

WARREN WOODS PUBLIC SCHOOLS TITAN EXPRESS SERVERY HAWTHORN FOOD PROGRAM FREEZER REPLACEMENT

ISSUED FOR: BIDS
DATE: MARCH 11, 2025
PROJECT NO.: 242030

ARCHITECT:

WAKELY ASSOCIATES, INC./ ARCHITECTS
30500 VAN DYKE AVE, SUITE 209, WARREN, MI 48093, 586.573.4100

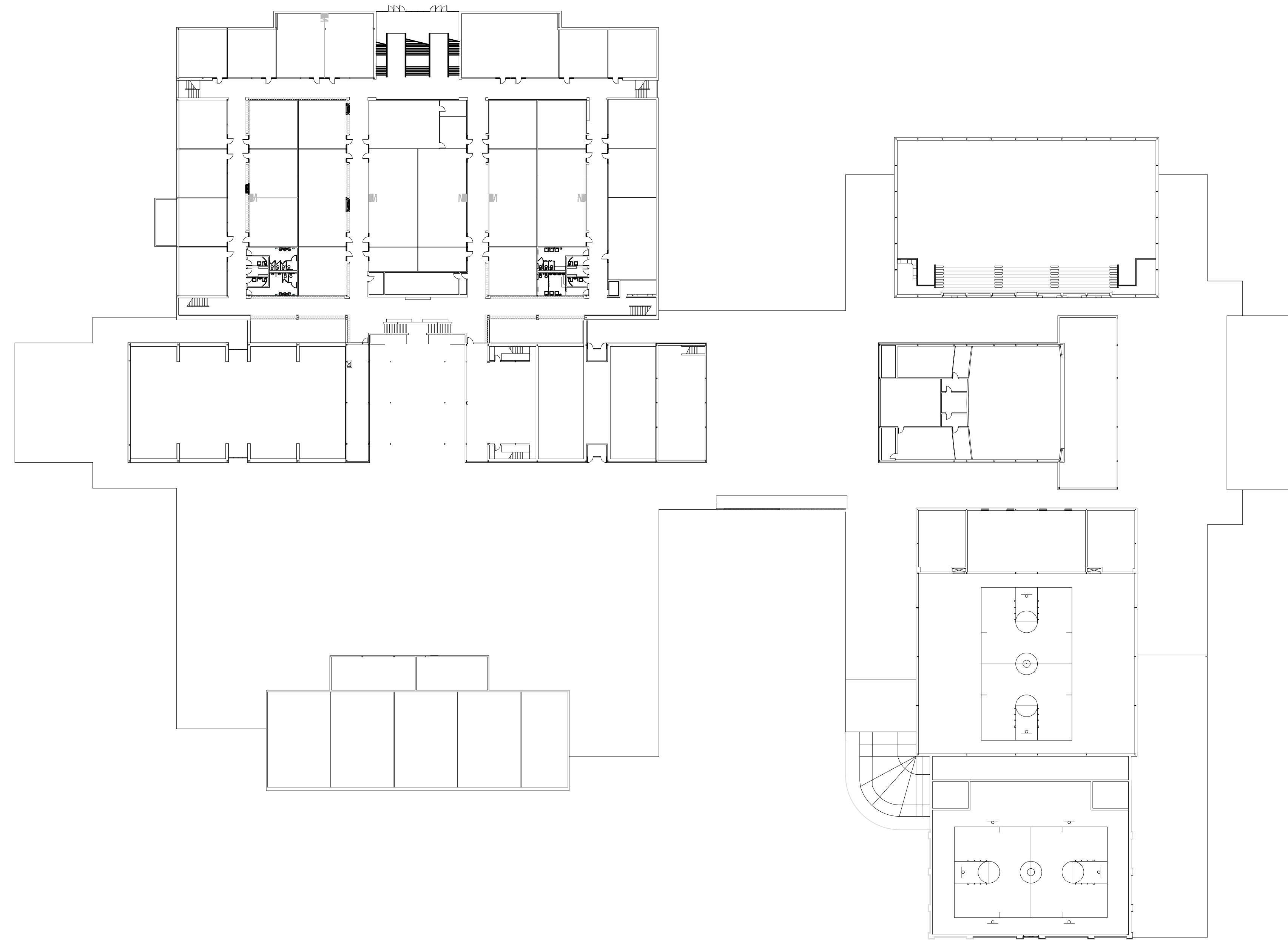
FOOD SERVICE CONSULTANT:

FOOD SERVICE DESIGN, L.L.C.
9201 FUNSTON ST., WHITE LAKE, MI 48386, 248.410.3459

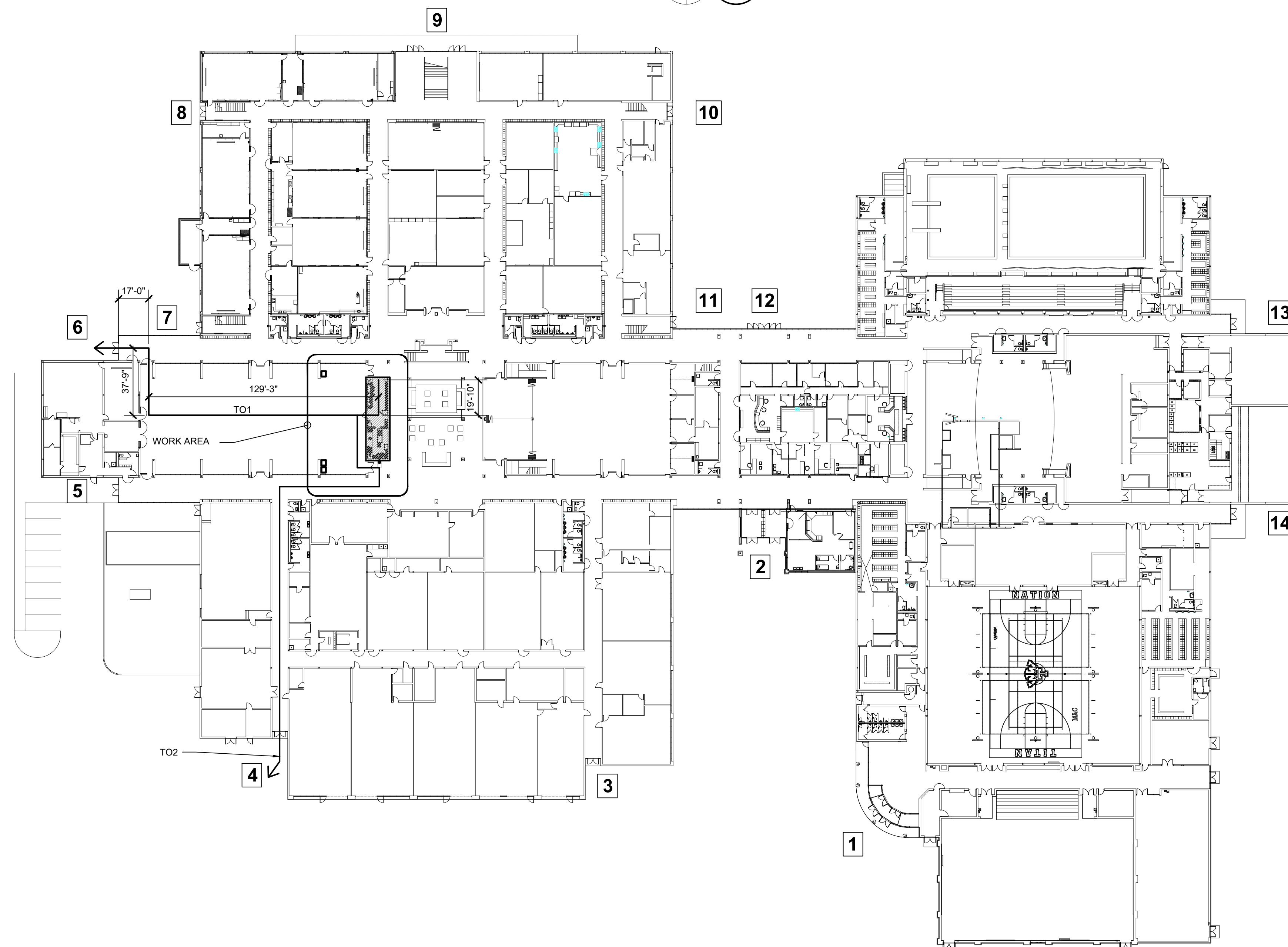
MECHANICAL/ELECTRICAL ENGINEERS

UNIFIED BUILDING SYSTEMS ENGINEERING, LLC
75 N. MAIN STREET, SUITE 221, MT. CLEMENS, MI 48043, 586-500-7055

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<p>Building Addresses</p> <table border="1"> <tr> <td>HAWTHORN 12900 FRAZHO RD. WARREN, MI 48049</td> <td>TOWER HIGH SCHOOL 27900 BUNERT RD. WARREN, MI 48049</td> </tr> </table>		HAWTHORN 12900 FRAZHO RD. WARREN, MI 48049	TOWER HIGH SCHOOL 27900 BUNERT RD. WARREN, MI 48049
HAWTHORN 12900 FRAZHO RD. WARREN, MI 48049	TOWER HIGH SCHOOL 27900 BUNERT RD. WARREN, MI 48049		
<p>Location Map</p>			



2 SECOND FLOOR LIFE-SAFETY PLAN
 LS6.00 SCALE: 1/40"=1'-0"



1 FIRST FLOOR - LIFE SAFETY PLAN
 LS6.00 SCALE: 1/40"=1'-0"

BUILDING CODE SUMMARY:

PROJECT:	WARREN WOODS PUBLIC SCHOOLS TOWER HIGH SCHOOL TITAN EXPRES SERVERY
ADDRESS:	27900 BURNET ROAD, WARREN MI 48808
PROPOSED USE:	RENOVATION OF AN EXISTING SERVERY INSIDE THE HIGH SCHOOL CAFETERIA
REFERENCE CODES:	MICHIGAN REHABILITATION CODE, 2015 EDITION MICHIGAN BUILDING CODE, 2015 EDITION MICHIGAN MECHANICAL CODE, 2021 EDITION MICHIGAN PLUMBING CODE, 2021 EDITION MICHIGAN ELECTRICAL CODE, (2023 NEC WITH PART 8 TECHNICAL AMENDMENTS) MICHIGAN ENERGY CODE, 2015 EDITION
BUILDING DATA USE GROUP:	E EDUCATIONAL
SPRINKLED:	REQUIRED; PROVIDED
CONSTRUCTION TYPE:	TYPE 2B
BUILDING HEIGHT PERMITTED (TABLE 504.4):	3 STORIES (504.4), 75' (WITH SPRINKLER SYSTEM - 504.2)
ACTUAL:	2 STORY 29' EDUCATIONAL (E) 1 BASEMENT MECHANICAL ROOM FOR POOL
MEZZANINE HIGH RISE:	NONE NONE
GROSS BUILDING AREA:	
GRADE LEVEL:	216,037 S.F.
BASEMENT	12,556
2ND LEVEL:	61,617
TOTAL AREA:	290,210 S.F.
WORK AREA (SERVERY)	
GRADE LEVEL:	703 S.F.
2ND LEVEL:	0 S.F.
TOTAL:	703 S.F.
TOTAL AREA (EDUCATIONAL)	
GRADE LEVEL:	15,214 S.F.
2ND LEVEL:	5,271 S.F.
TOTAL:	290,210 S.F.
LEVEL 2 ALTERATION UNDER 2015 MBC (ALTERING LAYOUT, DOORS, M/E/P)	
PARTY/FIREWALLS:	
EXTERIOR BEARING WALLS (FIRE SEPERATION DISTANCE > 30 FEET):	
NORTH:	0
EAST:	0
WEST:	0
SOUTH:	0
EXTERIOR NON-BEARING (FIRE SEPERATION DISTANCE > 30 FEET)	
NORTH:	0
EAST:	0
WEST:	0
SOUTH:	0
INTERIOR WALLS:	
BEARING:	0
NON-BEARING:	0
TENANT SEPERATION:	N/A
FIRE SEPARATION ASSEMBLIES:	
EXIT ENCLOSURES:	2
CEILING-FLOORS ASSEMBLY:	0
BEAMS:	0
COLUMNS:	0
CEILING-ROOF ASSEMBLY:	0
VERTICAL SHAFTS:	2
MIXED OCCUPANCY SEPARATION:	
TENANT SEPARATION:	N/A
EXIT ACCESS CORRIDORS (1020.1):	0
LIFE-SAFETY SYSTEMS:	
EMERGENCY LIGHTING & EXIT SIGNS:	REQUIRED; PROVIDED
FIRE ALARMS:	REQUIRED; PROVIDED
SMOKE DETECTIONS SYSTEMS:	REQUIRED; PROVIDED
PANIC HARDWARE:	REQUIRED; PROVIDED
FIRE SUPPRESSION SYSTEM:	REQUIRED; PROVIDED
STANDPIPE SYSTEM:	NOT REQUIRED; NOT PROVIDED
OCCUPANT LOAD:	
BUSINESS = 1 PERSON/200 GROSS SQUARE FEET - KITCHEN COMMERCIAL IS CLOSEST TO OCCUPANT LOAD IN SPACE	
TOTAL AREA:	703 S.F.
703 S.F./200 = 4 PERSONS TOTAL CALCULATED - UNCHANGED FROM PREVIOUS SERVERY	
EXIT REQUIREMENTS (B AND S ARE THE SAME UNLESS NOTED OTHERWISE):	
DEAD END LIMIT-MAXIMUM CONDITION (1020.4 W/ EXCEPTION #2):	ALLOWED: 50' ACTUAL: 0'
TRAVEL DISTANCE TO EXIT-MAXIMUM CONDITION (TABLE 1017.2):	ALLOWED: 250' ACTUAL: 204' (UNCHANGED)
IN WORK AREA: COMMON PATH OF TRAVEL 1006.3.2 (2) (WITH SPRINKLER SYSTEM)	ALLOWED: 75' ACTUAL: 20' (IN WORK AREA)
NUMBER OF EXITS (PER STORY):	UNCHANGED
REQUIRED (TABLE 1006.2.1) TOTAL OCCUPANT LOAD 120 OCCUPANTS	1091 OCCUPANTS
DESIGN LOADS (SEE STRUCTURAL DRAWINGS):	REQUIRED (4); ACTUAL (14) UNCHANGED
ROOF LIVE LOAD:	20 PSF
WIND:	90 MPH, 23 PSF
FLOOR:	100 PSF, 1ST FLOOR CORRIDORS, 1000# CONCENTRATED
SNOW:	30 PSF
SEISMIC:	SDS = 0.095 SD1 = 0.072 DESIGN CAT B 21 PSF
LATERAL DESIGN:	
SOIL BEARING CAPACITIES:	ASSUMED NET SOILS BEARING CAPACITY = N/A
SPECIAL APPROVAL BY LOCAL JURISDICTION:	N/A



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WARREN WOODS PUBLIC SCHOOL DISTRICT
TOWER HS - TITAN EXPRESS SERVERY
 HAWTHORN FOOD PROGRAM FREEZER REPLACEMENT

TOWER HIGH SCHOOL
LIFE-SAFETY PLANS

PRELIMINARY
 DESIGN DEVELOPMENT
 CONSTRUCTION
 FINAL RECORD

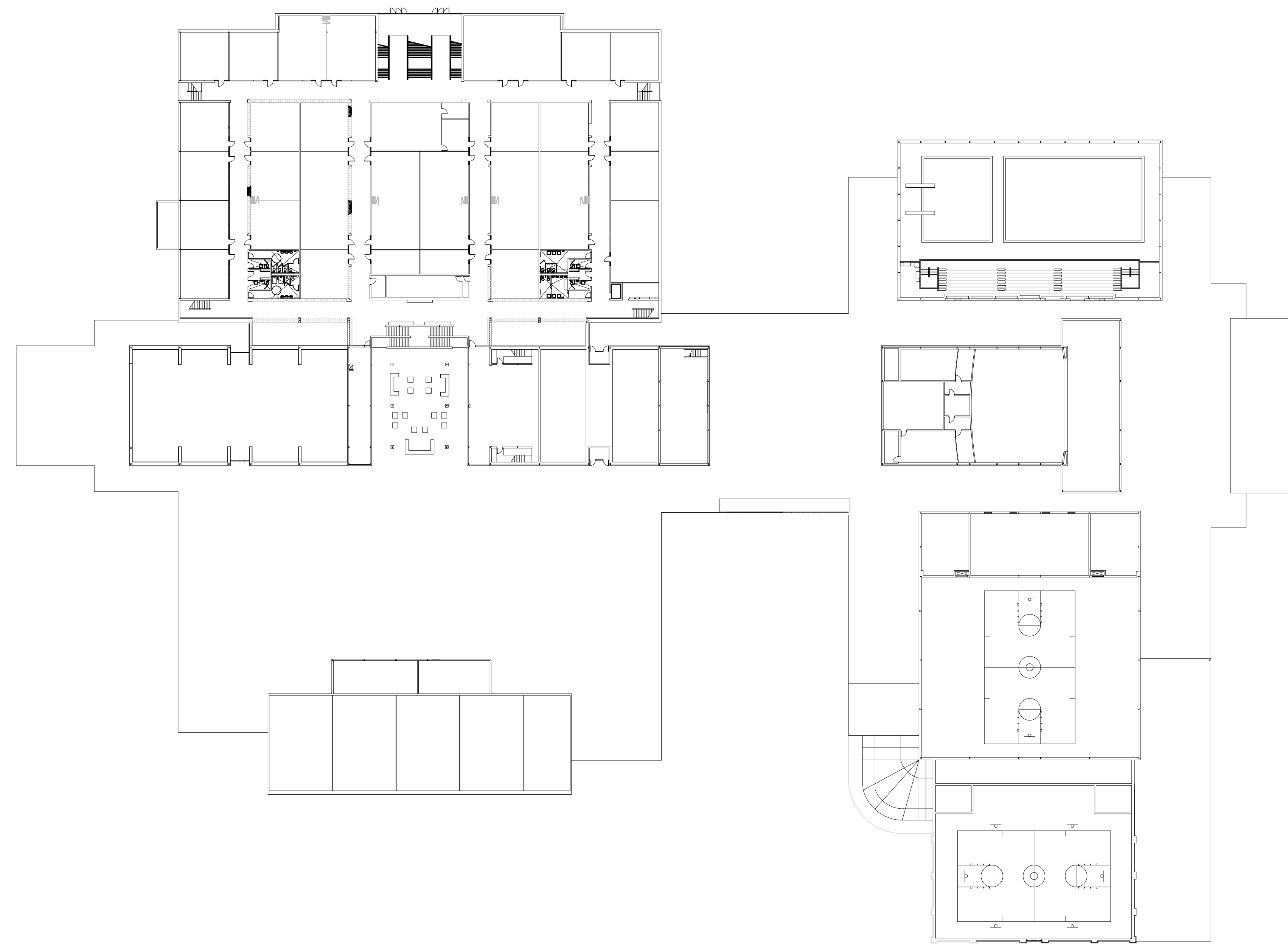
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 CHECKED BY: _RAS

REVISIONS:
 OWNER REVIEW 02/28/2025
 BIDS: 03/11/2025

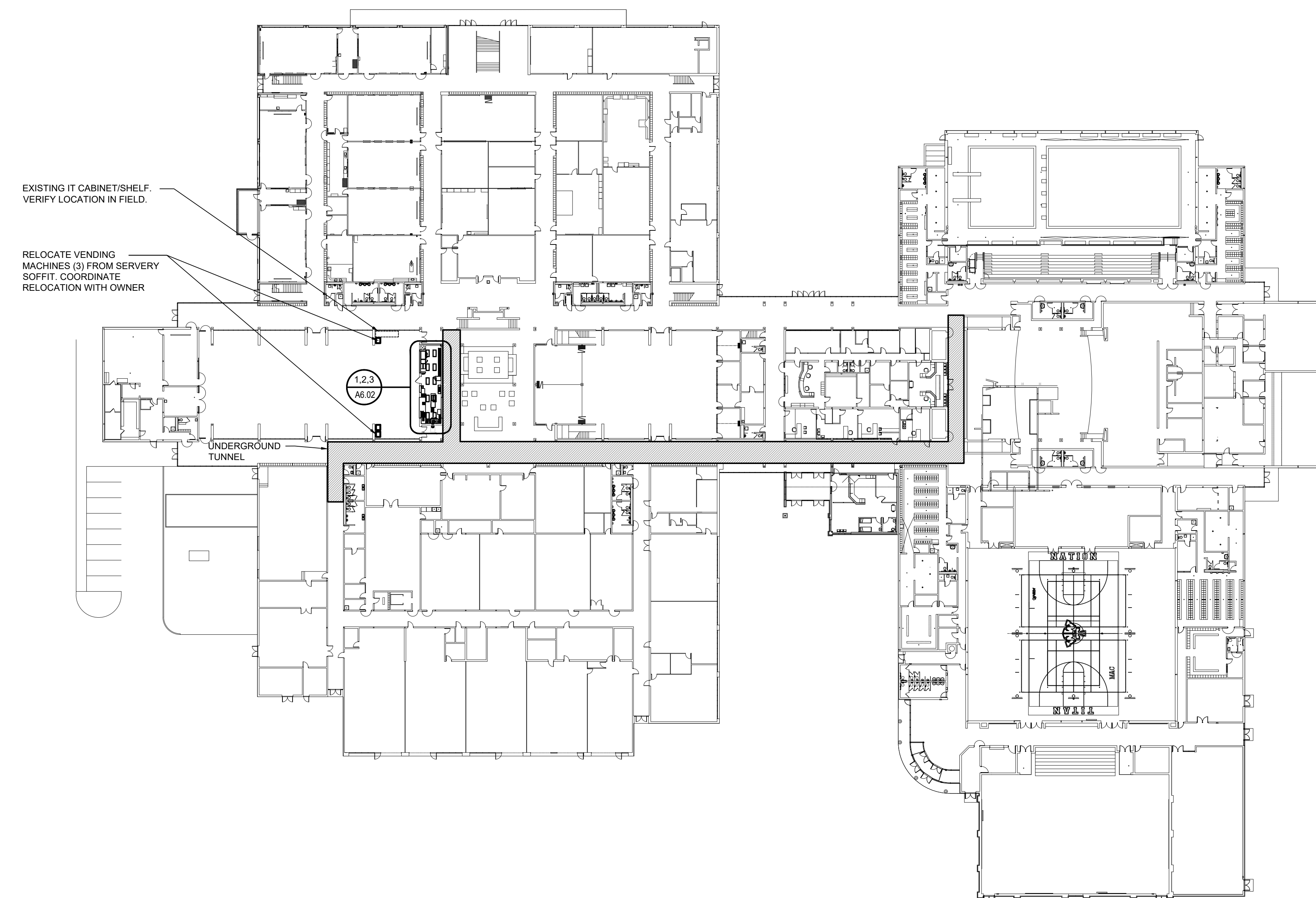
DATE: MARCH 11, 2025
 SHEET NO.:

LS6.00

JOB NO. 242030



2 SECOND FLOOR COMPOSITE PLAN
SCALE: 1/40"=1'-0"



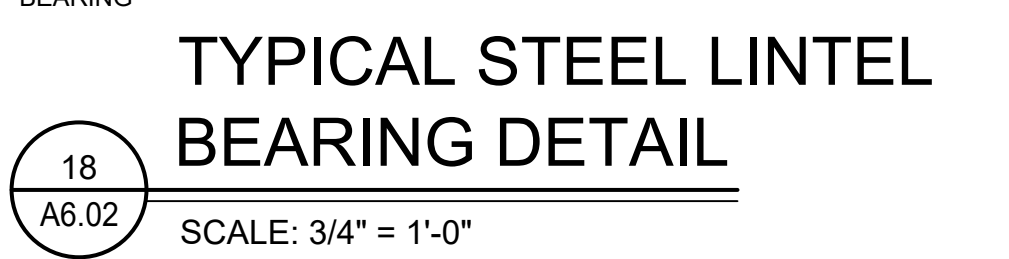
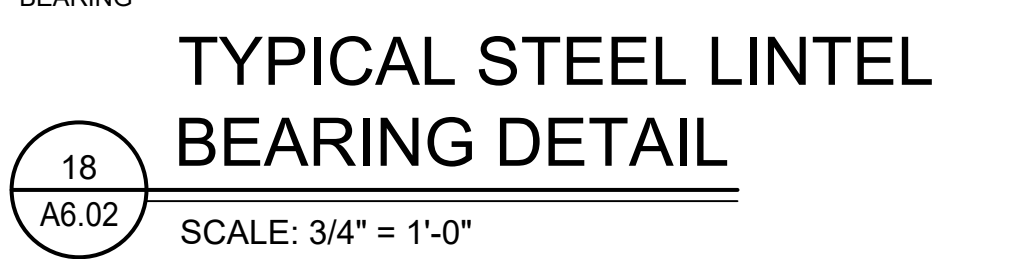
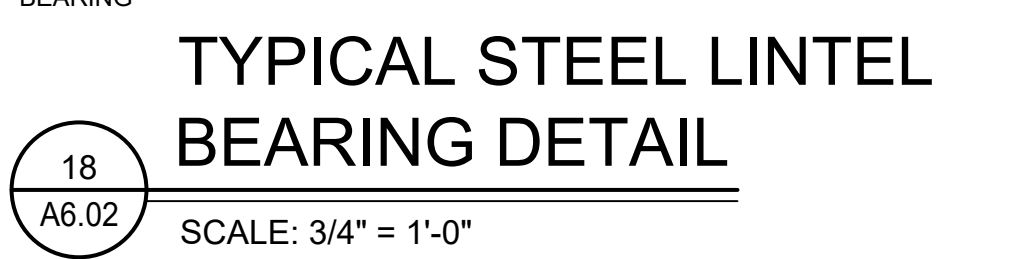
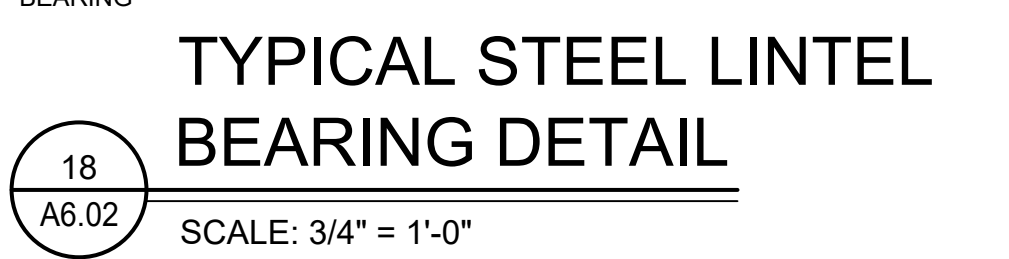
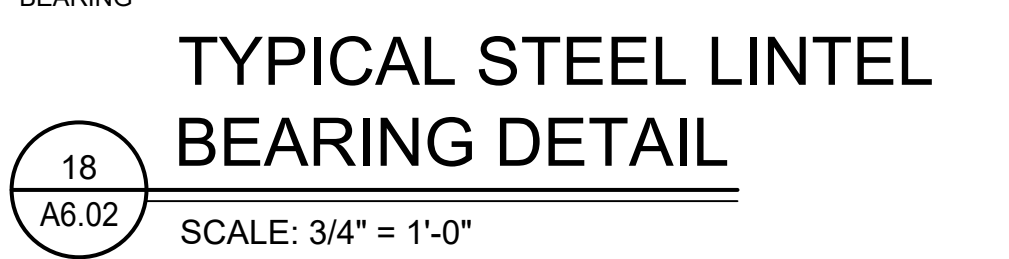
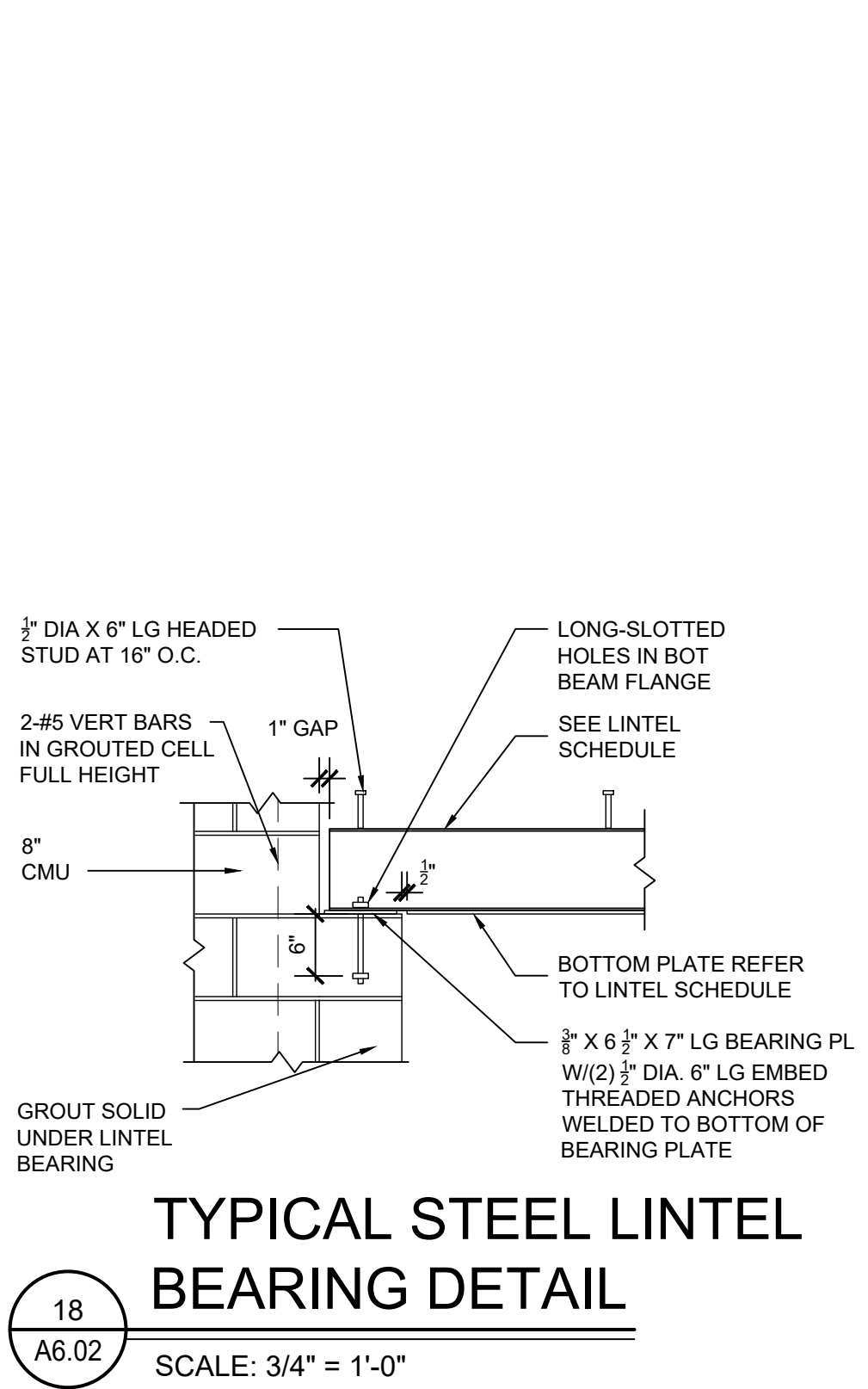
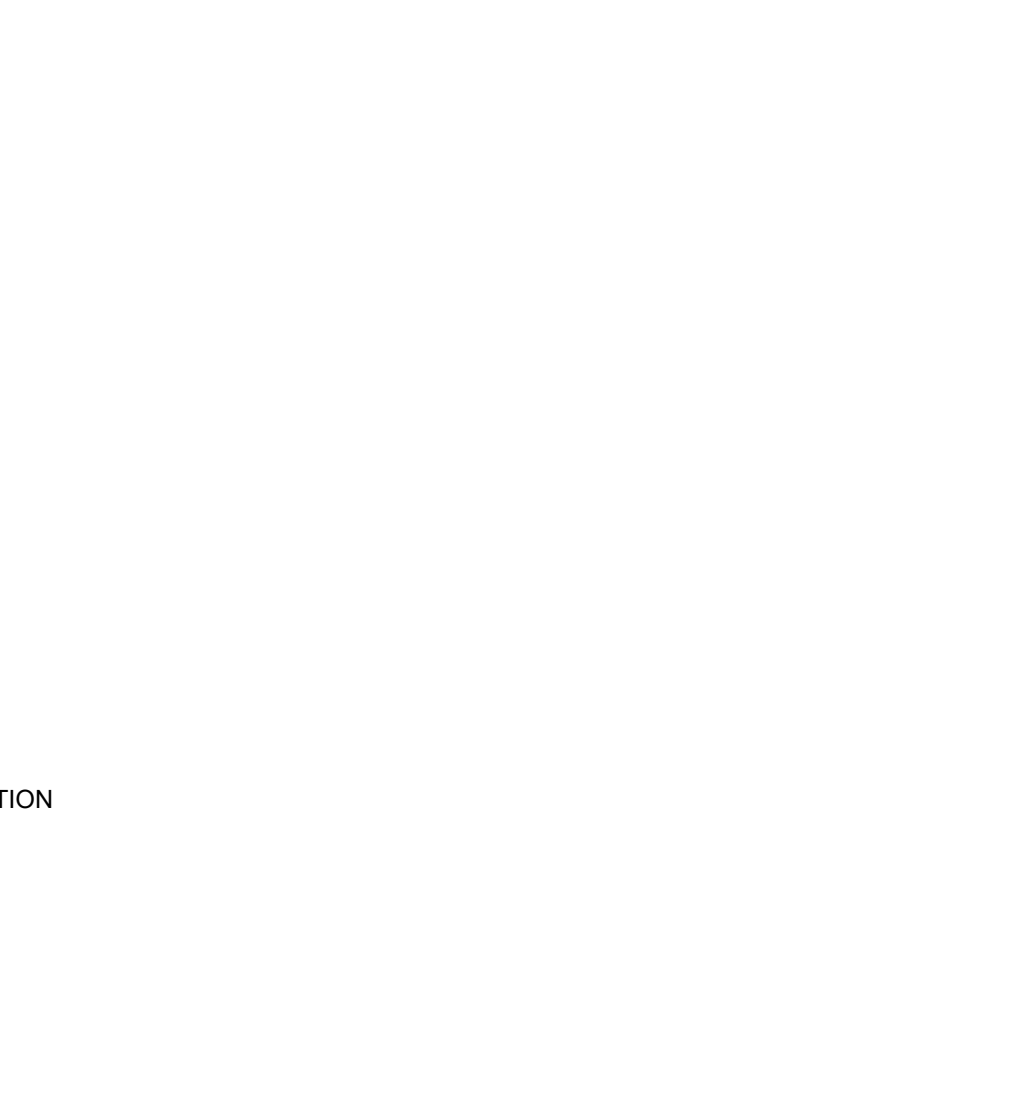
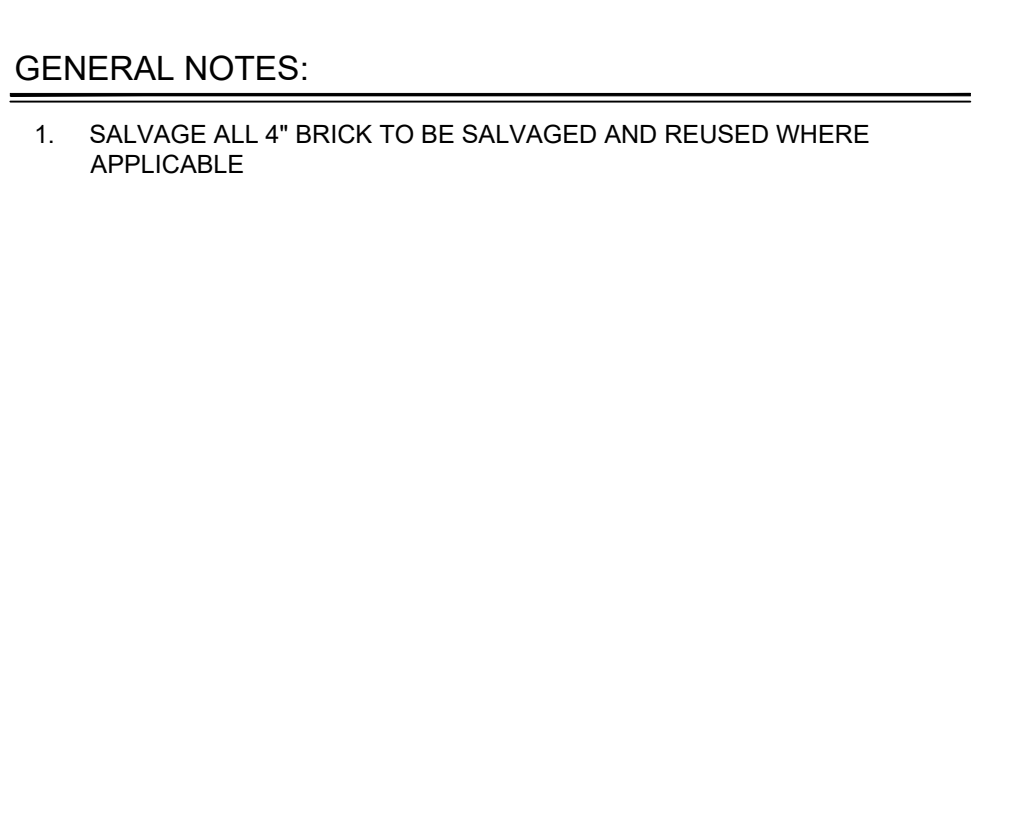
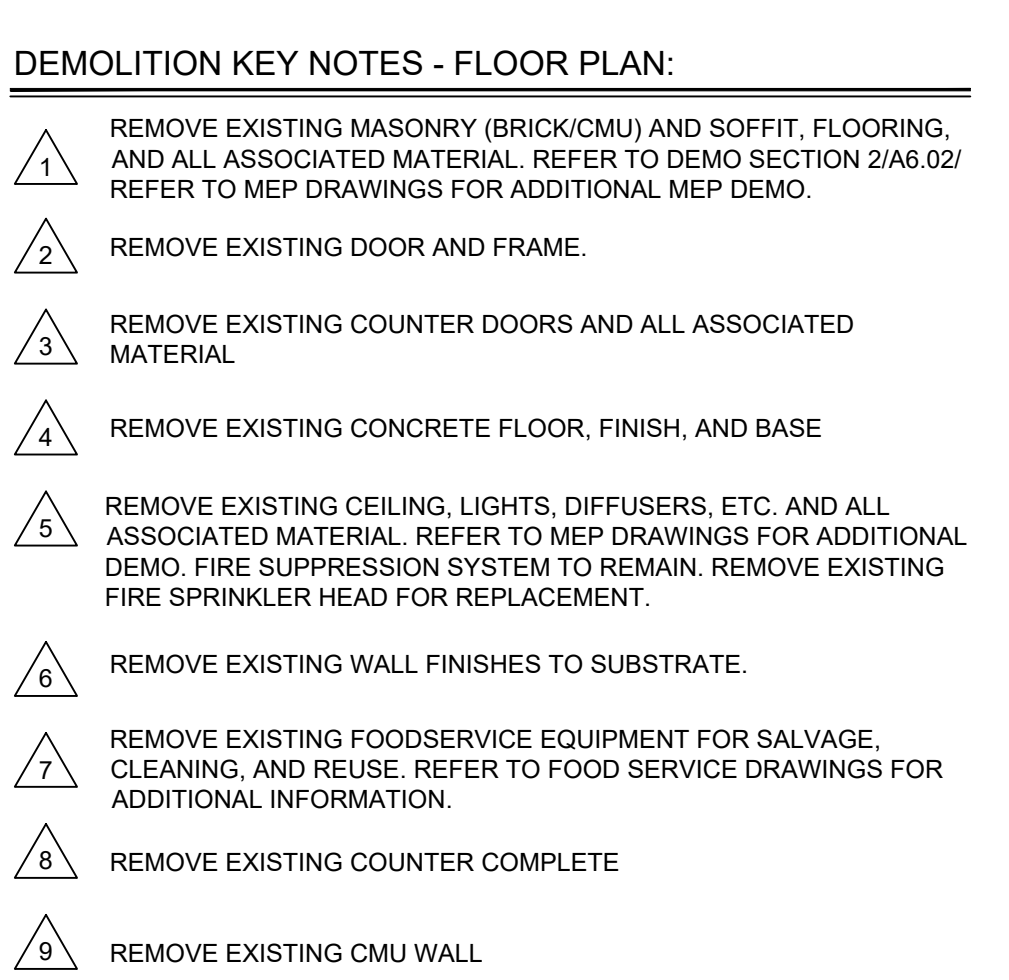
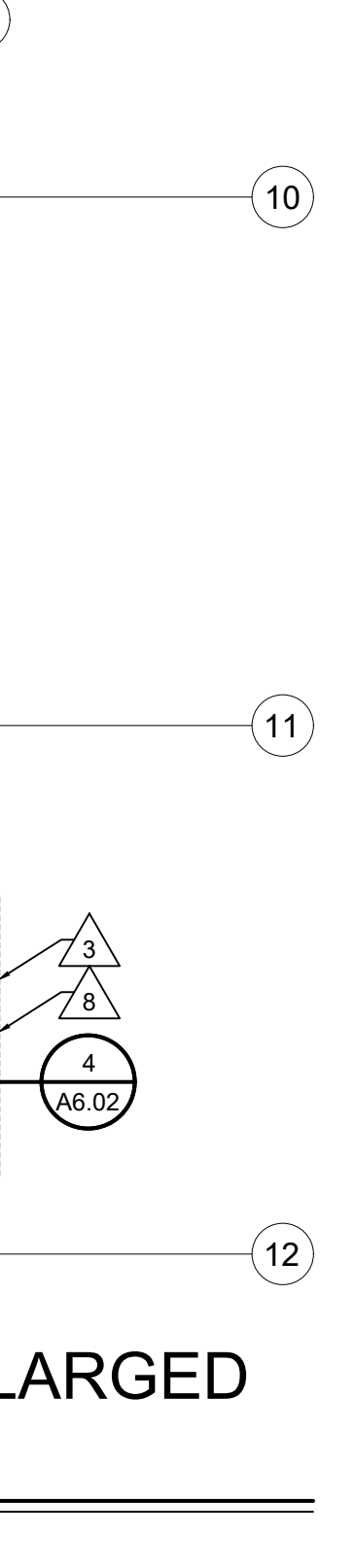
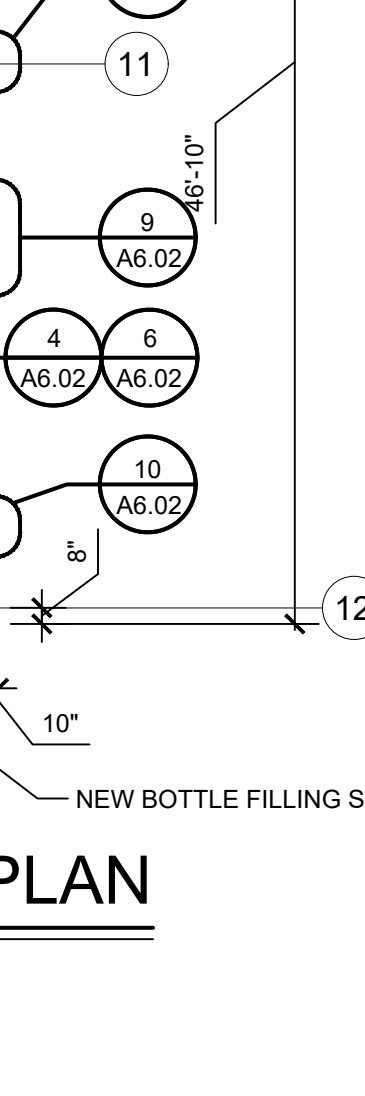
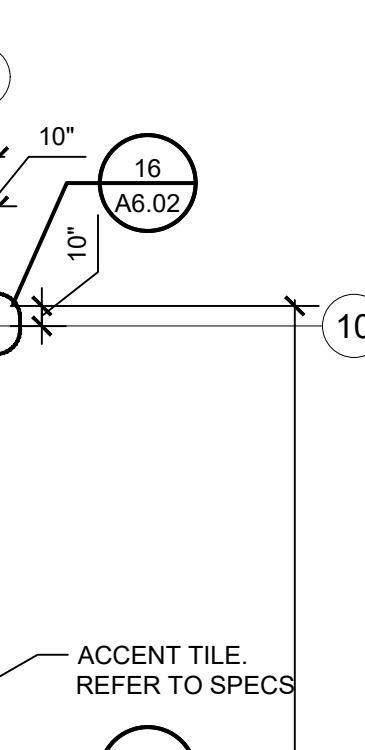
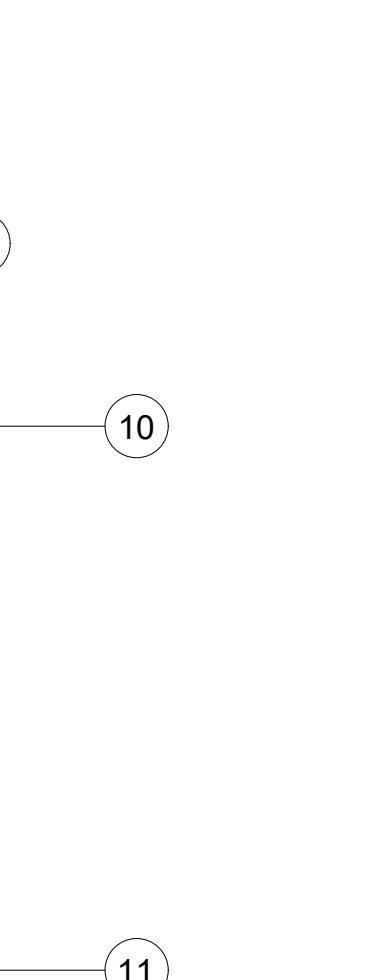
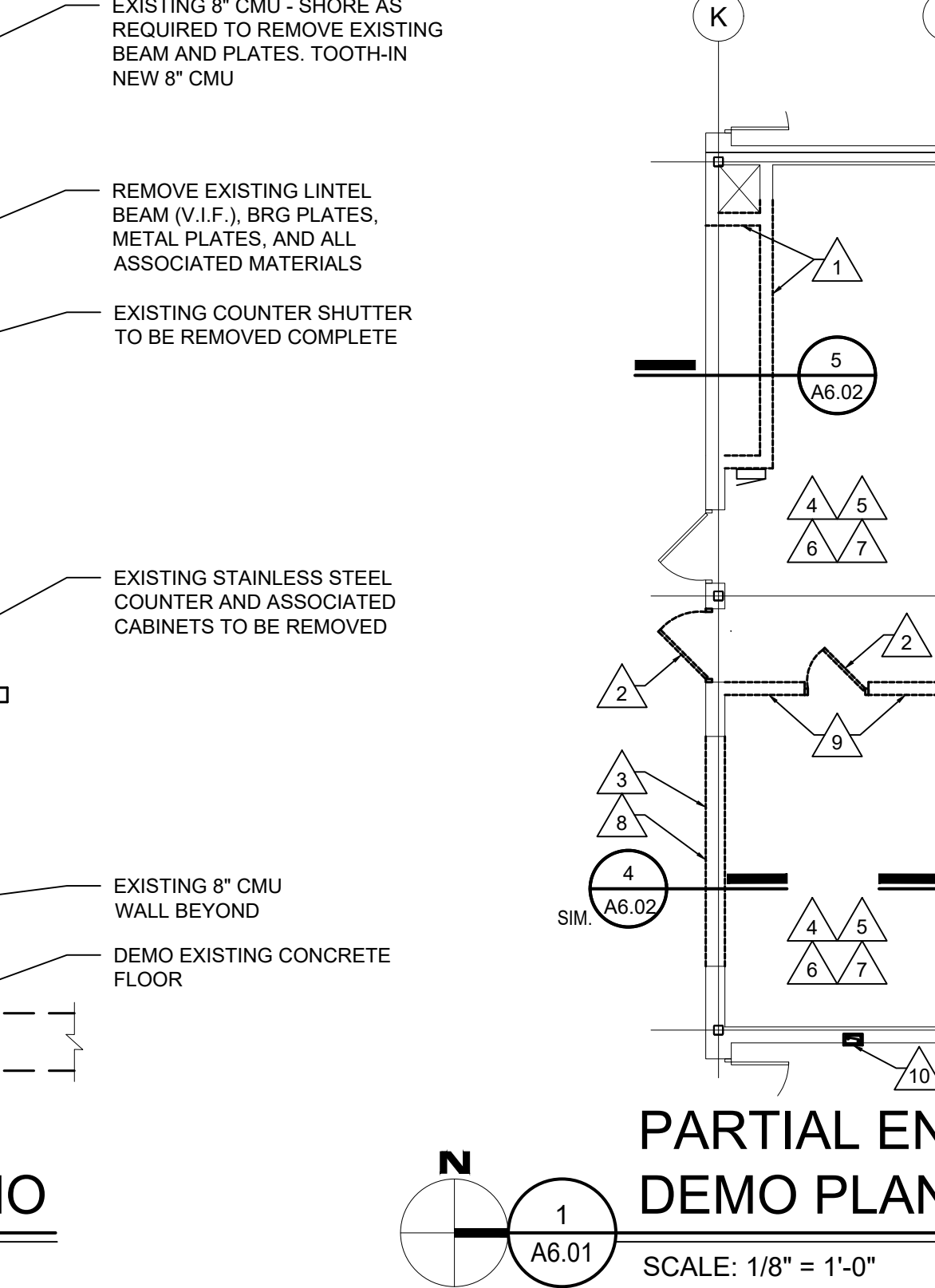
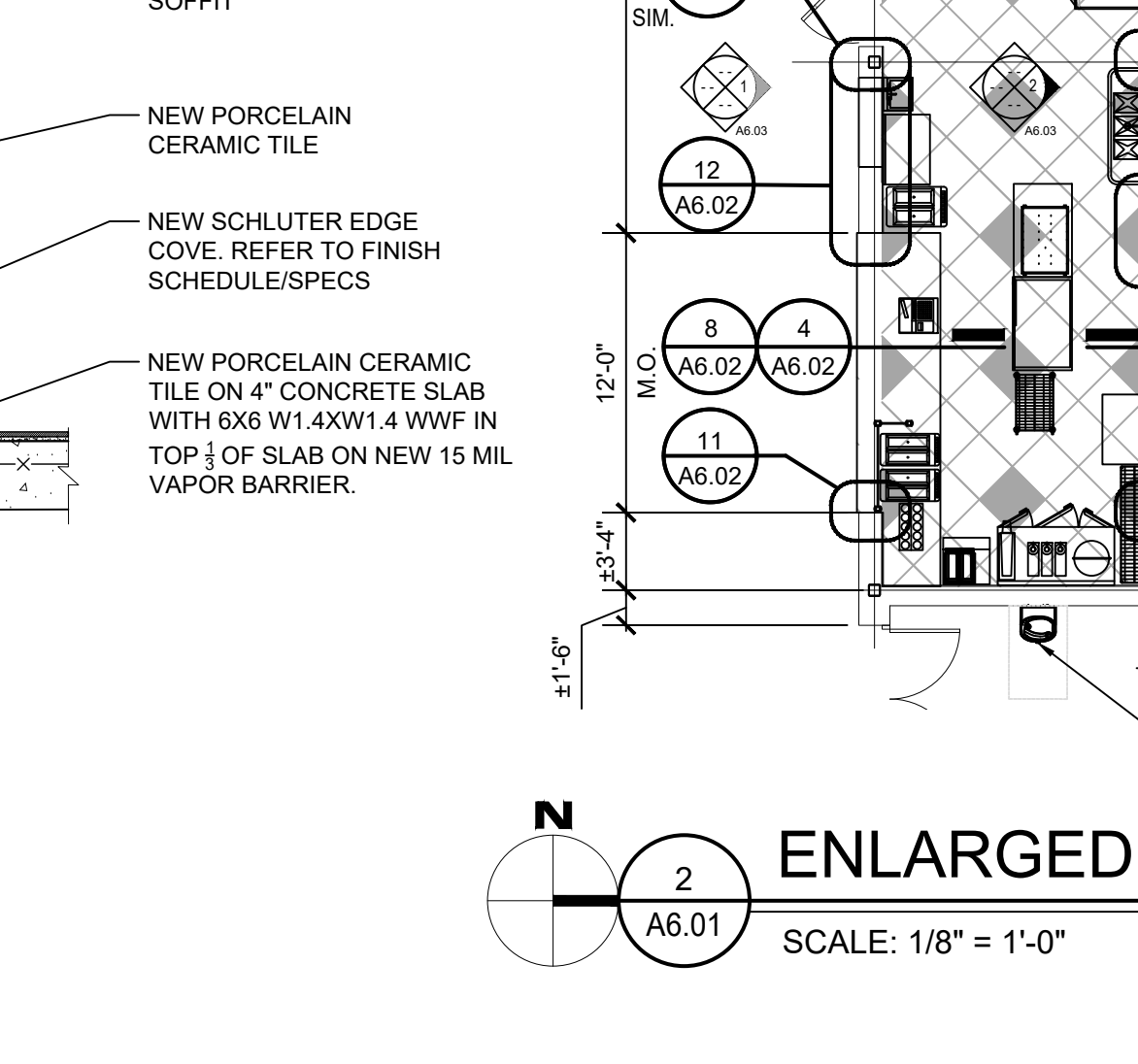
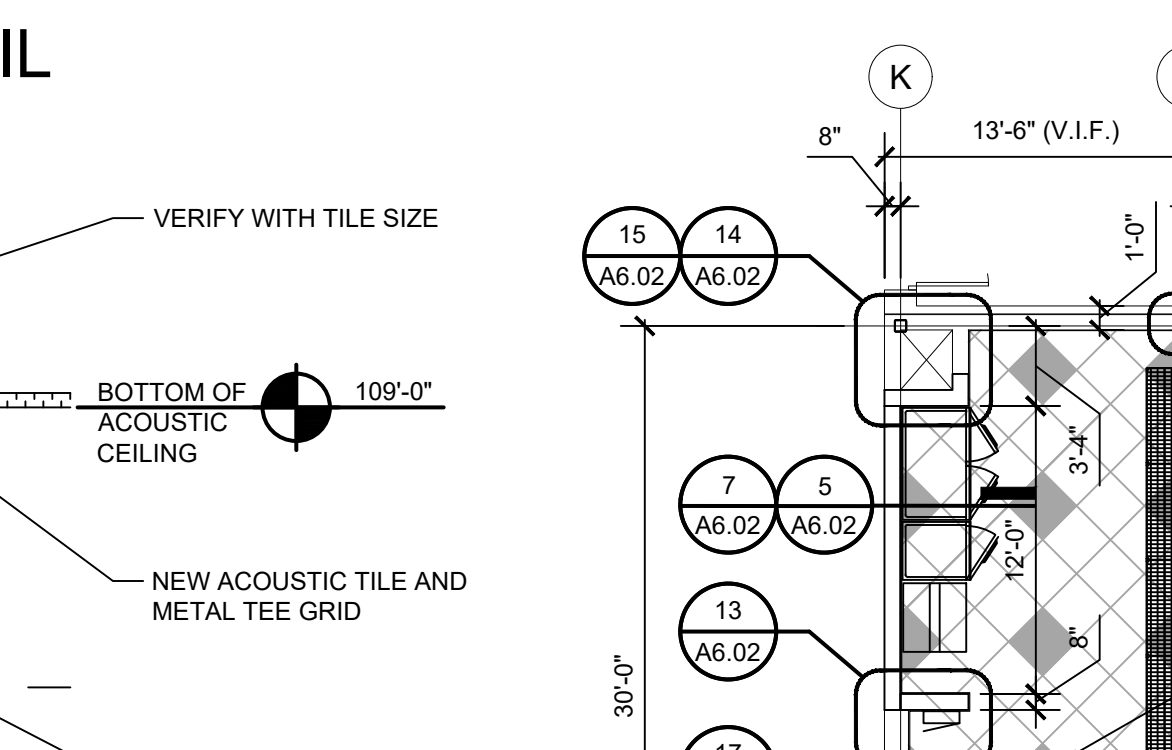
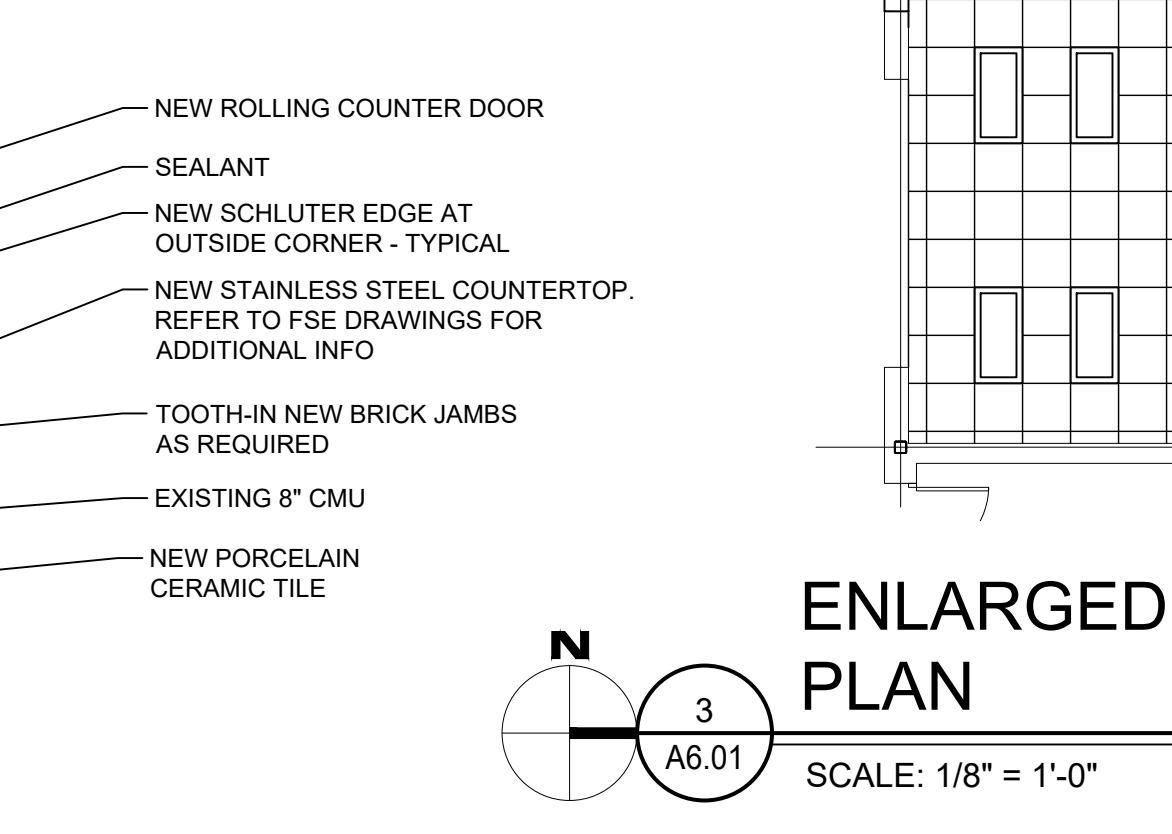
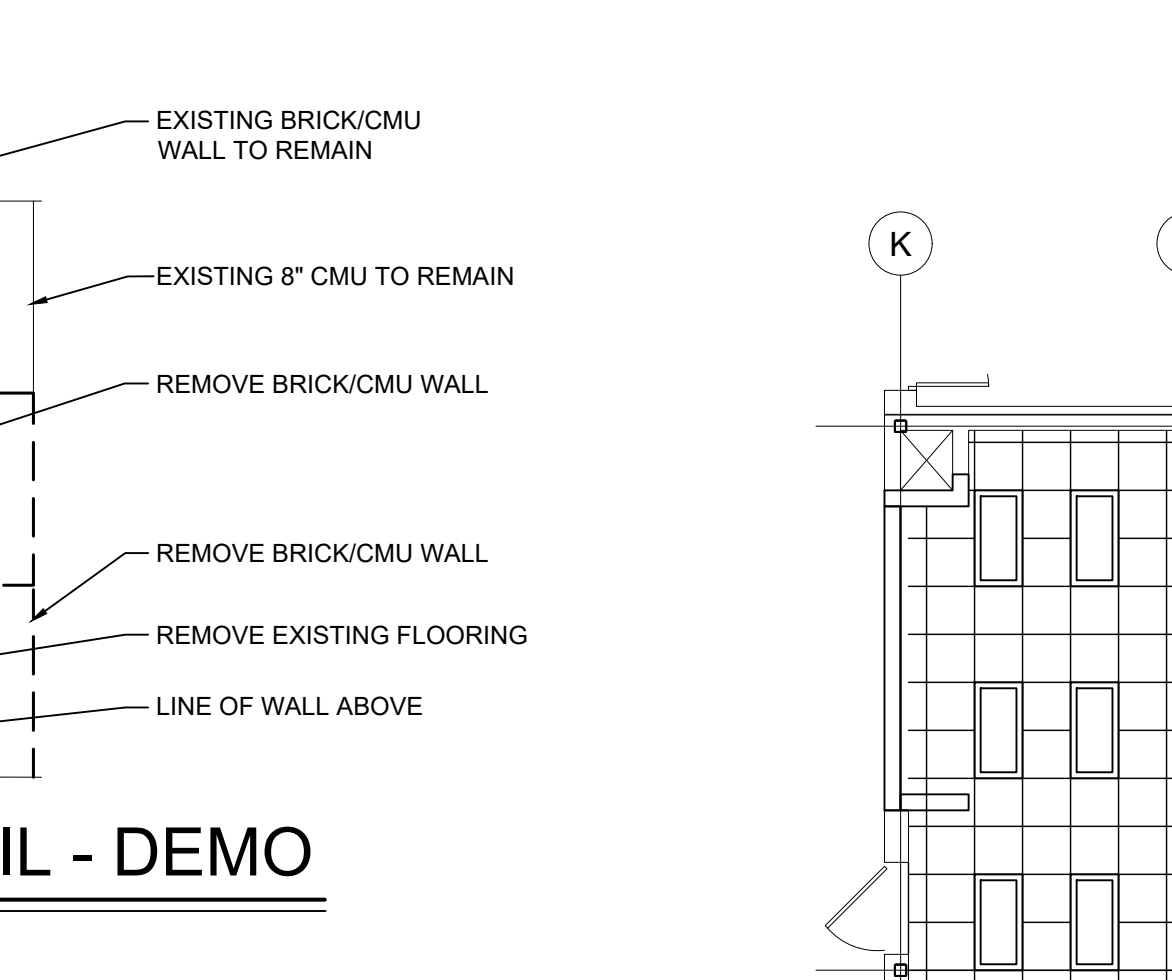
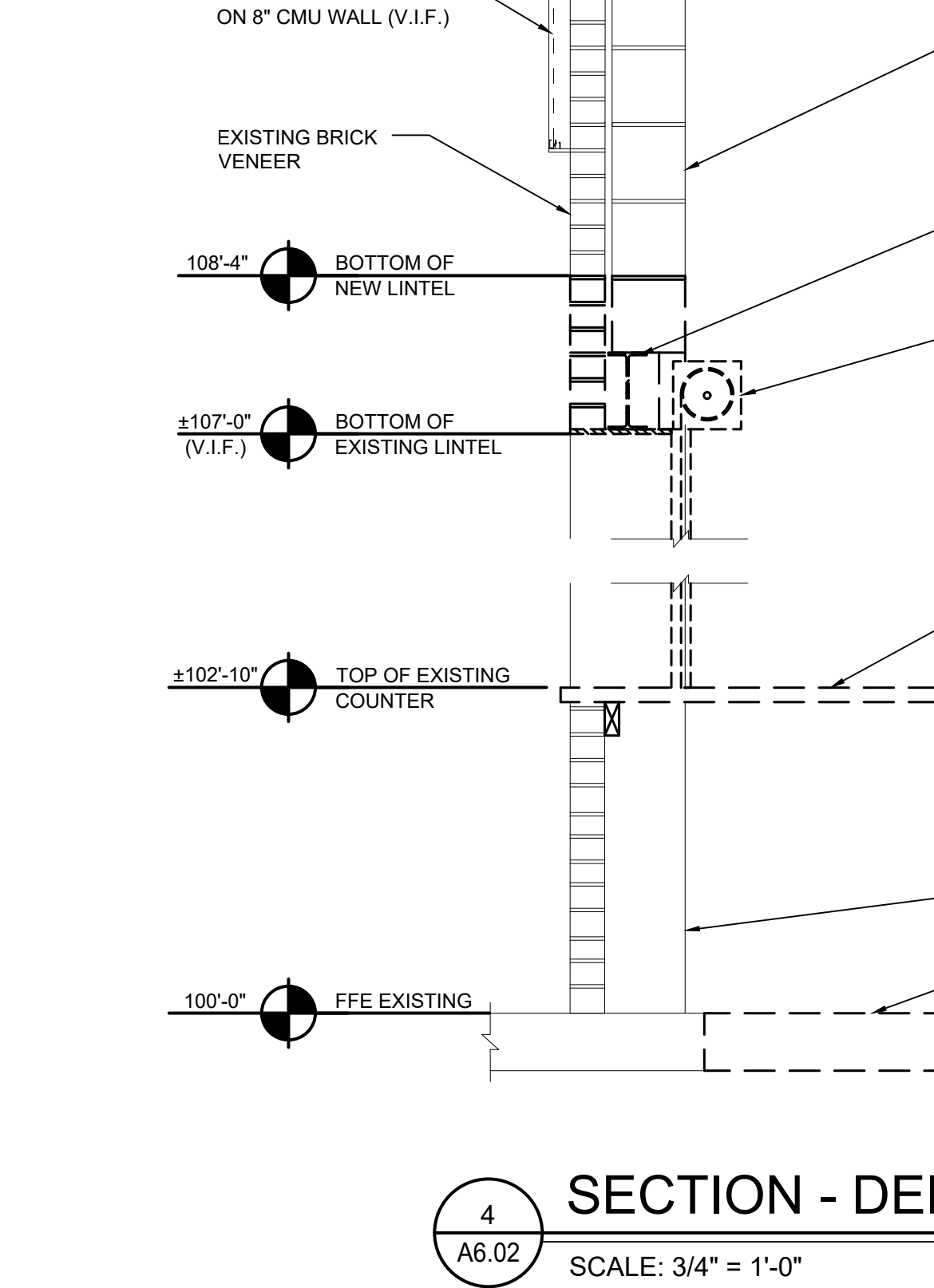
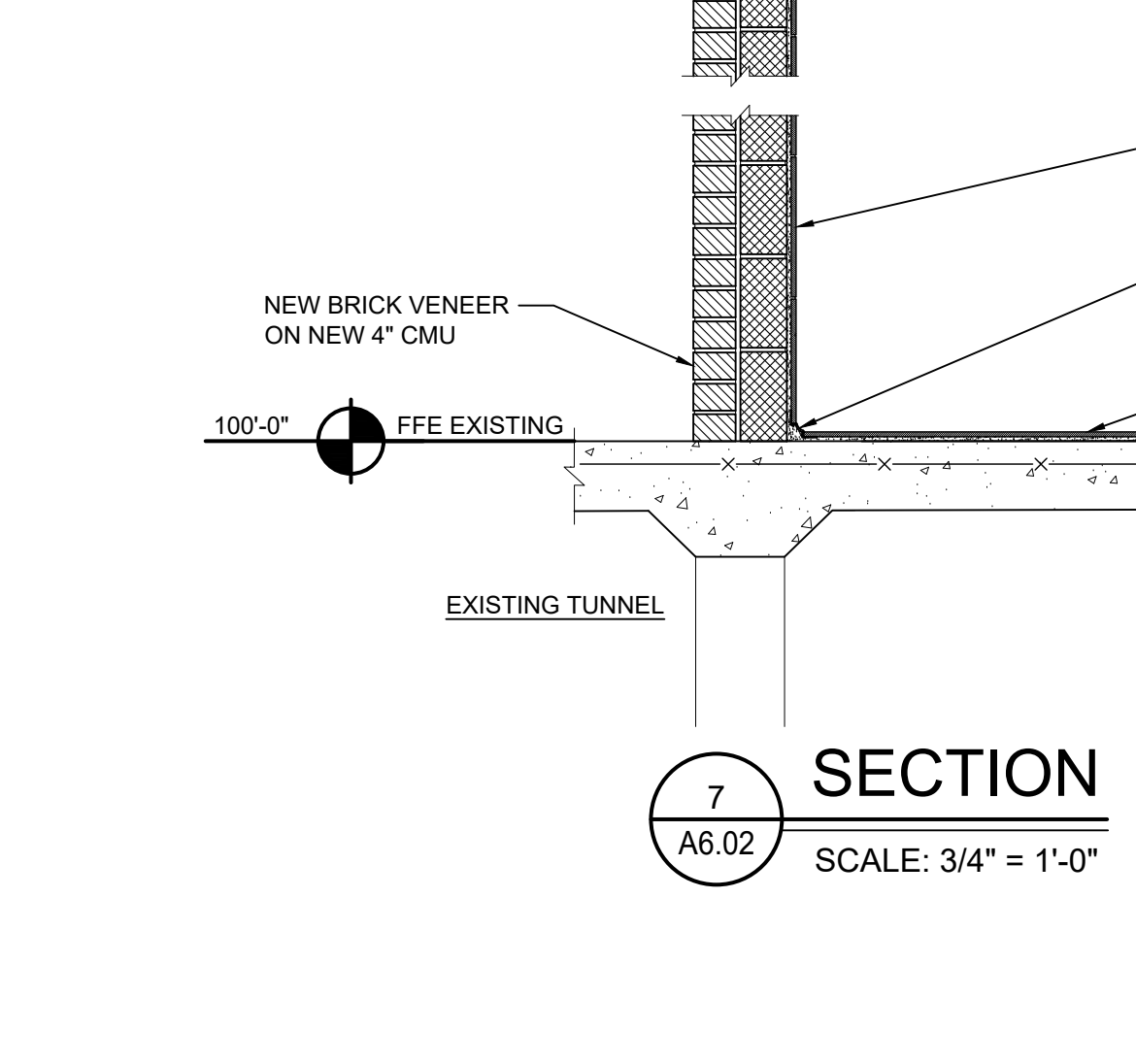
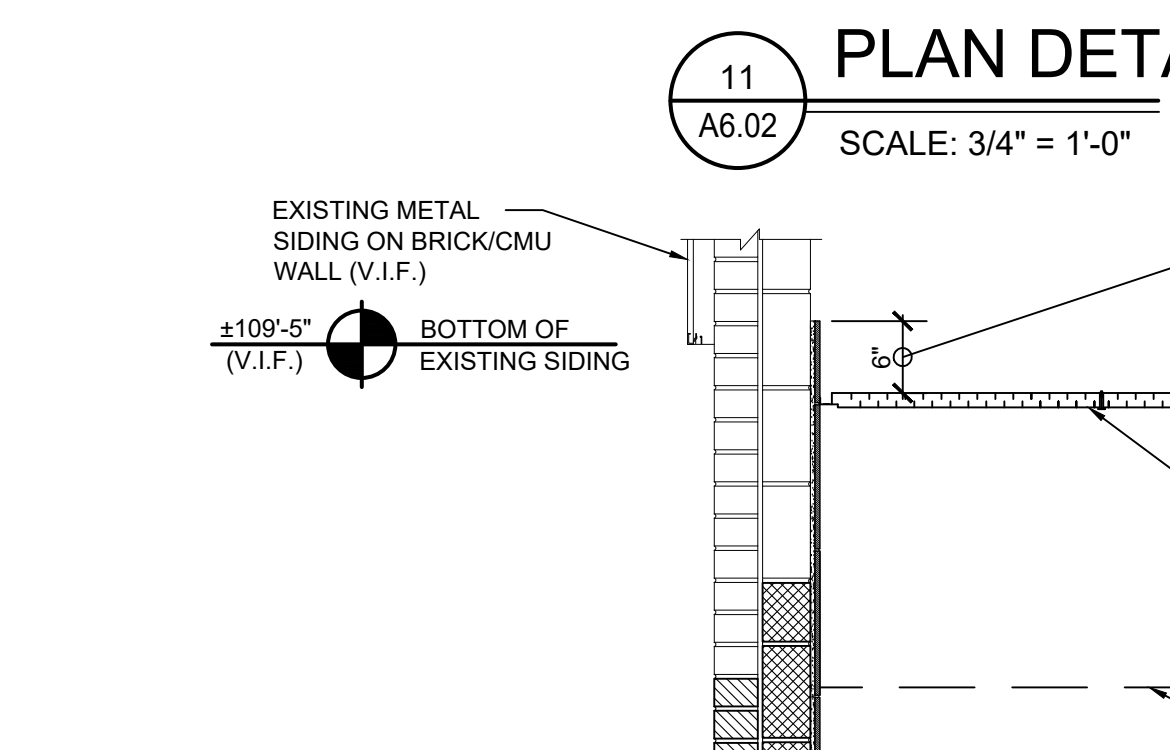
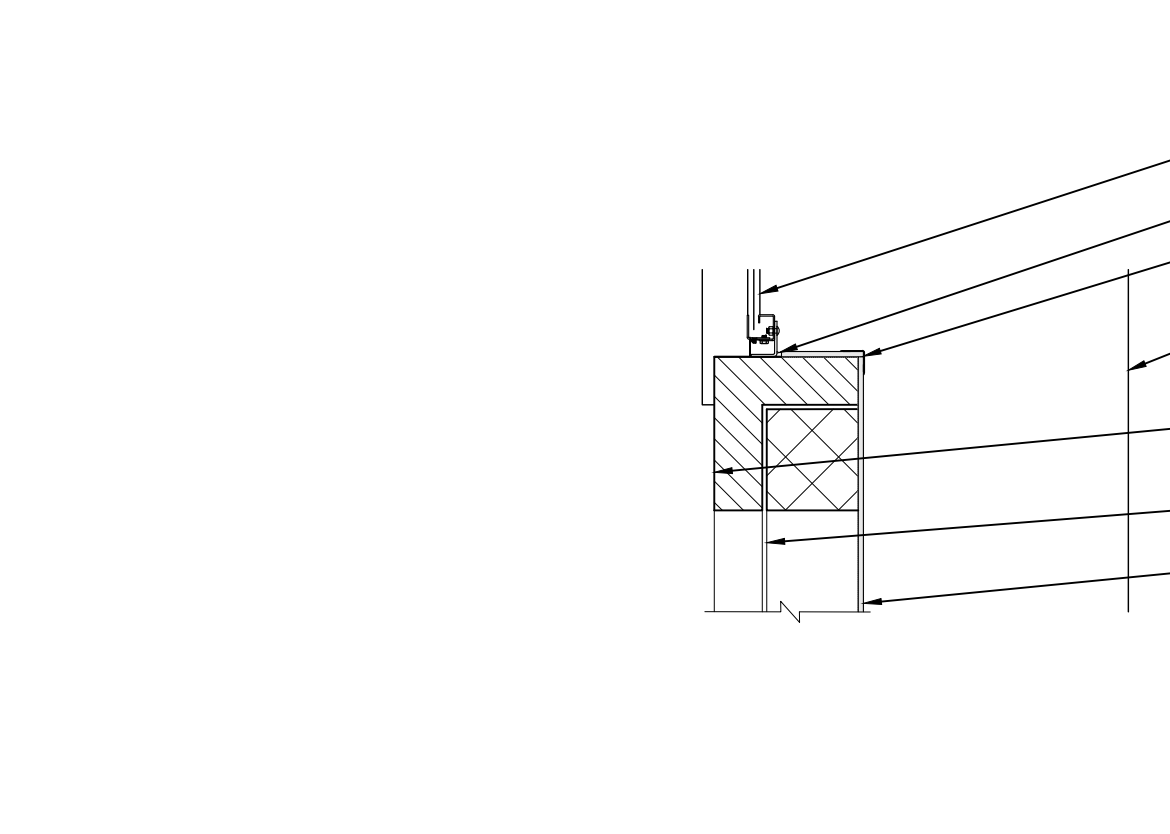
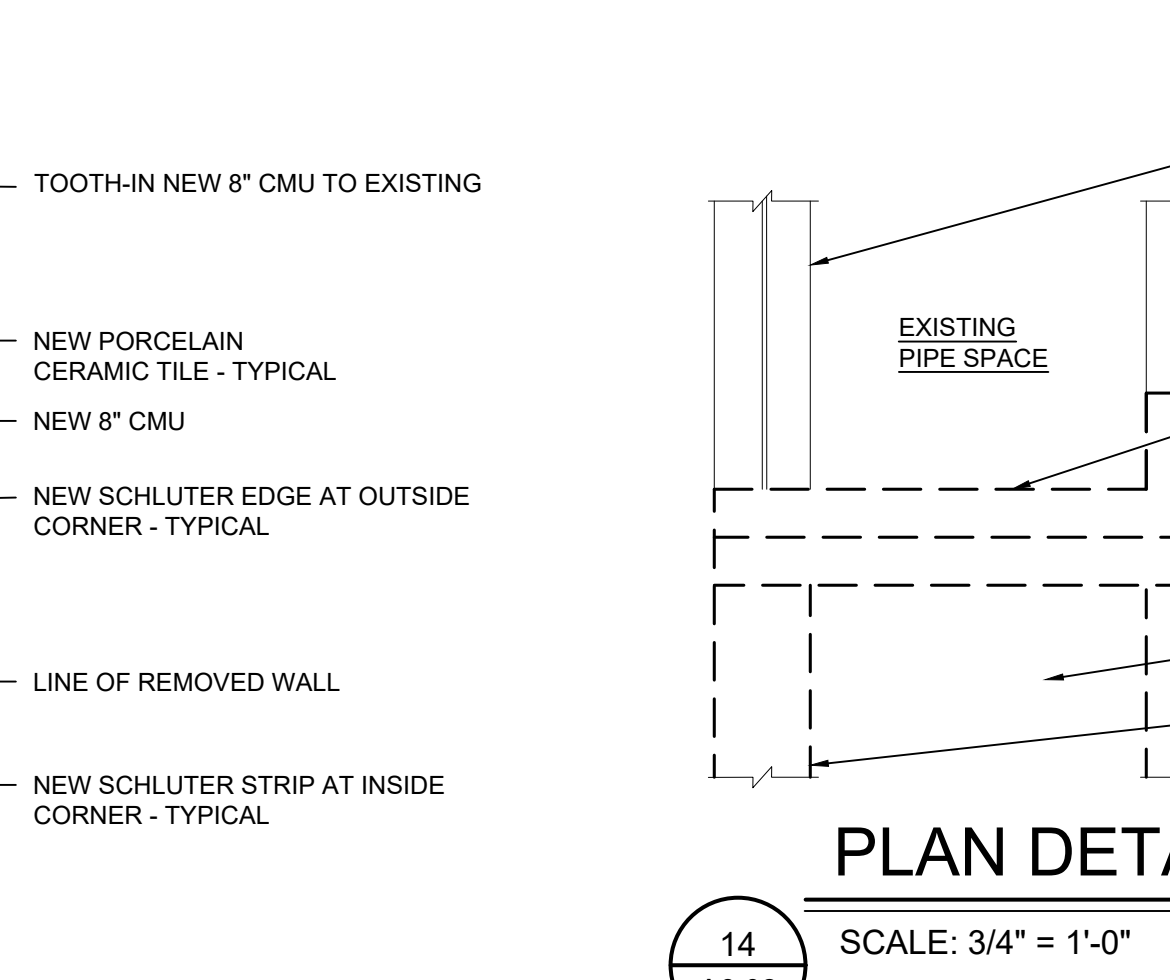
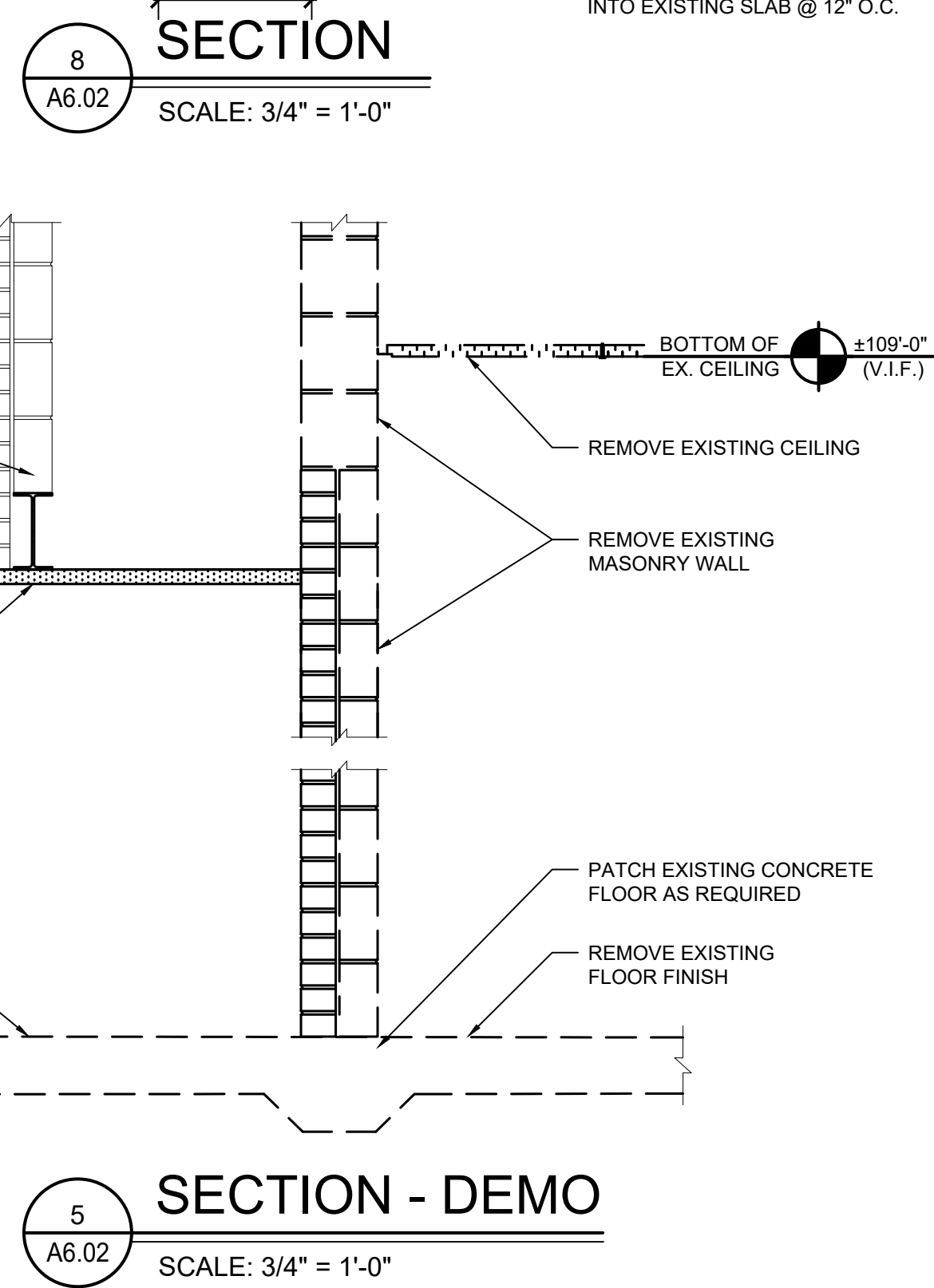
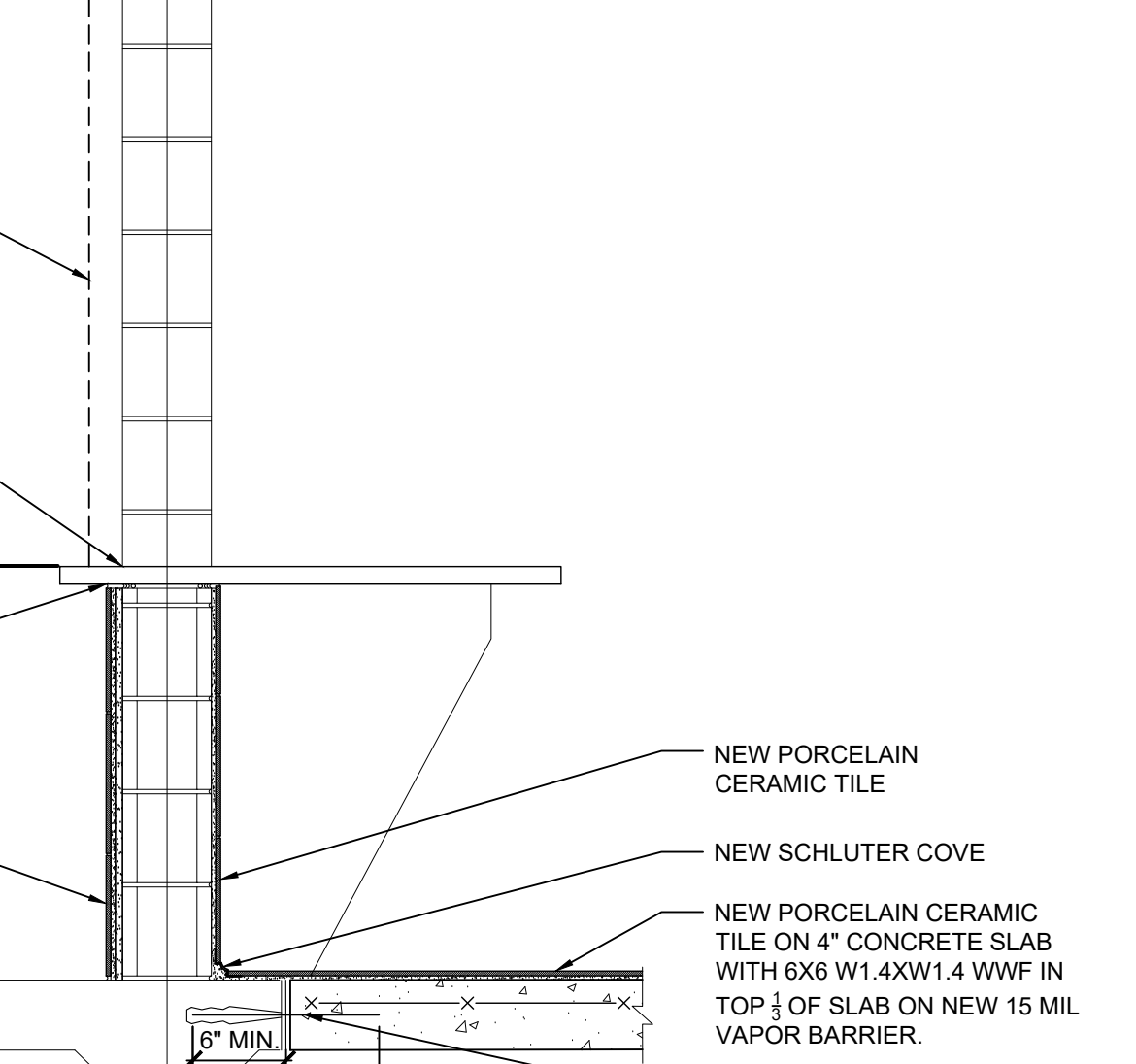
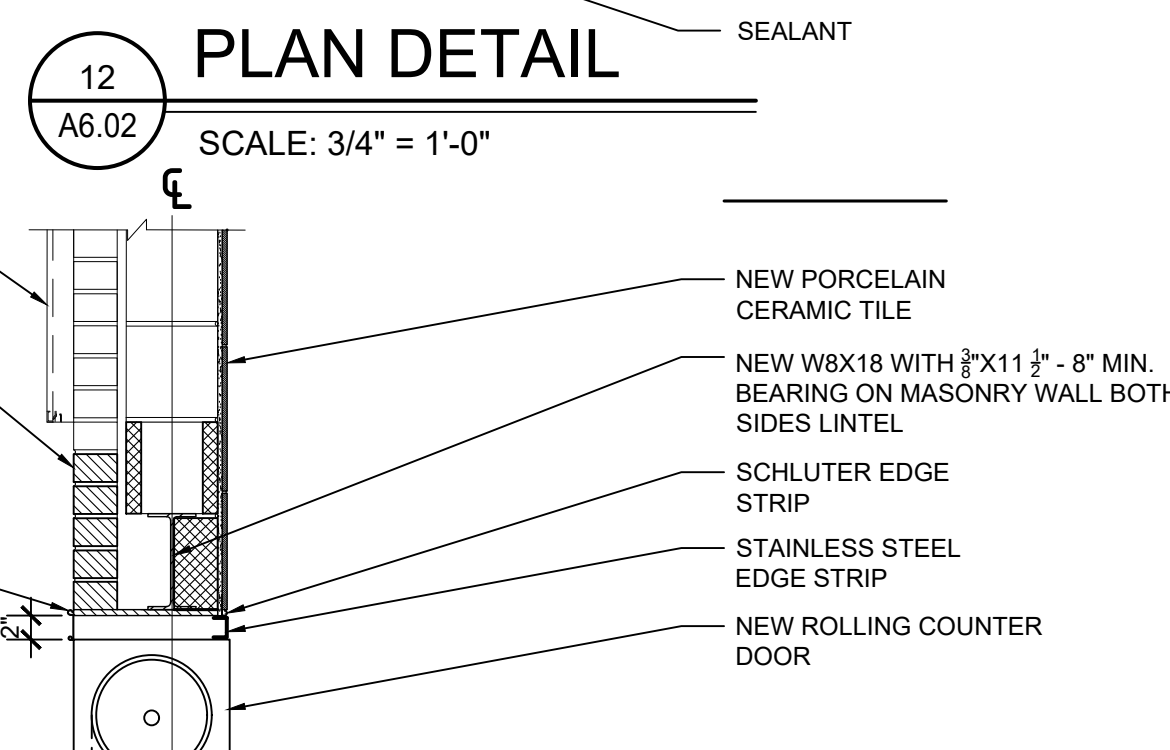
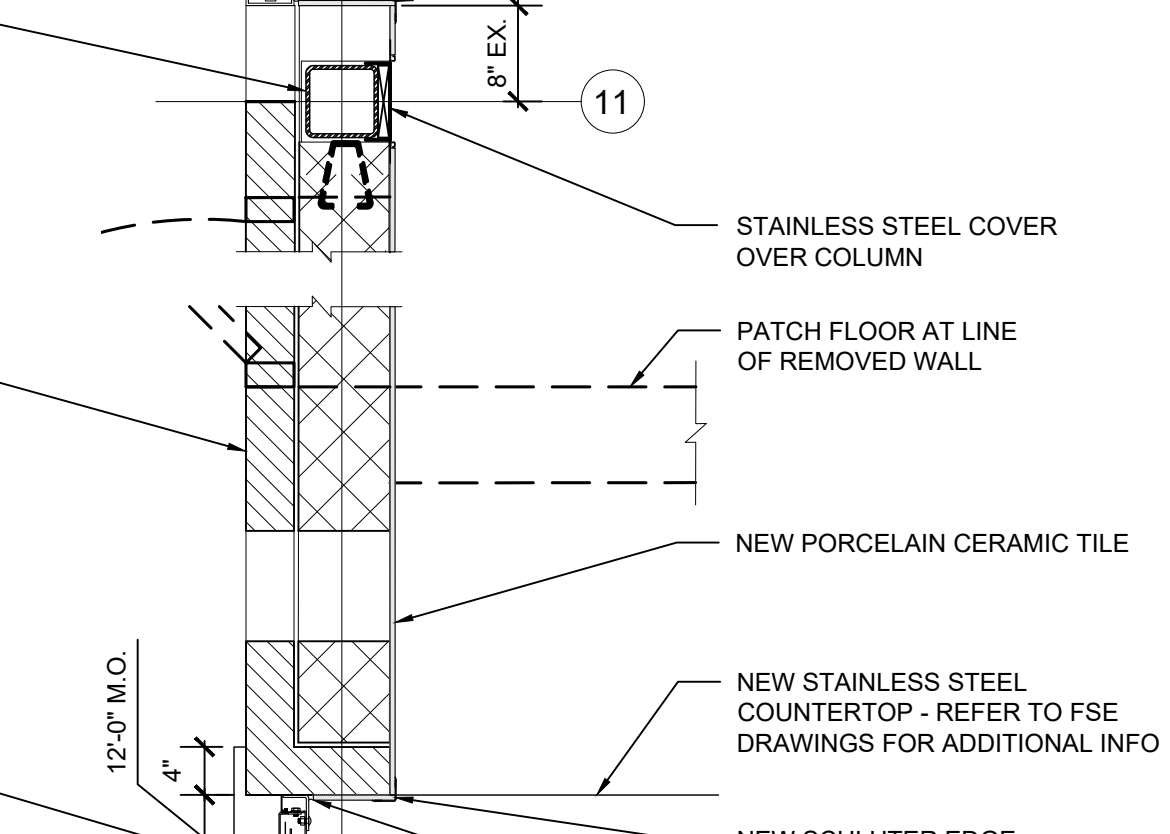
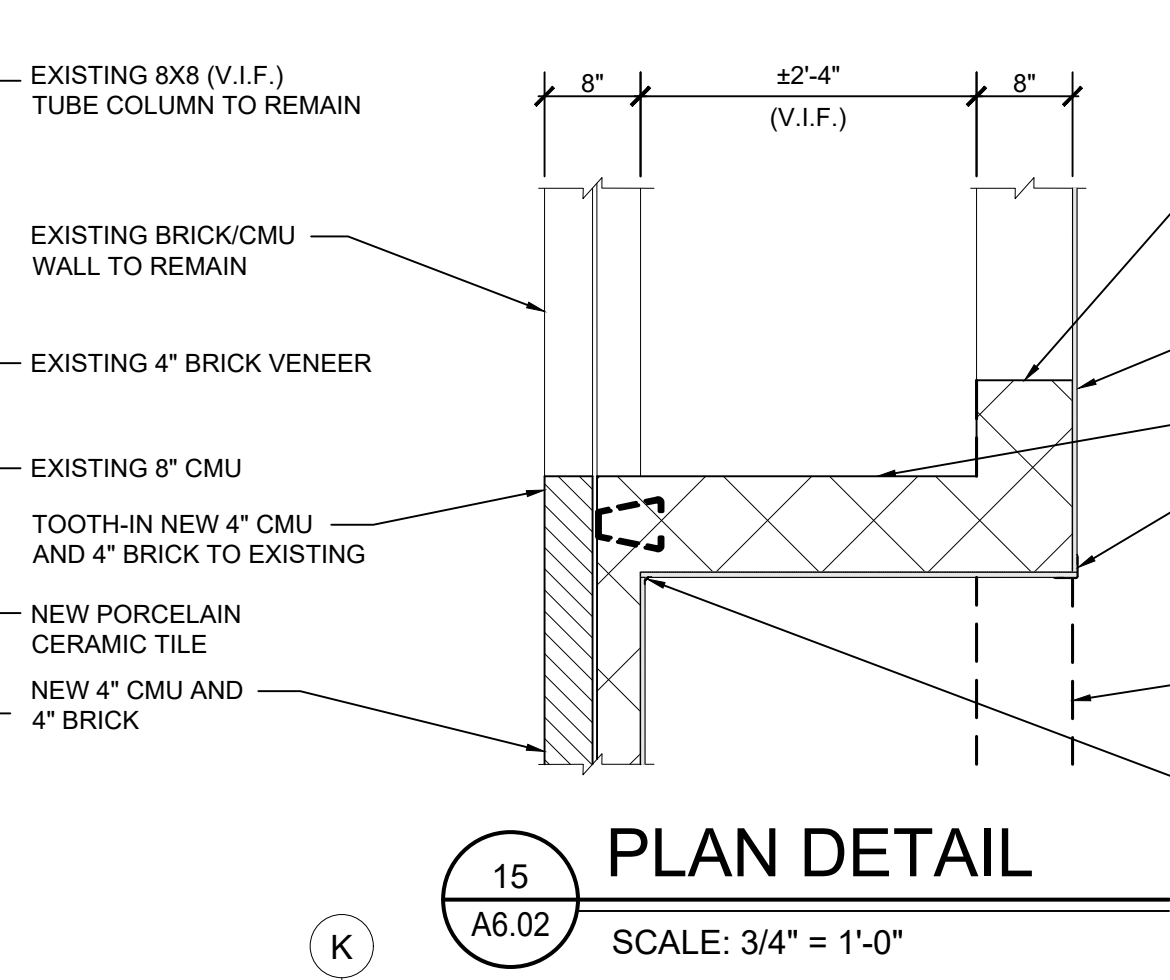
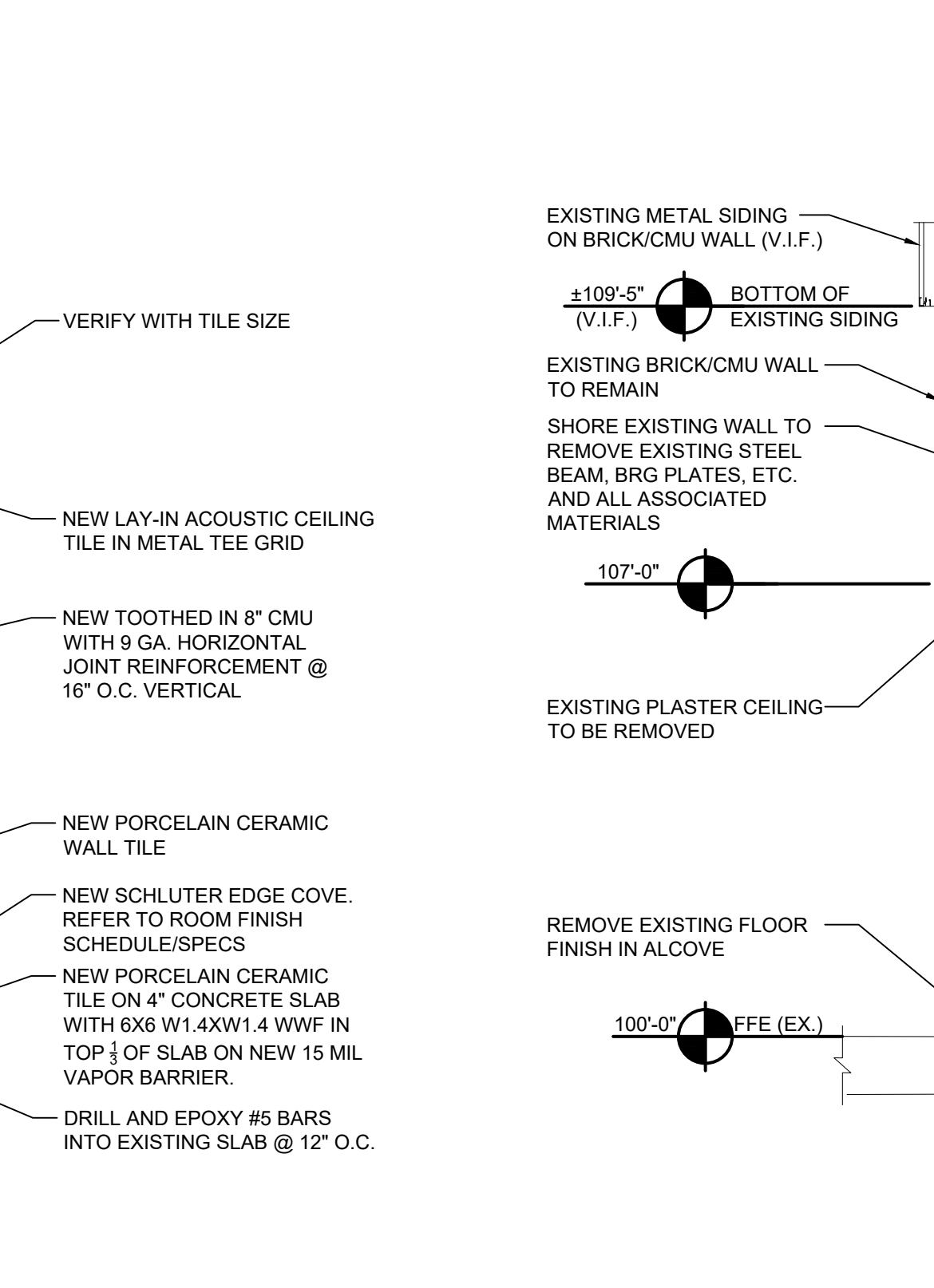
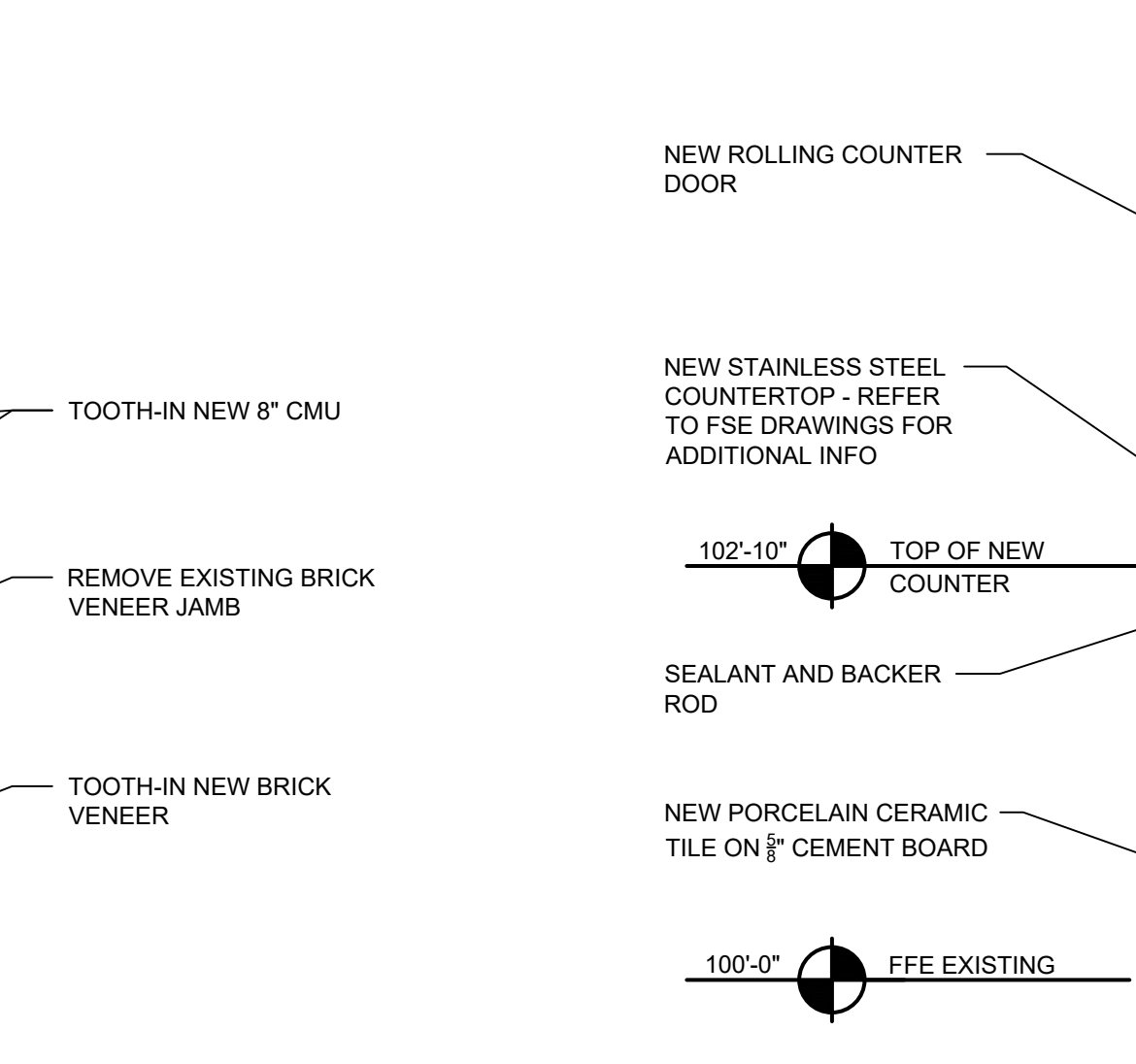
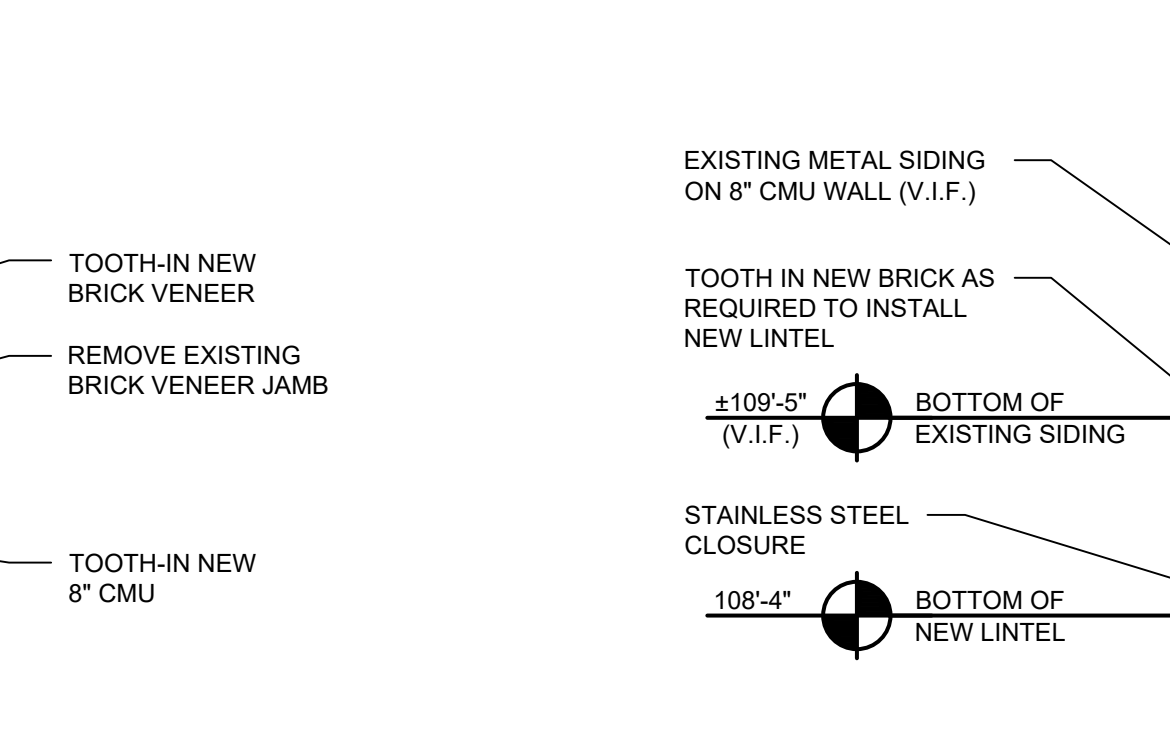
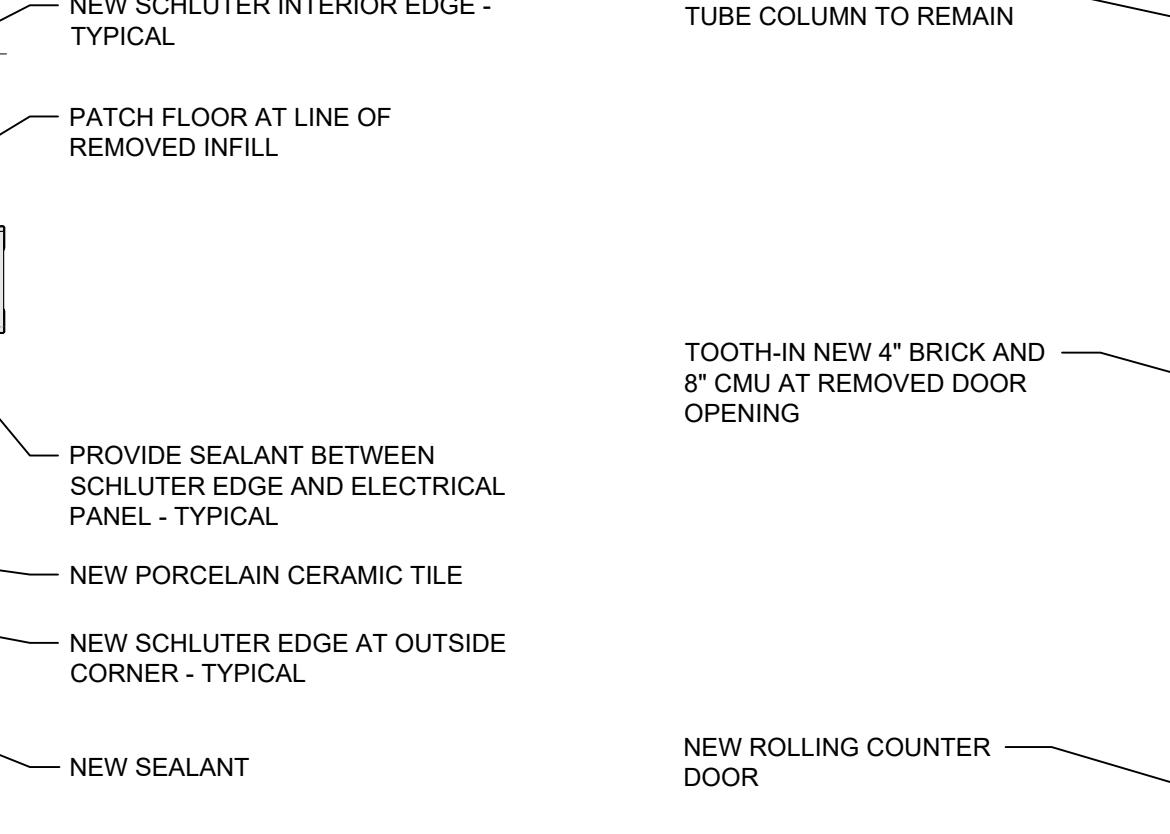
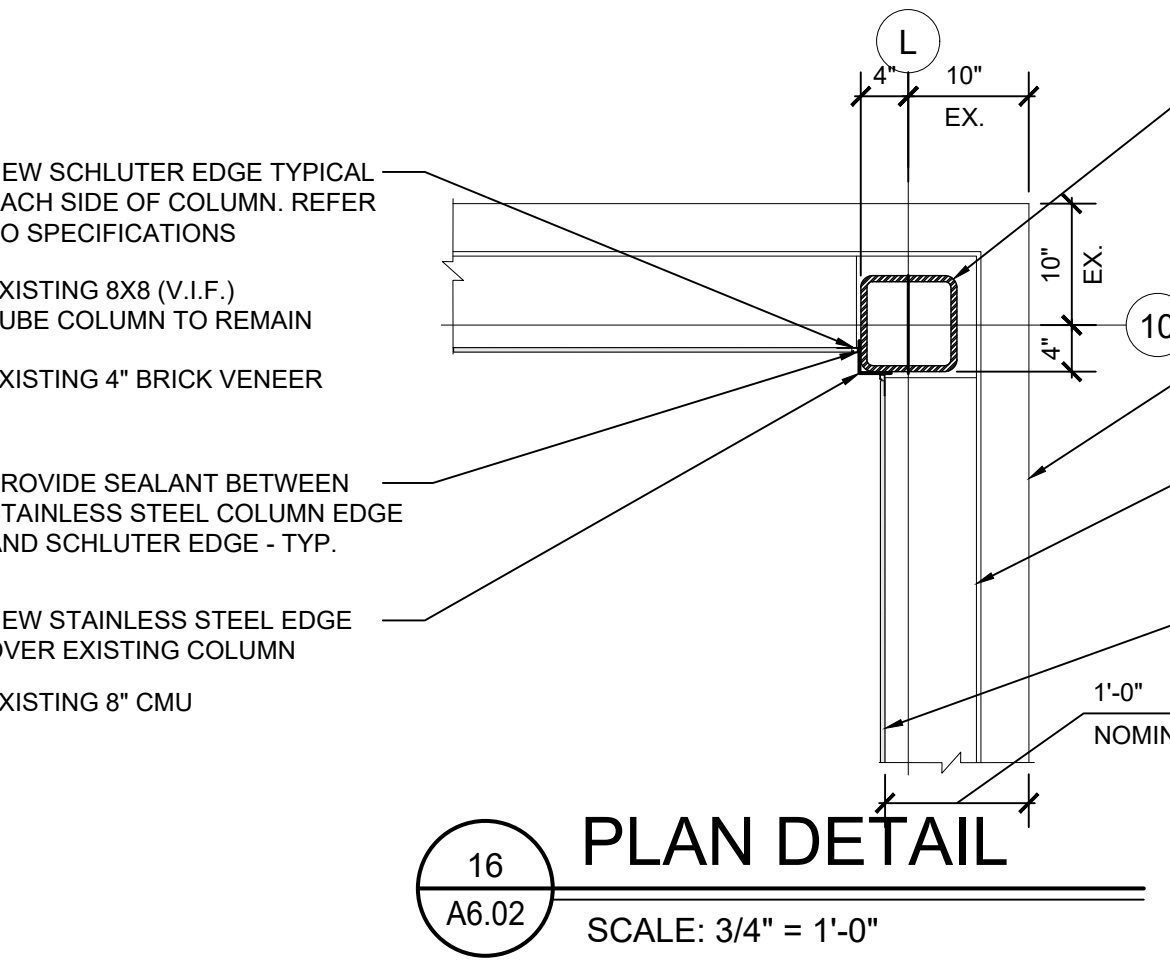
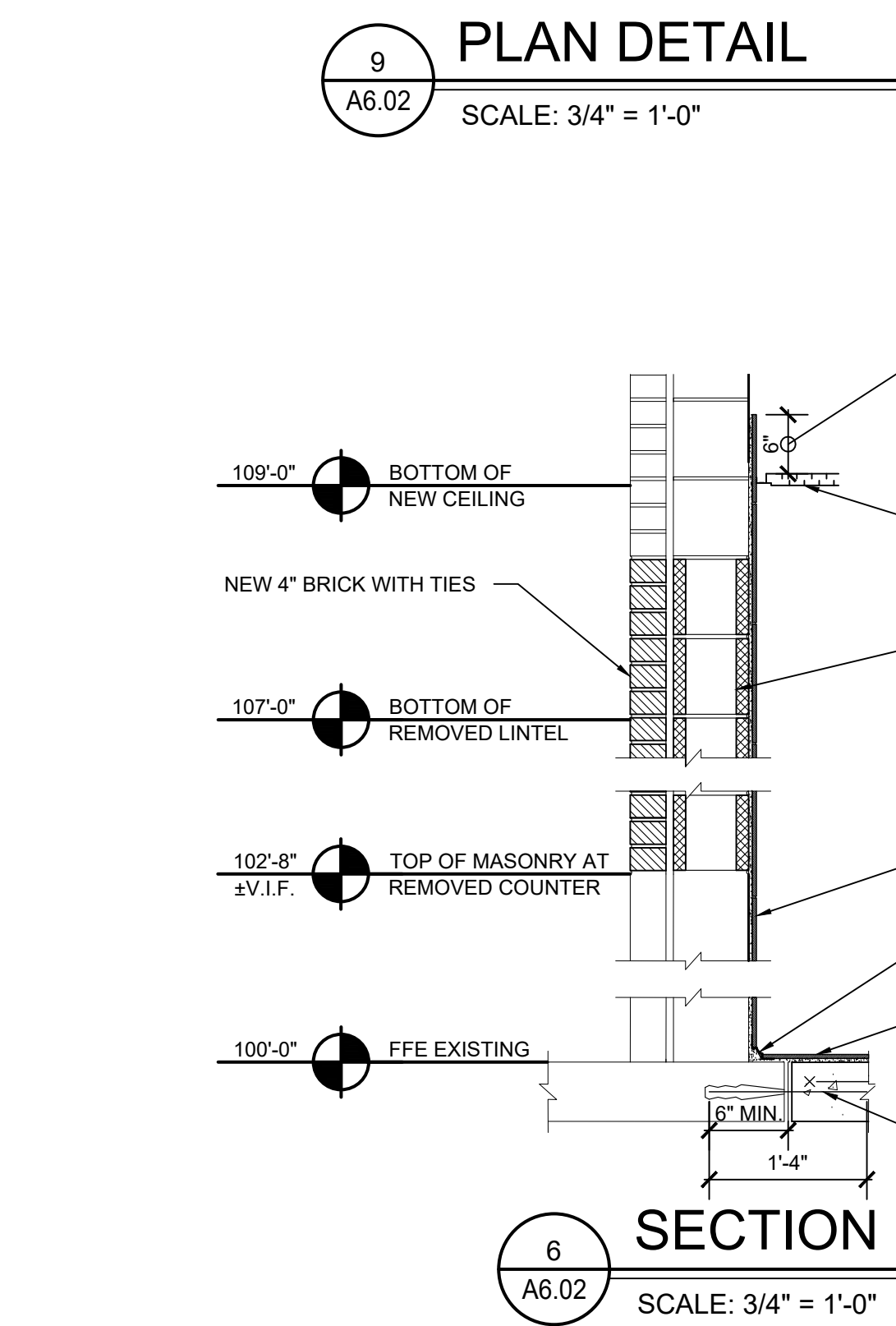
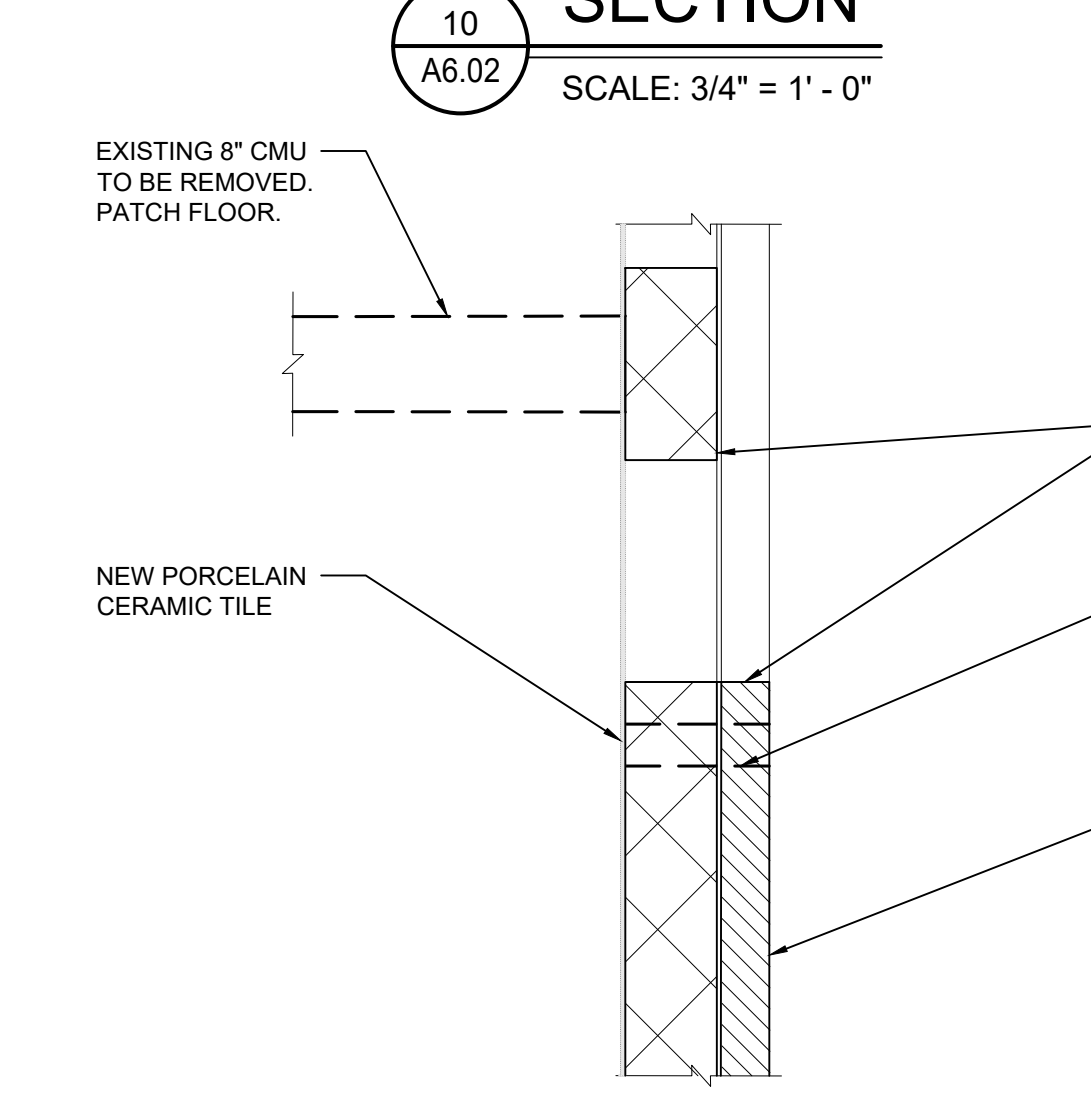
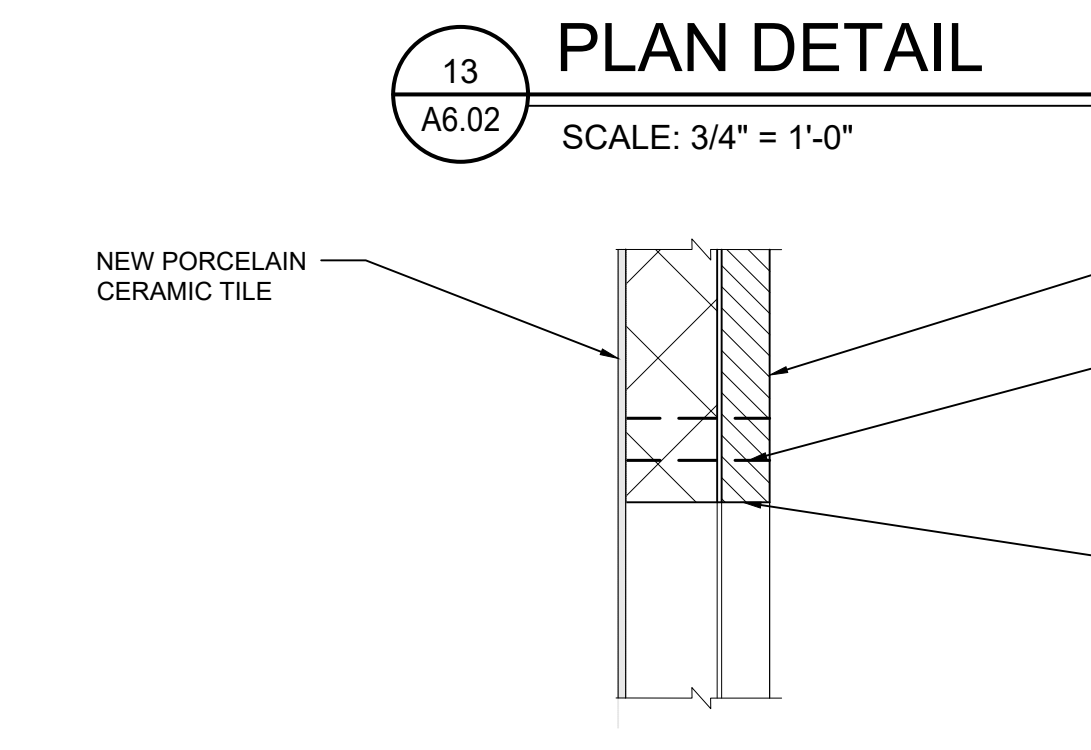
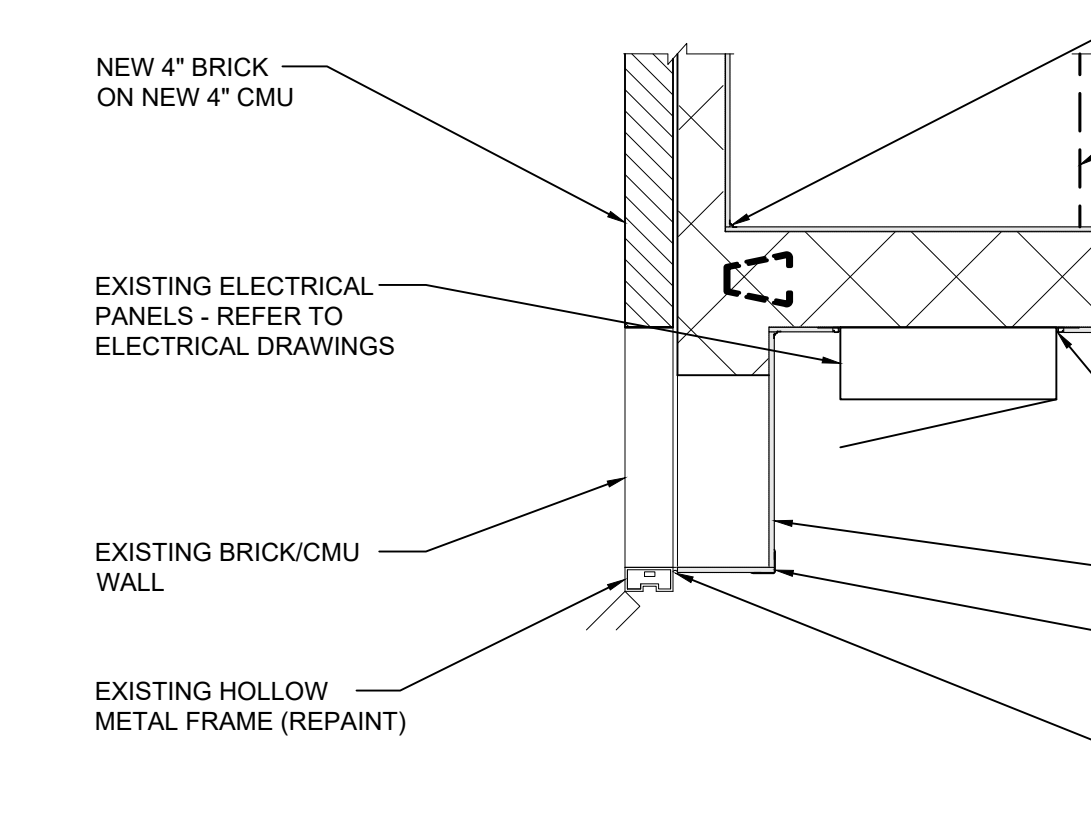
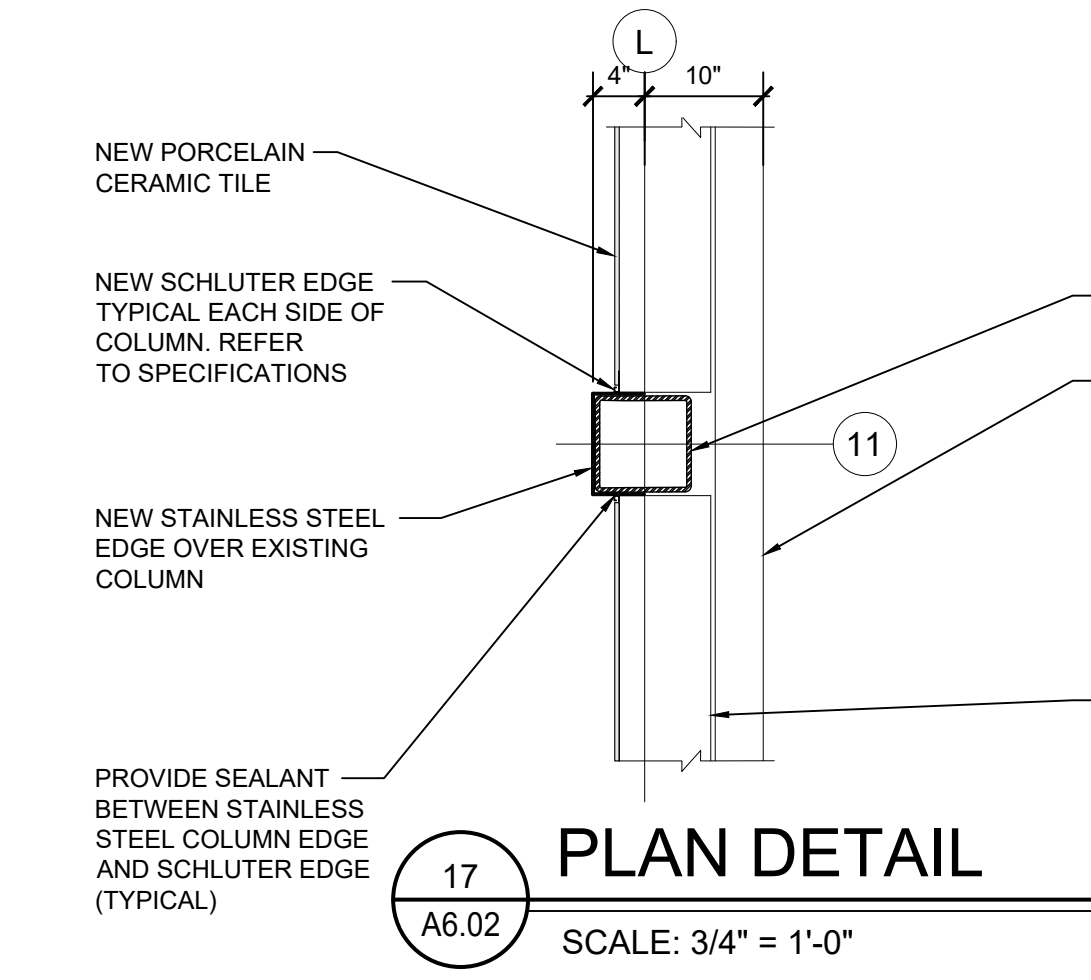
1 FIRST FLOOR COMPOSITE PLAN
SCALE: 1/40"=1'-0"

DEMOLITION KEY NOTES - FLOOR PLAN:

- 1 REMOVE EXISTING MASONRY (BRICK/CMU) AND SOFFIT, FLOORING, AND ALL ASSOCIATED MATERIAL. REFER TO DEMO SECTION 2/A6.02/ REFER TO MEP DRAWINGS FOR ADDITIONAL MEP DEMO.
- 2 REMOVE EXISTING DOOR AND FRAME.
- 3 REMOVE EXISTING COUNTER DOORS AND ALL ASSOCIATED MATERIAL.
- 4 REMOVE EXISTING CONCRETE FLOOR, FINISH, AND BASE.
- 5 REMOVE EXISTING CEILING, LIGHTS, DIFFUSERS, ETC. AND ALL ASSOCIATED MATERIAL. REFER TO MEP DRAWINGS FOR ADDITIONAL DEMO. FIRE SUPPRESSION SYSTEM TO REMAIN. REMOVE EXISTING FIRE SPRINKLER HEAD FOR REPLACEMENT.
- 6 REMOVE EXISTING WALL FINISHES TO SUBSTRATE.
- 7 REMOVE EXISTING FOODSERVICE EQUIPMENT FOR SALVAGE. CLEANING, AND REUSE. REFER TO FOOD SERVICE DRAWINGS FOR ADDITIONAL INFORMATION.
- 8 REMOVE EXISTING COUNTER COMPLETE.
- 9 REMOVE EXISTING CMU WALL.
- 10 DEMO RECESSED DRINKING FOUNTAIN.

GENERAL NOTES:

- 1. SALVAGE ALL 4" BRICK TO BE SALVAGED AND REUSED WHERE APPLICABLE



ROOM FINISH SCHEDULE

NO.	ROOM NAME	FLOOR	BASE	WALLS	CEILING		REMARKS
					MATERIAL	HGT.	
100	SERVERY	PCT	PCT	PCT	ACT	9'-0"	1,2,3

GENERAL NOTES:

1. ALL 4" BRICK TO BE SALVAGED AND REUSED WHERE APPLICABLE



WAKELY ASSOCIATES, INC.
ARCHITECTS

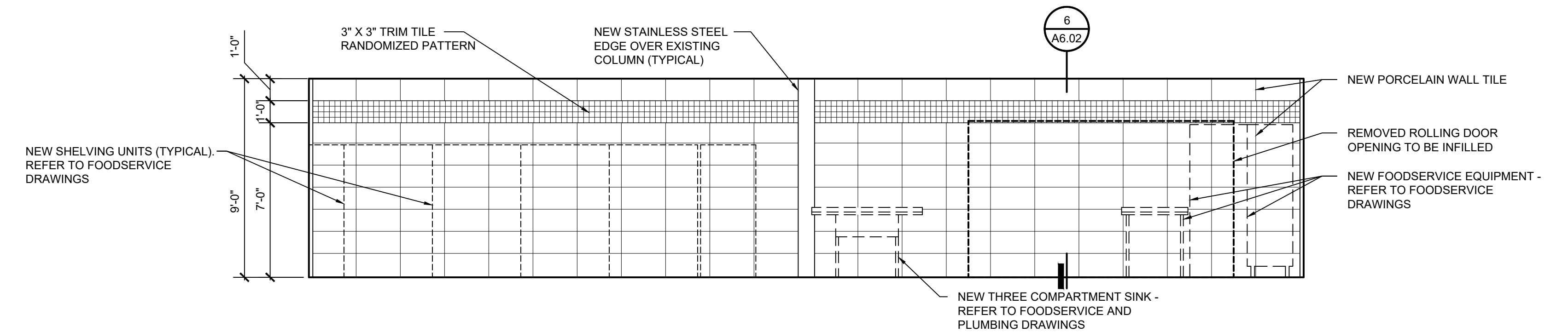
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ROOM FINISH REMARKS:

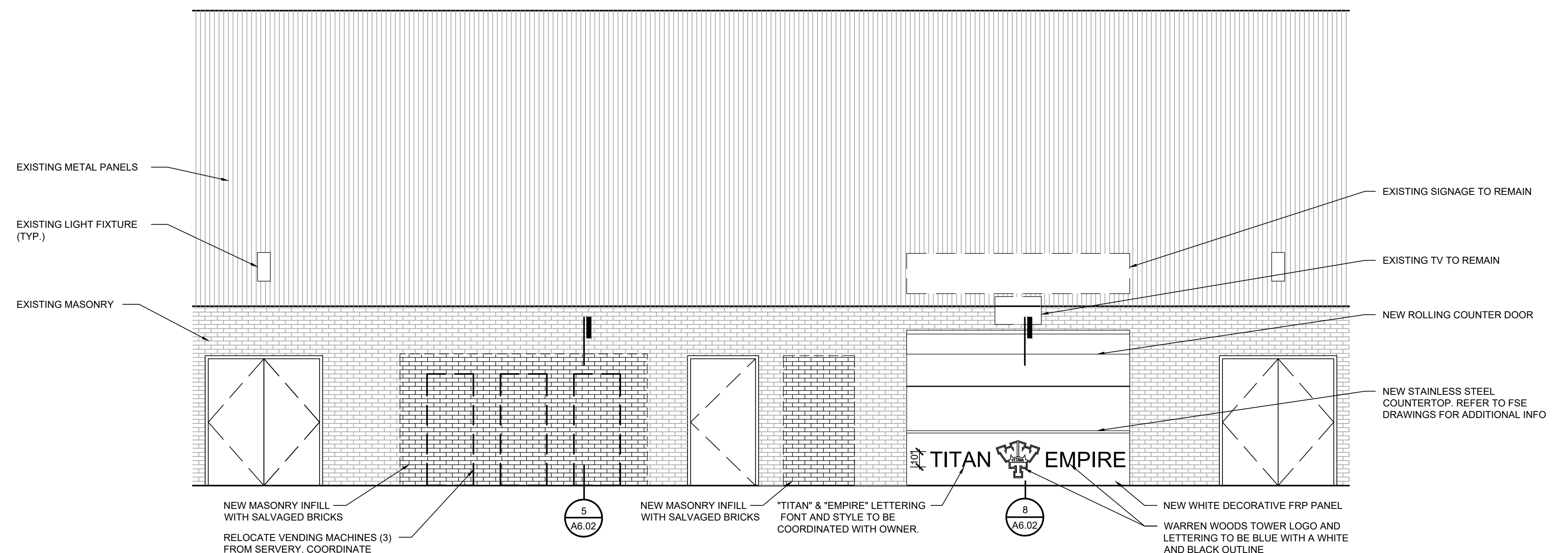
1. NEW FOOD SERVICE GRADE ACOUSTIC TILE IN NEW GRID
2. PAINT EXISTING DOOR FRAME - BOTH SIDES WITH NEW EPOXY PAINT
3. REFER TO ELEVATIONS AND SPECS FOR PORCELAIN CERAMIC WALL TILE SIDES

ABBREVIATIONS

PCT	PORCELAIN CERAMIC TILE
ETR	EXISTING TO REMAIN
ACT	ACOUSTIC CEILING TILE (REFER TO SPECS)
PT	PAINT



2 INTERIOR ELEVATION
A6.02 SCALE: 1/4"=1'-0"



NOTE: LETTERING AND LOGO COLORS
(REFER TO SPECS):
"HYPER BLUE SW6965"
"TRICORN BLACK SW6258"
"EXTRA WHITE SW7008"

1 INTERIOR ELEVATION
A6.02 SCALE: 1/4"=1'-0"

WARREN WOODS PUBLIC SCHOOL DISTRICT
TOWER HS - TITAN EXPRESS SERVERY
HAWTHORN FOOD PROGRAM FREEZER REPLACEMENT

TOWER HIGH SCHOOL
FOOD SERVICE
FINISH SCHEDULE AND
INTERIOR ELEVATIONS

- PRELIMINARY
- DESIGN DEVELOPMENT
- CONSTRUCTION
- FINAL RECORD

DRAWN BY: TDM
CHECKED BY: _RAS

REVISIONS
OWNER REVIEW 02/28/2025
BIDS 03/11/2025

DATE: MARCH 11, 2025
SHEET NO.

A6.03

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TOWER HS - TITAN EXPRESS SERVERY
HAWTHORN FOOD PROGRAM FREEZER REPLACEMENT

HAWTHORN
COMPOSITE FLOOR PLANS

PRELIMINARY
DESIGN DEVELOPMENT
CONSTRUCTION
FINAL RECORD

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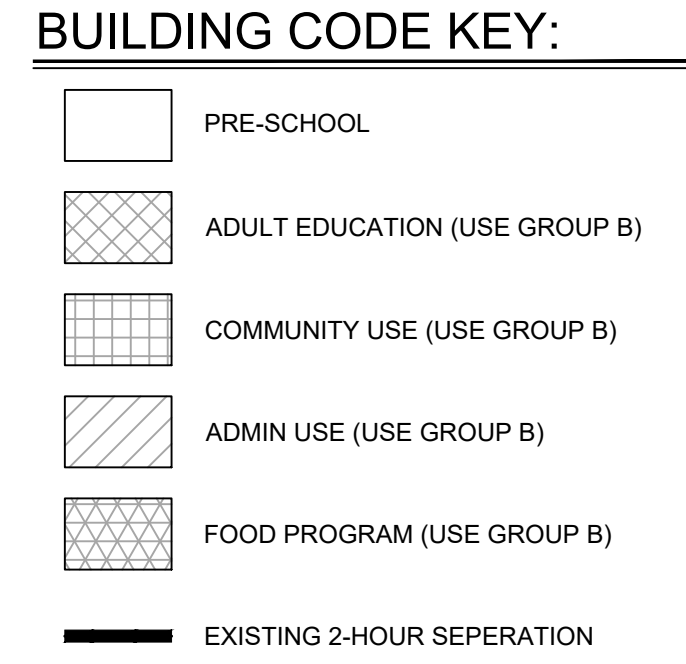
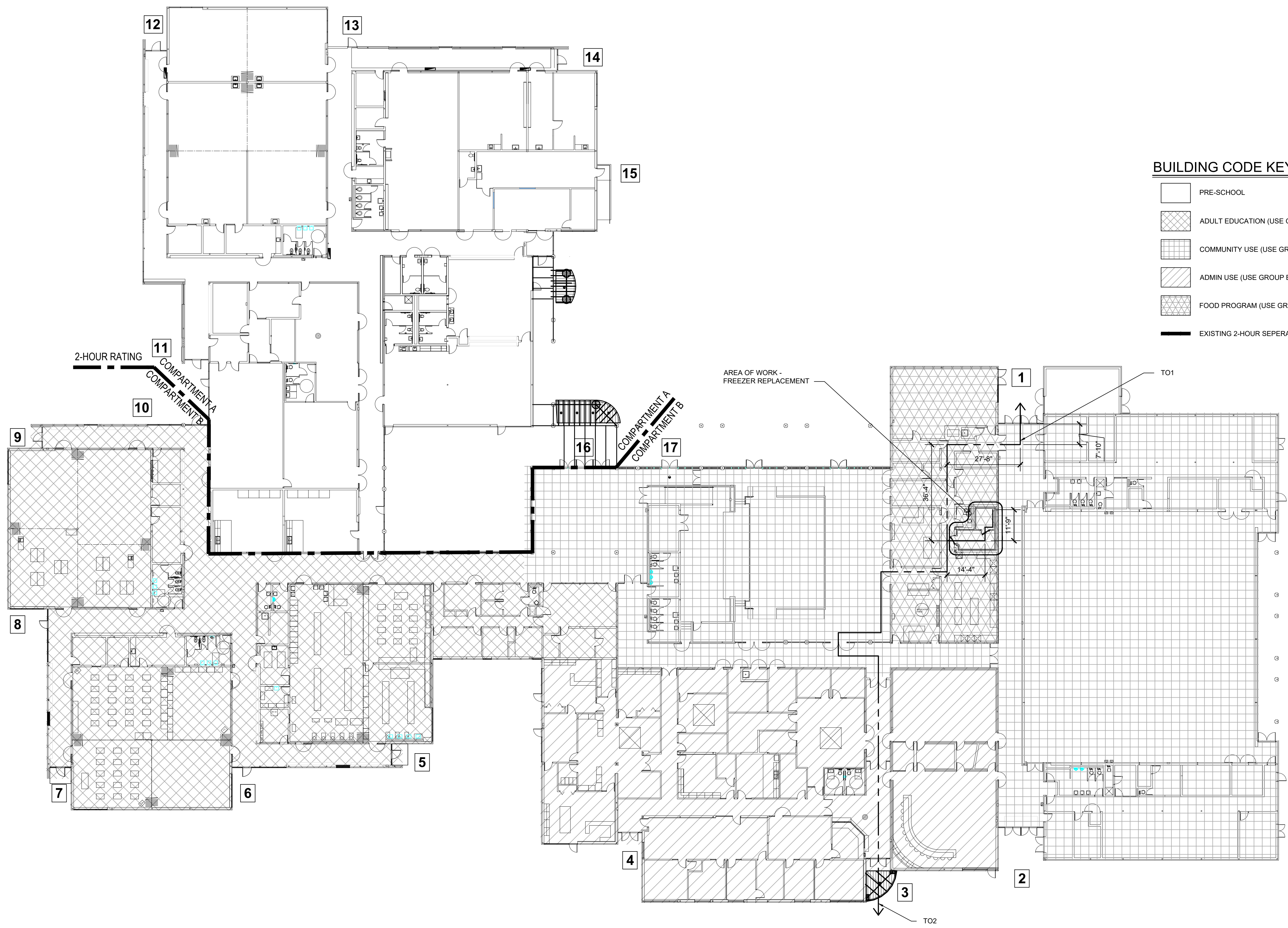
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JOB NO. 242030

BUILDING CODE SUMMARY:

PROJECT:	WARREN WOODS PUBLIC SCHOOLS HAWTHORN EDUCATIONAL CENTER FOOD PROGRAM FREEZER REPLACEMENT
ADDRESS:	12900 FRAZHO ROAD, WARREN MI 48808
PROPOSED USE:	ADMIN BUILDING BUSINESS USE GROUP/ PRESCHOOL REPLACEMENT OF AN EXISTING FREEZER/COOLER AT THE FOOD PROGRAM KITCHEN
REFERENCE CODES:	
RENOVATION:	MICHIGAN REHABILITATION CODE, 2015 EDITION
BUILDING:	MICHIGAN BUILDING CODE, 2015 EDITION
MECHANICAL:	MICHIGAN MECHANICAL CODE, 2021 EDITION
PLUMBING:	MICHIGAN PLUMBING CODE, 2021 EDITION
ELECTRICAL:	MICHIGAN ELECTRICAL CODE, (2023 NEC WITH PART 8 TECHNICAL AMENDMENTS)
ENERGY:	MICHIGAN ENERGY CODE, 2015 EDITION
BUILDING DATA USE GROUP:	E EDUCATIONAL
CONSTRUCTION TYPE:	TYPE 2B - MIXED CONSTRUCTION TYPE - MAINTAINING EXISTING SEPARATION BETWEEN PRESCHOOL + BUSINESS AREAS
BUILDING HEIGHT PERMITTED 2 STORIES (TABLE 504.4)	55'
ACTUAL BUILDING HEIGHT MAX 2 STORIES (504.2)	15' TYPE 2B
MEZZANINE HIGH RISE	NONE NONE
GROSS BUILDING AREA (EXISTING):	
GRADE LEVEL:	93,152 S.F. (EXISTING PRESCHOOL 25,924, EXISTING BUSINESS AREAS - ADMIN + ADULT = 67,228 SF)
SECOND FLOOR:	N/A S.F.
BASEMENT:	N/A S.F.
TOTAL AREA:	93,152 S.F.
WORK AREA (FREEZER)	
GRADE LEVEL:	200 S.F.
TOTAL:	200 S.F.
TOTAL AREA (EDUCATIONAL)	
GRADE LEVEL:	93,152 S.F.
TOTAL:	93,152 S.F.
LEVEL 1 ALTERATION UNDER 2015 MBC	
PARTY/FIREWALLS:	
EXTERIOR BEARING WALLS (FIRE SEPERATION DISTANCE > 30 FEET):	
NORTH:	0
EAST:	0
WEST:	0
SOUTH:	0
EXTERIOR NON-BEARING (FIRE SEPERATION DISTANCE > 30 FEET)	
NORTH:	0
EAST:	0
WEST:	0
SOUTH:	0
INTERIOR WALLS:	
BEARING:	0
NON-BEARING:	0
TENANT SEPERATION:	N/A
FIRE SEPARATION ASSEMBLIES:	
EXIT ENCLOSURES:	2
CEILING-FLOORS ASSEMBLY:	0
BEAMS:	0
COLUMNS:	0
CEILING-ROOF ASSEMBLY:	0
VERTICAL SHAFTS:	2
MIXED OCCUPANCY SEPARATION:	
TENANT SEPARATION:	1 PER MICHIGAN LICENSING RULES FOR CHILD CARE CENTERS
EXIT ACCESS CORRIDORS (1020.1):	1
LIFE-SAFETY SYSTEMS:	
EMERGENCY LIGHTING & EXIT SIGNS:	REQUIRED; PROVIDED
FIRE ALARMS:	REQUIRED; PROVIDED
SMOKE DETECTIONS SYSTEMS:	REQUIRED; PROVIDED
PANIC HARDWARE:	REQUIRED; PROVIDED
FIRE SUPPRESSION SYSTEM:	REQUIRED; PROVIDED
STANDPIPE SYSTEM:	NOT REQUIRED; NOT PROVIDED
OCCUPANT LOAD:	
BUSINESS = 1 PERSON/200 GROSS SQUARE FEET - KITCHEN COMMERCIAL IS CLOSEST TO OCCUPANT LOAD IN SPACE	
TOTAL AREA:	200 S.F.
(1) PERSONS TOTAL CALCULATED - FREEZER/COOLER CONSIDERED UNOCCUPIED. OCCUPANT LOAD UNCHANGED.	
EXIT REQUIREMENTS (EDUCATIONAL):	
DEAD END LIMIT-MAXIMUM CONDITION (1020.4 W/ EXCEPTION #2)	ALLOWED: 20' ACTUAL: 0'
TRAVEL DISTANCE TO EXIT-MAXIMUM CONDITION (TABLE 1017.2)	ALLOWED: 200' ACTUAL: 98' (UNCHANGED)
IN WORK AREA:	
COMMON PATH OF TRAVEL 1006.3.2 (2)	ALLOWED: 75' ACTUAL: 27' IN WORK AREA (UNCHANGED)
NUMBER OF EXITS (PER STORY) - UNCHANGED:	
REQUIRED (TABLE 1006.3.1) TOTAL OCCUPANT LOAD 120 OCCUPANTS	REQUIRED (2) ACTUAL (17) (UNCHANGED)
DESIGN LOADS (SEE STRUCTURAL DRAWINGS):	
ROOF LIVE LOAD:	20 PSF
WIND:	90 MPH, 23 PSF
FLOOR:	100 PSF, 1ST FLOOR CORRIDORS, 1000# CONCENTRATED
SNOW:	30 PSF
SEISMIC:	AV = 0.055 AU = 0.055
LATERAL DESIGN:	21 PSF
SOIL BEARING CAPACITIES:	ASSUMED NET SOILS BEARING CAPACITY = N/A
SPECIAL APPROVAL BY LOCAL JURISDICTION:	N/A



1 LIFE-SAFETY PLAN
A7.00
SCALE: 1/20" = 1'-0"

WARREN WOODS PUBLIC SCHOOL DISTRICT
TOWER HS - TITAN EXPRESS SERVERY
HAWTHORN FOOD PROGRAM FREEZER REPLACEMENT

HAWTHORN
COMPOSITE FLOOR PLANS

PRELIMINARY
DESIGN DEVELOPMENT
CONSTRUCTION
FINAL RECORD

DRAWN BY: TDM
CHECKED BY: RAS

REVISIONS
OWNER REVIEW 02/28/2025
BIDS 03/11/2025

DATE: MARCH 11, 2025
SHEET NO.

A7.00

JOB NO. 242030



 1
A7.00 COMPOSITE FLOOR PLAN
SCALE: 1/16" = 1'-0"

ROOM FINISH SCHEDULE

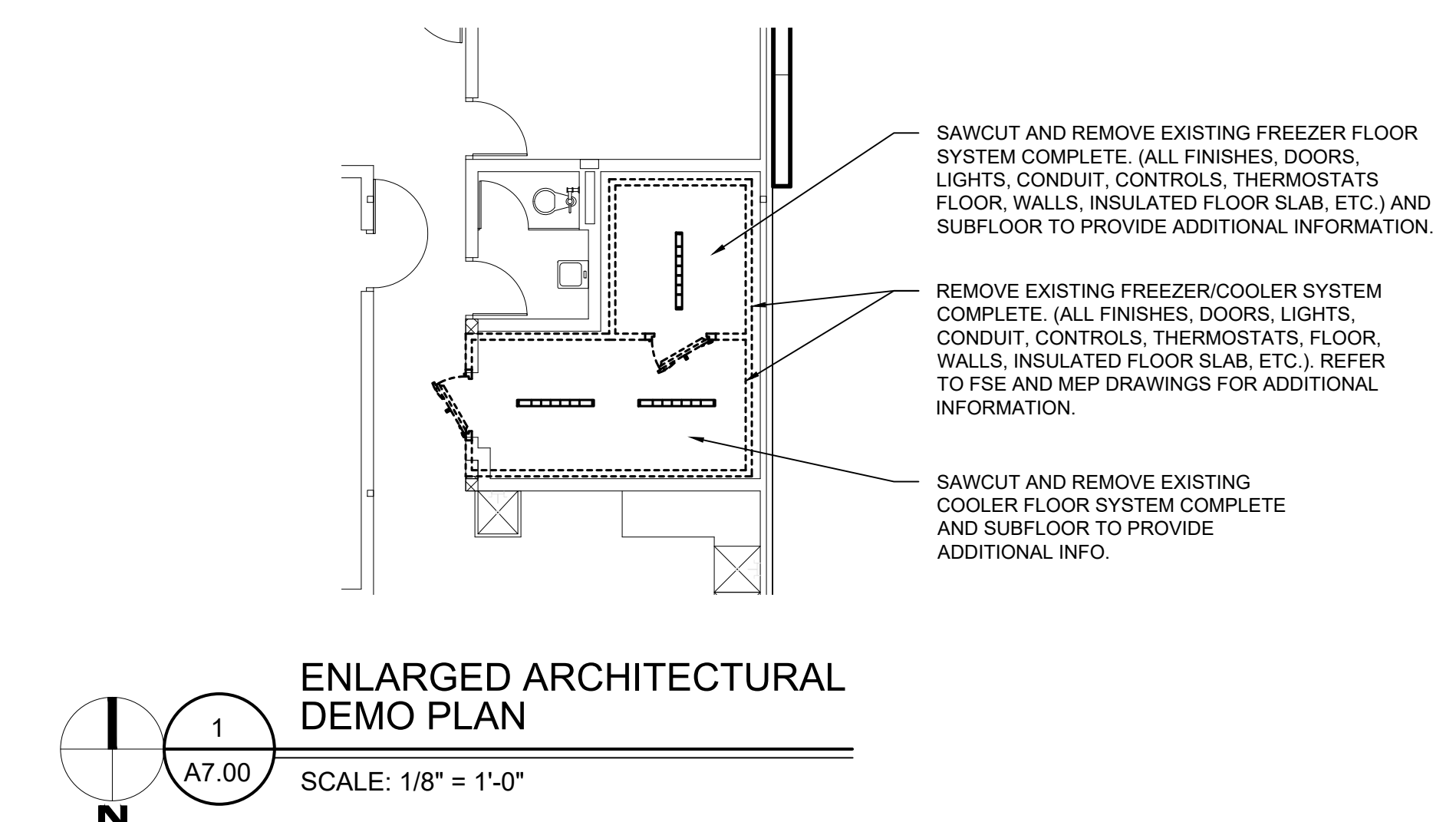
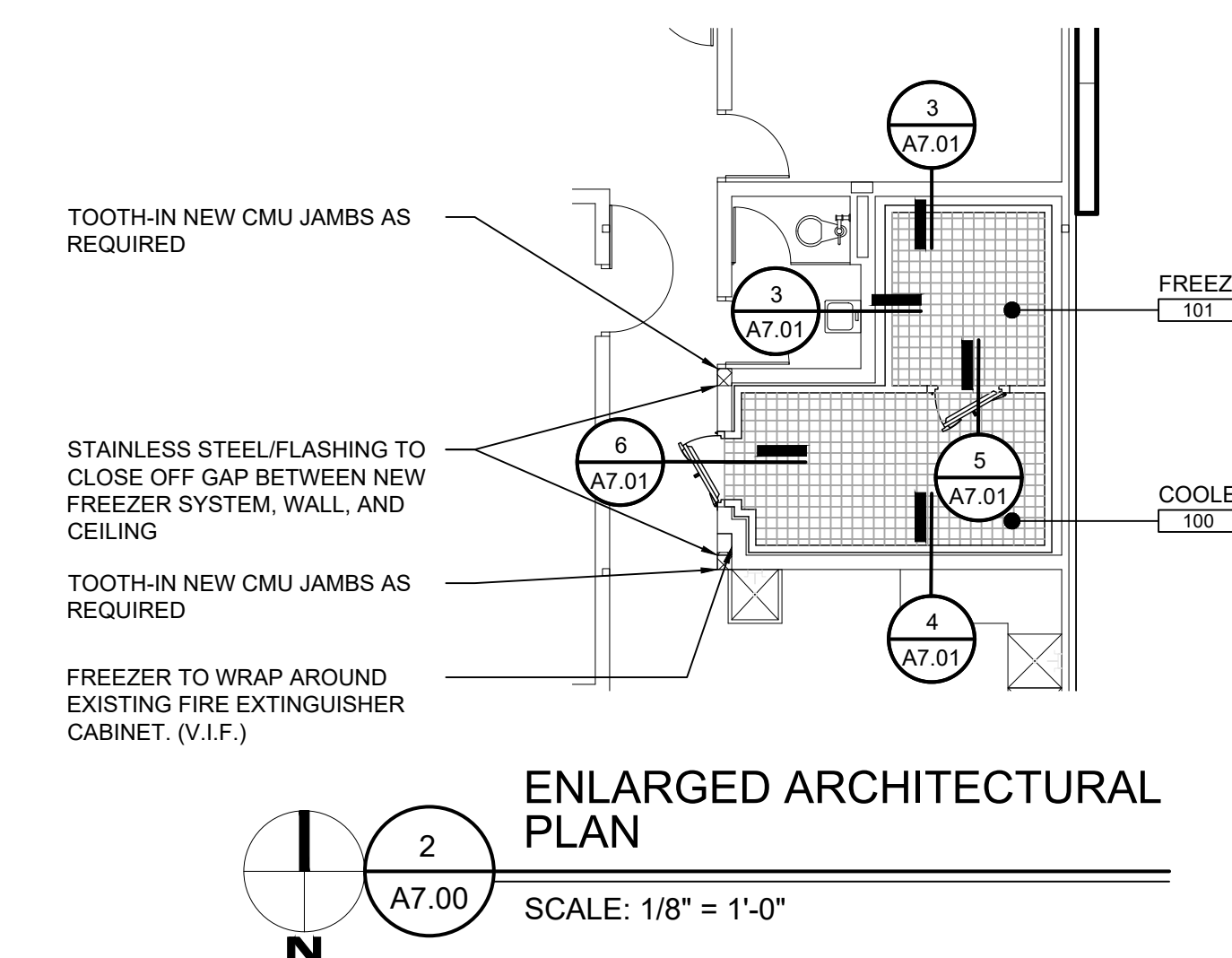
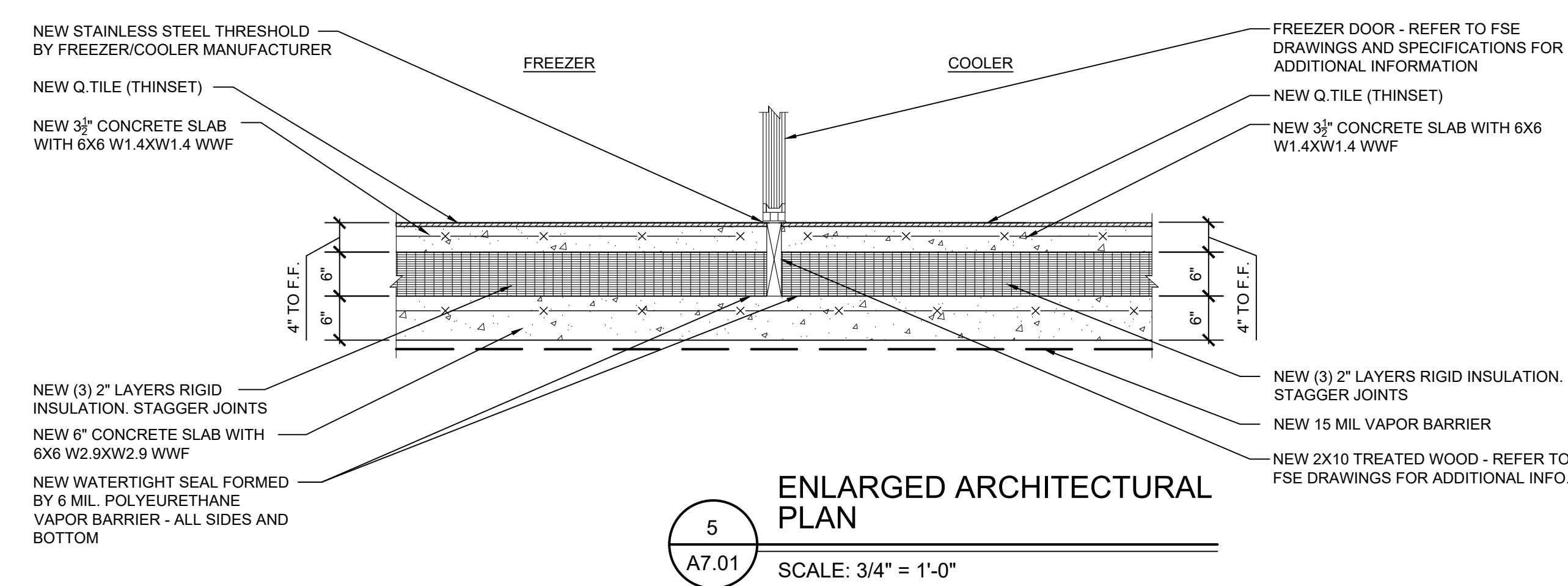
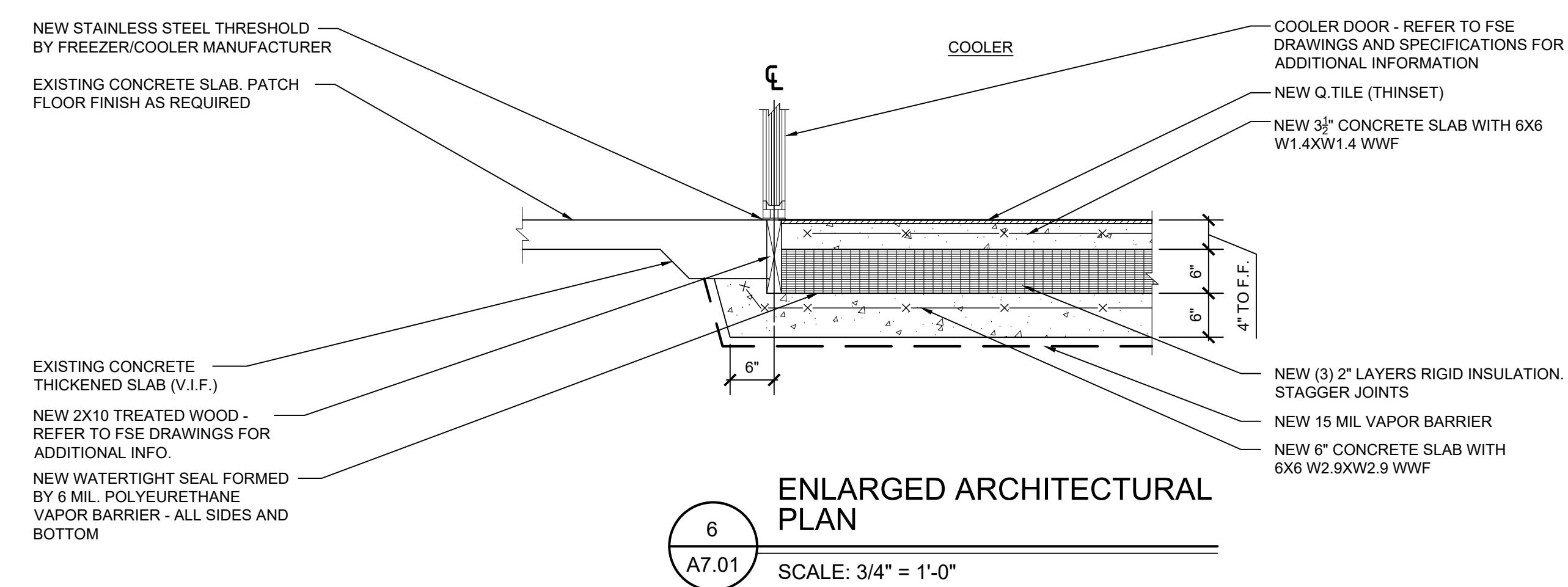
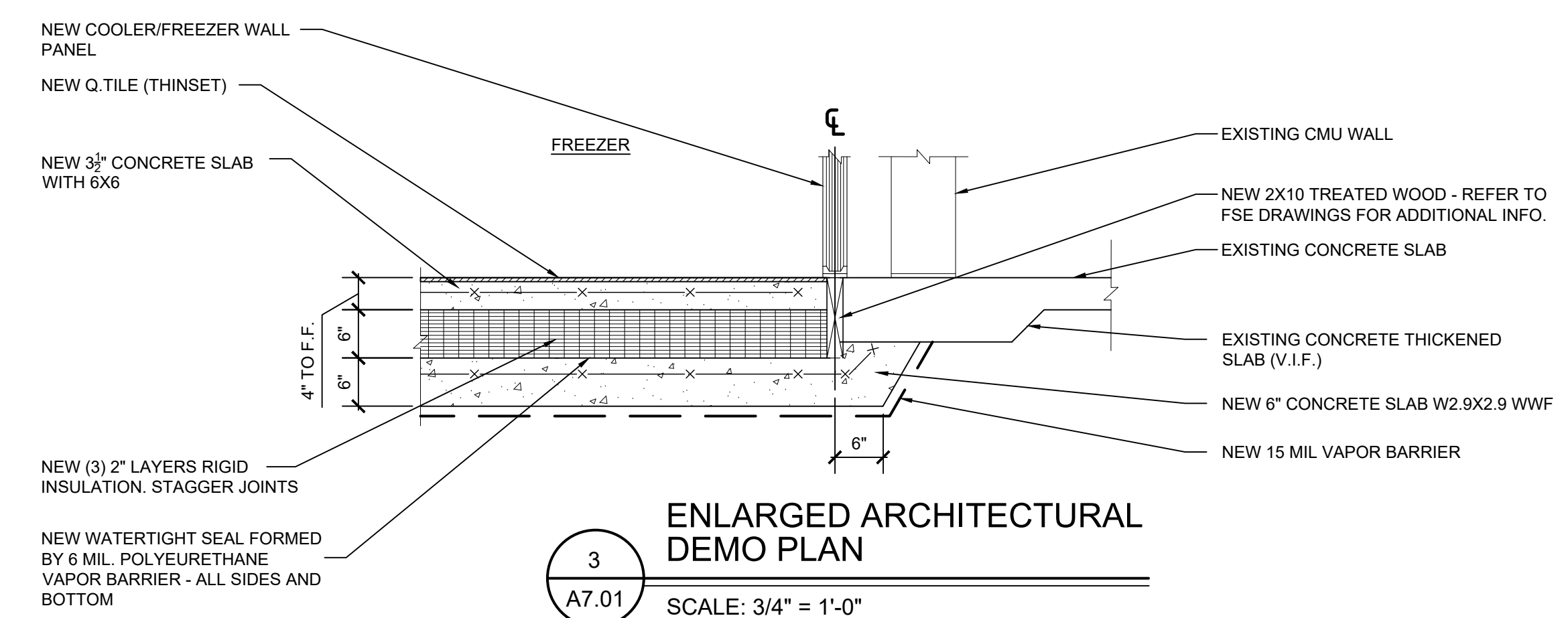
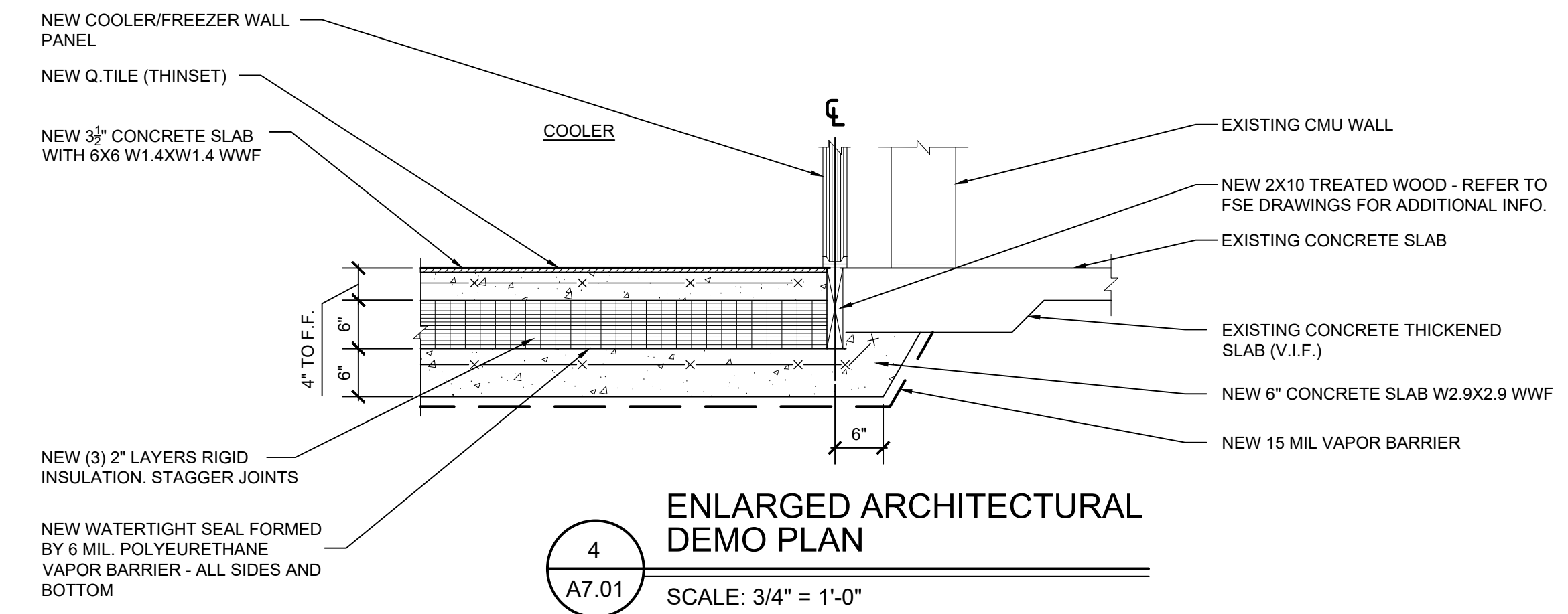
NO.	ROOM NAME	FLOOR	BASE	WALLS	CEILING		REMARKS
					MATERIAL	HGT.	
100	COOLER	Q.TILE	Q.TILE	PFP	PFP	7'-5"	1
101	FREEZER	Q.TILE	Q.TILE	PFP	PFP	7'-5"	1

ROOM FINISH REMARKS:

- REFER TO FSE DRAWINGS AND SPECS FOR ADDITIONAL INFORMATION.

ABBREVIATIONS

PFP	PRE-FINISHED PANELS
ETR	EXISTING TO REMAIN
ACT	ACOUSTIC CEILING TILE (REFER TO SPECS)
PT	PAINT



MECHANICAL ABBREVIATIONS

ABBREV.	DESCRIPTION
AAV	AUTOMATIC AIR VENT / AIR ADMITTANCE VALVE
AD	ACCESS DOOR
AE	AIR EXTRACTOR
AFF	ABOVE FINISHED FLOOR
APD	AIR PRESSURE DROP
ASR	AUTOMATIC SPRINKLER RISER
BFP	BACKFLOW PREVENTER
BHP	BRAKE HORSEPOWER
BOD	BOTTOM OF DUCT
BTU	BRITISH THERMAL UNIT
BTUH	BRITISH THERMAL UNITS PER HOUR
BWV	BACKWATER VALVE
CAP	CAPACITY
CAV	CONSTANT AIR VOLUME
CFH	CUBIC FEET PER HOUR
CFM	CUBIC FEET PER MINUTE
CIRC	CIRCULATING
CLG	COOLING
CO	CLEAN OUT
CONT	CONTINUATION OR CONTINUED
CONV	CONVECTOR
CUH	CABINET UNIT HEATER
CV	CONTROL VALVE
DB	DRY BULB TEMPERATURE
DEG	DEGREES
DDC	DIRECT DIGITAL CONTROL
DN	DOWN
DTC	DRAIN TILE CONNECTION
DWH	DOMESTIC WATER HEATER
(E)	EXISTING
EA/EXH	EXHAUST AIR
EAT	ENTERING AIR TEMPERATURE
EDB	ENTERING DRY BULB TEMPERATURE
EJ	EXHAUST FAN
EF	EXPANSION JOINT
EL	ELEVATION
ELECT	ELECTRICAL
EMS	ENERGY MANAGEMENT SYSTEM
ESP	EXTERNAL STATIC PRESSURE
EWB	ENTERING WET BULB TEMPERATURE
EWV	ELECTRIC WATER COOLER
*F	DEGREES FAHRENHEIT
FA	FACE AREA (COIL) / FREE AREA (LOUVER)
FC	FLEXIBLE CONNECTION
FD	FLOOR DRAIN
FDC	FIRE DEPARTMENT CONNECTION
FH	FIRE HYDRANT
FHC	FIRE HOSE CABINET
FHR	FIRE HOSE RACK
FHV	FIRE HOSE VALVE
FLA	FULL LOAD AMPS
FLR	FLOOR
FBM	FEET PER MINUTE
FFD	FUNNEL FLOOR DRAIN
FFE	FINISHED FLOOR ELEVATION
FS	FLOOR SINK
FT	FEET
FURN	FURNISHED
FV	FACE VELOCITY
FVC	FIRE VALVE CABINET
GAL	GALLON
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
HB	HOSE BIBB
HO	HUB OUTLET
HP	HORSEPOWER

MECHANICAL ABBREVIATIONS

ABBREV.	DESCRIPTION
HR	HOUR
HTG	HEATING
HYD	HYDRANT
HZ	HERTZ
ID	INSIDE DIAMETER
IE	INVERT ELEVATION
IN	INCHES
INST	INSTALLED
INV	INVERT
ISP	INTERNAL STATIC PRESSURE
IW	INDIRECT WASTE
KW	KILOWATT
LAT	LEAVING AIR TEMPERATURE
LAV	LAVATORY
LBS/HR	POUNDS PER HOUR
LDB	LEAVING DRY BULB TEMPERATURE
LRA	LOCKED ROTOR AMPS
LWB	LEAVING WET BULB TEMPERATURE
MAV	MANUAL AIR VENT
MAX	MAXIMUM
MBH	1000 BRITISH THERMAL UNITS PER HOUR
MCA	MINIMUM CIRCUIT AMPACITY
MECH	MECHANICAL
MFR	MANUFACTURER
MH	MANHOLE
MIN	MINIMUM
MISC	MISCELLANEOUS
MOD	MOTOR OPERATED DAMPER (AUTOMATIC)
MOP	MAXIMUM OVER-CURRENT PROTECTION
N.C.	NOISE CRITERIA
NIC	NOT IN CONTRACT
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
NOM	NOMINAL
OA	OUTSIDE AIR
OBD	OPPOSED BLADE DAMPER
OC	ON CENTER / CENTER TO CENTER
OD	OUTSIDE DIAMETER
OED	OPEN ENDED DUCT
ORS	OVERFLOW ROOF SUMP
OS&Y	OUTSIDE SCREW AND YOKE
PD	PRESSURE DROP (FEET OF WATER)
PRV	PRESSURE REDUCING VALVE
PSIA	POUNDS PER SQUARE INCH - ABSOLUTE
PSIG	POUNDS PER SQUARE INCH - GAUGE
PT	PRESSURE / TEMPERATURE PORT
RA	RETURN AIR
RH	RELATIVE HUMIDITY
REQD	REQUIRED
RELA	RELIEF AIR
RPM	REVOLUTIONS PER MINUTE
RPZ	REDUCED PRESSURE ZONE
RS	ROOF SUMP
SA	SUPPLY AIR
SH	SHOWER
SP	STATIC PRESSURE
SqFt / SF	SQUARE FOOT/SQUARE FEET
SS	SERVICE SINK
TC	TEMPERATURE CONTROL
T & P	TEMPERATURE AND PRESSURE
TSP	TOTAL STATIC PRESSURE
TYP	TYPICAL
UG	UNDERGROUND
UH	UNIT HEATER
UL	UNDERWRITERS LABORATORY
UNO	UNLESS NOTED OTHERWISE

MECHANICAL ABBREVIATIONS

ABBREV.	DESCRIPTION
UR	URINAL
VD	VOLUME DAMPER (MANUALLY ADJUSTABLE)
VTR	VENT THRU ROOF
W	WASTE
W&V	WASTE AND VENT
WB	WET BULB TEMPERATURE
WC	WATER CLOSET
WG	WATER GAUGE
WH	WALL HYDRANT

MECHANICAL PIPING SYMBOLS

ABBREV.	DESCRIPTION
—○—	PIPE ELBOW UP
—○—	PIPE ELBOW DOWN
—○—	PIPE TEE DOWN
→	DIRECTION OF FLOW
— —	UNION
— —	STRAINER
— —	CONCENTRIC REDUCER
— —	ECCENTRIC REDUCER
— —	EXPANSION JOINT
— —	FLEXIBLE CONNECTION
— —	PIPE ANCHOR
— —	PIPE GUIDE
— —	PIPE CAP OR PLUG
— —	ISOLATION VALVE
— —	CIRCULATING PUMP
— —	GLOBE VALVE
— —	BALL VALVE
— —	BUTTERFLY VALVE
— —	ANGLE VALVE
— —	CHECK VALVE (SWING)
— —	CHECK VALVE (SPRING)
— —	PLUG VALVE
— —	NEEDLE VALVE
— —	OUTSIDE SCREW AND YOKE VALVE (OS&Y)
— —	PRESSURE REGULATING VALVE
— —	SOLENOID VALVE
— —	CONTROL VALVE (2-WAY / 3-WAY)
— —	CENTRIFUGAL FAN
— —	AUTOMATIC GAS SHUT-OFF VALVE
— —	TRAP (PLAN VIEW)
— —	FLOOR DRAIN / FUNNEL FLOOR DRAIN (PLAN VIEW)
— —	FLOOR DRAIN / FUNNEL FLOOR DRAIN (ELEVATION)
— —	ROOF SUMP
— —	CLEAN OUT (IN FLOOR)
— —	CLEAN OUT (IN LINE)
— —	CLEAN OUT (WALL)
— —	BACKFLOW PREVENTER
— —	WATER METER ASSEMBLY
— —	HOSE BIBB, WALL HYDRANT
— —	DIRECTION OF PIPE PITCH
— —	SPRINKLER HEAD (UPRIGHT)
— —	SPRINKLER HEAD (SIDEWALL)
— —	FLOW SWITCH
— —	SIAMESE CONNECTION (YARD)
— —	SIAMESE CONNECTION (WALL MOUNTED)
— —	FIRE HYDRANT
— —	FLOW MEASURING DEVICE
— —	BALANCING VALVE
— —	COMBINATION FLOW MEASURING AND BALANCING DEVICE
— —	AUTOMATIC AIR VALVE
— —	MANUAL AIR VALVE

MECHANICAL SYMBOLS

ABBREV.	DESCRIPTION
— —	RECTANGULAR TAKE-OFF (SINGLE LINE)
— —	RECTANGULAR TAKE-OFF (DOUBLE LINE)
— —	ROUND TAKE-OFF (SINGLE LINE)
— —	ROUND TAKE-OFF (DOUBLE LINE)
— —	SPIN-IN FITTING (WITH VOLUME DAMPER)
— —	ELBOW (WITH TURNING VANES)
— —	RADIUS RECTANGULAR ELBOW
— —	RADIUS ROUND ELBOW
— —	RECTANGULAR ELBOW UP
— —	ROUND ELBOW UP
— —	RECTANGULAR ELBOW DOWN
— —	ROUND ELBOW DOWN
— —	CONCENTRIC TRANSITION (DOUBLE LINE)
— —	CONCENTRIC TRANSITION (SINGLE LINE)
— —	ECCENTRIC TRANSITION (DOUBLE LINE)
— —	ECCENTRIC TRANSITION (SINGLE LINE)
— —	INCLINED RISE IN DIRECTION OF AIR FLOW (DOUBLE LINE)
— —	INCLINED RISE IN DIRECTION OF AIR FLOW (SINGLE LINE)
— —	INCLINED DROP IN DIRECTION OF AIR FLOW (DOUBLE LINE)
— —	INCLINED DROP IN DIRECTION OF AIR FLOW (SINGLE LINE)
— —	FLEXIBLE CONNECTION
— —	FLEXIBLE DUCT CONNECTION TO SUPPLY DIFFUSER
— —	SUPPLY DIFFUSER
— —	LINEAR SLOT DIFFUSER
— —	RETURN OR EXHAUST GRILLE
— —	TRANSFER GRILLE
— —	CROSS SECTION OF SUPPLY AIR DUCT
— —	CROSS SECTION OF EXHAUST OR RETURN AIR DUCT
— —	EXISTING FIRE DAMPER (HORIZONTAL)
— —	NEW FIRE DAMPER (HORIZONTAL)
— —	EXISTING FIRE DAMPER (VERTICAL)
— —	NEW FIRE DAMPER (VERTICAL)
— —	EXISTING SMOKE DAMPER
— —	NEW SMOKE DAMPER
— —	EXISTING COMBINATION FIRE/SMOKE DAMPER (VERTICAL)
— —	NEW COMBINATION FIRE/SMOKE DAMPER (VERTICAL)
— —	EXISTING COMBINATION FIRE/SMOKE DAMPER (HORIZONTAL)
— —	NEW COMBINATION FIRE/SMOKE DAMPER (HORIZONTAL)
— —	VOLUME DAMPER (MANUALLY ADJUSTABLE)
— —	MOTORIZED DAMPER
— —	SMOKE DETECTOR
— —	CO2 SENSOR
— —	THERMOSTAT OR TEMPERATURE SENSOR
— —	HUMIDISTAT OR HUMIDITY SENSOR
— —	RETURN OR EXHAUST / SUPPLY AIR FLOW

PIPING LEGEND

ABBREV.	DESCRIPTION
—CA—	COMPRESSED AIR PIPING
—CD—	CONDENSATE DRAIN PIPING
—DT—	DRAIN TILE
—F—	FIRE PROTECTION PIPING
—FOR—	FUEL OIL RETURN PIPING
—FOS—	FUEL OIL SUPPLY PIPING
—G—	NATURAL GAS PIPING
—BCW—	BOOSTED-DOMESTIC COLD WATER PIPING
—BHW—	BOOSTED-DOMESTIC HOT WATER PIPING
—CW—	DOMESTIC COLD WATER PIPING
—NPCW—	NON POTABLE COLD WATER PIPING
—TW—	TEMPERED WATER PIPING
—HW—	DOMESTIC HOT WATER PIPING
—HW(140°F)—	DOMESTIC 140°F HOT WATER PIPING
—HWR—	DOMESTIC HOT WATER RETURN PIPING
—SAN—	SANITARY WASTE PIPING
—PSAN—	PUMPED SANITARY PIPING
—V—	VENT PIPING
—ST—	STORM SEWER PIPING
—PST—	PUMPED STORM PIPING
—RC—	RAIN CONDUCTOR PIPING
—ORC—	OVERFLOW RAIN CONDUCTOR PIPING
—CWR—	CHILLED WATER RETURN PIPING
—CHWS—	CHILLED WATER SUPPLY PIPING
—CWR—	CONDENSER WATER RETURN PIPING
—CWS—	CONDENSER WATER SUPPLY PIPING
—HHWR—	HEATING HOT WATER RETURN PIPING
—HHWS—	HEATING HOT WATER SUPPLY PIPING
—HPLR—	HEAT PUMP LOOP RETURN PIPING
—HPLS—	HEAT PUMP LOOP SUPPLY PIPING
—RL—	REFRIGERANT LIQUID PIPING
—RS—	REFRIGERANT SUCTION PIPING
—HGB—	HOT GAS BY-PASS PIPING
—GHR—	GEO HEAT EXCHANGE RETURN
—GHS—	GEO HEAT EXCHANGE SUPPLY
—STM—	STEAM PIPING
—HPS—	HIGH PRESSURE STEAM PIPING
—LPS—	LOW PRESSURE STEAM PIPING
—CR—	STEAM CONDENSATE RETURN PIPING
—PCR—	PUMPED STEAM CONDENSATE RETURN PIPING
—LPC—	LOW PRESSURE CONDENSATE PIPING
—HPC—	HIGH PRESSURE CONDENSATE PIPING
—MA—	MEDICAL AIR PIPING
—N—	NITROGEN GAS PIPING
—O2—	OXYGEN GAS PIPING
—VAC—	VACUUM PIPING

DRAWING INDEX	
SHT NO	DESCRIPTION
M0.00T	MECHANICAL GENERAL INFORMATION
M1.00T	MECHANICAL COMPOSITE PLAN
P4.00T	ENLARGED PLUMBING DEMOLITION & NEW WORK UNDERGROUND PLANS
P4.01T	ENLARGED PLUMBING DEMOLITION & NEW WORK FIRST FLOOR PLANS
M4.01T	ENLARGED MECHANICAL DEMOLITION & NEW WORK FIRST FLOOR PLANS
M5.00T	MECHANICAL DETAILS & SCHEDULES

DRAWING NOTATION	
SYMBOL	DESCRIPTION
⊙	NEW WORK KEY NOTE NO. 1
⊠	DEMOLITION KEY NOTE NO. 1
AHU-1	EQUIPMENT TAG
S-1 12x12 150-2	AIR TERMINAL TAG: IE: DIFFUSER TYPE = S-1 NECK SIZE = 12x12 CFM = 150 (TYPICAL FOR 2)
—	EXISTING DEVICES OR EQUIPMENT
—	NEW OR MODIFIED DEVICES OR EQUIPMENT
— —	EXISTING SYSTEM COMPONENT TO BE REMOVED
— —	POINT OF NEW CONNECTION

APPLICABLE CODES AND REGULATIONS	
YEAR	CODE
2015	MICHIGAN BUILDING CODE
2015	MICHIGAN REHABILITATION CODE FOR EXISTING BUILDINGS
2021	MICHIGAN PLUMBING CODE
2021	MICHIGAN MECHANICAL CODE
2015	MICHIGAN UNIFORM ENERGY CODE
2015	INTERNATIONAL FUEL GAS CODE
2012	NFPA 101 WITH BFS AMENDMENTS



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WARREN, MI 48093
UBS PROJECT 007.25.04 - 7

**WARREN WOODS PUBLIC SCHOOL DISTRICT
TOWER HS - TITAN EXPRESS SERVERY
HAWTHORN FOOD PROGRAM FREEZER REPLACEMENT**

MECHANICAL GENERAL INFORMATION

PRELIMINARY

DESIGN DEVELOPMENT

CONSTRUCTION

FINAL RECORD

DRAWN BY MPH

CHECKED BY MPH

REVISIONS

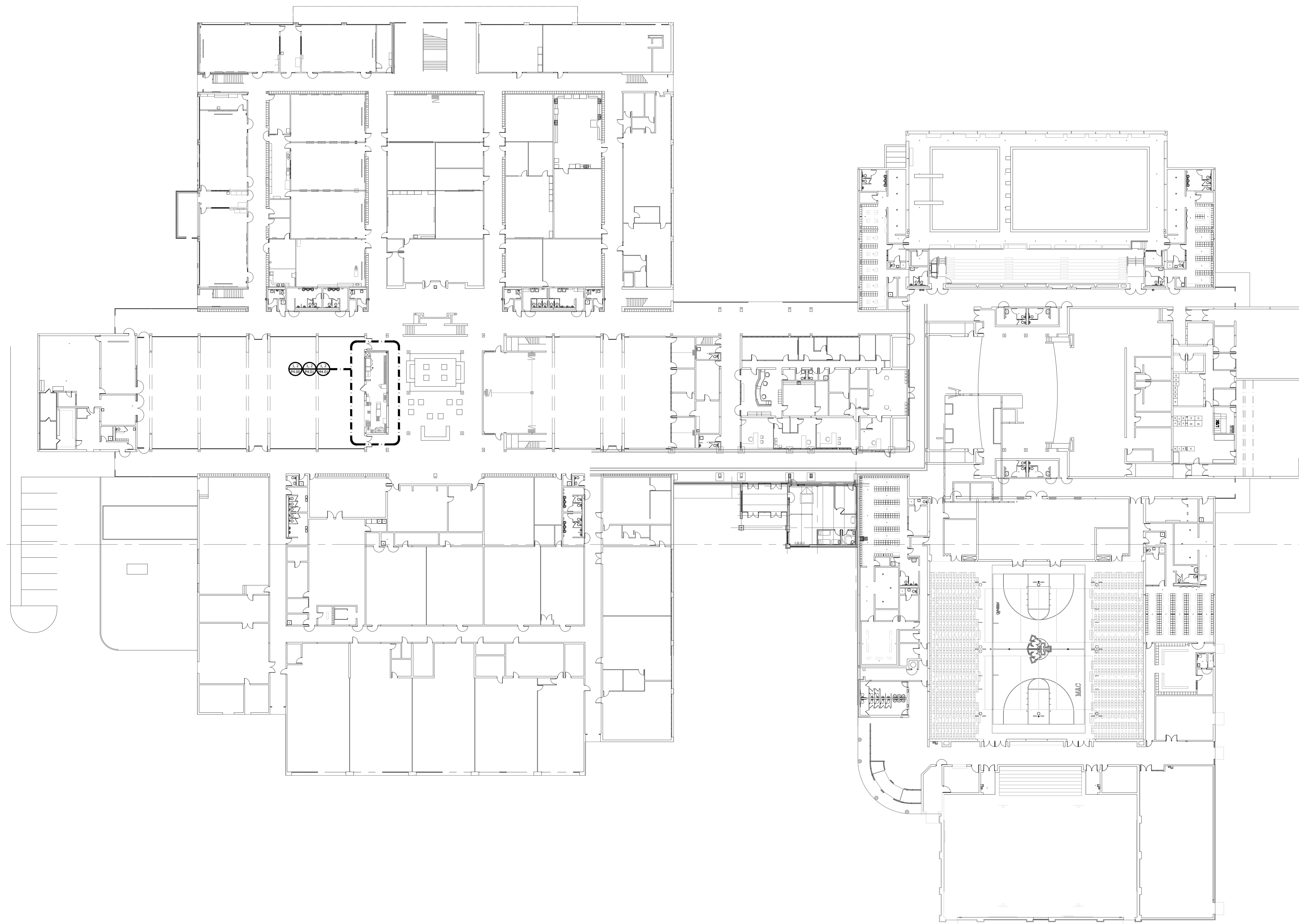
BIDS 03/11/2025

DATE: MARCH 11, 2025

SHEET NO.

JOB NO. 242030

M0.00T



MECHANICAL COMPOSITE PLAN
SCALE: 1/32" = 1'-0"

GENERAL DEMOLITION NOTES	
A	THESE DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL EXTENT OF WORK TO BE PERFORMED. THE EXACT EXTENT OF DEMOLITION SHALL BE DETERMINED BY THE NEW WORK.
B	ANY INTERRUPTIONS OF EXISTING SERVICES AND/OR EQUIPMENT SHALL BE PERFORMED AT A TIME APPROVED IN ADVANCE BY OWNER'S REPRESENTATIVE SO AS NOT TO INTERFERE WITH THE PRESENT BUILDING'S OPERATION.
C	PRIOR TO COMMENCEMENT OF WORK, CONTRACTOR SHALL VISIT THE SITE AND BECOME FAMILIAR WITH EXISTING SITE CONDITIONS, SYSTEMS, AND UTILITIES. NOTIFY DESIGN PROFESSIONAL OF ANY INTERFERENCES OR DISCREPANCIES.
D	ALL ITEMS INDICATED WITH CROSS-HATCHING SHALL BE REMOVED COMPLETELY WITH ALL RELATED ITEMS INCLUDING HANGERS, SUPPORTS, INSULATION, CONTROLS, ETC. CAP ALL OPEN-ENDED PIPES AND DUCTS.
E	THE OWNER SHALL HAVE FIRST RIGHT OF REFUSAL ON ALL EQUIPMENT BEING REMOVED. ALL ITEMS REMOVED SHALL BE LEGALLY DISPOSED OF. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL EXISTING RELOCATED AND OWNER-PROVIDED EQUIPMENT.
F	VERIFY DEPTH, SIZE, LOCATIONS, AND CONDITIONS OF EXISTING UTILITIES IN THE FIELD, INCLUDING POINTS OF CONNECTION, PRIOR TO STARTING WORK.
G	ALL ITEMS ON DEMOLITION PLAN SHALL BE CONSIDERED EXISTING UNLESS OTHERWISE NOTED. ALL WORK INDICATED ON PLANS HAS BEEN LOCATED PER EXISTING DRAWINGS AND/OR FIELD OBSERVATION AND REQUIRES FIELD VERIFICATION.
H	ALL EXISTING WORK TO REMAIN SHALL BE PROTECTED FROM DAMAGE. WHERE DUCT WORK PIPE INSULATION HAS BEEN DAMAGED DURING DEMOLITION, THE CONTRACTOR SHALL REPAIR INSULATION AS REQUIRED TO MATCH EXISTING.

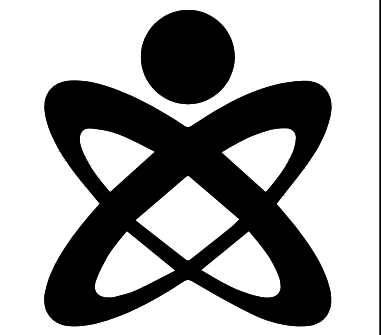
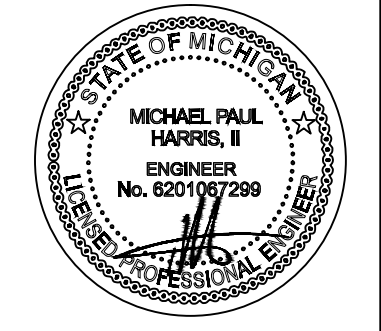
PLUMBING GENERAL NOTES	
A	THESE DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL EXTENT OF WORK TO BE PERFORMED. THE EXACT EXTENT OF DEMOLITION SHALL BE DETERMINED BY THE NEW WORK.
B	ANY INTERRUPTIONS OF EXISTING SERVICES AND/OR EQUIPMENT SHALL BE PERFORMED AT A TIME APPROVED IN ADVANCE BY OWNER'S REPRESENTATIVE SO AS NOT TO INTERFERE WITH THE PRESENT BUILDING'S OPERATION.
C	PRIOR TO COMMENCEMENT OF WORK, CONTRACTOR SHALL VISIT THE SITE AND BECOME FAMILIAR WITH EXISTING SITE CONDITIONS, SYSTEMS, AND UTILITIES. NOTIFY DESIGN PROFESSIONAL OF ANY INTERFERENCES OR DISCREPANCIES.
D	ALL ITEMS INDICATED WITH CROSS-HATCHING SHALL BE REMOVED COMPLETELY WITH ALL RELATED ITEMS INCLUDING HANGERS, SUPPORTS, INSULATION, CONTROLS, ETC. CAP ALL OPEN-ENDED PIPES AND DUCTS.
E	THE OWNER SHALL HAVE FIRST RIGHT OF REFUSAL ON ALL EQUIPMENT BEING REMOVED. ALL ITEMS REMOVED SHALL BE LEGALLY DISPOSED OF. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL EXISTING RELOCATED AND OWNER-PROVIDED EQUIPMENT.
F	VERIFY DEPTH, SIZE, LOCATIONS, AND CONDITIONS OF EXISTING UTILITIES IN THE FIELD, INCLUDING POINTS OF CONNECTION PRIOR TO STARTING WORK.
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H	ALL EXISTING WORK TO REMAIN SHALL BE PROTECTED FROM DAMAGE. WHERE DUCT WORK PIPE INSULATION HAS BEEN DAMAGED DURING DEMOLITION, THE CONTRACTOR SHALL REPAIR INSULATION AS REQUIRED TO MATCH EXISTING.
J	INSTALL ALL SANITARY AND STORM PIPING 2 1/2" OR LESS AT 1/4" PER FOOT AND 3" AND LARGER PIPING AT 1/8" PER FOOT MINIMUM UNLESS NOTED OTHERWISE. MINIMUM UNDERGROUND PIPE SIZE SHALL BE 3".
K	PROVIDE "INLINE" WATERLESS PRIMER TRAP SEAL PROTECTION ON ALL FLOOR DRAINS AND TRAPS SUBJECT TO EVAPORATION.
L	AT EACH CONNECTION OF GAS SUPPLY TO EQUIPMENT, PROVIDE A PIPE UNION, GAS SHUT OFF VALVE, TEE, AND 6" LONG DIRT LEG WITH CAP.
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UNIFIED BUILDING
SYSTEMS ENGINEERING
89 S. GRATIOT AVE.
MT. CLEMENS, MI 48043
UBS PROJECT 007.2504 - 1

WARREN WOODS PUBLIC SCHOOL DISTRICT
TOWER HS - TITAN EXPRESS SERVERY
HAWTHORN FOOD PROGRAM FREEZER REPLACEMENT

MECHANICAL COMPOSITE
PLAN

PRELIMINARY
DESIGN DEVELOPMENT
CONSTRUCTION
FINAL RECORD

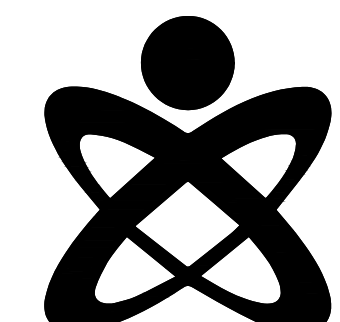
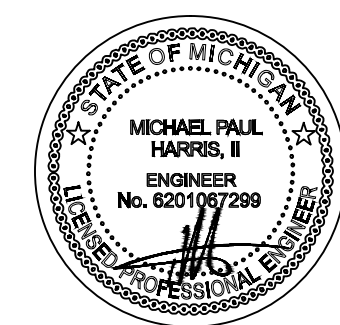
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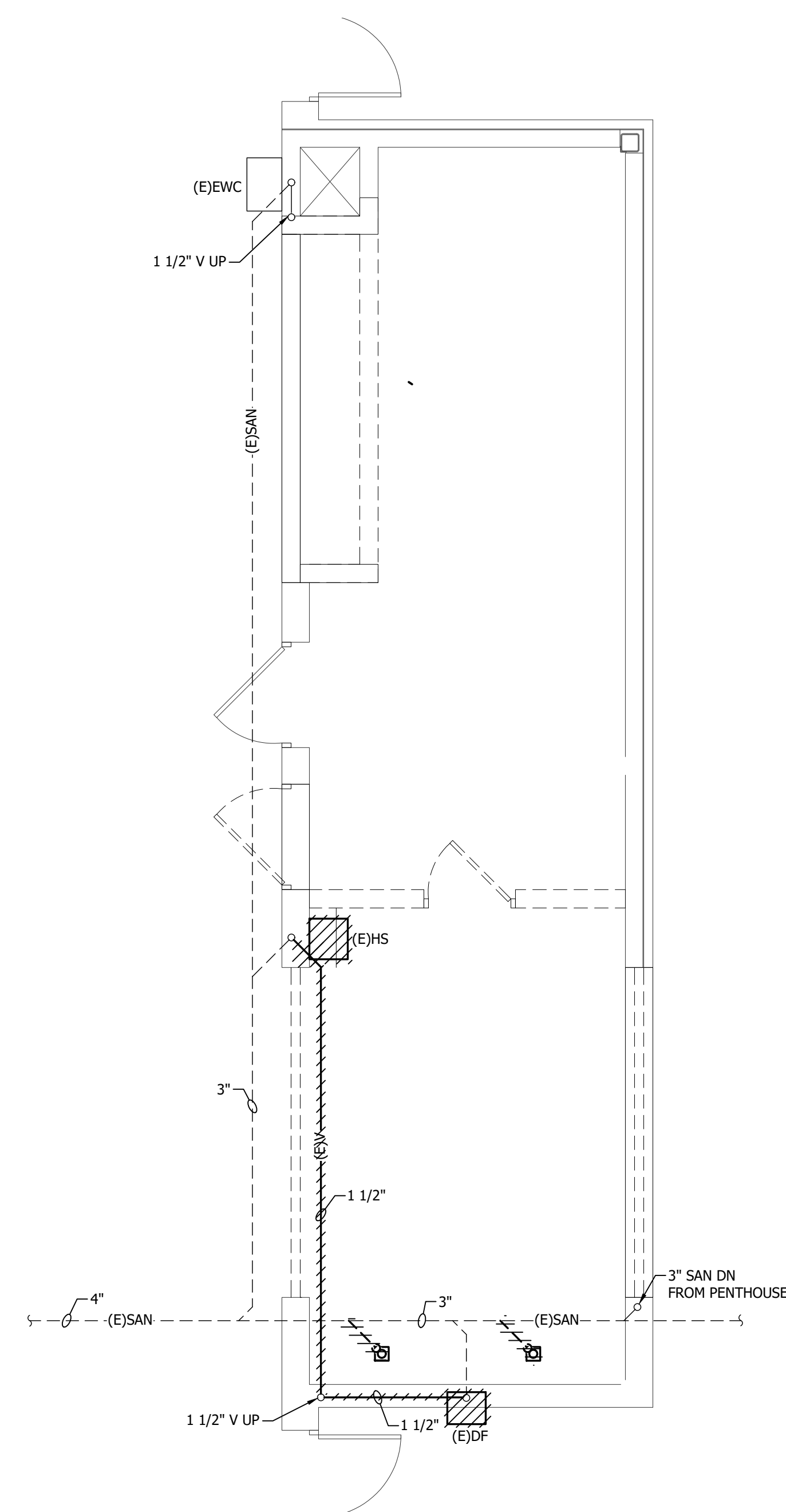
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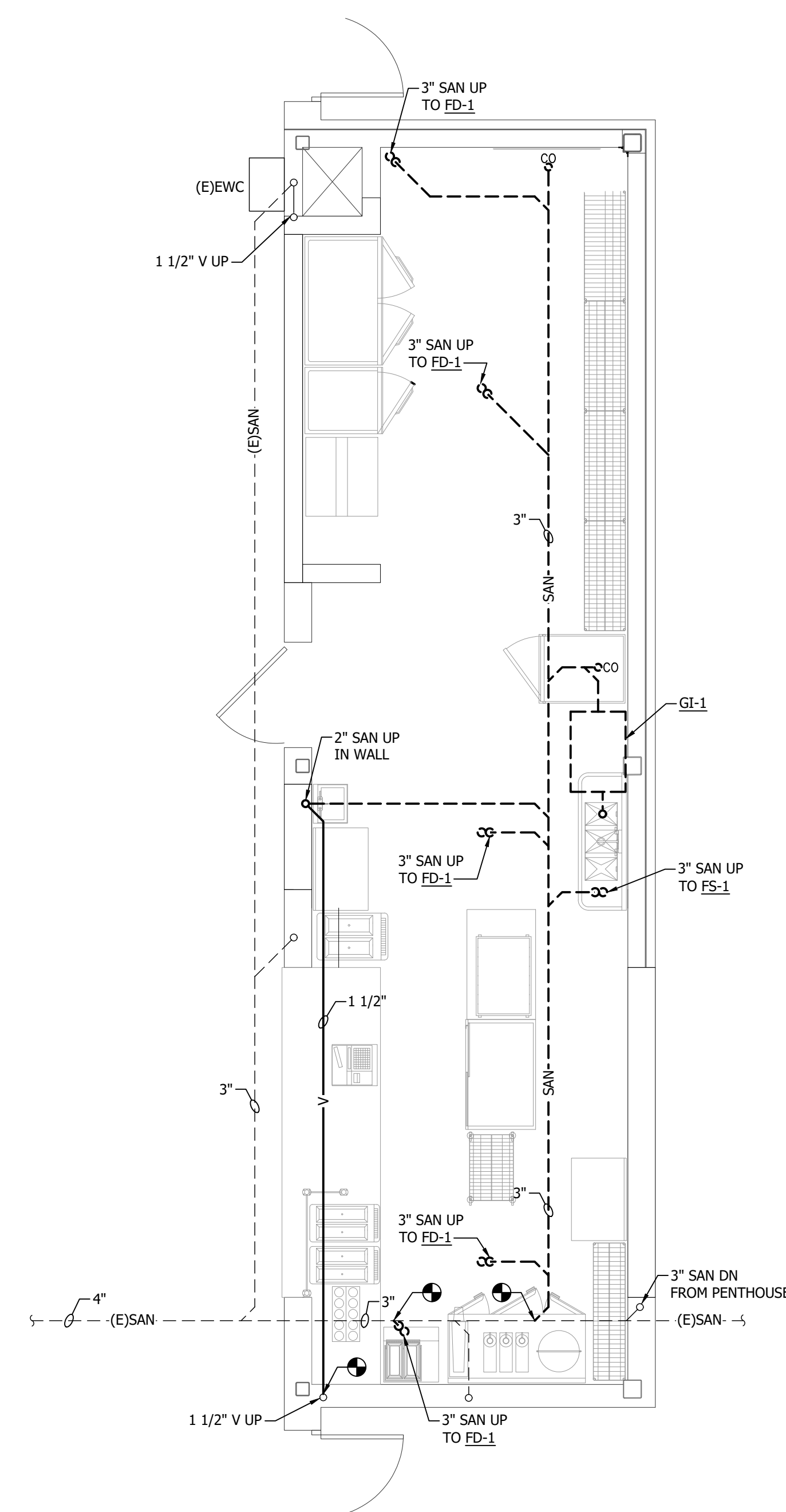
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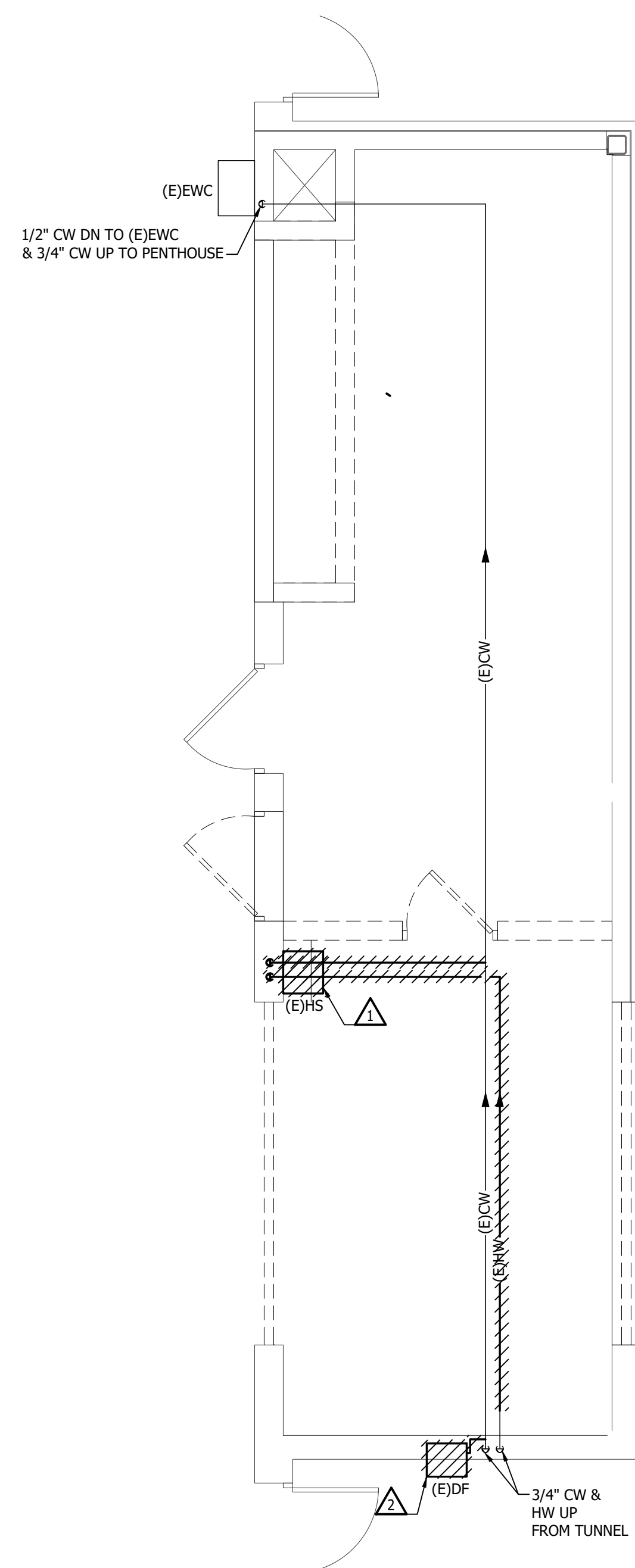
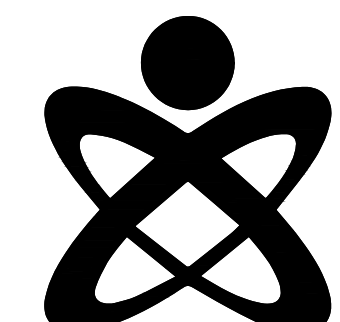
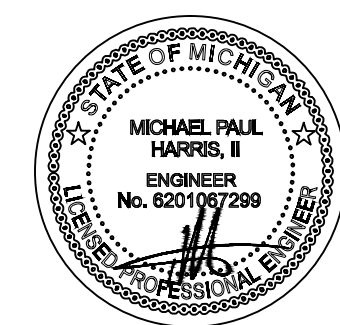
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1
M1.00
ENLARGED UNDERGROUND PLUMBING & VENT DEMOLITION PLAN
SCALE: 1/4" = 1'-0"



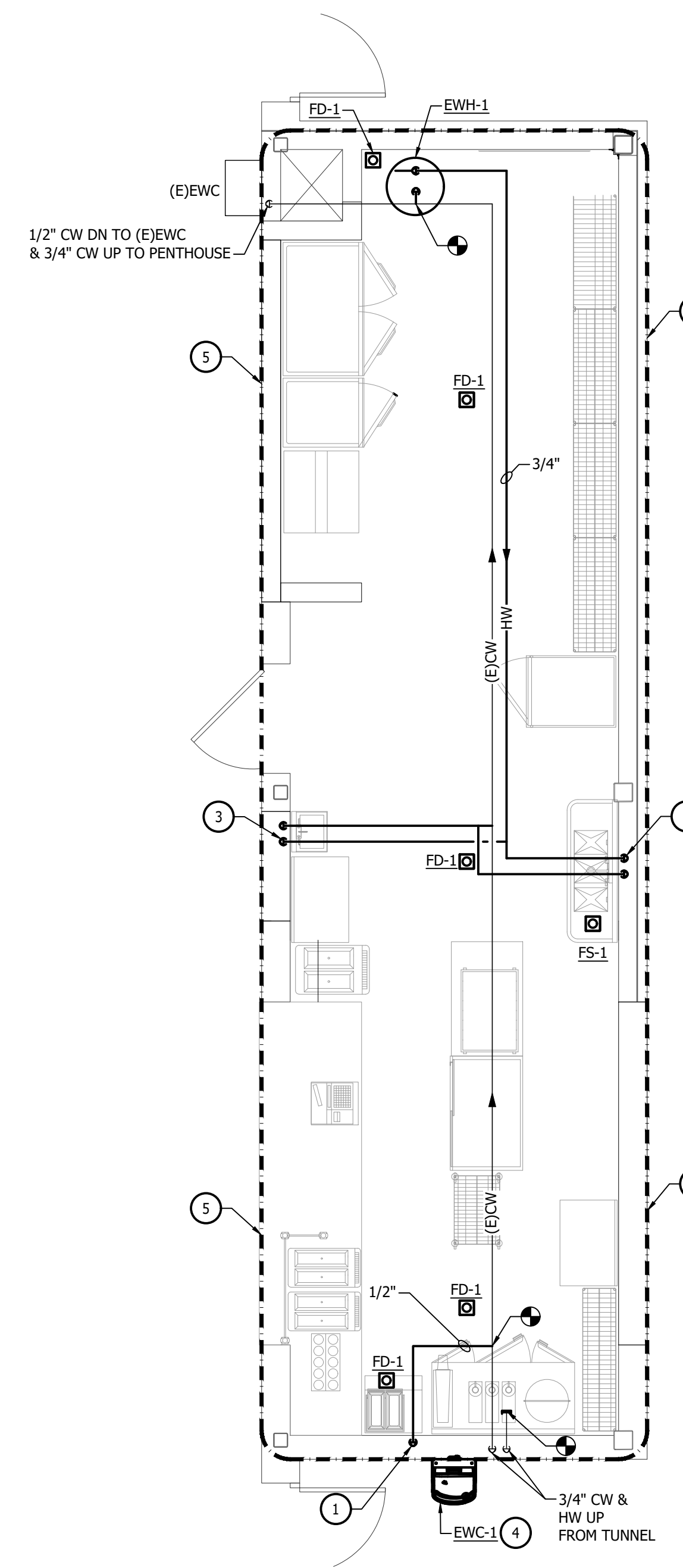
2
M1.00
ENLARGED UNDERGROUND PLUMBING & VENT NEW WORK PLAN
SCALE: 1/4" = 1'-0"



1
M1.00
ENLARGED PLUMBING DEMOLITION FIRST FLOOR PLAN
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DEMOLITION KEYED NOTES	
1	REMOVE HAND SINK COMPLETE INCLUDING ALL OVER HEAD PIPING AS INDICATED. CAP SANITARY PIPING IN WALL AND CAP.
2	REMOVE SEMI-RECESSED DRINKING FOUNTAIN COMPLETE INCLUDING ALL OVER HEAD PIPING AS INDICATED. TEMPORARILY CAP PIPING AND PREPARE FOR NEW CONNECTION.

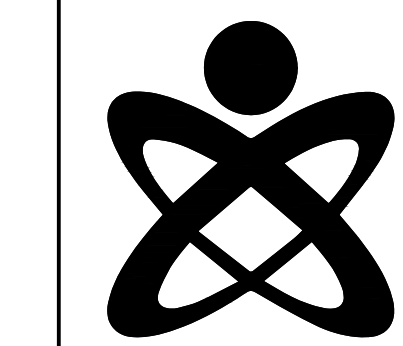
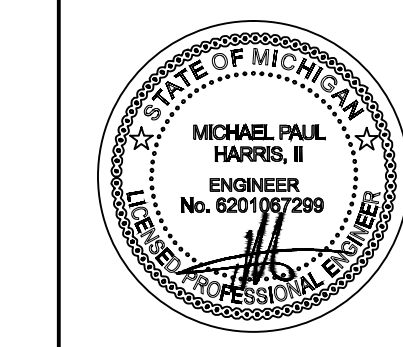


2
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B	CONTRACTOR SHALL COORDINATE HIS WORK WITH THE WORK OF ALL OTHER TRADES. SPRINKLER PIPING SHALL NOT BE LOCATED BELOW MECHANICAL EQUIPMENT.
C	MINIMUM RUN-OUT PIPE SIZE TO SPRINKLER HEADS SHALL BE 1".
D	FIRE PROTECTION TRADES SHALL SUBMIT PLANS, FLOW AND PRESSURE TEST AND CALCULATIONS TO THE LOCAL FIRE MARSHAL AND TO THE BUILDING'S INSURING AGENCY FOR APPROVAL. CONTRACTOR SHALL THEN MAKE ALL NECESSARY CORRECTIONS AND RESUBMIT PLANS AND CALCULATIONS FOR RECORD TO THE ARCHITECT AS WELL AS THE FIRE MARSHAL.
E	CONTRACTOR SHALL PROVIDE ALL NECESSARY TESTS AND PAY FOR ALL FEES, PERMITS, INSPECTIONS, AND LICENSES, AS REQUIRED BY THE LOCAL AUTHORITY.

NEW WORK KEYED NOTES	
1	ROUTE 1/2" CW DOWN IN EXISTING BLOCK WALL. EXTEND AND CONNECT 1/2" CW TO ICE MAKER (PROVIDED BY OTHERS) AND COFFEE MAKER (PROVIDED BY OTHERS). TERMINATE BOTH CONNECTIONS WITH ISOLATION VALVE AND ASSE 1020 BACKFLOW COMPLIANT PREVENTION DEVICES. COORDINATE NOTCHING OF EXISTING BLOCK FOR PIPE ROUTING WITH ARCHITECTURAL TRADES.
2	EXTEND 1/2" CW, 1/2" HW DOWN IN EXISTING BLOCK WALL AND CONNECT TO 3 COMPARTMENT SINK. INSTALL NEW FAUCET(S), PROVIDED BY FSE. PROVIDE NEW STOPS ON ALL CONNECTIONS. EXTEND 3" SAN FROM RISE AND SANITIZE BASIN TO FLOOR SINK. 3" SAN FROM WASH BASIN TO GRASE INTERCEPTOR. COORDINATE NOTCHING OF EXISTING BLOCK FOR PIPE ROUTING WITH ARCHITECTURAL TRADES.
3	ROUTE 1/2" CW, 1/2" HW, 1 1/2" V DOWN IN WALL, 1 1/2" V SAN UP FROM BELOW, 1 1/2" V DOWN IN WALL AND CONNECT TO HAND SINK (PROVIDED BY FSE). COORDINATE NOTCHING OF EXISTING BLOCK FOR PIPE ROUTING WITH ARCHITECTURAL TRADES.
4	INSTALL ELECTRIC WATER COOLER IN LOCATION OF REMOVED AND CONNECT TO EXISTING SERVICES. INFILL WALL OPENING. COORDINATE WITH ARCHITECTURAL AS REQUIRED FOR INFILL REQUIREMENTS.
5	IN AREA INDICATED, RE-WORK EXISTING FIRE PROTECTION SYSTEM IN ACCORDANCE WITH NFPA 13 REQUIREMENTS. COORDINATE WITH ARCHITECTURAL CEILING LAYOUTS AS NECESSARY.



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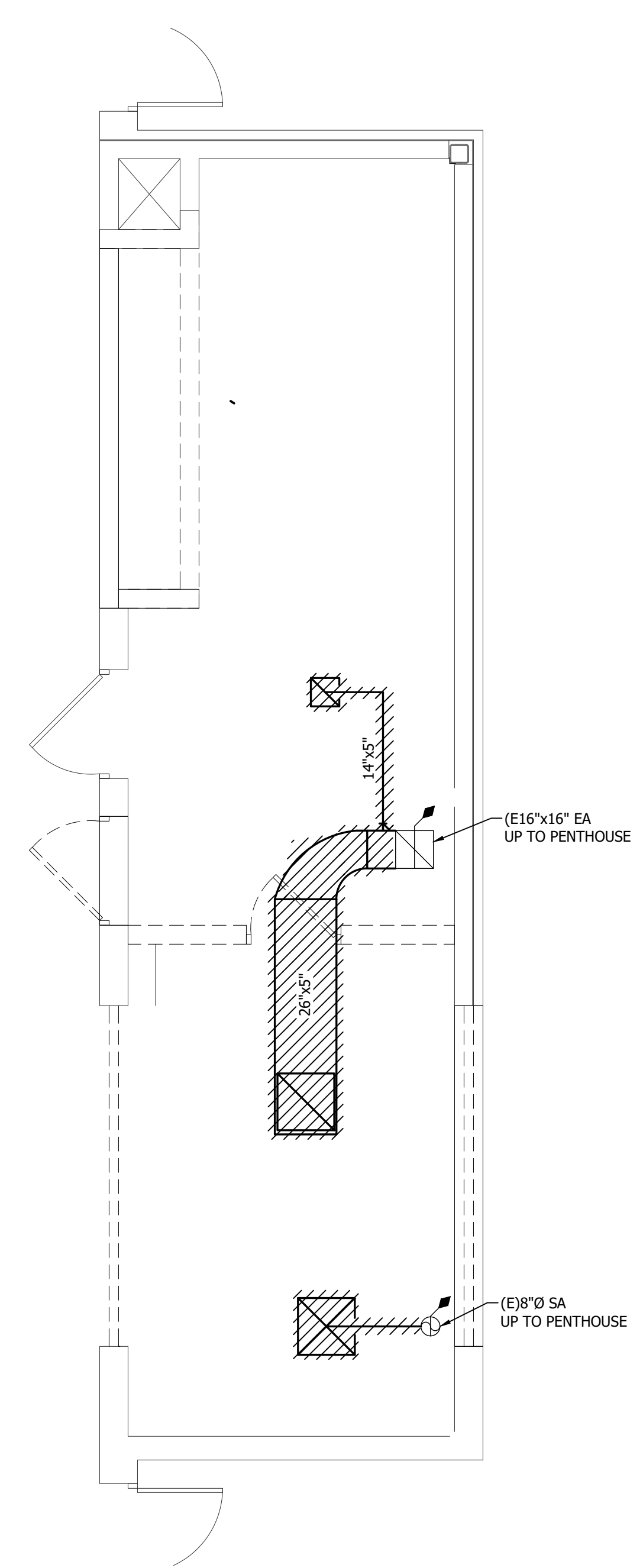
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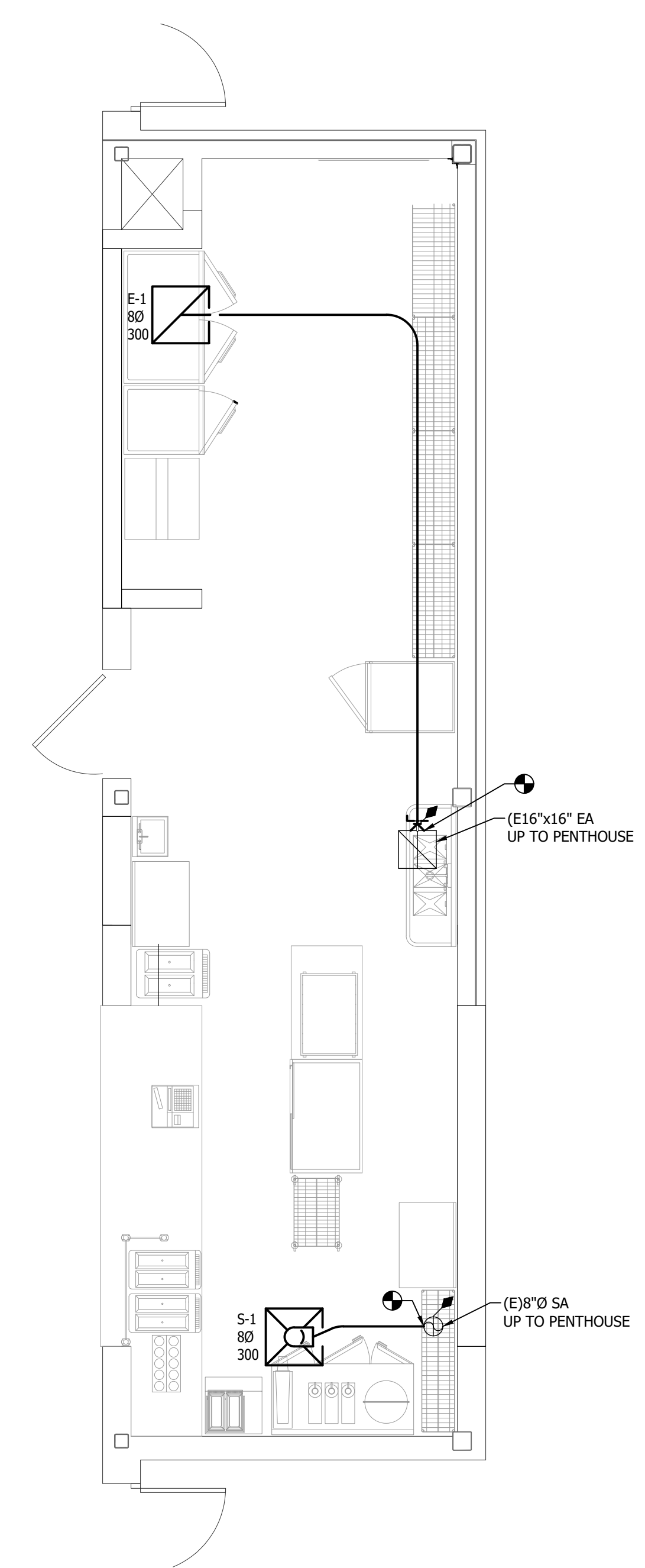
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1
M1.00
ENLARGED MECHANICAL DEMOLITION FIRST FLOOR PLAN
SCALE: 1/4" = 1'-0"

2
M1.00
ENLARGED MECHANICAL NEW WORK FIRST FLOOR PLAN
SCALE: 1/4" = 1'-0"

DOMESTIC WATER HEATER SCHEDULE (ELECTRIC TANK TYPE)													
UNIT ID	LOCATION/ AREA SERVED	STORAGE CAPACITY (GAL)	FUEL TYPE	INPUT (KW)	RECOVERY AT LOOP (GPH)	ELECTRICAL			DISCONNECT		MANUFACTURER/ MODEL NO.	REMARKS	
						MOCP	FLA	VOLTS	PHASE	FURN. BY			INST. BY
WH-1	SERVERY	50	ELECTRIC	15.0	74	-	41.6	208	3	EC	EC	-	BRADFORD WHITE E32-905-3

PLUMBING FIXTURE SCHEDULE							
TAG	BARRIER FREE	ITEM	PIPE CONNECTION SIZES			MANUFACTURER & MODEL NO.	ACCESSORIES
			WASTE	VENT	HW		
FD-1	-	FLOOR DRAIN W/ TRAP PRIMER	3"	-	-	ZURN: Z415-B21	
FS-1	-	FLOOR SINK	3"	1 1/2"	-	ZURN: ZB-1910	
EW-1	Y	ELECTRIC WATER COOLER WITH BOTTLE FILLER - FILTERED	2"	1 1/2"	1/2"	ELKAY: L258WSLP	PROVIDE WITH CANE APRON.

NOTES:

- SUPPLY ALL FIXTURES WITH LOOSE KEY STOPS.
- PROVIDE ALL ACCESSORIES NECESSARY FOR COMPLETE AND OPERABLE INSTALLATION.
- PROVIDE CARRIERS FOR ALL FIXTURES PER MANUFACTURER'S RECOMMENDATIONS.
- WHERE REQUIRED AND WHERE DESIGNATED, FIXTURES SHALL BE FURNISHED AND INSTALLED IN ACCORDANCE TO THE LATEST EDITION OF "THE BARRIER" FREE DESIGN REQUIREMENTS OF THE STATES CONSTRUCTION CODE.
- ALL FIXTURES SHALL MEET STATE DEPT. OF PUBLIC HEALTH REQUIREMENTS, AND SHALL BE SUITABLE FOR FOOD PREPARATION AREAS.
- REFER TO ARCHITECTURAL ELEVATIONS FOR EXACT LOCATION/MOUNTING HEIGHT OF ALL FIXTURES.

GRILLE, REGISTER AND DIFFUSER SCHEDULE							
UNIT ID	FACE SIZE	NECK SIZE	MOUNTING	FINISH	MATERIAL	PRICE/ MODEL NO.	REMARKS
S-1	24x24	SEE PLANS	CEILING	WHITE	STEEL	SPD	
E-1	24x24	SEE PLANS	CEILING	WHITE	STEEL	PODR	

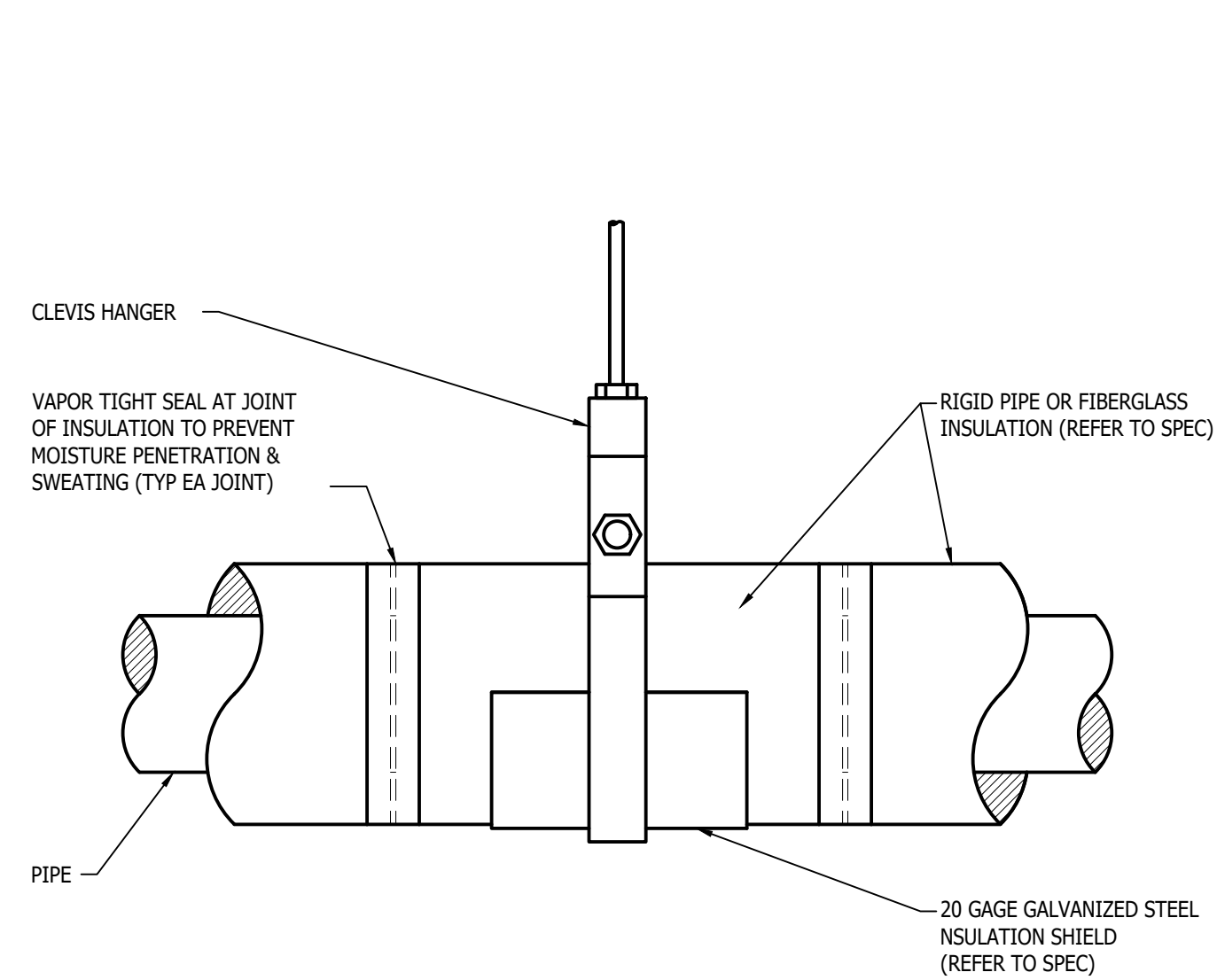
NOTES:

- COORDINATE WITH LIGHTING AND FRAME TYPE ACCORDINGLY WITH ARCHITECTURAL CEILING LAYOUT.

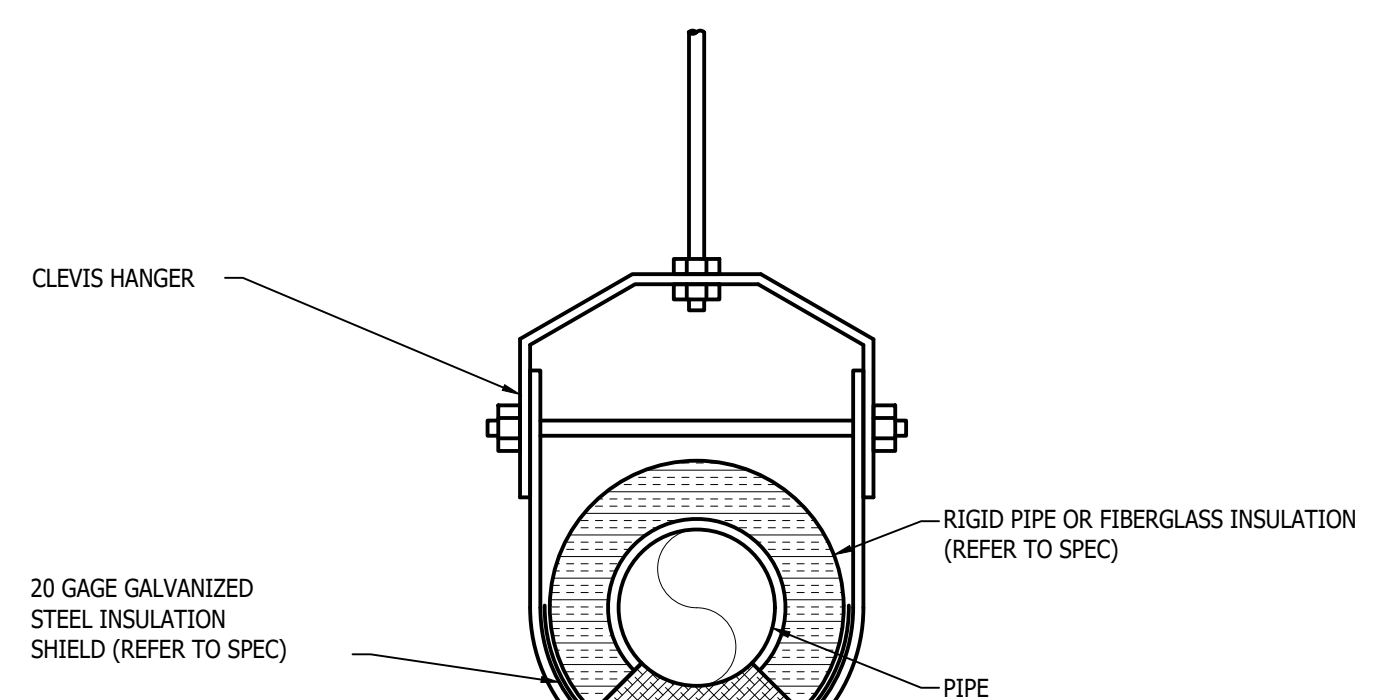
GREASE INTERCEPTOR SCHEDULE							
UNIT ID	FLOW RATE GPM	GREASE CAPACITY (LBS)	DIMENSIONS (INCH)			MODEL NO.	ACCESSORIES
			HEIGHT	LENGTH	WIDTH		
GI-1	35	130	13.75	23	35	G82	PROVIDE HEAVY DUTY COVER AND CLEANOUT PORT.

NOTES:

- MODEL NUMBER IS SCHIER GREAT BASIN UNLESS OTHERWISE NOTED.
- PROVIDE ALL ACCESSORIES FOR RECESSED FLOOR INSTALLATION.
- 3" THREADED INLET/OUTLET.



ELEVATION



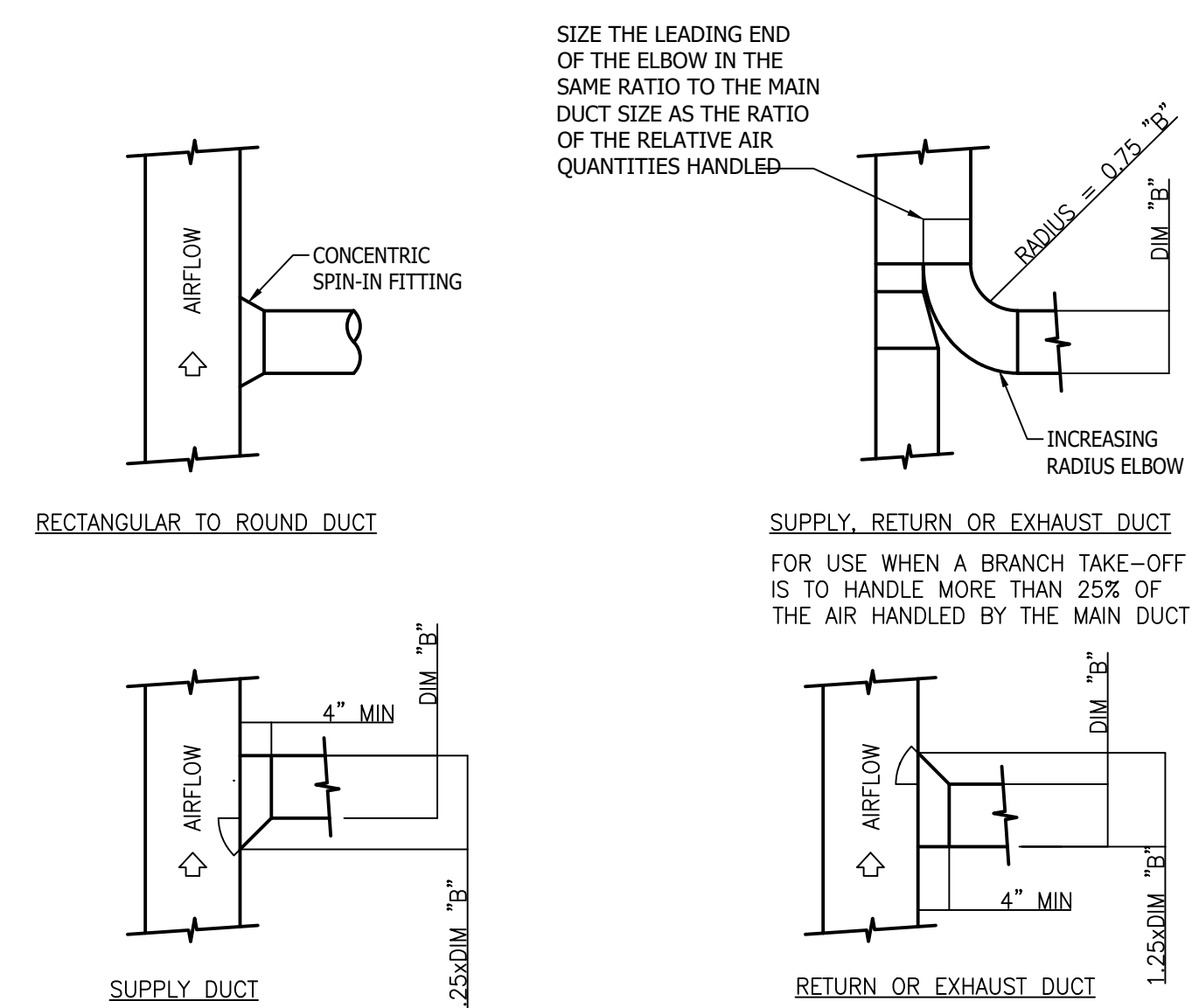
SECTION

NOTES:

- PRE-INSULATED PIPE SUPPORTS SHALL BE USED TO ALLOW PROPER ALIGNMENT OF PIPING DURING INSTALLATION. PRE-INSULATED HANGERS SHALL BE PIPE SHIELDS INCORPORATED OR APPROVED EQUAL. REFER TO SPECIFICATIONS.

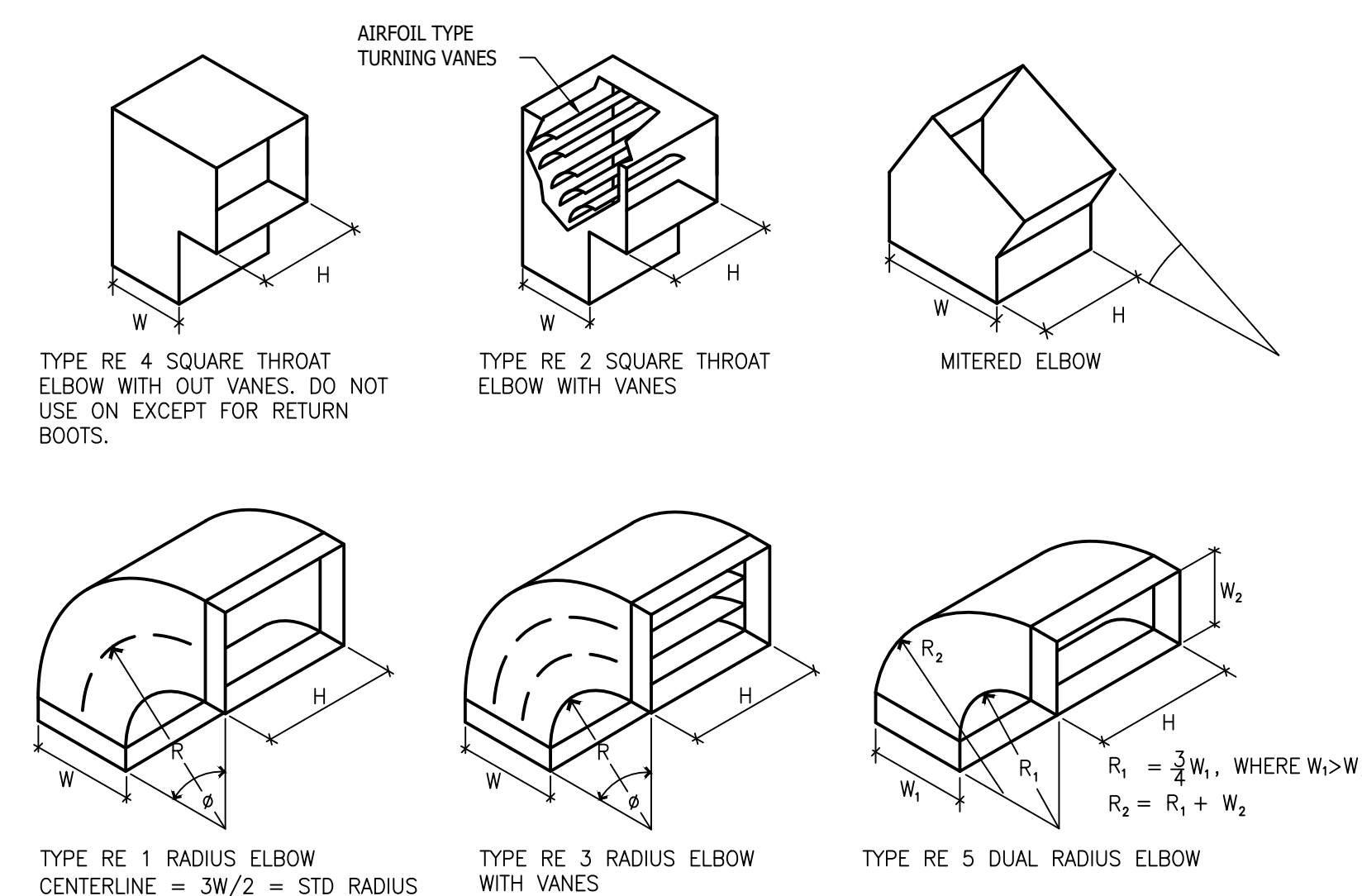
INSULATED PIPE HANGER DETAIL

NO SCALE



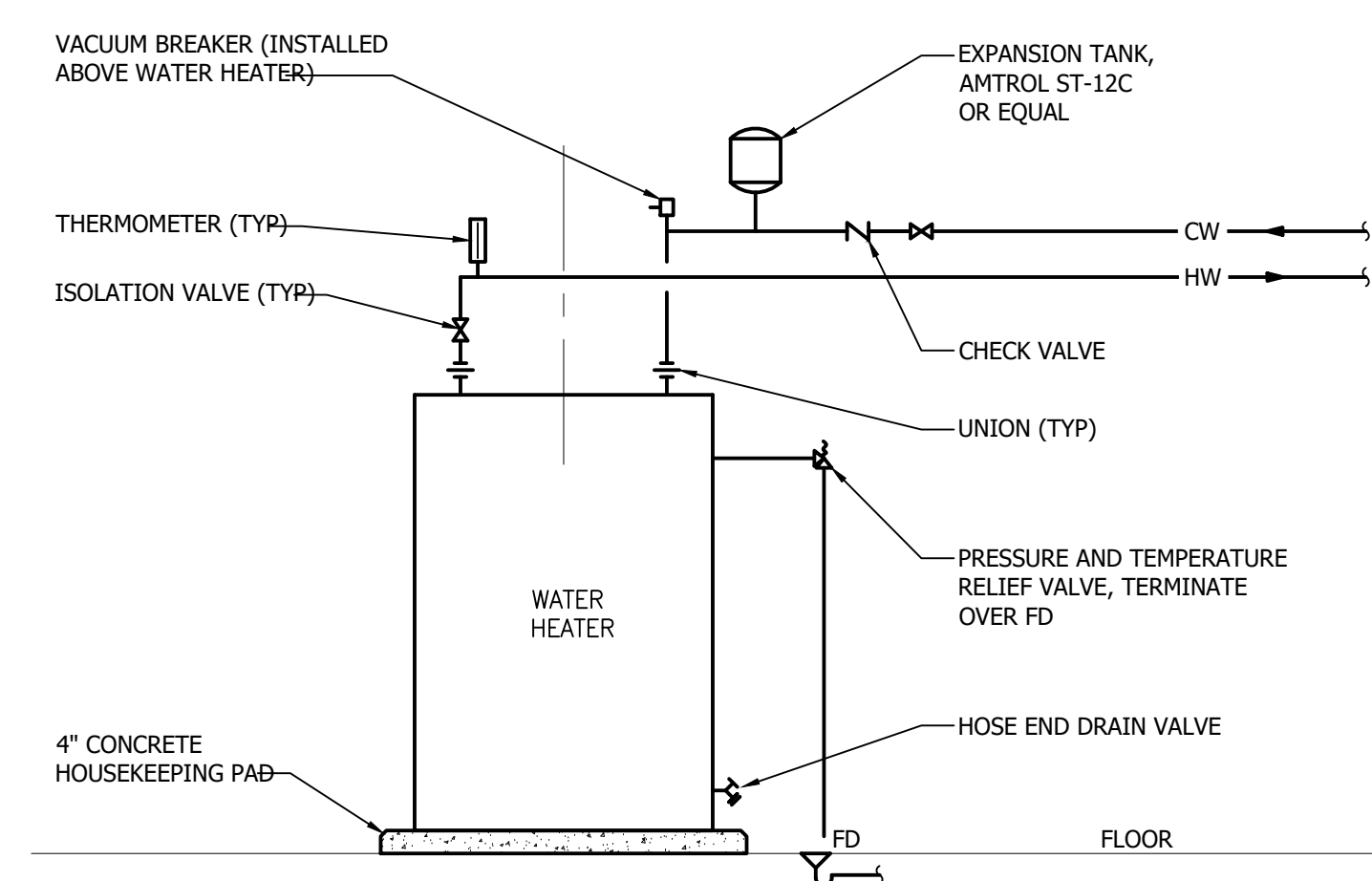
RECTANGULAR DUCT BRANCH TAKE-OFF DETAILS

NO SCALE



RECTANGULAR SHEET-METAL ELBOWS

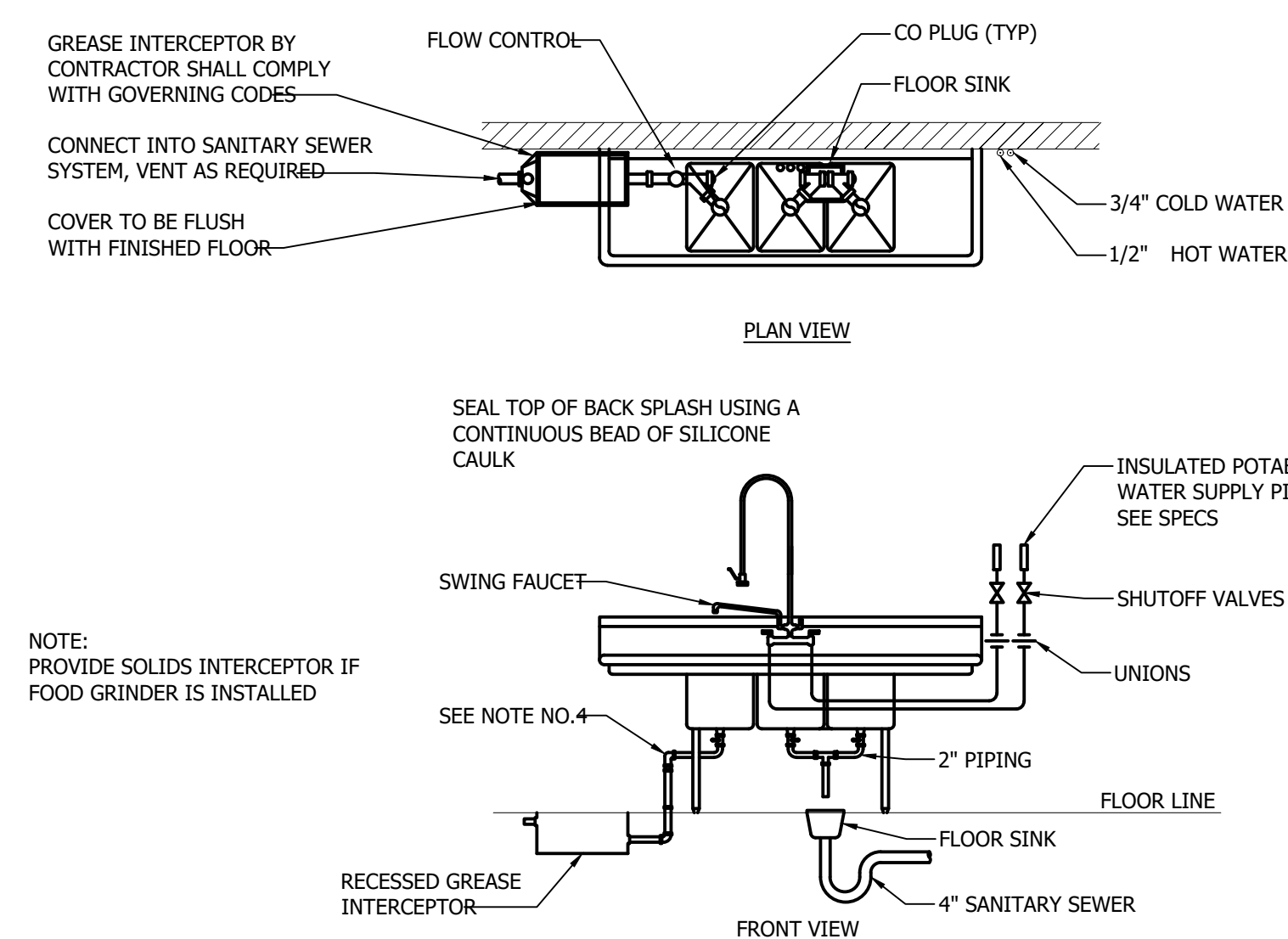
NO SCALE



ELECTRIC - DOMESTIC WATER HEATER PIPING DIAGRAM

NO SCALE

W/ EXPANSION TANK



3-COMPARTMENT SINK

NO SCALE

NOTE: PROVIDE SOLIDS INTERCEPTOR IF FOOD GRINDER IS INSTALLED

LUMINAIRE SCHEDULE					
FIXTURE SYMBOL	FIXTURE TAG	DESCRIPTION	MANUFACTURER(S)	LAMP SOURCE	WATTS
	A	2'x4' EDGE LIT FLAT PANEL LED LUMINAIRE. A FULLY LUMINOUS APPEARANCE GLARE FREE. SUITABLE FOR RECESS MOUNTING IN LAY-IN TYPE GRID CEILING. ALUMINUM FRAME WITH SATIN WHITE LENS, 4000 LUMENS, ELECTRONIC DRIVER, 4000K. 0-10V DIMMING CAPABLE, UNIVERSAL VOLTAGE.	1. LITHONIA CPX-2X4 4000LMSOCR40KSWLMIN100WVOLT 2. COOPER LIGHTING 3. COLUMBIA LIGHTING	80CRI 4000 LUMENS	38.9
	B	6.5" DEDAL WALL MOUNTED DECORATIVE FIXTURE WITH FRONT WALL MOUNT GOOSENECK ARM. MATTE WHITE FINISH. 1500 LM, 0-10V DIMMING CAPABLE, 4000K.	1. SPECTRUM LIGHTING ET60GV-15L-40K-D010X-PA16-MW-MW 2. COOPER LIGHTING 3. COLUMBIA LIGHTING	4000 LUMENS	25
	X	EXIT LIGHT EMERGENCY LIGHT SHALL BE UNIVERSAL MOUNT, DIECAST ALUMINUM, HIGH OUTPUT LED DIFFUSE LIGHT PANEL, RED LETTERS WITH MAINTENANCE FREE NICKEL CADMIUM BATTERY CAPABLE OF PROVIDING 90 MINUTE FULL LIGHT OPERATION.	1. LITHONIA LQM SERIES 2. SURE-LITES CX SERIES	120-277V	2.3
	#B	SAME AS TYPE # EXCEPT THIS FIXTURE WILL BE PROVIDED WITH AN INTERNAL BATTERY PACK, WIRE SUCH IT OPERATES NORMALLY WITH A SWITCH AND AS AN EMERGENCY LIGHT UPON LOSS OF POWER.			

LIGHTING SYMBOL LIST

SYMBOL	DESCRIPTION
	LIGHT FIXTURE - CEILING/GRID MOUNT
	LIGHT FIXTURE - INTERIOR WALL MOUNT LINEAR
	LIGHT FIXTURE - DOWNLIGHT WITH WALLWASH DIST.
	LIGHT FIXTURE - INTERIOR WALL SCNCE
	LIGHT FIXTURE - INTERIOR SURFACE MOUNT
	LIGHT FIXTURE - INTERIOR WALL MOUNTED
	LIGHT FIXTURE - INTERIOR PENDANT MOUNT
	LIGHT FIXTURE - INTERIOR PENDANT MOUNT CYLINDER
	TRACK AND TRACK MOUNTED LIGHT FIXTURES
	EXIT LIGHT - CEILING MOUNTED - ARROWS AS INDICATED ON PLAN (SHADED AREA INDICATES FACE(S) OF FIXTURE)
	EXIT LIGHT - WALL MOUNTED - ARROWS AS INDICATED ON PLAN (SHADED AREA INDICATES FACE(S) OF FIXTURE)
	EMERGENCY LIGHT FIXTURE - EMERGENCY BATTERY UNIT
	EMERGENCY LIGHT FIXTURE - BATTERY UNIT/EXIT SIGN
	LIGHT FIXTURE - EXTERIOR POLE MOUNT TYPE
	LIGHT FIXTURE - EXTERIOR WALL MOUNT TYPE
	LIGHT FIXTURE - EXTERIOR POST TOP TYPE
	LIGHT FIXTURE - EXTERIOR BOLLARD TYPE

NOTES:
1. LIGHTING SYMBOLS AS INDICATED ON PLANS ARE NOT DRAWN TO SCALE UNLESS NOTED OTHERWISE.

LIGHTING CONTROLS LEGEND

SYMBOL	DESCRIPTION
	SWITCH SINGLE POLE
	OCCUPANCY SENSOR SWITCH
	VACANCY SENSOR SWITCH
	LOW VOLTAGE DIMMER SWITCH
	VACANCY DIMMER SENSOR SWITCH
	CEILING MOUNTED OCCUPANCY SENSOR
	CEILING MOUNTED VACANCY SENSOR
	SWITCH THREE-WAY
	SINGLE POLE KEY SWITCH

POWER SYMBOL LIST

SYMBOL	DESCRIPTION
	CONDUIT DOWN
	CONDUIT UP
	CONTACTOR
	DISCONNECT SWITCH - NON FUSED
	DISCONNECT SWITCH - FUSED
	DISCONNECT SWITCH - COMB. MOTOR STARTER
	ELECTRICAL PANEL - 208/240 VOLTS
	ELECTRICAL PANEL - 480 VOLTS
	GROUNDING ROD
	GROUND
	GROUNDING BAR
	JUNCTION BOX
	JUNCTION BOX WITH HARDWIRED CONNECTION
	METER
	MOTOR - SINGLE PHASE
	MOTOR - THREE PHASE
	MOTOR RATED SWITCH
	POWER RECEPTACLE - SIMPLEX TYPE
	POWER RECEPTACLE - DUPLEX TYPE
	POWER RECEPTACLE - DUPLEX 6" ABOVE COUNTER
	POWER RECEPTACLE - USB/DUPLEX COMBO. DEVICE
	POWER RECEPTACLE - QUADRUPLEX TYPE
	POWER RECEPTACLE - RECESSED FLOOR TYPE
	POWER RECEPTACLE - SPECIALTY TYPE
	SURGE PROTECTION DEVICE
	TIME CLOCK
	TRANSFORMER (REFER TO SCHEDULES FOR INFO)
	VARIABLE SPEED DRIVE

NOTES:
1. ALL DEVICE RATINGS/SIZES SHALL BE COORDINATED WITH PLANS AND SCHEDULES.

AUXILIARY SYST. SYMBOL LIST

SYMBOL	DESCRIPTION
	CAMERA
	CARD READER
	COMMUNICATIONS DEVICE - 6" ABOVE COUNTER
	COMMUNICATIONS DEVICE - FLOOR
	COMMUNICATIONS DEVICE - WALL
	MAGNETIC DOOR HOLDER
	PUSH BUTTON
	SPEAKER
	WALL CLOCK - SINGLE FACE
	WALL CLOCK - DOUBLE FACE
	WALL CLOCK AND SPEAKER UNIT

NOTES:
1. ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR BOX AND CONDUIT FOR ALL DEVICES INDICATED.
2. LOW VOLTAGE CONTRACTOR SHALL PROVIDE EXACT SPECIFICATIONS AND LOCATIONS OF ALL DEVICES.

FIRE ALARM SYMBOL LIST

SYMBOL	DESCRIPTION
	DETECTION DEVICE
	DETECTION DEVICE - DUCT MOUNTED
	DETECTION DEVICE - FLOW SWITCH
	DETECTION DEVICE - TAMPER SWITCH
	FIRE ALARM ANNUNCIATOR PANEL
	FIRE ALARM CONTROL PANEL
	FIRE DEPARTMENT COMMUNICATION OUTLET
	MANUAL DEVICE - PULL STATION
	NOTIFICATION DEVICE - WALL MOUNTED
	NOTIFICATION DEVICE - CEILING MOUNTED

NOTES:
1. DRAWINGS INDICATE DESIGN INTENT ONLY, FINAL LOCATIONS AND DEVICE SPECIFICATIONS SHALL BE PROVIDED BY FIRE ALARM MANUFACTURER. REFER TO PROJECT SPECIFICATIONS FOR APPROVED MANUFACTURERS.

ELECTRICAL ABBREVIATIONS

ABBREV.	DESCRIPTION
AFF	ABOVE FINISHED FLOOR
A	AMPERE
AF	AMPERE FUSE/AMPERE FRAME
AWG	AMERICAN WIRE GAUGE
AT	AMPERE TRIP
ATS	AUTOMATIC TRANSFER SWITCH
AIC	AVAILABLE INTERRUPTING CURRENT (AMPS)
C	CONDUIT OR CEILING MOUNTED
CB	CIRCUIT BREAKER
CU	COPPER
CT	CURRENT TRANSFORMER
DIA	DIAMETER
DISC	DISCONNECT
EMT	ELECTRICAL METALLIC TUBING
EWG	ELECTRIC WATER COOLER
EPO	EMERGENCY POWER OFF
(E)	EXISTING ELECTRICAL EQUIPMENT OR WORK
FA	FIRE ALARM
FACP	FIRE ALARM CONTROL PANEL
FLA	FULL LOAD AMPS
F	FUSE
G/GRD	GROUND
GFG/GFI	GROUND FAULT CIRCUIT INTERRUPTER
HOA	HAND-OFF-AUTO
HP	HORSEPOWER
IG	ISOLATED GROUND
KV	KILOVOLT
KVA	KILOVOLT AMPERE
KW	KILOWATT
KWH	KILOWATT HOUR
LP	LIGHTING PANEL
MCB	MAIN CIRCUIT BREAKER
MDP	MAIN DISTRIBUTION PANEL
MLO	MAIN LUG ONLY
MAX	MAXIMUM
MIN	MINIMUM
NEC	NATIONAL ELECTRICAL CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
N/NEU	NEUTRAL
NF	NON-FUSIBLE
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
NIC	NOT IN CONTRACT
OF/OI	OWNER FURNISHED / CONTRACTOR INSTALLED
OF/OI	OWNER FURNISHED / OWNER INSTALLED
PH. OR #	PHASE
P	POLE
PF	POWER FACTOR
PVC	POLYVINYL CHLORIDE (PLASTIC)
(R)	RELOCATED EXISTING ELECTRICAL EQUIPMENT
(RR)	REMOVE AND REINSTALL
RMC	RIGID METALLIC CONDUIT
RP	RECEPTACLE PANEL
SPEC/SPECS	SPECIFICATIONS
TBB	TELEPHONE BACKBOARD
TYP.	TYPICAL
UC	UNDER COUNTER
UL	UNDERWRITERS LABORATORIES
UPS	UNINTERRUPTIBLE POWER SUPPLY
USB	UNIVERSAL SERIAL BUS
V	VOLT
VA	VOLT AMPERE
W	WATT
WG	WIRE GUARD
WP	WEATHERPROOF
XFMR	TRANSFORMER

DRAWING INDEX

SHT NO	DESCRIPTION
E0.00T	ELECTRICAL GENERAL INFORMATION & LIGHTING SCHEDULE
E1.00T	ELECTRICAL COMPOSITE PLAN
EP4.01T	ENLARGED ELECTRICAL POWER DEMOLITION & NEW WORK FLOOR PLANS
EL4.01T	ENLARGED ELECTRICAL LIGHTING DEMOLITION & NEW WORK FLOOR PLANS
E6.00T	ELECTRICAL PANEL SCHEDULES & DETAILS
E7.00T	ELECTRICAL ONE-LINE DIAGRAMS

DRAWING NOTATION

SYMBOL	DESCRIPTION
LA	LIGHTING FIXTURE TAG
	CONSTRUCTION KEY NOTE NUMBER 1
	DEMOLITION KEY NOTE NUMBER 1
	FEEDER SIZE TAG (REFER TO FEEDER SCHEDULE ON THIS SHEET)
FF-1	EQUIPMENT DESIGNATION (I.E. EXHAUST FAN NUMBER 1)
	EXISTING DEVICES OR EQUIPMENT
	NEW OR MODIFIED DEVICES OR EQUIPMENT
	NEW OR MODIFIED UNDERGROUND WIRING
	EXISTING SYSTEM COMPONENT TO BE REMOVED
	SECTION NUMBER 4
	SECTION NO. 6
	SHEET E5.2 ON WHICH SECTION IS CUT (ENLARGED PARTIAL PLAN SIMILAR)
	LIGHTING CONTROL TAG
	SCENE SCHEDULE ID 'A'
	DAYLIGHTING CONTROL ZONE '1' (MAY NOT APPEAR ON EVERY TAG)

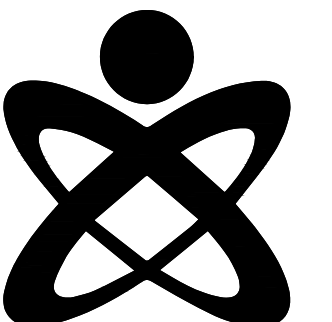
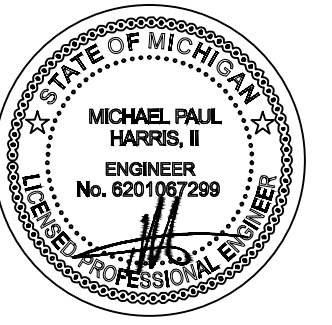
APPLICABLE CODES AND REGULATIONS

YEAR	CODE
2015	MICHIGAN BUILDING CODE
2015	MICHIGAN ENERGY CODE
2023	MICHIGAN ELECTRICAL CODE RULES, PART 8
2023	NATIONAL ELECTRICAL CODE (NFPA 70)
2013	NATIONAL FIRE PROTECTION ASSOCIATION, NFPA 20
2013	NATIONAL FIRE ALARM AND SIGNALING CODE, NFPA 72
2012	LIFE SAFETY CODE, NFPA 101
2013	STANDARD FOR EMERGENCY & STANDBY POWER SYSTEMS, NFPA 110
2009	ICC A117.1 ACCESSIBLE AND USABLE BUILDINGS & FACILITIES



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UNIFIED BUILDING SYSTEMS ENGINEERING 89 S. GRATIOT AVE. MT. CLEMENS, MI 48043 UBS PROJECT 007.25.04 - 1

WARREN WOODS PUBLIC SCHOOL DISTRICT
TOWER HS - TITAN EXPRESS SERVERY
HAWTHORN FOOD PROGRAM FREEZER REPLACEMENT

ELECTRICAL GENERAL INFORMATION & LIGHTING SCHEDULE

PRELIMINARY
DESIGN DEVELOPMENT
CONSTRUCTION
FINAL RECORD

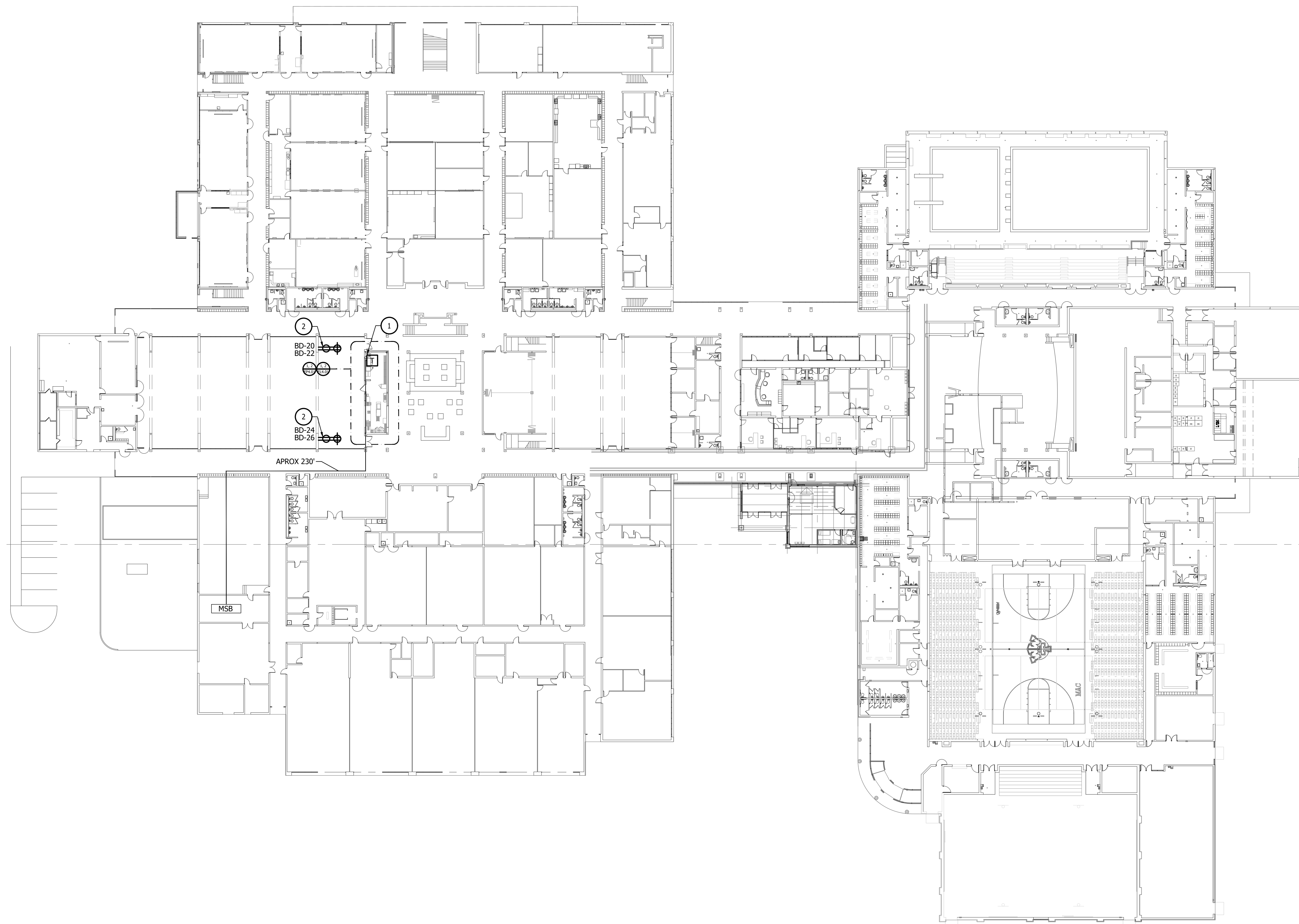
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REVISIONS
BIDS 03/11/2025

DATE: MARCH 11, 2025
SHEET NO.

E0.00T

JOB NO. 242030



ELECTRICAL COMPOSITE PLAN
SCALE: 1/32" = 1'-0"

GENERAL DEMOLITION NOTES	
A	THESE DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL EXTENT OF WORK TO BE PERFORMED. THE EXACT EXTENT OF DEMOLITION SHALL BE DETERMINED BY THE NEW WORK.
B	ANY INTERRUPTIONS OF EXISTING SERVICES AND/OR EQUIPMENT SHALL BE PERFORMED AT A TIME APPROVED IN ADVANCE BY OWNER'S REPRESENTATIVE SO AS NOT TO INTERFERE WITH THE PRESENT BUILDING'S OPERATION.
C	PRIOR TO COMMENCEMENT OF WORK, CONTRACTOR SHALL VISIT THE SITE AND BECOME FAMILIAR WITH EXISTING SITE CONDITIONS, SYSTEMS, AND UTILITIES. NOTIFY DESIGN PROFESSIONAL OF ANY INTERFERENCES OR DISCREPANCIES.
D	ALL ITEMS INDICATED WITH CROSS-HATCHING SHALL BE REMOVED COMPLETELY WITH ALL RELATED ITEMS INCLUDING HANGERS, SUPPORTS, INSULATION, CONTROLS, ETC. CAP ALL OPEN-ENDED PIPES AND DUCTS.
E	THE OWNER SHALL HAVE FIRST RIGHT OF REFUSAL ON ALL EQUIPMENT BEING REMOVED. ALL ITEMS REMOVED SHALL BE LEGALLY DISPOSED OF. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL EXISTING RELOCATED AND OWNER-PROVIDED EQUIPMENT.
F	VERIFY DEPTH, SIZE, LOCATIONS, AND CONDITIONS OF EXISTING UTILITIES IN THE FIELD, INCLUDING POINTS OF CONNECTION, PRIOR TO STARTING WORK.
G	ALL ITEMS ON DEMOLITION PLAN SHALL BE CONSIDERED EXISTING UNLESS OTHERWISE NOTED. ALL WORK INDICATED ON PLANS HAS BEEN LOCATED PER EXISTING DRAWINGS AND/OR FIELD OBSERVATION AND REQUIRES FIELD VERIFICATION.
H	ALL EXISTING WORK TO REMAIN SHALL BE PROTECTED FROM DAMAGE. WHERE DUCT WORK PIPE INSULATION HAS BEEN DAMAGED DURING DEMOLITION, THE CONTRACTOR SHALL REPAIR INSULATION AS REQUIRED TO MATCH EXISTING.

POWER GENERAL NOTES	
A	THESE DRAWINGS ARE DIAGRAMMATIC AND REPRESENT THE GENERAL EXTENT OF THE WORK TO BE PERFORMED. PROVIDE AND EXECUTE ALL HVAC SYSTEMS PER ENGINEER'S SPECIFICATION, AND LOCAL APPLICABLE CODES INCLUDING AMENDMENTS, BULLETINS, ETC. AS WELL AS THE STANDARDS OF INSTALLATION AND EQUIPMENT ESTABLISHED FOR THE BUILDINGS, AND REQUIREMENTS OF THE OWNER.
B	EXCEPT FOR CHANGES AS MAY BE SPECIFICALLY APPROVED BY THE ENGINEER OF RECORD IN ACCORDANCE WITH ALTERNATES OF OPTIONS AS STATED HEREINAFTER, ALL WORK MUST BE IN FULL ACCORDANCE WITH THE INTENT OF THE PLANS AND SPECIFICATIONS. SYSTEMS ARE TO BE COMPLETE, EFFICIENT, AND SATISFACTORY OPERATION WHEN PROJECT IS DELIVERED TO THE OWNER.
D	CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS AND APPROVAL FROM GOVERNING AUTHORITIES, FILE NECESSARY FORMS, PAY ALL INSPECTION FEES.
E	ELECTRICAL CONTRACTOR SHALL COMPLY WITH THE LATEST NATIONAL ELECTRICAL CODE, LIFE SAFETY CODE AND APPLICABLE STATE AND LOCAL CODES AND ORDINANCES.
F	ELECTRICAL EQUIPMENT AND WIRING SHALL BE NEW AND SHALL BE FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR, UNLESS OTHERWISE NOTED.
G	WIRING SHALL BE IN CONDUIT. CONDUIT SHALL BE 3/4" CONDUIT MINIMUM. CONDUITS IN FINISHED AREAS SHALL BE CONCEALED.
H	NEW WIRES SHALL BE TYPE THHN. MINIMUM SIZE SHALL BE #12 AWG, UNLESS OTHERWISE NOTED. FINAL CONNECTIONS TO EQUIPMENT, FURNISHED AND INSTALLED BY OTHERS, SHALL BE PROVIDED BY THIS CONTRACTOR.
J	ALL P.A. AND SPEAKER SCOPE BY OTHERS. REFER TO TECH DRAWINGS FOR FURTHER INFORMATION.

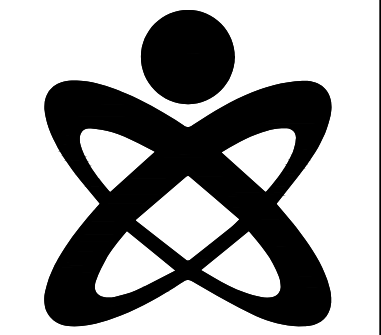
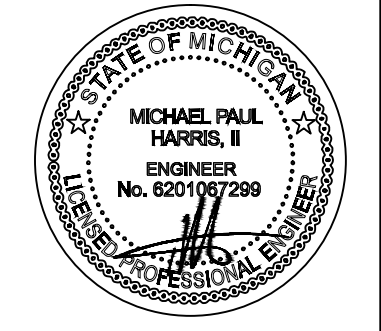
LIGHTING GENERAL NOTES	
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C	PRIOR TO COMMENCEMENT OF WORK, CONTRACTOR SHALL VISIT THE SITE AND BECOME FAMILIAR WITH EXISTING SITE CONDITIONS, SYSTEMS, AND UTILITIES. NOTIFY DESIGN PROFESSIONAL OF ANY INTERFERENCES OR DISCREPANCIES.
D	ALL ITEMS INDICATED WITH CROSS-HATCHING SHALL BE REMOVED COMPLETELY WITH ALL RELATED ITEMS INCLUDING HANGERS, SUPPORTS, INSULATION, CONTROLS, ETC. CAP ALL OPEN-ENDED PIPES AND DUCTS.
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G	ALL ITEMS ON DEMOLITION PLAN SHALL BE CONSIDERED EXISTING UNLESS OTHERWISE NOTED. ALL WORK INDICATED ON PLANS HAS BEEN LOCATED PER EXISTING DRAWINGS AND/OR FIELD OBSERVATION AND REQUIRES FIELD VERIFICATION.
H	ALL EXISTING WORK TO REMAIN SHALL BE PROTECTED FROM DAMAGE. WHERE DUCT WORK PIPE INSULATION HAS BEEN DAMAGED DURING DEMOLITION, THE CONTRACTOR SHALL REPAIR INSULATION AS REQUIRED TO MATCH EXISTING.
J	ALL SWITCHES SHALL BE WHITE WITH BRUSHED SILVER COVERPLATE.

NEW WORK KEYED NOTES	
1	NEW TRANSFORMER ABOVE KITCHEN IN STORAGE ROOM. REFER TO ONE LINE DIAGRAM FOR SIZING.
2	PROVIDE NEW 2000I RACKWAY FOR VENDING MACHINES. VERIFY EXACT LOCATION WITH OWNER PRIOR TO INSTALLATION. CIRCUIT AS SHOWN TO SPARE BREAKER MADE AVAILABLE IN DEMOLITION. REFER TO DETAIL #5 ON E5.00



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UBS PROJECT 007.2504 - 1

WARREN WOODS PUBLIC SCHOOL DISTRICT
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HAWTHORN FOOD PROGRAM FREEZER REPLACEMENT

ELECTRICAL COMPOSITE PLAN

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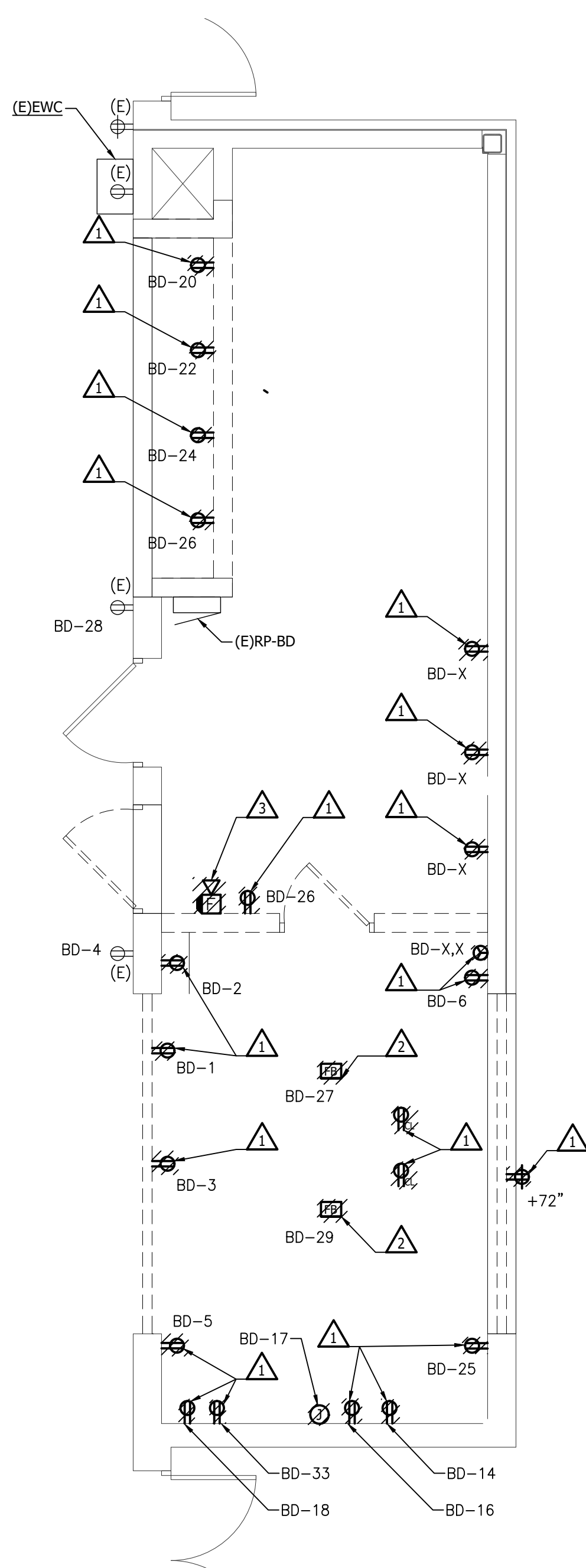
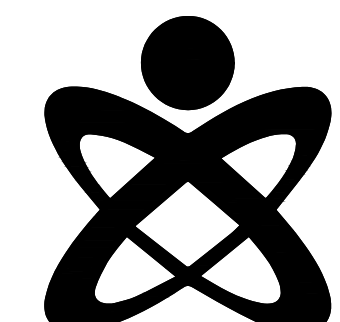
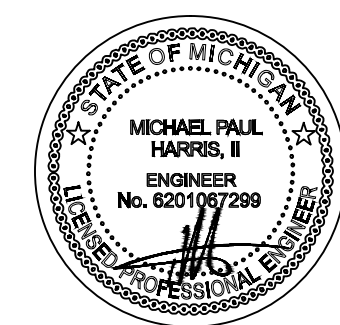
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CHECKED BY: TJO

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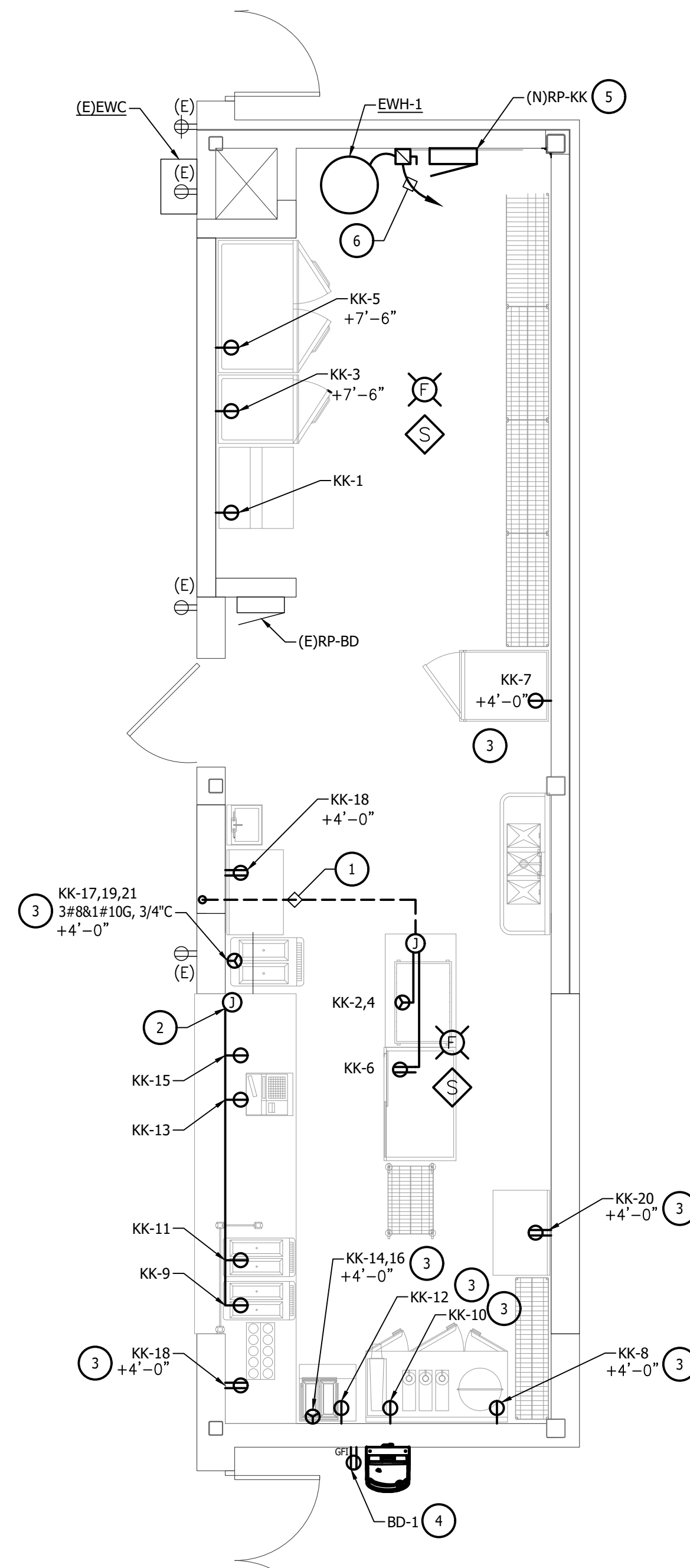
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GENERAL DEMOLITION NOTES	
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C	PRIOR TO COMMENCEMENT OF WORK, CONTRACTOR SHALL VISIT THE SITE AND BECOME FAMILIAR WITH EXISTING SITE CONDITIONS, SYSTEMS, AND UTILITIES. NOTIFY DESIGN PROFESSIONAL OF ANY INTERFERENCES OR DISCREPANCIES.
D	ALL ITEMS INDICATED WITH CROSS-HATCHING SHALL BE REMOVED COMPLETELY WITH ALL RELATED ITEMS INCLUDING HANGERS, SUPPORTS, INSULATION, CONTROLS, ETC. CAP ALL OPEN-ENDED PIPES AND DUCTS.
E	THE OWNER SHALL HAVE FIRST RIGHT OF REFUSAL ON ALL EQUIPMENT BEING REMOVED. ALL ITEMS REMOVED SHALL BE LEGALLY DISPOSED OF. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL EXISTING RELOCATED AND OWNER-PROVIDED EQUIPMENT.
F	VERIFY DEPTH, SIZE, LOCATIONS, AND CONDITIONS OF EXISTING UTILITIES IN THE FIELD, INCLUDING POINTS OF CONNECTION, PRIOR TO STARTING WORK.
G	ALL ITEMS ON DEMOLITION PLAN SHALL BE CONSIDERED EXISTING UNLESS OTHERWISE NOTED. ALL WORK INDICATED ON PLANS HAS BEEN LOCATED PER EXISTING DRAWINGS AND/OR FIELD OBSERVATION AND REQUIRES FIELD VERIFICATION.
H	ALL EXISTING WORK TO REMAIN SHALL BE PROTECTED FROM DAMAGE. WHERE DUCT WORK PIPE INSULATION HAS BEEN DAMAGED DURING DEMOLITION, THE CONTRACTOR SHALL REPAIR INSULATION AS REQUIRED TO MATCH EXISTING.

DEMOLITION KEYED NOTES	
1	DISCONNECT AND REMOVE ALL EXISTING RECEPTACLES. REMOVE COMPLETE CONDUIT AND WIRING BACK TO SOURCE. RETAIN BREAKERS AS SPARES, UPDATE PANEL SCHEDULES.
2	FLOORBOX TO BE REMOVED COMPLETE. TAKE CONDUIT AND WIRING BACK TO SOURCE.
3	FIRE ALARM DEVICES TO BE REMOVED COMPLETE. REFER TO NEW WORK PLANS FOR NEW DEVICE.

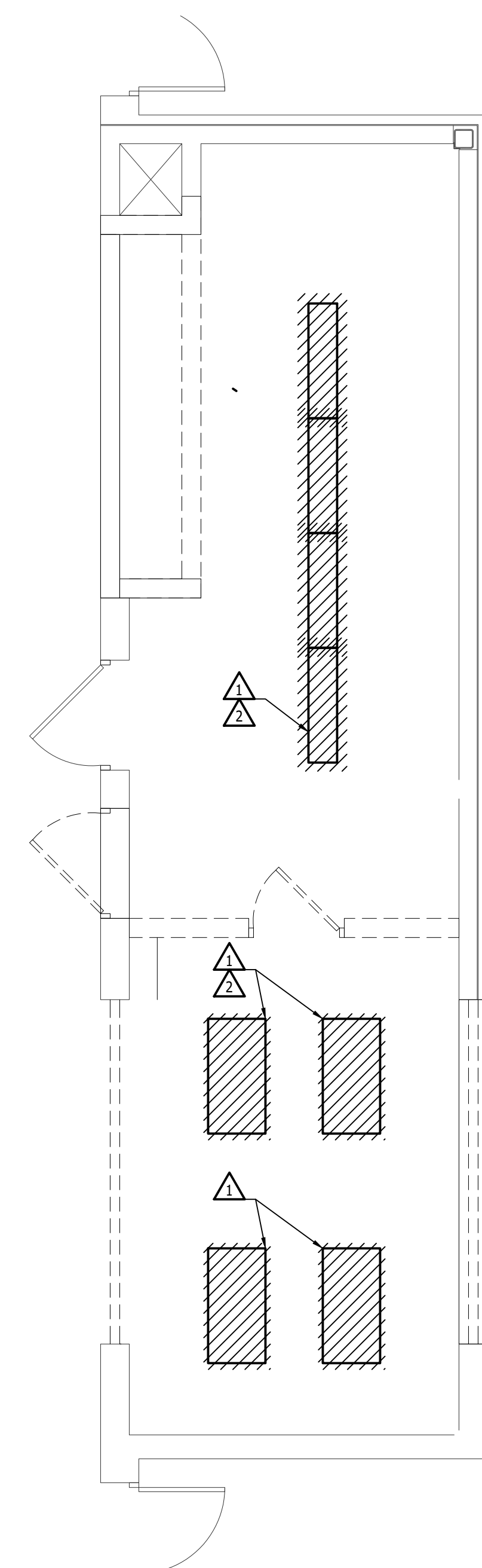
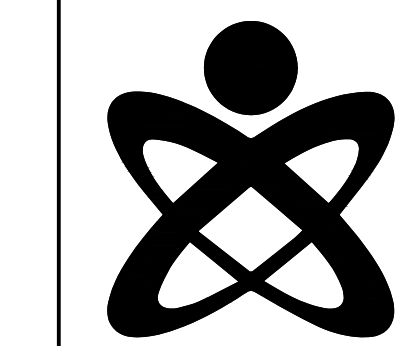
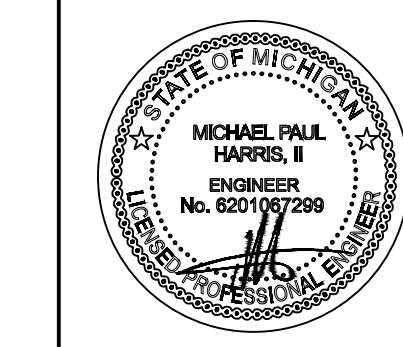


POWER GENERAL NOTES	
A	THESE DRAWINGS ARE DIAGRAMMATIC AND REPRESENT THE GENERAL EXTENT OF THE WORK TO BE PERFORMED. PROVIDE AND EXECUTE ALL HVAC SYSTEMS PER ENGINEER'S SPECIFICATION, AND LOCAL APPLICABLE CODES INCLUDING AMENDMENTS, BULLETINS, ETC. AS WELL AS THE STANDARDS OF INSTALLATION AND EQUIPMENT ESTABLISHED FOR THE BUILDINGS, AND REQUIREMENTS OF THE OWNER.
B	EXCEPT FOR CHANGES AS MAY BE SPECIFICALLY APPROVED BY THE ENGINEER OF RECORD IN ACCORDANCE WITH ALTERNATES OF OPTIONS AS STATED HEREINAFTER, ALL WORK MUST BE IN FULL ACCORDANCE WITH THE INTENT OF THE PLANS AND SPECIFICATIONS. SYSTEMS ARE TO BE COMPLETE, EFFICIENT, AND SATISFACTORY OPERATION WHEN PROJECT IS DELIVERED TO THE OWNER.
D	CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS AND APPROVAL FROM GOVERNING AUTHORITIES, FILE NECESSARY FORMS, PAY ALL INSPECTION FEES.
E	ELECTRICAL CONTRACTOR SHALL COMPLY WITH THE LATEST NATIONAL ELECTRICAL CODE, LIFE SAFETY CODE AND APPLICABLE STATE AND LOCAL CODES AND ORDINANCES.
F	ELECTRICAL EQUIPMENT AND WIRING SHALL BE NEW AND SHALL BE FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR, UNLESS OTHERWISE NOTED.
G	WIRING SHALL BE IN CONDUIT. CONDUIT SHALL BE 3/4" CONDUIT MINIMUM. CONDUITS IN FINISHED AREAS SHALL BE CONCEALED.
H	NEW WIRES SHALL BE TYPE THHN. MINIMUM SIZE SHALL BE #12 AWG, UNLESS OTHERWISE NOTED. FINAL CONNECTIONS TO EQUIPMENT, FURNISHED AND INSTALLED BY OTHERS, SHALL BE PROVIDED BY THIS CONTRACTOR.
J	ALL P.A. AND SPEAKER SCOPE BY OTHERS. REFER TO TECH DRAWINGS FOR FURTHER INFORMATION.
K	NEW POWER ON EXISTING TO REMAIN WALLS SHALL BE RAN IN LEGRANAD WIREMOLD V2000 OR SIMILAR. NEW POWER AND DATA ON EXISTING TO REMAIN WALLS SHALL BE RAN IN LEGRANAD WIREMOLD V4000 OR SIMILAR.
L	ALL RECEPTACLES 150V TO GROUND OR LESS THAT ARE SINGLE PHASE 50 AMPS OR LESS, AND THREE PHASE 100A OR LESS THAT ARE INSTALLED IN BATHROOMS, KITCHENS, ROOFTOPS, OUTDOOR, INDOOR WET LOCATIONS, LOCKER ROOMS GARAGES, CRAWLSPACES, UNFINISHED UNOCCUPIED BASEMENTS, AND WITHIN 6 FEET OF THE TOP INSIDE EDGE OF SINK BOWLS SHALL BE GFCI PROTECTED. GFCI PROTECTION SHALL BE READILY ACCESSIBLE.

NEW WORK KEYED NOTES	
1	PROVIDE 1" CONDUIT RUNNING DOWN TO THE FLOOR AND OUT TO NEW WORKTABLE FLOOR RECEPTACLES. REFER TO DETAIL 4 ON E6.00
2	PROVIDE 3/4" CONDUIT RUNNING DOWN TO SERVICING COUNTER AND OUT TO RECEPTACLE MOUNTED INSIDE OF COUNTER.
3	ROUTE CONDUIT IN EXISTING BLOCK WALL DOWN TO DEVICE. CONTRACTOR TO NOTCH EXISTING BLOCK WALL AS REQUIRED FOR ARCHITECTURAL TILE COVERING
4	RUN NEW WIRE AND CONDUIT FOR NEW DRINKING FOUNTAIN GFCI RECEPTACLE. RECEPTACLE SHALL BE READILY ACCESSIBLE. CIRCUIT AS SHOWN TO SHARED BREAKER MADE AVAILABLE IN DEMOLITION.
5	NEW 42 CIRCUIT 208/120V PANEL RP-KK TO BE INSTALLED TO SUPPORT KITCHEN EQUIPMENT. FED FROM NEW TRANSFORMER IN STORAGE ABOVE KITCHEN. REFER TO ONE-LINE DIAGRAM FOR SIZING.
6	NEW WATER HEATER. PROVIDE 60A 3P 240V WP SWITCH, RUN 3#6&1#10G 3/4" TO RP-KK-22,24,26. REFER TO PANEL SCHEDULE.

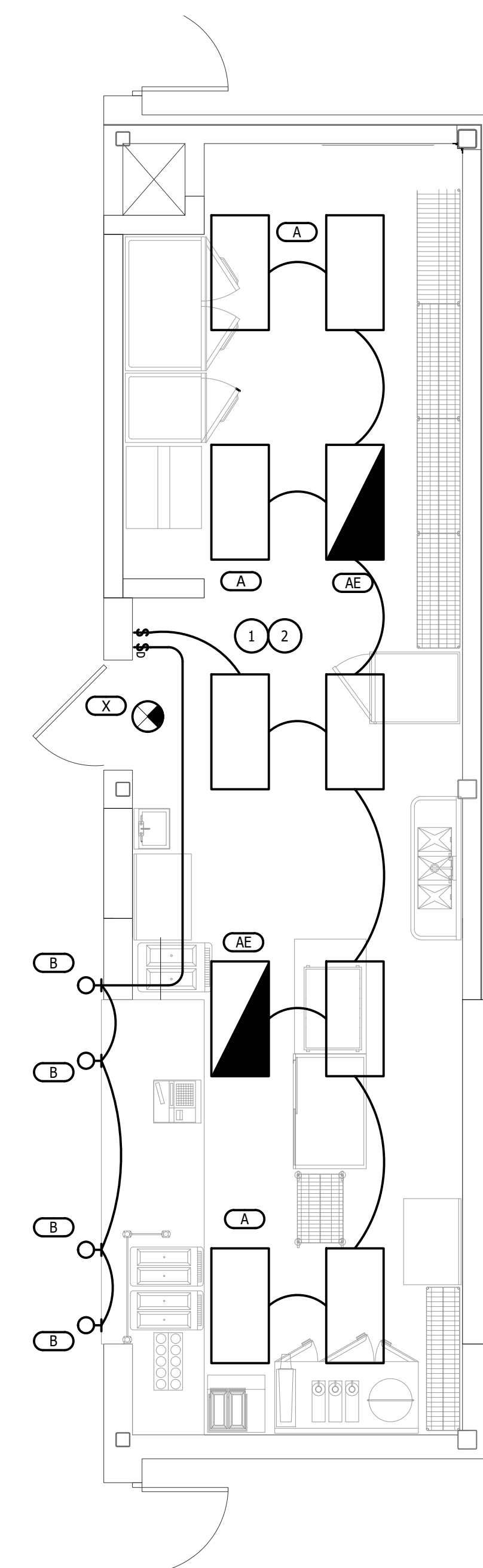
1
E1.00
ENLARGED ELECTRICAL POWER DEMOLITION FIRST FLOOR PLAN
SCALE: 1/4" = 1'-0"

2
E1.00
ENLARGED ELECTRICAL POWER NEW WORK FIRST FLOOR PLAN
SCALE: 1/4" = 1'-0"



GENERAL DEMOLITION NOTES	
A	THESE DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL EXTENT OF WORK TO BE PERFORMED. THE EXACT EXTENT OF DEMOLITION SHALL BE DETERMINED BY THE NEW WORK.
B	ANY INTERRUPTIONS OF EXISTING SERVICES AND/OR EQUIPMENT SHALL BE PERFORMED AT A TIME APPROVED IN ADVANCE BY OWNER'S REPRESENTATIVE SO AS NOT TO INTERFERE WITH THE PRESENT BUILDING'S OPERATION.
C	PRIOR TO COMMENCEMENT OF WORK, CONTRACTOR SHALL VISIT THE SITE AND BECOME FAMILIAR WITH EXISTING SITE CONDITIONS, SYSTEMS, AND UTILITIES. NOTIFY DESIGN PROFESSIONAL OF ANY INTERFERENCES OR DISCREPANCIES.
D	ALL ITEMS INDICATED WITH CROSS-HATCHING SHALL BE REMOVED COMPLETELY WITH ALL RELATED ITEMS INCLUDING HANGERS, SUPPORTS, INSULATION, CONTROLS, ETC. CAP ALL OPEN-ENDED PIPES AND DUCTS.
E	THE OWNER SHALL HAVE FIRST RIGHT OF REFUSAL ON ALL EQUIPMENT BEING REMOVED. ALL ITEMS REMOVED SHALL BE LEGALLY DISPOSED OF. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL EXISTING RELOCATED AND OWNER-PROVIDED EQUIPMENT.
F	VERIFY DEPTH, SIZE, LOCATIONS, AND CONDITIONS OF EXISTING UTILITIES IN THE FIELD, INCLUDING POINTS OF CONNECTION, PRIOR TO STARTING WORK.
G	ALL ITEMS ON DEMOLITION PLAN SHALL BE CONSIDERED EXISTING UNLESS OTHERWISE NOTED. ALL WORK INDICATED ON PLANS HAS BEEN LOCATED PER EXISTING DRAWINGS AND/OR FIELD OBSERVATION AND REQUIRES FIELD VERIFICATION.
H	ALL EXISTING WORK TO REMAIN SHALL BE PROTECTED FROM DAMAGE. WHERE DUCT WORK PIPE INSULATION HAS BEEN DAMAGED DURING DEMOLITION, THE CONTRACTOR SHALL REPAIR INSULATION AS REQUIRED TO MATCH EXISTING.

DEMOLITION KEYED NOTES	
1	EXISTING LIGHT FIXTURES TO BE REMOVED COMPLETE. REMOVE CONDUIT AND WIRING BACK TO JUNCTION BOX FEEDING THIS AREA. PREPARE FOR CONNECTION TO NEW LIGHTING FROM JUNCTION BOX AS INDICATED ON NEW WORK PLANS.
2	EXISTING SWITCHES AND LOW VOLTAGE CONTROL SENSORS TO BE REMOVED COMPLETE. PATCH AND PAINT AS REQUIRED.



LIGHTING GENERAL NOTES	
A	THESE DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL EXTENT OF WORK TO BE PERFORMED. THE EXACT EXTENT OF DEMOLITION SHALL BE DETERMINED BY THE NEW WORK.
B	ANY INTERRUPTIONS OF EXISTING SERVICES AND/OR EQUIPMENT SHALL BE PERFORMED AT A TIME APPROVED IN ADVANCE BY OWNER'S REPRESENTATIVE SO AS NOT TO INTERFERE WITH THE PRESENT BUILDING'S OPERATION.
C	PRIOR TO COMMENCEMENT OF WORK, CONTRACTOR SHALL VISIT THE SITE AND BECOME FAMILIAR WITH EXISTING SITE CONDITIONS, SYSTEMS, AND UTILITIES. NOTIFY DESIGN PROFESSIONAL OF ANY INTERFERENCES OR DISCREPANCIES.
D	ALL ITEMS INDICATED WITH CROSS-HATCHING SHALL BE REMOVED COMPLETELY WITH ALL RELATED ITEMS INCLUDING HANGERS, SUPPORTS, INSULATION, CONTROLS, ETC. CAP ALL OPEN-ENDED PIPES AND DUCTS.
E	THE OWNER SHALL HAVE FIRST RIGHT OF REFUSAL ON ALL EQUIPMENT BEING REMOVED. ALL ITEMS REMOVED SHALL BE LEGALLY DISPOSED OF. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL EXISTING RELOCATED AND OWNER-PROVIDED EQUIPMENT.
F	VERIFY DEPTH, SIZE, LOCATIONS, AND CONDITIONS OF EXISTING UTILITIES IN THE FIELD, INCLUDING POINTS OF CONNECTION PRIOR TO STARTING WORK.
G	ALL ITEMS ON DEMOLITION PLAN SHALL BE CONSIDERED EXISTING UNLESS OTHERWISE NOTED. ALL WORK INDICATED ON PLANS HAS BEEN LOCATED PER EXISTING DRAWINGS AND/OR FIELD OBSERVATION AND REQUIRES FIELD VERIFICATION.
H	ALL EXISTING WORK TO REMAIN SHALL BE PROTECTED FROM DAMAGE. WHERE DUCT WORK PIPE INSULATION HAS BEEN DAMAGED DURING DEMOLITION, THE CONTRACTOR SHALL REPAIR INSULATION AS REQUIRED TO MATCH EXISTING.
J	ALL SWITCHES SHALL BE WHITE WITH BRUSHED SILVER COVERPLATE.

NEW WORK KEYED NOTES	
1	NEW LED FIXTURES IN THIS AREA TO REPLACE EXISTING. PROVIDE NEW CONTROL SENSORS AND LV SWITCHING AS SHOWN, CONNECT TO EXISTING CIRCUIT AVAILABLE AS A RESULT OF DEMOLITION IN THE AREA. ALL WIRING AND CONDUIT SHALL BE NEW. RE-USE EXISTING SWITCH LOCATIONS FOR NEW SWITCHES.
2	NEW FIXTURES WITH BUILT-IN BATTERY BACK UP. WIRE SUCH THAT FIXTURES TURN ON NORMAL WITH SWITCHES AND STAY ON AS EMERGENCY POWER UPON LOSS OF POWER. HATCHED FIXTURES SHALL BE WIRED AHEAD OF LOCAL SWITCH.

1
E1.00 ENLARGED ELECTRICAL POWER DEMOLITION FIRST FLOOR PLAN
SCALE: 1/4" = 1'-0"

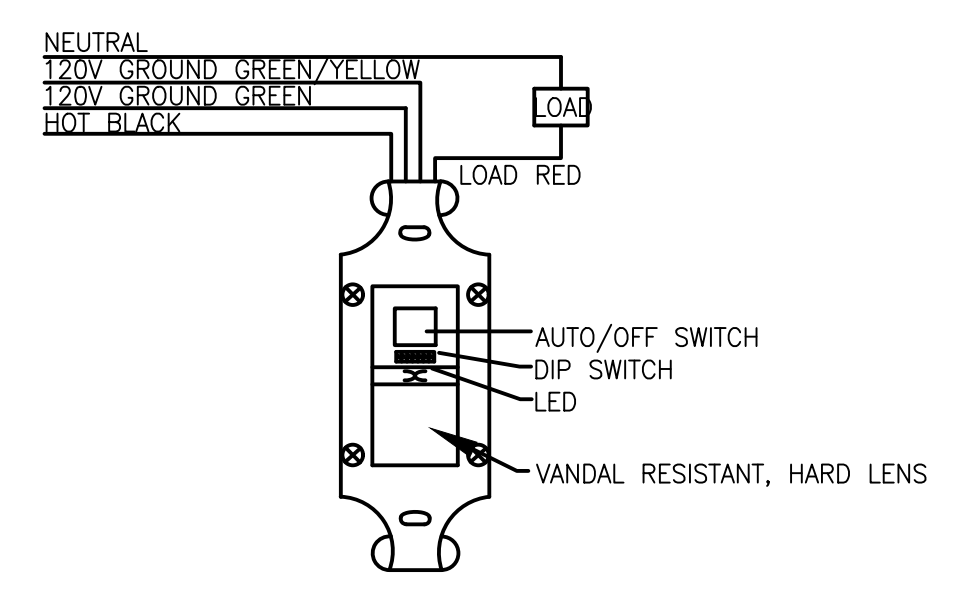
2
E1.00 ENLARGED ELECTRICAL POWER NEW WORK FIRST FLOOR PLAN
SCALE: 1/4" = 1'-0"

Remarks	Light Load	Recept Load	Cont Load	nonC Load	OC	Neutral: 100%			Min SC Interrupting Rating: XXX			Remarks
						OC	OC	OC	OC	OC	OC	
#1 MILK COOLER			828		20	1	X	2	20	1071		#4 SANDWICH SLIDE
#2 REACH-IN FREEZER			1440		20	3	X	4	20	1071		#18 BEVERAGE REFRIGERATOR
#3 REACH-IN REFRIGERATOR			1480		20	5	X	6	20	1480	780	#15 FREEZE CABINET
#4 HOT CABT				1440	20	7	X	8	20		504	#17 WORKTOP REFRIGERATOR
#23 SLUSHIE MACHINE 1				1440	20	9	X	10	20			#20 ICE MAKER
#23 SLUSHIE MACHINE 2				1440	20	11	X	12	20	1480		#21 COFFEE MAKER
#25 PDS		1800			20	13	X	14		1560		DCO CONVICENCE RECEPTACLES (2)
ECCO CONVICENCE RECEPTACLE		180			20	15	X	16		1560		DCO CONVICENCE RECEPTACLE (1)
#27 YOGURT MACHINE				3598	40	17	X	18	20		360	EW-1
SPARE				3598	20	19	X	20		4990		
SPARE				3598	20	21	X	22		4990		
SPARE					20	23	X	24	55	4990		
SPARE					20	25	X	26				
SPARE					20	27	X	28	35			
SPARE					20	29	X	30				
SPARE					20	31	X	32	15			
SPARE					20	33	X	34				
SPARE					35	X	36					
SPARE					37	X	38					
SPARE					39	X	40					
SPARE					41	X	42					

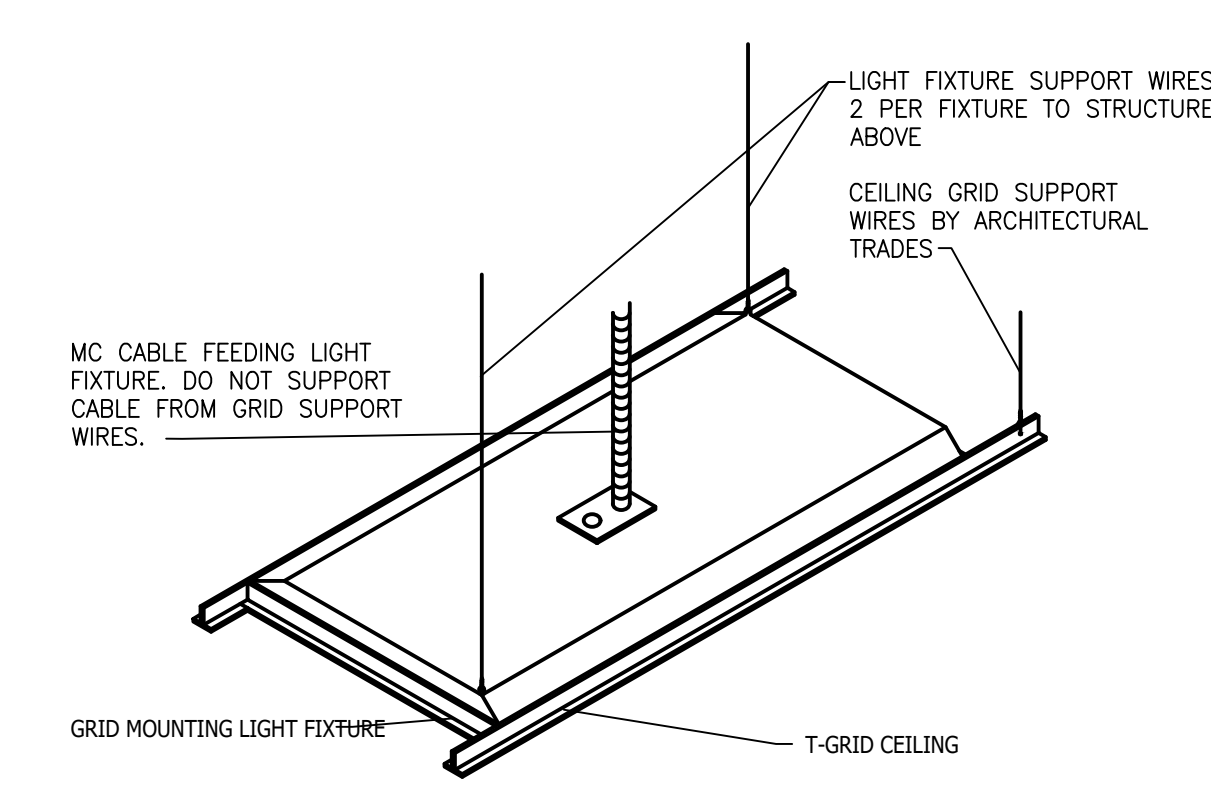
Load Description	Connected Load				Demand Factor	Demand Load			
	OA	OB	OC	Total		OA	OB	OC	Total
Lighting or Continuous Load (Volt-Amps)	0	0	0	0	1.00	0	0	0	0
180VA Receptacle Load (Volt-Amps)	1980	180	560	2520	1.00 (PER 100VA)	1980	180	560	2520
Amount over 10kVA	0	0	0	0	0.50 (1-10kVA)	0	0	0	0
Continuous Load (Volt-Amps)	828	1944	4140	6912	1.00	828	1944	4140	6912
Non-Continuous Load (Volt-Amps)	14339	12659	10028	37027	0.80	11472	10128	8023	29622
Total Load (kVA)	17.115	14.769	14.533	46.417	125% of Light/Cont and Recept (<10kVA) load plus other load	14.281	12.235	12.552	39.068
Total Amperity (Amps)	142.8	123.1	121.0	129.0	per NEC Article 215.2	118.9	102.0	104.3	108.4
Minimum Feeder Sizing (Amps)	146.9	123.5	121.7	130.7		123.0	102.4	105.0	110.1



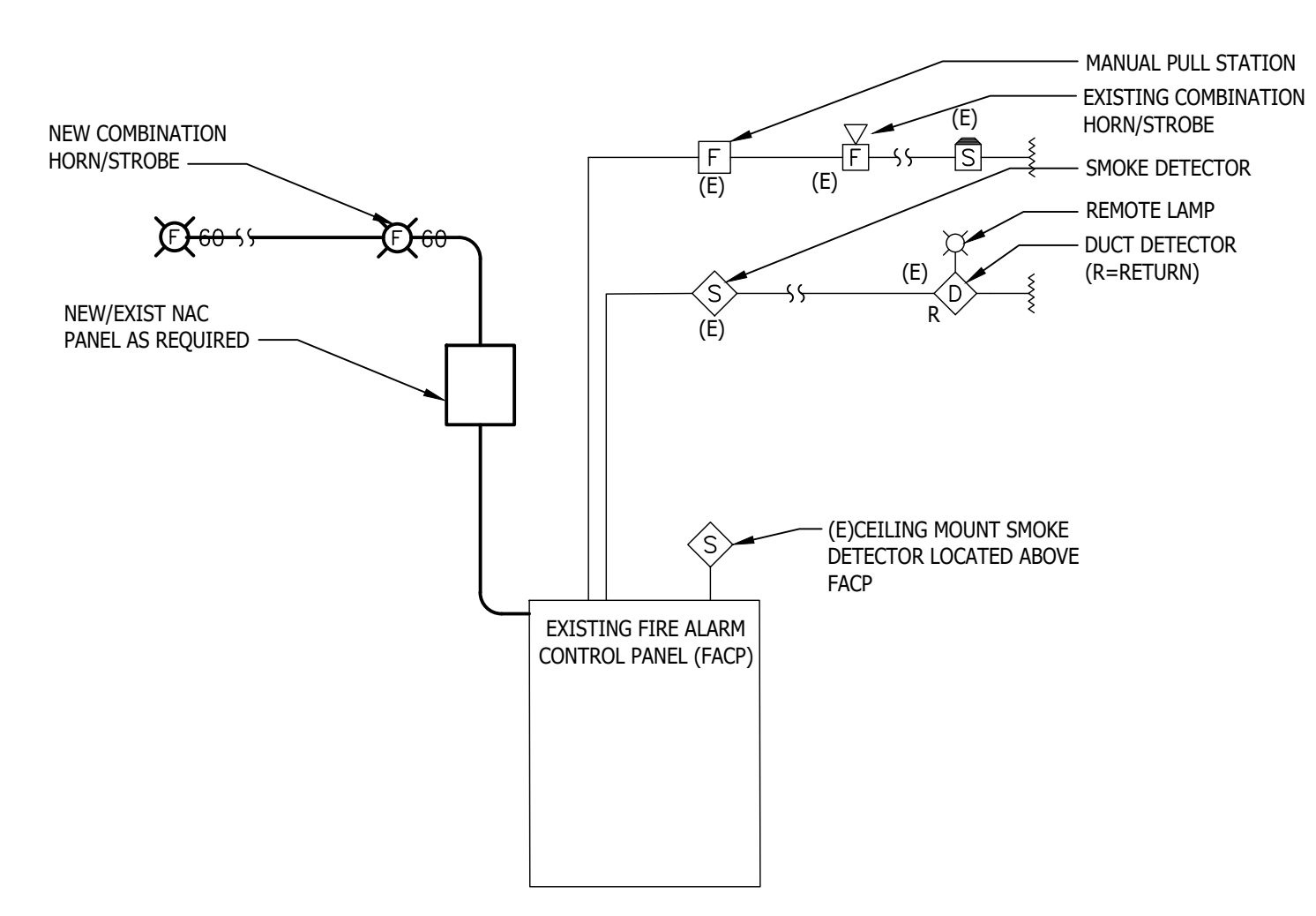
1. **DETAIL OF BRANCH CIRCUIT NUMBER ON RECEPTACLE PLATE**
NO SCALE



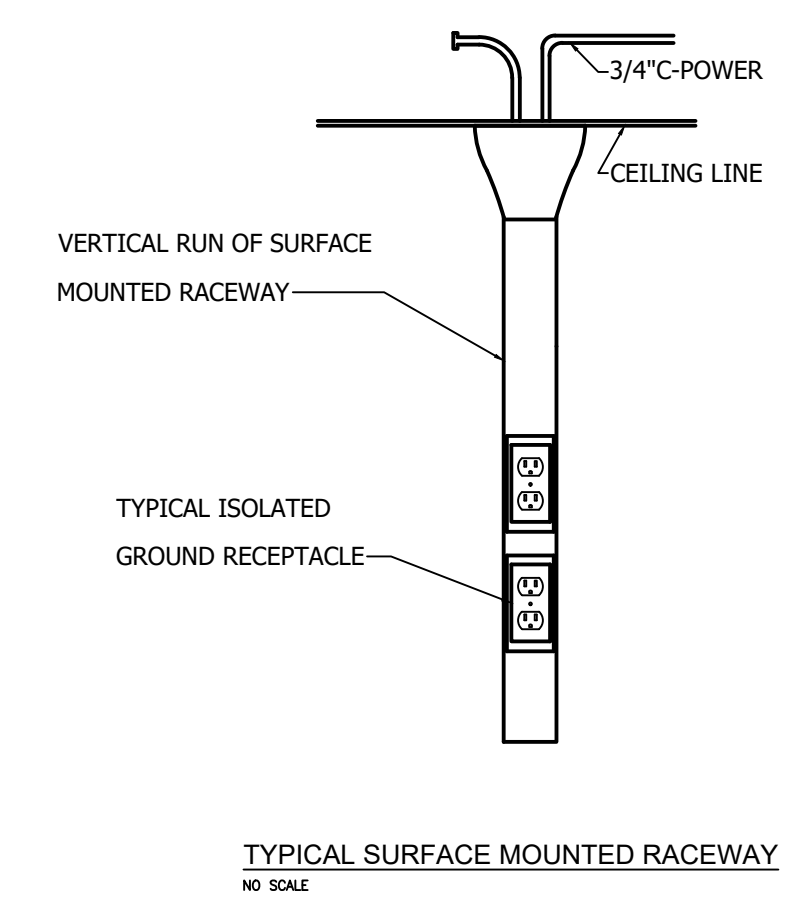
2. **OFFICE VACANCY SENSOR SCHEMATIC**
NO SCALE



3. **T-GRID FIXTURE MOUNTING DETAIL**
NO SCALE



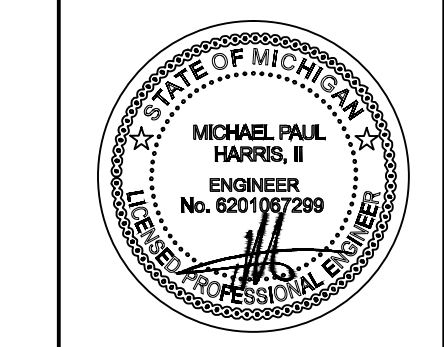
4. **TYPICAL KITCHEN FLOOR CONNECTIONS ROUGH-IN**
NO SCALE



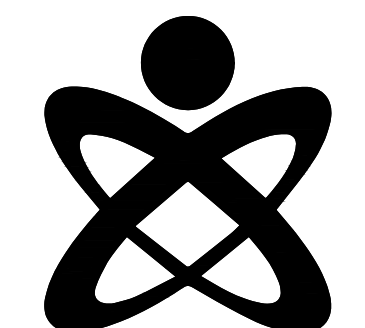
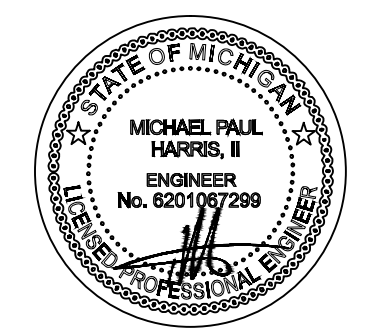
5. **V2000 SURFACE MOUNTED RACEWAY DETAIL**
NO SCALE

- NOTES:**
- FOR FIRE ALARM EQUIPMENT SPECIFICATION AND ADDITIONAL REQUIREMENTS, SEE SPECIFICATIONS.
 - ALL DUCT DETECTORS SHALL BE WIRED TO ACTIVATE ALARM SYSTEM AND SHUT DOWN FAN. PROVIDE INDICATOR LIGHT WHERE SMOKE DETECTORS ARE INSTALLED IN CONCEALED LOCATIONS OR ARE MORE THAN 18FT. ABOVE THE FINISHED FLOOR.
 - CANDELA RATINGS ARE INTENDED TO BE 15cd UNLESS NOTED OTHERWISE. ALL AUDIO AND VISUAL RATINGS SHALL MEET OR EXCEED NFPA REQUIREMENTS. MINOR DEVIATIONS SUCH AS STROBE RATING, MISSING OF AUDIO/VISUAL UNITS, SMOKE DETECTORS UNITS, PULL STATION, ETC. (MAX OF 10) SHALL BE INCLUDED AS PART OF THIS BID.
 - PROVIDE REMOTE POWER SUPPLIES AS REQUIRED FOR NOTIFICATION APPLIANCE CIRCUITS, NOT TO EXCEED 80% OF CAPACITY.
 - PROVIDE SMOKE DETECTOR ABOVE EACH REMOTE POWER SUPPLY PANEL.
 - PROVIDE BATTERY, CURRENT LOAD AND VOLTAGE DROP CALCULATIONS PER SPECIFICATIONS.
 - SEAL AROUND ALL PIPES & CONDUITS IN MASONRY AND DRYWALL WALLS.
 - ALL FIRE ALARM WIRING SHALL BE MINIMUM #14 AWG AND IN CONDUIT MIN 3/4" IN EXPOSED CEILING AREAS. CABLE IS ACCEPTABLE ABOVE LAY-IN CEILINGS IN J-HOOKS.
 - FIRE ALARM CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CHARGES INVOLVED IN OBTAINING APPROVAL AND CERTIFICATION FROM STATE ELECTRICAL INSPECTOR FOR A COMPLETE SYSTEM. CERTIFIED CONTRACTOR TO PAY ALL FEES REQUIRED.
 - THE ELEVATION DIAGRAM IS FOR REFERENCE PURPOSES. EXACT QUANTITIES OF DEVICES AND LOCATIONS SHALL COMPLY WITH NFPA GUIDELINES AND MEET APPROVAL OF THE STATE ELECTRICAL INSPECTOR. FIRE ALARM CONTRACTOR SHALL HAVE SHOP DRAWINGS INSPECTED BY THE STATE ELECTRICAL INSPECTOR PRIOR TO COMMENCEMENT OF WORK.
 - FOR FIRE ALARM SYMBOL LEGEND SEE DRAWING E000.
 - PROVIDE COVER WITH SIREN FEATURE TO ALL FIRE ALARM MANUAL PULL STATION.
 - FIRE ALARM VENDOR TO PROVIDE INSTALLATION DRAWINGS AS PART OF SUBMITTALS.
 - THE FIRE ALARM SYSTEM SHOWN ON THE DRAWINGS AND SPECIFICATIONS ARE A PERFORMANCE SPECIFICATION SYSTEM WITH DEVICE LOCATIONS. FIRE ALARM VENDOR AND CONTRACTOR MUST PROVIDE A COMPLETE SYSTEM PER CODE.
 - ALL STROBES EXISTING AND NEW SHALL BE SYNCHRONIZED.

FIRE ALARM RISER
NO SCALE



ELECTRICAL PANEL SCHEDULES & DETAILS
PRELIMINARY <input type="checkbox"/>
DESIGN DEVELOPMENT <input type="checkbox"/>
CONSTRUCTION <input checked="" type="checkbox"/>
FINAL RECORD <input type="checkbox"/>
DRAWN BY: PG
CHECKED BY: TJO
REVISIONS
BIDS: 03/11/2025
DATE: MARCH 11, 2025
SHEET NO.
E6.00T
JOB NO. 242030



WARREN WOODS PUBLIC SCHOOL DISTRICT
TOWER HS - TITAN EXPRESS SERVERY
HAWTHORN FOOD PROGRAM FREEZER REPLACEMENT

ELECTRICAL ONE-LINE DIAGRAMS

PRELIMINARY
DESIGN DEVELOPMENT
CONSTRUCTION
FINAL RECORD

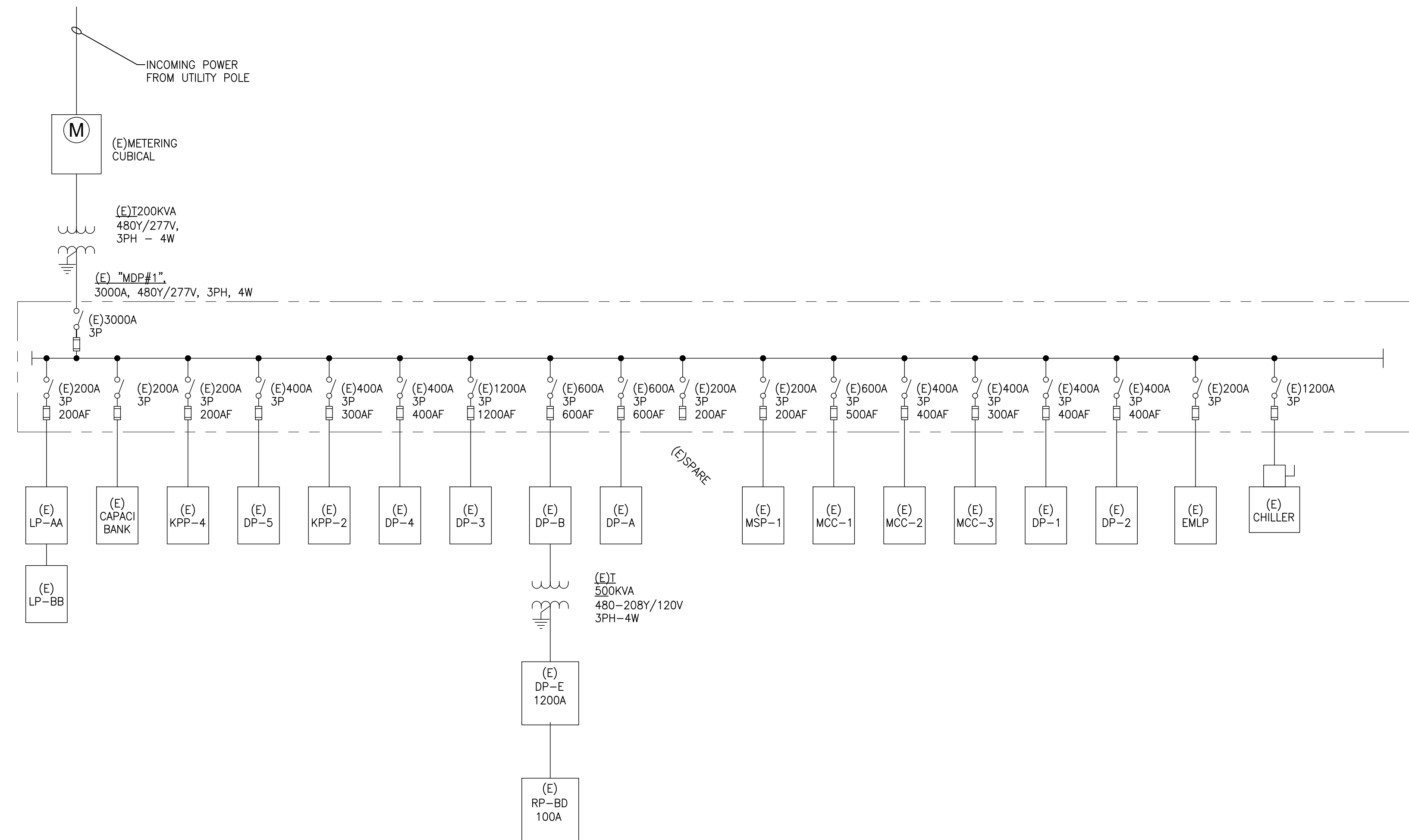
DRAWN BY PG
CHECKED BY TJO

REVISIONS
BIDS 03/11/2025

DATE: MARCH 11, 2025
SHEET NO.

E7.00T

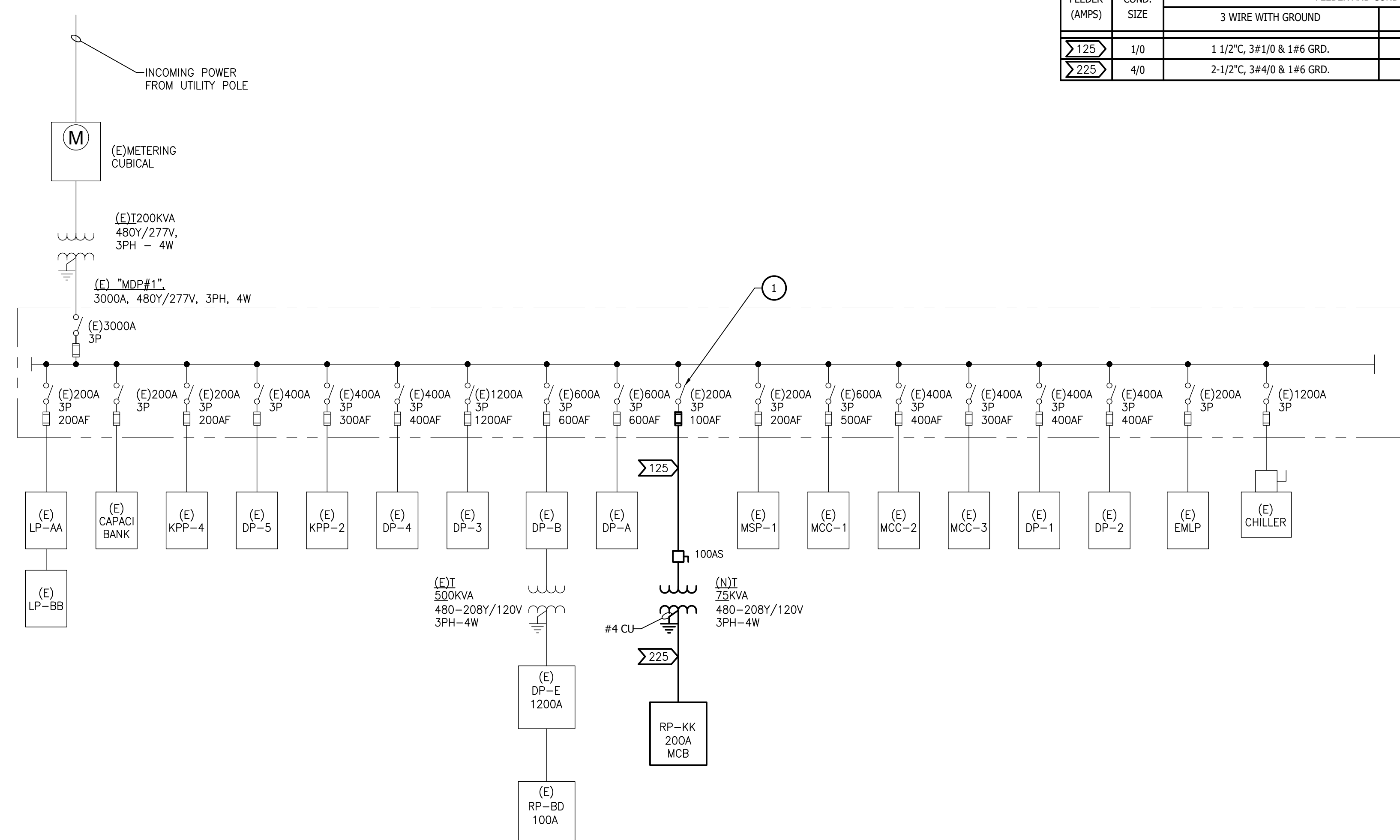
JOB NO. 242030



ELECTRICAL ONE-LINE DIAGRAM - EXISTING

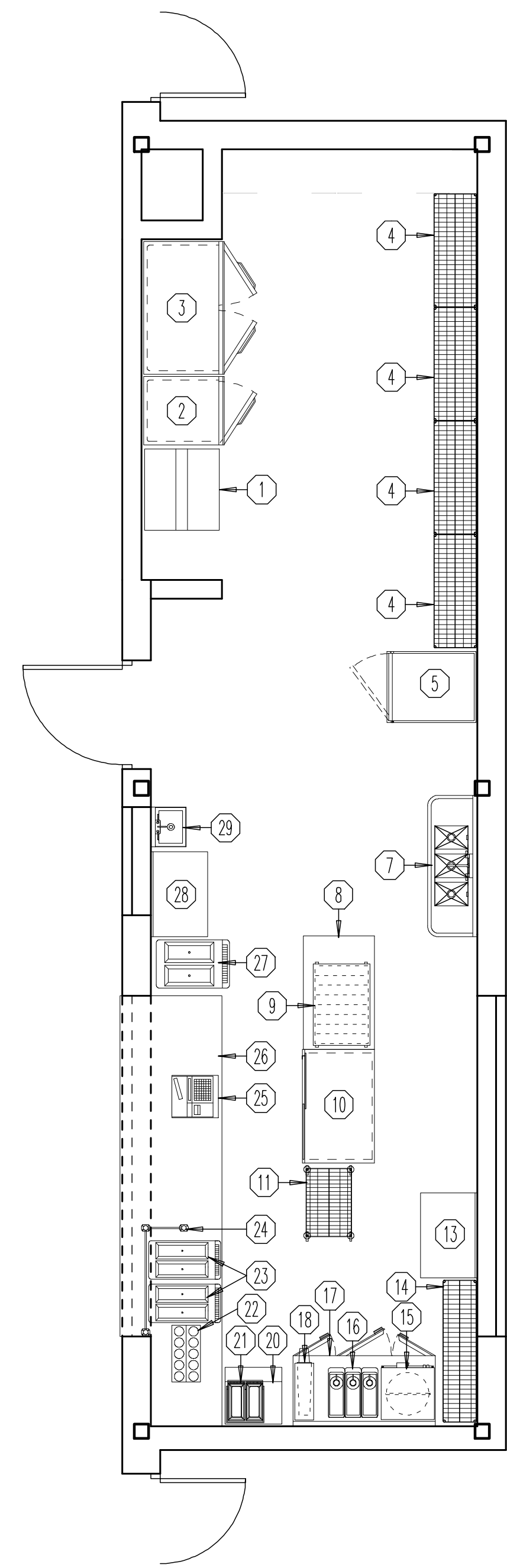
FEEDER (AMPS)	COND. SIZE	FEEDER AND CONDUIT SIZES	
		3 WIRE WITH GROUND	4 WIRE WITH GROUND
125	2/0	1 1/2" C, 3#1/0 & 1#6 GRD.	1 1/2" C, 4#1/0 & 1#6 GRD.
225	4/0	2-1/2" C, 3#4/0 & 1#6 GRD.	2-1/2" C, 4#4/0 & 1#6 GRD.

NEW WORK KEYED NOTES	
1	EXISTING SPARE 200A 3P SWITCH FUSED DOWN TO 100A TO BE USED FOR NEW TRANSFORMER AND RP-KK PANEL FEED AS SHOWN, PROVIDE NEW FUSES. REFER TO EPM.10 FOR LOCATIONS



ELECTRICAL ONE-LINE DIAGRAM - NEW WORK

TOWER HIGH SCHOOL SERVERY



EQUIPMENT SCHEDULE		
Item	Qty	Equipment Description
1.	1	MILK COOLER - RELOCATE/EXISTING
2.	1	REACH-IN FREEZER - RELOCATE/EXISTING
3.	1	REACH-IN REFRIGERATOR - RELOCATE/EXISTING
4.	LOT	STORAGE SHELVING - EXISTING
5.	1	MOBILE HOT CART
6.	-	OPEN NUMBER
7.	1	3 COMPARTMENT SINK
8.	1	WORKTABLE
9.	1	HEATED SANDWICH SLIDE
10.	1	BEVERAGE REFRIGERATOR
11.	1	SNACK RACK - BY OWNER
12.	-	OPEN NUMBER
13.	1	WORKTABLE
14.	1	STORAGE SHELVING
15.	1	PRETZEL CABINET - RELOCATE EXISTING
16.	1	BEVERAGE DISPENSER - BY OWNER
17.	1	WORKTOP REFRIGERATOR
18.	1	CUP DISPENSER - BY OWNER
19.	-	OPEN NUMBER
20.	1	ICE MAKER - RELOCATE/EXISTING
21.	1	COFFEE MAKER - BY OWNER
22.	1	TOPPING RAIL - BY OWNER
23.	2	SLUSHIE MACHINES
24.	1	GLASS PROTECTOR PANEL
25.	1	P.O.S. TERMINAL - BY OWNER
26.	1	SERVING COUNTER w/PASS-THRU LEDGE
27.	1	YOGURT MACHINE - RELOCATE/EXISTING
28.	1	WORKTABLE
29.	1	HAND SINK

WARREN WOODS PUBLIC SCHOOL DISTRICT
TOWER HS - TITAN EXPRESS SERVERY
HAWTHORN FOOD PROGRAM FREEZER REPLACEMENT

FOODSERVICE
EQUIPMENT
PLAN

PRELIMINARY
DESIGN DEVELOPMENT
CONSTRUCTION
FINAL RECORD

DRAWN BY: RDM
CHECKED BY: RDM

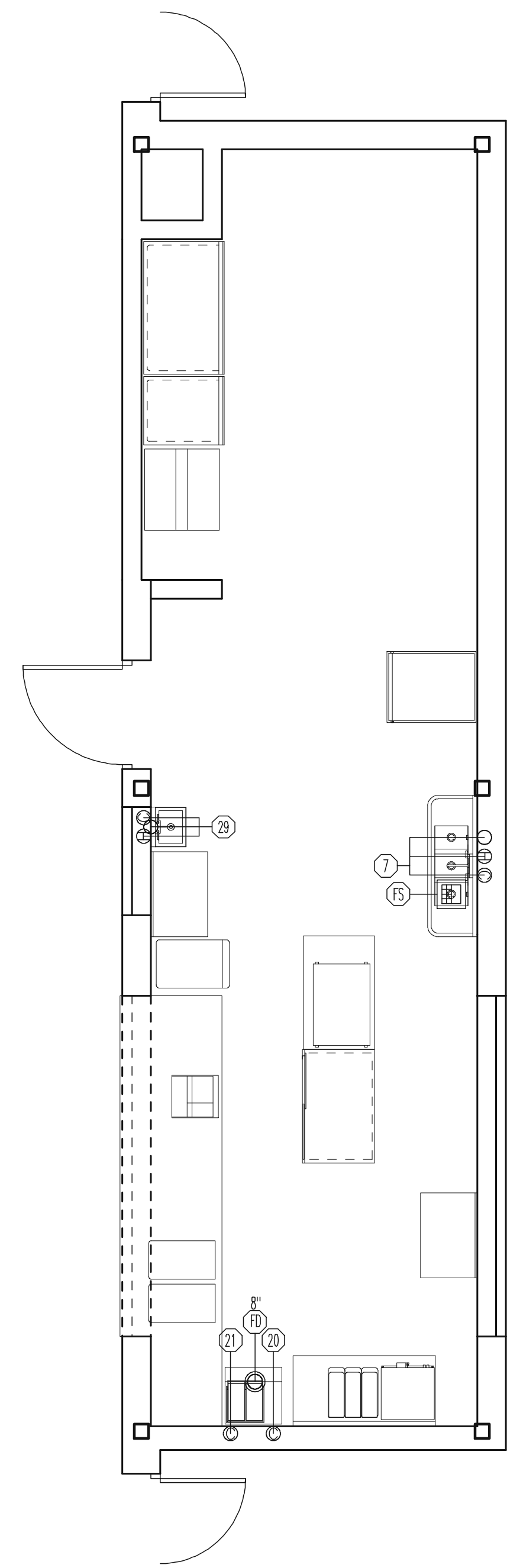
REVISIONS
OWNER REVIEW: 02/28/2025
R.D.S.: 03/11/2025

DATE: MARCH 11, 2025
SHEET NO.

FSE-1

JOB NO. 242030

TOWER HIGH SCHOOL SERVERY



(NOTE: MECHANICAL SYMBOLS APPLY TO THIS SHEET ONLY.)

MECHANICAL SYMBOL LEGEND	
SYMBOL	DESCRIPTION
A.F.F.	ABOVE FINISHED FLOOR
B.T.C.	BRANCH TO CONNECTION
D.F.A.	DOWN FROM ABOVE
F.E.C.	FOODSERVICE EQUIPMENT CONTRACTOR
G.C.	GENERAL CONTRACTOR
M.C.	MECHANICAL CONTRACTOR
O.D.G.H.	QUICK DISCONNECT GAS HOSE
⊕	FUNNEL-TYPE FLOOR DRAIN (SANITARY)
⊙	DIRECT CONNECT DRAIN
⊖	FLOORDRAIN (DO NOT SLOPE FLOOR TO DRAIN)
⊙	ROUND FLOOR SINK (8" DIAMETER)
⊞	FULL-GRADE FLOOR SINK (12" SQUARE)
⊞	1/2 GRADE FLOOR SINK (12" SQUARE)
⊞	FLOOR SINK; GRATE AS NEEDED (8" SQUARE)
◇	DIRECT CONNECT GAS SUPPLY
◇	FLEXIBLE QUICK RELEASE GAS SUPPLY
⊖	COLD WATER
⊖	HOT WATER
⊖	STEAM SUPPLY
⊖	CONDENSATE RETURN

- DIVISION 14 NOTES**
- THIS DRAWING AND THE DATA CONTAINED HEREIN ARE PROVIDED FOR BIDDING PURPOSES ONLY AND ARE NOT INTENDED AS ROUGH-IN DRAWINGS TO BE USED ON THE PROJECT SITE. THE F.E.C. SHALL PROVIDE FINAL DIMENSIONED ROUGH-IN DRAWINGS AND EQUIPMENT DATA FOR CONSTRUCTION PURPOSES.
 - REFER TO THE DIVISION 1400 GENERAL AND ITEM SPECIFICATIONS FOR ADDITIONAL INSTALLATION REQUIREMENTS.
 - FEE SHALL VERIFY UTILITY REQUIREMENTS OF OWNERS EXISTING EQUIPMENT (IF ANY) SCHEDULED FOR RE-USE.

- DIVISION 15 NOTES**
- MC SHALL ROUGH IN UTILITY LINES THROUGH WALLS, FLOORS AND CEILING. CONNECT WASTE LINES FROM ROOMS AND MAKE ALL CONNECTIONS TO THE FOODSERVICE EQUIPMENT. MC TO PROVIDE ALL TRAPS, MANIFOLDS AND PIPING REQUIRED TO INTERCONNECT SINK DRAINS AS SHOWN. MC TO PROVIDE ALL TRAPS, VALVES, PIPING, ETC. NEEDED FOR INSTALLATION OF FOODSERVICE EQUIPMENT.
 - ALL EXPOSED PIPING (ABOVE COUNTER HEIGHT OR IN A DIRECT LINE OF SIGHT) SHALL BE STAINLESS STEEL OR CHROME PLATED. INSTALL STAINLESS STEEL OR CHROME PLATED BRASS ESCUTCHEONS OR FLANGES FOR UTILITY LINES WHICH EXTEND THROUGH WALLS AND EQUIPMENT.
 - ALL EXPOSED PLUMBING SHALL BE INSTALLED A MINIMUM OF 6" AFT AND ALL HORIZONTAL RUNS SHALL BE BENEATH THE COUNTER LINE AND BELOW EQUIPMENT.
 - MC SHALL PROVIDE AND INSTALL ALL REQUIRED VACUUM BREAKERS. VACUUM BREAKERS, APPROVED BY THE MDPH, MUST BE PROVIDED ON ALL DISPOSERS, HOSE REELS, PRESSURE WASHERS AND ON ALL BEVERAGE EQUIPMENT REQUIRING A WATER CONNECTION. ALL ATMOSPHERIC VACUUM BREAKERS MUST BE LOCATED DOWNSTREAM OF SHUT-OFF VALVES IN ACCORDANCE WITH HEALTH DEPARTMENT CODES.

MECHANICAL SCHEDULE									
Item	Qty	Equipment Description	Hot Water	Cold Water	Hgt A.F.F.	Drain Type	Drain Size	Hgt A.F.F.	Comments
7	1	3 COMPARTMENT SINK	1/2"	1/2"	1'-0"	DIRECT	2-1/2"	10"	DIRECT WASTE FROM 1ST BOWL
						INDIRECT	2-1/2"		INDIRECT WASTE FROM 2ND & 3RD BOWL
20	1	ICE MAKER	-	1/2"	1'-0"	INDIRECT	1-1/2"	-	INDIRECT WASTE TO FLOOR DRAIN SHOWN
21	1	COFFEE MAKER	-	1/2"	4'-0"	-	-	-	
29	1	HANDSINK	1/2"	1/2"	1'-0"	DIRECT	1-1/2"	1'-0"	
FD	1	8" FLOOR DRAIN							8" FLOOR DRAIN FOR INDIRECT WASTE FROM ICE MAKER
FS	1	12" FLOOR SINK							FLOOR SINK FOR INDIRECT WASTE FROM 3 COMP SINK

WARREN WOODS PUBLIC SCHOOL DISTRICT
TOWER HS - TITAN EXPRESS SERVERY
HAWTHORN FOOD PROGRAM FREEZER REPLACEMENT

FOODSERVICE
PLUMBING
PLAN

PRELIMINARY
DESIGN DEVELOPMENT
CONSTRUCTION
FINAL RECORD

DRAWN BY: RDM
CHECKED BY: RDM

REVISIONS

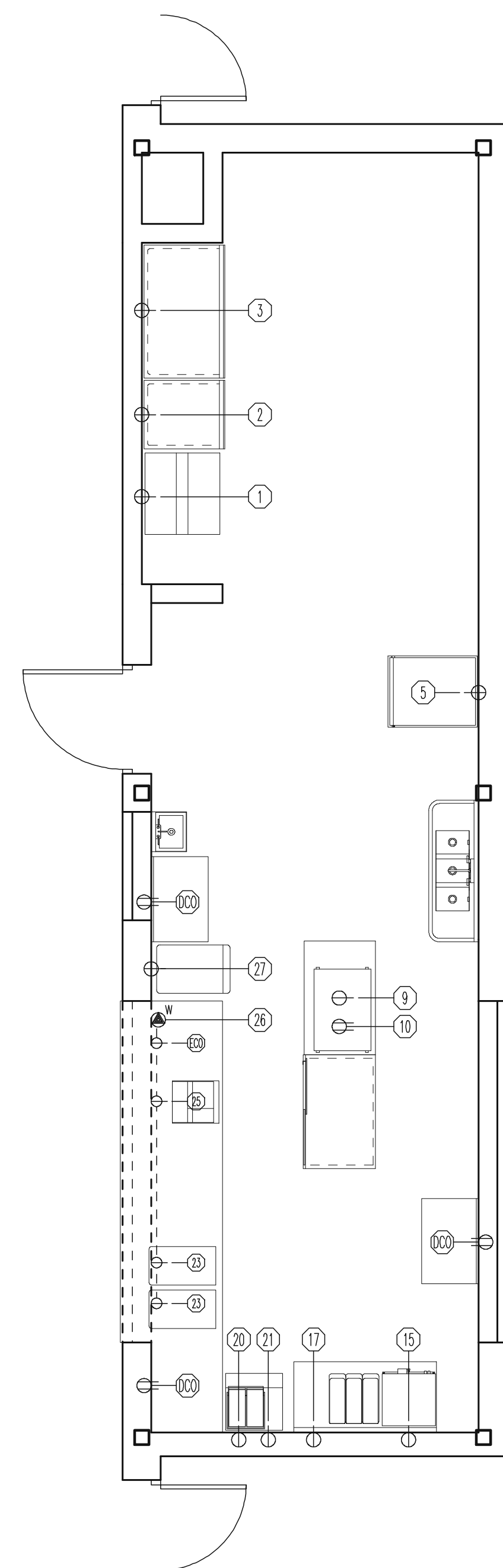
DWNER REVIEW 02/28/2025
BIDS 03/11/2025

DATE: MARCH 11, 2025
SHEET NO.

FSE-2

JOB NO. 242030

TOWER HIGH SCHOOL SERVERY



(NOTE: ELECTRICAL SYMBOLS APPLY TO THIS SHEET ONLY)

ELECTRICAL SYMBOL LEGEND			
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
A.F.F.	ABOVE FINISHED FLOOR	⊙	120V SINGLE RECEPTACLE
DCO	DUPLEX CONVENIENCE OUTLET	⊕	SINGLE POWER RECEPTACLE TO MATCH EQUIPMENT
D.F.A.	DOWN FROM ABOVE	⊙	FLUSH FLOOR RECEPTACLE W/WRINGED BRASS COVER
E.C.	ELECTRICAL CONTRACTOR	⊙	FLUSH MOUNTED JUNCTION BOX IN CEILING
F.E.C.	FOODSERVICE EQUIPMENT CONTRACTOR	⊙	FLUSH MOUNTED JUNCTION BOX IN WALL
G.C.	GENERAL CONTRACTOR	⊙	FLUSH MOUNTED JUNCTION BOX IN FLOOR
⊕	120V GROUND FAULT DUPLEX RECEPTACLE	⊕	CONDUIT OUT-OF-CEILING
⊕	SPLIT WIRE GROUND FAULT DUPLEX RECEPTACLE	⊕	CONDUIT OUT-OF-WALL
⊕	SWITCH	⊕	CONDUIT OUT-OF-FLOOR
⊕	FLUORESCENT LIGHT	⊕	LIGHT

DIMENSIONS FROM ABOVE FINISHED FLOOR ARE TO BE TO THE BOTTOM OF THE DEVICE.

- DIVISION 11400 NOTES**
- THIS DRAWING AND THE DATA CONTAINED HEREIN ARE PROVIDED FOR BIDDING PURPOSES ONLY AND ARE NOT INTENDED AS RUSH-IN DRAWINGS TO BE USED ON THE PROJECT SITE. THE FEC SHALL PROVIDE FINAL DIMENSIONED RUSH-IN DRAWINGS AND EQUIPMENT DATA FOR CONSTRUCTION PURPOSES.
 - REFER TO THE DIVISION 11400 GENERAL AND ITEM SPECIFICATIONS FOR ADDITIONAL INSTALLATION REQUIREMENTS.
 - FEC SHALL VERIFY UTILITY REQUIREMENTS OF OWNERS EXISTING EQUIPMENT (IF ANY) SCHEDULED FOR RE-USE.
- DIVISION 16 NOTES**
- EC SHALL ROUGH-IN ELECTRICAL SERVICE THROUGH WALLS, FLOORS AND CEILINGS. EC TO PROVIDE AND INSTALL ELECTRICAL SERVICES FROM ROUGH-INS TO FINAL CONNECTION POINTS ON FOODSERVICE EQUIPMENT.
 - EC SHALL FURNISH AND INSTALL ALL ELECTRICAL OUTLETS IN WALLS, FLOOR AND CEILING, AND IN OR ON FOODSERVICE EQUIPMENT WHERE NOTED ON DRAWINGS.
 - EC SHALL FURNISH AND INSTALL ALL DISCONNECT SWITCHES AS REQUIRED FOR THE EQUIPMENT IN ACCORDANCE WITH PREVALING ELECTRICAL AND BUILDING CODES.
 - EC SHALL FURNISH AND INSTALL ALL CONDUIT AND WIRING BETWEEN REMOTE CONTROL PANELS AND THE FOODSERVICE EQUIPMENT.
 - ALL CONDUITS SHALL BE RUN IN WALL AT 6" AFF MINIMUM OR AS INDICATED. ALL EXPOSED CONDUIT SHALL BE RUN TIGHT TO THE WALL. EC SHALL NOT ATTACH CONDUIT TO ANY LESS OR SHEDDING BRONZE. CONDUIT MUST BE SECURED TO THE BOTTOM OF THE TABLES OR OTHER STEEL SURFACES. ALL FLEXIBLE CONDUIT SHALL BE "HEALTHY" OR EQUAL. FLEXIBLE METAL CONDUIT IS NOT ACCEPTABLE. ALL COVER PLATES SHALL BE STAINLESS STEEL.
 - CONDUIT STUB OUT 2'-0" A.F.F. E.C. TO RUN CONDUIT INSIDE SERVING COUNTER ITEM 26 AND PROVIDE ELECTRICAL SERVICES TO THE FOLLOWING:
ONE (1) 120V GENERAL PURPOSE DCO MOUNTED INSIDE COUNTER.
ONE (1) 120V/15A/15A RECEPTACLE FOR P.O.S. TERMINAL MOUNTED INSIDE COUNTER.
TWO (2) 120V/15A/15A RECEPTABLES FOR SLUSHIE MACHINES MOUNTED INSIDE COUNTER.

ELECTRICAL SCHEDULE								
Item	Qty	Equipment Description	Voltage	Phase	Amps	Connection Type	Hgt A.F.F.	Comments
1	1	MILK COOLER	120	1	6.9	C&P	1'-6"	F.E.C. TO VERIFY ELECTRICAL
2	1	REACH-IN FREEZER	120	1	12	C&P	7'-6"	F.E.C. TO VERIFY ELECTRICAL
3	1	REACH-IN REFRIGERATOR	120	1	14	C&P	7'-6"	F.E.C. TO VERIFY ELECTRICAL
5	1	HOT CARY	120	1	12	C&P	4'-0"	-
9	1	SANDWICH SLIDE	120/208	1	10.3	C&P	5" MAX A.F.F.	RECEPTACLE LOCATED UNDER WORKTABLE
9	1	BEVERAGE REFRIGERATOR	120	1	6.5	C&P	5" MAX A.F.F.	RECEPTACLE LOCATED UNDER WORKTABLE
15	1	PRETZEL CABINET	120	1	14	C&P	4'-0"	F.E.C. TO VERIFY ELECTRICAL
17	1	WORKTOP REFRIGERATOR	120	1	4.2	C&P	1'-6"	-
20	1	ICE MAKER	120	1	14	C&P	1'-6"	F.E.C. TO VERIFY ELECTRICAL
21	1	COFFEE MAKER	208	1	15	C&P	4'-0"	F.E.C. TO VERIFY ELECTRICAL
23	2	SLUSHIE MACHINES	120	1	12	C&P	1'-0"	SEE DRAWING NOTE F.
25	1	P.O.S. TERMINAL	120	1	15	C&P	1'-0"	SEE DRAWING NOTE F.
26	1	SERVING COUNTER				SEE NOTE F	1'-0"	SEE DRAWING NOTE F.
27	1	YOGURT MACHINE	208	3	30	C&P	4'-0"	F.E.C. TO VERIFY ELECTRICAL
DCO	3	DUPLEX RECEPTACLE OUTLET	120	1	15	C&P	4'-0"	FOR GENERAL PURPOSE USE
ECO	1	SINGLE RECEPTACLE OUTLET	120	1	15	C&P	1'-0"	SEE DRAWING NOTE F.

WARREN WOODS PUBLIC SCHOOL DISTRICT
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MECHANICAL ABBREVIATIONS

ABBREV.	DESCRIPTION
AAV	AUTOMATIC AIR VENT / AIR ADMITTANCE VALVE
AD	ACCESS DOOR
AE	AIR EXTRACTOR
AF	ABOVE FINISHED FLOOR
APD	AIR PRESSURE DROP
ASR	AUTOMATIC SPRINKLER RISER
BFP	BACKFLOW PREVENTER
BHP	BRAKE HORSEPOWER
BOD	BOTTOM OF DUCT
BTU	BRITISH THERMAL UNIT
BTUH	BRITISH THERMAL UNITS PER HOUR
BWV	BACKWATER VALVE
CAP	CAPACITY
CAV	CONSTANT AIR VOLUME
CFH	CUBIC FEET PER HOUR
CFM	CUBIC FEET PER MINUTE
CIRC	CIRCULATING
CLG	COOLING
CO	CLEAN OUT
CONT	CONTINUATION OR CONTINUED
CONV	CONVECTOR
CUH	CABINET UNIT HEATER
CV	CONTROL VALVE
DB	DRY BULB TEMPERATURE
DEG	DEGREES
DDC	DIRECT DIGITAL CONTROL
DN	DOWN
DTC	DRAIN TILE CONNECTION
DWH	DOMESTIC WATER HEATER
(E)	EXISTING
EA/EXH	EXHAUST AIR
EAT	ENTERING AIR TEMPERATURE
EDB	ENTERING DRY BULB TEMPERATURE
EF	EXHAUST FAN
EJ	EXPANSION JOINT
EL	ELEVATION
ELECT	ELECTRICAL
EMS	ENERGY MANAGEMENT SYSTEM
ESP	EXTERNAL STATIC PRESSURE
EWB	ENTERING WET BULB TEMPERATURE
EWV	ELECTRIC WATER COOLER
*F	DEGREES FAHRENHEIT
FA	FACE AREA (COIL) / FREE AREA (LOUVER)
FC	FLEXIBLE CONNECTION
FD	FLOOR DRAIN
FDC	FIRE DEPARTMENT CONNECTION
FH	FIRE HYDRANT
FHC	FIRE HOSE CABINET
FHR	FIRE HOSE RACK
FHV	FIRE HOSE VALVE
FLA	FULL LOAD AMPS
FLR	FLOOR
FPM	FEET PER MINUTE
FFD	FUNNEL FLOOR DRAIN
FFE	FINISHED FLOOR ELEVATION
FS	FLOOR SINK
FT	FEET
FURN	FURNISHED
FV	FACE VELOCITY
FVC	FIRE VALVE CABINET
GAL	GALLON
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
HB	HOSE BIBB
HO	HUB OUTLET
HP	HORSEPOWER

MECHANICAL ABBREVIATIONS

ABBREV.	DESCRIPTION
HR	HOUR
HTG	HEATING
HYD	HYDRANT
HZ	HERTZ
ID	INSIDE DIAMETER
IE	INVERT ELEVATION
IN	INCHES
INST	INSTALLED
INV	INVERT
ISP	INTERNAL STATIC PRESSURE
IW	INDIRECT WASTE
KW	KILOWATT
LAT	LEAVING AIR TEMPERATURE
LAV	LAVATORY
LBS/HR	POUNDS PER HOUR
LDB	LEAVING DRY BULB TEMPERATURE
LRA	LOCKED ROTOR AMPS
LWB	LEAVING WET BULB TEMPERATURE
MAV	MANUAL AIR VENT
MAX	MAXIMUM
MBH	1000 BRITISH THERMAL UNITS PER HOUR
MCA	MINIMUM CIRCUIT AMPACITY
MECH	MECHANICAL
MFR	MANUFACTURER
MH	MANHOLE
MIN	MINIMUM
MISC	MISCELLANEOUS
MOD	MOTOR OPERATED DAMPER (AUTOMATIC)
MOP	MAXIMUM OVER-CURRENT PROTECTION
N.C.	NOISE CRITERIA
NIC	NOT IN CONTRACT
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
NOM	NOMINAL
OA	OUTSIDE AIR
OBD	OPPOSED BLADE DAMPER
OC	ON CENTER / CENTER TO CENTER
OD	OUTSIDE DIAMETER
OED	OPEN ENDED DUCT
ORS	OVERFLOW ROOF SUMP
OS&Y	OUTSIDE SCREW AND YOKE
PD	PRESSURE DROP (FEET OF WATER)
PRV	PRESSURE REDUCING VALVE
PSIA	POUNDS PER SQUARE INCH - ABSOLUTE
PSIG	POUNDS PER SQUARE INCH - GAUGE
PT	PRESSURE / TEMPERATURE PORT
RA	RETURN AIR
RH	RELATIVE HUMIDITY
REQD	REQUIRED
RELA	RELIEF AIR
RPM	REVOLUTIONS PER MINUTE
RPZ	REDUCED PRESSURE ZONE
RS	ROOF SUMP
SA	SUPPLY AIR
SH	SHOWER
SP	STATIC PRESSURE
SqFt / SF	SQUARE FOOT/SQUARE FEET
SS	SERVICE SINK
TC	TEMPERATURE CONTROL
T & P	TEMPERATURE AND PRESSURE
TSP	TOTAL STATIC PRESSURE
TYP	TYPICAL
UG	UNDERGROUND
UH	UNIT HEATER
UL	UNDERWRITERS LABORATORY
UNO	UNLESS NOTED OTHERWISE

MECHANICAL ABBREVIATIONS

ABBREV.	DESCRIPTION
UR	URINAL
VD	VOLUME DAMPER (MANUALLY ADJUSTABLE)
VTR	VENT THRU ROOF
W	WASTE
W&V	WASTE AND VENT
WB	WET BULB TEMPERATURE
WC	WATER CLOSET
WG	WATER GAUGE
WH	WALL HYDRANT

MECHANICAL PIPING SYMBOLS

ABBREV.	DESCRIPTION
—○—	PIPE ELBOW UP
—○—	PIPE ELBOW DOWN
—○—	PIPE TEE DOWN
→	DIRECTION OF FLOW
— —	UNION
— —	STRAINER
— —	CONCENTRIC REDUCER
— —	ECCENTRIC REDUCER
— —	EXPANSION JOINT
— —	FLEXIBLE CONNECTION
— —	PIPE ANCHOR
— —	PIPE GUIDE
— —	PIPE CAP OR PLUG
— —	ISOLATION VALVE
— —	CIRCULATING PUMP
— —	GLOBE VALVE
— —	BALL VALVE
— —	BUTTERFLY VALVE
— —	ANGLE VALVE
— —	CHECK VALVE (SWING)
— —	CHECK VALVE (SPRING)
— —	PLUG VALVE
— —	NEEDLE VALVE
— —	OUTSIDE SCREW AND YOKE VALVE (OS&Y)
— —	PRESSURE REGULATING VALVE
— —	SOLENOID VALVE
— —	CONTROL VALVE (2-WAY / 3-WAY)
— —	CENTRIFUGAL FAN
— —	AUTOMATIC GAS SHUT-OFF VALVE
— —	TRAP (PLAN VIEW)
— —	FLOOR DRAIN / FUNNEL FLOOR DRAIN (PLAN VIEW)
— —	FLOOR DRAIN / FUNNEL FLOOR DRAIN (ELEVATION)
— —	ROOF SUMP
— —	CLEAN OUT (IN FLOOR)
— —	CLEAN OUT (IN LINE)
— —	CLEAN OUT (WALL)
— —	BACKFLOW PREVENTER
— —	WATER METER ASSEMBLY
— —	HOSE BIBB, WALL HYDRANT
— —	DIRECTION OF PIPE PITCH
— —	SPRINKLER HEAD (UPRIGHT)
— —	SPRINKLER HEAD (SIDEWALL)
— —	FLOW SWITCH
— —	SIAMESE CONNECTION (YARD)
— —	SIAMESE CONNECTION (WALL MOUNTED)
— —	FIRE HYDRANT
— —	FLOW MEASURING DEVICE
— —	BALANCING VALVE
— —	COMBINATION FLOW MEASURING AND BALANCING DEVICE
— —	AUTOMATIC AIR VALVE
— —	MANUAL AIR VALVE

MECHANICAL SYMBOLS

ABBREV.	DESCRIPTION
— —	RECTANGULAR TAKE-OFF (SINGLE LINE)
— —	RECTANGULAR TAKE-OFF (DOUBLE LINE)
— —	ROUND TAKE-OFF (SINGLE LINE)
— —	ROUND TAKE-OFF (DOUBLE LINE)
— —	SPIN-IN FITTING (WITH VOLUME DAMPER)
— —	ELBOW (WITH TURNING VANES)
— —	RADIUS RECTANGULAR ELBOW
— —	RADIUS ROUND ELBOW
— —	RECTANGULAR ELBOW UP
— —	RECTANGULAR ELBOW DOWN
— —	ROUND ELBOW UP
— —	ROUND ELBOW DOWN
— —	CONCENTRIC TRANSITION (DOUBLE LINE)
— —	CONCENTRIC TRANSITION (SINGLE LINE)
— —	ECCENTRIC TRANSITION (DOUBLE LINE)
— —	ECCENTRIC TRANSITION (SINGLE LINE)
— —	INCLINED RISE IN DIRECTION OF AIR FLOW (DOUBLE LINE)
— —	INCLINED RISE IN DIRECTION OF AIR FLOW (SINGLE LINE)
— —	INCLINED DROP IN DIRECTION OF AIR FLOW (DOUBLE LINE)
— —	INCLINED DROP IN DIRECTION OF AIR FLOW (SINGLE LINE)
— —	FLEXIBLE CONNECTION
— —	FLEXIBLE DUCT CONNECTION TO SUPPLY DIFFUSER
— —	SUPPLY DIFFUSER
— —	LINEAR SLOT DIFFUSER
— —	RETURN OR EXHAUST GRILLE
— —	TRANSFER GRILLE
— —	CROSS SECTION OF SUPPLY AIR DUCT
— —	CROSS SECTION OF EXHAUST OR RETURN AIR DUCT
— —	EXISTING FIRE DAMPER (HORIZONTAL)
— —	NEW FIRE DAMPER (HORIZONTAL)
— —	EXISTING FIRE DAMPER (VERTICAL)
— —	NEW FIRE DAMPER (VERTICAL)
— —	EXISTING SMOKE DAMPER
— —	NEW SMOKE DAMPER
— —	EXISTING COMBINATION FIRE/SMOKE DAMPER (VERTICAL)
— —	NEW COMBINATION FIRE/SMOKE DAMPER (VERTICAL)
— —	EXISTING COMBINATION FIRE/SMOKE DAMPER (HORIZONTAL)
— —	NEW COMBINATION FIRE/SMOKE DAMPER (HORIZONTAL)
— —	VOLUME DAMPER (MANUALLY ADJUSTABLE)
— —	MOTORIZED DAMPER
— —	SMOKE DETECTOR
— —	CO2 SENSOR
— —	THERMOSTAT OR TEMPERATURE SENSOR
— —	HUMIDISTAT OR HUMIDITY SENSOR
— —	RETURN OR EXHAUST / SUPPLY AIR FLOW

PIPING LEGEND

ABBREV.	DESCRIPTION
—CA—	COMPRESSED AIR PIPING
—CD—	CONDENSATE DRAIN PIPING
—DT—	DRAIN TILE
—F—	FIRE PROTECTION PIPING
—FOR—	FUEL OIL RETURN PIPING
—FOS—	FUEL OIL SUPPLY PIPING
—G—	NATURAL GAS PIPING
—BCW—	BOOSTED-DOMESTIC COLD WATER PIPING
—BHW—	BOOSTED-DOMESTIC HOT WATER PIPING
—CW—	DOMESTIC COLD WATER PIPING
—NPCW—	NON POTABLE COLD WATER PIPING
—TW—	TEMPERED WATER PIPING
—HW—	DOMESTIC HOT WATER PIPING
—HW(140°F)—	DOMESTIC 140°F HOT WATER PIPING
—HWR—	DOMESTIC HOT WATER RETURN PIPING
—SAN—	SANITARY WASTE PIPING
—PSAN—	PUMPED SANITARY PIPING
—V—	VENT PIPING
—ST—	STORM SEWER PIPING
—PST—	PUMPED STORM PIPING
—RC—	RAIN CONDUCTOR PIPING
—ORC—	OVERFLOW RAIN CONDUCTOR PIPING
—CWR—	CHILLED WATER RETURN PIPING
—CHWS—	CHILLED WATER SUPPLY PIPING
—CWR—	CONDENSER WATER RETURN PIPING
—CWS—	CONDENSER WATER SUPPLY PIPING
—HHWR—	HEATING HOT WATER RETURN PIPING
—HHWS—	HEATING HOT WATER SUPPLY PIPING
—HPLR—	HEAT PUMP LOOP RETURN PIPING
—HPLS—	HEAT PUMP LOOP SUPPLY PIPING
—RL—	REFRIGERANT LIQUID PIPING
—RS—	REFRIGERANT SUCTION PIPING
—HGB—	HOT GAS BY-PASS PIPING
—GHR—	GEO HEAT EXCHANGE RETURN
—GHS—	GEO HEAT EXCHANGE SUPPLY
—STM—	STEAM PIPING
—HPS—	HIGH PRESSURE STEAM PIPING
—LPS—	LOW PRESSURE STEAM PIPING
—CR—	STEAM CONDENSATE RETURN PIPING
—PCR—	PUMPED STEAM CONDENSATE RETURN PIPING
—LPC—	LOW PRESSURE CONDENSATE PIPING
—HPC—	HIGH PRESSURE CONDENSATE PIPING
—MA—	MEDICAL AIR PIPING
—N—	NITROGEN GAS PIPING
—O2—	OXYGEN GAS PIPING
—VAC—	VACUUM PIPING

DRAWING INDEX	
SHT NO	DESCRIPTION
M0.00H	MECHANICAL GENERAL INFORMATION
M1.00H	MECHANICAL COMPOSITE PLAN
P4.01H	ENLARGED PLUMBING DEMOLITION & NEW WORK FIRST FLOOR PLANS

DRAWING NOTATION	
SYMBOL	DESCRIPTION
○	NEW WORK KEY NOTE NO. 1
△	DEMOLITION KEY NOTE NO. 1
AHU-1	EQUIPMENT TAG
S-1	AIR TERMINAL TAG:
12x12	IE: DIFFUSER TYPE = S-1
150-2	NECK SIZE = 12x12
	CFM = 150 (TYPICAL FOR 2)
—	EXISTING DEVICES OR EQUIPMENT
—	NEW OR MODIFIED DEVICES OR EQUIPMENT
—	EXISTING SYSTEM COMPONENT TO BE REMOVED
—	POINT OF NEW CONNECTION

APPLICABLE CODES AND REGULATIONS	
YEAR	CODE
2015	MICHIGAN BUILDING CODE
2015	MICHIGAN REHABILITATION CODE FOR EXISTING BUILDINGS
2021	MICHIGAN PLUMBING CODE
2021	MICHIGAN MECHANICAL CODE
2015	MICHIGAN UNIFORM ENERGY CODE
2015	INTERNATIONAL FUEL GAS CODE
2012	NFPA 101 WITH BFS AMENDMENTS



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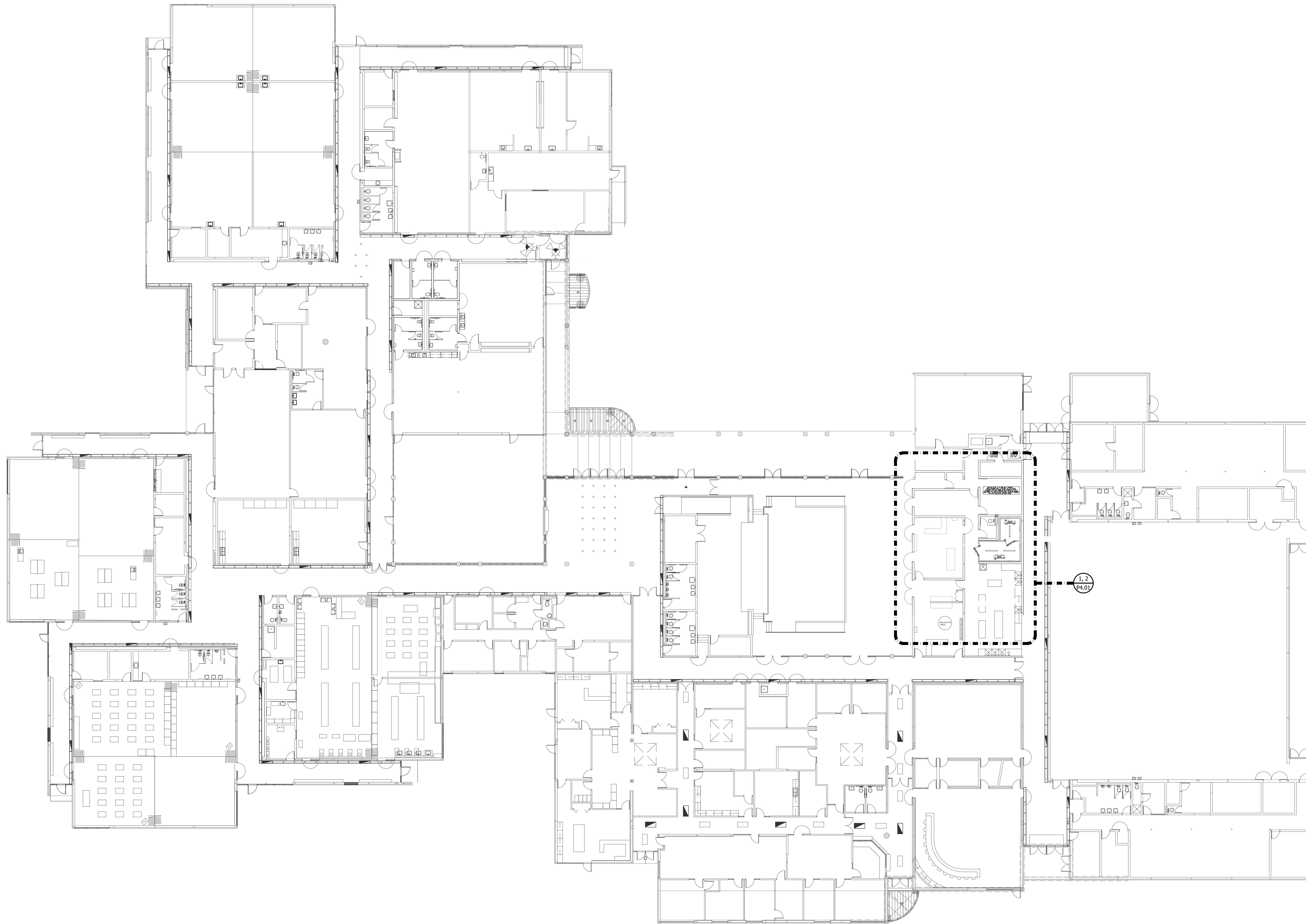
UNIFIED BUILDING
SYSTEMS ENGINEERING

89 S. GRATIOT AVE.
UBS PROJECT 007.25.04 - H

WARREN WOODS PUBLIC SCHOOL DISTRICT
TOWER HS - TITAN EXPRESS SERVERY
HAWTHORN FOOD PROGRAM FREEZER REPLACEMENT

MECHANICAL GENERAL INFORMATION	
PRELIMINARY	<input type="checkbox"/>
DESIGN DEVELOPMENT	<input type="checkbox"/>
CONSTRUCTION	<input checked="" type="checkbox"/>
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M0.00H



MECHANICAL COMPOSITE PLAN
SCALE: 1/16" = 1'-0"

GENERAL DEMOLITION NOTES	
A	THESE DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL EXTENT OF WORK TO BE PERFORMED. THE EXACT EXTENT OF DEMOLITION SHALL BE DETERMINED BY THE NEW WORK.
B	ANY INTERRUPTIONS OF EXISTING SERVICES AND/OR EQUIPMENT SHALL BE PERFORMED AT A TIME APPROVED IN ADVANCE BY OWNER'S REPRESENTATIVE SO AS NOT TO INTERFERE WITH THE PRESENT BUILDING'S OPERATION.
C	PRIOR TO COMMENCEMENT OF WORK, CONTRACTOR SHALL VISIT THE SITE AND BECOME FAMILIAR WITH EXISTING SITE CONDITIONS, SYSTEMS, AND UTILITIES. NOTIFY DESIGN PROFESSIONAL OF ANY INTERFERENCES OR DISCREPANCIES.
D	ALL ITEMS INDICATED WITH CROSS-HATCHING SHALL BE REMOVED COMPLETELY WITH ALL RELATED ITEMS INCLUDING HANGERS, SUPPORTS, INSULATION, CONTROLS, ETC. CAP ALL OPEN-ENDED PIPES AND DUCTS.
E	THE OWNER SHALL HAVE FIRST RIGHT OF REFUSAL ON ALL EQUIPMENT BEING REMOVED. ALL ITEMS REMOVED SHALL BE LEGALLY DISPOSED OF. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL EXISTING RELOCATED AND OWNER-PROVIDED EQUIPMENT.
F	VERIFY DEPTH, SIZE, LOCATIONS, AND CONDITIONS OF EXISTING UTILITIES IN THE FIELD, INCLUDING POINTS OF CONNECTION, PRIOR TO STARTING WORK.
G	ALL ITEMS ON DEMOLITION PLAN SHALL BE CONSIDERED EXISTING UNLESS OTHERWISE NOTED. ALL WORK INDICATED ON PLANS HAS BEEN LOCATED PER EXISTING DRAWINGS AND/OR FIELD OBSERVATION AND REQUIRES FIELD VERIFICATION.
H	ALL EXISTING WORK TO REMAIN SHALL BE PROTECTED FROM DAMAGE. WHERE DUCT WORK PIPE INSULATION HAS BEEN DAMAGED DURING DEMOLITION, THE CONTRACTOR SHALL REPAIR INSULATION AS REQUIRED TO MATCH EXISTING.

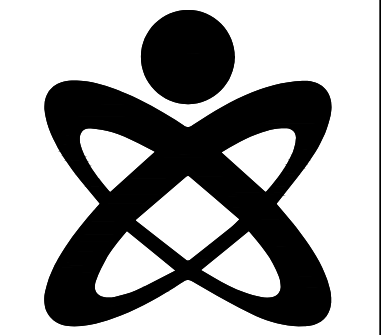
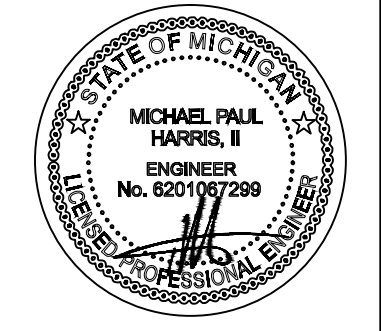
PLUMBING GENERAL NOTES	
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J	INSTALL ALL SANITARY AND STORM PIPING 2 1/2" OR LESS AT 1/4" PER FOOT AND 3" AND LARGER PIPING AT 1/8" PER FOOT MINIMUM UNLESS NOTED OTHERWISE. MINIMUM UNDERGROUND PIPE SIZE SHALL BE 3".
K	PROVIDE "INLINE" WATERLESS PRIMER TRAP SEAL PROTECTION ON ALL FLOOR DRAINS AND TRAPS SUBJECT TO EVAPORATION.
L	AT EACH CONNECTION OF GAS SUPPLY TO EQUIPMENT, PROVIDE A PIPE UNION, GAS SHUT OFF VALVE, TEE, AND 6" LONG DIRT LEG WITH CAP.
M	THE CEILING SPACE IS USED AS A RETURN AIR FLENUM. NO PLASTIC MATERIALS INCLUDING PVC PIPING, CONDUIT WIRING, ETC. SHALL BE USED. ALL MATERIALS TO BE USED ARE TO BE PLENUM RATED.

HVAC GENERAL NOTES	
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B	EXCEPT FOR CHANGES AS MAY BE SPECIFICALLY APPROVED BY THE ENGINEER OF RECORD, IN ACCORDANCE WITH ALTERNATES OF OPTIONS AS STATED HEREINAFTER, ALL WORK MUST BE IN FULL ACCORDANCE WITH THE INTENT OF THE PLANS AND SPECIFICATIONS. SYSTEMS ARE TO BE COMPLETE, EFFICIENT, AND SATISFACTORY OPERATION WHEN PROJECT IS DELIVERED TO THE OWNER.
C	THE CONTRACTOR AND EACH SUBCONTRACTOR COVENANTS AND AGREES TO INDEMNIFY, DEFEND, AND HOLD HARMLESS THE CONSULTING ENGINEER, ARCHITECT, AND OWNER FROM AND AGAINST ANY LIABILITY, LOSS, DAMAGE, OR EXPENSE INCLUDING ATTORNEY'S FEES ARISING FROM A FAILURE OR ALLEGED FAILURE ON THE PART OF THE CONTRACTOR, SUBCONTRACTORS, AND THEIR AGENTS/EMPLOYEES PROPERLY TO DISCHARGE THE OBLIGATIONS ASSUMED BY HIM/HER IN THE PERFORMANCE OF THE WORK, INCLUDING ANY ACT OR OMISSION ALLEGEDLY RESULTING IN DEATH, PERSONAL INJURY, PROPERTY DAMAGE, OR IMPROPER CONSTRUCTION PROTOCOL.
D	CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS AND APPROVAL FROM GOVERNING AUTHORITIES, FILE NECESSARY FORMS, PAY ALL INSPECTION FEES.
E	CONTRACTOR TO EXAMINE ALL ADJOINING WORK BEFORE COMMENCEMENT OF HIS/HER SCOPE OF WORK. REPORT ANY DISCREPANCIES TO THE CONSTRUCTION MANAGER FOR REVIEW AND APPROVAL. COORDINATE ALL WORK WITH OTHER TRADES TO ENSURE THAT INSTALLATION IS MADE IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
F	PROVIDE REQUIRED CLEARANCE IN FRONT OF ELECTRICAL EQUIPMENT; DUCTWORK/PIPING SHALL NOT INTERFERE WITH ELECTRICAL EQUIPMENT CLEARANCE.
G	CONNECTION TO EQUIPMENT SHALL BE VERIFIED WITH MANUFACTURER'S CERTIFIED DRAWINGS. ALL PIPING CONNECTIONS SHALL BE MINIMUM 3/4" UNLESS NOTED OTHERWISE.
H	FURNISH ADEQUATE LIABILITY INSURANCE AND BONDING DOCUMENTS AS REQUIRED BY THE OWNER.
J	ALL SUPPORT ANCHORS SECURED TO THE BOTTOM OF FLOOR SLABS SHALL BE DROP-IN OR SLEEVE ANCHOR TYPE. ALL SUPPORTING STEEL SHALL BE PROVIDED BY THE CONTRACTOR.
K	DUCTWORK/PIPING SHALL NOT BE INSTALLED IN A LOCATION THAT RESTRICTS THE ACCESS TO MECHANICAL DEVICES REQUIRING ACCESS.
L	THE CONTRACTOR SHALL PROVIDE ALL MISCELLANEOUS SUPPORTING STEEL FOR THE PROPER INSTALLATION OF MECHANICAL SYSTEMS.
M	BRANCH DUCTWORK TO GRILLES, REGISTERS, AND DIFFUSERS SHALL BE THE SAME SIZE AS THE TERMINAL DEVICE NECK SIZE WHERE NO DUCT SIZE IS INDICATED.



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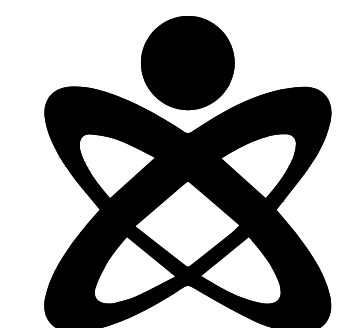
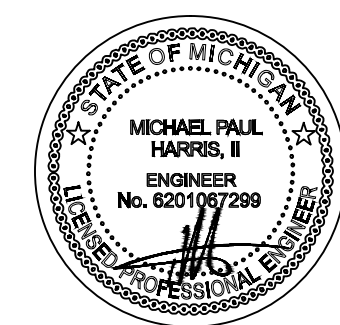
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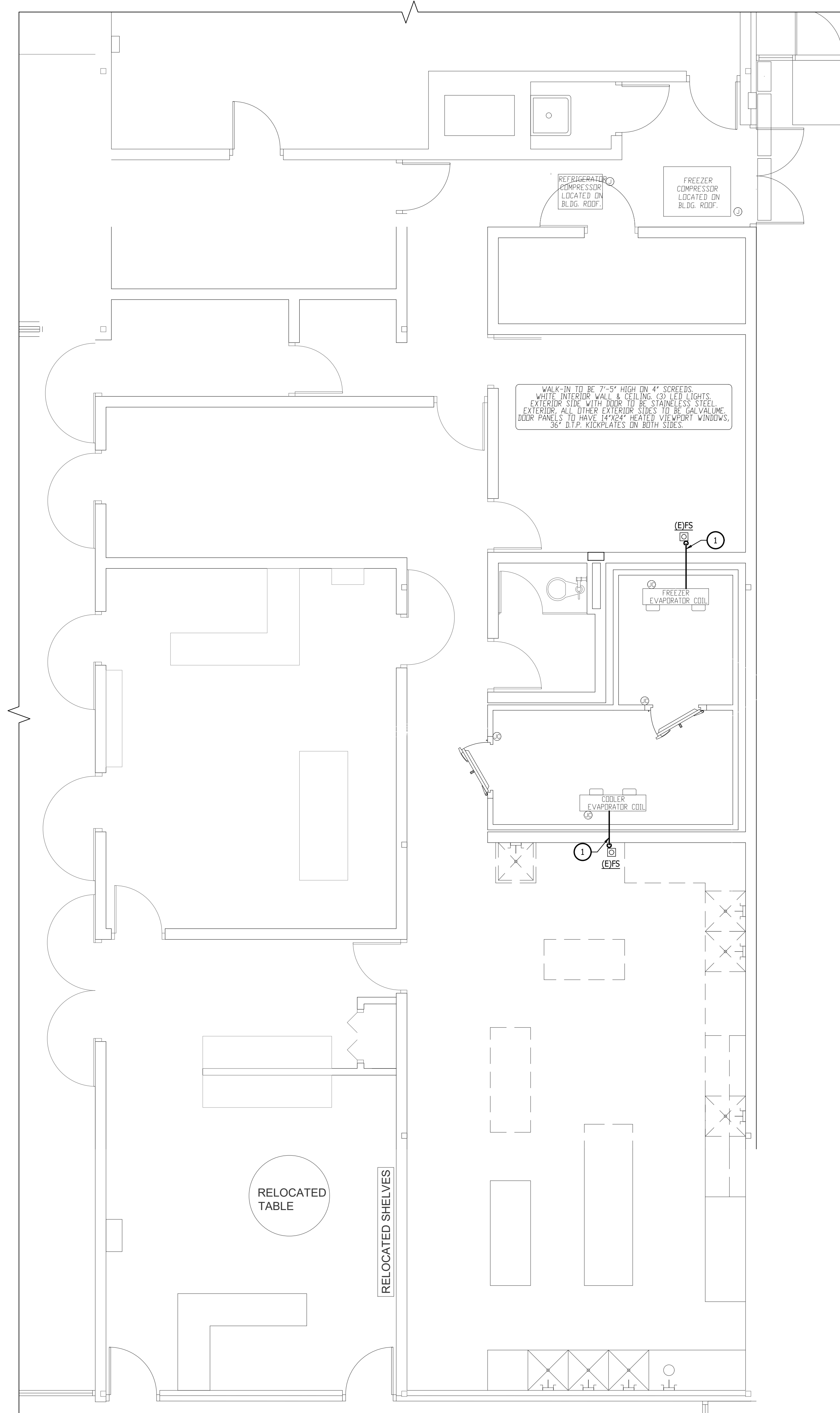
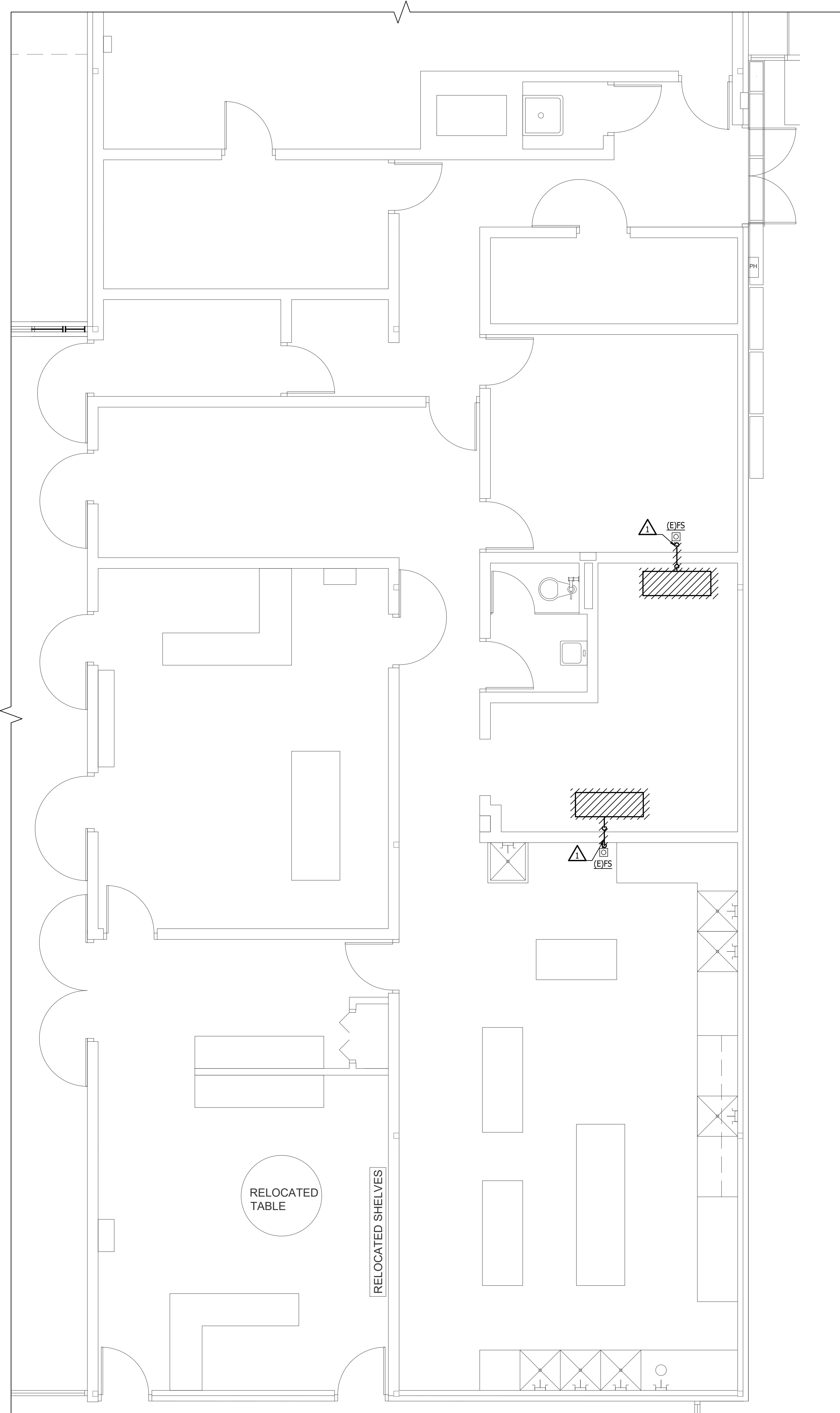


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C	PRIOR TO COMMENCEMENT OF WORK, CONTRACTOR SHALL VISIT THE SITE AND BECOME FAMILIAR WITH EXISTING SITE CONDITIONS, SYSTEMS, AND UTILITIES. NOTIFY DESIGN PROFESSIONAL OF ANY INTERFERENCES OR DISCREPANCIES.
D	ALL ITEMS INDICATED WITH CROSS-HATCHING SHALL BE REMOVED COMPLETELY WITH ALL RELATED ITEMS INCLUDING HANGERS, SUPPORTS, INSULATION, CONTROLS, ETC. CAP ALL OPEN-ENDED PIPES AND DUCTS.
E	THE OWNER SHALL HAVE FIRST RIGHT OF REFUSAL ON ALL EQUIPMENT BEING REMOVED. ALL ITEMS REMOVED SHALL BE LEGALLY DISPOSED OF. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL EXISTING RELOCATED AND OWNER-PROVIDED EQUIPMENT.
F	VERIFY DEPTH, SIZE, LOCATIONS, AND CONDITIONS OF EXISTING UTILITIES IN THE FIELD, INCLUDING POINTS OF CONNECTION, PRIOR TO STARTING WORK.
G	ALL ITEMS ON DEMOLITION PLAN SHALL BE CONSIDERED EXISTING UNLESS OTHERWISE NOTED. ALL WORK INDICATED ON PLANS HAS BEEN LOCATED PER EXISTING DRAWINGS AND/OR FIELD OBSERVATION AND REQUIRES FIELD VERIFICATION.
H	ALL EXISTING WORK TO REMAIN SHALL BE PROTECTED FROM DAMAGE. WHERE DUCT WORK PIPE INSULATION HAS BEEN DAMAGED DURING DEMOLITION, THE CONTRACTOR SHALL REPAIR INSULATION AS REQUIRED TO MATCH EXISTING.

DEMOLITION KEYED NOTES	
1	WALK-IN COOLER FAN COIL UNIT TO BE REMOVED BY OTHERS. REMOVE CONDENSATE PIPING THRU WALL TO FLOOR SINK COMPLETE.

PLUMBING GENERAL NOTES	
A	THESE DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL EXTENT OF WORK TO BE PERFORMED. THE EXACT EXTENT OF DEMOLITION SHALL BE DETERMINED BY THE NEW WORK.
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F	VERIFY DEPTH, SIZE, LOCATIONS, AND CONDITIONS OF EXISTING UTILITIES IN THE FIELD, INCLUDING POINTS OF CONNECTION PRIOR TO STARTING WORK.
G	ALL ITEMS ON DEMOLITION PLAN SHALL BE CONSIDERED EXISTING UNLESS OTHERWISE NOTED. ALL WORK INDICATED ON PLANS HAS BEEN LOCATED PER EXISTING DRAWINGS AND/OR FIELD OBSERVATION AND REQUIRES FIELD VERIFICATION.
H	ALL EXISTING WORK TO REMAIN SHALL BE PROTECTED FROM DAMAGE. WHERE DUCT WORK PIPE INSULATION HAS BEEN DAMAGED DURING DEMOLITION, THE CONTRACTOR SHALL REPAIR INSULATION AS REQUIRED TO MATCH EXISTING.
J	INSTALL ALL SANITARY AND STORM PIPING 2 1/2" OR LESS AT 1/4" PER FOOT AND 3" AND LARGER PIPING AT 1/8" PER FOOT MINIMUM UNLESS NOTED OTHERWISE. MINIMUM UNDERGROUND PIPE SIZE SHALL BE 3".
K	PROVIDE "IN-LINE" WATERLESS PRIMER TRAP SEAL PROTECTION ON ALL FLOOR DRAINS AND TRAPS SUBJECT TO EVAPORATION.
L	AT EACH CONNECTION OF GAS SUPPLY TO EQUIPMENT, PROVIDE A PIPE UNION, GAS SHUT OFF VALVE, TEE, AND 6" LONG DIRT LEG WITH CAP.
M	THE CEILING SPACE IS USED AS A RETURN AIR PLENUM. NO PLASTIC MATERIALS INCLUDING PVC PIPING, CONDUIT WIRING, ETC. SHALL BE USED. ALL MATERIALS TO BE USED ARE TO BE PLENUM RATED.

NEW WORK KEYED NOTES	
1	EXTEND INSULATED CONDENSATE PIPING FROM INDOOR FAN COIL THRU WALL AND ROUTE DOWN ALONG WALL TO FLOOR SINK. TERMINATE WITH AIR GAP.



DRAWING INDEX	
SHT NO	DESCRIPTION
E0.00H	ELECTRICAL GENERAL INFORMATION & LIGHTING SCHEDULE
E1.00H	ELECTRICAL COMPOSITE PLAN
EP4.01H	ENLARGED ELECTRICAL POWER DEMOLITION & NEW WORK FLOOR PLANS
E7.00H	ELECTRICAL PANEL SCHEDULES & ONE-LINE RISER DIAGRAMS

ELECTRICAL ABBREVIATIONS

ABBREV.	DESCRIPTION
AFF	ABOVE FINISHED FLOOR
A	AMPERE
AF	AMPERE FUSE/AMPERE FRAME
AWG	AMERICAN WIRE GAUGE
AT	AMPERE TRIP
ATS	AUTOMATIC TRANSFER SWITCH
AIC	AVAILABLE INTERRUPTING CURRENT (AMPS)
C	CONDUIT OR CEILING MOUNTED
CB	CIRCUIT BREAKER
CU	COPPER
CT	CURRENT TRANSFORMER
DIA	DIAMETER
DISC	DISCONNECT
EMT	ELECTRICAL METALLIC TUBING
EWG	ELECTRIC WATER COOLER
EPO	EMERGENCY POWER OFF
(E)	EXISTING ELECTRICAL EQUIPMENT OR WORK
FA	FIRE ALARM
FACP	FIRE ALARM CONTROL PANEL
FLA	FULL LOAD AMPS
F	FUSE
G/GRD	GROUND
GFCI/GFI	GROUND FAULT CIRCUIT INTERRUPTER
HOA	HAND-OFF-AUTO
HP	HORSEPOWER
IG	ISOLATED GROUND
KV	KILOVOLT
KVA	KILOVOLT AMPERE
KW	KILOWATT
KWH	KILOWATT HOUR
LP	LIGHTING PANEL
MCB	MAIN CIRCUIT BREAKER
MDP	MAIN DISTRIBUTION PANEL
MLO	MAIN LUG ONLY
MAX	MAXIMUM
MIN	MINIMUM
NEC	NATIONAL ELECTRICAL CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
N/NEU	NEUTRAL
NF	NON-FUSIBLE
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
NIC	NOT IN CONTRACT
OF/OI	OWNER FURNISHED / CONTRACTOR INSTALLED
OF/OI	OWNER FURNISHED / OWNER INSTALLED
PH, OR Ø	PHASE
P	POLE
PF	POWER FACTOR
PVC	POLYVINYL CHLORIDE (PLASTIC)
(R)	RELOCATED EXISTING ELECTRICAL EQUIPMENT
(RR)	REMOVE AND REINSTALL
RMC	RIGID METALLIC CONDUIT
RP	RECEPTACLE PANEL
SPEC/SPECS	SPECIFICATIONS
TBB	TELEPHONE BACKBOARD
TYP.	TYPICAL
UC	UNDER COUNTER
UL	UNDERWRITERS LABORATORIES
UPS	UNINTERRUPTIBLE POWER SUPPLY
USB	UNIVERSAL SERIAL BUS
V	VOLT
VA	VOLT AMPERE
W	WATT
WG	WIRE GUARD
WP	WEATHERPROOF
XFMR	TRANSFORMER

POWER SYMBOL LIST

SYMBOL	DESCRIPTION
•	CONDUIT DOWN
○	CONDUIT UP
□	CONTACTOR
□	DISCONNECT SWITCH - NON FUSED
□	DISCONNECT SWITCH - FUSED
□	DISCONNECT SWITCH - COMB. MOTOR STARTER
□	ELECTRICAL PANEL - 208/240 VOLTS
□	ELECTRICAL PANEL - 480 VOLTS
⊕	GROUNDING ROD
≡	GROUND
≡	GROUNDING BAR
⊕	JUNCTION BOX
⊕	JUNCTION BOX WITH HARDWIRED CONNECTION
M	METER
○	MOTOR - SINGLE PHASE
⊗	MOTOR - THREE PHASE
⊗	MOTOR RATED SWITCH
⊕	POWER RECEPTACLE - SIMPLEX TYPE
⊕	POWER RECEPTACLE - DUPLEX TYPE
⊕	POWER RECEPTACLE - DUPLEX 6" ABOVE COUNTER
⊕	POWER RECEPTACLE - USB/DUPLEX COMBO. DEVICE
⊕	POWER RECEPTACLE - QUADRUPLEX TYPE
⊕	POWER RECEPTACLE - RECESSED FLOOR TYPE
⊕	POWER RECEPTACLE - SPECIALTY TYPE
SPD	SURGE PROTECTION DEVICE
TC	TIME CLOCK
T	TRANSFORMER (REFER TO SCHEDULES FOR INFO)
VSD	VARIABLE SPEED DRIVE

NOTES:
1. ALL DEVICE RATINGS/SIZES SHALL BE COORDINATED WITH PLANS AND SCHEDULES.

AUXILIARY SYST. SYMBOL LIST

SYMBOL	DESCRIPTION
□	CAMERA
CR	CARD READER
▼	COMMUNICATIONS DEVICE - 6" ABOVE COUNTER
▼	COMMUNICATIONS DEVICE - FLOOR
▼	COMMUNICATIONS DEVICE - WALL
DH	MAGNETIC DOOR HOLDER
□	PUSH BUTTON
S	SPEAKER
⊕	WALL CLOCK - SINGLE FACE
⊕	WALL CLOCK - DOUBLE FACE
⊕	WALL CLOCK AND SPEAKER UNIT

NOTES:
1. ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR BOX AND CONDUIT FOR ALL DEVICES INDICATED.
2. LOW VOLTAGE CONTRACTOR SHALL PROVIDE EXACT SPECIFICATIONS AND LOCATIONS OF ALL DEVICES.

FIRE ALARM SYMBOL LIST

SYMBOL	DESCRIPTION
S	DETECTION DEVICE
S	DETECTION DEVICE - DUCT MOUNTED
FS	DETECTION DEVICE - FLOW SWITCH
TS	DETECTION DEVICE - TAMPER SWITCH
FAA	FIRE ALARM ANNUCIATOR PANEL
FACP	FIRE ALARM CONTROL PANEL
∇FD	FIRE DEPARTMENT COMMUNICATION OUTLET
F	MANUAL DEVICE - PULL STATION
F	NOTIFICATION DEVICE - WALL MOUNTED
F	NOTIFICATION DEVICE - CEILING MOUNTED

NOTES:
1. DRAWINGS INDICATE DESIGN INTENT ONLY, FINAL LOCATIONS AND DEVICE SPECIFICATIONS SHALL BE PROVIDED BY FIRE ALARM MANUFACTURER, REFER TO PROJECT SPECIFICATIONS FOR APPROVED MANUFACTURERS.

LIGHTING SYMBOL LIST

SYMBOL	DESCRIPTION
□	LIGHT FIXTURE - CEILING/GRID MOUNT
□	LIGHT FIXTURE - INTERIOR WALL MOUNT LINEAR
○	LIGHT FIXTURE - DOWNLIGHT WITH WALLWASH DIST.
△	LIGHT FIXTURE - INTERIOR WALL SCNCE
○	LIGHT FIXTURE - INTERIOR WALL MOUNTED
⊕	LIGHT FIXTURE - INTERIOR SURFACE MOUNT
⊕	LIGHT FIXTURE - INTERIOR PENDANT MOUNT
⊕	LIGHT FIXTURE - INTERIOR PENDANT MOUNT CYLINDER
←	TRACK AND TRACK MOUNTED LIGHT FIXTURES
⊕	EXIT LIGHT - CEILING MOUNTED - ARROWS AS INDICATED ON PLAN (SHADED AREA INDICATES FACE(S) OF FIXTURE)
⊕	EXIT LIGHT - WALL MOUNTED - ARROWS AS INDICATED ON PLAN (SHADED AREA INDICATES FACE(S) OF FIXTURE)
⊕	EMERGENCY LIGHT FIXTURE - BATTERY UNIT/EXIT SIGN
⊕	EMERGENCY LIGHT FIXTURE - EMERGENCY BATTERY UNIT
□	LIGHT FIXTURE - EXTERIOR POLE MOUNT TYPE
□	LIGHT FIXTURE - EXTERIOR WALL MOUNT TYPE
□	LIGHT FIXTURE - EXTERIOR POST TOP TYPE
⊕	LIGHT FIXTURE - EXTERIOR BOLLARD TYPE

NOTES:
1. LIGHTING SYMBOLS AS INDICATED ON PLANS ARE NOT DRAWN TO SCALE UNLESS NOTED OTHERWISE.

LIGHTING CONTROLS LEGEND

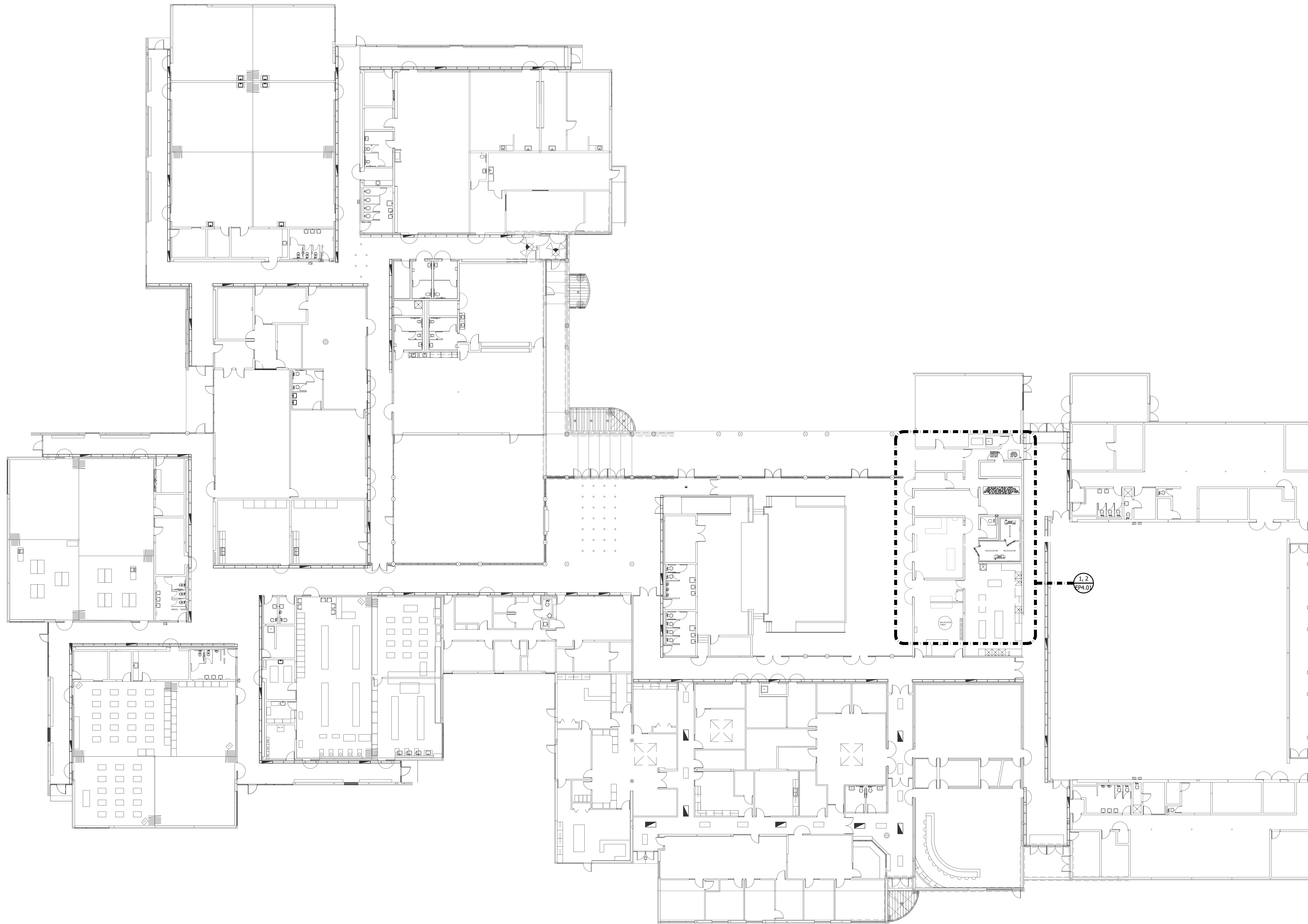
SYMBOL	DESCRIPTION
\$	SWITCH SINGLE POLE
\$o	OCCUPANCY SENSOR SWITCH
\$v	VACANCY SENSOR SWITCH
\$d	LOW VOLTAGE DIMMER SWITCH
\$vo	VACANCY DIMMER SENSOR SWITCH
⊕	CEILING MOUNTED OCCUPANCY SENSOR
⊕	CEILING MOUNTED VACANCY SENSOR
\$3	SWITCH THREE-WAY
\$K	SINGLE POLE KEY SWITCH

DRAWING NOTATION

SYMBOL	DESCRIPTION
LA	LIGHTING FIXTURE TAG
①	CONSTRUCTION KEY NOTE NUMBER 1
△	DEMOLITION KEY NOTE NUMBER 1
1	FEEDER SIZE TAG (REFER TO FEEDER SCHEDULE ON THIS SHEET)
FF-1	EQUIPMENT DESIGNATION (I.E. EXHAUST FAN NUMBER 1)
—	EXISTING DEVICES OR EQUIPMENT
—	NEW OR MODIFIED DEVICES OR EQUIPMENT
----	NEW OR MODIFIED UNDERGROUND WIRING
	EXISTING SYSTEM COMPONENT TO BE REMOVED
④	SECTION NUMBER 4
E5.2	SHEET E5.2 ON WHICH SECTION IS DRAWN
6	SECTION NO. 6
E5.2	SHEET E5.2 ON WHICH SECTION IS CUT (ENLARGED PARTIAL PLAN SIMILAR)
21	LIGHTING CONTROL TAG
JA	SCENE SCHEDULE ID 'A'
1A	DAYLIGHTING CONTROL ZONE '1' (MAY NOT APPEAR ON EVERY TAG)

APPLICABLE CODES AND REGULATIONS

YEAR	CODE
2015	MICHIGAN BUILDING CODE
2015	MICHIGAN ENERGY CODE
2023	MICHIGAN ELECTRICAL CODE RULES, PART 8
2023	NATIONAL ELECTRICAL CODE (NFPA 70)
2013	NATIONAL FIRE PROTECTION ASSOCIATION, NFPA 20
2013	NATIONAL FIRE ALARM AND SIGNALING CODE, NFPA 72
2012	LIFE SAFETY CODE, NFPA 101
2013	STANDARD FOR EMERGENCY & STANDBY POWER SYSTEMS, NFPA 110
2009	ICC A117.1 ACCESSIBLE AND USABLE BUILDINGS & FACILITIES



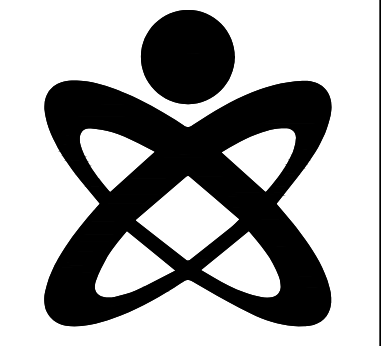
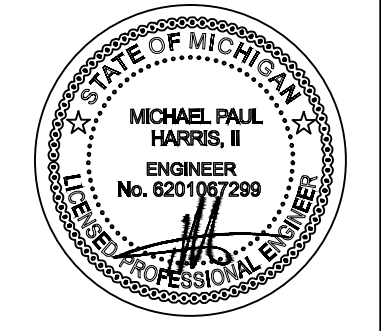
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E	ELECTRICAL CONTRACTOR SHALL COMPLY WITH THE LATEST NATIONAL ELECTRICAL CODE, LIFE SAFETY CODE AND APPLICABLE STATE AND LOCAL CODES AND ORDINANCES.
F	ELECTRICAL EQUIPMENT AND WIRING SHALL BE NEW AND SHALL BE FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR, UNLESS OTHERWISE NOTED.
G	WIRING SHALL BE IN CONDUIT. CONDUIT SHALL BE 3/4" CONDUIT MINIMUM. CONDUITS IN FINISHED AREAS SHALL BE CONCEALED.
H	NEW WIRES SHALL BE TYPE THHN. MINIMUM SIZE SHALL BE #12 AWG, UNLESS OTHERWISE NOTED. FINAL CONNECTIONS TO EQUIPMENT, FURNISHED AND INSTALLED BY OTHERS, SHALL BE PROVIDED BY THIS CONTRACTOR.
J	ALL P.A. AND SPEAKER SCOPE BY OTHERS. REFER TO TECH DRAWINGS FOR FURTHER INFORMATION.



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ELECTRICAL COMPOSITE
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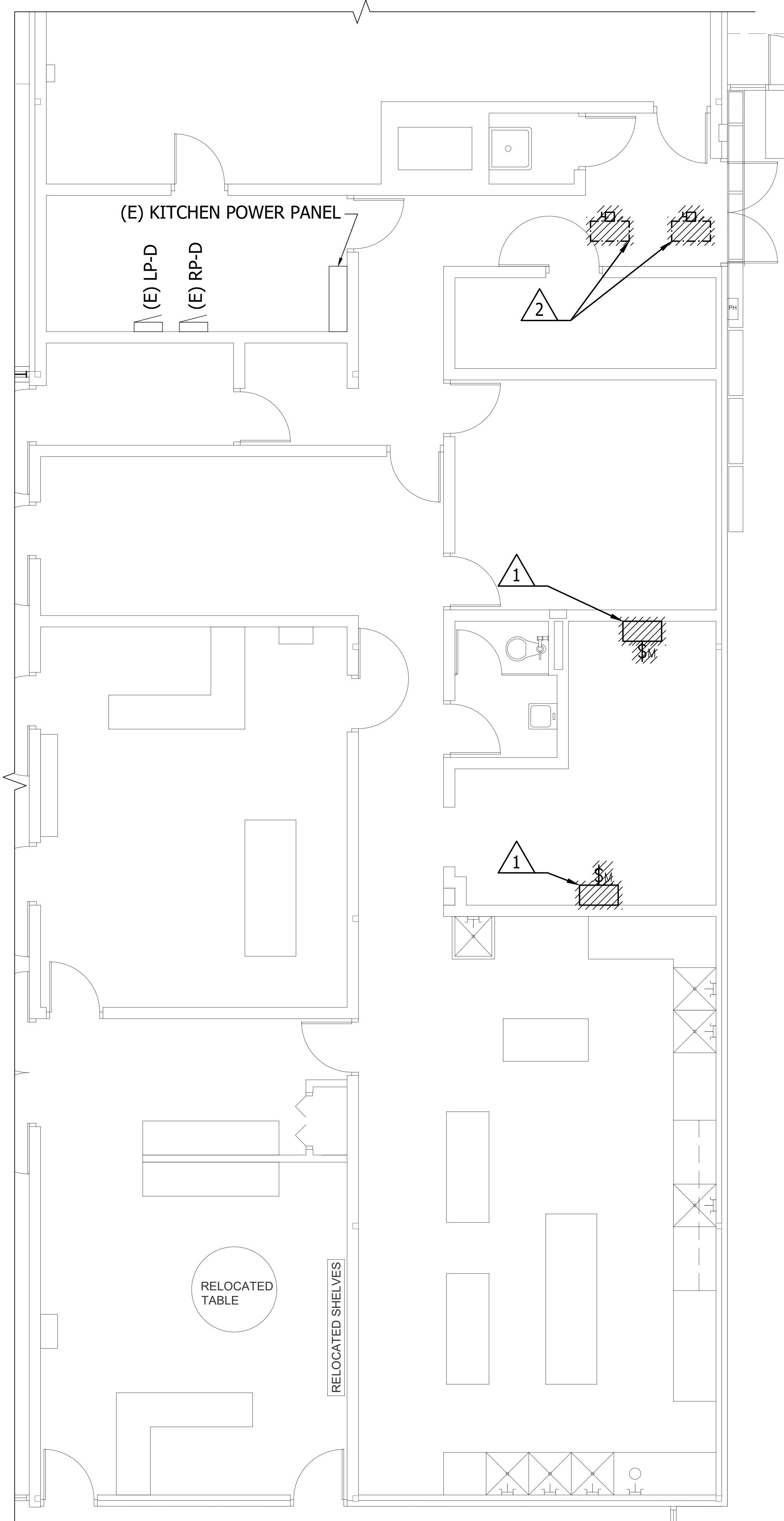
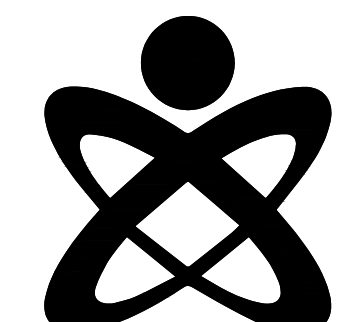
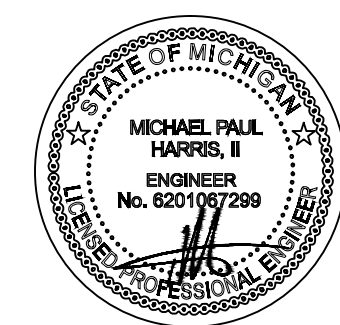
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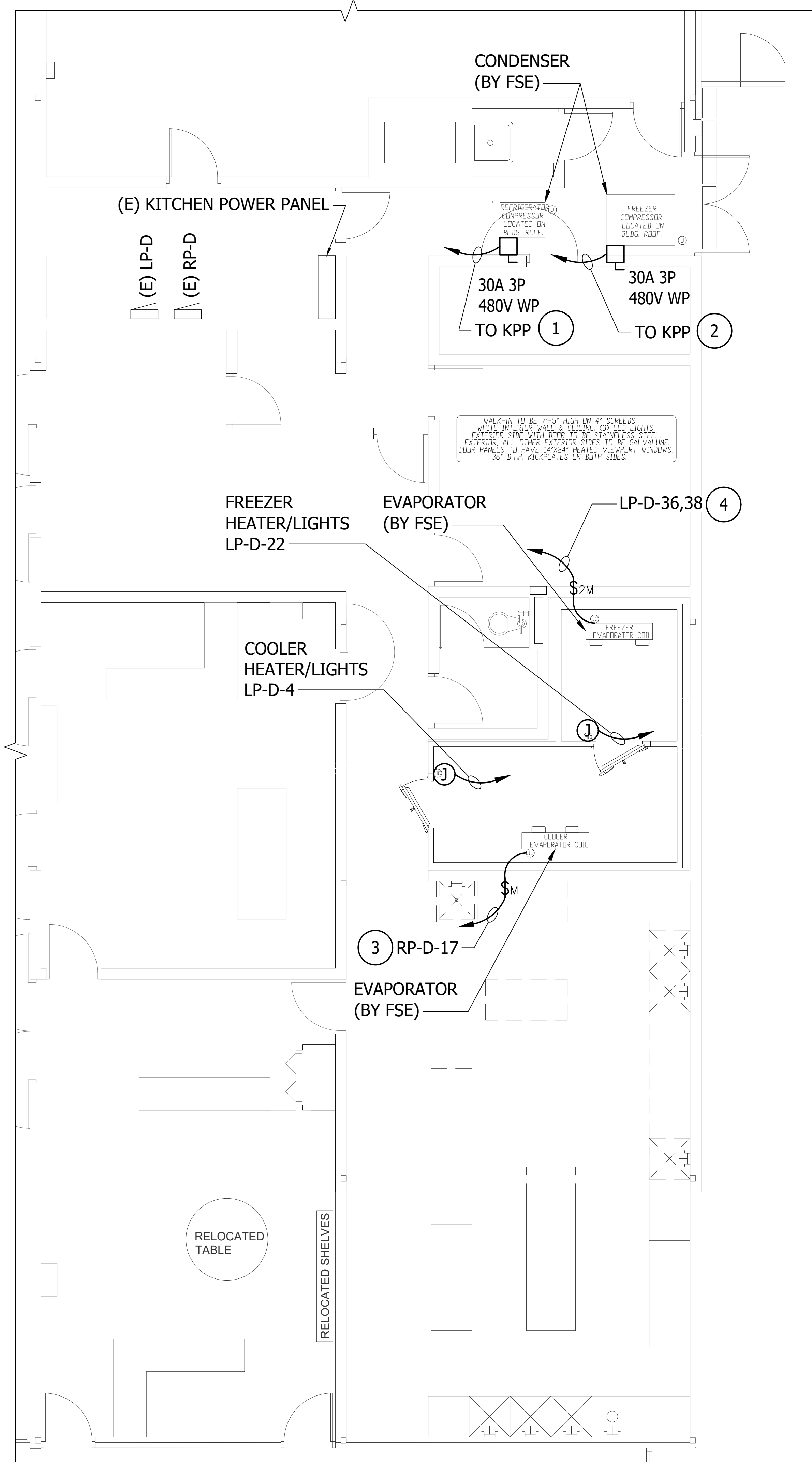
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F	VERIFY DEPTH, SIZE, LOCATIONS, AND CONDITIONS OF EXISTING UTILITIES IN THE FIELD, INCLUDING POINTS OF CONNECTION, PRIOR TO STARTING WORK.
G	ALL ITEMS ON DEMOLITION PLAN SHALL BE CONSIDERED EXISTING UNLESS OTHERWISE NOTED. ALL WORK INDICATED ON PLANS HAS BEEN LOCATED PER EXISTING DRAWINGS AND/OR FIELD OBSERVATION AND REQUIRES FIELD VERIFICATION.
H	ALL EXISTING WORK TO REMAIN SHALL BE PROTECTED FROM DAMAGE. WHERE DUCT WORK PIPE INSULATION HAS BEEN DAMAGED DURING DEMOLITION, THE CONTRACTOR SHALL REPAIR INSULATION AS REQUIRED TO MATCH EXISTING.

DEMOLITION KEYED NOTES	
1	WALK-IN EVAPORATOR TO BE REMOVED BY OTHERS. ELECTRICAL CONTRACTOR SHALL DISCONNECT, MAKE SAFE, DEMO ALL CONDUIT AND WIRING COMPLETE BACK TO SOURCE. RETAIN BREAKER AS SPARE. UPDATE PANEL SCHEDULE.
2	WALK-IN CONDENSER ON ROOF TO BE REMOVED BY OTHERS. ELECTRICAL CONTRACTOR SHALL DISCONNECT AND MAKE SAFE FOR DEMOLITION. PREPARE FOR THE INSTALLATION OF NEW CONDENSER. REFER TO NEW WORK PLAN FOR FURTHER INFORMATION.

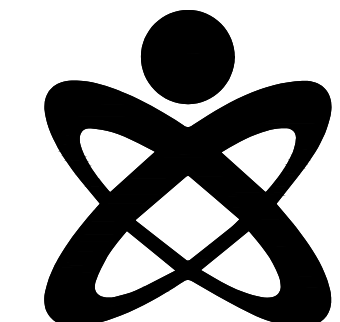
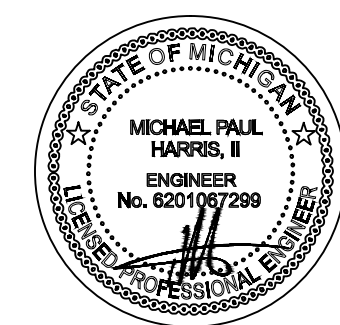


2
ENLARGED ELECTRICAL POWER NEW WORK FIRST FLOOR PLAN
SCALE: 1/4" = 1'-0"

POWER GENERAL NOTES	
A	THESE DRAWINGS ARE DIAGRAMMATIC AND REPRESENT THE GENERAL EXTENT OF THE WORK TO BE PERFORMED. PROVIDE AND EXECUTE ALL HVAC SYSTEMS PER ENGINEER'S SPECIFICATION, AND LOCAL APPLICABLE CODES INCLUDING AMENDMENTS, BULLETINS, ETC; AS WELL AS THE STANDARDS OF INSTALLATION AND EQUIPMENT ESTABLISHED FOR THE BUILDINGS, AND REQUIREMENTS OF THE OWNER.
B	EXCEPT FOR CHANGES AS MAY BE SPECIFICALLY APPROVED BY THE ENGINEER OF RECORD IN ACCORDANCE WITH ALTERNATES OF OPTIONS AS STATED HEREINAFTER, ALL WORK MUST BE IN FULL ACCORDANCE WITH THE INTENT OF THE PLANS AND SPECIFICATIONS. SYSTEMS ARE TO BE COMPLETE, EFFICIENT, AND SATISFACTORY OPERATION WHEN PROJECT IS DELIVERED TO THE OWNER.
D	CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS AND APPROVAL FROM GOVERNING AUTHORITIES, FILE NECESSARY FORMS, PAY ALL INSPECTION FEES.
E	ELECTRICAL CONTRACTOR SHALL COMPLY WITH THE LATEST NATIONAL ELECTRICAL CODE, LIFE SAFETY CODE AND APPLICABLE STATE AND LOCAL CODES AND ORDINANCES.
F	ELECTRICAL EQUIPMENT AND WIRING SHALL BE NEW AND SHALL BE FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR, UNLESS OTHERWISE NOTED.
G	WIRING SHALL BE IN CONDUIT. CONDUIT SHALL BE 3/4" CONDUIT MINIMUM. CONDUITS IN FINISHED AREAS SHALL BE CONCEALED.
H	NEW WIRES SHALL BE TYPE THHN. MINIMUM SIZE SHALL BE #12 AWG, UNLESS OTHERWISE NOTED. FINAL CONNECTIONS TO EQUIPMENT, FURNISHED AND INSTALLED BY OTHERS, SHALL BE PROVIDED BY THIS CONTRACTOR.
J	ALL P.A. AND SPEAKER SCOPE BY OTHERS. REFER TO TECH DRAWINGS FOR FURTHER INFORMATION.

NEW WORK KEYED NOTES	
1	COOLER CONDENSER BEING INSTALLED ON ROOF BY OTHERS. ELECTRICAL CONTRACTOR SHALL PROVIDE DISCONNECT AND FINAL ELECTRICAL CONNECTIONS. VERIFY EXACT LOCATION IN THE FIELD WITH F/C CONTRACTOR PRIOR TO ROUGH IN. WIRING AND CONDUIT SHALL BE NEW, REFER TO ONE LINE DIAGRAM FOR SIZING.
2	FREEZER CONDENSER BEING INSTALLED ON ROOF BY OTHERS. ELECTRICAL CONTRACTOR SHALL PROVIDE DISCONNECT AND FINAL ELECTRICAL CONNECTIONS. VERIFY EXACT LOCATION IN THE FIELD WITH F/C CONTRACTOR PRIOR TO ROUGH IN. WIRING AND CONDUIT SHALL BE NEW, REFER TO ONE LINE DIAGRAM FOR SIZING.
3	COOLER EVAPORATOR BEING INSTALLED BY OTHERS. ELECTRICAL CONTRACTOR SHALL PROVIDE DISCONNECT SWITCH AND FINAL ELECTRICAL CONNECTIONS USING NEW CONDUIT AND WIRING. VERIFY EXACT LOCATION IN THE FIELD WITH F/C CONTRACTOR PRIOR TO ROUGH IN.
4	FREEZER EVAPORATOR BEING INSTALLED BY OTHERS. ELECTRICAL CONTRACTOR SHALL PROVIDE DISCONNECT SWITCH AND FINAL ELECTRICAL CONNECTIONS USING NEW CONDUIT AND WIRING. VERIFY EXACT LOCATION IN THE FIELD WITH F/C CONTRACTOR PRIOR TO ROUGH IN.

1
ENLARGED ELECTRICAL POWER DEMOLITION FIRST FLOOR PLAN
SCALE: 1/4" = 1'-0"



UNIFIED BUILDING SYSTEMS ENGINEERING
89 S. GRATIOT AVE.
MT. CLEMENS, MI 48043
UBS PROJECT 007.25.04 - H

WARREN WOODS PUBLIC SCHOOL DISTRICT
TOWER HS - TITAN EXPRESS SERVERY
HAWTHORN FOOD PROGRAM FREEZER REPLACEMENT

ELECTRICAL PANEL SCHEDULES & ONE-LINE RISER DIAGRAMS

- PRELIMINARY
- DESIGN DEVELOPMENT
- CONSTRUCTION
- FINAL RECORD

DRAWN BY: PG
CHECKED BY: TJO

REVISIONS
BIDS: 03/11/2025

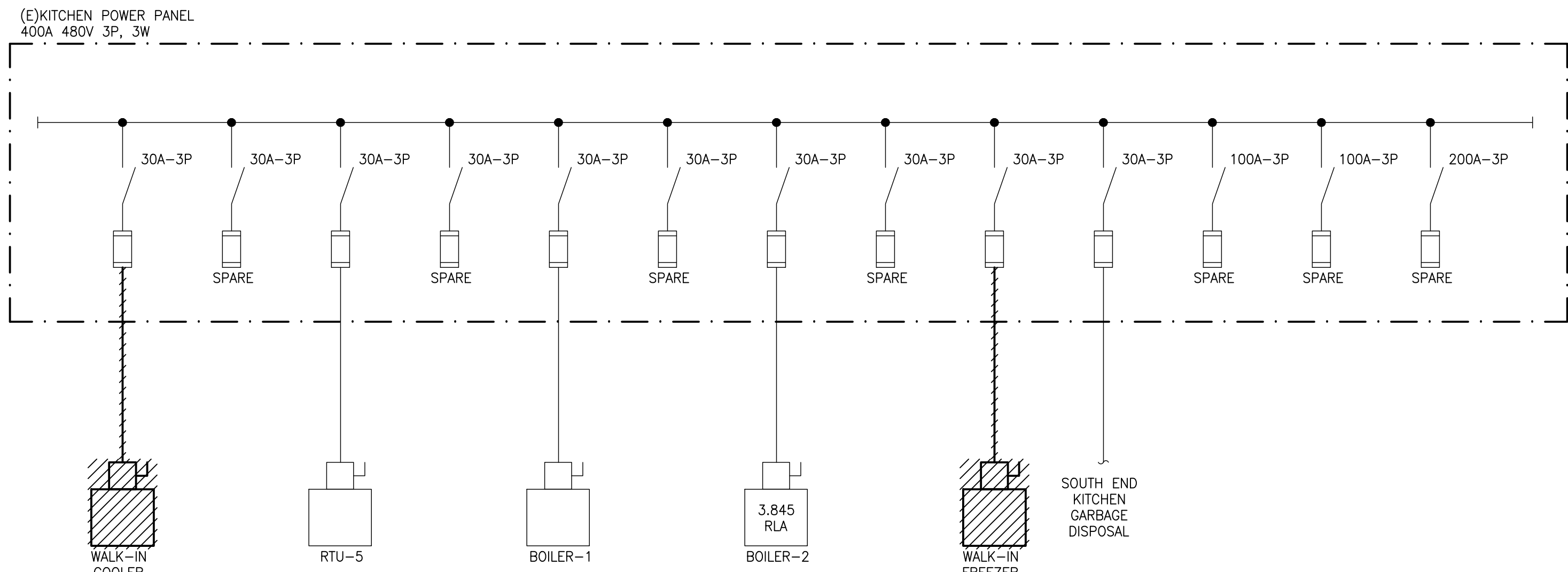
DATE: MARCH 11, 2025
SHEET NO.

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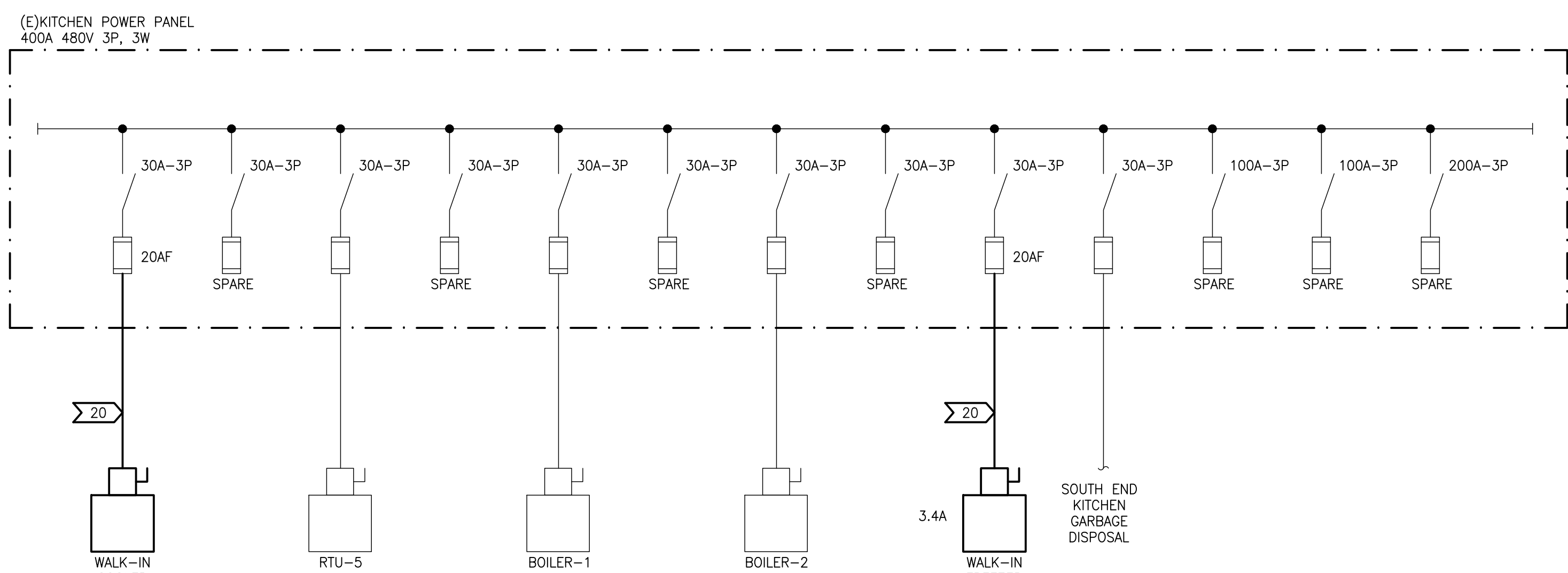
JOB NO. 242030

Panel Designation: LP-D		Main: 150A MCB		P-P Voltage: 208											
Panel Location: ELECTRICAL ROOM		Bussing: 150A		P-N Voltage: 120											
Fed From:		Ground Bus: STANDARD		Phase: 3											
Feeder Size: EXISTING		Acounting: SURFACE		Wires: 4											
EXISTING PANEL		Neutral: 100%		Min SC Interrupting Rating: EXISTING											
Remarks	Light Load	Recept Load	Cont Load	nonC Load	OC Prof	OC A	OC B	OC C	OC D	OC E	nonC Load	Cont Load	Recept Load	Light Load	g
LIGHTS - NORTHEAST EQUIPMENT STORAGE	850				20	1	X							460	LIGHTS - ELECTRICAL ROOM & COMP. ROOM
LIGHTS - GIRLS SHOWER ROOM	620				20	3	X						1440	665	COOLER HEATER/LIGHTS
LIGHTS - GIRLS SHOWER ROOM	620				20	5	X							480	LIGHTS - KITCHEN CLOSET
FLOOD LIGHTS - NORTH & EAST	1150				20	7	X							390	LIGHTS - KITCHEN STORAGE & JAN. STORAGE
FLOOD LIGHTS - SOUTH SIDE	800				20	9	X							280	BOILER ROOM LIGHTS
FLOOD LIGHTS - SOUTH & EAST	775				20	11	X							280	LIGHTS - BOILER ROOM
POLE LIGHTS - FRONT	650				20	13	X							880	LIGHTS - HALLWAY
LIGHTS - FRONT PORTICO	900				20	15	X							360	SOAP DISPENSER PLUG
LIGHTS - FRONT PORTICO	900				20	17	X							180	PLUG - NORTH TEACHER DINING ROOM
PLUG - KITCHEN OFFICES		900			20	19	X							720	PLUGS - NORTH TEACHERS ROOM
PLUG - KITCHEN OFFICES		1080			20	21	X					1440		665	FREEZER HEATER/LIGHTS
KITCHEN OFFICE RECEPTACLE		180			20	23	X							720	EXHAUST FAN #6
UNIT VENT #38 TEACHERS ROOM			600		20	25	X							360	REC. ELEC. RM. KITCHEN STR. JANITOR STR.
UNIT VENT #38 SERVING ROOM			800		20	27	X							500	TIME CLOCK
PLUG - WEST TEACHERS ROOM		540			20	29	X							180	LIGHTS - REAR PARKING LOT
DISPOSAL TEACHERS ROOM			500		20	31	X							1120	LIGHTS - FRONT PARKING LOT
FS TU					20	33	X							500	SGN
SGN		500			20	35	X							1019	COOLER EVAPORATOR
PANEL RPH			5403		20	37	X							1019	SPACE
			5403		20	39	X							40	SPACE
			5403		20	41	X							42	SPACE
Load Description		Connected Load				Demand Factor				Demand Load					
	OA	OB	OC	Total		OA	OB	OC	Total		OA	OB	OC	Total	
Lighting or Continuous Load (Volt-Amps)	5500	4400	3655	13555	1.00	5500	4400	3655	13555						
180VA Receptacle Load (Volt-Amps)	3100	1440	900	5440	1.00 (First 10kVA)	3100	1440	900	5440						
	Amount over 10kVA				0.50 (10-15kVA)	0	0	0	0						
Continuous Load (Volt-Amps)	1619	3990	1739	7338		1619	3990	1739	7338						
Non-Continuous Load (Volt-Amps)	5903	5403	5403	16709	0.90	5313	4863	4863	15038						
Total Load (kVA)	16.12	15.25	11.70	43.07	125% of Light/Cont and Recept (<10kVA) load plus other load per NEC Article 215.2	15.53	14.71	11.16	41.40						
Total Ampacity (Amps)	134.2	127.0	97.4	119.6		129.3	122.5	92.9	114.9						
Minimum Feeder Sizing (Amps)	132.2	139.2	106.9	132.8		147.2	134.7	102.4	128.1						

Panel Designation: RP-D		Main: 150A MCB		P-P Voltage: 208											
Panel Location: ELECTRICAL ROOM		Bussing: 150A		P-N Voltage: 120											
Fed From:		Ground Bus: STANDARD		Phase: 3											
Feeder Size: SEE ONE LINE DIAGRAM		Acounting: SURFACE		Wires: 4											
NEW PANEL		Neutral: 100%		Min SC Interrupting Rating: EXISTING											
Remarks	Light Load	Recept Load	Cont Load	nonC Load	OC Prof	OC A	OC B	OC C	OC D	OC E	nonC Load	Cont Load	Recept Load	Light Load	Remarks
PLUGS - SOUTH SERVING ROOM		1080			20	1	X							360	PLUGS - GIRLS SHOWER ROOM
PLUGS - SOUTH SERVING ROOM		900			20	3	X							540	PLUG - NORTH GYM
PLUGS - WEST SERVING ROOM		900			20	5	X					500			HAIR DRYERS
EXISTING LOAD			500		20	7	X					30			HAIR DRYER GIRLS LOCKER ROOM
PLUG - WEST KITCHEN		720			20	11	X							500	HAIR DRYER GIRLS LOCKER ROOM
PLUGS - KITCHEN TABLE GYM HALL		360			20	13	X							540	PLUGS - CORRIDOR, STORAGE, & OUTSIDE
PLUGS - CORRIDOR AND KITCHEN EAST		540			20	15	X							360	PLUGS - GIRLS LOCKER & MECH ROOM
PLUG - KITCHEN DESK/COOLER EVAP FAN		180	216		20	17	X							180	PLUG - GYM NORTH
FLOOR PLUG - SOUTH SERVING ROOM		360			20	19	X						500	360	PLUGS & COOLER EAST KITCHEN
FLOOR PLUG - CENTER SERVING ROOM		500			20	21	X							1080	FLOOR PLUG - KITCHEN/FAN ON OVEN
FLOOR PLUG - CENTER SERVING ROOM		900			20	23	X							1080	FLOOR PLUG - KITCHEN/FAN ON OVEN
SPARE					20	25	X							900	FLOOR PLUG - SERVING ROOM
EXHAUST FANS #7 & 8			1200		20	27	X							720	FLOOR PLUGS - SERVING ROOM
FLOOR PLUGS - SERVING ROOM		360			20	29	X							1080	FLOOR PLUGS - SERVING ROOM
DISPOSAL - TEACHERS DINING ROOM			500		20	31	X							1080	FLOOR PLUGS - SERVING ROOM
FLOOR PLUG - TEACHERS DINING ROOM		180			20	33	X							1080	FLOOR PLUGS - SERVING ROOM
FLOOR PLUG - SERVING ROOM		360			20	35	X							1080	FLOOR PLUGS - SERVING ROOM
220V FLOOR PLUG - SERVING ROOM		360			20	37	X							500	3 PHASE PLUG IN KITCHEN EAST WALL
EXISTING LOAD			500		20	39	X							500	
			500		20	41	X							42	
Load Description		Connected Load				Demand Factor				Demand Load					
	OA	OB	OC	Total		OA	OB	OC	Total		OA	OB	OC	Total	
Lighting or Continuous Load (Volt-Amps)	0	0	0	0	1.00	0	0	0	0						
180VA Receptacle Load (Volt-Amps)	4820	6440	7340	18600	1.00 (First 10kVA)	2291	3462	3946	10000						
	Amount over 10kVA				0.50 (10-15kVA)	1114	1489	1697	4300						
Continuous Load (Volt-Amps)	500	1200	216	1916	1.00	500	1200	216	1916						
Non-Continuous Load (Volt-Amps)	1500	1500	1500	4500	0.90	1350	1350	1350	4050						
Total Load (kVA)	6.82	9.14	9.06	25.02	125% of Light/Cont and Recept (<10kVA) load plus other load per NEC Article 215.2	5.56	7.50	7.21	20.27						
Total Ampacity (Amps)	56.8	76.1	75.4	89.4		46.3	62.5	60.0	56.3						
Minimum Feeder Sizing (Amps)	62.2	83.3	83.4	76.4		51.7	69.7	68.2	63.2						



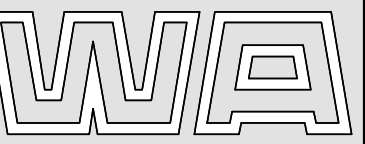
PARTIAL ONE-LINE DIAGRAM NEW WORK
NO SCALE



PARTIAL ONE-LINE DIAGRAM NEW WORK
NO SCALE

FEEDER (AMPS)	COND. SIZE	COPPER FEEDER AND CONDUIT SIZES	
		3 WIRE WITH GROUND	4 WIRE WITH GROUND
20	12	3#12, 1#12 GND IN 3/4"	4#12, 1#12 GND IN 3/4"

HAWTHORN FOOD PROGRAM FREEZER REPLACEMENT



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ARCHITECTS

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FOODSERVICE DESIGNERS
OPERATIONAL CONSULTING
AND PLANNERS

WARREN WOODS PUBLIC SCHOOL DISTRICT
TOWER HS - TITAN EXPRESS SERVERY
HAWTHORN FOOD PROGRAM FREEZER REPLACEMENT

FOODSERVICE
EQUIPMENT
PLAN

PRELIMINARY

DESIGN DEVELOPMENT

CONSTRUCTION

FINAL RECORD

DRAWN BY: RDM

CHECKED BY: RDM

REVISIONS

OWNER REVIEW 02/28/2025

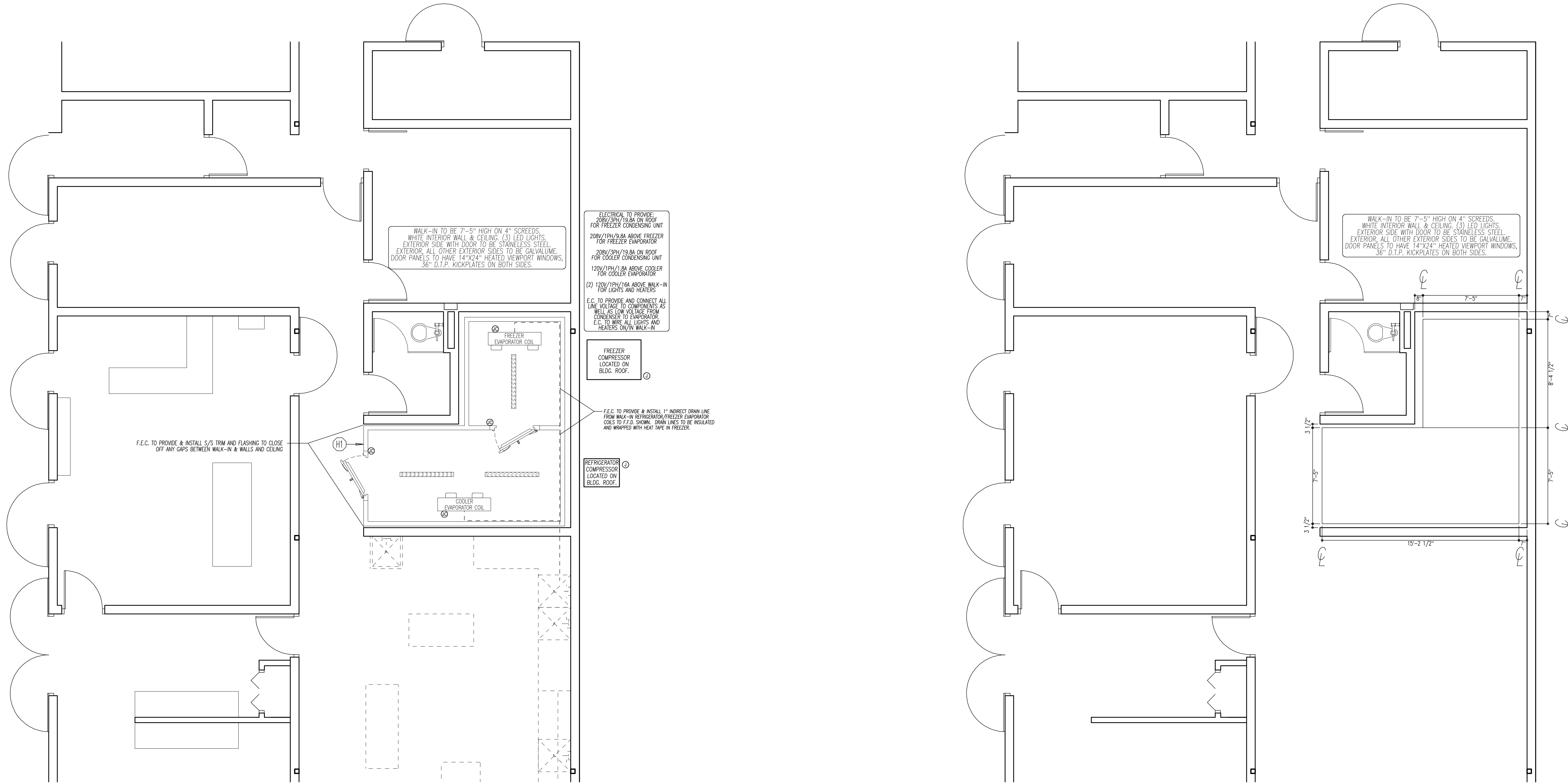
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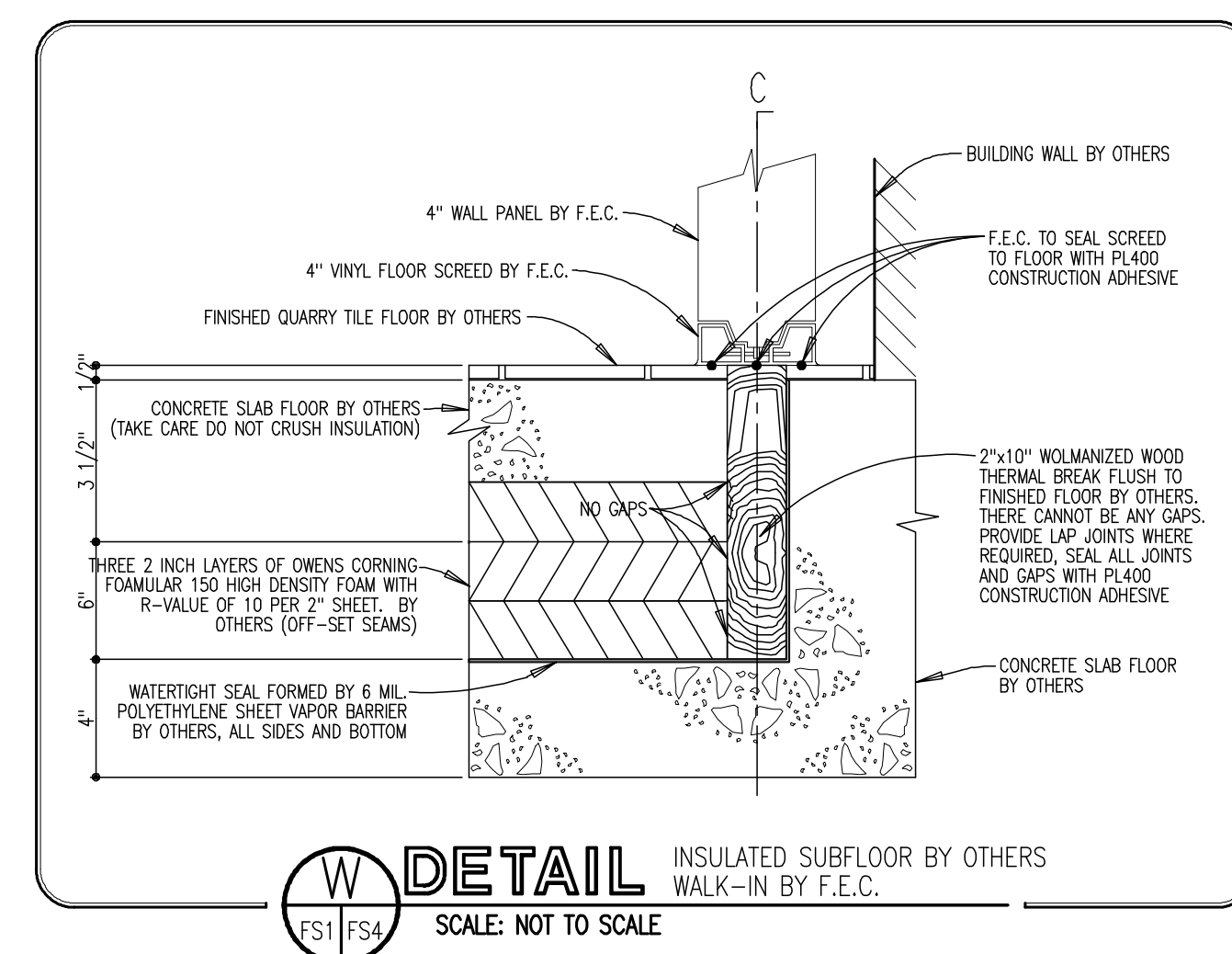
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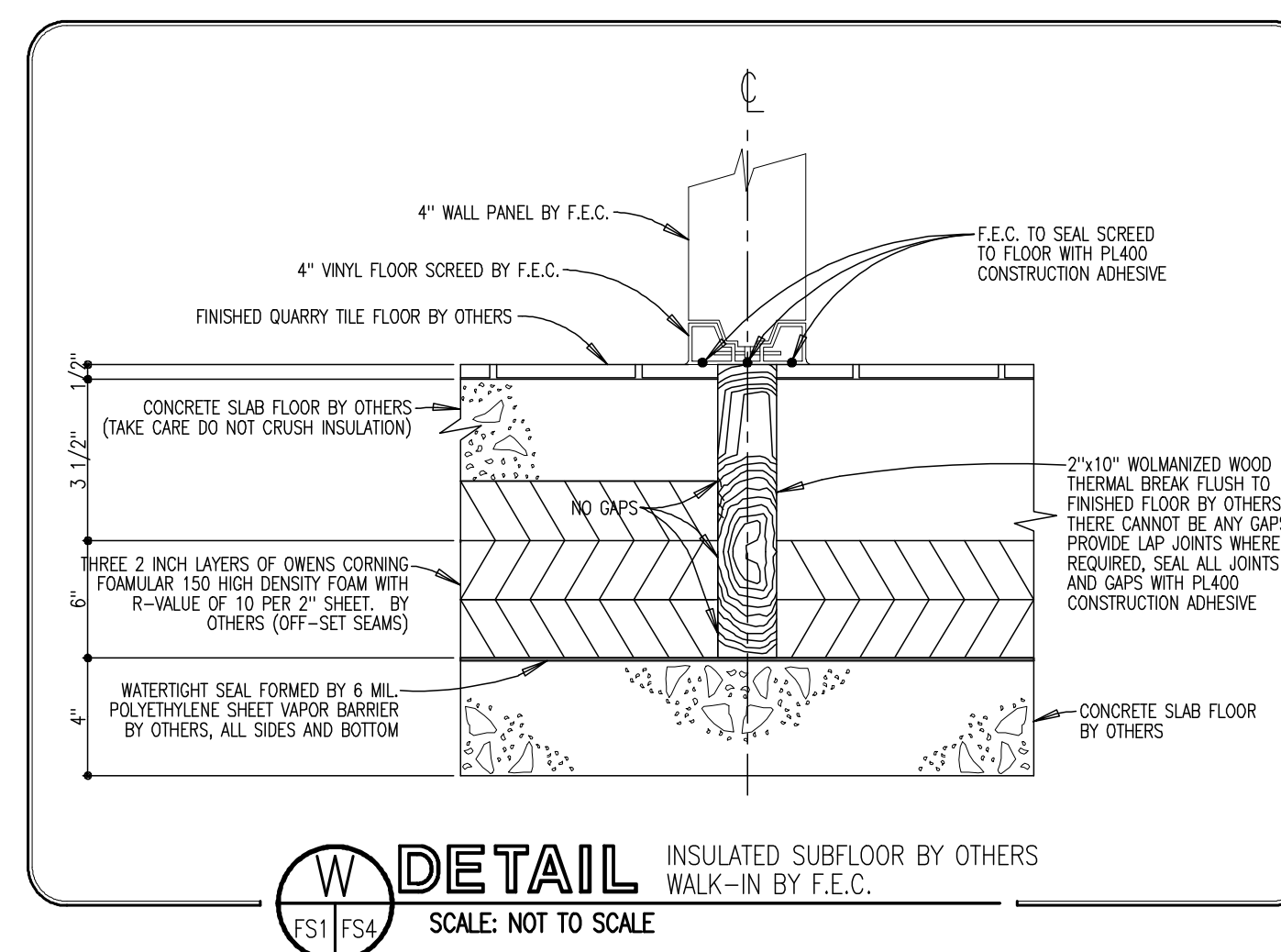
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WALL SECTION



WALL SECTION



DOOR SECTION

