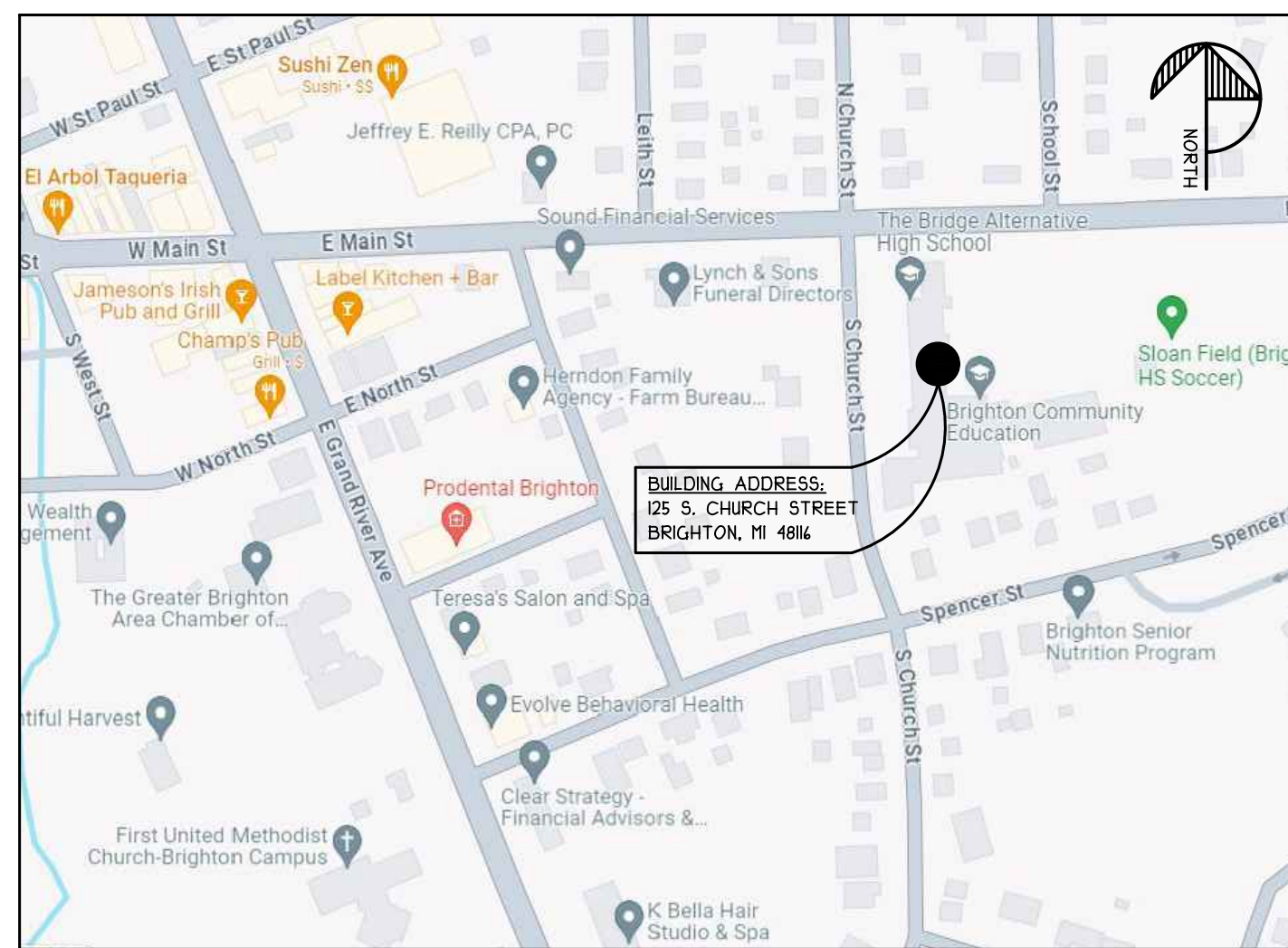
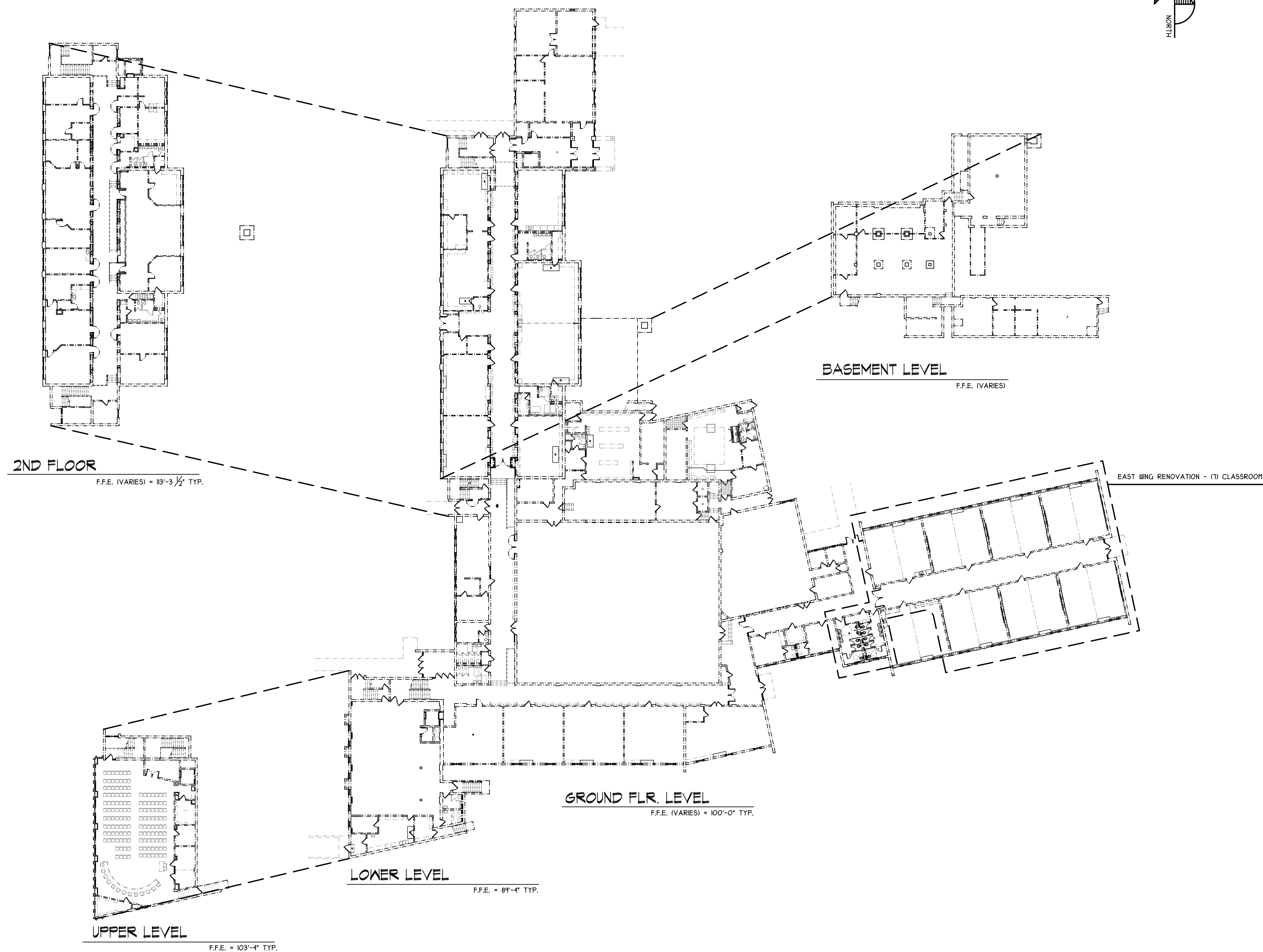


BRIGHTON AREA SCHOOLS - B.E.C.C. BLDG.

MISC. IMPROVEMENTS



LOCATION MAP
NOT TO SCALE



COMPOSITE PLANS

SCALE: 1/32" = 1'-0"

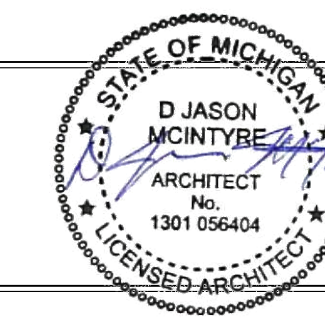
PROJECT NARRATIVE

THIS PROJECT CONSISTS OF FIVE COMPONENTS W/IN THE BRIGHTON AREA SCHOOLS B.E.C.C. BUILDING:
 1. REMOVE AND REPLACE EXISTING 1ST FLOOR MECHANICAL UNITS AS NEEDED TO PROVIDE AIR CONDITIONING.
 2. REMOVE AND REPLACE EXISTING EXTERIOR WINDOWS THROUGHOUT.
 3. REMOVE AND REPLACE EXISTING FIRE ALARM PANEL AND DEVICES.
 4. (EAST WING) RENOVATE 1 FORMER CLASSROOMS INTO NEW/UPDATED CLASSROOMS FOR THE DISTRICT.
 5. MISCELLANEOUS ROOM RENOVATIONS. GENERAL SCOPE INCLUDES FINISHES AND MEP FIXTURES AS NOTED.

ALTERATIONS DO NOT AFFECT EXISTING EGRESS, OCCUPANCY TYPE, OR OCCUPANT LOAD. EXISTING BUILDING SIZE, CONSTRUCTION TYPE, OR FIRE RATINGS TO REMAIN UNCHANGED AS WELL. THIS WORK IS CLASSIFIED AS LEVEL 2 ALTERATIONS UNDER THE MICHIGAN REHABILITATION CODE, 205. THE BUILDING IS NON-SPRINKLERED.

APPLICABLE CODES:

205 MICHIGAN REHABILITATION CODE
 208 MICHIGAN PLUMBING CODE
 206 MICHIGAN BUILDING CODE
 205 INTERNATIONAL BUILDING CODE
 204 MICHIGAN BARRIER FREE
 202 NFPA 101
 208 MICHIGAN PLUMBING CODE
 206 MICHIGAN MECHANICAL CODE
 205 INTERNATIONAL FIRE CODE
 201 NATIONAL ELECTRIC CODE



BUILDING INFORMATION:

UNCHANGED

FIRE RESISTANCE RATING (UNCHANGED CONSTRUCTION):

UNCHANGED

OCCUPANCY CALCULATIONS (BUSINESS OCCUPANCY):

UNCHANGED

REQUIRED EGRESS COMPONENTS:

UNCHANGED

PLUMBING FIXTURE REQUIREMENTS, PER MICHIGAN LABOR PLUMBING CODE, TABLE 403.1

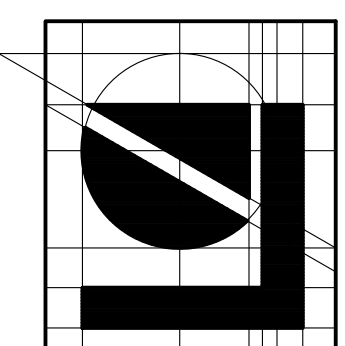
* (2) EXISTING MULTI-OCCUPANT BATHROOMS PROPOSED RENOVATIONS SHALL REDUCE WATER CLOSET COUNTS BY ONE (1) FIXTURE TO MEET & IMPROVE ADA REQUIREMENTS *

PROJECT INFORMATION

ISSUANCE

ARCHITECTURAL & INTERIORS	BIDS & PERMITS	ADD 01	ADD 02	BULL 01
CA COVER & CODE INFORMATION	X			
D1 DEMO PLANS	X			
D2 ENLARGED DEMO PLANS	X			
AI1 ENLARGED FLOOR PLANS	X			
AI2 ENLARGED REFL. CLG. PLAN	X			
A2.1 INTERIOR ELEVATIONS & DETAILS	X			
ID100 FINISH PLAN & KEY	X			
ID200 FINISH PLAN, KEY, & BID ALTERNATES	X			
ID400 REFLECTED CEILING PLANS	X			
WI1 WINDOW REPLACEMENT PLAN - FIRST FLR.	X			
WI2 WINDOW REPLACEMENT PLAN - 2ND FLR.	X			
W2.1 WINDOW REPLACEMENT EXT. ELEVATIONS.	X			
W2.2 WINDOW REPLACEMENT EXT. ELEVATIONS	X			
PLUMBING				
F1.0 GENERAL PLUMBING INFORMATION	X			
FD1.1 1ST FLR. - PLUMBING DEMOLITION PLAN	X			
FD1.2 1ST FLR. - PLUMBING NEW WORK PLAN	X			
MECHANICAL				
M1.0 MECHANICAL SPECIFICATIONS AND LEGEND	X			
MD1.1 1ST FLR. - PARTIAL MECHANICAL DEMO PLAN	X			
MD1.2 1ST FLR. - PARTIAL MECHANICAL DEMO PLAN	X			
MD1.3 1ST FLR. - PARTIAL MECHANICAL DEMO PLAN	X			
MD1.4 1ST FLR. - PARTIAL MECHANICAL DEMO PLAN	X			
M1.1 PARTIAL 1ST FLR. - MECHANICAL NEW WORK PLAN	X			
M1.2 PARTIAL 1ST FLR. - MECHANICAL NEW WORK PLAN	X			
M1.3 PARTIAL 1ST FLR. - MECHANICAL NEW WORK PLAN	X			
M1.4 PARTIAL 1ST FLR. - MECHANICAL NEW WORK PLAN	X			
M2.1 PARTIAL ROOF - MECHANICAL NEW WORK PLAN	X			
M2.2 PARTIAL ROOF - MECHANICAL NEW WORK PLAN	X			
M2.3 PARTIAL ROOF - MECHANICAL NEW WORK PLAN	X			
M2.4 PARTIAL ROOF - MECHANICAL NEW WORK PLAN	X			
M3.1 MECHANICAL DETAILS	X			
M4.1 MECHANICAL SCHEDULE	X			
M4.2 MECHANICAL SCHEDULE	X			
M4.3 MECHANICAL SCHEDULE	X			
ELECTRICAL				
E0.1 GENERAL ELECTRICAL INFORMATION	X			
E0.2 LIGHTING FIXTURE, CONTROLS SCHEDULE, & NOTES	X			
ED1.1 1ST FLR. - ELECTRICAL DEMOLITION PLAN	X			
E1.1 PARTIAL 1ST FLR. - NEW WORK ELECTRICAL PLAN	X			
E1.2 PARTIAL 1ST FLR. - NEW WORK ELECTRICAL PLAN	X			
E1.3 PARTIAL 1ST FLR. - NEW WORK ELECTRICAL PLAN	X			
E1.4 PARTIAL 1ST FLR. - NEW WORK ELECTRICAL PLAN	X			
E2.1 PARTIAL ROOF PLAN - NEW WORK ELECTRICAL PLAN	X			
E2.2 PARTIAL ROOF PLAN - NEW WORK ELECTRICAL PLAN	X			
E2.3 PARTIAL ROOF PLAN - NEW WORK ELECTRICAL PLAN	X			
E2.4 PARTIAL ROOF PLAN - NEW WORK ELECTRICAL PLAN	X			
E3.1 PARTIAL 1ST FLR. - NEW WORK LIGHTING PLAN	X			
E4.1 PARTIAL ONE-LINE DIAGRAM & SCHEDULE	X			
E5.1 ELECTRICAL SPECIFICATIONS	X			
E5.2 ELECTRICAL SPECIFICATIONS	X			
FIRE ALARM				
EF0.1 GENERAL ELECTRICAL INFORMATION	X			
EF1.1 PARTIAL 1ST FLR. - NEW FIRE ALARM SYSTEMS WORK	X			
EF1.2 PARTIAL 1ST FLR. - NEW FIRE ALARM SYSTEMS WORK	X			
EF1.3 PARTIAL 1ST FLR. - NEW FIRE ALARM SYSTEMS WORK	X			
EF1.4 PARTIAL 1ST FLR. - NEW FIRE ALARM SYSTEMS WORK	X			
EF1.5 PARTIAL 1ST FLR. - NEW FIRE ALARM SYSTEMS WORK	X			
EF2.1 PARTIAL 2ND FLR. - NEW FIRE ALARM SYSTEMS WORK	X			
EF2.2 PARTIAL 2ND FLR. - NEW FIRE ALARM SYSTEMS WORK	X			
EF3.1 ELECTRICAL SPECIFICATIONS	X			
EF3.2 ELECTRICAL SPECIFICATIONS	X			

SHEET INDEX



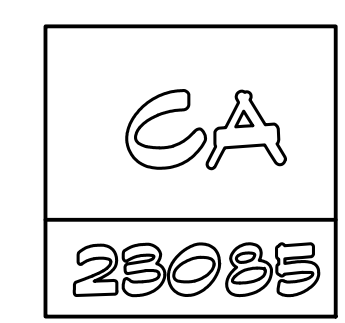
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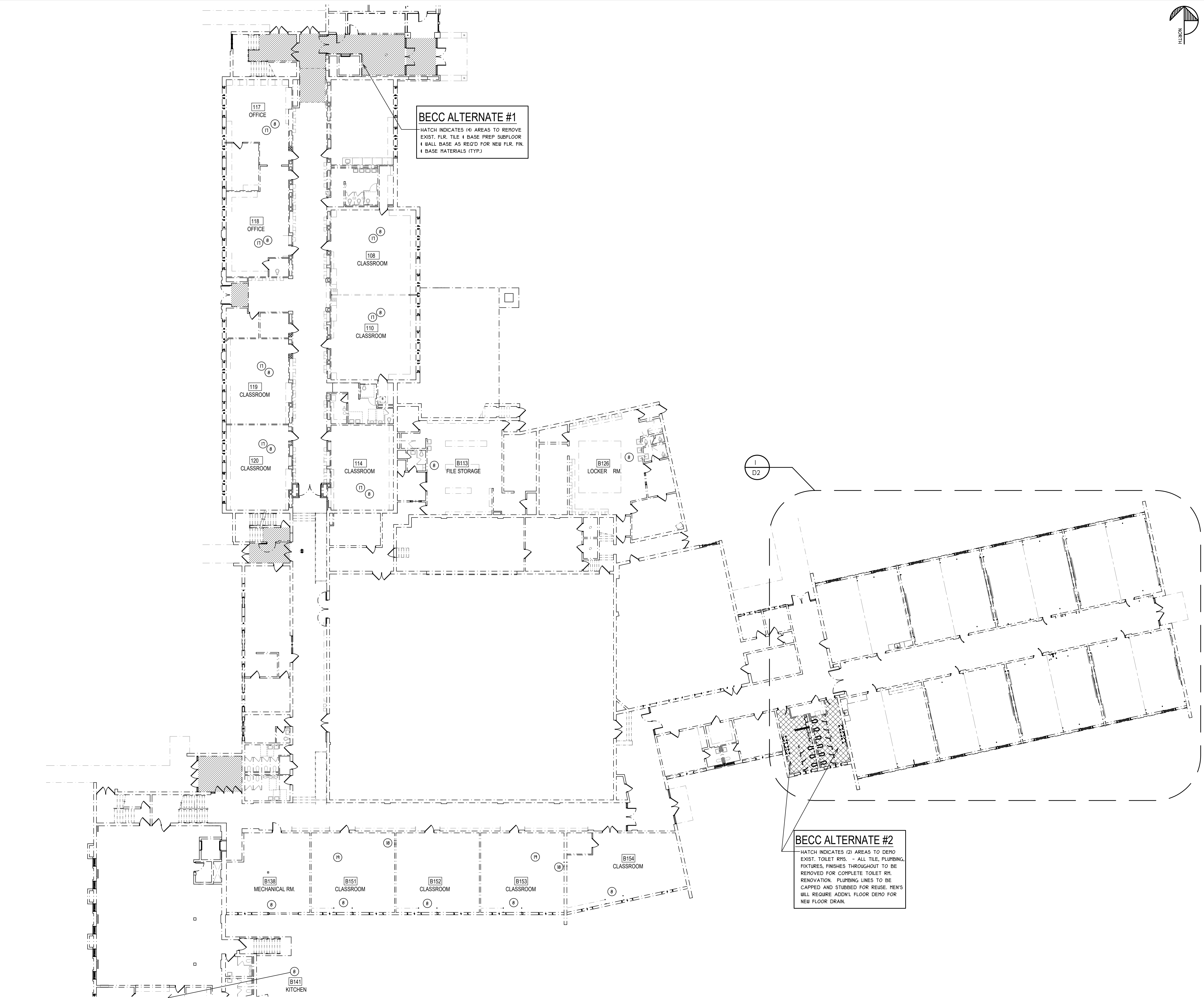
3/18/2024
11/2/2023
date

RENOVATIONS FOR:
BRIGHTON AREA SCHOOLS
(B.E.C.C. BLDG.) BRIGHTON, MICHIGAN
COVER



FILE LOCATION: C:\LINDHOUT\23084-088 BAS phase 4\23085 Project 2 - BECC East wing reno\dwg\CD\23085-CA code & cover.dwg
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BECC ALTERNATE #1
 HATCH INDICATES (4) AREAS TO REMOVE EXIST. FLR. TILE & BASE PREP SUBFLOOR
 (1) WALL BASE AS REQ'D FOR NEW FLR. FIN.
 (2) BASE MATERIALS (TYP.)

BECC ALTERNATE #2
 HATCH INDICATES (2) AREAS TO DEMO EXIST. TOILET RNS. - ALL TILE, PLUMBING, FIXTURES, FINISHES THROUGHOUT TO BE REMOVED FOR COMPLETE TOILET RM. RENOVATION. PLUMBING LINES TO BE CAPPED AND STUBBED FOR REUSE. MEN'S WILL REQUIRE ADD'N. FLOOR DEMO FOR NEW FLOOR DRAIN.

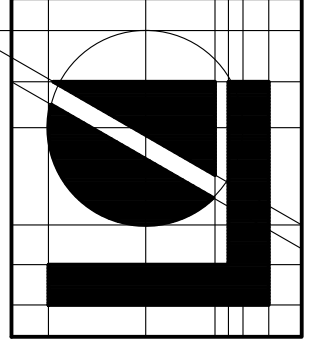
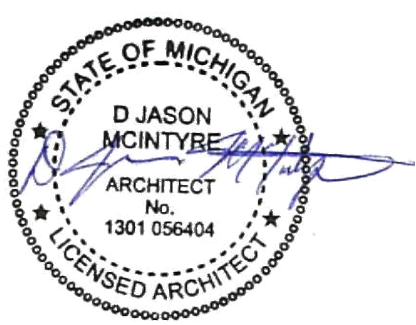
DEMO NOTES

- (1) REMOVE EXIST. WALL MTD. BULLETIN BD., CHALKBOARD, SHELVING, BRACKETS, ETC.
- (2) REMOVE EXIST. DOOR FRAME & HARDWARE.
- (3) REMOVE EXIST. MILLWORK
- (4) REMOVE EXIST. MILLWORK & EXIST. PLUMBING FIXTURE, CAP PLUMBING FLUSH AT ABANDONED LINES, PROVIDE COVER PLATES AS NEEDED.
- (5) REMOVE EXIST. CARPET & BASE THROUGHOUT, GRIND FLOOR, INFILL LOW SPOTS, & LEVEL CONCRETE AS REQ'D FOR NEW FLR FINISH.
- (6) SCRAPE & GRIND EXPOSED (PAINTED) CONCRETE FLOOR THROUGHOUT, INFILL LOW SPOTS & USE LEVELER AS REQ'D TO PREP FOR NEW FLR FINISH. REMOVE BASE THROUGHOUT.
- (7) SCRAPE, SAND, ETC. EXIST. MET. CLG. SYSTEM AS REQ'D & PREP FOR NEW FINISH (PT.).
- (8) DEMO EXISTING UNIT VENTILATOR OR HEATER. REFER TO MEP SHEET FOR ADDITIONAL INFORMATION.
- (9) REMOVE EXISTING RADIANT TUBE COVERS THROUGHOUT. REFER TO MEP SHEETS FOR MORE INFORMATION.
- (10) REMOVE EXIST. SUSP. LIGHT FIXTURES THROUGHOUT.
- (11) REMOVE EXIST. ALUM. FRAMED WINDOWS. REFER TO "W" WINDOW REPLACEMENT DRAWING SHEETS FOR ADDITIONAL INFORMATION.
- (12) REMOVE EXISTING THRU-WALL VENT & DUCT REVIEW/COORDINATE SCOPE W/ MEP DRAWINGS. PROVIDE TEMPORARY WEATHER-TIGHT INFILL CONSTRUCTION & PREP FOR NEW FINISHES.
- (13) REMOVE EXISTING WINDOW SILLS & BLINDS THROUGHOUT.
- (14) REMOVE & RELOCATE EXISTING POWER/LIGHT PANELS, DISCONNECTS, CONDUITS, JUNCTION BOXES ETC. IN THIS AREA. COORDINATE FULL SCOPE AND RELOCATION PLAN WITH ELECTRICAL SHEETS.
- (15) REMOVE EXISTING PTD. CLG. ACCESS PANELS & TRIM ABOVE
- (16) SCRAPE, SAND, & PATCH EXIST. WALLS (GYP. BD. & CMU BLOCK) AS REQ'D THROUGHOUT. PREP TO RECEIVE NEW FINISHES (PT.).
- (17) REMOVE EXIST. CLG. TILES THROUGHOUT FOR NEW ABOVE CLG. CONDENSATE PIPE INSTALLATION (RMS 108, 10, 14, 11, 18, 19, 120) - GRD TO REMAIN - MECH. CONTRACTOR TO MODIFY & PERFORM SELECTIVE DEMO.
- (18) PARTIALLY REMOVE EXIST. CMU BLOCK TO ACCOMMODATE NEW TRANSFER AIR DUCT - COORD. W/ MECHANICAL DRAWINGS.
- (19) PROVIDE VERTICAL DUCT & ROOF PENETRATION ABOVE & AS DETAILED ON MECHANICAL DRAWING SHEETS. COORD. LOCATION W/ EXISTING CEILING ACCESS OPENING.

GENERAL DEMO NOTES

- FIELD VERIFY EXACT LOCATIONS OF ALL EXIST. UTILITIES/SERVICES PRIOR TO DEMOLITION - RELOCATE EXIST. ABOVE CLG. ITEMS TO NEW ABOVE CLG. LOCATIONS AS REQ'D.
- CAP PLUMBING LINES BELOW FIN. FLR. ABOVE CLG. OR IN WALL AT ABANDONED FIXTURES.
- REMOVE EXIST. MISCELLANEOUS WALL MTD. SCREWS, HOOKS, NAILS, WALL SIGNAGE, ETC. THROUGHOUT WORK AREA. SCRAPE, SAND, & PREP WALL FOR NEW FINISH (PT.) AS REQ'D.
- REMOVE ALL DEMOLISHED MATERIALS FROM SITE.
- PROTECT EXIST. BLDG. & COMPONENTS W/IN WORK AREA. REPAIR/REPLACE ANY DAMAGED ITEMS TO ITS ORIGINAL LEVEL OF FINISH OR QUALITY.
- PREPARE SURFACES THROUGHOUT CONSTR. AREA (SCRAPE, SAND, PATCH, ETC.) TO RECEIVE NEW FINISHES.
- PROTECT IN PLACE EXISTING FIRE ALARM COMPONENTS. COORDINATE REMOVAL & MODIFICATIONS W/ ALARM CONTRACTORS, AS REQ'D.
- REFER TO MEP SHEETS FOR ADDITIONAL MEP DEMO INFORMATION & NEW SCOPE.
- DIMENSIONS SHOWN ARE APPROX. ONLY VERIFY IN FIELD. EXT. WALL DEMO FOR NEW OPENINGS INTENDED TO FALL ON TASONRY JOINTS (ADJUST ACCORDINGLY).
- ALL EXTERIOR WINDOW REMOVAL/REPLACEMENT SCOPE TO BE CONFIRMED & COORDINATED WITH "W" DRAWING SHEETS.
- REMOVE FIRE EXTINGUISHERS & HOOKS FROM WALLS THROUGHOUT. MAINTAIN ACCESS TO EXTINGUISHERS DURING CONSTRUCTION AND/OR STORE FOR REUSE/RELOCATION.
- REMOVE EXIST. DEVICE PLATES (OUTLET, SWITCH, ETC.) THROUGHOUT. NEW S.S. PLATES SHALL BE PROVIDED. COORDINATE SCOPE W/ MEP SHEETS.
- ALL FURNITURE TO BE REMOVED BY OWNER PRIOR TO DEMO.
- ALL LT. COMPONENTS (SECURITY CAMERAS, SPEAKERS, CLOCKS, ETC.) TO BE REMOVED BY OWNER PRIOR TO DEMO.

** REFER TO "W" DRAWING SHEETS FOR COMPLETE WINDOW REMOVE/REPLACE SCOPE OF WORK - TYP. **
 ** REFER TO "MEP" DRAWING SHEETS FOR COMPLETE UNIT VENTILATOR REMOVE/REPLACE SCOPE OF WORK - TYP. **



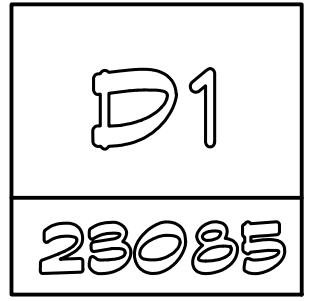
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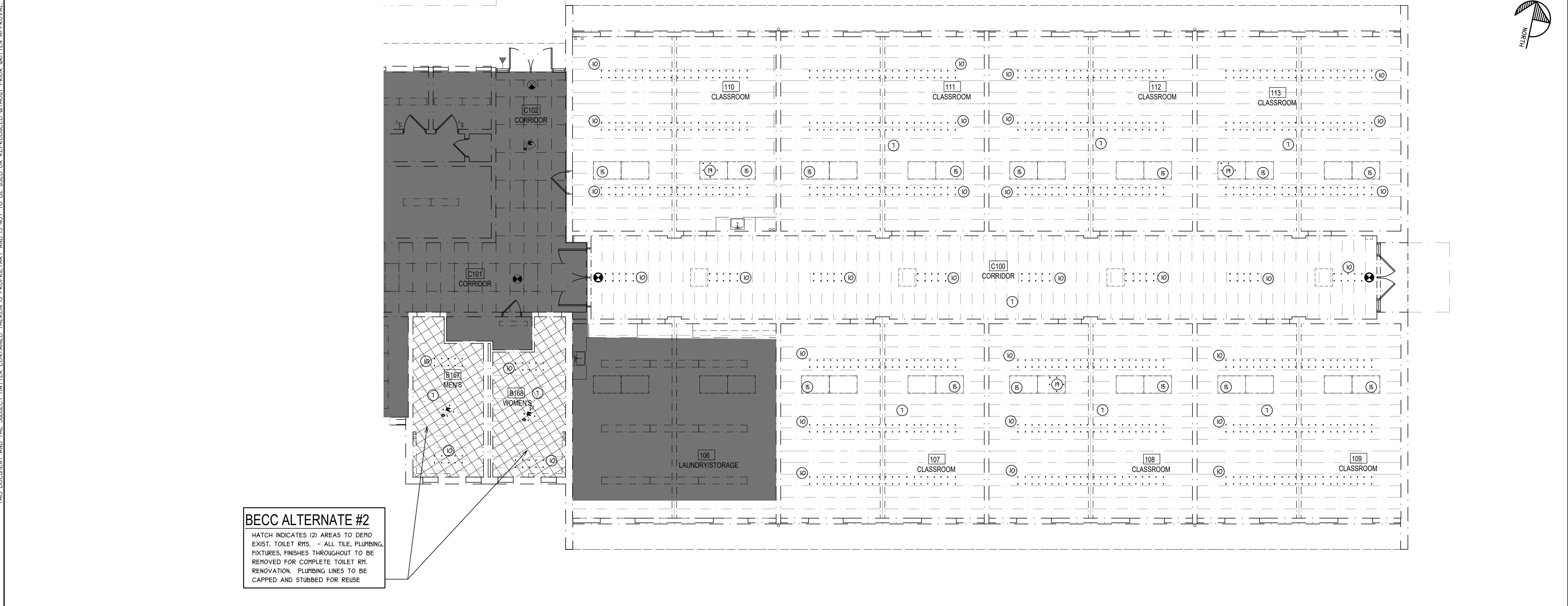
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CHK'D	XXX	DATE	
APP'D	XXX	DATE	

REVISIONS FOR:
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 (B.E.C.C. BLDG.) BRIGHTON, MICHIGAN
DEMO PLANS

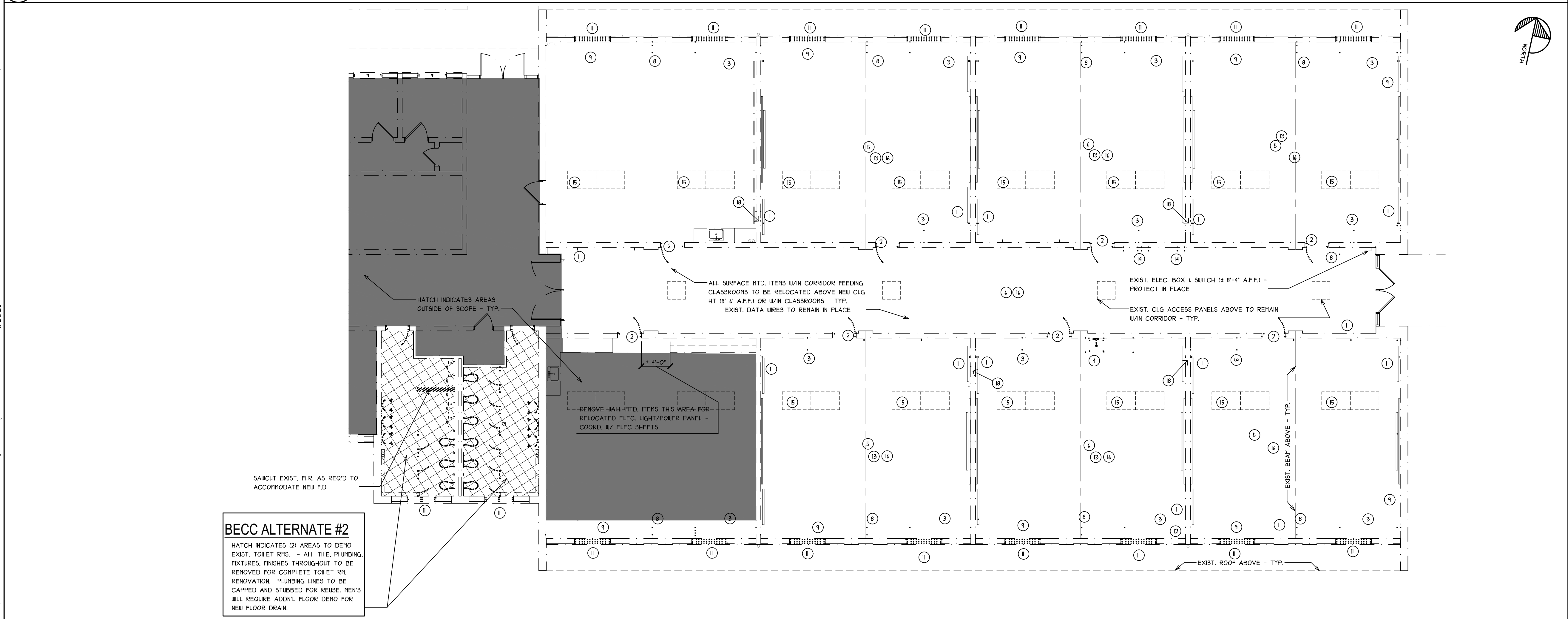


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2
D2
ENLARGED DEMO CEILING PLAN

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



1
D1
ENLARGED DEMO PLAN

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

DEMO NOTES

- 1 REMOVE EXIST. WALL MTD. BULLETIN BD., CHALKBOARD, SHELVING, BRACKETS, ETC.
- 2 REMOVE EXIST. DOOR FRAME & HARDWARE.
- 3 REMOVE EXIST. MILLWORK
- 4 REMOVE EXIST. MILLWORK & EXIST. PLUMBING FIXTURE, CAP PLUMBING FLUSH AT ABANDONED LINES. PROVIDE COVER PLATES AS NEEDED.
- 5 REMOVE EXIST. CARPET & BASE THROUGHOUT. GRIND FLOOR, INFILL LOW SPOTS, & LEVEL CONCRETE AS REQ'D FOR NEW FLR FINISH.
- 6 SCRAPE & GRIND EXPOSED (PAINTED) CONCRETE FLOOR THROUGHOUT. INFILL LOW SPOTS & USE LEVELER AS REQ'D TO PREP FOR NEW FLR FINISH. REMOVE BASE THROUGHOUT.
- 7 SCRAPE, SAND, ETC. EXIST. MET. CLG. SYSTEM AS REQ'D & PREP FOR NEW FINISH (PT).
- 8 DEMO EXISTING UNIT VENTILATOR OR HEATER. REFER TO MEP SHEET FOR ADDITIONAL INFORMATION.
- 9 REMOVE EXISTING RADANT TUBE COVERS THROUGHOUT. REFER TO MEP SHEETS FOR MORE INFORMATION.
- 10 REMOVE EXIST. SUSP. LIGHT FIXTURES THROUGHOUT.
- 11 REMOVE EXIST. ALUM. FRAMED WINDOWS. REFER TO "W" (WINDOW REPLACEMENT) DRAWING SHEETS FOR ADDITIONAL INFORMATION.
- 12 REMOVE EXISTING THRU-WALL VENT & DUCT REVIEW/COORDINATE SCOPE W/ MEP DRAWINGS. PROVIDE TEMPORARY WEATHER-TIGHT INFILL CONSTRUCTION & PREP FOR NEW FINISHES.
- 13 REMOVE EXISTING WINDOW SILLS & BLINDS THROUGHOUT.
- 14 REMOVE & RELOCATE EXISTING POWER/LIGHT PANELS, DISCONNECTS, CONDUITS, JUNCTION BOXES ETC. IN THIS AREA. COORDINATE FULL SCOPE AND RELOCATION PLAN WITH ELECTRICAL SHEETS.
- 15 REMOVE EXISTING PTD W.D. CLG. ACCESS PANELS & TRIM ABOVE
- 16 SCRAPE, SAND, & PATCH EXIST. WALLS (GYP. BD. & CMU BLOCK) AS REQ'D THROUGHOUT. PREP TO RECEIVE NEW FINISHES (PT.)
- 17 REMOVE EXIST. CLG. TILES THROUGHOUT FOR NEW ABOVE CLG. CONDENSATE PIPE INSTALLATION (RHS 108, 90, 14, 18, 14, 120) - GRD TO REMAIN - MECH. CONTRACTOR TO MODIFY & PERFORM SELECTIVE DEMO.
- 18 PARTIALLY REMOVE EXIST. CMU BLOCK TO ACCOMMODATE NEW TRANSFER AIR DUCT - COORD. W/ MECHANICAL DRAWINGS.
- 19 PROVIDE VERTICAL DUCT & ROOF PENETRATION ABOVE & AS DETAILED ON MECHANICAL DRAWING SHEETS. COORD LOCATION W/ EXISTING CEILING ACCESS OPENING.

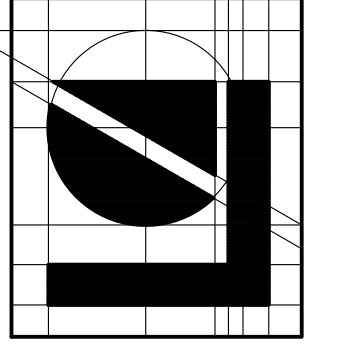
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- PROTECT IN PLACE EXISTING FIRE ALARM COMPONENTS. COORDINATE REMOVAL & MODIFICATIONS W/ ALARM CONTRACTORS, AS REQ'D.
- REFER TO MEP SHEETS FOR ADDITIONAL MEP DEMO INFORMATION & NEW SCOPE.
- DIMENSIONS SHOWN ARE APPROX. ONLY VERIFY IN FIELD. EXT WALL DEMO FOR NEW OPENINGS INTENDED TO FALL ON MASONRY JOINTS (ADJUST ACCORDINGLY).
- ALL EXTERIOR WINDOW REMOVAL/REPLACEMENT SCOPE TO BE CONFIRMED & COORDINATED WITH "W" DRAWING SHEETS.
- REMOVE FIRE EXTINGUISHERS & HOOKS FROM WALLS THROUGHOUT. MAINTAIN ACCESS TO EXTINGUISHERS DURING CONSTRUCTION AND/OR STORE FOR REUSE/RELOCATION.
- REMOVE EXIST. DEVICE PLATES (OUTLET, SWITCH, ETC.) THROUGHOUT. NEW S.S. PLATES SHALL BE PROVIDED. COORDINATE SCOPE W/ MEP SHEETS.
- ALL FURNITURE TO BE REMOVED BY OWNER PRIOR TO DEMO.
- ALL LT. COMPONENTS (SECURITY CAMERAS, SPEAKERS, CLOCKS, ETC.) TO BE REMOVED BY OWNER PRIOR TO DEMO.

** REFER TO "W" DRAWING SHEETS FOR COMPLETE WINDOW REMOVE/REPLACE SCOPE OF WORK - TYP. **

** REFER TO "MEP" DRAWING SHEETS FOR COMPLETE UNIT VENTILATOR REMOVE/REPLACE SCOPE OF WORK - TYP. **

DEMO NOTES



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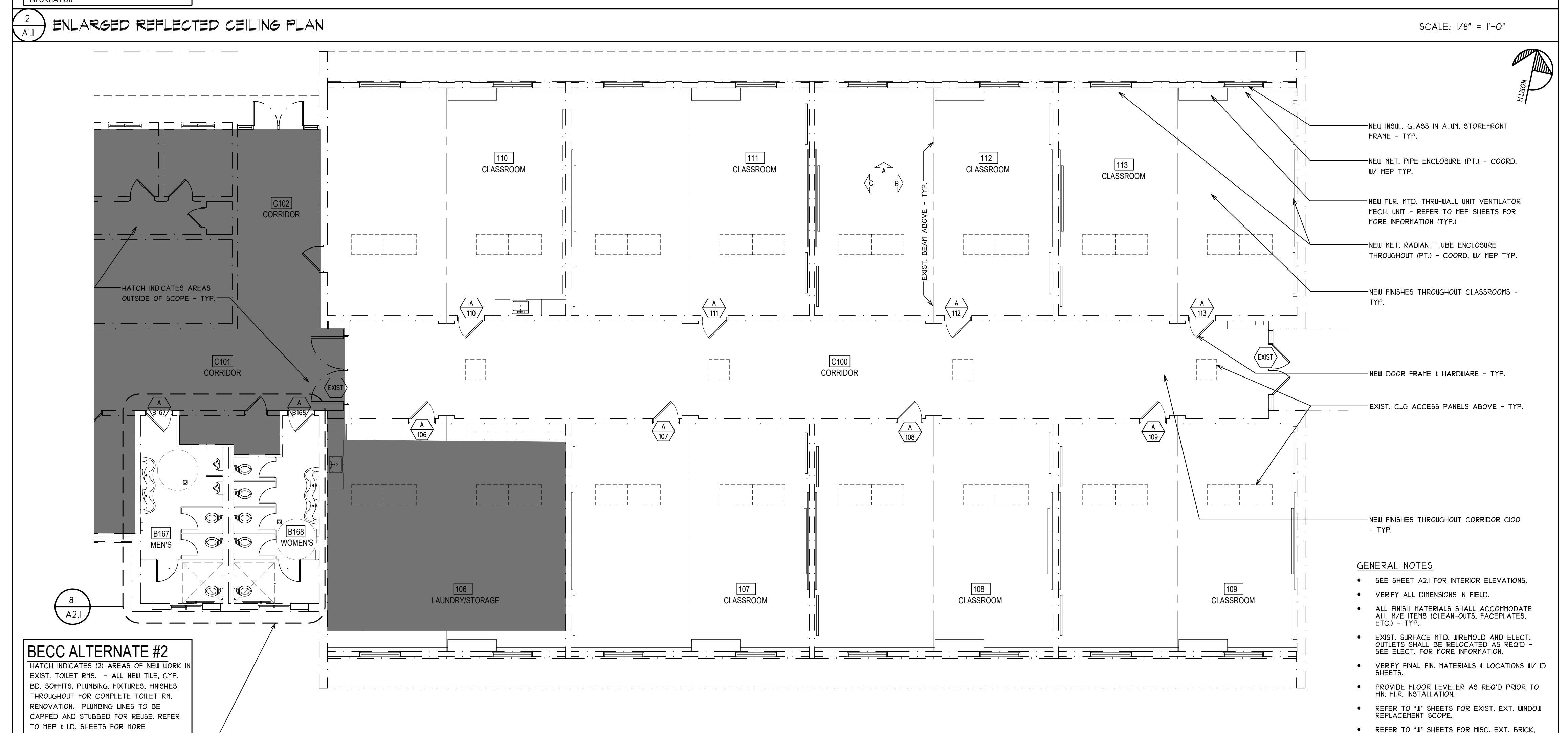
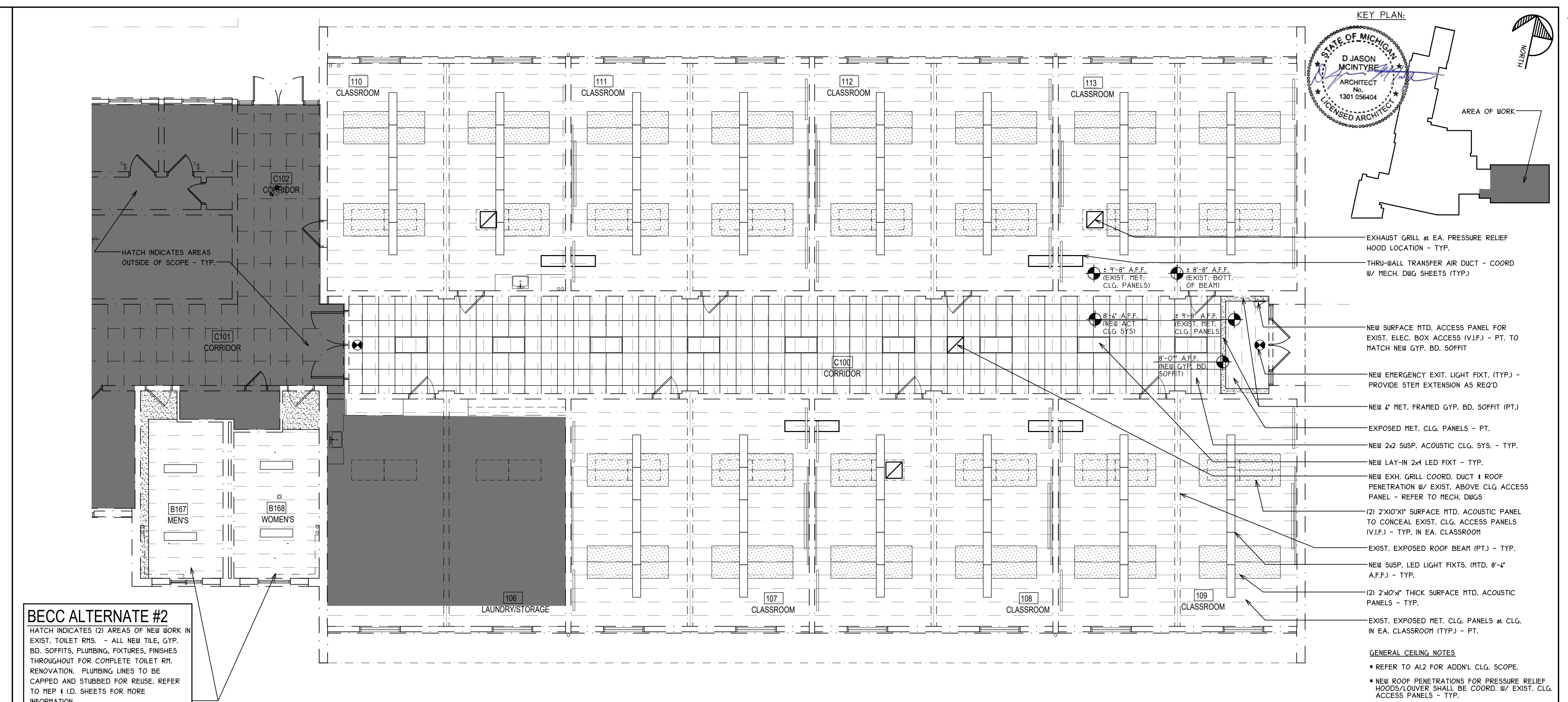
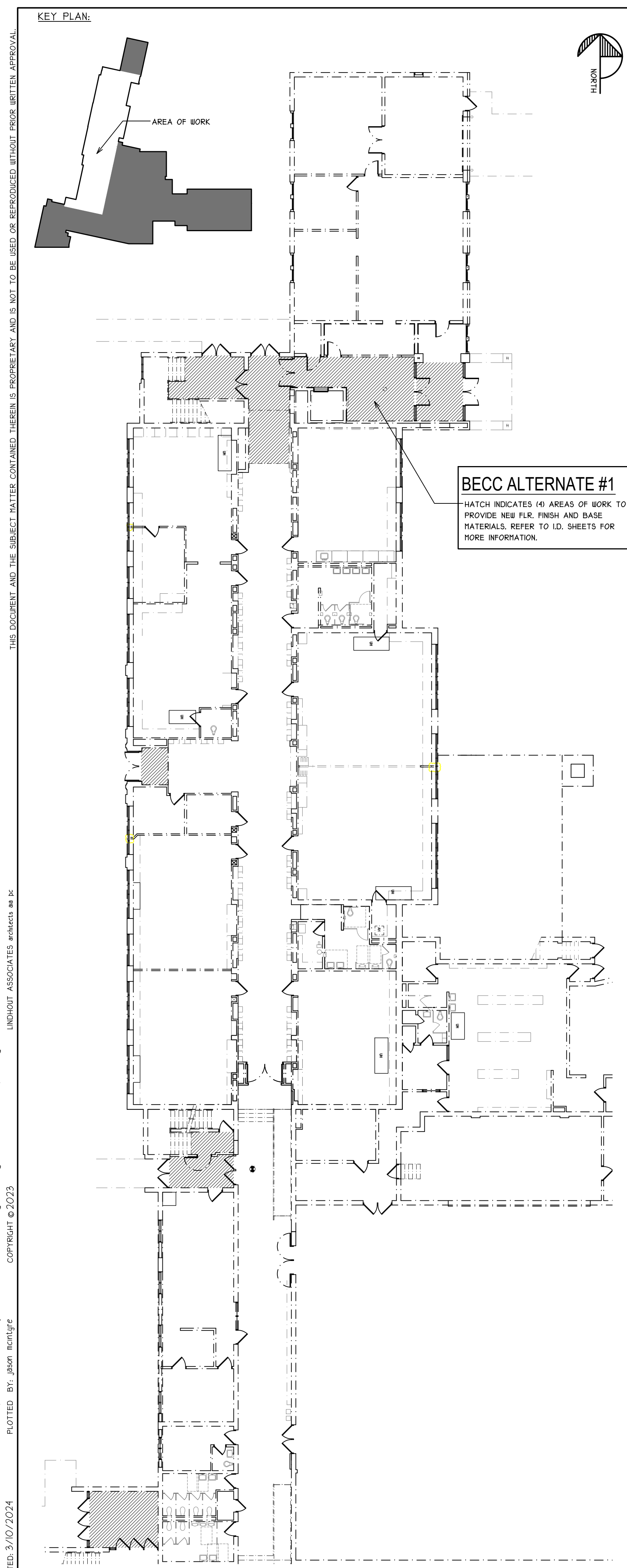
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DR	XXX	DR	XXX
APP'D	XXX	APP'D	XXX
			date

RENOVATIONS for:
BRIGHTON AREA SCHOOLS
 (B.E.C.C. BLDG.) BRIGHTON, MICHIGAN

ENLARGED DEMO PLANS

D2

23085



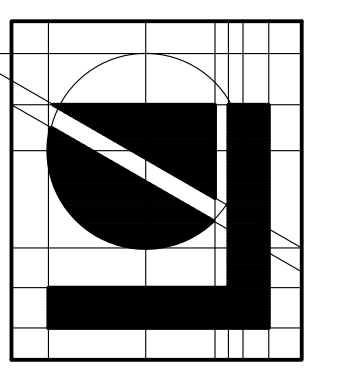
3
ALL
PARTIAL FLOOR PLAN - ALTERNATE #1

SCALE: 1/16" = 1'-0"

1
ALL
ENLARGED FLOOR PLAN

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

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11/2/2023	XXX	XXX
date		

REVISIONS for:

BRIGHTON AREA SCHOOLS
(B.E.C.C. BLDG.) BRIGHTON, MICHIGAN

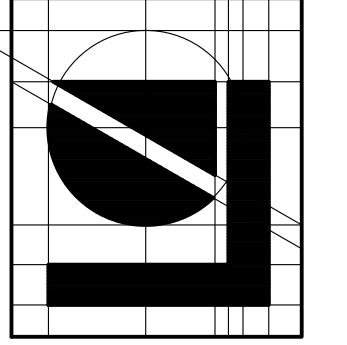
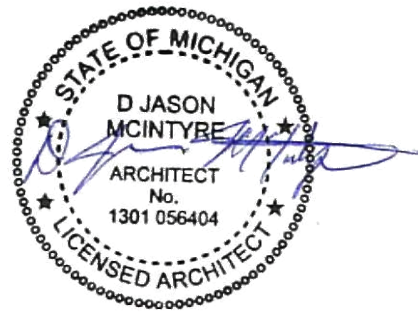
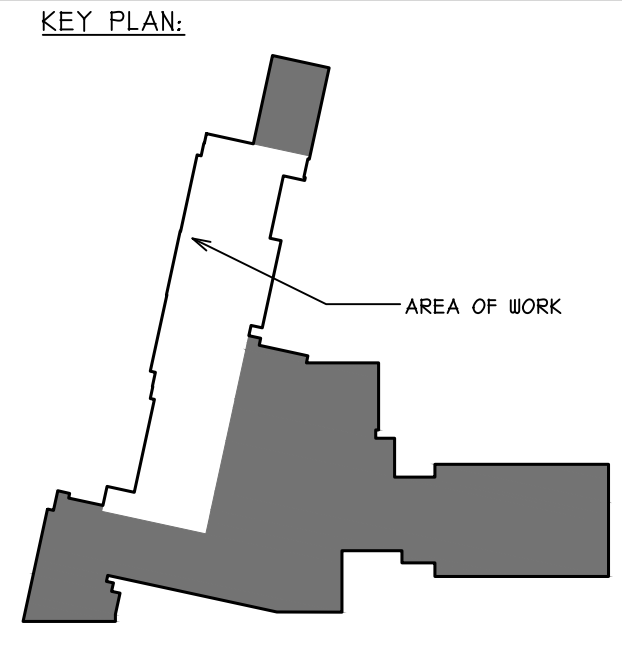
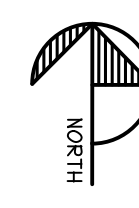
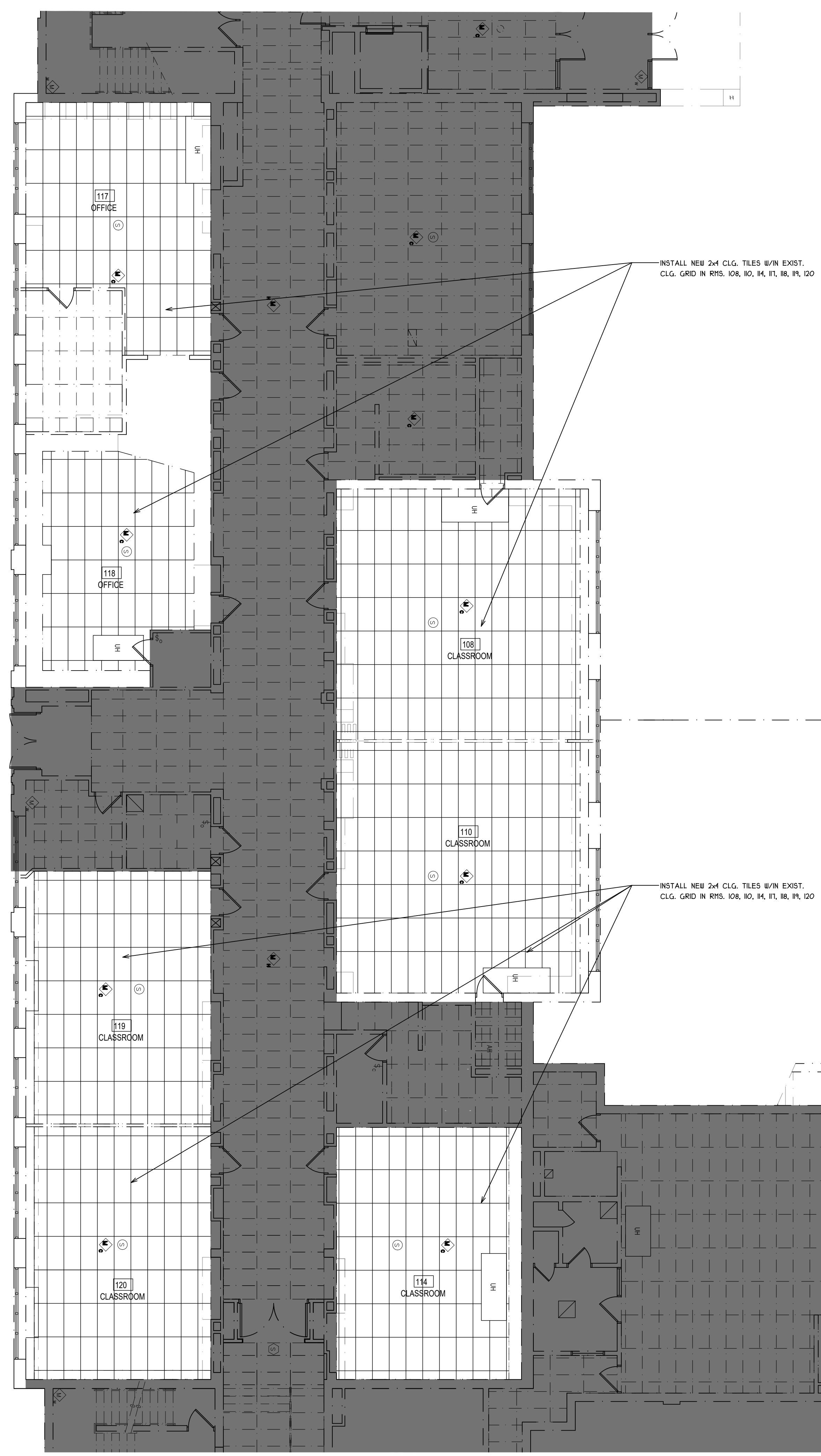
ENL'D PLANS

A1.1

23085

FILE LOCATION: C:\LINDHOUT\23084-088 BAS phase 6\23085 Project 2 - BECC East wing reno\dwg\CD\23085-A1.2 plans.dwg
DATE PLOTTED: 2/10/2024
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11/2/2023
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RENOVATIONS for:
BRIGHTON AREA SCHOOLS
(B.E.C.C. BLDG.) BRIGHTON, MICHIGAN
ENL'G'D PLANS

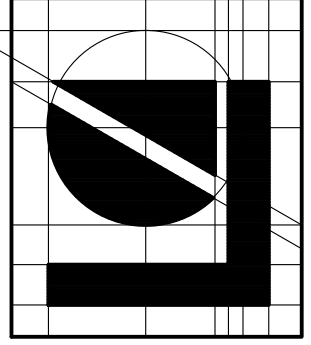
A1.2
2008

1
A1.2 ENLARGED REFLECTED CEILING PLAN

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

X
X NOT USED

FILE LOCATION: C:\LINDHOUT\23084-088 BAS phase 4\23085 Project 2 - BECC East wing\reno\dwg\CAD\23085-A2.1 int. elevs.dwg
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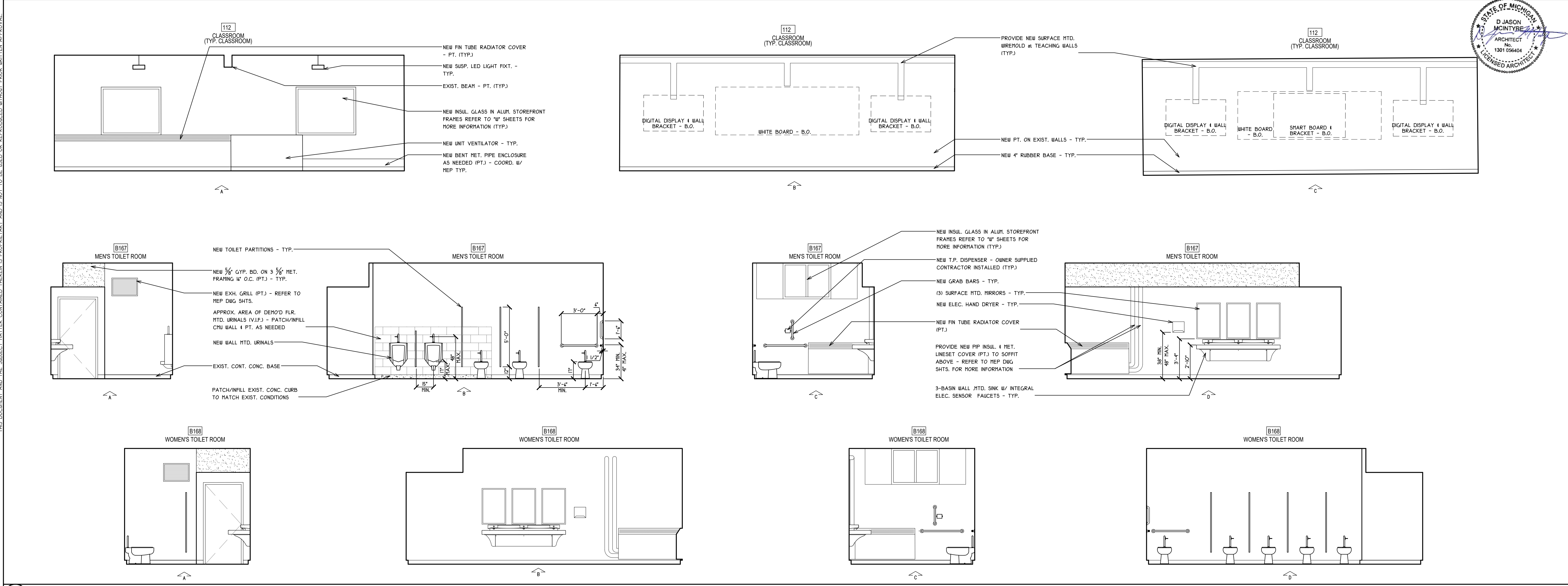
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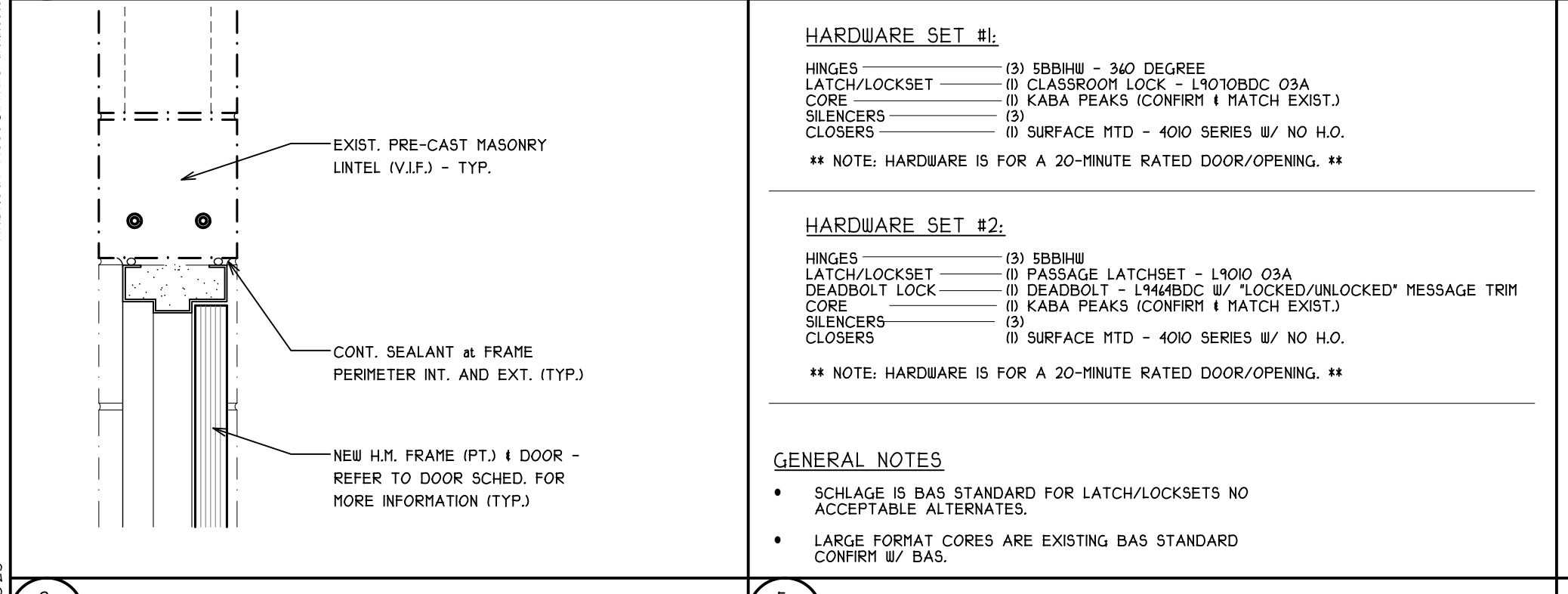
RENOVATIONS for:
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INT. ELEV. & DETS.

A2.1
23085



INTERIOR ELEVATIONS

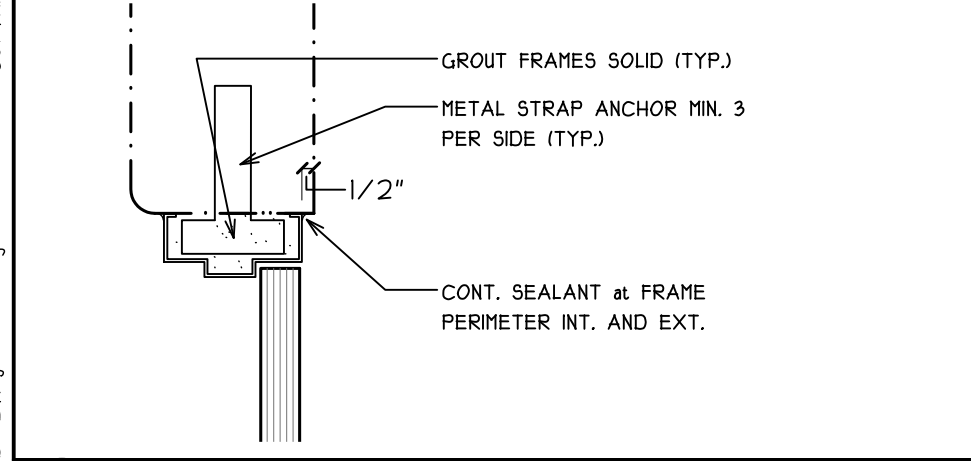
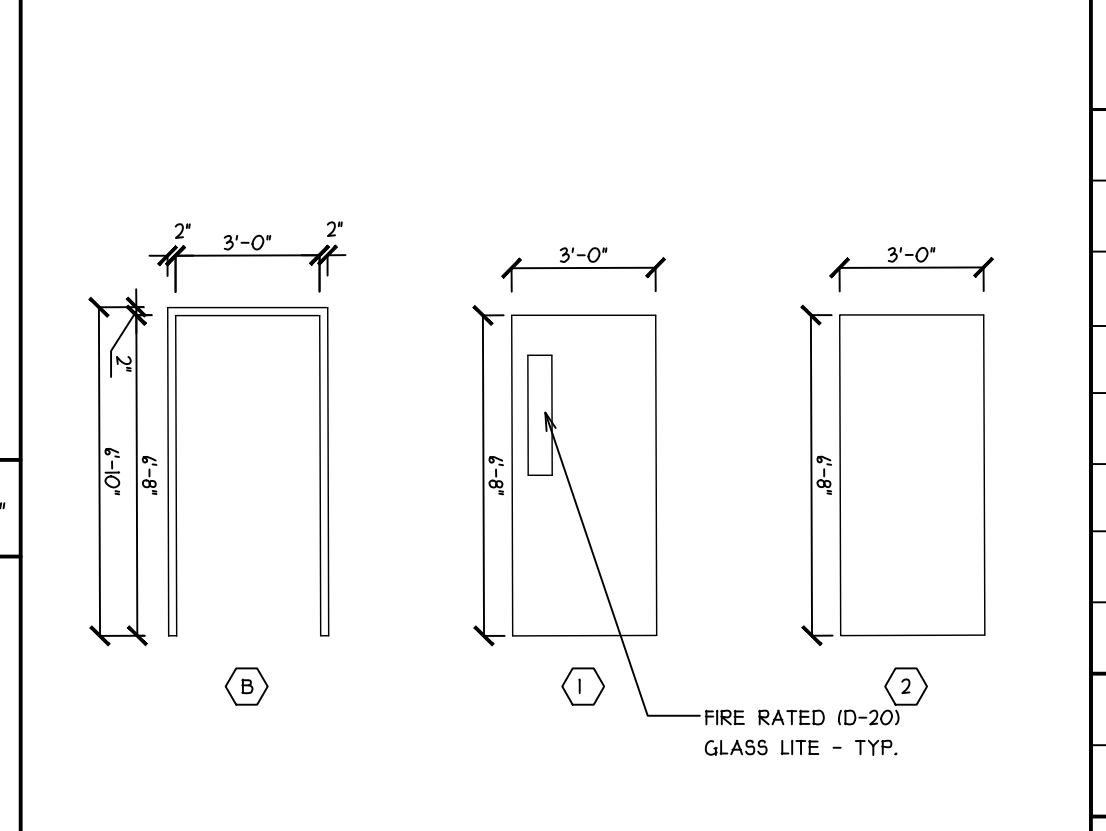
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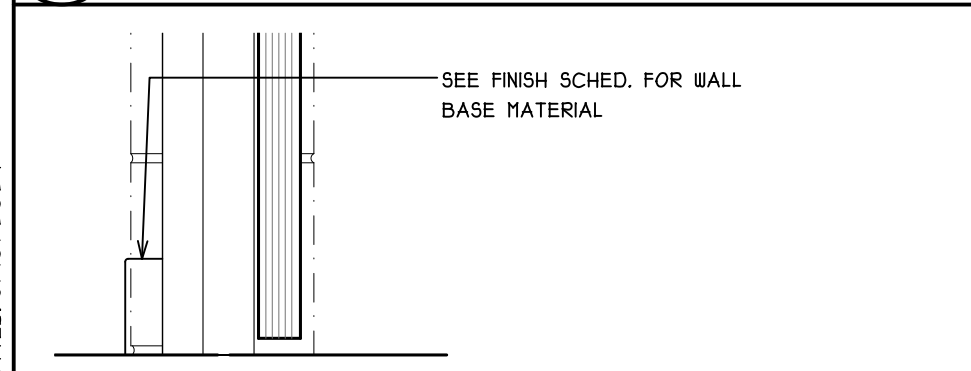
2 HEAD

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

5 HARDWARE SETS & INFORMATION



3 JAMB



4 SILL

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

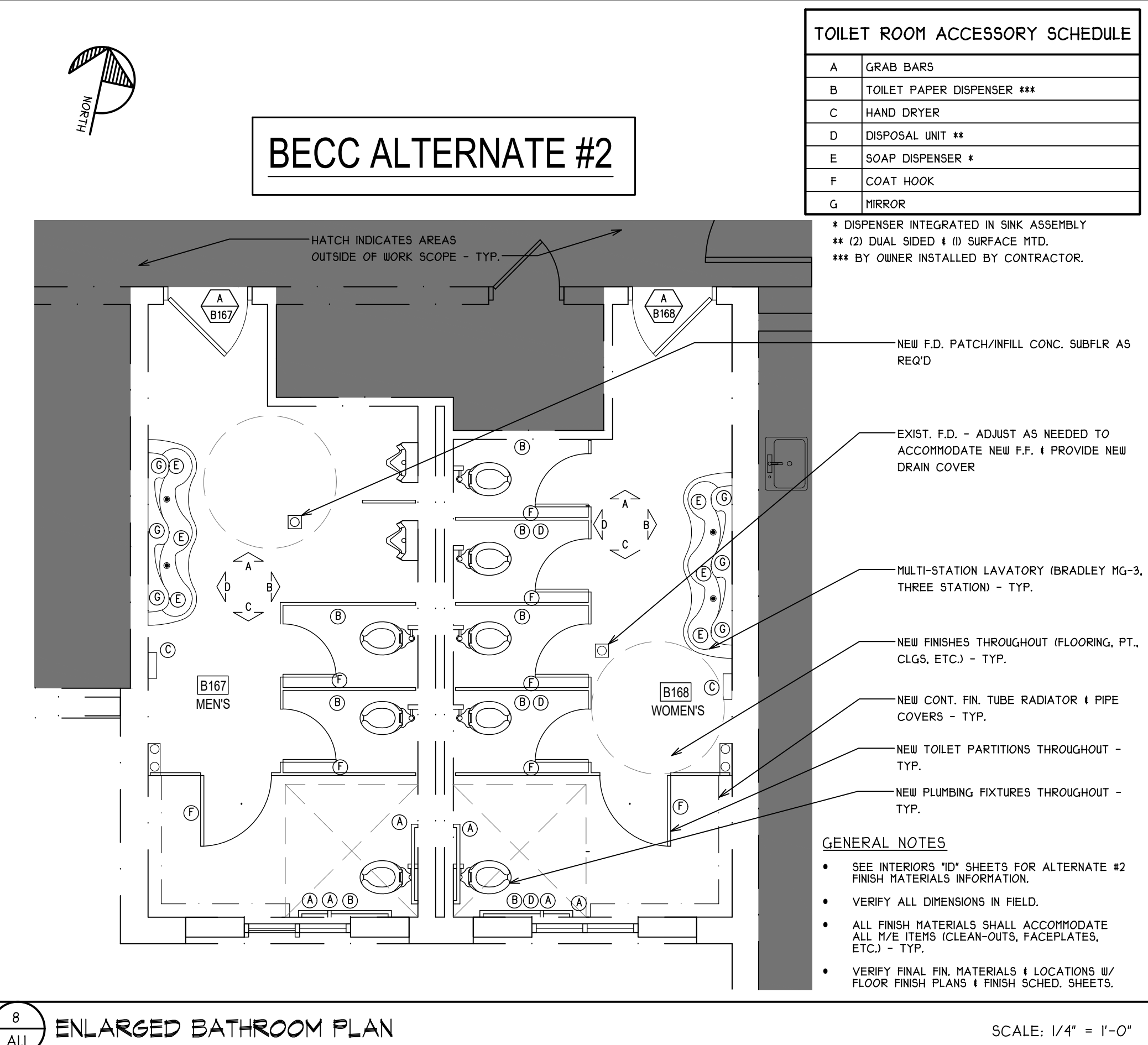
6 DOOR & FRAME TYPES

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

R116/DR#	DOOR SIZE	DOOR			FRAME			DETAILS			RATING	HDBR. SET	REMARKS
		TYP	MAT	FIN	TYP	MAT	FIN	HD	JB	SL			
106/A	3'-0" x 7'-0"	1	SCID	ST./V.	B	HI	PT	4/A2	3/A2	2/A2	20 MIN	1	
107/A	3'-0" x 7'-0"	1	SCID	ST./V.	B	HI	PT	4/A2	3/A2	2/A2	20 MIN	1	
108/A	3'-0" x 7'-0"	1	SCID	ST./V.	B	HI	PT	4/A2	3/A2	2/A2	20 MIN	1	
109/A	3'-0" x 7'-0"	1	SCID	ST./V.	B	HI	PT	4/A2	3/A2	2/A2	20 MIN	1	
110/A	3'-0" x 7'-0"	1	SCID	ST./V.	B	HI	PT	4/A2	3/A2	2/A2	20 MIN	1	
111/A	3'-0" x 7'-0"	1	SCID	ST./V.	B	HI	PT	4/A2	3/A2	2/A2	20 MIN	1	
112/A	3'-0" x 7'-0"	1	SCID	ST./V.	B	HI	PT	4/A2	3/A2	2/A2	20 MIN	1	
113/A	3'-0" x 7'-0"	1	SCID	ST./V.	B	HI	PT	4/A2	3/A2	2/A2	20 MIN	1	
B147/A	3'-0" x 7'-0"	2	SCID	ST./V.	B	HI	PT	4/A2	3/A2	2/A2	20 MIN	2	
B148/A	3'-0" x 7'-0"	2	SCID	ST./V.	B	HI	PT	4/A2	3/A2	2/A2	20 MIN	2	

- PT. ALL NEW DR FRAMES EA. SIDE
 - CONTRACTOR TO CONFIRM ALL EXIST. DOOR OPENINGS.
 - ALL CORES TO MATCH EXIST. BAS STANDARD CORES 1 KEYING. V.J.F.

7 DOOR SCHEDULE



8 ENLARGED BATHROOM PLAN

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

FINISH KEY				
CODE	MATERIAL	MANUFACTURER	DESCRIPTION	REMARKS
P1	PAINT	BENJAMIN MOORE	COLOR: TAPESTRY BEIGE BM975	FIELD (ALL WALLS, UNLESS NOTED OTHERWISE)
EP1	EPOXY PAINT	BENJAMIN MOORE	COLOR: TAPESTRY BEIGE BM975	
P2	PAINT	BENJAMIN MOORE	COLOR: HERBAL ESCAPE BM 1487	ACCENT
EP2	EPOXY PAINT	BENJAMIN MOORE	COLOR: HERBAL ESCAPE BM 1487	ACCENT
P3	PAINT	BENJAMIN MOORE	COLOR: ORANGE BLOSSOM BM 2168-30	ACCENT
P4	PAINT	BENJAMIN MOORE	COLOR: SPACE BLACK BM2119-10	DOOR AND WINDOW FRAMES
P5	PAINT	BENJAMIN MOORE	COLOR: WHITE DOVE OC-17	GENERAL CEILING, METAL DECK COLOR
CPT1	CARPET TILE	INTERFACE	COLLECTION/STYLE: STREAMING COLOR: DARK COPPER SIZE: 25CM X 1M INSTALLATION: ASHLAR	
CPT2	CARPET TILE	NOT USED	NOT USED	
WO1	WALK OFF TILE	INTERFACE	COLLECTION/STYLE: STEP REPEAT SR999 COLOR: ONYX SIZE: 19.69" X 19.69"	
B1	BASE	NORA	COLLECTION/STYLE: STEP REPEAT SR999 COLOR: ONYX SIZE: 19.69" X 19.69"	
RF1	RUBBER FLOOR	NORA	COLLECTION/STYLE: COVED WALL BASE COLOR: BLACK NOTE: 4" H	
RF2	RUBBER FLOOR	NORA	COLLECTION/STYLE: ENVIRONCARE 2.0 MM COLOR: HAUNTED HOUSE NOTE: SHEET	
RF3	RUBBER FLOOR	NORA	COLLECTION/STYLE: SENTICA 2.0 MM COLOR: HEATWAVE NOTE: SHEET	
T1	TRANSITION	SCHLUTER	STYLE: RENO-U FINISH: TBD NOTE: WALK OFF, CARPET, RUBBER FLOOR TO POLISHED CONCRETE, POLISHED CONCRETE TO EXISTING CORRIDOR FLOORING	
T1	TILE	CROSSVILLE	COLLECTION/STYLE: PORTUGAL COLOR: VENHO WHITE SIZE: 24"X24" TILE GROUT: TBD	
T2	TILE	CROSSVILLE	COLLECTION/STYLE: PORTUGAL COLOR: VENHO VERDE SIZE: 6"X24" TILE GROUT: TBD	
WT1	WINDOW TREATMENT	MECHO SHADE	COLLECTION/STYLE: MECHO/S MANUAL COLOR: TBD	
SPU1	TOILET COMPARTMENTS	GENERAL PARTITIONS	COLLECTION/STYLE: SOLID POLYMER UNITS COLOR: ONYX	
SS1	SOLID SURFACE	TERREON/BRADLEY	COLOR: EMPIRE GRAY	BRADLEY EXPRESS MG SERIES 2 WASH STATION

FLOOR PATTERN LEGEND (* DENOTES WALL BASE @ FLOORING)

- RF1 (*B1)
- RF2 (*B1)
- RF3 (*B1)
- CPT1 (*B1)
- WO1 (B1)
- T1/T2 (PAINTED EPOXY BASE, EP2)
- OUT OF SCOPE

FINISH PLAN KEY NOTES:

(TYPICAL THIS SHEET ONLY)

- ① ACCENT PAINT WALL (P2)
- ② PAINTED DOOR/WINDOW FRAMES (P4)
- ③ ROLLER BLIND (WT1)
- ④ GENERAL WALL COLOR (P1) UNLESS NOTED OTHERWISE ON PLAN
- ⑤ WALK OFF CARPET (WO1) WITH BASE (B1)
- ⑥ CARPET (CPT1) WITH BASE (B1)

FINISH PLAN GENERAL NOTES:

1. ALL WALLS TO BE PAINTED P1 UNLESS OTHERWISE NOTED ON PLAN.
2. REFER TO FINISH KEY FOR SPECIFIC FINISH TYPES.
3. CONTACT DESIGNER SHOULD ANY FINISH DISCREPANCIES OCCUR.
4. THIS SHEET IS INTENDED TO BE PRINTED IN COLOR TO CONVEY NECESSARY DESIGN INFORMATION.
5. PATCH ALL HOLES, ETC. LEFT BY ALL TRADES (INCLUDING ELECTRICAL AND MECHANICAL) PRIOR TO PAINTING. PAINT WALL(S) OR CEILING(S) NOT SCHEDULED TO BE PAINTED, WHICH HAVE HAD PATCHING, FROM INSIDE CORNER TO INSIDE CORNER ACROSS ENTIRE SURFACE.
6. FLOORING CONTRACTOR SHALL INCLUDE FLOOR PREPARATION IN THEIR BASE BID SCOPE OF WORK. ANTICIPATE AN APPLICATION OF FLOOR STONE OVER THE ENTIRE SURFACE TO BRING LIKE-PRODUCTS TO A LEVEL CONDITION THAT MEETS OR EXCEEDS THE SUBFLOOR TOLERANCES ESTABLISHED BY PRODUCT MANUFACTURER. WHERE MATERIAL IS TO BE INSTALLED AT SLAB ON GRADE CONDITIONS, MOISTURE TESTS SHALL BE CONDUCTED OF THE EXISTING SLAB TO ENSURE THE SUBFLOOR MEETS PRODUCT REQUIREMENTS. AT FLOOR TILE INSTALLATIONS, THE MOVEMENT GUIDELINES ESTABLISHED IN EJ171-05 SHALL BE FOLLOWED, INCLUDING THE USE OF BOND BREAKER TAPES AS RECOMMENDED.
7. AT EXISTING EXPANSION JOINTS, FEATHER FLOOR STONE 10'-0" IN BOTH DIRECTIONS TO MAINTAIN EXISTING EXPANSION JOINT DEPTH.
8. NEW FIN TUBE RADIATOR COVERS TO BE PAINTED TO MATCH COLOR OF WALL THEY ARE LOCATED. NOTE: NEW FIN TUBE COVERS PROVIDED WITHIN ROOMS B151, B152, B153, B154, (REFER TO M1.2 FOR LOCATIONS).



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B.E.C.C. BUILDING MISC IMPROVEMENTS

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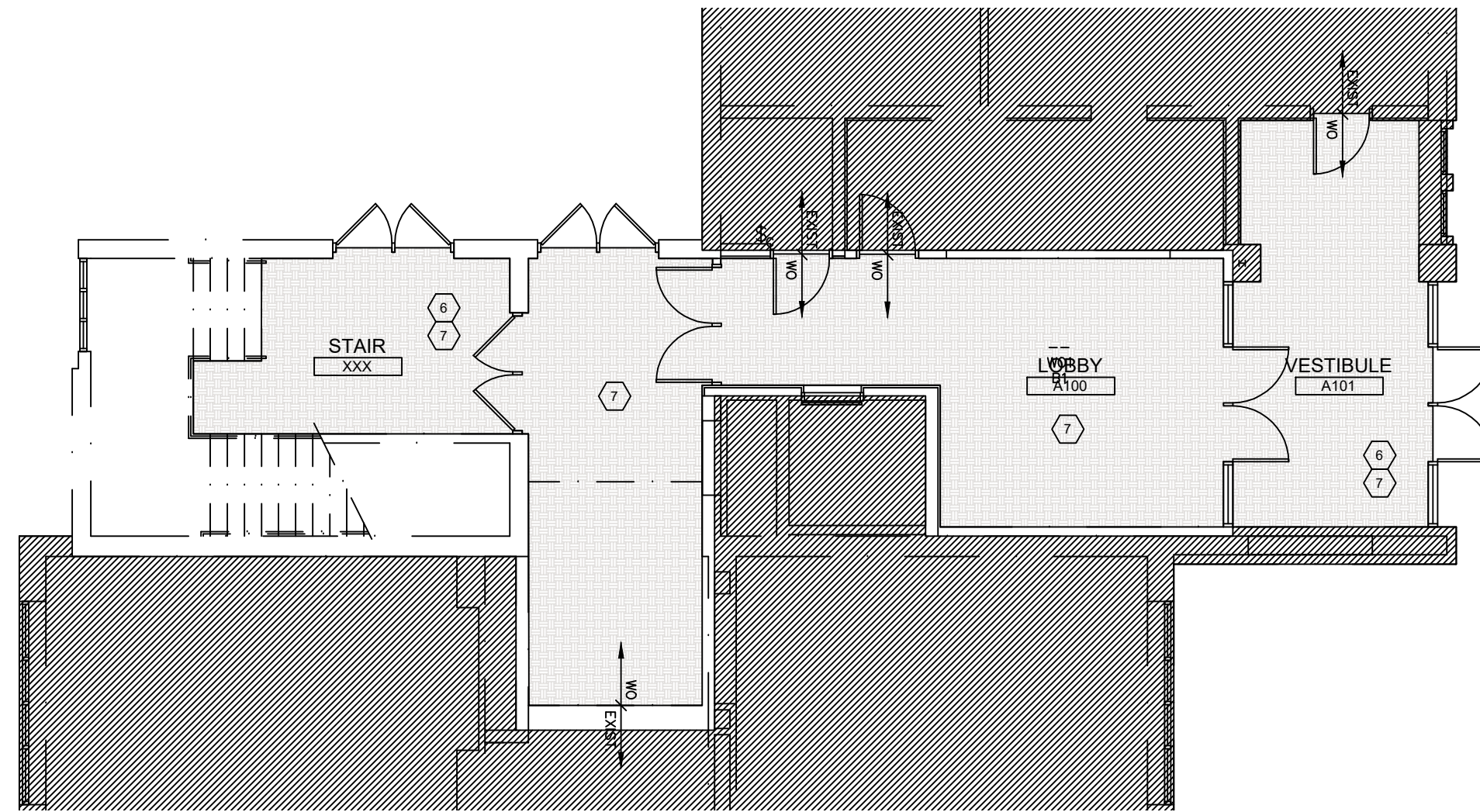
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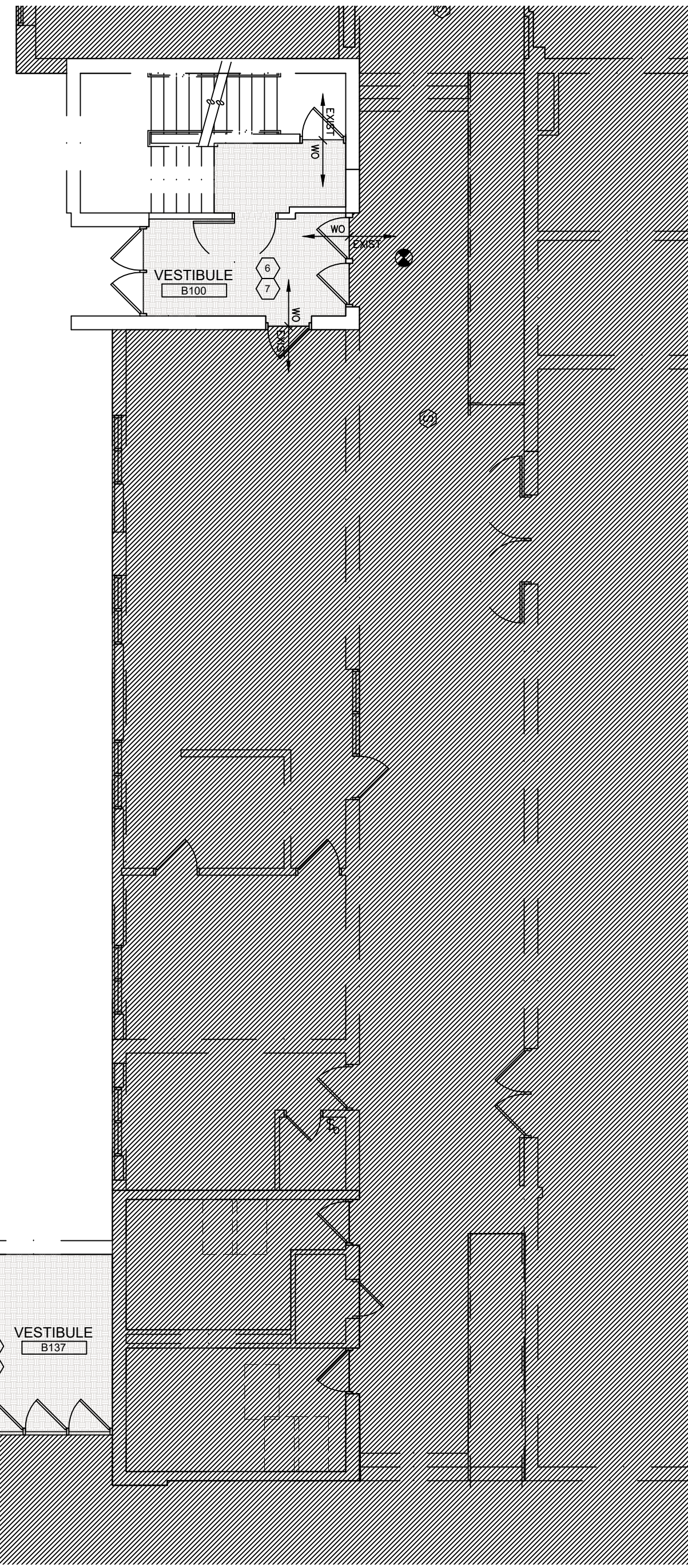
SHEET NAME FINISH FLOOR PLAN & KEY

SHEET NO.

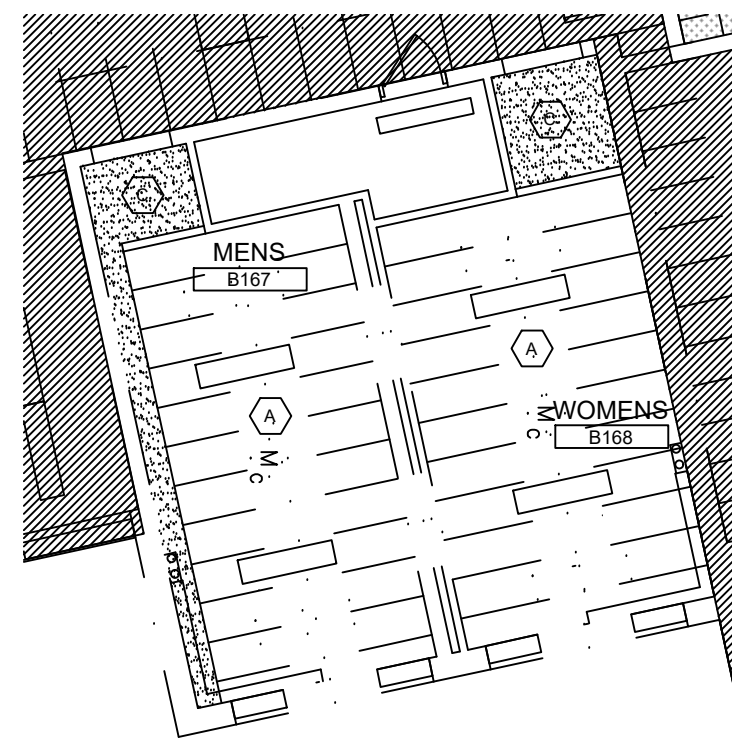
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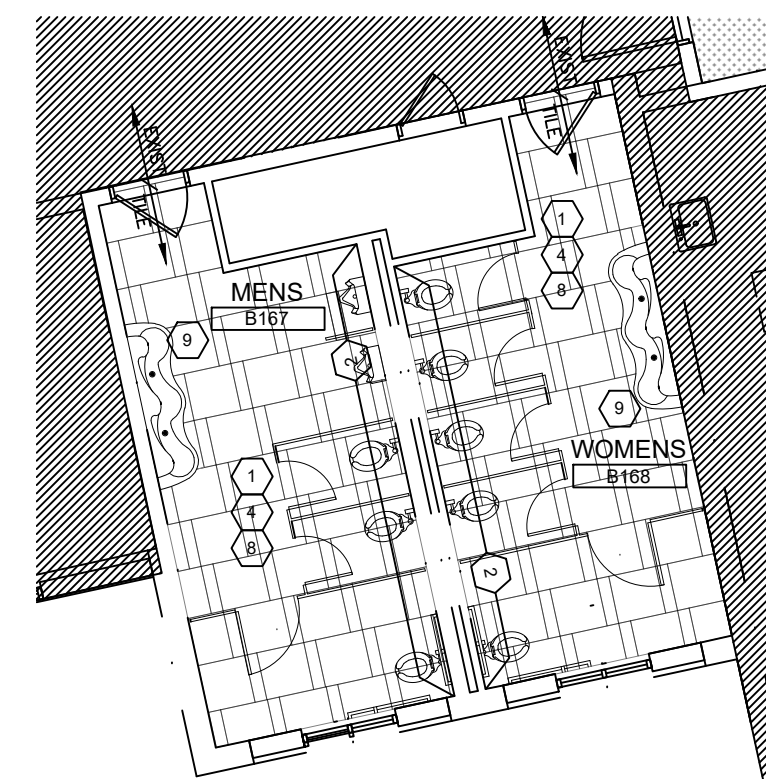
NORTH
ALT 1 - FINISH FLOOR PLAN
SCALE: 1/4" = 1'-0"



NORTH
ALT 1 - FINISH FLOOR PLAN
SCALE: 1/4" = 1'-0"



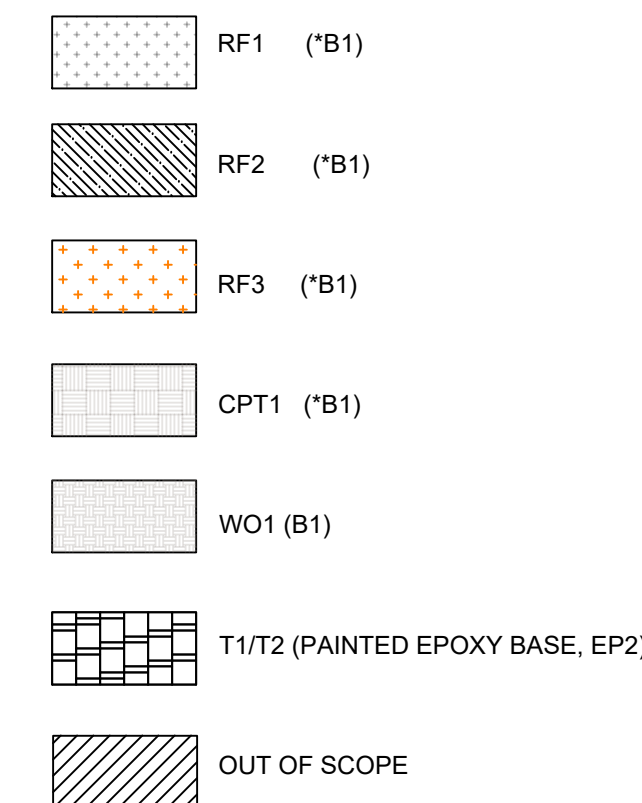
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ALT 3 - REFLECTED CEILING PLAN
SCALE: 1/4" = 1'-0"



NORTH
ALT 2 - FINISH FLOOR PLAN
SCALE: 1/4" = 1'-0"

FINISH KEY				
CODE	MATERIAL	MANUFACTURER	DESCRIPTION	REMARKS
P1	PAINT	BENJAMIN MOORE	COLOR: TAPESTRY BEIGE BM975	FIELD (ALL WALLS, UNLESS NOTED OTHERWISE)
EP1	EPOXY PAINT	BENJAMIN MOORE	COLOR: TAPESTRY BEIGE BM975	
P2	PAINT	BENJAMIN MOORE	COLOR: HERBAL ESCAPE BM 1487	ACCENT
EP2	EPOXY PAINT	BENJAMIN MOORE	COLOR: HERBAL ESCAPE BM 1487	ACCENT
P3	PAINT	BENJAMIN MOORE	COLOR: ORANGE BLOSSOM BM 2168-30	ACCENT
P4	PAINT	BENJAMIN MOORE	COLOR: SPACE BLACK BM2119-10	DOOR AND WINDOW FRAMES
P5	PAINT	BENJAMIN MOORE	COLOR: WHITE DOVE OC-17	GENERAL CEILING, METAL DECK COLOR
CPT1	CARPET TILE	INTERFACE	COLLECTION/STYLE: STREAMING COLOR: DARK COPPER SIZE: 25CM X 1M INSTALLATION: ASHLAR	
CPT2	CARPET TILE	NOT USED	NOT USED	
WO1	WALK OFF TILE	INTERFACE	COLLECTION/STYLE: STEP REPEAT SR999 COLOR: ONYX SIZE: 19.69" X 19.69"	
B1	BASE	NORA	COLLECTION/STYLE: STEP REPEAT SR999 COLOR: ONYX SIZE: 19.69" X 19.69"	
RF1	RUBBER FLOOR	NORA	COLLECTION/STYLE: COVED WALL BASE COLOR: BLACK NOTE: 4" H	
RF2	RUBBER FLOOR	NORA	COLLECTION/STYLE: ENVIRONCARE 2.0 MM COLOR: HAUNTED HOUSE NOTE: SHEET	
RF3	RUBBER FLOOR	NORA	COLLECTION/STYLE: SENTICA 2.0 MM COLOR: HEATWAVE NOTE: SHEET	
T1	TRANSITION	SCHLUTER	STYLE: RENO-U FINISH: TBD NOTE: WALK OFF, CARPET, RUBBER FLOOR TO POLISHED CONCRETE, POLISHED CONCRETE TO EXISTING CORRIDOR FLOORING	
T1	TILE	CROSSVILLE	COLLECTION/STYLE: PORTUGAL COLOR: VENHO WHITE SIZE: 24"X24" TILE GROUT: TBD	SUBFLOOR LEVELER & INFILL WHERE REQUIRED. RECESSED URINALS (TO BE DEMO'D) WILL REQUIRE ADDITIONAL LEVELER/INFILL
T2	TILE	CROSSVILLE	COLLECTION/STYLE: PORTUGAL COLOR: VENHO VERDE SIZE: 6"X24" TILE GROUT: TBD	SUBFLOOR LEVELER & INFILL WHERE REQUIRED.
WT1	WINDOW TREATMENT	MECHO SHADE	COLLECTION/STYLE: MECHO/5 MANUAL COLOR: TBD	
SPU1	TOILET COMPARTMENTS	GENERAL PARTITIONS	COLLECTION/STYLE: SOLID POLYMER UNITS COLOR: ONYX	
SS1	SOLID SURFACE	TERREON/BRADLEY	COLOR: EMPIRE GRAY	BRADLEY EXPRESS MG SERIES 3 WASH STATION
AC1	ACOUSTICAL CEILING PANEL	ARMSTRONG TECTUM	PAINT P5	SURFACE MOUNTED. REFER TO ARCHITECTURAL PLAN FOR SIZES AND LOCATIONS.
AC2	SUSPENDED ACOUSTIC CEILING SYSTEM	CERTAINTeed	STYLE: SYMPHONY EDGE: SQUARE SIZE: 24" X 24" X 3/4" COLOR: WHITE	GRID TO BE ARMSTRONG PRELUDE 15/16" EXPOSED TEE

FLOOR PATTERN LEGEND
(* DENOTES WALL BASE @ FLOORING)



FINISH PLAN KEY NOTES:
(TYPICAL THIS SHEET ONLY)

- RESTROOM FIELD PAINT TO BE EPOXY (EP1) UNLESS NOTED ON PLAN
- ACCENT EPOXY PAINT WALL (EP2)
- PAINTED DOOR/WINDOW FRAMES (P4)
- RESTROOM FLOOR TILE (T1, T2)
- RESTROOM WALL TILE (SEE TYP. WALL TILE ELEVATION)
- GENERAL WALL COLOR (P1) UNLESS NOTED OTHERWISE ON PLAN
- WALK OFF CARPET (WO1) WITH BASE (B1)
- CLEAN, PREP AND PAINT EXISTING CURB/BASE WITH EPOXY PAINT (EP2)
- SOLID SURFACE, WALL MOUNTED SINK BASIN (SS1)

FINISH PLAN GENERAL NOTES:

- ALL WALLS TO BE PAINTED P1 UNLESS OTHERWISE NOTED ON PLAN.
- REFER TO FINISH KEY FOR SPECIFIC FINISH TYPES.
- CONTACT DESIGNER SHOULD ANY FINISH DISCREPANCIES OCCUR.
- THIS SHEET IS INTENDED TO BE PRINTED IN COLOR TO CONVEY NECESSARY DESIGN INFORMATION.
- PATCH ALL HOLES, ETC. LEFT BY ALL TRADES (INCLUDING ELECTRICAL AND MECHANICAL) PRIOR TO PAINTING. PAINT WALL(S) OR CEILING(S) NOT SCHEDULED TO BE PAINTED, WHICH HAVE HAD PATCHING, FROM INSIDE CORNER TO INSIDE CORNER ACROSS ENTIRE SURFACE.
- FLOORING CONTRACTOR SHALL INCLUDE FLOOR PREPARATION IN THEIR BASE BID SCOPE OF WORK. ANTICIPATE AN APPLICATION OF FLOOR STONE OVER THE ENTIRE SURFACE TO BRING LIKE-PRODUCTS TO A LEVEL CONDITION THAT MEETS OR EXCEEDS THE SUBFLOOR TOLERANCES ESTABLISHED BY PRODUCT MANUFACTURER, WHERE MATERIAL IS TO BE INSTALLED AT SLAB ON GRADE CONDITIONS. MOISTURE TESTS SHALL BE CONDUCTED OF THE EXISTING SLAB TO ENSURE THE SUBFLOOR MEETS PRODUCT REQUIREMENTS. AT FLOOR TILE INSTALLATIONS, THE MOVEMENT GUIDELINES ESTABLISHED IN EJ171-05 SHALL BE FOLLOWED, INCLUDING THE USE OF BOND BREAKER TAPES AS RECOMMENDED.
- AT EXISTING EXPANSION JOINTS, FEATHER FLOOR STONE 10'-0" IN BOTH DIRECTIONS TO MAINTAIN EXISTING EXPANSION JOINT DEPTH.



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**SHEET NAME
FINISH FLOOR
PLAN & KEY
BID ALTERNATES**

SHEET NO.

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BRIGHTON AREA SCHOOLS
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BRIGHTON MI 48116

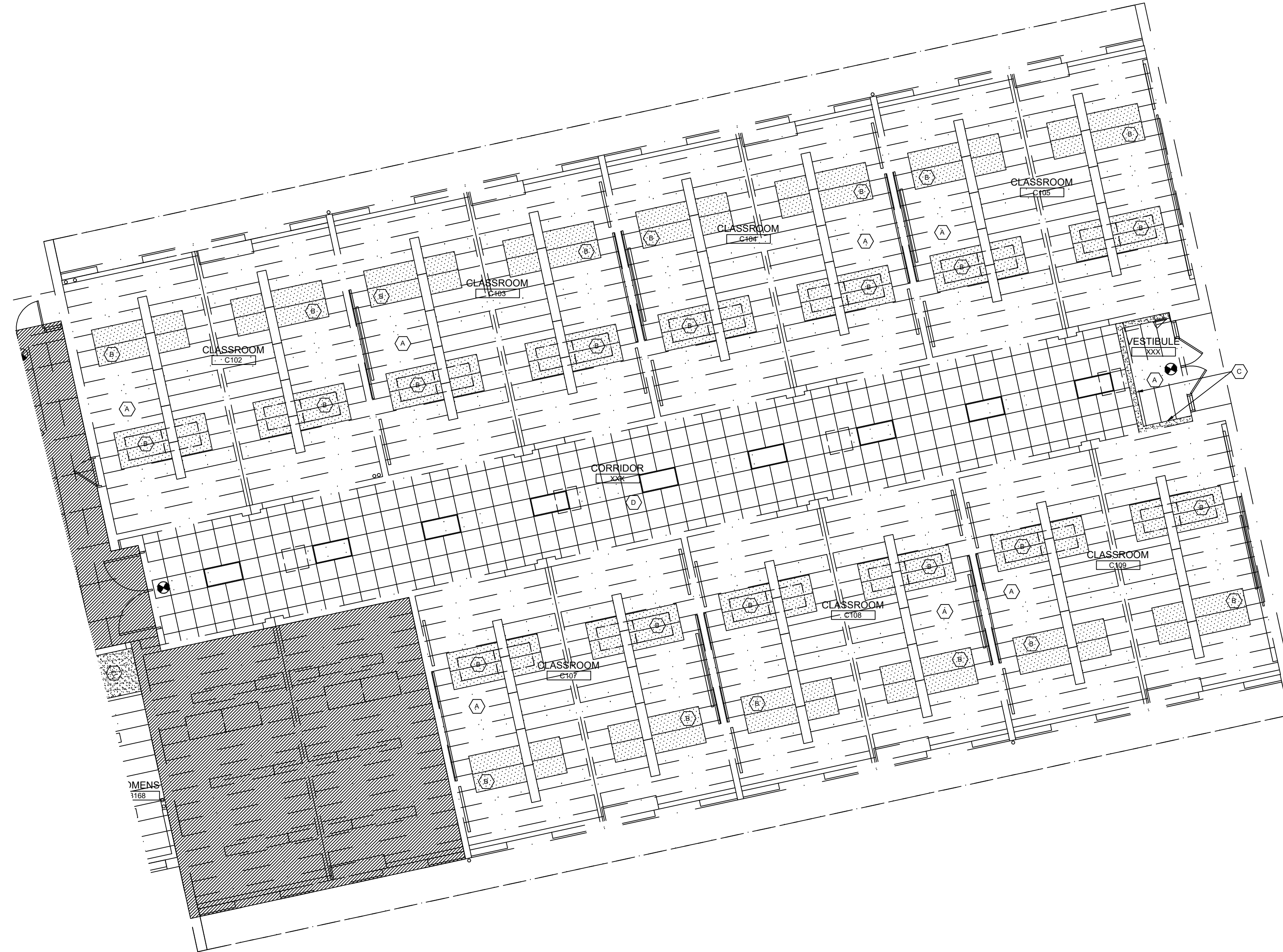
REFLECTED CEILING PLAN GENERAL NOTES:

1. CONTRACTOR TO CENTER ALL CEILING MOUNTED ITEMS (i.e. RECESSED LIGHT FIXTURES, SMOKE DETECTORS, FIRE SUPPRESSION HEADS) WITHIN THE ASSOCIATED CEILING TILE SHOWN. COORDINATE FINAL LOCATION WITH THE APPROPRIATE MECHANICAL, ELECTRICAL, FIRE ALARM, AND FIRE SUPPRESSION DRAWINGS AS REQUIRED.
2. REFER TO MECHANICAL HVAC PLANS FOR DIFFUSER/ GRILLE SIZES
3. REFER TO DIMENSIONS ON REFLECTED CEILING PLAN TO LOCATE/ LAYOUT CEILING GRID AND LIGHT FIXTURES.
4. CEILING HEIGHTS IN AREAS OF NEW WORK SHALL BE 8'-0" UNLESS NOTED ON REFLECTED CEILING PLAN.

REFLECTED CEILING PLAN KEY NOTES:

(TYPICAL THIS SHEET ONLY)

- (A) EXISTING CEILING TO BE PAINTED (P5)
- (B) ACOUSTIC CEILING PANELS (AC1)
- (C) PAINT GYP. SOFFIT (PT5)
- (D) SUSPENDED ACOUSTIC CEILING GRID AND TILES (AC2)



NORTH
REFLECTED CEILING PLAN
SCALE: 1/4" = 1'-0"

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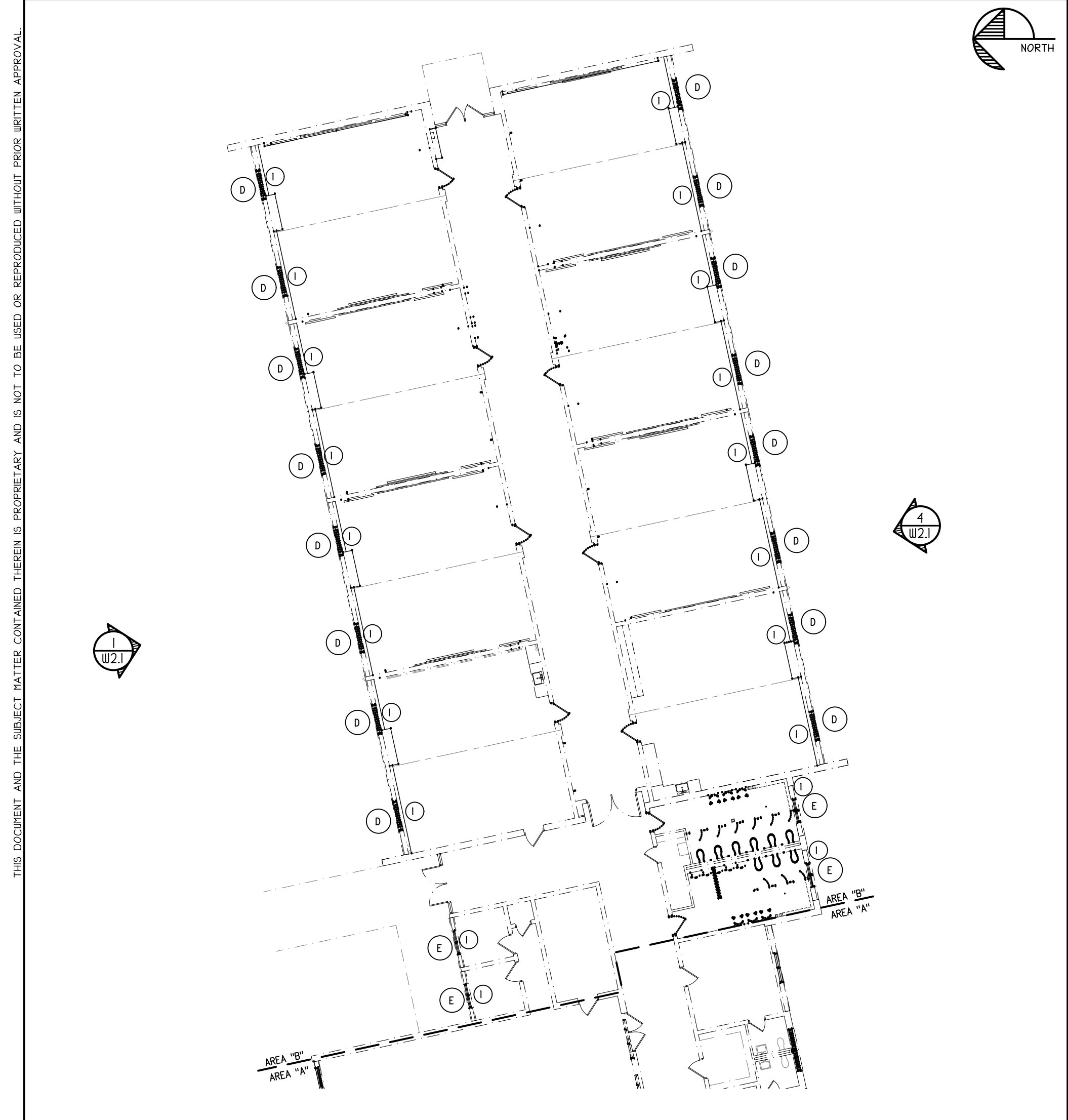
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SHEET NAME
**FINISH FLOOR
PLAN & KEY**

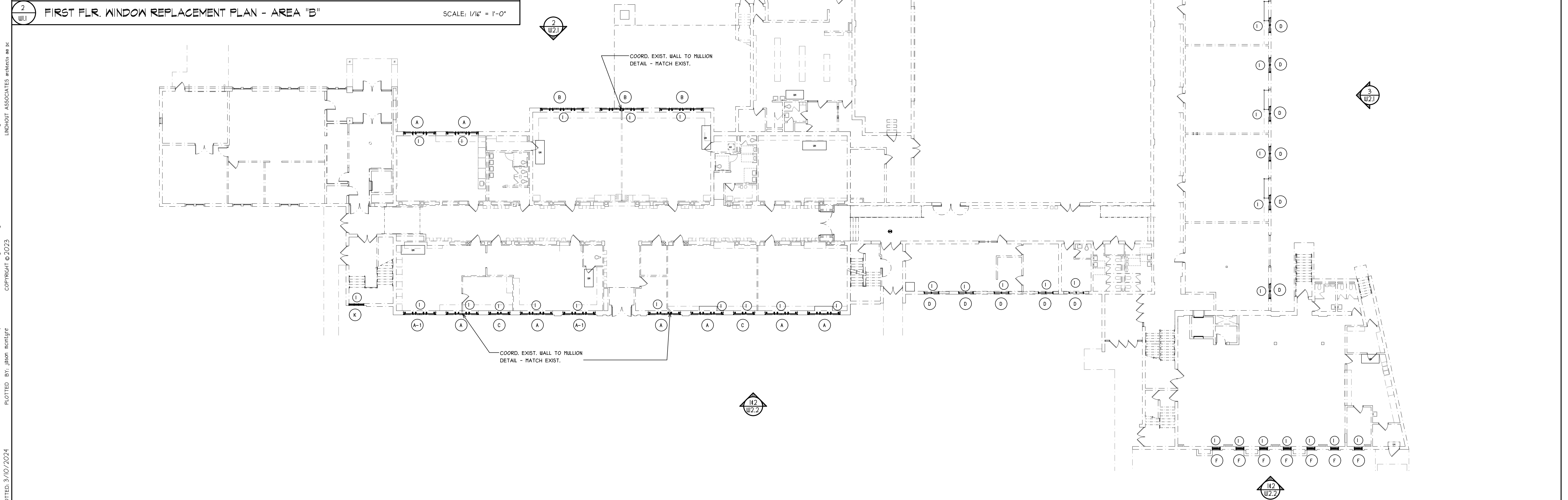
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DATE PLOTTED: 3/10/2024
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2
U1.1
FIRST FLR. WINDOW REPLACEMENT PLAN - AREA "B" SCALE: 1/16" = 1'-0"

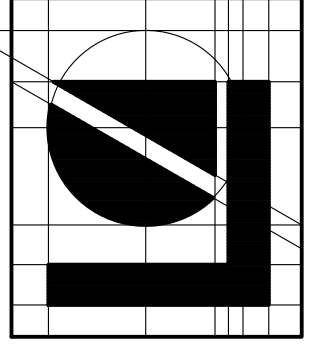


1
U1.1
FIRST FLR. WINDOW REPLACEMENT PLAN - AREA "A" SCALE: 1/16" = 1'-0"



LINE LEGEND	
—	NEW CONSTRUCTION
- - -	EXISTING TO REMAIN
---	HIDDEN WORK
.....	EXISTING TO BE REMOVED

- DEMO NOTES:**
- 1 REMOVE EXIST. ALUM. FRAMED WINDOW. REMOVE ALL ASSOCIATED FASTENERS AND ACCESSORIES + PROVIDE CLEAN JOINTS FOR NEW WINDOW INSTALLATION.
- GENERAL NOTES:**
- REFER TO DRAWING SHEETS DI 1 D2 FOR INTERIOR DEMO SCOPE.
 - ALL NEW WINDOWS SHALL BE THERMALLY BROKEN PREFINISHED ALUMINUM STOREFRONT W/ INSUL. GLASS
 - ALUM. FRAMES TO MATCH RECENT ALUM. ENTRYWAYS
 - GLASS TINT TO MATCH EXIST.
 - CONTRACTOR TO FIELD REVIEW ALL EXISTING WINDOW CONDITIONS + RUGH OPENING SIZES.



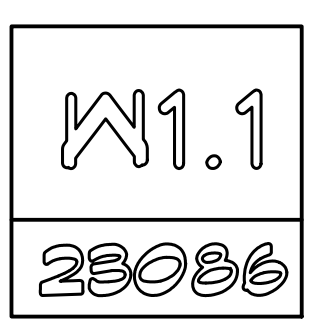
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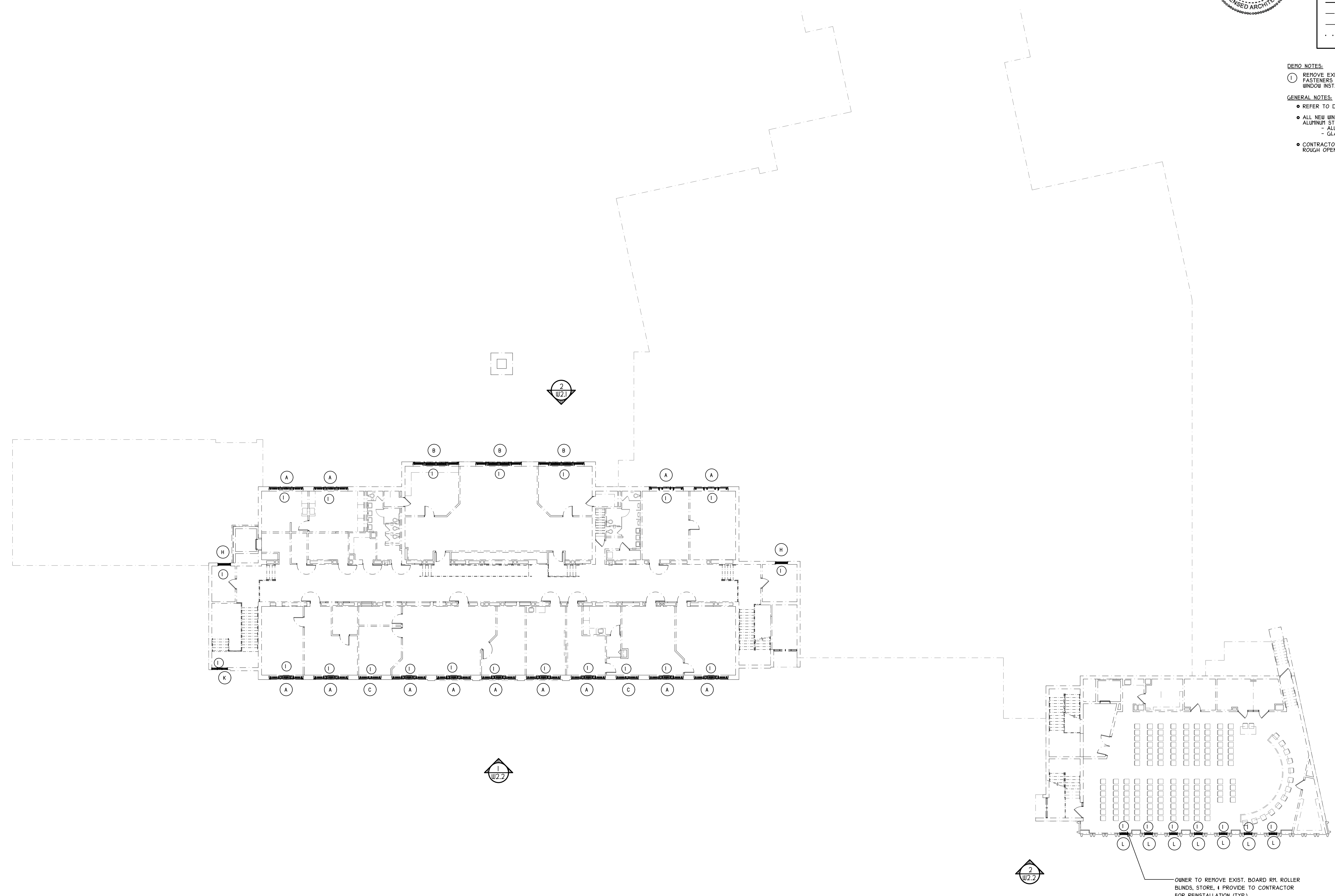
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REVISIONS for:
BRIGHTON AREA SCHOOLS
(B.E.C.C. BLDG.) BRIGHTON, MICHIGAN
WIND. REP. PLN. - 1ST FLR.



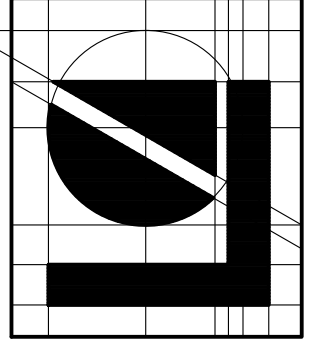
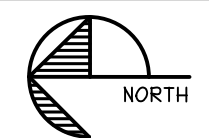
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FILE LOCATION: C:\LINDHOUT\23084-088 BAS phase 4\23085 Project 2 - BECC East wing reno\dwg\CAD\23086_011 - Window Plans.dwg
 DATE PLOTTED: 3/10/2024
 PLOTTED BY: jason mcintyre
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LINE LEGEND	
—	NEW CONSTRUCTION
- - -	EXISTING TO REMAIN
.....	HIDDEN WORK
.....	EXISTING TO BE REMOVED

- DEMO NOTES:**
- ① REMOVE EXIST. ALUM. FRAMED WINDOW, REMOVE ALL ASSOCIATED FASTENERS AND ACCESSORIES & PROVIDE CLEAN JOINTS FOR NEW WINDOW INSTALLATION.
- GENERAL NOTES:**
- REFER TO DRAWING SHEETS D1 & D2 FOR INTERIOR DEMO SCOPE.
 - ALL NEW WINDOWS SHALL BE THERMALLY BROKEN PREFINISHED ALUMINUM STOREFRONT w/ INSUL. GLASS
 - ALUM. FRAMES TO MATCH RECENT ALUM. ENTRYWAYS
 - GLASS TINT TO MATCH EXIST.
 - CONTRACTOR TO FIELD REVIEW ALL EXISTING WINDOW CONDITIONS & ROUGH OPENING SIZES.



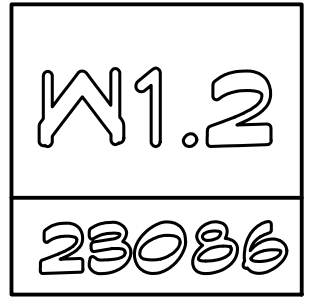
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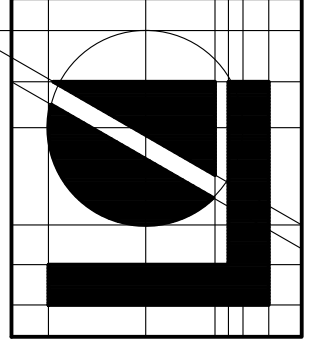
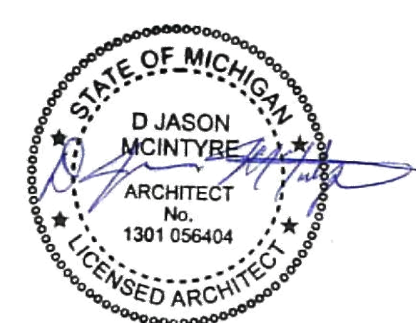
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chk'd:	XXX	3/8/2024
app'd:	XXX	11/2/2023

RENOVATIONS for:
 BRIGHTON AREA SCHOOLS
 (B.E.C.C. BLDG.) BRIGHTON, MICHIGAN
 WIND. REP. PLN. - 2ND FLR.



FILE LOCATION: C:\LINDHOUT\23084-088_BAS phase 6\23085 Project 2 - BECC East wing reno\dwg\CD\W2 - Exterior Window Elevations.dwg
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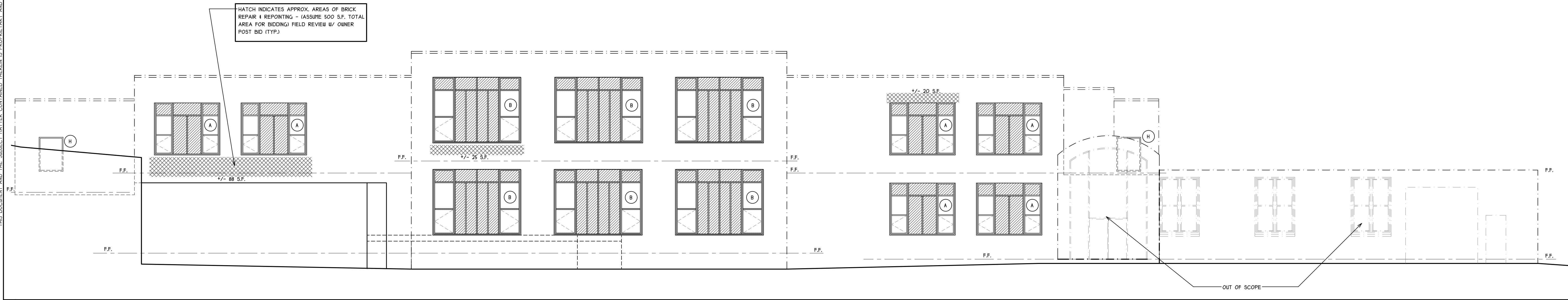
LINE LEGEND	
	NEW CONSTRUCTION
	EXISTING TO REMAIN
	HIDDEN WORK
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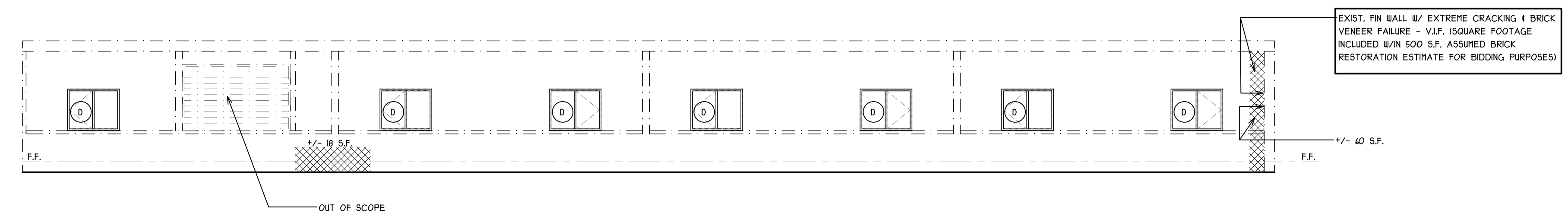
1 NORTH ELEVATION

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



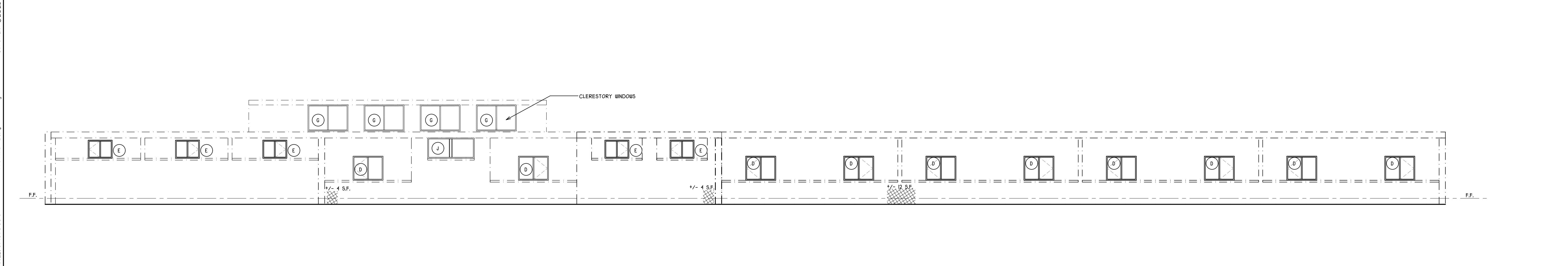
2 EAST ELEVATION

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



3 SOUTH ELEVATION

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



4 SOUTHEAST ELEVATION

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

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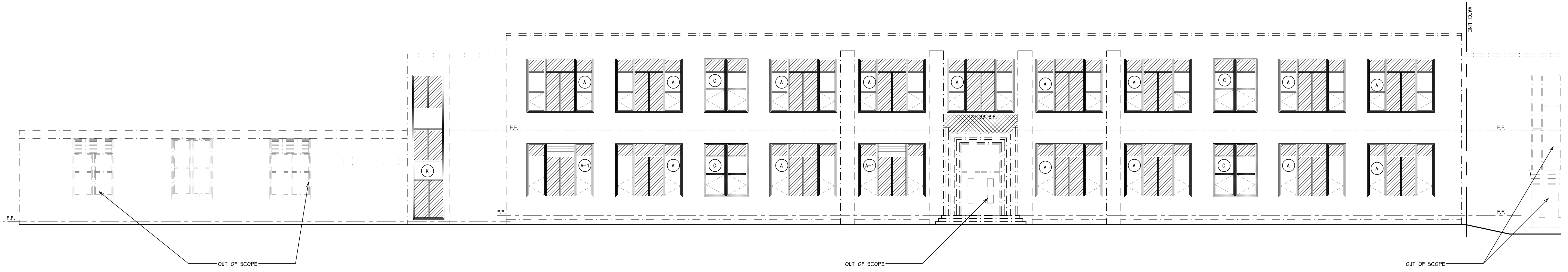
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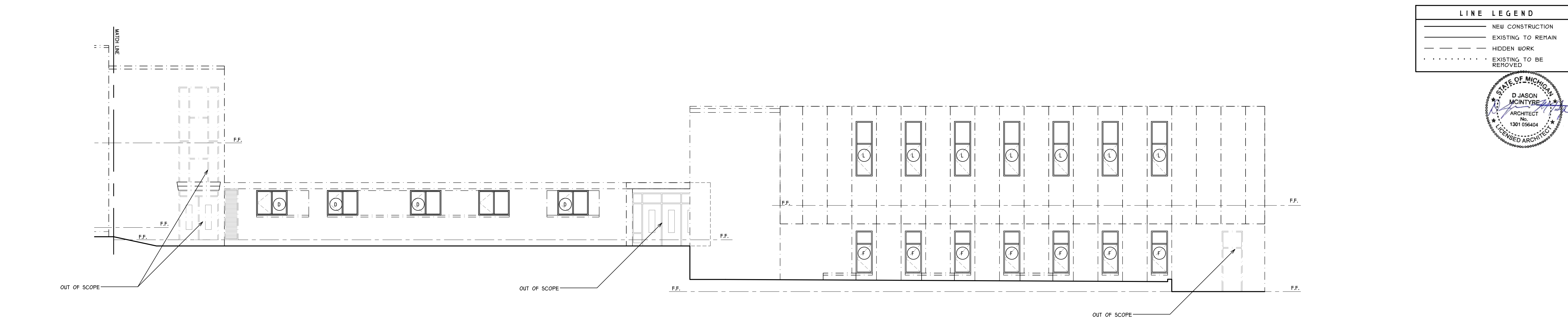
EXTERIOR WINDOW REPLACEMENT FOR:
BAS - B.E.C.C. BLDG
 BRIGHTON, MICHIGAN
 EXTERIOR ELEVATIONS

W2.1
 23084

FILE LOCATION: C:\LINDHOUT\23084-088 BAS phase 6\23085 Project 2 - BECC East wing reno\dwgs\CD\W2 - Exterior Window Elevations.dwg
 DATE PLOTTED: 3/10/2024
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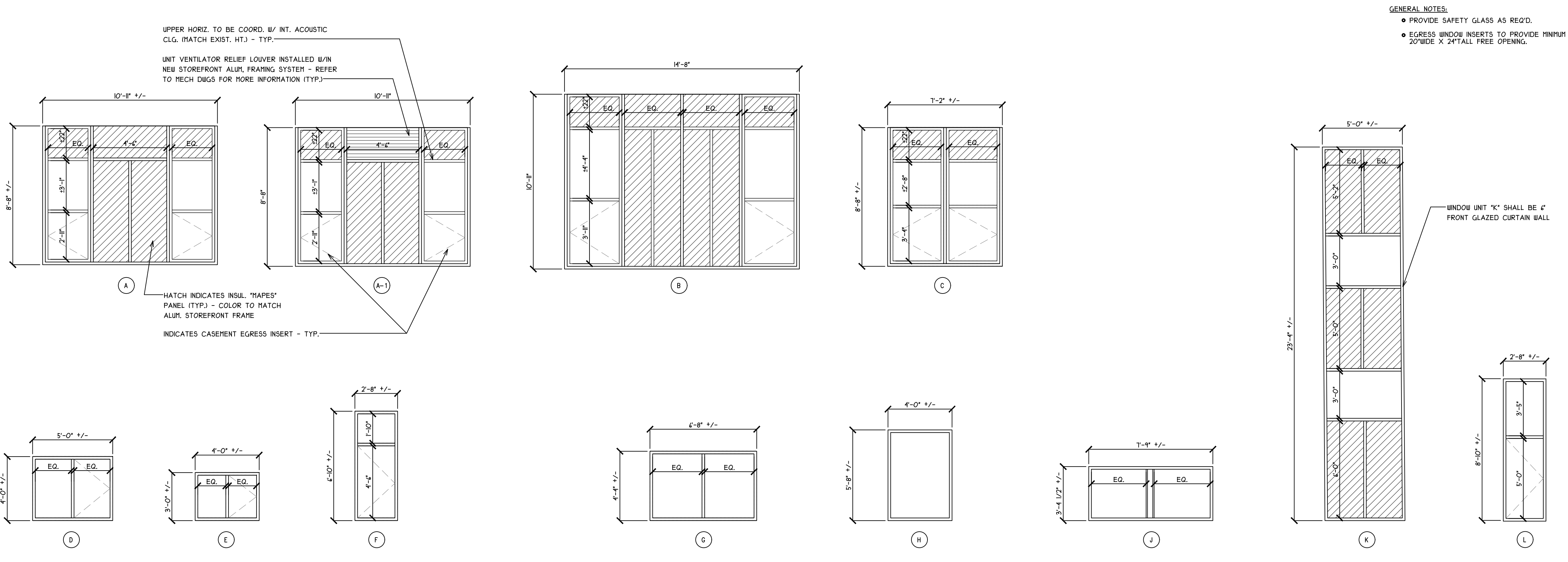


1 PARTIAL WEST ELEVATION SCALE: 1/8" = 1'-0"

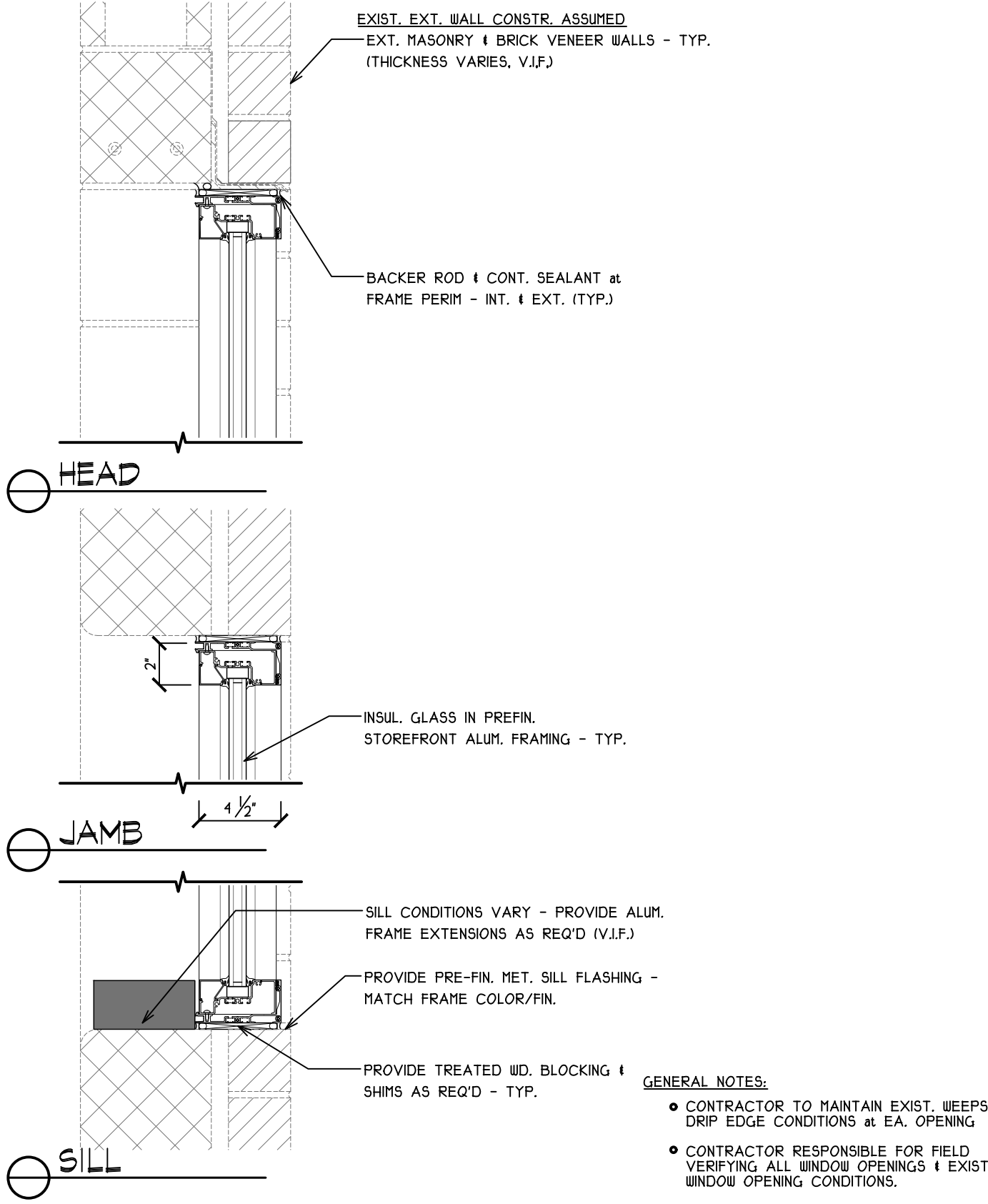


2 PARTIAL WEST ELEVATION SCALE: 1/8" = 1'-0"

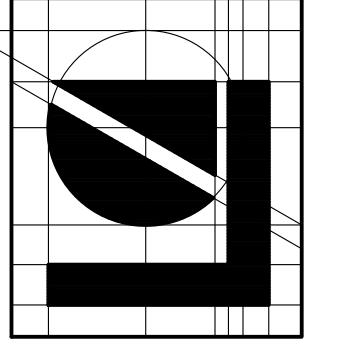
LINE LEGEND	
	NEW CONSTRUCTION
	EXISTING TO REMAIN
	HIDDEN WORK
	EXISTING TO BE REMOVED



3 WINDOW ELEVATIONS SCALE: 1/4" = 1'-0"



4 TYP. HEAD, JAMB & SILL DETAILS SCALE: 1/2" = 1'-0"



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EXTERIOR WINDOW REPLACEMENT FOR:
BAS - B.E.C.C. BLDG
 BRIGHTON, MICHIGAN
EXTERIOR ELEVATIONS

W2.2
 23084

PLUMBING SPECIFICATION

GENERAL NOTES: PLUMBING

- PROVIDE MATERIALS AND EQUIPMENT AND EXECUTE THE WORK, INCLUDING ALL TESTING AND INSPECTIONS, IN COMPLIANCE WITH THE APPLICABLE PROVISIONS OF FEDERAL, STATE AND LOCAL GOVERNMENT LAWS, ORDINANCES, REFERENCED CODES AND STANDARDS CURRENT AS OF THE ISSUE DATE OF THESE DRAWINGS. ALL MORE STRINGENT REQUIREMENTS OF THE CONTRACT DOCUMENTS SHALL MODIFY, SUPPLEMENT AND SUPERSEDE APPLICABLE PORTIONS OF GOVERNING LAWS, ORDINANCES, CODES AND STANDARDS.
- CONTRACTOR SHALL PRESENT CERTIFICATE TO THE OWNER THAT ALL APPLICABLE BUILDING PERMITS HAVE BEEN SECURED PRIOR TO STARTING ANY WORK, AND PROVIDE THE OWNER WITH ALL REQUIRED CERTIFICATES OF FINAL APPROVAL FROM THE GOVERNING JURISDICTIONS AT COMPLETION OF THE WORK. PROVIDE ALL SHOP DRAWINGS AS REQUIRED IN FOLLOWING SECTIONS.
- MAKE ALL CONNECTIONS TO EXISTING SYSTEMS DURING DESIGNATED PERIODS UPON APPROVAL OF THE OWNER AND AT NO INCREASE IN CONTRACT SUM.
- EXISTING FACILITIES:
 - DO NOT INTERRUPT EXISTING UTILITIES UTILIZED BY THE OWNER EXCEPT AS SPECIFIED OR WHEN APPROVED IN WRITING, AND THEN ONLY AFTER TEMPORARY UTILITY SERVICES HAVE BEEN APPROVED AND PROVIDED. INTERRUPTIONS MUST BE SCHEDULED TO SUIT THE OWNER'S REQUIREMENTS.
 - VERIFY ALL EXISTING WORK, WHERE EXISTING CONNECTIONS ARE PARTIAL, PROVIDE ALL NECESSARY MATERIALS, LABOR AND EQUIPMENT REQUIRED TO MODIFY EXISTING WORK. IN ADDITION, MAINTAIN INTEGRITY OF THE EXISTING SYSTEMS. RECTIFY ANY CONTAMINATION, DEGRADATION OF CLEANLINESS OR DAMAGE TO THE EXISTING SYSTEMS TO THE SATISFACTION OF THE OWNER. PROVIDE ALL WORK SO REQUIRED AT NO INCREASE IN THE CONTRACTOR'S ORIGINAL PROPOSAL.
- COORDINATE EXACT LOCATION OF CONSTRUCTION TO PRECLUDE ANY INTERFERENCES BETWEEN PIPING, WIRING, LIGHTING FIXTURES, DUCTWORK, BUILDING EQUIPMENT, PROCESS EQUIPMENT AND OTHER CONSTRUCTION.
- PROVIDE LABOR, INCLUDING FIELD ERECTION AND SUPERVISION, MATERIALS, EQUIPMENT AND ANCILLARIES, AND COORDINATE, PROCURE, FABRICATE, DELIVER, ERECT OR INSTALL, INTERFACE WITH EXISTING WORK, START, DEBUG AND TEST ALL SYSTEMS AS NECESSARY TO PROVIDE THE OWNER WITH A COMPLETE, OPERATING FACILITY IN CONFORMANCE WITH THE CONSTRUCTION BID DOCUMENTS.
- ALL CUTTING AND PATCHING THAT MAY BE NECESSARY FOR THE INSTALLATION OF THE MECHANICAL CONTRACTOR'S WORK SHALL BE PERFORMED AND REPAIRED BY THE TRADE WHOM NORMALLY PERFORMS THAT WORK AND PAID FOR BY THE PLUMBING CONTRACTOR. NO CUTTING OF THE BUILDING STRUCTURAL SYSTEM SHALL BE PERFORMED WITHOUT THE WRITTEN CONSENT OF THE ARCHITECT BEING PREVIOUSLY OBTAINED.
- THE PLUMBING CONTRACTOR SHALL VISIT THE SITE PRIOR TO SUBMITTING HIS BID TO FAMILIARIZE HIMSELF WITH THE ACTUAL PROJECT CONDITIONS AND TO CHECK FOR ANY INTERFERENCES BETWEEN HIS WORK AND THAT OF THE OTHER TRADES, AND/OR ANY APPARENT VIOLATIONS OF LOCAL OR STATE CODES, LAWS, ORDINANCES AND REGULATIONS. SHOULD ANY VIOLATIONS OR INTERFERENCES APPEAR AND DEPARTURE FROM THE DESIGN INTENT OF THE CONTRACT DOCUMENTS IS REQUIRED, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT PRIOR TO ENTERING INTO A CONTRACT WITH THE OWNER. FAILURE TO PROVIDE THE ARCHITECT WITH THE AFOREMENTIONED NOTIFICATION SHALL RESULT IN THE CONTRACTOR BEING HELD RESPONSIBLE TO COMPLETE ALL WORK TO MEET THE INTENT OF THE CONTRACT DOCUMENTS WITH NO ADDITIONAL EXPENSES BEING INCURRED BY THE OWNER.
- THE DRAWINGS ARE DIAGRAMMATIC AND SHOW GENERAL LOCATIONS AND ARRANGEMENTS OF ALL THE EQUIPMENT AND PIPING. THE DRAWINGS SHALL BE FOLLOWED AS CLOSELY AS BUILDING CONSTRUCTION AND ALL OTHER WORK WILL PERMIT. DO NOT SCALE DRAWINGS FOR EXACT MEASUREMENTS.
- DEMOLITION OF PLUMBING EQUIPMENT SHALL INCLUDE ALL EXISTING PIPING, VALVES, CONTROLS, SUPPORTS, FLUES AND EQUIPMENT WHERE SUCH ITEMS ARE NOT REQUIRED FOR THE PROPER OPERATION OF THE REVISED SYSTEM. REMOVE, RECONNECT, CAP, PLUG AND REPLACE EXISTING PIPING.

GENERAL NOTES: PLUMBING AND PIPING

- ALL PIPING SHALL BE CONCEALED UNLESS OTHERWISE NOTED. EXPOSING OF ANY PIPING MUST HAVE APPROVAL OF THE ARCHITECT.
- PROVIDE BRANCH LINE SHUT-OFF VALVES ON DOMESTIC WATER PIPING AT EACH PLUMBING FIXTURE.
- THE PLUMBING AND PIPING SYSTEMS SHALL BE INSTALLED IN STRICT ACCORDANCE WITH ALL STATE AND LOCAL PLUMBING CODES. THE PLUMBING AND PIPING CONTRACTOR SHALL OBTAIN ALL PERMITS, PAY ALL FEES, AND ARRANGE FOR ALL INSPECTIONS FOR HIS WORK. AT THE COMPLETION OF THE PROJECT, THE PLUMBING CONTRACTOR SHALL FURNISH THE OWNER WITH CERTIFICATES OF FINAL INSPECTIONS AND APPROVALS.
- PIPING SHALL BE AS FOLLOWS:
 - SANITARY AND VENT PIPING:
 - ALL 1-1/2" AND LARGER WASTE AND VENT PIPING ABOVE AND BELOW GROUND SHALL BE STANDARD WEIGHT CAST IRON SOIL PIPE WITH NO-HUB FITTINGS AND HEAVY DUTY COUPLINGS. COUPLINGS SHALL BE HUSKY HD 4000, CLAMP ALL 80 OR MISSION HW, SOLID CORE SCHEDULE 40 PVC PIPE WITH CEMENTED FITTINGS IS APPROVED WHERE LOCAL CODE PERMITS. ABOVE GROUND PVC PIPING SHALL NOT BE INSTALLED WITHIN ANY RETURN AIR PLENUM SPACE.
 - RUN ALL UNDERGROUND SANITARY 2 1/2" OR LESS AT 1/4" PER FOOT MINIMUM PITCH UNLESS NOTED OTHERWISE. SANITARY PIPING 3" OR LARGER SHALL BE PITCHED AT 1/8" PER FOOT MINIMUM UNLESS NOTED OTHERWISE.
 - ALL CONNECTIONS AND CHANGES IN DIRECTION OF THE SANITARY DRAINAGE SYSTEM SHALL BE MADE WITH APPROVED DRAINAGE FITTINGS PER LOCAL PLUMBING CODE.
 - DOMESTIC WATER PIPING:
 - ALL ABOVE GROUND DOMESTIC WATER PIPING SHALL BE TYPE "L" HARD DRAWN COPPER TUBING WITH WROUGHT COPPER OR CAST RED BRONZE FITTINGS OR PEX-a PIPING EQUAL TO UPONOR AQUAPEX PIPE WITH ASTM F1960 IPEX EXPANSION FITTINGS. ALL SOLDERED FITTINGS SHALL BE MADE WITH SIL-FOS SOLDER OR AN APPROVED NON-TOXIC SOLDER. MECHANICAL TYPE FITTINGS EQUAL TO VIEGA "PROPRESS", APOLLO "EXPRESS" OR MUELLER "STREAMLINE" FOR COPPER PIPING ARE APPROVED IN LIEU OF SOLDERED FITTINGS. FITTINGS SHALL HAVE A VISUAL INDICATOR TO ALERT THE CONTRACTOR WHEN THE FITTING IS NOT PRESSED.
 - VALVES:
 - BALL VALVES SHALL BE TWO PIECE FULL PORT BRONZE BALL VALVES WITH STAINLESS STEEL TRIM, TFE SEATS WITH 316 STAINLESS STEEL BALL AND STEM. THREADED BODY PACK NUT DESIGN WITH ADJUSTABLE STEM PACKING WITH THREADED OR SOLDERED ENDS. RATED FOR 150 PSIG SWP AND 600 PSIG CWP.
- PIPING INSULATION:
 - DOMESTIC COLD & HOT WATER PIPING SHALL BE INSULATED WITH MINIMUM 1" THICK FIBERGLASS INSULATION, WITH A FIRE RETARDANT JACKET, HAVING AN AVERAGE R VALUE OF 3.45. COLD WATER PIPING INSULATION SHALL BE PROVIDED WITH A VAPOUR BARRIER. PROVIDE PREFORMED SECTIONS WITH PVC COVERS AT ALL FITTINGS.
 - PIPE INSULATION SHALL HAVE A FLAME SPREAD AND SMOKE DENSITY RATING NOT EXCEEDING 25/50, AS TESTED PER ASTM STANDARD E-84.

- ISOLATE PIPING AND EQUIPMENT FROM THE BUILDING STRUCTURE WITH INSULATING HANGERS AND FITTINGS AS REQUIRED TO PREVENT GALVANIC CORROSION OF THE BUILDING PIPING SYSTEMS.
- ALL SERVICES SHALL BE PROPERLY SLEEVED WHEN ROUTED THROUGH FLOORS AND WALLS. CONTRACTOR TO PROVIDE FIRE RESISTANT ROPE PACKING FOR ALL PIPES PENETRATING FIRE RATED WALLS. CONTRACTOR SHALL OBTAIN A COPY OF THE ARCHITECTURAL DRAWINGS TO IDENTIFY FIRE RATED WALLS. CONTRACTOR SHALL PROVIDE A WEATHERPROOF SEAL FOR PIPING PENETRATING EXTERIOR WALLS AND SHALL PROVIDE A WATER TIGHT SEAL, SIMILAR TO "LINK SEAL", FOR ALL PIPING PENETRATING BASEMENT WALLS.
- FURNISH AND INSTALL ISOLATION VALVES AT ALL SERVICE POINTS OR EQUIPMENT CONNECTIONS. PROVIDE VACUUM BREAKERS (ASSE 1011, CSA B64.2, CSA B64.2.1) AND ANTI-SIPHON FITTINGS ON WATER PIPING SYSTEMS BEFORE EQUIPMENT CONNECTIONS, AND AT ALL HOSE END SPIGOTS AND HOSE CONNECTIONS, ETC. INSTALL REDUCED PRESSURE BACKFLOW PREVENTERS (ASSE 1013, AWWA C515, CSA B64.4, CSA B64.4.1) ON ALL MAKE-UP WATER LINES TO MECHANICAL EQUIPMENT AND ON BUILDING DOMESTIC WATER SERVICE WHERE LOCAL CODE REQUIRES. THE INSTALLATION SHALL BE IN STRICT ACCORDANCE WITH LOCAL CODES AND/OR AUTHORITIES FOR THE PROTECTION OF THE WATER SUPPLY SYSTEM. INSTALL STRAINER UP STREAM OF REDUCED PRESSURE BACKFLOW PREVENTER.
- THE PLUMBING AND PIPING CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER PITCH OF PIPE FOR DRAINAGE AND AIR VENTING OF PIPING SYSTEMS AND SHALL PROVIDE DRAINS TO RECEIVE THE PIPING SYSTEMS CONTENTS OF INDIRECT WASTE AND CONDENSATE DRAINAGE FROM ALL MECHANICAL DRAINS.
- THE PLUMBING AND PIPING CONTRACTOR SHALL VERIFY EXACT LOCATIONS AND PROVIDE ROUGH-INS FOR ALL EQUIPMENT FURNISHED BY OTHER CONTRACTORS. AFTER ALL EQUIPMENT HAS BEEN INSTALLED BY OTHER CONTRACTORS, THE PLUMBING AND PIPING CONTRACTOR SHALL MAKE ALL FINAL CONNECTIONS AND SHALL INCLUDE IN HIS BASE BID ALL VALVES, UNIONS, COUPLINGS, VACUUM BREAKERS, ETC., THAT ARE REQUIRED TO MAKE FINAL CONNECTIONS.
- THE PLUMBING AND PIPING CONTRACTOR SHALL OBTAIN OTHER TRADES DRAWINGS AND COORDINATE HIS WORK WITH THE TOTAL PROJECT AS IT RELATES TO ALL TRADES AND VISIT THE PROJECT SITE PRIOR TO SUBMITTING HIS BID TO FAMILIARIZE HIMSELF WITH THE ACTUAL PROJECT CONDITIONS AND TO CHECK FOR ANY INTERFERENCES BETWEEN HIS SCOPE OF WORK AND THAT OF THE OTHER TRADES, AND/OR ANY APPARENT VIOLATIONS OF LOCAL OR STATE BUILDING CODES, LAWS, ORDINANCES, AND REGULATIONS. IF ANY INTERFERENCES OR VIOLATIONS APPEAR AND DEPARTURE FROM THE INITIAL DESIGN INTENT OF THE CONSTRUCTION BID DOCUMENTS IS REQUIRED, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT PRIOR TO ENTERING INTO A CONTRACT WITH THE OWNER. FAILURE TO PROVIDE THE ARCHITECT WITH THE AFOREMENTIONED NOTIFICATION SHALL RESULT IN THE CONTRACTOR BEING HELD RESPONSIBLE TO COMPLETE ALL WORK TO MEET THE INTENT OF THE CONSTRUCTION BID DOCUMENTS WITH NO ADDITIONAL COSTS BEING INCURRED BY THE OWNER.

- THE CONTRACTOR SHALL COORDINATE ELECTRICAL CHARACTERISTICS OF ALL EQUIPMENT FURNISHED BY THIS CONTRACTOR WITH THE ELECTRICAL CONTRACTOR.
- FURNISH AND INSTALL AN INDIVIDUAL COMBINATION PRESSURE BALANCING AND THERMOSTATIC CONTROL VALVE THAT CONFORMS TO A.S.S.E. # 1070 WITH TEMPERED WATER PIPING CONNECTIONS FOR ALL ACCESSIBLE PLUMBING FIXTURES. SET THE VALVE FOR A MAXIMUM OF 110°F.
- THE CONTRACTOR SHALL SUBMIT EQUIPMENT SHOP DRAWINGS TO THE ARCHITECT FOR REVIEW PRIOR TO INSTALLATION OF ANY OF THE FOLLOWING EQUIPMENT:
 - PLUMBING FIXTURES
 - PLUMBING VALVES, HANGERS & ACCESSORIES.
 - PLUMBING INSULATION.
- THE CONTRACTOR SHALL GUARANTEE ALL WORK INSTALLED UNDER THIS CONTRACT TO BE FREE FROM DEFECTIVE WORKMANSHIP AND MATERIALS FOR A PERIOD OF ONE YEAR AFTER THE ACCEPTANCE OF THE BUILDING BY THE OWNER, AND SHOULD DEFECTS OCCUR WITHIN THIS PERIOD, REPAIR AND/OR REPLACE DEFECTIVE ITEMS AND ANY DAMAGE RESULTING FROM FAILURE OF THESE ITEMS, AT NO EXPENSE TO THE OWNER.
- THE CONTRACTOR SHALL COORDINATE LOCATIONS OF HIS EQUIPMENT AND WORK WITH OTHER BUILDING TRADES TO AVOID ANY INTERFERENCES BETWEEN HIS WORK AND THE WORK OF OTHER TRADES.
- ANY CUTTING AND/OR PATCHING, THAT MAY BE REQUIRED FOR THE INSTALLATION OF THE PLUMBING AND PIPING SYSTEMS, SHALL BE PERFORMED BY THE ARCHITECTURAL TRADES AND PAID FOR BY THIS CONTRACTOR. NO CUTTING OF THE BUILDING STRUCTURAL SYSTEM SHALL BE PERFORMED WITHOUT WRITTEN APPROVAL OF THE ARCHITECT BEING OBTAINED.
- WATER HAMMER ARRESTORS SHALL BE INSTALLED ON BOTH COLD AND HOT WATER LINES. INSTALL IN AN UPRIGHT POSITION AT ALL QUICK CLOSING VALVES, SOLENOIDS, AND PLUMBING FIXTURES. MANUFACTURED WATER HAMMER ARRESTORS SHALL CONFORM TO ASSE 1010, EQUAL TO SIOUX CHIEF 650/660 SERIES PISTON TYPE LOCATED, SIZED, AND INSTALLED IN ACCORDANCE WITH PLUMBING AND DRAINAGE INSTITUTE STANDARD NO.WH201.
- SEE ARCHITECTURAL DRAWINGS FOR EXACT LOCATION OF ALL NEW PLUMBING FIXTURES.
- COORDINATE ALL NEW LOCATIONS, SIZES AND ELEVATIONS OF SLEEVES THROUGH WALL SLABS AND FOUNDATIONS WITH STRUCTURAL DRAWINGS AND EXISTING FIELD CONDITIONS.
- SEAL ALL PENETRATIONS THROUGH WALLS AND FLOORS AIR AND WATERTIGHT. COORDINATE LOCATIONS AND ELEVATIONS OF ALL NEW UNDERGROUND UTILITIES WITH CIVIL SITE PLANS PRIOR TO START OF CONSTRUCTION.
- CONTRACTOR SHALL MAINTAIN ADEQUATE CLEARANCES (PER N.E.C.) ABOVE AND AROUND ANY NEW ELECTRICAL PANELS, EQUIPMENT AND TRANSFORMERS WHEN ROUTING OVERHEAD DOMESTIC WATER AND STORM PIPING.
- CONTRACTOR SHALL PROVIDE PROTECTION FOR PIPING INSTALLED IN CONCEALED SPACES TO PREVENT DAMAGE FROM FASTENERS.
- PLUMBING FIXTURES:
 - LAVATORIES SHALL CONFORM TO ANSI Z124.3, ASME A112.19.1/CSA B45.2, ASME A112.19.2/CSA B45.1 OR ASME A112.19.3/CSA B45.4.
 - SINKS SHALL CONFORM TO ANSI Z124.6, ASME A112.19.1/CSA B45.2, ASME A112.19.2/CSA B45.1 OR ASME A112.19.3/CSA B45.4.
 - URINALS SHALL CONFORM TO ANSI Z124.9, ASME A112.19.2/CSA B45.1, ASME A112.19.3 OR CSA B45.5.
 - WATER CLOSETS SHALL CONFORM TO ANSI Z124.4, ASME A112.19.2/CSA B45.1, ASME A112.19.3/CSA B45.4 OR CSA B45.5.
 - FAUCETS SHALL CONFORM TO ASME A112.18.1/CSA B125.1. DRINKING WATER FAUCETS SHALL ALSO CONFORM TO NSF 61, SECTION 9.
 - FAUCETS AND PLUMBING FIXTURES SHALL BE OF WATER CONSERVATION TYPE AND COMPLY WITH LOCAL ENERGY CODE STANDARDS.

PLUMBING ABBREVIATIONS

NOTE: ALL ABBREVIATIONS MAY NOT BE USED ON THIS PROJECT

EXIST. (E)	EXISTING EXISTING
L-#	LAVATORY
N.T.S.	NOT TO SCALE
P.V.C.	POLYVINYL CHLORIDE
TYP.	TYPICAL
U.O.N.	UNLESS OTHERWISE NOTED
V.I.F.	VERIFY IN FIELD
WC-#	WATER CLOSET

PLUMBING SYMBOLS

NOTE: ALL SYMBOLS MAY NOT BE USED ON THIS PROJECT

SYMBOL	DESCRIPTION
//////	EXISTING SERVICE AND/OR EQUIPMENT TO BE REMOVED.

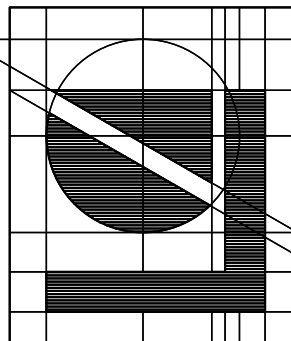
DEMOLITION GENERAL NOTES:

- COORDINATE SHUT-DOWN OF ANY SYSTEM WITH THE BUILDING SERVICES PERSONNEL PRIOR TO SYSTEM SHUT-DOWN.
- REMOVE (INCLUDING DISCONNECTION OF) MECHANICAL SERVICE AS INDICATED AND/OR DESCRIBED ALONG WITH PIPING, HANGERS, SUPPORTS, CONTROLS AND ALL RELATED ACCESSORIES.
- FIELD VERIFY EXACT SIZE AND LOCATION OF ALL EXISTING SERVICES PRIOR TO DEMOLITION.
- WHERE DAMAGE OCCURS DURING DEMOLITION, THE CONTRACTOR SHALL REPAIR AS REQUIRED SO AS TO BE COMPATIBLE WITH EXISTING.
- WHERE DUCT AND/OR PIPE INSULATION HAS BEEN DAMAGED, THE CONTRACTOR SHALL REPAIR AS REQUIRED SO AS TO BE COMPATIBLE WITH EXISTING.
- ALL ITEMS DEMOLISHED SHALL BE REMOVED FROM THE SITE AND DISPOSED OF PROPERLY, UNLESS NOTED OTHERWISE.
- LIMITS OF DEMOLITION ARE INDICATED ON THE DRAWINGS. SHOULD EXISTING FIELD CONDITIONS REQUIRE MODIFICATIONS OF THESE LIMITS FOR THE PROPER INSTALLATION OF NEW WORK, THE CONTRACTOR SHALL BE RESPONSIBLE FOR SUCH MODIFICATIONS.
- CAP AND SEAL AIRTIGHT ALL UNUSED OPENINGS ON THE RETURN AND SUPPLY DUCTWORK.

PLUMBING FIXTURE SCHEDULE

UNIT ID	BARRIER FREE	ITEM	PIPE CONNECTION SIZES				MANUFACTURER/ MODEL NO.	REMARKS
			WASTE	VENT	CW	HW		
L-1	Y	LAVATORY	2"	1 1/2"	1 1/2"	1 1/2"	BRADLEY: MG-3	SOLID SURFACE MATERIAL LAVATORY SYSTEM, DUAL STATION, CONTINUOUS BOWL, WITH PEDESTAL AND STAINLESS STEEL MOUNTING FRAME. FAUCET: INFRARED SENSOR OPERATED BY LAVATORY MANUFACTURER, 0.5 GPM, SLOW-CLOSING SOLENOID VALVE. WITH ASSE 1070 COMPLIANT MIXING VALVE PER STATION.
UR-1	Y	URINAL (FULL STALL)	2"	1 1/2"	3/4"	-	KOHLER BRANHAM K-25039-T	WASHOUT URINAL, VITREOUS CHINA, TOP SPUD, 1.0 GPF. FLUSH VALVE: SLOAN G2 9186-1.0, SENSOR OPERATED, MOUNT AT ADA HEIGHT.
WC-1	N	WATER CLOSET (FLOOR MOUNTED)	4"	2"	1 1/2"	-	KOHLER WELLCOMME K-96055-B	VITREOUS CHINA, ELONGATED BOWL, TOP SPUD, 1.0 - 1.6 GPF. FLUSH VALVE: SLOAN G2 8111-1.6, SENSOR OPERATED.
WC-2	Y	WATER CLOSET (FLOOR MOUNTED)	4"	2"	1 1/2"	-	KOHLER HIGHCLIFF K-96057	VITREOUS CHINA, ELONGATED BOWL, TOP SPUD, 1.0 - 1.6 GPF. FLUSH VALVE: SLOAN G2 8111-1.6, SENSOR OPERATED.

GENERAL PLUMBING INFORMATION



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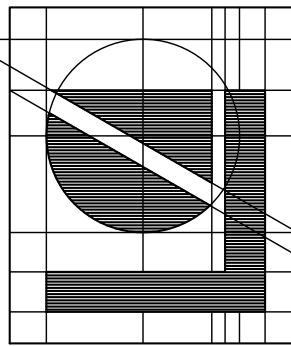


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 date 03/06/24

RENOVATIONS for:
BRIGHTON AREA SCHOOLS
 (B.E.C.C. BLDG.) BRIGHTON, MICHIGAN
 GENERAL PLUMBING INFORMATION

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MEEC-006 # 23-0111

RENOVATIONS for:
BRIGHTON AREA SCHOOLS
(B.E.C.C. BLDG.) BRIGHTON, MICHIGAN
FIRST FLOOR - PLUMBING DEMOLITION PLAN

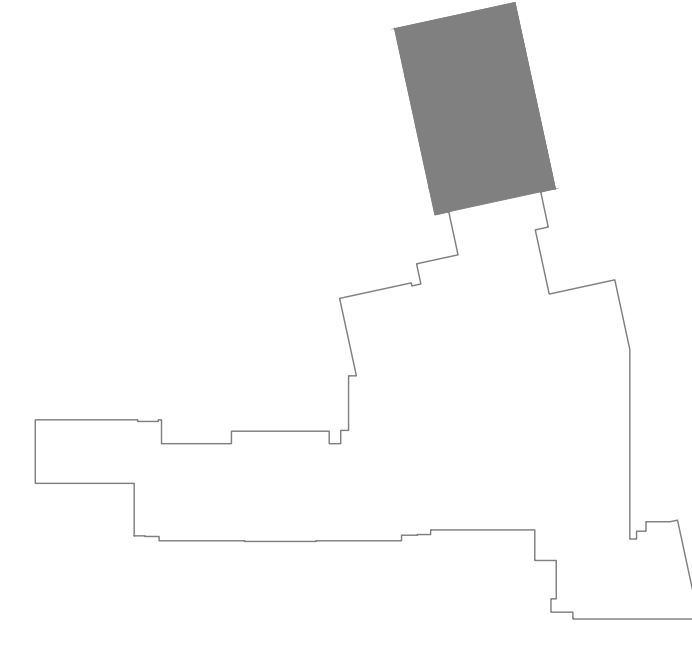
dr: W.J.
ck'd: Z.S.
app'd: J.K.

03/08/2024
date

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RENOVATIONS for:
BRIGHTON AREA SCHOOLS
(B.E.C.C. BLDG.) BRIGHTON, MICHIGAN
FIRST FLOOR - PLUMBING DEMOLITION PLAN

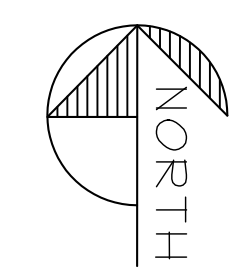
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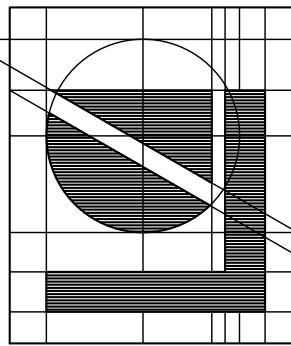
KEY PLAN

DEMOLITION KEY NOTES: (K)

1. REMOVE EXISTING PLUMBING FIXTURE. RETAIN EXISTING SANITARY AND DOMESTIC WATER FOR NEW FIXTURE.
2. REMOVE EXISTING PLUMBING FIXTURE COMPLETE. CAP EXISTING SANITARY BELOW THE FLOOR. CAP EXISTING DOMESTIC WATER IN THE WALL.
3. REMOVE EXISTING PLUMBING FIXTURE. RETAIN EXISTING SANITARY AND DOMESTIC WATER FOR NEW FIXTURE. REWORK EXISTING SANITARY AND DOMESTIC WATER AS NEEDED FOR NEW CONNECTION.



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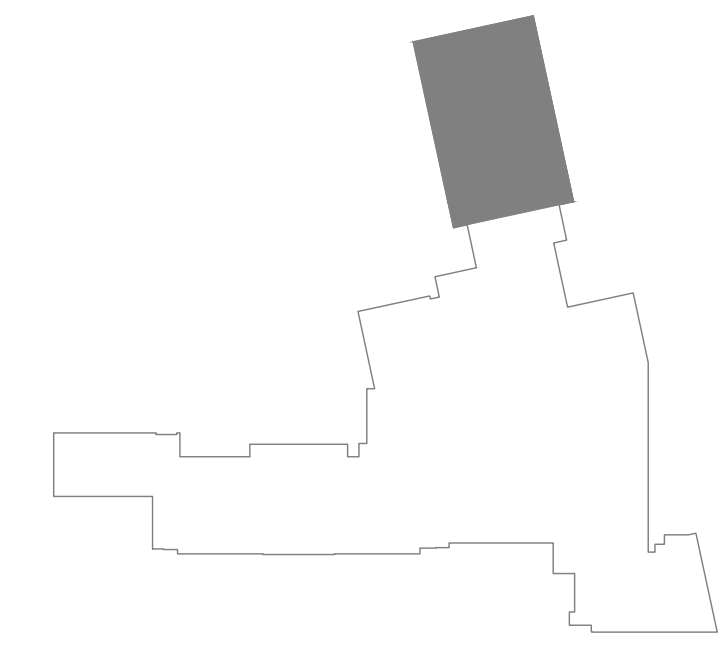
RENOVATIONS for:
BRIGHTON AREA SCHOOLS
(B.E.C.C. BLDG.) BRIGHTON, MICHIGAN
FIRST FLOOR - PLUMBING NEW WORK PLAN

03/08/2024 date
BIDS + PERMITS issued for

app'd: J.K.
ck'd: Z.S.
w.j.

03/08/24
JORDAN KOENIG
ENGINEER
No. 6201059789
REGISTERED PROFESSIONAL ENGINEER

P1.1
23086



KEY PLAN

- NEW WORK KEY NOTES:** (N)
1. NEW PLUMBING FIXTURE, CONNECT TO EXISTING SANITARY AND DOMESTIC WATER.
 2. NEW PLUMBING FIXTURE, REWORK EXISTING SANITARY AND DOMESTIC WATER AS NEEDED.



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MECHANICAL SPECIFICATION

GENERAL NOTES: MECHANICAL

- PROVIDE MATERIALS AND EQUIPMENT AND EXECUTE THE WORK, INCLUDING ALL TESTING AND INSPECTIONS, IN COMPLIANCE WITH THE APPLICABLE PROVISIONS OF FEDERAL, STATE AND LOCAL GOVERNMENT LAWS, ORDINANCES, REFERENCED CODES AND STANDARDS CURRENT AS OF THE ISSUE DATE OF THESE DRAWINGS. ALL MORE STRINGENT REQUIREMENTS OF THE CONTRACT DOCUMENTS SHALL MODIFY, SUPPLEMENT AND SUPERSEDE APPLICABLE PORTIONS OF GOVERNING LAWS, ORDINANCES, CODES AND STANDARDS.
- CONTRACTOR SHALL PRESENT CERTIFICATE TO THE OWNER THAT ALL APPLICABLE BUILDING PERMITS HAVE BEEN SECURED PRIOR TO STARTING ANY WORK, AND PROVIDE THE OWNER WITH ALL REQUIRED CERTIFICATES OF FINAL APPROVAL FROM THE GOVERNING JURISDICTIONS AT COMPLETION OF THE WORK. PROVIDE ALL SHOP DRAWINGS AS REQUIRED IN FOLLOWING SECTIONS.
- MAKE ALL CONNECTIONS TO EXISTING SYSTEMS DURING DESIGNATED PERIODS UPON APPROVAL OF THE OWNER AND AT NO INCREASE IN CONTRACT SUM.
- EXISTING FACILITIES:
 - DO NOT INTERRUPT EXISTING UTILITIES UTILIZED BY THE OWNER EXCEPT AS SPECIFIED OR WHEN APPROVED IN WRITING, AND THEN ONLY AFTER TEMPORARY UTILITY SERVICES HAVE BEEN APPROVED AND PROVIDED. INTERRUPTIONS MUST BE SCHEDULED TO SUIT THE OWNER'S REQUIREMENTS.
 -
 - VERIFY ALL EXISTING WORK, WHERE EXISTING CONNECTIONS ARE PARTIAL, PROVIDE ALL NECESSARY MATERIALS, LABOR AND EQUIPMENT REQUIRED TO MODIFY EXISTING WORK. IN ADDITION, MAINTAIN INTEGRITY OF THE EXISTING SYSTEMS, RECTIFY ANY CONTAMINATION, DEGRADATION OF CLEANLINESS OR DAMAGE TO THE EXISTING SYSTEMS TO THE SATISFACTION OF THE OWNER. PROVIDE ALL WORK SO REQUIRED AT NO INCREASE IN THE CONTRACTOR'S ORIGINAL PROPOSAL.
- COORDINATE EXACT LOCATION OF CONSTRUCTION TO PRECLUDE ANY INTERFERENCES BETWEEN PIPING, WIRING, LIGHTING FIXTURES, DUCTWORK, BUILDING EQUIPMENT, PROCESS EQUIPMENT AND OTHER CONSTRUCTION.
- PROVIDE LABOR, INCLUDING FIELD ERECTION AND SUPERVISION, MATERIALS, EQUIPMENT AND ANCILLARIES, AND COORDINATE, PROCURE, FABRICATE, DELIVER, ERECT OR INSTALL, INTERFACE WITH EXISTING WORK, START, DEBUG AND TEST ALL SYSTEMS AS NECESSARY TO PROVIDE THE OWNER WITH A COMPLETE, OPERATING FACILITY IN CONFORMANCE WITH THE CONSTRUCTION BID DOCUMENTS.
- ALL CUTTING AND PATCHING THAT MAY BE NECESSARY FOR THE INSTALLATION OF THE MECHANICAL CONTRACTOR'S WORK SHALL BE PERFORMED AND REPAIRED BY THE TRADE WHOM NORMALLY PERFORMS THAT WORK AND PAID FOR BY THE MECHANICAL CONTRACTOR.
- THE MECHANICAL CONTRACTOR SHALL VISIT THE SITE PRIOR TO SUBMITTING HIS BID TO FAMILIARIZE HIMSELF WITH THE ACTUAL PROJECT CONDITIONS AND TO CHECK FOR ANY INTERFERENCES BETWEEN HIS WORK AND THAT OF THE OTHER TRADES, AND/OR ANY APPARENT VIOLATIONS OF LOCAL OR STATE CODES, LAWS, ORDINANCES AND REGULATIONS. SHOULD ANY VIOLATIONS OR INTERFERENCES APPEAR AND DEPARTURE FROM THE DESIGN INTENT OF THE CONTRACT DOCUMENTS IS REQUIRED, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT PRIOR TO ENTERING INTO A CONTRACT WITH THE OWNER. FAILURE TO PROVIDE THE ARCHITECT WITH THE AFOREMENTIONED NOTIFICATION SHALL RESULT IN THE CONTRACTOR BEING HELD RESPONSIBLE TO COMPLETE ALL WORK TO MEET THE INTENT OF THE CONTRACT DOCUMENTS WITH NO ADDITIONAL EXPENSES BEING INCURRED BY THE OWNER.
- THE DRAWINGS ARE DIAGRAMMATIC AND SHOW GENERAL LOCATIONS AND ARRANGEMENTS OF ALL THE EQUIPMENT AND PIPING. THE DRAWINGS SHALL BE FOLLOWED AS CLOSELY AS BUILDING CONSTRUCTION AND ALL OTHER WORK WILL PERMIT. DO NOT SCALE DRAWINGS FOR EXACT MEASUREMENTS.
- DEMOLITION OF MECHANICAL EQUIPMENT SHALL INCLUDE ALL EXISTING PIPING, VALVES, CONTROLS, SUPPORTS AND EQUIPMENT WHERE SUCH ITEMS ARE NOT REQUIRED FOR THE PROPER OPERATION OF THE REVISED SYSTEM. REMOVE, RECONNECT, CAP, PLUG AND REPLACE EXISTING PIPING

GENERAL NOTES: PIPING

- ALL PIPING SHALL BE CONCEALED IN PIPE COVERS UNLESS OTHERWISE NOTED.
- THE PIPING SYSTEMS SHALL BE INSTALLED IN STRICT ACCORDANCE WITH ALL STATE AND LOCAL CODES. THE PIPING CONTRACTOR SHALL OBTAIN ALL PERMITS, PAY ALL FEES, AND ARRANGE FOR ALL INSPECTIONS FOR HIS WORK. AT THE COMPLETION OF THE PROJECT, THE CONTRACTOR SHALL FURNISH THE OWNER WITH CERTIFICATES OF FINAL INSPECTIONS AND APPROVALS.
- PIPING SHALL BE AS FOLLOWS:

A. HEATING HOT WATER PIPING:

- ALL ABOVE GROUND HEATING HOT WATER PIPING SHALL BE TYPE "L" HARD DRAWN COPPER TUBING WITH WROUGHT COPPER OR CAST RED BRONZE FITTINGS. ALL SOLDERED FITTINGS SHALL BE MADE WITH SIL FOS SOLDER OR AN APPROVED NON-TOXIC SOLDER.

B. REFRIGERATION PIPING:

- ALL REFRIGERANT PIPING SHALL BE TYPE "L" HARD DRAWN COPPER TUBING WITH SILVER SOLDERED WROUGHT OR CAST PRESSURE FITTINGS. PIPING SHALL BE FACTORY CLEANED AND PROVIDED WITH END CAPS TO PREVENT ANY CONTAMINATION OF THE INSIDE.

C. VALVES:

- BALL VALVES SHALL BE TWO PIECE FULL PORT BRONZE BALL VALVES WITH STAINLESS STEEL TRIM, TFE SEATS WITH 316 STAINLESS STEEL BALL AND STEM. THREADED BODY PACK NUT DESIGN WITH ADJUSTABLE STEM PACKING WITH THREADED OR SOLDERED ENDS. RATED FOR 150 PSIG SWP AND 600 PSIG CWP.

D. PIPING INSULATION:

- REFRIGERANT PIPING AND FITTINGS SHALL BE INSULATED WITH A MINIMUM 1/2" THICK CLOSED CELL ELASTOMERIC THERMAL INSULATION WITH A BUILT IN VAPOR BARRIER.
- HOT WATER HEATING PIPING SHALL BE INSULATED WITH A MINIMUM 1" THICK FIBERGLASS INSULATION WITH A FIRE RETARDANT SELF SEALING JACKET HAVING AN AVERAGE R VALUE OF 3.45. PROVIDE PREFORMED SECTIONS WITH PVC COVERS AT ALL FITTINGS.
- PIPE INSULATION SHALL HAVE A FLAME SPREAD AND SMOKE DENSITY RATING NOT EXCEEDING 25/50, AS TESTED PER ASTM STANDARD E-84.

- PIPING SHALL BE SUPPORTED FROM HANGERS AT AN ADEQUATE DISTANCE WITH SUPPORTING HANGER RODS FASTENED TO THE BUILDING STRUCTURE WHENEVER POSSIBLE. SUPPORT SPACING SHALL NOT EXCEED THE HANGER SPACING REQUIREMENTS PER SECTION 308 OF THE LOCAL PLUMBING CODE.

- ISOLATE PIPING AND EQUIPMENT FROM THE BUILDING STRUCTURE WITH INSULATING HANGERS AND FITTINGS AS REQUIRED TO PREVENT GALVANIC CORROSION OF THE BUILDING PIPING SYSTEMS.

- ALL SERVICES SHALL BE PROPERLY SLEEVED WHEN ROUTED THROUGH FLOORS AND WALLS. CONTRACTOR TO PROVIDE FIRE RESISTANT ROPE PACKING FOR ALL PIPES PENETRATING FIRE RATED WALLS. CONTRACTOR SHALL PROVIDE A WEATHERPROOF SEAL FOR PIPING PENETRATING EXTERIOR WALLS.

- FURNISH AND INSTALL ISOLATION VALVES AT ALL SERVICE POINTS OR EQUIPMENT CONNECTIONS.

- THE PIPING CONTRACTOR SHALL VERIFY EXACT LOCATIONS AND PROVIDE ROUGHINS FOR ALL EQUIPMENT FURNISHED BY OTHER CONTRACTORS. AFTER ALL EQUIPMENT HAS BEEN INSTALLED BY OTHER CONTRACTORS, THE PIPING CONTRACTOR SHALL MAKE ALL FINAL CONNECTIONS AND SHALL INCLUDE IN HIS BASE BID ALL VALVES, UNIONS, COUPLINGS, VACUUM BREAKERS, ETC., THAT ARE REQUIRED TO MAKE FINAL CONNECTIONS.

- THE MECHANICAL CONTRACTOR SHALL COORDINATE ELECTRICAL CHARACTERISTICS OF ALL EQUIPMENT FURNISHED BY THIS CONTRACTOR WITH THE ELECTRICAL CONTRACTOR.

- THE CONTRACTOR SHALL SUBMIT EQUIPMENT SHOP DRAWINGS TO THE ARCHITECT FOR REVIEW PRIOR TO INSTALLATION OF ANY OF THE FOLLOWING EQUIPMENT:

- VALVES, HANGERS & ACCESSORIES.
- INSULATION.

- THE CONTRACTOR SHALL GUARANTEE ALL WORK INSTALLED UNDER THIS CONTRACT TO BE FREE FROM DEFECTIVE WORKMANSHIP AND MATERIALS FOR A PERIOD OF ONE YEAR AFTER THE ACCEPTANCE OF THE BUILDING BY THE OWNER, AND SHOULD DEFECTS OCCUR WITHIN THIS PERIOD, REPAIR AND/OR REPLACE DEFECTIVE ITEMS AND ANY DAMAGE RESULTING FROM FAILURE OF THESE ITEMS, AT NO EXPENSE TO THE OWNER.

- THE CONTRACTOR SHALL COORDINATE LOCATIONS OF HIS EQUIPMENT AND WORK WITH OTHER BUILDING TRADES TO AVOID ANY INTERFERENCES BETWEEN HIS WORK AND THE WORK OF OTHER TRADES.

- COORDINATE ALL NEW LOCATIONS, SIZES AND ELEVATIONS OF SLEEVES THROUGH WALL SLABS AND FOUNDATIONS WITH STRUCTURAL DRAWINGS AND EXISTING FIELD CONDITIONS.

- SEAL ALL PENETRATIONS THROUGH WALLS AND FLOORS AIR AND WATERTIGHT.

- CONTRACTOR SHALL PROVIDE PROTECTION FOR

PIPING INSTALLED IN CONCEALED SPACES TO PREVENT DAMAGE FROM FASTENERS.

GENERAL NOTES: HVAC SYSTEM

- HEATING, VENTILATING, AND AIR CONDITIONING SYSTEMS ARE DESIGNED ON THE FOLLOWING CONDITIONS:

WINTER: INSIDE TEMP. 72 °F,
OUTSIDE TEMP. 1.4 °F. & 15 MPH WIND.

SUMMER: INSIDE TEMP. 78 °F. D.B. & 50% R.H.
OUTSIDE TEMP. 90.3°F. D.B. & 73.8°F. W.B.

- THE CONTRACTOR SHALL SUBMIT EQUIPMENT SHOP DRAWINGS TO THE ARCHITECT FOR APPROVAL PRIOR TO INSTALLATION OF ANY OF THE FOLLOWING:

- CONDENSING UNIT
- UNIT VENTILATORS

APPROVAL OF SHOP DRAWINGS DOES NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY TO CONFORM TO THE DESIGN INTENT OF THE BID DOCUMENTS.

APPROVAL OF SHOP DRAWINGS IS INTENDED TO BE FOR GENERAL CONFORMANCE WITH THE CONSTRUCTION DOCUMENTS ONLY. ANY EQUIPMENT THAT IS INSTALLED THAT WILL INVOLVE THE WORK OF OTHER TRADES SHALL BE COORDINATED WITH THOSE TRADES. REFER TO OTHER TRADE'S BID DOCUMENTS.

- THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONTROL AND INTERLOCK WIRING UNLESS OTHERWISE NOTED ON THE DRAWINGS. MECHANICAL CONTRACTOR SHALL PAY AND COORDINATE WITH THE ELECTRICAL CONTRACTOR ALL HIGH VOLTAGE WIRING THAT IS REQUIRED FOR INTERLOCKING OF CONTROLS.

- CONTRACTOR SHALL PROVIDE BUILDING OWNER WITH OPERATING AND MAINTENANCE MANUALS FOR ALL H.V.A.C. EQUIPMENT UPON COMPLETION OF PROJECT.

- MECHANICAL CONTRACTOR SHALL TEST ALL CONTROL ELEMENTS, VERIFY CALIBRATION OF ALL CONTROL DEVICES AND MAKE ADJUSTMENTS AS REQUIRED AT COMPLETION OF PROJECT.

- PROVIDE ACCESS AROUND ALL NEW EQUIPMENT PER MANUFACTURERS RECOMMENDATIONS.

- ALL MECHANICAL RELATED CORING THROUGH WALLS AND FLOORS SHALL BE BY MECHANICAL CONTRACTOR. SEAL ALL PENETRATIONS THROUGH RATED WALLS AND FLOORS WITH U.L. RATED CAULK SEALANT IN ACCORDANCE WITH THE SPECIFICATION REQUIREMENTS.

- CONTRACTOR SHALL MAINTAIN ADEQUATE CLEARANCES (PER N.E.C.) ABOVE AND AROUND ANY ELECTRICAL PANELS, EQUIPMENT AND TRANSFORMERS.

MECHANICAL GENERAL NOTES:

- COORDINATE NEW DUCTWORK WITH BUILDING STRUCTURAL CONDITIONS, EQUIPMENT MANUFACTURER RECOMMENDATIONS AND ALL OTHER TRADES TO AVOID INTERFERENCES.
- PROVIDE ACCESS AROUND ALL NEW EQUIPMENT PER MANUFACTURERS RECOMMENDATIONS.
- ALL MECHANICAL RELATED CORING THROUGH WALLS AND FLOORS SHALL BE BY MECHANICAL CONTRACTOR. SEAL ALL PENETRATIONS THROUGH RATED WALLS AND FLOORS WITH U.L. RATED CAULK SEALANT IN ACCORDANCE WITH THE SPECIFICATION REQUIREMENTS.
- ALL DUCTWORK SHALL BE ROUTED AS HIGH AS POSSIBLE ABOVE CEILINGS OR IN ARCHITECTURAL SOFFITS, WHERE INDICATED ON DRAWINGS.
- COORDINATE ROUTING WITH ARCHITECTURAL AND STRUCTURAL TRADES TO AVOID INTERFERENCES.
- ALL NEW DUCT SIZES TO DIFFUSERS SHALL MATCH NECK SIZE OF DIFFUSER OR GRILLE.
- COORDINATE EXACT LOCATIONS OF DIFFUSERS AND RETURN GRILLES WITH ARCHITECTURAL AND ELECTRICAL REFLECTED CEILING PLANS AND ARCHITECTURAL INTERIOR ELEVATIONS.
- COORDINATE ALL T-STAT HEIGHTS ABOVE FINISHED FLOOR WITH ARCHITECTURAL TRADES.
- BALANCE AIR SYSTEMS TO VALUES INDICATED ON DRAWINGS.
- ALL FLEXIBLE DUCTWORK SHALL BE LIMITED TO 5'-0" MAXIMUM LENGTH FROM HARD DUCT CONNECTION TO ROUND NECK SUPPLY AIR DIFFUSERS. FLEX DUCT APPROVED ABOVE ACCESSIBLE CEILING ONLY.

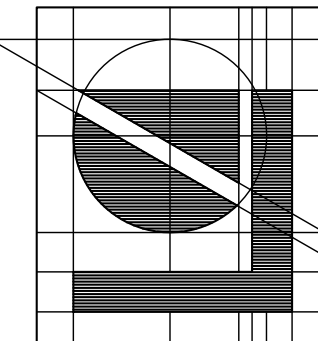
DEMOLITION SYMBOLS

NOTE: ALL SYMBOLS MAY NOT BE USED ON THIS PROJECT

SYMBOL	DESCRIPTION
	EXISTING SERVICE AND OR EQUIPMENT TO BE REMOVED.
	EXISTING SERVICE AND OR EQUIPMENT TO REMAIN.
	NEW SERVICE AND OR EQUIPMENT.
	EXISTING SERVICE TO BE CAPPED
	DEMOLITION LIMIT AND POINT OF NEW CONNECTION.
	NEW CONNECTION TO EXISTING SERVICE AND OR EQUIPMENT.
(E)	EXISTING

ABBREVIATIONS

ACCU-#	AIR COOLED CONDENSING UNIT
A.F.F.	ABOVE FINISHED FLOOR
A.L.	ACOUSTIC DUCT LINER
CFM	CUBIC FEET PER MINUTE
EF-#	EXHAUST FAN
EG-#	EXHAUST GRILLE
(E)	EXISTING
E.A.	EXHAUST AIR
HHWS	HEATING HOT WATER SUPPLY
HHWR	HEATING HOT WATER RETURN
O.A.	OUTDOOR AIR
UV-#	UNIT VENTILATOR



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RENOVATIONS for:
BRIGHTON AREA SCHOOLS
(B.E.C.C. BLDG.) BRIGHTON, MICHIGAN
MECHANICAL SPECIFICATION AND LEGEND

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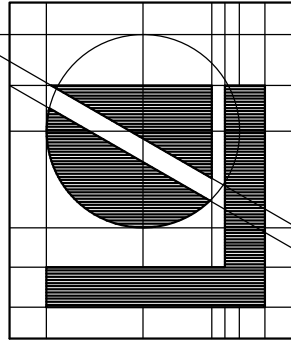
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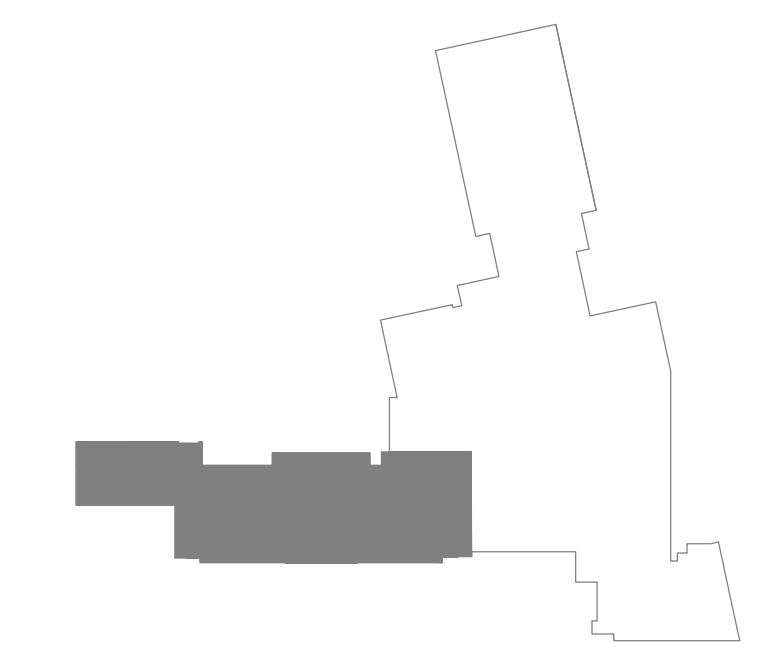
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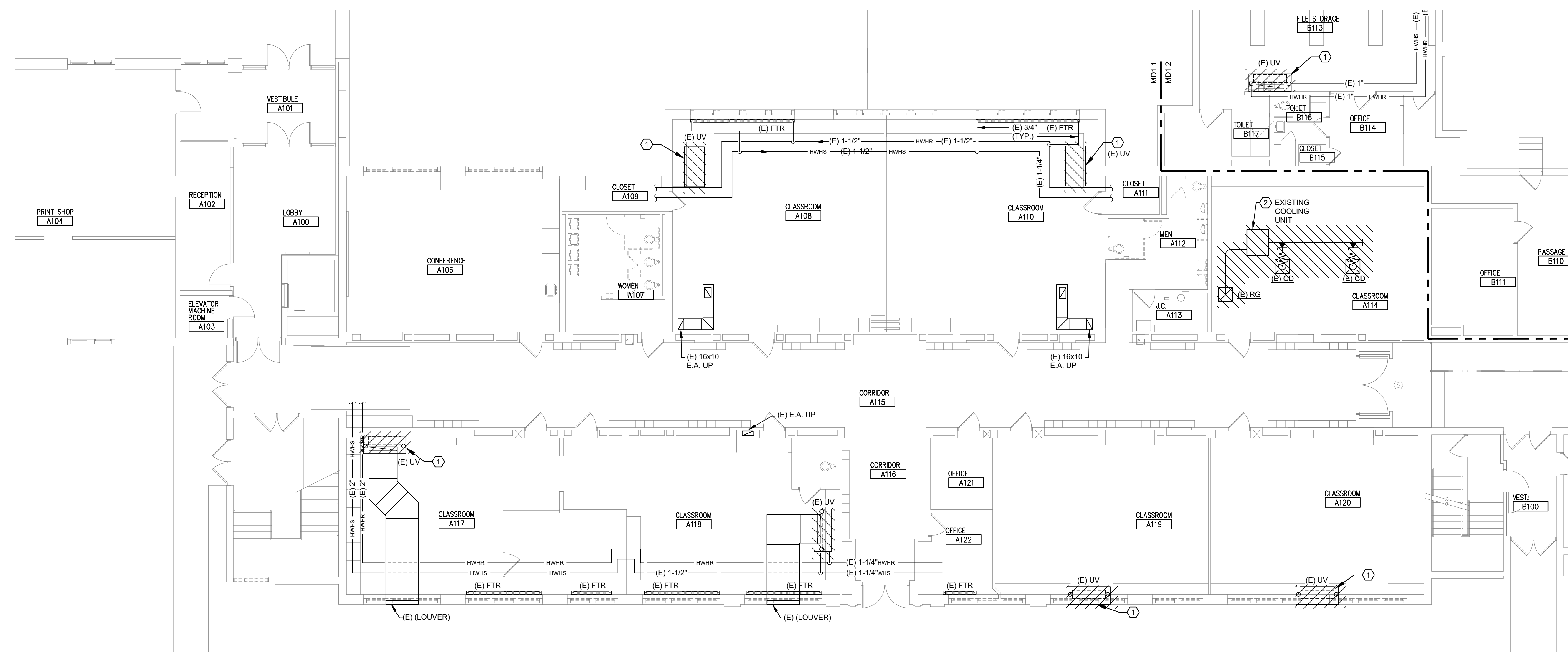
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RENOVATIONS for:
BRIGHTON AREA SCHOOLS
(B.E.C.C. BLDG.) BRIGHTON, MICHIGAN
PARTIAL FIRST FLOOR - MECHANICAL DEMOLITION PLAN

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KEY PLAN



GENERAL DEMOLITION NOTES:

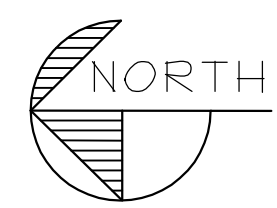
- REMOVE (INCLUDING DISCONNECTION) OF MECHANICAL SERVICES AS INDICATED AND/OR DESCRIBED ALONG WITH HANGERS, SUPPORTS, CONTROLS AND ALL RELATED ACCESSORIES.
- ALL ITEMS ON DEMOLITION PLAN SHALL BE CONSIDERED TO BE EXISTING UNLESS OTHERWISE NOTED.
- FIELD VERIFY EXACT SIZE AND LOCATION OF ALL EXISTING SERVICES PRIOR TO DEMOLITION.
- WHERE DAMAGE OCCURS DURING DEMOLITION, THE CONTRACTOR SHALL REPAIR AS REQUIRED SO AS TO BE COMPATIBLE WITH EXISTING.
- WHERE DUCT AND/OR PIPE HAS BEEN DAMAGED, THE CONTRACTOR SHALL REPAIR AS REQUIRED TO BE COMPATIBLE WITH EXISTING.
- ALL ITEMS DEMOLISHED SHALL BE REMOVED FROM THE SITE AND REMAIN THE PROPERTY OF THE OWNER (DISPOSED OF PROPERLY), UNLESS OTHERWISE NOTED.
- LIMITS OF DEMOLITION ARE INDICATED ON THE DRAWINGS. SHOULD EXISTING FIELD CONDITIONS REQUIRE MODIFICATIONS OF THESE LIMITS FOR THE PROPER INSTALLATION OF NEW WORK, THE CONTRACTOR SHALL BE RESPONSIBLE FOR SUCH MODIFICATIONS.
- CAP AND SEAL AIRTIGHT ALL UN-USE OPENINGS REMAINING OF THE RETURN AND SUPPLY DUCTWORK.
- MECHANICAL CONTRACTOR TO PERFORM SELECTIVE DEMO AND REMOVAL OF CEILING TILES TO ACCOMMODATE NEW UV'S AND DUCTWORK.

DEMOLITION KEY NOTES: (1)

- DISCONNECT AND REMOVE EXISTING HORIZONTAL /VERTICAL UNIT VENTILATOR WITH ASSOCIATED PIPING AND SUPPORTS. RECONNECT EXISTING HEATING HOT WATER SUPPLY AND RETURN PIPING PRIOR TO NEW UNIT VENTILATOR CONTROL VALVE. EXISTING SLEEVE AND LOUVER TO REMAIN.
- DISCONNECT AND REMOVE THE EXISTING COOLING UNIT ABOVE THE CEILING WITH ASSOCIATED DUCTWORK, GRILLES AND CONDENSING UNIT.
- DISCONNECT AND REMOVE THE EXISTING WINDOW UNIT WITH ASSOCIATED CONTROLS. REFER TO ARCHITECTURAL DRAWING FOR WALL WORK IN THIS AREA.

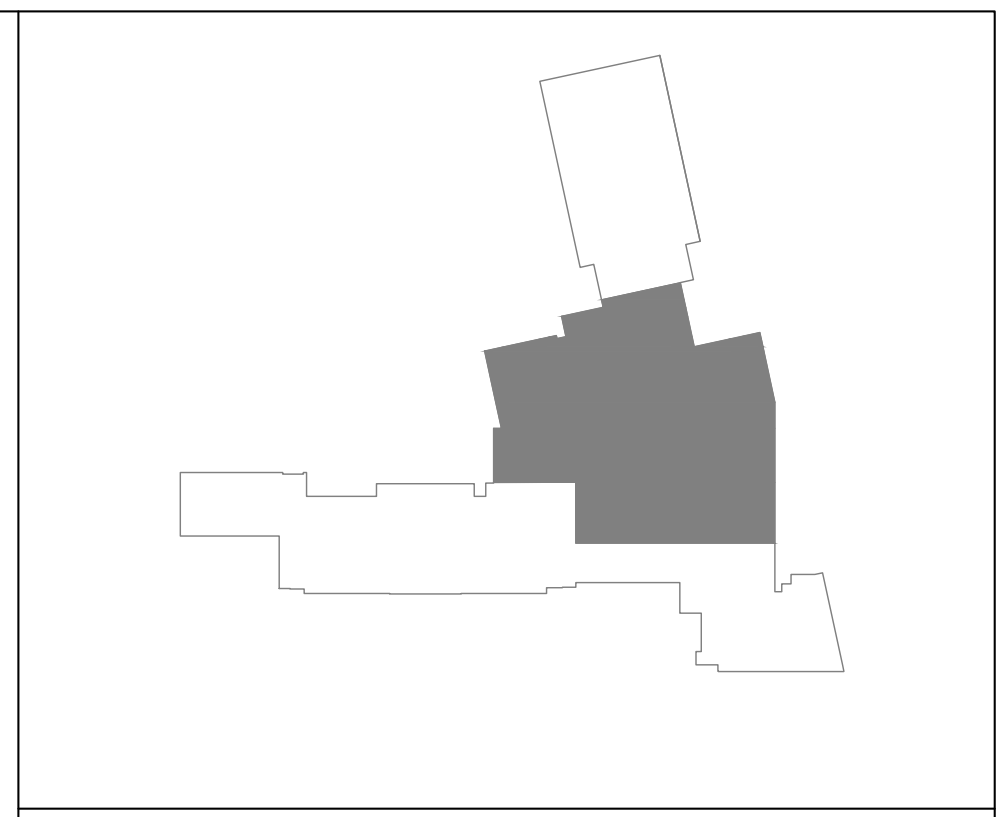
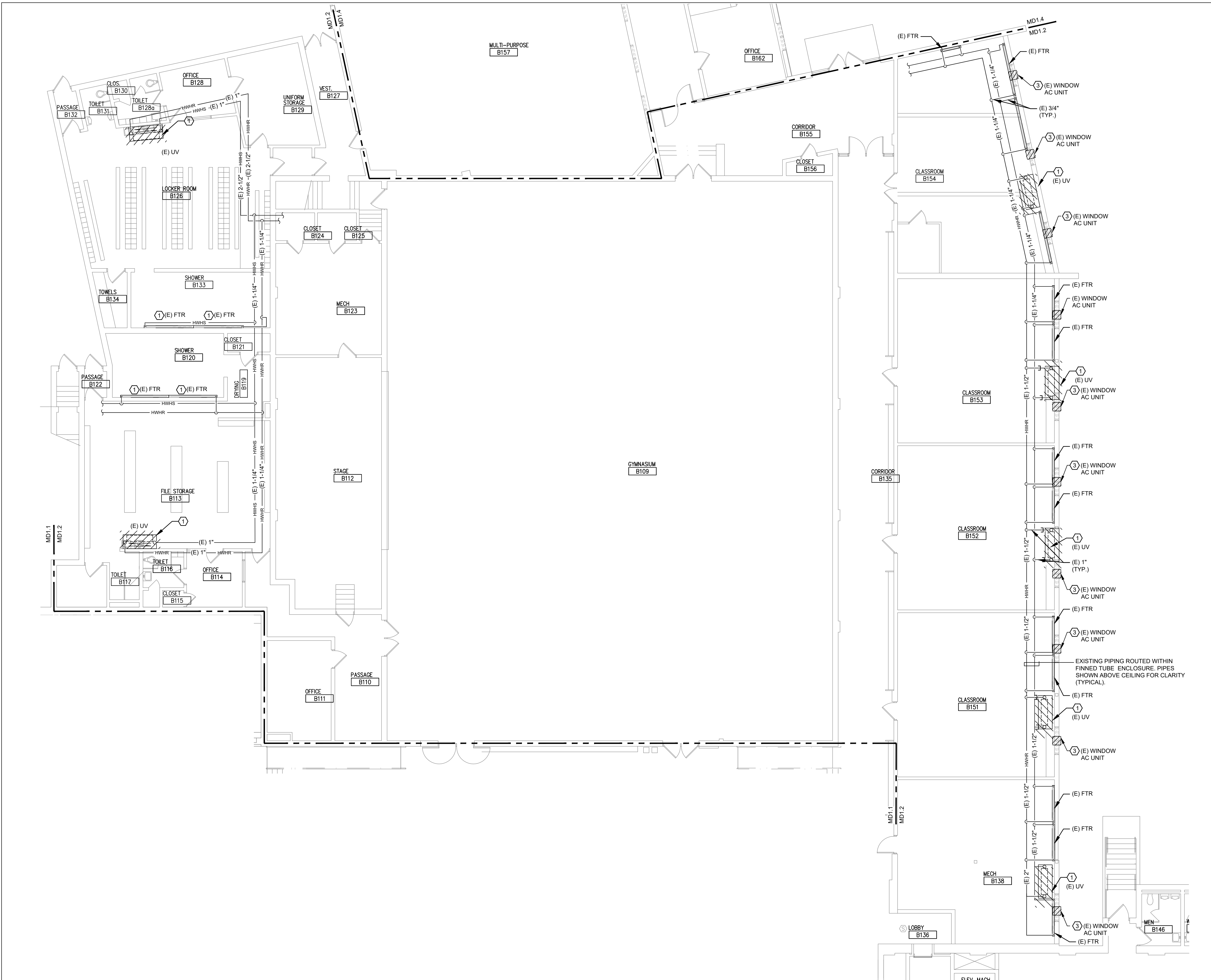


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MD1.1 PARTIAL FIRST FLOOR - MECHANICAL DEMOLITION PLAN

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



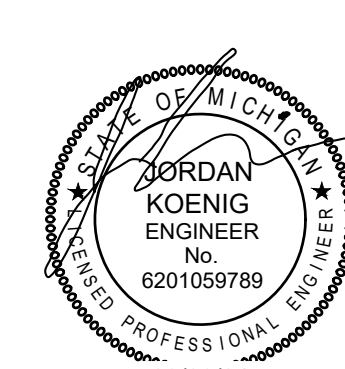
KEY PLAN

GENERAL DEMOLITION NOTES:

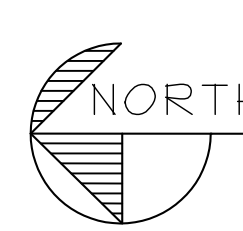
- REMOVE (INCLUDING DISCONNECTION) OF MECHANICAL SERVICES AS INDICATED AND/OR DESCRIBED ALONG WITH HANGERS, SUPPORTS, CONTROLS AND ALL RELATED ACCESSORIES.
- ALL ITEMS ON DEMOLITION PLAN SHALL BE CONSIDERED TO BE EXISTING UNLESS OTHERWISE NOTED.
- FIELD VERIFY EXACT SIZE AND LOCATION OF ALL EXISTING SERVICES PRIOR TO DEMOLITION.
- WHERE DAMAGE OCCURS DURING DEMOLITION, THE CONTRACTOR SHALL REPAIR AS REQUIRED SO AS TO BE COMPATIBLE WITH EXISTING.
- WHERE DUCT AND/OR PIPE HAS BEEN DAMAGED, THE CONTRACTOR SHALL REPAIR AS REQUIRED TO BE COMPATIBLE WITH EXISTING.
- ALL ITEMS DEMOLISHED SHALL BE REMOVED FROM THE SITE AND REMAIN THE PROPERTY OF THE OWNER (DISPOSED OF PROPERLY), UNLESS OTHERWISE NOTED.
- LIMITS OF DEMOLITION ARE INDICATED ON THE DRAWING. SHOULD EXISTING FIELD CONDITIONS REQUIRE MODIFICATIONS OF THESE LIMITS FOR THE PROPER INSTALLATION OF NEW WORK, THE CONTRACTOR SHALL BE RESPONSIBLE FOR SUCH MODIFICATIONS.
- CAP AND SEAL AIRTIGHT ALL UN-USE OPENINGS REMAINING OF THE RETURN AND SUPPLY DUCTWORK.
- MECHANICAL CONTRACTOR TO PERFORM SELECTIVE DEMO AND REMOVAL OF CEILING TILES TO ACCOMMODATE NEW UVS AND DUCTWORK.

DEMOLITION KEY NOTES: (#)

- DISCONNECT AND REMOVE EXISTING HORIZONTAL VERTICAL UNIT VENTILATOR WITH ASSOCIATED PIPING AND SUPPORTS. RECONNECT EXISTING HEATING HOT WATER SUPPLY AND RETURN PIPING PRIOR TO NEW UNIT VENTILATOR CONTROL VALVE. EXISTING SLEEVE AND LOUVER TO REMAIN.
- DISCONNECT AND REMOVE THE EXISTING COOLING UNIT ABOVE THE CEILING WITH ASSOCIATED DUCTWORK, GRILLES AND CONDENSING UNIT.
- DISCONNECT AND REMOVE THE EXISTING WINDOW UNIT WITH ASSOCIATED CONTROLS. REFER TO ARCHITECTURAL DRAWING FOR WALL WORK IN THIS AREA.

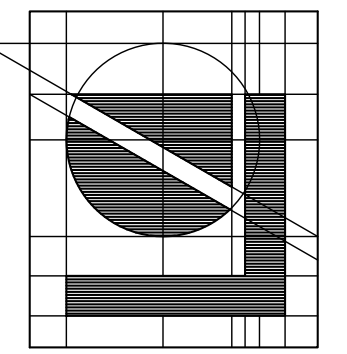


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MD1.2 PARTIAL FIRST FLOOR - MECHANICAL DEMOLITION PLAN

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



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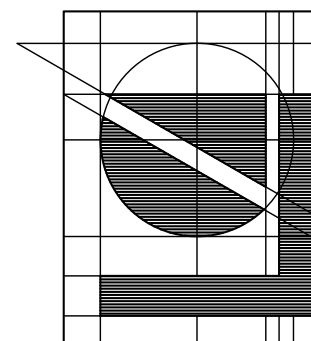


MECHANICAL ELECTRICAL ENGINEERING CONSULTANTS, PC
BIDS + PERMITS issued for

dr: z.s.
ck'd: w.v.
app'd: j.k.
date: 03/08/2024

RENOVATIONS for:
BRIGHTON AREA SCHOOLS
(B.E.C.C. BLDG.) BRIGHTON, MICHIGAN
PARTIAL FIRST FLOOR - MECHANICAL DEMOLITION PLAN

MD1.2
23086



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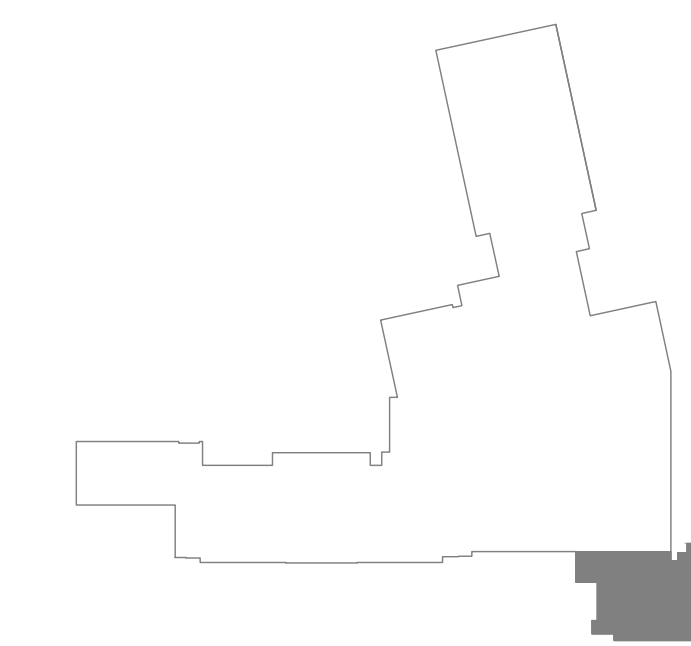
MECHANICAL ELECTRICAL ENGINEERING CONSULTANTS, P.C.
14400 SHADON RD., SUITE 200
FARMINGTON HILLS, MI 48334
734-454-5816
FAX: 734-454-5817
MEEC-008 # 23-0111

PERMITS issued for
BIDS

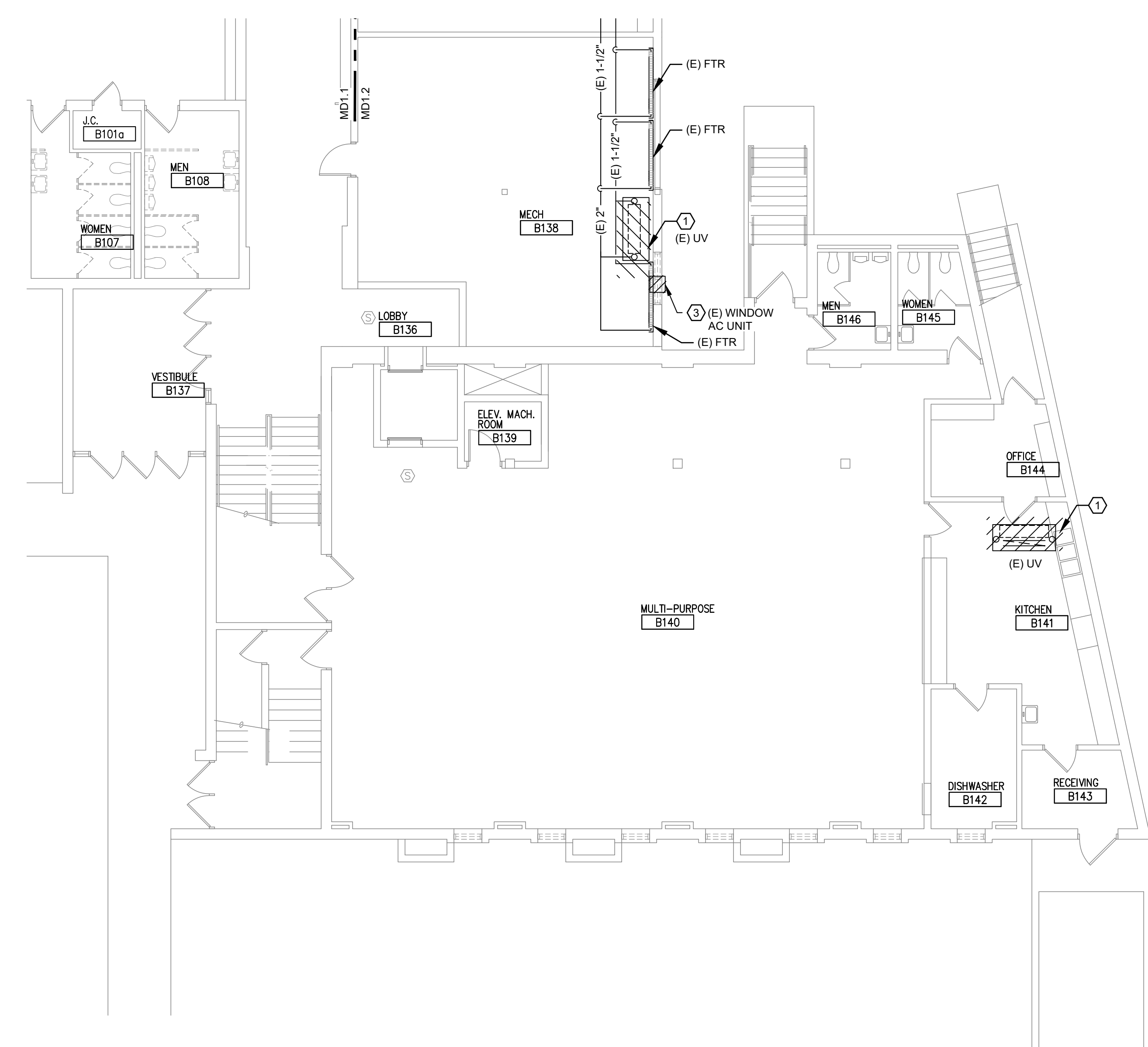
03/08/2024 date
Z.S. dr.
W.V. ckd.
J.K. app'd.

RENOVATIONS for:
BRIGHTON AREA SCHOOLS
(B.E.C.C. BLDG.) BRIGHTON, MICHIGAN
PARTIAL FIRST FLOOR - MECHANICAL DEMOLITION PLAN

MD1.3
23086



KEY PLAN

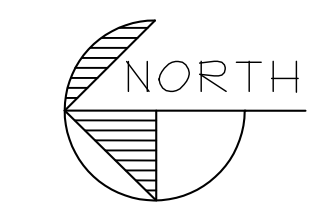
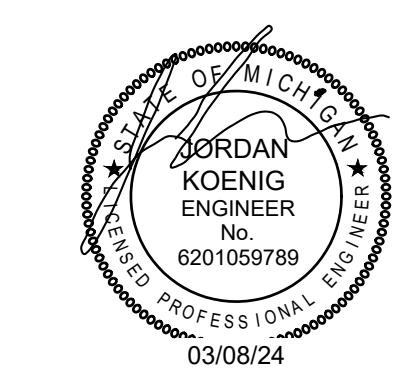


GENERAL DEMOLITION NOTES:

1. REMOVE (INCLUDING DISCONNECTION) OF MECHANICAL SERVICES AS INDICATED AND/OR DESCRIBED ALONG WITH HANGERS, SUPPORTS, CONTROLS AND ALL RELATED ACCESSORIES.
2. ALL ITEMS ON DEMOLITION PLAN SHALL BE CONSIDERED TO BE EXISTING UNLESS OTHERWISE NOTED.
3. FIELD VERIFY EXACT SIZE AND LOCATION OF ALL EXISTING SERVICES PRIOR TO DEMOLITION.
4. WHERE DAMAGE OCCURS DURING DEMOLITION, THE CONTRACTOR SHALL REPAIR AS REQUIRED SO AS TO BE COMPATIBLE WITH EXISTING.
5. WHERE DUCT AND/OR PIPE HAS BEEN DAMAGED, THE CONTRACTOR SHALL REPAIR AS REQUIRED TO BE COMPATIBLE WITH EXISTING.
6. ALL ITEMS DEMOLISHED SHALL BE REMOVED FROM THE SITE AND REMAIN THE PROPERTY OF THE OWNER (DISPOSED OF PROPERLY), UNLESS OTHERWISE NOTED.
7. LIMITS OF DEMOLITION ARE INDICATED ON THE DRAWING. SHOULD EXISTING FIELD CONDITIONS REQUIRE MODIFICATIONS OF THESE LIMITS FOR THE PROPER INSTALLATION OF NEW WORK, THE CONTRACTOR SHALL BE RESPONSIBLE FOR SUCH MODIFICATIONS.
8. CAP AND SEAL AIRTIGHT ALL UN-USE OPENINGS REMAINING OF THE RETURN AND SUPPLY DUCTWORK.
9. MECHANICAL CONTRACTOR TO PERFORM SELECTIVE DEMO AND REMOVAL OF CEILING TILES TO ACCOMMODATE NEW UVS AND DUCTWORK.

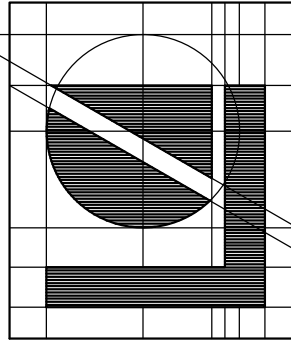
DEMOLITION KEY NOTES: (4)

1. DISCONNECT AND REMOVE EXISTING HORIZONTAL /VERTICAL UNIT VENTILATOR WITH ASSOCIATED PIPING AND SUPPORTS. RECONNECT EXISTING HEATING HOT WATER SUPPLY AND RETURN PIPING PRIOR TO NEW UNIT VENTILATOR CONTROL VALVE. EXISTING SLEEVE AND LOUVER TO REMAIN.
2. DISCONNECT AND REMOVE THE EXISTING COOLING UNIT ABOVE THE CEILING WITH ASSOCIATED DUCTWORK, GRILLES AND CONDENSING UNIT.
3. DISCONNECT AND REMOVE THE EXISTING WINDOW UNIT WITH ASSOCIATED CONTROLS. REFER TO ARCHITECTURAL DRAWING FOR WALL WORK IN THIS AREA.



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



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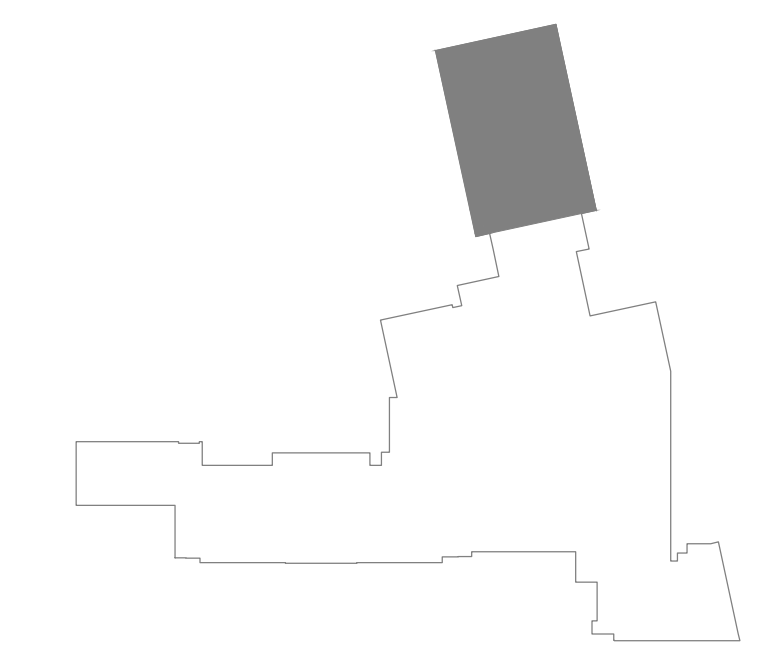
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03/08/2024
date

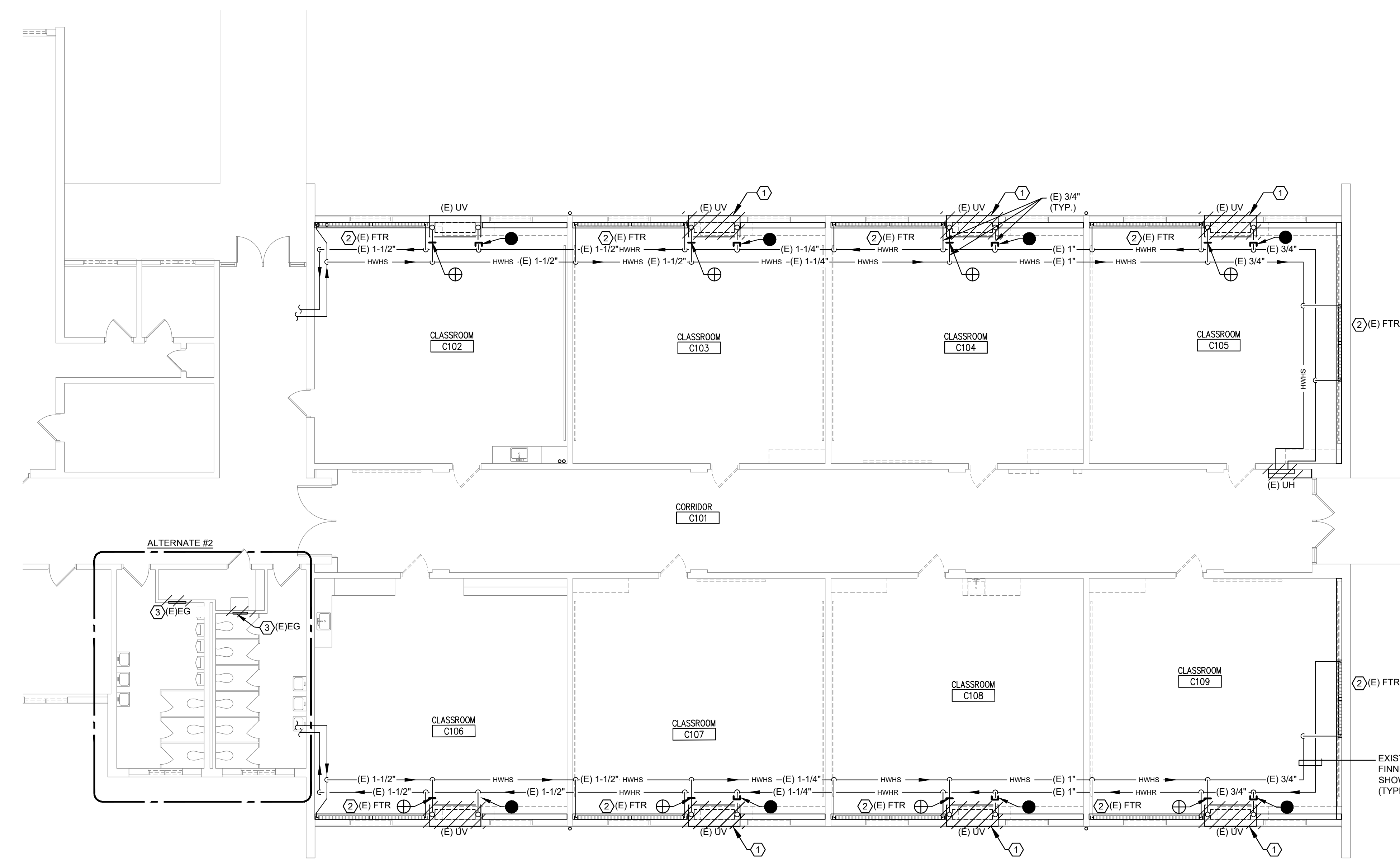
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RENOVATIONS for:
BRIGHTON AREA SCHOOLS
(B.E.C.C. BLDG.) BRIGHTON, MICHIGAN
PARTIAL FIRST FLOOR - MECHANICAL DEMOLITION PLAN

MD1.4
23086



KEY PLAN



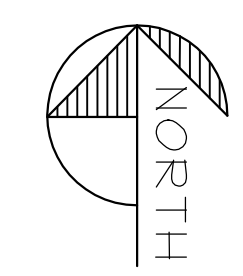
DEMOLITION KEY NOTES: (E)

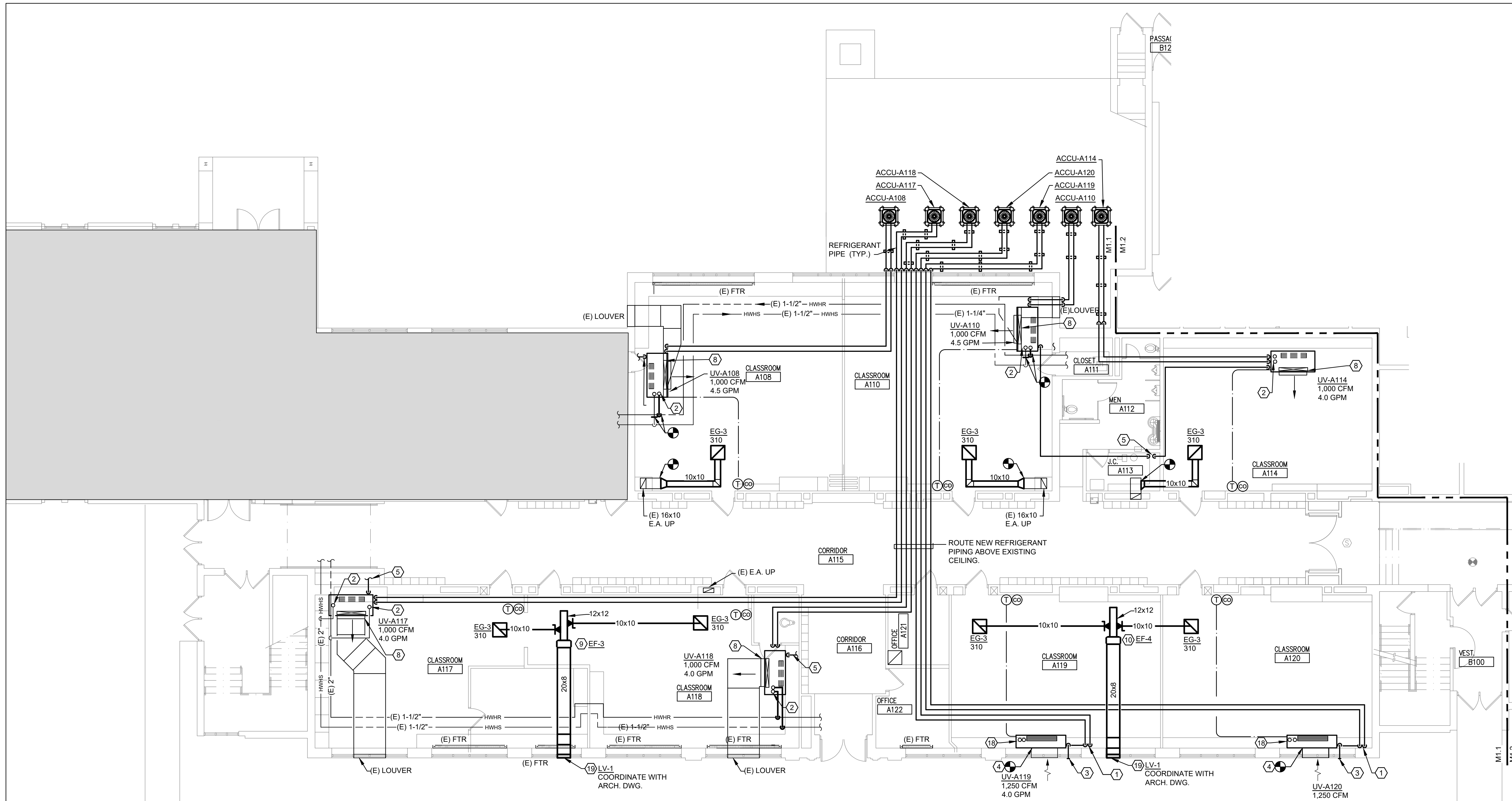
1. DISCONNECT AND REMOVE EXISTING HORIZONTAL VERTICAL UNIT VENTILATOR WITH ASSOCIATE PIPING AND SUPPORTS. RECONNECT EXISTING HEATING HOT WATER SUPPLY AND RETURN PIPING PRIOR TO NEW UNIT VENTILATOR CONTROL VALVE. EXISTING SLEEVE AND LOVER TO REMAIN.
2. REMOVE EXISTING FINNED TUBE ELEMENT ENCLOSURE WITH ASSOCIATED SUPPORTS AND BRACKETS.
3. DISCONNECT AND REMOVE EXISTING EXHAUST GRILLE AND REPLACE WITH NEW.
4. DISCONNECT AND REMOVE EXISTING UNIT HEATER WITH ASSOCIATE PIPING AND SUPPORTS.

EXISTING PIPING ROUTED WITHIN FINNED TUBE ENCLOSURE. PIPES SHOWN ABOVE CEILING FOR CLARITY (TYPICAL).



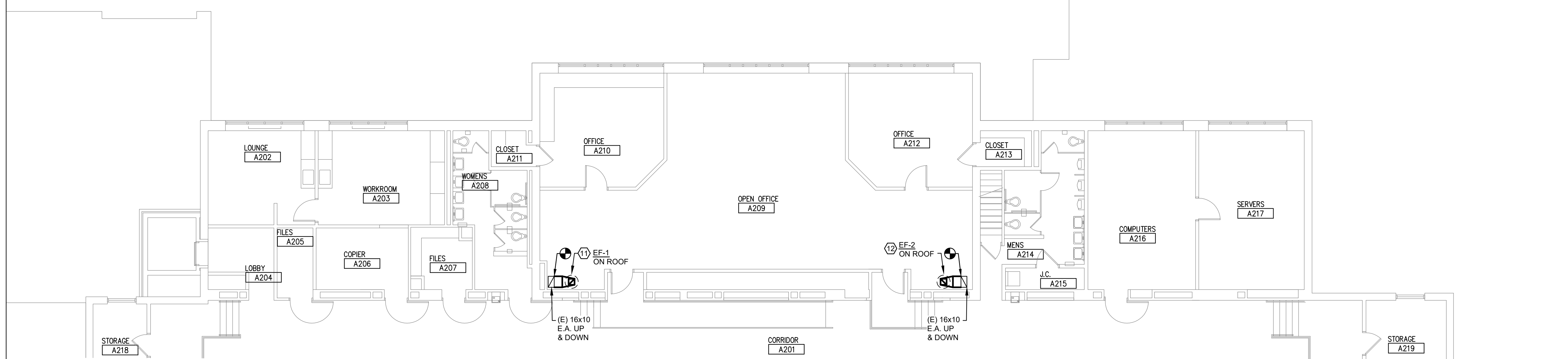
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1 MLI PARTIAL FIRST FLOOR - MECHANICAL NEW WORK PLAN

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



2 MLI PARTIAL SECOND FLOOR - MECHANICAL NEW WORK PLAN

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

KEY PLAN

GENERAL NOTES:

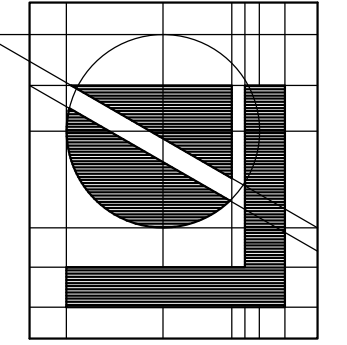
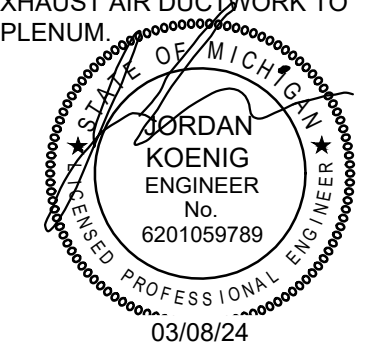
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2. ALL CONDENSATE PIPING SHALL BE 3/4" INSULATED TYPE "L" COPPER PIPE WITH 1/2" FIBERGLASS INSULATION.

KEY NOTES: (#)

ALL KEY NOTES MAY NOT BE USED ON THIS SHEET

1. REFRIGERANT LINE SET TO BE ROUTED THROUGH ENCLOSURE AND UP ALONG WALL TO SECOND FLOOR/ROOF. ROUTE PIPING WITHIN A RECTORSAL SLIMDUCT LINESET COVER SIMILAR TO MODEL SD-100-W (OR EQUAL). THE LOCATION OF ALL LINESET COVERS IS SHOWN. DIAGRAMMATICALLY THE MECHANICAL CONTRACTOR SHALL COORDINATE THE LOCATION OF ALL LINESET COVERS WITH FIELD CONDITIONS.
2. CONNECT NEW 3/4" HEATING HOT WATER SUPPLY AND RETURN PIPING TO EXISTING PIPING.
3. 3/4" COPPER CONDENSATE DRAIN TO BE CORED THROUGH EXISTING BRICK WALL TO SPILL TO GRADE. THE INSTALLING CONTRACTOR SHALL COORDINATE ALL WALL PENETRATIONS IN FIELD PRIOR TO COMPLETING THEIR WORK. ALL BRICK CORING SHALL BE DONE NEATLY AND ALL CUT EDGES OF BRICK SHALL BE SEALED AND CONCEALED UNDER A PRE-FINISHED BRASS ESCUTCHEON PLATE.
4. 43" x 11" EXISTING SLEEVE AND LOUVER. COORDINATE PLACEMENT OF UNIT VENTILATOR REAR EXTENSION WITH EXISTING EXTERIOR WALL SLEEVE & LOUVER.
5. 3/4" COPPER CONDENSATE DRAIN TO SPILL TO CLOSEST SERVICE SINK. PROVIDE CONDENSATE PUMP IF NEEDED. THE INSTALLING CONTRACTOR SHALL COORDINATE ALL WALL PENETRATIONS IN FIELD PRIOR TO COMPLETING THEIR WORK.
6. INSTALL NEW FINNED TUBE ELEMENT ENCLOSURE, MODINE MODEL #5012 OR EQUIVALENT. SLOPED TOP WITH STAMPED GRILLE. PROVIDE ALL HANGERS CRADLES AND END CAPS. FIELD VERIFY FOR EXACT DIMENSIONS AND FINNED TUBE PIPE CONDITION. COORDINATE INSTALLATION WITH FINISHED WALL MATERIAL.
7. REFRIGERANT LIQUID AND SUCTION LINE(S) UP THROUGH ROOF IN THIS AREA.
8. CONNECT EXISTING OUTSIDE AIR DUCT TO THE NEW UNIT VENTILATOR. FIELD VERIFY EXISTING LOCATION AND SIZE.
9. INTERLOCK NEW EXHAUST FAN EF-3 TO UV-A117 AND UV-A118.
10. INTERLOCK NEW EXHAUST FAN EF-4 TO UV-A119 AND UV-A120.
11. INTERLOCK NEW EXHAUST FAN EF-1 TO UV-A108.
12. INTERLOCK NEW EXHAUST FAN EF-2 TO UV-A110.
13. APPROXIMATELY 14'-6" LONG, 24" TALL, 5-1/4" DEEP FINNED TUBE ELEMENT ENCLOSURE.
14. APPROXIMATELY 8'-6" LONG, 24" TALL, 5-1/4" DEEP FINNED TUBE ELEMENT ENCLOSURE.
15. ALL AIR TRANSFER DUCTS MUST HAVE A CONTINUOUS ACOUSTICAL SMOKE AND SOUND TIGHT SEALANT FOR EACH SIDE OF THE WALL.
16. APPROXIMATELY 22'-2" LONG, 24" TALL, 5-1/4" DEEP FINNED TUBE ELEMENT ENCLOSURE.
17. APPROXIMATELY 19'-0" LONG, 24" TALL, 5-1/4" DEEP FINNED TUBE ELEMENT ENCLOSURE.
18. CONNECT NEW 3/4" HEATING HOT WATER SUPPLY AND RETURN PIPING TO EXISTING PIPING BELOW.
19. CONNECT NEW 20" x 8" EXHAUST AIR DUCTWORK TO 24"X48"X12" INSULATED PLENUM.

THIS DRAWING IS DIAGRAMMATIC AND SHOULD BE USED TO DETERMINE THE DESIGN INTENT. THE CONTRACTOR SHALL FIELD VERIFY ALL WORK AND SHALL NOTIFY THE ARCHITECT IMMEDIATELY OF ANY DISCREPANCIES IN THE DOCUMENTS BEFORE PROCEEDING. FAILURE TO DO SO WILL RESULT IN THE CONTRACTOR TAKING FULL RESPONSIBILITY AND LIABILITY FOR SAID DISCREPANCIES. NOTICE: THIS DRAWING AND THE DESIGN ARE THE PROPERTY OF MECHANICAL ELECTRICAL ENGINEERING CONSULTANTS, P.C. AND NO ALTERATIONS AND/OR TRANSFERS OF WORK ARE PERMITTED UNLESS WRITTEN APPROVAL IS GRANTED BY MECHANICAL ELECTRICAL ENGINEERING CONSULTANTS, P.C.



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14488 Sheldon Rd. Ste. 200
Brighton, Michigan 48116
734-454-8515
734-454-8517
MEEC JOB # 23-011

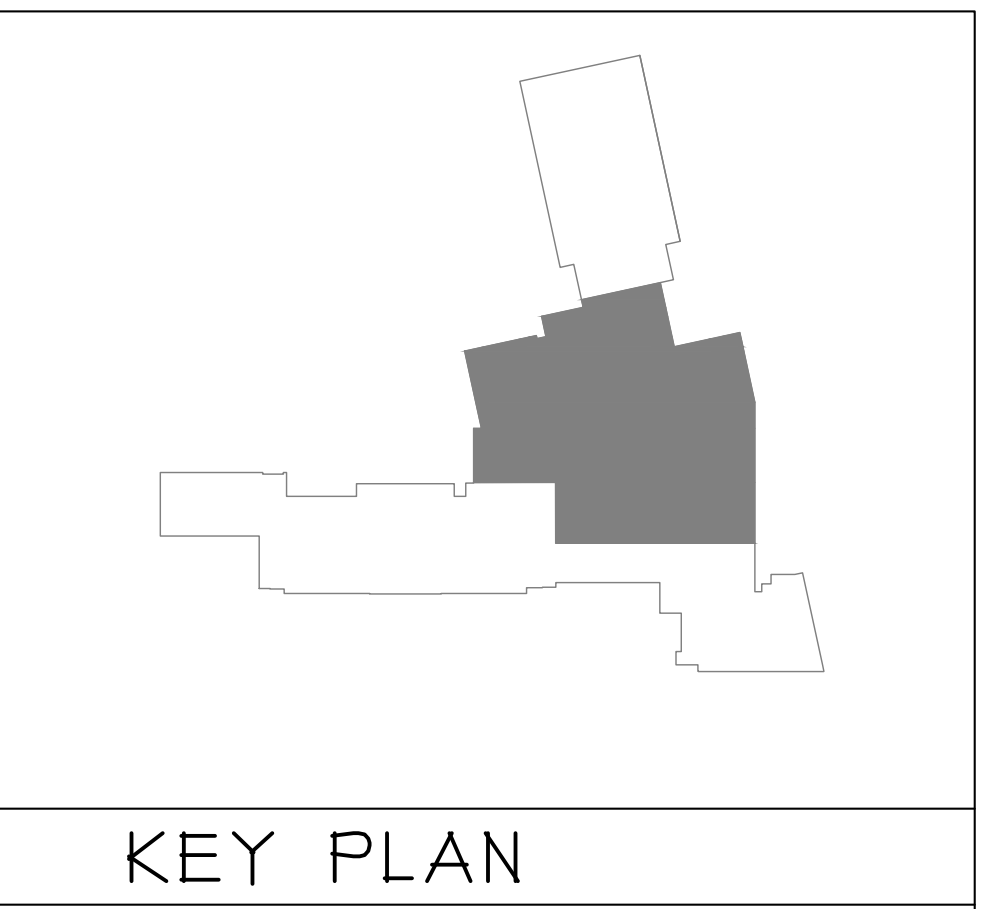
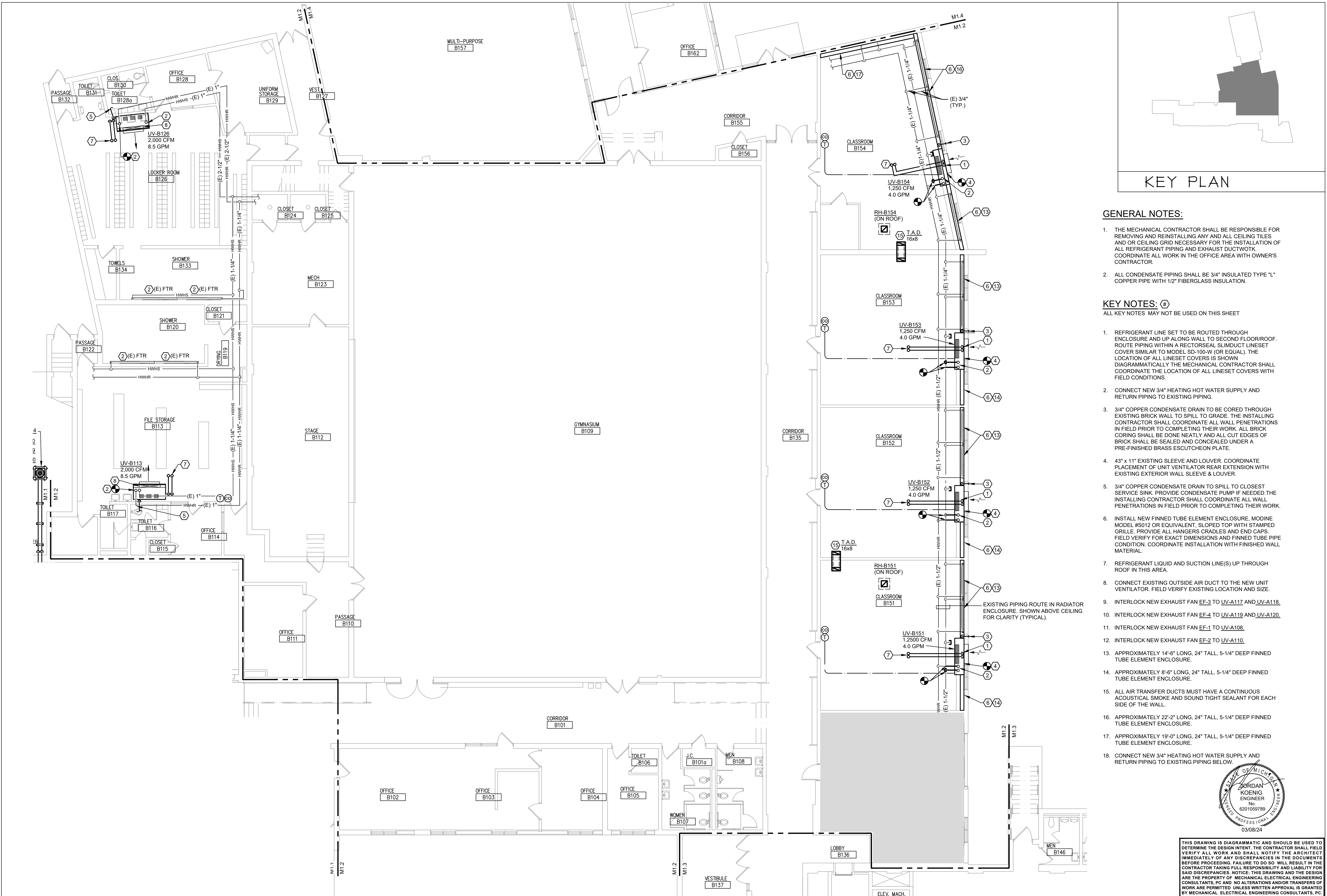
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03/08/2024
date

dr: z.s.
ckd: w.v.
app'd: j.k.

RENOVATIONS for:
BRIGHTON AREA SCHOOLS
(B.E.C.C. BLDG.) BRIGHTON, MICHIGAN
PARTIAL FIRST FLOOR - MECHANICAL NEW WORK PLAN

M1.1
23086



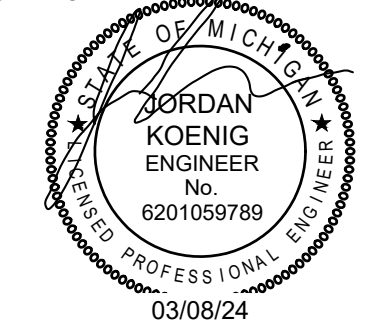
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KEY NOTES: (K)

ALL KEY NOTES MAY NOT BE USED ON THIS SHEET

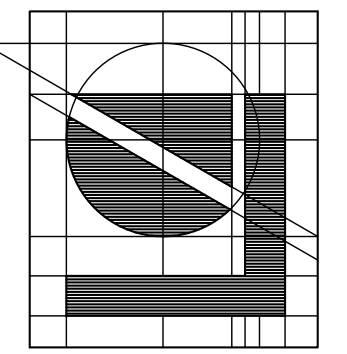
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6. INSTALL NEW FINNED TUBE ELEMENT ENCLOSURE. MODINE MODEL #5512 OR EQUIVALENT. SLOPED TOP WITH STAMPED GRILLE. PROVIDE ALL HANGERS CRADLES AND END CAPS. FIELD VERIFY FOR EXACT DIMENSIONS AND FINNED TUBE PIPE CONDITION. COORDINATE INSTALLATION WITH FINISHED WALL MATERIAL.
7. REFRIGERANT LIQUID AND SUCTION LINE(S) UP THROUGH ROOF IN THIS AREA.
8. CONNECT EXISTING OUTSIDE AIR DUCT TO THE NEW UNIT VENTILATOR. FIELD VERIFY EXISTING LOCATION AND SIZE.
9. INTERLOCK NEW EXHAUST FAN EF-3 TO UV-A117 AND UV-A118.
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13. APPROXIMATELY 14'-6" LONG, 24" TALL, 5-1/4" DEEP FINNED TUBE ELEMENT ENCLOSURE.
14. APPROXIMATELY 8'-6" LONG, 24" TALL, 5-1/4" DEEP FINNED TUBE ELEMENT ENCLOSURE.
15. ALL AIR TRANSFER DUCTS MUST HAVE A CONTINUOUS ACOUSTICAL SMOKE AND SOUND TIGHT SEALANT FOR EACH SIDE OF THE WALL.
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1 PARTIAL FIRST FLOOR - MECHANICAL NEW PLAN

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



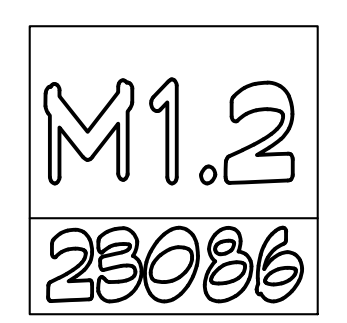
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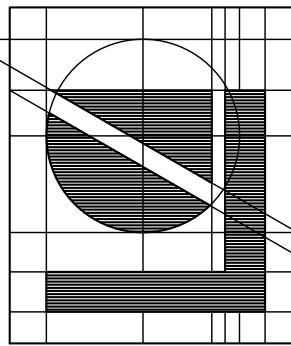


MECHANICAL ELECTRICAL ENGINEERING CONSULTANTS, P.C.
BIDS + PERMITS issued for

dr: z.s.
ckd: w.v.
app'd: j.k.
date: 03/08/2024

RENOVATIONS for:
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(B.E.C.C. BLDG.) BRIGHTON, MICHIGAN
PARTIAL FIRST FLOOR - MECHANICAL NEW PLAN





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14406 Shadon Rd., Ste. 200
Farmington Hills, MI 48334
734-454-8516
734-454-8517
MEEC-008 # 23-011

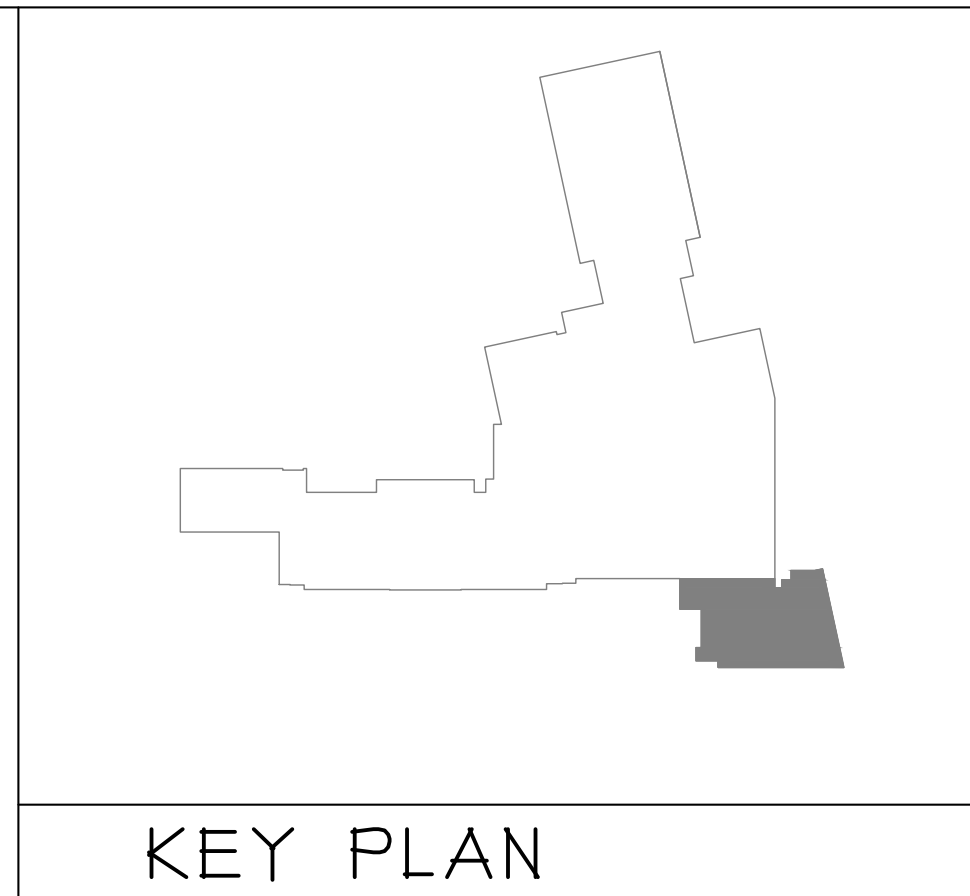
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BIDS

03/08/2024 date

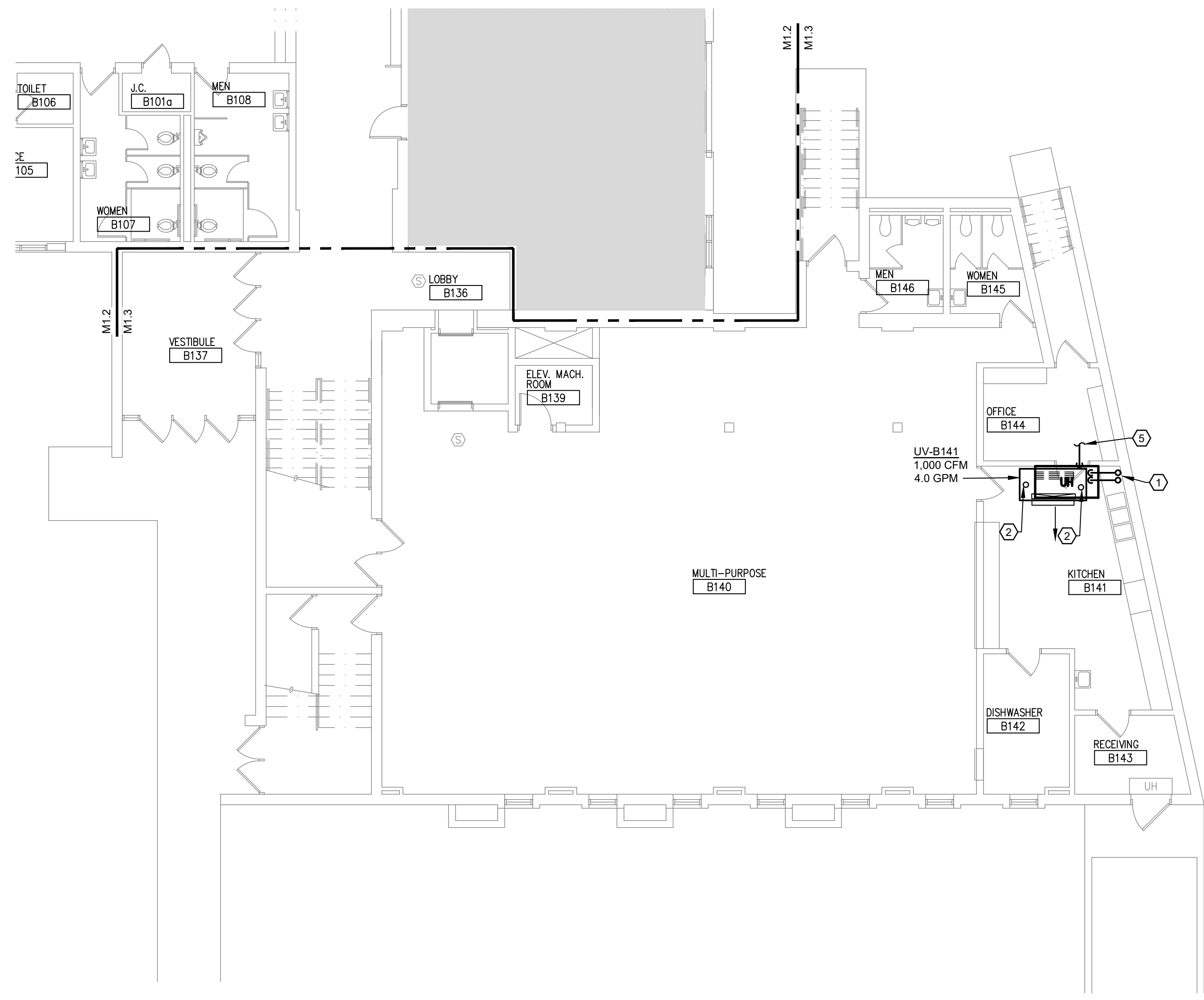
dr: z.s.
ckt: w.v.
app't: j.k.

RENOVATIONS for:
BRIGHTON AREA SCHOOLS
(B.E.C.C. BLDG.) BRIGHTON, MICHIGAN
PARTIAL FIRST FLOOR - MECHANICAL NEW PLAN

M1.3
23086



KEY PLAN



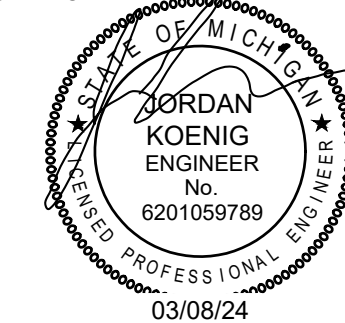
GENERAL NOTES:

1. THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING AND REINSTALLING ANY AND ALL CEILING TILES AND OR CEILING GRID NECESSARY FOR THE INSTALLATION OF ALL REFRIGERANT PIPING AND EXHAUST DUCTWORK. COORDINATE ALL WORK IN THE OFFICE AREA WITH OWNER'S CONTRACTOR.
2. ALL CONDENSATE PIPING SHALL BE 3/4" INSULATED TYPE "L" COPPER PIPE WITH 1/2" FIBERGLASS INSULATION.

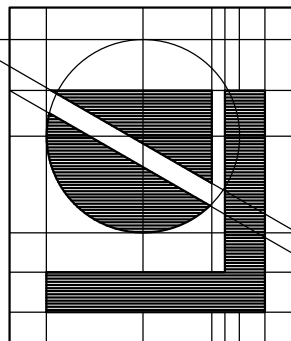
KEY NOTES: (K)

ALL KEY NOTES MAY NOT BE USED ON THIS SHEET

1. REFRIGERANT LINE SET TO BE ROUTED THROUGH ENCLOSURE AND UP ALONG WALL TO SECOND FLOOR/ROOF. ROUTE PIPING WITHIN A RECTORSEAL SLIMDUCT LINESET COVER SIMILAR TO MODEL SD-100-W (OR EQUAL). THE LOCATION OF ALL LINESET COVERS IS SHOWN. DIAGRAMMATICALLY THE MECHANICAL CONTRACTOR SHALL COORDINATE THE LOCATION OF ALL LINESET COVERS WITH FIELD CONDITIONS.
2. CONNECT NEW 3/4" HEATING HOT WATER SUPPLY AND RETURN PIPING TO EXISTING PIPING.
3. 3/4" COPPER CONDENSATE DRAIN TO BE CORED THROUGH EXISTING BRICK WALL TO SPILL TO GRADE. THE INSTALLING CONTRACTOR SHALL COORDINATE ALL WALL PENETRATIONS IN FIELD PRIOR TO COMPLETING THEIR WORK. ALL BRICK CORING SHALL BE DONE NEATLY AND ALL CUT EDGES OF BRICK SHALL BE SEALED AND CONCEALED UNDER A PRE-FINISHED BRASS ESCUTCHEON PLATE.
4. 43" x 11" EXISTING SLEEVE AND LOUVER. COORDINATE PLACEMENT OF UNIT VENTILATOR REAR EXTENSION WITH EXISTING EXTERIOR WALL SLEEVE & LOUVER.
5. 3/4" COPPER CONDENSATE DRAIN TO SPILL TO CLOSEST SERVICE SINK. PROVIDE CONDENSATE PUMP IF NEEDED. THE INSTALLING CONTRACTOR SHALL COORDINATE ALL WALL PENETRATIONS IN FIELD PRIOR TO COMPLETING THEIR WORK.
6. INSTALL NEW FINNED TUBE ELEMENT ENCLOSURE, MODINE MODEL #5012 OR EQUIVALENT, SLOPED TOP WITH STAMPED GRILLE. PROVIDE ALL HANGERS CRADLES AND END CAPS. FIELD VERIFY FOR EXACT DIMENSIONS AND FINNED TUBE PIPE CONDITION. COORDINATE INSTALLATION WITH FINISHED WALL MATERIAL.
7. REFRIGERANT LIQUID AND SUCTION LINE(S) UP THROUGH ROOF IN THIS AREA.
8. CONNECT EXISTING OUTSIDE AIR DUCT TO THE NEW UNIT VENTILATOR. FIELD VERIFY EXISTING LOCATION AND SIZE.
9. INTERLOCK NEW EXHAUST FAN EF-3 TO U.V.-A117 AND U.V.-A118.
10. INTERLOCK NEW EXHAUST FAN EF-4 TO U.V.-A119 AND U.V.-A120.
11. INTERLOCK NEW EXHAUST FAN EF-1 TO U.V.-A108.
12. INTERLOCK NEW EXHAUST FAN EF-2 TO U.V.-A110.
13. APPROXIMATELY 14'-6" LONG, 24" TALL, 5-1/4" DEEP FINNED TUBE ELEMENT ENCLOSURE.
14. APPROXIMATELY 8'-6" LONG, 24" TALL, 5-1/4" DEEP FINNED TUBE ELEMENT ENCLOSURE.
15. ALL AIR TRANSFER DUCTS MUST HAVE A CONTINUOUS ACOUSTICAL SMOKE AND SOUND TIGHT SEALANT FOR EACH SIDE OF THE WALL.
16. APPROXIMATELY 22'-2" LONG, 24" TALL, 5-1/4" DEEP FINNED TUBE ELEMENT ENCLOSURE.
17. APPROXIMATELY 19'-0" LONG, 24" TALL, 5-1/4" DEEP FINNED TUBE ELEMENT ENCLOSURE.
18. CONNECT NEW 3/4" HEATING HOT WATER SUPPLY AND RETURN PIPING TO EXISTING PIPING BELOW.



THIS DRAWING IS DIAGRAMMATIC AND SHOULD BE USED TO DETERMINE THE DESIGN INTENT. THE CONTRACTOR SHALL FIELD VERIFY ALL WORK AND SHALL NOTIFY THE ARCHITECT IMMEDIATELY OF ANY DISCREPANCIES IN THE DOCUMENTS BEFORE PROCEEDING. FAILURE TO DO SO WILL RESULT IN THE CONTRACTOR TAKING FULL RESPONSIBILITY AND LIABILITY FOR SAID DISCREPANCIES. NOTICE: THIS DRAWING AND THE DESIGN ARE THE PROPERTY OF MECHANICAL ELECTRICAL ENGINEERING CONSULTANTS, PC AND NO ALTERATIONS AND/OR TRANSFERS OF WORK ARE PERMITTED UNLESS WRITTEN APPROVAL IS GRANTED BY MECHANICAL ELECTRICAL ENGINEERING CONSULTANTS, PC.



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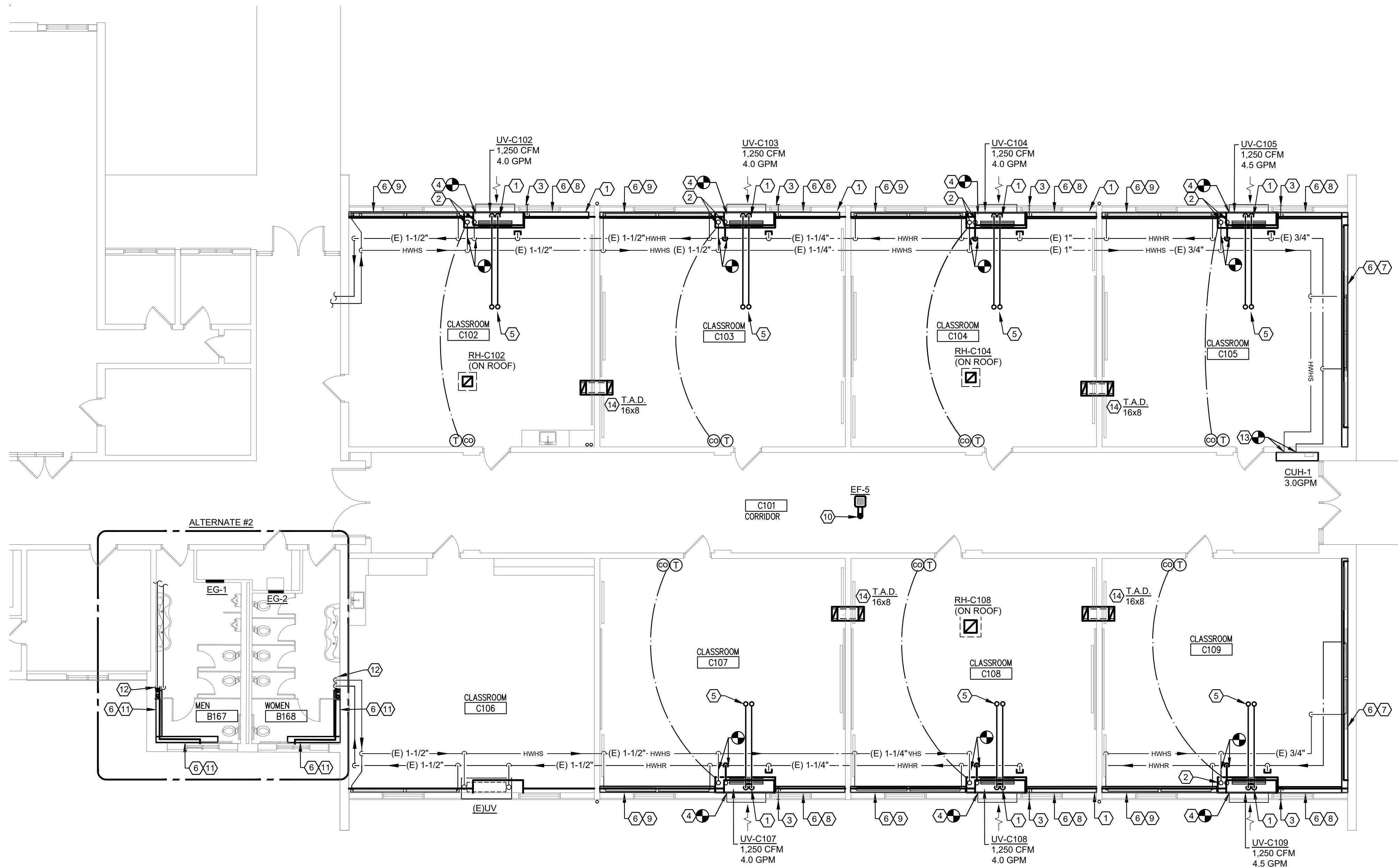
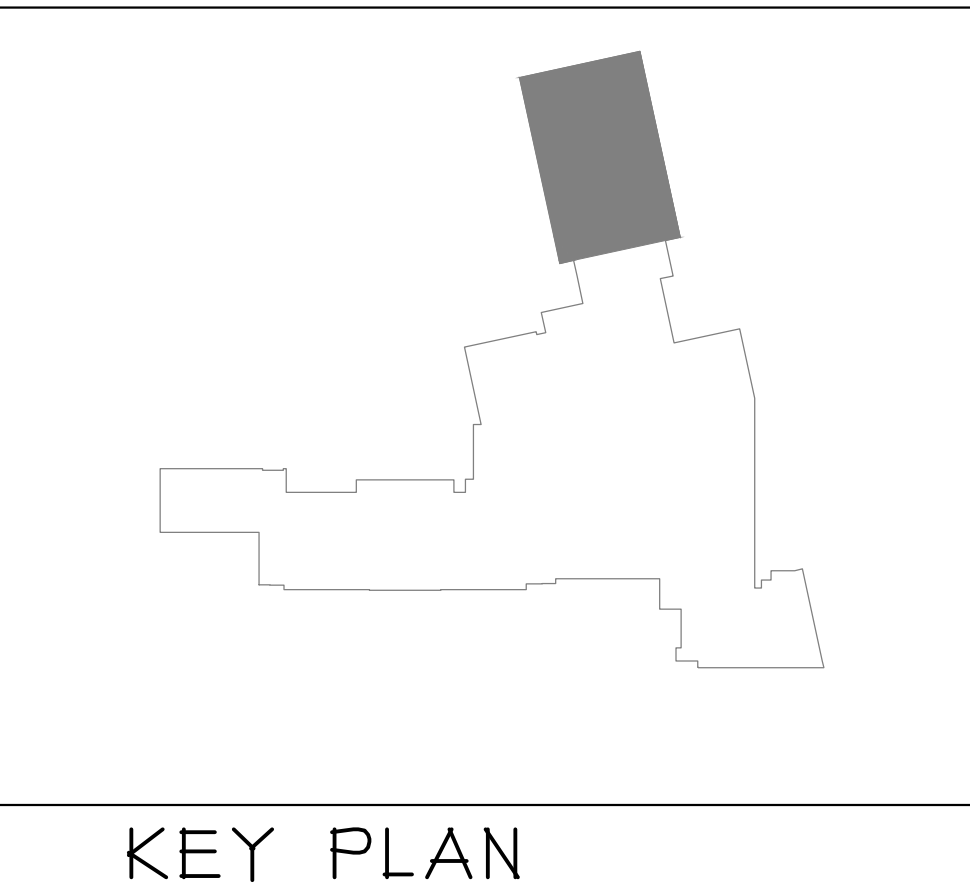
MECHANICAL ELECTRICAL ENGINEERING CONSULTANTS
 14498 SHADON RD. SUITE 200
 BRIGHTON, MI 48116
 734-464-6816
 734-464-6817
 M.E.C. JOB # 23-011

PERMITS ISSUED FOR
 BIDS

03/08/2024 date
 dr: z.s.
 ckd: w.v.
 app'd: j.k.

RENOVATIONS for:
BRIGHTON AREA SCHOOLS
 (B.E.C.C. BLDG.) BRIGHTON, MICHIGAN
PARTIAL FIRST FLOOR - MECHANICAL NEW PLAN

M1.4
23086



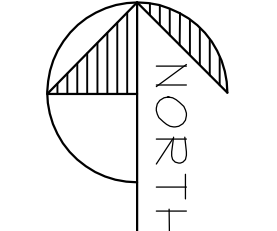
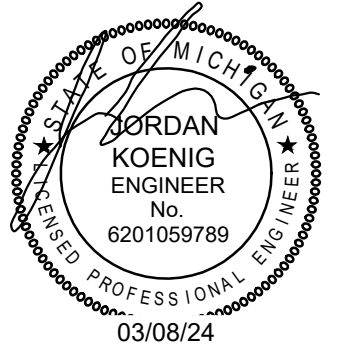
GENERAL NOTES:

1. THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING AND REINSTALLING ANY AND ALL CEILING TILES AND OR CEILING GRID NECESSARY FOR THE INSTALLATION OF ALL REFRIGERANT PIPING. COORDINATE ALL WORK IN THE OFFICE AREA WITH OWNER'S CONTRACTOR.
2. ALL CONDENSATE PIPING SHALL BE 3/4" INSULATED TYPE "L" COPPER PIPE WITH 1/2" FIBERGLASS INSULATION.

KEY NOTES: #

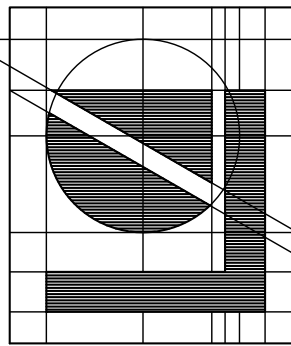
ALL KEY NOTES MAY NOT BE USED ON THIS SHEET

1. REFRIGERANT LINE SET TO BE ROUTED UP ALONG WALL TO ROOF. ROUTE PIPING WITHIN A RECTORSEAL SLIMDUCT LINESET COVER SIMILAR TO MODEL SD-100-W (OR EQUAL). THE LOCATION OF ALL LINESET COVERS IS SHOWN DIAGRAMMATICALLY THE MECHANICAL CONTRACTOR SHALL COORDINATE THE LOCATION OF ALL LINESET COVERS WITH FIELD CONDITIONS.
2. CONNECT NEW 3/4" HEATING HOT WATER SUPPLY AND RETURN PIPING TO EXISTING PIPING.
3. 3/4" COPPER CONDENSATE DRAIN TO BE CORED THROUGH EXISTING BRICK WALL TO SPILL TO GRADE. THE INSTALLING CONTRACTOR SHALL COORDINATE ALL WALL PENETRATIONS IN FIELD PRIOR TO COMPLETING THEIR WORK OR REUSE EXISTING WALL PENETRATION IF NEEDED. ALL BRICK CORING SHALL BE DONE NEATLY AND ALL CUT EDGES OF BRICK SHALL BE SEALED AND CONCEALED UNDER A PRE-FINISHED BRASS ESCUTCHEON PLATE.
4. 43" x 11" EXISTING SLEEVE AND LOUVER. COORDINATE PLACEMENT OF UNIT VENTILATOR REAR EXTENSION WITH EXISTING EXTERIOR WALL LOUVER.
5. REFRIGERANT LIQUID AND SUCTION LINE(S) UP THROUGH ROOF IN THIS AREA. REFER TO DRAWING M1.2 FOR CONTINUATION.
6. INSTALL NEW FINNED TUBE ELEMENT ENCLOSURE. MODINE MODEL #S24 OR EQUIVALENT. SLOPED TOP WITH STAMPED GRILLE. PROVIDE ALL HANGERS CRADLES AND END CAPS. FIELD VERIFY FOR EXACT DIMENSIONS AND FINNED TUBE PIPE CONDITION. COORDINATE INSTALLATION WITH FINISHED WALL MATERIAL.
7. APPROXIMATELY 28'-0" LONG, 24" TALL, 5-1/4" DEEP FINNED TUBE ELEMENT ENCLOSURE. FIELD VERIFY THE EXISTING ENCLOSURE SIZE.
8. APPROXIMATELY 8'-9" LONG, 24" TALL, 5-1/4" DEEP FINNED TUBE ELEMENT ENCLOSURE. FIELD VERIFY THE EXISTING ENCLOSURE SIZE.
9. APPROXIMATELY 13'-8" LONG, 24" TALL, 5-1/4" DEEP FINNED TUBE ELEMENT ENCLOSURE. FIELD VERIFY THE EXISTING ENCLOSURE SIZE.
10. 8"Ø EXHAUST AIR DUCT UP THRU ROOF.
11. APPROXIMATELY 66" LONG, 24" TALL, 5-1/4" DEEP FINNED TUBE ELEMENT ENCLOSURE.
12. INSULATION OF THE EXISTING HEATING PIPES SHOULD BE REPLACED AND PIPES SHOULD BE ENCLOSED WITHIN A RECTORSEAL SLIMDUCT LINESET COVER SIMILAR TO MODEL SD-100-W (OR EQUAL). THE LOCATION OF ALL PIPING COVERS IS SHOWN DIAGRAMMATICALLY THE MECHANICAL CONTRACTOR SHALL COORDINATE THE LOCATION OF ALL PIPING COVERS WITH FIELD CONDITIONS.
13. CONNECT NEW CABINET UNIT HEATER TO THE EXISTING PIPING.
14. ALL AIR TRANSFER DUCTS MUST HAVE A CONTINUOUS ACOUSTICAL SMOKE AND SOUND TIGHT SEALANT FOR EACH SIDE OF THE WALL.



THIS DRAWING IS DIAGRAMMATIC AND SHOULD BE USED TO DETERMINE THE DESIGN INTENT. THE CONTRACTOR SHALL FIELD VERIFY ALL WORK AND SHALL NOTIFY THE ARCHITECT IMMEDIATELY OF ANY DISCREPANCIES IN THE DOCUMENTS BEFORE PROCEEDING. FAILURE TO DO SO WILL RESULT IN THE CONTRACTOR TAKING FULL RESPONSIBILITY AND LIABILITY FOR SAID DISCREPANCIES. NOTICE: THIS DRAWING AND THE DESIGN ARE THE PROPERTY OF MECHANICAL ELECTRICAL ENGINEERING CONSULTANTS, P.C. AND NO ALTERATIONS AND/OR TRANSFERS OF WORK ARE PERMITTED UNLESS WRITTEN APPROVAL IS GRANTED BY MECHANICAL ELECTRICAL ENGINEERING CONSULTANTS, P.C.

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



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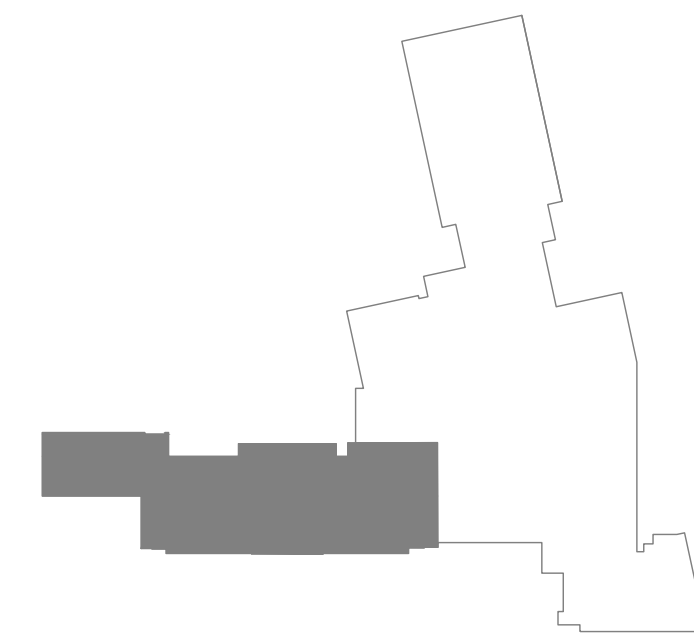
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ck'd: w.v.
app'd: j.k.

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RENOVATIONS for:
BRIGHTON AREA SCHOOLS
(B.E.C.C. BLDG.) BRIGHTON, MICHIGAN
PARTIAL ROOF - MECHANICAL NEW WORK PLAN

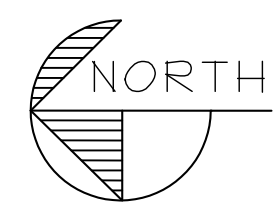
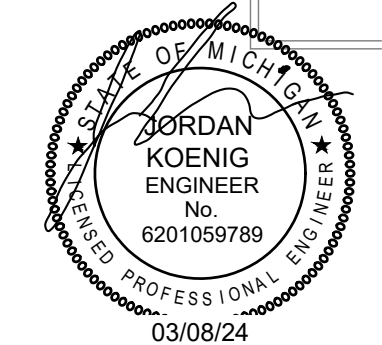
M2.1
23086



KEY PLAN

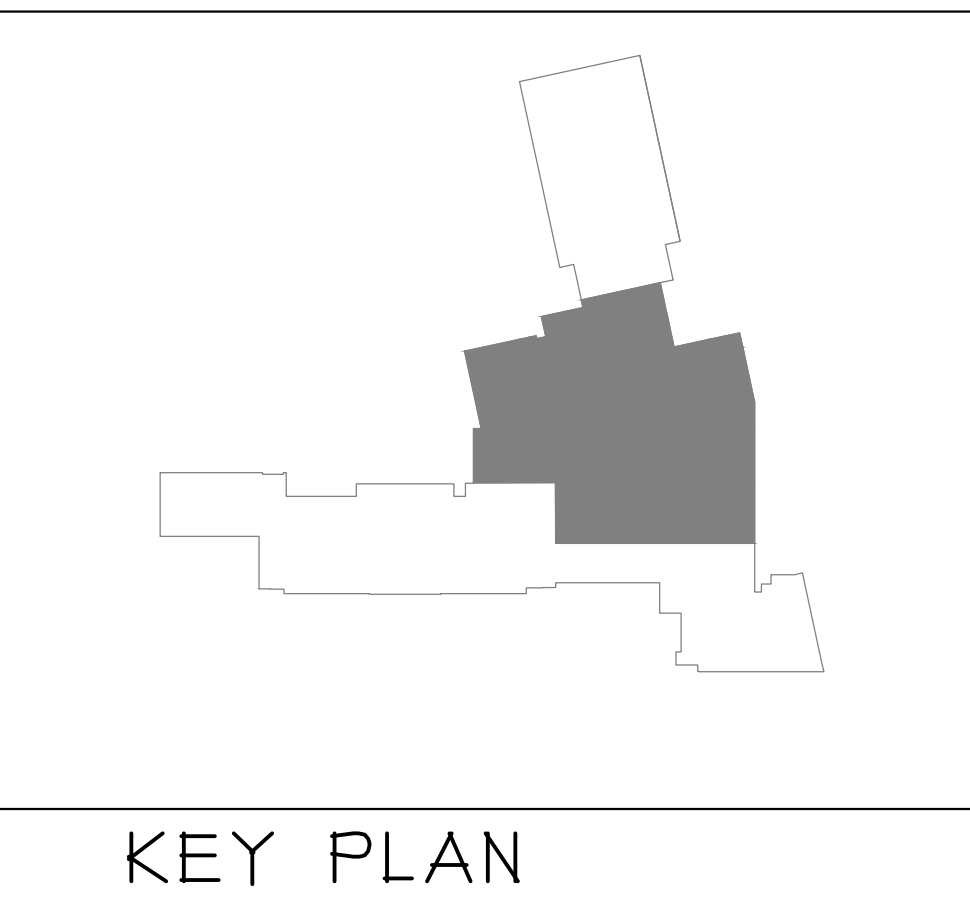
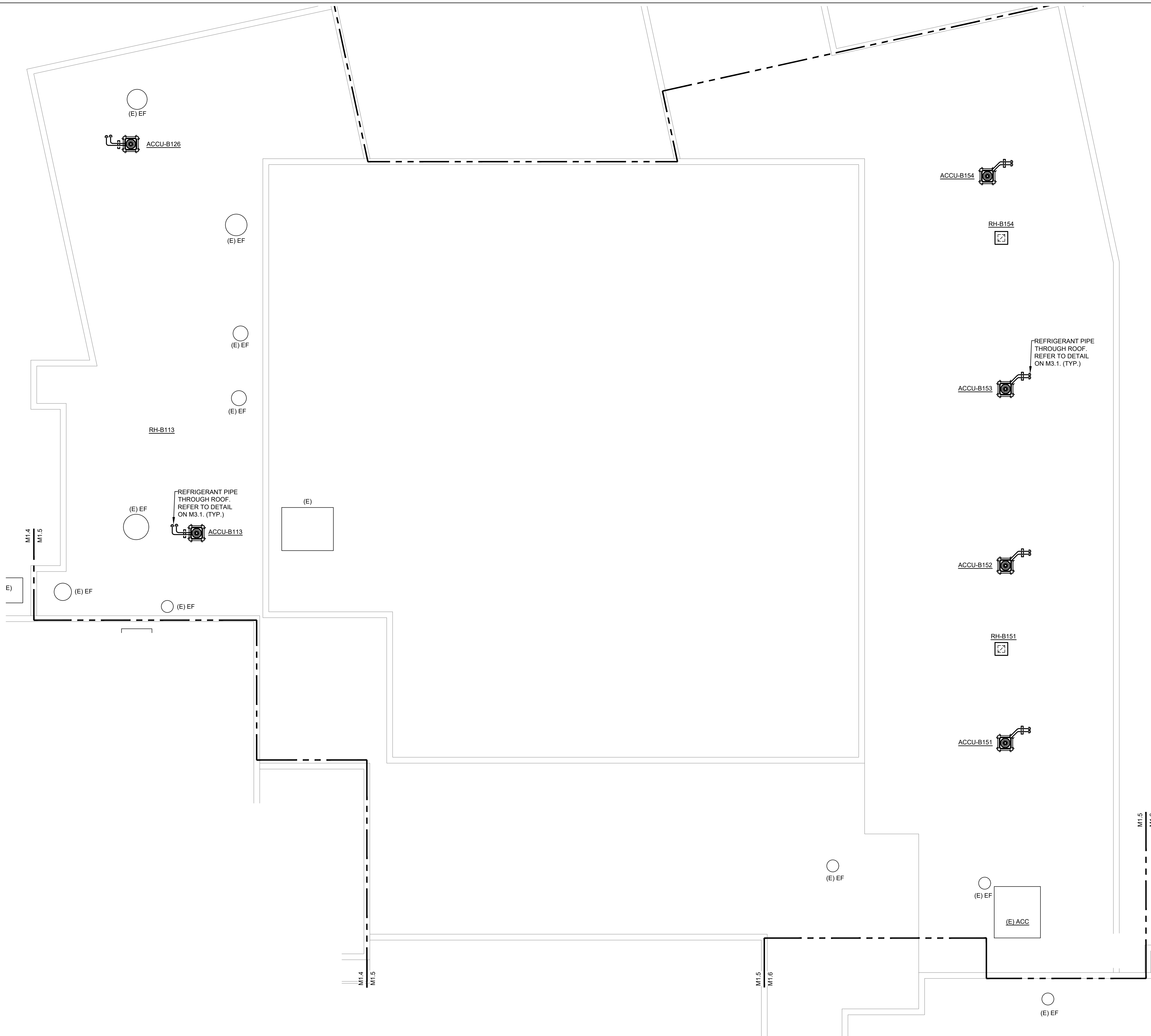
GENERAL NOTES:

3. THE MECHANICAL CONTRACTOR SHALL COORDINATE ALL ROOF PENETRATIONS WITH OWNER ROOFING CONTRACTOR TO MAINTAIN ALL WARRANTIES.
4. ALL CONDENSING UNITS SHALL BE INSTALLED ON THE SPECIFIED AND DETAILED ROOF SUPPORTS. THE FEET OF ALL ROOF SUPPORTS ARE TO BE PLACED ON RUBBER PADS TO PROTECT THE EXISTING ROOF MEMBRANE.
5. ALL REFRIGERANT PIPE SUPPORTS ARE TO BE PLACED ON RUBBER PADS TO PROTECT THE EXISTING ROOF MEMBRANE.
6. REFER TO DETAIL ON DRAWING M3.1 FOR REFRIGERANT PIPE AND ELECTRICAL CONDUIT ROOF PENETRATION DETAIL. CONTRACTOR SHALL MAINTAIN THE EXISTING ROOF WARRANTY AND COORDINATE ALL ROOF PENETRATIONS WITH THE OWNER.
7. LOCATE ALL NEW AIR COOLED CONDENSING UNITS A MINIMUM OF 10'-0" FROM ALL ROOF EDGES.



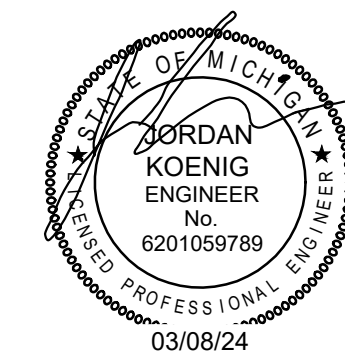
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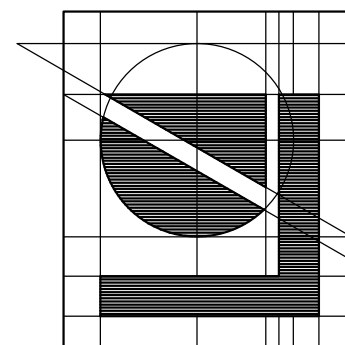


GENERAL NOTES:

3. THE MECHANICAL CONTRACTOR SHALL COORDINATE ALL ROOF PENETRATIONS WITH OWNER ROOFING CONTRACTOR TO MAINTAIN ALL WARRANTIES.
4. ALL CONDENSING UNITS SHALL BE INSTALLED ON THE SPECIFIED AND DETAILED ROOF SUPPORTS. THE FEET OF ALL ROOF SUPPORTS ARE TO BE PLACED ON RUBBER PADS TO PROTECT THE EXISTING ROOF MEMBRANE.
5. ALL REFRIGERANT PIPE SUPPORTS ARE TO BE PLACED ON RUBBER PADS TO PROTECT THE EXISTING ROOF MEMBRANE.
6. REFER TO DETAIL ON DRAWING M3.1 FOR REFRIGERANT PIPE AND ELECTRICAL CONDUIT ROOF PENETRATION DETAIL. CONTRACTOR SHALL MAINTAIN THE EXISTING ROOF WARRANTY AND COORDINATE ALL ROOF PENETRATIONS WITH THE OWNER.
7. LOCATE ALL NEW AIR COOLED CONDENSING UNITS A MINIMUM OF 10'-0" FROM ALL ROOF EDGES.



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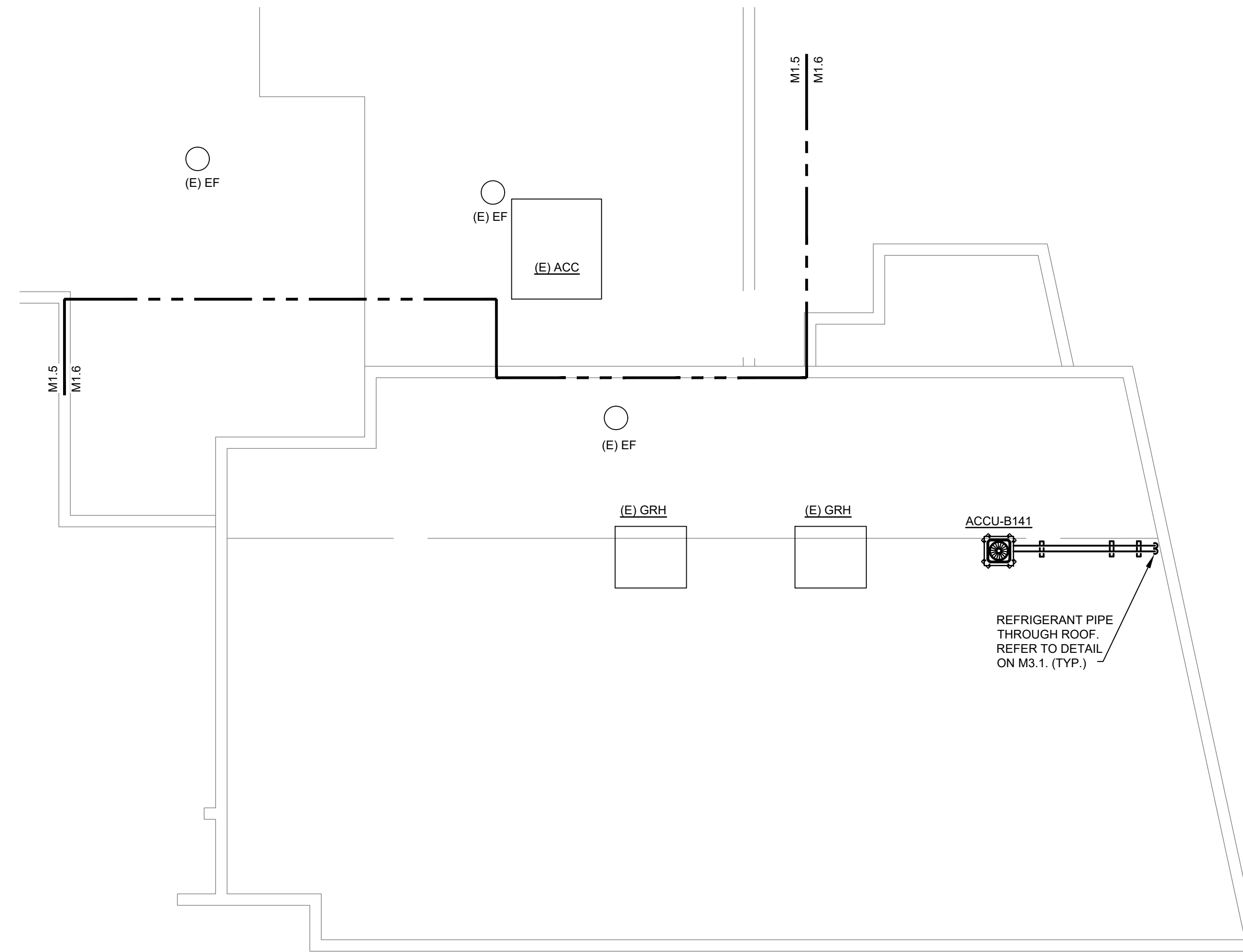
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date

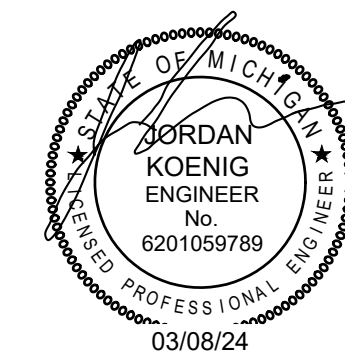
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RENOVATIONS for:
BRIGHTON AREA SCHOOLS
(B.E.C.C. BLDG.) BRIGHTON, MICHIGAN
PARTIAL ROOF - MECHANICAL NEW WORK PLAN

M2.2
23086



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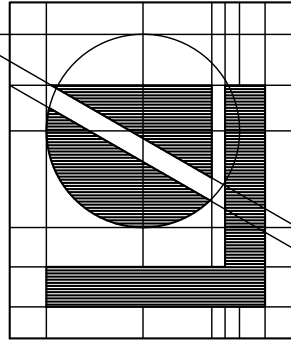
RENOVATIONS for:
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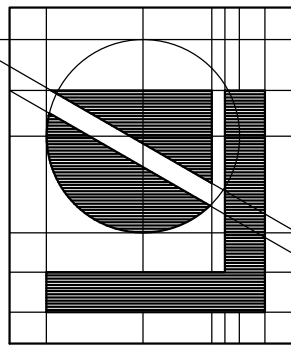


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KEY PLAN

- GENERAL NOTES:**
3. THE MECHANICAL CONTRACTOR SHALL COORDINATE ALL ROOF PENETRATIONS WITH OWNER ROOFING CONTRACTOR TO MAINTAIN ALL WARRANTIES.
 4. ALL CONDENSING UNITS SHALL BE INSTALLED ON THE SPECIFIED AND DETAILED ROOF SUPPORTS. THE FEET OF ALL ROOF SUPPORTS ARE TO BE PLACED ON RUBBER PADS TO PROTECT THE EXISTING ROOF MEMBRANE.
 5. ALL REFRIGERANT PIPE SUPPORTS ARE TO BE PLACED ON RUBBER PADS TO PROTECT THE EXISTING ROOF MEMBRANE.
 6. REFER TO DETAIL ON DRAWING M3.1 FOR REFRIGERANT PIPE AND ELECTRICAL CONDUIT ROOF PENETRATION DETAIL. CONTRACTOR SHALL MAINTAIN THE EXISTING ROOF WARRANTY AND COORDINATE ALL ROOF PENETRATIONS WITH THE OWNER.
 7. LOCATE ALL NEW AIR COOLED CONDENSING UNITS A MINIMUM OF 10'-0" FROM ALL ROOF EDGES.



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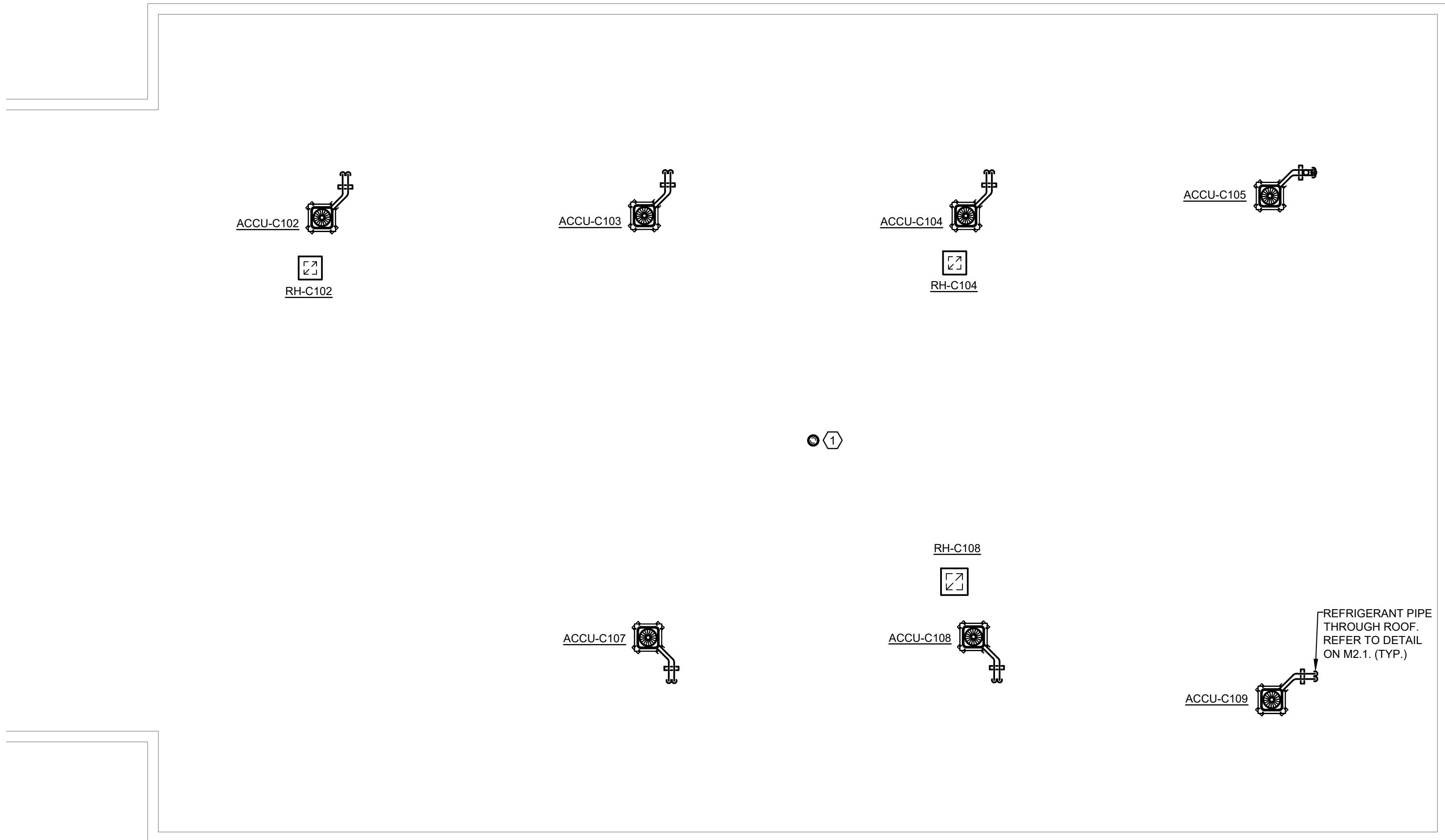
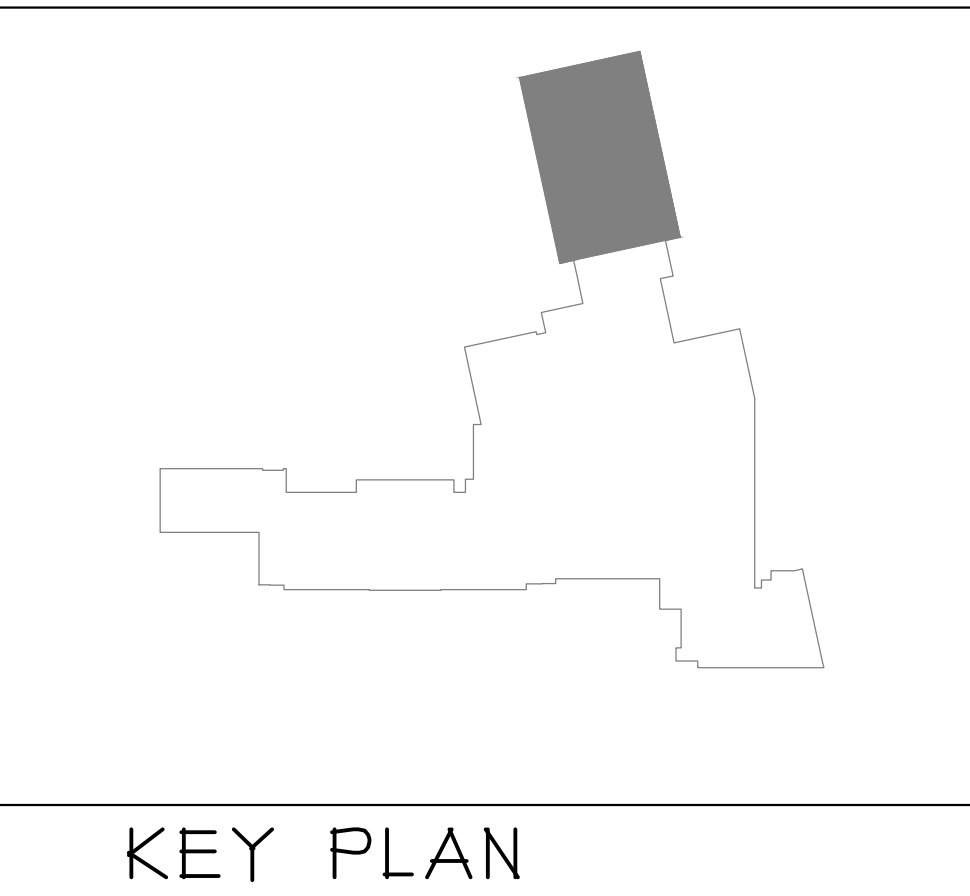
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RENOVATIONS for:
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PARTIAL ROOF - MECHANICAL NEW WORK PLAN

M2.4
23086

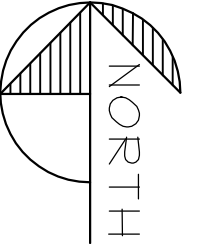
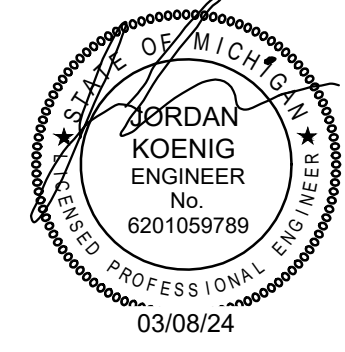


GENERAL NOTES:

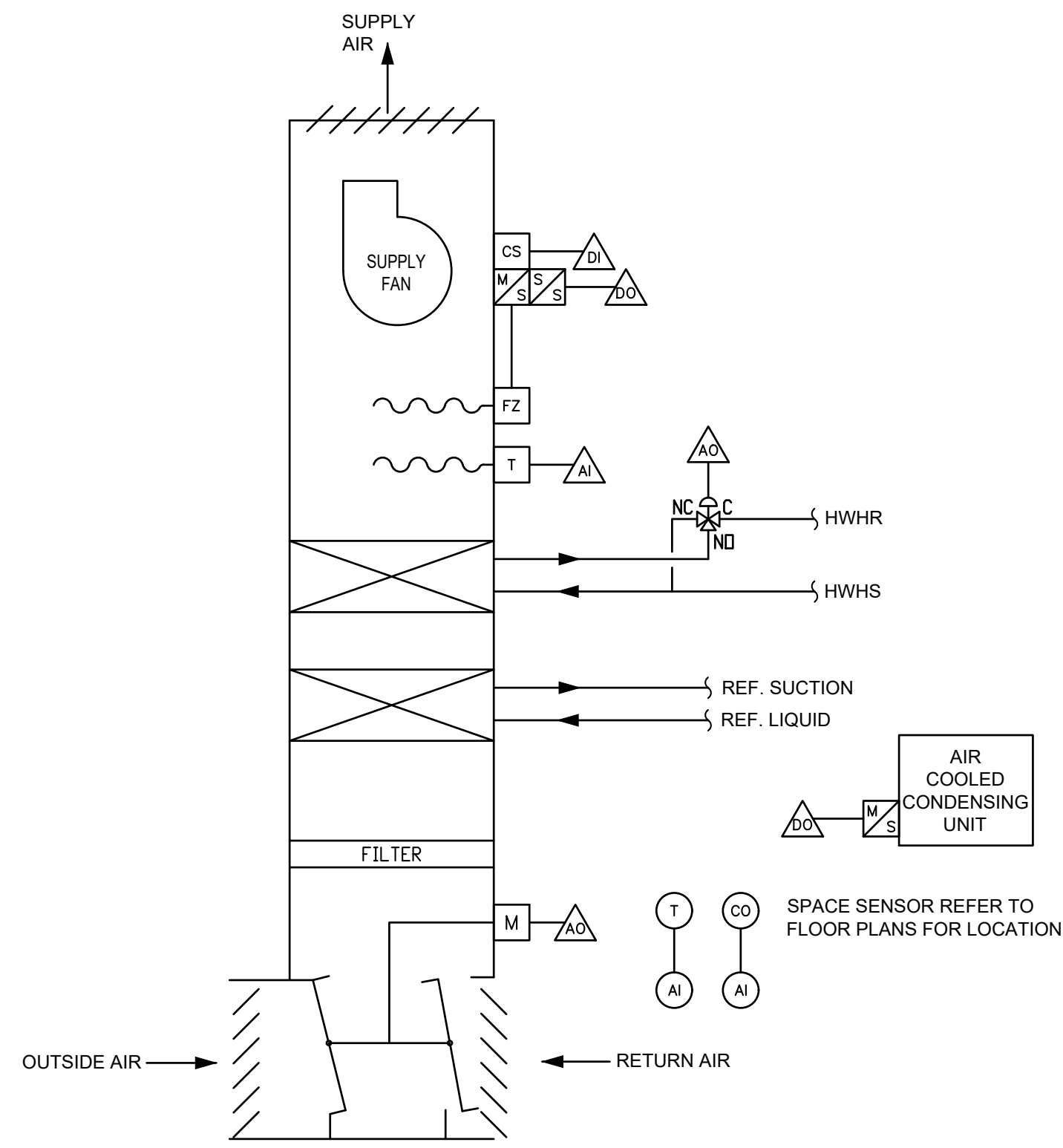
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5. ALL REFRIGERANT PIPE SUPPORTS ARE TO BE PLACED ON RUBBER PADS TO PROTECT THE EXISTING ROOF MEMBRANE.
6. REFER TO DETAIL ON DRAWING M2.1 FOR REFRIGERANT PIPE AND ELECTRICAL CONDUIT ROOF PENETRATION DETAIL. CONTRACTOR SHALL MAINTAIN THE EXISTING ROOF WARRANTY AND COORDINATE ALL ROOF PENETRATIONS WITH THE OWNER.
7. LOCATE ALL NEW AIR COOLED CONDENSING UNITS A MINIMUM OF 10'-0" FROM ALL ROOF EDGES.

KEY NOTES: (#)

1. 8"Ø EXHAUST AIR DUCT WITH RAIN CAP. TERMINATE AT A MINIMUM OF 24" OFF ROOF.



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UNIT VENTILATOR CONTROL

TYPICAL - REFER TO FLOOR PLANS FOR QUANTITY AND LOCATION OF UNITS

NOTES:

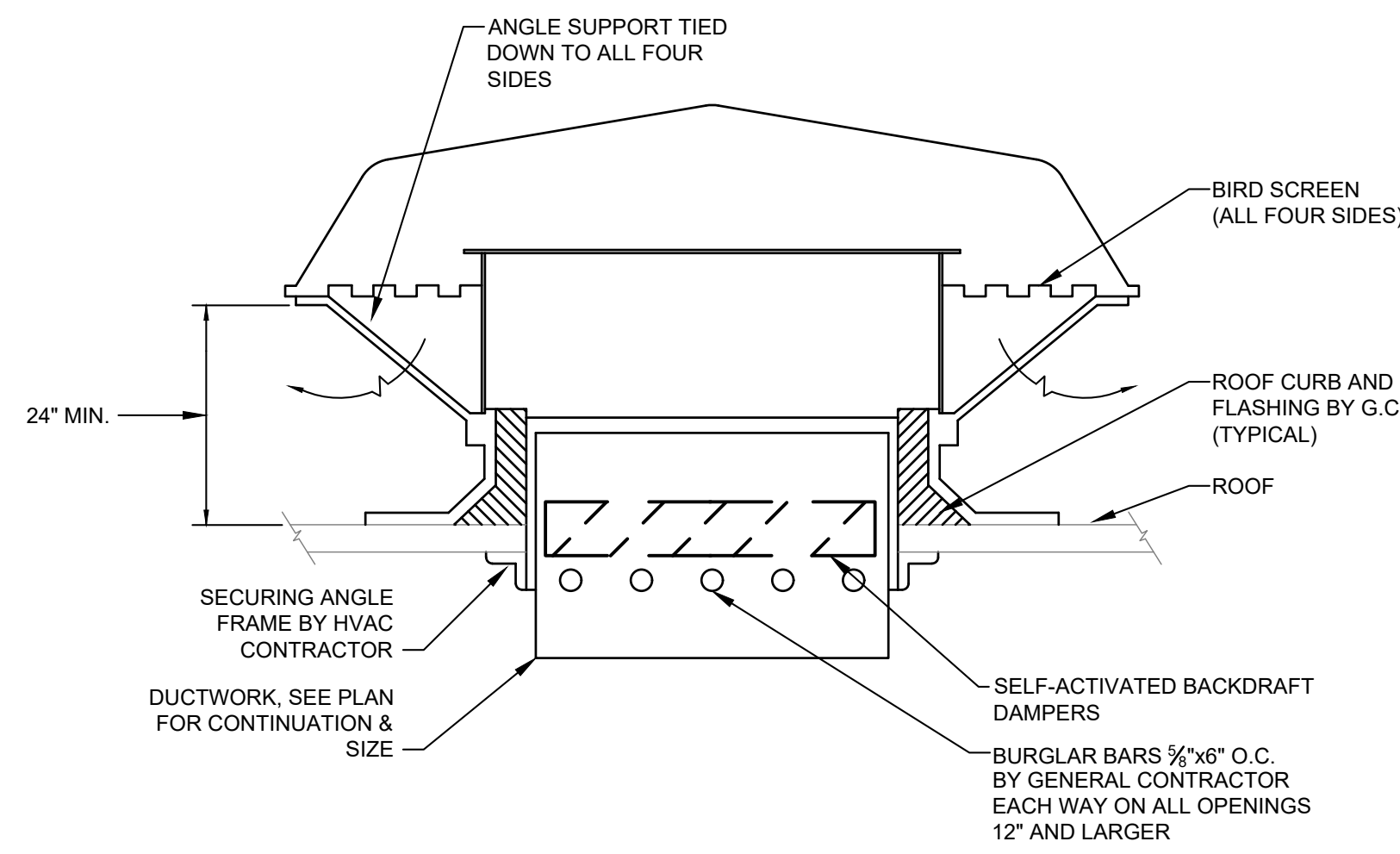
- △ INDICATES FACTORY MOUNTED COMPONENT WIRED TO TERMINAL STRIP (DDC READY) FOR FIELD INSTALLATION OF DDC CONTROLLER BY TC CONTRACTOR.
- TC CONTRACTOR SHALL COORDINATE TERMINATION REQUIREMENTS WITH UV SUPPLIER.

SEQUENCE OF OPERATION

UNIT VENTILATOR (TYPICAL):

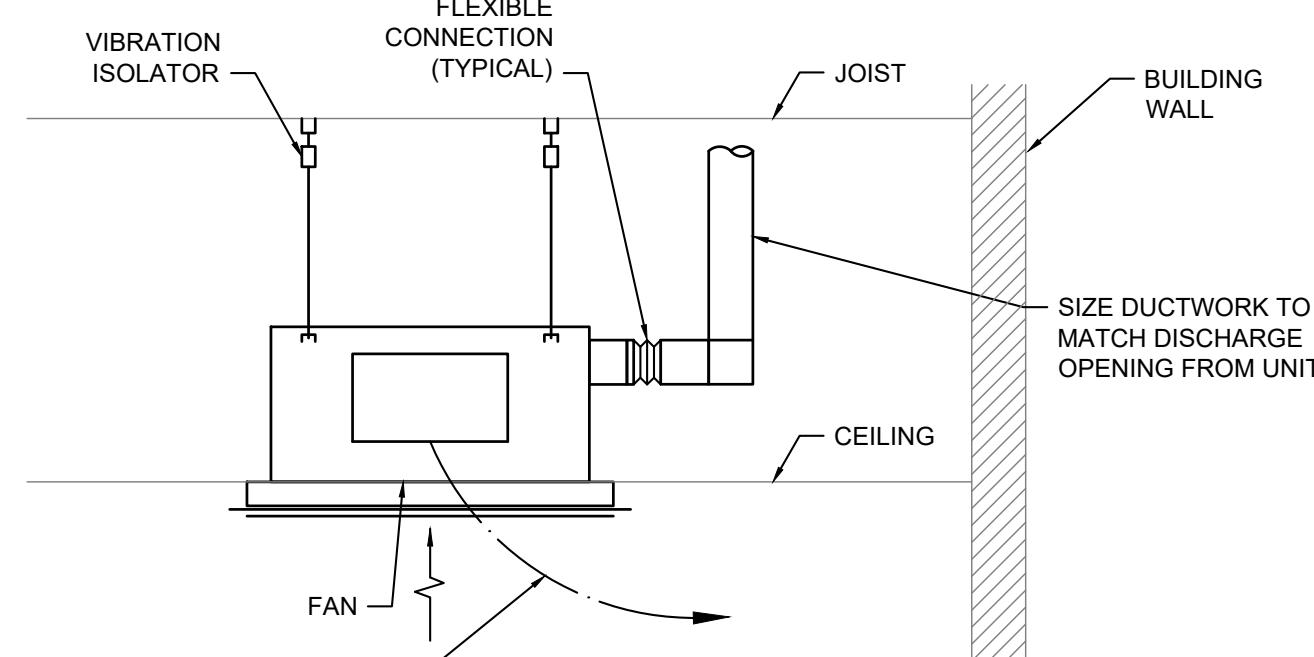
NOTE: ALL DDC SETPOINTS DESCRIBED IN SEQUENCE SHALL BE ADJUSTABLE BY SYSTEM OPERATORS (CREATE REQUIRED VIRTUAL POINTS). APPROPRIATE DEADBANDS SHALL BE USED TO PREVENT SHORT CYCLING SITUATIONS.

- SUPPLY FAN SHALL HAVE START/STOP CAPABILITY FROM THE THERMOSTAT. FAN SHALL OPERATE BASED ON TIME SCHEDULED OCCUPIED MODE AND UNOCCUPIED CYCLE MODE.
- FOR OCCUPIED MODE, UV SHALL BE CONTROLLED TO MAINTAIN SPACE TEMP SETPOINT OF 72°F (ADJUSTABLE).
- FOR UNOCCUPIED (HEATING) MODE, AHU SHALL CYCLE ON & OFF TO MAINTAIN A SETBACK SPACE TEMP SETPOINT OF 62°F (ADJUSTABLE).
- WHEN UV IS ACTIVATED DURING OCCUPIED MODE, WHEN UV IS DEACTIVATED OR OPERATING IN UNOCCUPIED CYCLE MODE OR WHEN UNIT IS OPERATION IN MORNING WARM-UP MODE, THE OUTDOOR AIR DAMPER SHALL REMAIN CLOSED.
- WHEN SPACE TEMP IS BELOW OCCUPIED MODE SETPOINT, T-STAT SHALL MODULATE MIXED AIR DAMPERS TO MINIMUM POSITION FOLLOWED BY MODULATION OF HEATING COIL VALVE TO ACHIEVE SETPOINT. IN HEATING MODE, DISCHARGE AIR TEMP LOW LIMIT SETPOINT OF 60°F AND HIGH LIMIT SETPOINT OF 100°F SHALL PROVIDE OVERRIDE CONTROL.
- DURING MORNING WARM-UP, DAT SETPOINT SHALL BE 100°F UNTIL BUILDING OCCUPANCY TIME OR WHEN OCCUPIED MODE SPACE TEMPERATURE IS REACHED.
- WHEN SPACE TEMP IS ABOVE SETPOINT AND OA TEMP IS LESS THAN RETURN AIR TEMP; DDC SHALL MODULATE OA DAMPER OPEN. IF OA TEMP IS EQUAL OR GREATER THAN ECONOMIZER LOCKOUT SETPOINT, MIXED AIR DAMPERS SHALL REMAIN IN MINIMUM OA POSITION. DISCHARGE AIR TEMP LOW LIMIT SETPOINT OF 55°F SHALL PROVIDE OVERRIDE CONTROL.
- WHEN SPACE TEMP IS ABOVE SETPOINT AND OA TEMP IS GREATER THAN RA TEMP; OUTSIDE AND RETURN AIR DAMPERS SHALL REMAIN AT MINIMUM OA POSITION AND THE COOLING COIL AND ASSOCIATED AIR COOLED CONDENSING UNIT SHALL BE ENERGIZED.
- FREESTAT SHALL DEACTIVATE SUPPLY FAN WHEN THE MIXED AIR TEMPERATURE IS 35°F OR BELOW.
- THE OUTSIDE AIR DAMPER WILL BE MODULATING BETWEEN MIN AND MAX POSITION NECESSARY TO PROVIDE THE DVR (DESIGN VENTILATION RATE) TO THE SPACE BASED ON CO2 CONCENTRATION. THE DAMPER CAN BE CLOSED DURING UNOCCUPIED HOURS.



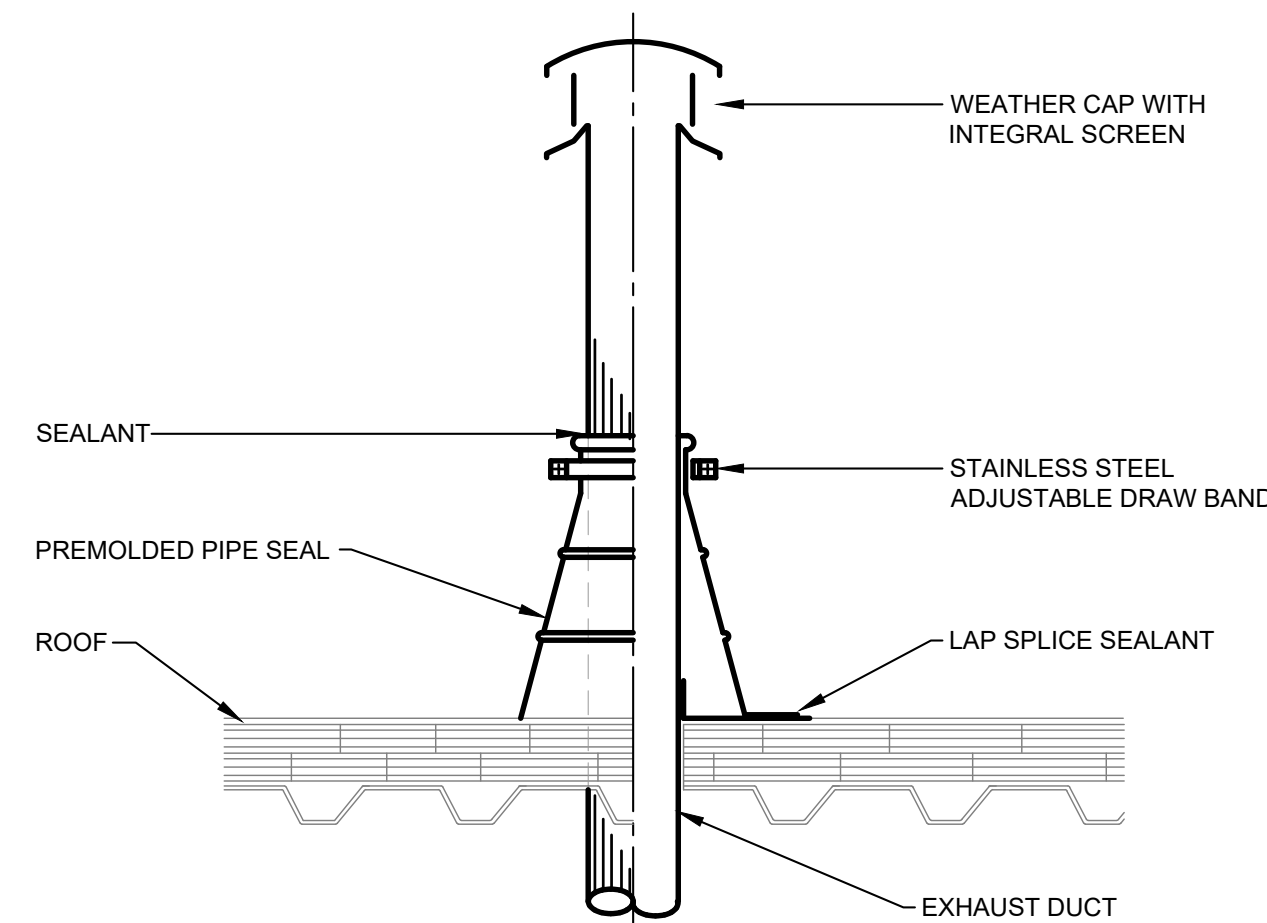
RELIEF ROOF VENTILATOR

N.T.S.



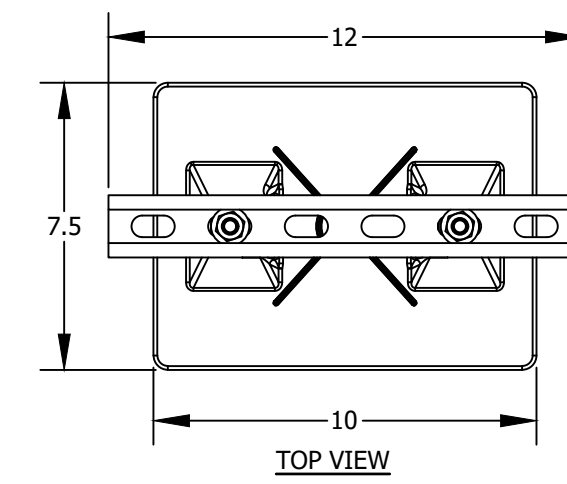
TYPICAL CEILING EXHAUST FAN DETAIL

N.T.S.



EXHAUST DUCT ROOF PENETRATION DETAIL

N.T.S.



MIRO MODEL: 2.5 CONDUIT SUPPORT - 5

KEY INFORMATION

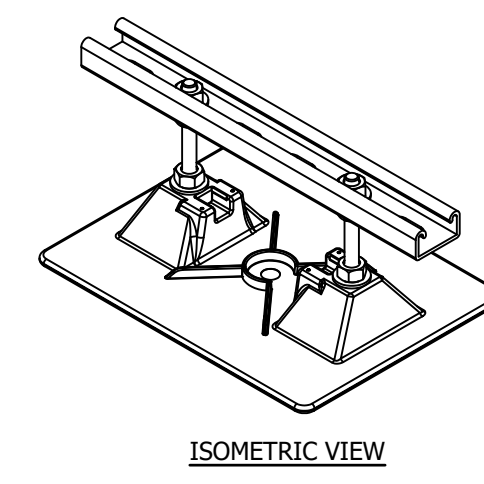
- Adjustable height from 3-1/2" to 5", even load required, maximum load is 115 lbs.
- Recommended spacing is not to exceed 10 feet centers depending upon the load. Make certain each stand is properly elevated to even load weight at all stands.
- Base Material: Polycarbonate
- All metal parts are either stainless steel or hot-dip galvanized.

ACCESSORIES

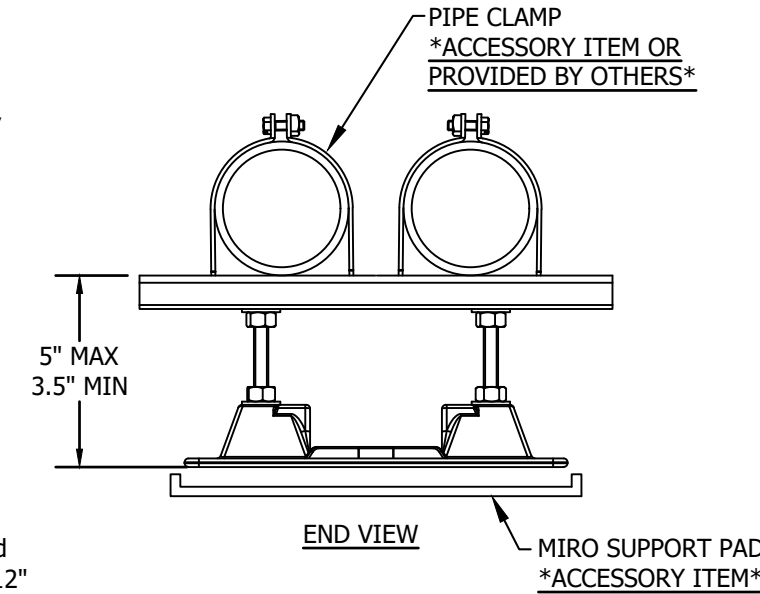
- Pipe Clamp/Strap - Order to Pipe O.D.
- Support pad or deck plate
- Eternabond: 2-sided tape

PRODUCT DESCRIPTION

A pipe support with "strut" used to support roof-mounted gas pipes and other mechanical piping. Pipes rest on a 12" length of strut which is mounted on the base. The pipes can be fastened by using the appropriate pipe clamp.

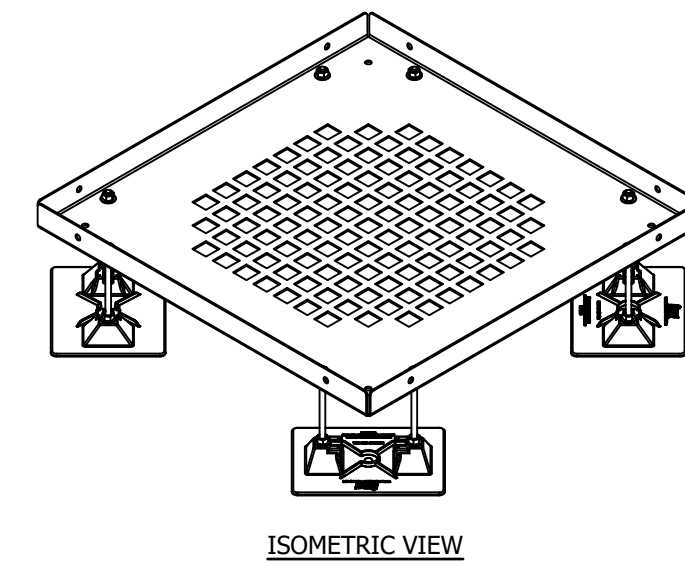
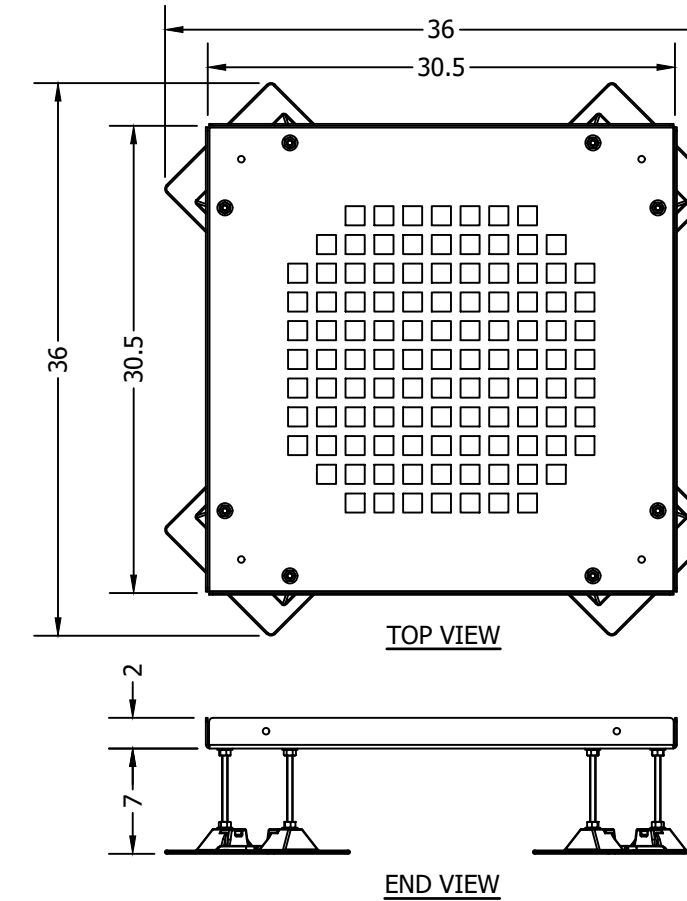


ISOMETRIC VIEW



REFRIGERANT PIPE - ROOF SUPPORT DETAIL

N.T.S.



ISOMETRIC VIEW

ACCESSORIES

- 7-1/2 x 10 Support pad (x4)
- Eternabond: 2-sided tape

PRODUCT DESCRIPTION

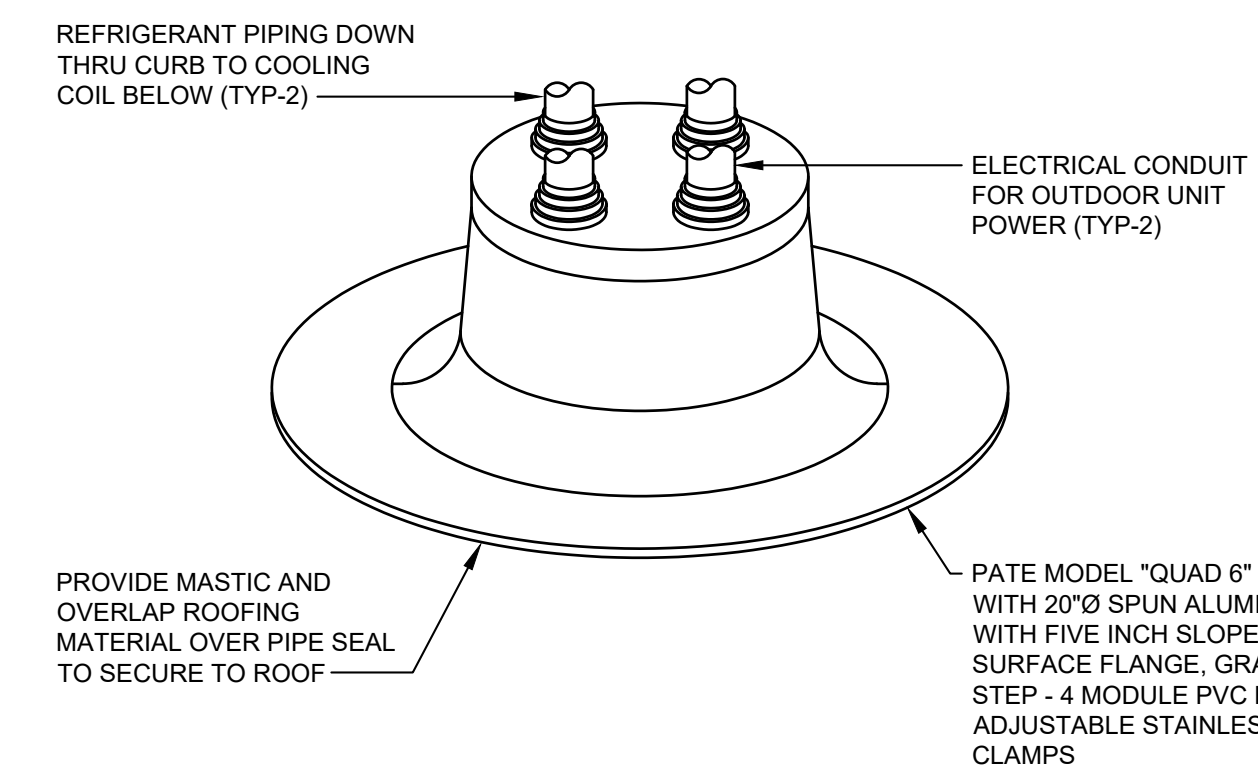
The MIRO LD-Mechanical Supports are design to elevate rooftop mechanical units, cabinets and other devices. The LD-Mechanical Supports pan is designed with slots to allow proper ventilation as well as moisture drainage away from the unit. The supports are adjustable in height per the drawing.

KEY INFORMATION

- Designed to support mechanical units, cabinets and other devices.
- Adjustable height up to 7", even load required, maximum load is 200 lbs.
- Custom sizes available
- Base Material: Polycarbonate
- All metal parts are either stainless steel, hot-dip galvanized or pre-galvanized.

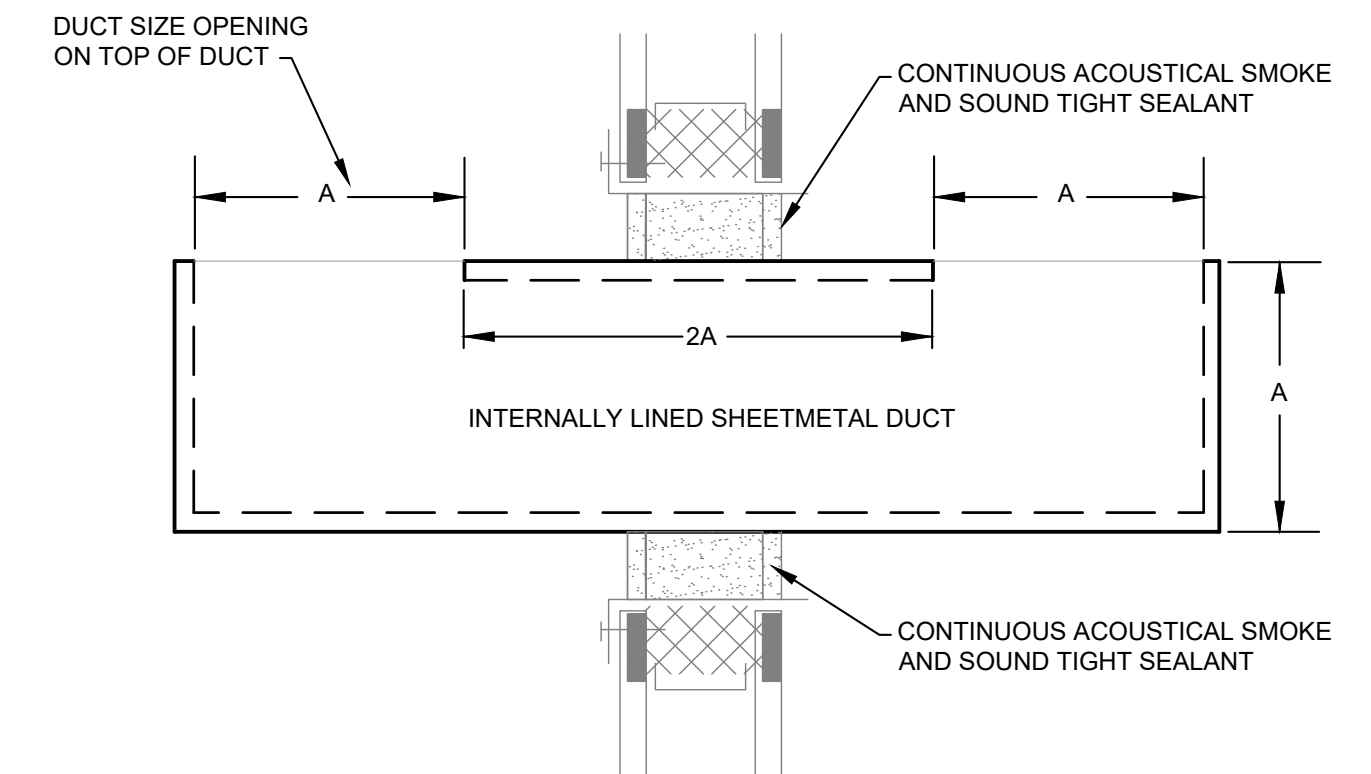
CONDENSING UNIT - ROOF SUPPORT DETAIL

N.T.S.



REFRIGERANT PIPE & ELECTRICAL CONDUIT ROOF PENETRATION DETAIL

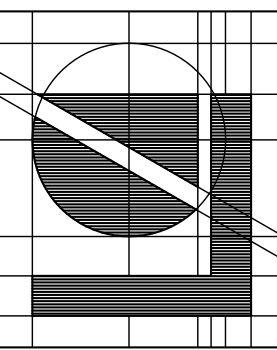
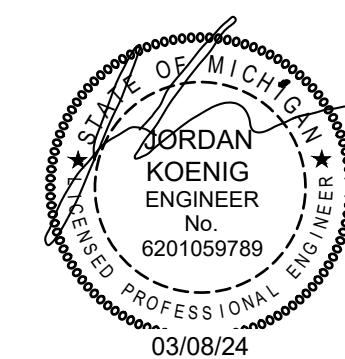
N.T.S.



ACOUSTIC TRANSFER AIR DUCT DETAIL

N.T.S.

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BIDS + PERMITS issued for
03/08/2024 date
dr: z.s. ck'd: w.v. app'd: j.k.

RENOVATIONS for:
BRIGHTON AREA SCHOOLS
(B.E.C.C. BLDG.) BRIGHTON, MICHIGAN
MECHANICAL DETAILS

UNIT VENTILATOR SCHEDULE

MARK	MANUFACTURER	MODEL NUMBER	CONFIGURATION	TYPE	FAN		DESIGN VENTILATION RATE OF OUTSIDE AIR DVR (CFM)		MOTOR HP	ENCLOSURE DIMENSION			HEATING COIL DATA					DX COOLING COIL DATA (@ 95°F AMBIENT)				ELECTRICAL			NOTES	
					SPEEDS	CFM	MIN	MAX		LENGTH (IN.)	DEPTH (IN.)	HEIGHT (IN.)	CAPACITY BTU/HR	TYPE	NUMBER OF ROWS	GPM	AIR ENT./LVG.	WATER ENT./LVG.	ENT. AIR TEMP. (DB / WB)	LVG. AIR TEMP. (DB / WB)	TOTAL BTU/HR	SENSIBLE BTU/HR	VOLT/ PHASE	M.C.A.		M.F.S.
UV-A108	DAIKIN	UAHF9H10	HORIZONTAL_CEILING	HHW / DX	3	1,000	100	310	0.25	36	76	16.62	72,908	HOT WATER	2	4.5	50 / 117.2	190 / 153.5	80° / 67°	57.1° / 56.3°	33,166	24,875	115 / 1	3.9	15 A	1,2,3,4,5,6,7
UV-A110	DAIKIN	UAHF9H10	HORIZONTAL_CEILING	HHW / DX	3	1,000	101	310	0.25	36	76	16.62	72,908	HOT WATER	2	4.5	50 / 117.2	190 / 153.5	80° / 67°	57.1° / 56.3°	33,167	24,876	115 / 1	3.9	15 A	1,2,3,4,5,6,7
UV-A114	DAIKIN	UAHF9H10	HORIZONTAL_CEILING	HHW / DX	3	1,000	102	310	0.25	36	76	16.62	72,908	HOT WATER	2	4.5	50 / 117.2	190 / 153.5	80° / 67°	57.1° / 56.3°	33,168	24,877	115 / 1	3.9	15 A	1,2,3,4,5,6,7
UV-A117	DAIKIN	UAVS9S13	VERTICAL_FLOOR MOUNTED	HHW / DX	3	1,250	101	310	0.25	86	21-7/8	30-1/8	71,162	HOT WATER	1	4.0	50 / 103.3	190 / 154.4	80° / 67°	55.6° / 55.5°	43,416	32,562	115 / 1	3.9	15 A	1,2,3,4,5,6,7
UV-A118	DAIKIN	UAVS9S13	VERTICAL_FLOOR MOUNTED	HHW / DX	3	1,250	102	310	0.25	86	21-7/8	30-1/8	71,162	HOT WATER	1	4.0	50 / 103.3	190 / 154.4	80° / 67°	55.6° / 55.5°	43,417	32,563	115 / 1	3.9	15 A	1,2,3,4,5,6,7
UV-A119	DAIKIN	UAHF9H10	HORIZONTAL_CEILING	HHW / DX	3	1,000	102	310	0.25	36	76	16.62	72,908	HOT WATER	2	4.5	50 / 117.2	190 / 153.5	80° / 67°	57.1° / 56.3°	33,168	24,877	115 / 1	3.9	15 A	1,2,3,4,5,6,7
UV-A120	DAIKIN	UAHF9H10	HORIZONTAL_CEILING	HHW / DX	3	1,000	103	310	0.25	36	76	16.62	72,908	HOT WATER	2	4.5	50 / 117.2	190 / 153.5	80° / 67°	57.1° / 56.3°	33,169	24,878	115 / 1	3.9	15 A	1,2,3,4,5,6,7
UV-B113	DAIKIN	UAHF9H20	HORIZONTAL_CEILING	HHW / DX	3	2,000	220	220	0.75	40	100	16.6	164.5	HOT WATER	3	8.5	50 / 125.8	190 / 151.3	80° / 67°	57.1° / 56.3°	65,966	49,475	115 / 1	12.0	20 A	1,2,3,4,5,6,7
UV-B126	DAIKIN	UAHF9H20	HORIZONTAL_CEILING	HHW / DX	3	2,000	220	220	0.75	40	100	16.6	164.5	HOT WATER	3	8.5	50 / 125.8	190 / 151.3	80° / 67°	57.1° / 56.3°	65,966	49,475	115 / 1	12.0	20 A	1,2,3,4,5,6,7
UV-B141	DAIKIN	UAHF9H10	HORIZONTAL_CEILING	HHW / DX	3	1,000	103	310	0.25	36	76	16.62	72,908	HOT WATER	2	4.5	50 / 117.2	190 / 153.5	80° / 67°	57.1° / 56.3°	33,169	24,878	115 / 1	3.9	15 A	1,2,3,4,5,6,7
UV-B151	DAIKIN	UAVS9S13	VERTICAL_FLOOR MOUNTED	HHW / DX	3	1,250	101	310	0.25	86	21-7/8	30-1/8	71,162	HOT WATER	1	4.0	50 / 103.3	190 / 154.4	80° / 67°	55.6° / 55.5°	43,416	32,562	115 / 1	3.9	15 A	1,2,3,4,5,6,7
UV-B152	DAIKIN	UAVS9S13	VERTICAL_FLOOR MOUNTED	HHW / DX	3	1,250	102	310	0.25	86	21-7/8	30-1/8	71,162	HOT WATER	1	4.0	50 / 103.3	190 / 154.4	80° / 67°	55.6° / 55.5°	43,417	32,563	115 / 1	3.9	15 A	1,2,3,4,5,6,7
UV-B153	DAIKIN	UAVS9S13	VERTICAL_FLOOR MOUNTED	HHW / DX	3	1,250	103	310	0.25	86	21-7/8	30-1/8	71,162	HOT WATER	1	4.0	50 / 103.3	190 / 154.4	80° / 67°	55.6° / 55.5°	43,418	32,564	115 / 1	3.9	15 A	1,2,3,4,5,6,7
UV-B154	DAIKIN	UAVS9S13	VERTICAL_FLOOR MOUNTED	HHW / DX	3	1,250	104	310	0.25	86	21-7/8	30-1/8	71,162	HOT WATER	1	4.0	50 / 103.3	190 / 154.4	80° / 67°	55.6° / 55.5°	43,419	32,565	115 / 1	3.9	15 A	1,2,3,4,5,6,7
UV-C102	DAIKIN	UAVS9S13	VERTICAL_FLOOR MOUNTED	HHW / DX	3	1,250	101	310	0.25	86	21-7/8	30-1/8	71,162	HOT WATER	1	4.0	50 / 103.3	190 / 154.4	80° / 67°	55.6° / 55.5°	43,416	32,562	115 / 1	3.9	15 A	1,2,3,4,5,6,7
UV-C103	DAIKIN	UAVS9S13	VERTICAL_FLOOR MOUNTED	HHW / DX	3	1,250	102	310	0.25	86	21-7/8	30-1/8	71,162	HOT WATER	1	4.0	50 / 103.3	190 / 154.4	80° / 67°	55.6° / 55.5°	43,417	32,563	115 / 1	3.9	15 A	1,2,3,4,5,6,7
UV-C104	DAIKIN	UAVS9S13	VERTICAL_FLOOR MOUNTED	HHW / DX	3	1,250	103	310	0.25	86	21-7/8	30-1/8	71,162	HOT WATER	1	4.0	50 / 103.3	190 / 154.4	80° / 67°	55.6° / 55.5°	43,418	32,564	115 / 1	3.9	15 A	1,2,3,4,5,6,7
UV-C105	DAIKIN	UAVS9S13	VERTICAL_FLOOR MOUNTED	HHW / DX	3	1,250	100	310	0.25	86	21-7/8	30-1/8	92,568	HOT WATER	2	4.5	50 / 120.4	190 / 148.9	80° / 67°	55.2° / 55.2°	43,416	32,562	115 / 1	3.9	15 A	1,2,3,4,5,6,7
UV-C107	DAIKIN	UAVS9S13	VERTICAL_FLOOR MOUNTED	HHW / DX	3	1,250	101	310	0.25	86	21-7/8	30-1/8	71,162	HOT WATER	1	4.0	50 / 103.3	190 / 154.4	80° / 67°	55.6° / 55.5°	43,416	32,562	115 / 1	3.9	15 A	1,2,3,4,5,6,7
UV-C108	DAIKIN	UAVS9S13	VERTICAL_FLOOR MOUNTED	HHW / DX	3	1,250	102	310	0.25	86	21-7/8	30-1/8	71,162	HOT WATER	1	4.0	50 / 103.3	190 / 154.4	80° / 67°	55.6° / 55.5°	43,417	32,563	115 / 1	3.9	15 A	1,2,3,4,5,6,7
UV-C109	DAIKIN	UAVS9S13	VERTICAL_FLOOR MOUNTED	HHW / DX	3	1,250	100	310	0.25	86	21-7/8	30-1/8	92,568	HOT WATER	2	4.5	50 / 120.4	190 / 148.9	80° / 67°	55.2° / 55.2°	43,416	32,562	115 / 1	3.9	15 A	1,2,3,4,5,6,7

(APPROVED EQUAL: TRANE, CHANGE AIR, AIREDALE)

NOTES:

1. PROVIDE SOLID END PANELS.
2. OUTSIDE AIR DAMPERS SHALL BE CONTROLLED BY CO2 SENSORS MOUNTED IN ROOM.
3. PROVIDE DIFFERENTIAL ENTHALPY ECONOMIZER CONTROLS.
4. PROVIDE OUTDOOR AIR GRILL AND SLEEVE IF NEEDED, FIELD VERIFY EXISTING LOCATION.

5. MOUNT UNIT ON 5" SUB-BASE
6. PROVIDE LEFT AND RIGHT PIPE CHASE TO ACCOMMODATE EXISTING (1" x 3/16") SIDE FIN TUBE RADIATOR ENCLOSURES.
7. PROVIDE CO2 SENSOR

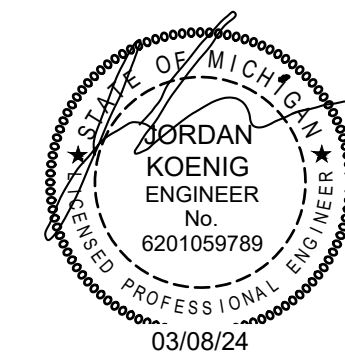
GRAVITY RELIEF AIR HOOD SCHEDULE

MARK	MANUFACTURER	MODEL NUMBER	HOOD DIMENSIONS (L" x W" x H")	THROAT DIMENSIONS (L" x W")	EXHAUST/ INTAKE (CFM)	STATIC PRESSURE (IN.WC.)	THROAT AREA (SQ.FT.)	THROAT VELOCITY (FPM)	CONSTRUCTION MATERIAL	NOTES
RH-B151	GREENHECK	FABRA HOOD	22" x 22"	16" x 16"	700	0.075	1.78	400	ALUMINUM	1, 2, 3, 4
RH-B154	GREENHECK	FABRA HOOD	22" x 22"	16" x 16"	700	0.075	1.78	400	ALUMINUM	1, 2, 3, 4
RH-C102	GREENHECK	FABRA HOOD	22" x 22"	16" x 16"	700	0.075	1.78	400	ALUMINUM	1, 2, 3, 4
RH-C104	GREENHECK	FABRA HOOD	22" x 22"	16" x 16"	700	0.075	1.78	400	ALUMINUM	1, 2, 3, 4
RH-C108	GREENHECK	FABRA HOOD	24" x 24"	18" x 18"	1050	0.075	2.25	470	ALUMINUM	1, 2, 3, 4

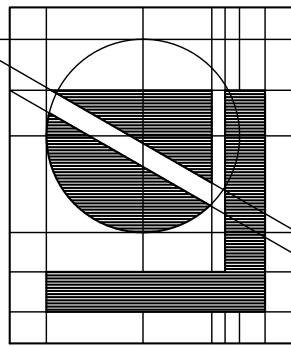
(APPROVED EQUAL: ACME, COOK, PENN VENTILATOR)

NOTES:

1. PROVIDE GALVANIZED BIRD SCREEN - 0.5 IN MESH TYPE.
2. PROVIDE 18" HIGH INSULATED ROOF CURB.
3. PROVIDE GRAVITY OPERATED BACK DRAFT DAMPER.
4. PROVIDE HOOD INSULATION FOR ALL RELIEF HOODS.



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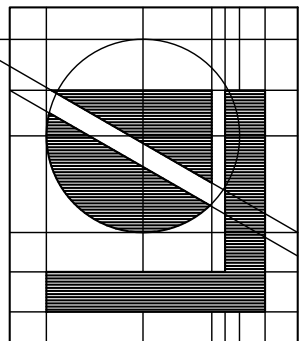


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dr: z.s.
ck'd: w.v.
app'd: j.k.
03/08/2024 date
BIDS + PERMITS issued for

RENOVATIONS for:
BRIGHTON AREA SCHOOLS
(B.E.C.C. BLDG.) BRIGHTON, MICHIGAN
MECHANICAL SCHEDULE



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RENOVATIONS for:
BRIGHTON AREA SCHOOLS
 (B.E.C.C. BLDG.) BRIGHTON, MICHIGAN
MECHANICAL SCHEDULE

M4.2
20086

CONDENSING UNIT SCHEDULE

MARK	MANUFACTURER	MODEL NUMBER	SYSTEM SERVED	COMPRESSORS				DIMENSIONS			ELECTRICAL				REFRIGERANT	WEIGHT	NOTES:
				NUMBER	TYPE	REFRIGERANT CIRCUITS/STEPS	TONS	LENGTH	WIDTH	HEIGHT	VOLTS / PHASE	RLA	MOP	SEER			
ACCU-A108	DAIKIN	DX3SEN3610	UV-A108	1	SCROLL	1 / 1	3.0	29"	29"	32.5"	208 / 1	14.1	30	13	R-410A	169	1,2,3,4,5,6,7,8
ACCU-A110	DAIKIN	DX3SEN3610	UV-A110	1	SCROLL	1 / 1	3.0	29"	29"	32.5"	208 / 1	14.1	30	13	R-410A	169	1,2,3,4,5,6,7,8
ACCU-A114	DAIKIN	DX3SEN3610	UV-A114	1	SCROLL	1 / 1	3.0	29"	29"	32.5"	208 / 1	14.1	30	13	R-410A	169	1,2,3,4,5,6,7,8
ACCU-A117	DAIKIN	DX3SEN3610	UV-A117	1	SCROLL	1 / 1	3.0	29"	29"	32.5"	208 / 1	14.1	30	13	R-410A	169	1,2,3,4,5,6,7,8
ACCU-A118	DAIKIN	DX3SEN3610	UV-A118	1	SCROLL	1 / 1	3.0	29"	29"	32.5"	208 / 1	14.1	30	13	R-410A	169	1,2,3,4,5,6,7,8
ACCU-A119	DAIKIN	DX3SEN3610	UV-A119	1	SCROLL	1 / 1	3.0	29"	29"	32.5"	208 / 1	14.1	30	13	R-410A	169	1,2,3,4,5,6,7,8
ACCU-A120	DAIKIN	DX3SEN3610	UV-A120	1	SCROLL	1 / 1	3.0	29"	29"	32.5"	208 / 1	14.1	30	13	R-410A	169	1,2,3,4,5,6,7,8
ACCU-B113	DAIKIN	DX3SEN4810	UV-B113	1	SCROLL	1 / 1	4.0	39.5"	35.5"	35.5"	208 / 1	25.6	50	13	R-410A	252	1,2,3,4,5,6,7,8
ACCU-B126	DAIKIN	DX3SEN4810	UV-B126	1	SCROLL	1 / 1	4.0	39.5"	35.5"	35.5"	208 / 1	25.6	50	13	R-410A	252	1,2,3,4,5,6,7,8
ACCU-B141	DAIKIN	DX3SEN3610	UV-B141	1	SCROLL	1 / 1	3.0	29"	29"	32.5"	208 / 1	14.1	30	13	R-410A	169	1,2,3,4,5,6,7,8
ACCU-B151	DAIKIN	DX3SEN3610	UV-B151	1	SCROLL	1 / 1	3.0	29"	29"	32.5"	208 / 1	14.1	30	13	R-410A	169	1,2,3,4,5,6,7,8
ACCU-B152	DAIKIN	DX3SEN3610	UV-B152	1	SCROLL	1 / 1	3.0	29"	29"	32.5"	208 / 1	14.1	30	13	R-410A	169	1,2,3,4,5,6,7,8
ACCU-B153	DAIKIN	DX3SEN3610	UV-B153	1	SCROLL	1 / 1	3.0	29"	29"	32.5"	208 / 1	14.1	30	13	R-410A	169	1,2,3,4,5,6,7,8
ACCU-B154	DAIKIN	DX3SEN3610	UV-B154	1	SCROLL	1 / 1	3.0	29"	29"	32.5"	208 / 1	14.1	30	13	R-410A	169	1,2,3,4,5,6,7,8
ACCU-C102	DAIKIN	DX3SEN3610	UV-C102	1	SCROLL	1 / 1	3.0	29"	29"	32.5"	208 / 1	14.1	30	13	R-410A	169	1,2,3,4,5,6,7,8
ACCU-C103	DAIKIN	DX3SEN3610	UV-C103	1	SCROLL	1 / 1	3.0	29"	29"	32.5"	208 / 1	14.1	30	13	R-410A	169	1,2,3,4,5,6,7,8
ACCU-C104	DAIKIN	DX3SEN3610	UV-C104	1	SCROLL	1 / 1	3.0	29"	29"	32.5"	208 / 1	14.1	30	13	R-410A	169	1,2,3,4,5,6,7,8
ACCU-C105	DAIKIN	DX3SEN3610	UV-C105	1	SCROLL	1 / 1	3.0	29"	29"	32.5"	208 / 1	14.1	30	13	R-410A	169	1,2,3,4,5,6,7,8
ACCU-C107	DAIKIN	DX3SEN3610	UV-C107	1	SCROLL	1 / 1	3.0	29"	29"	32.5"	208 / 1	14.1	30	13	R-410A	169	1,2,3,4,5,6,7,8
ACCU-C108	DAIKIN	DX3SEN3610	UV-C108	1	SCROLL	1 / 1	3.0	29"	29"	32.5"	208 / 1	14.1	30	13	R-410A	169	1,2,3,4,5,6,7,8
ACCU-C109	DAIKIN	DX3SEN3610	UV-C109	1	SCROLL	1 / 1	3.0	29"	29"	32.5"	208 / 1	14.1	30	13	R-410A	169	1,2,3,4,5,6,7,8

(APPROVED EQUAL: TRANE, CARRIER)

NOTES:

1. DATA BASED ON 95°F AMBIENT AIR.
2. MOUNT ON MIRO MODEL LD MECHANICAL SUPPORT.
3. DISCONNECT BY ELECTRICAL TRADES.

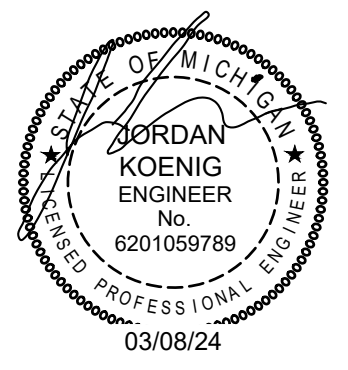
4. PROVIDE 40W CRANK CASE HEATER.
5. U.L. LISTED & ASHRAE 90.1-2013 COMPLIANT.
6. PROVIDE A HOFFMAN MODEL HO-814 HEAD PRESSURE CONTROLLER.

7. 410A REFRIGERANT PIPING SIZED BY MANUFACTURER.
8. PROVIDE FREEZE STAT.

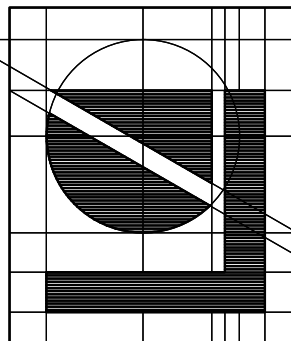
OUTDOOR AIR CALCULATION SCHEDULE

UNIT TAG	ROOM NAME & NUMBER	TOTAL AREA SQ. FT. (Az)	2009 MMC OCCUPANCY CLASSIFICATION	AREA OUTDOOR AIRFLOW RATE (Ra) CFM/SQ. FT.	AREA OUTDOOR AIR (Ra) x (Az) CFM	OCCUPANT DENSITY RATE #/1000 SQ. FT.	ZONE POPULATION (Pz=Az#1000) PEOPLE	PEOPLE OUTDOOR AIRFLOW RATE (Rp) CFM/PERSON	OCCUPANT OUTDOOR AIR (Rp) x (Pz) CFM	BREATHING ZONE OUTDOOR AIR (Vbz=RpPz+RaAz) CFM	ZONE AIR DISTRIBUTION EFFECTIVENESS (Ez)	ZONE OUTDOOR AIRFLOW REQUIRED (Voz=Vbz/Ez) CFM	TOTAL OUTDOOR AIR REQUIRED PER UNIT ZONE CFM	
UV-A108	CLASSROOM A108	820	CLASSROOM	0.12	98	25	20.5	10	205.0	303.4	1.0	303.4	305	
UV-A110	CLASSROOM A110	821	CLASSROOM	0.12	99	25	20.5	10	205.3	303.8	1.0	303.8	305	
UV-A114	CLASSROOM A114	822	CLASSROOM	0.12	99	25	20.6	10	205.5	304.1	1.0	304.1	305	
UV-A117	CLASSROOM A117	823	CLASSROOM	0.12	99	25	20.6	10	205.8	304.5	1.0	304.5	305	
UV-A118	CLASSROOM A118	824	CLASSROOM	0.12	99	25	20.6	10	206.0	304.9	1.0	304.9	305	
UV-A119	CLASSROOM A119	825	CLASSROOM	0.12	99	26	21.5	11	236.0	335.0	1.0	335.0	340	
UV-A120	CLASSROOM A120	826	CLASSROOM	0.12	99	27	22.3	12	267.6	366.7	1.0	366.7	370	
UV-B113	FILE STORAGE B113	878	STORAGE	0.12	105	0	0.0	0	0.0	105.4	1.0	105.4	105	
UV-B126	LOCKER ROOM	879	LOCKER ROOM	0.25 CFM EXHAUST PER SQUARE FOOT REQUIRED. 878x0.25 = 220 CFM. 220 CFM EXHAUST PROVIDED										
UV-B141	KITCHEN B141	822	KITCHEN	0.12	99	22	18.1	7	126.6	225.2	1.0	225.2	230	
UV-B151	CLASSROOM B151	823	CLASSROOM	0.12	99	23	18.9	8	151.4	250.2	1.0	250.2	250	
UV-B152	CLASSROOM B152	824	CLASSROOM	0.12	99	24	19.8	9	178.0	276.9	1.0	276.9	280	
UV-B153	CLASSROOM C108	825	CLASSROOM	0.12	99	25	20.6	10	206.3	305.3	1.0	305.3	305	
UV-B154	CLASSROOM C109	826	CLASSROOM	0.12	99	25	20.7	10	206.5	305.6	1.0	305.6	305	
UV-C102	CLASSROOM C102	820	CLASSROOM	0.12	98	30	24.6	10	246.0	344.4	1.0	344.4	350	
UV-C103	CLASSROOM C103	821	CLASSROOM	0.12	99	30	24.6	10	246.3	344.8	1.0	344.8	350	
UV-C104	CLASSROOM C104	822	CLASSROOM	0.12	99	30	24.7	10	246.6	345.2	1.0	345.2	350	
UV-C105	CLASSROOM C105	823	CLASSROOM	0.12	99	30	24.7	10	246.9	345.7	1.0	345.7	350	
UV-C107	CLASSROOM C107	824	CLASSROOM	0.12	99	30	24.7	10	247.2	346.1	1.0	346.1	350	
UV-C108	CLASSROOM C108	825	CLASSROOM	0.12	99	30	24.8	10	247.5	346.5	1.0	346.5	350	
UV-C109	CLASSROOM C109	826	CLASSROOM	0.12	99	30	24.8	10	247.8	346.9	1.0	346.9	350	

PER THE 2015 MICHIGAN MECHANICAL CODE TABLE 403.3.1.1 THE SPACES WITHIN THIS SCHEDULE MEET OR EXCEED THE REQUIREMENTS FOR OUTDOOR AIR FLOW RATE.



THIS DRAWING IS DIAGRAMMATIC AND SHOULD BE USED TO DETERMINE THE DESIGN INTENT. THE CONTRACTOR SHALL FIELD VERIFY ALL WORK AND SHALL NOTIFY THE ARCHITECT IMMEDIATELY OF ANY DISCREPANCIES IN THE DOCUMENTS BEFORE PROCEEDING. FAILURE TO DO SO WILL RESULT IN THE CONTRACTOR TAKING FULL RESPONSIBILITY AND LIABILITY FOR SAID DISCREPANCIES. NOTICE: THIS DRAWING AND THE DESIGN ARE THE PROPERTY OF MECHANICAL ELECTRICAL ENGINEERING CONSULTANTS, P.C. AND NO ALTERATIONS AND/OR TRANSFERS OF WORK ARE PERMITTED UNLESS WRITTEN APPROVAL IS GRANTED BY MECHANICAL ELECTRICAL ENGINEERING CONSULTANTS, P.C.



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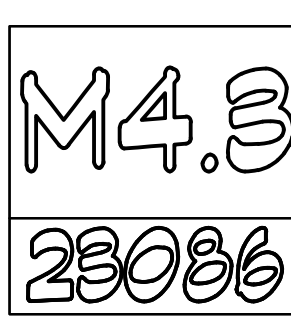
MECHANICAL ELECTRICAL ENGINEERING CONSULTANTS PC
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Farmington Hills, MI 48334
734-454-6516
734-454-6517
MEEC-008 # 23-011

RENOVATIONS for:
BRIGHTON AREA SCHOOLS
(B.E.C.C. BLDG.) BRIGHTON, MICHIGAN
MECHANICAL SCHEDULE

03/08/2024 date
BIDS + PERMITS issued for

dr: z.s.
ck'd: w.v.
app'd: j.k.

RENOVATIONS for:
BRIGHTON AREA SCHOOLS
(B.E.C.C. BLDG.) BRIGHTON, MICHIGAN
MECHANICAL SCHEDULE



23086

EXHAUST FAN SCHEDULE

MARK	MANUFACTURER	MODEL NUMBER	AREA SERVED	LOCATION	AIRFLOW (CFM)	EXTERNAL S.P.	FAN (RPM)	FAN (BHP)	FAN (HP)	SONES	ELECTRICAL	NOTES
EF-1	GREENHECK	CUE-080-VG	A108	ROOF	310	0.5	1,718	0.07	1 / 10	8.6	115V / 1PH	1,2,3,4,5,6
EF-2	GREENHECK	CUE-080-VG	A110	ROOF	310	0.5	1,718	0.07	1 / 10	8.6	115V / 1PH	1,2,3,4,5,7
EF-3	GREENHECK	CSP-A700-VG	A117 & A118	INLINE	620	0.35	1,115	0.16	1 / 6	1.5	115V / 1PH	1,2,3,4,5,8
EF-4	GREENHECK	CSP-A700-VG	A119 & A120	INLINE	620	0.35	1,115	0.16	1 / 6	1.5	115V / 1PH	1,2,3,4,5,9
EF-5	GREENHECK	SP-A200	CORRIDOR	CEILING	200	0.25	900	100 WATTS			115/1/60	1,4,10

(APPROVED EQUAL: GREENHECK, ACME, COOK, PENN, TWIN CITY, RUPP AIR)

NOTES:

- FAN SHALL HAVE AMCA SEAL & BE U.L. CERTIFIED.
- FAN SHALL HAVE ALUMINUM BIRD SCREEN.
- PROVIDE DUCT MOUNTED GRAVITY BACKDRAFT DAMPER.
- 18" INSULATED ROOF CURB.
- ECM MOTOR WITH POTENTIOMETER DIAL.
- FAN INTERLOCKED TO UV-A108.
- FAN INTERLOCKED TO UV-A110.
- FAN INTERLOCKED TO UV-A117 & UV-A118
- FAN INTERLOCKED TO UV-A1117 & UV-A120
- FAN INTERLOCKED TO UV-A1119 & UV-A120
- PROVIDE 24/7 TIME CLOCK CONTROL.

GRILLES REGISTERS AND DIFFUSERS SCHEDULE

MARK	MANUFACTURER	MODEL NUMBER	NECK SIZE	DIFFUSER SIZE	COLOR	MOUNTING TYPE	CONSTRUCTION	DAMPER	NOTES
EG-1	PRICE	630 / F / A	24" x 18"	25-3/4" x 19-3/4"	WHITE	WALL	ALUMINUM	ALUMINUM O.B.D.	1, 2
EG-2	PRICE	630 / F / A	20" x14"	21-3/4" x 15-3/4"	WHITE	WALL	ALUMINUM	ALUMINUM O.B.D.	1, 2
EG-3	PRICE	630 / F / A	24 x 24	25-3/4" x 25-3/4"	WHITE	CEILING	ALUMINUM	ALUMINUM O.B.D.	1

(APPROVED EQUAL: TITUS, PRICE, NAILOR, TUTTLE & BAILEY)

NOTES:

- PROVIDE ALL ACCESSORIES NEEDED TO PROPERLY MOUNT DEVICES.
- FIELD VERIFY EXISTING SIZE.

HOT WATER CABINET UNIT HEATER SCHEDULE

MARK	MANUFACTURER	MODEL NUMBER	DIMENSIONS (L" x W" x D")	MOUNTING TYPE	INLET / OUTLET CONFIGURATION	HEAT OUTPUT (BTUH)	WATER FLOW (GPM)	MAX PRESSURE DROP (FT WG)	ENTERING WATER TEMP. (°F)	LEAVING WATER TEMP. (°F)	AIRFLOW (CFM)	ENTERING AIR TEMP. (°F)	LEAVING AIR TEMP. (°F)	MCA/ MOP	VOLT/ PHASE	NOTES
CUH-1	DAIKIN	FHVC106	54"x25"x10"	FLOOR	BOTTOM FRONT / TOP FRONT	46,179	2.3	0.98	190	149.8	600	60	130	1.8A	15A	1,2,3,4

(APPROVED EQUAL: TRANE, STERLING, RITTLING, VULCAN)

NOTES:

- VERTICAL CONFIGURATION

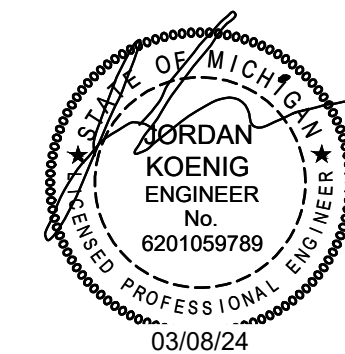
LOUVER SCHEDULE

MARK	MANUFACTURER	MODEL NUMBER	TYPE	AIRFLOW DIRECTION	SIZE (W x H x D)	FREE AREA (FT2)	AIRFLOW (CFM)	DESIGN AIR VELOCITY (FPM)	COLOR	INSULATED	DRAINABLE	MATERIAL	BIRD SCREEN	NOTES
LV-1	GREENHECK	ESD-403	FIXED	RELIEF	48" x 24"	3.79-	700	190	BY ARCHITECT	NO	YES	ALUMINUM	YES	1, 2

(APPROVED EQUAL: GREENHECK, AMERICAN WARMING & VENTILATING)

NOTES:

- COORDINATE FINAL LOUVER MOUNTING FRAME TYPE AND LOCATION WITH ARCHITECTURAL TRADES.
- REFER TO ARCHITECTURAL ELEVATIONS FOR FINAL MOUNTING LOCATIONS.



THIS DRAWING IS DIAGRAMMATIC AND SHOULD BE USED TO DETERMINE THE DESIGN INTENT. THE CONTRACTOR SHALL FIELD VERIFY ALL WORK AND SHALL NOTIFY THE ARCHITECT IMMEDIATELY OF ANY DISCREPANCIES IN THE DOCUMENTS BEFORE PROCEEDING. FAILURE TO DO SO WILL RESULT IN THE CONTRACTOR TAKING FULL RESPONSIBILITY AND LIABILITY FOR SAID DISCREPANCIES. NOTICE: THIS DRAWING AND THE DESIGN ARE THE PROPERTY OF MECHANICAL ELECTRICAL ENGINEERING CONSULTANTS, PC AND NO ALTERATIONS AND/OR TRANSFERS OF WORK ARE PERMITTED UNLESS WRITTEN APPROVAL IS GRANTED BY MECHANICAL ELECTRICAL ENGINEERING CONSULTANTS, PC.

ELECTRICAL SYMBOL LIST

POWER SYMBOLS

SYMBOL	DESCRIPTION
	DUPLEX RECEPTACLE, 120V, 20A, GROUNDING TYPE
	DUPLEX RECEPTACLE, 120V, 20A, GROUNDING TYPE, CEILING MOUNTED RECEPTACLE.
	FLUSH FLOOR MOUNTED 120V, 20A, CONVENIENCE RECEPTACLE, HUBBELL #B2537 WITH #S3082/S3925 COVER ASSY.
	MEDIA RECEPTACLE
	WEATHERPROOF RECEPTACLE
	COMPUTER GRADE RECEPTACLE, 120V, 20A., WITH ISOLATED GROUND
	SWITCHED DUPLEX RECEPTACLE, 120V, 20A, GROUNDING TYPE
	DUPLEX RECEPTACLE, 120V, 20A, GROUNDING TYPE
	DUPLEX RECEPTACLE, GFCI TYPE, 120V, 20A., GROUNDING TYPE
	COMPUTER GRADE RECEPTACLE, 120V, 20A, WITH ISOLATED GROUND
	DOUBLE DUPLEX RECEPTACLE, 120V, 20A, GROUNDING TYPE
	DOUBLE DUPLEX RECEPTACLE 120V, 20A, GROUNDING TYPE
	FLUSH FLOOR MOUNTED TELE/DATA OUTLET, HUBBELL #B2537 WITH #S3082/S2925 COVER ASSY. PROVIDE 3/4\"/>
	FLUSH FLOOR MOUNTED RECEPTACLE IN NONMETALLIC RECTANGULAR FLOOR BOX WITH 1-1/4\"/>
	FLUSH FLOOR MOUNTED DATA OUTLET IN NONMETALLIC RECTANGULAR FLOOR BOX WITH 1-1/4\"/>
	FLUSH FLOOR MOUNTED POWER/DATA OUTLET, HUBBELL #B4233 CAST IRON FLOOR BOX WITH #S3825 FLUSH COVER FOR POWER AND #S2925 FLUSH COVER PLATE FOR TELE/DATA. PROVIDE 120V, 20A DUPLEX RECEPTACLE.
	LEGRAND #EFB45 FLOOR BOX WITH TWO 120V, 20A, DUPLEX RECEPTACLES ON ONE SIDE AND ONE DATA DEVICE PLATE AND ONE AV DEVICE PLATE WITH ON THE OPPOSITE SIDE.
	LEGRAND #EFB45 FLOOR BOX WITH FOUR 120V, 20A, DUPLEX RECEPTACLES ON ONE SIDE AND ONE DATA DEVICE PLATE WITH 3 CAT6 CONNECTORS, AND ONE AV DEVICE PLATE WITH TWO-MDMI CONNECTORS ON THE OPPOSITE SIDE.
	SPECIAL RECEPTACLE, TYPE & MOUNTING HEIGHT AS NOTED

POWER SYMBOLS

SYMBOL	DESCRIPTION
	JUNCTION BOX - CEILING MOUNTED
	JUNCTION BOX - FLOOR MOUNTED
	JUNCTION BOX - WALL MOUNTED, HEIGHT AS NOTED
	KWH METER
	BASE FEED TO SYSTEM FURNITURE WITH POWER, TELEPHONE AND DATA CONNECTIONS TO CEILING SPACE
	FLOOR MOUNTED BASE FEED TO SYSTEM FURNITURE WITH POWER, TELEPHONE AND DATA CONNECTIONS TO CEILING SPACE
	(2) SECTION TELE / POWER POLE TO SYSTEM FURNITURE WITH POWER, TELEPHONE AND DATA CONNECTIONS TO CEILING SPACE
	WALL MOUNTED SURFACE METAL RACE WAY
	FUSIBLE DISCONNECT SWITCH - UPPER NUMERAL DENOTES SWITCH SIZE, LOWER NUMERAL DENOTES FUSE SIZE
	NON-FUSED DISCONNECT SWITCH - NUMERAL DENOTES SWITCH SIZE
	MAGNETIC MOTOR STARTER
	COMBINATION MOTOR STARTER
	MOTOR CONTROL SWITCH WITH PILOT LIGHT
	MANUAL MOTOR STARTER, OR ON MOTORIZED EQUIP.
	MOTOR CONNECTION
	LOAD CENTER
	LIGHTING PANELBOARD
	POWER PANELBOARD
	DISTRIBUTION PANELBOARD
	MAIN SWITCHBOARD
	TRANSFORMER
	CONTROL PANEL
	CEILING FAN
	PULL BOX, NEMA 3R

LOW VOLTAGE SYMBOLS

SYMBOL	DESCRIPTION
	DATA OUTLET
	PROXIMITY READER OUTLET
	KEY SWITCH
	TELEVISION OUTLET BOX

LIGHTING SYMBOLS

SYMBOL	DESCRIPTION
	SINGLE POLE TOGGLE SWITCH
	THREE-WAY TOGGLE SWITCH
	FOUR-WAY TOGGLE SWITCH
	KEY OPERATED SWITCH
	WALL DIMMER, DIMMING TECHNOLOGY AS REQUIRED, WATTAGE REQUIRED EQUAL TO CONNECTED LOAD PLUS 25 PERCENT
	SWITCH WITH PILOT LIGHT
	RECESSED TROFFER
	EMERGENCY LIGHT
	SURFACE MOUNTED LIGHT
	RECESSED TROFFER
	EMERGENCY LIGHT
	SURFACE MOUNTED LIGHT
	WALL MOUNTED LUMINAIRE, HEIGHT AS NOTED
	SURFACE MOUNTED LIGHT FIXTURE
	PENDANT MOUNTED LIGHT FIXTURE
	RECESSED DOWNLIGHT
	STRIP LIGHT
	SINGLE FACE EXIT SIGN, CEILING MTD. ARROWS AS INDICATED
	DOUBLE FACE EXIT SIGN, CEILING MTD. ARROWS AS INDICATED
	SINGLE FACE EXIT SIGN, WALL MTD. ARROWS AS INDICATED
	DOUBLE FACE EXIT SIGN, WALL MTD. ARROWS AS INDICATED
	BATTERY OPERATED EMERGENCY LIGHT
	COMBINATION EXIT / EMERGENCY LIGHT
	REMOTE EMERGENCY LIGHT
	TWIN HEAD REMOTE EMERGENCY LIGHT
	SITE LIGHTING BOLLARD
	OUTDOOR LIGHTING POLE & LUMINAIRE

FIRE ALARM & EMERGENCY VOICE/ALARM COMMUNICATION SYSTEM SYMBOLS

SYMBOL	DESCRIPTION
	FIRE ALARM MANUAL PULL STATION +48\"/>
	FIRE ALARM SPEAKER/STROBE COMBINATION DEVICE +80\"/>
	FIRE ALARM VISUAL DEVICE +80\"/>
	FIRE ALARM SPEAKER AT CEILING
	FIRE ALARM SPEAKER ON WALL +108\"/>
	DOOR HOLD OPEN DEVICE
	HEAT DETECTOR
	SMOKE DETECTOR
	FIRE ALARM CONTROL PANEL
	FIRE ALARM REMOTE ANNUNCIATOR

PROJECT SPECIFIC NOTES

- APPLICABLE CODES INCLUDE, BUT ARE NOT NECESSARILY LIMITED TO, THE FOLLOWING:
 - 2015 MICHIGAN BUILDING CODE
 - 2017 NEC WITH MICHIGAN PART 8 AMENDMENTS (INCLUDING NEC ART. 708)
 - NEC ARTICLE 708 - CRITICAL OPERATIONS POWER SYSTEMS
 - 2017 MICHIGAN ENERGY CODE (IECC 2015 / ASHRAE 90.1 - 2013)
 - 2009 ICC ANSI STANDARD A117.1-2009
 - 2015 INTERNATIONAL FIRE CODE
 - 2016 NFPA 1221 - STANDARD FOR INSTALLATION, MAINTENANCE AND USE OF EMERGENCY COMMUNICATIONS SYSTEMS
 - 2013 NFPA 72 - NATIONAL FIRE ALARM AND SIGNALING CODE
 - 2013 NFPA 110 - STANDARD FOR EMERGENCY AND STANDBY POWER SYSTEMS.
- OVERCURRENT PROTECTIVE DEVICES SERVING EMERGENCY SYSTEMS SHALL BE SELECTIVELY COORDINATED WITH ALL SUPPLY-SIDE OVERCURRENT PROTECTIVE DEVICES.
- A SHORT-CIRCUIT, ARC-FLASH AND OVERCURRENT PROTECTIVE DEVICE COORDINATION STUDY SHALL BE PROVIDED BY THE CONTRACTOR AT THE SAME TIME SUBMITTALS ARE PREPARED.
- CONTRACTOR SHALL PROVIDE NAMEPLATES FOR ALL ELECTRICAL EQUIPMENT AND ARC-FLASH LABELS INDICATING REQUIRED PPE PROTECTION.
- ALL WIRING AND BUSSING SHALL BE COPPER, UNLESS OTHERWISE NOTED.
- SURGE PROTECTION DEVICES SHALL BE PROVIDED WHERE INDICATED ON THE DRAWINGS AND/OR SPECIFICATIONS. SURGE PROTECTION DEVICES SHALL BE COMPATIBLE WITH THE LIGHTNING PROTECTION SYSTEM AND SHALL INCLUDE SURGE COUNTERS AND PROVISIONS FOR REMOTE MONITORING. ROUTE LOW-VOLTAGE CABLE FOR MONITORING BACK TO SERVER ROOM.
- A SEPARATE EQUIPMENT GROUNDING CONDUCTORS, SIZED PER NEC, SHALL BE INSTALLED WITH ALL CIRCUIT CONDUCTORS.
- PROVIDE A THERMAL-ADHESIVE LABEL ON EACH DEVICE (LIGHT SWITCH, RECEPTACLE, ETC.) INDICATING THE SOURCE PANEL AND CIRCUIT NUMBER.

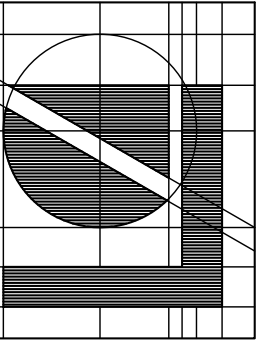
GENERAL NOTES

- THE CONTRACTOR SHALL ABIDE BY ALL FEDERAL, STATE, AND/OR LOCAL CODES. IF A DISCREPANCY BETWEEN CODES OCCURS, THE MOST STRINGENT SHALL PREVAIL.
- THE CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS PRIOR TO THE COMMENCEMENT OF ANY WORK. SHOULD DISCREPANCIES BE DISCOVERED, THE CONTRACTOR SHALL VERIFY INTENT WITH THE ENGINEER/OWNER BEFORE PROCEEDING.
- COORDINATE LOCATIONS OF ALL CEILING MOUNTED DEVICES WITH OTHER TRADES PRIOR TO INSTALLATION.
- COORDINATE ALL ROUGH-IN REQUIREMENTS FOR OWNER FURNISHED EQUIPMENT WITH THE OWNER PRIOR TO BEGINNING WORK. THESE DRAWINGS ARE BASED ON THE BEST INFORMATION AVAILABLE DURING THE DESIGN PHASE OF THE PROJECT.
- COORDINATE WITH MILLWORK CONTRACTOR TO DETERMINE THE EXACT LOCATION OF OUTLETS BEING PLACED IN MILLWORK.
- ALL DEVICES ARE TO BE FLUSH MOUNTED UNLESS NOTED OTHERWISE.
- DEVICES NOTED "GFI" SHALL INCLUDE GROUND FAULT INTERRUPTING DEVICES.
- DEVICES NOTED "WP" SHALL BE WEATHERPROOF, "WHILE-IN-USE" TYPE WHERE APPLICABLE.
- DEVICES NOTED "NL" SHALL BE NIGHT LIGHTS. PROVIDE UN-SWITCHED BRANCH CIRCUIT CONDUCTORS TO EACH FIXTURE.
- CONNECT ALL EXIT AND EMERGENCY LIGHTING FIXTURES TO LOCAL LIGHTING CIRCUIT, AHEAD OF ALL SWITCHES, PER NEC.

GENERAL NOTES - DEMOLITION

- CERTAIN AREAS IN THE EXISTING BUILDING SHALL BE MODIFIED TO SUIT THE NEW REQUIREMENTS. THESE DRAWINGS ARE DIAGRAMMATIC AND ARE INTENDED TO INDICATE THE SCOPE OF WORK REQUIRED TO COMPLETE A SAFE REMOVAL OF THE ELECTRICAL SYSTEMS AS INDICATED BY THE NOTES ON THIS DRAWING.
- WORK IN THE AREA SHALL INCLUDE THE DISCONNECTION, REMOVAL, RELOCATION, AND RECONNECTION COMPLETE IN ALL RESPECTS OF ALL ITEMS REQUIRED TO SUIT THE DESIGN INTENT. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VISIT THE PROJECT SITE TO CORRECTLY ASCERTAIN THE SCOPE OF SERVICES AND TO INCLUDE ALL PERTINENT COSTS IN HIS BID. NO EXTRAS WILL BE ALLOWED.
- ALL ELECTRICAL WORK INTERFERING WITH AND REQUIRING MODIFICATION FOR THE NEW REQUIREMENTS SHALL BE RELOCATED AS DIRECTED BY BUILDING MANAGEMENT PERSONNEL AND REINSTALLED AND REWIRED AS NECESSARY TO THE SATISFACTION OF THE BUILDING OWNER.
- PROVIDE ALL EQUIPMENT, MATERIALS, LABOR AND SUPERVISION NECESSARY TO PROVIDE A SAFE ELECTRICAL INSTALLATION. ALL ELECTRICAL DEVICES AND SYSTEMS THAT ARE INDICATED AS EXISTING TO REMAIN SHALL BE IN SAFE WORKING ORDER.
- OBTAIN NECESSARY PERMITS FROM THE LOCAL AUTHORITY HAVING JURISDICTION BEFORE PROCEEDING WITH ANY WORK IN THE FIELD.
- ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE, OSHA AND OTHER ELECTRICAL SAFETY STANDARDS AND GUIDELINES. CONFORM TO ALL STATE AND LOCAL CODES AND STANDARDS.
- ALL EQUIPMENT AND WIRING NOT IN RENOVATION AREAS BUT AFFECTED BY WORK IN RENOVATION AREAS SHALL BE RECONNECTED AS REQUIRED FOR A COMPLETE WORKING SYSTEM.
- ABANDONED AND INACTIVE CONDUITS, WIRE, DEVICES, EQUIPMENT, ETC., SHALL BE REMOVED IN THEIR ENTIRETY. IN ADDITION TO THESE ITEMS, THIS CONTRACTOR SHALL REMOVE ALL ITEMS AS INDICATED ON THE PLANS, OR AS REQUIRED TO CLEAN UP THE ENTIRE AREA OF UNUSED, ABANDONED, OR INACTIVE MATERIALS. CONDUIT AND WIRING FEEDING DEVICES AND EQUIPMENT TO BE REMOVED SHALL ALSO BE REMOVED UP TO THE NEXT ACTIVE PULLBOX, JUNCTION BOX, OR PANELBOARD, HANGERS, MESSENGER CABLE, BRACKETS, ETC. SUPPORTING ITEMS TO BE REMOVED SHALL ALSO BE UNFASTENED AND REMOVED. OPEN HOLES IN DUCTS, BOXES, PANELBOARDS, AND KNOCKOUTS SHALL BE CLOSED WITH SUITABLE SNAP PLUGS OR FILLER PLATES.
- THE CONTRACTOR SHALL REMOVE AND DELIVER TO A PLACE DESIGNATED BY THE OWNER ALL EXISTING ELECTRICAL EQUIPMENT NO LONGER INTENDED FOR USE. THIS EQUIPMENT REMAINS THE PROPERTY OF THE OWNER.
- ANY EQUIPMENT, DEVICES, MATERIALS, ETC., THE OWNER ELECTS NOT TO RETAIN SHALL BE LEGALLY DISPOSED OF BY THE CONTRACTOR OFF THE OWNER'S PREMISES.
- AT COMPLETION OF ALL ELECTRICAL WORK, UPDATE CIRCUIT DIRECTORIES IN PANELS AFFECTED BY NEW WORK WITH NEW TYPEWRITTEN CIRCUIT DESCRIPTIONS. CIRCUIT DIRECTORIES SHALL BE MOUNTED ON INSIDE OF FRONT PANEL COVER IN A CLEAR PLASTIC ENCLOSURE.
- EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS, AND IN ACCORDANCE WITH THEIR LISTING OR LABELING REQUIREMENTS. ANY PENETRATIONS THROUGH FIRE RATED ASSEMBLIES THAT ARE CREATED BY THE ELECTRICAL DEMOLITION, SHALL BE SEALED AND RESTORED IN ACCORDANCE WITH THE UL FIRE RESISTANCE DIRECTORY.
- WHERE CONDUIT AND/OR OUTLET BOXES INDICATED FOR DEMOLITION ARE EMBEDDED IN CONCRETE OR BELOW CONCRETE SLAB, ABANDON IN PLACE. CUT BACK AND SEAL EXPOSED CONDUIT. PROVIDE BLANK COVERS FOR ABANDONED BOXES. REMOVE ALL ASSOCIATED WIRING BACK TO SOURCE.

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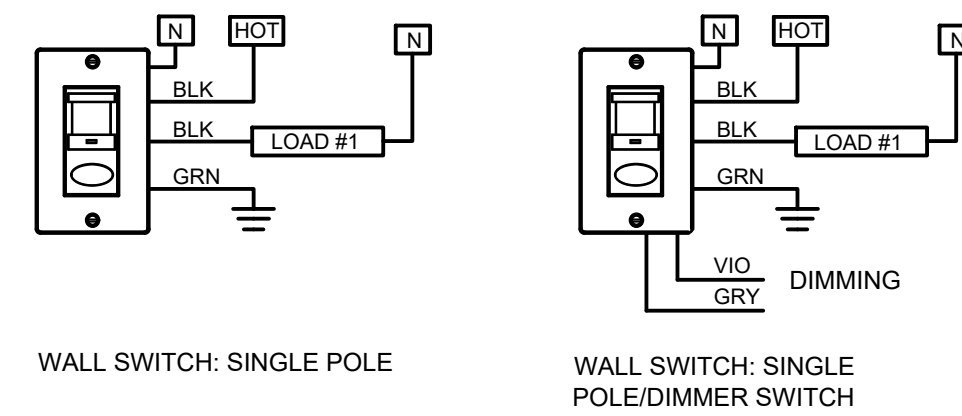
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ckt: J.E.
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RENOVATIONS for:
BRIGHTON AREA SCHOOLS
(B.E.C.C. BLDG.) BRIGHTON, MICHIGAN
GENERAL ELECTRICAL INFORMATION

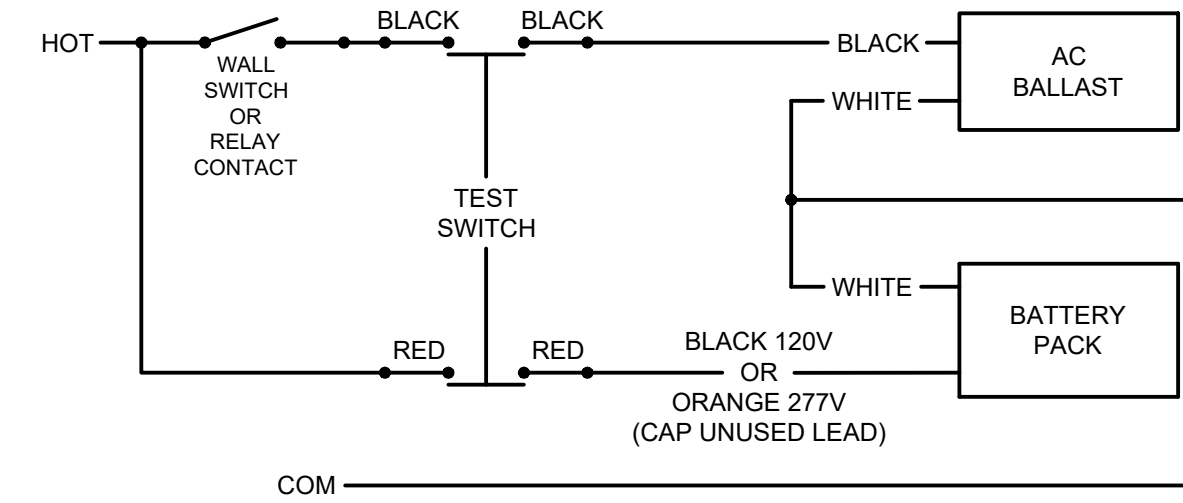
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INTERIOR LIGHTING FIXTURE SCHEDULE

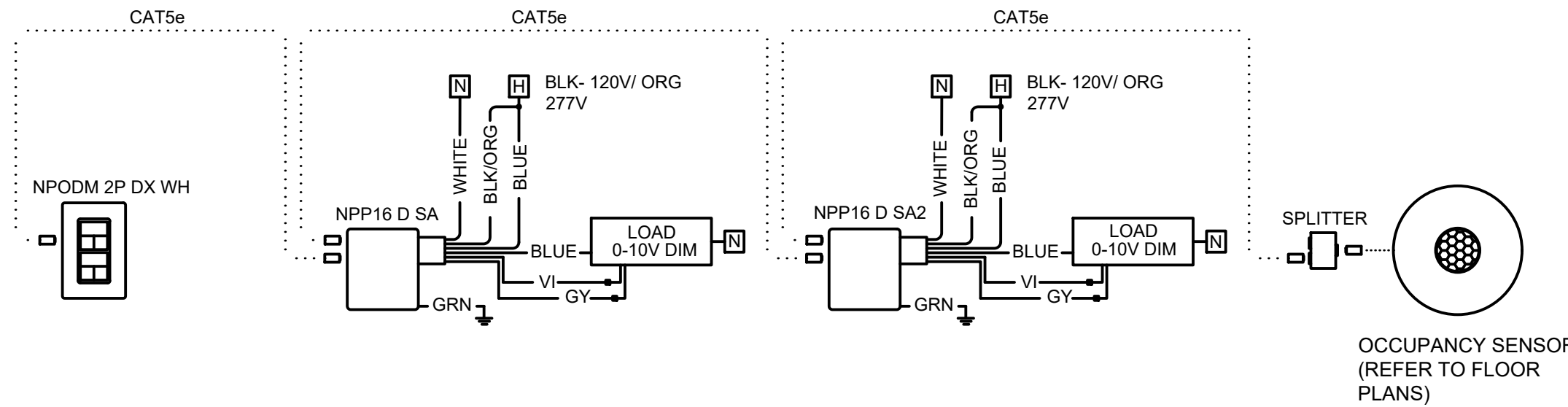
BASIS OF DESIGN											
TYPE	DESCRIPTION	LAMP QUANTITY	LAMP TYPE	LAMP INITIAL LUMEN OUTPUT	CCT	CRI	VOLTAGE	INPUT WATTAGE	BALLAST TYPE	BASIS OF DESIGN	NOTES
'A'	48" LINEAR LED SUSPENDED	1	LED	4500	4000K	80	UNI	39.9	0-10V DIMMABLE	COOPER LIGHTING #4WSL-LD2-45-5PS-UPL15-UNV-L840-CD-1-U-CCA	SUSPENSION CABLE AS REQUIRED TO MOUNT FIXTURE AT +9'-0" A.F.F.
'AX'	48" LINEAR LED SUSPENDED W/EMERGENCY BATTERY PACK	1	LED	4500	4000K	80	UNI	39.9	0-10V DIMMABLE	COOPER LIGHTING #4WSL-LD2-45-5PS-UPL15-UNV-EL14W-L840-CD-1-U-CCA	SUSPENSION CABLE AS REQUIRED TO MOUNT FIXTURE AT +9'-0" A.F.F.
'B'	48" LED TROFFER	1	LED	4700	4000K	80	UNI	41.5	0-10V DIMMABLE	COOPER LIGHTING #14EN-LD2-47-UNV-L840-CD-V	
'C'	SURFACE CEILING 48" LED LINEAR IMPACT RESISTANT ACRYLIC LENS	1	LED	5956	3500K	80	120	45	0-10V DIMMABLE	KENALL #R12 48 45L35K DCC 1	ROUGH SERVICE, PRISMATIC LENS
'BX'	48" LED TROFFER W/EMERGENCY BATTERY PACK	1	LED	4700	4000K	80	UNI	41.5	0-10V DIMMABLE	COOPER LIGHTING #14EN-LD2-45-5PS-UPL15-UNV-EL14W-L840-CD-1-U-CCA	
'EM'	EXTERIOR EMERGENCY LIGHT WITH BATTERY HEATER	4	LED	405	6350K	--	120	15.2	SOLID STATE DRIVER	DUAL-LITE #PG-B-HTR	
'X'	UNIVERSAL MOUNT EXIT SIGN WITH RED LETTERS ON WHITE STENCIL FACE	--	LED	--	--	--	120	3.3	SOLID STATE DRIVER	LIGHTALARMS #1XDC W RW	



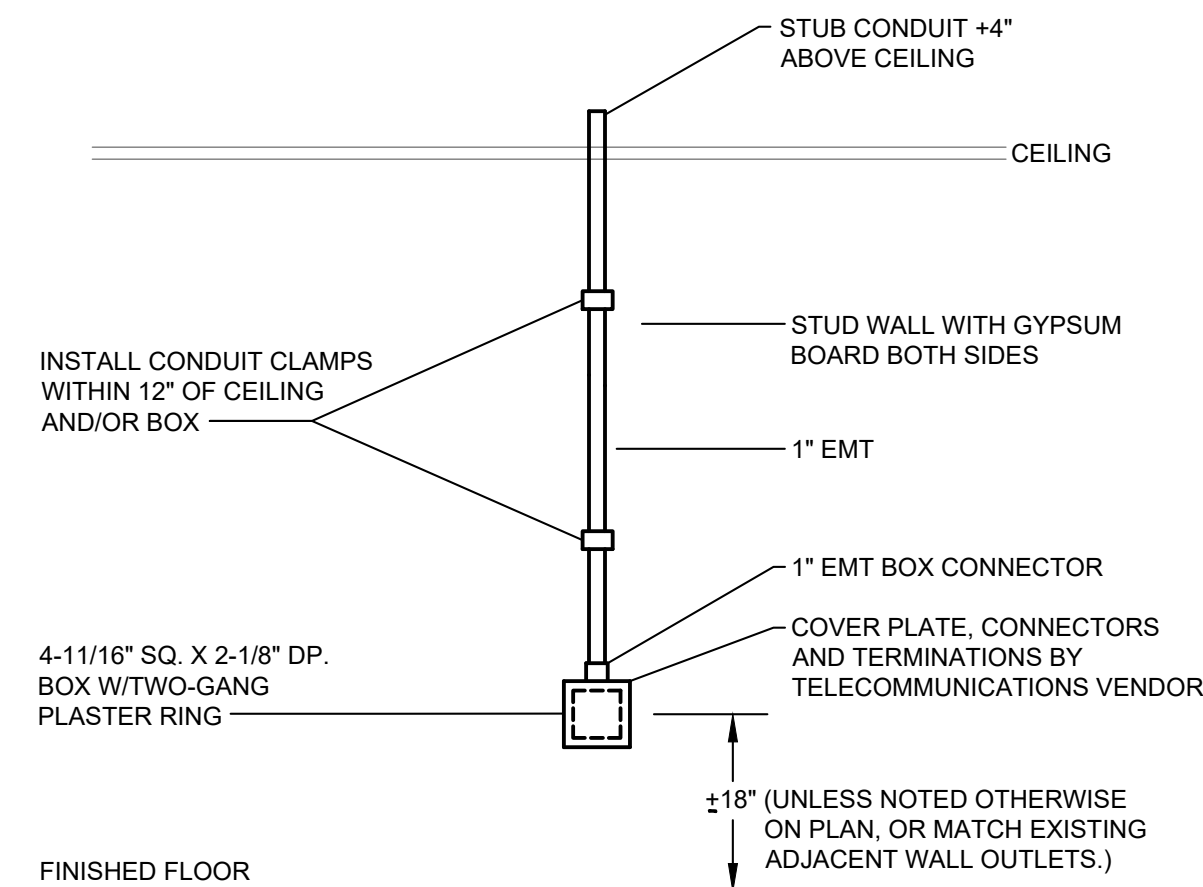
TYPICAL OCCUPANCY WALL SWITCH WIRING DETAILS
N.T.S.



EMERGENCY LIGHTING BATTERY BACK-UP WIRING DIAGRAM
N.T.S.



TYPICAL MULTI-ZONE CONTROL LIGHTING CONTROL WIRING DIAGRAM
N.T.S.



TYPICAL COMMUNICATIONS OUTLET INSTALLATION STANDARD
N.T.S.

AUTOMATIC LIGHTING CONTROL LEGEND (CATALOG NUMBERS BASED ON SENSOR SWITCH)

- 11 WSX PDT SA WALL SWITCH SENSOR, PASSIVE DUAL TECHNOLOGY, MANUAL ON AUTO OFF
 - 20 ON-OFF & RAISE LOWER WALL POD, OCCUPANCY CONTROLLED DIMMING, ACUTY nPDM DX
 - 22 DUAL TECHNOLOGY OCCUPANCY SENSOR, ACUTY nCM-PDT-9 (RJB) PHOTOCELL - AUTOMATIC DIMMING CONTROL
 - 26 RELAY MODULE WITH 0-10V DIMMING OUTPUT, ACUTY nPP16-D
 - 24 PASSIVE DUAL TECHNOLOGY, LARGE MOTION, PHOTOCELL AUTOMATIC DIMMING SENSOR, ACUTY nCM PDT10 RJB ADCX
- LOW VOLTAGE WIRING CAT-5E WITH RJ45 CONNECTORS.

LIGHTING CONTROL NOTES:

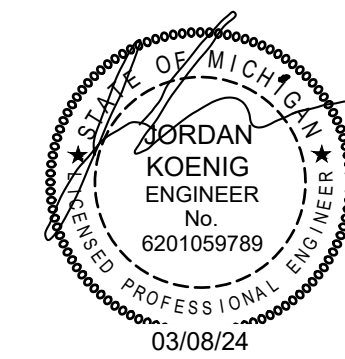
- ALTERNATE LIGHTING MANUFACTURER'S EQUIPMENT BY COOPER, PHILIPS OR HUBBELL, SHALL BE SIMILAR IN PERFORMANCE, FUNCTION AND CAPABILITY TO BE CONSIDERED AS EQUAL TO DEVICES SPECIFIED.
- SET ALL DEVICES FOR MANUAL-ON CONTROL, EXCEPT WHERE AUTO-ON IS PERMISSIBLE PER 2015 MICHIGAN ENERGY CODE.
- COMPLETE LIGHTING CONTROL SYSTEM SHALL BE PROVIDED IN COMPLIANCE WITH THE 2015 MICHIGAN ENERGY CODE (IECC 2015/ASHRAE 90.1/2013). PROVIDE COMPLIANCE WITH THE LIGHTING POWER DENSITY REQUIREMENTS OF SECTION 9 AND THE AUTOMATIC SHUT-OFF REQUIREMENTS OF SECTION 9.4.1.1.
- ALL OCCUPANCY SENSORS SHALL BE MOUNTED TO A VIBRATION FREE SURFACE, WITH SENSORS FACING THE AREA OF COVERAGE. PLACE AT LEAST 48" FROM SUPPLY AIR GRILLES, 72" FROM HORIZONTAL DISCHARGE DUCTS.
- LIGHTING CONTROLS MANUFACTURERS REPRESENTATIVE MUST PROVIDE ONSITE SUPPORT FOR PROJECT START-UP AND PROGRAMING.

GENERAL NOTES:

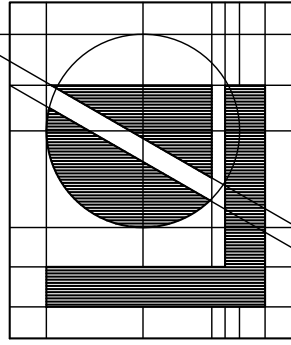
- REFER TO SHEET E0.1 FOR ELECTRICAL SYMBOL LIST, ABBREVIATIONS, AND PROJECT NOTES.
- REFER TO SHEET E0.2 FOR LIGHTING FIXTURE SCHEDULE AND CONTROLS.
- EXIT SIGNS AND EMERGENCY LIGHTING FIXTURES SHALL BE CONNECTED TO LINE SIDE OF PANEL "HP" CIRCUIT SERVING THE LOCAL AREA LIGHTING, AHEAD OF ALL SWITCHES/RELAYS/CONTROLS.
- ALL EXIT AND EMERGENCY LIGHTING SHALL BE UL-924 LISTED AND SHALL PROVIDED MINIMUM 90-MINUTE BATTERY BACKUP.
- REFER TO ARCHITECTURAL ELEVATIONS FOR EXACT LOCATION AND MOUNTING HEIGHT OF ALL EXTERIOR BUILDING MOUNTED LIGHTING FIXTURES.

LIGHTING FIXTURE NOTES

- ALTERNATE LIGHTING MANUFACTURERS EQUIPMENT SHALL BE SIMILAR IN PERFORMANCE, PHYSICAL APPEARANCE AND CONSTRUCTION TO BE CONSIDERED AS EQUAL TO UNITS SPECIFIED.
- ALTERNATE LIGHTING FIXTURE TYPES PROPOSED TO BE SUBSTITUTED BY BIDDING CONTRACTOR MUST BE PRE-APPROVED DURING BIDDING. CONTRACTOR OR LIGHTING REPRESENTATIVE SHALL FAX ALL SUCH REQUESTS WITH FIXTURE CUTS TO ENGINEER AT LEAST ONE WEEK PRIOR TO SUBMITTING BIDS. ENGINEER SHALL REVIEW THE PROPOSED ALTERNATE LIGHTING FIXTURES AND ISSUE A WRITTEN ACCEPTANCE OR DENIAL BY RETURN FAX. VERBAL APPROVAL WILL NOT BE ACCEPTABLE.
- ALL SHOP DRAWINGS SUBMITTED AFTER AWARD OF CONTRACT FOR LIGHTING FIXTURES WHICH WERE NOT PRE-APPROVED WILL BE REJECTED.
- FIXTURES SIMILAR IN DESIGN, CONSTRUCTION AND PHOTOMETRIC CHARACTERISTICS MANUFACTURED BY CREE LIGHTING, COOPER, LIGHTOLIER, HUBBELL ARE ACCEPTABLE ALTERNATES TO THOSE FIXTURES SPECIFIED.
- LIGHT EMITTING DIODE (LED) LAMPS AND FIXTURES: ALL LED LIGHT ENGINES (COMBINATIONS OF DIODES, DRIVER, HEAT SINK, HOUSING AND OPTICS), WHETHER SCREW-IN OR HARDWIRED, SHALL MEET ALL OF THE FOLLOWING CRITERIA:
 - THE RATED DRIVER INPUT WATTAGE AND TOTAL NUMBER OF LEDS SHALL BE PUBLISHED BY THE MANUFACTURER FOR EACH SCHEDULED FIXTURE UNIT (DRIVER AND LED COMBINATION) AND SHALL BE THE SAME WATTAGE USED IN THE FIXTURE LISTED IN THE LIGHT FIXTURE SCHEDULE.
 - LED FIXTURES SHALL INCLUDE A SACRIFICIAL SURGE PROTECTION DEVICE DESIGNED SPECIFICALLY TO PROTECT LED LIGHT FIXTURES FROM HIGH VOLTAGE AND / OR HIGH-AMPERAGE ELECTRICAL SURGES ASSOCIATED WITH LIGHTNING STRIKES, SPIKES ASSOCIATED WITH MOTOR STARTING, ETC. 100V -277VAC. SPD SHALL BE INSTALLED IN THE LIGHT FIXTURE JUNCTION BOX AND WIRED INTO THE AC LINE TO THE LIGHT FIXTURE.
 - LED LAMPS AND FIXTURES SHALL CARRY A SAFETY CERTIFICATION BY AN APPROVED TESTING LABORATORY (UL, CE, ETL, ETC).
 - LED LAMPS AND FIXTURES SHALL BE APPROVED AND LISTED UNDER EITHER ENERGY STAR OR DESIGN LIGHT CONSORTIUM.
 - LIGHTS CONSORTIUM: LED LUMINAIRES SHALL BE TESTED IN ACCORDANCE WITH THE APPROVED INDUSTRY MEASUREMENT STANDARD, IESNA LM-79, THE APPROVED METHOD FOR THE ELECTRICAL AND PHOTOMETRIC MEASUREMENTS OF SOLID STATE LIGHTING PRODUCTS; AND IESNA LM-80 "MEASURING LUMEN MAINTENANCE OF LED LIGHT SOURCES".
 - COLOR STABILITY SHALL BE WARRANTED TO MAINTAIN COLOR PROPERTIES OF NO MORE THAN A COLOR SHIFT OF 200K OVER A 5 YEAR PERIOD.
 - COLOR RENDERING INDEX (CRI) OF LED LAMPS SHALL BE 80 OR ABOVE.
 - LAMP LIFE SHALL EXCEED 50,000 HOURS.
 - SHALL BE DIMMABLE DOWN TO 5% UNLESS OTHERWISE NOTED.
 - INSTALLATION:
 - LIGHT FIXTURES SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
 - ARCHITECTURAL DRAWINGS, WHERE APPLICABLE, SHALL BE USED FOR EXACT LOCATION OF LIGHT FIXTURES.



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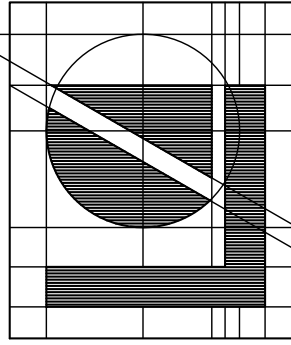
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03/08/2024 date

dr: D.P.
ckd: J.E.
app'd: J.K.

RENOVATIONS for:
BRIGHTON AREA SCHOOLS
(B.E.C.C. BLDG.) BRIGHTON, MICHIGAN
LIGHTING FIXTURE CONTROL SCHEDULES AND NOTES

SCALE: NONE



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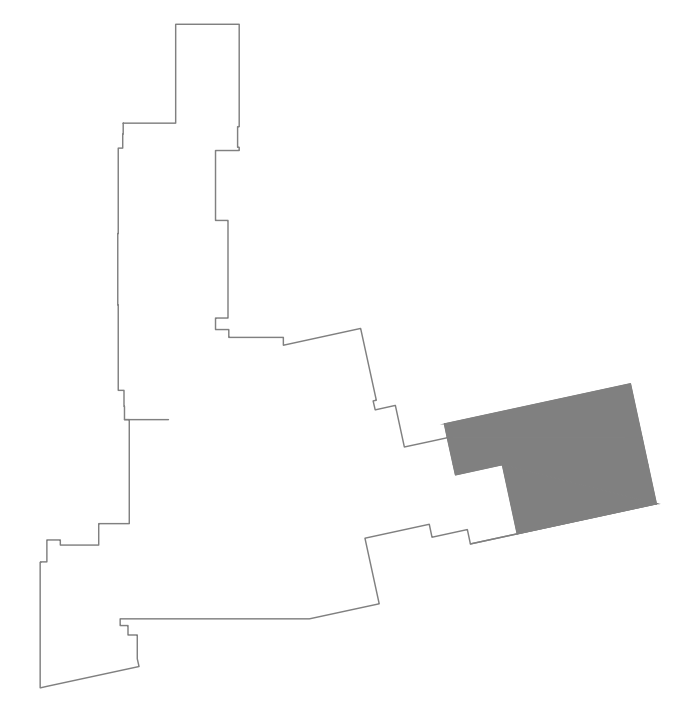


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RENOVATIONS for:
BRIGHTON AREA SCHOOLS
(B.E.C.C. BLDG.) BRIGHTON, MICHIGAN
PARTIAL FIRST FLOOR - ELECTRICAL DEMOLITION

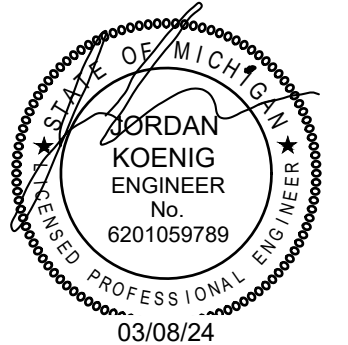
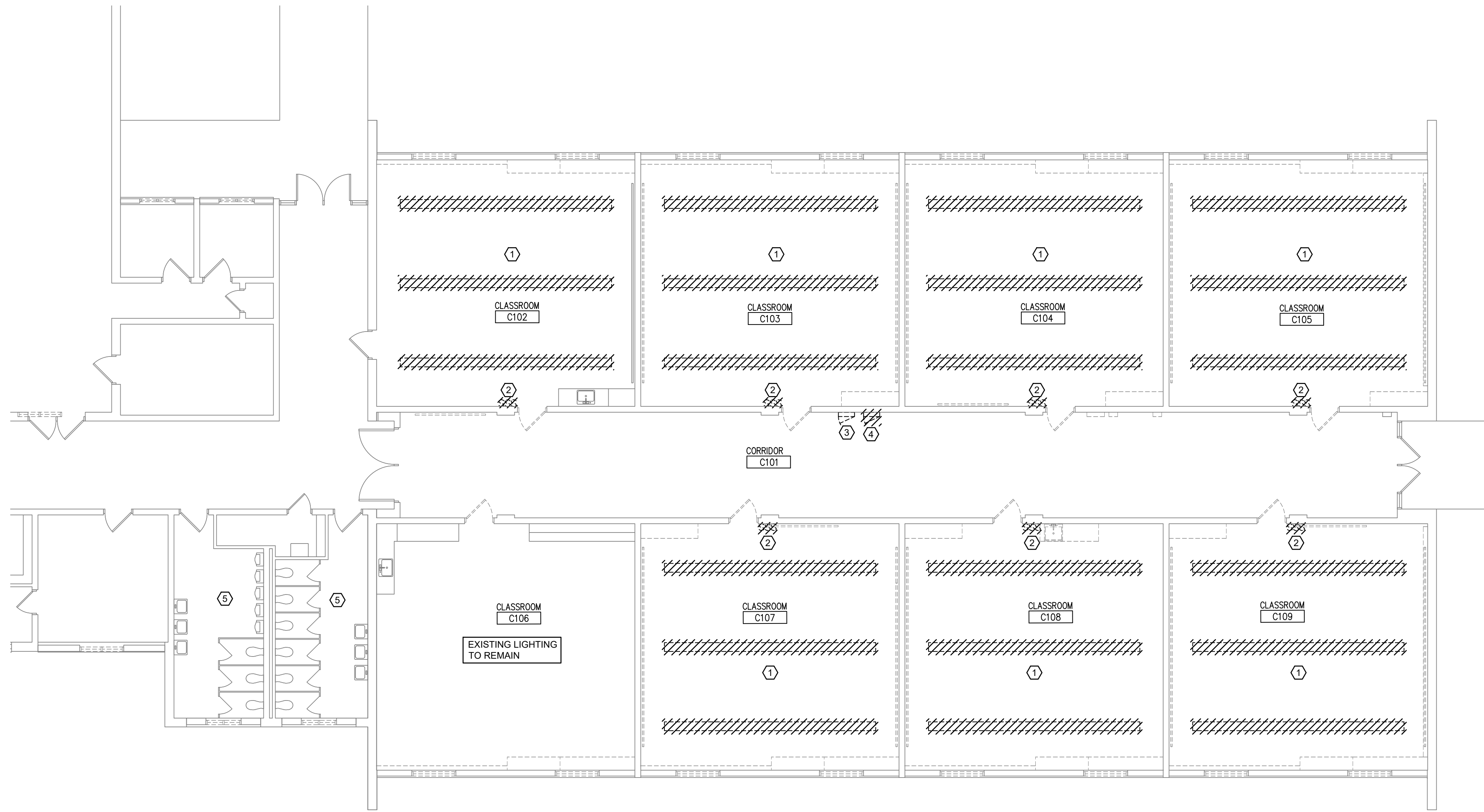
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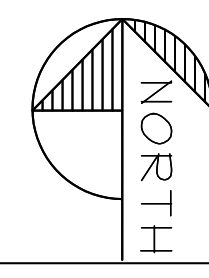
1 ED1.1 KEY PLAN

DEMOLITION KEY NOTES: (E)

1. REMOVE EXISTING SUSPENDED FLUORESCENT LIGHT FIXTURES.
2. REMOVE EXISTING LIGHT SWITCHES.
3. EXISTING PANEL 'F' TO BE REMOVED AND RELOCATED TO CLASSROOM C106. SEE SHEET E3.1.
4. EXISTING SUB PANEL TO BE REMOVED. REMOVE ALL ITEMS OR EQUIPMENT CONNECTED TO PANEL INCLUDING CONDUITS & BRANCH CIRCUIT WIRING, OUTLETS, DISCONNECT SWITCHES, ETC.
5. ALTERNATE #2 - REMOVE EXISTING LIGHTING FIXTURES AND REPLACE WITH NEW TYPE 'C'. REFER TO SHEET E2.1.

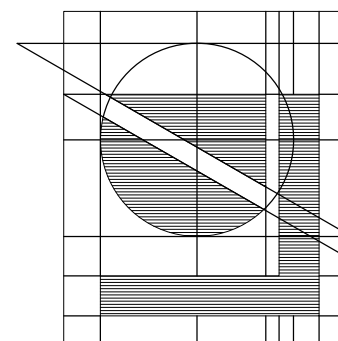


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SCALE: NONE

1 ED1.1 PARTIAL FIRST FLOOR - ELECTRICAL DEMOLITION PLAN



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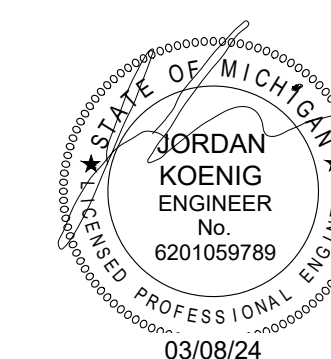
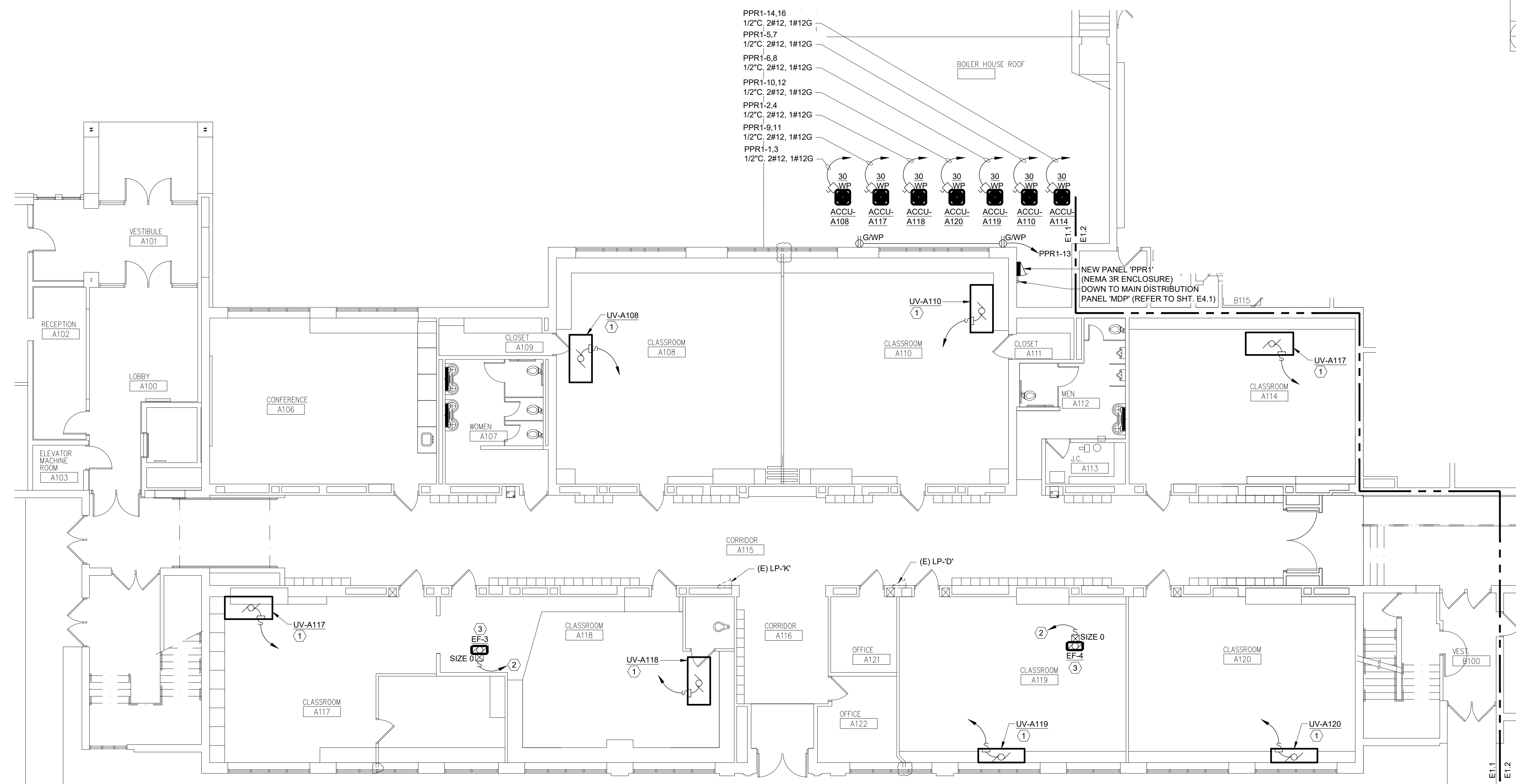
RENOVATIONS for:
BRIGHTON AREA SCHOOLS
 (B.E.C.C. BLDG.) BRIGHTON, MICHIGAN
 PARTIAL FIRST FLOOR - ELECTRICAL NEW WORK PLAN

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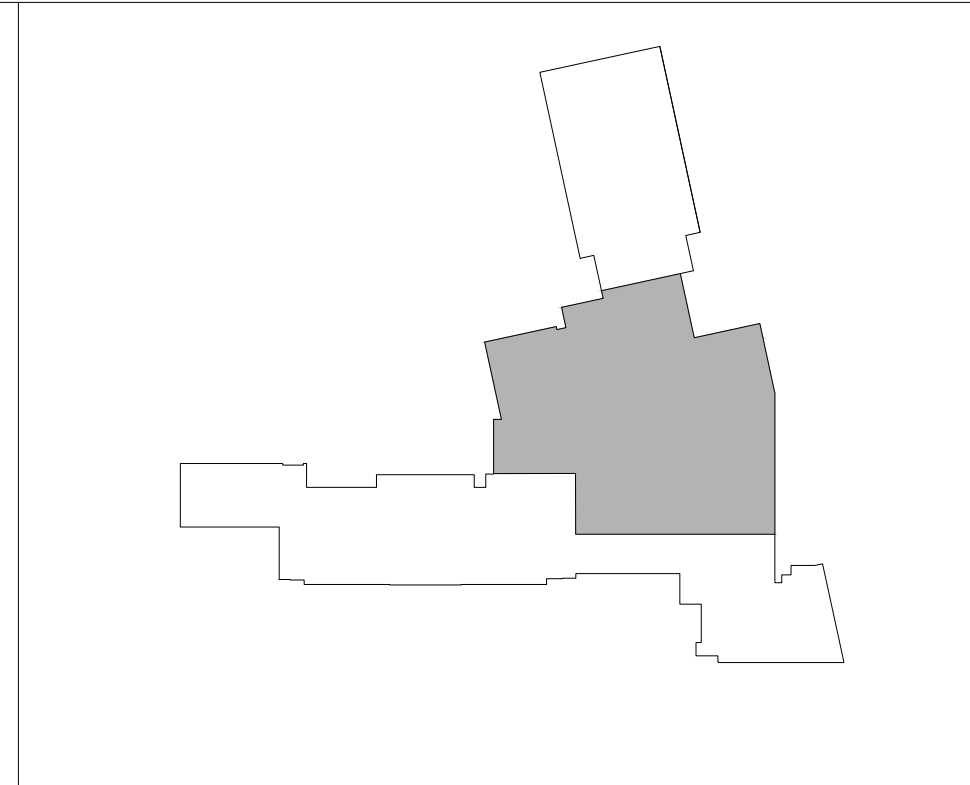
KEY PLAN

KEY NOTES: #

1. ELECTRICAL CONTRACTOR SHALL ELECTRICALLY DISCONNECT EXISTING MECHANICAL UNIT AND RECONNECT EXISTING 120V. CIRCUIT TO NEW UNIT VENTILATOR.
2. TO 20A. 1P. C.B. IN LPK'.
3. INTERLOCK WITH UV UNIT BY TEMPERATURE CONTROL CONTRACTOR.



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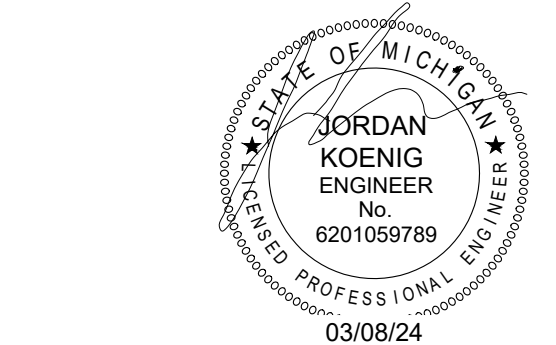
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E1.2 KEY PLAN

KEY NOTES: #

1. ELECTRICAL CONTRACTOR SHALL ELECTRICALLY DISCONNECT EXISTING MECHANICAL UNIT AND RECONNECT EXISTING 120V. CIRCUIT TO NEW UNIT VENTILATOR.

14 CL. 10
E1.1
E1.2
-13

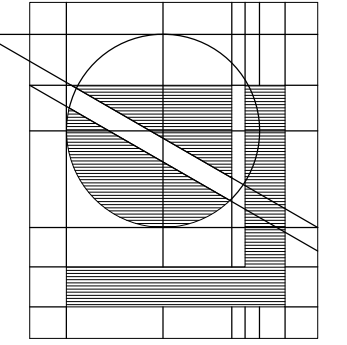
NEW PANEL 'PPR1'
(NEMA 3R ENCLOSURE)
DOWN TO MAIN DISTRIBUTION
PANEL 'MDP' (REFER TO SHT. E4.1)



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

1
E1.2 PARTIAL FIRST FLOOR - ELECTRICAL NEW WORK PLAN



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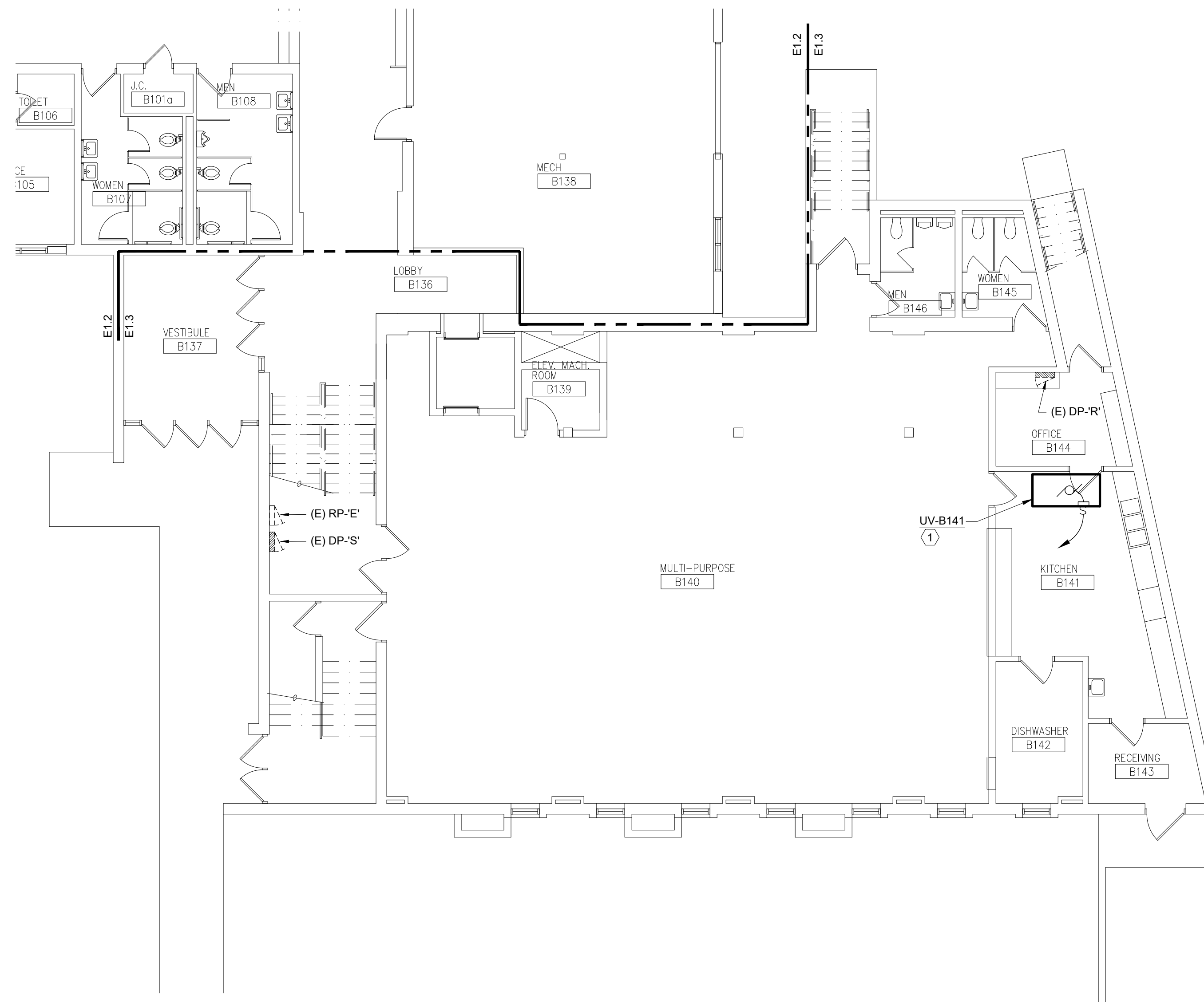


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date: 03/08/2024
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RENOVATIONS for:
BRIGHTON AREA SCHOOLS
(B.E.C.C. BLDG.) BRIGHTON, MICHIGAN
PARTIAL FIRST FLOOR - ELECTRICAL NEW WORK PLAN

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1
E1.3 KEY PLAN

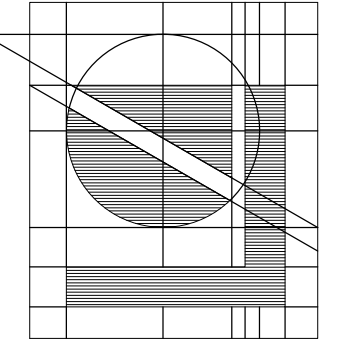
- KEY NOTES: #**
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1
E1.3 PARTIAL FIRST FLOOR - ELECTRICAL NEW WORK PLAN

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



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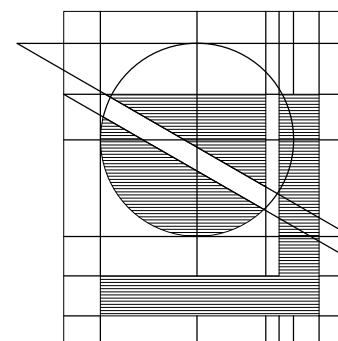
dr: D.P.
ckd: J.E.
app'd: J.K.

03/08/2024
date

BIDS + PERMITS
ISSUED FOR

RENOVATIONS for:
BRIGHTON AREA SCHOOLS
(B.E.C.C. BLDG.) BRIGHTON, MICHIGAN
PARTIAL FIRST FLOOR - ELECTRICAL NEW WORK PLAN

1.0
23086



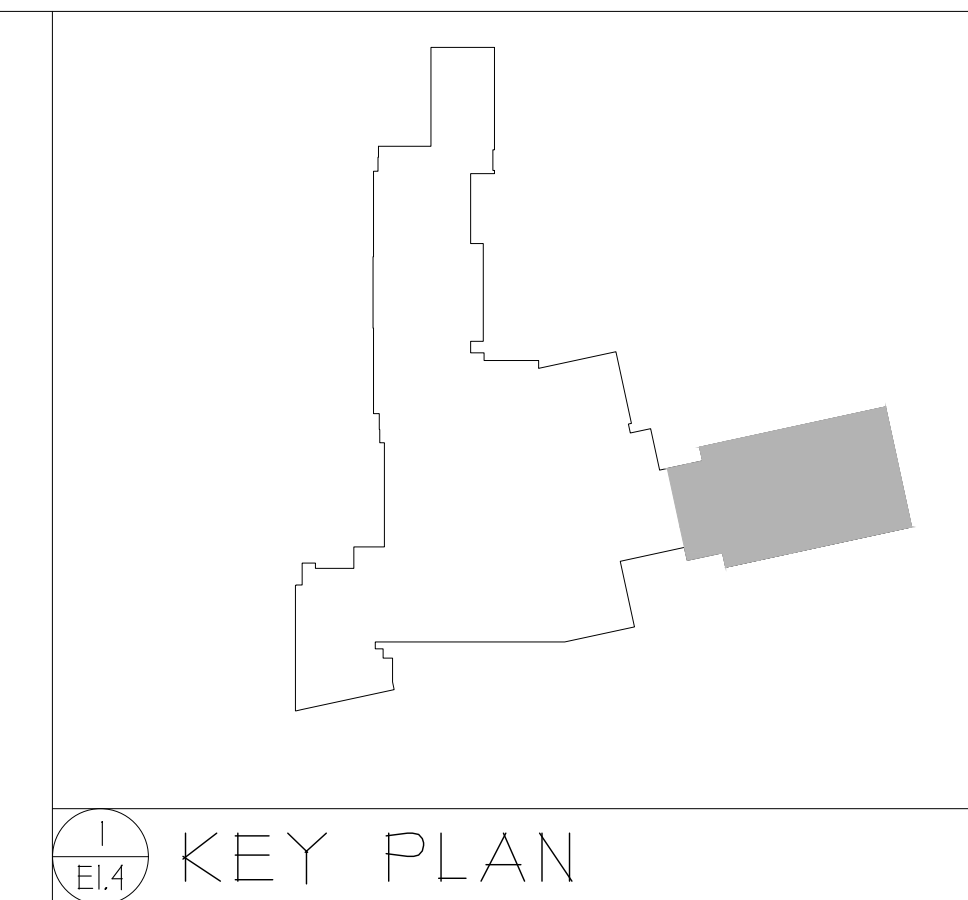
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 (B.E.C.C. BLDG.) BRIGHTON, MICHIGAN
 PARTIAL FIRST FLOOR - ELECTRICAL NEW WORK PLAN

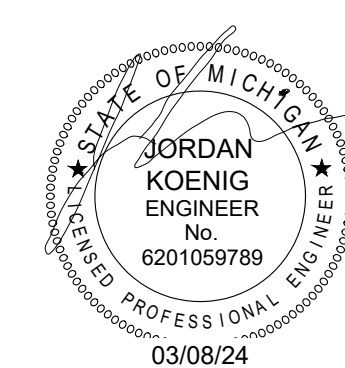
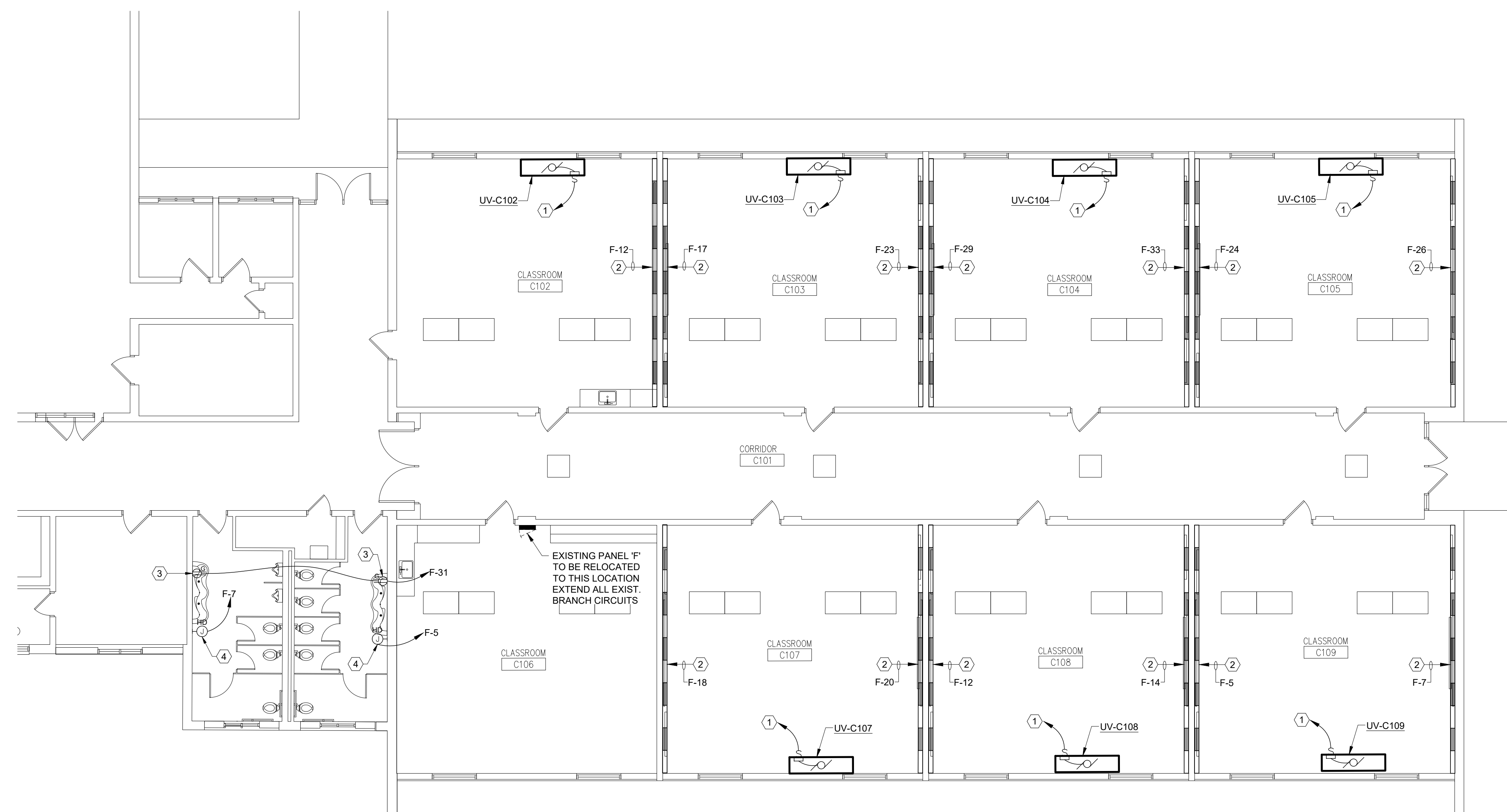
E1.4
23086



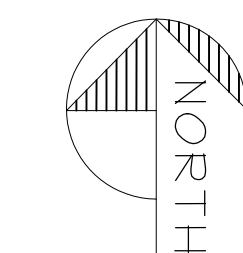
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E1.4 KEY PLAN

KEY NOTES: (#)

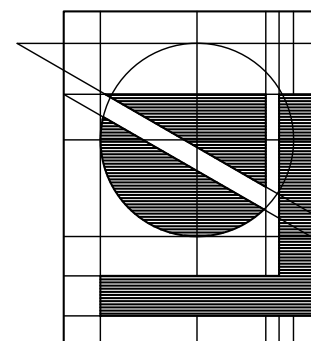
1. ELECTRICAL CONTRACTOR SHALL ELECTRICALLY DISCONNECT EXISTING MECHANICAL UNIT AND RECONNECT EXISTING 120V. CIRCUIT TO NEW UNIT VENTILATOR.
2. PROVIDE WIREMOLD SERIES 4000 STEEL RACEWAY ON WALL. REFER TO ARCHITECTURAL SHEET A2 FOR CONFIGURATION OF RACEWAY ON WALLS. PROVIDE 120V, 20A CIRCUIT AS INDICATED. PROVIDE DUPLEX OUTLETS AND DATA PORTS ON 42" CENTERS.
3. DUPLEX RECEPTACLE BELOW SINK FOR TOUCHLESS ELECTRONIC VALVE.
4. OUTLET BOX FOR NEW HAND DRYER. MOUNTING HEIGHT TO BE AS DIRECTED BY HAND DRYER MANUFACTURERS RECOMMENDATION.



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



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RENOVATIONS for:
BRIGHTON AREA SCHOOLS
(B.E.C.C. BLDG.) BRIGHTON, MICHIGAN
PARTIAL ROOF - ELECTRICAL NEW WORK PLAN

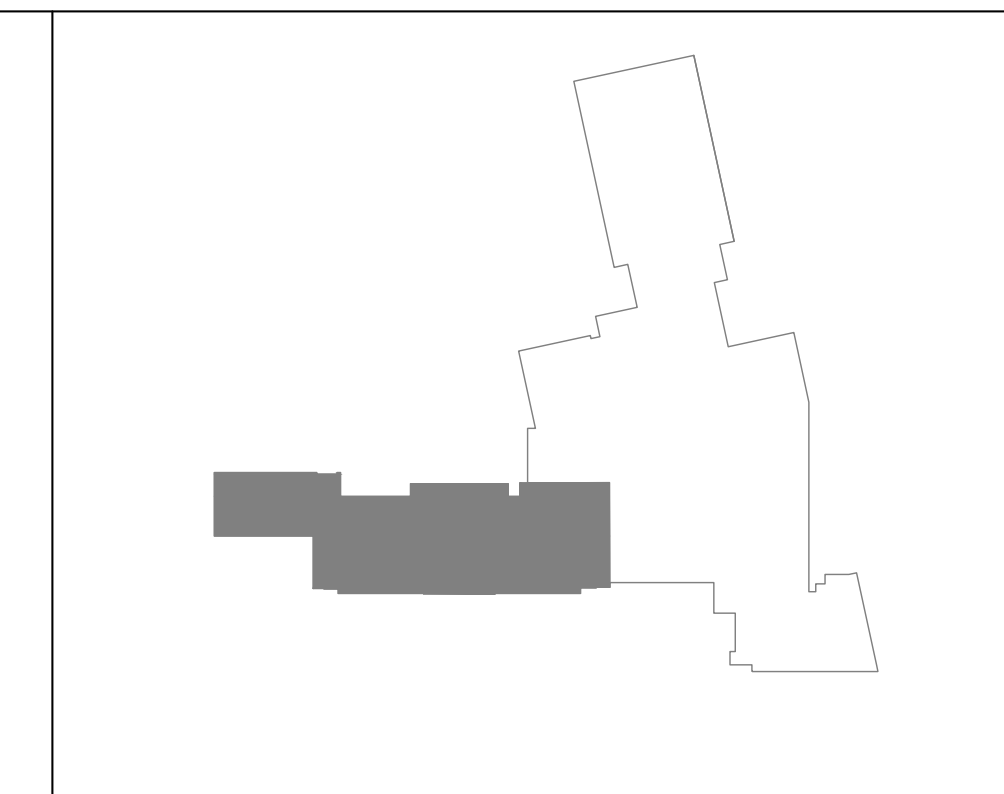
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RENOVATIONS for:
BRIGHTON AREA SCHOOLS
(B.E.C.C. BLDG.) BRIGHTON, MICHIGAN
PARTIAL ROOF - ELECTRICAL NEW WORK PLAN

E2.1
23086



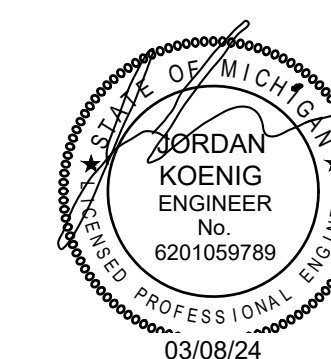
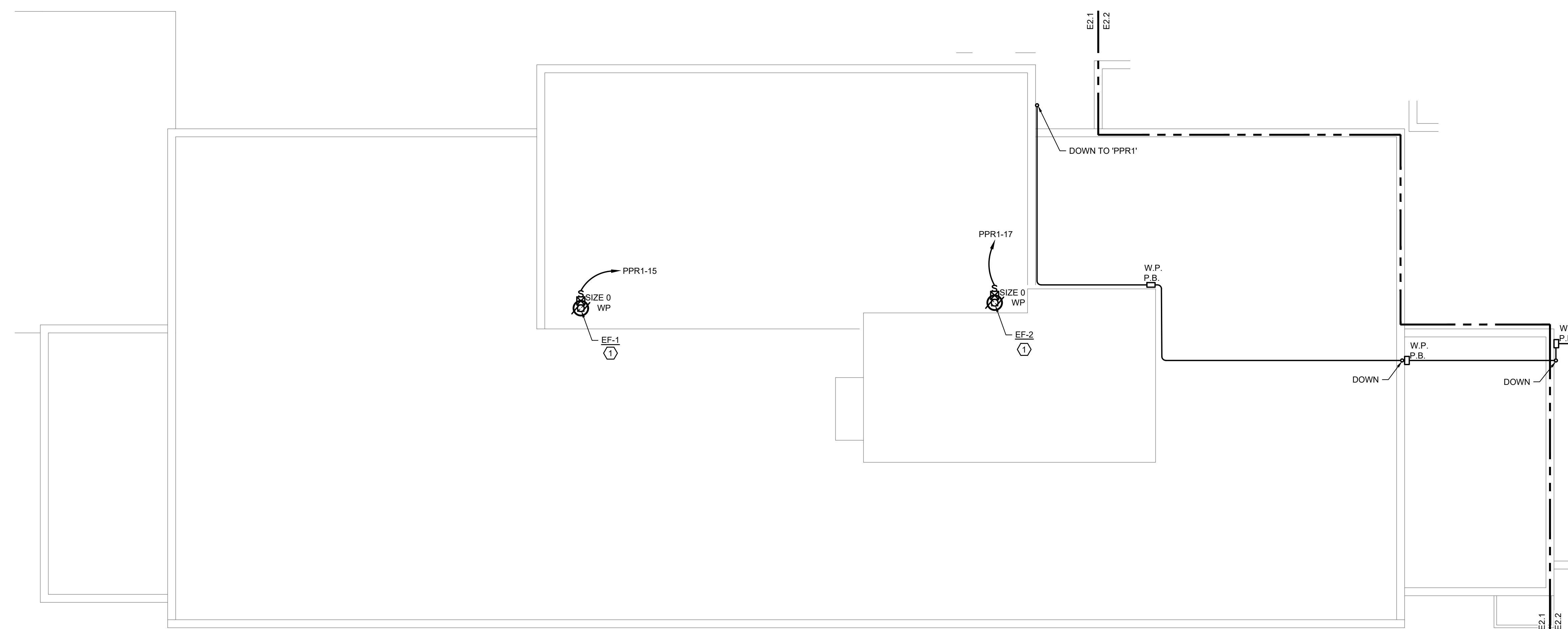
E2.1 KEY PLAN

GENERAL NOTES:

- ALL CONDUITS RUN ON ROOF SHALL BE SUPPORTED ON 'DURA-BLOCK' PIPE SUPPORTS AT 15' CENTERS.

KEY NOTES: (K)

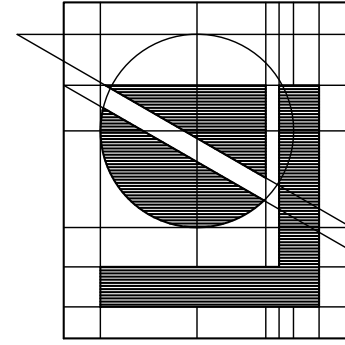
- INTERLOCK WITH UV UNIT BY TEMPERATURE CONTROL CONTRACTOR.



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E2.1 PARTIAL ROOF - ELECTRICAL NEW WORK PLAN

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



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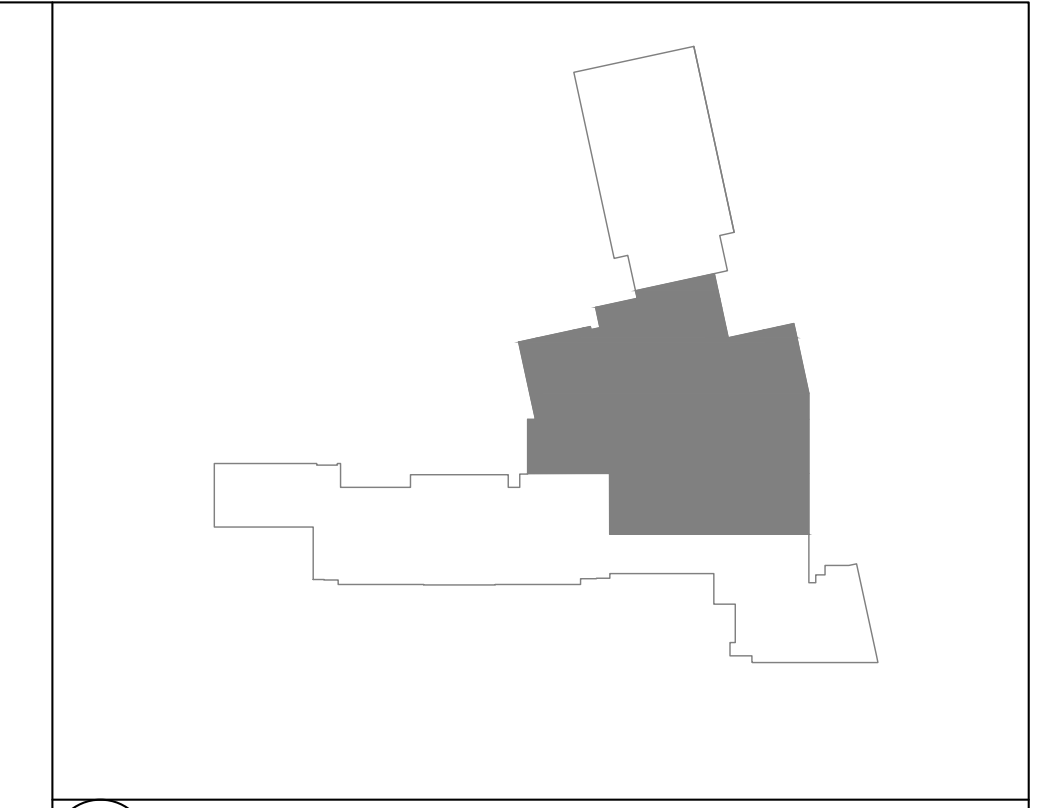


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RENOVATIONS for:
BRIGHTON AREA SCHOOLS
 (B.E.C.C. BLDG.) BRIGHTON, MICHIGAN
PARTIAL ROOF - ELECTRICAL NEW WORK PLAN

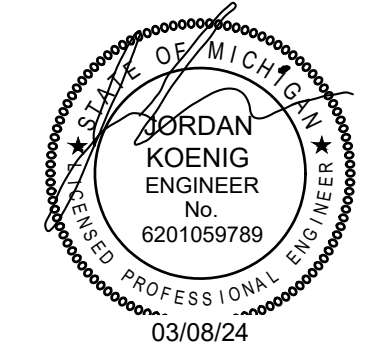
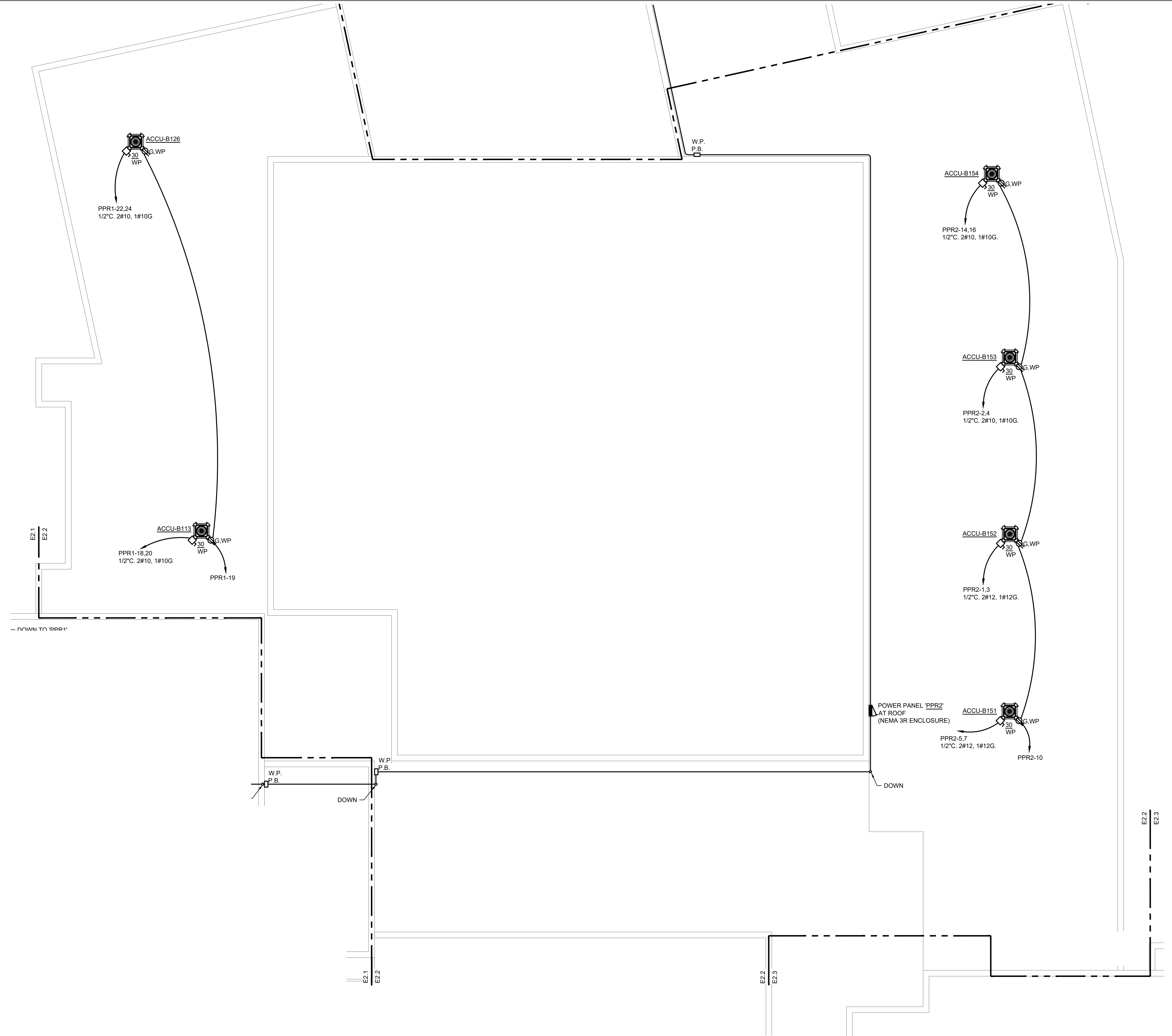
E2.2
23086



KEY PLAN

GENERAL NOTES:

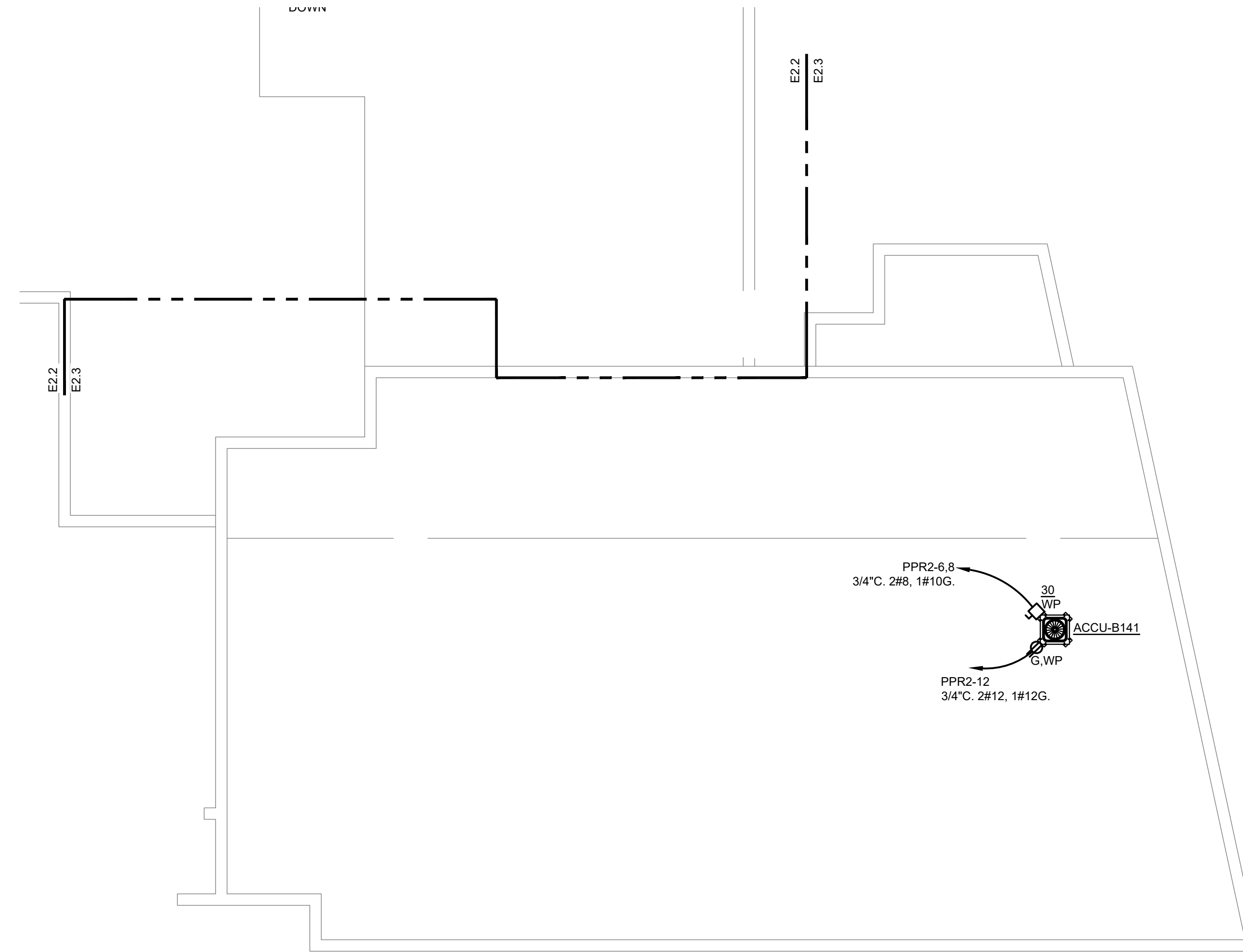
- ALL CONDUITS RUN ON ROOF SHALL BE SUPPORTED ON 'DURA-BLOCK' PIPE SUPPORTS AT 15' CENTERS.



THIS DRAWING IS DIAGRAMMATIC AND SHOULD BE USED TO DETERMINE THE DESIGN INTENT. THE CONTRACTOR SHALL FIELD VERIFY ALL WORK AND SHALL NOTIFY THE ARCHITECT IMMEDIATELY OF ANY DISCREPANCIES IN THE DOCUMENTS BEFORE PROCEEDING. FAILURE TO DO SO WILL RESULT IN THE CONTRACTOR TAKING FULL RESPONSIBILITY AND LIABILITY FOR SAID DISCREPANCIES. NOTICE: THIS DRAWING AND THE DESIGN ARE THE PROPERTY OF MECHANICAL ELECTRICAL ENGINEERING CONSULTANTS, PC AND NO ALTERATIONS AND/OR TRANSFERS OF WORK ARE PERMITTED UNLESS WRITTEN APPROVAL IS GRANTED BY MECHANICAL ELECTRICAL ENGINEERING CONSULTANTS, PC.

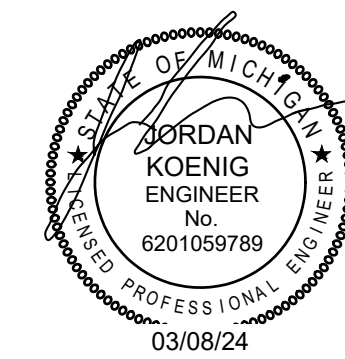
E2.2 PARTIAL ROOF - ELECTRICAL NEW WORK PLAN

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



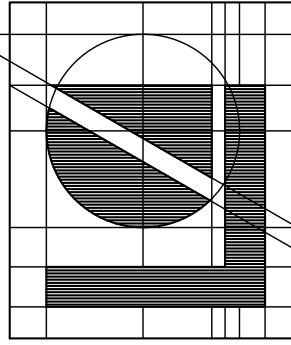
1
E2.3 KEY PLAN

- GENERAL NOTES:**
- ALL CONDUITS RUN ON ROOF SHALL BE SUPPORTED ON 'DURA-BLOCK' PIPE SUPPORTS AT 15' CENTERS.



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



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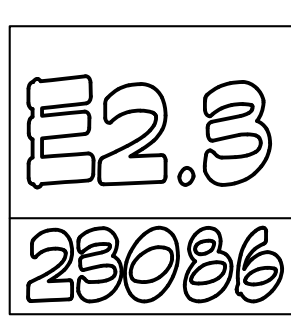


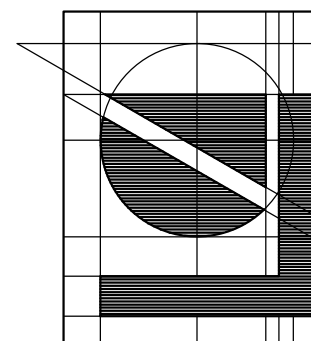
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RENOVATIONS for:
BRIGHTON AREA SCHOOLS
(B.E.C.C. BLDG.) BRIGHTON, MICHIGAN
PARTIAL ROOF - ELECTRICAL NEW WORK PLAN





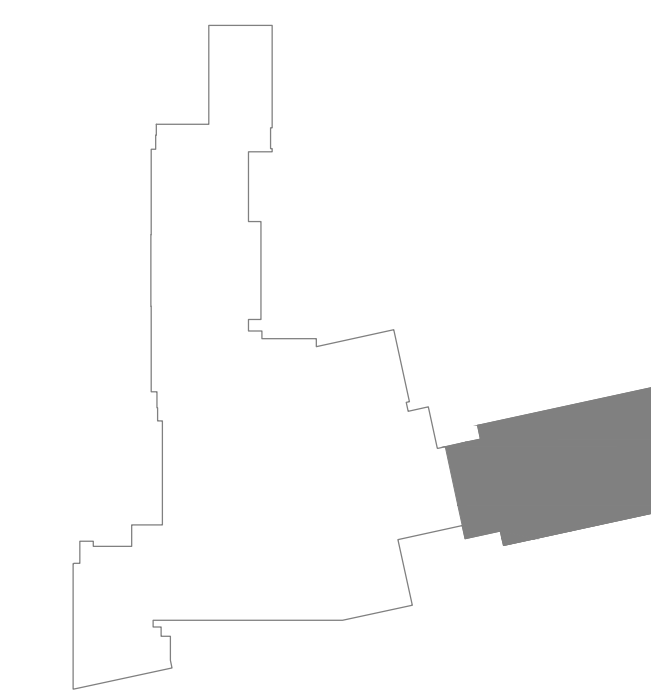
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RENOVATIONS for:
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 (B.E.C.C. BLDG.) BRIGHTON, MICHIGAN
PARTIAL ROOF - ELECTRICAL NEW WORK PLAN

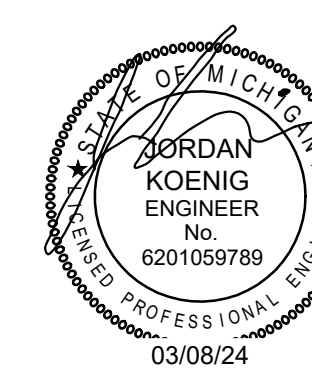
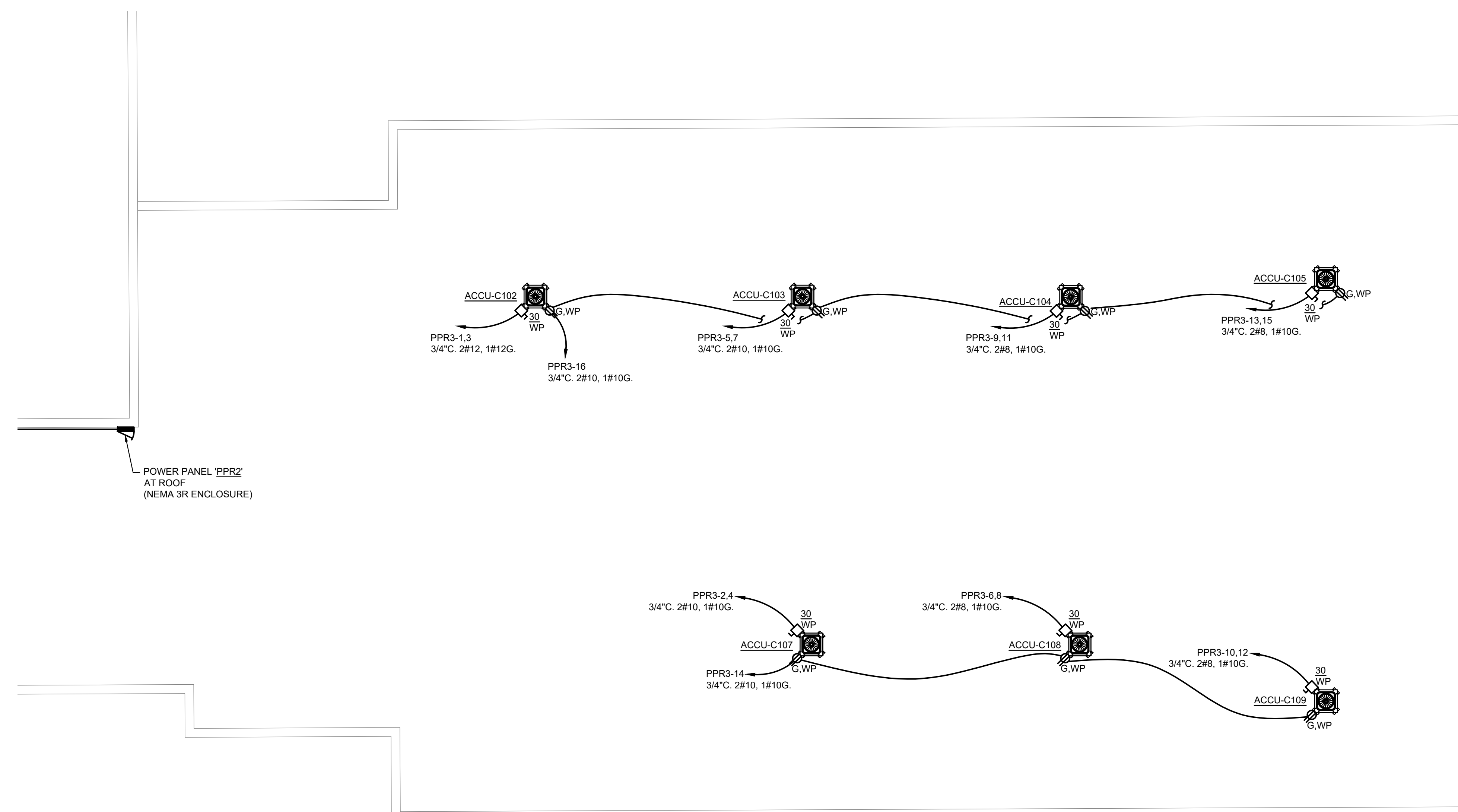
E2.4
23086



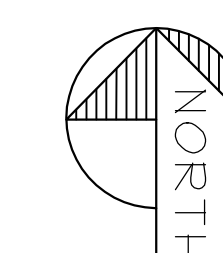
E2.4 KEY PLAN

GENERAL NOTES:

- ALL CONDUITS RUN ON ROOF SHALL BE SUPPORTED ON 'DURA-BLOCK' PIPE SUPPORTS AT 15' CENTERS.

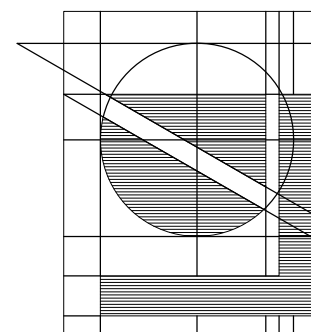


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E2.4 PARTIAL ROOF - ELECTRICAL NEW WORK PLAN

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



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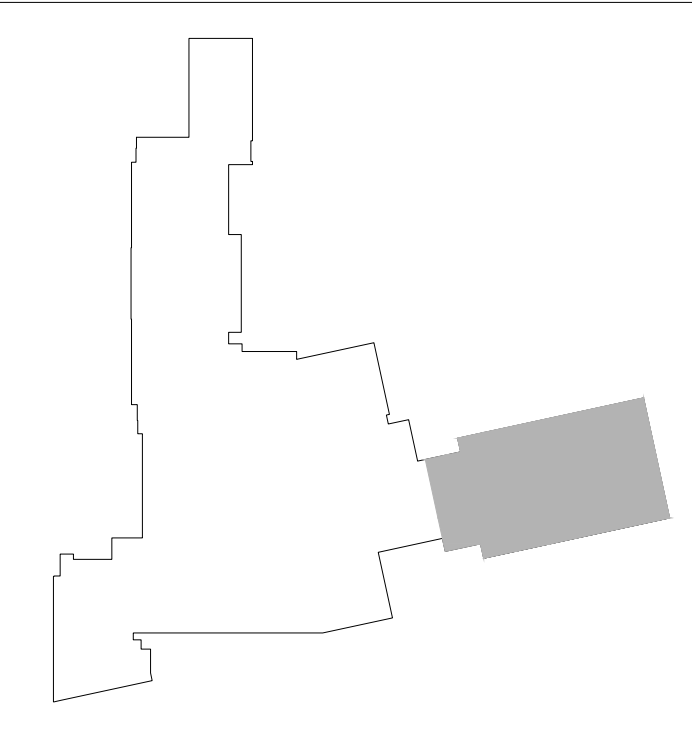
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 app'd: J.K.

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RENOVATIONS for:
BRIGHTON AREA SCHOOLS
 (B.E.C.C. BLDG.) BRIGHTON, MICHIGAN
 PARTIAL FIRST FLOOR - LIGHTING NEW WORK PLAN

E3.1
 23086



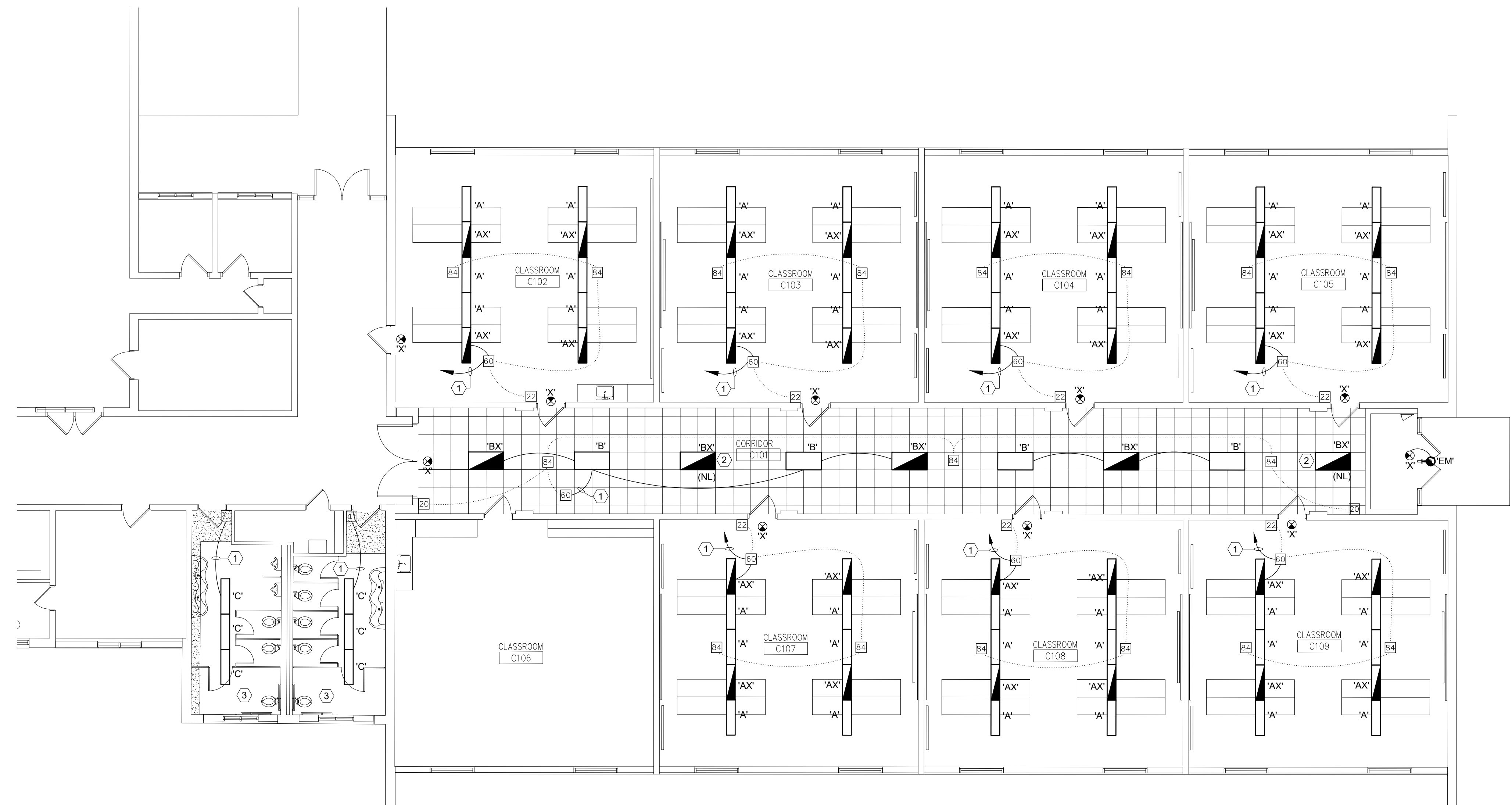
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 E3.1 KEY PLAN

GENERAL NOTES:

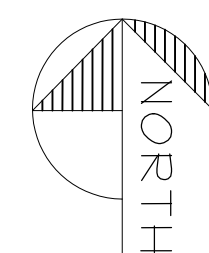
1. CONNECT EMERGENCY LIGHTS AND EXIT SIGNS AHEAD OF ALL SWITCHING.
2. REFER TO LIGHTING FIXTURE NOTES ON SHEET E0.2.

KEY NOTES: (#)

1. CONNECT TO EXISTING LOCAL LIGHTING CIRCUIT.
2. CONNECT NIGHT LIGHTS (NL) TO LOCAL LIGHTING CIRCUIT AHEAD OF ALL SWITCHING.
3. ALTERNATE #2 - REMOVE EXISTING LIGHTING FIXTURES AND REPLACE WITH NEW TYPE 'C'.

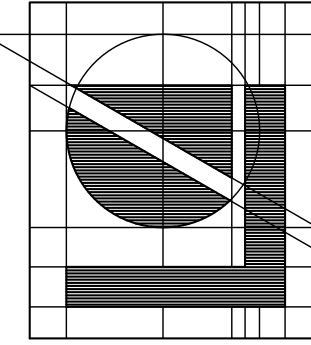


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 E3.1 PARTIAL FIRST FLOOR - LIGHTING NEW WORK PLAN

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



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REVISIONS for:
BRIGHTON AREA SCHOOLS
(B.E.C.C. BLDG.) BRIGHTON, MICHIGAN
PARTIAL ONE-LINE DIAGRAM & SCHEDULES

ISSUED for
BIDS & PERMITS
date: 03/08/2024
D.P. J.E.
dr: u.j.k. app'd: u.j.k.

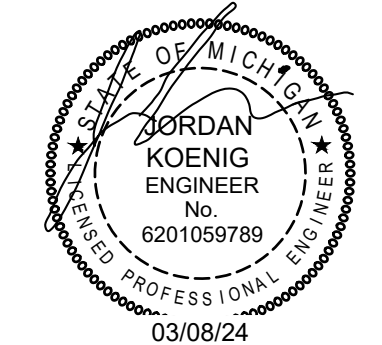
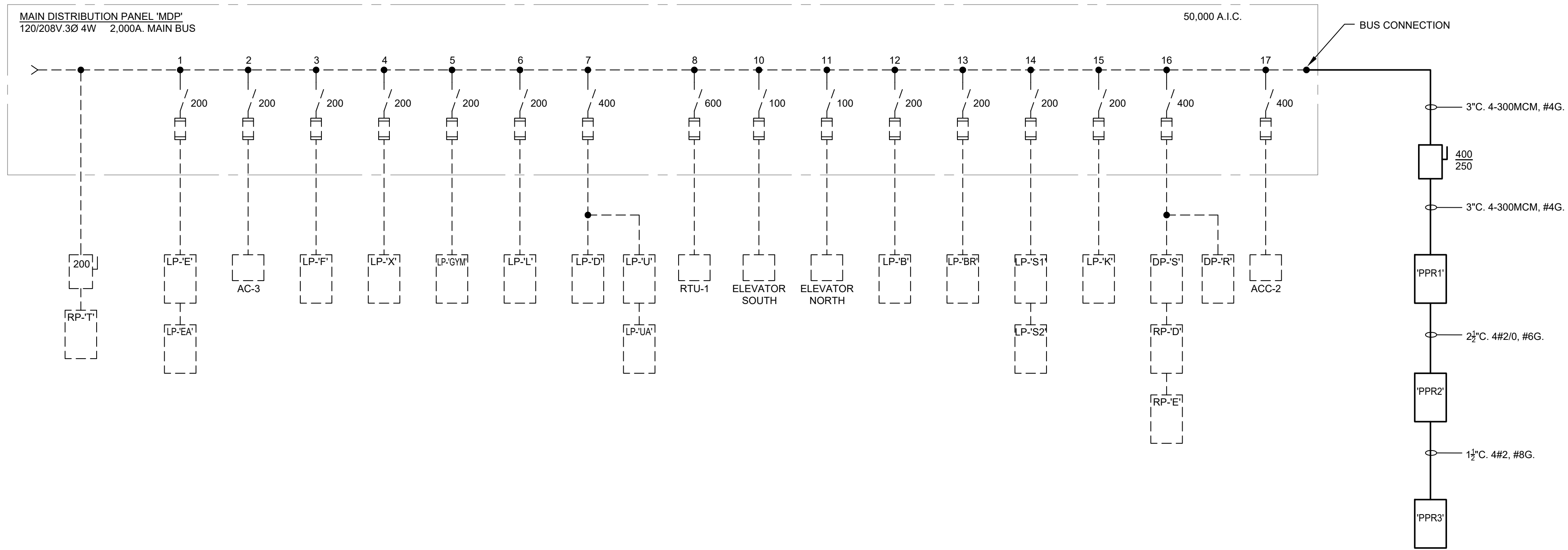
PANEL BOARD MAINS	LOAD - VA			VOLTAGE AND PHASE				SYM. A.I.C. MIN.			MOUNTING SURFACE - NEMA 3R
	A	B	C	BRKR #	CKT #	BRKR #	CTK #	A	B	C	
ACC-U-A107	1465			30	1	2	30	1465			ACC-U-A118
ACC-U-A110		1465		2	3	4	2	1465		1465	ACC-U-A119
ACC-U-A117			1465	30	5	6	30				ACC-U-A120
2 ROOF RECEPTACLES	360			20	13	14	2	1465			ACC-U-A114
EF-2 1/10HP		180		20	15	16	2	1465		1465	ACC-U-B113
2 ROOF RECEPTACLES	360			20	17	18	2	1465			ACC-U-B136
SPARE				20	19	20					
SPARE				20	21	22	30	1465			
SPARE				20	23	24	2			1465	
PANEL 'PPR2'	12800			150	25	26	20	--			SPARE
		12800		27	28	20		--			SPARE
			12800	29	30			--			SPARE
SPACE	--	--	--	31	32			--			SPACE
SPACE	--	--	--	33	34			--			SPACE
SPACE	--	--	--	35	36			--			SPACE
SPACE	--	--	--	37	38			--			SPACE
SPACE	--	--	--	39	40			--			SPACE
SPACE	--	--	--	41	42			--			SPACE
LOAD DESCRIPTION	DEMAND FACTOR D.F.		VOLT-AMPS				LOAD - VA		LOAD SERVED		
			CONNECTED	DEMAND		66,210	TOTAL DEMAND LOAD				
LIGHTING			--	--		735	25% LARGEST MOTOR				
RECEPTACLES	NEC		4,320	4,320		17,000	SPARE				
SMALL MOTORS	1.0		61,890	61,890							
MISC. EQUIPMENT			--	--		83,945	DESIGN LOAD				
			--	--		235	DESIGN AMPS				
TOTAL			66,210	66,210							

PANEL BOARD MAINS	LOAD - VA			VOLTAGE AND PHASE				SYM. A.I.C. MIN.			MOUNTING SURFACE - NEMA 3R
	A	B	C	BRKR #	CKT #	BRKR #	CTK #	A	B	C	
ACC-U-B152	1465			30	1	2	30	1465			ACC-U-B153
ACC-U-B151		1465		2	3	4	2	1465		1465	ACC-U-B141
			1465	30	5	6	30				ACC-U-B154
PANEL 'PPR3'	8465			100	9	10	20	540			3 ROOF RECEPTACLES
		5860		2	11	12	20	180			1 ROOF RECEPTACLES
SPARE	--	--	--	20	15	16	2	1465			
SPARE	--	--	--	20	17	18		--			SPACE
SPARE	--	--	--	19	20			--			SPACE
SPARE	--	--	--	21	22			--			SPACE
SPARE	--	--	--	23	24			--			SPACE
LOAD DESCRIPTION	DEMAND FACTOR D.F.		VOLT-AMPS				LOAD - VA		LOAD SERVED		
			CONNECTED	DEMAND		37,140	TOTAL DEMAND LOAD				
LIGHTING			--	--		735	25% LARGEST MOTOR				
RECEPTACLES	NEC		1,980	1,980		9,600	SPARE				
SMALL MOTORS	1.0		35,160	35,160							
MISC. EQUIPMENT			--	--		47,475	DESIGN LOAD				
			--	--		132	DESIGN AMPS				
TOTAL			37,140	37,140							

PANEL BOARD MAINS	LOAD - VA			VOLTAGE AND PHASE				SYM. A.I.C. MIN.			MOUNTING SURFACE - NEMA 3R
	A	B	C	BRKR #	CKT #	BRKR #	CTK #	A	B	C	
ACC-U-C102	1465			30	1	2	30	1465			ACC-U-C107
ACC-U-C103		1465		2	3	4	2	1465		1465	ACC-U-C108
ACC-U-C104			1465	30	5	6	30				ACC-U-C109
				2	7	8	2	1465		1465	
ACC-U-C105	1465			30	9	10	30	1465			3 ROOF RECEPTACLES
SPACE		1465		2	11	12	2			1465	4 ROOF RECEPTACLES
SPACE	--	--	--	17	18	20		--		--	SPACE
SPACE	--	--	--	19	20	20		--		--	SPACE
SPACE	--	--	--	21	22			--		--	SPACE
SPACE	--	--	--	23	24			--		--	SPACE
LOAD DESCRIPTION	DEMAND FACTOR D.F.		VOLT-AMPS				LOAD - VA		LOAD SERVED		
			CONNECTED	DEMAND		21,770	TOTAL DEMAND LOAD				
LIGHTING			--	--		735	25% LARGEST MOTOR				
RECEPTACLES	NEC		1,260	1,260		8,000	SPARE				
SMALL MOTORS	1.0		20,510	20,510							
MISC. EQUIPMENT			--	--		30,505	DESIGN LOAD				
			--	--		85	DESIGN AMPS				
TOTAL			21,770	21,770							

EXISTING PANELBOARD TO BE RELOCATED

PANEL BOARD MAINS	LOAD - VA			VOLTAGE AND PHASE				SYM. A.I.C. MIN.			MOUNTING SURFACE
	A	B	C	BRKR #	CKT #	BRKR #	CTK #	A	B	C	
RM #7 LTGS	450			20	1	2	20	--			RM #8 LTGS
RM #11 LTGS		450		20	3	4	20	--			RECEPT.#7
HAND DRYER - WOMENS			2000	20	5	6	20	--			SPARE
HAND DRYER - MENS	2000			20	7	8	20	--			RM #8 LTGS
RM #10 LTGS		450		20	9	10	20	--			RECEPT.#12
SPARE				20	11	12	20	--			SPARE
RM #11 LTGS	450			20	13	14	20	--			
RM #6 LTGS		450		20	15	16	20	--			RM #7 LTGS
SPARE				20	17	18	20	--			SPARE
RM #9 LTGS	450			20	19	20	20	--			
RM #13 LTGS		450		20	21	22	20	--			RECEPT.#13
SPARE				20	23	24	20	--			SPARE
CONTACTOR FAN	--	--	--	20	25	26	20	--			
DRYER / AC RECEIVING	--	--	--	20	27	28	20	--			RM #13 LTGS
SPARE				20	29	30	20	--			SPARE
MENS & WOMENS SINK VALVE	50			20	31	32	20	--			RM #12 LTGS
S.O.				33	34	20		--			SPARE
AIR COND				20	35	36	60	--			SNACK SHACK
LAUNDRY	--	--	--	20	37	38	2	--			
WASHER				40	39	40	60	--			SPARE
				2	41	42	2	--			
LOAD DESCRIPTION	DEMAND FACTOR D.F.		VOLT-AMPS				LOAD - VA		LOAD SERVED		
			CONNECTED	DEMAND		--	TOTAL DEMAND LOAD				
LIGHTING			--	--			25% LARGEST MOTOR				
RECEPTACLES	NEC		--	--			SPARE				
SMALL MOTORS	1.0		--	--							
MISC. EQUIPMENT			--	--			DESIGN LOAD				
			--	--			DESIGN AMPS				
TOTAL			--	--							



THIS DRAWING IS DIAGRAMMATIC AND SHOULD BE USED TO DETERMINE THE DESIGN INTENT. THE CONTRACTOR SHALL FIELD VERIFY ALL WORK AND SHALL NOTIFY THE ARCHITECT IMMEDIATELY OF ANY DISCREPANCIES IN THE DOCUMENTS BEFORE PROCEEDING. FAILURE TO DO SO WILL RESULT IN THE CONTRACTOR TAKING FULL RESPONSIBILITY AND LIABILITY FOR SAID DISCREPANCIES. NOTICE: THIS DRAWING AND THE DESIGN ARE THE PROPERTY OF MECHANICAL ELECTRICAL ENGINEERING CONSULTANTS, PC AND NO ALTERATIONS AND/OR TRANSFERS OF WORK ARE PERMITTED UNLESS WRITTEN APPROVAL IS GRANTED BY MECHANICAL ELECTRICAL ENGINEERING CONSULTANTS, PC.

E4.1 PARTIAL ONE-LINE DIAGRAM & SCHEDULES

SCALE: NONE

ELECTRICAL SPECIFICATIONS

1. GENERAL CONDITIONS:

- A. DRAWINGS AND GENERAL PROVISIONS OF CONTRACT, INCLUDING GENERAL AND SUPPLEMENTARY CONDITIONS AND DIVISION 1 SPECIFICATION SECTIONS, APPLY TO WORK OF THIS SECTION. THE ELECTRICAL CONTRACTOR SHALL ASSUME ALL OBLIGATIONS CONTAINED THEREIN THAT AFFECT HIS WORK. THE ELECTRICAL ENGINEER SHALL BE CONSULTED IN CASE OF ANY DISPUTES AND HIS DECISION SHALL BE FINAL.
- B. THE ELECTRICAL CONTRACTOR SHALL EXAMINE THE ARCHITECTURAL, PLUMBING AND MECHANICAL DRAWINGS AND SPECIFICATIONS AND SHALL FAMILIARIZE HIMSELF WITH ALL CONDITIONS OF WORK AFFECTING THE CONTRACT. SIZE AND CAPACITY OF ALL EQUIPMENT SHALL BE AS ON PLANS OR AS INDICATED HEREIN.
- C. FURNISH LABOR AND MATERIALS TO PROVIDE A COMPLETE ELECTRICAL SYSTEM AS REQUIRED BY THE PLANS AND SPECIFICATIONS.
- D. ANY ITEM APPEARING ON THE DRAWINGS AND NOT IN THE SPECIFICATION OR VICE VERSA, AND ANY ITEMS APPEARING IN NEITHER BUT NECESSARY TO ACCOMPLISH THE INTENT OF THESE SPECIFICATIONS, SHALL BE FURNISHED BY THE ELECTRICAL CONTRACTOR.
- E. WHERE EQUIPMENT SPECIFICATIONS OR DESCRIPTIONS INCLUDE A SPECIFIC MANUFACTURER AND CATALOG NUMBER, ANY SUBSTITUTED EQUIPMENT OR EQUIPMENT PROPOSED TO BE PROVIDED BY AN ALTERNATIVE MANUFACTURER SHALL FUNCTIONALLY MEET, OR EXCEED, THE REQUIREMENTS OF THE SPECIFIED EQUIPMENT IN ALL RESPECTS. ALTERNATE MANUFACTURERS SHALL REFER TO PRODUCT LITERATURE PUBLISHED BY THE MANUFACTURER OF THE EQUIPMENT SPECIFIED TO DETERMINE EQUIVALENCY OF THEIR PROPOSED ALTERNATE PRODUCT.

2. SCOPE OF WORK: THIS SPECIFICATION CONTEMPLATES THE PROVISION BY THE ELECTRICAL CONTRACTOR OF ALL LABOR AND MATERIALS REQUIRED TO INSTALL A COMPLETE SYSTEM OF ELECTRICAL WORK AS HEREIN SPECIFIED AND AS SHOWN OF THE DRAWINGS. WITHOUT RESTRICTING THE GENERALITY OF THE FOREGOING, THE FOLLOWING SHALL BE INCLUDED:

- A. NEW POWER AND LIGHTING BRANCH CIRCUIT WIRING, OUTLETS AND CONNECTIONS AS REQUIRED.
- B. NEW POWER AND LIGHTING PANELBOARDS, FEEDERS AND FINAL CONNECTIONS.
- C. GROUNDING OF COMPLETE ELECTRICAL SYSTEM PER ARTICLE 250 OF THE NATIONAL ELECTRICAL CODE, AND SPECIFICATIONS.
- D. EMERGENCY EGRESS AND EXIT LIGHTING SYSTEMS COMPLETE.
- E. BRANCH CIRCUIT WIRING AND FINAL CONNECTIONS TO ALL ITEMS OF OWNER'S EQUIPMENT AND MECHANICAL EQUIPMENT AS REQUIRED.
- F. DISCONNECT SWITCHES WHICH ARE NOT AN INTEGRAL PART OF EQUIPMENT.
- G. AUTOMATIC OCCUPANCY SENSING LIGHTING CONTROL SYSTEM COMPLETE.
- H. LIGHTING FIXTURES COMPLETE WITH LAMPS, HANGERS, SUPPORTS, AUXILIARIES AND REINFORCED CONCRETE FOUNDATIONS.
- I. DEMOLITION OF EXISTING LIGHTING AND POWER SYSTEMS AS INDICATED ON PLANS AND AS REQUIRED.
3. **CHARACTER OF EQUIPMENT:** ALL EQUIPMENT SHALL BE NEW AND SHALL CONFORM IN ALL RESPECTS TO THE LATEST APPROVED STANDARDS OF THE IEEE, ANSI AND THE "UL" LABEL OR LISTING.
4. **CODES AND ORDINANCES:** ALL ELECTRICAL WORK SHALL COMPLY WITH THE 2023 EDITION OF THE NATIONAL ELECTRICAL CODE, MICHIGAN BUILDING CODE, ALL ORDINANCES AND REGULATIONS, AND THE OCCUPATIONAL SAFETY AND HEALTH ACT (OSHA).
5. **PERMITS AND FEES:**
- A. THE ELECTRICAL CONTRACTOR SHALL OBTAIN ALL PERMITS, PAY ALL FEES, INCLUDING ALL COSTS ACCESSED BY THE CITY OF BRIGHTON AND ARRANGE FOR ALL INSPECTIONS FOR HIS WORK.
- B. BEFORE SUBMITTING HIS BID, THE ELECTRICAL CONTRACTOR SHALL DETERMINE FROM THEM ALL OF THEIR REQUIREMENTS AND CHARGES. ALL SUCH REQUIREMENTS AND CHARGES SHALL BE INCLUDED IN THE BASE BID PROPOSAL.
- C. AT THE COMPLETION OF ELECTRICAL WORK, THE ELECTRICAL CONTRACTOR SHALL FURNISH THE OWNER WITH ALL CERTIFICATES OF FINAL INSPECTION AND APPROVALS.

6. MICHIGAN UNIFORM ENERGY CODE COMPLIANCE:

- A. DRAWINGS: WITHIN 30 DAYS AFTER THE DATE OF SYSTEM ACCEPTANCE, THE ELECTRICAL CONTRACTOR SHALL SUBMIT RECORD DRAWINGS OF THE ACTUAL ELECTRICAL INSTALLATION TO THE BUILDING OWNER, INCLUDING:
- A SINGLE LINE DIAGRAM OF THE BUILDING ELECTRICAL DISTRIBUTION SYSTEM AND;
 - FLOOR PLANS INDICATING LOCATION AND AREA SERVED FOR ALL DISTRIBUTION.
- B. MANUALS: AN OPERATING AND MAINTENANCE MANUAL SHALL BE PROVIDED TO THE BUILDING OWNER. THE MANUALS SHALL INCLUDE, AT A MINIMUM, THE FOLLOWING:
- SUBMITTAL DATA STATING EQUIPMENT RATING AND SELECTED OPTIONS FOR EACH PIECE OF EQUIPMENT REQUIRING MAINTENANCE.
 - OPERATION MANUALS AND MAINTENANCE MANUALS FOR EACH PIECE OF EQUIPMENT REQUIRING MAINTENANCE, REQUIRED ROUTINE MAINTENANCE ACTIONS SHALL BE CLEARLY IDENTIFIED.
 - NAMES AND ADDRESS OF AT LEAST ONE QUALIFIED SERVICE AGENCY.
 - A COMPLETE NARRATIVE OF HOW EACH SYSTEM IS INTENDED TO OPERATE.
- C. THE ELECTRICAL CONTRACTOR SHALL DELIVER ALL REQUIRED DRAWINGS AND MANUALS TO THE OWNER BEFORE RECEIVING HIS FINAL PAYMENT.

7. SITE VISIT BY CONTRACTOR:

- A. THE CONTRACTOR SHALL VISIT THE SITE AND VERIFY THE CONDITIONS UNDER WHICH HIS WORK MUST BE CONDUCTED BEFORE SUBMITTING HIS PROPOSAL.
- B. THE SUBMITTING OF A PROPOSAL IMPLIES THAT THE CONTRACTOR HAS VISITED THE SITE, IS CONVERSANT WITH ALL SITE CONDITIONS, INCLUDING EXISTING SERVICES AND EQUIPMENT, OBSTRUCTIONS AND ALL CONDITIONS, WHICH WILL BE ENCOUNTERED IN THE REMOVAL AND/OR RELOCATION OF PRESENT MATERIALS AND EQUIPMENT, INSTALLATION OF NEW MATERIALS AND CUTTING AND PATCHING, ETC., FOR A COMPLETE ELECTRICAL INSTALLATION.
- C. IF ANY INTERFERENCES OR VIOLATIONS APPEAR AND DEPARTURE FROM THE DESIGN INTENT OF THE BID DOCUMENTS IS REQUIRED, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT PRIOR TO ENTERING INTO CONTRACT WITH THE OWNER. FAILURE TO PROVIDE THE ARCHITECT WITH THE FOREMENTIONED NOTIFICATION WILL RESULT IN THE CONTRACTOR BEING HELD RESPONSIBLE TO COMPLETE ALL WORK TO MEET THE DESIGN INTENT OF THE BID DOCUMENTS WITH NO ADDITIONAL EXPENSES ("EXTRAS") BEING INCURRED BY THE OWNER, ARCHITECT, OR ENGINEER.

8. COOPERATION WITH OTHER CONTRACTORS:

- A. ELECTRICAL CONTRACTOR SHALL ARRANGE ALL PARTS OF HIS WORK IN PROPER RELATION TO THE WORK OF OTHERS AND TO THE ARCHITECTURAL FINISH. WHERE INTERFERENCES OCCUR, THE ELECTRICAL CONTRACTOR SHALL, BEFORE INSTALLING THE WORK INVOLVED, CONSULT WITH THE ARCHITECT AS TO THE EXACT LOCATION AND LEVEL OF HIS WORK. THE ARCHITECT'S DECISION SHALL BE FINAL.
- B. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE ARRANGEMENT OF HIS WORK AND EQUIPMENT AND SHALL MAINTAIN PROPER HEADROOM UNDER HIS WORK. SHOULD WORK INSTALLED BY HIM REQUIRE MODIFICATION TO AVOID INTERFERENCE WITH OTHER WORK, AS DETERMINED BY THE ARCHITECT, SUCH CHANGES SHALL BE MADE WITHOUT ADDITIONAL COST.

9. STANDARDS OF MATERIAL AND WORKMANSHIP:

- A. ALL WORK SHALL BE DONE AT SUCH TIMES AND IN SUCH A MANNER AS WILL LEAST INTERFERE WITH THE MAINTENANCE AND OPERATION OF ALL RELATED OR AFFECTED SYSTEMS.

B. ALL MATERIALS AND EQUIPMENT SHALL BEAR THE LABEL OF APPROVAL OF THE NATIONAL BOARD OF FIRE UNDERWRITER'S LABORATORIES.

C. THE ELECTRICAL CONTRACTOR SHALL EFFECTIVELY PROTECT, AT HIS OWN EXPENSE, SUCH OF HIS WORK, MATERIALS OR EQUIPMENT AS IS LIABLE TO INJURY DURING THE CONSTRUCTION PERIOD.

D. ALL OPENINGS INTO ANY PART OF THE CONDUIT SYSTEM AS WELL AS ASSOCIATED FIXTURES, EQUIPMENT, ETC., BOTH BEFORE AND AFTER BEING SET IN PLACE, MUST BE SECURELY COVERED OR OTHERWISE PROTECTED TO PREVENT OBSTRUCTION OF THE CONDUIT, OR INJURY DUE TO CARELESSNESS OR MALICIOUSLY DROPPED TOOLS OR MATERIALS, GRIT, DIRT OR ANY FOREIGN MATTER. THE ELECTRICAL CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ALL DAMAGE SO DONE UNTIL HIS WORK IS FULLY AND FINALLY ACCEPTED. CONDUIT ENDS SHALL BE COVERED WITH CAPPED BUSHINGS. ALL ELECTRICAL EQUIPMENT SHALL BE GROUNDED.

E. IT IS NOT INTENDED THAT THE DRAWINGS OR THIS SPECIFICATION INDICATE OR SPECIFY EACH PIECE OF CONDUIT, FITTINGS, ETC., REQUIRED FOR THE INSTALLATION, WHERE ITEMS ARE REQUIRED FOR THE SATISFACTORY OPERATION OF THE INSTALLATION AND ARE NOT INDICATED ON THE DRAWINGS, THEY SHALL BE CONSIDERED TO BE BOTH SPECIFIED AND INDICATED.

F. GENERAL REQUIREMENTS AND DETAILS OF EQUIPMENT ARE SHOWN. DIMENSIONS OR SCALES SHOWN ARE APPROXIMATE AND MUST BE CHECKED AT JOB PRIOR TO INSTALLATION OF EQUIPMENT OR ANY ORDER GIVEN FOR FABRICATION.

G. ELECTRICAL CONTRACTORS SHALL HAVE COMPETENT FOREMAN ON THE PREMISES AT ALL TIMES TO SUPERINTEND AND CHECK AND LAY OUT ALL WORK. GIVE INFORMATION TO GENERAL CONTRACTOR REGARDING CHASES AND OPENINGS, AND BE RESPONSIBLE FOR SUCH LOCATIONS. THIS CONTRACTOR SHALL COOPERATE WITH OTHER CONTRACTORS WHERE CHASES, OPENINGS, PIPES, FOUNDATIONS, ETC., ARE IN PROXIMITY TO THE WORK OF OTHER TRADES AND ARRANGE THE WORK TO FIT. THIS CONTRACTOR SHALL STUDY WHERE OTHER TRADES LEAVE CONNECTIONS AND OUTLETS TO BE CONNECTED, SO THAT ALL WORK AND APPLIANCES SHALL BE PROPERLY ARRANGED FOR AND CONNECTED READY FOR USE.

10. SUBSTITUTIONS

- A. ALTERNATE MANUFACTURER'S ELECTRICAL EQUIPMENT SHALL BE SIMILAR IN PERFORMANCE, PHYSICAL APPEARANCE AND CONSTRUCTION TO BE CONSIDERED AS EQUAL TO EQUIPMENT SPECIFIED.
- B. ALTERNATE MANUFACTURER'S ELECTRICAL EQUIPMENT PROPOSED TO BE SUBSTITUTED BY BIDDING CONTRACTOR MUST BE PRE-APPROVED DURING BIDDING. CONTRACTOR, OR EQUIPMENT REPRESENTATIVE SHALL FAX ALL SUCH REQUESTS WITH EQUIPMENT CUTS TO ENGINEER AT LEAST ONE WEEK PRIOR TO SUBMITTING BIDS. ENGINEER WILL REVIEW THE PROPOSED ALTERNATE EQUIPMENT AND ISSUE A WRITTEN ACCEPTANCE OR DENIAL BY RETURN FAX. VERBAL APPROVAL WILL NOT BE ACCEPTABLE.
- C. ALL EQUIPMENT SHOP DRAWINGS, FIXTURE CUTS, ETC., SUBMITTED AFTER AWARD OF CONTRACT FOR ELECTRICAL EQUIPMENT WHICH WAS NOT PRE-APPROVED WILL BE REJECTED.
- D. IN THE EVENT SUBSTITUTIONS ARE PROPOSED TO THE ENGINEER AFTER THE CONTRACT HAS BEEN AWARDED, THE ENGINEER WILL RECORD ALL TIME USED BY HIM IN EVALUATION OF EACH PROPOSED SUBSTITUTION.
- E. WHETHER OR NOT THE ENGINEER APPROVES THE PROPOSED SUBSTITUTION, THE CONTRACTOR AGREES TO PROMPTLY UPON RECEIPT OF THE ENGINEER'S BILLING, REIMBURSE THE ENGINEER AT THE RATE OF TWO AND THREE-QUARTER TIMES THE DIRECT COST TO THE ENGINEER FOR ALL TIME SPENT BY HIM IN THE EVALUATION OF THE PROPOSED SUBSTITUTION.

11. **CUTTING AND PATCHING:** CUTTING AND PATCHING OF WALLS, FLOORS, CEILINGS, ROOFS, ETC., SHALL BE DONE BY ARCHITECTURAL TRADES CONTRACTOR BUT PAID FOR BY THE ELECTRICAL CONTRACTOR. STRUCTURAL MEMBERS SHALL NOT BE CUT WITHOUT OBTAINING WRITTEN PERMISSION FROM THE ARCHITECT. CONDUITS PASSING THROUGH ROOFS OR OUTSIDE WALLS EXPOSED TO WEATHER SHALL BE CAREFULLY FLASHED. FIRE-PROOFING OF HOLES SHALL BE PROVIDED AND SHALL BE OF A UL LISTED MATERIAL AND APPROVED BY AUTHORITY HAVING JURISDICTION.

12. INSPECTION, TESTING AND START-UP

- A. THE INTENT OF THE INSPECTION, TESTING, AND CHECK-OUT WORK SPECIFIED HEREIN, OR REQUIRED, IS TO ENSURE THAT ALL ELECTRICAL WORKMANSHIP AND EQUIPMENT, WHETHER OWNER FURNISHED OR CONTRACTOR FURNISHED, IS INSTALLED AND PERFORMS IN ACCORDANCE WITH THE DESIGN SPECIFICATIONS, DRAWINGS, MANUFACTURER'S INSTRUCTIONS AND ALL APPLICABLE CODES AND REQUIREMENTS. ALSO, IT IS INTENDED TO PROVIDE, INSURE, OR TO DETERMINE THE FOLLOWING:
- IF THE EQUIPMENT OR INSTALLATION HAS BEEN SUBJECTED TO DAMAGE DURING SHIPMENT OR INSTALLATION.
 - IF THE EQUIPMENT IS IN ACCORDANCE WITH THE PURCHASE ORDERS AND SPECIFICATIONS.
 - PROVIDE INITIAL ACCEPTANCE TESTS AND RECORDED DATA THAT CAN BE USED AS A BENCH MARK FOR FUTURE ROUTINE MAINTENANCE AND TROUBLE SHOOTING BY OWNER'S MAINTENANCE FORCES.
 - INSURE A SUCCESSFUL START-UP WITH A MINIMUM OF LAST-MINUTE INTERRUPTIONS AND PROBLEMS.
 - DETERMINE THE SUITABILITY OF THE EQUIPMENT AND SYSTEMS FOR ENERGIZATION AND PLACING INTO OPERATING SERVICE.
 - PROVIDE ASSURANCE THAT EACH SYSTEM COMPONENT IS NOT ONLY INSTALLED SATISFACTORILY BUT PERFORMS, AND WILL CONTINUE TO PERFORM, ITS FUNCTION IN THE SYSTEM WITH REASONABLE RELIABILITY THROUGHOUT THE LIFE OF THE PROJECT.
- B. CONTRACTOR RESPONSIBILITY: THE CONTRACTOR SHALL PROVIDE ALL NECESSARY LABOR, MATERIALS, TOOLS, TEST INSTRUMENTS OR OTHER EQUIPMENT OR SERVICE AND EXPENSES REQUIRED TO INSPECT, TEST, ADJUST, SET, CALIBRATE, FUNCTIONALLY AND OPERATIONALLY CHECK ALL WORK AND COMPONENTS OF THE VARIOUS ELECTRICAL SYSTEMS AND CIRCUITRY.

13. CODES, PERMITS AND FEES

- A. OBTAIN AND PAY FOR ALL PERMITS, LICENSES, INSPECTIONS, APPROVALS AND FEES REQUIRED AND ENSURE THAT THE ENTIRE ELECTRICAL INSTALLATION CONFORMS TO CODES AND REGULATIONS REQUIRED BY AUTHORITY OR AGENCY HAVING JURISDICTION OVER THE ENTIRE INSTALLATION OR CONSTRUCTION OF WORK INCLUDED. ALL FEES SHALL BE INCLUDED IN THE BASE PROPOSAL.
- B. THE ELECTRICAL CONTRACTOR SHALL, AT HIS EXPENSE, HAVE AN INSPECTION MADE BY THE LOCAL ELECTRICAL INSPECTION DEPARTMENT OF THE COMPLETE ELECTRICAL INSTALLATION AND SHALL DELIVER CERTIFICATE OF APPROVAL OF THE COMPLETE WORK TO THE OWNER BEFORE RECEIVING HIS FINAL PAYMENT.
- C. WHENEVER THE REQUIREMENTS OF THESE SPECIFICATIONS AND DRAWINGS EXCEED THE REQUIREMENTS OF GOVERNING CODES, LAWS, REGULATIONS AND ORDINANCES, THESE SPECIFICATIONS AND DRAWINGS SHALL GOVERN.
- D. SHOULD ANY CHANGE IN THE DRAWINGS AND SPECIFICATIONS BE REQUIRED TO CONFORM TO THESE CODES, ORDINANCES, LAWS AND REGULATIONS, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT IMMEDIATELY AT TIME OF SUBMITTING PROPOSAL. AFTER ENTERING INTO A CONTRACT, CONTRACTOR SHALL COMPLETE ALL WORK NECESSARY TO MEET CODE, LAWS, REGULATIONS AND ORDINANCE REQUIREMENTS WITHOUT EXTRA EXPENSE TO THE OWNER.

14. **FLASHING:** WHERE THE WORK INCLUDED REQUIRES CONDUIT TO PASS THROUGH THE ROOF OR ANY OTHER BUILDING ELEMENT REQUIRING WATERPROOFING, THE CONDUIT SHALL BE FLASHED UNDER THE SPECIFICATION SECTION CONCERNED, AND THE JOINT MADE WATERPROOF IN FULL CONFORMANCE WITH WATERPROOFING WARRANTY REQUIREMENTS.

15. SUPPORTING DEVICES

- A. CODES AND STANDARDS
- METHODS OF INSTALLATION SHALL COMPLY WITH THE PROVISIONS OF APPLICABLE SECTIONS OF THE LATEST EDITIONS OF THE NATIONAL ELECTRICAL CODE, THE STATE OF MICHIGAN BUILDING CODE, THE STATE OF MICHIGAN ELECTRICAL CODE, THE INTERNATIONAL BUILDING CODE, AND THE ICC ELECTRICAL CODE, AS APPLICABLE TO CONSTRUCTION AND INSTALLATION OF ELECTRICAL SUPPORTING DEVICES.

2) COMPLIANCE: COMPLY WITH APPLICABLE MSS STANDARD REQUIREMENTS, NATIONAL ELECTRICAL CONTRACTORS ASSOCIATION'S "STANDARD OF INSTALLATION", UL, AND FEDERAL SPECIFICATION FF-S-760.

B. PROVIDE SUPPORTING DEVICES WHICH COMPLY WITH MANUFACTURER'S STANDARD MATERIALS, DESIGN AND CONSTRUCTION IN ACCORDANCE WITH PUBLISHED PRODUCT INFORMATION, AND AS REQUIRED FOR COMPLETE.

C. CONDUITS RUN AT ROOM SHALL BE SUPPORTED ON EATON DURA-BLOCKOR ARLINGTON TYPE RTSE405 CONDUIT SUPPORTS. MAXIMUM SPACING BETWEEN SUPPORTS SHALL BE 10' O.C.

16. **OBSTRUCTIONS:** SHOULD ANY STRUCTURAL DIFFICULTIES PREVENT SETTING OF CABINETS, RUNNING CONDUCTORS, ETC., AT POINTS SHOWN ON PLANS, THE NECESSARY MINOR DEVIATIONS THEREFROM, AS DETERMINED BY THE ARCHITECT, MAY BE PERMITTED AND MUST BE MADE WITHOUT ADDITIONAL COST.

17. **ANY ITEM APPEARING** ON THE DRAWINGS AND NOT IN THE SPECIFICATION OR VICE VERSA, AND ANY ITEMS APPEARING IN NEITHER BUT NECESSARY TO ACCOMPLISH THE INTENT OF THESE SPECIFICATIONS, SHALL BE FURNISHED BY THE ELECTRICAL CONTRACTOR.

18. PANELBOARDS

PANELBOARDS SHALL BE DEAD FRONT TYPE WITH 3 WIRE MAINS AND BRANCHES OF THE CIRCUIT BREAKER TYPE PROVIDING THERMAL AND MAGNETIC TRIPPING. CIRCUIT BREAKERS SHALL BE THE MOLDED CASE QUICK-MAKE TYPE AND SHALL BE PROVIDED WITH BRANCHES AS SCHEDULED ON THE DRAWINGS.

A. ALL BREAKERS SHALL BE "BOLT-ON" TYPE. HANDLE TIES SHALL NOT BE PERMITTED.

B. CIRCUIT BREAKERS SHALL BE EATON CUTLER-HAMMER SERIES GB FOR 240/120 VOLT.

C. INTERRUPTING RATING:

- PANELBOARDS SHALL HAVE FULLY RATED INTERRUPTING RATINGS. PANELBOARDS SHALL BE LABELED WITH THE UL SHORT-CIRCUIT RATING.
 - INTERRUPTING CAPACITY FOR 240/120 VOLT PANELBOARD AND BREAKERS SHALL BE NOT LESS THAN THE FAULT CURRENT INDICATED ON THE DRAWINGS AND A MINIMUM OF 10,000 AMPERES AT 240 VOLT.
- D. ALL BUS - BAR SHALL BE ALUMINUM.

E. SURGE PROTECTIVE DEVICES:

- PROVIDE INTEGRAL SURGE PROTECTIVE DEVICES (SPD) IN ALL PANELBOARDS, UNLESS NOTED OTHERWISE.
- LIGHTING AND RECEPTACLE CIRCUIT BREAKER PANELBOARDS SHALL INCLUDE A CATEGORY A, 20 KA PER PHASE, 60 KA PER MODE SURGE PROTECTIVE DEVICE.
- SURGE PROTECTIVE DEVICES SHALL BE EQUAL TO EATON CUTLER-HAMMER SPD SERIES.

F. ENCLOSURES FOR PANELBOARDS MOUNTED AT EXTERIOR LOCATIONS SHALL BE NEMA 3R RAINPROOF.

F. PANELBOARDS SHALL BE CUTLER-HAMMER TYPE POW-R-LINE 3A OR EQUAL BY, SCHNEIDER ELECTRIC COMPANY, OR SIEMENS ENERGY AND AUTOMATION.

19. CONDUCTORS:

- A. ALL CONDUCTORS SHALL BE COPPER AND SHALL BE INSTALLED IN CONDUIT UNLESS OTHERWISE NOTED.
- B. ALL FEEDERS AND BRANCH CIRCUIT CONDUCTORS SHALL BE MINIMUM SIZE #12 A.W.G., 75 DEG. C. INSULATED, TYPE "XHWW", "THW" OR "THWN" INSULATED.
- C. NO WIRING SMALLER THAN NO. 12 A.W.G. SHALL BE USED UNLESS OTHERWISE NOTED, AND ALL WIRE NO. 10 A.W.G. AND LARGER SHALL BE STRANDED, UNLESS OTHERWISE SPECIFIED.
- D. CONDUCTORS RUN IN CONDUIT EXPOSED TO SUNLIGHT SHALL BE DERATED PER 2023 NEC 310.15(B)(2).
- E. CONDUCTORS SHALL BE COLOR CODED PER THE NATIONAL ELECTRICAL CODE.

20. BRANCH CIRCUIT WIRING:

- A. HOME RUNS TO ELECTRICAL PANELS 75 FEET IN LENGTH OR OVER SHALL BE NOT LESS THAN NO. #10 A.W.G., OR LARGER, AS NECESSARY, TO MAINTAIN A MAXIMUM VOLTAGE DROP OF 3 PERCENT, WHETHER OR NOT SHOWN ON THE DRAWINGS.
- B. BRANCH CIRCUITS MAY BE GROUPED CONSISTING OF ONE NEUTRAL FOR EACH THREE CIRCUITS. THREE HOT WIRES OF EACH FOUR WIRE CIRCUIT SHALL BE DISTRIBUTED ACROSS THE THREE PHASE BUSES IN THE LIGHTING PANEL AND THE WHITE (NEUTRAL) WIRE CONNECTED TO THE NEUTRAL BUS.
- C. MULTI-WIRE BRANCH CIRCUITS SHALL BE PROVIDED WITH THE MEANS TO SIMULTANEOUSLY DISCONNECT ALL UN-GROUNDED CONDUCTORS AT THE POINT WHERE THE BRANCH CIRCUIT ORIGINATES. REFER TO NEC 2023, SECTION 210.4(B). THIS APPLIES TO ALL MULTI-WIRE BRANCH CIRCUIT SUPPLYING ANY LOAD.
- D. PHASING FOR ALL FEEDER AND BRANCH CIRCUIT WIRING SHALL BE COLOR CODED.
- E. MULTI-WIRE BRANCH CIRCUITS SHALL BE PROVIDED WITH THE MEANS TO SIMULTANEOUSLY DISCONNECT ALL UNGROUNDED CONDUCTORS AT THE POINT WHERE THE BRANCH CIRCUIT ORIGINATES. THIS APPLIES TO ALL MULTI-WIRE BRANCH CIRCUITS SUPPLYING ANY LOAD. REFER TO 2023 NEC 210.4(B).

21. CONDUITS:

- A. ALL CONDUITS SHALL BE RUN CONCEALED IN FINISHED AREAS UNLESS OTHERWISE NOTED. EXPOSING OF ANY CONDUIT IN UN-FINISHED AREAS SHALL BE ONLY DONE WITH THE WRITTEN APPROVAL OF THE ARCHITECT.
- B. ALL CONDUIT SHALL BE ½" MINIMUM SIZE UNLESS OTHERWISE NOTED.
- C. ALL UNDERFLOOR CONDUITS MAY BE SCHEDULE 40 PVC OR HEAVY WALL GALVANIZED RIGID STEEL CONDUIT. CONDUIT SWEETS AND ELBOWS AND ALL CONDUIT WHERE EXPOSED BELOW 8'-0" A.F.F. SHALL BE HEAVY WALL GALVANIZED RIGID STEEL CONDUIT. CONDUITS INSTALLED IN WALLS AND ABOVE CEILINGS SHALL BE THINWALL GALVANIZED ELECTRICAL METALLIC TUBING (EMT).
- D. ALL CONDUITS INSTALLED AT EXTERIOR LOCATIONS BELOW GRADE SHALL BE SCHEDULE 40 PVC.
- E. A GROUNDING CONDUCTOR SIZED PER ARTICLE 250 OF THE N.E.C. SHALL BE INCLUDED WITH ALL CIRCUIT CONDUCTORS.

22. **FUSES:** FUSES 0 TO 600 AMPERE SHALL BE CURRENT LIMITING DUAL-ELEMENT TYPE, WITH SEPARATE

23. OUTLET BOXES

- A. OUTLETS BOXES SHALL BE ZINC-COATED AND SHALL BE OF THE SIZE AND TYPE TO ACCOMMODATE:
- STRUCTURAL CONDITIONS
 - SIZE AND NUMBER OF CONDUCTORS AND CONDUIT ENTERING
 - DEVICES OR FIXTURES FOR WHICH REQUIRED.
 - OUTLET BOXES SHALL BE FIRMLY ANCHORED IN PLACE AND SHALL BE PROVIDED WITH APPROVED FIXTURE SUPPORTS. OUTLET BOXES FOR SWITCHES, CONVENIENCE OUTLETS, ETC., SHALL BE SET FLUSH WITH FINISHED WALLS.

5) OUTLET BOXES SHALL BE NOT LESS THAN 1-1/2 INCHES DEEP UNLESS SHALLOWER BOXES ARE REQUIRED BY STRUCTURAL CONDITIONS. CEILING AND BRACKET BOXES SHALL BE NOT LESS THAN 4 INCH OCTAGONAL EXCEPT THAT SMALLER BOXES MAY BE USED WHERE REQUIRED BY THE PARTICULAR FIXTURE INSTALLED. FLUSH OR RECESSED FIXTURES SHALL BE PROVIDED WITH SEPARATE JUNCTION BOXES WHEN REQUIRED BY THE FIXTURE TERMINAL REQUIREMENTS. SWITCH AND RECEPTACLE BOXES SHALL BE APPROXIMATELY 4 INCHES. TELEPHONE OUTLET BOXES SHALL BE 4 INCHES SQUARE.

24. WIRING DEVICES

A. SWITCHES

- SNAP: PROVIDE GENERAL-DUTY FLUSH SINGLE-POLE TOGGLE SWITCHES, 20 AMPERES, 120/277 VOLTS AC, WITH MOUNTING YOKE INSULATED FROM MECHANISM, EQUIP WITH PLASTER EARS, SWITCH HANDLES, AND SIDE-WIRED SCREW TERMINALS.
- THREE-WAY: PROVIDE GENERAL-DUTY DUPLEX FLUSH 3-WAY AC SWITCHES, 20 AMPERES, 120/277 VOLTS, WITH MOUNTING YOKE INSULATED FROM MECHANISM, EQUIP WITH PLASTER EARS, LOCK TYPE SWITCH HANDLES, AND SIDE-WIRED SCREW TERMINALS, WITH BREAK-OFF TAB FEATURES, WHICH PERMITS WIRING FOR SEPARATE OR COMMON FEED.
- COLOR TO BE AS SELECTED BY ARCHITECT.

B. RECEPTACLES

- GENERAL-DUTY DUPLEX: PROVIDE, DUPLEX SPECIFICATION GRADE RECEPTACLES, 2-POLE, 3-WIRE, GROUNDING, WITH GREEN HEXAGONAL EQUIPMENT GROUND SCREW, GROUND TERMINALS AND POLES INTRINSICALLY CONNECTED TO MOUNTING YOKE, 20-AMPERES, 125-VOLTS, WITH METAL PLASTER EARS; DESIGN FOR SIDE AND BACK WIRING WITH NEMA CONFIGURATION 5-20R, BROWN COLOR, UNLESS OTHERWISE INDICATED.
- C. GROUND-FAULT INTERRUPTER RECEPTACLES:

1) PROVIDE "FEED-THRU" TYPE GROUND-FAULT CIRCUIT INTERRUPTERS, WITH HEAVY-DUTY DUPLEX RECEPTACLES, CAPABLE OF PROTECTING CONNECTED DOWSTREAM RECEPTACLES ON SINGLE CIRCUIT, AND OF BEING INSTALLED IN A 2-3/4" DEEP OUTLET BOX WITHOUT ADAPTER, GROUNDING TYPE UL-RATED CLASS A, GROUP 1, RATED 20-AMPERES, 120-VOLTS, 60 HZ, WITH SOLID-STATE GROUND-FAULT SENSING AND SIGNALING; WITH 5 MILLI-AMPERES GROUND-FAULT TRIP LEVEL; EQUIP WITH NEMA CONFIGURATION 5-20R.

D. BLANK FACE GROUND FAULT CIRCUIT INTERRUPTER, SHALL BE SPECIFICATION GRADE, FEED-THRU TYPE CAPABLE OF PROTECTING CONNECTED DOWSTREAM RECEPTACLES ON SINGLE CIRCUIT, WITH SELF-TEST FEATURE. RATED 20-AMPERES, 120-VOLTS, 60HZ. UL RATED CLASS A, TRIP LEVEL OF 5 MILLI-AMPERES GROUND-FAULT.

E. ALL RECEPTACLES SHALL BE LABELED WITH THE PANELBOARD AND THE CIRCUIT SUPPLYING THEM WITH A Dymo LABEL MOUNTED ON THE INSIDE APPLIED TO THE COVER PLATE FOR WALL RECEPTACLES AND DIRECTLY BELOW RECEPTACLES MOUNTED IN SURFACE METAL RACEWAY.

25. WEATHERPROOF BOXES AND COVERS

A. WIRING DEVICES INSTALLED AT EXTERIOR LOCATIONS SHALL BE INSTALLED IN A SINGLE GANG, DEEP WEATHERPROOF BOX WITH WHILE-IN-USE COVER PER 2023 NEC SECTION 408.9(B)(1).

1) BOXES AND COVERS SHALL BE CONSTRUCTED OF POLYCARBONATE AND SHALL BE FULLY GASKETED. THE TRANSLUCENT COVER SHALL INCLUDE A PAD-LOCKABLE, BREAK-RESISTANT BULLNOSE AND LATCH. PASS & SEYMOUR #WUIC10-DC OR EQUAL.

C. THE SIZE OF PULL BOX SHALL BE DETERMINED BY THE SIZE AND AMOUNT OF CONDUCTORS, AS WELL AS THE QUANTITY AND DIAMETER OF RACEWAYS. PULL BOXES AND JUNCTION BOXES FOR CONDUCTORS 4 AWG AND GREATER SHALL BE SIZED IN COMPLIANCE WITH 2023 NEC ARTICLE 314.28.

- COVERS SHALL BE FULLY GASKETED TO PREVENT INGRESS OF MOISTURE.
- COVERS SHALL BE BOLTED TO THE PULL BOX.

26. DEVICE PLATES

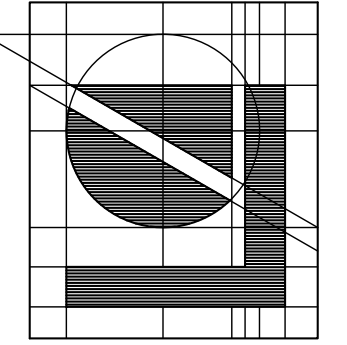
- A. DEVICE PLATES SHALL BE THERMOPLASTIC TYPE, FINISH AS SELECTED BY THE ARCHITECT OR OWNER.
- B. PROVIDE DEVICE PLATES FOR ALL SWITCHES, RECEPTACLES, OTHER PLATES, AND BLANK PLATES FOR UNUSED OUTLETS.

27. OCCUPANCY SENSOR LIGHTING CONTROL EQUIPMENT

- A. SCOPE OF WORK:
- CONTRACTOR SHALL INCLUDE ALL LABOR, MATERIALS, TOOLS, APPLIANCES, CONTROL HARDWARE, SENSOR, WIRE, JUNCTION BOXES AND EQUIPMENT NECESSARY FOR AND INCIDENTAL TO THE DELIVERY, INSTALLATION AND FURNISHING OF A COMPLETELY OPERATIONAL OCCUPANCY SENSOR LIGHTING CONTROL SYSTEM, AS DESCRIBED HEREIN.
 - CONTRACTOR SHALL COORDINATE ALL WORK DESCRIBED IN THIS SECTION WITH ALL OTHER APPLICABLE PLANS AND SPECIFICATIONS, INCLUDING BUT NOT LIMITED TO WIRING, CONDUIT, FIXTURES, HVAC SYSTEMS AND BUILDING MANAGEMENT SYSTEMS.
- B. ALL COMPONENTS SHALL BE UL LISTED, OFFER A FIVE (5) YEAR WARRANTY AND MEET ALL STATE AND LOCAL APPLICABLE CODE REQUIREMENTS.
- C. SUBMIT A LIGHTING PLAN, PRIOR TO INSTALLATION, CLEARLY MARKED BY MANUFACTURER SHOWING PROPER PRODUCT, LOCATION AND ORIENTATION OF EACH SENSOR.
- D. CONTRACTOR SHALL VERIFY AND MAKE ALL PROPER ADJUSTMENTS TO ASSURE OWNER'S SATISFACTION WITH THE OCCUPANCY SYSTEM. CONTRACTOR SHALL TRAIN OWNER'S PERSONNEL TO ENSURE OWNER'S SATISFACTION WITH THE OCCUPANCY SYSTEM.
- E. PRODUCTS:

- ALL EQUIPMENT INDICATED ON PLANS ARE BASED ON PRODUCTS MANUFACTURED BY SENSORSWITCH, LEVITON, LUTRON OR WATT STOPPER.
- ALTERNATE MANUFACTURERS EQUIPMENT WILL BE CONSIDERED FOR USE ON THIS PROJECT. HOWEVER, ALL EQUIPMENT PROPOSED AS EQUAL TO THAT SPECIFIED SHALL BE SIMILAR IN APPEARANCE, AND OPERATIONAL CHARACTERISTICS SHALL BE EQUAL TO OR BETTER THAN EQUIPMENT INDICATED ON PLANS. ALTERNATE MANUFACTURERS SHALL REFER TO PRODUCT LITERATURE PUBLISHED BY WATT STOPPER TO DETERMINE EQUIVALENCY OF THEIR ALTERNATE PROPOSED PRODUCT TO THAT SPECIFIED.
- CIRCUIT CONTROL HARDWARE:

THIS DRAWING IS DIAGRAMMATIC AND SHOULD BE USED TO DETERMINE THE DESIGN INTENT. THE CONTRACTOR SHALL FIELD VERIFY ALL WORK AND SHALL NOTIFY THE ARCHITECT IMMEDIATELY OF ANY DISCREPANCIES IN THE DOCUMENTS BEFORE PROCEEDING. FAILURE TO DO SO WILL RESULT IN THE CONTRACTOR TAKING FULL RESPONSIBILITY AND LIABILITY FOR SAID DISCREPANCIES. NOTICE: THIS DRAWING AND THE DESIGN ARE THE PROPERTY OF MECHANICAL ELECTRICAL ENGINEERING CONSULTANTS, P.C. AND NO ALTERATIONS AND/OR TRANSFERS OF WORK ARE PERMITTED UNLESS WRITTEN APPROVAL IS GRANTED BY MECHANICAL ELECTRICAL ENGINEERING CONSULTANTS, P.C.



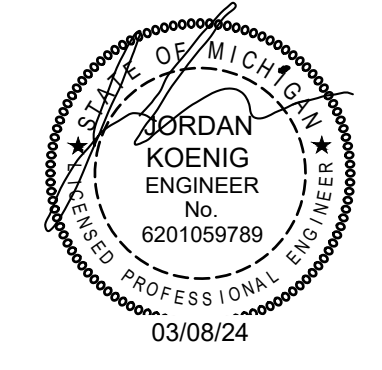
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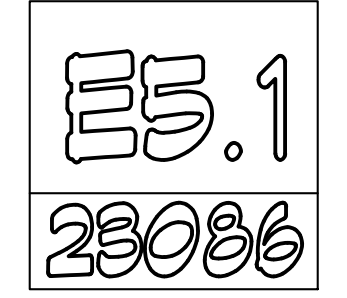
dr: D.P.
ckt: J.E.
app'd: J.K.
03/08/2024
date

RENOVATIONS for:
BRIGHTON AREA SCHOOLS
(B.E.C.C. BLDG.) BRIGHTON, MICHIGAN
ELECTRICAL SPECIFICATIONS



ELECTRICAL SPECIFICATIONS

SCALE: NONE



A. CONTROL UNITS - FOR EASE OF MOUNTING, INSTALLATION AND FUTURE SERVICE, CONTROL UNIT(S) SHALL BE ABLE TO EXTERNALLY MOUNT THROUGH A " KNOCK-OUT ON A STANDARD ELECTRICAL ENCLOSURE AND BE AN INTEGRATED, SELF-CONTAINED UNIT CONSISTING INTERNALLY OF AN ISOLATED LOAD SWITCHING CONTROL RELAY AND A TRANSFORMER TO PROVIDE LOW-VOLTAGE POWER. CONTROL UNIT SHALL PROVIDE POWER TO A MINIMUM OF TWO (2) SENSORS.

B. RELAY CONTACTS SHALL HAVE RATINGS OF:

- 1) 13A - 120 VAC TUNGSTEN
2) 20A - 120 VAC BALLAST
3) 20A - 277 VAC BALLAST
4) CONTROL WIRING:

A. CONTROL WIRING BETWEEN SENSORS AND CONTROLS UNITS SHALL BE CLASS II , 18-24 AWG, STRANDED U.L. CLASSIFIED, PVC INSULATED OR TEFLON JACKETED CABLE SUITABLE FOR USE IN PLENUMS, WHERE APPLICABLE.

B. MINIMUM ACCEPTABLE WIRE GAUGE FROM THE CIRCUIT CONTROL HARDWARE RELAYS SHALL BE #14 AWG.

F. INSTALLATION

- 1) THE LOCATIONS OF SENSORS SHOWN ON THE DRAWINGS ARE DIAGRAMMATIC AND ARE INTENDED TO INDICATE ONLY THE ROOMS WHICH ARE TO BE PROVIDED WITH SENSORS.
2) PRIOR TO ROUGH-IN OF SENSOR OUTLET, CONTRACTOR SHALL ARRANGE A PRE-INSTALLATION MEETING WITH THE MANUFACTURER'S FACTORY AUTHORIZED REPRESENTATIVE. AT THE OWNER'S FACILITY, TO VERIFY PLACEMENT OF SENSORS AND INSTALLATION CRITERIA.
3) PROPER JUDGMENT MUST BE EXERCISED IN EXECUTING THE INSTALLATION SO AS TO ENSURE THE BEST POSSIBLE INSTALLATION IN THE AVAILABLE SPACE AND TO OVERCOME LOCAL DIFFICULTIES DUE TO SPACE LIMITATIONS OR INTERFERENCE OF STRUCTURAL COMPONENTS. THE CONTRACTOR SHALL ALSO PROVIDE, AT THE OWNER'S FACILITY, THE TRAINING NECESSARY TO FAMILIARIZE THE OWNER'S PERSONNEL WITH THE OPERATION, USE, ADJUSTMENT, AND PROBLEM SOLVING DIAGNOSIS OF THE OCCUPANCY SENSING DEVICES AND SYSTEMS.

G. FACTORY COMMISSIONING:

- 1) UPON COMPLETION OF THE INSTALLATION, THE SYSTEM SHALL BE COMPLETELY COMMISSIONED BY THE MANUFACTURER'S FACTORY AUTHORIZED TECHNICIAN WHO WILL VERIFY ALL ADJUSTMENTS AND SENSOR PLACEMENT TO ENSURE A TROUBLE-FREE OCCUPANCY-BASED LIGHTING CONTROL SYSTEM. THIS SERVICE IS TO BE PROVIDED UNDER THE BASE CONTRACT AT NO ADDITIONAL COST TO THE OWNER.
2) THE ELECTRICAL CONTRACTOR SHALL PROVIDE BOTH THE MANUFACTURER AND THE ELECTRICAL ENGINEER WITH TEN WORKING DAYS WRITTEN NOTICE OF THE SCHEDULED COMMISSIONING DATE. UPON COMPLETION OF THE SYSTEM FINE TUNING THE FACTORY AUTHORIZED TECHNICIAN SHALL PROVIDE THE PROPER TRAINING TO THE OWNER'S PERSONNEL IN THE ADJUSTMENT AND MAINTENANCE OF THE SENSORS.

28. GROUNDING

- A. FURNISH AND INSTALL A COMPLETE GROUNDING SYSTEM IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE AND LOCAL CODES AND ORDINANCES.
B. GROUNDING PATH FROM CIRCUITS, EQUIPMENT, AND CONDUCTOR ENCLOSURES SHALL BE PERMANENT AND CONTINUOUS; AND SHALL HAVE A RESISTANCE TO GROUND OF LESS THAN 5 OHM.
C. ALL CABINETS, MOTOR FRAMES, MOTOR STARTERS, CONTACTORS, CONDUIT SYSTEMS, PANELBOARDS, TRANSFORMERS, ETC., SHALL BE THOROUGHLY GROUNDED IN ACCORDANCE WITH THE N.E.C. SECTIONS 250.24; 250.50; 250.52; AND TABLES 250.66 AND 250.122.
D. AN INSULATED COPPER EQUIPMENT GROUNDING CONDUCTOR SIZED IN ACCORDANCE WITH NEC 250.122 SHALL BE INSTALLED WITH ALL BRANCH-CIRCUIT CONDUCTORS.

29. LIGHTING FIXTURES:

- A. LED FIXTURES
1) SHALL BE REDUCTION OF HAZARDOUS SUBSTANCE (ROHS) COMPLIANT, AND SHALL COMPLY WITH FCC 47 CFR PART 15, IES LM-79 & 80.
2) SUITABLE FOR MULTIPLE-VOLTAGES, 120-277 VOLTS, SINGLE PHASE A.C., 60 HERTZ SERVICE.
3) MINIMUM CRI OF 80 WITH A COLOR TEMPERATURE OF 3500° K.
4) MINIMUM RATED LIFE OF 50,000 HOURS AT 25°C AMBIENT TEMPERATURE.
5) LED DRIVER SHALL HAVE A THD OF <20% AND A POWER FACTOR OF 0.95 OR HIGHER WITH INTEGRAL SHORT CIRCUIT, OPEN CIRCUIT AND OVERLOAD PROTECTION.
6) LED DRIVER SHALL DELIVER FULL RANGE DIMMING FROM 0-10V SIGNAL.
7) LED DRIVER AND LED MODULE SHALL BE ACCESSIBLE AND REPLACEABLE FROM BELOW.
C. LIGHTING FIXTURE LOCATIONS SHOWN ON THE PLANS ARE APPROXIMATE. THE ELECTRICAL CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF ALL LIGHTING FIXTURES WITH THE ARCHITECTURAL REFLECTED CEILING PLANS. LIGHT FIXTURES AND SPRINKLER HEAD LOCATIONS SHALL, UNLESS OTHERWISE NOTED, TAKE PRECEDENCE OVER AIR DISTRIBUTION DEVICE LOCATIONS.
D. LIGHTING FIXTURES INDICATED TO INCLUDE BATTERY BACK-UP EMERGENCY LIGHTING SHALL INCLUDE A FACTORY INSTALLED EMERGENCY LIGHTING BATTERY BACK-UP UNIT WITH AN INTEGRAL TEST SWITCH/INDICATOR/LASER TEST
E. EXIT LIGHTS SHALL BE AS SCHEDULED ON THE DRAWINGS. UNITS SHALL BE SINGLE OR DOUBLE-FACED AND ARROWS SHALL BE PROVIDED AS INDICATED ON PLANS. MOUNTING SHALL BE AS INDICATED ON PLANS.

30. DISCONNECT SWITCHES:

- A. DISCONNECT SWITCHES SHALL BE QUICK-MAKE, QUICK-BREAK, HEAVY DUTY TYPE; NEMA 1 FOR INDOOR USE, AND NEMA 3R FOR OUTDOOR USE RATED 600 VOLT. DISCONNECT SWITCHES SERVING MOTOR LOADS SHALL BE HORSEPOWER RATED.
B. EQUIP FUSIBLE SWITCHES WITH CLASS R, REJECTION TYPE FUSE CLIPS.
C. ACCEPTABLE MANUFACTURERS:
1) SQUARE D
2) CUTLER-HAMMER
3) SIEMENS ENERGY AND AUTOMATION.

31. MOTOR STARTERS:

- A. STARTERS FOR SINGLE PHASE MOTORS SHALL BE MANUAL TOGGLE SWITCH TYPE WITH THERMAL OVERLOADS, SURFACE OR FLUSH MOUNTED AS REQUIRED. SQUARE D CLASS 2510 HAND-OFF-AUTOMATIC (HOA) SWITCHES SHALL BE PROVIDED WHERE STARTERS ARE CONTROLLED BY AUTOMATIC DEVICES. THE FUNCTIONS, LOCATIONS, ETC., SHALL BE AS SPECIFIED UNDER MAGNETIC STARTERS.
B. STARTERS FOR THREE PHASE MOTORS SHALL BE MAGNETICALLY OPERATED, MECHANICALLY-HELD TYPE WITH OVERLOADS, CONTROL TRANSFORMER AND 2 AUXILIARY CONTACTS. WITH HOA SELECTOR SWITCH AND RED & GREEN PILOT LIGHTS MOUNTED IN FRONT COVER. STARTERS SHALL BE MOUNTED IN NEMA 3R FOR OUTDOOR. INSTALLATION. SQUARE D CLASS 8536.

C. MAGNETIC STARTERS SHALL BE PROVIDED FOR ALL 3-PHASE MOTORS. MAGNETIC STARTERS SHALL BE FULL VOLTAGE (ACROSS THE LINE) TYPE WITH PHASE FAILURE AND PHASE REVERSAL WITH TIME DELAY INCLUDING OVER-VOLTAGE AND UNDER-VOLTAGE PROTECTION. FOR AUTOMATIC CONTROL.

D. EACH MOTOR STARTER SHALL BE HORSEPOWER RATED NOT LESS THAN THE RATING OF THE MOTOR IT CONTROLS.
E. ACCEPTABLE MANUFACTURERS:

- 1) SQUARE D
2) CUTLER-HAMMER
3) SIEMENS ENERGY AND AUTOMATION

32. CONNECTION OF MECHANICAL EQUIPMENT

- A. THE ELECTRICAL CONTRACTOR IS CAUTIONED TO NOTE CAREFULLY OTHER SECTIONS OF THESE SPECIFICATIONS DESCRIBING ELECTRICAL EQUIPMENT TO BE FURNISHED UNDER THOSE SECTIONS IN ORDER THAT HE MAY FULLY UNDERSTAND THE WIRING REQUIREMENTS.
B. ALL POWER WIRING AND FEEDERS FOR MECHANICAL EQUIPMENT SHALL BE FURNISHED AND INSTALLED BY THE ELECTRICAL CONTRACTOR.
C. MOTOR STARTERS WHICH ARE NOT AN INTEGRAL PART OF EQUIPMENT SHALL BE FURNISHED AND INSTALLED BY THE ELECTRICAL CONTRACTOR.
D. SAFETY OR DISCONNECT SWITCHES WHERE INDICATED OR REQUIRED SHALL BE FURNISHED AND INSTALLED BY THE ELECTRICAL CONTRACTOR.
E. MOTOR CONTROL WIRING AND EQUIPMENT WILL BE FURNISHED AND INSTALLED BY THE MECHANICAL CONTRACTOR UNLESS OTHERWISE NOTED OR INDICATED ON THE DRAWINGS.

33. WIRING FOR EQUIPMENT FURNISHED BY OTHERS

- A. PROVIDE SERVICES AND MAKE FINAL CONNECTIONS FOR MOTORS AND EQUIPMENT. MAKE FINAL CONNECTIONS EXCEPT WHERE INDICATED AS "ROUGH-IN ONLY" OR "FINAL CONNECTIONS BY OTHERS". WHERE FINAL CONNECTIONS ARE TO BE MADE BY OTHERS INSTALL OUTLET BOX, PULL IN CONDUCTORS AND LEAVE 8" PIGTAIL FOR EACH CONDUCTOR. CONDUCTORS SHALL BE TAPED AND APPROPRIATE COVER PLATE INSTALLED OVER BOX.
B. PRIOR TO ROUGHING-IN CONDUIT AND BRANCH CIRCUITS, THE ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE MECHANICAL CONTRACTOR, THE EQUIPMENT CONTRACTORS AND THE OWNER. VERIFY WITH THEM THE EXACT LOCATIONS FOR ROUGH-INS, AND THE EXACT SIZE AND CHARACTERISTICS OF THE SERVICES REQUIRED. OBTAIN FROM THE MECHANICAL AND EQUIPMENT CONTRACTORS AND OWNER A SCHEDULE OF ELECTRICAL LOADS FOR THE EQUIPMENT FURNISHED BY THEM. THESE SCHEDULES SHALL BE USED FOR VERIFYING SERVICES, MOTOR STARTERS, DISCONNECTS, FUSES, AND OVERLOAD PROTECTION REQUIREMENTS.
C. SHOULD WORK INSTALLED BY THE ELECTRICAL CONTRACTOR REQUIRE MODIFICATION DUE TO HIS FAILURE TO COMPLY WITH THESE REQUIREMENTS, SUCH CHANGES SHALL BE MADE WITHOUT ADDITIONAL COST TO THE OWNER, THE ARCHITECT OR THE ENGINEER.
D. INSTALL AND ELECTRICALLY CONNECT OWNER FURNISHED EQUIPMENT.

34. FIRE AND SMOKE BARRIERS

- A. ALL CONDUIT PENETRATIONS IN FIRE-RATED WALLS AND FLOORS AND DESIGNATED SMOKE BARRIERS SHALL BE SEALED WITH AN APPROVED FIRE BARRIER MATERIAL.
B. SYSTEM SHALL PASS FIRE TEST EXPOSURE PER ASTM E-814 (U.L. 1479) AND WILL PROVIDE A 3-HOUR FIRE RATING.
C. BARRIER SHALL CONSIST OF A 1/4 INCH THICK COMPOSITE SHEET. BONDED ON ONE SIDE SHALL BE A LAYER OF 28 GAUGE GALVANIZED STEEL. THE OTHER SIDE SHALL BE REINFORCED WITH STEEL WIRE MESH AND COVERED WITH ALUMINUM FOIL. SANDWICHED BETWEEN SHALL BE AN ORGANIC/ INORGANIC, FIRE RESISTIVE ELASTOMERIC SHEET WHICH WHEN EXPOSED TO TEMPERATURES IN EXCESS OF 250°F. (121°C), THE SHEET SHALL EXPAND 8-10 TIMES ITS ORIGINAL SIZE FORMING A HARD CHARACTERISTIC TIGHTLY SEALING AGAINST SPREAD OF FLAME, GASES AND SMOKE.
D. PRODUCT:
1) 3M FIRE BARRIER COMPOSITE SHEET CS-195.
2) ALL SEAMS AND EDGES SHALL BE SEALED WITH 3M CP-25 FIRE BARRIER CAULK OR 303 PUTTY.

- A. ALTERNATE MANUFACTURERS:
1) SUBJECT TO COMPLIANCE WITH REQUIREMENTS, ALTERNATE MANUFACTURERS OFFERING SIMILAR PRODUCTS MAY BE INCORPORATED IN THE WORK.

35. ELECTRICAL IDENTIFICATION

- A. MATERIALS AND METHODS OF INSTALLATION SHALL COMPLY WITH THE PROVISIONS OF APPLICABLE SECTIONS OF LATEST EDITIONS OF THE NATIONAL ELECTRICAL CODE, THE STATE OF MICHIGAN BUILDING CODE, THE NATIONAL ELECTRICAL CODE AND THE ICC ELECTRICAL CODE AS APPLICABLE TO INSTALLATION OF IDENTIFYING LABELS AND MARKERS FOR WIRING AND EQUIPMENT.
B. COMPLY WITH APPLICABLE REQUIREMENTS OF UL STD 969, "MARKING AND LABELING SYSTEMS", PERTAINING TO ELECTRICAL IDENTIFICATION SYSTEMS.
C. COMPLY WITH APPLICABLE REQUIREMENTS OF NEMA STD NO'S WC-1 AND WC-2 PERTAINING TO ELECTRICAL IDENTIFICATION SYSTEMS.
D. LETTERING AND GRAPHICS:
1) COORDINATE NAMES, ABBREVIATIONS AND OTHER DESIGNATIONS USED IN ELECTRICAL IDENTIFICATION WORK, WITH CORRESPONDING DESIGNATIONS SHOWN, SPECIFIED OR SCHEDULED. PROVIDE NUMBERS, LETTERING AND WORDING AS INDICATED OR, IF NOT OTHERWISE INDICATED, AS RECOMMENDED BY MANUFACTURER OR AS REQUIRED FOR PROPER IDENTIFICATION AND OPERATION/ MAINTENANCE OF ELECTRICAL SYSTEMS AND EQUIPMENT. COMPLY WITH ANSI A13.1 PERTAINING TO MINIMUM SIZES FOR LETTERS AND NUMBERS.
E. CONDUIT IDENTIFICATION:
1) WHERE ELECTRICAL CONDUIT IS EXPOSED IN SPACES WITH EXPOSED MECHANICAL PIPING WHICH IS IDENTIFIED BY A COLOR-CODED METHOD, APPLY COLOR-CODED IDENTIFICATION ON ELECTRICAL CONDUIT IN A MANNER SIMILAR TO PIPING IDENTIFICATION. EXCEPT AS OTHERWISE INDICATED, USE WHITE AS CODED COLOR FOR CONDUIT.

36. SHOP DRAWINGS AND SUBMITTALS

ELECTRICAL CONTRACTOR SHALL SUBMIT EQUIPMENT SHOP DRAWINGS TO THE ARCHITECT FOR REVIEW PRIOR TO INSTALLATION OF LIGHTING FIXTURES, LIGHTING CONTROL DEVICES AND WIRING DEVICES.

37. GUARANTEE

ELECTRICAL CONTRACTOR SHALL GUARANTEE ALL WORK INSTALLED BY HIS WORKMEN UNDER THIS CONTRACT TO BE FREE FROM ALL DEFECTIVE WORKMANSHIP AND MATERIALS FOR A PERIOD OF ONE YEAR AFTER THE ACCEPTANCE OF THE BUILDING BY THE OWNER, AND SHOULD DEFECTS OCCUR WITHIN THIS PERIOD, REPAIR AND/OR REPLACE DEFECTIVE ITEMS, AT NO EXPENSE TO THE OWNER.

38. PANEL DIRECTORIES

- A. ALL EXISTING PANEL DIRECTORIES SHALL BE BROUGHT UP TO DATE.
B. THE NEW DIRECTORIES SHALL BE NEATLY TYPED SHOWING EQUIPMENT SERVED AND LOCATION FOR EACH BREAKER OR SWITCH.
C. THE USE OF DYMO LABELS ON ELECTRICAL EQUIPMENT WILL NOT BE ACCEPTABLE.

39. TESTING

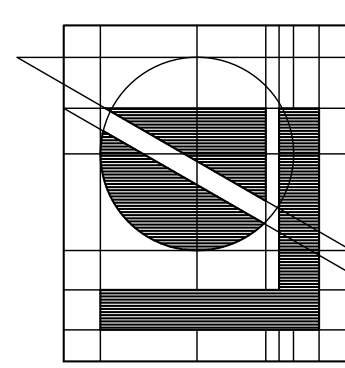
ALL CIRCUITS AND EQUIPMENT SHALL BE TESTED UPON COMPLETION OF WORK AND FINAL TESTS. WHEN REQUESTED, SHALL BE DONE IN THE PRESENCE OF THE OWNER'S REPRESENTATIVE. ANY CIRCUITS OR EQUIPMENT FOUND TO BE DEFECTIVE SHALL BE REPLACED OR REPAIRED, AS NECESSARY, AND THEN RETESTED WITHOUT ADDITIONAL EXPENSE TO THE OWNER.

40. CLEANING

UPON COMPLETION OF THE PROJECT, ALL ENCLOSURES SHALL BE LEFT FREE OF REFUSE AND THE EXTERIOR FREE OF DIRT AND PAINT SPLATTERS.

41. DEMOLITION WORK

- A. THE EXISTING BUILDING IS BEING MODIFIED TO SUITE THE NEW REQUIREMENTS. DURING THE NEW WORK, MAINTAIN CIRCUITS SUPPLYING EXISTING EQUIPMENT AND APARTMENTS DURING THE NEW WORK. ALL SUCH WORK SHALL BE AS SCHEDULED BY THE GENERAL CONTRACTOR TO ENSURE PROPER COORDINATION OF TRADES WHILE CONSTRUCTION IS BEING DONE.
B. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VISIT THE PROJECT SITE TO CORRECTLY ASCERTAIN THE SCOPE OF SERVICES AND TO INCLUDE ALL PERTINENT COSTS IN HIS BID. NO EXTRAS WILL BE ALLOWED.
C. ALL ELECTRICAL WORK INTERFERING WITH AND REQUIRING MODIFICATION FOR THE NEW REQUIREMENTS SHALL BE RELOCATED AS DIRECTED BY BUILDING MANAGEMENT PERSONNEL AND REINSTALLED AND REWIRED AS NECESSARY TO THE SATISFACTION OF THE BUILDING MANAGEMENT.
D. ABANDONED AND INACTIVE CONDUITS, WIRE, DEVICES, EQUIPMENT, ETC., SHALL BE REMOVED IN THEIR ENTIRETY. IN ADDITION TO THESE ITEMS, THIS CONTRACTOR SHALL REMOVE ALL ITEMS AS INDICATED ON THE PLANS, OR AS REQUIRED TO CLEAN UP THE ENTIRE AREA OF UNUSED, ABANDONED, OR INACTIVE MATERIALS. CONDUIT AND WIRING FEEDING DEVICES ND EQUIPMENT TO BE REMOVED SHALL ALSO BE REMOVED UP TO THE NEXT ACTIVE PULLBOX, JUNCTION BOX, OR PANELBOARD.
E. ALL EQUIPMENT AND WIRING NOT IN RENOVATION AREAS BUT AFFECTED BY WORK IN RENOVATION AREAS SHALL BE RECONNECTED AS REQUIRED FOR A COMPLETE WORKING SYSTEM.
F. HANGERS, MESSENGER CABLE, BRACKETS, ETC, SUPPORTING ITEMS TO BE REMOVED SHALL ALSO BE UNFASTENED AND REMOVED. OPEN HOLES IN DUCTS, BOXES, PANELBOARDS, AND KNOCKOUTS SHALL BE CLOSED WITH SUITABLE SNAP PLUGS OR FILLER PLATES.
G. THE CONTRACTOR SHALL REMOVE AND DELIVER TO A PLACE DESIGNATED BY THE OWNER ALL EXISTING ELECTRICAL EQUIPMENT NO LONGER INTENDED FOR USE. THIS EQUIPMENT REMAINS THE PROPERTY OF THE OWNER.
H. ANY EQUIPMENT, DEVICES, MATERIALS, ETC., THE OWNER ELECTS NOT TO RETAIN SHALL BE LEGALLY DISPOSED OF BY THE CONTRACTOR OFF THE OWNER'S PREMISES.
I. AT COMPLETION OF ALL ELECTRICAL WORK, UPDATE CIRCUIT DIRECTORIES IN PANELS AFFECTED BY NEW WORK WITH NEW TYPE WRITTEN CIRCUIT DESCRIPTIONS. CIRCUIT DIRECTORIES SHALL BE MOUNTED ON INSIDE OF FRONT PANEL COVER IN A CLEAR PLASTIC ENCLOSURE



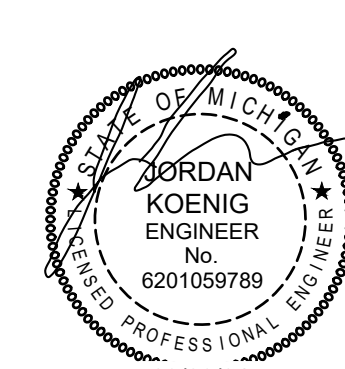
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BIDS + PERMITS issued for

03/08/2024 date
dr: D.P.
ck'd: J.E.
app'd: J.K.

RENOVATIONS for:
BRIGHTON AREA SCHOOLS
(5.E.C.C. BLDG.) BRIGHTON, MICHIGAN
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