIS, MN ARCHITECT

Signature: Daniel Poling
Print Name: Jack Poling
Date: JUNE 4, 2018 License No.: A-5084

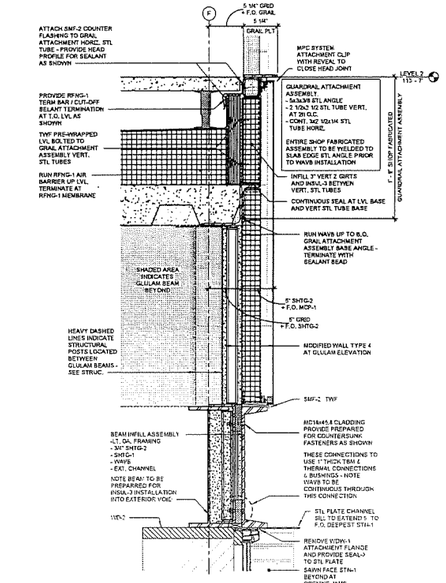
MARK	DATE	DESCRIPTION
	09.29.2017	SCHEMATIC DESIGN SUBMISSION
	12.06.2017	DD PRICING SET
	01.19.2018	DESIGN DEVELOPMENT SUBMISSION
	03.17.2018	SUDC SUBMISSION
	03.30.2018	100% CD PRICING ISSUE
	04.06.2018	PARKING LOT AND SITE PLAN SUBMISSION
	05.04.2018	90% CD SUBMISSION
	06.01.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE

PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: MSR CHECKED BY: MSR

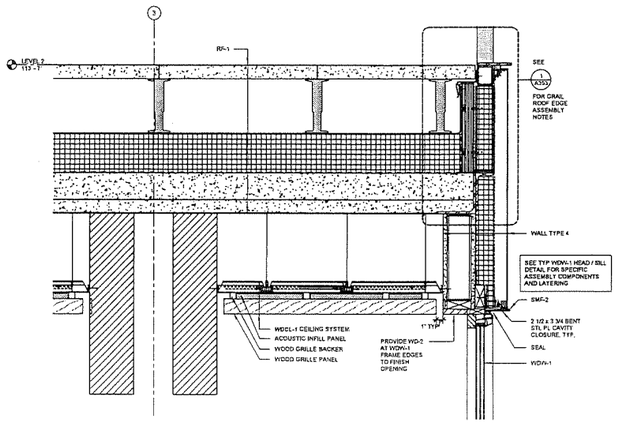
EXTERIOR DETAILS

EXHIBIT F
A352

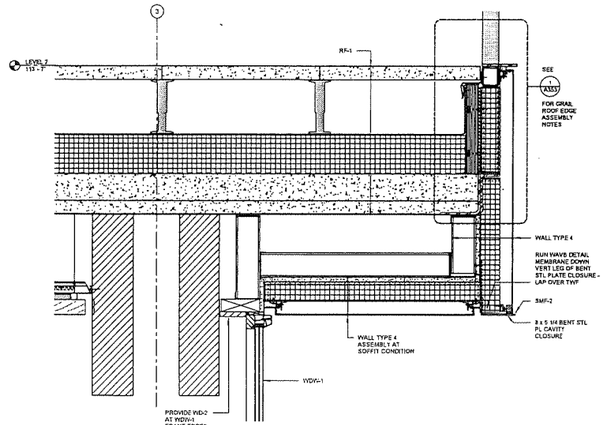
06/6/18



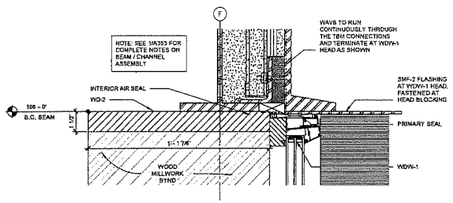
1 SECTION DETAIL - LVL1 TO LVL 2 TERRACE TRANSITION
A353 1 1/2" = 1'-0"



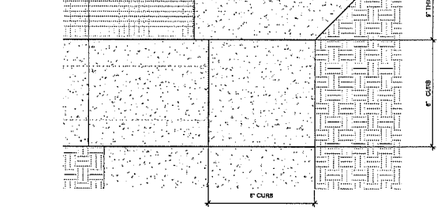
2 SECTION DETAIL - ROOF EDGE AT OUTDOOR CLASSROOM
A353 1 1/2" = 1'-0"



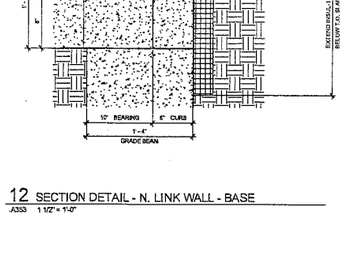
3 SECTION DETAIL - DOOR 110 - HEAD ASSEMBLY
A353 1 1/2" = 1'-0"



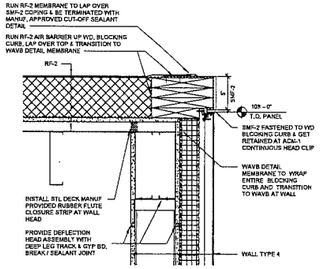
4 SECTION DETAIL - WDW-1 HEAD AT E. WALL BEAM
A353 3" = 1'-0"



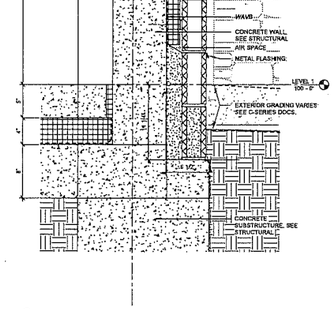
7 SECTION DETAIL - WDW-1 SYSTEM DOOR SILL AT OUTDOOR CLASSROOM
A353 3" = 1'-0"



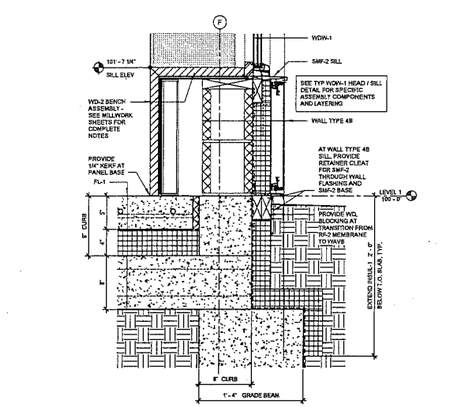
5 TOP OF GREENHOUSE KNEEWALL DETAIL - TYP.
A353 1" = 1'-0"



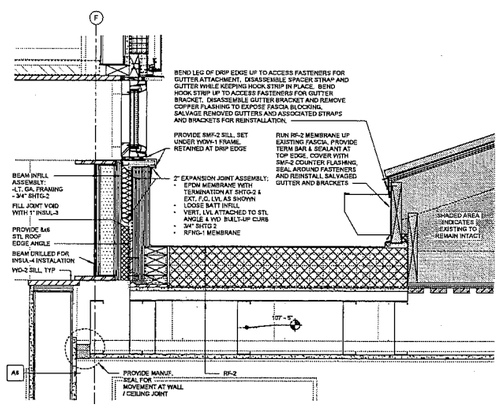
8 SECTION DETAIL - N. LINK - WALL HEAD
A353 1 1/2" = 1'-0"



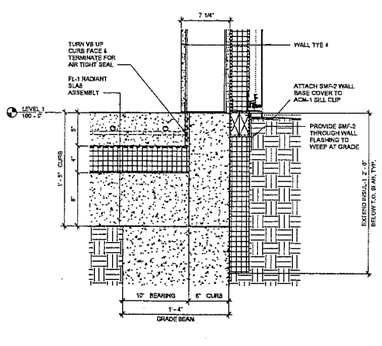
9 TYPICAL EXTERIOR KNEEWALL DETAIL
A353 1 1/2" = 1'-0"



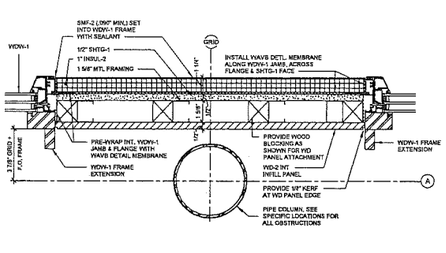
10 SECTION DETAIL - W. WALL - BASE
A353 1 1/2" = 1'-0"



11 SECTION DETAIL - ROOF AT LINK TO EDUCATION BLDG
A353 1 1/2" = 1'-0"



12 SECTION DETAIL - N. LINK WALL - BASE
A353 1 1/2" = 1'-0"



13 PLAN DETAIL - CLASSROOM - INFILL PANEL AT WDW-1
A353 3" = 1'-0"

MSR
740 South 2nd Street, 8th Floor
Minneapolis, Minnesota 55401-2281
Architecture, Interiors, and Urban Design
612 375 0936 tel
612 342 2216 fax
www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201
Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
303 South Paterson Street, Suite 1
Madison, WI 53703
608.251.3600 tel

Structural Engineer, Technology and AV
IMEG Corp.
1650 Deming Way, Suite 200
Madison, WI 53562
608.223.3600 tel

MEP Engineer
MEP Associates, LLC
850 Blue Gentian Road, Suite 175
Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
575 Minnehaha Ave West
St. Paul, MN 55103
651.254.1850 tel

Greenhouse Design
Rough Brothers, Inc.
5555 Vine Street
Cincinnati, OH 45217
513.242.0310 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin.
ARCHITECT SEAL:

WISCONSIN
DANIEL JACK POLING
A-5564
MINNEAPOLIS, MN
ARCHITECT

Signature:
Print Name: Jack Poling
Date: JUNE 4, 2018 License No: A-5564

MARK	DATE	DESCRIPTION
	09.29.2017	SCHEMATIC DESIGN SUBMISSION
	12.04.2017	DD PRICING SET
	01.19.2018	DESIGN DEVELOPMENT SUBMISSION
	01.17.2018	UDC SUBMISSION
	03.30.2018	75% CD PRICING ISSUE
	04.06.2018	PARKING LOT AND SITE PLAN SUBMISSION
	05.04.2018	100% CD SUBMISSION
	06.01.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE

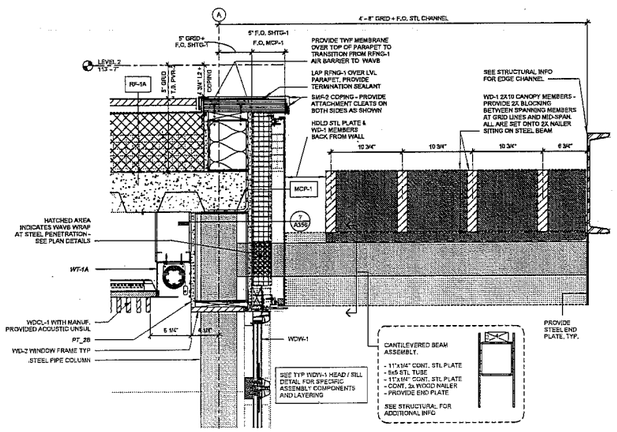
PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: MSR CHECKED BY: MSR

EXTERIOR DETAILS

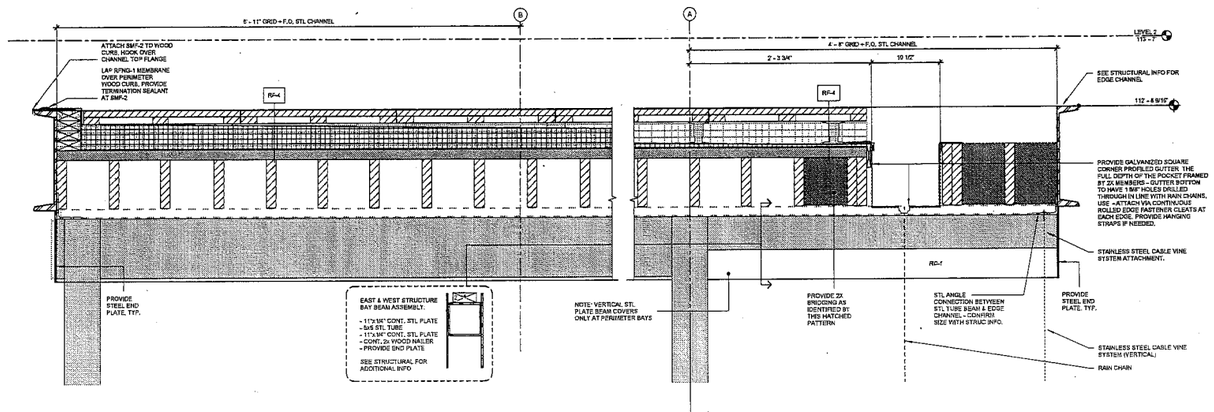
EXHIBIT F
A353

ORIGINAL

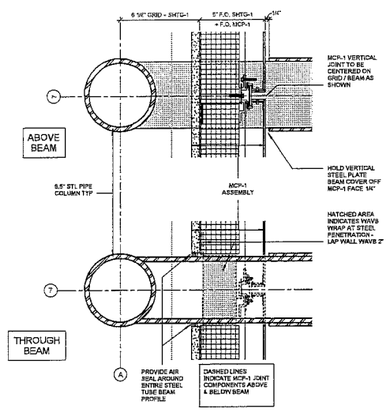
Architects Inc. 2017 Copyright Notice Vierbicher Associates, Inc.



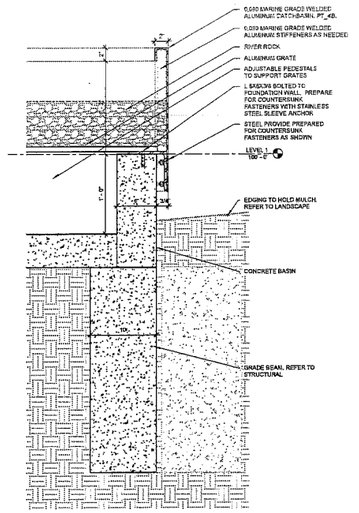
4 SECTION DETAIL - OVERHANG AT EAST CLASSROOM WALL
A356 1 1/2" = 1'-0"



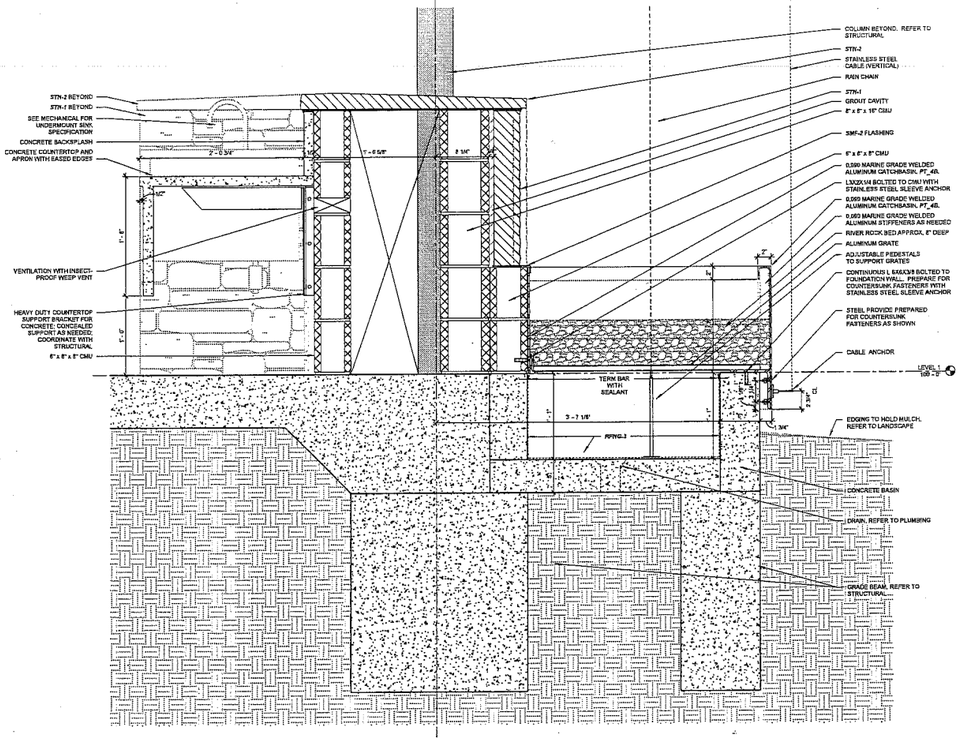
1 OUTDOOR CLASSROOM EAST ROOF EDGE
A356 1 1/2" = 1'-0"



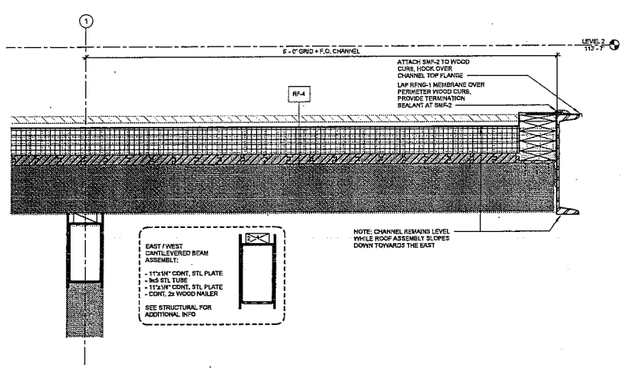
7 BEAM PENETRATION AT E WALL CANOPY
A356 3" = 1'-0"



5 SECTION DETAIL - WATER CATCHMENT N/S WALL
A356 1 1/2" = 1'-0"



2 SECTION DETAIL - OUTDOOR CLASSROOM AT WATER CATCHMENT FEATURE
A356 1 1/2" = 1'-0"



3 OUTDOOR CLASSROOM NORTH ROOF EDGE
A356 1 1/2" = 1'-0"

MSR 710 South 2nd Street, 6th Floor Minneapolis, Minnesota 55401-2282
Architecture, Interiors and Urban Design
612.375.0394 tel
612.342.2244 fax
www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201
Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
353 South Paterson Street, Suite 1
Madison, WI 53703
608.251.3000 tel

Structural Engineer, Technology and AV
IMEG Corp.
1800 Deming Way, Suite 200
Middleton, WI 53562
608.223.9600 tel

MEP Engineer
MEP Associates, LLC
860 Blue Gentian Road, Suite 175
Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
570 Asbury Ave West
St. Paul, MN 55107
651.291.1880 tel

Greenhouse Design
Rough Brothers, Inc.
9513 Vine Street
Cincinnati, OH 45217
513.242.0310 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin.
ARCHITECT SEAL

WISCONSIN
DANIEL JACK POLING
A-4094
MINNEAPOLIS, MN
ARCHITECT

Signature
Print Name: Jack Poling
Date: JUNE 4, 2018 License No.: A-4094

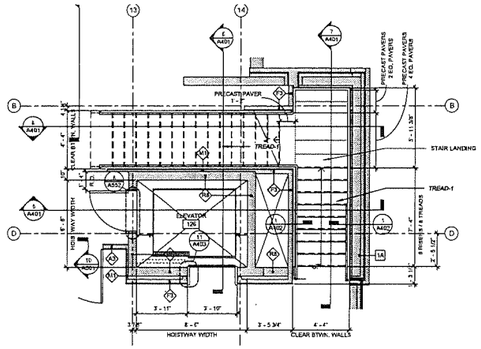
MARK	DATE	DESCRIPTION
	09.29.2017	SCHEMATIC DESIGN SUBMISSION
	12.04.2017	30% PRICING SET
	01.16.2018	DESIGN DEVELOPMENT SUBMISSION
	03.12.2018	KDAC SUBMISSION
	03.30.2018	70% CD PRICING ISSUE
	04.04.2018	PARKING LOT AND SITE PLAN SUBMISSION
	05.04.2018	90% CD SUBMISSION
	05.01.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE

PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: MSR CHECKED BY: MSR

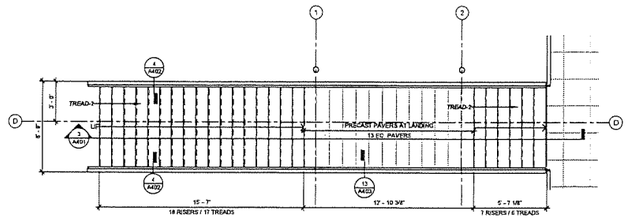
EXTERIOR DETAILS

EXHIBIT F
A356

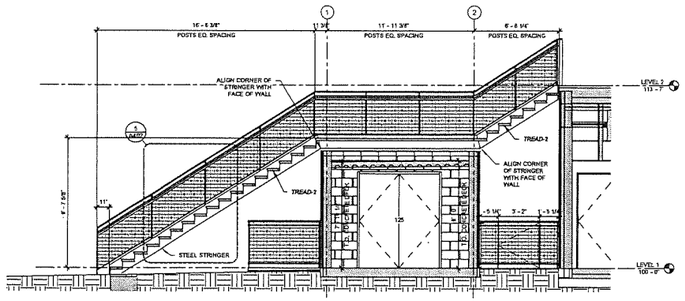
06/4/18



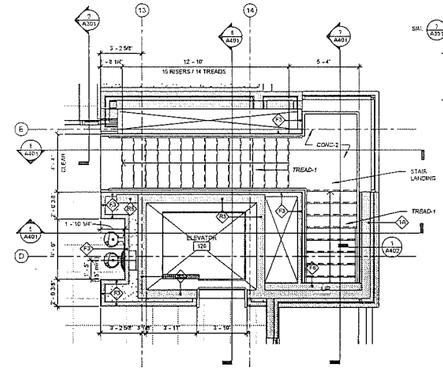
1 STAIR MS-1 PLAN LEVEL 1
A401 1/4" = 1'-0"



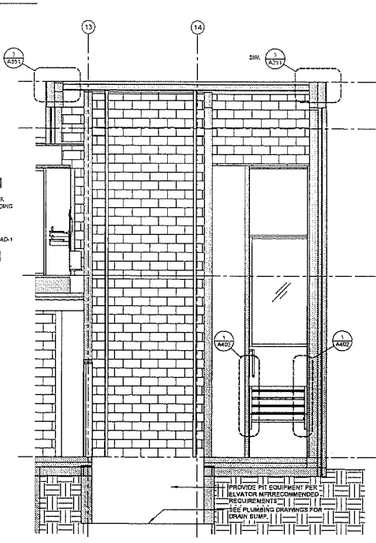
2 STAIR MS-2 PLAN LEVEL 1
A401 1/4" = 1'-0"



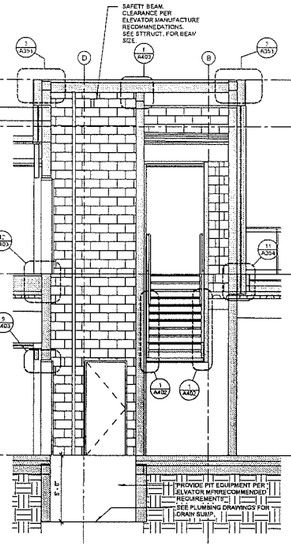
3 EXTERIOR STAIR SECTION N-S
A401 1/4" = 1'-0"



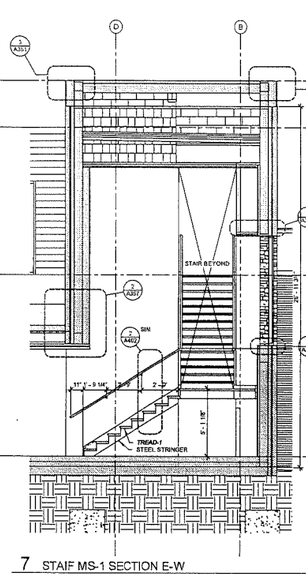
4 STAIR MS-1 PLAN LEVEL 2
A401 1/4" = 1'-0"



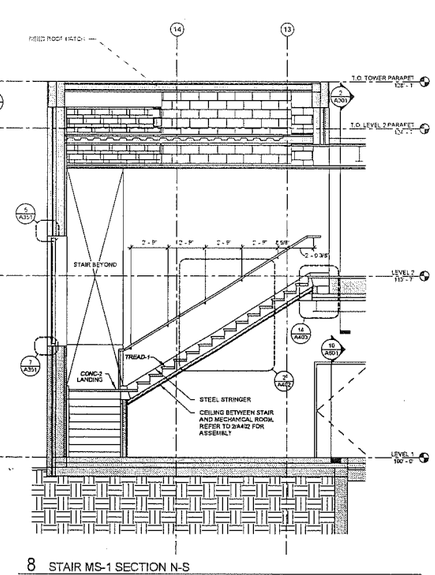
5 STAIR MS-1 AND ELEVATOR SHAFT SECTION N-S
A401 1/4" = 1'-0"



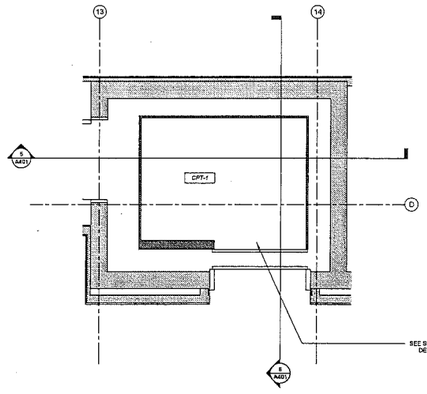
6 STAIR MS-1 AND ELEVATOR SHAFT SECTION E-W
A401 1/4" = 1'-0"



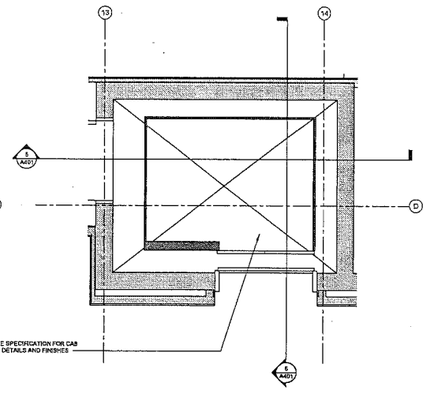
7 STAIF MS-1 SECTION E-W
A401 1/4" = 1'-0"



8 STAIR MS-1 SECTION N-S
A401 1/4" = 1'-0"



10 ELVATOR CAB FLOOR PLAN
A401 1/2" = 1'-0"



9 ELVATOR CAB REFLECTED CEILING PLAN
A401 1/2" = 1'-0"

MSR 710 South 2nd Street, 5th Floor Minneapolis, Minnesota 55401-2282
Architecture, Interiors and Urban Design. tel: 375 0196 tel 612 342 2216 fax www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive Suite 201 Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
353 South Paterson Street, Suite 1 Madison, WI 53703
608.251.3600 tel

Structural Engineer, Technology and A/V
IMEG Corp.
1550 Deming Way, Suite 200 Middleton, WI 53562
608.223.2600 tel

MEP Engineer
MEP Associates, LLC
600 Blue Garden Road, Suite 175 Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
570 Asbury Ave West St. Paul, MN 55107
651.254.1650 tel

Commissioning
Rough Brothers, Inc.
5513 Vine Street Cincinnati OH 45217
513.242.0310 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin, ARCHITECT SEAL

WISCONSIN DANIEL JACK POLING A-3384 MINNEAPOLIS, MN ARCHITECT

Signature: Daniel Poling
Print Name: Jack Poling
Date: JUNE 4, 2018 License No: A-3384

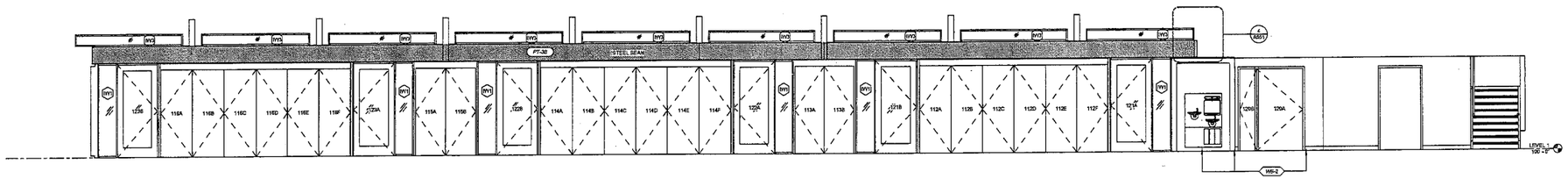
ISSUE	DATE	DESCRIPTION
	09.29.2017	SCHEMATIC DESIGN SUBMISSION
	12.08.2017	DD PRICING SET
	01.10.2018	DESIGN DEVELOPMENT SUBMISSION
	01.17.2018	UDC SUBMISSION
	03.30.2018	75% DD PRICING ISSUE
	04.06.2018	PARKING LOT AND SITE PLAN SUBMISSION
	05.04.2018	90% DD SUBMISSION
	06.01.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE

PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: MSR CHECKED BY: MSR

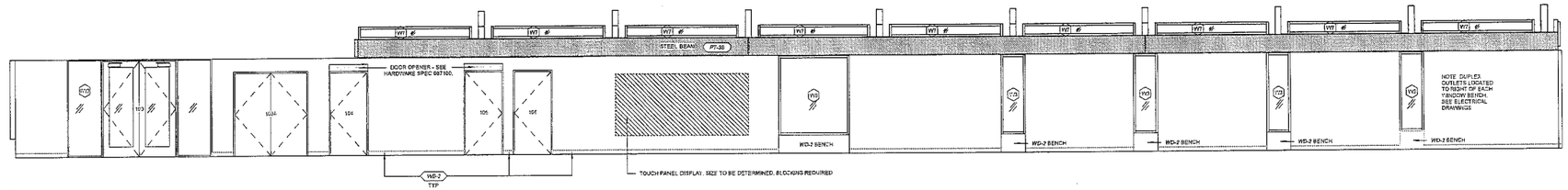
VERTICAL CIRCULATION

EXHIBIT F
A401

6/26/2018

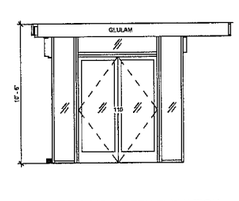


1 CIRCULATION 110 EAST ELEVATION
A501 1/4" = 1'-0"

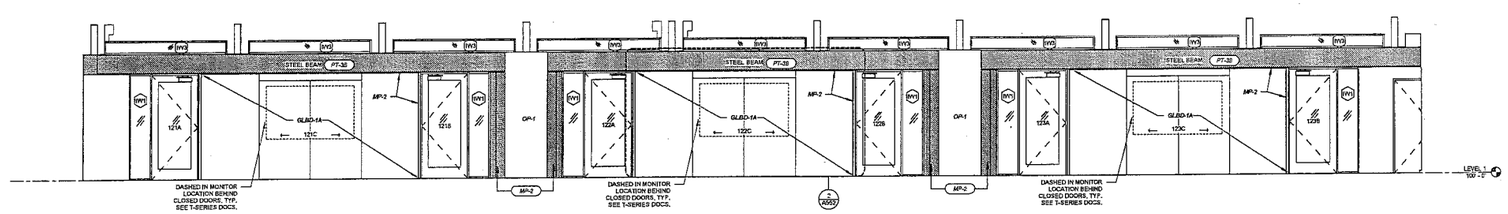


2 CIRCULATION 110 WEST ELEVATION
A501 1/4" = 1'-0"

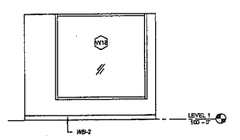
3 CLASSROOMS 121, 122 & 123 EAST ELEVATION
A501 1/4" = 1'-0"



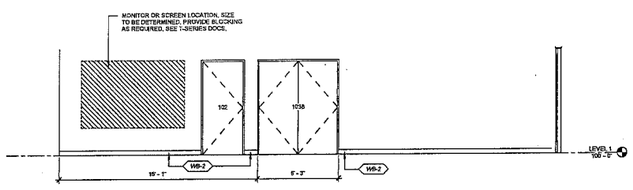
4 CIRCULATION 110 NORTH ELEVATION
A501 1/4" = 1'-0"



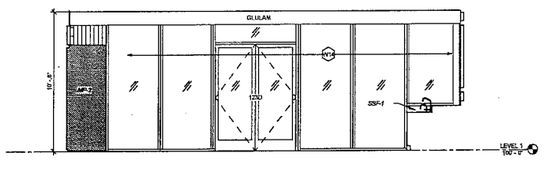
5 CLASSROOMS 121, 122 & 123 WEST ELEVATION
A501 1/4" = 1'-0"



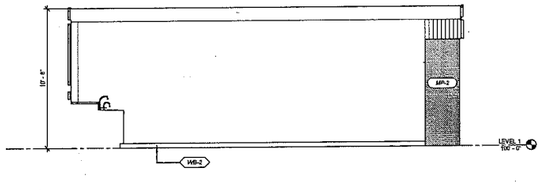
6 CIRCULATION 110 SOUTH ELEVATION
A501 1/4" = 1'-0"



7 LINK 110 NORTH ELEVATION
A501 1/4" = 1'-0"



8 CLASSROOM 123 NORTH ELEVATION
A501 1/4" = 1'-0"



9 CLASSROOM 121 SOUTH ELEVATION
A501 1/4" = 1'-0"

MSR
710 South 2nd Street, 6th Floor
Minneapolis, Minnesota 55401-2282
Architecture Interiors and Urban Design
tel 2 375 0536 tel
612 342 2344 fax
www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201
Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
323 South Paterson Street, Suite 1
Madison, WI 53703
608.251.3600 tel

Structural Engineer, Technology and A/V
IMEG Corp.
1800 Deming Way, Suite 200
Middleton, WI 53562
608.223.9600 tel

MEP Engineer
MEP Associates, LLC
850 Bluo Gentian Road, Suite 175
Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
570 Asbury Street
St. Paul, MN 55104
651.251.1880 tel

Greenhouse Design
Rough Brothers, Inc.
5510 Vine Street
Cincinnati, OH 45217
513.242.6310 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin.
ARCHITECT SEAL

WISCONSIN
DANIEL JACK POLING
A-8984
MINNEAPOLIS, MN
ARCHITECT

Signature:
Print Name: Jack Poling
Date: JUNE 4, 2018 License No.: A-8984

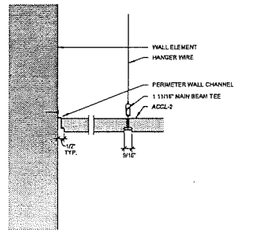
ISSUE	DATE	DESCRIPTION
	09.23.2017	SCHEMATIC DESIGN SUBMISSION
	12.04.2017	BOT PRICING SET
	01.12.2018	DESIGN DEVELOPMENT SUBMISSION
	01.17.2018	CDC SUBMISSION
	02.26.2018	75% CD PRICING ISSUE
	04.06.2018	PARKING LOT AND SITE PLAN SUBMISSION
	05.04.2018	100% CD SUBMISSION
	06.01.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE

PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: MSR CHECKED BY: MSR

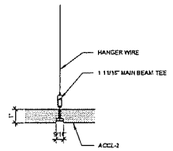
INTERIOR ELEVATIONS

EXHIBIT F
A501

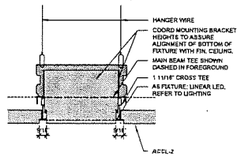
Spring Mill



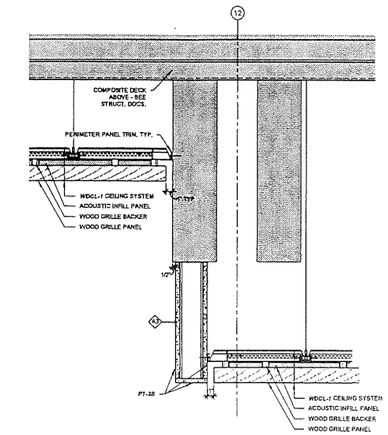
1 ACCL-2 CEILING DETAIL - WALL EDGE TYP
A551 3" = 1'-0"



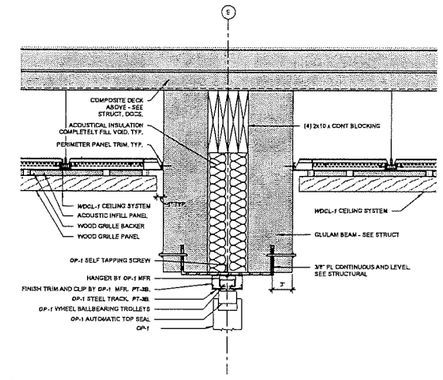
2 ACCL-2 CEILING DETAIL - SEAM TYP
A551 3" = 1'-0"



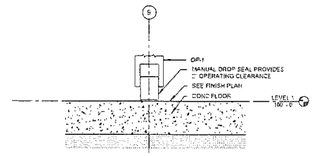
3 ACCL-2 CEILING DETAIL - LED FIXTURE
A551 3" = 1'-0"



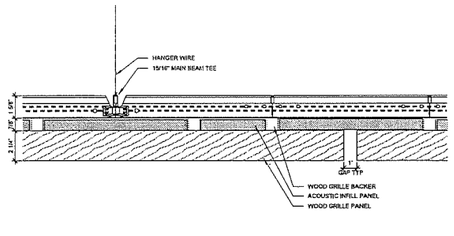
4 SECTION DETAIL - WOOD CEILING HEIGHT CHANGE
A551 1 1/2" = 1'-0"



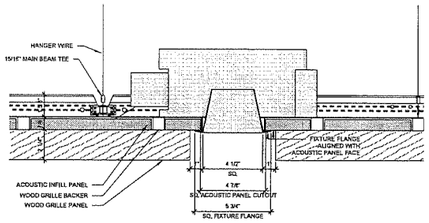
5 MOVABLE PARTITION HEAD DETAIL
A551 1 1/2" = 1'-0"



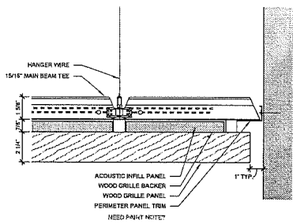
9 MOVABLE PARTITION BASE DETAIL
A551 1 1/2" = 1'-0"



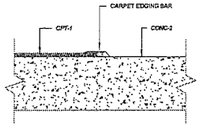
6 WDCL-1 CEILING DETAIL - SEAM TYP
A551 3" = 1'-0"



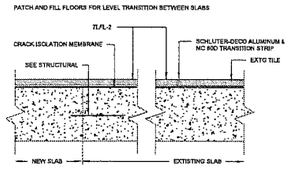
7 WDCL-1 CEILING DETAIL - LIGHT FIXTURE
A551 3" = 1'-0"



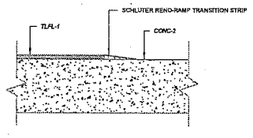
8 WDCL-1 CEILING DETAIL - WALL EDGE
A551 3" = 1'-0"



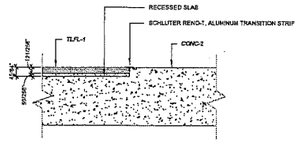
10 TRANSITION DETAIL: CONC-2 TO CPT
A551 3" = 1'-0"



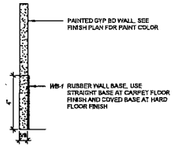
11 TRANSITION DETAIL NEW TILE TO EXISTING TILE
A551 3" = 1'-0"



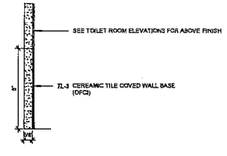
12 TRANSITION DETAIL: CONC-2 TO TILE
A551 3" = 1'-0"



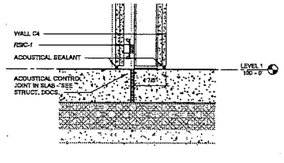
13 TRANSITION DETAIL: CONT-2 TO TILE (ALT)
A551 3" = 1'-0"



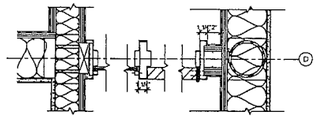
14 WALL BASE 1
A551 3" = 1'-0"



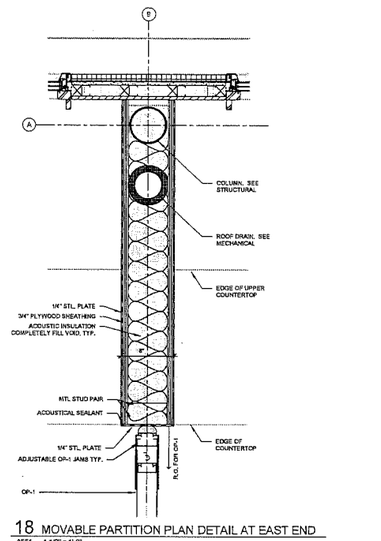
16 CERAMIC TILE WALL BASE 3
A551 3" = 1'-0"



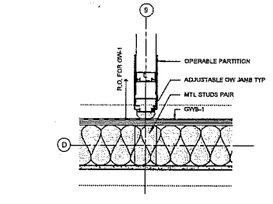
17 DETAIL AT ACOUSTICAL CONTROL JOINT IN FLOOR
A551 1 1/2" = 1'-0"



19 PLAN DETAIL AT TYPICAL CLASSROOM DOOR
A551 1 1/2" = 1'-0"



18 MOVABLE PARTITION PLAN DETAIL AT EAST END
A551 1 1/2" = 1'-0"



20 MOVABLE PARTITION PLAN DETAIL AT HALLWAY END
A551 1 1/2" = 1'-0"

MSR 710 South 2nd Street, 6th Floor Minneapolis, Minnesota 55401-2242
Architecture, Interiors, and Urban Design: 612 375 0936 tel, 612 342 2316 fax, www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201 Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
323 South Paterson Street, Suite 1 Madison, WI 53703
608.251.3600 tel

Structural Engineer, Technology and AV
IMEG Corp.
1600 Demetg Way, Suite 200 Madison, WI 53562
608.223.9600 tel

MEP Engineer
MEP Associates, LLC
800 Blue Gentian Road, Suite 170 Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
575 Montana Ave West St. Paul, MN 55107
651.251.1850 tel

Greenhouse Design
Rough Brothers, Inc.
5613 Vine Street Cincinnati, OH 45217
513.242.6310 tel

Olbrich Botanical Gardens Expansion

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin.
ARCHITECT SEAL

WISCONSIN DANIEL JACK POLING A-5694 MINNEAPOLIS, MN ARCHITECT

Signature:
Print Name: Jack Poling
Date: JUNE 4, 2018 License No.: A-5694

ISSUE		
	IMAGE	DATE	DESCRIPTION
		10.27.2017	SCHEMATIC DESIGN SUBMISSION
		12.08.2017	DD PRICING SET
		01.10.2018	DESIGN DEVELOPMENT SUBMISSION
		01.17.2018	UDC SUBMISSION
		03.16.2018	75% CD PRICING ISSUE
		04.06.2018	PARKING LOT AND SITE PLAN SUBMISSION
		05.04.2018	95% CD SUBMISSION
		06.01.2018	BIDTISSUE
		06.04.2018	PERMIT ISSUE

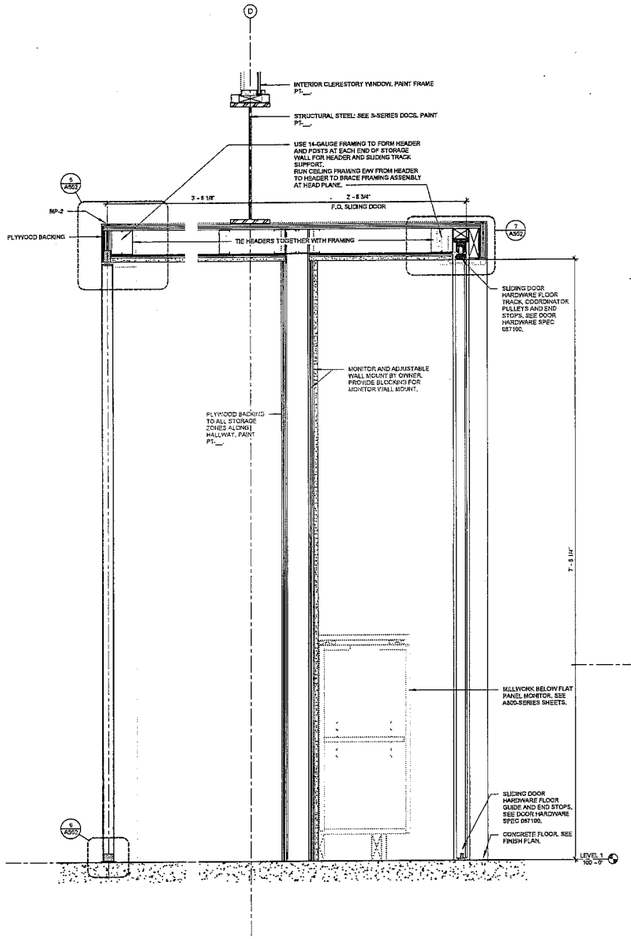
PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: MSR CHECKED BY: MSR

INTERIOR DETAILS

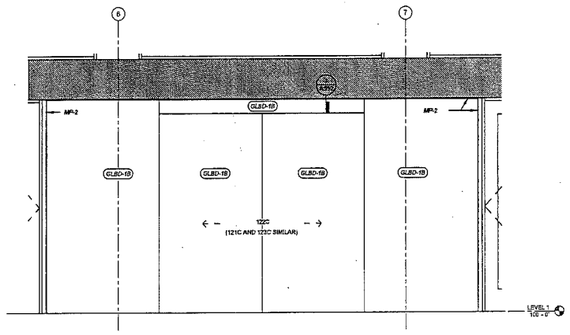
EXHIBIT F
A551

06/6/2018

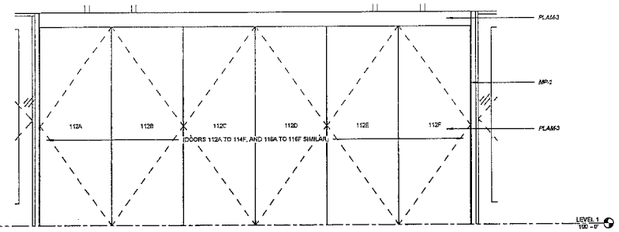
Architecture Interiors and Urban Design MSR 612.375.0936 612.342.2316 fax www.msrdesign.com



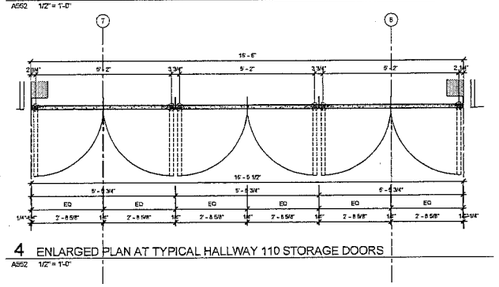
1 ENLARGED SECTION THROUGH HALLWAY / CLASSROOM STORAGE WALL
A552 1 1/2" = 1'-0"



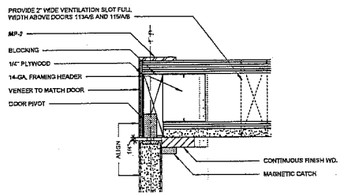
2 EAST ELEVATION DETAIL OF CLASSROOMS 121, 122 & 123 PRESENTATION NICHE
A552 1/2" = 1'-0"



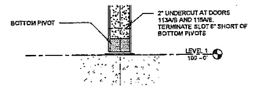
3 WEST ELEVATION DETAIL OF HALLWAY 110 STORAGE
A552 1/2" = 1'-0"



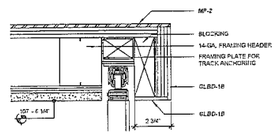
4 ENLARGED PLAN AT TYPICAL HALLWAY 110 STORAGE DOORS
A552 1/2" = 1'-0"



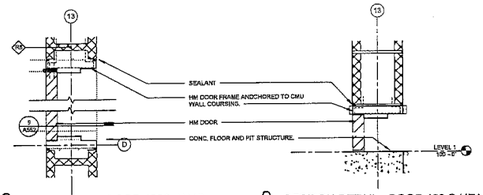
5 SECTION DETAIL - HALLWAY STORAGE DOOR HEAD
A552 3" = 1'-0"



6 SECTION DETAIL - HALLWAY STORAGE DOOR SILL
A552 3" = 1'-0"

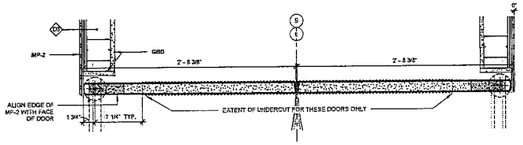


7 SECTION DETAIL - CLASSROOM SLIDING DOOR HEAD
A552 3" = 1'-0"

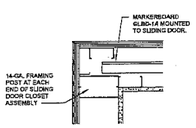


8 PLAN DETAIL - DOOR 120C JAMB
A552 1 1/2" = 1'-0"

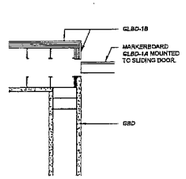
9 SECTION DETAIL - DOOR 120 C HEAD
A552 1 1/2" = 1'-0"



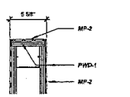
10 ENLARGED PLAN AT HALLWAY CLOSET DOUBLE DOORS 113A/B AND 115A/B
A552 1 1/2" = 1'-0"



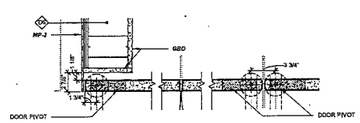
11 PLAN DETAIL AT PRES. CORNER
A552 1 1/2" = 1'-0"



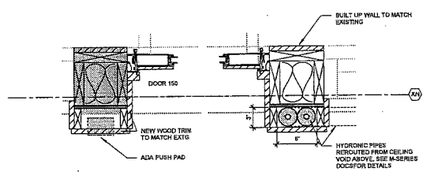
12 PLAN DETAIL AT PRES. POCKET DOOR
A552 1 1/2" = 1'-0"



13 MOVABLE PARTITION POCKET EDGE
A552 1 1/2" = 1'-0"



14 PLAN DETAIL AT HALLWAY STORAGE CORNER
A552 1 1/2" = 1'-0"



15 PLAN DETAIL - DOOR 150A JAMBS
A552 1 1/2" = 1'-0"

MSR 710 South 2nd Street, 6th Floor Minneapolis, Minnesota 55401-2282
Architecture 612.375.0536 tel
Interiors, and 612.342.2314 fax
Urban Design www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201
Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
323 South Paterson Street, Suite 1
Madison, WI 53703
608.251.3600 tel

Structural Engineer, Technology and A/V
IMEG Corp.
1600 Deming Way, Suite 200
Middleton, WI 53562
608.223.3600 tel

MEP Engineer
MEP Associates, LLC
850 Blue Gentian Road, Suite 175
Eagan, MN 55121
651.379.9129 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
570 Asbury Ave West
St. Paul, MN 55102
651.251.1880 tel

Greenhouse Design
Rough Brothers, Inc.
5513 Vine Street
Cincinnati, OH 45217
513.242.0310 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin.
ARCHITECT SEAL

WISCONSIN
DANIEL JACK POLING
A-5684
MINNEAPOLIS, MN
ARCHITECT

Signature
Print Name Jack Poling
Date JUNE 4, 2018 License No. A-5684

MARK	DATE	DESCRIPTION
	09.29.2017	SCHEMATIC DESIGN SUBMISSION
	12.04.2017	100 PADDING SET
	01.18.2018	DESIGN DEVELOPMENT SUBMISSION
	03.17.2018	50% SUBMISSION
	03.30.2018	75% CD PRICING ISSUE
	04.06.2018	PARKING LOT AND SITE PLAN SUBMISSION
	05.04.2018	95% CD SUBMISSION
	05.01.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE

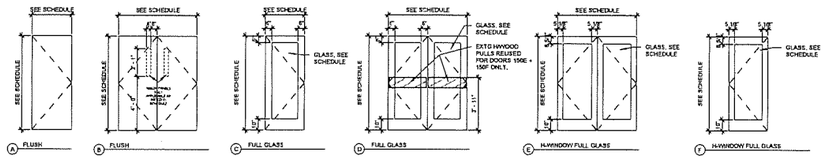
PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: MSR CHECKED BY: MSR

Drawing ©2017 Copyright MSR Interiors & Architecture, Inc.

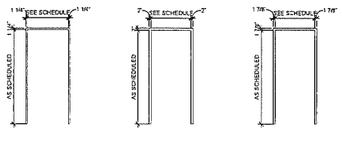
INTERIOR DETAILS

EXHIBIT F
A552

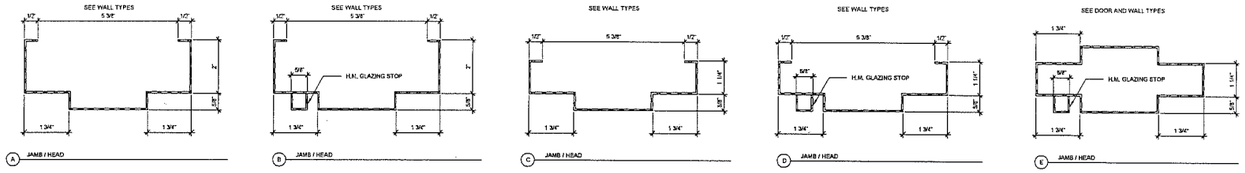
ORIGINAL



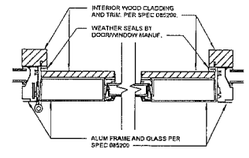
1 DOOR TYPES
A601 1/4" = 1'-0"



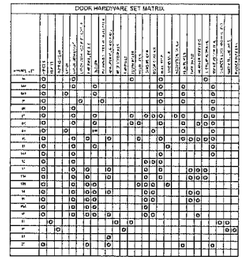
2 FRAME TYPES
A601 1/4" = 1'-0"



3 H.M. FRAME PROFILES
A601 6" = 1'-0"

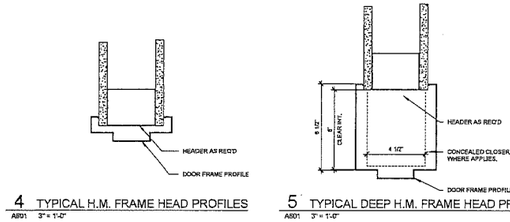


8 H-WIN "NORDIC" DOOR JAMB DETAIL
A601 3" = 1'-0"

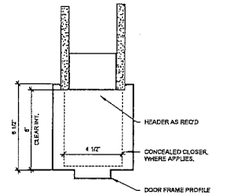


DOOR HARDWARE SET MATRIX

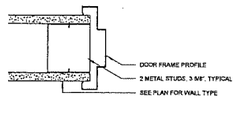
NOTES:



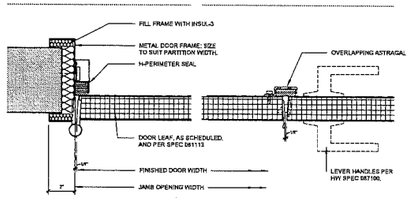
4 TYPICAL H.M. FRAME HEAD PROFILES
A601 3" = 1'-0"



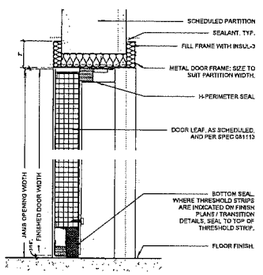
5 TYPICAL DEEP H.M. FRAME HEAD PROFILE
A601 3" = 1'-0"



6 TYPICAL H.M. FRAME JAMB PROFILE
A601 3" = 1'-0"



9 MECH ROOM DOOR DETAILS
A601 3" = 1'-0"



10 MECH DOOR HEAD AND THRESHOLD
A601 3" = 1'-0"

DOOR SCHEDULE GENERAL NOTES

1. COORDINATE DEPTH OF FRAMING AND OVER DOOR WITH HARDWARE REQUIREMENTS, INCLUDING HARDWARE ANCHORING REQUIREMENTS.

2. ALL NEW EXTERIOR DOORS TO BE INSULATED AND THERMALLY-BROKEN, INCLUDING THRESHOLD STRIPS.

3. ALL H.M. DOORS AND FRAMES TO BE FIELD PAINTED PT-3B, FOR ALL OTHER HM-TYPE DOORS AND FRAME DETAILS, REFER TO SPECIFICATION SECTION 081113.

4. ALL WOOD CLOSET DOORS TO BE FINISHED WITH PLAM-3, UNLESS NOTED OTHERWISE.

5. ALL WOOD CLAD EXTERIOR DOORS ARE SELF-FINISHED BY MANUFACTURER, FOR ALL OTHER WOOD CLAD EXTERIOR DOOR AND FRAME DETAILS, REFER TO SPECIFICATION SECTION 061200.

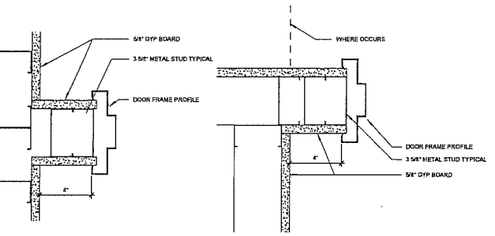
6. FOR ALL GLASS DOORS, REFER TO GLASS SPECIFICATION 088000, AND THE MATERIALS LIST ON SHEET G000.

7. FOR DOOR HARDWARE SETS, REFER TO SPECIFICATION SECTION 087100.

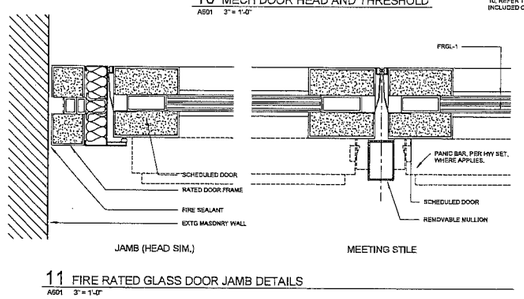
8. REFER TO T-SERIES DRAWINGS AND DOCUMENTS FOR CARD READER AND DOOR MONITORING REQUIREMENTS, DETAILS AND GENERAL LOCATIONS.

9. CARD READER LOCATIONS ON T-SERIES DRAWINGS ARE INDICATIVE AND REQUIRE PRECISE LOCATING IN THE FIELD WITH OWNER INPUT AND APPROVAL.

10. REFER TO OTHER DETAIL SHEETS IN THIS A-SERIES SET FOR DOOR DETAILS NOT INCLUDED ON THIS SHEET.



7 TYPICAL H.M. FRAME INSTALLATION AT PERPENDICULAR WALL OR CORNER
A601 3" = 1'-0"



11 FIRE RATED GLASS DOOR JAMB DETAILS
A601 3" = 1'-0"

MSR 310 South 2nd Street, 6th Floor Minneapolis, Minnesota 55401-2282
Architecture 612 375 0936 tel
Interiors and Urban Design 612 342 2216 fax
www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201
Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
303 South Paterson Street, Suite 1
Madison, WI 53703
608.251.3600 tel

Structural Engineer, Technology and A/V
IMEG Corp.
1930 Deming Way, Suite 200
Middleton, WI 53562
608.227.9000 tel

MEP Engineer
MEP Associates, LLC
650 Elm Grove Road, Suite 175
Elgin, IL 60123
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
575 Minnesota Ave West
St. Paul, MN 55118
651.251.1888 tel

Greenhouse Design
Rough Brothers, Inc.
5513 Vine Street
Cincinnati, OH 45217
513.242.0310 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin, ARCHITECT SEAL

WISCONSIN DANIEL JACK POLING A-8394 MINNEAPOLIS, MN ARCHITECT

Signature:
Print Name: Jack Poling
Date: JUNE 4, 2018 License No.: A-8394

ISSUE

PHASE	DATE	DESCRIPTION
	09.29.2017	SCHEMATIC DESIGN SUBMISSION
	12.06.2017	GD PRICING SET
	01.10.2018	EXTERIOR DEVELOPMENT SUBMISSION
	01.17.2018	HDC SUBMISSION
	03.30.2018	75% CD PRICING ISSUE
	04.06.2018	PARKING LOT AND SITE PLAN SUBMISSION
	05.04.2018	90% CD SUBMISSION
	06.01.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE

PROJECT NO. 2017016

PROJECT PHASE BID DOCUMENTS

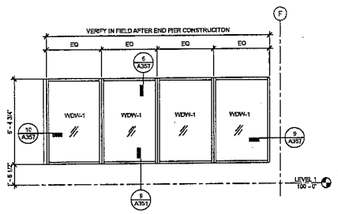
DRAWN BY: MSR CHECKED BY: MSR

DOOR SCHEDULE, TYPES AND DETAILS

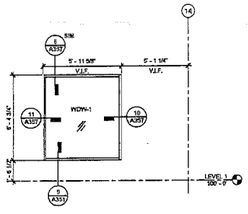
EXHIBIT F

A601

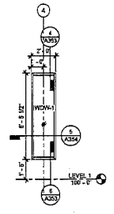
DRAFT



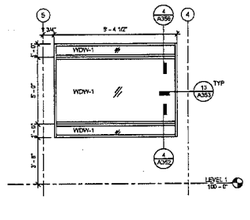
1 W1
A651 1/4" = 1'-0"



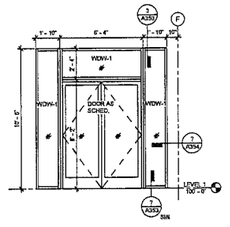
2 W2
A651 1/4" = 1'-0"



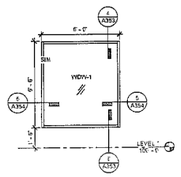
3 W3
A651 1/4" = 1'-0"



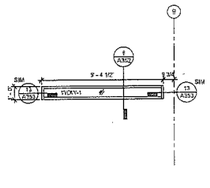
4 W4
A651 1/4" = 1'-0"



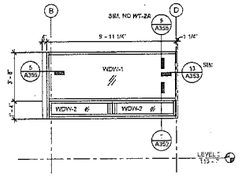
5 W5
A651 1/4" = 1'-0"



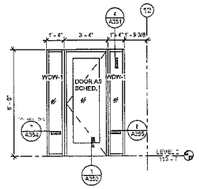
6 W6
A651 1/4" = 1'-0"



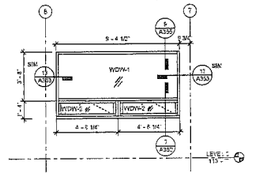
7 W7
A651 1/4" = 1'-0"



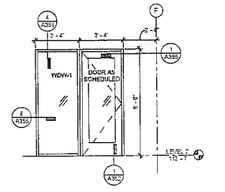
8 W8
A651 1/4" = 1'-0"



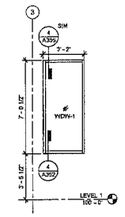
9 W9
A651 1/4" = 1'-0"



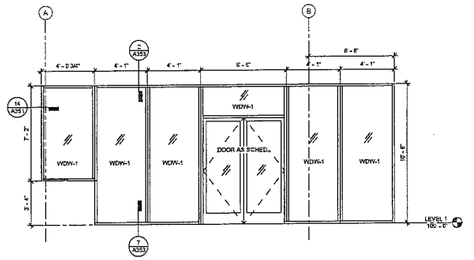
10 W10
A651 1/4" = 1'-0"



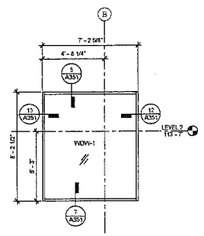
11 W11
A651 1/4" = 1'-0"



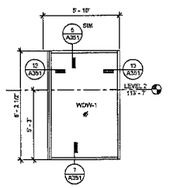
12 W12
A651 1/4" = 1'-0"



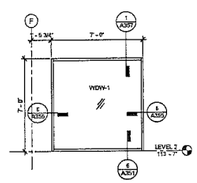
14 W14
A651 1/4" = 1'-0"



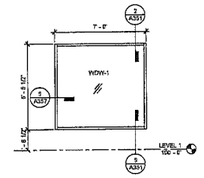
15 W15
A651 1/4" = 1'-0"



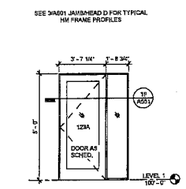
16 W16
A651 1/4" = 1'-0"



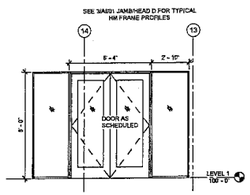
17 W17
A651 1/4" = 1'-0"



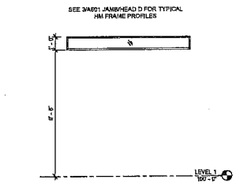
18 W18
A651 1/4" = 1'-0"



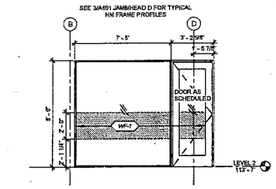
IW1 IW1
A651 1/4" = 1'-0"



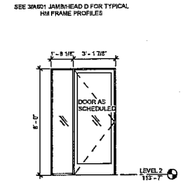
IW2 IW2
A651 1/4" = 1'-0"



IW3 IW3
A651 1/4" = 1'-0"



IW4 IW4
A651 1/4" = 1'-0"



IW5 IW5
A651 1/4" = 1'-0"

MSR
940 South 2nd Street, 5th Floor
Minneapolis, Minnesota 55401-2282
Architecture, Interiors and Urban Design
612.375.0336 tel
612.343.2214 fax
www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201
Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
333 South Paterson Street, Suite 1
Madison, WI 53703
608.251.3600 tel

Structural Engineer, Technology and AIV
IMEG Corp.
1800 Deming Way, Suite 200
Middleton, WI 53562
608.223.9020 tel

MEP Engineer
MEP Associates, LLC
550 Bluo Gentian Road, Suite 175
Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
570 Asbornsota Ave West
St. Paul, MN 55102
651.251.1660 tel

Greenhouse Design
Rough Brothers, Inc.
5613 Vine Street
Cincinnati, OH 45217
513.242.0310 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin.
ARCHITECT SEAL

WISCONSIN
DANIEL JACK POLING
A-6094
MINNEAPOLIS, MN
ARCHITECT

Signature:
Print Name: Jack Poling
Date: JUNE 4, 2018 License No. A-6094

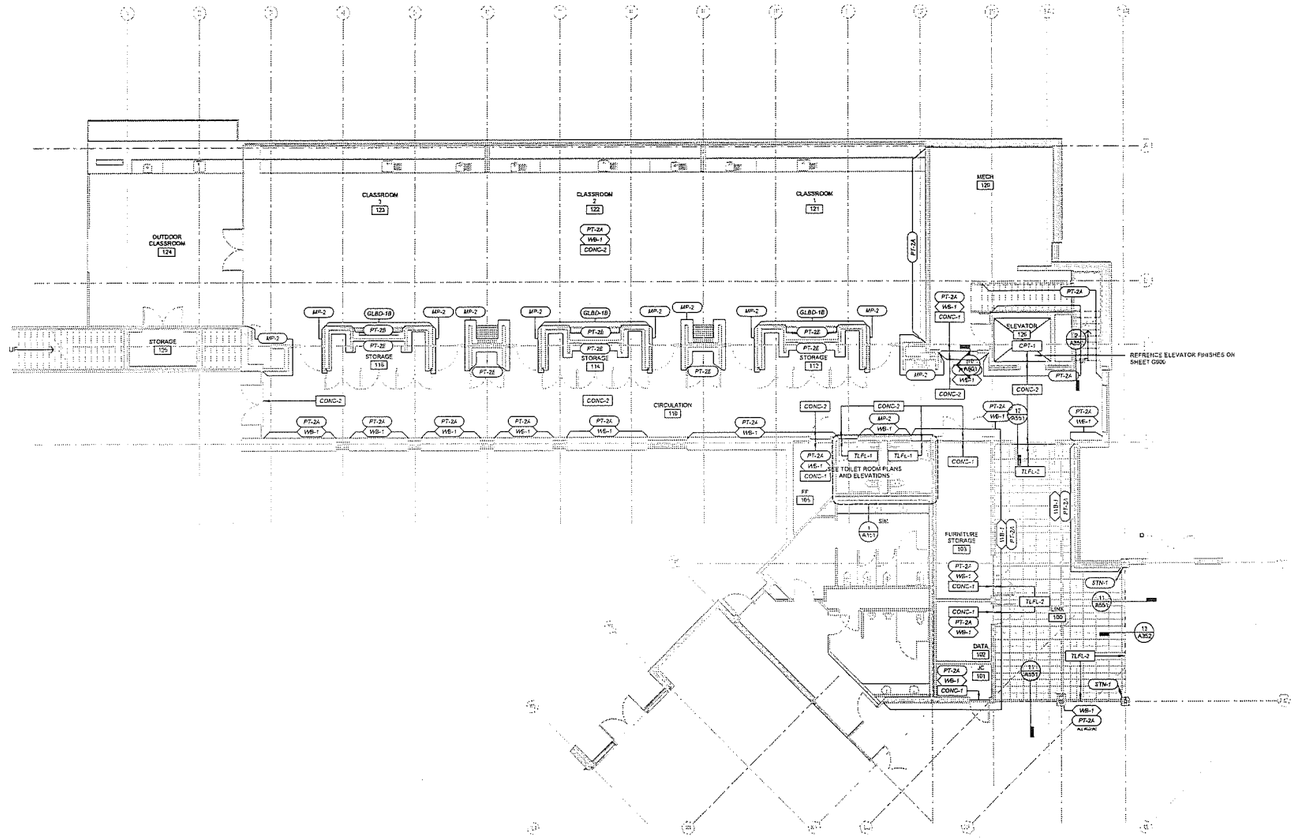
ISSUE	DATE	DESCRIPTION
	09.29.2017	SCHEMATIC DESIGN SUBMISSION
	12.04.2017	DD PRICING SET
	01.19.2018	DESIGN DEVELOPMENT SUBMISSION
	01.17.2018	CDC SUBMISSION
	03.30.2018	75% CD PRICING ISSUE
	04.06.2018	PARKING LOT AND SITE PLAN SUBMISSION
	05.04.2018	100% CD SUBMISSION
	05.01.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE

PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: MSR CHECKED BY: MSR

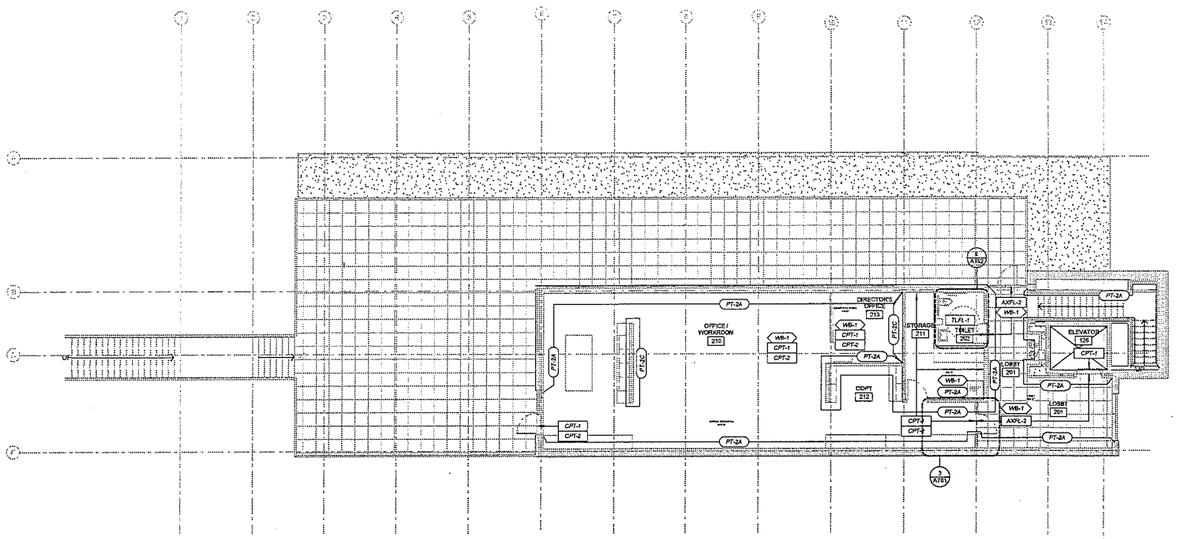
WINDOW TYPES

EXHIBIT F
A651

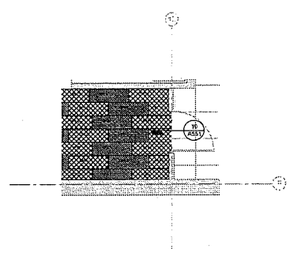
ORIGINAL



1 LEVEL 1 FINISH PLAN
A701 1/8" = 1'-0"



2 LEVEL 2 FINISH PLAN
A701 1/8" = 1'-0"



3 TYP LEVEL 2 CARPET PATTERN
A701 1/4" = 1'-0"

FINISH PLAN KEY

FLOOR FINISH: CPT-1A (STYLE COLOR)
WALL FINISH: PT-2A (STYLE / COLOR FINISH)
WALL BASE: WB-1 (STYLE)

NOTES:

1. SEE PROJECT MANUAL SPECIFICATION FOR KEY TO FINISH CODES AND INSTALLATION INSTRUCTIONS.
2. COORDINATE EXTENT OF FLOOR AND WALL FINISHES WITH MILLWORK DRAWINGS. FLOOR FINISHES TO EXTEND BENEATH MILLWORK U.N.O FINISH AND PRIME ALL WALLS BEHIND MILLWORK U.N.O
3. SEE SHEETS A151 FOR RESTROOM ELEVATIONS SHOWING WALL TILE PATTERNS & PAINT LOCATIONS ABOVE. USE SCHLUTER-SCHIENE (OR EQUAL) ANODIZED ALUMINUM EDGE PROTECTION AT EXPOSED TILE LOCATIONS WITHIN RESTROOMS AND SCHLUTER-JOLLY (OR EQUAL) ANODIZED ALUMINUM EDGE PROTECTION AT EXPOSED TILE AT ALL OTHER LOCATIONS. TYP.
4. ALL GWB CEILINGS TO BE PAINTED PT-1A U.N.O.
5. EXPOSED CEILING & MECHANICAL IN STAFF AREAS TO BE PAINTED PT-1A.
6. ALL ELECTRICAL ROOMS, JANITOR'S CLOSETS AND MECHANICAL ROOMS TO BE PAINTED PT-2A U.N.O.
7. FOR WB-1 BASE, USE STRAIGHT BASE AT CARPETED AREAS AND COVED BASE AT HARD FLOORING SURFACES. SEE MILLWORK PLANS FOR EXTENT AND INSTALLATION INFO.
8. SEE RCP FOR SHADE LOCATION AND FINISHES.
9. INSTALLER RESPONSIBLE FOR FIELD VERIFYING ALL QUANTITIES, DIMENSIONS AND CONDITIONS FOR WINDOW TREATMENTS. ALL SHADES SHALL BE FULL WIDTH WITH NO SEAMS OR BATTENS. INSTALLER RESPONSIBLE FOR SUBMITTING SHOP DRAWINGS FOR APPROVAL.
10. WHEN MORE THAN ONE WALL FINISH CODE IS LISTED AT WALLS ON FINISH PLANS. SEE INTERIOR ELEVATIONS FOR MATERIAL AND/OR PAINT COLOR TRANSITIONS.
11. SEE SPECIFICATIONS FOR INTERIOR FINISHES OF ELEVATOR CAB.

MSR
710 South 2nd Street, 6th Floor
Minneapolis, Minnesota 55401-2282
Architecture, Interiors and Urban Design
612 375 0194 tel
612 342 2214 fax
www.msrdesign.com

Civil Engineer:
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201
Madison, WI 53717
608.826.0532 tel

Landscape Architect:
Ken Saiki Design, Inc.
303 South Paterson Street, Suite 1
Madison, WI 53703
608.251.3000 tel

Structural Engineer, Technology and AV:
IMEG Corp.
1555 Deming Way, Suite 200
Middleton, WI 53562
608.221.3900 tel

MEP Engineer:
MEP Associates, LLC
469 Bair Gerdsen Road, Suite 170
Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant:
Summit Fire Consulting
575 Nineteenth Ave West
St. Paul, MN 55117
651.755.1850 tel

Commissioning Design:
Rough Brothers, Inc.
5513 Vine Street
Cincinnati, OH 45217
513.242.0310 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin.
ARCHITECT SEAL

WISCONSIN DANIEL JACK POLING A-8384 MINNEAPOLIS, MN ARCHITECT

Signature
Print Name: Jack Poling
Date: JUNE 4, 2018 License No.: A-8384

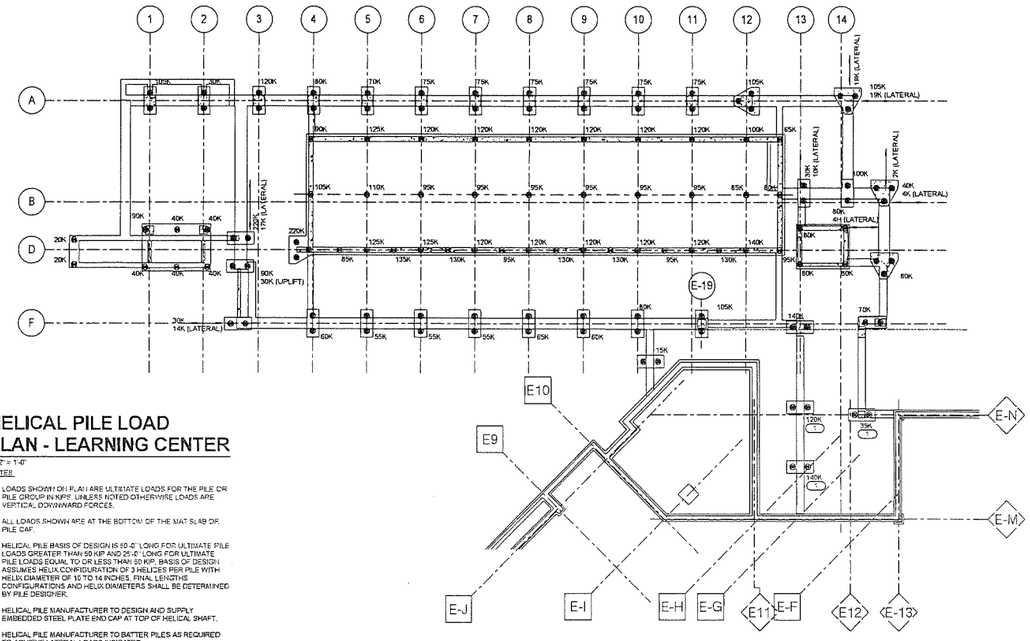
MARK	DATE	DESCRIPTION
	10.20.2017	SCHEMATIC DESIGN SUBMISSION
	11.06.2017	DD PRICING SET
	01.15.2018	DESIGN DEVELOPMENT SUBMISSION
	01.17.2018	LUDC SUBMISSION
	03.26.2018	70% CD PRICING ISSUE
	04.06.2018	PARKING LOT AND SITE PLAN SUBMISSION
	05.04.2018	90% CD SUBMISSION
	06.01.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE

PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: MSR CHECKED BY: MSR

FINISH PLANS

EXHIBIT F
A701

5/21/18 NAC



HELICAL PILE LOAD PLAN - LEARNING CENTER

1 PLAN ACRTY

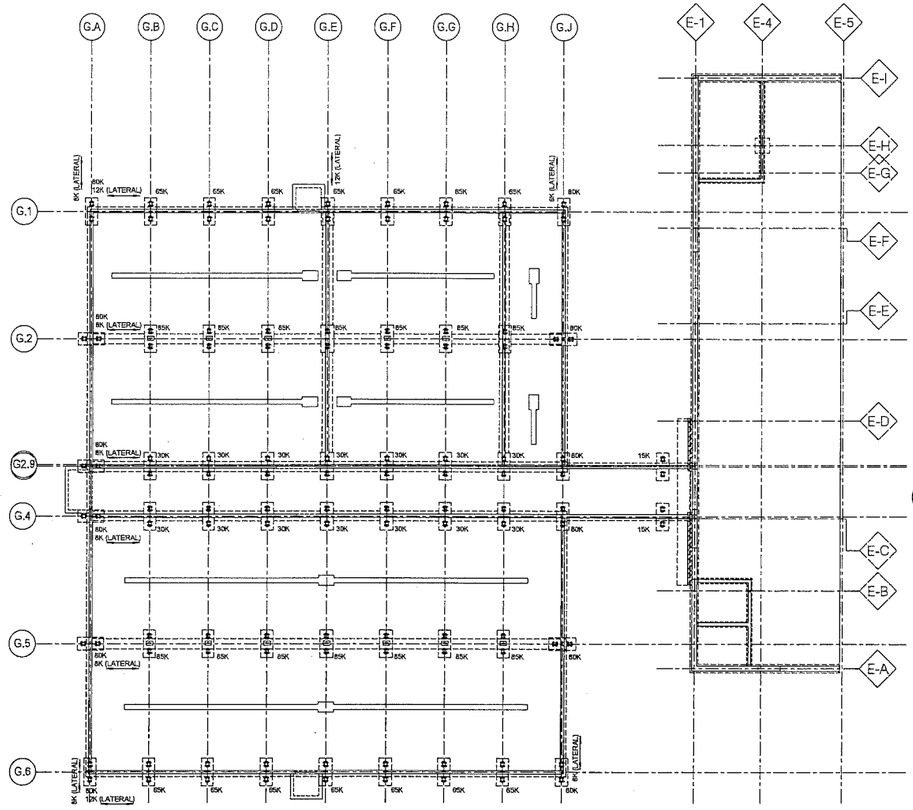
3/32" = 1'-0"

NOTES:

1. LOADS SHOWN ON PLAN ARE ULTIMATE LOADS FOR THE PILE OR PILE GROUP IN KIPS. UNLESS NOTED OTHERWISE LOADS ARE VERTICAL, DOWNWARD FORCES.
2. ALL LOADS SHOWN ARE AT THE BOTTOM OF THE MAT SLAB OR PILE CAP.
3. HELICAL PILE BASIS OF DESIGN IS 50'-0" LONG FOR ULTIMATE PILE LOADS GREATER THAN 50 KIP AND 25'-0" LONG FOR ULTIMATE PILE LOADS EQUAL TO OR LESS THAN 50 KIP. BASIS OF DESIGN ASSUMES HELIX CONFIGURATION OF 3 HELICES PER PILE WITH HELIX DIAMETER OF 10 TO 14 INCHES. FINAL LENGTHS, CONFIGURATIONS AND HELIX DIAMETERS SHALL BE DETERMINED BY PILE DESIGNER.
4. HELICAL PILE MANUFACTURER TO DESIGN AND SUPPLY EMBEDDED STEEL PLATE END CAP AT TOP OF HELICAL SHAFT.
5. HELICAL PILE MANUFACTURER TO BATTER PILES AS REQUIRED TO ACHIEVE LATERAL LOADS INDICATED.

KEYNOTES:

(1) EXPECT A DENSE ASPHALT LAYER AT 12'-0" BELOW EXISTING GRADE.



HELICAL PILE LOAD PLAN - GREEN HOUSE

2 PLAN ACRTP

3/32" = 1'-0"

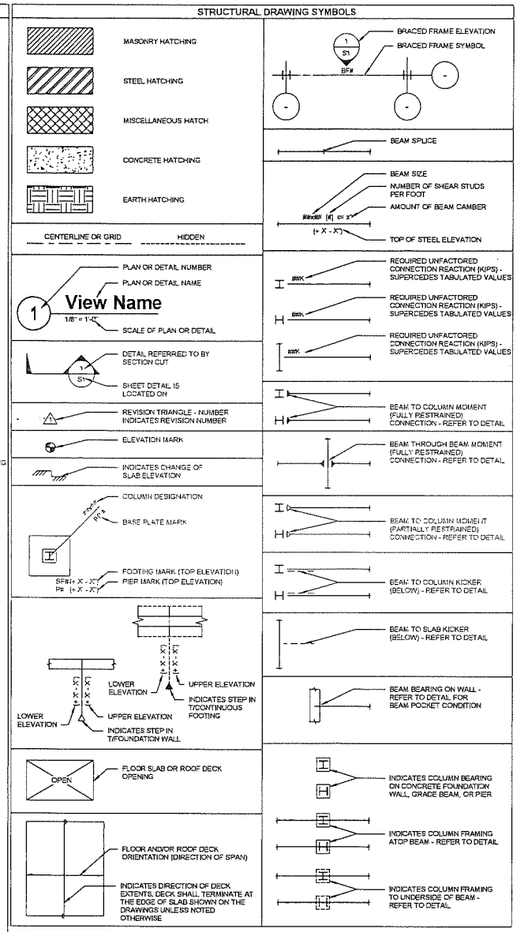
NOTES:

1. LOADS SHOWN ON PLAN ARE ULTIMATE LOADS FOR THE PILE GROUP IN KIPS. UNLESS NOTED OTHERWISE LOADS ARE VERTICAL, DOWNWARD FORCES.
2. ALL LOADS SHOWN ARE AT THE BOTTOM OF THE PILE CAP.
3. HELICAL PILE BASIS OF DESIGN IS 50'-0" LONG FOR ULTIMATE PILE LOADS GREATER THAN 50KIP AND 25'-0" LONG FOR ULTIMATE PILE LOADS EQUAL TO OR LESS THAN 50 KIP. BASIS OF DESIGN ASSUMES HELIX CONFIGURATION OF 3 HELICES PER PILE WITH HELIX DIAMETER OF 10 TO 14 INCHES. FINAL LENGTHS, CONFIGURATION, AND HELIX DIAMETERS SHALL BE DETERMINED BY PILE DESIGNER.
4. HELICAL PILE MANUFACTURER TO DESIGN AND SUPPLY EMBEDDED STEEL PLATE END CAP AT TOP OF HELICAL SHAFT.
5. HELICAL PILE MANUFACTURER TO BATTER PILES AS REQUIRED TO ACHIEVE LATERAL LOADS INDICATED.
6. EXPECT AN 8" GRAVEL LAYER ABOUT 18" BELOW EXISTING GRADE THROUGHOUT THE GREENHOUSE FOOTPRINT.

STRUCTURAL ABBREVIATIONS LIST

#	NUMBER
@	AT
°	DEGREES
Ø	DIAMETER
AHU	AIR-HANDLING UNIT
APPROX.	APPROXIMATE -LY
ARCH	ARCHITECT, -URE -LY
B.O.	BOTTOM OF
bf	BEAM FLANGE WIDTH -
BM	BEAM
BP	BASE PLATE
BRG	BEARING
CFSF	COLD FORM STEEL FRAMING
CJ	CONTROL JOINT
CL	CLEAR
CMU	CONCRETE MASONRY UNIT
CONC	CONCRETE
CONST	CONSTRUCTION
CONT	CONTINUOUS
D	DEPTH
DBL	DOUBLE
DEG	DEGREE
DIM	DIMENSION
DL	DEAD LOAD
DTL	DETAIL
DWG	DRAWING
EA	EACH
EF	EACH FACE
EJ	EXPANSION JOINT
EL	ELEVATION
ELEC	ELECTRICAL
EMBED	EMBEDDED
EOD	EDGE OF DECK
EOS	EDGE OF SLAB
EQ	EQUAL
EQUIP	EQUIPMENT
EW	EACH WAY
EXIST, (E)	EXISTING
EXP	EXPANSION
EXT	EXTERIOR
f'c	CONCRETE COMPRESSIVE STRENGTH
FDN	FOUNDATION
FIN	FINISHED
FL	FLOOR
FT	FOOT
FTG	FOOTING
Fy	YIELD STRESS
GA	GAGE OR GAUGE
GALV	GALVANIZED
GB	GRADE BEAM
GC	GENERAL CONTRACTOR
GYP	GYPSUM
HDG	HOT-DIPPED GALVANIZED
HORIZ	HORIZONTAL
HVAC	HEATING, VENTILATION, AIR CONDITIONING
HWS	HEADED, WELDED STUD
IN	INCH
INT	INTERIOR
JST	JOIST
JT	JOINT
k, KIP	KILOPOUND (1,000 POUNDS)
KO	KNOCK-OUT
KSF	KIPS PER SQUARE FOOT
L	LENGTH
LB	POUND
LF	LINEAR FOOT
LL	LIVE LOAD
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LSH	LONG SIDE HORIZONTAL
LSV	LONG SIDE VERTICAL
LONG	LONGITUDINAL
M/E	MECHANICAL/ELECTRICAL
MAX	MAXIMUM
MECH	MECHANICAL
MEZZ	MEZZANINE
MIN	MINIMUM
MISC	MISCELLANEOUS
MK	MARK
N	NORTH
#	LENGTH (AS PLATES)
NIC	NOT IN CONTRACT
NO	NUMBER
NTS	NOT TO SCALE
OC	ON CENTER
OPNG	OPENING
OPP	OPPOSITE
PAF	POWER ACTUATED FASTENER
PC	PRECAST
PCF	POUNDS PER CUBIC FOOT
PL	PLATE
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PVC	POLYVINYL CHLORIDE
R	RADIUS
RD	ROOF DRAIN
REINF	REINFORCING, -MENT, -ED
REQ'D	REQUIRED
REF	REFERENCE, REFER TO
RTU	ROOF-TOP UNIT
SC	TC WITH GLASS A PAYING SURFACE
SCHED	SCHEDULE
SIM	SIMILAR
SL	SNOW LOAD
SP	SPACE(S)
SPEC	SPECIFICATION(S)
SPEC'D	SPECIFIED
SQ	SQUARE
STD	STANDARD
STIFF	STIFFENER
T.O.	TOP OF
TC	PRE-TENSIONED BOLT
TEMP	TEMPERATURE
tf	BEAM FLANGE THICKNESS
TRANS	TRANSVERSE
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
VERT	VERTICAL
VIF	VERIFY IN FIELD
VWA	VERIFY WITH ARCHITECTURAL DRAWINGS
WP	WORKING POINT
WT	WEIGHT
WWR	WELDED WIRE REINFORCING
YD	YARD

STRUCTURAL DRAWING SYMBOLS



PILE CAP SCHEDULE

MARK	DEPTH	BOTTOM BARS		TOP BARS		PILES	REMARKS
		SHORT BARS	LONG BARS	SHORT BARS	LONG BARS		
PC2	2'-0"	(5) #6	(3) #6	(5) #6	(3) #6	2	-
PC3	2'-0"	(5) #6, 3 WAYS		(5) #6, 3 WAYS		3	-

NOTES:

1. REFER TO S202 FOR PILE CAP DETAILS.

GRADE BEAM SCHEDULE

MARK	WIDTH	BOTTOM ELEVATION	BOTTOM BARS	TOP BARS	SIDE BARS	STIRRUPS	REMARKS
GB1	2'-7"	+95'-0"	(4) #7	(4) #8	#5 @ 12" OC	#4 @ 12" OC	-
GB2	1'-0"	+96'-0"	(2) #5	(2) #5	#5 @ 12" OC	#4 @ 12" OC	-
GB3	2'-6"	+93'-0"	(4) #9	(4) #9	#5 @ 12" OC	#4 @ 12" OC	-
GB4	2'-0"	+96'-0"	(4) #8	(3) #8	#5 @ 12" OC	#4 @ 12" OC	-
GB5	1'-0"	+96'-0"	(2) #8	(2) #8	#5 @ 12" OC	#4 @ 12" OC	-
GB6	1'-6"	+96'-0"	(3) #8	(3) #8	#5 @ 12" OC	#4 @ 12" OC	-
GB7	2'-0"	+97'-3"	(3) #7	(3) #7	#5 @ 12" OC	#4 @ 6" OC	-
GB8	1'-3"	+97'-7"	(3) #7	(3) #7	-	#4 @ 4" OC	-
GB9	1'-2 1/2"	+95'-0"	(3) #8	(3) #8	#5 @ 12" OC	#4 @ 12" OC	-
GB10	2'-3"	+96'-0"	(4) #7	(4) #8	#5 @ 12" OC	#4 @ 12" OC	-
GB11	1'-6"	+96'-8"	(3) #8	(3) #8	#5 @ 12" OC	#4 @ 12" OC	-
GB12	2'-2"	+95'-0"	(4) #9	(4) #9	#5 @ 12" OC	#4 @ 12" OC	-

NOTES:

1. MAINTAIN MINIMUM DEPTH OF 4'-0" FROM FINISH GRADE TO BOTTOM OF GRADE BEAM ELEVATION. STEP BOTTOM AS REQUIRED.

IMEG 1555 DEMING WAY, SUITE 200 MIDDLETON, WI 53562 608.203.3660 FAX: 866.808.3455 www.imegcorp.com PROJECT # 17P0105.00

IMEG CORP. RETAINS ITS COPYRIGHT, INCLUDING COPYRIGHTS, TO THESE DRAWINGS, SPECIFICATIONS, AND DESIGNS PREPARED BY IMEG CORP. AND ARE THE EXCLUSIVE PROPERTY OF IMEG CORP AND SHALL NOT BE USED ON, REPRODUCED FOR ANY OTHER PROJECT WITHOUT THE EXPRESS WRITTEN APPROVAL AND PARTICIPATION OF IMEG CORP. © 2018 IMEG CORP.

REFERENCE SCALE IN INCHES 0 1 2 3

MSR 710 South 2nd Street, 8th Floor Minneapolis, Minnesota 55401-2262
Architecture, Interiors and Urban Design 612.375.0336 tel 612.342.2216 fax www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201 Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
303 South Paterson Street, Suite 1 Madison, WI 53703
608.251.3600 tel

Structural Engineer, Technology and A/V
IMEG Corp.
1800 Deming Way, Suite 200 Middleton, WI 53562
608.223.9600 tel

MEP Engineer
MEP Associates, LLC
660 Blue Gentian Road, Suite 170 Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
515 Shoreham Ave West St. Paul, MN 55102
651.251.1650 tel

Greenhouse Design
Rough Brothers, Inc.
5513 Vine Street Cincinnati, OH 45217
513.242.0310 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin.
ARCHITECT SEAL:

WISCONSIN DANIEL JACK POLING A-5694 MINNEAPOLIS, MN ARCHITECT

Signature
Print Name
Date: JUNE 1, 2018 License No:

ISSUE	
MARK	DATE DESCRIPTION
	12.05.2017 CD PRICING SET
	01.12.2018 DESIGN DEVELOPMENT SUBMISSION
	03.30.2018 75% CD SUBMISSION
	05.04.2018 100% CONSTRUCTION DOCUMENTS
	05.07.2018 BID ISSUE
	06.04.2018 PERMIT ISSUE

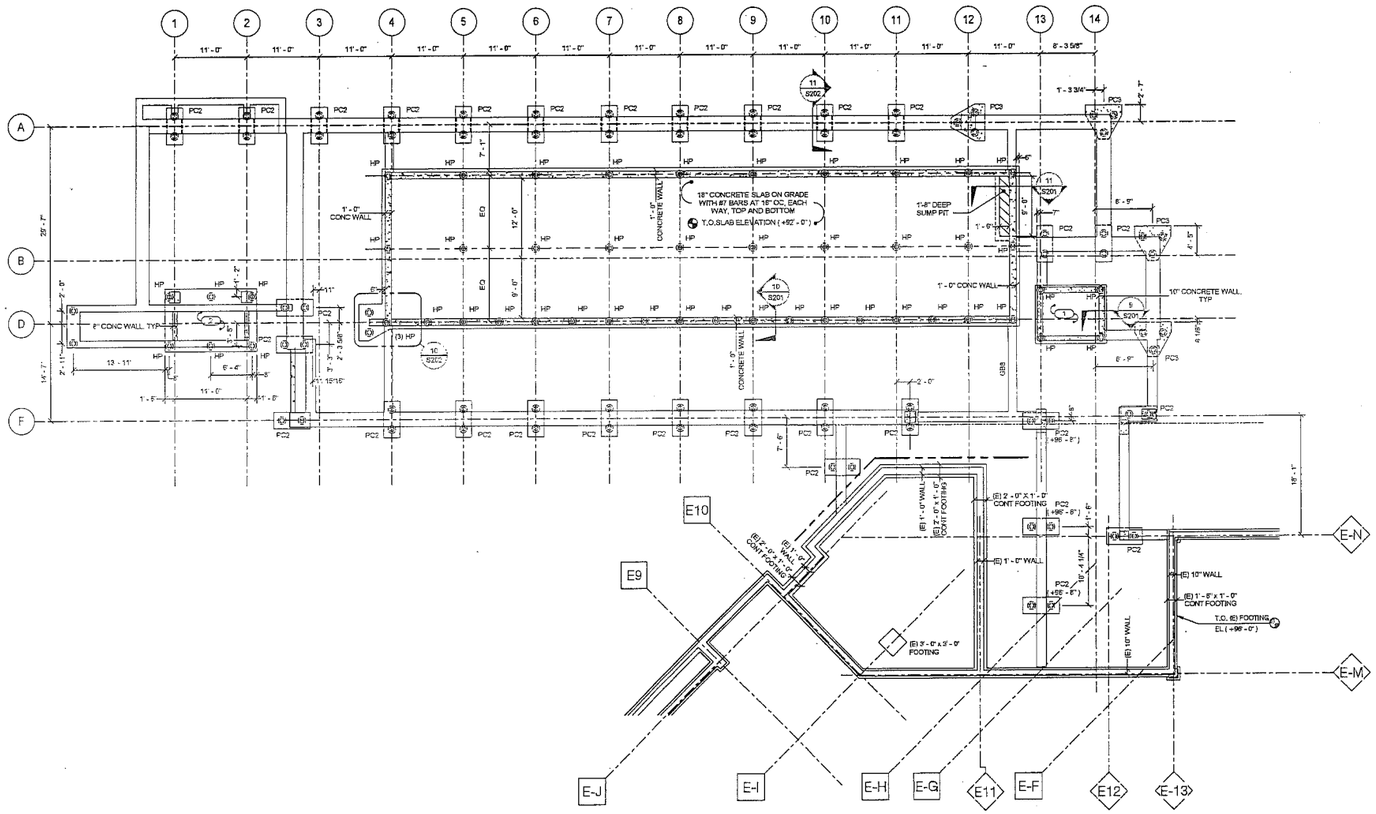
PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: SIDBHO CHECKED BY: ABBPER

SYMBOLS AND ABBREVIATIONS

EXHIBIT G

S002

ORIGINAL



1 LEARNING CENTER HELICAL PILE PLAN

1/8" = 1'-0"

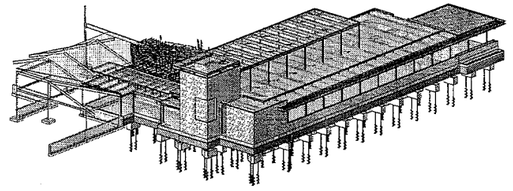
PLAN NORTH

NOTES:

1. PC# INDICATES PILE CAP. REFER TO S002 FOR SCHEDULE AND LOADS. REFER TO S202 FOR DETAILS. TOP OF PILE CAP ELEVATION (+96' - 0") UNO.
2. SLEEVE UTILITIES THROUGH FOUNDATION PER 12/S201. COORDINATE SIZE AND LOCATION WITH MECHANICAL AND PLUMBING CONTRACTORS.
3. ——— INDICATES APPROXIMATE LOCATION OF EARTH RETENTION SYSTEM. REQUIRED DURING CONSTRUCTION OF TANK SLABS AND WALLS. CONTRACTOR, TO PROVIDE DESIGN FOR INSTALLATION AND NOT DISTURB THE EXISTING FOUNDATIONS. GEOTECHNICAL REPORT WILL BE PROVIDED. COORDINATE DRAIN TILE INSTALLATION WITH LOCATION OF EARTH RETENTION SYSTEM. CONTRACTOR OPTION TO USE EARTH RETENTION SYSTEM AS FORMWORK.
4. HP INDICATES HELICAL PILE UNDER MAT SLAB. REFER TO S002 FOR LOADS.
5. CISTERN MAT SLAB AND CISTERN WALLS TO HAVE XYPEX ADDITIVE IN CONCRETE.

KEYNOTES:

1. ELEVATOR PIT SLAB: 18" CONCRETE MAT SLAB WITH #7 @ 16" OC BOTH DIRECTIONS, TOP AND BOTTOM. TOP OF SLAB ELEVATION (+90' - 0"). COORDINATE PIT DEPTH WITH SELECTED ELEVATOR.
2. 18" CONCRETE MAT SLAB WITH #7 @ 16" OC BOTH DIRECTIONS, TOP AND BOTTOM. TOP OF SLAB ELEVATION (+96' - 0").



3D VIEW

MSR 710 South 2nd Street, 8th Floor Minneapolis, Minnesota 55401-2282
Architecture Interiors and Urban Design
612 375 0336 tel
612 342 2216 fax
www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201 Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
305 South Patterson Street, Suite 1 Madison, WI 53703
608.251.3600 tel

Structural Engineer, Technology and A/V
IMEG Corp.
1400 Deming Way, Suite 200 Madison, WI 53562
608.223.9400 tel

MEP Engineer
MEP Associates, LLC
850 Blue Gentian Road, Suite 170 Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
525 Bronshaw Ave West St. Paul, MN 55118
651.251.1880 tel

Greenhouse Design
Rough Brothers, Inc.
5513 Vine Street Cincinnati, OH 45217
513.242.8910 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin.
ARCHITECT SEAL

WISCONSIN DANIEL JACK POLING A-6094 MINNEAPOLIS, MN ARCHITECT

Signature
Print Name
Date JUNE 1, 2017 License No.

ISSUE	DATE	DESCRIPTION
	12.01.2017	DD PRICING SET
	01.19.2018	DESIGN DEVELOPMENT SUBMISSION
	03.30.2018	FDN. CD SUBMISSION
	05.04.2018	90% CONSTRUCTION DOCUMENTS
	06.01.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE

PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: SIDSHO CHECKED BY: ABSPER

LEARNING CENTER HELICAL PILE PLAN

EXHIBIT G

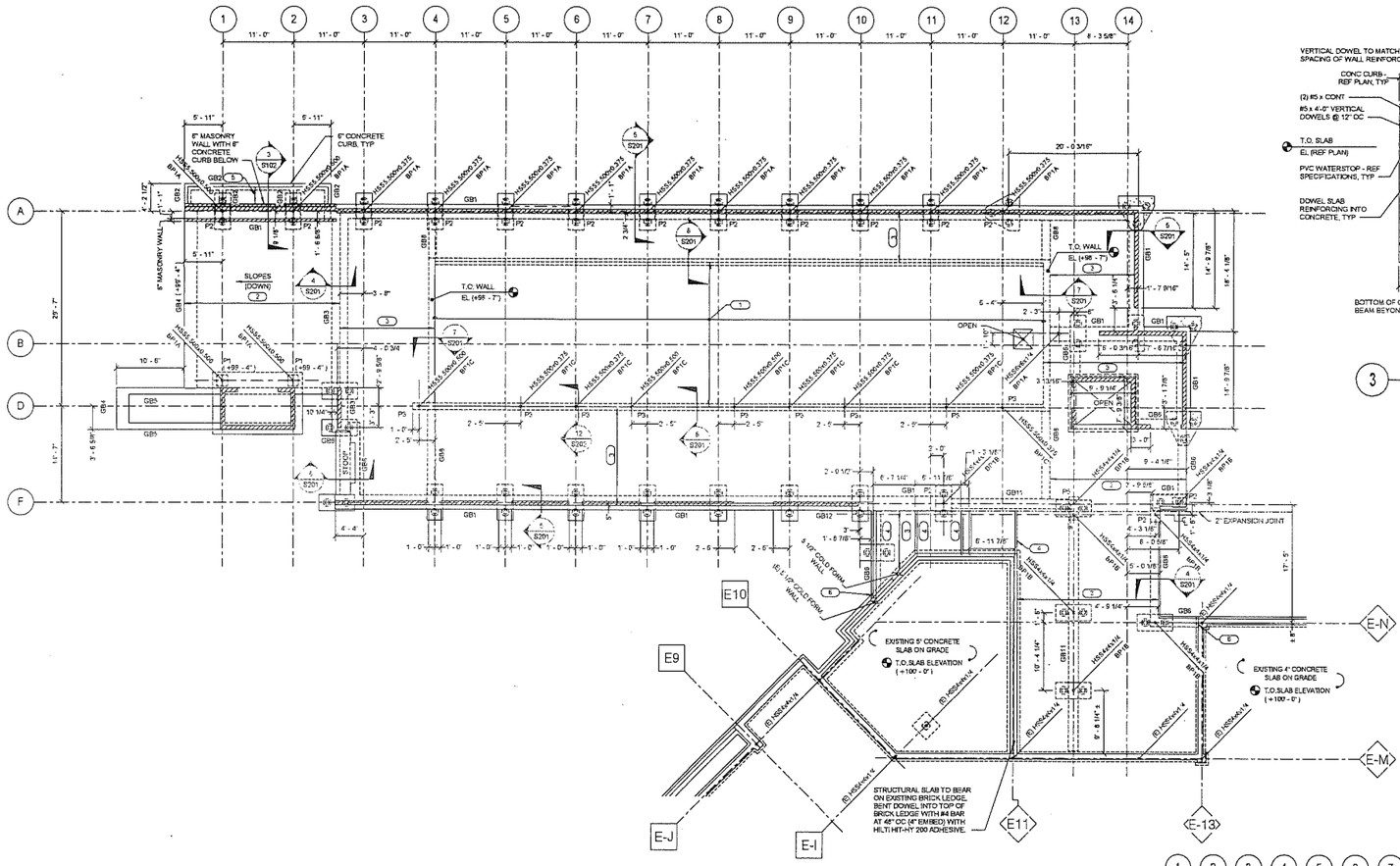
S101

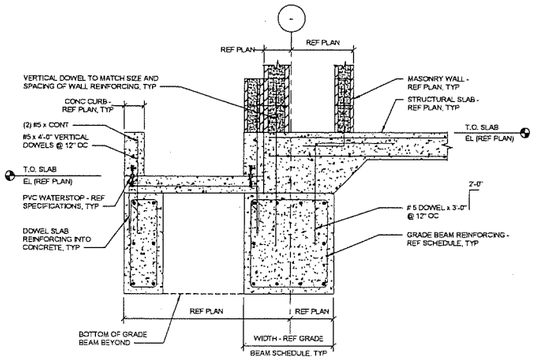
IMEG 1400 DEMING WAY., SUITE 200 MADISON, WI 53562 PH: 608.223.9400 FAX: 608.836.9410 www.imegcorp.com PROJECT # 170600.00

IMEG CORP. RESERVES PROPRIETARY RIGHTS, INCLUDING COPYRIGHTS, TO THIS DRAWING AND THE DATA IT REPRESENTS. SAID MATERIAL AND/OR DATA ARE NOT TO BE USED ON ANY PROJECT BY IMEG CORP. AND SHALL NOT BE USED OR REPRODUCED FOR ANY OTHER PROJECT WITHOUT THE EXPRESS WRITTEN APPROVAL AND PARTICIPATION OF IMEG CORP. © 2018 IMEG CORP.

REFERENCE SCALE IN INCHES 0 1 2 3

ORIGINAL





3 OUTDOOR CLASSROOM CATCH BASIN DETAIL

3/4" = 1'-0"

1 LEARNING CENTER FOUNDATION PLAN

1/8" = 1'-0"

NOTES:

1. TOP OF FOUNDATION WALL ELEVATION (+98' - 3"), UNO.
2. ALL MASONRY WALLS SHOWN ARE TO BE NOMINALLY 8" WITH #5 @ 48" OC, UNO. MASONRY SHEAR WALL LAYOUT ON THIS SHEET FOR MASONRY SHEAR WALL LOCATION AND REINFORCING.
3. BP# INDICATES BASE PLATE. REFER TO S202 FOR ANCHOR ROD AND BASE PLATE DETAILS.
4. P# INDICATES CONCRETE PIER. REFER TO S202 FOR DETAILS. TOP OF PIER ELEVATION MATCHES TOP OF WALL OR GRADE BEAM, UNO.
5. PROVIDE 2'-0" x 2'-0" CORNER BARS FOR GRADE BEAM AND WALL INTERSECTIONS. BAR SIZE AND QUANTITY TO MATCH LONGITUDINAL AND HORIZONTAL BARS.
6. REFER TO DETAIL 12/S202 FOR OPENINGS IN HOLLOWCORE PLANK.
7. SLEEVE UTILITIES THROUGH FOUNDATION PER 12/S201. COORDINATE SIZE AND LOCATION WITH MECHANICAL AND PLUMBING CONTRACTORS.
8. GB# INDICATES GRADE BEAM. REFER TO S002 FOR GRADE BEAM SCHEDULE. TOP OF GRADE BEAM ELEVATION (+98' - 7"), UNO.
9. REFER TO DETAILS 1, 2 AND 3 ON S201 FOR STRUCTURAL SLAB DETAILS.

KEYNOTES:

(1) SLAB ON INSULATION ON PRECAST PLANK WITH TOPPING:
5" CONCRETE TOPPING SLAB WITH 6x6 - W2.1xW2.1 WWR. TOP OF SLAB = (+100' - 0")
4" ASTM D6947 EPS 12 BY GEOFOAM OR EQUIVALENT
2" COMPOSITE CONCRETE TOPPING SLAB WITH 6x6 - W1.4xW1.4 WWR
10" HOLLOWCORE SLAB. THE HOLLOWCORE SLAB IS TO BE DESIGNED FOR 65 PSF SUPERIMPOSED DEAD LOAD (EXCLUDES 2" COMPOSITE TOPPING) AND 100 PSF SUPERIMPOSED LIVE LOAD. HOLLOWCORE TO BE DESIGNED WITH APPROPRIATE CLEAR COVER TO PROTECT AGAINST WATER MOISTURE EXPOSURE AT BOTTOM OF THE PLANK.

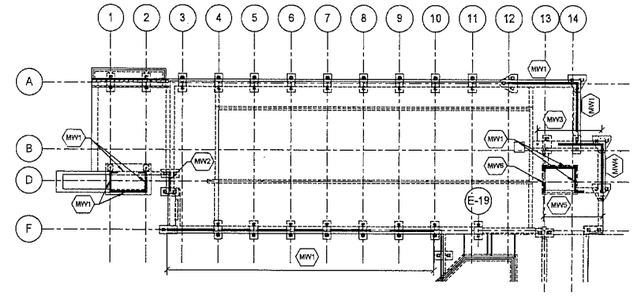
(2) 5" STRUCTURAL SLAB WITH #5 @ 10" OC TOP AND BOTTOM AND #4 @ 12" OC TEMPERATURE REINFORCING. TOP OF SLAB = (+100' - 0"). SLAB IS TO BE SLOPED PER ARCHITECTURAL DRAWINGS. THICKNESS OF SLAB IS TO BE CONSTANT THROUGHOUT.

(3) SLAB ON INSULATION ON STRUCTURAL SLAB:
5" CONCRETE TOPPING SLAB WITH 6x6 - W2.1xW2.1 WWR. TOP OF SLAB = (+100' - 0")
4" ASTM D6947 EPS 12 BY GEOFOAM OR EQUIVALENT
8" STRUCTURAL SLAB WITH #5 @ 12" OC TOP AND BOTTOM, AND #4@12" OC TEMPERATURE REINFORCING.

(4) COLD FORM BEARING WALL. WALL TO BE DESIGNED FOR 150LB DEAD LOAD AND 650LB SNOW LOAD. CONCRETE CURB BETWEEN TOP OF STRUCTURAL SLAB AND BOTTOM OF TOPPING SLAB TO BE PROVIDED AT EACH WALL LOCATION.

(5) 5" STRUCTURAL SLAB WITH #4 @ 12" OC EACH WAY, TOP OF SLAB = (+99' - 0").

(6) DOWEL REINFORCING OF GRADE BEAM INTO EXISTING PIER AND ANCHOR WITH HILTI HIT-HY 270 (4" EMBED).



2 MASONRY SHEAR WALL LAYOUT

1/16" = 1'-0"

MASONRY WALL REINFORCING SCHEDULE

MARK	VERTICAL	HORIZONTAL	END ZONES	NOTES
MW1	#5 @ 48" OC	-	(1) CELL WITH (1) #5	-
MW2	#5 @ 24" OC	-	(2) CELLS WITH (1) #5 EACH CELL	-
MW3	REFER TO 4/S104			-
MW4	REFER TO 3/S104			-
MW5	REFER TO 2/S104			-
MW6	REFER TO 5/S104			-

NOTES:

1. TYPICAL HORIZONTAL REINFORCING IS AS PER SPECIFICATIONS. IT IS INTENDED TO BE 'DUROWAL - LADDER TYPE' OR EQUIVALENT.
2. REINFORCED CORES ARE ALWAYS GROUTED.
3. REFER TO 8/S301 FOR TYPICAL MASONRY OPENING AND END ZONE DETAIL.
4. END ZONE REINFORCEMENT CONTROL OVER TYPICAL VERTICAL REINFORCEMENT. TYPICAL VERTICAL REINFORCEMENT APPLIES BETWEEN END ZONES.
5. PROVIDE BOND BEAM WITH (2) #5 AT EACH LEVEL, UNLESS NOTED OTHERWISE IN DETAILS.

IMEG
1909 DENTING PKWY., SUITE 200
MIDDLETON, WI 53562
608.203.9500 FAX: 608.836.9410
www.imegcorp.com
PROJECT # 17M0028.00

IMEG CORP. RESERVES PROPRIETARY RIGHTS, INCLUDING COPYRIGHTS, TO THIS DRAWING AND THE DATA WITHIN IT(ELECTRONIC), AND WHERE SHOWN OR STATED THEY ARE THE EXCLUSIVE PROPERTY OF IMEG CORP AND SHALL NOT BE USED OR REPRODUCED FOR ANY OTHER PROJECT WITHOUT THE EXPRESS WRITTEN APPROVAL AND PARTICIPATION OF IMEG CORP.
© 2018 IMEG CORP.

REFERENCE SCALE IN INCHES
0 1 2 3

MSR
710 South 2nd Street, 8th Floor
Minneapolis, Minnesota 55401-2182
Architecture, Interiors and Urban Design
612 375 0336 tel
612 341 2216 fax
www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fronex Drive, Suite 201
Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
353 South Paterson Street, Suite 1
Madison, WI 53703
608.251.3600 tel

Structural Engineer, Technology and A/V
IMEG Corp.
1600 Deming Way, Suite 200
Middleton, WI 53562
608.203.9500 tel

MEP Engineer
MEP Associates, LLC
860 Blue Gentian Road, Suite 171
Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
570 Asbury Ave West
St. Paul, MN 55102
651.291.1550 tel

Greenhouse Design
Rough Brothers, Inc.
5543 Vine Street
Cincinnati, OH 45217
513.242.0310 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin.
ARCHITECT SEAL

WISCONSIN
DANIEL JACK POLING
A-5034
MINNEAPOLIS, MN
ARCHITECT

Signature:
Print Name:
Date: JUNE 1, 2018 License No.

ISSUE MARK	DATE	DESCRIPTION
	12.08.2017	CD PRICING SET
	01.16.2018	DESIGN DEVELOPMENT SUBMISSION
	03.30.2018	75% CD SUBMISSION
	05.04.2018	100% CONSTRUCTION DOCUMENTS
	06.01.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE

PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: SIDBHO CHECKED BY: ABBPER

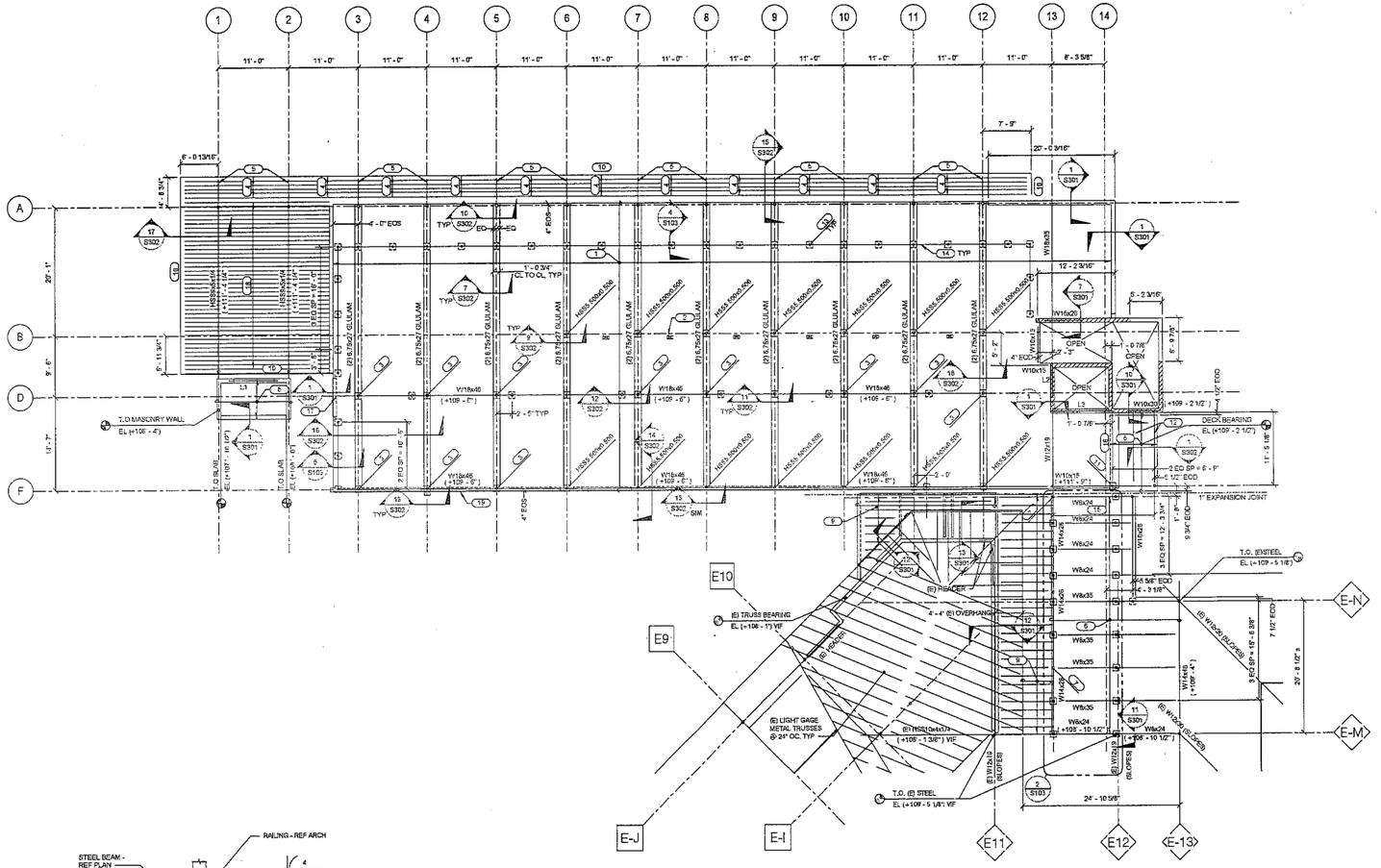
LEARNING CENTER FOUNDATION PLAN

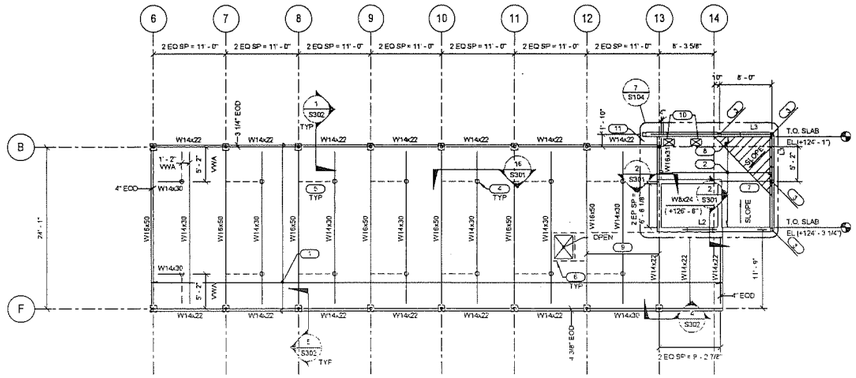
EXHIBIT G

S102

ORIGINAL

Revit 2017 Large Team Printed by: ...
C:\Users\...\17M0028_BP_...


1 2 3 4 5 6 7 8 9 10 11 12 13 14
A B D F
E10 E9 E-J E-I E11 E12 E-13 E-N E-M
T.O MASONRY WALL EL (+108' - 4")
T.O SLAB EL (+107' - 10 1/2")
T.O SLAB EL (+108' - 0")
(E) RIDGE BEAM
(E) TRUSS BEARING EL (+108' - 1") VIF
4'-4" (E) OVERHANG
(E) PURLINS
(E) LIGHT GAGE METAL TRUSSES @ 24" OC. TYP
(E) W10x26 (GLOPES)
(E) W12x19 (GLOPES)
(E) W18x35 (GLOPES)
T.O. (E) STEEL EL (+109' - 5 1/8") VIF
T.O. (E)STEEL EL (+109' - 5 1/8")
DECK BEARING EL (+109' - 2 1/2")
1" EXPANSION JOINT
24' - 10 5/8"
W18x46 (+109' - 6")
W16x26 (+109' - 8")
W10x15 (+111' - 9")
W10x12 (+109' - 2 1/2")
W8x24 (+105' - 10 1/2")
W14x48 (+109' - 4")
HSS5.500x0.500
HSS5.500x0.375
(5.75x27 GLULAM
W12x19
W16x26
W16x31
W18x35
W18x40
W18x46
W18x50
W18x55
W18x60
W18x65
W18x71
W18x76
W18x86
W18x97
W18x106
W18x119
W18x130
W18x143
W18x158
W18x192
W18x211
W18x234
W18x258
W18x283
W18x311
W18x35
W8x24
W8x31
W8x35
W8x40
W8x48
W8x58
W8x67
W8x10
W8x15
W8x18
W8x21
W10x26
W10x33
W10x39
W10x45
W10x49
W10x54
W10x60
W10x68
W10x77
W10x88
W10x100
W10x112
W12x120
W12x136
W12x152
W12x170
W12x190
W12x210
W12x230
W12x252
W12x279
W12x305
W12x336
W12x368
W12x399
W12x426
W12x454
W12x484
W12x515
W12x550
W12x583
W12x620
W12x652
W12x688
W12x723
W12x762
W12x797
W12x835
W12x872
W12x906
W12x945
W12x985
W12x1024
W12x1065
W12x1106
W12x1152
W12x1194
W12x1243
W12x1294
W12x1345
W12x1399
W12x1453
W12x1509
W12x1568
W12x1628
W12x1690
W12x1752
W12x1819
W12x1888
W12x1958
W12x2031
W12x2106
W12x2183
W12x2262
W12x2343
W12x2426
W12x2512
W12x2600
W12x2691
W12x2784
W12x2880
W12x2979
W12x3080
W12x3184
W12x3291
W12x3400
W12x3512
W12x3627
W12x3744
W12x3864
W12x3987
W12x4113
W12x4241
W12x4373
W12x4508
W12x4645
W12x4786
W12x4930
W12x5078
W12x5229
W12x5384
W12x5543
W12x5705
W12x5871
W12x6041
W12x6215
W12x6393
W12x6576
W12x6763
W12x6954
W12x7150
W12x7351
W12x7556
W12x7766
W12x7981
W12x8201
W12x8426
W12x8656
W12x8891
W12x9132
W12x9378
W12x9630
W12x9888
W12x10152
W12x10422
W12x10698
W12x10981
W12x11271
W12x11568
W12x11872
W12x12184
W12x12504
W12x12832
W12x13169
W12x13515
W12x13870
W12x14235
W12x14610
W12x14995
W12x15391
W12x15799
W12x16219
W12x16652
W12x17099
W12x17561
W12x18039
W12x18534
W12x19047
W12x19579
W12x20131
W12x20704
W12x21300
W12x21920
W12x22565
W12x23237
W12x23938
W12x24670
W12x25435
W12x26235
W12x27072
W12x27948
W12x28865
W12x29825
W12x30830
W12x31882
W12x32984
W12x34138
W12x35347
W12x36614
W12x37941
W12x39331
W12x40787
W12x42312
W12x43909
W12x45581
W12x47331
W12x49162
W12x51077
W12x53079
W12x55171
W12x57356
W12x59637
W12x62017
W12x64499
W12x67086
W12x69781
W12x72587
W12x75507
W12x78544
W12x81701
W12x84980
W12x88384
W12x91916
W12x95578
W12x99373
W12x103303
W12x107370
W12x111577
W12x115925
W12x120416
W12x125052
W12x129835
W12x134766
W12x139846
W12x145076
W12x150457
W12x155988
W12x161670
W12x167502
W12x173484
W12x179615
W12x185894
W12x192319
W12x198888
W12x205599
W12x212449
W12x219435
W12x226553
W12x233799
W12x241169
W12x248658
W12x256261
W12x263973
W12x271788
W12x279700
W12x287702
W12x295787
W12x303947
W12x312174
W12x320459
W12x328794
W12x337170
W12x345578
W12x354008
W12x362450
W12x370894
W12x379329
W12x387744
W12x396127
W12x404466
W12x412748
W12x420961
W12x429091
W12x437125
W12x445048
W12x452846
W12x460504
W12x468006
W12x475335
W12x482475
W12x489408
W12x496116
W12x502581
W12x508784
W12x514705
W12x520325
W12x525624
W12x530581
W12x535174
W12x539381
W12x543179
W12x546544
W12x549452
W12x551877
W12x553793
W12x555172
W12x555984
W12x556198
W12x555784
W12x554709
W12x552941
W12x550446
W12x547189
W12x543134
W12x538243
W12x532480
W12x525807
W12x518187
W12x509584
W12x499961
W12x489282
W12x477511
W12x464613
W12x450553
W12x435297
W12x418812
W12x401064
W12x382020
W12x361648
W12x339917
W12x316796
W12x292256
W12x266268
W12x238805
W12x209841
W12x179351
W12x147312
W12x113700
W12x78492
W12x41666
W12x3
W12x2
W12x1
W12x0
W10x0
W8x0
W18x0
W16x0
W14x0
W10x0
W8x0
W18x0
W16x0
W14x0
W10x0
W8x0
W18x0
W16x0
W14



1 LEARNING CENTER ROOF FRAMING PLAN

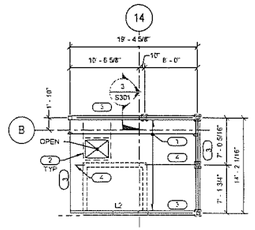
1/8" = 1'-0"

NOTES

1. REFER TO 6/S302 FOR TYPICAL SHEAR CONNECTION.
2. ● INDICATES ASTM F1852 BOLT WITH A CLASS A FAYING SURFACE IS TO BE PROVIDED IN SHEAR CONNECTION.
3. LF INDICATES LINTEL IN STRUCTURAL MASONRY WALL - REFER TO 9/S301 FOR SCHEDULE.
4. FOR LINTELS IN NON-STRUCTURAL WALLS, REFER TO GENERAL NOTES FOR SCHEDULE.

KEYNOTES

1. 1 1/2" (20 GA) STEEL DECK, 2 SPAN MINIMUM, FASTENING = 36/4 (1) WITH 5/8" PUDDLE WELDS AND #10 SIDELAP SCREWS, DECK BEARING ELEVATION (+123' - 3 1/2"), UNO.
2. 3" NORMAL - WEIGHT CONCRETE ON 2" (20 GA) CONFORM DECK, 1 SPAN, WITH 6x6 - W1.4xW1.4 WWR, TOTAL THICKNESS = 5", SEE PLAN FOR ELEVATIONS.
3. HSS5x5x5/16 POSTS.
4. FALL ARREST POST BY OTHERS. HOLES FOR ANCHORING OF POSTS TO BE PROVIDED. STEEL FABRICATOR TO COORDINATE WITH FALL ARREST SYSTEM PROVIDED.
5. L4x4x1/4 KICKER.
6. PROVIDE ANGLE FRAMING AROUND OPENINGS IN ROOF DECK PER 15/S301.
7. L6x5x3/8, MINIMUM 4" BEARING ON GROUTED MASONRY BLOCK EACH END.
8. PROVIDE CONCRETE BUILD UP TO FORM SLOPE. REFER TO ARCHITECTURAL DRAWINGS FOR SLOPE REQUIREMENTS. MAXIMUM BUILD UP EQUAL TO 2".
9. CONTINUE DECK EDGE ANGLE PAST END OF MASONRY WALL. AFTER MASONRY WALL ENDS PROVIDE PLATE ON BACK SIDE OF ANGLE. REFER TO DETAIL 18/301.
10. FLOOR PENETRATION - REFER TO 8/S301 FOR DETAIL.
11. L6x4x3/8 (LLV). PROVIDE 4" BEARING OF HORIZONTAL LEG EACH END AND WELD TO BEARING.

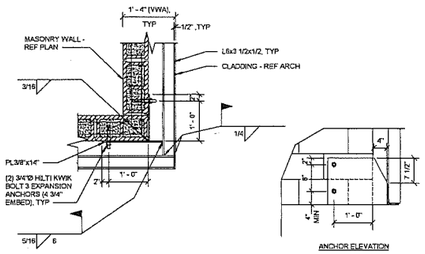


7 PLENUM ROOF

1/8" = 1'-0"

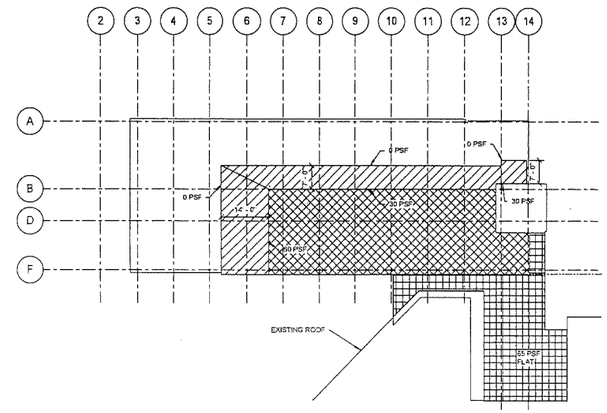
KEYNOTES

1. 1 1/2" (20 GA) STEEL DECK, FASTENING = 36/4 (1) WITH 5/8" PUDDLE WELDS AND #10 SIDELAP SCREWS. DECK BEARING ELEVATION (+123' - 3 1/2"), UNO.
2. PROVIDE ANGLE FRAMING AROUND OPENINGS PER 15/S301.
3. HSS5x5x1/4 (+127' - 11 1/2").
4. L6x5x3/8 (+127' - 3 1/2"), MINIMUM 4" BEARING ON GROUTED BLOCK EACH END.



8 LINTEL SUPPORT

3/4" = 1'-0"

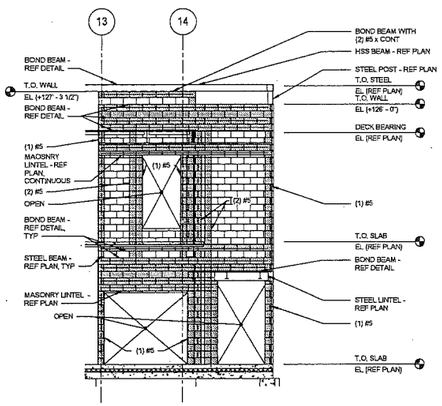


6 LEARNING CENTER ROOF LOAD PLAN

1/16" = 1'-0"

NOTES

1. ALL INDICATED LOADS ARE IN ADDITION TO THE FOLLOWING DESIGN LOADS
   ROOF DEAD LOAD = 25 PSF
   SNOW LOAD = SEE S001
2. ▨ INDICATES TAPERED SNOW DRIFT LOAD.
3. ▥ INDICATES FLAT SNOW DRIFT LOAD.
4. ▩ INDICATES ROOF SUPPORTING SOLAR PANELS, DESIGN DEAD LOAD = 10 PSF.

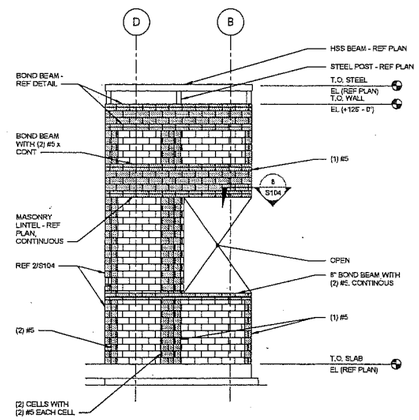


2 MASONRY SHEAR WALL ELEVATION - WEST FACE

3/16" = 1'-0"

NOTES:

1. ELEVATION SHOWN IS LOOKING EAST.
2. REFER TO DETAILS 4, 5, AND 6/S301 FOR TYPICAL BEAM BEARING AT THE END OF STEEL LINTELS.
3. REFER TO 8/S301 FOR CONDITIONS NOT COVERED BY ELEVATION.

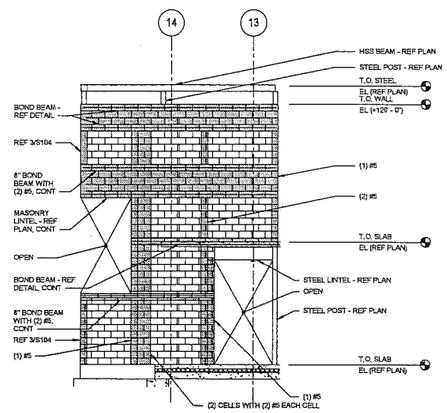


3 MASONRY SHEAR WALL ELEVATION - SOUTH FACE

3/16" = 1'-0"

NOTES:

1. ELEVATION SHOWN IS LOOKING NORTH.
2. REFER TO DETAILS 4, 5, AND 6/S301 FOR TYPICAL BEAM BEARING AT THE END OF STEEL LINTELS.
3. REFER TO 8/S301 FOR CONDITIONS NOT COVERED BY ELEVATION.

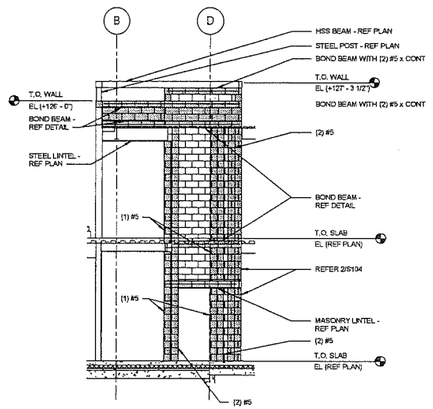


4 MASONRY SHEAR WALL ELEVATION - EAST FACE

3/16" = 1'-0"

NOTES:

1. ELEVATION SHOWN IS LOOKING WEST.
2. REFER TO DETAILS 4, 5, AND 6/S301 FOR TYPICAL BEAM BEARING AT THE END OF STEEL LINTELS.
3. REFER TO 8/S301 FOR CONDITIONS NOT COVERED BY ELEVATION.



5 MASONRY SHEAR WALL ELEVATION - NORTH FACE

3/16" = 1'-0"

NOTES:

1. ELEVATION SHOWN IS LOOKING SOUTH.
2. REFER TO DETAILS 4, 5, AND 6/S301 FOR TYPICAL BEAM BEARING AT THE END OF STEEL LINTELS.
3. REFER TO 8/S301 FOR CONDITIONS NOT COVERED BY ELEVATION.

IMEG
1400 DENNY WAY, SUITE 200
MIDDLETON, WI 53562
608.203.9600 FAX: 608.203.9615
www.imegcorp.com
PROJECT # 170410.00

IMEG CORP. RETAINS PROPRIETARY RIGHTS, INCLUDING COPYRIGHTS, TO THIS DRAWING AND THE DATA SHOWN THEREON, AND SPECIFICALLY AND/OR DATA ARE THE EXCLUSIVE PROPERTY OF IMEG CORP. AND SHALL NOT BE USED OR REPRODUCED FOR ANY DIVISION PROJECT WITHOUT THE EXPRESS WRITTEN APPROVAL AND PARTICIPATION OF IMEG CORP. © 2018 IMEG CORP.
REFERENCE SCALE IN INCHES
0 1 2 3

MSR 710 South 2nd Street, 8th Floor Minneapolis, Minnesota 55401-2282
Architecture, Interiors and Urban Design: 612 375 0336 tel, 612 342 2216 fax, www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201
Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
303 South Paterson Street, Suite 1
Madison, WI 53703
608.251.3900 tel

Structural Engineer: Technology and A/V
IMEG Corp.
1400 Denny Way, Suite 200
Middleton, WI 53562
866.223.9600 tel

MEP Engineer
MEP Associates, LLC
662 Blue Gentian Road, Suite 170
Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
575 Minnesota Ave West
St. Paul, MN 55103
651.251.1610 tel

Greenhouse Design
Rough Brothers, Inc.
5533 Vine Street
Cincinnati, OH 45217
513.242.6510 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin.
ARCHITECT SEAL

WISCONSIN
DANIEL JACK POLING
A-5594
MINNEAPOLIS, MN
ARCHITECT

Signature
Print Name
Date: JUNE 1, 2018 License No:

MARK	DATE	DESCRIPTION
	12.04.2017	DD PRICING SET
	01.15.2018	DESIGN DEVELOPMENT SUBMISSION
	03.30.2018	75% DD SUBMISSION
	05.04.2018	90% CONSTRUCTION DOCUMENTS
	06.01.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE

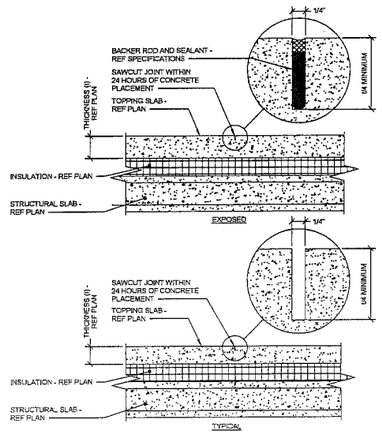
PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: SIDBHO CHECKED BY: ABSPER

LEARNING CENTER ROOF FRAMING PLAN

EXHIBIT G

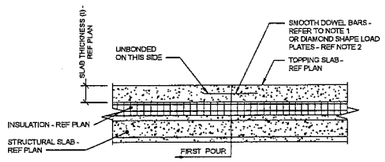
S104

02/6 INK



1 TYPICAL TOPPING SLAB CONTROL JOINT

1" = 1'-0"

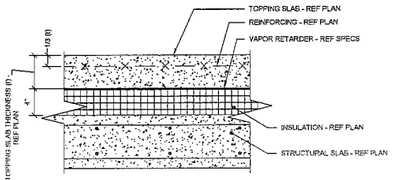


2 TYPICAL TOPPING SLAB CONSTRUCTION JOINT

3/4" = 1'-0"

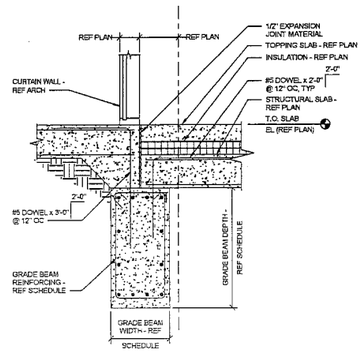
NOTES:

1. 3/4"Ø X 1'-2" SMOOTH DOWEL BARS AT 12" OC.
2. 1/4"x4 1/2"x4 1/2" DIAMOND LOAD PLATES AT 18" OC.
3. DOWEL BAR AT TOPPING SLAB CONSTRUCTION JOINT NOT REQUIRED IN THIS CLASSROOM.



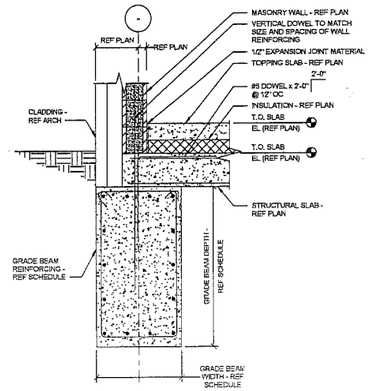
3 TYPICAL TOPPING SLAB SECTION

1 1/2" = 1'-0"



4 CURTAIN WALL CURB DETAIL

3/4" = 1'-0"



5 EXTERIOR WALL DETAIL

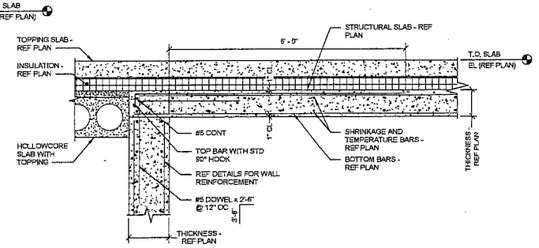
3/4" = 1'-0"

6 TYPICAL STOOP SECTION

3/4" = 1'-0"

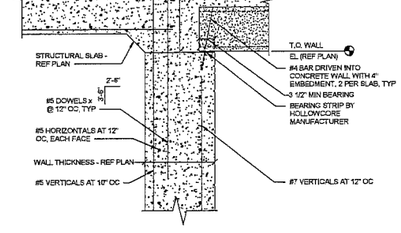
NOTES:

1. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT STOOP LAYOUT AND LOCATIONS.
2. REFER TO TYPICAL FOUNDATION WALL DETAIL FOR INFORMATION NOT SHOWN.



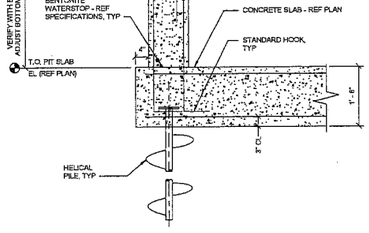
7 TYPICAL ONE WAY SECTION

3/4" = 1'-0"



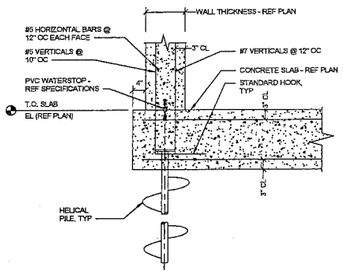
8 HOLLOW CORE BEARING DETAIL

1" = 1'-0"



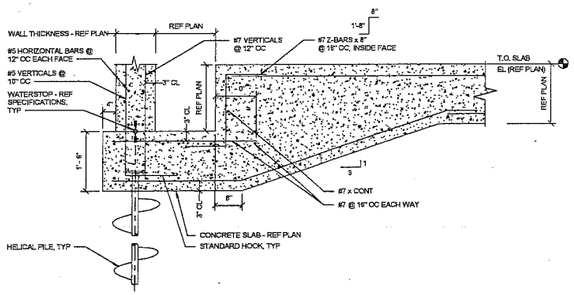
9 ELEVATOR PIT SECTION

3/4" = 1'-0"



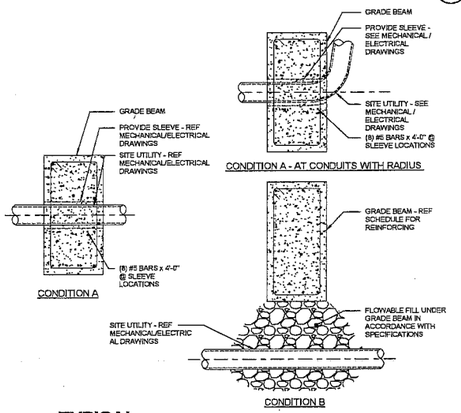
10 WALL BEARING ON MAT SLAB DETAIL

3/4" = 1'-0"



11 SUMP PIT IN MAT SLAB DETAIL

3/4" = 1'-0"



12 TYPICAL FOUNDATION DETAILS AT SITE UTILITIES

3/4" = 1'-0"

NOTES:

1. SEE MECHANICAL AND ELECTRICAL DRAWINGS FOR ALL LOCATIONS, ELEVATIONS, ETC, OF SITE UTILITIES. CONTRACTOR SHALL NOTIFY ENGINEER SHOULD SUCH A CONDITION ARISE AND AWAIT FURTHER INSTRUCTIONS.

IMEG CORP. RESERVES PROPRIETARY RIGHTS, INCLUDING COPYRIGHTS, TO THIS DRAWING AND THE DATA SHOWN THEREON, AND DRAWING AND/OR DATA ARE THE EXCLUSIVE PROPERTY OF IMEG CORP AND SHALL NOT BE USED OR REPRODUCED FOR ANY OTHER PROJECT WITHOUT THE EXPRESS WRITTEN APPROVAL AND PARTICIPATION OF IMEG CORP. © 2018 IMEG CORP.

REFERENCE SCALE IN INCHES

0 1 2 3

MSR 710 South 2nd Street, 8th Floor Minneapolis, Minnesota 55401-2282
Architecture Interiors and Urban Design
612.375.0336 tel
612.342.2216 fax
www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201
Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
303 South Paterson Street, Suite 1
Madison, WI 53703
608.251.3000 tel

Structural Engineer, Technology and AV
IMEG Corp.
1830 Deming Way, Suite 200
Middleton, WI 53562
608.221.9600 tel

MEP Engineer
MEP Associates, LLC
850 Blue Gentian Road, Suite 170
Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
570 Asbury Ave West
St. Paul, MN 55103
651.251.1880 tel

Greenhouse Design
Rough Brothers, Inc.
5533 Vine Street
Cincinnati, OH 45217
513.242.0310 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin, ARCHITECT SEAL

WISCONSIN DANIEL JACK POLING A-8884 MINNEAPOLIS, MN ARCHITECT

Signature:
Print Name:
Date: JUNE 1, 2018 License No:

ISSUE MARK	DATE	DESCRIPTION
	11.06.2017	DD PRICING SET
	01.10.2018	DESIGN DEVELOPMENT SUBMISSION
	03.30.2018	75% CD SUBMISSION
	05.04.2018	90% CONSTRUCTION DOCUMENTS
	05.21.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE

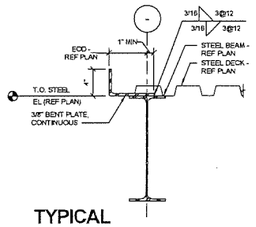
PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: SIDBHO CHECKED BY: ABBPER

FOUNDATION DETAILS

EXHIBIT G

S201

3/21/18 ARC

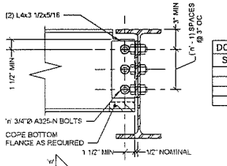


1 TYPICAL CLOSURE PLATE DETAIL

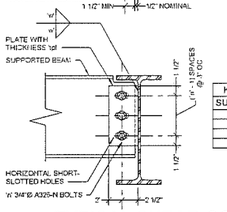
1 1/2" = 1'-0"

NOTES

1. REFER TO PLAN FOR DECK ORIENTATION.



DOUBLE ANGLE CONNECTION TABLE	
SUPPORTED BEAM	'n'
Wt. W16	2
W12, W14	3
W16	4
W18	5



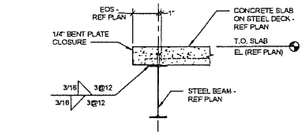
KNIFE PLATE CONNECTION TABLE			
SUPPORTED BEAM	'tpl'	'n'	'w'
Wt. W16	1/4"	2	3/16"
W12, W14	5/16"	3	1/4"
W16	5/16"	4	1/4"
W18	5/16"	5	1/4"

6 TYPICAL SHEAR CONNECTION

1 1/2" = 1'-0"

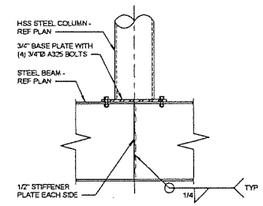
NOTES

1. BOTH DOUBLE ANGLE AND KNIFE PLATE CONNECTION CONFIGURATIONS ARE ACCEPTABLE, UNLESS NOTED OTHERWISE, FABRICATOR AND DETAILER SHALL SELECT WHICH OPTION IS BEST SUITED FOR THEIR FABRICATION PROCESS AND THE ANTICIPATED ERECTION PROCEDURES.
2. DETAIL TO BE SIMILAR AT CONNECTIONS TO WIDE FLANGE OR HSS COLUMNS.
3. UNLESS NOTED OTHERWISE, PROVIDE SHEAR CONNECTIONS AS INDICATED BY THIS DETAIL.
4. DETAILER IS RESPONSIBLE FOR FULLY DEVELOPING GEOMETRY AND DIMENSIONAL INFORMATION REQUIRED TO FABRICATE.
5. WHERE TYPICAL SHEAR CONNECTION DETAIL IS NOT APPLICABLE, FABRICATOR SHALL SELECT AND DETAIL ALTERNATE CONNECTION CAPABLE OF DEVELOPING EQUAL STRENGTH. ALTERNATE CONNECTION SHALL BE SELECTED IN ACCORDANCE WITH AISC ASD CONNECTION TABLES.
6. WHERE BEAMS FRAME INTO EXISTING COLUMNS USE THE KNIFE PLATE CONNECTION WITH A FIELD WELD TO EXISTING COLUMN.



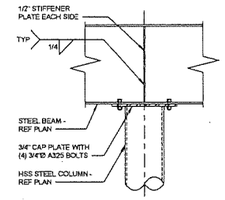
2 TYPICAL SLAB EDGE DETAIL

3/4" = 1'-0"



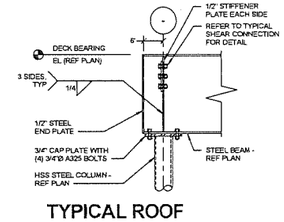
3 COLUMN BEARING ON BEAM

3/4" = 1'-0"



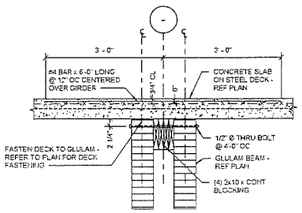
4 BEAM BEARING ON COLUMN

3/4" = 1'-0"



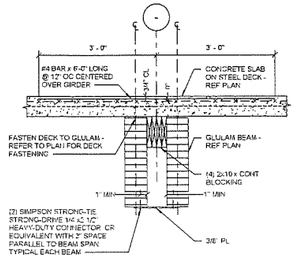
5 TYPICAL ROOF MOMENT CONNECTION

3/4" = 1'-0"



7 TYPICAL GLULAM BEAM DETAIL

3/4" = 1'-0"

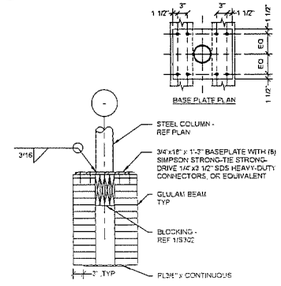


8 PARTITION SUPPORT DETAIL

3/4" = 1'-0"

NOTES

1. CONNECTION SHOWN IS DESIGNED TO SUPPORT 1000 LB POINT LOAD FROM THE OPERABLE PARTION.

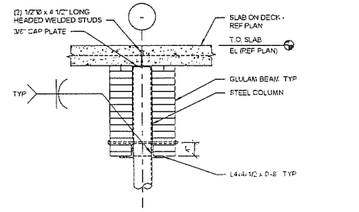


9 FRAMING DETAIL

3/4" = 1'-0"

NOTES

1. CONCRETE DECK NOT SHOWN FOR CLARITY.

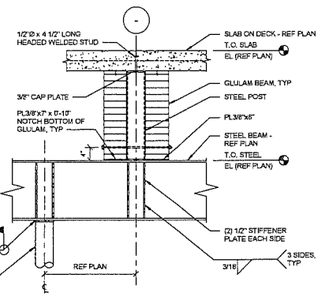


10 FRAMING DETAIL

3/4" = 1'-0"

NOTES

1. BLOCKING BETWEEN GLULAMS IS NOT SHOWN FOR CLARITY.

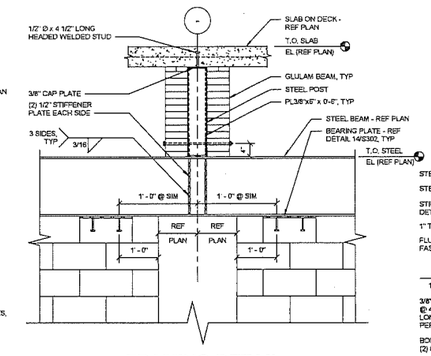


12 FRAMING DETAIL

3/4" = 1'-0"

NOTES:

1. BLOCKING BETWEEN GLULAMS IS NOT SHOWN FOR CLARITY.

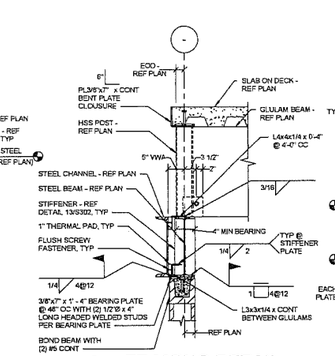


13 FRAMING DETAIL

3/4" = 1'-0"

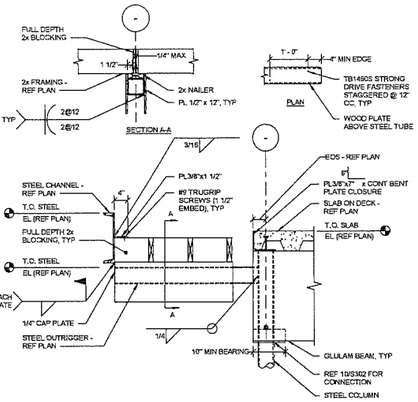
NOTES:

1. NO OPENING BELOW POST BEARING AT SIM.
2. BLOCKING BETWEEN GLULAMS IS NOT SHOWN FOR CLARITY



14 FRAMING DETAIL

3/4" = 1'-0"

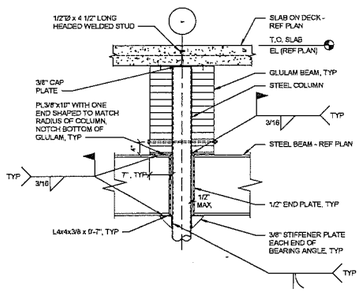


15 FRAMING DETAIL

3/4" = 1'-0"

NOTES:

1. ALL WELDS TO BE SEAL WELDED AND VENT HOLES TO BE PLUGGED.

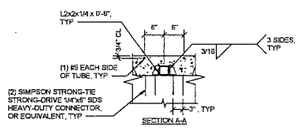


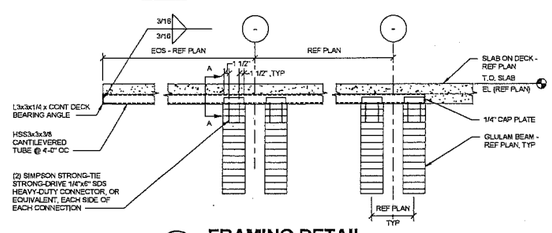
11 FRAMING DETAIL

3/4" = 1'-0"

NOTES:

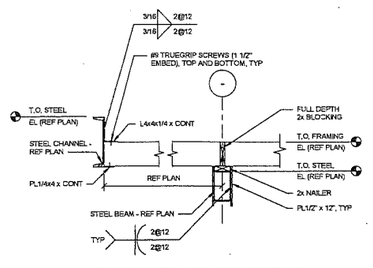
1. BLOCKING BETWEEN GLULAMS IS NOT SHOWN FOR CLARITY.





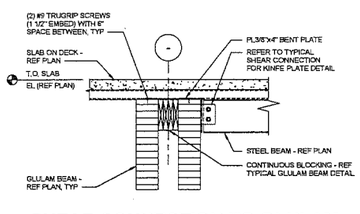
16 FRAMING DETAIL

3/4" = 1'-0"



17 CHANNEL EDGE DETAIL

3/4" = 1'-0"



18 SHEAR CONNECTION TO GLULAM

3/4" = 1'-0"

MSR
710 South 2nd Street, 6th Floor
Minneapolis, Minnesota 55401-2242
Architecture Interiors and Urban Design
612 375 0336 tel
612 342 2216 fax
www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201
Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
323 South Fairchild Street, Suite 1
Madison, WI 53703
608.251.3600 tel

Structural Engineer, Technology and A/V
IMEG Corp.
1600 Deming Way, Suite 200
Middleton, WI 53562
608.203.9500 tel

MEP Engineer
MEP Associates, LLC
840 Bee Gresen Road, Suite 171
Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
575 Minnesota Ave West
St. Paul, MN 55103
651.251.1910 tel

Greenhouse Design
Rough Brothers, Inc.
5513 Vine Street
Cincinnati, OH 45217
513.242.6310 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin.
ARCHITECT SEAL

WISCONSIN
DANIEL JACK POLING
A-6194
MINNEAPOLIS, MN
ARCHITECT

Signature:
Print Name:
Date: JUNE 1, 2018 License No.:

SHEET		
SHEET	DATE	DESCRIPTION
	12.08.2017	100 PRICING SET
	01.19.2018	30% DESIGN DEVELOPMENT SUBMISSION
	03.20.2018	70% CD SUBMISSION
	05.04.2018	100% CONSTRUCTION DOCUMENTS
	06.01.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE

PROJECT NO. 2017016

PROJECT PHASE BID DOCUMENTS

DRAWN BY: SIDBHO CHECKED BY: ABBPER

FRAMING DETAILS

EXHIBIT G

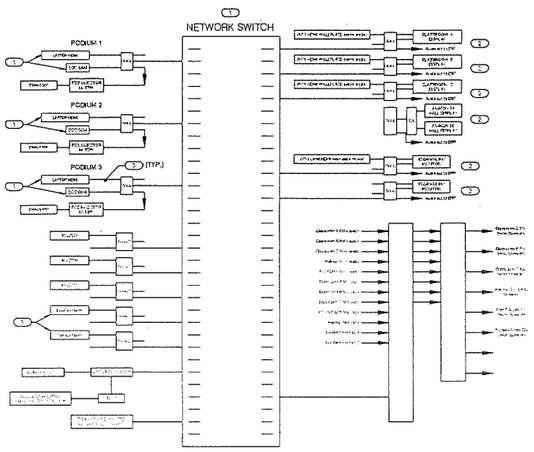
S302

IMEG
1600 DEMING WAY, SUITE 200
MIDDLETON, WI 53562
608.203.9500 FAX: 608.836.8410
www.imegcorp.com
PROJECT # 17040000.00

IMEG CORP. RESERVES PROPRIETARY RIGHTS, INCLUDING COPYRIGHTS, TO THIS DRAWING AND THE DATA SHOWN THEREON, AND DRAWING AND/OR DATA ARE THE EXCLUSIVE PROPERTY OF IMEG CORP. AND SHALL NOT BE USED OR REPRODUCED FOR ANY OTHER PROJECT WITHOUT THE EXPRESS WRITTEN APPROVAL AND PARTICIPATION OF IMEG CORP. © 2018 IMEG CORP.

REFERENCE SCALE IN INCHES
0 1 2 3

ORIGINAL

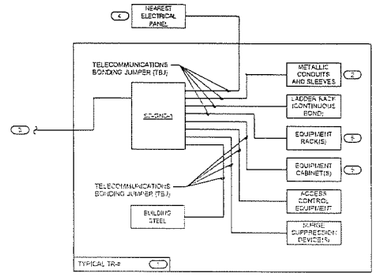


1 CLASSROOM AV RISER DIAGRAM

NO SCALE

NOTES:
1. THIS RISER IS DIAGRAMMATIC AND MAY NOT SHOW ACTUAL ROUTING OR QUANTITIES OF MATERIALS. THIS RISER IS SHOWN FOR CLARIFICATION OF CONNECTION LOCATIONS AND CABLE TYPE. DEVICES SHOWN ARE TYPICAL OF THE DEVICES IN THE AREA SHOWN. REFER TO FLOOR PLANS FOR ACTUAL QUANTITIES OF DEVICES
2. REFER TO GENERAL TECHNOLOGY EQUIPMENT SCHEDULE ON T500 FOR ADDITIONAL INFORMATION.

KEYNOTES:
1. OWNER FURNISHED OWNER INSTALLED.
2. OWNER FURNISHED CONTRACTOR INSTALLED.
3. CONTRACTOR FURNISHED CONTRACTOR INSTALLED.

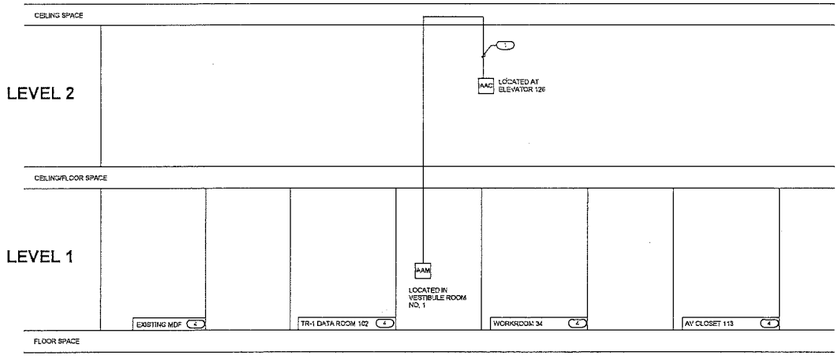


2 TYPICAL TELECOM ROOM BONDING FLOW DIAGRAM

NO SCALE

NOTES:
1. THIS FLOW DIAGRAM IS DIAGRAMMATIC AND MAY NOT SHOW ACTUAL ROUTING OR QUANTITIES OF MATERIALS. THIS FLOW DIAGRAM IS SHOWN FOR CLARIFICATION OF CONNECTION LOCATIONS AND CONDUCTOR TYPE. ALL CONNECTIONS AND SYSTEM DEVICES SHOWN ARE TYPICAL AND NOT REPRESENTATIVE OF ACTUAL PROJECT QUANTITIES. REFER TO FLOOR PLANS AND ENLARGED FLOOR PLANS FOR ACTUAL QUANTITIES AND LOCATIONS OF DEVICES AND MORE SPECIFIC ROUTING INFORMATION. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. ALL CONDUCTORS IN THE TECHNOLOGY BONDING SYSTEM SHALL BE MINIMUM SIZE OF #6 AWG PLENUM RATED COPPER GREEN OR MARKED WITH A DISTINCTIVE GREEN COLOR UNLESS CONDUCTOR LENGTH IS LESS THAN 65 FEET. REFER TO BONDING CONDUCTOR SIZING SCHEDULE FOR SIZING CRITERIA FOR CONDUCTORS LESS THAN 65 FEET IN LENGTH. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
3. ALL BONDING CONDUCTORS AND BONDING JUMPERS SHALL BE CONNECTED BY COMPRESSION LUGS, EXOTHERMIC WELDING, OR IRREVERSIBLE COMPRESSION CONNECTORS. SOLDER IS NOT AN ACCEPTABLE MEANS OF CONNECTION. SHEET METAL SCREWS SHALL NOT BE USED TO CONNECT COMMUNICATIONS BONDING CONDUCTORS TO EQUIPMENT. WHERE NECESSARY, REMOVE PAINT AND/OR USE PAINT-PIERCING WASHERS TO PROVIDE PROPER ELECTRICAL BOND AT ALL CONNECTIONS.
4. REFER TO 27100 FOR BONDING BUS BAR DETAIL AND ADDITIONAL INFORMATION AND REQUIREMENTS FOR SC-GND-1.

KEYNOTES:
1. REFER TO TELECOM ROOM REFERENCES SCHEDULE ON DRAWING T000 FOR TELECOMMUNICATIONS ROOM NUMBER AND LOCATION INFORMATION.
2. INCLUDES HORIZONTAL AND VERTICAL CONDUIT SLEEVES FOR TECHNOLOGY CABLING.
3. BONDING CONDUCTOR FOR TELECOMMUNICATIONS (BCT), TO EXISTING ELECTRICAL ENTRANCE INTERSYSTEM BONDING TERMINATION, REFER TO 4T1400 FOR TECHNOLOGY BONDING RISER DIAGRAM FOR CONTINUATION AND ADDITIONAL INFORMATION AND REQUIREMENTS.
4. REFER TO THE ELECTRICAL DRAWINGS FOR LOCATION.
5. PROVIDE SC-GND-2 RACK MOUNT TECHNOLOGY BONDING BUSBAR AT EACH EQUIPMENT RACK.



3 AREA OF RESCUE RISER DIAGRAM

NO SCALE

NOTES:
1. THIS RISER IS DIAGRAMMATIC AND MAY NOT SHOW ACTUAL ROUTING OR QUANTITIES OF MATERIALS. THIS RISER IS SHOWN CLARIFICATION OF CONNECTION LOCATIONS AND CABLE TYPES. DEVICES SHOWN ARE TYPICAL OF THE DEVICES IN THE AREA SHOWN. REFER TO FLOOR PLANS FOR ACTUAL QUANTITIES OF DEVICES AND MORE SPECIFIC ROUTING INFORMATION. REFER TO SPECIFICATIONS ADDITIONAL REQUIREMENTS.

KEYNOTES:
1. ONE (1) 18 GAUGE 2-CONDUCTOR CABLE, PLENUM RATED, REFER TO SPECIFICATIONS FOR REQUIREMENTS.

MSR
Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201
Madison, WI 53717
608.826.0532 tel
Landscape Architect
Ken Saiki Design, Inc.
333 South Paterson Street, Suite 1
Madison, WI 53703
608.251.3490 tel
Structural Engineer, Technology and AV
IMEG Corp.
1550 Deming Way., Suite 200
Middleton, WI 53562
608.221.3400 tel
MEP Engineer
MEP Associates, LLC
800 Main Corporate Drive, Suite 125
Eagan, MN 55121
651.379.4120 tel
Fire Protection Engineer and Code Consultant
Summit Fire Consulting
575 Enterprise Ave West
St. Paul, MN 55118-1121
651.291.1501 tel
Commissioning Design
Rough Brothers, Inc.
1635 Vets Drive
Cincinnati, OH 45202
513.242.6316 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin.
ARCHITECT SEAL

WISCONSIN
DANIEL JACK POLING
A-5334
MINNEAPOLIS, MN
ARCHITECT

Signature:
Print Name: Jack Poling
Date: JUNE 4, 2014 License No.: A-5334

BASE		
MARK	DATE	DESCRIPTION
	01.10.2014	DESIGN DEVELOPMENT SUBMISSION
	03.20.2014	75% CD SUBMISSION
	05.06.2014	75% CD SUBMISSION
	05.01.2014	BID SET
	05.04.2014	PERMIT ISSUE

PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: BHASON CHECKED BY: DONPAU

RISER DIAGRAMS - TECHNOLOGY

EXHIBIT O

T401

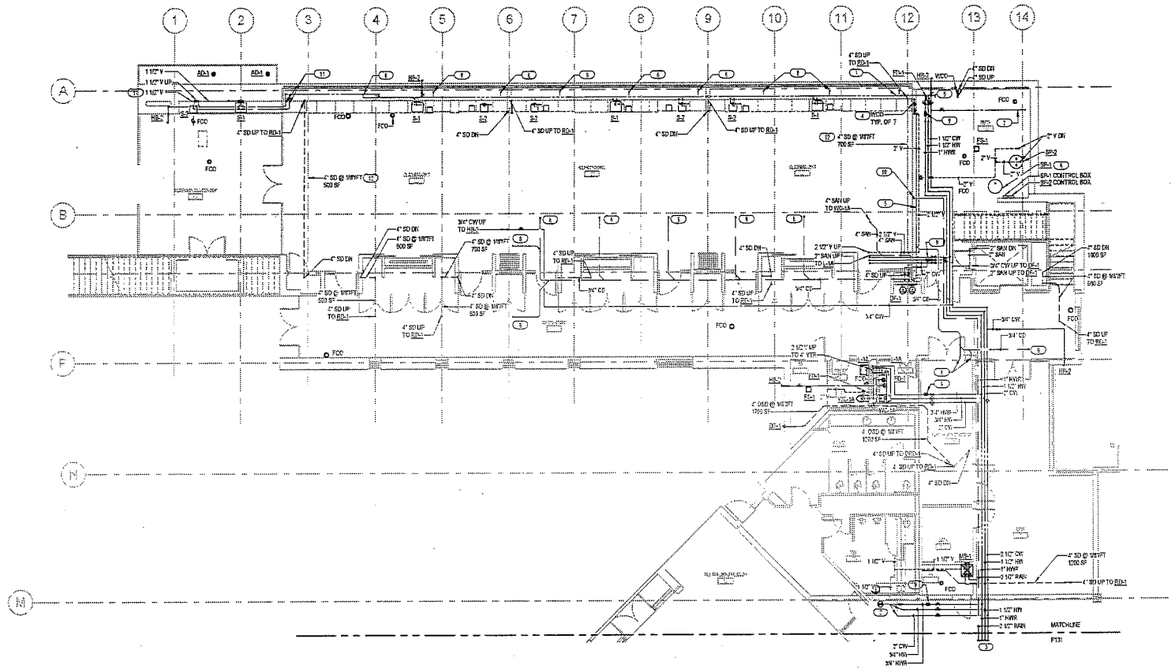
IMEG
1550 DEMING WAY, SUITE 200
MIDDLETON, WI 53562
PROJECT # 13W2LN1

IMEG CORP. RECEIVES PROPRIETARY RIGHTS, INCLUDING COPYRIGHTS, TO THESE DRAWINGS AND THE IDEAS SHOWN. THESE DRAWINGS AND/OR IDEAS ARE NOT TO BE USED IN WHOLE OR IN PART, AND SHALL NOT BE LOANED, REPRODUCED FOR ANY OTHER PROJECT WITHOUT THE EXPRESS WRITTEN APPROVAL AND PARTICIPATION OF IMEG CORP. © 2013 IMEG CORP.

REFERENCE SCALE IN INCHES
4 3 2 1 0

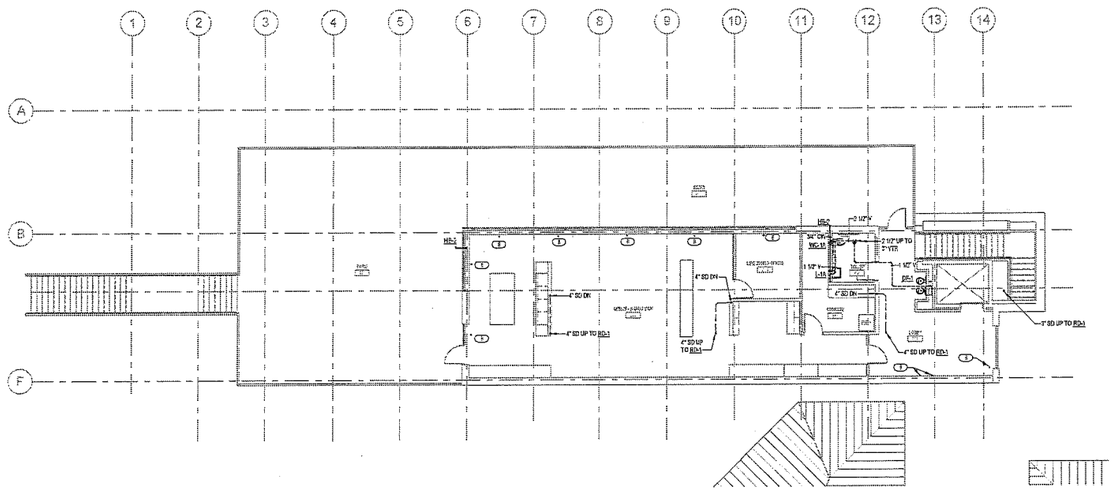
ORIGINAL

BY ENTITY AND DISCIPLINE \ DGN FILENAME \ M:\PROJECTS\PROJECTS\BPW\BPW_T401.dgn



1 LEARNING CENTER PLUMBING PLAN LEVEL 1

1/8" = 1'-0"



2 LEARNING CENTER PLUMBING PLAN LEVEL 2

1/8" = 1'-0"

GENERAL NOTES

1. REFER TO MECHANICAL PLANS FOR BH FLOOR PIPING. COORDINATE ALL BELOW GRADE PIPING.

KEYED NOTES

1. ROUTE WATER PIPING IN CABINETRY/CHASE. COORDINATE WITH MECHANICAL DUCTWORK. REFER TO ARCHITECTURAL DETAIL ISOMETRIC AND MECHANICAL SECTION VIEW.
2. CONNECT NEW 2" CW, 3/4" HW, AND 3/4" HWR TO EXISTING 2", 3/4 HW, AND 1/2 HWR THIS AREA.
3. REFER TO P131 FOR CONTINUATION.
4. WALL CLEANOUTS TO BE ON MECHANICAL ROOM SIDE OF WALL. REFER TO RISER DIAGRAM P201 AND DETAIL 5/P201.
5. ROUTE 3/4" CD TO FD-1.
6. REFER TO DETAIL 6/P101 FOR RP-1 PIPING AND ASSOCIATED COMPONENTS.
7. 3/4" CW DOWN TIGHT TO WALL AND TO BELOW GRADE. SEE P100 FOR CONTINUATION. AT BASE OF DROP, INCLUDE QUICK DISCONNECT WITH SHUT-OFF VALVE, AND SHUT-OFF IMMEDIATELY UPSTREAM OF QUICK DISCONNECT TO ALLOW FOR COMPRESSED AIR CONNECTION AND WATER BLOW-OUT OF LINE.
8. ROUTE 3/4" CD UP TO RECESSED FAN COIL UNIT.
9. HWR BALANCE VALVE SET TO 0.5 GPM. INSTALL ACCESSIBLE.
10. 2 1/2" RAINWATER PIPE UP FROM CISTERN SUMP PUMP. BELOW, CONTRACTOR SHALL CONNECT TO PUMP'S WALVING BY OTHERS. PENETRATE FLOOR WITH LINKSEAL AND ROUTE AS SHOWN.
11. 3/4" CW AND 3/4" HW OUT THROUGH EXTERIOR WALL. IN CASWETRY, INTERIOR, TO EXTERIOR SINK STRUCTURE. AT EXT. INCLUDE QUICK DISCONNECT WITH SHUT-OFF VALVE, AND SHUT-OFF IMMEDIATELY UPSTREAM OF QUICK DISCONNECT TO ALLOW FOR COMPRESSED AIR CONNECTION AND WATER BLOW-OUT OF LINE
12. OUTDOOR CLASSROOM VENT SHALL BE COPPER. TERMINATE VENT 12" BELOW DECK. DO NOT PENETRATE DECKROOF.
13. ROUTE PIPING BETWEEN GLUE LAM.

MSR

Architecture
Interiors
Urban Design

Civil Engineer
Vierbicher Associates, Inc.
610 Fourier Drive, Suite 201
Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
333 South Paterson Street, Suite 1
Madison, WI 53703
608.251.3900 tel

Structural Engineer, Traveldigs and AV
IMEG Corp.
1950 Deming Way, Suite 200
Middleton, WI 53562
608.203.9900 tel

MEP Engineer
MEP Associates, LLC
333 Beer Springs Road, Suite 125
Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
375 E Lawrence Ave Street
St. Paul, MN 55101
651.251.1455 tel

Commissioning Consult
Rough Brothers, Inc.
5555 Yale Street
Cincinnati, OH 45227
513.242.6010 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Engineer under the Laws of the State of Wisconsin. ENGINEER SEAL

Signature:

Print Name: Larry Nesser

Date: JUNE 4, 2018 License No: E-32240

ISSUE		
NAME	DATE	DESCRIPTION
	09.05.2017	SCHEMATIC DESIGN SUBMISSION
	10.24.2017	CD PRICING SET
	01.19.2018	DESIGN DEVELOPMENT SUBMISSION
	03.12.2018	100% SUBMISSION
	03.31.2018	100% CD PRICING ISSUE
	05.04.2018	100% CONSTRUCTION DOCUMENTS
	05.21.2018	BID ISSUE
	06.04.2018	ADDENDUM 1

PROJECT NO. 2017016

PROJECT PHASE BID DOCUMENTS

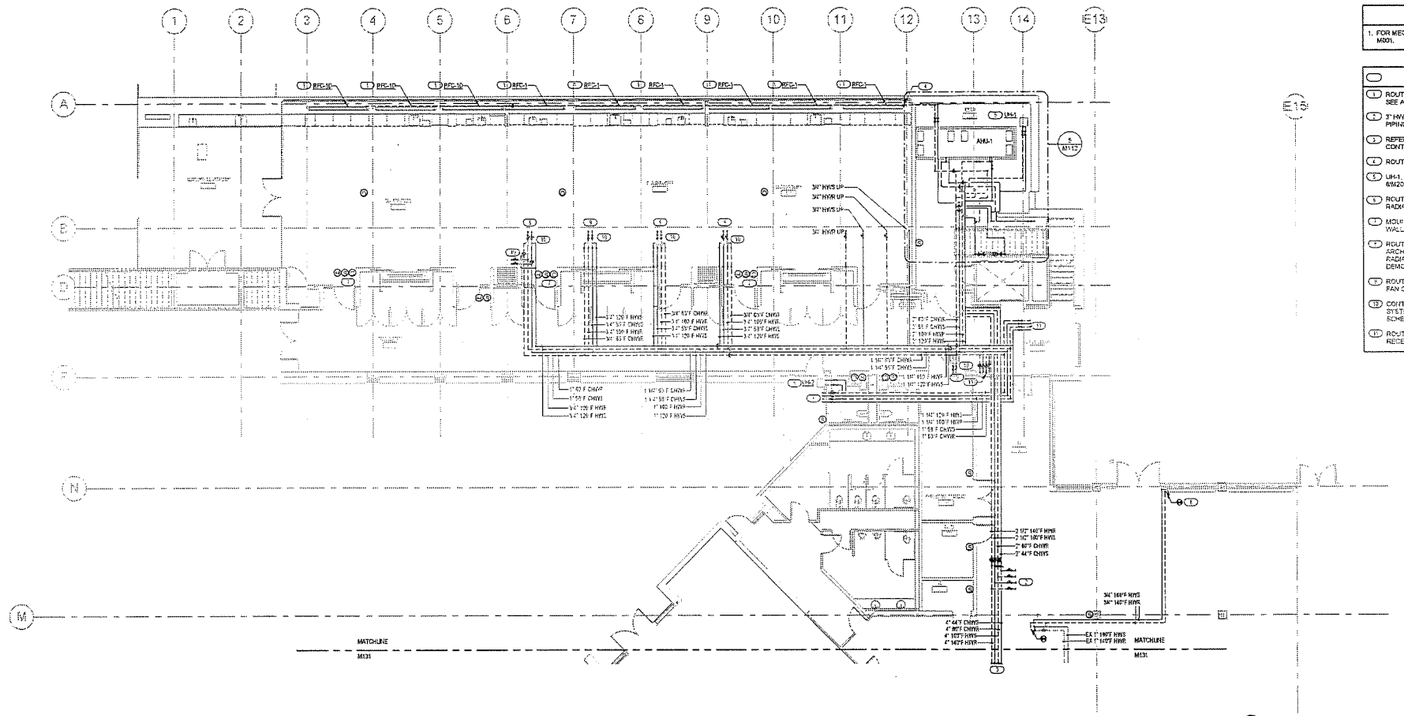
DRAWN BY: MSR CHECKED BY: MSR

LEARNING CENTER PLUMBING PLAN - ABOVE GRADE

EXHIBIT K

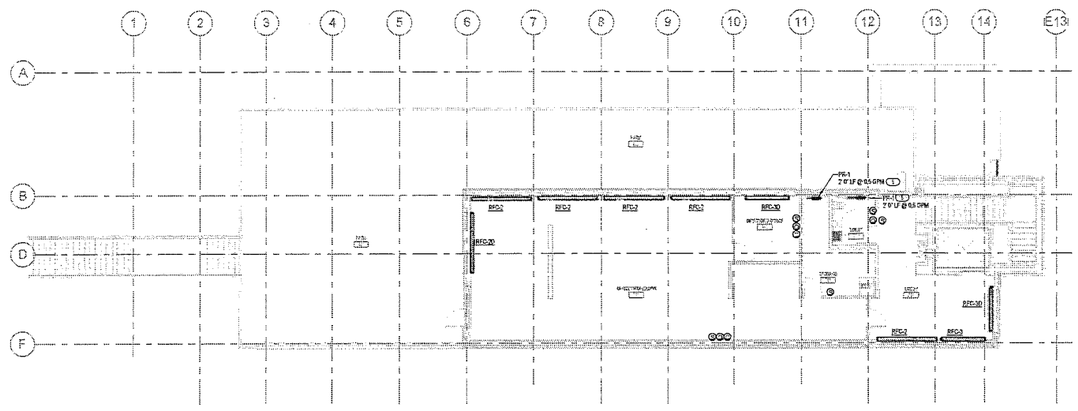
P101

ORIGINAL



1 LEARNING CENTER MECHANICAL PIPING PLAN LEVEL 1

1/8" = 1'-0"



2 LEARNING CENTER MECHANICAL PIPING PLAN LEVEL 2

1/8" = 1'-0"

GENERAL NOTES

1. FOR MECHANICAL NOTES, LEGENDS AND ABBREVIATION, REFER TO M001.

KEYED NOTES

1. ROUTE 3/4" CHWS, 3/4" CHWR PIPE TO RECESSED FAN COIL UNIT, SEE ALSO 2/M102.
2. 3" HWS, 3" HWR, 1" CHWS, AND 3" CHWR FOR FUTURE EXPANSION, PIPING SHALL BE CAPPED AND VALVED.
3. REFER TO COMMONS AREA MECHANICAL PIPING PLAN, M131, FOR CONTINUATION.
4. ROUTE 1 1/2" CHWS, AND 1 1/2" CHWR IN WALL CAVITY.
5. UH-1, UH-2, PR-1, AND PR-2 SHALL BE PIPED PER DETAIL 10/M202 & 6/M201.
6. ROUTE 1" HWS, 1" HWR, 1" CHWS, 1" CHWR PIPE DOWN TO RADIANT MANIFOLD.
7. MOUNT THERMOSTAT, HUMIDITY SENSOR, AND CO2 SENSOR ON WALL.
8. ROUTE HWS AND HWR DOWN IN DOOR COLUMN 3, SEE ARCHITECTURAL DETAIL. CONNECT TO EXISTING FIN TUBE RADIATION SUPPLY AND RETURN IN THIS AREA. CUT DURING DEMOLITION PHASE.
9. ROUTE 3/4" CHWS/CHWR AND 3/4" CHWR/HWR PIPE TO RECESSED FAN COIL UNIT. ABOVE. SEE ALSO 2/M102.
10. CONTRACTOR SHALL CONVERT 4-PIPE SYSTEM INTO 2-PIPE SYSTEM VIA 3-WAY MODULATING VALVE. REFER TO CONTROLS SCHEMATIC 3/M303.
11. ROUTE 3/4" HWS, 3/4" HWR, 3/4" CHWS, 3/4" CHWR PIPE TO RECESSED FAN COIL UNIT. SEE ALSO 2/M102.

MSR

Architecture
Interiors
Urban Design

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201
Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
302 South Paterson Street, Suite 1
Madison, WI 53703
608.251.3800 tel

Structural Engineer, Technology and A/V
IMEG Corp.
1550 Deming Way, Suite 200
Middleton, WI 53562
608.223.9020 tel

MEP Engineer
MEP Associates, LLC
455 Science Drive, Suite 125
Madison, WI 53711
608.833.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
5711 Enterprise Way West
Eau Claire, WI 54701
715.261.5750 tel

Commissioning Agent
Rough Brothers, Inc.
1633 West Street
Cincinnati, OH 45214
513.242.0010 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Engineer under the Laws of the State of Wisconsin. ENGINEER SEAL

Signature:

Print Name: Larry Iverson

Date: JUNE 4, 2018 License No. E-29243

MARK	DATE	DESCRIPTION
	09.22.2017	SCHEMATIC DESIGN SUBMISSION
	10.27.2017	DD PRICING SET
	01.10.2018	DESIGN DEVELOPMENT SUBMISSION
	03.12.2018	100 SUBMISSION
	03.31.2018	75% ED PRICING ISSUE
	05.04.2018	95% CONSTRUCTION DOCUMENTS
	06.01.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE

PROJECT NO. 2017016

PROJECT PHASE BID DOCUMENTS

DRAWN BY: MSR CHECKED BY: MSR

LEARNING CENTER MECHANICAL PIPING PLAN

EXHIBIT J
M102

ORIGINAL

GOVERNING CODE:
INTERNATIONAL BUILDING CODE 2015

DESIGN LOADS:
DEAD LOAD _____ 10 PSF
LIVE LOAD _____ 12 PSF
GROUND SNOW _____ 30 PSF IMPORTANCE FACTOR 1.0
WIND LOAD _____ 115 MPH EXPOSURE 'B', IMPORTANCE FACTOR 1.0
SEISMIC LOAD _____ S_{DS} = 0.090
S_{D1} = 0.074
SITE CLASS = D

CODES & SPECIFICATIONS:
STRUCTURE IS DESIGNED IN ACCORDANCE WITH:
THE ALUMINUM ASSOCIATION "SPECIFICATIONS FOR ALUMINUM STRUCTURES".

1. GENERAL NOTES:
   A. ALUMINUM SURFACES IN CONTACT WITH MASONRY TO RECEIVE A HEAVY COAT OF CLEAR POLYURETHANE COATING.
   B. CAULKING TO BE G.E. SILGLAZE II 2809.
2. STRUCTURAL ALUMINUM:
   A. ALL DETAILING, FABRICATION, AND ERECTION SHALL CONFORM TO THE LATEST EDITION OF THE SPECIFICATIONS FOR ALUMINUM STRUCTURES.
   B. FIELD CONNECTIONS TO BE BOLTED.
3. MATERIALS:
   A. ALUMINUM SHAPES: ALLOY 6061-T6 & 6063-T6.
   B. ALUMINUM PLATE: ALLOY 6061-T6
   C. ALUMINUM SHEET: ALLOY 5052-H32.
   D. ALL BOLTS ¼" DIA. AND LARGER TO BE GALVANIZED ASME J429 GRADE 5.
   E. ALL BOLTS 3/16" AND SMALLER TO BE STAINLESS STEEL.
   F. ALL SHEET METAL SCREWS TO BE STAINLESS STEEL.
   G. ALL #8 AND #10 TEK SCREWS TO BE STAINLESS STEEL.
   H. ALL #12 TEK SCREWS TO BE GALVANIZED.
4. ANCHOR BOLTS:
   A. ANCHOR BOLTS TO BE 316 STAINLESS THREADED ROD, SET WITH EPOXY IN FIELD DRILLED HOLES IN EXISTING KNEEWALL. ROD DIAMETER, LENGTH AND EMBEDMENT AS SPECIFIED ON ROUGH BROTHERS SHEET GH5.1.
   B. EPOXY ANCHORS TO BE INSTALLED PER MANUFACTURER'S INSTRUCTIONS SUPPLIED WITH THE EPOXY CARTRIDGE.

GLAZING:
   A. ROOF GLASS (FULL LITES 23 15/16" x 26") TO BE ¼" LAMINATED, CONSISTING OF 2 LAYERS OF ⅛" CLEAR HEAT STRENGTHENED GLASS WITH AN .030" CLEAR POLYVINYL BUTYRAL INNER LAYER. ROOF GLASS AT RIDGE AND OR VENT HEADER TO BE FIELD CUT FROM ¼" LAMINATED CONSISTING OF 2 LAYERS OF ⅛" CLEAR ANNEALED GLASS WITH AN .030" CLEAR POLYVINYL BUTYRAL INNER LAYER.
   B. SIDEWALL AND GABLE GLAZING (FULL LITES 24" x 26") TO BE ⅛" CLEAR TEMPERED GLASS. ODD SHAPE GLASS AT TOP OF GABLES SHALL BE FIELD CUT FROM ⅛" CLEAR ANNEALED GLASS.
   C. ALL GLASS TO BE SET IN ELASTIC ROPE PUTTY, LAID WITH A 3/16" LAP.
   D. ROOF GLASS TO BE TOP SEALED WITH BUTYL ELASTIC GLAZING COMPOUND.

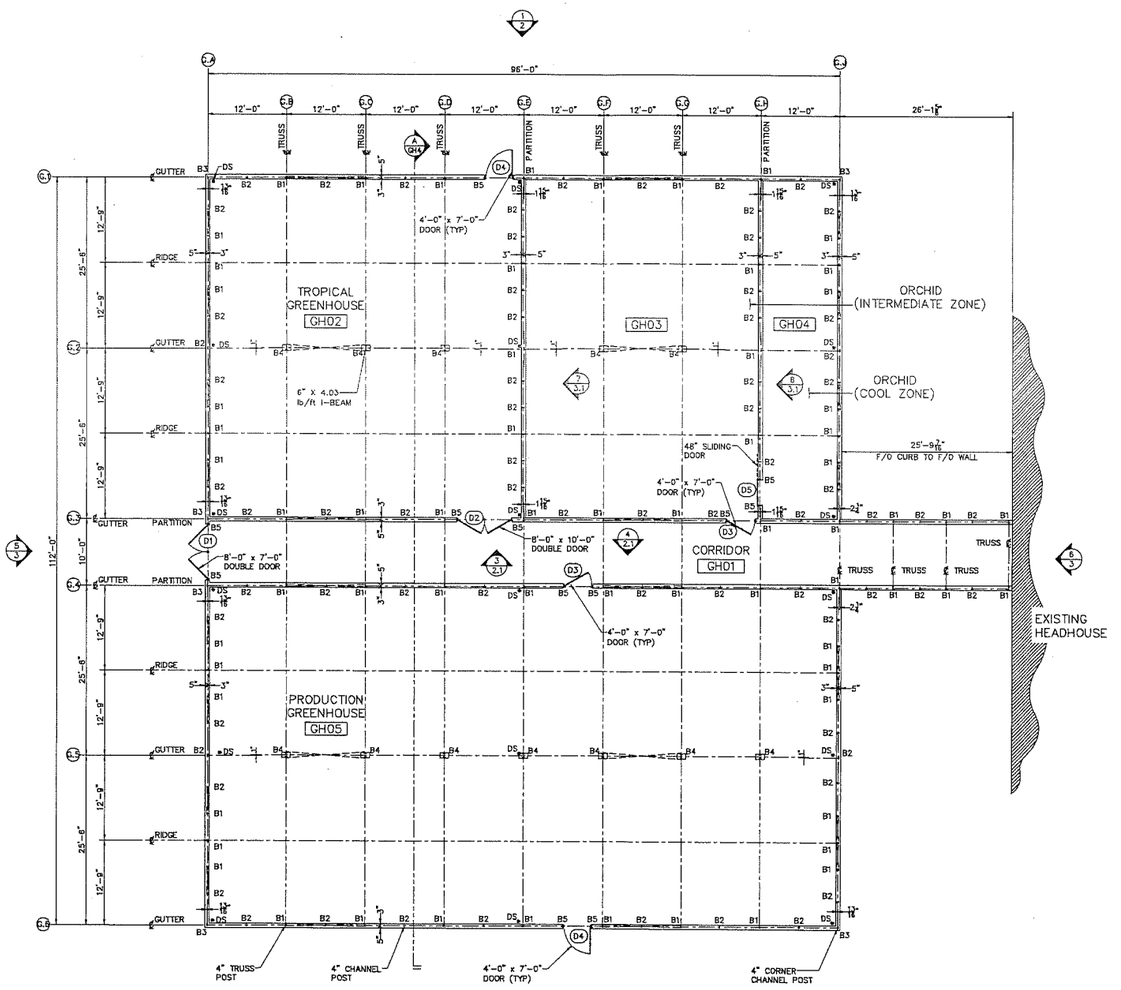
6. ALUMINUM FINISH:
   A. ALL ALUMINUM TO BE MILL FINISH.

7. SCREENS:
   A. ALL ROOF VENTS TO HAVE 16 X 18 ALUMINUM MESH INSECT SCREEN WITH 5/16" x 7/8" EXTRUDED ALUMINUM, MILL FINISH FRAME WITH BRUSH SEALS AT VENT OPERATOR PENETRATIONS.
   B. EVAPORATIVE COOLING PAD SYSTEMS IN COORIDOR TO HAVE 16 X 18 ALUM. MESH INSECT SCREEN.
   C. LOUVER IN COORIDOR TO HAVE 16 X 18 ALUM. MESH INSECT SCREEN.
   D. INSULATED DAMPERS OVER EVAPORATIVE COOLING PAD SYSTEM IN THE PRODUCTION ZONE TO HAVE 16 X 18 ALUM. MESH SCREEN BOX.

8. VENTS:
   A. ROOF VENTS TO BE 36" WITH 42" STRAIGHT ALUMINUM/STEEL RACK AND PINION OPERATORS.

9. WORK BY OTHERS:
   A. ALL COUNTERFLASHING TO BE FURNISHED AND INSTALLED BY SHEET METAL CONTRACTOR.
   B. ALL PLUMBING AND GUTTER DOWNSPOUT PIPING TO BE FURNISHED AND INSTALLED BY PLUMBING CONTRACTOR.
   C. ALL ELECTRICAL WORK INCLUDING WIRING, CONDUIT, PANELS AND LIGHTS TO BE FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR.
   D. ALL MASONRY AND CONCRETE WORK TO BE BY MASONRY CONTRACTOR.
   E. SEALING OF ALL PIPING AND CONDUIT PENETRATIONS THROUGH GREENHOUSE GLAZING TO BE PERFORMED BY THE RESPECTIVE TRADE CONTRACTOR INSTALLING THE GIVEN PIPE OR CONDUIT.

DRAWING INDEX	
DWG NO.	DRAWING DESCRIPTION
GH1	POST PLAN LAYOUT
GH2	SIDEWALL ELEVATIONS
GH2.1	CORRIDOR PARTITION ELEVATIONS
GH3	GABLE ELEVATIONS
GH3.1	GABLE PARTITIONS
GH4	TRUSS SECTION
GH4.1	TRUSS DETAILS
GH5	FOUNDATION PLAN
GH5.1	POST BASE ANCHOR DETAILS
GH6	EQUIPMENT PLAN
GH6.1	BENCH PLAN
GH6.2	EQUIPMENT SECTIONS
GH6.3	GREENHOUSE ONE LINE POWER DIAGRAM
GH6.4	CORRIDOR ONE LINE POWER DIAGRAM
GH6.5	INTERCONNECTION DIAGRAM
GH7	RIDGE SECTION
GH8	TYPICAL SIDEWALL SECTION
GH8.1	TYPICAL PARTITION SECTION
GH9	ROOF TO GABLE SECTION
GH10	DOOR DETAILS
GH11	CLOSURE DETAILS



POST PLAN LAYOUT
SCALE: 1/8" = 1'-0"

TRUE PLAN

ENGINEERING NOTE:
ENGINEER'S SEAL APPLIES TO DESIGN OF STRUCTURAL COMPONENTS ONLY

MSR 710 South 2nd Street, 8th Floor Minneapolis, Minnesota 55401-2282
Architecture 612 375 0336 tel
Interiors and Urban Design 612 342 2510 fax www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201 Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
343 South Paterson Street, Suite 1 Madison, WI 53703
608.251.3000 tel

Structural Engineer Technology and A/V
IMEG Corp.
1500 Deming Way, Suite 200 Madison, WI 53562
608.222.9400 tel

MEP Engineer
MEP Associates, LLC
850 Bush Gardner Road, Suite 125 Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
275 Hardman Ave West St Paul, MN 55107
651.251.1820 tel

Greenhouse Design
Rough Brothers, Inc.
5513 Vine Street Cincinnati OH 45217
513.242.0310 tel

Olbrich Botanical Gardens
Expansion Phase 1
BPW Project #81623
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the laws of the State of Wisconsin.
ARCHITECT SEAL

WISCONSIN DANIEL JACK POLING A-6084 MINNEAPOLIS, MN ARCHITECT

Signature:
Print Name: Jack Poling
Date: MAY 4, 2018 License No: A-6084

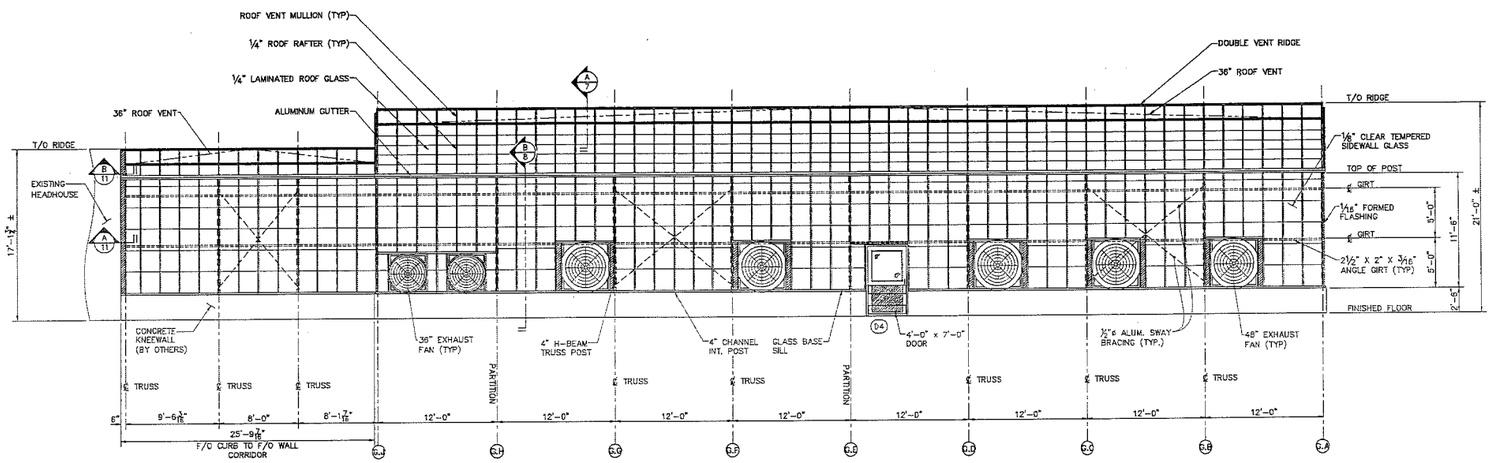
ISSUE		
MARK	DATE	DESCRIPTION
	03.29.2017	SCHEMATIC DESIGN SUBMISSION
	12.08.2017	50% PRICING SET
	01.19.2018	DESIGN DEVELOPMENT SUBMISSION
	01.17.2018	CDC SUBMISSION
	03.30.2018	90% CD PRICING ISSUE
	04.06.2018	PARKING LOT AND SITE PLAN SUBMISSION
	05.04.2018	90% CD RESUBMISSION
	05.01.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE

PROJECT NO. 2017016
PROJECT PHASE: BID DOCUMENTS
DRAWN BY: TLB CHECKED BY: SW

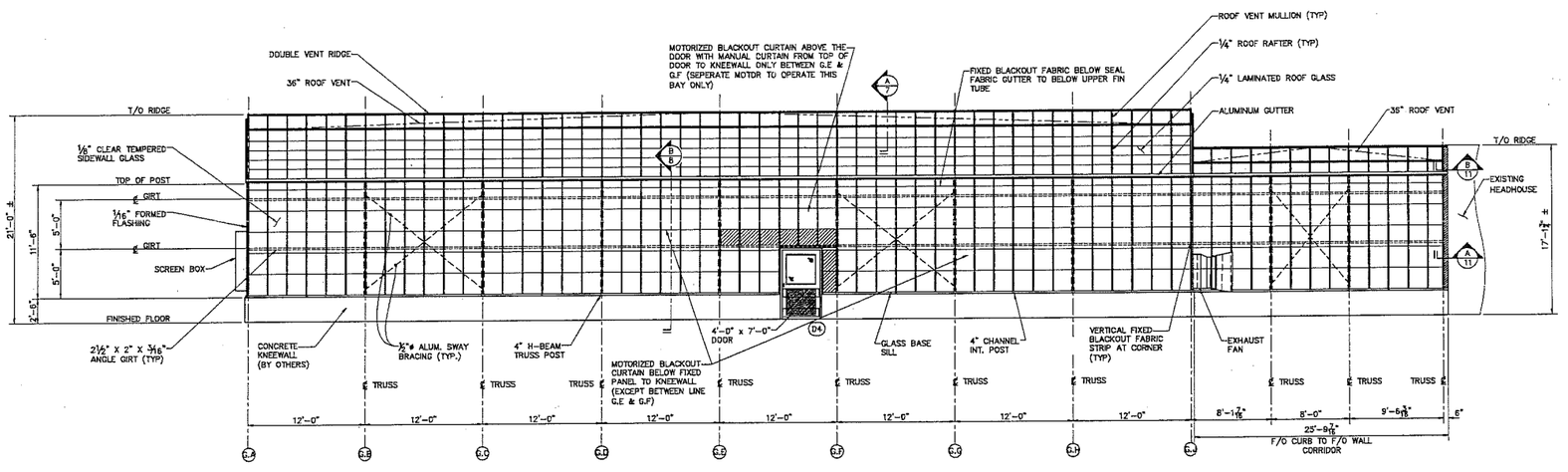
GREENHOUSE POST PLAN LAYOUT

EXHIBIT H
GH1

02/16/NAC



NORTH SIDEWALL ELEVATION (1)
SCALE: 3/16"=1'-0"



SOUTH SIDEWALL ELEVATION (2)
SCALE: 3/16"=1'-0"

ENGINEERING NOTE:
ENGINEER'S SEAL APPLIES TO DESIGN OF STRUCTURAL COMPONENTS ONLY

MSR
710 South 2nd Street, 8th Floor
Minneapolis, Minnesota 55401-2282
Architecture, Interiors, and Urban Design
612.375.9336 tel
612.342.2316 fax
www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201
Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
323 South Paterson Street, Suite 1
Madison, WI 53703
608.251.3000 tel

Structural Engineer, Technology and A/V
IMEG Corp.
1800 Deming Way, Suite 200
Middleton, WI 53562
608.223.9000 tel

MEP Engineer
MEP Associates, LLC
860 Blue Gentian Road, Suite 175
Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
575 Minnehaha Ave West
St. Paul, MN 55103
651.251.1860 tel

Greenhouse Design
Rough Brothers, Inc.
5513 Vine Street
Cincinnati, OH 45217
513.242.6310 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin.
ARCHITECT SEAL

WISCONSIN
DANIEL JACK POLING
A-5084
MINNEAPOLIS, MN
ARCHITECT

Signature:
Print Name: Jack Poling
Date: MAY 4, 2018 License No.: A-5084

MARK	DATE	DESCRIPTION
	09.29.2017	SCHEMATIC DESIGN SUBMISSION
	03.06.2017	DD PRICING SET
	03.16.2018	DESIGN DEVELOPMENT SUBMISSION
	03.17.2018	LUDC SUBMISSION
	03.30.2018	100% CD PRICING ISSUE
	04.06.2018	PARKING LOT AND SITE PLAN SUBMISSION
	05.04.2018	90% CD SUBMISSION
	06.01.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE

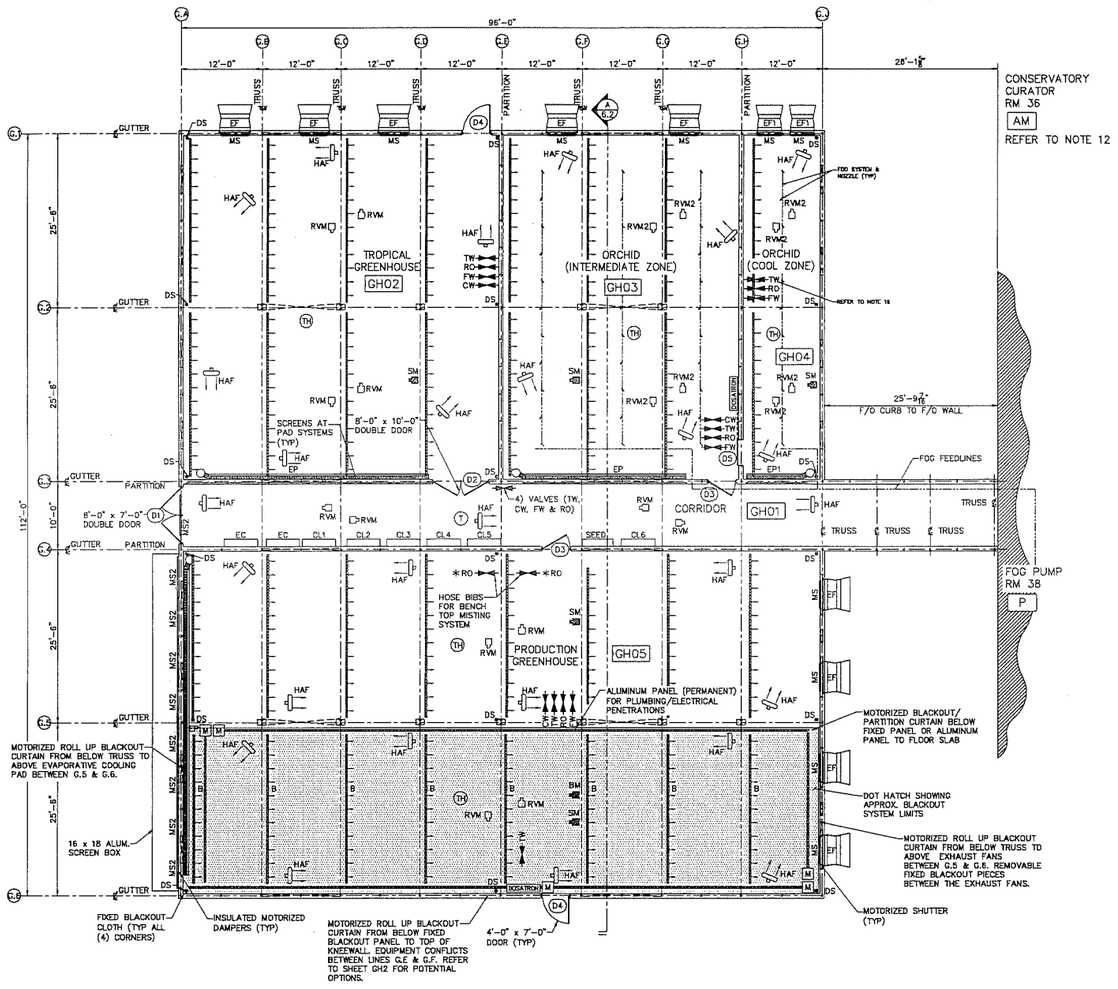
PROJECT NO. 2017016
PROJECT PHASE: BID DOCUMENTS
DRAWN BY: TLB CHECKED BY: SW

Drawing ©2018 Copyright Keyser, Sumner & Associates, Ltd.

GREENHOUSE SIDEWALL ELEVATIONS

EXHIBIT H
GH2

ORIGINAL



EQUIPMENT PLAN LAYOUT
SCALE: 1/8" = 1'-0"

TRUE PLAN

ROOM SQUARE FOOTAGE	
ROOM	SQUARE FEET
TROPICAL GREENHOUSE	2,450 +/-
ORCHIDS (COOL ZONE)	605 +/-
ORCHIDS (WARM ZONE)	1,840 +/-
PRODUCTION GREENHOUSE	4,900 +/-

HOSE BIB IDS (WATER SUPPLY BY PLUMBING CONTRATOR)		
SYMBOL	QTY.	DESCRIPTION
TW	6	TEMPERED WATER
RO	7	REVERSE OSMOSIS WATER
FW	6	FERTILIZED WATER
CW	4	COLD WATER

* RO WATER COULD CAUSE DAMAGE TO FILTERS AND SOLENOID VALVES. OSG TO BE RESPONSIBLE FOR PROPER MAINTENANCE OF SYSTEM AFTER RO WATER HAS BEEN USED.

EQUIPMENT SCHEDULE – BASIS OF DESIGN							
SYMBOL	QTY.	DESCRIPTION	HP	VOLT	PH	AMP	RPM
RVM	12	ROOF VENT MOTOR, LOCK EWA 12, WITH OPEN/CLOSE LIMIT SWITCH, 150Nm	0.3	208	3	1.7	3.8
RVM2	8	ROOF VENT MOTOR, LOCK EWA 10, 50 Nm, WITH OPEN/CLOSE LIMIT SWITCH	0.15	208	3	.9	4.6
SM	5	ROOF SHADE MOTOR, LOCK EWA 10, 90Nm	0.15	208	3	1.0	4.6
BM	1	BLACKOUT SYSTEM MOTOR, LOCK EWA 10, 90NM	0.15	208	3	1.0	4.6
	4	MOTORIZED SUSPENDED ROOF SHADE/HEAT RETENTION CURTAIN SYSTEM, w/TREVIRA CS FLAME RETARDANT SHADE FABRIC WITH 50%–60% LIGHT REDUCTION, 50% ENERGY SAVINGS.	–	–	–	–	–
B	1	MOTORIZED CABLE/DRAG ROOF BLACKOUT CURTAIN SYSTEM, w/OBSCURA 10075FR AB+BW FABRIC, w/99% LIGHT REDUCTION, AND 75% ENERGY SAVINGS.	–	–	–	–	–
M	5	MOTORIZED VERTICAL BLACKOUT CURTAIN SYSTEM, WITH A RMA20.0512 TUBE MOTOR, W/SNYDER WEATHERSPAN 500 130Z.	.375	120	–	2.3	12
HAF	27	12" VK12 SCHAEFER HAF FAN	1/10	115	1	1.3	1725
EF	9	48" MUNTERS DRIVE EXHAUST FAN WITH FIBERGLASS HOUSING, WITH MUNTERS MOTORIZED SHUTTERS: VX48DF21C–224–HR	1½	208	3	6.0	649
EF1	2	36" MUNTERS DRIVE EXHAUST FAN WITH FIBERGLASS HOUSING, WITH MUNTERS MOTORIZED SHUTTERS, VX36DF21C–224–HR	3/4	208	3	3.3	876
MS	11	GREENHECK INSULATED MOTORIZED ALUMINUM SHUTTERS WITH HINGES AT EXHAUST FANS WITH BELIMO ACTUATORS	–	120	1	0.28	–
MS2	9	72" X 72" GREENHECK INSULATED MOTORIZED ALUMINUM SHUTTERS WITH (2) BELIMO ACTUATORS FOR PRODUCTION EVAPORATIVE COOLING PAD SYSTEM AND OVER THE WEST GABLE DOOR	–	120	1	0.28	–
EP	3	6'–0" TALL EVAPORATIVE COOLING PAD SYSTEM W/ PVC RETURN GUTTER, PLUMBING KIT, RESERVOIR TANK AND SUBMERSIBLE PUMP, TROPICAL AND PRODUCTION SYSTEMS EC:1122 PUMP, SUBMERS (LITTLE GIANT 509207)	1/10	115	1	13.0	–
EP1	1	6'–0" TALL EVAPORATIVE COOLING PAD SYSTEM W/ PVC RETURN GUTTER, PLUMBING KIT, RESERVOIR TANK AND SUBMERSIBLE PUMP, ORCHID SYSTEMS: EC1319; PUMP, SUMBERS (UTTLE GIANT 506810/506801)	1/3	115	1	5.0	–
TH	5	ENVIRONMENTAL CONTROL SYSTEM – ASPIRATED TEMPERATURE/HUMIDITY SENSOR	–	–	–	–	–
T	1	ENVIRONMENTAL CONTROL SYSTEM – TEMPERATURE SENSOR	–	–	–	–	–
• DS	18	4" DOWNSPOUT PIPING (BY PLUMBING CONTRACTOR) ESTIMATED LOCATIONS SHOWN	–	–	–	–	–
CL1–CL6	6	GREENHOUSE CONTROL PANELS	–	–	–	–	–
EC	2	ELECTRICAL PANEL (BY ELECTRICIAN)	–	–	–	–	–
SEED	1	SEED INTERFACE PANEL FOR WADSWORTH SYSTEM	–	–	–	–	–
P	1	FOG PUMP, 0.75 GPM, 1000 psi, LOCATION RM 38	1.5	208	3	–	1725
	2	FOG ZONE 3–WAY VALVE WITH ZONE CONTROL PANEL, LOCATION TBD	–	24	–	–	–
	---	FOG SYSTEM LINES AND NOZZLES	–	–	–	–	–
DOSATRON	2	FERTILIZER INJECTOR WITH MONITOR SYSTEM, DOSATRON 14MZ2, 14 GPM–1:500 – 1:50	–	115	–	–	–

EQUIPMENT NOTES:

1. ALL ELECTRICAL WIRING (LINE & LOW VOLTAGE), CONDUIT, CIRCUIT PANELS, OUTLETS, LIGHTING (NON–HPS, HPS, LED) SHALL BE PROVIDED AND INSTALLED BY ELECTRICAL CONTRACTOR.
2. ALL PLUMBING WORK INCLUDING HOSE BIBS, FLOOR DRAINS, AND DOWNSPOUT PIPING SHALL BE PROVIDED AND INSTALLED BY PLUMBING CONTRACTOR.
3. ALL FIRE PROTECTION SHALL BE PROVIDED AND INSTALLED BY OTHERS & ALLOW FOR RIGHT OF WAY FOR SHADE SYSTEM.
4. ROOF SHADE SYSTEM & BLACKOUT SYSTEMS MUST HAVE TRAVEL RIGHT OF WAY. DO NOT MOUNT OR INSTALL LIGHTS, CONDUIT, PIPING, J–BOXES, DISCONNECT SWITCHES OR ANY PIECE OF EQUIPMENT IN ANY WAY THAT WILL INTERFERE WITH THE TRAVEL OF EACH SHADE CURTAIN SYSTEM.
5. SEE SHEET GH6.1 FOR BENCH PLAN.
6. REFER TO SHEETS GH6.3–GH6.5 FOR WADSWORTH CONTROL SYSTEMS.
7. HWR/HWS TEMP SENSORS AT MAIN CONNECTIONS IN CORRIDOR FOR MONITORING TEMPERATURES THROUGH THE SEED CONTROL SYSTEM.
8. TEMPERATURE PROBES FOR EACH FLOOR HEAT VALVE FOR MONITORING TEMPERATURES THROUGH THE SEED CONTROL SYSTEM.
9. PAR LIGHT SENSORS IN EACH ZONE (LED LIGHTS BY ELECTRICAL CONTRACTOR).
10. COMPUTER STATION FOR CONTROL SYSTEM SHALL BE PROVIDED BY OTHERS AND LOCATED IN CONSERVATORY CURATOR RM 36.
11. GREENHOUSE CONTROL SYSTEM SOFTWARE SHALL BE BY WADSWORTH CONTROL SYSTEMS.
12. ALARM MANAGER PROVIDED WITH CONSERVATORY PORTION OF THE CONTROL SYSTEM IN CONSERVATORY CURATOR RM 36.
13. GREENHOUSE CONTROL SYSTEM WEATHER STATION SHALL BE PROVIDED WITH THE CONSERVATORY PORTION OF THE CONTROL SYSTEM AND SHALL BE CONNECTED THROUGH THE NETWORK.
14. EVAPORATIVE COOLING SYSTEM REQUIRES SUPPLY LINE WITH MANUAL SHUT OFF VALVE AT EACH TANK AND FLOOR DRAIN TO BE PROVIDED BY PLUMBING CONTRACTOR. SYSTEM APPROX. FLOW RATES ARE AS FOLLOWS: PRODUCTION G'HSE.–38 GPM, TROPICAL G'HSE.–27 GPM, ORCHID INTERM.–23 GPM, ORCHID COOL–9 GPM.
15. FOG SYSTEM SHALL INCLUDE FOG PUMP, ZONE VALVES, FEED LINES FROM PUMP TO FOG LINES WITH NOZZLES TO GH03 & GH04.
16. FOG SYSTEM SHALL PROVIDE 50 TO 70% HUMIDITY; 1.0 GPM, @ 30–60 PSI. A 3/4" DIA. RO INLET CONNECTION SHALL BE PROVIDED TO THE FOG PUMP BY PLUMBING CONTRACTOR, ALONG WITH A FLOOR DRAIN.
17. FERTILIZER INJECTOR BY–PASS SYSTEM REQUIRES TEMPERED WATER, BACKFLOW PREVENTER, SHUT OFF VALVE AND 115V OUTLET PROVIDED BY PLUMBING & ELECTRICAL CONTRACTOR.
18. FERTILIZER INJECTOR (TW) LINE SHALL BE PROVIDED FROM INJECTOR IN INTERMEDIATE ORCHID ZONE TO COOL ORCHID ZONE FOR HOSE ATTACHMENT BY PLUMBING CONTRACTOR.
19. SUPPLY & RETURN LINES FOR FIN TUBE HEATING SYSTEM SHALL BE BROUGHT INTO THE GREENHOUSE CORRIDOR BY MECHANICAL CONTRACTOR WITH A FLANGED CONNECTION AND A BALL VALVE. BOILER BY MECHANICAL CONTRACTOR. FOR G'HSE HEATING SYSTEMS, REFER TO THE 'H' SERIES DRAWINGS.
20. PORTABLE GENERATOR FOR HOOK UP SHALL BE PROVIDED BY ELECTRICAL CONTRACTOR TO SUPPORT ALL THE GREENHOUSE EQUIPMENT IN THE EVENT OF A POWER OUTAGE.
21. ELECTRICAL CONTRACTOR TO PROVIDE AND INSTALL HPS SUPPLEMENTAL LIGHTING IN THE TROPICAL AND ORCHID ZONES AND LED SUPPLEMENTAL LIGHTING IN THE PRODUCTION ZONES AND UNISTRUT FOR HANGING FROM THE GREENHOUSE STRUCTURE. REFER TO E–SERIES DRAWINGS. ALL GH SUPPLEMENTAL LIGHTING SHALL BE CONTROLLED BY SEED CONTROL SYSTEM.

MSR
710 South 2nd Street, 6th Floor
Minneapolis, Minnesota 55401–2282
Architecture, Interiors and Urban Design
612.375.0336 tel
612.342.2216 fax
www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201
Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
302 South Paterson Street, Suite 1
Madison, WI 53703
608.251.3600 tel

Structural Engineer, Technology and AV
IMEG Corp.
1600 Deming Way, Suite 200
Middleton, WI 53562
608.223.9600 tel

MEP Engineer
MEP Associates, LLC
880 Blue Gentian Road, Suite 172
Eagan, MN 55121
651.379.8120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
575 Aldenhamna Ave West
St. Paul, MN 55102
651.251.1800 tel

Greenhouse Design
Rough Brothers, Inc.
6543 Vine Street
Cincinnati, OH 45217
513.242.6310 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin.
ARCHITECT SEAL

WISCONSIN DANIEL JACK POLING A-8094 MINNEAPOLIS, MN ARCHITECT

Signature: _____
Print Name: Jack Poling
Date: MAY 4, 2018 License No.: A-8094

ISSUE		
NAME	DATE	DESCRIPTION
	09.29.2017	SCHEMATIC DESIGN SUBMISSION
	12.08.2017	DD PRICING SET
	01.19.2018	DESIGN DEVELOPMENT SUBMISSION
	01.17.2018	%DC SUBMISSION
	03.30.2018	70% CD PRICING ISSUE
	04.06.2018	PARKING LOT AND SITE PLAN SUBMISSION
	04.04.2018	90% CD SUBMISSION
	04.01.2018	BID ISSUE
	04.04.2018	PERMIT ISSUE

PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: TLS CHECKED BY: SW

GREENHOUSE EQUIPMENT PLAN

EXHIBIT H
GH6

ORIGINAL

Department of Public Works
Engineering Division
Robert F. Phillips, 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
Gregory T. Fries, P.E.
Kathleen M. Cryan

Principal Engineer 2
Christopher J. Petykowski, P.E.
John S. Fahrney, P.E.

Principal Engineer 1
Christina M. Bachmann, P.E.
Mark D. Moder, P.E.
Janet Schmidt, P.E.

Facilities & Sustainability
Jeanne E. Hoffman, Manager
Bryan Cooper, Principal Architect

Mapping Section Manager
Eric T. Pederson, P.S.

Financial Manager
Steven B. Danner-Rivers

July 3, 2018

NOTICE OF ADDENDUM
ADDENDUM NO. 3

CONTRACT NO. 8162, PROJECT NO. 17193
Olbrich Botanical Gardens Expansion Project 1

This addendum is issued to modify, explain or correct the original Drawings, Specifications, or Contract Documents marked as ***Olbrich Botanical Gardens Expansion Project 1, City of Madison Project 17193, Contract #8162, as issued on June 1, 2018*** and is hereby made a part of the contract documents. This addendum consists of five (5) pages and the referenced exhibits.

Please acknowledge this addendum on page E1 of the contract documents and/or in Section E: Bidder's Acknowledgement on Bid Express.

An electronic version of these documents can be found on the Bid Express web site at:
http://www.bidexpress.com

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

For questions regarding this bid, contact:

Randy Wiesner
City of Madison Engineering
Phone: 608-267-8679
Fax: 608-264-9275
Email: RWiesner@cityofmadison.com

Sincerely,

Robert F. Phillips, P.E., City Engineer

FOR

Cc: Greg Fries

1. GENERAL CONTRACT CONDITIONS

A. This is the Final Addendum (Addendum 3) for Contract 8162. Per section A of the Contract Specifications the goal was to have this addendum published by 4:00PM July 2. The City of Madison policy for addendums is no later than 48 hours prior to bids being due. There will be no time extension to the bidding period. All bids are due at 2:00PM, Thursday, July 12, 2018.

2. GENERAL CLARIFICATIONS, QUESTIONS AND ANSWERS

A. ***Q:*** Please provide detail 14/A403 as called out from detail8/A401.
A: The detail was provided and drawing number updated to 10/A403 in Addendum 1.

B. ***Q:*** A demolition note on drawing AD101 reads "REMOVE EXISITING WINDOWS AND RETAIN EXISTING STRUCTURAL MASONRY OPENING AND CMU PIERS." in the area of the headhouse. The windows are approximately 4' wide by 3'-3" tall. However, at detail 2/A112 it appears to indicate that the masonry is removed down to the floor slab. Are we to remove just the window and infill or remove the entire wall and replace as indicated on 2/A112?
A: Remove the existing windows and CMU down to floor and replace as indicated on 2/A112. The corresponding demolition note on drawing AD101 has been updated to match.

C. ***Q:*** In spec section 12 36 13, part 2.3.C, please clarify the height and top-edge detail specifications.
A: Specification 12 36 13 has been updated to clarify the height and top-edge detail specifications.

D. ***Q:*** Regarding dewatering, part 3.1.C and part 3.2.J of section 31 23 00 are contradictory regarding ground water. Is dewatering of ground water part of the contract or extra compensation via unit price?
A: Dewatering of all ground water is part of the contract. Section 3.2.J has been removed from the specification 31 23 00. Section 3.1.C has been edited for additional clarity.

E. ***Q:*** Part 2.2.C of section 27 41 23 calls out AV equipment provided by Contractor including monitors. Part 2.3 of the same section calls out monitors furnished by Owner; furthermore, detail 1/T401 indicates monitors provided by Owner. Please clarify who is to provide the monitors.
A: The design intent is for the Division 27/AV Contractor to provide all new wall monitors and AV equipment as identified on the drawings. The spec section and detail 1/T401 have been revised to reflect the design intent.

F. ***Q:*** Spec section 27 41 23-2 makes reference to drawings T-501 and T-601 which are not part of the bid documents. Please clarify the correct sheet references.
A: Spec section 27 41 23-2 has been revised to correctly reference drawing T500.

G. ***Q:*** Specifications 10 44 13 and 10 44 16 specify fire extinguisher cabinets and fire extinguishers. Reviewing the plans there appears to be none called out. Please clarify if there are any fire extinguisher cabinets and or fire extinguishers and where they are located.
A: Fire extinguisher locations have been added to drawing A101 and are indicated with material ID FEX-1. There are no fire extinguisher cabinets. The Fire Extinguisher Cabinet specification has been removed.

H. ***Q:*** Sheet A121 shows WT-2 automated shades. Please confirm that these are supposed to be WT-1A which would match the specification and also sheet G000.
A: Material ID WT-2 updated to WT-2A on Sheet A121. Shades WT-2A on the first floor are motorized and shades WT-1A on the second floor are manual as called for in the specification.

I. ***Q:*** Specification 10 28 00 page 2 specifies underlavatory guards. Reviewing the plans there appears to be none called out. Please clarify if there are any underlavatory guards and where they are located.
A: Underlavatory guards are required at all locations with exposed traps.

J. ***Q:*** Specification 10 28 00 – Toilet Accessories and sheet A151 have toilet accessories called out that are to be provided by the contractor. The specification doesn't specify approved manufacturers or models for the contractor supplied items. Please clarify.
A: Specification 10 28 00 is a performance specification without approved manufacturers or models. Per the specification, some items are owner furnished contractor installed.

K. ***Q:*** Roofing Plan A103 calls out various roof types such as RF-1, RF-2, etc. These roof types are not on the material list on drawing G000. Please clarity the roof types and update all relative drawing details.

A: RF-1, RF-2, etc. are roof assembly references as detailed on Sheet G002 (to the lower right).

L. *Q:* Specification 03 30 00 page 15 section 3.5.A gives direction for finish of exposed concrete surfaces. Does this include piers, interior walls and exterior walls in the new Greenhouse, storage, cistern and elevator pit walls?

A: Specification 03 30 00 3.5.A. Exposed Smooth Formed Surfaces does not apply to Greenhouse piers, interior knee walls, or exterior knee walls. It does not apply to the Learning Center cistern. The Learning Center Storage (Room 125) and elevator pit walls are CMU and this finish does not apply to them either.

M. *Q:* Detail 9 on sheet A353 is conflicting with detail 5 on sheet S203. Please verify which detail should be followed?

A: Follow detail 5/S203 where the concrete curb is cast monolithically with the grade beam.

N. *Q:* Foundation detail 13/A351 is not clearly identified on the structural drawings. Is a concrete curb required as indicated? Is any reinforcing required at this curb?

A: Where wall construction consists of stud wall in lieu of masonry, a concrete curb should be provided. A note to this effect has been added to detail 5/S201.

O. *Q:* Detail 14/A351 calls for a concrete curb under the CMU wall and a concrete curb to support the stone veneer. Are these curbs required as they are not shown at detail on 5/S201. Is any reinforcing or doweling required?

A: See addendum 2 revisions to detail 5/S201. Contractor has the option to provide cut CMU or concrete curb. Continuous reinforcing bar is required in curb and has been indicated in detail 5/S201. All CMU wall coursing needs to start at Level 1 finished slab level.
The contractor has a similar option for supporting the stone veneer. The curb to support the exterior stone cladding varies in height around the building depending on grade elevation. Detail 14/A351 has been updated and base details 3/A359 and 4/A359 have been added to clarify intent.

P. *Q:* Please provide a specification and/or detail for the stormwater cistern access manhole as called out on A101. Is it to be an access panel or hatch type opening?

A: Material ID MAN-1 has been added to 1/A101 and the Material / Product ID List on G000. It is a self sealing hatch-type opening.

Q. *Q:* Per the cities general conditions, item 107.4, the contractor is required to provide builders risk insurance for the project. On the Madison Municipal Building project the builders risk was carried by the city. Please confirm if the builders risk will be carried by the city similar to the MMB project or if the contract will be required to carry it.

A: The Contractor shall be responsible for carrying the builders risk insurance for this contract. The City Standard Specification Section 107.4(i) has been modified since the MMB bidding to include the following language: "*This insurance shall apply to new buildings, structures, additions, remodeling, alterations and renovations of existing buildings.*"

R. *Q:* Please clarify the depth of shelving called for. Do you want the shelves to have integral backstops? Do you want book supports for each shelf?

A: No integral back and no book supports are needed at this time. Shelving depth is 18".

S. *Q:* Is the owner providing all WD-2 interior finish wood?

A: Yes, the owner is providing all WD-2 interior finish wood.

T. *Q:* Is contractor / subcontractor responsible for getting the WD-2 material to a casework subcontractor?

A: Yes, the contractor / subcontractor is responsible for picking up the WD-2 from the source and delivering it to their subcontractor. The Wood Cycle is the source of WD-2 as added to specification 062023 in Addendum 2. They are located in Fitchburg, WI.

U. *Q:* Does the owner have the WD-2 reclaimed ash subcontracted out already with a casework company?

A: No, Casework is to be subcontracted by the Contractor.

V. *Q:* Regarding the Supplemental Unit Price Worksheet:

1. The dictated quantities on the form are causing confusion. Per note 2 on the form, the estimated quantities should be included in the base bid; does that mean the bidding contractor can rely on these quantities and not do a takeoff? Shouldn't the quantities be a quantity of (1) for each item? The burden of quantity is up to each bidding contractor for items 1, 2, 7, & 8. What if the quantities determined by the bidding contractor differ from the quantities on the worksheet?

A: The form has been redone, some items have been removed. Final quantities are the responsibility of the General Contractor. All unit quantites are shown as one (1) to provide a delivered and installed unit price for each item listed.

2. Clarify the intent of item 1. There are multiple exterior wall types that include CMU as noted on drawing G002. Which exterior wall type is intended for this unit price?
   A: This item has been removed from the worksheet.
3. Should item 4 have units of CY for breaker run in lieu of Ton?
   A: This has been corrected to CY.
4. Items 5 & 6 are typically price per CY no per hour. Please clarity the intent.
   A: Item 5 is now in CY and Item 6 has been removed from the worksheet.
5. Items 7 & 8 should be removed from the worksheet as this work is part of the base bid.
   A: Items have been removed.
6. Item 9 should be split into two separate lines for add and deduct to match the specification 31 26 00. Each Helical Pile Contractor will submit a different unit price for add and a different unit price for deduct to the General Contractors. It is unfair for the General Contractor to only provide one unit price on the worksheet to be used for adds and deducts.
   A: This item has been split into tow separate items.
7. Please clarify item 10 as this work should be part of the base bid.
   A: This item has been removed.

W. *Q:* Regarding the submission of the SBE form, the bid documents seem silent as to when this paperwork is to be submitted. Can this bid document be submitted at 4:00pm on the same bid day as the base bid? This would allow time for the bidding contractors to review SBE quotes, confirm data, and get the correct information on the bid form.
A: The Department of Civil Rights (DCR) who administers the SBE program has reviewed the request to extend the deadline for all SBE documentation. DCR has indicated that the previous project had extenuating circumstances and the will not be extending the deadline for this contract. All SBE documentation is to be submitted with the rest of the required bid documents.

X. *Q:* Procuring Accoya Radiata Pine with a structural stamp on it for use of the 2x8 and 2x10 joists is a challenge. Is the structural stamp necessary?
A: Since Accoya doesn't seem to have different grade specifications, we do not need a stamp indicating the grade. The supplier will be expected to submit product data indicating that it meets the design values indicated on the drawings as a submittal.

Y. *Q:* On drawing S002, Note 1 of Helical Pile Load Plan states "Loads shown on plan are ultimate loads for the pile or pile group." Are these ASD or LRFD loads?
A: The loads have been revised to be service level loads (ASD) and this has been clarified in the Helical Pile Load Plan notes.

Z. *Q:* Refer to Specification, Part 1.6 Quality Assurance, B. Design, Bullet points 2, 3 and 4 which dictate different factor of safety values (2 & 3) for pile design. Which factor of safety shall be used for pile design based on the ASD/working load method? Typical industry standard factor of safety for new construction helical pile is 1.5 with factor of safety of 2.0 used for retrofit applications. Factor of safety of 3 of pile design will require large diameter, longer lead time helical piles at many locations, possible even micropiles.
A: Factor of safety values are based on service level loads (ASD). See Bid Addendum 3 for clarification and revisions. The factors of safety in the specifications were selected based on recommendations given in the geotechnical report.

AA. *Q:* The Glulam spec 06 18 00 mentions "preservative treatment" on line 1, page 5. Is preservative treatment applicable for this project?
A: Glulams will not require preservative treatment. Preservative treatment references have been removed from the specification in Addendum 3.

BB. *Q:* Section 0727-15 Non Bituminous Self Adhering Sheet Air Barrier lists two products, Henry SA and Carlisle, that are bituminuous based. Are these acceptable?
A: Yes, both products are acceptable. However, if a bituminuous membrane is selected, a butyl based (hi-temp) membrane is to be used in all locations directly under metal flashing.

CC. *Q:* Detail 5/A501 shows the sliding markerboards in the middle of each 4 panel system are to be mounted in front of a monitor with a narrow piece of glass board to be mounted above the sliding

boards. Please clarify the design intent of the sliding boards and the narrow panel above the sliding boards.

A: Sheet A552 shows the intent of both the sliding glass markerboards and the narrow panel above the sliding boards. Section 1/A552 shows that the sliding boards consist of a glass markerboard GLBD-!A mounted to a sliding pocket door. See Door Schedule for more information. The narrow panel above the sliding pocket door is shown in Detail 7/A552. The finish face of the glass markerboard GLBD-1B above the sliding pocket door is aligned with the finish face of the glass markerboards GLBD-1B shown in detail 12/A552.

DD. *Q:* Several questions have been asked regarding seeding and softscape.

A: All finish softscape shall be the responsibility of Olbrich Botanical Gardens staff except where noted in the plans and specifications. Any reference to seeding is intended to be used as needed for erosion control requirements and is not intended to be permanent seeding.

3. **ACCEPTABLE EQUIVALENTS**

A. USG; Section 095426, True Wood Grilles Modular Grille.

4. **SPECIFICATIONS**

A. EXHIBIT-AS_061800 Glued Laminated Construction.
B. EXHIBIT-AT_095426 Acoustical Wood Ceiling.
C. EXHIBIT-AU_123613 Concrete Countertops.
D. EXHIBIT-AV_224213.13 Commercial Water Closets
E. EXHIBIT-AW_236423.13 FL – Air-Cooled Scroll Water Chillers
F. EXHIBIT-AX_262416 Panelboards
G. EXHIBIT-AY_263100 Photovoltaic Performance Requirements
H. EXHIBIT-AZ_274123 Audio-Visual Accessories
I. EXHIBIT-BA_312300 – Foundation Excavation and Backfill

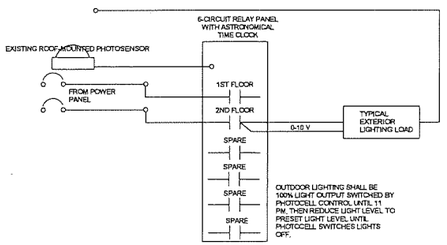
5. **DRAWINGS**

A. Exhibit AM_Arch – Bid Addendum 3, consisting of the following sheets: G000, A101, A103, A121, A301, A351, A359, A401, A403.
B. Exhibit AN_Structural – Bid Addendum 3, consisting of the following sheets: S001, S002, S104, S201.
C. Exhibit AO_Technology – Bid Addendum 3, consisting of the following sheet: T500.
D. Exhibit AP_Plumbing – Bid Addendum 3, consisting of the following sheets P401.
E. Exhibit AQ_Mechanical – Bid Addendum 3, consisting of the following sheet: M301.
F. Exhibit AR_Electrical – Bid Addendum 3, consisting of the following sheets: E104, E500.

6. **PROPOSAL**

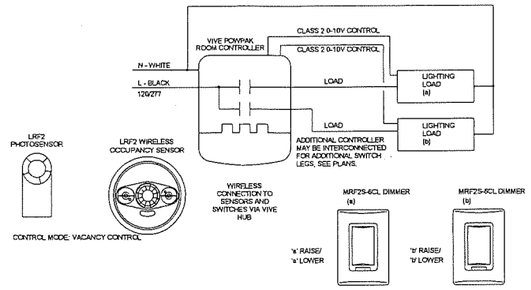
A. The Supplemental Unit Price Worksheet has been reviewed per Section 2 Item V above. A new worksheet has been posted to BidExpress in Section B of the web page. General Contractors are being advised to ensure they are including the version posted as Addendum 3 with their bid packet .

End of Contract 8162 Addendum 3



OUTDOOR LIGHTING CONTROL

CONTROL MODE: PHOTOCELL AND RELAY



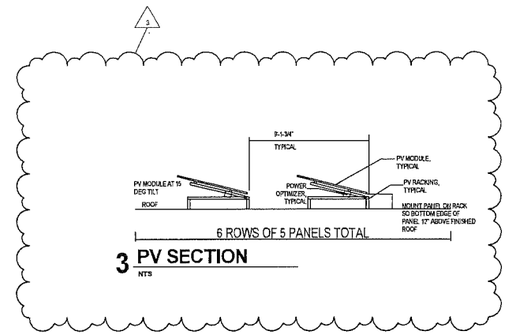
OCCUPANCY SENSOR, DAYLIGHTING PHOTOCELL, AND 0-10V DIMMING, MULTIPLE SWITCH LEGS

DETAIL NOTES

1. ALL LIGHTING CONTROL CABLING SHALL BE PROVIDED IN ACCORDANCE WITH SPECIFICATION DIVISION 27.
2. BASIS OF DESIGN IS LUTRON VIVE SERIES DIGITAL LIGHTING CONTROL.
3. SEE FLOOR PLANS FOR OCCUPANCY SENSOR TYPES.
4. SEE PLANS FOR QUANTITY AND LOCATION OF OCCUPANCY SENSORS.
5. DETAIL SHOWN WITH DIMMERS, OCCUPANCY SENSORS, AND DAYLIGHT SENSOR AS USED IN LEARNING CENTER CLASSROOM AND SECOND FLOOR OFFICES. SEE DRAWINGS FOR SPECIFIC CONFIGURATIONS OF OTHER AREAS.

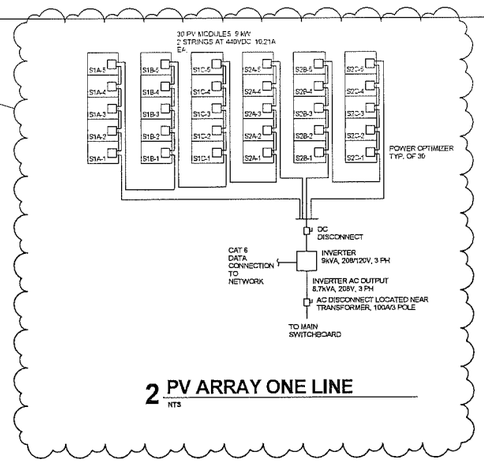
1 LIGHTING CONTROLS

NTS



3 PV SECTION

NTS



2 PV ARRAY ONE LINE

NTS

PHOTOVOLTAIC GENERAL NOTES

1. INSTALLING CONTRACTOR SHALL PROVIDE SUBMITTALS OF ALL EQUIPMENT INSTALLED WITHIN THE COMPLETED SYSTEM. SUBMITTALS SHALL INCLUDE PHYSICAL LAYOUT DRAWINGS AND INTERCONNECTION DIAGRAMS.
2. THE PV SYSTEM SHALL INCLUDE RAPID SHUTDOWN MEETING THE 2017 NEC REQUIREMENTS AT A MINIMUM.
3. THE PV SYSTEM SHALL INCLUDE LABELING AS REQUIRED WITHIN THE NEC. LABELING SHALL INCLUDE A PLACARD AT THE ELECTRICAL SERVICE IDENTIFYING THE LOCATION OF INVERTERS AND RAPID SHUTDOWN DEVICES - SEE SHEET E112 FOR DISCONNECT LOCATION.
4. COORDINATE INSTALLATION OF THE PV SYSTEM WITH THE UTILITY. THE ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR ALL APPLICATIONS, INSPECTIONS, AND ADDITIONAL REQUIREMENTS THE UTILITY MAY HAVE FOR A UTILITY INTERACTIVE SYSTEM. THE CITY SHALL PAY ANY PERMIT COSTS.
5. DC STRINGS AND INVERTED AC POWER SHALL EACH INCLUDE DISCONNECTING MEANS AND FUSE PROTECTION.
6. SEE ARCHITECTURAL SHEET A105 AND ELECTRICAL ROOF PLAN E104 FOR FURTHER INFORMATION ON PHYSICAL LAYOUT.

PV ARRAY BASIS OF DESIGN

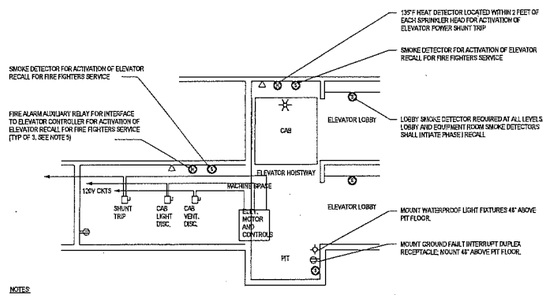
BASIS OF DESIGN:
MODULES: SEE SPECIFICATION FOR MANUFACTURERS & MODELS
- MAX POWER: 285 - 300W
- OPEN CKT. VOLTAGE: 40.1V MAX.
- SHORT CIRCUIT CURRENT: 10.23A MAX.
- MAXIMUM POWER POINT CURRENT: 9.57A
- DIMENSIONS: 37.8" X65.0" X 1.7

INVERTER: SOLAREDGE 9 PHASE INVERTER 120/208OV GRID, SE9KUS
INPUT
- MAX DC POWER: 12.15kW
- MAX INPUT VOLTAGE DC+ TO DC- 500VDC
- NOMINAL INPUT VOLTAGE DC+ TO DC- 400VDC
- MAXIMUM INPUT CURRENT: 26.5ADC

OUTPUT
- RATED AC OUTPUT: 9kVA
- AC OUTPUT VOLTAGE NOMINAL (L-N/L-L) 120/208V
- AC FREQUENCY (NOMINAL): 60 HZ
- MAX CONTINUOUS OUTPUT CURRENT (PER PHASE): 25
- RAPID SHUTDOWN : ADD ON KIT COMMUNICATES WITH OPTIMIZERS.

POWER OPTIMIZER: SOLAREDGE P320
- MPPT OPERATING RANGE: 8-48VDC
- MAXIMUM DC INPUT CURRENT: 13.75ADC
- MAXIMUM OUTPUT CURRENT: 15ADC
- MAX OUTPUT VOLTAGE: 60VDC

RACK: SEE SPECIFICATION.



NOTES:

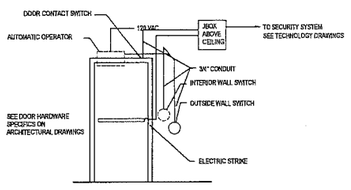
1. ANSI/ASME A17.1-1996/A17.1a-1997/A17.1b-1998, SAFETY CODE FOR ELEVATORS AND ESCALATORS.
2. THE HOISTWAY AND MACHINE ROOM FOR THIS INSTALLATION ARE SPRINKLED. THEREFORE, ANSI/ASME A17.1 REQUIRES THAT THE MAIN POWER SUPPLY TO THE AFFECTED ELEVATOR BE AUTOMATICALLY DISCONNECTED UPON OR PRIOR TO APPLICATION OF WATER
3. IN ACCORDANCE WITH SECTION 3-9.4 OF ANSI/NFPA 72, NATIONAL FIRE ALARM CODE, HEAT DETECTORS USED TO SHUT DOWN ELEVATOR POWER PRIOR TO SPRINKLER OPERATION SHALL HAVE BOTH LOWER TEMPERATURE RATING AND A HIGHER SENSITIVITY THAN THE SPRINKLER HEADS. COORDINATE REQUIREMENTS WITH INSTALLATION OF FIRE PROTECTION SYSTEM.
4. FIRE ALARM SYSTEM SMOKE DETECTORS SHALL BE INSTALLED IN ELEVATOR LOBBIES, ELEVATOR HOISTWAY AND ELEVATOR MACHINE ROOM TO INITIATE ELEVATOR RECALL FOR FIRE FIGHTERS SERVICE IN ACCORDANCE WITH RULE 211.3 OF ANSI/ASME A17.1 AND SECTION 3-8.3 OF ANSI/NFPA 72.
5. IN ACCORDANCE WITH SECTION 3-8.3.7 OF ANSI/NFPA 72, THREE (3) EACH FIRE ALARM AUXILIARY RELAYS SHALL BE PROVIDED IN THE ELEVATOR MACHINE ROOM TO INTERFACE WITH THE ELEVATOR CONTROLLER. EACH RELAY SHALL PROVIDE THE FOLLOWING SIGNAL (OPERATION OF CONTACTS), RESPECTIVELY:

A. SMOKE DETECTOR IN THE DESIGNATED (PRIMARY) ELEVATOR LOBBY IS ACTIVATED;
B. SMOKE DETECTOR IN ANY OF THE ELEVATOR LOBBIES EXCEPT THE DESIGNATED (PRIMARY) LOBBY IS ACTIVATED.
C. SMOKE DETECTOR(S) IN THE HOISTWAY AND/OR ELEVATOR MACHINE ROOM IS ACTIVATED.

SYMBOLS LEGEND	
△	SPRINKLER HEAD
Ⓢ	SMOKE DETECTOR
Ⓗ	HEAT DETECTOR
□ᵀ	SHUNT TRIP
☆	WALL MOUNTED LIGHT
⚲	DUPLEX RECEPTACLE

5 ELEVATOR DETAILS

1/8" = 1'-0"



4 DOOR DETAILS

1/4" = 1'-0"

MSR 710 South 2nd Street, 8th Floor Minneapolis, Minnesota 55401-2282
Architecture Interiors and Urban Design 612 375 0336 tel 612 342 2216 fax www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201 Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
303 South Paterson Street, Suite 1 Madison, WI 53703
608.251.3600 tel

Structural Engineer, Technology and A/V
IMEG Corp.
1600 Deming Way, Suite 200 Middleton, WI 53562
608.223.9600 tel

MEP Engineer
MEP Associates, LLC
660 Blue Gentian Road, Suite 175 Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
575 Minnesota Ave West St. Paul, MN 55107
651.251.1880 tel

Greenhouse Design
Rough Brothers, Inc.
5512 Vine Street Cincinnati, OH 45217
513.242.0310 tel

REVISED

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Engineer under the Laws of the State of Wisconsin.
ENGINEER SEAL

Signature:
Print Name: Randall A. Jacobs
Date: JUNE 6, 2018 License No.: 35721

ISSUE		
MARK	DATE	DESCRIPTION
1	09.01.2017	SCHEMATIC DESIGN SUBMISSION
	12.05.2017	DD PRICING SET
	01.12.2018	DESIGN DEVELOPMENT SUBMISSION
	03.17.2018	CDC SUBMISSION
	03.30.2018	75% CD PRICING ISSUE
	05.04.2018	100% CONSTRUCTION DOCUMENTS
	06.01.2018	BID ISSUE
	04.04.2018	PERMIT ISSUE
	06.11.2018	ADDENDUM 1
	06.22.2018	ADDENDUM 2
	07.03.2018	ADDENDUM 3

PROJECT NO. 2017016

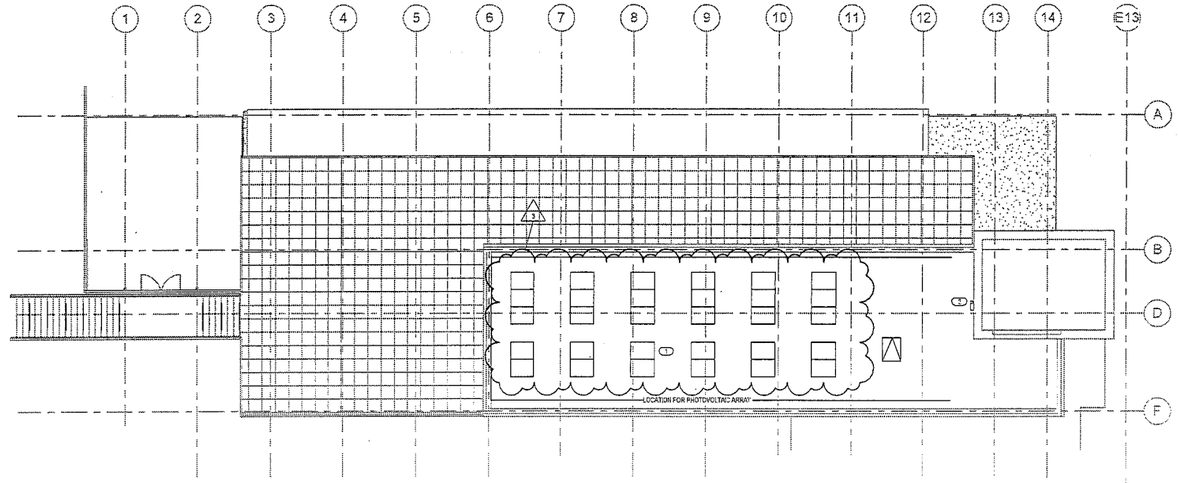
PROJECT PHASE: BID DOCUMENTS

DRAWN BY: MSR CHECKED BY: MSR

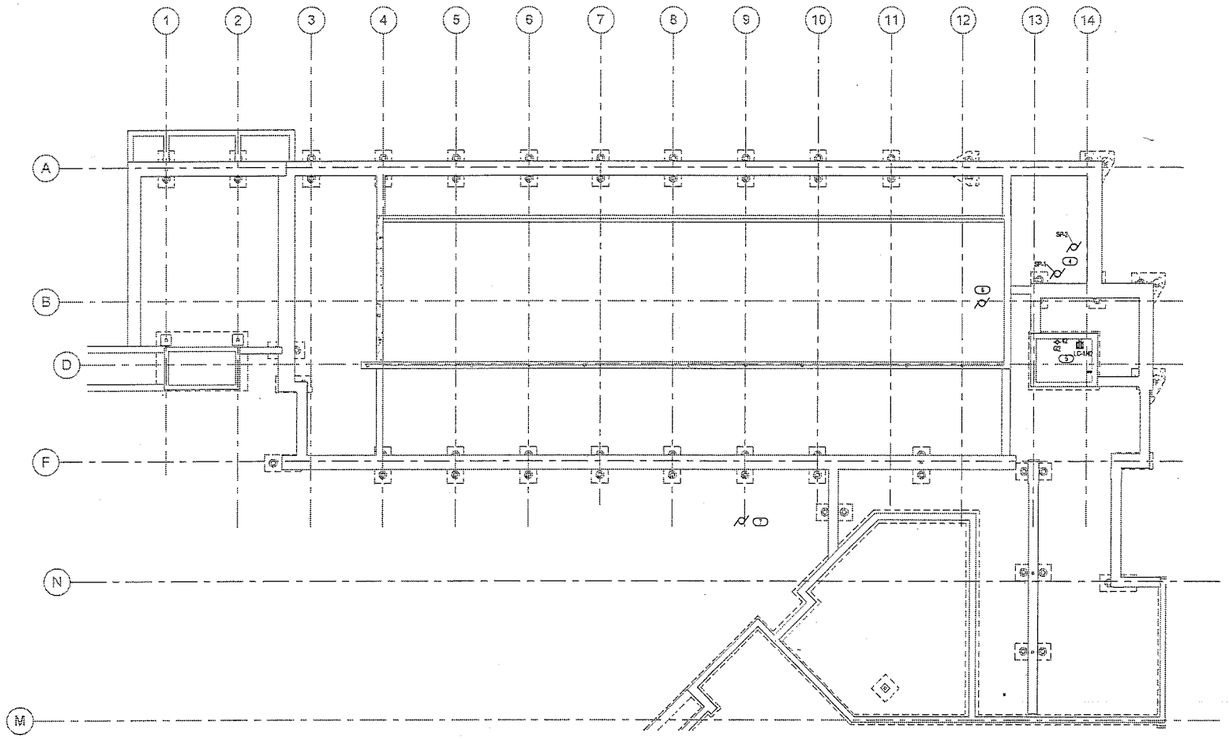
Drawing ©2017 Copyright Mays, Seliski & Rasmussen, Ltd.

ELECTRICAL DETAILS

E500



1 LEARNING CENTER ELECTRICAL ROOF PLAN
1/8" = 1'-0"



2 LEARNING CENTER ELECTRICAL PLAN - BELOW GRADE
1/8" = 1'-0"

GENERAL POWER NOTES

A. SEE SHEET E000 FOR SYMBOLS, ABBREVIATIONS, AND PROJECT GENERAL NOTES.

B. SEE ARCHITECTURAL, MECHANICAL AND GREENHOUSE DRAWINGS FOR ADDITIONAL INFORMATION ON EQUIPMENT LOCATIONS.

C. SEE MOTOR AND EQUIPMENT SCHEDULE FOR MOTOR CONNECTION INFORMATION. COORDINATE THE LOCATION OF EQUIPMENT CONNECTIONS AND DISCONNECTING MEANS WITH THE EQUIPMENT SUPPLIER.

D. VERIFY ROUGH-IN REQUIREMENTS OF ALL OWNER FURNISHED EQUIPMENT PRIOR TO INSTALLATION.

E. GFCI PROTECTED RECEPTACLES SHALL BE PROVIDED WHERE THE RECEPTACLE IS LOCATED WITHIN 6' OF A SINK AND IN ANY WET LOCATION.

F. MINIMUM HOME RUN CONDUIT SIZE SHALL BE 3/4".

G. PANEL CIRCUIT DESIGNATIONS PROVIDED FOR DESIGN INTENT. EC SHALL VERIFY AND DOCUMENT EXACT CIRCUIT NUMBERS AS CIRCUITED IN THE FIELD.

KEYED NOTES

1. PHOTOVOLTAIC ARRAY BASIS OF DESIGN: MODULES W. PANEL ARRAYS ON FIXED, NON-BALLASTED RACKING. DC OPTIMIZERS. INVERTERS TO 208 VOLT 3-PHASE. SOLAR PANELS MOUNTED ON RACKS SUCH THAT 1' CLEARANCE IS LEFT ABOVE ROOF. SEE DETAIL ON E500.
2. MOUNT DC DISCONNECT TO WALL IN THIS LOCATION. SEE ONE LINE ON SHEET E500.
3. NOT USED.
4. CONTROLS FOR SUMP PUMPS MOUNTED ON WALL IN MECH ROOM 120. SEE SHEET P201 FOR SUMP PUMP DETAIL.
5. MOUNT LIGHT FIXTURE AND SWITCH ON WALL AND GFCI RECEPTACLE IN ELEVATOR PIT.
6. RAIN WATER CISTERN SUMP PUMP. SEE NOTES ON SHEETS E102 AND E112.
7. LIFT STATION MOTOR. SEE NOTE ON SHEET E102.

MSR 710 South 2nd Street, 8th Floor Minneapolis, Minnesota 55401-2282
Architecture Interiors and Urban Design
612 375 0336 tel
612 342 2218 fax
www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201 Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
303 South Paterson Street, Suite 1 Madison, WI 53703
608.251.3600 tel

Structural Engineer, Technology and A/V
IMEG Corp.
1800 Deming Way, Suite 200 Middleton, WI 53562
608.223.9600 tel

MEP Engineer
MEP Associates, LLC
860 Blue Gentian Road, Suite 175 Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
575 Minnesota Ave West St. Paul, MN 55103
651.251.1650 tel

Greenhouse Design
Rough Brothers, Inc.
5513 Vine Street Cincinnati, OH 45217
513.242.5310 tel

Olbrich Botanical Gardens
Expansion Phase 1
BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Engineer under the Laws of the State of Wisconsin.
ENGINEER SEAL

Signature:
Print Name: Randall A. Jacobs
Date: JUNE 4, 2018 License No: 35771

ISSUE	DATE	DESCRIPTION
1	09.09.2017	SCHEMATIC DESIGN SUBMISSION
	12.08.2017	DD PRICING SET
	01.10.2018	DESIGN DEVELOPMENT SUBMISSION
	01.17.2018	UDC SUBMISSION
	03.31.2018	70% CD PRICING ISSUE
	05.04.2018	100% CONSTRUCTION DOCUMENTS
	05.31.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE
	06.11.2018	ADDENDUM 1
	06.22.2018	ADDENDUM 2
	07.03.2018	ADDENDUM 3

PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: MSR CHECKED BY: MSR

LEARNING CENTER ROOF AND BELOW GRADE POWER PLAN

E104

REVISED

System description:
Dedicated outdoor air air handler for dehumidification and primary air supply. Unit includes enthalpy wheel and intrinsic DX cooling with hot gas re-heat of desiccant wheel. Supply fan, exhaust fan, and regeneration fan. Heating coil and cooling coil.

Manufacturer Controller:
The manufacturer provides primary control of certain air handler functions, including those noted in the matrix shown on this page. Controls contractor shall coordinate all necessary work with the manufacturer during submittal phase.

Schedule / Enable:
Air handler shall be scheduled through the BAS and shall operate under either occupied or unoccupied modes.

Occupied / Unoccupied Modes:
1. During unoccupied mode:
   A. Unit shall be off (all dampers and valves shall be closed, all fans and the wheels shall be off) unless 2 (adj) or more zones exceed their setpoint. Then unit shall enter unoccupied cooling mode. For purposes of this sequence, only zones receiving airflow from the air handler shall be considered, so zones with dedicated cooling systems, heat only systems, or pass-through air only, shall be counted.
   B. In unoccupied cooling mode, if conditions do not allow for economizer mode, the unit shall enter economizer mode. This will be accomplished by allowing the unit to enter an 'occupied' mode for purposes of the on-board, manufacturer-provided, programming. If occupancy status changes at the BAS, it will change this status. If outdoor conditions exit economizer parameters, the unit shall likewise exit nighttime economizer operations.
   C. In unoccupied cooling mode, it conditions allow for economizer mode, the unit shall enter economizer mode. This will be accomplished by allowing the unit to enter an 'occupied' mode for purposes of the on-board, manufacturer-provided, programming. If occupancy status changes at the BAS, it will change this status. If outdoor conditions exit economizer parameters, the unit shall likewise exit nighttime economizer operations.
2. The following sequences apply to occupied state unless individually noted otherwise.

Supply Fan:
Fan operates to maintain duct static, with reset.
1. Fan shall modulate speed to maintain 0.5" w.c. (adj) at the duct static pressure sensor. Final nominal setpoint shall be confirmed and set by the balancing contractor.
2. Static pressure setpoint shall be reset using a trim and response logic, within the bounds of 0.4" w.c. (adj) and 1.2" w.c. (adj). Final maximum and minimum setpoints shall be confirmed and set by the balancing contractor based on a worst-case test (i.e. to satisfy worst zone even when all air valves at minimum and all maximum design condition).
3. Trim and response is as follows:
   A. Poll all variable air volume boxes; BAS shall allow for any zone to be removed from poll or added to poll through interface of VAV page.
   B. A zone pressure request is generated when a VAV is 95% (adj) or greater than maximum flow. The request is eliminated at 80% (adj) or below of flow.
   C. Fan shall adjust speed every 90 (adj) minutes. If more than 1 (adj) zones are sending a pressure request, the setpoint shall be increased by 0.04" w.c (adj). If less than 1 (adj) zones are sending a pressure request, the setpoint shall be decreased by 0.04" w.c (adj). If 1 (adj) zone are sending a pressure request, the setpoint shall not change.
   D. The controls contractor shall tune the reset after the building has been occupied to eliminate instability, and shall provide a trend graph to show stability.

Exhaust Fan:
Fan operates to exhaust airflow equal to the outdoor airflow.
1. Fan shall modulate speed to exhaust airflow (as measured at the exhaust airflow measuring station) equal to the outdoor airflow rate (as measured at the outdoor airflow measuring station) LESS a programmed offset value of 200cfm (adj).
2. This sequence applies in occupied economizer or occupied non-economizer operation.
3. During unoccupied operation, the exhaust fan shall be off.

Regeneration Fan:
Fan operates at all times when unit is in dehumidification mode, and hot gas reheat is enabled (refer to sequence matrix).
1. Fan shall modulate speed to achieve 115F exhaust air (shown after the desiccant wheel, fifty unit controller.)

Discharge Air Temperature Control:
Unit DAT is allowed to float, with restrictions for heating and alarm.
1. Discharge air temperature shall be allowed to float between 62F (adj) and 70F (adj). (This allows for unit to enter regeneration mode, and other operating modes, without risk of or need for re-heat or sub-cool.)
2. If an alarm for temperature (see below) is generated, DAT shall be reset to 54F (adj).

Chilled Water Coil:
Cooling coil in last stage to meet discharge air temperature if economizer, energy recovery, nor regeneration heat can do so.
1. If discharge air temperature is above upper limit of setpoint range, and economizer is disabled or is at 100%, or enthalpy wheel is at full speed, then modulate valve open to achieve discharge air setpoint.
2. If discharge air temperature is below lower limit of setpoint range, and the valve is open, then modulate valve closed to achieve discharge air setpoint.
3. The cooling coil shall be locked out below 55F (adj) outdoor air temperature.

Heating Water Coil:
Heating coil in last stage to meet discharge air temperature if economizer, energy recovery, nor regeneration heat can do so.
1. If discharge air temperature is below lower limit of setpoint range, and economizer is disabled or is at 100%, or enthalpy wheel is at full speed, then modulate valve open to achieve discharge air setpoint.
2. If discharge air temperature is above upper limit of setpoint range, and the valve is open, then modulate valve closed to achieve discharge air setpoint.
3. The heating coil shall be locked out above 65F (adj) outdoor air temperature.

Economizer Operation:
Economizer is a fixed dry-bulb type.
1. Economizer will be enabled when the outdoor air temperature conditions align with the matrix column tagged 'Med. Enthalpy Well' mode.
2. When enabled, the economizer shall modulate the outdoor air dampers concurrently and inversely to the recirculation damper to achieve the discharge air setpoint.
3. Economizer mode damper operations shall not allow outdoor air to drop below minimum outdoor air airflow rates scheduled.

Enthalpy Wheel Operation:
Variable speed total energy recovery between exhaust and outdoor air; controlled by unit controller

Ventilation Air Control:
Resets ventilation air at air handler based on return air co2 levels.
1. Sequence applies only during occupied mode.
2. At the zone level: refer to VAV sequence.
3. At the air handler level:
   A. The air handler shall be programmed with minimum and reset outdoor air values. Ventilation requirements are noted on mechanical life sheet, with minimum outdoor air rate shown under Wisconsin Code requirements (approximately 750cfm) and full outdoor air rated under ASHRAE requirements (approximately 1500cfm).
   B. Normal / ambient CO2 level is 1000 (adj) ppm.
   C. If CO2 level is below setpoint, the air handler shall operate to maintain the minimum outdoor airflow rate scheduled at the outdoor airflow sensor.
   D. If CO2 is above setpoint, the air handler shall revise the outdoor airflow rate from minimum value to reset value until the return air CO2 level drops below setpoint by a set value (200ppm, adj), and then shall return to minimum outdoor airflow.

Damper Operations:
Unit includes modulating outdoor air damper (at unit), two-position exhaust air damper (at louver), modulating recirculation damper (in unit).
1. Outdoor air damper:
   A. Outdoor air damper shall be closed when the unit is in unoccupied mode, unless the unoccupied economizer operation is active.
   B. During occupied hours, if the unit is not in economizer mode, the outdoor air damper shall modulate to maintain the minimum outdoor airflow rate scheduled.
   C. If the unit is in economizer mode (occupied or unoccupied), the outdoor air damper shall operate as described in the economizer section.
2. Exhaust air damper
   A. The exhaust air damper shall be closed when the unit is in unoccupied mode.
   B. During occupied hours, and during economizer operation, the relief air damper shall be open.
3. Recirculation damper shall at all times operate concurrently to, and in opposition to, the outdoor air damper.

Alarms:
See also alarms section in specifications.
1. Alarm if any valve fails (all valves shall provide feedback on position).
2. Alarm if any damper fails (all dampers shall provide feedback on position).
3. Alarm if supply air temperature setpoint cannot be achieved (+/- 2F (adj) within 5 minutes (adj) of setpoint adjustment
4. Alarm if any filter differential pressure exceeds 1" w.c. (adj)
5. Alarm if any safety is tripped.
6. Alarm if the unit controller sends an alarm signal (generic).
7. Alarm if any space temperature remains beyond setpoint (and deadband) for greater than 30 minutes (adjustable).
   A. If this condition is for a space higher than setpoint (as opposed to a space lower than setpoint), enable the chilled water coil and set the discharge air temperature setpoint at 54F (adj). Remain in this mode until all spaces return to setpoint, and then return to normal operation.

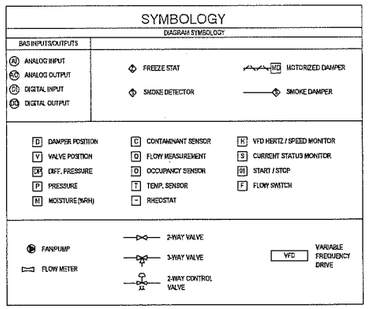
Safeties:
All safeties shall be programmed to change the unit from enabled to not enabled, that shall shut down.
1. Freeze stat: freezestat shall trip if temperature drops below 35F (adj). Reset of freezestat is manual.
2. Supply fan high pressure limit: if supply air pressure exceeds 2" w.c. (adj), Reset of high pressure limit is manual.
3. Exhaust fan low pressure limit: low pressure limit shall trip if the duct-mounted static pressure probe drops below setpoint, -2" w.c. (adj). Reset of low pressure limit is manual.
4. Fire alarm: shall trip upon activation of duct smoke detectors. Reset of fire alarm is manual.

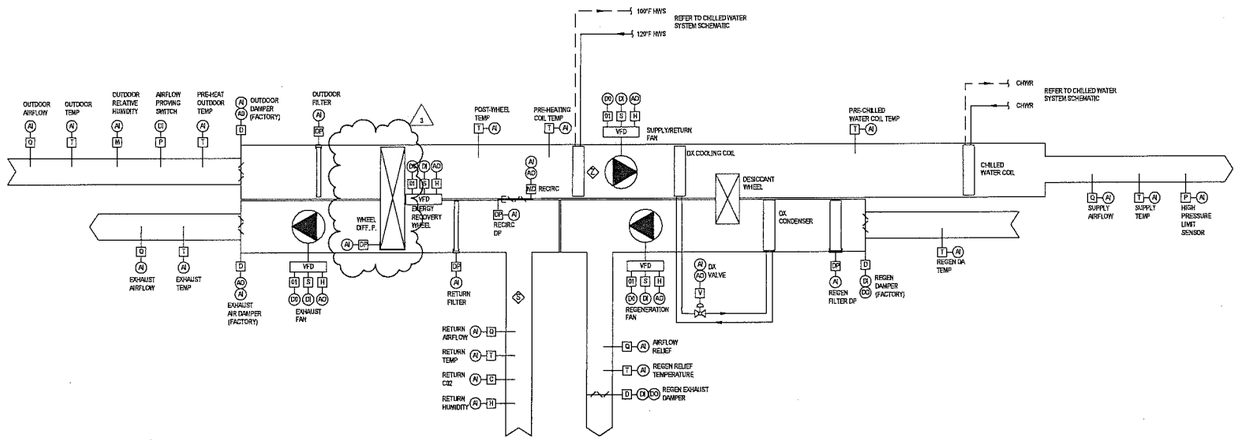
The following table lists all possible unit operating modes and also lists the corresponding component operation for each mode.

Control Inputs				OCC MODE 1 ENTHALPY DEHUMID	OCC MODE 2 ENTHALPY COOLING	OCC MODE 3 ENTHALPY DEHUMID	OCC MODE 4 ENTHALPY COOLING	OCC MODE 5 ENTHALPY LOCKOUT	OCC MODE 6 ENTHALPY HEATING	UNOCC MODE DEHUMID	UNOCC MODE DEHUMID	UNOCC MODE HEAT	UNOCC MODE HEAT
Occupied Signal ON	$h_{OA} > h_{RA}$	$DP_{OA} > DP_{RA}$	-	0%	-	-	-	-	-	-	-	-	-
		$DP_{OA} < DP_{RA}$	-	-	0%	-	-	-	-	-	-	-	-
		$DP_{OA} > DP_{RA}$	-	-	-	0%	-	-	-	-	-	-	-
	$h_{OA} < h_{RA}$	$T_{OA} < T_{RA}$	-	-	-	-	ON	-	-	-	-	-	-
		$DP_{OA} < DP_{RA}$	$T_{OA} > T_{RA}$ & $T_{OA} > T_{SPACE}$	-	-	-	-	ON	-	-	-	-	-
			$T_{OA} < T_{RA}$ & $T_{OA} < T_{SPACE}$	-	-	-	-	-	ON	-	-	-	-
Occupied Signal OFF	-	$DP_{SPACE} > DP_{SETPOINT}$	$T_{SPACE} > T_{SETPOINT}$	-	-	-	-	-	-	ON	-	-	-
	-		$T_{SPACE} < T_{SETPOINT}$	-	-	-	-	-	-	-	ON	-	-
	-	$DP_{SPACE} < DP_{SETPOINT}$	$T_{SPACE} > T_{SETPOINT}$	-	-	-	-	-	-	-	-	ON	-
	-		$T_{SPACE} < T_{SETPOINT}$	-	-	-	-	-	-	-	-	-	ON

Components									
Supply VFD	ON/MOD	ON/MOD	ON/MOD	ON/MOD	OFF	ON	ON/MOD	ON/MOD	OFF	ON
Supply VFD	ON/MOD	ON/MOD	ON/MOD	ON/MOD	OFF	ON/MOD	ON/MOD	ON/MOD	ON/MOD	ON/MOD
Exhaust VFD	ON/MOD	ON/MOD	ON/MOD	ON/MOD	OFF	ON/MOD	ON/MOD	ON/MOD	OFF	OFF
Exhaust Damper	OPEN/MOD	OPEN/MOD	OPEN/MOD	OPEN/MOD	60%-100%	60%-100%	OPEN	OPEN	CLOSED	CLOSED
OA Damper	OPEN/MOD	OPEN/MOD	OPEN/MOD	OPEN/MOD	60%-100%	60%-100%	OPEN	OPEN	CLOSED	CLOSED
Energy Damper	CLOSED	CLOSED	CLOSED	CLOSED	CLOSED	CLOSED	60%-100%	60%-100%	60%-100%	60%-100%
Steam Humidifier	ON	ON	ON	OFF	OFF	OFF	OFF	ON	ON	OFF
Enthalpy Wheel	ON/MOD	ON/MOD	OFF	OFF	OFF	ON/MOD	OFF	ON	OFF	OFF
Regen Wheel	OFF	OFF	ON	ON	OFF	OFF	OFF	ON	OFF	OFF
Hot Water Valve Operation	OFF	OFF	OFF	OFF	OFF	OPEN/MOD	OFF	OPEN/MOD	ON/MOD	CLOSED
Cold Water Valve Operation	OPEN/MOD	OPEN/MOD	OPEN/MOD	OPEN/MOD	CLOSED	CLOSED	OPEN/MOD	CLOSED	MOD	OPEN/MOD

h_{OA} = Outdoor Air Enthalpy; T_{OA} = Outdoor Air Temperature; DP_{OA} = Outdoor Air Dew Point
T_{SPACE} = Space Temperature; DP_{SPACE} = Space Dew Point





1 MODULAR AHU WITH ENTHALPY RECOVERY
NOT TO SCALE

MSR
710 South 2nd Street, 8th Floor
Minneapolis, Minnesota 55401-2282
Architecture, Interiors and Urban Design
612 375 0336 tel
612 342 2216 fax
www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201
Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
333 South Paterson Street, Suite 1
Madison, WI 53703
608.251.3500 tel

Structural Engineer, Technology and A/V
IMEG Corp.
1600 Deming Way, Suite 200
Middleton, WI 53562
608.223.9500 tel

MEP Engineer
MEP Associates, LLC
800 Blue Gentian Road, Suite 175
Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
575 Minnehaha Ave West
St. Paul, MN 55103
651.291.1550 tel

Commissioning Design
Rough Brothers, Inc.
5513 Vine Street
Cincinnati, OH 45217
513.242.0310 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Engineer under the Laws of the State of Wisconsin, ENGINEER SEAL

Signature:
Print Name: Larry Nierstedt
Date: JUNE 4, 2018 License No: E-30240

MARK	DATE	DESCRIPTION
	09.08.2017	SCHEMATIC DESIGN SUBMISSION
	12.08.2017	DD PRICING SET
	01.19.2018	DESIGN DEVELOPMENT SUBMISSION
	03.17.2018	IUCC SUBMISSION
	05.31.2018	75% CD PRICING ISSUE
	06.04.2018	95% CONSTRUCTION DOCUMENTS
	06.21.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE
1	06.11.2018	ADDENDUM 1
2	06.22.2018	ADDENDUM 2
3	07.02.2018	ADDENDUM 3

PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: MSR CHECKED BY: MSR

MECHANICAL CONTROLS SCHEMATICS

M301

REVISED

PLUMBING FIXTURE SCHEDULE

MARK	FIXTURE	MANUFACTURER	MODEL	MOUNT	ROUGH-IN SCHEDULE COLD	HOT	WASTE	VENT	FITTINGS AND REMARKS
WC-1A	MANUAL FLUSH VALVE WATER CLOSET	ZURN	Z5615-BWL	WALL	1-1/2"	-	4"	2"	WITH 1.28GPF MANUAL VALVE MODEL SLOAN ROYAL 111-1.28, ELONGATED OPEN FRONT SEAT, Z1256 OR Z1202 ECCARRY CARRIER, WHERE TAGGED WC-1A, UNIT SHALL BE INSTALLED TO A.D.A. HEIGHT.
WC-1B	WALL HUNG LAVATORY	AMERICAN STANDARD	AFWALLMEC	WALL	3/4"	3/4"	2"	2"	DECKED FAUCET WITH 0.5GPM FLOW AND A PERMANENT INTEGRATED TRIM PROVIDING POINT OF USE MIXING VALVE, ASSE 1070 APPROVED.
B-1	LEARNING CENTER CLASSROOM SINK	ELKAY	EFRU191810	UNDERMOUNT	3/4"	3/4"	2"	2"	PROVIDE ELKAY LKDK2232 8" CENTERSET, CONCEALED DECK MOUNT FAUCET WITH 1.5 GPM FLOW RATE. PROVIDE POINT OF USE MIXING VALVE, ASSE 1070 APPROVED.
B-2	LEARNING CENTER CLASSROOM SINK	ELKAY	ELUHAD221255TP	UNDERMOUNT	3/4"	3/4"	2"	2"	PROVIDE ELKAY LKSTNC SENSOR OPERATED AT 0.5 GPM FLOW. PROVIDE POINT OF USE MIXING VALVE, ASSE 1070 APPROVED.
MS-1	MOP SINK	MUSTEE	63M	FLOOR	3/4"	3/4"	2"	1 1/2"	PROVIDE ELKAYA SERVICE FAUCET, 65,700 HOSE AND HOSE HOLDER, 65,800 MOP HANGER, AND 97.2424 WALL GUARDS.
DF-1	BI-LEVEL WITH BOTTLE FILLER	ELKAY	LZWSLHPBM2K	WALL	3/4"	-	2"	1-1/2"	INSTALL TO COMPLY WITH A.D.A. REQUIREMENTS. PROVIDE FILTER; PROVIDE TWO ADDITIONAL FILTERS FOR REPLACEMENT.
HB-1	NON- FREEZELESS WALL FAUCET	WOODFORD	19SP	WALL	3/4"	-	-	-	ANTI-SIPHON WALL FAUCET WITH INTEGRAL CHECK AND ATMOSPHERIC VENT.
HB-2	FREEZELESS WALL HYDRANT	WOODFORD	87	EXT. WALL	3/4"	-	-	-	ANTI-SIPHON, CHROME FINISH, EXPOSED WITH OPERATING KEY.

FLOOR AND ROOF DRAIN SCHEDULE

MARK	FIXTURE	MANUFACTURER	MODEL	MOUNT	ROUGH-IN SCHEDULE WASTE	VENT	FITTINGS AND REMARKS
FD-1	FLOOR DRAIN	ZURN	Z5615-BWL	FLOOR	3"	2"	PROVIDE 3" OUTLET, WHERE FUNNELS ARE INDICATED ON PLAN, PROVIDE ZURN OVAL FUNNEL, FIELD WELDING OF FUNNELS TO STRAINERS IS NOT ALLOWED.
FS-1	FLOOR SINK	ZURN	Z1909	FLOOR	4"	2"	12X12X6 PORCELAIN ENAMEL CAST IRON FLOOR SINK, PROVIDE WITH LOOSE SET 3/4" GRATE, ALUMINUM DOME BOTTOM STRAINER.
TD-1	TRENCH SYSTEM	ACO DRAIN	K100	FLOOR	-	-	UNIT SHALL BE MODULAR TRENCH DRAIN SYSTEM. PROVIDE SLOTTED STEEL, BOLTLESS LOCKING, NO SLIP AND ADA COMPLIANT GRATE. PROVIDE GRATE REMOVAL TOOL (TOTAL OF 4), TRENCH DRAIN CLEANING TOOL (TOTAL OF 4). ALL PARTS SHALL BE LEED CERTIFIED.
CB-1	CATCH BASIN	ACO DRAIN	K2-9020	FLOOR	4"	SEE PLAN	INLINE CATCH BASIN WITH 4" OUTLET AT 23.19" INVERT. INCLUDE INLINE TRASH BUCKET.
RD-1	ROOF DRAIN	ZURN	Z100	ROOF	SEE PLAN	-	WITH PLAIN BRONZE DOME.
OFD-1	OVERFLOW ROOF DRAIN	ZURN	Z199	ROOF	SEE PLAN	-	WITH PLAIN BRONZE DOME.
AD-1	AREA DRAIN	ZURN	Z507	ROOF	SEE PLAN	-	WITH DURA-COATED CAST IRONBODY AND TOP, INCLUDE SECONDARY STRAINER AND SEDIMENT BUCKET.
AD-2	AREA DRAIN	ZURN	Z1730	ROOF	SEE PLAN	-	STAINLESS STEEL CONSTRUCTION.

EXPANSION TANK SCHEDULE

EXPANSION TANK #	SYSTEM	LOCATION	SIZE HEIGHT (IN)	SIZE DIAMETER (IN)	CAPACITY ACCEPT. VOLUME (GAL.)	CAPACITY TANK VOLUME (GAL)	PRE-CHARGE (PSIG)	MAXIMUM PRESSURE IN TANK (PSI)	SYSTEM WATER VOLUME (GAL)	SYSTEM CONNECTION SIZE (IN)	MANUFACTURER	MODEL	NOTES
ET-2	HOT WATER	FCG PUMP ROOM 36	11	5	1.43	2.1	20	150	10.6	3/4	WATTS	PLT-5	1,2

NOTES
1. PER DETAIL 2/P301.
2. INSTALL PER MANUFACTURER'S RECOMMENDATIONS.

SUMP PUMP SCHEDULE

Type Mark	MARK	DESCRIPTION	MANUFACTURER	SUMP MODEL NUMBER	SUMP SIZE	STANDARD CONNECTIONS	ELECTRICAL H.P.	ELECTRICAL VOLTS	ELECTRICAL PHASE	CHECK VALVE	GPM	CORD LENGTH	NOTES
SUMP	SP-1	POLY BASIN WITH SEALED STEEL COVER	WEL	1411-OSS	39" x 126"	2"	1/2	115	1	2"	56 @ 15'	20'	1,2,3,4
SUMP	SP-2	POLY BASIN WITH SEALED STEEL COVER	WEL	1408	36" x 144"	2"	1/2	115	1	2"	20 @15	20'	1,2,3,5

NOTES
1. AUTOMATIC VERTICAL FLOAT SWITCH.
2. SEE DETAIL 6/P301 AND 7/P301.
3. PROVIDE WITH LOCAL CONTROL PANEL FROM MANUFACTURER; NO CONNECTION TO B.A.S.
4. SIMPLEX INSTALLATION.
5. DUPLEX INSTALLATION.

CIRCULATION PUMP SCHEDULE

MARK	SERVICE	MAXIMUM WORKING PRESSURE (PSI)	MAXIMUM OPERATING TEMP (°F)	ELECTRICAL CHAR.	HP	FLANGE SIZE (IN)	FLOW (GPM)	HEAD (FT)	MANUFACTURER & MODEL NO.	NOTES
P-6	GREENHOUSE HEATING TABLE	175	230	115/1/60	1/12	3/4	5.5	5.0	BELL AND GOSSETT, ECOCIRC XL 26-30	1,2,3
P-7	GREENHOUSE MISTING TABLE	175	260	208/1/60	1/2	2.0	11	75	BELL AND GOSSETT, ECOCIRC XL 26-140	1,2,3

NOTES:
1. STAINLESS STEEL IMPELLER.
2. SEE DETAIL M/P301.
3. DISCONNECT BY ELECTRICAL CONTRACTOR.

TANKLESS GAS WATER HEATER SCHEDULE

MARK	LOCATION	TEMPERATURE RISE (DEG F)	HIGH INPUT	AIR INTAKE (IN.)	FLUE EXHAUST	MANUFACTURER	MODEL	NOTES
WH-2	GREENHOUSE	20	199	2	2	BOSCH	TR90E	1,2,3

NOTES:
1. UNIT SHALL BE OUTDOOR RATED.
2. PROVIDE CONCENTRIC VENT TERMINATION.
3. INSTALL PER MANUFACTURER'S WRITTEN INSTRUCTIONS.

MIXING VALVE SCHEDULE

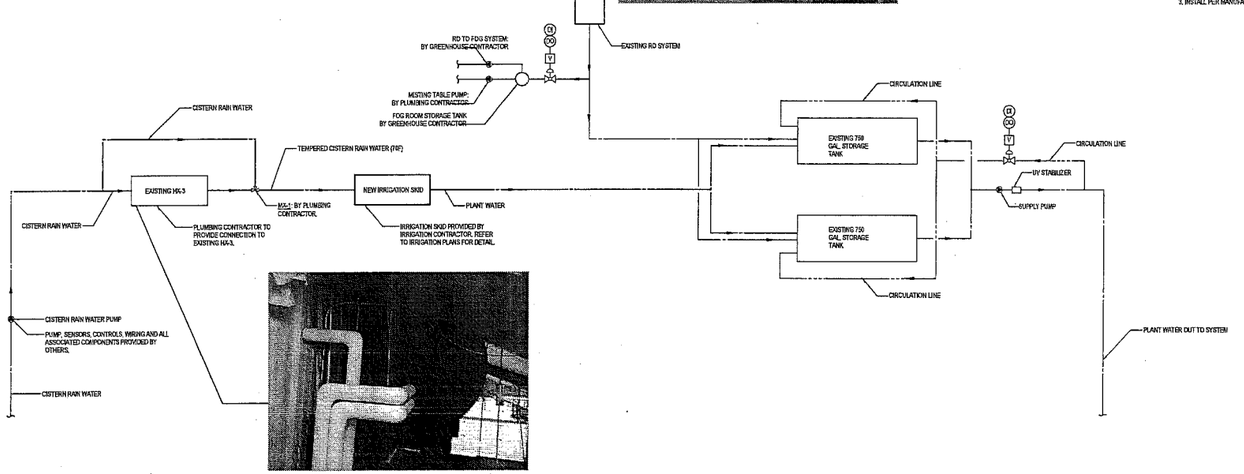
MARK	LOCATION	FLOW (GPM)	INLETS & OUTLETS (IN)	MANUFACTURER & MODEL NO.	NOTES
MV-1	HEADHOUSE	50	1 1/4, 1 1/2	LAWLER, 802	1

NOTES:
1. INSTALL PER MANUFACTURER'S RECOMMENDATIONS.

RAINWATER SYSTEM DESIGN INTENT:
1) IF RAIN WATER IS AVAILABLE IN THE CISTERN, CISTERN RAIN WATER SHALL BE USED AS PRIMARY SOURCE OF WATER.
   a) CISTERN RAIN WATER PUMP SHALL TURN ON WHEN THE WATER LEVEL IN THE EXISTING STORAGE TANKS REACHES LOWER LIMIT. CISTERN RAIN WATER PUMP SHALL TURN OFF WHEN THE WATER LEVEL IN THE EXISTING STORAGE TANKS REACHES UPPER LIMIT.
   b) THE RAIN WATER SHALL BE ROUTED FROM THE CISTERN RAIN WATER PUMP TO AN EXISTING SOLAR THERMAL HEAT EXCHANGER.
   c) A THERMOSTATIC MIXING VALVE SHALL BE PROVIDED DOWNSTREAM OF SOLAR THERMAL HEAT EXCHANGER AS SHOWN ON SCHEMATIC DIAGRAM. THE MIXING VALVE SHALL BE SET TO DISCHARGE TIP TEMPERED WATER.
   d) THE TEMPERED WATER SHALL PASS THROUGH AN IRRIGATION SKID TO FILTER RAIN WATER, ONCE RAIN WATER PASSES THE FILTRATION SYSTEM, IT BECOMES PLANT WATER. PLANT WATER FROM OUTLET OF IRRIGATION SKID SHALL BE ROUTED TO EXISTING STORAGE TANKS.
   e) PLANT WATER SHALL FILL STORAGE TANKS TO UPPER LIMIT.
   f) IF THERE IS DEMAND OUT IN THE SYSTEM (A VALVE OPENS), THE SUPPLY PUMP SHALL DRAW PLANT WATER FROM BOTH EXISTING STORAGE TANKS TO PROVIDE SYSTEM PRESSURIZATION; SIMULTANEOUSLY, A 2-POSITION VALVE ON THE CIRCULATION LINE SHALL BE CLOSED. IF THERE IS NO DEMAND OUT IN THE SYSTEM (NO VALVE IS OPEN), THE 2-POSITION VALVE ON THE CIRCULATION LINE SHALL OPEN TO ALLOW CIRCULATION OF PLANT WATER BETWEEN THE EXISTING STORAGE TANKS.
2) IF RO RAIN WATER IS AVAILABLE IN THE CISTERN, RO WATER SHALL BE USED AS PRIMARY SOURCE OF WATER.
   a) RO WATER SHALL FILL EXISTING STORAGE TANKS WHEN THE WATER LEVEL IN THE TANKS REACHES LOWER LIMIT.
   b) IF THERE IS DEMAND OUT IN THE SYSTEM (A VALVE OPENS), THE SUPPLY PUMP SHALL DRAW RO WATER FROM BOTH EXISTING STORAGE TANKS TO PROVIDE SYSTEM PRESSURIZATION; SIMULTANEOUSLY, A 2-POSITION VALVE ON THE CIRCULATION LINE SHALL BE CLOSED. IF THERE IS NO DEMAND OUT IN THE SYSTEM (NO VALVE IS OPEN), THE 2-POSITION VALVE ON THE CIRCULATION LINE SHALL OPEN TO ALLOW CIRCULATION OF RO WATER BETWEEN THE EXISTING STORAGE TANKS.
   c) IF THERE IS DEMAND OUT IN THE SYSTEM (A VALVE OPENS), THE SUPPLY PUMP SHALL DRAW PLANT WATER FROM BOTH EXISTING STORAGE TANKS TO PROVIDE SYSTEM PRESSURIZATION; SIMULTANEOUSLY, A 2-POSITION VALVE ON THE CIRCULATION LINE SHALL BE CLOSED. IF THERE IS NO DEMAND OUT IN THE SYSTEM (NO VALVE IS OPEN), THE 2-POSITION VALVE ON THE CIRCULATION LINE SHALL OPEN TO ALLOW CIRCULATION OF PLANT WATER BETWEEN THE EXISTING STORAGE TANKS.

MISTING AND FOG SYSTEMS DESIGN INTENT:
1) A NEW RO WATER STORAGE TANK SHALL BE PLACED IN THE FOG ROOM. WHEN RO WATER LEVEL IN THE TANK REACHES LOWER LIMIT, A 2-POSITION VALVE SHALL OPEN TO ALLOW FLOW OF RO WATER INTO THE STORAGE TANK. WHEN RO WATER LEVEL IN THE TANK REACHES UPPER LIMIT, A 2-POSITION VALVE SHALL CLOSE TO RESTRICT FLOW OF RO WATER INTO THE STORAGE TANK.
2) MISTING AND FOG SYSTEM SHALL CONNECT SEPARATELY TO THE STORAGE TANK. MISTING AND FOG SYSTEM SHALL NOT TEE-OFF FROM THE SAME LINE.
3) FOG PUMP, ASSOCIATED COMPONENTS AND FOG LINE DOWNSTREAM OF FOG PUMP PROVIDED BY GREENHOUSE CONTRACTOR.

NOTE:
THE FOG AND MISTING SYSTEMS SHALL RECEIVE RO WATER AT ALL TIMES.



2 RAIN/RO WATER SCHEMATIC
NOT TO SCALE

MSR
710 South 2nd Street, 8th Floor
Minneapolis, Minnesota 55401-2282
Architecture, Interiors and Urban Design
612 375 0336 tel
612 342 2216 fax
www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201
Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
707 South Paterson Street, Suite 1
Madison, WI 53703
608.251.3000 tel

Structural Engineer, Technology and AV
IMEG Corp.
1400 Deming Way, Suite 200
Middleton, WI 53562
608.223.0600 tel

MEP Engineer
MEP Associates, LLC
850 Bear Canteen Road, Suite 170
Bergen, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
575 Minnesota Ave West
St. Paul, MN 55103
651.291.1850 tel

Greenhouse Design
Rough Brothers, Inc.
5513 Vine Street
Cincinnati, OH 45217
513.242.0310 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Engineer under the Laws of the State of Wisconsin.
ENGINEER SEAL:

Signature:
Print Name: Larry Heiner
Date: JUNE 4, 2018 License No: E-30240

MARK	DATE	DESCRIPTION
	06.09.2017	SCHEMATIC DESIGN SUBMISSION
	12.08.2017	DD PRICING SET
	01.10.2018	DESIGN DEVELOPMENT SUBMISSION
	01.17.2018	DDC SUBMISSION
	03.21.2018	75% CD PRICING ISSUE
	05.04.2018	90% CONSTRUCTION DOCUMENTS
	06.01.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE
1	06.11.2018	ADDENDUM 1
2	06.25.2018	ADDENDUM 2
3	07.03.2018	ADDENDUM 3

PROJECT NO.
2017016
PROJECT PHASE
BID DOCUMENTS
DRAWN BY: MSR
CHECKED BY: MSR

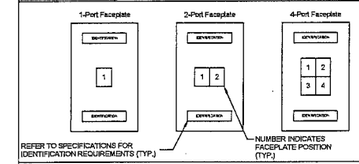
PLUMBING SCHEDULES AND RAIN/RO SCHEMATIC

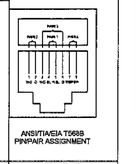
P401

REVISED

INFORMATION OUTLET SCHEDULE

SINGLE GANG WALL PLATES





ANSI/TIA/EIA T568B PINPAIR ASSIGNMENT

NOTES:
1. PROVIDE REMOVABLE BLANK INSERT(S) FOR ALL UNUSED PORTS.
2. REFER TO SPECIFICATIONS SECTION 27 05 53 FOR ADDITIONAL INFORMATION ON LABELING REQUIREMENTS.

SCHEDULE NOTES:
1. LOCATION OF FUTURE OR OWNER PROVIDED WIRELESS ACCESS POINT, PROVIDE A 20' SLACK COIL AT THE NEAREST CABLE SUPPORT FOR POSSIBLE RELOCATION AFTER WIRELESS SURVEY.

LEGEND

CAT6	CAT 6 RJ-45
CAT6A	CAT6A RJ-45
BL	BLANK FILLER MODULE
HDMI	HDMI CONNECTOR

CONFIGURATION	# FACEPLATE PORTS	FACEPLATE PORT IDENTIFICATION: POSITION 1 JACK TYPE	POSITION 2 JACK TYPE	POSITION 3 JACK TYPE	POSITION 4 JACK TYPE	NOTES
C1	1	CAT6	BL			
C2-WAP	2	CAT6A	CAT6A			1.
C2	4	CAT6	CAT6	CAT6	CAT6	
CA-1	4	CAT6	CAT6	HDMI	HDMI	
W	1	CAT6				

CONTROLLED SECURITY SCHEME (CSS) TYPE SCHEDULE

ELECTRONIC DOOR HARDWARE SUCH AS ELECTRIC STRIKES, ELECTRIC LATCH RETRACTION, ETC, SHALL BE PROVIDED AND INSTALLED BY OTHERS, REFER TO THE GENERAL TECHNOLOGY EQUIPMENT SCHEDULE ON T500 FOR CREDENTIAL READER TYPE INFORMATION.

		CREDENTIAL READER					INTEGRATION														REQUEST TO EXIT	DOOR HARDWARE																		OTHER (REFER TO NOTES)	
DOOR #	CR	CREDENTIAL READER TYPE	MULTIPLE CREDENTIAL READERS OPERATES SINGLE DOOR	OPERATES MULTIPLE DOORS	WIRELESS	AUTOMATIC DOOR OPERATOR	ELEVATOR	LOCKED BY EMERGENCY DURESS SEQUENCE	REMOTE UNLOCK VIA INTERCOM MASTER	INTRUSION DETECTION	REMOTE UNLOCK VIA PUSHBUTTON	REMOTE UNLOCK VIA FIRE COMMAND CENTER	VIDEO SURVEILLANCE	INTERNAL ELECTRIFIED HARDWARE CONNECTION	LOCAL PUSHBUTTON DOOR HARDWARE OVERRIDE	MOTION DETECTOR	ELECTRONIC LOCKING HARDWARE (BY OTHERS)	MAG LOCK	LATCH STATUS DETECTION	DOOR ALARM	MONITOR DOOR POSITION SWITCH SPDT	MONITOR DOOR POSITION SWITCH DPDT	MONITOR DOOR POSITION SWITCH FOR OVERHEAD DOOR	DELAYED EGRESS	LOCAL 120VAC POWER SUPPLY	SCHEDULE BASED LOCKING	VISUAL STROBE	NOTES
100	CR					•								•			•				•																			
102	CR													•			•				•																			
110	CR					•								•			•				•																			
113B	CR													•			•				•																			
129	CR					•															•																			
150A	CR					•								•			•				•																			
201A	CR													•			•				•																			
201B	CR					•								•			•				•																			
210	CR													•			•				•																			
GH01A	CR													•			•				•																			
GH02	CR													•			•				•																			
GH03	CR													•			•				•																			

GENERAL TECHNOLOGY EQUIPMENT SCHEDULE

THE EQUIPMENT LIST ABBREVIATIONS AND THE GENERAL TECHNOLOGY EQUIPMENT SCHEDULE ARE FOR THE CONVENIENCE OF THE CONTRACTOR. EACH CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF QUANTITIES AND SHALL FURNISH ALL MATERIAL REQUIRED, WHETHER SPECIFIED OR NOT, TO PRODUCE A SATISFACTORY WORKING SYSTEM.

CATALOG NUMBERS ARE NOT TO BE CONSIDERED COMPLETE BUT ARE GIVEN ONLY TO AID THE CONTRACTOR IN THE SEARCH FOR MATERIAL. NO MATERIAL SHALL BE ORDERED BY MANUFACTURER AND CATALOG NUMBER ONLY. EACH CONTRACTOR SHALL FIRST READ THE COMPLETE DESCRIPTION OF THE MATERIAL ON THESE DRAWINGS AND SPECIFICATIONS. THE FIRST MANUFACTURER LISTED IS THE BASIS OF DESIGN. "STANDARD COLOR" INDICATES FACTORY FINISH AVAILABLE AT NO ADDITIONAL CHARGE.

EQUIPMENT LIST ABBREVIATION	EQUIPMENT LIST DESCRIPTION	EQUIPMENT LIST MANUFACTURER AND MODEL
AC-ADO-W	ACCESS CONTROL AUTOMATIC DOOR OPENER.	
AC-CR-W	ACCESS CONTROL CARD READER, PROVIDED AS INTEGRAL PART OF SECURITY MANAGEMENT SYSTEM, REFER TO CONTROLLED SECURITY SCHEME (CSS) TYPE SCHEDULE ON T500 AND 8/7400 ACCESS CONTROL RISER DIAGRAM FOR ADDITIONAL INFORMATION. CARD READERS SHOWN ON PLANS TO IDENTIFY INTENDED MOUNTING LOCATION. REFER TO SPECIFICATION SECTION 28 13 00 FOR COMPLETE INFORMATION.	KEYSCAN K-KPR
AC-DC	ACCESS CONTROL DOOR CONTACT, REFER TO 8/7400 ACCESS CONTROL RISER DIAGRAM FOR ADDITIONAL INFORMATION. REFER TO SPECIFICATION SECTION 28 13 00 FOR COMPLETE INFORMATION.	*
AC-REX	ACCESS CONTROL REQUEST TO EXIT DEVICE, REFER TO 8/7400 ACCESS CONTROL RISER DIAGRAM FOR ADDITIONAL INFORMATION. REFER TO SPECIFICATION SECTION 28 13 00 FOR COMPLETE INFORMATION.	*
AC-SEC-1	ACCESS CONTROL SECURITY SYSTEM CONTROL PANEL, REFER TO SPECIFICATION SECTION 28 13 00 FOR COMPLETE INFORMATION.	KEYSCAN ACCESS CONTROL SYSTEM NO SUBSTITUTIONS
AR-AAC-W	AREA OF RESCUE ASSISTANCE CALL STATION, WALL MOUNT, VANDAL RESISTANT WITH MUSHROOM SWITCH, MOMENTARY SWITCH WITH LED AND ONE AUDIBLE ALARM. MOUNT IN CORNELL PROVIDED 4-1/2" SQUARE STAINLESS STEEL FACEPLATE AND DUAL GANG BACK BOX WITH 1-3/4" DEPTH AT 48" AFF. REFER TO 8/7401 FOR AREA OF RESCUE RISER DIAGRAM FOR ADDITIONAL INFORMATION.	CORNELL 4201BVM OR PRE-APPROVED EQUAL
AR-AAM-W	AREA OF RESCUE ASSISTANCE MASTER STATION, 4-ZONE PANEL WITH AUDIBLE ALARM ON THE PANEL AND LED LIGHTS PER ZONE TO INDICATE WHEN CALL IS INITIATED. POWER REQUIREMENTS: 24VDC, MOUNT IN CORNELL PROVIDED 10"H X 9"W X 3.5"D BACKBOX (SB-40) AT 48" AFF. INCLUDE TELEPHONE ACCESS KIT (ETAK-4202), FULLY PROGRAMMABLE AUTO DIALER, MESSAGES CAN BE RECORDED LOCALLY, REMOTELY, OR CONFIGURED AS AN ALARM DIALER, REFER TO 8/7401 FOR AREA OF RESCUE RISER DIAGRAM FOR ADDITIONAL INFORMATION.	CORNELL A-4204 OR PRE-APPROVED EQUAL
AV-CP3-1	CONTROL PROCESSOR FOR SINGLE OR DIVISIBLE ROOM A/V CONTROL, SUPPORTS 7" WALL TOUCH PANEL, INTERFACE AND HANDHELD HARD BUTTON RF REMOTE CONTROL, LOCAL AREA NETWORK CONTROL, AND PROGRAMMING INTERFACE AND RS232, CONTACT CLOSURE AND INFRARED CONTROL, FOR COMMERCIAL AND CONSUMER A/V DEVICES. 1 RU HEIGHT, REFER TO 1/7400 CLASS ROOM A/V RISER DIAGRAM FOR CONTROL PORT REQUIREMENTS.	CRESTRON CP3
AV-IRS-C	AUDIO VISUAL INFRARED PARTITION SENSOR, CEILING MOUNT.	NO SUBSTITUTIONS CRESTRON CLS-PART-CN NO SUBSTITUTIONS
AV-MC-1	SCALING PRESENTATION SWITCHER AND CONTROLLER, 8 INPUTS INCLUDING MINIMUM 2 HDMI, 2 HDBASET, 2 SWITCHED HDMI AND 2 SWITCHED HDBASET OUTPUTS, INPUT SCALING TO 1080P AND WUXGA (1920 X 1200) OUTPUT, LAN OR RS232 CONTROL OF AUDIO VIDEO EQUIPMENT, 3 RU HEIGHT.	CRESTRON DMPS3-300-C NO SUBSTITUTIONS
AV-MON-1	80" THIN BEZEL LED VIDEO WALL DISPLAY MONITOR 16:9 ASPECT RATIO 1920X1080 PIXEL RESOLUTION, ONE BNC COAXIAL INPUT, RCA L/R INPUTS. ONE SET OF RCA COMPONENT INPUTS, THREE (3) HDMI IN, MINI D-SUB INPUT, USB, M3 AUDIO INPUT, M3 AUDIO OUTPUT, RJ-11, M3 JACK AND RS-232C.	PANASONIC TH-80LF50E OR PRE-APPROVED EQUAL
AV-MON-2	LED/LCD DISPLAY MONITOR, 65" 16:9 ASPECT RATIO, 1920X1080 PIXEL RESOLUTION WITH MINIMUM OF (3) HDMI INPUTS, (1) USB CONNECTION (1) RJ-45 LAN CONNECTION AND RS232 CONTROL.	PANASONIC TH-65LF50U OR PRE-APPROVED EQUAL
AV-MPH-REC	STANDARD DIVERSITY WIRELESS MICROPHONE RECEIVER WITH HANDHELD MIC, PROGRAMMABLE CHANNELS. MIC AND LINE OUTPUTS DETACHABLE AND REMOTE LOCATABLE 1/2 WAVE ANTENNA. RACK MOUNTABLE IN 1 RU.	SHURE ULX AKG TELEX
AV-PRE-1	DANTE ENABLED DIGITAL PREAMP AND MIDLINE MIXER WITH EIGHT MIDLINE INPUTS AND MINIMUM TWO OUTPUTS WITH PARAMETRIC EQ COMPRESSOR AND INPUT DUCKING, CONTROL INTERFACE VIA RS232 OR LAN WITH FULL DISCRETE COMMAND SET FOR ZONE VOLUME, INPUT LEVELS AND INPUT SWITCHING, 2 RU HEIGH.	BMP TESIRAFORTE CRESTRON
AV-PRE-2	DANTE ENABLED DIGITAL PREAMP AND MIDLINE MIXER WITH EIGHT MIDLINE INPUTS AND MINIMUM TWO OUTPUTS WITH PARAMETRIC EQ COMPRESSOR AND INPUT DUCKING, CONTROL INTERFACE VIA RS232 OR LAN WITH FULL DISCRETE COMMAND SET FOR ZONE VOLUME, INPUT LEVELS AND INPUT SWITCHING, 2 RU HEIGH.	BMP TESIRAFORTE CRESTRON
AV-R-W	AUDIO VISUAL, ROUGH-IN, WALL MOUNT, PROVIDE ONE (1) 4 11/16" SQUARE BACKBOX WITH A DOUBLE GANG PLASTER RING, WALL MOUNT, AND ONE (1) 1 1/4" CONDUIT TO ABOVE ACCESSIBLE CEILING. REFER TO FLOOR PLANS FOR ADDITIONAL CONDUIT REQUIREMENTS. WHERE ROUGH-IN IS INSTALLED IN E.C. PROVIDED RECESSED BOX PROVIDE A SINGLE GANG BOX.	*
AV-RX-1	JUNCTION BOX MOUNT 4K DIGITAL MEDIA HDBASET RECEIVER AND DISPLAY CONTROLLE, ONE DM TWISTED PAIR INPUT, ONE HDMI OUPUT AND RS-232/INFRARED CONTROL OUTPUT, WHITE COLOR, MOUNT IN AV-WP1-W DISPLAY CONNECTIVITY BOX UNLESS OTHERWISE NOTED.	CRESTRON DM-RMC-4K-100-C-1G NO SUBSTITUTIONS
AV-S1-C	PERFORMANCE AUDIO BREAKER, CEILING MOUNTED, RECESSED, SOUND REINFORCEMENT, HEMISPHERICAL DISPERSION, FULL RANGE TYPE WITH BASS REFLEX ENCLOSUR, 60 WATT (16 OHMS) AND 120 WATT (8 OHMS) CONTINUOUS POWER HANDLING, SENSITIVITY: 90dB SPL @ 1W/1M, 70Hz-20kHz FREQUENCY RESPONSE, PRODUCTS TO BE CONSIDERED FOR PRE-APPROVAL MUST BE SUBMITTED WITH A POLAR FREQUENCY RESPONSE CURVE AT 500, 1000, 2000, 4000 AND 8000 Hz, AS WELL AS A FREQUENCY RESPONSE CURVE.	CRESTRON SAROS IC6LPT-8-T-EACH OR PRE-APPROVED EQUAL
AV-SFC-1	4 PORT HD-SDI/3G-SDI TO FIBER CONVERTER TRANSCEIVER, FOR EXTENDING AV-CM1-W VIDEO SIGNAL OVER SINGLE MODE FIBER TO OWNER MEDIA TEA, FOUR BNC HD-SDI/3G-SDI INPUTS, FOUR LC SINGLE MODE FIBER INPUTS/OUTPUTS FOUR BNC HD-SDI/3G-SDI AND HDMI LOOP OUTPUTS, HDMI LOOP OUTPUTS USED TO SEND VIDEO TO AV SWITCHER.	BLACKMAGIC ATEM STUDIO CONVERTER 2 OR PRE-APPROVED EQUAL
AV-SW-8	8X8 HOME MATRIX CARD FRAME SWITCH WITH MINIMUM TWO HDBASET TWISTED PAIR INPUTS, FOUR HDMI INPUTS, FIVE HDBASET TWISTED PAIR OUTPUTS, ONE HDMI OUTPU. REFER TO AV RISERS ON T-400 FOR ADDITIONAL CONNECTIVITY INFORMATION.	CRESTRON DM SERIES NO SUBSTITUTIONS
AV-TP-W	7" LED CAPTIVE EDGE TO EDGE GLASS TOUCH PANEL, WALL MOUNT, POE NETWORK POWER SUPPORT.	CRESTRON TSW-752 NO SUBSTITUTIONS
AV-TVT-1	OWNER FURNISHED CONTRACTOR INSTALLED HIGH DEFINITION IPTV TUNER WITH ONE 10/100 LAN INPUT, ONE DVI/HDMI AND COAXIAL OR OPTICAL DIGITAL AND ANALOG RCA OUTPUTS, INFRARED CONTROL WITH FULL DISCRETE COMMAND SET FOR POWER AND CHANNEL SELECTION, 1 RU MOUNTING HEIGHT	*
AV-TX-1	JUNCTION BOX MOUNT 4K DIGITAL MEDIA HDBASET TRANSMITTE. ONE DM TWISTED PAIR OUTPUT, ONE HDMI INPUT AND RS-232/INFRARED CONTROL INPUT, WHITE COLOR.	CRESTRON DM-TX-4K-100-C-1G NO SUBSTITUTIONS
AV-WP1-W	A/V DISPLAY CONNECTIVITY BOX,[ISR PWB-250 WHITE] 14.25" X 7" X 4" WALL RECESSED BOX WITH TWO SINGLE GANG AND ONE 1-1/4" KNOCKOUTS. INSTALL ONE 3/4" CONDUIT FOR POWER, PROVIDE SINGLE GANG JUNCTION BOX AND DUPLEX RECEPTACLE INSTALL ONE 1" CONDUIT TO NEAREST CABLE TRAY OR PATHWAY FOR INFORMATION OUTLET, REFER TO INFORMATION OUTLET SCHEDULE ON T500 FOR WALL PLATE AND JACK INFORMATION. INSTALL ONE 1-1/4" CONDUIT TO ABOVE ACCESSIBLE CEILING FOR FUTURE LOW VOLTAGE CABLING, FINISH WITH NYLON BUSHING, INSTALL AT 60" OC AFF UNO.	*
SC-CPW-1	FIRE RATED PATHWAY, 4"W X 4-5/8" H X14'-1" L, BUILT IN SMOKE SEALING SYSTEM THAT AUTOMATICALLY ADJUSTS TO THE AMOUNT OF CABLES INSTALLED, ORANGE PAINT.	STI EZ PATH SERIES 44 NO SUBSTITUTIONS
SC-CT-1	CABLE TRAY, WIRE MESH TYPE, 4" LOADING DEPTH, 12" WIDTH, COMPLETE WITH ALL FITTINGS AND MOUNTING HARDWARE, PROVIDE TRAPEZE SUPPORT WITH PLASTIC RETAINER, CUTTING OF THE MESH CABLE TRAY SHALL BE DONE WITH OFFSET BOLT CUTTERS ONLY, 10' MAXIMUM SUPPORT SPAN, EITHER SPLICE WASHERS OR TERMINAL GROUND SUPPORT AND JUMPER WIRE SHALL BE USED TO ATTAIN GROUNDING CONTINUITY THROUGHOUT, Z-BRACKETS SHALL BE USED FOR WALL MOUNTED APPLICATIONS. REFER TO MANUFACTURERS INSTALLATION INSTRUCTIONS AND SPECIFICATION SECTION 27 05 28 FOR ADDITIONAL INFORMATION.	COOPER B-LINE FLEXTRAY FT4x12x10 MONO-SYSTEMS CABLOFIL
SC-CT-2	CABLE TRAY, WIRE MESH TYPE, 4" LOADING DEPTH, 6" WIDTH, COMPLETE WITH ALL FITTINGS AND MOUNTING HARDWARE, PROVIDE TRAPEZE SUPPORT WITH PLASTIC RETAINER, CUTTING OF THE MESH CABLE TRAY SHALL BE DONE WITH OFFSET BOLT CUTTERS ONLY, 10' MAXIMUM SUPPORT SPAN, EITHER SPLICE WASHERS OR TERMINAL GROUND SUPPORT AND JUMPER WIRE SHALL BE USED TO ATTAIN GROUNDING CONTINUITY THROUGHOUT, Z-BRACKETS SHALL BE USED FOR WALL MOUNTED APPLICATIONS. REFER TO MANUFACTURERS INSTALLATION INSTRUCTIONS AND SPECIFICATION SECTION 27 05 28 FOR ADDITIONAL INFORMATION.	COOPER B-LINE FLEXTRAY FT4x6x10 MONO-SYSTEMS CABLOFIL
SC-ER-1	STANDARD 19" EQUIPMENT RACK, 84"H X 19"W X 15"D, FEATURING PASS-THRU HOLES ON FRONT AND SIDES FOR CABLE MANAGEMENT (HUBBELL VS76H). DURABLE BLACK POWDER COAT FINISH, MEETS EIA-310-E REQUIREMENT AND PROVIDES (45) 19" X 1.75" MOUNTING SPACES. PROVIDE COMPLETE WITH TWO (2) TWO-SIDED VERTICAL WIRE MANAGERS PER RACK, EACH WITH MINIMUM 14" X 6" CAPACITY FRONT AND REAR, AND WITH LADDER RACK CONNECTION HARDWARE ACCESSORIES AND RADIUS DROP LADDER RACK. PROVIDE WITH TOP CENTER WATERFALL, TOP CHANNEL PATHWAY FOR LADDER RACK, AND ANY ADDITIONAL HARDWARE FOR COMPLETE INSTALLATION, REFER TO SPECIFICATIONS SECTION 27 11 00 FOR ADDITIONAL INFORMATION.	HUBBELL HPWBRR19 CHATSWORTH HOFFMAN
SC-ER-2	4-POST EQUIPMENT RACK WITH 1/6 SQUARE HOLES, 84" HIGH, 25" WIDE SUPPORTING STANDARD 19" MOUNTING SPACE, 36" DEEP, INDEPENDENT ADJUSTABLE FRONT AND REAR MOUNTING RAILS CAN BE ADJUSTED WHILE RACK IS SECURED TO FLOOR, PRINTED RACK SPACE IDENTIFICATION ON ALL EQUIPMENT RAILS. UL LISTED FOR 2,500LBS. DURABLE BLACK POWDER COAT FINISH. PROVIDES (45) 1.75 MOUNTING SPACES. THIS EQUIPMENT RACK SHALL INCLUDE VERTICAL WIRE MANAGEMENT.	HUBBELL SR8419-36 CHATSWORTH HOFFMAN
SC-FDC-1	OPTICAL FIBER DISTRIBUTION PANEL, RACK MOUNT, HIGH DENSITY, MINIMUM 144 FIBER CAPACITY, PROVIDE WITH CLAMP AND GROUNDING KIT, COUPLING PANELS, DUPLEX LC CONNECTORS, COUPLINGS AND JUMPERS. REQUIRES (2) 1.75" MOUNTING SPACES.	HUBBELL FCR SERIES PANELS: FIP SERIES OR PRE-APPROVED EQUAL
SC-GND-1	WALL MOUNT GROUND BAR, 4" H X 12" L X 1/4" D COPPER, ELECTRICALLY ISOLATED BY INSULATORS INTEGRAL TO MOUNTING BRACKETS. PROVIDE UNIT CONFIGURED WITH SIXTEEN (16) SETS OF 5/16" HOLES SPACED 5/8" ON CENTER TO ACCOMMODATE "W" SPACED TWO-HOLE COMPRESSION LUGS AND THREE (3) SETS OF 7/16" HOLES SPACED 1" ON CENTER TO ACCOMMODATE "C" SPACED TWO-HOLE COMPRESSION LUGS. ANSI/EIA/TIA-607 AND BICSI COMPLIANT. UL LISTED. REFER TO 27300 FOR ADDITIONAL INFORMATION.	CHATSWORTH PRODUCTS 40153-012 ERICO HARGER
SC-GND-2	RACK MOUNT GROUND BAR, COPPER, 3/16" D X 3/4" H X 19" W, (8) #6-32 TAPPED LUG MOUNTING HOLES, (4) 5/16" UNTAPPED LUGS, UL LISTED.	CHATSWORTH PRODUCTS 10610-019 ERICO HARGER
SC-HH-1	HAND-HOLE COMPOSITE POLYMER CONCRETE BODY AND COVER, STAINLESS STEEL HARDWARE BOLTED NON-SKID COVER RATED FOR 15,000LB. DESIGN LOAD OCCASIONAL NON-DELIBERATE VEHICULAR TRAFFIC. STACK UNITS TO ACHIEVE DEPTH SHOWN ON PLANS. UNITS IN LANDSCAPED AREAS SHALL BE GREEN IN COLOR. "COMMUNICATIONS" LOGO ON HAND-HOLE COVER, CONTRACTOR SHALL FIELD VERIFY QUANTITY AND LOCATIONS, REFER TO 5/7300 FOR DETAIL. SC-HH-1 = 24"WX24"L.	HUBBELL/QUAZITE PG2424BBZ4 PG2424HA00 CARSON INDUSTRIES ARMORCAST HIGH-LINE PRODUCTS SYNERTECH

GENERAL TECHNOLOGY EQUIPMENT SCHEDULE

THE EQUIPMENT LIST ABBREVIATIONS AND THE GENERAL TECHNOLOGY EQUIPMENT SCHEDULE ARE FOR THE CONVENIENCE OF THE CONTRACTOR. EACH CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF QUANTITIES AND SHALL FURNISH ALL MATERIAL REQUIRED, WHETHER SPECIFIED OR NOT, TO PRODUCE A SATISFACTORY WORKING SYSTEM.

CATALOG NUMBERS ARE NOT TO BE CONSIDERED COMPLETE BUT ARE GIVEN ONLY TO AID THE CONTRACTOR IN THE SEARCH FOR MATERIAL. NO MATERIAL SHALL BE ORDERED BY MANUFACTURER AND CATALOG NUMBER ONLY. EACH CONTRACTOR SHALL FIRST READ THE COMPLETE DESCRIPTION OF THE MATERIAL ON THESE DRAWINGS AND SPECIFICATIONS. THE FIRST MANUFACTURER LISTED IS THE BASIS OF DESIGN. "STANDARD COLOR" INDICATES FACTORY FINISH AVAILABLE AT NO ADDITIONAL CHARGE.

EQUIPMENT LIST ABBREVIATION	EQUIPMENT LIST DESCRIPTION	EQUIPMENT LIST MANUFACTURER AND MODEL
SC-HWM-1	HORIZONTAL WIRE MANAGEMENT, 3" X 3" RIGID FRONT FINGERS WITH FLEXIBLE RETENTION TABS, 2" X 5" FLEXIBLE REAR FINGERS, REMOVABLE FRONT COVER HINGES 180 DEGREES UP OR DOWN. INTEGRAL BEND RADIUS CONTROL. PASS THROUGH HOLES ALLOW FRONT TO REAR CABLING, REQUIRES (2) 1.75" MOUNTING SPACES.	HUBBELL HCF19CBEIN OR PRE-APPROVED EQUAL
SC-IO-CWAP	INFORMATION OUTLET, WIRELESS ACCESS POINT, WALL OR CEILING MOUNT, 2-PORT FACEPLATE AS INDICATED ON INFORMATION OUTLET SCHEDULE ON DRAWING T500. REFER TO INFORMATION OUTLET SCHEDULE ON DRAWING T500 FOR DESCRIPTION OF EACH CONFIGURATION, PIN CONFIGURATION OF JACKS, AND ADDITIONAL INFORMATION AND REQUIREMENTS. PROVIDE RATED CABLE, BACKBOXES AND OUTLETS FOR GREENHOUSE LOCATIONS AS INDICATED ON DRAWINGS. TERMINATE CABLE WITH PLUG, LABEL, AND STORE SPECIFIED SLACK LOOP OF CABLE ON J-HOOK AT LOCATION INDICATED ON FLOOR PLANS.	COVERPLATE: HUBBELL FCXX SERIES JACK: HUBBELL CAT6A: HJ6AW SERIES NO SUBSTITUTIONS
SC-IO-F	INFORMATION OUTLET, POKE-THROUGH MOUNT 4-PORT COVERPLATE AS INDICATED ON DRAWINGS AND INFORMATION OUTLET SCHEDULE. REFER TO INFORMATION OUTLET SCHEDULE ON T500 FOR PIN CONFIGURATION INFORMATION. " 6 " INDICATES INFORMATION OUTLET FACEPLATE CONFIGURATION AS INDICATED ON THE PLANS. REFER TO INFORMATION OUTLET SCHEDULE ON T500 FOR ADDITIONAL INFORMATION. INSTALL INFORMATION OUTLET IN E.C. PROVIDED FLOORBOX, PROVIDE ADAPTER PLATE FOR 106-TYPE FACEPLATE WHERE REQUIRED. COORDINATE ADDITIONAL MOUNTING REQUIREMENTS WITH E.C. PROVIDE REMOVABLE BLANK INSERTS FOR UNUSED PORTS, REFER TO SPECIFICATION SECTION 27 15 00 FOR ADDITIONAL INFORMATION.	LEGRAND EVOLUTION 10 POKE THRU
SC-IO-W	INFORMATION OUTLET, WALL MOUNT, 2 OR 4-PORT FACEPLATE AS INDICATED IN INFORMATION OUTLET SCHEDULE ON DRAWING T500. "6" INDICATES INFORMATION OUTLET FACEPLATE CONFIGURATION AS INDICATED ON THE FLOOR PLANS. REFER TO INFORMATION OUTLET SCHEDULE ON DRAWING T500 FOR DESCRIPTION OF EACH CONFIGURATION AND FOR PIN CONFIGURATION OF JACKS. INSTALL INFORMATION OUTLET IN A 4" SQUARE 2-1/8" DEEP BACK BOX WITH A SINGLE GANG PLASTER RING AND A 1" EMT CONDUIT STUBBED TO NON-CONTINUOUS CABLE SUPPORT ROUTE OR CABLE TRAY ABOVE NEAREST ACCESSIBLE CEILING. REFER TO 1/7300 FOR TECHNOLOGY ROUGH-IN MOUNTING DETAIL. PROVIDE REMOVABLE BLANK INSERTS FOR UNUSED FACEPLATE PORTS.	COVERPLATE: HUBBELL IPF SERIES JACK HUBBELL CAT6 HJ6 SERIES NO SUBSTITUTIONS
SC-LR-1	LADDER RACK, 12" WIDE TUBULAR STEEL CONSTRUCTION, RUST RESISTANT BLACK ENAMEL FINISH. UL LISTED. PROVIDE COMPLETE WITH ALL NECESSARY ADAPTERS, SUPPORT HARDWARE, AND FITTINGS TO INCLUDE RADIUS DROPS. REMOVE SHARP BURRS FROM LADDER RACK AND REPAINT ALL AREAS THAT HAVE BEEN FIELD MODIFIED, CUT, OR EXPOSED.	COPPER BLINE FT12x10x10 MONO SYSTEMS OR PRE-APPROVED EQUAL
SC-MPP-1	MODULAR PATCH PANEL, FORTY EIGHT (48) MODULAR CAT6 RJ-45 SNAP IN JACKS, MOUNTS DIRECTLY TO EIA/TIA STANDARD 19" RELAY RACK PORT IDENTIFICATION NUMBERS. PROVIDED WITH COLOR CODING AND LABEL HOLDER KITS. U.L. LISTED. REQUIRES (2) 1.75" MOUNTING SPACES.	HUBBELL CAT 6 PS48U NO SUBSTITUTIONS
SC-MPP-2	MODULAR PATCH PANEL, FORTY EIGHT (48) MODULAR CAT6A RJ-45 SNAP IN JACKS, MOUNTS DIRECTLY TO EIA/TIA STANDARD 19" RELAY RACK PORT IDENTIFICATION NUMBERS, PROVIDED WITH COLOR CODING AND LABEL HOLDER KITS. U.L. LISTED. REQUIRES (2) 1.75" MOUNTING SPACES.	HUBBELL CAT 6A PS48U NO SUBSTITUTIONS
SC-PS-1	POWER STRIP, HORIZONTALLY MOUNTS IN A STANDARD EIA/TIA 19" RACK, (10) REAR RECEPTACLES. 125VAC/60HZ. PROVIDE WITH 15-0" CORD, INTERNAL CIRCUIT BREAKER. U.L. LISTED. REQUIRES (1) 1.75" MOUNTING SPACE.	HUBBELL HPWPWR HOMACO INC. CHATSWORTH PRODUCTS TRIPP LITE
SC-TE-W	TELECOM ENCLOSURE, WALL MOUNTED.	HUBBELL QUADCAB HSQ4878 OR PRE-APPROVED EQUAL
SC-TTB-1	TELECOMMUNICATIONS TERMINAL BOARD, 4' X 8' X 3/4" A-C GRADE FIRE-RATED PLYWOOD. INSTALL ORIENTED VERTICALLY WITH TOP OF PLYWOOD AT +102" AFF AND WITH "A" GRADE SMOOTH SURFACE EXPOSED, RATING STAMP MUST REMAIN VISIBLE.	*
SC-WAP-C	INFORMATION OUTLET WIRELESS ACCESS POINT DEVICE/ENCLOSURE, CEILING MOUNT, NO FACEPLATE AS INDICATED IN INFORMATION OUTLET SCHEDULE ON DRAWING T500. TERMINATE CABLE WITH PLUG, LABEL, AND STORE A MINIMUM OF 15'-0" OF SLACK LOOP OF CABLE ON J-HOOK AT LOCATION INDICATED ON FLOOR PLANS. REFER TO SUGGESTED MATRIX OF SCOPE RESPONSIBILITY ON DRAWING T001 FOR ADDITIONAL INFORMATION. PROVIDE (2) TWO CATEGORY 6 CABLES AND JACKS PER WAP.	ENCLOSURE CIBERON 1030 SERIES OR PRE-APPROVED EQUAL
SC-WP-W	INFORMATION OUTLET FOR WALL PHONE, 1-PORT FACEPLATE AS INDICATED IN INFORMATION OUTLET SCHEDULE ON DRAWING T500. " W " PROVIDE (1) RJ-45 JACK FOR VOICE AT +48" AFF FOR WALL HUNG PHONE. INSTALL INFORMATION OUTLET IN A 4" SQUARE BACKBOX WITH A SINGLE GANG PLASTER RING AND A 1" EMT CONDUIT STUBBED TO ABOVE NEAREST ACCESSIBLE CEILING.	COVERPLATE: ICC IC107FFWSS JACK: HUBBELL CAT6: HJ6 SERIES NO SUBSTITUTIONS

IMEG
1500 DEMING WAY, SUITE 250
MIDDLETON, WI 53562
608.203.2450 FAX: 866.914.9415
www.jacobsmeg.com
PROJECT # 17A400.00

IMEG CORP. RESERVES ALL COPYRIGHT, RIGHTS, INCLUDING COPYRIGHTS, TO THIS DRAWING AND THE DATA SHOWN THEREON. SAID DRAWING AND/OR DATA ARE THE EXCLUSIVE PROPERTY OF IMEG CORP. AND SHALL NOT BE USED OR REPRODUCED FOR ANY OTHER PROJECT WITHOUT THE EXPRESS WRITTEN APPROVAL AND PARTICIPATION OF IMEG CORP. © 2018 IMEG CORP.

REFERENCE SCALE IN INCHES
0 1 2 3

MSR
710 South 2nd Street, 8th Floor
Minneapolis, Minnesota 55401-2282
Architecture, Interiors and Urban Design
612 375 0336 tel
612 342 2216 fax
www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201
Madison, WI 53717
608.826.0532 tel

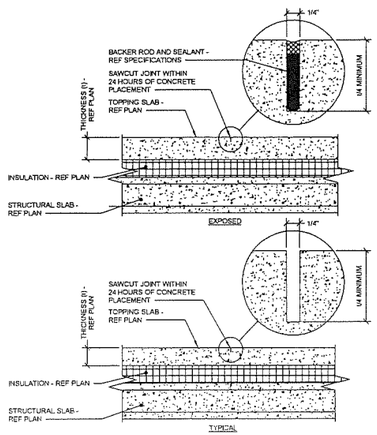
Landscape Architect
Ken Saiki Design, Inc.
353 South Paterson Street, Suite 1
Madison, WI 53703
608.251.5600 tel

Structural Engineer, Technology and A/V
IMEG Corp.
1800 Deming Way, Suite 200
Middleton, WI 53562
608.203.9600 tel

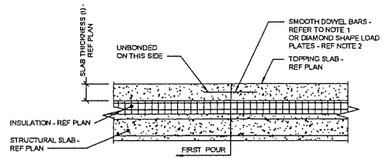
MEP Engineer
MEP Associates, LLC
850 Bus Campus Road, Suite 170
Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
575 Minnesota Ave West
St. Paul, MN 55103
651.291.1990 tel

Greenhouse Design
Rough Brothers, Inc.
5510 Vine Street
Cincinnati, OH 45217
513.242.

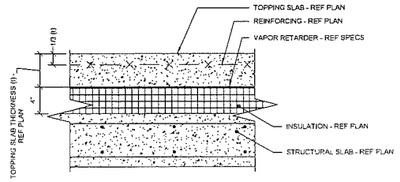


1 TYPICAL TOPPING SLAB CONTROL JOINT
1" = 1'-0"

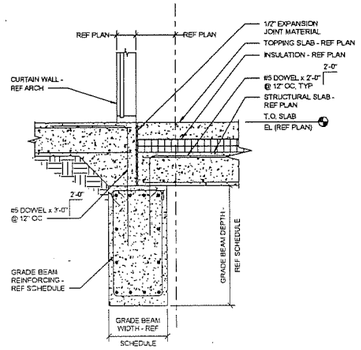


2 TYPICAL TOPPING SLAB CONSTRUCTION JOINT
3/4" = 1'-0"

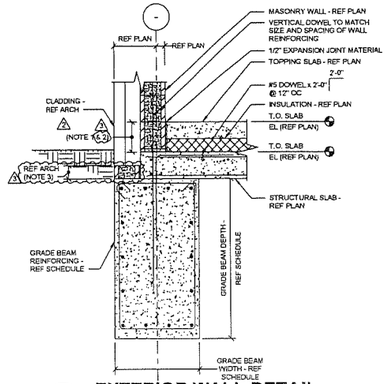
NOTES:
1. 3/4"Ø X 1'-2" SMOOTH DOWEL BARS AT 12" OC.
2. 1/4"x4 1/2"x4 1/2" DIAMOND LOAD PLATES AT 18" OC.
3. DOWEL BAR AT TOPPING SLAB CONSTRUCTION JOINT NOT REQUIRED IN THE CLASSROOM.



3 TYPICAL TOPPING SLAB SECTION
1 1/2" = 1'-0"

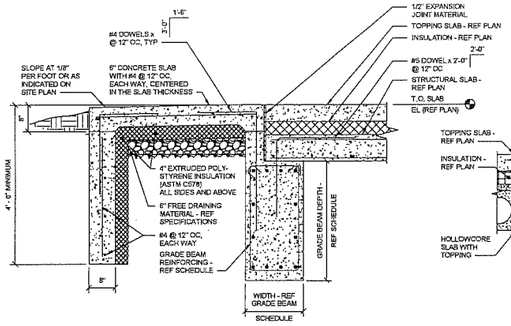


4 CURTAIN WALL CURB DETAIL
3/4" = 1'-0"



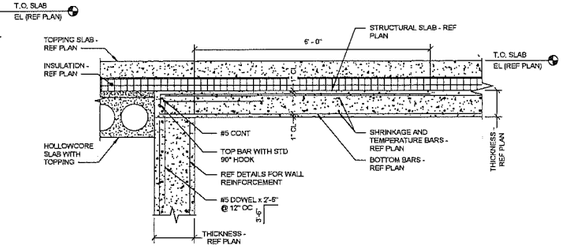
5 EXTERIOR WALL DETAIL
3/4" = 1'-0"

NOTES
1. CONTRACTOR OPTION TO CUT BLOCK OR POUR CONCRETE CURB TO MAINTAIN COURSING ACROSS DUE FINISH FLOOR CONCRETE CURB TO HAVE #4 x CONT HORIZONTAL REINFORCING. VERIFY ALL CONDITIONS WITH ARCHITECTURAL DRAWINGS.
2. WHERE WALL CONSTRUCTION CONSISTS OF STUD WALL IN LIEU OF MASONRY, PROVIDE CONCRETE CURB WITH #4 VERTICAL DOWELS AT 4'-0" OC WITH #4 x CONT HORIZONTAL.
3. CONTRACTOR OPTION TO USE MASONRY WITH #4 VERTICAL DOWELS AT 4'-0" OC WITH OR POUR CONCRETE CURB WITH #4 VERTICAL DOWELS AT 4'-0" OC WITH #4 x CONT HORIZONTAL.

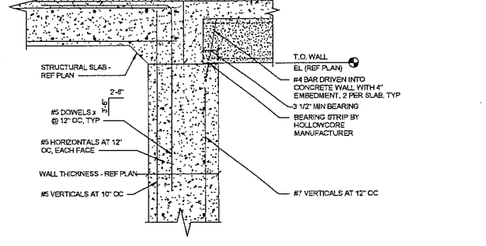


6 TYPICAL STOOP SECTION
3/4" = 1'-0"

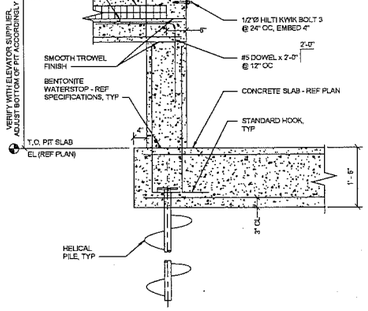
NOTES:
1. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT STOOP LAYOUT AND LOCATIONS.
2. REFER TO TYPICAL FOUNDATION WALL DETAIL FOR INFORMATION NOT SHOWN.



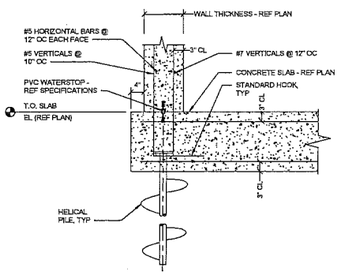
7 TYPICAL ONE WAY SECTION
3/4" = 1'-0"



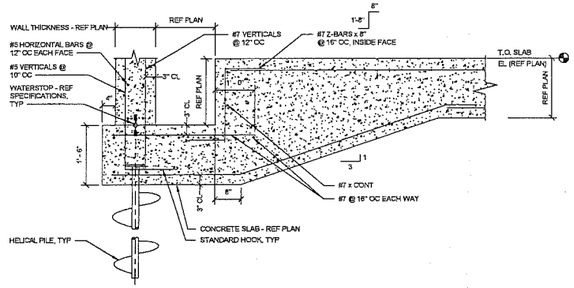
8 HOLLOW CORE BEARING DETAIL
1" = 1'-0"



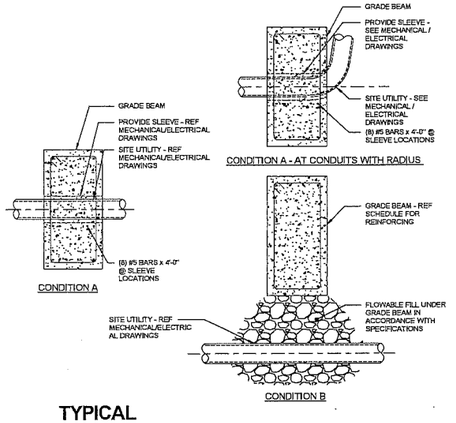
9 ELEVATOR PIT SECTION
3/4" = 1'-0"



10 WALL BEARING ON MAT SLAB DETAIL
3/4" = 1'-0"



11 SUMP PIT IN MAT SLAB DETAIL
3/4" = 1'-0"



12 TYPICAL FOUNDATION DETAILS AT SITE UTILITIES
3/4" = 1'-0"

NOTES:
1. SEE MECHANICAL AND ELECTRICAL DRAWINGS FOR ALL LOCATIONS, ELEVATIONS, ETC, OF SITE UTILITIES. CONTRACTOR SHALL NOTIFY ENGINEER SHOULD SUCH A CONDITION ARISE AND AWAIT FURTHER INSTRUCTIONS.

IMEG CORP. RESERVES PROPRIETARY RIGHTS, INCLUDING COPYRIGHTS, TO THIS DRAWING AND THE DATA SHOWN THEREON, AND DRAWING AND/OR DATA ARE THE EXCLUSIVE PROPERTY OF IMEG CORP. AND SHALL NOT BE USED OR REPRODUCED FOR ANY OTHER PROJECT WITHOUT THE EXPRESS WRITTEN APPROVAL AND PARTICIPATION OF IMEG CORP. © 2018 IMEG CORP.

REVISED

MSR 710 South 2nd Street, 9th Floor Minneapolis, Minnesota 55401-2262
Architecture, Interiors and Urban Design
612 375 0336 tel
612 342 2216 fax
www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201
Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
332 South Paterson Street, Suite 1
Madison, WI 53703
608.251.3600 tel

Structural Engineer, Technology and A/V
IMEG Corp.
1600 Deming Way, Suite 200
Middleton, WI 53562
608.223.9600 tel

MEP Engineer
MEP Associates, LLC
662 Blue Gentian Road, Suite 175
Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
575 Minnesota Ave West
St. Paul, MN 55103
651.251.1650 tel

Greenhouse Design
Rough Brothers, Inc.
5513 Vine Street
Cincinnati, OH 45217
513.242.0310 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin.
ARCHITECT SEAL

WISCONSIN DANIEL JACK POLING A-8984 MINNEAPOLIS, MN ARCHITECT

Signature
Print Name
Date JUNE 1, 2018 License No.

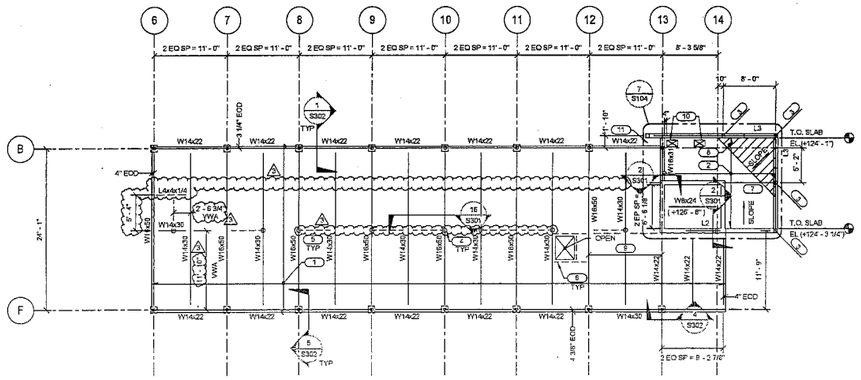
ISSUE MARK	DATE	DESCRIPTION
	12.08.2017	DD PRICING SET
	01.12.2018	DESIGN DEVELOPMENT SUBMISSION
	03.12.2018	70% CD SUBMISSION
	05.04.2018	90% CONSTRUCTION DOCUMENTS
	06.01.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE
2	06.22.2018	ADDENDUM 2
3	07.03.2018	ADDENDUM 3

PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY SIDBHO
CHECKED BY ABBPER

FOUNDATION DETAILS

EXHIBIT G

S201



1 LEARNING CENTER ROOF FRAMING PLAN

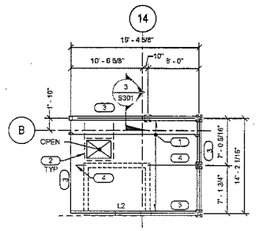
1/8" = 1'-0"

NOTES:

1. REFER TO S/S302 FOR TYPICAL SHEAR CONNECTION.
2. ● INDICATES ASTM F1852 BOLT WITH A CLASS A FAYING SURFACE IS TO BE PROVIDED IN SHEAR CONNECTION.
3. LF INDICATES LINTEL IN STRUCTURAL MASONRY WALL - REFER TO S/S301 FOR SCHEDULE.
4. FOR LINTELS IN NON-STRUCTURAL WALLS, REFER TO GENERAL NOTES FOR SCHEDULE.

KEYNOTES:

1. 1 1/2" (20 GA) STEEL DECK, 2 SPAN MINIMUM, FASTENING = 36/4 (1) WITH 5/8" PUDDLE WELDS AND #10 SIDELAP SCREWS, DECK BEARING ELEVATION (+123' - 3 1/2"), UNO.
2. 3" NORMAL - WEIGHT CONCRETE ON 2" (20 GA) CONFORM DECK, 1 SPAN, WITH 6x6 - W1.4xW1.4 WWR, TOTAL THICKNESS = 5", SEE PLAN FOR ELEVATIONS.
3. HSS8x8x5/16 POSTS.
4. FALL ARREST POST BY OTHERS, HOLES FOR ANCHORING OF POSTS TO BE PROVIDED. STEEL FABRICATOR TO COORDINATE WITH FALL ARREST SYSTEM PROVIDED.
5. L4x4x1/4 KICKER.
6. PROVIDE ANGLE FRAMING AROUND OPENINGS IN ROOF DECK PER 1S/S301.
7. L6x6x3/8, MINIMUM 4" BEARING ON GROUTED MASONRY BLOCK EACH END.
8. PROVIDE CONCRETE BUILD UP TO FORM SLOPE. REFER TO ARCHITECTURAL DRAWINGS FOR SLOPE REQUIREMENTS. MAXIMUM BUILD UP EQUAL TO 2".
9. CONTINUE DECK EDGE ANGLE PAST END OF MASONRY WALL. AFTER MASONRY WALL ENDS PROVIDE PLATE ON BACK SIDE OF ANGLE, REFER TO DETAIL 18/301.
10. FLOOR PENETRATION - REFER TO 14/S301 FOR DETAIL.
11. L6x4x3/8 (LLV), PROVIDE 4" BEARING OF HORIZONTAL LEG EACH END AND WELD TO BEARING.

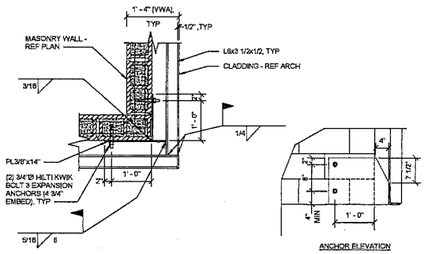


7 PLENUM ROOF

1/8" = 1'-0"

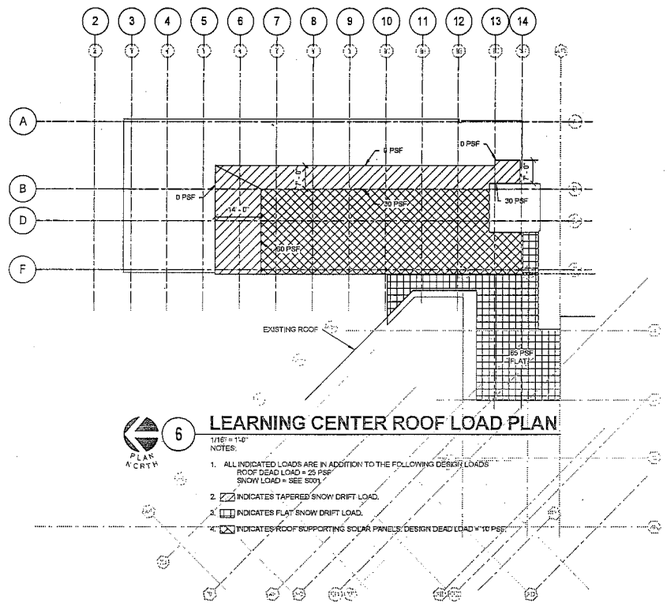
KEYNOTES:

1. 1 1/2" (20 GA) STEEL DECK, FASTENING = 36/4 (1) WITH 5/8" PUDDLE WELDS AND #10 SIDELAP SCREWS, DECK BEARING ELEVATION (+127' - 3 1/2"), UNO.
2. PROVIDE ANGLE FRAMING AROUND OPENINGS PER 1S/S301.
3. HSS8x8x1/4 (+127' - 11 1/2").
4. L6x6x3/8 (+127' - 3 1/2"), MINIMUM 4" BEARING ON GROUTED BLOCK EACH END.



8 LINTEL SUPPORT

3/4" = 1'-0"

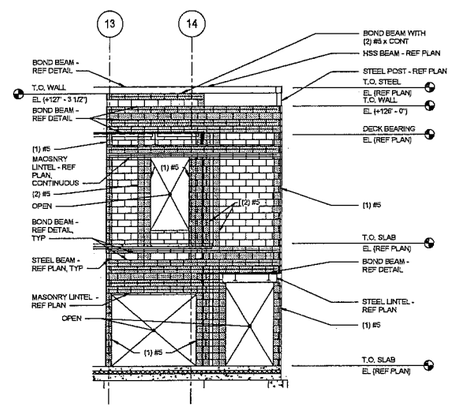


6 LEARNING CENTER ROOF LOAD PLAN

1/16" = 1'-0"

NOTES:

1. ALL INDICATED LOADS ARE IN ADDITION TO THE FOLLOWING DESIGN LOADS:
   ROOF DEAD LOAD = 25 PSF
   SNOW LOAD = SEE S001
2. INDICATES TAPERED SNOW DRIFT LOAD.
3. INDICATES FLAT SNOW DRIFT LOAD.
4. INDICATES ROOF SUPPORTING SOLAR PANELS; DESIGN DEAD LOAD = 10 PSF.

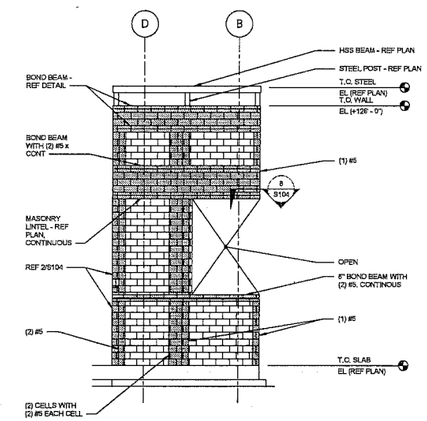


2 MASONRY SHEAR WALL ELEVATION - WEST FACE

3/16" = 1'-0"

NOTES:

1. ELEVATION SHOWN IS LOOKING EAST.
2. REFER TO DETAILS 4, 5, AND 8/S301 FOR TYPICAL BEAM BEARING AT THE END OF STEEL LINTELS.
3. REFER TO 8/S301 FOR CONDITIONS NOT COVERED BY ELEVATION.

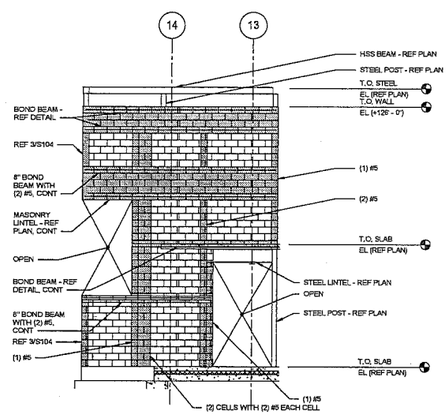


3 MASONRY SHEAR WALL ELEVATION - SOUTH FACE

3/16" = 1'-0"

NOTES:

1. ELEVATION SHOWN IS LOOKING NORTH.
2. REFER TO DETAILS 4, 5, AND 8/S301 FOR TYPICAL BEAM BEARING AT THE END OF STEEL LINTELS.
3. REFER TO 8/S301 FOR CONDITIONS NOT COVERED BY ELEVATION.

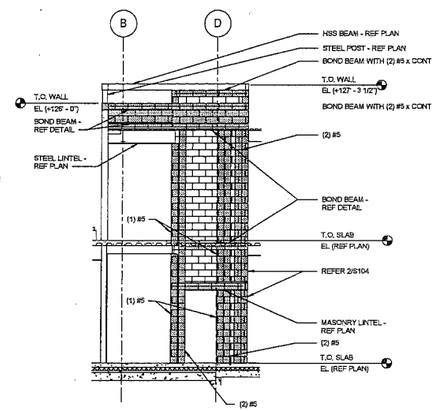


4 MASONRY SHEAR WALL ELEVATION - EAST FACE

3/16" = 1'-0"

NOTES:

1. ELEVATION SHOWN IS LOOKING WEST.
2. REFER TO DETAILS 4, 5, AND 8/S301 FOR TYPICAL BEAM BEARING AT THE END OF STEEL LINTELS.
3. REFER TO 8/S301 FOR CONDITIONS NOT COVERED BY ELEVATION.



5 MASONRY SHEAR WALL ELEVATION - NORTH FACE

3/16" = 1'-0"

NOTES:

1. ELEVATION SHOWN IS LOOKING SOUTH.
2. REFER TO DETAILS 4, 5, AND 8/S301 FOR TYPICAL BEAM BEARING AT THE END OF STEEL LINTELS.
3. REFER TO 8/S301 FOR CONDITIONS NOT COVERED BY ELEVATION.

IMEG CORP. RESERVES PROPRIETARY RIGHTS, INCLUDING COPYRIGHTS, TO THIS DRAWING AND THE DATA CONTAINED HEREIN, AND ON-SCREEN DISPLAY OF SUCH DOCUMENT PROPERTY OF IMEG CORP. AND SHALL NOT BE REUSED OR REPRODUCED FOR ANY OTHER PROJECT WITHOUT THE EXPRESS WRITTEN APPROVAL AND PARTICIPATION OF IMEG CORP. © 2018 IMEG CORP.

REFERENCE SCALE 3/4" INCHES

MSR
710 South 2nd Street, 8th Floor
Minneapolis, Minnesota 55401-2282
Architecture Interiors and Urban Design
612 375 0336 tel
612 342 2216 fax
www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201
Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
303 South Paterson Street, Suite 1
Madison, WI 53703
608.251.3600 tel

Structural Engineer, Technology and A/V
IMEG Corp.
1600 Deming Way, Suite 200
Middleton, WI 53562
608.223.9600 tel

MEP Engineer
MEP Associates, LLC
880 Blue Gentian Road, Suite 175
Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
575 Mororamo Ave West
St. Paul, MN 55102
651.251.1550 tel

Greenhouse Design
Rough Brothers, Inc.
5513 Vine Street
Cincinnati, OH 45217
513.242.8100 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin.
ARCHITECT SEAL

WISCONSIN
DANIEL JACOB POLING
A-5894
MINNEAPOLIS, MN
ARCHITECT

Signature:
Print Name:
Date: JUNE 1, 2018 License No:

ISSUE		
MARK	DATE	DESCRIPTION
	12.08.2017	DD PRICING SET
	01.10.2018	DESIGN DEVELOPMENT SUBMISSION
	03.30.2018	75% CD'S SUBMISSION
	05.04.2018	90% CONSTRUCTION DOCUMENTS
	06.01.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE
2	06.22.2018	ADDENDUM 2
3	07.03.2018	ADDENDUM 3

PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: SI/DH/HO CHECKED BY: ABB/PER

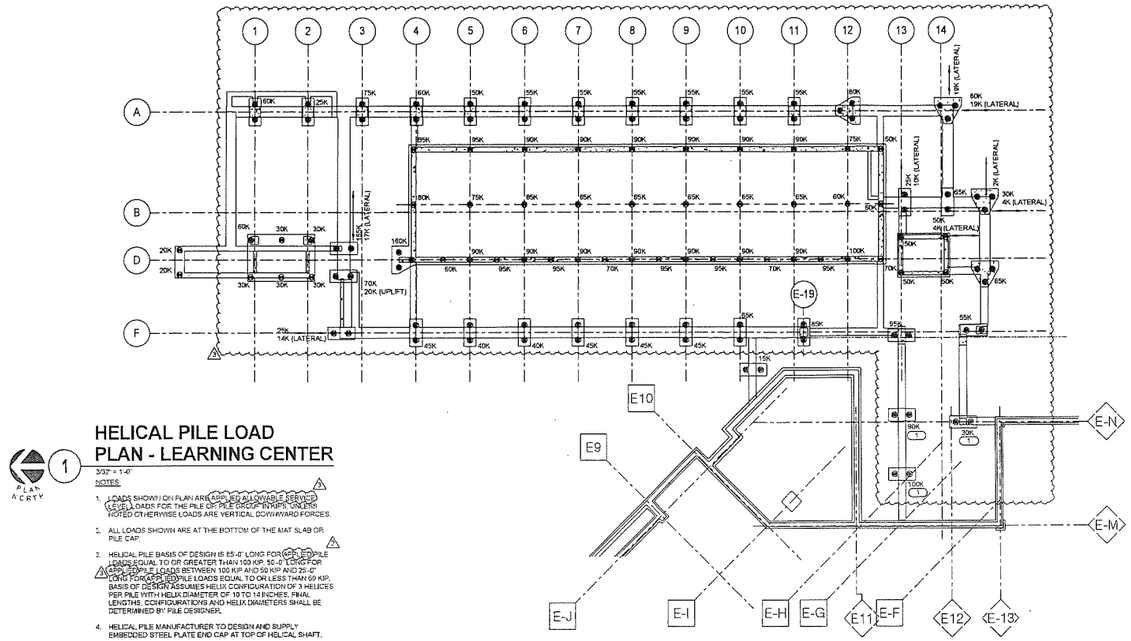
Plotted 2017 Copyright Mayer, Brown & Peterson Co.

LEARNING CENTER ROOF FRAMING PLAN

EXHIBIT G

S104

REVISED



1 HELICAL PILE LOAD PLAN - LEARNING CENTER

PLAN NORTH

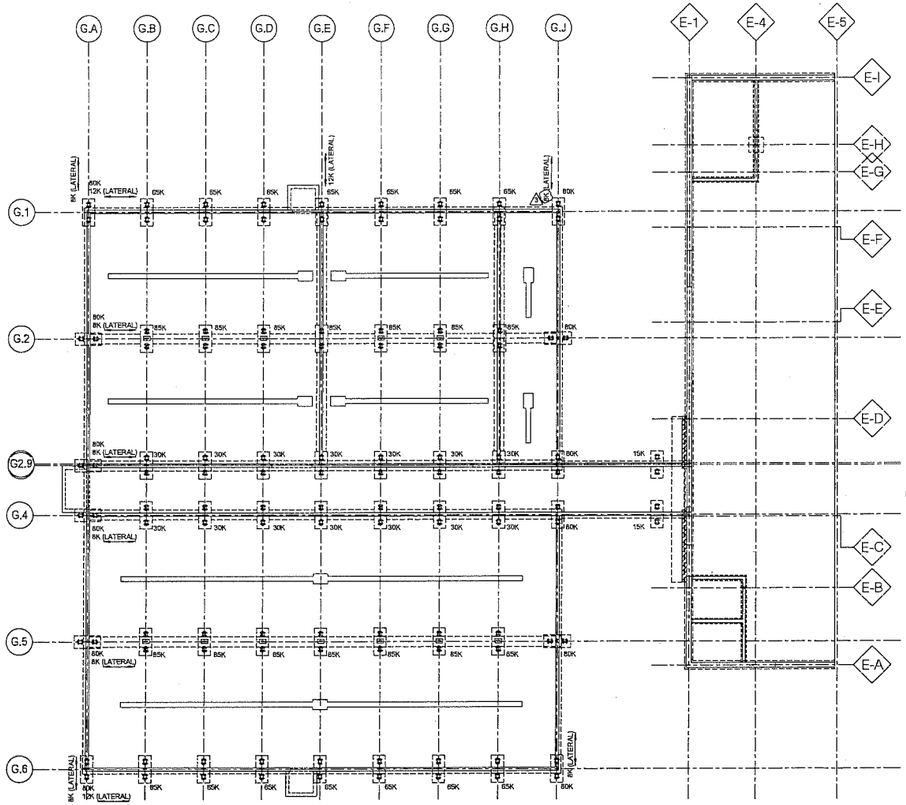
3/32" = 1'-0"

NOTES:

1. LOADS SHOWN ON PLAN ARE (KSP) PER ALLOWABLE (SERVICE LEVEL) LOADS FOR THE PILE OR GROUP IN KIPS. UNLESS NOTED OTHERWISE LOADS ARE VERTICAL DOWNWARD FORCES.
2. ALL LOADS SHOWN ARE AT THE BOTTOM OF THE MAT SLAB OR PILE CAP.
3. HELICAL PILE BASIS OF DESIGN IS 65'-0" LONG FOR (KSP) PILE LOADS EQUAL TO OR GREATER THAN 100 KIP. 50'-0" LONG FOR (KSP) PILE LOADS BETWEEN 100 KIP AND 50 KIP AND 25'-0" LONG FOR (KSP) PILE LOADS EQUAL TO OR LESS THAN 50 KIP. BASIS OF DESIGN ASSUMES HELIX CONFIGURATION OF 3 HELICES PER PILE WITH HELIX DIAMETER OF 10 TO 14 INCHES. FINAL LENGTHS, CONFIGURATIONS AND HELIX DIAMETERS SHALL BE DETERMINED BY PILE DESIGNER.
4. HELICAL PILE MANUFACTURER TO DESIGN AND SUPPLY EMBEDDED STEEL PLATE END CAP AT TOP OF HELICAL SHAFT.
5. HELICAL PILE MANUFACTURER TO BATTER PILES AS REQUIRED TO ACHIEVE LATERAL LOADS INDICATED.

KEYNOTES:

1. EXPECT A DENSE ASPHALT LAYER AT 12'-0" BELOW EXISTING GRADE.



2 HELICAL PILE LOAD PLAN - GREEN HOUSE

PLAN NORTH

3/32" = 1'-0"

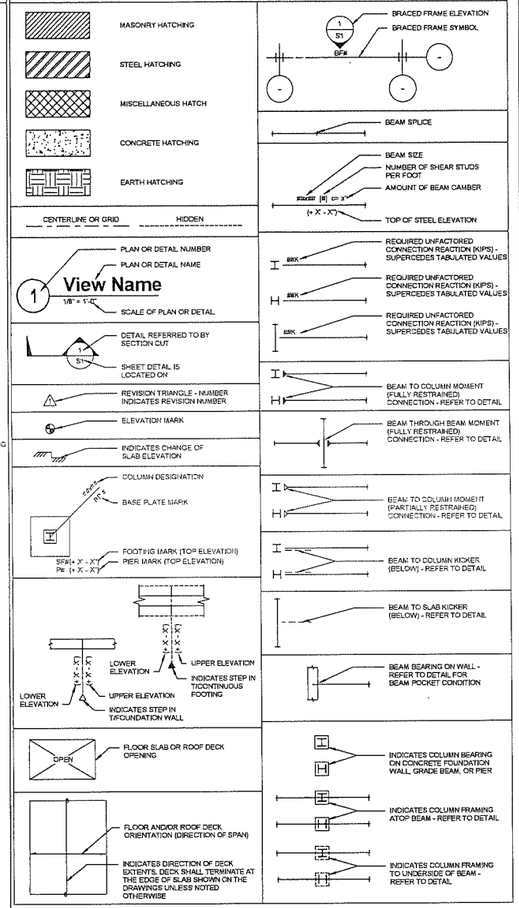
NOTES:

1. LOADS SHOWN ON PLAN ARE (KSP) PER ALLOWABLE (SERVICE LEVEL) LOADS FOR THE PILE GROUP IN KIPS. UNLESS NOTED OTHERWISE LOADS ARE VERTICAL DOWNWARD FORCES.
2. ALL LOADS SHOWN ARE AT THE BOTTOM OF THE PILE CAP.
3. HELICAL PILE BASIS OF DESIGN IS 60'-0" LONG FOR (KSP) PILE LOADS GREATER THAN 50KIP AND 20'-0" LONG FOR (KSP) PILE LOADS EQUAL TO OR LESS THAN 50 KIP. BASIS OF DESIGN ASSUMES HELIX CONFIGURATION OF 3 HELICES PER PILE WITH HELIX DIAMETER OF 10 TO 14 INCHES. FINAL LENGTHS, CONFIGURATION, AND HELIX DIAMETERS SHALL BE DETERMINED BY PILE DESIGNER.
4. HELICAL PILE MANUFACTURER TO DESIGN AND SUPPLY EMBEDDED STEEL PLATE END CAP AT TOP OF HELICAL SHAFT.
5. HELICAL PILE MANUFACTURER TO BATTER PILES AS REQUIRED TO ACHIEVE LATERAL LOADS INDICATED.
6. EXPECT AN 8" GRAVEL LAYER ABOUT 18" BELOW EXISTING GRADE THROUGHOUT THE GREENHOUSE FOOTPRINT.

STRUCTURAL ABBREVIATIONS LIST

#	NUMBER
@	AT
°	DEGREES
Ø	DIAMETER
AHU	AIR-HANDLING UNIT
APPROX	APPROXIMATE, -LY
ARCH	ARCHITECT, -URE, -LY
B.O.	BOTTOM OF
bf	BEAM FLANGE WIDTH
BM	BEAM
BP	BASE PLATE
BRG	BEARING
CFSF	COLD FORM STEEL FRAMING
CJ	CONTROL JOINT
CL	CLEAR
CMU	CONCRETE MASONRY UNIT
CONC	CONCRETE
CONST	CONSTRUCTION
CONT	CONTINUOUS
D	DEPTH
DBL	DOUBLE
DEG	DEGREE
DIM	DIMENSION
DL	DEAD LOAD
DTL	DETAIL
DWG	DRAWING
EA	EACH
EF	EACH FACE
EJ	EXPANSION JOINT
EL	ELEVATION
ELEC	ELECTRICAL
EMBED	EMBEDDED
EOD	EDGE OF DECK
EOS	EDGE OF SLAB
EQ	EQUAL
EQUIP	EQUIPMENT
EW	EACH WAY
EXIST, (E)	EXISTING
EXP	EXPANSION
EXT	EXTERIOR
f'c	CONCRETE COMPRESSIVE STRENGTH
FDN	FOUNDATION
FIN	FINISHED
FL	FLOOR
FT	FOOT
FTG	FOOTING
Fy	YIELD STRESS
GA	GAGE OR GAUGE
GALV	GALVANIZED
GB	GRADE BEAM
GC	GENERAL CONTRACTOR
GYP	GYPSUM
HDG	HOT-DIPPED GALVANIZED
HORIZ	HORIZONTAL
HVAC	HEATING, VENTILATION, AIR CONDITIONING
HWS	HEADED, WELDED STUD
IN	INCH
INT	INTERIOR
JST	JOIST
JT	JOINT
k, KIP	KILOPOUND (1,000 POUNDS)
KO	KNOCK-OUT
KSF	KIPS PER SQUARE FOOT
L	LENGTH
LB	POUND
LF	LINEAR FOOT
LL	LIVE LOAD
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LSH	LONG SIDE HORIZONTAL
LSV	LONG SIDE VERTICAL
LONG	LONGITUDINAL
M/E	MECHANICAL/ELECTRICAL
MAX	MAXIMUM
MECH	MECHANICAL
MEZZ	MEZZANINE
MIN	MINIMUM
MISC	MISCELLANEOUS
MK	MARK
N	NORTH
N	LENGTH (AS PLATES)
NIC	NOT IN CONTRACT
NO	NUMBER
NTS	NOT TO SCALE
OC	ON CENTER
OPNG	OPENING
OPP	OPPOSITE
PAF	POWER ACTUATED FASTENER
PC	PRECAST
PCF	POUNDS PER CUBIC FOOT
PL	PLATE
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PVC	POLYVINYL CHLORIDE
R	RADIUS
RD	ROOF DRAIN
REINF	REINFORCING, -MENT, -ED
REQ'D	REQUIRED
REF	REFERENCE, REFER TO
RTU	ROOF-TOP UNIT
SC	TC WITH CLASS A FAYING SURFACE
SCHED	SCHEDULE
SIM	SIMILAR
SL	SNOW LOAD
SP	SPACE(S)
SPEC	SPECIFICATION(S)
SPECD	SPECIFIED
SQ	SQUARE
STD	STANDARD
STIFF	STIFFENER
T.O.	TOP OF
TC	PRE-TENSIONED BOLT
TEMP	TEMPERATURE
tf	BEAM FLANGE THICKNESS
TRANS	TRANSVERSE
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
VERT	VERTICAL
VIF	VERIFY IN FIELD
VWA	VERIFY WITH ARCHITECTURAL DRAWINGS
WP	WORKING POINT
WT	WEIGHT
WWR	WELDED WIRE REINFORCING
YD	YARD

STRUCTURAL DRAWING SYMBOLS



PILE CAP SCHEDULE

MARK	DEPTH	BOTTOM BARS: SHORT BARS	BOTTOM BARS: LONG BARS	TOP BARS: SHORT BARS	TOP BARS: LONG BARS	PILES	REMARKS
PC2	2'-0"	(8) #6	(4) #6	(3) #6	(3) #6	2	-
PC3	2'-0"	(7) #6, 3 WAYS		(5) #6, 3 WAYS		3	-

NOTES:

1. REFER TO S202 FOR PILE CAP DETAILS.

GRADE BEAM SCHEDULE

MARK	WIDTH	BOTTOM ELEVATION	BOTTOM BARS	TOP BARS	SIDE BARS	STIRRUPS	REMARKS
GB1	2'-2"	+96'-0"	(4) #7	(4) #8	#5 @ 12" OC	#4 @ 12" OC	-
GB2	1'-0"	+96'-0"	(2) #5	(2) #5	#5 @ 12" OC	#4 @ 12" OC	-
GB3	2'-6"	+96'-0"	(4) #9	(4) #9	#5 @ 12" OC	#4 @ 12" OC	-
GB4	2'-0"	+96'-0"	(4) #8	(3) #8	#5 @ 12" OC	#4 @ 12" OC	-
GB5	1'-0"	+96'-0"	(2) #6	(2) #6	#5 @ 12" OC	#4 @ 18" OC	-
GB6	1'-6"	+96'-0"	(3) #8	(3) #8	#5 @ 12" OC	#4 @ 12" OC	-
GB7	2'-0"	+97'-3"	(3) #7	(3) #7	#5 @ 12" OC	#4 @ 6" OC	-
GB8	1'-3"	+97'-7"	(3) #7	(3) #7	-	#4 @ 4" OC	-
GB9	1'-2 1/2"	+95'-0"	(3) #8	(3) #8	#5 @ 12" OC	#4 @ 12" OC	-
GB10	2'-3"	+96'-0"	(4) #7	(4) #8	#5 @ 12" OC	#4 @ 12" OC	-
GB11	1'-6"	+96'-8"	(3) #8	(3) #8	#5 @ 12" OC	#4 @ 12" OC	-
GB12	2'-2"	+95'-0"	(4) #9	(4) #9	#5 @ 12" OC	#4 @ 12" OC	-

NOTES:

1. MAINTAIN MINIMUM DEPTH OF 4'-0" FROM FINISH GRADE TO BOTTOM OF GRADE BEAM ELEVATION, STEP BOTTOM AS REQUIRED.

IMEG
1800 DEMING WAY, SUITE 200 MIDDLETON, WI 53562 608.222.8866 FAX: 866.818.9613 www.imegcorp.com PROJECT # 17W0016.00
IMEG CORP. RESERVES PROPRIETARY RIGHTS, INCLUDING COPYRIGHTS, TO THIS DRAWING AND THE DATA SHOWN THEREON. THIS DRAWING AND/OR THE INFORMATION THEREON SHALL NOT BE USED OR THE SUBJECT OF ANY OTHER PROJECT WITHOUT THE EXPRESS WRITTEN APPROVAL AND PARTICIPATION OF IMEG CORP. © 2018 IMEG CORP.
REFERENCE SCALE IN INCHES
0 1 2 3

MSR 710 South 2nd Street, 8th Floor Minneapolis, Minnesota 55401-2182
Architecture Interiors and Urban Design
612 375 0336 tel
612 342 2216 fax
www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201
Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
323 South Paterson Street, Suite 1
Madison, WI 53703
608.251.1.3600 tel

Structural Engineer, Terminology and A/V
IMEG Corp.
1800 Deming Way, Suite 200
Middleton, WI 53562
608.223.9600 tel

MEP Engineer
MEP Associates, LLC
863 Blue Gentian Road, Suite 175
Eagan, MN 55121
651.379.9125 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
575 Eleventeen Ave West
St. Paul, MN 55103
651.251.1850 tel

Greenhouse Design
Rough Brothers, Inc.
5513 Vine Street
Cincinnati, OH 45217
513.242.0310 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin.
ARCHITECT SEAL

WISCONSIN DANIEL JACK POLING A-8094 MINNEAPOLIS, MN ARCHITECT

Signature:
Print Name:
Date: JUNE 1, 2018 License No.

ISSUE		
MARK	DATE	DESCRIPTION
	12.08.2017	DD FINISHES SET
	01.10.2018	DESIGN DEVELOPMENT SUBMISSION
	03.30.2018	100% CD SUBMISSION
	05.04.2018	90% CONSTRUCTION DOCUMENTS
	06.01.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE
1	06.11.2018	ADDENDUM 1
2	06.22.2018	ADDENDUM 2
3	07.03.2018	ADDENDUM 3

PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: SIDBHO CHECKED BY: ABBPER

SYMBOLS AND ABBREVIATIONS

EXHIBIT G

S002

REVISED

DESIGN CRITERIA

1. CODES:
INTERNATIONAL BUILDING CODE (IBC) 2015 WITH WISCONSIN BUILDING CODE REVISIONS
AMERICAN CONCRETE INSTITUTE BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE (ACI 318-14)
AMERICAN CONCRETE INSTITUTE BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES (ACI 530-13)
AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS
ALLOWABLE STRENGTH DESIGN (ASD)(AISC 360-10) FOURTEENTH EDITION, 2010
AMERICAN WELDING SOCIETY D1.1
NORTH AMERICAN SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS, 2013
ANSI/AWC NATIONAL DESIGN SPECIFICATION (NDS) FOR WOOD CONSTRUCTION AND SUPPLEMENT (NDS-15)

2. DESIGN LOADS:

RISK CATEGORY	III
CLASSROOM ADDITION:	III
GREENHOUSE ADDITION:	II
BACKFILL	
EQUIVALENT FLUID PRESSURE	70 PCF
SEISMIC	
SOIL CLASSIFICATION	D
SPECTRAL RESPONSE ACCELERATION, Ss	0.11 g
SPECTRAL RESPONSE ACCELERATION, S1	0.04 g
SHORT PERIOD DESIGN ACCELERATION, Sds	0.12 g
LONG PERIOD DESIGN ACCELERATION, Sd1	0.06 g
IMPORTANCE FACTOR	1.25
SEISMIC DESIGN CATEGORY	A
SEISMIC FORCE RESISTING SYSTEM	MASONRY SHEAR WALLS AND STEEL MOMENT FRAMES NOT DETAILED FOR SEISMIC
ANALYSIS PROCEDURE	ASCE 7-10 SECTION 1.4
DESIGN BASE SHEAR, V	0.01 x W
WIND - PARAMETERS	
BASIC WIND SPEED	
CLASSROOM ADDITION:	120 MPH
GREENHOUSE ADDITION	110 MPH
EXPOSURE CLASS	B
WIND - MAIN WIND FORCE RESISTING SYSTEM PRESSURES	
DESIGN PRESSURE	
CLASSROOM ADDITION:	25 PSF
GREENHOUSE ADDITION:	DETERMINED BY GREEN HOUSE SUPPLIER
ROOF UPLIFT PRESSURE	
CLASSROOM ADDITION:	20 PSF (GROSS) [LC 1.0WL]
GREENHOUSE ADDITION	DETERMINED BY GREEN HOUSE SUPPLIER
ROOF UPLIFT PRESSURE	
CLASSROOM ADDITION	3 PSF (NET) [LC 0.9D, + 1.0WL]
GREEN HOUSE	DETERMINED BY GREEN HOUSE SUPPLIER
WIND - ELEMENTS AND COMPONENTS PER APPLICABLE BUILDING CODE	
LIVE LOADS	
TYPICAL FLOORS	100 PSF UNREDUCIBLE
MECHANICAL	125 PSF UNREDUCIBLE
SNOW LOADS	
GROUND SNOW LOAD	30 PSF
SNOW EXPOSURE FACTOR	1.0
THERMAL FACTOR	1.0
IMPORTANCE FACTOR	1.1
FLAT-ROOF SNOW LOAD	23 PSF
DESIGN LOAD	25 PSF
DRIFTING LOAD	REFER TO PLAN S3/104 FOR ROOF LOAD PLAN

3. MINIMUM FROST PROTECTION DEPTH FROM ADJACENT GRADE:
EXTERIOR FOOTING ADJACENT TO HEATED AREA -4'-0"
EXTERIOR FOOTINGS IN UNHEATED AREA -4'-0"

4. SPECIFIED 28-DAY CONCRETE COMPRESSIVE STRENGTHS (f'c)

FOOTINGS	3000 PSI
FOUNDATION WALLS	4000 PSI
STRUCTURAL SLABS	4000 PSI
TYPICAL - UNLESS NOTED OTHERWISE	4000 PSI

5. CONCRETE REINFORCING STEEL SHALL BE HIGH STRENGTH NEW BILLET STEEL CONFORMING TO THE FOLLOWING STANDARDS:

DEFORMED BARS:	ASTM A615, GRADE 60	Fy = 60 KSI
WELDED WIRE REINFORCING	ASTM A185	Fy = 65 KSI
PRESTRESSING STRAND, 1/2"Ø 7-WIRE LOW-RELAXATION	ASTM A416, GRADE 270	Fy = 270 KSI

6. MATERIALS FOR CONCRETE UNIT MASONRY SHALL CONFORM TO THE FOLLOWING STANDARDS:

CONCRETE MASONRY UNITS	ASTM C90
MORTAR MATERIALS	ASTM C270, TYPE S
GROUT FOR MASONRY	ASTM C479
REINFORCING STEEL FOR MASONRY	ASTM A615, GRADE 60 (UNO)
PLATE AND BENT BAR ANCHORS	ASTM A36
SHEET METAL ANCHORS AND TIES	ASTM A1008
WIRE MESH TIES	ASTM A185
WIRE TIES AND ANCHORS	ASTM A951
ANCHOR BOLTS FOR MASONRY	ASTM A307, GRADE A

7. MINIMUM 28 DAY COMPRESSIVE STRENGTHS FOR MASONRY (f'm):

DESIGN ASSEMBLY STRENGTH, f'm	2000 PSI
INDIVIDUAL CONCRETE MASONRY UNITS	2800 PSI
MORTAR FOR MASONRY (TYPE S REQUIRED)	1800 PSI
GROUT FOR MASONRY	2000 PSI

8. STRUCTURAL STEEL SHALL CONFORM TO THE FOLLOWING STANDARDS:

WIDE FLANGE SECTIONS	ASTM A992	Fy = 50 KSI
OTHER ROLLED SECTIONS	ASTM A36	Fy = 36 KSI
SQUARE AND RECTANGULAR HSS	ASTM A500, GR B	Fy = 46 KSI
ROUND HSS	ASTM A500, GR B	Fy = 42 KSI
SQUARE, RECTANGULAR, ROUND HSS	ASTM A1085	Fy = 50 KSI
CAP AND BASE PLATES	ASTM A36	Fy = 36 KSI
CONNECTION MATERIAL	ASTM A36	Fy = 36 KSI
STIFFENER PLATES	ASTM A36	Fy = 36 KSI
ANCHOR RODS	ASTM F1554, GR 36	Fy = 36 KSI
HIGH STRENGTH BOLTS	ASTM F3125, GRADE A325	120 KSI
HEAVY HEX NUTS	ASTM A563	
WASHERS	ASTM F436	
HEADED WELDED STEEL STUDS	ASTM A108, TYPE B	
ELECTRODES FOR ARC WELDING	AWS 5.1, E70XX	

9. COLD-FORMED STRUCTURAL STUDS SHALL CONFORM TO THE FOLLOWING STANDARDS:

ROLLED SECTIONS, CONNECTION MATERIAL, STIFFENER PLATES		
18 GAUGE AND THINNER	ASTM A653, GR 33	Fy = 33 KSI
16 GAUGE AND THICKER	ASTM A653, GR 50	Fy = 50 KSI
CONNECTION MATERIAL (>3/16" THICK)	ASTM A36	Fy = 36 KSI
ANCHOR RODS	ASTM F1554, GR 36	Fy = 36 KSI
BOLTS	ASTM A307	Fy = 10 KSI
COATING - HOT DIPPED	ASTM A924, G60	
ELECTRO - PLATE	ASTM A591	
ALUMINUM - ZINC	ASTM A792, GR 40	
INSTALLATION	ASTM C955 AND ASTM C1007	
ELECTRODES FOR ARC WELDING	AWS 5.1, E60XX	

10. STEEL DECK AND ALL ACCESSORIES SHALL BE FORMED FROM STEEL SHEETS CONFORMING TO THE FOLLOWING STANDARDS:

GALVANIZED COMPOSITE FLOOR DECK	ASTM A653, GR 33	Fy = 33 KSI
GALVANIZED STEEL ROOF DECK	ASTM A653, GR 33	Fy = 33 KSI

11. GLULAM BEAMS:
DOUGLAS FIR LARCH (BASIS OF DESIGN)
Fb = 2400 PSI
Fc⊥ = 650 PSI
E = 1,800,000 PSI

12. WOOD FRAMING:
ACCOYA (BASIS OF DESIGN)
Fb = 2400 PSI
Fc⊥ = 650 PSI
E = 1,800,000 PSI

13. STRUCTURAL THERMAL BREAK MATERIAL, BUSHINGS AND WASHERS SHALL CONFORM TO THE MINIMUM STANDARDS:

COMPRESSIVE STRENGTH	ASTM D638	36,900 PSI
COMPRESSIVE MODULUS	ASTM D695	291,154 PSI FOR 1/2" 979,400 PSI
SHEAR STRENGTH	ASTM D732	15,000 PSI
THERMAL CONDUCTIVITY	ASTM C518	1.8 BTU IN/HR SF °F
COEFFICIENT OF THERMAL EXPANSION	ASTM E831	2.2 x 10E-6 IN/IN/°F
THERMAL RESISTANCE (R VALUE)	ASTM C518	0.95 HR SF °F/BTU
ACCEPTABLE MANUFACTURERS	FABREKA OR OTHER PRE-APPROVED MANUFACTURER	

GENERAL NOTES

1. NEITHER THE PROFESSIONAL ACTIVITIES OF THE ENGINEER, NOR THE PRESENCE OF THE ENGINEER OR HIS OR HER EMPLOYEES AND SUBCONSULTANTS AT THE CONSTRUCTION SITE, SHALL RELIEVE THE CONTRACTOR AND ANY OTHER ENTITY OF THEIR OBLIGATIONS, DUTIES, AND RESPONSIBILITIES INCLUDING, BUT NOT LIMITED TO, CONSTRUCTION MEANS, METHODS, SEQUENCE, TECHNIQUES, OR PROCEDURES NECESSARY FOR PERFORMING, SUPERINTENDING, OR COORDINATING ALL PORTIONS OF THE WORK OF CONSTRUCTION IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND ANY HEALTH OR SAFETY PRECAUTIONS REQUIRED BY ANY REGULATORY AGENCIES. THE ENGINEER AND HIS OR HER PERSONNEL HAVE NO AUTHORITY TO EXERCISE ANY CONTROL OVER ANY CONSTRUCTION CONTRACTOR OR OTHER ENTITY OR THEIR EMPLOYEES IN CONNECTION WITH THEIR WORK OR ANY HEALTH OR SAFETY PRECAUTIONS. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE JOBSITE SAFETY. THE ENGINEER AND THE ENGINEER'S CONSULTANTS SHALL BE MADE ADDITIONAL INSUREDS UNDER THE CONTRACTOR'S GENERAL LIABILITY INSURANCE POLICY.
2. STRUCTURAL DRAWINGS INCLUDE DESIGN REQUIREMENTS AND DIMENSIONS FOR STRUCTURAL INTEGRITY BUT DO NOT SHOW ALL DETAIL DIMENSIONS TO FIT INTRICATE ARCHITECTURAL AND MECHANICAL DETAILS. CONTRACTOR SHALL SO CONSTRUCT THE WORK SO THAT IT WILL CONFORM TO THE CLEARANCES REQUIRED BY ARCHITECTURAL, MECHANICAL AND ELECTRICAL DESIGN.
3. THE CONTRACT STRUCTURAL DRAWINGS AND SPECIFICATIONS REPRESENT THE FINISHED STRUCTURE. UNLESS NOTED OTHERWISE, THEY DO NOT INDICATE THE MEANS OR METHODS OF CONSTRUCTION.
4. DETAILS AND NOTES ON THE STRUCTURAL DRAWINGS ARE INTENDED TO BE TYPICAL FOR SIMILAR SITUATIONS ELSEWHERE.
5. ESTABLISH AND VERIFY ALL OPENINGS AND INSERTS FOR MECHANICAL, ELECTRICAL AND PLUMBING WITH APPROPRIATE TRADE CONTRACTORS. OPENING SIZES AND LOCATIONS SHOWN FOR DUCTS, PIPES, INSERTS AND OTHER PENETRATIONS WHEN SHOWN ARE FOR GENERAL INFORMATION ONLY AND SHALL BE VERIFIED PRIOR TO FORMING.
6. DIMENSIONS, NOTES, AND DETAILS ON DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS.
7. WHERE NEW CONSTRUCTION INTERFACES WITH EXISTING CONDITIONS, FIELD VERIFY EXISTING DIMENSIONS, MEMBER SIZES AND ELEVATIONS SHOWN ON THE DRAWINGS PRIOR TO STARTING CONSTRUCTION. ALL DISCREPANCIES SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE ARCHITECT.
8. REFER TO ARCHITECTURAL DRAWINGS FOR THE FOLLOWING:
A. SIZE AND LOCATION OF ALL DOOR AND WINDOW OPENINGS. UNLESS NOTED OTHERWISE.
B. SIZE AND LOCATIONS OF ALL INTERIOR AND EXTERIOR MASONRY WALLS.
C. SIZE AND LOCATION OF ALL CONCRETE CURBS, FLOOR DRAINS, SLOPES, DEPRESSED AREAS, CHANGES IN LEVEL, DIAMETERS, GROOVES, INSERTS, ETC.
D. SIZE AND LOCATION OF ALL FLOOR AND ROOF OPENINGS UNLESS NOTED OTHERWISE.
E. FLOOR, WALL AND ROOF FINISHES.
F. STAIR FRAMING AND DETAILS. ALSO REFER TO STAIR MANUFACTURER'S APPROVED SHOP DRAWINGS.
G. DIMENSIONS NOT SHOWN ON STRUCTURAL DRAWINGS.
H. FIRE PROTECTION REQUIREMENTS.
9. REFER TO MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS FOR THE FOLLOWING
A. PIPE RUNS, SLEEVES, HANGERS, TRENCHES, WALL AND SLAB OPENINGS, ETC., EXCEPT AS SHOWN.
B. ELECTRICAL CONDUIT RUNS, BOXES, OUTLETS IN WALLS AND SLABS.
C. CONCRETE INSERTS FOR ELECTRICAL, MECHANICAL OR PLUMBING FIXTURES.
D. SIZE AND LOCATION OF MACHINE OR EQUIPMENT BASES OR CURBS AND ANCHOR BOLTS FOR MOTOR MOUNTS.
10. BEFORE SUBMITTING A PROPOSAL FOR THIS WORK, EACH BIDDER SHALL VISIT THE PREMISES AND BECOME FULLY ACQUAINTED WITH THE EXISTING CONDITIONS. TEMPORARY CONSTRUCTION REQUIRED, QUANTITIES AND TYPES OF EQUIPMENT, ETC. THE BID SHALL INCLUDE ALL SUMS REQUIRED TO DO THE WORK, HOWEVER THE EXISTING CONDITIONS, DISRUPTION OF NORMAL ACTIVITIES IN THE WORK AREA SHALL BE KEPT TO A MINIMUM.
11. SHOP DRAWINGS PREPARED BY SUPPLIERS, SUBCONTRACTORS AND OTHERS SHALL BE REVIEWED AND COORDINATED PRIOR TO SUBMITTING TO THE ARCHITECT. EACH SHOP DRAWING SUBMITTED SHALL BE STAMPED, INITIALED AND DATED INDICATING REVIEW BY THE CONSTRUCTION MANAGER/GENERAL CONTRACTOR.
12. SHOP DRAWINGS PREPARED BY THE SUBCONTRACTORS, SUPPLIERS, AND OTHERS SHALL BE REVIEWED BY THE CONTRACTOR ONLY FOR GENERAL CONFORMANCE WITH DESIGN CONCEPT ONLY. REVIEW BY THE ARCHITECT SHALL NOT BEGIN WITHOUT THE PRIOR COORDINATION AND REVIEW BY THE GENERAL CONTRACTOR, WORK SHALL NOT BEGIN WITHOUT REVIEW BY THE ARCHITECT. NOTATIONS MADE BY THE ARCHITECT ON THE SHOP DRAWINGS DO NOT RELIEVE THE CONTRACTOR FROM COMPLYING WITH THE REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS.
13. OPTIONS ARE FOR THE CONTRACTOR'S CONVENIENCE, CONTRACTOR SHALL BE RESPONSIBLE FOR ALL NECESSARY CHANGES RESULTING FROM CHOOSING AN OPTION AND SHALL COORDINATE ALL DETAILS. THE COST OF ADDITIONAL DESIGN WORK NECESSITATED BY SELECTION OF AN OPTION SHALL BE BORNE BY THE CONTRACTOR.
14. THE COST OF ADDITIONAL DESIGN WORK DUE TO ERRORS OR OMISSIONS BY THE CONTRACTOR IN CONSTRUCTION SHALL BE BORNE BY THE CONTRACTOR.
15. ANY ENGINEERING DESIGN PROVIDED BY OTHERS AND SUBMITTED FOR REVIEW OR RECORD SHALL BEAR THE STAMP AND SIGNATURE OF A PROFESSIONAL STRUCTURAL ENGINEER REGISTERED IN THE STATE OF WI.
16. ELEVATIONS ARE BASED ON THE FIRST FLOOR ELEVATION OF (+ 100' - 0") WHICH IS EQUAL TO CIVIL ELEVATION OF (853.83').

FOUNDATIONS/SLAB-ON-GRADE

1. CROSS REFERENCE ARCHITECTURAL AND STRUCTURAL DRAWINGS TO ASSURE PROPER DIMENSIONS AND PLACEMENT OF ALL ANCHOR BOLTS, INSERTS, NOTCHES, EDGES IN GRADE BEAMS, FOUNDATION WALLS AND PIERS.
2. FOUNDATION DESIGN BASED ON GEOTECHNICAL ENGINEERING REPORT DATED OCTOBER 4, 2017 BY CGC, INC. REPORT IS ON FILE WITH THE ARCHITECT.
3. ALL EXCAVATIONS SHALL BE PROPERLY AND SAFELY BACKFILLED. DO NOT PLACE BACKFILL BEHIND RETAINING WALLS BEFORE CONCRETE HAS ATTAINED SPECIFIED COMPRESSIVE STRENGTH. CONTRACTOR SHALL BRACE OR PROTECT ALL WALLS BELOW GRADE FROM LATERAL LOADS UNTIL SUPPORTING FLOOR IS COMPLETE, IN PLACE AND HAS ATTAINED FULL STRENGTH. CONTRACTOR SHALL PROVIDE FOR DESIGN, PERMITS, AND INSTALLATION OF SHORING AND/OR SHEETING. BACKFILLING IS NOT PERMITTED FOR FOUNDATION WALLS UNTIL SUPPORTED SLAB ABOVE IS IN PLACE OR THE WALL IS ADEQUATELY BRACED TO RESIST LATERAL LOADS.
4. UNLESS NOTED OTHERWISE, ALL PILE CAPS SHALL BE CENTERED UNDER WALLS, PIERS OR COLUMNS.
5. PROVIDE SAW CUT CONTROL JOINTS IN ALL SLABS-ON-GRADE. LOCATE JOINTS ALONG COLUMN LINES WITH INTERMEDIATE JOINTS SPACED PER THE TABLE BELOW, UNLESS NOTED OTHERWISE. CONTROL JOINTS SHALL BE CONTINUOUS, NOT STAGGERED OR OFFSET. SLAB PANELS SHALL HAVE A MAXIMUM LENGTH TO WIDTH RATIO OF 1.5 TO 1. PROVIDE ADDITIONAL CONTROL JOINTS AT ALL RE-ENTRANT CORNERS FORMED IN SLAB ON GRADE.

SLAB ON GRADE THICKNESS	MAX JOINT SPACING
5"	15'-0"

UNDERPINNING NOTES

1. UNDERPIN EXISTING WALLS AND FOOTINGS AND PLACE NEW FOOTINGS AS SHOWN ON THE FOUNDATION PLAN AND DETAILS.
2. NO EXCAVATION CAN BE DONE WITHIN 6'-0" OF THE EXISTING BUILDING UNTIL UNDERPINNING IS COMPLETE.
3. POURED CONCRETE WALL UNDERPINNING PROCEDURE SHALL BE AS FOLLOWS:
A. WHERE NOTED ON THE PLANS AND DETAILS, UNDERPINNING SHALL BE PERFORMED IN SEPARATE OPERATIONS NOT TO EXCEED 6'-0" IN LENGTH.
B. PLACE HORIZONTAL REINFORCING BARS WITH 90-DEGREE BENDS SO THAT THEY MAY BE STRAIGHTENED TO LAP WITH BARS OF ADJACENT UNDERPINNING SECTIONS.
C. PLACE CONCRETE OF NEW WALL TO WITHIN 3"-4" OF THE UNDERSIDE OF EXISTING FOOTING WHERE APPLICABLE. AFTER 2 DAYS PACK FINAL 3"-4" WITH DRY GROUT. USE SAME GROUT SPECIFIED UNDER STEEL BASE PLATES GIVEN IN SPECIFICATION SECTION 03 12 23. GROUT IS TO SET AT LEAST 2 DAYS BEFORE ADJACENT SECTION IS EXCAVATED. SHORE AND BRACE EACH SECTION AS SOON AS FORMS ARE REMOVED. WHEN EXCAVATION IS STARTED IN ANY SECTION, ALL WORK IN THAT SECTION MUST BE COMPLETED PROMPTLY AND PRIOR TO STARTING ANOTHER SECTION IN THE IMMEDIATE AREA.
4. DURING UNDERPINNING OPERATION, CONTRACTOR SHALL BRACE AND SHORE WITH JACKS EXISTING FOOTING OR WALL AS REQUIRED TO PREVENT MOVEMENT OF EXISTING BUILDING. THE SHORING SHALL BE SELECTED TO WITHSTAND THE DESIGN FORCES INDICATED ON THE DRAWINGS. THE SHORING JACKS ARE TO BE LEFT IN PLACE AND CAST INTO THE CONCRETE UNDERPINNING POUR.
5. CONTRACTOR SHALL SUBMIT A SCHEDULE OF UNDERPINNING OPERATIONS FOR REVIEW OF THE ARCHITECT AND ENGINEER.
6. CONTRACTOR SHALL SURVEY EXISTING FOOTING AND WALL ELEVATIONS PRIOR TO, DURING, AND AFTER UNDERPINNING OPERATIONS TO MONITOR POTENTIAL MOVEMENTS. SURVEY RESULTS SHALL BE SUBMITTED TO THE ARCHITECT AND ENGINEER.

PRESTRESSED /PRECAST CONCRETE

1. PRECAST MEMBERS SHALL BE DESIGNED FOR ALL LOADING CONDITIONS REQUIRED BY THE GOVERNING BUILDING CODES IN ADDITION TO ANY SPECIFIC LOADINGS SHOWN ON THE DRAWINGS.
2. ALL TOPPING SLABS TO BE NON-COMPOSITE WITH HOLLOW CORE SLABS, UNLESS NOTED OTHERWISE.

REINFORCING STEEL

1. FOR CAST-IN-PLACE CONCRETE THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCEMENT UNLESS NOTED OTHERWISE:

CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH	3 INCHES
CONCRETE EXPOSED TO EARTH OR WEATHER	
NO. 6 BARS OR LARGER	2 INCHES
NO. 5 BARS OR SMALLER	1 1/2 INCHES
SLABS, WALLS, JOISTS NOT EXPOSED TO WEATHER OR IN CONTACT WITH EARTH	
NO. 14 AND NO. 18 BARS	1 1/2 INCHES
NO. 11 BARS OR SMALLER	3/4 INCHES
BEAMS AND COLUMNS NOT EXPOSED TO WEATHER OR IN CONTACT WITH EARTH	1 1/2 INCHES

2. DIMENSIONS OF CONCRETE COVER FOR REINFORCEMENT INDICATED ON DRAWINGS ARE TO OUTERMOST REINFORCING BARS, FOR BEAMS OR COLUMNS WITH STIRRUPS OR TIES, CLEAR COVER INDICATED IS TO STIRRUPS OR TIES.
3. BAR SPLICES: SPLICE REINFORCING WHERE INDICATED ON THE DRAWINGS. ALL SPLICES SHALL BE CLASS 'B' AS DEFINED IN ACI 318. IF SPLICE LENGTH IS NOT GIVEN ON THE DRAWINGS, PROVIDE LAP LENGTHS (IN INCHES) AS FOLLOWS:

	3000 PSI CONCRETE		4000 PSI CONCRETE	
BAR SIZE	OTHER	TOP	OTHER	TOP
#3	22	28	19	25
#4	29	38	25	33
#5	36	47	31	41
#6	43	56	37	49
#7	63	81	54	71
#8	72	93	62	81
#9	81	105	70	91
#10	91	118	79	102
#11	101	131	87	114

LAP LENGTHS ASSUME CLEAR SPACING BETWEEN BARS OF 2 BAR DIAMETERS, AND A MINIMUM COVER OF 1 BAR DIAMETER. FOR DEVELOPMENT LENGTHS, DIVIDE BY 1.3, TOP BARS ARE DEFINED AS HORIZONTAL BARS WITH MORE THAN 1'-0" OF FRESH CONCRETE BELOW.

MASONRY (CONCRETE MASONRY UNITS)

1. MORTAR SHALL CONFORM TO AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM) DESIGNATION CITED UNDER DESIGN CRITERIA, AND PROJECT SPECIFICATIONS. REFER TO DESIGN CRITERIA FOR MINIMUM COMPRESSIVE STRENGTH OF MORTAR.
2. REFER TO ARCHITECTURAL DRAWINGS FOR SURFACE AND HEIGHT OF UNITS, LAYING PATTERN AND JOINT TYPE. ALL BLOCK SHALL BE RUNNING BOND UNLESS NOTED OTHERWISE.
3. THE LOAD BEARING CONCRETE MASONRY WALLS FOR THIS PROJECT WERE DESIGNED TO SPAN VERTICALLY AND BE BRACED BY THE ROOF AND FLOOR FRAMING ELEMENTS OF THE STRUCTURE, DURING CONSTRUCTION THE MASONRY CONTRACTOR SHALL PROVIDE LATERAL BRACING UNTIL THE ROOF STRUCTURE IS INSTALLED AS RECOMMENDED BY ACI 530 AND THE LATEST REVISION OF "STANDARD PRACTICE FOR BRACING MASONRY WALLS UNDER CONSTRUCTION" PREPARED BY THE COUNCIL FOR MASONRY WALL BRACING. THIS BRACING IS TO PREVENT UNNECESSARY STRESS OR DAMAGE TO THE MASONRY WALLS FROM WIND LOADS, WHICH CAN OCCUR WHILE THE WALLS ARE NOT PROPERLY BRACED BY THE ROOF AND FLOOR STRUCTURE.
4. BAR SPLICES: SPLICE REINFORCING WHERE INDICATED ON THE DRAWINGS. IF SPLICE LENGTH IS NOT GIVEN ON THE DRAWINGS PROVIDE LAP LENGTHS (IN INCHES) AS FOLLOWS. BARS LARGER THAN #9 ARE TO BE MECHANICALLY SPLICED.

MINIMUM LAP SPLICE LENGTH	
BAR SIZE	LAP LENGTH
#3	27
#4	36
#5	46
#6	54
#7	63
#8	72
#9	82

POST INSTALLED ANCHORS

1. POST INSTALLED EXPANSION ANCHORS SERVING AS THE BASIS OF DESIGN ARE SHOWN ON THE DRAWINGS. ACCEPTABLE ALTERNATE ANCHORS MAY BE SUPPLIED PROVIDED THAT THE QUANTITY AND CONFIGURATION MATCHES THE CAPACITY OF THE DESIGN ANCHOR QUANTITY AND CONFIGURATION. ANY ACCEPTABLE ALTERNATES ARE TO BE SUBMITTED TO THE STRUCTURAL ENGINEER FOR REVIEW. INSTALL IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS. THE FOLLOWING TABLE SUMMARIZES THE EXPANSION ANCHORS USED ON THE PROJECT.

ANCHORED INTO:	BASIS OF DESIGN	ACCEPTABLE ALTERNATES AT CONTRACTOR'S OPTION
GROUTED MASONRY	HILTI KWIK BOLT 3	DEWALT/POWERS POWER STUD+ SD1 SIMPSON WEDGE-ALL
CONCRETE	HILTI KWIK BOLT TZ	DEWALT/POWERS POWER STUD+ SD2 TWISTED HEAD TRUBOLT+ SIMPSON STRONG BOLT 2

2. POST INSTALLED THREADED ANCHORS SERVING AS THE BASIS OF DESIGN ARE SHOWN ON THE DRAWINGS. ACCEPTABLE ALTERNATE ANCHORS MAY BE SUPPLIED PROVIDED THAT THE QUANTITY AND CONFIGURATION MATCHES THE CAPACITY OF THE DESIGN ANCHOR QUANTITY AND CONFIGURATION. ANY ACCEPTABLE ALTERNATES ARE TO BE SUBMITTED TO THE STRUCTURAL ENGINEER FOR REVIEW. INSTALL IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS. THE FOLLOWING TABLE SUMMARIZES THE THREADED ANCHORS USED ON THE PROJECT.

ANCHORED INTO:	BASIS OF DESIGN	ACCEPTABLE ALTERNATES AT CONTRACTOR'S OPTION
GROUTED MASONRY	HILTI KWIK HUS	DEWALT/POWERS SCREW-BOLT+ SIMPSON TITEN HD
UNCRACKED CONCRETE	HILTI KWIK HUS	DEWALT/POWERS SCREW-BOLT+ SIMPSON TITEN HD
CRACKED CONCRETE	HILTI KWIK HUS	DEWALT/POWERS SCREW-BOLT+ SIMPSON TITEN HD

3. ADHESIVE ANCHOR SYSTEMS FOR ATTACHMENT INTO CONCRETE SHALL CONSIST OF DEFORMED REINFORCING BARS OR ASTM A193 GRADE B7 RODS, HEAVY DUTY NUTS AND WASHERS, AND A TWO COMPONENT STRUCTURAL ADHESIVE. ADHESIVE ANCHORING SYSTEMS SERVING AS THE BASIS OF DESIGN ARE SHOWN ON THE DRAWINGS. ACCEPTABLE ALTERNATE ANCHORS MAY BE SUPPLIED PROVIDED THAT THE QUANTITY AND CONFIGURATION MATCHES THE CAPACITY OF THE DESIGN ANCHOR QUANTITY AND CONFIGURATION. ANY ACCEPTABLE ALTERNATES ARE TO BE SUBMITTED TO THE STRUCTURAL ENGINEER FOR REVIEW. INSTALL IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS. ANCHORING SYSTEMS INTO HOLLOW MASONRY SHALL INCLUDE A SCREEN TUBE. THE FOLLOWING TABLE SUMMARIZES THE ADHESIVE ANCHORS USED ON THE PROJECT.

ANCHORED INTO:	BASIS OF DESIGN	ACCEPTABLE ALTERNATES AT CONTRACTOR'S OPTION
HOLLOW MASONRY	HILTI HIT-HY 270	DEWALT/POWERS AC 100+ GOLD ITW AT ACRYLIC
GROUTED MASONRY	HILTI HIT-HY 270	DEWALT/POWERS AC 100+ GOLD ITW AT ACRYLIC SIMPSON SET
CONCRETE	HILTI HIT-HY 200	DEWALT/POWERS AC 200+ SIMPSON SET XP

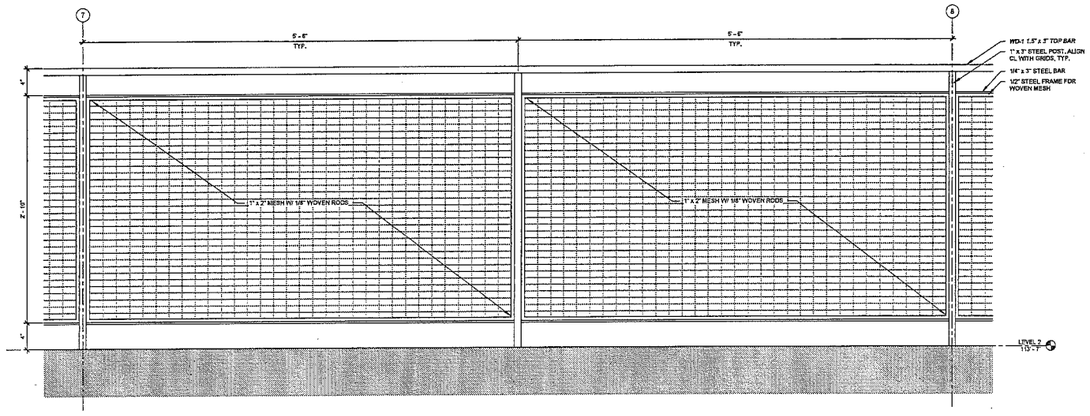
GREEN HOUSE BUILDING CRITERIA

1. FOUNDATION DESIGN IS BASED ON PRELIMINARY DESIGN REACTIONS RECEIVED FROM ROUGH BROTHERS, INC. GREENHOUSE MANUFACTURER. FINAL DESIGN REACTIONS SUPPLIED BY THE SELECTED GREENHOUSE MANUFACTURER MAY DIFFER FROM PRELIMINARY REACTIONS. BASED ON FINAL REACTIONS SUPPLIED, MODIFICATIONS TO THE FOUNDATION PLAN MAY BE REQUIRED. GENERAL CONTRACTOR SHALL INCLUDE IN THEIR BID AN ADD AND DEDUCT PRICE PER CUBIC YARD OF CONCRETE WORK INSTALLED IN CASE SUCH CHANGES ARE REQUIRED.
2. GREENHOUSE MANUFACTURER SHALL ENGAGE A PROFESSIONAL ENGINEER LICENSED TO PRACTICE STRUCTURAL ENGINEERING IN THE STATE OF WISCONSIN TO DESIGN THE GREENHOUSE AND TO SUBMIT STAMPED AND SEALED DRAWINGS AND STRUCTURAL CALCULATIONS FOR THE GREENHOUSE.
3. FOUNDATION DESIGN IS BASED ON THE GREENHOUSE COLUMNS HAVING PINNED BASES AND TRANSFERRING NO MOMENTS TO THE FOUNDATIONS.
4. ALL EXTERNAL LATERAL LOAD RESISTANCE AND STABILITY OF THE GREENHOUSE IN THE COMPLETED STRUCTURE IS PROVIDED BY MOMENT FRAMES AND TENSION ONLY ROD BRACING. THE VERTICAL LATERAL MEMBERS CARRY THE APPLIED LATERAL LOADS TO THE BUILDING FOUNDATION. THE TENSION ONLY ROD BRACING AT THE ROOF SERVES AS THE HORIZONTAL DIAPHRAGM THAT DISTRIBUTES THE LATERAL WIND AND SEISMIC FORCES HORIZONTALLY TO THE VERTICAL LATERAL MEMBERS. ALL LATERAL RESISTING MEMBERS ARE BY THE GREENHOUSE MANUFACTURER.
5. GREENHOUSE MANUFACTURER IS SOLELY RESPONSIBLE FOR THE DESIGN AND MANUFACTURER OF THE GREENHOUSE. THE BUILDING MUST BE DESIGNED TO MEET THE LOADING INDICATED IN THE DRAWINGS AND THE DESIGN CRITERIA INDICATED ABOVE.
6. GREENHOUSE MANUFACTURER IS TO COORDINATE WITH ARCHITECTURAL DRAWINGS FOR WINDOW AND DOOR OPENINGS WHEN DESIGNING THE LATERAL SYSTEM.

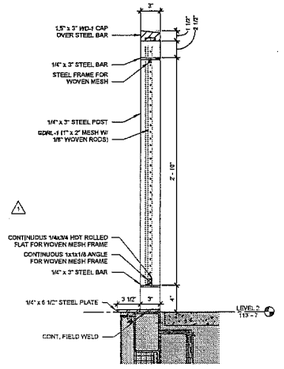
STRUCTURAL STEEL

1. REFER TO DRAWINGS FOR DETAIL OF DECK OPENINGS. REFER TO ARCHITECTURAL MECHANICAL, ELECTRICAL DRAWINGS, ETC., FOR EXACT SIZE, LOCATION, AND COUNT OF REQUIRED OPENINGS.
2. UNLESS NOTED OTHERWISE ALL WELDS SHALL BE CONTINUOUS 1/4" FILLET WELDS.
3. HIGH STRENGTH BOLTS SHALL BE INSTALLED IN ACCORDANCE WITH AISC "SPECIFICATIONS FOR STRUCTURAL JOINTS USING HIGH-STRENGTH BOLTS." REFER TO DETAILS FOR BOLT SIZE AND MATERIAL ASTM DESIGNATION.
4. BOLTS IN SLOTTED HOLES SHALL BE LOCATED IN THE CENTER OF THE HOLE AFTER FIELD ASSEMBLY IS COMPLETE, UNLESS DETAILED OTHERWISE.
5. USE BACKING FOR ALL FULL PENETRATION WELDS. ALL FULL AND/OR PARTIAL PENETRATION WELDS SHALL BE FULLY DETAILED ON THE SHOP DRAWINGS.
6. ALL LATERAL LOAD RESISTANCE AND STABILITY OF THE BUILDING IN THE COMPLETED STRUCTURE IS PROVIDED BY A COMBINATION OF REINFORCED MASONRY SHEAR WALLS AND STEEL MOMENT FRAMES (SEE PLAN SHEETS FOR LOCATIONS), THE COMPOSITE STEEL DECK AND CONCRETE FLOORS SERVE AS HORIZONTAL DIAPHRAGMS THAT DISTRIBUTE THE LATERAL WIND AND SEISMIC FORCES HORIZONTALLY TO THE VERTICAL LATERAL ELEMENTS. THE VERTICAL LATERAL ELEMENTS CARRY THE APPLIED LATERAL LOADS TO THE BUILDING FOUNDATION.

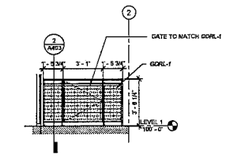
STEEL D



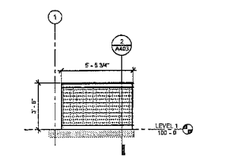
1 GDRL-1 - TYPICAL ELEVATION
A403 1 1/2" = 1'-0"



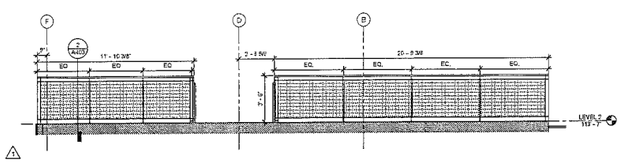
2 RAILING SECTION @ GDRL-1
A403 1 1/2" = 1'-0"



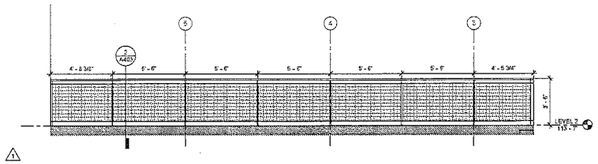
3 OUTDOOR CLASSROOM WEST GATE ELEVATION - GDRL-1
A403 1/4" = 1'-0"



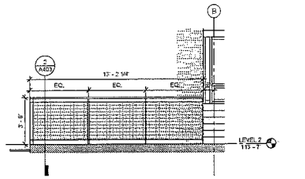
4 OUTDOOR CLASSROOM WEST RAILING ELEVATION - GDRL-1
A403 1/4" = 1'-0"



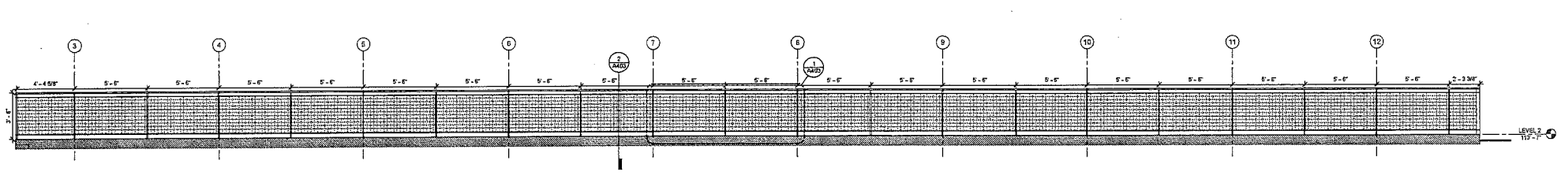
5 EXTERIOR PATIO RAILING NORTH ELEVATION - GDRL-1
A403 1/4" = 1'-0"



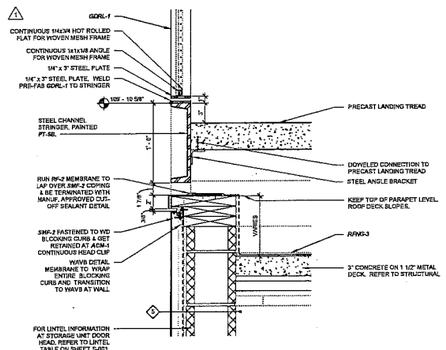
6 EXTERIOR PATIO RAILING WEST ELEVATION - GDRL-1
A403 1/4" = 1'-0"



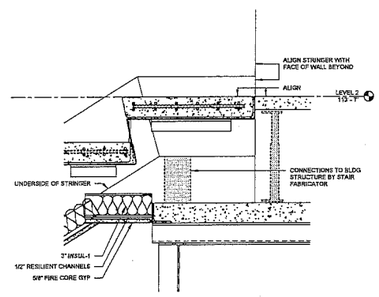
7 EXTERIOR PATIO SOUTH RAILING ELEVATION - GDRL-1
A403 1/4" = 1'-0"



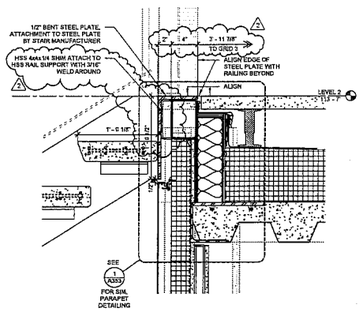
8 EXTERIOR PATIO RAILNG EAST ELEVATION - GDRL-1
A403 1/4" = 1'-0"



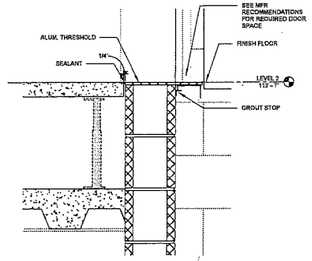
9 SECTION DETAIL - EXTERIOR STAIR AND STORAGE W.WALL
A403 1 1/2" = 1'-0"



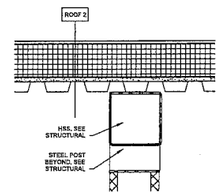
10 SECTION DETAIL - STAIR MS-1 CONNECTION
A403 1 1/2" = 1'-0"



11 SECTION DETAIL - STAIR MS-2 CONNECTION
A403 1 1/2" = 1'-0"



12 ELEVATOR DOOR THRESHOLD AT L-2
A403 1 1/2" = 1'-0"



13 ELEVATOR SHAFT ROOF DETAIL
A403 1 1/2" = 1'-0"

MSR 710 South 2nd Street, 6th Floor Minneapolis, Minnesota 55401-2242
Architecture, Interiors and Urban Design. 612.375.0336 tel 617.342.2344 fax www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201 Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
303 South Paterson Street, Suite 1 Madison, WI 53703
608.251.3600 tel

Structural Engineer, Technology and AV
IMEG Corp.
1300 Deming Way, Suite 200 Middleton, WI 53562
608.223.9600 tel

MEP Engineer
MEP Associates, LLC
880 Bass Garden Road, Suite 175 Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
575 Minnesota Ave West St. Paul, MN 55107
651.251.1880 tel

Greenhouse Design
Rough Brothers, Inc.
5513 Vine Street Cincinnati, OH 45217
513.242.0310 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin.
ARCHITECT SEAL

WISCONSIN
DANIEL JACK POLING
A-5594
MINNEAPOLIS, MN
ARCHITECT

Signature:
Print Name: Jack Poling
Date: JUNE 4, 2018 License No.: A-5594

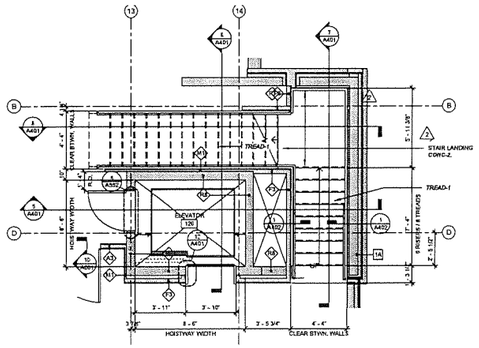
MARK	DATE	DESCRIPTION
	01.25.2017	SCHEMATIC DESIGN SUBMISSION
	12.04.2017	CD PRICING SET
	01.10.2018	DESIGN DEVELOPMENT SUBMISSION
	01.17.2018	LDC SUBMISSION
	03.30.2018	100% CD PRICING ISSUE
	04.05.2018	PARKING LOT AND SITE PLAN SUBMISSION
	05.01.2018	BID ISSUE
	05.04.2018	PERMIT ISSUE
1	05.08.2018	BID ADDENDUM 1
2	05.23.2018	BID ADDENDUM 3

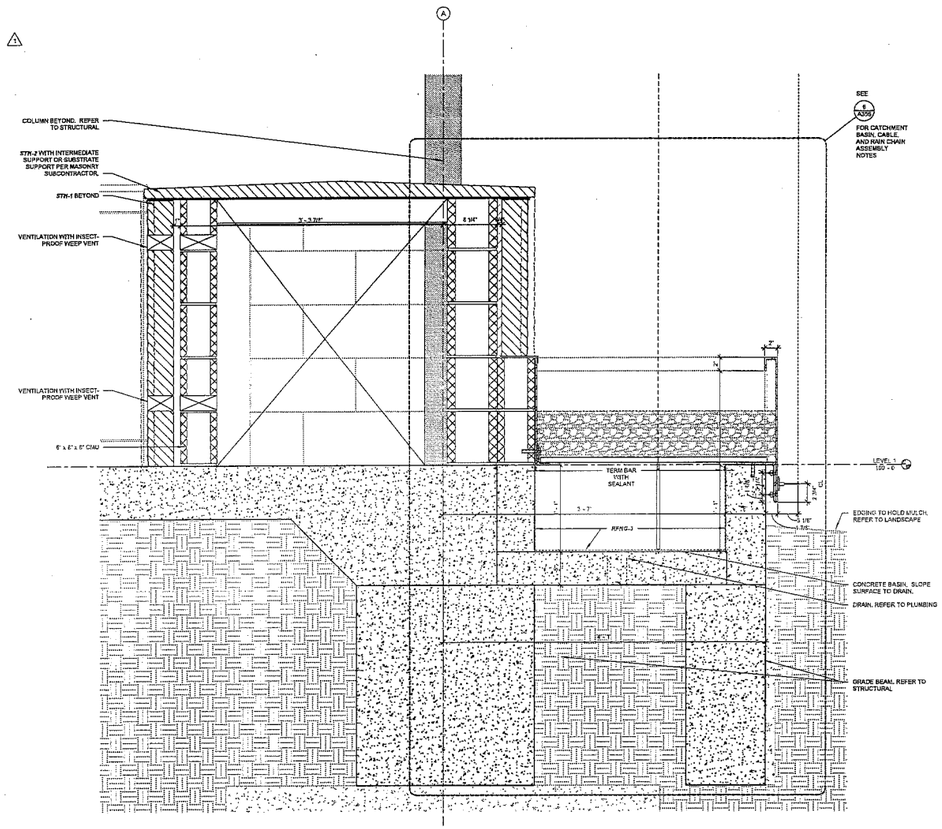
PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: MSR CHECKED BY: MSR

VERTICAL CIRCULATION DETAILS

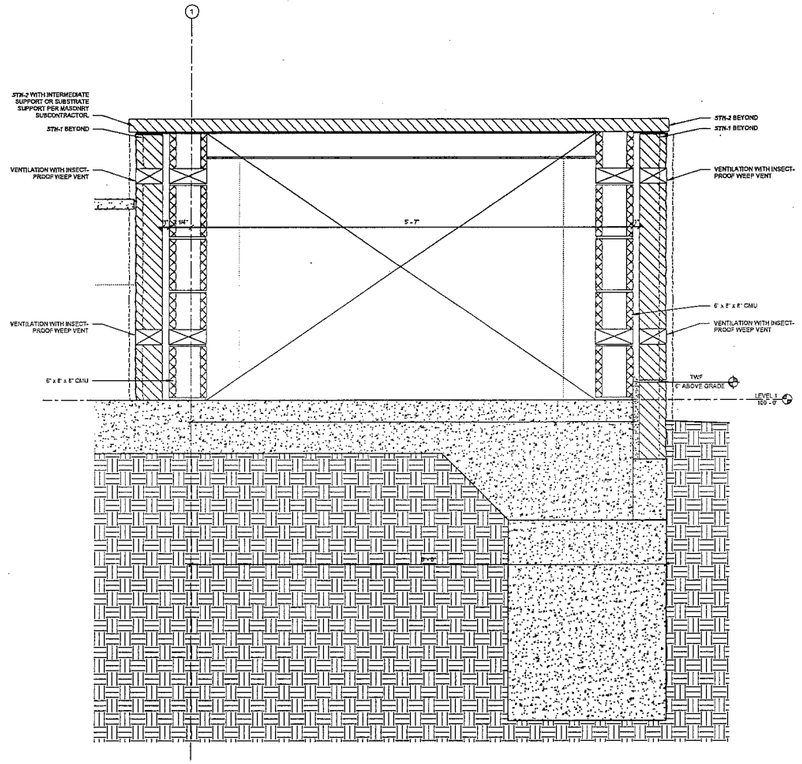
EXHIBIT F
A403

REVISED

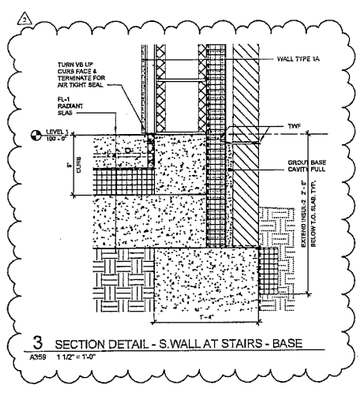

13
14
A401
A401
A401
B
B
A
STAIR LANDING CONC-2
TREAD-1
HOISTWAY WIDTH
CLEAR STWN. WALLS
D
D
ELEVATOR 125
A502
A502
A502
A503
A503
A503



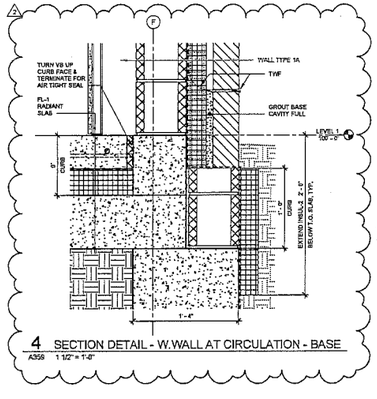
1 SECTION DETAIL - OUTDOOR CLASSROOM AT WATER CATCHMENT FEATURE
A359 1 1/2" = 1'-0"



2 SECTION DETAIL - OUTDOOR CLASSROOM AT STONE LEDGE
A359 1 1/2" = 1'-0"



3 SECTION DETAIL - S.WALL AT STAIRS - BASE
A359 1 1/2" = 1'-0"



4 SECTION DETAIL - W.WALL AT CIRCULATION - BASE
A359 1 1/2" = 1'-0"

MSR
710 South 2nd Street, 6th Floor
Minneapolis, Minnesota 55401-2282
Architecture, Interiors and Urban Design
612.375.0336 tel
612.342.2314 fax
www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201
Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
303 South Paterson Street, Suite 1
Madison, WI 53703
608.251.3600 tel

Structural Engineer, Technology and A/V
IMEG Corp.
1500 Deming Way, Suite 200
Madison, WI 53562
608.223.9600 tel

MEP Engineer
MEP Associates, LLC
860 Blue Gentian Road, Suite 175
Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
575 Minnesota Ave West
St. Paul, MN 55102
651.251.1880 tel

Greenhouse Design
Rough Brothers, Inc.
5513 Vine Street
Cincinnati, OH 45217
513.242.0310 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin. ARCHITECT SEAL

WISCONSIN
DANIEL JACK POLING
A-6394
MINNEAPOLIS, MN
ARCHITECT

Signature:
Print Name: Jack Poling
Date: JUNE 4, 2015 License No: A-6394

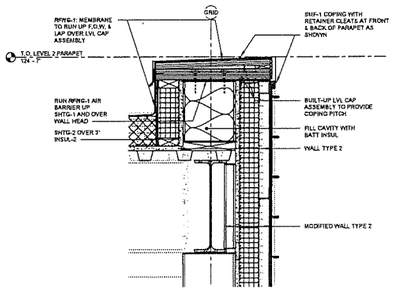
MARK	DATE	DESCRIPTION
1	06.25.2015	BID ADDENDUM 2
2	07.09.2015	BID ADDENDUM 3

PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: MSR CHECKED BY: MSR

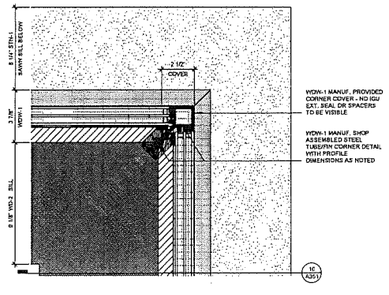
EXTERIOR DETAILS

EXHIBIT F
A359

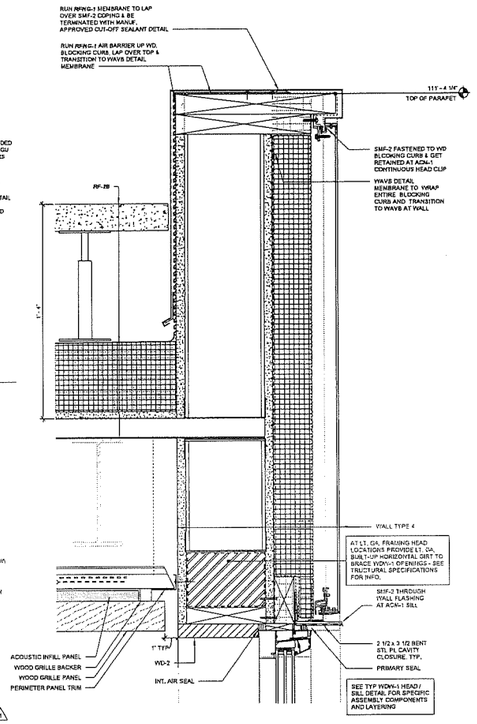
REVISED



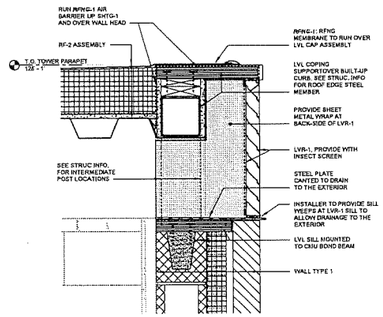
1 SECTION DETAIL - WALL TYPE 2 PARAPET
A351 1 1/2" = 1'-0"



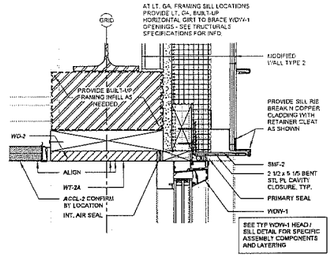
2 PLAN DETAIL - WDW-1 CORNER AT STAIR
A351 3" = 1'-0"



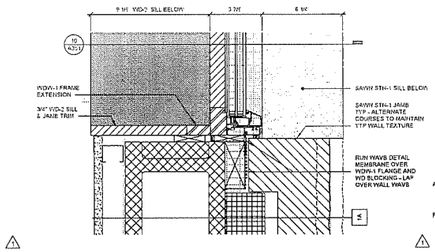
6 SECTION DETAIL - LOWER TOWER LOBBY - ROOF EDGE
A351 3" = 1'-0"



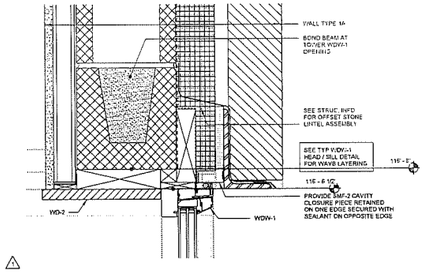
3 SECTION DETAIL - TOWER WALL AT LVR-1
A351 1 1/2" = 1'-0"



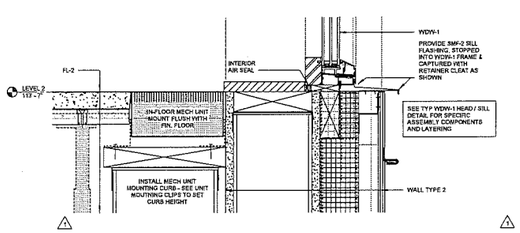
4 SECTION DETAIL - HEAD AT E. WALL ENTRY
A351 3" = 1'-0"



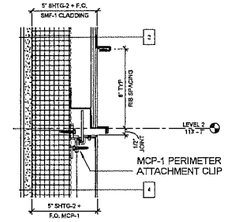
5 PLAN DETAIL - WDW-1 JAMB AT STAIR
A351 3" = 1'-0"



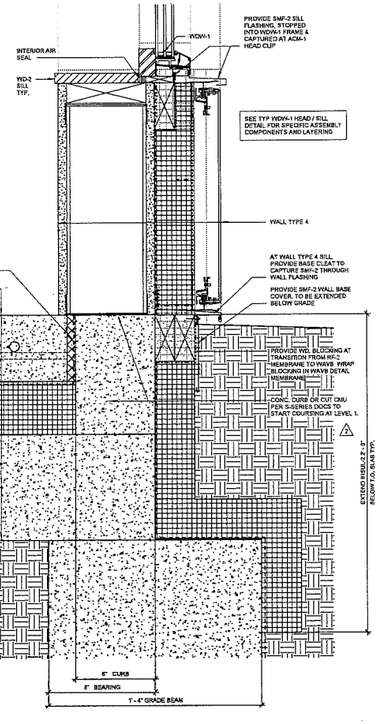
7 SECTION DETAIL - WDW-1 HEAD AT TOWER WALL
A351 3" = 1'-0"



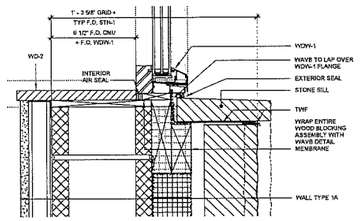
8 DETAIL SECTION - WDW-1 SILL AT FL-2
A351 3" = 1'-0"



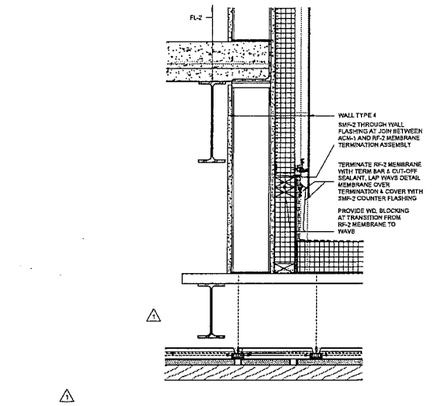
9 TYP WALL 2 + WALL 4 TRANSITION
A351 3" = 1'-0"



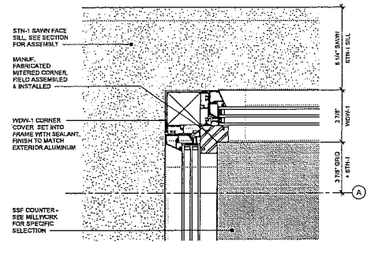
13 SECTION DETAIL - TOWER LOBBY WALL BASE
A351 3" = 1'-0"



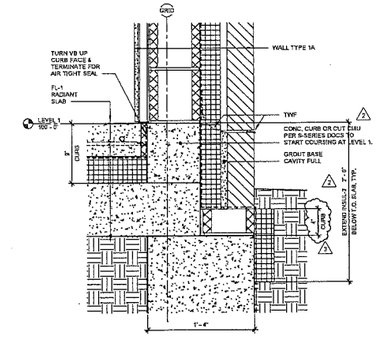
10 SECTION DETAIL - SILL AT TOWER WALL
A351 3" = 1'-0"



11 SECTION DETAIL - TOWER LOBBY TRASITION TO LVL 1 ROOF
A351 1 1/2" = 1'-0"



12 PLAN DETAIL - WDW-1 CORNER AT CLASSROOM 3
A351 3" = 1'-0"



14 SECTION DETAIL - E.WALL AT MECH - BASE
A351 1 1/2" = 1'-0"

MSR 710 South 2nd Street, 5th Floor Minneapolis, Minnesota 55401-2282
Architecture, Interiors and Urban Design. ph: 612 375 0194 fax: 612 342 2216 www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201 Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
353 South Paterson Street, Suite 1 Madison, WI 53703
608.251.3600 tel

Structural Engineer, Technology and A/V
IMEG Corp.
1600 Deming Way, Suite 200 Middleton, WI 53562
608.223.9600 tel

MEP Engineer
MEP Associates, LLC
562 Blue Garden Road, Suite 175 Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
570 Asbury Ave West St. Paul, MN 55107
651.251.1850 tel

Greenhouse Design
Rough Brothers, Inc.
5613 Vine Street Cincinnati, OH 45217
513.242.8310 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin.
ARCHITECT SEAL

WISCONSIN DANIEL JACK POLING A-5594 MINNEAPOLIS, MN ARCHITECT

Signature
Print Name: Jack Poling
Date: JUNE 4, 2018 License No. A-5594

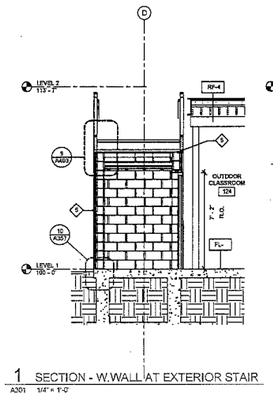
MARK	DATE	DESCRIPTION
	09.29.2017	SCHEMATIC DESIGN SUBMISSION
	12.08.2017	DD PRICING SET
	01.12.2018	DESIGN DEVELOPMENT SUBMISSION
	01.17.2018	UDC SUBMISSION
	03.30.2018	70% CD PRICING ISSUE
	04.05.2018	PARKING LOT AND SITE PLAN SUBMISSION
	06.01.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE
1	06.05.2018	BID ADDENDUM 1
2	06.22.2018	BID ADDENDUM 2
3	07.05.2018	BID ADDENDUM 3

PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: MSR CHECKED BY: MSR

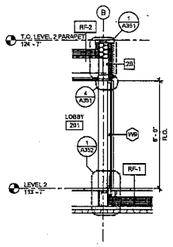
EXTERIOR DETAILS

EXHIBIT F
A351

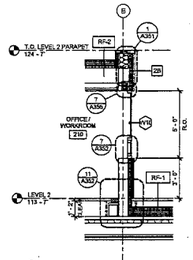
Copyright by MSR Architects, Inc.



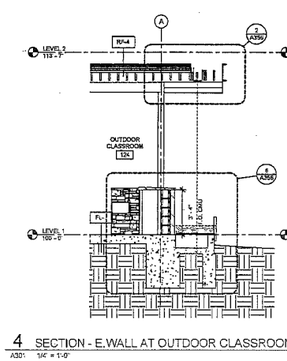
1 SECTION - W.WALL AT EXTERIOR STAIR
A301 1/4" = 1'-0"



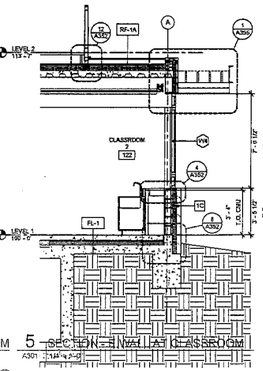
2 SECTION - E. WALL ENTRY
A301 1/4" = 1'-0"



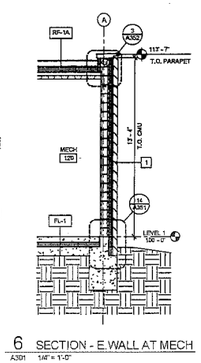
3 SECTION - E.WALL AT OFFICE
A301 1/4" = 1'-0"



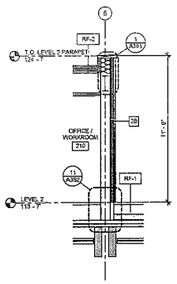
4 SECTION - E.WALL AT OUTDOOR CLASSROOM
A301 1/4" = 1'-0"



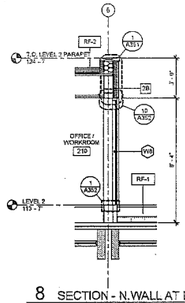
5 SECTION - W.WALL AT CLASSROOM
A301 1/4" = 1'-0"



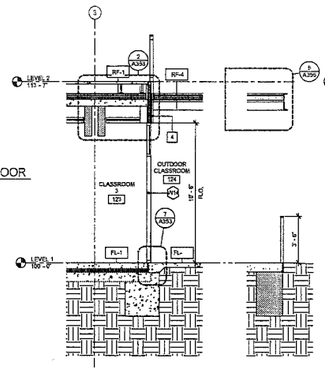
6 SECTION - E.WALL AT MECH
A301 1/4" = 1'-0"



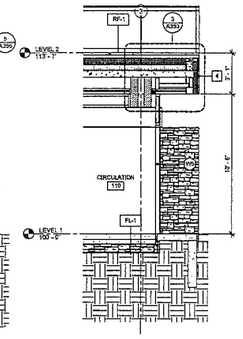
7 SECTION - N.WALL AT OFFICE
A301 1/4" = 1'-0"



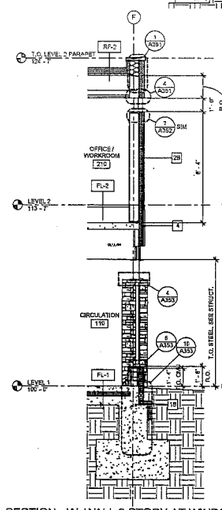
8 SECTION - N.WALL AT DOOR
A301 1/4" = 1'-0"



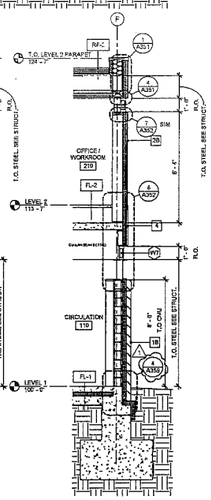
9 SECTION - N.WALL AT CLASSROOM
A301 1/4" = 1'-0"



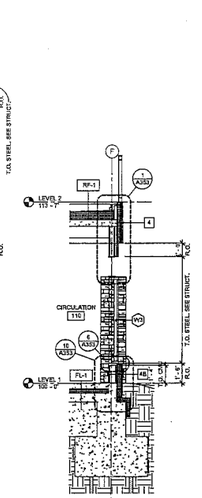
10 SECTION - N.WALL AT ENTRANCE
A301 1/4" = 1'-0"



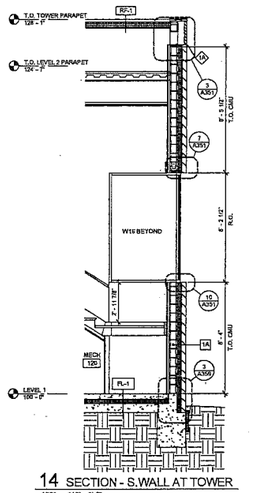
11 SECTION - W. WALL 2 STORY AT WINDOW
A301 1/4" = 1'-0"



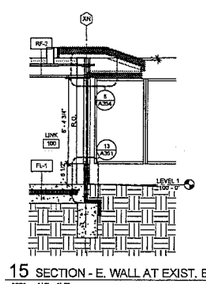
12 SECTION - W.WALL GRIDS 7/8
A301 1/4" = 1'-0"



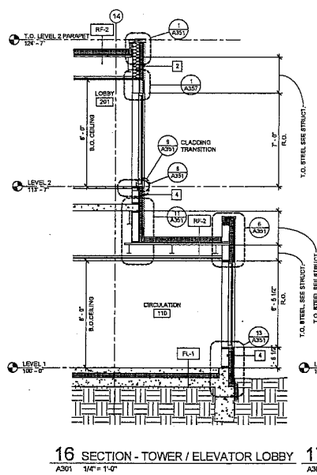
13 SECTION - W.WALL AT WINDOW
A301 1/4" = 1'-0"



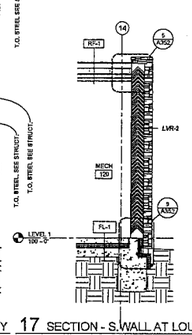
14 SECTION - S.WALL AT TOWER
A301 1/4" = 1'-0"



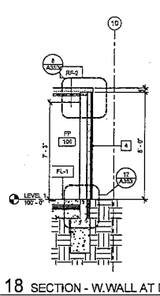
15 SECTION - E. WALL AT EXIST. BLDG
A301 1/4" = 1'-0"



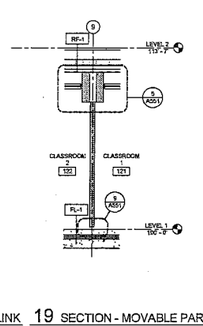
16 SECTION - TOWER / ELEVATOR LOBBY
A301 1/4" = 1'-0"



17 SECTION - S.WALL AT LOUVER
A301 1/4" = 1'-0"



18 SECTION - W.WALL AT LINK
A301 1/4" = 1'-0"



19 SECTION - MOVABLE PARTITION
A301 1/4" = 1'-0"

REVISED

MSR 710 South 2nd Street, 8th Floor Minneapolis, Minnesota 55401-2282
Architecture Interiors and Urban Design
612 375 0536 tel
612 362 2236 fax
www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201 Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
303 South Paterson Street, Suite 1 Madison, WI 53703
608.251.3000 tel

Structural Engineer, Technology and A/V
IMEG Corp.
1800 Deming Way, Suite 200 Middleton, WI 53562
608.223.9600 tel

MEP Engineer
MEP Associates, LLC
860 Blue Gentian Road, Suite 170 Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
575 Minnesota Ave West St. Paul, MN 55118
651.291.1800 tel

Greenhouse Design
Rough Brothers, Inc.
5613 Vine Street Cincinnati, OH 45217
513.242.0010 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #81623
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin.
ARCHITECT SEAL

WISCONSIN
DANIEL JACK POLING
A-5384
MINNEAPOLIS, MN
ARCHITECT

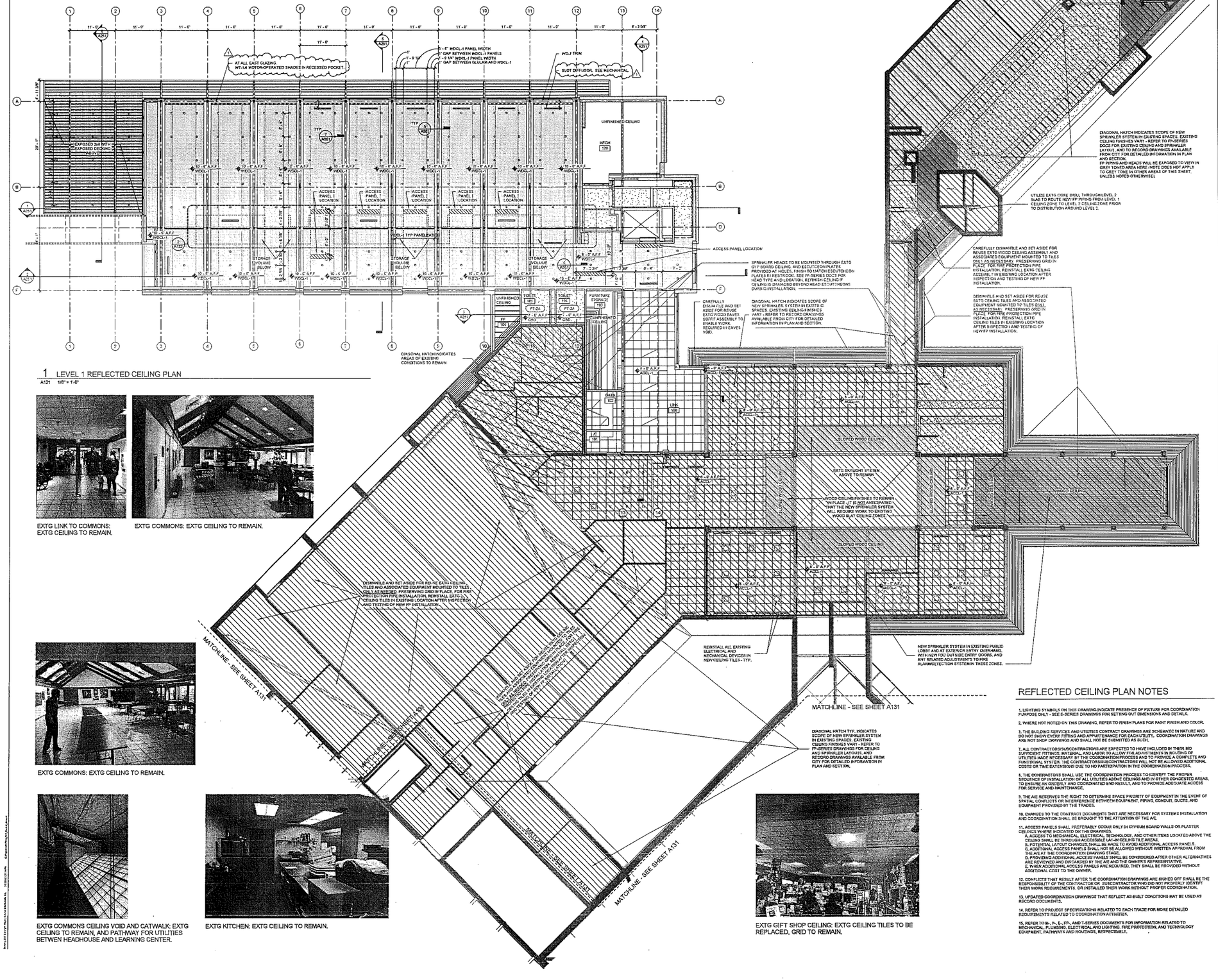
Signature:
Print Name: Jack Poling
Date: JUNE 4, 2018 License No.: A-5384

ISSUE MARK	DATE	DESCRIPTION
	05.26.2017	SCHEMATIC DESIGN SUBMISSION
	12.08.2017	CD PRICING SET
	01.16.2018	DESIGN DEVELOPMENT SUBMISSION
	01.17.2018	DDC SUBMISSION
	03.30.2018	70% CD PRICING ISSUE
	04.06.2018	PARKING LOT AND SITE PLAN SUBMISSION
	05.01.2018	BID ISSUE
	05.04.2018	PERMIT ISSUE
1	07.03.2018	BID ADDENDUM 3

PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: MSR CHECKED BY: MSR

WALL SECTIONS

EXHIBIT F
A301



1 LEVEL 1 REFLECTED CEILING PLAN
A121 1/8" = 1'-0"

EXTG LINK TO COMMONS: EXTG CEILING TO REMAIN.

EXTG COMMONS: EXTG CEILING TO REMAIN.

EXTG COMMONS: EXTG CEILING TO REMAIN.

EXTG COMMONS CEILING VOID AND CATWALK: EXTG CEILING TO REMAIN, AND PATHWAY FOR UTILITIES BETWEEN HEADHOUSE AND LEARNING CENTER.

EXTG KITCHEN: EXTG CEILING TO REMAIN.

EXTG GIFT SHOP CEILING: EXTG CEILING TILES TO BE REPLACED, GRID TO REMAIN.

REFLECTED CEILING PLAN NOTES

1. LIGHTING SYMBOLS ON THIS DRAWING INDICATE PRESENCE OF FIXTURE FOR COORDINATION PURPOSE ONLY - SEE E-SERIES DRAWINGS FOR SETTING OUT DIMENSIONS AND DETAILS.
2. WHERE NOT NOTED ON THIS DRAWING, REFER TO FINISH PLANS FOR PAINT FINISH AND COLOR.
3. THE BUILDING SERVICES AND UTILITIES CONTRACT DRAWINGS ARE SCHEMATIC IN NATURE AND DO NOT SHOW EVERY FITTING AND APPURTENANCE FOR EACH UTILITY. COORDINATION DRAWINGS ARE NOT SHOP DRAWINGS AND SHALL NOT BE SUBMITTED AS SUCH.
7. ALL CONTRACTORS/SUBCONTRACTORS ARE EXPECTED TO HAVE INCLUDED IN THEIR BID SUFFICIENT FITTINGS, MATERIAL, AND LABOR TO ALLOW FOR ADJUSTMENTS IN ROUTING OF UTILITIES MADE NECESSARY BY THE COORDINATION PROCESS AND TO PROVIDE A COMPLETE AND FUNCTIONAL SYSTEM. THE CONTRACTORS/SUBCONTRACTORS WILL NOT BE ALLOWED ADDITIONAL COSTS OR TIME EXTENSIONS DUE TO NON-PARTICIPATION IN THE COORDINATION PROCESS.
8. THE CONTRACTORS SHALL USE THE COORDINATION PROCESS TO IDENTIFY THE PROPER SEQUENCE OF INSTALLATION OF ALL UTILITIES ABOVE CEILINGS AND IN OTHER CONGESTED AREAS, TO ENSURE AN ORDERLY AND COORDINATED END RESULT, AND TO PROVIDE ADEQUATE ACCESS FOR SERVICE AND MAINTENANCE.
9. THE A/E RESERVES THE RIGHT TO DETERMINE SPACE PRIORITY OF EQUIPMENT IN THE EVENT OF SPATIAL CONFLICTS OR INTERFERENCE BETWEEN EQUIPMENT, PIPING, CONDUIT, DUCTS, AND EQUIPMENT PROVIDED BY THE TRADES.
10. CHANGES TO THE CONTRACT DOCUMENTS THAT ARE NECESSARY FOR SYSTEMS INSTALLATION AND COORDINATION SHALL BE BROUGHT TO THE ATTENTION OF THE A/E.
11. ACCESS PANELS SHALL PREFERABLY OCCUR ONLY IN GYPSUM BOARD WALLS OR PLASTER CEILINGS INDICATED ON THE DRAWINGS.
   A. ACCESS TO MECHANICAL, ELECTRICAL, TECHNOLOGY, AND OTHER ITEMS LOCATED ABOVE THE CEILING SHALL BE THROUGH ACCESSIBLE LAY-IN CEILING TILE AREAS.
   B. POTENTIAL LAYOUT CHANGES SHALL BE MADE TO AVOID ADDITIONAL ACCESS PANELS.
   C. ADDITIONAL ACCESS PANELS SHALL NOT BE ALLOWED WITHOUT WRITTEN APPROVAL FROM THE A/E AT THE COORDINATION DRAWING STAGE.
   D. PROVIDING ADDITIONAL ACCESS PANELS SHALL BE CONSIDERED AFTER OTHER ALTERNATIVES ARE REVIEWED AND DISCARDED BY THE A/E AND THE OWNER'S REPRESENTATIVE.
   E. WHEN ADDITIONAL ACCESS PANELS ARE REQUIRED, THEY SHALL BE PROVIDED WITHOUT ADDITIONAL COST TO THE OWNER.
12. CONFLICTS THAT RESULT AFTER THE COORDINATION DRAWINGS ARE SIGNED OFF SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR OR SUBCONTRACTOR WHO DID NOT PROPERLY IDENTIFY THEIR WORK REQUIREMENTS, OR INSTALLED THEIR WORK WITHOUT PROPER COORDINATION.
13. UPDATED COORDINATION DRAWINGS THAT REFLECT AS-BUILT CONDITIONS MAY BE USED AS RECORD DOCUMENTS.
14. REFER TO PROJECT SPECIFICATIONS RELATED TO EACH TRADE FOR MORE DETAILED REQUIREMENTS RELATED TO COORDINATION ACTIVITIES.
15. REFER TO M-, P-, E-, FP-, AND T-SERIES DOCUMENTS FOR INFORMATION RELATED TO MECHANICAL, PLUMBING, ELECTRICAL AND LIGHTING, FIRE PROTECTION, AND TECHNOLOGY EQUIPMENT, PATHWAYS AND ROUTINGS, RESPECTIVELY.

MSR 710 South 2nd Street, 6th Floor Minneapolis, Minnesota 55401-2282
Architecture: 612.375.0936 tel
Interiors and Urban Design: 612.342.2244 fax
www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201
Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
323 South Paterson Street, Suite 1
Madison, WI 53703
608.251.3600 tel

Structural Engineer, Technology and A/V
IMEG Corp.
1600 Deming Way, Suite 200
Middleton, WI 53562
608.223.9600 tel

MEP Engineer
MEP Associates, LLC
660 Bass Garden Road Suite 175
Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
575 Snoasdale Ave East
St. Paul, MN 55102
651.251.1880 tel

Greenhouse Design
Rough Brothers, Inc.
5515 Vine Street
Cincinnati, OH 45217
513.242.0510 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin. ARCHITECT SEAL

WISCONSIN DANIEL JACK POLING A-5594 MINNEAPOLIS, MN ARCHITECT

Signature: Jack Poling
Print Name: Jack Poling
Date: JUNE 4, 2018 License No: A-5594

MARK	DATE	DESCRIPTION
	09.29.2017	SCHEMATIC DESIGN SUBMISSION
	12.04.2017	DD PRICING SET
	01.15.2018	DESIGN DEVELOPMENT SUBMISSION
	03.12.2018	UDC SUBMISSION
	03.30.2018	100% CD PRICING ISSUE
	04.06.2018	PARKING LOT AND SITE PLAN SUBMISSION
	06.01.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE
1	07.03.2018	BID ADDENDUM 3

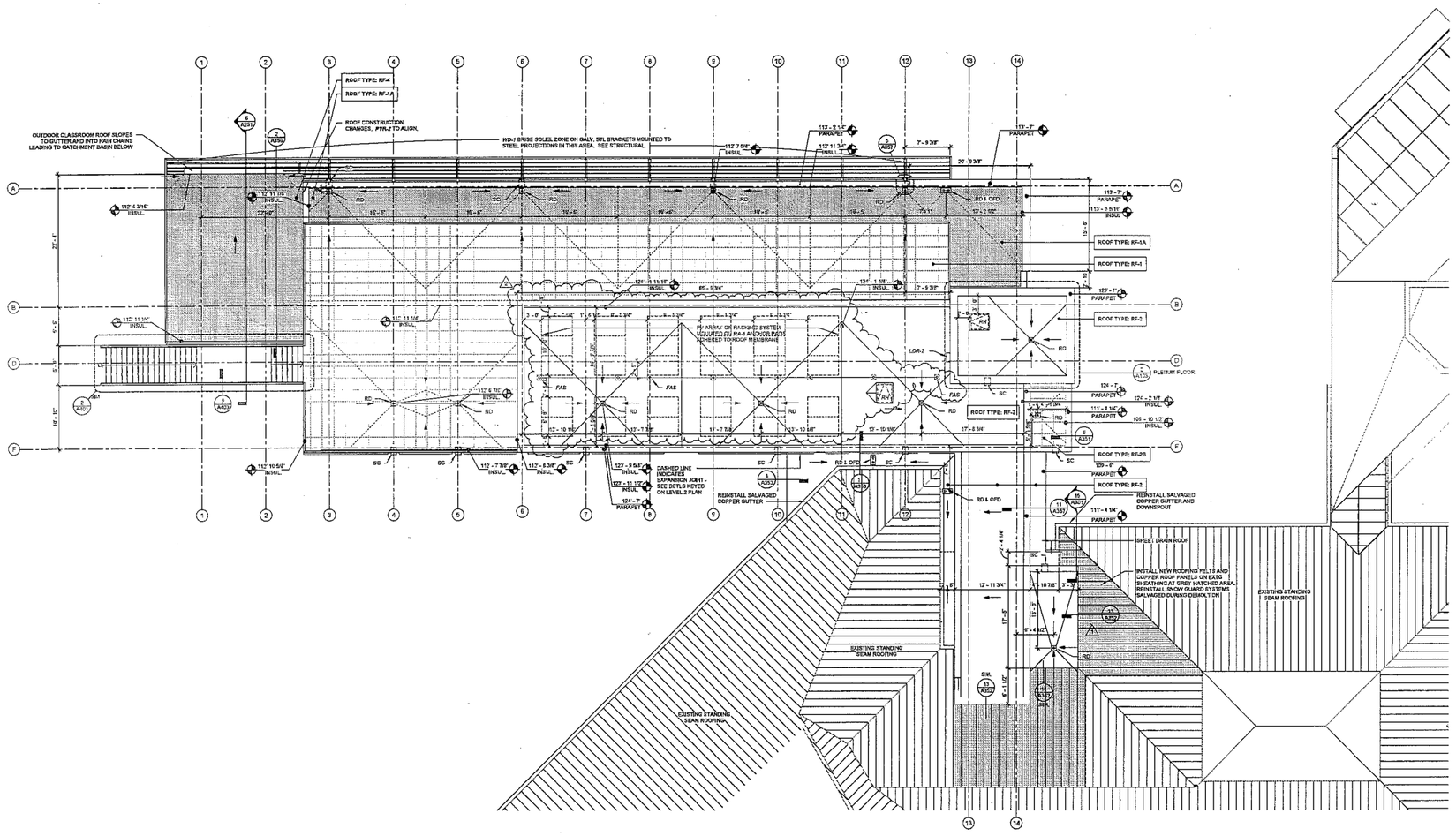
PROJECT NO: 2017016
PROJECT PHASE: BID DOCUMENTS
DRAWN BY: MSR CHECKED BY: MSR

REFLECTED CEILING PLAN - LEVEL 1 - EXTG + NEW

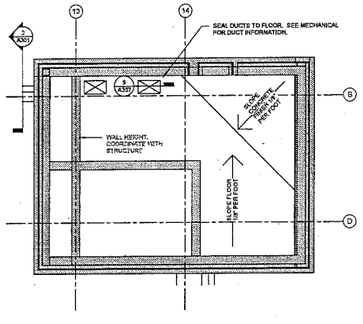
EXHIBIT F

A121

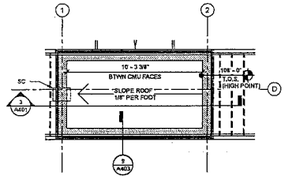
REVISED



1 ROOF PLAN
A103 1/8" = 1'-0"



2 ROOF PLAN - PLENUM FLOOR
A103 1/4" = 1'-0"



3 OUTDOOR CLASSROOM ROOF PLAN
A103 1/4" = 1'-0"

ROOF PLAN NOTES

1. ALL SLOPED INSULATION LINES SHOWN DASHED OCCUR UNDERNEATH FINISH SURFACE OF PAVERS.

2. FOR NEW COPPER ROOF DETAILS REFER TO SHEET A204 FOR DETAILS FROM 2012 RECORD SET WHEN EXISTING FACILITY WAS RE-ROOFED. NEW COPPER ROOF DETAILS TO FOLLOW THE SAME DETAIL PRINCIPLES AND TO COORDINATE WITH AS-BUILT CONDITIONS.

3. REFER TO SHEET G002 FOR ROOF TYPES AND SYSTEMS, AND RELATED SPECIFICATIONS.

4. PROTECT ALL REMAINING PORTIONS OF THE BUILDING ROOFS AND ADJACENT FEATURES NOT SCHEDULED FOR DEMOLITION. THESE AREAS SHALL BE COMPLETELY PROTECTED DURING DEMOLITION AND REMOVAL OF DEBRIS. ANY RESULTING DAMAGE SHALL BE REPAIRED OR REPLACED TO LIKE-NEW CONDITION BY THE CONTRACTOR RESPONSIBLE UNDER THE DIRECTION AND APPROVAL OF THE OWNER AND ARCHITECT.

5. THE MEANING OF "PREPARE AREAS" OF DEMOLITION AND REMOVAL FOR NEW COMPONENTS/FINISHES IS THAT IT IS TO BE LEFT CLEAR OF DEBRIS, DUST, LOOSE MATERIAL, NAILS, SCREWS, ANCHORS, REINFORCEMENT AND ALL OTHER FIXING TYPES, AND IN A SOUND MANNER, SUITABLE AS A SUBSTRATE FOR SUBSEQUENT PREPARATION AND FINISHING BY OTHER TRADES. REFER TO SPECIFICATIONS FOR APPLICABLE TRADES IN AREAS WHERE DEMOLITION AFFECTS EXISTING WALLS / CEILINGS / UNDERSIDE FLOOR DECKS TO REMAIN.

6. PROVIDE INTERIOR AND EXTERIOR SHORING, BRACING, OR SUPPORT AS REQUIRED TO PREVENT MOVEMENT, SETTLEMENT, OR COLLAPSE OF ADJACENT CONSTRUCTION SCHEDULED TO REMAIN. SEE STRUCTURAL DOCUMENTS FOR FURTHER DETAILS.

MSR 710 South 2nd Street, 8th Floor Minneapolis, Minnesota 55401-2382
Architecture Interiors and Urban Design
612 375 0336 tel
612 342 2316 fax
www.msrdesign.com

Civil Engineer:
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201
Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
303 South Paterson Street, Suite 1
Madison, WI 53703
608.251.3400 tel

Structural Engineer, Technology and A/V
IMEG Corp.
1800 Deming Way, Suite 200
Middleton, WI 53562
608.223.9600 tel

MEP Engineer
MEP Associates, LLC
650 Bee Canton Road, Suite 175
Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
575 Minnesota Ave West
St. Paul, MN 55102
651.251.1630 tel

Greenhouse Design
Rough Brothers, Inc.
5513 Vine Street
Cincinnati, OH 45217
513.242.0310 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin.
ARCHITECT SEAL

WISCONSIN
DANIEL JACK POLING
A-8994
MINNEAPOLIS, MN
ARCHITECT

Signature:
Print Name: Jack Poling
Date: JUNE 4, 2018 License No: A-8994

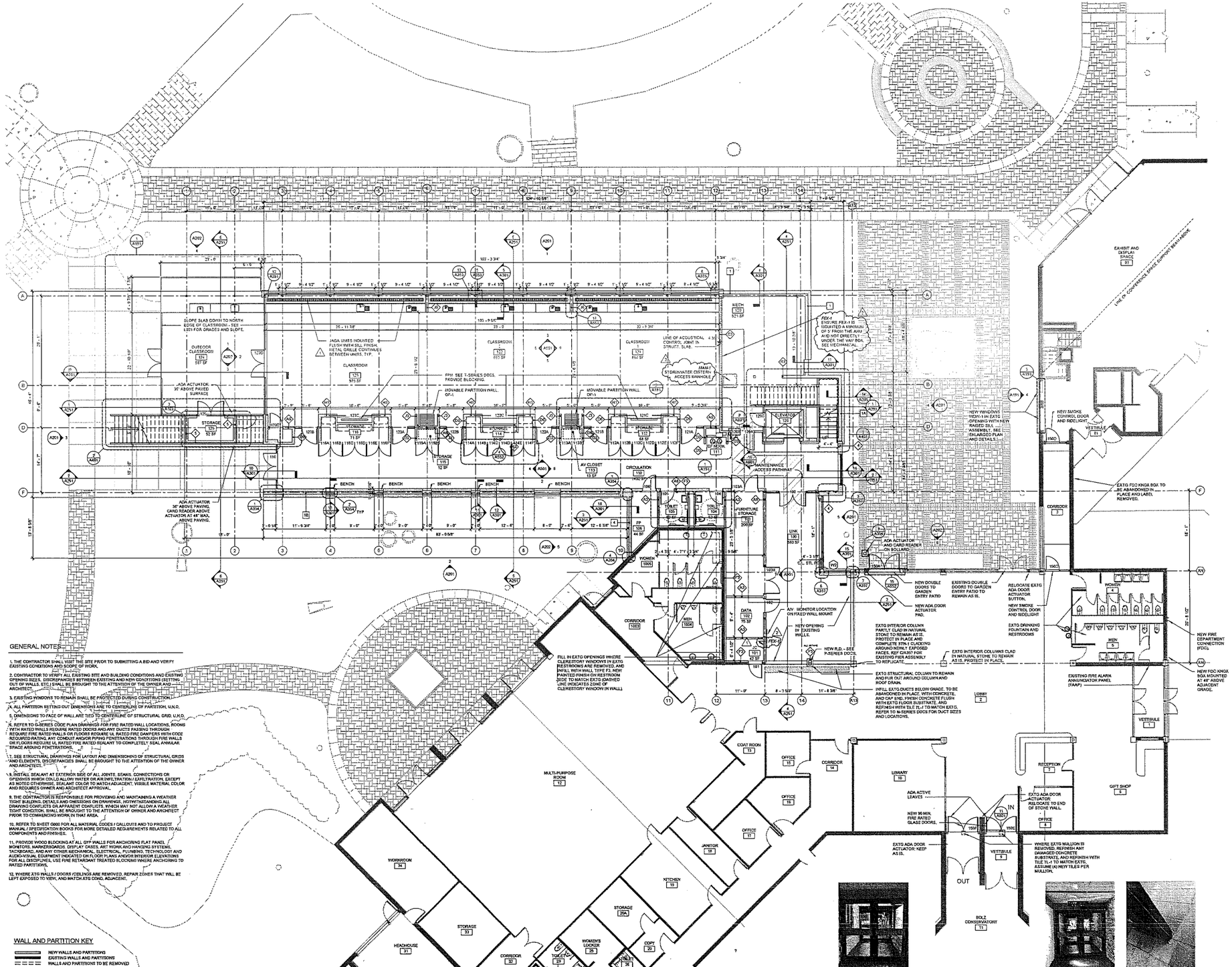
ISSUE MARK	DATE	DESCRIPTION
	09.29.2017	SCHEMATIC DESIGN SUBMISSION
	12.08.2017	DD PRICING SET
	01.12.2018	DESIGN DEVELOPMENT SUBMISSION
	01.17.2018	LDC SUBMISSION
	03.30.2018	75% CD PRICING ISSUE
	04.05.2018	PARKING LOT AND SITE PLAN SUBMISSION
	05.01.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE
1	06.22.2018	BID ADDENDUM 2
2	07.03.2018	BID ADDENDUM 3

PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: MSR CHECKED BY: MSR

LEARNING CENTER ROOF PLAN

EXHIBIT F
A103

REVISED



GENERAL NOTES

1. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO SUBMITTING A BID AND VERIFY EXISTING CONDITIONS AND SCOPE OF WORK.
2. CONTRACTOR TO VERIFY ALL EXISTING SITE AND BUILDING CONDITIONS AND EXISTING OPENING SIZES. DISCREPANCIES BETWEEN EXISTING AND NEW CONDITIONS (SETTING OUT OF WALLS, ETC.) SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER AND ARCHITECT.
3. EXISTING WINDOWS TO REMAIN SHALL BE PROTECTED DURING CONSTRUCTION.
4. ALL PARTITION SETTING OUT DIMENSIONS ARE TO CENTERLINE OF PARTITION, U.N.O.
5. DIMENSIONS TO FACE OF WALL ARE TIED TO CENTERLINE OF STRUCTURAL GRID, U.N.O.
6. REFER TO G-SERIES CODE PLAN DRAWINGS FOR FIRE RATED WALL LOCATIONS. ROOMS WITH RATED WALLS REQUIRE RATED DOORS AND ANY DUCTS PASSING THROUGH REQUIRE FIRE RATED WALLS OR FLOORS REQUIRE UL RATED FIRE DAMPERS WITH CODE REQUIRED RATING. ANY CONDUIT AND/OR PIPING PENETRATIONS THROUGH FIRE WALLS OR FLOORS REQUIRE UL RATED FIRE RATED SEALANT TO COMPLETELY SEAL ANNULAR SPACE AROUND PENETRATIONS.
7. SEE STRUCTURAL DRAWINGS FOR LAYOUT AND DIMENSIONING OF STRUCTURAL GRIDS AND ELEMENTS. DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER AND ARCHITECT.
8. INSTALL SEALANT AT EXTERIOR SIDE OF ALL JOINTS, SEAMS, CONNECTIONS OR OPENINGS WHICH COULD ALLOW WATER OR AIR INFILTRATION / EXFILTRATION, EXCEPT AS NOTED OTHERWISE. SEALANT COLOR TO MATCH ADJACENT, VISIBLE MATERIAL COLOR AND REQUIRES OWNER AND ARCHITECT APPROVAL.
9. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING AND MAINTAINING A WEATHER TIGHT BUILDING. DETAILS AND OMISSIONS ON DRAWINGS, NOTWITHSTANDING ALL DRAWING CONFLICTS OR APPARENT CONFLICTS, WHICH MAY NOT ALLOW A WEATHER TIGHT CONDITION, SHALL BE BROUGHT TO THE ATTENTION OF OWNER AND ARCHITECT PRIOR TO COMMENCING WORK IN THAT AREA.
10. REFER TO SHEET G900 FOR ALL MATERIAL CODES / CALLOUTS AND TO PROJECT MANUAL / SPECIFICATION BOOKS FOR MORE DETAILED REQUIREMENTS RELATED TO ALL COMPONENTS AND FINISHES.
11. PROVIDE WOOD BLOCKING AT ALL OFF WALLS FOR ANCHORING FLAT PANEL MONITORS, MARKERBOARDS, DISPLAY CASES, ART WORK AND HANGING SYSTEMS. TACKBOARD, AND ANY OTHER MECHANICAL, ELECTRICAL, PLUMBING, TECHNOLOGY AND AUDIO-VISUAL EQUIPMENT INDICATED ON FLOOR PLANS AND/OR INTERIOR ELEVATIONS. FOR ALL DESIGNLINES, USE FIRE RETARDANT TREATED BLOCKING WHERE ANCHORING TO RATED PARTITIONS.
12. WHERE EXTG WALLS / DOORS / CEILINGS ARE REMOVED, REPAIR ZONES THAT WILL BE LEFT EXPOSED TO VIEW, AND MATCH EXTG COND. ADJACENT.

WALL AND PARTITION KEY

- NEW WALLS AND PARTITIONS
- EXISTING WALLS AND PARTITIONS
- WALLS AND PARTITIONS TO BE REMOVED
- 1 HOUR RATED FIRE WALL
- 2 HOUR RATED FIRE WALL

1 LEVEL 1 PLAN
A101 1/8" = 1'-0"

MSR 710 South 2nd Street, 6th Floor Minneapolis, Minnesota 55401-2282
Architecture Interiors and Urban Design
612 375 0536 tel
612 342 2214 fax
www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201 Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
303 South Paterson Street, Suite 1 Madison, WI 53703
608.251.3600 tel

Structural Engineer, Technology and AV
IMEG Corp.
1800 Deming Way, Suite 200 Middleton, WI 53562
608.222.5600 tel

MEP Engineer
MEP Associates, LLC
859 Blue Gentian Road, Suite 175 Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
575 Minnesota Ave West St. Paul, MN 55107
651.251.1850 tel

Greenhouse Design
Rough Brothers, Inc.
5513 Vine Street Cincinnati, OH 45217
513.242.0310 tel

REVISED

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin.
ARCHITECT SEAL

WISCONSIN DANIEL JACK POLING A-6994 MINNEAPOLIS, MN ARCHITECT

Signature
Print Name: Jack Poling
Date: JUNE 4, 2018 License No: A-6994

ISSUE		
REMK	DATE	DESCRIPTION
	09.25.2017	SCHEMATIC DESIGN SUBMISSION
	12.04.2017	DD PRICING SET
	01.19.2018	DESIGN DEVELOPMENT SUBMISSION
	03.17.2018	UDC SUBMISSION
	03.30.2018	FINAL CD PRICING ISSUE
	04.06.2018	PARKING LOT AND SITE PLAN SUBMISSION
	06.01.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE
1	06.22.2018	BID ADDENDUM 2
2	07.02.2018	BID ADDENDUM 3

PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: MSR CHECKED BY: MSR

LEARNING CENTER FLOOR PLAN - LEVEL 1

EXHIBIT F
A101

MATERIAL / PRODUCT ID LIST with Spec Data

ID	Short Name	Section	Spec Data
ACOU-1	ACOUSTICAL CEILING SYSTEM	09 5113	MFR: Armstrong; PRODUCT: Optima, Plant Based; EDGE: Tegular; MODEL: 3229PB; PANEL SIZE: 24" x 24" x 1"; COLOR: White; GRID: 9/16", White;
ACOU-2	ACOUSTICAL CEILING SYSTEM	09 5113	MFR: Armstrong; PRODUCT: Optima, Plant Based; EDGE: Tegular; MODEL: 3229PB; PANEL SIZE: 24" x 60" x 1"; COLOR: White; GRID: 9/16", White;
ARF-1	ACCESS FLOORING	09 6900	MFR: Tate; PRODUCT: CorCore 1000; PANEL SIZE: 24" x 24"; THICKNESS: 1 5/8"; UNDERSTRUCTURE: Posiloc;
ARF-2	ACCESS FLOORING	09 6900	MFR: Tate; PRODUCT: STONEWORKS: Classic Concrete; PANEL SIZE: 24" x 24"; THICKNESS: 1 5/16"; FINISH: Pronaco Concrete Protector W2; UNDERSTRUCTURE: Bolted Stringer;
CONT-1	CONCRETE COUNTERTOP	12 3610	PRODUCT: Concrete Countertop COLOR: TBD; FINISH: Smooth Trowelled; EDGE: Eased; SEALER: Clear, Matte; THICKNESS: See Drawings; INLAIDINES: See Drawings; JOINT TYPE: Grooved, 1/8"; CUTOUTS: Sink with Drainboard and Faucets
CPNP	COLD-FORMED STEEL FRAMING - SEE STRUCTURAL	05 4000	PRODUCT: Cold-Formed Steel Studs and Furring;
CNU	CONCRETE MASONRY UNIT - SEE STRUCTURAL	04 2200	PRODUCT: Concrete Masonry Units;
CMU-2	CONCRETE MASONRY UNIT - VENEER	04 2200	PRODUCT: Concrete Masonry Units; FINISH: Burnished; COLOR: MP 50 Dark Grey/Black;
CONC-1	SEALED CONCRETE FINISH - SEE STRUCTURAL	03 3000	PRODUCT: Penetrating Liquid Densifier and Sealer;
CONC-2	POLISHED CONCRETE FINISH	03 3543	POLISH: Level 1: Matte finish, 100 grit; FINISH: Penetrating Liquid Densifier and Sealer; FINISH ADDITIVE: Increte Stain-Gap or HTC Supershot;
CPT-1	CARPET TILE FLOORING - PLANK	09 6813	MFR: Mohawk; STYLE: Lichen, Micro Roots; COLOR: Iceland Moss
CPT-2	CARPET TILE FLOORING - PLANK	09 6813	MFR: Mohawk; STYLE: Lichen Micro Bloom, COLOR: Iceland Moss
ELEV	HYDRAULIC MRL ELEVATOR	14 2400	MFR: Otis (or Thyssenkrupp); STYLE: Machine-Roomless Hydraulic; MODEL: HydroMod (Endura NRL); CAR TYPE: Passenger; CAPACITY (lbs): 3,000; SPEED (fpm, min): 150; OPENING: Front, Rapid Hoist; CAB ENTRANCE: 1-Speed, Satin Stainless Steel; OPERATING PANEL: Satin Stainless Steel; CAR PANELS: Custom Laminate, PLAM-4; HANDRAIL: Flat Bar 2"W, Satin Stainless Steel; CEILING: LED, Satin Bar, Satin Stainless Steel; DOOR SILLS: Satin Stainless Steel; FLOORING: Carpet, See Finish Plan; HALL ENTRANCE: Covered EW-4; FIXTURES: Classic, Satin Stainless Steel BUTTONS: Flush, Illuminated Hilo;
FPS	FALL ARREST SYSTEM	13 1200	DESIGN-BY: TBD;
HDW-1	HYPE SATISHELVES	06 42 16	MFR: AMERCA; MOUNTING BRACKETS: At Incasement for Lintel;
GRID	GRIDWALL - TBD	09 2900	PRODUCT: Panel-Mesh Gridwall Basic;
GSRL-1	DECORATIVE METAL GUARDRAIL	05 7300	PRODUCT: Custom Steel Guardrail FINISH: PT-01, UNO;
IGU-1	CLEAR ANNEALED GLASS	08 8000	PRODUCT: Annealed Glass COLOR: Clear; THICKNESS: 1/4", typical * indicates Tempered
GLBS-1A	GLASS BASKETBOARD - WHITE	10 1100	MFR: Clarus Glassworks, LLC; STYLE: WMD2W2; COLOR: White Magnetic Finish
HDRL-1	DECORATIVE METAL HANDRAIL	05 7300	PRODUCT: Stainless Steel Tubing Finish: Satin, No.4 Polish, PROFILE: 1 1/2" Diameter;
IGU-1	INSULATED GLASS UNIT	08 8000	MFR: Cardinal Glass; PRODUCT: Double-Pane COLOR: Clear; UNIT THICKNESS: 1"; FILL: Argon; SUNWOOW: Solar Control, CARDINAL: LoE366Q2, SUNVALUE (MAX): 0.25; VLT (MIN): 67%; SHGC (MAX): 0.27; * Indicates Tempered
INSUL-1	ACOUSTICAL INSULATION	09 2900	PRODUCT: Unfaced Mineral Wool Blanket Insulation;
INSUL-2	BELOW GRADE INSULATION	07 2100	PRODUCT: Expanded Polystyrene Foam (EPS); TYPE: IX, 25+R; R-VALUE: 4.2/inch;
INSUL-3	CONTINUOUS WALL INSULATION	07 2100	PRODUCT: Polyisocyanurate Foam, BOD: Hunter Panels, Inc CG; FACER: Glass-Fiber-mat; FURRING SYSTEM: TBD;
INSUL-4	SPRAY FOAM INSULATION	07 2119	PRODUCT: Water-blown, Closed-cell Spray Polyurethane Foam; BOD: Icynene, ProSeal Elect; DENSITY: 2.2 pcf/m3, Closed-cell; BLOWING AGENT: Water; R-VALUE: 4.3/inch; VAPOR BARRIER: 2.4 Inch;
INSUL-5	VENTILATED NAILBASE INSULATION	07 2100	PRODUCT: Ventilated Nailbase Insulation; BOD: GAF, ThermaCal 1; SHEATHING: 1/2" Plywood; AIRSPACE: 1"; INSULATION: Polyisocyanurate; HANDL THICKNESS: 8 1/2"; R-VALUE: 35;
LDR-1	WALL-MOUNTED LADDER	05 5000	PRODUCT: Wallmounted Access Ladder; WIDTH: 18"; RUNGS: 1" Square; MATERIAL: Steel; FINISH: Factory Primed, Field Painted;
LDR-2	WALL-MOUNTED LADDER, EXTERIOR	05 5000	PRODUCT: Wallmounted Access Ladder; WIDTH: 18"; RUNGS: 1" Square; MATERIAL: Galvanized Steel; FINISH: Factory Primed, Field Painted;
LVR-1	LOUVER	05 9119	MFR: Greenheck; MODEL: ESD-302; TYPE: Drainable; DEPTH: 2 inches; FREE AREA (4x4): 35%; COLOR: ;
LVR-2	ACOUSTICAL LOUVER	05 9119	MFR: Greenheck; MODEL: AFH-125; TYPE: Acoustical, Sightproof; DEPTH: 12 inches; FREE AREA (4x4): 27%; COLOR: ;
MW-1	MILLWORK/ACCESSORY - PULL	06 4116	MFR: Studio 917 Hardware; STYLE: Chrome Collection; PRODUCT NUMBER: P20A6B-126;
MW-4	MILLWORK/ACCESSORY - COAT ROD	06 4116	MFR: Knape and Vogt; STYLE: Closets Pro Regular-Duty Adjustable Closet Rod w/ Rural Flange; PRODUCT NUMBER: KP0022-48/72;
MW-5	MILLWORK/ACCESSORY - PAPER TOWEL DISPENSR	06 4116	MFR: Bobrick; STYLE: TrimLineSeries; PRODUCT NUMBER: B-6261;
MW-6	MILLWORK/ACCESSORY - SOAP TRAY	06 4116	MFR: Jaros STYLE: Bed Tray; PRODUCT NUMBER: H-2982;
MW-7	MILLWORK/ACCESSORY - WASTE BIN	06 4116	MFR: Knape and Vogt; STYLE: Soft Close, Tip-Mount Wave e-bin Recycling Bins; PRODUCT NUMBER: 73C15-1-109PT;
MAN-1	MANHOLE COVER		MFR: Neenah; MODEL: R-1743-M; DESCRIPTION: Ultimate Frame, Solid Gasketed Lid; OPTIONS: Inground hinge plug for wetland application;
MCP-1	METAL COMPOSITE PANEL	07 4212.23	MFR: 3A Composites USA, Inc.; PRODUCT: Alucobond Plus, FR Core; THICKNESS: 4 mm SYSTEM: Rainscreen (), Insulation Outboard; FINISH: Classic Colors; COLOR: TBD (Dark Charcoal or Fauxs Black);
MR-1	METAL PANEL - STANDING SEAM - COPPER	07 4113.19	PRODUCT: Standing Seam Metal Wall Panels, METAL: Copper; FINISH: Mill, Non-Patinated; WEIGHT: 20 oz; PANEL WIDTH: 6 inches; SEAM HEIGHT: 1 inch; UNDERLAYMENT: WRB with Slip Sheet;
MR-2	METAL PANEL - BLACKENED STEEL	05 9000	PRODUCT: Steel Rain Screen Wall Panels; THICKNESS: 14G FINISH: Phos Black by Bentwood Technologies; FASTENERS: Counter-sunk, Black Oxide Screws;
MS-1	METAL PAN STAIR - INTERIOR	05 5113	PRODUCT: Work Shop; TREADS: Precast Concrete Tread; MFR: Texture Design by Wacobe Tile, Inc.; TYPE: C-30, Tread with Setback Bed FINISH: TBD; SAFETY: Carborundum Strips;
MS-2	METAL PAN STAIR - EXTERIOR	05 5113	PRODUCT: Metal Stair; TREADS: Precast Concrete Tread; MFR: Texture Design by Wacobe Tile, Inc.; TYPE: C-60, Self-supporting Flat Tread; COLOR: TBD; SAFETY: Carborundum Strips;
NSMF	NON-STRUCTURAL METAL FRAMING	09 2216	PRODUCT: Non-Structural Metal Studs and Furring;
OP-1	OPERABLE PARTITION	10 2239	MFR: Modernfold; MODEL: Acoustic-Seal Ensonic; NRC: 0.65 (Perforated Panels); STC: 54; PANEL FINISH: Fabric; MFR: DARNELSE; STYLE: KOREL, SLEET EMBARDIER; COLOR: ECR6-420;
PLAM-1	PLASTIC LAMINATE	06 4116	MFR: WILSONART; STYLE: STANDARD LAMINATE; COLOR: CAPRI LINEN, 4942-3K
PLAM-2	PLASTIC LAMINATE	06 4116	MFR: WILSONART; STYLE: TRACELESS; COLOR: CHARCOAL VELVET, 19504-31;
PLAM-3	PLASTIC LAMINATE	06 4116	MFR: FILSONART; STYLE: TRACELESS COLOR: SNOW WHITE VELVET, 19501-31;

MATERIAL / PRODUCT ID LIST with Spec Data

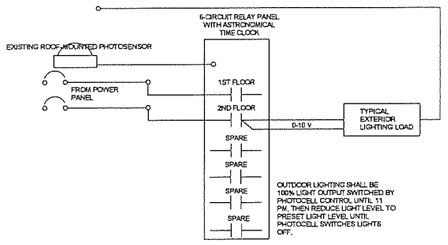
ID	Short Name	Section	Spec Data
PLAM-4	PLASTIC LAMINATE - ELEV-1	06 4116	MFR: WILSONART; STYLE: STANDARD LAMINATE; COLOR: Dove Grey, 020-60, Matte;
PT-1	INTERIOR PAINT - FLAT	09 9123	PRODUCT: Interior Paint; SHEEN: Flat;
PT-2	INTERIOR PAINT - EGGSHELL	09 9123	PRODUCT: Interior Paint; SHEEN: Eggshell;
PT-3	HIGH-PERFORMANCE INTERIOR PAINT - SEMI-GLOSS	09 9123	PRODUCT: Interior Paint; SHEEN: Semi-Gloss;
PT-4	HIGH-PERFORMANCE EXTERIOR PAINT - SEMI-GLOSS	09 9113	PRODUCT: Exterior Paint; SHEEN: Semi-Gloss;
PT-5	EXTERIOR POWDERCOAT		PRODUCT: Exterior Powdercoat; SHEEN: Semi-Gloss;
PT- A	PAINT COLOR - WHITE	09 9123	MFR: BENJAMIN MOORE; STYLE: OWI-50; COLOR: CAPITOL WHITE;
PT- B	PAINT COLOR - CHARCOAL	09 9123	MFR: BENJAMIN MOORE; STYLE: 2124-10; COLOR: WROUGHT IRON;
PT- E	PAINT COLOR - ACCENT COLOR	09 9123	MFR: Sherwin Williams; STYLE: SW 7617; COLOR: Mediterranean;
PVM-1	PEDESTAL PAVER SYSTEM - CONCRETE	07 7600	PRODUCT: Concrete Pavers on Pedestals; MFR: Wausau or Bowl; MODULE: 24" x 24"; THICKNESS: 2"; COLOR: TBD;
PVR-2	PEDESTAL PAVER SYSTEM - WOOD	07 7600	PRODUCT: Wood Slat Pavers on Pedestals; MFR: Bison Innovative Products; MODEL: WPC-TED-100W-CUMARU-24; MODULE: 24" x 24"; SPECIES: Cumaru, FSC; FINISH: Unsealed;
PWD-1	CONCEALED PLYWOOD BACKING	06 1000	PRODUCT: Concealed Plywood Backing Panels; GRADE: DOC PS 1, Exposure 1, C-D Plugged, FRT; THICKNESS: 3/4";
RA-1	ROOF ANCHOR FOR PV RACKING	07 5523	MFR: Anchor Roofers; PRODUCT: ULAnchor 2000 EPDM;
RC-1	RAIN CHAIN	05 5443	MFR: SEO Rain Chain; MODEL: Helmet; COLOR: Silver; LENGTH: 12 feet; ATTACHMENT: Hooktop Metal Fitting and Wire;
REVEAL-1	5/8" GYPSUM REVEAL TRIM	092116	MFR: Fry Reglet Corporation; MODEL: DGM-625-1125; FINISH: Aluminum, Black;
RFNS-1	EPDM ROOFING SYSTEM	07 5523	MFR: Firestone or Carlisle; MEMBRANE: EPDM - Mech. Black; INSTALLATION: Fully adhered; COVER BOARD: High-Density Polyisocyanurate
RFNS-2	METAL ROOFING SYSTEM	07 4113.16	PRODUCT: Standing Seam Metal Roofing; SEAM TYPE: Snap-Lock Seam; METAL: To Match: Cumberland Copper; FINISH: Mill, Non-patinated; UNDERLAYMENT: Systemic Roofing Felt, GAF Deck Armor; ISOLATATE: Self-Adhering, High-Temp Sheet; SLIP SHEET: Rosin Paper;
RFNS-3	EPDM FLASHING	07 6223	MFR: Firestone or Carlisle; MEMBRANE: Cured EPDM, 60-mil, Black, Self-adhered; INSTALLATION: Fully adhered
RH	ROOF HATCH	07 7200	PRODUCT: Single-Leaf Insulated Roof Hatch SIZE: 30" x 30"; MATERIAL: Aluminum; FINISH: Mill Finish;
RSIS-1	RESILIENT SOUND ISOLATION CLIP	09 2216	MFR: PAC International, Inc.; MODEL: RSIC-1
SHELF-1	SHELVING SYSTEM BRACKARD 24"H	06 4116	MFR: Ezhng; MODEL: PILVCH-54; SIZE: 54"H; COLOR: Arctic White;
SHELF-2	SHELVING SYSTEM SHELF AND BRACKET	06 4116	MFR: Ezhng; MODEL: IN2518A; SIZE: 25"D x 18"H; COLOR: Arctic White;
SHELF-3	SHELVING SYSTEM SHELF AND BRACKET	06 4116	MFR: Ezhng; MODEL: IN2018A; SIZE: 20"D x 18"H; COLOR: Arctic White;
SHELF-4	SHELVING SYSTEM STANDARD 20"H	06 4116	MFR: Ezhng; MODEL: PILVCH-32; SIZE: 32"H; COLOR: Arctic White;
SHTG-1	GYPSUM SHEATHING	06 1600	MFR: CertainTeed Gypc; TYPE: Type X, Glass-Mat Faced; THICKNESS: 5/8";
SHTG-2	PLYWOOD SHEATHING	06 1600	PRODUCT: Exterior Plywood Sheathing, GRADE: DOC PS1, Exterior, FRT; SPAN RATING: 32/16; THICKNESS: 1/2";
SMV-1	SHEET METAL FLASHING - COPPER	07 6200	PRODUCT: Copper Sheet; FINISH: Mill, Non-Patinated; WEIGHT: 20 oz, UNO; CUTTERS: Match Existing Profile; DOWNSPOUTS: Formed Round, 6" D; UNDERLAYMENT: Self-Adhering, High-Temp Sheet;
SMV-2	SHEET METAL FLASHING - GRAY/BLACK	07 6200	PRODUCT: Coated Aluminum Sheet; THICKNESS: 0.040", UNO; COLOR: TBD, Match WDW-1 and MCP-1;
SSF-1	SOLID SURFACE	12 3661	MFR: CAESARSTONE; STYLE: 4100; COLOR: RAVEN;
SSF-2	SOLID SURFACE	12 3661	MFR: CAESARSTONE; STYLE: 6141; COLOR: OCEAN FOAM;
STN-1	STONE VENEER	04 4313.13	MFR: Buechel Stone Corp; PRODUCT: Full Bed Veneer; COLOR: Fond du Lac Rustic; TEXTURE: Rustic; WEEP SYSTEM: Mesonry Technology, Inc.;
STN-2	CUT STONE TRIM	04 4313.13	MFR: Buechel Stone Corp; PRODUCT: Cut Limestone Shapes; COLOR: Indiana Buff (or Texas Creme); TEXTURE: Smooth;
TA-04	TOILET TISSUE DISPENSER JUMBO-ROLL (OHC)	10 2800	MFR: TBD by Owner; STYLE: ; COLOR: ;
TA-05	PAPER TOWEL (FOLDED) DISPENSER	10 2800	MFR: Bobrick; MODEL: B-262; FINISH: Satin Stainless Steel;
TA-06	PAPER TOWEL (ROLL) DISPENSER (OHC)	10 2800	MFR: TBD by Owner; STYLE: ; COLOR: ;
TA-11	LIQUID-SOAP DISPENSER (OHC)	10 2800	MFR: TBD by Owner; STYLE: ; COLOR: ;
TA-12	GRAB BAR	10 2800	MFR: Bobrick; MODEL: B-6806; FINISH: Satin Stainless Steel; DIAMETER: 1 1/2"; LENGTH: See Drawings;
TA-14	SANITARY-NAPKIN DISPOSAL UNIT	10 2800	MFR: Bobrick; MODEL: B-270; FINISH: Satin Stainless Steel;
TA-11	MIRROR UNIT (FRAMED)	10 2800	MFR: TBD BY OWNER/ARCHITECT; STYLE: LUCIANO MIRROR, SMALL; COLOR: BLACK;
TA-19	HOOK	10 2800	MFR: Bobrick; MODEL: B-212; FINISH: Satin Nickel;
TA-24	DIAPER-CHANGING STATION	10 2800	MFR: Koala Kare; MODEL: KB211-SSRE; FINISH: Satin Stainless Steel;
TBP	THERMAL BREAK FRAMING	07 2100	MFR: Advanced Architectural Products; PRODUCT: SMARTc; MODEL: GridSmart;
TBN	THERMAL BREAK MATERIAL - SEE STRUCTURAL	GEN NOTES	MFR: Fairmeus or Accetwerq; PRODUCT: Structural Thermal Break Materials
TC-1	CERAMIC TILE	09 3013	MFR: FIRECLAY TILE; STYLE: ANNIL 3; COLOR: CUSTOM - SPRUCE, HUNTER, LIMON, CARBON;
TC-2	CERAMIC TILE (OHC)	09 3013	MFR: DAL; STYLE: 4"x4"; COLOR: ASH;
TC-3	CERAMIC TILE WALL BASE (OHC)	09 3013	MFR: DAL; STYLE: 4"x 6", COVE BASE COLOR: ASH;
TLBD	TILE BACKER BOARD	09 2900	PRODUCT: Cement Board
TLFC-1	TILE FLOORING	09 3013	MFR: MOSA; STYLE: SELECTION ONE, 12X24; COLOR: 1104 Y;
TLFC-2	TILE FLOORING	09 3013	MFR: Ammicon Tiles; STYLE: Quarry Naturals; COLOR: Shadow Grey 948; SIZE: 8x8;
TREAD-1	ARCHITECTURAL PRECAST CONCRETE TREAD BONDED TO BENT STEEL RISERS	05 5106	MIN THICKNESS 3 1/2"
TREAD-2	WELDED PRECAST STAIR TREAD C-80 SELF-SUPPORTING FLAT TREAD	05 5106	MIN THICKNESS 3 1/2"
TR-1	STAINLESS STEEL TRELLIS SYSTEM	03 9443	MFR: Haver, Inc.; PRODUCT: GreenGuide System; MATERIAL: Type 316 Stainless Steel; ROPE TOP: Swaged Radiuz Hinge; ROPE BOTTOM: Swaged Terminal-Gate Eye; TENSIONING: Turnbuckle; MOUNTING: GreenGuide Spacer;
TWF	THRU-WALL FLASHING AND DRIP EDGE	07 2715	MFR: 3M; PRODUCT: 3015TWF; TYPE: Sheet-Applied DRIP EDGE: Stainless Steel
VB	UNDERSLAB VAPOR BARRIER	07 3000	MFR: Stego or Raven; PRODUCT: ASTM E1745, Class A; THICKNESS: 10mil min.;
WWB	WATER-RMA-VAPOR BARRIER MEMBRANE	07 2715	MFR: 3M; PRODUCT: 3015; TYPE: Sheet-Applied VAPOR (max): 0.1 US perm; AIR (max): 0.004 CFM/ft at 1.57 in.w;
WB-1	RUBBER WALL BASE	09 6513	MFR: JOHNSONITE; STYLE: TRADITIONAL WALL BASE; COLOR: #3 BURNT UMBER;
WD-1	ACETYLATED WOOD	06 2013	MFR: Accsys Technologies PLC; PRODUCT: Accoya Wood; SPECIES: Radiata Pine;
WD-2	INTERIOR FINISH WOOD	06 2023	PRODUCT: Reclaimed Wood for Interior Trim; SPECIES: Ash; FINISH: Clear;
WD-3	INTERIOR FINISH WOOD VENEER	06 2023	PRODUCT: Wood Veneer; SPECIES: Ash; FINISH: Clear;

MATERIAL / PRODUCT ID LIST with Spec Data

ID	Short Name	Section	Spec Data
WDG-1	WOOD CEILING SYSTEM	09 5426	MFR: Armstrong; PRODUCT: Woodworks Cedar; PANEL TYPE: 725BSG; SLAT SIZE: 5/8" x 2 1/4"; SLATS PER PANEL: 8; PANEL SIZE: 12"W x 2 3/4"H; PANEL LENGTH AND CONFIGURATION: See Drawings; FINISH: Grille Khaki; GRID: Heavy-Duty Prelude XL; GRID COLOR: Black; BACKING: Fleece, BioAcoustic; WALL TYPE: 5823; GRILL COLOR: Black (Matte);
WDW-1	ALUMINUM/WOOD WINDOW	08 5200	MFR: Hi-Mondy; FINISH: Desert Sid; SQU: Custom 3P or 2P; SPECIES: Reclaimed Ash; WD FINISH: Clear sealer; AL FINISH: Painted; COLOR: TBD, match WDR-1 and SMF-2; NOTES: Refer to Heavy Commercial Doors; THICKNESS: 2 1/4";
WP-1	WINDOW FILM, PRIVACY	08 8733	MFR: 3M; PRODUCT: Fasara Glass Finish; PATTERN: Halo White (Milano), SH2MAL;
WP-3	WATERPROOFING MEMBRANE	07 1416	MFR: GCPGrace; PRODUCT: Procor;
WRB	WATER-RESISTIVE BARRIER	07 2500	PRODUCT: Soprs Layer 615 Asphalt FAC TYPE: ASTM D226, Type I; SLIP SHEET: Rosin Paper;
WT-1A	ROLLER WINDOW SHADE, MOTORIZED	12 2413	MFR: Hunter Douglas; TYPE: Motorized, Single; SHADING: 3% Openness; COLOR: GreenScreen Evolve HD3505, Shale;
WT-2A	ROLLER WINDOW SHADE, MANUAL	12 2413	MFR: Hunter Douglas; TYPE: Manual, Single; SHADING: 5% Openness; COLOR: GreenScreen Evolve HD3505, Shale;

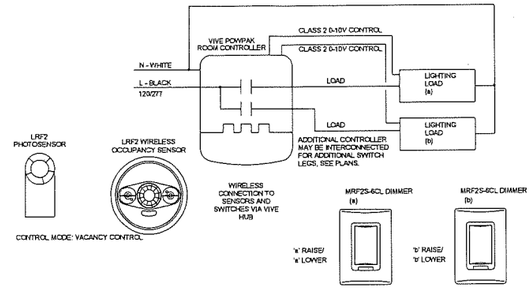
SHT NO	SHEET NAME
GENERAL	
G000	SHEET INDEX, GENERAL NOTES AND MATERIALS
G001	SITE CONTEXT AND SYMBOLS
G002	TYPES AND SYSTEMS
G201	CODE PLAN - OVERALL APPROACH
G202	CODE PLAN AND ANALYSIS
ARCHITECTURAL DEMOLITION	
AD100	TILE DEMOLITION PLAN
AD101	DEMOLITION PLANS
AD121	REFLECTED CEILING PLAN - DEMOLITION
CIVIL	
C100	EXISTING CONDITIONS PLAN
C200	DEMOLITION PLAN
C300	SITE PLAN
C400	GRADING & EROSION CONTROL PLAN
C500	UTILITY PLAN
C501	LIFT STATION DETAIL
C600	CONSTRUCTION DETAILS - 1
C601	CONSTRUCTION DETAILS - 2
C602	CONSTRUCTION DETAILS - 3
C603	CONSTRUCTION DETAILS - 4
LANDSCAPE	
L001	HARDSCAPE PLAN
L002	HARDSCAPE DETAILS
L003	GRADING PLAN
ARCHITECTURAL	
A001	ARCHITECTURAL SITE PLAN
A100	LEARNING CENTER FLOOR PLAN - LEVEL 1
A102	LEARNING CENTER FLOOR PLAN - LEVEL 2
A105	LEARNING CENTER ROOF PLAN
A111	GREENHOUSE - HEADHOUSE FLOOR + ROOF PLAN
A112	GREENHOUSE - HEADHOUSE SECTION AND ELEVATION
A121	REFLECTED CEILING PLAN - LEVEL 1 - EXTG + NEW
A122	REFLECTED CEILING PLAN - LEVEL 1 + 2 - EXTG + NEW
A131	REFLECTED CEILING PLAN - LEVEL 1 - DAYTIME
A132	EXISTING BUILDING REFERENCE DRAWINGS
A151	TOILET ROOM PLANS AND ELEVATIONS
A152	TOILET ROOM PLANS AND ELEVATIONS
A191	ENLARGED PLANS AND SECTIONS
A201	EXTERIOR ELEVATIONS
A202	EXTERIOR ELEVATIONS
A251	BUILDING SECTIONS
A301	WALL SECTIONS
A351	EXTERIOR DETAILS
A352	EXTERIOR DETAILS
A353	EXTERIOR DETAILS
A354	EXTERIOR DETAILS
A355	EXTERIOR DETAILS
A356	EXTERIOR DETAILS
A357	EXTERIOR DETAILS
A358	EXTERIOR DETAILS - COPPER ROOFING
A359	EXTERIOR DETAILS
A401	VERTICAL CIRCULATION
A402	VERTICAL CIRCULATION DETAILS
A403	VERTICAL CIRCULATION DETAILS
A501	INTERIOR ELEVATIONS
A502	INTERIOR ELEVATIONS
A503	INTERIOR ELEVATIONS
A551	INTERIOR DETAILS
A552	INTERIOR DETAILS
A601	DOOR SCHEDULE, TYPES AND DETAILS
A651	FINISH TYPES
A701	FINISH PLANS
A801	MILLWORK PLANS
A802	MILLWORK ELEVATIONS
A803	LEVEL 1 MILLWORK
A804	LEVEL 2 MILLWORK
A851	MILLWORK DETAILS
A852	MILLWORK DETAILS
A901	FURNITURE PLANS - ISSUED FOR REFERENCE ONLY
STRUCTURAL	
S001	GENERAL NOTES
S002	SYMBOLS AND ABBREVIATIONS
S101	LEARNING CENTER PILECAP PLAN
S102	LEARNING CENTER FOUNDATION PLAN
S103	LEARNING CENTER LEVEL 2 FRAMING PLAN
S104	LEARNING CENTER ROOF FRAMING PLAN
S111	GREENHOUSE FOUNDATION PLAN
S113	GREENHOUSE ROOF FRAMING PLAN
S201	FOUNDATION DETAILS
S202	FOUNDATION DETAILS
S203	FOUNDATION DETAILS
S301	FRAMING DETAILS
S302	FRAMING DETAILS
GREENHOUSE	
GH1	GREENHOUSE POST PLAN
GH2	GREENHOUSE SIDEWALL ELEVATIONS
GH2.1	GREENHOUSE CORRIDOR PARTITION ELEVATIONS
GH3	GREENHOUSE GABLE ELEVATIONS
GH3.1	GREENHOUSE GABLE PARTITIONS
GH4	GREENHOUSE TRUSS ELEVATION
GH4.1	GREENHOUSE TRUSS DETAILS
GH5	GREENHOUSE FOUNDATION PLAN
GH6.1	GREENHOUSE POST AND BASE ANCHOR DETAILS
GH6	GREENHOUSE EQUIPMENT PLAN
GH6.2	GREENHOUSE BENCH PLAN
GH6.2	GREENHOUSE EQUIPMENT SECTIONS
GH6.3	GREENHOUSE CONTROL (GROWING AREA)
GH6.4	GREENHOUSE CONTROL (CORRIDOR)
GH6.5	GREENHOUSE CONTROL (CONSERVATORY)
GH7	GREENHOUSE RIDGE SECTION
GH8	TYPICAL GREENHOUSE SIDEWALL SECTION
GH8.1	TYPICAL GREENHOUSE PARTITION SECTION
GH8.2	TYPICAL GREENHOUSE COOL CELL DETAILS
GH9	GREENHOUSE ROOF TO GABLE SECTION
GH10	GREENHOUSE DOOR SCHEDULE
GH11	GREENHOUSE CLOSURE DETAILS

SHT NO	SHEET NAME
GREENHOUSE HEATING	
H1	GREENHOUSE HEATING SYSTEM NOTES & SCHEDULES
H2	GREENHOUSE HEATING SYSTEM LAYOUT
H2A	GREENHOUSE HEATING SYSTEM PEX MANIFOLD RISK
H3	GREENHOUSE HEATING SYSTEM PEX LAYOUT
H3A	GREENHOUSE HEATING SYSTEM PEX DETAILS
H4	GREENHOUSE UPPER L LOWER PIN TUBE LAYOUT
H4A	GREENHOUSE SNOW MELT PIN TUBE LAYOUT
H4B	PIN TUBE DETAILS
H4C	PIN TUBE COVER AND INSULATION DETAILS
H5	TROPICAL GHSE A PIPING ELEVATION
H5A	TROPICAL GHSE B PIPING ELEVATION
H5B	ORCHID INT GHSE A PIPING ELEVATION
H5C	ORCHID INT GHSE B PIPING ELEVATION
H6	PRODUCTION GHSE A PIPING ELEVATION
H6	MIXING VALVE DETAILS
H6A	ZONE CONTROL VALVE DETAILS
H7	BENCHTOP HEATING LAYOUT
H7A	BENCHTOP HEATING DETAILS
MECHANICAL	
M001	MECHANICAL TITLE SHEET
MD101	GREENHOUSE MECHANICAL PIPING DEMO PLAN
MD131	COMMONS AREA MECHANICAL DEMOLITION PLAN
M101	LEARNING CENTER MECHANICAL DUCTWORK PLAN
M102	LEARNING CENTER MECHANICAL PIPING PLAN
M103	LEARNING CENTER RADIANT HEAT AND COOL
M111	GREENHOUSE MECHANICAL PIPING PLAN
M112	ENLARGED PLANS AND SECTIONS
M113	ENLARGED PLANS AND SECTIONS
M131	COMMONS AREA MECHANICAL PIPING PLAN
M201	MECHANICAL DETAILS
M202	MECHANICAL DETAILS
M301	MECHANICAL SCHEDULES
M302	MECHANICAL SCHEDULES
M303	MECHANICAL CONTROLS SCHEMATICS
M401	MECHANICAL CONTROLS SCHEMATICS
M402	MECHANICAL CONTROLS SCHEMATICS
PLUMBING	
P000	PLUMBING TITLE SHEET
PD111	GREENHOUSE PLUMBING DEMO PLAN - BELOW GRADE
PD112	GREENHOUSE PLUMBING DEMO PLAN - ABOVE GRADE
PD131	COMMONS AREA PLUMBING DEMO PLAN
P100	LEARNING CENTER PLUMBING PLAN - BELOW GRADE
P101	LEARNING CENTER PLUMBING PLAN - ABOVE GRADE
P102	LEARNING CENTER PLUMBING ROOF PLAN
P111	GREENHOUSE PLUMBING PLAN - BELOW GRADE
P112	GREENHOUSE PLUMBING PLAN - ABOVE GRADE
P131	COMMONS AREA PLUMBING PLAN
P201	PLUMBING RISER DIAGRAM
P301	PLUMBING FIXTURE & SCHEDULES
P401	PLUMBING SCHEDULES AND RAINRO SCHEMATIC
IRRIGATION	
I100	IRRIGATION PUMP SKID
I121	IRRIGATION DEMO AND QUICK COUPLER PLAN
FIRE PROTECTION	
FP000	SITE PLAN, GENERAL NOTES, DETAILS
FP100	FIRE PROTECTION LEVEL 1
FP101



OUTDOOR LIGHTING CONTROL

CONTROL MODE: PHOTOCELL AND RELAY

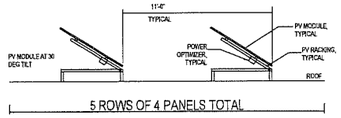


OCCUPANCY SENSOR, DAYLIGHTING PHOTOCELL, AND 0-10V DIMMING, MULTIPLE SWITCH LEGS

DETAIL NOTES

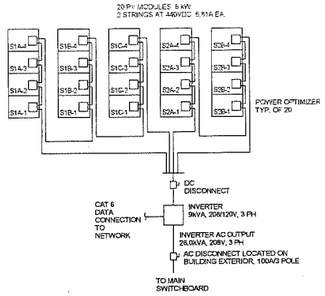
1. ALL LIGHTING CONTROL CABLING SHALL BE PROVIDED IN ACCORDANCE WITH SPECIFICATION DIVISION 27.
2. BASIS OF DESIGN IS LUTRON VIVE SERIES DIGITAL LIGHTING CONTROL.
3. SEE FLOOR PLANS FOR OCCUPANCY SENSOR TYPES.
4. SEE PLANS FOR QUANTITY AND LOCATION OF OCCUPANCY SENSORS.
5. DETAIL SHOWN WITH DIMMERS, OCCUPANCY SENSORS, AND DAYLIGHT SENSOR AS USED IN LEARNING CENTER CLASSROOM AND SECOND FLOOR OFFICES. SEE DRAWINGS FOR SPECIFIC CONFIGURATIONS OF OTHER AREAS.

1 LIGHTING CONTROLS
NTS



5 ROWS OF 4 PANELS TOTAL

3 PV SECTION
NTS



2 PV ARRAY ONE LINE
NTS

PHOTOVOLTAIC GENERAL NOTES

1. INSTALLING CONTRACTOR SHALL PROVIDE SUBMITTALS OF ALL EQUIPMENT INSTALLED WITHIN THE COMPLETED SYSTEM. SUBMITTALS SHALL INCLUDE PHYSICAL LAYOUT DRAWINGS AND INTERCONNECTION DIAGRAMS.
2. THE PV SYSTEM SHALL INCLUDE RAPID SHUTDOWN MEETING THE 2017 NEC REQUIREMENTS AT A MINIMUM.
3. THE PV SYSTEM SHALL INCLUDE LABELING AS REQUIRED WITHIN THE NEC. LABELING SHALL INCLUDE A PLACARD AT THE ELECTRICAL SERVICE IDENTIFYING THE LOCATION OF INVERTERS AND RAPID SHUTDOWN DEVICES - SEE SHEET E112 FOR DISCONNECT LOCATION.
4. COORDINATE INSTALLATION OF THE PV SYSTEM WITH THE UTILITY. THE ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR ALL APPLICATIONS, INSPECTIONS, AND ADDITIONAL REQUIREMENTS THE UTILITY MAY HAVE FOR A UTILITY INTERACTIVE SYSTEM. THE CITY SHALL PAY ANY PERMIT COSTS.
5. DC STRINGS AND INVERTED AC POWER SHALL EACH INCLUDE DISCONNECTING MEANS AND FUSE PROTECTION.
6. SEE ARCHITECTURAL SHEET A105 AND ELECTRICAL ROOF PLAN E104 FOR FURTHER INFORMATION ON PHYSICAL LAYOUT.

PV ARRAY BASIS OF DESIGN

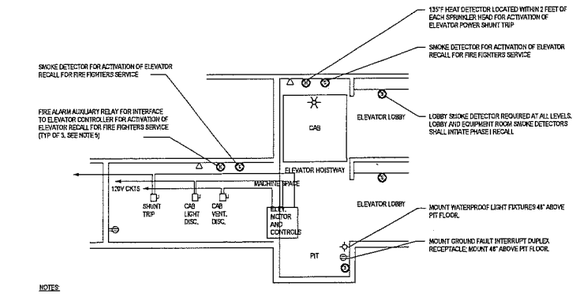
BASIS OF DESIGN:
MODULES: SEE SPECIFICATION FOR MANUFACTURERS & MODELS
- MAX POWER: 285 - 300W
- OPEN CKT. VOLTAGE: 40.1V MAX.
- SHORT CIRCUIT CURRENT: 10.23A MAX.
- MAXIMUM POWER POINT CURRENT: 9.57A
- DIMENSIONS: 31.8" X65.9" X 1.3"

INVERTER: SOLAREDGE 9 PHASE INVERTER 120/208V GRID, SE9KUS
INPUT
- MAX DC POWER: 12.15kW
- MAX INPUT VOLTAGE DC+ TO DC-: 500VDC
- NOMINAL INPUT VOLTAGE DC+ TO DC-: 400VDC
- MAXIMUM INPUT CURRENT: 26.5ADC

OUTPUT
- RATED AC OUTPUT: 9kVA
- AC OUTPUT VOLTAGE NOMINAL (L-N/L-L): 120/208V
- AC FREQUENCY (NOMINAL): 60 HZ
- MAX CONTINUOUS OUTPUT CURRENT (PER PHASE): 25
- RAPID SHUTDOWN : ADD ON KIT COMMUNICATES WITH OPTIMIZERS.

POWER OPTIMIZER: SOLAREDGE P300
- INPUT OPERATING RANGE: 8-48VDC
- MAXIMUM DC INPUT CURRENT: 13.75ADC
- MAXIMUM OUTPUT CURRENT: 15ADC
- MAX OUTPUT VOLTAGE: 60VDC

RACK: SEE SPECIFICATION.



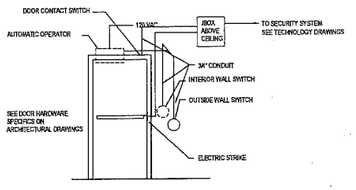
NOTES:

1. ANSI/ASME A17.1-1996/A17.1a-1997/A17.1b-1998, SAFETY CODE FOR ELEVATORS AND ESCALATORS.
2. THE HOISTWAY AND MACHINE ROOM FOR THIS INSTALLATION ARE SPRINKLED. THEREFORE, ANSI/ASME A17.1 REQUIRES THAT THE MAIN POWER SUPPLY TO THE AFFECTED ELEVATOR BE AUTOMATICALLY DISCONNECTED UPON OR PRIOR TO APPLICATION OF WATER
3. IN ACCORDANCE WITH SECTION 3-9.4 OF ANSI/NFPA 72, NATIONAL FIRE ALARM CODE, HEAT DETECTORS USED TO SHUT DOWN ELEVATOR POWER PRIOR TO SPRINKLER OPERATION SHALL HAVE BOTH LOWER TEMPERATURE RATING AND A HIGHER SENSITIVITY THAN THE SPRINKLER HEADS. COORDINATE REQUIREMENTS WITH INSTALLATION OF FIRE PROTECTION SYSTEM.
4. FIRE ALARM SYSTEM SMOKE DETECTORS SHALL BE INSTALLED IN ELEVATOR LOBBIES, ELEVATOR HOISTWAY AND ELEVATOR MACHINE ROOM TO INITIATE ELEVATOR RECALL FOR FIRE FIGHTERS SERVICE IN ACCORDANCE WITH RULE 211.3 OF ANSI/ASME A17.1 AND SECTION 3-8.3 OF ANSI/NFPA 72.
5. IN ACCORDANCE WITH SECTION 3-8.3.7 OF ANSI/NFPA 72, THREE (3) EACH FIRE ALARM AUXILIARY RELAYS SHALL BE PROVIDED IN THE ELEVATOR MACHINE ROOM TO INTERFACE WITH THE ELEVATOR CONTROLLER, EACH RELAY SHALL PROVIDE THE FOLLOWING SIGNAL (OPERATION OF CONTACTS), RESPECTIVELY:

A. SMOKE DETECTOR IN THE DESIGNATED (PRIMARY) ELEVATOR LOBBY IS ACTIVATED.
B. SMOKE DETECTOR IN ANY OF THE ELEVATOR LOBBIES EXCEPT THE DESIGNATED (PRIMARY) LOBBY IS ACTIVATED.
C. SMOKE DETECTOR(S) IN THE HOISTWAY AND/OR ELEVATOR MACHINE ROOM IS ACTIVATED.

SYMBOLS LEGEND	
△	SPRINKLER HEAD
S	SMOKE DETECTOR
H	HEAT DETECTOR
ST	SHUNT TRIP
	WALL MOUNTED LIGHT
	DUPLEX RECEPTACLE

5 ELEVATOR DETAILS
1/8" = 1'-0"



4 DOOR DETAILS
1/4" = 1'-0"

MSR 710 South 2nd Street, 8th Floor Minneapolis, Minnesota 55401-2282
Architecture, Interiors and Urban Design 612.375.0336 tel 612.342.2216 fax www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201 Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
303 South Paterson Street, Suite 1 Madison, WI 53703
608.251.3600 tel

Structural Engineer, Technology and A/V
IMEG Corp.
1830 Deming Way, Suite 200 Middleton, WI 53562
608.223.9600 tel

MEP Engineer
MEP Associates, LLC
850 Blue Gentian Road, Suite 175 Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
515 Mainesharp Ave West St. Paul, MN 55180
651.291.1880 tel

Greenhouse Design
Rough Brothers, Inc.
5513 Vine Street Cincinnati, OH 45217
513.242.0310 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Engineer under the Laws of the State of Wisconsin. ENGINEER SEAL

WISCONSIN RANDALL A. JACOBS E-32771 ST. PAUL MN PROFESSIONAL ENGINEER

Signature:
Print Name: Randall A. Jacobs
Date: JUNE 4, 2018 License No. 35771

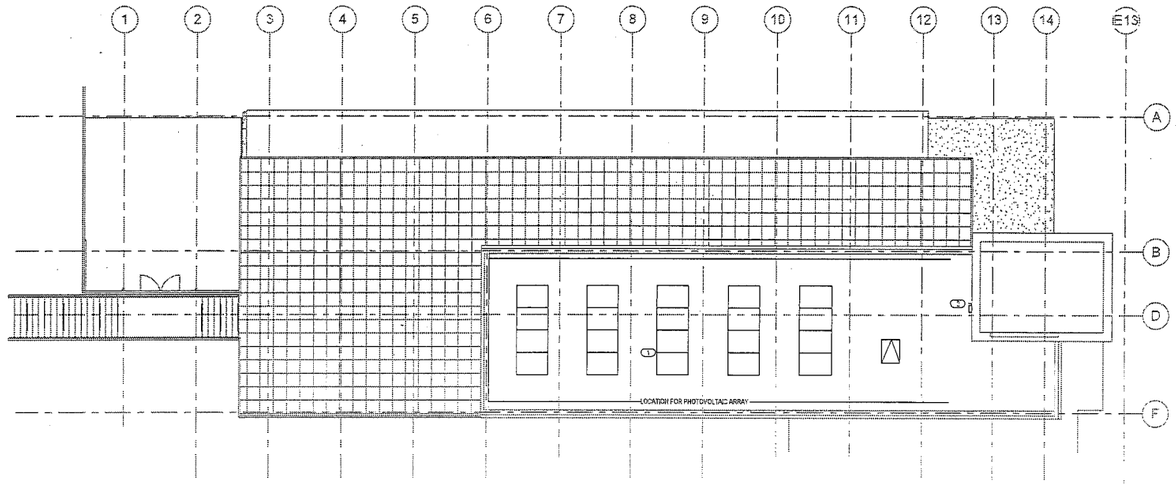
ISSUE MARK	DATE	DESCRIPTION
	09.06.2017	SCHEMATIC DESIGN SUBMISSION
	12.04.2017	DCI PRICING SET
	01.10.2018	DESIGN DEVELOPMENT SUBMISSION
	03.17.2018	MCC SUBMISSION
	03.23.2018	75% CD PRICING ISSUE
	05.04.2018	90% CONSTRUCTION DOCUMENTS
	06.01.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE

PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: MSR CHECKED BY: MSR

ELECTRICAL DETAILS

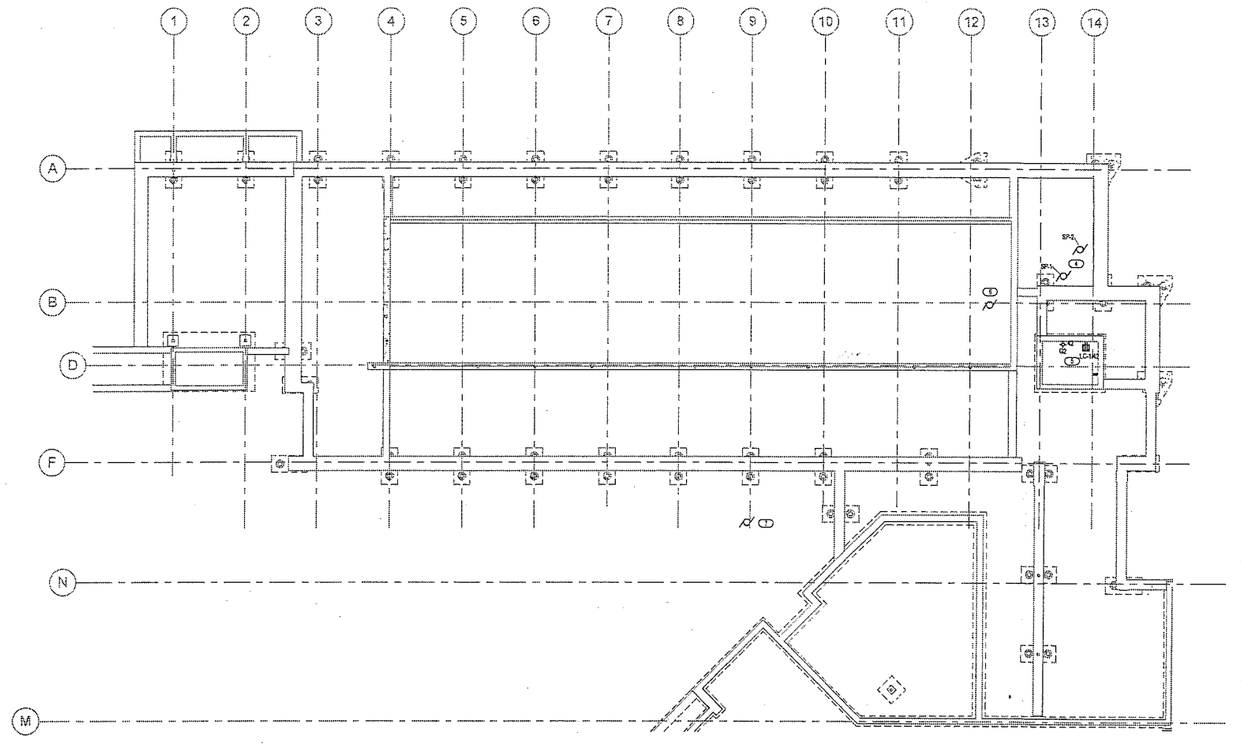
EXHIBIT N
E500

Original



1 LEARNING CENTER ELECTRICAL ROOF PLAN

1/8" = 1'-0"



2 LEARNING CENTER ELECTRICAL PLAN - BELOW GRADE

1/8" = 1'-0"

GENERAL POWER NOTES

A. SEE SHEET E000 FOR SYMBOLS, ABBREVIATIONS, AND PROJECT GENERAL NOTES.

B. SEE ARCHITECTURAL, MECHANICAL AND GREENHOUSE DRAWINGS FOR ADDITIONAL INFORMATION ON EQUIPMENT LOCATIONS.

C. SEE MOTOR AND EQUIPMENT SCHEDULE FOR MOTOR CONNECITON INFORMATION. COORDINATE THE LOCATION OF EQUIPMENT CONNECTIONS AND DISCONNECTING MEANS WITH THE EQUIPMENT SUPPLIER.

D. VERIFY ROUGH-IN REQUIREMENTS OF ALL OWNER FURNISHED EQUIPMENT PRIOR TO INSTALLATION.

E. GFCI PROTECTED RECEPTACLES SHALL BE PROVIDED WHERE THE RECEPTACLE IS LOCATED WITHIN 6' OF A SINK AND IN ANY WET LOCATION.

F. MINIMUM HOME RUN CONDUIT SIZE SHALL BE 3/4".

G. PANEL CIRCUIT DESIGNATIONS PROVIDED FOR DESIGN INTENT. EC SHALL VERIFY AND DOCUMENT EXACT CIRCUIT NUMBERS AS CIRCUITED IN THE FIELD.

KEYED NOTES

1. PHOTOVOLTAIC ARRAY BASIS OF DESIGN: MODULES W. PANEL ARRAYS ON FIXED, NON-BALLASTED RACKING, DC OPTIMIZERS, INVERTERS TO 208 VOLT 3-PHASE. SEE DETAIL ON E500.
2. MOUNT DC DISCONNECT TO WALL IN THIS LOCATION. SEE ONE LINE ON SHEET E500.
3. ---
4. CONTROLS FOR SUMP PUMPS MOUNTED ON WALL IN MECH ROOM 120. SEE SHEET P301 FOR SUMP PUMP DETAIL.
5. MOUNT LIGHT FIXTURE AND SWITCH ON WALL AND GFCI RECEPTACLE IN ELEVATOR PIT.
6. RAIN WATER CISTERN SUMP PUMP. SEE NOTES ON SHEETS E102 AND E112.
7. LIFT STATION MOTOR. SEE NOTE ON SHEET E102.

MSR
710 South 2nd Street, 8th Floor
Minneapolis, Minnesota 55401-2252
Architecture, Interiors and Urban Design
612 375 0336 tel
612 342 2216 fax
www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201
Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
303 South Paterson Street, Suite 1
Madison, WI 53703
608.251.4000 tel

Structural Engineer, Technology and AV
IMEG Corp.
1600 Deming Way, Suite 200
Middleton, WI 53562
608.223.9600 tel

MEP Engineer
MEP Associates, LLC
882 Blue Gentian Road, Suite 175
Eagan, MN 55121
651.379.9129 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
570 Asbury Ave West
St. Paul, MN 55102
651.251.1666 tel

Commissioning
Rough Brothers, Inc.
5510 Vine Street
Cincinnati, OH 45217
513.242.6510 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Engineer under the Laws of the State of Wisconsin.
ENGINEER SEAL

WISCONSIN
RANDALL A. JACOBS
E-39771
ST. PAUL, MN
ENGINEER

Signature:
Print Name: Randall A. Jacobs
Date: JUNE 4, 2018 License No: 39771

ISSUE		
NUMBER	DATE	DESCRIPTION
	05.09.2017	SCHEMATIC DESIGN SUBMISSION
	10.04.2017	DD PRICING SET
	01.10.2018	DESIGN DEVELOPMENT SUBMISSION
	01.17.2018	UDC SUBMISSION
	03.31.2018	75% CD PRICING ISSUE
	05.04.2018	95% CONSTRUCTION DOCUMENTS
	05.31.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE

PROJECT NO. 2017015
PROJECT PHASE BID DOCUMENTS
DRAWN BY: MSR CHECKED BY: MSR

LEARNING CENTER ROOF AND BELOW GRADE POWER PLAN

EXHIBIT N
E104

7/31/2018

System description:
Dedicated outdoor air air handler for dehumidification and primary air supply. Unit includes enthalpy wheel and in-row DX cooling with hot gas re-heat of desiccant wheel. Supply fan, exhaust fan, and regeneration fan. Heating coil and cooling coil.

Manufacturer Controller:
The manufacturer provided primary control of certain air handler functions, including those noted in the matrix shown on this page. Controls contractor shall coordinate all necessary work with the manufacturer during submittal phase.

Schedule / Enable:
Air handler shall be scheduled through the BAS and shall operate under either occupied or unoccupied modes.

Occupied / Unoccupied Modes:
1. During unoccupied mode:
   A. Unit shall be off (all dampers and valves shall be closed, all fans and the wheels shall be off) unless 2 (adj) or more zones exceed their setpoint. Then unit shall enter unoccupied cooling mode. For purposes of this sequence, only zones requiring airflow from the air handler shall be considered; no zones with dedicated cooling systems, heat only systems, or pass-through air only, shall be counted.
   B. In unoccupied cooling mode, if conditions do not allow for economizer operation, the recirculation damper shall open and all other dampers shall remain closed. The exhaust fan and regeneration fan shall be off. The supply fan and primary cooling coil shall all operate as specified for occupied mode.
   C. In unoccupied cooling mode, if conditions allow for economizer mode, the unit shall enter economizer mode.
2. The following sequences apply in occupied mode unless specifically noted otherwise.

Supply Fan:
Fan operates to maintain duct static, with reset.
1. Fan shall modulate speed to maintain 0.8" w.c. (adj) at the duct static pressure sensor. Final normal setpoint shall be confirmed and set by the balancing contractor.
2. Static pressure setpoint shall be reset using a trim and response loop, where the bounds of 0.8" w.c. (adj) and 1.8" w.c. (adj). Final maximum and minimum setpoints shall be confirmed and set by the balancing contractor based on a worst-case test (i.e., to satisfy worst case zone when all air valves at minimum and at maximum design condition).
3. Trim and response is as follows:
   A. Pick all variable air volume boxes, BAS shall allow for any zone to be removed from pick or added to pick through interface of VAV page.
   B. A zone pressure request is generated when a VAV is 95% (adj) or greater than maximum flow. The request is eliminated at 80% (adj) or below of flow.
   C. Fan shall adjust upward every 10 (adj) minutes, if more than 1 (adj) zones are sending a pressure request, the setpoint shall be increased by 0.06" w.c (adj). If less than 1 (adj) zones are sending a pressure request, the setpoint shall be decreased by 0.06" w.c (adj). If 1 (adj) zone are sending a pressure request, the setpoint shall not change.
   D. The controls contractor shall tune the reset after the building has been occupied to eliminate instability, and shall provide a trend graph to show stability.

Exhaust Fan:
Fan operates to exhaust airflow equal to the outdoor airflow.
1. Fan shall modulate speed to exhaust airflow (as measured at the exhaust airflow measuring station) equal to the outdoor airflow rate (as measured at the outdoor airflow measuring station) LESS a programmed offset value of 200 cfm (adj).
2. This sequence applies in occupied economizer or occupied non-economizer operation.
3. During unoccupied operation, the exhaust fan shall be off.

Regeneration Fan:
Fan operates at all times when unit is in dehumidification mode, and hot gas reheat is enabled before to enhance misting.
1. Fan shall modulate speed to achieve 115F exhaust air stream after the desiccant wheel. (By unit controller.)

Discharge Air Temperature Control:
Unit DAT is allowed to float, with restrictions for heating and alarm.
1. Discharge air temperature shall be allowed to float between 62° F (adj) and 72F (adj). (This allows for unit to enter regeneration mode and other operating modes without risk of need for re-heat or sub-cool.)
2. If an alarm for temperature goes between generated, DAT shall be reset to 54F (adj).

Chilled Water Coil:
Cooling coil in first steps to provide discharge air temperature if economizer, energy recovery, and regeneration heat can do so.
1. If discharge air temperature is above upper limit of setpoint range, and economizer is unavailable or at 100%, or enthalpy wheel is at high speed, then modulate valve open to achieve discharge air setpoint.
2. If discharge air temperature is below lower limit of setpoint range, and the valve is open, then modulate valve closed to achieve discharge air setpoint.
3. The cooling coil shall be locked out below 50° (adj) outdoor air temperature.

Heating Water Coil:
Heating coil in first steps to meet discharge air temperature if economizer, energy recovery, and regeneration heat can do so
1. If discharge air temperature is below lower limit of setpoint range, and economizer is unavailable or at 100%, or enthalpy wheel is at high speed, then modulate valve open to achieve discharge air setpoint.
2. If discharge air temperature is above upper limit of setpoint range, and the valve is open, then modulate valve closed to achieve discharge air setpoint.
3. The heating coil shall be locked out above 65F (adj) outdoor air temperature.

Economizer Operation:
Economizer is a fixed dry-bulb type.
1. Economizer will be enabled when the outdoor air temperature conditions align with the matrix column tagged "Unit, Enthalpy Wheel mode."
2. When enabled, the economizer shall modulate the outdoor air damper concurrently and inversely to the recirculation damper to achieve the discharge air setpoint.
3. Economizer mode damper operations shall not allow outdoor air to drop below minimum outdoor air airflow rates scheduled.

Enthalpy Wheel Operation:
Variable speed total energy recovery between exhaust and outdoor air; controlled by unit controller

Ventilation Air Control:
Resets ventilation air at air handler based on return air co2 levels.
1. Sequence applies only during occupied mode.
2. At the zone level, refer to VAV sequence.
3. At the air handler level:
   A. The air handler shall be programmed with minimum and reset outdoor air values. Ventilation requirements are noted on mechanical title sheet, with minimum outdoor air rate shown under Wisconsin Code requirements (approximately 750cfm) and full outdoor air noted under ASHRAE requirements (approximately 1500cfm).
   B. Nominal / setpoint CO2 level is 1000 (adj) ppm.
   C. If CO2 level is below setpoint, the air handler shall operate to maintain the minimum outdoor airflow rate scheduled at the outdoor airflow sensor.
   D. If CO2 is above setpoint, the air handler shall reverse the outdoor airflow rate from minimum value to reset value until the return air CO2 level drops below setpoint by a set value (200ppm, adj), and then shall return to minimum outdoor airflow.

Damper Operation:
Unit includes modulating outdoor air damper (if unit), two-position exhaust air damper (at louver), modulating recirculation damper (in unit).
1. Outdoor air damper:
   A. Outdoor air damper shall be closed when the unit is in unoccupied mode, unless the unoccupied economizer operation is active.
   B. During occupied hours, if the unit is not in economizer mode, the outdoor air damper shall modulate to maintain the minimum outdoor airflow rate scheduled.
   C. If the unit is in economizer mode (occupied or unoccupied), the outdoor air damper shall operate as described in the economizer section.
2. Exhaust air damper
   A. The exhaust air damper shall be closed when the unit is in unoccupied mode.
   B. During occupied hours, and during economizer operation, the relief air damper shall be open.
3. Recirculation damper shall at all times operate concurrently to, and in opposition to, the outdoor air damper.

Alarms:
See also alarms section in specification.
1. Alarm if any valve fails (all valves shall provide feedback on position).
2. Alarm if any damper fails (all dampers shall provide feedback on position).
3. Alarm if supply air temperature setpoint cannot be achieved (+/- 2° (adj) within 5 minutes (adj) of setpoint adjustment
4. Alarm if any filter differential pressure exceeds 1" w.c. (adj)
5. Alarm if any safety is tripped.
6. Alarm if the unit controller needs an alarm signal (power).
7. Alarm if any space temperature remains beyond setpoint (and deadband) for greater than 30 minutes (adjustable).
   A. If fire condition is for a space higher than setpoint (as opposed to a space lower than setpoint), enable fire chilled water coil and set the discharge air temperature setpoint at 54F (adj). Remain in this mode until all spaces return to setpoint, and then return to normal operation.

Safeties:
All safeties shall be wired to the supply, return, and exhaust fan starters of the vfd safety circuit, if any safety is tripped, the starters shall not function in any mode (hand, off, auto). Similarly, vfds shall not function in any mode (hand, off, auto) or in by-pass mode if a safety is tripped.
1. Freezestat: freezestat shall trip if temperature drops below 35F (adj). Reset of freezestat is manual.
2. Supply fan high pressure limit: high pressure limit shall trip if the duct-mounted static pressure probe exceeds setpoint, 2" w.c. (adj). Reset of high pressure limit is manual.
3. Exhaust fan low pressure limit: low pressure limit shall trip if the duct-mounted static pressure probe drops below setpoint, -2" w.c. (adj). Reset of low pressure limit is manual.
4. Fire alarm: shall trip upon activation of duct smoke detectors. Reset of fire alarm is manual.

The following table lists all possible unit operating modes and also lists the corresponding component operation for each mode.

Control Inputs				OCC MODE: HI ENTHALPY DEHUMID	OCC MODE: HI ENTHALPY COOLING	OCC MODE: MED ENTHALPY DEHUMID	OCC MODE: MED ENTHALPY EXHEAT	OCC MODE: MED ENTHALPY UNAT	OCC MODE: LOW ENTHALPY HEATING	UNOCC MODE: DEHUMID	UNOCC MODE: DEHUMID	UNOCC MODE: HEAT	UNOCC MODE: COOL
Unit Enable Dis	Occupied Signal ON	$h_{OA} > h_{RA}$ & $T_{OA} > T_{RA}$	$DP_{SPACE} < DP_{SET}$	-	ON	-	-	-	-	-	-	-	-
			$DP_{SPACE} = DP_{SET}$	-	-	ON	-	-	-	-	-	-	-
			$DP_{SPACE} > DP_{SET}$	-	-	-	ON	-	-	-	-	-	-
		$h_{OA} < h_{RA}$ & $T_{OA} > T_{RA}$	$DP_{SPACE} < DP_{SET}$	-	-	-	-	ON	-	-	-	-	-
			$DP_{SPACE} = DP_{SET}$	-	-	-	-	-	ON	-	-	-	-
			$DP_{SPACE} > DP_{SET}$	-	-	-	-	-	-	ON	-	-	-
		$T_{OA} < T_{RA}$	$DP_{SPACE} < DP_{SET}$	-	-	-	-	-	-	-	ON	-	-
			$DP_{SPACE} = DP_{SET}$	-	-	-	-	-	-	-	-	ON	-
			$DP_{SPACE} > DP_{SET}$	-	-	-	-	-	-	-	-	-	ON

Components										
Supply VFD		ON/MOD	ON/MOD	ON/MOD	ON/MOD	OFF	OFF	ON/MOD	ON/MOD	ON
Supply VFD	-	ON/MOD	ON/MOD	ON/MOD	ON/MOD	ON/MOD	ON/MOD	ON/MOD	ON/MOD	OFF
Exhaust VFD		OFF/MOD	OFF/MOD	ON/MOD	ON/MOD	OFF/MOD	ON/MOD	ON/MOD	OFF	OFF
Exhaust Damper		OPEN/MOD	OPEN/MOD	OPEN/MOD	OPEN/MOD	100%-OPEN	100%-OPEN	100%-OPEN	CLOSED	CLOSED
DX Stages		ON/MOD*	ON/MOD*	ON/MOD	100%-MOD	100%-OPEN	100%-OPEN	CLOSED	CLOSED	CLOSED
Desic Stages		CLOSED	CLOSED	CLOSED	CLOSED	CLOSED	CLOSED	ON/MOD	ON/MOD	ON/MOD
Heat Exchanger		ON	ON	OFF	OFF	OFF	OFF	ON	ON	OFF
Enthalpy Wheel		ON/MOD	ON/MOD	OFF	OFF	OFF	ON/MOD	OFF	OFF	OFF
Regen Heat		ON	OFF	ON	OFF	ON	OFF	ON	ON	OFF
Hot Water Valve	Operation	OPEN/MOD	OPEN/MOD	OPEN/MOD	OPEN/MOD	CLOSED	CLOSED	OPEN/MOD	OPEN/MOD	OPEN/MOD
Chilled Water Valve	Operation	OPEN/MOD	OPEN/MOD	OPEN/MOD	OPEN/MOD	CLOSED	CLOSED	OPEN/MOD	OPEN/MOD	OPEN/MOD

h_{OA} = Outdoor Air Enthalpy; T_{OA} = Outdoor Air Temperature; DP_{OA} = Outdoor Air Dew Point
T_{SPACE} = Space Temperature; DP_{SPACE} = Space Dew Point

SYMBOLOGY

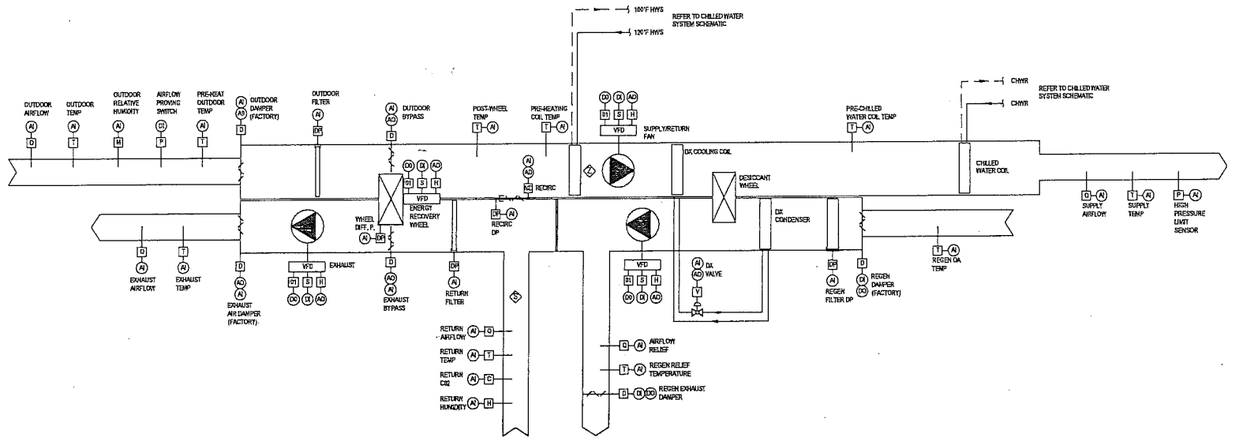
DIAGRAM SYMBOLOGY

BAS INPUTS/OUTPUTS
- (A) ANALOG INPUT
- (AO) ANALOG OUTPUT
- (D) DIGITAL INPUT
- (DO) DIGITAL OUTPUT

- FREEZE STAT
- SMOKE DETECTOR
- MOTORIZED DAMPER
- SMOKE DAMPER

- (D) DAMPER POSITION
- (V) VALVE POSITION
- (DP) DIFF. PRESSURE
- (P) PRESSURE
- (H) MOISTURE (%RH)
- (C) CONTAMINANT SENSOR
- (O) FLOW MEASUREMENT
- (O) OCCUPANCY SENSOR
- (T) TEMP. SENSOR
- (-) RHEOSTAT
- (H) VFD HERTZ / SPEED MONITOR
- (S) CURRENT STATUS MONITOR
- (S) START / STOP
- (F) FLOW SWITCH

- FAN/PUMP
- FLOW METER
- 2-WAY VALVE
- 3-WAY VALVE
- 3-WAY CONTROL VALVE
- VFD VARIABLE FREQUENCY DRIVE



1 MODULAR AHU WITH ENTHALPY RECOVERY
NOT TO SCALE

MSR
710 South 2nd Street, 8th Floor
Minneapolis, Minnesota 55401-2282
Architecture, Interiors and Urban Design
612 375 0336 tel
612 342 2216 fax
www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201
Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
303 South Paterson Street, Suite 1
Madison, WI 53703
608.255.1.3600 tel

Structural Engineer, Technology and AV
IMEG Corp.
1600 Deming Way, Suite 200
Madison, WI 53562
608.273.9600 tel

MEP Engineer
MEP Associates, LLC
860 Blue Gentian Road, Suite 170
Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
575 Market St. 2nd Floor
St. Paul, MN 55102
651.251.1810 tel

Sustainability Design
Rough Brothers, Inc.
5533 Vine Street
Cincinnati, OH 45217
513.242.0310 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Engineer under the Laws of the State of Wisconsin.
ENGINEER SEAL:

LARRY J. MEILER E-30240 WISCONSIN MECHANICAL ENGINEER

Signature:
Print Name: Larry Meiler
Date: JUNE 6, 2018 License No.: E-30240

MARK	DATE	DESCRIPTION
	03.09.2017	SCHEMATIC DESIGN SUBMISSION
	12.04.2017	DD PRICING SET
	01.10.2018	DESIGN DEVELOPMENT SUBMISSION
	01.17.2018	UDC SUBMISSION
	03.30.2018	70% CD PRICING ISSUE
	05.04.2018	90% CONSTRUCTION DOCUMENTS
	05.21.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE

PROJECT NO. 2017016
PROJECT PHASE: BID DOCUMENTS
DRAWN BY: MSR CHECKED BY: MSR

MECHANICAL CONTROLS SCHEMATICS

EXHIBIT J
M301

ORIGINAL

PLUMBING FIXTURE SCHEDULE

MARK	FIXTURE	MANUFACTURER	MODEL	MOUNT	ROUGH-IN SCHEDULE COLD	HOT	WASTE	VENT	FITTINGS AND REMARKS
WC-1A	MANUAL FLUSH VALVE WATER CLOSET	ZURN	Z5615-BWL	WALL	1-1/2"	-	4"	2"	WITH 1.28GPF MANUAL VALVE MODEL Z6000PL-HET, ELONGATED OPEN FRONT SEAT, Z1291 OR Z1293 EZCARRY CARRIER. WHERE TAGGED WC-1A, UNIT SHALL BE INSTALLED TO A.D.A. HEIGHT.
L-1A	WALL HUNG LAVATORY	AMERICAN STANDARD	0476.001EC	WALL	3/8"	3/8"	2"	1-1/2"	INCLUDE ZER5624-LW.STHWD WIRED FAUCET WITH 0.35 GPM VANDAL-RESISTANT NON-AERATED OUTLET
S-1	LEARNING CENTER CLASSROOM SINK	ELKAY	EFRU181519	UNDERMOUNT	3/4"	3/4"	2"	2"	PROVIDE ELKAY LKD2522C 4" CENTERSET, CONCEALED DECK MOUNT FAUCET WITH 1.5 GPM FLOW RATE.
S-2	LEARNING CENTER CLASSROOM SINK	ELKAY	ELUHAD2122SPD	UNDERMOUNT	3/4"	3/4"	2"	2"	PROVIDE ELKAY LKSTHC SENSOR OPERATED AT 0.5 GPM FLOW.
MS-1	MOP SINK	MUSTEE	63M	FLOOR	3/4"	3/4"	2"	1 1/2"	PROVIDE 63J00A SERVICE FAUCET, 61J70 HOSE AND HOSE HOLDER, 65J00 MOP HANGER, AND 67J42H WALL GUARDS.
DF-1	BI-LEVEL WITH BOTTLE FILLER	ELKAY	LZWS-LRPB8OWK	WALL	3/4"	-	.5"	1-1/2"	INSTALL TO COMPLY WITH A.D.A. REQUIREMENTS. PROVIDE FILTER; PROVIDE TWO ADDITIONAL FILTERS FOR REPLACEMENT.
HB-1	NON-FREEZELESS WALL FAUCET	WOODFORD	1019	WALL	3/4"	-	-	-	ANTI-SIPHON WALL FAUCET WITH INTEGRAL CHECK AND ATMOSPHERIC VENT.
HB-2	FREEZELESS WALL HYDRANT	WOODFORD	87	EXT. WALL	3/4"	-	-	-	ANTI-SIPHON, CHROME FINISH, EXPOSED WITH OPERATING KEY.

FLOOR AND ROOF DRAIN SCHEDULE

MARK	FIXTURE	MANUFACTURER	MODEL	MOUNT	ROUGH-IN SCHEDULE WASTE	VENT	FITTINGS AND REMARKS
FD-1	FLOOR DRAIN	ZURN	Z5915-BWL	FLOOR	3"	2"	PROVIDE 3" OUTLET. WHERE FUNNELS ARE INDICATED ON PLAN, PROVIDE ZURN OVAL FUNNEL. FIELD WELDING OF FUNNEL TO STRAINERS IS NOT ALLOWED.
FS-1	FLOOR SINK	ZURN	Z1900	FLOOR	4"	2"	12X12X6 PORCELAIN ENAMEL CAST IRON FLOOR SINK. PROVIDE WITH LOOSE SET 24" GRATE, ALUMINUM DOME BOTTOM STRAINER.
TD-1	TRENCH SYSTEM	ACO DRAIN	KV60	FLOOR	-	-	UNIT SHALL BE MODULAR TRENCH DRAIN SYSTEM. PROVIDE SLOTTED STEEL, BOLTLESS LOCKING, NO SLIP AND ADA COMPLIANT GRATE. PROVIDE GRATE RETAINING TOOL, (TOTAL OF 4). TRENCH DRAIN CLEANING TOOL (TOTAL OF 4). ALL PARTS SHALL BE LEED CERTIFIED.
CB-1	CATCH BASIN	ACO DRAIN	KI-9002	FLOOR	6"	SEE PLAN	INLINE CATCH BASIN WITH 4" OUTLET AT 21.19" INVERT. INCLUDE INLINE TRASH BUCKET.
RD-1	ROOF DRAIN	ZURN	Z100	ROOF	SEE PLAN	-	WITH PLAIN BRONZE DOME.
ORD-1	OVERFLOW ROOF DRAIN	ZURN	Z199	ROOF	SEE PLAN	-	WITH PLAIN BRONZE DOME.
AD-1	AREA DRAIN	ZURN	Z587	ROOF	SEE PLAN	-	WITH DURA-COATED CAST IRON BODY AND TOP. INCLUDE SECONDARY STRAINER AND SEDIMENT BUCKET.
AD-2	AREA DRAIN	ZURN	Z1730	ROOF	SEE PLAN	-	STAINLESS STEEL CONSTRUCTION.

EXPANSION TANK SCHEDULE

EXPANSION TANK #	SYSTEM	LOCATION	SIZE HEIGHT (IN)	SIZE DIAMETER (IN)	CAPACITY ACCEPT. VOLUME (GAL)	CAPACITY TANK VOLUME (GAL)	PRE-CHARGE (PSIG)	MAXIMUM PRESSURE IN TANK (PSI)	SYSTEM WATER VOLUME (GAL)	SYSTEM CONNECTION SIZE (IN)	MANUFACTURER	MODEL	NOTES
ET-2	HOT WATER	FCC PUMP ROOM 22	11	6	1.41	2.1	39	150	10.8	3/4	WATTS	PLT-5	1,2

NOTES
1. PER DETAIL SP201.
2. INSTALL PER MANUFACTURER'S RECOMMENDATIONS.

SUMP PUMP SCHEDULE

Type Mark	MARK	DESCRIPTION	MANUFACTURER	SUMP BASIN NUMBER	SUMP SIZE	STANDARD CONNECTIONS	ELECTRICAL H.P.	ELECTRICAL VOLTS	ELECTRICAL PHASE	CHECK VALVE	GPM	CORD LENGTH	NOTES
SUMP	SP-1	POLY BASIN WITH SEALED STEEL COVER.	WEIL	1411-OSS	30" x 120"	2"	1/2	115	1	2"	50 @ 15'	20'	1,2,3,4
SUMP	SP-2	POLY BASIN WITH SEALED STEEL COVER.	WEIL	1466	24" x 144"	2"	1/2	115	1	2"	20 @ 15'	20'	1,2,3,5

NOTES:
1. AUTOMATIC VERTICAL FLOAT SWITCH.
2. SEE DETAIL 6/P301 AND 7/P301.
3. PROVIDE WITH LOCAL CONTROL PANEL FROM MANUFACTURER; NO CONNECTION TO B.A.S.
4. SIMPLEX INSTALLATION.
5. DUPLEX INSTALLATION.

CIRCULATION PUMP SCHEDULE

MARK	SERVICE	MAXIMUM WORKING PRESSURE (PSI)	MAXIMUM OPERATING TEMP (°F)	ELECTRICAL CHAR.	HP	FLANGE SIZE (IN)	FLOW (GPM)	HEAD (FT)	MANUFACTURER & MODEL NO.	NOTES
P-4	GREENHOUSE HEATING TABLE	175	250	115/1/60	1/12	3/4	5.5	5.0	BELL AND GOSSETT, ECOCIRC N, 26-33	1,2,3
P-7	GREENHOUSE MISTING TABLE	175	250	230/1/60	1/2	2.5	11	75	BELL AND GOSSETT, ECOCIRC XL, 26-140	1,2,3

NOTES
1. STAINLESS STEEL IMPELLER.
2. SEE DETAIL M750.
3. DISCONNECT BY ELECTRICAL CONTRACTOR.

TANKLESS GAS WATER HEATER SCHEDULE

MARK	LOCATION	TEMPERATURE RISE (DEG F)	INPUT (MBH)	AIR INTAKE (IN.)	FLUE EXHAUST	MANUFACTURER	MODEL	NOTES
WH-2	GREENHOUSE	70	199	2	2	BOSCH	TR200	1,2,3

NOTES:
1. UNIT SHALL BE OUTDOOR RATED.
2. PROVIDE CONCENTRIC VENT TERMINATION.
3. INSTALL PER MANUFACTURER'S WRITTEN INSTRUCTIONS.

MIXING VALVE SCHEDULE

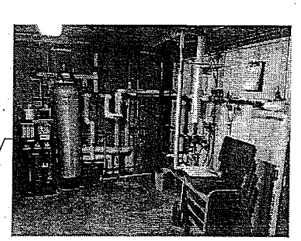
MARK	LOCATION	FLOW (GPM)	INLETS & OUTLETS (IN)	MANUFACTURER & MODEL NO.	NOTES
MV-1	HEADHOUSE	50	1 1/4, 1 1/2	LAWLER, 880	1

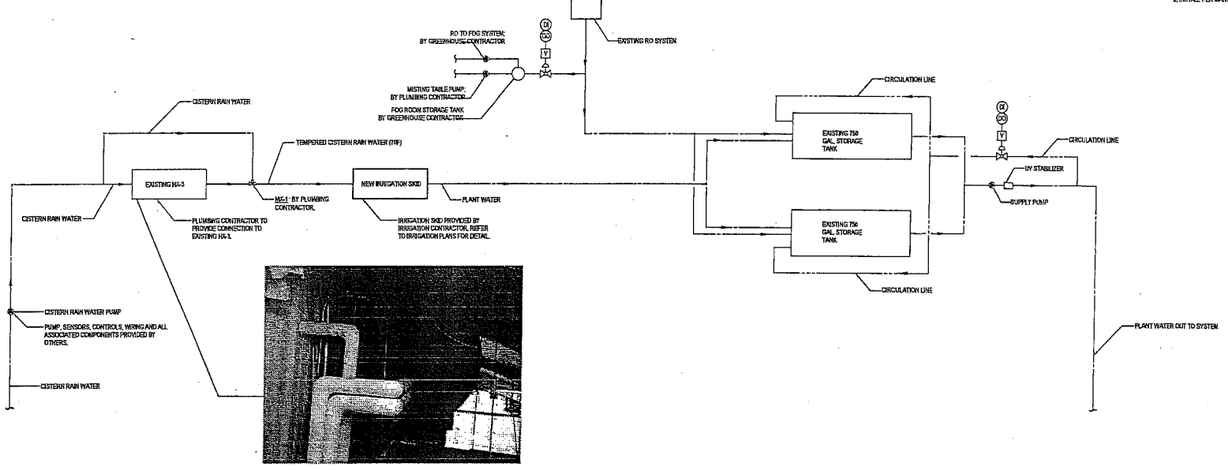
NOTES:
1. INSTALL PER MANUFACTURER'S RECOMMENDATIONS.

RO/RAIN WATER SYSTEM DESIGN INTENT:
1) IF RAIN WATER IS AVAILABLE IN THE CISTERN; CISTERN RAIN WATER SHALL BE USED AS PRIMARY SOURCE OF WATER.
   a) CISTERN RAIN WATER PUMP SHALL TURN ON WHEN THE WATER LEVEL IN THE EXISTING STORAGE TANKS REACHES LOWER LIMIT. CISTERN RAIN WATER PUMP SHALL TURN OFF WHEN THE WATER LEVEL IN THE EXISTING STORAGE TANKS REACHES UPPER LIMIT.
   b) THE RAIN WATER SHALL BE ROUTED FROM THE CISTERN RAIN WATER PUMP TO AN EXISTING SOLAR THERMAL HEAT EXCHANGER.
   c) A THERMOSTATIC MIXING VALVE SHALL BE PROVIDED DOWNSTREAM OF SOLAR THERMAL HEAT EXCHANGER AS SHOWN ON SCHEMATIC DIAGRAM. THE MIXING VALVE SHALL BE SET TO DISCHARGE 75F TEMPERED WATER.
   d) THE TEMPERED WATER SHALL PASS THROUGH AN IRRIGATION SKID TO FILTER RAIN WATER. ONCE RAIN WATER PASSES THE FILTRATION SYSTEM, IT BECOMES PLANT WATER. PLANT WATER FROM OUTLET OF IRRIGATION SKID SHALL BE ROUTED TO EXISTING STORAGE TANKS.
   e) PLANT WATER SHALL FILL STORAGE TANKS TO UPPER LIMIT.
   f) IF THERE IS DEMAND OUT IN THE SYSTEM (A VALVE OPENS), THE SUPPLY PUMP SHALL DRAW PLANT WATER FROM BOTH EXISTING STORAGE TANKS TO PROVIDE SYSTEM PRESSURIZATION; SIMULTANEOUSLY, A 2-POSITION VALVE ON THE CIRCULATION LINE SHALL BE CLOSED. IF THERE IS NO DEMAND OUT IN THE SYSTEM (NO VALVE IS OPEN), THE 2-POSITION VALVE ON THE CIRCULATION LINE SHALL OPEN TO ALLOW CIRCULATION OF PLANT WATER BETWEEN THE EXISTING STORAGE TANKS.
2) IF NO RAIN WATER IS AVAILABLE IN THE CISTERN; RO WATER SHALL BE USED AS PRIMARY SOURCE OF WATER.
   a) NO WATER SHALL FILL EXISTING STORAGE TANKS WHEN THE WATER LEVEL IN THE TANKS REACHES LOWER LIMIT.
   b) IF THERE IS DEMAND OUT IN THE SYSTEM (A VALVE OPENS), THE SUPPLY PUMP SHALL DRAW RO WATER FROM BOTH EXISTING STORAGE TANKS TO PROVIDE SYSTEM PRESSURIZATION; SIMULTANEOUSLY, A 2-POSITION VALVE ON THE CIRCULATION LINE SHALL BE CLOSED. IF THERE IS NO DEMAND OUT IN THE SYSTEM (NO VALVES OPEN), THE 2-POSITION VALVE ON THE CIRCULATION LINE SHALL OPEN TO ALLOW CIRCULATION OF RO WATER BETWEEN THE EXISTING STORAGE TANKS.
   c) IF THERE IS DEMAND OUT IN THE SYSTEM (A VALVE OPENS), THE SUPPLY PUMP SHALL DRAW PLANT WATER FROM BOTH EXISTING STORAGE TANKS TO PROVIDE SYSTEM PRESSURIZATION; SIMULTANEOUSLY, A 2-POSITION VALVE ON THE CIRCULATION LINE SHALL BE CLOSED. IF THERE IS NO DEMAND OUT IN THE SYSTEM (NO VALVES OPEN), THE 2-POSITION VALVE ON THE CIRCULATION LINE SHALL OPEN TO ALLOW CIRCULATION OF PLANT WATER BETWEEN THE EXISTING STORAGE TANKS.

MISTING AND FOG SYSTEMS DESIGN INTENT:
1) A NEW RO WATER STORAGE TANK SHALL BE PLACED IN THE FOG ROOM. WHEN RO WATER LEVEL IN THE TANK REACHES LOWER LIMIT, A 2-POSITION VALVE SHALL OPEN TO ALLOW FLOW OF RO WATER INTO THE STORAGE TANK. WHEN RO WATER LEVEL IN THE TANK REACHES UPPER LIMIT, A 2-POSITION VALVE SHALL CLOSE TO ABSTRACT FLOW OF RO WATER INTO THE STORAGE TANK.
2) MISTING AND FOG SYSTEM SHALL CONNECT DOWNSTREAM OF THE STORAGE TANK. MISTING AND FOG SYSTEM SHALL NOT TEE-OFF FROM THE SAME LINE.
3) FOG PUMP, ASSOCIATED COMPONENTS AND FOG LINE DOWNSTREAM OF FOG PUMP PROVIDED BY GREENHOUSE CONTRACTOR.

NOTE:
THE FOG AND MISTING SYSTEMS SHALL ACCEPT RO WATER AT ALL TIMES.





2 RAIN/RO WATER SCHEMATIC
NOT TO SCALE

MSR
710 South 2nd Street, 8th Floor
Minneapolis, Minnesota 55401-2262
Architecture Interiors and Urban Design
612 375 0336 tel
612 342 2216 fax
www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201
Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
323 South Patterson Street, Suite 1
Madison, WI 53703
608.251.3400 tel

Structural Engineer, Technology and A/V
IMEG Corp.
1600 Deming Way, Suite 200
Middleton, WI 53562
608.223.9500 tel

MEP Engineer
MEP Associates, LLC
650 Elm Grove Road, Suite 175
Elgin, MN 55123
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
575 Enterprise Ave West
St. Paul, MN 55102
651.251.1010 tel

Greenhouse Design
Rough Brothers, Inc.
5513 Vine Street
Cincinnati, OH 45217
513.242.5310 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Engineer under the Laws of the State of Wisconsin. ENGINEER SEAL

LARRY J. NELSEN E-30240 WISCONSIN

Signature,
Print Name: Larry Nelsen
Date: JUNE 4, 2018 License No.: E-30240

MARK	DATE	DESCRIPTION
	05.04.2017	SCHEMATIC DESIGN SUBMISSION
	12.08.2017	DD PRICING SET
	01.10.2018	DESIGN DEVELOPMENT SUBMISSION
	03.12.2018	CDD1 SUBMISSION
	03.30.2018	70% CD PRICING ISSUE
	05.04.2018	90% CONSTRUCTION DOCUMENTS
	06.01.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE

PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: MSR CHECKED BY:

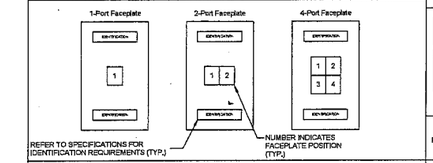
PLUMBING SCHEDULES AND RAIN/RO SCHEMATIC

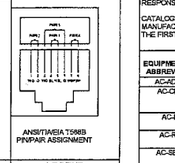
EXHIBIT K
P401

ORIGINAL

INFORMATION OUTLET SCHEDULE

SINGLE GANG WALL PLATES





ANSI/TIA/EIA T568B PINPAIR ASSIGNMENT

NOTES:
1. PROVIDE REMOVABLE BLANK INSERT(S) FOR ALL UNUSED PORTS.
2. REFER TO SPECIFICATIONS SECTION 27 05 53 FOR ADDITIONAL INFORMATION ON LABELING REQUIREMENTS.

SCHEDULE NOTES:
1. LOCATION OF FUTURE OR OWNER PROVIDED WIRELESS ACCESS POINT. PROVIDE A 20' SLACK COIL AT THE NEAREST CABLE SUPPORT FOR POSSIBLE RELOCATION AFTER WIRELESS SURVEY.

LEGEND

CAT6	CAT 6 RJ-45
CAT6A	CAT6A RJ-45
BL	BLANK FILLER MODULE
HDMI	HDMI CONNECTOR

CONFIGURATION	# OF FACEPLATE PORTS	FACEPLATE PORT IDENTIFICATION				NOTES
		POSITION 1 JACK TYPE	POSITION 2 JACK TYPE	POSITION 3 JACK TYPE	POSITION 4 JACK TYPE	
C2	2	CAT6	BL			
C2-WAP	2	CAT6A	CAT6A			1.
C4	4	CAT6	CAT6	CAT6	CAT6	
C4-1	4	CAT6	CAT6	HDMI	HDMI	
W	1	CAT6				

CONTROLLED SECURITY SCHEME (CSS) TYPE SCHEDULE

ELECTRONIC DOOR HARDWARE SUCH AS ELECTRIC STRIKES, ELECTRIC LATCH RETRACTION, ETC., SHALL BE PROVIDED AND INSTALLED BY OTHERS. REFER TO THE GENERAL TECHNOLOGY EQUIPMENT SCHEDULE ON T500 FOR CREDENTIAL READER TYPE INFORMATION.

	CREDENTIAL READER	INTEGRATION											REQUEST TO EXIT	DOOR HARDWARE														OTHER (REFER TO NOTES)	
DOOR #	CREDENTIAL READER TYPE	MULTIPLE CREDENTIAL READERS OPERATES SINGLE DOOR	OPERATES MULTIPLE DOORS	WIRELESS	AUTOMATED DOOR OPERATOR	ELEVATOR	LOCKED BY EMERGENCY DURESS SEQUENCE	REMOTE UNLOCK VIA INTERCOM MASTER	REMOTE UNLOCK VIA PUSHBUTTON	INTRUSION DETECTION	REMOTE UNLOCK VIA FIRE COMMAND CENTER	VIDEO SURVEILLANCE	INTERNAL ELECTRIFIED HARDWARE CONNECTION	LOCAL PUSHBUTTON DOOR HARDWARE OVERRIDE	MOTION DETECTOR	ELECTRONIC LOCKING HARDWARE (BY OTHERS)	MAG LOCK	LATCH STATUS DETECTION	LOCAL ALARM HORN	MONITOR DOOR POSITION SWITCH #1	MONITOR DOOR POSITION SWITCH #2	MONITOR DOOR POSITION SWITCH DPDT	MONITOR DOOR POSITION SWITCH FOR OVERHEAD DOOR	DELAYED EGRESS	LOCAL 12/24VDC POWER SUPPLY	SCHEDULE BASED LOCKING	VISUAL STROBE	NOTES
100	CR			*	*								*			*				*	*	*						
102	CR			*									*			*				*	*	*						
110	CR			*									*			*				*	*	*						
113B	CR												*			*				*	*	*						
129	CR			*									*			*				*	*	*						
159A	CR			*									*			*				*	*	*						
201A	CR												*			*				*	*	*						
201B	CR			*									*			*				*	*	*						
210	CR												*			*				*	*	*						
GH01A	CR												*			*				*	*	*						
GI-02	CR												*			*				*	*	*						
GI-05	CR												*			*				*	*	*						

GENERAL TECHNOLOGY EQUIPMENT SCHEDULE

THE EQUIPMENT LIST ABBREVIATIONS AND THE GENERAL TECHNOLOGY EQUIPMENT SCHEDULE ARE FOR THE CONVENIENCE OF THE CONTRACTOR. EACH CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF QUANTITIES AND SHALL FURNISH ALL MATERIAL REQUIRED, WHETHER SPECIFIED OR NOT, TO PRODUCE A SATISFACTORY WORKING SYSTEM.

CATALOG NUMBERS ARE NOT TO BE CONSIDERED COMPLETE BUT ARE GIVEN ONLY TO AID THE CONTRACTOR IN THE SEARCH FOR MATERIAL. NO MATERIAL SHALL BE ORDERED BY MANUFACTURER AND CATALOG NUMBER ONLY. EACH CONTRACTOR SHALL FIRST READ THE COMPLETE DESCRIPTION OF THE MATERIAL ON THESE DRAWINGS AND SPECIFICATIONS. THE FIRST MANUFACTURER LISTED IS THE BASIS OF DESIGN. "STANDARD COLOR" INDICATES FACTORY FINISH AVAILABLE AT NO ADDITIONAL CHARGE.

EQUIPMENT LIST ABBREVIATION	EQUIPMENT LIST DESCRIPTION	EQUIPMENT LIST MANUFACTURER AND MODEL
AC-ADCW	ACCESS CONTROL, AUTOMATIC DOOR OPENER.	*
AC-CR-W	ACCESS CONTROL CARD READER, PROVIDED AS INTEGRAL PART OF SECURITY MANAGEMENT SYSTEM. REFER TO CONTROLLED SECURITY SCHEME (CSS) TYPE SCHEDULE ON T500 AND 3/7400 ACCESS CONTROL, RISER DIAGRAM FOR ADDITIONAL INFORMATION. CARD READERS SHOWN ON PLANS TO INDICATE APPROXIMATE LOCATION. REFER TO SPECIFICATION SECTION 28 13 00 FOR COMPLETE INFORMATION.	KEYSCAN K-KPR
AC-DC	ACCESS CONTROL DOOR CONTACT, REFER TO 3/7400 ACCESS CONTROL RISER DIAGRAM FOR ADDITIONAL INFORMATION. REFER TO SPECIFICATION SECTION 28 13 00 FOR COMPLETE INFORMATION.	*
AC-REX	ACCESS CONTROL, REQUEST TO EXIT DEVICE, REFER TO 3/7400 ACCESS CONTROL RISER DIAGRAM FOR ADDITIONAL INFORMATION. REFER TO SPECIFICATION SECTION 28 13 00 FOR COMPLETE INFORMATION.	*
AC-SEC-1	ACCESS CONTROL, SECURITY SYSTEM CONTROL PANEL, REFER TO SPECIFICATION SECTION 28 13 00 FOR COMPLETE INFORMATION.	KEYSCAN ACCESS CONTROL SYSTEM NO SUBSTITUTIONS
AR-AAC-W	AREA OF RESCUE ASSISTANCE CALL STATION, WALL MOUNT, VANDAL RESISTANT WITH MUSHROOM SWITCH, MOMENTARY SWITCH WITH LED AND ONE AUDIBLE ALARM, MOUNT IN CORNELL PROVIDED 4-1/2" SQUARE STAINLESS STEEL FACEPLATE AND DUAL GANG BACK BOX WITH 1-3/4" DEPTH AT 48" AFF. REFER TO 3/7401 FOR AREA OF RESCUE RISER DIAGRAM FOR ADDITIONAL INFORMATION.	CORNELL 4201BVM OR PRE-APPROVED EQUAL
AR-AAM-W	AREA OF RESCUE ASSISTANCE MASTER STATION, 4-ZONE PANEL WITH AUDIBLE ALARM ON THE PANEL AND LED LIGHTS PER ZONE TO INDICATE WHEN CALL IS INITIATED. POWER REQUIREMENTS: 24VDC. MOUNT IN CORNELL PROVIDED 10"H X 9"W X 3.5"D BACKBOX (BB-40) AT 48" AFF. INCLUDE TELEPHONE ACCESS KIT (MTAK-4202). FULLY PROGRAMMABLE AUTO DIALER, MESSAGES CAN BE RECORDED LOCALLY, REMOTELY, OR CONFIGURED AS AN ALARM DIALER. REFER TO 3/7401 FOR AREA OF RESCUE RISER DIAGRAM FOR ADDITIONAL INFORMATION.	CORNELL A-4204 OR PRE-APPROVED EQUAL
AV-CPS-1	CONTROL PROCESSOR FOR SINGLE OR DIVISIBLE ROOM AV CONTROL, SUPPORTS 7" WALL TOUCH PANEL INTERFACE AND HANDHELD HARD BUTTON IR/ REMOTE CONTROL. LOCAL AREA NETWORK CONTROL AND PROGRAMMING INTERFACE AND RS232, CONTACT CLOSURE AND INFRARED CONTROL FOR COMMERCIAL AND CONSUMER AV DEVICES. 1 RU HEIGHT. REFER TO 1/7401 CLASS ROOM AV RISER DIAGRAM FOR CONTROL PORT REQUIREMENTS.	CRESTRON CP3 EXTRON
AV-IRS-C	AUDIO VISUAL, INFRARED SENSOR, CEILING MOUNT.	*
AV-MC-1	SCALING PRESENTATION SWITCHER AND CONTROLLER, 8 INPUTS INCLUDING MINIMUM 2 HDMI, 2 HDBASET, 2 SWITCHED HDMI AND 2 SWITCHED HDBASET OUTPUTS, INPUT SCALING TO 1080P AND WUXGA (1920 X 1200) OUTPUT, LAN OR RS232 CONTROL OF AUDIO VIDEO EQUIPMENT, 3 RU HEIGHT.	CRESTRON DMPS3-300-C EXTRON
AV-MON-1	55" THIN BEZEL LED VIDEO WALL DISPLAY MONITOR, 16:9 ASPECT RATIO, 1920X1080 PIXEL RESOLUTION, ONE BNC COAXIAL INPUT, RCA L/R INPUTS, ONE SET OF RCA COMPONENT INPUTS, THREE (3) HDMI IN, MINI D-SUB INPUT, USB M3 AUDIO INPUT, M3 AUDIO OUTPUT, RJ-11, M3 JACK AND RS-232C.	PANASONIC TH-55LF50E OR PRE-APPROVED EQUAL
AV-MON-2	LED/LCD DISPLAY MONITOR 55" 16:9 ASPECT RATIO 1920X1080 PIXEL RESOLUTION WITH MINIMUM OF (3) HDMI INPUTS, (1) USB CONNECTION (1) RJ-45 LAN CONNECTION AND RS232 CONTROL.	PANASONIC TH-60LF50U OR PRE-APPROVED EQUAL
AV-MPI-REC	STANDARD DIVERSITY WIRELESS MICROPHONE RECEIVER WITH HANDHELD MIC. PROGRAMMABLE CHANNELS. MIC AND LINE OUTPUTS DETACHABLE AND REMOTE LOCATABLE 1/2 WAVE ANTENNAE. RACK MOUNTABLE IN 1 RU.	SHURE ULX AKG TELEX
AV-PRE-1	DANTE ENABLED DIGITAL PREAMP AND MIXLINE MIXER WITH EIGHT MIXLINE INPUTS AND MINIMUM TWO OUTPUTS WITH PARAMETRIC EQ, COMPRESSOR AND INPUT DUCKING. CONTROL, INTERFACE VIA RS232 OR LAN WITH FULL DISCRETE COMMAND SET FOR ZONE VOLUME, INPUT LEVELS AND INPUT SWITCHING, 2 RU HEIGH.	BIAMP TESIRAFORTE CRESTRON
AV-PRE-2	DANTE ENABLED DIGITAL PREAMP AND MIXLINE MIXER WITH EIGHT MIXLINE INPUTS AND MINIMUM TWO OUTPUTS WITH PARAMETRIC EQ, COMPRESSOR AND INPUT DUCKING. CONTROL, INTERFACE VIA RS232 OR LAN WITH FULL DISCRETE COMMAND SET FOR ZONE VOLUME, INPUT LEVELS AND INPUT SWITCHING, 2 RU HEIGH.	BIAMP TESIRAFORTE CRESTRON
AV-RR-W	AUDIO VISUAL, ROUGHIN, WALL MOUNT, PROVIDE ONE (1) 4 11/16" SQUARE BACKBOX WITH A DOUBLE GANG PLASTER RING, WALL MOUNT, AND ONE (1) 1 1/4" CONDUIT TO ABOVE ACCESSIBLE CEILING. REFER TO FLOOR PLANS FOR ADDITIONAL CONDUIT REQUIREMENTS, WHERE NOTED AS INSTALLED IN E.C. PROVIDED RECESSED BOX PROVIDE A SINGLE GANG BOX.	*
AV-RX-1	JUNCTION BOX MOUNT 4K DIGITAL MEDIA HDBASET RECEIVER AND DISPLAY CONTROLLE, ONE DM TWISTED PAIR INPUT, ONE HDMI OUPUT AND RS-232/INFRARED CONTROL, OUTPUT, WHITE COLOR, MOUNT IN AV-WPI-W DISPLAY CONNECTIVITY BOX UNLESS OTHERWISE NOTED.	CRESTRON DM-RMC-4K-100-C-1G EXTRON
AV-S1-C	PERFORMANCE AUDIO SPEAKER, CEILING MOUNTED, RECESSED, SOUND REINFORCEMENT, HEMISPHERICAL DISPERSION, FULL RANGE TYPE WITH BASS REFLEX ENCLOSUR, 60 WATT (16 OHMS) AND 120 WATT (8 OHMS) CONTINUOUS POWER HANDLING, SENSITIVITY: 90dB SPL @ 1W/1M, 70 Hz-20kHz FREQUENCY RESPONSE. PRODUCTS TO BE CONSIDERED FOR PRE-APPROVAL MUST BE SUBMITTED WITH A POLAR FREQUENCY RESPONSE CURVE AT 500, 1000, 2000, 4000 AND 8000 Hz, AS WELL AS A FREQUENCY RESPONSE CURVE.	CRESTRON BARCO ICSLPT-S-T-EACH OR PRE-APPROVED EQUAL
AV-SFC-1	4 PORT HD-SDI/3G-SDI TO FIBER CONVERTER TRANSCEIVER, FOR EXTENDING AV-CM1-W VIDEO SIGNAL OVER SINGLE MODE FIBER TO OWNER MEDIA TEA. FOUR BNC HD-SDI/3G-SDI INPUTS, FOUR LC SINGLE MODE FIBER INPUTS/OUTPUTS FOUR BNC HD-SDI/3G-SDI AND HDMI LOOP OUTPUTS, HDMI LOOP OUTPUTS USED TO SEND VIDEO TO AV SWITCHER.	BLACKMAGIC ATEM STUDIO CONVERTER 2 OR PRE-APPROVED EQUAL
AV-SW-2	5X8 HDMI MATRIX CARD FRAME SWITCH WITH MINIMUM TWO HDBASET TWISTED PAIR INPUTS, FOUR HDMI INPUTS, FIVE HDBASET TWISTED PAIR OUTPUTS, ONE HDMI OUTPU. REFER TO AV RISERS ON T403 FOR ADDITIONAL CONNECTIVITY INFORMATION.	CRESTRON DM SERIES EXTRON
AV-TP-W	7" LED CAPTIVE EDGE TO EDGE GLASS TOUCH PANEL, WALL MOUNT, POE NETWORK POWER SUPPORT.	CRESTRON TSW-752 OR PRE-APPROVED EQUAL
AV-TVT-1	HIGH DEFINITION IPTV TUNER WITH ONE 10/100 LAN INPUT, ONE DVI-HDMI AND COAXIAL OR OPTICAL DIGITAL AND ANALOG RCA OUTPUTS, INFRARED CONTROL WITH FULL DISCRETE COMMAND SET FOR POWER AND CHANNEL SELECTION. 1 RU MOUNTING HEIGHT.	*
AV-TX-1	JUNCTION BOX MOUNT 4K DIGITAL MEDIA HDBASET TRANSMITTE. ONE DM TWISTED PAIR OUTPUT, ONE HDMI INPUT AND RS-232/INFRARED CONTROL INPUT, WHITE COLOR.	CRESTRON DM-TX-4K-100-C-1G EXTRON
AV-WPI-W	A/V DISPLAY CONNECTIVITY BOX (FSR PWB-230 WHITE) 14.25" X 7" X 4" WALL RECESSED BOX WITH TWO SINGLE GANG AND ONE 1-1/4" KNOCKOUTS. INSTALL ONE 3/4" CONDUIT FOR POWER, PROVIDE SINGLE GANG JUNCTION BOX AND DUPLEX RECEPTACLE INSTALL ONE 1" CONDUIT TO NEAREST CABLE TRAY OR PATHWAY FOR INFORMATION OUTLET, REFER TO INFORMATION OUTLET SCHEDULE ON T500 FOR WALL PLATE AND JACK INFORMATION. INSTALL ONE 1-1/4" CONDUIT TO ABOVE ACCESSIBLE CEILING FOR FUTURE LOW VOLTAGE CABLING, FINISH WITH NYLON BUSHING. INSTALL AT 60" OC AFF UNO.	*
SC-CPW-1	FIRE RATED PATHWAY, 4"W X 4-5/8" H X14" L, BUILT IN SMOKE SEALING SYSTEM THAT AUTOMATICALLY ADJUSTS TO THE AMOUNT OF CABLES INSTALLED, ORANGE PAINT.	STI EZ PATH SERIES 44 NO SUBSTITUTIONS
SC-CT-1	CABLE TRAY, WIRE MESH TYPE, 4" LOADING DEPTH, 12" WIDTH, COMPLETE WITH ALL FITTINGS AND MOUNTING HARDWARE. PROVIDE TRAPEZE SUPPORT WITH PLASTIC RETAINER. CUTTING OF THE MESH CABLE TRAY SHALL BE DONE WITH OFFSET BOLT CUTTERS ONLY. 10' MAXIMUM SUPPORT SPAN. EITHER SPLICE WASHERS OR TERMINAL GROUND SUPPORT AND JUMPER WIRE SHALL BE USED TO ATTAIN GROUNDING CONTINUITY THROUGHOUT. Z-BRACKETS SHALL BE USED FOR WALL MOUNTED APPLICATIONS. REFER TO MANUFACTURERS INSTALLATION INSTRUCTIONS AND SPECIFICATION SECTION 27 05 29 FOR ADDITIONAL INFORMATION.	COOPER B-LINE FLEXTRAY FT4x12x10 MONO-SYSTEMS CABLOFIL
SC-CT-2	CABLE TRAY, WIRE MESH TYPE, 4" LOADING DEPTH, 6" WIDTH, COMPLETE WITH ALL FITTINGS AND MOUNTING HARDWARE. PROVIDE TRAPEZE SUPPORT WITH PLASTIC RETAINER. CUTTING OF THE MESH CABLE TRAY SHALL BE DONE WITH OFFSET BOLT CUTTERS ONLY. 10' MAXIMUM SUPPORT SPAN. EITHER SPLICE WASHERS OR TERMINAL GROUND SUPPORT AND JUMPER WIRE SHALL BE USED TO ATTAIN GROUNDING CONTINUITY THROUGHOUT. Z-BRACKETS SHALL BE USED FOR WALL MOUNTED APPLICATIONS. REFER TO MANUFACTURERS INSTALLATION INSTRUCTIONS AND SPECIFICATION SECTION 27 05 29 FOR ADDITIONAL INFORMATION.	COOPER B-LINE FLEXTRAY FT4x6x10 MONO-SYSTEMS CABLOFIL
SC-ER-1	STANDARD 19" EQUIPMENT RACK, 84"H X 19"W X 15"D, FEATURING PASS-THRU HOLES ON FRONT AND SIDES FOR CABLE MANAGEMENT (HUBBELL V576H), DURABLE BLACK POWDER COAT FINISH, MEETS EIA-310-E REQUIREMENT AND PROVIDES (45) 19" X 1.75" MOUNTING SPACES. PROVIDE COMPLETE WITH TWO (2) TWO-SIDED VERTICAL WIRE MANAGERS PER RACK, EACH WITH MINIMUM 14" X 6" CAPACITY FRONT AND REAR, AND WITH LADDER RACK CONNECTION HARDWARE ACCESSORIES AND RADIUS DROP LADDER RACK. PROVIDE WITH TOP CENTER WATERFALL TOP CHANNEL PATHWAY FOR LADDER RACK, AND ANY ADDITIONAL HARDWARE FOR COMPLETE INSTALLATION. REFER TO SPECIFICATIONS SECTION 27 11 00 FOR ADDITIONAL INFORMATION.	HUBBELL HPW84RR19 CHATSWORTH HOFFMAN
SC-ER-2	4-POST EQUIPMENT RACK WITH M6 SQUARE HOLES, 84" HIGH, 23" WIDE SUPPORTING STANDARD 19" MOUNTING SPACE, 36" DEEP, INDEPENDENT ADJUSTABLE FRONT AND REAR MOUNTING RAILS CAN BE ADJUSTED WHILE RACK IS SECURED TO FLOOR. PRINTED RACK SPACE IDENTIFICATION ON ALL EQUIPMENT RAILS. UL LISTED FOR 2,500LBS. DURABLE BLACK POWDER COAT FINISH, PROVIDES (45) 1.75 MOUNTING SPACES. THIS EQUIPMENT RACK SHALL INCLUDE VERTICAL WIRE MANAGEMENT.	HUBBELL SR4419-36 CHATSWORTH HOFFMAN
SC-FDC-1	OPTICAL FIBER DISTRIBUTION PANEL, RACK MOUNT, HIGH DENSITY, MINIMUM 144 FIBER CAPACITY, PROVIDE WITH CLAMP AND GROUNDING KIT, COUPLING PANELS, DUPLEX LC CONNECTORS, COUPLINGS AND JUMPERS. REQUIRES (2) 1.75" MOUNTING SPACES.	HUBBELL FCR SERIES PANELS: FSP SERIES OR PRE-APPROVED EQUAL
SC-GND-1	WALL MOUNT GROUND BAR, .4" H X 12" L X 1/4" D COPPER, ELECTRICALLY ISOLATED BY INSULATORS INTEGRAL TO MOUNTING BRACKETS. PROVIDE UNIT CONFIGURED WITH SIXTEEN (16) SETS OF 9/16" HOLES SPACED 5/8" ON CENTER TO ACCOMMODATE "A" SPACED TWO-HOLE COMPRESSION LUGS AND THREE (3) SETS OF 7/16" HOLES SPACED 1" ON CENTER TO ACCOMMODATE "D" SPACED TWO-HOLE COMPRESSION LUGS. ANSI/EIA/TIA-607 AND BICSI COMPLIANT. UL LISTED. REFER TO 2/7300 FOR ADDITIONAL INFORMATION.	CHATSWORTH PRODUCTS 40153-212 ERICO HARGER
SC-GND-2	RACK MOUNT GROUND BAR, COPPER, 3/16" D X 3/4" H X 19" W, (8) #6-32 TAPPED LUG MOUNTING HOLES, (4) 5/16" UNTAPPED LUGS, U.L. LISTED.	CHATSWORTH PRODUCTS 11801-019 ERICO HARGER
SC-HH-1	HANDHOLE COMPOSITE POLYMER CONCRETE BODY AND COVER, STAINLESS STEEL HARDWARE BOLTED NON-SKID COVER RATED FOR 15,000LB. DESIGN LOAD OCCASIONAL NON-DELIBERATE VEHICULAR TRAFFIC. STACK UNITS TO ACIEVE DEPTH SHOWN ON PLANS, UNITS IN LANDSCAPED AREAS SHALL BE GREEN IN COLOR. "COMMUNICATIONS" LOGO ON HANDHOLE COVER. CONTRACTOR SHALL FIELD VERIFY QUANTITY AND LOCATIONS. REFER TO 9/7300 FOR DETAIL. SC-HH-1 = 24"WX24"L.	HUBBELL/QUAZITE PG2424BB24 PG2424HA00 CARSON INDUSTRIES ARMORCAST HIGHLINE PRODUCTS SYNERTECH
SC-HWM-1	HORIZONTAL WIRE MANAGEMENT, 3" X 3" RIGID FRONT FINGERS WITH FLEXIBLE RETENTION TABS, 2" X 5" FLEXIBLE REAR FINGERS, REMOVABLE FRONT COVER. HINGES 180 DEGREES UP OR DOWN. INTEGRAL BEND RADIUS CONTROL. PASS THROUGH HOLES ALLOW FRONT TO REAR CABLING. REQUIRES (2) 1.75" MOUNTING SPACES.	HUBBELL HCR19CETN OR PRE-APPROVED EQUAL

GENERAL TECHNOLOGY EQUIPMENT SCHEDULE

THE EQUIPMENT LIST ABBREVIATIONS AND THE GENERAL TECHNOLOGY EQUIPMENT SCHEDULE ARE FOR THE CONVENIENCE OF THE CONTRACTOR. EACH CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF QUANTITIES AND SHALL FURNISH ALL MATERIAL REQUIRED, WHETHER SPECIFIED OR NOT, TO PRODUCE A SATISFACTORY WORKING SYSTEM.

CATALOG NUMBERS ARE NOT TO BE CONSIDERED COMPLETE BUT ARE GIVEN ONLY TO AID THE CONTRACTOR IN THE SEARCH FOR MATERIAL. NO MATERIAL SHALL BE ORDERED BY MANUFACTURER AND CATALOG NUMBER ONLY. EACH CONTRACTOR SHALL FIRST READ THE COMPLETE DESCRIPTION OF THE MATERIAL ON THESE DRAWINGS AND SPECIFICATIONS. THE FIRST MANUFACTURER LISTED IS THE BASIS OF DESIGN. "STANDARD COLOR" INDICATES FACTORY FINISH AVAILABLE AT NO ADDITIONAL CHARGE.

EQUIPMENT LIST ABBREVIATION	EQUIPMENT LIST DESCRIPTION	EQUIPMENT LIST MANUFACTURER AND MODEL
SCI-CWAP	INFORMATION OUTLET, WIRELESS ACCESS POINT, WALL OR CEILING MOUNT, 2-PORT FACEPLATE AS INDICATED ON INFORMATION OUTLET SCHEDULE ON DRAWING T500. REFER TO INFORMATION OUTLET SCHEDULE ON DRAWING T500 FOR DESCRIPTION OF EACH CONFIGURATION, PIN CONFIGURATION OF JACKS, AND ADDITIONAL INFORMATION AND REQUIREMENTS. PROVIDE RATED CABLE, BACKBOXES AND OUTLETS FOR GREENHOUSE LOCATIONS AS INDICATED ON DRAWINGS. TERMINATE CABLE WITH PLUG, LABEL, AND STORE SPECIFIED SLACK LOOP OF CABLE ON J-HOOK AT LOCATION INDICATED ON FLOOR PLANS.	COVERPLATE: HUBBELL FDXX SERIES JACK: HUBBELL CAT6A HXAWY SERIES NO SUBSTITUTIONS
SCI-DF	INFORMATION OUTLET, POKE-THROUGH MOUNT 4-PORT COVERPLATE AS INDICATED ON DRAWINGS AND INFORMATION OUTLET SCHEDULE. REFER TO INFORMATION OUTLET SCHEDULE ON T500 FOR PIN CONFIGURATION INFORMATION. "-F" INDICATES INFORMATION OUTLET FACEPLATE CONFIGURATION AS INDICATED ON THE PLANS. REFER TO INFORMATION OUTLET SCHEDULE ON T500 FOR ADDITIONAL INFORMATION. INSTALL INFORMATION OUTLET IN E.C. PROVIDED FLOORBOX, PROVIDE ADAPTER PLATE FOR 106-TYPE FACEPLATE WHERE REQUIRED. COORDINATE ADDITIONAL MOUNTING REQUIREMENTS WITH E.C. PROVIDE REMOVABLE BLANK INSERTS FOR UNUSED PORTS. REFER TO SPECIFICATION SECTION 27 15 00 FOR ADDITIONAL INFORMATION.	LEGRAND EVOLUTION 10 POKE THRU
SCI-DW	INFORMATION OUTLET, WALL MOUNT, 2 OR 4-PORT FACEPLATE AS INDICATED IN INFORMATION OUTLET SCHEDULE ON DRAWING T500. "-F" INDICATES INFORMATION OUTLET FACEPLATE CONFIGURATION AS INDICATED ON THE FLOOR PLANS. REFER TO INFORMATION OUTLET SCHEDULE ON DRAWING T500 FOR DESCRIPTION OF EACH CONFIGURATION AND FOR PIN CONFIGURATION OF JACKS. INSTALL INFORMATION OUTLET IN A 4" SQUARE 2-1/8" DEEP BACK BOX WITH A SINGLE GANG PLASTER RING AND A 1" EMT CONDUIT STUBBED TO NON-CONTINUOUS CABLE SUPPORT ROUTE OR CABLE TRAY ABOVE NEAREST ACCESSIBLE CEILING. REFER TO V7300 FOR TECHNOLOGY ROUGH-IN MOUNTING DETAIL. PROVIDE REMOVABLE BLANK INSERTS FOR UNUSED FACEPLATE PORTS.	COVERPLATE: HUBBELL IFP SERIES JACK: HUBBELL CAT6 HUB SERIES NO SUBSTITUTIONS
SC-LR-1	LADDER RACK, 18" WIDE TUBULAR STEEL CONSTRUCTION, RUST RESISTANT BLACK ENAMEL FINISH, UL LISTED, PROVIDE COMPLETE WITH ALL NECESSARY ADAPTERS, SUPPORT HARDWARE, AND FITTINGS. TO INCLUDE RADIUS DROPS, REMOVE SHARP BURRS FROM LADDER RACK AND REPAINT ALL AREAS THAT HAVE BEEN FIELD MODIFIED, CUT, OR EXPOSED.	COPPER BLINE FT2X18X10 MONO SYSTEMS OR PRE-APPROVED EQUAL
SC-MPP-1	MODULAR PATCH PANEL, FORTY EIGHT (48) MODULAR CAT6 RJ-45 SNAP IN JACKS, MOUNTS DIRECTLY TO EIA/TIA STANDARD 19" RELAY RACK PORT IDENTIFICATION NUMBERS PROVIDED WITH COLOR CODING AND LABEL HOLDER KITS U.L. LISTED. REQUIRES (2) 1.75" MOUNTING SPACES.	HUBBELL CAT 6 P6E48U NO SUBSTITUTIONS
SC-MPP-2	MODULAR PATCH PANEL, FORTY EIGHT (48) MODULAR CAT6A RJ-45 SNAP IN JACKS, MOUNTS DIRECTLY TO EIA/TIA STANDARD 19" RELAY RACK PORT IDENTIFICATION NUMBERS PROVIDED WITH COLOR CODING AND LABEL HOLDER KITS U.L. LISTED. REQUIRES (2) 1.75" MOUNTING SPACES.	HUBBELL CAT 6A P6A48U NO SUBSTITUTIONS
SC-PS-1	POWER STRIP, HORIZONTALLY MOUNTS IN A STANDARD EIA/TIA 19" RACK. (10) REAR RECEPTACLES 120VAC/60HZ. PROVIDE WITH 10-4" CORD. INTERNAL CIRCUIT BREAKER. U.L. LISTED, REQUIRES (1) 1.75" MOUNTING SPACE.	HUBBELL HPVPWR HOWARD INC. CHATSWORTH PRODUCTS TRIPP LITE
SC-TE-W	TELECOM ENCLOSURE, WALL MOUNTED.	HUBBELL QUADCAB WSC24SR OR PRE-APPROVED EQUAL
SC-TTB-1	TELECOMMUNICATIONS TERMINAL BOARD, 4' X 8' X 3/4" A-C GRADE FIRE-RATED PLYWOOD. INSTALL ORIENTED VERTICALLY WITH TOP OF PLYWOOD AT +102" AFF AND WITH "A" GRADE SMOOTH SURFACE EXPOSED. RATING STAMP MUST REMAIN VISIBLE.	*
SC-WAP-C	INFORMATION OUTLET WIRELESS ACCESS POINT DEVICE/ENCLOSURE, CEILING MOUNT. NO FACEPLATE AS INDICATED IN INFORMATION OUTLET SCHEDULE ON DRAWING T500. TERMINATE CABLE WITH PLUG, LABEL, AND STORE A MINIMUM OF 15'-0" OF SLACK LOOP OF CABLE ON J-HOOK AT LOCATION INDICATED ON FLOOR PLANS. REFER TO SUGGESTED MATRIX OF SCOPE RESPONSIBILITY ON DRAWING T001 FOR ADDITIONAL INFORMATION. PROVIDE (2) TWO CATEGORY 6 CABLES AND JACKS PER WAP.	ENCLOSURE OBERON 1029 SERIES OR PRE-APPROVED EQUAL
SC-WP-W	INFORMATION OUTLET FOR WALL PHONE, 1-PORT FACEPLATE AS INDICATED IN INFORMATION OUTLET SCHEDULE ON DRAWING T500. " W " PROVIDE (1) RJ-45 JACK FOR VOICE AT +48" AFF FOR WALL HUNG PHONE. INSTALL INFORMATION OUTLET IN A 4" SQUARE BACKBOX WITH A SINGLE GANG PLASTER RING AND A 1" EMT CONDUIT STUBBED TO ABOVE NEAREST ACCESSIBLE CEILING.	COVERPLATE: ICC IC107FPWSS JACK: HUBBELL CAT6 HUB SERIES NO SUBSTITUTIONS

MSR
710 South 2nd Street, 8th Floor
Minneapolis, Minnesota 55401-2282
Architecture 612 375 0336 tel
Interiors and Urban Design 612 342 2216 fax
www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201
Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
323 South Paterson Street, Suite 1
Madison, WI 53703
608.251.3600 tel

Structural Engineer, Technology and AV
IMEG Corp.
1800 Deming Way, Suite 200
Middleton, WI 53562
608.223.9000 tel

MEP Engineer
MEP Associates, LLC
660 Blue Gentian Road, Suite 170
Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
375 Woodcrest Ave West
St. Paul, MN 55102
651.251.1639 tel

Greenhouse Design
Rough Brothers, Inc.
5543 Vine Street
Cincinnati, OH 45227
513.242.6010 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that the plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin.
ARCHITECT SEAL

WISCONSIN
DANIEL JACK POLING
A-8594
MINNEAPOLIS, MN
ARCHITECT

Signature:
Print Name: Jack Poling
Date: JUNE 4, 2019 License No: A-8594

ISSUE		
	DATE	DESCRIPTION
	01.10.2019	DESIGN DEVELOPMENT SUBMISSION
	03.29.2019	75% CD SUBMISSION
	05.24.2019	90% CD SUBMISSION
	06.01.2019	BID ISSUE
	06.04.2019	PERMIT ISSUE

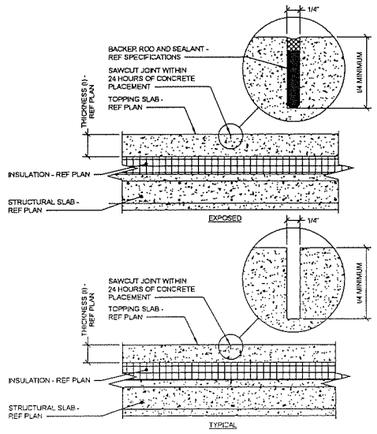
PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: BHASON CHECKED BY: DONPAU

SCHEDULES - TECHNOLOGY

EXHIBIT O

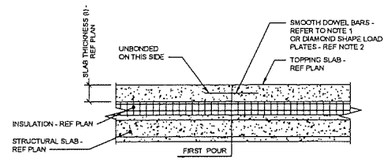
T500

IMEG
1800 DEMING WAY, SUITE 200
MIDDLETON, WI 53562
PHONE: 608.223.9000 FAX: 608.836.1410
www



1 TYPICAL TOPPING SLAB CONTROL JOINT

1" = 1'-0"

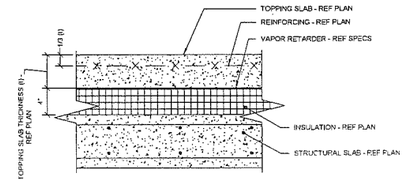


2 TYPICAL TOPPING SLAB CONSTRUCTION JOINT

3/4" = 1'-0"

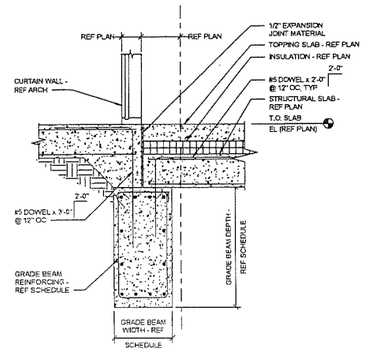
NOTES

1. 3/4"Ø x 1'-2" SMOOTH DOWEL BARS AT 12" OC.
2. 1/4"x4 1/2"x4 1/2" DIAMOND LOAD PLATES AT 18" OC.
3. DOWEL BAR AT TOPPING SLAB CONSTRUCTION JOINT NOT REQUIRED IN THE CLASSROOM.



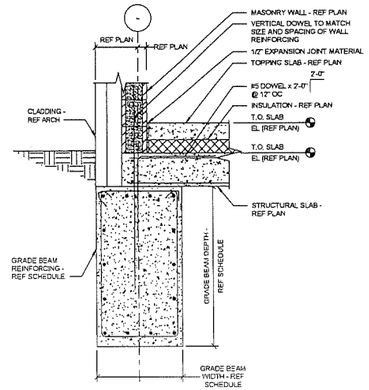
3 TYPICAL TOPPING SLAB SECTION

1 1/2" = 1'-0"



4 CURTAIN WALL CURB DETAIL

3/4" = 1'-0"



5 EXTERIOR WALL DETAIL

3/4" = 1'-0"

6 TYPICAL STOOP SECTION

3/4" = 1'-0"

NOTES:

1. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT STOOP LAYOUT AND LOCATIONS.
2. REFER TO TYPICAL FOUNDATION WALL DETAIL FOR INFORMATION NOT SHOWN.

7 TYPICAL ONE WAY SECTION

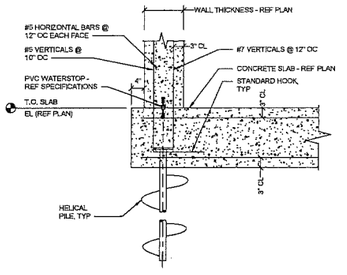
3/4" = 1'-0"

8 HOLLOW CORE BEARING DETAIL

1" = 1'-0"

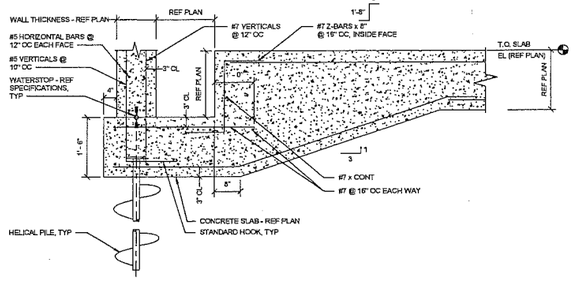
9 ELEVATOR PIT SECTION

3/4" = 1'-0"



10 WALL BEARING ON MAT SLAB DETAIL

3/4" = 1'-0"



11 SUMP PIT IN MAT SLAB DETAIL

3/4" = 1'-0"

12 TYPICAL FOUNDATION DETAILS AT SITE UTILITIES

3/4" = 1'-0"

NOTES:

1. SEE MECHANICAL AND ELECTRICAL DRAWINGS FOR ALL LOCATIONS, ELEVATIONS, ETC. OF SITE UTILITIES. CONTRACTOR SHALL NOTIFY ENGINEER SHOULD SUCH A CONDITION ARISE AND AWAIT FURTHER INSTRUCTIONS.

IMEG CORP. RESERVES PROPRIETARY RIGHTS, INCLUDING COPYRIGHTS, TO THIS DRAWING AND THE DATA SHOWN THEREON. SAID DRAWING AND/OR DATA ARE THE EXCLUSIVE PROPERTY OF IMEG CORP AND SHALL NOT BE USED OR REPRODUCED FOR ANY PURPOSE WHATSOEVER WITHOUT THE EXPRESS WRITTEN APPROVAL AND PERMISSION OF IMEG CORP. ©2018 IMEG CORP.

REFERENCE SCALE IN INCHES 0 1 2 3

MSR
710 South 2nd Street, 8th Floor
Minneapolis, Minnesota 55401-2282
Architecture, Interiors and Urban Design
612 375 0336 tel
612 342 2216 fax
www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201
Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
303 South Paterson Street, Suite 1
Madison, WI 53703
608.251.3600 tel

Structural Engineer, Technology and A/V
IMEG Corp.
1820 Deming Way, Suite 200
Middleton, WI 53562
608.223.9600 tel

MEP Engineer
MEP Associates, LLC
850 Blair Gieskin Road, Suite 175
Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
575 Aldrmans Ave West
St. Paul, MN 55103
651.251.1150 tel

Greenhouse Design
Rough Brothers, Inc.
5512 Vine Street
Cincinnati, OH 45217
513.242.0310 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin.
ARCHITECT SEAL

WISCONSIN DANIEL JACK POLING A-5396 MINNEAPOLIS, MN ARCHITECT

Signature:
Print Name:
Date: JUNE 1, 2018 License No:

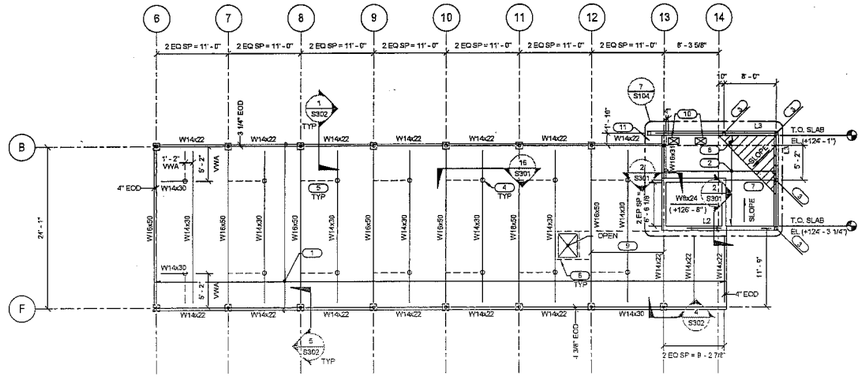
ISSUE MARK	DATE	DESCRIPTION
	12.08.2017	DD PRICING SET
	01.10.2018	DESIGN DEVELOPMENT SUBMISSION
	03.30.2018	75% CD SUBMISSION
	05.04.2018	90% CONSTRUCTION DOCUMENTS
	06.01.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE

PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: SIDBHO CHECKED BY: ABBPER

FOUNDATION DETAILS

EXHIBIT G

S201



1 LEARNING CENTER ROOF FRAMING PLAN

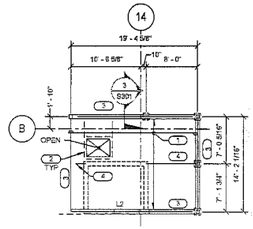
1/8" = 1'-0"

NOTES

1. REFER TO 6/S302 FOR TYPICAL SHEAR CONNECTION.
2. ● INDICATES ASTM F1852 BOLT WITH A CLASS A FAYING SURFACE IS TO BE PROVIDED IN SHEAR CONNECTION.
3. L# INDICATES LINTEL IN STRUCTURAL MASONRY WALL - REFER TO 9/S301 FOR SCHEDULE.
4. FOR LINTELS IN NON-STRUCTURAL WALLS, REFER TO GENERAL NOTES FOR SCHEDULE.

KEYNOTES:

1. 1 1/2" (20 GA) STEEL DECK, 3 SPAN MINIMUM. FASTENING = 36/4 (1) WITH 5/8" PUDDLE WELDS AND #10 SIDELAP SCREWS. DECK BEARING ELEVATION (+122' - 3 1/2"), UNO.
2. 3" NORMAL - WEIGHT CONCRETE ON 2" (20 GA) CONFORM DECK, 1 SPAN, WITH 6x6 - W1.4xW1.4 WWR. TOTAL THICKNESS = 5". SEE PLAN FOR ELEVATIONS.
3. HSS6x6x5/16 POSTS.
4. FALL ARREST POST BY OTHERS. HOLES FOR ANCHORING OF POSTS TO BE PROVIDED. STEEL FABRICATOR TO COORDINATE WITH FALL ARREST SYSTEM PROVIDED.
5. L4x4x1/4 KICKER.
6. PROVIDE ANGLE FRAMING AROUND OPENINGS IN ROOF DECK PER 15/S301.
7. L6x6x3/8. MINIMUM 4" BEARING ON GROUTED MASONRY BLOCK EACH END.
8. PROVIDE CONCRETE BUILD UP TO FORM SLOPE. REFER TO ARCHITECTURAL DRAWINGS FOR SLOPE REQUIREMENTS. MAXIMUM BUILD UP EQUAL TO 2".
9. CONTINUE DECK EDGE ANGLE PAST END OF MASONRY WALL. AFTER MASONRY WALL ENDS PROVIDE PLATE ON BACK SIDE OF ANGLE. REFER TO DETAIL 16/S301.
10. FLOOR PENETRATION - REFER TO 9/S301 FOR DETAIL.
11. L6x4x3/8 (LLV). PROVIDE 4" BEARING OF HORIZONTAL LEG EACH END AND WELD TO BEARING.

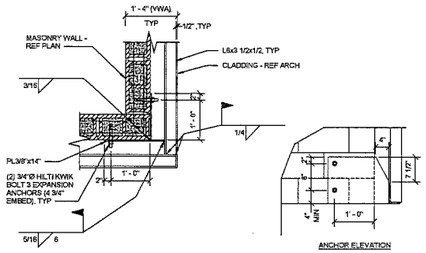


7 PLENUM ROOF

1/8" = 1'-0"

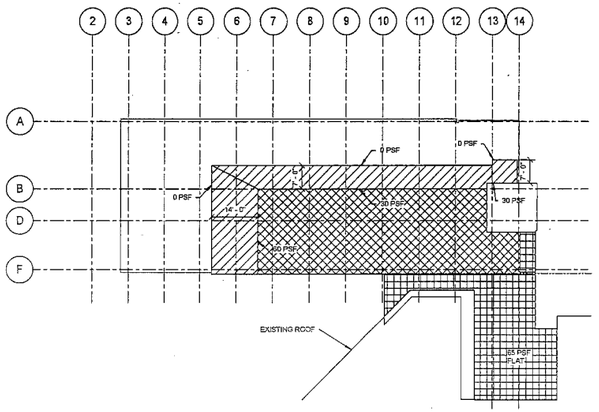
KEYNOTES

1. 1 1/2" (20 GA) STEEL DECK, FASTENING = 36/4 (1) WITH 5/8" PUDDLE WELDS AND #10 SIDELAP SCREWS. DECK BEARING ELEVATION (+122' - 3 1/2"), UNO.
2. PROVIDE ANGLE FRAMING AROUND OPENINGS PER 15/S301.
3. HSS6x6x1/4 (+122' - 11 1/2").
4. L6x6x3/8 (+122' - 3 1/2"). MINIMUM 4" BEARING ON GROUTED BLOCK EACH END.



8 LINTEL SUPPORT

3/4" = 1'-0"

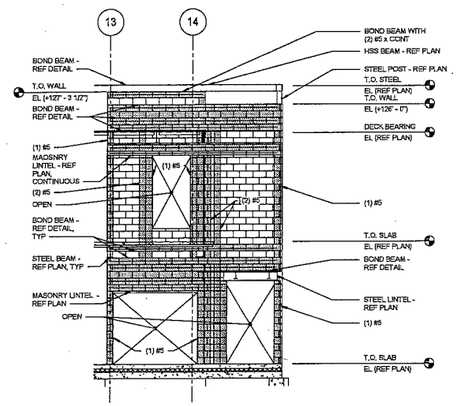


6 LEARNING CENTER ROOF LOAD PLAN

1/16" = 1'-0"

NOTES:

1. ALL INDICATED LOADS ARE IN ADDITION TO THE FOLLOWING DESIGN LOADS
   ROOF DEAD LOAD = 25 PSF
   SNOWY LOAD = SEE S001
2. INDICATES TAPERED SNOW DRIFT LOAD.
3. INDICATES FLAT SNOW DRIFT LOAD.
4. INDICATES ROOF SUPPORTING SOLAR PANELS. DESIGN DEAD LOAD = 10 PSF.

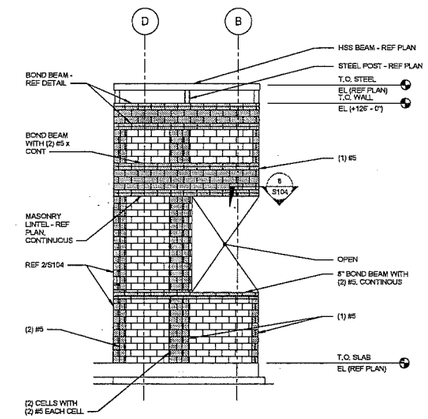


2 MASONRY SHEAR WALL ELEVATION - WEST FACE

3/16" = 1'-0"

NOTES:

1. ELEVATION SHOWN IS LOOKING EAST.
2. REFER TO DETAILS 4, 5, AND 6/S301 FOR TYPICAL BEAM BEARING AT THE END OF STEEL LINTELS.
3. REFER TO 8/S301 FOR CONDITIONS NOT COVERED BY ELEVATION.

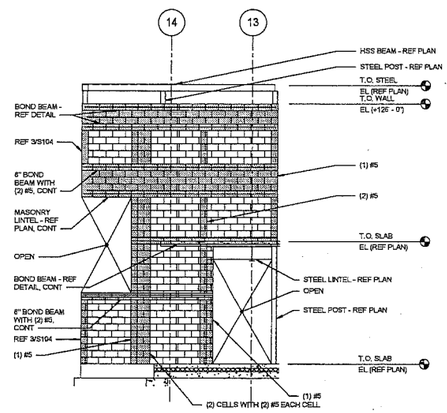


3 MASONRY SHEAR WALL ELEVATION - SOUTH FACE

3/16" = 1'-0"

NOTES:

1. ELEVATION SHOWN IS LOOKING NORTH.
2. REFER TO DETAILS 4, 5, AND 6/S301 FOR TYPICAL BEAM BEARING AT THE END OF STEEL LINTELS.
3. REFER TO 8/S301 FOR CONDITIONS NOT COVERED BY ELEVATION.

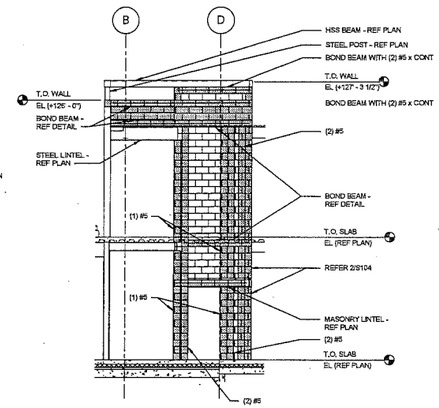


4 MASONRY SHEAR WALL ELEVATION - EAST FACE

3/16" = 1'-0"

NOTES:

1. ELEVATION SHOWN IS LOOKING WEST.
2. REFER TO DETAILS 4, 5, AND 6/S301 FOR TYPICAL BEAM BEARING AT THE END OF STEEL LINTELS.
3. REFER TO 8/S301 FOR CONDITIONS NOT COVERED BY ELEVATION.



5 MASONRY SHEAR WALL ELEVATION - NORTH FACE

3/16" = 1'-0"

NOTES:

1. ELEVATION SHOWN IS LOOKING SOUTH.
2. REFER TO DETAILS 4, 5, AND 6/S301 FOR TYPICAL BEAM BEARING AT THE END OF STEEL LINTELS.
3. REFER TO 8/S301 FOR CONDITIONS NOT COVERED BY ELEVATION.

MSR 710 South 2nd Street, 8th Floor Minneapolis, Minnesota 55401-2282
Architecture Interiors and Urban Design
612 375 0336 tel
612 342 2216 fax
www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201
Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
353 South Paterson Street, Suite 1
Madison, WI 53703
608.251.3600 tel

Structural Engineer, Technology and AV
IMEG Corp.
1600 Deming Way, Suite 200
Middleton, WI 53562
608.223.9500 tel

MEP Engineer
MEP Associates, LLC
850 Blue Gentian Road, Suite 170
Eagan, MN 55121
651.378.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
575 Minnesota Ave West
St. Paul, MN 55103
651.251.1850 tel

Greenhouse Design
Rough Brothers, Inc.
5613 Vine Street
Cincinnati, OH 45217
513.242.8010 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin.
ARCHITECT SEAL

WISCONSIN
DANIEL JACK POLING
A-5596
MINNEAPOLIS, MN
ARCHITECT

Signature:
Print Name:
Date: JUNE 1, 2018 License No:

NUMB.	DATE	DESCRIPTION
	12.06.2017	CD PRICING SET
	01.15.2018	DESIGN DEVELOPMENT SUBMISSION
	03.30.2018	70% CD SUBMISSION
	05.04.2018	90% CONSTRUCTION DOCUMENTS
	06.01.2018	BID ISSUE
	06.04.2018	REVISED BID ISSUE

PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: SIDSHO CHECKED BY: ABBPER

Sheet No.2017 Copyright Notice, Exterior Environments, Inc.

LEARNING CENTER ROOF FRAMING PLAN

EXHIBIT G

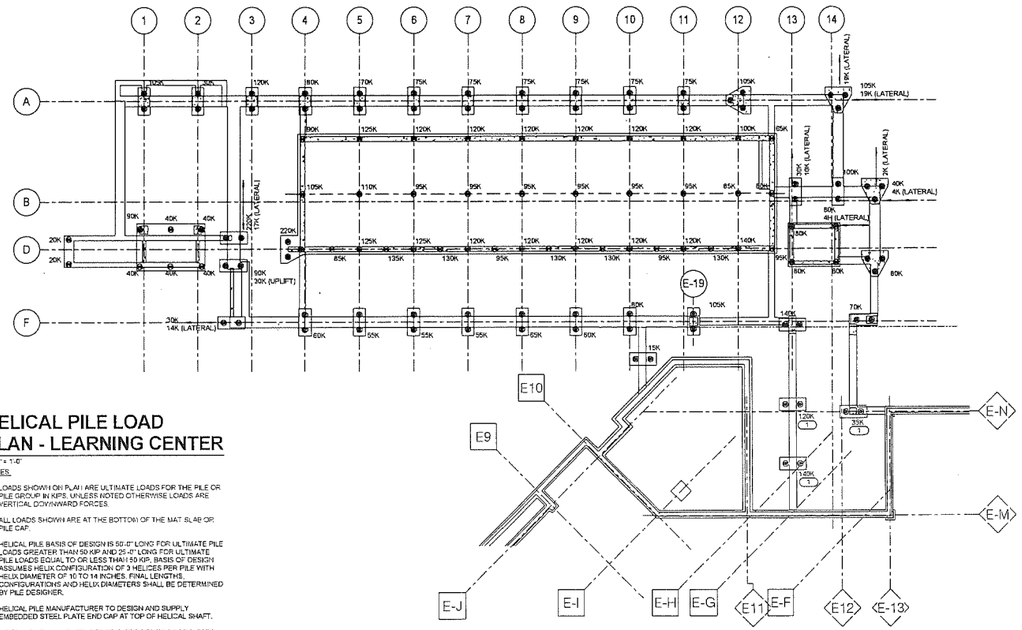
S104

IMEG 1600 DEMING WAY, SUITE 200 MIDDLETON, WI 53562 608.223.9500 FAX: 608.836.8410 www.imegcorp.com PROJECT # 17W1004.00

IMEG CORP. RESERVES PROPRIETARY RIGHTS, INCLUDING COPYRIGHTS, TO THIS DRAWING AND THE DATA SHOWN THEREON. SAID DRAWING AND/OR DATA ARE THE EXCLUSIVE PROPERTY OF IMEG CORP. AND SHALL NOT BE USED OR REPRODUCED FOR ANY OTHER PROJECT WITHOUT THE EXPRESS WRITTEN APPROVAL AND PARTICIPATION OF IMEG CORP. © 2018 IMEG CORP.

REFERENCE SCALE IN INCHES
0 1 2

ORIGINAL



HELICAL PILE LOAD PLAN - LEARNING CENTER

1 PLAN NORTH

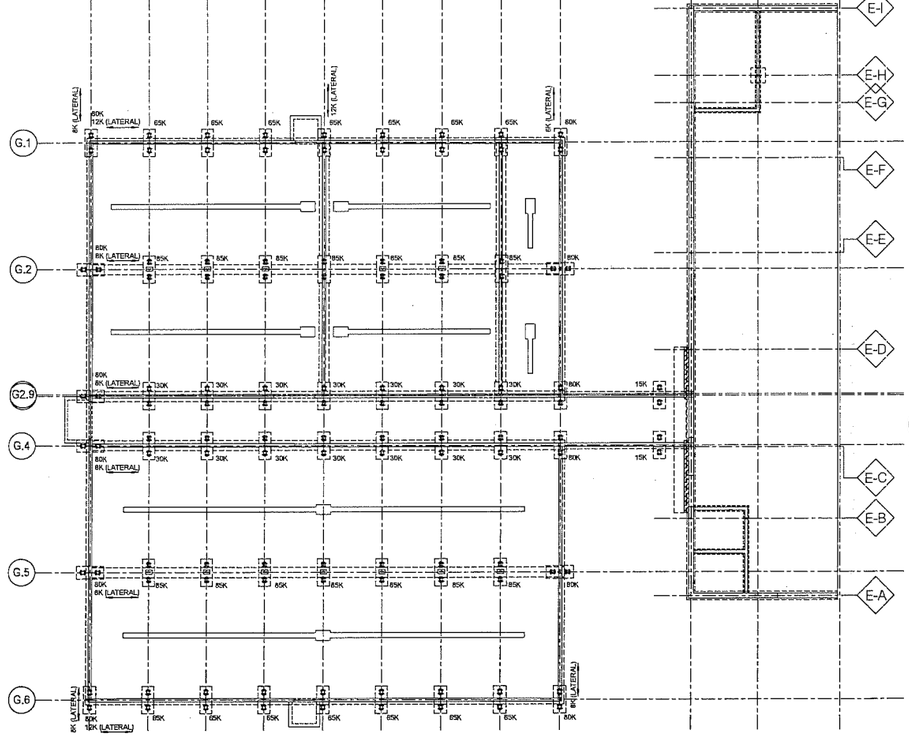
3/32" = 1'-0"

NOTES:

1. LOADS SHOWN ON PLAN ARE ULTIMATE LOADS FOR THE PILE OR PILE GROUP IN KIPS. UNLESS NOTED OTHERWISE LOADS ARE VERTICAL DOWNWARD FORCES.
2. ALL LOADS SHOWN ARE AT THE BOTTOM OF THE MAT SLAB OR PILE CAP.
2. HELICAL PILE BASIS OF DESIGN IS 50'-0" LONG FOR ULTIMATE PILE LOADS GREATER THAN 50 KIP AND 25'-0" LONG FOR ULTIMATE PILE LOADS EQUAL TO OR LESS THAN 50 KIP. BASIS OF DESIGN ASSUMES HELIX CONFIGURATION OF 3 HELICES PER PILE WITH HELIX DIAMETER OF 10 TO 14 INCHES. FINAL LENGTHS, CONFIGURATIONS AND HELIX DIAMETERS SHALL BE DETERMINED BY PILE DESIGNER.
4. HELICAL PILE MANUFACTURER TO DESIGN AND SUPPLY EMBEDDED STEEL PLATE END CAP AT TOP OF HELICAL SHAFT.
5. HELICAL PILE MANUFACTURER TO BATTER PILES AS REQUIRED TO ACHIEVE LATERAL LOADS INDICATED.

KEYNOTES:

1 EXPECT A DENSE ASPHALT LAYER AT 12'-0" BELOW EXISTING GRADE.



HELICAL PILE LOAD PLAN - GREEN HOUSE

2 PLAN NORTH

3/32" = 1'-0"

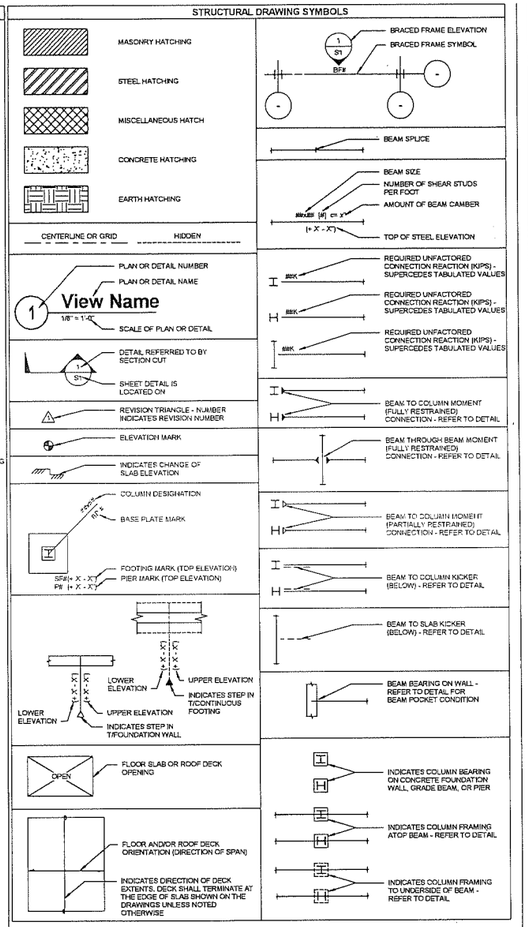
NOTES:

1. LOADS SHOWN ON PLAN ARE ULTIMATE LOADS FOR THE PILE GROUP IN KIPS. UNLESS NOTED OTHERWISE LOADS ARE VERTICAL DOWNWARD FORCES.
2. ALL LOADS SHOWN ARE AT THE BOTTOM OF THE PILE CAP.
3. HELICAL PILE BASIS OF DESIGN IS 50'-0" LONG FOR ULTIMATE PILE LOADS GREATER THAN 50KIP AND 25'-0" LONG FOR ULTIMATE PILE LOADS EQUAL TO OR LESS THAN 50 KIP. BASIS OF DESIGN ASSUMES HELIX CONFIGURATION OF 3 HELICES PER PILE WITH HELIX DIAMETER OF 10 TO 14 INCHES. FINAL LENGTHS, CONFIGURATION, AND HELIX DIAMETERS SHALL BE DETERMINED BY PILE DESIGNER.
4. HELICAL PILE MANUFACTUER TO DESIGN AND SUPPLY EMBEDDED STEEL PLATE END CAP AT TOP OF HELICAL SHAFT.
5. HELICAL PILE MANUFACTURER TO BATTER PILES AS REQUIRED TO ACHIEVE LATERAL LOADS INDICATED.
6. EXPECT AN 8" GRAVEL LAYER ABOUT 18" BELOW EXISTING GRADE THROUGHOUT THE GREENHOUSE FOOTPRINT.

STRUCTURAL ABBREVIATIONS LIST

#	NUMBER
@	AT
°	DEGREES
Ø	DIAMETER
AHU	AIR-HANDLING UNIT
APPROX	APPROXIMATE, -LY
ARCH	ARCHITECT, -URE, -LY
B.O.	BOTTOM OF
bf	BEAM FLANGE WIDTH
BM	BEAM
BP	BASE PLATE
BRG	BEARING
CFSF	COLD FORM STEEL FRAMING
CJ	CONTROL JOINT
CL	CLEAR
CMU	CONCRETE MASONRY UNIT
CONC	CONCRETE
CONST	CONSTRUCTION
CONT	CONTINUOUS
D	DEPTH
DBL	DOUBLE
DEG	DEGREE
DIM	DIMENSION
DL	DEAD LOAD
DTL	DETAIL
DWG	DRAWING
EA	EACH
EF	EACH FACE
EJ	EXPANSION JOINT
EL	ELEVATION
ELEC	ELECTRICAL
EMBED	EMBEDDED
EOD	EDGE OF DECK
EOS	EDGE OF SLAB
EQ	EQUAL
EQUIP	EQUIPMENT
EW	EACH WAY
EXIST, (E)	EXISTING
EXP	EXPANSION
EXT	EXTERIOR
f'c	CONCRETE COMPRESSIVE STRENGTH
FDN	FOUNDATION
FIN	FINISHED
FL	FLOOR
FT	FOOT
FTG	FOOTING
Fy	YIELD STRESS
GA	GAGE OR GAUGE
GALV	GALVANIZED
GB	GRADE BEAM
GC	GENERAL CONTRACTOR
GYP	GYPSUM
HDG	HOT-DIPPED GALVANIZED
HORIZ	HORIZONTAL
HVAC	HEATING, VENTILATION, AIR CONDITIONING
HWS	HEADED, WELDED STUD
IN	INCH
INT	INTERIOR
JST	JOIST
JT	JOINT
K, KIP	KILOPOUND (1,000 POUNDS)
KO	KNOCK-OUT
KSF	KIPS PER SQUARE FOOT
L	LENGTH
LB	POUND
LF	LINEAR FOOT
LL	LIVE LOAD
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LSH	LONG SIDE HORIZONTAL
LSV	LONG SIDE VERTICAL
LONG	LONGITUDINAL
MECH	MECHANICAL/ELECTRICAL
MAX	MAXIMUM
MECH	MECHANICAL
MEZZ	MEZZANINE
MIN	MINIMUM
MISC	MISCELLANEOUS
MK	MARK
N	NORTH
N	LENGTH (AS PLATES)
NIC	NOT IN CONTRACT
NO	NUMBER
NTS	NOT TO SCALE
OC	ON CENTER
OPNG	OPENING
OPP	OPPOSITE
PAF	POWER ACTUATED FASTENER
PC	PRECAST
PCF	POUNDS PER CUBIC FOOT
PL	PLATE
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PVC	POLYVINYL CHLORIDE
R	RADIUS
RD	ROOF DRAIN
REINF	REINFORCING, -MENT, -ED
REQ'D	REQUIRED
REF	REFERENCE, REFER TO
RTU	ROOF-TOP UNIT
SC	TC WITH CLASS A FAYING SURFACE
SCHED	SCHEDULE
SIM	SIMILAR
SL	SNOW LOAD
SP	SPACE(S)
SPEC	SPECIFICATION(S)
SPEC'D	SPECIFIED
SQ	SQUARE
STD	STANDARD
STIFF	STIFFENER
T.O.	TOP OF
TC	PRE-TENSIONED BOLT
TEMP	TEMPERATURE
tf	BEAM FLANGE THICKNESS
TRANS	TRANSVERSE
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
VERT	VERTICAL
VIF	VERIFY IN FIELD
VWA	VERIFY WITH ARCHITECTURAL DRAWINGS
WP	WORKING POINT
WT	WEIGHT
WWR	WELDED WIRE REINFORCING
YD	YARD

STRUCTURAL DRAWING SYMBOLS



PILE CAP SCHEDULE

MARK	DEPTH	BOTTOM BARS		TOP BARS		PILES	REMARKS
		SHORT BARS	LONG BARS	SHORT BARS	LONG BARS		
PC2	2' - 0"	(5) #6	(3) #6	(5) #5	(3) #6	2	-
PC3	2' - 0"	(5) #6, 3 WAYS		(5) #5, 3 WAYS		3	-

NOTES:

1. REFER TO S202 FOR PILE CAP DETAILS.

GRADE BEAM SCHEDULE

MARK	WIDTH	BOTTOM ELEVATION	BOTTOM BARS	TOP BARS	SIDE BARS	STIRRUPS	REMARKS
GB1	2' - 2"	+95' - 0"	(4) #7	(4) #8	#5 @ 12" OC	#4 @ 12" OC	-
GB2	1' - 0"	+95' - 0"	(2) #5	(2) #5	#5 @ 12" OC	#4 @ 18" OC	-
GB3	2' - 6"	+95' - 0"	(4) #9	(4) #9	#5 @ 12" OC	#4 @ 12" OC	-
GB4	2' - 0"	+96' - 0"	(4) #8	(3) #8	#5 @ 12" OC	#4 @ 12" OC	-
GB5	1' - 0"	+96' - 0"	(2) #6	(2) #6	#5 @ 12" OC	#4 @ 18" OC	-
GB6	1' - 6"	+96' - 0"	(3) #6	(3) #6	#5 @ 12" OC	#4 @ 12" OC	-
GB7	2' - 0"	+97' - 3"	(3) #7	(3) #7	#5 @ 12" OC	#4 @ 6" OC	-
GB8	1' - 3"	+97' - 7"	(3) #7	(3) #7	-	#4 @ 4" OC	-
GB9	1' - 2 1/2"	+95' - 0"	(3) #6	(3) #6	#5 @ 12" OC	#4 @ 12" OC	-
GB10	2' - 3"	+96' - 0"	(4) #7	(4) #8	#5 @ 12" OC	#4 @ 12" OC	-
GB11	1' - 6"	+96' - 8"	(3) #8	(3) #8	#5 @ 12" OC	#4 @ 12" OC	-
GB12	2' - 2"	+95' - 0"	(4) #9	(4) #9	#5 @ 12" OC	#4 @ 12" OC	-

NOTES:

1. MAINTAIN MINIMUM DEPTH OF 4' - 0" FROM FINISH GRADE TO BOTTOM OF GRADE BEAM ELEVATION. STEP BOTTOM AS REQUIRED.

MSR
710 South 2nd Street, 8th Floor
Minneapolis, Minnesota 55401-2082
Architecture 612 375 0334 tel
Interiors and Urban Design 612 342 2216 fax
www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201
Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
333 South Paterson Street, Suite 1
Madison, WI 53703
608.251.3500 tel

Structural Engineer, Technology and A/V
IMEG Corp.
1600 Deming Way, Suite 200
Middleton, WI 53562
608.223.9600 tel

MEP Engineer
MEP Associates, LLC
860 Blue Gentian Road, Suite 175
Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
575 Aberdeena Ave West
St. Paul, MN 55103
651.291.1550 tel

Greenhouse Design
Rough Brothers, Inc.
5513 Vine Street
Cincinnati, OH 45217
513.242.0310 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that these plans, specifications or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin.
ARCHITECT SEAL

WISCONSIN DANIEL JACK POLING A-9994 MINNEAPOLIS, MN ARCHITECT

Signature
Print Name:
Date: JUNE 1, 2018 License No:

ISSUE		
EMAIL	DATE	DESCRIPTION
	12.06.2017	DD PRICING SET
	01.16.2018	DESIGN DEVELOPMENT SUBMISSION
	03.30.2018	70% CD SUBMISSION
	05.04.2018	100% CONSTRUCTION DOCUMENTS
	06.01.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE

PROJECT#: 2017016
PROJECT PHASE: BID DOCUMENTS
DRAWN BY: SIDSHO
CHECKED BY: ABBPER

SYMBOLS AND ABBREVIATIONS

EXHIBIT G

S002

IMEG
1600 DEMING WAY, SUITE 200
MIDDLETON, WI 53562
608.223.9600 FAX: 608.836.8410
www.imegcorp.com
PROJECT #: 17-00410-00

IMEG CORP. RESERVES PROPRIETARY RIGHTS, INCLUDING COPYRIGHTS, TO THIS DRAWING AND THE DATA WHICH IT DEPICTS, AND DRAWING AND/OR DATA ARE THE EXCLUSIVE PROPERTY OF IMEG CORP. AND SHALL NOT BE USED OR REPRODUCED FOR ANY OTHER PROJECT WITHOUT THE EXPRESS IN WRITTEN APPROVAL AND PARTICIPATION OF IMEG CORP. © 2018 IMEG CORP.

REFERENCE SCALE IN INCHES
0 1 2 3

ORIGINAL

DESIGN CRITERIA

1. CODES:
INTERNATIONAL BUILDING CODE (IBC) 2015 WITH WISCONSIN BUILDING CODE REVISIONS
AMERICAN CONCRETE INSTITUTE BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE (ACI 318-14)
AMERICAN CONCRETE INSTITUTE BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES (ACI 530-13)
AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS
ALLOWABLE STRENGTH DESIGN (ASD)(AISC 360-10) FOURTEENTH EDITION, 2010
AMERICAN WELDING SOCIETY D1.1
NORTH AMERICAN SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS, 2015
ANSI/AWC NATIONAL DESIGN SPECIFICATION (NDS) FOR WOOD CONSTRUCTION AND SUPPLEMENT (NDS-15)

2. DESIGN LOADS:

RISK CATEGORY
CLASSROOM ADDITION: III
GREENHOUSE ADDITION: II

BACKFILL
EQUIVALENT FLUID PRESSURE 70 PCF

SEISMIC
SOIL CLASSIFICATION D
SPECTRAL RESPONSE ACCELERATION, Ss 0.11 g
SPECTRAL RESPONSE ACCELERATION, S1 0.04 g
SHORT PERIOD DESIGN ACCELERATION, Sds 0.12 g
LONG PERIOD DESIGN ACCELERATION, Sd1 0.09 g
IMPORTANCE FACTOR 1.25
SEISMIC DESIGN CATEGORY A
SEISMIC FORCE RESISTING SYSTEM MASONRY SHEAR WALLS AND STEEL MOMENT FRAMES NOT DETAILED FOR SEISMIC
ANALYSIS PROCEDURE ASCE 7-10 SECTION 1.4
DESIGN BASE SHEAR, V 0.01 x W

WIND - PARAMETERS
BASIC WIND SPEED
CLASSROOM ADDITION 120 MPH
GREENHOUSE ADDITION 110 MPH
EXPOSURE CLASS B

WIND - MAIN WIND FORCE RESISTING SYSTEM PRESSURES
DESIGN PRESSURE
CLASSROOM ADDITION 25 PSF
GREENHOUSE ADDITION DETERMINED BY GREEN HOUSE SUPPLIER
ROOF UPLIFT PRESSURE
CLASSROOM ADDITION 20 PSF (GROSS) (LC 1.0W)
GREENHOUSE ADDITION DETERMINED BY GREEN HOUSE SUPPLIER
ROOF UPLIFT PRESSURE
CLASSROOM ADDITION 3 PSF (NET) (LC 0.6DL + 1.0W)
GREEN HOUSE DETERMINED BY GREEN HOUSE SUPPLIER

WIND - ELEMENTS AND COMPONENTS
PER APPLICABLE BUILDING CODE

LIVE LOADS
TYPICAL FLOORS 100 PSF UNREDUCIBLE
MECHANICAL 125 PSF UNREDUCIBLE

SNOW LOADS
GROUND SNOW LOAD 30 PSF
SNOW EXPOSURE FACTOR 1.0
THERMAL FACTOR 1.0
IMPORTANCE FACTOR 1.1
FLAT-ROOF SNOW LOAD 23 PSF
DESIGN LOAD 25 PSF
DRIFTING LOAD REFER TO PLAN 6S104 FOR ROOF LOAD PLAN

3. MINIMUM FROST PROTECTION DEPTH FROM ADJACENT GRADE:
EXTERIOR FOOTING ADJACENT TO HEATED AREA -4'-0"
EXTERIOR FOOTINGS IN UNHEATED AREA -4'-0"

4. SPECIFIED 28-DAY CONCRETE COMPRESSIVE STRENGTHS (f'c)
FOOTINGS 3000 PSI
FOUNDATION WALLS 4000 PSI
STRUCTURAL SLABS 4000 PSI
TYPICAL - UNLESS NOTED OTHERWISE 4000 PSI

5. CONCRETE REINFORCING STEEL SHALL BE HIGH STRENGTH NEW BILLET STEEL CONFORMING TO THE FOLLOWING STANDARDS:
DEFORMED BARS ASTM A615, GRADE 60 Fy = 60 KSI
WELDED WIRE REINFORCING ASTM A185 Fy = 65 KSI
PRESTRESSING STRAND, 1/2"Ø 7-WIRE LOW-RELAXATION ASTM A416, GRADE 270 Fy = 270 KSI

6. MATERIALS FOR CONCRETE UNIT MASONRY SHALL CONFORM TO THE FOLLOWING STANDARDS:
CONCRETE MASONRY UNITS ASTM C90
MORTAR MATERIALS ASTM C270, TYPE S
GROUT FOR MASONRY ASTM C476
REINFORCING STEEL FOR MASONRY ASTM A615, GRADE 60 (UNO)
PLATE AND BENT BAR ANCHORS ASTM A36
SHEET METAL ANCHORS AND TIES ASTM A1008
WIRE MESH TIES ASTM A185
WIRE TIES AND ANCHORS ASTM A951
ANCHOR BOLTS FOR MASONRY ASTM A307, GRADE A

7. MINIMUM 28 DAY COMPRESSIVE STRENGTHS FOR MASONRY (f'm):
DESIGN ASSEMBLY STRENGTH, f'm 2000 PSI
INDIVIDUAL CONCRETE MASONRY UNITS 2600 PSI
MORTAR FOR MASONRY (TYPE S REQUIRED) 1800 PSI
GROUT FOR MASONRY 2000 PSI

8. STRUCTURAL STEEL SHALL CONFORM TO THE FOLLOWING STANDARDS:
WIDE FLANGE SECTIONS ASTM A992 Fy = 50 KSI
OTHER ROLLED SECTIONS ASTM A36 Fy = 36 KSI
SQUARE AND RECTANGULAR HSS ASTM A500, GR B Fy = 46 KSI
ROUND HSS ASTM A500, GR B Fy = 42 KSI
SQUARE, RECTANGULAR, ROUND HSS ASTM A1085 Fy = 50 KSI
CAP AND BASE PLATES ASTM A36 Fy = 36 KSI
CONNECTION MATERIAL ASTM A36 Fy = 36 KSI
STIFFENER PLATES ASTM A36 Fy = 36 KSI
ANCHOR RODS ASTM F1554, GR 36 Fy = 36 KSI
HIGH STRENGTH BOLTS ASTM F3125, GRADE A325 120 KSI
HEAVY HEX NUTS ASTM A563
WASHERS ASTM F436
HEADED WELDED STEEL STUDS ASTM A108, TYPE B
ELECTRODES FOR ARC WELDING AWS 5.1, E70XX

9. COLD-FORMED STRUCTURAL STUDS SHALL CONFORM TO THE FOLLOWING STANDARDS:
ROLLED SECTIONS, CONNECTION MATERIAL, STIFFENER PLATES
18 GAUGE AND THINNER ASTM A653, GR 33 Fy = 33 KSI
16 GAUGE AND THICKER ASTM A653, GR 50 Fy = 50 KSI
CONNECTION MATERIAL (>3/16" THICK) ASTM A36 Fy = 36 KSI
ANCHOR RODS ASTM F1554, GR 36 Fy = 36 KSI
BOLTS ASTM A307 Fy = 10 KSI
COATING - HOT DIPPED ASTM A924, G90
ELECTRO - PLATE ASTM A591
ALUMINUM - ZINC ASTM A792, GR 40
INSTALLATION ASTM C955 AND ASTM C1007
ELECTRODES FOR ARC WELDING AWS 5.1, E60XX

10. STEEL DECK AND ALL ACCESSORIES SHALL BE FORMED FROM STEEL SHEETS CONFORMING TO THE FOLLOWING STANDARDS:
GALVANIZED COMPOSITE FLOOR DECK ASTM A653, GR 33 Fy = 33 KSI
GALVANIZED STEEL ROOF DECK ASTM A653, GR 33 Fy = 33 KSI

11. GLULAM BEAMS:

DOUGLAS FIR LARCH (BASIS OF DESIGN)
Fb = 2400 PSI
Fc⊥ = 650 PSI
E = 1,800,000 PSI

12. STRUCTURAL THERMAL BREAK MATERIAL, BUSHINGS AND WASHERS SHALL CONFORM TO THE MINIMUM STANDARDS:
COMPRESSIVE STRENGTH ASTM D638 39,900 PSI
COMPRESSIVE MODULUS ASTM D695 291,194 PSI FOR 1/2" 673,400 PSI
SHEAR STRENGTH ASTM D732 19,000 PSI
THERMAL CONDUCTIVITY ASTM C518 1.8 BTU/ HR SF °F
COEFFICIENT OF THERMAL EXPANSION ASTM E831 2.2 x 10E-6 IN/IN/°F
THERMAL RESISTANCE (R VALUE) ASTM C518 0.95 HR SF °F/BTU
ACCEPTABLE MANUFACTURERS FABREEKA OR OTHER PRE-APPROVED MANUFACTURER

GENERAL NOTES

1. NEITHER THE PROFESSIONAL ACTIVITIES OF THE ENGINEER, NOR THE PRESENCE OF THE ENGINEER OR HIS OR HER EMPLOYEES AND SUBCONSULTANTS AT THE CONSTRUCTION SITE, SHALL RELIEVE THE CONTRACTOR AND ANY OTHER ENTITY OF THEIR OBLIGATIONS, DUTIES, AND RESPONSIBILITIES INCLUDING, BUT NOT LIMITED TO, CONSTRUCTION MEANS, METHODS, SEQUENCE, TECHNIQUES, OR PROCEDURES NECESSARY FOR PERFORMING, SUPERINTENDING, OR COORDINATING ALL PORTIONS OF THE WORK OF CONSTRUCTION IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND ANY HEALTH OR SAFETY PRECAUTIONS REQUIRED BY ANY REGULATORY AGENCIES. THE ENGINEER AND HIS OR HER PERSONNEL HAVE NO AUTHORITY TO EXERCISE ANY CONTROL OVER ANY CONSTRUCTION CONTRACTOR OR OTHER ENTITY OR THEIR EMPLOYEES IN CONNECTION WITH THEIR WORK OR ANY HEALTH OR SAFETY PRECAUTIONS. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE JOBSITE SAFETY. THE ENGINEER AND THE ENGINEER'S CONSULTANTS SHALL BE MADE ADDITIONAL INSUREDS UNDER THE CONTRACTOR'S GENERAL LIABILITY INSURANCE POLICY.
2. STRUCTURAL DRAWINGS INCLUDE DESIGN REQUIREMENTS AND DIMENSIONS FOR STRUCTURAL INTEGRITY BUT DO NOT SHOW ALL DETAIL DIMENSIONS TO FIT INTRICATE ARCHITECTURAL AND MECHANICAL DETAILS. CONTRACTOR SHALL SO CONSTRUCT THE WORK SO THAT IT WILL CONFORM TO THE CLEARANCES REQUIRED BY ARCHITECTURAL, MECHANICAL AND ELECTRICAL DESIGN.
3. THE CONTRACT STRUCTURAL DRAWINGS AND SPECIFICATIONS REPRESENT THE FINISHED STRUCTURE. UNLESS NOTED OTHERWISE, THEY DO NOT INDICATE THE MEANS OR METHODS OF CONSTRUCTION.
4. DETAILS AND NOTES ON THE STRUCTURAL DRAWINGS ARE INTENDED TO BE TYPICAL FOR SIMILAR SITUATIONS ELSEWHERE.
5. ESTABLISH AND VERIFY ALL OPENINGS AND INSERTS FOR MECHANICAL, ELECTRICAL, AND PLUMBING WITH APPROPRIATE TRADE CONTRACTORS. OPENING SIZES AND LOCATIONS SHOWN FOR DUCTS, PIPES, INSERTS AND OTHER PENETRATIONS WHEN SHOWN ARE FOR GENERAL INFORMATION ONLY AND SHALL BE VERIFIED PRIOR TO FORMING.
6. DIMENSIONS, NOTES, AND DETAILS ON DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS.
7. WHERE NEW CONSTRUCTION INTERFACES WITH EXISTING CONDITIONS, FIELD VERIFY EXISTING DIMENSIONS, MEMBER SIZES AND ELEVATIONS SHOWN ON THE DRAWINGS PRIOR TO STARTING CONSTRUCTION. ALL DISCREPANCIES SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE ARCHITECT.
8. REFER TO ARCHITECTURAL DRAWINGS FOR THE FOLLOWING:
A. SIZE AND LOCATION OF ALL DOOR AND WINDOW OPENINGS UNLESS NOTED OTHERWISE.
B. SIZE AND LOCATIONS OF ALL INTERIOR AND EXTERIOR MASONRY WALLS.
C. SIZE AND LOCATION OF ALL CONCRETE CURBS, FLOOR DRAINS, SLOPES, DEPRESSED AREAS, CHANGES IN LEVEL, CHAMFERS, GROOVES, INSERTS, ETC.
D. SIZE AND LOCATION OF ALL FLOOR AND ROOF OPENINGS UNLESS NOTED OTHERWISE.
E. FLOOR, WALL AND ROOF FINISHES.
F. STAIR FRAMING AND DETAILS. ALSO REFER TO STAIR MANUFACTURER'S APPROVED SHOP DRAWINGS.
G. DIMENSIONS NOT SHOWN ON STRUCTURAL DRAWINGS.
H. FIRE PROTECTION REQUIREMENTS.
9. REFER TO MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS FOR THE FOLLOWING.
A. PIPE RUNS, SLEEVES, HANGERS, TRENCHES, WALL AND SLAB OPENINGS, ETC. EXCEPT AS SHOWN.
B. ELECTRICAL CONDUIT RUNS, BOXES, OUTLETS IN WALLS AND SLABS.
C. CONCRETE INSERTS FOR ELECTRICAL, MECHANICAL OR PLUMBING FIXTURES.
D. SIZE AND LOCATION OF MACHINE OR EQUIPMENT BASES OR CURBS AND ANCHOR BOLTS FOR MOTOR MOUNTS.
10. BEFORE SUBMITTING A PROPOSAL FOR THIS WORK, EACH BIDDER SHALL VISIT THE PREMISES AND BECOME FULLY ACQUAINTED WITH THE EXISTING CONDITIONS. TEMPORARY CONSTRUCTION REQUIRED (SHORING, SCAFFOLDING, EQUIPMENT, ETC. THE BID SHALL INCLUDE ALL SUMS REQUIRED TO DO THE WORK WITHIN THE EXISTING CONDITIONS. DISRUPTION OF NORMAL ACTIVITIES IN THE WORK AREA SHALL BE KEPT TO A MINIMUM.
11. SHOP DRAWINGS PREPARED BY SUPPLIERS, SUBCONTRACTORS, AND OTHERS SHALL BE REVIEWED AND COORDINATED PRIOR TO SUBMITTING TO THE ARCHITECT. EACH SHOP DRAWING SUBMITTED SHALL BE STAMPED, INITIALED AND DATED INDICATING REVIEW BY THE CONSTRUCTION MANAGER/GENERAL CONTRACTOR.
12. SHOP DRAWINGS PREPARED BY THE SUBCONTRACTORS, SUPPLIERS, AND OTHERS SHALL BE REVIEWED BY THE ARCHITECT ONLY FOR GENERAL CONFORMANCE WITH DESIGN CONCEPT ONLY. REVIEW BY THE ARCHITECT SHALL NOT BEGIN WITHOUT THE PRIOR COORDINATION AND REVIEW BY THE GENERAL CONTRACTOR. WORK SHALL NOT BEGIN WITHOUT REVIEW BY THE ARCHITECT. NOTATIONS MADE BY THE ARCHITECT ON THE SHOP DRAWINGS DO NOT RELIEVE THE CONTRACTOR FROM COMPLYING WITH THE REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS.
13. OPTIONS ARE FOR THE CONTRACTOR'S CONVENIENCE. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL NECESSARY CHANGES RESULTING FROM CHOOSING AN OPTION AND SHALL COORDINATE ALL DETAILS. THE COST OF ADDITIONAL DESIGN WORK NECESSITATED BY SELECTION OF AN OPTION SHALL BE BORNE BY THE CONTRACTOR.
14. THE COST OF ADDITIONAL DESIGN WORK DUE TO ERRORS OR OMISSIONS BY THE CONTRACTOR IN CONSTRUCTION SHALL BE BORNE BY THE CONTRACTOR.
15. ANY ENGINEERING DESIGN PROVIDED BY OTHERS AND SUBMITTED FOR REVIEW OR RECORD SHALL BEAR THE STAMP AND SIGNATURE OF A PROFESSIONAL STRUCTURAL ENGINEER REGISTERED IN THE STATE OF WI.
16. ELEVATIONS ARE BASED ON THE FIRST FLOOR ELEVATION OF (+ 100' - 0") WHICH IS EQUAL TO CIVIL ELEVATION OF (853.65').

FOUNDATIONS/SLAB-ON-GRADE

1. CROSS REFERENCE ARCHITECTURAL AND STRUCTURAL DRAWINGS TO ASSURE PROPER DIMENSIONS AND PLACEMENT OF ALL ANCHOR BOLTS, INSERTS, NOTCHES, EDGES IN GRADE BEAMS, FOUNDATION WALLS AND PIERS.
2. FOUNDATION DESIGN BASED ON GEOTECHNICAL ENGINEERING REPORT DATED OCTOBER 4, 2017 BY CGC, INC. REPORT IS ON FILE WITH THE ARCHITECT.
3. ALL EXCAVATIONS SHALL BE PROPERLY AND SAFELY BACKFILLED. DO NOT PLACE BACKFILL BEHIND RETAINING WALLS BEFORE CONCRETE HAS ATTAINED SPECIFIED COMPRESSIVE STRENGTH. CONTRACTOR SHALL BRACE OR PROTECT ALL WALLS BELOW GRADE FROM LATERAL LOADS UNTIL SUPPORTING FLOOR IS COMPLETELY IN PLACE AND HAS ATTAINED FULL STRENGTH. CONTRACTOR SHALL PROVIDE FOR DESIGN, PERMITS, AND INSTALLATION OF SHORING AND/OR SHEETING. BACKFILLING IS NOT PERMITTED FOR FOUNDATION WALLS UNTIL SUPPORTED SLAB ABOVE IS IN PLACE OR THE WALL IS ADEQUATELY BRACED TO RESIST LATERAL LOADS.
4. UNLESS NOTED OTHERWISE, ALL PILE CAPS SHALL BE CENTERED UNDER WALLS, PIERS OR COLUMNS.
5. PROVIDE SAW CUT CONTROL JOINTS IN ALL SLABS-ON-GRADE, LOCATE JOINTS ALONG COLUMN LINES WITH INTERMEDIATE JOINTS SPACED PER THE TABLE BELOW, UNLESS NOTED OTHERWISE. CONTROL JOINTS SHALL BE CONTINUOUS, NOT STAGGERED OR OFFSET. SLAB PANELS SHALL HAVE A MAXIMUM LENGTH TO WIDTH RATIO OF 1.5 TO 1. PROVIDE ADDITIONAL CONTROL JOINTS AT ALL RE-ENTRANT CORNERS FORMED IN SLAB ON GRADE.

SLAB ON GRADE THICKNESS	MAX JOINT SPACING
5"	15'-0"

UNDERPINNING NOTES

1. UNDERPIN EXISTING WALLS AND FOOTINGS AND PLACE NEW FOOTINGS AS SHOWN ON THE FOUNDATION PLANS AND DETAILS.
2. NO EXCAVATION CAN BE DONE WITHIN 6'-0" OF THE EXISTING BUILDING UNTIL UNDERPINNING IS COMPLETE.
3. POURED CONCRETE WALL UNDERPINNING PROCEDURE SHALL BE AS FOLLOWS:
A. WHERE NOTED ON THE PLANS AND DETAILS, UNDERPINNING SHALL BE PERFORMED IN SEPARATE OPERATIONS NOT TO EXCEED 6'-0" IN LENGTH.
B. PLACE HORIZONTAL REINFORCING BARS WITH 90-DEGREE BENDS SO THAT THEY MAY BE STRAIGHTENED TO LAP WITH BARS OF ADJACENT UNDERPINNING SECTIONS.
C. PLACE CONCRETE OF NEW WALL TO WITHIN 3"-4" OF THE UNDERSIDE OF EXISTING FOOTING WHERE APPLICABLE. AFTER 2 DAYS PACK FINAL 3"-4" WITH DRY GROUT. USE SAME GROUT SPECIFIED UNDER STEEL BASE PLATES GIVEN IN SPECIFICATION SECTION 05 12 23. GROUT IS TO SET AT LEAST 7 DAYS BEFORE ADJACENT SECTION IS EXCAVATED. SHORE AND BRACE EACH SECTION AS SOON AS FORMS ARE REMOVED. WHEN EXCAVATION IS STARTED IN ANY SECTION, ALL WORK IN THAT SECTION MUST BE COMPLETED PROMPTLY AND PRIOR TO STARTING ANOTHER SECTION IN THE IMMEDIATE AREA.
4. DURING UNDERPINNING OPERATION, CONTRACTOR SHALL BRACE AND SHORE WITH JACKS EXISTING FOOTING OR WALL AS REQUIRED TO PREVENT MOVEMENT OF EXISTING BUILDING. THE SHORING SHALL BE SELECTED TO WITHSTAND THE DESIGN FORCES INDICATED ON THE DRAWINGS. THE SHORING JACKS ARE TO BE LEFT IN PLACE AND CAST INTO THE CONCRETE UNDERPINNING POUR.
5. CONTRACTOR SHALL SUBMIT A SCHEDULE OF UNDERPINNING OPERATIONS FOR REVIEW OF THE ARCHITECT AND ENGINEER.
6. CONTRACTOR SHALL SURVEY EXISTING FOOTING AND WALL ELEVATIONS PRIOR TO, DURING, AND AFTER UNDERPINNING OPERATIONS TO MONITOR POTENTIAL MOVEMENTS. SURVEY RESULTS SHALL BE SUBMITTED TO THE ARCHITECT AND ENGINEER.

PRESTRESSED /PRECAST CONCRETE

1. PRECAST MEMBERS SHALL BE DESIGNED FOR ALL LOADING CONDITIONS REQUIRED BY THE GOVERNING BUILDING CODES IN ADDITION TO ANY SPECIFIC LOADINGS SHOWN ON THE DRAWINGS.
2. ALL TOPPING SLABS TO BE NON-COMPOSITE WITH HOLLOW CORE SLABS, UNLESS NOTED OTHERWISE.

REINFORCING STEEL

1. FOR CAST-IN-PLACE CONCRETE THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCEMENT UNLESS NOTED OTHERWISE:

CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH 3 INCHES

CONCRETE EXPOSED TO EARTH OR WEATHER
NO. 6 BARS OR LARGER 2 INCHES
NO. 5 BARS OR SMALLER 1 1/2 INCHES

SLABS, WALLS, JOISTS NOT EXPOSED TO WEATHER OR IN CONTACT WITH EARTH
NO. 14 AND NO. 18 BARS 1 1/2 INCHES
NO. 11 BARS OR SMALLER 3/4 INCHES

BEAMS AND COLUMNS NOT EXPOSED TO WEATHER OR IN CONTACT WITH EARTH 1 1/2 INCHES

2. DIMENSIONS OF CONCRETE COVER FOR REINFORCEMENT INDICATED ON DRAWINGS ARE TO OUTERMOST REINFORCING BARS, FOR BEAMS OR COLUMNS WITH STIRRUPS OR TIES, CLEAR COVER INDICATED IS TO STIRRUPS OR TIES.
3. BAR SPLICES: SPLICE REINFORCING WHERE INDICATED ON THE DRAWINGS. ALL SPLICES SHALL BE CLASS "B" AS DEFINED IN ACI 318, IF SPLICE LENGTH IS NOT GIVEN ON THE DRAWINGS, PROVIDE LAP LENGTHS (IN INCHES) AS FOLLOWS:

	3000 PSI CONCRETE		4000 PSI CONCRETE	
BAR SIZE	OTHER	TOP	OTHER	TOP
#3	22	29	19	25
#4	29	38	25	33
#5	36	47	31	41
#6	43	56	37	49
#7	63	81	54	71
#8	72	93	62	81
#9	81	105	70	91
#10	91	118	79	102
#11	101	131	87	114

LAP LENGTHS ASSUME CLEAR SPACING BETWEEN BARS OF 2 BAR DIAMETERS, AND A MINIMUM COVER OF 1 BAR DIAMETER. FOR DEVELOPMENT LENGTHS, DIVIDE BY 1.3. TOP BARS ARE DEFINED AS HORIZONTAL BARS WITH MORE THAN 1'-0" OF FRESH CONCRETE BELOW.

MASONRY (CONCRETE MASONRY UNITS)

1. MORTAR SHALL CONFORM TO AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM) DESIGNATION CITED UNDER DESIGN CRITERIA AND PROJECT SPECIFICATIONS. REFER TO DESIGN CRITERIA FOR MINIMUM COMPRESSIVE STRENGTH OF MORTAR.
2. REFER TO ARCHITECTURAL DRAWINGS FOR SURFACE AND HEIGHT OF UNITS LAYING PATTERN AND JOINT TYPE. ALL BLOCK SHALL BE RUNNING BOND UNLESS NOTED OTHERWISE.
3. THE LOAD BEARING CONCRETE MASONRY WALLS FOR THIS PROJECT WERE DESIGNED TO SPAN VERTICALLY AND BE BRACED BY THE ROOF AND FLOOR FRAMING ELEMENTS OF THE STRUCTURE. DURING CONSTRUCTION THE MASONRY CONTRACTOR SHALL PROVIDE LATERAL BRACING UNTIL THE ROOF STRUCTURE IS INSTALLED AS RECOMMENDED BY ACI 530 AND THE LATEST REVISION OF "STANDARD PRACTICE FOR BRACING MASONRY WALLS UNDER CONSTRUCTION", PREPARED BY THE COUNCIL FOR MASONRY WALL BRACING. THIS BRACING IS TO PREVENT UNNECESSARY STRESS OR DAMAGE TO THE MASONRY WALLS FROM WIND LOADS, WHICH CAN OCCUR WHILE THE WALLS ARE NOT PROPERLY BRACED BY THE ROOF AND FLOOR STRUCTURE.
4. BAR SPLICES: SPLICE REINFORCING WHERE INDICATED ON THE DRAWINGS. IF SPLICE LENGTH IS NOT GIVEN ON THE DRAWINGS PROVIDE LAP LENGTHS (IN INCHES) AS FOLLOWS. BARS LARGER THAN #9 ARE TO BE MECHANICALLY SPLICED.

MINIMUM LAP SPLICE LENGTH	
BAR SIZE	LAP LENGTH
#3	27
#4	36
#5	45
#6	54
#7	63
#8	72
#9	82

POST INSTALLED ANCHORS

1. POST INSTALLED EXPANSION ANCHORS SERVING AS THE BASIS OF DESIGN ARE SHOWN ON THE DRAWINGS. ACCEPTABLE ALTERNATE ANCHORS MAY BE SUPPLIED PROVIDED THAT THE QUANTITY AND CONFIGURATION MATCHES THE CAPACITY OF THE DESIGN ANCHOR QUANTITY AND CONFIGURATION. ANY ACCEPTABLE ALTERNATES ARE TO BE SUBMITTED TO THE STRUCTURAL ENGINEER FOR REVIEW. INSTALL IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS. THE FOLLOWING TABLE SUMMARIZES THE EXPANSION ANCHORS USED ON THE PROJECT:

ANCHORED INTO:	BASIS OF DESIGN	ACCEPTABLE ALTERNATES AT CONTRACTOR'S OPTION
GROUTED MASONRY	HILTI KWIK BOLT 3	DEWALT/POWERS POWER STUD+ SD1 SIMPSON WEDGE-ALL
CONCRETE	HILTI KWIK BOLT TZ	DEWALT/POWERS POWER STUD+ SD2 ITW/RED HEAD TRUBOLT+ SIMPSON STRONG BOLT 2

2. POST INSTALLED THREADED ANCHORS SERVING AS THE BASIS OF DESIGN ARE SHOWN ON THE DRAWINGS. ACCEPTABLE ALTERNATE ANCHORS MAY BE SUPPLIED PROVIDED THAT THE QUANTITY AND CONFIGURATION MATCHES THE CAPACITY OF THE DESIGN ANCHOR QUANTITY AND CONFIGURATION. ANY ACCEPTABLE ALTERNATES ARE TO BE SUBMITTED TO THE STRUCTURAL ENGINEER FOR REVIEW. INSTALL IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS. THE FOLLOWING TABLE SUMMARIZES THE THREADED ANCHORS USED ON THE PROJECT:

ANCHORED INTO:	BASIS OF DESIGN	ACCEPTABLE ALTERNATES AT CONTRACTOR'S OPTION
GROUTED MASONRY	HILTI KWIK HUS	DEWALT/POWERS SCREW-BOLT+ SIMPSON TITEN HD
UNCRACKED CONCRETE	HILTI KWIK HUS	DEWALT/POWERS SCREW-BOLT+ SIMPSON TITEN HD
CRACKED CONCRETE	HILTI KWIK HUS	DEWALT/POWERS SCREW-BOLT+ SIMPSON TITEN HD

3. ADHESIVE ANCHOR SYSTEMS FOR ATTACHMENT INTO CONCRETE SHALL CONSIST OF DEFORMED REINFORCING BARS OR ASTM A193 GRADE B7 RODS, HEAVY DUTY NUTS AND WASHERS, AND A TWO COMPONENT STRUCTURAL ADHESIVE. ADHESIVE ANCHORING SYSTEMS SERVING AS THE BASIS OF DESIGN ARE SHOWN ON THE DRAWINGS. ACCEPTABLE ALTERNATE ANCHORS MAY BE SUPPLIED PROVIDED THAT THE QUANTITY AND CONFIGURATION MATCHES THE CAPACITY OF THE DESIGN ANCHOR QUANTITY AND CONFIGURATION. ANY ACCEPTABLE ALTERNATES ARE TO BE SUBMITTED TO THE STRUCTURAL ENGINEER FOR REVIEW. INSTALL IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS. ANCHORING SYSTEMS INTO HOLLOW MASONRY SHALL INCLUDE A SCREEN TUBE. THE FOLLOWING TABLE SUMMARIZES THE ADHESIVE ANCHORS USED ON THE PROJECT:

ANCHORED INTO:	BASIS OF DESIGN	ACCEPTABLE ALTERNATES AT CONTRACTOR'S OPTION
HOLLOW MASONRY	HILTI HIT-HY 270	DEWALT/POWERS AC 100+ GOLD ITW AT ACRYLIC
GROUTED MASONRY	HILTI HIT-HY 270	DEWALT/POWERS AC 100+ GOLD ITW AT ACRYLIC SIMPSON SET
CONCRETE	HILTI HIT-HY 200	DEWALT/POWERS AC 200+ SIMPSON SET XP

GREEN HOUSE BUILDING CRITERIA

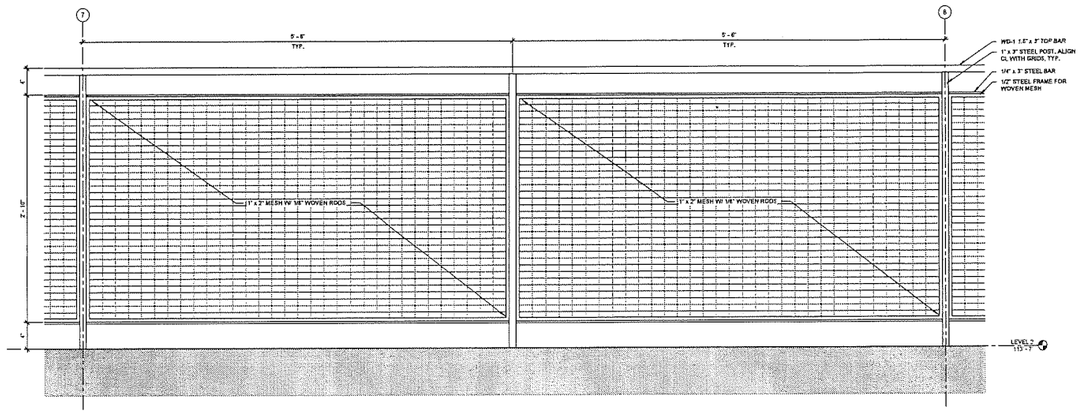
1. FOUNDATION DESIGN IS BASED ON PRELIMINARY DESIGN REACTIONS RECEIVED FROM ROUGH BROTHERS, INC. GREENHOUSE MANUFACTURER. FINAL DESIGN REACTIONS SUPPLIED BY THE SELECTED GREENHOUSE MANUFACTURER MAY DIFFER FROM PRELIMINARY REACTIONS. BASED ON FINAL REACTIONS SUPPLIED, MODIFICATIONS TO THE FOUNDATION PLAN MAY BE REQUIRED. GENERAL CONTRACTOR SHALL INCLUDE IN THEIR BID AN ADD AND DEDUCT PRICE PER CUBIC YARD OF CONCRETE WORK INSTALLED IN CASE SUCH CHANGES ARE REQUIRED.
2. GREENHOUSE MANUFACTURER SHALL ENGAGE A PROFESSIONAL ENGINEER LICENSED TO PRACTICE STRUCTURAL ENGINEERING IN THE STATE OF WISCONSIN TO DESIGN THE GREENHOUSE AND TO SUBMIT STAMPED AND SEALED DRAWINGS AND STRUCTURAL CALCULATIONS FOR THE GREENHOUSE.
3. FOUNDATION DESIGN IS BASED ON THE GREENHOUSE COLUMNS HAVING PINNED BASES AND TRANSFERRING NO MOMENTS TO THE FOUNDATIONS.
4. ALL EXTERNAL LATERAL LOAD RESISTANCE AND STABILITY OF THE GREENHOUSE IN THE COMPLETED STRUCTURE IS PROVIDED BY MOMENT FRAMES AND TENSION ONLY ROD BRACING. THE VERTICAL LATERAL MEMBERS CARRY THE APPLIED LATERAL LOADS TO THE BUILDING FOUNDATION. THE TENSION ONLY ROD BRACING AT THE ROOF SERVES AS THE HORIZONTAL DIAPHRAGM THAT DISTRIBUTES THE LATERAL WIND AND SEISMIC FORCES HORIZONTALLY TO THE VERTICAL LATERAL MEMBERS. ALL LATERAL RESISTING MEMBERS ARE BY THE GREENHOUSE MANUFACTURER.
5. GREENHOUSE MANUFACTURER IS SOLELY RESPONSIBLE FOR THE DESIGN AND MANUFACTURER OF THE GREENHOUSE. THE BUILDING MUST BE DESIGNED TO MEET THE LOADING INDICATED IN THE DRAWINGS AND THE DESIGN CRITERIA INDICATED ABOVE.
6. GREENHOUSE MANUFACTURER IS TO COORDINATE WITH ARCHITECTURAL DRAWINGS FOR WINDOW AND DOOR OPENINGS WHEN DESIGNING THE LATERAL SYSTEM.

STRUCTURAL STEEL

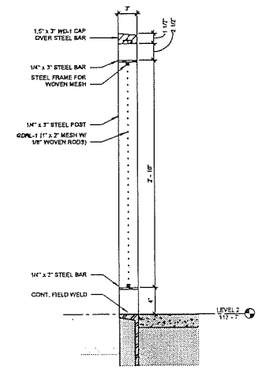
1. REFER TO DRAWINGS FOR DETAIL OF DECK OPENINGS. REFER TO ARCHITECTURAL MECHANICAL, ELECTRICAL DRAWINGS, ETC., FOR EXACT SIZE, LOCATION, AND COUNT OF REQUIRED OPENINGS.
2. UNLESS NOTED OTHERWISE ALL WELDS SHALL BE CONTINUOUS 1/4" FILLET WELDS.
3. HIGH STRENGTH BOLTS SHALL BE INSTALLED IN ACCORDANCE WITH AISC "SPECIFICATIONS FOR STRUCTURAL JOINTS USING HIGH-STRENGTH BOLTS." REFER TO DETAILS FOR BOLT SIZE AND MATERIAL ASTM DESIGNATION.
4. BOLTS IN SLOTTED HOLES SHALL BE LOCATED IN THE CENTER OF THE HOLE AFTER FIELD ASSEMBLY IS COMPLETE, UNLESS DETAILED OTHERWISE.
5. USE BACKING FOR ALL FULL PENETRATION WELDS. ALL FULL AND/OR PARTIAL PENETRATION WELDS SHALL BE FULLY DETAILED ON THE SHOP DRAWINGS.
6. ALL LATERAL LOAD RESISTANCE AND STABILITY OF THE BUILDING IN THE COMPLETED STRUCTURE IS PROVIDED BY A COMBINATION OF REINFORCED MASONRY SHEAR WALLS AND STEEL MOMENT FRAMES (SEE PLAN SHEETS FOR LOCATIONS). THE COMPOSITE STEEL DECK AND CONCRETE FLOORS SERVE AS HORIZONTAL DIAPHRAGMS THAT DISTRIBUTE THE LATERAL WIND AND SEISMIC FORCES HORIZONTALLY TO THE VERTICAL LATERAL ELEMENTS. THE VERTICAL LATERAL ELEMENTS CARRY THE APPLIED LATERAL LOADS TO THE BUILDING FOUNDATION.

STEEL DECK

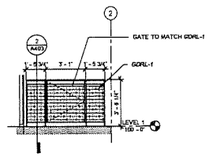
1. DECK SIZE AND GAGE INDICATED IN THE DRAWINGS ARE BASED ON THE FOLLOWING:
A. VULCRAFT 2008 (2003) CATALOG FOR GRAVITY DESIGN LOADS AND UNSHORED CONSTRUCTION SPANS.
B. STEEL DECK INSTITUTE (SDI) DIAPHRAGM DESIGN MANUAL 3RD EDITION FOR DIAPHRAGM LOADS.
2. STEEL ROOF DECK GALVANIZING SHALL CONFORM TO ASTM A653 WITH A MINIMUM COATING OF G60.
3. COMPOSITE STEEL FLOOR DECK GALVANIZING SHALL CONFORM TO ASTM A653 WITH A MINIMUM COATING OF G60.
4. CORRUGATED STEEL FORM DECK GALVANIZING SHALL CONFORM TO ASTM A653 WITH A MINIMUM COATING OF G90.
5. UNLESS NOTED OTHERWISE, DECK SHALL BE FASTENED WITH 5/8" DIAMETER PUDDLE WELDS AT 12" OC AT ALL SUPPORTS AND EDGES. SIDE LAPS SHALL BE FASTENED WITH #10 TEK SCREWS, MINIMUM ONE AT EACH MIDSPAN. OPENING EDGES SHALL RECEIVE THE SAME WELDING AS REQUIRED AT DECK ENDS. ALL WELDING SHALL BE PERFORMED BY CERTIFI



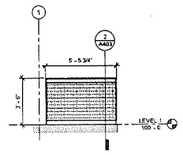
1 GDRL-1 - TYPICAL ELEVATION
A403 1 1/2" = 1'-0"



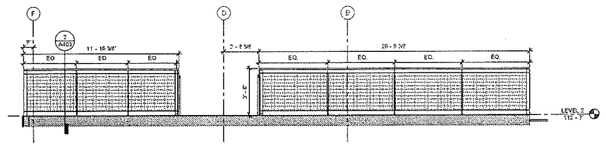
2 RAILING SECTION @ GDRL-1
A403 1 1/2" = 1'-0"



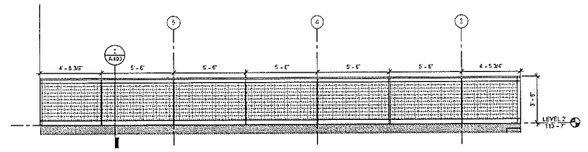
7 OUTDOOR CLASSROOM WEST GATE ELEVATION - GDRL-1
A403 1/4" = 1'-0"



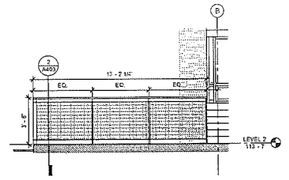
10 OUTDOOR CLASSROOM WEST RAILING ELEVATION - GDRL-1
A403 1/4" = 1'-0"



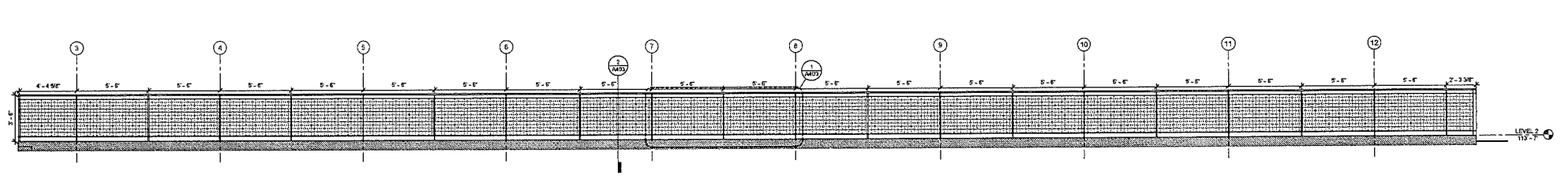
3 EXTERIOR PATIO RAILING NORTH ELEVATION - GDRL-1
A403 1/4" = 1'-0"



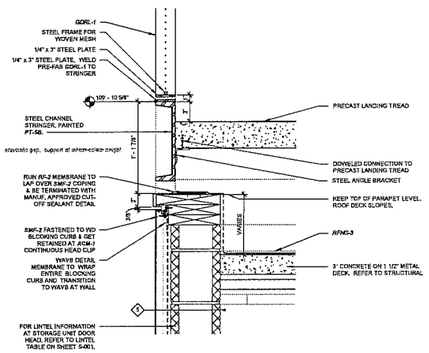
4 EXTERIOR PATIO RAILING WEST ELEVATION - GDRL-1
A403 1/4" = 1'-0"



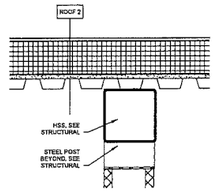
5 EXTERIOR PATIO SOUTH RAILING ELEVATION - GDRL-1
A403 1/4" = 1'-0"



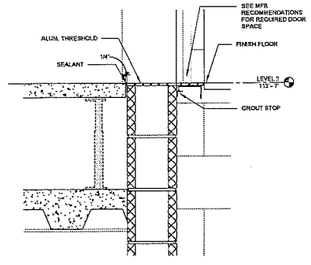
6 EXTERIOR PATIO RAILNG EAST ELEVATION - GDRL-1
A403 1/4" = 1'-0"



13 SECTION DETAIL - EXTERIOR STAIR AND STORAGE W.WALL
A403 1 1/2" = 1'-0"



8 ELEVATOR SHAFT ROOF DETAIL
A403 1 1/2" = 1'-0"



12 ELEVATOR DOOR THRESHOLD AT L-2
A403 1 1/2" = 1'-0"

MSR
710 South 2nd Street, 8th Floor
Minneapolis, Minnesota 55401-2282
Architecture, Interiors and Urban Design
612 375 0336 tel
612 342 2216 fax
www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201
Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
323 South Paterson Street, Suite 1
Madison, WI 53703
608.251.3000 tel

Structural Engineer, Technology and A/V
IMEG Corp.
1800 Deming Way, Suite 200
Middleton, WI 53562
608.223.9600 tel

MEP Engineer
MEP Associates, LLC
800 Blue Gentian Road, Suite 175
Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
575 Minnesota Ave West
St. Paul, MN 55107
651.251.1880 tel

Greenhouse Design
Rough Brothers, Inc.
5513 Vine Street
Cincinnati, OH 45217
513.242.0310 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin.
ARCHITECT SEAL

WISCONSIN
DANIEL JACK POLING
A-8994
MINNEAPOLIS, MN
ARCHITECT

Signature:
Print Name: Jack Poling
Date: JUNE 4, 2018 License No: A-8994

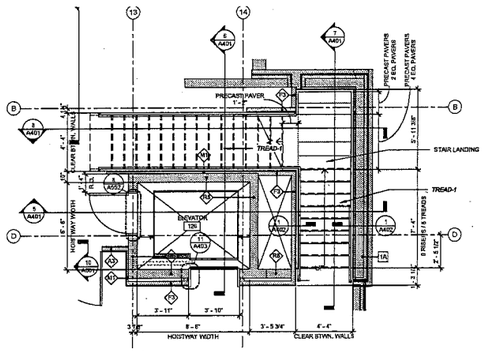
MARK	DATE	DESCRIPTION
	02.23.2017	SCHEMATIC DESIGN SUBMISSION
	12.04.2017	CD PRICING SET
	03.15.2018	DESIGN DEVELOPMENT SUBMISSION
	03.17.2018	UDC SUBMISSION
	05.10.2018	75% CD PRICING ISSUE
	04.06.2018	PARKING LOT AND SITE PLAN SUBMISSION
	05.04.2018	75% CD SUBMISSION
	06.01.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE

PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: MSR CHECKED BY: MSR

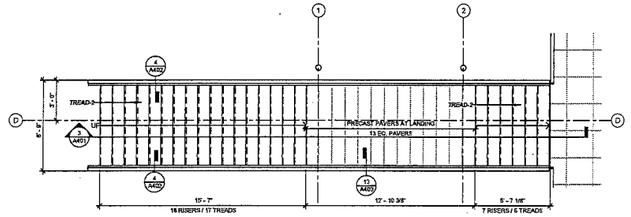
VERTICAL CIRCULATION DETAILS

EXHIBIT F
A403

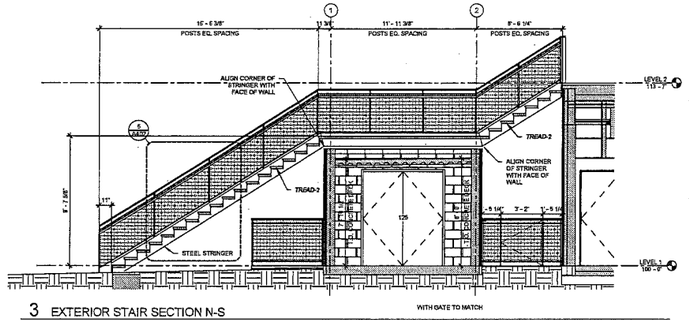
ORIGINAL



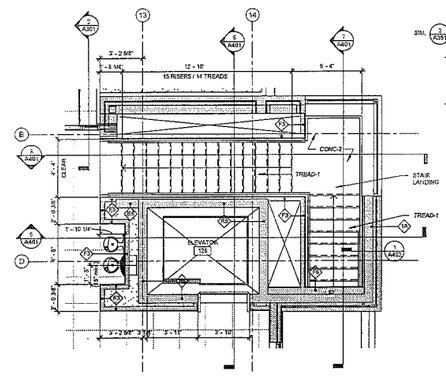
1 STAIR MS-1 PLAN LEVEL 1
A401 1/4" = 1'-0"



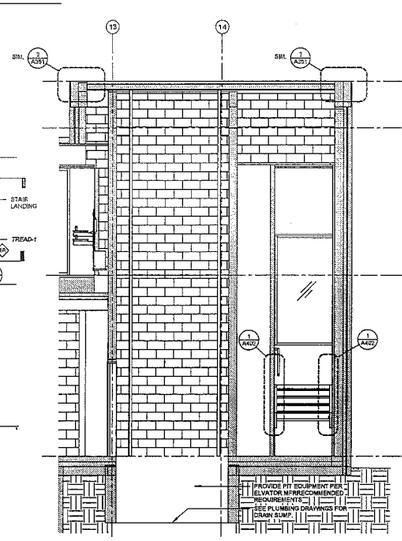
2 STAIR MS-2 PLAN LEVEL 1
A401 1/4" = 1'-0"



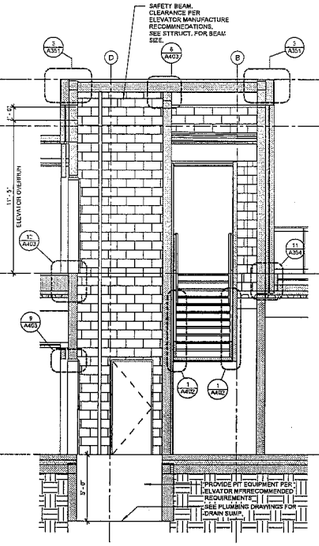
3 EXTERIOR STAIR SECTION N-S
A401 1/4" = 1'-0"



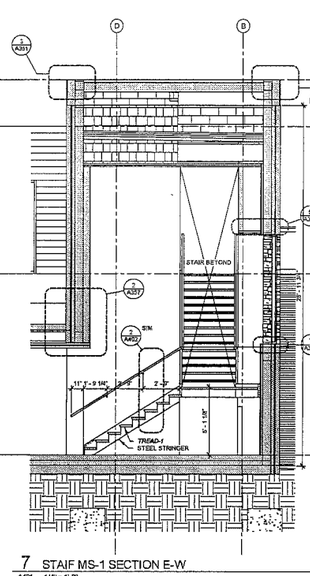
4 STAIR MS-1 PLAN LEVEL 2
A401 1/4" = 1'-0"



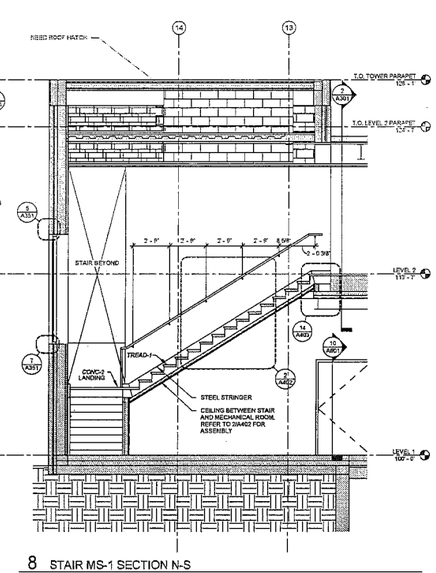
5 STAIR MS-1 AND ELEVATOR SHAFT SECTION N-S
A401 1/4" = 1'-0"



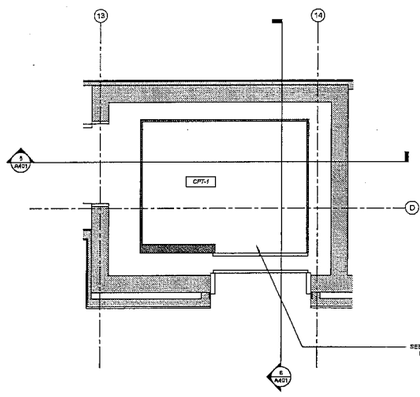
6 STAIR MS-1 AND ELEVATOR SHAFT SECTION E-W
A401 1/4" = 1'-0"



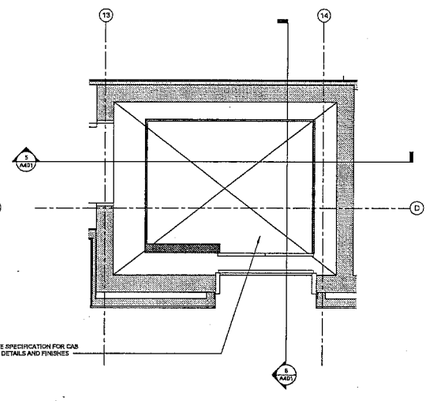
7 STAIF MS-1 SECTION E-W
A401 1/4" = 1'-0"



8 STAIR MS-1 SECTION N-S
A401 1/4" = 1'-0"



10 ELVATOR CAB FLOOR PLAN
A401 1/2" = 1'-0"



9 ELVATOR CAB REFLECTED CEILING PLAN
A401 1/2" = 1'-0"

MSR
710 South 2nd Street, 6th Floor
Minneapolis, Minnesota 55401-2282
Architecture
Interiors and
Urban Design
612 375 0396 tel
612 342 2316 fax
www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201
Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
303 South Paterson Street, Suite 1
Madison, WI 53703
608.251.3600 tel

Structural Engineer, Technology and AV
IMEG Corp.
1600 Deming Way, Suite 200
Middleton, WI 53562
608.223.9600 tel

MEP Engineer
MEP Associates, LLC
850 Blue Gentian Road, Suite 175
Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
570 Asbury Ave West
St. Paul, MN 55102
651.704.1650 tel

Greenhouse Design
Rough Brothers, Inc.
6615 Vine Street
Cincinnati, OH 45217
513.242.0310 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin.
ARCHITECT SEAL

WISCONSIN
DANIEL JACK POLING
A-5084
MINNEAPOLIS, MN
ARCHITECT

Signature:
Print Name: Jack Poling
Date: JUNE 4, 2018 License No.: A-5084

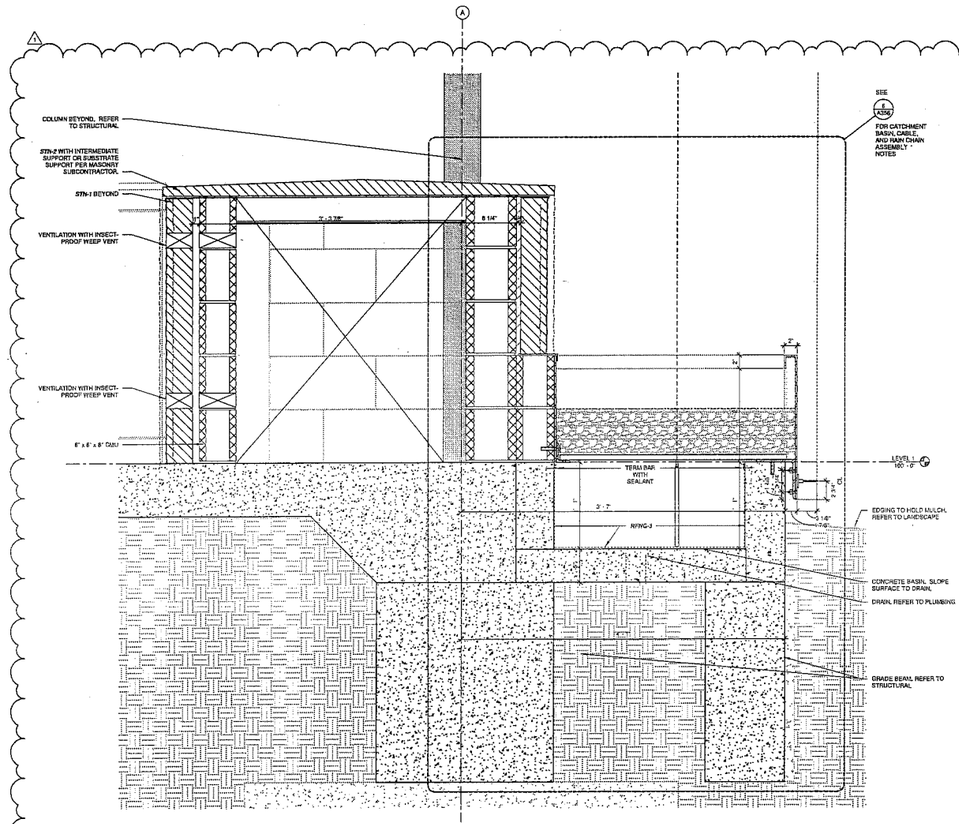
MARK	DATE	DESCRIPTION
	09.29.2017	SCHEMATIC DESIGN SUBMISSION
	12.04.2017	DD PRICING SET
	01.10.2018	DESIGN DEVELOPMENT SUBMISSION
	01.17.2018	UDC SUBMISSION
	03.30.2018	70% CD PRICING ISSUE
	04.06.2018	PARKING LOT AND SITE PLAN SUBMISSION
	05.04.2018	99% CD SUBMISSION
	05.21.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE

PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: MSR CHECKED BY: MSR

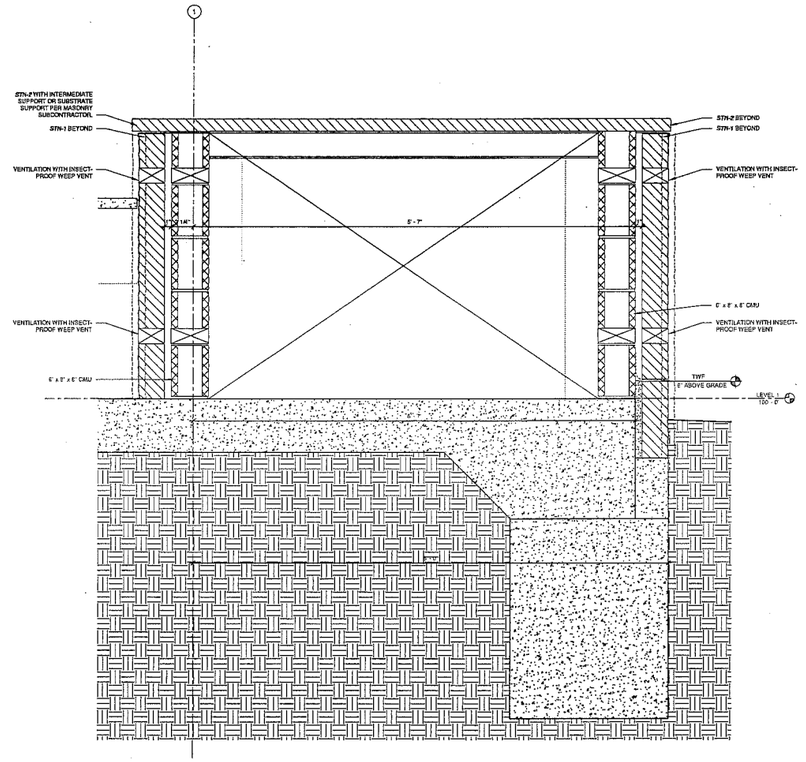
VERTICAL CIRCULATION

EXHIBIT F
A401

Drawings and Specifications as instruments of service are and shall remain the property of MSR Design and Ken Saiki Design, Inc. whether the project for which they are made is executed or not. They are not to be used by the Owner on other projects, for additions to this project, or for completion of this project by others, except by agreement in writing and with appropriate compensation to MSR Design and Ken Saiki Design, Inc. Visual contact with these drawings or specifications shall constitute conclusive evidence of acceptance of these restrictions.



1 SECTION DETAIL - OUTDOOR CLASSROOM AT WATER CATCHMENT FEATURE
A359 1 1/2" = 1'-0"



2 SECTION DETAIL - OUTDOOR CLASSROOM AT STONE LEDGE
A359 1 1/2" = 1'-0"

MSR
710 South 2nd Street, 8th Floor
Minneapolis, Minnesota 55401-2282
Architecture Interiors and Urban Design
612.375.0336 tel
612.342.2216 fax
www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201
Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
303 South Paterson Street, Suite 1
Madison, WI 53703
608.251.3600 tel

Structural Engineer, Technology and AV
IMEG Corp.
1600 Deming Way, Suite 200
Madison, WI 53562
608.223.9600 tel

MEP Engineer
MEP Associates, LLC
660 Blue Gentian Road, Suite 175
Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
575 Minnehaha Ave West
St. Paul, MN 55103
651.251.1883 tel

Greenhouse Design
Rough Brothers, Inc.
5513 Vine Street
Cincinnati, OH 45217
513.242.6310 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin.
ARCHITECT SEAL

WISCONSIN
DANIEL JACK POLING
A-5084
MINNEAPOLIS, MN
ARCHITECT

Signature:
Print Name: Jack Poling
Date: JUNE 4, 2018 License No: A-5084

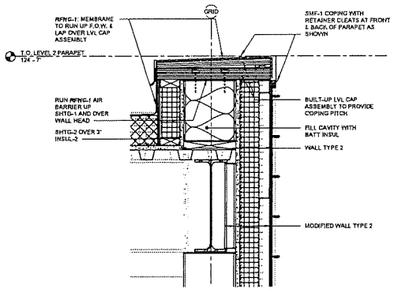
ISSUE MARK	DATE	DESCRIPTION
1	06.22.2018	BID ADDENDUM 2

PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: MSR CHECKED BY: MSR

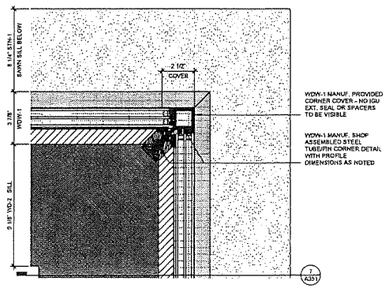
EXTERIOR DETAILS

EXHIBIT F
A359

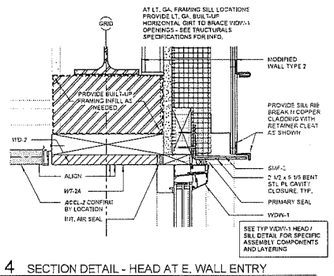
"ORIGINAL" ADDENDUM 2



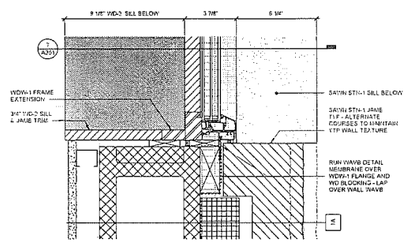
1 SECTION DETAIL - WALL TYPE 2 PARAPET
A351 1 1/2" = 1'-0"



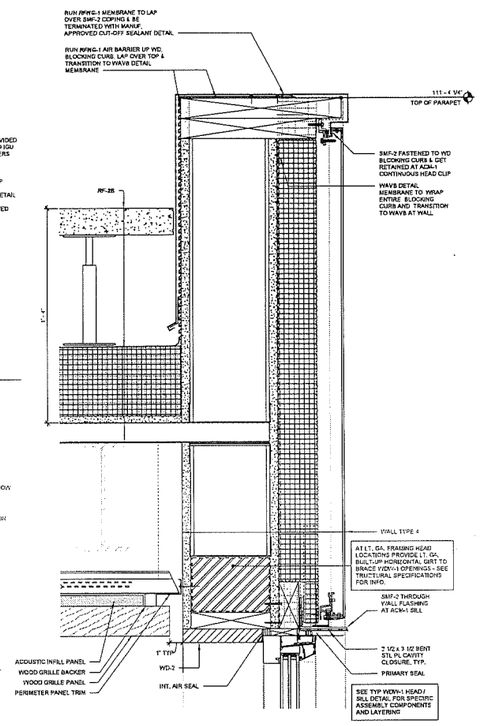
12 PLAN DETAIL - WDW-1 CORNER AT STAIR
A351 3" = 1'-0"



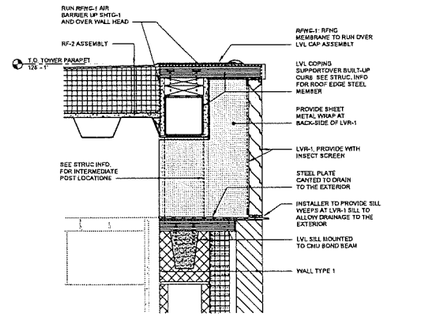
4 SECTION DETAIL - HEAD AT E. WALL ENTRY
A351 3" = 1'-0"



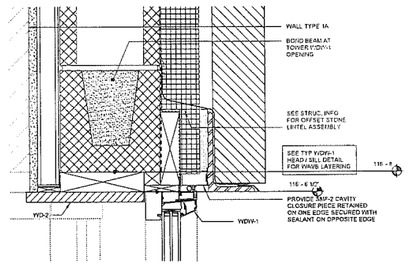
13 PLAN DETAIL - WDW-1 JAMB AT STAIR
A351 3" = 1'-0"



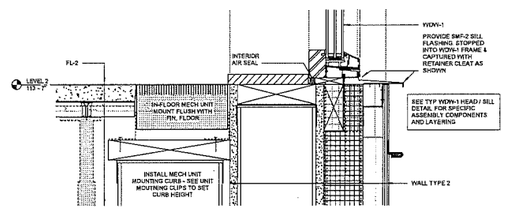
2 SECTION DETAIL - LOWER TOWER LOBBY - ROOF EDGE
A351 3" = 1'-0"



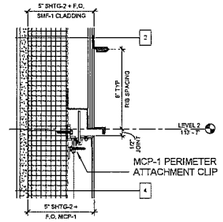
3 SECTION DETAIL - TOWER WALL AT LVR-1
A351 1 1/2" = 1'-0"



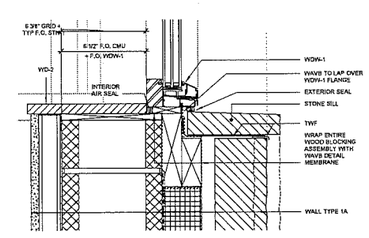
5 SECTION DETAIL - WDW-1 HEAD AT TOWER WALL
A351 3" = 1'-0"



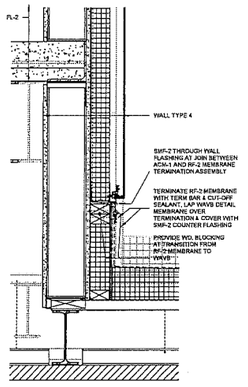
6 DETAIL SECTION - WDW-1 SILL AT FL-2
A351 3" = 1'-0"



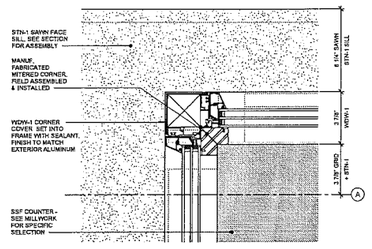
11 TYP WALL 2 + WALL 4 TRANSITION
A351 3" = 1'-0"



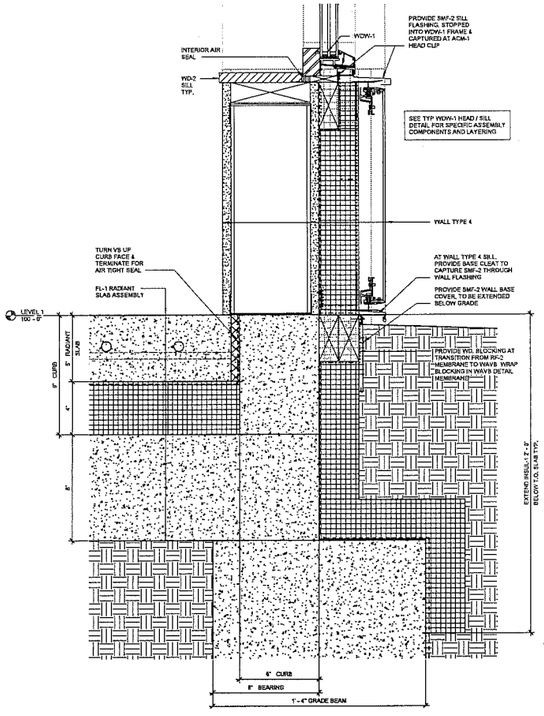
7 SECTION DETAIL - SILL AT TOWER WALL
A351 3" = 1'-0"



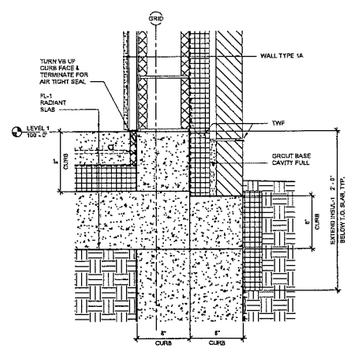
8 SECTION DETAIL - TOWER LOBBY TRASITION TO LVL 1 ROOF
A351 1 1/2" = 1'-0"



14 PLAN DETAIL - WDW-1 CORNER AT CLASSROOM 3
A351 3" = 1'-0"



9 SECTION DETAIL - TOWER LOBBY WALL BASE
A351 3" = 1'-0"



10 SECTION DETAIL - E.WALL AT MECH - BASE
A351 1 1/2" = 1'-0"

MSR 710 South 2nd Street, 6th Floor Minneapolis, Minnesota 55401-2282
Architecture Interiors and Urban Design. ph) 375.0196 tel fx) 342.2214 fax www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201 Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
303 South Paterson Street, Suite 1 Madison, WI 53703
608.251.3000 tel

Structural Engineer, Technology and AV
IMEG Corp.
1800 Deming Way, Suite 200 Middleton, WI 53562
608.221.9600 tel

MEP Engineer
MEP Associates, LLC
850 East Garden Road, Suite 175 Eagan, MN 55123
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
575 Mississippi Ave West St. Paul, MN 55107
651.251.1800 tel

Greenhouse Design
Rough Brothers, Inc.
5515 Vine Street Cincinnati, OH 45217
513.242.6010 tel

Olbrich Botanical Gardens
Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin. ARCHITECT SEAL

WISCONSIN DANIEL JACK POLING A-6084 MINNEAPOLIS, MN ARCHITECT

Signature
Print Name: Jack Poling
Date: JUNE 4, 2018 License No: A-6084

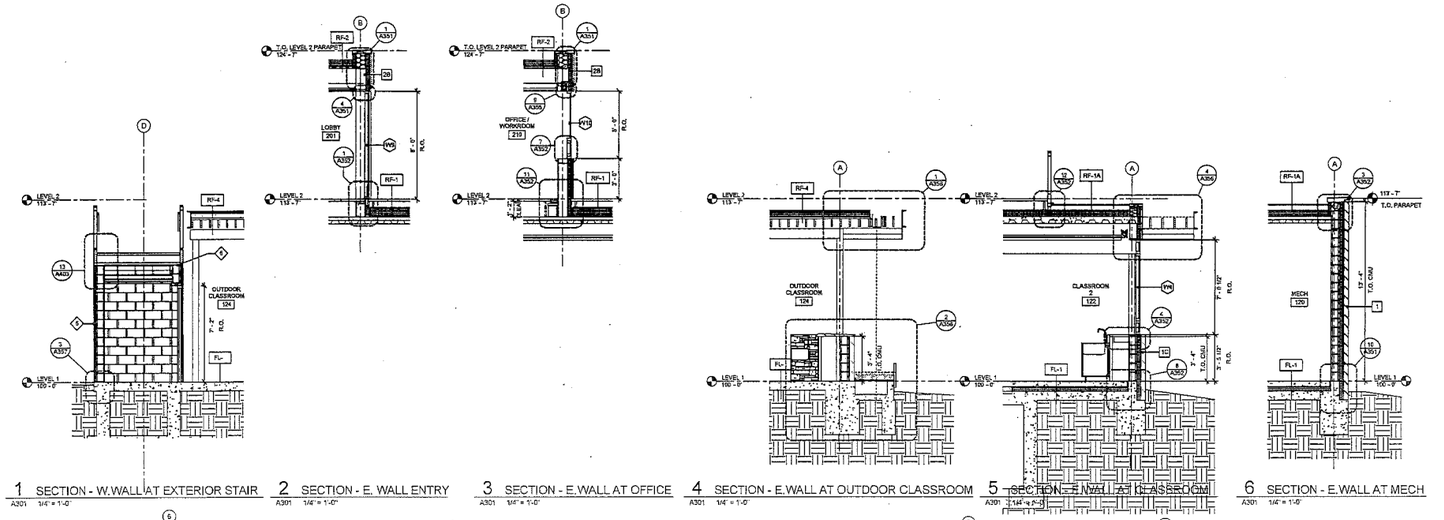
MARK	DATE	DESCRIPTION
	03.29.2017	SCHEMATIC DESIGN SUBMISSION
	12.06.2017	DD PRICING SET
	01.10.2018	DESIGN DEVELOPMENT SUBMISSION
	01.17.2018	UDC SUBMISSION
	03.30.2018	75% CD PRICING ISSUE
	04.06.2018	PARKING LOT AND SITE PLAN SUBMISSION
	05.04.2018	90% CD SUBMISSION
	05.01.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE

PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: MSR CHECKED BY: MSR

EXTERIOR DETAILS

EXHIBIT F
A351

ORIGINAL



MSR 710 South 2nd Street, 8th Floor Minneapolis, Minnesota 55401-2282
Architecture Interiors and Urban Design
612.375.0936 tel
612.342.2216 fax
www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fronter Drive, Suite 201
Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
360 South Paterson Street, Suite 1
Madison, WI 53703
608.251.3600 tel

Structural Engineer, Technology and AV
IMEG Corp.
1400 Deming Way, Suite 200
Madison, WI 53562
608.223.3600 tel

MEP Engineer
MEP Associates, LLC
660 Blue Gentian Road, Suite 170
Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
575 Minnehaha Ave West
St. Paul MN 55103
651.251.1835 tel

Greenhouse Design
Rough Brothers, Inc.
5513 West Street
Cincinnati, OH 45212
513.242.6310 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin.
ARCHITECT SEAL

WISCONSIN
DANIEL JACK POLING
A-8584
MINNEAPOLIS, MN
ARCHITECT

Signature:
Print Name: Jack Poling
Date: JUNE 4, 2018 License No: A-8584

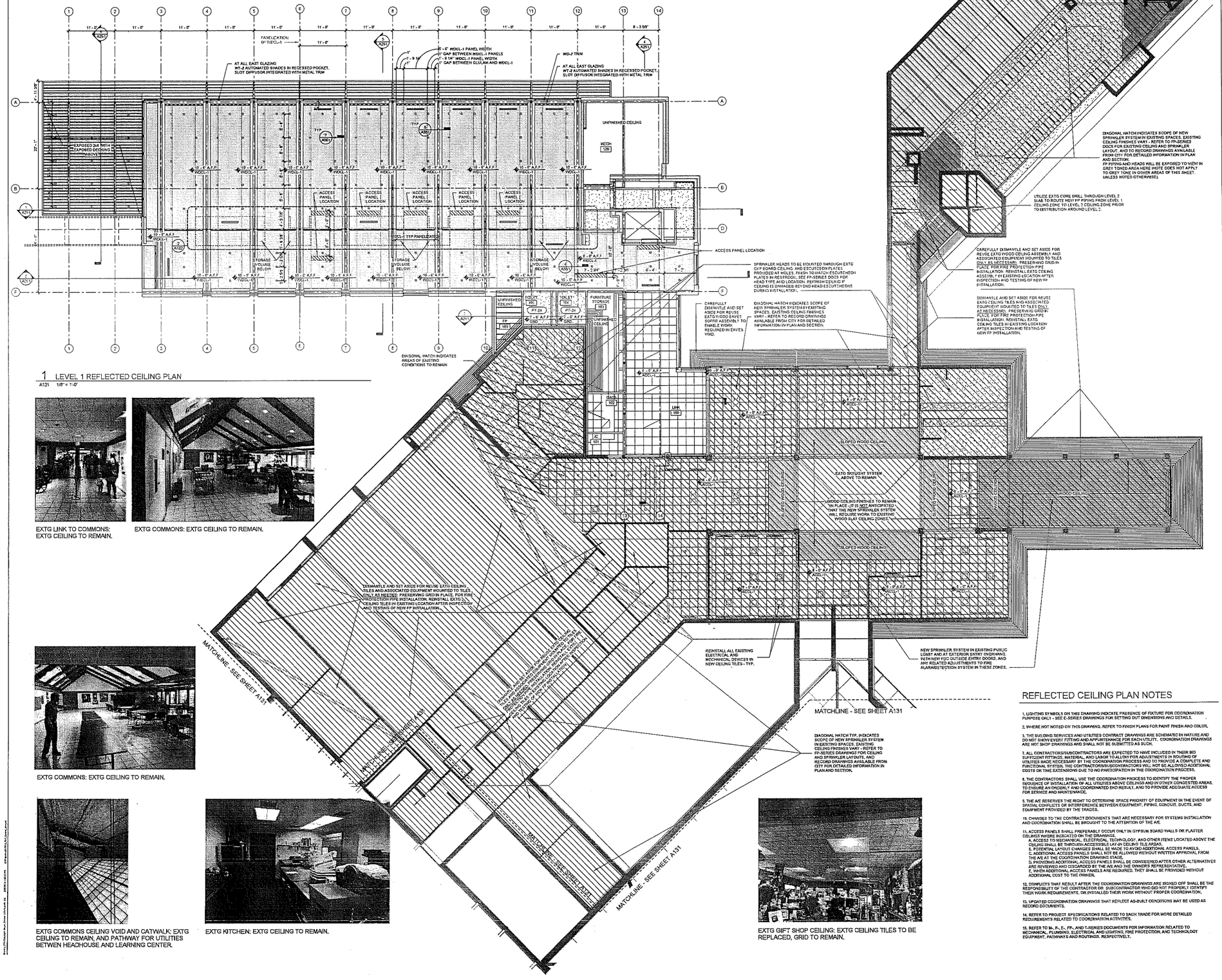
ISSUE/MARK	DATE	DESCRIPTION
	02.03.2017	SCHEMATIC DESIGN SUBMISSION
	12.08.2017	CD PRICING SET
	01.10.2018	DESIGN DEVELOPMENT SUBMISSION
	01.17.2018	UDC SUBMISSION
	03.30.2018	75% CD PRICING ISSUE
	04.06.2018	PARKING LOT AND SITE PLAN SUBMISSION
	05.04.2018	90% CD SUBMISSION
	06.01.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE

PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: MSR CHECKED BY: MSR

WALL SECTIONS

EXHIBIT F
A301

ORIGINAL



1 LEVEL 1 REFLECTED CEILING PLAN
A121 1/8" = 1'-0"

EXTG LINK TO COMMONS: EXTG CEILING TO REMAIN.

EXTG COMMONS: EXTG CEILING TO REMAIN.

EXTG COMMONS: EXTG CEILING TO REMAIN.

EXTG COMMONS CEILING VOID AND CATWALK: EXTG CEILING TO REMAIN, AND PATHWAY FOR UTILITIES BETWEEN HEADHOUSE AND LEARNING CENTER.

EXTG KITCHEN: EXTG CEILING TO REMAIN.

EXTG GIFT SHOP CEILING: EXTG CEILING TILES TO BE REPLACED, GRID TO REMAIN.

REFLECTED CEILING PLAN NOTES

1. LIGHTING SYMBOLS ON THIS DRAWING INDICATE PRESENCE OF FIXTURE FOR COORDINATION PURPOSES ONLY - SEE E-SERIES DRAWINGS FOR SETTING OUT DIMENSIONS AND DETAILS.
2. WHERE NOT NOTED ON THIS DRAWING, REFER TO FINISH PLANS FOR PAINT FINISH AND COLOR.
3. THE BUILDING SERVICES AND UTILITIES CONTRACT DRAWINGS ARE SCHEMATIC IN NATURE AND DO NOT SHOW EVERY FITTING AND APPURTENANCE FOR EACH UTILITY. COORDINATION DRAWINGS ARE NOT SHOP DRAWINGS AND SHALL NOT BE SUBMITTED AS SUCH.
7. ALL CONTRACTORS/SUBCONTRACTORS ARE EXPECTED TO HAVE INCLUDED IN THEIR BID SUFFICIENT FITTINGS, MATERIAL, AND LABOR TO ALLOW FOR ADJUSTMENTS IN ROUTING OF UTILITIES MADE NECESSARY BY THE COORDINATION PROCESS AND TO PROVIDE A COMPLETE AND FUNCTIONAL SYSTEM. THE CONTRACTORS/SUBCONTRACTORS WILL NOT BE ALLOWED ADDITIONAL COSTS OR TIME EXTENSIONS DUE TO NO PARTICIPATION IN THE COORDINATION PROCESS.
8. THE CONTRACTORS SHALL USE THE COORDINATION PROCESS TO IDENTIFY THE PROPER SEQUENCE OF INSTALLATION OF ALL UTILITIES ABOVE CEILINGS AND IN OTHER CONGESTED AREAS, TO ENSURE AN ORDERLY AND COORDINATED END RESULT, AND TO PROVIDE ADEQUATE ACCESS FOR SERVICE AND MAINTENANCE.
9. THE A/E RESERVES THE RIGHT TO DETERMINE SPACE PRIORITY OF EQUIPMENT IN THE EVENT OF SPATIAL CONFLICTS OR INTERFERENCE BETWEEN EQUIPMENT, PIPING, CONDUIT, DUCTS, AND EQUIPMENT PROVIDED BY THE TRADES.
10. CHANGES TO THE CONTRACT DOCUMENTS THAT ARE NECESSARY FOR SYSTEMS INSTALLATION AND COORDINATION SHALL BE BROUGHT TO THE ATTENTION OF THE A/E.
11. ACCESS PANELS SHALL PREFERABLY OCCUR ONLY IN GYPSUM BOARD WALLS OR PLASTER CEILINGS WHERE INDICATED ON THE DRAWINGS.
A. ACCESS TO MECHANICAL, ELECTRICAL, TECHNOLOGY, AND OTHER ITEMS LOCATED ABOVE THE CEILING SHALL BE THROUGH ACCESSIBLE LAY-IN CEILING TILE AREAS.
B. POTENTIAL LAYOUT CHANGES SHALL BE MADE TO AVOID ADDITIONAL ACCESS PANELS.
C. ADDITIONAL ACCESS PANELS SHALL NOT BE ALLOWED WITHOUT WRITTEN APPROVAL FROM THE A/E AT THE COORDINATION DRAWING STAGE.
D. PROVIDING ADDITIONAL ACCESS PANELS SHALL BE CONSIDERED AFTER OTHER ALTERNATIVES ARE REVIEWED AND DISCARDED BY THE A/E AND THE OWNER'S REPRESENTATIVE.
E. WHEN ADDITIONAL ACCESS PANELS ARE REQUIRED, THEY SHALL BE PROVIDED WITHOUT ADDITIONAL COST TO THE OWNER.
12. CONFLICTS THAT RESULT AFTER THE COORDINATION DRAWINGS ARE SIGNED OFF SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR OR SUBCONTRACTOR WHO DID NOT PROPERLY IDENTIFY THEIR WORK REQUIREMENTS, OR INSTALLED THEIR WORK WITHOUT PROPER COORDINATION.
13. UPDATED COORDINATION DRAWINGS THAT REFLECT AS-BUILT CONDITIONS MAY BE USED AS RECORD DOCUMENTS.
14. REFER TO PROJECT SPECIFICATIONS RELATED TO EACH TRADE FOR MORE DETAILED REQUIREMENTS RELATED TO COORDINATION ACTIVITIES.
15. REFER TO M-, P-, E-, FP-, AND T-SERIES DOCUMENTS FOR INFORMATION RELATED TO MECHANICAL, PLUMBING, ELECTRICAL AND LIGHTING, FIRE PROTECTION, AND TECHNOLOGY EQUIPMENT, PATHWAYS AND ROUTINGS, RESPECTIVELY.

MSR 710 South 2nd Street, 6th Floor Minneapolis, Minnesota 55401-2282
Architecture, Interiors and Urban Design. ph 612 375 0336 tel 612 342 2216 fax www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201 Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
303 South Paterson Street, Suite 1 Madison, WI 53703
608.251.3600 tel

Structural Engineer, Technology and AV
IMEG Corp.
1800 Deming Way, Suite 200 Middleton, WI 53562
608.223.9600 tel

MEP Engineer
MEP Associates, LLC
850 Elan Garden Road, Suite 175 Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
575 Minnesota Ave West St. Paul, MN 55118
651.294.1855 tel

Greenhouse Design
Rough Brothers, Inc.
5513 Vine Street Cincinnati, OH 45217
513.242.0310 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin.
ARCHITECT SEAL

WISCONSIN DANIEL JACK POLING A-6984 MINNEAPOLIS, MN ARCHITECT

Signature:
Print Name: Jack Poling
Date: JUNE 4, 2018 License No.: A-6984

MARK	DATE	DESCRIPTION
	01.23.2017	SCHEMATIC DESIGN SUBMISSION
	12.04.2017	DD PRICING SET
	01.15.2018	DESIGN DEVELOPMENT SUBMISSION
	01.17.2018	DD FC SUBMISSION
	03.30.2018	70% CD PRICING ISSUE
	04.16.2018	PARKING LOT AND SITE PLAN SUBMISSION
	05.04.2018	95% CD SUBMISSION
	05.31.2018	BID ISSUE
	05.04.2018	PERMIT ISSUE

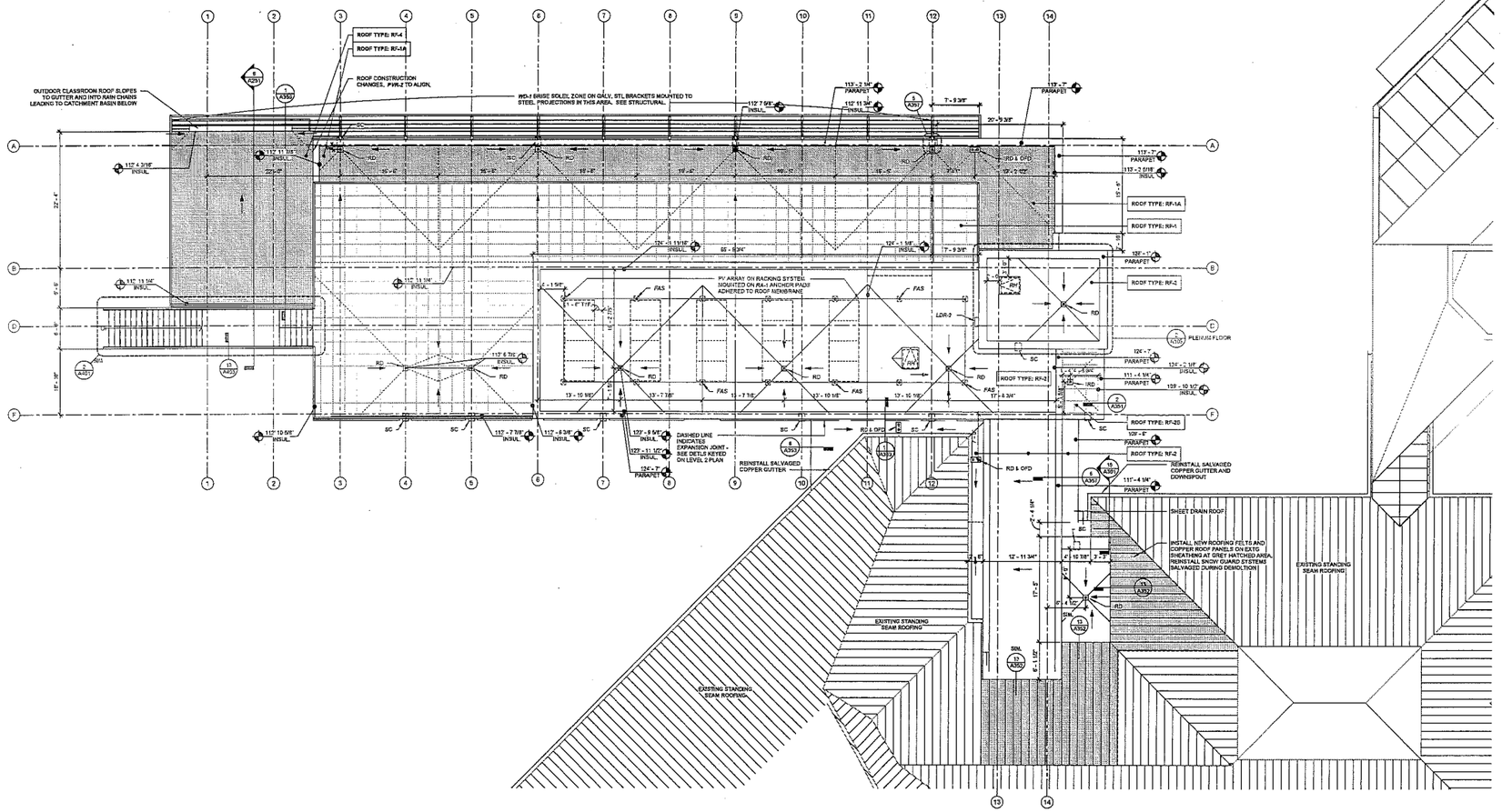
PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: MSR CHECKED BY: MSR

REFLECTED CEILING PLAN - LEVEL 1 - EXTG + NEW

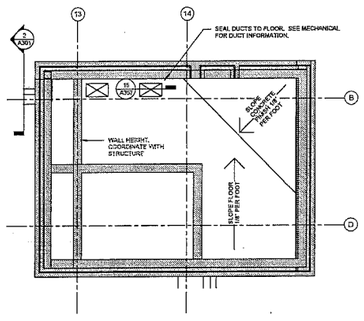
EXHIBIT F

A121

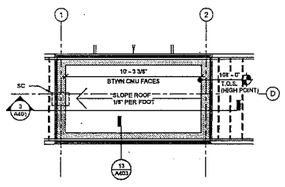
ORIGINAL



1 ROOF PLAN
A103 1/8" = 1'-0"



2 ROOF PLAN - PLENUM FLOOR
A103 1/4" = 1'-0"



3 OUTDOOR CLASSROOM ROOF PLAN
A103 1/4" = 1'-0"

ROOF PLAN NOTES

1. ALL SLOPED INSULATION LINES SHOWN DASHED OCCUR UNDERNEATH FINISH SURFACE OF PAVERS.

2. FOR NEW COPPER ROOF DETAILS REFER TO SHEET A258 FOR DETAILS FROM 2012 RECORD SET WHEN EXISTING FACILITY WAS RE-ROOFED. NEW COPPER ROOF DETAILS TO FOLLOW THE SAME DETAIL PRINCIPLES AND TO COORDINATE WITH AS-BUILT CONDITIONS.

3. REFER TO SHEET G002 FOR ROOF TYPES AND SYSTEMS, AND RELATED SPECIFICATIONS.

4. PROTECT ALL REMAINING PORTIONS OF THE BUILDING ROOFS AND ADJACENT FEATURES NOT SCHEDULED FOR DEMOLITION. THESE AREAS SHALL BE COMPLETELY PROTECTED DURING DEMOLITION AND REMOVAL OF DEBRIS. ANY RESULTING DAMAGE SHALL BE REPAIRED OR REPLACED TO LIKE-NEW CONDITION BY THE CONTRACTOR RESPONSIBLE UNDER THE DIRECTION AND APPROVAL OF THE OWNER AND ARCHITECT.

5. THE MEANING OF "PREPARE AREAS" OF DEMOLITION AND REMOVAL FOR NEW COMPONENT/FINISHES IS THAT IT IS TO BE LEFT CLEAR OF DEBRIS, DUST, LOOSE MATERIAL, NAILS, SCREWS, ANCHORS, REINFORCEMENT AND ALL OTHER FOREIGN TYPES, AND IN A SOUND MANNER, SUITABLE AS A SUBSTRATE FOR SUBSEQUENT PREPARATION AND FINISHING BY OTHER TRADES. REFER TO SPECIFICATIONS FOR APPLICABLE TRADES IN AREAS WHERE DEMOLITION AFFECTS EXISTING WALLS / CEILINGS / UNDERSIDE FLOOR DECKS TO REMAIN.

6. PROVIDE INTERIOR AND EXTERIOR SHORING, BRACING, OR SUPPORT AS REQUIRED TO PREVENT MOVEMENT, SETTLEMENT, OR COLLAPSE OF ADJACENT CONSTRUCTION SCHEDULED TO REMAIN. SEE STRUCTURAL DOCUMENTS FOR FURTHER DETAILS.

MSR
710 South 2nd Street, 8th Floor
Minneapolis, Minnesota 55401-2282
Architecture Interiors and Urban Design
612 375 0394 tel
612 342 2246 fax
www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fayette Drive, Suite 201
Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
333 South Paterson Street, Suite 1
Madison, WI 53703
608.251.3900 tel

Structural Engineer, Technology and A/V
IMEG Corp.
1800 Deming Way, Suite 200
Middleton, WI 53562
608.223.9600 tel

MEP Engineer
MEP Associates, LLC
859 Blue Gentian Road, Suite 175
Eagan, MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
575 Minnesota Ave West
St. Paul, MN 55102
651.251.1880 tel

Greenhouse Design
Rough Brothers, Inc.
5533 Vine Street
Cincinnati OH 45217
513.242.6010 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin. ARCHITECT SEAL:

WISCONSIN
DANIEL JACK POLING
A-5394
MINNEAPOLIS, MN
ARCHITECT

Signature:
Print Name: Jack Poling
Date: JUNE 6, 2018 License No: A-5394

ISSUE INDEX	DATE	DESCRIPTION
	05.25.2017	SCHEMATIC DESIGN SUBMISSION
	12.08.2017	DD PRICING SET
	01.19.2018	DESIGN DEVELOPMENT SUBMISSION
	03.17.2018	UDC SUBMISSION
	03.30.2018	75% CD PRICING ISSUE
	04.06.2018	PARKING LOT AND SITE PLAN SUBMISSION
	05.04.2018	100% CD SUBMISSION
	06.01.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE

PROJECT NO. 2017016
PROJECT PHASE BID DOCUMENTS
DRAWN BY: MSR CHECKED BY: MSR

LEARNING CENTER ROOF PLAN

EXHIBIT F
A103

ORIGINAL

02/6/17 FINAL

GENERAL NOTES

1. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO SUBMITTING A BID AND VERIFY EXISTING CONDITIONS AND SCOPE OF WORK.

2. CONTRACTOR TO VERIFY ALL EXISTING SITE AND BUILDING CONDITIONS AND EXISTING OPENING SIZES. DISCREPANCIES BETWEEN EXISTING AND NEW CONDITIONS (SETTING OUT OF WALLS, ETC.) SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER AND ARCHITECT.

3. EXISTING WINDOWS TO REMAIN SHALL BE PROTECTED DURING CONSTRUCTION.

4. ALL PARTITION SETTING OUT DIMENSIONS ARE TO CENTERLINE OF PARTITION, U.N.O.

5. DIMENSIONS TO FACE OF WALL ARE TIED TO CENTERLINE OF STRUCTURAL GRID, U.N.O.

6. REFER TO G-SERIES CODE PLAN DRAWINGS FOR FIRE RATED WALL LOCATIONS. ROOMS WITH RATED WALLS REQUIRE RATED DOORS AND ANY DUCTS PASSING THROUGH REQUIRE FIRE RATED WALLS OR FLOORS REQUIRE UL RATED FIRE DAMPERS WITH CODE REQUIRED RATING. ANY CONDUIT AND/OR PIPING PENETRATIONS THROUGH FIRE WALLS OR FLOORS REQUIRE UL RATED FIRE RATED SEALANT TO COMPLETELY SEAL ANNULAR SPACE AROUND PENETRATIONS.

7. SEE STRUCTURAL DRAWINGS FOR LAYOUT AND DIMENSIONING OF STRUCTURAL GRIDS AND ELEMENTS. DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER AND ARCHITECT.

8. INSTALL SEALANT AT EXTERIOR SIDE OF ALL JOINTS, SEAMS, CONNECTIONS OR OPENINGS WHICH COULD ALLOW WATER OR AIR INFILTRATION / EXFILTRATION, EXCEPT AS NOTED OTHERWISE. SEALANT COLOR TO MATCH ADJACENT, VISIBLE MATERIAL COLOR AND REQUIRES OWNER AND ARCHITECT APPROVAL.

9. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING AND MAINTAINING A WEATHER TIGHT BUILDING. DETAILS AND DIMENSIONS ON DRAWINGS, NOTWITHSTANDING ALL DRAWING CONFLICTS OR APPARENT CONFLICTS, WHICH MAY NOT ALLOW A WEATHER TIGHT CONDITION, SHALL BE BROUGHT TO THE ATTENTION OF OWNER AND ARCHITECT PRIOR TO COMMENCING WORK IN THAT AREA.

10. REFER TO SHEET G000 FOR ALL MATERIAL CODES / CALLOUTS AND TO PROJECT MANUAL / SPECIFICATION BOOKS FOR MORE DETAILED REQUIREMENTS RELATED TO ALL COMPONENTS AND FINISHES.

11. PROVIDE WOOD BLOCKING AT ALL GYP WALLS FOR ANCHORING FLAT PANEL MONITORS, MARKERBOARDS, DISPLAY CASES, ART WORK AND HANGING SYSTEMS, TACKBOARD, AND ANY OTHER MECHANICAL, ELECTRICAL, PLUMBING, TECHNOLOGY AND AUDIO-VISUAL EQUIPMENT INDICATED ON FLOOR PLANS AND/OR INTERIOR ELEVATIONS FOR ALL DESCRIPTIONS. USE FIRE RETARDANT TREATED BLOCKING WHERE ANCHORING TO RATED PARTITIONS.

12. WHERE EXTG WALLS / DOORS / CEILINGS ARE REMOVED, REPAIR ZONES THAT WILL BE LEFT EXPOSED TO VIEW, AND MATCH XTG COND, ADJACENT.

WALL AND PARTITION KEY

- NEW WALLS AND PARTITIONS
- EXISTING WALLS AND PARTITIONS
- WALLS AND PARTITIONS TO BE REMOVED
- 1 HOUR RATED FIRE WALL
- 2 HOUR RATED FIRE WALL

1 LEVEL 1 PLAN
A101 1/8" = 1'-0"

EXTG CONS. DOORS (OUT): REUSE EXTG WOOD PULLS

EXTG CONS. DOORS (IN): REUSE EXTG WOOD PULLS

EXTG CONS. DOOR MULLION AT FLOOR

MSR
710 South 2nd Street, 6th Floor
Minneapolis, Minnesota 55401-2282
Architecture, Interiors, and Urban Design
612 375 0596 tel
612 342 2356 fax
www.msrdesign.com

Civil Engineer
Vierbicher Associates, Inc.
999 Fourier Drive, Suite 201
Madison, WI 53717
608.826.0532 tel

Landscape Architect
Ken Saiki Design, Inc.
323 South Paterson Street, Suite 1
Madison, WI 53703
608.251.3400 tel

Structural Engineer, Technology and A/V
IMEG Corp.
1300 Deming Way, Suite 200
Madison, WI 53562
608.222.9600 tel

MEP Engineer
MEP Associates, LLC
600 Blair Gerken Road, Suite 175
Eagan MN 55121
651.379.9120 tel

Fire Protection Engineer and Code Consultant
Summit Fire Consulting
575 Minnesota Ave West
St. Paul, MN 55107
651.251.1850 tel

Greenhouse Design
Rough Brothers, Inc.
5513 Vine Street
Cincinnati OH 45217
513.242.6310 tel

Olbrich Botanical Gardens Expansion Phase 1

BPW Project #8162
3330 Atwood Avenue
Madison, WI 53704

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Wisconsin. ARCHITECT SEAL

WISCONSIN
DANIEL JACK POLING
A-5084
MINNEAPOLIS, MN
ARCHITECT

Signature:
Print Name: Jack Poling
Date: JUNE 4, 2013 License No.: A-5084

ISSUE NUMBER	DATE	DESCRIPTION
	08.29.2017	SCHEMATIC DESIGN SUBMISSION
	12.06.2017	DD PRICING SET
	01.12.2018	DESIGN DEVELOPMENT SUBMISSION
	01.17.2018	UDC SUBMISSION
	03.30.2018	75% CD PRICING ISSUE
	04.06.2018	PARKING LOT AND SITE PLAN SUBMISSION
	05.04.2018	100% CD SUBMISSION
	06.01.2018	BID ISSUE
	06.04.2018	PERMIT ISSUE

PROJECT NO.: 2017016
PROJECT PHASE: BID DOCUMENTS
DRAWN BY: MSR
CHECKED BY: MSR

LEARNING CENTER FLOOR PLAN - LEVEL 1

EXHIBIT F

A101

MATERIAL / PRODUCT ID LIST with Spec Data

ID	Short Name	Section	Spec Data
ACDL-1	ACOUSTICAL CEILING SYSTEM	09 5113	MFR: Armstrong; PRODUCT: Optima, Plant Based; EDGE: Tegular; MODEL: 3570TB; PANEL SIZE: 24" x 24" x 1"; COLOR: White; GRID: 9/16", White;
ACDL-2	ACOUSTICAL CEILING SYSTEM	09 5113	MFR: Armstrong; PRODUCT: Optima, Plant Based; EDGE: Tegular; MODEL: 3789TB; PANEL SIZE: 24" x 48" x 1"; COLOR: White; GRID: 9/16", White;
AXFL-1	ACCESS FLOORING	09 6800	MFR: Tate; PRODUCT: CoolCore 1000; PANEL SIZE: 24" x 24"; THICKNESS: 1 5/8"; UNDERSTRUCTURE: Pedestal;
AXFL-2	ACCESS FLOORING	09 6800	MFR: Tate; PRODUCT: STONEWORKS: Elemez Concrete; PANEL SIZE: 24" x 24"; THICKNESS: 1 5/16"; FINISH: Powercoat Concrete Protector WB; UNDERSTRUCTURE: Bolted Stringer;
CCT-1	CONCRETE COUNTERTOP	12 3413	PRODUCT: Concrete Countertop COLOR: TBD; FINISH: Smooth Troweled; EDGE: Eased; SEALER: Clear, Matte; THICKNESS: See Drawings; SPLASH: See Drawings; JOINT TYPE: Grooved, 1/16"; CUTOUTS: Sink with Deckboard and Faucets
CFSF	COLD-FORMED STEEL FRAMING - SEE STRUCTURAL	05 4000	PRODUCT: Cold-formed Steel Studs and Furring;
CMU	CONCRETE MASONRY UNIT - SEE STRUCTURAL	04 2200	PRODUCT: Concrete Masonry Unit;
CMU-2	CONCRETE MASONRY UNIT - VENEER	04 2200	PRODUCT: Concrete Masonry Units; FINISH: Burnished; COLOR: MI Bal Dark Gray/Black;
CONC-1	SEALED CONCRETE FINISH - SEE STRUCTURAL	03 3000	PRODUCT: Penetrating Liquid Densifier and Sealer; FINISH: Penetrating Liquid Densifier and Sealer;
CONC-2	POLISHED CONCRETE FINISH	03 3543	PRODUCT: Penetrating Liquid Densifier and Sealer; FINISH ADDITIVE: Incorp. Stain-Grey or HTC Suretone;
CPT-1	CARPET TILE FLOORING - PLANK	09 6813	MFR: Mohawk; STYLE: Lotus, Macro Bloom; COLOR: Iceland Moss
CPT-2	CARPET TILE FLOORING - PLANK	09 6813	MFR: Mohawk; STYLE: Lotus Macro Bloom; COLOR: Iceland Moss
ELEV	HYDRAULIC PASS. ELEVATOR	14 2419	MFR: Otis (or ThyssenKrupp) STYLE: Maxima Roomless Hydraulic MODEL: HydroFlow Endure MRL; CAR TYPE: Passenger; CAPACITY (lbs): 3,500; SPEED (fpm, max): 100; OPENING: Front, Right Hand; CAB ENTRANCES: 1-Closed, Satin Stainless Steel; OPERATING PANEL: Satin Stainless Steel CAR PANELS: Custom Laminate - Plywood CAR DOORS: Satin Stainless Steel; BUMPER RAIL: Wood Type, Satin Stainless Steel CEILING: LED Fluorescent, Perforated FLOORING: Custom. See Finish Plan HALL ENTRANCES: Cleanout Drive FIXTURES: Classic: Satin Stainless Steel BUTTONS: Flush Illuminated Mini
FAS	FALL ARREST SYSTEM	11 2401	PRODUCT: TBD
FEC	FIRE EXTINGUISHER CABINET	10 4413	MFR: J. Industries (or Larsen); MODEL: Semi-(or Cloud); STYLE: Recessed Tiowless DOOR: Solid; COLOR: TBD
GB0	GYPSUM BOARD	09 2700	PRODUCT: Fabricated Gypsum Board
GDRL-1	DECORATIVE METAL GUARDRAIL	05 7300	PRODUCT: Custom Steel Guardrail FINISH: PT-4B, UNO
GLS-1	CLEAR ANNEALED GLASS	08 0800	PRODUCT: Annealed Glass COLOR: Clear; THICKNESS: 1/4", typical; TI determine Tempered
GLSD-1A	GLASS CHALKBOARDS - WHITE	10 1129	MFR: Grand Glassboards, LLC; STYLE: WallChalk; COLOR: White, Magnetic Finish
HDRL-1	DECORATIVE METAL HANDRAIL	05 7300	PRODUCT: Stainless Steel Tubing FINISH: Satin, No.4 Finish; PROFILE: 1 1/2" Diameter
IGU-1	INSULATED GLASS UNIT	08 8000	MFR: Cardinal Glass; PRODUCT: Double-Pane; COLOR: Clear; UNIT THICKNESS: 1"; FILL: Argon; SHADOW: Solar Control; CARDINAL: LHE/HS2; U-VALUE (MAX): 0.25; VLT (MIN): 63%; SHGC (MAX): 0.27; T indicates Tempered
INSUL-1	ACOUSTICAL INSULATION	09 2900	PRODUCT: Unfaced Mineral Wool Batt Insulation;
INSUL-2	BELOW GRADE INSULATION	07 2100	PRODUCT: Expanded Polystyrene Foam (EPS); TYPE: IX, 25-PSI; R-VALUE: 4.28/inch;
INSUL-3	CONTINUOUS WALL INSULATION	07 2100	PRODUCT: Polyisocyanurate Foam; BOD: Hunter Panels, Xci CG; FACER: Glass Fiber Mat; FURRING SYSTEM: TBD;
INSUL-4	SPRAY FOAM INSULATION	07 2115	PRODUCT: Water-blown, Closed-cell Spray Polyurethane Foam; R-VALUE: 4.9/inch; DENSITY: 2.2 pounds, Closed-cell; SLOPING AGENT: Water; R-VALUE: 4.9/inch; VAPOR BARRIER: 2.4 Mrh;
INSUL-5	VENTILATED NAILBASE INSULATION	07 2100	PRODUCT: Ventilated Nailbase Insulation; BOD: GAF, Tremlock IS; SHEATHING: 1/2" Plywood; ASSEMBLY: TI; INSULATION: Polyisocyanurate; PANEL THICKNESS: 6 1/2"; R-VALUE: 30;
LDR-1	WALL-MOUNTED LADDER	05 5000	PRODUCT: Wall-mounted Access Ladder; WIDTH: 18"; RUNGS: 1" Square; MATERIAL: Steel; FINISH: Factory Primed, Field Painted;
LDR-2	WALL-MOUNTED LADDER, EXTERIOR	05 5000	PRODUCT: Wall-mounted Access Ladder; WIDTH: 18"; RUNGS: 1" Square; MATERIAL: Galvanized Steel; FINISH: Factory Primed, Field Painted;
LVR-1	LOUVER	08 9115	MFR: Greenheck; MODEL: ESD-302; TYPE: Drainable; DEPTH: 2 inches; FREE AREA (MIN): 35%; COLOR: ;
LVR-2	ACOUSTICAL LOUVER	08 9119	MFR: Greenheck; MODEL: AFS-120; TYPE: Acoustical, Supersed; DEPTH: 12 inches; FREE AREA (MIN): 37%; COLOR: ;
MA-1	MILLWORK ACCESSORY - PULL	06 4116	MFR: Rockwood; STYLE: Citrus or 817 Hardware; STYLE: Cityscape Collection; PRODUCT NUMBER: 810M05-12E;
MA-4	MILLWORK ACCESSORY - COAT ROD	06 4116	MFR: Knape and Vogt; STYLE: Closet-Pro Regular-Duty Adjustable Closet Rod w/ Fixed Flanges; PRODUCT NUMBER: KPW022-48/72;
MA-5	MILLWORK ACCESSORY - PAPER TOWEL DISPENSER	06 4116	MFR: Bobrick; STYLE: TerraLuxSeries; PRODUCT NUMBER: B-526;
MA-6	MILLWORK ACCESSORY - SOAP TRAY	06 4116	MFR: Hiko; STYLE: Bold Trim; PRODUCT NUMBER: H-2982;
MA-7	MILLWORK ACCESSORY - WASTE BIN	06 4116	MFR: Knape and Vogt; STYLE: Soft Close, Top-Mount Waste with Recycling Bin; PRODUCT NUMBER: TSC15S-1-35PT;
MCP-1	METAL COMPOSITE PANEL	07 4213.23	MFR: 3A Composites USA, Inc.; PRODUCT: Aluminum Plus, FR Core, THICKNESS: 4 mm SYSTEM: Reserved II, Insulation Outboard FINISH: Clarion Classic COLOR: TBD (Dusty Charcoal or Picture Black)
MP-1	METAL PANEL - STANDING SEAM - COPPER	07 4113.19	PRODUCT: Standing Seam Metal Wall Panels; METAL: Copper; FINISH: Mill, Non-Patinated; WEIGHT: 20 oz; PANEL WIDTH: 8 Inches; SEAM HEIGHT: 1 inch; UNDERLAYMENT: WRB with Slip Sheet;
MP-2	METAL PANEL - BLACKENED STEEL	07 5000	PRODUCT: Sheet Plate Interior Wall Panels; THICKNESS: TBD; FINISH: Presto Black by Sherwood Technologies; FASTENERS: Counter-sunk Black Oxide Screws;
MS-1	METAL PAN STAIR - INTERIOR	05 5113	PRODUCT: Metal Stair; TREADS: Precast Concrete Tread; MFR: Texture Design by Wausau Tile, Inc.; TYPE: C-30, Tread with Safety Grit FINISH: TBD, SAFETY: Carborundum Strips;
MS-2	METAL PAN STAIR - EXTERIOR	05 5113	PRODUCT: Metal Stair; TREADS: Precast Concrete Tread; MFR: Texture Design by Wausau Tile, Inc.; TYPE: C-30, Self-supporting Flat Tread; COLOR: TBD; SAFETY: Carborundum Strips;
NSSF	NON-STRUCTURAL METAL FRAMING	09 2216	PRODUCT: Non-Structural Metal Studs and Furring
OP-1	OPERABLE PARTITION	10 2233	MFR: Modernfold; MODEL: Acoustic-Seal 932; NRC: 0.80 (Perforated Panels); STC: 54; PANEL FINISH: Fabric; MFR: CARNEGIE; STYLE: XOREL, SILENT EMBROIDER; COLOR: 9299-830;
PLAM-1	PLASTIC LAMINATE	06 4116	MFR: WILSONART; STYLE: STANDARD LAMINATE; COLOR: CRISP LINEN, 4962-38;
PLAM-2	PLASTIC LAMINATE	06 4116	MFR: WILSONART; STYLE: TRACELESS; COLOR: CHARCOAL VELVET, 1550H-31;
PLAM-3	PLASTIC LAMINATE	06 4116	MFR: WILSONART; STYLE: TRACELESS COLOR: SNOWWHITE VELVET, 1550H-31;

MATERIAL / PRODUCT ID LIST with Spec Data

ID	Short Name	Section	Spec Data
PLAM-4	PLASTIC LAMINATE - ELEV-1	06 4116	MFR: WILSONART; STYLE: STANDARD LAMINATE; COLOR: Dove Grey, D30-60, Matte;
PT-1	INTERIOR PAINT - FLAT	09 9123	PRODUCT: Interior Paint; SHEEN: Flat;
PT-2	INTERIOR PAINT - EGGSHELL	09 9123	PRODUCT: Interior Paint; SHEEN: Eggshell;
PT-3	HIGH-PERFORMANCE INTERIOR PAINT - SEMI-GLOSS	09 9123	PRODUCT: Interior Paint; SHEEN: Semi-Gloss;
PT-4	HIGH-PERFORMANCE EXTERIOR PAINT - SEMI-GLOSS	09 9113	PRODUCT: Exterior Paint; SHEEN: Semi-Gloss;
PT-5	EXTERIOR POWDERCOAT		PRODUCT: Exterior Powdercoat; SHEEN: Semi-Gloss;
PT-_A	PAINT COLOR - WHITE	09 9123	MFR: BENJAMIN MOORE; STYLE: OC-149; COLOR: CAPITOL WHITE;
PT-_B	PAINT COLOR - CHARCOAL	09 9123	MFR: BENJAMIN MOORE; STYLE: 2124-10; COLOR: TWILIGHT MOR;
PT-_C	PAINT COLOR - ACCENT COLOR	09 9123	MFR: Sherwin Williams; STYLE: SW 7612; COLOR: Mediterranean;
PVR-1	PEDESTAL PAVER SYSTEM - CONCRETE	07 7600	PRODUCT: Concrete Pavers on Pedestals; MFR: Wausau or Basic; MODEL: 24" x 24"; THICKNESS: 2"; COLOR: TBD;
PVR-2	PEDESTAL PAVER SYSTEM - WOOD	07 7600	PRODUCT: Wood Slat Pavers on Pedestals; MFR: Shaw Innovative Products; MODEL: WT-FSC-100%-CUMARU-24; MODULE: 24" x 24"; SPECIES: Cumaru, FSC; FINISH: Unsealed;
PWD-1	CONCEALED PLYWOOD BACKING	06 1000	PRODUCT: Concealed Plywood Backing Panels; GRADE: DOC PS 1, Exposure 1, C-D Plugged, INT; THICKNESS: 3/4";
RA-1	ROOF ANCHOR FOR PV RACKING	07 5323	MFR: Anchor Products; PRODUCT: U-Anchor 2000 EPDM;
REVEAL-1	5/8" GYPSUM REVEAL TRIM	092116	MFR: Fry Reglet Corporation; MODEL: TDM-625-1125; FINISH: Aluminum, Satin;
RPNG-1	EPDM ROOFING SYSTEM	07 5323	MFR: Firestone or Carlisle; MEMBRANE: EPDM, 60-mil, Black; INSTALLATION: Fully adhered; COVER BOARD: High-Density Polyisocyanurate
RPNG-2	METAL ROOFING SYSTEM	07 4113, 16	PRODUCT: Standing Seam Metal Roofing SEAM TYPE: Double-Lock; METAL: 16 ounce, Guttermount Copper, FINISH: Mill, Non-patinated UNDERLAYMENT: Synthetic Roofing Felt, GAF Deck Armor ICE/WATER: Self-Adhering, High-Temp Sheet; SLIP SHEET: Resin Paper;
RPNG-3	EPDM FLASHING	07 5323	MFR: Firestone or Carlisle; MEMBRANE: Cured EPDM, 60-mil, Black; Self-adhered, INSTALLATION: Fully adhered;
RR	ROOF HATCH	07 7200	PRODUCT: Smoke-Vent Insulated Roof Hatch, SIZE: 36" x 36"; MATERIAL: Aluminum, FINISH: Mill Finish
RSG-1	RESILIENT SOUND ISOLATION CLIP	09 2216	MFR: PAC International, Inc. MODEL: RSIC-1
SHELF-1	SHELVING SYSTEM STANDARD 24 in	06 4116	MFR: Edsal; MODEL: FLYC7244 SIZE: 84 in COLOR: Arctic White
SHELF-1	SHELVING SYSTEM SHELF AND BRACKET	06 4116	MFR: Edsal; MODEL: IN2616A SIZE: 24"W x 16"D COLOR: Arctic White
SHELF-1	SHELVING SYSTEM SHELF AND BRACKET	06 4116	MFR: Edsal; MODEL: IN2016A SIZE: 24"W x 16"D COLOR: Arctic White
SHELF-1	SHELVING SYSTEM STANDARD 90 in	06 4116	MFR: Edsal; MODEL: FLYC7296 SIZE: 96 in COLOR: Arctic White
SHTG-1	OSB SOLID SHEATHING	06 1600	PRODUCT: Structural Gypsum Sheathing TYPE: Type X, Glass-Mat Faces, THICKNESS: 5/8"
SHTG-3	PLYWOOD SHEATHING	06 1600	PRODUCT: Exterior Plywood Sheathing GRADE: DOC PS1, Exterior, EXT, SPAN RATING: 32/16, THICKNESS: 1/2"
SMF-1	SHEET METAL FLASHING - COPPER	07 6200	PRODUCT: Copper Sheet, FINISH: Mill, Non-Patinated, WEIGHT: 20 oz, UNO, GUTTERS: Match Existing Profile, DOWNSPOUTS: Formed Round, 3"D, UNDERLAYMENT: Self-Adhering, High-Temp Sheet;
SNF-2	SHEET METAL FLASHING - GRAVELSTOP	07 6200	PRODUCT: Coated Aluminum Sheet, THICKNESS: 0.040", UNO, COLOR: TBD, Match YCYK-1 and MCP-1;
SSF-1	SOLID SURFACE	12 3661	MFR: CAESARSTONE; STYLE: 4120; COLOR: RAVEN;
SSF-2	SOLID SURFACE	12 3661	MFR: CAESARSTONE; STYLE: 5141; COLOR: OCEAN FOAM;
STN-1	STONE VENEER	04 4313.13	MFR: Boremal Stone Corp; PRODUCT: Full Bed Veneer, COLOR: Fall Red Ashlar, TEXTURE: Rustic;
STN-2	CUT STONE TRIM	04 4313.13	MFR: Boremal Stone Corp; PRODUCT: Cut Limestone Shapes; COLOR: Indiana Buff (or Texas Creme); TEXTURE: Smooth;
TA-04	TOILET TISSUE DISPENSER JUMBO-ROLL (OFCI)	10 2800	MFR: TBD by Owner; STYLE: ; COLOR: ;
TA-05	PAPER TOWEL (FOLDED) DISPENSER	10 2800	MFR: Bobrick; MODEL: B-262; FINISH: Satin Stainless Steel;
TA-06	PAPER TOWEL (ROLL) DISPENSER (OFCI)	10 2430	MFR: TBD by Owner; STYLE: ; COLOR: ;
TA-11	LIQUID SOAP DISPENSER (OFCI)	10 2830	MFR: TBD by Owner; STYLE: ; COLOR: ;
TA-12	GRAB BAR	10 2800	MFR: Bobrick; MODEL: B-6806; FINISH: Satin Stainless Steel; DIAMETER: 1.25"; LENGTH: See Drawings;
TA-14	SANITARY-NAPKIN DISPOSAL UNIT	10 2800	MFR: Bobrick; MODEL: B-270; FINISH: Satin Stainless Steel;
TA-17	MIRROR UNIT (FRAMED)	10 2820	MFR: DESIGN KITCHEN REACH; STYLE: LEGANO MIRROR, SMALL; COLOR: BLACK;
TA-18	HOOK	10 2800	MFR: Bobrick; MODEL: B-6116; FINISH: Satin Nickel;
TA-24	DIAPER-CHANGING STATION	10 2800	MFR: Koala Kare; MODEL: KB110-SSRE; FINISH: Satin Stainless Steel;
TBP	THERMAL BREAK/FRAMING	07 2100	MFR: Advanced Architectural Products; PRODUCT: SMARTIE; MODEL: GREENHT
TBM	THERMAL BREAK MATERIAL - SEE STRUCTURAL	KSSN NOTES	MFR: Fabreeka or Amerstrem; PRODUCT: Structural Thermal Break Material
TL-1	CERAMIC TILE	09 3013	MFR: FIRECLAY TILE; STYLE: ARABLE; COLOR: CUSTOM - SPRUCE, HUNTER, LIMON, CARBON
TL-2	CERAMIC TILE (OFCI)	09 3013	MFR: DAL; MILLPORAL PLANS COLOR: N/A;
TL-3	CERAMIC TILE WALL BASE (OFCI)	09 3013	MFR: DAL; STYLE: 4" x 6", COVE BASE COLOR: N/A;
TLBD	TILE BACKER BOARD	09 2900	PRODUCT: Cement Board
TLFL-1	TILE FLOORING	09 3013	MFR: MODA; STYLE: SELECTION DNS, 122XN; COLOR: 1104 T;
TLFL-2	TILE FLOORING	09 3013	MFR: American Olean; STYLE: Quarry Naturals; COLOR: Shadow Gray 948; SIZE: 6x6
TRUD-1	ARCHITECTURAL PRECAST CONCRETE TREAD BONDED TO BENT STEEL RISERS	05 5100	
TRUD-2	PRAIRIE/PRECAST STAIR TREAD C-60 SELF-SUPPORTING FLAT TREAD	05 5100	MIN THICKNESS 2 1/2"
TS-1	STAINLESS STEEL TRUSS SYSTEM	20 9443	MFR: Jakob, SLC; PRODUCT: Grown-Guide System; MATERIAL: Type 316 Stainless Steel; ROPE TOP: Swaged Nicopress Head, ROPE BOTTOM: Swaged GreenGuide Eye; TENSIONING: Turnbuckle, MOUNTING: GreenGuide Spacer;
TPF	THRU-WALL FLASHING AND DRIP EDGE	07 2715	MFR: TBD; PRODUCT: 301STWF; TYPE: Sheet-Applied; DRIP EDGE: Stainless Steel
VB	UNDERSLAB VAPOR BARRIER	03 3000	MFR: Stego or Raven; PRODUCT: ASTM E1745, Class A; THICKNESS: Shall meet;
VWFB	WATER-VAPOR BARRIER MEMBRANE	07 2715	MFR: 3M; PRODUCT: 3015; TYPE: Sheet-Applied; VAPOR (max): 0.1 US perm; AIR (max): 0.004 CFM/ft² at 1.57 lb/ft²;
WB-1	RUBBER WALL BASE	09 6513	MFR: JOHNSONITE; STYLE: TRADITIONAL WALL BASE; COLOR: 93 BURNT UMBER 6"; PRODUCT: Sheet Plate Interior Wall Base,
WB-2	STEEL WALL BASE	05 5000	MFR: Accoya Technologies PLC; PRODUCT: Accoya Wood; SPECIES: Radiata Pine;
WD-1	ACETYLATED WOOD	06 2013	MFR: Accoya Technologies PLC; PRODUCT: Accoya Wood; SPECIES: Radiata Pine;
WD-2	INTERIOR FINISH WOOD	06 2023	PRODUCT: Reclaimed Wood for Interior Trim; SPECIES: Ash; FINISH: Clear;
WD-3	INTERIOR FINISH WOOD VENEER	09 2023	PRODUCT: Wood Veneer; SPECIES: Ash; FINISH: Clear;

MATERIAL / PRODUCT ID LIST with Spec Data

ID	Short Name	Section	Spec Data
WDCL-1	WOOD CEILING SYSTEM	09 5425	MFR: Armstrong; PRODUCT: Woodworks Grille; PANEL TYPE: 7296SQ; SLAT SIZE: 3/4" x 2 3/4"; SLATS PER PANEL: 8; PANEL SIZE: 12"W x 2 3/4"D; PANEL LENGTH: Custom, See Drawings; FINISH: Cedar Stain; GRID: Concealed Grid Product XL; COLOR: Match Stain; INFILL PRODUCT: Soft Acoustic; INFILL TYPE: 5625; INFILL COLOR: Black (Matte);
WDW-1	ALUMINUM/WOOD WINDOW	08 5200	MFR: Hurtwerke; TYPE: Direct Set; ASG: Cardinn 3P or 2P; GLASS: Retained Ash tumbled by Owner; PVC FINISH: Clear panes; ALUMINUM: Clear Anodized; COLOR: TBD, match MCP-1 and SM-2; EXTERIOR: Metal Cladding Heavy Commercial Duty; THICKNESS: 2 3/4";
WW-1	WINDOW FILM, PRIVACY	08 8733	MFR: 3M; PRODUCT: Fasara Glass Finish; PATTERN: Milky White (Mistro), SH-CMAN-J;
WP-1	WATERPROOFING MEMBRANE	07 1416	MFR: GCP Grace; PRODUCT: Procor;
WRB	WATER-RESISTIVE BARRIER	07 2500	PRODUCT: Single-Layer #15 Asphalt Felt; TYPE: ASTM D226, Type I; SLIP SHEET: Resin Paper;
WT-1A	ROLLER WINDOW SHADE, MOTORIZED	12 2413	MFR: Hunter Douglas; TYPE: Material, Single; SHADING: 5% Dayscreen; COLOR: GreenScreen Evolve HO3505, Shale;
WT-3R	ROLLER WINDOW SHADE, MANUAL	12 2413	MFR: Hunter Douglas; TYPE: Manual, Single; SHADING: 5% Dayscreen; COLOR: GreenScreen Evolve HO3505, Shale;

SHT NO	SHEET NAME
G002	SHEET INDEX, GENERAL NOTES AND MATERIALS
G003	SITE CONTEXT AND SYMBOLS
G004	TYPE TYS AND STYLES
G051	CCGL PLAN - OVERALL APPROACH
G052	CCGL PLAN AND ANALYSES
ARCHITECTURAL DEMOLITION	
AD100	SITE DEMOLITION PLAN
AD101	DEMOLITION PLANS
AD120	REFLECTED CEILING PLAN - DEMOLITION
CIVIL	
C100	EXISTING CONDITIONS PLAN
C500	DEMOLITION PLAN
C505	SITE PLAN
C506	GRADING & EROSION CONTROL PLAN
C506	UTILITY PLAN
C551	LIFT STATION DETAIL
C901	CONSTRUCTION DETAILS - 1
C901	CONSTRUCTION DETAILS - 2
C902	CONSTRUCTION DETAILS - 3
C903	CONSTRUCTION DETAILS - 4
LANDSCAPE	
L001	HARDSCAPE PLAN
L002	HARDSCAPE DETAILS
L003	GRADING PLAN
ARCHITECTURAL	
A000	ARCHITECTURAL SITE PLAN
A100	LEARNING CENTER FLOOR PLAN - LEVEL 1
A102	LEARNING CENTER FLOOR PLAN - LEVEL 2
A103	LEARNING CENTER ROOF PLAN
A111	GREENHOUSE - HEADHOUSE FLOOR + ROOF PLAN
A112	GREENHOUSE - HEADHOUSE SECTION AND ELEVATION
A121	REFLECTED CEILING PLAN - LEVEL 1 - EXTG + NEW
A122	REFLECTED CEILING PLAN - LEVEL 1 + 2 - EXTG + NEW
A131	REFLECTED CEILING PLAN - LEVEL 1 - EXISTING
A132	EXISTING BUILDING REFERENCE DRAWINGS
A151	TOILET ROOM PLANS AND ELEVATIONS
A152	TOILET ROOM PLANS AND ELEVATIONS
A191	ENLARGED PLANS AND SECTIONS
A201	EXTERIOR ELEVATIONS
A202	EXTERIOR ELEVATIONS
A251	BUILDING SECTIONS
A301	WALL SECTIONS
A351	EXTERIOR DETAILS
A352	EXTERIOR DETAILS
A353	EXTERIOR DETAILS
A354	EXTERIOR DETAILS
A355	EXTERIOR DETAILS
A356	EXTERIOR DETAILS
A357	EXTERIOR DETAILS
A358	EXTERIOR DETAILS - COPPER ROOFING
A401	VERTICAL CIRCULATION
A402	VERTICAL CIRCULATION DETAILS
A403	VERTICAL CIRCULATION DETAILS
A501	INTERIOR ELEVATIONS
A502	INTERIOR ELEVATIONS
A503	INTERIOR ELEVATIONS
A551	INTERIOR DETAILS
A552	INTERIOR DETAILS
A601	DOOR SCHEDULE, TYPES AND DETAILS
A651	WINDOW TYPES
A701	FINISH PLANS
A851	MILLWORK PLANS
A852	LEVEL 1 MILLWORK
A853	LEVEL 1 MILLWORK
A854	LEVEL 2 MILLWORK
A951	MILLWORK DETAILS
A952	MILLWORK DETAILS
A991	FURNITURE PLANS - ISSUED FOR REFERENCE ONLY
STRUCTURAL	
S001	GENERAL NOTES
S002	SYMBOLS AND ABBREVIATIONS
S101	LEARNING CENTER HELICAL PILE PLAN
S102	LEARNING CENTER FOUNDATION PLAN
S103	LEARNING CENTER LEVEL 2 FRAMING PLAN
S104	LEARNING CENTER ROOF FRAMING PLAN
S111	GREENHOUSE FOUNDATION PLAN
S112	GREENHOUSE ROOF FRAMING PLAN
S201	FOUNDATION DETAILS
S202	FOUNDATION DETAILS
S203	FOUNDATION DETAILS
S301	FRAMING DETAILS
S302	FRAMING DETAILS
GREENHOUSE	
GH1	GREENHOUSE POST PLAN
GH2	GREENHOUSE SIDEWALL ELEVATIONS
GH2.1	GREENHOUSE CORRIDOR PARTITION ELEVATIONS
GH3	GREENHOUSE GABLE ELEVATIONS
GH3.1	GREENHOUSE GABLE PARTITIONS
GH4	GREENHOUSE TRUSS SECTION
GH4.1	GREENHOUSE TRUSS DETAILS
GH5	GREENHOUSE FOUNDATION PLAN
GH5.1	GREENHOUSE POST AND BASE ANCHOR DETAILS
GH6	GREENHOUSE EQUIPMENT PLAN
GH6.1	GREENHOUSE BENCH PLAN
GH6.2	GREENHOUSE EQUIPMENT SECTIONS
GH6.3	GREENHOUSE CONTROL (GROWING AREA)
GH6.4	GREENHOUSE CONTROL (CORRIDOR)
GH6.5	GREENHOUSE CONTROL (CONSERVATORY)
GH6.6	GREENHOUSE CONTROL (INTERCONNECT)
GH6.8	TYPICAL GREENHOUSE DOOR, CELL DETAILS
GH7	GREENHOUSE RIDGE SECTION
GH8	TYPICAL GREENHOUSE SIDEWALL SECTION
GH8.1	TYPICAL GREENHOUSE PARTITION SECTION
GH9	GREENHOUSE ROOF TO CABLE SECTION
GH10	GREENHOUSE DOOR SCHEDULE
GH11	GREENHOUSE CLOSURE DETAILS

SHT NO	SHEET NAME
GREENHOUSE HEATING	
H1	GREENHOUSE HEATING SYSTEM NOTES & SCHEDULES
H2	GREENHOUSE HEATING SYSTEM LAYOUT
H3	GREENHOUSE HEATING SYSTEM PIPE MANIFOLD PLAN
H4	GREENHOUSE HEATING SYSTEM PIPE LAYOUT
H5	GREENHOUSE HEATING SYSTEM PIPE DETAILS
H6	GREENHOUSE UPPER & LOWER PIPE TUBE LAYOUT
H7	GREENHOUSE SNOW MELT PIPE TUBE LAYOUT
H4B	PIPE TUBE DETAILS
H4C	PIPE TUBE COVER AND INSULATION DETAILS
H5	TROPICAL SHED A PIPING ELEVATION
H5A	TROPICAL SHED B PIPING ELEVATION
H5B	ORCHID WT GHSE A PIPING ELEVATION
H5C	ORCHID WT GHSE B PIPING ELEVATION
H5E	PRODUCTION GHSE A PIPING ELEVATION
H6	MIXING VALVE DETAILS
H6A	ZONE CONTROL VALVE DETAILS
H7	BENCHTOP HEATING LAYOUT
H7A	BENCHTOP HEATING DETAILS
MECHANICAL	
M001	MECHANICAL TITLE SHEET
MD111	GREENHOUSE MECHANICAL PIPING DEMO PLAN
MD131	COMMONS AREA MECHANICAL DEMO PLAN
M201	MECHANICAL DETAILS
M202	MECHANICAL DETAILS
M301	MECHANICAL SCHEDULES
M302	MECHANICAL SCHEDULES
M303	MECHANICAL CONTROLS SCHEMATICS
M401	MECHANICAL CONTROL SCHEMATICS
M402	MECHANICAL CONTROL SCHEMATICS
PLUMBING	
P000	PLUMBING TITLE SHEET
PD111	GREENHOUSE PLUMBING DEMO PLAN - BELOW GRADE
PD112	GREENHOUSE PLUMBING DEMO PLAN - ABOVE GRADE
PD131	COMMONS AREA PLUMBING DEMO PLAN
P100	LEARNING CENTER PLUMBING PLAN - BELOW GRADE
P101	LEARNING CENTER PLUMBING PLAN - ABOVE GRADE
P102	LEARNING CENTER PLUMBING ROOF PLAN
P111	GREENHOUSE PLUMBING PLAN - BELOW GRADE
P112	GREENHOUSE PLUMBING PLAN - ABOVE GRADE
P131	COMMONS AREA PLUMBING PLAN
P201	PLUMBING RISER DIAGRAM
P301	PLUMBING DETAILS & SCHEDULES
P401	PLUMBING SCHEDULES AND PAINTING SCHEMATIC
IRRIGATION	
I100	IRRIGATION PLANT SHED
I101	IRRIGATION DEMO AND QUICK COUPLER PLAN
FIRE PROTECTION	
F000	SITE PLAN, GENERAL NOTES, DETAILS
F100	FIRE PROTECTION LEVEL 1
F101	FIRE PROTECTION PLAN EXTG BUILDING
F102	FIRE PROTECTION LEVEL 2 - NEW ADDITION
F103	FIRE PROTECTOR WITHIN BUILDING
ELECTRICAL	
E000	ELECTRICAL TITLE SHEET
ED100	LOBBY LIGHTING DEMOLITION
ED110	GREENHOUSE ELECTRICAL DEMO PLAN
E001	SITE LANDSCAPE POWER PLAN
E002	SECOND FLOOR EXTERIOR LIGHTING PLAN
E101	LEARNING CENTER LIGHTING PLAN
E102	LEARNING CENTER POWER PLAN
E103	LEARNING

Department of Public Works
Engineering Division
Robert F. Phillips, 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
Gregory T. Fries, P.E.
Kathleen M. Cryan

Principal Engineer 2
Christopher J. Petykowski, P.E.
John S. Fahrney, P.E.

Principal Engineer 1
Christina M. Bachmann, P.E.
Mark D. Moder, P.E.
Janet Schmidt, P.E.

Facilities & Sustainability
Jeanne E. Hoffman, Manager
Bryan Cooper, Principal Architect

Mapping Section Manager
Eric T. Pederson, P.S.

Financial Manager
Steven B. Danner-Rivers

July 10, 2018

NOTICE OF ADDENDUM
ADDENDUM NO. 4

CONTRACT NO. 8162, PROJECT NO. 17193
Olbrich Botanical Gardens Expansion Project 1

This addendum is issued to modify, explain or correct the original Drawings, Specifications, or Contract Documents marked as ***Olbrich Botanical Gardens Expansion Project 1, City of Madison Project 17193, Contract #8162, as issued on June 1, 2018*** and is hereby made a part of the contract documents. This addendum consists of three (3) pages, there are no referenced exhibits included with this addendum.

Please acknowledge this addendum on page E1 of the contract documents and/or in Section E: Bidder's Acknowledgement on Bid Express.

An electronic version of these documents can be found on the Bid Express web site at:
http://www.bidexpress.com

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

For questions regarding this bid, contact:

Randy Wiesner
City of Madison Engineering
Phone: 608-267-8679
Fax: 608-264-9275
Email: RWiesner@cityofmadison.com

Sincerely,

Robert F. Phillips, P.E., City Engineer

Cc: Greg Fries

1. GENERAL CONTRACT CONDITIONS

A. This section not used.

2. GENERAL CLARIFICATIONS, QUESTIONS AND ANSWERS

A. *Q:* Section 01 40 00 Quality Requirements under part 1.9.A state's tests and inspections are by Contractor unless explicitly assigned to Owner. The following sections are called out by Owner. Please clarify if the testing in these sections is by contractor or owner.

1. 03 30 00 - Cast in Place – 1.3.A.1 states owner will employ and inspection agency to perform the duties and responsibilities of testing.

A: Specification 03 30 00 Cast-In-Place Concrete - 1.3.A.1. shall read: The Contractor shall employ an Inspection Agency to perform the duties and responsibilities specified below.

2. 05 12 23 – Structural Steel 1.3.A.1 states owner will employ and inspection agency to perform the duties and responsibilities of testing.

A: Specification 05 12 23 Structural Steel - 1.3.A.1. shall read: The Contractor shall employ an Inspection Agency to perform the duties and responsibilities specified below.

3. 07 27 15 – Nonbituminous self adhering sheet air barriers – 3.4.b states owner will engage a qualified testing agency to perform tests.

A: Specification 07 27 15 Nonbituminous Self-Adhering Sheet Air Barriers – 3.4.B. shall read: Testing Agency: Contractor will engage a qualified testing agency to perform tests and inspections.

4. 07 84 13 – Firestopping – 3.3.A. states Owner will engage a qualified testing agency to perform tests…

A: Specification 07 84 13 Penetration Firestopping – 3.3.A. shall read: The Contractor will engage a qualified testing agency to perform tests and inspections according to ASTM E 2174.

5. 31 26 00 Steel Helical Piles – 1.4.A. states the owner shall pay for testing… Also Contractor to provide number of compression, lateral, and tension tests as required by drawings. 1.10.B&C&D.

A: Specification 31 26 00 Steel Helical Piles – 1.4.A.1. shall read: The Contractor shall employ an Inspection Agency to perform the duties and responsibilities specified below. Section 1.10.B.1. is correct as written. Section 1.10.C.1. is correct as written. Section 1.10.D.1. is correct as written.

6. Section 01 45 29 Testing Laboratory Services calls for the Contractor to test the following:

- Section 03 30 00 – within spec section 03 30 00 part 1.3A.1. the Owner is to employ the inspection agency.

  A: See answer to Question A.1. above.
- Section 05 12 – this spec section isn't part of the project documents, but 05 12 23 calls out by Owner under part 1.3.A.1.

  A: 01 45 29 Testing Laboratory Services – 1.1.B.2. shall read: Section 05 12 23: Structural Steel. See answer to Question A.2. above for an update to Specification 05 12 23 Structural Steel.
- Section 05 40 00 – Cold-Formed Steel Framing (CFSF) System – no testing is called out within the spec section.

  A: No testing is required in specification 05 40 00 Cold-Formed Steel Framing (CFSF) System. Part 1.1.B.3 shall be removed from Specification 01 45 29 Testing Laboratory Services.
- Section 31 20 00 – Earthwork – this spec section isn't part of the project documents.

  A: Part 1.1.B.4. is an incorrect reference. Project specifications do include two related sections: 31 20 00 Foundation Excavation and Backfill and 31 23 16 Earthwork. The Contractor shall be responsible for any testing required in both specifications.

3. ACCEPTABLE EQUIVALENTS
   A. This section not used.

4. SPECIFICATIONS
   A. This section not used.

5. DRAWINGS
   A. This section not used.

6. PROPOSAL
   A. This section not used.

End of Contract 8162 Addendum 4

SECTION E: BIDDERS ACKNOWLEDGEMENT

OLBRICH BOTANICAL GARDENS EXPANSION PROJECT 1
CONTRACT NO. 8162

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 - 2018 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. _____ through _____ 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 Joe Daniels Construction Co., Inc. (name of corporation, partnership, or person submitting bid) a corporation organized and existing under the laws of the State of Wisconsin a partnership consisting of _____; an individual trading as _____; of the City of Madison State of Wisconsin; that I have examined and carefully prepared this Proposal, from the plans and specifications and have checked the same in detail before submitting this Proposal; that I have fully authority to make such statements and submit this Proposal in (its, their) behalf; and that the said statements are true and correct.

Joseph A. Daniels
SIGNATURE Joseph A. Daniels

President
TITLE, IF ANY

Sworn and subscribed to before me this
12th day of July, 20 18.

Kim M. Sansbury
(Notary Public or other officer authorized to administer oaths)
My Commission Expires 07/17/2020

Bidders shall not add any conditions or qualifying statements to this Proposal.

Contract 8162 – Joe Daniels Construction Co., Inc.

Section E: Bidder's Acknowledgement

This section is a required document for the bid to be considered complete. There are two methods for completing the Bidder Acknowledgement Report. Method one: The report can be downloaded, completed, and uploaded to this site to be included with your electronic bid. Method two: The report can be downloaded from the site and submitted by hand to the City of Madison. Either method of submission requires that the Bidder Acknowledgement Report be received by the bid due date.

Method of Submittal for Bidder Acknowledgement (click in box below to choose) *
I will download Bidder Acknowledgement Downloadable Document, complete, and upload online.

The bidder acknowledges receipt of the following addenda to the contract for the above designated project. Please check the appropriate box for each addendum reviewed. If no addenda have been issued, then no boxes are required to be checked.

Any addenda issues after 12:00 P.M. on the Tuesday proceeding the bid due date shall include a provision extending the bid due date.

Addendum Acknowledgement

Acknowledge each Addenda reviewed by checking the appropriate checkboxes below.

- [x] Addendum 1 *
- [x] Addendum 2 *
- [x] Addendum 3 *
- [x] Addendum 4 *
- [ ] Addendum 5
- [ ] Addendum 6

Section F: Best Value Contracting (BVC)

This section is a required document for the bid to be considered complete. There are two methods for completing the Best Value Contracting (BVC) form. Method one: The form can be filled out online and submitted to this site to be included with your electronic bid. Method two: The form can be downloaded from the site and submitted by hand to the City of Madison.

Method of Submittal for BVC (click in box below to choose) *

I will submit Bid Express fillable online form (BVC).

Best Value Contracting
1. The Contractor shall indicate the non-apprenticeable trades used on this contract.
Trucking and Landscaping

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

OLBRICH BOTANICAL GARDENS EXPANSION PROJECT 1
CONTRACT NO. 8162

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: Joe Daniels Construction Co., Inc.

Address: 919 Applegate Road, Madison, WI 53713

Telephone Number: 608/271-4800 Fax Number: 608/271-4570

Contact Person/Title: Joseph A. Daniels - President

Prime Bidder Certification

I, Joseph A. Daniels (Name), President (Title) of

Joe Daniels Construction Co., Inc. (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

July 12, 2018
Date

OLBRICH BOTANICAL GARDENS EXPANSION PROJECT 1
CONTRACT NO. 8162

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
H&H Industries' - SBE Subcontractor	HVAC	.64 %
Burse Surveying	Staking	.13 %
Capitol Steel Erectors	Steel Erection	1.43 %
Integral Building Systems	Data/Voice	1.40 %
		%
		%
		%
		%
		%
		%
		%
		%
		%
Subtotal SBE who are NOT suppliers:		3.60 %

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: 3.60 %.

DANIELS

General Contractors

July 12, 2018

Affirmative Action Department
Madison Municipal Building
215 Martin Luther King Jr. Blvd.
Madison, WI 53701-1626

Re: Olbrich Botanical Gardens - Expansion Project 1
Contract #8162

On the above listed project, we intend to subcontract the following work.

Structural Steel Install, Masonry, Insulation, Waterproofing, Roofing, Aluminum Curtain Wall, Ceramic Tile, Acoustic Ceiling, Painting, Greenhouse, Elevator, Sprinkler, Plumbing, HVAC, Electric, Voice/Data, Fire Alarm and Flooring

Sincerely,

Joseph A. Daniels
President

kis

OLBRICH BOTANICAL GARDENS EXPANSION PROJECT 1

CONTRACT NO. 8162
DATE: 7/12/2018

			Joe Daniels Construction Co., Inc.
Item	Quantity	Price	Extension
Section B: Proposal Page			
90001 - Demolition and Construction of foundation, building, and required sitework per plans and specifications. - Lump Sum	1.00	$9,473,000.00	$9,473,000.00
90002 - Complete installation and testing of PV Solar System Equipment - Lump Sum	1.00	$39,300.00	$39,300.00
90003 - Complete installation and testing of Fire Hydrant Acct. 17133-51-140 - Lump Sum	1.00	$10,300.00	$10,300.00
3 Items	Totals		$9,522,600.00

Supplemental Unit Price Worksheet

Contract: 8162

Title: Olbrich Botanical Gardens - Expansion Project 1

Addendum 3

Item No.	Description	Qty.	Units	Unit Price (see note 1 below)
1	Specification 31 11 23; Geotextile Fabric, WisDOT Type SR (Subgrade Reinforcement). To be applied if undercut of the fire access lane is required during construction.	1	SY	$2.50
2	Specification 31 23 16; Excavation Below Subgrade (EBS). To be applied if undercut of the fire access lane is required during construction.	1	CY	$30.00
3	Specification 31 23 16; Excavation Below Subgrade (EBS) Backfill, 3" Breaker Run. To be applied if undercut of the fire access lane is required during construction.	1	CY	$58.00
4	Specification 31 23 16; Rock Excavation. To be applied if rock excavation of the fire access lane is required during construction.	1	CY	$125.00
5	Specification 31 26 00; Add for 1'-0" length of Helical Pier or fraction thereof. To be applied when the pier length installed is longer than as designed.	1	LF	$54.00
6	Specification 31 26 00; Deduct for 1'-0" length of Helical Pier or fraction thereof. To be applied when the pier length installed is shorter than as designed.	1	LF	$10.00

Notes:

1. Unit Price shall be used for all additions and deletions of work performed by change order as described in each item above.
2. The Contractor must fill out all unit prices in the table above and the bidder information below for bid to be accepted.

Contractor Information

Joseph A. Daniels

Bidders Signature

July 12, 2018

Date

Joseph A. Daniels

Bidders Printed Name (First, Last)

Joe Daniels Construction Co., Inc.

Company Name

Department of Public Works
Engineering Division
Robert F. Phillips, 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
Michael R. Dailey, P.E.

Principal Engineer 2
Gregory T. Fries, P.E.
Christopher J. Petykowski, P.E.

Principal Engineer 1
Christina M. Bachmann, P.E.
Eric L. Dundee, P.E.
John S. Fahmey, P.E.

Facilities & Sustainability
Jeanne E. Hoffman, Manager

Operations Manager
Kathleen M. Cryan

Mapping Section Manager
Eric T. Pederson, P.S.

Financial Manager
Steven B. Danner-Rivers

BIENNIAL BID BOND

Joe Daniels Construction Co., Inc.
(a corporation of the State of Wisconsin)
(individual), (partnership), (hereinafter referred to as the "Principal") and
The Cincinnati Insurance Company
a corporation of the State of Ohio (hereinafter referred to as the "Surety") and licensed to do business in the State of Wisconsin, are held and firmly bound unto the City of Madison, Wisconsin (hereinafter referred to as the "City"), in the sum equal to the individual proposal guaranty amounts of the total bid or bids of the Principal herein accepted by the City, for the payment of which the Principal and the Surety hereby jointly and severally bind ourselves, our heirs, executors, administrators, successors and assigns.

The condition of this obligation is that the Principal has submitted to the City certain bids for projects from the time period of February 1, 2018 through January 31, 2020.

If the Principal is awarded the contract(s) by the City and, within the time and manner required by law after the prescribed forms are presented for its signature, the Principal enters into (a) written contract(s) in accordance with the bid(s), and files with the City its bond(s) guaranteeing faithful performance and payment for all labor and materials, as required by law, or if the City rejects all bids for the work described, then this obligation shall be null and void; otherwise , it shall remain in full force and effect.

In the event the Principal shall fail to execute and deliver the contract(s) or the performance and payment bond(s), all within the time specified or any extension thereof, the Principal and Surety agree jointly and severally to pay to the City within ten (10) calendar days of written demand a total equal to the sum of the individual proposal guaranty amounts of the total bid(s) as liquidated damages.

The Surety, for value received, hereby agrees that the obligations of it and its bond shall be in no way impaired or affected by any extension of time within which the City may accept a bid, and the Surety does hereby waive notice of any such extension.

This bond may be terminated by the Surety upon giving thirty (30) days written notice to the City of its intent to terminate this bond and to be released and discharged therefrom, but such termination shall not operate to relieve or discharge the Surety from any liability already accrued or which shall accrue before the expiration of such thirty (30) day period.

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.

PRINCIPAL

Joe Daniels Construction Co., Inc.
COMPANY NAME

AFFIX SEAL (no seal)

11-16-2017
DATE

By: _____
SIGNATURE AND TITLE
Joseph A. Daniels - President

SURETY

The Cincinnati Insurance Company
COMPANY NAME

AFFIX SEAL

11-16-2017
DATE

By: _____
SIGNATURE AND TITLE
Elizabeth Mosca, Attorney-in-Fact

This certifies that I have been duly licensed as an agent for the Surety in Wisconsin under National Provider No. 12305256 for the year 2018 and appointed as attorney in fact with authority to execute this bid bond, which power of attorney has not been revoked.

11-16-2017
DATE

_____
AGENT SIGNATURE

PO Box 259408
ADDRESS

Madison, WI 53725-9408
CITY, STATE AND ZIP CODE

608-252-9674
TELEPHONE NUMBER

Note to Surety and Principal: Any bid submitted which this bond guarantees may be rejected if the Power of Attorney form showing that the Agent of Surety is currently authorized to execute bonds on behalf of Surety is not attached to this bond.

THE CINCINNATI INSURANCE COMPANY

Fairfield, Ohio

POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS: That THE CINCINNATI INSURANCE COMPANY, a corporation organized under the laws of the State of Ohio, and having its principal office in the City of Fairfield, Ohio, does hereby constitute and appoint

Tim Hausmann; Judith A. Walker; Patrick A. McKenna;
Brooke L. Parker and/or Elizabeth Mosca

of Madison, Wisconsin its true and lawful Attorney(s)-in-Fact to sign, execute, seal and deliver on its behalf as Surety, and as its act and deed, any and all bonds, policies, undertakings, or other like instruments, as follows:

Any such obligations in the United States, up to
Thirty Million and No/100 Dollars ($30,000,000.00).

This appointment is made under and by authority of the following resolution passed by the Board of Directors of said Company at a meeting held in the principal office of the Company, a quorum being present and voting, on the 6th day of December, 1958, which resolution is still in effect:

"RESOLVED, that the President or any Vice President be hereby authorized, and empowered to appoint Attorneys-in-Fact of the Company to execute any and all bonds, policies, undertakings, or other like instruments on behalf of the Corporation, and may authorize any officer or any such Attorney-in-Fact to affix the corporate seal; and may with or without cause modify or revoke any such appointment or authority. Any such writings so executed by such Attorneys-in-Fact shall be binding upon the Company as if they had been duly executed and acknowledged by the regularly elected officers of the Company."

This Power of Attorney is signed and sealed by facsimile under and by the authority of the following Resolution adopted by the Board of Directors of the Company at a meeting duly called and held on the 7th day of December, 1973.

"RESOLVED, that the signature of the President or a Vice President and the seal of the Company may be affixed by facsimile on any power of attorney granted, and the signature of the Secretary or Assistant Secretary and the seal of the Company may be affixed by facsimile to any certificate of any such power and any such power of certificate bearing such facsimile signature and seal shall be valid and binding on the Company. Any such power so executed and sealed and certified by certificate so executed and sealed shall, with respect to any bond or undertaking to which it is attached, continue to be valid and binding on the Company."

IN WITNESS WHEREOF, THE CINCINNATI INSURANCE COMPANY has caused these presents to be sealed with its corporate seal, duly attested by its Vice President this 1st day of October, 2015.

The Cincinnati Insurance Company CORPORATE SEAL OHIO

THE CINCINNATI INSURANCE COMPANY

Stephen A. Jutte

Vice President

STATE OF OHIO) ss:
COUNTY OF BUTLER)

On this 1st day of October, 2015, before me came the above-named Vice President of THE CINCINNATI INSURANCE COMPANY, to me personally known to be the officer described herein, and acknowledged that the seal affixed to the preceding instrument is the corporate seal of said Company and the corporate seal and the signature of the officer were duly affixed and subscribed to said instrument by the authority and direction of said corporation.

NOTARIAL SEAL STATE OF OHIO

Mark J. Huller

MARK J. HULLER, Attorney at Law
NOTARY PUBLIC - STATE OF OHIO
My commission has no expiration date. Section 147.03 O.R.C.

I, the undersigned Secretary or Assistant Secretary of THE CINCINNATI INSURANCE COMPANY, hereby certify that the above is a true and correct copy of the Original Power of Attorney issued by said Company, and do hereby further certify that the said Power of Attorney is still in full force and effect.

GIVEN under my hand and seal of said Company at Fairfield, Ohio.
this 16 day of November, 2017.

The Cincinnati Insurance Company CORPORATE SEAL OHIO

Scott R. Bolen

Secretary

BN-1005 (10/15)

CERTIFICATE OF BIENNIAL BID BOND

TIME PERIOD- VALID (FROM/TO) February 1, 2018 to January 31, 2020
NAME OF SURETY The Cincinnati Insurance Company
NAME OF CONTRACTOR Joe Daniels Construction Co., Inc.
CERTIFICATE HOLDER City of Madison, Wisconsin

This is to certify that a biennial bid bond issued by the above-named Surety is currently on file with the City of Madison.

This certificate is issued as a matter of information and conveys no rights upon the certificate holder and does not amend, extend or alter the coverage of the biennial bid bond.

Cancellation: Should the above policy be cancelled before the expiration date, the issuing Surety will give thirty (30) days written notice to the certificate holder indicated above.

SIGNATURE OF AUTHORIZED CONTRACTOR REPRESENTATIVE
Joseph A. Daniels - President

November 16, 2017
DATE

SECTION H: AGREEMENT

THIS AGREEMENT made this 8th day of August in the year Two Thousand and Eighteen between **JOE DANIELS CONSTRUCTION CO., INC.** hereinafter called the Contractor, and the City of Madison, Wisconsin, hereinafter called the City.

WHEREAS, the Common Council of the said City of Madison under the provisions of a resolution adopted **AUGUST 7, 2018**, and by virtue of authority vested in the said Council, has awarded to the Contractor the work of performing certain construction.

NOW, THEREFORE, the Contractor and the City, for the consideration hereinafter named, agree as follows:

1. **Scope of Work.** The Contractor shall, perform the construction, execution and completion of the following listed complete work or improvement in full compliance with the Plans, Specifications, Standard Specifications, Supplemental Specifications, Special Provisions and contract; 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:

OLBRICH BOTANICAL GARDENS EXPANSION PROJECT 1
CONTRACT NO. 8162

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 FIVE HUNDRED TWENTY-TWO THOUSAND SIX HUNDRED AND NO/100** ($**9,522,600.00**) Dollars being the amount bid by such Contractor and which was awarded to him/her as provided by law.

4. **Affirmative Action.** In the performance of the services under 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.

   The Contractor agrees that within thirty (30) days after the effective date of this agreement, the Contractor will provide to the City Affirmative Action Division certain workforce utilization statistics, using a form to be furnished by the City.

   If the contract is still in effect, or if the City enters into a new agreement with the Contractor, within one year after the date on which the form was required to be provided, the Contractor will provide updated workforce information using a second form, also to be furnished by the City. The second form will be submitted to the City Affirmative Action Division no later than one year after the date on which the first form was required to be provided.

   The Contractor further agrees that, for at least twelve (12) months after the effective date of this contract, it will notify the City Affirmative Action Division of each of its job openings at facilities in Dane County for which applicants not already employees of the Contractor are to be considered. The notice will include a job description, classification, qualifications and application procedures

and deadlines. The Contractor agrees to interview and consider candidates referred by the Affirmative Action Division if the candidate meets the minimum qualification standards established by the Contractor, and if the referral is timely. A referral is timely if it is received by the Contractor on or before the date started in the notice.

Articles of Agreement
Article I

The Contractor shall take affirmative action in accordance with the provisions of this contract to insure that applicants are employed, and that employees are treated during employment without regard to race, religion, color, age, marital status, disability, sex, sexual orientation, gender identity or national original and that the employer shall provide harassment free work environment for the realization of the potential of each employee. Such action shall include, but not be limited to, the following: employment, upgrading, demotion or transfer, recruitment or recruitment advertising, layoff or termination, rates of pay or other forms of compensation and selection for training including apprenticeship insofar as it is within the control of the Contractor. The Contractor agrees to post in conspicuous places available to employees and applicants notices to be provided by the City setting out the provisions of the nondiscrimination clauses in this contract.

Article II

The Contractor shall in all solicitations or advertisements for employees placed by or on behalf of the Contractors state that all qualified or qualifiable applicants will be employed without regard to race, religion, color, age, marital status, disability, sex, sexual orientation, gender identity or national origin.

Article III

The Contractor shall send to each labor union or representative of workers with which it has a collective bargaining agreement or other contract or understanding a notice to be provided by the City advising the labor union or worker's representative of the Contractor's equal employment opportunity and affirmative action commitments. Such notices shall be posted in conspicuous places available to employees and applicants for employment.

Article V

The Contractor agrees that it will comply with all provisions of the Affirmative Action Ordinance of the City of Madison, including the contract compliance requirements. The Contractor agrees to submit the model affirmative action plan for public works contractors in a form approved by the Affirmative Action Division Manager.

Article VI

The Contractor will maintain records as required by Section 39.02(9)(f) of the Madison General Ordinances and will provide the City Affirmative Action Division with access to such records and to persons who have relevant and necessary information, as provided in Section 39.02(9)(f). The City agrees to keep all such records confidential, except to the extent that public inspection is required by law.

Article VII

In the event of the Contractor's or subcontractor's failure to comply with the Equal Employment Opportunity and Affirmative Action Provisions of this contract or Section 39.03 and 39.02 of the Madison General Ordinances, it is agreed that the City at its option may do any or all of the following:

1. Cancel, terminate or suspend this Contract in whole or in part.

2. Declare the Contractor ineligible for further City contracts until the Affirmative Action requirements are met.

3. Recover on behalf of the City from the prime Contractor 0.5 percent of the contract award price for each week that such party fails or refuses to comply, in the nature of liquidated damages, but not to exceed a total of five percent (5%) of the contract price, or five thousand dollars ($5,000), 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.

OLBRICH BOTANICAL GARDENS EXPANSION PROJECT 1
CONTRACT NO. 8162

IN WITNESS WHEREOF, the Contractor has hereunto set his/her hand and seal and the City has caused these presents to be sealed with its corporate seal and to be subscribed by its Mayor and City Clerk the day and year first above written.

Countersigned:

JOE DANIELS CONSTRUCTION CO., INC.
Company Name

Keea I. Sainsbury 8/8/18
Witness Keea I. Sainsbury Date

Joseph A. Daniels 8/8/18
President Joseph A. Daniels Date

Keea I. Sainsbury 8/8/18
Witness Keea I. Sainsbury Date

Samuel J. Daniels 8/8/18
Secretary Samuel J. Daniels Date

CITY OF MADISON, WISCONSIN

Provisions have been made to pay the liability that will accrue under this contract.

Finance Director

Approved as to form:

Patricia Lawton
City Attorney

Signed this 20th day of AUGUST, 20 18

Witness

Mayor 20 AUG 2018
Date

Witness

Maribeth Witzel-Behl 8-14-2018
City Clerk Date

BOND NO. B1242684

SECTION I: PAYMENT AND PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS, that we **JOE DANIELS CONSTRUCTION CO., INC.** as principal, and The Cincinnati Insurance Company Company of Cincinnati, Ohio as surety, are held and firmly bound unto the City of Madison, Wisconsin, in the sum of **NINE MILLION FIVE HUNDRED TWENTY-TWO THOUSAND SIX HUNDRED AND NO/100** ($**9,522,600.00**) 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:

OLBRICH BOTANICAL GARDENS EXPANSION PROJECT 1
CONTRACT NO. 8162

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 8th day of August 2018

Countersigned:

Witness Keea I. Sainsbury

Secretary Samuel J. Daniels

JOE DANIELS CONSTRUCTION CO., INC.
Company Name (Principal)

President Joseph A. Daniels Seal No Seal

Approved as to form:

City Attorney

THE CINCINNATI INSURANCE COMPANY
Surety Seal
☐ Salary Employee ☒ Commission

By
Attorney-in-Fact Patrick A. McKenna

This certifies that I have been duly licensed as an agent for the above company in Wisconsin under National Producer Number ~~259408~~ 650765 for the year 2018, and appointed as attorney-in-fact with authority to execute this payment and performance bond which power of attorney has not been revoked.

August 8, 2018
Date

Agent Signature Patrick A. McKenna

THE CINCINNATI INSURANCE COMPANY

Fairfield, Ohio

POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS: That THE CINCINNATI INSURANCE COMPANY, a corporation organized under the laws of the State of Ohio, and having its principal office in the City of Fairfield, Ohio, does hereby constitute and appoint

Patrick A. McKenna; Judith A. Walker; Brooke L. Parker; Elizabeth Mosca and/or David Zenobi

of Madison, Wisconsin its true and lawful Attorney(s)-in-Fact to sign, execute, seal and deliver on its behalf as Surety, and as its act and deed, any and all bonds, policies, undertakings, or other like instruments, as follows:

Any such obligations in the United States, up to
Thirty Million and No/100 Dollars ($30,000,000.00).

This appointment is made under and by authority of the following resolution passed by the Board of Directors of said Company at a meeting held in the principal office of the Company, a quorum being present and voting, on the 6th day of December, 1958, which resolution is still in effect:

> "RESOLVED, that the President or any Vice President be hereby authorized, and empowered to appoint Attorneys-in-Fact of the Company to execute any and all bonds, policies, undertakings, or other like instruments on behalf of the Corporation, and may authorize any officer or any such Attorney-in-Fact to affix the corporate seal; and may with or without cause modify or revoke any such appointment or authority. Any such writings so executed by such Attorneys-in-Fact shall be binding upon the Company as if they had been duly executed and acknowledged by the regularly elected officers of the Company."

This Power of Attorney is signed and sealed by facsimile under and by the authority of the following Resolution adopted by the Board of Directors of the Company at a meeting duly called and held on the 7th day of December, 1973.

> "RESOLVED, that the signature of the President or a Vice President and the seal of the Company may be affixed by facsimile on any power of attorney granted, and the signature of the Secretary or Assistant Secretary and the seal of the Company may be affixed by facsimile to any certificate of any such power and any such power of certificate bearing such facsimile signature and seal shall be valid and binding on the Company. Any such power so executed and sealed and certified by certificate so executed and sealed shall, with respect to any bond or undertaking to which it is attached, continue to be valid and binding on the Company."

IN WITNESS WHEREOF, THE CINCINNATI INSURANCE COMPANY has caused these presents to be sealed with its corporate seal, duly attested by its Vice President this 8th day of March, 2017.

THE CINCINNATI INSURANCE COMPANY

Stephen A. Walter

Vice President

STATE OF OHIO) ss:
COUNTY OF BUTLER)

On this 8th day of March, 2017, before me came the above-named Vice President of THE CINCINNATI INSURANCE COMPANY, to me personally known to be the officer described herein, and acknowledged that the seal affixed to the preceding instrument is the corporate seal of said Company and the corporate seal and the signature of the officer were duly affixed and subscribed to said instrument by the authority and direction of said corporation.

Mark J. Huller

MARK J. HULLER, Attorney at Law
NOTARY PUBLIC - STATE OF OHIO
My commission has no expiration date. Section 147.03 O.R.C.

I, the undersigned Secretary or Assistant Secretary of THE CINCINNATI INSURANCE COMPANY, hereby certify that the above is a true and correct copy of the Original Power of Attorney issued by said Company, and do hereby further certify that the said Power of Attorney is still in full force and effect.

GIVEN under my hand and seal of said Company at Fairfield, Ohio.
this 8th day of August, 2018

Steven O. Lam

Secretary

BN-1005 (3/17)