

WARBY PARKER

MarketStreet Lynnfield

Lalire March Architects LLP
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GENERAL NOTES:

- SCOPE OF WORK: TENANT IMPROVEMENT
- ALL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE MASSACHUSETTS STATE BUILDING CODE NINTH EDITION CMR 70 (IBC 2015), FIRE DEPARTMENT RULES AND REGULATIONS, UTILITY COMPANY REQUIREMENTS, AND THE BEST TRADE PRACTICES.
- BEFORE COMMENCING WORK, THE CONTRACTOR SHALL FILE ALL REQUIRED INSURANCE CERTIFICATES WITH THE DEPARTMENT OF BUILDINGS, OBTAIN ALL REQUIRED PERMITS, AND PAY ALL FEES REQUIRED BY THE GOVERNING AGENCIES.
- MINOR DETAILS NOT USUALLY SHOWN OR SPECIFIED, BUT REQUIRED FOR PROPER CONSTRUCTION OF ANY PART OF THE WORK SHALL BE INCLUDED AS IF THEY WERE INDICATED IN THE DRAWINGS.
- THE CONTRACTOR SHALL COORDINATE ALL WORK PROCEDURES WITH THE STIPULATIONS OF LOCAL AUTHORITIES, BUILDING MANAGEMENT OR BOARD OF DIRECTORS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL CONDITIONS AND MATERIALS WITHIN THE PROPOSED CONSTRUCTION AREA. THE CONTRACTOR SHALL DESIGN AND INSTALL ADEQUATE SHORING AND BRACING FOR ALL STRUCTURAL OR REMOVAL TASKS. THE CONTRACTOR SHALL HAVE SOLE RESPONSIBILITY FOR ANY DAMAGE OR INJURIES CAUSED BY OR DURING THE EXECUTION OF THE WORK.
- THE CONTRACTOR SHALL LAY OUT HIS OWN WORK, AND SHALL PROVIDE ALL DIMENSIONS REQUIRED FOR OTHER TRADES: PLUMBING, ELECTRICALS, ETC.
- PLUMBING WORK SHALL BE PERFORMED BY PERSONS LICENSED IN THEIR TRADES, WHO SHALL ARRANGE FOR AND OBTAIN THROUGH THE DEPARTMENT OF BUILDINGS ALL REQUIRED PERMITS, INSPECTIONS AND REQUIRED SIGN OFFS.
- ELECTRICAL WORK SHALL BE PERFORMED BY PERSONS LICENSED IN THEIR TRADES, WHO SHALL ARRANGE FOR AND OBTAIN THROUGH THE BUREAU OF ELECTRICAL CONTROL ALL REQUIRED PERMITS, INSPECTIONS AND REQUIRED SIGN OFFS.
- THE CONTRACTOR SHALL DO ALL CUTTING, PATCHING, REPAIRING AS REQUIRED TO PERFORM ALL OF THE WORK INDICATED ON THE DRAWINGS, AND ALL OTHER WORK THAT MAY BE REQUIRED TO COMPLETE THE JOB.
- ALL PIPING AND WIRING SHALL BE REMOVED TO A POINT OF CONCEALMENT AND SHALL BE PROPERLY CAPPED OR PLUGGED.

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T-004	SPECIFICATIONS	X					
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11.28.22 Issue for LL, Permit & Bid
No. Date Issue

WARBY PARKER
Marketstreet Lynnfield
535 Market St.
Ground Floor
Lynnfield, MA 01940

LMA PROJECT NO. 2298

BUILDING CODE ANALYSIS:

Building Code: Massachusetts State Building Code Ninth Edition CMR 70 (IBC 2015)
Accessibility Code: Architectural Access Board CMR 521 & 2010 ADA Standards for Accessible Design
Mechanical Code: 2015 International Mechanical Code with Massachusetts Amendments
Electric Code: 2020 National Electrical Code with Massachusetts Amendments
Plumbing Code: 2018 Massachusetts State Plumbing Code
Energy Code: 2018 International Energy Conservation Code with Massachusetts Amendments
Fire Code: 2015 NFPA 1 with Massachusetts Amendments

BUILDING DEPARTMENT DATA:

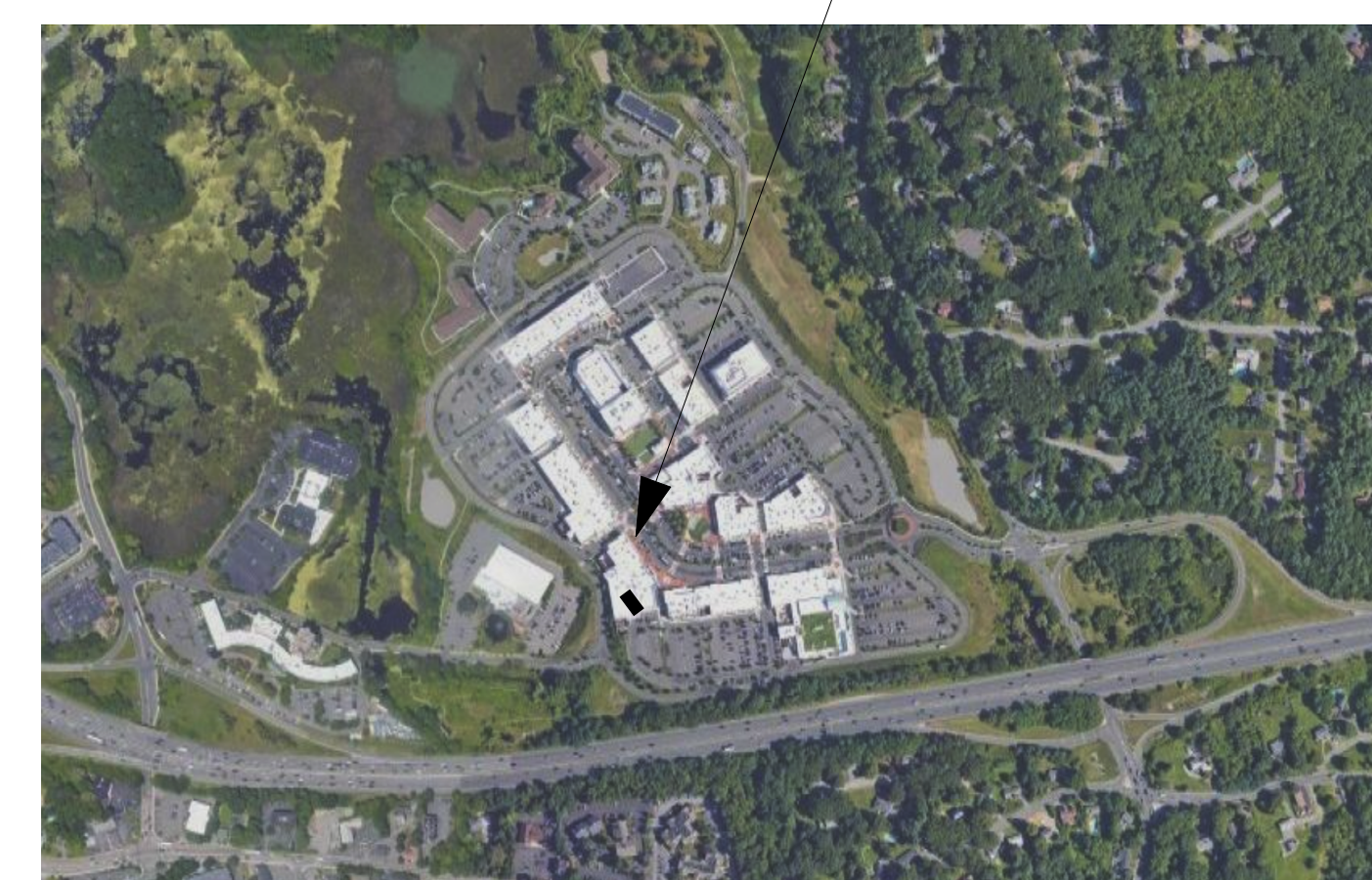
Building Department: Lynnfield, MA
Construction Type: IIB
Occupancy Type: M, Mercantile
Summary: No change in Use.
Tenant/Tenant Separation: One Hour
Tenant/Corridor: One Hour
Tenant/Common Area: One Hour
Sales/Stock Separation: None Required
Sprinkler System: Fully Sprinklered
Travel Distance: 75' Maximum
Exit Path Width: 36"
Number of Exits: One Required

SCOPE OF WORK

The proposed scope of work includes interior tenant improvements to Tenant Space no. 535 at MarketStreet Lynnfield.

The project renovations will occur within the demised lease space with no change to the use group.
Tenant improvement construction will include new non-structural partitions, storefront modifications, casework, fixtures, architectural finishes, lighting, and HVAC.

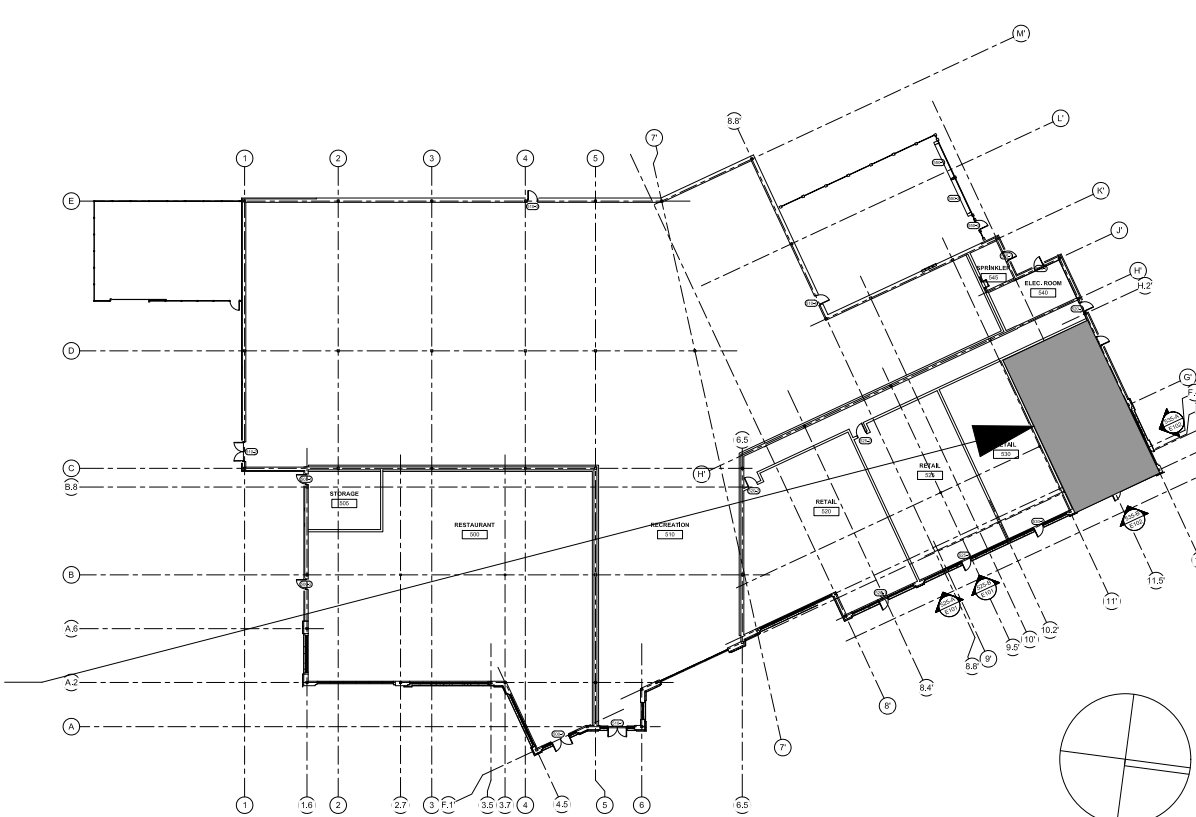
VICINITY PLAN NOT TO SCALE



SEPARATE SUBMITTALS FOR PERMIT:

FIRE ALARM
SPRINKLER

WARBY PARKER
RETAIL INC.
Space No. 535
(Ground Floor)
1,760SF

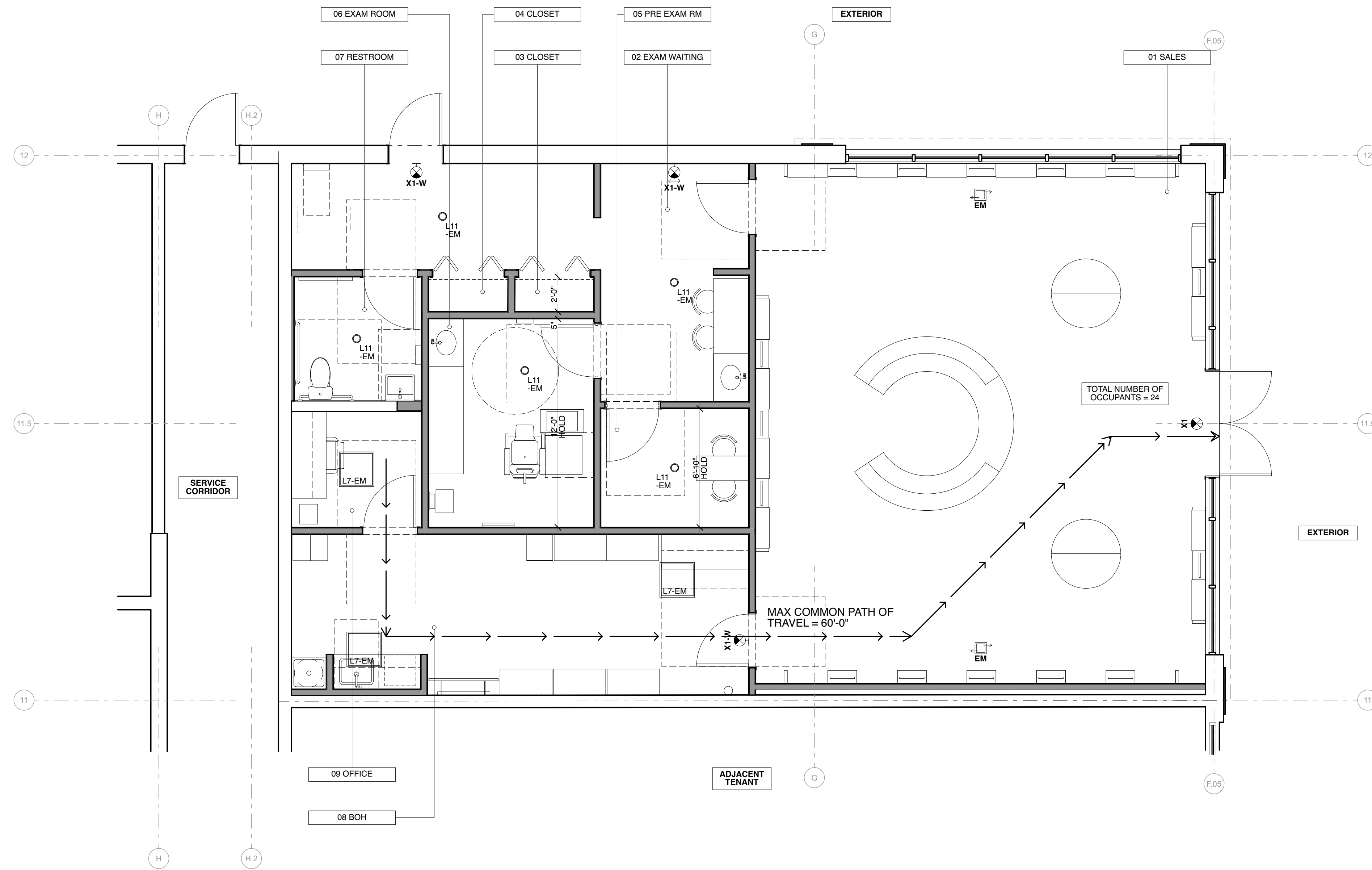


LEASE AREA : 1,760 SQ FT
SURVEYED LEASE AREA : N/A
NET USABLE AREA : 1,580 SQ FT
SALES AREA : 775 SQ FT
EXAM SUITE AREA : 500 SQ FT
BOH AREA : 305 SQ FT
COMMON AREA : N/A

COVER SHEET

T-001

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1 LIFE SAFETY PLAN
SCALE: 1/4" = 1'-0"

OCCUPANCY CALCULATIONS:

Occupant Load Factor:
 60sf/person Mercantile
 100sf/person Business
 300sf/person Storage

Gross Square Footage = 1,760SF
 Sales Floor:
 882 gross sf / 60sf per person = 15 occupants
 Business:
 878 gross sf / 100sf per person = 9 occupants

Total Occupants: **24 occupants**

LIFE SAFETY LEGEND

- EM RECESSED EMERGENCY LED FIXTURE
- X
⊗ RECESSED CEILING MOUNTED EXIT SIGN
(ARROW SHOWS DIRECTION OF EXIT)
- ⊙ FE FIRE EXTINGUISHER
- PATH OF TRAVEL

LIFE SAFETY NOTES

1. ALL EXIT COMMON PATH OF TRAVEL DISTANCES ARE LESS THAN 75'-0"
2. THE EGRESS PATH SHALL REMAIN FREE AND CLEAR OF ALL OBSTRUCTIONS AT ALL TIMES. NO STORAGE IS PERMITTED IN ANY EGRESS PATH.
3. SEE ELECTRICAL DRAWINGS FOR EM FIXTURES.
4. ENTRY DOORS SHALL REMAIN UNLOCKED AND OPEN WHEN STORE IS OCCUPIED.

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No.	Date	Issue
11.28.22		Issue for LL, Permit & Bid

WARBY PARKER
 Marketstreet Lynnfield
 535 Market St.
 Ground Floor
 Lynnfield, MA 01940

LMA PROJECT NO. 2298

LIFE SAFETY PLAN

T-105

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NO.	DATE	ISSUE
	11.23.22	Issue for LL Review, Permit & Bid

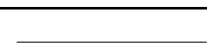
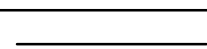
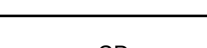
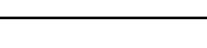

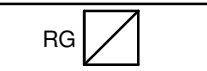


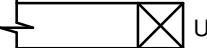
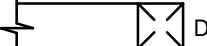
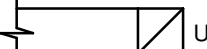

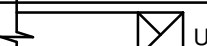
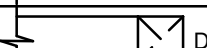
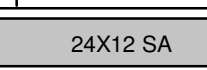
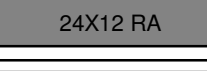





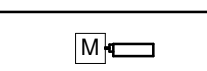
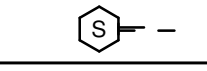




WARBY PARKER
 Marketstreet Lynnfield
 427 Walnut Street
 Space No.535
 Ground Floor
 Lynnfield, MA 01940

LMA PROJECT NO. 2298

MECHANICAL COVER SHEET

M-001

STANDARD HVAC ABBREVIATIONS					
AAV	AUTOMATIC AIR VENT	HD	HEAD	RO	REVERSE OSMOSIS
ACCESS	ACCESSORIES	HOA	HAND/OFF/AUTOMATIC	RPM	REVOLUTIONS PER MINUTE
AD	ACCESS DOOR	HP	HORSEPOWER	RS	REFRIGERANT SUCTION
AFF	ABOVE FINISHED FLOOR	HPR	HIGH PRESSURE RETURN	SA	SUPPLY AIR
AMP	AMPERE	HSTAT	(STEAM CONDENSATE) HUMIDISTAT	SAT	SUPPLY AIR TEMPERATURE
AP	ACCESS PANEL	HTG	HEATING	SC	SHADING COEFFICIENT
APD	AIR PRESSURE DROP	HWR	HEATING HOT WATER RETURN	SCD	SMOKE CONTROL DAMPER
ARI	AIR CONDITIONING AND REFRIGERATION INSTITUTE	HWS	HEATING HOT WATER SUPPLY	SD	SMOKE DETECTOR
ASME	AMERICAN SOCIETY OF MECHANICAL ENGINEERS	HZ	HERTZ	SENS	SENSIBLE HEAT
BAS	BUILDING AUTOMATION SYSTEM	IO	INPUT/OUTPUT	SP	STATIC PRESSURE
BD	BACKDRAFT DAMPER	IQO	INDOOR AIR QUALITY	TAB	TESTING, ADJUSTING, BALANCE
BHP	BRAKE HORSEPOWER	IN HG	INCHES OF MERCURY	TDH	TOTAL DYNAMIC HEAD
BTU	BRITISH THERMAL UNIT	IN WC	INCH WATER COLUMN	TDS	TOTAL DISSOLVED SOLIDS
BTUH	BRITISH THERMAL UNIT PER HOUR	IN WG	INCH WATER GAUGE	TSP	TOTAL STATIC PRESSURE
CD	CEILING DIFFUSER	IPV	INTERGRATED PART LOAD VALUE	TSTAT	THERMOSTAT
CFH	CUBIC FEET PER HOUR	INST	INSTALLED	UL	UNDERWRITERS LABORATORY
CFM	CUBIC FEET PER MINUTE	KW	KILOWATT	VAV	VARIABLE AIR VOLUME
CHWR	CHILLED WATER RETURN	KWH	KILOWATT HOUR	VFD	VARIABLE FREQUENCY DRIVE
CHWS	CHILLED WATER SUPPLY	LAT	LEAVING AIR TEMPERATURE	WB	WET-BULB (TEMPERATURE)
CI	CAST IRON	LBS/HR	POUNDS PER HOUR	WG	WATER GAGE
CLG	COOLING	LF	LINEAR FOOT (FEET)	WPD	WATER SIDE PRESSURE DROP
CO	CARBON MONOXIDE	LPR	LOW PRESSURE RETURN	WIRE	WIRED
CO2	CARBON DIOXIDE	LPS	LOW PRESSURE STEAM		
COP	COEFFICIENT OF PERFORMANCE	LWT	LEAVING WATER TEMPERATURE		
CV	CONSTANT VOLUME	MAX	MAXIMUM		
CWR	CONDENSER WATER RETURN	MBH	1000 BTUH		
CWS	CONDENSER WATER SUPPLY	MCA	MINIMUM BRANCH CIRCUIT AMPACITY		
DB	DEGIBELS	MERV	MINIMUM EFFICIENCY REPORTING VALUE		
DB	DRY-BULB TEMPERATURE	MIN	MINIMUM		
DC	DISCONNECT	MOD	MOTOR OPERATED DAMPER		
DDC	DIRECT DIGITAL CONTROLS	MPR	MEDIUM PRESSURE RETURN		
DEG	DEGREE DELTA(CHANGE IN TEMPERATURE)	MPS	MEDIUM PRESSURE STEAM		
DIA	DIAMETER	MRI	MAGNETIC RESONANCE IMAGING		
DIW	DEIONIZED WATER	MVD	MANUAL VOLUME DAMPER		
DP	DEW POINT TEMPERATURE	NA	NOT APPLICABLE		
DX	DIRECT EXPANSION	NC	NOISE CRITERIA		
EA	EXHAUST AIR	NC	NORMALLY CLOSED		
EAT	ENTERING AIR TEMPERATURE	NO	NORMALLY OPEN		
EER	ENERGY EFFICIENCY RATIO	NTS	NOT TO SCALE		
EG	EXHAUST GRILLE	OA	OUTSIDE AIR		
EMERG	EMERGENCY POWER	OCP	OVER CURRENT PROTECTION		
ESP	EXTERNAL STATIC PRESSURE	PD	PRESSURE DROP		
EWT	ENTERING WATER TEMPERATURE	PPM	PARTS PER MILLION		
EX	EXISTING	PRS	PRESSURE REGULATING (VALVE) STATION		
F	FAHRENHEIT	PRV	PRESSURE REGULATING VALVE		
F&T	FLOAT AND THERMOSTATIC	PSI	POUNDS PER SQUARE INCH		
FA	FREE AREA	PSIA	POUNDS PER SQUARE INCH - ABSOLUTE		
FD	FIRE DAMPER	PSIG	POUNDS PER SQUARE INCH - GAGE		
FLA	FULL LOAD AMPERES	RA	RETURN AIR		
FPM	FEET PER MINUTE	RAT	RETURN AIR TEMPERATURE		
FPS	FEET PER SECOND	RH	RELATIVE HUMIDITY		
FT	FEET	RL	REFRIGERANT LIQUID LINE		
FURN	FURNISHED	RLA	RUN LOAD AMPERE		
GA	GAUGE				
GAL	GALLONS				
GPM	GALLONS PER MINUTE				

MECHANICAL LEGEND	
SYMBOL	DESCRIPTION
PLAN-VIEW LINE TYPES	
	WORK SHOWN FADED INDICATES EXISTING WORK TO REMAIN OR NEW WORK BY OTHERS AS APPLICABLE
	WORK SHOWN BOLD-CONTINUOUS INDICATES NEW WORK
PIPING LINE TYPES	
	CONDENSATE DRAIN
	SUPPLY MAIN OR BRANCH
MECHANICAL AIR DEVICES	
	EXHAUST REGISTER
	RETURN GRILLE
	CEILING DIFFUSER
	LINEAR SLOT DIFFUSER
MECHANICAL DUCTWORK	
	SUPPLY DUCT WITH ELBOW TURNED UP
	SUPPLY DUCT WITH ELBOW TURNED DOWN
	RETURN DUCT WITH ELBOW TURNED UP
	RETURN DUCT WITH ELBOW TURNED DOWN
	EXHAUST DUCT WITH ELBOW TURNED UP
	EXHAUST DUCT WITH ELBOW TURNED DOWN
	SUPPLY DUCT
	RETURN DUCT
	EXHAUST DUCT
	DUCT FLEX CONNECTOR
	FLEXIBLE DUCTWORK CONNECTION
	BRANCH TAKEOFF
	REDUCER, CONCENTRIC
	REDUCER, NONCONCENTRIC
MECHANICAL DUCTWORK ACCESSORIES	
	MOTOR OPERATED DAMPER - LOW VOLTAGE
	DUCT MOUNTED SMOKE DETECTOR (HARD WIRE INTERLOCK TO FAN MOTOR BY E.C.) FURNISHED BY E.C., INSTALLED BY M.C.
MECHANICAL STATS & SENSORS	
	TEMPERATURE SENSOR
	LOW VOLTAGE THERMOSTAT
MECHANICAL MISCELLANEOUS	
	CONNECT TO EXISTING (FIELD VERIFY EXISTING UTILITY SERVICE TYPE, PRIOR TO MAKING CONNECTION)

2" REFERENCE LINE
 DESIGNER:KLH CHECKER:KSL

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 All reports, plans, specifications, computer files, field data, notes and other documents and instruments prepared by the Consultant as instruments of service shall remain the property of the Consultant. The Consultant shall retain all common law, statutory and other reserved rights, including, without limitation, the copyright therein.

Pipe Type Legend			
Mark	Color	System Name	Pipe Material
CD.2		CD - Condensate	6 - Copper - Type L - ASTM B88
NG.2		NG - Natural Gas	6 - Copper - Type L - ASTM B88

FIELD VERIFY ALL CONDITIONS

DESIGN DRAWINGS ARE SCHEMATIC. THIS CONTRACTOR SHALL VISIT THE SITE PRIOR TO BIDDING OR AWARD OF CONTRACT TO INSPECT EXISTING FIELD CONDITIONS. THIS CONTRACTOR SHALL INCLUDE ALL LABOR AND MATERIALS NECESSARY FOR FIELD MODIFICATIONS DUE TO EXISTING CONDITIONS.

THE CONTRACTOR SHALL CONTACT THE ARCHITECT, ENGINEER OR OWNER PRIOR TO BIDDING FOR INTERPRETATIONS AND CLARIFICATIONS OF THE DESIGN AND INCLUDE IN HIS BID ALL COSTS TO MEET THE DESIGN INTENT. CLARIFICATIONS MADE BY THE ARCHITECT, ENGINEER OR OWNER AFTER BIDDING WILL BE FINAL AND SHALL BE IMPLEMENTED AT CONTRACTORS COST.

BIDDING CONTRACTORS SHALL HAVE A WORKING KNOWLEDGE OF LOCAL CODES AND ORDINANCES AND SHALL INCLUDE IN THEIR BIDS THE COSTS FOR ALL WORK INSTALLED IN STRICT ACCORDANCE WITH GOVERNING CODES, THE PLANS AND SPECIFICATIONS NOT WITHSTANDING. THE CONTRACTOR SHALL ALERT ARCHITECT, ENGINEER OR OWNER OF ANY APPARENT DISCREPANCIES BETWEEN GOVERNING CODES AND DESIGN INTENT.

GENERAL DEMOLITION NOTE

MECHANICAL CONTRACTOR TO REMOVE EXISTING HVAC EQUIPMENT, DUCTWORK, HANGERS, INSULATION, AIR DEVICES, CONTROLS AND MISCELLANEOUS EQUIPMENT, ETC... NOT INTENDED FOR REUSE.

GENERAL NOTES

- ALL RECTANGULAR RETURN AIR AND SUPPLY AIR DUCTWORK SHALL BE LINED WITH ACOUSTICAL LINER THE FIRST 15 FEET. IF CONCEALED, THE REMAINDER SHALL BE WRAPPED. IF EXPOSED, INTERNALLY LINE AS INDICATED ON PLANS. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION. IN GENERAL, MOUNT DUCTWORK AT 15'-0" AFF TO CLEAR ALL LIGHTS UNLESS OTHERWISE NOTED OR REQUIRED BY FIELD CONDITIONS.
- CONICAL BELLMOUTH FITTINGS WITH MANUAL BALANCING DAMPER TO BE USED FOR ALL ROUND BRANCH TAPS ABOVE ACCESSIBLE LAY-INS IN CEILINGS. CONICAL BELLMOUTH FITTINGS WITHOUT MANUAL BALANCING DAMPERS TO BE USED FOR ALL ROUND BRANCH TAPS ABOVE INACCESSIBLE DRYWALL CEILINGS WITH BALANCING REQUIRED WITHIN 2 FT. OF DIFFUSER WITH PLASTER FRAME.
- FLEX DUCT SHALL BE LIMITED TO 5'-0" IN LENGTH, NO DUCT BOARD ALLOWED. WIDTH OF DUCT SUPPORTS SHALL BE 2" WIDER THAN THE DUCT.
- THE HVAC CONTRACTOR IS RESPONSIBLE FOR COORDINATING BOX-OUT LOCATIONS FOR ALL DRYWALL MOUNTED AIR DEVICES WITH GENERAL CONTRACTOR AND CEILING FRAME.
- MECHANICAL CONTRACTOR TO PROVIDE TENANT WITH AS-BUILT DRAWINGS. ALL EQUIPMENT SHOP DRAWINGS, INFORMATION ON THERMOSTATS, CONTROL WIRING DIAGRAMS AND OTHER PERTINENT INFORMATION AT COMPLETION OF PROJECT.
- SEE ARCHITECTURAL DRAWINGS FOR CEILING HEIGHTS.
- CONTRACTOR SHALL ENSURE THAT ALL EQUIPMENT AND DUCTWORK NOT SHOWN TO REMAIN IS FULLY REMOVED AND NOT ABANDONED.
- HVAC CONTRACTOR IS REQUIRED TO VISIT THE JOB SITE TO BECOME FAMILIAR WITH MAJOR ITEMS SUCH AS STRUCTURAL ELEMENTS, PLUMBING LOCATIONS, AND ELECTRICAL RUNS. ADDITIONALLY, HVAC CONTRACTOR SHALL VERIFY EXACT LOCATIONS AND DIMENSIONS OF SUCH ITEMS AS HVAC UNITS, DUCTWORK, ETC. PRIOR TO BID, AND CONTACT THE OWNER'S CONSTRUCTION REPRESENTATIVE AND REPORT ANY DIFFERENCES/DISCREPANCIES IN THE DRAWINGS FOR A DECISION.
- COORDINATE ALL DUCTWORK PRIOR TO DUCTWORK FABRICATION. INSTALL DUCTWORK AS HIGH AS POSSIBLE. COORDINATE THE PATH OF THE DUCTWORK WITH THE LIGHTING PLAN, SPRINKLER PIPING, EXISTING STRUCTURE, EXISTING DUCTWORK AND ALL OTHER EXISTING CONDITIONS (TYPICAL).
- ALL MATERIALS EXPOSED WITHIN PLENUMS SHALL BE NON-COMBUSTIBLE OR SHALL HAVE A FLAME SPREAD INDEX OF NOT MORE THAN 25 AND A SMOKE-DEVELOPED INDEX OF NOT MORE THAN 50 WHEN TESTED IN ACCORDANCE WITH ASTM E 84.
- ALL EXPOSED DUCTS TO BE PAINTED TO MATCH CEILING.

KEYED NOTES

- EXISTING ROOFTOP UNIT TO REMAIN. BALANCE TO THE SCHEDULED AIRFLOW. CLEAN AND VERIFY PROPER OPERATION: CLEAN COOLING, HEATING COILS, RECHARGE REFRIGERANT, REPLACE BELT, DRIVE, AND MOTOR AS REQUIRED. REPLACE FILTERS. CHECK COMPRESSOR AND FANS, REPLACE/REPAIR AS REQUIRED. PROVIDE OWNER WITH RECONDITIONING REPORT PRIOR TO TURNOVER. FIELD VERIFY EXACT LOCATION AND ORIENTATION PRIOR TO BID.
- PROVIDE NEW ROOF MOUNTED EXHAUST FAN AS SCHEDULED. BALANCE TO THE SCHEDULED AIRFLOW. MAINTAIN A MINIMUM OF 10'-0" FROM ANY BUILDING INTAKE.
- PROVIDE CABLE OPERATED DAMPER FOR DIFFUSER IN INACCESSIBLE CEILING.
- PROVIDE NEW PROGRAMMABLE THERMOSTAT IN BACK OFFICE AREA WITH REMOTE SENSOR IN LOCATIONS AS INDICATED ON PLANS. THERMOSTATS/SENSORS SHALL BE SAME MANUFACTURER AS HVAC UNIT. COORDINATE EXACT LOCATION WITH TENANT, OR TENANT'S REPRESENTATIVE. PRIOR TO INSTALLATION, WIRE TO HVAC UNIT PER MANUFACTURER'S PRINTED INSTRUCTIONS.
- RETURN GRILLE WITH LINED BOOT. REFER TO DETAIL FOR SIZE.
- ELECTRICAL CONTRACTOR SHALL FURNISH NEW ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR. MECHANICAL CONTRACTOR SHALL INSTALL SMOKE DETECTOR IN THE RETURN AIR DUCT. MECHANICAL CONTRACTOR SHALL PROVIDE WIRING TO FAN INTERLOCK. E.C. SHALL PROVIDE WIRING FOR CONNECTION TO REMOTE ANNUNCIATOR.
- 1" DOOR UNDERCUT.
- PROVIDE CONDENSATE DRAIN AS SHOWN TO DRAIN TO MOP SINK. DRAIN THROUGH CODE COMPLIANT AIR GAP.

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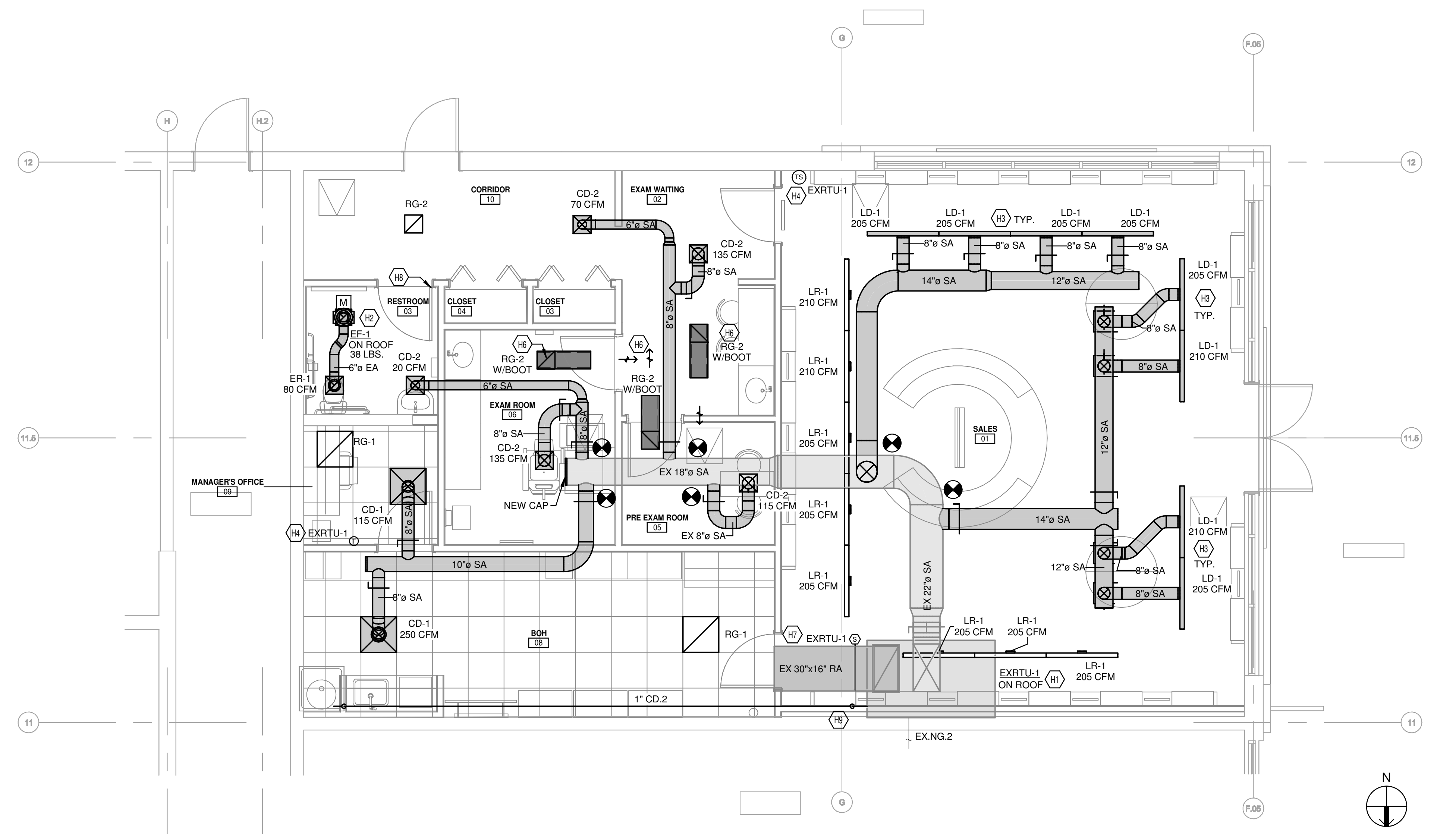
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LMA PROJECT NO. 2298

MECHANICAL DUCTWORK PLAN

M-100



1 MECHANICAL PLAN
 1/4" = 1'-0"

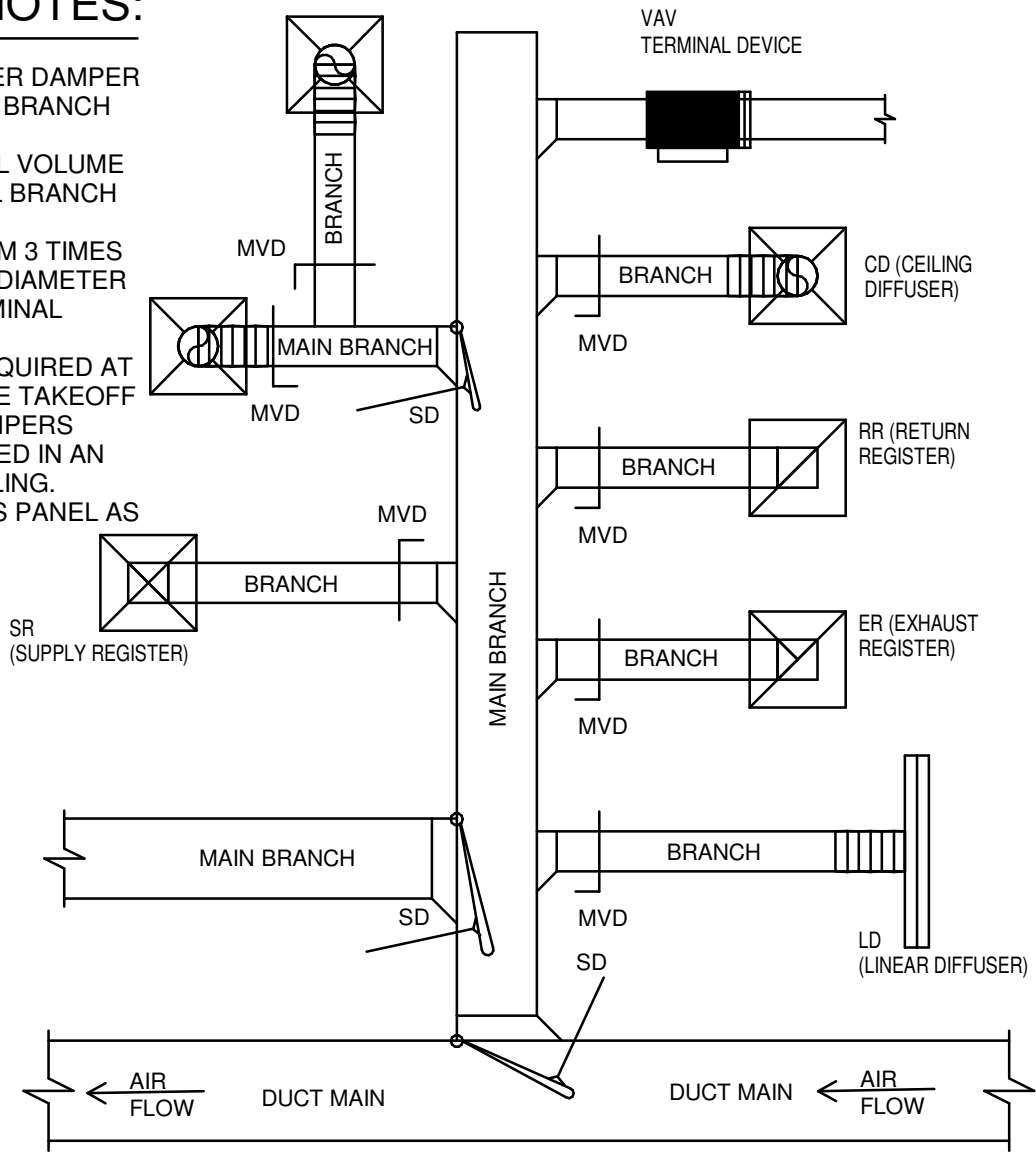
2" REFERENCE LINE
 DESIGNER:TLH CHECKER:KSL

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GENERAL NOTES:

1. PROVIDE SPLITTER DAMPER (SD) AT ALL MAIN BRANCH TAKEOFFS
2. PROVIDE MANUAL VOLUME DAMPERS AT ALL BRANCH TAKEOFFS
3. PROVIDE MINIMUM 3 TIMES STRAIGHT INLET DIAMETER TO ALL VAV TERMINAL DEVICES
4. DAMPER NOT REQUIRED AT TERMINAL DEVICE TAKEOFF
5. ALL MANUAL DAMPERS SHALL BE LOCATED IN AN ACCESSIBLE CEILING. PROVIDE ACCESS PANEL AS REQUIRED.

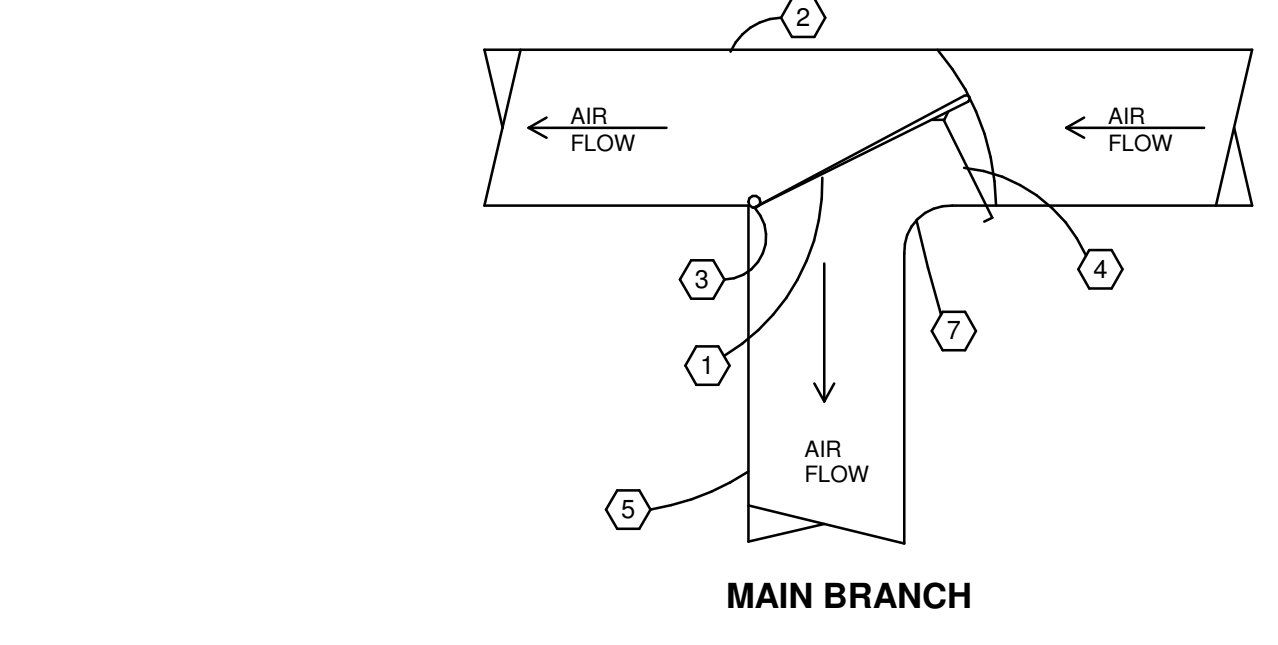


233300.00-01 - MANUAL DAMPER DETAIL

SCALE: NONE

KEYED NOTES:

1. 20 GAUGE DOUBLE SHEET METAL AIR FOIL FULL DEPTH OF MAIN DUCT UP TO 12" WIDE BRANCHES 18 GAUGE ON WIDER BRANCHES
2. MAIN DUCT
3. GALVANIZED 3/16" ROD
4. VENTLOCK NO. 600-3 DAMPER BLADE, BRACKET & LOCKING BALL JOINT WITH 1/4" Ø GALVANIZED OPERATOR PAD
5. BRANCH MAIN DUCT
6. DOUBLE THICKNESS TURNING VANES (TYPICAL)
7. 3" RADIUS MINIMUM

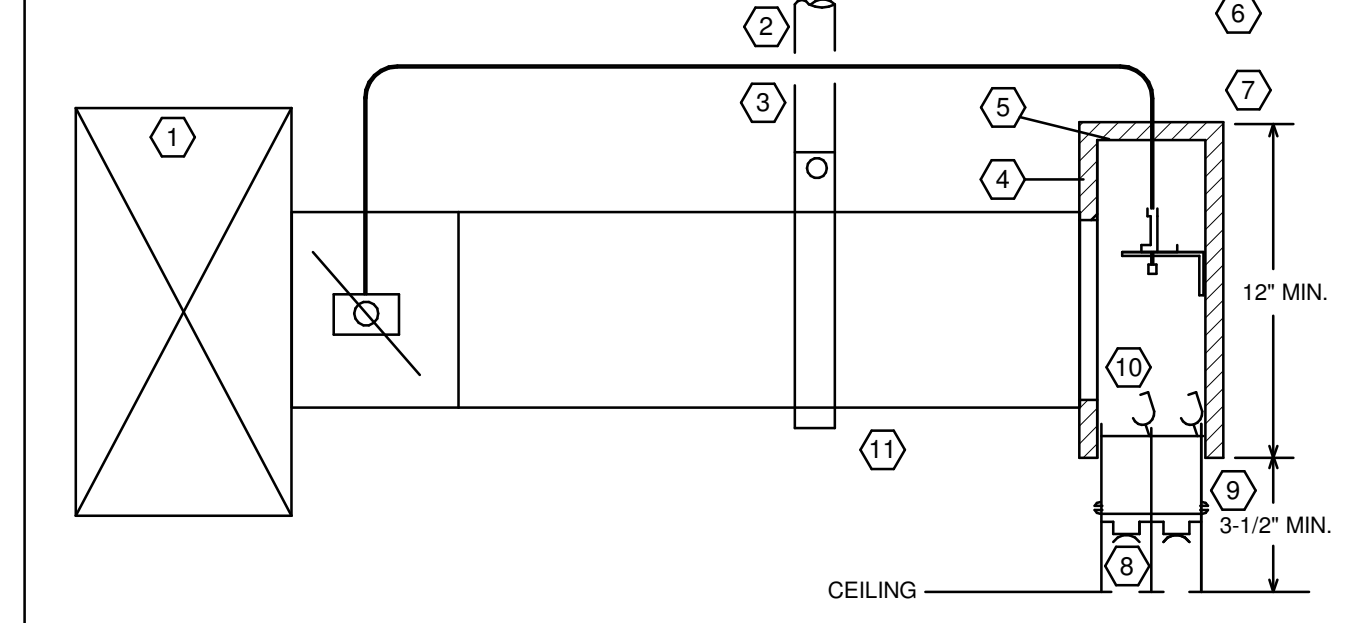


GENERAL NOTES:

- A. WHERE LINEAR DIFFUSER IS ADJACENT TO WINDOWS, ADJUST PATTERN CONTROLLER TO DIRECT AIRFLOW HORIZONTALLY TOWARDS WINDOWS.
- B. OMIT FLEX DUCT ON DISTRIBUTION SYSTEMS THAT PENETRATE 1-HR FIRE BARRIERS. REFER TO ARCHITECTURAL PLANS FOR LOCATIONS OF FIRE BARRIERS.

KEYED NOTES:

1. LOW PRESSURE SUPPLY DUCT
2. 1" WIDE BAND AND CLAMP.
3. SHEET METAL SCREW.
4. SHEET METAL PLENUM.
5. 1/2" ACOUSTICAL LINING.
6. PATTERN CONTROLLER.
7. SCREWS, MIN 6" ON CENTER & SEAL AIRTIGHT, TYP, BOTH SIDES
8. VOLUME ADJUSTER
9. BAND CLAMP
10. INACCESSIBLE VOLUME DAMPERS SHALL BE ADJUSTABLE FROM THE FACE OF THE DIFFUSER BY USE OF THE BOWDEN CABLE CONTROL SYSTEM (#270-275 CONTROLLER) MANUFACTURED BY YOUNG REGULATOR COMPANY OR APPROVED EQUIVALENT.
11. SHEET METAL BRANCH DUCT

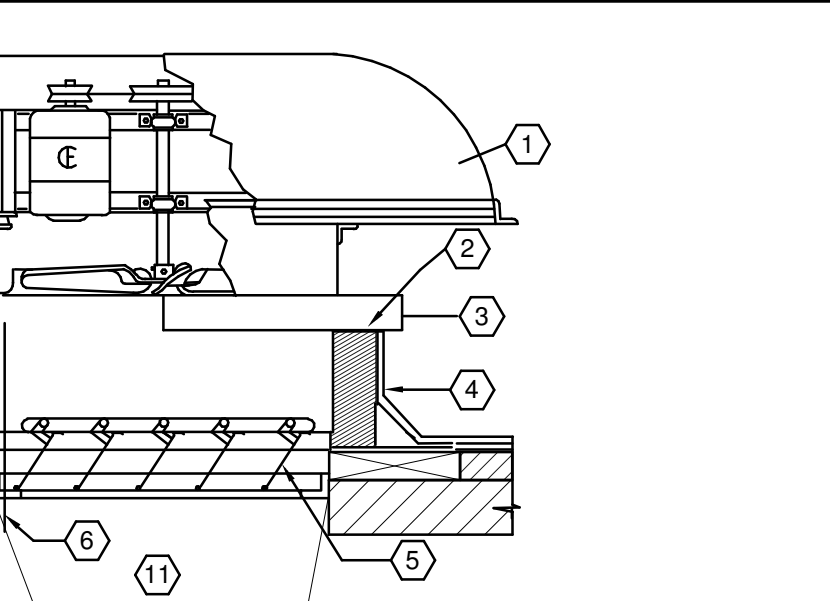


233713.00-12 - PLENUM/LINEAR DIFFUSER W/ YOUNG REG.

SCALE: NONE

KEYED NOTES:

1. PROPELLOR ROOF FAN
2. WOOD NAILER
3. ANCHOR ALL FOUR SIDES WITH SCREWS 12" O.C.
4. PREFABRICATED INSULATED CURB
5. MOTOR OPER. DAMPER INTERFACED WITH EXHAUST FAN WIRING/STARTER
6. CONDUIT HOLE
7. ANCHOR TO ROOF DECK AS REQUIRED
8. RUBBER HASKET APPLIED TO TOP OF CURB
9. ROOFING UP UNDER FLASHING. PROVIDE CURB TYPE AND FLASHING PER ROOFING MANUFACTURER'S REQUIREMENTS
10. BIRD SCREEN
11. CENTER TRANSITION TO DUCTWORK FROM DAMPER OR CURB. PROVIDE 3x DIAMETER STRAIGHT RUN MINIMUM.

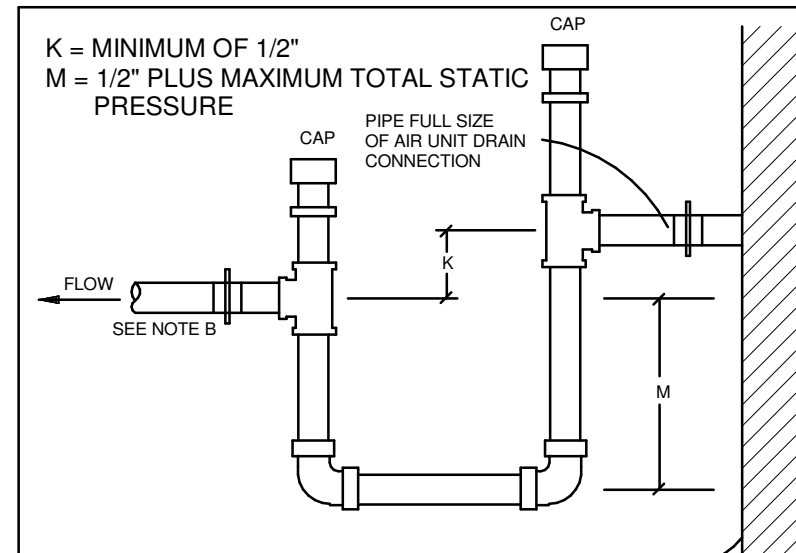


GENERAL NOTES:

- A. DELETE CANT FOR SINGLE MEMBRANE ROOFS
- B. TOP OF CURB MUST BE LEVEL. FABRICATE PITCH IN CURB IF NECESSARY
- C. CONTRACTOR HAS THE OPTION TO INCREASE THE HEIGHT OF THE CURB OR ADD BLOCKING TO THE CURB. THE ADDITIONAL HEIGHT REQUIRED SHALL EQUAL THE ROOF ASSEMBLY THICKNESS. THE CURB INTAKE OPENING SHALL BE AT A MINIMUM OF 12" ABOVE FINISHED ROOF.
- D. LOCATE A MINIMUM OF 10'-0" FROM EDGE OF ROOF, INTAKES, AND ROOF HATCH.

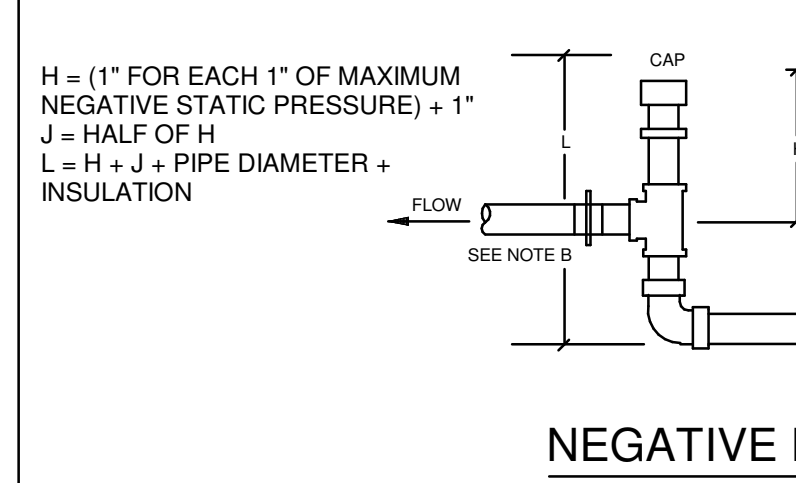
233423.00-05 - EXHAUST FAN

SCALE: NONE



- GENERAL NOTES:**
- A. LOCATE TRAPS SO AS TO BE ACCESSIBLE FOR CLEANING.
 - B. CONDENSATE PIPING SHALL GRADUALLY SLOPE DOWN FROM DRAIN TRAP.
 - C. CONFIRM TRAP REQUIREMENTS WITH EQUIPMENT MANUFACTURER.
 - D. REFER TO SPECIFICATIONS FOR MATERIAL AND INSULATION REQUIREMENTS.
 - E. PROVIDE UNION UPSTREAM AND DOWNSTREAM OF TRAP.

POSITIVE PRESSURE



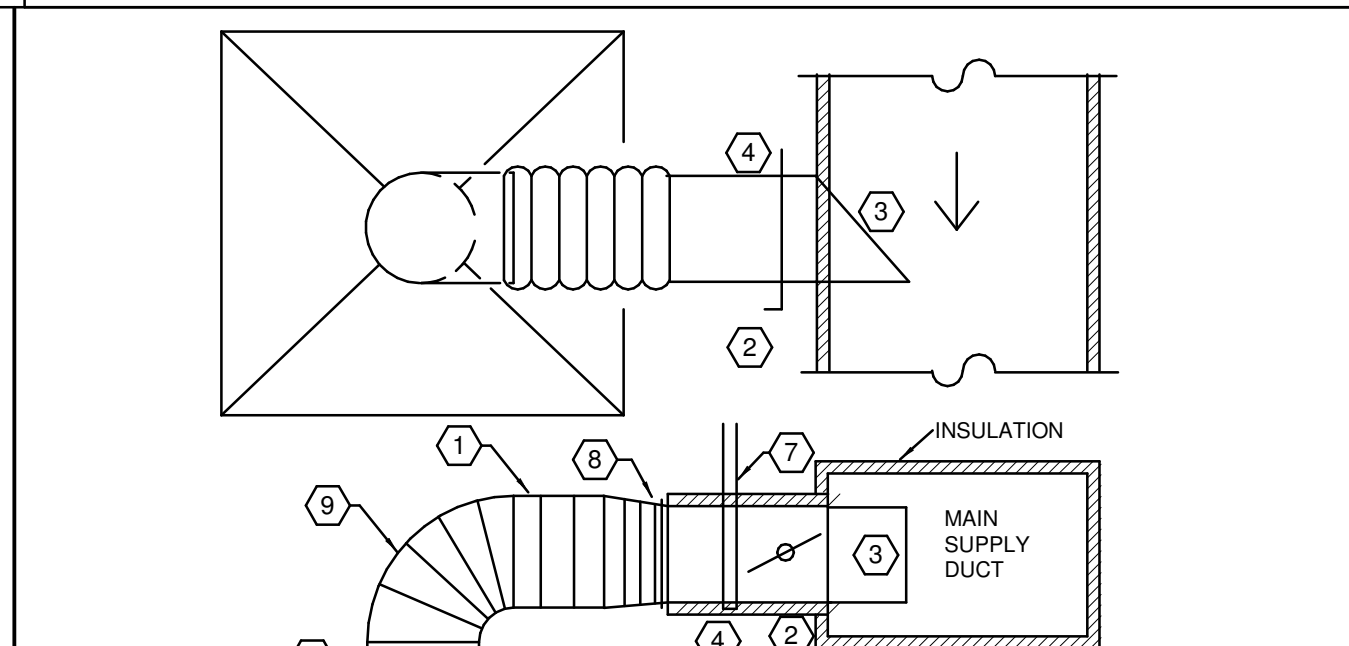
- GENERAL NOTES:**
- A. LOCATE TRAPS SO AS TO BE ACCESSIBLE FOR CLEANING.
 - B. CONDENSATE PIPING SHALL GRADUALLY SLOPE DOWN FROM DRAIN TRAP.
 - C. CONFIRM TRAP REQUIREMENTS WITH EQUIPMENT MANUFACTURER.
 - D. REFER TO SPECIFICATIONS FOR MATERIAL AND INSULATION REQUIREMENTS.
 - E. PROVIDE UNION UPSTREAM AND DOWNSTREAM OF TRAP.

NEGATIVE PRESSURE

NOTE: OUTDOOR UNITS AND UNITS LOCATED IN UNCONDITIONED SPACES WHICH PROVIDE COOLING IN THE WINTER MUST HAVE HEAT TRACE ON THE CONDENSATE PIPING.

232113.23-05 - CONDENSATE DRAIN TRAP POSITIVE & NEGATIVE

SCALE: NONE



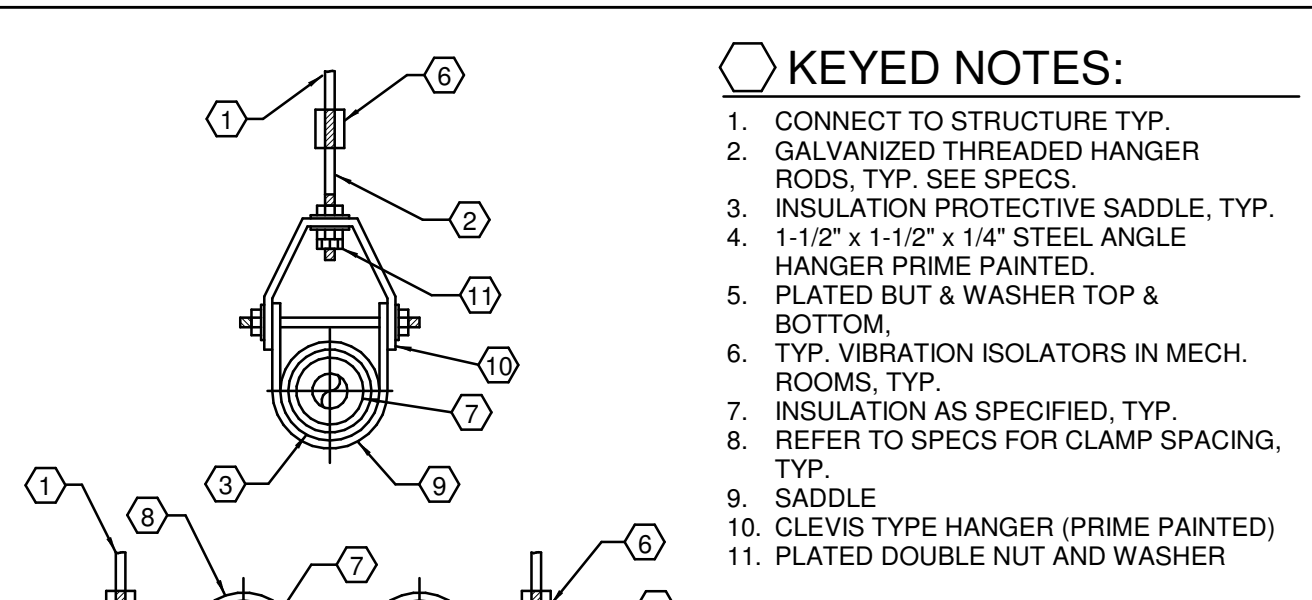
- GENERAL NOTES:**
- A. OMIT FLEX DUCT ON DISTRIBUTION SYSTEMS THAT PENETRATE 1-HR FIRE BARRIERS. REFER TO ARCHITECTURAL PLANS FOR LOCATIONS OF FIRE BARRIERS.

KEYED NOTES:

1. MAXIMUM LENGTH OF INSUL. FLEX DUCT EQUALS 5 FEET. FLEX NOT PERMITTED IN INACCESSIBLE CEILINGS
2. INSULATED DUCT, COLLAR AND DIFFUSER BY HVAC CONTRACTOR
3. SCOOP
4. SPIN IN FITTING WITH MANUAL VOLUME DAMPER
5. INTERNAL BUTTERFLY DAMPER FOR DRYWALL APPLICATIONS ONLY. (PROVIDE KEY FOR ADJUSTMENT)
6. SECURE TO CEILING PER MANUFACTURER'S RECOMMENDATIONS AND PER CEILING FINISH. PROVIDE GRID CLIPS PER MFG R REQUIREMENTS. PROVIDE FRAMING FOR DRYWALL INSTALLATION.
7. HANGER, SECURE TO STRUCTURE AND DUCTWORK
8. PEEL BACK INSULATION AND PROVIDE STRAPPING AND SHEET METAL SCREWS AT FLEX CONNECTION TO DUCT. THEN PROVIDE STRAPPING AROUND INSULATION
9. SUPPORT FLEX TO PREVENT COLLAPSING

233713.00-04 - DIFFUSER INSTALLATION TYPICAL

SCALE: NONE



- GENERAL NOTES:**
- A. IF HOT WATER PIPING IS ON THE SAME RACK AS OTHER PIPING, THE HOT WATER SHALL BE ON ROLLER SUPPORTS.
 - B. REGARDLESS OF WHAT IS INDICATED ON ANY FLOOR PLANS OR OTHER DETAILS THE ACTUAL INSTALLATION OF ANY HYDRONIC PIPING SHALL CONFORM TO WHAT IS SHOWN BELOW

232113.23-14 - PIPE HANGERS TYPICAL

SCALE: NONE

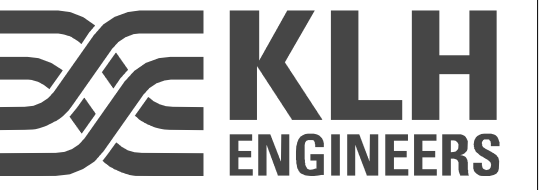
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MECHANICAL - DETAILS

M-501



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HVAC ACCESSORIES

ACCESSORIES:

1. MOTOR DAMPER	5. INTAKE HOOD	9. ACCESS DOOR	13. FACE/BYPASS DAMPER	17. DUCT FLANGES	21. ECON POWERED EXHAUST
2. ECONOMIZER	6. VIBRATION ISOLATION	10. FLEX CONNECTIONS	14. CONDENSATE PUMP	18. BASE RAIL	22. ECON BAROMETRIC RELIEF
3. ROOF CURB	7. FLAT FILTER	11. MOUNTING COLLAR	15. MOTOR GUARD	19. HUMIDIFIER	23. HOT GAS REHEAT COIL
4. HAIL GUARDS	8. FILTER/MIXING BOX	12. HOT GAS BYPASS	16. GREASE TRAP	20. CO2 SENSORS	24. SHAFT GROUNDING BRUSHES

HVAC FANS SCHEDULE

Equipment shall be braced and labeled by the equipment manufacturer to withstand the minimum scheduled available fault current value for listed equipment.

EQUIPMENT MARK	DESCRIPTION	STATUS	WEIGHT (lbs)	MANUFACTURER	MODEL	CFM (cfm)	ESP (in WC)	FAN RPM (rpm)	BHP (hp)	EMERGENCY	ELECTRIC CONNECTION SUMMARY	AVAILABLE FAULT CURRENT
EF-1	CENTRIFUGAL ROOF VENTILATOR	NEW	38	GREENHECK	G-097-VG	80	0.5	1101	0.03	NO	(EF-1) A - 120V/1PH, 0.25 HP, 3.8A FLA	2084

HVAC LOAD SCHEDULE

THE HEATING AND COOLING LOAD CALCULATIONS ARE BASED ON THE RTS (RADIANT TIME SERIES) METHOD. ASSUMPTIONS AND EXECUTION OF THESE METHODS ARE PER ASHRAE 183-2007 STANDARD FOR PEAK COOLING AND HEATING LOAD CALCULATIONS IN BUILDINGS EXCEPT LOW-RISE RESIDENTIAL BUILDINGS.

COOLING LOAD BREAKDOWN													HEATING LOAD BREAKDOWN											
EQUIPMENT MARK	CROOF	CWALL	CPART	COLASS	CSOLAR	CLIGHTS	CEQUIP	CPSENS	CSSENS	CFAN	COAS	CTSENS	CPLAT	COAL	CLTAL	CTOT	HROOF	HWALL	HPART	HGLASS	HSPACE	HSLAB	HOA	HTOT
EXRTU-1	3	1.57	0	4.23	16.75	8.7	11.32	4.73	50.88	1.25	5.6	57.73	3.4	9.06	12.46	70.19	6.58	5.38	0	19.32	60.77	2.37	27.13	60.77

HVAC ELECTRICAL COORDINATION SCHEDULE

ABBREVIATIONS		CONTRACTOR TYPE								MOTOR CONTROL TYPE								CONTROL TYPE				SHORT CIRCUIT RATING				
DC	LOCAL DISCONNECT	EC	ELECTRICAL CONTRACTOR	CS	COMBINATION STARTER	TC	TIMECLOCK									TC	TIMECLOCK	WHERE SHORT CIRCUIT RATING CODE REQUIRED								
MC	MOTOR CONTROL (POWER)	EX	EXISTING	MCC	MOTOR CONTROL STARTER	CPT	CONTROL POWER TRANSFORMER									CPT	CONTROL POWER TRANSFORMER	VALUE INDICATES "YES"								
SD	DUCT SMOKE DETECTOR	FC	FIRE PROTECTION CONTRACTOR	MG	MAGNETIC STARTER OR CONTACT	BAS	BUILDING AUTOMATION SYSTEM									BAS	BUILDING AUTOMATION SYSTEM	APPLICABLE EQUIPMENT'S								
CN	CONTROLS	GC	GENERAL CONTRACTOR	MS	MANUAL STARTER	LOW	LOW VOLTAGE CONTROLS									LOW	LOW VOLTAGE CONTROLS	SHORT CIRCUIT RATING								
TS	TOGGLE SWITCH	HC	HVAC CONTRACTOR	VFD	VARIABLE FREQUENCY DRIVE	LINE	LINE VOLTAGE CONTROLS									LINE	LINE VOLTAGE CONTROLS	SHALL EXCEED THE								
C/B	H.A.C.R. CIRCUIT BREAKER AT SOURCE PANELBOARD	MFR	MANUFACTURER	MSR	MANUAL STARTER W/ CONTROL RELAY	RLINE	REVERSE ACTING LINE VOLTAGE THERMOSTAT									RLINE	REVERSE ACTING LINE VOLTAGE THERMOSTAT	AVAILABLE FAULT CURRENT VALUE								
FLA	FUSE AT LOCAL DISCONNECT (VERIFY FIELD RATING)	PC	PLUMBING CONTRACTOR	OV	OVERCURRENT PROTECTION	MAN	MANUAL									MAN	MANUAL	CURRENT VALUE								
FLA	OPERATING FULL LOAD AMPS	OR	OWNER OR OTHERS			FA	FIRE ALARM									FA	FIRE ALARM	INDICATED.								
MCA	MINIMUM CIRCUIT AMPACITY					CO	CARBON MONOXIDE SENSOR									CO	CARBON MONOXIDE SENSOR									
CP	CORD AND PLUG CONNECTION (BLANK)					INT	INTEGRAL TO EQUIPMENT									INT	INTEGRAL TO EQUIPMENT									
						ASD	AREA SMOKE DETECTOR									ASD	AREA SMOKE DETECTOR									
						DSD	DUCT SMOKE DETECTOR									DSD	DUCT SMOKE DETECTOR									
CONNECTION MARK	DESCRIPTION	VOLTAGE	PHASE	EMERGENCY	HP	WATTS	HTG KW	FLA	MCA	OCF	FED FROM	DC TYPE	DC FURN	DC INST	DC WIRE	MC TYPE	MC FURN	MC INST	MC WIRE	CN TYPE	CN FURN	CN INST	CN WIRE	SHORT CIRCUIT RATING CODE REQUIRED?	AVAILABLE FAULT CURRENT	
EXRTU-1-A	PACKAGED ROOFTOP UNIT, GAS HEAT	480 V	3					19	25			EC	EC	EC	MG	MFR	MFR	MFR	MFR	LOW	HC	HC	HC	HC	Yes	0
EF-1-A	CENTRIFUGAL ROOF VENTILATOR	120 V	1		0.25			3.8				EC	EC	EC	MG	MFR	MFR	MFR	MFR	LINE	EC	EC	EC	No	2084	

HVAC VENTILATION SCHEDULE

NUMBER	NAME	AREA	LEVEL	AIR CHGS	OA CHGS	PEOPLE	OA PER PERSON	OA PER SQ FT.	REQ SUP	ACT SUP	REQ OA	ACT OA	ACT RET	ACT EXH	CRIT OA	PRESSURE	PCT OPERABLE	NATURAL VENTILATION
01	SALES	782 SF	Level 1	0	0	12	7.5	0.12	1805	1650	248	248	1650	0	14.1	Neutral	0	
02	EXAM WAITING	Redundant Space	Level 1	0	0	2	0.06	75	20	20	135	135	0	15.8	Neutral	0		
03	CLOSET	8 SF	Level 1	0	0	0	0	0.12	5	5	1	1	5	0	24	Neutral	0	
03	RESTROOM	52 SF	Level 1	0	0	0	0	0	20	20	3	3	0	80	0	Negative	0	
04	CLOSET	8 SF	Level 1	0	0	0	0	0.12	5	5	1	1	5	0	24	Neutral	0	
05	PRE EXAM ROOM	58 SF	Level 1	0	0	1	5	0.06	115	115	17	17	115	0	9.2	Neutral	0	
06	EXAM ROOM	114 SF	Level 1	0	0	1	5	0.06	135	135	20	20	135	0	11	Neutral	0	
08	BOH	239 SF	Level 1	0	0	0	0	0.12	250	250	38	38	250	0	14.6	Neutral	0	
09	MANAGERS OFFICE	50 SF	Level 1	0	0	1	5	0.06	115	115	17	17	115	0	8.7	Neutral	0	
10	CORRIDOR	235 SF	Level 1	0	0	0	0	0.06	60	70	11	11	70	0	12.3	Neutral	0	
TOTAL		1547 SF																

LINEAR DIFFUSER NOTES

- TAPE AND SPACKLE BORDER TYPE 22
- TO APPEAR CONTINUOUS FROM OCCUPIED AREAS
- PROVIDE END CAPS, SPLINES, AND MOUNTING HARDWARE FOR COMPLETE INSTALLATION
- PROVIDE PRE-MANUFACTURED SUPPLY PLENUM BOXES
- PROVIDE RETURN HOOD LIGHT SHIELDED FOR RETURN SECTIONS
- PROVIDE CUSTOM LENGTH AS NECESSARY PER ARCHITECTURAL DRAWINGS

HVAC DIFFUSERS AND REGISTERS SCHEDULE

TAG	MANUFACTURER	MODEL	FACE	MOUNTING	MATERIAL	FINISH	DAMPER TYPE	BORDER STYLE	REMARKS
CD-1	TITUS	OMNI	24"x24"	CEILING	STEEL	STANDARD WHITE	OPPOSED BLADE	LAY IN MOUNTING	
CD-2	TITUS	OMNI	12"x12"	CEILING	STEEL	STANDARD WHITE	OPPOSED BLADE	LAY-IN PANEL, PROVIDE FRAME FOR CEILING MOUNTING	
ER-1	TITUS	350RL	12"x12"	CEILING	ALUMINUM	STANDARD WHITE	OPPOSED BLADE	LAY-IN PANEL, PROVIDE FRAME FOR CEILING MOUNTING	
LD-1	TITUS	FL10	4'-0"-(1) 1" SLOT	CEILING	ALUMINUM	STANDARD WHITE	CABLE OPERATED	SURFACE MOUNT	SEE LINEAR DIFFUSER NOTES
LR-1	TITUS	FL10	4'-0"-(1) 1" SLOT	CEILING	ALUMINUM	STANDARD WHITE	CABLE OPERATED	SURFACE MOUNT	SEE LINEAR DIFFUSER NOTES
RG-1	TITUS	350RL	24"x24"	CEILING	STEEL	STANDARD WHITE	OPPOSED BLADE	LAY IN MOUNTING	
RG-2	TITUS	350RL	12"x12"	CEILING	STEEL	STANDARD WHITE	OPPOSED BLADE	LAY-IN PANEL, PROVIDE FRAME FOR CEILING MOUNTING	

HVAC ROOFTOP UNITS SCHEDULE

Equipment shall be braced and labeled by the equipment manufacturer to withstand the minimum scheduled available fault current value for listed equipment.

EQUIPMENT MARK	DESCRIPTION	LOCATION	STATUS	WEIGHT (lbs)	MANUFACTURER	MODEL	MIN SEER	CFM (cfm)	ESP (in WC)	OACFM (cfm)	NOMINAL TONS	MAT CLG DB (Deg F)	MAT CLG WB (Deg F)	CLG MBH (mbh)	CLG SENS (mbh)	LAT DB (Deg F)	LAT CLG WB (Deg F)	MAT HTG (Deg F)	HTG MBH (mbh)	MIN HTG AFUE	GAS HTG IN (mbh)	GAS HTG OUT (mbh)	EMERGENCY	ELECTRIC CONNECTION SUMMARY	AVAILABLE FAULT CURRENT
EXRTU-1	PACKAGED ROOFTOP UNIT, GAS HEAT	ROOF	EXISTING	986	CARRIER	48TCEA07	11.0	2500	1	376	7.5	78	65	70	58	55	54	61	61	81	115	93	NO	(EXRTU-1) A - 480V/3PH, 19 MCA, 25A OCP	0

2" REFERENCE LINE
 DESIGNER:TLH CHECKER:KSL

MECHANICAL - SCHEDULES

M-601

11.23.22 Issue for LL Review, Permit & Bid

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LMA PROJECT NO. 2298



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242 Walnut Street
Space No.535
Ground Floor
Lynnfield, MA 01940

LMA PROJECT NO. 2298

MECHANICAL - SPECIFICATIONS

M-701

Provide louvers and dampers of size as noted.
Manufacturer: Subject to compliance with requirements, provide diffusers of one of the following:
Acrolite
Perfo
Pottorf
Greenheck
Ruskin

Duct Liner Adhesive: As recommended by insulation manufacturer and complying with NFPA 90A or NFPA 90B.
Duct Liner Fasteners: Comply with SMACNA HVAC Duct Construction Standards.
Installation of Metal Ductwork:
General: Assemble and install ductwork in accordance with recognized industry practices which will achieve air-tight (5% leakage) systems rated 2" and under; 1% for systems rated over 2") and noiseless (no objectionable noise) systems, capable of performing each indicated ductwork service.
Align ductwork accurately at connections, within 1/8" misalignment tolerance and with internal surfaces smooth.
Support ductwork with rigid hangers, straps, hangers and anchors of other type which will hold ducts true-to-shape and to prevent buckling. Support vertical ducts at every floor.

Sealing: Seal all longitudinal seams, S's and ards and all joints with mastic or cement. Install according to SMACNA standards.
Balancing Dampers: The sheet metal contractor shall be fully responsible for installing balancing dampers in the ductwork, (whether shown on the drawing or not) in order to arrive at the intended air flow. The balancing sub-contractor shall provide direction and assistance in determining locations where dampers are required. Additional dampers, if required shall be installed at the additional cost to the owner.

Shall Penetrations: Provide sealant pack around all ducts and piping sleeves which pass through walls that extend to bottom side of structure and rated walls.
Fabrication: Coordinate with other trades for work at project as necessary to match shop-fabricated work and accommodate installation requirements.

Routing: Locate ductwork runs, except as otherwise indicated, vertically and horizontally and avoid diagonal runs wherever possible. Run ductwork in shortest route which does not compromise elements of building.
Limit clearance to 1/2" where furring is shown for enclosure or concealment of ducts, but allow for insulation thickness in any. Where possible, locate insulated ductwork for 1" clearance outside of insulation. Wherever possible in finished and occupied spaces, conceal ductwork from view by locating in mechanical shafts, hollow wall construction or above suspended ceilings. Do not encase horizontal runs in solid partitions, except as specifically stated otherwise.

Coordinate layout with suspended ceiling and lighting layouts and similar finished work.
Electrical Equipment: Do not route ductwork through transformer vaults and their electrical equipment spaces and enclosures.
Penetrations: Where ducts pass through interior partitions and exterior walls, and are exposed to view, conceal space between construction opening and duct or duct insulation with sheet metal flanges of same gage as duct.
Overlap opening on duct on 4 sides by 1/4" fasten to duct and substrate.

All dampers integral to or utilized as part of an engineered smoke control system shall be listed and comply with UL 555S.
All fire dampers shall be listed and comply with UL 555.
All dampers shall be low leakage with edge and blade seals. Damper manufacturers are subject to specification compliance. Provide products by one of the following:
Greenheck Fan Corporation
Nalor Industries
Pottorf
Ruskin
Young Regulatory Company

Coordination: Coordinate duct installations with installation of accessories, dampers, control and associated work of ductwork system.
Installation of Duct Liner:
General: Install duct liner in accordance with SMACNA HVAC Duct Construction Standards. Size of ductwork system and penetration of ducts will need to be increased if lined duct is used.
Store internally lined ductwork up, off of the floor. Protect internally lined ductwork from being damaged by debris. The following ductwork shall be lined in addition to that shown per plans:
Ductwork from open ceiling plenum return to HVAC unit.
Supply and return ductwork 10 feet downstream of HVAC unit.

Transfer air ducts.
Butter the leading edge of all internal duct lining with the manufacturer's recommended adhesive.
Inspect and repair all damaged lining prior to installation of ductwork.
Installation of Flexible Ducts:
Maximum Length: For any duct run using flexible duct, do not exceed 5' - 0" extended length.
Installation shall have smooth full radius turns down to 90 degrees.
Installation not permitted above inaccessible ceilings.

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Type: Centrifugal fan, direct or belt driven as scheduled.
Provide aluminum, galvanized steel, or fiberglass weatherproof housings as scheduled. Provide square base to suit roof slope. Provide integral split-capacitor motor for direct driven fans; capacitor-start, induction motor type motor for belt driven fans.
Provide the following Types of Housing Design:
Hooded dome type.
Electrical: Provide factory-wired non-fusible type disconnect switch at motor in fan housing. Provide thermal overload protection in fan motor. Provide conduit chase within unit for electrical connection.
Provide NEMA 1 disconnect factory mounted. For single phase fractional HP fans use a toggle type disconnect switch. On three phase integral HP fans use a NEMA 1 safety switch.
Bird Screens: Provide removable bird screens, 1/2" mesh, 16-ga aluminum or brass wire.
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Rooftop Curb: Provide factory fabricated roof curb by the same manufacturer as the equipment. Roof curb to be insulated.
Manufacturer: Subject to compliance with requirements, provide centrifugal roof ventilators of one of the following:
Acme
Capitair
Cook (Loren) Co.
Greenheck
Lyn City Fan & Blower
INSTALLATION:
Coordinate venting work with work of roofing, walls, and ceilings, as necessary for proper interlocking.
Provide access door in duct 24 gauge, and the service damper.
Solder bottom joints and use 2" of side joints of duct under roof ventilator to retain any moisture entering ventilator.

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Bird Screens: Provide removable bird screens, 1/2" mesh, 16-ga aluminum or brass wire.
All dampers integral to or utilized as part of an engineered smoke control system shall be listed and comply with UL 555S.
Rooftop Curb: Provide factory fabricated roof curb by the same manufacturer as the equipment. Roof curb to be insulated.
Manufacturer: Subject to compliance with requirements, provide centrifugal roof ventilators of one of the following:
Acme
Capitair
Cook (Loren) Co.
Greenheck
Lyn City Fan & Blower
INSTALLATION:
Coordinate venting work with work of roofing, walls, and ceilings, as necessary for proper interlocking.
Provide access door in duct 24 gauge, and the service damper.
Solder bottom joints and use 2" of side joints of duct under roof ventilator to retain any moisture entering ventilator.

Except where specifically indicated otherwise above, the HVAC/Temperature Control Contractor shall provide all electrical work as required for all temperature control related wiring (i.e. conduit, raceway, outlet boxes, junction boxes, wiring, etc.) in accordance with Electrical Specifications and drawings. All conduit shall be 3/4" minimum.
Coordinate all thermostats/sensor locations in field (case by case) with Architect, Owner and Electrical Contractor to ensure that they are placed in locations that will not interfere with furniture, equipment, artwork, wall-hung specialties, room finishes, etc. All thermostat/sensor wall locations indicated on HVAC drawings are schematic only and must be verified case-by-case prior to rough-in.
All electrical work as described in this specification shall be per the latest edition of the National Electrical Code (NEC) and per applicable state and local codes.
Where "free-air" installation methods (either exposed above the ceilings, in bridge runs or in cable trays) are permitted under Electrical Specifications above ceilings, provide plenum-rated cables wherever plenum ceilings (if any) exist and install as defined under Electrical Specifications. Install low voltage circuits, located in concrete slabs and masonry walls, in inaccessible locations, or exposed in occupied areas, in electrical conduit regardless of what wiring methods are permitted under Electrical Specifications.
Where cable trays or bridge runs are provided by the electrical contractor for low voltage cables, these raceways may be utilized for control wiring by this contractor (provide special color coded jackets, label cable jackets per Electrical Specifications and group control wiring cables together). Provide conduit drops from control tray/bridge run paths to wall outlet boxes and equipment rooms.
Unshielded or shielded twisted pair Ethernet cabling shall be installed in accordance with Electrical Specifications. All cables/wiring installed concealed by gypsum board, masonry or other inaccessible materials in walls or above ceilings shall be installed in conduit, 3/4" minimum.

All conduit, bridge runs, raceway, outlet boxes, etc. necessary for complete operational installation control wiring shall be provided (furnished and installed) by the temperature control contractor in strict compliance with Electrical Specifications documents. Coordinate all work with all other applicable trades including the electrical contractor.
Provide all required conduit work to and between equipment in a manner compliant with that described above (i.e. between VAV boxes, to boilers, starters, condensing units, etc. as applicable).
Coordinate all wiring without splices between terminal points, color-coded. Install in neat workmanlike manner, securely fastened. Install in accordance with National Electrical Code and per Electrical Specifications.
Install circuits over 25 volt with color-coded No. 12 wire with 0.031" high temperature (105 degs. F) plastic insulation on each conductor and plastic sheath over all.
Install electronic circuits with color-coded No. 12 wire with 0.023" polyethylene insulation on each conductor with plastic-jacketed copper shield over all.

Smoke Detector
All duct smoke detectors will be furnished by electrical contractor, installed by the HVAC contractor, and wired by the electrical contractor per local codes. HVAC contractor will interlock fan with smoke detector.
Motor Operated Dampers
All fresh air intakes and exhaust louvers shall have motor operated dampers. Dampers shall be low leak with blade and edge seals. All motor operated dampers shall be provided and wired by the mechanical contractor unless otherwise specified. Provide all necessary transformers, contractors, controls and wiring for interlocking equipment to motor operated dampers.

23.34 23.00 - HVAC PIPING INSULATION
Submittal Requirements:
Product Data: For each type of product indicated.
Provide 1" Armaflex on refrigerant piping.
Provide 1" fiberglass insulation on concealed condensate drain piping.
Insulation shall have a minimum thickness as required by Code.
All insulation and adhesives shall have a flame spread index not more than 25 and a smoke developed index of not more than 10.

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Provide 1" fiberglass insulation

OWNERSHIP OF INSTRUMENTS OF SERVICE
All reports, plans, specifications, computer files, field data, notes and other documents and instruments prepared by the Consultant as instruments of service shall remain the property of the Consultant. The Consultant shall retain all common law, statutory and other reserved rights, including, without limitation, the copyright thereto.

All rights reserved. No part of these drawings or specifications may be copied, reproduced or used in connection with any work, other than the specific project for which they have been prepared, without prior written authorization from the Architect.

COMcheck Software Version 4.1.5.3
Mechanical Compliance Certificate

Project Information
Energy Code: 2018 IECC
Project Title: Warby Parker
Location: Lynnfield, Massachusetts
Climate Zone: 6A
Project Type: Alteration
Construction Site: 427 Walnut Street
Owner/Agent: Designer/Contractor
Space No. 535 Ground Floor
Lynnfield, MA 01940
Mechanical Systems List
Quantity System Type & Description
1 HVAC System 1 (Single Zone)
Heating 1 each - Dual Fan Coil, Gas, Capacity = 61 kBtu/h
Proposed Efficiency = 81.00% EER, Required Efficiency = 80.00% EER
Cooling 1 each - Single Package DX Unit, Capacity = 71 kBtu/h, Air-Cooled Condenser, Air Economizer
Proposed Efficiency = 14.00 EER, Required Efficiency = 11.00 EER + 12.6 EER
Fan Systems: FAN SYSTEM 1 - Compliance Measure name: IP method. Phase:
Fans:
FAN 1 Supply, Constant Volume, 2500 CFM, 2.0 motor nameplate hp, 0.0 fan efficiency grade

Mechanical Compliance Statement
Compliance Statement: The proposed mechanical alteration project represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed mechanical systems have been designed to meet the 2018 IECC requirements in COMcheck Version 4.1.5.3 and to comply with any applicable mandatory requirements listed in the inspection Checklist.

Name Title Signature Date

COMcheck Software Version 4.1.5.3
Inspection Checklist
Energy Code: 2018 IECC

Requirements: 100.0% were addressed directly in the COMcheck software
Text in the "Comments/Assumptions" column is provided by the user in the COMcheck Requirements screen. For each requirement, the user certifies that a code requirement will be met and how that is documented, or that an exception is being claimed. Where compliance is itemized in a separate table, a reference to that table is provided.

Section # & Req ID	Plan Review	Complies?	Comments/Assumptions
C103.2 (F107)	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the mechanical systems and equipment and document where exceptions to the standard are claimed. Load calculations per acceptable engineering standards and handbooks.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.

Additional Comments/Assumptions:

Section # & Req ID	Footing / Foundation Inspection	Complies?	Comments/Assumptions
C403.12.2 (C404.5.1) (F09)	Snowmelt systems and freeze protection systems have sensors and controls configured to limit service for pavement temperature and outdoor temperature. Future connection to controls.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.

Additional Comments/Assumptions:

Section # & Req ID	Plumbing Rough-In Inspection	Complies?	Comments/Assumptions
C404.5.1 (C404.5.2) (F16)	Heated water supply piping conforms to pipe length and volume requirements. Refer to section details.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C404.6.3 (F17)	Pumps that circulate water between a heater and storage tank have controls that limit operation from startup to 5 minutes after end of heating cycle.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C404.7 (F18)	Demand recirculation water systems have controls that start the pump upon receiving a signal from the action of a user of a fixture or appliance and limit the temperature of the water entering the cold water pipe to 125°F.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.

Additional Comments/Assumptions:

Section # & Req ID	Mechanical Rough-In Inspection	Complies?	Comments/Assumptions
C402.2.6 (ME41)	Thermally ineffective panel surfaces of sensible heating panels have insulation = R-5.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C403.8.4 (ME147)	Motors for fans that are not less than 1/2 hp and less than 3 hp are electronically commutated motors or have a minimum motor efficiency of 70 percent. These motors have the means to adjust motor speed.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C403.8.5 (ME147)	Each DX cooling system > 65 kBtu/h and cooler water-recirculation cooling system with fans > 1/4 hp are designed to vary the indoor fan airflow as a function of load and comply with related requirements of this section.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C403.12.1 (ME11)	Systems that heat outside the building envelope are radiant heat systems controlled by an occupancy sensing device or time switch.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C403.2.3 (ME55)	HVAC equipment efficiency verified.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	See the Mechanical Systems list for values.
C403.5.3 (ME113)	Fault detection and diagnostics installed with air-cooled unitary DX units having economizers.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C403.2.2 (ME39)	Natural or mechanical ventilation is provided in accordance with International Mechanical Code Chapter 4. Mechanical ventilation has capability to reduce outdoor air supply to minimum per IECC Chapter 4.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C403.7.1 (ME39)	Demand control ventilation provided for spaces with > 30 people/1,000 ft ² occupant density and served by systems with air side economizer, auto modulating outside air damper control, or design airflow > 3,000 cfm.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C403.7.2 (ME115)	Enclosed parking garage ventilation has automatic contaminant detection and capacity to purge or modulate fans to 50% or less of design capacity.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C403.7.6 (ME143)	HVAC systems serving guestrooms in Group 9.3 buildings with > 50 guestrooms. Each guestroom is provided with controls that automatically manage temperature setpoints and ventilation (see sections C403.7.6.1 and C403.7.6.2).	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C403.7.4 (ME57)	Exhaust air energy recovery on systems meeting Table C403.7.4(1) and C403.7.4(2).	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.

Additional Comments/Assumptions:

11.23.22 Issue for LL Review, Permit & Bid

NO. DATE ISSUE

Project Title: Warby Parker
Data filename: G:\2400-24999\24700-24799\24718\Project Data\EnergyCompliance\Mechanical Reportmech.cck Page 1 of 11
Report date: 11/23/22

Project Title: Warby Parker
Data filename: G:\2400-24999\24700-24799\24718\Project Data\EnergyCompliance\Mechanical Reportmech.cck Page 2 of 11
Report date: 11/23/22

Project Title: Warby Parker
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Report date: 11/23/22

Project Title: Warby Parker
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Report date: 11/23/22

Project Title: Warby Parker
Data filename: G:\2400-24999\24700-24799\24718\Project Data\EnergyCompliance\Mechanical Reportmech.cck Page 5 of 11
Report date: 11/23/22

WARBY PARKER
Marketstreet Lynnfield
427 Walnut Street
Space No. 535
Ground Floor
Lynnfield, MA 01940

Section # & Req ID	Mechanical Rough-In Inspection	Complies?	Comments/Assumptions
C403.1.5 (ME116)	Kitchen exhaust systems comply with replacement air and conditioned supply air limitations, and safety hood rating requirements and maximum exhaust rise criteria.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C403.11.1 (ME60)	HVAC ducts and plenums insulated in accordance with C403.1.1 and C403.11.2 constructed in accordance with C403.11.2, verification may need to occur during Foundation Inspection.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C403.5.1 (ME42)	Air economizers provided where required, meet the requirements for design capacity, control signal, ventilation controls, high limit shut-off, integrated economizer controls, and provide a means to relieve excess outside air during operation.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C403.5.3 (ME124)	Air economizers automatically reduce outdoor air intake to the design minimum outdoor air quantity when outdoor air intake will not reduce cooling energy usage. See Table C403.5.3.1 for applicable device types and climate zones.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C403.5.4 (ME125)	System capable of relieving excess outdoor air during air economizer operation to prevent overpressurizing located to avoid recirculation into the building.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C403.5.5 (ME126)	Return, exhaust/retrieval and outdoor air dampers used in economizers have motorized dampers that automatically shut when not in use and meet maximum leakage limits. Reference section C403.7.7 for details.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C403.4.1 (ME83)	Heating for vestibules and air curtains with integral heating include automatic controls that shut off the heating system when outdoor air temperature < 40°F. Vestibule heating and cooling systems controlled by thermostat in the vestibule with heating setpoint <= 60°F and cooling setpoint >= 65°F.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C403.3.3 (ME35)	Hot gas bypass limited for <=240 kBtu/h - 50% >240 kBtu/h - 25%	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C408.2.1 (ME33)	Air auditors and zone terminal devices have means for air balancing.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C403.5.6 (ME123)	Refrigerated display cases, walk-in coolers or walk-in freezers served by remote compressors and remote condensers not located in a condensing unit, have fan-powered condensers that comply with sections C403.5.1 and refrigeration compressor systems that comply with C403.5.2.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.

Additional Comments/Assumptions:

Section # & Req ID	Rough-In Electrical Inspection	Complies?	Comments/Assumptions
C403.2.1 (EL26)	Low-voltage dry-type distribution electric transformers meet the minimum efficiency requirements of Table C403.6.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C403.7 (EL27)	Electric motors meet the minimum efficiency requirements of Tables C403.7(1) through C403.7(4). Efficiency verified through certification under an approved certification program or the equipment efficiency ratings shall be provided by motor manufacturer. Labeling certification programs do not exist.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C405.8.2 (EL28)	Escalators and moving walks comply with ASME A17.1/CSA B44 and have automatic controls configured to reduce speed to the minimum permitted speed in accordance with ASME A17.1/CSA B44 or applicable local code when not conveying passengers.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement does not apply.
C403.4.1 (F19)	Thermostatic controls have a 5°F deadband.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C403.2.4 (F20)	Temperature controls have setback or override restrictions.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C403.2.4 (F20)	Each zone equipped with setback controls using automatic time clock or programmable control system.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C403.2.4 (F140)	Automatic Controls: Setback to 55°F (heat) and 65°F (cool). Tidy clock, hour occupancy override, 10-hour setback.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C403.2.4 (F141)	Systems include optimum start controls.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C408.1.1 (F157)	Building operations and maintenance documents will be provided to the owner. Documents will cover manufacturers' information, specifications, programming procedures and means of illustrating to owner how building equipment and systems are intended to be installed, maintained, and operated.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C408.2.1 (F128)	Commissioning plan developed by registered design professional or approved agency.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C408.2.3 (F11)	HVAC equipment has been tested to ensure proper operation.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.

Additional Comments/Assumptions:

Section # & Req ID	Final Inspection	Complies?	Comments/Assumptions
C403.2.3 (F18)	Furnished O&M manuals for HVAC systems within 90 days of system acceptance.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C403.2.2 (F17)	HVAC systems and equipment capacity does not exceed calculated loads.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C403.2.4 (F14)	Heating and cooling for each zone is controlled by a thermostat control.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C403.4.1 (F19)	Thermostatic controls have a 5°F deadband.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C403.2.4 (F20)	Temperature controls have setback or override restrictions.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C403.2.4 (F20)	Each zone equipped with setback controls using automatic time clock or programmable control system.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C403.2.4 (F140)	Automatic Controls: Setback to 55°F (heat) and 65°F (cool). Tidy clock, hour occupancy override, 10-hour setback.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C403.2.4 (F141)	Systems include optimum start controls.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C408.1.1 (F157)	Building operations and maintenance documents will be provided to the owner. Documents will cover manufacturers' information, specifications, programming procedures and means of illustrating to owner how building equipment and systems are intended to be installed, maintained, and operated.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C408.2.1 (F128)	Commissioning plan developed by registered design professional or approved agency.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C408.2.3 (F11)	HVAC equipment has been tested to ensure proper operation.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.

Additional Comments/Assumptions:

Section # & Req ID	Final Inspection	Complies?	Comments/Assumptions
C403.2.3 (F11)	Furnished O&M manuals for HVAC systems within 90 days of system acceptance.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C403.2.3 (F18)	HVAC systems and equipment capacity does not exceed calculated loads.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C403.2.4 (F14)	Heating and cooling for each zone is controlled by a thermostat control.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C403.4.1 (F19)	Thermostatic controls have a 5°F deadband.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C403.2.4 (F20)	Temperature controls have setback or override restrictions.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C403.2.4 (F20)	Each zone equipped with setback controls using automatic time clock or programmable control system.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C403.2.4 (F140)	Automatic Controls: Setback to 55°F (heat) and 65°F (cool). Tidy clock, hour occupancy override, 10-hour setback.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C403.2.4 (F141)	Systems include optimum start controls.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C408.1.1 (F157)	Building operations and maintenance documents will be provided to the owner. Documents will cover manufacturers' information, specifications, programming procedures and means of illustrating to owner how building equipment and systems are intended to be installed, maintained, and operated.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C408.2.1 (F128)	Commissioning plan developed by registered design professional or approved agency.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C408.2.3 (F11)	HVAC equipment has been tested to ensure proper operation.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.

Additional Comments/Assumptions:

Project Title: Warby Parker
Data filename: G:\2400-24999\24700-24799\24718\Project Data\EnergyCompliance\Mechanical Reportmech.cck Page 6 of 11
Report date: 11/23/22

Project Title: Warby Parker
Data filename: G:\2400-24999\24700-24799\24718\Project Data\EnergyCompliance\Mechanical Reportmech.cck Page 7 of 11
Report date: 11/23/22

Project Title: Warby Parker
Data filename: G:\2400-24999\24700-24799\24718\Project Data\EnergyCompliance\Mechanical Reportmech.cck Page 8 of 11
Report date: 11/23/22

Project Title: Warby Parker
Data filename: G:\2400-24999\24700-24799\24718\Project Data\EnergyCompliance\Mechanical Reportmech.cck Page 9 of 11
Report date: 11/23/22

Project Title: Warby Parker
Data filename: G:\2400-24999\24700-24799\24718\Project Data\EnergyCompliance\Mechanical Reportmech.cck Page 10 of 11
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LMA PROJECT NO. 2298

MECHANICAL - COMPLIANCE

M-801

2" REFERENCE LINE
DESIGNER:TLH CHECKER:KSL

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GENERAL LIGHTING PLAN NOTES

- A. EXIT SIGN CONNECTIONS: CONNECT ALL EXIT SIGNAGE AHEAD OF ANY SWITCHING.
- B. INDOOR EGRESS LIGHTING: CONNECT ALL INDOOR EGRESS LIGHTING, DESIGNATED "EL", AHEAD OF ANY SWITCHING, UNLESS CONTROL METHODS ARE INDICATED OTHERWISE FOR A GIVEN AREA.
- C. BATTERY BACKUP DEVICES: WHERE INDICATED IN DOCUMENTS, PROVIDE UL 924 LISTED BATTERY DEVICES, WHICH AUTOMATICALLY REVERT TO FULL ILLUMINATION FOR THE AFFECTED LUMINAIRE IN THE EVENT OF LOSS OF POWER FROM THE NORMAL POWER SUPPLY CIRCUIT. PROVIDE UNSWITCHED "HOT" TO SUCH COMPONENTS TO PROVIDE CONTINUOUS POWER EVEN IF LUMINAIRE IS TURNED OFF USING NORMAL LIGHTING CONTROLS.
- D. TRANSFER/RELAY-CONTROL DEVICES: WHERE INDICATED IN DOCUMENTS, PROVIDE TRANSFER/RELAY-CONTROL DEVICES, WHICH AUTOMATICALLY REVERT TO FULL ILLUMINATION FOR THE AFFECTED LUMINAIRE IN THE EVENT OF LOSS OF POWER FROM THE NORMAL POWER SUPPLY CIRCUIT. PROVIDE UNSWITCHED "HOT" TO SUCH COMPONENTS, TO PROVIDE CONTINUOUS POWER EVEN IF LUMINAIRE IS TURNED OFF USING NORMAL LIGHTING CONTROLS.

GENERAL NOTES

- A. REFER TO DRAWINGS FOR MOUNTING TYPE, NUMBER OF FACES AND ARROWS OF EXIT SIGNS. VERIFY IN FIELD PRIOR TO INSTALLATION.
- B. VERIFY COMPATIBILITY WITH VOLTAGE, CONTROLS, ETC. FOR ALL LUMINAIRE COMPONENTS.
- C. COORDINATE EACH LUMINAIRE LOCATION WITH THE ARCHITECTURAL REFLECTED CEILING PLANS, CEILING INSTALLERS, ETC. AND PROVIDE APPROPRIATE MOUNTING SYSTEM REQUIRED FOR EACH LUMINAIRE. ALSO, PROVIDE PLASTER FRAMES, WALL BRACKETS, SUPPORTS, OR OTHER APPURTENANCES AS REQUIRED FOR PROPER AND COMPLETE INSTALLATIONS.
- D. WEAR CLEAN WHITE COTTON GLOVES WHEN HANDLING EXPOSED REFLECTIVE LUMINAIRE SURFACES. REMOVE PLASTIC SHIPPING BAGS ONLY AFTER INTERIOR WORK IS COMPLETE, AND CLEAN ALL SURFACES WITH CLEAN DRY CHEESE CLOTH.
- E. MOUNTING HEIGHTS INDICATED ARE TO THE BOTTOM OF THE LUMINAIRE, UNLESS OTHERWISE NOTED.
- F. PRODUCTS: PROVIDE PRODUCTS INDICATED ON DRAWINGS AND SCHEDULES. WHERE MULTIPLE MANUFACTURER SERIES/MODEL NUMBERS ARE LISTED FOR A SINGLE LUMINAIRE, PROVIDE ONE OF THOSE LISTED. WHERE A SPECIFIC MANUFACTURER SERIES/MODEL NUMBER IS LISTED AS BASIS-OF-DESIGN, AND WHERE IT IS STATED THAT EQUIVALENTS WILL BE CONSIDERED, ANY PROPOSED NON-LISTED LUMINAIRE ARE SUBJECT TO REVIEW BY DESIGN PROFESSIONAL(S), SUBMITTALS FOR WHICH SHALL BE FURNISHED AT LEAST 10 DAYS PRIOR TO BID DUE DATE OR THEY WILL NOT BE CONSIDERED. THESE PRE-BID SUBMITTALS SHALL CLEARLY STATE EXACTLY WHAT IS BEING PROPOSED AND SHALL DEMONSTRATE COMPLIANT EQUIVALENCY. SIMILAR REQUESTS FOR PROPOSED SUBSTITUTIONS MAY BE MADE ONLY AFTER BIDS ARE RECEIVED, AND ONLY IF OWNER CHOOSES TO CONSIDER SUBSTITUTION REQUESTS. DESIGN PROFESSIONAL(S) AND OWNER RESERVE THE RIGHT TO REJECT ALL PRODUCTS THAT ARE NOT DEEMED TO BE FULLY EQUIVALENT TO THE BASIS-OF-DESIGN LISTING(S). SUBMIT ALL REQUESTS AND QUESTIONS THROUGH THE FORMALLY-ESTABLISHED BIDDING PROCESS, NOT DIRECTLY TO ENGINEER.

KEYED NOTES

- L1 MILLWORK LIGHTING IS POWERED THROUGH RECEPTACLE. MILLWORK LIGHTING SUPPLIED BY MILLWORK VENDOR. REFER TO POWER PLAN FOR RECEPTACLE LOCATION AND CIRCUITING.
- L2 3-WAY DIMMER SWITCH TO CONTROL CEILING LIGHTING.
- L3 SWITCH TO CONTROL UNDERCABINET LIGHTING.
- L4 LOCATION OF MASTER SWITCH BANK.
- L5 OCCUPANCY SENSOR SHALL TURN ON LIGHTS FOR AFTER HOURS. REFER TO LIGHTING DIAGRAM FOR ADDITIONAL INFORMATION.
- L6 LIGHT FIXTURE TO BE POWERED THROUGH UNDERCABINET RECEPTACLE.
- L8 TRACK SHALL ONLY BE FED WITH WHIP. NO EXPOSED JBOX. PROVIDE REVERSE POLARITY FEED AS REQUIRED (FROM LIGHTING PROVIDER).
- L9 DIMMER SWITCH FOR VANITY LIGHT.


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11.23.22		Issue for LL Review, Permit & Bid

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 427 Walnut Street
 Space No.535
 Ground Floor
 Lynnfield, MA 01940

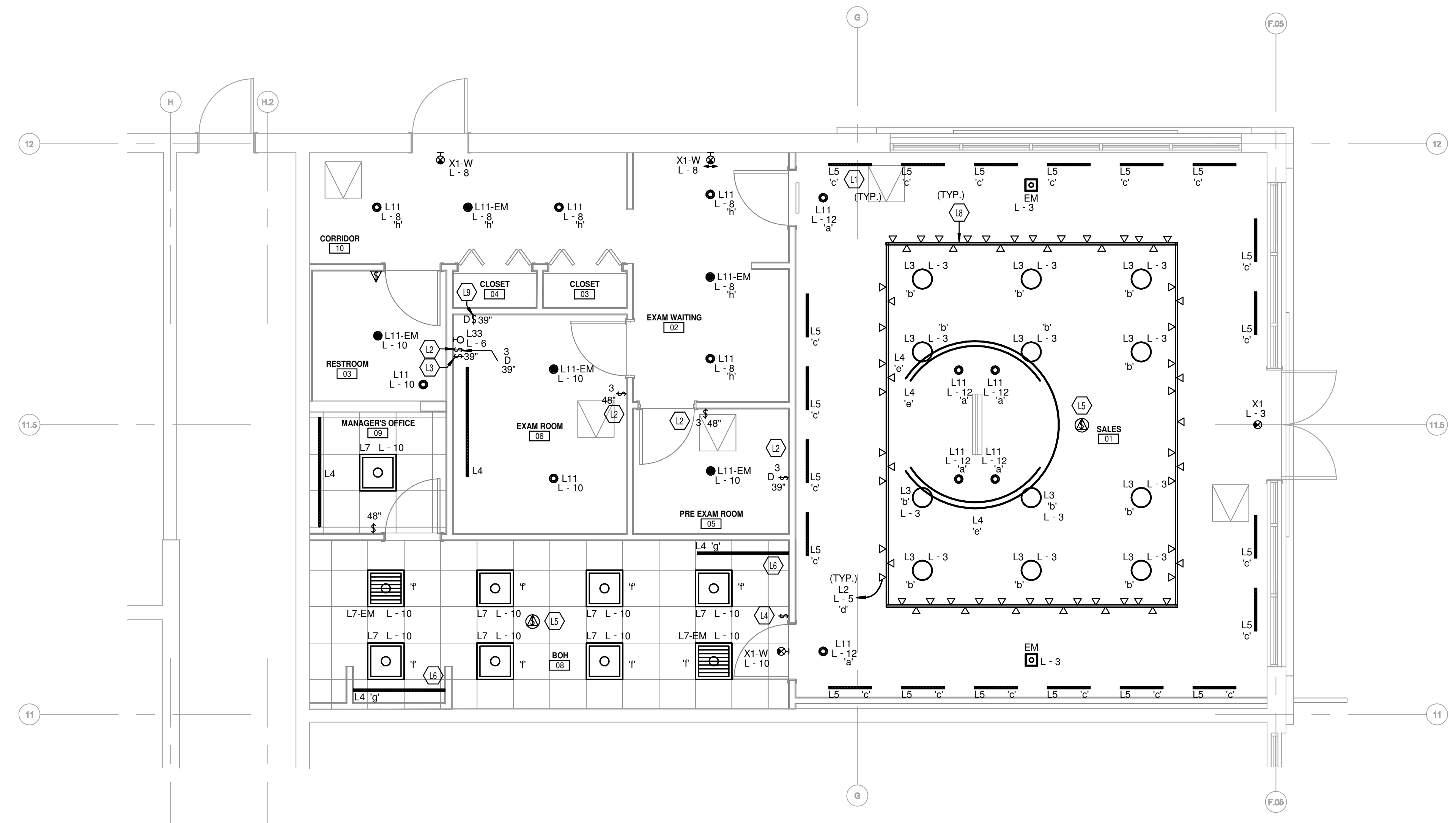
LMA PROJECT NO. 2298

ELECTRIC LIGHTING PLAN

EL100

1 ELECTRIC LIGHTING PLAN
 1/4" = 1'-0"

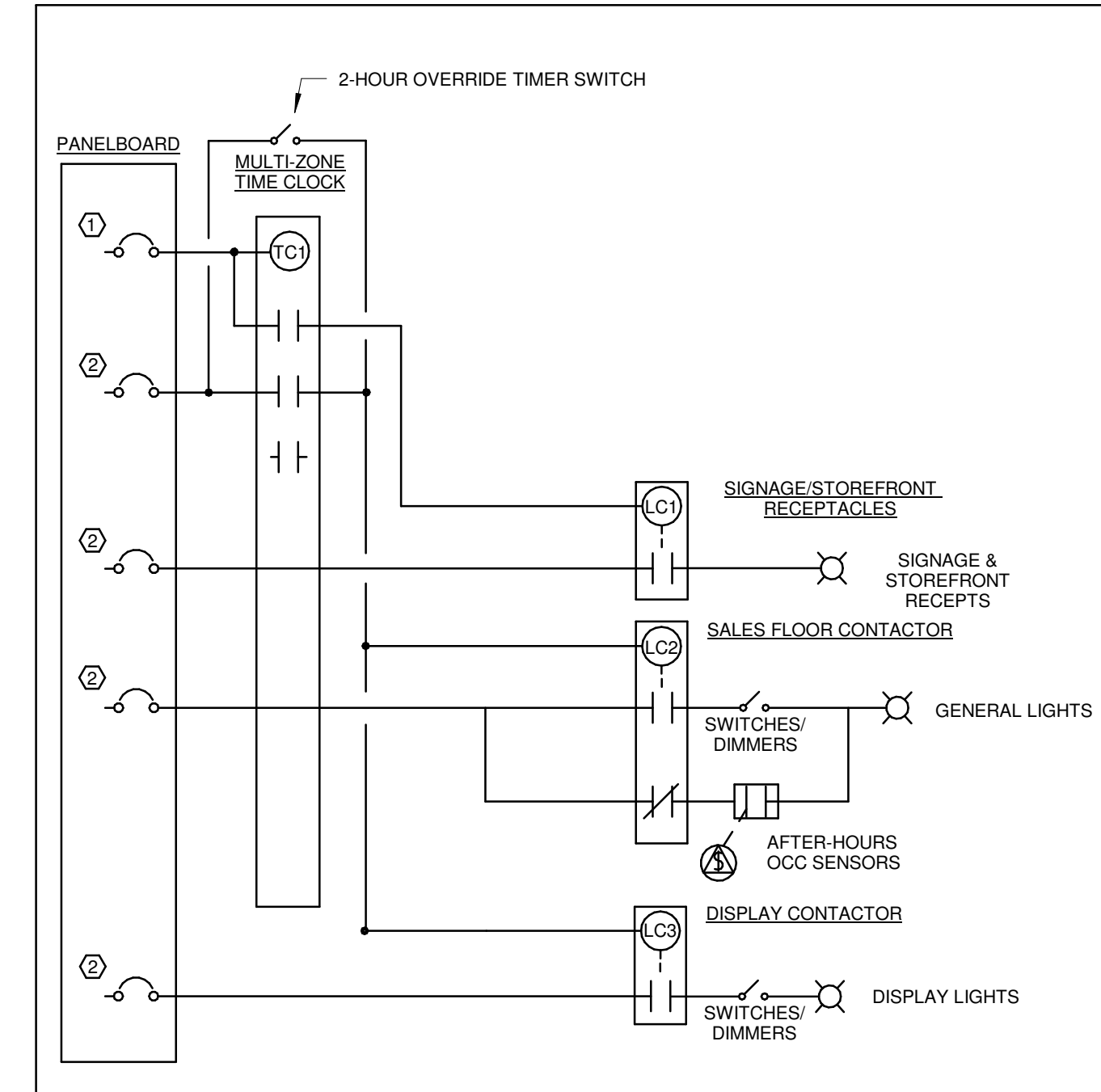
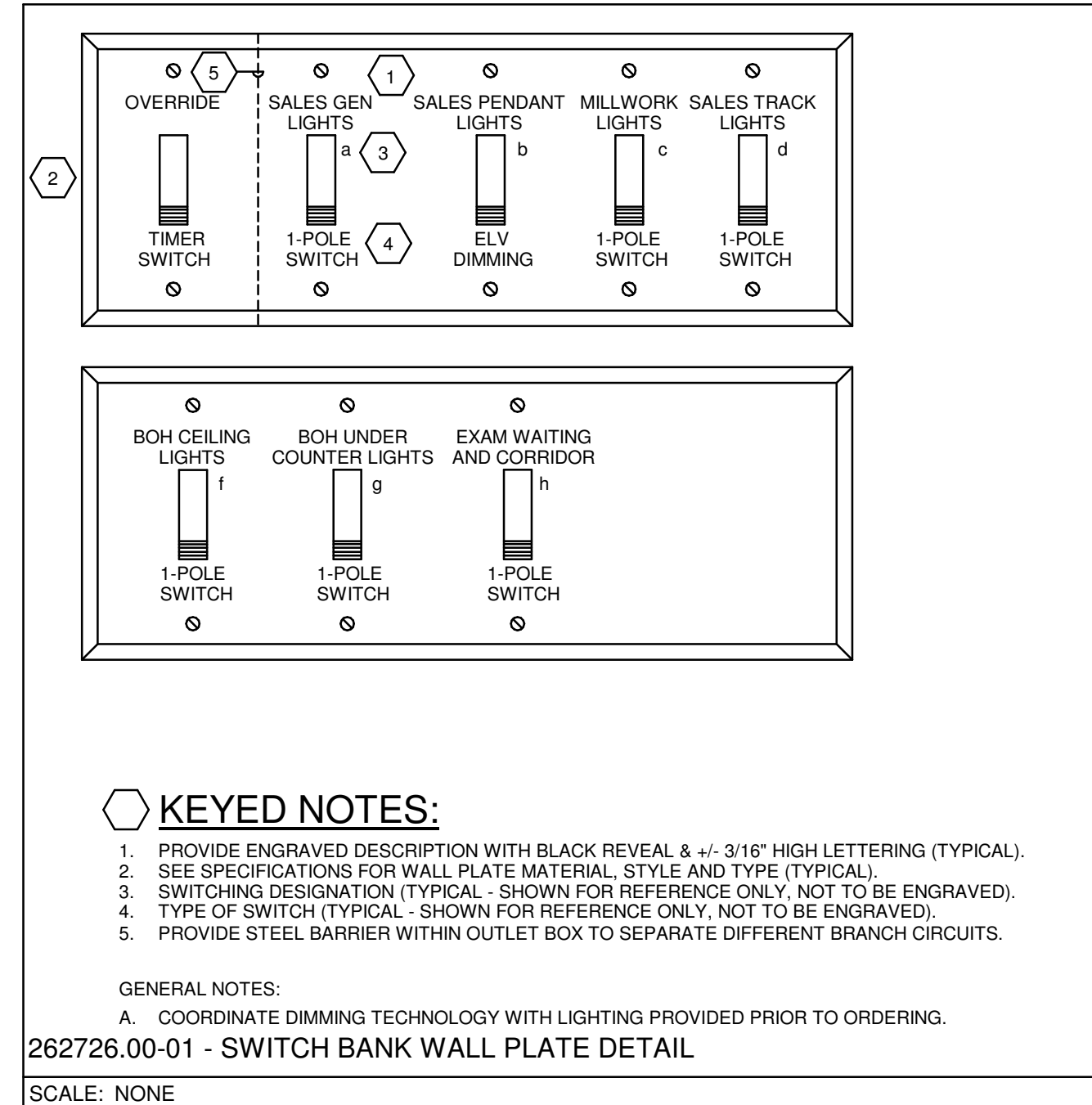
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LUMINAIRE SCHEDULE

TYPE	DESCRIPTION	Manufacturer	Model	Light Source	LAMP QTY	LAMP BASE	Battery Type	Dimming Protocol	FIXTURE LOAD	VOLTAGE	COMMENTS
EM	FULLY RECESSED SQUARE CONCEALED EM LIGHT 7" X 7" WITH ROTATING 4" X 4" DOOR, FIELD SELECTABLE VOLTAGE, WHITE FINISH PER ARCHITECT, FIELD PAINTED	ISOLITE	MGN-25 LC UI SO	LED	1	(2) 25MR11 SUPERFLUX HALOGEN	INTEGRAL 90 MINUTE	0-10V	50 VA	120 V	
L2	LED TRACK HEAD, 1462 DELIVERED LUMENS WITH 23° BEAM SPREAD (MEDIUM BEAM), 3000K, DIMMING, FINISH WHITE	CONTECH	CTL9052-M-3C-D-P	LED		LEDS BY MANUFACTURER 3000K CCT	NONE	INC	14 VA	120 V	INCANDESCENT, FORWARD PHASE
L3	OPAL WHITE GLOBE WITH WHITE CORD AND CANOPY, 14" Ø, MEDIUM BASE. PROVIDE WATTAGE RESTRICTION LABEL FOR LAMP WATTAGE SPECIFIED.	PROGRESS LIGHTING	P4406-29 W/LAMP	LED	1	GREEN CREATIVE LED 18.5A21G/DIM830	NONE	ELV	19 VA	120 V	REFER TO ARCHITECTURAL ELEVATIONS FOR MOUNTING HEIGHT OF FIXTURE. PROVIDE CORD LENGTH REQUIRED.
L4	LED TAPE LIGHT	HERA LIGHTING	HERA STICK38-13-34-46/HO/W/W POWER SUPPLY: STICKPS2430HE	LED	1	N/A	NONE	0-10V		120 V	2.4W/FT
L5	LED TAPE LIGHT	HERA LIGHTING	TB12-40-S24-X11-01-	LED	1	N/A	NONE	0-10V	6 VA	120 V	2.4W/FT
L7	LED 2X2 EDGE/ELITE PANEL, RECESS DEPTH OF FIXTURE: 2.2" LUMEN OUTPUT: 3500 LUMENS. FIXTURE SUITABLE FOR MOUNTING IN ACT. CEILING, 3500K.	SYLVANIA	PANELF1A/032UNV/D835/22G/WH	LED	1	LEDS BY MANUFACTURER 3500K CCT	NONE	0-10V	32 VA	120 V	ARCHITECT TO CONFIRM CEILING SYSTEM TYPE.
L7-EM	LED 2X2 EDGE/ELITE PANEL, RECESS DEPTH OF FIXTURE: 2.2" LUMEN OUTPUT: 3500 LUMENS. MOUNTING KIT FOR MOUNTING IN GYP. CEILING, 3500K, EM BATTERY PACK.	SYLVANIA	PANELF1A/032UNV/D835/22G/WHE SMRKITA22A/WH	LED	1	LEDS BY MANUFACTURER	INTEGRAL 90 MINUTE	0-10V	32 VA	120 V	ARCHITECT TO CONFIRM CEILING SYSTEM TYPE.
L11	LED 3.5" APERTURE ROUND LENSED SHALLOW DOWNLIGHT WITH INTEGRAL 0-10V DIMMABLE DRIVER. 50° WIDE FLOOD DISTRIBUTION. 1400 DELIVERED LUMENS. SOLITE LENS.	INTENSE LIGHTING	MODELXMG2DRTR-NC-L2-D101-120W/M XTFG2-W-SF-L2-30-50-SL	LED	1	LEDS BY MANUFACTURER 3000K CCT	NONE	0-10V	22 VA	120 V	TITLE 24 COMPLIANT
L11-EM	LED 3.5" APERTURE ROUND LENSED SHALLOW DOWNLIGHT WITH INTEGRAL 0-10V DIMMABLE DRIVER. 50° WIDE FLOOD DISTRIBUTION. 1400 DELIVERED LUMENS. SOLITE LENS.	INTENSE LIGHTING	MODELXMG2DRTR-NC-L2-D101-120W/M XTFG2-W-SF-L2-30-50-SL	LED	1	LEDS BY MANUFACTURER 3000K CCT	INTEGRAL 90 MINUTE	0-10V	22 VA	120 V	TITLE 24 COMPLIANT
L33	BARLOW LED VANITY LIGHT, SATIN BRASS, 24 INCHES	AFX	AFX2077333	LED	1	LED	NONE	0-10V	22 VA	120 V	SEE ELEVATIONS FOR MOUNTING HEIGHT, ALIGHT CENTERED WITH MIRROR/SINK
T2	SINGLE CIRCUIT SURFACE MOUNTED TRACK AND CURRENT LIMITER, OVERALL WHITE FINISH.	CONTECH	SURFACE MOUNT J STYLE TRACK (2)32" W/23HDS SURFACE MOUNT J-TYPE (2) 46" W/39HDS	N/A		N/A		NONE	0 VA	120 V	UL 924 EM TRANSFER RELAY IF REQUIRED TO BE PROVIDED BY ELECTRICAL CONTRACTOR.
X1	RECESSED MOUNTED EDGE-LIT LED EXIT SIGN WITH 6" RED LETTERS.	LIGHTALARMS	6UEARM	LED	1	LEDS BY MANUFACTURER	INTEGRAL 90 MINUTE	NONE	4 VA	120 V	
X1-W	RECESSED MOUNTED EDGE-LIT LED EXIT SIGN WITH 6" RED LETTERS.	LIGHTALARMS	6UEARM	LED	1	LEDS BY MANUFACTURER	INTEGRAL 90 MINUTE	NONE	4 VA	120 V	



LIGHTING CONTACTOR SCHEDULE

NOTES:

- PROVIDE A MINIMUM OF (2) SPARE CONTACTS IN EACH CONTACTOR UNLESS NOTED OTHERWISE.
- REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.
- CONTACTOR DESIGNATIONS DO NOT INDICATE QUANTITY OF CONTACTORS. THEY INDICATE CONTACTOR GROUPING(S) AND COMMON CONTROL METHODS ONLY. PROVIDE QUANTITY OF...

CONTROL ZONE DESCRIPTION & CONTACTOR CONTROL METHOD

C1 - SIGNAGE AND SHOW WINDOW RECEPTACLES	C2 - SALES GENERAL LIGHTS	C3 - SALES DISPLAY LIGHTS		
SUPPLY	CIRCUIT NUMBER	NUMBER OF POLES	CONTACT CURRENT	LOAD NAME
L	37	1	4 A	(#) SIGNAGE CONTINUOUS SALES 01
L	39	1	4 A	(#) SIGNAGE CONTINUOUS SALES 01
L	41	1	4 A	(#) SIGNAGE CONTINUOUS SALES 01
L	2	1	10 A	(#) SIGNAGE CONTINUOUS SALES 01
L	4	1	4 A	(#) SIGNAGE CONTINUOUS SALES 01
C2				
L	3	1	3 A	(#) LTG SALES 01
L	12	1	1 A	(#) LTG SALES 01
C3				
L	5	1	7 A	LTG SALES 01
L	7	1	17 A	(#) RCPT SALES 01

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WARBY PARKER
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 427 Walnut Street
 Space No.535
 Ground Floor
 Lynnfield, MA 01940

LMA PROJECT NO. 2298

ELECTRIC LIGHTING
DETAILS

EL101

2" REFERENCE LINE
 DESIGNER:LAH CHECKER: LGF

ELECTRIC FLOOR OUTLET DEVICE SCHEDULE

FLOOR OUTLET DEVICE NOTES:

- LISTING AND LABELING: FLOOR BOXES SHALL BE LISTED AND LABELED AS WELL AS MARKED FOR INTENDED LOCATION AND APPLICATION.
- COMPLY WITH UL 514 AND NFPA 70 SCRUB WATER EXCLUSION REQUIREMENTS. MAINTAIN SMOKE AND FIRE RATINGS OF ALL FLOORS AND CEILINGS.
- PROVIDE BARRIERS TO SEPARATE POWER FROM COMMUNICATIONS.
- MATCH THE SURROUNDING FLOORING MATERIAL WHEREVER POSSIBLE, AND COORDINATE FINISHED SURFACE MATERIALS WITH ARCHITECTURAL DRAWINGS.
- PROVIDE MINIMUM 1" CONDUIT TO ABOVE NEAREST ACCESSIBLE CEILING FOR EACH GANG IDENTIFIED FOR TECHNOLOGY UNLESS OTHERWISE NOTED.

ACCEPTABLE MANUFACTURERS:

- FSR
- WIREMOLD / LEGRAND
- HUBBELL INCORPORATED

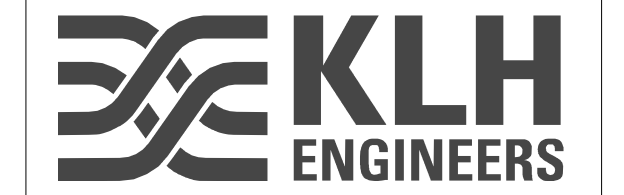
TYPE	BASIS OF DESIGN	FLOOR BOX TYPE	FLOOR CONSTRUCTION	FLOOR BOX MATERIAL	COVER MATERIAL	ACTIVATION	POWER	TECHNOLOGY	COMMENTS
A	AS SCHEDULED	SURFACE MOUNTED	CONCRETE - SLAB ON GRADE	STEEL	COORDINATE WITH ARCH.	FLUSH	DUPLX		

GENERAL POWER PLAN NOTES

- EQUIPMENT COORDINATION SCHEDULES: REFER TO EQUIPMENT COORDINATION SCHEDULES FOR REQUIREMENTS ASSOCIATED WITH EQUIPMENT CIRCUITING, CONNECTIONS, ANCILLARY DEVICES AND EQUIPMENT, ETC. COORDINATE LOCATIONS AND REQUIREMENTS FOR ALL EQUIPMENT WITH RESPECTIVE EQUIPMENT SUPPLIERS AND INSTALLERS PRIOR TO ORDERING ANY RELATED MATERIALS OR COMMENCING WITH ANY RELATED ROUGH-IN WORK.
- TECHNOLOGY SYSTEMS: PROVIDE RACEWAY AND PATHWAY SYSTEMS FOR ALL TECHNOLOGY WORK. INCLUDE OUTLET BOXES, CONDUITS, RACEWAYS, J-HOOKS, CABLE TRAY, ETC. AS REQUIRED FOR COMPLETE OPERATIONAL SYSTEMS. COORDINATE ALL RELATED WORK (INCLUDING ASSOCIATED POWER) WITH OWNER (INCLUDING OWNER'S PROJECT MANAGER), FIELD CONDITIONS, FURNITURE INSTALLER(S), TECHNOLOGY INSTALLER(S) AND WORK OF OTHER TRADES AND SUPPLIERS/INSTALLERS AS APPLICABLE. TERMINATE ALL CONDUITS FROM OUTLET BOXES TO NEAREST ACCESSIBLE CEILING CAVITY, OR TO OVERHEAD STRUCTURAL SPACE FOR AREAS WITH NO CEILINGS. PROVIDE CONDUITS WITH SWEEP BENDS, PULL STRINGS, PLASTIC BUSHINGS AND IDENTIFICATION AT OVERHEAD ENDS. PROVIDE BLANK WALL PLATES TO MATCH WIRING DEVICE WALL PLATES.
- STOREFRONT WINDOWS: INSTALL RECEPTACLES INDICATED ABOVE STOREFRONT WINDOWS WITHIN 18 INCHES OF THE TOP OF STOREFRONT WINDOWS, AND INSTALL COMPLIANT WITH NEC, INCLUDING ARTICLE 210.62.
- GFCI PROTECTION: PROVIDE GROUND FAULT CIRCUIT INTERRUPTER (GFCI) PROTECTION FOR PERSONNEL FOR ALL SINGLE-PHASE RECEPTACLES RATED 150 VOLTS TO GROUND OR LESS, 50 AMPERES OR LESS AND THREE-PHASE RECEPTACLES RATED 150 VOLTS TO GROUND OR LESS, 100 AMPERES OR LESS INSTALLED IN/FOR THE FOLLOWING LOCATIONS/APPLICATIONS: BATHROOMS, KITCHENS, ROOFTOPS, OUTDOORS, SINKS (WHERE RECEPTACLES ARE INSTALLED WITHIN 6 FEET FROM THE TOP INSIDE EDGE OF THE BOWL OF THE SINK), INDOOR WET LOCATIONS, VENDING MACHINES AND AREAS, ELECTRIC WATER COOLERS, LOCKER ROOMS WITH ASSOCIATED SHOWERING FACILITIES, AND GARAGES, SERVICE BAYS, AND SIMILAR AREAS OTHER THAN VEHICLE EXHIBITION HALLS AND SHOWROOMS. PROVIDE GFCI RECEPTACLES AT LOCATIONS THAT ARE AND WILL REMAIN READILY ACCESSIBLE. ELSEWHERE PROVIDE GFCI PROTECTION AT THE RESPECTIVE SOURCE CIRCUIT BREAKER.
- TRIM AND DOOR FINISHES: PROVIDE FACTORY-PAINTED OR FIELD-PAINTED TRIMS AND DOORS TO MATCH WALL FINISH COLOR FOR ALL PANELBOARDS AND SIMILAR EQUIPMENT THAT ARE INSTALLED RECESSED IN FINISHED WALLS. IF FIELD-PAINTED, PAINT ALL SIDES AND EDGES WITH TWO COATS OF PAINT BEFORE INSTALLATION, AND LET DRY BEFORE INSTALLING THEM. ENSURE THAT NO COMPONENTS ARE (DOORS, LATCHES, SCREWS, ETC.) ARE "PAINTED SHUT".
- SIGNAGE: COORDINATE ALL SIGNAGE REQUIREMENTS WITH OWNER (INCLUDING OWNER'S PROJECT MANAGER), SIGNAGE SUPPLIERS AND INSTALLERS, AND ARCHITECT TO DETERMINE SPECIFICS REGARDING LOCATIONS, POWER, CONTROL, AND OTHER PERTINENT INFORMATION. PROVIDE POWER (ON DEDICATED CIRCUIT(S)) FOR SIGNAGE REQUIRING POWER CONNECTIONS. PROVIDE PHOTOCELL AND TIME-BASED CONTROL, CONFIGURED AS DIRECTED BY OWNER. PROVIDE ALL ELECTRICAL WORK, INCLUDING DISCONNECTING MEANS, COMPLIANT WITH ARTICLE 600 OF NFPA 70. COMPLY WITH LAND-GRID REQUIREMENTS WHERE APPLICABLE.
- ELEVATIONS: COORDINATE ALL ELECTRIC RECEPTACLE HEIGHTS WITH ARCHITECTURAL PLAN PRIOR TO ROUGH IN.
- PROVIDE HEALTHCARE RATED RECEPTACLES AND HEALTHCARE RATED TYPE MC CABLE FOR ALL BRANCH CIRCUITS WITH IN THE EXAM AND PRE-EXAM ROOMS TO MEET NEC 517 (GENERAL CARE REQUIREMENTS).

KEYED NOTES

- E1 PROVIDE FLUSH MOUNTED JUNCTION BOX AND 2" EMPTY CONDUITS WITH PULL STRING. PROVIDE WITH GROMMET HOLE COVER.
- E3 CONDUIT TO ROUTE POWER TO FLOOR MOUNTED RECEPTACLES. RUN CONDUIT IN WALLS AND ON THE FLOOR UNDER BAYS.
- E4 PROVIDE POWER AND CONTROL WIRING, CONNECTIONS, ETC. FOR SIGNAGE. COORDINATE EXACT LOCATION, HEIGHT, AND ELECTRICAL REQUIREMENTS WITH SIGNAGE INSTALLER AND PROVIDE ELECTRICAL WORK ACCORDINGLY. WHERE THE SIGN IS NOT PROVIDED WITH AN INTEGRAL DISCONNECTING MEANS, PROVIDE FLUSH-MOUNTED, LOCAL DISCONNECT SWITCH INSTALLED IN A CONCEALED, BUT ACCESSIBLE, LOCATION WITHIN SITE OF THE SIGN. WHERE THIS IS NOT POSSIBLE, PROVIDE LOCK-OUT, TAG-OUT BREAKER IN SOURCE PANELBOARD IN LIEU OF LOCAL DISCONNECT SWITCH AND A LABEL INSIDE THE SIGN ENCLOSURE IDENTIFYING THE BREAKER'S LOCATION PER NEC 600.6(A)(2).
- E6 SHOW WINDOW RECEPTACLES MUST BE WITHIN 18" OF THE TOP OF THE WINDOW.
- E8 FLOOR MOUNTED RECEPTACLE TO POWER MILLWORK LIGHTING.
- E10 SAW CUT FROM NEAREST WALL TO CASHWRAP. PROVIDE (1) 3/4" CONDUIT FOR POWER AND (2) 1" CONDUIT FOR LOW VOLTAGE.
- E17 EXHAUST FAN CONTROLLED BY OCCUPANCY SENSOR IN RESTROOM. PROVIDE ADDITIONAL RELAYS AS REQUIRED.
- E24 RECEPTACLE FOR UNDER CABINET LIGHTING.
- E31 EXISTING TRANSFORMER IS TRAPEZE MOUNTED FROM DECK.



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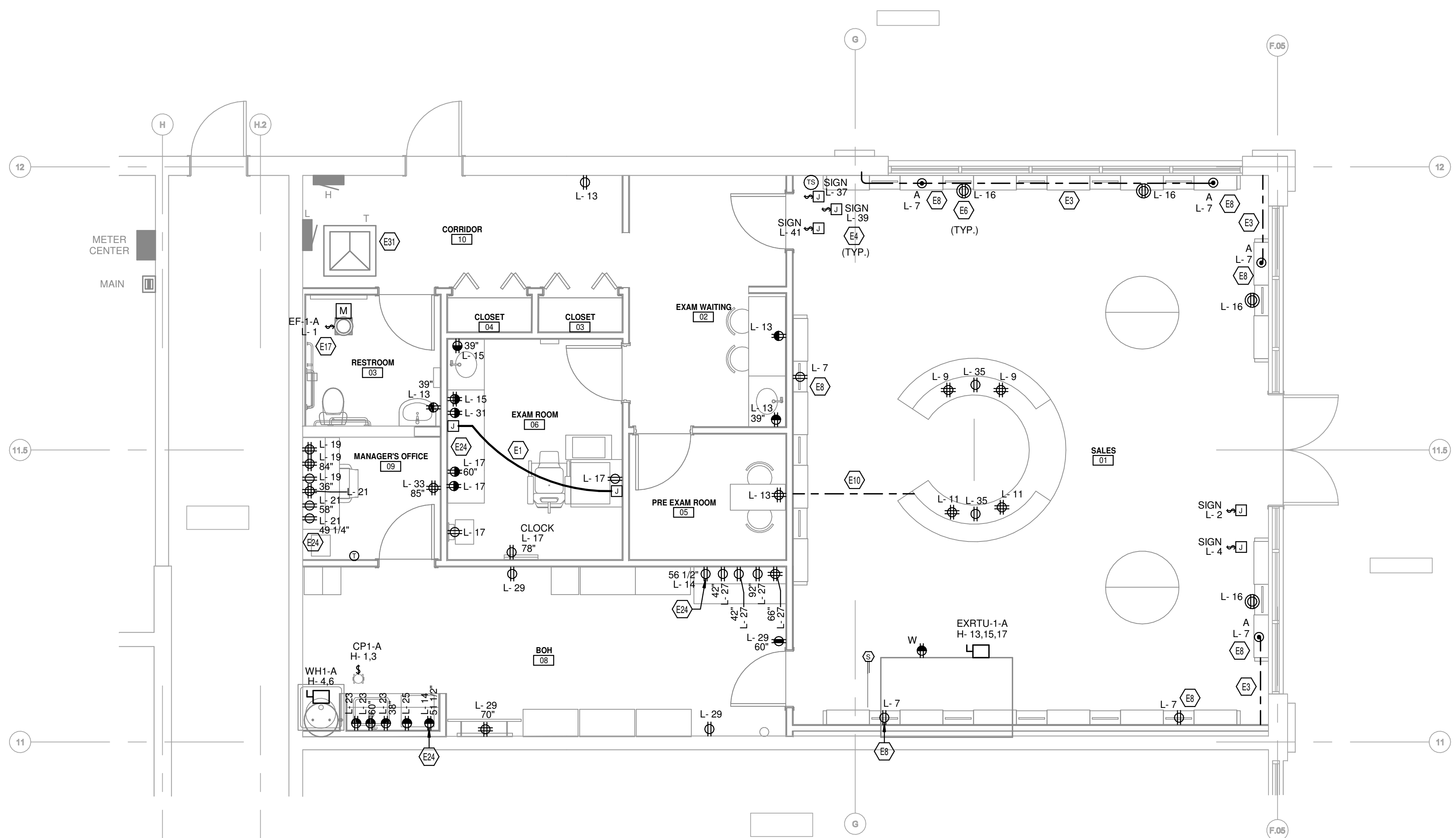
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LMA PROJECT NO. 2298

ELECTRIC POWER PLAN

EP100

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1 ELECTRIC POWER PLAN
 1/4" = 1'-0"

2" REFERENCE LINE
 DESIGNER:LAH CHECKER: LGF

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SECURITY & LOW VOLTAGE SCHEDULE		
G.C. to obtain cuts & specifications from Warby Parker		
ID	DEVICE	NOTES
TC	AURORA TRAFFIC CAMERA	<ul style="list-style-type: none"> * MUST BE CENTERED WITH FRONT ENTRANCE * MUST BE 3-4 FEET DEEP INTO ENTRANCE, WITHOUT EXCEPTIONS * DEVICE IS SURFACE MOUNTED TIGHT TO THE U.S.O. FINISHED CEILING * DROP-POLE IS REQUIRED FOR CEILING HIGHER THAN 14 FEET * RUN PLENUM RATED WHITE CAT6 CABLING IN CONDUIT FROM MOUNTING POINT TO NETWORK AREA IN MANAGER'S OFFICE * THERE SHOULD BE NO JUNCTION BOX * 36" OF SLACK SHOULD BE PROVIDED AT THE DEVICE MOUNTING POINT * EACH END MUST BE LABELED "TC#"
WAP#1	AEROHIVE AP250	<ul style="list-style-type: none"> * DEVICE IS SURFACE MOUNTED TIGHT TO THE U.S.O. FINISHED CEILING * DROP-POLE IS REQUIRED FOR CEILING HIGHER THAN 14 FEET * RUN PLENUM RATED WHITE CAT6 CABLING IN CONDUIT FROM MOUNTING POINT TO NETWORK AREA IN MANAGER'S OFFICE * EACH END MUST BE LABELED "WAP#1" * THERE SHOULD BE NO JUNCTION BOX * 36" OF SLACK SHOULD BE PROVIDED AT THE DEVICE MOUNTING POINT
WAP #2	AEROHIVE AP130	<ul style="list-style-type: none"> * DEVICE IS SURFACE MOUNTED TIGHT TO THE U.S.O. FINISHED CEILING * DROP-POLE IS REQUIRED FOR CEILING HIGHER THAN 14 FEET * RUN PLENUM RATED WHITE CAT6 CABLING IN CONDUIT FROM MOUNTING POINT TO NETWORK AREA IN MANAGER'S OFFICE * EACH END MUST BE LABELED "WAP#2" * THERE SHOULD BE NO JUNCTION BOX * 36" OF SLACK SHOULD BE PROVIDED AT THE DEVICE MOUNTING POINT
SC #XX	AXIS M3045-V	<ul style="list-style-type: none"> * SURFACE MOUNTED TIGHT TO UNDERSIDE OF GWB AND WITHIN 6" FROM NEAREST WALL * RUN PLENUM RATED WHITE CAT6 CABLING IN CONDUIT FROM MOUNTING POINT TO NETWORK AREA IN MANAGER'S OFFICE * EACH END MUST BE LABELED "SC#1", "SC#2", ETC. * THERE SHOULD BE NO JUNCTION BOX * 36" OF SLACK SHOULD BE PROVIDED AT THE DEVICE MOUNTING POINT
32" WALL-MOUNTED MONITOR	TAA 32" LED HDTV 1366X768	<ul style="list-style-type: none"> * MOUNTED @ 60" A.F.F. * REQUIRES QUAD POWER
9.7" WALL MOUNTED IPAD	APPLE 9.7" IPAD TABLET	<ul style="list-style-type: none"> * MOUNTED @ 60" A.F.F. * REQUIRES DUPLEX POWER
NETWORK	STARTECH.COM 6U 19" WALL MOUNTED SERVER RACK WITH ACRYLIC DOOR INTERNET MODEM	<ul style="list-style-type: none"> * REQUIRES QUAD POWER * LOW VOLTAGE TERMINATION POINT FOR WAPS, CAMERAS, WALL-DROPS * SITS ATOP TOP SHELF OF MANAGER'S OFFICE (NOT MOUNTED) * THIS DOES NOT INCLUDE DGA BOXES, THIS IS LOW VOLTAGE ONLY
RECESSED SPEAKERS	CONTROL 26CT: 6.5" CEILING LOUDSPEAKER JBL	<ul style="list-style-type: none"> * RUN SPEAKER CABLE DAISY CHAINED TO MUSIC CONTROL AREA
MUSIC CONTROL AREA	CROWN G160MA POWER AMP	<ul style="list-style-type: none"> * RUN SPEAKER CABLE FROM MOUNTING POINT TO MUSIC CONTROL AREA * REQUIRES DUPLEX POWER
CG	CELLULAR GATEWAY: 16" WIDE X 7" DEEP	<ul style="list-style-type: none"> * RUN PLENUM RATED WHITE CAT6 CABLING IN CONDUIT FROM MOUNTING POINT TO NETWORK AREA IN MANAGER'S OFFICE * THERE SHOULD BE NO JUNCTION BOX * 36" OF SLACK SHOULD BE PROVIDED AT THE DEVICE MOUNTING POINT * REQUIRES 18" O.C. CLEARANCE FROM OTHER DEVICES
DATA PORTS	DUPLEX OR QUAD DATA	<ul style="list-style-type: none"> * RUN (4) OR (2) PLENUM RATED WHITE CAT6 CABLING IN CONDUIT FROM DEVICE TO NETWORK AREA IN MANAGER'S OFFICE

FIRE ALARM LEGEND	
SYMBOL	DESCRIPTION
FIRE ALARM DEVICES	
	FIRE ALARM SYSTEM MANUAL PULL STATION
	FIRE ALARM DUCT SMOKE DETECTOR AND SAMPLING TUBE
	FIRE ALARM SYSTEM STROBE-ONLY DEVICE (PROVIDE CANDELA (cd) RATING FOR STROBE AS INDICATED ON DRAWINGS)
	FIRE ALARM SYSTEM HORN / STROBE DEVICE (PROVIDE CANDELA (cd) RATING FOR STROBE AS INDICATED ON DRAWINGS)
	FIRE ALARM SYSTEM CEILING / OVERHEAD MOUNTED HORN / STROBE DEVICE (PROVIDE CANDELA (cd) RATING FOR STROBE AS INDICATED ON DRAWINGS)
PLAN-VIEW AND GRAPHIC LINE TYPES	
WORK SHOWN BOLD-CONTINUOUS INDICATES NEW WORK (UNLESS OTHERWISE INDICATED)	
WORK SHOWN FADED INDICATES EXISTING WORK TO REMAIN OR NEW WORK BY OTHERS AS APPLICABLE (UNLESS OTHERWISE INDICATED)	
WORK SHOWN BOLD-DASHED INDICATES SELECTIVE DEMOLITION WORK (UNLESS OTHERWISE INDICATED)	
DRAWING SET APPEARANCE	
<p>TO BETTER COMMUNICATE SCOPE TO PERMIT AGENCIES AND CONTRACTORS, EACH DRAWING IN THIS DRAWING SET HAS BEEN CREATED IN BOTH "COLOR" AND "BLACK AND WHITE". THERE EXISTS A COLOR LAYER WITHIN EACH DRAWING WHERE VISIBILITY IS CONTROLLED THROUGH THE PDF LAYER MANAGER. THIS LAYER VISIBILITY CAN BE TOGGLED DISPLAYING EITHER "COLOR" OR "BLACK AND WHITE". TO MAINTAIN SCOPE BASED SHADING WHEN PRINTING TO PAPER, BLACK AND WHITE NEEDS TO BE VISIBLE. FOR FURTHER INSTRUCTIONS, REFER TO CONTRACTOR RESOURCES ON OUR WEBSITE AND DOWNLOAD "DRAWING COLOR INSTRUCTIONS".</p> <p>WWW.KLHENGRS.COM - CONTRACTOR RESOURCES (RIGHT HAND SIDE OF PAGE).</p>	

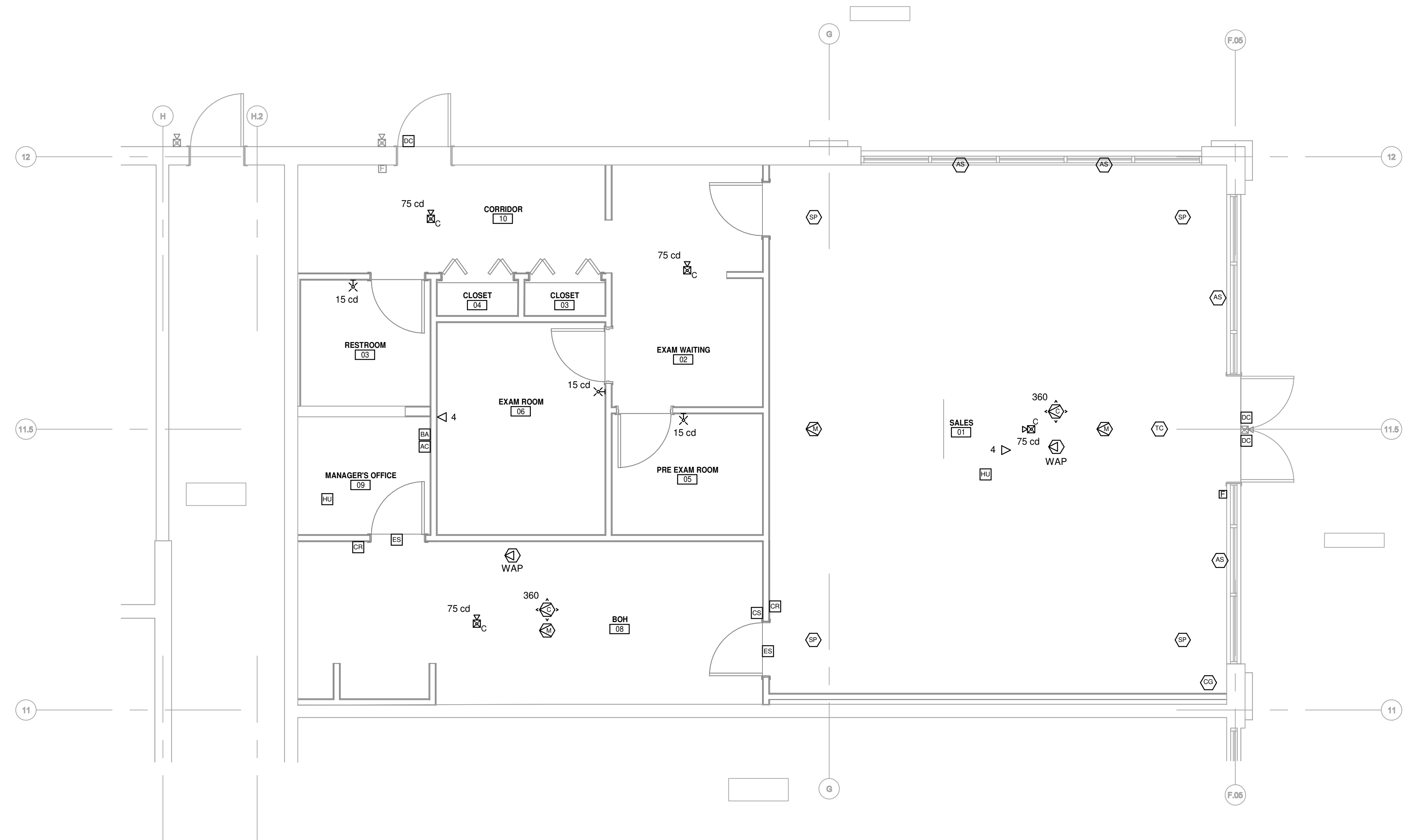
FIRE ALARM GENERAL NOTES

THE FIRE ALARM DEVICES SHOWN ARE IN PREFERRED LOCATIONS. THE CONTRACTOR SHALL INCLUDE IN HIS BID A COMPLETE FIRE ALARM SYSTEM DESIGNED, FURNISHED AND INSTALLED BY A LANDLORD APPROVED FIRE ALARM CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FILING, AND OBTAINING NECESSARY SIGN OFFS FROM THE FIRE AND BUILDING DEPARTMENTS.

SECURITY & LOW VOLTAGE SCHEDULE	
ID	DEVICE
AC	ACCESS CONTROL PANEL
AS	AUDIO SENSOR
BA	BURGLAR ALARM
CG	CELLULAR GATEWAY
CR	CARD READER
CS	COMMAND STATION AND SIREN
DC	DOOR CONTACT
ES	ELECTRIC STRIKE
HU	HOLD UP STATION
TC	TRAFFIC COUNTER

TECHNOLOGY LEGEND	
SYMBOL	DESCRIPTION
TECHNOLOGY (ROUGH-IN ONLY)	
COORDINATE WITH SYSTEM INSTALLERS PRIOR TO INSTALLATION FOR LOCATIONS, HEIGHTS, CONDUIT TERMINATIONS, ETC. ALL OUTLET BOXES FOR ROUGH-IN SHALL BE MINIMUM 2-1/4" DEEP.	
	CEILING COMMUNICATION OUTLET - VOICE, DATA, VOICE/DATA RESPECTIVELY LEFT TO RIGHT PROVIDE (1) 1" CONDUIT TO ABOVE ACCESSIBLE CEILING UNLESS NOTED OTHERWISE.
	"WAP" = WIRELESS ACCESS POINT
	DOOR OR MILLWORK MOUNTED DEVICE - SEE SCHEDULE FOR DETAILS. PROVIDE (1) 1" CONDUIT TO ABOVE ACCESSIBLE CEILING UNLESS NOTED OTHERWISE.
	CEILING MOUNT DEVICE - SEE SCHEDULE FOR DETAILS. PROVIDE (1) 1" CONDUIT TO ABOVE ACCESSIBLE CEILING UNLESS NOTED OTHERWISE.
	KEYPAD OR ACCESS CONTROL DEVICE - PROVIDE (1) 1" CONDUIT TO ABOVE ACCESSIBLE CEILING UNLESS NOTED OTHERWISE.
	DOOR OR MILLWORK MOUNTED DEVICE - SEE SCHEDULE FOR DETAILS. PROVIDE (1) 1" CONDUIT TO ABOVE ACCESSIBLE CEILING UNLESS NOTED OTHERWISE.

TECHNOLOGY LEGEND	
SYMBOL	DESCRIPTION
TELECOMMUNICATIONS	
	CEILING DATA OUTLET WAP = WIRELESS ACCESS POINT
	WALL DATA OUTLET WAP = WIRELESS ACCESS POINT, 2 = DUPLEX, 4 = QUAD
	WALL VOICE AND DATA OUTLET ACC = ADMINISTRATIVE CONTROL CONSOLE
AUDIO-VISUAL SYSTEMS	
	CEILING SPEAKER
SECURITY SYSTEMS	
	CEILING SECURITY CAMERA
	CEILING MOTION SENSOR



1 LOW VOLTAGE PLAN
 1/4" = 1'-0"

2" REFERENCE LINE
 DESIGNER:LAH CHECKER: LGF

KLH ENGINEERS
 KOHRS LONNEMANN HEIL ENGINEERS, INC.
 MECHANICAL/ELECTRICAL ENGINEERS
 WWW.KLHENGRS.COM
 1538 ALEXANDRIA PIKE, SUITE 11
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 Ground Floor
 Lynnfield, MA 01940

LMA PROJECT NO. 2298

ELECTRIC LOW VOLTAGE PLAN

EP300

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ELECTRIC SINGLE LINE EQUIPMENT SCHEDULE

EQUIPMENT	PHASE	EQUIPMENT TYPE	SUPPLY FROM	SPACE NUMBER	SPACE NAME	VOLTAGE	PHASE	WIRES	DEMAND (kVA)	DEMAND (A)	MAINS RATING (A)	MAINS FRAME RATING (A)	MAINS TYPE	FEEDER ID	FEEDER	VD %	LUGS TYPE	SPD	ULSE	GEC	ENCLOSURE TYPE	200% NEUTRAL	K-RATING	FAULT CURRENT (A)	SHORT CIRCUIT RATING (A)	NOTES
UTILITY	Existing	Pad Mounted				480	3														NEMA 3R			65000		
METER CENTER	Existing	Meter Center Main	UTILITY			480	3	4	41.3 kVA	50 A	800	800	THERMAL MAGNETIC	X800	EXISTING FEEDER, AT RATING INDICATED, TO REMAIN UNLESS NOTED OTHERWISE	0					NEMA 3R			56856	EXISTING	
MAIN	Existing	Enclosed Circuit Breaker	METER CENTER			480	3	4	41.3 kVA	50 A	200	200	THERMAL MAGNETIC	X200	EXISTING FEEDER, AT RATING INDICATED, TO REMAIN UNLESS NOTED OTHERWISE	0					NEMA 3R			54985	EXISTING	
H	Existing	Branch Panelboard	MAIN	10	CORRIDOR	480	3	4	41.3 kVA	50 A	200	200	THERMAL MAGNETIC	X200	EXISTING FEEDER, AT RATING INDICATED, TO REMAIN UNLESS NOTED OTHERWISE	0					NEMA 3R			43645	EXISTING	
T	Existing	30 kVA	H	10	CORRIDOR	480	3	3	18.0 kVA	22 A	50	50		X50	EXISTING FEEDER, AT RATING INDICATED, TO REMAIN UNLESS NOTED OTHERWISE	0				NEMA 3R			3122	EXISTING		
L	Existing	Branch Panelboard	T	10	CORRIDOR	208	3	4	18.0 kVA	50 A	100	100	THERMAL MAGNETIC	X100	EXISTING FEEDER, AT RATING INDICATED, TO REMAIN UNLESS NOTED OTHERWISE	0				NEMA 3R			2994	EXISTING		

NOTES:
 ALL CONDUIT SIZES INDICATED ARE MINIMUM SIZES. INCREASE SIZES AS REQUIRED TO ACCOMMODATE CONDUCTOR PULLING EASE, FIELD CONDITIONS, ETC.
 CU = COPPER CONDUCTOR, *AL* = ALUMINUM CONDUCTOR

TYPICAL EQUIPMENT NAME NOMENCLATURE:
 1 - POWER DISTRIBUTION SYSTEM (BLANK - NORMAL, E - EMERGENCY, S - STANDBY, L - LIFE SAFETY)
 2 - DESCRIPTION (H - 480Y/277V, L - 208Y/120V)
 3 - FLOOR / LEVEL
 4 - SEQUENCE

FEEDER ID NOMENCLATURE:
 * - INDICATES FEEDER SIZED TO COMPENSATE FOR VOLTAGE DROP
 1 - GROUND TYPE (MAY BE BLANK)
 U = EQUIPMENT GROUND CONDUCTOR REMOVED FOR SERVICE ENTRANCE FROM UTILITY
 P = PARITY-SIZED EQUIPMENT GROUND CONDUCTOR
 X = EXISTING FEEDER TO REMAIN UNLESS OTHERWISE NOTED
 T = UPSIZED GROUND CONDUCTORS FOR TRANSFORMER SECONDARY

2 - CONDUCTOR AMPACITY
 3 - TOTAL NUMBER OF PHASE AND GROUNDED ("NEUTRAL") CONDUCTORS
 4 - CONDUCTOR MATERIAL: C = COPPER, A = ALUMINUM
 5 - SPECIAL (MAY BE BLANK)
 1 = ISOLATED GROUND (PROVIDE CONTINUOUS INSULATED ISOLATED EQUIPMENT GROUNDING CONDUCTOR(S) FROM INSULATED ISOLATED GROUND BAR(S) TO RESPECTIVE UPSTREAM SERVICE ENTRANCE OR DERIVED SYSTEM GROUNDING ELECTRODE CONDUCTOR AS APPLICABLE.

HVAC ELECTRICAL COORDINATION SCHEDULE

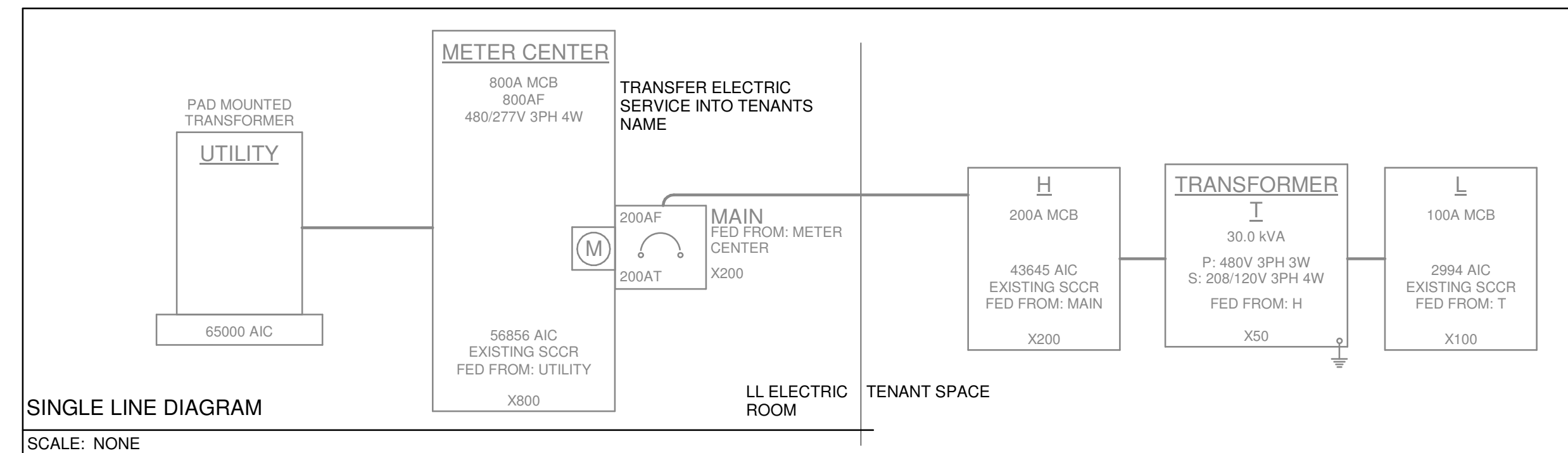
CONNECTION MARK	DESCRIPTION	VOLTAGE	PHASE	EMERGENCY	HP	WATTS	HTG KW	FLA	MCA	OCF	FED FROM	DC TYPE	DC FURN	DC INST	DC WIRE	MC TYPE	MC FURN	MC INST	MC WIRE	CN TYPE	CN FURN	CN INST	CN WIRE	SHORT CIRCUIT RATING CODE REQUIRED?	AVAILABLE FAULT CURRENT
EXRTU-1-A	PACKAGED ROOFTOP UNIT, GAS HEAT	480 V	3						19	25			EC	EC	EC	MG	MFR	MFR	MFR	LINE	HC	HC	HC	Yes	0
EF-1-A	CENTRIFUGAL ROOF VENTILATOR	120 V	1		0.25		3.8						EC	EC	EC	MG	MFR	MFR	MFR	LINE	EC	EC	EC	No	2084

PLUMBING ELECTRICAL COORDINATION SCHEDULE

CONNECTION MARK	DESCRIPTION	VOLTAGE	PHASE	EMERGENCY	HP	WATTS	HTG KW	FLA (A)	MCA (A)	OCF (A)	FED FROM	DC TYPE	DC FURN	DC INST	DC WIRE	MC TYPE	MC FURN	MC INST	MC WIRE	CN TYPE	CN FURN	CN INST	CN WIRE	SHORT CIRCUIT RATING CODE REQUIRED?	AVAILABLE FAULT CURRENT
CP1-A	DOMESTIC HOT WATER CIRCULATION PUMP	480 V	1			60							EC	EC	EC	MG	MFR	MFR	MFR	LINE	PC	PC	EC	No	7325
WH1-A	TANK TYPE ELECTRIC WATER HEATER	480 V	1			4500							EC	EC	EC	--	--	--	--	INT	MFR	MFR	MFR	No	8007

ELECTRIC EQUIPMENT SUPPLY SCHEDULE

EQUIPMENT MARK	SUPPLY FROM	CKT	EMERG.	LOAD (kVA)	AVAILABLE FAULT CURRENT	VOLTS	POLE	HTG KW	WATT	HP	FLA (A)	MCA (A)	ROD OCP (A)	BREAKER RATING (A)
CP1-A	H	1,3		0.06	7325	480 V	2	60			0.25	3.8	19	25
EF-1-A	L	1		0.46	2084	120 V	1							20
EXRTU-1-A	H	13,15,17		14.22	0	480 V	3							25
WH1-A	H	4,6		4.50	8007	480 V	2	4500						20



SINGLE LINE DIAGRAM

SCALE: NONE

2" REFERENCE LINE
 DESIGNER: LAH CHECKER: LGF

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ELECTRIC POWER - SINGLE LINE DIAGRAM

EP601

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**ELECTRIC POWER -
 PANEL SCHEDULES
 AND LEGEND**

EP602

PANEL NAME: L																			
SUPPLY FROM: T					MAINS RATING (A): 100					FAULT CURRENT (A): 2994					PHASE: Existing				
LOCATION: CORRIDOR 10					MAINS TYPE: THERMAL MAGNETIC					SHORT CIRCUIT RATING (A): EXISTING					SURGE SUPPRESSION: ULSE:				
DISTRIBUTION SYSTEM: 208/120V 3PH 4W					FEEDER ID: X100					LUGS TYPE: 200% NEUTRAL:					ISOLATED GROUND:				
FEEDER: EXISTING FEEDER, AT RATING INDICATED, TO REMAIN UNLESS NOTED OTHERWISE																			
ENCLOSURE TYPE: NEMA 3R																			
CKT	CIRCUIT DESCRIPTION	VD%	AWG	GND	TRIP	FRAME	POLE	A	B	C	POLE	FRAME	TRIP	GND	AWG	VD%	CIRCUIT DESCRIPTION	CKT	
1	(#) EF-1-A LTG 09,08	0.137	#12	#12	20 A	20 A	1	0.46	1.20		1	20 A	20 A	#12	#12	2.401	(#) SIGNAGE CONTINUOUS SALES 01	2	
3	(#) LTG SALES 01	0.428	#12	#12	20 A	20 A	1		0.33	0.50		1	20 A	20 A	#12	#12	1.029	(#) SIGNAGE CONTINUOUS SALES 01	4
5	LTG SALES 01	1.064	#12	#12	15 A	15 A	1			0.85	0.02	1	20 A	20 A	#12	#12	0.014	(#) LTG 10,05,06	6
7	(#) RCPT SALES 01	2.078	#12	#12	20 A	20 A	1	1.98	0.14			1	20 A	20 A	#12	#12	0.047	(#) LTG CORRIDOR 10	8
9	(#) RCPT SALES 01	0.966	#12	#12	20 A	20 A	1		0.72	0.40		1	20 A	20 A	#12	#12	0.213	(#) LTG 09,08	10
11	(#) RCPT SALES 01	1.107	#12	#12	20 A	20 A	1		0.72	0.13	1	20 A	20 A	#12	#12	0.139	(#) LTG SALES 01	12	
13	(#) RCPT 05,02,10	0.542	#12	#12	20 A	20 A	1	1.08	0.36			1	20 A	20 A	#12	#12	0.35	(#) RCPT BOH 08	14
15	(#) RCPT EXAM ROOM 06	0.228	#12	#12	20 A	20 A	1		0.54	0.72		1	20 A	20 A	#12	#12	0.86	RCPT SALES 01	16
17	(#) RCPT EXAM ROOM 06	0.558	#12	#12	20 A	20 A	1			0.90	0.00	1	--	20 A	--	--	--	(#) SPARE	18
19	(#) RCPT MANAGER'S OFFICE 09	0.363	#12	#12	20 A	20 A	1	0.90	0.00			1	--	20 A	--	--	--	(#) SPARE	20
21	(#) RCPT MANAGER'S OFFICE 09	0.335	#12	#12	20 A	20 A	1		0.72	0.00		1	--	20 A	--	--	--	(#) SPARE	22
23	(#) RCPT BOH 08	0.497	#12	#12	20 A	20 A	1		0.54	0.00	1	--	20 A	--	--	--	--	(#) SPARE	24
25	(#) RCPT BOH 08	0.18	#12	#12	20 A	20 A	1	0.18	0.00			1	--	20 A	--	--	--	(#) SPARE	26
27	(#) RCPT BOH 08	1.061	#12	#12	20 A	20 A	1		0.90	0.00		1	--	20 A	--	--	--	(#) SPARE	28
29	(#) RCPT BOH 08	0.819	#12	#12	20 A	20 A	1		0.90	0.00	1	--	20 A	--	--	--	--	(#) SPARE	30
31	(#) RCPT EXAM ROOM 06	0.103	#12	#12	20 A	20 A	1	0.18	0.00			1	--	20 A	--	--	--	(#) SPARE	32
33	(#) RCPT MANAGER'S OFFICE 09	0.249	#12	#12	20 A	20 A	1		0.36	0.00		1	--	20 A	--	--	--	(#) SPARE	34
35	(#) RCPT SALES 01	0.495	#12	#12	20 A	20 A	1		0.36	0.00	1	--	20 A	--	--	--	--	(#) SPARE	36
37	(#) SIGNAGE CONTINUOUS SALES 01	0.482	#12	#12	20 A	20 A	1	0.50	0.00			--	--	--	--	--	--	(EX) SPACE	38
39	(#) SIGNAGE CONTINUOUS SALES 01	0.486	#12	#12	20 A	20 A	1		0.50	0.00		--	--	--	--	--	--	(EX) SPACE	40
41	(#) SIGNAGE CONTINUOUS SALES 01	0.458	#12	#12	20 A	20 A	1			0.50	0.00	--	--	--	--	--	--	(EX) SPACE	42
TOTAL CONNECTED LOAD:										7.0 kVA	5.7 kVA	4.9 kVA							
LOAD CLASSIFICATION										CONNECTED LOAD		DEMAND FACTOR		ESTIMATED DEMAND		PANEL TOTALS			
Continuous										3200 VA		125.00%		4000 VA		EXISTING CONNECTED LOAD:			
Cooling										0 VA		0.00%		0 VA		EXISTING LOAD DEMAND FACTOR:			
Elevator										0 VA		0.00%		0 VA		ADDED CONNECTED LOAD: 17598 VA			
Heating										0 VA		0.00%		0 VA		DEMAND CALCULATION NOTES:			
Kitchen Equipment										0 VA		0.00%		0 VA		TOTAL DEMAND: 17952.5 VA			
Lighting										1882 VA		125.00%		2353 VA		TOTAL DEMAND AMPS: 50 A			
Motor										456 VA		125.00%		570 VA					
Non-Continuous										0 VA		0.00%		0 VA					
Receptacle										12060 VA		91.46%		11030 VA					
NOTES:										BREAKER QUANTITIES (NEW ONLY)									
										(1) 15A / 1P, (1) 20A / 1P									

PANEL NAME: H																			
SUPPLY FROM: MAIN					MAINS RATING (A): 200					FAULT CURRENT (A): 43645					PHASE: Existing				
LOCATION: CORRIDOR 10					MAINS TYPE: THERMAL MAGNETIC					SHORT CIRCUIT RATING (A): EXISTING					SURGE SUPPRESSION: ULSE:				
DISTRIBUTION SYSTEM: 480/277V 3PH 4W					FEEDER ID: X200					LUGS TYPE: 200% NEUTRAL:					ISOLATED GROUND:				
FEEDER: EXISTING FEEDER, AT RATING INDICATED, TO REMAIN UNLESS NOTED OTHERWISE																			
ENCLOSURE TYPE: NEMA 3R																			
CKT	CIRCUIT DESCRIPTION	VD%	AWG	GND	TRIP	FRAME	POLE	A	B	C	POLE	FRAME	TRIP	GND	AWG	VD%	CIRCUIT DESCRIPTION	CKT	
1	CPI-A MOTOR BOH 08	0.003	#12	#12	20 A	20 A	2	0.03	0.00			1	--	20 A	--	--	(EX) SPARE	2	
3	(EX) SPARE	--	--	--	20 A	--	1		0.03	2.25		2	20 A	20 A	#12	#12	0.233	WH1-A CONTINUOUS BOH 08	4
5	(EX) SPARE	--	--	--	20 A	--	1	0.00	0.00			1	--	20 A	--	--	(EX) SPARE	8	
7	(EX) SPARE	--	--	--	20 A	--	1		0.00	0.00		1	--	20 A	--	--	(EX) SPARE	10	
9	(EX) SPARE	--	--	--	20 A	--	1		0.00	0.00		1	--	20 A	--	--	(EX) SPARE	12	
11	(EX) SPARE	--	--	--	20 A	--	1		0.00	0.00		1	--	20 A	--	--	(EX) SPARE	14	
13	(EX) EXRTU-1-A MOTOR SALES 01	--	--	--	25 A	25 A	3		4.74	6.98								(EX) T	16
15	(EX) EXRTU-1-A MOTOR SALES 01	--	--	--	25 A	25 A	3		4.74	5.69		3	50 A	50 A	SL	SL	SL	(EX) T	18
17	(EX) SPACE	--	--	--	--	--	--	0.00	0.00									(#) SPARE	20
19	(EX) SPACE	--	--	--	--	--	--	0.00	0.00									(#) SPARE	22
21	(EX) SPACE	--	--	--	--	--	--	0.00	0.00			3	--	25 A	--	--	--	(#) SPARE	24
23	(EX) SPACE	--	--	--	--	--	--	0.00	0.00									(#) SPARE	26
25	(EX) SPACE	--	--	--	--	--	--	0.00	0.00									(#) SPARE	28
27	(EX) SPACE	--	--	--	--	--	--	0.00	0.00			3	--	20 A	--	--	--	(#) SPARE	30
29	(EX) SPACE	--	--	--	--	--	--	0.00	0.00									(#) SPARE	32
31	(EX) SPACE	--	--	--	--	--	--	0.00	0.00									(#) SPARE	34
33	(EX) SPACE	--	--	--	--	--	--	0.00	0.00									(#) SPARE	36
35	(EX) SPACE	--	--	--	--	--	--	0.00	0.00									(#) SPARE	38
37	(EX) SPACE	--	--	--	--	--	--	0.00	0.00									(#) SPARE	40
39	(EX) SPACE	--	--	--	--	--	--	0.00	0.00									(#) SPARE	42
41	(EX) SPACE	--	--	--	--	--	--	0.00	0.00									(#) SPARE	44
TOTAL CONNECTED LOAD:										11.7 kVA	12.7 kVA	11.9 kVA							
LOAD CLASSIFICATION										CONNECTED LOAD		DEMAND FACTOR		ESTIMATED DEMAND		PANEL TOTALS			
Continuous										7700 VA		125.00%		9625 VA		EXISTING CONNECTED LOAD:			
Cooling										0 VA		0.00%		0 VA		EXISTING LOAD DEMAND FACTOR:			
Elevator										0 VA		0.00%		0 VA		ADDED CONNECTED LOAD: 36374 VA			
Heating										0 VA		0.00%		0 VA		DEMAND CALCULATION NOTES:			
Kitchen Equipment										0 VA		0.00%		0 VA		TOTAL DEMAND: 41293.5 VA			
Lighting										1882 VA		125.00%		2353 VA		TOTAL DEMAND AMPS: 50 A			
Motor										14732 VA		124.12%		18286 VA					
Non-Continuous										0 VA		0.00%		0 VA					
Receptacle										12060 VA		91.46%		11030 VA					
NOTES:										BREAKER QUANTITIES (NEW ONLY)									
										(2) 20A / 2P									

PANEL SCHEDULE LEGEND		PANEL SCHEDULE LEGEND	
**	= WIRE SIZED TO COMPENSATE FOR VOLTAGE DROP	(F)	= CIRCUIT FOR FUTURE USE. PROVIDE BREAKER INDICATED. LOAD SHOWN FOR REFERENCE ONLY.
(#)	= REFER TO DRAWINGS FOR SPECIFICATIONS	(G)	= PROVIDE GROUND-FAULT CIRCUIT INTERRUPTER (GFCI) CIRCUIT BREAKER
(-)	= NEW CIRCUIT TO EXISTING CIRCUIT BREAKER	(GE)	= PROVIDE GROUND-FAULT EQUIPMENT PROTECTION (GFEPT) CIRCUIT BREAKER
(-)	= CONNECT BRANCH CIRCUIT, WHICH WAS DISCONNECTED FROM ANOTHER SOURCE AS PART OF SELECTIVE DEMOLITION, TO POLE SPACE(S) INDICATED, DETERMINE EXACT POLE ASSIGNMENT(S) BASED ON EXISTING COLOR-CODING OF THE BRANCH CIRCUIT CONDUCTOR INSULATION. PROVIDE NEW BREAKER IF REQUIRED.	(H)	= PROVIDE HANDLE TIE
(A)	= PROVIDE ARC FAULT CIRCUIT INTERRUPTER (AFCI) CIRCUIT BREAKER	(L)	= PROVIDE LOCK-ON DEVICE
(AG)	= PROVIDE COMBINATION ARC FAULT (AFCI) / GROUND FAULT (GFCI) CIRCUIT INTERRUPTER CIRCUIT BREAKER	(LI)	= PROVIDE ELECTRONIC LONG AND INSTANTANEOUS ADJUSTABILITY
(ERM)	= PROVIDE ENERGY REDUCTION MAINTENANCE (REDUCED ENERGY) CIRCUIT BREAKER	(LSI)	= PROVIDE ELECTRONIC LONG, SHORT, AND INSTANTANEOUS ADJUSTABILITY
(EX)	= EXISTING CIRCUIT TO REMAIN	(LSIA)	= PROVIDE ELECTRONIC LONG, SHORT, INSTANTANEOUS, AND GROUND-FAULT ALARM ADJUSTABILITY
		(LSIG)	= PROVIDE ELECTRONIC LONG, SHORT, INSTANTANEOUS, AND GROUND-FAULT ADJUSTABILITY
		(LT)	= PROVIDE LOCK-OUT/TAG-OUT DEVICE
		SL	= SEE THE SINGLE LINE DIAGRAM / SCHEDULE FOR WIRE SIZE AND VOLTAGE DROP
		(ST)	= PROVIDE SHUNT TRIP CIRCUIT BREAKER

PANEL SCHEDULE GENERAL NOTES	
A.	PROVIDE HACR RATED BREAKERS ON ALL MOTOR LOADS.
B.	ALL CONDUCTORS SHOWN ARE COPPER.
C.	ALL VOLTAGE DROP CALCULATIONS AND COMPENSATED WIRE SIZES ARE BASED ON RIGHT ANGLE CIRCUIT LENGTHS. ACTUAL VOLTAGE DROP MAY VARY BASED ON INSTALLED WIRE LENGTH.
D.	VOLTAGE DROP CALCULATIONS AND WIRE SIZES SHOWN IN THE PANEL SCHEDULES ARE FOR HOMERUN CONDUCTORS ONLY. FOR CIRCUITS WITH MORE THAN 1 DEVICE, THESE SIZES ASSUME THE CONDUCTORS DOWNSTREAM OF THE HOMERUN DEVICE ARE THE MINIMUM SIZE REQUIRED BY THE NEC BASED ON THE RATING OF THE CIRCUIT. WHERE THIS IS NOT THE CASE, IT HAS BEEN INDICATED ON THE DRAWINGS. VOLTAGE DROP TO THE FARTHEST DEVICE HAS BEEN CALCULATED TO NEVER EXCEED 5%.
E.	RECEPTACLE LOADS CALCULATED AT 100% OF FIRST 10kVA, 50% OF REMAINDER. MOTOR LOADS CALCULATED AT 125% OF THE LARGEST MOTOR, 100% OF ALL OTHER MOTORS.

2" REFERENCE LINE
 DESIGNER: LAH CHECKER: LGF