SAGINAW VALLEY STATE UNIVERSITY

# RYDER CENTER - SECOND FLOOR OFFICE RENOVATIONS & R199M WOMEN'S LACROSSE LOCKER ROOM RENOVATIONS 2022

**SEPTEMBER 8, 2022**

Bid #23009

**Pre-Bid Meeting: Wednesday, September 14, 2022 at 10:00 a.m.**
**Meet at the east side of Ryder Center (see map)**

**Bids Due: Friday, September 23, 2022 at 2:00 p.m.**

Facilities Planning & Construction Department
7400 Bay Road
University Center, Michigan 48710
Tel. (989) 964-4074
Fax (989) 964-4096

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# INSTRUCTIONS TO BIDDERS

**OWNER:**

Saginaw Valley State University
7400 Bay Road
University Center, MI 48710

**PROJECT:**

Ryder Center
Second Floor Office Renovations
& R199M Women's Lacrosse Locker Room Renovations 2022
SVSU Bid No. 23009

**DESIGNER / ENGINEER:**

TSSF Architects, Inc.
122 N. Washington Ave. ◊ Saginaw, MI 48607
Ph: (989) 752-7311 ◊ Fax: (989) 752-7313

**PRE-BID MEETING/TOUR:**

| | |
|---|---|
| Date: | Wednesday, September 14, 2022 |
| Time: | 10:00 a.m. |
| Location: | Facilities Planning & Construction Office |
| Contact: | Mike Pazdro - SVSU |

**BID DUE DATE:**

| | |
|---|---|
| Date: | Friday, September 23, 2022 |
| Time: | 2:00 p.m. |

Note: Bids will be publicly opened and read aloud.

**BID LOCATION:**

Saginaw Valley State University
Facilities Planning & Construction Office (SCC-A 153)
7400 Bay Road, University Center, MI

Note: Bids must be received in the Facilities Planning & Construction Office prior to above due date and time. Bids delivered to any other office or location will be rejected. Late bids will not be accepted and will not be opened. Faxed bids will not be accepted.

**PROJECT TIME FRAMES:**

Second Floor Office Renovations:
During SVSU's Christmas Break

R199M Women's Lacrosse Locker Room Renovations
Begin Immediately and complete as soon as possible

1. LOCATION OF PROJECT

Ryder Center
Second Floor Office Renovations & R199M Women's Lacrosse Locker Room Renovations
7400 Bay Rd.
University Center, Michigan 48710

2. PROPOSALS AND SCOPE

A. BIDDING IS BY INVITATION ONLY. Proposals shall be accepted only from those firms that have been pre- qualified and invited to bid on this project. Sub-Contractors, if used, shall be from the pre-qualified list.

B. Proposals are invited for work in accordance with these specifications and the accompanying drawings prepared by Architect.

C. The Bidder is to fill out completely and submit in duplicate two (2) sets of the Proposal Form furnished with the documents. The forms must be filled out in ink, typewritten or by word processing, with signature in longhand. Proposal amounts must be stated in writing and figures. In case of a discrepancy between the written statement and the figures, the written statement will govern. Proposals submitted in any other form will not be considered.

D. Proposals must be delivered in a sealed envelope, properly addressed and labeled as follows:

Address to: Facilities Planning & Construction
Saginaw Valley State University
7400 Bay Road
University Center, MI 48710

Label as Follows: **SEALED BID ENCLOSED FOR:**
Ryder Center
Second Floor Office Renovations
& R199M Women's Lacrosse Locker Room Renovations
SVSU Bid #23009
Submitted by: Company Name

E. The Owner's Standard General Conditions, Supplemental Conditions and any other amendments, included herein, by reference or by addendum, govern all operations that are to be conducted in the performance of any contract entered into for the Work.

3. REQUIREMENTS FOR SIGNING PROPOSALS

A. Corporations: Signature of official shall be accompanied by a certified copy of the resolution of the Board of Directors authorizing the individual signing to bind the corporation.

B. Partnerships: Signature of one partner shall be accompanied by a certified copy of the power of attorney authorizing the individual signing to bind all partners. If bid is signed by all partners, no authorization is required.

C. Individual: No authorization is needed.

D. Each signature must be witnessed.

4. MODIFICATIONS

A. Modifications to a bid previously submitted will be accepted only if received prior to official bid opening time and properly identified with the proposal name, signed and dated. Indicate only amount of change in bid. Do not reveal original bid price. No oral modifications will be considered. Modifications shall be scanned & e-mailed, faxed or hand delivered.

5. EXAMINATION OF SITE

A. It is necessary for bidders to inform themselves of the conditions under which work is to be performed, the site of the work, the structures, the obstacles that may be encountered and all other relevant matters concerning the work to be performed. The Bidder, if awarded the contract, shall not be allowed any extra compensation by reason of any matter or thing concerning which such Bidder might have become fully self-informed, because of a failure to have informed self prior to the bidding.

6. TAXES

A. The Contractor shall include and be deemed to have included in his bid and contract price all Michigan Sales and Use Taxes currently imposed by Legislative enactment and as administered by the Michigan Department of Treasury, Revenue Division, on the bid date.

If the Contractor is not required to pay or bear the burden, or obtains a refund or drawback in whole or in part of any Michigan Sales or Use Tax, interest or penalty thereon, which was required to be and was deemed to have been included in the bid and contract price, the contract price shall be reduced by the amount thereof and the amount of such reduction, whether as a refund or otherwise, shall ensure solely to the benefit of the State of Michigan.

7. CONSIDERATION OF BIDS

A. The bidder acknowledges the right of the Owner to reject any or all bids and to waive any informality or irregularity in any bid received. In addition, the bidder recognizes the right of the Owner to reject a bid if the bidder failed to furnish any required bid security, or awardability or to submit the data required by the bidding documents, or if the bid is in any way incomplete, irregular or conditional.

B. It is the intent of the Owner to award a contract to the lowest responsible bidder provided the bid has been submitted in accordance with the requirements of the bidding documents, and does not exceed the funds available.

C. The University reserves the right to award to other than the low bidder if, in the opinion of the University, it is in their best interest to do so.

8. BID BOND

A. A Bid Bond is not required.

9. MICHIGAN PRODUCTS

A. All prime bidders and their subcontract bidders and suppliers shall utilize Michigan made products whenever possible where price, quality and performance are equal to or better than non-Michigan products.

10. INTERPRETATION OF DOCUMENTS AND ADDENDA

A. Before the Owner makes the award, neither the Owner nor the Designer/Engineer will give verbal answers to inquiries regarding the meaning of drawings and specifications, or verbal instructions. Any such verbal statements by any persons, prior to the award, are invalid.

B. Any explanation desired by bidders must be requested of the Designer/Engineer in writing, and if explanation is necessary, a reply will be made in the form of an addendum, a copy of which will be forwarded to each bidder who has received a set of the Contract Documents and to such other prospective bidders as have requested a copy of each addenda.

C. Any addenda issued to bidders prior to the date of receipt of proposals become a part of the Contract Documents and all proposals are to include the work described in the addenda. Each proposal submitted must list all addenda which have been received before the bid due date.

11. EQUAL EMPLOYMENT OPPORTUNITY CLAUSE

A. Saginaw Valley State University is an equal opportunity employer and is non-discriminatory in its policies and practices.

B. In the performance of any contract or purchase order resulting herefrom, the bidder, contractor, subcontractor or vendor agrees and covenants not to discriminate against an employee or applicant for employment for any reason directly or indirectly related to employment because of race, color, religion, national origin, sex, handicap, or disabled veteran or Vietnam era veteran status. The provisions of section 202 of Executive Order 11246, as amended, section 503 of the Rehabilitation Act of 1973 as amended, and 38USC2012, the Vietnam Era Readjustment Assistance Act of 1974 as amended are incorporated herein by specific reference.

C. The bidder, contractor, subcontractor, or vendor agrees to and is in compliance with other Federal, State, and Local laws, published rules, regulations, directives and orders that govern equal opportunity in matters related to employment.

12. UNFAIR LABOR PRACTICE

A. Public Act No. 278 of 1980 prohibits the State of Michigan from awarding a Contract or Subcontract to an employer who has been found in contempt of court by a Federal Court of Appeals, on not less than three (3) occasions involving different violations during the preceding seven (7) years, for failure to correct an unfair labor practice as prohibited by Section 8 of Chapter 372 of the National Labor Relations Act, 29 U.S.C. 158.

B. An employer who has a Contract with the State of Michigan may not, in relation to that Contract, Subcontract with such as employer.

C. The State of Michigan may rescind the Contract if the name of the employer or the name of a subcontractor, manufacturer, or supplier of the employer subsequently appears in the register of such employers which will be compiled by Michigan's Department of Labor pursuant to Section 2 of Public Act No. 278 of 1980.

END OF SECTION

# PROPOSAL FORM

**OWNER:** Saginaw Valley State University
7400 Bay Road
University Center, MI 48710

**PROJECT:** Ryder Center
Second Floor Office Renovations
& R199M Women's Lacrosse Locker Room Renovations
SVSU Bid No. 23009

**DESIGNER / ENGINEER:** TSSF Architects, Inc.
122 N. Washington Ave. ♢ Saginaw, Michigan

**CONTRACT:** General Construction

**Name of Bidder:** _____

**Address:** _____

_____

_____

**Telephone #:** _____ **Fax #:** _____

**TO:** Saginaw Valley State University
Facilities Planning & Construction Office
7400 Bay Road, University Center, MI

**PROPOSAL:** Pursuant to and in compliance with your Invitation to Bid and the Contract Documents relating to the above named project, the Undersigned agrees to enter into an Agreement with the Owner for the Stipulated Sum of:

Total Base Sum of _____

_____ Dollars ($_____)

**For Accounting Purposes, please provide cost per project.**

**Second Floor Office Renovations:**

Total Sum of _____

_____Dollars ($_____)

**R199M Women's Lacrosse Locker Room Renovations:**

Total Sum of _____

_____Dollars ($_____)

**VOLUNTARY ALTERNATES:**

Voluntary Alternate

_____

_____

Add / Subtract ($_____) to the base Proposal.

**ADDENDA:**

The undersigned has included in the Proposal the modifications to the work described in the following addenda issued subsequent to the Invitation to Bid and received prior to this submission.

Addendum No. _____ Date: _____

Addendum No. _____ Date: _____

Addendum No. _____ Date: _____

**AMERICAN MADE PRODUCTS & SERVICES:**

Saginaw Valley State University endeavors to buy products made in the United States of America whenever an American made* product is available that meets or exceeds the specifications requested and the price is equal to or lower than a foreign made product. Vendors are requested to bid American made products and/or service whenever available. Vendors may bid foreign made products or services when:

1. They are specified.
2. As an alternate as long as they are technically acceptable.

Each vendor must check the appropriate box for the products and/or services proposed. IF NOT CHECKED YOUR PROPOSAL MAY BE CONSIDERED INVALID.

_____Yes, meets the definition of American made products or services.

_____Are foreign made and/or foreign services.

*More than 50% of the product is manufactured or assembled in the United States.

**PROPOSAL SIGNATURE:**

The undersigned agrees to execute a contract for the Work covered by this proposal provided he is notified of its acceptance with sixty (60) days of the opening of proposals.

Date: _____ Name of Company_____

Signature _____

Print name_____

Title_____

Witnessed in Presence of: Signature_____

Print name_____

Date: _____ Title_____

Submit two (2) copies.

END OF SECTION

# PRE-QUALIFIED CONTRACTORS

| Company Name & Address | Phone # | Fax # |
|---|---|---|
| ATI Group<br>3419 Pierson Place, Flushing, MI 48433 | 810.230.6202 | 810.230.6208 |
| Beckering Advisor Incorporated<br>650 – 44th St. SE, Grand Rapids, MI 49548 | 616.532.8191 | 616.532.8193 |
| Blue Spader Contractors, Inc.<br>30375 Northwestern Hwy., Farmington Hills, MI 48334 | 734.394.0923 | |
| Braun Construction Group<br>39395 W. 12 Mile Rd., Ste. 100, Farmington Hills, MI 48331 | 248.848.0567 | 248.848.1039 |
| C.D. Barnes Associates<br>3437 Eastern Ave. SE, Grand Rapids, MI 49508 | 616.241.4491 | 616.241.1177 |
| The Christman Company<br>208 N. Capitol Ave., Lansing, MI 48933-1357 | 517.482.1488 | 517.482.3520 |
| Colasanti Construction Services, Inc.<br>672 Woodbridge, Ste. 100, Detroit, MI 48226 | 313.567.0060 | 313.567.7713 |
| Conquest Construction Co., Inc. (General Trades Only)<br>11805 Mayfield, Livonia, MI 48150 | 734.458.1800 | 734.458.2060 |
| DCC Construction<br>9100 Lapeer Rd., Davison, MI 48423 | 810.658.4322 | 810.658.4320 |
| D & D Building, Inc.<br>3264 Union, SE, Wyoming, MI 49548 | 616.243.5633 | 616.243.2010 |
| DeMaria Building Company, Inc.<br>3031 W. Grand Blvd., Ste. 624, Detroit, MI 48202 | 313.870.2800 | 313.870.2810 |
| DeShano Companies, Inc.<br>325 Commerce Court, Gladwin, MI 48624 | 989.426.2521 | 989.426.0526 |
| DeVere Construction Company Inc.<br>1030 DeVere Dr., Alpena, MI 49707 | 989.356.4411 | 989.356.1198 |
| E & L Construction Group, Inc.<br>3040 Airpark Dr. S., Flint, MI 48507 | 810.744.4300 | 810.744.1735 |
| Elkhorn Construction Co. Inc.<br>6072 N. Birch Hill Dr., Smiths Creek, MI 48074 | 810.367.7460 | 810.367.7462 |
| Elzinga & Volkers, Inc.<br>86 East Sixth Street, Holland, MI 49423 | 616.392.2383 | 616.392.3752 |
| Eurich Home Improvement Inc.<br>3734 Fortune Blvd., Saginaw, MI 48603 | 989.799.5645 | 989.799.3279 |

# PRE-QUALIFIED CONTRACTORS

| Company Name & Address | Phone # | Fax # |
|---|---|---|
| Frank Rewold and Son Inc.<br>333 E. Second St., Rochester, MI 48307 | 248.651.7242 | 248.651.5174 |
| George H. Pastor & Sons, Inc.<br>34018 Beacon, Livonia, MI 48150 | 734.522.3800 | 734.458.1988 |
| Gerace Construction Company, Inc.<br>4055 S. Saginaw Rd., Midland, MI 4864 | 989.496.2440 | 989.496.2465 |
| Gerald G. Bergman, Inc.<br>515 N. Woodbridge St., Saginaw, MI 48602 | 989.754.6545 | 989.754.5775 |
| Gilmour Construction, Inc.<br>1305 Weiss St., Frankenmuth, MI 48734 | 989.652.2015 | 989.652.8224 |
| Graham Construction Corp.<br>3399 Fashion Square Blvd., Saginaw, MI 48603 | 989.921.3030 | 989.921.3031 |
| Granger Construction Company<br>6267 Aurelius Rd., P.O. Box 22187, Lansing, MI 48909 | 517.393.1670 | 517.393.1382 |
| J. Perez Construction, Inc.<br>2232 Davison Rd., Flint, MI 48506 | 810.233.8555 | 810.233.8558 |
| J.R. Heineman & Sons<br>1224 N. Niagara St., Saginaw, MI 48602 | 989.753.8483 | 989.753.9644 |
| Kasco Inc.<br>226 E. Hudson, Royal Oak, MI 48067 | 248.547.1210 | 248.546.1276 |
| LaSalle Group Inc.<br>30375 Northwestern Hwy., Farmington Hills, MI 48334 | 734.394.0650 | 734.394.0730 |
| Leppek Construction Co.<br>3540 Old Kawkalin Rd., Bay City, MI 48706 | 989.684.5500 | 989.893.7547 |
| Moltus Building Group, LLC<br>3200 James Savage Rd., Ste. #4, Midland, MI 48642 | 989.486.9330 | 888.886.4523 |
| The Monahan Company<br>21321 Kelly Rd., Eastpointe, MI 48021 | 586.774.3800 | 586.774.2530 |
| Oliver / Hatcher Construction (do not self perform)<br>27333 Meadowbrook Rd., Ste. 100, Novi, MI 48377 | 248.374.1100 | 248.374.1110 |
| Pumford Construction, Inc.<br>1674 Champagne Dr. N., Saginaw, MI 48604 | 989.754.6262 | 989.754.6263 |
| R. C. Hendrick & Son, Inc.<br>2885 S. Graham Rd., Saginaw, MI 48609 | 989.781.8116 | 989.781.9512 |

# PRE-QUALIFIED CONTRACTORS

| Company Name & Address | Phone # | Fax # |
|---|---|---|
| R. L. White Development, Corp.<br>8240 Embury Rd., P.O. Box 4, Grand Blanc, MI 48480 | 810.695.2330 | 810.695.6377 |
| Roncelli, Inc.<br>6471 Metro Parkway, Sterling Heights, MI 48312 | 586.264.2060 | 586.979.3190 |
| Schonsheck, Inc.<br>51331 W. Pontiac Trail, Wixom, MI 48393 | 248.669.8800 | 248.669.0850 |
| Sorensen Gross Construction Services, LLC<br>3407 Torrey Rd., Flint, MI 48507 | 810.767.4821 | 810.238.6222 |
| Spence Brothers<br>417 McCoskry, Saginaw, MI 48601 | 989.752.0400 | 989.752.8769 |
| Sugar Construction, Inc.<br>2968 Venture Dr., Midland, MI 48640 | 989.631.4154 | 989.631.7012 |
| Three Rivers Corporation<br>3069 Vantage Point Dr., P.O. Box 1467, Midland MI 48641 | 989.631.9726 | 989.631.7402 |
| Triangle Associates, Inc.<br>3769 Three Mile Rd. NW, Grand Rapids, MI 49534 | 616.453.3950 | 616.453.5952 |
| Usztan, LLC<br>261 Collier Rd., Auburn Hills, MI 48326 | 248.332.7448 | 248.332.7452 |
| Walbridge<br>777 Woodward Ave., Ste. 300, Detroit, MI 48226 | 313.963.8000 | 313.234.0434 |
| Walsh Construction Company<br>3011 W. Grand Blvd., Ste. 2300, Detroit, MI 48202 | 313.873.6600 | 313.873.6633 |
| Wieland<br>4162 English Oak Dr., Lansing, MI 48911 | 517.372.8650 | 517.372.8961 |
| Wm. Bronner & Son Contractors, Inc.<br>393 List St., Frankenmuth, MI 48734 | 989.652.3229 | 989.652.3646 |
| Wobig Construction Co., Inc.<br>527 N. Woodbridge, Saginaw, MI 48602 | 989.752.1294 | 989.752.9535 |
| Wolgast Corporation<br>4835 Towne Centre Rd., Ste. 203, Saginaw, MI 48604 | 989.790.9120 | 989.790.9053 |
| Wolverine Building Group<br>4045 Barden Dr. SE, Grand Rapids, MI 49512 | 616.949.3360 | 616.949.6211 |

# PRE-QUALIFIED SUBCONTRACTORS

(Pre-Qualified Subcontractors are to submit their cost to companies on the Pre-Qualified Contractors list.)

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# PRE-QUALIFIED SUBCONTRACTORS

(Pre-Qualified Subcontractors are to submit their cost to companies on the Pre-Qualified Contractors list.)

## Cleaning & Waste Management

| Company Name & Address | Phone # | Fax # |
|---|---|---|
| Caravan Facilities Management LLC<br>1108 E. Big Beaver Rd., Troy, MI 48083 | 989.399.0000 | 989.399.0003 |
| Clean Team<br>6907 Westside Saginaw Rd., Ste. 4, Bay City, MI 48706<br>K.Miller@cleanteamclean.com | 989.752.2424 | 989.752.9581 |
| First Class Building Maintenance<br>2020 Durand St., Saginaw, MI 48602<br>FCBM@Provide.net | 989.752.7354 | 989.752.6790 |
| Romanow Building Services<br>3093 Enterprise Dr., Saginaw, MI 48603 | 989.799.9610 | 989.799.9626 |
| Warju's Janitorial Service LLC<br>1136 E. Caro Rd., Caro, MI 48723 | 989.551.8815 | 989.672.6231 |

# PRE-QUALIFIED SUBCONTRACTORS

(Pre-Qualified Subcontractors are to submit their cost to companies on the Pre-Qualified Contractors list.)

## Concrete

| Company Name & Address | Phone # | Fax # |
|---|---|---|
| A. J. Rehmus & Son Inc.<br>3702 Patterson Rd., P.O. Box 611, Bay City, MI 48706 | 989.686.8101 | 989.686.8168 |
| Eastlund Concrete Construction Inc.<br>3929 E. Holt Road, Holt, MI 48842 | 517.694.0204 | 517.694.2055 |
| Fessler & Bowman, Inc.<br>4099 Eagle's Nest Ct., Flushing, MI 48433 | 810.733.1313 | 810.733.7883 |
| Graham Construction Corp.<br>3399 Fashion Square Blvd., Saginaw, MI 48603 | 989.921.3030 | 989.921.3031 |
| Grand River Construction, Inc.<br>5210 36th Ave., Hudsonville, MI 49426 | 616.669.5611 | 616.669.3466 |
| Michigan Mudjacking<br>1699 N. Huron Rd., Pinconning, MI 48650 | 989.324.1658 | 989.879.2165 |
| Pumford Construction, Inc.<br>1674 Champagne Dr. N., Saginaw, MI 48604 | 989.754.6262 | 989.754.6263 |
| R. C. Hendrick & Son, Inc.<br>2885 S. Graham Rd., Saginaw, MI 48609 | 989.781.8116 | 989.781.9512 |
| Roe Roe's Concrete Liftng<br>19821 Gratiot Rd., Merrill, MI 48637 | 989.578.2257 | |
| Spence Brothers<br>203 S. Washington Ave., Ste. 360, Saginaw, MI 48607 | 989.752.0400 | 989.752.8769 |
| Sugar Construction, Inc.<br>2968 Venture Dr., Midland, MI 48640 | 989.631.4154 | 989.631.7012 |
| Superior Concrete Construction<br>3272 E. Townline Lk., P.O. Box 859, Harrison, MI 48625 | 989.539.4390 | 989.539.3456 |
| Three Rivers Corporation<br>3069 Vantage Point Dr., P.O. Box 1467, Midland MI 48641 | 989.631.9726 | 989.631.7402 |
| Wobig Construction Co., Inc.<br>527 N. Woodbridge, Saginaw, MI 48602 | 989.752.1294 | 989.752.9535 |

# PRE-QUALIFIED SUBCONTRACTORS

(Pre-Qualified Subcontractors are to submit their cost to companies on the Pre-Qualified Contractors list.)

## Masonry

| Company Name & Address | Phone # | Fax # |
|---|---|---|
| Akins Construction, Inc.<br>6565 East Nevada, Detroit, MI 48234 | 586.254.0992 | 586.254.2989 |
| Brend Contracting Co., Inc.<br>13120 23 Mile Rd., Shelby Twp., MI 48315 | 586.997.1320 | 586.997.1370 |
| Davenport Masonry, Inc.<br>P.O. Box 188, Holt, MI 48842 | 517.699.6157 | 517.699.6141 |
| Edgar Boettcher Mason Contractor Inc.<br>3803 N. Euclid Ave., Bay City, MI 48706 | 989.684.4807 | 989.684.4824 |
| Kasco Inc.<br>226 E. Hudson, Royal Oak, MI 48067 | 248.547.1210 | 248.546.1276 |
| Leidal & Hart Mason Contractors<br>32225 Schoolcraft Rd., Livonia, MI 48150 | 734.522.2400 | 734.522.8650 |
| McMath Masonry, Inc.<br>6210 Hackett Road, Freeland, MI 48623 | 989.695.2612 | 989.695.2652 |
| Mid-Michigan Masonry, Inc.<br>3045 E. Mercantile Dr., Midland, MI 48642 | 989.631.1860 | 989.631.1874 |
| Pumford Construction, Inc.<br>1674 Champagne Dr. N., Saginaw, MI 48604 | 989.754.6262 | 989.754.6263 |
| Schiffer Mason Contractors, Inc.<br>2190 Delhi NE St., P.O. Box 250, Holt, MI 48842 | 517.694.2566 | 517.694.1936 |
| Straus Masonry, Inc.<br>2580 N. Johnson Rd., Weidman, MI 48893 | 989.644.2090 | 989.644.3758 |

# PRE-QUALIFIED SUBCONTRACTORS

(Pre-Qualified Subcontractors are to submit their cost to companies on the Pre-Qualified Contractors list.)

## Roofing & Sheet Metal



| Company Name & Address | Phone # | Fax # |
|---|---|---|
| Ann Arbor Roofing Co.<br>328 East Six Mile Rd., P.O. Box 347, Whitmore Lake, MI 48189 | 734.449.9400 | 734.449.1135 |
| Beyer Roofing Company, Inc.<br>6241 Sherman Rd., Saginaw, MI 48604 | 989.754.7741 | 989.754.8971 |
| Bloom Roofing Systems, Inc.<br>12238 Emerson Dr., Brighton, MI 48116 | 248.264.7200 | 248.587.5068 |
| Bornor Restoration, Inc.<br>525 Filley St., Lansing, MI 48906-2975 | 517.482.1625 | 517.482.4840 |
| Brandle Roofing & Sheet Metal<br>3400 Centennial Dr., Midland, MI 48642 | 989.496.2076 | 989.496.3960 |
| Bri-Car Roofing & Sheet Metal<br>4597 S. Garfield Rd., Auburn, MI 48611 | 989.662.4532 | 989.662.4601 |
| Buchinger Roofing Inc.<br>1888 N. Gera Rd., P.O. Box 131, Reese, MI 48757 | 989.868.3621 | 989.868.3660 |
| CEI Michigan LLC<br>2140 Industrial St., P.O. Box 200, Howell, MI 48843 | 517.548.0039 | 517.548.0182 |
| Gerald G. Bergman, Inc.<br>515 N. Woodbridge St., Saginaw, MI 48602 | 989.754.6545 | 989.754.5775 |
| Great Lakes Roofing & Insulation Systems, Inc.<br>19022 S. M-129, Sault Ste. Marie, MI 49783 | 906.647.2916 | 906.647.2206 |
| Kawkawlin Roofing Company<br>2924 Old Kawkawlin Rd., P.O. Box 538, Kawkawlin, MI 48631 | 989.684.0561 | 989.684.6120 |
| Lutz Roofing Company, Inc.<br>4721 22 Mile Rd., Shelby Township, MI 48317 | 586.739.1148 | 586.739.7678 |
| McDonald Roofing<br>3960 Ann Arbor Rd., Jackson, MI 49202 | 517.764.1336 | 517.764.3286 |
| Mid Michigan Roofing, LLC<br>3232 Enterprise Dr., Saginaw, MI 48603 | 989.793.5834 | 989.799.8234 |
| National Roofing & Sheet Metal Co., Inc.<br>G-4130 Flint Asphalt Dr., Burton, MI 48529 | 810.742.7373 | 810.742.8726 |
| Royal Roofing Company, Inc.<br>2445 Brown Rd., Orion, MI 48359 | 248.276.7663 | 248.276.9170 |

# PRE-QUALIFIED SUBCONTRACTORS

(Pre-Qualified Subcontractors are to submit their cost to companies on the Pre-Qualified Contractors list.)

## Roofing & Sheet Metal



| Company Name & Address | Phone # | Fax # |
|---|---|---|
| Streng Construction Inc.<br>7481 Chesaning Rd., Chesaning, MI 48616 | 989.845.6365 | 989.845.5118 |
| Thos. Brown & Son Roofing Co.<br>700 Third St., Bay City, MI 48708 | 989.892.0069 | 989.892.2560 |
| Tri-Star Roofing & Sheet Metal LLC<br>2273 Wadhams Rd., Kimball, MI 48074 | 810.937.2756 | 810.937.2687 |
| Universal Roofing, Inc.<br>1455 N. Huron Rd., P.O. Box 399, Linwood, MI 48634 | 989.697.4449 | 989.697.4211 |
| Valley Roofing Co., Inc.<br>408 Woodside Ave., Bay City, MI 48708 | 989.892.2412 | 989.892.0181 |
| Vondette Roofing Inc.<br>5386 Garfield Rd., Saginaw, MI 48603 | 989.239.3870 | |
| Wendling Sheet Metal, Inc.<br>2633 Carrollton Rd., Saginaw, MI 48604 | 989.753.5286 | 989.753.8375 |
| Wolverine Building Group<br>4045 Barden Dr. SE, Grand Rapids, MI 49512 | 616.949.3360 | 616.949.6211 |

# PRE-QUALIFIED SUBCONTRACTORS

(Pre-Qualified Subcontractors are to submit their cost to companies on the Pre-Qualified Contractors list.)

## Damproofing and Waterproofing

| Company Name & Address | Phone # | Fax # |
|---|---|---|
| Custom Caulking, Inc.<br>1460 Comstock St., P.O. Box 381, Marne, MI 49435 | 616.677.3999 | 616.677.3990 |
| D.C. Byers Company<br>16429 Upton Rd., Lansing, MI 48823 | 616.538.7300 | 616.538.1970 |
| Helms Caulking, Inc.<br>6724 Pine Ridge Ct. SW, Jenison, MI 49428 | 616.538.7520 | 616.538.6944 |
| Premier Caulking, Inc.<br>4462 Remembrance Rd., Grand Rapids, MI 49534 | 616.454.5227 | 616.454.2571 |

# PRE-QUALIFIED SUBCONTRACTORS

(Pre-Qualified Subcontractors are to submit their cost to companies on the Pre-Qualified Contractors list.)

## Windows and Glazing

| Company Name & Address | Phone # | Fax # |
|---|---|---|
| American Glass and Metals Corporation<br>15100 Keel St., P.O. Box 701511, Plymouth, MI 48170 | 734.459.0760 | 734.459.0238 |
| Architectural Glass & Metals, Inc.<br>604 S. 8th St., Kalamazoo, MI 49009 | 269.375.6165 | 269.375.4765 |
| Architectural Glazing Systems, Inc.<br>7384 N. Clio Rd., Mt. Morris, MI 48458 | 810.687.8871 | 810.687.8873 |
| Bay Glass Company<br>1209 N. Madison Ave., Bay City, MI 48708 | 989.894.2866 | |
| Calvin & Company Inc.<br>5076 Pilgrim Rd., Flint, MI 48507 | 810.239.3524 | 810.239.3534 |
| Curtis Glass Company<br>1900 E. Maple, Troy, MI 48083 | 248.744.4480 | 248.744.4485 |
| Glazing Solutions Inc.<br>402 N. Main St., P.O. Box 131, Morrice, MI 48857 | 517.625.1011 | 517.625.1013 |
| Hewett Co., Inc.<br>210 Orchard Lake Rd., Pontiac, MI 48341 | 248.334.9200 | 248.334.3327 |
| Lansing Glass Company<br>330 Baker St., Lansing, MI 48910 | 517.374.2888 | 517.374.9727 |
| Madison Heights Glass Company Inc.<br>2020 Burdette, Ferndale, MI 48220 | 248.544.4334 | 248.544.7499 |
| Midland Glass Company<br>3057 E. Mercantile Dr., Midland, MI 48642-7833 | 989.835.6715 | 989.835.7536 |
| Universal Glass and Metals, Inc.<br>3000 Vinewood, Detroit, MI 48216 | 313.898.8225 | 313.898.8226 |
| Valley Glass Company<br>2424 Midland Rd., Saginaw, MI 48603 | 989.790.9342 | 989.790.3013 |

# PRE-QUALIFIED SUBCONTRACTORS

(Pre-Qualified Subcontractors are to submit their cost to companies on the Pre-Qualified Contractors list.)

## Drywall / Ceilings



| Company Name & Address | Phone # | Fax # |
|---|---|---|
| Acoustical Arts, Inc.<br>3601 Mertz Rd., Caro, MI 48723 | 989.672.2467 | 989.672.2133 |
| Bouma Corporation, The<br>1933 Northern Star Dr., Traverse City, MI 49686 | 231.947.2811 | 231.947.3112 |
| Central Interiors, Inc.<br>5490 Nasser St., Flint, MI 48505 | 810.785.3548 | 810.785.6970 |
| City Renovation & Trim, Inc.<br>2685 Paldan Dr., Auburn Hills, MI 48326 | 248.276.8900 | 248.276.8909 |
| Conquest Construction Co., Inc.<br>11805 Mayfield, Livonia, MI 48150 | 734.458.1800 | 734.458.2060 |
| Integrity Interiors, Inc.<br>622 East Cesar E. Chavez Ave., Lansing, MI 48906 | 517.332.8457 | 517.332.8458 |
| J.M. Petrie Acoustical, Inc.<br>603 S. Niagara St., Saginaw, MI 48602-1536 | 989.799.8511 | 989.799.0772 |
| Kasco Inc.<br>226 E. Hudson, Royal Oak, MI 48067 | 248.547.1210 | 248.546.1276 |
| Matric Company<br>4412 Ace Commercial Ct., Bay City, MI 48706 | 989.684.2950 | 989.684.4487 |
| Metal Arts Construction, Inc.<br>1700 Gover Pkwy., P.O. Box 157, Mt. Pleasant, MI 48804 | 989.772.0782 | 989.779.0017 |
| Pumford Construction, Inc.<br>1674 Champagne Dr. N., Saginaw, MI 48604 | 989.754.6262 | 989.754.6263 |
| Ramar Construction<br>2621 Carrollton Rd., Saginaw, MI 48604 | 989.753.6971 | 989.753.5195 |
| Ritsema Associates<br>3000 Dormax SW, Grandville, MI 49418 | 616.538.0120 | 616.538.9695 |
| Saylor's, Inc.<br>8751 Whiteford Rd., Ottawa Lake, MI 49267 | 734.856.4979 | 734.856.6099 |
| Sobie Company, Inc.<br>3276 Industrial Dr. SE, Dutton, MI 49316 | 616.698.9800 | 616.698.0994 |
| Tri-City Acoustical, Inc.<br>421 W. Morley Dr., Saginaw, MI 48601 | 989.752.9301 | 989.752.8831 |

# PRE-QUALIFIED SUBCONTRACTORS

(Pre-Qualified Subcontractors are to submit their cost to companies on the Pre-Qualified Contractors list.)

## Drywall / Ceilings



| Company Name & Address | Phone # | Fax # |
|---|---|---|
| Turner-Brooks, Inc.<br>28811 John R., Madison Heights, MI 48071 | 248.548.3400 | 248.548.9213 |
| William Reichenbach Company<br>4216 Legacy Pkwy., Lansing, MI 48909 | 517.882.3404 | 517.882.3726 |
| Wobig Construction Co., Inc.<br>527 N. Woodbridge, Saginaw, MI 48602 | 989.752.1294 | 989.752.9535 |

# PRE-QUALIFIED SUBCONTRACTORS

(Pre-Qualified Subcontractors are to submit their cost to companies on the Pre-Qualified Contractors list.)

## Flooring



| Company Name & Address | Phone # | Fax # |
|---|---|---|
| Artisan Tile Inc.<br>9864 E. Grand River, Ste 110-132, Brighton, MI 48116 | 810.220.2370 | 810.220.3762 |
| A. T. Frank Co., Inc.<br>3135 Boardwalk, Saginaw, MI 48603 | 989.497.1900 | 989.497.8230 |
| Bay Area Specialty Flooring LLC<br>7870 Webster Rd., P.O. Box 280, Freeland, MI 48623 | 989.695.5363 | 989.695.9394 |
| Bouma Corporation, The<br>1933 Northern Star Dr., Traverse City, MI 49686 | 231.947.2811 | 231.947.3112 |
| Central Tile & Terrazzo Co., Inc.<br>5180 South 9th St., Kalamazoo, MI 49009 | 269.375.1660 | 269.375.4522 |
| Gehrke's Commercial Flooring<br>4890 Curve Rd., Freeland, MI 48623 | 989.781.0879 | 989.781.1756 |
| Integrity Interiors, Inc.<br>622 East Cesar E. Chavez Ave., Lansing, MI 48906 | 517.332.8457 | 517.332.8458 |
| Kasco Inc.<br>226 E. Hudson, Royal Oak, MI 48067 | 248.547.1210 | 248.546.1276 |
| Mike's Custom Tile Co.<br>206 B East Grove St., Kawkawlin, MI 48631 | 989.686.5975 | |
| MIS Corporation - Michigan.<br>3515 Janes Ave., Saginaw, MI 48601 | 989.753.5599 | 989.753.3119 |
| NBS (National Business Supply, Inc.)<br>2595 Bellingham, Troy, MI 48083 | 248.823.5400 | 248.823.5401 |
| Northeastern Paint Supply, Inc.<br>2883 McCarty Rd., Saginaw, MI 48603 | 989.799.8190 | 989.799.8195 |
| O'Connors Carpet One<br>5355 Gratiot Rd., Saginaw, MI 48638 | 989.793.0960 | 989.793.8494 |
| Ritsema Associates<br>3000 Dormax SW, Grandville, MI 49418 | 616.538.0120 | 616.538.9695 |
| Seelye Group LTD<br>1411 Lake Lansing Rd., Lansing, MI 48912 | 888.297.1838 | 517.485.2692 |
| Sobie Company, Inc.<br>3276 Industrial Dr. SE, Dutton, MI 49316 | 616.698.9800 | 616.698.0994 |

# PRE-QUALIFIED SUBCONTRACTORS

(Pre-Qualified Subcontractors are to submit their cost to companies on the Pre-Qualified Contractors list.)

## Flooring



| Company Name & Address | Phone # | Fax # |
|---|---|---|
| Solution Planning & Contract Environment, Inc. (SPACE)<br>3142 Vantage Point Dr., Midland, MI 48642 | 989.835.5151 | 989.835.5357 |
| Superior Floor Coverings LLC<br>5154 M-21, Corunna, MI 48817 | 989-472-4445 | N/A |
| Supreme Floor Covering, Inc.<br>1392 S. Valley Center Dr., Bay City, MI 48706 | 989.684.8888 | 989.684.9255 |
| TerCon Systems<br>3555 Jewell Rd., Howell, MI 48843 | 248.709.8515 | |
| Valley Carpet Inc.<br>3450 S. Huron Rd., Bay City, MI 48706 | 989.684.6065 | 989.684.0909 |
| Wolverine Stone Company<br>27270 Gloede, Warren, MI 48088 | 586.777.7788 | 586.777.7853 |

# PRE-QUALIFIED SUBCONTRACTORS

(Pre-Qualified Subcontractors are to submit their cost to companies on the Pre-Qualified Contractors list.)

## Painting

| Company Name & Address | Phone # | Fax # |
|---|---|---|
| Akins Construction, Inc.<br>6565 East Nevada, Detroit, MI 48234 | 586.254.0992 | 586.254.2989 |
| Detail Painting Inc.<br>62 Elder Ave., Grant, MI 49327 | 231.834.1400 | 231.834.1413 |
| Hock Painting Inc.<br>1995 W. Greenwood Rd., Alger, MI 48610 | 989.345.7650 | 810.564.9880 |
| Kasco Inc.<br>226 E. Hudson, Royal Oak, MI 48067 | 248.547.1210 | 248.546.1276 |
| Larkin's Painters, Inc.<br>614 S. Fayette St., Saginaw, MI 48602 | 989.793.8077 | 989.793.4673 |
| Metal Arts Construction, Inc.<br>1700 Gover Pkwy., P.O. Box 157, Mt. Pleasant, MI 48804 | 989.772.0782 | 989.779.0017 |
| Murray Painting Co.<br>6078 Hackett Rd., Freeland, MI 48623 | 989.695.8152 | 989.695.8199 |
| Niles Construction Services, Inc.<br>5048 Pilgrim Rd., Flint, MI 48507 | 810.238.9100 | 810.736.0473 |
| Niles Industrial, LLC<br>201 S. Alloy Dr., Fenton, MI 48430 | 810.593.7000 | 810.593.7001 |
| Northern Bay Painting LLC<br>780 N. Gavord Rd., Sterling, MI 48659 | 989.225.1220 | 989.654.2951 |
| Ritsema Associates<br>3000 Dormax SW, Grandville, MI 49418 | 616.538.0120 | 616.538.9695 |
| Seaway Painting L.L.C.<br>31801 Schoolcraft, Livonia, MI 48150 | 734.522.2440 | 734.522.6022 |
| Seven Brothers Painting, Inc.<br>50805 Rizzo Dr., Shelby Twp., MI 48312 | 586.977.5906 | 586.412.0368 |
| Signature Painting<br>211 First St., P.O. Box 535, Breckenridge, MI 48615 | 989.842.5984 | 989.463.6945 |
| T & M Painting, Inc.<br>215 Hayden St., Saginaw, MI 48607 | 989.754.0099 | 989.754.6728 |
| Thermico, Inc.<br>3405 Centennial Dr., Ste. 2, Midland, MI 48642 | 989.496.2927 | 989.496.7220 |

# PRE-QUALIFIED SUBCONTRACTORS

(Pre-Qualified Subcontractors are to submit their cost to companies on the Pre-Qualified Contractors list.)

## Casework

| Company Name & Address | Phone # | Fax # |
|---|---|---|
| Architectural Systems Group, LLC<br>92 Veterans Dr., Holland, MI 49423 | 616.396.9993 | 616.396.1362 |
| Case Systems Inc.<br>2700 James Savage Rd., Midland, MI 48642 | 989.496.9510 | 989.496.9928 |
| Detroit Technical Equipment Company<br>55 E. Long Lake Rd. #433, Troy, MI 48085 | 248.232.8894 | 248.232.8895 |
| Eyewood Design Inc.<br>1954 N. Betsie River Rd., Interlochen, MI 49643 | 231.275.5457 | 231.275.2214 |
| Farnell Contracting<br>3355 Lahring Rd., Linden, MI 48451 | 810.714.3421 | 810.714.3628 |
| Farnell Equipment Co.<br>2950 Todd Rd., Troy, MI 48084 | 248.643.8890 | 248.643.9472 |
| Graham Construction Corp. (Swanstone Approved)<br>3399 Fashion Square Blvd., Saginaw, MI 48603 | 989.921.3030 | 989.921.3031 |
| KJP Sales, Inc.<br>915 E. Isabella Rd., Midland, MI 48640 | 989.835.4500 | 989.835.3366 |
| Owens Cabinet<br>1928 Stark Rd., Midland MI 48642 | 989.835.1293 | 989.835.2096 |
| Phoenix Casework Inc. (Swanstone Approved)<br>1407 Woodside Ave., Essexville, MI 48642 | 989.295.9811 | 989.892.3154 |
| Stonecreek Interior Systems, LLC<br>7603 Green Meadows Dr., Lewis Center, OH 43035 | 740.548.2451 | 740.548.2351 |
| Strata Design, Inc.<br>1645 Park Dr., Traverse City, MI 48686<br>P.O. Box 6250, Traverse City, MI 49696-6250 | 231.929.2140 | 231.929.4958 |
| Three Rivers Corporation (Swanstone Approved)<br>3069 Vantage Point Dr., P.O. Box 1467, Midland MI 48641 | 989.631.9726 | 989.631.7402 |
| Wobig Construction Co., Inc. (Swanstone Approved)<br>527 N. Woodbridge, Saginaw, MI 48602 | 989.752.1294 | 989.752.9535 |

# PRE-QUALIFIED SUBCONTRACTORS

(Pre-Qualified Subcontractors are to submit their cost to companies on the Pre-Qualified Contractors list.)

## Water-Based Fire-Suppression Systems

| Company Name & Address | Phone # | Fax # |
|---|---|---|
| Bay Line Fire Protection<br>5913 North Huron Rd., Pinconning, MI 48650 | 989.879.4639 | 989.879.7126 |
| Beck Fire Protection, Inc.<br>5370 W. Vienna Rd., P.O. Box 496, Clio, MI 48420 | 810.687.7770 | 810.687.9990 |
| Brigade Fire Protection, Inc.<br>5701 Safety Dr., Belmont, MI 49306 | 800.886.1614 | 616.784.1140 |
| Dependable Fire Protection Inc.<br>13360 White Creek Ave. NE, Cedar Springs, MI 49319 | 616.696.8000 | 616.696.8511 |
| Dynamic Piping Co., Inc.<br>14816 Gratiot Rd., P.O. Box 590, Hemlock, MI 48626 | 989.642.5257 | 989.642.5258 |
| Great Lakes Fire Protection Inc.<br>14033 N. Saginaw Rd., P.O. Box 278, Clio, MI 48420 | 810.687.1414 | 810.686.9292 |
| Interstate Fire Protection, Inc.<br>28807 Reilly Rd., New Hudson, MI 48165 | 248.667.9180 | 248.667.9175 |
| John E. Green Company<br>778 Bridgeview South, Saginaw, MI 48604 | 989.752.5100 | 989.752.0424 |
| S.A. Comunale Company, Inc.<br>23042 Commerce Dr., Farmington Hills, MI 48335 | 248.427.0724 | 248.427.0750 |
| Total Fire Protection Inc.<br>5062 Kendrick Court SE, Grand Rapids, MI 49512 | 616.735.2300 | 616.735.2330 |
| Winninger Fire Protection, Inc.<br>244 Cherry St., P.O. Box 283, Frankenmuth, MI 48734 | 989.652.4438 | 989.652.8570 |
| Wolverine Fire Protection Co.<br>8067 N. Dort Hwy., P.O. Box 219, Mt. Morris, MI 48458 | 810.686.4630 | 810.686.0440 |

# PRE-QUALIFIED SUBCONTRACTORS

(Pre-Qualified Subcontractors are to submit their cost to companies on the Pre-Qualified Contractors list.)

## Plumbing



| Company Name & Address | Phone # | Fax # |
|---|---|---|
| ATI Group<br>3419 Pierson Place, Flushing, MI 48433 | 810.230.6202 | 810.230.6208 |
| Beauchamps Heating & Cooling, LLC<br>1376 E. Prairie Rd, Midland, MI 48640 | 989.486.9505 | |
| Contrast Mechanical, Inc.<br>15825 Leone Dr., Macomb Twp., MI 48042 | 586.786.1200 | 586.786.1205 |
| Dickerson Mechanical, Inc.<br>415 W. Rising St., P.O. Box 250, Davison, MI 48423 | 810.653.7290 | 810.653.1415 |
| Dunbar Mechanical, Inc.<br>9282 General Dr., Plymouth, MI 48170 | 248.675.9456 | 419.537.8840 |
| Goyette Mechanical Co., Inc.<br>3842 Gorey Ave., Flint, MI 48506 | 810.743.6883 | 810.743.9114 |
| Hayes Mechanical<br>318 N. 25th St., Saginaw, MI 48601 | 989.401.5599 | 989.401.5590 |
| J. E. Johnson, Inc.<br>1550 E. Virginia Dr., Midland, MI 48642 | 989.835.6671<br>800.646.2690 | 989.835.7147 |
| John E. Green Company<br>778 Bridgeview South, Saginaw, MI 48604 | 989.752.5100 | 989.752.0424 |
| Johnson & Wood LLC<br>1745 N. Outer Dr., Saginaw, MI 48601 | 989.401.8390 | 989.401.8392 |
| M.A.P. Mechanical Contractors, Inc.<br>2000 Austin, Midland, MI 48640 | 989.496.3456 | 989.496.7444 |
| Monarch Welding<br>1566 Tech Park Dr., Bay City, MI 48706 | 989.684.3400 | 989.684.0344 |
| Pleune Service Co.<br>750 Himes S.E., Grand Rapids, MI 49548 | 616.243.6374 | 616.243.5387 |
| Remer Plumbing, Heating & Air Conditioning, Inc.<br>5565 State Street, P.O. Box 1569, Saginaw, MI 48605 | 989.792.8738 | 989.793.7312 |
| S & D Mechanical Services, Inc.<br>1921 Howard Ave., Flint, MI 4850 | 810.238.9333 | 810.238.9338 |
| Smillie Plumbing & Heating, Inc.<br>10270 Pierce Rd., Freeland, MI 48623 | 989.695.5133 | 989.695.2226 |

# PRE-QUALIFIED SUBCONTRACTORS

(Pre-Qualified Subcontractors are to submit their cost to companies on the Pre-Qualified Contractors list.)

## Plumbing



| Company Name & Address | Phone # | Fax # |
|---|---|---|
| W. Soule & Company<br>7125 S. Sprinkle Rd., Portage, MI 49002 | 269.324.7001 | 269.324.7950 |
| William E. Walter, Inc.<br>1917 Howard Ave., Flint, MI 48503 | 810.232.7459 | 810.232.8698 |
| Wirtz Plumbing & Heating, Inc.<br>7876 N. River Rd., Freeland, MI 48623 | 989.692.0655 | 989.692.0891 |

# PRE-QUALIFIED SUBCONTRACTORS

(Pre-Qualified Subcontractors are to submit their cost to companies on the Pre-Qualified Contractors list.)

## HVAC



| Company Name & Address | Phone # | Fax # |
|---|---|---|
| ATI Group<br>3419 Pierson Place, Flushing, MI 48433 | 810.230.6202 | 810.230.6208 |
| Beauchamps Heating & Cooling, LLC<br>1376 E. Prairie Rd, Midland, MI 48640 | 989.486.9505 | |
| Contrast Mechanical, Inc.<br>15825 Leone Dr., Macomb Twp., MI 48042 | 586.786.1200 | 586.786.1205 |
| Dickerson Mechanical, Inc.<br>415 W. Rising St., P.O. Box 250, Davison, MI 48423 | 810.653.7290 | 810.653.1415 |
| Dunbar Mechanical, Inc.<br>9282 General Dr., Plymouth, MI 48170 | 248.675.9456 | 419.537.8840 |
| Goyette Mechanical Co., Inc.<br>3842 Gorey Ave., Flint, MI 48506 | 810.743.6883 | 810.743.9114 |
| Hayes Mechanical<br>318 N. 25th St., Saginaw, MI 48601 | 989.401.5599 | 989.401.5590 |
| J. E. Johnson, Inc.<br>1550 E. Virginia Dr., Midland, MI 48642 | 989.835.6671<br>800.646.2690 | 989.835.7147 |
| John E. Green Company<br>778 Bridgeview South, Saginaw, MI 48604 | 989.752.5100 | 989.752.0424 |
| Johnson & Wood LLC<br>1745 N. Outer Dr., Saginaw, MI 48601 | 989.401.8390 | 989.401.8392 |
| M.A.P. Mechanical Contractors, Inc.<br>2000 Austin, Midland, MI 48640 | 989.496.3456 | 989.496.7444 |
| Monarch Welding<br>1566 Tech Park Dr., Bay City, MI 48706 | 989.684.3400 | 989.684.0344 |
| Pleune Service Co.<br>750 Himes S.E., Grand Rapids, MI 49548 | 616.243.6374 | 616.243.5387 |
| Remer Plumbing, Heating & Air Conditioning, Inc.<br>5565 State Street, P.O. Box 1569, Saginaw, MI 48605 | 989.792.8738 | 989.793.7312 |
| S & D Mechanical Services, Inc.<br>1921 Howard Ave., Flint, MI 4850 | 810.238.9333 | 810.238.9338 |
| Smillie Plumbing & Heating, Inc.<br>10270 Pierce Rd., Freeland, MI 48623 | 989.695.5133 | 989.695.2226 |

# PRE-QUALIFIED SUBCONTRACTORS

(Pre-Qualified Subcontractors are to submit their cost to companies on the Pre-Qualified Contractors list.)

## HVAC



| Company Name & Address | Phone # | Fax # |
|---|---|---|
| W. Soule & Company<br>7125 S. Sprinkle Rd., Portage, MI 49002 | 269.324.7001 | 269.324.7950 |
| William E. Walter, Inc.<br>1917 Howard Ave., Flint, MI 48503 | 810.232.7459 | 810.232.8698 |
| Wirtz Plumbing & Heating, Inc.<br>7876 N. River Rd., Freeland, MI 48623 | 989.692.0655 | 989.692.0891 |

# PRE-QUALIFIED SUBCONTRACTORS

(Pre-Qualified Subcontractors are to submit their cost to companies on the Pre-Qualified Contractors list.)

## Testing & Balancing

| Company Name & Address | Phone # | Fax # |
|---|---|---|
| All American Balancing, LLC<br>10157 Lake Rd., Otisville, MI 48463 | 810.569.4152 (cell) | 810.631.6649 |
| Ener-Tech (Dee Cramer Inc.)<br>4221 E. Baldwin Rd., Holly, MI 48442 | 810.579.5000 | 810.579.2664 |
| Enviro-Aire, Inc.<br>28915 Harper Ave., St. Clair Shores, MI 48081 | 586.779.6200 | 586.779.8312 |
| Hi-Tech Test & Balance<br>10270 Pierce Rd., P.O. Box 512, Freeland, MI 48623 | 989.695.5498 | 989.695.2226 |
| International Test & Balance, Inc.<br>17135 W. 10 Mile Road, Ste. 112, Southfield, MI 48075 | 248.559.5864 | 248.559.6241 |
| Pro-MEC Engineering Services, Inc.<br>480 Promec Dr., P.O. Box 513, Grand Ledge, MI 48837 | 517.627.8532 | 517.627.2562 |

# PRE-QUALIFIED SUBCONTRACTORS

(Pre-Qualified Subcontractors are to submit their cost to companies on the Pre-Qualified Contractors list.)

## HVAC Ducts & Casings

| Company Name & Address | Phone # | Fax # |
|---|---|---|
| A. C. Klopf, Inc.<br>524 S. Franklin Street, Saginaw, MI 48607 | 989.754.0403 | 989.754.5082 |
| Answer Heating & Cooling, Inc.<br>8490 Midland Road, Freeland, MI 48623 | 989.695.9461 | 989.695.9789 |
| Applegate, Inc.<br>485 E. South St., Jackson, MI 49203 | 517.783.2646 | 517.783.1219 |
| Custom Engineering, Inc.<br>990 S. Huron Rd., P.O. Box 367, Linwood, MI 48634 | 989.697.3444 | 989.697.4400 |
| Dee Cramer, Inc.<br>4221 E. Baldwin Rd., Holly, MI 48442 | 810.579.5000 | 810.579.2664 |
| Goyette Mechanical Co., Inc.<br>3842 Gorey Ave., Flint, MI 48506 | 810.743.6883 | 810.743.9114 |
| J. E. Johnson, Inc.<br>2298 N. Eastman Rd., Midland, MI 48642 | 989.835.6671<br>800.646.2690 | 989.835.7147 |
| MJ Mechanical, Inc.<br>11787 Prior Rd., St. Charles, MI 48655 | 989.865.9633 | 989.865.9632 |
| National Roofing & Sheet Metal Co., Inc.<br>G-4130 Flint Asphalt Dr., Burton, MI 48529 | 810.742.7373 | 810.742.8726 |
| Pleune Service Co.<br>750 Himes S.E., Grand Rapids, MI 49548 | 616.243.6374 | 616.243.5387 |
| S&Z Sheetmetal, Inc.<br>5237 Commerce Rd., Flint, MI 48507 | 810.230.0200 | 810.230.0201 |
| Smillie Plumbing & Heating, Inc.<br>10270 Pierce Rd., Freeland, MI 48623 | 989.695.5133 | 989.695.2226 |
| U. S. Sheet Metal, Inc.<br>3200 Enterprise Dr., Saginaw, MI 48603 | 989.799.4850 | 989.799.9672 |
| Wendling Sheet Metal, Inc.<br>2633 Carrollton Rd., Saginaw, MI 48604 | 989.753.5286 | 989.753.8375 |

# PRE-QUALIFIED SUBCONTRACTORS

(Pre-Qualified Subcontractors are to submit their cost to companies on the Pre-Qualified Contractors list.)

## Temperature Controls

| Company Name & Address | Phone # | Fax # |
|---|---|---|
| Johnson Controls Inc.<br>1080 Tittabawassee Rd., Saginaw, MI 48604 | 989.245.6103 | 989.759.4407 |

# PRE-QUALIFIED SUBCONTRACTORS

(Pre-Qualified Subcontractors are to submit their cost to companies on the Pre-Qualified Contractors list.)

## Electrical



| Company Name & Address | Phone # | Fax # |
|---|---|---|
| Amcomm Telecommunications Inc.<br>12482 Emerson Dr., Brighton, MI 48116 | 248.698.8868 | 248.698.8869 |
| ATI Group<br>3419 Pierson Place, Flushing, MI 48433 | 810.230.6202 | 810.230.6208 |
| Bierlein Trombley Electric<br>378 N. Tuscola Rd., Bay City, MI 48708 | 989.778.2500 | |
| Block Electric Company<br>2580 N. Johnson Rd., P.O. Box 63, Weidman, MI 48893 | 989.644.8883 | 989.644.8885 |
| Bock Electric Inc.<br>3510 Rhodes Rd., Rhodes, MI 48652-9731 | 989.879.4256 | 989.879.6565 |
| Clements Electric Inc.<br>204 S. Dean, Bay City, MI 48706 | 989.892.4780 | 989.892.4776 |
| Consumers Energy Corporation<br>1 Energy Plaza, Jackson, MI 49201 | 616.260.9640 | |
| ESCON Group, Inc.<br>6 Johnson Court, Bay City, MI 48708 | 989.893.4541 | 989.893.4542 |
| F.D. Hayes Electric Company<br>2301 Beal Avenue, Lansing, MI 48910 | 517.482.0608 | 517.482.4110 |
| Feyen Zylstra, LLC<br>2396 Hillside Drive NW, Grand Rapids, MI 49544 | 616.224.7707 | 616.224.7799 |
| Great Lakes Power & Lighting, Inc.<br>9646 Marine City Hwy., Casco, MI 48064 | 586.716.4000 | 586.716.4770 |
| Halligan Electric, Inc.<br>705 Kelso St., Flint, MI 48506 | 810.238.8581 | 810.238.1493 |
| Helm Electric, Inc.<br>2375 Maple Rd., Frankenmuth, MI 48734 | 989.652.8779 | 989.652.8778 |
| JAG Electric, LLC<br>1250 W. Vassar Rd., Reese, MI 48757 | 989.868.9853 | 989.596.0806 |
| Ken David Electric<br>3195 Christy Way S., Ste. 8, Saginaw, MI 48603 | 989.793.6100 | 989.793.2775 |
| Master Electric, Inc.<br>2350 W. M-61, P.O. Box 404, Gladwin, MI 48624 | 989.426.9860 | 989.426.9862 |

# PRE-QUALIFIED SUBCONTRACTORS

(Pre-Qualified Subcontractors are to submit their cost to companies on the Pre-Qualified Contractors list.)

## Electrical



| Company Name & Address | Phone # | Fax # |
|---|---|---|
| Metro Electric Engineering Technologies, Inc.<br>110 East Pond Dr., Romeo, MI 48065 | 586.752.2622 | 586.752.2862 |
| Motor City Electric Technologies Inc.<br>9440 Grinnell, Detroit, MI 48213 | 313.921.5300 | 313.921.5310 |
| Newkirk Electric Associates, Inc.<br>2751 Lippincott Blvd., Flint, MI 48507 | 810.742.4400 | 810.742.4410 |
| Nuechterlein Electric, Inc.<br>304 List St., Frankenmuth, MI 48734 | 989.652.2431 | 989.652.9830 |
| Parkway Electric & Communications, LLC<br>11952 James St., Holland, MI 49424 | 616.392.2788 | 616.392.6880 |
| PowerComm Electric<br>465 N. Franklin, Ste. C, Frankenmuth, MI 48734 | 989.652.4889 | 989.652.4959 |
| J. Ranck Electric, Inc.<br>1993 Gover Parkway, Mt. Pleasant, MI 48858 | 800.792.3822 | 989.775.8830 |
| Spark Electric Services Inc.<br>1000 N. Chilson, Ste. 1, Bay City, MI 48706 | 989.686.5691 | 989.316.2932 |
| S.R.V. Services, Inc.<br>9472 E. Coldwater Rd., Davison, MI 48423 | 810.845.2117 | 810.653.6504 |
| Taunt Electric Company<br>895 Industrial Dr., Gladwin, MI 48624 | 989.426.9306 | 989.426.4530 |
| Thiel Electric, Inc.<br>7920 McCarty Rd., Saginaw, MI 48603 | 989.792.1188 | 989.792.6165 |
| Van Herweg Electric, Inc.<br>2885 Enterprise Ct., Saginaw, MI 48603 | 989.791.1131 | 989.791.3946 |
| Walker Electric, Inc.<br>3725 S. Saginaw St., Ste. 105, Flint, MI 48507 | 810.233.5111 | 810.233.5112 |
| Weinstein Electric Company<br>213 W. First Ave., Flint, MI 48503 | 810.232.5934 | 810.232.3218 |
| Wm. F. Nelson Electric, Inc.<br>111 Hoyt St., Saginaw, MI 48607 | 989.752.7184 | 989.752.6441 |
| Windemuller Electric, Inc.<br>2936 E. Venture Dr., Midland, MI 48640 | 989.631.2023 | 989.631.3110 |

# PRE-QUALIFIED SUBCONTRACTORS

(Pre-Qualified Subcontractors are to submit their cost to companies on the Pre-Qualified Contractors list.)

## Data Communications

| Company Name & Address | Phone # | Fax # |
|---|---|---|
| Amcomm Telecommunications Inc.<br>12482 Emerson Dr., Brighton, MI 48116 | 248.698.8868 | 248.698.8869 |
| Master Electric, Inc.<br>2350 West M-61, Gladwin, MI 48624 | 989.426.9860 | 989.426.9862 |
| Moss<br>561 Century SW, Grand Rapids, MI 49503 | 616.451.9933 | 616.451.8187 |
| Motor City Electric Technologies Inc.<br>9440 Grinnell St., Detroit, MI 48213 | 313.957.3459 | 313.957.3559 |
| Pro-Tech Cabling Systems, Inc.<br>1805 E. Maple Rd., Clare, MI 48617 | 989.386.3722 | 989.386.4996 |
| The DataCom Group, Inc.<br>3979 Holt Rd., Holt, MI 48842 | 517.699.5000 | 517.699.5076 |

# GENERAL CONDITIONS

Article 1. Definitions

(a) The Contract Documents consist of the Agreement, the General Conditions of the Contract, the Drawings and Specifications including all modifications thereof incorporated in the documents before their execution. These form the Contract.

(b) The Owner, Saginaw Valley State University, and the Contractor are those mentioned as such in the agreement. They are treated throughout the Contract Documents as if each were of the singular number and masculine gender.

(c) Designer / Engineer – The firm undertaking the execution of the design, bid documents and general construction review for design conformity.

(d) The term "work" of the Contractor or Subcontractor includes labor, materials or both, transportation, equipment or other facilities necessary to complete the Contract.

(e) Bidder - Any individual, firm or corporation, submitting a proposal for the work contemplated, acting directly or through a duly authorized representative.

(f) Contractor - The individual, firm or corporation undertaking the execution of the work under the terms of the Contract and acting directly or through a duly authorized representative.

(g) Subcontractor - As employed herein, includes only those having a direct contract with the Contractor and it includes one who furnished material worked to a special design according to the plans or specifications of this work, but does not include one who merely furnished material not so worked.

(h) Inspector - The authorized representative of the Owner assigned to make detailed inspection of any or all portions of the work or materials thereof.

Article 2. Execution of Documents

The Contract Documents are complimentary and what is called for by any one shall be as binding as if called for by all. The intentions of the documents are to include all labor and materials, equipment and transportation necessary for the proper execution of the work.

Article 3. Copies of Drawings Furnished

The Owner will furnish to the Contractor, free of charge, all copies of drawings and specifications reasonably necessary for the execution of the work. He shall also furnish additional instructions by means of drawings or otherwise, necessary for the proper execution of the work.

Article 4. Materials and Workmanship

Discrepancies: In all cases of discrepancies between the drawings and specifications, the Owner shall be notified. If Work proceeds without obtaining proper interpretation of the conflicting drawings and specifications from the Owner, the installed Work which is not in accordance with the design and best practices must be replaced at no additional cost to the Owner.

Omissions: The drawings and specifications are intended to include all Work and materials necessary for completion of the Work. Any incidental item of material, labor or detail required for the proper execution and completion of the Work and omitted from either the drawings and specifications or both, but obviously required by governing codes, local regulations, trade practices, operational functions, and good workmanship, shall be provided as a part of the Contract Work without extra charge, even though not specifically detailed or mentioned.

Article 5. Materials, Appliances, Employees

Unless otherwise stipulated, the Contractor shall provide and pay for all materials, labor, tools, equipment, light, power, transportation and other facilities necessary for the execution of the work. Unless otherwise specified, all materials shall be new and both workmanship and materials shall be of a good quality. The Contractor shall, if required, furnish satisfactory evidence as to the kind and quality of materials. The Contractor shall enforce strict discipline and good order among his employees and shall not employ any unfit person or one not skilled in the work assigned to him.

Article 6. Royalties and Patents

The Contractor shall pay royalties and license fees. He shall defend all suits or claims for infringement of any patent rights and shall save the Owner harmless from loss on account thereof, except that the Owner shall be responsible for all such loss when a particular process or the product of a particular manufacturer or manufacturers is specified, but if the Contractor has information that the process or article specified is an infringement of a patent he shall be responsible for such loss unless he promptly gives such information to the Owner.

Article 7. Permits & Regulations

The Contractor shall obtain and pay for all permits necessary for the proper execution of the work. He shall comply with all laws and regulations bearing on the conduct of the work and shall notify the Owner if the drawings and specifications are at variance therewith.

Article 8. Use Of Site

The Contractor shall coordinate with the Owner to maintain uninterrupted operations of University business throughout the Work. The Contractor shall also confine operations at the site to areas permitted by law, ordinances, and permits and shall not unreasonably encumber the site with any materials for equipment.

Article 9. Safety Regulations

The Contractor shall conform to the "General Safety Rules and Regulations" for the Construction Industry, as prescribed by the Construction Safety Commission, Department of Labor, Bureau of Safety and Regulations, Lansing, Michigan, and the Occupational Safety and Health Standards of the United States Department of Labor. This shall be made a condition of each subcontract entered into pursuant to the Contract.

Article 10. Storage and Protection

All materials and equipment delivered to and used in the Work shall be suitably stored and protected from the elements. The areas used for storage shall only be those approved by the Owner's. The Owner assumes no responsibility for stored material. The Ownership and title to materials will not be vested in the Owner before materials are incorporated in the Work. After delivery, before and after installation, the Contractor shall protect materials and equipment against theft, injury or damage from all causes.

Bulk materials subject to deterioration because of dampness, the weather or contamination shall be covered and protected while in storage. Materials in containers shall be kept in original sealed containers, unopened, with labels plainly indicating manufacturer's name, brand, type and grade of material. Containers that are broken, opened, watermarked and/or contain caked, lumpy or otherwise damaged materials are unacceptable and shall be immediately removed from the work site.

Equipment stored outdoors shall be kept from contact with the ground, away from areas subject to flooding and covered with weatherproof plastic sheeting or tarpaulins.

Article 11. Protection of Work, Property & Persons

The Contractor shall continuously maintain adequate protection of his work, the Owner's and adjacent property, and public from damage, injury, or loss arising in connection with this Contract. Any damage caused by the Contractor's operation shall be repaired, replaced or compensated for by the Contractor.

The Contractor shall furnish and install all temporary facilities, dust barriers and controls required by the Work, shall remove them from Owner's property upon completion of the Work and the grounds and existing facilities shall be restored to their original condition.

The Contractor shall furnish, install and maintain as long as necessary and remove when no longer required adequate barrier, warning signs or lights at all dangerous points throughout the Work for protection of property, workmen and the public. The Contractor shall hold Saginaw Valley State University harmless from damage or claims arising out of any injury or damage that may be sustained by any person or persons as a result of the Work under the Contract. All construction aids shall conform to federal, state and local codes or laws for protection of workmen and the public.

Article 12. Inspection of Work

The Owner and his representatives shall at all times have access to the work wherever it is in preparation of progress and the Contractor shall provide proper facilities for such access and for inspection. If the specifications, the Owner's instructions, laws, ordinances or any public authority require any work to be specially tested or approved, the Contractor shall give the Owner timely notice of its readiness for inspection, and if the inspection is by another authority than the Owner of the date fixed for such inspection. Inspections by the Owner shall be promptly made, and where practicable at the source of supply. If any work should be covered up without approval or consent of the Owner, it must, if required by the Owner, be uncovered for examination at the Contractor's expense.

Article 13. Superintendence: Supervision

The Contractor shall keep on his work a competent superintendent and other necessary assistants, all satisfactory to the Owner. The superintendent shall represent the Contractor in his absence and all directions given to him shall be as binding as if given to the Contractor.

If the Contractor, in the course of the work, finds any discrepancy between the drawings and the physical conditions of the locality, or any errors or omissions in drawings or in the layout as given by points and instructions, it shall be his duty to immediately inform the Owner and the Owner shall promptly verify the same.

Article 14. Changes in the Work

The Owner without invalidating the contract, may, in writing, order extra work or make changes by altering, adding to or deducting from the work, the Contract Sum being adjusted accordingly. All such work shall be executed under the conditions of the original contract.

Article 15. Correction of the Work

The Contractor shall remedy any defects due to faulty materials or workmanship which appear within a period of one year from the date of completion of the contract. The provisions of this article apply to work done by subcontractors as well as to work done by direct employees of the Contractor.

Article 16. Claims for Extra Cost

If the Contractor claims that any instructions by drawings or otherwise, involve extra cost, he shall give the Owner written notice thereof within a reasonable time after the receipt of such instructions, and in any event before proceeding to execute the work and the procedure then shall be as provided for changes in the work. No such claim shall be valid unless so made.

Article 17. Deductions for Uncorrected Work

If the Owner deems it inexpedient to correct work injured or done not in accordance with the contract, an equitable deduction from the Contract price shall be made therefore.

Article 18. Correction of Work Before Final Payment

The Contractor shall promptly remove and correct all work condemned by the Owner as failing to conform to the Contract. The Contractor shall promptly replace and re-execute his own work in accordance with the contract and without expense to the Owner. He shall bear the expense of making good all work of other contractors destroyed or damaged by such replacement.

Article 19. Delays and Extension of Time

If the Contractor should be delayed at any time in the progress of the work by any act or neglect of the Owner, or of any employee of the Owner, or by any separate Contractor employed by the Owner, or by changes ordered in the work, or by strikes, lockouts, fire, unusual delay in transportation, unavoidable casualties or any causes beyond the Contractor's control, or by delay authorized by the Owner pending arbitration, or by any cause which the Owner shall decide to justify the delay, then the time of completion shall be extended for such reasonable times as the Owner may decide.

No such extension shall be made for delay occurring more than seven days before claim therefore is made in writing to the Owner. In the case of a continuing cause of delay, only one claim is necessary.

If no schedule or agreement stating the dates upon which drawings shall be furnished is made, then no claim for delay shall be allowed on account of failure to furnish drawings until two weeks after demand for such drawings and not then unless such claim be reasonable.

Article 20. Owner's Right to Terminate Contract

The Owners may terminate the Contract when the approved progress schedule is not met because of failure of the Contractor to exercise diligence and effectively perform all required Work or when the progress of the Work is unacceptable to the Designer/Engineer.

If the Contractor should be adjudged as bankrupt, or if he should make a general assignment for the benefit of his creditors, or if a receiver should be appointed on account of his insolvency, or if he should persistently or repeatedly refuse or should fail, except in cases for which extension of time is provided to supply enough properly skilled workmen or proper materials, or if he should fail to make prompt payment to subcontractors or for material or labor, or persistently disregard laws, ordinances or the instructions of the Owner, or otherwise be guilty of a substantial violation of any provision of the contract then, upon the certificate of the Owner that sufficient cause exists to justify such action, may, without prejudice to any other right or remedy and after giving the Contractor seven days written notice, terminate the employment of the Contractor and take possession of the premises and of all materials, tools and appliances thereon and finish the work by whatever method he may deem expedient. In such case the Contractor shall not be entitled to receive any further payment until the work is finished. If the unpaid balance of the contract price shall exceed the expense of finishing the work including compensation for additional managerial and administrative services, such excess shall be paid to the Contractor. If such expense shall exceed such unpaid balance, the Contractor shall pay the difference to the Owner. The expense incurred by the Owner as herein provided, and the damage incurred through the Contractor's detail, shall be certified by the Owner.

Article 21. Contractor's Right to Stop or Terminate Contract

If the work should be stopped under an order of any court, or other public authority, for a period of three months through no act or fault of the Contractor or of anyone employed by him, or if the Owner should fail to issue any certificate for payment within seven days after it is due, or if the Owner should fail to pay to the Contractor within seven days of its maturity and presentation, any sum certified by the Owner or awarded by arbitrators, then the Contractor may, upon seven days written notice to the Owner, stop work or terminate this contract and recover from the Owner payment for all work executed and any loss sustained upon any plant or materials and reasonable profit and damages.

Article 22. Insurance

No work connected with the contract shall be started until the Contractor has submitted evidence to the University Facilities Planning & Construction Department, that:

(1) the Contractor shall carry Worker's Compensation Insurance in the amounts required by Michigan Statute, upon all of its employees engaged in the work and shall be responsible to ensure that all subcontractors maintain equal Worker's Compensation Coverage, and the Worker's Compensation policy should also provide Employers Liability Insurance with minimum limit requirements of at least $500,000 Bodily Injury By Accident, $500,000 Bodily Injury By Disease, and $500,000 Policy Limit By Disease.

(2) Contractor is to carry Commercial General Liability Insurance with minimum limit requirements of $1 Million each occurrence, $1 Million Personal Injury and Advertising Injury, $2 Million Products and Completed Operations Aggregate and $2 Million General Aggregate. Coverage should include Premises and Operations, Products and Complete Operation, Blanket Contractual and Broad Form Property Damage Liability.

(3) The Contractor shall carry Automobile Liability Insurance with minimum limit requirements of $1 Million each accident. All of this insurance shall be maintained during the life of this Order and/or Contract. **Saginaw Valley State University shall be endorsed as an additional insured to the Commercial General Liability Policy and Automobile Liability Policy.**

Contractor shall advise their carrier to provide a Certificate of Insurance for this insurance coverage to the University Facilities Planning & Construction Department and this Certificate of Insurance shall contain a provision that should any of the above described policies be cancelled before the expiration date thereof, notice will be delivered in accordance with the policy provisions.

Contractor further agrees to indemnify, save and hold harmless the University, its employees, its agents, its President, and its Board of Trustees from any and all suits, claims, liability, damages, loss, cost and expenses of every kind of nature, including attorney fees, which may be asserted against the University, its employees or agents, its President or its Board of Trustees by another or others resulting from the performance of the work herein described.

Article 23. Performance & Payment Bonds

If the bid amount is equal to or greater than $50,000, the Contractor shall provide a Performance Bond and a Payment Bond, each in the value of 100% of the Contract Sum.

Article 24. Separate Contracts

The Owner reserves the right to let other contracts in connection with this work. The Contractor shall afford other contractors reasonable opportunity for the introduction and storage of their materials and the execution of their work, and shall properly connect and coordinate his work with theirs.

Article 25. Subcontracts

The Contractor shall, as soon as practicable after the execution of the contract, notify the Owner in writing of the names of subcontractors proposed for the principal parts of the work and for such others as the Owner may direct and shall not employ any that the Owner may within a reasonable time object to as incompetent or unfit.

If the Contractor has submitted before execution of the contract a list of subcontractors and the change of any name on such list is required in writing by the Owner after such execution, the contract once shall be increased or diminished by the difference in cost occasioned by such change.

The Owner shall, on request, furnish to any subcontractor, wherever practicable, evidence of the amounts certified on his account.

The Contractor agrees that he is as fully responsible to the Owner for the acts and omissions of his subcontractors and of persons either directly or indirectly employed by them, as he is for the acts and omissions of persons directly employed by him.

Nothing contained in the contract documents shall create any contractual relation between any subcontractor and the Owner.

Article 26. Owner's Status

The Owner has authority to stop the work whenever such stoppage may be necessary to insure the proper execution of the contract. He shall also have authority to reject all work and materials that do not conform to the contract, to direct the application of forces to any portion of the work, as in his judgment is required, and to order the forces increased or diminished, and to decide questions which arise in the execution of the work.

Article 27. Payment

Payment for the work will be made in one sum at the completion of the contract except that partial payments of the completed work may be made at monthly intervals. If Contractor expects to request partial payments he shall submit a Schedule of Values of the various parts of the work aggregating the total contract sum. This schedule of values shall include a 10% line item for close-out which encompasses as-builts, punch lists, warranties, operation and maintenance manuals, owner training, etc. When applying for payments, Contractor shall submit a statement based upon this schedule, itemized and supported as the Owner may require, including a 10% line item for close-out. Payment request to be submitted on a modified form similar to AIA G702 and submitted to the Designer/Engineer for approval.

Contract will not be considered complete until the work has been finally accepted by the Owner and the following close-out documents have been furnished:

(a) Required warranties
(b) Satisfactory evidence that all subcontractors, material bills and other indebtedness connected with work have been paid
(c) Record drawings
(d) Operation and maintenance manuals
(e) Owner Training
(f) Signed and completed punchlist
(g) Sworn statement
(h) Unconditional waivers from all subcontractors and major suppliers

Article 28. Shop Drawings
Submit three (3) copies of shop drawings to Owner for review.

Article 29. Field Measurements
The accompanying drawings show the arrangement, general design and extent of the Work and are more or less diagrammatical with materials and equipment shown in their general locations. The Contractor shall make field measurements to verify or supplement dimensions indicated, and assume full responsibility for accurate fit of all Work.

Article 30. Clean-Up
(a) The Contractor shall keep the premises free of accumulation of waste materials or rubbish caused by his operations. If the Contractor fails to keep the area clean during the course of the work and upon completion, the Owner may have the area of the work cleaned properly and the cost thereof shall be charged to the Contractor.

(b) The Contractor shall legally dispose of all empty material containers, spent items, rubbish, etc. off campus property.

Article 31. Substantial Completion
The Contractor shall notify the Owner when the Work will be substantially complete and ready for inspection and preparation of a list minor replacement, correction and adjustment items. The Contractor shall be represented on the job site at the time this inspection is made thereafter shall complete all Work by the date set for final acceptance by the Owner.

Article 32. Project Close-Out Documents
The Contractor shall provide three (3) hard copies of all record documents, operation and maintenance data, testing data, sworn statement and waivers with the final pay request.

Contractor shall include all operation and maintenance data and/or record Drawings required by Contract Documents.

END OF GENERAL CONDITIONS

Section 00510

# OWNER/CONTRACTOR AGREEMENT

## I. DATE, OWNER AND CONTRACTOR

A. Date of Agreement: _____

B. The Parties To This Agreement:

B1. The Owner: Saginaw Valley State University
7400 Bay Road, University Center, MI 48710

B2. The Contractor: _____

## II. THE PROJECT, LOCATION AND DESCRIPTION OF WORK

A. Project Name: _____

B. Project Location: _____

C. Description of Work: _____

## III. PAYMENT FOR WORK

The Owner shall pay the Contractor for the performance of the Work, subject to the provisions of the Contract Documents, and subject to additions and deductions by Change Order, as provided in the General Conditions of the Contract for Construction, in current funds, the Contract Sum of:

_____ and $^{00}/_{100}$ _____ Dollars
($___)

SAMPLE

## IV. CONTRACTOR'S ASSIGNED PERSONNEL

The Contractor has assigned the following personnel to the Project in the capacities designated, and shall not change these assignments without the concurrence of the Owner in the form of an Amendment to the Contract. Additionally, the Contractor agrees to remove personnel assigned to the project, listed here or otherwise, at the request of the Owner, in the event such personnel are shown not to be acting consistently in the Owner's best interests.

| Name | Title | Responsibility |
|---|---|---|
| _____ | , Manager | Overall Project Control |
| _____ | , Superintendent | Field Supervision |
| _____ | , Safety Officer | All Safety Related Issues |

## V. THE OWNER/CONTRACTOR AGREEMENT

### A. CONTRACT DOCUMENTS

#### A1. DOCUMENTS

The Contract Documents include this Agreement and the following documents:

A1.1 General Conditions of the Contract for Construction:
As Noted in Specification

A1.2 Supplementary Conditions of the Contract for Construction:
As Noted in Specification

A1.3 Additional Conditions, consisting of:
_____

A1.4 Drawings, dated: _____

A1.5 Specifications, dated: _____

A1.6 Addenda,: _____

A1.7 Modifications issued during construction.

SAMPLE

A2. CONTRACT

All Contract documents are a part of this Agreement as if attached to or repeated in this Agreement. All references to “Contractors” in the Contract Documents apply specifically and individually to the Contractor identified in and party to this Agreement. The Plural, “Contractors”, always applies individually to the Contractor and each contractor, and shall not be interpreted collectively, as if it applied to all contractors as a group.

A3. DEFINITIONS

The definitions of terms used throughout the Contract Documents are those standard to the construction industry, or as used in the General Conditions of the Contract for Construction.

A4. OTHER DOCUMENTS

If the provisions of this Agreement conflict with any provisions of other documents, the provisions of this Agreement shall control.

B. CONTRACTOR PERFORMANCE

B1. CONTRACTOR PERFORMANCE

The Contractor agrees to perform all Work, as identified in Provision V of this Agreement, in accord with, as required by and as set forth in the Contract Documents.

B2. REPRESENTATION

The Contractor, by executing this Agreement, represents that he fully understands the requirements of the Contract Documents with respect to scope and content, and will expeditiously complete the Work in conformance to the Contract Documents. He agrees to provide his best skills and judgment, and to cooperate with others involved in the Project, and at all times to protect the Owner’s interests.

B3. STARTING THE WORK

The Contractor shall commence the Work in such a manner and at such a time as to expeditiously pursue the Work diligently to completion. The Contractor shall work in a cooperative manner with other contractors.

SAMPLE

B3.1 The execution of this Agreement by both parties constitute a Notice to Proceed with the Work, unless the Owner issues a separate Notice to Proceed designating a different starting time. The Contractor shall promptly provide timely performance according to the immediate progress requirements of the Project.

B3.2 The Contractor shall commence the Work prior to the execution of this Agreement if a Letter of Intent containing a Notice to Proceed is issued by the Owner.

B3.3 Upon receipt of a Notice to Proceed, the Contractor shall pursue and complete the Work without voluntary interruption for any reason, as long as the Work can be performed, at a pace consistent with good industry practice regardless of pending or current claims or disputes in connection with the Contract Documents.

B4. TIMELY PERFORMANCE

B4.1 It is the Owner's intent to complete the Project as soon as possible. The Contractor agrees to cooperate in scheduling and performing the Work to achieve completion of the Project as soon as possible.

B4.2 The Contractor acknowledges and accepts the prospects of such delays, interferences and interruptions to the progress of the Project and to the Work as are inherent in the construction industry. The Contractor represents that he has included compensation for such delays, interferences and interruptions in the Contract Sum.

B4.3 The Owner does not guarantee that delays, interferences and/or interruptions to the Work will not occur. The Owner expressly disclaims any responsibilities or obligations resulting from delays, interferences or interruptions.

B4.4 The Contractor shall not be entitled to additional compensation or damages due to delays, interferences or interruptions to the Work or the Project, but shall be entitled only to an appropriate extension of time in accord with the General Conditions of the Contract for Construction.

SAMPLE

C. OWNER'S PERFORMANCE

C1. PAYMENT FOR WORK

C1.1 As stated in provision III on page 00510 – 1.

C2. UNIT PRICES

C2.1 In Addition to the Contract Sum, or as a part thereof if it is so stipulated in this Agreement, the Owner shall pay the Contractor an amount computed from the quantity of Work performed as determined by the Project Team. The unit prices for such work shall be:

| Type of Work | Unit | Unit Price |
|---|---|---|

C2.2 If actual quantities differ from the quantities contemplated by more than 25%, and it is shown that a substantial inequity will result either to the Contractor or to the Owner if these unit prices are used, the applicable unit prices shall be mutually adjusted.

C3. PROGRESS PAYMENTS

The Owner shall pay the Contractor periodically for Work performed according to the provisions of the General Conditions of the Contract for Construction. Payment request shall be submitted on a modified form similar to AIA G702 and submitted to the Designer for approval.

C4. FINAL PAYMENT

Final Payment, constituting the entire unpaid balance of the adjusted Contract Sum, shall be paid by the Owner to the Contractor within thirty (30) days of receipt by the Owner of certification of Final Completion as stipulated in the General Conditions of the Contract for Construction.

C5. CONTRACT ADMINISTRATION

The Owner shall administer the provisions of the Contract Documents through the Project Team.

C6. CONSTRUCTION SUPPORT ITEMS

The Owner shall provide certain Construction Support Items to be used by all contractors in a cooperative manner. The list of these items appears in the General Conditions of the Contract for Construction.

SAMPLE

D. CHANGES

D1. PRICING

Unless otherwise agreed in writing by the Owner and the Contractor, Modifications resulting in Change Orders shall be priced by the Contractor in the following manner:

D1.1 Cost shall be the estimated actual, direct cost of the labor, material and equipment involved plus an overhead charge of 15% for the work done by Contractor's own personnel and shall not exceed 10% for work done under subcontract, sub-subcontract, etc.

D1.2 Labor shall be calculated at standard hourly rates.

D1.3 Material shall be calculated at the Contractor's invoice cost.

D1.4 Equipment shall be calculated at the least period rate applicable for the duration of use, and based on a published rate schedule currently in use.

D1.5 The Contractor shall provide the Owner with back-up information substantiating all costs.

D1.6 Supervision labor above the level of Foreman shall be included in the charge for overhead, per paragraph D1.1 above.

D1.7 Unit prices where given by proposal shall be used where applicable.

E. RISK MANAGEMENT

E1. BONDS

If required by the bidding documents, the Contractor shall provide a Performance Bond and a Labor and Material Bond, each in the value of 100% of the Contract Sum. The Contractor represents that the cost of the bonds, if required, has been included in the Contract Sum.

E2. UNANTICIPATED CONDITIONS

This Contract shall be equitably adjusted by Change Order to the extent that such conditions increase or decrease the cost of Work if, during the performance of the Work, the Contractor encounters either of the following:

SAMPLE

E2.1 Concealed conditions below the surface of the ground which are at variance with conditions indicated by the Contract Documents and with available soil investigation data.

E2.2 Previously unknown conditions of an unusual nature below the surface of the ground, which differ materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in this Contract.

A substantiated written claim for such an adjustment shall be made by the Contractor or the Owner within fifteen days after first observance of any such condition.

## VI. EXECUTION

The Owner and the Contractor have executed this Agreement as of the day and year stated in provision I.A. above.

### A. THE OWNER:

Saginaw Valley State University

Signature: _____

Printed Name: James G. Muladore

Title: Executive Vice President for Administration & Business Affairs

Date: _____

### B. THE CONTRACTOR:

_____

Signature: _____

Printed Name: _____

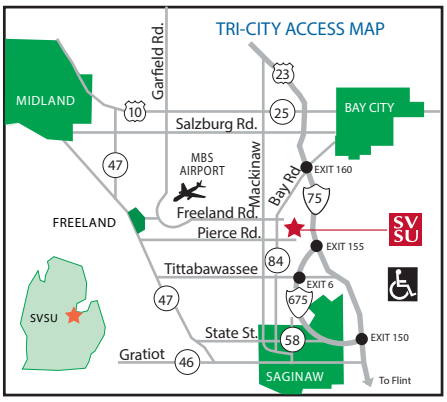
Title: _____

Date: _____

SAMPLE

# SAGINAW VALLEY STATE UNIVERSITY

7400 Bay Road • University Center, MI 48710 • svsu.edu



1. Arbury Fine Arts Center
2. Archery Range
3. Art Studio
4. Baseball Field
5. Basketball Intramural Courts
6. Bookstore
7. Brown Hall
8. Campus Recreation Center
9. Carmona College of Business
10. Convenience Store
11. Curtiss Hall
12. Discus Throw
13. Doan Center (Marketplace)
14. Fieldhouse
15. Football Practice Field
16. Founders Hall
17. Marshall M. Fredericks Sculpture Museum & Gardens
18. Gilbertson Hall
19. Great Lakes Residence Halls (First Year Suites A-E)
20. Groening Commons
21. Grounds Building
22. Health & Human Services
23. Information Kiosk
24. Intramural Fields (East & West)
25. Living Center South
26. Living Center Southwest
27. Ming Chuan University
28. MJ Brandimore House (LC North)
29. Morley Field
30. Non-Motorized Pathway
31. Observatory
32. Owsley Grove
33. Performing Arts Center
    A. Malcolm Field Theatre for Performing Arts
    B. Rhea Miller Recital Hall
34. Pine Grove Apartments
35. Pioneer Hall
36. Ryder Center for Health & Physical Ed. (Gerstacker Aquatics Center, Hamilton Gymnasium, O'Neill Arena)
37. Dow Doan Science Building East
38. Dow Doan Science Building West
39. South Campus Complex (Buildings A,B&C)
40. Soccer Fields
41. Softball Fields
42. Student Center
43. Tennis Courts
44. Tranquil Residence Halls (First Year Suites F & G)
45. University Health Center
46. University Police/Parking Services
47. University Village East
48. University Village West
49. VIP Athletic Parking
50. Wickes Hall (Admissions & Financial Aid)
51. Wickes Memorial Stadium
52. Yien International Garden
53. Zahnow Amphitheatre
54. Zahnow Library
    (Center for Academic Innovation, Center for Academic Achievement, Academic Tutoring, Information Technology, The Testing Center, and The Writing Center)

## SYMBOL KEY

- Annual Ring Sculpture
- Power-Assist Door 1st Floor
- Power-Assist Door 2nd Floor
- Edwards Bell Tower
- Food/Dining
- Emergency Blue Telephone
- Gateway Entrance
- Gazelle Fountain
- Handicapped Parking
- Metered Parking
- Wetland Preserve
- Native Plantings

## COLOR KEY

- Faculty/Staff Reserved Parking: Permit Required in Shaded Portions of F, G1, L, and J4 Lots until 6:45 p.m.
- Roadways and Open Parking Lots
- Student Housing
- Educational Buildings
- Outdoor Sports Locations
- VR Student Resident Parking (VR permit required)
- UR Student Resident Parking (UR permit required)
- Free, Resident (UR permit required) & Overnight
- P Student Resident Parking (P permit required)

Smoking is permissible only in lettered and residential parking lots, at least 25 ft. from any building.

February 2020

SVSU does not discriminate based on race, religion, color, gender, sexual orientation, national origin, age, physical impairment, disability or veteran status in the provision of education, employment and other services.

# RENOVATIONS TO RYDER CENTER SECOND FLOOR OFFICES:

SAGINAW VALLEY STATE UNIVERSITY

## BID NUMBER 23009

University Center, Michigan

Project No. 2223
August 5, 2022


**TSSF ARCHITECTS, INC.**

ARCHITECTS PLANNERS

122 N. WASHINGTON AVENUE SAGINAW , MICHIGAN

# DOCUMENT 00010
# TABLE OF CONTENTS

**DIVISON 0 - DOCUMENTS**
00010 - Table of Contents
00800 - Drawing Index

**DIVISION 2 - SITE CONSTRUCTION**
02225 - Minor Demolition for Remodeling

**DIVISION 3 - CONCRETE**
Not Used

**DIVISION 4 - MASONRY**
Not Used

**DIVISION 5 - METALS**
05400 – Cold-Formed Metal Framing

**DIVISION 6 - WOOD AND PLASTICS**
06100 – Rough Carpentry
06200 - Finish Carpentry

**DIVISION 7 - THERMAL AND MOISTURE PROTECTION**
07900 – Joint Sealers

**DIVISION 8 - DOORS AND WINDOWS**
08110 - Steel Frames
08710 – Door Hardware
08800 – Glazing

**DIVISION 9 - FINISHES**
09260 - Gypsum Board Assemblies
09510 - Acoustical Ceilings
09680 - Carpet
09900 - Paints and Coatings

END OF DOCUMENT

**SECTION 00800**

**DRAWING INDEX**

**PART 1 GENERAL**

**COVER –** Title Sheet, Drawing Index, Location Map, Abbreviations, General Notes, B.F. Mounting Heights

**ARCHITECTURAL**

| | |
|---|---|
| A0.1 | Code Review |
| D2.0 | Partial Second Floor Demolition Plan |
| A2.0 | Partial Second Floor Plan |
| A3.0 | Schedules and Notes |
| A9.0 | Partial Second Floor Reflected Ceiling Plan |

**MECHANICAL**

| | |
|---|---|
| M1.0 | Partial Second Floor Plan – Mechanical Demolition |
| M2.0 | Partial Second Floor Plan – HVAC |
| M3.0 | Partial Second Floor Plan – Fire Protection |
| M4.0 | Schedules and Specifications |

**ELECTRICAL**

| | |
|---|---|
| E1.0 | Partial Second Floor Plan – Electrical Demolition |
| E2.0 | Partial Second Floor Plan – Lighting |
| E3.0 | Partial Second Floor Plan – Power and Systems |
| E4.0 | Panel Schedules and Specifications |
| E5.0 | Partial Second Floor Plan – Emergency Lighting Calcs |

END OF SECTION

**SECTION 02225**

**MINOR DEMOLITION FOR REMODELING**

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Demolishing designated building equipment and fixtures.
   2. Demolishing designated construction.
   3. Cutting and alterations for completion of the Work.
   4. Removing designated items for Owner's retention.
   5. Protecting items designated to remain.
   6. Removing demolished materials.

B. Refer to Division 0 and Division 1 requirements. Requirements of these Sections and the project drawings shall govern work in this Section.

1.2 SUBMITTALS

A. Demolition Schedule: Indicate overall schedule and interruptions required for utility and building services.

B. Shop Drawings:
   1. Indicate demolition sequence.
   2. Indicate location of items designated for Owner's retention.
   3. Indicate location and construction of temporary work.

1.3 CLOSEOUT SUBMITTALS

A. Project Record Documents: Accurately record actual locations of capped utilities, concealed utilities discovered during demolition and subsurface obstructions.

B. Operation and Maintenance Data: Submit description of system, inspection data, and parts lists.

1.4 QUALITY ASSURANCE

A. Conform to applicable code for demolition work, dust control and products requiring electrical disconnection.

B. Conform to applicable code for procedures when hazardous or contaminated materials are discovered.

C. Obtain required permits from authorities having jurisdiction.

1.5 PRE-INSTALLATION MEETINGS

A. Convene minimum one week prior to commencing work of this section.

1.6 SCHEDULING

A. Schedule Work to coincide with new construction.

B. Cooperate with Owner in scheduling noisy operations and waste removal that may impact Owners operation in adjoining spaces.

C. Perform noisy, malodorous, dusty work:
   1. As directed by Owner and Construction Manager.

D. Coordinate utility and building service interruptions with Owner.
   1. Do not disable or disrupt building fire or life safety systems without three days prior written notice to Owner.
   2. Schedule tie-ins to existing systems to minimize disruption.
   3. Coordinate Work to ensure fire sprinklers, fire alarms, smoke detectors, emergency lighting, exit signs and other life safety systems remain in full operation in occupied areas.

1.7 PROJECT CONDITIONS

A. Conduct demolition to minimize interference with adjacent and occupied building areas.

B. Cease operations immediately if structure appears to be in danger and notify Architect/Engineer. Do not resume operations until directed.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

3.1 PREPARATION

A. Notify affected utility companies before starting work and comply with their requirements.

B. Mark location and termination of utilities.

C. Erect, and maintain temporary barriers and security devices, including warning signs and lights, and similar measures, for protection of the public, Owner and existing improvements indicated to remain.

D. Erect and maintain weatherproof closures for exterior openings.

E. Erect and maintain temporary partitions to prevent spread of dust, odors, and noise to permit continued Owner occupancy.

F. Prevent movement of structure; provide temporary bracing and shoring required to ensure safety of existing structure.

G. Provide appropriate temporary signage including signage for exit or building egress.

H. Do not close or obstruct building egress path.

I. Do not disable or disrupt building fire or life safety systems without 3 days prior written notice to Owner.

3.2 SALVAGE REQUIREMENTS

A. Coordinate with Owner to identify building components and equipment required to be removed and delivered to Owner's storage.

B. Tag components and equipment Owner designates for salvage.

C. Protect designated salvage items from demolition operations until items can be removed.

D. Carefully remove building components and equipment indicated to be salvaged.

E. Disassemble as required to permit removal from building.

F. Package small and loose parts to avoid loss.

G. Mark equipment and packaged parts to permit identification and consolidation of components of each salvaged item.

H. Prepare assembly instructions consistent with disassembled parts. Package assembly instructions in protective envelope and securely attach to each disassembled salvaged item.

I. Deliver salvaged items to Owner's Storage Facility. Obtain signed receipt from Owner.

3.3 DEMOLITION

A. Conduct demolition to minimize interference with adjacent [and occupied] building areas.

B. Maintain protected egress from and access to adjacent existing buildings at all times.

C. Do not close or obstruct sidewalks without permits.

D. Cease operations immediately when structure appears to be in danger and notify Architect/Engineer.

E. Disconnect and remove designated utilities within demolition areas.

F. Cap and identify abandoned utilities at termination points when utility is not completely removed. Annotate Record Drawings indicating location and type of service for capped utilities remaining after demolition.

G. Demolish in orderly and careful manner. Protect existing improvements, supporting structural members.

H. Carefully remove building components indicated to be reused.
   1. Disassemble components as required to permit removal.
   2. Package small and loose parts to avoid loss.
   3. Mark components and packaged parts to permit reinstallation.
   4. Store components, protected from construction operations, until reinstalled.

I. Remove demolished materials from site except where specifically noted otherwise. Do not burn or bury materials on site.

J. Remove materials as Work progresses. Upon completion of Work, leave areas in clean condition.

K. Remove temporary Work.

END OF SECTION

**SECTION 05400**

**COLD-FORMED METAL FRAMING**

PART 1 GENERAL

1.1 SUMMARY

A. Section includes load bearing formed steel stud exterior wall and exterior roof, soffit/fascia framing and formed steel framing and bridging.

B. Refer to Division 0 and Division 1 requirements. Requirements of these divisions and project drawings shall govern work in this section.

1.2 SYSTEM DESCRIPTION

A. Size components to withstand design loads as follows as indicated on drawings.

B. Maximum Allowable Deflection: 1: 240 of span.

C. Wall System:
1. Design to AISI NASPEC, AISC General, and AISC Header.
2. Design to provide for movement of components without damage, failure of joint seals, undue stress on fasteners, or other detrimental effects when subject to seasonal or cyclic day/night temperature ranges.

D. Design system to accommodate construction tolerances, deflection of building structural members, and clearances of intended openings.

E. Seismic Design: Design and detail elements and connections to resist seismic force in accordance with 2009 Michigan Building Code requirements and ACI 318 for Seismic Zone 0 and Seismic Importance Factor 1.

1.3 SUBMITTALS

A. Shop Drawings:
1. Indicate component details, framed openings, bearing, anchorage, loading, type and location of fasteners and accessories or items required of related work.
2. Indicate stud and soffit/fascia layout.
3. Provide calculations for loadings and stresses of framing sealed by Professional Structural Engineer registered in State of Michigan.

B. Product Data: Describe materials and finish, product criteria and limitations.

1.4 QUALITY ASSURANCE

A. Calculate structural properties of framing members in accordance with AISI NASPEC.

B. Furnish framing materials in accordance with SSMA - Product Technical Information.

C. Design framing under direct supervision of Professional Engineer experienced in design of this Work and licensed in State of Michigan.

PART 2 PRODUCTS

2.1 COLD FORMED METAL FRAMING

2.2 FRAMING COMPONENTS

A. Steel Sheet: ASTM A1003/A1003M; Structural Grade, Type H, metallic coated:
   1. Grade: As required by performance requirements.
   2. Coating: G60 (Z180).

B. Studs: Steel sheet, formed to channel shape, punched web; 0.048 inch thick and size as indicated on drawings.

C. Track: Steel sheet, formed to channel shape; same width as studs, tight fit; 0.048 inch thick, solid web.

2.3 ACCESSORIES

A. Bracing, Furring, Bridging, Plates, Gussets and Clips: Formed sheet steel, thickness determined by performance requirements specified; same finish as framing members.

B. Screws: Self drilling, self-tapping.

C. Anchorage Devices: Power actuated.

D. Welding: In accordance with AWS D1.1 and AWS D1.3.

E. Touch-Up Primer for Galvanized Surfaces: SSPC Paint 20 Type I Inorganic.
   1. Interior Anti-Corrosive Paints: Maximum volatile organic compound content in accordance with GC-03.

2.4 FABRICATION

A. Fabricate assemblies of sizes and profiles required; with framing members fitted, reinforced and braced.

B. Fit and assemble in largest practical sections for delivery to site, ready for installation.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify building framing components are ready to receive work.

3.2 ERECTION OF STUDS

A. Align floor and ceiling tracks; locate to wall layout. Secure in place with fasteners at maximum 24 inches oc. Coordinate installation of sealant with floor tracks.

B. Place studs at 16 inches oc; not more than 2 inches from abutting walls and at each side of openings. Connect studs to tracks using fastener method.

C. Construct corners using minimum three studs. Double stud wall openings, door and window jambs.

D. Erect load bearing studs one piece full length. Splicing of studs is not permitted.

E. Allow for deflection, directly below horizontal building framing for non-load bearing framing.

F. Attach furring channels to studs for attachment of fixtures anchored to walls and for attachment of mechanical and electrical items within walls.

G. Touch-up field welds and damaged primed surfaces with primer to match shop coating.

3.3 TOLERANCES

A. Maximum Variation from Indicated Position: ¼ inch.

B. Maximum Variation of Member from Plane: ¼ inch.

END OF SECTION

**SECTION 06100**

**ROUGH CARPENTRY**

PART 1 GENERAL

1.1 SUMMARY

A. Section includes wall sheathing; and roof curbs; blocking in wall and roof openings; wood furring and grounds; electrical panel back boards, concealed wood blocking.

B. Refer to Division 0 and Division 1 requirements. Requirements of these divisions and project drawings shall govern work in this section.

1.2 SUBMITTALS

A. Shop Drawings: Indicate framing system, loads and cambers, bearing details, framed openings.

1.3 QUALITY ASSURANCE

A. Perform Work in accordance with the following:
1. Lumber Grading Agency: Certified by DOC PS 20.
2. Lumber: DOC PS 20.
3. Wood Structural Panels: DOC PS 1 or DOC PS 2.

PART 2 PRODUCTS

2.1 LUMBER MATERIALS

A. Lumber Grading Rules: WWPA G-5.

2.2 SHEATHING MATERIALS

A. Wall Sheathing: Rated sheathing structural I plywood or oriented strand board, span rating 40/20 exposable durability I, sanded.

B. Telephone and Electrical Panel Boards: Plywood.

2.3 SHEATHING AND UNDERLAYMENT LOCATIONS

A. Above Grade Wall Sheathing: 5/8-inch-thick, 48 x 96 inch sized sheets, square edges.

2.4 ACCESSORIES

A. Fasteners and Anchors:
1. Fasteners: Hot dipped galvanized steel for high humidity and treated wood locations, unfinished steel elsewhere.
2. Nails and Staples: ASTM F1667.

B. Anchors: Toggle bolt type for anchorage to hollow masonry. Expansion shield and lag bolt type for anchorage to solid masonry or concrete. Bolt or ballistic fastener for anchorages to steel.

PART 3 EXECUTION

3.1 FRAMING

A. Set structural members level and plumb, in correct position.

B. Fasten framing in accordance with applicable code.

C. Place horizontal members crown side up.

D. Curb roof openings except where curbs are provided. Construct curb members of single pieces for each side.

3.2 SHEATHING

A. Install wall sheathing in accordance with ASTM C1280.

B. Fasten sheathing in accordance with applicable code.

C. Install sheathing to two span continuous.

D. Secure wall sheathing with ends staggered, over firm bearing.

E. Install telephone and electrical panel back boards with plywood sheathing material where required. Size back board by 12 inches beyond size of electrical panel.

END OF SECTION

**SECTION 06200**

**FINISH CARPENTRY**

PART 1 GENERAL

1.1 SUMMARY

A. Section includes finish carpentry items, other than shop prefabricated casework; hardware and attachment accessories.

B. Refer to Division 0 and Division 1 requirements. Requirements of these Sections and the project drawings shall govern work in this Section.

1.2 SUBMITTALS

A. Shop Drawings: Indicate materials, component profiles, fastening methods, jointing details, finishes, and accessories.

B. Samples: Submit 2 x 3 inch size samples illustrating wood grain and specified finish.

1.3 QUALITY ASSURANCE

A. Perform Work in accordance with AWI Quality Standards, Premium Grade.

B. Surface Burning Characteristics: Maximum 25/450 flame spread/smoke developed index when tested in accordance with ASTM E84, NFPA 255 and UL 723.

PART 2 PRODUCTS

2.1 COMPONENTS

A. Hardwood Lumber: Graded in accordance with AWI, I Premium; Red Oak species, ript sawn, maximum moisture content of 6 percent; with plain sawn grain, of quality suitable for transparent finish.

B. Softwood Plywood: PS 1 Grade AB; Graded in accordance with AWI, I Premium veneer, particleboard core; face species.

2.2 ACCESSORIES

A. Fasteners and Anchors:
   1. Fasteners: Hot dipped galvanized steel for high humidity and treated wood locations, unfinished steel elsewhere.
   2. Nails and Staples: ASTM F1667.

B. Contact Adhesives: Water Base type.

C. Wall Adhesive: Cartridge type, compatible with wall substrate, capable of achieving durable bond.

D. Primer: Alkyd primer sealer.

2.3 FABRICATION

A. Fabricate to AWI Premium standards.

2.4 SHOP FINISHING

A. Sand work smooth and set exposed nails.

B. Apply wood filler in exposed nail indentations.

C. On items to receive transparent finishes, use wood filler matching surrounding surfaces and of types recommended for applied finishes.

D. Stain, seal, and varnish exposed to view surfaces.

E. Seal internal surfaces.

F. Seal surfaces in contact with cementitious materials.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify field conditions are acceptable and are ready to receive work.

3.2 PREPARATION

A. Prime paint surfaces of items or assemblies in contact with cementitious materials, before installation.

3.3 INSTALLATION

A. Install work in accordance with AWI Premium quality standard.

B. Set and secure materials and components in place, plumb and level.

C. Install trim by nails.

D. Install hardware supplied by Section 08710.

E. Preparation For Finish:
   1. Sand work smooth and set exposed fasteners. Apply wood filler in exposed fastener indentations.
   2. Site Finishing: Refer to Section 09900.

END OF SECTION

**SECTION 07900**

**JOINT SEALERS**

PART 1 GENERAL

1.1 SUMMARY

A. Section includes sealants and joint backing.

B. Refer to Division 0 and Division 1 requirements. Requirements of these Sections and the project drawings shall govern work in this Section.

1.2 SUBMITTALS

A. Product Data: Submit data indicating sealant chemical characteristics, performance criteria, substrate preparation, limitations, and color availability.

1.3 ENVIRONMENTAL REQUIREMENTS

A. Maintain temperature and humidity recommended by sealant manufacturer during and after installation.

PART 2 PRODUCTS

2.1 JOINT SEALERS

A. Manufacturers:
   1. Dow Corning Corp.
   2. GE Silicones.
   3. Pecora Corp.
   4. Sika Corp.

B. Product Description:
   1. High Performance General Purpose Exterior (Nontraffic) Sealant: Polyurethane; ASTM C920, Grade NS, Class 25, Uses M, G, and A; single component.
      a. Type: A.
      b. Color: Standard colors matching finished surfaces.
      c. Applications: Use for:
         1) Joints between concrete and other materials.
         2) Joints between metal frames and other materials.
         3) Other exterior nontraffic joints for which no other sealant is indicated.
   2. General Purpose Interior Sealant: Acrylic emulsion latex; ASTM C834, single component, paintable.
      a. Type: D.
      b. Color: Standard colors matching finished surfaces.
      c. Applications: Use for interior wall and ceiling control joints, joints between door and window frames and wall surfaces, and other interior joints for which no other type of sealant is indicated.
   3. General Purpose Sealant: Silicone; ASTM C920, Uses M and A; single component, mildew resistant.
      a. Type: E.
      b. Applications use for:

1) Joints between plumbing fixtures and floor and wall surfaces, and joints between toilet room, counter tops and wall surfaces.
2) Control, expansion and soft joints in masonry.
3) Control, expansion and soft joints in EIFS work.

4. Acoustical Sealant: Butyl or acrylic sealant; ASTM C920, Grade NS, Class 12-1/2, Uses M and A; single component, solvent release curing, non-skinning.
   a. Type: F.
   b. Applications: Use for concealed locations only at acoustically rated construction.
      1) Provide sealant bead between top stud runner and structure and between bottom stud track and floor.

2.2 ACCESSORIES

A. Primer: Non-staining type, recommended by sealant manufacturer to suit application.

B. Joint Cleaner: Non-corrosive and non-staining type, recommended by sealant manufacturer; compatible with joint forming materials.

C. Joint Backing: Round foam rod compatible with sealant; ASTM D1667, closed cell PVC; oversized 30 to 50 percent larger than joint width.

D. Bond Breaker: Pressure sensitive tape recommended by sealant manufacturer to suit application.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify substrate surfaces and joint openings are ready to receive work.

B. Verify joint backing and release tapes are compatible with sealant.

3.2 PREPARATION

A. Remove loose materials and foreign matter impairing adhesion of sealant.

B. Clean and prime joints.

C. Perform preparation in accordance with ASTM C1193.

3.3 INSTALLATION

A. Perform installation in accordance with ASTM C1193.

B. Perform acoustical sealant application work in accordance with ASTM C919.

C. Measure joint dimensions and size joint backers to achieve width-to-depth ratio, neck dimension, and surface bond area as recommended by manufacturer [, except where specific dimensions are indicated].

D. Install bond breaker where joint backing is not used.

E. Install sealant free of air pockets, foreign embedded matter, ridges, and sags.

F. Apply sealant within recommended application temperature ranges. Consult manufacturer when sealant cannot be applied within these temperature ranges.

G. Tool joints concave.

END OF SECTION

**SECTION 08110**

**STEEL DOORS AND FRAMES**

1 GENERAL

1.1 SUMMARY

A. Section includes steel doors and frames; non-rated, interior borrowed light frames.

1.2 SUBMITTALS

A. Shop Drawings: Indicate door and frame elevations, internal reinforcement, cut-outs for glazing.

B. Product Data: Submit door and frame configurations, location of cut-outs for hardware reinforcement.

1.3 QUALITY ASSURANCE

A. Perform Work in accordance with the following:
   1. ANSI 250.8 - Recommended Specifications for Standard Steel Doors and Frames.
   2. DHI - Door Hardware Institute - The Installation of Commercial Steel Doors and Steel Frames, Insulated Steel Doors in Wood Frames and Builder's Hardware.

2 PRODUCTS

2.1 STEEL DOORS AND FRAMES

A. Manufacturers:
   1. Amweld Building Products, Inc.
   2. Ceco Door Products
   3. Pioneer Industries
   4. Republic Builders Products
   5. Steelcraft
   6. Curries Manufacturing, Inc.

B. Product Description: Standard shop fabricated steel doors, and frames; fire rated and non-rated types; flush face or stile and rail design. .

2.2 COMPONENTS

A. Exterior Doors (Insulated): SDI 108,1-3/4 inch thick.
   1. Level 3 - Extra heavy Duty, Model 1, full flush design.

B. Interior Doors (Non-Rated): SDI 108, 1-3/4 inch thick.
   1. Level 2 - Heavy Duty, Model 2, seamless design.

C. Interior Frames:
   1. Level 2 for Door Models 2, nominal 16 gage/0.053 inch thick material, base metal thickness.

2.3 ACCESSORIES

A. Silencers: Resilient rubber set in steel channel.

B. Removable Stops: Rolled steel channel shape.
C. Bituminous Coating: Fibered asphalt emulsion.

D. Primer: ANSI A250.10 rust inhibitive type.

2.4 FABRICATION

A. Fabricate doors and frames with hardware reinforcement welded in place. Protect frame hardware preparations with mortar guard boxes.

B. Fabricate frames as face welded units.

C. Fabricate frames to suit masonry wall coursing with head member as indicated on drawings.

D. Reinforce frames wider than 48 inches with roll formed steel channels fitted tightly into frame head, flush with top.

E. Prepare interior frames for silencers and install.

F. Frame Transom Bars: Fixed type, with profile matching jamb and head.

2.5 SHOP FINISHING

A. Steel Sheet: Galvanized to ASTM A653/A653M G60.

B. Primer: Baked.

C. Coat inside of frame profile with bituminous coating.

3 EXECUTION

3.1 EXAMINATION

A. Verify opening sizes and tolerances are acceptable.

3.2 INSTALLATION

A. Install doors and frames in accordance with ANSI A250.8.

B. Coordinate installation of doors and frames with installation of hardware specified in Section 08710.

C. Coordinate door frames with masonry, gypsum board wall construction for frame anchor placement.

D. Install roll formed steel reinforcement channels between two abutting frames. Anchor to structure and floor.

E. Install door louvers plumb and level.

F. Coordinate installation of glass and glazing specified in Section 08800.

G. Adjust door for smooth and balanced door movement.

H. Tolerances:
1. Maximum Diagonal Distortion: 1/16 inch measured with straight edge, corner to corner.

END OF SECTION

**SECTION 08710**

**DOOR HARDWARE**

PART 1 GENERAL

1.1 SUMMARY

A. Section includes hardware for wood and aluminum doors.

1.2 SUBMITTALS

A. Shop Drawings: Indicate locations and mounting heights of each type of hardware, electrical characteristics and connection requirements.

B. Samples: Submit hinge, latchset, lockset, and closer, illustrating style, color, and finish. Incorporate into the work.

1.3 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: Submit data on operating hardware, lubrication requirements, and inspection procedures related to preventative maintenance.

1.4 QUALITY ASSURANCE

A. Perform Work in accordance with the following requirements:
   1. ANSI A156 series.
   2. NFPA 101 – Life Safety Code

B. Furnish hardware marked and listed in BHMA Directory of Certified Products.

C. Coordination: Coordinate work of this section with other directly affected sections requiring integral reinforcement for door hardware.

D. Supplier: Company specializing in supplying commercial door hardware with minimum three years documented experience, approved by primary hardware manufacturers.

1.5 WARRANTY

A. Furnish five-year manufacturer warranty for door hardware.

1.6 MAINTENANCE SERVICE

A. Provide service and maintenance services of door closers for one year from Date of Substantial Completion.

B. Provide special wrenches and tools applicable to each different or special hardware component.

PART 2 PRODUCTS

2.1 DOOR HARDWARE

A. Manufacturers:

B. Hinge Manufacturers:
   1. Match Existing

C. Lockset, Latch Set and Cylinder Manufacturers:
   1. Match Existing

D. Door Controls and overhead Holders Manufacturers:
   1. Match Existing

2.2 COMPONENTS

A. General Hardware Requirements: Where not specifically indicated, comply with applicable. ANSI A156 standard for type of hardware required. Furnish each type of hardware with accessories as required for applications indicated and for complete, finished, operational doors.
   1. Templates: Furnish templates or physical hardware items to door and frame manufacturers sufficiently in advance to avoid delay in Work.
   2. Reinforcing Units: Furnished by door and frame manufacturers; coordinated by hardware supplier or hardware manufacturer.
   3. Fasteners: Furnish as recommended by hardware manufacturer and as required to secure hardware.
      a. Finish: Match hardware item being fastened.
   4. Electrical Devices: Make provisions and coordinate requirements for electrical devices and connections for hardware.

B. Hinges: ANSI A156.1, full mortise type complying with following general requirements unless otherwise scheduled.
   1. Widths: Sufficient to clear trim projection when door swings 180°.
   2. Number: Furnish minimum three hinges to 90-inches high, four hinges to 120-inches high for each door leaf.

A. Locksets: Furnish locksets compatible with specified cylinders. Furnish standard strikes with extended lips to protect trim from being marred by latch bolt (verify type of cutouts provided in metal frames).
   1. Bored (Cylindrical) Locksets: ANSI A156.2, Series 4000, Grade 1 unless otherwise indicated.
   2. Interconnected Locksets: ANSI A156.12, Series 5000, Grade 1 unless otherwise indicated.

B. Cylinders: ANSI A156.5, Grade 1, 5 pin type
   1. Keying: Keyed as directed by Owner. Mastery Keyed
   2. Supply keys in the following minimum quantities:
      a. 5 master keys.
      b. Change keys for each lock.

C. Closers: ANSI A 156.4, modern type with cover, surface-mounted closers; full rack and pinion type with steel spring and non-freezing hydraulic fluid; closers required for fire-rated doors unless otherwise indicated.
   1. Adjustability: Furnish controls for regulating closing, latching, speeds, and back checking.

2. Arms: Type to suit individual condition; parallel-arm closers at reverse bevel doors and where doors can swing full 180-degrees.
3. Location: Mount closers on inside of exterior doors, room side of interior doors typical; mount on pull side of other doors.
4. Operating Pressure: Maximum operating pressure as follows.
   a. Interior Doors: Maximum 5 pounds.

1. Door controls and Overhead Holders: Furnish with accessories as required for complete operational installation.
   1. Manual Overhead stops, ANSI A 156.8, Grade 1 types, as specified.
   2. Closer Holder Release Devices: ANSI A156.15, door mounted, jamb-mounted, concealed-mounted, closer holder release devices, closers with single point, multiple point, hold open, free swinging release dev ice, designed to make swing doors close upon receiving electrical signal.
   3. Low Energy Power Door Operators: ANSI A156.19 power mechanism opens and closes door upon receipt of signal.

D. Manual Protection Plates and trim: Furnish as indicated in Schedule, with accessories as required for complete operational door installations.
   1. Manual Bolts: ANSI A156.16 Grade 1, top and bottom flush bolts, with dust-proof flor strike.
   2. Kickplates Mop Plate: ANSI A156.6 metal; height indicated in Schedule by 1-inch less than door width.
   3. Wall Stops: ANSI A156.1, Grade 1, 3-inch wall stop.

## 2.3 ACCESSORIES

A. Lock Trim: Furnish levers with escutcheon plate as indicated in Schedule, as selected from manufacturer’s full range of levers and roses.

B. Through Bolts: Through bolts and grommet nuts are not permitted on door faces in occupied areas unless no alternative is possible.
   1. Do not use through bolts on solid wood core doors.

## 2.4 FINISHING

A. Finishes: ANSI A156.18, with following finishes, except where otherwise indicated in Schedule at end of section.
   1. Hinges and Pivots:
      a. BHMA 629 and 625, bright polished finish.
   2. Typical Interior Door Hardware:
   3. Typical Interior Toilet Room Door Hardware:
      a. BHMA 629, bright polished stainless-steel
   4. Closers: Finish appearance to match door hardware on same face of door.
      a. BHMA 628, satin aluminum, clear anodized.
   5. Other Items: Provide manufacturer’s standard finishes to match similar hardware types on same door and maintain acceptable finish considering anticipated use and BHMA category of finish.

PART 3 – EXECUTION

3.1 EXAMINATION

A. Verify doors and frames are ready to receive work and dimensions are as indicated and instructed by manufacturer.

B. Verify electric power is available to power operated devices and is of correct characteristics.

3.2 INSTALLATION

A. Coordinate mounting heights with door and frame manufacturers. Use templates provided by hardware item manufacturer.

B. Mounting Heights from Finished Floor to Center Line of Hardware Item: Comply with manufacturer recommendations and applicable codes.

END OF SECTION

**SECTION 08800**

**GLAZING**

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Glass glazing for metal frames, doors and windows.
   2. Glass glazing materials and installation requirements are included in this section for other sections referencing this section.

B. Refer to Division 0 and Division 1 requirements. Requirements of these Sections and the project drawings shall govern work in this Section.

1.2 SYSTEM DESCRIPTION

A. System performance to achieve continuity of building enclosure air barrier and vapor retarder with glass and glazing materials of this section.

B. Interior Glass Deflection: Maximum differential deflection for two adjacent unsupported edges when 50 plf force is applied to one panel at any point up to 42 inches above finished floor less than thickness of glass.

1.3 SUBMITTALS

A. Shop Drawings: Signed and sealed by professional engineer.
   1. Indicate sizes, layout, thicknesses, and loading conditions for glass.

B. Product Data:
   1. Glass: Provide structural, physical, and thermal and solar optical performance characteristics, size limitations, special handling or installation requirements.
   2. Glazing Sealants, Compounds and Accessories: Provide chemical, functional, and environmental characteristics, limitations, special application requirements. Identify available colors where exposed.

1.4 QUALITY ASSURANCE

A. Perform Work in accordance with GANA Glazing Manual, GANA FGMA Sealant Manual, GANA Laminated Glass Design Guide for glazing installation methods.

B. Fire Rated Door Glazing: Tested in accordance with one of the following and complying with NFPA 80.
   1. NFPA 252; with neutral pressure level at 40 inches maximum above sill at 5 minutes into test.
   2. UL 10C.

C. Apply label from agency approved by authority having jurisdiction to identify each fire rated glass lite.

1.5 WARRANTY

A. Furnish ten year manufacturer warranty including coverage for sealed glass units from seal failure, interpane dusting, misting, and replacement of defective glass.

B. Furnish ten year warranty to include coverage for delamination of laminated glass and replacement of defective glass.

PART 2 PRODUCTS

2.1 FLOAT GLASS MATERIALS

A. Heat Strengthened Glass: ASTM C1048, Type 1 transparent flat, Quality Q3, Kind HS heat strengthened, Condition A uncoated, float glass.

B. Tempered Glass: ASTM C1048, Type 1 transparent flat, Quality Q3, Kind FT fully tempered, Condition A uncoated, float glass with horizontal tempering.
   1. Furnish tempered glass where heat strengthened glass cannot meet specified performance requirements.
   2. Furnish tempered glass conforming to CPSC 16 CFR 1201 Category IIat locations where safety glass is required by applicable code.

2.2 FLOAT GLASS PRODUCTS

A. Clear Glass: Heat strengthened and Tempered float glass as specified; Class 1 clear.
   1. Clear tempered glass (FG-CT).
   2. Minimum Thickness: ¼ inch, unless otherwise indicated.

2.3 COMPONENTS

A. Safety Glass: Conform to ANSI Z97.1, minimum thickness ¼ inch unless otherwise indicated.
   1. Clear Tempered Glass (Type GL-1): ASTM C1048, Kind FT Fully tempered, Condition A, uncoated, Type 1 transparent flat, Class 1 clear, Quality q3 glazing select.

2.4 ACCESSORIES

A. Elastomeric Glazing Sealants: Materials compatible with adjacent materials including glass, insulating glass seals and glazing channels.
   1. Silicone Glazing Sealant: ASTM C920, Type S, Grade NS, Class and Use suitable for glazing application indicated; single component; solvent curing; capable of water immersion without loss of properties; non-bleeding, non-staining, cured Shore A hardness of 15 to 25.
      a. Color: As selected.
      b. Structural Silicone: Furnish high-modulus structural silicone glazing materials where sealant bonds glass to substrate.

   2. Polyurethane Glazing Sealant: ASTM C920, Type S, Grade NS, Class and Use suitable for glazing application indicated; single component, chemical curing, non-staining, non-bleeding, Shore A Hardness Range 20 to 35.
      a. Color: As selected.
   3. Acrylic Sealant: ASTM C920, Type S, Grade NS, Class and Use suitable for glazing application indicated; single component, solvent curing, non-bleeding; cured Shore A hardness of 15 to 25.

a. Color: As selected.

B. Setting Blocks: ASTM C864 Option I, Neoprene, 80 to 90 Shore A durometer hardness.

C. Spacer Shims: ASTM C864 Option I, Neoprene, 50 to 60 Shore A durometer hardness.

D. Glazing Clips: Manufacturer's standard type.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify openings for glazing are correctly sized, within tolerance, and glazing channels or recesses are clean, free of obstructions, and ready to receive glazing.

3.2 PREPARATION

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

B. Prime surfaces scheduled to receive sealant.

3.3 INSTALLATION

A. Perform installation in accordance with GANA Glazing Manual.
   1. Glazing Sealants: Comply with ASTM C1193.
   2. Fire Rated Openings: Comply with NFPA 80.

B. Interior Dry Method (Tape and Tape) Installation:
   1. Cut glazing tape to length and set against permanent stops, projecting 1/16 inch above sight line.
   2. Place setting blocks at 1/3 points.
   3. Rest glazing on setting blocks and push against tape for full contact at perimeter of pane or unit.
   4. Place glazing tape on free perimeter of glazing in same manner described above.
   5. Install removable stop without displacement of tape. Exert pressure on tape for full continuous contact.
   6. Knife trim protruding tape.

C. Interior Wet/Dry Method (Tape and Sealant) Installation:
   1. Cut glazing tape to length and install against permanent stops, projecting 1/16 inch above sight line.
   2. Place setting blocks at 1/3 points.
   3. Rest glazing on setting blocks and push against tape to ensure full contact at perimeter of pane or unit.
   4. Install removable stops, spacer shims inserted between glazing and applied stops at 24 inch intervals, ¼ inch below sight line.
   5. Fill gaps between pane and applied stop with elastomeric glazing sealant to depth equal to bite on glazing, to uniform and level line.
   6. Trim protruding tape edge.

D. Plastic Film Installation:
   1. Install plastic film with adhesive.
   2. Place without air bubbles, creases or visible distortion.

3. Fit tight to glass perimeter with razor cut edge.

3.4 CLEANING

A. Remove glazing materials from finish surfaces.

B. Remove labels after Work is complete.

C. Clean glass and adjacent surfaces.

END OF SECTION

**SECTION 09260**

**GYPSUM BOARD ASSEMBLIES**

PART 1 GENERAL

1.1 SUMMARY

A. Section includes gypsum board with joint treatment; metal stud wall framing; metal channel ceiling framing; and acoustic insulation.

B. Refer to Division 0 and Division 1 requirements. Requirements of these Sections and the project drawings shall govern work in this Section.

1.2 SUBMITTALS

A. Product Data: Submit data on metal framing, gypsum board, joint tape; acoustic accessories.

1.3 QUALITY ASSURANCE

A. Perform Work in accordance with ASTM C840. GA-201 - Gypsum Board for Walls and Ceilings. GA-214 - Recommended Specification: Levels of Gypsum Board Finish. GA-216 - Recommended Specifications for the Application and Finishing of Gypsum Board.

B. Furnish framing materials in accordance with SSMA - Product Technical Information.

PART 2 PRODUCTS

2.1 GYPSUM BOARD ASSEMBLIES

A. Manufacturers:
   1. G-P Gypsum Corp.
   2. National Gypsum Co.
   3. United States Gypsum Co.
   4. Substitutions: Permitted.

2.2 COMPONENTS

A. Studs and Tracks: ASTM C645; GA-216 and GA-600; galvanized sheet steel, 0.030 inch thick, C shape.

B. Furring, Framing, and Accessories: ASTM C645, GA-216 and GA-600.

C. Gypsum Board Materials: ASTM C1396/C1396M; Type X fire resistant everywhere.
   1. Standard Gypsum Board: 5/8 inch thick, maximum available length in place; ends square cut, tapered edges, Dens Armor Paperless.
   2. Exterior Gypsum Soffit Board: ½ inch thick, maximum available length in place; ends square cut, tapered edges.
   3. Showers: Water resistant board.

2.3 ACCESSORIES

A. Acoustic Insulation: ASTM C665, preformed glass fiber, friction fit type, unfaced, 3 inch thick.

B. Acoustic Sealant: Non-hardening, non-skinning, for use in conjunction with gypsum board.

C. Gypsum Board Accessories: ASTM C1047; metal; corner beads, edge trim, and expansion joints.
   1. Metal Accessories: Galvanized steel.
   2. Edge Trim: Type LC, L or U bead.

D. Joint Materials: ASTM C475, GA-201 and GA-216, reinforcing tape, joint compound, and water.

E. Fasteners: ASTM C1002; Type S, GA-216; length to suit application.

F. Adhesive: ASTM C557, GA-216.

G. Gypsum Board Screws: ASTM C954, ASTM C1002; length to suit application.
   1. Screws for Steel Framing: Type S.

## PART 3 EXECUTION

### 3.1 EXAMINATION

A. Verify site conditions are ready to receive work.

### 3.2 INSTALLATION

A. Metal Studs:
   1. Install studs in accordance with ASTM C754 and GA-216.
   2. Metal Stud Spacing: 12 inches oc.
   3. Partition Heights: Full height to structure above. Install additional bracing for partitions extending above ceiling.

B. Ceiling Framing:
   1. Install in accordance with ASTM C754 and GA-216.
   2. Coordinate location of hangers with other work. Install ceiling framing independent of walls, columns, and above ceiling work.
   3. Reinforce openings in ceiling suspension system interrupting main carrying channels or furring channels, with lateral channel bracing.
   4. Laterally brace entire suspension system.

C. Acoustic Accessories:
   1. Place acoustic insulation in partitions tight within spaces, around cut openings, behind and around electrical and mechanical items within or behind partitions, and tight to items passing through partitions.
   2. Install acoustic sealant within partitions.

D. Gypsum Board:
   1. Install gypsum board in accordance with GA-216 and GA-600.
   2. Fasten gypsum board to furring or framing with screws.
   3. Place control joints consistent with lines of building spaces as directed by Architect/Engineer.
   4. Place corner beads at external corners. Use longest practical length. Place edge trim where gypsum board abuts dissimilar materials.
   5. Seal cut edges and holes in exterior gypsum soffit board with sealant.

E. Joint Treatment:
   1. Finish in accordance with GA-214 Level 4.
   2. Tape, fill, and sand exposed joints, edges, and corners to produce smooth surface ready to receive finishes.
   3. Feather coats onto adjoining surfaces so camber is maximum 1/32 inch.
   4. Taping, filling, and sanding is not required at surfaces behind adhesive applied ceramic tile.

F. Tolerances: Maximum Variation from Flat Surface: 1/8 inch in 10 feet in any direction.

END OF SECTION

**SECTION 09510**

**ACOUSTICAL CEILINGS**

PART 1 GENERAL

1.1 SUMMARY

A. Section includes suspended metal grid ceiling system; and acoustic tile.

B. Refer to Division 0 and Division 1 requirements. Requirements of these Sections and the project drawings shall govern work in this Section.

1.2 SYSTEM DESCRIPTION

A. Provide system capable of supporting imposed loads with deflection limited to 1: 360.

1.3 SUBMITTALS

A. Shop Drawings: Indicate ceiling layout.

B. Product Data: Submit manufacturer's product data.

C. Samples: Submit ceiling tile and suspension system.

1.4 QUALITY ASSURANCE

A. Conform to CISCA requirements.

B. Surface Burning Characteristics: Maximum 25/450 flame spread/smoke developed index when tested in accordance with ASTM E84.

1.5 ENVIRONMENTAL REQUIREMENTS

A. Maintain uniform temperature of minimum 60 degrees F, and maximum humidity acoustic unit installation.

PART 2 PRODUCTS

2.1 SUSPENDED ACOUSTICAL CEILINGS

A. Manufacturers:
   1. United States Gypsum Company, Model 131 “F” Fissured.
   2. Substitutions: Not Permitted.

2.2 COMPONENTS

A. Grid:
   1. Non-Fire Rated Grid: ASTM C635, intermediate duty, non-fire rated, exposed T configuration; components die cut and interlocking.
   2. Grid Materials: Commercial quality cold rolled steel with galvanized coating.
   3. Exposed grid surface width: 15/16 inch.
   4. Grid Finish: White color.

5. Support Channels and Hangers: Galvanized steel, size and type to suit application and ceiling system flatness requirements specified.

B. Acoustic Tiles: ASTM E1264 conforming to the following:
   1. Nominal Size: 24 x 24 inches.
   2. Thickness: ¾ inches.
   3. Surface Finish: Non-directional fissured.
   4. Edge: Square.
   5. Color: White.

2.3 ACCESSORIES

A. Acoustic Batt Insulation: ASTM C665, friction fit type, unfaced; 3 inch thick.

B. Gypsum Board: Fire rated type, 5/8 inch thick, paper faced.

C. Acoustic Sealant for Perimeter Moldings: Specified in Section 07900.

D. Touch-up Paint: Type and color to match acoustic and grid units.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify layout of hangers does not interfere with other work.

3.2 INSTALLATION

A. Suspension System:
   1. Install system in accordance with ASTM C636.
   2. Coordinate location of hangers with other work. Where components prevent regular spacing of hangers, reinforce system to span extra distance.
   3. Hang system independent of walls, columns, ducts, pipes and conduit.
   4. Locate system on room axis leaving equal border units, according to reflected plan.
   5. Install edge molding at intersection of ceiling and vertical surfaces, using longest practical lengths.

B. Acoustic Units:
   1. Install acoustic units level, free from damage, twist, warp or dents.
   2. Lay acoustic insulation above acoustic units for distance of 48 inches on both sides of acoustic partitions.

C. Tolerances: Variation from Flat and Level Surface: 1/8 inch in 10 feet.

END OF SECTION

**SECTION 09680**

**CARPET**

PART 1 GENERAL

1.1 SUMMARY

A. Section includes carpet direct-glued.

B. Refer to Division 0 and Division 1 requirements. Requirements of these Sections and the project drawings shall govern work in this Section.

1.2 SUBMITTALS

A. Shop Drawings: Indicate seaming plan, method of joining seams, direction of carpet pile and pattern, location of edge moldings and edge bindings.

1.3 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: Submit maintenance and cleaning instructions.

1.4 QUALITY ASSURANCE

A. Surface Burning Characteristics:
   1. Floor Finishes: Comply with one of the following:
      a. Class I, minimum 0.45 watts/sq cm when tested in accordance with NFPA 253.
      b. CPSC 16 CFR 1630.

1.5 ENVIRONMENTAL REQUIREMENTS

A. Store materials in area of installation of 48 hours prior to installation.

B. Maintain minimum 70 degrees F ambient temperature 3 days prior to, during and 24 hours after installation.

C. Ventilate installation area during installation and for 3 days after installation.

1.6 WARRANTY

A. Furnish five year manufacturer warranty for carpet integrity, wear, and colorfastness.

1.7 EXTRA MATERIALS

A. Furnish 1% sq ft of carpeting of each type, color, and pattern specified.

PART 2 PRODUCTS

2.1 CARPET COMPONENTS

A. Carpet Field: Tandus with Power Bond backing, 6 ft. roll goods.
   1. Style: 11498 - Fabricate.
   2. Color: 36204 – French Navy.

3. Substitutions: Not Permitted.

2.2 ACCESSORIES

A. Sub-Floor Filler: Cementitious Type recommended by flooring material manufacturer.

B. Tackless Strip: Carpet gripper, of type recommended by carpet manufacturer to suit application, with attachment devices.

C. Moldings and Edge Strips: Vinyl, color as selected.

D. Seam Adhesive: Recommended by manufacturer.

E. Contact Adhesive: Compatible with carpet material and recommended by carpet manufacturer.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify floor surfaces are smooth and flat within tolerances specified in Section 03050 and are ready to receive work.

B. Verify concrete floors for glue-down installation are ready for carpet installation by testing for moisture emission rate and alkalinity. Obtain instructions when test results are not within specified limits.

3.2 PREPARATION

A. Remove sub-floor ridges and bumps. Fill minor or local low spots, cracks, joints, holes, and other defects with sub-floor filler.

B. Apply, trowel, and float filler to achieve smooth, flat, hard surface. Prohibit traffic until filler is cured.

C. Vacuum clean substrate.

3.3 INSTALLATION

A. Install carpet and cushion in accordance with Carpet and Rug Institute CRI 104 - Standard for Installation of Commercial Carpet.

B. Verify carpet match before cutting to ensure minimal variation between dye lots.

C. Lay out carpet and locate seams in accordance with shop drawings:
1. Locate seams in area of least traffic, out of areas of pivoting traffic, and parallel to main traffic.
2. Do not locate seams perpendicular through door openings.
3. Align run of pile in same direction as anticipated traffic and in same direction on adjacent pieces.
4. Locate change of color or pattern between rooms under door centerline.
5. Provide monolithic color, pattern, and texture match within each contiguous area.

D. Install carpet by direct glue-down method.

E. Complete installation of edge strips, concealing exposed edges. Bind cut edges where not concealed by edge strips.

F. Cleaning:
   1. Remove excess adhesive from floor, base, and wall surfaces without damage.
   2. Clean and vacuum carpet surfaces.

END OF SECTION

**SECTION 09900**

**PAINTS AND COATINGS**

PART 1 GENERAL

1.1 SUMMARY

A. Section includes surface preparation and field application of paints stains, varnishes and other coatings.

B. Refer to Division 0 and Division 1 requirements. Requirements of these Sections and the project drawings shall govern work in this Section.

1.2 SUBMITTALS

A. Product Data: Submit data on finishing products.

B. Samples: Submit two paper chip samples, 8 x 12 inch in size illustrating range of colors available for each surface finishing product scheduled.

1.3 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: Submit maintenance and cleaning instructions.

1.4 QUALITY ASSURANCE

A. Surface Burning Characteristics:
   1. Fire Retardant Finishes: Maximum 25/450 flame spread/smoke developed index when tested in accordance with ASTM E84, NFPA 255 and UL 723.

1.5 ENVIRONMENTAL REQUIREMENTS

A. Store and apply materials in environmental conditions required by manufacturer's instructions.

PART 2 PRODUCTS

2.1 PAINTS AND COATINGS

A. Manufacturers:
   1. Fuller-O'Brien.
   2. ICI Paint Stores.
   3. PPG Architectural Finishes.
   4. Sherwin Williams.
   5. The Glidden Co.
   6. Substitutions: Permitted.

2.2 COMPONENTS

A. Coatings: Ready mixed except field catalyzed coatings of good flow and brushing properties, capable of drying or curing free of streaks or sags.

1. Flat and Non-Flat Paints: Maximum volatile organic compound content in accordance with GS-11.
2. Anti-Corrosive Paints: Maximum volatile organic compound content in accordance with GC-03.
3. Clear Wood Finishes: Maximum volatile organic compound content in accordance with SCAQMD Rule 1113.

B. Accessory Materials: Linseed oil, shellac, turpentine, paint thinners and other materials required to achieve finishes specified.
   1. Clear Wood Finishes: Maximum volatile organic compound content in accordance with SCAQMD Rule 1113.

## PART 3 EXECUTION

### 3.1 EXAMINATION

A. Verify substrate conditions are ready to receive Work.

B. Measure moisture content of porous surfaces using electronic moisture meter. Do not apply finishes unless moisture content is less than 12 percent.

### 3.2 PREPARATION

A. Correct minor defects and clean surfaces affecting work of this section.

B. Remove electrical plates, hardware, light fixture trim, escutcheons, and fittings prior to preparing surfaces or applying finishes.

C. Gypsum Board Surfaces: Fill minor defects with filler compound. Spot prime defects after repair.

D. Galvanized Surfaces: Remove surface contamination and oils and wash with solvent. Apply coat of etching primer.

E. Concrete and Unit Masonry Surfaces Scheduled to Receive Paint Finish: Remove foreign matter. Remove oil and grease with solution of tri-sodium phosphate, rinse well and allow to dry.

F. Uncoated Steel and Iron Surfaces: Remove scale by wire brushing, sandblasting, clean by washing with solvent. Apply treatment of phosphoric acid solution. Prime paint after repairs.

G. Shop Primed Steel Surfaces: Sand and scrape to remove loose primer and rust. Clean surfaces with solvent. Prime bare steel surfaces.

H. Interior Wood Items Scheduled to Receive Transparent Finish: Wipe off dust and grit prior to sealing, seal knots, pitch streaks, and sappy sections with sealer. Fill nail holes and cracks after sealer has dried; sand lightly between coats.

### 3.3 APPLICATION

A. Sand wood and metal surfaces lightly between coats to achieve required finish.

B. Where clear finishes are required, tint fillers to match wood.

C. Prime concealed surfaces of interior woodwork with primer paint.

D. Prime concealed surfaces of interior wood surfaces scheduled to receive stain or varnish finish with gloss varnish reduced 25 percent with thinner.

E. Finishing Mechanical And Electrical Equipment:
   1. Refer to Mechanical and Electrical Sections for schedule of color coding, identification banding of equipment, duct work piping, and conduit.
   2. Color code items in accordance with requirements indicated. Color band and identify with flow arrows, names and numbering.
   3. Paint shop primed equipment.
   4. Remove unfinished louvers, grilles, covers, and access panels and paint separately. Paint dampers exposed behind louvers, grilles, convector and baseboard cabinets to match face panels.
   5. Prime and paint insulated and exposed pipes, insulated and exposed ducts, hangers, brackets, collars and supports, except where items are prefinished.
   6. Paint interior surfaces of air ducts and convector and baseboard heating cabinets visible through grilles and louvers with one coat of flat black paint to visible surfaces.
   7. Paint exposed conduit and electrical equipment occurring in finished areas.
   8. Paint both sides and edges of plywood backboards.
   9. Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings removed prior to finishing.

F. Cleaning: As work proceeds, promptly remove finishes where spilled, splashed, or spattered.

3.4 SCHEDULE - SHOP PRIMED ITEMS FOR SITE FINISHING

A. Metal Fabrications Section 05500: Exposed surfaces of lintels and handrails.

3.5 SCHEDULE - EXTERIOR SURFACES

A. Steel - Galvanized:
   1. One coat of galvanize primer.
   2. Two coats of alkyd enamel, gloss.

3.6 SCHEDULE - INTERIOR SURFACES

A. Wood - Transparent:
   1. Filler coat (for open grained wood only).
   2. One coat of stain.
   3. One coat of sealer.
   4. Two coats of varnish, satin.

B. Concrete, Concrete Block:
   1. One coat of block filler.
   2. One coat of primer sealer latex.
   3. Two coats of latex, semi-gloss.

C. Concrete, Concrete Block: Existing:
   1. Touch-up with primer sealer latex.
   2. Touched up areas to receive two coats of latex, semi-gloss.

D. Concrete Block: Shower/Locker Room (New Construction):
   1. One coat of block filler.
   2. One coat of primer sealer latex.

3. Two coats of epoxy, semi-gloss.

E. Concrete Block: Shower/Locker Room (Existing Construction):
   1. Touch-up with one coat of primer sealer latex.
   2. Primer areas to receive two coats of epoxy, semi-gloss.
   3. Pre-painted block to receive one coat of epoxy, semi-gloss.

F. Steel - Primed:
   1. Touch-up with alkyd primer.
   2. Two coats of latex enamel, semi-gloss.

G. Steel - Galvanized:
   1. Touch-up with one coat of galvanize primer.
   2. Two coats of latex enamel, semi-gloss.

H. Steel - Existing Painted
   1. Touch-up one coat alkyd primer.
   2. Primed areas to receive two coats of latex enamel, semi-gloss.
   3. Pre-painted steel to receive one coat of latex enamel, semi-gloss.

I. Plaster, Gypsum Board:
   1. One coat of alkyd primer sealer.
   2. Two coats of latex acrylic enamel, eggshell.

J. Plaster, Gypsum Board: Shower Areas (New Construction):
   1. One coat of alkyd primer sealer.
   2. Two coats of epoxy, semi-gloss.

K. Plaster, Gypsum Board: Shower Areas (Existing Construction):
   1. Touch-up with one coat of alkyd primer.
   2. Primed areas to receive two coats of epoxy, semi-gloss.
   3. Pre-painted areas to receive one coat of epoxy, semi-gloss.

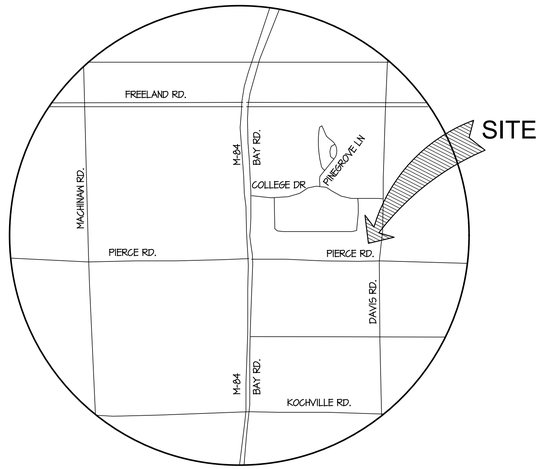
END OF SECTION

# RENOVATIONS TO RYDER CENTER SECOND FLOOR OFFICES FOR:

# SAGINAW VALLEY STATE UNIVERSITY

7400 BAY RD.
UNIVERSITY CENTER, MI 48710

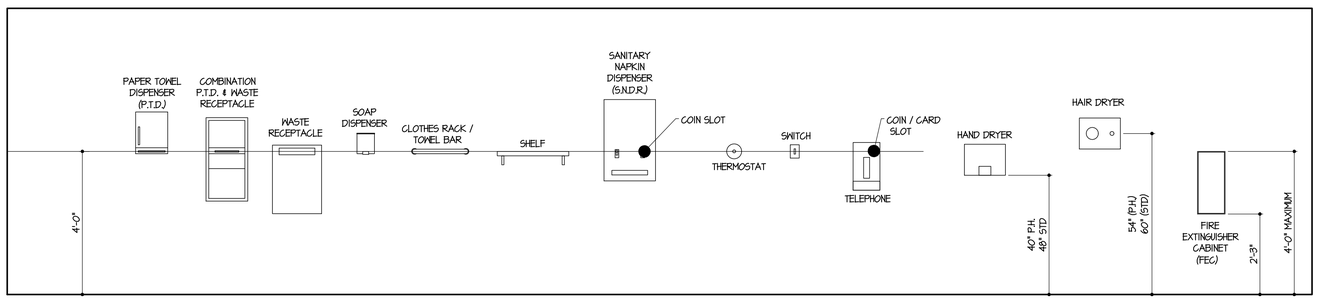
SVSU BID NO. 23009

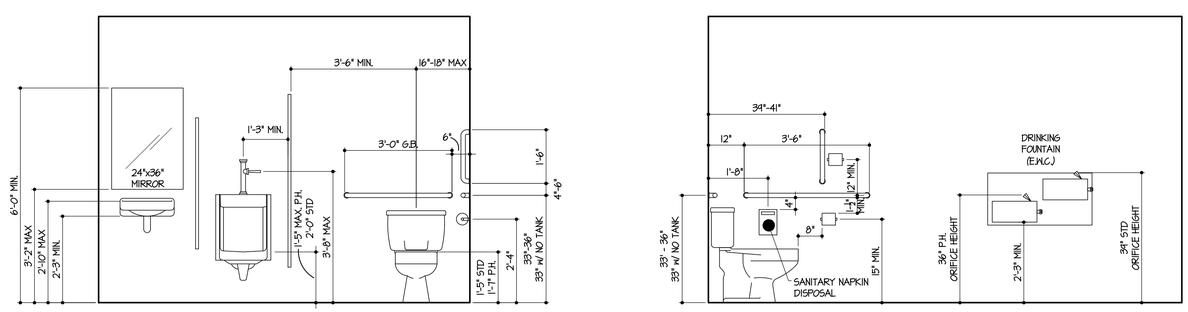



LOCATION MAP

ARCHITECT: TSSF ARCHITECTS, INC.
ARCHITECTS PLANNERS
122 N. WASHINGTON AVENUE SAGINAW , MICHIGAN

CONSULTING ENGINEERS: MECHANICAL / ELECTRICAL
MacMILLAN ASSOCIATES CONSULTING ENGINEERS
714 EAST MIDLAND STREET BAY CITY, MICHIGAN 48706




TYPICAL MOUNTING HEIGHTS

## ABBREVIATIONS:

| | |
|---|---|
| A.F.F. | ABOVE FINISH FLOOR |
| ALUM. | ALUMINUM |
| A/V | AUDIO– VISUAL |
| B.F. | BARRIER FREE |
| BIT. | BITUMINOUS |
| B.O. | BY OWNER / BOTTOM OF |
| C.J. | CONTROL JOINT |
| C.L. | CENTER LINE |
| CONC. | CONCRETE |
| C.T. | CERAMIC TILE |
| EA. | EACH |
| E.C. | ELECTRICAL CONTRACTOR |
| E.I.F.S. | EXTERIOR INSULATION FINISH SYSTEM |
| E.J. | EXPANSION JOINT |
| EQ. | EQUAL |
| F.D. | FLOOR DRAIN |
| FL. | FLOOR |
| FT. | FOOT |
| G.C. | GENERAL CONTRACTOR |
| GYP. BD. | GYPSUM BOARD |
| H.C.W. | HOLLOW CORE WOOD |
| H.M. | HOLLOW METAL |
| I.D. | INSIDE DIAMETER |
| K.D. | KNOCK DOWN |
| LT. | LIGHT |
| MANUF. | MANUFACTURER |
| MET. | METAL |
| M.O. | MASONRY OPENING |
| N.I.C. | NOT IN CONTRACT |
| O.C. | ON CENTER |
| O.D. | OUTSIDE DIAMETER |
| PART. | PARTITION |
| PL. | PLATE |
| P.O.N.C. | POINT OF NEW CONNECTION |
| PORC. | PORCELAIN CONNECTION |
| R.O. | ROUGH OPENING |
| S.A.F.B. | SOUND ABSORBING FIBERGLASS BATT |
| S.C.W. | SOLID CORE WOOD |
| S.S. | STAINLESS STEEL |
| STD. | STANDARD |
| SUSP. | SUSPENDED |
| T.O. | TOP OF |
| U.N.O. | UNLESS NOTED OTHERWISE |
| U/S | UNDERSIDE OF DECK |
| V. | VENT |
| V.B. | VINYL BASE |
| V.C.T. | VINYL COMPOSITION TILE |
| V.I.F. | VERIFY IN FIELD |
| V.T.R. | VENT THROUGH ROOF |
| W/ | WITH |
| W.C. | WATER CLOSET |
| WD. | WOOD |

## DRAWING INDEX:


COVER

ARCHITECTURAL

A0.1 CODE REVIEW
D2.0 PARTIAL SECOND FLOOR DEMO. PLAN
A2.0 PARTIAL SECOND FLOOR PLAN
A3.0 SCHEDULES AND NOTES
A9.0 PARTIAL SECOND FLOOR REFLECTED CEILING PLAN

MECHANICAL

M1.0 PARTIAL SECOND FLOOR PLAN – MECHANICAL DEMOLITION
M2.0 PARTIAL SECOND FLOOR PLAN – HVAC
M3.0 PARTIAL SECOND FLOOR PLAN – FIRE PROTECTION
M4.0 SCHEDULES AND SPECIFICATIONS

ELECTRICAL

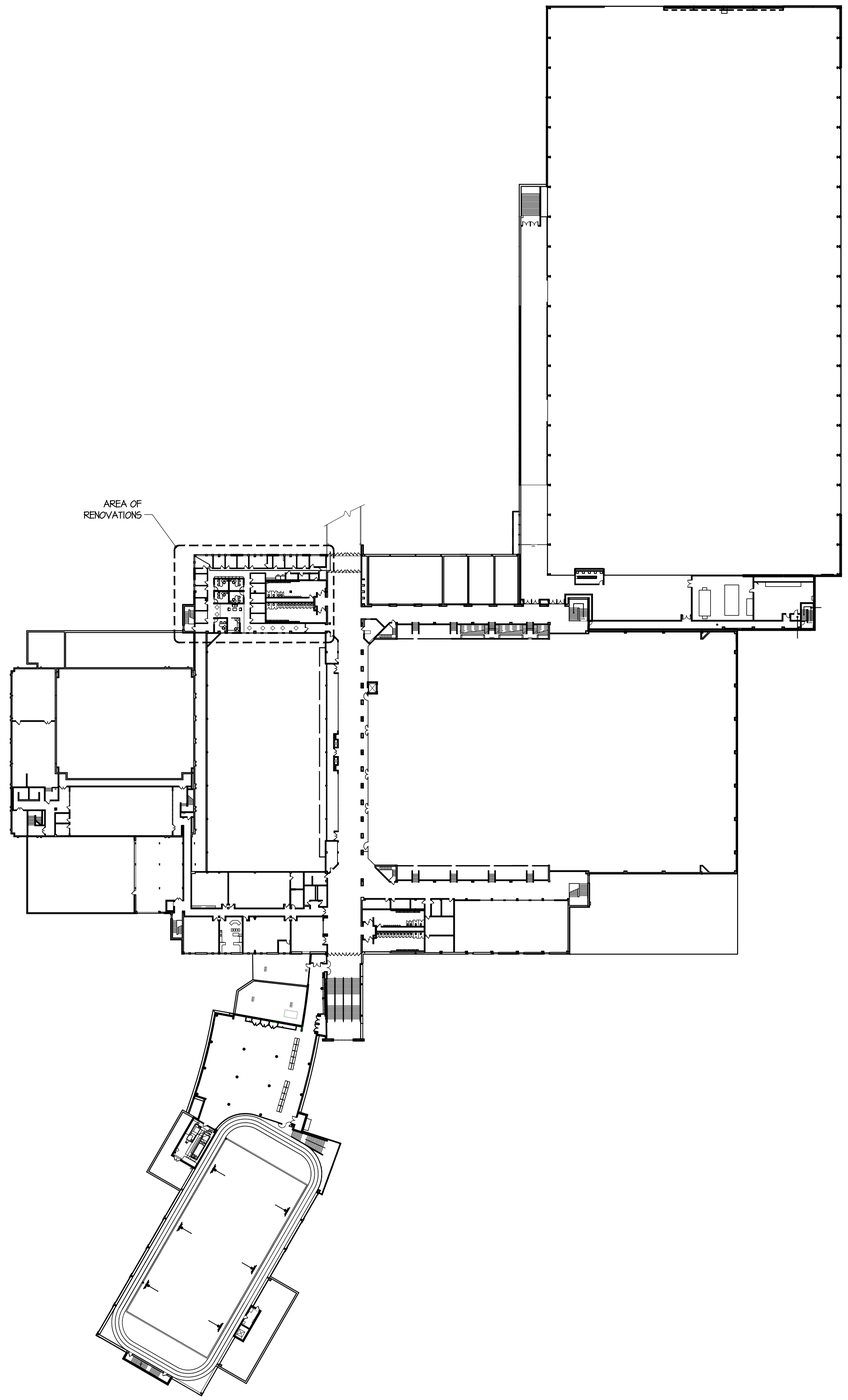
E1.0 PARTIAL SECOND FLOOR PLAN – ELECTRICAL DEMOLITION
E2.0 PARTIAL SECOND FLOOR PLAN – LIGHTING
E3.0 PARTIAL SECOND FLOOR PLAN – POWER AND SYSTEMS
E4.0 PANEL SCHEDULES AND SPECIFICATIONS
E5.0 PARTIAL SECOND FLOOR PLAN – EMERGENCY LIGHITNG CALCS


## SYMBOLS:

DETAIL SYMBOL | CROSS SECTION SYMBOL | ELEVATION SYMBOL

KEYED NOTES SYMBOL | WINDOW SYMBOL | DOOR SYMBOL | WALL TYPE SYMBOL

BID SET 08-05-22




MEZZANINE PLAN
SCALE: 1"= 60'-0"

## CODES:

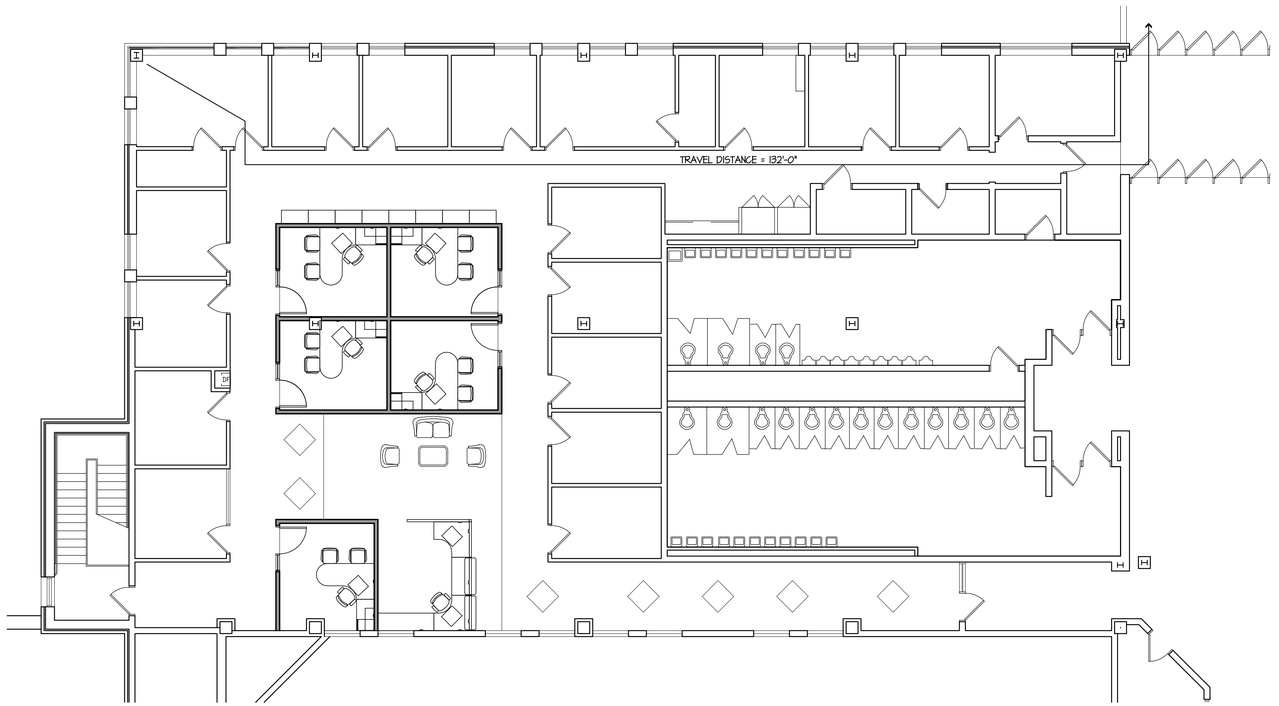
2015 MICHIGAN BUILDING CODE
2018 MICHIGAN MECHANICAL CODE
2018 MICHIGAN PLUMBING CODE
2017 NATIONAL ELECTRICAL CODE
2021 NFPA 1 - FIRE CODE

## BUILDING:

USE GROUP - ASSEMBLY A-4
CONSTRUCTION TYPE - 11B
FIRE SUPPRESSION - FULLY SPRINKLED

## BUILDING AREA:

| | |
|---|---|
| EXISTING GROUND FLOOR | 354,705 S.F. |
| EXISTING MEZZANINE FLOOR | 92,358 S.F. |
| RENOVATED AREA: | 2,298 S.F. |
| OCCUPANT LOAD: | 22 ALLOWABLE<br>6 IN RENOVATED AREA |




TSSF ARCHITECTS, INC.
ARCHITECTS PLANNERS
122 N. WASHINGTON AVENUE SAGINAW, MICHIGAN

RENOVATIONS TO RYDER CENTER SECOND FLOOR OFFICES:
SAGINAW VALLEY STATE UNIVERSITY
UNIVERSITY CENTER, MICHIGAM

| NO. | DATE |
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DATE 08/05/22
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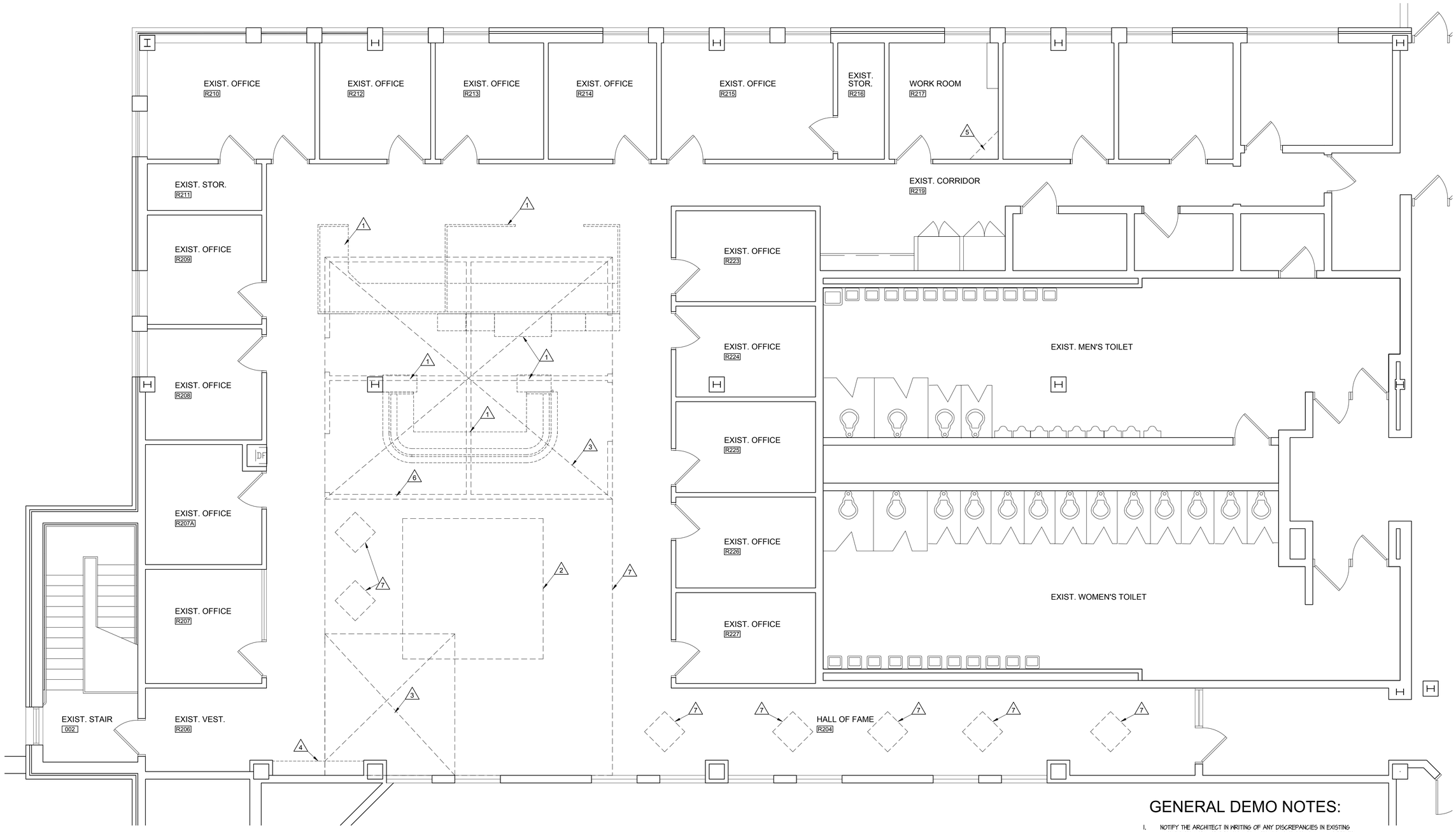
PROJECT NO.
2223




## PARTIAL SECOND FLOOR DEMOLITION PLAN

SCALE: 1/4" = 1'-0"

## DEMOLITION KEY NOTES:

1. DISCONNECT POWER AS REQUIRED FOR FURNITURE REMOVAL BY OWNER.
2. REMOVE EXISTING CARPET INSET, PREP FLOOR FOR NEW CARPET
3. REMOVE PORTION OF EXISTING CEILING TILE AND GRID AREA. SALVAGE TILES FOR REUSE.
4. REMOVE EXISTING TROPHY CASE AND CASEWORK BELOW. SALVAGE FOR OWNER.
5. REMOVE EXISTING SHELF. PATCH WALL AS REQUIRED.
6. REMOVE PORTION OF FLOORING FOR NEW WALL CONSTRUCTION.
7. REMOVE PORTION OF FLOORING FOR NEW CARPET REPLACEMENT OR WALLS, SEE SHEET A2.0 FOR DIMENSIONS.

## GENERAL DEMO NOTES:

1. NOTIFY THE ARCHITECT IN WRITING OF ANY DISCREPANCIES IN EXISTING CONDITIONS THAT MAY ALTER THE CONSTRUCTION PRIOR TO COMMENCING DEMOLITION / CONSTRUCTION.
2. CONTRACTOR TO REVIEW ALL DRAWINGS AND NOTES. NOTIFY THE ARCHITECT OF ANY DISCREPANCIES OR ADDITIONAL INFORMATION REQUIRED FOR THE PROPER COMPLETION OF PROJECT BEFORE SUBMITTING A BID AND UNDERTAKING CONSTRUCTION.
3. CONTRACTOR SHALL PROVIDE AND INSTALL ALL FLASHING, CAULKING AND OTHER MATERIALS AS REQUIRED TO ENSURE A WATERTIGHT, LEAK-PROOF PERIMETER DURING AND AFTER THE DEMOLITION PHASE.
4. EXISTING STRUCTURE (COLUMNS, BEAMS, GIRTS, ETC., DOOR HEADERS, JAMBS, ETC.) TO BE PROTECTED DURING THE DEMOLITION PROCESS (U.N.O.)
5. REMOVE AND DISPOSE OF TEMPORARY PROTECTION AS REQUIRED FOR NEW CONSTRUCTION.
6. ALL MATERIALS ARE EXISTING UNLESS NOTED OTHERWISE.
7. MECHANICAL, ELECTRICAL ITEMS TO BE DEMOLISHED SHALL BE BY THE RESPECTIVE TRADE CONTRACTOR.
8. FOR ADDITIONAL ITEMS TO BE DEMOLISHED SEE COMPLETE MECHANICAL AND ELECTRICAL DRAWINGS.

TSSF ARCHITECTS, INC.
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ARCHITECTS
122 N. WASHINGTON AVENUE SAGINAW, MICHIGAN

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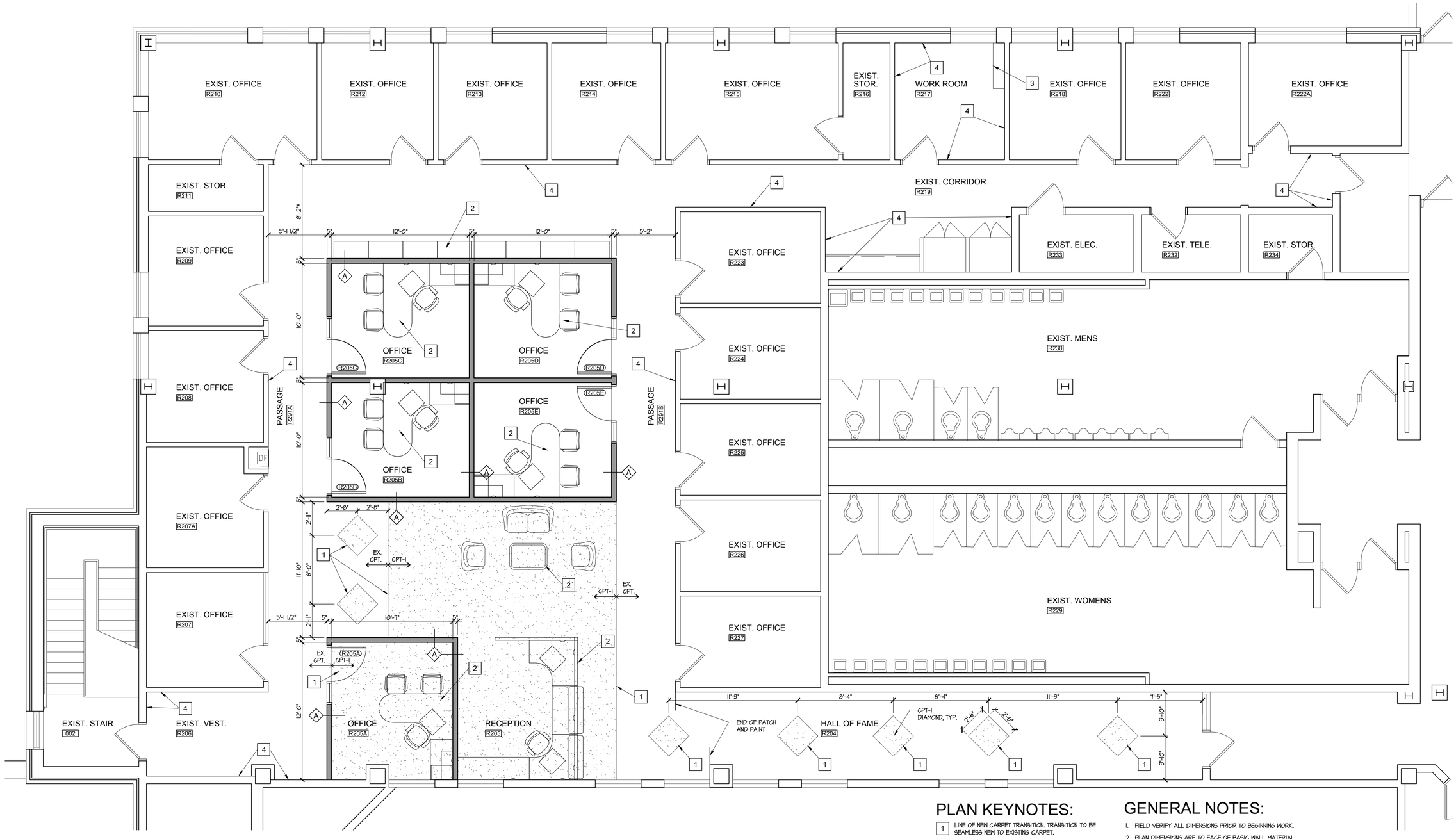


## PARTIAL SECOND FLOOR PLAN
SCALE: 1/4" = 1'-0"

## WALL TYPES:
SCALE: 1 1/2" = 1'-0"

A — NON-RATED
5/8" GYP. BD. ON BOTH SIDES OF MTL. STUD FRAMING @ 16" O.C. W/ 3" SAFB CREASED TO 6" ABOVE CLG., BRACE TO DECK ABOVE.

## PLAN KEYNOTES:

1. LINE OF NEW CARPET TRANSITION. TRANSITION TO BE SEAMLESS NEW TO EXISTING CARPET.
2. FURNITURE AND EQUIPMENT PROVIDED AND INSTALLED BY OWNER.
3. EXISTING SHELF TO REMAIN
4. PATCH AND PAINT WALL.

## GENERAL NOTES:

1. FIELD VERIFY ALL DIMENSIONS PRIOR TO BEGINNING WORK.
2. PLAN DIMENSIONS ARE TO FACE OF BASIC WALL MATERIAL (GYPSUM BOARD, PLASTER OR CMU) AND DO NOT INCLUDE THICKNESS OF FINISH MATERIAL (CERAMIC TILE, PANELING, ETC). AT AREAS WHERE GYP. BD. IS ADHERED TO CMU, THE DIMENSION IS TO THE CMU.
3. PROVIDE POLYURETHANE SEALANT AT ALL JUNCTURES OF DISSIMILAR MATERIALS (DOOR FRAMES, COUNTERTOPS, ETC.)
4. ALL CUTTING AND PATCHING IS THE RESPONSIBILITY OF THE TRADE REQUIRING THE WORK.
5. PROVIDE BLOCKING FOR ALL WALL HUNG EQUIPMENT AS REQUIRED. ALL WOOD BLOCKING MUST BE NON-COMBUSTABLE.
6. THE ARCHITECT DOES NOT HAVE CONTROL OR CHARGE OF THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, OR PROCEDURES, IS NOT RESPONSIBLE FOR SAFETY PRECAUTIONS AND PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK, AND WILL NOT BE RESPONSIBLE FOR THE CONTRACTOR'S FAILURE TO CARRY OUT THE WORK IN ACCORDANCE WITH THOSE DOCUMENTS PREPARED BY THE ARCHITECT.
7. ALL CONTRACTORS SHALL VISIT THE SITE AND ACQUAINT THEMSELVES WITH THE CONDITIONS UNDER WHICH THE CONTRACT WILL BE PERFORMED.

TSSF ARCHITECTS, INC.
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PROJECT NO. 2223

# FINISH SCHEDULE

| ROOM NO. | ROOM NAME | FLOORS | | BASE | WALLS | | | | | | | | CEILING | | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | NORTH | | EAST | | SOUTH | | WEST | | | | |
| | | MATERIAL | FINISH | | MAT. | FIN. | MAT. | FIN. | MAT. | FIN. | MAT. | FIN. | TYPE | HEIGHT | |
| R205 | RECEPTION | EXIST. | EX/CPT-1/ CPT-2 | V | GYP | PNT-1 | EX | - | EX/ GYP | PNT-1 | EX/ GYP | PNT-1 | EX | - | 1 2 |
| R205A | OFFICE | EXIST. | CPT | V | GYP | PNT-1 | GYP | PNT-1 | GYP | PNT-1 | GYP | PNT-1 | SAT | - | 2 |
| R205B | OFFICE | EXIST. | CPT | V | GYP | PNT-1 | GYP | PNT-1 | GYP | PNT-1 | GYP | PNT-1 | SAT | - | 2 |
| R205C | OFFICE | EXIST. | CPT | V | GYP | PNT-1 | GYP | PNT-1 | GYP | PNT-1 | GYP | PNT-1 | SAT | - | 2 |
| R205D | OFFICE | EXIST. | CPT | V | GYP | PNT-1 | GYP | PNT-1 | GYP | PNT-1 | GYP | PNT-1 | SAT | 10'-0" | 2 |
| R205E | OFFICE | EXIST. | CPT | V | GYP | PNT-1 | GYP | PNT-1 | GYP | PNT-1 | GYP | PNT-1 | SAT | - | 2 |
| R219 | CORRIDOR | EXIST. | EXIST. | V | EX | PNT-1 | EX | PNT-1 | EX/ GYP | PNT-1 | EX | PNT-1 | EX | - | 2 |
| R219A | PASSAGE | EXIST. | EXIST. | V | EX | PNT-1 | GYP | PNT-1 | EX | PNT-1 | EX | PNT-1 | EX | - | 2 |
| R219B | PASSAGE | EXIST. | EXIST. | V | EX | PNT-1 | EX | PNT-1 | EX | PNT-1 | GYP | PNT-1 | EX | - | 2 |
| | | | | | | | | | | | | | | | |

## FINISHES KEY:

SAT - ACOUSTICAL CEILING TILE
BOS - BOTTOM OF STRUCTURE
PT - PORCELAIN TILE
CPT - CARPET
GYP - GYPSUM BOARD
SEALED - SEALED CONC.
PNT - PAINT
V - RESILIENT WALL BASE
WC - WALL COVERING/ GRAPHIC
EXP - EXPOSED STRUCTURE
FRP - FIBERGLASS REINFORCED PANEL

## FINISH SCHEDULE NOTES:

1 PAINT ALL EXISTING WALLS ADJACENT TO NEW WALLS, SEE NOTE 4 ON A2.0.

2 REWORK CEILING GRID AND TILES FOR NEW WALL.

# SCHEDULE OF FINISHES

| ABBREV. | ITEM | MANUFACTURER | PATTERN/STYLE | COLOR | SIZE | REMARKS |
|---|---|---|---|---|---|---|
| V | WALL BASE | ROPPE | ROLL COVERED | DEEP NAVY P134 | 4" TALL | |
| | | | | | | |
| CPT-1 | CARPET | TARKETT | 11498 FABRICATE | 36204 FRENCH NAVY | 6 FT. ROLL GOODS | |
| | | | | | 6 FT. ROLL GOODS | |
| | | | | | | |
| PNT-1 | PAINT | SHERWIN WILLIAMS | | COLOR TO BE SELECTED BY OWNER | | INTERIOR WALLS - FIELD |
| PNT-2 | PAINT | SHERWIN WILLIAMS | | COLOR TO BE SELECTED BY OWNER | | DOORS AND FRAMES |
| | | | | | | |
| SAT | ACOUSTICAL TILE CEILING | USG | SQUARE EDGE/ FISSURED | COLOR: WHITE | 24"x24" | WHITE 15/16" GRID |
| | | | | | | |

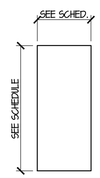
# DOOR SCHEDULE

| DOOR NO. | TYPE | MAT. | SIZE | | | FRAME | | DETAILS | | | CLASS RATING | HARDWARE SET | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | WIDTH | HT. | THICK | TYPE | MAT. | HEAD | JAMB | SILL | | | |
| R205A | A | HM | 3'-0" | 7'-0" | 1 3/4" | I | HM | 1/A3.0 | 2/A3.0 | - | - | 1 | 1 2 |
| R205B | A | HM | 3'-0" | 7'-0" | 1 3/4" | I | HM | 1/A3.0 | 2/A3.0 | - | - | 1 | 1 2 |
| R205C | A | HM | 3'-0" | 7'-0" | 1 3/4" | I | HM | 1/A3.0 | 2/A3.0 | - | - | 1 | 1 2 |
| R205D | A | HM | 3'-0" | 7'-0" | 1 3/4" | I | HM | 1/A3.0 | 2/A3.0 | - | - | 1 | 1 2 |
| R205E | A | HM | 2'-0" | 1'-10" | 1 3/4" | I | HM | 1/A3.0 | 2/A3.0 | - | - | 1 | 1 2 |
| | | | | | | | | | | | | | |

## DOOR SCHEDULE NOTES:

1 DOORS TO BE FLUSH HOLLOW METAL STYLE, PAINTED TO MATCH EXISTING.

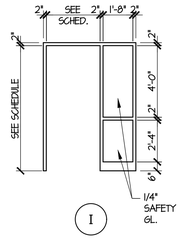
2 HARDWARE TO MATCH COLOR AND MANUFACTURER ON EXISTING DOORS.




A

## DOOR TYPES

SCALE: 1/4" = 1'-0"

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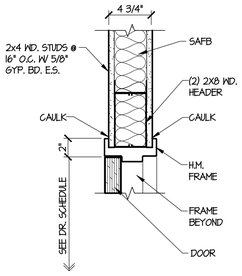
## FRAME TYPES

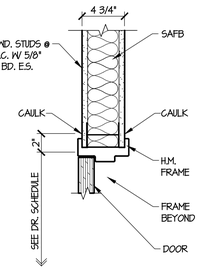
SCALE: 1/4" = 1'-0"




1 / A2.0

## HEAD

SCALE: 1 1/2" = 1'-0"




2 / A2.0

## JAMB

SCALE: 1 1/2" = 1'-0"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122 N. WASHINGTON AVENUE SAGINAW, MICHIGAN


RENOVATIONS TO RYDER CENTER SECOND FLOOR OFFICES:

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UNIVERSITY CENTER, MICHIGAM

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**A3.0**

PROJECT NO.
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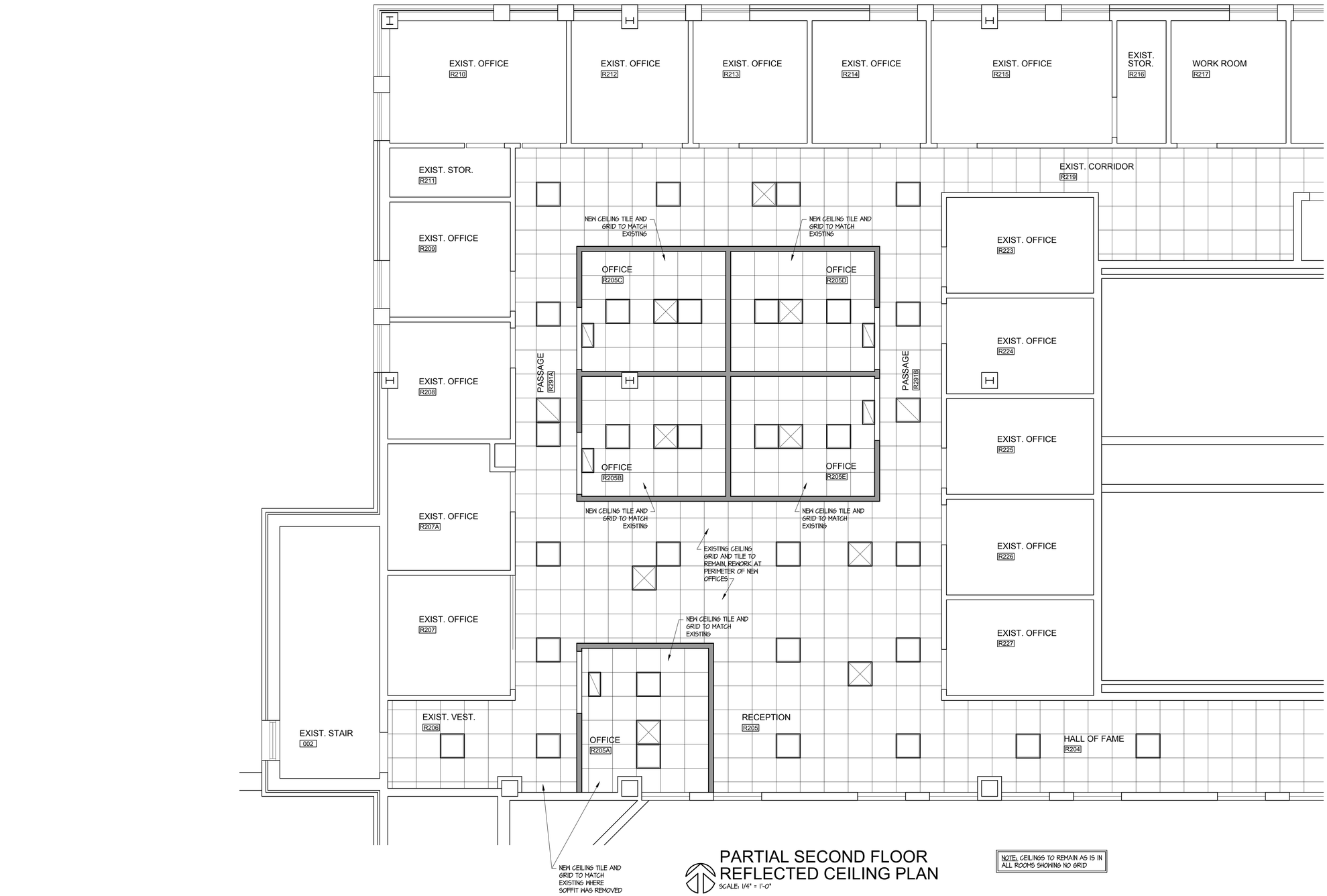


## PARTIAL SECOND FLOOR REFLECTED CEILING PLAN

SCALE: 1/4" = 1'-0"

NOTE: CEILINGS TO REMAIN AS IS IN ALL ROOMS SHOWING NO GRID

TSSF ARCHITECTS, INC.
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A9.0

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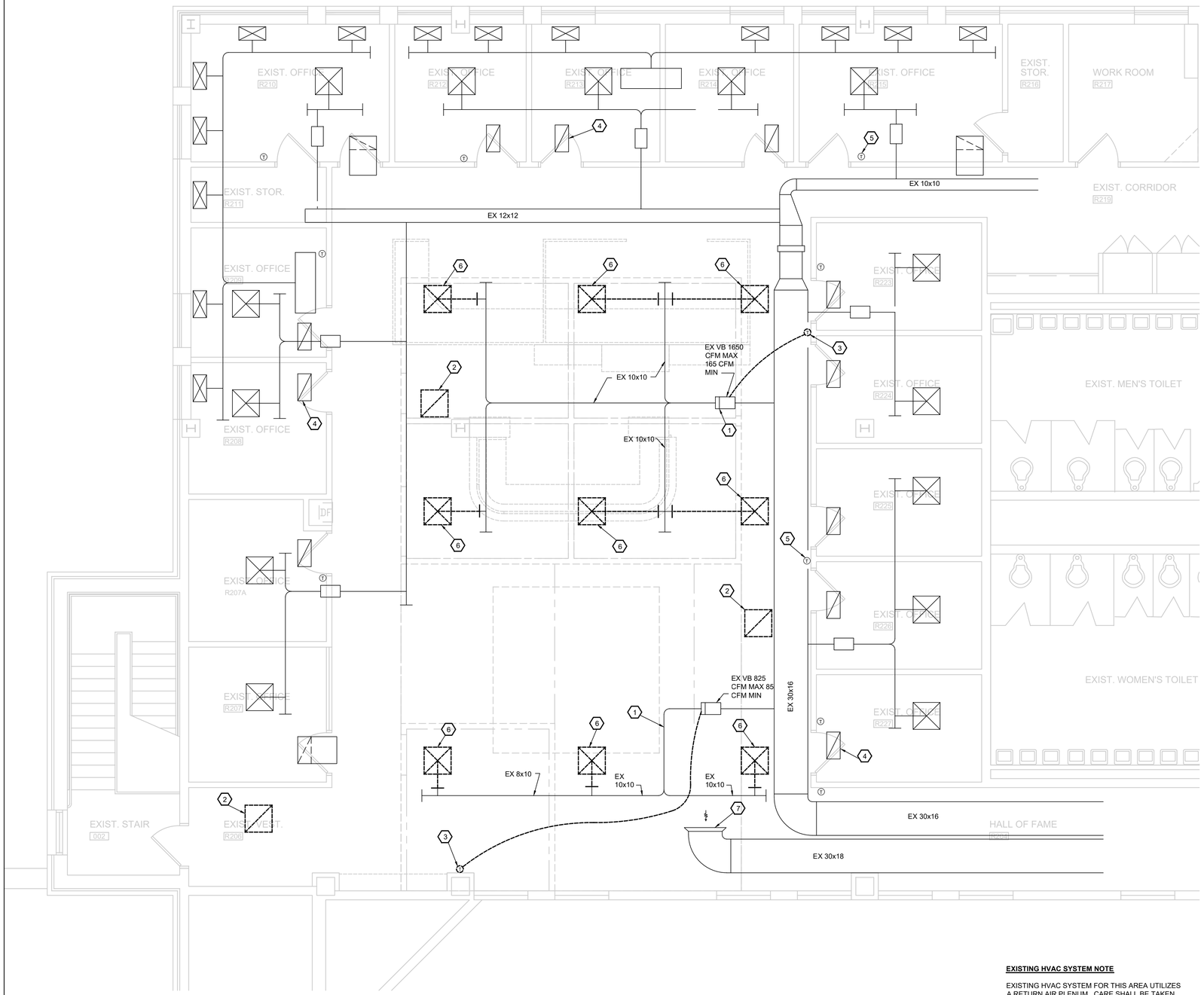


NORTH

## PARTIAL SECOND FLOOR PLAN - MECHANICAL DEMOLITION

1/4"=1'-0"

**KEYED NOTES**

1. EXISTING DUCTWORK, VAV BOXES, ETC TO REMAIN (TYP).
2. REMOVE AND RELOCATE EXISTING RETURN AIR GRILLE.
3. REMOVE AND RELOCATE EXISTING THERMOSTAT AND ASSOCIATED WIRING/PNEUMATIC TUBING.
4. EXISTING RETURN AIR GRILLE TO REMAIN (TYP).
5. EXISTING THERMOSTAT TO REMAIN. (TYP)
6. REMOVE EXISTING SUPPLY AIR DIFFUSER AND SUPPLY AIR DUCTWORK. EXISTING SUPPLY AIR DIFFUSERS SHALL BE REUSED.
7. EXISTING 30x18 RETURN AIR OPENING ABOVE CEILING. PROVIDE MERV 8 FILTERS OVER OPENING DURING CONSTRUCTION. SEE EXISTING HVAC SYSTEM NOTE ON THIS SHEET.

**EXISTING HVAC SYSTEM NOTE**

EXISTING HVAC SYSTEM FOR THIS AREA UTILIZES A RETURN AIR PLENUM. CARE SHALL BE TAKEN DURING CONSTRUCTION TO STOP DUST AND DEBRIS FROM BEING DEPOSITED ABOVE THE CEILING AND MIXED INTO THE RETURN AIR STREAM. PROVIDE MERV 8 FILTERS OVER RETURN AIR OPENINGS ABOVE CEILING DURING CONSTRUCTION.

**GENERAL NOTES**

1. ALL EXISTING EQUIPMENT, PIPING, DUCTWORK, ETC. THAT IS TO BE REMOVED SHALL REMAIN THE PROPERTY OF THE OWNER. THE CONTRACTOR SHALL REMOVE AND LOCATE THIS MATERIAL THAT REMAINS THE PROPERTY OF THE OWNER TO A LOCATION DETERMINED BY THE OWNER SOMEWHERE ON SITE. IF THE OWNER DOES NOT WANT TO MAINTAIN POSSESSION OF THE REMOVED MATERIAL, THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING MATERIAL FROM THE SITE AND DISPOSING OF THIS MATERIAL AS NECESSARY TO MEET ALL CODES AND REQUIREMENTS AND SHALL PAY ALL COSTS AS REQUIRED FOR ANY DISPOSAL FEES, INSPECTIONS, PERMITS, ETC.
2. REMOVE ALL EXISTING DUCT HANGERS, PIPE HANGERS, INSULATION, VALVES, FITTINGS, ETC. ASSOCIATED WITH DUCTWORK AND PIPING BEING REMOVED.

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ARCHITECTS PLANNERS
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RENOVATIONS TO RYDER CENTER SECOND FLOOR OFFICES:
SAGINAW VALLEY STATE UNIVERSITY
UNIVERSITY CENTER, MICHIGAM

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DATE 8/05/22
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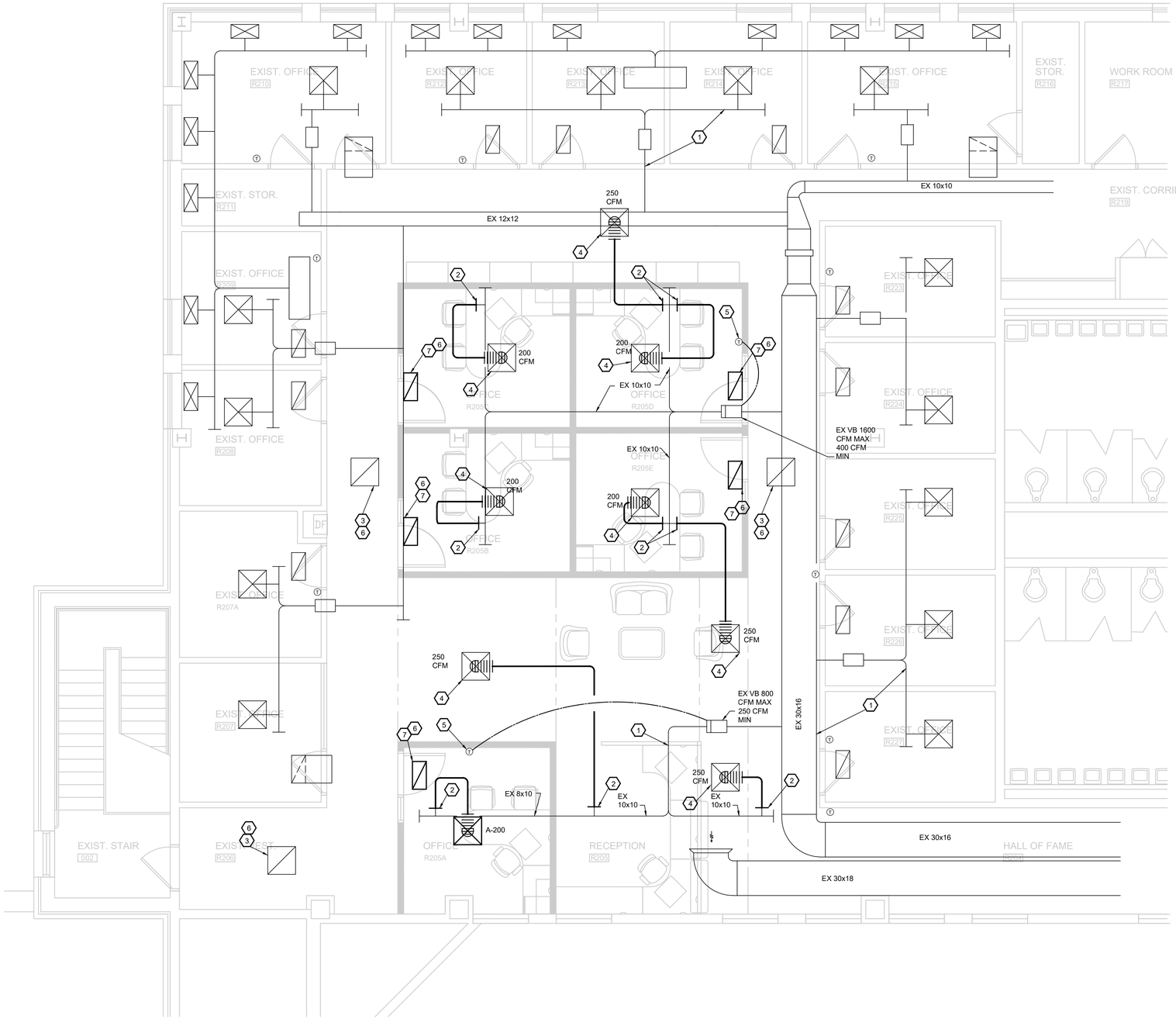
PROJECT NO.
2223

2/3/2021 11:22 AM MICHAEL VOGTMANN (MVOGTMANN@MACMILLANASSOCIATES.COM) F:\2-TSSF\2022-2703 SVSU RYDER CENTER OFFICE RENOVATION\2022-2703-M-M1.0 DEMO




NORTH

## PARTIAL SECOND FLOOR PLAN -HVAC

1/4"=1'-0"

KEYED NOTES

1. EXISTING DUCTWORK AND VAV BOXES SHOWN LIGHT TO REMAIN. (TYP).
2. CONNECT NEW SUPPLY AIR DUCTWORK TO EXISTING ABOVE CEILING. ROUTE ALL DUCTWORK ABOVE CEILING. FIELD VERIFY SIZE OF EXISTING DUCTWORK AND TRANSITION AS REQUIRED.
3. RELOCATE EXISTING 24X24 RETURN AIR GRILLE.
4. RELOCATE EXISTING SUPPLY AIR DIFFUSER.
5. RELOCATE EXISTING THERMOSTAT. EXTEND EXISTING WIRING/PNEUMATIC TUBING AS REQUIRED.
6. PROVIDE A RETURN AIR CANOPY MODEL #RAC BY PRICE INDUSTRIES FOR EACH RETURN AIR GRILLE.
7. NEW 24X12 TYPE "B" RETURN AIR GRILLE.

**TEMPERATURE CONTROL NOTE**

THE TEMPERATURE CONTROL CONTRACTOR IS JCI. THE TEMPERATURE CONTROL SCOPE OF WORK FOR THIS PROJECT IS AS FOLLOWS: RELOCATE TEMPERATURE/SENSORS AND RE-PROGRAM MAXIMUM/MINIMUM AIRFLOWS FOR TWO EXISTING VAV BOXES.

THE TEMPERATURE CONTROL CONTRACTOR SHALL BE ONSITE OR AVAILABLE DURING TEST AND BALANCE TO DRIVE NEW AND EXISTING BOXES TO 100% OPEN AND TO CALIBRATE BOXES TO AIRFLOWS AS SHOWN.

THE TEMPERATURE CONTROL CONTRACTOR SHALL REPROGRAM THE NOTED EXISTING VOLUME BOXES BEING REUSED TO NEW AIRFLOWS SHOWN ON THE DRAWINGS.

**GENERAL MECHANICAL NOTES**

1. ALL DIFFUSER AND GRILLE LOCATIONS SHALL BE COORDINATED WITH ARCHITECTURAL REFLECTED CEILING PLAN.
2. FURNISH AND INSTALL MANUAL BALANCING DAMPERS ON ALL SUPPLY AIR BRANCH DUCTWORK TO ALLOW BALANCING OF AIR OUTLETS INDIVIDUALLY.
3. FOR DUCT BRANCH SIZES ROUTING TO DIFFUSERS OR GRILLES NOT NOTED ON DRAWINGS, DUCT SIZE SHALL MATCH DIFFUSER OR GRILLE NECK SIZE NOTED ON DIFFUSER OR GRILLE SCHEDULE.
4. WHEN REUSING AN EXISTING SUPPLY AIR DIFFUSER THE NECK SIZE OF THE EXISTING DIFFUSER SHALL MATCH THE SCHEDULED DIFFUSER NECK SIZE FOR A NEW SUPPLY AIR DIFFUSER.

**TEST AND BALANCE NOTE**

THE TEST AND BALANCE CONTRACTOR SHALL BALANCE THE EXISTING & NEW VOLUME BOXES TO AIRFLOWS SHOWN ON DRAWING AND ALL ASSOCIATED DIFFUSERS AND GRILLES TO AIRFLOWS SHOWN ON THE REVISION DRAWINGS. THE TEST AND BALANCE CONTRACTOR SHALL PROVIDE A SEPARATE BID FROM THE MECHANICAL TRADES AND AN OWNER APPROVED TEST AND BALANCE CONTRACTOR SHALL BE USED.

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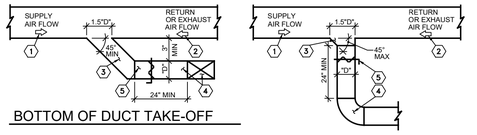
2/3/2021 11:22 AM MICHAEL VOGTMANN (MVOGTMANN@MACMILLANASSOCIATES.COM) F:\27-TSSF\2022-2703 SVSU RYDER CENTER OFFICE RENOVATION\2022-2703-MAE2.0 HP HVAC

## MECHANICAL SYMBOL LIST

| | |
|---|---|
| | REDUCER |
| | CAP |
| | FLEXIBLE CONNECTION |
| | ELBOW RISING UP |
| | ELBOW DROPPING DOWN |
| | TEE WITH PIPE UP |
| | TEE WITH PIPE DOWN |
| T | TEMPERATURE SENSOR |
| C | ROOM SENSOR CONTROLLER |
| T | THERMOSTAT OR WALL SENSOR |
| [A-250`] | SUPPLY AIR DIFFUSER - TYPE "A", 250 CFM |
| [B-250`] | RETURN OR EXHAUST AIR GRILLE - TYPE "B", 250 CFM |
| | MANUAL DAMPER |
| ABV | ABOVE |
| ACCU | AIR COOLED CONDENSING UNIT |
| ACU | AIR CONDITIONING UNIT |
| AFF | ABOVE FINISHED FLOOR |
| AHU | AIR HANDLING UNIT |
| CFM | CUBIC FEET PER MINUTE |
| CW | COLD WATER |
| EA | EXHAUST AIR |
| EAR | EXHAUST AIR REGISTER |
| EF | EXHAUST FAN |
| EL | ELEVATION |
| EX | EXISTING |
| FD | FLOOR DRAIN |
| FS | FLOOR SINK |
| GPM | GALLONS PER MINUTE |
| HHW | HEATING HOT WATER |
| HW | HOT WATER |
| HWR | HOT WATER RETURN |
| MBD | MANUAL BALANCING DAMPER |
| NC | NORMALLY CLOSED |
| NO | NORMALLY OPENED |
| OA | OUTSIDE AIR |
| PRV | PRESSURE REGULATING OR REDUCING VALVE |
| PSI | POUNDS PER SQUARE INCH |
| RA | RETURN AIR |
| RAR | RETURN AIR REGISTER |
| RF | RETURN AIR FAN |
| RTU | ROOF TOP UNIT |
| SA | SUPPLY AIR |
| SAR | SUPPLY AIR REGISTER |
| SP | STATIC PRESSURE |
| VA | VALVE |
| VAV | VARIABLE AIR VOLUME BOX |




BOTTOM OF DUCT TAKE-OFF

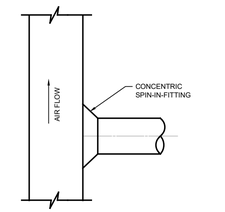



SIDE OF DUCT TAKE-OFF

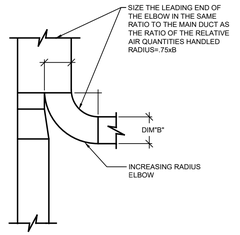
1. DIRECTION OF AIR FLOW FOR A SUPPLY AIR DUCT.
2. DIRECTION OF AIR FLOW FOR A RETURN AIR OR EXHAUST AIR DUCT.
3. ANGLED SHEET METAL TAP INTO DUCT MAIN.
4. MINIMUM 24" STRAIGHT DUCT BEFORE DUCT ELBOW.
5. MANUAL BALANCED DAMPER INSTALLED IN MINIMUM 24" STRAIGHT DUCT.

GENERAL NOTE:
ALL DUCT JOINTS, FITTINGS, ETC. SHALL BE EXTERNALLY SEALED, SEE SPECIFICATION FOR SEALANT INFORMATION.

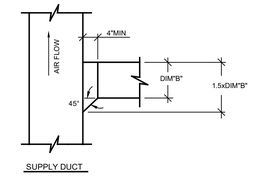
## BRANCH DUCT TAKE-OFF DETAIL
NO SCALE



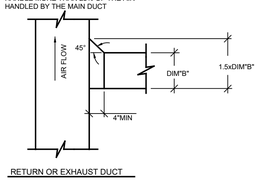

RECTANGULAR TO ROUND DUCT




SUPPLY, RETURN OR EXHAUST DUCT
FOR USE WHEN A BRANCH TAKE-OFF IS TO HANDLE MORE THAN 25% OF THE AIR HANDLED BY THE MAIN DUCT



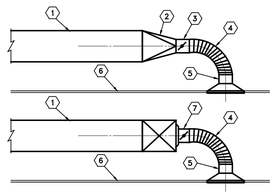

SUPPLY DUCT



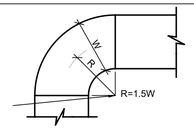

RETURN OR EXHAUST DUCT

## RECTANGULAR DUCT BRANCH TAKE-OFF DETAILS
NO SCALE

1. BRANCH DUCT
2. TRANSITION
3. DAMPER WITH POSITIVE LOCKING WING NUT
4. FLEXIBLE INSULATED DUCT SIMILAR TO FLEXMASTER TYPE 3 OR APPROVED EQUAL MAXIMUM 5'-0" LENGTH
5. DIFFUSER OR GRILLE W/ ROUND NECK OR SQUARE TO ROUND NECK ADAPTER
6. LAY-IN CEILING
7. TAKE-OFF FITTING SIMILAR TO FLEXMASTER MODEL #CB-D CONICAL BELL MOUTH FITTING WITH DAMPER AND POSITIVE LOCKING WING NUT

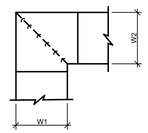



## BRANCH DUCT CONNECTION TO DIFFUSER OR GRILLE DETAIL
NO SCALE




NOTE
1. THE INTERIOR SURFACE OF ALL RADIUS ELBOWS SHALL BE MADE ROUND.
2. ALL STANDARD RADIUS ELBOWS CAN BE SUBSTITUTED WITH A SQUARE VANE MITERED ELBOW.
3. NO MITERED ELBOWS WITHOUT VANES SHALL BE INSTALLED.

## DUCTWORK RADIUS ELBOW




NOTE
1. ALL VANE ELBOWS SHALL BE CONSTRUCTED AND INSTALLED AS DETAILED BY SMACNA.
2. WHEN W1 DOES NOT EQUAL W2, VANE SHALL BE SINGLE THICKNESS VANE TYPE REGARDLESS OF W DIMENSION.
3. ALL SINGLE THICKNESS VANES SHALL HAVE A 2" RADIUS, 1 1/2" MAXIMUM SPACE BETWEEN VANES AND A 3/4" TRAILING EDGE.
4. WHEN W EQUALS W2 AND W1 IS GREATER THAN 20", VANES SHALL BE DOUBLE VANE TYPE.
5. NO MITERED ELBOW WITHOUT VANES SHALL BE INSTALLED.

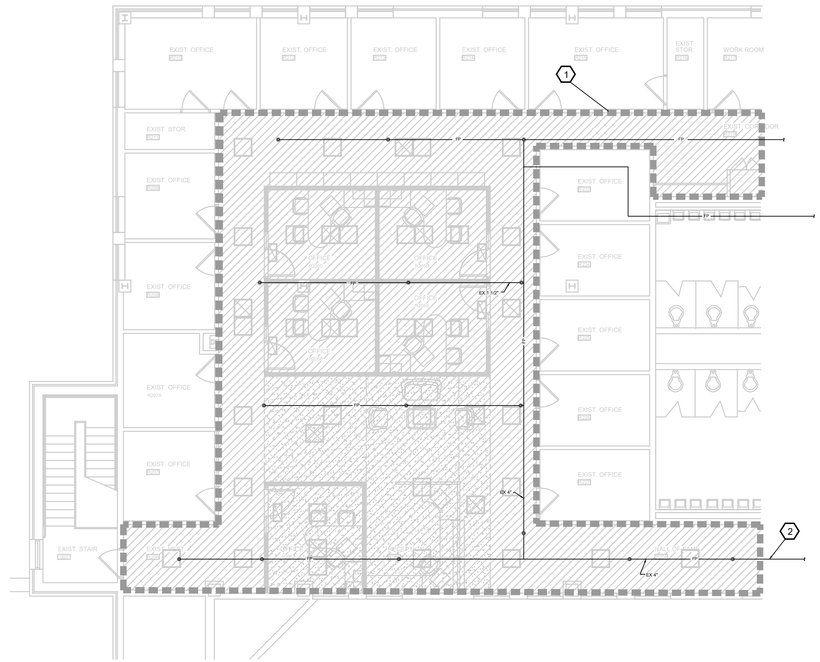
## DUCTWORK SQUARE VANE MITERED ELBOWS
NO SCALE

**FIRE PROTECTION NOTES**

1. THE FIRE PROTECTION CONTRACTOR SHALL PROVIDE A SEPARATE BID FROM MECHANICAL CONTRACTOR. A LICENSED FIRE PROTECTION CONTRACTOR SHALL DESIGN, DETAIL AND INSTALL A FIRE PROTECTION SPRINKLER SYSTEM TO COVER THE NEW AND/OR REMODELED AREAS.
2. THE ENTIRE FIRE PROTECTION SYSTEM DESIGN AND INSTALLATION SHALL BE STRICTLY IN ACCORDANCE WITH NFPA 13 SPRINKLER SYSTEMS AND SHALL MEET THE REQUIREMENTS OF THE LOCAL AND STATE FIRE MARSHAL AND ALL OTHER AUTHORITIES HAVING JURISDICTION.
3. ALL PERMITS, LICENSES, FEES, INSPECTIONS AND ARRANGEMENT/COORDINATION OF SUCH SHALL BE OBTAINED AND PAID FOR BY THE FIRE PROTECTION CONTRACTOR.
4. THE FIRE PROTECTION CONTRACTOR SHALL PROVIDE A FLOW TEST AND FURNISH COMPLETE DETAILED COMPUTER AIDED DESIGN (CAD) WORKING DRAWINGS OF THE SYSTEM AND SHALL SUBMIT THEM TO THE FIRE MARSHAL, ARCHITECT/ENGINEER, AND ALL AGENCIES REQUIRED BY CODE FOR THEIR REVIEW AND APPROVAL. NO WORK OR FABRICATION SHALL COMMENCE BEFORE THE DETAILED WORKING DRAWINGS OF THE SYSTEM, WITH THE AGENCIES APPROVALS, ARE SUBMITTED TO AND ARE REVIEWED BY THE ARCHITECT/ENGINEER. SYSTEM SHALL BE COMPLETE WITH OUTSIDE ALARM BELL, FLOW SWITCH, SUPERVISORY SWITCH ON SYSTEM CONTROL VALVE, HYDRAULIC DESIGN PLATE AT MAIN RISER, SPARE HEADS AND WRENCH, DOCUMENTATION, ETC.
5. THE FIRE PROTECTION CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS AND VERIFY TIE-IN LOCATION, ROUTING OF PIPING, LOCATION OF SPRINKLER HEADS WITH RESPECT TO DUCTS, EQUIPMENT, LIGHT FIXTURES, ETC. SPRINKLER HEADS SHALL BE CENTERED IN CEILING TILES AND HALF TILES.
6. LAYOUT AND DESIGN OF THE SYSTEM SHALL BE BASICALLY AS DESIGNED FOR REQUIRED OCCUPANCY HAZARD. SYSTEMS SHALL BE SIZED BY HYDRAULIC CALCULATIONS PER NFPA PAMPHLET NO. 13.
7. THE FIRE PROTECTION CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF THE FIRE PROTECTION WATER SERVICE SIZE BY VERIFICATION OF LOCAL WATER PRESSURE AND FLOW FROM THE LOCAL AUTHORITIES. THIS VERIFICATION SHALL BE PERFORMED DURING BIDDING AND NOTIFICATION TO THE ARCHITECT/ENGINEER OF ANY NECESSARY FIRE PROTECTION SERVICE CHANGES SHALL BE MADE 5 DAYS PRIOR TO BID DATE. THE COMPLETED SYSTEM SHALL BE IN ACCORDANCE WITH NFPA-13 REQUIREMENTS.
8. THE CONTRACTOR SHALL INCLUDE IN THEIR BID ANY COST FOR REQUESTING AUTOCAD BACKGROUNDS FOR THEIR USE FROM THE ARCHITECT OR ENGINEER. THE COST WILL BE $150.00 FOR THE FIRST PLAN, AND $50.00 FOR EACH ADDITIONAL PLAN THAT MAY BE REQUESTED FOR AUTOCAD USE. A WAIVER OF RESPONSIBILITY FOR THE ARCHITECT AND ENGINEER RELATED TO CONTRACTOR USE OF THE CAD FILES SHALL BE SIGNED BY THE CONTRACTOR.
9. SEE SPECIFICATION FOR FURTHER INFORMATION AND REQUIREMENTS.

FIRE PROTECTION KEYED NOTES

1. THE FIRE PROTECTION SYSTEM SHALL BE MODIFIED IN ALL SHADED AREAS TO ACCOMMODATE REVISED FLOOR PLAN. ALL SPRINKLER HEADS SHALL BE REMOVED IN AREAS OF NEW CEILING. COORDINATE NEW PIPING AND SPRINKLER HEADS WITH ALL OTHER TRADES. THE FIRE PROTECTION CONTRACTOR SHALL BE RESPONSIBLE FOR UPDATING THE FIRE PROTECTION SYSTEM TO MEET THE REQUIREMENTS OF THE LOCAL AND STATE FIRE MARSHAL AND ALL OTHER CODES AND AUTHORITIES HAVING JURISDICTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFICATION OF EXISTING PIPES. THE FINAL DESIGN AND INSTALLATION OF THE FIRE PROTECTION SPRINKLER SYSTEM SHALL BE THE RESPONSIBILITY OF THE FIRE PROTECTION CONTRACTOR.
2. EXISTING FIRE PROTECTION PIPING. THE FIRE PROTECTION CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING ALL EXISTING PIPING AND SIZING. EXISTING PIPING AND FIRE PROTECTION HEADS ARE SHOWN FOR REFERENCE(TYP).




NORTH

## PARTIAL SECOND FLOOR PLAN - FIRE PROTECTION
1/8"=1'-0"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2/3/2021 11:22 AM MICHAEL VOGTMANN (MVOGTMANN@MACMILLANASSOCIATES.COM) F:\27-TSSF\2022-2703 SVSU RYDER CENTER OFFICE RENOVATION\2022-2703-M-M3.0 DETAILS

## GENERAL MECHANICAL NOTES

1. THE MECHANICAL TRADES SHALL FAMILIARIZE THEMSELVES WITH ALL EXISTING AND NEW CONDITIONS, THESE DRAWINGS, ADDENDA & RELATED SPECIFICATIONS. THEY SHALL COMPLETELY SATISFY THEMSELVES AS TO THE CONDITIONS TO WHICH THE WORK IS TO BE PERFORMED BEFORE SUBMITTING THEIR BID. NO ALLOWANCES OR CONSIDERATIONS WILL BE GIVEN AT A LATER DATE FOR ALLEGED MISUNDERSTANDINGS AS TO THE REQUIREMENTS OF THE WORK, MATERIALS TO BE FURNISHED, OR CONDITIONS REQUIRED BY THE NATURE OF THIS PROJECT SITE DUE TO NEGLECT ON THE BIDDERS PART TO MAKE SUCH AN EXAMINATION AND COORDINATION.
2. DRAWINGS ARE DIAGRAMMATIC AND ARE INTENDED TO SHOW APPROXIMATE LOCATION AND GENERAL ARRANGEMENT OF SYSTEMS AND EQUIPMENT. DRAWINGS SHALL NOT BE SCALED FOR LOCATION OF SYSTEMS, EQUIPMENT, ETC. ALL LOCATIONS OF SYSTEMS AND EQUIPMENT SHALL BE VERIFIED IN FIELD AND COORDINATED WITH ALL OTHER TRADES AND EXISTING FIELD CONDITIONS. SOME SYSTEMS (PIPING, DUCTWORK, ETC.) AND EQUIPMENT LOCATIONS MAY REQUIRE CHANGES IN LOCATION DUE TO FIELD CONDITIONS AND COORDINATION WITH OTHER TRADES. THESE CHANGES SHALL BE MADE WITH NO ADDITIONAL COST TO THE OWNER. FAILURE TO VERIFY AND COORDINATE WILL BE NO REASON FOR ADDITIONAL COMPENSATION.
3. THE INSTALLATION OF ALL SYSTEMS, EQUIPMENT, ETC., IS SUBJECT TO CLARIFICATION WITH SUBMITTED SHOP DRAWINGS AND FIELD COORDINATION REQUIREMENTS. EQUIPMENT OUTLINES SHOWN ON DRAWINGS OR DIMENSIONED ON DRAWINGS ARE LIMITING DIMENSIONS. ANY EQUIPMENT THAT REDUCES THE INDICATED CLEARANCES OR EXCEEDS SPECIFIED OR SCHEDULED EQUIPMENT DIMENSIONS SHALL NOT BE USED.
4. THE MECHANICAL CONTRACTOR SHALL COORDINATE FINAL LOCATION OF ALL EQUIPMENT WITH PIPING, DUCTWORK, ETC., AT THE TIME OF ROUGH-IN. ALL EQUIPMENT TO BE SERVICEABLE. ABOVE CEILING EQUIPMENT SHALL BE WITHIN 18" OF CEILING WITHOUT ANY OBSTRUCTIONS AND SHALL HAVE ALL SERVICE AND ACCESS SPACES KEPT CLEAR. PERFORM ABOVE CEILING COORDINATION WITH ALL TRADES.
5. THESE DRAWINGS AND THE ASSOCIATED SPECIFICATIONS ARE INTENDED TO PROVIDE COMPLETELY FURNISHED, INSTALLED AND OPERATIONAL MECHANICAL SYSTEM (HEATING, VENTILATING, AIR CONDITIONING, PLUMBING AND PIPING, ETC.). IF THESE DRAWINGS AND ASSOCIATED SPECIFICATIONS HAVE INFORMATION OMITTED THAT WOULD NOT ALLOW A COMPLETELY OPERATIONAL SYSTEM AS IS THE INTENT OF THE ENGINEER, THE BIDDER SHALL NOTIFY THE ENGINEER A MINIMUM ONE WEEK PRIOR TO THE BID DATE TO ALLOW FOR ADDENDA. ONCE BIDS HAVE BEEN RECEIVED, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL MATERIAL, LABOR, ETC., TO FURNISH AND INSTALL A COMPLETELY OPERATIONAL MECHANICAL SYSTEM AS IS THE INTENT OF THESE DRAWINGS AND ASSOCIATED SPECIFICATION.
6. THE MECHANICAL TRADES SHALL TAKE OUT ALL PERMITS AND ARRANGE FOR NECESSARY INSPECTIONS AND SHALL PAY ALL FEES AND COSTS.
7. THE MECHANICAL TRADES SHALL VERIFY AMOUNT OF EXISTING PIPING, VALVES, DUCTWORK, ETC. TO BE REMOVED OR RELOCATED TO ALLOW FOR INSTALLATION OF NEW PIPING, DUCTWORK, VALVES, EQUIPMENT, WALLS, ETC. ALL ABANDONED PIPING, VALVES, ETC., SHALL BE REMOVED.
8. THE MECHANICAL TRADES SHALL COORDINATE ALL WORK WITH OTHER TRADES AND SHALL COORDINATE ANY SYSTEMS SHUT-DOWN WITH THE ARCHITECT/ENGINEER AND OWNER.
9. ALL EXISTING EQUIPMENT, PIPING, DUCTWORK, ETC. THAT IS TO BE REMOVED SHALL REMAIN THE PROPERTY OF THE OWNER. THE CONTRACTOR SHALL REMOVE AND LOCATE THIS MATERIAL THAT REMAINS THE PROPERTY OF THE OWNER TO A LOCATION DETERMINED BY THE OWNER SOMEWHERE ON SITE. IF THE OWNER DOES NOT WANT TO MAINTAIN POSSESSION OF THE REMOVED MATERIAL, THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING MATERIAL FROM THE SITE AND DISPOSING OF THIS MATERIAL AS NECESSARY TO MEET ALL CODES AND REQUIREMENTS AND SHALL PAY ALL COSTS AS REQUIRED FOR ANY DISPOSAL FEES, INSPECTIONS, PERMITS, ETC.
10. ATTACHMENTS OF MECHANICAL OR ELECTRICAL EQUIPMENT TO STRUCTURAL MEMBERS ARE THE RESPONSIBILITY OF THE INSTALLING TRADE. STRUCTURAL MEMBERS SHALL NOT BE FIELD CUT, WELDED OR OTHERWISE MODIFIED WITHOUT APPROVAL OF THE ARCHITECT/ENGINEER. ATTACHMENT TO STEEL JOISTS SHALL BE MADE AT PANEL POINTS WHENEVER POSSIBLE. STEEL JOISTS SHALL BE REINFORCED FOR NON-PANEL POINT CONCENTRATED LOADS IN ACCORDANCE WITH THE STRUCTURAL DETAILS; THIS WORK SHALL BE PERFORMED BY CERTIFIED WELDERS AND IS THE RESPONSIBILITY OF THE TRADE INSTALLING THE SUBJECT LOAD. STRUCTURAL MEMBERS SHALL NOT BE OVERLOADED AS A RESULT OF ATTACHMENTS. ATTACHMENT/EQUIPMENT LOADING FOR ALL TRADES RESULTING IN TOTAL LOAD GREATER THAN AN EQUIVALENT UNIFORM 5 PSF FOR ANY MEMBER SHALL BE SUBMITTED TO THE ARCHITECT/ENGINEER FOR REVIEW.
11. THE MECHANICAL TRADES SHALL FURNISH AND LOCATE CEILING AND/OR WALL ACCESS DOORS AS REQUIRED TO GIVE ACCESS TO VALVES, EQUIPMENT, ETC. COORDINATE WALL OR CEILING FIRE RATINGS AND FURNISH ACCESS DOOR WITH RATING AS NECESSARY. THE GENERAL TRADES SHALL INSTALL ACCESS DOORS.
12. SEE SPECIFICATION FOR FURTHER INFORMATION.

## SPECIFIED AND SCHEDULED EQUIPMENT NOTE

EQUIPMENT MANUFACTURER'S AND MATERIALS SPECIFIED OR SCHEDULED ON THESE PROJECT DRAWINGS AND SPECIFICATIONS SHALL BE INCLUDED UNDER THE BASE BID PRICE. SUBSTITUTE OR ALTERNATE EQUIPMENT SHALL BE PRICED AS AN ADD OR DEDUCT PRICE TO THE CONTRACTOR'S BASE BID PRICE. IF ONE OR MORE SUBSTITUTIONS ARE ACCEPTED WITH THE PROPOSAL AT THE CORRESPONDING ALTERNATE PRICE, IT SHALL BE UNDERSTOOD THAT APPROVAL OF SAID EQUIPMENT SHALL BE SUBJECT TO STRICT ADHERENCE TO THE PLANS AND SPECIFICATIONS. SHOULD ANY OF THE SUBSTITUTE EQUIPMENT FAIL TO MEET THE SPECIFICATIONS AFTER THE PROPOSAL HAS BEEN ACCEPTED, REGARDLESS IF EQUIPMENT HAS BEEN SHIPPED TO THE SITE AND INSTALLED, THE CONTRACTOR SHALL FURNISH AT NO EXTRA COST TO THE OWNER, THE SPECIFIED EQUIPMENT MEETING THE REQUIREMENTS AS STATED IN THESE SPECIFICATIONS AND COVER ALL COSTS NECESSARY FOR REMOVAL AND REINSTALLATION OF EQUIPMENT.

## DIFFUSER AND GRILLE SCHEDULE

TYPE A: SUPPLY AIR DIFFUSER (4- WAY THROW): PRICE #SCD-3 OR EQUAL TITUS SQUARE CEILING SUPPLY DIFFUSER, ALL STEEL CONSTRUCTION, BAKED-ON ENAMEL FINISH WITH COLOR SELECTED BY ARCHITECT. FRAME AS REQUIRED FOR CEILING TYPE WITH DIFFUSER PANEL TO MATCH GRID SIZE WHERE INSTALLED IN A LAY IN CEILING. MAXIMUM NECK VELOCITY SHALL BE 700 FPM AND MAXIMUM NC LEVEL SHALL BE 25.

| CFM | NECK SIZE | CFM | NECK SIZE |
|---|---|---|---|
| 0-125 | 6"X6" (6" DIA.) | 451-600 | 15"X15" (14" DIA.) |
| 126-250 | 9"X9" (8" DIA.) | 601-900 | 18"X18" (16" DIA.) |
| 251-350 | 12"X12" (10" DIA) | 901-1200 | 21"X21" |
| 351-450 | 12"X12" (12" DIA.) | | |

TYPE B: CEILING RETURN AIR GRILLE: PRICE 80DAL-TB OR EQUAL TITUS SQUARE CEILING EGG CRATE RETURN GRILLE, WITH 11"X22" OR 24" X 24" NECK AS NOTED ON DRAWINGS, ALL STEEL CONSTRUCTION, 1/2" X 1/2" X 1/2" SQUARES, BAKED-ON ENAMEL FINISH WITH COLOR SELECTED BY ARCHITECT, FRAME FOR 2'X2' T-BAR LAY-IN CEILING.

## DUCT TAKE-OFF FITTINGS SCHEDULE

LOW PRESSURE TAKE-OFF FITTINGS (TAKE-OFFS FROM MAIN DUCT) SHALL BE SIMILAR TO FLEXMASTER USA, INC. MODEL #CB-D CONICAL BELLMOUTH FITTING WITH DAMPER AND POSITIVE LOCKING WING NUT AND ROLLED BEAD, INSTALLED AS RECOMMENDED BY MANUFACTURER. ALL EDGES OF THE TAKE-OFF OPENING IN THE DUCT SHALL BE SEALED WITH FIRE RETARDANT DUCT SEALER.

## FLEXIBLE DUCT SCHEDULE

ALL FLEXIBLE DUCT USED TO CONNECT DIFFUSERS, ETC. SHALL BE SIMILAR TO FLEXMASTER USA, INC. TYPE 3 CONSISTING OF A FACTORY FABRICATED ASSEMBLY OF A TRILAMINATE OF ALUMINUM FOIL, FIBERGLASS AND POLYESTER. IT SHALL BE MECHANICALLY LOCKED WITHOUT ADHESIVE INTO A FORMED ALUMINUM HELIX ON THE DUCTS OUTSIDE SURFACE. THE DUCT MATERIAL SHALL BE FACTORY WRAPPED IN A THICK BLANKET OF FIBERGLASS INSULATION WITH A "C" FACTOR OF .23 OR LESS. THE INSULATION SHALL BE ENCASED IN A FIRE RETARDANT POLYETHYLENE PROTECTIVE VAPOR BARRIER WITH A PERM RATING OF NOT OVER 0.1 GRAINS PER SQUARE FOOT PER HOUR PER INCH OF MERCURY. THE FLEXIBLE DUCT SHALL BE UL 181 CLASS I AIR DUCT AND COMPLY WITH NFPA 90A AND 90B AND HAVE A FLAME SPREAD OF NOT OVER 25 AND A SMOKE DEVELOPED OF NOT OVER 50. THE FLEXIBLE DUCT SHALL HAVE A MINIMUM PRESSURE RATING OF 12" W.C. THROUGH A TEMPERATURE RANGE OF -20 DEGREE F TO 250 DEGREE F. MAXIMUM LENGTH OF FLEXIBLE DUCT SHALL BE 5'-0" TO EACH DIFFUSER OR GRILLE. FLEXIBLE DUCT SHALL HAVE A MINIMUM OF BENDS USING LONG RADIUS BENDS ONLY, INSTALLED AS RECOMMENDED BY MANUFACTURER.

## MECHANICAL SPECIFICATIONS

REFERENCE
INSTRUCTIONS TO BIDDERS, CONDITIONS OF THE CONTRACT, DIVISION 1, AND THIS SECTION SHALL APPLY TO THIS DIVISION.

CODES, PERMITS & INSPECTIONS
CONTRACTOR SHALL SECURE PERMITS, INSPECTIONS AND TESTS, PAY ALL FEES, DEPOSITS, AND COSTS FOR ALL MECHANICAL UTILITIES AND SERVICES INVOLVED AND PRESENT THE OWNER A CERTIFICATE OF INSPECTION AND APPROVAL FROM THE DEPARTMENT HAVING JURISDICTION OVER HIS WORK. SHOULD ANY CHANGE IN THE DRAWINGS AND SPECIFICATIONS BE REQUIRED TO COMPLY WITH ALL APPLICABLE CODES, RULES, REGULATIONS, ETC., CONTRACTOR SHALL NOTIFY THE ENGINEER BEFORE SUBMITTING BID. AFTER ENTERING INTO CONTRACT, ALL WORK NECESSARY TO MEET THE REQUIREMENTS SHALL BE COMPLETED WITHOUT ADDITION TO THE CONTRACT AMOUNT. WHERE WORK INDICATED IS MORE THAN REQUIRED BY CODES, ETC., SUCH WORK SHALL BE AS INDICATED.

JOB OBSERVATION
NOTWITHSTANDING ANY REFERENCE TO ANY CODE, RULE OR REGULATION, ENGINEER SHALL HAVE NO RESPONSIBILITY FOR SAFETY ON THE JOB SITE, SHALL HAVE NO RIGHT TO CHANGE OR STOP THE WORK, SHALL NOT CONTROL THE MEANS OF THE WORK, AND SHALL NOT HAVE ANY DUTY TO PROVIDE SUPERVISION OF MEANS, METHODS, PROCESSES OR PROCEDURES OF CONSTRUCTION.

FIRST-CLASS WORKABLE SYSTEMS
FIRST CLASS WORKABLE SYSTEMS SHALL BE PROVIDED BY THE CONTRACTOR. IF, IN THE OPINION OF THE CONTRACTOR, CHANGES IN THE DRAWINGS OR SPECIFICATIONS ARE REQUIRED TO PRODUCE FIRST-CLASS WORKABLE SYSTEMS, CONTRACTOR SHALL REQUEST AN INTERPRETATION FROM THE ENGINEER BEFORE PROCEEDING WITH THE WORK. IF THE CONTRACTOR FAILS TO MAKE SUCH A REQUEST, NO EXCUSE WILL THEREAFTER BE ENTERTAINED FOR FAILURE TO PROVIDE FIRST-CLASS WORKABLE SYSTEMS.

DRAWINGS
DRAWINGS ARE INTENDED TO SHOW THE GENERAL ARRANGEMENT, DESIGN, AND EXTENT OF THE WORK AND ARE DIAGRAMMATIC. THEY ARE NOT INTENDED TO BE SCALED FOR ROUGH-IN MEASUREMENTS NOR TO SERVE AS SHOP DRAWINGS. THE ENGINEERS AND OWNER RESERVE THE RIGHT TO MAKE MINOR CHANGES IN THE LOCATION OF EQUIPMENT, DUCTWORK, PIPING, ETC. AT THE TIME OF ROUGH-IN WITHOUT ADDITIONAL COST TO THE OWNER. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS, LOCATIONS, ETC. FOR ACCURACY AND POSSIBILITY OF INTERFERENCES DUE TO FIELD CONDITIONS AND ACTUAL BUILDING STRUCTURE. FAILURE TO CHECK WILL BE NO REASON FOR ADDITIONAL COMPENSATION.

SHOP DRAWINGS
SUBMIT ELECTRONIC SET OF COMPLETE SHOP DRAWINGS FOR ALL MECHANICAL EQUIPMENT AND MATERIALS TO THE ENGINEER FOR REVIEW BEFORE FABRICATION OF WORK OR ORDERING OF EQUIPMENT. DRAWINGS MUST BE REVIEWED BY THE ENGINEER BEFORE ORDERING EQUIPMENT. ALL SHOP DRAWINGS REJECTED SHALL BE CORRECTED AND RESUBMITTED TO THE ENGINEER BEFORE ORDERING.

STANDARDS OF INDUSTRY
STANDARDS OF INDUSTRY SHALL BE FOLLOWED WHEN APPLICABLE.

GUARANTEE
CONTRACTOR SHALL GUARANTEE EQUIPMENT, MATERIALS AND WORKMANSHIP IN HIS CONTRACT AND SHALL MAKE GOOD AT HIS OWN EXPENSE ANY DEFECTS WHICH MAY DEVELOP WITHIN ONE YEAR AFTER START-UP OF EACH PIECE OF EQUIPMENT, OCCUPANCY BY OWNER, OR FINAL ACCEPTANCE OF THE JOB, WHICHEVER OCCURS FIRST.

CONTRACTORS RECORD/AS-BUILT DRAWINGS
CONTRACTOR SHALL MAINTAIN AND KEEP AN UP-TO-DATE SET OF "RECORD" DRAWINGS REFLECTING "AS-BUILT" CONDITIONS OF THEIR WORK. CONTRACTOR SHALL INDICATE EXACT DIMENSIONS AND ELEVATIONS FOR ALL UNDERGROUND WORK. UPON COMPLETION OF THIS PROJECT, THE CONTRACTOR SHALL DELIVER TO THE ENGINEER THE "RECORD" DRAWINGS.

LOCAL CONDITIONS
BEFORE SUBMITTING BIDS AND/OR PROCEEDING WITH THE PROJECT, THE CONTRACTOR SHALL EXAMINE ALL DRAWINGS, SPECIFICATIONS AND ADDENDA ISSUED FOR THE PROJECT AND SHALL EXAMINE THE PROJECT SITE. THE CONTRACTOR SHALL THOROUGHLY INVESTIGATE THE PROJECT SITE AND BECOME FULLY INFORMED AS TO THE EXTENT OF HIS WORK AND COORDINATION OF THIS WORK WITH ALL OTHER TRADES AND INCLUDE ALL COST TO PERFORM AND COMPLETE WORK FOR THIS PROJECT PER DRAWINGS AND SPECIFICATION AND ALL CODES.

OPERATION AND MAINTENANCE MANUALS
CONTRACTOR SHALL FURNISH TO THE ARCHITECT/ENGINEER TWO (2) COPIES OF AN APPROVED BOUND (3-RING BINDER) BOOK WITH TABS FOR SECTIONS COVERING EACH ITEM OF EQUIPMENT. THESE NOTEBOOKS SHALL INCLUDE SHOP DRAWINGS, MAINTENANCE MANUALS, OPERATING MANUALS AND PARTS LIST AS NECESSARY TO INSTRUCT THE OWNER ON PROPER OPERATION AND USE AS WELL AS MAINTENANCE FOR EACH PIECE OF EQUIPMENT FOR THIS PROJECT. THESE BOOKS SHALL ALSO INCLUDE CONTRACTOR'S, SUBCONTRACTOR'S AND MANUFACTURER'S NAMES, TELEPHONE NUMBERS AND ADDRESSES. MANUALS SHALL ALSO INCLUDE SEQUENCE OF OPERATION, CONTROL EQUIPMENT LITERATURE, WIRING AND CONTROL DIAGRAMS, CERTIFICATES OF GUARANTEES, CERTIFICATES OF INSPECTION, MECHANICAL SYSTEM TEST AND BALANCING REPORTS. THE CONTRACTOR SHALL ACCUMULATE AND SUMMARIZE THE CONTROL AND MAINTENANCE SEQUENCE IN TYPEWRITTEN SHEET TO BE INCLUDED IN THE REPORT. THESE MANUALS SHOULD BE HARD BOUND IN BEST QUALITY BINDERS AND TURNED OVER TO THE ARCHITECT/ENGINEER FOR APPROVAL AT COMPLETION OF PROJECT.

START-UP SERVICE
CONTRACTOR SHALL ARRANGE WITH EQUIPMENT MANUFACTURERS FOR PROVIDING COMPLETE START-UP SERVICE FOR ALL EQUIPMENT ON THIS PROJECT. ALL START-UP SERVICES SHALL BE PERFORMED IN THE PRESENCE OF THE OWNER AND/OR ENGINEER. A WRITTEN REPORT SHALL BE SUBMITTED TO THE ENGINEER STATING DATE OF START-UP, MANUFACTURER APPROVAL OF SYSTEM OPERATION AND INSTALLATION.

CUTTING AND PATCHING
CUTTING AND PATCHING SHALL BE BY TRADES REGULARLY ENGAGED IN THIS TYPE OF WORK, EXCEPT DRILLING OF HOLES SHALL BE DONE BY THE TRADES REQUIRING SAME. STRUCTURAL MEMBERS SHALL NOT BE CUT OR DRILLED.

SALVAGEABLE MATERIAL
SALVAGEABLE MATERIAL SHALL REMAIN THE PROPERTY OF THE OWNER AND SHALL BE STORED AT LOCATIONS AS DIRECTED BY THE OWNER, EXCEPT THE OWNER RESERVES THE RIGHT TO DESIGNATE CERTAIN ITEMS OF SALVAGEABLE MATERIAL TO BE REMOVED FROM THE PROJECT SITE.

STORAGE FACILITY
FURNISH AND MAINTAIN A WEATHERPROOF STORAGE FACILITY ON THE SITE OF ADEQUATE SIZE TO STORE MISCELLANEOUS EQUIPMENT AND/OR MATERIALS TO PREVENT EXPOSURE TO THE WEATHER. LOCATION OF SHED SHALL BE DETERMINED BY THE OWNER AND ARCHITECT/ENGINEER. THE OWNER RESERVES THE RIGHT TO DENY STORAGE OF MATERIALS OR EQUIPMENT IN ANY EXISTING OR NEW BUILDINGS.

PROTECTION FROM DAMAGE
THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL MATERIALS, EQUIPMENT, ETC. AND ALL WORK INSTALLED BY HIMSELF AND SHALL PROTECT IT FROM DAMAGE UNTIL FINAL ACCEPTANCE OF THIS PROJECT BY THE OWNER.

FURNISH ALL COVERINGS AND PROTECTION FROM DIRT, DUST, RAIN, STORM, HEAT, TRAFFIC, WEAR, ETC. AND ALL POSSIBLE INJURY INCLUDING THAT BY OTHER WORKMEN. ANY EQUIPMENT, WORKMANSHIP, MATERIALS, ETC. DAMAGED PRIOR TO FINAL ACCEPTANCE BY THE OWNER OF THIS PROJECT SHALL BE PROPERLY REPAIRED AT NO EXPENSE TO THE OWNER.

PROTECT ALL PLUMBING FIXTURES AND OTHER EQUIPMENT FROM DAMAGE BY COVERING OR COATING. ANY DENTED, SCRATCHED, RUSTED OR MARRED SURFACE FINISHES WILL NOT BE ACCEPTED.

PROTECT ALL EQUIPMENT, MATERIALS, ETC. FROM FREEZING.

ASBESTOS INSULATION
ALL EXISTING ASBESTOS INSULATION ON EXISTING PIPING, EQUIPMENT, ETC. WHERE TIE-INS ARE REQUIRED, SHALL BE REMOVED BY THE OWNER.

DUCTWORK
DUCTS, CASINGS, HOUSINGS, ETC. SHALL BE FABRICATED FROM, PRIME QUALITY, HOT DIP GALVANIZED STEEL SHEET AS RECOMMENDED IN THE LATEST ISSUES OF ASHRAE GUIDE AND SMACNA DUCT MANUALS IN VARIABLE AIR VOLUME SYSTEMS, WHEN USED. SUPPLY AIR DUCTS LOCATED BETWEEN AIR HANDLING SYSTEM AND VAV BOXES; DUCT CONSTRUCTION AND INSTALLATION SHALL MEET SMACNA STANDARDS FOR 6" W.C. FOR ALL OTHER SUPPLY AIR DUCTWORK AND EXHAUST AIR, RETURN AIR, OUTSIDE AIR INTAKE AND RELIEF AIR DUCTS, DUCT CONSTRUCTION AND INSTALLATION SHALL MEET SMACNA STANDARDS FOR 2" W.C.

RECTANGULAR DUCTS SHALL HAVE TEES, ELBOWS AND BENDS WITH A MINIMUM THROAT RADIUS OF 1 TIMES THE DUCT WIDTH AND BE OF THE SAME GAUGE AND MATERIAL AS THE STRAIGHT DUCT. INCREASE DUCT SIZES GRADUALLY, NOT EXCEEDING 15 DEGREES DIVERGENCE IF POSSIBLE; MAXIMUM 30 DEGREES DIVERGENCE UPSTREAM OF EQUIPMENT AND 45 DEGREES CONVERGENCE DOWNSTREAM. WHERE VOLUME BOXES ARE CONNECTED TO DUCT MAIN OR WHERE DIFFUSERS ARE CONNECTED TO DUCT BRANCHES BY ROUND FLEX DUCT, INSTALL DUCT SPIN-IN FITTINGS SUCH AS FLEXMASTER USA, INC. MODEL #FLD WITH DAMPER AND POSITIVE LOCKING WING NUT. SEAL ALL EDGES WITH FIRE RETARDANT DUCT SEALER. FLEXIBLE INSULATED DUCTS (CONNECTIONS FROM MAIN DUCT TO VOLUME BOX AND/OR FROM DUCT BRANCH TO DIFFUSERS) SHALL BE FLEXMASTER USA, INC. TYPE #3. USE MAXIMUM LENGTH OF 5'-0" TO EACH CONNECTION. INSTALL FLEXIBLE DUCT WITH MINIMUM OF BENDS USING LONG RADIUS BENDS ONLY.

DUCT SEALANT
ALL DUCTWORK INCLUDING SUPPLY AIR, OUTSIDE AIR, RETURN AIR, EXHAUST AIR AND RELIEF AIR DUCT SYSTEMS SHALL HAVE ALL JOINTS SEALED. DUCTWORK DESIGNED AT SMACNA 6" PRESSURE SHALL MEET SMACNA CLASS "A" SEAL REQUIREMENTS. DUCTWORK DESIGNED AT SMACNA 2" PRESSURE SHALL MEET SMACNA CLASS "C" SEAL REQUIREMENTS.

DUCT HANGERS
HORIZONTAL STEEL DUCTWORK SHALL BE SUPPORTED BY MEANS OF TRAPEZE BARS AND ROUND STEEL ROD OF SIZES LISTED BELOW. ROUND STEEL RODS SHALL BE ELECTRO-GALVANIZED ALL-THREAD ROD. HANGERS SHALL BE PROVIDED AT BOTH SIDES OF FLAT SIDED DUCTWORK FOR THE FULL HEIGHT OF DUCT. ROUND DUCTWORK SHALL BE PROVIDED WITH A BAND OF THE SAME SIZE AS THE HANGER TO COMPLETELY ENCIRCLE THE DUCT. BAND SHALL BE SECURED TO THE HANGER BY MEANS OF A MINIMUM 3/16" BOLT. MINIMUM DUCT HANGER SIZES SHALL BE AS LISTED BELOW

| D. DUCT SIZE | UPPER ATTACHMENT RATING | STEEL ROD | MAXIMUM SPACING | MINIMUM NO. OF HANGERS | TRAPEZE SHELF ANGLE |
|---|---|---|---|---|---|
| UP TO 16" | 750 LBS. | 3/8" | 10' | 2 | 1 1/2"X1 1/2" X 3/16" |
| 19" TO 36" | 1000 LBS. | 3/8" | 10' | 2 | 1 1/2"X1 1/2" X 3/16" |
| 37" TO 120" | 3000 LBS. | 3/8" | 8' | 2 | 2"X 2"X1/4" |

DUCT INSULATION
DUCTWORK LOCATED IN CONCEALED AREAS (CONCEALED AREAS SHALL INCLUDE DUCT SHAFTS, SPACES ABOVE DROPPED CEILINGS, SPACES BETWEEN WALLS, ETC.) SHALL BE WRAPPED EXTERNALLY WITH OWENS-CORNING, KNAUF, MANSVILLE, OR EQUAL, FIBERGLAS ALL-SERVICE DUCT WRAP, LIGHT DENSITY GLASS FIBER INSULATION FACED WITH A REINFORCED FOIL/KRAFT LAMINATE MEETING THE REQUIREMENTS OF ASTM C553, 1.0 LBS. PER CUBIC FOOT DENSITY, 1 1/2" THICK. WHERE DUCTS ARE 24" IN WIDTH OR GREATER, MECHANICAL FASTENERS SPACED AT 18" (APPROX.) CENTERS ARE REQUIRED ON THE BOTTOM OF THE DUCT TO PREVENT THE INSULATION FROM SAGGING. ALL SEAMS, TEARS, PUNCTURES, AND OTHER PENETRATIONS SHALL BE CLOSED WITH 3" PRESSURE SENSITIVE, VAPOR BARRIER MASTIC REINFORCED GLASS SCRIM TAPE.

TESTING, ADJUSTING AND BALANCING

TESTING, ADJUSTING AND BALANCING SHALL BE PERFORMED BY AN INDEPENDENT CERTIFIED AGENCY IN ACCORDANCE WITH AABC, ADC, ASHRAE III, NEBB AND SMACNA STANDARDS. FURNISH TYPE WRITTEN ELECTRONIC REPORTS OF AIR AND WATER SYSTEMS BALANCE REPORTS TO THE ENGINEER INDICATING DESIGN AND ACTUAL QUANTITIES, NAMEPLATE DATA, ETC.

AIR SYSTEMS ADJUST AIR HANDLING, DISTRIBUTION SYSTEMS, AIR INLETS AND OUTLETS, ETC. TO PROVIDE SUPPLY, RETURN, EXHAUST, OUTSIDE AIR AND RELIEF AIR QUANTITIES TO WITHIN 10% OF REQUIRED OR DESIGNED AIR QUANTITIES. VERIFY THAT SYSTEMS ARE COMPLETE AND OPERABLE BEFORE COMMENCING WORK. VERIFY SYSTEMS ARE STARTED AND OPERATING AT A SAFE AND NORMAL OPERATION, TEMPERATURE CONTROL SYSTEMS ARE INSTALLED COMPLETE AND OPERABLE, PROPER THERMAL OVERLOAD PROTECTION IS IN PLACE FOR ELECTRICAL EQUIPMENT, FINAL FILTERS ARE CLEAN AND IN PLACE, DUCT SYSTEMS ARE CLEAN OF DEBRIS, FANS ARE ROTATING CORRECTLY, FIRE AND VOLUME DAMPERS ARE IN PLACE AND IN OPEN POSITIONS, AIR COIL FINS ARE CLEANED AND COMBED, ACCESS DOORS ARE CLOSED AND DUCT END CAPS ARE IN PLACE, AIR OUTLETS ARE INSTALLED AND CONNECTED, DUCT SYSTEM LEAKAGE IS MINIMIZED, ETC. MEASURE AND RECORD ALL AIR MOVING EQUIPMENT, AIR INLETS AND OUTLETS STATIC PRESSURES, RPM'S, ETC.

FIRE PROTECTION PIPING

SCOPE OF WORK

DESIGN AND REVISE THE EXISTING AUTOMATIC SPRINKLER AND STANDPIPE SYSTEM FOR ALL RENOVATED PORTIONS OF THE BUILDING. FURNISH AND INSTALL ALL PIPING, SPRINKLER AND ACCESSORIES AND APPURTENANCES FOR COMPLETE SYSTEMS AS SHOWN ON DRAWINGS AND HEREINAFTER SPECIFIED. THE ENTIRE INSTALLATION SHALL BE STRICTLY IN ACCORDANCE WITH NFPA STANDARD NO. 13, SPRINKLER SYSTEMS, AND SHALL MEET THE REQUIREMENTS OF THE OWNERS INSURANCE CARRIER, GOVERNING FIRE MARSHAL AND ALL OTHER AUTHORITIES HAVING JURISDICTION. SYSTEMS SHALL BE HYDRAULICALLY DESIGNED, DETAILED, FURNISHED AND INSTALLED BY A COMPETENT, EXPERIENCED AND LICENSED FIRE PROTECTION CONTRACTOR REGULARLY ENGAGED IN FURNISHING AND INSTALLING FIRE PROTECTION SYSTEMS. CONTACT CAMPUS FACILITIES AT (989) 964-4080 BEFORE WORKING ON THE FIRE PROTECTION SYSTEM. CONTRACTORS SHALL BE RESPONSIBLE FOR THE COST OF FALSE ALARMS TO THE KOCHVILLE FIRE DEPARTMENT CAUSED BY FAILURE TO CONTACT FACILITIES PRIOR TO WORK. A CONTINUOUS FIRE WATCH WITHIN AFFECTED AREAS MAY BE REQUIRED BY SVSU. COORDINATE WITH SVSU FOR EXACT DETAILS.

CONTRACTOR SHALL FURNISH COMPLETE DETAILED COMPUTER AIDED DESIGN (CAD) WORKING DRAWINGS, HYDRAULIC CALCULATIONS AND EQUIPMENT SHOP DRAWINGS OF THE SYSTEM AND SHALL SUBMIT THEM TO THE OWNERS INSURANCE CARRIER AND GOVERNING FIRE MARSHAL FOR THEIR REVIEW AND APPROVAL. SHOP DRAWINGS SHALL BEAR DESIGNERS/INSTALLERS STATE OF MICHIGAN LICENSE NUMBER AND CERTIFICATION NUMBER, AND HAVE APPROVAL OF FIRE MARSHALL BEFORE BEING SUBMITTED TO THE ENGINEER. EIGHT COPIES OF APPROVED DRAWINGS, CALCULATIONS, SHOP DRAWINGS AND PRODUCT DATA SHALL BE SUBMITTED TO ARCHITECT/ENGINEER FOR REVIEW. NO WORK SHALL BE COMMENCED BEFORE SHOP DRAWINGS ARE REVIEWED BY ARCHITECT/ENGINEER'S.

ALL PERMITS, LICENSES, FEES, INSPECTIONS AND ARRANGEMENTS REQUIRED FOR THE WORK UNDER THIS CONTRACT SHALL BE OBTAINED AND PAID FOR BY THE CONTRACTOR. DOCUMENTATION SHALL BE PROVIDED AS REQUIRED BY THE STATE FIRE MARSHAL. AT COMPLETION OF THE PROJECT, THE FIRE PROTECTION CONTRACTOR SHALL CLEAN, LUBRICATE AND OPERATE ALL CONTROL VALVES, ALARMS AND DEVICES. PROVIDE OWNER WITH TWO COPIES OF NFPA STANDARD NO. 25 ON INSPECTION, TESTING AND MAINTENANCE OF WATER BASED FIRE PROTECTION SYSTEMS AND MAINTENANCE AND PARTS LISTS FOR ALL EQUIPMENT INSTALLED. INSTALL HYDRAULIC DESIGN PLATE ON SPRINKLER RISER AS PER SECTION 10-5 AND PROVIDE SPARE SPRINKLER HEADS WITH WRENCHES IN WALL MOUNTED BOX NEAR RISER AS PER SECTION 3-2.9 IN THE 1999 EDITION OF NFPA 13.

CONTRACTOR SHALL BE RESPONSIBLE FOR TOTAL SYSTEM DESIGN AND LAYOUT OF SPRINKLER HEADS AND PIPING. FIRE PROTECTION CONTRACTOR SHALL BE LICENSED AND CERTIFIED BY THE STATE OF MICHIGAN FOR THE DESIGN AND INSTALLATION OF FIRE PROTECTION STANDPIPE, HOSE AND SPRINKLER SYSTEMS.

SPRINKLER HEADS FOR SUSPENDED CEILINGS SHALL BE: STANDARD COVERAGE SEMI-RECESSED PENDANT TYPE WITH MATCHING PUSH-ON ESCUTCHEON PLATE. (USED IN FINISH AREAS UNLESS NOTED OTHERWISE ON DRAWINGS). CHROME PLATED HEAD AND ESCUTCHEON. ESCUTCHEON PLATE FINISH: CHROME PLATED. FUSIBLE LINK SHALL BE GLASS BULB TYPE TEMPERATURE RATED FOR SPECIFIC AREA HAZARD. EXPOSED AREA SPRINKLER HEAD SHALL BE: STANDARD COVERAGE UPRIGHT TYPE WITH BRASS HEAD FINISH. FUSIBLE LINK SHALL BE: FUSIBLE SOLDER LINK TYPE TEMPERATURE RATED FOR SPECIFIC AREA HAZARD. GUARDS: FINISH TO MATCH SPRINKLER HEAD.

PIPE HANGERS AND SUPPORTS

PIPE HANGERS SHALL:

CONFORM TO NFPA 13 AND NFPA 14.
HANGERS FOR PIPE SIZES ½ TO 1½ INCH: MALLEABLE IRON, ADJUSTABLE SWIVEL, SPLIT RING.
HANGERS FOR PIPE SIZES 2 INCHES AND OVER: CARBON STEEL, ADJUSTABLE, CLEVIS.
MULTIPLE OR TRAPEZE HANGERS: STEEL CHANNELS WITH WELDED SPACERS AND HANGER RODS.
WALL SUPPORT FOR PIPE SIZES TO 3 INCHES: CAST IRON HOOK.
WALL SUPPORT FOR PIPE SIZES 4 INCHES AND OVER: WELDED STEEL BRACKET AND WROUGHT STEEL CLAMP.
VERTICAL SUPPORT: STEEL RISER CLAMP.
FLOOR SUPPORT: CAST IRON ADJUSTABLE PIPE SADDLE, LOCKNUT, NIPPLE, FLOOR FLANGE, AND CONCRETE PIER OR STEEL SUPPORT.
COPPER PIPE SUPPORT: CARBON STEEL RING, ADJUSTABLE, COPPER PLATED.

INSTALL PIPING IN ACCORDANCE WITH NFPA 13 FOR SPRINKLER SYSTEMS, NFPA 14 FOR STANDPIPE AND HOSE SYSTEMS, NFPA 24 FOR SERVICE MAINS AND NFPA 70 NATIONAL ELECTRICAL CODE AND ALL OTHER APPLICABLE CODES AND REGULATIONS. HYDROSTATICALLY TEST ENTIRE SYSTEM IN ACCORDANCE WITH NFPA 14. TEST SHALL BE WITNESSED BY AUTHORITY HAVING JURISDICTION AND ARCHITECT/ENGINEER.


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ARCHITECTS PLANNERS
122 N. WASHINGTON AVENUE SAGINAW , MICHIGAN


RENOVATIONS TO RYDER CENTER SECOND FLOOR OFFICES:
SVSU SAGINAW VALLEY STATE UNIVERSITY
UNIVERSITY CENTER, MICHIGAM

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PROJECT NO.
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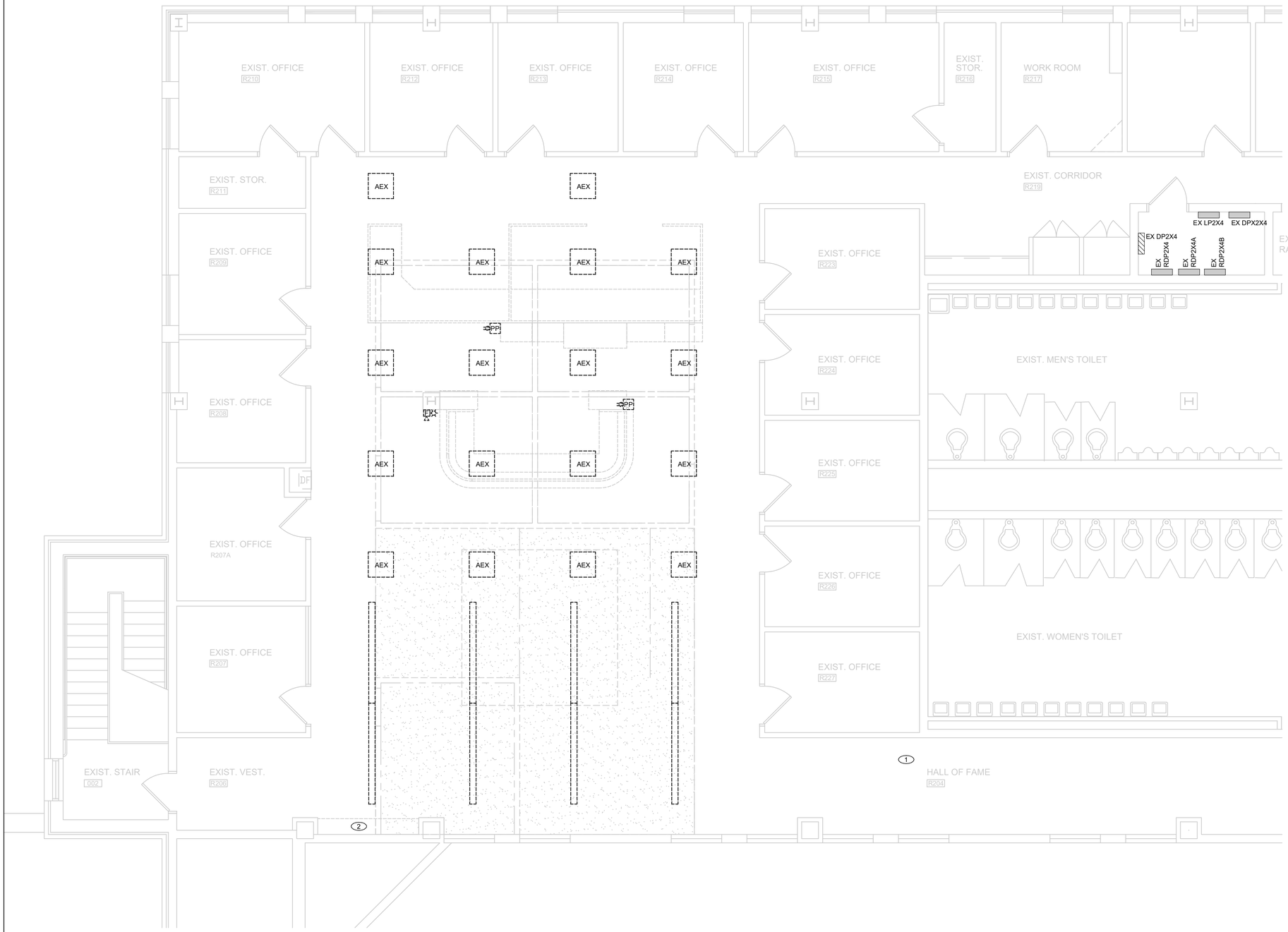
2/3/2021 11:22 AM MICHAEL VOGTMANN (MVOGTMANN@MACMILLANASSOCIATES.COM) F:\27-TSSF\2022-2703 SVSU RYDER CENTER OFFICE RENOVATION\2022-2703-M-M4.0 SCHEDU




NORTH

## PARTIAL SECOND FLOOR PLAN - ELECTRICAL DEMOLITION

1/4"=1'-0"

### GENERAL DEMOLITION NOTES

1. ALL EXISTING LIGHTING AND POWER OUTSIDE THE DEMOLITION SCOPE LIMITS SHALL REMAIN UNLESS NOTED OTHERWISE.
2. REFER TO THE NEW LIGHTING, POWER AND SYSTEMS PLANS FOR UPGRADES.
3. EXISTING EXIT LIGHTS AND EMERGENCY LIGHTING SHOWN DASHED AND OR NOTED SHALL BE REMOVED. FIELD CONFIRM QUANTITIES AND LOCATIONS. CONTRACTOR SHALL REMOVE ALL EXIT LIGHTS AND EMERGENCY LIGHTS DISCOVERED ABOVE THOSE SHOWN AS PART OF THE PROJECT REQUIREMENTS THAT ARE LOCATED WITHIN THE SCOPE BOUNDARY.
4. CONTRACTOR SHALL FIELD CONFIRM ALL QUANTITIES OF ELECTRICAL ITEMS REQUIRED TO BE REMOVED AND OR RELOCATED ABOVE THOSE NOTED OR SHOWN THAT ARE WITHIN THE SCOPE LIMITS ALL SUCH ITEMS SHALL BE INCLUDED AS PART OF BID SUBMITTED.
5. DEVICE LOCATIONS ARE SHOWN DIAGRAMMATIC. FIELD CONFIRM THE EXACT LOCATION.
6. CONTRACTOR SHALL DISPOSE OF ALL DEMOED EQUIPMENT UNLESS NOTED OTHERWISE. THE OWNER RESERVES THE RIGHT TO ALL DEMOLITION ITEMS. EC SHALL PROVIDE ALL ITEMS THAT SVSU WISHES TO SAVE PLACE ON A PALLET TO BE STORED.
7. DASHED LINE SHOWN ON DEMOLITION SHEETS ARE ITEMS SHOWN TO BE REMOVED UNLESS NOTED OTHERWISE.
8. EC SHALL REMOVE ALL CONDUCTORS BACK TO SOURCE FOR ALL RECEPTACLES, LIGHTS, SWITCHES, ETC. SCHEDULED FOR REMOVAL UNLESS NOTED OTHERWISE.
9. PROVIDE BLANK COVER PLATES OVER UNUSED ROUGH-IN BOXES AT THE END OF THE PROJECT.
10. EXISTING CONDUIT MAY BE UTILIZED FOR NEW WIRING AT THE CONTRACTORS DISCRETION. ANY UNUSED CONDUIT SHALL BE COMPLETELY REMOVED INCLUDING ALL HANGERS AND SUPPORTS. PROPERLY SUPPORT EXISTING CONDUIT TO MEET CURRENT CODE.

### KEYED NOTES

(1) EXISTING TRACK LIGHTING TO REMAIN IN HALLWAY.

(2) DEMO EXISTING LIGHTS IN DISPLAY CASE.

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RENOVATIONS TO RYDER CENTER SECOND FLOOR OFFICES:
SAGINAW VALLEY STATE UNIVERSITY
UNIVERSITY CENTER, MICHIGAM

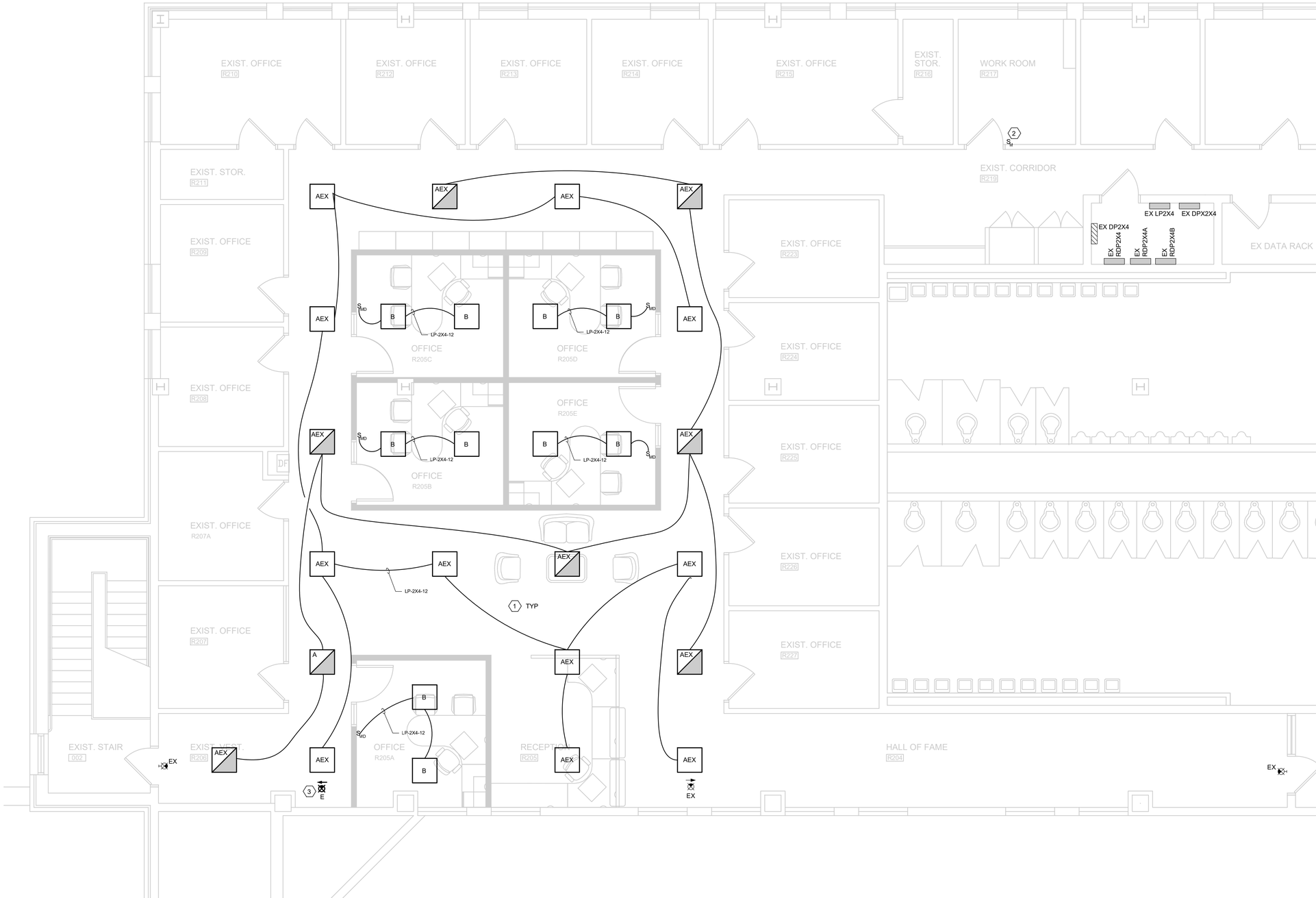
| NO. | DATE |
|---|---|
| | |

DRAWN BY RLM
DATE 8/05/22
APPROVED JWF

SHEET NO
E1.0
OF .

PROJECT NO.
2223

2/3/2021 11:22 AM MICHAEL VOGTMANN (MVOGTMANN@MACMILLANASSOCIATES.COM) F:\27-TSSF\2022-2703 SVSU RYDER CENTER OFFICE RENOVATION\2022-2703-E1.0 ELECTRICAL DEMOLITION PLAN




NORTH

## PARTIAL SECOND FLOOR PLAN - LIGHTING

1/4"=1'-0"

### LIGHTING WIRING METHODS

1. EXIT LIGHTS SHALL OPERATE 24-7 AND SHALL BE WIRED FROM THE LOCAL EMERGENCY CIRCUIT.
2. HALF-TONE SHADED FIXTURES REPRESENTS THE FIXTURE IS AN EMERGENCY LIGHT AND HAS BACK UP POWER FROM THE GENERATOR. ALL EMERGENCY LIGHTS SHALL BE WIRED IN A SEPARATE CONDUIT FOR ALL OTHER LIGHTING.
3. ALL LIGHTING CIRCUITS SHALL BE INSTALLED IN CONDUIT.
4. MC CABLE IS ONLY ACCEPTABLE AS A FINAL WIRING CONNECTION TO RECESSED LIGHTING INSTALLED IN ACCESSIBLE CEILINGS. MC CABLE LENGTH SHALL NOT EXCEED 6'-0".
5. PROVIDE A DEDICATED NEUTRAL CONDUCTOR FOR EACH NEW LIGHTING CIRCUIT. SHARED NEUTRALS ARE NOT PERMITTED FOR THIS PROJECT.
6. PROVIDE AN EQUIPMENT GROUNDING CONDUCTOR FOR NEW LIGHTING CIRCUITS. THE USE OF THE RACEWAY FOR A GROUNDING PATH IS NOT ACCEPTABLE FOR THIS PROJECT.
7. REFER TO THE ARCHITECTURAL DRAWINGS FOR ALL LIGHT FIXTURE LOCATIONS.
8. ALL DIMMER SWITCHES SHALL BE CAPABLE OF HANDLING THE LOAD AS SHOWN AND BE LISTED AS APPROVED BY THE MANUFACTURER OF THE LIGHT THAT IS BEING DIMMED.

### LIGHTING FIXTURE SCHEDULE

| TYPE | DESCRIPTION |
|---|---|
| A | LED TROFFER, 3400 LUMENS, 3500K COLOR TEMP<br>LITHONIA EPANL 2X2 34L 35K |
| AEX | EXISTING TYPE "A" FIXTURE |
| B | SAME AS TYPE "A" EXCEPT 4800 LUMENS<br>LITHONIA EPANL 2X2 4800 LUMEN, 80CRI, 3500K CCT 0-10V DIMMING, 44.6 WATT |
| E | STAINLESS STEEL EXIT SIGN, LITHONIA LQC-1-R-EL N ELAWGEXT |

### GENERAL NOTES

1. USE EXISTING 2X2 EPANL LIGHT FIXTURES FOR TYPES "A" AND "AE".

### KEYED NOTES

1. UTILIZE EXISTING SWITCHING AND CONTROLS FOR NEW LIGHTS.
2. REPLACE EXISTING WALL SWITCH WITH A NEW MOTION SENSOR SWITCH.
3. WIRE TO THE EXISTING EXIT LIGHT CIRCUIT.

MACMILLAN ASSOCIATES CONSULTING ENGINEERS
714 EAST MIDLAND STREET • BAY CITY, MICHIGAN 48706
(989) 894-4300 F(989) 894-9930 WWW.MACMILLANASSOCIATES.COM

TSSF ARCHITECTS, INC.
PLANNERS
ARCHITECTS
122 N. WASHINGTON AVENUE SAGINAW , MICHIGAN

RENOVATIONS TO RYDER CENTER SECOND FLOOR OFFICES:
SAGINAW VALLEY STATE UNIVERSITY
UNIVERSITY CENTER, MICHIGAM

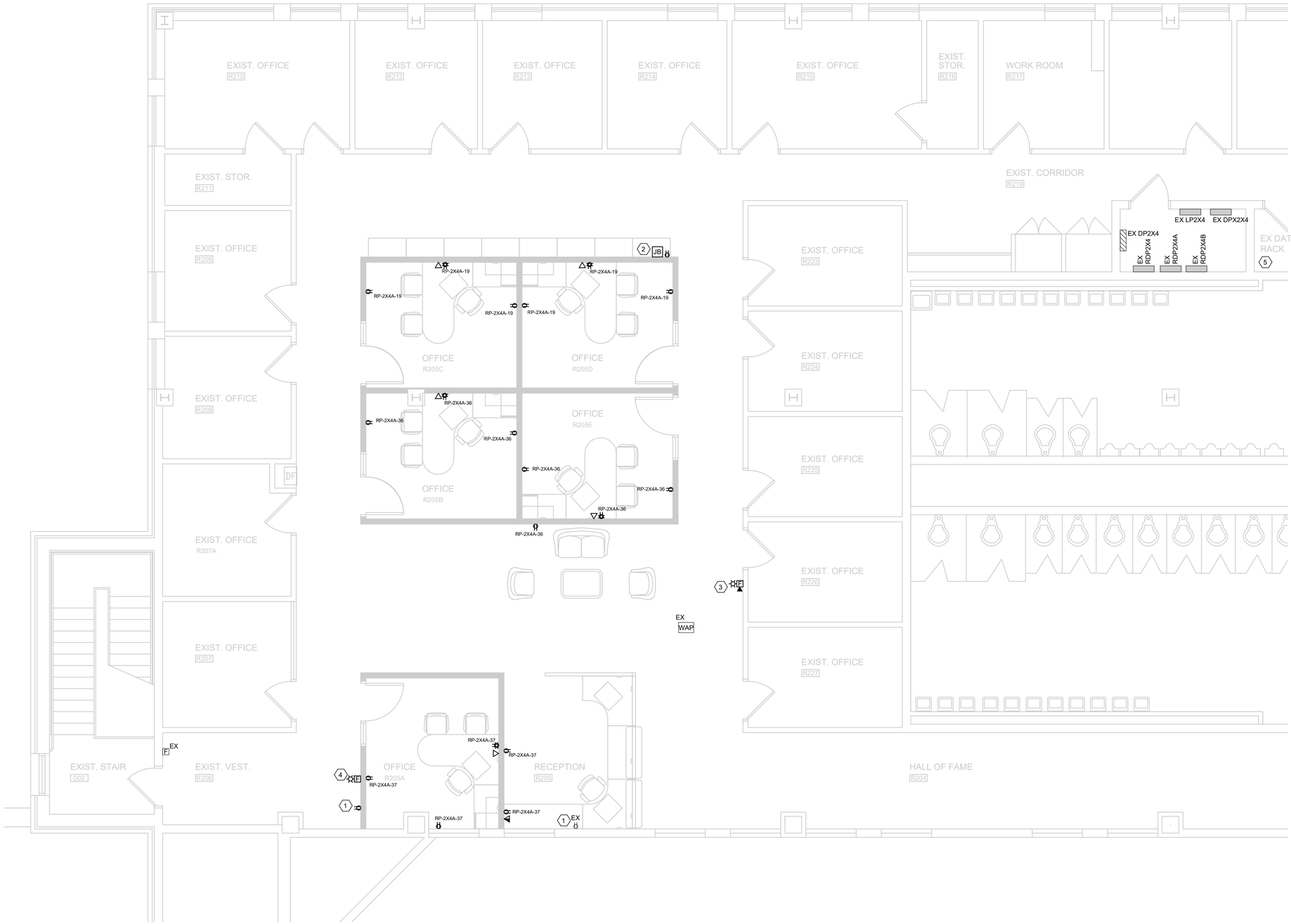
| NO. | DATE |
|---|---|
| | |

DRAWN BY RLM
DATE 8/05/22
APPROVED JWF

SHEET NO
E2.0
OF

PROJECT NO.
2223

2/3/2023 11:22 AM MICHAEL.VOGTMANN.(MVOGTMANN@MACMILLANASSOCIATES.COM) F:\27-TSSF\2022-2703 SVSU RYDER CENTER OFFICE RENOVATION\2022-2703-S-E2.0 LIGHTING PLAN




NORTH

## PARTIAL SECOND FLOOR PLAN - POWER AND SYSTEMS

1/4"=1'-0"

**GENERAL NOTES - POWER AND SYSTEMS**

1. DEVICE HEIGHT SHOWN SHALL BE TO TOP OF BOX UNLESS NOTED OTHERWISE.
2. RECEPTACLE CIRCUITS SHALL HAVE DEDICATED NEUTRALS THE USE OF SHARED NEUTRALS IS NOT ACCEPTABLE.
3. ALL RACEWAYS SHALL BE EQUIPPED WITH A MINIMUM #12 GREEN JACKETED GROUNDING CONDUCTOR, THE USE OF THE RACEWAY ALONE AS A GROUND PATH IS NOT ACCEPTABLE.
4. THE CONTRACTOR IS RESPONSIBLE TO FURNISH AND INSTALL ALL NEW FIRE ALARM DEVICES THAT ARE REQUIRED ABOVE AND BEYOND THE DEVICES THAT ARE SALVAGED FROM THE DEMOLITION AREA.
5. ALL NEW WORK SHALL BE FLUSH MOUNTED. SURFACE WIREWAY IS ONLY ALLOWED AS NOTED ON A SPECIFIC LOCATION BY LOCATION BASIS.
6. OUTLET BOXES SHALL NOT BE MOUNTED BACK TO BACK TO AVOID NOISE TRANSFER ISSUES.
7. PROVIDE NEW CABLING BACK TO THE 2ND FLOOR DATA ROOM. REUSE EXISTING PATHWAY WHERE POSSIBLE.

**KEYED NOTES**

1. INSTALL NEW RECEPTACLE. USE EXISTING CIRCUIT FOR RECEPTACLE POWER.
2. PROVIDE LOW VOLTAGE ROUGH-IN FOR FUTURE USE.
3. REUSE EXISTING FIRE ALARM DEVICE IN NEW LOCATION.
4. FURNISH AND INSTALL NEW FIRE ALARM DEVICE.
5. UTILIZE EXISTING SWITCH IN DATA RACK FOR NEW DATA FEEDS.

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| NO. | DATE |
|---|---|
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PROJECT NO.
2223

2/3/2021 11:22 AM MICHAEL VOGTMANN (MVOGTMANN@MACMILLANASSOCIATES.COM) F:\27-TSSF\2022-2703 SVSU RYDER CENTER OFFICE RENOVATION\2022-2703-E3.0 POWER AND SYSTEMS PLAN

ELECTRICAL SYMBOLS

- 2'x2' FIXTURE, TYPE INDICATED
- HALF SHADED FIXTURES ARE EMERGENCY FIXTURES
- EXIT LIGHT
- MOUNTED EXIT LIGHT
- EBS — EMERGENCY LIGHTING BYPASS SWITCH
- $S_{MD}$ — MOTION AND DIMMING SWITCH
- PANELBOARD
- JB — JUNCTION BOX
- PP — POWER POLE
- DUPLEX RECEPTACLE
- QUADPLEX RECEPTACLE
- DATA OUTLET ROUGH-IN 4" SQUARE ROUGH IN WITH A SINGLE GANG TRIM RING AND 1" CONDUIT ROUTED TO THE ACCESSIBLE CEILING WITH (2) BELDEN CAT 6 RUN TO THE LOCAL IDF RACK
- DATA OUTLET ROUGH-IN 4" SQUARE ROUGH IN WITH A SINGLE GANG TRIM RING AND 1" CONDUIT ROUTED TO THE ACCESSIBLE CEILING WITH (1) BELDEN CAT 6 RUN TO THE LOCAL IDF RACK
- DATA OUTLET ROUGH-IN 4" SQUARE ROUGH IN WITH A SINGLE GANG TRIM RING AND 1" CONDUIT ROUTED TO THE ACCESSIBLE CEILING WITH (4) BELDEN CAT 6 RUN TO THE LOCAL IDF RACK
- WAP — WIRELESS ACCESS POINT. (1) BELDEN CAT 6 ACCESS POINT PROVIDED BY UNIVERSITY INSTALLED BY THE CONTRACTOR
- F — FIRE ALARM PULL STATION
- FIRE ALARM STROBE ONLY
- FIRE ALARM HORN/STROBE COMBO
- ----- INDICATES TO BE REMOVED
- EX — EXISTING

ELECTRICAL SPECIFICATIONS

INTERFERENCES

A. THE CONTRACTOR, WHEN DIRECTED BY THE ARCHITECT OR OWNER, SHALL MAKE SUCH CHANGES OR OFF-SETS AS REQUIRED SO THAT THE WORK SHALL BE PROPERLY LOCATED. FAILURE TO COMPLY WITH THE FOREGOING WILL NOT RELIEVE CONTRACTORS RESPONSIBILITY OF MAKING SUCH CHANGES. SUCH CHANGES SHALL BE COMPLETED AT NO ADDITIONAL COST TO THE OWNER.

MATERIALS AND WORKMANSHIP

A. ALL MATERIALS AND EQUIPMENT FURNISHED FOR INSTALLATION ON THIS PROJECT SHALL BE NEW AND IN STRICT ACCORDANCE WITH THIS SPECIFICATION. ALL ELECTRICAL EQUIPMENT SHALL BEAR THE UNDERWRITER'S LABEL.

B. ALL WORK SHALL BE PERFORMED IN A PROFESSIONAL MANNER UNDER THE SUPERVISION THE CONTRACTOR'S FIELD MANAGER. THE FIELD MANAGER SHALL BE CONSIDERED THE POINT OF CONTACT FOR DAILY COMMUNICATIONS.

C. SHOULD ANY DISPUTE ARISE AS TO THE QUALITY OF THE WORKMANSHIP, OWNER AND ENGINEER AND CONTRACTOR SHALL MUTUALLY AGREE WORK IS NON-ACCEPTABLE AND SHALL BE REWORKED AT NO ADDITIONAL COST TO THE OWNER.

GUARANTEES

A. ALL EQUIPMENT AND WORK PERFORMED UNDER DIVISION 26000 SHALL BE GUARANTEED FOR ONE YEAR FROM TIME OF SUBSTANTIAL COMPLETION OF PROJECT,

OWNERS ACCEPTANCE OF EQUIPMENT

A. UPON THE OWNER'S WRITTEN ACCEPTANCE, THE CONTRACTOR'S GUARANTEE PERIOD SHALL BEGIN AND THE OWNER SHALL ACCEPT THE RESPONSIBILITY FOR OPERATION AND MAINTENANCE AND THE CONTRACTOR'S LIABILITY SHALL BE LIMITED TO THE CONDITIONS COVERED IN THE GUARANTEE AS DESCRIBED IN THESE SPECIFICATIONS. ACCEPTANCE SHALL BE DEFINED AS ALL WORK COMPLETED PER PLANS AND SPECIFICATIONS, FINAL WALK-THRU ITEMS COMPLETED, WARRANTY LETTER SUBMITTED, AS-CONSTRUCTED DRAWINGS SUBMITTED AND FINAL PAYMENT APPLICATION SUBMITTED.

SUBMITTALS

A. PROVIDE ELECTRONIC SHOP DRAWINGS.

B. SUBMIT SHOP DRAWINGS AND PRODUCT DATA GROUPED TO INCLUDE COMPLETE SUBMITTALS OF RELATED SYSTEMS, PRODUCTS, AND ACCESSORIES IN SINGLE SUBMITTALS.

C. CIRCUIT BREAKERS, LIGHT FIXTURES, PANELBOARDS, ETC.

REGULATORY REQUIREMENTS

A. CONFORM TO CURRENT STATE OF MICHIGAN BUILDING CODES AND SVSU STANDARDS.

B. CONFORM TO REQUIREMENTS OF NFPA 70, 2017 NATIONAL ELECTRIC CODE, 2015 MICHIGAN BUILDING CODE, 2009 MICHIGAN BARRIER FREE DESIGN.

C. EQUIPMENT: U.L. TESTED AND APPROVED FOR ITS PURPOSE.

D. THE ELECTRICAL CONTRACTOR SHALL OBTAIN AND PAY FOR PERMITS, INSPECTION FEES AND FINAL WIRING CERTIFICATE. COPIES OF THE CERTIFICATE OF INSPECTION ARE TO BE PROVIDED TO THE OWNER AFTER FINAL INSPECTION AND APPROVAL FROM AUTHORITIES HAVING JURISDICTION.

TELEPHONE AND DATA

A. ELECTRICAL TRADE SHALL PROVIDE A 4' SQUARE BOX WITH A SINGLE GANG TRIM RING FOR TELEPHONE AND DATA WIRING. INSTALL A 1" EMT CONDUIT STUB UP INTO THE CEILING, PROVIDE A PLASTIC BUSHING ON ALL CONDUIT ENDS.

B. PATCH PANELS AND PATCH CORDS FURNISHED BY SVSU, INSTALLED BY ELECTRICAL CONTRACTOR.

C. VOICE/DATA INSTALLATION SHALL BE BY A DIVISION 27000 CONTACTOR THAT IS LISTED ON THE SVSU APPROVED LIST.

D. SUBMIT ELECTRONIC TEST FOR EACH CABLE.

E. LABEL BOTH ENDS OF THE CABLE, THE FACEPLATE, AND THE PATCH PANEL PER SVSU'S STANDARDS.

F. VERIFY THE FINAL FURNITURE LAYOUT PRIOR TO INSTALLING DATA ROUGH-INS.

PROJECT/SITE CONDITIONS

A. INSTALL WORK IN LOCATIONS SHOWN ON DRAWINGS, UNLESS PREVENTED BY PROJECT CONDITIONS.

B. ALL BIDDERS SHALL PERSONALLY INSPECT THE SITE AND ACQUAINT THEMSELVES WITH ALL EXISTING CONDITIONS INVOLVED IN EXECUTION OF THIS CONTRACT, AND MAKE ALL NECESSARY MEASUREMENTS. NO "EXTRA" WILL BE CONSIDERED FOR ADDITIONAL WORK REQUIRED BECAUSE OF BIDDER'S FAILURE TO DO SO.

C. THE ELECTRICAL TRADES SHALL BE RESPONSIBLE TO COLLABORATE WITH THEIR FIRE ALARM VENDOR TO SCHEDULE THE BUREAU OF FIRE SERVICES INSPECTOR SYSTEM WALK THRU. COMPLETE ALL FIRE ALARM SYSTEM REQUIREMENTS AS ADVISED BY THE INSPECTOR. INCLUDE ALL OF THE INSPECTOR'S LISTED ITEMS AND INCLUDING ALL COSTS.

D. ELECTRICAL TRADES SHALL BE RESPONSIBLE FOR ALL CUTTING, CHANNELING, AND PATCHING TO COMPLETE THE ELECTRICAL INSTALLATION.

G INSTALL SWITCHES 48 INCHES TO TOP OF BOX ABOVE FINISHED FLOOR.

H MOUNT RECEPTACLES, VOICE/DATA OUTLETS 16 INCHES TO BOTTOM OF BOX ABOVE FINISHED FLOOR, UNLESS SHOWN OTHERWISE. CONFIRM EXISTING CONDITION AND INSTALL NEW ACCORDINGLY.

CONDUIT REQUIREMENTS (ELECTRICAL METALLIC TUBING (EMT))

A. 3/4" MINIMUM SIZE CONDUIT

B. DRY INTERIOR LOCATIONS:
 1. USE EMT TYPE CONDUIT, SET SCREW COUPLINGS AND CONNECTORS.

C. DESCRIPTION: ANSI C80.3; GALVANIZED TUBING.

D. FITTINGS AND CONDUIT BODIES: ANSI/NEMA FB 1; SET SCREW TYPE.

GENERAL INSTALLATION METHODS

A. ARRANGE CONDUIT SUPPORTS TO PREVENT MISALIGNMENT DURING WIRING INSTALLATION.

B. GROUP RELATED CONDUITS; SUPPORT USING CONDUIT RACK. CONSTRUCT RACK USING STEEL CHANNEL; PROVIDE SPACE ON EACH FOR 25 PERCENT ADDITIONAL CONDUITS.

C. FASTEN CONDUIT SUPPORTS TO BUILDING STRUCTURE AND SURFACES.

D. DO NOT SUPPORT CONDUIT WITH WIRE OR PERFORATED PIPE STRAPS.

E. DO NOT ATTACH CONDUIT TO CEILING SUPPORT WIRES.

F. ROUTE CONDUIT PARALLEL AND PERPENDICULAR TO WALLS OR BUILDING CENTERLINES.

G. ROUTE CONDUIT INSTALLED ABOVE ACCESSIBLE CEILINGS PARALLEL AND PERPENDICULAR TO WALLS.

H. LOW-VOLTAGE WIRING INSTALLED IN CEILING SPACE IS NOT REQUIRED TO BE INSTALLED IN CONDUIT. USE J HOOKS AS THE CABLE MANAGEMENT METHOD. LAYING CABLES LOOSE ACROSS THE CEILING TILES OR GRID SYSTEM IS NOT ACCEPTABLE.

BUILDING WIRE

A. DESCRIPTION: SINGLE CONDUCTOR INSULATED WIRE.

B. CONDUCTOR: STRANDED COPPER.

C. INSULATION VOLTAGE RATING: 600 VOLTS.

D. INSULATION: TYPE THHN/THWN 75ºC.

GROUNDING

A. EQUIPMENT GROUNDING CONDUCTORS. PROVIDE GREEN JACKETED CONDUCTOR GROUND CONDUCTOR FOR THE LIGHTING AND POWER CIRCUITS. EXISTING FIELD CONDITIONS MAY DISCOVERED THE USE OF THE CONDUITS AS THE GROUND PATH. MATCH EXISTING CONDITIONS AS DEEMED NECESSARY OTHERWISE PROVIDE THE GROUNDING CONDUCTOR AS SPECIFIED.

RECEPTACLES

A. SPECIFICATION GRADE. 20 AMP 125 VOLT GROUNDING TYPE. WHITE BODY WITH WHITE COVER PLATE.

B. LABEL EXISTING AND NEW RECEPTACLE COVER PLATES WITH CLEAR ADHESIVE AND BLACK LETTERS INDICATING SOURCE PANEL AND CIRCUIT (RPA-5).

WIRING METHODS

1. LIGHTING IS 277 VOLT.

2. GENERAL PURPOSE RECEPTACLES REQUIRE DEDICATED NEUTRALS AND A GROUNDING CONDUCTOR.

FIRE ALARM

A. MANUFACTURER SHALL BE SIMPLEX DEVICES TO MATCH EXISTING.

B. RECERTIFY PROJECT LOCATIONS FIRE ALARM SYSTEM AFTER CONSTRUCTION.

C. PROVIDE DUST COVERS FOR EXISITNG FIRE ALARM DEVICES DURING CONSTRUCTION.

GENERAL NOTES

1. ALL NEW DATA DEVICES SHALL BE INSTALLED WITH NEW CAT6 DATA CABLE RUN BACK TO THE EXISTING LOCAL IDL RACK.

2. ALL NEW DEVICES SHALL BE FLUSH MOUNTED.

3. PROVIDE DEVICE COVER PLATE LABELING INDICATING SOURCE PANEL AND CIRCUIT NUMBER PER SVSU STANDARDS.

4. FURNISH AND INSTALL BLANK COVER PLATES ON UNUSED ROUGH-IN BOXES.

EMERGENCY LIGHTING BYPASS SWITCH SCHEDULE

EBS NINE 24, INC. #BLTC OR EQUAL. DESIGNED TO MEET UL 924 REQUIREMENTS. 10 AMP LOAD CAPACITY, 50,000 VOLTS PLUS INPUT SURGE PROTECTION, ON-BOARD TEST SWITCH FOR LOCAL INSPECTION. FAILSAFE ON FUNCTIONALITY.

**EXISTING**
**DPX 2X4**

MAIN: SIZE & TYPE: 225 A — BUS RATING: A — VOLTAGE: 480 / 277 V 3 Ø, 4 WIRE — MOUNTING: SURFACE
PANEL LOCATION: SECOND FLOOR RYDER OFFICES — FEEDER SIZE: — FED FROM: — MIN RMS AMPS:

| CKT # | CIRCUIT DESCRIPTION | LOAD (KVA) A | B | C | AMPS / POLES | CKT # | LOAD TYPE | CKT # | AMPS / POLES | LOAD (KVA) A | B | C | CIRCUIT DESCRIPTION | CKT # |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | SPARE | | | | 20/1 | 1 | | 2 | | | | | PREPARED SPACE | 2 |
| 3 | SPARE | | | | 20/1 | 3 | | 4 | 20/1 | | | | SPARE | 4 |
| 5 | EXIT LIGHTS NORTH HALL NITE LIGHTS | | | | 20/1 | 5 | | 6 | 20/1 | | | | SPARE | 6 |
| 7 | LIGHTING SECTION "E" LOBBY | | | | 20/1 | 7 | | 8 | 20/1 | | | | SPARE | 8 |
| 9 | LIGHTING SECTION "B" ARENA | | | | 20/1 | 9 | | 10 | 20/1 | | | | SPARE | 10 |
| 11 | LIGHTING SECTION "B", "E", AUX GYM, NOTRTH HALL NITE LIGHTS | | | | 20/1 | 11 | | 12 | 20/1 | | | | SPARE | 12 |
| 13 | PREPARED SPACE | | | | | 13 | | 14 | 20/1 | | | | NORTH EAST ARENA NITE LIGHTS | 14 |
| 15 | PREPARED SPACE | | | | | 15 | | 16 | 20/1 | | | | NORTH WEST ARENA NIGHT LIGHTS | 16 |
| 17 | PREPARED SPACE | | | | | 17 | | 18 | | | | | PREPARED SPACE | 18 |
| 19 | PREPARED SPACE | | | | | 19 | | 20 | | | | | PREPARED SPACE | 20 |
| 21 | PREPARED SPACE | | | | | 21 | | 22 | | | | | PREPARED SPACE | 22 |
| 23 | PREPARED SPACE | | | | | 23 | | 24 | | | | | PREPARED SPACE | 24 |
| 25 | PREPARED SPACE | | | | | 25 | | 26 | | | | | PREPARED SPACE | 26 |
| 27 | PREPARED SPACE | | | | | 27 | | 28 | | | | | PREPARED SPACE | 28 |
| 29 | PREPARED SPACE | | | | | 29 | | 30 | | | | | PREPARED SPACE | 30 |

NOTES:

**EXISTING**
**LP 2X4**

MAIN: SIZE & TYPE: 225 A — BUS RATING: A — VOLTAGE: 480 / 277 V 3 Ø, 4 WIRE — MOUNTING: SURFACE
PANEL LOCATION: SECOND FLOOR RYDER OFFICES — FEEDER SIZE: — FED FROM: — MIN RMS AMPS:

| CKT # | CIRCUIT DESCRIPTION | LOAD (KVA) A | B | C | AMPS / POLES | CKT # | LOAD TYPE | CKT # | AMPS / POLES | LOAD (KVA) A | B | C | CIRCUIT DESCRIPTION | CKT # |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | LIGHTING TRANSCRIPTION OFFICES | | | | 20/1 | 1 | | 2 | 20/1 | | | | LIGHTING MAIN CORRIDOR (PERIMETER) | 2 |
| 3 | LIGHTING CUBICLES | | | | 20/1 | 3 | | 4 | 20/1 | | | | LIGHTING MAIN CORRIDOR (PERIMETER) | 4 |
| 5 | LIGHTING CONCESSION, POOL CORRIDOR | | | | 20/1 | 5 | | 6 | 20/1 | | | | LIGHTING MAIN CORRIDOR (DOWN LIGHTING) | 6 |
| 7 | LIGHTING CORRIDOR SECTION "B" STAIRS | | | | 20/1 | 7 | | 8 | 20/1 | | | | LIGHTING CORRIDOR TICKETING | 8 |
| 9 | LIGHTING PENTHOUSE | | | | 20/1 | 9 | | 10 | 20/1 | | | | LIGHTING TOILET ROOM | 10 |
| 11 | LIGHTING PENTHOUSE | | | | 20/1 | 11 | | 12 | 20/1 | | | | LIGHTING OFFICES 1 | 12 |
| 13 | SPARE | | | | 20/1 | 13 | | 14 | 20/1 | | | | SPARE | 14 |
| 15 | COURT 1, 2, & 3 RACKETBALL COURTS | | | | 20/1 | 15 | | 16 | 20/1 | | | | SPARE | 16 |
| 17 | AUX GYM | | | | 20/1 | 17 | | 18 | 20/1 | | | | SPARE | 18 |
| 19 | SPARE | | | | 20/1 | 19 | | 20 | 20/1 | | | | SPARE | 20 |
| 21 | SPARE | | | | 20/1 | 21 | | 22 | 20/1 | | | | SPARE | 22 |
| 23 | SPARE | | | | 20/1 | 23 | | 24 | 20/1 | | | | SPARE | 24 |
| 25 | SPARE | | | | 20/1 | 25 | | 26 | 20/1 | | | | SPARE | 26 |
| 27 | SPARE | | | | 20/1 | 27 | | 28 | 20/1 | | | | SPARE | 28 |
| 29 | SPARE | | | | 20/1 | 29 | | 30 | | | | | PREPARED SPACE | 30 |

NOTES: UTILIZE EXISTING CIRCUITS FOR LIGHTING CHANGES

**EXISTING**
**RP 2X4A**

MAIN: SIZE & TYPE: 225 A — BUS RATING: 225 A — VOLTAGE: 208 / 120 V 1 Ø, 4 WIRE — MOUNTING: SURFACE
PANEL LOCATION: SECOND FLOOR RYDER OFFICES — FEEDER SIZE: — FED FROM: — MIN RMS AMPS:

| CKT # | CIRCUIT DESCRIPTION | LOAD (kVA) A | | C | AMPS / POLES | CKT # | LOAD TYPE | CKT # | AMPS / POLES | LOAD (kVA) A | | C | CIRCUIT DESCRIPTION | CKT # |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | TRANSCRIPTION RECEPTACLE | | | | 20/1 | 1 | | 2 | 20/1 | | | | RECEPTION RECEPTACLES | 2 |
| 3 | TRANSCRIPTION RECEPTACLE | | | | 20/1 | 3 | | 4 | 20/1 | | | | TOILET ROOMS AND ENTRANCE RECEPTACLES | 4 |
| 5 | TRANSCRIPTION RECEPTACLE | | | | 20/1 | 5 | | 6 | 20/1 | | | | TOILET ROOMS RECEPTACLES | 6 |
| 7 | OFFICE NO. 6, 7, RECEPTACLE | | | | 20/1 | 7 | | 8 | 20/1 | | | | OFFICES 3, P.E. RECEPTACLES | 8 |
| 9 | A.D. AND ADJACENT RM 210 RECEPTACLE (MONITOR) | | | | 20/1 | 9 | | 10 | 20/1 | | | | OFFICE 9, STORAGE RECEPTACLES | 10 |
| 11 | OFFICES 1, 2, RECEPTACLE | | | | 20/1 | 11 | | 12 | 20/1 | | | | RECESSED SPACE RECEPTACLES | 12 |
| 13 | OFFICES 7, 8, 11 RECEPTACLES | | | | 20/1 | 13 | | 14 | 20/1 | | | | OFFICES 4 & 5 RECEPTACLES | 14 |
| 15 | OFFICES 12, 14, 15 RECEPTACLES | | | | 20/1 | 15 | | 16 | 20/1 | | | | R222A, R222 | 16 |
| 17 | OFFICES 17, 18 RECEPTACLES | | | | 20/1 | 17 | | 18 | 20/1 | | | | UNKNOWN | 18 |
| 19 | OFFICES R205C AND R205D RECEPTACLES 1 | | | | 20/1 | 19 | | 20 | 20/1 | | | | TEL & ELECTRICAL ROOM RECEPTACLES | 20 |
| 21 | OFFICES 19, 20 RECEPTACLES (LOBBY MONITOR) | | | | 20/1 | 21 | | 22 | 20/1 | | | | JC RECEPTACLES | 22 |
| 23 | OFFICES 13, 16 RECEPTACLES | | | | 20/1 | 23 | | 24 | 20/1 | | | | FC-15 &16 | 24 |
| 25 | FC-8, 9, 10 | | | | 20/1 | 25 | | 26 | 20/1 | | | | LIGHTING RECEPTION AND RYDER ENTRANCE MONITOR | 26 |
| 27 | LIGHTING A.D., P.E. | | | | 20/1 | 27 | | 28 | 20/1 | | | | LIGHTING RECEPTION | 28 |
| 29 | UNKNOWN | | | | 20/1 | 29 | | 30 | 20/1 | | | | LIGHTING CORRIDOR | 30 |
| 31 | KITCHEN COUNTER | | | | 20/1 | 31 | | 32 | 20/1 | | | | LIGHTING TOILET SHAFT | 32 |
| 33 | KITCHEN COUNTER | | | | 20/1 | 33 | | 34 | 20/1 | | | | WATER COOLER | 34 |
| 35 | FRONT WEST OFFICE RECPETACLES R222A 2 | | | | 20/1 | 35 | | 36 | 20/1 | | | | OFFICES R205B AND R205E RECEPTACLES 2 | 36 |
| 37 | OFFICES R205A AND RECEPTION RECEPTACLES | | | | 20/1 | 37 | | 38 | 30A/ | | | | SPARE | 38 |
| 39 | UNKNOWN | | | | 20/1 | 39 | | 40 | 2P | | | | SPARE | 40 |
| 41 | SPARE | | | | 20/1 GFI | 41 | | 42 | | | | | PREPARED SPACE | 42 |

NOTES:
1. REUSE EXISTING CIRCUIT TO FEED NEW LOADS. REFER TO POWER AND SYSTEMS PLAN
2. UTILIZE EXISTING SPARE CIRCUIT BREAKERS TO FEED NEW LOADS. REFER TO POWER AND SYSTEMS PLAN.
3. FURNISH AND INSTALL NEW CIRCUIT BREAKER IN PREPARED SPACE. TO FEED NEW LOADS. REFER TO POWER AND SYSTEMS PLAN.

**EXISTING**
**RP 2X4B**

MAIN: SIZE & TYPE: 225 A — BUS RATING: 225 A — VOLTAGE: 208 / 120 V 1 Ø, 4 WIRE — MOUNTING: SURFACE
PANEL LOCATION: SECOND FLOOR RYDER OFFICES — FEEDER SIZE: — FED FROM: — MIN RMS AMPS:

| CKT # | CIRCUIT DESCRIPTION | LOAD (kVA) A | | C | AMPS / POLES | CKT # | LOAD TYPE | CKT # | AMPS / POLES | LOAD (kVA) A | | C | CIRCUIT DESCRIPTION | CKT # |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | CORRIDOR E-W RECEPTACLE | | | | 20/1 | 1 | | 2 | 20/1 | | | | CORRIDOR N-S RECEPTACLE | 2 |
| 3 | CORRIDOR E-W WATER COOLER | | | | 20/1 | 3 | | 4 | 20/1 | | | | EWC CORRIDOR | 4 |
| 5 | CORRIDOR E-W RECEPTACLE | | | | 20/1 | 5 | | 6 | 20/1 | | | | EWC CORRIDOR | 6 |
| 7 | LOBBY TRACK LIGHTING | | | | 20/1 | 7 | | 8 | 20/1 | | | | VOMITORY FLOODS "G" | 8 |
| 9 | LOBBY TRACK LIGHTING | | | | 20/1 | 9 | | 10 | 20/1 | | | | CONCESSION RECEPTACLE | 10 |
| 11 | CONCESSION RECEPTACLE | | | | 20/1 | 11 | | 12 | 20/1 | | | | CONCESSION RECEPTACLE | 12 |
| 13 | CONCESSION RECEPTACLE | | | | 20/1 | 13 | | 14 | 20/1 | | | | CONCESSION RECEPTACLE | 14 |
| 15 | CONCESSION RECEPTACLE | | | | 20/1 | 15 | | 16 | 20/1 | | | | CONCESSION RECEPTACLE | 16 |
| 17 | CONCESSION RECEPTACLE | | | | 20/1 | 17 | | 18 | 20/1 | | | | CONCESSION RECEPTACLE | 18 |
| 19 | ROOF CAMERA POWER | | | | 20/1 | 19 | | 20 | 20/1 | | | | UNKNOWN | 20 |
| 21 | GFI ON ROOF | | | | 20/1 | 21 | | 22 | 20/1 | | | | UNKNOWN | 22 |
| 23 | AC #3 ROOM R232 | | | | 30A/ | 23 | | 24 | 20/1 | | | | CONCESSION RECEPTACLE | 24 |
| 25 | AC #3 ROOM R232 | | | | 2P | 25 | | 26 | | | | | PREPARED SPACE | 26 |
| 27 | PREPARED SPACE | | | | | 27 | | 28 | | | | | PREPARED SPACE | 28 |
| 29 | PREPARED SPACE | | | | | 29 | | 30 | | | | | PREPARED SPACE | 30 |

NOTES:

MACMILLAN ASSOCIATES CONSULTING ENGINEERS
714 EAST MIDLAND STREET • BAY CITY, MICHIGAN 48706
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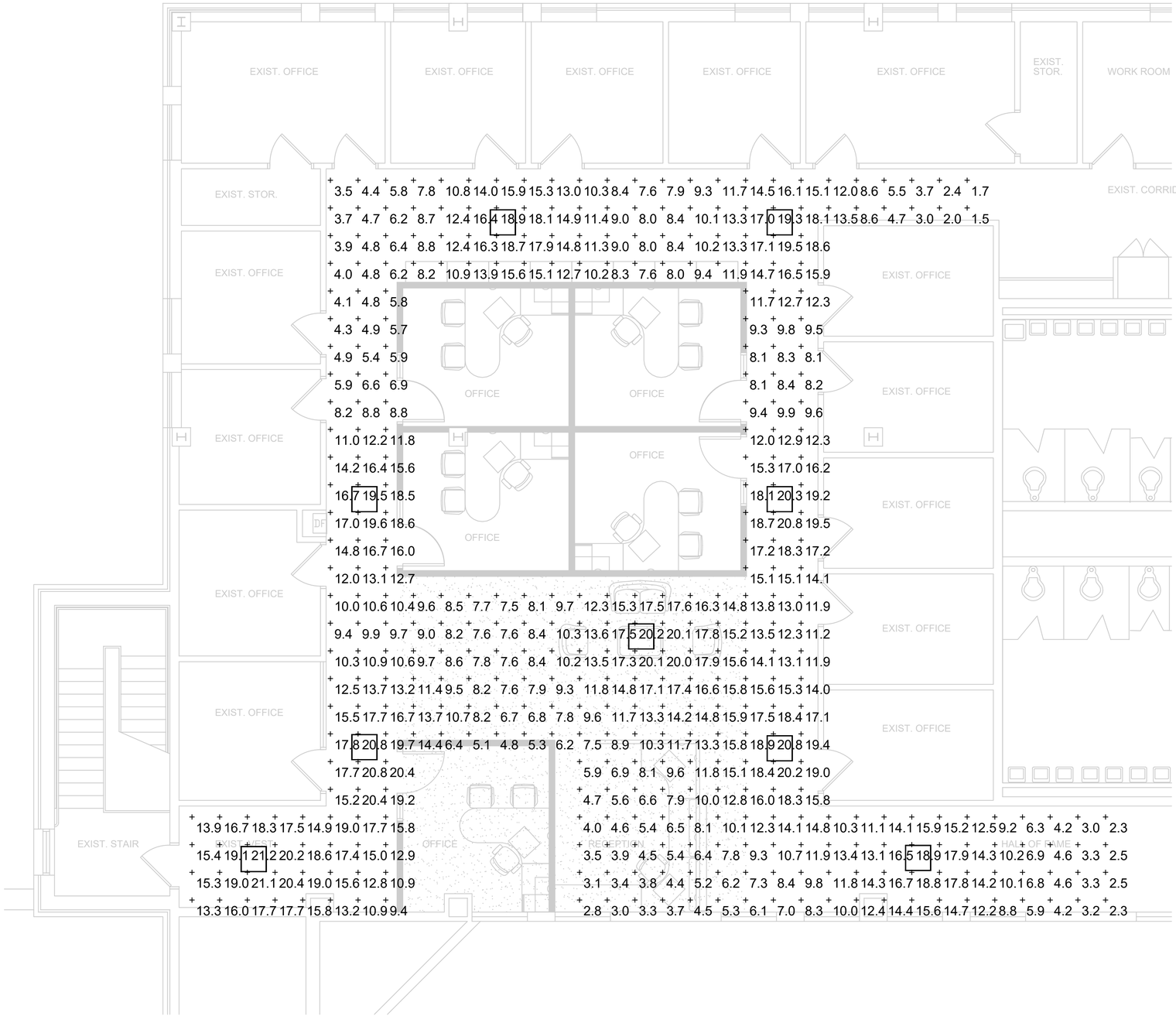
TSSF ARCHITECTS, INC.
ARCHITECTS PLANNERS
122 N. WASHINGTON AVENUE SAGINAW, MICHIGAN

RENOVATIONS TO RYDER CENTER SECOND FLOOR OFFICES:
SAGINAW VALLEY STATE UNIVERSITY
UNIVERSITY CENTER, MICHIGAM

| NO. | DATE |
|---|---|
| | |

DRAWN BY RLM
DATE 8/05/22
APPROVED JWF
SHEET NO
E4.0
OF .
PROJECT NO.
2223




NORTH

PARTIAL SECOND FLOOR PLAN - EMERGENCY LIGHTING CALCULATIONS

1/4"=1'-0"

Schedule

| Symbol | Label | Image | Quantity | Manufacturer | Catalog Number | Description | Number Lamps | Lumens Per Lamp | Light Loss Factor | Wattage | Plot |
|---|---|---|---|---|---|---|---|---|---|---|---|
| □ | A | | 9 | Lithonia Lighting | EPANL 22 34L 35K | EPANL 22 34L 35K | 1 | 3363 | 0.95 | 31.45 | |
| ▨ | AE | | 0 | Lithonia Lighting | EPANL 22 34L 35K | EPANL 22 34L 35K | 1 | 3363 | 0.32 | 31.45 | |
| □ | B | | 0 | Lithonia Lighting | EPANL 2X2 4800LM 80CRI 35K | EPANL 2x2, 4800 Nominal Lumens, 80 CRI, 3500K CCT | 1 | 4729 | 1 | 44.6 | |

Statistics

| Description | Symbol | Avg | Max | Min | Max/Min | Avg/Min |
|---|---|---|---|---|---|---|
| Waiting Room and Corridors | + | 11.7 fc | 21.2 fc | 1.5 fc | 14.1:1 | 7.8:1 |

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| NO. | DATE |
|---|---|
| | |
| | |

DRAWN BY RLM
DATE 8/05/22
APPROVED JWF

SHEET NO
E5.0
OF

PROJECT NO.
2223

2/3/2021 11:22 AM MICHAEL VOGTMANN (MVOGTMANN@MACMILLANASSOCIATES.COM) F:\27-TSSF\2022-2703 SVSU RYDER CENTER OFFICE RENOVATION\2022-2703-E-E5.0 EMERGENCY LIGHTING PLAN

# RENOVATIONS TO RYDER CENTER
# WOMENS LACROSSE LOCKER ROOM

SAGINAW VALLEY STATE UNIVERSITY

## BID NUMBER 23009

University Center, Michigan

Project No. 2224
August 5, 2022


**TSSF ARCHITECTS, INC.**

ARCHITECTS PLANNERS

122 N. WASHINGTON AVENUE SAGINAW , MICHIGAN

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**SECTION 00800**

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| M3.0 | Partial First Floor Plan – Domestic Piping |
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END OF SECTION

**SECTION 02225**

**MINOR DEMOLITION FOR REMODELING**

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:
1. Demolishing designated building equipment and fixtures.
2. Demolishing designated construction.
3. Cutting and alterations for completion of the Work.
4. Removing designated items for Owner's retention.
5. Protecting items designated to remain.
6. Removing demolished materials.

B. Refer to Division 0 and Division 1 requirements. Requirements of these Sections and the project drawings shall govern work in this Section.

1.2 SUBMITTALS

A. Demolition Schedule: Indicate overall schedule and interruptions required for utility and building services.

B. Shop Drawings:
1. Indicate demolition sequence.
2. Indicate location of items designated for Owner's retention.
3. Indicate location and construction of temporary work.

1.3 CLOSEOUT SUBMITTALS

A. Project Record Documents: Accurately record actual locations of capped utilities, concealed utilities discovered during demolition and subsurface obstructions.

B. Operation and Maintenance Data: Submit description of system, inspection data, and parts lists.

1.4 QUALITY ASSURANCE

A. Conform to applicable code for demolition work, dust control and products requiring electrical disconnection.

B. Conform to applicable code for procedures when hazardous or contaminated materials are discovered.

C. Obtain required permits from authorities having jurisdiction.

1.5 PRE-INSTALLATION MEETINGS

A. Convene minimum one week prior to commencing work of this section.

1.6 SCHEDULING

A. Schedule Work to coincide with new construction.

B. Cooperate with Owner in scheduling noisy operations and waste removal that may impact Owners operation in adjoining spaces.

C. Perform noisy, malodorous, dusty work:
   1. As directed by Owner and Construction Manager.

D. Coordinate utility and building service interruptions with Owner.
   1. Do not disable or disrupt building fire or life safety systems without three days prior written notice to Owner.
   2. Schedule tie-ins to existing systems to minimize disruption.
   3. Coordinate Work to ensure fire sprinklers, fire alarms, smoke detectors, emergency lighting, exit signs and other life safety systems remain in full operation in occupied areas.

1.7 PROJECT CONDITIONS

A. Conduct demolition to minimize interference with adjacent and occupied building areas.

B. Cease operations immediately if structure appears to be in danger and notify Architect/Engineer. Do not resume operations until directed.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

3.1 PREPARATION

A. Notify affected utility companies before starting work and comply with their requirements.

B. Mark location and termination of utilities.

C. Erect, and maintain temporary barriers and security devices, including warning signs and lights, and similar measures, for protection of the public, Owner and existing improvements indicated to remain.

D. Erect and maintain weatherproof closures for exterior openings.

E. Erect and maintain temporary partitions to prevent spread of dust, odors, and noise to permit continued Owner occupancy.

F. Prevent movement of structure; provide temporary bracing and shoring required to ensure safety of existing structure.

G. Provide appropriate temporary signage including signage for exit or building egress.

H. Do not close or obstruct building egress path.

I. Do not disable or disrupt building fire or life safety systems without 3 days prior written notice to Owner.

3.2 SALVAGE REQUIREMENTS

A. Coordinate with Owner to identify building components and equipment required to be removed and delivered to Owner's storage.

B. Tag components and equipment Owner designates for salvage.

C. Protect designated salvage items from demolition operations until items can be removed.

D. Carefully remove building components and equipment indicated to be salvaged.

E. Disassemble as required to permit removal from building.

F. Package small and loose parts to avoid loss.

G. Mark equipment and packaged parts to permit identification and consolidation of components of each salvaged item.

H. Prepare assembly instructions consistent with disassembled parts. Package assembly instructions in protective envelope and securely attach to each disassembled salvaged item.

I. Deliver salvaged items to Owner's Storage Facility. Obtain signed receipt from Owner.

3.3 DEMOLITION

A. Conduct demolition to minimize interference with adjacent [and occupied] building areas.

B. Maintain protected egress from and access to adjacent existing buildings at all times.

C. Do not close or obstruct sidewalks without permits.

D. Cease operations immediately when structure appears to be in danger and notify Architect/Engineer.

E. Disconnect and remove designated utilities within demolition areas.

F. Cap and identify abandoned utilities at termination points when utility is not completely removed. Annotate Record Drawings indicating location and type of service for capped utilities remaining after demolition.

G. Demolish in orderly and careful manner. Protect existing improvements, supporting structural members.

H. Carefully remove building components indicated to be reused.
   1. Disassemble components as required to permit removal.
   2. Package small and loose parts to avoid loss.
   3. Mark components and packaged parts to permit reinstallation.
   4. Store components, protected from construction operations, until reinstalled.

I. Remove demolished materials from site except where specifically noted otherwise. Do not burn or bury materials on site.

J. Remove materials as Work progresses. Upon completion of Work, leave areas in clean condition.

K. Remove temporary Work.

END OF SECTION

**SECTION 03050**

**BASIC CONCRETE MATERIALS AND METHODS**

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Formwork.
   2. Reinforcement.
   3. Accessories.
   4. Cast-in place concrete.
   5. Finishing and curing.
   6. Crystalline Waterproofing Admixture.

B. Refer to Division 0 and Division 1 requirements. Requirements of these Sections and the project drawings shall govern work in this Section.

1.2 SYSTEM DESCRIPTION

A. Design, engineer and construct formwork, shoring and bracing in accordance with ACI 301, ACI 318 to conform to applicable code requirements to achieve concrete shape, line and dimension.

B. Vapor Retarder Permeance: Maximum 1 perm when tested in accordance with ASTM E96, Procedure A.

1.3 SUBMITTALS

A. Shop Drawings:
   1. Indicate pertinent dimensioning, arrangement of joints and ties, location of bracing and temporary supports, schedule of erection and stripping.
   2. Indicate reinforcement sizes, spacings, locations, and quantities, bending and cutting schedules, supporting and spacing devices.
   3. Indicate sidewalks, slabs-on-grade.

B. Product Data: Indicate admixtures and anchors.

C. Design Data: Submit mix designs.

1.4 QUALITY ASSURANCE

A. Construct and erect concrete formwork in accordance with ACI 301 and ACI 318.

B. Perform concrete reinforcing work in accordance with ACI 301, ACI 315, ACI 318 and CRSI Manual of Practice.

C. Perform cast-in-place concrete work in accordance with ACI 301, ACI 318 and ACI 305.

PART 2 PRODUCTS

2.1 FORM MATERIALS AND ACCESSORIES

A. Form Materials: At discretion of Contractor.

B. Form Release Agent: Colorless mineral oil not capable of staining concrete or impairing natural bonding characteristics of coating intended for use on concrete.

C. Formed Construction Joints for Slab-on-Grade: Galvanized steel, tongue and groove type profile, knockout holes to receive doweling.

D. Slab Edge Joint Filler: ASTM D1751, Premolded asphaltic board, ½ inch thick.

E. Vapor Retarder: ASTM E1745 Class B; 10 mil thick; type recommended for below grade application. Furnish joint tape recommended by manufacturer. Seal all joints and penetrations.

2.2 REINFORCEMENT MATERIALS

A. Deformed Reinforcement: ASTM A615/A615M; 60 ksi yield strength, steel bars, unfinished.

B. Welded Deformed Wire Fabric: ASTM A497; in flat sheets; unfinished.

C. Chairs, Bolsters, Bar Supports, Spacers: Sized and shaped for support of reinforcing; plastic tipped or non-corroding for supports in slabs forming finished ceilings or where supports are exposed to weather.

D. Fabricate concrete reinforcement in accordance with CRSI Manual of Practice, ACI 301, ACI 318.

E. Weld reinforcement in accordance with AWS D1.4.

2.3 CONCRETE MATERIALS

A. Cement: ASTM C150, Normal-Type I Portland type.

B. Fine and Coarse Aggregates: ASTM C33.

C. Water: Clean and not detrimental to concrete.

D. Air Entrainment Admixture: ASTM C260.

E. Bonding Agent: Latex emulsion.

F. Non-shrink Grout: Premixed compound consisting of non-metallic aggregate, cement, water reducing and plasticizing agents.

2.4 CONCRETE MIX

A. Mix and deliver concrete in accordance with ASTM C94/C94M, Option [A] [C].

| | | | SSD | Abs. Vol. |
|---|---|---|---|---|
| B. | Cement | Type I ASTM C-150 | 454 | 2.31 |
| | Ash | Type C ASTM C0618 | 110 | 0.68 |
| | Sand | 2NS ASTM C-33 | 1380 | 8.35 |
| | C Agg | 6AA Limestone ASTM C-33 | 1850 | 11.10 |
| | Water | ASTM C-94 | 260 | 4.17 |
| | WRA | 2000NI ASTM C494 | | |
| | Entrapped Air | | 1.5 | 0.41 |

C. Add air entraining agent to concrete mix for concrete work exposed to exterior.

## PART 3 EXECUTION

### 3.1 FORMWORK ERECTION

A. Erect formwork, shoring and bracing to achieve design requirements.

B. Camber slabs and framing to achieve ACI 301 tolerances.

C. Provide bracing to ensure stability of formwork.

D. Apply form release agent to formwork prior to placing form accessories and reinforcement.

E. Do not apply form release agent where concrete surfaces will receive special finishes or applied coverings affected by agent.

F. Clean forms as erection proceeds, to remove foreign matter.

### 3.2 INSERTS, EMBEDDED COMPONENTS, AND OPENINGS

A. Provide formed openings where required for work to be embedded in and passing through concrete members.

B. Coordinate work of other sections in forming and setting openings, slots, recesses, chases, sleeves, bolts, anchors, and other inserts.

C. Install concrete accessories straight, level, and plumb.

D. Place joint filler at perimeter of floor slab, penetrations and isolation joints.

E. Install void forms. Protect forms from moisture before concrete placement and from crushing during concreting.

### 3.3 REINFORCEMENT PLACEMENT

A. Place reinforcement, supported and secured against displacement.

B. Ensure reinforcing is clean, free of loose scale, dirt, or other foreign coatings.

C. Weld reinforcement in accordance with AWS D1.4.
   1. Do not weld crossing reinforcement bars for assembly.

D. Space reinforcement bars with minimum clear spacing in accordance with ACI 301 and ACI 318.
   1. Where bars are indicated in multiple layers, place upper bars directly above lower bars.

E. Maintain concrete cover around reinforcement in accordance with ACI 301 and ACI 318.

3.4 PLACING CONCRETE

A. Prepare previously placed concrete by cleaning with steel brush and applying bonding agent.

B. Install vapor retarder under interior slabs on grade in accordance with ASTM E1643. Lap joints minimum 6 inches and seal watertight.

C. Repair damaged vapor retarder with vapor retarder material, lap over damaged areas minimum 6 inches and seal watertight.

D. Separate slabs-on-grade from vertical surfaces with joint filler, extended from bottom of slab to within ¼ inch of finished slab surface.

E. Place concrete continuously between predetermined expansion, control and construction joints.

F. Place floor slabs in every-other lane-placement or saw cut pattern indicated.

G. Where new concrete is doweled to existing work, drill holes in existing concrete, insert steel dowels and pack with non-shrink grout.

H. Screed floors, slabs-on-grade and concrete base for toppings level.

3.5 FORM REMOVAL

A. Do not remove forms or bracing until concrete has gained sufficient strength to carry its own weight and imposed loads.

B. Remove formwork progressively and in accordance with code requirements.

3.6 SEPARATE FLOOR TOPPINGS

A. Place concrete floor toppings to required lines and levels.

B. Prior to placing, roughen concrete base course and remove deleterious material. Broom and vacuum clean.

C. Place required edge strips, reinforcing and other items to be cast in.

D. Apply bonding agent base course.

3.7 FLOOR FINISHING

A. Finish concrete floor surfaces in accordance with ACI 301 and ACI 302.1.

B. Uniformly spread, screed, and float concrete.

C. Steel trowel surfaces receiving carpeting, resilient flooring, seamless flooring, thin set quarry tile, thin set ceramic tile or remaining exposed to view in finished construction.

D. Maintain surface flatness, with maximum variation of 1/8 inch in 10 ft.

E. In areas with floor drains, maintain floor level at walls and slope surfaces uniformly to drains.

3.8 CURING AND PROTECTION

A. Immediately after placement, protect concrete from premature drying, excessively hot or cold temperatures, and mechanical injury.
   1. Protect concrete footings from freezing for minimum 5 days.

B. Immediately after placement, protect concrete from premature drying.

C. Maintain concrete with minimal moisture loss at relatively constant temperature for period necessary for hydration of cement and hardening of concrete for not less than 7 days.

3.9 FORMED SURFACES

A. Provide concrete surfaces to be left exposed, concrete walls with smooth rubbed finish.

3.10 ERECTION TOLERANCES

A. Install reinforcement within tolerances required by ACI 301 and ACI 318.

3.11 FIELD QUALITY CONTROL

A. Perform field testing in accordance with ACI 301 and ACI 318.

B. Reinforcement Inspection:
   1. Inspect for correct materials, fabrication, sizes, locations, spacing, concrete cover, and splicing.

C. Strength Test Samples:
   1. Sample concrete and make one set of three cylinders for every 75 cu yds or less of each class of concrete placed each day and for every 5,000 sf of surface area for slabs and walls.

D. Field Testing:
   1. Measure slump and temperature for each compressive strength concrete sample.
   2. Measure air content in air entrained concrete for each compressive strength concrete sample.

E. Cylinder Compressive Strength Testing:
   1. Test Method: ASTM C39.
   2. Test Acceptance: In accordance with ACI 301 and ACI 318.
   3. Test two cylinders at 28 days.
   4. Retain one cylinder for testing when requested by Architect/Engineer.
   5. Dispose remaining cylinders when testing is not required.

3.12 DEFECTIVE CONCRETE

A. Modify or replace concrete not conforming to required lines, details and elevations, as directed by Architect/Engineer.

END OF SECTION

**SECTION 04065**

**MASONRY MORTAR AND GROUT**

PART 1 GENERAL

1.1 SUMMARY

A. Section includes mortar and grout for masonry.

B. Refer to Division 0 and Division 1 requirements. Requirements of these Sections and the project drawings shall govern work in this Section.

1.2 QUALITY ASSURANCE

A. Perform Work in accordance with ACI 530 Building Code Requirements for Masonry Structures and ACI 530.1 Specification for Masonry Structures.

1.3 ENVIRONMENTAL REQUIREMENTS

A. Cold Weather Requirements: In accordance with ACI 530.1 when ambient temperature or temperature of masonry units is less than 40 degrees F.

B. Hot Weather Requirements: In accordance with ACI 530.1 when ambient temperature is greater than 100 degrees F or ambient temperature is greater than 90 degrees F with wind velocity greater than 8 mph.

PART 2 PRODUCTS

2.1 COMPONENTS

A. Portland Cement: ASTM C150, Type I, gray color.

B. Mortar Aggregate: ASTM C144, standard masonry type.

C. Hydrated Lime: ASTM C206, Type N.

D. Grout Aggregate: ASTM C404.

E. Water: Clean and potable.

F. Bonding Agent: Latex type.

G. Calcium chloride is not permitted.

2.2 MIXES

A. Mortar Mixes:
   1. Mortar for Structural Masonry: ASTM C270, Type N using Property specification.
   2. Mortar for Non-Structural Masonry: ASTM C270, Type S using Property specification.
   3. Pointing Mortar: ASTM C270, Type N, using Property specification.
   4. Stain Resistant Pointing Mortar: One part Portland cement, 1/8 part hydrated lime, and two parts graded (80 mesh) aggregate, proportioned by volume. Add aluminum

tristearate, calcium stearate, or ammonium stearate equal to 2 percent of Portland cement by weight.
5. Mortar for structural glazed tile units to be white.

B. Mortar Mixing:
1. Thoroughly mix mortar ingredients in accordance with ASTM C270 in quantities needed for immediate use.

C. Grout Mixes:
1. Bond Beams, Lintels, Engineered Masonry: 3,000 psi strength at 28 days; 8-10 inches slump mixed in accordance with ASTM C476 Course grout.

D. Grout Mixing:
1. Thoroughly mix grout ingredients in quantities needed for immediate use in accordance with ASTM C476.
2. Do not use anti-freeze compounds to lower freezing point of grout.

## PART 3 EXECUTION

### 3.1 PREPARATION

A. Apply bonding agent to existing concrete surfaces.

### 3.2 INSTALLATION

A. Install mortar and grout in accordance with ACI 530.1 Specification for Masonry Structures.

### 3.3 FIELD QUALITY CONTROL

A. Testing Frequency: One set of specified tests for every 5,000 sf of completed wall area.

B. Testing of Mortar Mix: In accordance with ASTM C780.

C. Testing of Grout Mix: In accordance with ASTM C1019.

END OF SECTION

**SECTION 04810**

**UNIT MASONRY ASSEMBLIES**

PART 1 GENERAL

1.1 SUMMARY

A. Section includes brick, concrete masonry units; firebrick and reinforcement, anchorage, and accessories.

B. Refer to Division 0 and Division 1 requirements. Requirements of these Sections and the project drawings shall govern work in this Section.

1.2 SUBMITTALS

A. Product Data:
   1. Submit data for masonry units and fabricated wire reinforcement, wall ties, anchors and other accessories.

1.3 QUALITY ASSURANCE

A. Perform Work in accordance with ACI 530 Building Code Requirements for Masonry Structures and ACI 530.1 Specification for Masonry Structures.

1.4 ENVIRONMENTAL REQUIREMENTS

A. Cold Weather Requirements: In accordance with ACI 530.1 when ambient temperature or temperature of masonry units is less than 40 degrees F.

B. Hot Weather Requirements: In accordance with ACI 530.1 when ambient temperature is greater than 100 degrees F or ambient temperature is greater than 90 degrees F with wind velocity greater than 8 mph.

PART 2 PRODUCTS

2.1 COMPONENTS

A. Hollow Load Bearing Concrete Masonry Units: ASTM C90; normal weight.

B. Solid Load-Bearing Concrete Masonry Units: ASTM; normal weight.

C. Hollow Non-Load Bearing Concrete Masonry Units: ASTM C129; normal weight.

D. Concrete Brick Units: ASTM C55, same weight as block units.

E. Concrete Masonry Unit Size and Shape: Nominal modular size of 8 x 16 x 8 inches. Furnish special units for 90 degree corners, bond beams and lintels.

F. All exposed masonry unit corners to be bull nosed.

2.2 ACCESSORIES

A. Single Wythe Joint Reinforcement: ASTM A951; ladder type; steel; 0.188 inch diameter side rods with 0.148 inch diameter cross ties; hot dip galvanized.

B. Reinforcing Steel: ASTM A615/A615M, 60 ksi yield grade, deformed billet bars, galvanized finish.

C. Anchor Rods: ASTM A307; Grade C; J-shaped or L-shaped; complete with washers and heavy hex nuts; sized for minimum 15 inch embedment; galvanized finish.
   1. Hot-Dipped Galvanizing: ASTM A153/A153M.
   2. Mechanical Galvanizing: ASTM B695; Class 55.

D. Mortar and Grout: As specified in Section 04065.

E. Cleaning Solution: Non-acidic, not harmful to masonry work or adjacent materials, recommended by masonry unit manufacturer.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify field conditions are acceptable and are ready to receive Work.

3.2 PREPARATION

A. Coordinate placement of anchors supplied by other sections.

B. Wet clay and shale brick before laying when initial rate of absorption is greater than 30 grams when tested in accordance with ASTM C67.

3.3 INSTALLATION

A. Maintain masonry courses to uniform dimension. Form vertical and horizontal joints of uniform thickness.

B. Coursing of Concrete Masonry Units:
   1. Bond: Match existing.
   2. Coursing: One unit and one mortar joint to equal 8 inches.
   3. Mortar Joints: Concave.

C. Cut mortar joints flush where ceramic or quarry wall tile is scheduled, resilient base is scheduled or cavity insulation vapor retarder adhesive is applied.

D. Placing And Bonding:
   1. Isolate masonry partitions from vertical structural framing members with movement joint.
   2. Isolate top of masonry from horizontal structural framing members and slabs or decks.

E. Joint Reinforcement And Anchorage - Single Wythe Masonry:
   1. Install horizontal joint reinforcement 16 inches oc. Place joint reinforcement continuous in first [and second] joint below top of walls.
   2. Place masonry joint reinforcement in first and second horizontal joints above and below openings. Extend minimum 16 inches each side of opening.

F. Masonry Flashings:
   1. Extend flashings horizontally through outer wythe at foundation walls, above ledge or shelf angles and lintels, at bottom of walls and turn down on outside face to form drip.
   2. Turn flashing up minimum 8 inches and bed into mortar joint of masonry seal to concrete back-up.
   3. Lap end joints and seal watertight.
   4. Turn flashing, fold, and seal at corners, bends, and interruptions.

G. Grouted Components:
   1. Reinforce bond beam and pilasters.
   2. Support and secure reinforcing bars from displacement.
   3. Place and consolidate grout fill without displacing reinforcing.
   4. At bearing locations, fill masonry cores with grout for minimum 12 inches both sides of opening.

H. Built-In Work:
   1. As work progresses, install built-in metal door and glazed frames, fabricated metal frames, window frames and other items to be built in the work furnished by other sections.
   2. Bed anchors of metal door and glazed frames in adjacent mortar joints. Fill frame voids solid with grout or mortar. Fill adjacent masonry cores with grout minimum 12 inches from framed openings.

I. Cutting And Fitting:
   1. Cut and fit for chases, pipes, conduit, sleeves and grounds. Coordinate with other sections of work to provide correct size, shape, and location.

J. Cleaning:
   1. Remove excess mortar and mortar smears as work progresses.
   2. Clean soiled surfaces with cleaning solution.

K. Tolerances:
   1. Maximum Variation from Plumb: 1/4 inch per story non-cumulative; 1/2 inch in two stories or more.
   2. Maximum Variation from Level Coursing: 1/8 inch in 3 ft and 1/4 inch in 10 ft; 1/2 inch in 30 ft.

END OF SECTION

**SECTION 05500**

**METAL FABRICATIONS**

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Shop fabricated ferrous metal items, prime painted.

B. Aluminum railing.

1.2 SUBMITTALS

A. Shop Drawings: Indicate profiles, sizes, connection attachments, reinforcing, anchorage, size and type of fasteners, and accessories. Include erection drawings, elevations, and details where applicable.

B. Indicate welded connections using standard AWS A2.0 welding symbols. Indicate net weld lengths.

C. Prepare Shop Drawings under direct supervision of a Professional Structural Engineer experienced in design of this work and licensed in the State of Michigan.

PART 2 PRODUCTS

2.1 MATERIALS

A. Steel Sections: ASTM A36.

B. Steel Plate: ASTM A283.

C. Bolts, Nuts, and Washers: ASTM A325.

D. Welding Materials: AWS D1.1.

E. Shop and Touch-Up Primer: SSPC 15, Type 1, red oxide.

2.2 FABRICATION - GENERAL

A. Fit and shop assemble items in largest practical sections, for delivery to site.

B. Continuously seal joined members by continuous welds.

C. Grind exposed joints flush and smooth with adjacent finish surface. Make exposed joints butt tight, flush, and hairline. Ease exposed edges to small uniform radius.

D. Exposed Mechanical Fastenings: Flush countersunk screws or bolts, consistent with design of component.

E. Supply components required for anchorage of fabrications. Fabricate anchors and related components of same material and finish as fabrication.

F. Accurately form components required for anchorage of stairs and landings and railings to each other and to building structure.

2.3 FINISHES - STEEL

A. Clean surfaces of rust, scale, grease, and foreign matter prior to finishing.

B. Shop prime items with one coat. Do not prime surfaces in direct contact with concrete or where field welding is required.

PART 3 EXECUTION

3.1 EXAMINATION AND PREPARATION

A. Verify that field conditions are acceptable and are ready to receive work.

B. Make provisions for erection loads with temporary bracing. Keep work in alignment.

C. Supply items required to be cast into concrete or embedded in masonry with setting templates, to appropriate sections.

3.2 INSTALLATION

A. Install items plumb and level, accurately fitted, free from distortion or defects.

B. Allow for erection loads and provide temporary bracing to maintain true alignment until completion of erection and installation of permanent attachments.

C. Field weld components as indicated. Perform field welding in accordance with AWS D1.1.

D. Obtain Architect/Engineer approval prior to site cutting.

E. After erection, prime welds, abrasions, and surfaces not shop primed, except surfaces to be in contact with concrete.

END OF SECTION

**SECTION 06100**

**ROUGH CARPENTRY**

PART 1 GENERAL

1.1 SUMMARY

A. Section includes wall sheathing; and roof curbs; blocking in wall and roof openings; wood furring and grounds; electrical panel back boards, concealed wood blocking.

B. Refer to Division 0 and Division 1 requirements. Requirements of these divisions and project drawings shall govern work in this section.

1.2 SUBMITTALS

A. Shop Drawings: Indicate framing system, loads and cambers, bearing details, framed openings.

1.3 QUALITY ASSURANCE

A. Perform Work in accordance with the following:
1. Lumber Grading Agency: Certified by DOC PS 20.
2. Lumber: DOC PS 20.
3. Wood Structural Panels: DOC PS 1 or DOC PS 2.

PART 2 PRODUCTS

2.1 LUMBER MATERIALS

A. Lumber Grading Rules: WWPA G-5.

2.2 SHEATHING MATERIALS

A. Wall Sheathing: Rated sheathing structural I plywood or oriented strand board, span rating 40/20 exposable durability I, sanded.

B. Telephone and Electrical Panel Boards: Plywood.

2.3 SHEATHING AND UNDERLAYMENT LOCATIONS

A. Above Grade Wall Sheathing: 5/8-inch-thick, 48 x 96 inch sized sheets, square edges.

2.4 ACCESSORIES

A. Fasteners and Anchors:
1. Fasteners: Hot dipped galvanized steel for high humidity and treated wood locations, unfinished steel elsewhere.
2. Nails and Staples: ASTM F1667.

B. Anchors: Toggle bolt type for anchorage to hollow masonry. Expansion shield and lag bolt type for anchorage to solid masonry or concrete. Bolt or ballistic fastener for anchorages to steel.

PART 3 EXECUTION

3.1 FRAMING

A. Set structural members level and plumb, in correct position.

B. Fasten framing in accordance with applicable code.

C. Place horizontal members crown side up.

D. Curb roof openings except where curbs are provided. Construct curb members of single pieces for each side.

3.2 SHEATHING

A. Install wall sheathing in accordance with ASTM C1280.

B. Fasten sheathing in accordance with applicable code.

C. Install sheathing to two span continuous.

D. Secure wall sheathing with ends staggered, over firm bearing.

E. Install telephone and electrical panel back boards with plywood sheathing material where required. Size back board by 12 inches beyond size of electrical panel.

END OF SECTION

**SECTION 06200**

**FINISH CARPENTRY**

PART 1 GENERAL

1.1 SUMMARY

A. Section includes finish carpentry items, other than shop prefabricated casework; hardware and attachment accessories.

B. Refer to Division 0 and Division 1 requirements. Requirements of these Sections and the project drawings shall govern work in this Section.

1.2 SUBMITTALS

A. Shop Drawings: Indicate materials, component profiles, fastening methods, jointing details, finishes, and accessories.

B. Samples: Submit 2 x 3 inch size samples illustrating wood grain and specified finish.

1.3 QUALITY ASSURANCE

A. Perform Work in accordance with AWI Quality Standards, Premium Grade.

B. Surface Burning Characteristics: Maximum 25/450 flame spread/smoke developed index when tested in accordance with ASTM E84, NFPA 255 and UL 723.

PART 2 PRODUCTS

2.1 COMPONENTS

A. Hardwood Lumber: Graded in accordance with AWI, I Premium; Red Oak species, ript sawn, maximum moisture content of 6 percent; with plain sawn grain, of quality suitable for transparent finish.

B. Softwood Plywood: PS 1 Grade AB; Graded in accordance with AWI, I Premium veneer, particleboard core; face species.

2.2 ACCESSORIES

A. Fasteners and Anchors:
   1. Fasteners: Hot dipped galvanized steel for high humidity and treated wood locations, unfinished steel elsewhere.
   2. Nails and Staples: ASTM F1667.

B. Contact Adhesives: Water Base type.

C. Wall Adhesive: Cartridge type, compatible with wall substrate, capable of achieving durable bond.

D. Primer: Alkyd primer sealer.

2.3 FABRICATION

A. Fabricate to AWI Premium standards.

2.4 SHOP FINISHING

A. Sand work smooth and set exposed nails.

B. Apply wood filler in exposed nail indentations.

C. On items to receive transparent finishes, use wood filler matching surrounding surfaces and of types recommended for applied finishes.

D. Stain, seal, and varnish exposed to view surfaces.

E. Seal internal surfaces.

F. Seal surfaces in contact with cementitious materials.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify field conditions are acceptable and are ready to receive work.

3.2 PREPARATION

A. Prime paint surfaces of items or assemblies in contact with cementitious materials, before installation.

3.3 INSTALLATION

A. Install work in accordance with AWI Premium quality standard.

B. Set and secure materials and components in place, plumb and level.

C. Install trim by nails.

D. Install hardware supplied by Section 08710.

E. Preparation For Finish:
   1. Sand work smooth and set exposed fasteners. Apply wood filler in exposed fastener indentations.
   2. Site Finishing: Refer to Section 09900.

END OF SECTION

**SECTION 06410**

**CUSTOM CASEWORK**

PART 1 GENERAL

1.1 SUMMARY

A. Section includes custom-fabricated cabinet units; counter tops; cabinet hardware; preparation for installing utilities in cabinets; and shop finishing.

B. Refer to Division 0 and Division 1 requirements. Requirements of these Sections and the project drawings shall govern work in this Section.

1.2 REFERENCES

A. American National Standards Institute:
   1. ANSI A156.9 - Cabinet Hardware.
   2. ANSI A208.1 - Mat-Formed Wood Particleboard.

B. Architectural Woodwork Institute:
   1. AWI - Quality Standards Illustrated.

C. ASTM International:
   1. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.

D. Federal Specification Unit:
   1. FS A-A-1936 - Adhesive, Contact, Neoprene Rubber.

E. Forest Stewardship Council:
   1. FSC Guidelines - Forest Stewardship Council Guidelines.

F. Green Seal:
   1. GS-36 - Aerosol Adhesives.

G. Hardwood Plywood and Veneer Association:
   1. HPVA HP-1 - American National Standard for Hardwood and Decorative Plywood.

H. National Electrical Manufacturers Association:
   1. NEMA LD 3 - High Pressure Decorative Laminates.

I. National Fire Protection Association:
   1. NFPA 255 - Standard Method of Test of Surface Burning Characteristics of Building Materials.
   2. NFPA 286 - Standard Methods of Fire Tests for Evaluating Contribution of Wall and Ceiling Interior Finish to Room Fire Growth.

J. South Coast Air Quality Management District:
   1. SCAQMD Rule 1168 - Adhesive and Sealant Applications.

K. Underwriters Laboratories Inc.:
   1. UL 723 - Tests for Surface Burning Characteristics of Building Materials.

L. Woodwork Institute:

1. WI - Manual of Millwork.

1.3 SUBMITTALS

A. Shop Drawings: Indicate materials, component profiles and elevations, assembly methods, joint details, fastening methods, accessory listings, hardware location and schedule of finishes.

B. Product Data: Submit data for hardware accessories.

C. Samples:
1. Submit two, 8 x 10 inch size samples, illustrating cabinet finish.
2. Submit two, 8 x 10 inch size samples, illustrating counter top finish.
3. Submit samples of drawer pulls and hinges, illustrating hardware finish.

1.4 QUALITY ASSURANCE

A. Perform work in accordance with AWI (Architectural Woodwork Institute) Architectural Woodwork Quality Standards Illustrated, Premium Grade.

B. Surface Burning Characteristics: Maximum 25/450 flame spread/smoke developed index when tested in accordance with ASTM E84.

1.5 QUALIFICATIONS

A. Fabricator: Company specializing in performing Work of this section with minimum three years documented experience.

1.6 PRE-INSTALLATION MEETINGS

A. Convene minimum one week prior to commencing work of this section.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Protect units from moisture damage.

1.8 ENVIRONMENTAL REQUIREMENTS

A. During and after installation of Work of this section, maintain same temperature and humidity conditions in building spaces as will occur after occupancy.

1.9 FIELD MEASUREMENTS

A. Verify field measurements prior to fabrication.

PART 2 PRODUCTS

2.1 CUSTOM CABINETS

2.2 COMPONENTS

A. Softwood Lumber: AWI Custom Grade; maximum moisture content of 6-8 percent; and the following:
1. Species of Wood: Pine.

B. Wood Particleboard: ANSI A208.1 Type 1; composed of wood chips or sawdust, medium density, made with water resistant adhesive; sanded faces.

C. High Pressure Decorative Laminate: NEMA LD 3, GP50 for horizontal surfaces, GP28 for vertical surfaces, CL20 for cabinet liner surfaces, BK20 for undecorated backing sheets; color, pattern, and surface texture as selected.

2.3 ACCESSORIES

A. Adhesive for High Pressure Decorative Laminates: Type recommended by laminate manufacturer to suit application.

B. Plastic Edge Trim: Extruded flat shaped; smooth finish; self-locking serrated tongue; of width to match component thickness; color as selected.

C. Fasteners and Anchors:
   1. Fasteners: Electro galvanized steel for high humidity and treated wood locations, unfinished steel elsewhere.
   2. Nails and Staples: ASTM F1667.

D. Bolts, Nuts, Washers, Lags, Pins, and Screws: Of size and type to suit application.

E. Concealed Joint Fasteners: Threaded steel.

F. Grommets: Plastic material for cut-outs.

G. Hardware: BHMA A156.9.

H. Shelf Standards and Rests: Formed steel channels and rests, cut for fitted rests spaced at 1 inch centers; satin finish.

I. Shelf Brackets: Formed steel brackets, formed for attachment with lugs; satin finish.

J. Drawer and Door Pulls: Extruded aluminum pull, full width of drawer, "U" shaped pull, satin, 4 inch centers.

K. Cabinet Locks: Keyed cylinder, two keys for each lock, master keyed, steel with satin finish. All door and drawers to have lock.

L. Catches: Magnetic. Touch type.

M. Drawer Slides: Galvanized steel construction, ball bearings separating tracks, full extension type.

N. Hinges: Knuckle disappearing type, steel with chrome finish.

2.4 FABRICATION

A. Shop assemble casework for delivery to site in units easily handled and to permit passage through building openings.

B. Fit shelves, doors, and exposed edges with plastic edging. Use one piece for full length only.

C. Cap exposed high pressure decorative laminate finish edges with plastic trim.

D. Door and Drawer Fronts: ¾ inch thick; flush overlay style.

E. When necessary to cut and fit on site, fabricate materials with ample allowance for cutting. Furnish trim for scribing and site cutting.

F. Apply high pressure decorative laminate finish in full uninterrupted sheets consistent with manufactured sizes. Fit corners and joints hairline; secure with concealed fasteners.

G. Apply wood laminate by grain matching adjacent sheets to book matching.

H. Apply laminate backing sheet to reverse side of laminate finished surfaces.

I. Fabricate cabinets and counter tops with cutouts for inserts, outlet boxes and fixtures and fittings. Verify locations of cutouts from on-site dimensions. Seal cut edges.

2.5 SHOP FINISHING

A. Sand work smooth and set exposed nails and screws.

B. Apply wood filler in exposed nail and screw indentations.

C. Finish in accordance with Section 09900.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify adequacy of backing and support framing.

B. Verify location and sizes of utility rough-in associated with work of this section.

3.2 INSTALLATION

A. Set and secure casework in place; rigid, plumb, and level.

B. Use fixture attachments in concealed locations for wall mounted components.

C. Use concealed joint fasteners to align and secure adjoining cabinet units and counter tops.

D. Carefully scribe casework abutting other components, with maximum gaps of 1/32 inch. Do use additional overlay trim for this purpose.

E. Secure cabinet and counter bases to floor using appropriate angles and anchorages.

F. Countersink anchorage devices at exposed locations. Conceal with solid wood plugs of species to match surrounding wood; finish flush with surrounding surfaces.

3.3 ADJUSTING

A. Adjust moving or operating parts to function smoothly and correctly.

3.4 CLEANING

A. Clean casework, counters, shelves, hardware, fittings, and fixtures.

END OF SECTION

**SECTION 06650**

**SOLID POLYMER FABRICATIONS**

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Solid surface window sill, countertop and back splash.

B. Sealant, joint adhesive.

1.2 REFERENCES

A. ASTM E84 - Surface Burning Characteristics of Building Materials.

B. NFPA 70 - National Electrical Code.

C. UL - Underwriters Laboratories Inc., Fire Resistance Directory.

1.3 MAINTENANCE DATA

A. Maintenance Data: Indicate list of approved cleaning materials and procedures required; list of substances that are harmful to the component materials.

B. Include instructions for stain removal, surface and gloss restoration.

1.4 QUALIFICATIONS

A. Fabrication/Installer: Company specializing in the fabrication/installation of the products specified in this section with minimum three years documented experience and shall be an authorized manufacturer's representative. Material shall be manufactured by a certified ISO 9002 firm.

1.5 REGULATORY REQUIREMENTS

A. Conform to applicable code for flame/smoke rating for thickness shown on drawings in accordance with ASTM E84 requirements.

B. Material must comply with FDA for food contact and be listed by NSF for use in food contact areas.

1.6 FIELD MEASUREMENTS

A. Verify that field measurements are taken for proper installation as instructed by manufacturer.

B. Fabricator shall be responsible for providing appropriate manufacturer forms for warranty registration.

1.7 WARRANTY

A. Provide ten year warranty of product free from defects in material and workmanship under normal use and service.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Manufactures:
   1. Corian: DuPont (Reception Desk)
   2. SwanStone: Vanity top, sink, back splash, shelf and window sill.

2.2 MATERIALS

A. Resin: Polyester and acrylic types, with integral coloring, stain resistant to domestic chemicals and cleaners 1/2 inch thickness.

B. Adhesive: Manufacturer's recommended joint adhesive.

C. Sealant: Silicone shall be as recommended by the manufacturer.

D. Sink: 19" x 13" x 6" Intergal sink (SwanStone).

2.3 FABRICATION

A. Fabricate components to achieve shape and configuration.

2.4 FINISH

A. Color: As selected from manufacturer's full range of colors, matte finish. Price group E.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify existing conditions.

B. Verify that joint preparation and affected dimensions are acceptable.

3.2 PREPARATION

A. Provide anchoring devices for installation and embedding.

B. Provide templates and rough-in measurements.

3.3 INSTALLATION

A. Install components in accordance with manufacturer's instructions.

B. Align work plumb and level.

C. Rigidly anchor to substrate to prevent misalignment.

3.4 TOLERANCES

A. Maximum Variation From True Dimension: 1/8.

B. Maximum Offset From True Position: 1/8.

3.5 CLEANING

A. Clean surfaces in accordance with manufacturer’s instructions.

3.6 PROTECTION OF FINISHED WORK

A. Protect finished work.

B. Do not permit construction near unprotected surfaces.

END OF SECTION

**SECTION 07900**

**JOINT SEALERS**

PART 1 GENERAL

1.1 SUMMARY

A. Section includes sealants and joint backing.

B. Refer to Division 0 and Division 1 requirements. Requirements of these Sections and the project drawings shall govern work in this Section.

1.2 SUBMITTALS

A. Product Data: Submit data indicating sealant chemical characteristics, performance criteria, substrate preparation, limitations, and color availability.

1.3 ENVIRONMENTAL REQUIREMENTS

A. Maintain temperature and humidity recommended by sealant manufacturer during and after installation.

PART 2 PRODUCTS

2.1 JOINT SEALERS

A. Manufacturers:
   1. Dow Corning Corp.
   2. GE Silicones.
   3. Pecora Corp.
   4. Sika Corp.

B. Product Description:
   1. High Performance General Purpose Exterior (Nontraffic) Sealant: Polyurethane; ASTM C920, Grade NS, Class 25, Uses M, G, and A; single component.
      a. Type: A.
      b. Color: Standard colors matching finished surfaces.
      c. Applications: Use for:
         1) Joints between concrete and other materials.
         2) Joints between metal frames and other materials.
         3) Other exterior nontraffic joints for which no other sealant is indicated.
   2. General Purpose Interior Sealant: Acrylic emulsion latex; ASTM C834, single component, paintable.
      a. Type: D.
      b. Color: Standard colors matching finished surfaces.
      c. Applications: Use for interior wall and ceiling control joints, joints between door and window frames and wall surfaces, and other interior joints for which no other type of sealant is indicated.
   3. General Purpose Sealant: Silicone; ASTM C920, Uses M and A; single component, mildew resistant.
      a. Type: E.
      b. Applications use for:

1) Joints between plumbing fixtures and floor and wall surfaces, and joints between toilet room, counter tops and wall surfaces.
2) Control, expansion and soft joints in masonry.
3) Control, expansion and soft joints in EIFS work.

4. Acoustical Sealant: Butyl or acrylic sealant; ASTM C920, Grade NS, Class 12-1/2, Uses M and A; single component, solvent release curing, non-skinning.
   a. Type: F.
   b. Applications: Use for concealed locations only at acoustically rated construction.
      1) Provide sealant bead between top stud runner and structure and between bottom stud track and floor.

2.2 ACCESSORIES

A. Primer: Non-staining type, recommended by sealant manufacturer to suit application.

B. Joint Cleaner: Non-corrosive and non-staining type, recommended by sealant manufacturer; compatible with joint forming materials.

C. Joint Backing: Round foam rod compatible with sealant; ASTM D1667, closed cell PVC; oversized 30 to 50 percent larger than joint width.

D. Bond Breaker: Pressure sensitive tape recommended by sealant manufacturer to suit application.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify substrate surfaces and joint openings are ready to receive work.

B. Verify joint backing and release tapes are compatible with sealant.

3.2 PREPARATION

A. Remove loose materials and foreign matter impairing adhesion of sealant.

B. Clean and prime joints.

C. Perform preparation in accordance with ASTM C1193.

3.3 INSTALLATION

A. Perform installation in accordance with ASTM C1193.

B. Perform acoustical sealant application work in accordance with ASTM C919.

C. Measure joint dimensions and size joint backers to achieve width-to-depth ratio, neck dimension, and surface bond area as recommended by manufacturer [, except where specific dimensions are indicated].

D. Install bond breaker where joint backing is not used.

E. Install sealant free of air pockets, foreign embedded matter, ridges, and sags.

F. Apply sealant within recommended application temperature ranges. Consult manufacturer when sealant cannot be applied within these temperature ranges.

G. Tool joints concave.

END OF SECTION

**SECTION 08110**

**STEEL DOORS AND FRAMES**

1 GENERAL

1.1 SUMMARY

A. Section includes steel doors and frames; non-rated, interior borrowed light frames.

1.2 SUBMITTALS

A. Shop Drawings: Indicate door and frame elevations, internal reinforcement, cut-outs for glazing.

B. Product Data: Submit door and frame configurations, location of cut-outs for hardware reinforcement.

1.3 QUALITY ASSURANCE

A. Perform Work in accordance with the following:
   1. ANSI 250.8 - Recommended Specifications for Standard Steel Doors and Frames.
   2. DHI - Door Hardware Institute - The Installation of Commercial Steel Doors and Steel Frames, Insulated Steel Doors in Wood Frames and Builder's Hardware.

2 PRODUCTS

2.1 STEEL DOORS AND FRAMES

A. Manufacturers:
   1. Amweld Building Products, Inc.
   2. Ceco Door Products
   3. Pioneer Industries
   4. Republic Builders Products
   5. Steelcraft
   6. Curries Manufacturing, Inc.

B. Product Description: Standard shop fabricated steel doors, and frames; fire rated and non-rated types; flush face or stile and rail design. .

2.2 COMPONENTS

A. Exterior Doors (Insulated): SDI 108,1-3/4 inch thick.
   1. Level 3 - Extra heavy Duty, Model 1, full flush design.

B. Interior Doors (Non-Rated): SDI 108, 1-3/4 inch thick.
   1. Level 2 - Heavy Duty, Model 2, seamless design.

C. Interior Frames:
   1. Level 2 for Door Models 2, nominal 16 gage/0.053 inch thick material, base metal thickness.

2.3 ACCESSORIES

A. Silencers: Resilient rubber set in steel channel.

B. Removable Stops: Rolled steel channel shape.
C. Bituminous Coating: Fibered asphalt emulsion.

D. Primer: ANSI A250.10 rust inhibitive type.

2.4 FABRICATION

A. Fabricate doors and frames with hardware reinforcement welded in place. Protect frame hardware preparations with mortar guard boxes.

B. Fabricate frames as face welded units.

C. Fabricate frames to suit masonry wall coursing with head member as indicated on drawings.

D. Reinforce frames wider than 48 inches with roll formed steel channels fitted tightly into frame head, flush with top.

E. Prepare interior frames for silencers and install.

F. Frame Transom Bars: Fixed type, with profile matching jamb and head.

2.5 SHOP FINISHING

A. Steel Sheet: Galvanized to ASTM A653/A653M G60.

B. Primer: Baked.

C. Coat inside of frame profile with bituminous coating.

3 EXECUTION

3.1 EXAMINATION

A. Verify opening sizes and tolerances are acceptable.

3.2 INSTALLATION

A. Install doors and frames in accordance with ANSI A250.8.

B. Coordinate installation of doors and frames with installation of hardware specified in Section 08710.

C. Coordinate door frames with masonry, gypsum board wall construction for frame anchor placement.

D. Install roll formed steel reinforcement channels between two abutting frames. Anchor to structure and floor.

E. Install door louvers plumb and level.

F. Coordinate installation of glass and glazing specified in Section 08800.

G. Adjust door for smooth and balanced door movement.

H. Tolerances:
1. Maximum Diagonal Distortion: 1/16 inch measured with straight edge, corner to corner.

END OF SECTION

**SECTION 08305**

**ACCESS DOORS**

PART 1 GENERAL

1.1 SUMMARY

A. Non-rated access door and frame units.

B. Ceiling locations.

C. Refer to “General and Special Conditions,” “Instructions to Bidders” and Division 1 requirements. Requirements of these Sections and the project drawings shall govern work in this Section.

1.2 SUBMITTALS

A. Shop Drawings: Indicate exact position of all access units.

B. Product Data: Provide sizes, types, finishes, scheduled locations and details of adjoining work.

C. Manufacturer’s Installation Instructions: Indicate installation requirements, rough-in dimensions.

1.3 PROJECT RECORD DOCUMENTS

A. Record actual locations of all access units.

1.4 FIELD MEASUREMENTS

A. Verify that field measurements are as indicated on shop drawings.

1.5 COORDINATION

A. Coordinate the work with electrical work requiring access units.

PART 2 PRODUCTS

2.1 MANUFACTURERS - WALL AND CEILING UNITS

A. Bilco or approved equal.

2.2 ACCESS UNITS - CEILINGS

A. Non-Fire Rated Door and Frame Unit: Formed steel.
1. In Plaster on Metal Furring: Model manufactured by Bilco.

B. Size: 24” x 24” unless otherwise indicated.

2.3 FABRICATION - CEILING UNITS

A. Fabricate frames and flanges of 16 gauge steel.

B. Fabricate door panels of 14 gauge steel single thickness steel sheet.

C. Weld, fill and grind joints to assure flush and square unit.

D. Hardware:
   1. Hinge: 175 degree steel hinge.
   2. Lock: Stainless steel screwdriver operated cam latch.

2.4 FINISH

A. Prime and finish coat of baked enamel.

PART 3 EXECUTION

3.1 INSTALLATION

A. Install units in accordance with manufacturer's instructions.

B. Install frames plumb and level in opening. Secure rigidly in place.

C. Position unit to provide convenient access to concealed work requiring access.

END OF SECTION

**SECTION 08710**

**DOOR HARDWARE**

PART 1 GENERAL

1.1 SUMMARY

A. Section includes hardware for wood and aluminum doors.

1.2 SUBMITTALS

A. Shop Drawings: Indicate locations and mounting heights of each type of hardware, electrical characteristics and connection requirements.

B. Samples: Submit hinge, latchset, lockset, and closer, illustrating style, color, and finish. Incorporate into the work.

1.3 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: Submit data on operating hardware, lubrication requirements, and inspection procedures related to preventative maintenance.

1.4 QUALITY ASSURANCE

A. Perform Work in accordance with the following requirements:
   1. ANSI A156 series.
   2. NFPA 101 – Life Safety Code

B. Furnish hardware marked and listed in BHMA Directory of Certified Products.

C. Coordination: Coordinate work of this section with other directly affected sections requiring integral reinforcement for door hardware.

D. Supplier: Company specializing in supplying commercial door hardware with minimum three years documented experience, approved by primary hardware manufacturers.

1.5 WARRANTY

A. Furnish five-year manufacturer warranty for door hardware.

1.6 MAINTENANCE SERVICE

A. Provide service and maintenance services of door closers for one year from Date of Substantial Completion.

B. Provide special wrenches and tools applicable to each different or special hardware component.

PART 2 PRODUCTS

2.1 DOOR HARDWARE

A. Manufacturers:

B. Hinge Manufacturers:
   1. Match Existing

C. Lockset, Latch Set and Cylinder Manufacturers:
   1. Match Existing

D. Door Controls and overhead Holders Manufacturers:
   1. Match Existing

2.2 COMPONENTS

A. General Hardware Requirements: Where not specifically indicated, comply with applicable. ANSI A156 standard for type of hardware required. Furnish each type of hardware with accessories as required for applications indicated and for complete, finished, operational doors.
   1. Templates: Furnish templates or physical hardware items to door and frame manufacturers sufficiently in advance to avoid delay in Work.
   2. Reinforcing Units: Furnished by door and frame manufacturers; coordinated by hardware supplier or hardware manufacturer.
   3. Fasteners: Furnish as recommended by hardware manufacturer and as required to secure hardware.
      a. Finish: Match hardware item being fastened.
   4. Electrical Devices: Make provisions and coordinate requirements for electrical devices and connections for hardware.

B. Hinges: ANSI A156.1, full mortise type complying with following general requirements unless otherwise scheduled.
   1. Widths: Sufficient to clear trim projection when door swings 180°.
   2. Number: Furnish minimum three hinges to 90-inches high, four hinges to 120-inches high for each door leaf.

A. Locksets: Furnish locksets compatible with specified cylinders. Furnish standard strikes with extended lips to protect trim from being marred by latch bolt (verify type of cutouts provided in metal frames).
   1. Bored (Cylindrical) Locksets: ANSI A156.2, Series 4000, Grade 1 unless otherwise indicated.
   2. Interconnected Locksets: ANSI A156.12, Series 5000, Grade 1 unless otherwise indicated.

B. Cylinders: ANSI A156.5, Grade 1, 5 pin type
   1. Keying: Keyed as directed by Owner. Mastery Keyed
   2. Supply keys in the following minimum quantities:
      a. 5 master keys.
      b. Change keys for each lock.

C. Closers: ANSI A 156.4, modern type with cover, surface-mounted closers; full rack and pinion type with steel spring and non-freezing hydraulic fluid; closers required for fire-rated doors unless otherwise indicated.
   1. Adjustability: Furnish controls for regulating closing, latching, speeds, and back checking.

2. Arms: Type to suit individual condition; parallel-arm closers at reverse bevel doors and where doors can swing full 180-degrees.
3. Location: Mount closers on inside of exterior doors, room side of interior doors typical; mount on pull side of other doors.
4. Operating Pressure: Maximum operating pressure as follows.
   a. Interior Doors: Maximum 5 pounds.

1. Door controls and Overhead Holders: Furnish with accessories as required for complete operational installation.
   1. Manual Overhead stops, ANSI A 156.8, Grade 1 types, as specified.
   2. Closer Holder Release Devices: ANSI A156.15, door mounted, jamb-mounted, concealed-mounted, closer holder release devices, closers with single point, multiple point, hold open, free swinging release dev ice, designed to make swing doors close upon receiving electrical signal.
   3. Low Energy Power Door Operators: ANSI A156.19 power mechanism opens and closes door upon receipt of signal.

D. Manual Protection Plates and trim: Furnish as indicated in Schedule, with accessories as required for complete operational door installations.
   1. Manual Bolts: ANSI A156.16 Grade 1, top and bottom flush bolts, with dust-proof flor strike.
   2. Kickplates Mop Plate: ANSI A156.6 metal; height indicated in Schedule by 1-inch less than door width.
   3. Wall Stops: ANSI A156.1, Grade 1, 3-inch wall stop.

## 2.3 ACCESSORIES

A. Lock Trim: Furnish levers with escutcheon plate as indicated in Schedule, as selected from manufacturer’s full range of levers and roses.

B. Through Bolts: Through bolts and grommet nuts are not permitted on door faces in occupied areas unless no alternative is possible.
   1. Do not use through bolts on solid wood core doors.

## 2.4 FINISHING

A. Finishes: ANSI A156.18, with following finishes, except where otherwise indicated in Schedule at end of section.
   1. Hinges and Pivots:
      a. BHMA 629 and 625, bright polished finish.
   2. Typical Interior Door Hardware:
   3. Typical Interior Toilet Room Door Hardware:
      a. BHMA 629, bright polished stainless-steel
   4. Closers: Finish appearance to match door hardware on same face of door.
      a. BHMA 628, satin aluminum, clear anodized.
   5. Other Items: Provide manufacturer’s standard finishes to match similar hardware types on same door and maintain acceptable finish considering anticipated use and BHMA category of finish.

PART 3 – EXECUTION

3.1 EXAMINATION

A. Verify doors and frames are ready to receive work and dimensions are as indicated and instructed by manufacturer.

B. Verify electric power is available to power operated devices and is of correct characteristics.

3.2 INSTALLATION

A. Coordinate mounting heights with door and frame manufacturers. Use templates provided by hardware item manufacturer.

B. Mounting Heights from Finished Floor to Center Line of Hardware Item: Comply with manufacturer recommendations and applicable codes.

END OF SECTION

**SECTION 09260**

**GYPSUM BOARD ASSEMBLIES**

PART 1 GENERAL

1.1 SUMMARY

A. Section includes gypsum board with joint treatment; metal stud wall framing; metal channel ceiling framing; and acoustic insulation.

B. Refer to Division 0 and Division 1 requirements. Requirements of these Sections and the project drawings shall govern work in this Section.

1.2 SUBMITTALS

A. Product Data: Submit data on metal framing, gypsum board, joint tape; acoustic accessories.

1.3 QUALITY ASSURANCE

A. Perform Work in accordance with ASTM C840. GA-201 - Gypsum Board for Walls and Ceilings. GA-214 - Recommended Specification: Levels of Gypsum Board Finish. GA-216 - Recommended Specifications for the Application and Finishing of Gypsum Board.

B. Furnish framing materials in accordance with SSMA - Product Technical Information.

PART 2 PRODUCTS

2.1 GYPSUM BOARD ASSEMBLIES

A. Manufacturers:
1. G-P Gypsum Corp.
2. National Gypsum Co.
3. United States Gypsum Co.
4. Substitutions: Permitted.

2.2 COMPONENTS

A. Studs and Tracks: ASTM C645; GA-216 and GA-600; galvanized sheet steel, 0.030 inch thick, C shape.

B. Furring, Framing, and Accessories: ASTM C645, GA-216 and GA-600.

C. Gypsum Board Materials: ASTM C1396/C1396M; Type X fire resistant everywhere.
1. Standard Gypsum Board: 5/8 inch thick, maximum available length in place; ends square cut, tapered edges, Dens Armor Paperless.
2. Exterior Gypsum Soffit Board: ½ inch thick, maximum available length in place; ends square cut, tapered edges.
3. Showers: Water resistant board.

2.3 ACCESSORIES

A. Acoustic Insulation: ASTM C665, preformed glass fiber, friction fit type, unfaced, 3 inch thick.

B. Acoustic Sealant: Non-hardening, non-skinning, for use in conjunction with gypsum board.

C. Gypsum Board Accessories: ASTM C1047; metal; corner beads, edge trim, and expansion joints.
   1. Metal Accessories: Galvanized steel.
   2. Edge Trim: Type LC, L or U bead.

D. Joint Materials: ASTM C475, GA-201 and GA-216, reinforcing tape, joint compound, and water.

E. Fasteners: ASTM C1002; Type S, GA-216; length to suit application.

F. Adhesive: ASTM C557, GA-216.

G. Gypsum Board Screws: ASTM C954, ASTM C1002; length to suit application.
   1. Screws for Steel Framing: Type S.

## PART 3 EXECUTION

### 3.1 EXAMINATION

A. Verify site conditions are ready to receive work.

### 3.2 INSTALLATION

A. Metal Studs:
   1. Install studs in accordance with ASTM C754 and GA-216.
   2. Metal Stud Spacing: 12 inches oc.
   3. Partition Heights: Full height to structure above. Install additional bracing for partitions extending above ceiling.

B. Ceiling Framing:
   1. Install in accordance with ASTM C754 and GA-216.
   2. Coordinate location of hangers with other work. Install ceiling framing independent of walls, columns, and above ceiling work.
   3. Reinforce openings in ceiling suspension system interrupting main carrying channels or furring channels, with lateral channel bracing.
   4. Laterally brace entire suspension system.

C. Acoustic Accessories:
   1. Place acoustic insulation in partitions tight within spaces, around cut openings, behind and around electrical and mechanical items within or behind partitions, and tight to items passing through partitions.
   2. Install acoustic sealant within partitions.

D. Gypsum Board:
   1. Install gypsum board in accordance with GA-216 and GA-600.
   2. Fasten gypsum board to furring or framing with screws.
   3. Place control joints consistent with lines of building spaces as directed by Architect/Engineer.
   4. Place corner beads at external corners. Use longest practical length. Place edge trim where gypsum board abuts dissimilar materials.
   5. Seal cut edges and holes in exterior gypsum soffit board with sealant.

E. Joint Treatment:
   1. Finish in accordance with GA-214 Level 4.
   2. Tape, fill, and sand exposed joints, edges, and corners to produce smooth surface ready to receive finishes.
   3. Feather coats onto adjoining surfaces so camber is maximum 1/32 inch.
   4. Taping, filling, and sanding is not required at surfaces behind adhesive applied ceramic tile.

F. Tolerances: Maximum Variation from Flat Surface: 1/8 inch in 10 feet in any direction.

END OF SECTION

**SECTION 09300**

**TILE**

PART 1 GENERAL

1.1 SUMMARY

A. Section includes porcelain, porcelain mosaic tile for interior floor and wall applications.

B. Refer to Division 0 and Division 1 requirements. Requirements of these Sections and the project drawings shall govern work in this Section.

1.2 SUBMITTALS

A. Shop Drawings: Indicate patterned applications and thresholds.

B. Product Data: Submit instructions for using grouts and adhesives.

1.3 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: Submit recommended cleaning methods, cleaning materials, stain removal methods, and polishes and waxes.

1.4 QUALITY ASSURANCE

A. Perform Work in accordance with TCA Handbook and ANSI A108.1 Series/A118.1 Series.

B. Manufacturer: Company specializing in manufacturing products specified in this section with minimum three years experience and with service facilities within 100 miles of Project.

C. Installer: Company specializing in performing Work of this section with minimum three years experience, approved by manufacturer.

D. Provide 25 year warranty system for floors and walls.

1.5 ENVIRONMENTAL REQUIREMENTS

A. Do not install adhesives in unventilated environment.

B. Maintain ambient and substrate temperature of 50 degrees F during installation of mortar materials.

PART 2 PRODUCTS

2.1 TILE

A. Manufacturers:
   1. American Olean.
   2. Atlas Concord.
   3. Crossville.

2.2 COMPONENTS

A. Porcelain Tile (Type A): American Olean, Mosaics.
   1. Moisture Absorption: 0 to 0.5 percent.
   2. Size: 2” x 2” (bull nosed at exposed edge).
   3. Shape: Square.
   4. Edge: Square.
   5. Surface Finish: Un-glazed.
   6. Color: Price Group 2, match existing.

B. Base: Same, 5”H, coved.

C. Porcelain Tile (Type D): Stone Peak, Limestone Collection.
   1. Moisture Absorption: 0 to 0.5 percent.
   2. Size: 12” x 12” (floor), 12” x 24” (walls), 2” x 2” (shower floor and around floor drain). 3” x 12” bull nose trim.
   3. Shape: Square, Rectangular.
   4. Edge: Square.
   5. Surface Finish: Matte.
   6. Color: Honey.

D. Accent Tile: Same, 12” x 12” New Mosaic, Walnut.

E. Base: Same, 6” x 12” coved.

F. Porcelain Tile (Type E): Crossville, Cross colors.
   1. Moisture Absorption: 0 to 0.5 percent.
   2. Size: 8” x 8”.
   3. Shape: Square.
   4. Edge: Square.
   5. Surface Finish: Matte Un-glazed.
   6. Color: To be determined.

G. Mortar Materials:
   1. Patching mortar bed materials as required to provide suitable substrate for new tile installations. Approved manufacturers: Laticrete.
   2. Mortar Setting Bond Materials:
      a. Latex-Portland Cement type: ANSI A118.4 and A118.11.

H. Grout Materials:
   1. Epoxy Grout: ANSI A118.7, Spectra Loc-Pro and/or Pro Premium.

I. Waterproof/Crack Membrane: Shall be Laticrete Hydro Ban.

J. Perimeter Joint: Shall be Laticrete Latasil.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify surfaces are ready to receive work.

3.2 PREPARATION

A. Install waterproof and crack membrane per Manufacturer's recommendations.

3.3 INSTALLATION

A. Install tile and grout in accordance with applicable requirements of ANSI A108.1 through A108.10, and TCA Handbook recommendations.

B. Cut and fit tile to penetrations through tile, leaving sealant joint space. Form corners and bases neatly. Align floor, base and wall joints.

C. Place tile joints uniform in width, subject to variance in tolerance allowed in tile size. Make joints watertight, without voids, cracks, excess mortar, or excess grout.

D. Grout tile joints.

E. Floors:
   1. Over interior concrete substrates, install in accordance with TCA Handbook Method F113, dry-set or latex-portland cement bond coat, with standard grout.
      a. Where waterproofing membrane is indicated, install in accordance with TCA Handbook Method F122, with latex-portland cement grout.

F. Wall Tile:
   1. Over interior concrete and masonry install in accordance with TCA Handbook Method W202, thin-set with dry-set or latex-portland cement bond coat.

END OF SECTION

**SECTION 09650**

**RESILIENT FLOORING**

PART 1 GENERAL

1.1 SUMMARY

A. Section includes resilient flooring and base.

B. Refer to Division 0 and Division 1 requirements. Requirements of these Sections and the project drawings shall govern work in this Section.

1.2 SUBMITTALS

A. Product Data: Submit manufacturer's product data.

1.3 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: Submit maintenance instruction and data.

1.4 QUALITY ASSURANCE

A. Surface Burning Characteristics:
   1. Base Material: Class I, minimum 0.45 watts/sq cm when tested in accordance with NFPA 253.

1.5 ENVIRONMENTAL REQUIREMENTS

A. Maintain temperature in storage area between 55 degrees F and 90 degrees F.

B. Store materials for not less than 48 hours prior to installation in area of installation at temperature of 70 degrees F to achieve temperature stability. Thereafter, maintain conditions above 55 degrees F.

PART 2 PRODUCTS

2.1 RESILIENT BASE

A. Manufacturers:
   1. Roppe.
   2. Substitutions: Permitted.

B. Base: ASTM F1861 Rubber; top set coved:
   1. Height: 4 inch.
   2. Thickness: 0.125 inch thick.
   3. Finish: Matte.
   4. Length: Roll.
   5. Accessories: Premolded external corners, end stops.

2.2 ACCESSORIES

A. Primers and Adhesives: Waterproof, types recommended by floor material manufacturer.

2.3 RUBBER FLOOR

A. Manufacturer:
   1. Nora Rubber Flooring
   2. Approved Equal

B. Material: Recycled Rubber Compound.

C. Size: Manufacturer’s standard size tile.

D. Pattern: As selected from manufacturer’s standards.

E. Color: As selected from manufacturer’s standards.

2.4 ACCESSORIES

A. Primers and Adhesives: Waterproof types as recommended by flooring manufacturer.

2.5 EXTRA MATERIALS

A. Base: 1 roll of each color used.

B. Vinyl Flooring: 150 sq. ft. of each color used.

C. Rubber Floor: 1 box of each color used.

D. Vinyl Plank: 50 sq. ft. of each color used.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify concrete floors are dry to maximum moisture content as recommended by manufacturer and exhibit negative alkalinity, carbonization and dusting.

3.2 PREPARATION

A. Clean substrate.

B. Fill minor low spots and other defects.

C. Apply primer as required to prevent "bleed-thru" or interference with adhesion by substances that cannot be removed.

3.3 INSTALLATION

A. Adhere base tight to wall and floor surfaces.

B. Fit joints tightly and make vertical. Miter internal corners. At external corners, use premolded units.

3.4 CLEANING

A. Remove excess adhesive from surfaces without damage.

END OF SECTION

**SECTION 09900**

**PAINTS AND COATINGS**

PART 1 GENERAL

1.1 SUMMARY

A. Section includes surface preparation and field application of paints stains, varnishes and other coatings.

B. Refer to Division 0 and Division 1 requirements. Requirements of these Sections and the project drawings shall govern work in this Section.

1.2 SUBMITTALS

A. Product Data: Submit data on finishing products.

B. Samples: Submit two paper chip samples, 8 x 12 inch in size illustrating range of colors available for each surface finishing product scheduled.

1.3 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: Submit maintenance and cleaning instructions.

1.4 QUALITY ASSURANCE

A. Surface Burning Characteristics:
   1. Fire Retardant Finishes: Maximum 25/450 flame spread/smoke developed index when tested in accordance with ASTM E84, NFPA 255 and UL 723.

1.5 ENVIRONMENTAL REQUIREMENTS

A. Store and apply materials in environmental conditions required by manufacturer's instructions.

PART 2 PRODUCTS

2.1 PAINTS AND COATINGS

A. Manufacturers:
   1. Fuller-O'Brien.
   2. ICI Paint Stores.
   3. PPG Architectural Finishes.
   4. Sherwin Williams.
   5. The Glidden Co.
   6. Substitutions: Permitted.

2.2 COMPONENTS

A. Coatings: Ready mixed except field catalyzed coatings of good flow and brushing properties, capable of drying or curing free of streaks or sags.

1. Flat and Non-Flat Paints: Maximum volatile organic compound content in accordance with GS-11.
2. Anti-Corrosive Paints: Maximum volatile organic compound content in accordance with GC-03.
3. Clear Wood Finishes: Maximum volatile organic compound content in accordance with SCAQMD Rule 1113.

B. Accessory Materials: Linseed oil, shellac, turpentine, paint thinners and other materials required to achieve finishes specified.
   1. Clear Wood Finishes: Maximum volatile organic compound content in accordance with SCAQMD Rule 1113.

## PART 3 EXECUTION

### 3.1 EXAMINATION

A. Verify substrate conditions are ready to receive Work.

B. Measure moisture content of porous surfaces using electronic moisture meter. Do not apply finishes unless moisture content is less than 12 percent.

### 3.2 PREPARATION

A. Correct minor defects and clean surfaces affecting work of this section.

B. Remove electrical plates, hardware, light fixture trim, escutcheons, and fittings prior to preparing surfaces or applying finishes.

C. Gypsum Board Surfaces: Fill minor defects with filler compound. Spot prime defects after repair.

D. Galvanized Surfaces: Remove surface contamination and oils and wash with solvent. Apply coat of etching primer.

E. Concrete and Unit Masonry Surfaces Scheduled to Receive Paint Finish: Remove foreign matter. Remove oil and grease with solution of tri-sodium phosphate, rinse well and allow to dry.

F. Uncoated Steel and Iron Surfaces: Remove scale by wire brushing, sandblasting, clean by washing with solvent. Apply treatment of phosphoric acid solution. Prime paint after repairs.

G. Shop Primed Steel Surfaces: Sand and scrape to remove loose primer and rust. Clean surfaces with solvent. Prime bare steel surfaces.

H. Interior Wood Items Scheduled to Receive Transparent Finish: Wipe off dust and grit prior to sealing, seal knots, pitch streaks, and sappy sections with sealer. Fill nail holes and cracks after sealer has dried; sand lightly between coats.

### 3.3 APPLICATION

A. Sand wood and metal surfaces lightly between coats to achieve required finish.

B. Where clear finishes are required, tint fillers to match wood.

C. Prime concealed surfaces of interior woodwork with primer paint.

D. Prime concealed surfaces of interior wood surfaces scheduled to receive stain or varnish finish with gloss varnish reduced 25 percent with thinner.

E. Finishing Mechanical And Electrical Equipment:
   1. Refer to Mechanical and Electrical Sections for schedule of color coding, identification banding of equipment, duct work piping, and conduit.
   2. Color code items in accordance with requirements indicated. Color band and identify with flow arrows, names and numbering.
   3. Paint shop primed equipment.
   4. Remove unfinished louvers, grilles, covers, and access panels and paint separately. Paint dampers exposed behind louvers, grilles, convector and baseboard cabinets to match face panels.
   5. Prime and paint insulated and exposed pipes, insulated and exposed ducts, hangers, brackets, collars and supports, except where items are prefinished.
   6. Paint interior surfaces of air ducts and convector and baseboard heating cabinets visible through grilles and louvers with one coat of flat black paint to visible surfaces.
   7. Paint exposed conduit and electrical equipment occurring in finished areas.
   8. Paint both sides and edges of plywood backboards.
   9. Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings removed prior to finishing.

F. Cleaning: As work proceeds, promptly remove finishes where spilled, splashed, or spattered.

3.4 SCHEDULE - SHOP PRIMED ITEMS FOR SITE FINISHING

A. Metal Fabrications Section 05500: Exposed surfaces of lintels and handrails.

3.5 SCHEDULE - EXTERIOR SURFACES

A. Steel - Galvanized:
   1. One coat of galvanize primer.
   2. Two coats of alkyd enamel, gloss.

3.6 SCHEDULE - INTERIOR SURFACES

A. Wood - Transparent:
   1. Filler coat (for open grained wood only).
   2. One coat of stain.
   3. One coat of sealer.
   4. Two coats of varnish, satin.

B. Concrete, Concrete Block:
   1. One coat of block filler.
   2. One coat of primer sealer latex.
   3. Two coats of latex, semi-gloss.

C. Concrete, Concrete Block: Existing:
   1. Touch-up with primer sealer latex.
   2. Touched up areas to receive two coats of latex, semi-gloss.

D. Concrete Block: Shower/Locker Room (New Construction):
   1. One coat of block filler.
   2. One coat of primer sealer latex.

3. Two coats of epoxy, semi-gloss.

E. Steel - Primed:
   1. Touch-up with alkyd primer.
   2. Two coats of latex enamel, semi-gloss.

F. Steel - Galvanized:
   1. Touch-up with one coat of galvanize primer.
   2. Two coats of latex enamel, semi-gloss.

G. Steel - Existing Painted
   1. Touch-up one coat alkyd primer.
   2. Primed areas to receive two coats of latex enamel, semi-gloss.
   3. Pre-painted steel to receive one coat of latex enamel, semi-gloss.

H. Plaster, Gypsum Board:
   1. One coat of alkyd primer sealer.
   2. Two coats of latex acrylic enamel, eggshell.

I. Plaster, Gypsum Board: Shower Areas (New Construction):
   1. One coat of alkyd primer sealer.
   2. Two coats of epoxy, semi-gloss.

END OF SECTION

**SECTION 10105**

**VISUAL DISPLAY BOARDS**

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Surfaced metal marker boards.

1.2 SUBMITTALS

A. Shop Drawings: Indicate wall elevations, dimensions, joint locations, special anchor details.

B. Product Data: Provide data on marker boards, tack boards, tack board surface covering and trim and accessories.

C. Samples: Submit two samples 4 x 4 inch in size illustrating materials and finish, color and texture of marker board and trim, tack board and tack board surfacing.

D. Affidavit Requirements: Provide information that tack board materials have been tested by a nationally recognized testing laboratory, tested under ASTM C-84, meeting a Class A rating as follows: Flame spread 0.25, Fuel Contributed 0.35 and Smoke Developed 0.50. Submit notarized affidavit stating that materials supplied were to the same as those tested. Also, submit notarized affidavit from installer stating materials were installed in accordance with the test.

1.3 OPERATION AND MAINTENANCE DATA

A. Maintenance Data: Include data on regular cleaning and stain removal.

1.4 QUALIFICATIONS

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

1.5 FIELD MEASUREMENTS

A. Verify that field measurements are as indicated on shop drawings.

1.6 WARRANTY

A. Provide five year warranty.

B. Warranty: Include coverage of marker board surface from discoloration due to cleaning, crazing or cracking, staining and loss of original writing and erasing qualities.

PART 2 PRODUCTS

2.1 MANUFACTUERS

A. Claridge Products and Equipment.

B. Alliance Wall Corporation.

C. Greensteel Markerboards and Tackboards.

2.2 MARKER BOARD MATERIALS

A. Sheet Steel: ASTM A424, Type I, commercial quality.

2.3 CORE AND FRAME MATERIALS

A. Hardboard: AHA A135.4, tempered, smooth face.

B. Frame: Aluminum extrusions, ASTM B221, 6061 alloy.

2.4 ACCESSORIES

A. Adhesives: Type used by manufacturer.

B. Temporary Protective Cover: Sheet polyethylene, 8 mil thick.

C. Cleaning Instruction Plate: Provide instructions for Marker board cleaning on a metal plate fastened to perimeter frame near chalkrail.

2.5 FABRICATION - MARKERBOARDS

A. Outer Face Sheet: Steel, 24 gauge thick. LCS Face.

B. Core: Hardboard, 7/16 inch thick.

C. Backing Surface: Aluminum sheet, 0.015 inch thick.

D. Splice Joint: Concealed spline of sheet steel.

2.6 FABRICATION - FRAME AND TRIM

A. Aluminum Frame: Slip-on aluminum trim; concealed fasteners.

2.7 FINISHES

A. LCS Markerboard face, white color.

B. Aluminum Frame: Clear, satin anodized finish.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify that internal wall blocking is ready to receive work and positioning dimensions are as indicated on shop drawings.

3.2 INSTALLATION

A. Install marker boards in accordance with manufacturer’s instructions.

B. Secure units level and plumb.

3.3 Cleaning:

A. Clean marker board surfaces in accordance with manufacturer's instructions.

B. Cover marker board surfaces with protective cover, taped to frame.

C. Remove temporary protective cover at date of Substantial Completion.

END OF SECTION

**SECTION 10155**

**TOILET COMPARTMENTS**

PART 1 GENERAL

1.1 SUMMARY

A. Section includes phenolic toilet compartments and urinal screens.

1.2 SUBMITTALS

A. Shop Drawings: Indicate partition plan and elevation views, dimensions, details of wall, floor, ceiling, supports and door swings.

PART 2 PRODUCTS

2.1 TOILET COMPARTMENTS

A. Manufacturers:
   1. American Specialties.
   2. Bobrick - Washroom Accessories.
   3. Bradley Corp.

2.2 COMPONENTS

A. Door, Panel, and Pilaster Construction: Solid phenolic core with decorative melamine surface, standard color as selected.

B. Doors and Panels: 1 inch thick.

C. Pilasters: 1 ¼ inch thick.

D. Mounting:
   1. Partition: Floor mounted, top braced
   2. Screen: Wall mounted

2.3 ACCESSORIES

A. Head Rails: Hollow chrome-plated steel tube, with anti-grip profile and cast socket wall brackets.

B. Pilaster Shoes: Formed chrome-plated steel. Provide adjustment for height variations with screw jack through steel saddles.

C. Internal reinforcement: Provide for attached hardware and fittings.

D. Attachments and Bolts: Steel, with heavy duty aluminum brackets.

E. Hardware:
   1. Hinges: Stainless Steel Full Channel Piano Hinge
   2. Latch and Keeper: Sliding type latch, door strike and keeper with rubber bumper; for each door.

3. Coat Hook: Cast alloy, with rubber bumper tip; mounted on door.
4. Pull: furnish pull for outswinging doors.

## PART 3 EXECUTION

### 3.1 EXAMINATION

A. Verify opening dimensions and plumbing fixture and rough-in locations are as indicated on shop drawings.

B. Verify correct location of built-in framing, anchorage, bracing, and blocking.

### 3.2 INSTALLATION

A. Install partition components secure, plumb, and level.

B. Attached panel brackets securely using anchor devices.

C. Adjust and align door hardware so free movement is attained.

END OF SECTION

**SECTION 10500**

**LOCKERS**

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Metal lockers.

1.2 SUBMITTALS

A. Shop Drawings: Indicate locker plan layout, numbering plan.

B. Product Data: Submit data on locker types, sizes and accessories.

C. Samples: Submit two 3 x 6 inches in size, of each color selected; applied to specified base metal.

D. Manufacturer's Installation Instructions: Submit installation template and attachment devices.

PART 2 PRODUCTS

2.1 LOCKERS

A. Manufacturers:
   1. Lyon Workspace Products, Inc.
   2. Penco Products, Inc.
   3. Republic Storage Systems Co., Inc.
   4. Debourgh Manufacturing Co.

2.2 COMPONENTS – ATHLETIC LOCKERS – Equal to Republic MVP Foot Locker

A. Sheet Steel: Mild, cold rolled and leveled unfinished steel; to the following minimum thicknesses:
   1. Body and Shelf: 16 gage
   2. Frame: 16 gage
   3. Back: 18 gage
   4. Seat: 14 gage
   5. Front: 14 gage

2.3 ACCESSORIES

A. For Each Locker: Four single prong wall hooks, and full width coat rod.

2.4 FABRICATION

A. Locker Units:
   1. Width: Refer to Schedules
   2. Depth: Refer to Schedules
   3. Height: 72 inches.
   4. Configuration: Open foot Locker.

5. Mounting: Surface mounted.
6. Base: On concrete
7. Base Height: 4 inch.
8. Top: Flat metal with closures.
9. Locking: Recessed for padlock hasps.

B. Locker Body: Formed and flanged; with steel stiffener ribs; Keps nuts and bolts.

C. Frames: Formed channel shape.

D. Locking device supplied by Owner.

E. Number Plates: Furnish aluminum plates. Form numbers ½ inch high of block font style, in contrasting color.

F. Form recess for operating handle and locking device.

G. Finish edges smooth without burrs.

H. Furnish box end panel and filler strips.

I. Provide ADA compliant lockers where shown.

2.5 FACTORY FINISHING

A. Clean, degrease, and neutralize metal; prime and finish with one coat of baked enamel.

B. Paint locker units of 1 color throughout.

C. Color: As selected from manufacturer's standard range.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify prepared bases are in correct position and configuration.

B. Verify bases and embedded anchors are properly sized.

3.2 INSTALLATION

A. Install lockers plumb and square.

B. Place and secure on prepared base.

C. Secure lockers with anchor devices to suit substrate materials.

D. Bolt adjoining locker units together to provide rigid installation.

E. Install end panels and filler panels.

F. Install accessories.

G. Replace components not operating smoothly.

3.3 SCHEDULE

A. Women's Lacrosse – MVP Foot Locker – 24"w x 21"d x 72"h – 28 regular & 1 ADA required.

END OF SECTION

**SECTION 10800**

**TOILET, BATH AND LAUNDRY ACCESSORIES**

PART 1 GENERAL

1.1 SUMMARY

A. Section includes toilet and washroom accessories.

B. Refer to Division 0 and Division 1 requirements. Requirements of these Sections and the project drawings shall govern work in this Section.

1.2 SUBMITTALS

A. Product Data: Submit data on accessories describing size, finish, details of function, attachment methods.

PART 2 PRODUCTS

2.1 TOILET, BATH AND LAUNDRY ACCESSORIES

A. Manufacturers:
1. American Specialties, Inc.
2. Bobrick.
3. Bradley Corp.
4. Substitutions: Not Permitted.

2.2 COMPONENTS

A. Products listed in Schedule are made by American Specialties, Inc.

B. Furnish two keys for each accessory to Owner. Master key accessories.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify exact location of accessories for installation.

3.2 PREPARATION

A. Deliver inserts and rough-in frames to site. Provide templates and rough-in measurements.

B. See Section 06100 for installation of blocking and reinforcing plates in walls.

3.3 INSTALLATION

A. Install plumb and level, securely and rigidly anchored to substrate.

B. Mounting Heights and Locations: As required by accessibility regulations and as indicated on Drawings:

3.4 SCHEDULES

A. Toilet Grab Bars: Satin stainless steel, concealed mounting, 3100 series, 42” long, 36” long and 18” long. One each per barrier free stall.

B. Shower Curtain Rod: Heavy duty 18 gauge stainless steel, 1 ¼ inch diameter, model 1204.

C. Shower Curtain: 8 gauge vinyl, 72” high, white. Model 1200-V.

D. Shower Curtain Hook: Stainless steel hook. Model 1200-SHU.

E. Mirrors: Satin stainless steel, 0600 series, 24” x 60” and 24” x 36.” Locate one (24” x 36” above each lavatory wash basin. See drawings for (24” x 60” locations).

F. Toilet Paper Dispenser: Large roll dispenser furnished by Owner, installed by Contractor.

G. Soap Dispenser: Wall mounted dispenser furnished by Owner, installed by Contractor.

H. Paper Towel Dispenser: Wall mounted dispenser furnished by Owner, installed by Contractor.

I. Shelf: Surface mounted stainless steel wall shelf, model #0692, 6 inch depth, 18 inch length. Install one above each water closet and urinal.

J. Sanitary Napkin Disposal: Stainless steel sanitary waste receptacle, models 0472, 0472-1 and 0473. Install one at each water closet stall

K. Wall Hooks: Surface mounted, stainless steel. Model 7340. See drawings for location.

L. Door Hooks: Doug Mockett CH-1, satin nickel. Locate on back of all wood doors.

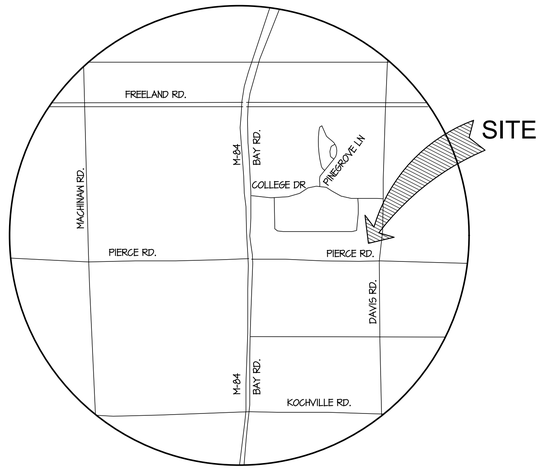
END OF SECTION

# RENOVATIONS TO RYDER CENTER
# WOMENS LACROSSE LOCKER ROOM FOR:

# SAGINAW VALLEY STATE UNIVERSITY

7400 BAY RD.
UNIVERSITY CENTER, MI 48710

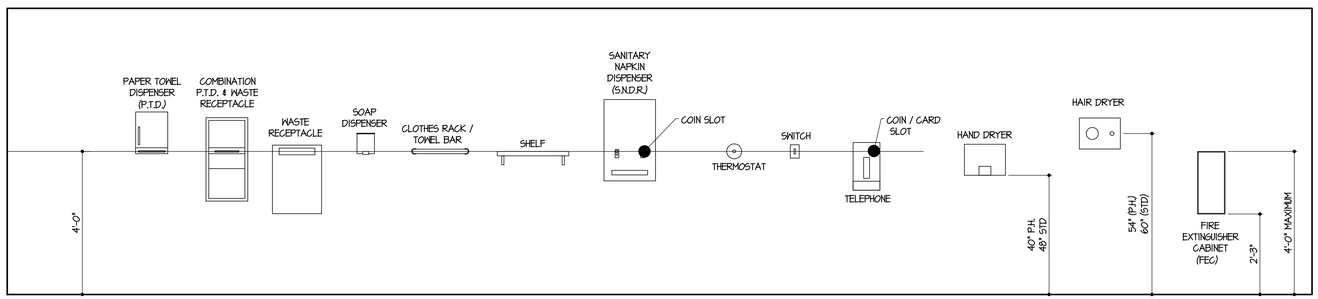
SVSU BID NO. 23009

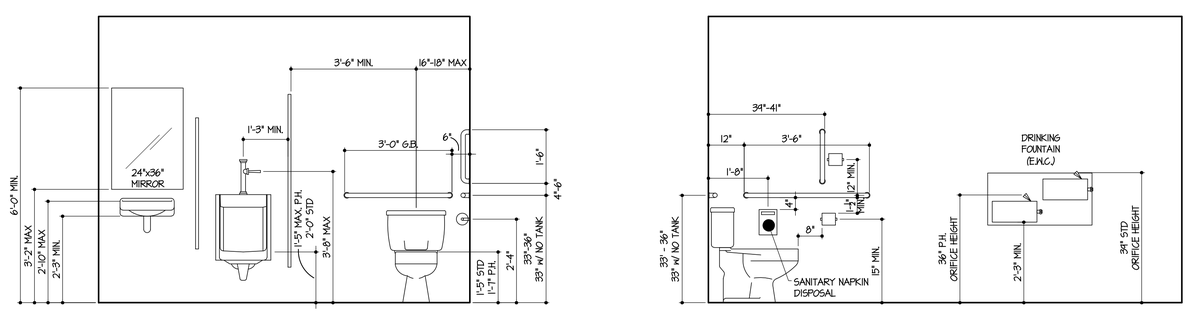



LOCATION MAP

ARCHITECT: TSSF ARCHITECTS, INC.
ARCHITECTS PLANNERS
122 N. WASHINGTON AVENUE SAGINAW , MICHIGAN

CONSULTING ENGINEERS: MECHANICAL / ELECTRICAL
MacMILLAN ASSOCIATES CONSULTING ENGINEERS
714 EAST MIDLAND STREET BAY CITY, MICHIGAN 48706




TYPICAL MOUNTING HEIGHTS

## ABBREVIATIONS:

| | |
|---|---|
| A.F.F. | ABOVE FINISH FLOOR |
| ALUM. | ALUMINUM |
| A/V | AUDIO– VISUAL |
| B.F. | BARRIER FREE |
| BIT. | BITUMINOUS |
| B.O. | BY OWNER / BOTTOM OF |
| C.J. | CONTROL JOINT |
| C.L. | CENTER LINE |
| CONC. | CONCRETE |
| C.T. | CERAMIC TILE |
| EA. | EACH |
| E.C. | ELECTRICAL CONTRACTOR |
| E.I.F.S. | EXTERIOR INSULATION FINISH SYSTEM |
| E.J. | EXPANSION JOINT |
| EQ. | EQUAL |
| F.D. | FLOOR DRAIN |
| FL. | FLOOR |
| FT. | FOOT |
| G.C. | GENERAL CONTRACTOR |
| GYP. BD. | GYPSUM BOARD |
| H.C.W. | HOLLOW CORE WOOD |
| H.M. | HOLLOW METAL |
| I.D. | INSIDE DIAMETER |
| K.D. | KNOCK DOWN |
| LT. | LIGHT |
| MANUF. | MANUFACTURER |
| MET. | METAL |
| M.O. | MASONRY OPENING |
| N.I.C. | NOT IN CONTRACT |
| O.C. | ON CENTER |
| O.D. | OUTSIDE DIAMETER |
| PART. | PARTITION |
| PL. | PLATE |
| P.O.N.C. | POINT OF NEW CONNECTION |
| PORC. | PORCELAIN CONNECTION |
| R.O. | ROUGH OPENING |
| S.A.F.B. | SOUND ABSORBING FIBERGLASS BATT |
| S.C.W. | SOLID CORE WOOD |
| S.S. | STAINLESS STEEL |
| STD. | STANDARD |
| SUSP. | SUSPENDED |
| T.O. | TOP OF |
| U.N.O. | UNLESS NOTED OTHERWISE |
| U/S | UNDERSIDE OF DECK |
| V. | VENT |
| V.B. | VINYL BASE |
| V.C.T. | VINYL COMPOSITION TILE |
| V.I.F. | VERIFY IN FIELD |
| V.T.R. | VENT THROUGH ROOF |
| W/ | WITH |
| W.C. | WATER CLOSET |
| WD. | WOOD |

## DRAWING INDEX:


COVER

ARCHITECTURAL

A0.1 CODE REVIEW
D2.0 PARTIAL FIRST FLOOR DEMOLITION PLAN
A2.0 PARTIAL FIRST FLOOR PLAN, INTERIOR ELEVATIONS AND DETAILS
A3.0 PARTIAL FIRST FLOOR FINISH PLAN AND SCHEDULES
A9.0 PARTIAL FIRST FLOOR REFLECTED CEILING PLAN

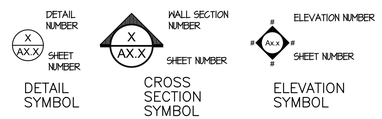
MECHANICAL

M1.0 PARTIAL FIRST FLOOR PLAN – MECHANICAL DEMOLITION
M2.0 PARTIAL FIRST FLOOR PLAN – SANITARY AND VENT
M3.0 PARTIAL FIRST FLOOR PLAN – DOMESTIC PIPING
M4.0 PARTIAL FIRST FLOOR PLAN – HVAC PIPING AND HVAC
M5.0 PARTIAL FIRST FLOOR PLAN – FIRE PROTECTION
M6.0 MECHANICAL SPECIFICATIONS

ELECTRICAL

E1.0 PARTIAL FIRST FLOOR PLAN – ELECTRICAL DEMOLITION
E2.0 PARTIAL FIRST FLOOR PLAN – LIGHTING
E3.0 PARTIAL FIRST FLOOR PLAN – POWER AND SYSTEMS
E4.0 ELECTRICAL SPECIFICATIONS
E5.0 PARTIAL FIRST FLOOR PLAN - EMERGENCY LIGHTING CALCULATIONS


## SYMBOLS:

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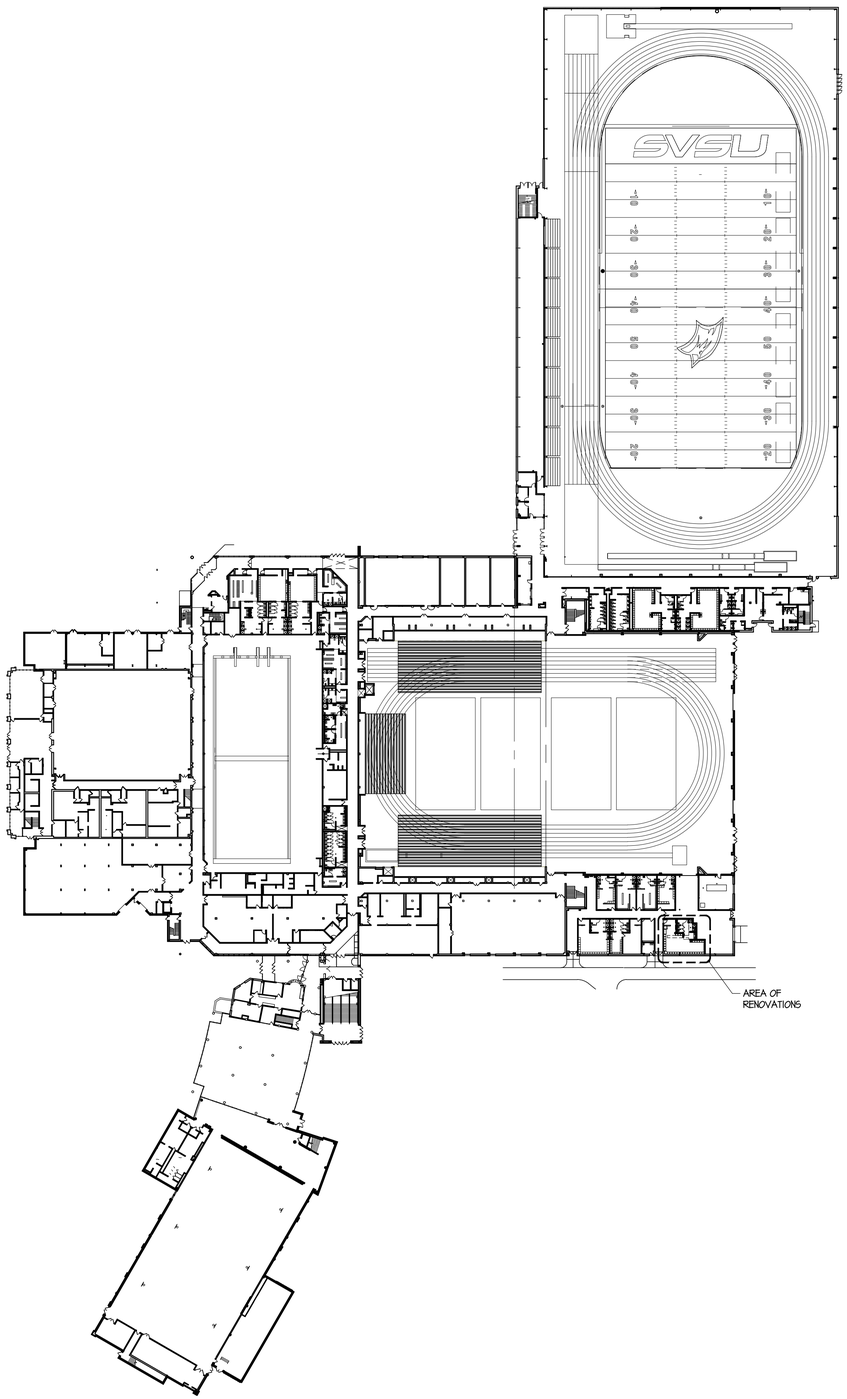
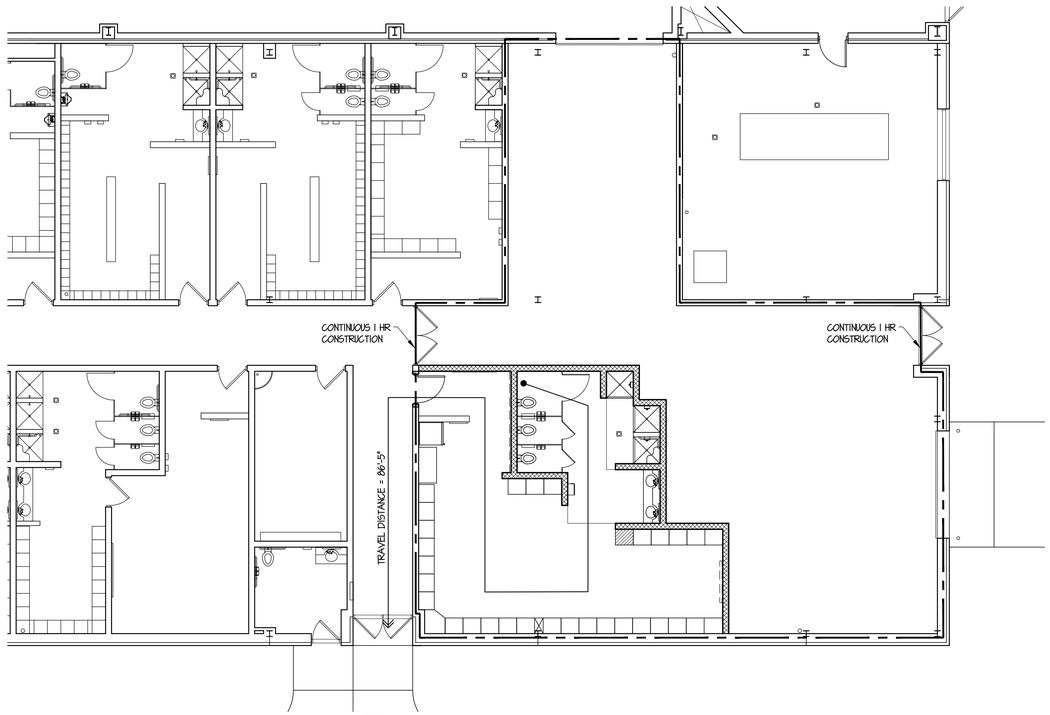



GROUND FLOOR PLAN
SCALE: 1"= 60'-0"




MEZZANINE PLAN
SCALE: 1"= 60'-0"

## CODES:

2015 MICHIGAN BUILDING CODE
2018 MICHIGAN MECHANICAL CODE
2018 MICHIGAN PLUMBING CODE
2017 NATIONAL ELECTRICAL CODE
2021 NFPA 1 - FIRE CODE

## BUILDING:

USE GROUP - ASSEMBLY A-4
CONSTRUCTION TYPE - 2B
FIRE SUPPRESSION - FULLY SPRINKLED

## BUILDING AREA:

| | |
|---|---|
| EXISTING GROUND FLOOR | 354,705 S.F. |
| EXISTING MEZZANINE FLOOR | 92,358 S.F. |
| RENOVATED AREA: | 903 S.F. |
| OCCUPANT LOAD: | 61 ALLOWED<br>29 ACTUAL |

## NOTE:

CONSTRUCT TEMPORARY 1 HR CONSTRUCTION BARRIERS AS REQUIRED TO SEPARATE CONSTRUCTION ZONES FROM THE REMAINDER OF THE BUILDING. THE CONSTRATOR IS RESPONSIBLE FOR MAINTAINING A CONTINUOUS 1 HR. CONSTRUCTION BARRIERS BETWEEN ALL CONSTRUCTION AREAS AND EXISTING OCCUPIED SPACES

TSSF ARCHITECTS, INC.
ARCHITECTS PLANNERS
122 N. WASHINGTON AVENUE SAGINAW, MICHIGAN

RENOVATIONS TO RYDER CENTER: WOMENS LACROSSE LOCKER ROOM
SAGINAW VALLEY STATE UNIVERSITY
UNIVERSITY CENTER, MICHIGAM

| NO. | DATE |
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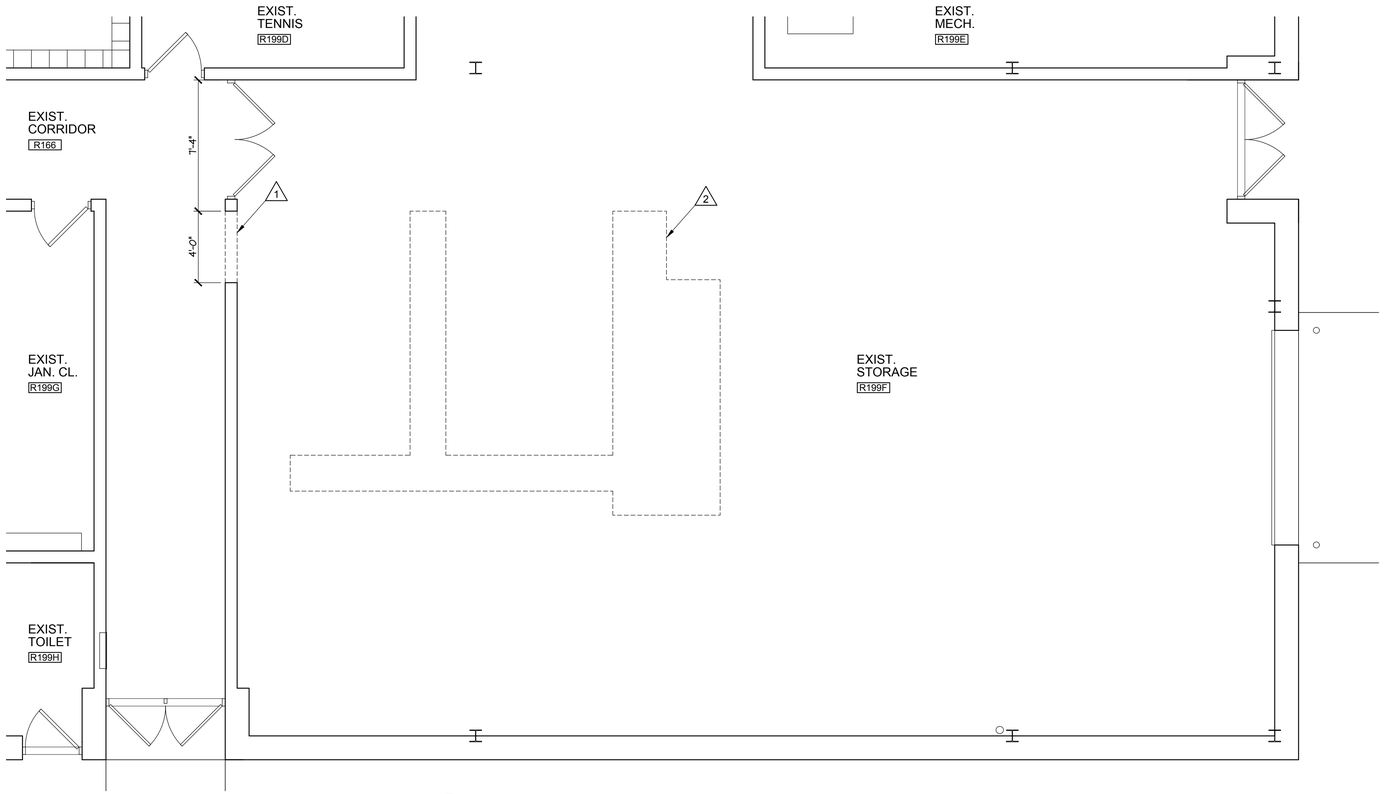
DRAWN BY C.M.B.
DATE 08/05/22
APPROVED

SHEET NO.
A0.1

PROJECT NO.
2224




PARTIAL FIRST FLOOR DEMOLITION PLAN
SCALE: 1/4" = 1'-0"

## GENERAL DEMO NOTES:

1. NOTIFY THE ARCHITECT IN WRITING OF ANY DISCREPANCIES IN EXISTING CONDITIONS THAT MAY ALTER THE CONSTRUCTION PRIOR TO COMMENCING DEMOLITION / CONSTRUCTION.
2. CONTRACTOR TO REVIEW ALL DRAWINGS AND NOTES. NOTIFY THE ARCHITECT OF ANY DISCREPANCIES OR ADDITIONAL INFORMATION REQUIRED FOR THE PROPER COMPLETION OF PROJECT BEFORE SUBMITTING A BID AND UNDERTAKING CONSTRUCTION.
3. CONTRACTOR SHALL PROVIDE AND INSTALL ALL FLASHING, CAULKING AND OTHER MATERIALS AS REQUIRED TO ENSURE A WATERTIGHT, LEAK-PROOF PERIMETER DURING AND AFTER THE DEMOLITION PHASE.
4. EXISTING STRUCTURE (COLUMNS, BEAMS, GIRTS, ETC., DOOR HEADERS, JAMBS, ETC.) TO BE PROTECTED DURING THE DEMOLITION PROCESS (U.N.O.)
5. REMOVE AND DISPOSE OF TEMPORARY PROTECTION AS REQUIRED FOR NEW CONSTRUCTION.
6. ALL MATERIALS ARE EXISTING UNLESS NOTED OTHERWISE.
7. MECHANICAL, ELECTRICAL ITEMS TO BE DEMOLISHED SHALL BE BY THE RESPECTIVE TRADE CONTRACTOR.
8. FOR ADDITIONAL ITEMS TO BE DEMOLISHED SEE COMPLETE MECHANICAL AND ELECTRICAL DRAWINGS.

## DEMOLITION KEY NOTES:

1. SAWCUT AND REMOVE PORTION OF EXISTING CMU WALL, PREP FOR TOOTHING IN NEW BULLNOSE CMU INFILL.
2. SAWCUT AND REMOVE PORTION OF EXISTING CONC. SLAB FOR NEW SANITARY LINES, REFER TO MECHANICAL FOR MORE INFO.

TSSF ARCHITECTS, INC.
ARCHITECTS PLANNERS
122 N. WASHINGTON AVENUE SAGINAW, MICHIGAN

RENOVATIONS TO RYDER CENTER: WOMENS LACROSSE LOCKER ROOM
SAGINAW VALLEY STATE UNIVERSITY
UNIVERSITY CENTER, MICHIGAM

| NO. | DATE |
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DATE **08/05/22**
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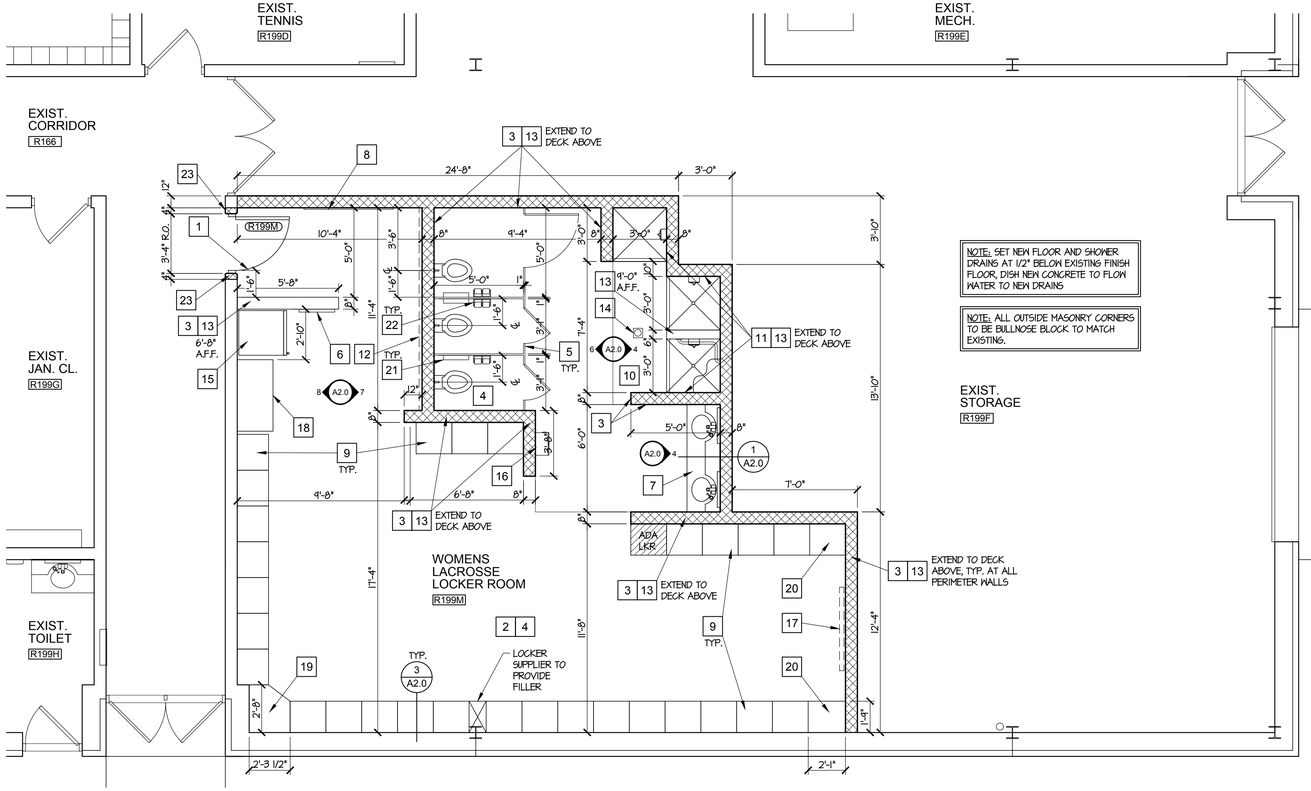
PROJECT NO.
2224



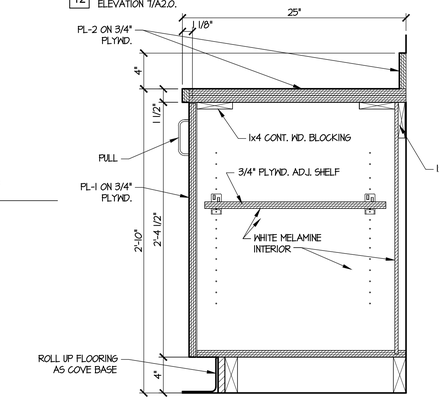

## PARTIAL FIRST FLOOR PLAN
SCALE: 1/4" = 1'-0"

## PLAN KEYNOTES:

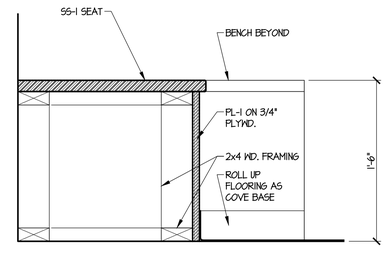
1. NEW FLUSH 3'-0" x 7'-0" H.M. DOOR. PAINT DOOR AND FRAMES.
2. NEW RUBBER FLOORING W/ 4" COVE RUBBER BASE
3. PAINT (EPOXY) ALL BLOCK WALLS, PERIMETER WALLS TO 12'-0" ±. DIVIDER WALLS 6'-8". SHOWER WALLS 9'-0"
4. EXISTING EXPOSED STRUCTURE "CEILING" TO REMAIN UNPAINTED
5. NEW TOP BRACED TOILET PARTIONS. INSTALL GRAB BARS, TOILET PAPER DISP. AND NAPKIN DISP. FURNISHED BY OWNER.
6. NEW 24" x 60" MIRROR AT 12" AFF
7. NEW COUNTER TOP/SHELF. REFER TO ELEV. AND DETAIL ON SHEET A2.0.
8. NEW 4'-0" x 6'-0" 'WHITE' BOARD
9. NEW 24"W x 21"D x 72"H MET. LOCKERS, FILLER AND END PANELS. REFER TO LOCKER BASE DETAIL 3/A2.0
10. NEW 2"x2" CERAMIC TILE FLOORING. REFER TO FINISH PLAN ON SHEET FF2.0 FOR FURTHER INFO.
11. NEW 2"x2" CERAMIC WALL TILE. REFER TO FINISH PLAN ON SHEET FF2.0 FOR FURTHER INFO.
12. NEW LACROSSE STICK STORAGE RACK, REFER TO ELEVATION 7/A2.0.
13. NEW CMU WALL, SEE PLAN FOR HEIGHT AND THICKNESS
14. NEW FLOOR DRAIN, SEE MECH.
15. REFRIGERATOR BY OWNER
16. PAPER TOWEL DISP. PROVIDED BY OWNER, INSTALLED BY CONTRACTOR @ 40" A.F.F.
17. NEW 65" TV AND BRACKET BY OWNER, PROVIDE 6"x24" SHELF BELOW, VERIFY HT. W/ OWNER
18. PROVIDE NEW 48" COUNTERTOP AND BACKSPLASH MTD. AT 34" A.F.F. W/ CABINETS
19. PROVIDE NEW CORNER BENCH @ 18" A.F.F., REFER TO DETAIL 12/A2.0
20. PROVIDE BUILT-IN SHELF UNIT TO MATCH HEIGHT OF LOCKERS, REFER TO DETAIL 10/A2.0
21. SANITARY NAPKIN DISPOSAL. OWNER PROVIDED AND CONTRACTOR INSTALLED.
22. TOILET PAPER DISPENSER. OWNER PROVIDED AND CONTRACTOR INSTALLED. DOUBLE ROLL AT BF STALL, TRIPLE ROLL AT REMAINING STALLS.
23. TOOTH IN NEW 8" BULLNOSE CMU MASONRY AT EACH SIDE OF NEW DOOR OPENINGS.

## GENERAL NOTES:

1. FIELD VERIFY ALL DIMENSIONS PRIOR TO BEGINNING WORK.
2. PLAN DIMENSIONS ARE TO FACE OF BASIC WALL MATERIAL (GYPSUM BOARD, PLASTER OR CMU) AND DO NOT INCLUDE THICKNESS OF FINISH MATERIAL (CERAMIC TILE, PANELING, ETC.). AT AREAS WHERE GYP. BD. IS ADHERED TO CMU, THE DIMENSION IS TO THE CMU.
3. PROVIDE POLYURETHANE SEALANT AT ALL JUNCTURES OF DISSIMILAR MATERIALS (DOOR FRAMES, COUNTERTOPS, ETC.)
4. ALL CUTTING AND PATCHING IS THE RESPONSIBILITY OF THE TRADE REQUIRING THE WORK.
5. PROVIDE BLOCKING FOR ALL WALL HUNG EQUIPMENT AS REQUIRED. ALL WOOD BLOCKING MUST BE NON-COMBUSTABLE.
6. THE ARCHITECT DOES NOT HAVE CONTROL OR CHARGE OF THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, OR PROCEDURES, IS NOT RESPONSIBLE FOR SAFETY PRECAUTIONS AND PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK, AND WILL NOT BE RESPONSIBLE FOR THE CONTRACTOR'S FAILURE TO CARRY OUT THE WORK IN ACCORDANCE WITH THOSE DOCUMENTS PREPARED BY THE ARCHITECT.
7. ALL CONTRACTORS SHALL VISIT THE SITE AND ACQUAINT THEMSELVES WITH THE CONDITIONS UNDER WHICH THE CONTRACT WILL BE PERFORMED.




## 9/A2.0 COUNTER DETAIL
SCALE: 1 1/2" = 1'-0"




## 12/A2.0 BENCH DETAIL
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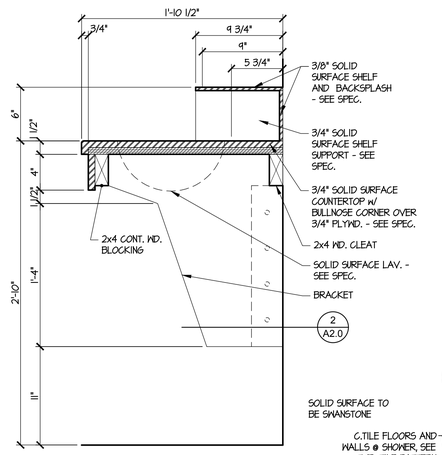


## 1/A2.0 VANITY DETAIL
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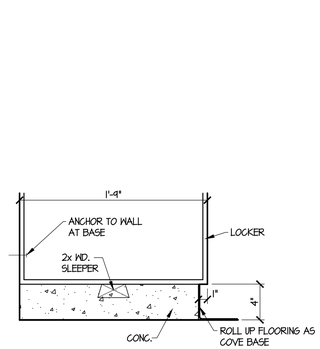
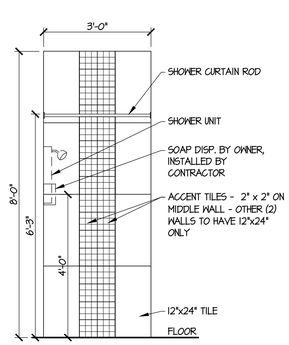
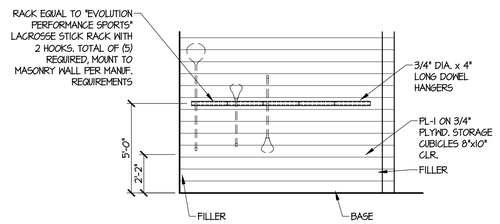



## 3/A2.0 LOCKER BASE
SCALE: 1 1/2" = 1'-0"

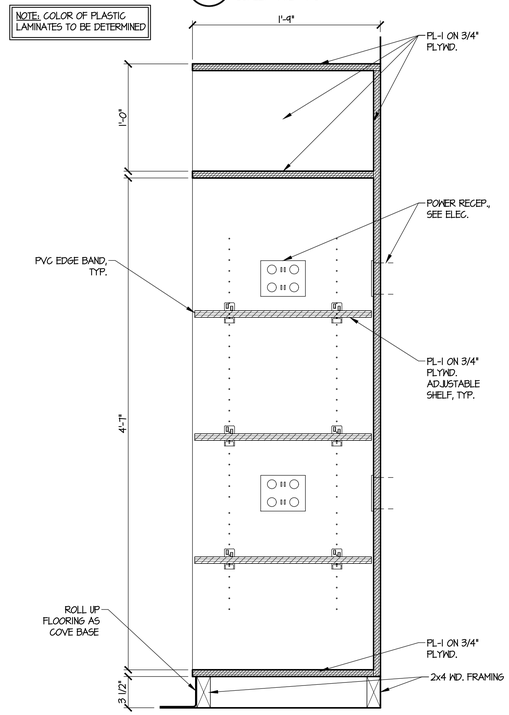



## 5/A2.0 TILE PATTERN
SCALE: 1/2" = 1'-0"

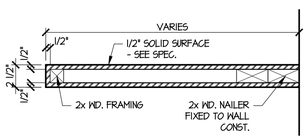



## 7/A2.0 LACROSSE RACK STORAGE
SCALE: 1/4" = 1'-0"

NOTE: COLOR OF PLASTIC LAMINATES TO BE DETERMINED




## 10/A2.0 SHELF UNIT
SCALE: 1 1/2" = 1'-0"




## 2/A2.0 BRACE DETAIL
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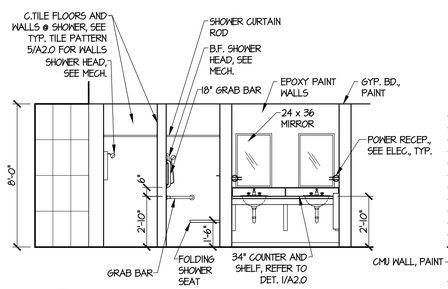
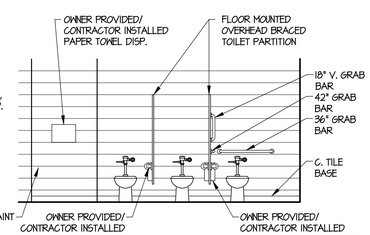
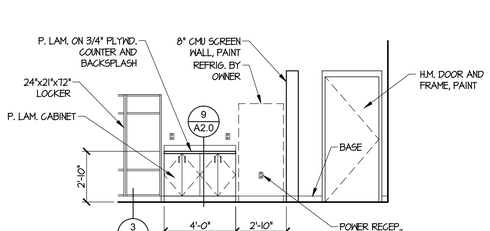



## 4/A2.0 LAV/ SHOWER ELEV.
SCALE: 1/4" = 1'-0"




## 6/A2.0 TOILET COMPARMENTS
SCALE: 1/4" = 1'-0"




## 8/A2.0 COUNTER ELEVATION
SCALE: 1/4" = 1'-0"

RENOVATIONS TO RYDER CENTER: WOMENS LACROSSE LOCKER ROOM

SAGINAW VALLEY STATE UNIVERSITY
UNIVERSITY CENTER, MICHIGAM

TSSF ARCHITECTS, INC.
ARCHITECTS PLANNERS
122 N. WASHINGTON AVENUE SAGINAW, MICHIGAN

| NO. | DATE |
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DRAWN BY C.M.B.
DATE 08/05/22
APPROVED

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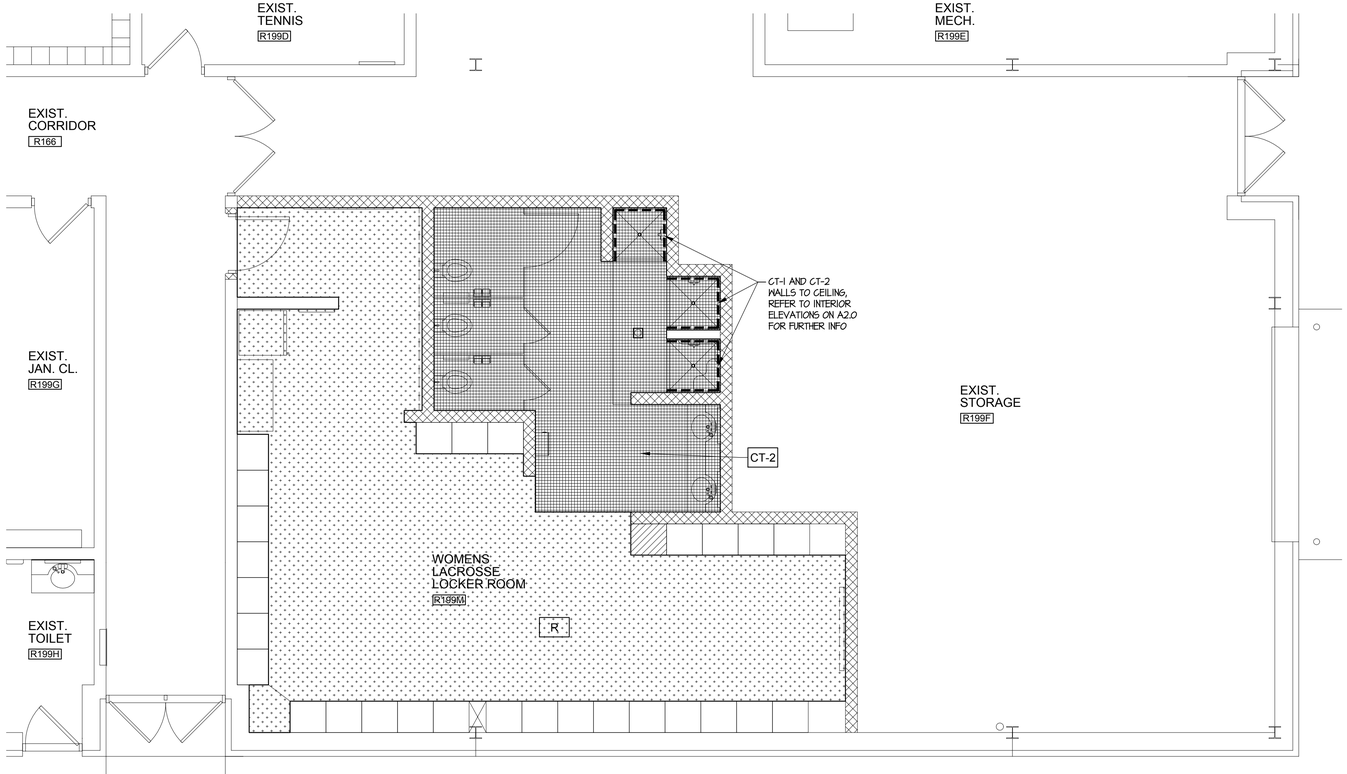
A2.0

PROJECT NO.
2224




## PARTIAL FIRST FLOOR FINISH PLAN
SCALE: 1/4" = 1'-0"

## SCHEDULE OF FINISHES

| ABBREV. | ITEM | MANUFACTURER | PATTERN/STYLE | COLOR | SIZE | REMARKS |
|---|---|---|---|---|---|---|
| V | WALL BASE | JOHNSONITE | - | TO BE SELECTED BY OWNER/ ARCHITECT | 4" TALL | |
| | | | | | | |
| R | RUBBER FLOORING | NORA RUBBER FLOORING | NORAMENT GRANO 992 | BLACK PEPPER | 36"x36" | LOCKER ROOM FLOOR |
| | | | | | | |
| CT-1 | PORCELAIN TILE | STONE PEAK | SIMPLY MODERN | SIMPLY TAN, HONED | 12"x12", 12"x24" | WALL FIELD TILE |
| CT-2 | PORCELAIN TILE | INTERCERAMIC | SPRINT | DARK GRAY | 2"x2" | FLOOR AND WALL ACCENT TILE |
| | | | | | | |
| PL-1 | PLASTIC LAMINATE | FORMICA | - | STOP RED 834-58 | - | LAMINATE FOR SHELVES AND BENCH BASE |
| PL-2 | PLASTIC LAMINATE | FORMICA | - | GRAPHITE GRAFIX 515-58 | - | LAMINATE FOR COUNTERS AND TOILET PART. |
| | | | | | | |
| PNT-1 | PAINT | SHERWIN WILLIAMS | - | TO BE SELECTED BY OWNER/ ARCHITECT | - | INTERIOR WALLS - FIELD |
| PNT-2 | PAINT | SHERWIN WILLIAMS | - | TO BE SELECTED BY OWNER/ ARCHITECT | - | DOORS AND FRAMES |
| | | | | | | |
| SS-1 | SOLID SURFACE | SWANSTONE | - | ASH GRAY 203 | - | INTEGRAL SINK AND SHELF, BENCH TOP |

## FINISH SCHEDULE

| ROOM NO. | ROOM NAME | FLOORS | | BASE | WALLS | | | | | | | | CEILING | | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | NORTH | | EAST | | SOUTH | | WEST | | | | |
| | | MATERIAL | FINISH | | MAT. | FIN. | MAT. | FIN. | MAT. | FIN. | MAT. | FIN. | TYPE | HEIGHT | |
| R199M | WOMENS LACROSSE LKR | EXIST. | R/ CT-1/ CT-2 | V | CMU | PNT-1 | CMU | PNT-1 | CMU | PNT-1 | CMU | PNT-1 | EX | EXP | 1 2 3 |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |

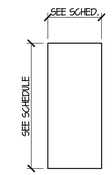
### FINISHES KEY:
SAT - ACOUSTICAL CEILING TILE
BOS - BOTTOM OF STRUCTURE
CT - PORCELAIN TILE
CPT - CARPET
GYP - GYPSUM BOARD
SEALED - SEALED CONC.
PNT - PAINT
V - RESILIENT WALL BASE
R - RUBBER FLOORING
P - EXPOSED STRUCTURE

### FINISH SCHEDULE NOTES:
1. PAINT ALL EXISTING WALLS ADJACENT TO NEW WALLS
2. REWORK CEILING GRID AND TILES FOR NEW WALL.
3. PATCH IN NEW CARPET WHERE LOGO CARPET WAS REMOVED

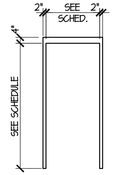
## DOOR SCHEDULE

| DOOR NO. | TYPE | MAT. | SIZE | | | FRAME | | DETAILS | | | CLASS RATING | HARDWARE SET | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | WIDTH | HT. | THICK | TYPE | MAT. | HEAD | JAMB | SILL | | | |
| R199M | A | HM | 3'-0" | 7'-0" | 1 3/4" | I | HM | 1/A3.0 | 2/A3.0 | - | - | 1 | 1 2 |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |

### DOOR SCHEDULE NOTES:
1. DOOR TO BE FLUSH HOLLOW METAL SLAB PAINTED TO MATCH EXISTING.
2. HARDWARE TO MATCH COLOR AND MANUFACTURER ON EXISTING DOORS.




A
## DOOR TYPES
SCALE: 1/4" = 1'-0"

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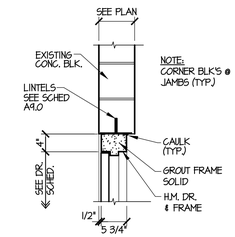
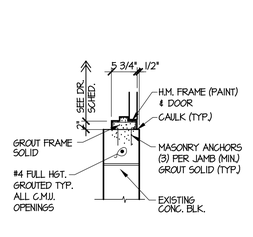
## FRAME TYPES
SCALE: 1/4" = 1'-0"




1 / A3.0
## HEAD DETAIL
SCALE: 3/4" = 1'-0"




2 / A3.0
## JAMB DETAIL
SCALE: 3/4" = 1'-0"

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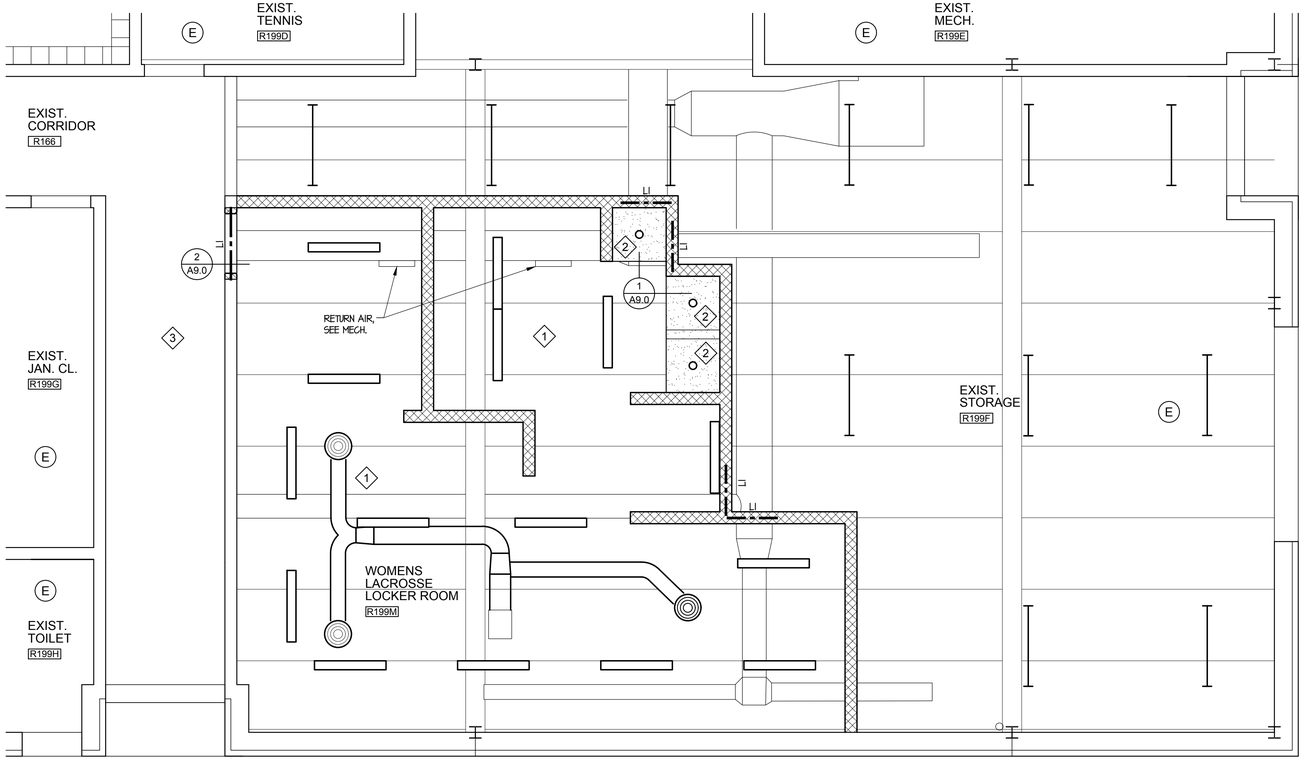
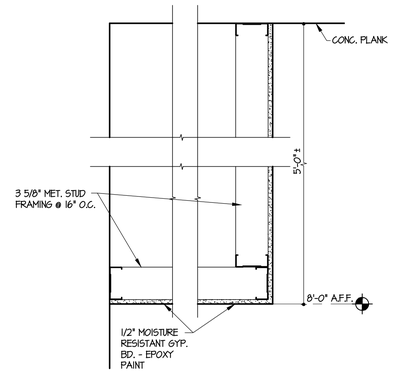



## PARTIAL FIRST FLOOR REFLECTED CEILING PLAN
SCALE: 1/4" = 1'-0"




## 1/A9.0 SOFFIT DETAIL
SCALE: 1 1/2" = 1'-0"

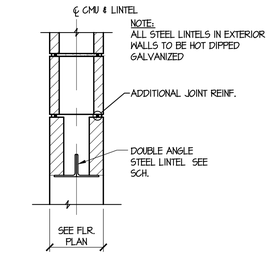
## REFLECTED CEILING PLAN KEYNOTES:

1. EXPOSED CORE PLANK CLG.
2. 1/2" SUSP. M.R. GYP. BD. CLG. - PAINT
3. EX. SUSP. LAY-IN ACOUST. CLG. - REMOVE & REINSTALL AS REQ'D TO RUN NEW M&E LINES. REFER TO M&E SHEETS

## LEGEND:

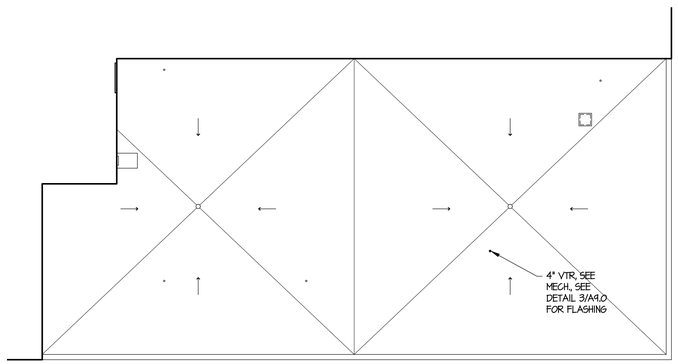
- LIGHT FIXTURE
- RECESSED INCANDESCENT FIXTURE
- DIFFUSER, REGISTER
- GYPSUM BOARD CEILING
- (E) EXIST'G CEILING

NOTE: REFER TO MECHANICAL AND ELECTRICAL SHEETS FOR FURTHER INFORMATION

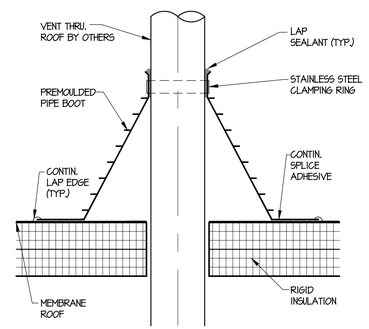



## 2/A9.0 LINTEL DETAIL
SCALE: 1 1/2" = 1'-0"

| LINTEL SCHEDULE | | |
|---|---|---|
| MARK | MATERIAL | SIZE |
| L1 | 8" CMU | (2) L5 x 3 1/2 x 5/16 b/b, LLV |
| | | |




## PARTIAL ROOF PLAN
SCALE: 1/16" = 1'-0"




## 3/A9.0 TYP. ROOF PENETRATION
SCALE: 3"= 1'-0"

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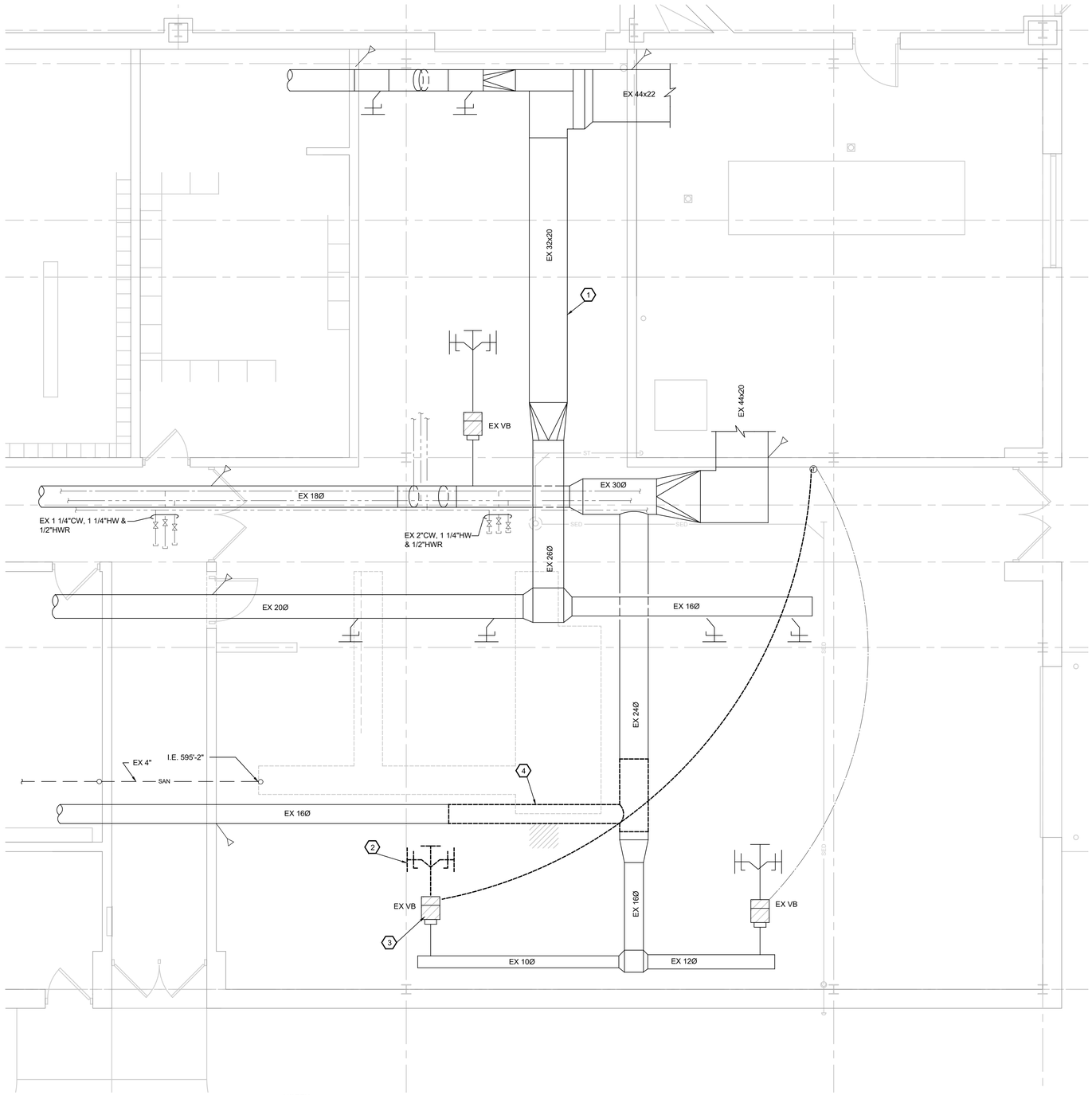


NORTH

## PARTIAL FIRST FLOOR PLAN - MECHANICAL DEMOLITION

1/4"=1'-0"

KEYED NOTES

1. EXISTING DUCTWORK AND PIPING SHOWN LIGHT TO REMAIN. (TYP)
2. REMOVE EXISTING SUPPLY AIR DUCTWORK BACK TO EXISTING VOLUME BOX.
3. EXISTING VAV BOX SHALL BE DISCONNECTED FROM EXISTING THERMOSTAT. EXISTING THERMOSTAT SHALL REMAIN.
4. REMOVE AND REVISE EXISTING DUCTWORK AS REQUIRED FOR NEW MASONRY WALL INSTALLATION.

**GENERAL NOTES**

1. ALL EXISTING EQUIPMENT, PIPING, DUCTWORK, ETC. THAT IS TO BE REMOVED SHALL REMAIN THE PROPERTY OF THE OWNER. THE CONTRACTOR SHALL REMOVE AND LOCATE THIS MATERIAL THAT REMAINS THE PROPERTY OF THE OWNER TO A LOCATION DETERMINED BY THE OWNER SOMEWHERE ON SITE. IF THE OWNER DOES NOT WANT TO MAINTAIN POSSESSION OF THE REMOVED MATERIAL, THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING MATERIAL FROM THE SITE AND DISPOSING OF THIS MATERIAL AS NECESSARY TO MEET ALL CODES AND REQUIREMENTS AND SHALL PAY ALL COSTS AS REQUIRED FOR ANY DISPOSAL FEES, INSPECTIONS, PERMITS, ETC.
2. REMOVE ALL EXISTING DUCT HANGERS, PIPE HANGERS, INSULATION, VALVES, FITTINGS, ETC. ASSOCIATED WITH DUCTWORK AND PIPING BEING REMOVED.

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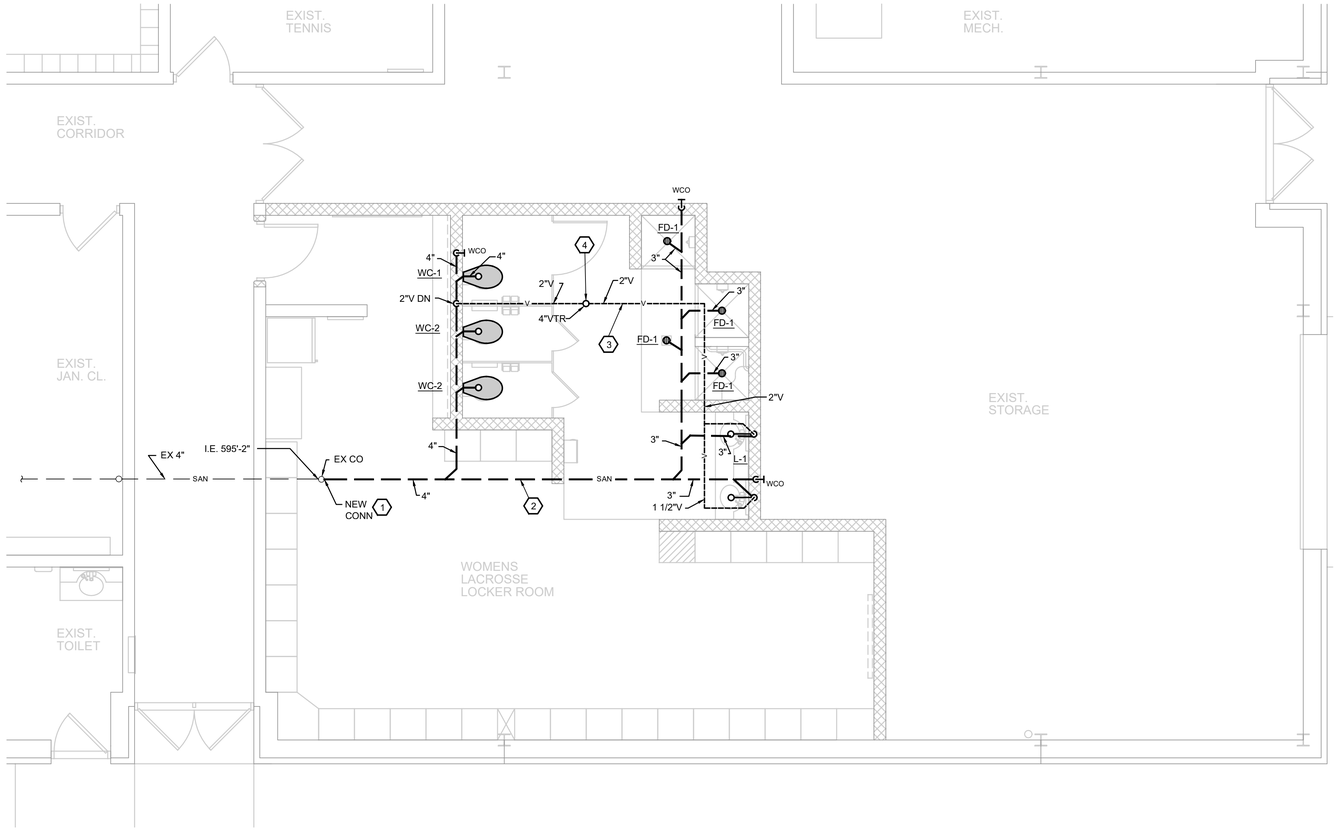
KEYED NOTES

1. CONNECT NEW 4" SANITARY TO EXISTING 4" SANITARY PIPING BELOW FLOOR. THE EXISTING INVERT IS APPROXIMATELY 16" BELOW FINISHED FLOOR. CONFIRM EXACT INVERT IN FIELD.
2. NEW SANITARY PIPING BELOW GRADE. (TYP)
3. NEW VENT PIPING ROUTED HIGH IN SPACE. LOCKER ROOM WILL NOT HAVE A CEILING. ALL PIPING WILL BE EXPOSED WITHIN SPACE. (TYP)
4. EXTEND 4" VENT THROUGH ROOF.




NORTH

PARTIAL FIRST FLOOR PLAN - SANITARY & VENT

1/4"=1'-0"

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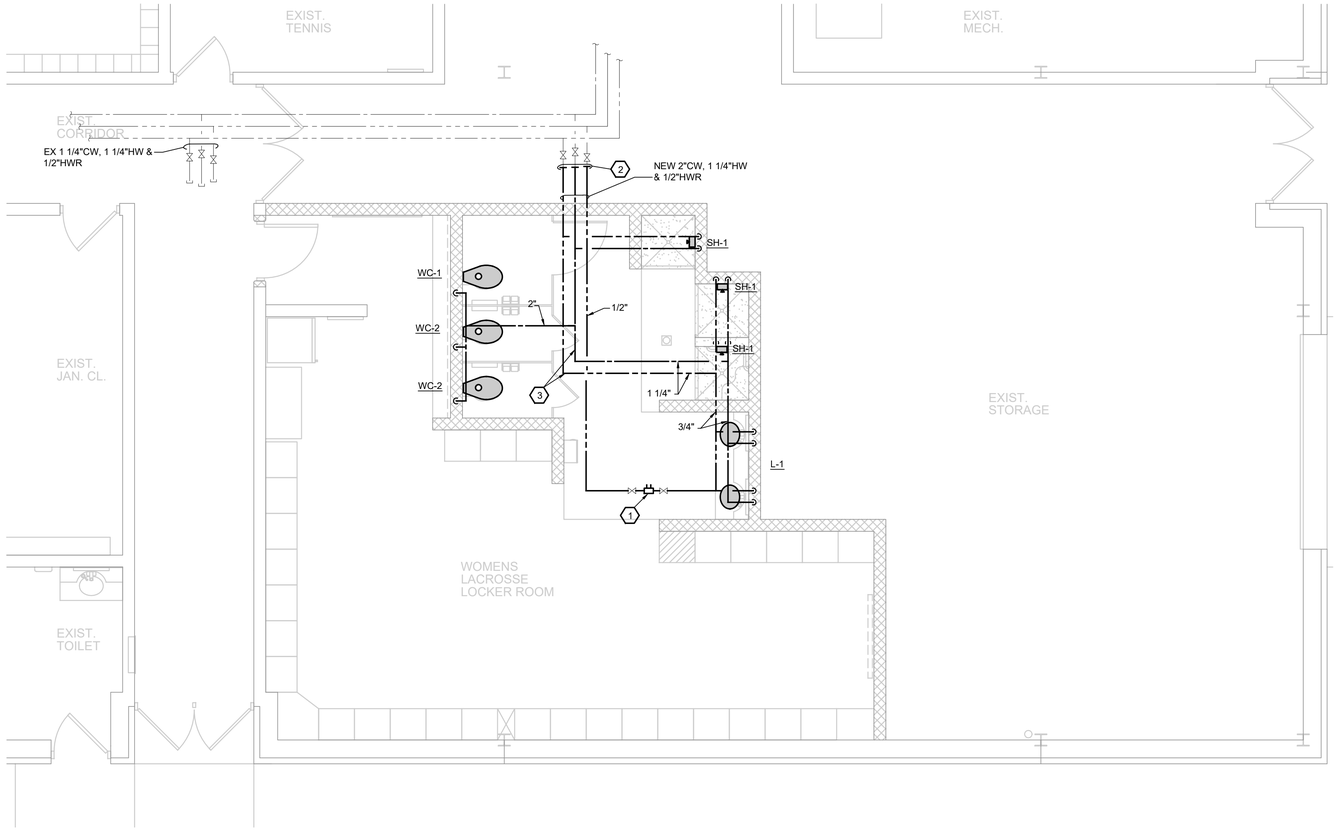


NORTH

## PARTIAL FIRST FLOOR PLAN - DOMESTIC PIPING

1/4"=1'-0"

KEYED NOTES

1. GRISWOLD AUTOMATIC FLOW CONTROL VALVE SET AT 0.5 GPM.
2. CONNECT NEW DOMESTIC CW, HW & HWR PIPING TO EXISTING PIPING AT SHUT-OFF VALVES.
3. ROUTE PIPING HIGH WITHIN SPACE. LOCKER ROOM DOES NOT HAVE A CEILING. ALL PIPING WILL BE EXPOSED WITHIN SPACE.


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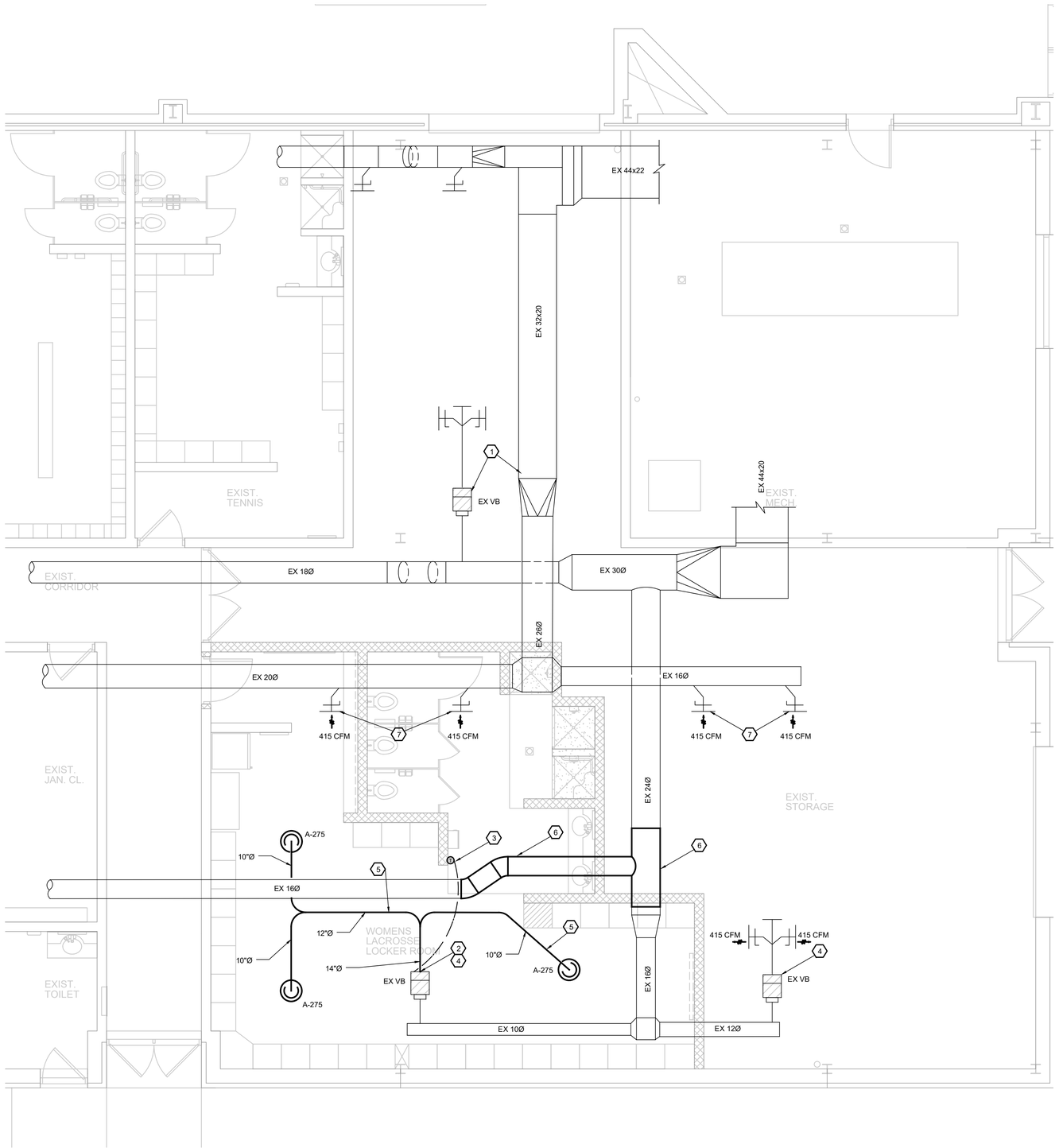


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## PARTIAL FIRST FLOOR PLAN - HVAC PIPING & HVAC

1/4"=1'-0"

**KEYED NOTES**

1. EXISTING PIPING, VAV BOXES, DUCTWORK, ETC SHOWN LIGHT TO REMAIN (TYP).
2. CONNECT NEW SUPPLY AIR DUCTWORK TO THE EXISTING VAV BOX. PROVIDE TRANSITIONS AS REQUIRED
3. NEW THERMOSTAT FURNISHED AND INSTALLED BY THE TEMPERATURE CONTROL CONTRACTOR.
4. TEMPERATURE CONTROL CONTRACTOR SHALL REPROGRAM EXISTING VOLUME BOX TO AIRFLOW SHOWN ON DRAWINGS.
5. ALL NEW SUPPLY AIR DUCTWORK SHALL BE EXPOSED SPIRAL DUCTWORK AND NOT INSULATED OR PAINTED.
6. CONNECT NEW SUPPLY AIR DUCTWORK TO EXISTING DUCTWORK.REVISE AND EXTEND EXISTING SPIRAL DUCTWORK AS REQUIRED TO INSTALL THE NEW MASONRY WALLS.
7. EXISTING EXHAUST AIR GRILLES TO REMAIN. BALANCE TO 415 CFM EACH.

**GENERAL MECHANICAL NOTES**

1. ALL DIFFUSER AND GRILLE LOCATIONS SHALL BE COORDINATED WITH ARCHITECTURAL REFLECTED CEILING PLAN.
2. FURNISH AND INSTALL MANUAL BALANCING DAMPERS ON ALL SUPPLY AIR BRANCH DUCTWORK TO ALLOW BALANCING OF AIR OUTLETS INDIVIDUALLY.
3. FOR DUCT BRANCH SIZES ROUTING TO DIFFUSERS OR GRILLES NOT NOTED ON DRAWINGS, DUCT SIZE SHALL MATCH DIFFUSER OR GRILLE NECK SIZE NOTED ON DIFFUSER OR GRILLE SCHEDULE.

**TEMPERATURE CONTROL NOTE**

THE TEMPERATURE CONTROL CONTRACTOR IS JCI. THE TEMPERATURE CONTROL SCOPE OF WORK FOR THIS PROJECT IS AS FOLLOWS: REPROGRAM MAXIMUM/MINIMUM AIRFLOWS FOR TWO EXISTING VAV BOX. INSTALL NEW THERMOSTAT FOR EXISTING VAV BOX.

THE TEMPERATURE CONTROL CONTRACTOR SHALL BE ONSITE OR AVAILABLE DURING TEST AND BALANCE TO DRIVE NEW AND EXISTING BOXES TO 100% OPEN AND TO CALIBRATE BOXES TO AIRFLOWS AS SHOWN.

THE TEMPERATURE CONTROL CONTRACTOR SHALL REPROGRAM THE NOTED EXISTING VOLUME BOXES BEING REUSED TO NEW AIRFLOWS SHOWN ON THE DRAWINGS.

**TEST AND BALANCE NOTE**

THE TEST AND BALANCE CONTRACTOR SHALL BALANCE THE EXISTING VOLUME BOXES TO AIRFLOWS SHOWN ON DRAWING AND ALL ASSOCIATED DIFFUSERS AND GRILLES TO AIRFLOWS SHOWN ON THE REVISION DRAWINGS. FOUR EXISTING RETURN AIR GRILLES SHALL BE BALANCED TO THE AIRFLOW SHOWN ON DRAWING. THE TEST AND BALANCE CONTRACTOR SHALL PROVIDE A SEPARATE BID FROM THE MECHANICAL TRADES AND AN OWNER APPROVED TEST AND BALANCE CONTRACTOR SHALL BE USED.

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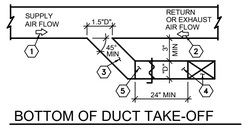
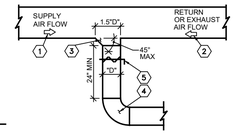
## MECHANICAL SYMBOL LIST

| | |
|---|---|
| | REDUCER |
| | CAP |
| | FLEXIBLE CONNECTION |
| | ELBOW RISING UP |
| | ELBOW DROPPING DOWN |
| | TEE WITH PIPE UP |
| | TEE WITH PIPE DOWN |
| T | TEMPERATURE SENSOR |
| C | ROOM SENSOR CONTROLLER |
| T | THERMOSTAT OR WALL SENSOR |
| [A-250'] | SUPPLY AIR DIFFUSER - TYPE "A", 250 CFM |
| [B-250'] | RETURN OR EXHAUST AIR GRILLE - TYPE "B", 250 CFM |
| | MANUAL DAMPER |
| ABV | ABOVE |
| ACCU | AIR COOLED CONDENSING UNIT |
| ACU | AIR CONDITIONING UNIT |
| AFF | ABOVE FINISHED FLOOR |
| AHU | AIR HANDLING UNIT |
| CFM | CUBIC FEET PER MINUTE |
| CW | COLD WATER |
| EA | EXHAUST AIR |
| EAR | EXHAUST AIR REGISTER |
| EF | EXHAUST FAN |
| EL | ELEVATION |
| EX | EXISTING |
| FD | FLOOR DRAIN |
| FS | FLOOR SINK |
| GPM | GALLONS PER MINUTE |
| HHW | HEATING HOT WATER |
| HW | HOT WATER |
| HWR | HOT WATER RETURN |
| MBD | MANUAL BALANCING DAMPER |
| NC | NORMALLY CLOSED |
| NO | NORMALLY OPENED |
| OA | OUTSIDE AIR |
| PRV | PRESSURE REGULATING OR REDUCING VALVE |
| PSI | POUNDS PER SQUARE INCH |
| RA | RETURN AIR |
| RAR | RETURN AIR REGISTER |
| RF | RETURN AIR FAN |
| RTU | ROOF TOP UNIT |
| SA | SUPPLY AIR |
| SAR | SUPPLY AIR REGISTER |
| SP | STATIC PRESSURE |
| VA | VALVE |
| VAV | VARIABLE AIR VOLUME BOX |




### BOTTOM OF DUCT TAKE-OFF

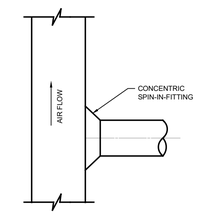
1. DIRECTION OF AIR FLOW FOR A SUPPLY AIR DUCT.
2. DIRECTION OF AIR FLOW FOR A RETURN AIR OR EXHAUST AIR DUCT.
3. ANGLED SHEET METAL TAP INTO DUCT MAIN.
4. MINIMUM 24" STRAIGHT DUCT BEFORE DUCT ELBOW.
5. MANUAL BALANCED DAMPER INSTALLED IN MINIMUM 24" STRAIGHT DUCT.



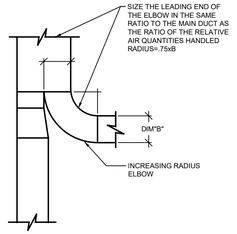

### SIDE OF DUCT TAKE-OFF

GENERAL NOTE:
ALL DUCT JOINTS, FITTINGS, ETC. SHALL BE EXTERNALLY SEALED. SEE SPECIFICATION FOR SEALANT INFORMATION.

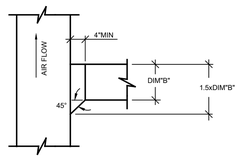
### BRANCH DUCT TAKE-OFF DETAIL
NO SCALE



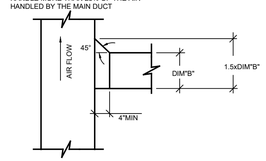

RECTANGULAR TO ROUND DUCT




SUPPLY, RETURN OR EXHAUST DUCT
FOR USE WHEN A BRANCH TAKE-OFF IS TO HANDLE MORE THAN 25% OF THE AIR HANDLED BY THE MAIN DUCT

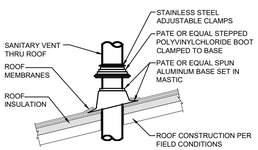



SUPPLY DUCT

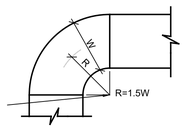



RETURN OR EXHAUST DUCT

### RECTANGULAR DUCT BRANCH TAKE-OFF DETAILS
NO SCALE

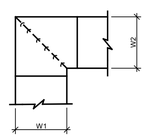



### VENT THRU ROOF DETAIL
NO SCALE




NOTE
1. THE INTERIOR SURFACE OF ALL RADIUS ELBOWS SHALL BE MADE ROUND.
2. ALL STANDARD RADIUS ELBOWS CAN BE SUBSTITUTED WITH A SQUARE VANE MITERED ELBOW.
3. NO MITERED ELBOWS WITHOUT VANES SHALL BE INSTALLED.

### DUCTWORK RADIUS ELBOW




**NOTE**

1 ALL VANE ELBOWS SHALL BE CONSTRUCTED AND INSTALLED AS DETAILED BY SMACNA.

2 WHEN W1 DOES NOT EQUAL W2, VANE SHALL BE SINGLE THICKNESS VANE TYPE REGARDLESS OF W DIMENSION.

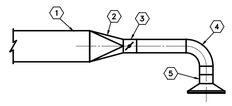
3 ALL SINGLE THICKNESS VANES SHALL HAVE A 2" RADIUS, 1 1/2" MAXIMUM SPACE BETWEEN VANES AND A 3/4" TRAILING EDGE.

4 WHEN W EQUALS W2 AND W1 IS GREATER THAN 20", VANES SHALL BE DOUBLE VANE TYPE.

5 NO MITERED ELBOW WITHOUT VANES SHALL BE INSTALLED.

### DUCTWORK SQUARE VANE MITERED ELBOWS
NO SCALE

1. BRANCH DUCT
2. TRANSITION
3. DAMPER WITH POSITIVE LOCKING WING NUT
4. DIFFUSER OR GRILLE W/ ROUND NECK OR SQUARE TO ROUND NECK ADAPTER
5. METAL DUCT WITH ELBOW FITTING TO CONNECT TO AIR OUTLET DEVICE. FLEXIBLE DUCTWORK SHALL NOT BE USED TO MAKE CONNECTION




### BRANCH DUCT CONNECTION TO DIFFUSER OR GRILLE DETAIL
NO SCALE

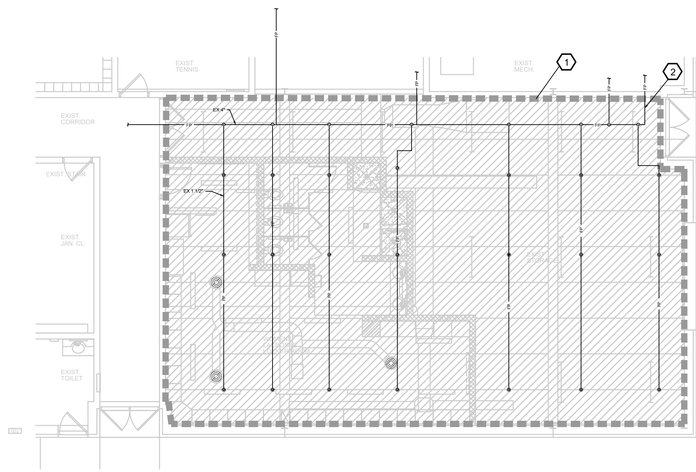
Sm17A – BRANCH DUCT CONN TO DIFF GRILLE CE ONLY.dwg

**FIRE PROTECTION NOTES**

1. THE FIRE PROTECTION CONTRACTOR SHALL PROVIDE A SEPARATE BID FROM MECHANICAL CONTRACTOR. A LICENSED FIRE PROTECTION CONTRACTOR SHALL DESIGN, DETAIL AND INSTALL A FIRE PROTECTION SPRINKLER SYSTEM TO COVER THE NEW AND/OR REMODELED AREAS.
2. THE ENTIRE FIRE PROTECTION SYSTEM DESIGN AND INSTALLATION SHALL BE STRICTLY IN ACCORDANCE WITH NFPA 13 SPRINKLER SYSTEMS AND SHALL MEET THE REQUIREMENTS OF THE LOCAL AND STATE FIRE MARSHAL AND ALL OTHER AUTHORITIES HAVING JURISDICTION.
3. ALL PERMITS, LICENSES, FEES, INSPECTIONS AND ARRANGEMENT/COORDINATION OF SUCH SHALL BE OBTAINED AND PAID FOR BY THE FIRE PROTECTION CONTRACTOR.
4. THE FIRE PROTECTION CONTRACTOR SHALL PROVIDE A FLOW TEST AND FURNISH COMPLETE DETAILED COMPUTER AIDED DESIGN (CAD) WORKING DRAWINGS OF THE SYSTEM AND SHALL SUBMIT THEM TO THE FIRE MARSHAL, ARCHITECT/ENGINEER, AND ALL AGENCIES REQUIRED BY CODE FOR THEIR REVIEW AND APPROVAL. NO WORK OR FABRICATION SHALL COMMENCE BEFORE THE DETAILED WORKING DRAWINGS OF THE SYSTEM, WITH THE AGENCIES APPROVALS, ARE SUBMITTED TO AND ARE REVIEWED BY THE ARCHITECT/ENGINEER. SYSTEM SHALL BE COMPLETE WITH OUTSIDE ALARM BELL, FLOW SWITCH, SUPERVISORY SWITCH ON SYSTEM CONTROL VALVE, HYDRAULIC DESIGN PLATE AT MAIN RISER, SPARE HEADS AND WRENCH, DOCUMENTATION, ETC.
5. THE FIRE PROTECTION CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS AND VERIFY TIE-IN LOCATION, ROUTING OF PIPING, LOCATION OF SPRINKLER HEADS WITH RESPECT TO DUCTS, EQUIPMENT, LIGHT FIXTURES, ETC. SPRINKLER HEADS SHALL BE CENTERED IN CEILING TILES AND HALF TILES.
6. LAYOUT AND DESIGN OF THE SYSTEM SHALL BE BASICALLY AS DESIGNED FOR REQUIRED OCCUPANCY HAZARD. SYSTEMS SHALL BE SIZED BY HYDRAULIC CALCULATIONS PER NFPA PAMPHLET NO. 13.
7. THE FIRE PROTECTION CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF THE FIRE PROTECTION WATER SERVICE SIZE BY VERIFICATION OF LOCAL WATER PRESSURE AND FLOW FROM THE LOCAL AUTHORITIES. THIS VERIFICATION SHALL BE PERFORMED DURING BIDDING AND NOTIFICATION TO THE ARCHITECT/ENGINEER OF ANY NECESSARY FIRE PROTECTION SERVICE CHANGES SHALL BE MADE 5 DAYS PRIOR TO BID DATE. THE COMPLETED SYSTEM SHALL BE IN ACCORDANCE WITH NFPA-13 REQUIREMENTS.
8. THE CONTRACTOR SHALL INCLUDE IN THEIR BID ANY COST FOR REQUESTING AUTOCAD BACKGROUNDS FOR THEIR USE FROM THE ARCHITECT OR ENGINEER. THE COST WILL BE $150.00 FOR THE FIRST PLAN, AND $50.00 FOR EACH ADDITIONAL PLAN THAT MAY BE REQUESTED FOR AUTOCAD USE. A WAIVER OF RESPONSIBILITY FOR THE ARCHITECT AND ENGINEER RELATED TO CONTRACTOR USE OF THE CAD FILES SHALL BE SIGNED BY THE CONTRACTOR.
9. SEE SPECIFICATION FOR FURTHER INFORMATION AND REQUIREMENTS.

FIRE PROTECTION KEYED NOTES

1. THE FIRE PROTECTION SYSTEM SHALL BE MODIFIED IN ALL SHADED AREAS TO ACCOMMODATE REVISED FLOOR DRAIN. COORDINATE NEW PIPING AND SPRINKLER HEADS WITH ALL OTHER TRADES. THE FIRE PROTECTION CONTRACTOR SHALL BE RESPONSIBLE FOR UPDATING THE FIRE PROTECTION SYSTEM TO MEET THE REQUIREMENTS OF THE LOCAL AND STATE FIRE MARSHAL AND ALL OTHER CODES AND AUTHORITIES HAVING JURISDICTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFICATION OF EXISTING PIPES. THE FINAL DESIGN AND INSTALLATION OF THE FIRE PROTECTION SPRINKLER SYSTEM SHALL BE THE RESPONSIBILITY OF THE FIRE PROTECTION CONTRACTOR.
2. EXISTING FIRE PROTECTION PIPING. THE FIRE PROTECTION CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING ALL EXISTING PIPING AND SIZING. EXISTING PIPING AND FIRE PROTECTION HEADS ARE SHOWN FOR REFERENCE(TYP).




NORTH

### PARTIAL FIRST FLOOR PLAN - FIRE PROTECTION
1/8"=1'-0"


MACMILLAN ASSOCIATES CONSULTING ENGINEERS
714 EAST MIDLAND STREET • BAY CITY, MICHIGAN 48706
(989) 894-4300 FO(989) 894-9930 WWW.MACMILLANASSOCIATES.COM

TSSF ARCHITECTS, INC.
PLANNERS
ARCHITECTS
122 N. WASHINGTON AVENUE SAGINAW , MICHIGAN


RENOVATIONS TO RYDER CENTER: WOMENS LACROSSE LOCKER ROOM

SAGINAW VALLEY STATE UNIVERSITY
UNIVERSITY CENTER, MICHIGAM

| NO. | DATE |
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DRAWN BY RLM
DATE 08/05/22
APPROVED JWF

SHEET NO
M5.0
OF .

PROJECT NO.
2224


2/3/2021 11:22 AM MICHAEL VOGTMANN (MVOGTMANN@MACMILLANASSOCIATES.COM) F:\27-TSSF\2022\2702 SVSU WOMENS LACROSSE LOCKER ROOM\2022-2702-M-M5.0 DETAILS

## GENERAL MECHANICAL NOTES

1. THE MECHANICAL TRADES SHALL FAMILIARIZE THEMSELVES WITH ALL EXISTING AND NEW CONDITIONS, THESE DRAWINGS, ADDENDA & RELATED SPECIFICATIONS. THEY SHALL COMPLETELY SATISFY THEMSELVES AS TO THE CONDITIONS TO WHICH THE WORK IS TO BE PERFORMED BEFORE SUBMITTING THEIR BID. NO ALLOWANCES OR CONSIDERATIONS WILL BE GIVEN AT A LATER DATE FOR ALLEGED MISUNDERSTANDINGS AS TO THE REQUIREMENTS OF THE WORK, MATERIALS TO BE FURNISHED, OR CONDITIONS REQUIRED BY THE NATURE OF THIS PROJECT SITE DUE TO NEGLECT ON THE BIDDERS PART TO MAKE SUCH AN EXAMINATION AND COORDINATION.
2. DRAWINGS ARE DIAGRAMMATIC AND ARE INTENDED TO SHOW APPROXIMATE LOCATION AND GENERAL ARRANGEMENT OF SYSTEMS AND EQUIPMENT. DRAWINGS SHALL NOT BE SCALED FOR LOCATION OF SYSTEMS, EQUIPMENT, ETC. ALL LOCATIONS OF SYSTEMS AND EQUIPMENT SHALL BE VERIFIED IN FIELD AND COORDINATED WITH ALL OTHER TRADES AND EXISTING FIELD CONDITIONS. SOME SYSTEMS (PIPING, DUCTWORK, ETC.) AND EQUIPMENT LOCATIONS MAY REQUIRE CHANGES IN LOCATION DUE TO FIELD CONDITIONS AND COORDINATION WITH OTHER TRADES. THESE CHANGES SHALL BE MADE WITH NO ADDITIONAL COST TO THE OWNER. FAILURE TO VERIFY AND COORDINATE WILL BE NO REASON FOR ADDITIONAL COMPENSATION.
3. THE INSTALLATION OF ALL SYSTEMS, EQUIPMENT, ETC., IS SUBJECT TO CLARIFICATION WITH SUBMITTED SHOP DRAWINGS AND FIELD COORDINATION REQUIREMENTS. EQUIPMENT OUTLINES SHOWN ON DRAWINGS OR DIMENSIONED ON DRAWINGS ARE LIMITING DIMENSIONS. ANY EQUIPMENT THAT REDUCES THE INDICATED CLEARANCES OR EXCEEDS SPECIFIED OR SCHEDULED EQUIPMENT DIMENSIONS SHALL NOT BE USED.
4. THE MECHANICAL CONTRACTOR SHALL COORDINATE FINAL LOCATION OF ALL EQUIPMENT WITH PIPING, DUCTWORK, ETC., AT THE TIME OF ROUGH-IN. ALL EQUIPMENT TO BE SERVICEABLE. ABOVE CEILING EQUIPMENT SHALL BE WITHIN 18" OF CEILING WITHOUT ANY OBSTRUCTIONS AND SHALL HAVE ALL SERVICE AND ACCESS SPACES KEPT CLEAR. PERFORM ABOVE CEILING COORDINATION WITH ALL TRADES.
5. THESE DRAWINGS AND THE ASSOCIATED SPECIFICATIONS ARE INTENDED TO PROVIDE COMPLETELY FURNISHED, INSTALLED AND OPERATIONAL MECHANICAL SYSTEM (HEATING, VENTILATING, AIR CONDITIONING, PLUMBING AND PIPING, ETC.). IF THESE DRAWINGS AND ASSOCIATED SPECIFICATIONS HAVE INFORMATION OMITTED THAT WOULD NOT ALLOW A COMPLETELY OPERATIONAL SYSTEM AS IS THE INTENT OF THE ENGINEER, THE BIDDER SHALL NOTIFY THE ENGINEER A MINIMUM ONE WEEK PRIOR TO THE BID DATE TO ALLOW FOR ADDENDA. ONCE BIDS HAVE BEEN RECEIVED, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL MATERIAL, LABOR, ETC., TO FURNISH AND INSTALL A COMPLETELY OPERATIONAL MECHANICAL SYSTEM AS IS THE INTENT OF THESE DRAWINGS AND ASSOCIATED SPECIFICATION.
6. THE MECHANICAL TRADES SHALL TAKE OUT ALL PERMITS AND ARRANGE FOR NECESSARY INSPECTIONS AND SHALL PAY ALL FEES AND COSTS.
7. THE MECHANICAL TRADES SHALL VERIFY AMOUNT OF EXISTING PIPING, VALVES, DUCTWORK, ETC. TO BE REMOVED OR RELOCATED TO ALLOW FOR INSTALLATION OF NEW PIPING, DUCTWORK, VALVES, EQUIPMENT, WALLS, ETC. ALL ABANDONED PIPING, VALVES, ETC., SHALL BE REMOVED.
8. THE MECHANICAL TRADES SHALL COORDINATE ALL WORK WITH OTHER TRADES AND SHALL COORDINATE ANY SYSTEMS SHUT-DOWN WITH THE ARCHITECT/ENGINEER AND OWNER.
9. ALL EXISTING EQUIPMENT, PIPING, DUCTWORK, ETC. THAT IS TO BE REMOVED SHALL REMAIN THE PROPERTY OF THE OWNER. THE CONTRACTOR SHALL REMOVE AND LOCATE THIS MATERIAL THAT REMAINS THE PROPERTY OF THE OWNER TO A LOCATION DETERMINED BY THE OWNER SOMEWHERE ON SITE. IF THE OWNER DOES NOT WANT TO MAINTAIN POSSESSION OF THE REMOVED MATERIAL, THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING MATERIAL FROM THE SITE AND DISPOSING OF THIS MATERIAL AS NECESSARY TO MEET ALL CODES AND REQUIREMENTS AND SHALL PAY ALL COSTS AS REQUIRED FOR ANY DISPOSAL FEES, INSPECTIONS, PERMITS, ETC.
10. ATTACHMENTS OF MECHANICAL OR ELECTRICAL EQUIPMENT TO STRUCTURAL MEMBERS ARE THE RESPONSIBILITY OF THE INSTALLING TRADE. STRUCTURAL MEMBERS SHALL NOT BE FIELD CUT, WELDED OR OTHERWISE MODIFIED WITHOUT APPROVAL OF THE ARCHITECT/ENGINEER. ATTACHMENT TO STEEL JOISTS SHALL BE MADE AT PANEL POINTS WHENEVER POSSIBLE. STEEL JOISTS SHALL BE REINFORCED FOR NON-PANEL POINT CONCENTRATED LOADS IN ACCORDANCE WITH THE STRUCTURAL DETAILS; THIS WORK SHALL BE PERFORMED BY CERTIFIED WELDERS AND IS THE RESPONSIBILITY OF THE TRADE INSTALLING THE SUBJECT LOAD. STRUCTURAL MEMBERS SHALL NOT BE OVERLOADED AS A RESULT OF ATTACHMENTS. ATTACHMENT/EQUIPMENT LOADING FOR ALL TRADES RESULTING IN TOTAL LOAD GREATER THAN AN EQUIVALENT UNIFORM 5 PSF FOR ANY MEMBER SHALL BE SUBMITTED TO THE ARCHITECT/ENGINEER FOR REVIEW.
11. THE MECHANICAL TRADES SHALL FURNISH AND LOCATE CEILING AND/OR WALL ACCESS DOORS AS REQUIRED TO GIVE ACCESS TO VALVES, EQUIPMENT, ETC. COORDINATE WALL OR CEILING FIRE RATINGS AND FURNISH ACCESS DOOR WITH RATING AS NECESSARY. THE GENERAL TRADES SHALL INSTALL ACCESS DOORS.
12. SEE SPECIFICATION FOR FURTHER INFORMATION.

## SPECIFIED AND SCHEDULED EQUIPMENT NOTE

EQUIPMENT MANUFACTURER'S AND MATERIALS SPECIFIED OR SCHEDULED ON THESE PROJECT DRAWINGS AND SPECIFICATIONS SHALL BE INCLUDED UNDER THE BASE BID PRICE. SUBSTITUTE OR ALTERNATE EQUIPMENT SHALL BE PRICED AS AN ADD OR DEDUCT PRICE TO THE CONTRACTOR'S BASE BID PRICE. IF ONE OR MORE SUBSTITUTIONS ARE ACCEPTED WITH THE PROPOSAL AT THE CORRESPONDING ALTERNATE PRICE, IT SHALL BE UNDERSTOOD THAT APPROVAL OF SAID EQUIPMENT SHALL BE SUBJECT TO STRICT ADHERENCE TO THE PLANS AND SPECIFICATIONS. SHOULD ANY OF THE SUBSTITUTE EQUIPMENT FAIL TO MEET THE SPECIFICATIONS AFTER THE PROPOSAL HAS BEEN ACCEPTED, REGARDLESS IF EQUIPMENT HAS BEEN SHIPPED TO THE SITE AND INSTALLED, THE CONTRACTOR SHALL FURNISH AT NO EXTRA COST TO THE OWNER, THE SPECIFIED EQUIPMENT MEETING THE REQUIREMENTS AS STATED IN THESE SPECIFICATIONS AND COVER ALL COSTS NECESSARY FOR REMOVAL AND REINSTALLATION OF EQUIPMENT.

## DIFFUSER AND GRILLE SCHEDULE

TYPE A: SUPPLY AIR DIFFUSER : PRICE #RCD OR EQUAL TITUS CEILING SUPPLY DIFFUSER, ALL STEEL CONSTRUCTION, BAKED-ON ENAMEL FINISH WITH COLOR SELECTED BY ARCHITECT. FRAME AS REQUIRED FOR CEILING TYPE WITH DIFFUSER PANEL TO MATCH GRID SIZE WHERE INSTALLED IN A LAY IN CEILING. MAXIMUM NECK VELOCITY SHALL BE 700 FPM AND MAXIMUM NC LEVEL SHALL BE 25.

| CFM | NECK SIZE |
|---|---|
| 275 | 10” DIA. |

## DUCT TAKE-OFF FITTINGS SCHEDULE

LOW PRESSURE TAKE-OFF FITTINGS (TAKE-OFFS FROM MAIN DUCT) SHALL BE SIMILAR TO FLEXMASTER USA, INC. MODEL #CB-D CONICAL BELLMOUTH FITTING WITH DAMPER AND POSITIVE LOCKING WING NUT AND ROLLED BEAD, INSTALLED AS RECOMMENDED BY MANUFACTURER. ALL EDGES OF THE TAKE-OFF OPENING IN THE DUCT SHALL BE SEALED WITH FIRE RETARDANT DUCT SEALER.

## PLUMBING FIXTURE SCHEDULE

WC-1: FLOOR MOUNTED FLUSH VALVE WATER CLOSET (BARRIER FREE): AMERICAN STANDARD #3043.001 MADERA FLOWISE ADA EL 1.6, 16 1/2" HIGH WATER SAVER TOILET WITH SIPHON JET ACTION, ELONGATED BOWL, OFF-FLOOR MOUNTING, 1 ½" TOP SPUD, WHITE VITREOUS CHINA, 1.28 GALLONS PER FLUSH. FITTINGS SHALL INCLUDE SLOAN SOLIS 8111-1.28 SOLAR POWERED WITH BATTERY BACK-UP FLUSH VALVE WITH VACUUM BREAKER, CENTOCO 1500CC WHITE OPEN FRONT SEAT LESS COVER, CARRIER AND HARDWARE, BOLTS, ETC. WATER CLOSET SHALL BE MOUNTED AT HEIGHT TO MEET BARRIER FREE AND A.D.A. REQUIREMENTS OF 17" A.F.F TO TOP OF SEAT. INSTALLATION SHALL MEET A.D.A. REQUIREMENTS. CONTROL FOR FLUSH VALVE SHALL BE MOUNTED ON THE WIDE SIDE OF THE TOILET AREA.

WC-2: FLOOR MOUNTED FLUSH VALVE WATER CLOSET : AMERICAN STANDARD #2234.001 MADERA FLOWISE, 15" HIGH WITH SIPHON JET ACTION, ELONGATED BOWL, OFF-FLOOR MOUNTING, 1 ½" TOP SPUD, WHITE VITREOUS CHINA, 1.28 GALLONS PER FLUSH. FITTINGS SHALL INCLUDE SLOAN SOLIS 8111-1.28 SOLAR POWERED WITH BATTERY BACK-UP FLUSH VALVE WITH VACUUM BREAKER, CENTOCO 1500CC WHITE OPEN FRONT SEAT LESS COVER, CARRIER AND HARDWARE, BOLTS, ETC. CONTROL FOR FLUSH VALVE SHALL BE MOUNTED ON THE WIDE SIDE OF THE TOILET AREA.

L-1: COUNTERTOP LAVATORY: LAVATORY TO BE INTEGRAL SOLID SURFACE BASIN PROVIDED/INSTALLED BY GENERAL TRADES. FITTING SHALL INCLUDE SLOAN #EFX675.000.000 BASYS LOW INTEGRATED BASE FAUCET, SOLAR POWERED, BATTERY BACK-UP, 0.5 GPM FLOW, GRID DRAIN, P-TRAP, WHEEL HANDLE STOPS, TAILPIECE, ALL POLISHED CHROME FINISH, UNDERSINK PROTECTIVE PIPE COVERS, ETC. INSTALL THERMOSTATIC MIXING VALVE THAT IS ASSE 1070 LISTED UNDER EACH LAVATORY, PIPE TO HOT WATER SIDE OF FAUCET, AND ADJUST TO 105 DEGREE HOT WATER MAXIMUM AT FAUCET.

SH-1: STANDARD SHOWER FITTINGS: BRADLEY WS-1WCA-EF-S20-RSD STAINLESS STEEL SHOWER, THRU-WALL SUPPLY PIPING, PRESS-BALANCE VALVE WITH STOPS, RECESSED SOAP DISH AND BRASS BALL JOINT INSTITUTIONAL 2.0 GPM SHOWER HEAD. PROVIDE CHECK-STOPS, SEVERE SERVICE BRACKET AND ASSE SHOWER VALVE. VALVE SHALL MEET A.S.S.E STANDARD 1016. VERIFY MOUNTING HEIGHTS AND LOCATIONS WITH ARCHITECTURAL DRAWINGS BEFORE STARTING WORK. ADJUST VALVE TO PROVIDE 105 DEGREE MAXIMUM WATER TEMPERATURE FROM SHOWER HEAD.

CO-1: CLEANOUTS: PROVIDE ZURN Z-1400 SERIES DURA-COATED CAST IRON CLEANOUTS WITH BRONZE PLUG AS FOLLOWS:

EXTERIOR: ZB-1400 POLISHED BRONZE ROUND TOP
FINISHED FLOORS: ZN-1400 NICKEL BRONZE ROUND TOP
CERAMIC TILE: ZN-1400-T NICKEL BRONZE SQUARE TOP
CARPETED FLOORS: ZN-1400-CM NICKEL BRONZE WITH CARPET MARKER ROUND TOP
WALL CLEANOUTS: ZS-1469 STAINLESS STEEL ACCESS AS REQUIRED BY PIPE SIZE
HEAVY DUTY CLEANOUTS: (AT LOCATIONS OF VEHICLE/FORKLIFT TRAFFIC) ZN-1400HD

FD-1: FLOOR DRAIN (LOCATED IN A FINISHED FLOOR): ZURN ZN-415-5B CAST IRON FLOOR DRAIN WITH FLANGE, INTEGRAL REVERSIBLE CLAMPING COLLAR 5" DIAMETER SATIN NICKEL BRONZE STRAINER AND TRAP PRIMER CONNECTION WHERE REQUIRED. FURNISH A DEEP SEAL TRAP FOR EACH FLOOR DRAIN.

TP-1: TRAP SEALER: EACH FLOOR DRAIN SHALL HAVE A MEANS OF MAINTAINING THE WATER SEAL IN THE TRAP BY MEANS OF A TRAP SEALER.

TRAP SEAL: 2692 QUAD CLOSE TRAP SEAL DEVICE BY JAY R. SMITH MFG. CO. FOR FLOOR DRAIN. SIZE OF TRAP SEALER SHALL MATCH INTERNAL PIPE SIZE DIAMETER. FLOW RATES FOR TRAP SEAL ARE AS FOLLOWS: 2" - 8GPM. 3" - 24 GPM (LARGER FLOW DUE TO TRAP SEAL BEING LOWER IN DRAIN BODY). 3.5" - 14 GPM (TRAP SEAL INSTALLED IN STRAINER). 4" - 35 GPM.

PPC-1: UNDER LAVATORY PROTECTIVE PIPE COVERS: ZURN OR EQUAL "INSUL-GARD" TRAP AND STOP/RISER INSULATED COVERS SHALL BE FURNISHED AND INSTALLED ON ALL EXPOSED PIPING AND VALVES BELOW LAVATORIES TO MEET ADA REQUIREMENTS. THIS SHALL INCLUDE DRAIN, CW & HW PIPING, VALVES, ETC.

THERMOSTATIC MIXING VALVE SHALL BE FURNISHED AND INSTALLED UNDER EACH NEW AND EXISTING LAVATORY, HAND SINK, COUNTER SINK, AND SIMILAR FIXTURE. VALVE SHALL BE LISTED ASSE 1070, 1/2" SIZE WITH STRAINER AND CHECK-STOPS. PIPE TO HOT WATER SIDE OF FAUCET AND ADJUST TO PROVIDE 105 DEGREE HOT WATER AT FAUCET

WATER HAMMER ARRESTORS: PROVIDE STAINLESS STEEL, BELLOWS TYPE, PRESSURE RATED FOR 250 PSI, SIMILAR TO ZURN Z-1 700

## MECHANICAL SPECIFICATIONS

REFERENCE
INSTRUCTIONS TO BIDDERS, CONDITIONS OF THE CONTRACT, DIVISION 1, AND THIS SECTION SHALL APPLY TO THIS DIVISION.

CODES, PERMITS & INSPECTIONS
CONTRACTOR SHALL SECURE PERMITS, INSPECTIONS AND TESTS, PAY ALL FEES, DEPOSITS, AND COSTS FOR ALL MECHANICAL UTILITIES AND SERVICES INVOLVED AND PRESENT THE OWNER A CERTIFICATE OF INSPECTION AND APPROVAL FROM THE DEPARTMENT HAVING JURISDICTION OVER HIS WORK. SHOULD ANY CHANGE IN THE DRAWINGS AND SPECIFICATIONS BE REQUIRED TO COMPLY WITH ALL APPLICABLE CODES, RULES, REGULATIONS, ETC., CONTRACTOR SHALL NOTIFY THE ENGINEER BEFORE SUBMITTING BID. AFTER ENTERING INTO CONTRACT, ALL WORK NECESSARY TO MEET THE REQUIREMENTS SHALL BE COMPLETED WITHOUT ADDITION TO THE CONTRACT AMOUNT. WHERE WORK INDICATED IS MORE THAN REQUIRED BY CODES, ETC., SUCH WORK SHALL BE AS INDICATED.

JOB OBSERVATION
NOTWITHSTANDING ANY REFERENCE TO ANY CODE, RULE OR REGULATION, ENGINEER SHALL HAVE NO RESPONSIBILITY FOR SAFETY ON THE JOB SITE, SHALL HAVE NO RIGHT TO CHANGE OR STOP THE WORK, SHALL NOT CONTROL THE MEANS OF THE WORK, AND SHALL NOT HAVE ANY DUTY TO PROVIDE SUPERVISION OF MEANS, METHODS, PROCESSES OR PROCEDURES OF CONSTRUCTION.

FIRST-CLASS WORKABLE SYSTEMS
FIRST CLASS WORKABLE SYSTEMS SHALL BE PROVIDED BY THE CONTRACTOR. IF, IN THE OPINION OF THE CONTRACTOR, CHANGES IN THE DRAWINGS OR SPECIFICATIONS ARE REQUIRED TO PRODUCE FIRST-CLASS WORKABLE SYSTEMS, CONTRACTOR SHALL REQUEST AN INTERPRETATION FROM THE ENGINEER BEFORE PROCEEDING WITH THE WORK. IF THE CONTRACTOR FAILS TO MAKE SUCH A REQUEST, NO EXCUSE WILL THEREAFTER BE ENTERTAINED FOR FAILURE TO PROVIDE FIRST-CLASS WORKABLE SYSTEMS.

DRAWINGS
DRAWINGS ARE INTENDED TO SHOW THE GENERAL ARRANGEMENT, DESIGN, AND EXTENT OF THE WORK AND ARE DIAGRAMMATIC. THEY ARE NOT INTENDED TO BE SCALED FOR ROUGH-IN MEASUREMENTS NOR TO SERVE AS SHOP DRAWINGS. THE ENGINEERS AND OWNER RESERVE THE RIGHT TO MAKE MINOR CHANGES IN THE LOCATION OF EQUIPMENT, DUCTWORK, PIPING, ETC. AT THE TIME OF ROUGH-IN WITHOUT ADDITIONAL COST TO THE OWNER. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS, LOCATIONS, ETC. FOR ACCURACY AND POSSIBILITY OF INTERFERENCES DUE TO FIELD CONDITIONS AND ACTUAL BUILDING STRUCTURE. FAILURE TO CHECK WILL BE NO REASON FOR ADDITIONAL COMPENSATION.

SHOP DRAWINGS
SUBMIT ELECTRONIC SET OF COMPLETE SHOP DRAWINGS FOR ALL MECHANICAL EQUIPMENT AND MATERIALS TO THE ENGINEER FOR REVIEW BEFORE FABRICATION OF WORK OR ORDERING OF EQUIPMENT. DRAWINGS MUST BE REVIEWED BY THE ENGINEER BEFORE ORDERING EQUIPMENT. ALL SHOP DRAWINGS REJECTED SHALL BE CORRECTED AND RESUBMITTED TO THE ENGINEER BEFORE ORDERING.

STANDARDS OF INDUSTRY
STANDARDS OF INDUSTRY SHALL BE FOLLOWED WHEN APPLICABLE.

GUARANTEE
CONTRACTOR SHALL GUARANTEE EQUIPMENT, MATERIALS AND WORKMANSHIP IN HIS CONTRACT AND SHALL MAKE GOOD AT HIS OWN EXPENSE ANY DEFECTS WHICH MAY DEVELOP WITHIN ONE YEAR AFTER START-UP OF EACH PIECE OF EQUIPMENT, OCCUPANCY BY OWNER, OR FINAL ACCEPTANCE OF THE JOB, WHICHEVER OCCURS FIRST.

CONTRACTORS RECORD/AS-BUILT DRAWINGS
CONTRACTOR SHALL MAINTAIN AND KEEP AN UP-TO-DATE SET OF “RECORD” DRAWINGS REFLECTING "AS-BUILT" CONDITIONS OF THEIR WORK. CONTRACTOR SHALL INDICATE EXACT DIMENSIONS AND ELEVATIONS FOR ALL UNDERGROUND WORK. UPON COMPLETION OF THIS PROJECT, THE CONTRACTOR SHALL DELIVER TO THE ENGINEER THE “RECORD” DRAWINGS.

LOCAL CONDITIONS
BEFORE SUBMITTING BIDS AND/OR PROCEEDING WITH THE PROJECT, THE CONTRACTOR SHALL EXAMINE ALL DRAWINGS, SPECIFICATIONS AND ADDENDA ISSUED FOR THE PROJECT AND SHALL EXAMINE THE PROJECT SITE. THE CONTRACTOR SHALL THOROUGHLY INVESTIGATE THE PROJECT SITE AND BECOME FULLY INFORMED AS TO THE EXTENT OF HIS WORK AND COORDINATION OF THIS WORK WITH ALL OTHER TRADES AND INCLUDE ALL COST TO PERFORM AND COMPLETE WORK FOR THIS PROJECT PER DRAWINGS AND SPECIFICATION AND ALL CODES.

OPERATION AND MAINTENANCE MANUALS
CONTRACTOR SHALL FURNISH TO THE ARCHITECT/ENGINEER TWO (2) COPIES OF AN APPROVED BOUND (3-RING BINDER) BOOK WITH TABS FOR SECTIONS COVERING EACH ITEM OF EQUIPMENT. THESE NOTEBOOKS SHALL INCLUDE SHOP DRAWINGS, MAINTENANCE MANUALS, OPERATING MANUALS AND PARTS LIST AS NECESSARY TO INSTRUCT THE OWNER ON PROPER OPERATION AND USE AS WELL AS MAINTENANCE FOR EACH PIECE OF EQUIPMENT FOR THIS PROJECT. THESE BOOKS SHALL ALSO INCLUDE CONTRACTOR'S, SUBCONTRACTOR'S AND MANUFACTURER'S NAMES, TELEPHONE NUMBERS AND ADDRESSES. MANUALS SHALL ALSO INCLUDE SEQUENCE OF OPERATION, CONTROL EQUIPMENT LITERATURE, WIRING AND CONTROL DIAGRAMS, CERTIFICATES OF GUARANTEES, CERTIFICATES OF INSPECTION, MECHANICAL SYSTEM TEST AND BALANCING REPORTS. THE CONTRACTOR SHALL ACCUMULATE AND SUMMARIZE THE CONTROL AND MAINTENANCE SEQUENCE IN TYPEWRITTEN SHEET TO BE INCLUDED IN THE REPORT. THESE MANUALS SHOULD BE HARD BOUND IN BEST QUALITY BINDERS AND TURNED OVER TO THE ARCHITECT/ENGINEER FOR APPROVAL AT COMPLETION OF PROJECT.

START-UP SERVICE
CONTRACTOR SHALL ARRANGE WITH EQUIPMENT MANUFACTURERS FOR PROVIDING COMPLETE START-UP SERVICE FOR ALL EQUIPMENT ON THIS PROJECT. ALL START-UP SERVICES SHALL BE PERFORMED IN THE PRESENCE OF THE OWNER AND/OR ENGINEER. A WRITTEN REPORT SHALL BE SUBMITTED TO THE ENGINEER STATING DATE OF START-UP, MANUFACTURER APPROVAL OF SYSTEM OPERATION AND INSTALLATION.

CUTTING AND PATCHING
CUTTING AND PATCHING SHALL BE BY TRADES REGULARLY ENGAGED IN THIS TYPE OF WORK, EXCEPT DRILLING OF HOLES SHALL BE DONE BY THE TRADES REQUIRING SAME. STRUCTURAL MEMBERS SHALL NOT BE CUT OR DRILLED.

SALVAGEABLE MATERIAL
SALVAGEABLE MATERIAL SHALL REMAIN THE PROPERTY OF THE OWNER AND SHALL BE STORED AT LOCATIONS AS DIRECTED BY THE OWNER, EXCEPT THE OWNER RESERVES THE RIGHT TO DESIGNATE CERTAIN ITEMS OF SALVAGEABLE MATERIAL TO BE REMOVED FROM THE PROJECT SITE.

STORAGE FACILITY
FURNISH AND MAINTAIN A WEATHERPROOF STORAGE FACILITY ON THE SITE OF ADEQUATE SIZE TO STORE MISCELLANEOUS EQUIPMENT AND/OR MATERIALS TO PREVENT EXPOSURE TO THE WEATHER. LOCATION OF SHED SHALL BE DETERMINED BY THE OWNER AND ARCHITECT/ENGINEER. THE OWNER RESERVES THE RIGHT TO DENY STORAGE OF MATERIALS OR EQUIPMENT IN ANY EXISTING OR NEW BUILDINGS.

PROTECTION FROM DAMAGE
THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL MATERIALS, EQUIPMENT, ETC. AND ALL WORK INSTALLED BY HIMSELF AND SHALL PROTECT IT FROM DAMAGE UNTIL FINAL ACCEPTANCE OF THIS PROJECT BY THE OWNER.
FURNISH ALL COVERINGS AND PROTECTION FROM DIRT, DUST, RAIN, STORM, HEAT, TRAFFIC, WEAR, ETC. AND ALL POSSIBLE INJURY INCLUDING THAT BY OTHER WORKMEN. ANY EQUIPMENT, WORKMANSHIP, MATERIALS, ETC. DAMAGED PRIOR TO FINAL ACCEPTANCE BY THE OWNER OF THIS PROJECT SHALL BE PROPERLY REPAIRED AT NO EXPENSE TO THE OWNER.
PROTECT ALL PLUMBING FIXTURES AND OTHER EQUIPMENT FROM DAMAGE BY COVERING OR COATING. ANY DENTED, SCRATCHED, RUSTED OR MARRED SURFACE FINISHES WILL NOT BE ACCEPTED.
PROTECT ALL EQUIPMENT, MATERIALS, ETC. FROM FREEZING.

BELOW GROUND SANITARY, STORM AND DRAINAGE (MUST BE APPROVED BY GOVERNING AUTHORITIES)
UNDER BUILDING AND TO 5'-0” OUTSIDE THE BUILDING, SCHEDULE 40 PVC OR SERVICE WEIGHT CAST IRON. FROM 5'-0” OUTSIDE THE BUILDING, SCHEDULE 40 PVC EXCEPT DRAINS UNDER DRIVE OR PARKING AREAS SHALL BE CAST IRON UNLESS NOTED OTHERWISE.

ABOVE GROUND SANITARY, STORM AND DRAINAGE (MUST BE APPROVED BY GOVERNING AUTHORITIES)
SCHEDULE 40 PVC OR FOR 3” AND LARGER SERVICE WEIGHT CAST IRON HUBLESS WITH SS CLAMP-AND-SHIELD ASSEMBLIES OR HUB AND SPIGOT WITH NEOPRENE JOINING GASKET AND FOR 2 1/2” AND SMALLER SCHEDULE 40 GALVANIZED PIPE WITH SCREWED FITTINGS. NOTE: LOCAL AUTHORITY APPROVAL (INCLUDING FIRE MARSHAL) SHALL BE OBTAINED IN WRITING FOR USE OF PVC PIPING ABOVE GRADE.

DOMESTIC WATER PIPING, ABOVE GRADE INSIDE BUILDING (MUST BE APPROVED BY GOVERNING AUTHORITIES).

DOMESTIC WATER PIPING INCLUDES COLD WATER, HOT WATER AND HOT WATER RETURN PIPING.

PIPING: 6" AND SMALLER SHALL BE: COPPER TUBING: ASTM B88, TYPE L, HARD DRAWN, SEAMLESS.
FITTINGS: ASME B16.18 CAST BRONZE TEE TAP OR ASME B16.22 WROUGHT COPPER WITH ASTM B32 SOLDER JOINTS AND LEAD FREE GRADE 95-A TIN - ANTIMONY OR TIN AND SILVER WITH MELTING RANGE 430 TO 535 DEGREES F OR AWS A5BCUP SILVER BRAZE.

PIPING AND MECHANICAL JOINT SYSTEM: 2" THRU 6" MAY BE MECHANICAL PIPE COUPLINGS OF A BOLTED TYPE WITH A CENTRAL CAVITY DESIGN PRESSURE-RESPONSIVE GASKET ALONG WITH GROOVED END COPPER OR BRONZE FITTINGS AS AVAILABLE, AS MANUFACTURED BY VICTAULIC OR GRUV-LOK.

COPPER TUBE: ASTM B-88 (TYPE K OR L) - ROLL GROOVED ONLY.

VALVES

GATE VALVES:
UP TO AND INCLUDING 3 INCHES: BRONZE BODY, BRONZE TRIM, SCREWED BONNET, RISING STEM, HANDWHEEL, INSIDE SCREW WITH BACKSEATING STEM, SOLID WEDGE DISC, ALLOY SEAT RINGS, SOLDER OR THREADED ENDS.
OVER 3 INCHES: IRON BODY, BRONZE TRIM, BOLTED BONNET, RISING STEM, HANDWHEEL, OUTSIDE SCREW AND YOKE, SOLID WEDGE DISC WITH BRONZE SEAT RINGS, FLANGED OR GROOVED ENDS. (GROOVED ENDS ONLY IF APPROVED BY ARCHITECT/ENGINEER).

SWING CHECK VALVES:
UP TO AND INCLUDING 3 INCHES: BRONZE BODY, BRONZE TRIM, BRONZE ROTATING SWING DISC, WITH COMPOSITION DISC, SOLDER OR THREADED ENDS.
OVER 3 INCHES: IRON BODY, BRONZE TRIM, BRONZE OR BRONZE FACED ROTATING SWING DISC, RENEWABLE DISC AND SEAT, FLANGED ENDS OR GROOVED ENDS IF VICTAULIC GROOVED END FITTINGS ARE USED.

BALL VALVES:
UP TO AND INCLUDING 2 INCHES: BRONZE ONE PIECE BODY, STAINLESS STEEL BALL, TEFLON SEATS AND STUFFING BOX RING, LEVER HANDLE WITH BALANCING STOPS, SOLDER OR THREADED ENDS.
OVER 2 INCHES: CAST STEEL BODY, CHROME PLATED STEEL BALL, TEFLON SEAT AND STUFFING BOX SEALS, LEVER HANDLE, OR GEAR DRIVE HANDWHEEL FOR SIZES 10 INCHES AND OVER, FLANGED. DUCTILE IRON BODY, CHROME PLATED CARBON STEEL BALL AND STEM, TFE SEATS, LEVER HANDLE OR GEAR OPERATOR, GROOVED ENDS. VICTAULIC SERIES 726.

BUTTERFLY VALVES:
BODY: PPS (POLYPPHENYLENE SULFIDE) COATED CAST OR DUCTILE IRON WITH RESILIENT REPLACEABLE EPDM SEAT, WAFER OR LUG ENDS OR GROOVED ENDS IF VICTAULIC GROOVED END FITTINGS ARE USED. DISC: ALUMINUM BRONZE, EPDM ENCAPSULATED DUCTILE IRON OR STAINLESS STEEL. OPERATOR: 10 POSITION LEVER HANDLE UP TO 4". LARGER THAN 4" SHALL HAVE GEAR DRIVE HANDWHEEL.

UNIONS
UNIONS OR FLANGES SHALL BE USED AT EQUIPMENT CONNECTIONS. DIELECTRIC CONNECTIONS BETWEEN COPPER AND IRON OR STEEL PIPE SHALL BE MADE WITH DIELECTRIC NIPPLES SIMILAR TO VICTAULIC STYLE 47. A BRASS ADAPTER DIELECTRIC UNION IS NOT ACCEPTABLE.

PLATES AND SLEEVES
PROVIDE AND INSTALL PIPE SLEEVES FOR ALL PIPING AND DUCTS PASSING THROUGH WALLS, FLOORS AND CEILINGS. SLEEVES THROUGH WALLS BELOW GRADE AND AT ALL FLOOR SHALL BE BLACK STEEL. SLEEVES THROUGH WALLS AND CEILINGS MAY BE 20 GAUGE GALVANIZED SHEET METAL. WHERE PIPES ARE INSULATED, SLEEVES SHALL BE LARGE ENOUGH TO PASS THE INSULATION. ALL PENETRATION VOIDS SHALL BE SEALED SMOKE TIGHT WITH NON-COMBUSTIBLE MATERIALS SIMILAR TO 3M OR HILTI FIRESTOP SYSTEMS TO MAINTAIN THE INTEGRITY OF THE FIRE RATED STRUCTURE. IN A NON-FIRE RATED ASSEMBLY, SEAL ALL VOIDS WITH NON-HARDENING SEALANT.

HANGERS AND SADDLES
SHALL BE MODERN PIPE SUPPORTS CORP., GRINNELL/ANVIL, AUTO GRIP OR M-CO. FOR COPPER PIPE WITH STEEL HANGERS, CLEAN AND WRAP PIPE WITH TWO LAYERS OF PLASTIC INSULATING TAPE AT POINTS OF CONTACT. HANGERS FOR PIPING WITH VAPOR BARRIER SEALED INSULATION SHALL BE MULTIPURPOSE PIPE SADDLES FITTING OVER THE INSULATION. WIRE OR PERFORATED STRAP IRON WILL NOT BE PERMITTED FOR PIPE SUPPORTS. HANGERS SHALL BE CLEVIS OR SPLIT RING TYPE WITH VERTICAL ADJUSTMENT AND BEAM CLAMP SIMILAR TO GRINNELL/ANVIL FIG. 260, WITH MAXIMUM SPACING PER ASHRAE STANDARDS:

| PIPE SIZE | STEEL PIPE | COPPER PIPE | PVC PIPE | ROD SIZE |
|---|---|---|---|---|
| 1/2 TO 3/4 INCH | 6 FEET | 5 FEET | 4 FEET | 3/8” |
| 1 INCH | 7 FEET | 5 FEET | 4 FEET | 3/8” |
| 1 1/4 INCH | 7 FEET | 7 FEET | 4 FEET | 3/8” |
| 1 1/2 INCH | 7 FEET | 7 FEET | 4 FEET | 1/2” |
| 2 INCH | 10 FEET | 8 FEET | 4 FEET | 1/2” |
| 2 1/2 INCH | 11 FEET | 9 FEET | 4 FEET | 5/8” |
| 3 INCH | 11 FEET | 9 FEET | 4 FEET | 5/8” |
| 3 1/2 INCH | 13 FEET | 11 FEET | 4 FEET | 5/8” |
| 4 INCH | 14 FEET | 12 FEET | 4 FEET | 5/8” |

CONFORM TO ASME B31.9, ASTM F708, MSS SP58, MSS SP69 AND MSS SP89. HANGERS FOR HOT PIPE SIZES ½ TO 1½ INCH: MALLEABLE IRON, ADJUSTABLE SWIVEL, SPLIT RING. HANGERS FOR COLD PIPES SIZES ½" TO 1½" AND HOT AND COLD PIPE SIZES 2 INCHES AND OVER: CARBON STEEL, ADJUSTABLE, CLEVIS. HANGERS FOR HOT PIPE SIZES THRU 4 INCHES: CARBON STEEL, ADJUSTABLE, CLEVIS. HANGERS FOR HOT PIPE SIZES 5 INCHES AND OVER: ADJUSTABLE STEEL YOKE, CAST IRON ROLL, DOUBLE HANGER.

TESTING, FLUSHING AND CLEANING OF PIPING SYSTEMS

SANITARY AND STORM PIPING: TESTING OF SYSTEM SHALL BE PER STATE PLUMBING CODE AND CONDUCT WATER, AIR OR PEPPERMINT TEST ON THE ENTIRE SYSTEM. TEST UNDERGROUND SANITARY, STORM AND VENT PIPING WITH AT LEAST A 10 FOOT HEAD OF WATER.

DOMESTIC WATER PIPING: BEFORE ANY FIXTURES ARE CONNECTED, HYDROSTATICALLY TEST AT 100 PSIG OR 50 PSIG IN EXCESS OF THE WORKING PRESSURE WHICHEVER IS GREATER, AT THE LOWEST POINT IN THE SYSTEM FOR A MINIMUM OF (4) HOURS. THIS PRESSURE TO BE ON PIPING ONLY, NOT ON FIXTURES.

CHLORINATION OF DOMESTIC WATER PIPING:
ALL DOMESTIC WATER PIPING AND EQUIPMENT SHALL BE COMPLETELY FLUSHED OUT AND CHLORINATED BEFORE PLACING SYSTEM IN SERVICE. CHLORINATION PROCEDURE SHALL BE IN ACCORDANCE WITH APPLICABLE LOCAL CODES AND STATE DEPARTMENT OF HEALTH. CHLORINE SHALL BE ADDED AT A RATE SUFFICIENT TO PROVIDE A SOLUTION MIXTURE OF AT LEAST 50 PPM AND HELD IN SYSTEM FOR A 24 HOUR RETENTION, AFTER IT SHALL BE FLUSHED OUT UNTIL THE CHLORINE RESIDUAL DOES NOT EXCEED 0.5 PPM.

ASBESTOS INSULATION
ALL EXISTING ASBESTOS INSULATION ON EXISTING PIPING, EQUIPMENT, ETC. WHERE TIE-INS ARE REQUIRED, SHALL BE REMOVED BY THE OWNER.

PIPE INSULATION ON INDOOR SYSTEMS
PIPE INSULATION SHALL BE AS MANUFACTURED BY ARMSTRONG, CERTAINTEED, KNAUF, MANSVILLE OR OWENS-CORNING. OWENS-CORNING NUMBERS ARE GIVEN TO ESTABLISH TYPES. ALL INSULATIONS, COVERINGS, VAPOR BARRIERS, ADHESIVES, ETC. SHALL BE CLASS A, MAXIMUM OF 25 FLAME SPREAD, 35 FUEL CONTRIBUTED AND 50 SMOKE DEVELOPED RATING. INSULATION SHALL HAVE VAPOR BARRIER AND BE UL RATED. INSULATION SHALL BE OWENS-CORNING FIBERGLAS ASJ-SSL II PIPE COVERING WITH FACTORY APPLIED DOUBLE PRESSURE SENSITIVE ADHESIVE SYSTEM TO PROVIDE POSITIVE CLOSURES AND VAPOR BARRIER INTEGRITY.

ALL LONGITUDINAL JOINTS SHALL BE SECURED WITH SELF SEALING LAPS. ALL TRANSVERSE JOINTS SHALL BE SECURED WITH SELF-SEALING BUTT STRIPS. BUTT STRIPS SHALL BE MINIMUM 3" WIDE. APPLY INSULATION TO PIPE WITH ALL JOINTS BUTTED TIGHTLY TOGETHER. FITTINGS, INCLUDING VALVES, FLANGES, UNIONS, ETC. SHALL BE INSULATED WITH THE SAME THICKNESS AS THE REQUIRED PIPE INSULATION AND COVERED WITH ZESTON OR SPEEDLINE PVC FITTING COVER.

INSULATION THICKNESS SHALL BE AS FOLLOWS:

| PIPING SYSTEM | PIPE SIZES | INSULATION THICKNESS |
|---|---|---|
| DOMESTIC COLD WATER | ALL SIZES | 1" |
| DOMESTIC HOT WATER | UP THRU 1 1/4" | 1" |
| AND HOT WATER RETURN | 1 1/2" AND LARGER | 1 1/ 2" |
| HEATING HOT WATER (220OF AND BELOW) | UP THRU 1 1/4" | 1 1/2" |
| AND AIR SEPARATOR TANK | 1 1/2" AND LARGER | 2" |

CLEAN ALL SURFACES BEFORE APPLYING COVERING. INSULATION SHALL BE CONTINUOUS THROUGH WALLS, FLOORS, CEILINGS, ETC. TERMINATE AND SEAL INSULATION AT BOTH ENDS OF UNINSULATED UNIONS AND FLANGES BY A NEAT 45 DEGREE BEVEL. INSTALL ALL INSULATION IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS.

PIPE IDENTIFICATION
ALL PIPING SHALL BE IDENTIFIED PER ANSI/OSHA OR OWNER'S STANDARDS WITH COLOR PIPE BANDS, IDENTIFICATION LABELS AND FLOW ARROWS. PIPES SHALL BE BANDED AND LABELED ON 10'-0" CENTERS ON CONTINUOUS LINES, AT EQUIPMENT CONNECTIONS, AT BOTH SIDES OF A WALL THROUGH WHICH PIPE PASSES AT EVERY BRANCH CONNECTION, ON PIPING WITHIN SIGHT OF AN ACCESS DOOR OR PANEL. SHOW SLOPE DIRECTIONAL ARROWS AT EACH IDENTIFICATION POINT. LABELS, FLOW ARROWS AND STENCIL AND PAINT SHALL BE 1" HIGH ON PIPING UP TO 2 1/2" AND SHALL BE 2" HIGH ON PIPE SIZES OF 3" AND LARGER. BANDS SHALL BE 1 1/2" WIDE. LABELS SHALL BE AS MANUFACTURED BY SETON OR W.H. BRADY COMPANY OR EQUAL. VERIFY TYPE, SIZE AND COLORS OF PIPE IDENTIFICATION WITH OWNER.

GENERAL PLUMBING AND PIPING NOTES

ALL PLUMBING FIXTURES SHALL BE INDEPENDENTLY VALVED WITH CHROME PLATED OR BRASS STOPS.

PIPING SHALL BE COMPLETE FROM SERVICE CONNECTION TO ALL FIXTURES, EQUIPMENT, OUTLETS, ETC.

ALL BRACKETS, CLEATS, PLATES, ANCHORS, ETC. REQUIRED TO SUPPORT FIXTURES OR PIPING SHALL BE FURNISHED.

SHUT OFF VALVES SHALL BE INSTALLED AT ALL BRANCH LINES OFF MAIN PIPING, OR WHERE MAINS DIVIDE/SEPARATE TO SERVE DIFFERENT AREAS, TO ALLOW ISOLATION OF ALL BRANCH PIPING AND SYSTEMS THEY SERVE SUCH AS TOILET ROOMS, AREAS OR WINGS OF THE BUILDING, ETC.

FIXTURE CONNECTIONS

IN GENERAL, UNLESS OTHERWISE NOTED ON THE DRAWINGS, THE SIZES OF ALL THE BRANCH CONNECTIONS TO FIXTURES SHALL BE NO SMALLER THAN THOSE LISTED IN THE FOLLOWING SCHEDULE AND AS REQUIRED BY LOCAL AND STATE PLUMBING CODES, LATEST EDITION:

| FIXTURE | WASTE | VENT | C.W. | H.W. |
|---|---|---|---|---|
| LAVATORY | 1¼” | 1¼” | ½” | ½” |
| SINKS (GENERAL) | 1½” | 1½” | ½” | ½” |
| JANITOR'S SERVICE SINK | 3” | 2” | ½” | ½” |
| WATER CLOSET-FLUSH VALVE | 4” | 2” | 1¼” | -- |
| URINAL-FLUSH VALVE | 2” | 2” | 1” | -- |
| WALL HYDRANTS (HOSE BIBB) | -- | -- | ¾” | -- |
| DRINKING FOUNTAIN | 1½” | 1½” | ½” | -- |
| SHOWERS | 2” | 2” | ¾” | ¾” |

DUCTWORK
DUCTS, CASINGS, HOUSINGS, ETC. SHALL BE FABRICATED FROM, PRIME QUALITY, HOT DIP GALVANIZED STEEL SHEET AS RECOMMENDED IN THE LATEST ISSUES OF ASHRAE GUIDE AND SMACNA DUCT MANUALS IN VARIABLE AIR VOLUME SYSTEMS, WHEN USED. SUPPLY AIR DUCTS LOCATED BETWEEN AIR HANDLING SYSTEM AND VAV BOXES; DUCT CONSTRUCTION AND INSTALLATION SHALL MEET SMACNA STANDARDS FOR 6" W.C. FOR ALL OTHER SUPPLY AIR DUCTWORK AND EXHAUST AIR, RETURN AIR, OUTSIDE AIR INTAKE AND RELIEF AIR DUCTS, DUCT CONSTRUCTION AND INSTALLATION SHALL MEET SMACNA STANDARDS FOR 2" W.C.

RECTANGULAR DUCTS SHALL HAVE TEES, ELBOWS AND BENDS WITH A MINIMUM THROAT RADIUS OF 1 TIMES THE DUCT WIDTH AND BE OF THE SAME GAUGE AND MATERIAL AS THE STRAIGHT DUCT. INCREASE DUCT SIZES GRADUALLY, NOT EXCEEDING 15 DEGREES DIVERGENCE IF POSSIBLE; MAXIMUM 30 DEGREES DIVERGENCE UPSTREAM OF EQUIPMENT AND 45 DEGREES CONVERGENCE DOWNSTREAM. WHERE VOLUME BOXES ARE CONNECTED TO DUCT MAIN OR WHERE DIFFUSERS ARE CONNECTED TO DUCT BRANCHES BY ROUND FLEX DUCT, INSTALL DUCT SPIN-IN FITTINGS SUCH AS FLEXMASTER USA, INC. MODEL #FLD WITH DAMPER AND POSITIVE LOCKING WING NUT. SEAL ALL EDGES WITH FIRE RETARDANT DUCT SEALER. FLEXIBLE INSULATED DUCTS (CONNECTIONS FROM MAIN DUCT TO VOLUME BOX AND/OR FROM DUCT BRANCH TO DIFFUSERS) SHALL BE FLEXMASTER USA, INC. TYPE #3. USE MAXIMUM LENGTH OF 5'-0" TO EACH CONNECTION. INSTALL FLEXIBLE DUCT WITH MINIMUM OF BENDS USING LONG RADIUS BENDS ONLY.

DUCT SEALANT
ALL DUCTWORK INCLUDING SUPPLY AIR, OUTSIDE AIR, RETURN AIR, EXHAUST AIR AND RELIEF AIR DUCT SYSTEMS SHALL HAVE ALL JOINTS SEALED. DUCTWORK DESIGNED AT SMACNA 6" PRESSURE SHALL MEET SMACNA CLASS “A” SEAL REQUIREMENTS. DUCTWORK DESIGNED AT SMACNA 2" PRESSURE SHALL MEET SMACNA CLASS “C” SEAL REQUIREMENTS.

DUCT HANGERS
HORIZONTAL STEEL DUCTWORK SHALL BE SUPPORTED BY MEANS OF TRAPEZE BARS AND ROUND STEEL ROD OF SIZES LISTED BELOW. ROUND STEEL RODS SHALL BE ELECTRO-GALVANIZED ALL-THREAD ROD. HANGERS SHALL BE PROVIDED AT BOTH SIDES OF FLAT SIDED DUCTWORK FOR THE FULL HEIGHT OF DUCT. ROUND DUCTWORK SHALL BE PROVIDED WITH A BAND OF THE SAME SIZE AS THE HANGER TO COMPLETELY ENCIRCLE THE DUCT. BAND SHALL BE SECURED TO THE HANGER BY MEANS OF A MINIMUM 3/16" BOLT. MINIMUM DUCT HANGER SIZES SHALL BE AS LISTED BELOW

| D. DUCT SIZE | UPPER ATTACHMENT RATING | ROD | STEEL SPACING | MAXIMUM | MINIMUM NO. OF HANGERS | TRAPEZE SHELF ANGLE |
|---|---|---|---|---|---|---|
| UP TO 16" | 750 LBS. | 3/8" | 10' | 2 | 1 1/2"X1 1/2" X 3/16" | |
| 19" TO 36" | 1000 LBS. | 3/8" | 10' | 2 | 1 1/2"X1 1/2" X 3/16" | |
| 37" TO 120" | 3000 LBS. | 3/8" | 8' | 2 | 2"X 2"X1/4" | |

TESTING, ADJUSTING AND BALANCING

TESTING, ADJUSTING AND BALANCING SHALL BE PERFORMED BY AN INDEPENDENT CERTIFIED AGENCY IN ACCORDANCE WITH AABC, ADC, ASHRAE III, NEBB AND SMACNA STANDARDS. FURNISH TYPE WRITTEN ELECTRONIC REPORTS OF AIR AND WATER SYSTEMS BALANCE REPORTS TO THE ENGINEER INDICATING DESIGN AND ACTUAL QUANTITIES, NAMEPLATE DATA, ETC.

AIR SYSTEMS ADJUST AIR HANDLING, DISTRIBUTION SYSTEMS, AIR INLETS AND OUTLETS, ETC. TO PROVIDE SUPPLY, RETURN, EXHAUST, OUTSIDE AIR AND RELIEF AIR QUANTITIES TO WITHIN 10% OF REQUIRED OR DESIGNED AIR QUANTITIES. VERIFY THAT SYSTEMS ARE COMPLETE AND OPERABLE BEFORE COMMENCING WORK. VERIFY SYSTEMS ARE STARTED AND OPERATING AT A SAFE AND NORMAL OPERATION, TEMPERATURE CONTROL SYSTEMS ARE INSTALLED COMPLETE AND OPERABLE, PROPER THERMAL OVERLOAD PROTECTION IS IN PLACE FOR ELECTRICAL EQUIPMENT, FINAL FILTERS ARE CLEAN AND IN PLACE, DUCT SYSTEMS ARE CLEAN OF DEBRIS, FANS ARE ROTATING CORRECTLY, FIRE AND VOLUME DAMPERS ARE IN PLACE AND IN OPEN POSITIONS, AIR COIL FINS ARE CLEANED AND COMBED, ACCESS DOORS ARE CLOSED AND DUCT END CAPS ARE IN PLACE, AIR OUTLETS ARE INSTALLED AND CONNECTED, DUCT SYSTEM LEAKAGE IS MINIMIZED, ETC. MEASURE AND RECORD ALL AIR MOVING EQUIPMENT, AIR INLETS AND OUTLETS STATIC PRESSURES, RPM'S, ETC.

WATER SYSTEMS VERIFY THAT SYSTEMS ARE COMPLETE AND OPERABLE BEFORE COMMENCING WORK. VERIFY SYSTEMS ARE STARTED AT A SAFE AND NORMAL OPERATION, TEMPERATURE CONTROL SYSTEMS ARE INSTALLED COMPLETE AND OPERABLE, PROPER THERMAL OVERLOAD PROTECTION IS IN PLACE FOR ELECTRICAL EQUIPMENT, HYDRONIC SYSTEMS ARE FLUSHED, FILLED AND VENTED, PUMPS ARE ROTATING CORRECTLY, PROPER STRAINER BASKETS ARE CLEAN AND IN PLACE, SERVICE AND BALANCE VALVES ARE OPEN, ETC. ADJUST WATER SYSTEMS TO PROVIDE REQUIRED OR DESIGN QUANTITY AND TO PROVIDE SPECIFIED OR SCHEDULES PRESSURE DROPS AND FLOWS THROUGH EQUIPMENT, COILS, ETC. ADJUST FLOWS BY MEANS OF BALANCING COCKS, VALVES AND FITTINGS.

FIRE PROTECTION PIPING

SCOPE OF WORK

DESIGN AND REVISE THE EXISTING AUTOMATIC SPRINKLER AND STANDPIPE SYSTEM FOR ALL RENOVATED PORTIONS OF THE BUILDING. FURNISH AND INSTALL ALL PIPING, SPRINKLER AND ACCESSORIES AND APPURTENANCES FOR COMPLETE SYSTEMS AS SHOWN ON DRAWINGS AND HEREINAFTER SPECIFIED. THE ENTIRE INSTALLATION SHALL BE STRICTLY IN ACCORDANCE WITH NFPA STANDARD NO. 13, SPRINKLER SYSTEMS, AND SHALL MEET THE REQUIREMENTS OF THE OWNERS INSURANCE CARRIER, GOVERNING FIRE MARSHAL AND ALL OTHER AUTHORITIES HAVING JURISDICTION. SYSTEMS SHALL BE HYDRAULICALLY DESIGNED, DETAILED, FURNISHED AND INSTALLED BY A COMPETENT, EXPERIENCED AND LICENSED FIRE PROTECTION CONTRACTOR REGULARLY ENGAGED IN FURNISHING AND INSTALLING FIRE PROTECTION SYSTEMS. CONTACT CAMPUS FACILITIES AT (989) 964-4080 BEFORE WORKING ON THE FIRE PROTECTION SYSTEM. CONTRACTORS SHALL BE RESPONSIBLE FOR THE COST OF FALSE ALARMS TO THE KOCHVILLE FIRE DEPARTMENT CAUSED BY FAILURE TO CONTACT FACILITIES PRIOR TO WORK. A CONTINUOUS FIRE WATCH WITHIN AFFECTED AREAS MAY BE REQUIRED BY SVSU. COORDINATE WITH SVSU FOR EXACT DETAILS.

CONTRACTOR SHALL FURNISH COMPLETE DETAILED COMPUTER AIDED DESIGN (CAD) WORKING DRAWINGS, HYDRAULIC CALCULATIONS AND EQUIPMENT SHOP DRAWINGS OF THE SYSTEM AND SHALL SUBMIT THEM TO THE OWNERS INSURANCE CARRIER AND GOVERNING FIRE MARSHAL FOR THEIR REVIEW AND APPROVAL. SHOP DRAWINGS SHALL BEAR DESIGNERS/INSTALLERS STATE OF MICHIGAN LICENSE NUMBER AND CERTIFICATION NUMBER, AND HAVE APPROVAL OF FIRE MARSHALL BEFORE BEING SUBMITTED TO THE ENGINEER. EIGHT COPIES OF APPROVED DRAWINGS, CALCULATIONS, SHOP DRAWINGS AND PRODUCT DATA SHALL BE SUBMITTED TO ARCHITECT/ENGINEER FOR REVIEW. NO WORK SHALL BE COMMENCED BEFORE SHOP DRAWINGS ARE REVIEWED BY ARCHITECT/ENGINEER'S.

ALL PERMITS, LICENSES, FEES, INSPECTIONS AND ARRANGEMENTS REQUIRED FOR THE WORK UNDER THIS CONTRACT SHALL BE OBTAINED AND PAID FOR BY THE CONTRACTOR. DOCUMENTATION SHALL BE PROVIDED AS REQUIRED BY THE STATE FIRE MARSHAL. AT COMPLETION OF THE PROJECT, THE FIRE PROTECTION CONTRACTOR SHALL CLEAN, LUBRICATE AND OPERATE ALL CONTROL VALVES, ALARMS AND DEVICES. PROVIDE OWNER WITH TWO COPIES OF NFPA STANDARD NO. 25 ON INSPECTION, TESTING AND MAINTENANCE OF WATER BASED FIRE PROTECTION SYSTEMS AND MAINTENANCE AND PARTS LISTS FOR ALL EQUIPMENT INSTALLED. INSTALL HYDRAULIC DESIGN PLATE ON SPRINKLER RISER AS PER SECTION 10-5 AND PROVIDE SPARE SPRINKLER HEADS WITH WRENCHES IN WALL MOUNTED BOX NEAR RISER AS PER SECTION 3-2.9 IN THE 1999 EDITION OF NFPA 13.

CONTRACTOR SHALL BE RESPONSIBLE FOR TOTAL SYSTEM DESIGN AND LAYOUT OF SPRINKLER HEADS AND PIPING. FIRE PROTECTION CONTRACTOR SHALL BE LICENSED AND CERTIFIED BY THE STATE OF MICHIGAN FOR THE DESIGN AND INSTALLATION OF FIRE PROTECTION STANDPIPE, HOSE AND SPRINKLER SYSTEMS.

SPRINKLER HEADS FOR SUSPENDED CEILINGS SHALL BE: STANDARD COVERAGE SEMI-RECESSED PENDANT TYPE WITH MATCHING PUSH-ON ESCUTCHEON PLATE. (USED IN FINISH AREAS UNLESS NOTED OTHERWISE ON DRAWINGS). CHROME PLATED HEAD AND ESCUTCHEON. ESCUTCHEON PLATE FINISH: CHROME PLATED. FUSIBLE LINK SHALL BE GLASS BULB TYPE TEMPERATURE RATED FOR SPECIFIC AREA HAZARD. EXPOSED AREA SPRINKLER HEAD SHALL BE: STANDARD COVERAGE UPRIGHT TYPE WITH BRASS HEAD FINISH. FUSIBLE LINK SHALL BE: FUSIBLE SOLDER LINK TYPE TEMPERATURE RATED FOR SPECIFIC AREA HAZARD. GUARDS: FINISH TO MATCH SPRINKLER HEAD.

PIPE HANGERS AND SUPPORTS

PIPE HANGERS SHALL:

CONFORM TO NFPA 13 AND NFPA 14.
HANGERS FOR PIPE SIZES ½ TO 1½ INCH: MALLEABLE IRON, ADJUSTABLE SWIVEL, SPLIT RING.
HANGERS FOR PIPE SIZES 2 INCHES AND OVER: CARBON STEEL, ADJUSTABLE, CLEVIS.
MULTIPLE OR TRAPEZE HANGERS: STEEL CHANNELS WITH WELDED SPACERS AND HANGER RODS.
WALL SUPPORT FOR PIPE SIZES TO 3 INCHES: CAST IRON HOOK.
WALL SUPPORT FOR PIPE SIZES 4 INCHES AND OVER: WELDED STEEL BRACKET AND WROUGHT STEEL CLAMP.
VERTICAL SUPPORT: STEEL RISER CLAMP.
FLOOR SUPPORT: CAST IRON ADJUSTABLE PIPE SADDLE, LOCKNUT, NIPPLE, FLOOR FLANGE, AND CONCRETE PIER OR STEEL SUPPORT.
COPPER PIPE SUPPORT: CARBON STEEL RING, ADJUSTABLE, COPPER PLATED.

INSTALL PIPING IN ACCORDANCE WITH NFPA 13 FOR SPRINKLER SYSTEMS, NFPA 14 FOR STANDPIPE AND HOSE SYSTEMS, NFPA 24 FOR SERVICE MAINS AND NFPA 70 NATIONAL ELECTRICAL CODE AND ALL OTHER APPLICABLE CODES AND REGULATIONS. HYDROSTATICALLY TEST ENTIRE SYSTEM IN ACCORDANCE WITH NFPA 14. TEST SHALL BE WITNESSED BY AUTHORITY HAVING JURISDICTION AND ARCHITECT/ENGINEER.

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TSSF ARCHITECTS, INC.
ARCHITECTS PLANNERS
122 N. WASHINGTON AVENUE SAGINAW , MICHIGAN

RENOVATIONS TO RYDER CENTER: WOMENS LACROSSE LOCKER ROOM
SAGINAW VALLEY STATE UNIVERSITY
UNIVERSITY CENTER, MICHIGAM

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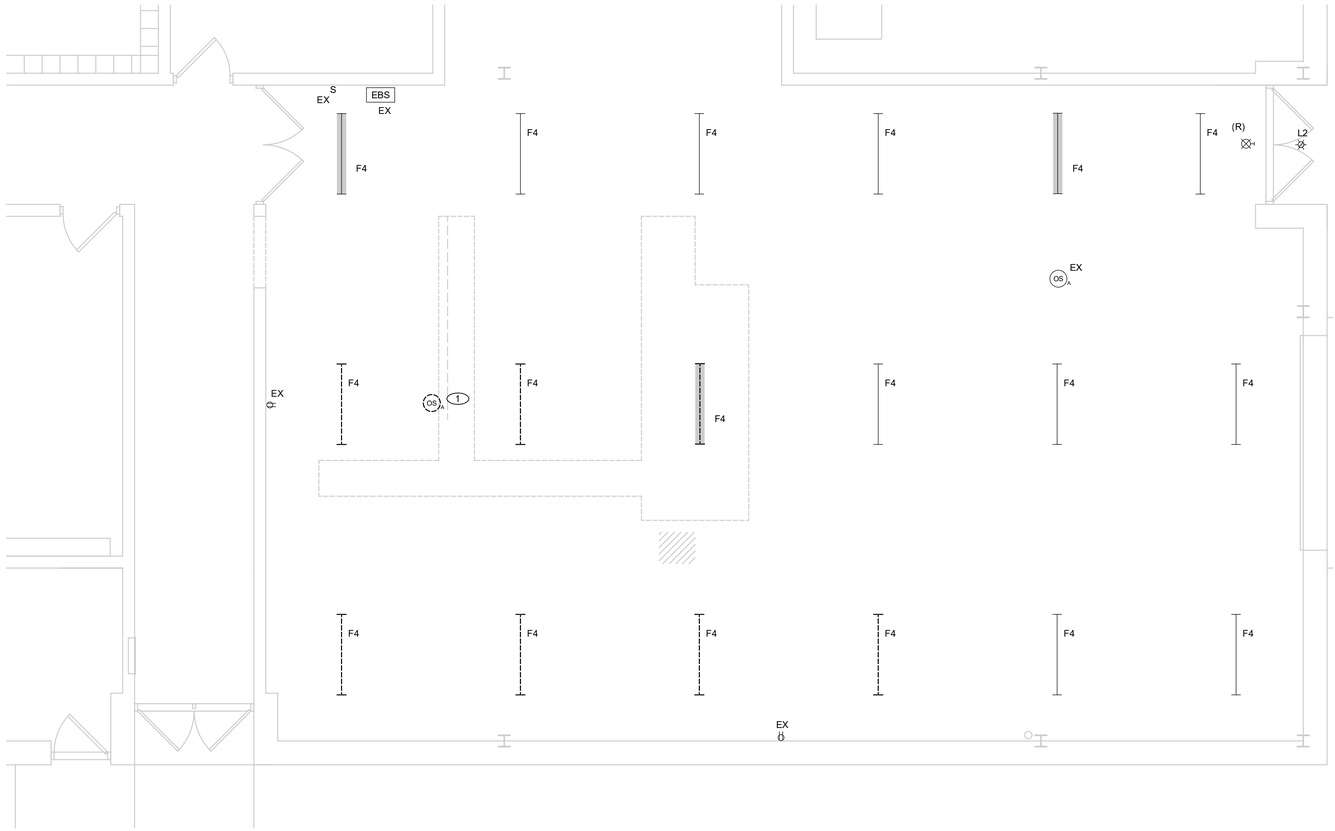
DRAWN BY RLM
DATE 08/05/22
APPROVED JWF
SHEET NO
M6.0
OF
PROJECT NO.
2224

2/3/2021 11:22 AM MICHAEL VOGTMANN (MVOGTMANN@MACMILLANASSOCIATES.COM) F:\27-TSSF\2022-2702 SVSU WOMEN'S LACROSSE LOCKER ROOM\2022-2702-M-M6.0 SCHEDU




NORTH

## PARTIAL FIRST FLOOR PLAN - ELECTRICAL DEMOLITION

1/4"=1'-0"

**GENERAL DEMOLITION NOTES**

1. ALL EXISTING LIGHTING AND POWER OUTSIDE THE DEMOLITION SCOPE LIMITS SHALL REMAIN UNLESS NOTED OTHERWISE.
2. REFER TO THE NEW LIGHTING, POWER AND SYSTEMS PLANS FOR UPGRADES.
3. EXISTING EXIT LIGHTS AND EMERGENCY LIGHTING SHOWN DASHED AND OR NOTED SHALL BE REMOVED. FIELD CONFIRM QUANTITIES AND LOCATIONS. CONTRACTOR SHALL REMOVE ALL EXIT LIGHTS AND EMERGENCY LIGHTS DISCOVERED ABOVE THOSE SHOWN AS PART OF THE PROJECT REQUIREMENTS THAT ARE LOCATED WITHIN THE SCOPE BOUNDARY.
4. CONTRACTOR SHALL FIELD CONFIRM ALL QUANTITIES OF ELECTRICAL ITEMS REQUIRED TO BE REMOVED AND OR RELOCATED ABOVE THOSE NOTED OR SHOWN THAT ARE WITHIN THE SCOPE LIMITS ALL SUCH ITEMS SHALL BE INCLUDED AS PART OF BID SUBMITTED.
5. DEVICE LOCATIONS ARE SHOWN DIAGRAMMATIC. FIELD CONFIRM THE EXACT LOCATION.
6. CONTRACTOR SHALL DISPOSE OF ALL DEMOED EQUIPMENT UNLESS NOTED OTHERWISE. THE OWNER RESERVES THE RIGHT TO ALL DEMOLITION ITEMS. EC SHALL PROVIDE ALL ITEMS THAT SVSU WISHES TO SAVE PLACE ON A PALLET TO BE STORED.
7. DASHED LINE SHOWN ON DEMOLITION SHEETS ARE ITEMS SHOWN TO BE REMOVED UNLESS NOTED OTHERWISE.
8. EC SHALL REMOVE ALL CONDUCTORS BACK TO SOURCE FOR ALL RECEPTACLES, LIGHTS, SWITCHES, ETC. SCHEDULED FOR REMOVAL UNLESS NOTED OTHERWISE.
9. PROVIDE BLANK COVER PLATES OVER UNUSED ROUGH-IN BOXES AT THE END OF THE PROJECT.
10. EXISTING CONDUIT MAY BE UTILIZED FOR NEW WIRING AT THE CONTRACTORS DISCRETION. ANY UNUSED CONDUIT SHALL BE COMPLETELY REMOVED INCLUDING ALL HANGERS AND SUPPORTS. PROPERLY SUPPORT EXISTING CONDUIT TO MEET CURRENT CODE.

**KEYED NOTES**

(1) REMOVE EXISTING OCCUPANCY SENSOR AND REPLACE IN NEW LOCATION.

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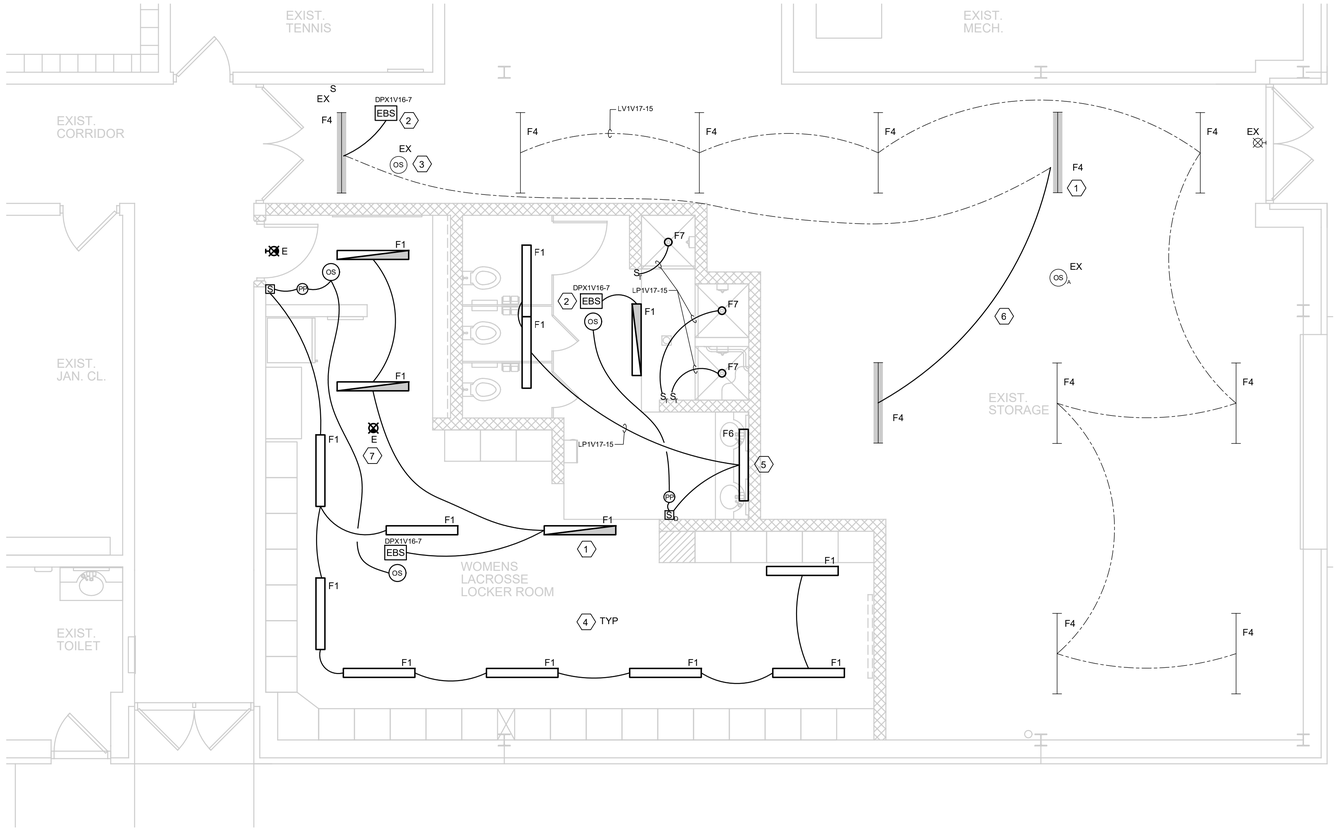


NORTH

## PARTIAL FIRST FLOOR PLAN - LIGHTING

1/4"=1'-0"

**KEYED NOTES**

1. UTILIZE A UL 924 "EBS" DEVICE TO CONTROL THE DESIGNATED LIGHT FIXTURE WITH THE LOCAL LIGHTING. UPON LOSS OF NORMAL POWER FIXTURE SHALL BE ENERGIZED TO FULL OUTPUT.
2. EBS DEVICE TO BE INSTALLED IN ACCESSIBLE LOCATION WITH LABEL INDICATING AREA AND CIRCUIT SERVED.
3. REINSTALL EXISTING OCCUPANCY SENSOR IN NEW LOCATION.
4. MOUNT FIXTURES AT APPX 10'0" ABOVE FINISHED FLOOR. COORDINATE WITH DUCTWORK. UTILIZE THREADED ROD SECURED TO THE CONCRETE DECK FOR SUPPORTS.
5. MOUNT FIXTURE 80 (INCHES) ABOVE FINISHED FLOOR TO THE BOTTOM OF THE FIXTURE.
6. REWIRE EXISTING LIGHT FIXTURE TO EMERGENCY EGRESS LIGHTING CIRCUIT.
7. UTILIZE THREADED ROD TO PENDANT MOUNT THE EXIT SIGN.

**LIGHTING FIXTURE SCHEDULE**

| TYPE | DESCRIPTION |
|---|---|
| E | STAINLESS STEEL EXIT SIGN, LITHONIA LQC-1-R-EL N ELAWGEXT |
| F1 | 4' PENDANT MOUNTED LED, DAMP LOCATION, LENSED, MVOLT KENALL MLHA8-48-F-MW-PP-1-45L40K-1-DV 5070 LUMEN 40K COLOR TEMP 49 WATT INPUT POWER |
| F4 | EXISTING LIGHT FIXTURE |
| F6 | 4' WALL MOUNTED, DAMP LOCATION, LENSED FIXTURE, MVOLT, KENALL MILLENNIUM STRETCH VANITY KENAL #MLHA8-48-F-MW-PP45L40K-DV |
| F7 | RECESSED, LENSED, WET LOCATION SHOWER DOWNLIGHT FIXTURE, LITHONIA LDN6-40/1000/L06/WR/MVOLTGZ10 |

**LIGHTING WIRING METHODS**

1. EXIT LIGHTS SHALL OPERATE 24-7 AND SHALL BE WIRED FROM THE LOCAL EMERGENCY CIRCUIT.
2. HALF-TONE SHADED FIXTURES REPRESENTS THE FIXTURE IS AN EMERGENCY LIGHT AND HAS BACK UP POWER FROM THE GENERATOR. ALL EMERGENCY LIGHTS SHALL BE WIRED IN A SEPARATE CONDUIT FOR ALL OTHER LIGHTING.
3. ALL LIGHTING CIRCUITS SHALL BE INSTALLED IN CONDUIT.
4. MC CABLE IS ONLY ACCEPTABLE AS A FINAL WIRING CONNECTION TO RECESSED LIGHTING INSTALLED IN ACCESSIBLE CEILINGS. MC CABLE LENGTH SHALL NOT EXCEED 6'-0".
5. PROVIDE A DEDICATED NEUTRAL CONDUCTOR FOR EACH NEW LIGHTING CIRCUIT. SHARED NEUTRALS ARE NOT PERMITTED FOR THIS PROJECT.
6. PROVIDE AN EQUIPMENT GROUNDING CONDUCTOR FOR NEW LIGHTING CIRCUITS. THE USE OF THE RACEWAY FOR A GROUNDING PATH IS NOT ACCEPTABLE FOR THIS PROJECT.
7. REFER TO THE ARCHITECTURAL DRAWINGS FOR ALL LIGHT FIXTURE LOCATIONS.
8. ALL DIMMER SWITCHES SHALL BE CAPABLE OF HANDLING THE LOAD AS SHOWN AND BE LISTED AS APPROVED BY THE MANUFACTURER OF THE LIGHT THAT IS BEING DIMMED.

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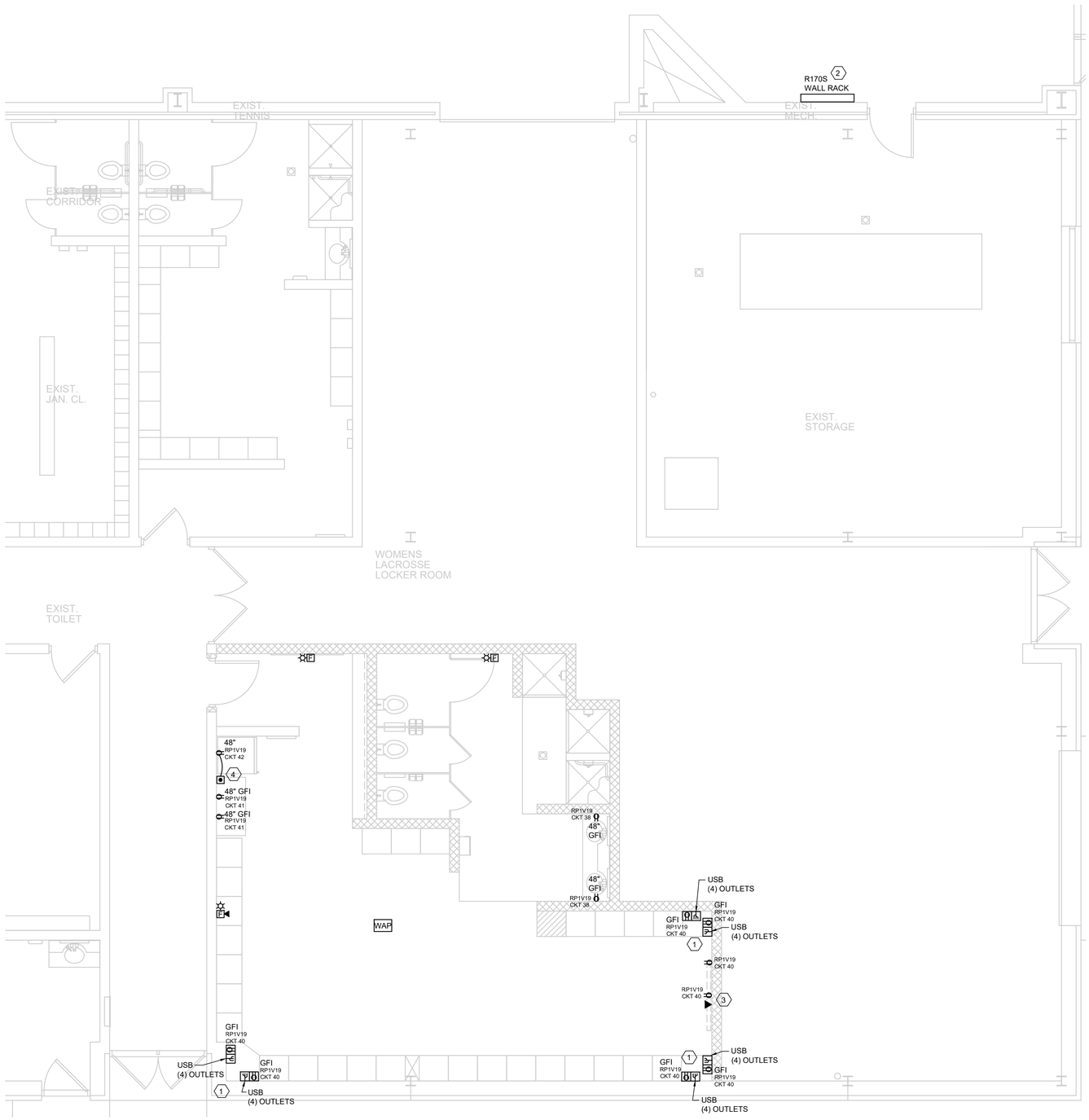


NORTH

## PARTIAL FIRST FLOOR PLAN - POWER AND SYSTEMS

1/4"=1'-0"

**GENERAL NOTES - POWER AND SYSTEMS**

1. DEVICE HEIGHT SHOWN SHALL BE TO TOP OF BOX UNLESS NOTED OTHERWISE.
2. RECEPTACLE CIRCUITS SHALL HAVE DEDICATED NEUTRALS THE USE OF SHARED NEUTRALS IS NOT ACCEPTABLE.
3. ALL RACEWAYS SHALL BE EQUIPPED WITH A MINIMUM #12 GREEN JACKETED GROUNDING CONDUCTOR, THE USE OF THE RACEWAY ALONE AS A GROUND PATH IS NOT ACCEPTABLE.
4. THE CONTRACTOR IS RESPONSIBLE TO FURNISH AND INSTALL ALL NEW FIRE ALARM DEVICES THAT ARE REQUIRED ABOVE AND BEYOND THE DEVICES THAT ARE SALVAGED FROM THE DEMOLITION AREA.
5. ALL NEW WORK SHALL BE FLUSH MOUNTED. SURFACE WIREWAY IS ONLY ALLOWED AS NOTED ON A SPECIFIC LOCATION BY LOCATION BASIS.
6. OUTLET BOXES SHALL NOT BE MOUNTED BACK TO BACK TO AVOID NOISE TRANSFER ISSUES.
7. PROVIDE NEW CABLING BACK TO THE 2ND FLOOR DATA ROOM. REUSE EXISTING PATHWAY WHERE POSSIBLE.

**KEYED NOTES**

1. ALL GFI USB OUTLETS ARE TO BE MOUNTED AT A HEIGHT OF 48 (INCHES) OFF OF LOCKER ROOM FLOOR.
2. UTILIZE EXISTING DATA RACK.
3. COORDINATE TV HEIGHT WITH OWNER PRIOR TO ROUGH IN.
4. FURNISH AND INSTALL A FEED THRU GFI DEVICE WIRED AHEAD OF THE FRIDGE RECEPTACLE.

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ELECTRICAL SYMBOLS

- 2'x2' FIXTURE, TYPE INDICATED
- HALF SHADED FIXTURES ARE EMERGENCY FIXTURES
- EXIT LIGHT
- MOUNTED EXIT LIGHT
- EBS — EMERGENCY LIGHTING BYPASS SWITCH
- $S_{MD}$ — MOTION AND DIMMING SWITCH
- PANELBOARD
- JB — JUNCTION BOX
- PP — POWER POLE
- DUPLEX RECEPTACLE
- QUADPLEX RECEPTACLE
- FEED THRU GFI DEVICE
- DATA OUTLET ROUGH-IN 4" SQUARE ROUGH IN WITH A SINGLE GANG TRIM RING AND 1" CONDUIT ROUTED TO THE ACCESSIBLE CEILING WITH (2) BELDEN CAT 6 RUN TO THE LOCAL IDF RACK
- DATA OUTLET ROUGH-IN 4" SQUARE ROUGH IN WITH A SINGLE GANG TRIM RING AND 1" CONDUIT ROUTED TO THE ACCESSIBLE CEILING WITH (1) BELDEN CAT 6 RUN TO THE LOCAL IDF RACK
- DATA OUTLET ROUGH-IN 4" SQUARE ROUGH IN WITH A SINGLE GANG TRIM RING AND 1" CONDUIT ROUTED TO THE ACCESSIBLE CEILING WITH (4) BELDEN CAT 6 RUN TO THE LOCAL IDF RACK
- WAP — WIRELESS ACCESS POINT. (1) BELDEN CAT 6 ACCESS POINT PROVIDED BY UNIVERSITY INSTALLED BY THE CONTRACTOR
- F — FIRE ALARM PULL STATION
- F — FIRE ALARM STROBE ONLY
- F — FIRE ALARM HORN/STROBE COMBO
- ----- INDICATES TO BE REMOVED
- EX — EXISTING

ELECTRICAL SPECIFICATIONS

INTERFERENCES

A. THE CONTRACTOR, WHEN DIRECTED BY THE ARCHITECT OR OWNER, SHALL MAKE SUCH CHANGES OR OFF-SETS AS REQUIRED SO THAT THE WORK SHALL BE PROPERLY LOCATED. FAILURE TO COMPLY WITH THE FOREGOING WILL NOT RELIEVE CONTRACTORS RESPONSIBILITY OF MAKING SUCH CHANGES. SUCH CHANGES SHALL BE COMPLETED AT NO ADDITIONAL COST TO THE OWNER.

MATERIALS AND WORKMANSHIP

A. ALL MATERIALS AND EQUIPMENT FURNISHED FOR INSTALLATION ON THIS PROJECT SHALL BE NEW AND IN STRICT ACCORDANCE WITH THIS SPECIFICATION. ALL ELECTRICAL EQUIPMENT SHALL BEAR THE UNDERWRITER'S LABEL.

B. ALL WORK SHALL BE PERFORMED IN A PROFESSIONAL MANNER UNDER THE SUPERVISION THE CONTRACTOR'S FIELD MANAGER. THE FIELD MANAGER SHALL BE CONSIDERED THE POINT OF CONTACT FOR DAILY COMMUNICATIONS.

C. SHOULD ANY DISPUTE ARISE AS TO THE QUALITY OF THE WORKMANSHIP, OWNER AND ENGINEER AND CONTRACTOR SHALL MUTUALLY AGREE WORK IS NON-ACCEPTABLE AND SHALL BE REWORKED AT NO ADDITIONAL COST TO THE OWNER.

GUARANTEES

A. ALL EQUIPMENT AND WORK PERFORMED UNDER DIVISION 26000 SHALL BE GUARANTEED FOR ONE YEAR FROM TIME OF SUBSTANTIAL COMPLETION OF PROJECT,

OWNERS ACCEPTANCE OF EQUIPMENT

A. UPON THE OWNER'S WRITTEN ACCEPTANCE, THE CONTRACTOR'S GUARANTEE PERIOD SHALL BEGIN AND THE OWNER SHALL ACCEPT THE RESPONSIBILITY FOR OPERATION AND MAINTENANCE AND THE CONTRACTOR'S LIABILITY SHALL BE LIMITED TO THE CONDITIONS COVERED IN THE GUARANTEE AS DESCRIBED IN THESE SPECIFICATIONS. ACCEPTANCE SHALL BE DEFINED AS ALL WORK COMPLETED PER PLANS AND SPECIFICATIONS, FINAL WALK-THRU ITEMS COMPLETED, WARRANTY LETTER SUBMITTED, AS-CONSTRUCTED DRAWINGS SUBMITTED AND FINAL PAYMENT APPLICATION SUBMITTED.

SUBMITTALS

A. PROVIDE ELECTRONIC SHOP DRAWINGS.

B. SUBMIT SHOP DRAWINGS AND PRODUCT DATA GROUPED TO INCLUDE COMPLETE SUBMITTALS OF RELATED SYSTEMS, PRODUCTS, AND ACCESSORIES IN SINGLE SUBMITTALS.

C. CIRCUIT BREAKERS, LIGHT FIXTURES, PANELBOARDS, ETC.

REGULATORY REQUIREMENTS

A. CONFORM TO CURRENT STATE OF MICHIGAN BUILDING CODES AND SVSU STANDARDS.

B. CONFORM TO REQUIREMENTS OF NFPA 70, 2017 NATIONAL ELECTRIC CODE, 2015 MICHIGAN BUILDING CODE, 2009 MICHIGAN BARRIER FREE DESIGN.

C. EQUIPMENT: U.L. TESTED AND APPROVED FOR ITS PURPOSE.

D. THE ELECTRICAL CONTRACTOR SHALL OBTAIN AND PAY FOR PERMITS, INSPECTION FEES AND FINAL WIRING CERTIFICATE. COPIES OF THE CERTIFICATE OF INSPECTION ARE TO BE PROVIDED TO THE OWNER AFTER FINAL INSPECTION AND APPROVAL FROM AUTHORITIES HAVING JURISDICTION.

TELEPHONE AND DATA

A. ELECTRICAL TRADE SHALL PROVIDE A 4' SQUARE BOX WITH A SINGLE GANG TRIM RING FOR TELEPHONE AND DATA WIRING. INSTALL A 1" EMT CONDUIT STUB UP INTO THE CEILING, PROVIDE A PLASTIC BUSHING ON ALL CONDUIT ENDS.

B. PATCH PANELS AND PATCH CORDS FURNISHED BY SVSU, INSTALLED BY ELECTRICAL CONTRACTOR.

C. VOICE/DATA INSTALLATION SHALL BE BY A DIVISION 27000 CONTACTOR THAT IS LISTED ON THE SVSU APPROVED LIST.

D. SUBMIT ELECTRONIC TEST FOR EACH CABLE.

E. LABEL BOTH ENDS OF THE CABLE, THE FACEPLATE, AND THE PATCH PANEL PER SVSU'S STANDARDS.

F. VERIFY THE FINAL FURNITURE LAYOUT PRIOR TO INSTALLING DATA ROUGH-INS.

PROJECT/SITE CONDITIONS

A. INSTALL WORK IN LOCATIONS SHOWN ON DRAWINGS, UNLESS PREVENTED BY PROJECT CONDITIONS.

B. ALL BIDDERS SHALL PERSONALLY INSPECT THE SITE AND ACQUAINT THEMSELVES WITH ALL EXISTING CONDITIONS INVOLVED IN EXECUTION OF THIS CONTRACT, AND MAKE ALL NECESSARY MEASUREMENTS. NO "EXTRA" WILL BE CONSIDERED FOR ADDITIONAL WORK REQUIRED BECAUSE OF BIDDER'S FAILURE TO DO SO.

C. THE ELECTRICAL TRADES SHALL BE RESPONSIBLE TO COLLABORATE WITH THEIR FIRE ALARM VENDOR TO SCHEDULE THE BUREAU OF FIRE SERVICES INSPECTOR SYSTEM WALK THRU. COMPLETE ALL FIRE ALARM SYSTEM REQUIREMENTS AS ADVISED BY THE INSPECTOR. INCLUDE ALL OF THE INSPECTOR'S LISTED ITEMS AND INCLUDING ALL COSTS.

D. ELECTRICAL TRADES SHALL BE RESPONSIBLE FOR ALL CUTTING, CHANNELING, AND PATCHING TO COMPLETE THE ELECTRICAL INSTALLATION.

G INSTALL SWITCHES 48 INCHES TO TOP OF BOX ABOVE FINISHED FLOOR.

H MOUNT RECEPTACLES, VOICE/DATA OUTLETS 16 INCHES TO BOTTOM OF BOX ABOVE FINISHED FLOOR, UNLESS SHOWN OTHERWISE. CONFIRM EXISTING CONDITION AND INSTALL NEW ACCORDINGLY.

CONDUIT REQUIREMENTS (ELECTRICAL METALLIC TUBING (EMT))

A. 3/4" MINIMUM SIZE CONDUIT

B. DRY INTERIOR LOCATIONS:
   1. USE EMT TYPE CONDUIT, SET SCREW COUPLINGS AND CONNECTORS.

C. DESCRIPTION: ANSI C80.3; GALVANIZED TUBING.

D. FITTINGS AND CONDUIT BODIES: ANSI/NEMA FB 1; SET SCREW TYPE.

GENERAL INSTALLATION METHODS

A. ARRANGE CONDUIT SUPPORTS TO PREVENT MISALIGNMENT DURING WIRING INSTALLATION.

B. GROUP RELATED CONDUITS; SUPPORT USING CONDUIT RACK. CONSTRUCT RACK USING STEEL CHANNEL; PROVIDE SPACE ON EACH FOR 25 PERCENT ADDITIONAL CONDUITS.

C. FASTEN CONDUIT SUPPORTS TO BUILDING STRUCTURE AND SURFACES.

D. DO NOT SUPPORT CONDUIT WITH WIRE OR PERFORATED PIPE STRAPS.

E. DO NOT ATTACH CONDUIT TO CEILING SUPPORT WIRES.

F. ROUTE CONDUIT PARALLEL AND PERPENDICULAR TO WALLS OR BUILDING CENTERLINES.

G. ROUTE CONDUIT INSTALLED ABOVE ACCESSIBLE CEILINGS PARALLEL AND PERPENDICULAR TO WALLS.

H. LOW-VOLTAGE WIRING INSTALLED IN CEILING SPACE IS NOT REQUIRED TO BE INSTALLED IN CONDUIT. USE J HOOKS AS THE CABLE MANAGEMENT METHOD. LAYING CABLES LOOSE ACROSS THE CEILING TILES OR GRID SYSTEM IS NOT ACCEPTABLE.

BUILDING WIRE

A. DESCRIPTION: SINGLE CONDUCTOR INSULATED WIRE.

B. CONDUCTOR: STRANDED COPPER.

C. INSULATION VOLTAGE RATING: 600 VOLTS.

D. INSULATION: TYPE THHN/THWN 75ºC.

GROUNDING

A. EQUIPMENT GROUNDING CONDUCTORS. PROVIDE GREEN JACKETED CONDUCTOR GROUND CONDUCTOR FOR THE LIGHTING AND POWER CIRCUITS. EXISTING FIELD CONDITIONS MAY DISCOVERED THE USE OF THE CONDUITS AS THE GROUND PATH. MATCH EXISTING CONDITIONS AS DEEMED NECESSARY OTHERWISE PROVIDE THE GROUNDING CONDUCTOR AS SPECIFIED.

RECEPTACLES

A. SPECIFICATION GRADE. 20 AMP 125 VOLT GROUNDING TYPE. WHITE BODY WITH WHITE COVER PLATE.

B. LABEL EXISTING AND NEW RECEPTACLE COVER PLATES WITH CLEAR ADHESIVE AND BLACK LETTERS INDICATING SOURCE PANEL AND CIRCUIT (RPA-5).

WIRING METHODS

1. LIGHTING IS 277 VOLT.

2. GENERAL PURPOSE RECEPTACLES REQUIRE DEDICATED NEUTRALS AND A GROUNDING CONDUCTOR.

FIRE ALARM

A. MANUFACTURER SHALL BE SIMPLEX DEVICES TO MATCH EXISTING.

B. RECERTIFY PROJECT LOCATIONS FIRE ALARM SYSTEM AFTER CONSTRUCTION.

C. PROVIDE DUST COVERS FOR EXISITNG FIRE ALARM DEVICES DURING CONSTRUCTION.

GENERAL NOTES

1. ALL NEW DATA DEVICES SHALL BE INSTALLED WITH NEW CAT6 DATA CABLE RUN BACK TO THE EXISTING LOCAL IDL RACK.

2. ALL NEW DEVICES SHALL BE FLUSH MOUNTED.

3. PROVIDE DEVICE COVER PLATE LABELING INDICATING SOURCE PANEL AND CIRCUIT NUMBER PER SVSU STANDARDS.

4. FURNISH AND INSTALL BLANK COVER PLATES ON UNUSED ROUGH-IN BOXES.

EMERGENCY LIGHTING BYPASS SWITCH SCHEDULE

EBS — NINE 24, INC. #BLTC OR EQUAL. DESIGNED TO MEET UL 924 REQUIREMENTS. 10 AMP LOAD CAPACITY, 50,000 VOLTS PLUS INPUT SURGE PROTECTION. ON-BOARD TEST SWITCH FOR LOCAL INSPECTION. FAILSAFE ON FUNCTIONALITY.

**EX**
**RP1V19**

MAIN: SIZE & TYPE: **100** A
BUS RATING: A
VOLTAGE: **208 / 120** V **3** Ø, **4** WIRE
MOUNTING: **Surface**

PANEL LOCATION: **LOCKER ROOM HALLWAY**
FEEDER SIZE:
FED FROM:
MIN RMS AMPS:

| CKT # | CIRCUIT DESCRIPTION | LOAD (KVA) A | LOAD (KVA) B | LOAD (KVA) C | AMPS / POLES | CKT # | LOAD TYPE | CKT # | AMPS / POLES | LOAD (KVA) A | LOAD (KVA) B | LOAD (KVA) C | CIRCUIT DESCRIPTION | CKT # |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | HAIR DRYER - TENNIS R199A | | | | 20/1 | 1 | | 2 | 20/1 | | | | HAIR DRYER - MEN'S COACHES R199B | 2 |
| 3 | HAIR DRYER - WOMEN'S COACHES R199C | | | | 20/1 | 3 | | 4 | 20/1 | | | | HAIR DRYER - GOLF R199D | 4 |
| 5 | HAIR DRYER - WOMEN'S BASKETBALL R199J | | | | 20/1 | 5 | | 6 | 20/1 | | | | HAIR DRYER - MEN'S BASKETBALL R199K | 6 |
| 7 | RECEPTS - CORRIDOR R198 CLOS R199GD TOIL R199H | | | | 20/1 | 7 | | 8 | 20/1 | | | | RECEPTS STORAGE R199F | 8 |
| 9 | RECEPTS - WOMEN'S BBALL R199J MEN'S BBALL R199K | | | | 20/1 GFI | 9 | | 10 | 20/1 GFI | | | | RECEPTS - TENNIS R199A MEN'S COACHES R199B | 10 |
| 11 | RECEPTS - WOMEN'S COACHES R199C GOLF R199D | | | | 20/1 GFI | 11 | | 12 | 20/1 | | | | COUNTER RECEPTS - TENNIS R199A | 12 |
| 13 | COUNTER RECEPTS - MEN'S COACHES R199B | | | | 20/1 | 13 | | 14 | 20/1 | | | | COUNTER RECEPTS - WOMEN'S COACHES R199C | 14 |
| 15 | COUNTER RECEPTS - GOLF R199D | | | | 20/1 | 15 | | 16 | 20/1 | | | | CUH-1 & CUH-2 - CORRIDOR R199 | 16 |
| 17 | RECEPTS - MECH RM R199E | | | | 20/1 | 17 | | 18 | 20/1 | | | | WATER HEATER DWH-1 MECH RM R199E | 18 |
| 19 | PUMP CP-1 MECHANICAL RM R199E | | | | 20/1 | 19 | | 20 | 20/1 | | | | PUMP CP-2 MECHANICAL RM 199E | 20 |
| 21 | COUNTER RECEPTS - MEN'S BASKETBALL R199K | | | | 20/1 | 21 | | 22 | 20/1 | | | | COUNTER RECEPTS - WOMEN'S BASKETBALL R199J | 22 |
| 23 | HAIR DRYER 199A | | | | 20/1 | 23 | | 24 | 20/1 | | | | HAIR DRYER 199K | 24 |
| 25 | HAIR DRYER 199C | | | | 20/1 | 25 | | 26 | 20/1 | | | | HAIR DRYER 199B | 26 |
| 27 | HAIR DRYER 199A | | | | 20/1 | 27 | | 28 | 20/1 | | | | HAIR DRYER 199J | 28 |
| 29 | COUNTER RECEPT - MEN'S BASKETBALL R199K | | | | 20/1 | 29 | | 30 | 20/1 | | | | COUNTER RECEPT - WOMEN'S BASKETBALL R199J | 30 |
| 31 | DATA RACH - MECHANICAL ROOM R199E | | | | 20/1 | 31 | | 32 | 20/1 | | | | WALL MOUNTED TV'S - MEN'S AND WOMEN'S BBALL | 32 |
| 33 | ELEC WATER COOLER | | | | 20/1 | 33 | | 34 | 20/1 | | | | REC CHARGER | 34 |
| 35 | O.S. REC | | | | 20/1 | 35 | | 36 | 20/1 | | | | O.S. REC | 36 |
| 37 | O.S. REC | | | | 20/1 | 37 | | 38 | 20/1 | | | | COUNTER RECEPTS - WOMEN'S LACROSSE 1 | 38 |
| 39 | MICROWAVE AND COUNTER RECEPTS - WOMEN'S LACROSSE 1 | | | | 20/1 | 39 | | 40 | 20/1 | | | | RECEPTS AND TV - WOMEN'S LACROSSE 1 | 40 |
| 41 | SECURITY | | | | 20/1 | 41 | | 42 | 20/1 | | | | REFRIGERATOR - WOMEN'S LACROSSE 1 | 42 |

NOTES: 1. UTILIZE EXISTING SPARE CIRCUITS TO INSTALL NEW DEVICES ON CKTS 38, 39, 40, 42

MACMILLAN ASSOCIATES CONSULTING ENGINEERS
714 EAST MIDLAND STREET • BAY CITY, MICHIGAN 48706
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TSSF ARCHITECTS, INC.
PLANNERS
ARCHITECTS
122 N. WASHINGTON AVENUE SAGINAW • MICHIGAN

RENOVATIONS TO RYDER CENTER: WOMENS LACROSSE LOCKER ROOM
SAGINAW VALLEY STATE UNIVERSITY
UNIVERSITY CENTER, MICHIGAM

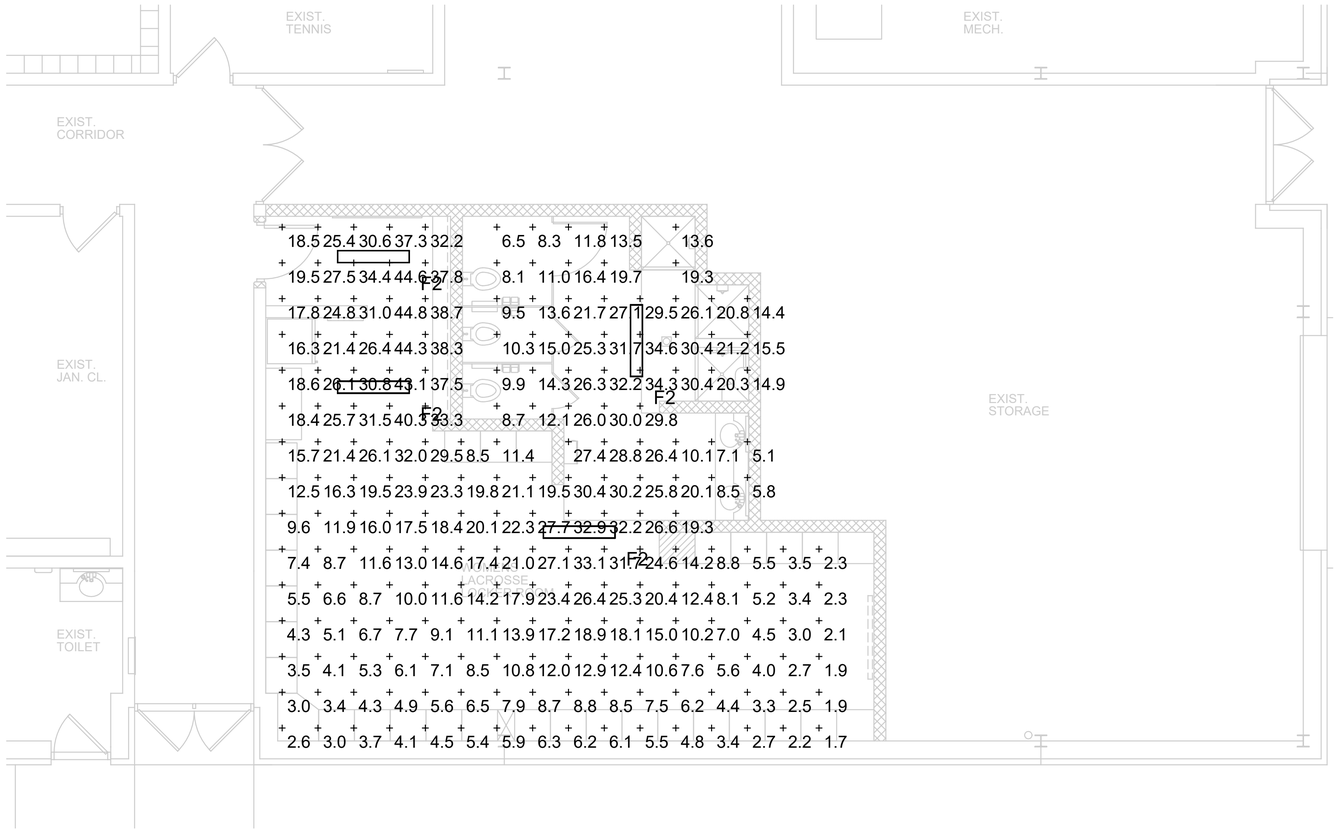
| NO. | DATE |
|---|---|
| | |

DRAWN BY RLM
DATE 08/05/22
APPROVED JWF

SHEET NO
E4.0
OF .

PROJECT NO.
2224

MICHAEL VOGTMANN (MVOGTMANN@MACMILLANASSOCIATES.COM) F:\27-TSSF\2022\2702 SVSU WOMEN'S LACROSSE LOCKER ROOM\2022-2702-E-E4.0 ELECTRICAL SCHEDULES
2/3/2021 11:22 AM




NORTH

## PARTIAL FIRST FLOOR PLAN - EMERGENCY LIGHTING CALCULATIONS

1/4"=1'-0"

| Statistics | | | | | | |
|---|---|---|---|---|---|---|
| Description | Symbol | Avg | Max | Min | Max/Min | Avg/Min |
| Locker Room Calcs | + | 16.3 fc | 44.8 fc | 1.7 fc | 26.4:1 | 9.6:1 |

Schedule

| Symbol | Label | Image | Quantity | Manufacturer | Catalog Number | Description | Number Lamps | Lumens Per Lamp | Light Loss Factor | Wattage | Plot |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | F1 | | 0 | Kenall Manufacturing | Kenall 5070Lumen 45Watt 40k MLHA8-48-F | MLHA8-48-F-MW-PP-1-45L40K-DCC-1-DV | 144 | 34 | 0.95 | 50.026 | |
| | F2 | | 4 | Kenall Manufacturing | Kenall 8250Lumen 67Watt 40k MLHA8-48-F | MLHA8-48-F-MW-PP-1-67L40K-DCC-1-DV | 144 | 49 | 0.95 | 74.353 | |
| | FE2 | | 0 | Kenall Manufacturing | Kenall EMERGENCY BATTERY PACK AT 1100LUMEN | MLHA8-48-F-MW-PP-1-67L40K-DCC-1-DV | 144 | 49 | 0.95 | 74.353 | |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| NO. | DATE |
|---|---|
| | |

DRAWN BY RLM
DATE 08/05/22
APPROVED JWF

SHEET NO
E5.0
OF .

PROJECT NO.
2224


2/3/2021 11:22 AM MICHAEL VOGTMANN (MVOGTMANN@MACMILLANASSOCIATES.COM) F:\21-TSSF\2022-2702 SVSU WOMENS LACROSSE LOCKER ROOM\2022-2702-E-E5.0 EMERGENCY LIGHTING PLAN