Addendum No. 1 **February 14, 2017**

Project: **Lansing Pathway Promise**
Project: SB-0006
Fairview Additions and Renovations

This addendum is issued prior to the bid date in order to inform the bidders of modifications in the scope of work as described and detailed in the project manual dated January 13, 2017 prepared by The Christman Company. Minor clarifications to the work categories, drawings and specifications have been made.

The bidders shall include in their bids the increased costs or decreased costs for all material, labor, supervision, overhead and profit required to properly and completely execute the work described in this addendum.

The applicable provisions of the Contract Documents shall govern all work as modified by this addendum unless specifically noted otherwise.

The bidder shall acknowledge receipt of this addendum and all attachments on the Trade Contract Proposal Form.

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Item No. **Changes**

1. Information for all Bidders:
   a. The proposal deadline remains unchanged: **Wednesday, February 22, 2017** at **2:00 PM**.
   b. Pre-bid RFIs were received and answered in an attachment to this addendum.
   c. Construction schedule is attached.
   d. Sample trade contract agreement is attached.
   e. All substitution requests must be made in writing and submitted with the completed attached form and emailed to Bids2016@lansingschools.net .
2. Clarification for WC 20 – General Trades:
   a. Specification 081113 was mistakenly labeled "Aluminum-Framed Entrances & Store Fronts" in the WC 20 Work Category Description. The correct name for Specification 081113 is "Hollow Metal Doors and Frames" and shall be included in WC 20 proposals.
3. Changes to Specifications and Drawings: Refer to C2AE Write Up

Attachments:
Addendum No. 1 Write Up – C2AE
Work Category Description: WC 20 General Trades
Pre-Bid Meeting Minutes
Pre-Bid Meeting Sign-In Sheet
Pre-Bid RFI Question and Answer Sheet
Construction Schedule
Sample Trade Contract Agreement
Request for Substitution Form
Specification: 233813 – Commercial Kitchen Hoods
Drawings: G-001, G-110, G-500, C-103, C-105, C-501, S-101.B, S-120.D, S-500, S-502, AD-110, AD-120, A-110.B, A-110.C, A-110.D, A-110.E, A-111.C, A-200, A-201, A-202, A-203, A-401, A-402, A-500, A-510, I-206, P-101.B, P-111.B, P-400, P-600, P-900, P-901, P-902, M-101.B, M-110.D, M-111.A, M-111.B, M-111.C, M-111.D, M-111.E, M-300, M-600, M-601, M-800, EP-400, and EP-700.

End of Addendum No. 1

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ADDENDUM #1

Project No.:	16-0400	**Date:**	February 14, 2017
Project:	Lansing Pathway Promise SB-0006 Fairview Additions and Renovations Ingham County, Michigan	**A/E Firm:** **Project Manager:**	C2AE Steve Jurczuk
Owner:	Lansing School District 519 West Kalamazoo Street Lansing, MI 48933		

The following changes, revisions, modifications, etc. shall be incorporated into the contract documents, specifications, and plans.

SPECIFICATIONS

A1.1 Refer to Section 033000 – Cast-in-Place Concrete (not reissued):
REVISE paragraph 2.5.A to read as follows:

"A. Sheet Vapor Retarder: ASTM E 1745, Class A*, 15 mill*. Include manufacturer's recommended adhesive or pressure-sensitive tape."

A1.2 Refer to Section 071113 – Bituminous Dampproofing (not reissued):
REVISE paragraph 3.2.A to read as follows:

"A. Concrete Foundations *Below Grade*: Apply two brush or spray coats at not less than 1.5 gal./100 sq. ft. for first coat and 1 gal./100 sq. ft. for second coat."

A1.3 Refer to Section 101100 – Visual Display Units (not reissued):
ADD Aarco as an acceptable manufacturer to paragraph 2.2.A

A1.4 Refer to Section 224216.13 – Commercial Lavatories (not reissued):
DELETE paragraphs 2.1.B and 2.1.C. These two wall-mounted lavatory stations are no longer being used.

A1.5 Refer to Section 230923 – Direct Digital Control (DDC) System for HVAC (not reissued):
ADD subparagraphs 1.1.A.3 through 1.1.A.5 as follows:

"*3. It is the Lansing School District's goal to implement an "open/non-proprietary" Building Management System (BMS) that will allow products from various suppliers to be integrated into a unified system in order to provide flexibility for expansion, maintenance, and service of the system."*

4. *The BMS as provided in this specification shall be based on Tridium's Niagara Framework and adhere to the open NCIS licensing.*
   a. *The BMS shall be comprised of Java Application Control Engine of Controllers (JACE) and shall connect to the District's local area network.*
   b. *Access to the BMS, either locally, or remotely from a central site, shall be accomplished through standard Web browsers via the internet and/or local area network.*
   c. *Each JACE shall communicate to LonMark/LonTalk, BACnet, ModBus listed controllers, and other open and legacy protocol systems/devices.*
   d. *The District shall be the named license holder of all software associated with any and all incremental work on the project. No exceptions allowed."*
5. *It is the responsibility of the controls contractor to provide any hardware, software, control devices, or supplementary and miscellaneous items not mentioned in this specification that are necessary for a fully functional and integrated system of temperature controls, graphic interfaces, monitoring, and management.*
   a. *Depict floor plans and each mechanical system, components, and data points on point-and-click graphics that will allow operators to perform all normal functions through Web Browser interface.*"

A1.6 Refer to Section 233813 – Commercial Kitchen Hoods (issued):
ADD section in its entirety.

A1.7 Refer to Section 334100 – Storm Utility Drainage Piping (not reissued):
Underground stormwater piping may be any material acceptable by the City of Lansing's "Special Provision for Storm Sewers", latest supplement.

DRAWINGS

A1.8 Refer to Sheet G-001 (reissued):
ADD sheet A-203.

A1.9 Refer to Sheet G-110 (reissued):
REVISE to construct two hour fire wall at location of two hour fire barrier.

A1.10 Refer to Sheet G-500 (reissued):
REVISE wall types as shown.

A1.11 Refer to Sheet C-103 and C-501 (reissued):
See detail 13/C-501 for dumpster slab construction.

A1.12 Refer to Sheet C-105 (reissued):
See revised water line layout.

A1.13 Refer to Sheet S-101.B (reissued):
REVISE P-3 in pier schedule.

A1.14 Refer to Sheet S-120.D (reissued):
- REVISE column sizes in gymnasium.
- REVISE roof framing near firewall.
- REVISE column schedule.

A1.15 Refer to Sheet S-401 (not reissued):
DELETE note pointing to column line D.6 P-5/F-2.

A1.16 Refer to Sheet S-500 (reissued):
REVISE canopy pier details.

A1.17 Refer to Sheet S-502 (reissued):
ADD detail for roof framing near firewall.

A1.18 Refer to Sheets AD-110, A-110C, A-111C and I-206 (reissued):
REMOVE additional built in casework in room 167. Construct new wall and adjust ceiling as shown.

A1.19 Refer to AD-120 (reissued):
Clarify extents of roof demolition and patching.

A1.20 Refer to Sheets A-110B, A-110D, A-110E and A-401 (reissued):
REVISE group restrooms as shown.

A1.21 Refer to Sheet A-110D (reissued):
REVISE to construct two hour fire wall at location of two hour fire barrier. Shift windows and VUVs in rooms 189 and 190. REVISE structural adjacent to fire wall.

A1.22 Refer to Sheet A-120 (not reissued):
The existing SBS roof that is under warranty is a GAF system installed by National Roofing.

A1.23 Refer to Sheets A-110B, A-110E and A-402 (reissued):
ADD lockers to room 135 and 213.

A1.24 Refer to Sheet A-110E (reissued):
Provide blocking in Office 215 for wall mounted furniture hutch. Coordinate location with architect and furniture installer.

A1.25 Refer to Sheets A-200, A-201, A-202, and A-203 (reissued):
See revised exterior elevations with additional notes.

A1.26 Refer to Sheet A-311 (not reissued):
REVISE foundation and slab insulation to be 2” in lieu of 4”. All new foundation walls to have damp proofing applied per specification.

A1.27 Refer to Sheet A-402 (reissued):
ADD blocking to the east wall of Assistant Principal’s office, Room 216.

A1.28 Refer to Sheet A-500 (reissued):
See additional details 15/A-500, 16/A-500, and 17/A-500 regarding building expansion joint.

A1.29 Refer to Sheet A-510 (reissued):
Reorganized sheet.

A1.30 Refer to Sheet I-110 (not reissued):
Strip, clean and reseal existing terrazzo in corridors. Clean strip and reseal exposed terrazzo in rooms where dirtied by construction activities.

A1.31 Refer to Sheets I-201, I-202, I-206 and I-208 (not reissued):
Classroom shelving to be plastic laminate clad ¾" particle board w/ 3mm PVC edge. Shelf support to be K&V 70/170 brackets and standards or equal. Mount standards 24 o.c. (max.) Provide in anochrome finish.

A1.32 Refer to Sheets I-210, I-202 and I-204 (not reissued):
Existing cabinets to be painted includes the interior. Cabinets will be emptied by Owner.

A1.33 Refer to Sheet P-101.B (reissued):
REVISE domestic water piping for new bathroom fixture layout as shown.

A1.34 Refer to Sheet P-111.B (reissued):
REVISE domestic water piping for new bathroom fixture layout as shown.

A1.35 Refer to Sheet P-400 (reissued):
REVISE domestic water and sanitary piping for new bathroom fixture layout as shown.

A1.36 Refer to Sheet P-600 (reissued):
- DELETE LAV-2 and LAV-3 from plumbing fixture schedule as shown.
- ADD cane apron to EWC-1 as shown.

A1.37 Refer to Sheet P-900 (reissued):
REVISE sanitary piping isometric for new bathroom fixture layout as shown.

A1.38 Refer to Sheet P-901 (reissued):
REVISE sanitary piping isometric for new bathroom fixture layout as shown.

A1.39 Refer to Sheet P-902 (reissued):
REVISE sanitary piping isometric for new bathroom fixture layout as shown.

A1.40 Refer to Sheets M-101.B, M-111.C, M-300 (reissued):
See notes and details for pipe routing and supporting directions.

A1.41 Refer to Sheets M-110.D (re-issued):
Include emergency gas shutoff button between kitchen equipment and nearest exit.

A1.42 Refer to Sheets M-111.A, M-111.B, M-111.C, M-111.D, M-111.E (reissued):
- See detail for directions on draining condensate as noted on plans.
- See detail for pipe support directions.

A1.43 Refer to Sheets M-111.B, M-600 (reissued):
VRF Condensing Unit to be sized larger to provide additional capacity.

A1.44 Refer to Sheet M-601 (reissued):
REMOVE condensate pumps for Blower Coils from scope of work.

A1.45 Refer to Sheet M-800 (reissued):

- Kitchen Hood is to be interlocked with Kitchen Equipment.
- Note change in heating setback temperature for Vertical Unit Ventilator.

A1.46 Refer to Sheet EP-400 (reissued):

In the Kitchen 201 and Servery 202, REVISE the receptacles indicated to GFCI type.

A1.47 Refer to Sheet EP-700 (reissued):

In the One-Line Diagram, REVISE the circuit breaker sizes and conductor sizes as indicated.

Work Category No. 20 – General Trades

Work Included:

The subcontractor shall timely perform all General Trades work as detailed below, in accordance with the contract documents (including Bidding Requirements, Proposal Section, Contract Forms, General Conditions, Supplemental Conditions, General Requirements, Addenda, etc.), including, but not limited to, the following Specification Sections and Work Scope Items. Unless otherwise noted, this contractor is responsible for all items specified in the following specifications sections:

024119 Selective Demolition
033000 Cast-In-Place Concrete
061053 Miscellaneous Rough Carpentry
062023 Interior Finish Carpentry
066400 Plastic Paneling
078413 Penetration Firestopping
079200 Joint Sealants
081113 ***Hollow Metal Doors and Frames (ADD 1)***
081416 Flush Wood Door
083326 Overhead Coiling Grilles
087100 Door Hardware
087113 Automatic Door Operators
099700 Modular Wall System
101100 Visual Display Units
123623.13 Plastic-Laminate-Clad Countertops
101200 Display Cases
101416 Plaques
101450 Signage
102113.19 Plastic Toilet Compartments
102239 Folding Panel Partitions
102800 Toilet, Bath & Laundry Accessories
104413 Fire Protection Cabinets
104416 Fire Extinguishers
105113 Metal Lockers
107500 Flag Poles
115213 Projection Screens
116623 Gymnasium Equipment
122413 Roller Window Shades
123216 Manufactured Plastic-Lam Casework
129300 Site Furnishings

Work Category Notes:

1. Complete all exterior and interior Carpentry/Millwork (rough and finish) and various General Trades Work as noted within this Work Category, including all labor, materials and equipment required for a complete installation.
2. All exterior and interior rough and finish carpentry including counters, cabinets, trim, nailers, blocking and plywood sheathing unless noted otherwise.
3. Furnish and install all roof nailers, plywood sheathing and blocking unless noted otherwise. Remove perimeter fall protection which consists of misc. iron uprights and perimeter cable (top and mid-rail) just prior to the installation of roof nailers and sheathing. Discard perimeter protection materials into dumpster. Furnish and install roof curb wood nailers and blocking. Furnish and install rigid insulation in concealed locations created by Subcontractor.
4. Furnish all embedded anchors & bolts for rough carpentry to masonry & concrete to be installed by others.
5. Furnish and install wood blocking, FRP, sheets, boards, plywood, etc. for required materials that are to be installed by this work category.

6. If in-wall backing/blocking is required by a specific manufacturer for products included as part of this Work, though not specifically shown within the documents, i.e. architectural millwork, handrails, wall trim, wall mounted toilet partitions, visual display surfaces, metal lockers, fire extinguisher cabinets, misc. accessories, etc., Subcontractor to furnish and install blocking for a complete installation. Also, Subcontractor to furnish and install required sheet metal strip backing for materials provided as part of this Work, as well as materials furnished by the Owner and specifically assigned to Subcontractor for installation of tack boards, tack strips, coat hooks, and other items listed.
7. Furnish and install all wood blocking in gypsum walls as required for cabinets, toilet partitions, metal and wood lockers, hangers, racks, brackets, handrail, owner furnished items, etc. Also furnish and install all roof required nailers/blocking unless shown otherwise.
8. Furnish and Install exterior and floor expansion joints (including any grouting requirement to anchor, level and properly set), including fire barrier(s) under and beyond expansion joint areas. Installation of floor expansion joints shall occur just prior to finish flooring installation. Fire barrier(s) within concealed locations to be installed and inspected prior to being covered by architectural walls and ceilings.
9. Provide non-combustible wood blocking in walls for wall mounted accessories and equipment installed by owner/others shown or specified.
10. Furnish and install folding doors, including above ceiling misc. iron support to receive folding doors.
11. Furnish and install doors, frames, and hardware. Furnish only and coordinate delivery of frames to be received and installed by others. Coordinate power supply wiring diagrams for power to power supplies directly with WC 28. Card readers shall be furnished and installed by others.
12. Include grouting of hollow metal door frames in drywall partitions.
13. Manufacturer's rep is to review, approve and sign off on the installation of all door hardware before acceptance by TCC and the Owner.
14. All interior finish carpentry, architectural woodwork, stainless steel countertops, shelving and millwork. Provide all sealants to adjacent surfaces, including dissimilar materials. Coordinate counter top support spacing with WC 27 under lavatory guards and lavatory installation.
15. Furnish and install wall protection systems, including fiberglass reinforced wall panels and associated trim/accessories for a complete installation.
16. Furnish and install all window sills.
17. Furnish and install all solid-surface materials and grommets as indicated.
18. All architectural hardware for cabinets supplied by this Work Category.
19. Include all stainless steel required and associated with millwork.
20. Furnish and install all custom casework including cabinets, p-lam coat shelves, p-lam and solid surface vanity tops, and solid surface windowsills.
21. All fabricated materials are to be shop assembled to the greatest extent possible before shipping to the job site.
22. Furnish and installation of specialties including but not limited to: lockers, benches, medicine cabinets, stainless steel shelves, curtain tracks, coat rods, coat racks, shelving, wall and corner guards, impact rails, fire extinguishers, fire extinguisher cabinets, impact resistant wall protection, signage, coat/clothes hooks,

shelving, bulletin boards, broom / mop hooks, lockers, benches, hand sanitizer, white boards, tack strips, tack boards, overhead doors, coiling counter doors, etc., as well as all items mentioned in the above referenced spec sections.

23. Equipment items designated as Owner-Furnished/Contractor-Installed are a part of this scope of work. Owner furnished equipment isolated to an electrical connection "only" will be handled by the electrical subcontractor. Equipment requiring water, steam, medical gas, ducting, etc. will be handled by the mechanical subcontractor. All equipment that does not have any mechanical and/or electrical connection is the responsibility of this work category to receive, unload, distribute, and install.
24. Install owner furnished items such as TV brackets, monitors, keyboard trays, soap dispensers, paper towel dispensers, pencil drawers and magazine racks.
25. Furnish all fasteners (nails, screws, etc.) necessary for installation and not normally supplied by vendor.
26. Protect from damage existing finish work that is to remain.
27. Furnish and install sealants for all materials installed by this contractor such as cabinets, counters, sills, etc.
28. Furnish shop drawings, samples, product data, test reports, coordination drawings and other submittals as specified. Coordinate submittal schedule with the Construction Manager.

Specific Notes and Details:

The following details and notes are included in this Work Category; this list is to clarify the specific items noted below and does not exclude other details or otherwise limit the scope of work for this Work Category.

1. Provide temporary fire extinguishers (during construction) within a freestanding wood cabinet painted in red, labeled "fire extinguisher" as located by the Construction Manager. Removal following use included. Quantity for each area to match minimum required by MIOSHA.
2. Provide lockable doors and hardware in the temporary walls as shown on site logistics plan and temporary egress plan.
3. Protect existing structures, equipment, flooring, and other finishes from damage during the performance of this contract.
4. Furnish, install, and maintain temporary enclosures on exterior of building during removal and reconfiguration of the exterior walls. This contractor shall build modular enclosure panels capable of being installed and removed as necessary daily for other adjacent subcontractors (WC 11, WC 12, etc.) to perform work and then be closed at the end of each shift. The enclosure panels shall be strong enough to secure the building and prevent weather infiltration. The Enclosure panel system shall be utilized in three (3) bays at a time and relocated by the priority list included on the temporary enclosure plan. Once window rough openings are established this contractor shall enclose individual window openings with plywood and shift the modular panel enclosure system to the next bay on the priority list. WC 18 shall be responsible to remove individual window plywood closures.
5. Furnish and install all specified hardware for all doors in hollow metal frames. Responsible for coordination with Electrical Systems and Security Systems Subcontractors to ensure complete function of powered and integrated secure access door systems. This contractor is responsible for specified door hardware and low voltage wiring for doors included in this WC. Electrical Systems Subcontractor will provide 120V power and connection to power supplies. Security Systems Subcontractor will provide key card readers and integration of hardware into security system.

6. Furnish all cylinders and cores as listed in door hardware specification for doors included in this WC. Core to be keyed by owner.
7. Furnish and install concealed countertop carriers.
8. Furnish and install plywood suspended ceiling clouds.
9. Review 'Work Category Scope Clarification Drawings' for further illustration of scope of work. Work to be performed includes, but is not limited to, drawing notes with respective work category number.
10. Provide 140 hour allowance for laborers and 140 carpenter hours to be used at the discretion of TCC. Daily time tickets will be required by TCC. All unused funds will be returned to the Owner.

Related Work by Others:

1. Dumpsters
2. Temporary water and electrical
3. Benchmarks and column lines (one in each direction) by Construction Manager.
4. Roof access doors, curbs, expansion joints and accessories by WC 14.
5. Roof insulation by WC 14.
6. Independent testing and inspections by Owner.
7. Roof mechanical equipment curbs by WC 27, installed by WC 14.
8. Temporary heat by Construction Manager.
9. Aluminum entrance door hardware furnished and installed by WC 18.
10. Roof accessories furnished and installed by WC 14.
11. All aluminum door hardware provided by WC 18 and keyed by same.
12. All structural framing by WC 12 and WC 21.

Allowances:

This Contractor shall include in their Base Bid a Construction Manager's allowance of $0.00. Reference Section 01020 for specific instructions on allowances.

Unit Prices:

Unit Prices are to be complete furnished in-place operations, and include all costs, incidental materials and work, insurance, fringes, bonds, engineering, overhead and profit. Reference the Trade Contract Proposal form for unit pricing required.

End of Work Category No. 20

CHRISTMAN SINCE 1894

Pre-Bid Meeting Minutes

Project Name:	**Lansing Pathway Promise Project: SB-0006 Fairview Elementary School**	Bid Package:	**No. 2 Additions & Renovations**
Christman Project No.:	**217012**	Meeting Date & Time:	**February 8, 2017 @ 4:15pm**

Meeting Purpose:

- To communicate clearly defined work scope, quality standards, and anticipated schedule to subcontractors.
- Providing this information improves the likelihood that bids will be consistent with the Owner's and The Christman Company's quality standards and schedule expectations.

Meeting Agenda:

1. **Introduction**
   a. Owner: Lansing School District
   b. Construction Manager: The Christman Company
   c. Architect and Engineer: C2AE

2. **General Notes**
   a. The Christman Company Corporate Safety Policy: All trades will acknowledge our policy and must adhere to the requirements of this policy and MIOSHA requirements.
   b. Hazardous materials surveys will be made available to contractors working on site. Abatement will be performed by owner/others. All workers on site must have current lead/asbestos awareness training.
   c. The Lansing School District has a No-Tobacco Policy that will be enforced during the project.

3. **Project Notes**
   a. Overview of Project: all bidders shall reference the project manual for work category descriptions and scope clarifications. Bidders shall also reference the WC Scope Clarification Notes on select drawings located in the project manual.
   b. Quality expectations are high on this project and will be reviewed by members of the project team.
   c. Site Logistics: all bidders shall reference the logistics plans included in the project manual.
   d. Document Control: Project Website and PlanGrid.

4. **Schedule Overview**
   a. Phasing Plan included in Project Manual
   b. A more detailed schedule will be provided in future addendum.

5. **Bid Documents and Bidding Procedures**
   a. All documents on websites: www.lansingschools.net, buy4michigan.com, and www.bxlansing.com
   b. RFI Cutoff: ***February 15th at 12pm (noon).***
   c. Addenda: No. 1 will be issued February 14th and No. 2 will be issued February 20th
   d. Bid Deadline: ***February 22nd at 2pm –*** Public Bid Opening.
   e. Post Bid Interviews will occur shortly after bid opening.
   f. Proposals must be presented on the forms provided in the contract documents.
   g. Complete all mandatory forms: Proposal Form, Supplier/Vendor Application, Affidavit of Bidder – Familial Disclosure, Non-Discrimination Cert., Affidavit of Bidder – Non-Collusion, Iran Economic Sanctions, and Legal Status of Bidder. **Use the Checklist!**
   h. Trade Contractor Qualification is required. Form is located in Project Manual or online at: https://www.christmanco.com/Bidding/Documents-and-Forms
   i. Mandatory Alternates:
      i. #1: Furnish and install MCT in lieu of VCT (WC 23)
      ii. #2: Add two rows of shelving on cabinet wall (WC 20)
      iii. #3: Furnish and install a standby generator (multiple WCs)
         1. WC 02 – Prep for equipment pad
         2. WC 10 – equipment pad
         3. WC 27 – Natural gas piping
         4. WC 28 – Generator and other associated equipment
      iv. #4: Reclad existing soffits w/ aluminum panels (WC 15 add and WC 24 deduct)

j. Voluntary Alternates are highly encouraged and will be evaluated in the post-bid phase.
k. Tax status: *Taxable.*
l. Bid security is required.
m. Bond is required: *Include in base bid cost for Co-Obligee Labor & Material Payment and Performance Bond.*
n. This is a Michigan LARA prevailing wage project.
o. Contact for questions: Bids2016@lansingschools.net

6. Questions and Site Visit

Lansing Pathway Promise

Project SB-006: Fairview Elementary
Additions and Renovations

Pre-Bid Conference
2/8/17

Meeting Agenda

- Introduction
  - Owner: Lansing School District
  - Construction Manager: The Christman Company
  - Architect and Engineer: C2AE
- General Notes
  - Christman Safety Policy
  - Hazardous Material Survey
- Project Notes
- Schedule Overview
- Bid Documents and Bidding Procedures
- Questions and Site Visit

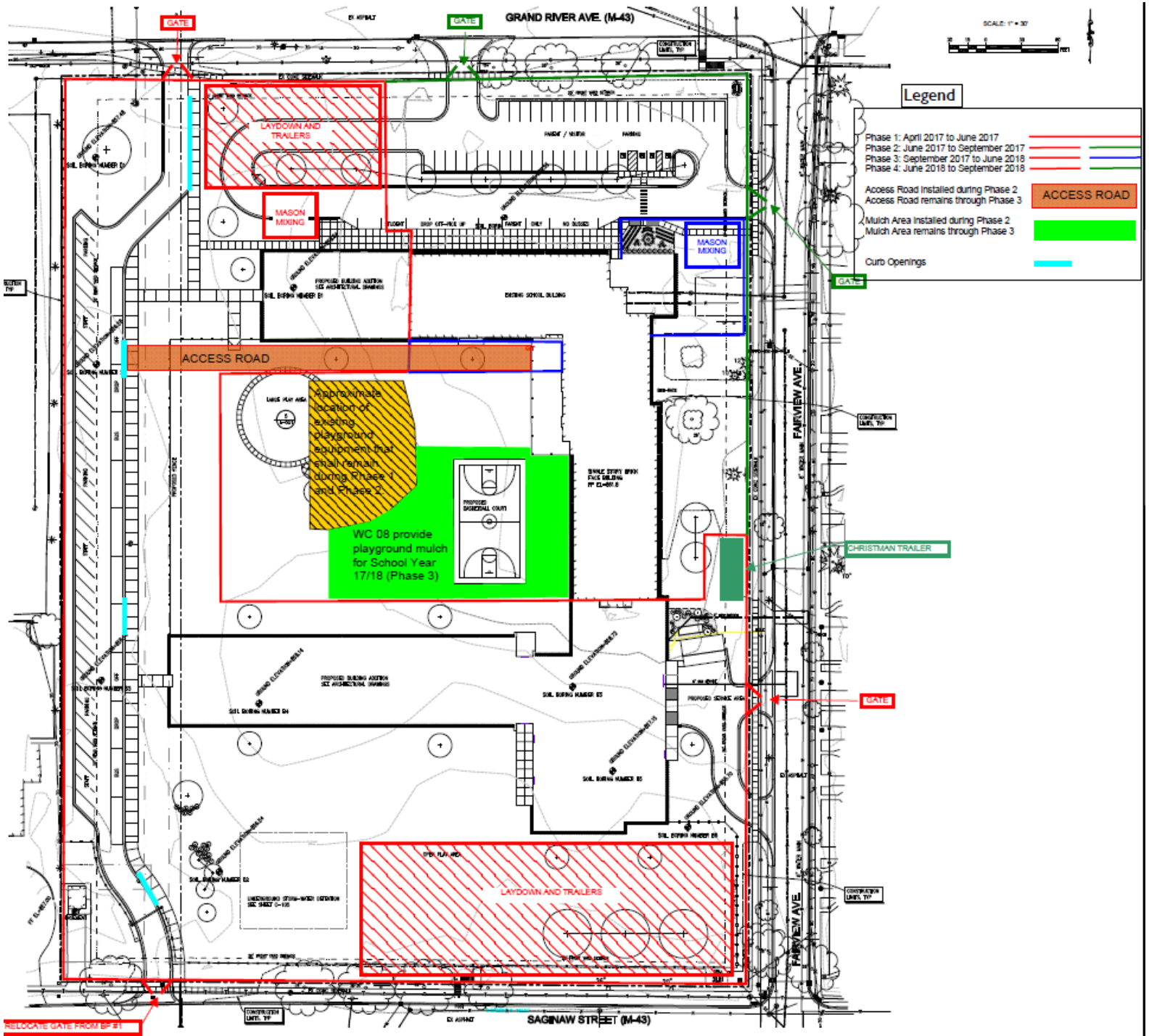
Overview of Project

Overview of Project

Work Categories:

WC 01 – Selective Demolition	WC 12 – Structural Steel	WC 24 – Painting
WC 02 – Earthwork & Site Utilities	WC 14 – Roofing and Sheet Metal	WC 25 – Playground Equipment
WC 05 – Site Concrete	WC 15 – Metal Siding	WC 26 – Fire Protection
WC 06 – Asphalt Paving	WC 18 – Glass, Glazing, Alum. Ent.	WC 27 – Mech. and Plumbing Sys.
WC 07 – Fencing	WC 20 – General Trades	WC 28 – Electrical Sys.
WC 08 – Landscaping	WC 21 – Walls and Ceilings	WC 29 – Food Service Equipment
WC 10 – Structural Concrete	WC 22 – Hard Tile and Terrazzo	
WC 11 - Masonry	WC 23 – Carpet & Resilient Floors	

Site Logistics



Schedule / Phasing

Phase 1 - Spring 2017: start as soon as contracts are issued and end on the last day of school for School Year 16/17, 6/9/17.

Major Activities: Site Work, Storm Drain Lines and Detention Basin, West Road, Exterior Basketball Court

Phase 2 - Summer 2017: start after the last day of school for School Year 16/17, 6/9/17.

Major Activities: Excavate and Place Area B Canopy Footings, Underground MEP for Area B, Structural Steel for Area B Addition and Canopy, Masonry Walls at Area B Canopy and Addition, Temporary Protection Wall at Area B Addition, Functional Security Vestibule #142, Exterior Wall Reconfiguration of Existing Priority #1 Bays (this scope includes selective demolition, structural steel, masonry, rough carpentry, temporary enclosures, window systems), Foundations/Floor/Walls/Roof for MEP Room 191, Establish New Electrical Service into MEP Room 191 with Temporary Electrical Feed to Existing Structure, Installation of HVAC Duct and Sprinkler Mains/Branches in Existing Classrooms, Start Tunnel MEP Rough-in

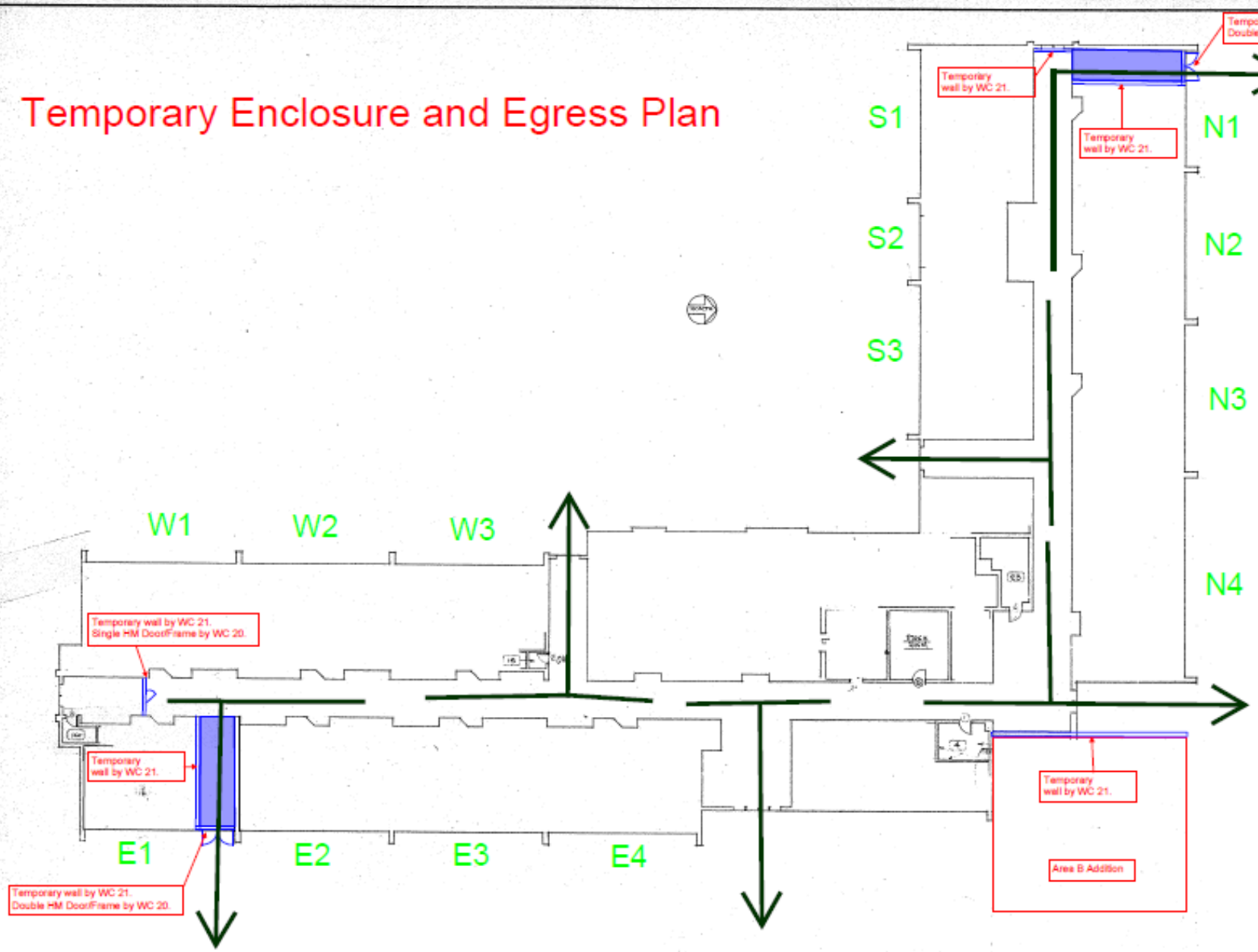
Phase 3 - Fall/Winter/Spring 2017-2018: start on first day of school for School Year 17/18, approximately 9/5/17, and end on the last day of school for School Year 17/18, approximately 6/8/18.

Major Activities: Complete Tunnel MEP Rough-in, Establish Enclosure of Additions A, D & E by 11/15/17, MEP Rough-in of Additions A, D & E, Interior Finishes of Additions A, D & E, Install Contractor Provided Specialties and Equipment in Additions A, D & E

Phase 4 - Summer 2018: start after the last day of school for School Year 17/18, approximately 6/8/18, and will end prior to the first day of school for School Year 18/19.

Major Activities: Flooring Abatement by Owner, Existing Interior Wall Reconfiguration, Exterior Wall Reconfiguration of Existing Priority #2 Bays (this scope includes selective demolition, structural steel, masonry, rough carpentry, temporary enclosures, window systems), Connect Unit Ventilators, Demo Existing Tunnel Hydronic Piping, Install New Playground Equipment, Complete Site Restoration, Interior Finishes of Existing Spaces, Install Contractor Provided Specialties and Equipment in Areas B & C

Temporary Enclosure and Egress Plan



Legend

- Temporary Wall by WC 21
- Temporary Door by WC 20
- N1 Existing Exterior Bay Numbering

Priority for Exterior Wall Reconfiguration by Bay:

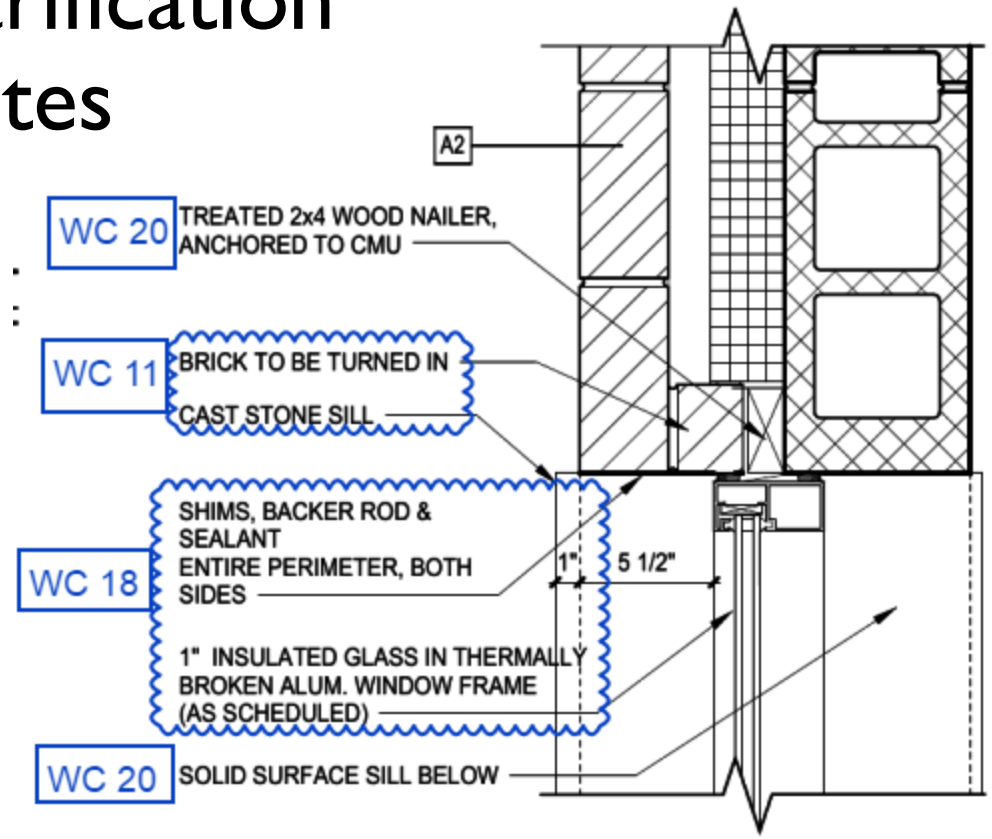
Priority Group #1: E1, N1, W1, W2, W3, S3, S2, S1

Priority Group #2: E2, E3, E4, N2, N3, N4

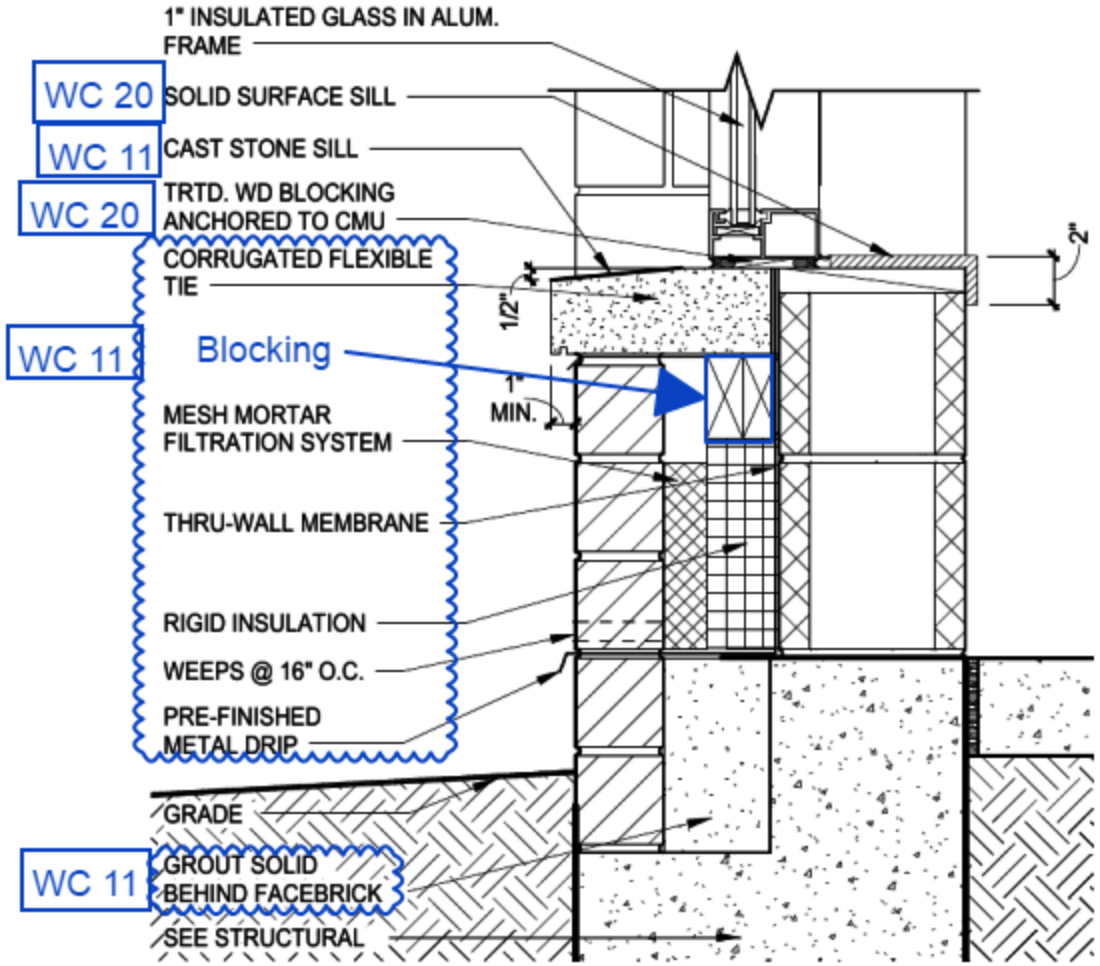
Temporary Enclosure Panel System. WC 20 shall furnish, install, and maintain temporary enclosures on exterior of building during removal and reconfiguration of the exterior walls. WC 20 shall build modular enclosure panels capable of being installed and removed as necessary daily for other adjacent subcontractors (WC 11, WC 12, etc.) to perform work and then be closed at the end of shift. The enclosure panels shall be strong enough to secure the building and prevent weather infiltration. The enclosure panel system shall be utilized in three (3) bays at a time and relocated by the priority list above. Once window rough openings are established in a bay, WC 20 shall enclose individual window openings with plywood and shift the modular panel enclosure system to the next bay on the priority list. WC 18 shall be responsible to remove individual window plywood closures when they install new windows.

→ Egress Paths

WC Scope Clarification Notes



2 / A-110.A TYP. JAMB DTL @ NEW CONSTRUCTION
SCALE: 1 1/2" = 1'-0"



1 / A-311 TYPICAL SILL DETAIL @ NEW CONSTRUCTION
SCALE: 1 1/2" = 1'-0"

Bid Documents and Bidding Procedures

- Documents located on websites
- RFI Cutoff: ***February 15th at 12pm (noon).***
- Addenda No. 1 will be issued February 14th
- Addenda No. 2 will be issued February 20th
- Bid Deadline: ***February 22nd at 2pm –*** Public Bid Opening.
- **Complete all Mandatory Forms**
- **Use the Checklist!**
- Trade Contractor Qualification is Required
- Substitution Procedures

Alternates

- Mandatory (do not include in base bid amount):
  - #1: Furnish and install MCT in lieu of VCT (WC 23)
  - #2: Add two rows of shelving on cabinet wall (WC 20)
  - #3: Furnish and install a standby generator (WC 02, 10, and 28)
  - #4: Reclad existing soffits w/aluminum panels (WC 15 and WC 24)

- Breakout Pricing (include in base bid amount):
  - WC 24: Paint of exposed ceilings in existing spaces where ceiling removed

- Voluntary:
  - Highly encouraged.

Other Notes

- Tax status: Taxable
- Bid security: Required
- Bond: Co-Obligee Labor & Material Payment and Performance
- Michigan LARA Prevailing Wage Project

- Questions: Bids2016@lansingschools.net

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Meeting Sign-In Sheet

Project Name: Lansing Pathway Promise Project: SB-0006 Fairview Additions and Renovations

Meeting Purpose: Project Pre-Bid Conference and Site Walkthrough

Date: February 8th, 2017 at 4:15pm

Name of Representative	Company Name	Phone Number	Email Address
Greig Carneval	Davenport Masonry	517-927-9031	estimating@davenportmasonry.com
Tom Large	The Large Co	372-1843	tomlarge@thelargecompany.com
KIM EMay	CRS Conlige	5174443220	Kim@CRSLLCRcpg.co
Jim Sickles	Roofing Innovations	517 482-2409	jsickles@roofinginnovations.com
Mandy Bressers	Luke Landscape	517-490-0257	mbressers@lukelandscape.com
Jeremy Raymond	Laux Construction	517-694-0117	estimating@lauxconstruction.com
Mike Hull	Superior electric	5174857125	m.hull@superiorelectricinc.com
Tracy Sears	J T & T Elec	5176262786	tsears@jttelectric.com
Dustin Howard	Limbach	517-331-4765	dustin.howard@limbachinc.com
Eric Simon	Limbach	248-310-3718	eric.simon@limbachinc.com
MIKE DOERR	GRAND RIVER INTERIORS	517-889-5806	MIKE@GRIPINTERIORS.COM
JOSH DOBLE	DOBIE CONSTRUCTION	517-627-2981	JTDOBIE@DOBIECONSTRUCTION.COM
Brian Dobson	Centennial	517/543-9900	brian@centennial-electric.co
Butch Redinger	Redinger Steel	517-223-0023	Butch@Redinger Steel.com

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Meeting Sign-In Sheet

Name of Representative	Company Name	Phone Number	Email Address
Ralph Yates	Young Bros	5179273002	ralphy@ybdonline.com
Eric Rademacher	Johnson & Wood	517-719-3202	eric@johnsonwoodllc.com
Troy Stanley	Carols Exc.	517 775 9508	TStanley@carolsexcavatinginc.com
G. Dameron	Integrity	989-415-8610	greg@integrity-interiors.com
Jerry Carter	Moore Trosper	517-694-6310	INFO@MooreTrosper.com
Manuel Smith	Summit	517-575-0881	manuels@summit.ws
Bill Willburn	Superior Asphalt	616-916-9718	bwilburn@superiorasphalt.com
Timmie Snook	Berner Restoration	517-482-1625	tims@berner.com
Tim Wedley	Gunthorpe	517-281-6174	Tim.Wedley@Gunthorpeplumbing.com
Kevin Reeds	Brighton	517-990-1216	kevin@brightonelectric.com
Mary Cooley	ETMackenzie	517-627-8408	mcooley@mackenzieco.com
Tim Spalding	Seelye	517-449-1533	Tim.Spalding@Sgtypes.com
Wade Sheaffer	Limbach	248-521-0239	wade.sheaffer@limbachinc.com
Chris Halloran	Midwest Wall Co.	517-490-1951	chrishalloran@mwwall.com
Josh Redinger	Redinger Steel	517-294-0037	josh@redingersteel.com
Tom Maczik Jr.	Valley Steel	989-737-1054	tomvalleysteel@yahoo.com

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Meeting Sign-In Sheet

Name of Representative	Company Name	Phone Number	Email Address
STEVE Meyer	SCHAFER MASON	517 6480854	smeyer@schaffermason.com
SCOTT BRAYTON	EASTLAND CONC	517-202-1758	EASTCONC@AOL.com
KRISTA CHAMBERLAIN	OUTDOOR EXPRESSIONS	517.706.7320	krista@outdoorxpressionslandscaping.com
MATT JONES	" "	517.712.5430	matt@outdoorexpressionslandscaping.com
CHAD POWERS	NIELSEN CONST.	517-202-6270	CHAD.POWERS@SBCGLOBAL.NET
Brad Morse	Allied Mechanical Services	517-784-8534	bmorse@alliedmechanical.com
TOM BIEGAJ	FD HAYES ELEC.	517-614-7991	tbiegaj@fdhayes.com
JON TOMER	JOHNSON Control	2693703253	JON.A.TOMER@JCI.Com
Scott Chamberlain	Cinbach	248 290 2290	Scott.Chamberlain@CinbachInc.com
Wayne Haughton	D+H	810 691 2170	Wayne@DandHfire.Com
TOM KNOY	METRO CONSTRUCTION	517 483 2264	TKNOYE METROCONSTRUCTION Company.com
TOM DOBIE	DOBIE CONSTRUCTION.	517-627-2981	TDOBIE@DOBIECONSTRUCTION.com

CHRISTMAN
SINCE 1894

Meeting Sign-In Sheet

Name of Representative	Company Name	Phone Number	Email Address
Bob LeVoy	B. J. Painting	517 484 5200	info@bjpaint.com
JEFF MALNER	F. D. Hayes	517-388-2379	JMALNER@FDHAYES.COM
Mike Thackaberry	McDonald Roofing	517-499-5016	MIKET@mcdonaldroofing.biz
Rob Crowe	Christman		
Steve Jarczuk	C2AE		
Barry Rorey	Owners Rep		
Todd Coe	LSD		
Jon Laing	LSD		

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Lansing Pathway Promise Project: SB-0006
Fairview Additions and Renovations
Addendum No. 1

Pre-Bid Question and Answers
February 14, 2017

1. For Temperature Controls: the specifications do not call for a Tridium Front End. On the Averill and Riddle projects Delta Controls was approved as an acceptable manufacturer. Is that the same for the Fairview Project?
    a. **Response from A/E in this addendum.**

2. For WC 10 Structural Concrete, in specification 033000-4, item 2.5, vapor retarder, are we using 10 mil or 15 mil?
    a. **Response from A/E in this addendum.**

3. For WC 10 Structural Concrete, in specification 071113 Bituminous Dampproofing are we installing on the foundations below grade?
    a. **Response from A/E in this addendum.**

4. For WC 10 Structural Concrete, drawing A-311, details call for 4" insulation on walls and under slab, but some of the details are also showing 2" insulation on the outside. Could you please clarify?
    a. **Response from A/E in this addendum.**

5. For WC 02 Earthwork and Site Utilities, City of Lansing Storm Sewer Standards allow the use of reinforced concrete pipe, PVC and HDPE. The plans and specs do not call out which material is to be used. What is the require material for this project?
    a. **Response from A/E in this addendum.**

6. For WC 20 General Trades, in the scope write up, it indicates that we are to provide floor and wall expansion joints. Sheet S-120.D indicates a 2" expansion joint in the masonry. Is this the expansion joint you are referring too? If so, could you provide a specification for the expansion joint?
    a. **Response from A/E in this addendum. The building expansion joint is located in part D.**

7. For WC 20 General Trades, Sheet I-201, Note #5, it is assumed that the prepping and painting of the existing casework will be by WC 24 Painting. Please confirm.
    a. **Yes, WC 24 Painting is responsible for prepping and painting existing casework.**

8. For WC 20 General Trades, Sheet I-201, Note #7, Could you note which doors will need new track replacement? All of the existing doors shown in the elevations are hinged doors.
    a. **There is an existing sliding door cabinet in several classrooms. Field verification will be required for actual count.**

9. Can you clarify what will be involved in WC 22 specific note #3 "selective demolition of existing terrazzo floor and base"?
    a. **WC 22 shall be responsible for cutting and patching of existing terrazzo floor and base at locations where existing corridor walls are modified for new corridor openings.**

10. Can you also clarify if there is any "floor finish" need for the existing Terrazzo floor? There is a note on I-401 about stripping and refinishing the terrazzo.
    a. **Response from A/E in this addendum.**

11. A lot of the floor finishes will not be used until 6-18 months from now. Are you expecting all the products to be order and stored for 6-18 months or do you want our pricing to be good for 6-18 months until the products are needed. All manufacturers will for sure raise their prices before the bulk of the products will be needed.
    a. **Subcontractors are responsible to include appropriate costs in their base bid proposal amounts.**

12. Specification section 015639 Temporary Tree & Plant Protection is listed under the scope for WC 02 & WC 08. Which work category is responsible for the work?
    a. **It is the primary responsibility of WC 08 to perform work outlined within specification section 015639. It is the responsibility of WC 02 to comply with protection requirements as outlined in the specification.**

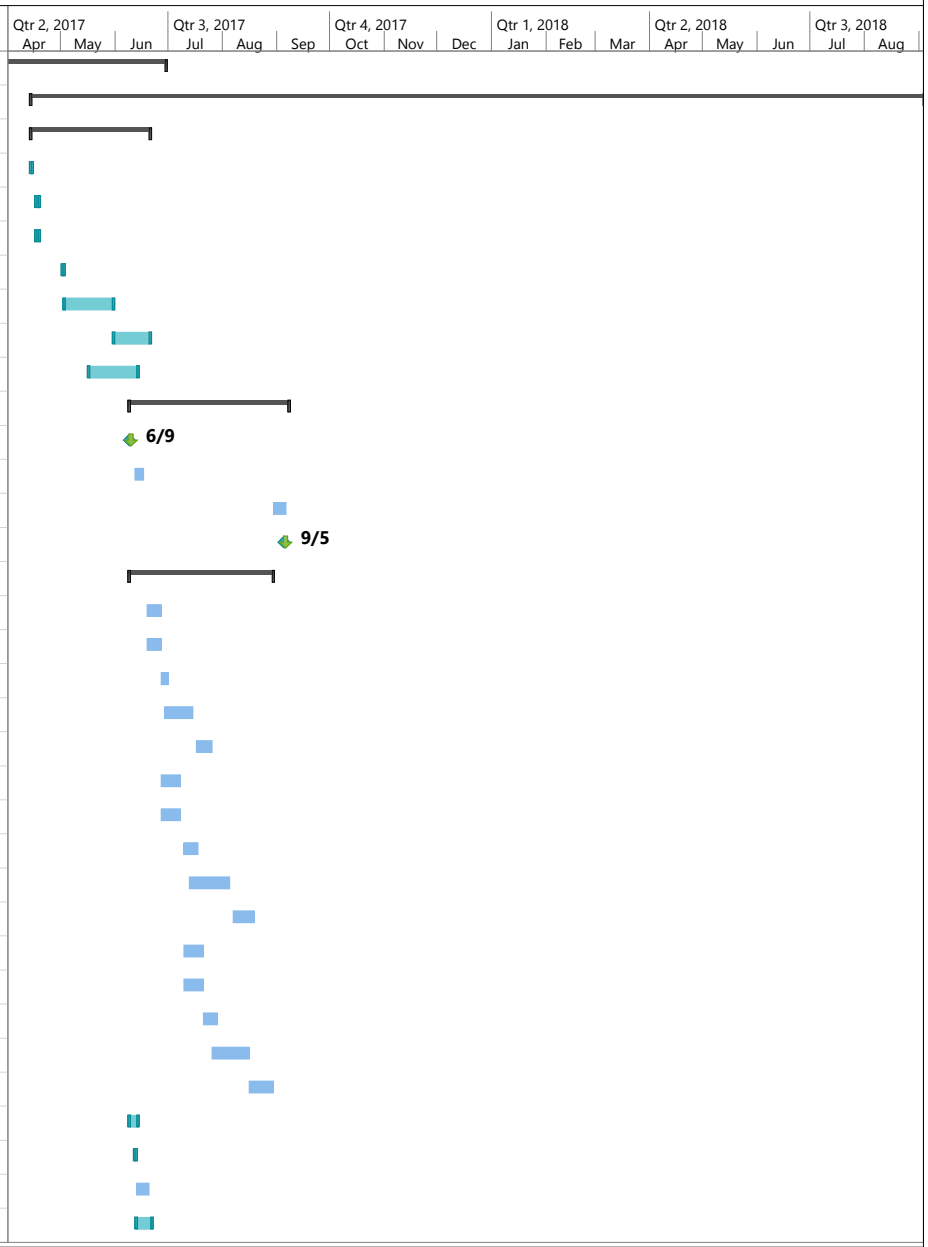
13. There are no cross section details provided for the dumpster pad or for the sidewalk through the driveways. Would you please provide details?
    a. **For dumpster pad see clarification in this addendum. For sidewalk through driveways see detail 1/C-501.**

14. Questions related to the casework: For the shelf above casework in the classrooms is the shelf melamine or P-lam and what holds the shelf up (there is no detail or brackets showing)? For the P-lam countertops we cannot find matching 3mm PVC in 1-1/2" width, can the countertops be 1-1/4" thick or can the 3mm PVC be a solid contrasting color? Is the Dry Erase Laminate PL-6 applied on a substrate or directly on the wall? Do the B3 cabinets in the Kindergarten and Pre-K classrooms have the trays included or are they just open cubbies? Do the Wardrobe units need to have the two drawer file cabinet inside?
    a. **The shelving will be clarified in this addendum. For the countertops, maintain countertop thickness. Contrasting PVC edge will be selected if necessary. For the Dry Erase Laminate, apply directly to wall. For the B3 cabinets, based on specified product, totes are included in base bid. For the Wardrobe units, based on specified product, file drawers are base bid.**

15. For WC 08, is any irrigation to be included? If there is not then are we responsible for watering to establish Lawn areas and planting beds and for how long?
    a. **There is no irrigation. WC 08 is responsible for watering to establish lawn and bed areas. Temporary water connections will be available on site and will be required throughout the duration of the project as necessary until turnover to the owner.**

Lansing Pathway Promise
Project SB-0006: Fairview Elementary
Construction Bid Schedule

ID	Task Name	Duration	Start	Finish
1	**Fairview Pre-Construction**	**123 days**	**Wed 1/11/17**	**Thu 6/29/17**
22	**Construction**	**362 days**	**Fri 4/14/17**	**Tue 9/4/18**
23	**Phase 1: Spring 2017**	**48 days**	**Fri 4/14/17**	**Tue 6/20/17**
24	Mobilize to Site	1 day	Fri 4/14/17	Fri 4/14/17
25	Install Site Fencing and Silt Fence	2 days	Mon 4/17/17	Tue 4/18/17
26	Layout for Drive Road/Lots	2 days	Mon 4/17/17	Tue 4/18/17
27	Ground Breaking Ceremony	1 day	Tue 5/2/17	Tue 5/2/17
28	Install Storm Sewer Along Drive Road	20 days	Wed 5/3/17	Tue 5/30/17
29	Install Storm Detention Basin	15 days	Wed 5/31/17	Tue 6/20/17
30	West Side of Site to Grade	20 days	Wed 5/17/17	Tue 6/13/17
31	**Phase 2: Summer 2017**	**65 days**	**Fri 6/9/17**	**Thu 9/7/17**
32	Last Day of School Year 16/17	0 days	Fri 6/9/17	Fri 6/9/17
33	Owner Move-out	5 days	Mon 6/12/17	Fri 6/16/17
34	Owner Move-in	5 days	Wed 8/30/17	Tue 9/5/17
35	Tentative First Day of School Year 17/18	0 days	Tue 9/5/17	Tue 9/5/17
36	**Existing Building**	**58 days**	**Fri 6/9/17**	**Tue 8/29/17**
37	Demo At Window Wall Bays N1 and E1	6 days	Mon 6/19/17	Mon 6/26/17
38	Temp. Protection at Wall Bays N1 and E1	6 days	Mon 6/19/17	Mon 6/26/17
39	Structural Steel Install N1, E1	4 days	Tue 6/27/17	Fri 6/30/17
40	Masonry Infill at Bays N1 and E1	12 days	Thu 6/29/17	Fri 7/14/17
41	Window Install N1, E1	7 days	Mon 7/17/17	Tue 7/25/17
42	Demo At Window Wall Bays at W1, W2, W3	9 days	Tue 6/27/17	Fri 7/7/17
43	Temp. Protection at Wall Bays W1, W2, W3	9 days	Tue 6/27/17	Fri 7/7/17
44	Structural Steel Install W1, W2, W3	6 days	Mon 7/10/17	Mon 7/17/17
45	Masonry Infill at Bays W1, W2, W3	17 days	Thu 7/13/17	Fri 8/4/17
46	Window Install W1, W2, W3	10 days	Mon 8/7/17	Fri 8/18/17
47	Demo At Window Wall Bays S1, S2, S3	9 days	Mon 7/10/17	Thu 7/20/17
48	Temp. Protection at Wall Bays S1, S2, S3	9 days	Mon 7/10/17	Thu 7/20/17
49	Structural Steel Install S1, S2, S3	6 days	Fri 7/21/17	Fri 7/28/17
50	Masonry Infill at Bays S1, S2, S3	15 days	Wed 7/26/17	Tue 8/15/17
51	Window Install S1, S2, S3	10 days	Wed 8/16/17	Tue 8/29/17
52	Demo Existing Fiber Optic Lines	3 days	Fri 6/9/17	Tue 6/13/17
53	Shutdown Bathrooms in Existing Building	1 day	Mon 6/12/17	Mon 6/12/17
54	Demo Existing Sanitary Piping in Tunnel	5 days	Tue 6/13/17	Mon 6/19/17
55	Demo Existing CW, HW and HWR Piping in Tunnel	7 days	Tue 6/13/17	Wed 6/21/17

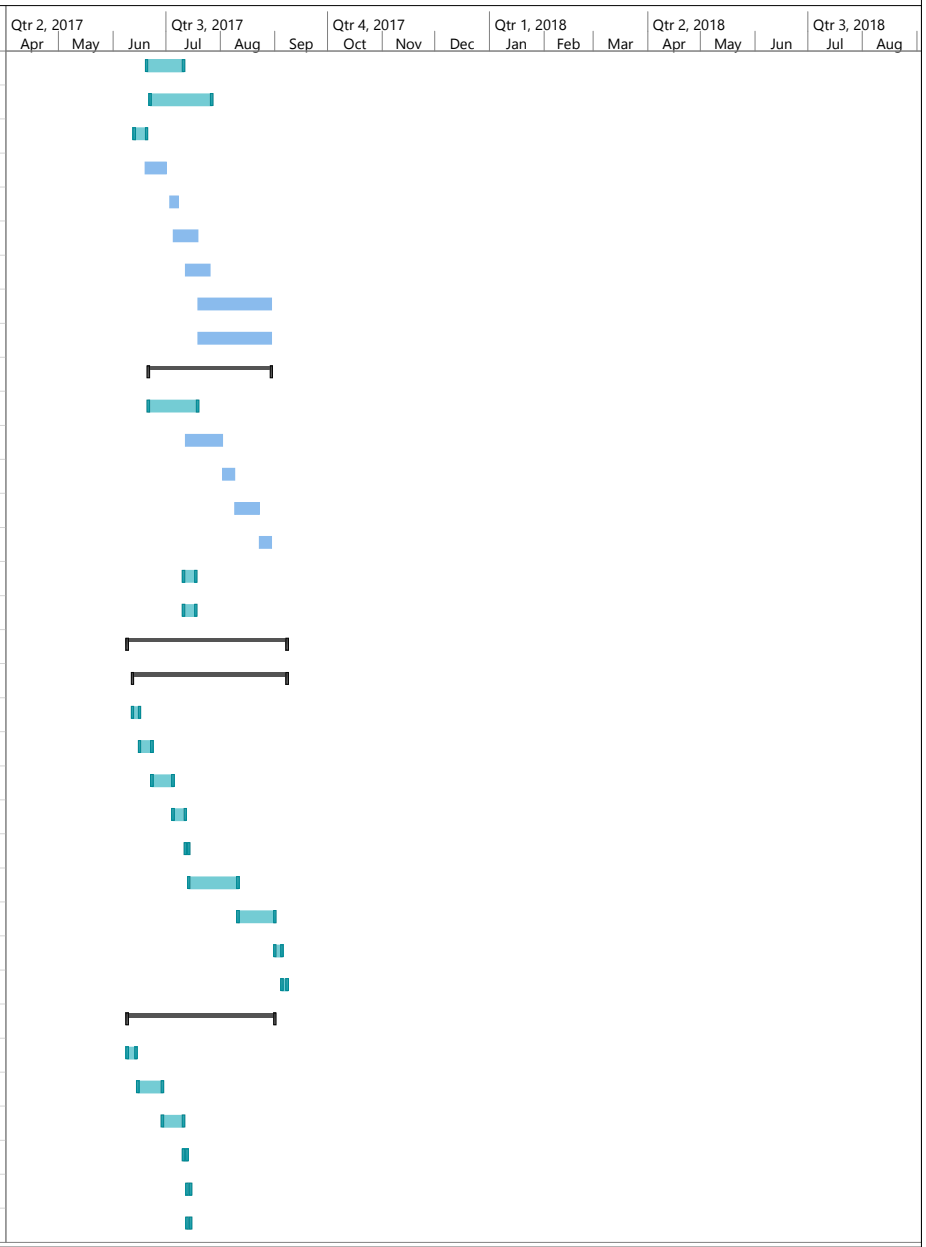


Project: Fairview Schedule Adde
Date: Tue 2/14/17

Task	Project Summary	Manual Task	Start-only	Deadline
Split	Inactive Task	Duration-only	Finish-only	Progress
Milestone	Inactive Milestone	Manual Summary Rollup	External Tasks	Manual Progress
Summary	Inactive Summary	Manual Summary	External Milestone

Lansing Pathway Promise
Project SB-0006: Fairview Elementary
Construction Bid Schedule

ID	Task Name	Duration	Start	Finish
56	Install New Sanitary Lines in Tunnel	15 days	Tue 6/20/17	Mon 7/10/17
57	Install New CW, HW and HWR Piping in Tunnel	25 days	Thu 6/22/17	Wed 7/26/17
58	Demo/Install Storm Piping in Tunnel	5 days	Tue 6/13/17	Mon 6/19/17
59	Install Temp Floor Protection in Existing Building	10 days	Mon 6/19/17	Fri 6/30/17
60	Selective Ceiling Demo and Tie up Existing Lights	5 days	Mon 7/3/17	Fri 7/7/17
61	Demo Existing Ceilings	10 days	Wed 7/5/17	Tue 7/18/17
62	Paint Above Existing Ceilings	10 days	Wed 7/12/17	Tue 7/25/17
63	Install Fire Protection Lines Above Ceilings	30 days	Wed 7/19/17	Tue 8/29/17
64	Install Ductwork Above Ceilings	30 days	Wed 7/19/17	Tue 8/29/17
65	**Sitework**	**50 days**	**Wed 6/21/17**	**Tue 8/29/17**
66	Cut Road Grade and Install Agg Base	20 days	Wed 6/21/17	Tue 7/18/17
67	Install Curb and Gutter	15 days	Wed 7/12/17	Tue 8/1/17
68	Fine Grade and Base Layer Asphalt Drive Road	5 days	Wed 8/2/17	Tue 8/8/17
69	Install New Basketball Court	10 days	Wed 8/9/17	Tue 8/22/17
70	Grade and Install Mulch at Basketball Court/Playground	5 days	Wed 8/23/17	Tue 8/29/17
71	Install 6" Fire Service	5 days	Tue 7/11/17	Mon 7/17/17
72	Install 6" San Service	5 days	Tue 7/11/17	Mon 7/17/17
73	**Building Additions**	**65 days**	**Fri 6/9/17**	**Thu 9/7/17**
74	**Area B Addition**	**64 days**	**Mon 6/12/17**	**Thu 9/7/17**
75	Excavate for Area B and Canopy Footings	4 days	Mon 6/12/17	Thu 6/15/17
76	Underground MEP Area B	5 days	Fri 6/16/17	Thu 6/22/17
77	Area B and Canopy Footing Install	8 days	Fri 6/23/17	Tue 7/4/17
78	Underground MEP Area B Addition	5 days	Wed 7/5/17	Tue 7/11/17
79	Pour Floor Area B Addition	2 days	Wed 7/12/17	Thu 7/13/17
80	Structural Steel Installation Area B Addition and Canopy	20 days	Fri 7/14/17	Thu 8/10/17
81	CMU Walls Area B at Canopy and Addition	15 days	Fri 8/11/17	Thu 8/31/17
82	Temp. Protection Install at Staff Entrance	2 days	Fri 9/1/17	Mon 9/4/17
83	Temp. Roof at Staff Entrance	3 days	Tue 9/5/17	Thu 9/7/17
84	**Area C and Area D Additions (CL 4 to 2.3)**	**60 days**	**Fri 6/9/17**	**Thu 8/31/17**
85	Excavate for Area C/D Footings (CL 4 to 2.3)	3 days	Fri 6/9/17	Tue 6/13/17
86	Underground MEP Area C/D (CL 4 to 2.3)	10 days	Thu 6/15/17	Wed 6/28/17
87	Area C/D Footings (CL 4 to 2.3)	8 days	Thu 6/29/17	Mon 7/10/17
88	Pour Floor Area C/D (CL 4 to 2.3)	2 days	Tue 7/11/17	Wed 7/12/17
89	Pour Equipment Pads in MEP 191	2 days	Thu 7/13/17	Fri 7/14/17
90	Pour Pad for Transformer and Generator	2 days	Thu 7/13/17	Fri 7/14/17

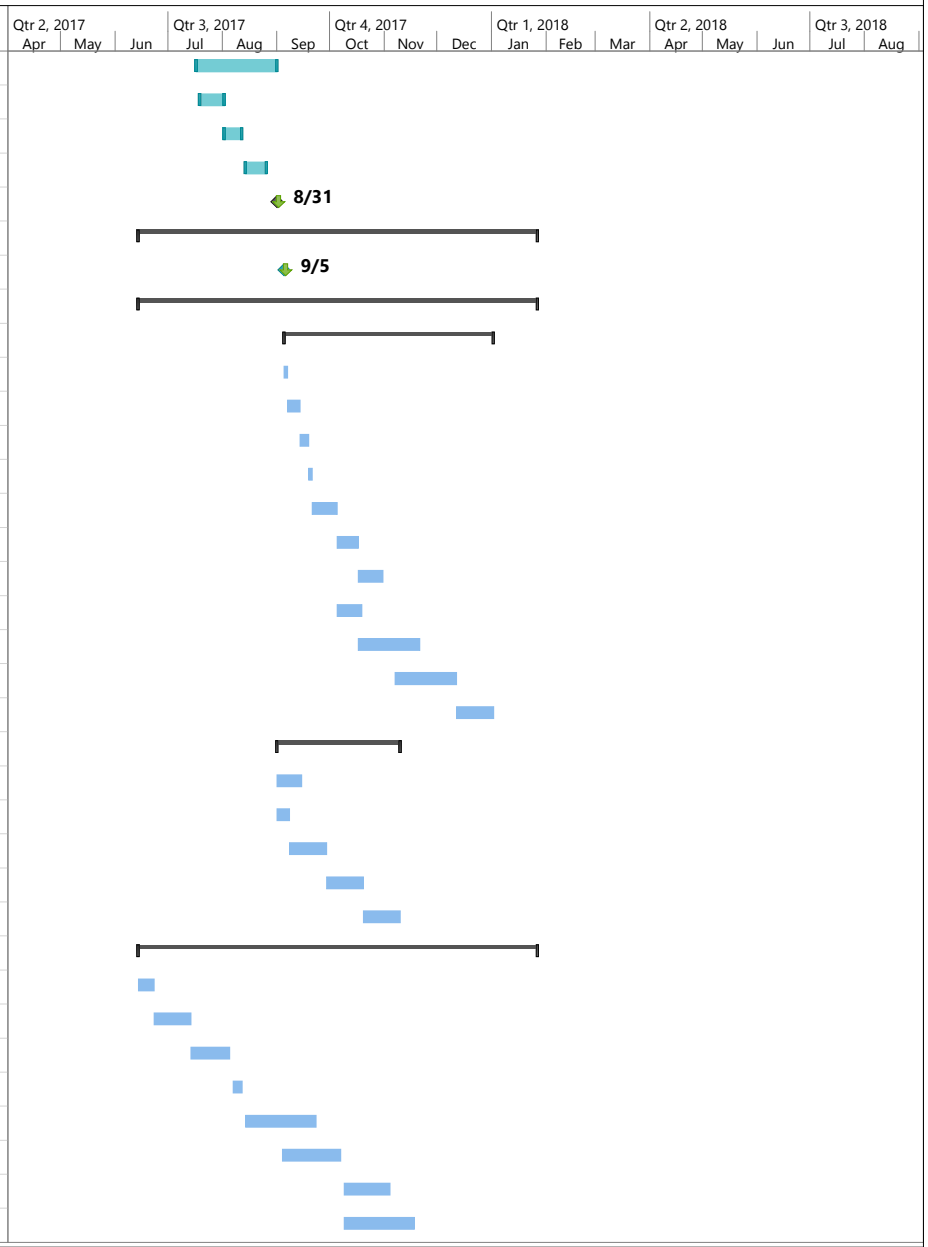


Project: Fairview Schedule Adde
Date: Tue 2/14/17

Task	Project Summary	Manual Task	Start-only	Deadline
Split	Inactive Task	Duration-only	Finish-only	Progress
Milestone	Inactive Milestone	Manual Summary Rollup	External Tasks	Manual Progress
Summary	Inactive Summary	Manual Summary	External Milestone

Lansing Pathway Promise
Project SB-0006: Fairview Elementary
Construction Bid Schedule

ID	Task Name	Duration	Start	Finish
91	Install Transformer, Generator, Building Power	34 days	Mon 7/17/17	Thu 8/31/17
92	CMU Walls Area C/D (CL 4 to 2.3)	10 days	Wed 7/19/17	Tue 8/1/17
93	Structural Steel Install Area C/D (CL 4 to 2.3)	8 days	Wed 8/2/17	Fri 8/11/17
94	Install Roof Area C/D (CL 4 to 2.3)	10 days	Mon 8/14/17	Fri 8/25/17
95	Complete Power/Temp from New Trans to Building	0 days	Thu 8/31/17	Thu 8/31/17
96	**Phase 3: 2017/2018 School Year**	**163 days**	**Wed 6/14/17**	**Fri 1/26/18**
97	Tentative First Day of School Year 17/18	0 days	Tue 9/5/17	Tue 9/5/17
98	**Building Additions**	**163 days**	**Wed 6/14/17**	**Fri 1/26/18**
99	**Area A Addition**	**85 days**	**Tue 9/5/17**	**Mon 1/1/18**
100	Excavate for Area A Addition Footings	2 days	Tue 9/5/17	Wed 9/6/17
101	Underground MEP Area A Addition	5 days	Thu 9/7/17	Wed 9/13/17
102	Area A Addition Footings	3 days	Thu 9/14/17	Mon 9/18/17
103	Pour Floor Area A Addition	2 days	Tue 9/19/17	Wed 9/20/17
104	CMU Walls Area A Addition	10 days	Thu 9/21/17	Wed 10/4/17
105	Structural Steel Installation Area A Addition	8 days	Thu 10/5/17	Mon 10/16/17
106	Install Roof Area A Addition	10 days	Tue 10/17/17	Mon 10/30/17
107	Install Windows Area A	10 days	Thu 10/5/17	Wed 10/18/17
108	MEP Rough-in Area A	25 days	Tue 10/17/17	Mon 11/20/17
109	Interior Finishes in Area A	25 days	Tue 11/7/17	Mon 12/11/17
110	Install Specialties and Equipment Area A	15 days	Tue 12/12/17	Mon 1/1/18
111	**Area B Addition**	**50 days**	**Fri 9/1/17**	**Thu 11/9/17**
112	Install Windows Area B	10 days	Fri 9/1/17	Thu 9/14/17
113	Install Roof Area B	5 days	Fri 9/1/17	Thu 9/7/17
114	MEP Rough-in Area B	15 days	Fri 9/8/17	Thu 9/28/17
115	Interior Finishes Area B	15 days	Fri 9/29/17	Thu 10/19/17
116	Install Specialties and Equipment Area B	15 days	Fri 10/20/17	Thu 11/9/17
117	**Area C and Area D Additions (Remainder)**	**163 days**	**Wed 6/14/17**	**Fri 1/26/18**
118	Excavate for Area C/D Footings	7 days	Wed 6/14/17	Thu 6/22/17
119	Underground MEP Area C/D	15 days	Fri 6/23/17	Thu 7/13/17
120	Area C/D Footings	16 days	Fri 7/14/17	Fri 8/4/17
121	Pour Floor Area C/D	5 days	Mon 8/7/17	Fri 8/11/17
122	CMU Walls Area C/D	30 days	Mon 8/14/17	Fri 9/22/17
123	Structural Steel Install Area C/D	25 days	Mon 9/4/17	Fri 10/6/17
124	Install Roof Area C/D	20 days	Mon 10/9/17	Fri 11/3/17
125	MEP Rough-in Area C/D	30 days	Mon 10/9/17	Fri 11/17/17

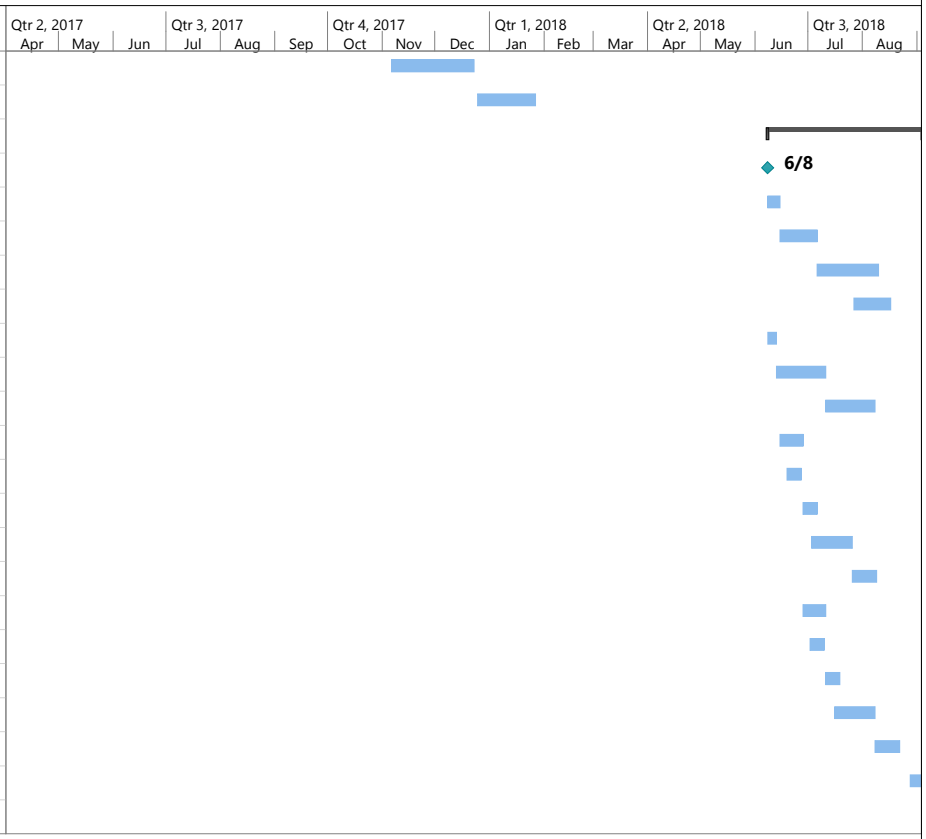


Project: Fairview Schedule Adde
Date: Tue 2/14/17

Task
Split
Milestone
Summary
Project Summary
Inactive Task
Inactive Milestone
Inactive Summary
Manual Task
Duration-only
Manual Summary Rollup
Manual Summary
Start-only
Finish-only
External Tasks
External Milestone
Deadline
Progress
Manual Progress

Lansing Pathway Promise
Project SB-0006: Fairview Elementary
Construction Bid Schedule

ID	Task Name	Duration	Start	Finish
126	Interior Finishes Area C/D	35 days	Mon 11/6/17	Fri 12/22/17
127	Install Specialties and Equipment Area C/D	25 days	Mon 12/25/17	Fri 1/26/18
128	**Phase 4: Summer 2018**	**62 days**	**Fri 6/8/18**	**Tue 9/4/18**
129	Tentative Last Day of School Year 17/18	0 days	Fri 6/8/18	Fri 6/8/18
130	Owner Move-out / Abatement	5 days	Fri 6/8/18	Thu 6/14/18
131	Existing Building Interior Wall Reconfiguration	15 days	Fri 6/15/18	Thu 7/5/18
132	Existing Building Interior Finishes	25 days	Fri 7/6/18	Thu 8/9/18
133	Existing Building Install Specialties and Equipment	15 days	Fri 7/27/18	Thu 8/16/18
134	Demo Existing Playground	3 days	Fri 6/8/18	Tue 6/12/18
135	Install New Playground	20 days	Wed 6/13/18	Tue 7/10/18
136	Turf Establishment	20 days	Wed 7/11/18	Tue 8/7/18
137	Demo At Window Wall Bays E2, E3, E4	9 days	Fri 6/15/18	Wed 6/27/18
138	Temp. Protection at Wall Bays E2, E3, E4	6 days	Tue 6/19/18	Tue 6/26/18
139	Structural Steel Install E2, E3, E4	6 days	Thu 6/28/18	Thu 7/5/18
140	Masonry Infill at Bays E2, E3, E4	17 days	Tue 7/3/18	Wed 7/25/18
141	Window Install E2, E3, E4	10 days	Thu 7/26/18	Wed 8/8/18
142	Demo At Window Wall Bays N2, N3, N4	9 days	Thu 6/28/18	Tue 7/10/18
143	Temp. Protection at Wall Bays N2, N3, N4	6 days	Mon 7/2/18	Mon 7/9/18
144	Structural Steel Install N2, N3, N4	6 days	Wed 7/11/18	Wed 7/18/18
145	Masonry Infill at Bays N2, N3, N4	17 days	Mon 7/16/18	Tue 8/7/18
146	Window Install N2, N3, N4	10 days	Wed 8/8/18	Tue 8/21/18
147	Owner Move-In	5 days	Tue 8/28/18	Mon 9/3/18
148	Tentative First Day of School Year 18/19	0 days	Tue 9/4/18	Tue 9/4/18



Project: Fairview Schedule Adde
Date: Tue 2/14/17

Task
Split
Milestone
Summary
Project Summary
Inactive Task
Inactive Milestone
Inactive Summary
Manual Task
Duration-only
Manual Summary Rollup
Manual Summary
Start-only
Finish-only
External Tasks
External Milestone
Deadline
Progress
Manual Progress

** Trade Contract Agreement **
Lansing Public Schools

THIS AGREEMENT, initiated this day, January 01, 2017, and as executed herein, is by and between: Lansing School District with it's principal place of business located at: 519 W. Kalamazoo St, Lansing, MI 48933 (hereinafter called the Owner) and Soil & Materials Engineers, Inc., with its principal place of business located at: 2663 Eaton Rapids Road, Lansing, Michigan 48911-6310 (hereinafter called the Trade Contractor).

WITNESSETH:

That the Lansing School District and this Trade Contractor, for the consideration identified herein, do by agree to the following:

ARTICLE I - PROJECT:

The Trade Contractor agrees to perform and pay for all of the work, as described in Article IV, for the following project: LCS Fairview SB-0003; located at: 519 W. Kalamazoo St, Lansing, MI 48933 for the Owner: the Lansing School District et al as set forth herein.

ARTICLE II - CONTRACT DOCUMENTS:

The Contract Documents consist of this Agreement and attached exhibits, the scope of work identified herein, AIA Document A232-2009 General Conditions of the Contract for Construction (as modified), and shall be in accordance with the following bid documents prepared by: C2AE located at: 648 Monroe NW Suite 210, Grand Rapids, MI 49503 (herein called the Architect and/or Engineer), including all precontract addenda and subsequent modifications, which documents are hereby a part of this Agreement as if repeated herein and which the Trade Contractor acknowledges receipt and understanding of the following:

DRAWINGS:

See attached Trade Contract Agreement Supplement 'A'.

SPECIFICATIONS:

See attached Trade Contract Agreement Supplement 'A'.

ADDENDA:

See attached Trade Contract Agreement Supplement 'A'.

ARTICLE III:

In consideration for the performance of the work identified herein, the Owner shall pay the Trade Contractor, in current funds, the following firm Contract Sum, subject to additions or deletions by Change Order, as provided in the Contract Documents.

CONTRACT SUM:

1. Work Category		$
	Total for Contract:	$

ARTICLE IV - SCOPE OF WORK:

A. SEE ATTACHED TRADE CONTRACT AGREEMENT SUPPLEMENT 'A'.

ARTICLE V - GENERAL PROVISIONS OF THIS AGREEMENT:

ACCEPTANCE OF THIS ORDER CONSTITUTES AN AGREEMENT OF THE FOLLOWING CONDITIONS:

A. ENTIRE AGREEMENT:

1. This Agreement supersedes and cancels any written or verbal agreements heretofore made, and shall constitute the only agreement between the parties hereto with respect to the work or any portion thereof covered by this Agreement; and further, both parties agree that should any judicial interpretation of this Agreement be required, then in that event, the laws of the State of Michigan shall apply.

2. No terms of this Agreement or the nature and extent of the work under this Agreement shall be waived, modified or enlarged, except in writing signed by the parties hereto.

B. INSPECTION:

1. The Owner, Architect and/or Engineer, or the Construction Manager or their representatives, shall have full and free access at reasonable hours to the shops, factories, or other places of business of the Trade Contractor, or his Subcontractors or suppliers, in order that the Construction Manager may inform itself as to the general condition and progress of the work herein contemplated.

C. BONDS:

1. The Trade Contractor shall pay for and deliver a separate Performance Bond and a separate Labor & Material Payment Bond in the forms acceptable to the Owner and each in the full amount of this Agreement, issued by a surety company with an AM Best rating of A or better, approved to do business in the State of Michigan and acceptable to the Owner and duly executed by those agents with complete Power of Attorney to the full limits therein.

2. The Owner shall have the right, without notice to such surety company, to order changes in the performance or time of performance of this Agreement necessary to complete the work. The above provision shall not prejudice the right of the Owner to require the Trade Contractor to provide additional performance and payment bonds equal to any increase in the value of the work.

D. TAXES AND BENEFITS:

1. The Trade Contractor accepts and assumes exclusive liability for and shall defend and save harmless the Owner and the Construction Manager against the payment of:

   a. All contributions, taxes or premiums which may be payable under Federal and State Unemployment Compensation, Federal Social Security Act, hospitalization and medical assistance and all other Governmental Agency Regulations covering employees, by whomsoever employed, engaged in the performance of the work included in this Agreement.

   b. The contributions and fringe benefits measured by wages of his employees and the employees of his subcontractors required by the Social Security Act, The Federal Income Tax, unemployment tax or any tax under the laws of the State of Michigan requiring the employer to make withholdings from the wages of the employees, and the Trade Contractor accepts exclusive liability for all of such withholding. The Trade Contractor shall certify before receiving a final payment that all such taxes or sums required to be withheld from the employees are paid.

   c. All sales or use taxes, payable by the Trade Contractor arising out of the furnishing or installing by the Trade Contractor of any and all kinds of material, equipment or personal property under this Agreement.

d. All union health, vacation, pension, travel pay, and other fringe benefits; dues, apprenticeship or industry advancement funds; which may be measured by wages of his employees or sub-contractors; shall be paid by the Trade Contractor.

E. INSURANCE:

1. The Trade Contractor represents to be protected by occurrence based policies of insurance for general liability, including comprehensive, products and completed operations, hazard, contractual and independent contractors, and where applicable, underground hazard and/or explosion and collapse, as well as automobile liability, workman's compensation and employer's liability and agrees to maintain such protection in full force and effect for the duration of the Trade Contractor's work and to furnish certificates, identifying the Owner, the Owner Representative (Roney Construction Advisors, LLC), Architect and/or Engineer (C2AE), The Christman Company and their Directors, Officers and Agents as an additional insured, and including other parties, if so specified. Additional Insured Endorsements 20 10 07 04 and 20 37 07 04 or their equivalent are required per this Trade Contract Agreement. All insurance certificates must include evidence of these endorsements. Insurance covering the specified additional insured parties shall be primary insurance and all other insurance carried by the additional insured parties shall be excess insurance.

2. Refer to AIA Document A232-2009, General Conditions of the Contract for Construction (as modified) relative to all insurance.

3. The Trade Contractor shall maintain all policies and the full liability limits:

a.	Worker's Compensation	- Statutory Limit
		- $500,000 Employer's Liability
b.	Commercial General Liability	
	1) Bodily Injury	- $2,000,000 Each Occurrence
		- $2,000,000 Project Aggregate
	2) Property Damage	- $2,000,000 Each Occurrence
		- $2,000,000 Project Aggregate
c.	Comprehensive Automobile Liability	
	1) Bodily Injury	- $2,000,000 Each Occurrence
		- $2,000,000 Project Aggregate
	2) Property Damage	- $2,000,000 Each Occurrence

4. All insurance certificates and policies shall be submitted prior to the performance of any work on site. All certificates and policies shall contain provisions for a 30 day prior written notice to the Owner and other certificate holders of any pending change or cancellation. In the event that the Trade Contractor becomes uninsured for any liabilities specified; such default shall be regarded as a material breach of contract, subject to the provisions of Article U herein.

5. All insurance coverage procured by the Trade Contractor shall be provided by insurance companies which have policy holder ratings not lower than "A" and financial ratings not lower than "XI" in the Best's Insurance Guide, latest edition in effect as of the date of the Agreement.

6. Products and Completed Operations insurance shall be maintained for a minimum period of at least three (3) years after either the actual project Substantial Completion Date or final payment, whichever is earlier.

7. In the event of loss or damage resulting from perils to material, equipment or structures owned by the Trade Contractor, the Trade Contractor will look solely to its own insurance for reimbursement for any such loss or damage. The Trade Contractor, in signing this Agreement, agrees to hold harmless the Owner and Construction Manager for any loss or damage to such materials, equipment, and structures.

8. The Trade Contractor will be held responsible for any damage to existing structures, work, materials, or equipment because of its operations and shall repair or replace any damaged structures, work, materials, or equipment to the satisfaction of, and at no additional cost to the Owner and/or Construction Manager.

9. The Trade Contractor waives all of its rights and shall require its insurance carriers, with respect to all insurance policies, to waive all rights of subrogation against the Owner, Construction Manager, and Architect and/or Engineer, their parent companies, affiliates, subsidiaries, partners, directors, officers, agents, and employees and against other subcontractors.

10. Trade Contractor represents that its subcontractors of any tier will provide and maintain the same insurance coverages and conditions as specified in the Article E. Trade Contractor shall provide copies of Certificate of Insurance to the Construction Manager if requested by the Construction Manager.

F. SAFETY:

1. Refer to AIA Document A232-2009, General Conditions of the Contract for Construction (as modified) for Safety Requirements.

2. In addition to the requirements of the contract general conditions; AIA 232-2009 the Trade Contractor acknowledges receipt of the Construction Manager's Safety Program and Trade Contractor agrees to cooperate with the Owner and/or the Construction Manager's Safety Program, to take all reasonable precautions for the safety of its employees on the projects, to assist in the prevention of accidents or injury to persons on or adjacent to the premises where the work is being performed, and to comply with all federal, state and local safety laws and ordinances applicable to the work. Trade Contractor further acknowledges and accepts full responsibility for safety on the site as it relates to Trade Contractor's operations and employees. The Trade Contractor agrees to submit to the Construction Manager, a current Safety Program and Experience Modification rates for Trade Contractor and any subsubcontractor working at the project site.

3. In addition to the requirements of the contract general conditions; AIA 232-2009 all labor, materials and equipment consumed or supplied under this Agreement shall conform to provisions of the Williams-Steiger Occupational Safety and Health Act of 1970, effective April 28, 1971, and the General Safety Rules and Regulations for the Construction Industry as amended to December 31, 1969, and prepared under the authority of Act No. 88 of the Public Acts of 1943, State of Michigan, as amended. It shall be the responsibility of the Trade Contractor to furnish his employees a place of employment free from recognized hazards that are causing, or likely to cause death or serious physical harm. The Trade Contractor shall be liable for damages as the result of the failure of his employee to follow the provisions as set forth above.

4. In addition to the requirements of the contract general conditions; AIA 232-2009 the Construction Manager shall be immediately notified and recieve copies of all OSHA citations and accident reports, and the Trade Contractor shall immediately correct or remedy nonconforming practices or installations.

5. The Trade Contractor hereby agrees to release, hold harmless and indemnify the Construction Manager and the Owner, from and against such loss, delay, fine, remedial costs, attorney fees, penalties, interest, action or cause of action arising out of any breach, in whole or in part, by the Trade Contractor of this Article.

6 The Trade Contractor expressly agrees and understands that the Trade Contractor shall abide by all requirements dictated by the Michigan Right-To-Know Law in its entirety. Further, the Trade Contractor shall furnish the Construction Manager copies of Material Safety Data Sheets (MSDS) for all materials to be used in the execution of this work.

7. The Trade Contractor shall immediately correct any unsafe conditions identified by Construction Manager. In the event Trade Contractor fails to immediately correct such unsafe conditions, Construction Manager may either (1) have the unsafe conditions corrected by others at Trade Contractor's expense, or (2) direct that the work be stopped in the area of the unsafe condition.

8. Trade Contractor represents that its subcontractors of any tier will abide by the provisions of this agreement.

G. EQUAL OPPORTUNITY:

1. The parties hereto hereby covenant not to discriminate against any employee or applicant for employment with respect to his/her hire, tenure, terms, conditions or privileges of employment because of his/her race, color, age, sex, gender identity, religion, or national origin.

2. The Trade Contractor agrees to comply with the provisions of the Michigan Fair Employment Practices Code.

3. The Trade Contractor also agrees to, when dictated by the Owner, be awardable by and in compliance with the directives and guidelines of the Contract Compliance Division of the Michigan Civil Rights Commission.

H. AGREEMENTS AND ASSIGNMENT:

1. The Trade Contractor shall not sublet this Agreement or any portion thereof, without the written consent of the Owner. Consent will not be given to any proposed Agreement which would relieve the Trade Contractor or its surety of their responsibilities under this Agreement.

2. The Trade Contractor shall make no assignment of any monies due under this Agreement, or which may become due hereunder, without the prior written consent of the Owner.

I. COOPERATION WITH OTHERS:

1. The Trade Contractor agrees to cooperate with the Construction Manager and with all other Trade Contractors with whose work that of the Trade Contractor may come in contact in order to avoid any conflict, and to insure a first-class workmanlike job in every respect.

2. In consideration of the permission by the Owner or Construction Manager to use any tools or equipment of any nature whatsoever, including elevators, hoists, derricks, cranes, side tracks, yards, or any instrument used in or for the erection of this project or otherwise, under the terms of any contract between us, verbal or written, pending the completion of such contract, it is understood and agreed that the Trade Contractor assumes complete responsibility and liability for the use or operation of said equipment and to indemnify and hold harmless the Owner and Construction Manager, against any damage, claim, liability, costs or expense whatsoever, accruing or arising in any manner whatsoever because of Trade Contractor's use or operation of said equipment or use of same for Trade Contractor's benefit, by reason of any accident of any nature to persons or property caused thereby, irrespective of who shall actually operate the said equipment.

3. Further, the Trade Contractor agrees to be responsible for any theft, loss or injury to any of his materials, equipment or tools.

4. Unless otherwise assigned, the Trade Contractor shall do all cutting, fitting, and patching of his work that may be required to make its several parts come together properly and to fit it to receive or be received by work of the other trades.

J. CLEAN UP:

1. Trade Contractor is at all times to keep Owner's premises, adjoining premises, streets, and building clear of rubbish caused by his operation and his workmen, and is to remove all such rubbish at his own expense, as directed by the Construction Manager. If the Trade Contractor shall fail to clean the site to the satisfaction of the Construction Manger and/or the Owner then the Construction Manager may do the necessary cleaning and charge the cost thereof to the Trade Contractor.

K. PROTECTION OF FINISHED WORK:

1. Trade Contractor will protect all his materials and work from hazards and be fully responsible for their condition until accepted by the Owner and also shall be responsible for any damage caused by him to the work or property of others including but not limited to the property of the Owner or the Construction Manager.

2. The Trade Contractor shall be responsible for damages, defects, defacements or delay of the whole project caused in whole or in part by its negligence, and shall forthwith, at its own expense, correct same or accept a reduction in price in the amount of the excess cost incurred by the Owner and/or Construction Manager, as a result of such default.

L. PAYMENT:

1. Refer to AIA Document A232-2009, General Conditions of the Contract for Construction (as modified).

2. For the work performed by theTrade Contractor under this Agreement, the Owner shall make partial payments to the Trade Contractor. The Trade Contractor will be paid for the work in place and materials properly stored by the Trade Contractor, less retainage, as held by the Owner. No payment shall be in any respect taken as an admission by the Owner of the amount of work done, its classification, quality or sufficiency of the sum due the Trade Contractor or as an acceptance of release of the Trade Contractor's responsibility under the terms of this Agreement. After the first partial payment so made to the Trade Contractor, the Owner shall have the right to withhold any subsequent partial payments unless the Trade Contractor furnishes with each request for payment, satisfactory sworn statement and unconditional waiver of lien or bond claim by the Trade Contractor for lower-tier subcontractors, suppliers, payrolls and all such indebtedness connected with the Trade Contractor's work which were reflected in previous payment requests, and for which payment has been made to the Trade Contractor by the Owner. All material for which the Trade Contractor is paid shall become the property of the Owner and shall not be removed from the project site.

3. The Trade Contractor will be required to cut off monthly costs on the 20th of the month and get their percent completed approved by the Construction Manager. Once approved by the Owner, the Trade Contractor must then submit the actual invoice to the Construction Manager by the 25th of the month, in order to receive timely payment.

4. If any liens, bond claims or notice of intention to file are received by the Owner, Architect, or the Construction Manager, the full amount thereof shall be withheld pending adjustment. If the Trade Contractor defaults in payment of his debts on this project, the Owner shall have the right to pay such debts and charge them to the Trade Contractor. This provision shall not be construed as a waiver of the right of the Trade Contractor to file and enforce a lien claim against the Owner.

5. Prior to the first application for payment, the Trade Contractor shall submit for approval a detailed schedule of values on AIA Form G703 or equivalent. The schedule of values must be broken down by the various aspects and areas of work and include labor and material breakdowns for each work item, general conditions, mobilization, demobilization, punch list and administrative close-out. Application for payments will not be processed until the schedule of values has been approved by the Construction Manager.

6. Subject to the provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:

    1. Take that portion of the Contract Sum properly allocable to completed Work as determined by multiplying the percentage completion of each portion of the Work by the share of the total Contract Sum allocated to that portion of the Work in the schedule of values, less retainage of « ten » percent (« 10 » %). Pending final determination of cost to the Owner of changes in the Work, amounts not in dispute may be included as provided in Section 7.3.7 of the General Conditions;

2. Add that portion of the Contract Sum properly allocable to materials and equipment delivered and suitably stored at the site for subsequent incorporation in the completed construction (or, if approved in advance by the Owner, suitably stored off the site at a location agreed upon in writing), less retainage of « ten » percent (« 10 » %);

3. Subtract the aggregate of previous payments made by the Owner; and

4. Subtract amounts, if any, for which the Construction Manager or Architect has withheld or nullified a Certificate for Payment as provided in Section 9.5 of the General Conditions.

5. Any reduction in retainage of this Contract shall be in the sole discretion of the Owner, and the Owner reserves the right to restore the retainage to its full contract amount in the event the Owner believes that retainage restoration is desirable.

M. PAYROLL REPORTS:

1. The Trade Contractor has the responsibility to submit to the Construction Manager weekly certified payrolls in compliance with Labor Department Standards. Failure to comply with this requirement will result in the delay of payment of the Trade Contractor's invoices.

N. CHANGES AND EXTRA WORK:

1. No extra or additional work shall be done by the Trade Contractor except upon the prior written authority of the Owner and in the event the Trade Contractor proceeds without such written authority, the Trade Contractor thereby expressly waives any and all claims for additional payment therefor. No oral waiver of the requirements of prior written authority shall be binding.

2. The Owner may, without invalidating this Agreement, make any changes by altering, adding to, or reducing the extent of the work, including the deletion of any major items of work to be completed under the terms of this Agreement. No change in the extent or scope of such work shall be made except by a Change Order signed by the Owner. The charge or credit for any such changes shall be determined, at Owner's option, by any of the following methods: (1) agreed upon lump sum price, (2) unit prices named in this Agreement or subsequently agreed upon in writing, or (3) time and material. Trade Contractor shall submit for approval a quotation covering any change made in the work which affects the Contract Sum. Said quotation shall be submitted promptly upon receipt of notification of the change. Any increased amount payable to the Trade Contractor by virtue of such change shall not become due until a change order has been reviewed and issued by the Owner.

O. PROGRESS:

1. Refer to AIA Document A232-2009, General Conditions of the Contract for Construction (as modified).

2. Should the Trade Contractor in any way cause in full or in part delay in the progress of the work due to his own fault or negligence so as to cause any loss or damage for which the Owner shall become liable, the Trade Contractor shall compensate the Owner therefor. If the Trade Contractor delays the progress of the work, the Trade Contractor shall, at its own cost and expense, work such overtime or provide additional resources as may be necessary to avoid delay in the completion of the work under this Agreement.

3. If Trade Contractor shall (a) fail to correct, replace and/or re-execute faulty or defective work and/or materials, (b) fail to complete or diligently proceed with this Agreement within the time herein provided, or (c) be unable to proceed with the work because of any action by one or more employees of Trade Contractor or by a person or labor organization purporting or attempting to represent any employee of the Trade Contractor; the Owner, upon three days' notice to Trade Contractor, shall have the right to correct, replace and/or re-execute such faulty, defective or damaged work, or to take over this Agreement with all materials, tools and appliances of the Trade Contractor on the premises and complete the remaining work, charging the cost thereof to Trade Contractor. Under such

circumstances, the Owner shall also have the right to withhold any and all payments to the Trade Contractor until all such cost charges have been paid in full to the Owner.

4. If delayed, the Trade Contractor shall immediately notify the Owner in writing.

P. DISPUTES:

1. Refer to AIA Document A232-2009, General Conditions of the Contract for Construction (as modified).

Q. CLAIMS:

1. Refer to AIA Document A232-2009, General Conditions of the Contract for Construction (as modified).

R. TERMINATION FOR DEFAULT:

1. Refer to AIA Document A232-2009, General Conditions of the Contract for Construction (as modified).

S. INDEMNIFICATION & DEFENSE:

1. Refer to AIA Document A232-2009, General Conditions of the Contract for Construction (as modified) .

T. ENFORCEMENT:

1. The failure of the Owner to enforce, at any time, any of the provisions of this Agreement, or to require at any time, performance by the Trade Contractor of any of the provisions hereof, shall be in no way construed to be a waiver, nor in any way to affect the validity of this Agreement order or any part thereof or the right of the Owner to thereafter enforce each and every such provision.

2. Should any portion of this Agreement be invalid or unenforceable, the remainder of the Agreement shall be valid and enforceable to

the fullest extent permitted by law.

U. WARRANTY:

1. The Trade Contractor warranties that the work herein contracted will be as specified and will be free from defects in design, workmanship, and materials. If within the warranty period the work fails to meet the provisions of this warranty, the Trade Contractor shall promptly correct any defects, including nonconformance with the Contract Documents, by adjustment, repair, or replacement of all defective parts or materials.

2. The Trade Contractor shall provide a one (1) year warranty from the actual project "Substantial Completion Date" on all material, equipment and workmanship unless a longer warranty period is required as specified in the specifications. With respect to any portion of the goods or services which have been repaired or replaced by Trade Contractor during the warranty period, the Trade Contractor shall provide a one (1) year warranty on the goods or services after the date of repair or replacement.

ARTICLE VI - MISCELLANEOUS PROVISIONS

A. NATURE OF RELATIONSHIP:

1. For all purposes herein, the Trade Contractor shall be deemed to be an independent contractor fully responsible for the means, methods and safety measures and procedures utilized fulfilling the scope of services or terms of this Agreement. Under no circumstances shall the Trade Contractor be deemed to be an employee or joint venturer with the Owner or Construction Manager.

B. SEVERABILITY:

1. Any provision of this Agreement may be severable from the whole without affecting the enforceability of the remainder if so deemed by a court of competent jurisdiction.

C. NO WAIVER:

1. Any failure of either party to enforce any of the provisions of this Agreement or to require compliance with any of its terms at any time during the duration of this Agreement shall in no way effect the validity of this Agreement, or any part hereof, and shall not be deemed a waiver of such party thereafter to enforce any and each such provision.

D. SUCCESSORS AND ASSIGNS:

1. This Agreement shall be binding upon the parties hereto and their successors and assigns.

E. EXHIBITS:

1. The following exhibits atttached hereto are included herin by reference.

    a. Exhibit I - Supplement "A"

    b. Exhibit II - Construction Manager's Safety-Program

F. NO THIRD-PARTY BENEFICIARY:

1. This Agreement is not intended to create any third-party beneficiary or duties to or rights to thrid parties, and is only for the direct

benefit of the Owner and Trade Contractor. Without limiting the generality fo the foregoing, nothing in this Agrement shall relieve the Construction Manager of any duties that it owes to the Owner.

G. OTHER PROVISIONS:

1. In the event of any mediation arising out of or relating to this Agreement, Owner reserves the right to require that the mediation hearing be conducted in the general area where the Owner's principal place of business is located. Any mediation with respect to this Agreement shall be non-binding.

2. The Owner reserves the right in its discretion to require consolidation or joinder of any dispute arising out of or relating to this Agreement which another mediation or arbitration involving a person or entity not a party to this Agreement, in the event the Owner believes such consolidation or joinder is necessary in order to resolve a dispute or avoid duplication of time, expense or effort.

3. The Contractor shall include similar dispute resolution provisions in all agreements with subcontractors, sub-consultants, suppliers, or fabricators so retained, thereby providing for a consistent method of dispute resolution among the parties to those agreements.

4. In the event of any inconsistency between this Agreement and the General Conditions of the Contract for Construction applicable for this Agreement, as modified (the "General Conditions"), the terms of this Agreement shall govern.

5. Claims by the Owner arising under this Agreement shall be subject to the limitations provisions defined in Michigan law, except that in no event shall a claim by the Owner be deemed untimely if filed within six (6) years of final project completion. This provision is acknowledged to apply notwithstanding any other and shorter time frames contractually applicable to claims of the Contractor.

6. The modifications made to AIA Document A232 - 2009 Edition by the Owner are hereby incorporated into this Agreement. The Contractor may request a copy of same.

7. All specified insurance certificates and/or insurance policies must be received by the Construction Manager prior to the Contractor commencing work. To the extent required by law or the General Conditions, the Contractor agrees to furnish a performance bond and labor and materials payment bond for the full amount of this contract, including any change orders.

8. Notwithstanding any provisions within the Contract Documents , nothing shall be deemed a waiver of any immunity granted to Owner by law or statute, including but not necessarily limited to, governmental immunity under MCL 691.1407.

9. The Owner, being a governmental unit, is protected by the Michigan Void Construction Contracts Act, MCL 691.991.

10. The Contractor agrees that neither it nor its Subcontractors will discriminate against any employee or applicant for employment, to be employed in the performance of this Agreement, with respect to hire, tenure, conditions or privilege of employment, or any matter directly or indirectly related to employment, because of race, age, sex, color, religion, national origin, ancestry or physical disability. Breach of this covenant may be regarded as a material breach of this Agreement. »

ACCEPTANCE:

The said parties, for themselves, their heirs, successors, executors, and administrators and assignees, do hereby agree to the full performance and covenants contained herein.

By signing below these parties affirm that they are each authorized agents of their respective organizations, with full rights and privileges to enter into this Agreement on behalf of those respective organizations.

TRADE CONTRACTOR	OWNER Lansing Public Schools
By: _____ Signature	By: _____ Signature
_____ Print Name	_____ Print Name
_____ Title	_____ Title
_____ Date	_____ Date
Witnessed By: _____ Print Name	Witnessed By: _____ Print Name
_____ Signature	_____ Signature

REQUEST FOR SUBSTITUTION

TO: _____ **DATE:** _____

PROJECT: _____

SECTION	**PARAGRAPH**	**SPECIFIED ITEM**
_____	_____	_____

PROPOSED SUBSTITUTION: _____ **MODEL:** _____

MANUFACTURER: _____ **PHONE:** (____) _____

Include product description, specifications, drawings, photographs, performance and test data adequate for evaluation. Clearly identify applicable portions of the data. Also include description of changes to contract documents that would be required as a result of the substitution.

The undersigned states that the following line items, unless modified on attachments, are correct:

A. I have read and fully understand the conditions for substitutions outlined in this specification section.

B. The proposed substitution does not affect dimensions shown on drawings.

C. The undersigned will reimburse architect for any building design changes required due to the substitution, including engineering, detailing, and services associated with re-approval by authorities.

D. I will coordinate installation and make both known and unforeseen changes to other work required for substitution at no additional cost to the owner.

E. The proposed substitution will have no adverse affect on other trades, the construction schedule, or specified warranty requirements.

F. Maintenance and service parts will be locally available for the proposed substitution.

G. The undersigned further states that the function, appearance, and quality of the proposed substitutions are equivalent or superior to the specified item.

SUBMITTED BY: _____

SIGNATURE _____

FIRM _____

ADDRESS _____

_____

TELEPHONE (____) _____

FAX (____) _____

FOR USE BY C2AE

ACCEPTED **ACCEPTED AS NOTED**

NOT ACCEPTED **RECEIVED TOO LATE**

BY _____

DATE _____

REMARKS _____

SECTION 233813 - COMMERCIAL-KITCHEN HOODS (ADM1)

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes Type I commercial-kitchen hoods.

1.2 DEFINITIONS

A. Listed Hood: A hood, factory fabricated and tested for compliance with UL 710 by a testing agency acceptable to authorities having jurisdiction.

B. Type I Hood: A hood designed for grease exhaust applications.

1.3 ACTION SUBMITTALS

A. Product Data: For the following:
1. *Hoods.*
2. *Filters/baffles.*
3. *Fire-suppression systems.*
4. *Luminaires.*

B. Shop Drawings:
1. *Show plan view, elevation view, sections, roughing-in dimensions, service requirements, duct connection sizes, and attachments to other work.*
2. *Show cooking equipment plan and elevation to confirm minimum code-required overhang.*
3. *Indicate performance, exhaust and makeup air airflow, and pressure loss at actual Project-site elevation.*
4. *Show control cabinets.*
5. *Show fire-protection cylinders, piping, actuation devices, and manual control devices.*
6. *Detail equipment assemblies and indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.*
7. *Include diagrams for power, signal, and control wiring.*
8. *Duct Connections: Detail connections between ducts and hoods, including access doors and panels.*
9. *Piping Diagrams: Detail fire-suppression piping and components and differentiate between manufacturer-installed and field-installed piping. Include roughing-in requirements for drain connections. Show cooking equipment plan and elevation to illustrate fire-suppression nozzle locations.*

1.4 INFORMATIONAL SUBMITTALS

A. Coordination Drawings: Reflected ceiling plans, drawn to scale, on which the following items are shown and coordinated with each other, using input from installers of the items involved:
1. Suspended ceiling assembly components.
2. Structural members to which equipment will be attached.
3. Roof framing and support members for duct penetrations.

B. Welding certificates.

C. Field quality-control reports.

1.5 QUALITY ASSURANCE

A. Welding Qualifications: Qualify procedures and personnel according to AWS D1.1/D 1.1M, "Structural Welding Code - Steel," for hangers and supports; and AWS D9.1/D9.1M, "Sheet Metal Welding Code," for joint and seam welding.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

2.2 HOOD MATERIALS

A. Stainless-Steel Sheet: ASTM A 666, Type 304.
1. Minimum Thickness: 0.050 inch.
2. Finish: Comply with SSINA's "Finishes for Stainless Steel" for recommendations for applying and designating finishes.
a. Finish shall be free from tool and die marks and stretch lines and shall have uniform, directionally textured, polished finish indicated, free of cross scratches. Grain shall run with long dimension of each piece.
3. Concealed Stainless-Steel Surfaces: ASTM A 480/A 480M, No. 2B finish (bright, cold-rolled, unpolished finish).
4. Exposed Surfaces: ASTM A 480/A 480M, No. 3 finish (intermediate polished surface).
5. When polishing is completed, passivate and rinse surfaces. Remove embedded foreign matter and leave surfaces chemically clean.

B. Sealant: ASTM C 920; Type S, Grade NS, Class 25, Use NT. Elastomeric sealant shall be NSF certified for commercial-kitchen hood application. Sealants, when cured and washed, shall comply with requirements in 21 CFR 177.2600, for use in areas that come in contact with food.
1. Color: As selected by Architect from manufacturer's full range.

2. *Backer Rod: Closed-cell polyethylene, in diameter larger than joint width.*

C. *Gaskets: NSF certified for end-use application indicated; of resilient rubber, neoprene, or PVC that is nontoxic, stable, odorless, nonabsorbent, and unaffected by exposure to foods and cleaning compounds, and that passes testing according to UL 710.*

2.3 GENERAL HOOD FABRICATION REQUIREMENTS

A. *Welding: Use welding rod of same composition as metal being welded. Use methods that minimize distortion and develop strength and corrosion resistance of base metal. Make ductile welds free of mechanical imperfections such as gas holes, pits, or cracks.*
   1. *Welded Butt Joints: Full-penetration welds for full-joint length. Make joints flat, continuous, and homogenous with sheet metal without relying on straps under seams, filling in with solder, or spot welding.*
   2. *Grind exposed welded joints flush with adjoining material and polish to match adjoining surfaces.*
   3. *Where fasteners are welded to underside of equipment, finish reverse side of weld smooth and flush.*
   4. *Coat concealed stainless-steel welded joints with metallic-based paint to prevent corrosion.*

B. *For metal butt joints, comply with SMACNA's "Kitchen Ventilation Systems & Food Service Equipment Guidelines."*

C. *Where stainless steel is joined to a dissimilar metal, use stainless-steel welding material or fastening devices.*

D. *Form metal with break bends that are not flaky, scaly, or cracked in appearance; where breaks mar uniform surface appearance of material, remove marks by grinding, polishing, and finishing.*

E. *Sheared Metal Edges: Finish free of burrs, fins, and irregular projections.*

F. *In food zones, as defined in NSF, fabricate surfaces free from exposed fasteners.*

G. *Cap exposed fastener threads, including those inside cabinets, with stainless-steel lock washers and stainless-steel cap (acorn) nuts.*

H. *Fabricate pipe slots on equipment with turned-up edges sized to accommodate service and utility lines and mechanical connections.*

I. *Fabricate enclosures, including panels, housings, and skirts, to conceal service lines, operating components, and mechanical and electrical devices including those inside cabinets unless otherwise indicated.*

J. *Fabricate equipment edges and backsplashes according to SMACNA's "Kitchen Ventilation Systems & Food Service Equipment Guidelines."*

K. Fabricate enclosure panels to ceiling and wall as follows:
1. *Fabricate panels on all exposed side(s) with same material as hood, and extend from ceiling to top of hood canopy and from canopy to wall.*
2. *Wall Offset Spacer: Minimum of 3 inches.*
3. *Wall Shelves and Overshelves: Fabricate according to SMACNA's "Kitchen Ventilation Systems & Food Service Equipment Guidelines," with minimum 0.0625-inch- thick, stainless-steel shelf tops.*

2.4 TYPE I EXHAUST HOOD FABRICATION

A. Basis-of-Design Product: Subject to compliance with requirements, provide the product indicated on Drawings or a comparable product by one of the following:
1. *Air Tech; Delfield Company (The).*
2. *Captive-Aire Systems.*
3. *Greenheck.*
4. *Halton Company.*

B. Weld all joints exposed to grease with continuous welds, and make filters/baffles or grease extractors and makeup air diffusers easily accessible for cleaning.
1. *Fabricate hoods according to NSF 2, "Food Equipment."*
2. *Hoods shall be listed and labeled, according to UL 710, by a testing agency acceptable to authorities having jurisdiction.*
3. *Hoods shall be designed, fabricated, and installed according to NFPA 96.*
4. *Include access panels as required for access to fire dampers and fusible links.*
5. *Duct-Collar Fire Dampers: Collar and damper shall comply with UL 710 testing and listing required for the entire hood.*
    a. *Collar: Minimum 0.0598-inch- thick stainless steel, at least 3 inches long, continuously welded to top of hood and at corners. Fabricate a collar with a minimum 0.5-inch- wide duct flange.*
    b. *Blades: Minimum 0.1046-inch- thick stainless steel, counterbalanced to remain closed after actuation.*
    c. *Blade Pivot and Spring: Stainless steel.*
    d. *Fusible Link: Replaceable, 212 deg F rated.*

C. Hood Configuration: Exhaust only.

D. Hood Style: Wall-mounted canopy.

E. Filters/Baffles: Removable, stainless-steel, with spring-loaded fastening. Fabricate stainless steel for filter frame and removable collection cup and pitched trough. Exposed surfaces shall be pitched to drain to collection cup. Filters/baffles shall be tested according to UL 1046, "Safety for Grease Filters for Exhaust Ducts," by an NRTL acceptable to authorities having jurisdiction.

F. Luminaires: Surface-mounted, LED luminaires and lamps with lenses sealed vapor tight. Wiring shall be in conduit on hood exterior. Number and location of luminaires shall provide a minimum of 70 fc at 30 inches above finished floor.
1. *Light switches shall be mounted on wall adjacent to hood.*

2. Luminaires: LED complying with UL 1598.

G. Comply with hood control requirements in Section 230923 "Direct Digital Control (DDC) System for HVAC" and Section 230993.11 "Sequence of Operations for HVAC DDC."

H. Hood Controls: Hood-mounting control cabinet, fabricated of stainless steel.
1. Exhaust Fan: On-off switches shall start and stop the exhaust fan. Interlock exhaust fan with designated makeup air supply fan to operate simultaneously. Interlock exhaust fan with fire-suppression system to operate fan during fire-suppression-agent release and to remain in operation until manually stopped. Include red pilot light to indicate fan operation.
a. Exhaust Fan Motor Starter: Comply with Section 262913.03 "Manual and Magnetic Motor Controllers."
2. Temperature Control: Cycle makeup air and exhaust-air fans on and off, based on temperature at hood discharge. Interlock fan control with fire-suppression system to operate during fire-suppression-agent release and to remain in operation until manually stopped. Provide air-purge fan and conduit to photocell and reflector to avoid grease accumulation that will negatively affect performance of system.

I. Capacities and Characteristics: Refer to equipment schedules on drawings.

2.5 WET-CHEMICAL FIRE-SUPPRESSION SYSTEM

A. Basis-of-Design Product: Subject to compliance with requirements, provide the product indicated on Drawings or a comparable product by one of the following:
1. Ansul Incorporated; a Tyco International Ltd. Company.
2. Badger Fire Protection.
3. Kidde Fire Systems.
4. Pyro Chem.
5. Approved Equal.

B. Description: Engineered distribution piping designed for automatic detection and release or manual release of fire-suppression agent by hood operator. Fire-suppression system shall be listed and labeled for complying with NFPA 17A, "Wet Chemical Extinguishing Systems," by a qualified testing agency acceptable to authorities having jurisdiction.
1. Steel Pipe, NPS 2 and Smaller: ASTM A 53/A 53M, Type S, Grade A, Schedule 40, plain ends.
2. Malleable-Iron Threaded Fittings: ASME B16.3, Classes 150 and 300.
3. Piping, fusible links and release mechanism, tank containing the suppression agent, and controls shall be factory installed. Controls shall be in stainless-steel control cabinet mounted on hood or wall. Furnish manual pull station for wall mounting. Exposed piping shall be covered with chrome-plated aluminum tubing. Exposed fittings shall be chrome plated.
4. Liquid Extinguishing Agent: Noncorrosive, low-pH liquid.
5. Furnish electric-operated gas shutoff valve; see Section 231123 "Facility Natural-Gas Piping."

6. *Fire-suppression system controls shall be integrated with controls for fans, lights, and fuel supply and located in a single cabinet for each group of hoods immediately adjacent.*
7. *Wiring shall have color-coded, numbered terminal blocks and grounding bar. Spare terminals for fire alarm, optional wiring to start fan with fire alarm, red pilot light to indicate fan operation, and control switches shall all be factory wired in control cabinet with relays or starters. Include spare terminals for fire alarm, and wiring to start fan with fire alarm.*

PART 3 - EXECUTION

3.1 EXAMINATION

A. *Examine substrates and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.*

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

3.2 INSTALLATION

A. *Coordinate equipment layout and installation with adjacent Work, including luminaires, HVAC equipment, plumbing, and fire-suppression system components.*

B. *Complete field assembly of hoods where required.*
   1. *Make closed butt and contact joints that do not require filler.*
   2. *Grind field welds on stainless-steel equipment smooth, and polish to match adjacent finish. Comply with welding requirements in "General Hood Fabrication Requirements" Article.*

C. *Install hoods and associated services with clearances and access for maintaining, cleaning, and servicing hoods, filters/baffles, grease extractor, and fire-suppression systems according to manufacturer's written instructions and requirements of authorities having jurisdiction.*

D. *Securely anchor and attach items and accessories to walls, floors, or bases with stainless-steel fasteners unless otherwise indicated.*

E. *Install hoods to operate free from vibration.*

F. *Install trim strips and similar items requiring fasteners in a bed of sealant. Fasten with stainless-steel fasteners at 48 inches o.c. maximum.*

G. *Install sealant in joints between equipment and abutting surfaces with continuous joint backing unless otherwise indicated. Provide airtight, watertight, vermin-proof, sanitary joints.*

H. *Install lamps, with maximum recommended wattage, in equipment with integral lighting.*

I. Set initial temperatures, and calibrate sensors.

J. Set field-adjustable switches.

3.3 CONNECTIONS

A. Connect ducts according to requirements in Section 233300 "Air Duct Accessories." Install flexible connectors on makeup air supply duct. Weld exhaust-duct connections with continuous liquid tight joint.

B. Install fire-suppression piping for remote-mounted suppression systems according to NFPA 17A, "Wet Chemical Extinguishing Systems."

3.4 FIELD QUALITY CONTROL

A. Perform the following tests and inspections with the assistance of a factory-authorized service representative:
1. *Test each equipment item for proper operation. Repair or replace equipment that is defective, including units that operate below required capacity or that operate with excessive noise or vibration.*
2. *Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.*
3. *Test drain, gas, and liquid-carrying components for leaks. Repair or replace leaking components.*
4. *Perform hood performance tests required by authorities having jurisdiction.*
5. *Perform fire-suppression system performance tests required by authorities having jurisdiction.*

B. Commercial-kitchen hoods will be considered defective if they do not pass tests and inspections.

C. Prepare test and inspection reports.

3.5 DEMONSTRATION

A. Train Owner's maintenance personnel to adjust, operate, and maintain commercial-kitchen hoods.

END OF SECTION 233813

RENOVATIONS FOR:
LANSING SCHOOL DISTRICT

FAIRVIEW ADDITIONS AND RENOVATIONS

Lansing, Michigan

PROJECT NUMBER: 160400

ISSUE DATE: 01/13/2017

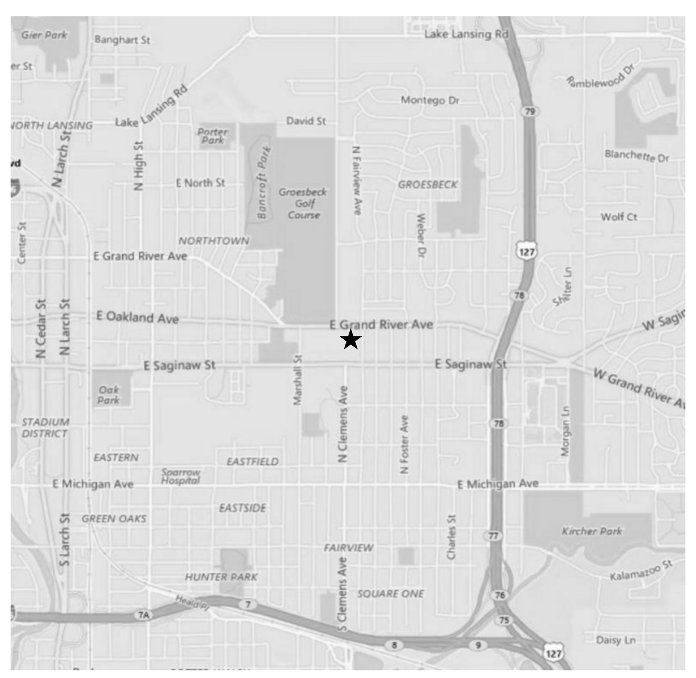
ADDENDUM 1

LANSING PATHWAY PROMISE PROJECT: SB-0003

Set 1 of 2

LOCATION MAP

NO SCALE



VICINITY MAP

NO SCALE

Know what's below. Call before you dig.

IT IS UNDERSTOOD THAT THE CONTRACTOR SHALL PERFORM ALL WORK UNDER THIS CONTRACT IN ACCORDANCE WITH ALL APPLICABLE PROVISIONS, POLICIES, RULES AND STANDARDS OF THE MICHIGAN OCCUPATIONAL SAFETY AND HEALTH ACT (MDSHA), BEING ACT 154 OF THE PUBLIC ACTS OF 1974 AND AS AMENDED.

EXCEPT WHERE OTHERWISE INDICATED ON THE PLANS OR IN THE PROPOSAL SUPPLEMENTAL SPECIFICATIONS CONTAINED THEREIN, ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE APPLICABLE SECTIONS OF THE MICHIGAN DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION, 2003 EDITION, AND THE CURRENT SUPPLEMENTAL SPECIFICATIONS. (AVAILABLE AT WWW.MDOT.STATE.MI.US/SPECBOOK)

THROUGHOUT THE DRAWING SET, THE GRAYSCALE LEGEND ON THE EDGE OF TITLE BLOCKS SHOULD TRANSITION FROM WHITE THROUGH EIGHT SHADES OF GRAY TO SOLID BLACK. IF THE GRAYSCALE SHADES ARE NOT DISTINCT, THE DRAWING(S) HAVE NOT PRINTED CORRECTLY.

Lansing School District

Lansing Pathway Promise

CHRISTMAN SINCE 1894

ADDITIVE ALTERNATES:

1. Furnish and install MCT in lieu of VCT
2. Add two rows of shelving on cabinet wall
3. Furnish and install a standby generator
4. Reclad existing soffits w/ aluminum panels

DRAWING INDEX	
SHEET NUMBER	**SHEET NAME**
000 General	
G-001	COVER SHEET
G-110	FIRST FLOOR LIFE SAFETY PLAN
G-500	TYPICAL STANDARDS AND PARTITION TYPES
003 Civil	
G-1	GENERAL INFORMATION
C-001	EXISTING SITE SURVEY
C-002	PROPOSED SITE PLAN
C-100	SITE DEMOLITION PLAN NORTH
C-101	SITE DEMOLITION PLAN SOUTH
C-102	SITE IMPROVEMENTS AND GEOMETRICS NORTH
C-103	SITE IMPROVEMENTS AND GEOMETRICS SOUTH
C-104	SITE GRADING AND UTILITY PLAN NORTH
C-105	SITE GRADING AND UTILITY PLAN SOUTH
C-106	SOIL EROSION AND SEDIMENTATION CONTROL PLAN
C-201	STORM SEWER PROFILE
C-501	STANDARD DETAILS
C-502	STANDARD DETAILS 2
C-503	UNDERGROUND DETENTION DETAILS
003.5 Landscape	
L-101	LANDSCAPE PLAN NORTH
L-102	LANDSCAPE PLAN SOUTH
L-501	LANDSCAPE DETAILS
004 Structural	
S-001	GENERAL NOTES
S-101.A	FOUNDATION FLOOR PLAN - AREA A
S-101.B	FOUNDATION FLOOR PLAN - AREA B
S-101.C	FOUNDATION FLOOR PLAN - AREA C
S-101.D	FOUNDATION FLOOR PLAN - AREA D
S-101.E	FOUNDATION FLOOR PLAN - AREA E
S-120.A	ROOF FRAMING PLAN - AREA A
S-120.B	ROOF FRAMING PLAN - AREA B
S-120.C	ROOF FRAMING PLAN - AREA C
S-120.D	ROOF FRAMING PLAN - AREA D
S-120.E	ROOF FRAMING PLAN - AREA E
S-200	ELEVATIONS AND DETAILS
S-401	ENLARGED FRAMING PLANS
S-402	ENLARGED FRAMING PLANS
S-500	FOUNDATION DETAILS
S-501	FRAMING DETAILS
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005 Architectural	
AD-110	FIRST FLOOR DEMOLITION PLAN
AD-120	ROOF DEMOLITION PLAN
A-110	OVERALL PLAN
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A-110.E	FLOOR PLAN
A-111.A	FIRST FLOOR RCP - AREA A
A-111.B	FIRST FLOOR RCP - AREA B
A-111.C	FIRST FLOOR RCP - AREA C
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A-120	ROOF PLAN - OVERALL
A-200	EXTERIOR ELEVATIONS
A-201	EXTERIOR ELEVATIONS
A-202	EXTERIOR ELEVATIONS
A-203	EXTERIOR ELEVATIONS
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A-301	BUILDING SECTIONS
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A-401	ENLARGED FLOOR PLANS
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A-521	CANOPY DETAILS
A-600	ARCHITECTURAL SCHEDULES
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I-202	INTERIOR ELEVATIONS
I-203	INTERIOR ELEVATIONS
I-204	INTERIOR ELEVATIONS
I-205	INTERIOR ELEVATIONS
I-206	INTERIOR ELEVATIONS
I-207	INTERIOR ELEVATIONS
I-208	INTERIOR ELEVATIONS
I-400	ENLARGED FINISH PLAN
I-401	ENLARGED FINISH PLAN
I-402	ENLARGED FINISH PLAN
I-403	ENLARGED FINISH PLAN
I-404	ENLARGED FINISH PLAN
I-405	ENLARGED FINISH PLAN
I-600	ROOM FINISH SCHEDULES
I-601	MATERIALS SCHEDULES

1

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LANSING SCHOOL DISTRICT
FAIRVIEW ADDITIONS AND RENOVATIONS
Lansing, Michigan

COVER SHEET

REVISIONS

REV	DESCRIPTION	DATE
1	ADDENDUM 1	2/14/17

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

PROJ. #: 160400

DATE: 01/13/2017

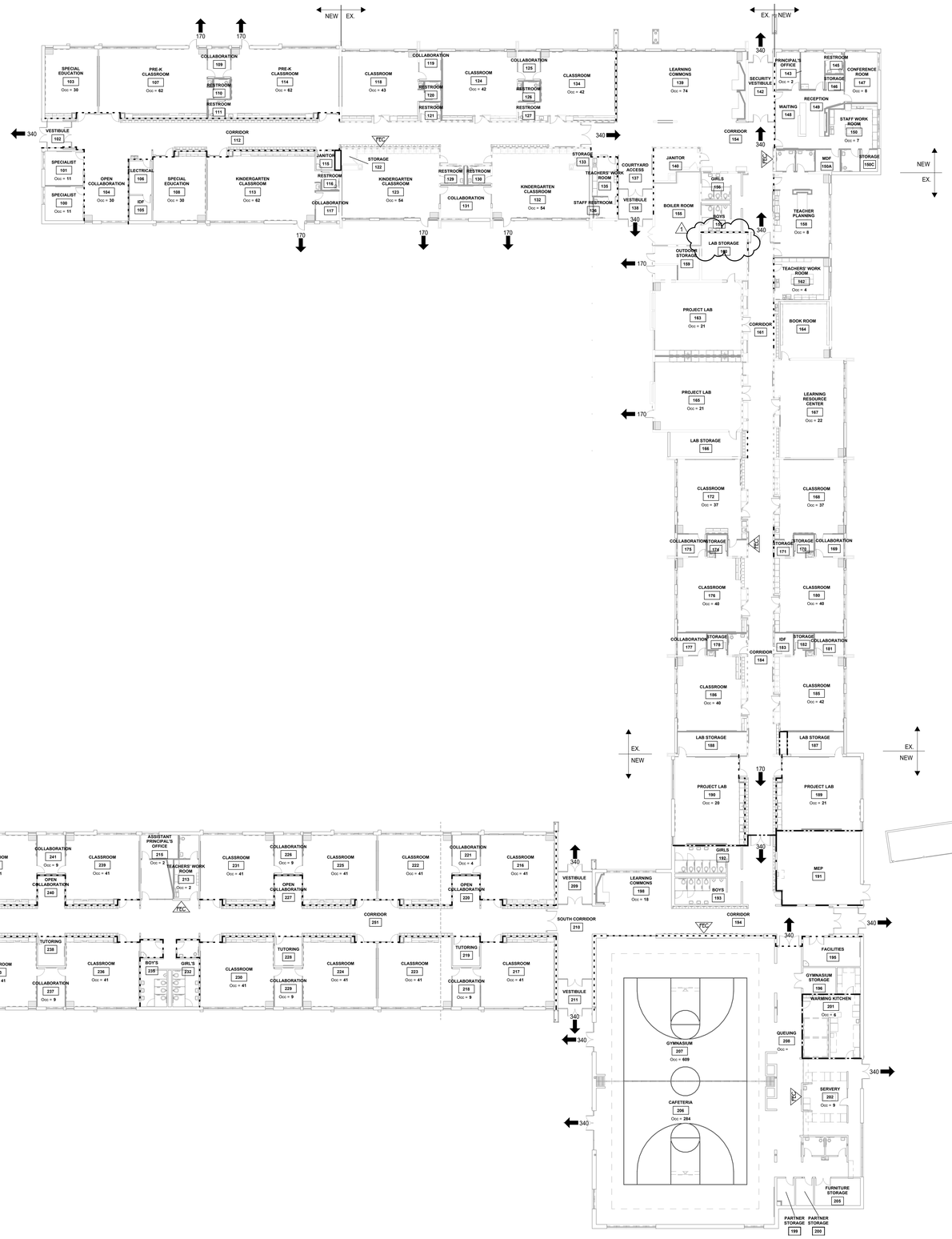
SHEET

G-001

ADDENDUM 1

THE BAR BELOW SHOWS GRAYSCALE FROM WHITE TO SOLID BLACK
BLACK
WHITE
WE RECYCLE

Addendum #1



FIRST FLOOR LIFE SAFETY PLAN
1" = 20'-0"

APPLICABLE CODES AND STANDARDS

APPLICABLE CODES	EDITION:
BUILDING CODES:	
NFPA 101 LIFE SAFETY CODE	2012
MICHIGAN BUILDING CODE	2012
PLUMBING CODE:	
MICHIGAN PLUMBING CODE	2012
HVAC CODE:	
MICHIGAN MECHANICAL CODE	2012
ELECTRICAL CODE:	
NATIONAL ELECTRICAL CODE	2014

CODE SUMMARY

CODE SUMMARY IS BASED ON THE FOLLOWING CRITERIA:
EXISTING BUILDING AND ADDITION ARE TO BE SPRINKLERED THROUGHOUT.
(EXCEPT UNOCCUPIED, NON-COMBUSTIBLE CRAWLSPACE)
EXISTING BUILDING MEETS THE REQUIREMENTS OF NFPA 101,
CHAPTER 15 - EXISTING EDUCATION OCCUPANCIES

OCCUPANCY CLASSIFICATION:
- EDUCATION E *(UNCHANGED)*

BUILDING AREA:

EXISTING CONDITIONS	28,648
NEW CONSTRUCTION	52,461
TOTAL	= 81,109

TYPES OF CONSTRUCTION:
- (I)(200) *(UNCHANGED) AND 3B*

FIRE ALARM SYSTEM:
- NEW

OCCUPANCY LOAD:
- CLASSROOMS 1/20
- LABS 1/50
- GYM 1/7
- CAFETERIA 1/15
- OFFICE 1/100

DOORS/CORRIDOR = 0.2"/ PERSON

DEADEND CORRIDOR = 50' MAX

TRAVEL DISTANCE = 200' MAX

ROOMS OVER 250 SF & STUDENT OCCUPIED NEED EGRESS WINDOW UNLESS SPRINKLED (12.2.11.1)

JANITOR CLOSET = 1 HR OR SPRINKLED

ROOMS W/ GAS = 1 HR OR SPRINKLED

FINISHES: CLASS B

FIRE CODE RATINGS

SMOKE TIGHT PARTITION	EXISTING SMOKE TIGHT PARTITION
1-HR. FIRE RATED WALL	EXISTING 1-HR. FIRE RATED WALL
1-HR. FIRE RATED WALLS/SMOKE BARRIER	EXISTING 1-HR. FIRE RATED WALLS/SMOKE BARRIER
2-HR. FIRE RATED WALL	EXISTING 2-HR. FIRE RATED WALL

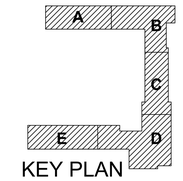
NOTE: EXISTING RATED WALL SHOWN SCREENED ON PLAN. - V.I.F. WALLS MEET DESIGNATED REQUIREMENTS & ADD OPENING & PENETRATION PROTECTIVES AS REQ'D

SYMBOL LEGEND

FEC — FIRE EXTINGUISHER CABINET

EXIT CAPACITY

KEY PLAN



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LANSING SCHOOL DISTRICT
FAIRVIEW ADDITIONS AND RENOVATIONS
Lansing, Michigan

FIRST FLOOR LIFE SAFETY PLAN

REVISIONS

REV.	DESCRIPTION	DATE
1	ADDENDUM 1	2/14/17

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SCALE: As indicated
PROJ. #: 160406
DATE: 01/13/2017
SHEET
G-110

ADDENDUM 1

Addendum #1

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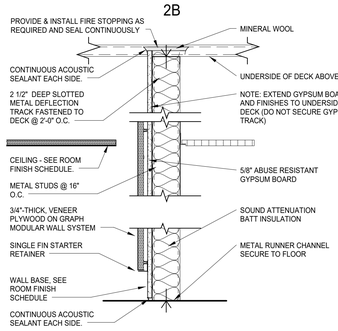
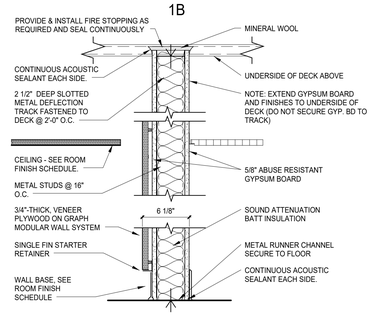
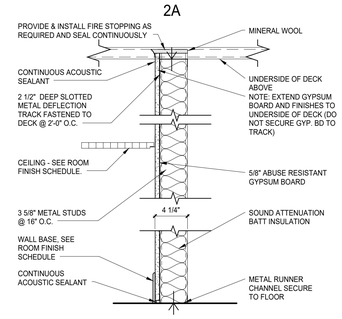






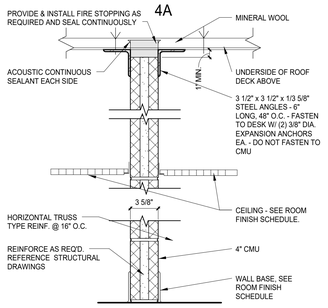
PARTITION TYPE '2C'
6" DEEP, LIGHT GAUGE METAL STUDS
6 5/8" OVERALL THICKNESS

PARTITION TYPE '2D'
2 1/2" DEEP, LIGHT GAUGE METAL STUDS
3 1/8" OVERALL THICKNESS

PARTITION TYPE '1C'
6" DEEP, LIGHT GAGE METAL STUDS
7 1/4" OVERALL THICKNESS

WALL TYPE GENERAL NOTES

1. ALL INTERIOR WALLS SHALL EXTEND FROM TOP OF FLOOR AND BE SEALED TO UNDERSIDE OF FLOOR OR ROOF STRUCTURE. U.N.O.
   A. ALL INTERIOR METAL STUD WALLS THAT EXTEND TO UNDERSIDE OF STRUCTURE SHALL INCORPORATE A 'SLIP-TRACK CONNECTION.
   B. ALL INTERIOR METAL STUD WALLS THAT ARE LATERALLY BRACED TO ADJACENT STRUCTURE SHALL INCORPORATE A SLOTTED LT. GA. CLIP ANGLE WELDED TO STRUCTURE AND CONNECTED TO MTL.STUDS.
2. SEE WALL SECTIONS / STRUCTURAL PLANS FOR VERTICAL WALL REINFORCING SIZE & SPACING EQUIREMENTS. PROVIDE SLEEVES, AS REQUIRED, IN SOLID GROUTED CMU SHEAR WALLS FOR MECHANICAL AND ELECTRICAL PENETRATIONS.
3. INTERIOR WALL CONTROL JOINTS ARE TO BE SPACED 26'-0" O.C. (MAX), INTERIOR & EXTERIOR CONTROL JOINTS ON THE SAME WALL ARE TO ALIGN.
4. PROVIDE DRYWALL CONTROL JOINT @ INTERSECTIONS OF METAL STUD WALL CONSTRUCTION AND MASONRY WALL CONSTRUCTION.
5. VERIFY ALL EXISTING WALLS THAT ARE SCHEDULED AS EXISTING FIRE RATED WALLS MEET U.L. REQUIREMENTS FOR WALLS & OPENING PROTECTIVES. PATCH & REPAIR AS REQUIRED.
6. REMAINING PENETRATIONS IN WALLS DUE TO DEMOLITION WORK SHALL BE INFILLED WITH WALL CONSTRUCTION TO MATCH.
7. PATCH & REPAIR EXISTING WALLS AND SURFACES AFFECTED AS REQ'D. FOR NEW FINISHES, OR AS REQ'D. TO RETURN AREA TO LIKE-NEW CONDITION.
8. PROVIDE FIRE RATED WOOD NAILERS AND BLOCKING - 5/8" PLYWOOD OR 18 GAUGE PLATE AS REQUIRED FOR INSTALLATION OF WALL SUPPORTED EQUIPMENT.
9. SOUND ATTENUATION BLANKET REQUIRED FULL HEIGHT AT ALL ROOMS U.N.O.



PARTITION TYPE '4B'
SAME AS 4A EXCEPT FOR THE FOLLOWING CHARACTRISTICS:
6" CMU
5 5/8" OVERALL THICKNESS

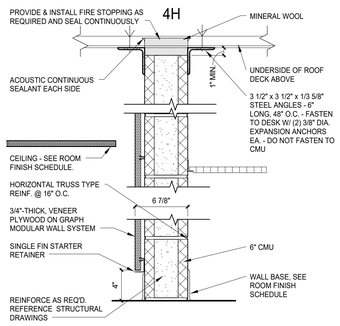
PARTITION TYPE '4C'
SAME AS 4A EXCEPT FOR THE FOLLOWING CHARATRISTICS:
8" CMU
7 5/8" OVERALL THICKNESS

PARTITION TYPE '4D'
SAME AS 4H EXCEPT FOR THE FOLLOWING CHARATRISTICS:
12" CMU
11 5/8" OVERALL THICKNESS

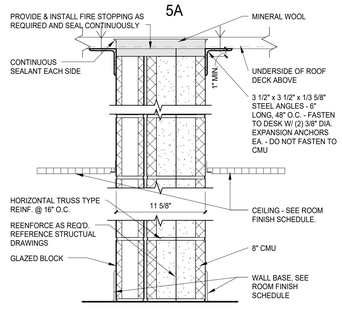
PARTITION TYPE '4E'
SAME AS 4A EXCEPT FOR THE FOLLOWING CHARATRISTICS:
4" GLAZED CMU
3 5/8" OVERALL THICKNESS

PARTITION TYPE '4F'
SAME AS 4A EXCEPT FOR THE FOLLOWING CHARATRISTICS
6" GLAZED CMU
5 5/8" OVERALL THICKNESS

PARTITION TYPE '4G'
SAME AS 4H EXCEPT FOR THE FOLLOWING CHARATRISTICS:
8" GLAZED CMU
7 5/8" OVERALL THICKNESS

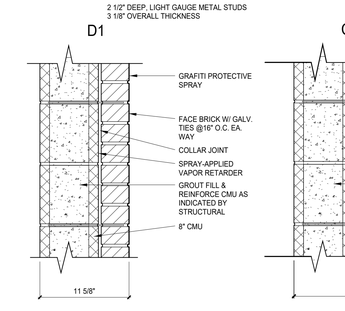


PARTITION TYPE '4I'
SAME AS 4H EXCEPT FOR THE FOLLOWING CHRACTERISTICS
8" WIDE CMU
8 7/8" OVERALL THICKNESS



PARTITION TYPE '5B'
(NON-RATED/4" GLAZED BLOCK ON 8" CMU/UNINSULATED)

PARTITION TYPE '5C'
(NON-RATED/4" CMU ON 8" CMU/UNINSULATED)

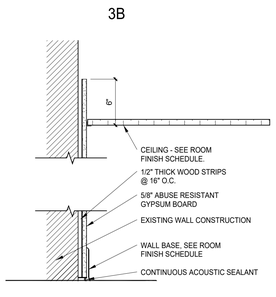


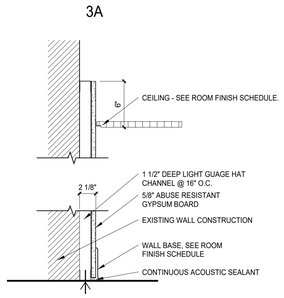
EXTERIOR WALL TYPE 'D2'
SAME AS D1, EXCEPT FOR THE FOLLOWING CHARACTERISTICS:
4" WIDE CMU
8" OVERALL THICKNESS

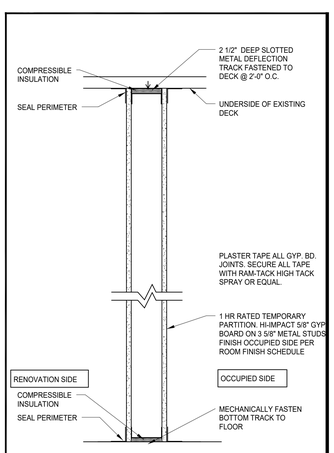
EXTERIOR WALL TYPE 'B2'
SAME AS A1, EXCEPT FOR THE FOLLOWING CHARACTERISTICS:
12" WIDE CMU
1'-3 1/2" OVERALL THICKNESS

EXTERIOR WALL TYPE 'A2'
SAME AS A1, EXCEPT FOR THE FOLLOWING CHARACTERISTICS:
8" WIDE CMU
1'-4" OVERALL THICKNESS

EXTERIOR WALL TYPE 'A3'
SAME AS A1, EXCEPT FOR THE FOLLOWING CHARACTERISTICS:
12" WIDE CMU
1'-8" OVERALL THICKNESS



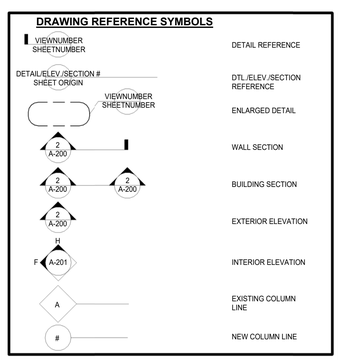




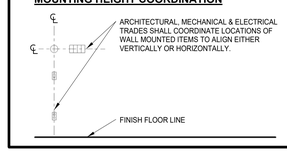
TYPICAL TEMPORARY CONSTRUCTION PARTITION
NOT TO SCALE

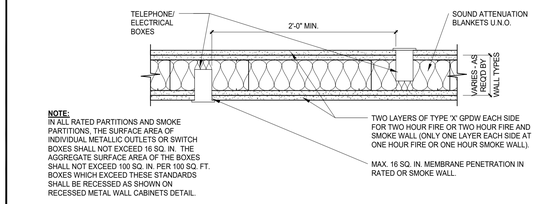
NOTE: REFER TO G-200 FOR LOCATION OF CONSTRUCTION PARTITIONS

DRAWING REFERENCE SYMBOLS



MOUNTING HEIGHT COORDINATION



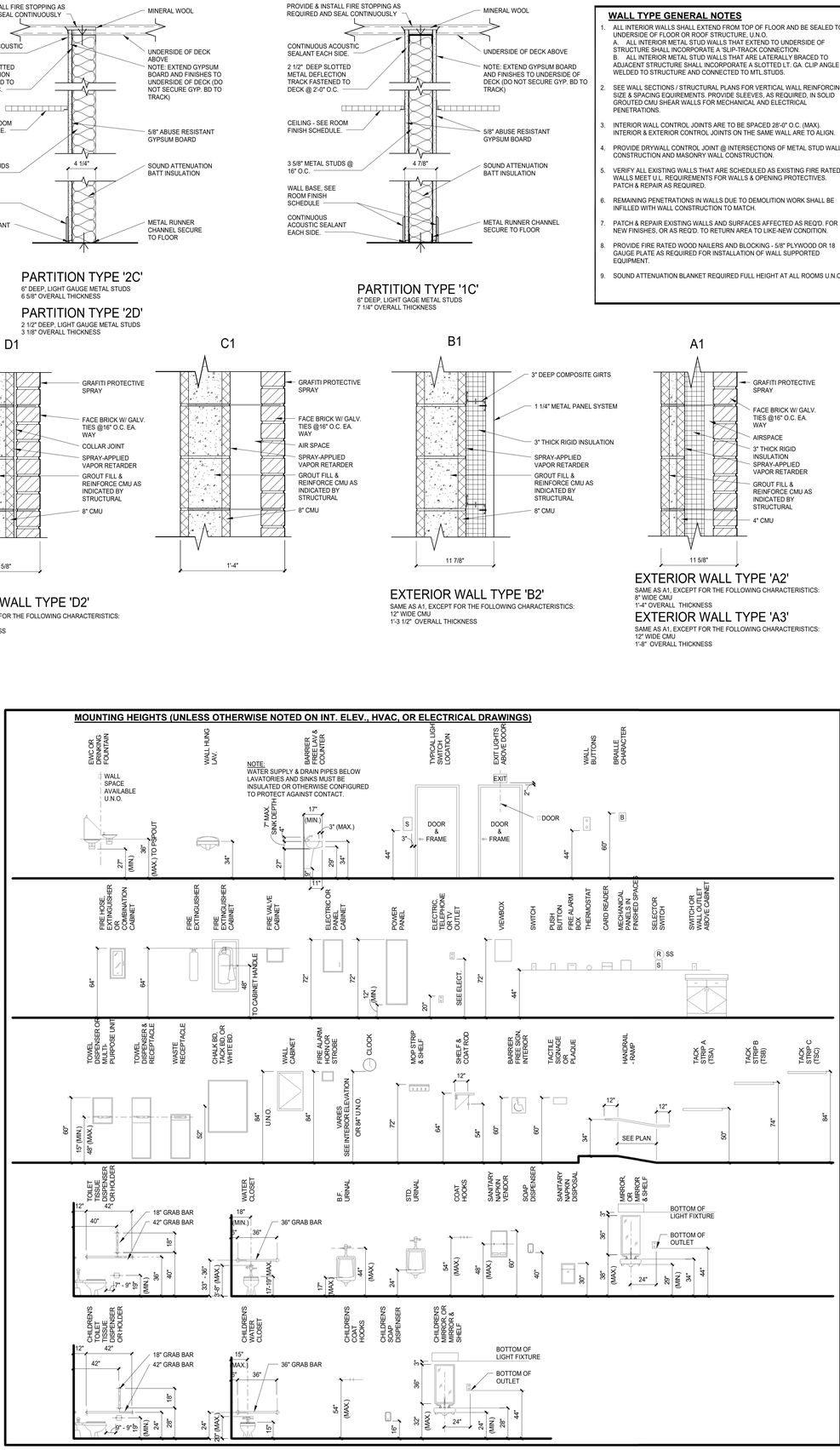


NOTE:
IN ALL RATED PARTITIONS AND SMOKE PARTITIONS, THE SURFACE AREA OF INDIVIDUAL METALLIC OUTLETS OR SWITCH BOXES SHALL NOT EXCEED 16 SQ. IN. THE AGGREGATE SURFACE AREA OF THE BOXES SHALL NOT EXCEED 100 SQ. IN. PER 100 SQ. FT. BOXES WHICH EXCEED THESE STANDARDS SHALL BE RECESSED AS SHOWN ON RECESSED METAL WALL CABINETS DETAIL.

ELECTRICAL/TELEPHONE BOXES IN RATED AND/OR SMOKE WALLS
NOT TO SCALE

NOTE: REFER TO FLOOR PLANS FOR LOCATION OF CONSTRUCTION PARTITION

MOUNTING HEIGHTS (UNLESS OTHERWISE NOTED ON INT. ELEV., HVAC, OR ELECTRICAL DRAWINGS)



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LANSING SCHOOL DISTRICT
FAIRVIEW ADDITIONS AND RENOVATIONS
Lansing, Michigan

TYPICAL STANDARDS AND PARTITION TYPES

REVISIONS

REV	DESCRIPTION	DATE
1	ADDENDUM 1	2/14/17

SCALE: As indicated
PROJ. #: 160400
DATE: 01/13/2017
SHEET: G-500
Addendum #1

ADDENDUM 1

2/14/2017 7:23:22 PM
C:\Users\phillip.southland\160400_Central_ARCH_recovered_phillip.southland.rvt

WE RECYCLE

SCALE: 1" = 20'

20 10 0 20 40 FEET

MATCH LINE - SEE SHEET C-102

SAGINAW STREET (M-43)

FAIRVIEW AVE.

CONSTRUCTION LIMITS, TYP

CENTER WITH BLDG ENTRY SEE ARCHITECTURAL PLANS SEE NOTE 2, THIS SHEET

FF ELEV: 861.8

FF EL=857.00

10 EQUAL BLG LOADING SPACES SHEET C-103 FOR CONTINUATION

39 EQUAL SPACES SHEET C-103 FOR CONTINUATION

REAR YARD SETBACK

20' FRONT YARD SETBACK

SEE NOTE 2, THIS SHEET

SEE NOTE 4, THIS SHEET

9 EQUAL SPACES

2 EQUAL SPACES

20' PRIME WORK ZONE SETBACK

-5' INCIDENTAL CONSTRUCTION SEE NOTE 5, THIS SHEET (TYP BOTH SIDES OF DRIVE)

6" WATER MAIN

8" STORM SEWER

8" SANITARY

8" CONC SW (TYP)

MBT EASEMENT

WEST ENTRANCE ROAD CENTERLINE GEOMETRICS

LINE	BEARING	DISTANCE
L-1	S 00°37'51" E	45.50'
L-2	S 00°00'00" W	472.18'
L-3	S 45°00'00" W	55.95'
L-4	S 00°00'00" W	141.08'

CURVE	DELTA ANGLE	DEGREE OF CURVE	CHORD BEARING	TANGENT	RADIUS	ARC LENGTH	CHORD LENGTH
C-1	40°06'15"	51°09'25"	S 20°03'07" E	40.88'	112.00'	78.39'	76.80'
C-2	40°06'15"	104°10'27"	S 20°03'07" E	20.08'	55.00'	38.50'	37.72'
C-3	45°00'00"	114°35'30"	N 22°30'00" E	20.71'	50.00'	39.27'	38.27'

SITE IMPROVEMENTS NOTES

1. REFER TO SHEET C-102 FOR ADJACENT CONSTRUCTION REQUIREMENTS
2. NEW CONCRETE PAVEMENT TO EXTEND TO BUILDING FOUNDATION, THIS LOCATION. REFER TO SPECIFICATIONS FOR EXPANSION REQUIREMENTS
3. CONTRACTOR SHALL ESTABLISH COORDINATE CONTROL POINTS FOR REVIEW AND APPROVAL PRIOR TO COMMENCING CONSTRUCTION ACTIVITIES. PROTECT THROUGHOUT CONSTRUCTION.
4. INSTALL CURB AND GUTTER TO MATCH ELEVATION OF ADJACENT CONCRETE SIDEWALK, THIS AREA.
5. CONTRACTOR SHALL INSTALL PROPOSED CONCRETE SIDEWALK OR CURB AND GUTTER. FIELD VERIFY EXISTING JOINTS AND SAWCUT AT NEAREST JOINT TO PROVIDE CLEAN CONSTRUCTION LINE. ALL SIDEWALK TO BE PLACED AT 4" DEPTH EXCEPT WHERE SIDEWALK CROSSES DRIVEWAYS, IN WHICH CASE IT SHALL BE PLACED AT 8" DEPTH.
6. BUILDING COORDINATES ARE REFERENCED TO THE EXTERIOR FOUNDATION.
7. INSTALLATION OF PROPOSED CONCRETE CURB AND THICKENED EDGE SIDEWALK TO MATCH FINISH GRADE OF SIDEWALK. CONTRACTOR SHALL TRANSITION BETWEEN SURFACE, INCLUDING REVEAL AND TAPER.
8. ALL AREAS DISTURBED OUTSIDE OF THE CONSTRUCTION LIMITS SHALL BE RESTORED TO A CONDITION EQUAL TO OR BETTER THAN EXISTED PRIOR TO CONSTRUCTION.
9. EXISTING PLANT MATERIAL IDENTIFIED TO REMAIN SHALL BE PROTECTED IN ACCORDANCE WITH REQUIREMENTS OF SPECIFICATION SECTION XXXXX. THE CONTRACTOR SHALL SELECTIVELY PRUNE EXISTING TREES WHICH OVERHANG PARKING AND/OR DRIVE AREA TO PROVIDE A MINIMUM 8' OVERHEAD CLEARANCE.
10. CONTRACTOR SHALL PROVIDE CONCRETE PAVEMENT AND FINISH WITH A 2' X 2' SCORED GRID PATTERN, BROOM FINISH.
11. CONTRACTOR SHALL INSTALL CHAIN LINK FENCE, COMPLETE. FIELD VERIFY LOCATION OF FENCE WITH RESPECT TO PROPERTY LINE PRIOR TO FINAL INSTALLATION, TO ELIMINATE ANY ENCROACHMENT.
12. REFER TO SHEET C-102 FOR ADDITIONAL NOTES.
13. SEE SURVEY, SHEET C-001 FOR HORIZONTAL AND VERTICAL CONTROL INFORMATION.

SITE IMPROVEMENTS KEY

- A CONCRETE WALK — 1 / C-501
- B STANDARD DUTY– HMA PAVEMENT — 4 / C-501
- C HEAVY DUTY– HMA PAVEMENT — 5 / C-501
- D LAWN/LANDSCAPE AREA, SEE SHEET L-101.
- E BASKETBALL COURT — 6 / C-501
- F SITE BENCH — 10 / C-501
- G PLAYGROUND AREA, SEE NOTE 12, SHEET C-102
- H EARTH MOUNDED AMPITHEATER, SEE SHEET C-105
- I PAVEMENT MARKING, TYP SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS
- J THICKENED EDGE CONCRETE WALK — 2 / C-501
- K SITE SIGN, BY OTHERS
- L 4' TALL CHAIN LINK FENCE SEE NOTE 11, THIS SHEET — 7 / C-501
- M 6' TALL CHAIN LINK FENCE SEE NOTE 11, THIS SHEET — 7 / C-501
- N DUMPSTER ENCLOSURE, SEE ARCHITECTURAL SHEETS FOR MORE INFORMATION — A / A-501, 13 / C-501
- O CONSTRUCT 10' TRANSITION FROM FULL HEIGHT CURB TO "0" HEIGHT CURB
- P MDOT TYPE F4 CONCRETE CURB AND GUTTER — 10 / C-502
- Q MDOT TYPE F4 CONCRETE CURB AND GUTTER – WASH OUT GUTTER PAN. TRANSITION FROM STANDARD GUTTER TO WASH OUT 10' EACH SIDE OF LIMITS NOTED. — 10 / C-502
- R MAINTENANCE STRIP — 4 / L-501
- S ELECTRICAL PAD, SEE ELECTRICAL SHEETS FOR MORE INFORMATION — 1 / E-010
- T BARRIER GATE — 11 / C-501
- U UTILITY CUT PAVEMENT REPLACEMENT — 11 / C-502

LEGEND

FV = FIELD VERIFY
FF = FACE TO FACE OF CURB
BB = BACK TO BACK OF CURB
FC = FACE OF CURB
GP = GUTTER PAN
BC = BACK OF CURB

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LANSING SCHOOL DISTRICT
FAIRVIEW ADDITIONS AND RENOVATIONS
INGHAM, MI

SITE IMPROVMENTS AND GEOMETRICS SOUTH

REVISIONS

ADDENDUM 01 02/14/2017

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SCALE: AS SHOWN
PROJ.#: 160400
DATE: 1/12/2017

SHEET
C-103

ADDENDUM 1

PLOTTED BY: RUEL MATTHEW 02/14/2017 1:33 PM
M:\2016\160400_LSD_Fairview\Drawings\Civil\Construct\160400_Fairview Site Plan.dwg SITE IMPROVMENTS AND GEOMETRICS SOUTH
CIVIL SHEETS.CTB

WE RECYCLE

SCALE: 1" = 20'

20 10 0 20 40 FEET

MATCH LINE - SEE SHEET C-104

CONSTRUCTION LIMITS, TYP

CATCH BASIN ST3B
48" DIAMETER
N:452650.46
E:13081447.85

STORM MH ST4
60" DIAMETER
N:452582.73
E:13081338.17

CONSTRUCT 6"ø SDR-26 PVC STORM LEAD TO STORM MH ST4. CONNECT BUILDING FOOTING DRAIN LINE WITH FLEXIBLE COUPLING ADAPTER. COORDINATE LOCATION WITH MECHANICAL CONTRACTOR

CONSTRUCT 10" STORM LEAD AT 1.0%. CONNECT TO BUILDING STORM WITH COUPLING ADAPTER AND FITTINGS AS REQUIRED. COORDINATE LOCATION WITH MECHANICAL CONTRACTOR.

STORM MH ST5
60" DIAMETER
N:452527.61
E:13081338.79

CONSTRUCT 24"X6" TEE WITH 6"ø SDR-26 PVC STORM LEAD. CONNECT BUILDING FOOTING DRAIN LINE WITH FLEXIBLE COUPLING ADAPTER. COORDINATE LOCATION WITH MECHANICAL CONTRACTOR

BUILDING ADDITION
FF = 861.80

EARTHWORK PRELOADING PAD APPROX 9' BELOW FINISHED FLOOR THIS EARTHWORK HAS BEEN COMPLETED.

CONSTRUCT 6" FIRE SERVICE. MAINTAIN 5' MINIMUM COVER OVER MAIN AND SERVICE

CONNECT 6" FIRE SERVICE TO EXISTING WATER MAIN. INSTALL 6" X 6" TAPPING SLEEVE WITH 6" TAPPING VALVE AND VALVE BOX

6" FIRE SERVICE

CONNECT WATER SERVICE AND SANITARY SERVICE TO BUILDING LINES. INSTALL FITTINGS AS REQUIRED AT CONNECTION. SANITARY SERVICE IE 856.30. COORDINATE LOCATIONS WITH MECHANICAL CONTRACTOR.

6" SAN SERVICE

BUILDING ADDITION
FF = 861.80

CONSTRUCT 6"ø SANITARY SERVICE AT 1%. CONNECT TO SANITARY SEWER WITH AN 8" X 6" SERVICE CONNECTION. CONNECT TO BUILDING SANITARY LINE WITH COUPLING ADAPTER AND FITTINGS AS REQUIRED. DETAIL 12, SHEET C-502 FOR CONNECTION TO MAIN.

CATCH BASIN ST6A
48" DIAMETER
N:452440.82
E:13081263.06

STORM MH ST6
60" DIAMETER
N:452413.89
E:13081339.72

STORM MH ST9
60" DIAMETER
N:452411.29
E:13081404.04

STORM MH ST8
72" DIAMETER
N:452375.74
E:13081342.80

STORMTECH MODEL MC-3500
23,907 CU. FT. OF STORAGE
121 UNITS (11 ROWS BY 11 LONG)
BASE EL: 849.25'
TOP OF STONE EL: 854.75'
SEE SHEET C-503 FOR ADDITIONAL INFORMATION

STORM MH ST7
48" DIAMETER
N:452339.63
E:13081404.04

STORM MH ST10
48" DIAMETER
N:452375.46
E:13081404.04

CATCH BASIN ST7B
48" DIAMETER
N:452298.40
E:13081322.15

CATCH BASIN ST7A
48" DIAMETER
N:452298.40
E:13081346.15

CONSTRUCTION LIMITS, TYP

FF EL=857.00

MBT EASEMENT

30' REAR YARD SETBACK

20' FRONT YARD SETBACK

15" WATER MAIN

6" WATER MAIN

6" SANITARY

42" SD

24" STORM

12" STORM

T4N-R2W_I-5_PIN

N 89°49'24" E 390.24'

N 89°30'07" W 441.11'

N 89°30'51" W 422.38'

SAGINAW STREET (M-43)

FAIRVIEW AVE.

NO-PARKING

EX Structure

EX Hydrant

EX Utility Pole

PINCH

CONSTRUCTION LIMITS, TYP

SITE GRADING/UTILITY NOTES

1. CONTRACTOR SHALL PROVIDE A 2% SLOPE ACROSS WALK PAVEMENT IN DIRECTION NOTED, UNLESS OTHERWISE DIRECTED. CROSS SLOPES MUST CONFORM TO ADA REQUIREMENTS.
2. SEE SHEETS C-201 AND C-503 FOR STORM SEWER PROFILE AND UNDERGROUND DETENTION SYSTEM DETAILS.
3. CONTRACTOR SHALL GRADE SITE UNIFORMLY BETWEEN SPOT ELEVATIONS REFERENCED.
4. GRADIENTS IN LAWN/LANDSCAPE AREAS ARE NOT TO EXCEED A 1:4 (HORIZONTAL : VERTICAL) AT ANY TIME.
5. STORM MH ST8 IS THE OUTLET CONTROL STRUCTURE, SEE DETAIL 9, SHEET C-501 FOR ADDITIONAL INFORMATION.
6. STORM MH ST6 IS TO BE A STC 900 STORMCEPTOR STRUCTURE, OR APPROVED EQUAL.
7. STORM MH ST7A IS TO BE A STC 450i STORMCEPTOR CATCH BASIN, OR APPROVED EQUAL.

LANSING BOARD OF WATER AND LIGHT NOTES

1. MAINTAIN A MINIMUM OF 10 FEET HORIZONTAL AND 18 INCHES VERTICAL SEPARATION BETWEEN WATER AND SEWERS AND A MINIMUM OF 5 FEET HORIZONTAL AND 12 INCHES VERTICAL SEPARATION BETWEEN WATER AND OTHER UTILITIES.
2. ALL WATER MAIN AND SERVICES TO BE INSTALLED IN ACCORDANCE WITH LBWL STANDARDS AND SPECIFICATIONS.
3. CONTRACTOR TO CONTACT THE LBWL AT LEAST 72 HOURS PRIOR TO SCHEDULED SHUT OFFS TO COORDINATE SHUT DOWN AND TURN ON ACTIVITIES.
4. ALL DUCTILE IRON WATER MAIN SHALL BE PRESSURE CLASS 350. ALL COPPER PIPE SHALL BE TYPE K.
5. ALL WORK ON LBWL WATER DISTRIBUTION SYSTEM SHALL BE PERFORMED BY THE LBWL OR BY A LBWL APPROVED CONTRACTOR WITH A LBWL INSPECTOR ON-SITE.
6. A LBWL WATER SERVICE AGREEMENT SHALL BE IN PLACE PRIOR TO CONSTRUCTION OF ANY WATER RELATED ITEMS.

LEGEND

874	EXISTING CONTOUR
874	PROPOSED CONTOUR
+873.25	PROPOSED SPOT ELEVATION
+873.25TC	PROPOSED TOP OF CURB ELEVATION
+873.25LIP	PROPOSED LIP OF GUTTER ELEVATION
+873.25TW	PROPOSED TOP OF WALK ELEVATION

PLOTTED BY: BEN MATTHEW - 1/5/2021 11:13 PM
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CASE STUDIES 2018

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LANSING SCHOOL DISTRICT
FAIRVIEW ADDITIONS AND RENOVATIONS
INGHAM, MI

SITE GRADING AND UTILITY PLAN SOUTH

REVISIONS

ADDENDUM 01
02/14/2017

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SCALE: AS SHOWN

PROJ. #: 160400

DATE: 1/12/2017

SHEET
C-105

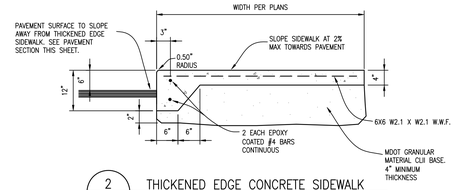
ADDENDUM 1

WE RECYCLE

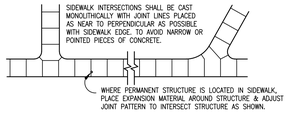
1 C-501 CONCRETE SIDEWALK
(NO SCALE)

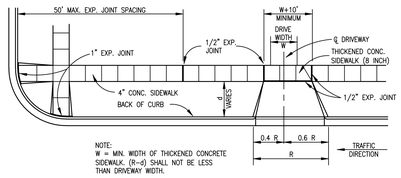
NOTE: TRANSVERSE AND LONGITUDINAL JOINTS TO MEET THE FOLLOWING REQUIREMENTS UNLESS OTHERWISE DETAILED ON THE DRAWINGS.

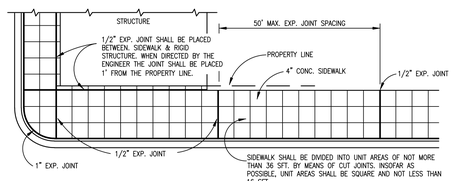
1. TRANSVERSE JOINT SPACING TO MATCH SIDEWALK WIDTH FOR SIDEWALKS 7'-0" AND LESS IN WIDTH.
2. TRANSVERSE JOINT SPACING FOR SIDEWALKS IN EXCESS OF 7'-0" IN WIDTH TO BE 1/2 THE SIDEWALK WIDTH.
3. FOR SIDEWALKS WIDER THAN 7'-0", SAWCUT A LONGITUDINAL JOINT ALONG THE CENTERLINE OF THE SIDEWALK.
4. INSTALL EXPANSION JOINTS AT 50' INTERVALS.



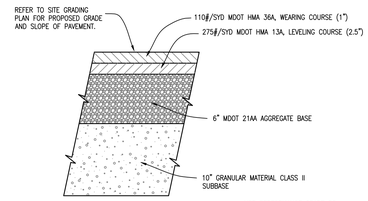
2 C-501 THICKENED EDGE CONCRETE SIDEWALK
(NO SCALE)



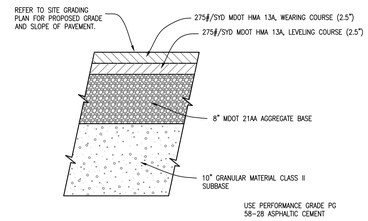




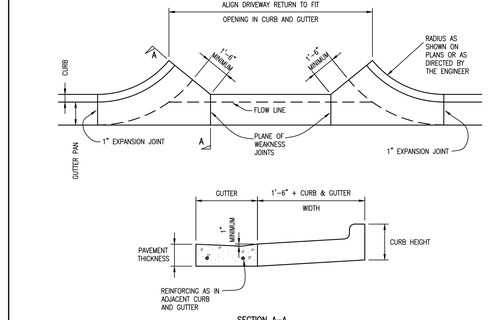
3 C-501 LOCATION OF JOINTS IN CONCRETE SIDEWALK
(NO SCALE)



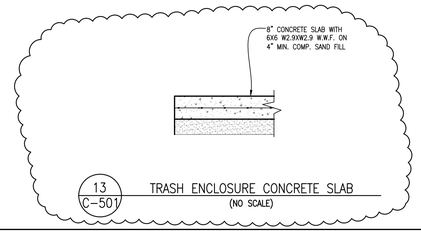
4 C-501 STANDARD DUTY HMA PAVEMENT SECTION
(NO SCALE)



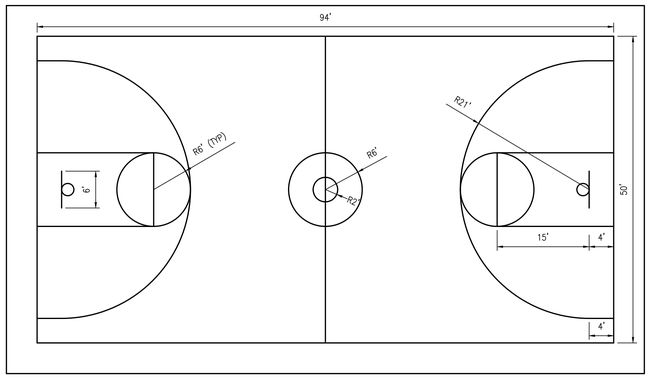
5 C-501 HEAVY DUTY HMA PAVEMENT SECTION
(NO SCALE)



12 C-501 MDOT TYPE M DRIVEWAY OPENING
(NO SCALE)

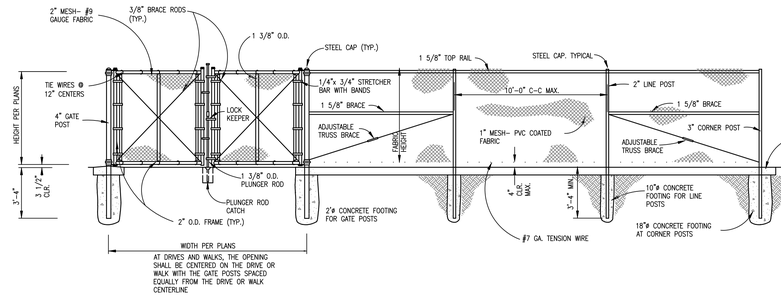


13 C-501 TRASH ENCLOSURE CONCRETE SLAB
(NO SCALE)

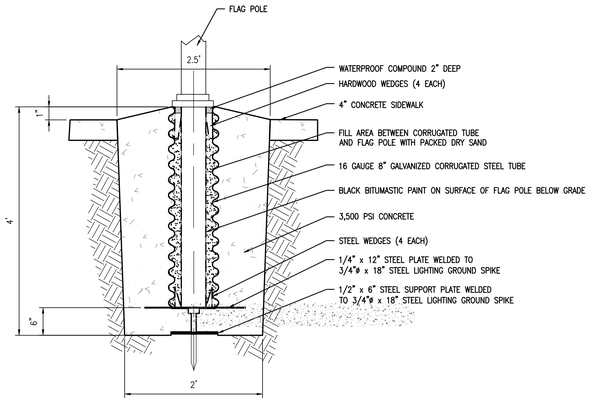


NOTES:
1. CONTRACTOR SHALL FURNISH AND INSTALL TWO (2) HEAVY DUTY GOAL SYSTEMS CONSISTING OF 1/2" THICK PLEXIGLAS, ONE PIECE 7 GA THICK 5" SQUARE POLE AND COMPETITION GRADE BREAK AWAY RIM, ADJUSTABLE TO A HEIGHT OF 5'0", AND AN OVERHANG MAXIMUM OF 3'0", AS MANUFACTURED BY PRO DUNK HOOPS, 22047 LUTHERN CHURCH RD, SUITE 1, TOMSALL, TX 77377 OR APPROVED EQUAL. INSTALL PER MANUFACTURERS RECOMMENDATIONS.
2. BASKETBALL COURT TO BE MARKED AS SHOWN. SEE SPECIFICATION 321723 FOR ADDITIONAL INFORMATION REGARDING PAVEMENT MARKING REQUIREMENTS.

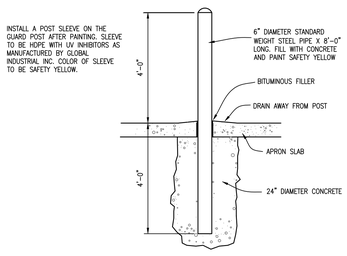
6 C-501 BASKETBALL COURT STRIPING DETAIL
(NO SCALE)



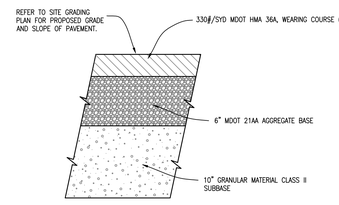
7 C-501 CHAIN LINK FENCE WITH SWING GATE DETAIL
(NO SCALE)



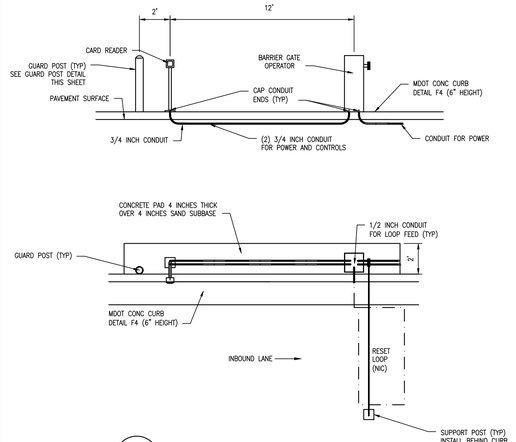
8 C-501 FLAG POLE FOUNDATION DETAIL
NO SCALE



9 C-501 GUARD POST DETAIL
NO SCALE



10 C-501 TYPICAL BASKETBALL COURT PAVEMENT SECTION
NO SCALE



11 C-501 BARRIER GATE
NO SCALE

PLOTTED BY: BEEL, MATTHEW - 12/12/2017 - 1:24 PM
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LANSING SCHOOL DISTRICT
FAIRVIEW ADDITIONS AND RENOVATIONS
INGHAM, MI

STANDARD DETAILS

REVISIONS

ADDENDUM 01
02/14/2017

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SCALE: AS SHOWN
PROJ. #: 160400
DATE: 1/12/2017

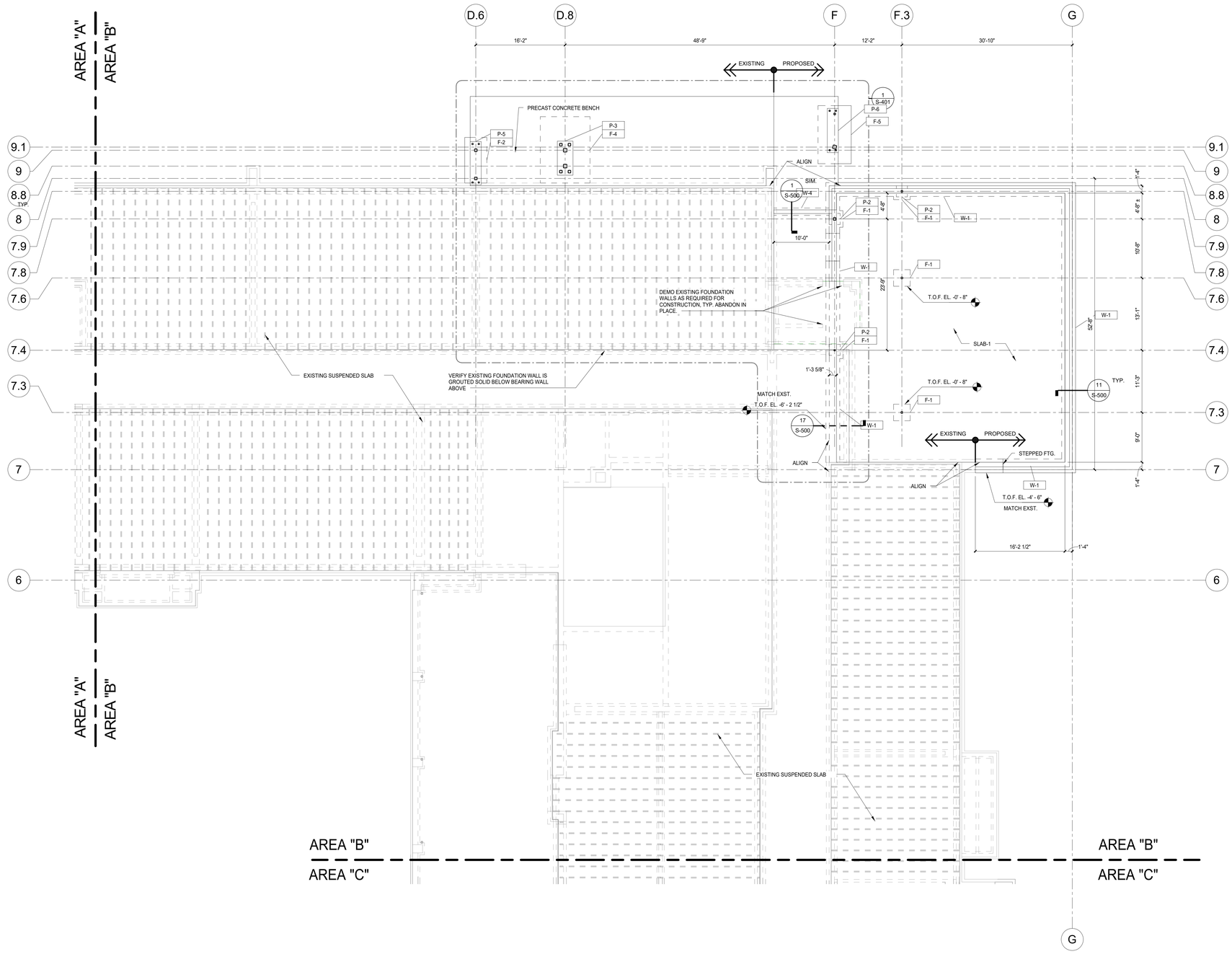
SHEET
C-501

ADDENDUM 1

FOUNDATION PLAN NOTES

1. C.J. AND CONST. JOINT LOCATIONS ARE SHOWN FOR VISUAL REPRESENTATION ONLY. FIELD LOCATE AT SPACING NOT TO EXCEED 30'SLAB THICKNESS.
2. PIPE PENETRATIONS THRU FOUNDATION, PER DETAIL.
3. ALL FOOTINGS SHALL BEAR ON UNDISTURBED SOIL OR PROPERLY COMPACTED FILL AS REQUIRED.
4. CONTRACTOR SHALL VERIFY DIMENSIONS WITH ARCHITECTURAL PLANS. NOTIFY ENGINEER OF DISCREPANCIES.
5. FINISH FLOOR ELEVATION = 0'-0"
   USGS FINISH FLOOR ELEVATION = 861.80
6. REFER TO DETAIL FOR ANCHOR ROD INFORMATION.
7. TOP OF FOOTING ELEVATION (T.O.F.) = -3'-6" U.N.O.
   TOP OF PIER ELEVATION (T.O.P.) = -0'-8" U.N.O.
8. SEE DETAIL FOR THICKENED SLAB AT INTERIOR CMU WALLS. TYPICAL FOR ALL INTERIOR NON-LOAD BEARING CMU WALLS.

REINF. CONC. FLOOR SLAB	
MARK	DESCRIPTION
SLAB-1	4" CONC. SLAB ON GRADE W/ 6x6 - W1.4xW1.4 WWF WITH VAPOR BARRIER OVER 6" OF COMPACTED GRANULAR FILL, TYP. ALL LOCATIONS U.N.O.

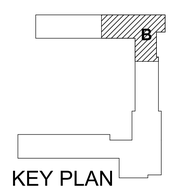


FOUNDATION PLAN - AREA B
1/8" = 1'-0"

FOOTING SCHEDULE					
	DIMENSIONS			REINFORCING	
MARK	WIDTH	LENGTH	THICKNESS	W (SHORT BARS)	L (LONG BARS)
F-1	3' - 0"	3' - 0"	1' - 0"	(4) #5 BARS, BOTTOM	(4) #5 BARS, BOTTOM
F-2	8' - 3"	4' - 0"	1' - 6"	(6) #7 BARS, BOTTOM	(5) #7 BARS, BOTTOM
F-3	6' - 0"	6' - 0"	1' - 6"	(7) #7 BARS, BOTTOM	(7) #7 BARS, BOTTOM
F-4	9' - 0"	12' - 0"	1' - 6"	(10) #8 BARS, BOTTOM	(13) #8 BARS, BOTTOM
F-5	10' - 6"	6' - 0"	1' - 6"	(7) #7 BARS, BOTTOM	(7) #7 BARS, BOTTOM

PIER SCHEDULE				
	DIMENSIONS		REINFORCING	
MARK	WIDTH	LENGTH	VERTICAL BARS	TIES
P-1	0' - 8"	1' - 4"	(4) #6 BARS	#3 BARS @ 12" O.C.
P-2	2' - 0"	2' - 4"	(6) #6 BARS	#3 BARS @ 12" O.C.
P-3	6' - 2"	2' - 10"	(32) #8 BARS	#4 BARS @ 12" O.C.
P-4	2' - 0"	5' - 9"	(14) #6 BARS	#3 BARS @ 12" O.C.
P-5	2' - 0"	4' - 10"	(18) #6 BARS	#3 BARS @ 12" O.C.
P-6	8' - 0"	2' - 0"	(18) #6 BARS	#3 BARS @ 12" O.C.
P-7	2' - 0"	4' - 0"	(12) #6 BARS	#3 BARS @ 12" O.C.

WALL FOOTING SCHEDULE						
	DIMENSIONS		REINFORCING			
MARK	WIDTH	THICKNESS	W (SHORT BARS)	L (LONG BARS)	WALL DOWEL BARS	WALL HORIZONTAL BARS
W-1	2' - 6"	1' - 0"	#5 BARS @ 12" O.C.	(3) CONT. #5 BARS	#6 BARS @ 12" O.C. E.F.	#6 BARS @ 12" O.C. E.F.
W-2	3' - 0"	1' - 0"	#5 BARS @ 12" O.C.	(3) CONT. #5 BARS	#6 BARS @ 12" O.C. E.F.	#6 BARS @ 12" O.C. E.F.
W-3	2' - 0"	1' - 0"	#5 BARS @ 12" O.C.	(3) CONT. #5 BARS	#4 BARS @ 12" O.C.	#4 BARS @ 12" O.C.
W-4	1' - 4"	1' - 0"	#5 BARS @ 12" O.C.	(3) CONT. #5 BARS	#4 BARS @ 12" O.C.	#4 BARS @ 12" O.C.



KEY PLAN

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FOUNDATION FLOOR PLAN - AREA B

REVISIONS

REV	DESCRIPTION	DATE
1	ADDENDUM 1	2/16/2017

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SCALE: 1/8" = 1'-0"
PROJ. #: 160400
DATE: 01/13/2017
SHEET
S-101.B
Addendum #1

ADDENDUM 1

2/14/2017 1:47:24 PM
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ROOF DECK	
MARK	DESCRIPTION
D-1	1.5B18 (1 1/2" , TYPE B, 18 GA.) METAL ROOF DECK. FASTEN TO END SUPPORTS W/ X-ENP-19-L15 HILTI POWDER ACTUATED FASTENERS, IN A 36/3 PATTERN, AND WITH (3) HILTI SLC 01 (18 GA.) SIDELAP CONNECTORS IN EACH SIDELAP PER SPAN. (2) SPAN MINIMUM.
D-2	1.5BA18 (1 1/2" , TYPE B, 18 GA.) ACOUSTIC METAL ROOF DECK. FASTEN TO END SUPPORTS W/ X-ENP-19 L15 HILTI POWDER ACTUATED FASTENERS, IN A 36/3 PATTERN, AND WITH (6) HILTI SLC 01 (18 GA.) SIDELAP CONNECTORS IN EACH SIDELAP PER SPAN. (2) SPAN MINIMUM.

STEEL FRAMING NOTES

1. T.O.S. EL. = 13'-6 1/2" U.N.O.
2. 7"x7"x1/2" THK. BEAM BEARING PLATE WITH (2) 1/2"ø x 6" LG. STUDS IN SOLID GROUTED CORES, TYP. AT EACH CMU BEAM BEARING POINT
3. COORDINATE AHU AND CHILLER LOCATIONS AND INSTALLATION WITH MECHANICAL DRAWINGS AND FINAL APPROVED SHOP DRAWINGS.

MASONRY WALL REINFORCEMENT SCHEDULE

MARK	WALL		COMMENTS
	WALL SIZE	VERTICAL REINF.	
M1	6" & 8" CMU	---	PARTITION WALL
M2	8" CMU	(1) #5 @ 32" O.C.	INTERIOR WALL
M3	4" CMU	(1) #3 @ 16" O.C.	EXTERIOR WALL
M4	8" CMU	(1) #5 @ 32" O.C.	EXTERIOR WALL W/ FACE BRICK
M5	12" CMU	(1) #5 @ 24" O.C.	EXTERIOR/INTERIOR WALL W/ FACE BRICK
M6	12" CMU	(1) #5 @ 24" O.C.	INTERIOR WALL
	GROUT (2) ADJACENT CELLS SOLID W/ (2) #5 EACH CELL. BARS BEYOND LINTEL END SHALL BE CONTINUOUS PAST LINTEL BEAM (USE THE FIRST (2) CELLS BEYOND DOOR JAMB)		

NOTES:
1. VERTICAL WALL REINFORCEMENT SHALL BE LAPPED WITH FOOTING DOWEL BARS AND SOLID GROUTED, FULL WALL HEIGHT.
2. PROVIDE HORIZONTAL LADDER REINFORCING AT 16" O.C. TYP.
3. PROVIDE (2) VERTICAL BARS IN SOLID GROUTED CORES ADJACENT TO WALL OPENINGS (TYP.). RUN BARS FULL WALL HEIGHT AND DOWEL INTO FOUNDATION WALL. TO AVOID LINTEL INTERFERENCE DO NOT INSTALL IN FIRST CORE ADJACENT TO OPENING. GROUT REINFORCED CORE AND JAMB CORE SOLID TO FOUNDATION.
4. PROVIDE HORIZONTAL BOND BEAMS AT LOCATIONS SHOWN ON DETAILS, AND AT INTERMEDIATE LOCATIONS AS REQUIRED FOR A MAXIMUM BOND BEAM SPACING OF 12'-0". UNLESS OTHERWISE NOTED, BOND BEAM REINFORCING SHALL BE (2) #5 BARS CONTINUOUS.
5. ALL MASONRY SUPPORTING BEAMS SHALL INCLUDE BOTTOM PLATE AND BRICK ANGLES PER LINTEL SCHEDULE. GALVANIZE LINTELS SUPPORTING EXTERIOR MASONRY.
6. ALL MASONRY WORK SHALL BE DONE IN ACCORDANCE WITH LATEST ACI 530 SPECIFICATIONS. MASONRY UNTIS SHALL CONFORM TO ASTM C90 OR ASTM C026 GRADE SW AS APPLICABLE. USE TYPE M OR S MORTAR. f'm USED IN DESIGN = 1500 PSI.
7. BEAM, JOIST, AND LINTEL BEARING ON MASONRY WALLS SHALL BE A MINIMUM OF 8".

COLUMN SCHEDULE						
			ANCHOR BOLTS			
MARK	MEMBER	BASE PLATE	QTY.	SIZE	MIN. EMBED.	COMMENTS
C-1	HSS3X3X5/16	9"x9"x3/4"	4	3/4"ø	12"	
C-2	HSS3-1/2X3-1/2X1/4	9"x9"x3/4"	4	3/4"ø	12"	
C-3	HSS4X4X1/2	10"x10"x3/4"	4	3/4"ø	12"	
C-5	HSS6X6X1/2	12"x12"x3/4"	4	3/4"ø	12"	
C-6	HSS8X8X1/2	14"x14"x3/4"	4	3/4"ø	12"	SEE DETAIL 19/S-500

ROOF FRAMING PLAN - AREA D
1/8" = 1'-0"

KEY PLAN

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ROOF FRAMING PLAN - AREA D

REVISIONS

REV	DESCRIPTION	DATE
1	ADDENDUM 1	01/4/2017

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SCALE: 1/8" = 1'-0"
PROJ. #: 160400
DATE: 01/11/2017
SHEET: S-120.D
Addendum #1

ADDENDUM 1

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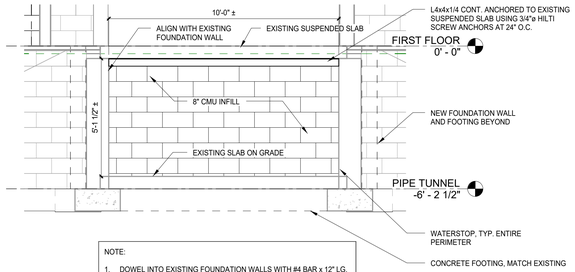
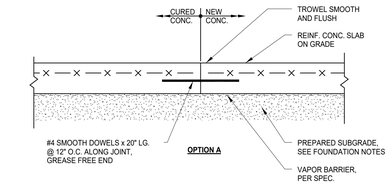


NOTE:

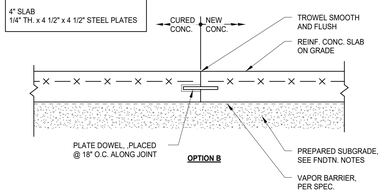
1. DOWEL INTO EXISTING FOUNDATION WALLS WITH #4 BAR x 12" LG. AT 16" O.C. USING HILTI HIT HY-70.
2. #4 BARS AT 24" O.C. VERTICAL REINFORCEMENT IN SOLID GROUTED CORES.

15 PIPE TUNNEL INFILL DETAIL
3/8" = 1'-0"

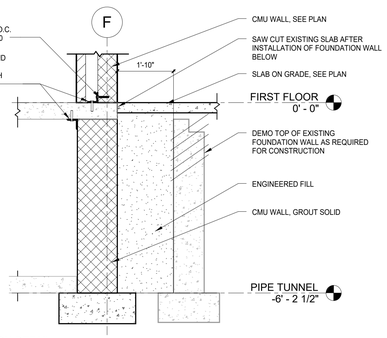


NOTE:
PLATE DOWELS OR OTHER ENGINEER APPROVED EQUAL SLAB JOINT TRANSFER REINFORCING TO BE:

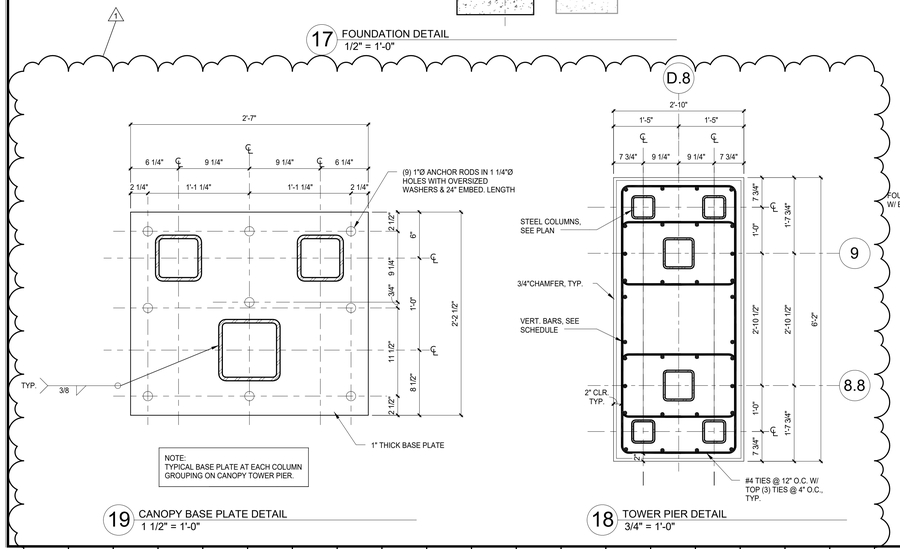
4" SLAB
1/4" TH. x 4 1/2" x 4 1/2" STEEL PLATES

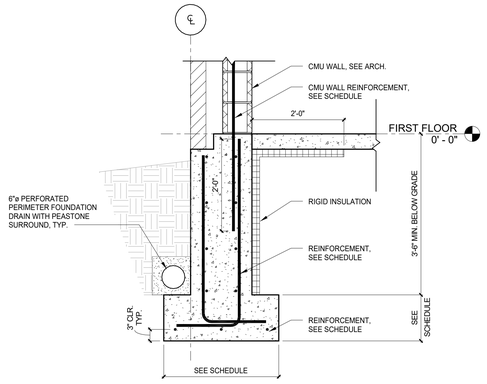


16 SLAB ON GRADE CONSTRUCTION JOINT DETAIL
3/4" = 1'-0"

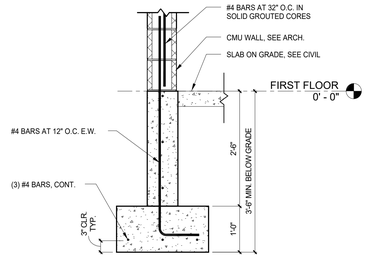


17 FOUNDATION DETAIL
1/2" = 1'-0"

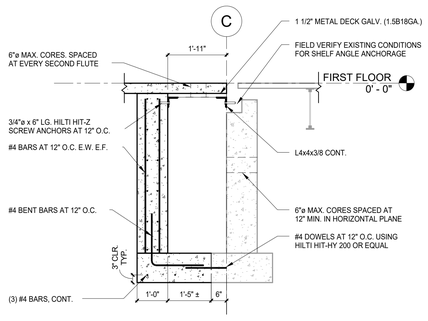




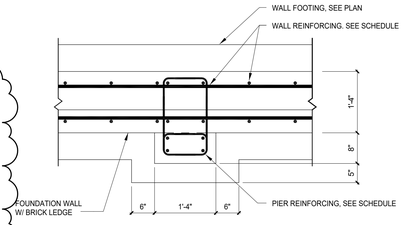
11 TYPICAL EXTERIOR WALL FOOTING
3/4" = 1'-0"



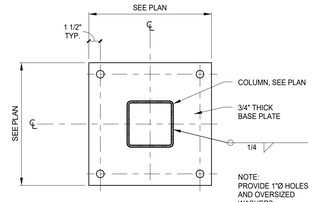
12 DUMPSTER ENCLOSURE WALL FOOTING DETAIL
3/4" = 1'-0"



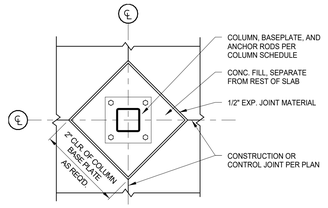
13 PIPE CHASE DETAIL
1/2" = 1'-0"



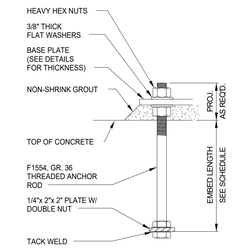
14 PIER DETAIL
3/4" = 1'-0"



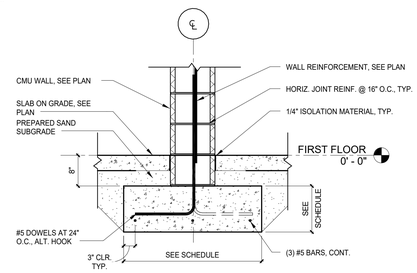
6 BASE PLATE DETAILS
1 1/2" = 1'-0"



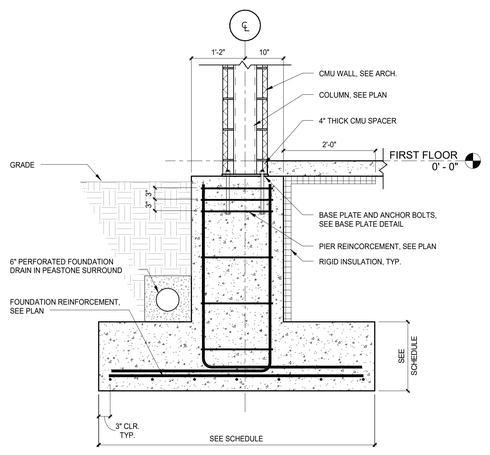
7 INTERIOR ISOLATION JOINT DETAIL
3/4" = 1'-0"



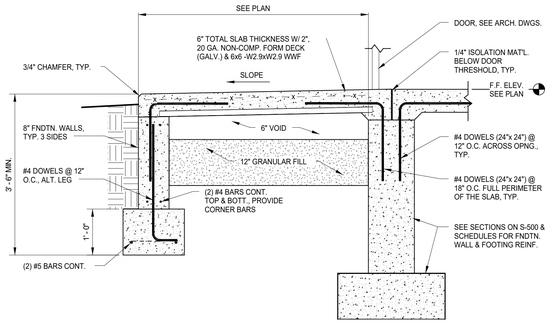
8 ANCHOR ROD DETAIL
1 1/2" = 1'-0"



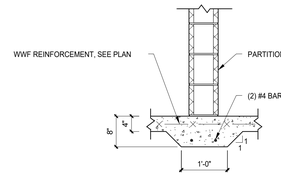
9 INTERIOR WALL FOOTING DETAIL
3/4" = 1'-0"



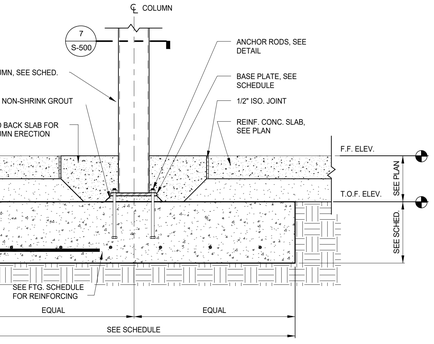
10 TYPICAL EXTERIOR COLUMN FOOTING DETAIL
3/4" = 1'-0"



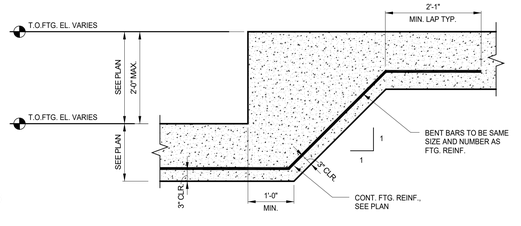
1 ENTRANCE SLAB SECTION
3/4" = 1'-0"



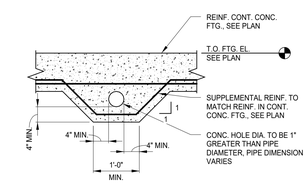
2 TYPICAL INTERIOR THICKENED SLAB DETAIL
3/4" = 1'-0"



3 INTERIOR COLUMN FOOTING DETAIL
3/4" = 1'-0"



4 STEPPED FOOTING DETAIL
3/4" = 1'-0"



5 PIPE PENETRATION DETAIL
3/4" = 1'-0"

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LANSING SCHOOL DISTRICT
FAIRVIEW ADDITIONS AND RENOVATIONS
LANSING, MICHIGAN

FOUNDATION DETAILS

REVISIONS

REV	DESCRIPTION	DATE
1	ADDENDUM 1	3/14/2017

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SCALE: As indicated
PROJ. #: 160400
DATE: 01/13/2017
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S-500
Addendum #1

ADDENDUM 1

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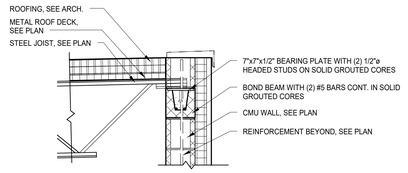
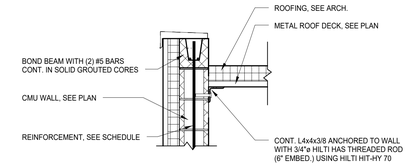
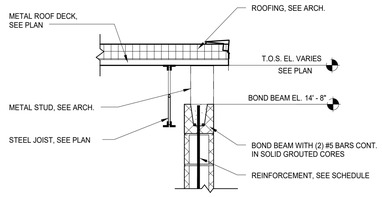


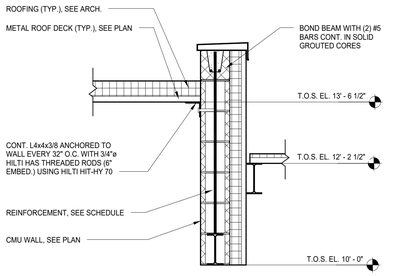
8 TYPICAL JOIST BEARING DETAIL
3/4" = 1'-0"



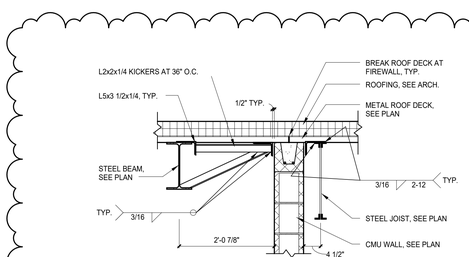
9 ROOF EDGE DETAIL
3/4" = 1'-0"



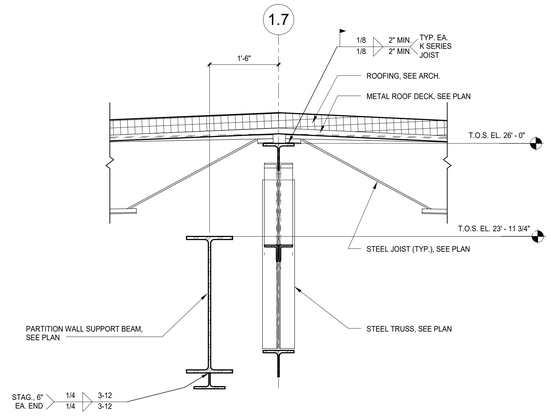
10 ROOF EDGE DETAIL
3/4" = 1'-0"



11 ROOF EDGE DETAIL 5
3/4" = 1'-0"



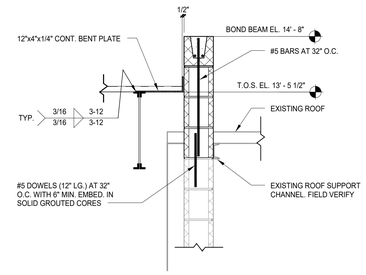
12 ROOF DETAIL AT FIREWALL
3/4" = 1'-0"



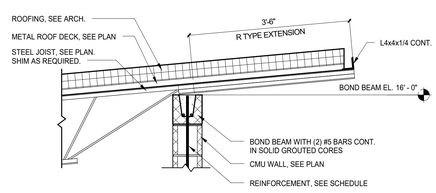
NOTES:

1. COORDINATE PARTITION WALL SUPPORT BEAM TOP OF STEEL ELEVATION WITH WALL SUPPLIER DETAILS AND FINAL APPROVED SHOP DRAWINGS.
2. INSTALL PARTITION WALL TRACK LEVEL AFTER DEAD LOAD DEFLECTION OF BEAM OCCURS.

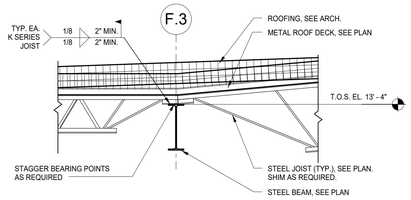
4 PARTITION WALL SUPPORT DETAIL
3/4" = 1'-0"



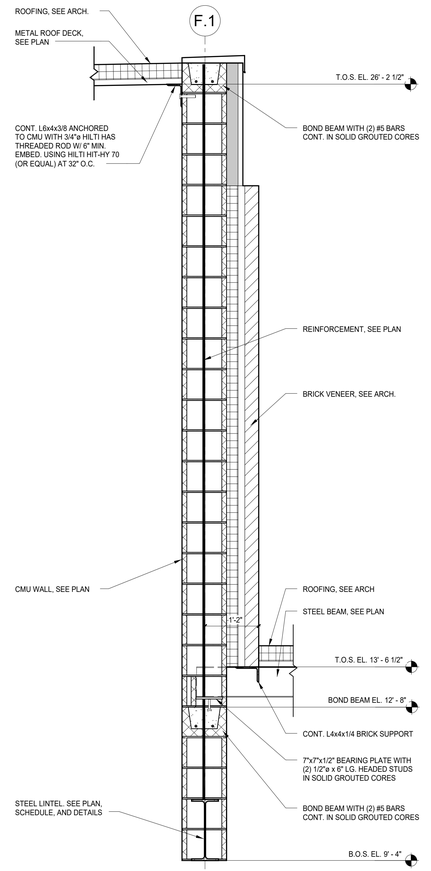
5 ROOF FRAMING DETAIL AT EXISTING ROOF
3/4" = 1'-0"



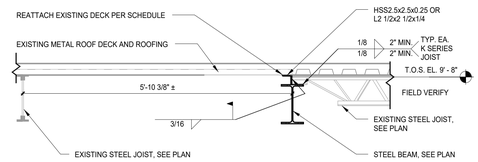
6 BEARING DETAIL WITH END EXTENSION
3/4" = 1'-0"



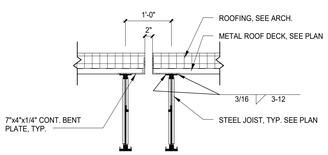
7 JOIST BEARING DETAIL
3/4" = 1'-0"



1 BEARING WALL SECTION
3/4" = 1'-0"



2 BEARING DETAIL
3/4" = 1'-0"



3 ROOF EXPANSION JOINT DETAIL
3/4" = 1'-0"

LANSING SCHOOL DISTRICT
FAIRVIEW ADDITIONS AND RENOVATIONS
LANSING, MICHIGAN

FRAMING DETAILS

REVISIONS

REV.	DESCRIPTION	DATE
1	ADDENDUM 1	2/16/2017

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SCALE: 3/4" = 1'-0"
PROJ. #: 150400
DATE: 01/13/2017
SHEET
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ADDENDUM 1

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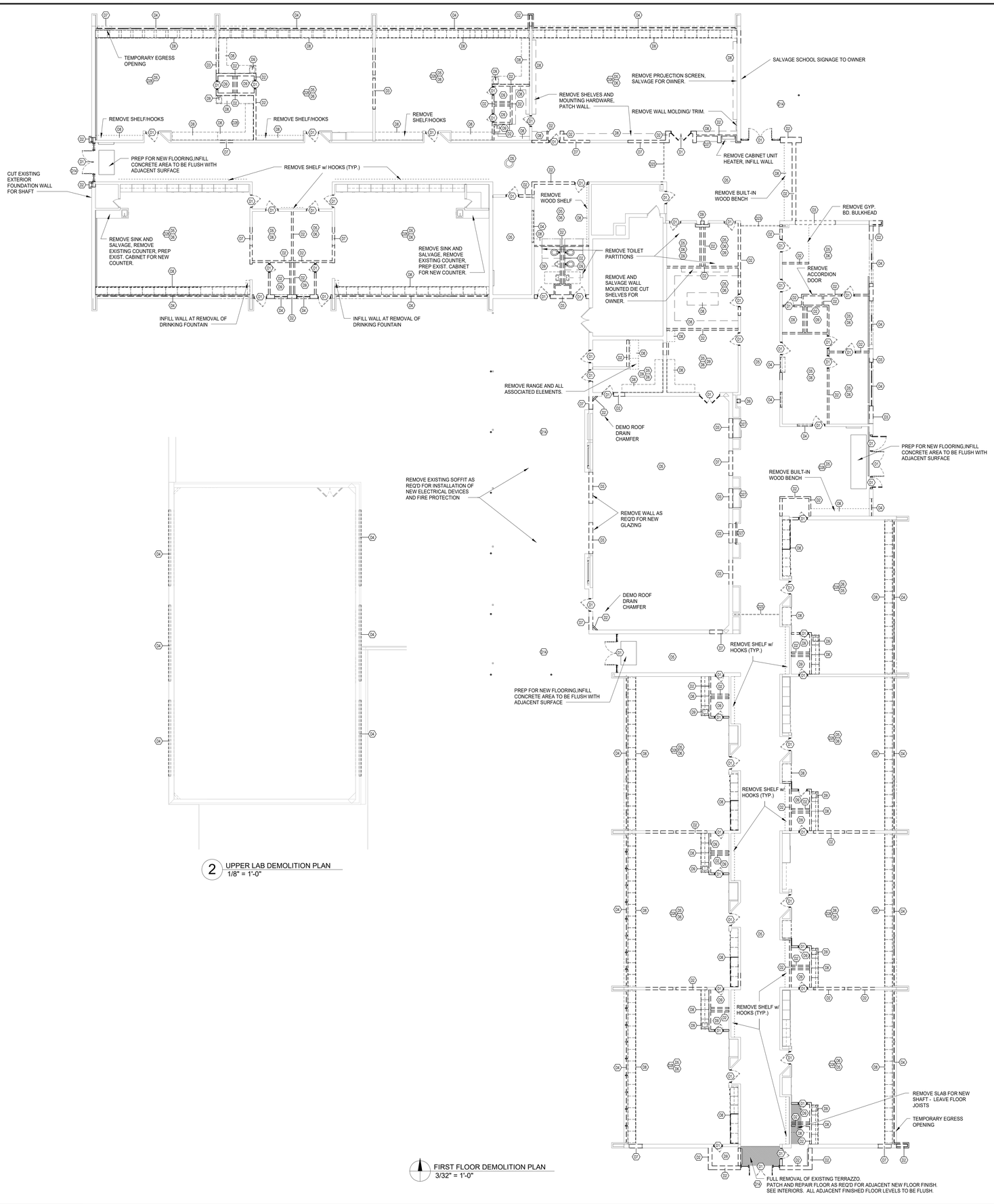

2 UPPER LAB DEMOLITION PLAN
1/8" = 1'-0"

FIRST FLOOR DEMOLITION PLAN
3/32" = 1'-0"

DEMO PLAN LEGEND:

- EXISTING WALL OR PARTITION TO REMAIN
- EXISTING WALL/PARTITION OR EXISTING ITEMS TO BE REMOVED
- EXISTING DOOR TO REMAIN
- EXISTING DOOR & FRAME TO BE REMOVED
- EXISTING BUILDING COMPONENT & STRUCTURE TO REMAIN
- EXISTING ASSEMBLY TO BE REMOVED

NOTE: ALL ITEMS SHOWN DARK AND DASHED ARE TO BE DEMOLISHED- U.N.O.

GENERAL DEMOLITION NOTES:

1. ALL EXISTING LOOSE MATERIALS, FURNITURE, PORTABLE ELECTRONIC DEVICES AND EQUIPMENT TO BE RETAINED BY THE OWNER WILL BE MOVED PRIOR TO DEMOLITION.
2. REFER TO ALL ARCHITECTURAL, STRUCTURAL, MECHANICAL, PLUMBING, ELECTRICAL, FIRE PROTECTION DRAWINGS, AND SPECIFICATION SECTION 017000 (EXECUTION REQUIREMENTS) FOR OTHER DEMOLITION NOTES AND INFORMATION.
3. SHORE AND BRACE ALL WORK REQUIRED TO REMAIN.
4. THE CONTRACTOR SHALL FIELD VERIFY EXACT DIMENSIONS AND CONDITIONS IN FIELD PRIOR TO START OF WORK.
5. DOCUMENTS ARE BASED ON OWNER'S RECORD DRAWINGS AND ARE SHOWN TO ASSIST THE BIDDERS ONLY. CONTRACTOR AND SUBCONTRACTORS SHALL VISIT THE SITE PRIOR TO SUBMITTING BID AND BECOME FAMILIAR WITH ALL CONDITIONS AND NEW WORK. NOTIFY ARCHITECT IMMEDIATELY OF DISCREPANCIES PRIOR TO COMMENCEMENT OF WORK.
6. ALL DISTURBED SURFACES TO BE PATCHED/ REPAIRED TO RECEIVE NEW FINISHES IN A LIKE-NEW CONDITION TO MATCH ADJACENT FINISH.
7. ALL EXISTING ATTACHED ITEMS (WALL GUARDS, SWITCHES, ETC.) AND EQUIPMENT TO BE RETAINED ARE TO BE REMOVED AND REINSTALLED BY CONTRACTOR UPON COMPLETION OF FINISHING WORK.
8. ANY ITEMS LEFT IN DEMOLITION AREAS WILL BECOME THE PROPERTY OF DEMOLITION CONTRACTOR FOR THEIR OFF-SITE DISPOSAL AT THE CONTRACTOR'S EXPENSE. CONSTRUCTION MANAGER TO COORDINATE DEMOLITION WORK WITH OWNER AND CONTRACTOR PRIOR TO START OF WORK.
9. CONDUITS, CONDUCTORS AND FEEDERS TO ALL ELECTRICAL LOADS BEING DEMOLISHED ARE TO BE REMOVED BACK TO THEIR SOURCE IN ACCORDANCE WITH THE N.E.C. THIS IS TO INCLUDE POWER, LIGHTING CONTROLS, AND ALL COMMUNICATION SYSTEMS.
10. COORDINATE WITH PLUMBING CONTRACTOR IN SELECTIVE REMOVAL OF VENTS, WASTE PIPING AND RAIN WATER CONDUCTORS IN AREA AFFECTED BY THE WORK. REFER ALSO TO PLUMBING DEMO DRAWINGS.
11. PATCH/REPAIR/REPLACE ALL MATERIALS AFFECTED BY RENOVATION TO MATCH ORIGINAL EXISTING MATERIAL, FINISH, COLOR, ETC., U.N.O.
12. PATCH, REPAIR, REPLACE EXISTING MATERIALS AS REQUIRED TO RECEIVE NEW FINISHES.
13. REFER TO ALL ARCHITECTURAL, STRUCTURAL, MECHANICAL, PLUMBING, ELECTRICAL, FIRE PROTECTION DRAWINGS, AND SPECIFICATION SECTION 01700 (EXECUTION REQUIREMENTS) FOR OTHER DEMOLITION NOTES AND INFORMATION.
14. REFER TO FLOOR PLAN FOR DIMENSIONS AND OTHER INFORMATION NOT SHOWN HERE.
15. SOME FOUNDATION WALLS & FOOTINGS MAY BE ALLOWED TO REMAIN (BELOW GRADE.) COORDINATE WITH UTILITIES AND ALL TRADES. ---
    A. WHERE FOUNDATION WALLS AND FOOTINGS ARE ALLOWED TO REMAIN, REMOVE FOUNDATION TO 8" BELOW SLAB AS REQUIRED TO PROVIDE FOR NEW SLAB.
16. ALL ITEMS TO BE REMOVED ARE SHOWN DARKER AND DASHED, U.N.O.
17. THE OWNER IS FULLY RESPONSIBLE FOR THE IDENTIFICATION, ENCAPSULATION, AND ABATEMENT OF ANY MATERIALS CONTAINING ASBESTOS.
18. AT REMOVAL OF CABINET UNIT HEATERS, PATCH THE EXISTING WALL. CUT ANY NEW CMU TO MATCH EXISTING COUSING, TYPICAL.
19. AT WALL INFILLS PATCH THE EXISTING WALL. CUT ANY NEW CMU TO MATCH EXISTING COURSING, TYPICAL.
20. PREP GLAZED BLOCK FOR PAINTING, SEE SPECS.
21. EXISTING TERRAZZO FLOORING AND COVE BASE TO REMAIN, U.N.O.
22. PREP ALL REMAINING/EXISTING CASEWORK FOR PAINT. REMOVE HARDWARE PULLS, PATCH AND PREP FOR NEW PULLS. FILL/PATCH DAMAGED AREAS OF CASEWORK, PREP FOR PAINT
23. ALL EXISTING WINDOW TREATMENTS TO BE REMOVED.
24. ALL EXISTING TACK BOARDS AND TACK STRIPS TO REMAIN IN THE CORRIDORS, UNLESS OBSTRUCTED BY NEW ELEMENTS.
25. REMOVE ALL TACK BOARDS, TACK STRIPS AND MARKER BOARDS FROM CLASSROOMS, SALVAGE FOR OWNER.

DEMOLITION KEY

KEY VALUE	KEYNOTE TEXT
D1	REMOVE EXISTING DOOR ASSEMBLY INCLUDING DOOR(S), SIDELIGHTS, GROUT FILLED FRAMES, THRESHOLD, HARDWARE, ANCHORS, AND TRIM (ON BOTH SIDES OF EACH DOOR). PATCH AND REPAIR ADJACENT WALL/FLOOR SURFACES AT AREAS OF REMOVAL TO MATCH EXISTING AND/OR AS REQUIRED FOR PROPER INSTALLATION OF NEW FINISHES.PATCH THE EXISTING WALL. CUT ANY NEW CMU TO MATCH THE EXISTING COURSING, TYPICAL.
D2	REMOVE EXISTING WALL, BASE TRIM, ALL ATTACHED/EMBEDDED ITEMS, AND ALL OTHER ASSOCIATED WALL MATERIALS FROM FLOOR TO DECK ABOVE. PATCH AND REPAIR ADJACENT WALL/FLOOR SURFACES AT AREAS OF REMOVAL TO MATCH EXISTING AND/OR AS REQUIRED FOR PROPER INSTALLATION OF NEW FINISHES. STEEL STRUCTURE TO REMAIN.
D3	SAWCUT EXISTING EXTERIOR WALL FOR NEW OPENING. SEE STRUCTURAL FOR ADDITIONAL NOTES AND LINTEL SIZE. SEE FLOOR PLAN FOR OPENING SIZE.
D4	REMOVE EXISTING WINDOW INCLUDING FRAME AND ALL HARDWARE ASSOCIATED WITH EXISTING WINDOW & SHADES/BLINDS. PATCH THE EXISTING WALL. CUT ANY NEW CMU TO MATCH THE EXISTING COURSING, TYPICAL.
D5	REMOVE EXISTING CEILING INCLUDING ALL BRACKETS, ANCHORS & SUPPORTS. REMOVE MOLDING TOUCHING EXISTING CEILINGS. PATCH AND REPAIR ADJACENT SURFACES AT AREAS OF REMOVAL TO MATCH EXISTING AND/OR AS REQUIRED FOR PROPER INSTALLATION OF NEW FINISHES. PROVIDE NEW CEILING TILES FOR ANY ADJACENT TILES THAT ARE TO REMAIN, THAT ARE DAMAGED DURING DEMOLITION.
D6	REMOVE EXISTING FINISH FLOOR MATERIALS AND ADHESIVE/MORTAR AS REQUIRED FOR PROPER INSTALLATION OF NEW FLOOR FINISH. PATCH AND REPAIR ADJACENT WALL/FLOOR SURFACES AT AREAS OF REMOVAL TO MATCH EXISTING AND/OR AS REQUIRED FOR PROPER INSTALLATION OF NEW FINISHES.
D7	SAW CUT WALL FOR NEW DOOR. PATCH AND REPAIR ADJACENT SURFACES AT AREAS OF REMOVAL TO MATCH EXISTING AND/OR AS REQUIRED FOR PROPER INSTALLATION OF NEW FINISHES.
D8	REMOVE EXISTING MILLWORK AND/OR WALL MOUNTED SHELVING INCLUDING ANY ASSOCIATED BRACING SUPPORTS, BRACKETS, AND ANCHORS AS NECESSARY FOR INSTALLATION OF NEW FINISHED OR CASEWORK. PATCH AND REPAIR ADJACENT SURFACES AT AREAS OF REMOVAL TO MATCH EXISTING AND/OR AS REQUIRED FOR PROPER INSTALLATION OF NEW FINISHES OR CASEWORK. ETC.
D9	REMOVE EXISTING PLUMBING FIXTURES AND ANY ASSOCIATED PIPING AND ANCHORS AS NECESSARY FOR INSTALLATION OF NEW FIXTURES AND/OR FINISHES. COORDINATE WITH PLUMBING DRAWINGS. PATCH AND REPAIR ADJACENT SURFACES AT AREAS OF REMOVAL TO MATCH EXISTING AND/OR AS REQUIRED FOR PROPER INSTALLATION OF NEW FINISHES.
D14	REMOVE EXISTING CANOPY INCLUDING ALL BRACKETS, ANCHORS, SUPPORTS, FRAMING MEMBERS, AND SKIN.
D23	REMOVE EXISTING SECURITY GRILL AND HARDWARE. PATCH AND REPAIR ADJECENT WALLS AS REQ'D. SEE GENERAL NOTES.
D26	REMOVE EXISTING MOUNTED TECHNOLOGY (TVS, PROJECTORS, MOUNTING HARDWARE, CONDUIT, ETC.) SALVAGE FOR OWNER.
D27	REMOVE EXISTING DISPLAY CASE, INCLUDING ALL ASSOCIATED BRACKETS AND LIGHTING. PATCH, MATCH, REPAIR ADJACENT SURFACES FOR NEW FINISHES.
D28	REMOVE EXISTING BULKHEAD TO DECK ABOVE

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LANSING SCHOOL DISTRICT
FAIRVIEW ADDITIONS AND RENOVATIONS
Lansing, Michigan

FIRST FLOOR
DEMOLITION PLAN

REVISIONS

REV	DESCRIPTION	DATE
1	ADDENDUM 1	2/14/17

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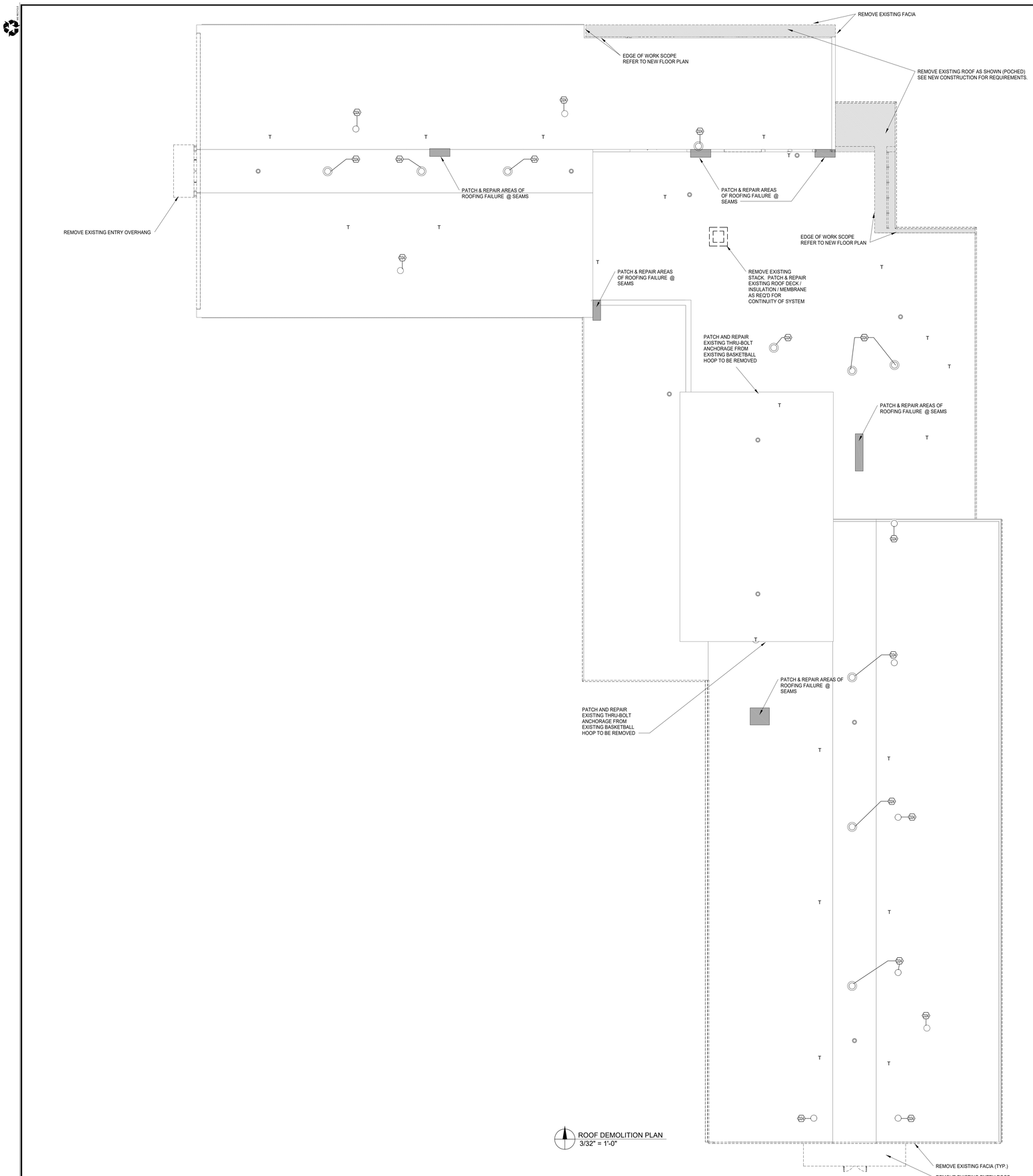

ROOF DEMOLITION PLAN
3/32" = 1'-0"

DEMO PLAN LEGEND:

- EXISTING WALL OR PARTITION TO REMAIN
- EXISTING WALL/PARTITION OR EXISTING ITEMS TO BE REMOVED
- EXISTING DOOR TO REMAIN
- EXISTING DOOR & FRAME TO BE REMOVED
- EXISTING BUILDING COMPONENT & STRUCTURE TO REMAIN
- EXISTING ASSEMBLY TO BE REMOVED

NOTE: ALL ITEMS SHOWN DARK AND DASHED ARE TO BE DEMOLISHED- U.N.O.

GENERAL DEMOLITION NOTES:

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4. THE CONTRACTOR SHALL FIELD VERIFY EXACT DIMENSIONS AND CONDITIONS IN FIELD PRIOR TO START OF WORK.
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9. CONDUITS, CONDUCTORS AND FEEDERS TO ALL ELECTRICAL LOADS BEING DEMOLISHED ARE TO BE REMOVED BACK TO THEIR SOURCE IN ACCORDANCE WITH THE N.E.C. THIS IS TO INCLUDE POWER, LIGHTING CONTROLS, AND ALL COMMUNICATION SYSTEMS.
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20. PREP GLAZED BLOCK FOR PAINTING, SEE SPECS.
21. EXISTING TERRAZZO FLOORING AND COVE BASE TO REMAIN, U.N.O.
22. PREP ALL REMAINING/EXISTING CASEWORK FOR PAINT. REMOVE HARDWARE PULLS, PATCH AND PREP FOR NEW PULLS. FILL/PATCH DAMAGED AREAS OF CASEWORK, PREP FOR PAINT.
23. ALL EXISTING WINDOW TREATMENTS TO BE REMOVED.
24. ALL EXISTING TACK BOARDS AND TACK STRIPS TO REMAIN IN THE CORRIDORS, UNLESS OBSTRUCTED BY NEW ELEMENTS.
25. REMOVE ALL TACK BOARDS, TACK STRIPS AND MARKER BOARDS FROM CLASSROOMS, SALVAGE FOR OWNER.

DEMOLITION KEY	
KEY VALUE	KEYNOTE TEXT
D24	REMOVE EXISTING EXHAUST VENTILATOR - PATCH & REPAIR ADJACENT ROOFING AS REQ'D.

NOTE:
MAINTAIN EXISTING ROOF WARRANTY

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LANSING SCHOOL DISTRICT
FAIRVIEW ADDITIONS AND RENOVATIONS
Lansing, Michigan

ROOF DEMOLITION PLAN

REVISIONS

REV	DESCRIPTION	DATE
1	ADDENDUM 1	2/14/17

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DATE: 01/13/2017
SHEET
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Addendum #1

ADDENDUM 1

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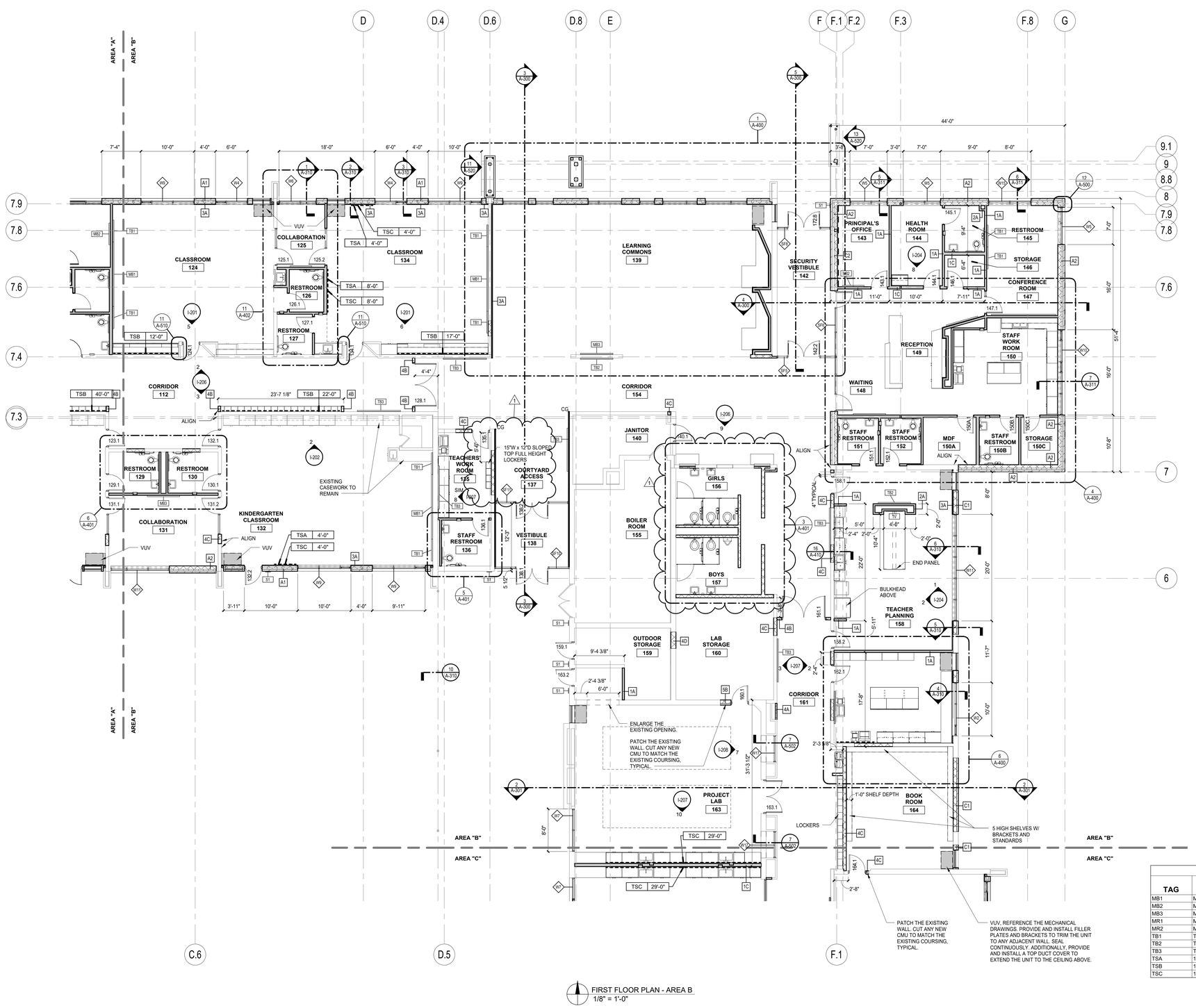

FIRST FLOOR PLAN - AREA B
1/8" = 1'-0"

GENERAL NOTES (FLOOR PLANS)

1. EACH CONTRACTOR IS RESPONSIBLE TO COORDINATE THEIR WORK WITH THE OTHER TRADES.
2. ANY CONFLICT BETWEEN THE NOTES, DETAILS, SPECIFICATIONS, AND/OR DRAWINGS MUST BE VERIFIED WITH THE ARCHITECT AND/OR ENGINEER. THE STRICTEST REQUIREMENT WILL GOVERN.
3. CONSTRUCTION DETAILS NOT DEPICTED WILL FOLLOW THE SAME LOGIC OF OTHER SIMILAR CONDITIONS. ANY UNCLEAR CONDITION MUST BE VERIFIED WITH THE ARCHITECT AND/OR ENGINEER PRIOR TO THE WORK BEING PERFORMED.
4. THE DRAWINGS ARE NOT TO BE SCALED. ANY UNCLEAR DIMENSION OR DISCREPANY MUST BE VERIFIED WITH THE ARCHITECT AND/OR ENGINEER PRIOR TO THE WORK BEING PERFORMED.
5. PRIOR TO THE WORK BEING PERFORMED, THE EXISTING CONDITIONS MUST BE VERIFIED IN THE FIELD. ANY CONDITION THAT DIFFERS FROM THE CONSTRUCTION DOCUMENTS MUST BE VERIFIED WITH THE ARCHITECT AND/OR ENGINEER.
6. PRIOR TO THE WORK BEING PERFORMED, DIMENSIONS INDICATED IN THE CONSTRUCTION DOCUMENTS MUST BE VERIFIED IN THE FIELD. ANY CONDITION THAT DIFFERS FROM THE CONSTRUCTION DOCUMENTS MUST BE VERIFIED WITH THE ARCHITECT AND/OR ENGINEER.
7. THE CONSTRUCTION MANAGER (CM) OR GENERAL CONTRACTOR (GC) MUST REVIEW THE ENTIRE SET OF CONSTRUCTION DOCUMENTS, INCLUDING BOTH THE DRAWINGS AND SPECIFICATIONS.
8. THE CM OR GC MUST COORDINATE THE WORK REQUIRED BETWEEN THE TRADES. IF CONFLICTS ARISE DUE TO THE COORDINATION OF THE TRADES, THE CM OR GC MUST VERIFY THE CONFLICT WITH THE ARCHITECT AND/OR ENGINEER PRIOR TO THE WORK BEING PERFORMED.
9. NEW WORK MUST BE COORDINATED WITH THE DEMOLITION REQUIRED BY THE CONSTRUCTION DOCUMENTS.
10. WHERE ATTACHED OR IMBEDDED ITEMS WERE REMOVED, PATCH ANY INTERIOR OR EXTERIOR WALL TO MATCH THE ADJACENT EXISTING CONSTRUCTION.
11. EACH CONTRACTOR IS RESPONSIBLE FOR THE PREPARATION OF ANY FLOOR, WALL, AND/OR CEILING RECEIVING NEW FINISHES.
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MARKER/TACK BOARD SCHEDULE

TAG	ACCESSORY	SUPPLIED BY	INSTALLED BY	BLOCKING REQ'D
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MB2	MARKER BOARD 4'-0"W x 4'-0"H	CONTRACTOR	CONTRACTOR	NO
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MR2	MIRROR - 24X36			YES
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KEY PLAN

c2ae elevating human achievement
www.c2ae.com

LANSING SCHOOL DISTRICT
FAIRVIEW ADDITIONS AND RENOVATIONS
Lansing, Michigan

FLOOR PLAN

REVISIONS

REV	DESCRIPTION	DATE
1	ADDENDUM 1	2/16/17

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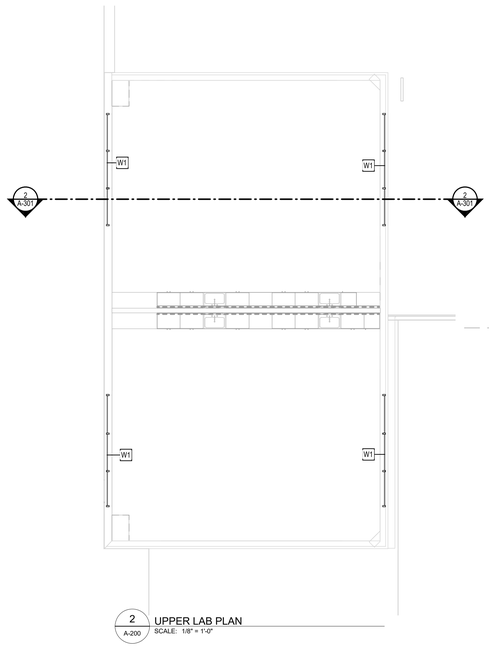
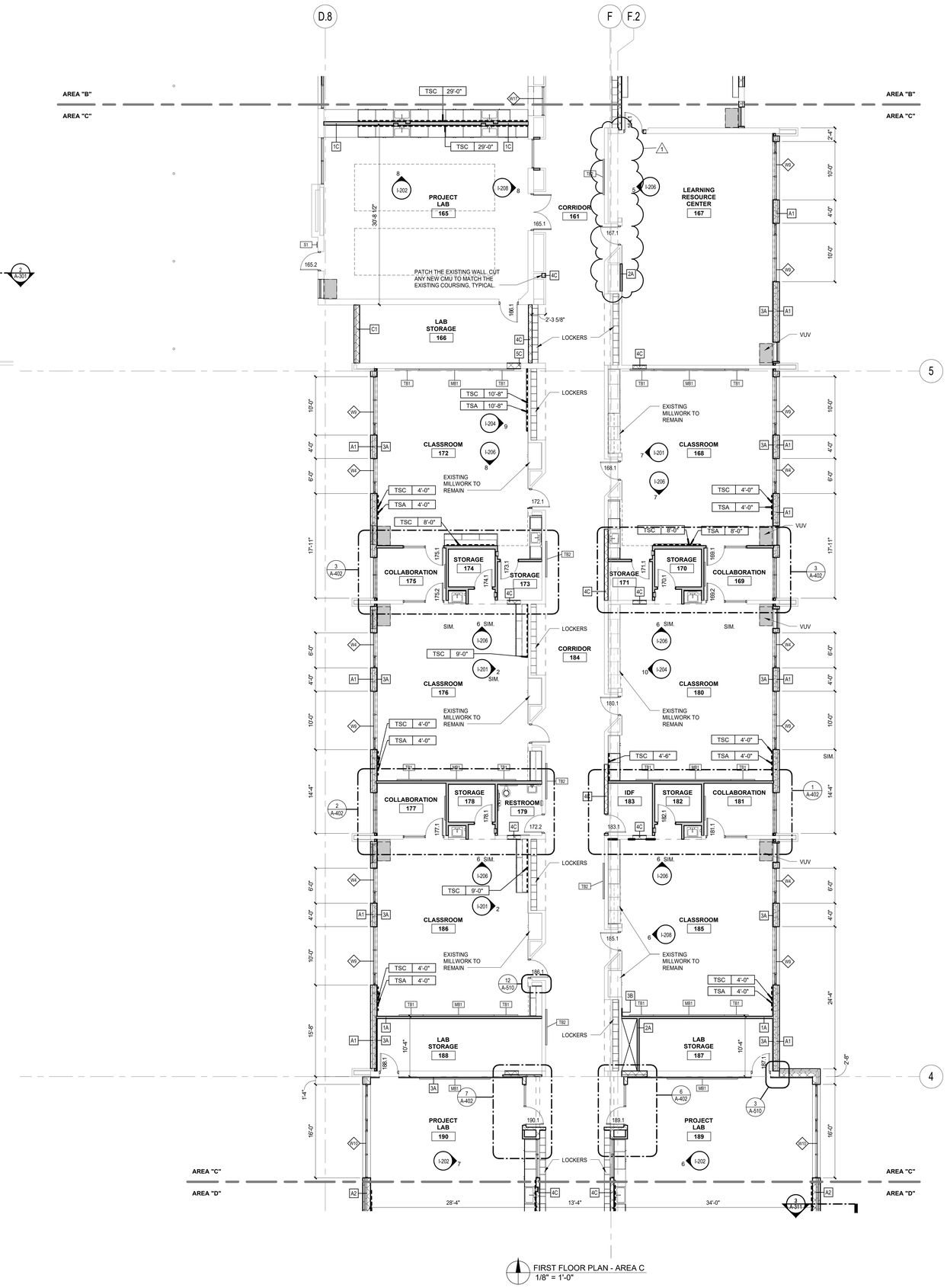


2 UPPER LAB PLAN
A-200 SCALE: 1/8" = 1'-0"



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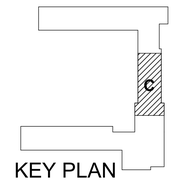

KEY PLAN

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elevating human achievement
www.c2ae.com

LANSING SCHOOL DISTRICT
FAIRVIEW ADDITIONS AND RENOVATIONS
Lansing, Michigan

FLOOR PLAN

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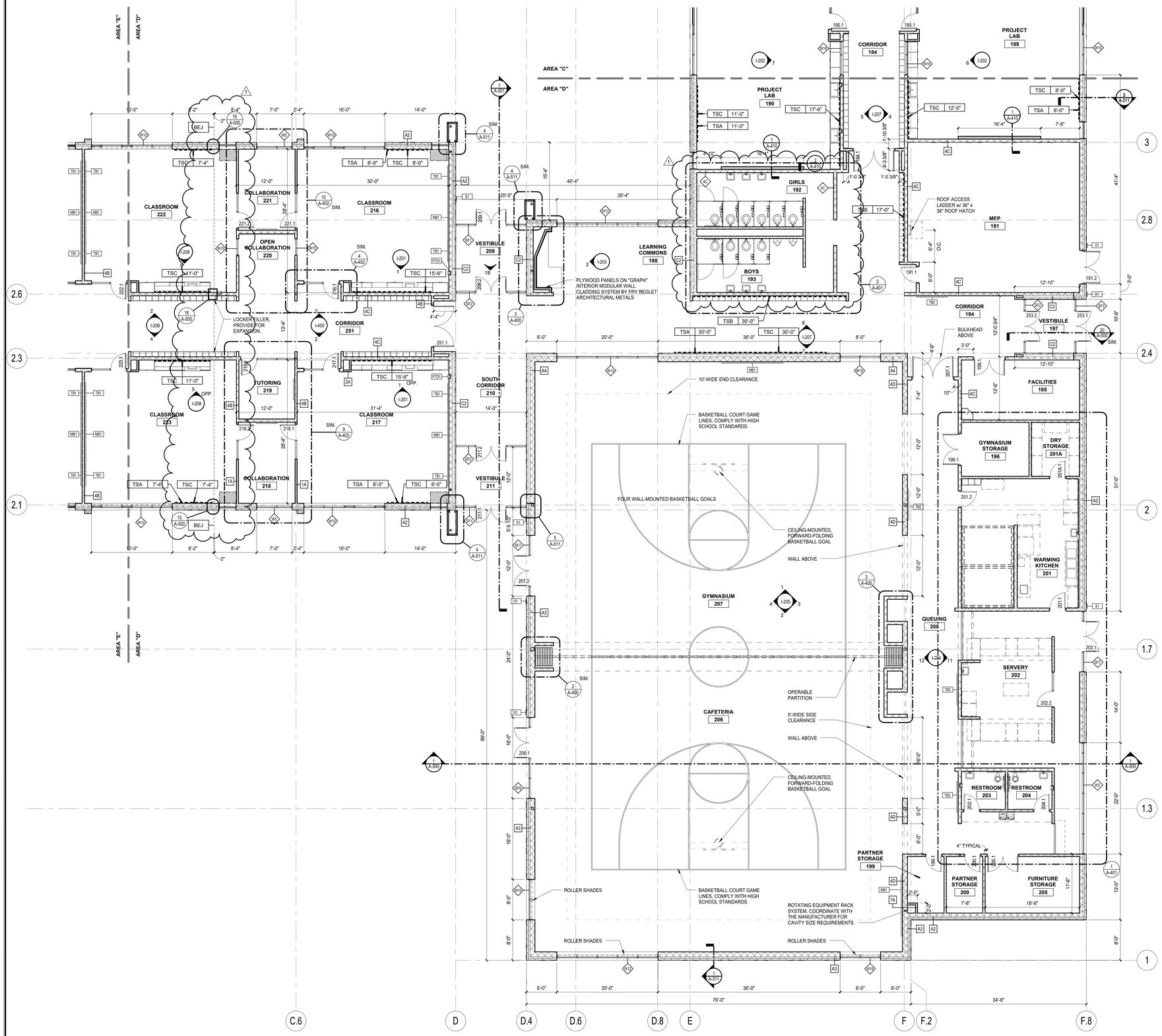

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FAIRVIEW ADDITIONS AND RENOVATIONS
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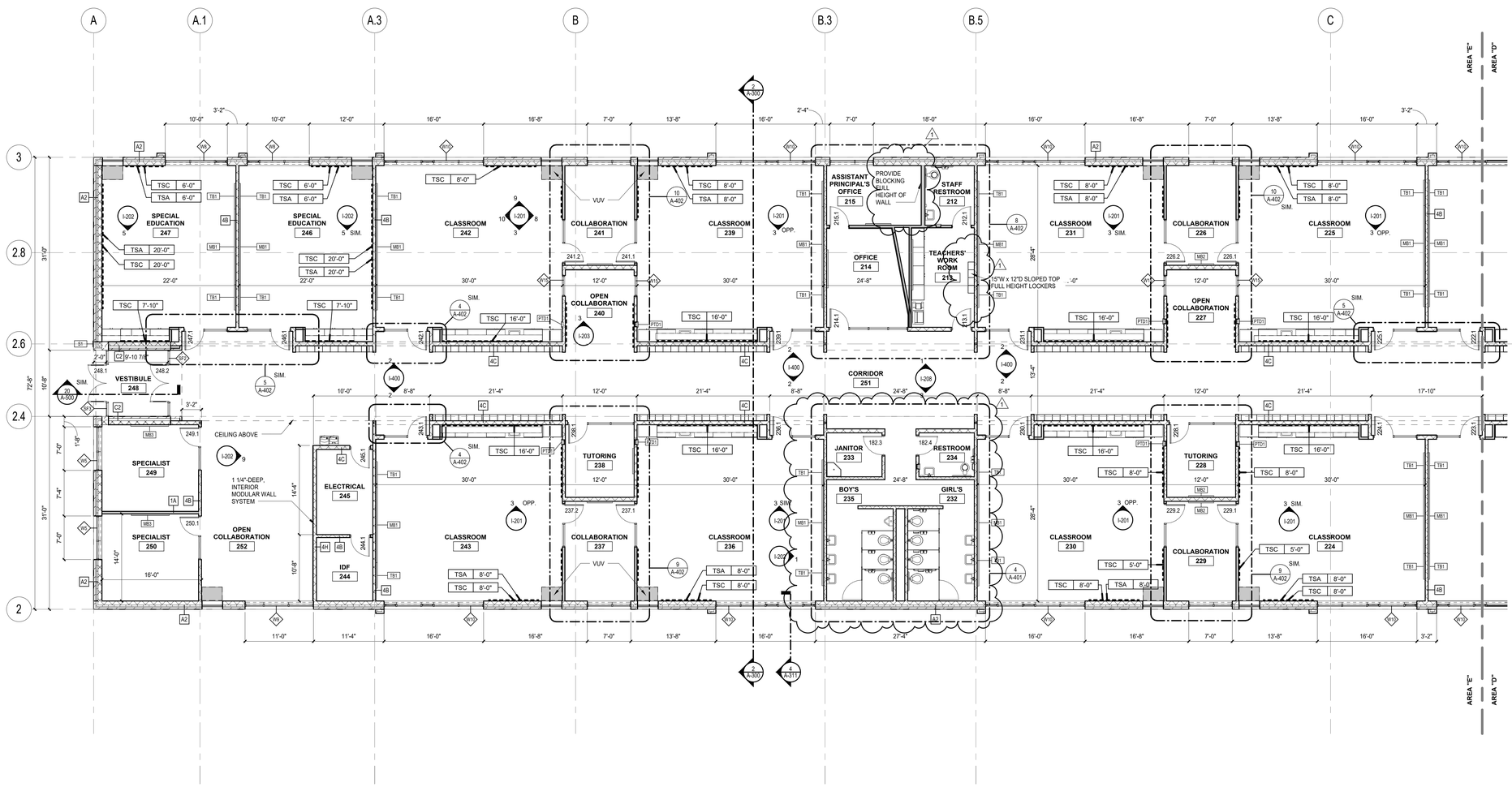

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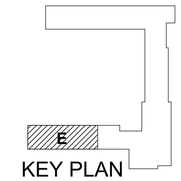
TB2	TACK BOARD 6'-0"W x 4'-0"H	CONTRACTOR	CONTRACTOR	NO
TB3	TACK BOARD 8'-0"W x 4'-0"H	CONTRACTOR	CONTRACTOR	NO
TSA	1" TACK STRIP 54" AFF (SEE PLAN FOR LENGTH)	CONTRACTOR	CONTRACTOR	NO
TSB	1" TACK STRIP 74" AFF (SEE PLAN FOR LENGTH)	CONTRACTOR	CONTRACTOR	NO
TSC	1" TACK STRIP 82" AFF (SEE PLAN FOR LENGTH)	CONTRACTOR	CONTRACTOR	NO



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LANSING SCHOOL DISTRICT
FAIRVIEW ADDITIONS AND RENOVATIONS
Lansing, Michigan

FLOOR PLAN

REVISIONS

REV	DESCRIPTION	DATE
1	ADDENDUM 1	2/14/17

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SCALE: As indicated
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SHEET
A-110.E
Addendum #1

ADDENDUM 1

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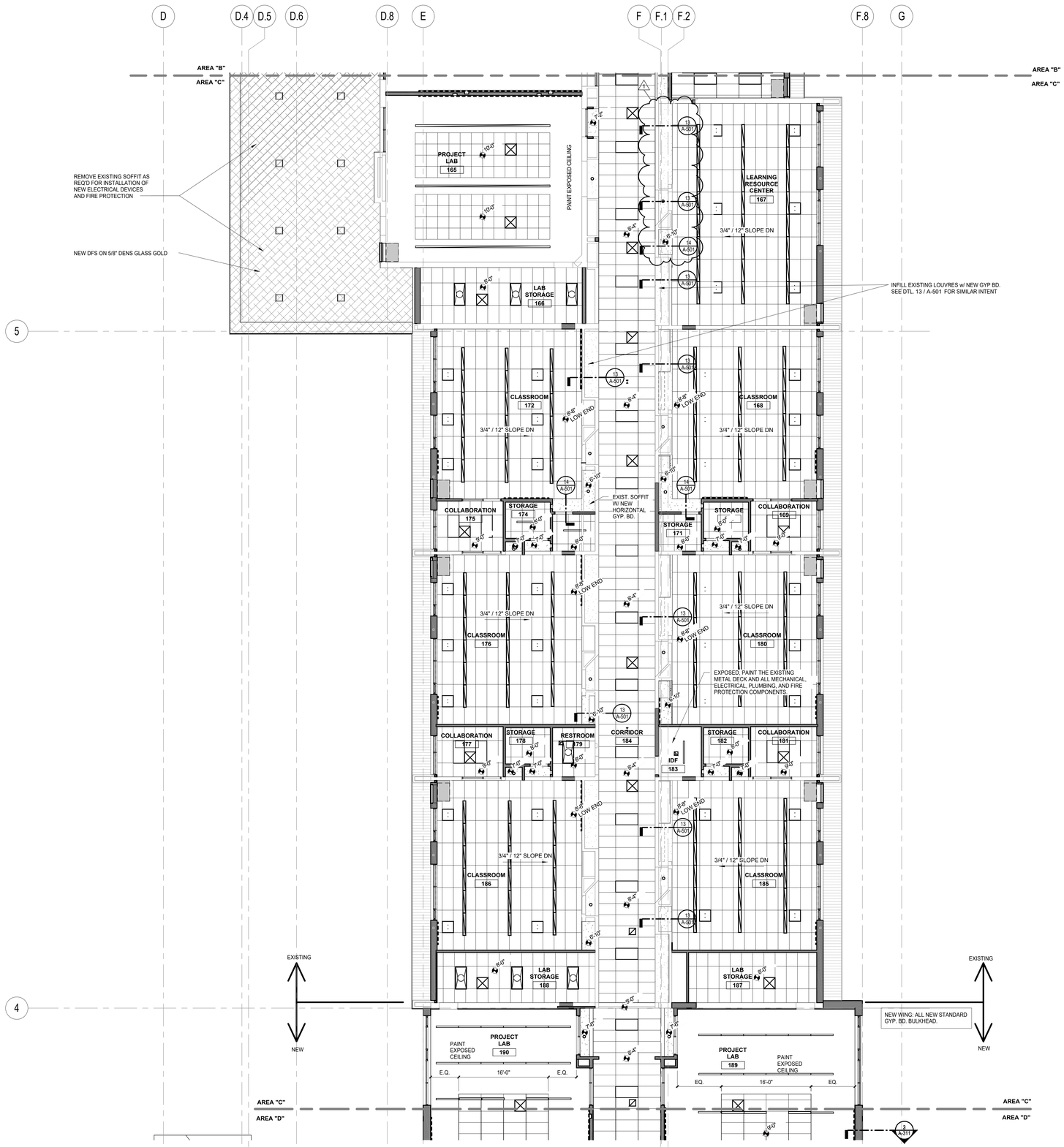
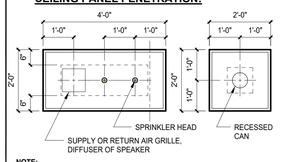


REFLECTED CEILING PLAN LEGEND:

- EXPOSED
- GYPSUM BOARD
- 2X2 ACOUSTIC CEILING PANEL
- 2X4 ACOUSTIC CEILING PANEL
- 2X4 WASHABLE ACOUSTIC CEILING PANEL
- EXISTING 2X2 ACOUSTIC CEILING PANEL
- DIRECT APPLIED FINISH SYSTEM
- X'-X" CEILING HEIGHT- ABOVE FINISH FLOOR
- 2'x2' LIGHT FIXTURE
- 2'x4' LIGHT FIXTURE
- LINEAR LIGHT FIXTURE
- RECESSED ROUND LIGHT FIXTURE (EMERGENCY FIXTURES SHADED)
- SUPPLY DIFFUSER
- LINEAR DIFFUSER DIFFUSER
- TRANSFER GRILL AND/OR EXHAUST FAN
- FIRE EXIT SIGN LOCATION
- (S) SPEAKER LOCATION (SEE ELECTRICAL COMMUNICATIONS)
- (C) CAMERA LOCATION (SEE ELECTRICAL COMMUNICATIONS)

CEILING PANEL PENETRATION:

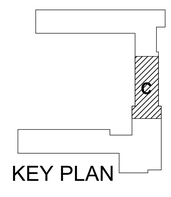


NOTE:
ALL PENETRATIONS OF ACOUSTICAL CEILING PANELS BY GRILLES OR DIFFUSERS OR SPRINKER HEADS SHALL BE CENTERED IN THE SHORT DIMENSION AND BE CENTERED OR AT 1/4 POINTS IN THE LONG DIMENSION OF A PANEL AS INDICATED. FOR THE 2x2 CEILING TILE, THE PENETRATIONS OF GRILLES OR DIFFUSERS SHALL BE CENTERED IN THE PANEL.

IF CEILING GRID LAYOUT RESULTS IN TILES OF LESS THAN 3", FOR RUNS OF MORE THAN TWO TILES, CONSULT WITH ARCHITECT FOR INSTRUCTIONS BEFORE PROCEEDING.

REFLECTED CEILING PLAN GENERAL NOTES:

1. SEE MECHANICAL & ELECTRICAL DRAWINGS FOR OTHER APPLICABLE NOTES & ITEMS.
2. ALL CEILING GRIDS ARE TO BE CENTERED IN THE ROOM IN BOTH DIRECTIONS (AS SHOWN) UNLESS NOTED OTHERWISE.
3. ALL EXPOSED ACP EDGES TO BE FINISHED w/ 4" ALUMINUM EDGE TRIM IN WHITE (TYP.)
4. ALL EXPOSED STRUCTURAL / PLUMBING / MECHANICAL / ELECTRICAL ELEMENTS ARE TO BE SPRAYED AND PAINTED. REFER TO ROOM FINISH SCHEDULE.
5. BULKHEADS:
   - VERTICAL FACE: PAINT AS NOTED ON SCHEDULE
   - HORIZONTAL FACE: TO BE P-10 (WHITE) U.N.O.



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LANSING SCHOOL DISTRICT
FAIRVIEW ADDITIONS AND RENOVATIONS
Lansing, Michigan

FIRST FLOOR RCP - AREA C

REVISIONS

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1	ADDENDUM 1	2/14/17

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Addendum #1

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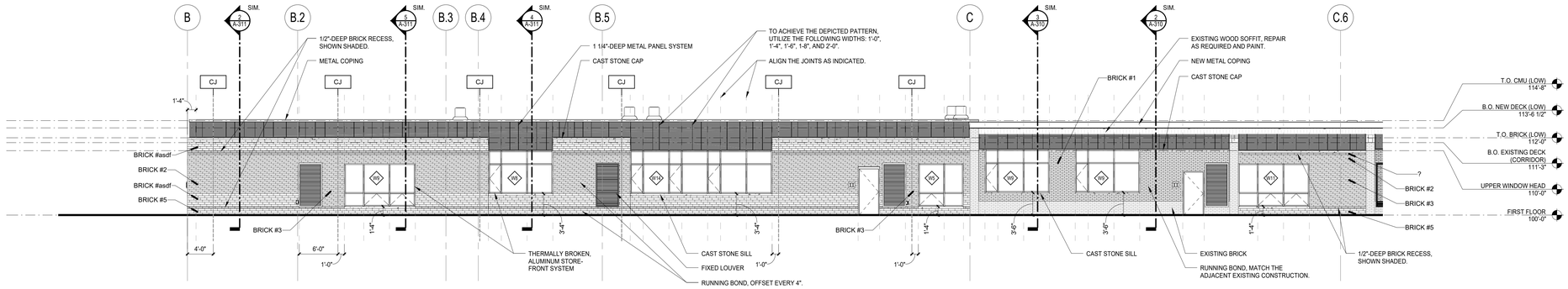
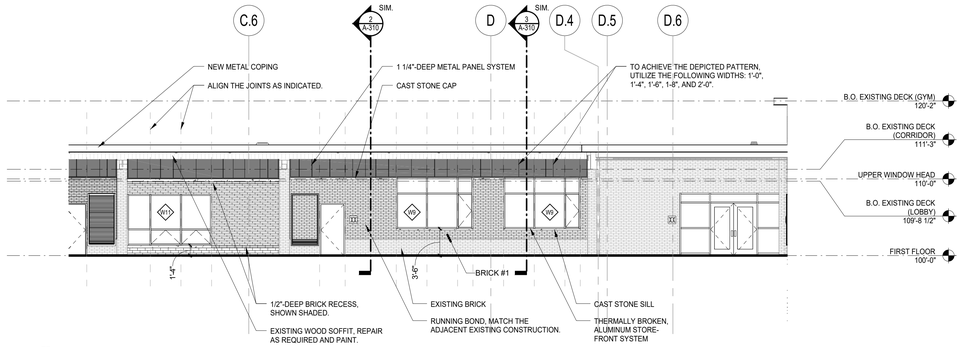
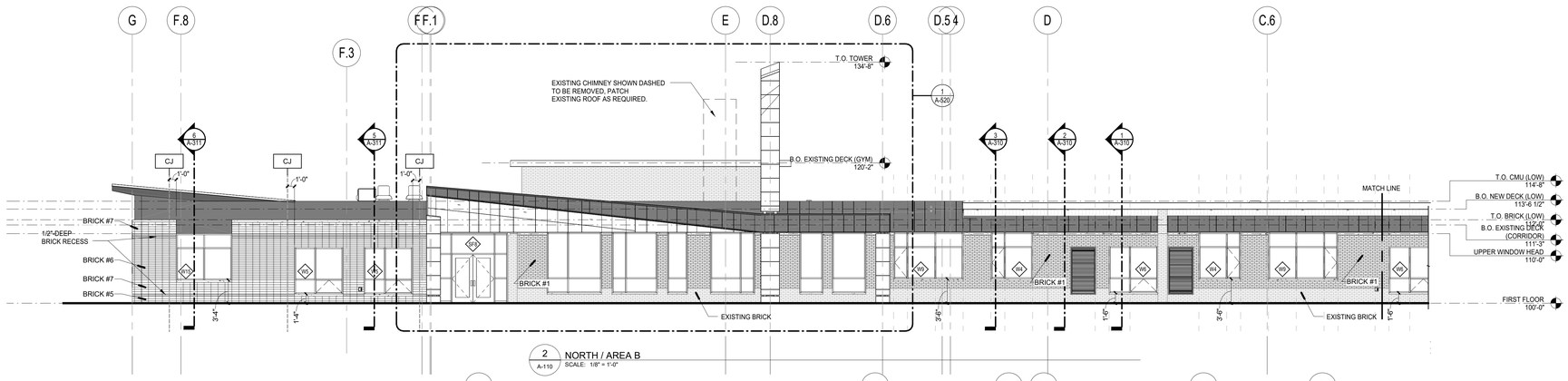


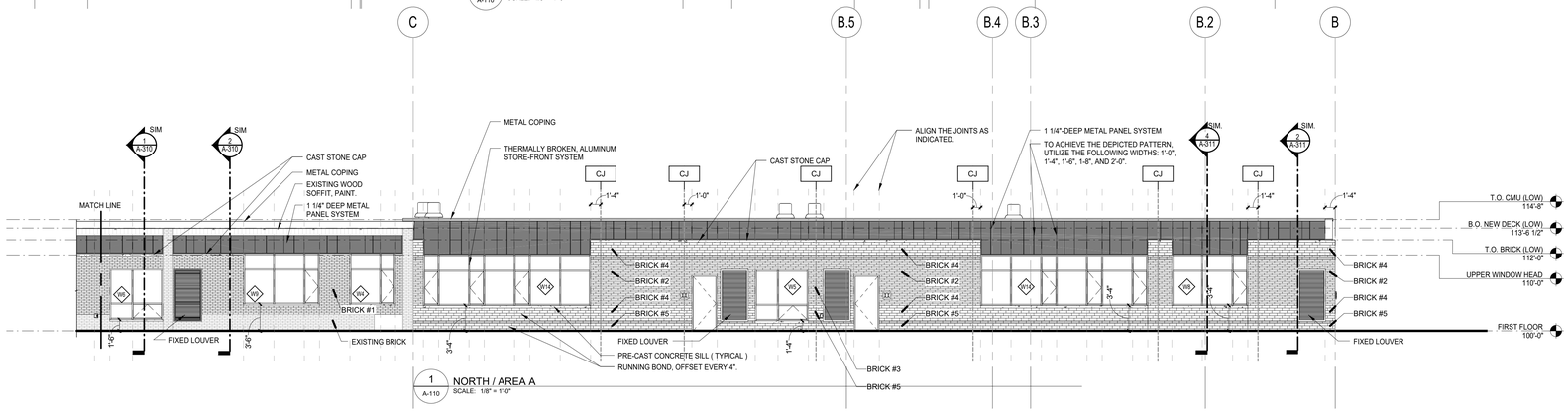
4 SOUTH / AREA A
1/8" = 1'-0"



3 SOUTH / AREA B
1/8" = 1'-0"



2 NORTH / AREA B
A-110 SCALE: 1/8" = 1'-0"



1 NORTH / AREA A
A-110 SCALE: 1/8" = 1'-0"

GENERAL NOTES (EXTERIOR ELEVATIONS)

1. UNLESS NOTED OTHERWISE, ALL COLOR SELECTIONS ARE TO BE SELECTED BY THE ARCHITECT FROM EACH RESPECTIVE MANUFACTURER'S STANDARD RANGE OF COLORS.
2. UNLESS NOTED OTHERWISE, ALL LOUVERS, VENTS, SURFACE-MOUNTED PIPES, AND OTHER SIMILAR COMPONENTS ARE TO BE PAINTED OR PRE-FINISHED TO MATCH THEIR RESPECTIVE ADJACENT SURFACES.

MATERIAL LEGEND

BRICK #1	"WHIRLPOOL SPECIAL" MODULAR BRICK
BRICK #2	"WHIRLPOOL SPECIAL" NORMAN BRICK
BRICK #3	"EBONITE" NORMAN BRICK
BRICK #4	"WHIRLPOOL SPECIAL" UTILITY BRICK
BRICK #5	"EBONITE" UTILITY BRICK
BRICK #6	"BEACON GRAY" NORMAN BRICK
BRICK #7	"BEACON GRAY" UTILITY BRICK

SYMBOL LEGEND

101.1	DOOR NUMBER, REFERENCE THE DOOR SCHEDULE.
A1	WALL TYPE, REFERENCE THE WALL LEGEND.
W1	WINDOW TYPE, REFERENCE THE WINDOW ELEVATIONS.
CG	CORNER GUARD
EWC	ELECTRIC WATER COOLER
FD	FLOOR DRAIN
FE1	SEMI-RECESSED FIRE EXTINGUISHER CABINET
BF	BARRIER FREE
BEJ	BUILDING EXPANSION JOINT
CJ	CONTROL JOINT
T	TEMPERED

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LANSING SCHOOL DISTRICT
FAIRVIEW ADDITIONS AND RENOVATIONS
Lansing, Michigan

EXTERIOR ELEVATIONS

REVISIONS

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A-200
Addendum #1

ADDENDUM 1

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GENERAL NOTES (EXTERIOR ELEVATIONS)

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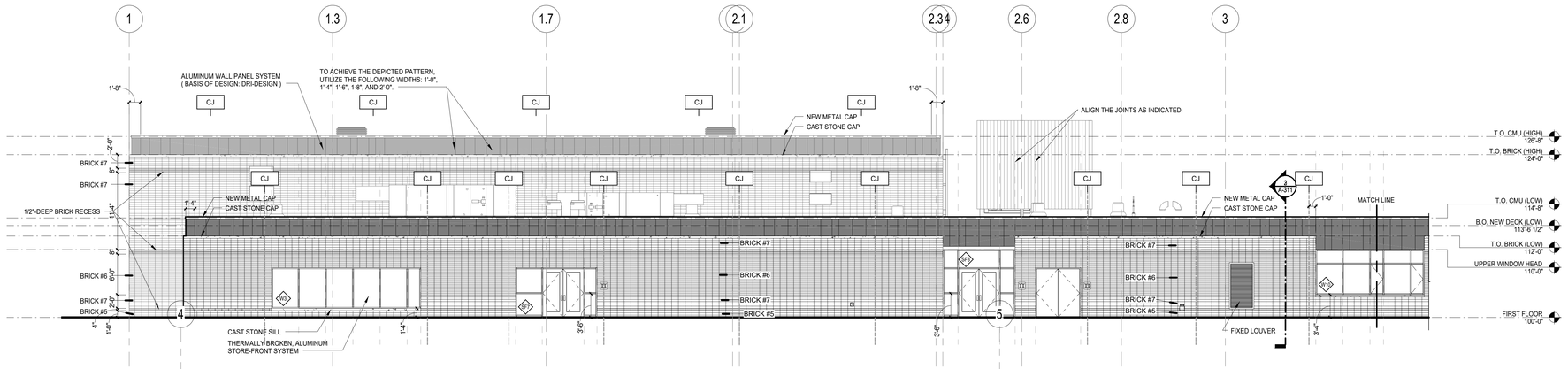
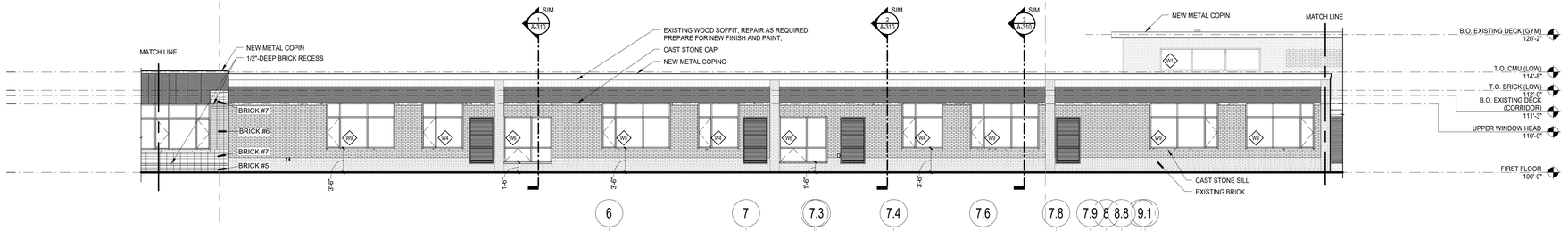
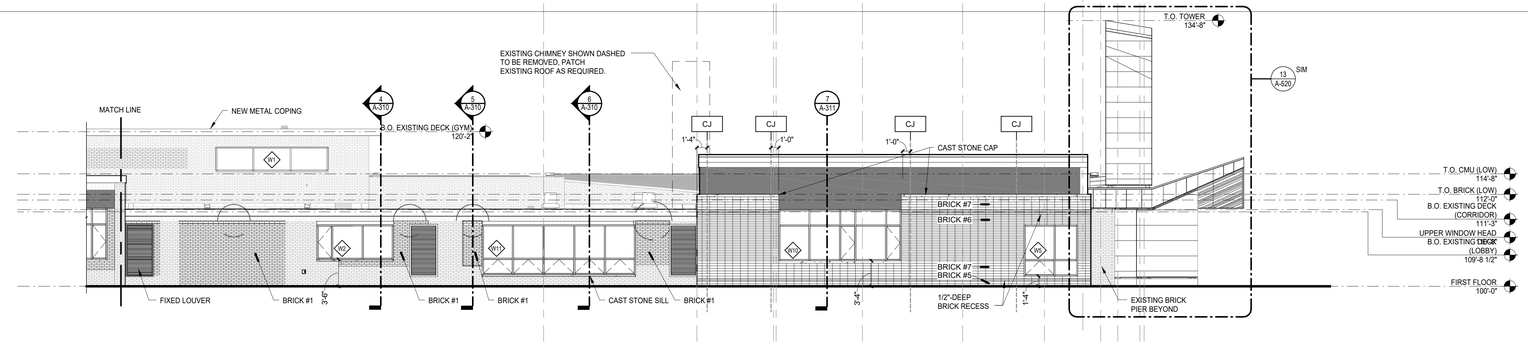
BRICK #5	"EBONITE" UTILITY BRICK
BRICK #6	"BEACON GRAY" NORMAN BRICK
BRICK #7	"BEACON GRAY" UTILITY BRICK



3 EAST / AREA D
1/8" = 1'-0"



2 EAST / AREA C
1/8" = 1'-0"



1 EAST / AREA B
1/8" = 1'-0"

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FAIRVIEW ADDITIONS AND RENOVATIONS
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EXTERIOR ELEVATIONS

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SHEET: A-201
ADDENDUM 1

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GENERAL NOTES (EXTERIOR ELEVATIONS)

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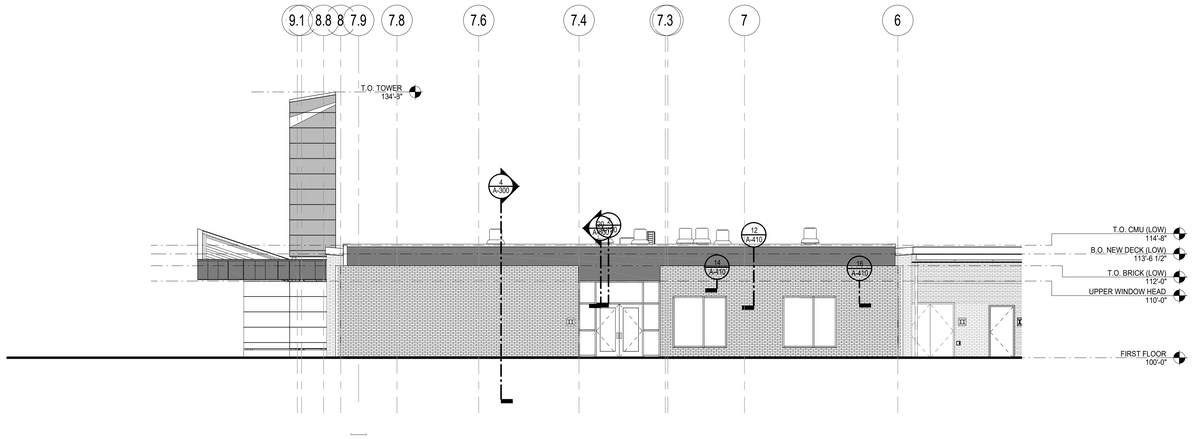
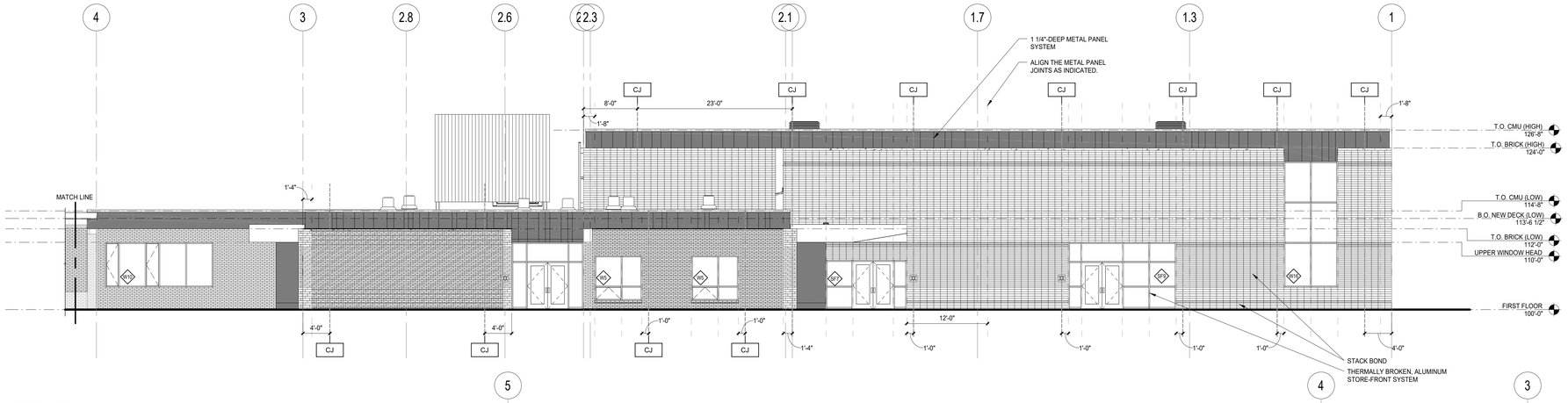
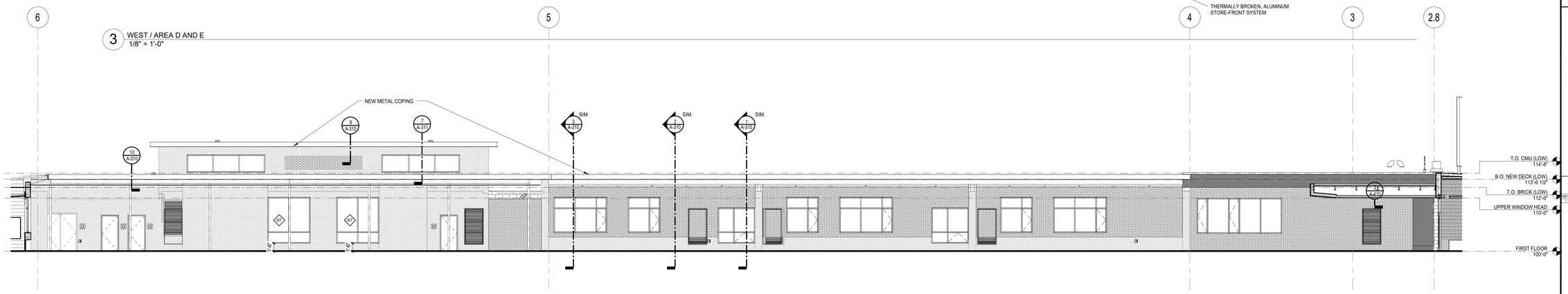
BRICK #7	"BEACON GRAY" UTILITY BRICK



2 WEST / AREA A AND B
1/8" = 1'-0"



3 WEST / AREA D AND E
1/8" = 1'-0"



1 WEST / AREA B AND C
1/8" = 1'-0"

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EXTERIOR ELEVATIONS

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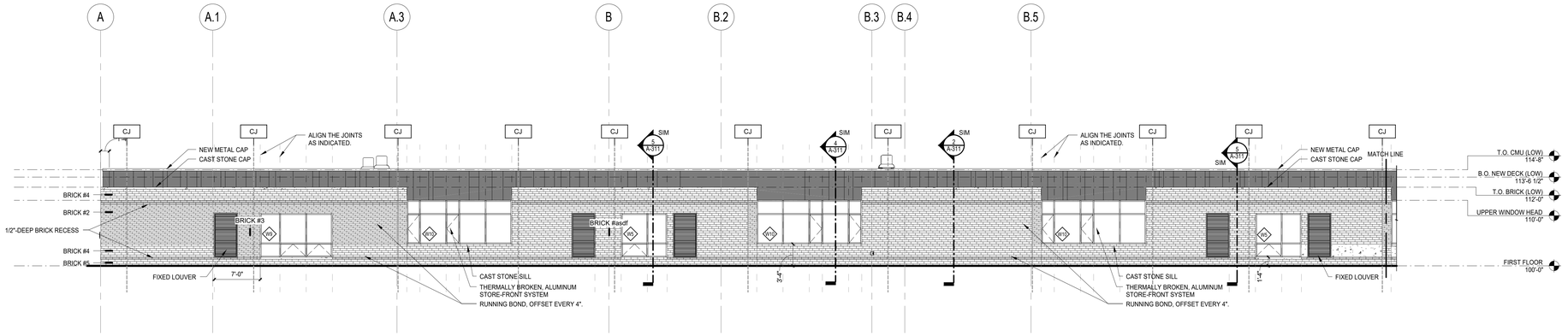

GENERAL NOTES (EXTERIOR ELEVATIONS)

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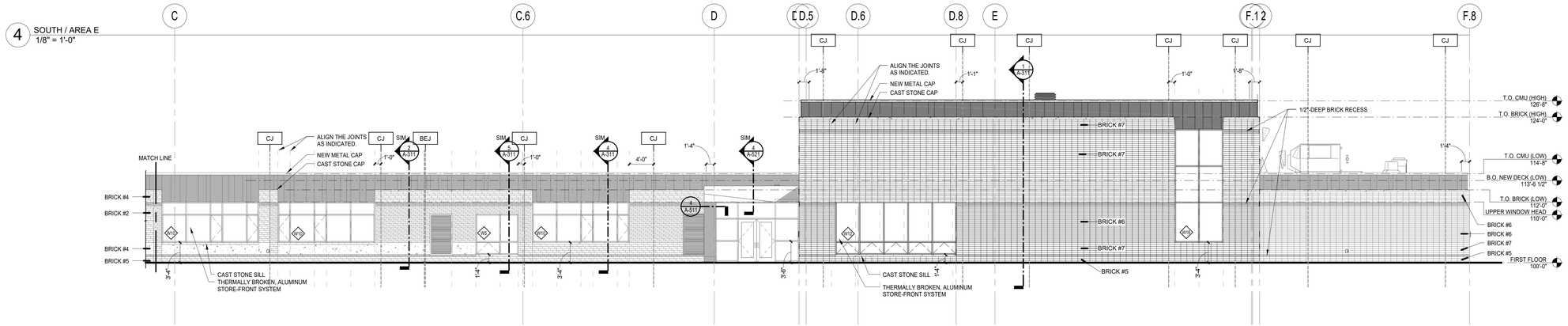
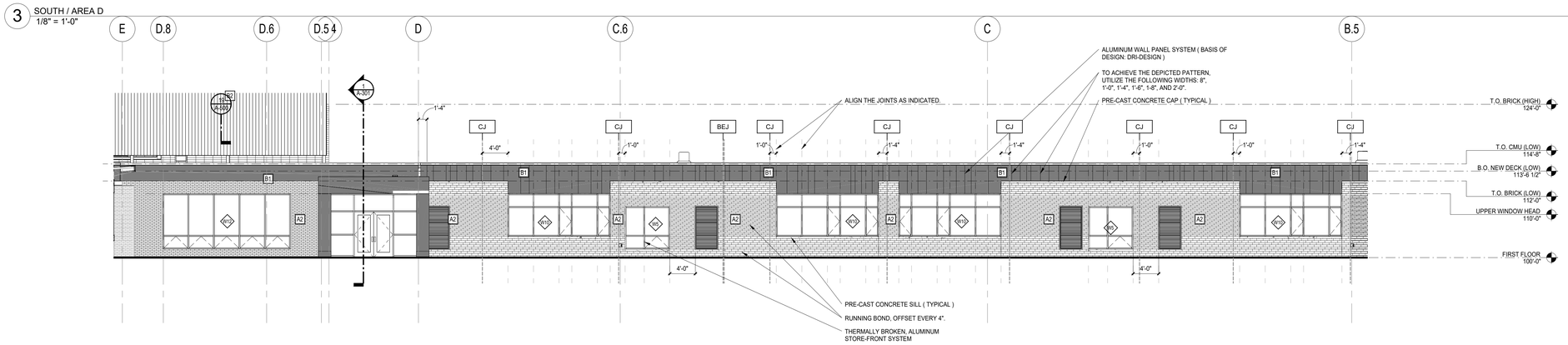
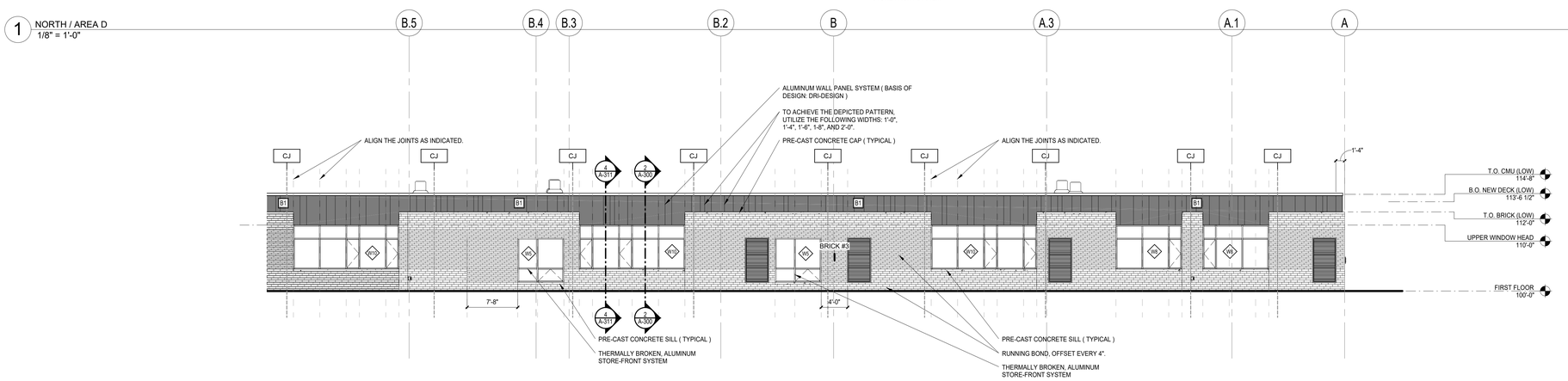


4 SOUTH / AREA E
1/8" = 1'-0"



3 SOUTH / AREA D
1/8" = 1'-0"



1 NORTH / AREA D
1/8" = 1'-0"

2 NORTH / AREA E
1/8" = 1'-0"

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FAIRVIEW ADDITIONS AND RENOVATIONS
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EXTERIOR ELEVATIONS

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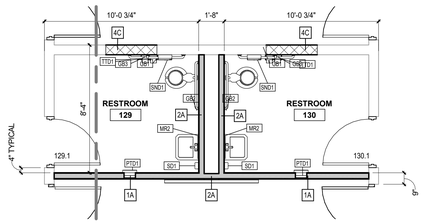
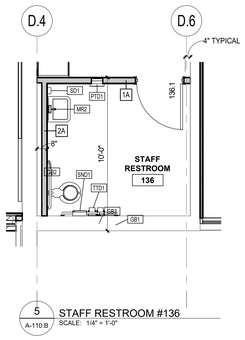
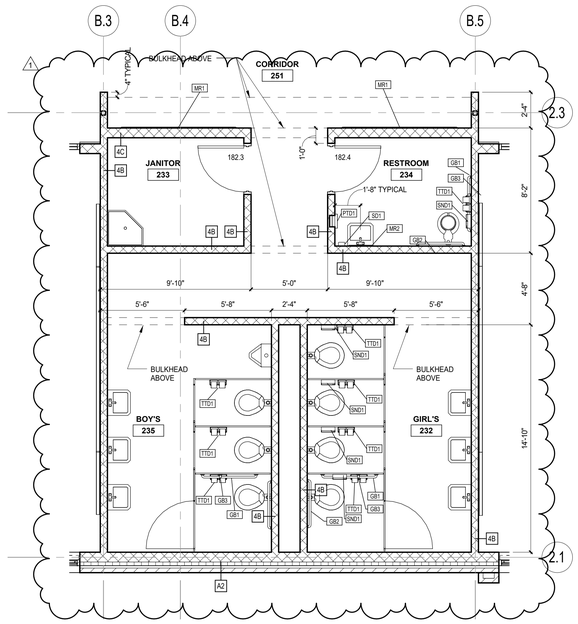


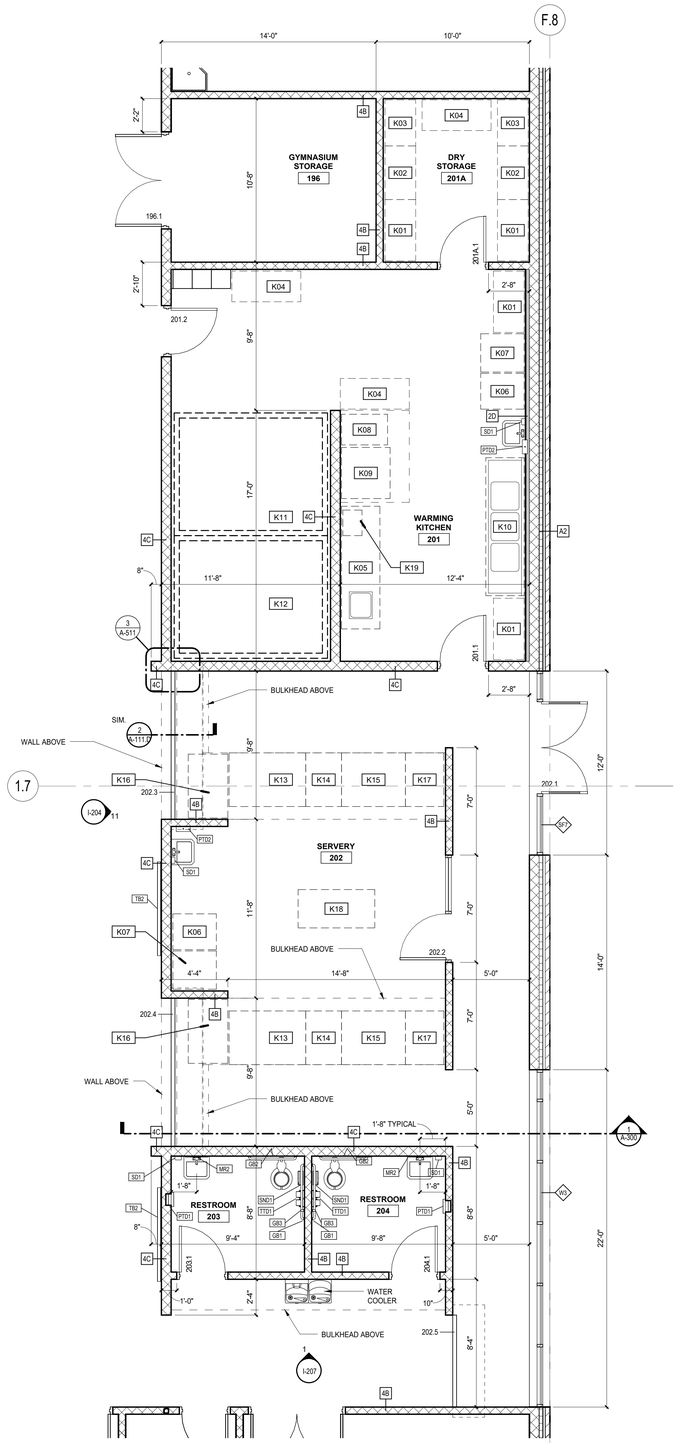
6 RESTROOMS #129 AND #130
A-110.A SCALE: 1/4" = 1'-0"



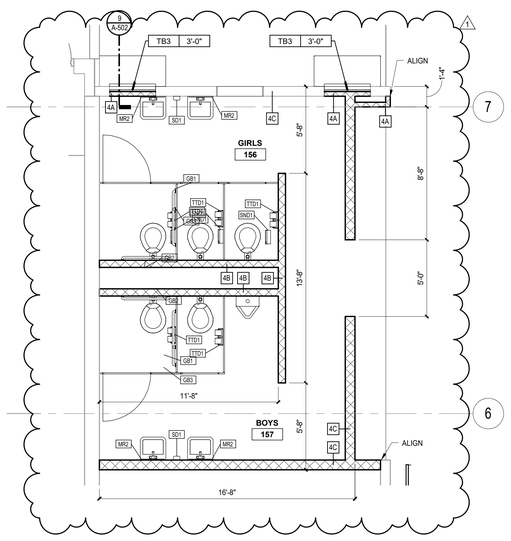
5 STAFF RESTROOM #136
A-110.B SCALE: 1/4" = 1'-0"



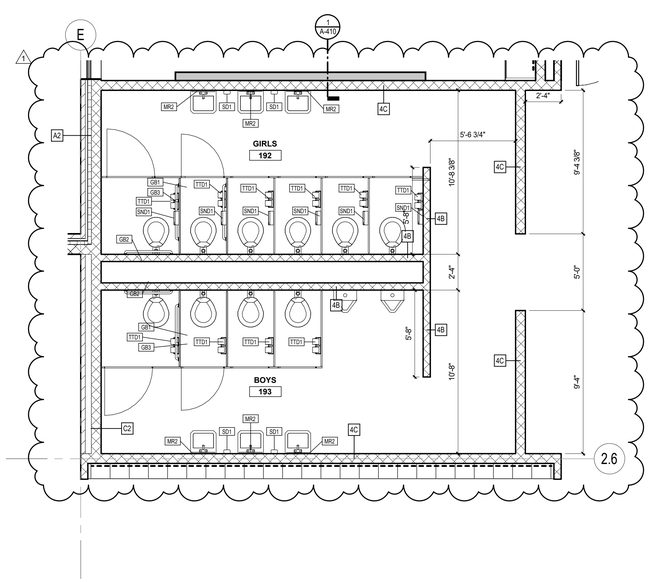
4 GROUP RESTROOMS
A-110.E SCALE: 1/4" = 1'-0"



1 WARMING KITCHEN #201 AND SERVERY #202
A-110.D SCALE: 1/4" = 1'-0"



3 GROUP RESTROOMS
A-110.B SCALE: 1/4" = 1'-0"



2 GROUP RESTROOMS
A-110.D SCALE: 1/4" = 1'-0"

GENERAL NOTES (FLOOR PLANS)

1. EACH CONTRACTOR IS RESPONSIBLE TO COORDINATE THEIR WORK WITH THE OTHER TRADES.
2. ANY CONFLICT BETWEEN THE NOTES, DETAILS, SPECIFICATIONS, AND/OR DRAWINGS MUST BE VERIFIED WITH THE ARCHITECT AND/OR ENGINEER. THE STRICTEST REQUIREMENT WILL GOVERN.
3. CONSTRUCTION DETAILS NOT DEPICTED WILL FOLLOW THE SAME LOGIC OF OTHER SIMILAR CONDITIONS. ANY UNCLEAR CONDITION MUST BE VERIFIED WITH THE ARCHITECT AND/OR ENGINEER PRIOR TO THE WORK BEING PERFORMED.
4. THE DRAWINGS ARE NOT TO BE SCALED. ANY UNCLEAR DIMENSION OR DISCREPANY MUST BE VERIFIED WITH THE ARCHITECT AND/OR ENGINEER PRIOR TO THE WORK BEING PERFORMED.
5. PRIOR TO THE WORK BEING PERFORMED, THE EXISTING CONDITIONS MUST BE VERIFIED IN THE FIELD. ANY CONDITION THAT DIFFERS FROM THE CONSTRUCTION DOCUMENTS MUST BE VERIFIED WITH THE ARCHITECT AND/OR ENGINEER.
6. PRIOR TO THE WORK BEING PERFORMED, DIMENSIONS INDICATED IN THE CONSTRUCTION DOCUMENTS MUST BE VERIFIED IN THE FIELD. ANY CONDITION THAT DIFFERS FROM THE CONSTRUCTION DOCUMENTS MUST BE VERIFIED WITH THE ARCHITECT AND/OR ENGINEER.
7. THE CONSTRUCTION MANAGER (CM) OR GENERAL CONTRACTOR (GC) MUST REVIEW THE ENTIRE SET OF CONSTRUCTION DOCUMENTS, INCLUDING BOTH THE DRAWINGS AND SPECIFICATIONS.
8. THE CM OR GC MUST COORDINATE THE WORK REQUIRED BETWEEN THE TRADES. IF CONFLICTS ARISE DUE TO THE COORDINATION OF THE TRADES, THE CM OR GC MUST VERIFY THE CONFLICT WITH THE ARCHITECT AND/OR ENGINEER PRIOR TO THE WORK BEING PERFORMED.
9. NEW WORK MUST BE COORDINATED WITH THE DEMOLITION REQUIRED BY THE CONSTRUCTION DOCUMENTS.
10. WHERE ATTACHED OR IMBEDDED ITEMS WERE REMOVED, PATCH ANY INTERIOR OR EXTERIOR WALL TO MATCH THE ADJACENT EXISTING CONSTRUCTION.
11. EACH CONTRACTOR IS RESPONSIBLE FOR THE PREPARATION OF ANY FLOOR, WALL, AND/OR CEILING RECEIVING NEW FINISHES.
12. REMOVE ANY ADHESIVE AND/OR MORTAR REMAINING FROM THE REMOVAL OF ANY EXISTING FLOOR COVERING.
13. UNLESS NOTED OTHERWISE, PATCH AND PREPARE FLOORS FLUSH WITH ADJACENT FLOOR SURFACES. FILL ANY SLOPING OR RECESSED AREAS LEVEL TO THE FINISH FLOOR ELEVATION TO ACCOMMODATE NEW FINISHES.
14. FILL-IN EXISTING CHASE OPENINGS, PENETRATIONS IN THE FLOOR AND CEILING DECK. FIRE-RATING OF NEW CONSTRUCTION TO MATCH EXISTING. REFER TO DRAWINGS FOR DETAILS.
15. WHEN REMOVING DEBRIS FROM THE CONSTRUCTION AREA WITH A DUMPSTER, WIPE OFF THE WHEELS BEFORE LEAVING THE CONSTRUCTION AREA AND LAY WET RAGS OVER THE DUMPSTER TO REDUCE DUST.
16. IF CONSTRUCTION NOISE AND/OR VIBRATION IMPACTS THE OWNER'S ONGOING USE OF THEIR FACILITY, THE OWNER RESERVES THE RIGHT TO HALT CONSTRUCTION AT ANY TIME.
17. UNLESS NOTED OTHERWISE, EACH DIMENSION IS TAKEN FROM THE FACE OF THE DRYWALL, MASONRY, OR CONCRETE.
18. EACH CONTRACTOR IS RESPONSIBLE TO COORDINATE THE LOCATION OF RECESSED OR IMBEDDED ITEMS WITH THE OTHER TRADES.
19. FIRE RATINGS MUST BE MAINTAINED AROUND ANY RECESSED OR MBEDDED ITEM.
20. VERIFY ANY OPENING AND/OR PENETRATION NOT DEPICTED IN THE CONSTRCTION DOCUMENTS WITH THE ARCHITECT AND/OR ENGINEER PRIOR TO THE WORK BEING PERFORMED.
21. ISOLATE DISSIMILAR METALS AS REQUIRED.
22. WHERE THEIR WORK IMPACTS THE EXISTING CONSTRUCTION, EACH CONTRACTOR MUST PATCH AND/OR REPAIR ANY BLEMISH AND/OR DAMAGE RESULTING FROM THEIR WORK, MATCHING THE ADJACENT EXISTING CONSTRUCTION.
23. PROVIDE AND INSTALL CONTINUOUS BLOCKING FOR MILLWORK, PLUMBING FIXTURES, AND/OR OTHER EQUIPMENT AS REQUIRED.
24. WHERE ANY DRYWALL ABUTS A DISSIMILAR MATERIAL, PROVIDE AND INSTALL METAL DRYWALL TRIM OR BEADS SET BACK A QUARTER OF INCH, CAULK CONTINUOUSLY.
25. PAINT ANY EXPOSED LINTELS.
26. ANY BLOCKING REQUIRED MUST BE NON-CONBUSTIBLE.
27. PIPES BELOW ANY SINK MUST BE INSULATED OR OTHERWISE CONFIGURED TO AVOID CONTACT WITH THE USER.
28. REFERENCE THE EXTERIOR ELEVATIONS AND WALL SECTIONS FOR MASONRY TYPES, COURSING, AND PATTERNS.
29. ALL EXISTING TACK STRIPS AND TACK BOARDS ARE TO REMAIN IN CORRIDORS, UNLESS OBSTRUCTED BY NEW OPENINGS.

LOCKER SUMMARY

LOWER ELEMENTARY WING //	148 LOCKERS IN ONE TIER
EAST WING //	115 LOCKERS IN ONE TIER
UPPER ELEMENTARY WING //	24 LOCKERS IN ONE TIER 386 LOCKERS IN TWO TIERS 410 TOTAL LOCKERS
	673 TOTAL LOCKERS THROUGHOUT (FIELD VERIFY)

ACCESSORY SCHEDULE

TAG	ACCESSORY	MANUFACTURER	MODEL	SUPPLIED BY	INSTALLED BY
GB1	42" HORIZONTAL GRAB BAR	BRADLEY	8122-00142		
GB2	36" HORIZONTAL GRAB BAR	BRADLEY	8122-00136		
GB3	18" VERTICAL GRAB BAR	BRADLEY	8122-00118	CONTRACTOR	CONTRACTOR
MR1	MIRROR - 90X36	BRADLEY	780-2436	CONTRACTOR	CONTRACTOR
MR2	MIRROR - 24X36	BRADLEY	780-2436		
PTD1	PAPER TOWEL DISPENSER, SEMI-RECESSED	BRADLEY	244-100000		
PTD2	PAPER TOWEL DISPENSER	BRADLEY	250-150000		
S1	EXTERIOR DOOR SIGN			CONTRACTOR	CONTRACTOR
SD1	SOAP DISPENSER	BRADLEY	6A01-11	CONTRACTOR	CONTRACTOR
SND1	SANITARY NAPKIN DISPOSAL SURFACE MOUNTED	BRADLEY	4722-150000		
TB3	TACK BOARD 8'-0"W x 4'-0"H			CONTRACTOR	CONTRACTOR
TTD1	TOILET TISSUE DISPENSER - DUAL	BRADLEY	5241		

KITCHEN EQUIPMENT

Mark	Name
K01	Wire Shelving
K02	Wire Shelving
K03	Wire Shelving
K04	Wire Shelving
K05	Preparation Counter
K06	Cold Food Cabinet
K07	Hot Food Cabinet
K08	Gas Convention Steamer
K09	Gas Convention Oven
K10	Three-Compartment Sink
K11	Walk-In Cooler
K12	Walk-In Freezer
K13	Hot Food Table
K14	Utility Counter
K15	Cold Food Table
K16	Milk Cooler
K17	Cashier Counter
K18	Work Table
K19	Microwave

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LANSING SCHOOL DISTRICT
FAIRVIEW ADDITIONS AND RENOVATIONS
Lansing, Michigan

ENLARGED FLOOR PLANS

REVISIONS

REV	DESCRIPTION	DATE
1	ADDENDUM 1	2/16/17

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SCALE: 1/4" = 1'-0"
PROJ. #: 160400
DATE: 01/13/2017

1 SHEET
A-401

ADDENDUM 1

Addendum #1

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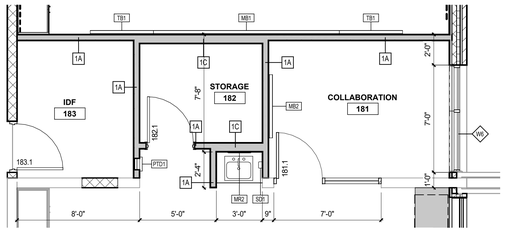

1 A-110.C FLOOR PLAN // AREA C - Callout 3
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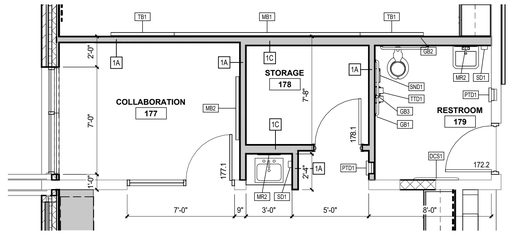

2 A-110.C FLOOR PLAN // AREA C - Callout 2
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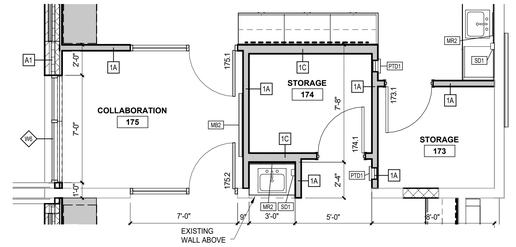

3 A-110.C FLOOR PLAN // AREA C - Callout 1
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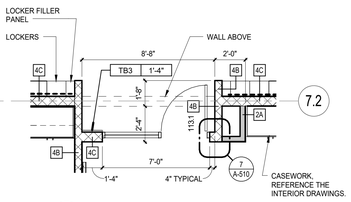

4 A-110.A SINGLE CLASSROOM ALCOVE / TYPICAL
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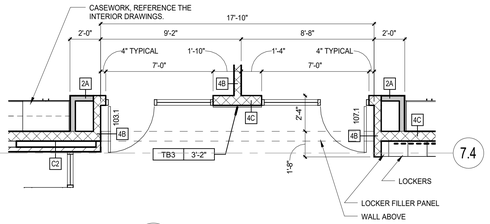

5 A-110.A DOUBLE CLASSROOM ALCOVE / TYPICAL
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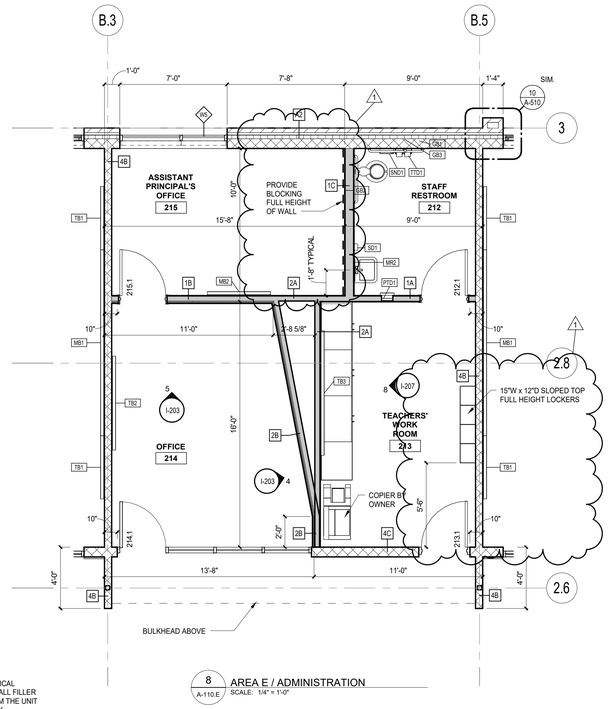
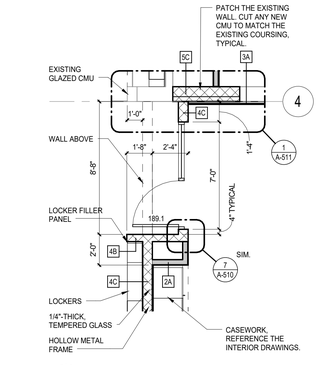
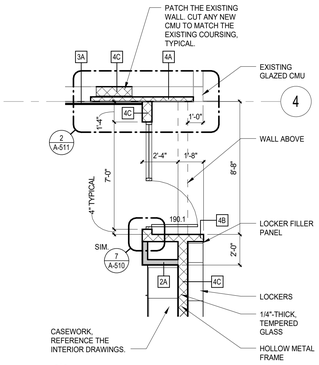


8 A-110.E AREA E / ADMINISTRATION
SCALE: 1/4" = 1'-0"



6 A-110.C PROJECT LAB #189 / CLASSROOM ALCOVE
SCALE: 1/4" = 1'-0"



7 A-110.C PROJECT LAB #190 / CLASSROOM ALCOVE
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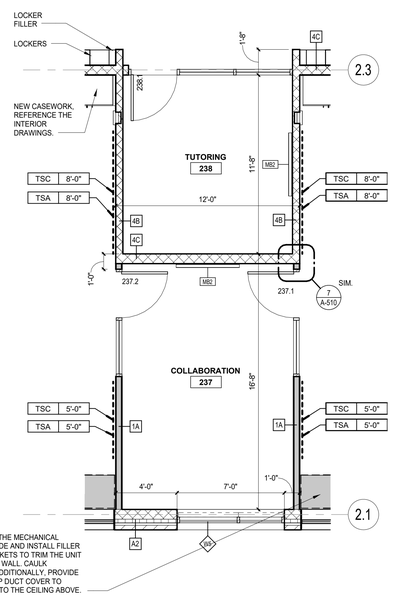

9 A-110.D TUTORING #238
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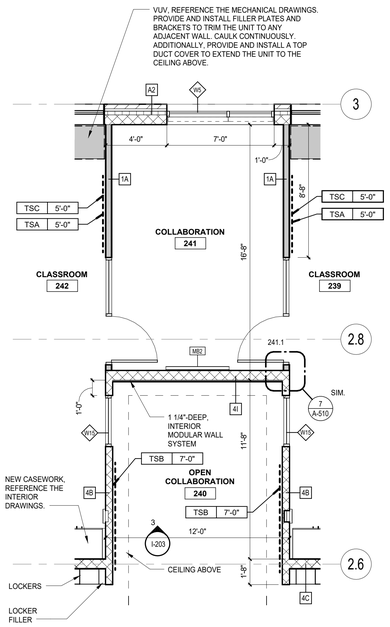

10 A-110.D AREA E / COLLABORATION BLOCK
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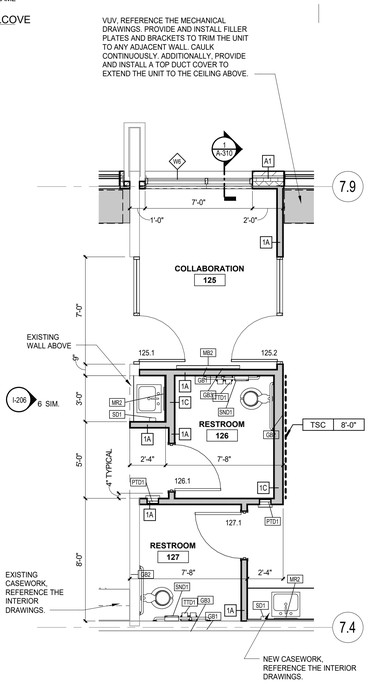

11 A-110.B AREA B / SUPPORT SPINE
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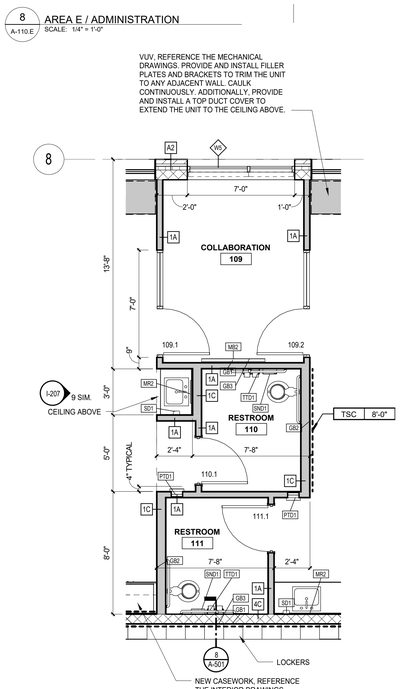
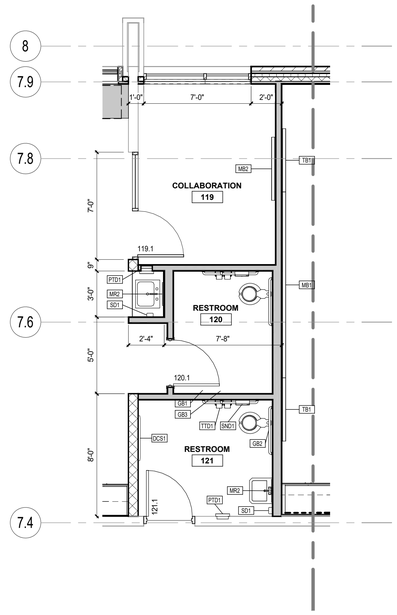


12 A-110.A AREA A / SUPPORT SPINE
SCALE: 1/4" = 1'-0"



13 A-110.A FLOOR PLAN // AREA A - Callout 1
SCALE: 1/4" = 1'-0"

GENERAL NOTES (FLOOR PLANS)

1. EACH CONTRACTOR IS RESPONSIBLE TO COORDINATE THEIR WORK WITH THE OTHER TRADES.
2. ANY CONFLICT BETWEEN THE NOTES, DETAILS, SPECIFICATIONS, AND/OR DRAWINGS MUST BE VERIFIED WITH THE ARCHITECT AND/OR ENGINEER. THE STRICTEST REQUIREMENT WILL GOVERN.
3. CONSTRUCTION DETAILS NOT DEPICTED WILL FOLLOW THE SAME LOGIC OF OTHER SIMILAR CONDITIONS. ANY UNCLEAR CONDITION MUST BE VERIFIED WITH THE ARCHITECT AND/OR ENGINEER PRIOR TO THE WORK BEING PERFORMED.
4. THE DRAWINGS ARE NOT TO BE SCALED. ANY UNCLEAR DIMENSION OR DISCREPANY MUST BE VERIFIED WITH THE ARCHITECT AND/OR ENGINEER PRIOR TO THE WORK BEING PERFORMED.
5. PRIOR TO THE WORK BEING PERFORMED, THE EXISTING CONDITIONS MUST BE VERIFIED IN THE FIELD. ANY CONDITION THAT DIFFERS FROM THE CONSTRUCTION DOCUMENTS MUST BE VERIFIED WITH THE ARCHITECT AND/OR ENGINEER.
6. PRIOR TO THE WORK BEING PERFORMED, DIMENSIONS INDICATED IN THE CONSTRUCTION DOCUMENTS MUST BE VERIFIED IN THE FIELD. ANY CONDITION THAT DIFFERS FROM THE CONSTRUCTION DOCUMENTS MUST BE VERIFIED WITH THE ARCHITECT AND/OR ENGINEER.
7. THE CONSTRUCTION MANAGER (CM) OR GENERAL CONTRACTOR (GC) MUST REVIEW THE ENTIRE SET OF CONSTRUCTION DOCUMENTS, INCLUDING BOTH THE DRAWINGS AND SPECIFICATIONS.
8. THE CM OR GC MUST COORDINATE THE WORK REQUIRED BETWEEN THE TRADES. IF CONFLICTS ARISE DUE TO THE COORDINATION OF THE TRADES, THE CM OR GC MUST VERIFY THE CONFLICT WITH THE ARCHITECT AND/OR ENGINEER PRIOR TO THE WORK BEING PERFORMED.
9. NEW WORK MUST BE COORDINATED WITH THE DEMOLITION REQUIRED BY THE CONSTRUCTION DOCUMENTS.
10. WHERE ATTACHED OR IMBEDDED ITEMS WERE REMOVED, PATCH ANY INTERIOR OR EXTERIOR WALL TO MATCH THE ADJACENT EXISTING CONSTRUCTION.
11. EACH CONTRACTOR IS RESPONSIBLE FOR THE PREPARATION OF ANY FLOOR, WALL, AND/OR CEILING RECEIVING NEW FINISHES.
12. REMOVE ANY ADHESIVE AND/OR MORTAR REMAINING FROM THE REMOVAL OF ANY EXISTING FLOOR COVERING.
13. UNLESS NOTED OTHERWISE, PATCH AND PREPARE FLOORS FLUSH WITH ADJACENT FLOOR SURFACES. FILL ANY SLOPING OR RECESSED AREAS LEVEL TO THE FINISH FLOOR ELEVATION TO ACCOMMODATE NEW FINISHES.
14. FILL-IN EXISTING CHASE OPENINGS, PENETRATIONS IN THE FLOOR AND CEILING DECK. FIRE-RATING OF NEW CONSTRUCTION TO MATCH EXISTING. REFER TO DRAWINGS FOR DETAILS.
15. WHEN REMOVING DEBRIS FROM THE CONSTRUCTION AREA WITH A DUMPSTER, WIPE OFF THE WHEELS BEFORE LEAVING THE CONSTRUCTION AREA AND LAY WET RAGS OVER THE DUMPSTER TO REDUCE DUST.
16. IF CONSTRUCTION NOISE AND/OR VIBRATION IMPACTS THE OWNER'S ONGOING USE OF THEIR FACILITY, THE OWNER RESERVES THE RIGHT TO HALT CONSTRUCTION AT ANY TIME.
17. UNLESS NOTED OTHERWISE, EACH DIMENSION IS TAKEN FROM THE FACE OF THE DRYWALL, MASONRY, OR CONCRETE.
18. EACH CONTRACTOR IS RESPONSIBLE TO COORDINATE THE LOCATION OF RECESSED OR IMBEDDED ITEMS WITH THE OTHER TRADES.
19. FIRE RATINGS MUST BE MAINTAINED AROUND ANY RECESSED OR MBEDDED ITEM.
20. VERIFY ANY OPENING AND/OR PENETRATION NOT DEPICTED IN THE CONSTRCTION DOCUMENTS WITH THE ARCHITECT AND/OR ENGINEER PRIOR TO THE WORK BEING PERFORMED.
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LOCKER SUMMARY

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EAST WING //	115 LOCKERS IN ONE TIER
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LANSING SCHOOL DISTRICT
FAIRVIEW ADDITIONS AND RENOVATIONS
Lansing, Michigan

ENLARGED FLOOR PLANS

REVISIONS

REV	DESCRIPTION	DATE
1	ADDENDUM 1	2/16/17

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SCALE: 1/4" = 1'-0"
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DATE: 01/13/2017
SHEET
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Addendum #1
ADDENDUM 1

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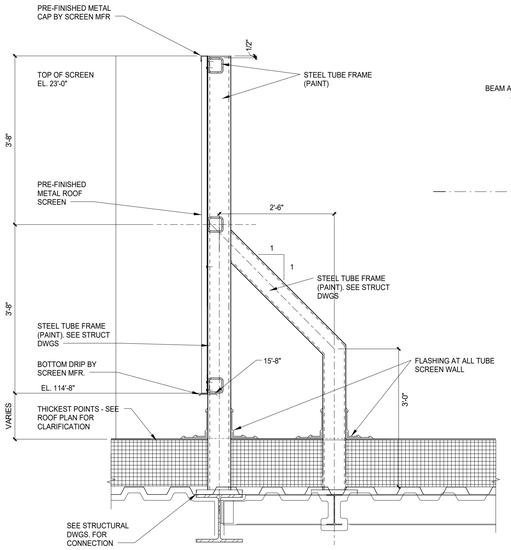
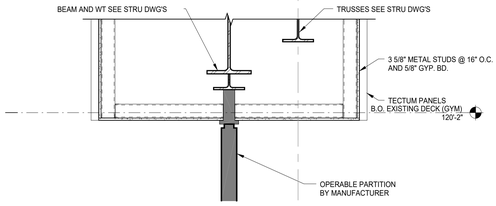
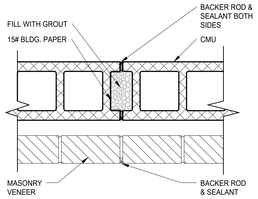


22 A-120 ENLARGED DETAIL @ SCREEN WALL
SCALE: 3/4" = 1'-0"

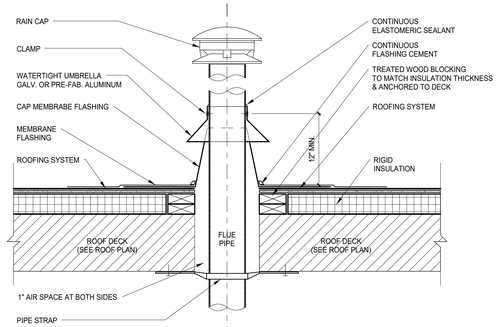
5' HIGH SCREEN PANELS



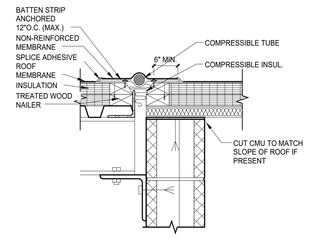
19 A-111.D OPERABLE PARTITION / BULKHEAD
SCALE: 3/4" = 1'-0"



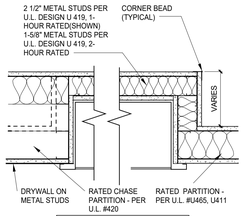
14 CONTROL JOINT DETAIL
SCALE: 1 1/2" = 1'-0"



9 A1 ROOF FLUE FLASHING DETAIL
SCALE: 1 1/2" = 1'-0"

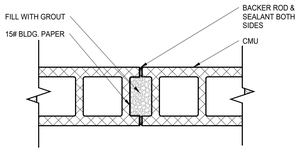


4 EXPANSION JOINT DETAIL
SCALE: 1 1/2" = 1'-0"



1-HOUR RATED PARTITION (2-HOUR SIMILAR)

18 RECESSED FIRE EXTINGUISHER
SCALE: 1 1/2" = 1'-0"



13 CONTROL JOINT DETAIL
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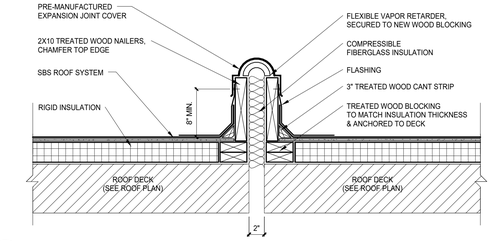
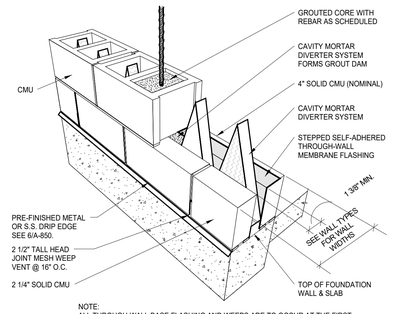
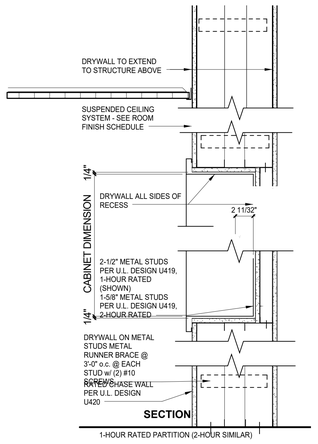


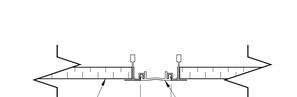
8 ROOF EXPANSION JOINT DETAIL
SCALE: 1 1/2" = 1'-0"



NOTE:
ALL THROUGH-WALL BASE FLASHING AND WEEPS ARE TO OCCUR AT THE FIRST MORTAR JOINT ABOVE GRADE, SOLID GROUT ANY CAVITY BELOW. STEP UP & DOWN PER GRADE



21 RECESSED FIRE EXTINGUISHER CAB. / ELECTRIC PANEL
SCALE: 1 1/2" = 1'-0"



17 EXPANSION JOINT CEILING
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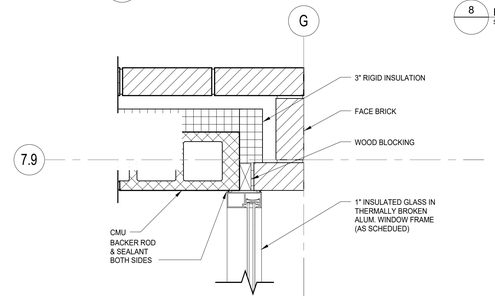
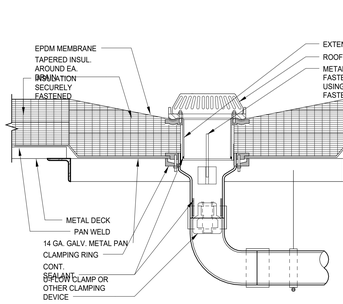
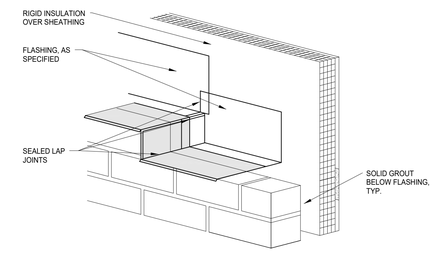


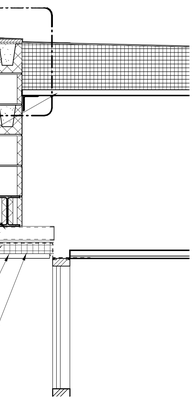
12 A-110.B ENLARGED DETAIL
SCALE: 1 1/2" = 1'-0"



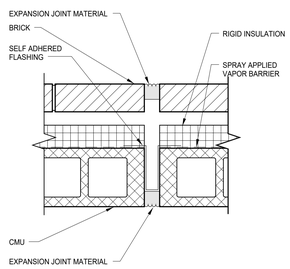
7 TYP. ROOF DRAIN
SCALE: 1 1/2" = 1'-0"



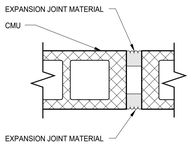
3 BASE FLASHING DETAIL
SCALE: 3/4" = 1'-0"



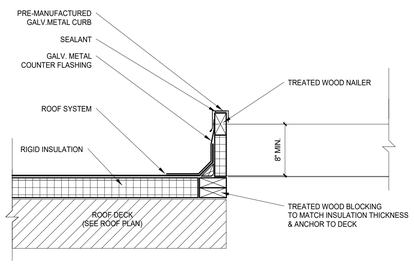
20 A-110.A VESTIBULE SECTION
SCALE: 3/4" = 1'-0"



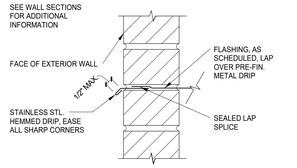
15 A-110.D EXPANTION JOINT EXTERIOR WALL
SCALE: 1 1/2" = 1'-0"



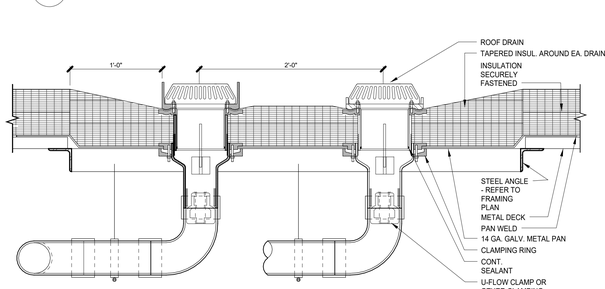
16 A-110.D EXPANSION JOINT INTERIOR
SCALE: 1 1/2" = 1'-0"



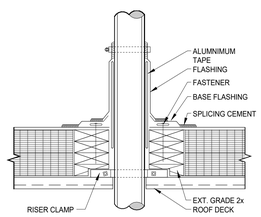
11 ROOF CURB DETAIL
SCALE: 1 1/2" = 1'-0"



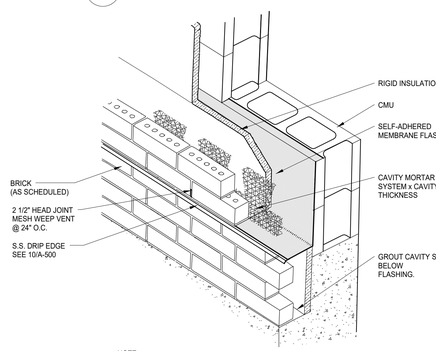
6 TYP. 2-PIECE FLASHING DETAIL
SCALE: 3" = 1'-0"



10 TYP. OVERFLOW ROOF DRAIN
SCALE: 1 1/2" = 1'-0"



5 PIPE PENETRATION FLASHING
SCALE: 1 1/2" = 1'-0"



NOTE:
ALL THROUGH-WALL BASE FLASHING AND WEEPS ARE TO OCCUR AT THE SECOND MORTAR JOINT ABOVE GRADE, SOLID GROUT ANY CAVITY BELOW. STEP UP & DOWN PER GRADE

2 TYP. STEPPED FLASHING DETAIL @ EXTERIOR INSUL.
SCALE: 1 1/2" = 1'-0"

1 MASONRY VENEER (ON CMU) BASE FLASHING DETAIL
SCALE: 3/4" = 1'-0"

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SECTION DETAILS

REVISIONS

REV.	DESCRIPTION	DATE
1	ADDENDUM 1	2/16/17

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SCALE: As indicated
PROJ. #: 160400
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SHEET
A-500
Addendum #1

1 ADDENDUM 1

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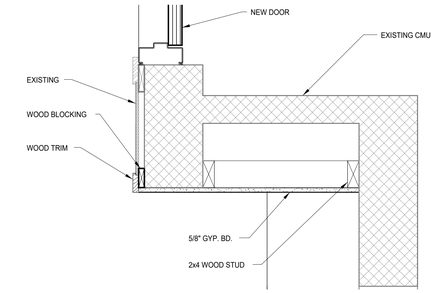
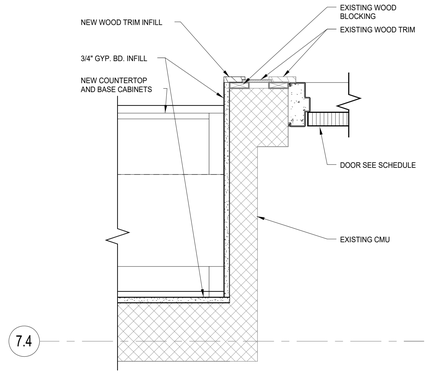
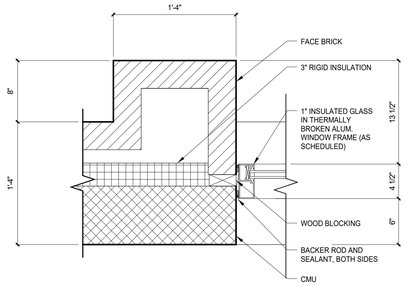
14 A-400 LEARNING COMMONS #139 / VUV
SCALE: 1 1/2" = 1'-0"



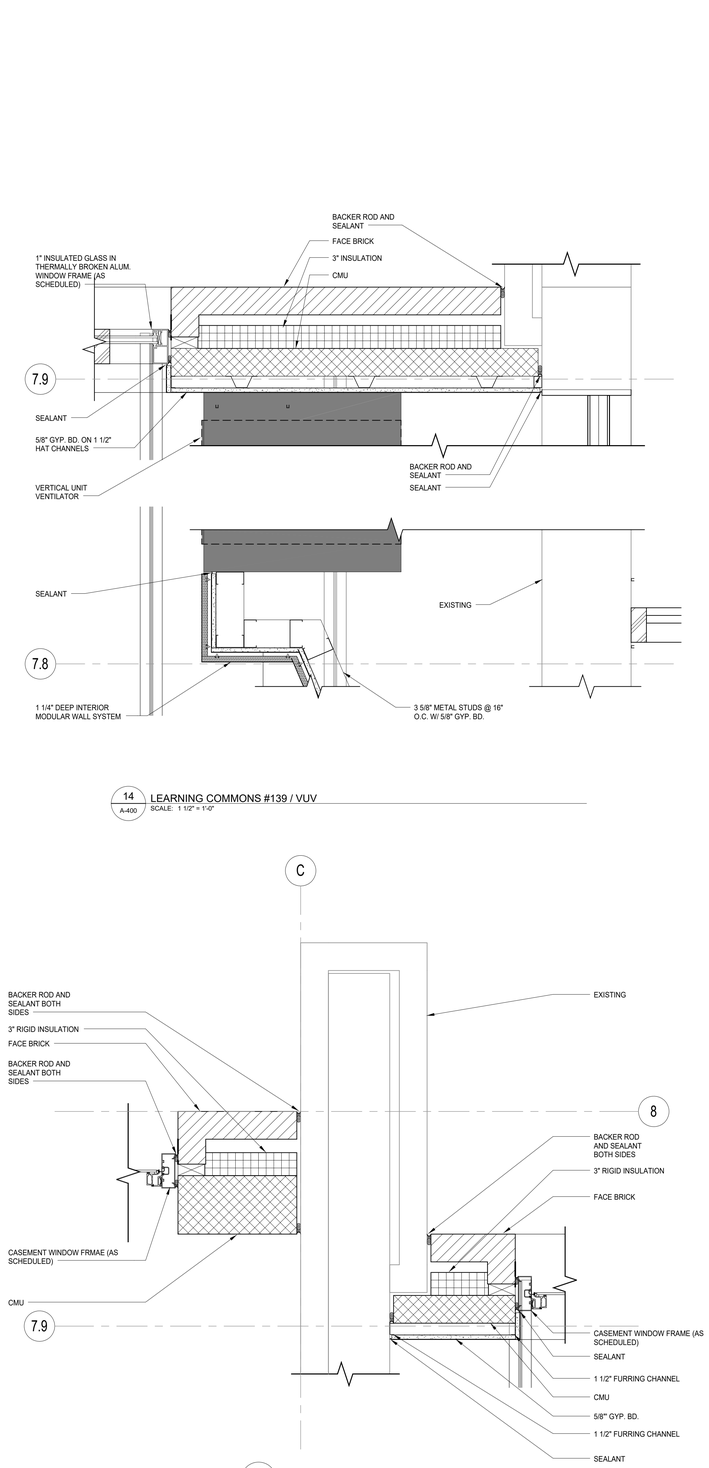
12 A-110.C Detail 9
SCALE: 1 1/2" = 1'-0"



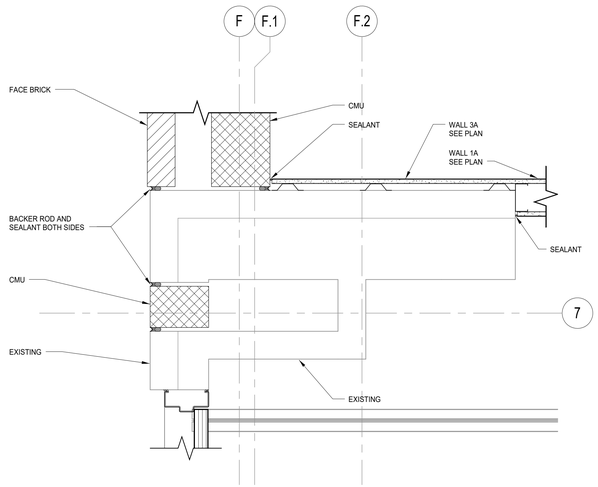
11 A-110.A DETAIL INFILL @ ROOM 124
SCALE: 1 1/2" = 1'-0"



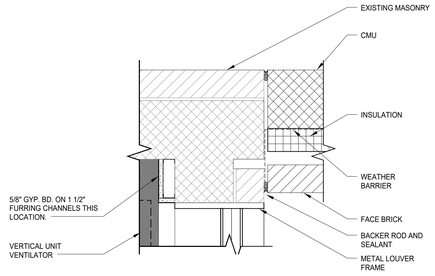
10 A-110.A PRE-K CLASSROOM #114 / WINDOW JAMB
SCALE: 1 1/2" = 1'-0"



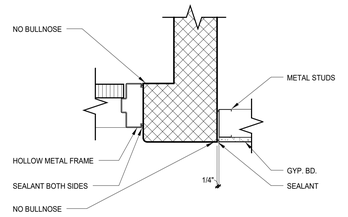
13 A-110.A CLASSROOM #118 / EXISTING PIER
SCALE: 1 1/2" = 1'-0"



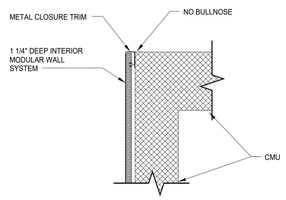
9 A-400 TEACHER PLANNING #158 / BUILDING JOINT / INTERIOR
SCALE: 1 1/2" = 1'-0"

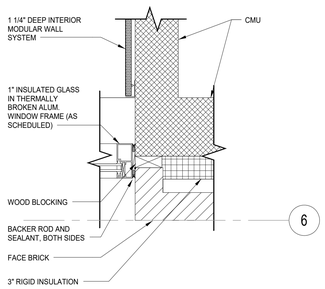


8 A-400 TEACHER PLANNING #158 / BUILDING JOINT / EXTERIOR
SCALE: 1 1/2" = 1'-0"



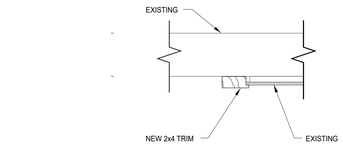
7 A-402 CLASSROOM ALCOVE / DOOR JAMB
SCALE: 1 1/2" = 1'-0"



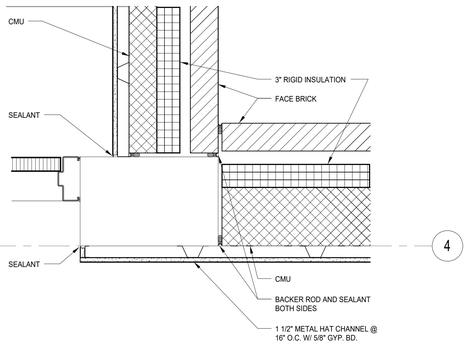


6 A-110.A OPEN COLLABORATION #104 / NORTH
SCALE: 1 1/2" = 1'-0"

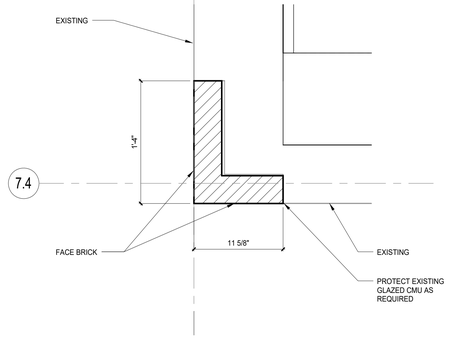
5 A-110.A OPEN COLLABORATION #104 / SOUTH
SCALE: 1 1/2" = 1'-0"



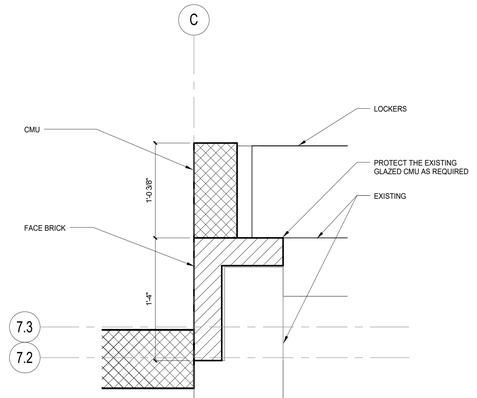
4 I-201 Detail 12
SCALE: 1 1/2" = 1'-0"



3 A-110.C PROJECT LAB #189 / PIER
SCALE: 1 1/2" = 1'-0"



2 A-110.A Detail 8
SCALE: 1 1/2" = 1'-0"



1 A-110.A CORRIDOR #112 / BUILDING JOINT
SCALE: 1 1/2" = 1'-0"

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LANSING SCHOOL DISTRICT
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Lansing, Michigan

PLAN DETAILS

REVISIONS

REV	DESCRIPTION	DATE
1	ADDENDUM 1	2/16/17

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PROJ. #: 160400
DATE: 01/13/2017

1 SHEET A-510
Addendum #1

ADDENDUM 1

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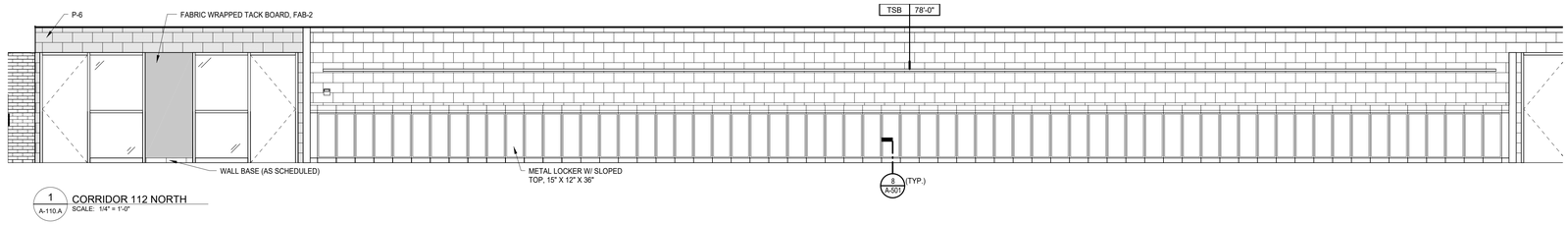
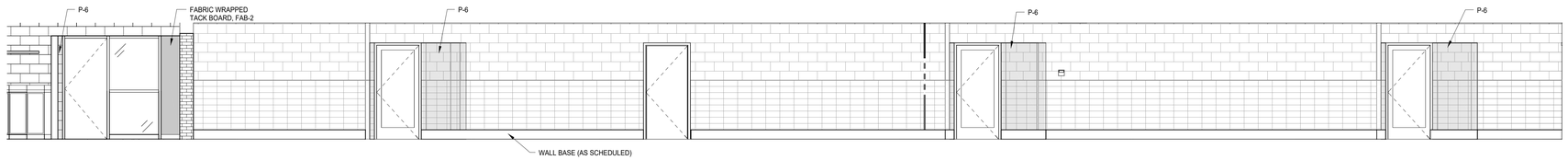
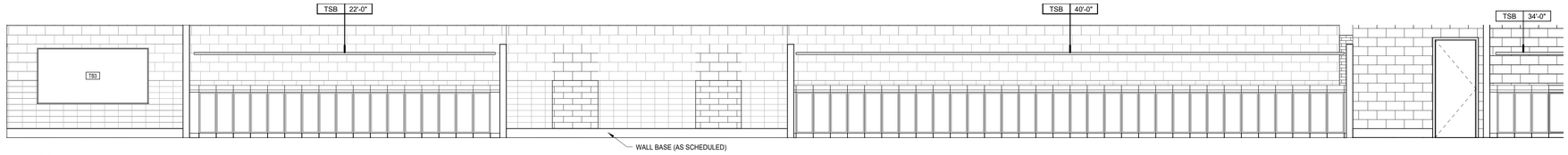


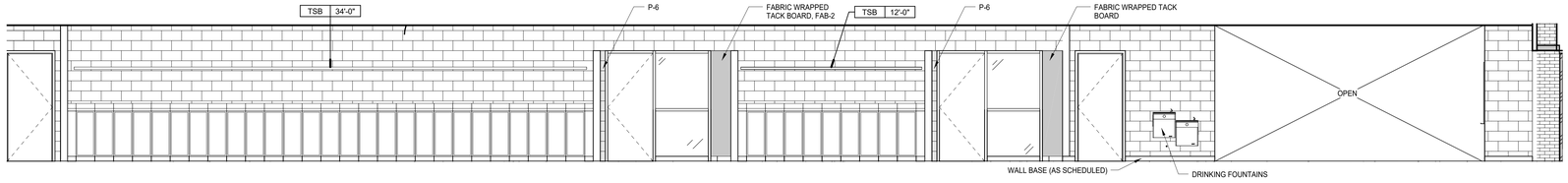
1 A-110.A CORRIDOR 112 NORTH
SCALE: 1/4" = 1'-0"



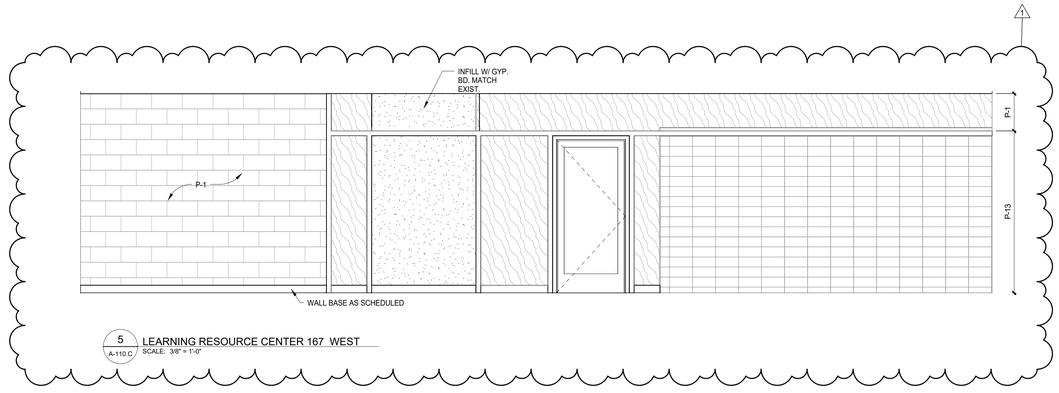
2 A-110.A CORRIDOR 112 NORTH CONTINUED
SCALE: 1/4" = 1'-0"



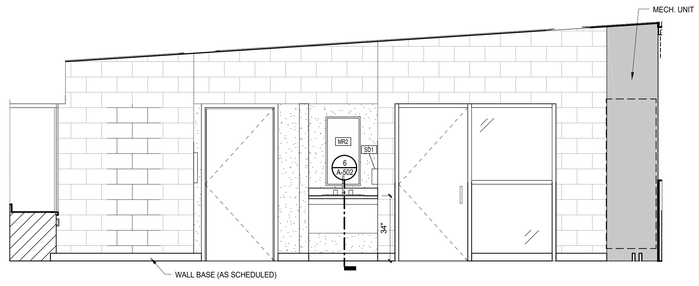
3 A-110.A CORRIDOR 112 SOUTH
SCALE: 1/4" = 1'-0"



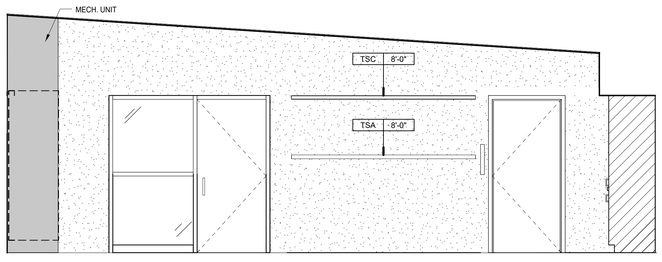
4 A-110.A CORRIDOR 112 SOUTH CONTINUED
SCALE: 1/4" = 1'-0"



5 A-110.C LEARNING RESOURCE CENTER 167 WEST
SCALE: 3/8" = 1'-0"



6 A-110.C CLASSROOM 180 NORTH
SCALE: 3/8" = 1'-0"



7 A-110.C CLASSROOM 168 SOUTH
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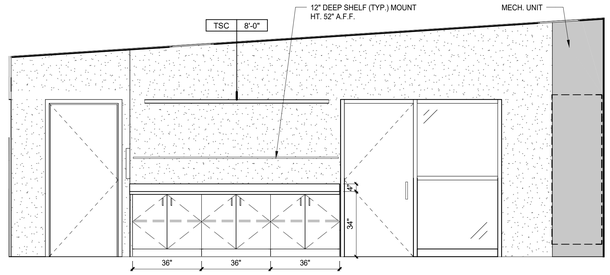
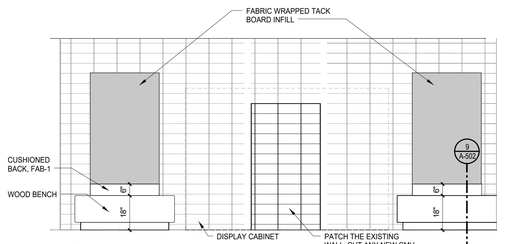


8 A-110.C CLASSROOM 172 SOUTH
SCALE: 3/8" = 1'-0"



9 A-110.B CORRIDOR 154 SOUTH
SCALE: 3/8" = 1'-0"

MILLWORK GENERAL NOTES

1. CONTRACTOR SHALL FIELD VERIFY ALL FINISHED DIMENSIONS PRIOR TO ORDERING / INSTALLATION.
2. ALL COUNTERTOPS TO BE CONSTRUCTED OF PLASTIC LAMINATE ON ALL EXPOSED SIDES ON (2) LAYERS OF 3/4" PARTICLE BD., U.N.O.
3. ALL PLASTIC LAMINATE COUNTERS TO HAVE PVC EDGE.
4. ALL BACKSPLASHES TO BE CONSTRUCTED OF PLASTIC LAMINATE ON ALL EXPOSED SIDES ON (1) LAYER OF 3/4" PARTICLE BD., U.N.O.
5. EXISTING CASEWORK/MILLWORK TO BE SANDED, PREPPED FOR PAINT AND PAINTED (P-13). PATCH ALL DAMAGED WOOD PRIOR TO PAINTING. PL-6 TO BE APPLIED TO ALL EXISTING GLASS AND TACKBOARD SLIDING DOORS. SEE INTERIOR ELEVATIONS.
6. REMOVE HARDWARE PULLS ON EXISTING CASEWORK AND REPLACE WITH NEW PULLS TO MATCH NEW CABINETS.
7. ON EXISTING CASEWORK, REPLACE TRACK SYSTEM AT ALL SLIDING DOORS W/NEW.
8. EXISTING WOOD TRIM TO BE PAINTED TO MATCH ADJACENT WALL SURFACE. SEE ELEVATIONS.
9. ALL EXPOSED SURFACES OF CABINETS ARE TO BE FINISHED TO MATCH CABINET FINISH, U.N.O.
10. PROVIDE HOLE & GROMMET IN COUNTER AT ALL ABOVE-COUNTER ELEC. DEVICE & EQUIPMENT LOCATIONS (BY OWNER & BY CONTRACTOR) WHERE OUTLET (THAT SERVICES ELEC. DEVICE OR EQUIPMENT) IS BELOW COUNTER. VERIFY W/ OWNER ALL LOCATIONS.
11. WHERE RESILIENT BASE ARE USED IN A ROOM WITH CABINETS, APPLY BASE TO TOE SPACE OF CABINETS, U.N.O.
12. PROVIDE BLOCKING IN WALL AT ALL CASEWORK (AND ACCESSORIES) LOCATIONS. SEE FLOOR PLANS AND INTERIOR DRAWINGS FOR LOCATIONS OF CASEWORK.
13. PROVIDE FILLER PIECE AT ALL CABINET LOCATIONS TO FILL GAP BETWEEN CABINET AND ADJACENT WALL. FILLER PIECE TO BE FLUSH WITH FACE OF CABINET AND SHALL MATCH MATERIAL AND FINISH OF CABINETS. MIN. 1 1/2" WIDTH.
14. ALL COUNTERTOPS LOCATED ATOP BASE CABINETS TO HAVE 1" OVERHANG, U.N.O.
15. ALL COUNTERTOP SUPPORTS TO BE 'RAKKS EH-18 SERIES'; 'EH-1818' FOR 24" DEEP COUNTERS AND 'EH-1824' FOR 30" DEEP COUNTERS, AND SHALL BE SPACED 32" O.C. MAX., & AT ENDS. COORDINATE LOCATION W/ OWNER'S EQUIPMENT & FURNISHINGS PLACEMENT. SUPPORTS TO BE PAINTED TO MATCH ADJACENT WALL COLOR. PROVIDE BLOCKING.
16. ALL BASE CABINETS SHALL BE 34"H x 24"D, U.N.O.
17. ALL WALL CABINETS STANDARD 12"D AND MOUNTED AT 7'-0" A.F.F. TO TOP, U.N.O., SEE ELEVATIONS.
18. SEE FLOOR PLANS / FINISH PLANS / INTERIOR ELEVATIONS FOR CASEWORK SIZES.
19. B1 WARDROBE TO BE THE EQUIVALENT TO STEVENS MODEL NO. 25607, 36"W X 24"D X 84"H.
20. B2 WARDROBE TO BE THE EQUIVALENT TO STEVENS MODEL NO. 25607, 36"W X 24"D X 82"H.
21. B3 TOTE TRAY TO BE THE EQUIVALENT TO STEVENS MODEL NO. 10270, 48"W X 24"D X 34"H.
22. SEE SPECS FOR CASEWORK HARDWARE.

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INTERIOR ELEVATIONS

REVISIONS

REV	DESCRIPTION	DATE
1	ADDENDUM 1	2/14/17

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SCALE: As indicated
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DATE: 01/13/2017
SHEET
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Addendum #1
ADDENDUM 1

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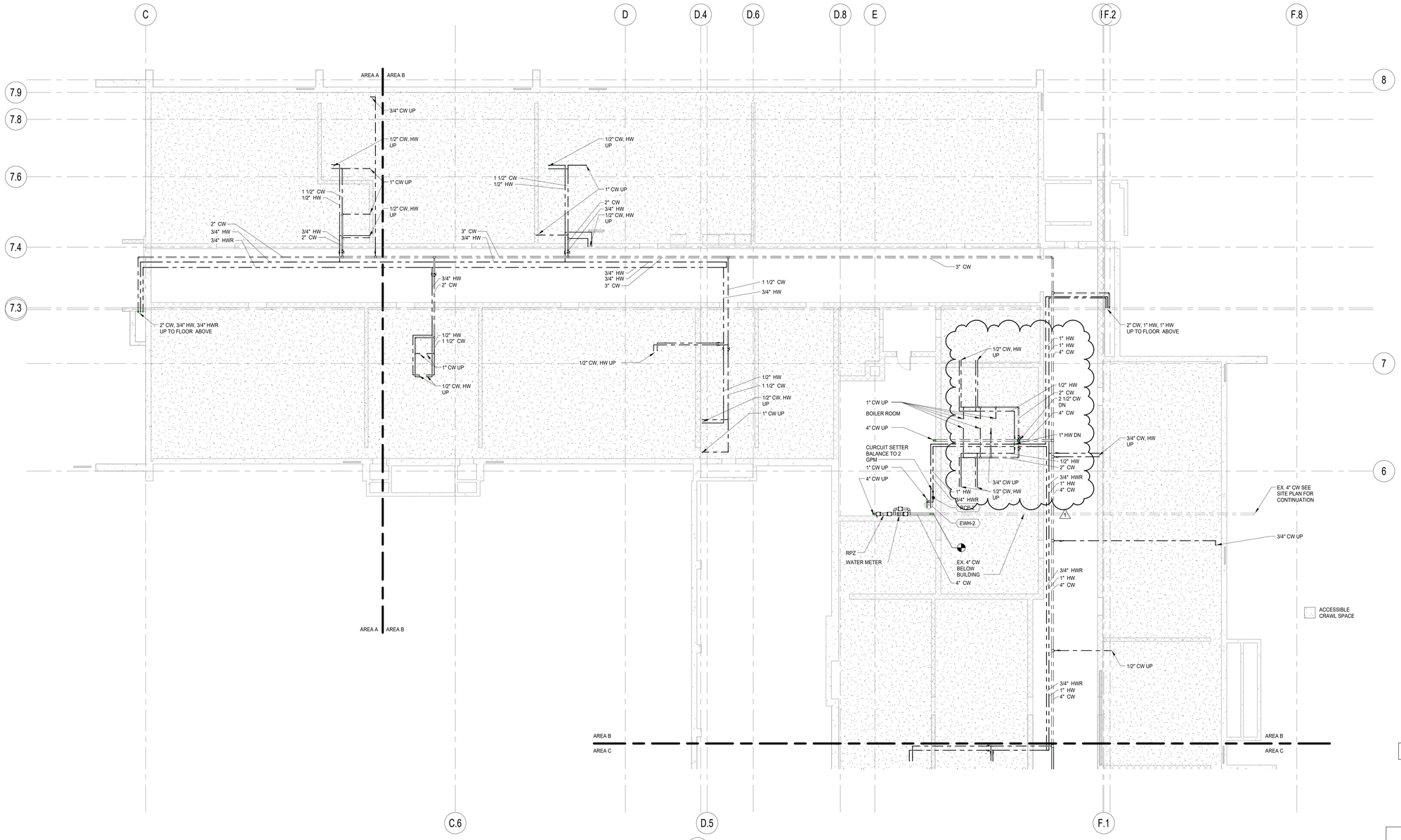

1 TUNNEL DOMESTIC WATER AND NATURAL GAS PLAN PLAN - AREA B
1/8" = 1'-0"

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TUNNEL DOMESTIC WATER & GAS PLAN - AREA B

REVISIONS

REV	DESCRIPTION	DATE
1	ADDENDUM #1	01/18/2017

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DATE: 01/13/2017
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ADDENDUM 1

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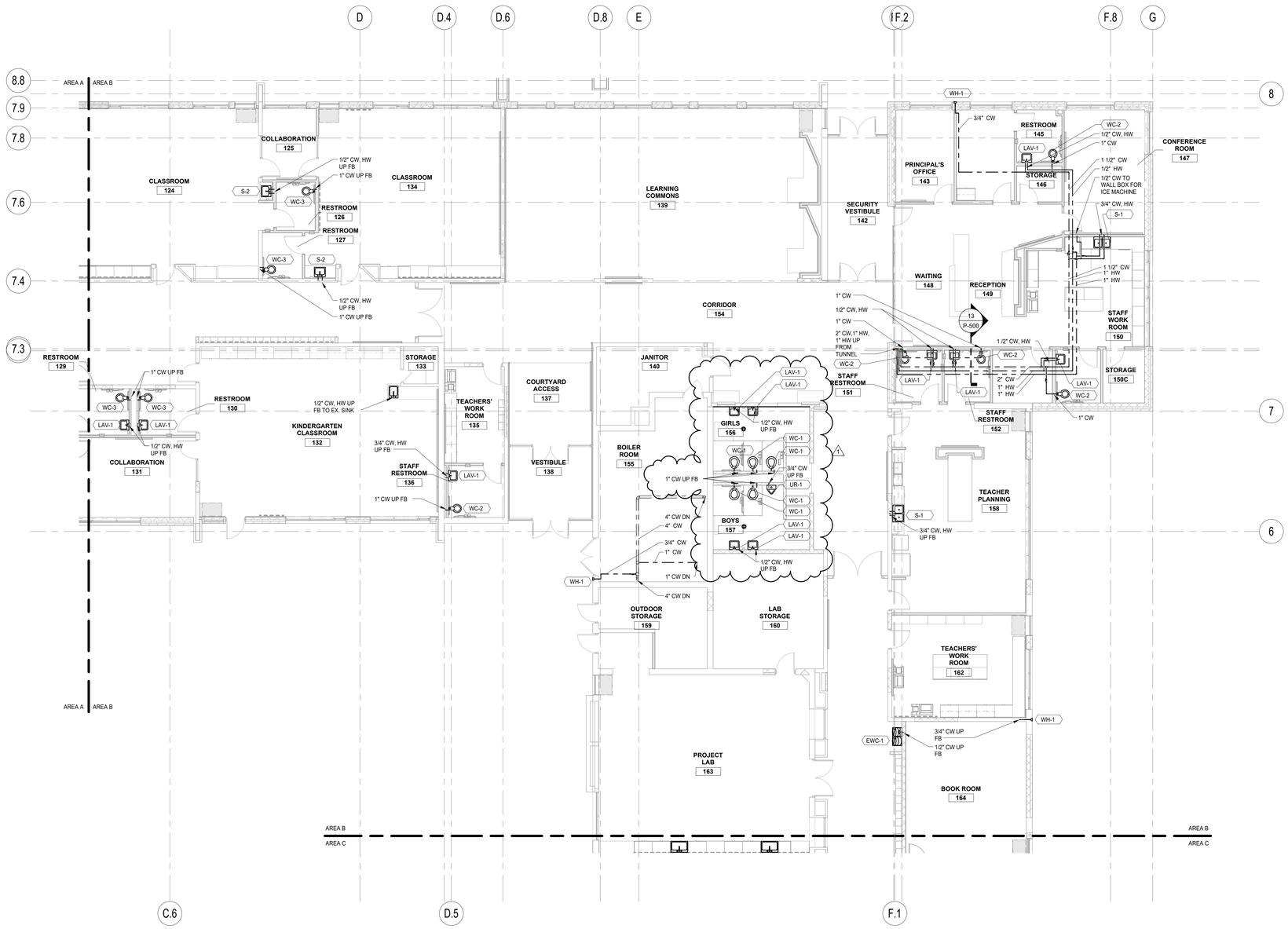
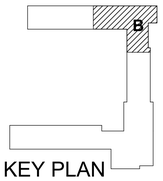


FIRST FLOOR DOMESTIC WATER AND NATURAL GAS - AREA B
1/8" = 1'-0"



KEY PLAN

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FAIRVIEW ADDITIONS AND RENOVATIONS

Lansing, Michigan

FIRST FLOOR DOMESTIC WATER & GAS PLAN - AREA B

REVISIONS

REV	DESCRIPTION	DATE
1	ADDENDUM 01	02/14/2017

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SCALE: 1/8" = 1'-0"
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DATE: 01/13/2017
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P-111.B

ADDENDUM 1

Addendum #1

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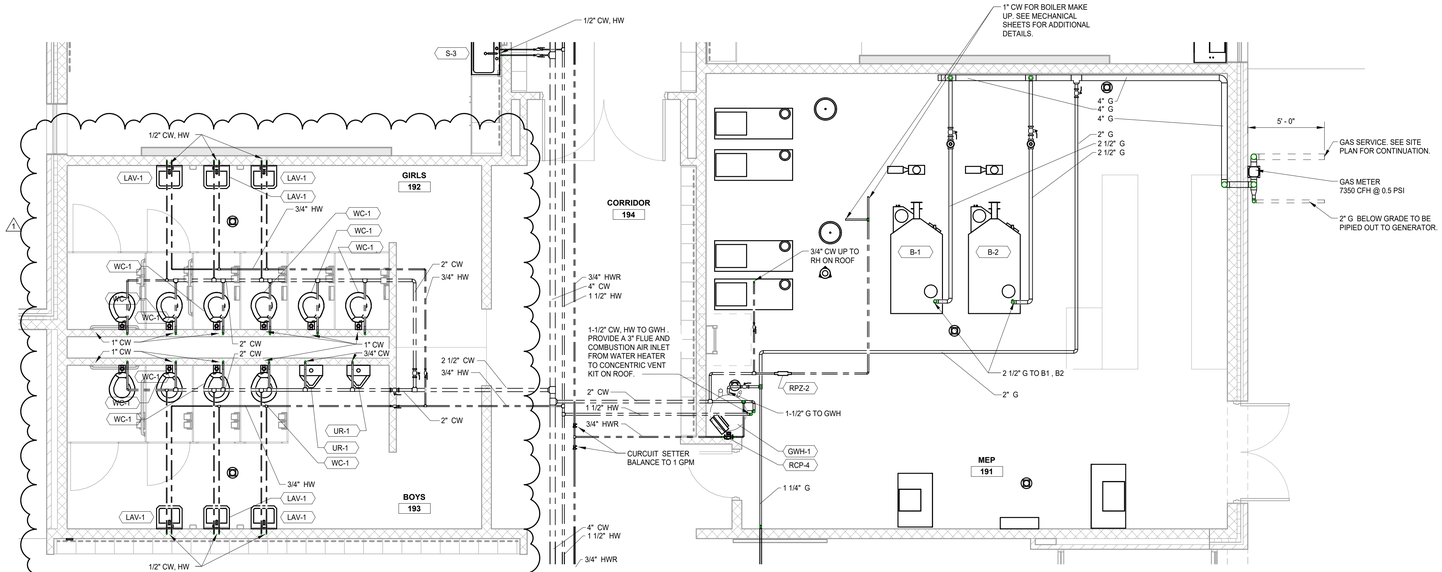
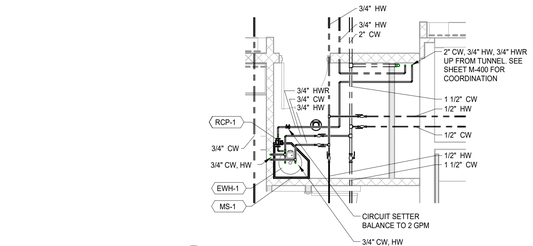


6 ENLARGED MECHANICAL ROOM AND BATHROOM PLAN - AREA D
1/4" = 1'-0"



7 ENLARGED DOMESTIC WATER HEATER PLUMBING PLAN - AREA A
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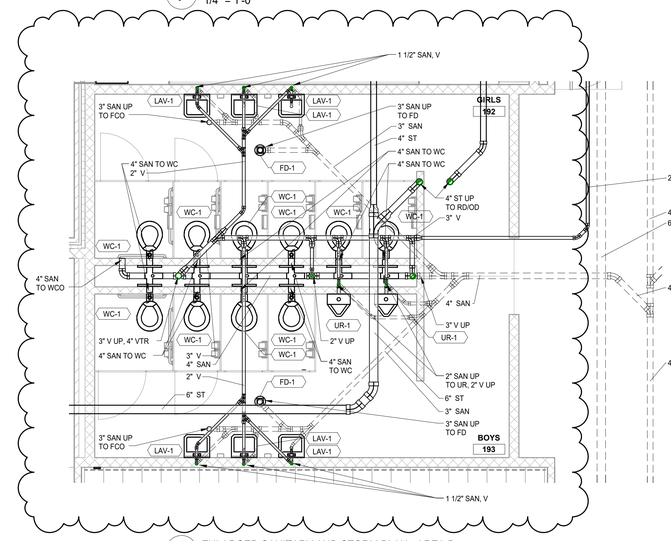
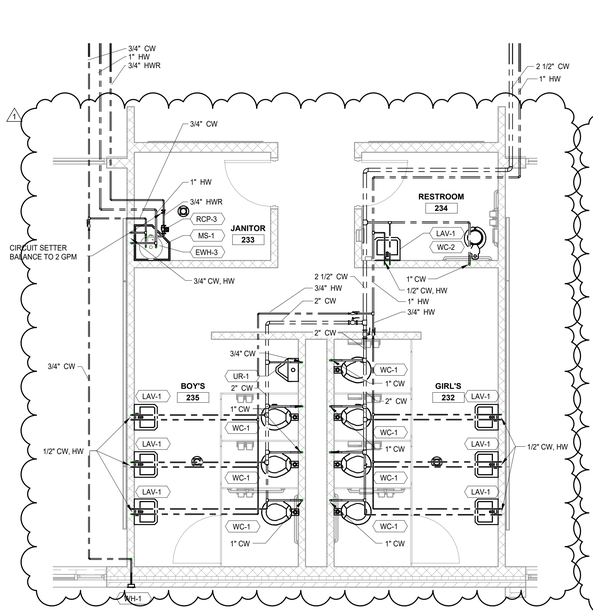
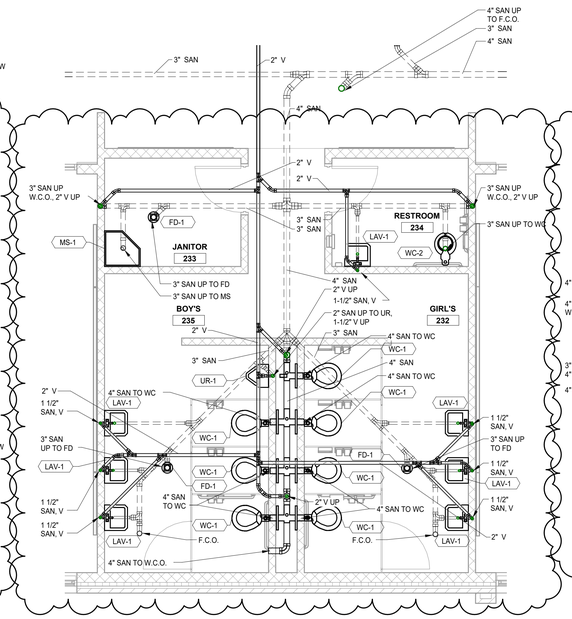


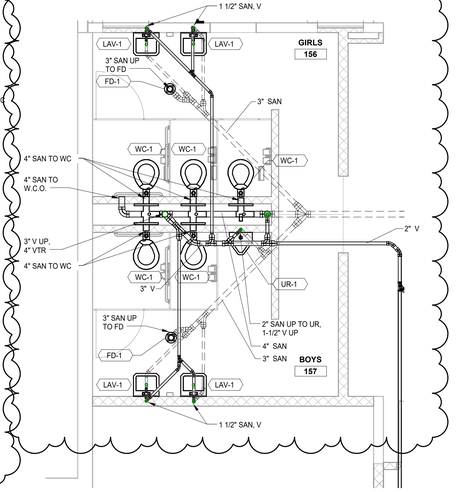
5 ENLARGED SANITARY AND STORM PLAN - AREA D
1/4" = 1'-0"



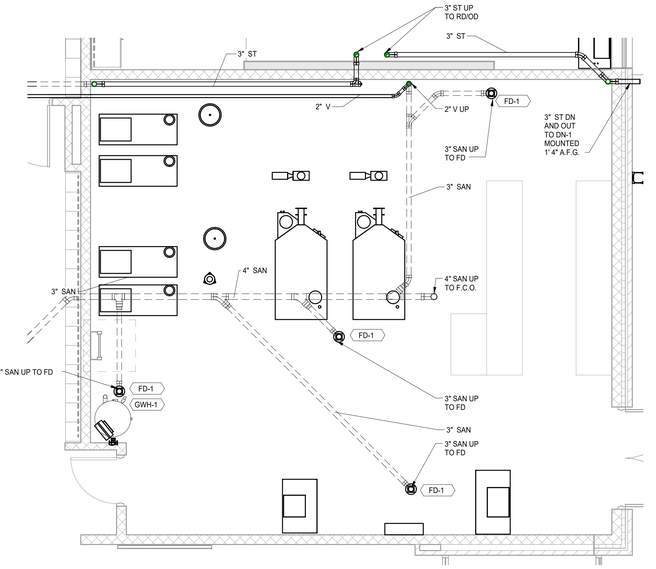
4 DOMESTIC PLUMBING PLAN - AREA E
1/4" = 1'-0"



3 FIRST FLOOR ENLARGED SANITARY PLAN - AREA E
1/4" = 1'-0"



2 ENLARGED SANITARY AND STORM PLAN - AREA B
1/4" = 1'-0"



1 ENLARGED MECHANICAL ROOM SANITARY AND STORM PLAN
1/4" = 1'-0"

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LANSING SCHOOL DISTRICT
FAIRVIEW ADDITIONS AND RENOVATIONS
Lansing, Michigan

ENLARGED PLUMBING FLOOR PLANS

REVISIONS

REV	DESCRIPTION	DATE
1	ADDENDUM #1	02/14/2017

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SCALE: 1/4" = 1'-0"
PROJ. #: 160400
DATE: 01/13/2017
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Addendum #1
ADDENDUM 1

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PLUMBING ABBREVIATIONS

ABBREVIATION	DESCRIPTION
AFF	ABOVE FINISHED FLOOR
ASPE	AMERICAN SOCIETY OF PLUMBING ENGINEERS
AAV	AIR ADMITTANCE VALVE
AV	ACID VENT
AW	ACID WASTE
CD	CONDENSATE DRAIN
CA	COMPRESSED AIR
CI	CAST IRON
CH	CHILLER
CO	CLEANOUT
CW	COLD WATER
COND	CONDENSATE RETURN
CP	CONDENSATE PUMP
D	DRAIN
DIA	DIAMETER
DIW	DEIONIZED WATER
EFF	EFFICIENCY
EL	ELEVATION
EWT	ENTERING WATER TEMPERATURE
FD	FLOOR DRAIN
F&Y	FLOAT AND THERMOSTATIC
FCO	FLOOR CLEANOUT
FPM	FEET PER MINUTE
FS	FLOW SWITCH
FT	FEET
G	GAS
GA	GAUGE
GAL	GALLONS
GPM	GALLONS PER MINUTE
GPR	GAS PRESSURE REGULATOR
HD	HEAD
HB	HOSE BIBB
HP	HORSEPOWER
HW	HOT WATER
HWR	HOT WATER RETURN
HX	HEAT EXCHANGER
ID	INSIDE DIAMETER
IN	INCHES
IN WC	INCHES WATER COLUMN
IPC	INTERNATIONAL PLUMBING CODE
kW	KILOWATTS
kWh	KILOWATT HOURS
LAV	LAVATORY
LF	LINEAR FEET
LWT	LEAVING WATER TEMPERATURE
LPG	LIQUID PETROLEUM GAS
LPS	LOW PRESSURE STEAM
MA	MEDICAL AIR
MG	MEDICAL GAS
MFS	MAXIMUM FUSE SIZE
MCA	MINIMUM CIRCUIT AMPACITY
MHP	MOTOR HORSEPOWER
MOCP	MAXIMUM OVERCURRENT PROTECTION
MPC	MICHIGAN PLUMBING CODE
MR	MANUFACTURER'S RECOMMENDATIONS
NA	NOT APPLICABLE
NC	NORMALLY CLOSED
NG	NATURAL GAS
NO	NORMALLY OPEN
NO2	NITROGEN DIOXIDE
NTS	NOT TO SCALE
OD	OUTSIDE DIAMETER
OZ	OUNCE
P	PUMP
PD	PRESSURE DROP
PRV	PRESSURE REDUCING VALVE
PPM	PARTS PER MILLION
PSI	POUNDS PER SQUARE INCH
PSIA	POUNDS PER SQUARE INCH ATMOSPHERE
PSIG	POUNDS PER SQUARE INCH GAUGE
RPBFP	REDUCED PRESSURE BACKFLOW PREVENTER
RPM	ROUNDS PER MINUTE
RLA	RUNNING LOAD AMPS
RV	RELIEF VALVE
S	SINK
SAN	SANITARY
SOV	SHUTOFF VALVE
SCW	SOFT COLD WATER
ST	STORM
ODL	STORM OVERFLOW
MBH	THOUSAND BTU/HR
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
V	SANITARY VENT
VSD	VARIABLE SPEED DRIVE
VFD	VARIABLE FREQUENCY DRIVE
WCO	WALL CLEANOUT
WHA	WATER HAMMER ARRESTER
WPD	WATER PRESSURE DROP
SQFT	SQUARE FEET
FB	FROM BELOW

PLUMBING PIPING SYMBOLS LEGEND

SYMBOL	DESCRIPTION
	DOMESTIC COLD WATER
	DOMESTIC HOT WATER
	DOMESTIC HOT WATER RETURN
	SANITARY VENT ABOVE GRADE
	SANITARY VENT BELOW GRADE
	NATURAL GAS
	NATURAL GAS BELOW GRADE
	SANITARY ABOVE GRADE
	SANITARY BELOW GRADE
	STORM ABOVE GRADE
	STORM BELOW GRADE
	POINT OF CONNECTION BETWEEN PROPOSED AND EXISTING SYSTEMS

PLUMBING VALVE SYMBOLS LEGEND

SYMBOL	DESCRIPTION
	GATE VALVE
	GLOBE VALVE
	CHECK VALVE
	STRAINER
	FLEXIBLE CONNECTION
	BUTTERFLY VALVE
	BALL VALVE
	TWO-WAY CONTROL VALVE
	THREE-WAY CONTROL VALVE
	TRIPLE DUTY VALVE
	PRESSURE REGULATING VALVE
	BALANCE VALVE
	PRESSURE RELIEF VALVE
	PLUG VALVE
MV	MANUAL AIR VENT
	TEST PLUG
AAV	AUTOMATIC AIR VENT
	PIPE CAP
	CIRCUIT SETTER
	FLOW METER
	PETE'S PLUG

PLUMBING GENERAL NOTES:

1. IF COMPLIANCE WITH TWO OR MORE DIFFERING STANDARDS, REQUIREMENTS, DRAWINGS OR SPECIFICATIONS, OR ANY COMBINATION THEREOF, IS SPECIFIED AND THESE ESTABLISH DIFFERENT OR CONFLICTING REQUIREMENTS FOR MINIMUM QUANTITIES OR QUALITY LEVELS, COMPLY WITH THE MOST STRINGENT REQUIREMENT. THE MOST STRINGENT REQUIREMENT WILL BE THE BETTER QUALITY OR GREATER QUANTITY OF WORK, AND WILL TYPICALLY BE THE MORE EXPENSIVE OPTION. REFER UNCERTAINTIES AND REQUIREMENTS THAT ARE DIFFERENT, BUT APPARENTLY EQUAL, TO ENGINEER FOR A DECISION BEFORE PROCEEDING.
2. THE QUANTITY OR QUALITY LEVEL SHOWN OR SPECIFIED SHALL BE THE MINIMUM PROVIDED OR PERFORMED. THE ACTUAL INSTALLATION MAY COMPLY EXACTLY WITH THE MINIMUM QUANTITY OR QUALITY SPECIFIED, OR IT MAY EXCEED THE MINIMUM WITHIN REASONABLE LIMITS. TO COMPLY WITH THESE REQUIREMENTS, INDICATED NUMERIC VALUES ARE MINIMUM OR MAXIMUM, AS APPROPRIATE, FOR THE CONTEXT OF REQUIREMENTS. REFER UNCERTAINTIES TO ENGINEER FOR A DECISION BEFORE PROCEEDING.
3. DESIGN DOCUMENTS MUST BE REPRODUCED IN THEIR ENTIRETY, INCLUDING ALL PLANS, SPECIFICATIONS, AND FRONT END DOCUMENTS.
4. ONLY COMPLETE DOCUMENT SETS ARE TO BE DISTRIBUTED TO SUBCONTRACTORS AND SUPPLIERS OF THE CONTRACTOR DURING BIDDING OR CONSTRUCTION.
5. FAILURE TO REVIEW AND COMPLY WITH A FULL SET OF CONTRACT DOCUMENTS WILL NOT BE ACCEPTED AS A VALID REASON FOR FAILURE TO MEET THE REQUIREMENTS OF THE PLANS AND SPECIFICATIONS.
6. ALL PLUMBING WORK SHALL BE INSTALLED IN ACCORDANCE WITH LOCAL CODES, ORDINANCES, AND LAWS AND SHALL BE OF SIMILAR QUALITY, MATERIAL, AND INSTALLATION METHODOLOGY.
7. HAZARDOUS MATERIALS ARE PRESENT IN CONSTRUCTION TO BE SELECTIVELY DEMOLISHED. A REPORT ON THE PRESENCE OF HAZARDOUS MATERIALS IS ON FILE FOR REVIEW AND USE. EXAMINE REPORT TO BECOME AWARE OF LOCATIONS WHERE HAZARDOUS MATERIALS ARE PRESENT.
   1. HAZARDOUS MATERIAL REMEDIATION IS SPECIFIED ELSEWHERE IN THE CONTRACT DOCUMENTS.
   2. DO NOT DISTURB HAZARDOUS MATERIALS OR ITEMS SUSPECTED OF CONTAINING HAZARDOUS MATERIALS EXCEPT UNDER PROCEDURES SPECIFIED ELSEWHERE IN THE CONTRACT DOCUMENTS.
   3. IF THE CONTRACTOR OR ANY SUBCONTRACTORS SUSPECT UNANTICIPATED HAZARDOUS MATERIALS ARE PRESENT, THE CONTRACTOR IS TO STOP ALL WORK AFFECTING SAID MATERIALS AND NOTIFY THE ENGINEER.
8. ALL ABOVE CEILING SYSTEMS AND COMPONENTS (INCLUDING BUT NOT LIMITED TO MECHANICAL, ELECTRICAL, PLUMBING, FIRE PROTECTION, ETC.) SHALL BE COORDINATED SUCH THAT THE SYSTEMS ARE PROPERLY INTEGRATED IN THE SPACE PROVIDED ABOVE CEILING AT THE CEILING HEIGHTS NOTED. IT IS THE RESPONSIBILITY OF EACH CONTRACTOR TO COORDINATE PATHWAYS WITHIN THE SPACE PROVIDED. CEILING HEIGHTS WILL NOT BE MODIFIED.
9. COORDINATE LOCATIONS OF ALL FIXTURES WITH ARCHITECTURAL AND ELECTRICAL PRIOR TO ROUGH-IN. ALL CONFLICTS WITH FINISHES, ADJACENT CONSTRUCTION, AND CONSTRUCTION DOCUMENTS ARE TO GENERATE AN RFI FROM THE PLUMBING CONTRACTOR TO THE ARCHITECT/ENGINEER PRIOR TO PROCEEDING AND COMPLETION OF WORK.
10. CEILING CONTRACTOR SHALL FURNISH AND INSTALL HINGED STEEL ACCESS PANELS FOR ALL ABOVE CEILING PLUMBING SPECIALTIES REQUIRING ACCESS OR SERVICE, BALANCING VALVES, AND ISOLATION VALVES IN GYPSUM CEILINGS. PANELS SHALL BE KEYED FOR ACCESS BY MAINTENANCE STAFF ONLY, AND FINISHED WITH WHITE BAKED-ON ENAMEL. PLUMBING CONTRACTOR SHALL CONSOLIDATE ABOVE CEILING ACCESS REQUIREMENTS TO LIMIT PANELS AS MUCH AS POSSIBLE. PLUMBING CONTRACTOR SHALL PROVIDE ALL NECESSARY ACCESS PANELS AS A RESULT FROM PLAN DEVIATION/ALTERATION. COORDINATE QUANTITY AND LOCATION OF ADDITIONAL ACCESS PANELS WITH CEILING CONTRACTOR.
11. ALL SANITARY AND STORM PIPING SHALL BE INSTALLED TO MAINTAIN 1% SLOPE FOR 3" OR LARGER AND 2% SLOPE FOR 2" OR SMALLER UNLESS OTHERWISE NOTED. ALL GREASE WASTE PIPING TO BE 2% SLOPE.
12. ALL SANITARY AND STORM RISERS SHALL BE FITTED WITH ACCESSIBLE CLEANOUT AT BASE. PROVIDE CLEANOUTS COVER/WALL PLATE IN FINISHED AREAS.
13. PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR FIRESTOPPING ALL NEW PLUMBING PENETRATIONS THROUGH RATED ASSEMBLIES.
14. PLUMBING CONTRACTOR SHALL PROVIDE WATER PROOF SHEET METAL CAP, INSULATED (EQUIVALENT TO ROOF) FOR ALL DEMOLISHED ROOF PENETRATIONS.
15. PLUMBING CONTRACTOR SHALL FURNISH AND INSTALL ISOLATION VALVES AT ALL WATER CONSUMING FIXTURES, AND LOCATE VALVES TO ALLOW FOR ACCESS WITHIN 3' AFTER CONSTRUCTION IS COMPLETE.
16. ALL PLUMBING EQUIPMENT SHALL BE PROVIDED WITH MOTOR STARTERS COMPATIBLE WITH CONTROLS SYSTEM. COORDINATE WITH CONTROLS AND ELECTRICAL CONTRACTORS.

PLUMBING FIXTURE SCHEDULE

MARK	FIXTURE	MANUFACTURER	MODEL	CONNECTIONS				DESCRIPTION
				SAN	VENT	CW	HW	
WC-1	WATER CLOSET	AMERICAN STANDARD	3351.101	4"	2"	1"	-	VITREOUS CHINA, WALL MOUNTED, ADA COMPLIANT, ELONGATED FLUSH VALVE TOILET. HIGH EFFICIENCY, ULTRA LOW CONSUMPTION (1.28 GPF) WATER CLOSET. PROVIDE WITH ADJUSTABLE SLOPE FLOOR MOUNTED WALL CARRIER .
	FLUSH VALVE	AMERICAN STANDARD	6047.121					MANUAL LEVER PISTON TYPE FLUSH VALVE ULTRA LOW CONSUMPTION (1.28 GPF).
	SEAT	AMERICAN STANDARD	5901.110T					ELONGATED RIGHT WIDTH, OPEN FRONT, LESS COVER, SOLID PLASTIC TOILET SEAT, EVER CLEAN SURFACE
WC-2	WATER CLOSET	AMERICAN STANDARD	2854.128	3"	2"	1"	-	VITREOUS CHINA, FLOOR MOUNTED, ADA COMPLIANT, ELONGATED FLUSH VALVE TOILET. HIGH EFFICIENCY, ULTRA LOW CONSUMPTION (1.28 GPF) WATER CLOSET.
	SEAT	AMERICAN STANDARD	5901.110T					ELONGATED RIGHT WIDTH, OPEN FRONT, LESS COVER, SOLID PLASTIC TOILET SEAT, EVER CLEAN SURFACE
WC-3	WATER CLOSET	AMERICAN STANDARD	2599.001	3"	2"	1"	-	PROVIDE PROTECTIVE DEVICE TO COVER P-TRAP AND HOT AND COLD WATER ANGLE STOPS AND SUPPLIES. SHALL COMPLY WITH ASTM D-635, UBC 85, ADA 11/27/92 AND SHALL BE LISTED BY IAMPO FILE 3375.
	FLUSH VALVE	AMERICAN STANDARD	6047.121					VITREOUS CHINA, FLOOR MOUNTED, YOUTH HEIGHT, ELONGATED FLUSH VALVE TOILET. HIGH EFFICIENCY, ULTRA LOW CONSUMPTION (1.28 GPF) WATER CLOSET.
	SEAT	AMERICAN STANDARD	5901.110T					ELONGATED RIGHT WIDTH, OPEN FRONT, LESS COVER, SOLID PLASTIC TOILET SEAT, EVER CLEAN SURFACE
UR-1	URINAL	AMERICAN STANDARD	6590.003	2"	1-1/2"	3/4"	-	VITREOUS CHINA, WALL MOUNTED, ADA COMPLIANT, HIGH EFFICIENCY, ULTRA LOW CONSUMPTION (0.125 GPF) PISTON TYPE FLUSH VALVE. PROVIDE WITH FLOOR MOUNTED WALL CARRIER.
LAV-1	WALL-HUNG LAVATORY	AMERICAN STANDARD	9024.001EC	1-1/2"	1-1/2"	1/2"	1/2"	20" x 18" WALL MOUNTED VITRIOUS CHINA LAVATORY, 4" CENTERS, ADA COMPLIANT. PROVIDE WITH FLOOR MOUNTED WALL CARRIER.
	TRIM	AMERICAN STANDARD	1340.105					SINGLE HOLE, VANDLE RESISTANT, CAST BRASS SINGLE HANDLE METERING FAUCET, 1.0 GPM AERATOR.
	DRAIN	AMERICAN STANDARD	7716.020					BRASS GRID DRAIN POLISHED CHROME, LESS OVERFLOW, 1-1/2" TAILPIECE.
	SUPPLIES	MCGUIRE	LF2165CCLK					1/2" AND 3/8" LOOSE KEY ANGLE STOP WITH BRASS STEMS AND 3/8" O.D. RISER.
	TRAP	MCGUIRE	8912					CAST BRASS P-TRAP WITH CLEANOUT PLUG AND BRASS NUTS AND TAILPIECE TO BE INSULATED TO COMPLY WITH ADA.
	MIXING VALVE	APOLLO	MVD					ASSE 1070 LISTED FOR SINGLE FIXTURE USE.
S-1	SINK	ELKAY	LR3322	1-1/2"	1-1/2"	3/4"	3/4"	33" x 22" x 8 1/8" DOUBLE BOWL, TOP MOUNT, 18 GAUGE 304 STAINLESS STEEL.
	TRIM	CHICAGO FAUCETS	1100-G2E3-317AB					5 1/4" SWING GOOSENECK SPOUT, 2.2 GPM AERATOR AND 4" WRIST BLADE HANDLES.
	DRAIN	ELKAY	LK99					3 1/2" STAINLESS STEEL CONICAL BASKET STRAINER WITH RUBBER STOPPER AND LOCKING STEM,4" LONG 1 1/2" Ø TAILPIECE.
	SUPPLIES	MCGUIRE	LF2165CCLK					1/2" AND 3/8" LOOSE KEY ANGLE STOP WITH BRASS STEMS AND 3/8" O.D. RISER.
	TRAP	MCGUIRE	8912					CAST BRASS P-TRAP WITH CLEANOUT PLUG AND BRASS NUTS.
	MIXING VALVE	APOLLO	MVD					ASSE 1070 LISTED FOR SINGLE FIXTURE USE.
S-2	SINK	ELKAY	DRKADQ222055R	1-1/2"	1-1/2"	1/2"	1/2"	22" x 19 1/2" x 5 1/2" SINGLE BOWL, TOP MOUNT, REAR OFFSET DRAIN, 18 GAUGE 304 STAINLESS STEEL.
	TRIM	CHICAGO FAUCETS	1100-G2E3-317AB					5 1/4" SWING GOOSENECK SPOUT, 2.2 GPM AERATOR AND 4" WRIST BLADE HANDLES.
	BUBBLER	ELKAY	LKVR1141A					LEAD FREE, PUSH BUTTON, CHROME PLATED, VANDLE RESISTANT BUBBLER, ANTI ROTATION, 1/2" CONNECTION.
	DRAIN	ELKAY	LK35					3 1/2" STAINLESS STEEL CONICAL BASKET STRAINER WITH RUBBER STOPPER AND METAL STEM,4" LONG 1 1/2" Ø TAILPIECE.
	SUPPLIES	MCGUIRE	LF2165CCLK					1/2" AND 3/8" LOOSE KEY ANGLE STOP WITH BRASS STEMS AND 3/8" O.D. RISER.
	TRAP	MCGUIRE	8912					CAST BRASS P-TRAP WITH CLEANOUT PLUG AND BRASS NUTS. SINK STRAINER AND TAILPIECE TO BE INSULATED TO COMPLY WITH ADA.
	MIXING VALVE	APOLLO	MVD					ASSE 1070 LISTED FOR SINGLE FIXTURE USE.
S-3	SINK	ELKAY	LRAD312265	1-1/2"	1-1/2"	3/4"	3/4"	31" x 22" x 6" SINGLE BOWL, TOP MOUNT, REAR OFFSET DRAIN, 18 GAUGE 304 STAINLESS STEEL.
	TRIM	CHICAGO FAUCETS	1100-G2E3-317AB					5 1/4" SWING GOOSENECK SPOUT, 2.2 GPM AERATOR AND 4" WRIST BLADE HANDLES.
	DRAIN	ELKAY	LK99					3 1/2" STAINLESS STEEL CONICAL BASKET STRAINER WITH RUBBER STOPPER AND LOCKING STEM,4" LONG 1 1/2" Ø TAILPIECE.
	SUPPLIES	MCGUIRE	LF2165CCLK					1/2" AND 3/8" LOOSE KEY ANGLE STOP WITH BRASS STEMS AND 3/8" O.D. RISER.
	TRAP	MCGUIRE	8912					CAST BRASS P-TRAP WITH CLEANOUT PLUG AND BRASS NUTS. SINK STRAINER AND TAILPIECE TO BE INSULATED TO COMPLY WITH ADA.
	MIXING VALVE	APOLLO	MVD					ASSE 1070 LISTED FOR SINGLE FIXTURE USE.
	SOLIDS INTERCEPTOR	JOSAM	61000					NICKLOY BOTTOM ACCESS SOLIDS INTERCEPTOR.
S-4	THREE COMPARTMENT SINK	EAGLE GROUP	414-22-3-18	3"	1-1/2"	3/4"	3/4"	90" x 27 1/2" x 13 1/2" THREE COMPARTMENT FLOOR STANDING, HEAVY GAUGE STAINLESS STEEL.
	PULL DOWN SPRAY	T AND S BRASS	MPZ-8WWN-08-CR					8" WALL MOUNT MIXING FAUCET, CERAMA CARTRIDGES W/ CHECK VALVES, 4" WRIST BLADE HANDLES, 8" ADD ON SWING SPOUT, 24" FLEXIBLE STAINLESS STEEL HOSE, 1.42 GPM SPRAY BRACKET, 6" WALL BRACKET.
	TRIM	T AND S BRASS	B-0290-04					8" WALL MOUNT MIXING FAUCET,BIG-FLO CARTRIDGES, 4" WRIST BLADE HADLES, 12" SWING SPOUT.
HS-1	WALL-HUNG HAND SINK	AMERICAN STANDARD	9024.001EC	1-1/2"	1-1/2"	1/2"	1/2"	20" x 18" WALL MOUNTED VITRIOUS CHINA LAVATORY, 4" CENTERS.
	TRIM	CHICAGO FAUCETS	895-317ABCP					3 1/2" RIGID GOOSENECK SPOUT, 2.2 GPM AERATOR, AND 4" WRIST BLADE HANDLES.
	DRAIN	AMERICAN STANDARD	7716.020					BRASS GRID DRAIN POLISHED CHROME, LESS OVERFLOW, 1-1/2" TAILPIECE.
	SUPPLIES	MCGUIRE	LF2165CCLK					1/2" AND 3/8" LOOSE KEY ANGLE STOP WITH BRASS STEMS AND 3/8" O.D. RISER.
	TRAP	MCGUIRE	8912					CAST BRASS P-TRAP WITH CLEANOUT PLUG AND BRASS NUTS.
	MIXING VALVE	APOLLO	MVD					ASSE 1070 LISTED FOR SINGLE FIXTURE USE.
MS-1	MOP SINK	FIAT PRODUCTS	TSBC1610	3"	1-1/2"	3/4"	3/4"	24" x 24" x 10" TARAZZO MOP SINK, STAINLESS STEEL CAP ON THRESHOLD, GRID DRAIN, 24" STAINLESS STEEL WALL GUARDS, HOSE AND BRACKET.
	TRIM	CHICAGO FAUCETS	540-LD897SWXF317CP					8" WALL MOUNT CAST BRASS FAUCET, SPOUT HOSE CONNECTION, PAIL HOOK, WALL BRACE, POLISHED.
FS-1	FLOOR SINK	JOSAM	49320A	SEE PLANS	-	-	-	12" x 12" x 6" CAST IRON BODY FLOOR SINK, ACID RESISTANT COATING 4 PIECE GRATE.
FD-1	FLOOR DRAIN	JOSAM	30000-S	SEE PLANS	-	-	-	5" x 5" COATED CAST IRON BODY FLOOR DRAIN, TWO PIECE BODY WITH DOUBLE DRAINAGE FLANGE, WEEPHOLES, BOTTOM OUTLET AND AJUSTABLE SATIN NICKELOY SQUARE STRAINER. PROVIDE WITH TRAP SEAL RECTORSEAL MODEL SS3009.
RD-1	ROOF DRAIN	JOSAM	21500	SEE PLANS				COATED CAST IRON ROOF DRAIN, LARGE POLY-PROPYLENE LOCKING DOME, INTEGRAL GRAVEL STOP, LARGE SUMP WITH WIDE ROOF FLANGE AND BOTTOM OUTLET.
RD-2	ROOF DRAIN	JOSAM	22080	SEE PLANS	-	-	-	COATED CAST IRON ROOF DRAIN,SMALL BEEHIVE DOME, INTEGRAL GRAVEL STOP, SMALL SUMP WITH ROOF FLANGE AND BOTTOM OUTLET.
OD-1	OVERFLOW DRAIN	JOSAM	21560-16	SEE PLANS	-	-	-	COATED CAST IRON ROOF DRAIN, 2" WATER DAM, LARGE POLY-PROPYLENE LOCKING DOME, INTEGRAL GRAVEL STOP, LARGE SUMP WITH WIDE ROOF FLANGE AND BOTTOM OUTLET.
DN-1	DISCHARGE NOZZLE	JOSAM	25010-CI-00	SEE PLANS	-	-	-	STAINLESS STEEL DISCHARGE NOZZLE, STAINLESS STEEL FLANGE AND STAINLESS STEEL PERFORATED COVER.
EWC-1	ELECTRIC WATER COOLER	ELKAY	VRCTL8WSK	SEE PLANS	-	-	-	BI-LEVEL STAINLESS STEEL VANDLE RESISTANT ELECTRIC WATER COOLER, INTEGURAL BOTTLE FILL STATION, 8 GPH CAPACITY.
	CANE APRON	ELKAY	98324C	-	-	-	-	STAINLESS STEEL CANE APRON FOR VRCTL WATER COOLERS.
WH-1	WALL HYDRANT	WOODFORD	B65	-	-	3/4"	-	FREEZE LESS WALL HYDRANT, SINGLE CHECK HOSE CONNECTION AND ANTI-SIPHON VACCUM BREAKERS, LOCKABLE CHROME FINISH, HINGED COVER BOX, T HANDLE KEY.
HB-1	HOSE BIB	WOODFORD	24	-	-	3/4"	-	WALL MOUNTED ANIT-SIPHON VACCUM BREAKER HOSE BIB, CHROME FINISH.
RH-1	ROOF HYDRANT	WOODFORD	SRH-HS	-	-	3/4"	-	ROOF MOUNTED HYDRANT, INTEGRAL INTERNAL SELF DRAINING RESIVOR, VACCUM BREAKER.
RPZ-1	REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTER	APOLLO	4ALF-20A-02-D	-	-	4"	-	4" REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTER, NON-RISING STEM GATE VALVES AND FLANGED CONNECTIONS.
RPZ-2	REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTER	APOLLO	4ALF-204-A2-F	-	-	3/4"	-	3/4" REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTER, BALL SHUT-OFF VALVES AND THREDED CONNECTIONS.

GREASE INTERCEPTOR SCHEDULE

MARK	MANUFACTURER	MODEL	DESCRIPTION
GT-1	SCHIER	GB-35	POLYETHYLENE CONSTRUCTION, 35 GPM GREASE INTERCEPTOR, 142 LBS GREASE CAPACITY, 9.5 GALLON SOLIDS CAPACITY.

ELECTRIC WATER HEATER SCHEDULE

MARK	MANUFACTURER	MODEL	ELEMENT WATTAGE	VOLTAGE	CAPACITY (GAL)	WATER CONNECTION SIZE	REMARKS
EWH-1	BRADFORD WHITE	LE130L3-3	4500 W	480	30	3/4"	
EWH-2	BRADFORD WHITE	LE130L3-3	4500 W	480	30	3/4"	
EWH-3	BRADFORD WHITE	LE130L3-3	4500 W	480	30	3/4"	

GAS WATER HEATER SCHEDULE

MARK	MANUFACTURER	MODEL	MBH	CAPACITY (GAL)	WATER CONNECTION SIZE	FUEL TYPE	REMARKS
GWH-1	BRADFORD WHITE	EF-100T-199E-3N	199,999	100	1 1/2"	NATURAL GAS	

RECIRCULATING PUMP SCHEDULE

GENERAL				WATER PROPERTIES		ELECTRICAL PROPERTIES					
MARK	MANUFACTURER	MODEL	SERVING	GPM	PRESSURE DROP (FT HD)	WATTS	RPM	VOLTAGE	PHASE	FLA	REMARKS
RCP-1	BELL AND GOSSETT	NBF-12F/LW	EWH-1	2	8	55	2800	115	1	0.48	PROVIDE WITH AQUA STAT, TIMER AND PLUG CORD.
RCP-2	BELL AND GOSSETT	NBF-12F/LW	EWH-2	2	8	55	2800	115	1	0.48	PROVIDE WITH AQUA STAT, TIMER AND PLUG CORD.
RCP-3	BELL AND GOSSETT	NBF-12F/LW	EWH-3	2	8	55	2800	115	1	0.48	PROVIDE WITH AQUA STAT, TIMER AND PLUG CORD.
RCP-4	BELL AND GOSSETT	NBF-12F/LW	GWH-1	2	8	55	2800	115	1	0.48	PROVIDE WITH AQUA STAT, TIMER AND PLUG CORD.

PLUMBING PIPING SYSTEM APPLICATION SCHEDULE

					PIPING METERIAL						JOINING METHOD					CONSTRUCTION					
SYSTEM	ABBREVIATION	AREA OR SYSTEM SERVED	PIPE LOCATION	PIPE SIZE (IN)	COPPER DWV TUBE	COPPER TYPE K	COPPER TYPE L	CAST IRON	DUCTILE IRON	PVC, SOLID WALL	COUPLING, HEAVY DUTY	SOLDERED	BRAZED	GROOVED FITTINGS	SOLVENT CEMENT	OPERATING TEMPERATURE (°F)	MINIMUM WORKING PRESSURE (PSI)	TEST PRESSURE (PSI)	TEST DURATION (HRS)	ACCEPTANCE LEVEL	REMARKS
DOMESTIC WATER	CW / HW / HWR	DOMESTIC WATER	ABOVE GROUND	NPS 2-1/2 AND SMALLER			X					X		X		40-140	100	150	12	ZERO / LOSS / LEAKS	
DOMESTIC WATER	CW / HW / HWR	DOMESTIC WATER	ABOVE GROUND	NPS 3 TO NPS 4			X		X				X	X		40-140	100	150	12	ZERO / LOSS / LEAKS	
DOMESTIC WATER	CW / HW / HWR	DOMESTIC WATER	UNDER BUILDING SLAB	NPS 2 AND SMALLER		X						X				40-140	100	150	12	ZERO / LOSS / LEAKS	
INDIRECT WASTE	IW	EQUIPMENT WASTE	ABOVE GROUND	ALL SIZES	X						X					40-140	100	150	12	ZERO / LOSS / LEAKS	
SANITARY & VENT	SAN / V	TOILET ROOMS / SINKS / MISC. FLOOR DRAINS	ABOVE GROUND	NPS 2 AND SMALLER	X					X	X				X	30-140	.5	150	12	ZERO / LOSS /LEAKS	
SANITARY & VENT	SAN / V	TOILET ROOMS / SINKS / MISC. FLOOR DRAINS	ABOVE GROUND	NPS 2 1/2 TO NPS 4					X		X	X				X	30-140	.5	150	12	ZERO / LOSS / LEAKS	
SANITARY & VENT	SAN / V	TOILET ROOMS / SINKS / MISC. FLOOR DRAINS	ABOVE GROUND	NPS 5 AND LARGER					X		X	X				X	30-120	.5	150	12	ZERO / LOSS / LEAKS	
SANITARY & VENT	SAN / V	TOILET ROOMS / SINKS / MISC. FLOOR DRAINS	UNDER GROUND	ALL SIZES					X		X	X				X	30-120	.5	150	12	ZERO / LOSS / LEAKS	
STORM	ST	BUILDING ROOF DRAINAGE	ABOVE GROUND	NPS 6 AND SMALLER					X			X					30-120	.5	150	12	ZERO / LOSS / LEAKS	PROVIDE INSULATION ON ALL HORIZONTAL PIPING. EXCEPT HORIZONTAL PIPING IN TUNNEL
STORM	ST	BUILDING ROOF DRAINAGE	ABOVE GROUND	NPS 8 AND LARGER					X			X					30-120	.5	150	12	ZERO / LOSS / LEAKS	PROVIDE INSULATION ON ALL HORIZONTAL PIPING. EXCEPT HORIZONTAL PIPING IN TUNNEL
STORM	ST	BUILDING ROOF DRAINAGE	UNDER GROUND	NPS 8 AND LARGER					X		X	X			X	30-140	.5	150	12	ZERO / LOSS /LEAKS	
STORM	ST	BUILDING ROOF DRAINAGE	UNDER GROUND	NPS 10 AND LARGER					X		X	X			X	30-140	.5	150	12	ZERO / LOSS /LEAKS	

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SCHEDULES

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SHEET
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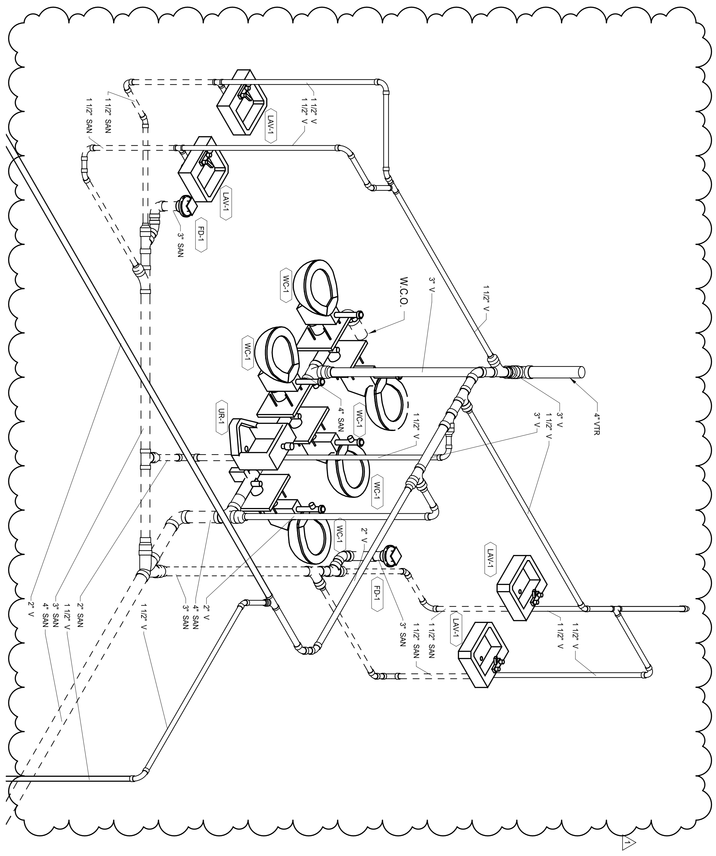
ADDENDUM 1



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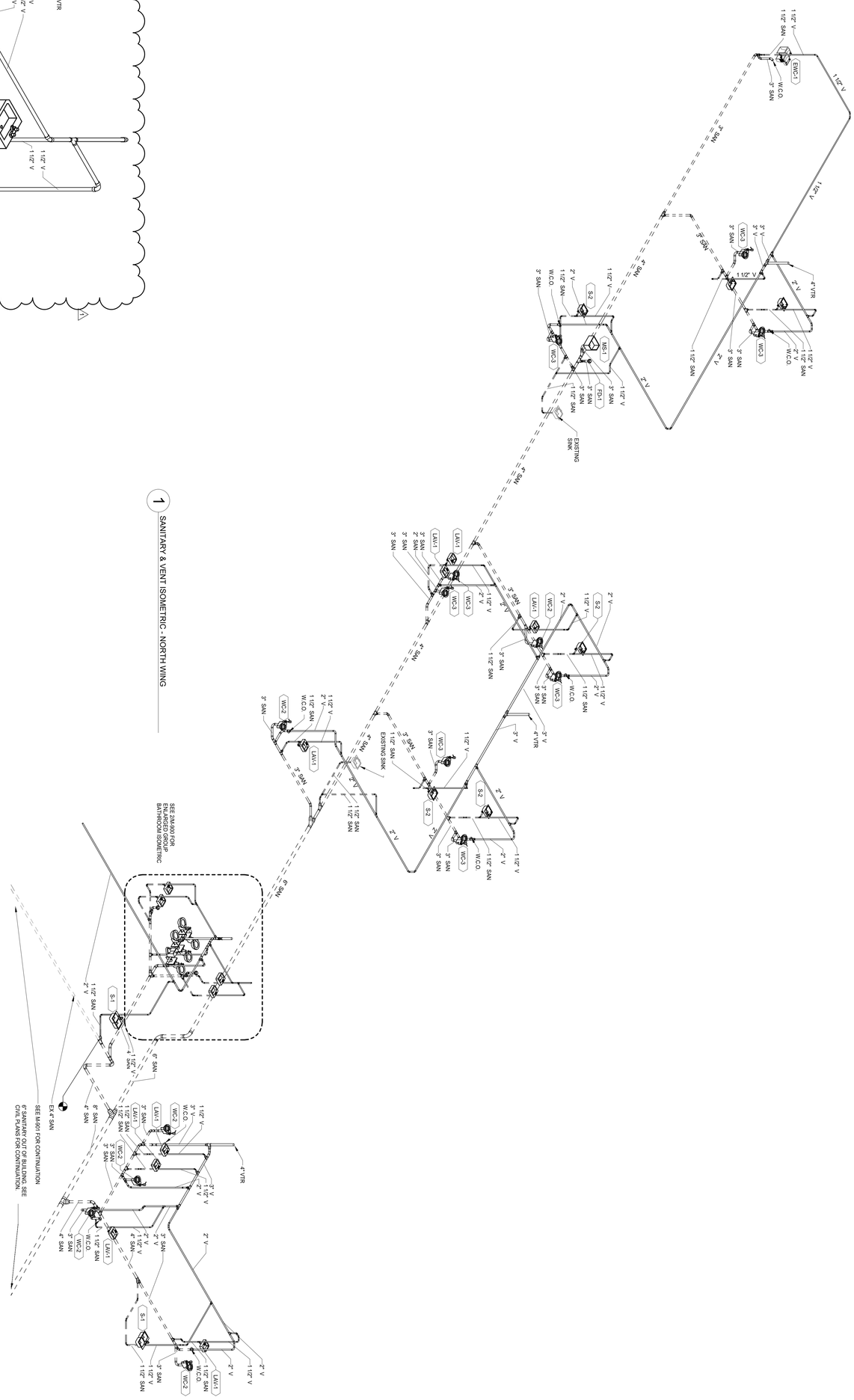

1 SANITARY & VENT ISOMETRIC - NORTH WING

ISOMETRICS - NORTH WING

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PROJ # 160400
DATE 02/13/2017
SHEET P-900

Addendum #1

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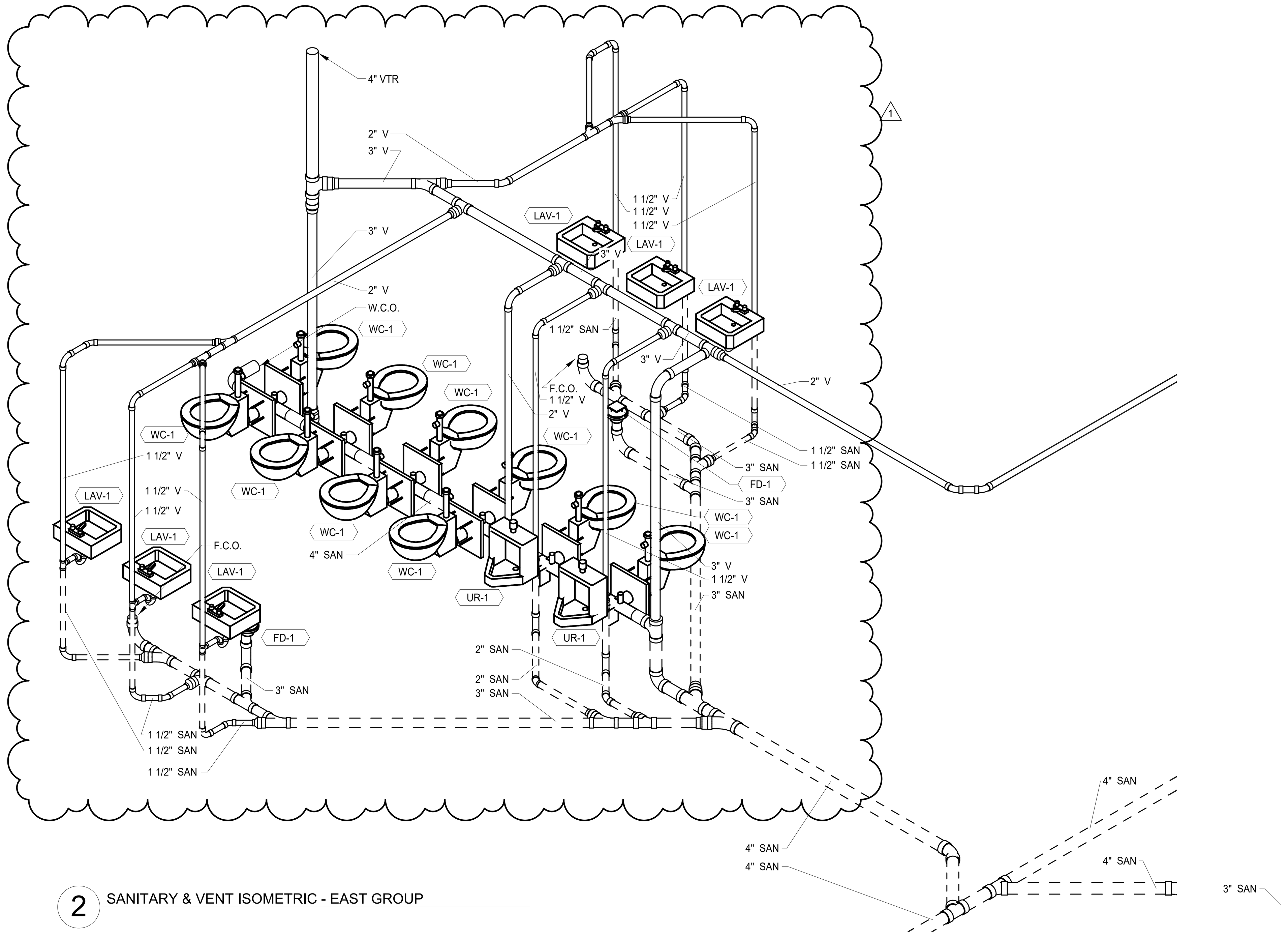

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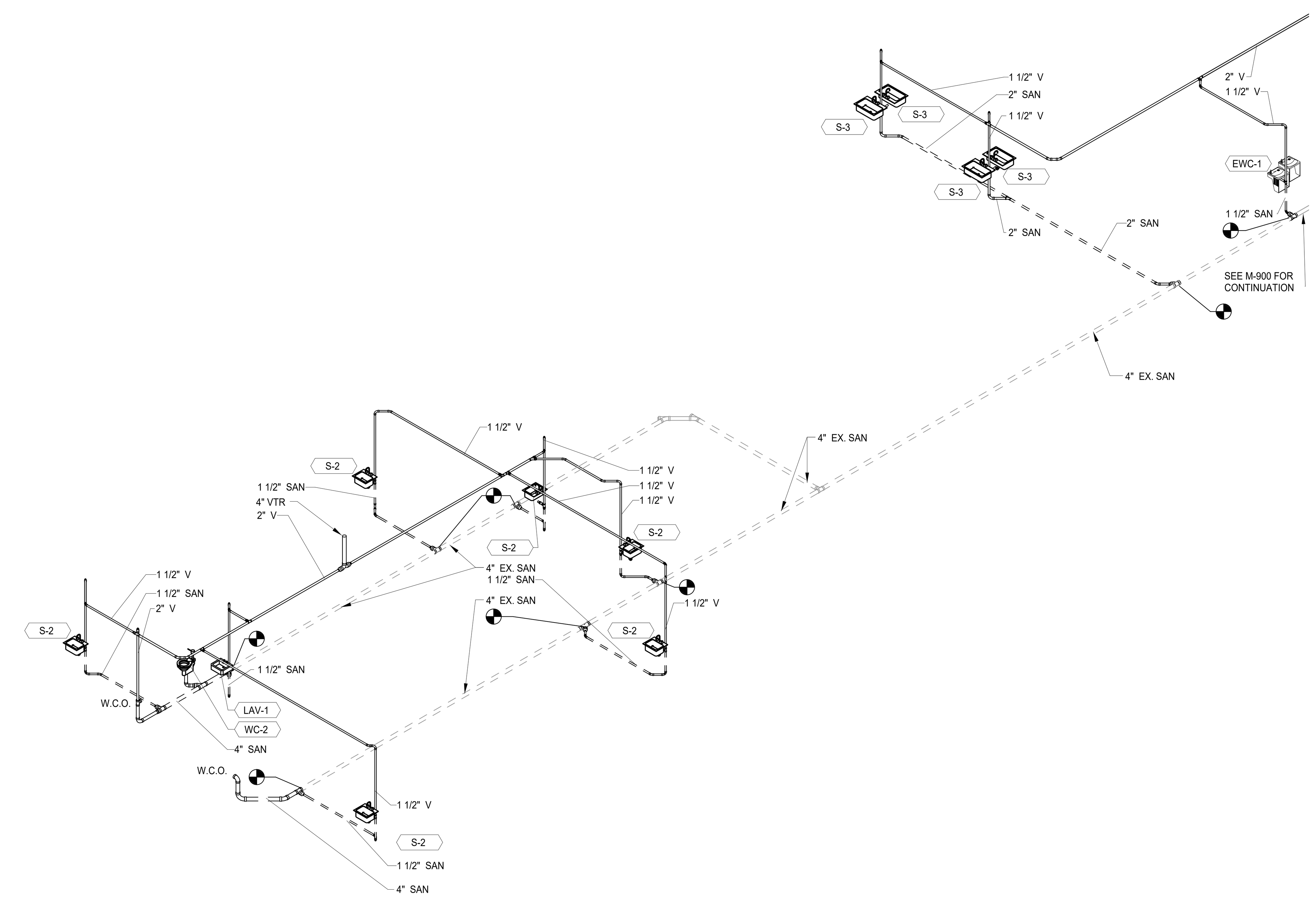

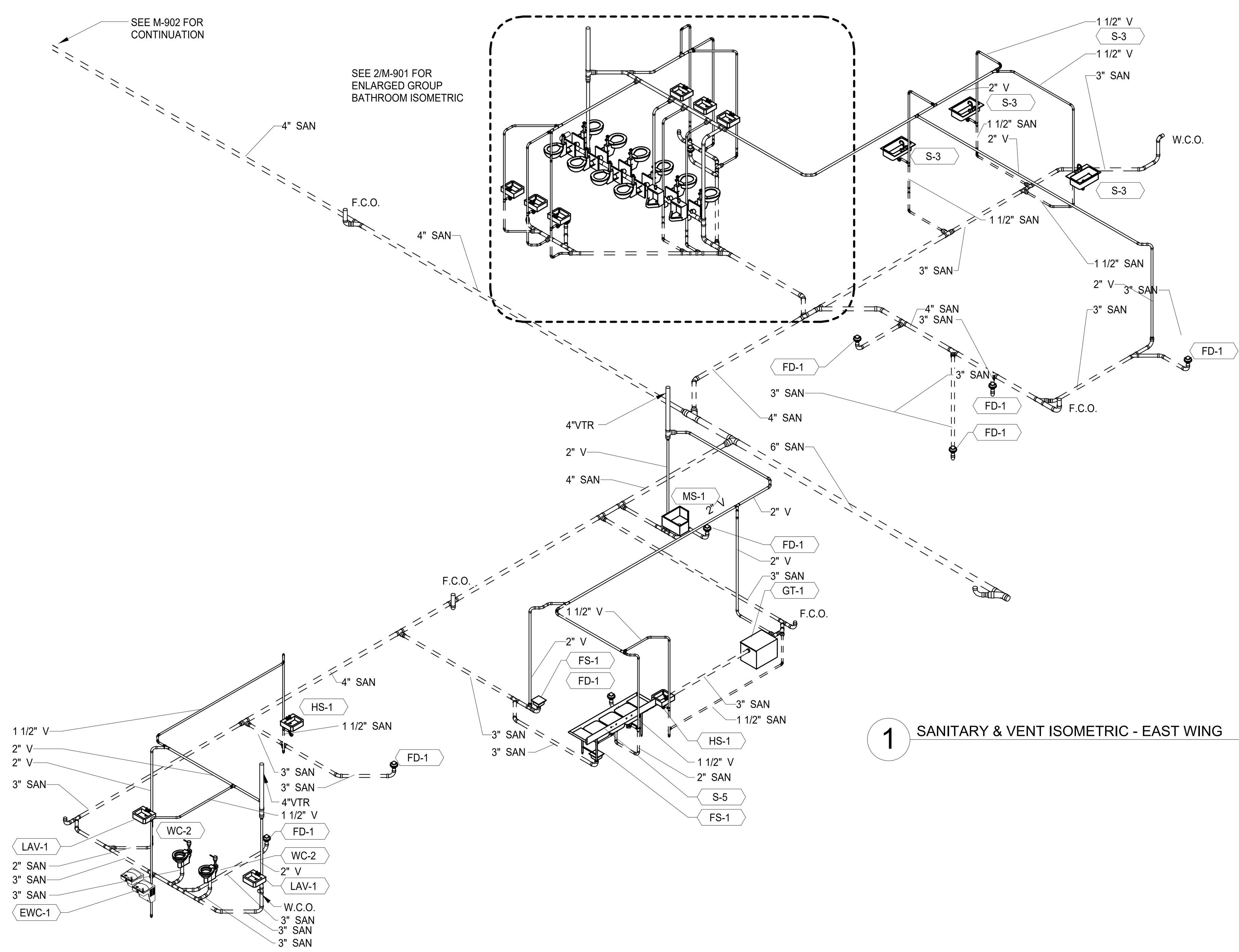

1 SANITARY & VENT ISOMETRIC - EAST WING

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P-901

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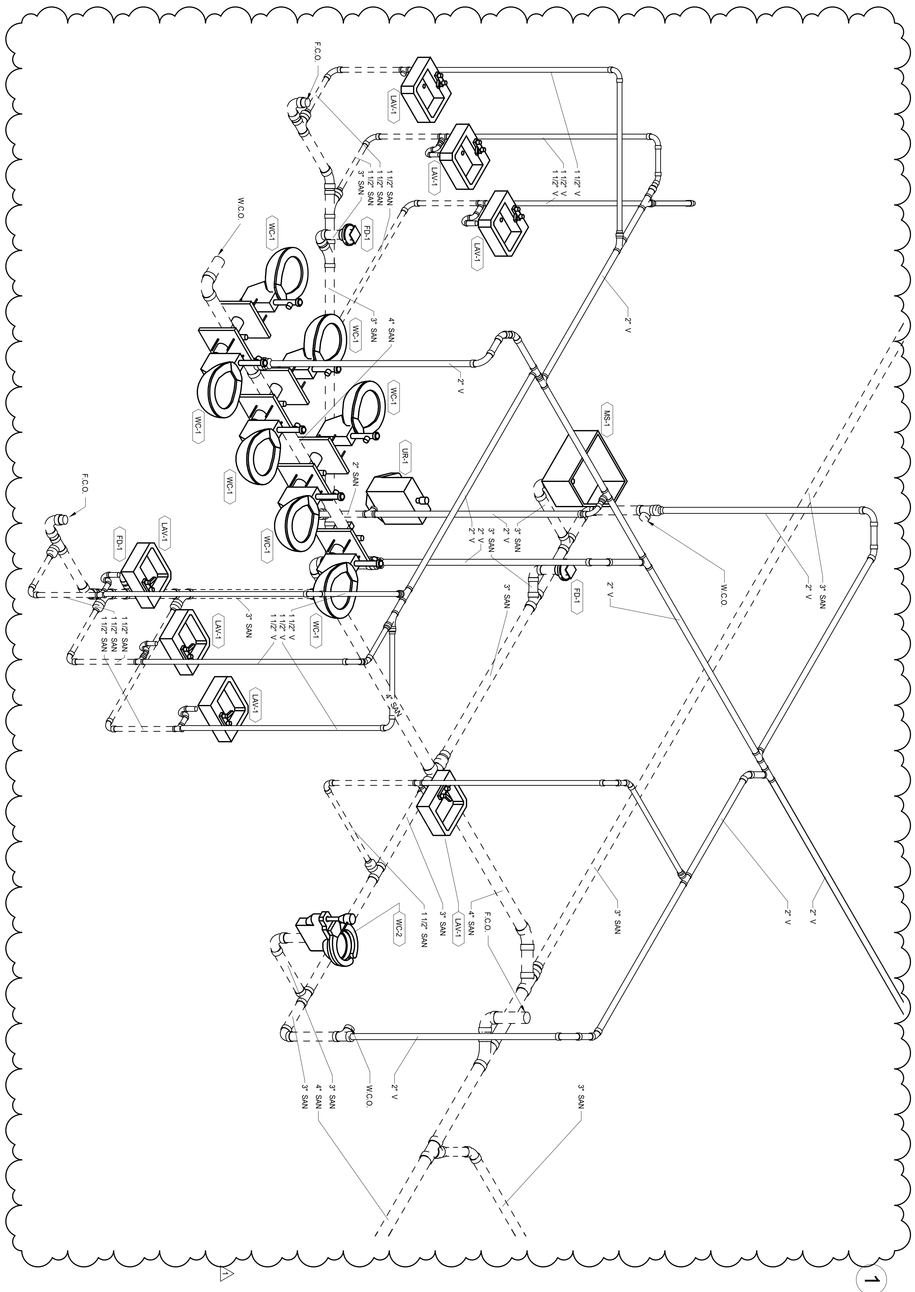
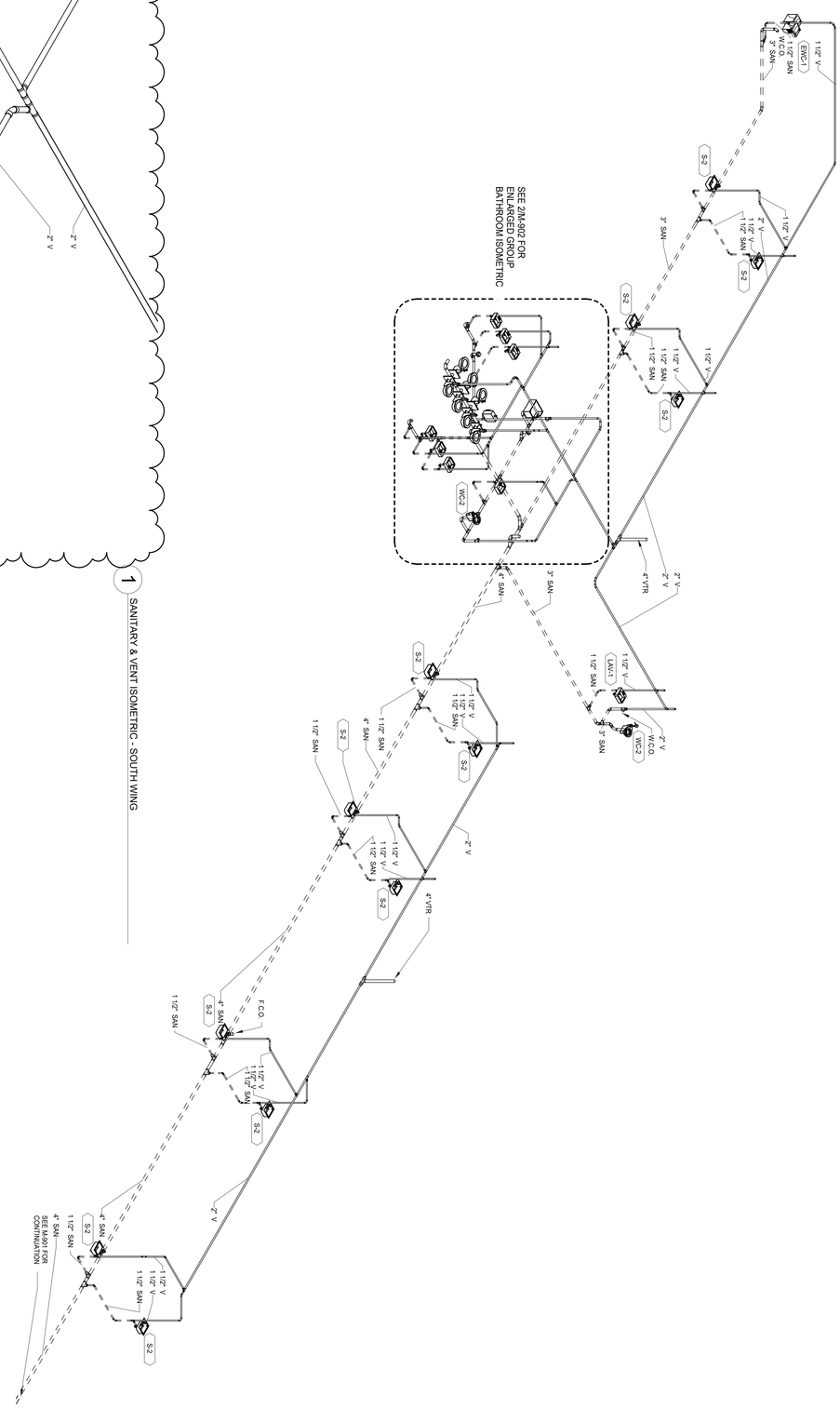


2 SANITARY & VENT ISOMETRIC - SOUTH GROUP



1 SANITARY & VENT ISOMETRIC - SOUTH WING

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PROJ # 160400
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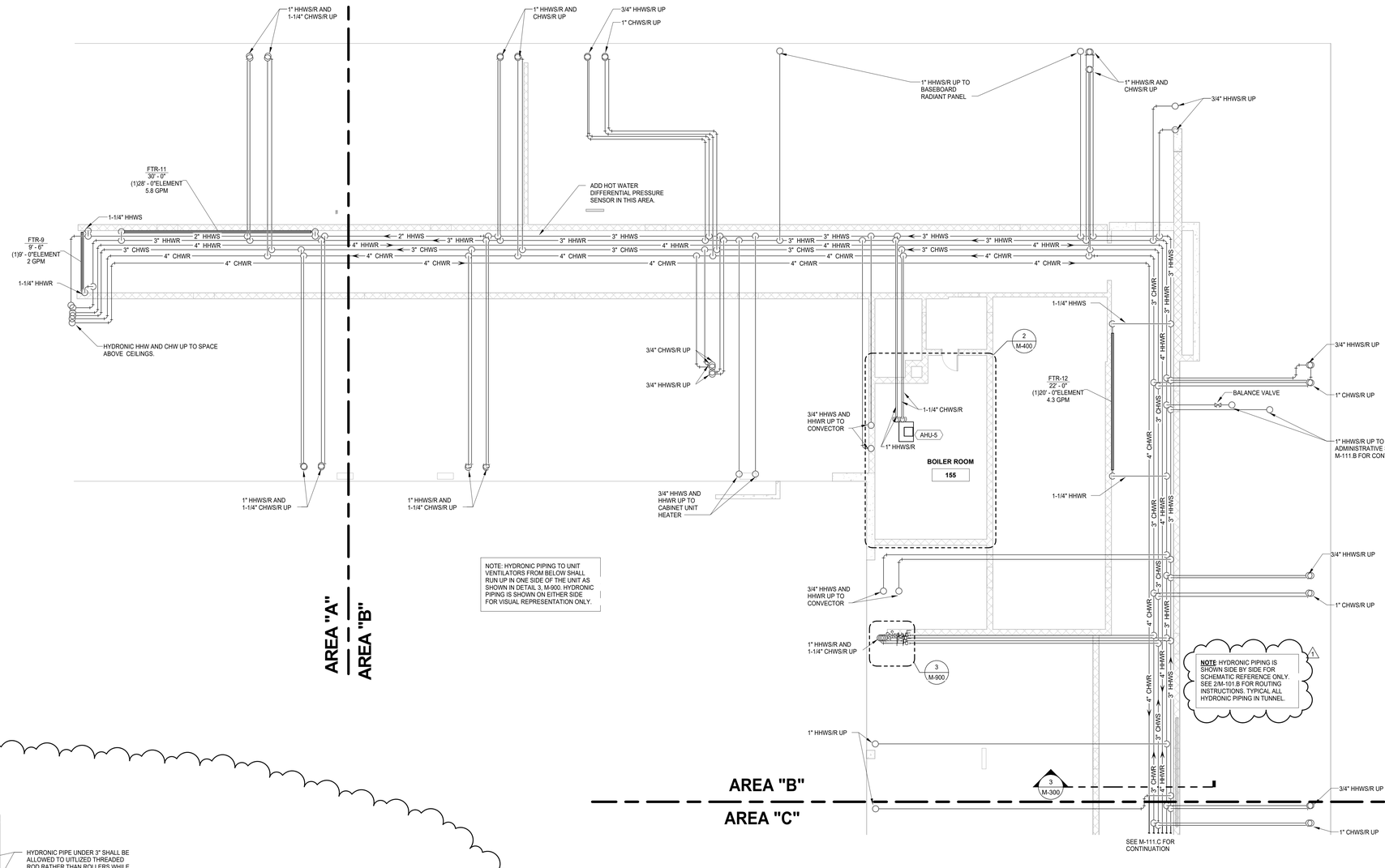
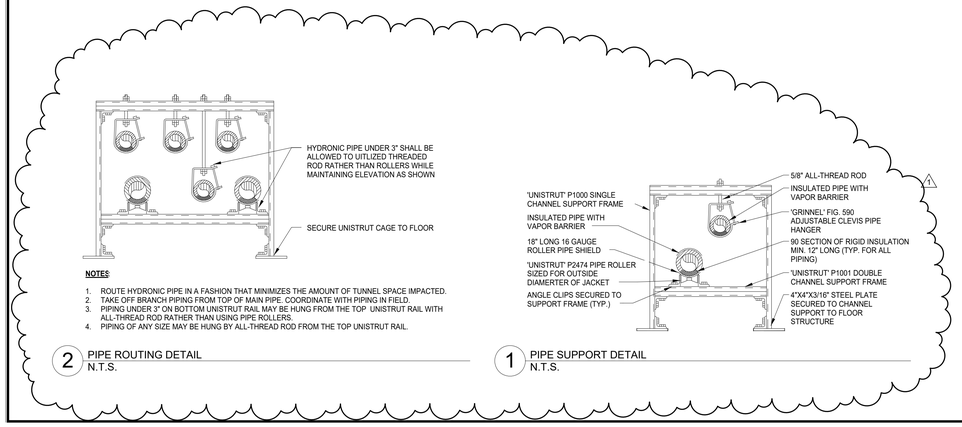
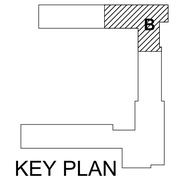




TUNNEL HYDRONIC PLAN - AREA B
1/8" = 1'-0"



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TUNNEL HYDRONIC PLAN - AREA B

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ADDENDUM 1

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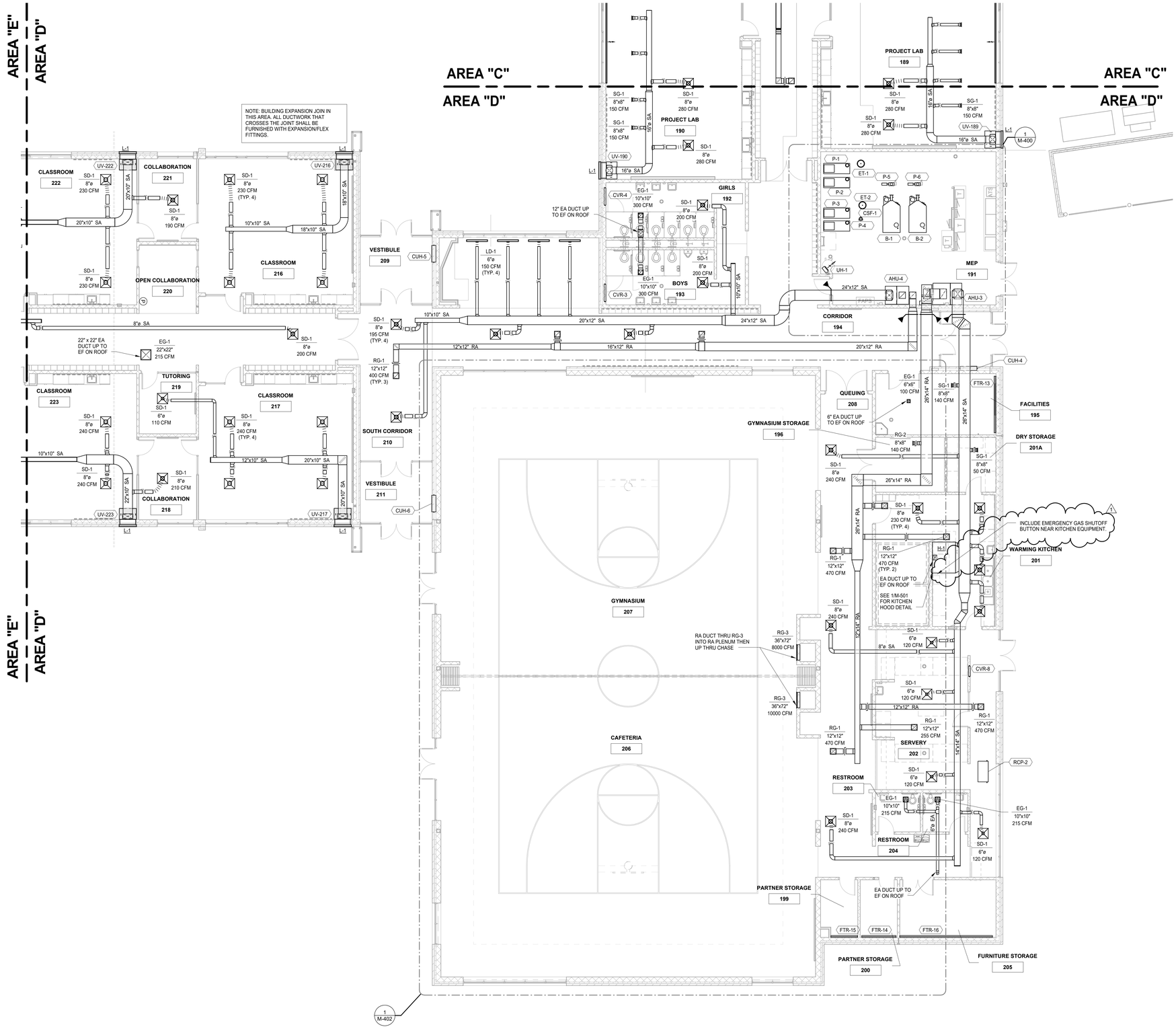

FIRST FLOOR HVAC PLAN - AREA D
1/8" = 1'-0"

KEY PLAN

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FIRST FLOOR HVAC PLAN - AREA D

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SCALE: 1/8" = 1'-0"
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Addendum #1

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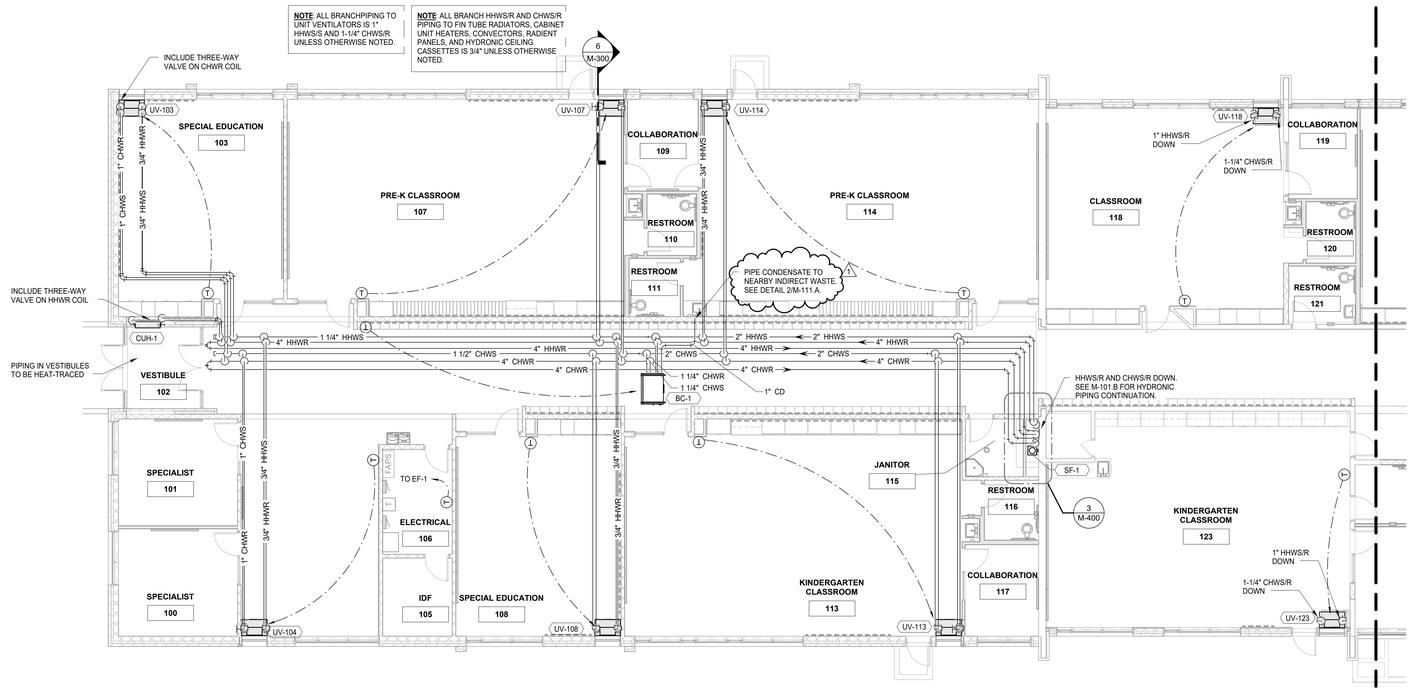
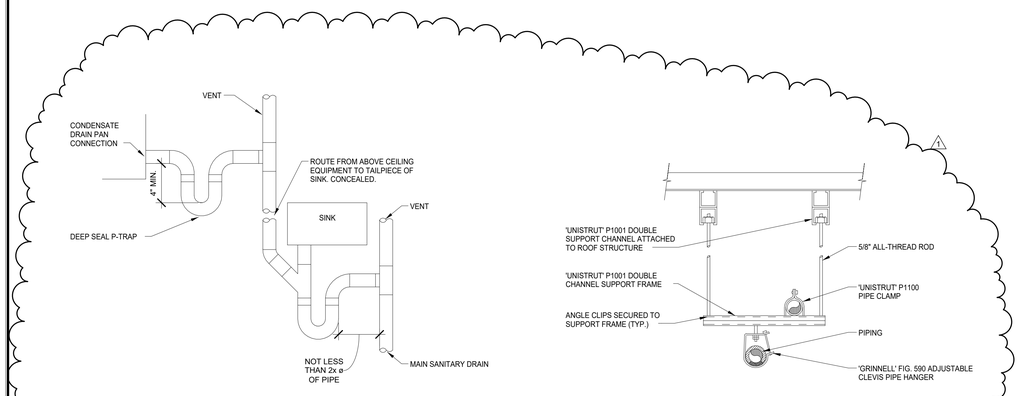
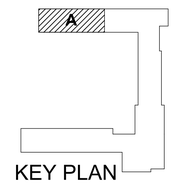


FIRST FLOOR HYDRONIC PLAN - AREA A
1/8" = 1'-0"



2 CONDENSATE DRAIN TO INDIRECT WASTE DETAIL
N.T.S.

1 TYPICAL ROOF STRUCTURE PIPE HANGING DETAIL
N.T.S.



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FIRST FLOOR HYDRONIC PLAN - AREA A

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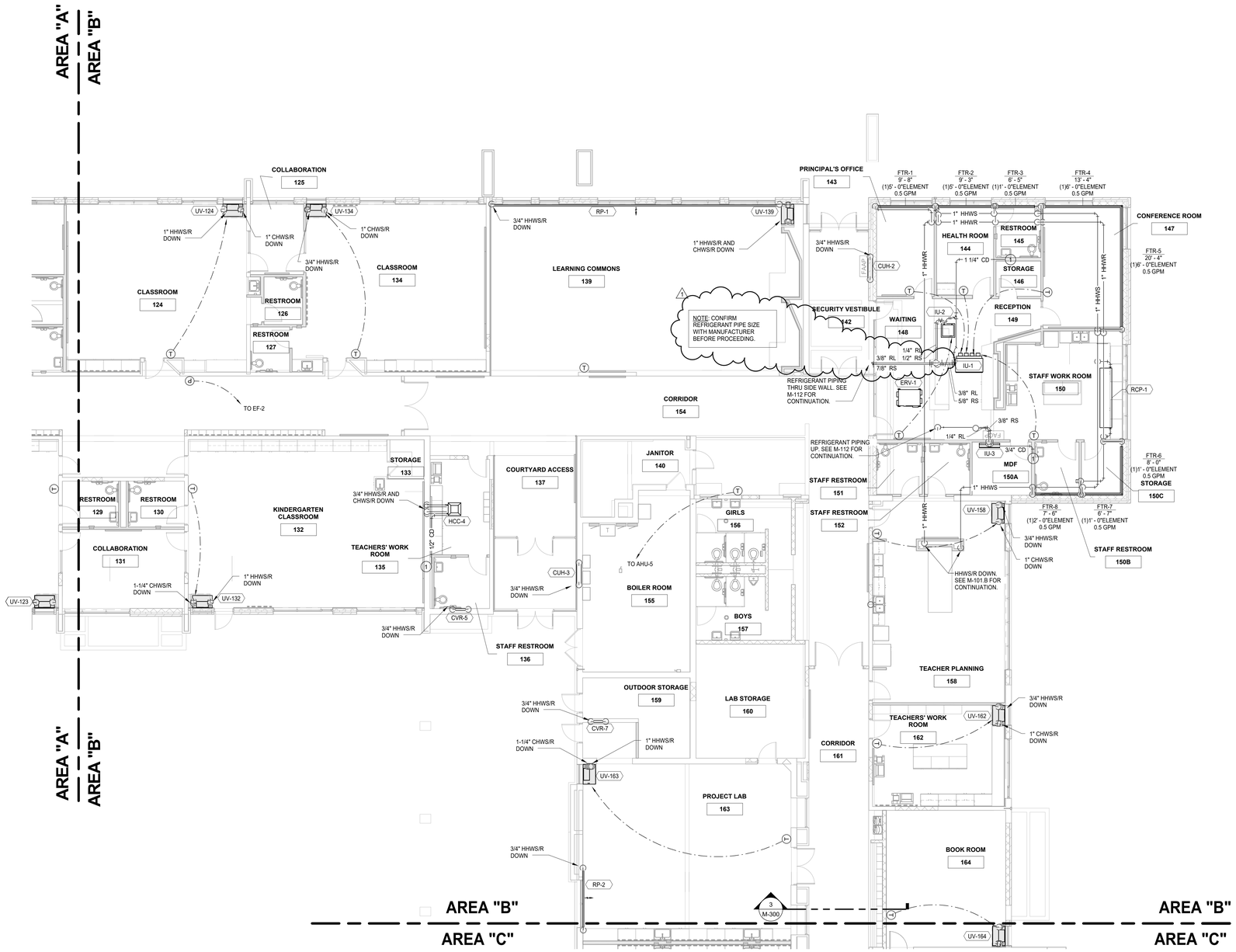
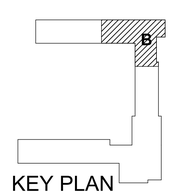
MECHANICAL KEYNOTES:

1. PIPE CONDENSATE TO NEARBY INDIRECT WASTE. SEE 2/M-111.A.



FIRST FLOOR HYDRONIC PLAN - AREA B
1/8" = 1'-0"



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FIRST FLOOR HYDRONIC PLAN - AREA B

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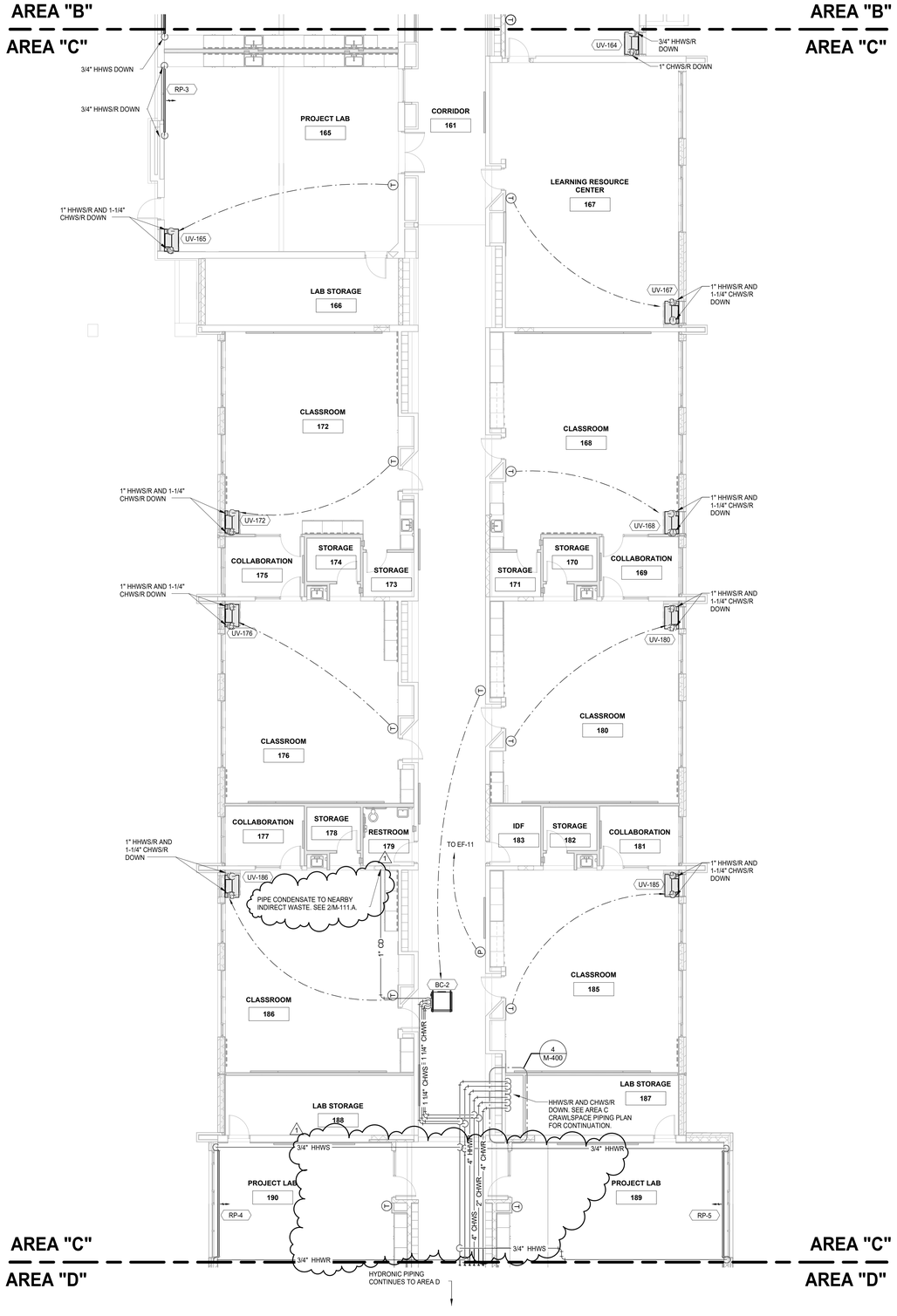
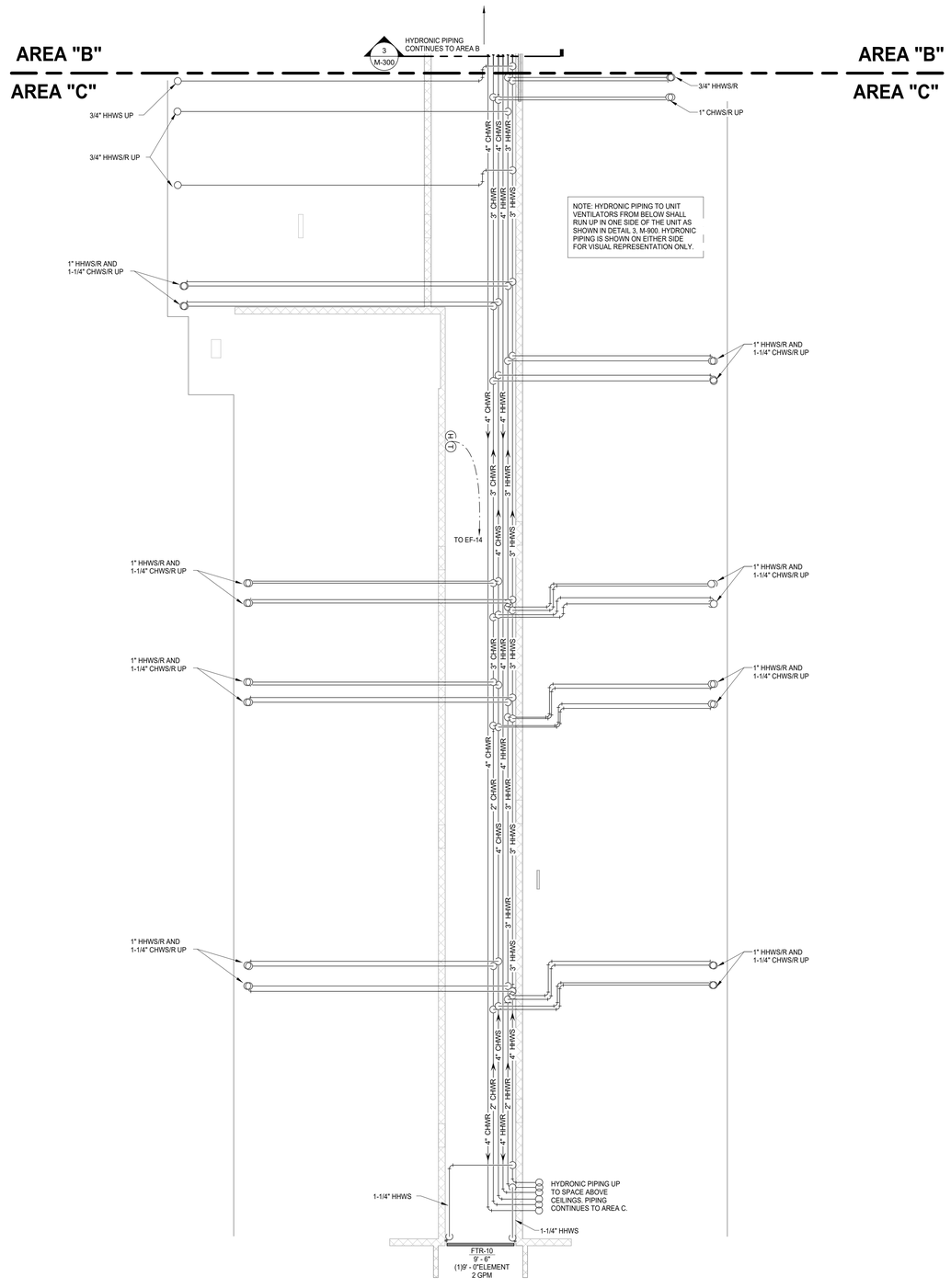
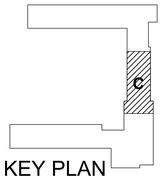


FIRST FLOOR HYDRONIC PLAN - AREA C
1/8" = 1'-0"



TUNNEL HYDRONIC PLAN - AREA C
1/8" = 1'-0"



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FIRST FLOOR HYDRONIC PLAN - AREA C

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SCALE: 1/8" = 1'-0"
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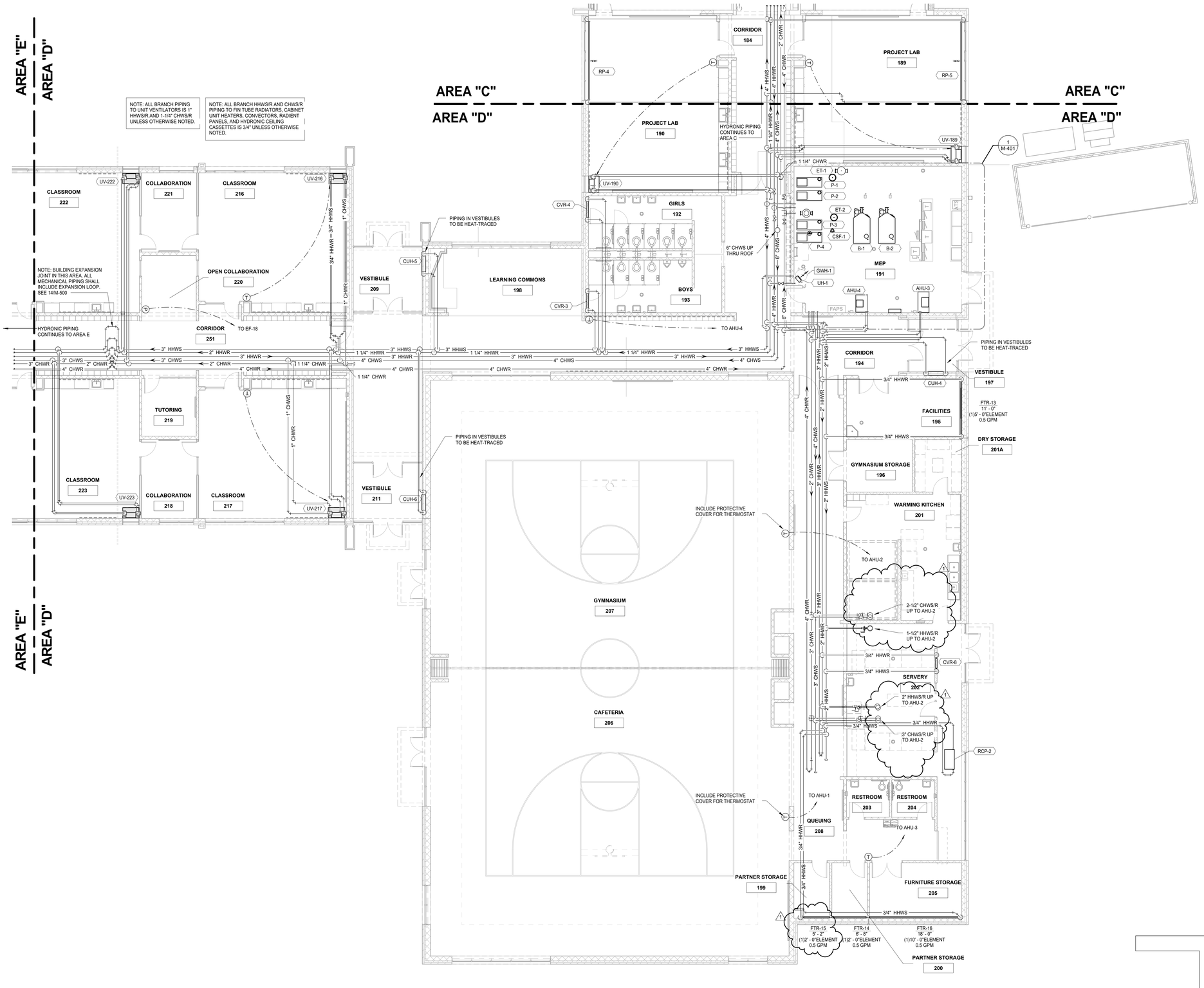
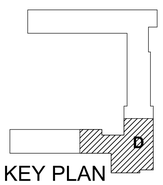


FIRST FLOOR HYDRONIC PLAN - AREA D
1/8" = 1'-0"



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FIRST FLOOR HYDRONIC PLAN - AREA D

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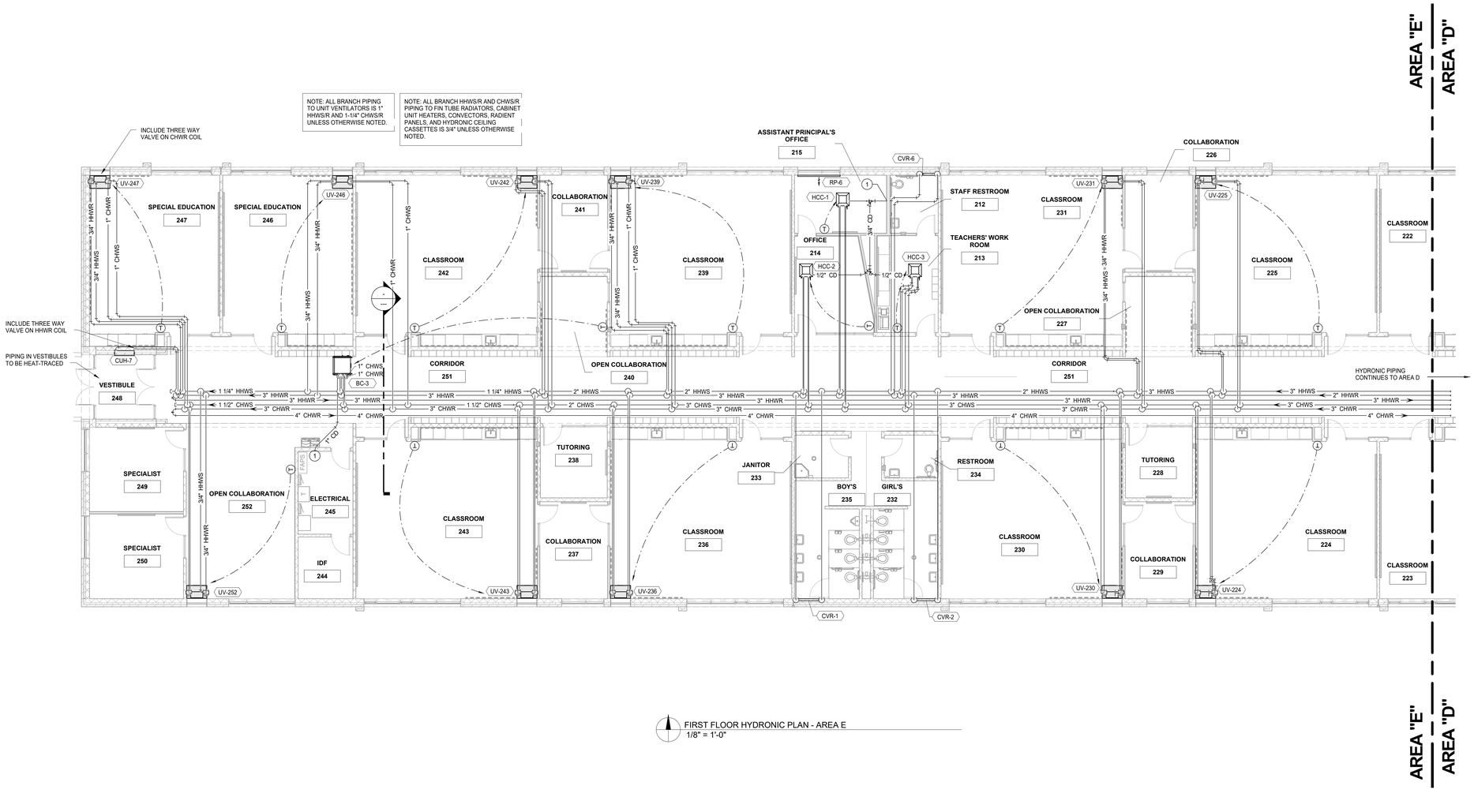
MECHANICAL KEYNOTES:

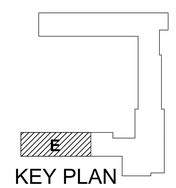
1. PIPE CONDENSATE TO NEARBY INDIRECT WASTE. SEE 2/M-111.A.

NOTE: ALL BRANCH PIPING TO UNIT VENTILATORS IS 1" HHWS/R AND 1-1/4" CHWS/R UNLESS OTHERWISE NOTED.

NOTE: ALL BRANCH HHWS/R AND CHWS/R PIPING TO FIN TUBE RADIATORS, CABINET UNIT HEATERS, CONVECTORS, RADIENT PANELS, AND HYDRONIC CEILING CASSETTES IS 3/4" UNLESS OTHERWISE NOTED.



FIRST FLOOR HYDRONIC PLAN - AREA E
1/8" = 1'-0"



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FIRST FLOOR HYDRONIC PLAN - AREA E

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SHEET
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Addendum #1

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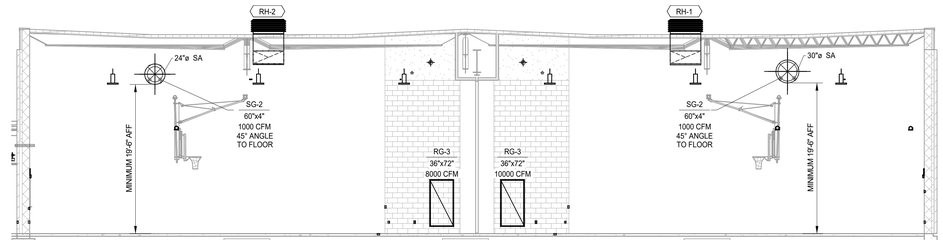
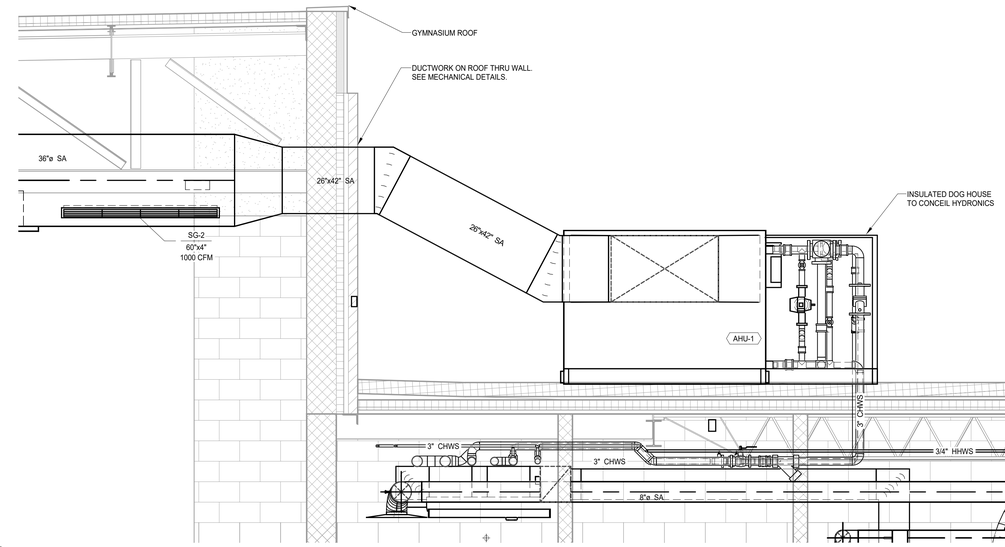
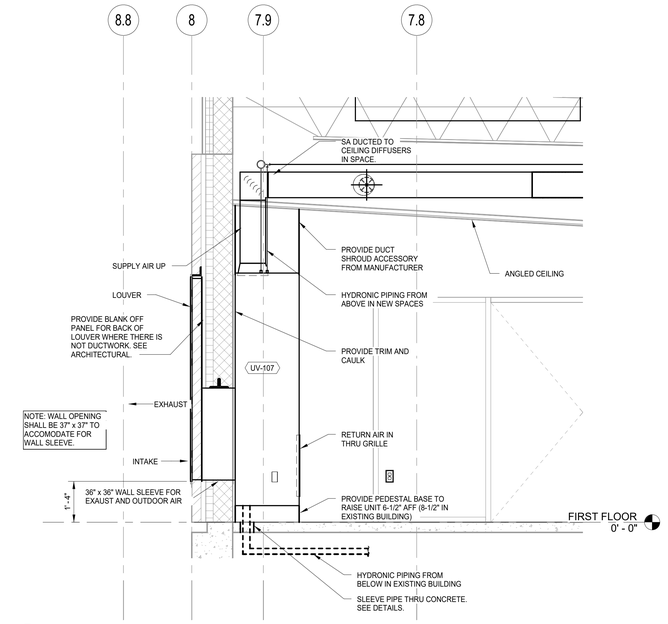


7 GYMNASIUM SECTION
1/8" = 1'-0"



4 AHU -1 SECTION
1/2" = 1'-0"



6 TYPICAL UNIT VENTILATOR SECTION
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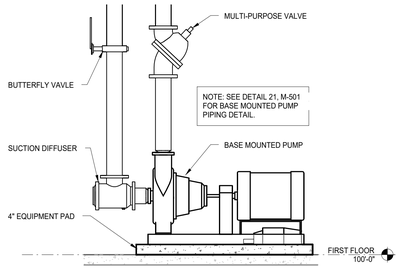

5 TYPICAL BASEMOUNTED PUMP SECTION
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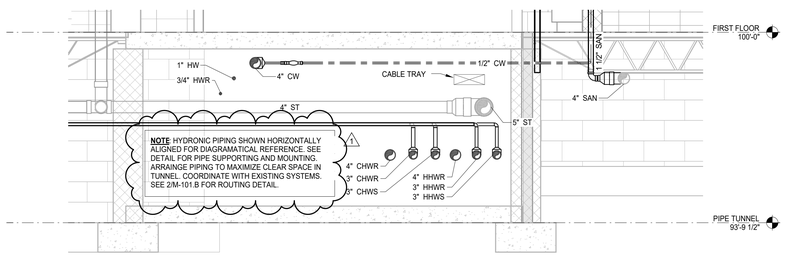
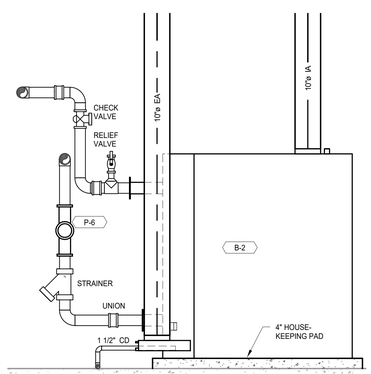
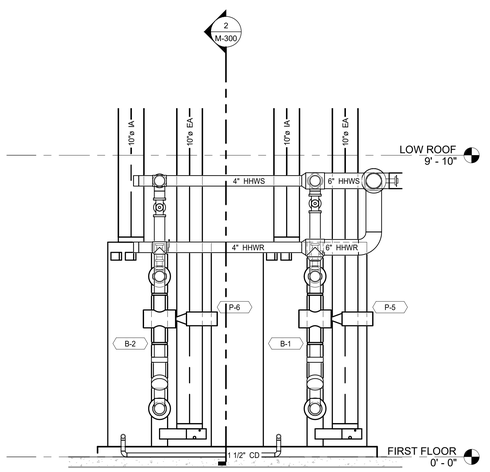


3 TUNNEL PIPING SECTION
1/2" = 1'-0"



2 BOILER SIDE SECTION
1/2" = 1'-0"



1 BOILER FRONT SECTION
1/2" = 1'-0"

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LANSING SCHOOL DISTRICT
FAIRVIEW ADDITIONS AND RENOVATIONS
LANSING, MICHIGAN

MECHANCAL SECTIONS

REVISIONS

REV	DESCRIPTION	DATE
1	ADDENDUM 1	2/14/2017

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Addendum #1
ADDENDUM 1

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AIR COOLED CHILLER SCHEDULE

MARK	MANUFACTURER	MODEL	CAPACITY			GENERAL INFORMATION				EVAPORATOR					CONDENSER			ELECTRICAL REQUIREMENTS				NOTES
			NOMINAL TONS	MAXIMUM (TONS)	MINIMUM (%)	COMPRESSOR	REFRIGERANT	EER (IPLV)	WxLxH	WEIGHT	GPM	EWT (°F)	LWT (°F)	PD (FT-HD)	LIQUID	NUMBER OF FANS	FAN AIRFLOW (CFM)	E.A.T. (°F)	VOLTAGE	PHASE	MCA	MOCP	
CH-1	CARRIER	30XV/300M	300	259.7	12.5	VDF SCREW	R-134A	19.56	88"x393"x99"	17764	651	54	44	17.6	30% GLYCOL	8	86400	95	460	3	554.8	700.0	1, 2

1. INCLUDE NON-FUSED DISCONNECT.
2. INCLUDE VFD FOR COMPRESSOR.

BOILER SCHEDULE

GENERAL					HEATING INFORMATION							ELECTRICAL			WEIGHT	NOTES
MARK	MANUFACTURER	MODEL	LOCATION	SERVING	INPUT	OUTPUT	TURNDOWN	EWT (°F)	LWT (°F)	GPM	PD (FT-HD)	VOLTS	PHASE	AMPS		
B-1	LOCHINVAR	CREST FBN3000	MEP 127	BUILDING	3000	2760	20:1	140	180	138	1.2	120	1	13.6	4126	1
B-2	LOCHINVAR	CREST FBN3000	MEP 127	BUILDING	3000	2760	20:1	140	180	138	1.2	120	1	13.6	4126	1

1. INCLUDE MANUFACTURER RECOMMENDED GAS PRESSURE REGULATOR. SAP NUMBER 100269924.

PUMP SCHEDULE

MARK	SERVING	MANUFACTURER	SERIES	MODEL	GPM	PRESSURE DROP (FT-HD)	ELECTRICAL REQUIREMENTS				NOTES
							HP	RPM	VOLTAGE	PHASE	
P-1	BUILDING HEATING SYSTEM	BELL & GOSSETT	E-1510	2EB	165	110	10	1750	460	3	1
P-2	BUILDING HEATING SYSTEM	BELL & GOSSETT	E-1510	2EB	165	110	10	1750	460	3	1
P-3	BUILDING COOLING SYSTEM	BELL & GOSSETT	E-1510	4GC	285	115	30	1770	460	3	1, 3
P-4	BUILDING COOLING SYSTEM	BELL & GOSSETT	E-1510	4GC	285	115	30	1770	460	3	1, 3
P-5	BOILER B-1	BELL & GOSSETT	ECOCIRC_XL	XL_40-275	138	20	2	2950	208	1	2
P-6	BOILER B-2	BELL & GOSSETT	ECOCIRC_XL	XL_40-275	138	20	2	2950	208	1	2
P-7	AHU-1 CIRCULATION	BELL & GOSSETT	BOOSTER	NRF-45	24	15	1/6	3300	115	1	
P-8	AHU-2 CIRCULATION	BELL & GOSSETT	BOOSTER	NRF-45	17	15	1/6	3300	115	1	

1. INCLUDE VFD ON PUMP
2. INCLUDE EDM ON PUMP
3. 30% PROPYLENE-GLYCOL SOLUTION

REFRIGERATION CONDENSING UNIT SCHEDULE

MARK	MANUFACTURER	MODEL	LOCATION	AREA SERVED	ELECTRICAL		CAPACITIES		WEIGHT	NOTES
					VOLTAGE	PHASE	MCA	COOLING (TONS)	HEATING (MBH)	
CU-1	DAIKIN	RXYQ96TTJU	ADMIN ROOF	ADMINISTRATION	208	3	27.6	8	103	553	1, 3
CU-2	TOSHIBA CARRIER	RAS-24EAV-UL	ROOF	MDF	208	1	10	2.0	14.8	88	2

1. VARIABLE REFRIGERANT FLOW (VRF) SYSTEM
2. DUCTLESS SYSTEM
3. CONFIRM PIPE SIZING WITH MANUFACTURER BEFORE INSTALLATION.
4. COOLING CAPACITY AT OA TEMPERATURE OF 92°F, HEATING CAPACITY AT OA TEMPERATURE OF -1°F.

REFRIGERATION INDOOR UNIT SCHEDULE

MARK	MANUFACTURER	MODEL	AREA SERVED	AIRFLOW				CAPACITIES (kBTUH)		ELECTRICAL			OPERATING WEIGHT (LBS)	NOTES
				LOW	MED	HIGH	FRESH AIR	HEATING	COOLING	VOLTAGE	PHASE	MCA		
IU-1	DAIKIN	FXMQ48PBVJU	ADMIN AREA	988	1165	1377	425	54.0	48.0	208	1	3.4	500	1, 3
IU-2	DAIKIN	FXZQ09MVJU9	RECEPTION	265	265	335	0	11.1	9.5	208	1	0.8	42	1, 3
IU-3	CARRIER	RAS-09EKV-UL	MFD	177	244	303	0	10.8	9.0	208	1	10	25	2, 3

1. VARIABLE REFRIGERANT FLOW (VRF) SYSTEM
2. DUCTLESS SYSTEM
3. INCLUDE CONDENSATE PUMP FROM MANUFACTURER

KITCHEN HOOD SCHEDULE

MARK	MANUFACTURER	MODEL	HOOD LENGTH	HOOD WIDTH	MAX COOKING TEMPERATURE (°F)	CFM	ESP (IN-WG)	NOTES
H-1	ACCUREX	XBEW	72"	54"	600	1200	0.41	

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GRILLE, REGISTER & DIFFUSER SCHEDULE

MARK	MANUFACTURER	MODEL	DESCRIPTION	FRAME	DAMPER	NECK SIZE	NOTES
EG-1	TITUS	50F	CEILING MOUNTED EXHAUST GRILLE, WHITE	ALUMINUM	NO	AS NOTED	1, 2
EG-2	TITUS	33R	WHITE WALL MOUNTED EXHAUST GRILLE, WHITE	STEEL	NO	AS NOTED	1, 3
LD-1	TITUS	FL-10	4' LONG, SINGLE SLOT HIGHTHROW SUPPLY WITH TITUS PLENUM, WHITE	ALUMINUM	NO	AS NOTED	1, 5
RG-1	TITUS	50F	CEILING MOUNTED RETURN GRILLE, WHITE	ALUMINUM	NO	AS NOTED	1, 2
RG-2	TITUS	33R	WALL MOUNTED RETURN GRILLE, WHITE	STEEL	NO	AS NOTED	1, 3
RG-3	TITUS	33R	WALL MOUNTED GYMNASIUM RETURN GRILLE, WHITE	STEEL	NO	AS NOTED	1, 3
SD-1	TITUS	TMS	2'X2' SQUARE CEILING DIFFUSER, WHITE	ALUMINUM	NO	AS NOTED	1, 2
SG-1	TITUS	301FL	WALL MOUNTED SUPPLY GRILLE, WHITE	STEEL	NO	AS NOTED	1, 3
SG-2	TITUS	S-DL	GYMNASIUM-STYLE DUCT MOUNT SUPPLY GRILLE, STAINLESS	STEEL	NO	AS NOTED	1, 4
TG-1	TITUS	33R	WALL MOUNTED TRANSFER GRILLE, WHITE	STEEL	NO	AS NOTED	1, 3

1. PROVIDE ALL FITTINGS AND ACCESSORIES NECESSARY FOR A COMPLETE INSTALLATION.
2. LAY IN 2X2 CEILING GRID. SEE ARCHITETURAL RCP FOR PLACEMENT.
3. MOUNT ON WALL.
4. MOUNT ON DUCTWORK.
5. MOUNT IN SPECIALTY CEILING GRID. SEE ACHITECTURAL RCP FOR PLACEMENT.

EXPANSION TANK SCHEDULE

MARK	MANUFACTURER	MODEL	CAPACITY (GALLONS)	SYSTEM	DIA x LENGTH (IN)	FULL WEIGHT	NOTES
ET-1	BELL & GOSSETT	SERIES B	1512	HEATING HOT WATER	48" x 70"	4665	
ET-2	BELL & GOSSETT	SERIES B	1490	CHILLED WATER	48" x 70"	4665	

HOOD SCHEDULE

MARK	SERVING	MANUFACTURER	MODEL	CFM	E.S.P. (IN-WG)	UNIT WEIGHT	NOTES
IH-1	TUNNEL INTAKE AIR	GREENHECK	GRSI-18	2015	0.20	19	1
IH-2	AHU-5 INTAKE AIR	GREENHECK	GRSI-15	874	0.10	13	1
IH-3	AHU-3 INTAKE AIR	GREENHECK	GRSI-15	874	0.10	13	1
IH-4	AHU-4 INTAKE AIR	GREENHECK	GRSI-15	874	0.10	13	1
IH-5	BC-1 INTAKE AIR	GREENHECK	GRSI-8	200	0.05	7	1
IH-6	BC-2 INTAKE AIR	GREENHECK	GRSI-8	252	0.08	7	1
IH-7	BC-3 INTAKE AIR	GREENHECK	GRSI-8	200	0.05	7	1
IH-8	ERV INTAKE AIR	GREENHECK	GRSI-10	490	0.06	9	1
RH-1	GYMNASIUM RELIEF	GREENHECK	WRH-36x48	9600	0.01	100	1
RH-2	GYMNASIUM RELIEF	GREENHECK	WRH-36x48	9600	0.01	100	1

1. INCLUDE BACKDRAFT DAMPERS

LOUVER SCHEDULE

MARK	MANUFACTURER	MODEL	SIZE		DESCRIPTION	NOTES
			WIDTH	HEIGHT		
L-1	RUSKIN	ELF-6375-DXH	36"	78"	HEAVY GUAGE EXTRUDED ALUMINUM	1

1. SEE ARCHITECTURAL SPECIFICATIONS FOR MORE DETAILS

SUPPLY FAN SCHEDULE

MARK	SERVING	MANUFACTURER	MODEL	H.P.	CFM	E.S.P. (IN-WG)	RPM	ELECTRICAL		DRIVE	UNIT WEIGHT	NOTES
								VOLTS	PHASE			
SF-1	TUNNEL	GREENHECK	SQ-130-VG/A	3/4	1961	0.75	1725	115	1	DIRECT	77"	1

1. INTERLOCK WITH EF-14
2. INLINE FAN

EXHAUST FAN SCHEDULE

MARK	SERVING	MANUFACTURER	MODEL	H.P.	CFM	E.S.P. (IN-WG)	RPM	ELECTRICAL		DRIVE	UNIT WEIGHT	NOTES
								VOLTS	PHASE			
EF-1	ELECTRICAL-106	GREENHECK	G-060HP-VG/E	1/4	153	0.01	1300	115	1	DIRECT	15	3
EF-2	NORTH CORRIDOR	GREENHECK	G-143HP-VG/B	1/3	2003	0.13	1140	115	1	DIRECT	77	1, 3
EF-3	RESTROOMS 110, 111	GREENHECK	G-060HP-VG/G	1/4	153	0.05	1300	115	1	DIRECT	15	3
EF-4	JANITOR-115; RESTROOM-116	GREENHECK	G-060HP-VG/G	1/4	153	0.05	1300	115	1	DIRECT	15	3
EF-5	RESTROOMS 120, 121	GREENHECK	G-060HP-VG/G	1/4	153	0.05	1300	115	1	DIRECT	15	3
EF-6	RESTROOMS 129, 130	GREENHECK	G-060HP-VG/G	1/4	153	0.05	1300	115	1	DIRECT	15	3
EF-7	RESTROOMS 126, 127	GREENHECK	G-060HP-VG/G	1/4	153	0.05	1300	115	1	DIRECT	15	3
EF-8	RESTROOM-136	GREENHECK	G-060HP-VG/E	1/4	116	0.05	1050	115	1	DIRECT	15	3
EF-9	WOMEN'S-156; MEN'S-157	GREENHECK	G-095HP-VG/G	1/4	420	0.03	1300	115	1	DIRECT	22	3
EF-10	RESTROOMS 151, 152	GREENHECK	G-060HP-VG/G	1/4	153	0.05	1300	115	1	DIRECT	15	3
EF-11	EAST CORRIDOR	GREENHECK	G-143HP-VG/B	1/3	2003	0.13	1140	115	1	DIRECT	77	1, 3
EF-12	RESTROOM-179	GREENHECK	G-060HP-VG/E	1/4	153	0.05	1300	115	1	DIRECT	15	3
EF-13	IDF-183	GREENHECK	G-060HP-VG/E	1/4	153	0.01	1300	115	1	DIRECT	15	3
EF-14	TUNNEL	GREENHECK	G-123HP-VG/A	1/2	1871	0.50	1725	115	1	DIRECT	55	3
EF-15	WOMEN'S-192; MEN'S-193	GREENHECK	G-099HP-VG/B	1/4	860	0.01	1140	115	1	DIRECT	54	3
EF-16	KITCHEN-201	ACCUREX	XRUB-131-3	1/3	1200	0.76	1320	115	1	BELT	122	2, 3
EF-17	RESTROOMS 203, 204	GREENHECK	G-060HP-VG/G	1/4	153	0.05	1300	115	1	DIRECT	15	3
EF-18	SOUTH CORRIDOR	GREENHECK	G-143HP-VG/B	1/3	2003	0.13	1140	115	1	DIRECT	77	1, 3
EF-19	RESTROOM-212	GREENHECK	G-060HP-VG/E	1/4	116	0.05	1050	115	1	DIRECT	15	3
EF-20	RESTROOM-234	GREENHECK	G-060HP-VG/E	1/4	116	0.05	1050	115	1	DIRECT	15	3
EF-21	WOMEN'S-235; MEN'S-236	GREENHECK	G-099HP-VG/C	1/4	560	0.01	860	115	1	DIRECT	54	3
EF-22	IDF-244	GREENHECK	G-060HP-VG/E	1/4	116	0.05	1050	115	1	DIRECT	15	3
EF-23	FACILITIES-195	GREENHECK	G-060HP-VG/E	1/4	153	0.01	1300	115	1	DIRECT	15	3

1. INTERLOCK WITH ADJUSTABLE STATIC PRESSURE SENSOR IN ASSOCAITED HALLWAY.
2. INTERLOCK WITH KITCHEN AHU-3
3. INCLUDE BACKDRAFT DAMPERS 1

ENERGY RECOVERY VENTILATOR SCHEDULE

MARK	MANUFACTURER	MODEL	AIRFLOW	E.S.P.	VOLTAGE	PHASE	FLA	MCA	WEIGHT	NOTES
ERV-1	CONSERV	G01I - FSS - ASHHHH-1BCA	425	1.9	120	1	8.2	10.3	105	1, 2, 3

1. INCLUDE GALVANIZED MOTORIZED DAMPER FOR INTAKE AIR AND GRAVITY BACKDRAFT DAMPER FOR EXHAUST AIR.
2. INCLUDE ELECTRIC PRE-HEAT COIL FOR DEFROST.
3. INCLUDE NON-FUSED DISCONNECT.

AIR HANDLING UNIT HEATING COIL SCHEDULE

MARK	MANUFACTURER	COIL MODEL	CAPACITY (MBH)	FACE AREA (SF)	ROWS	EAT (°F)	LAT (°F)	GPM	WPD (PSI)	EWT (°F)	LWT (°F)	CONTROL VALVE	NOTES
AHU-1	CARRIER	28MH	477.19	21	2	56	99	24	0.20	180	140	3-WAY	1, 2
AHU-2	CARRIER	28MH	332.29	14	2	56	97	17	0.34	180	140	2-WAY	1, 2
AHU-3	CARRIER	28NB	140.13	5	2	43	92	8	0.40	180	142	2-WAY	1
AHU-4	CARRIER	28NB	101.34	3	2	37	86	7	0.52	180	150	2-WAY	1
AHU-5	CARRIER	28NB	83.41	3	2	32	80	6	0.34	180	150	2-WAY	1

1. CONTROL VALVES SHALL FAIL OPEN
2. INCLUDE CIRCULATING PUMP FOR FREEZE PROTECTION

AIR HANDLING UNIT COOLING COIL SCHEDULE

MARK	MANUFACTURER	COIL MODEL	FACE AREA (SF)	ROWS	TOTAL CAPACITY (MBH)	SENSIBLE CAPACITY (MBH)	EAT DB (°F)	EAT WB (°F)	LAT DB (°F)	LAT WB (°F)	GPM	WPD (PSI)	EWT (°F)	LWT (°F)	FLUID	PERCENTAGE	CONTROL VALVE
AHU-1	CARRIER	28MC	21	10	411.53	285.66	80	67	53	53	87	2.10	44	54	PROPYLENE GLYCOL	30%	3-WAY
AHU-2	CARRIER	28MC	14	10	308.16	212.25	80	67	53	52	65	7.50	44	54	PROPYLENE GLYCOL	30%	2-WAY
AHU-3	CARRIER	28NA	6	6	75.11	62.11	81	67	58	57	16	2.80	44	54	PROPYLENE GLYCOL	30%	2-WAY
AHU-4	CARRIER	28NA	4	6	47.79	41.78	82	68	60	59	10	1.50	44	54	PROPYLENE GLYCOL	30%	2-WAY
AHU-5	CARRIER	28NA	4	6	44.29	37.08	83	68	60	59	10	1.30	44	54	PROPYLENE GLYCOL	30%	2-WAY

AIR HANDLING UNIT SCHEDULE

GENERAL					SUPPLY FAN						OUTDOOR AIR		ELECTRICAL REQUIREMENTS			WEIGHT	NOTES
MARK	MANUFACTURER	MODEL	PRE-FILTER	AIR FILTER	CFM	T.S.P. (IN-WG)	E.S.P. (IN-WG)	HP	RPM FAN/MOTOR	FLA	MCA	OA CFM	OA %	VOLTAGE	PHASE	FREQUENCY		
AHU-1	CARRIER	39M21W	2"	4" FLAT	9847	3.50	1.25	10	1178 / 1200	14.3	17.9	1277	13%	460	3	60	6400	1, 2, 3, 4, 5, 6, 7
AHU-2	CARRIER	39M14W	2"	4" FLAT	7280	3.50	1.25	7.5	1502 / 1200	11.2	14.0	1278	16%	460	3	60	5200	1, 2, 3, 4, 5, 6, 7
AHU-3	CARRIER	39LD06	N/A	2" PLEATED	2500	2.05	1.00	5	1121 / 1800	2.1	2.6	600	24%	460	3	60	782	1, 2, 5, 6, 8, 9
AHU-4	CARRIER	39LD03	N/A	2" PLEATED	1800	2.32	1.00	2	1613 / 1800	2.1	2.6	850	47%	460	3	60	593	1, 2, 6, 8, 9
AHU-5	CARRIER	39LD03	N/A	2" PLEATED	1500	1.98	1.00	2	1495 / 1800	1.4	1.8	500	33%	460	3	60	587	1, 2, 6, 8, 9

1. INCLUDE VFD ON PLENUM SUPPLY FAN.
2. INCLUDE DISCONNECT SWITCH.
3. AHU TO BE SUITABLE FOR OUTDOOR CONDITIONS.
4. INTERLOCK WITH GYMNASIUM RELIEF HOODS.
5. INTERLOCK MINIMUM OA INTAKE WITH EF-16.
6. INCLUDE CO2 SENSOR IN RA DUCT FOR DEMAND-CONTROLLED VENTILATION REQUIREMENTS.
7. INCLUDE MIXING BOX SECITON WITH OA AND RA DAMPERS.
8. INCLUDE FBM1 COMBO FILTER AND MIXING BOX SECTION.
9. INCLUDE PHW HEATING COIL.

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LANSING, MICHIGAN

MECHANICAL SCHEDULES

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1	ADDENDUM 1	2/16/2017

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ADDENDUM 1

Addendum #1

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VERTICAL UNIT VENTILATOR SCHEDULE

GENERAL			SUPPLY FAN						HEATING COIL										COOLING COIL										ELECTRICAL DATA				WEIGHT	NOTES
MARK	MANUFACTURER	MODEL	CFM	OA CFM	E.S.P. (IN-WG)	MOTOR TYPE	HP	FLA	FACE AREA (SF)	ROWS	MBH	EAT (°F)	LAT (°F)	EWT (°F)	LWT (°F)	GPM	MAX WPD (PSI)	CONTROL VALVE	FACE AREA (SF)	ROWS	TOTAL MBH	SENSIBLE MBH	EAT (°F)	LAT (°F)	EWT (°F)	LWT (°F)	GPM	WPD (PSI)	CONTROL VALVE	VOLT	PHASE	HZ	MCA		
UV-103	CHANGEAIR	FRESHMEN HCW - B CABINET	700	300	0.25	ECM	1/2	4.1	4.5	1	32.3	39	90	180	151	2.3	0.20	3-WAY	4.5	4	28.8	19.4	81	54	45	55	6.0	1.20	3-WAY	277	1	60	7.73	750	1, 2, 3, 4, 5, 6, 7, 8, 10, 11, 12
UV-104	CHANGEAIR	FRESHMEN HCW - B CABINET	950	250	0.25	ECM	1/2	4.1	4.5	1	43.5	51	90	180	156	2.2	0.30	3-WAY	4.5	4	26.0	21.4	79	57	45	55	5.5	1.10	2-WAY	277	1	60	7.73	750	1, 2, 3, 4, 5, 6, 7, 8, 10, 11, 12
UV-107	CHANGEAIR	FRESHMEN HCW - B CABINET	1250	500	0.25	ECM	1/2	4.1	4.5	1	65.8	41	90	180	162	7.4	1.60	2-WAY	4.5	5	48.4	33.5	81	55	45	56	9.5	2.80	2-WAY	277	1	60	7.73	750	1, 2, 3, 4, 5, 6, 7, 8, 10, 11, 12
UV-108	CHANGEAIR	FRESHMEN HCW - B CABINET	700	300	0.25	ECM	1/2	4.1	4.5	1	32.3	39	90	180	151	2.3	0.20	2-WAY	4.5	4	45.8	19.4	81	54	45	55	6.0	1.20	2-WAY	277	1	60	7.73	750	1, 2, 3, 4, 5, 6, 7, 8, 10, 11, 12
UV-113	CHANGEAIR	FRESHMEN HCW - B CABINET	1300	550	0.25	ECM	1/2	4.1	4.5	1	66.8	40	90	180	162	7.5	1.60	2-WAY	4.5	5	50.8	35.0	81	55	45	56	10.0	3.10	2-WAY	277	1	60	7.73	750	1, 2, 3, 4, 5, 6, 7, 8, 10, 11, 12
UV-114	CHANGEAIR	FRESHMEN HCW - B CABINET	1000	425	0.25	ECM	1/2	4.1	4.5	1	54.9	40	90	180	154	4.3	0.70	2-WAY	4.5	4	34.0	25.0	81	57	45	55	7.0	1.50	2-WAY	277	1	60	7.73	750	1, 2, 3, 4, 5, 6, 7, 8, 10, 11, 12
UV-118	CHANGEAIR	FRESHMEN HCW - B CABINET	1250	500	0.25	ECM	1/2	4.1	4.5	1	65.8	41	90	180	162	7.4	1.60	2-WAY	4.5	5	69.6	33.5	81	55	45	56	9.5	2.80	2-WAY	277	1	60	7.73	750	1, 2, 3, 4, 5, 6, 7, 9, 10, 11, 12
UV-123	CHANGEAIR	FRESHMEN HCW - B CABINET	1600	550	0.25	ECM	1/2	4.1	4.5	2	76.7	45	90	180	150	5.2	0.50	2-WAY	4.5	5	51.7	39.0	80	57	45	55	10.5	3.30	2-WAY	277	1	60	7.73	750	1, 2, 3, 4, 5, 6, 7, 9, 10, 11, 12
UV-124	CHANGEAIR	FRESHMEN HCW - B CABINET	1200	500	0.25	ECM	1/2	4.1	4.5	1	65.1	40	90	180	162	7.5	1.60	2-WAY	4.5	5	48.2	32.8	81	55	45	56	9.5	2.80	2-WAY	277	1	60	7.73	750	1, 2, 3, 4, 5, 6, 7, 9, 10, 11, 12
UV-132	CHANGEAIR	FRESHMEN HCW - B CABINET	1350	475	0.25	ECM	1/2	4.1	4.5	1	65.8	45	90	180	160	6.6	1.30	2-WAY	4.5	5	48.8	34.9	80	55	45	55	10.0	3.10	2-WAY	277	1	60	7.73	750	1, 2, 3, 4, 5, 6, 7, 9, 10, 11, 12
UV-134	CHANGEAIR	FRESHMEN HCW - B CABINET	1050	425	0.25	ECM	1/2	4.1	4.5	1	56.1	41	90	180	154	4.5	0.70	2-WAY	4.5	5	43.6	29.3	81	54	45	55	8.5	2.40	2-WAY	277	1	60	7.73	750	1, 2, 3, 4, 5, 6, 7, 9, 10, 11, 12
UV-139	CHANGEAIR	FRESHMEN HCW - B CABINET	1700	250	0.25	ECM	1/2	5.5	4.5	1	54.9	59	90	180	159	5.3	0.40	2-WAY	4.5	5	33.7	33.0	77	59	45	55	7.0	1.70	2-WAY	277	1	60	9.48	750	1, 2, 3, 4, 5, 6, 7, 9, 10, 11, 12
UV-158	CHANGEAIR	FRESHMEN HCW - F CABINET	950	250	0.25	ECM	1/2	4.1	4.5	1	39.6	51	90	180	155	3.3	0.30	2-WAY	4.5	4	46.3	21.4	79	57	45	55	5.5	1.10	2-WAY	277	1	60	7.73	750	1, 2, 3, 4, 5, 6, 7, 9, 10, 11, 12
UV-162	CHANGEAIR	FRESHMEN HCW - F CABINET	700	300	0.25	ECM	1/2	4.1	4.5	1	26.9	39	90	180	143	1.5	0.10	2-WAY	4.5	4	45.8	19.4	81	54	45	55	6.0	1.20	2-WAY	277	1	60	7.73	750	1, 2, 3, 4, 5, 6, 7, 9, 10, 11, 12
UV-163	CHANGEAIR	FRESHMEN HCW - B CABINET	1150	450	0.25	ECM	1/2	4.1	4.5	1	59.7	42	90	180	156	5.2	0.90	2-WAY	4.5	5	64.1	31.3	81	54	45	56	9.0	2.60	2-WAY	277	1	60	7.73	750	1, 2, 3, 4, 5, 6, 7, 9, 10, 11, 12
UV-164	CHANGEAIR	FRESHMEN HCW - F CABINET	700	300	0.25	ECM	1/2	4.1	4.5	1	38.8	39	90	180	138	1.9	0.20	2-WAY	4.5	4	45.8	19.4	81	54	45	55	6.0	1.20	2-WAY	277	1	60	7.73	750	1, 2, 3, 4, 5, 6, 7, 9, 10, 11, 12
UV-165	CHANGEAIR	FRESHMEN HCW - B CABINET	1150	450	0.25	ECM	1/2	4.1	4.5	1	59.7	42	90	180	156	5.2	0.90	2-WAY	4.5	5	45.7	31.3	81	54	45	56	9.0	2.60	2-WAY	277	1	60	7.73	750	1, 2, 3, 4, 5, 6, 7, 9, 10, 11, 12
UV-167	CHANGEAIR	FRESHMEN HCW - B CABINET	1250	375	0.25	ECM	1/2	4.1	4.5	1	55.5	48	90	180	167	8.9	0.90	2-WAY	4.5	5	43.9	31.8	79	55	45	55	9.0	2.60	2-WAY	277	1	60	7.73	750	1, 2, 3, 4, 5, 6, 7, 9, 10, 11, 12
UV-168	CHANGEAIR	FRESHMEN HCW - B CABINET	1350	500	0.25	ECM	1/2	4.1	4.5	1	67.7	43	90	180	162	7.6	1.70	2-WAY	4.5	5	49.5	35.1	80	55	45	55	10.0	3.10	2-WAY	277	1	60	7.73	750	1, 2, 3, 4, 5, 6, 7, 9, 10, 11, 12
UV-172	CHANGEAIR	FRESHMEN HCW - B CABINET	1150	500	0.25	ECM	1/2	4.1	4.5	1	63.9	39	90	180	162	7.2	1.50	2-WAY	4.5	5	45.8	32.2	81	54	45	56	9.5	2.80	2-WAY	277	1	60	7.73	750	1, 2, 3, 4, 5, 6, 7, 9, 10, 11, 12
UV-176	CHANGEAIR	FRESHMEN HCW - B CABINET	1250	575	0.25	ECM	1/2	4.1	4.5	2	72.2	37	90	180	148	4.7	0.40	2-WAY	4.5	5	51.4	34.6	82	55	45	56	10.0	3.10	2-WAY	277	1	60	7.73	750	1, 2, 3, 4, 5, 6, 7, 9, 10, 11, 12
UV-180	CHANGEAIR	FRESHMEN HCW - B CABINET	1200	450	0.25	ECM	1/2	4.1	4.5	1	60.8	43	90	180	157	5.4	1.00	2-WAY	4.5	5	45.8	31.9	80	55	45	56	9.0	2.60	2-WAY	277	1	60	7.73	750	1, 2, 3, 4, 5, 6, 7, 9, 10, 11, 12
UV-185	CHANGEAIR	FRESHMEN HCW - B CABINET	1150	450	0.25	ECM	1/2	4.1	4.5	1	59.7	42	90	180	156	5.2	0.90	2-WAY	4.5	5	64.7	31.3	81	54	45	56	9.0	2.60	2-WAY	277	1	60	7.73	750	1, 2, 3, 4, 5, 6, 7, 9, 10, 11, 12
UV-186	CHANGEAIR	FRESHMEN HCW - B CABINET	1150	450	0.25	ECM	1/2	4.1	4.5	1	59.7	42	90	180	156	5.2	0.90	2-WAY	4.5	5	64.1	31.3	81	54	45	56	9.0	2.60	2-WAY	277	1	60	7.73	750	1, 2, 3, 4, 5, 6, 7, 9, 10, 11, 12
UV-189	CHANGEAIR	FRESHMEN HCW - B CABINET	1100	500	0.25	ECM	1/2	4.1	4.5	1	58.9	38	90	180	157	5.2	0.90	2-WAY	4.5	5	63.0	31.5	82	54	45	56	9.5	2.80	2-WAY	277	1	60	7.73	750	1, 2, 3, 4, 5, 6, 7, 8, 10, 11, 12
UV-190	CHANGEAIR	FRESHMEN HCW - B CABINET	1150	450	0.25	ECM	1/2	4.1	4.5	1	59.7	42	90	180	157	5.2	0.90	2-WAY	4.5	5	63.6	31.3	81	54	45	56	9.0	2.60	2-WAY	277	1	60	7.73	750	1, 2, 3, 4, 5, 6, 7, 8, 10, 11, 12
UV-216	CHANGEAIR	FRESHMEN HCW - B CABINET	900	425	0.25	ECM	1/2	4.1	4.5	1	52.9	36	90	180	154	4.1	0.60	2-WAY	4.5	4	34.3	23.9	82	56	45	55	7.0	1.50	2-WAY	277	1	60	7.73	750	1, 2, 3, 4, 5, 6, 7, 8, 10, 11, 12
UV-217	CHANGEAIR	FRESHMEN HCW - B CABINET	900	425	0.25	ECM	1/2	4.1	4.5	1	55.1	36	90	180	156	4.8	0.80	2-WAY	4.5	4	60.2	23.9	82	56	45	55	7.0	1.50	2-WAY	277	1	60	7.73	750	1, 2, 3, 4, 5, 6, 7, 8, 10, 11, 12
UV-222	CHANGEAIR	FRESHMEN HCW - B CABINET	1100	500	0.25	ECM	1/2	4.1	4.5	1	63.1	38	90	180	162	7.2	1.50	2-WAY	4.5	5	47.8	31.5	82	54	45	56	9.5	2.80	2-WAY	277	1	60	7.73	750	1, 2, 3, 4, 5, 6, 7, 8, 10, 11, 12
UV-223	CHANGEAIR	FRESHMEN HCW - B CABINET	1300	550	0.25	ECM	1/2	4.1	4.5	1	66.8	40	90	180	162	7.6	1.70	2-WAY	4.5	5	73.8	35.0	81	55	45	56	10.0	3.10	2-WAY	277	1	60	7.73	750	1, 2, 3, 4, 5, 6, 7, 8, 10, 11, 12
UV-224	CHANGEAIR	FRESHMEN HCW - B CABINET	1200	450	0.25	ECM	1/2	4.1	4.5	1	60.8	43	90	180	157	5.4	1.00	2-WAY	4.5	5	66.4	31.9	80	55	45	56	9.0	2.60	2-WAY	277	1	60	7.73	750	1, 2, 3, 4, 5, 6, 7, 8, 10, 11, 12
UV-225	CHANGEAIR	FRESHMEN HCW - B CABINET	1100	500	0.25	ECM	1/2	4.1	4.5	1	63.1	38	90	180	162	7.2	1.50	2-WAY	4.5	5	66.0	31.5	82	54	45	56	9.5	2.80	2-WAY	277	1	60	7.73	750	1, 2, 3, 4, 5, 6, 7, 8, 10, 11, 12
UV-230	CHANGEAIR	FRESHMEN HCW - B CABINET	1400	600	0.25	ECM	1/2	4.1	4.5	2	77.0	39	90	180	150	5.2	0.50	2-WAY	4.5	5	54.2	37.5	81	55	45	55	11.0	3.60	2-WAY	277	1	60	7.73	750	1, 2, 3, 4, 5, 6, 7, 8, 10, 11, 12
UV-231	CHANGEAIR	FRESHMEN HCW - B CABINET	1100	400	0.25	ECM	1/2	4.1	4.5	1	54.7	44	90	180	151	3.9	0.60	2-WAY	4.5	5	43.1	29.7	80	54	45	56	8.5	2.40	2-WAY	277	1	60	7.73	750	1, 2, 3, 4, 5, 6, 7, 8, 10, 11, 12
UV-236	CHANGEAIR	FRESHMEN HCW - B CABINET	1300	600	0.25	ECM	1/2	4.1	4.5	2	75.3	37	90	180	150	5.2	0.50	2-WAY	4.5	5	53.1	35.9	82	55	45	56	10.5	3.30	2-WAY	277	1	60	7.73	750	1, 2, 3, 4, 5, 6, 7, 8, 10, 11, 12
UV-239	CHANGEAIR	FRESHMEN HCW - B CABINET	900	425	0.25	ECM	1/2	4.1	4.5	1	52.9	36	90	180	154	4.1	0.60	2-WAY	4.5	4	60.2	23.9	82	56	45	55	7.0	1.50	2-WAY	277	1	60	7.73	750	1, 2, 3, 4, 5, 6, 7, 8, 10, 11, 12
UV-242	CHANGEAIR	FRESHMEN HCW - B CABINET	1100	500	0.25	ECM	1/2	4.1	4.5	1	63.1	38	90	180	162	7.2	1.50	2-WAY	4.5	5	66.0	31.5	82	54	45	56	9.5	2.80	2-WAY	277	1	60	7.73	750	1, 2, 3, 4, 5, 6, 7, 8, 10, 11, 12
UV-243	CHANGEAIR	FRESHMEN HCW - B CABINET	1150	500	0.25	ECM	1/2	4.1	4.5	1	63.9	39	90	180	162	7.4	1.60	2-WAY	4.5	5	48.0	32.2	81	54	45	56	9.5	2.80	2-WAY	277	1	60	7.73	750	1, 2, 3, 4, 5, 6, 7, 8, 10, 11, 12
UV-246	CHANGEAIR	FRESHMEN HCW - B CABINET	700	300	0.25	ECM	1/2	4.1	4.5	1	32.3	39	90	180	151	2.3	0.20	2-WAY	4.5	4	45.8	19.4	81	54	45	55	6.0	1.20	2-WAY	277	1	60	7.73	750	1, 2, 3, 4, 5, 6, 7, 8, 10, 11, 12
UV-247	CHANGEAIR	FRESHMEN HCW - B CABINET	700	300	0.25	ECM	1/2	4.1	4.5	1	32.3	39	90	180	151	2.3	0.20	3-WAY	4.5	4	45.8	19.4	81	54	45	55	6.0	1.20	3-WAY	277	1	60	7.73	750	1, 2, 3, 4, 5, 6, 7, 8, 10, 11, 12
UV-252	CHANGEAIR	FRESHMEN HCW - B CABINET	900	250	0.25	ECM	1/2	4.1	4.5	1	38.5	50	90	180	133	1.7	0.20	3-WAY	4.5	4	26.2	20.9	79	57	45	55	5.5	1.10	2-WAY	277	1	60	7.73	750	1, 2, 3, 4, 5, 6, 7, 8, 10, 11, 12

1. DISPOSABLE PLEATED FILTERS, MERV 8 TYPE.
2. SUPPLY AND RELIEF FANS ARE ELECTRONICALLY COMMUTATED MOTORS (ECM).
3. CONTROL VALVES MUST FAIL OPEN.
4. FACTORY INSTALLED DISCONNECT SWITCH.
5. HOT WATER COILS BASED ON 100% WATER, CHILLED WATER COILS BASED ON 30% PROPYLENE GLYCOL SOLUTION.
6. UNIT TO BE PROVIDED WITH DUCT SHROUD TO CONCEAL DUCTWORK UP THRU CEILING SPACE.
7. UNIT TO BE PROVIDED WITH PEDESTAL BASE.
8. HYDRONIC PIPING CONNECTIONS FROM ABOVE.
9. HYDRONIC PIPING CONNECTION FROM BELOW.
10. INCLUDE PIPE ACCESSORY PACKAGE FROM MANUFACTURER.
11. INCLUDE CO2 SENSORS TO UTILIZE DEMAND CONTROLLED VENTILATION.
12. PIPE CONDENSATE OUT BACK OF LOUVER.

CABINET UNIT HEATER SCHEDULE

MARK	MANUFACTURER	MODEL	CFM	GPM	EWT (°F)	BTUH	ELECTRICAL			NOTES
							VOLTAGE	PHASE	HORSEPOWER	
CUH-1	MODINE	WCC00208	250	1.3	180	10500	115	1	1/3	1, 2
CUH-2	MODINE	WCC00208	250	1.3	180	10500	115	1	1/3	1, 3
CUH-3	MODINE	WCC00208	250	1.3	180	10500	115	1	1/3	1, 3
CUH-4	MODINE	WCC00208	250	1.3	180	10500	115	1	1/3	1, 3
CUH-5	MODINE	WCC00208	250	1.3	180	10500	115	1	1/3	1, 3
CUH-6	MODINE	WCC00208	250	1.3	180	10500	115	1	1/3	1, 3
CUH-7	MODINE	WCC00208	250	1.3	180	10500	115	1	1/3	1, 2

1. FULLY RECESSED IN WALL.
2. INCLUDE 3-WAY CONTROL VALVE.
3. INCLUDE 2-WAY CONTROL VALVE.
4. INCLUDE INTEGRAL DISCONNECT SWITCH.

UNIT HEATER SCHEDULE

MARK	MANUFACTURER	MODEL	AIRFLOW	GPM	EWT (°F)	BTUH	ELECTRICAL			NOTES
							VOLTAGE	PHASE	HORSEPOWER	
UH-1	MODINE	HSB 18	340 CFM	2.0 GPM	180	18000	115	1	1/60	1

1. INCLUDE 2-WAY CONTROL VALVE.

HYDRONIC RADIANT PANEL SCHEDULE

MARK	MANUFACTURER	MODEL	AREA SERVED	PHYSICAL PROPERTIES			HEATING ELEMENT			NOTES
				ENCLOSER HEIGHT	PIPE SIZE	ELEMENT LENGTH	GPM	EWT (°F)	BTU/HR	
RP-1	RUNTAL	R3F-2	139	6"	3/4"	20' - 0"	2.5	180	20000	1, 2
RP-2	RUNTAL	RSF-2	163	6"	3/4"	10' - 0"	1.5	180	10000	1, 2
RP-3	RUNTAL	R3F-2	165	6"	3/4"	10' - 0"	1.5	180	10000	1, 2
RP-4	RUNTAL	R3F-2	190	6"	3/4"	16' - 0"	1.5	180	16000	1, 3
RP-5	RUNTAL	R3F-2	189	6"	3/4"	16' - 0"	1.5	180	16000	1, 3
RP-6	RUNTAL	R3F-2	215	6"	3/4"	5' - 0"	1.5	180	5000	1, 3

1. INCLUDE 2-WAY CONTROL VALVE.
2. PEDESTAL BASE FLOOR-MOUNTED.
3. WALL-MOUNTED.

HYDRONIC FIN TUBE RADIATOR SCHEDULE

MARK	MANUFACTURER	MODEL	AREA SERVED	PHYSICAL PROPERTIES					HEATING ELEMENT			NOTES
				ROWS	ENCLOSER HEIGHT	PIPE SIZE	ELEMENT LENGTH	FINS PER FOOT	GPM	AWT (°F)	BTU/HR	
FTR-1	MODINE	SP 3-1/4" x 2-3/4"	143	1	10"	3/4"	5' - 0"	34	0.5	170	2600	1
FTR-2	MODINE	SP 3-1/4" x 2-3/4"	144	1	10"	3/4"	5' - 0"	34	0.5	170	2600	1
FTR-3	MODINE	SP 3-1/4" x 2-3/4"	145	1	10"	3/4"	1' - 0"	34	0.5	170	520	1
FTR-4	MODINE	SP 3-1/4" x 2-3/4"	147	1	10"	3/4"	6' - 0"	34	0.5	170	3120	1
FTR-5	MODINE	SP 3-1/4" x 2-3/4"	147	1	10"	3/4"	6' - 0"	34	0.5	170	3120	1
FTR-6	MODINE	SP 3-1/4" x 2-3/4"	153	1	10"	3/4"	1' - 0"	34	0.5	170	520	1
FTR-7	MODINE	SP 3-1/4" x 2-3/4"	153	1	10"	3/4"	1' - 0"	34	0.5	170	520	1
FTR-8	MODINE	SP 3-1/4" x 2-3/4"	197	1	10"	3/4"	2' - 0"	34	0.5	170	1040	1
FTR-9	MODINE	SP 4-1/4" x 4-1/4"	TUNNEL	3	24"	1 1/4"	9' - 0"	50	2.0	170	18540	2
FTR-10	MODINE	SP 4-1/4" x 4-1/4"	TUNNEL	3	24"	1 1/4"	9' - 0"	50	2.0	170	18540	2
FTR-11	MODINE	SP 4-1/4" x 4-1/4"	TUNNEL	3	24"	1 1/4"	28' - 0"	50	5.75	170	57680	2
FTR-12	MODINE	SP 4-1/4" x 4-1/4"	TUNNEL	3	24"	1 1/4"	20' - 0"	50	4.25	170	41200	2
FTR-13	MODINE	SP 3-1/4" x 2-3/4"	202	1	10"	3/4"	5' - 0"	34	0.5	170	2600	2
FTR-14	MODINE	SP 3-1/4" x 2-3/4"	200	1	10"	3/4"	5' - 0"	34	0.5	170	2600	2
FTR-15	MODINE	SP 3-1/4" x 2-3/4"	199	1	10"	3/4"	2' - 0"	34	0.5	170	1040	2
FTR-16	MODINE	SP 3-1/4" x 2-3/4"	205	1	10"	3/4"	2' - 0"	34	0.5	170	1040	2

1. INCLUDE THERMOSTAT CONTROLLED 2-WAY CONTROL VALVE.
2. INCLUDE DANFOSS SELF-CONTAINED 2-WAY CONTROL VALVE.

RADIANT CEILING PANEL SCHEDULE

MARK	MANUFACTURER	MODEL	AREA SERVED	PHYSICAL PROPERTIES		HEATING ELEMENT			NOTES
				PIPE SIZE	PANEL LENGTH	GPM	EWT (°F)	BTU/HR	
RCP-1	RITTLING	CARBOLINE DIN EN 14037	150	1/2"	10' - 0"	0.5	180	3600	1, 2
RCP-2	RITTLING	CARBOLINE DIN EN 14037	150	1/2"	4' - 0"	0.5	180	1500	1, 2

1. INCLUDE 2-WAY CONTROL VALVE.
2. 120" X 24" MODEL.

HYDRONIC CEILING CASSETTES

MARK	MANUFACTURER	MODEL	AREA SERVED	AIRFLOW (CFM)				HYDRONIC HEATING		HYDRONIC COOLING		ELECTRICAL			OPERATING WEIGHT (LBS)	NOTES
				LOW	MED	HIGH	FRESH AIR	CAPACITY (BTU/H)	FLOW (GPM)	CAPACITY (BTU/H)	FLOW (GPM)	VOLTAGE	PHASE	HORSEPOWER		
HCC-1	CARRIER	42WKN08AAEBA	ASSITANT PRINCIPAL	260	300	350	40	13800	1.5	6600	1.5	115	1	1/8	45	1, 2, 3, 4
HCC-2	CARRIER	42WKN08AAEBA	OFFICE	260	300	350	40	13800	1.5	6600	1.5	115	1	1/8	45	1, 2, 3, 4
HCC-3	CARRIER	42WKN08AAEBA	OFFICE	260	300	350	40	13800	1.5	6600	1.5	115	1	1/8	45	1, 2, 3, 4
HCC-4	CARRIER	42WKN08AAEBA	TEACHER WORK ROOM	260	300	350	40	13800	1.5	6600	1.5	115	1	1/8	45	1, 2, 3, 4

1. INCLUDE 2-WAY CONTROL VALVES.
2. PROVIDE DEFLECT-O SVMAW4 4" BROWN WALL CAP FOR FRESH AIR INTAKE.
3. USE SINGLE 3" DUCT KNOCK-OUT FOR FRESH AIR INTAKE. TRANSITION TO 4" DUCT FOR ROUTING TO WALL.
4. INCLUDE CONDENSATE PUMP FROM MANUFACTURER

CONVECTOR SCHEDULE

MARK	MANUFACTURER	MODEL	GPM	EWT (°F)	BTUH	NOTES
CVR-1	MODINE	PL044032	0.6	180	7296	1, 2
CVR-2	MODINE	PL044032	0.6	180	7296	1, 2
CVR-3	MODINE	PL044032	0.6	180	7296	1, 2
CVR-4	MODINE	PL044032	0.6	180	7296	1, 2
CVR-5	MODINE	PL042426	0.5	180	3696	1, 2
CVR-6	MODINE	PL042426	0.5	180	3696	1, 2
CVR-7	MODINE	PL042426	0.5	180	3696	1, 2
CVR-8	MODINE	PL042426	0.5	180	3696	1, 2

1. INCLUDE 2-WAY CONTROL VALVE.
2. FULLY RECESSED IN WALL.

BLOWER COIL SCHEDULE

GENERAL			AIRFLOW			HYDRONIC HEATING				HYDRONIC COOLING				ELECTRICAL					FLA	WEIGHT	NOTES
MARK	MANUFACTURER	MODEL	CFM	E.S.P. (IN-WG)	OA CFM	MBH	EWT (°F)	LWT (°F)	GPM	MBH	EWT (°F)	LWT (°F)	GPM	HORSEPOWER	FAN QTY	VOTLAGE	PHASE	FREQUENCY			
BC-1	CARRIER	42BHE20	2000	0.10	200	70.5	180	140	3.6	56.7	44	54	12.0	3/4	1	277	1	60	4.2	311	1, 2
BC-2	CARRIER	42BHE16	1600	0.10	250	56.5	180	140	2.9	45.6	44	54	9.6	3/4	1	277	1	60	4.2	284	1, 2
BC-3	CARRIER	42BHE10	1000	0.10	200	39.1	180	140	2.0	30.7	44	54	6.5	3/4	1	277	1	60	4.2	231	1, 2

1. INCLUDE MIXING BOX WITH TOP OA AND REAR RA DAMPERS.
2. INCLUDE 2-WAY CONTROL VALVES.
3. INCLUDE CONDENSATE PUMP EQUAL TO HYDROMATIC HCU20S. 1

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LANSING SCHOOL DISTRICT
FAIRVIEW ADDITIONS AND RENOVATIONS
LANSING, MICHIGAN

MECHANICAL SCHEDULES

REVISIONS

REV	DESCRIPTION	DATE
1	ADDENDUM 1	2/14/2017

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SCALE:
PROJ. #: 160400
DATE: 02/14/2017
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ADDENDUM 1

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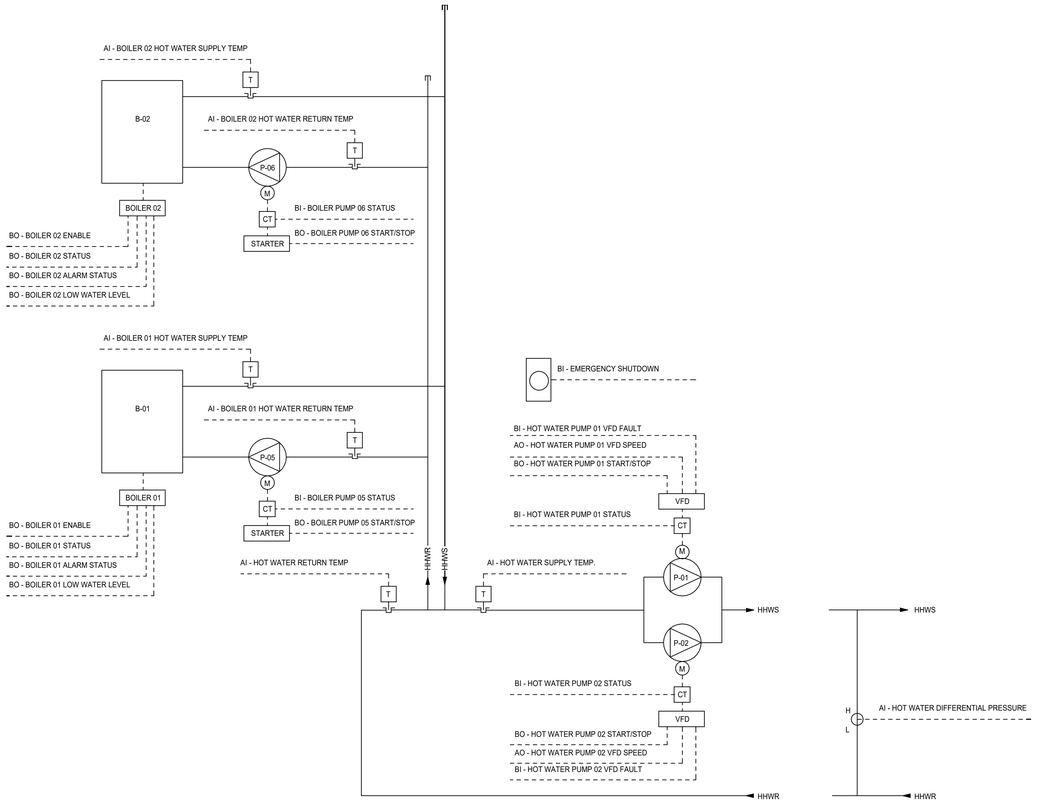
WE RECYCLE

BUILDING: FAIRVIEW ELEMENTARY

SYSTEM: HEATING HOT WATER

SYSTEM COMPONENT:	POINT ID	ABBREVIATION	POINT LEGEND: ELECTRIC DEVICE / CONTROL DEVICE / DEVICE CSE	SYSTEM OUTPUTS: BINARY: SPEED CHANGING / TWO POSITION / STAGING / THREE POSITION	SYSTEM OUTPUTS: ANALOG: PROPORTIONAL / FLOW RATE / TEMPERATURE	SYSTEM INPUTS: BINARY: TEMPERATURE LIMIT / PROCESS LIMIT / FLOW / PRESSURE LIMIT	SYSTEM INPUTS: ANALOG: TEMPERATURE / FLOW RATE / PRESSURE	SYSTEM SOFTWARE/CONTROL: ALARM PROCESSING: SCHEDULE SYSTEM OP. / TIME/DATE PROGRAMS / INTERLOCK PROGRAMS / TIMED EQUIPMENT CYCLING / DEMAND LIMITING / OPTIMUM START/STOP	SYSTEM SOFTWARE/CONTROL: APPLICATION/FUNCTION: PROPORTIONAL CONTROL / PID CONTROL / SEQUENCE CONTROL / DATA COMMUNICATION	REMARKS
HOT WATER DIFF.. PRESS.	AI	HWDP					●			
HOT WATER RETURN TEMP.	AI	HWRT					●			
HOT WATER SUPPLY TEMP.	AI	HWST					●			
BOILER 01 INLET TEMP.	AI	B01-HWRT					●			
BOILER 01 OUTLET TEMP.	AI	B01-HWST					●			
BOILER 02 INLET TEMP.	AI	B02-HWRT					●			
BOILER 02 OUTLET TEMP.	AI	B02-HWST					●			
HOT WATER PUMP 01 VFD SPEED	AO	HWP01-SP			●					
HOT WATER PUMP 02 VFD SPEED	AO	HWP02-SP			●					
BOILER 01 HOT WATER SUPPLY RESET TEMP.	AO	B01-HWSRT			●					
BOILER 01 HOT WATER RETURN RESET TEMP.	AO	B01-HWRRT			●					
BOILER 02 HOT WATER SUPPLY RESET TEMP.	AO	B02-HWSRT			●					
BOILER 02 HOT WATER RETURN RESET TEMP.	AO	B02-HWRRT			●					
BOILER 01 ALARM STATUS	BI	B01-ASTS			●					
BOILER 01 LOW WATER LEVEL	BI	B01-LWL			●					
BOILER 02 ALARM STATUS	BI	B02-ASTS			●					
BOILER 02 LOW WATER LEVEL	BI	B02-LWL			●					
HOT WATER PUMP 01 VFD FAULT	BI	HWP01-FLT				●				
HOT WATER PUMP 02 VFD FAULT	BI	HWP02-FLT				●				
BOILER PUMP 05 STATUS	BI	BP05-STS				●				
BOILER PUMP 06 STATUS	BI	BP06-STS				●				
BOILER 01 STATUS	BI	P01-STS				●				
BOILER 02 STATUS	BI	P02-STS				●				
BOILER PUMP 05 START/STOP	BO	P05-SS	●							
BOILER PUMP 06 START/STOP	BO	P06-SS	●							
BOILER 01 ENABLE	BO	B01-EN	●							
BOILER 02 ENABLE	BO	B02-EN	●							
OUTSIDE AIR TEMP.	AI	OAT					●			
HOT WATER DIFF. PRESS. SETPOINT	AI	HWDP-ST					●			
HIGH HOT WATER DIFF. PRESS.	AI	HW-HDPT						●		
LOW HOT WATER DIFF. PRESS.	AI	HW-LDP						●		
HOT WATER PUMP 01 FAILURE	BI	HWP01-F								
HOT WATER PUMP 02 FAILURE	BI	HWP02-F								
BOILER PUMP 05 RUNNING IN HAND	BI	P05-IH								
BOILER PUMP 05 RUNTIME	AI	P05-RT								
BOILER PUMP 06 FAILURE	BI	P06-F								
BOILER PUMP 06 RUNNING IN HAND	BI	P06-IH								
BOILER PUMP 06 RUNTIME	AI	P06-RT								
BOILER 01 FAILURE	BI	B01-F								
BOILER 01 RUNNING IN HAND	BI	B01-IH								
BOILER 01 RUNTIME	AI	B01-RT								
BOILER 02 FAILURE	BI	B02-F								
BOILER 02 RUNNING IN HAND	BI	B02-IH								
BOILER 02 RUNTIME	AI	B02-RT								
LEAD BOILER FAILURE	BI	LB-F								
HIGH PRIMARY HOT WATER SUPPLY TEMP.	AI	HW-HST						●		
LOW PRIMARY HOT WATER SUPPLY TEMP.	AI	HW-LST						●		
BOILER 01 HIGH HOT WATER SUPPLY TEMP.	AI	B01-HHWST						●		
BOILER 01 LOW HOT WATER SUPPLY TEMP.	AI	B01-LHWST						●		
BOILER 02 HIGH HOT WATER SUPPLY TEMP.	AI	B02-HHWST						●		
BOILER 02 LOW HOT WATER SUPPLY TEMP.	AI	B02-LHWST						●		



1 HEATNG HOT WATER CONTROL DIAGRAM
N.T.S.

SEQUENCE OF OPERATION FOR HEATING HOT WATER SYSTEM

BOILER SYSTEM - RUN CONDITIONS:

THE BOILER SYSTEM SHALL BE ENABLED TO RUN WHENEVER OUTSIDE AIR TEMPERATURE IS LESS THAN 65°F (ADJ.). TO PREVENT SHORT CYCLING, EACH BOILER SHALL RUN FOR AND BE OFF FOR MINIMUM ADJUSTABLE TIMES (BOTH USER DEFINABLE), UNLESS SHUTDOWN ON SAFETIES OR OUTSIDE AIR CONDITIONS. EACH BOILER SHALL RUN SUBJECT TO ITS OWN INTERNAL SAFETIES AND CONTROLS.

BOILER SAFETIES:

THE FOLLOWING SAFETIES SHALL BE MONITORED:

- BOILER ALARM.
- LOW WATER LEVEL.

ALARMS SHALL BE PROVIDED AS FOLLOWS:

- BOILER ALARM.
- LOW WATER LEVEL ALARM.

HOT WATER PUMP (P-1 & P-2) LEAD/LAG OPERATION:

THE TWO HOT WATER PUMPS SHALL OPERATE IN A LEAD/LAG FASHION.

- THE LEAD PUMP SHALL RUN FIRST.
- ON FAILURE OF THE LEAD PUMP, THE LAG PUMP SHALL RUN AND THE LEAD PUMP SHALL TURN OFF.
- THE LAG PUMP SHALL STAGE ON AND RUN IN UNISON WITH THE LEAD PUMP WHEN THE LEAD PUMP EXCEEDS 90% OF OPERATING SPEED (ADJ).
- THE LAG PUMP SHALL STAGE OFF WHEN THE SPEED DROPS BELOW 30% (ADJ).

THE DESIGNATED LEAD PUMP SHALL ROTATE UPON ONE OF THE FOLLOWING CONDITIONS (USER SELECTABLE):

- MANUALLY THROUGH A SOFTWARE SWITCH
- IF PUMP RUNTIME (ADJ.) IS EXCEEDED
- DAILY
- WEEKLY
- MONTHLY

ALARMS SHALL BE PROVIDED AS FOLLOWS:

- FAILURE: COMMANDED ON, BUT THE STATUS IS OFF.
- RUNNING IN HAND: COMMANDED OFF, BUT THE STATUS IS ON.
- RUNTIME EXCEEDED: STATUS RUNTIME EXCEEDS A USER DEFINABLE LIMIT.
- VFD FAULT.

HOT WATER DIFFERENTIAL PRESSURE CONTROL:

THE CONTROLLER SHALL MEASURE HOT WATER DIFFERENTIAL PRESSURE AND MODULATE THE HOT WATER PUMP VFDS IN SEQUENCE TO MAINTAIN ITS HOT WATER DIFFERENTIAL PRESSURE SETPOINT. THE FOLLOWING SETPOINTS ARE RECOMMENDED VALUES. ALL SETPOINTS SHALL BE FIELD ADJUSTED DURING THE TEST AND BALANCE PERIOD TO MEET THE REQUIREMENTS OF ACTUAL FIELD CONDITIONS. THE CONTROLLER SHALL MODULATE HOT WATER PUMP SPEEDS TO MAINTAIN A HOT WATER DIFFERENTIAL PRESSURE OF 10 PSI (ADJ.). THE VFDS MINIMUM SPEED SHALL NOT DROP BELOW 20% (ADJ.).

ON DROPPING HOT WATER DIFFERENTIAL PRESSURE, THE VFDS SHALL STAGE ON AND RUN TO MAINTAIN SETPOINT AS FOLLOWS:

- THE CONTROLLER SHALL MODULATE THE LEAD VFD TO MAINTAIN SETPOINT.
- IF THE LEAD VFD SPEED IS GREATER THAN A SETPOINT OF 90% (ADJ.), THE LAG VFD SHALL STAGE ON.
- THE LAG VFD SHALL RAMP UP TO MATCH THE LEAD VFD SPEED AND THEN RUN IN UNISON WITH THE LEAD VFD TO MAINTAIN SETPOINT.

ON RISING HOT WATER DIFFERENTIAL PRESSURE, THE VFDS SHALL STAGE OFF AS FOLLOWS:

- IF THE VFDS SPEEDS DROPS BACK TO 60% (ADJ.) BELOW SETPOINT, THE LAG VFD SHALL STAGE OFF.
- THE LEAD VFD SHALL CONTINUE TO RUN TO MAINTAIN SETPOINT.

ALARMS SHALL BE PROVIDED AS FOLLOWS:

- HIGH HOT WATER DIFFERENTIAL PRESSURE: IF 25% (ADJ.) GREATER THAN SETPOINT.
- LOW HOT WATER DIFFERENTIAL PRESSURE: IF 25% (ADJ.) LESS THAN SETPOINT.

BOILER PUMPS:

THE BOILER PUMP(S) SHALL RUN ANYTIME THE BOILER(S) ARE CALLED TO RUN AND SHALL HAVE A USER DEFINABLE DELAY (ADJ.) ON STOP.

ALARMS SHALL BE PROVIDED AS FOLLOWS:

- BOILER PUMP FAILURE: COMMANDED ON, BUT THE STATUS IS OFF.
- BOILER PUMP RUNNING IN HAND: COMMANDED OFF, BUT THE STATUS IS ON.
- BOILER PUMP RUNTIME EXCEEDED: STATUS RUNTIME EXCEEDS A USER-DEFINABLE LIMIT.

BOILER LEAD/STANDBY OPERATION:

THE BOILERS SHALL CYCLE ON IN A LEAD/LAG FASHION WHEN CALLED TO RUN AND FLOW IS PROVEN.

- THE LEAD BOILER SHALL RUN FIRST.
- ON FAILURE OF THE LEAD BOILER, THE LAG BOILER(S) SHALL RUN AND THE LEAD BOILER SHALL TURN OFF.
- AS HOT WATER TEMPERATURE DROPS BELOW A SETPOINT OF 150°F (ADJ.), THE LAG BOILER(S) SHALL STAGE ON AND RUN IN UNISON WITH THE LEAD BOILER TO MAINTAIN HOT WATER TEMPERATURE SETPOINT.
- AS HOT WATER TEMPERATURE RISES BACK TO 20°F ABOVE SETPOINT, THE LAG BOILER(S) SHALL STAGE OFF.

THE DESIGNATED LEAD BOILER SHALL ROTATE UPON ONE OF THE FOLLOWING CONDITIONS: (USER SELECTABLE):

- MANUALLY THROUGH A SOFTWARE SWITCH
- IF BOILER RUNTIME (ADJ.) IS EXCEEDED
- DAILY
- WEEKLY
- MONTHLY

ALARMS SHALL BE PROVIDED AS FOLLOWS:

- FAILURE: COMMANDED ON BUT THE STATUS IS OFF.
- RUNNING IN HAND: COMMANDED OFF BUT THE STATUS IS ON.
- RUNTIME EXCEEDED: STATUS RUNTIME EXCEEDS A USER DEFINABLE LIMIT.
- LEAD BOILER FAILURE: THE LEAD BOILER IS IN FAILURE AND THE STANDBY BOILER IS ON.

HOT WATER SUPPLY TEMPERATURE SETPOINT RESET:

THE HOT WATER SUPPLY TEMPERATURE SETPOINT SHALL RESET BASED ON OUTSIDE AIR TEMPERATURE. AS OUTSIDE AIR TEMPERATURE RISES FROM 10°F (ADJ.) TO 50°F (ADJ. THE HOT WATER SUPPLY TEMPERATURE SETPOINT SHALL RESET DOWNWARDS FROM 180°F (ADJ.) TO 140°F (ADJ.) FROM THE CURRENT BOILER SETPOINT.

PRIMARY HOT WATER TEMPERATURE MONITORING:

THE FOLLOWING TEMPERATURES SHALL BE MONITORED:

- PRIMARY HOT WATER SUPPLY.
- PRIMARY HOT WATER RETURN.

ALARMS SHALL BE PROVIDED AS FOLLOWS:

- HIGH PRIMARY HOT WATER SUPPLY TEMP: IF GREATER THAN 200°F (ADJ.).
- LOW PRIMARY HOT WATER SUPPLY TEMP: IF LESS THAN 100°F (ADJ.).

BOILER HOT WATER TEMPERATURE MONITORING:

THE FOLLOWING TEMPERATURES SHALL BE MONITORED:

- BOILER HOT WATER SUPPLY.
- BOILER HOT WATER RETURN.

ALARMS SHALL BE PROVIDED AS FOLLOWS:

- HIGH HOT WATER SUPPLY TEMP: IF GREATER THAN 200°F (ADJ.).
- LOW HOT WATER SUPPLY TEMP: IF LESS THAN 100°F (ADJ.).

SEQUENCE OF OPERATION FOR VARIABLE REFRIGERANT FLOW (VRF) SYSTEM

GENERAL:

THE SYSTEM STATUS SHALL BE MONITORED AND CONTROLLED REMOTELY BY BMS. OCCUPIED/UNOCCUPIED CONTROLS SHALL BE MANAGED BY BMS.

INDOOR UNITS SHALL BE CONTROLLED BY ZONE STATUS OF OCCUPIED/UNOCCUPIED.

CONDENING UNIT IS INTERLOCKED TO ENERGIZE ON A CALL FROM THE INDOOR UNITS.

AIRFLOW CONTROL:

DURING THE HEATING SEASON, THE FINNED-TUBE RADIATORS IN THE SPACES SHALL MODULATE TO MAINTAIN SPACE TEMPERATURE. THE INDOOR UNITS ON THE VRF SHALL ENERGIZE TO PROIVDE MINIMUM VENTILATION AIRFLOW AND MAINTAIN A SPACE AIR TEMPERATURE OF 70°F.

DURING THE COOLING SEASON, THE INDOOR UNITS SHALL RUN CONTINUOUSLY.

TEMPERATURE CONTROL:

THE DISCHARGE AIR TEMPERATURE FOR THE INDOOR UNITS (IU-1, IU-2) SHALL MODULATE THE DXV BASED ON A CALL FOR HEATING OF COOLING.

SUPPLY AIR DISCHARGE TEMPERATURES SHALL BE BASED ON THE FOLLOWING ADJUSTABLE SETPOINTS.
HEATING: 70°F
COOLING: 72°F

VENTILATION:

A CALL FOR HEATING OR COOLING SHALL ENERGIZE THE ENERGY RECOVERY VENTILATOR (ERV-1).

SEQUENCE OF OPERATION FOR KITCHEN HOOD

GENERAL:

KITCHEN HOOD (H-1) SHALL BE INTERLOCKED TO RUN WHENEVER ASSOCIATED KITCHEN EQUIPMENT IS RUNNING.

EXHAUST FAN (EF-19) SHALL BE INTERLOCKED TO RUN WHENEVER THE KITCHEN HOOD IS IN OPERATION.

MAKE-UP AIR:

MAKE-UP AIR FOR THE KITCHEN SHALL BE PROVIDED BY A COMBINATION OF EXTRA INTAKE AIR THROUGHOUT THE BUILDING AND AHU-3, WHICH SERVES THE KITCHEN AND SHALL PROVIDE 600 CFM OA WHEN KITCHEN HOOD HD-1 IS IN OPERATION.

SEQUENCE OF OPERATION FOR EXHAUST SYSTEM

GENERAL EXHAUST:

THREE EXHAUST FANS SERVING THE THREE WINGS OF THE BUILDING, SHALL BE ENERGIZED BASED ON BUILDING STATIC PRESSURE OF 0.08" WC (ADJ). EXHAUST FANS SHALL BE DE-ENERGIZED ONCE BUILDING STATIC PRESSURE GOES BELOW 0.04" WC (ADJ.)

BATHROOM EXHAUST:

EXHAUST FANS SERVING BATHROOMS SHALL BE INTERLOCKED WITH THE LIGHTSWITCH TO OPERATE WHENEVER THE LIGHTS ARE ON.

TECHNOLOGY ROOM EXHAUST:

EXHAUST FANS SERVING TECHNOLOGY SPACES (IDF ROOMS) SHALL RUN CONSTANTLY WHEN SPACE TEMPERATURE IS ABOVE 85°F.

TUNNEL EXHAUST:

EXHAUST FAN SERVING THE TUNNEL SHALL RUN CONTINUOUSLY WHEN THE TUNNEL REACHES 60% RH AND SHUT DOWN WHEN TUNNEL DROPS BELOW 55% RH. INTERLOCK EXHAUST FAN WITH SF-1. DISABLE EF-14 AND SF-1 AND ALARM BMS IFTEMPERATURE IN TUNNEL DROPS BELOW 40°F.

SEQUENCE OF OPERATION FOR ENERGY RECOVERY VENTILATOR

VENTILATION:

THE ENERGY RECOVER VENTILATOR SHALL RUN CONTINUOUSLY WHENEVER THE VARIABLE REFRIGERANT FLOW SYSTEM IS IN USE.

THE ENERGY RECOVER VENTILATOR SHALL NOT RUN WHEN THE VARIABLE REFRIGERANT FLOW SYSTEM IS NOT IN USE.

PRE-HEAT:

THE ELECTRIC PRE-HEAT OPTION ON THE ERV SHALL BE USED TO DEFROST THE CORE OF THE ERV.

ALARMS & SAFETIES:

LOW TEMPERATURE LOCKOUT - THE ERV SHUT DOWN COMPLETELY AT AN OUTDOOR AIR TEMPERATURE OF -20°F (ADJ.)

SEQUENCE OF OPERATION FOR HYDRONIC CEILING CASSETTES

OCCUPIED MODE:

THE HYDRONIC CEILING CASSETTE SHALL RUN CONTINUOUSLY WHEN THE SPACE IS IN OCCUPIED MODE.

HEATING MODE:

HEATING COIL CONTROL VALVE - THE CONTROL VALVE ON THE HEATING COIL SHALL MODULATE TO MAINTAIN A SPACE TEMPERATURE OF 68°F IN OCCUPIED MODE, AND SET BACK TO 62°F IN UNOCCUPIED MODE.

COOLING MODE:

COOLING COIL CONTROL VALVE – THE CONTROL VALVE ON THE COOLING COIL SHALL MODULATE TO MAINTAIN A SPACE TEMPERATURE OF 72°F DURING OCCUPIED MODE AND SHALL BE SET BACK TO MAINTAIN A SETPOINT OF 78°F DURING UNOCCUPIED MODE.

VENTILATION:

THE FRESH AIR KNOCK-OUTS SHALL ALLOW 40 CFM OF FRESH AIR TO THE UNIT WHEN THE UNIT OPERATES AT FULL CAPACITY.

ALARMS & SAFETIES:

FREEZE PROTECTION - IF THE AIR TEMPERATURE ON THE SUPPLY SIDE OF THE HEATING COIL FALLS BELOW 45°F AN ALARM SHALL SIGNAL AFTER A 30 SECOND DELAY. IF THE TEMPERATURE CONTINUES TO FALL BELOW 38°F, THE SUPPLY AND RETURN FANS SHALL SHUT DOWN, THE OA DAMPERS SHALL CLOSE, AND THE CONTROL VALVE ON THE HEATING COIL SHALL OPEN TO 100%. THE UV WILL NEED TO BE MANUALLY RESET.

SEQUENCE OF OPERATION FOR HYDRONIC COILS

FINNED TUBE RADIATORS / RADIANT CEILING PANELS:

FINNED TUBE RADIATORS (FTR-1 - FTR-8 AND THE RADIANT CEILING PANEL (RCP-1) IN THE WELCOME CENTER SHALL BE CONTROLLED BY A DANFOSS SELF-CONTAINED CONTROL VALVE. THE CONTROL VALVE SHALL MODULATE TO MAINTAIN A SPACE TEMPERATURE OF 65°F. THE VRF SYSTEM SHALL MODULATE TO MAINTAIN 70°F AND TEMPER REQUIRED VENTILATION AIR. THE VRF THERMOSTAT SETPOINT MUST BE HIGHER THAN THE PERIMETER HEAT.

FINNED TUBE RADIATORS (FTR-14 - FTR-16) IN THE THREE STORAGE ROOMS ON THE SOUTHEAST CORNER OF THE BUILDING SHALL BE PIPED IN SERIES AND CONTROLLED VIA A DANFOSS SELF-CONTAINED CONTROL VALVE IN FURNATURE STORAGE ROOM 205.

THE FINNED TUBE RADIATOR (FTR-13) IN THE FACILITIES ROOM SHALL BE CONTROLLED VIA LOCAL THERMOSTAT TO MAINTAIN A SPACE TEMPERATURE OF 68°F (ADJ.).

FINNED TUBE RADIATORS (FTR-9 - FTR-12) IN THE TUNNEL SHALL BE CONTROLLED VIA A DANFOSS SELF-CONTAINED CONTROL VALVE AND SHALL BE ENERGIZED WHEN THE SPACE TEMPERATURE DROPS BELOW 65°F.

RADIANT PANELS:

RADIENT PANELS SHALL BE CONTROLLED BY A DANFOSS SELF-CONTAINED CONTROL VALVE AND SHALL MAINTAIN A SPACE TEMPERATURE OF 65°F TO LIGHTEN HEATING LOAD DUE TO HIGH GLASS AREAS IN THE LEARNING COMMONS AND PROJECT LABS. VERTICAL UNIT VENTILATORS SHALL BE ENERGIZED TO MAINTAIN SPACE TEMPERATURE.

CONVECTORS:

CONVECTORS SHALL BE ENERGIZED ON A CALL FOR HEAT TO MAINTAIN A SPACE AIR TEMPERATURE OF 70°F (ADJ.).

CABINET UNIT HEATER:

CABINET UNIT HEATERS SHALL BE ENERGIZED ON A CALL FOR HEAT TO MAINTAIN A 75°F (ADJ.) SPACE AIR TEMPERATURE.

UNIT HEATER:

UNIT HEATER (UH-1) SHALL BE ENERGIZED ON A CALL FOR HEAT TO MAINTAIN A 60°F (ADJ.) SPACE AIR TEMPERATURE.

SEQUENCE OF OPERATION FOR BLOWER COILS

OCCUPIED MODE:

THE BLOWER COIL SHALL RUN CONTINUOUSLY WHEN THE SPACE IS IN OCCUPIED MODE.

HEATING MODE:

HEATING COIL CONTROL VALVE - THE CONTROL VALVE ON THE HEATING COIL SHALL MODULATE TO MAINTAIN A SPACE TEMPERATURE OF 68°F IN OCCUPIED MODE, AND SET BACK TO 62°F IN UNOCCUPIED MODE.

COOLING MODE:

COOLING COIL CONTROL VALVE – THE CONTROL VALVE ON THE COOLING COIL SHALL MODULATE TO MAINTAIN A SPACE TEMPERATURE OF 72°F DURING OCCUPIED MODE AND SHALL BE SET BACK TO MAINTAIN A SETPOINT OF 78°F DURING UNOCCUPIED MODE.

VENTILATION:

THE OUTDOOR AIR DAMPERS SHALL BE SET TO MINIMUM OUTDOOR AIR IN THE OCCUPIED MODE.

THE OUTDOOR AIR DAMPERS SHALL CLOSE IN UNOCCUPIED MODE.

ALARMS & SAFETIES:

FREEZE PROTECTION - IF THE AIR TEMPERATURE ON THE SUPPLY SIDE OF THE HEATING COIL FALLS BELOW 45°F AN ALARM SHALL SIGNAL AFTER A 30 SECOND DELAY. IF THE TEMPERATURE CONTINUES TO FALL BELOW 38°F, THE SUPPLY AND RETURN FANS SHALL SHUT DOWN, THE OA DAMPERS SHALL CLOSE, AND THE CONTROL VALVE ON THE HEATING COIL SHALL OPEN TO 100%. THE UV WILL NEED TO BE MANUALLY RESET.

SEQUENCE OF OPERATION FOR VERTICAL UNIT VENTILATORS

OCCUPIED MODE:

THE VERTICAL UNIT VENTILATOR SHALL RUN CONTINUOUSLY WHEN THE SPACE IS IN OCCUPIED MODE.

HEATING MODE:

HEATING COIL CONTROL VALVE - THE CONTROL VALVE ON THE HEATING COIL SHALL MODULATE TO MAINTAIN A SPACE AIR TEMPERATURE OF 72°F (ADJ) IN THE OUUPIED MODE AND 68°F (ADJ) IN THE UNOCCUPIED MODE.

SUPPLY FAN - COMMAND THE SUPPLY FAN ECM TO 50%. IF THE CONTROL VALVE MODULATE TO 90% OPEN, COMMAND THE ECM TO 100% OPEN. COMMAND THE ECM BACK TO 50% ONCE THE CONTROL VALVE MODULATES BACK DOWN TO 50%.

COOLING MODE:

COOLING COIL CONTROL VALVE - ON A CALL FOR COOLING, THE CONTROL VALVE ON THE COOLING COIL SHALL MODULATE TO MAINTAIN A DISCHARGE AIR TEMPERATURE OF 55°F. WHEN THE SPACE IS SATISFIED, REGULATE DISCHARGE AIR TEMPERATURE ROOM NEUTRAL.

SUPPLY FAN - THE ECM ON THE SUPPLY FAN SHALL MODULATE BETWEEN 30% AND 100% TO MAINTAIN A SPACE SETPOINT OF 72°F IN OCCUPIED MODE, AND 78°F IN UNOCCUPIED MODE.

ECONOMIZER MODE:

MIXED AIR DAMPERS - IN THE COOLING MODE, WHEN THE RETURN AIR ENTHALPY IS HIGHER THAN THE OUTDOOR AIR ENTHALPY, AND THE OUTSIDE AIR TEMPERATURE IS BELOW 65°F, MODULATE THE MIXED AIR DAMPERS TO MAINTAIN A 55°F MIXED AIR TEMPERATURE.

COOLING COIL CONTROL VALVE - ON A CALL FOR COOLING, THE CONTROL VALVE ON THE COOLING COIL SHALL MODULATE TO MAINTAIN A DISCHARGE AIR TEMPERATURE OF 55°F. WHEN THE SPACE IS SATISFIED, REGULATE DISCHARGE AIR TEMPERATURE ROOM NEUTRAL.

SUPPLY FAN - THE ECM ON THE SUPPLY FAN SHALL MODULATE BETWEEN 30% AND 100% TO MAINTAIN A SPACE SETPOINT OF 72°F IN OCCUPIED MODE, AND 78°F IN UNOCCUPIED MODE.

VENTILATION:

DEMAND-CONTROLLED VENTILATION - IN THE OCCUPIED MODE, THE SPACE SHALL UTILIZE DEMAND-CONTROLLED VENTILATION WITH CO2 SENSORS TO MODULATE THE DAMPERS TO MAINTAIN A SPACE CO2 LEVEL OF LESS THAN 1100 PPM.

THE OUTDOOR AIR DAMPERS SHALL CLOSE IN UNOCCUPIED MODE.

ALARMS & SAFETIES:

FREEZE PROTECTION - IF THE AIR TEMPERATURE ON THE SUPPLY SIDE OF THE HEATING COIL FALLS BELOW 45°F AN ALARM SHALL SIGNAL AFTER A 30 SECOND DELAY. IF THE TEMPERATURE CONTINUES TO FALL BELOW 38°F, THE SUPPLY AND RETURN FANS SHALL SHUT DOWN, THE OA DAMPERS SHALL CLOSE, AND THE CONTROL VALVE ON THE HEATING COIL SHALL OPEN TO 100%. THE UV WILL NEED TO BE MANUALLY RESET.

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LANSING SCHOOL DISTRICT
FAIRVIEW ADDITIONS AND RENOVATIONS
LANSING, MICHIGAN

MECHANICAL CONTROLS

REVISIONS

REV	DESCRIPTION	DATE
1	ADDENDUM 1	2/14/2017

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SCALE: As indicated
PROJ. #: 160400
DATE: 02/14/2017
SHEET
M-800

ADDENDUM 1
Addendum #1

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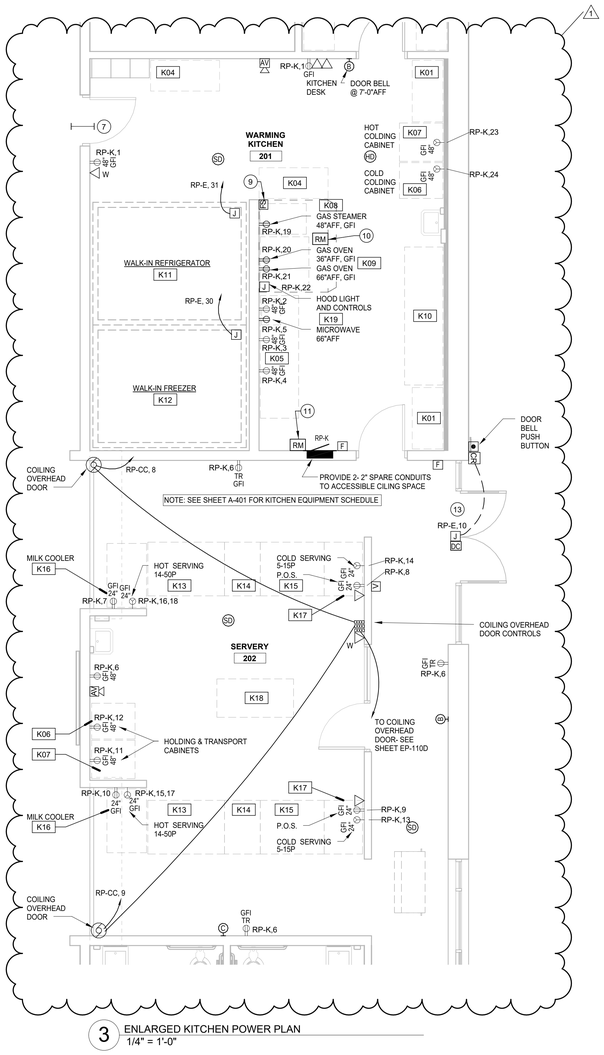
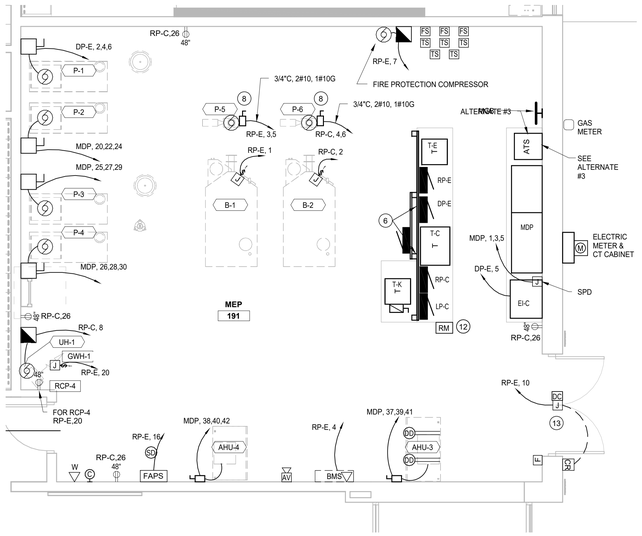


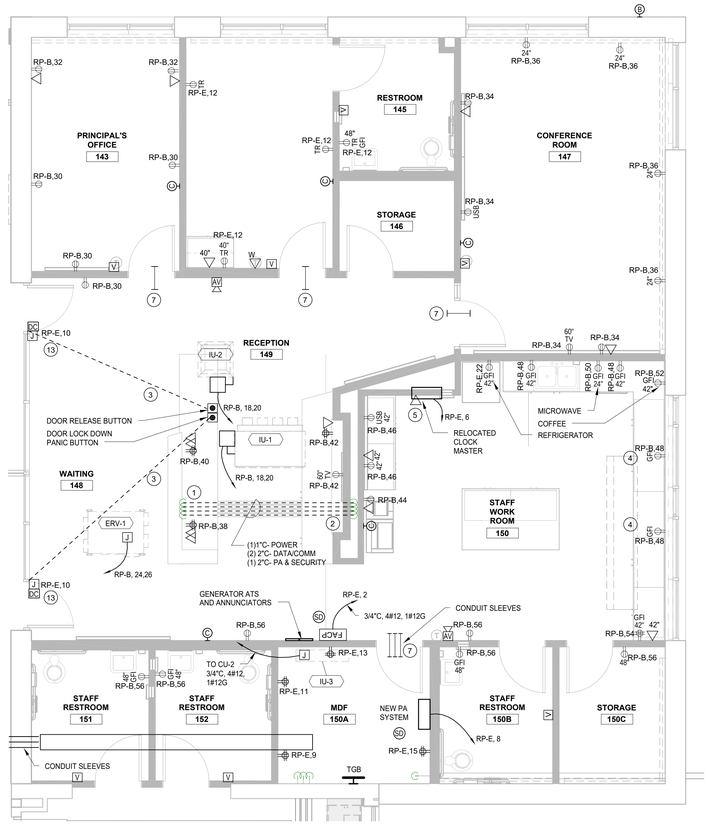
3 ENLARGED KITCHEN POWER PLAN
1/4" = 1'-0"

WALK-IN GENERAL NOTES:

A. ELECTRICAL CONTRACTOR (EC) SHALL FURNISH AND INSTALL ALL INTERCONNECTING WIRING FOR WALK-IN REFRIGERATOR AND FREEZER LIGHTS, DOOR HEATERS, COMPRESSORS, EVAPORATORS, ALARM SYSTEMS, HEATED PRESSURE RELIEF VENTS, WINDOW HEATERS, TIME CLOCKS, INTERLOCKS, ETC. IF UNITS ARE NOT PRE-WIRED, WIRE PER MANUFACTURER'S DRAWINGS. CONDUIT FOR WALK-IN LIGHTING SHALL BE RUN OVER TOP OF BOXES. INTERIOR CONDUIT RUNS ARE NOT ACCEPTABLE. ALL PENETRATIONS FOR CONDUIT AND REFRIGERATION LINES SHALL BE SEALED WITH FOAM TO INSURE THAT THERE ARE NO AIR LEAKAGES.
B. 120V/1PH, 8A FOR LIGHTS, ALARM, AND DOOR AND WINDOW HEATERS.
C. 120V/1PH, 1.8A FOR REFRIGERATOR EVAPORATOR COIL.
D. 208V/3PH, 1HP FOR REFRIGERATOR COMPRESSOR.
E. 120V/1PH, 10 FOR TO LIGHTS, ALARM, DOOR AND WINDOW HEATERS, HEATED PRESSURE RELIEF VENT, AND EVAPORATOR COIL.
F. 208V/1PH, 7A FOR FREEZER EVAPORATOR COIL.
G. 208V/3PH, 2HP FOR FREEZER COMPRESSOR.
H. ALL LOADS AND CONNECTIONS ARE TO BE VERIFIED WITH APPROVED SHOP DRAWINGS BEFORE INSTALLATION.



2 ENLARGED MECHANICAL ROOM MEP 191
1/4" = 1'-0"



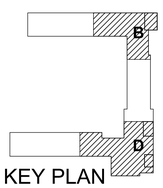
1 ENLARGED POWER PLAN WELCOME CENTER
1/4" = 1'-0"

GENERAL NOTES:

1. ALL NEW CONDUIT SHALL BE CONCEALED AND DEVICES RECESSED IN WALLS WHERE EVER POSSIBLE AND UNLESS OTHERWISE NOTED. FISH THROUGH EXISTING WALLS FROM ABOVE THE CEILING. IN HARD WALLS THAT ARE NOT ACCESSIBLE, PROVIDE A PAINTABLE SURFACE MOUNTED RACEWAY EQUAL TO WIREMOLD 500 SERIES BY LEGRAND.
2. PROVIDE NEW TYPED INDEXES IN EACH PANELBOARD.
3. ALL DATA/COMM, AV, SECURITY, AND ACCESS CONTROL DEVICES AND CABLING TO BE PROVIDED BY THE COMMUNICATIONS CONTRACTOR. ELECTRICAL CONTRACTOR TO PROVIDE ALL BACK BOXES AND RACEWAY. REFER TO THE "T" SHEETS FOR LOCATIONS AND QUANITIES.
4. NEW FIRE ALARM SYSTEM AND DEVICES ARE TO BE INSTALLED THROUGHOUT THE BUILDING. ANY EXISTING DEVICES NOT NOTED ON THE DEMOLITION PLANS SHALL BE REPLACED WITH NEW DEVICES AND CONNECTED TO THE NEW SYSTEM. REUSE EXISTING CONDUITS IF POSSIBLE, PROVIDE NEW WIRING.
5. ALL EXISTING ELECTRICAL DEVICES AND COVERPLATES ARE TO RECEIVE NEW DEVICES AND COVERPLATES WHETHER NOTED OUT ON THE PLANS OR NOT, INCLUDING THE EXISTING MECHANICAL AND JANITOR ROOMS.
6. ALL RECEPTACLE IN WARMING KITCHEN 201 AND SERVERY 202 SHALL BE GFCI TYPE.

ENLARGED PLAN KEYED NOTES:

1. STUB CONDUIT INTO MILLWORK. PROVIDE CONNECTIONS TO DEVICES RECESSED AND FLUSH MOUNTED IN MILLWORK WALL. CONCEAL ALL CONDUIT AND WIRING.
2. STUB CONDUITS UP TO ABOVE ACCESSIBLE CEILING SPACE IN STAFF WORK ROOM.
3. PROVIDE ¾" CONDUIT FROM PANIC BUTTON AND DOOR RELEASE BUTTON MOUNTED TO UNDERSIDE OF DESK BELOW SLAB AND UP IN TO DOOR JAMB. CONCEAL IN MILLWORK WALL. COORDINATE WITH DOOR HARDWARE SUPPLIER AND TECHNOLOGY CONTRACTOR.
4. FLUSH MOUNT HORIZONTAL GFI DUPLEX RECEPTACLES RECESSED INTO THE COUNTERTOP BACKSPLASH.
5. PROVIDE EXISTING RELOCATED MASTER CLOCK WITH A NEW NATIONAL TIME & SIGNAL #SF100 SEMI-FLUSH MOUNTING KIT FOR RECESSING INTO NEW WALL. RECESS EXISTING RELOCATED POWER SUPPLY BELOW RELOCATED PANEL.
6. PROVIDE FLOOR TO CEILING EQUIPMENT MOUNTING RACK WITH UNISTRUT P1001 OR EQUAL, BACK TO BACK TYPE MOUNTING CHANNEL. ANCHOR TO FLOOR AND JOISTS ABOVE. PROVIDE CROSS MEMBERS FOR MOUNTING AND BRACING AS REQUIRED. MAINTAIN 48" CLEARANCE BETWEEN FACES OF WALL MOUNTED EQUIPMENT AND RACK MOUNTED EQUIPMENT.
7. PROVIDE 2"C SLEEVE ABOVE CEILING FOR COMMUNICATIONS CABLES. PROVIDE J-HOOKS FROM SLEEVE TO CABLE TRAY IN CORRIDOR AND FROM SLEEVE TO OUTLET CONDUIT ROUGH-IN. SEE OUTLET ROUGH-IN DETAILS ON SHEET EP-500.
8. 30A/2P NON-FUSIBLE SWITCH; NEMA 1 ENCLOSURE.
9. CONNECT TO HOOD FIRE SUPPRESSION SYSTEM TO ACTIVATE FIRE ALARM SYSTEM WHEN SUPPRESSION SYSTEM IS ACTIVATED.
10. FIELD LOCATE GAS SHUTOFF VALVE. FURNISH AND INSTALL FIRE ALARM SYSTEM RELAY MODULE AND 120VAC TO 24VAC FUSED STEPDOWN TRANSFORMER FOR VALVE OPERATOR. LOCATE TRANSFORMER AND MODULE ABOVE CEILING.
11. FURNISH AND INSTALL FIRE ALARM RELAY MODULE AND 120VAC TO 24VAC FUSED STEPDOWN TRANSFORMER FOR PANELBOARD RP-K SHUNT TRIP CIRCUIT BREAKERS. LOCATE TRANSFORMER AND MODULE ABOVE CEILING.
12. FURNISH AND INSTALL FIRE ALARM RELAY MODULE AND 120VAC TO 24VAC FUSED STEPDOWN TRANSFORMER FOR PANELBOARD LP-C SHUNT TRIP CIRCUIT BREAKERS. LOCATE TRANSFORMER AND MODULE ON PANEL MOUNTING RACK.
13. SEE DETAIL ON SHEET EP-500.



KEY PLAN

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LANSING SCHOOL DISTRICT
FAIRVIEW ADDITIONS AND RENOVATIONS
Lansing, Michigan

ENLARGED POWER FLOOR PLANS

REVISIONS

REV	DESCRIPTION	DATE
1	20220629-001	02/15/2017

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SCALE: As indicated
PROJ. #: 160400
DATE: 01/13/2017
SHEET
EP-400
Addendum #1

ADDENDUM 1

2/14/2017 10:29:47 AM
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GENERAL NOTES:

1. THE EXISTING ONELINE DIAGRAM INFORMATION HAS BEEN TAKEN FROM THE EXISTING FACILITY DRAWINGS AND HAS NOT BEEN COMPLETELY FIELD VERIFIED FOR ACCURACY.
2. VERIFY HP/KW/KVA RATINGS OF ALL MECHANICAL EQUIPMENT SUPPLIED. ADJUST FEEDER AND BRANCH CIRCUIT SIZING AS REQUIRED.

DEMOLITION KEY NOTES:

(1) DISCONNECT AND REMOVE EXISTING ELECTRICAL SERVICE AND DISTRIBUTION EQUIPMENT AND MATERIALS. COORDINATE REMOVAL OF EXISTING TRANSFORMER POLE AND SERVICE EQUIPMENT WITH LANSING BOARD OF WATER AND LIGHT (LBWL). REMOVE ANY ITEMS NOT REMOVED BY LBWL. REFER ALSO TO SHEETS ED-110 AND ED-111.

KEYED NOTES:

(1) NEW THREE PHASE ELECTRIC SERVICE BY LBWL. COORDINATE INSTALLATION WITH LBWL. SEE ELECTRICAL SITE PLAN E-010.

(2) PADMOUNT TRANSFORMER FURNISHED AND INSTALLED BY LBWL. PROVIDE CONCRETE PAD COMPLYING WITH LBWL SPECIFICATIONS.

(3) FURNISH AND INSTALL CT CABINET. INSTALL METER BASE. COMPLY WITH LBWL REQUIREMENTS.

(4) LSIG ELECTRONIC TRIP CIRCUIT BREAKER.

(5) TRANSFORMER – 75KVA, 3PH, 480V-120/208V. SEPARATELY DERIVED SYSTEM- GROUND TO BAR IN ROOM.

(6) TRANSFORMER – 45KVA, 3PH, 480V-120/208V. SEPARATELY DERIVED SYSTEM- GROUND TO BAR IN ROOM.

(7) VERIFY CONNECTION REQUIREMENTS WITH MANUFACTURER.

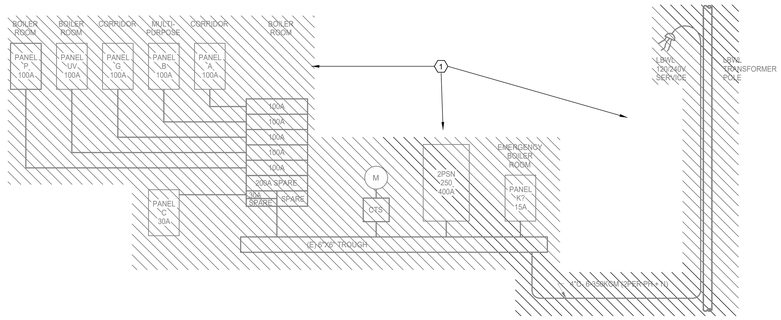
(8) VARIABLE FREQUENCY DRIVE FURNISHED WITH PUMP.

(9) SWITCH FURNISHED WITH UNIT.

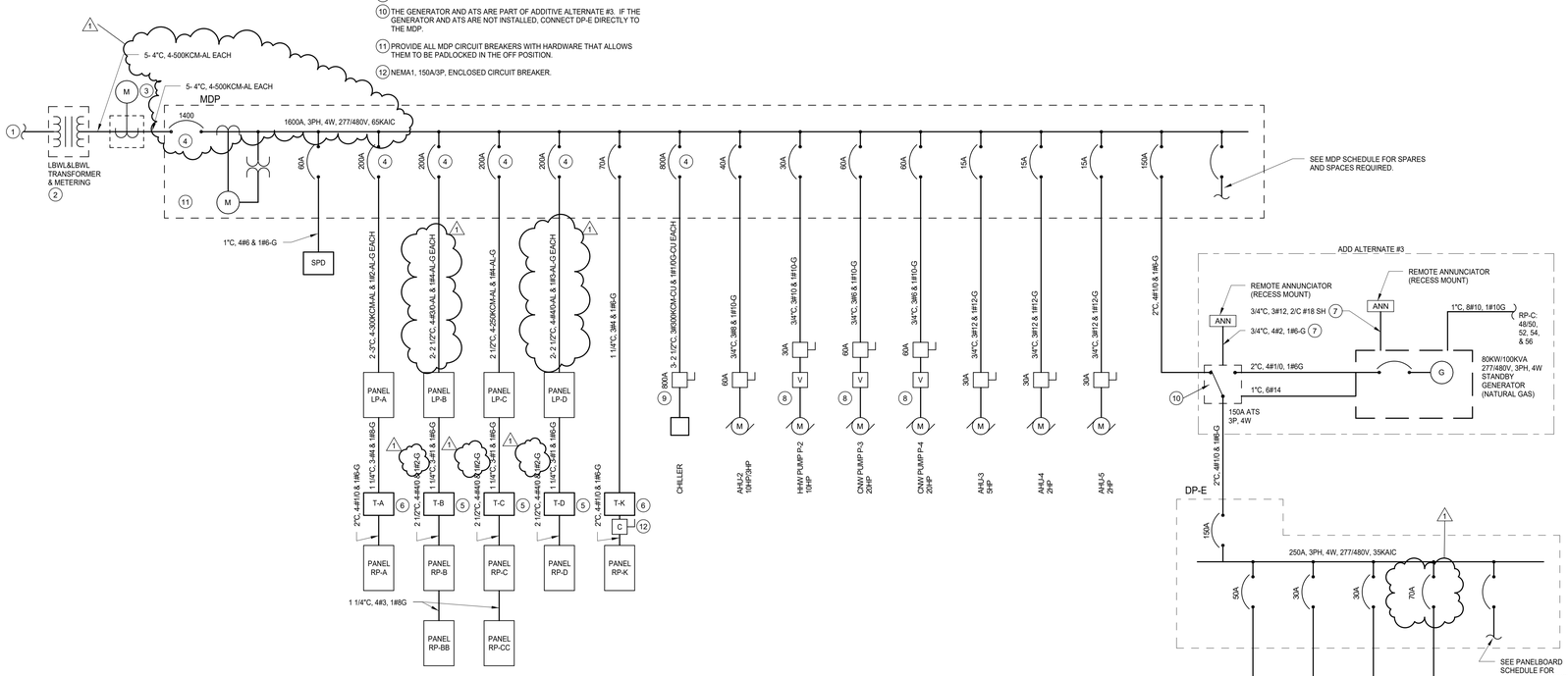
(10) THE GENERATOR AND ATS ARE PART OF ADDITIVE ALTERNATE #3. IF THE GENERATOR AND ATS ARE NOT INSTALLED, CONNECT DP-E DIRECTLY TO THE MDP.

(11) PROVIDE ALL MDP CIRCUIT BREAKERS WITH HARDWARE THAT ALLOWS THEM TO BE PADLOCKED IN THE OFF POSITION.

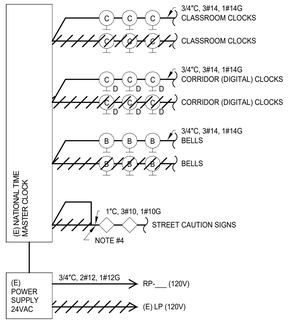
(12) NEMA1, 150A/3P, ENCLOSED CIRCUIT BREAKER.



1 DEMOLITION ONE-LINE DIAGRAM
N.T.S.



2 POWER DISTRIBUTION ONE-LINE DIAGRAM
N.T.S.



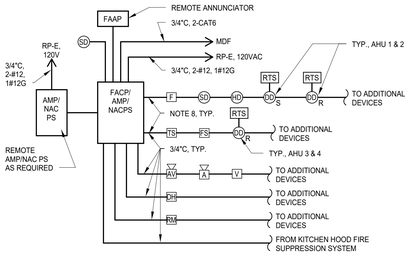
CLOCK SYSTEM NOTES:

1. DISCONNECT AND RELOCATE THE EXISTING NATIONAL TIME MASTER CLOCK AND POWER SUPPLY.
2. DISCONNECT EXISTING CLASSROOM ANALOG CLOCKS AND CORRIDOR DIGITAL CLOCKS AND RETAIN FOR REINSTALLATION.
3. DISCONNECT AND REMOVE EXISTING BELLS.
4. FIELD LOCATE EXISTING CAUTION SIGN CIRCUITS AND EXTEND TO RELOCATED MASTER CLOCK.
5. REMOVE AND REPLACE EXISTING CLOCK SYSTEM WIRING. EXISTING CLOCK SYSTEM CONDUITS MAY BE REUSED WHERE PRACTICAL.
6. NEW CLASSROOM CLOCKS SHALL BE NATIONAL TIME ANALOG CLOCKS TO MATCH EXISTING. NEW CORRIDOR CLOCKS SHALL BE DIGITAL DOUBLE FACE CLOCKS TO MATCH EXISTING.
7. THE CONTRACTOR SHALL PROVIDE A COMPLETE AND OPERATIONAL CLOCK SYSTEM. VERIFY CONNECTION REQUIREMENTS WITH NATIONAL TIME. REFER ALSO TO SPECIFICATION SECTION 275313 "CLOCK SYSTEMS."
8. PROVIDE CLOCK CIRCUITS WITH ½"C. VERIFY CABLES AND CONDUCTORS REQUIRED WITH NATIONAL TIME.

4 CLOCK SYSTEM ONE-LINE DIAGRAM
N.T.S.

FIRE ALARM SYSTEM NOTES:

1. THE NEW FIRE ALARM SYSTEM SHALL BE BY NATIONAL TIME.
2. PROVIDE ADDITIONAL ANNUNCIATION DEVICES OR NOTIFICATION APPLIANCES ON THE INTERIOR AND EXTERIOR OF THE BUILDING AS REQUIRED TO COMPLY WITH ALL NFPA, FEDERAL, STATE AND LOCAL REQUIREMENTS.
3. PROVIDE ADDITIONAL DETECTION OR INITIATION DEVICES TO COMPLY WITH ALL NFPA, FEDERAL, STATE AND LOCAL REQUIREMENTS.
4. PROVIDE NAC POWER SUPPLIES AND REMOTE AMPLIFIERS WHERE REQUIRED.
5. THE CONTRACTOR SHALL PROVIDE A COMPLETE FIRE ALARM SYSTEM COMPLYING WITH NFPA, FEDERAL, STATE AND LOCAL REQUIREMENTS.
6. POWER THE FIRE ALARM NAC POWER SUPPLY PANELS FROM THE 120V CIRCUIT SHOWN OR FROM THE NEAREST 120V PANELBOARD. IN ADDITION, PROVIDE A SMOKE DETECTOR ABOVE EACH POWER SUPPLY PANEL.
7. ½"C. CABLES AND CONDUCTORS AS REQUIRED.



3 FIRE ALARM ONE-LINE DIAGRAM
N.T.S.

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LANSING SCHOOL DISTRICT
FAIRVIEW ADDITIONS AND RENOVATIONS
Lansing, Michigan

POWER DIAGRAMS

REVISIONS

REV	DESCRIPTION	DATE
1	ADDENDUM 1	02/16/2017

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SCALE: 12" = 1'-0"
PROJ. #: 160400
DATE: 01/13/2017
SHEET
EP-700
Addendum #1

ADDENDUM 1