

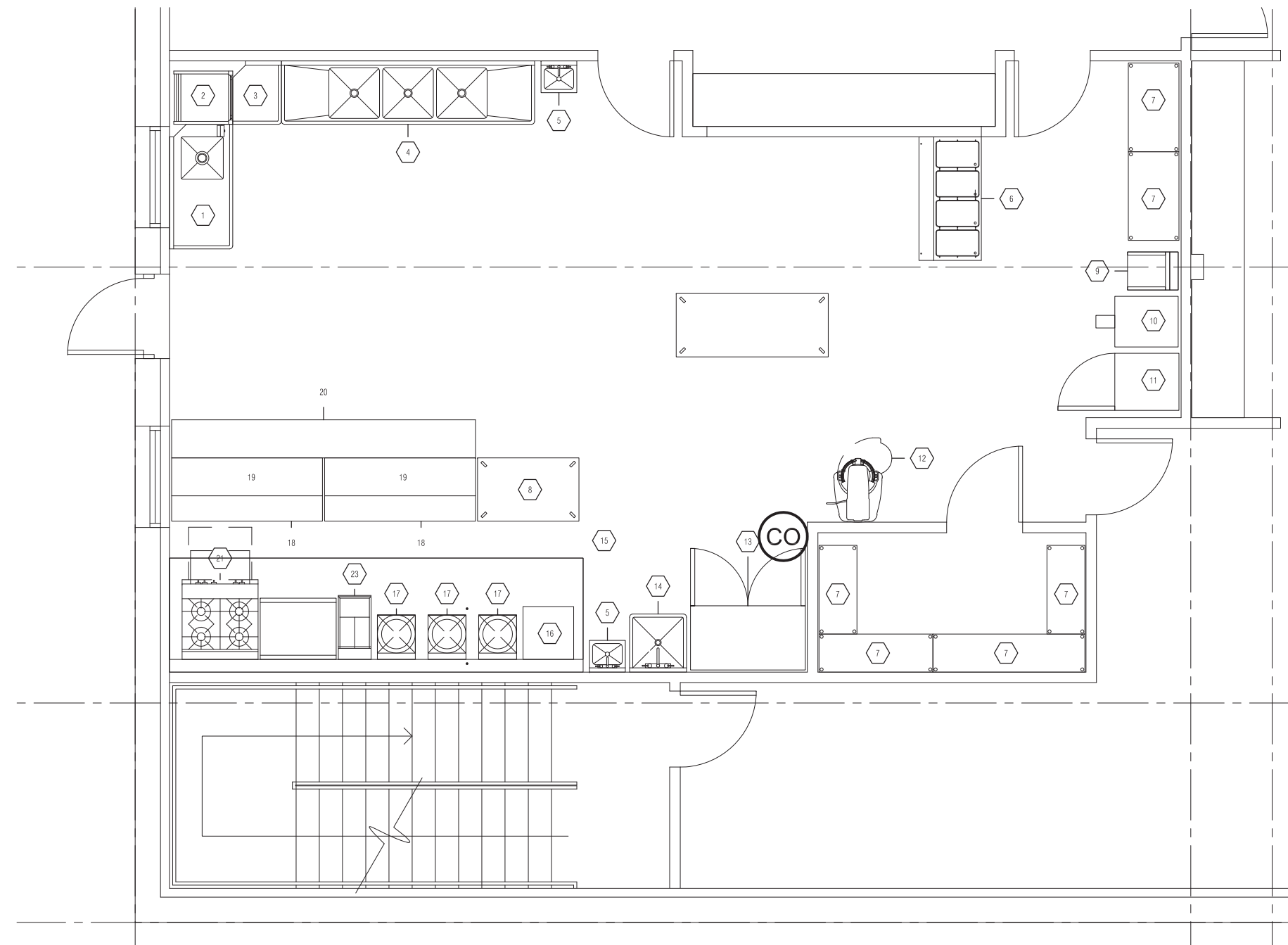


**GENERAL NOTES**

- DUCTWORK SHOWN FOR DIAGRAMMATIC PURPOSES ONLY. CONTRACTOR SHALL VERIFY ALL DUCT PLACEMENT AND ADJUST AS NEEDED TO ACCOMMODATE STRUCTURAL ELEMENTS WHILE MAINTAINING DUCT CROSS SECTIONAL AREAS SHOWN ON PLANS.
- CONTRACTOR SHALL NOT USE PLANS TO FABRICATE DUCTWORK. CONTRACTOR SHALL USE MEASURED BUILDING DIMENSIONS OF ALL STRUCTURAL ELEMENTS FOR PREPARING DUCTWORK.
- EQUIPMENT LAYOUT SHOWN FOR DIAGRAMMATIC PURPOSES ONLY. CONTRACTOR SHALL INSTALL EQUIPMENT PER MANUFACTURERS RECOMMENDATIONS.
- CONTRACTOR SHALL UTILIZE TURNING VANES AT ALL POSSIBLE LOCATIONS TO MINIMIZE TOTAL STATIC PRESSURE LOSSES.
- HVAC CONTRACTOR SHALL COORDINATE ALL ROOF PENETRATIONS AND ROOF DUCT INSTALLATION WITH GENERAL AND ROOF CONTRACTORS.
- CONTRACTOR SHALL INSTALL FIRE DAMPERS (FD) AT ALL PENETRATIONS THROUGH FIRE RATED PARTITIONS. FIRE DAMPER HOURLY RATING TO MATCH PARTITION.
- ALL NEW DUCTWORK SHALL BE INSTALLED TIGHT TO STRUCTURE WHEREVER POSSIBLE TO MAXIMIZE SPACE FOR ALL OTHER TRADES.
- NEW MECHANICAL EQUIPMENT SHALL BE PROVIDED WITH MANUFACTURER RECOMMENDED VIBRATION ISOLATION SUPPORTS. CONTRACTOR SHALL INSURE ANY MECHANICAL VIBRATION OR NOISE ISSUES CAUSED BY THE NEW WORK BE ELIMINATED PRIOR TO THE OCCUPATION OF THE SPACE BY THE TENANT.
- MINIMUM SHEET STEEL THICKNESS SHALL BE 26 GAUGE
- CONTRACTOR SHALL PROVIDE ACCESS PANELS THAT ARE OF SUFFICIENT SIZE FOR MAINTENANCE OF ANY DAMPERS OR EQUIPMENT ABOVE SHEET ROCK OR OTHERWISE UNACCESSIBLE CEILING/WALLS. ALL ACCESS PANELS SHALL BE COORDINATED WITH PROJECT ARCHITECT FOR STYLE. ACCESS PANEL COLOR TO MATCH CORRESPONDING CEILING/WALL. COORDINATE ALL COLORS AND TRIMS WITH ARCHITECT. CONTRACTOR SHALL MAKE ALL REASONABLE EFFORTS TO LOCATE ALL EQUIPMENT AND DAMPERS THAT REQUIRE MAINTENANCE ABOVE ACCESSIBLE CEILINGS.
- ALL NEW INDOOR EQUIPMENT, PIPING, AND DUCTWORK SHALL BE A CONCEALED INSTALLATION. EXCEPTION ONLY TO WALL/FLOOR MOUNTED HVAC UNITS.

**LOUVER SCHEDULE**

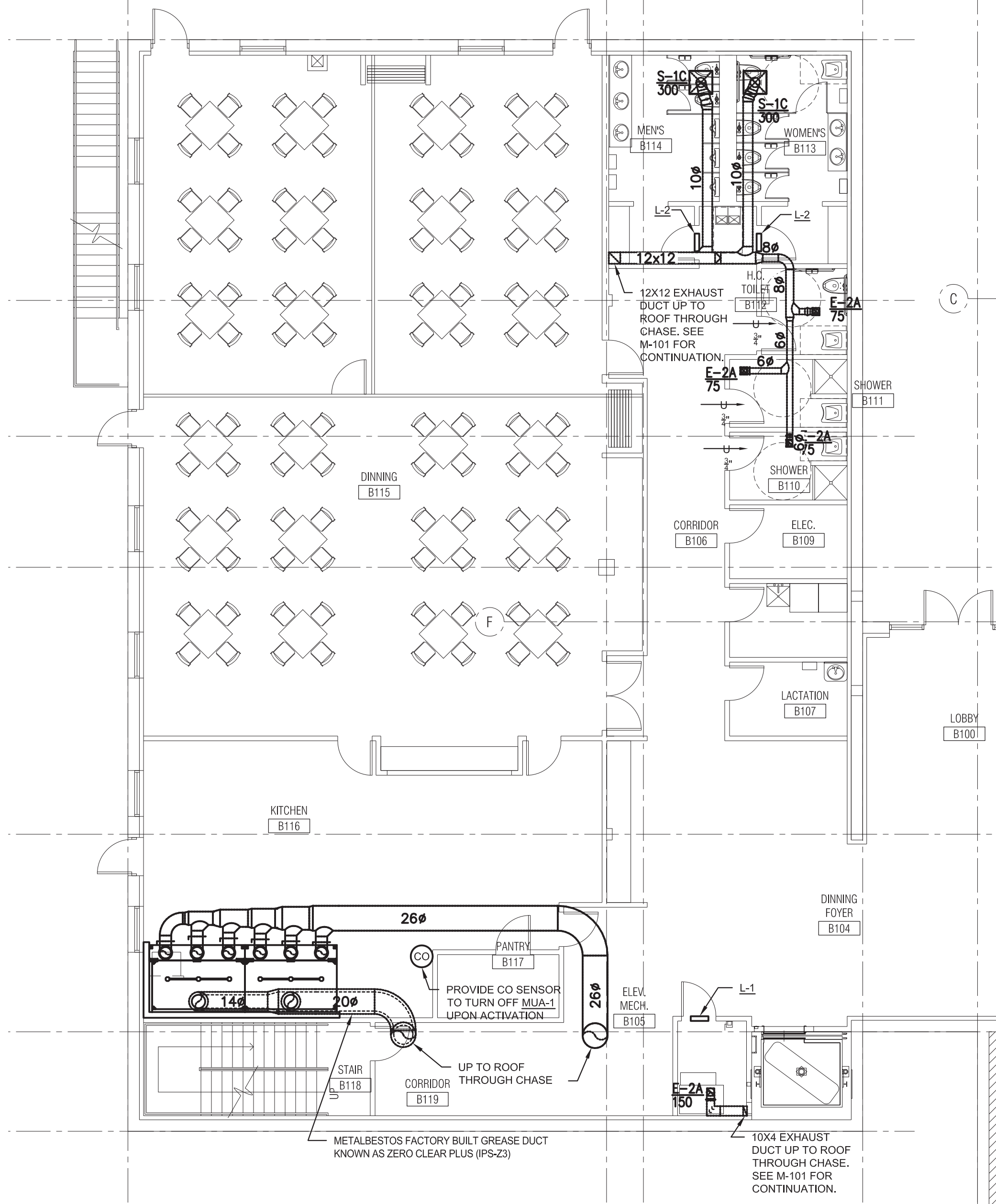
TAG	LOCATION	FUNCTION	BLADE STYLE	WIDTH/ HEIGHT (IN.)	FRAME DEPTH (IN.)	CFM	FREE AREA (SQ. FT)	MATERIAL	FINISH	REMARKS
L-1	ELEVATOR MECHANICAL ROOM	TRANSFER AIR	--	18/12	2"	150	0.675	STEEL FRAME	COORDINATE WITH ARCHITECT	NAILOR 61DGD-FR. COLOR BY ARCHITECT, FIRE RATING TO MATCH.
L-2	PUBLIC RESTROOM	TRANSFER AIR	--	24/12	2"	300	0.9	STEEL FRAME	COORDINATE WITH ARCHITECT	NAILOR 61DGD. COLOR BY ARCHITECT.



**MECHANICAL - KITCHEN LAYOUT AND EQUIPMENT IDENTIFICATION**  
SCALE: 3/16"=1'-0"

**DIFFUSER, GRILLE, AND REGISTER SCHEDULE**

CALLOUT	DESCRIPTION	AIRFLOW RANGE (CFM)	FACE SIZE (IN)	INLET SIZE (IN)	NOISE CRITERIA @ MAX CFM	NOTES
E-2A	TITUS 50FF EGGRATE RETURN	0 - 150	7 3/4x7 3/4	6x6	22	COORDINATE CEILING TYPE, FRAME AND COLOR WITH ARCHITECT.
S-1C	TITUS PAS	0 - 330	24x24	10ø	27	COORDINATE CEILING TYPE, FRAME AND COLOR WITH ARCHITECT.



**MECHANICAL - NEW LOWER LEVEL FLOOR PLAN**  
SCALE: 1/8"=1'-0"

**CAPTIVEAIRE GREASE HOOD INFORMATION**

HOOD NO.	MODEL	LENGTH	MAX. COOKING TEMP.	EXHAUST PLENUM			HOOD CONSTRUCTION	HOOD CONFIG.		FILTER(S)						LIGHT(S)			MAKE-UP AIR SUPPLY PLENUM							
				TOTAL EXH. CFM	DIAM.	CFM		S.P.	END TO END	ROW	TYPE	QTY.	HEIGHT	LENGTH	QTY.	TYPE	WIRE GUARD	FIRE SYSTEM PIPING	HOOD HANGING WGT	POSITION	LENGTH	WIDTH	HEIGHT	RISER DIAMETER	RISER CFM	RISER QUANTITY
1	5424 ND-2-PSP-F	8' 0.00"	450 Deg.	1800	14"	1800	-0.698"	430 SS	LEFT	ALONE	Captrate Solo Filter	1	20"	16"	3	Incandescent Light Fixt	NO	YES	448 LBS	FRONT	96"	16"	6"	14"	480	3
												4	20"	20"												
2	5424 ND-2-PSP-F	8' 1.00"	450 Deg.	1819	14"	1819	-0.711"	430 SS	RIGHT	ALONE	Captrate Solo Filter	1	20"	16"	3	Incandescent Light Fixt	NO	YES	435 LBS	FRONT	100"	16"	6"	14"	484	3
												4	20"	20"												

**SCHEDULE OF EQUIPMENT**

Item	Qty.	Description	Electrical													Water			Waste				Natural Gas					Flue	Manufacturer	Model No.	Notes/ Remarks:				
			Amps	KW	HP	Volts	Conn	Type	Min. Amp	Hertz	Phase	Cold	Hot	AFF	Direct	AFF	Indirect	AFF	Gas Pressure	Gas Flow (CFH)	Connection Size	Gas Regulator	Size												
1	1	Dishable, Soiled																																	
2	1	Dishwasher, Door Type	36.6	15.8	1	208-230v					50	60	3	1/2"	1/2"	18"																			
3	1	Dishable, Cleaned																																	
4	1	Sink, (3) Compartment (2 Faucets)														1/2"	1/2"	18"				2"	9"												
5	2	Hand Sink(2)														1/2"	1/2"	18"				2"	9"												
6	1	Serving Counter	14.4			208-240v				NEMA 6-20	25	60	3	1/2"	1/2"	18"							2"	9"											
7	6	Shelving Unit																																	
8	2	Stainless Steel Table																																	
9	1	Rice Mixer			3/4	200-240					50	60	3																						
10	1	Mixer Grinder	37.0		10	208				NEMA L21-30P	50	60	3																						
11	1	Freezer, Reach-In	7.8		1/2	115v				NEMA 5-15P	60	1																							
12	1	Food Mixer	5.7		3/4	200-240v					50	60	3																						
13	1	Refrigerator	9.2		1/2	115v				NEMA 5-15P	60	1																							
14	1	Hand Sink													1/2"	1/2"	18"				2"	9"													
15	1	Exhaust Hood																																	
16	1	Steamer	46.1	15		208v					50	60	3	1/2"	1/2"	18"				1/2" NPT	2"	9"													
17	1	Stock Pot																																	
18	1	Work Top Cooler	7.0		1/3						60	1																							
19	2	Double Overshelf																																	
20	1	Dish Cabinet																																	
21	1	Range, Gas (heavy-duty)				208-240v					60	1						7"	225	1-1/4"	SPECIFIED	5"			Advance Turbo	DC-812							225,000 BTU		
22	1	Griddle, Gas									60	1													Star Mfg.	E3045W							60,000 BTU		
23	1	Fryer				120					60	1													Pitco Frialator	45C+							122,000 BTU		

**MECHANICAL - KITCHEN EQUIPMENT REQUIREMENT SPREADSHEET**  
SCALE: NTS

**SRI LAKSHMI TEMPLE NEW ADDITION**

117 WAVERLY STREET  
ASHLAND, MA 01721

Joyce Design Partnership  
Architecture • Interior Design

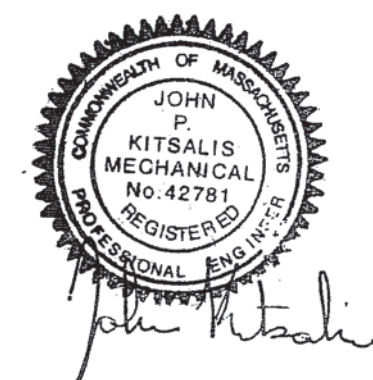
111 PERKINS STREET SUITE 215  
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ABERJONA ENGINEERING INC

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Issue	Date
PERMIT SET (CORE & SHELL)	10.15.2014

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Sheet Title

**MECHANICAL - NEW LOWER LEVEL FLOOR PLAN**

Scale	Drawn by	Verified by
AS NOTED	TJL	JPK

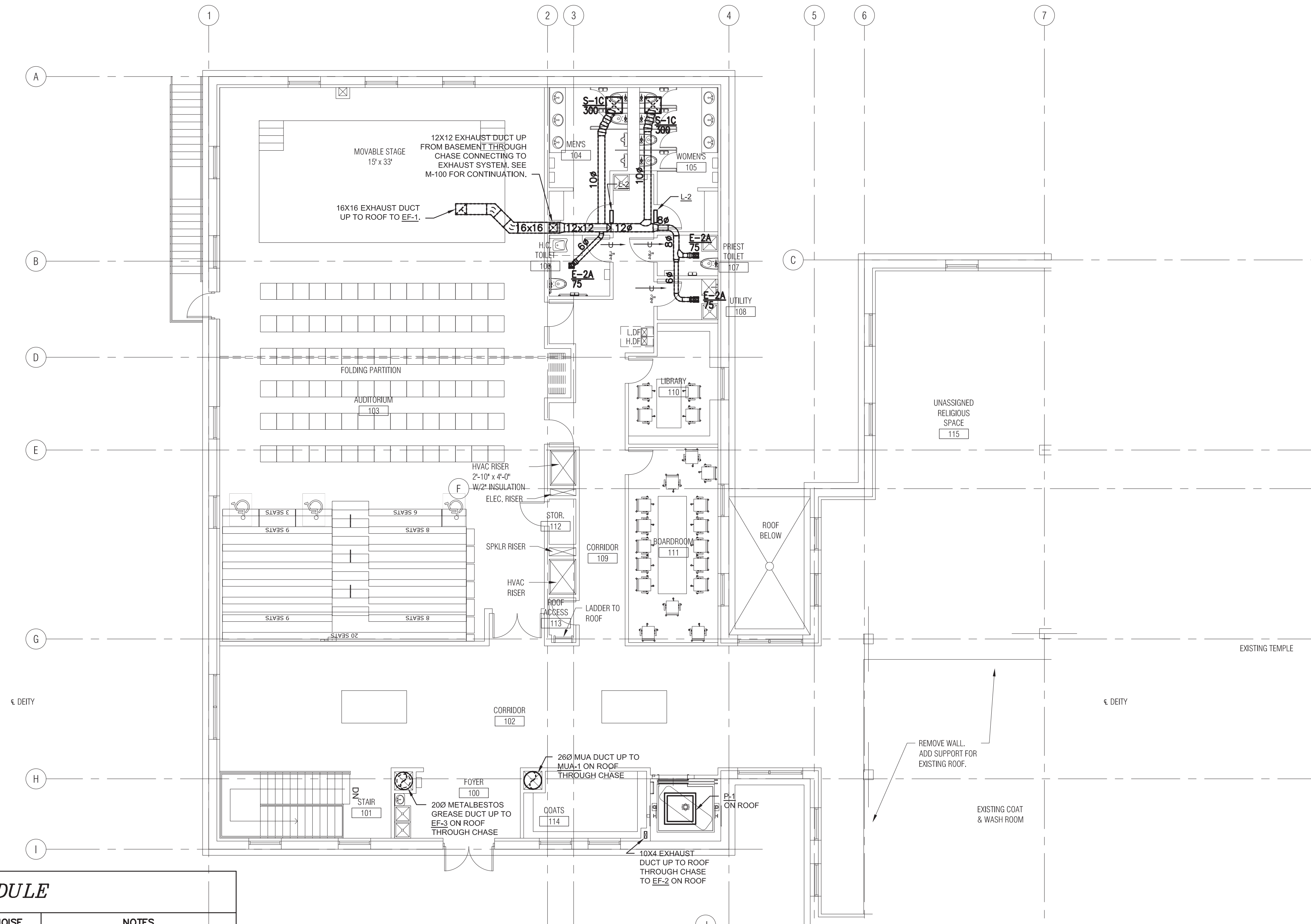
Sheet #

**M-100**

Project # 1203020

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CALLOUT	DESCRIPTION	AIRFLOW RANGE (CFM)	FACE SIZE (IN)	INLET SIZE (IN)	NOISE CRITERIA @ MAX CFM	NOTES
E-2A	TITUS 50FF EGGRATE RETURN	0 - 150	7 3/4x7 3/4	6x6	22	COORDINATE CEILING TYPE, FRAME AND COLOR WITH ARCHITECT.
S-1C	TITUS PAS	0 - 330	24x24	10ø	27	COORDINATE CEILING TYPE, FRAME AND COLOR WITH ARCHITECT.

**ELEVATOR LOUVERED PENTHOUSE**

TAG	DIMENSIONS (WIDTH X DEPTH X HEIGHT)	FREE AREA (SQ FT)	MANUFACTURER	MODEL NUMBER	REMARKS
P-1	30"x30"x18"	4.44	GREENHECK	PEV-400	PROVIDE WITH 3" HIGH ROOF CURB, BIRD SCREEN, AND FINISH BY ARCHITECT. ROOF CURB SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS WITH FLASHING AND COUNTER FLASHING BY CONTRACTOR. PROVIDE WITH MANUFACTURER INCLUDED SMOKE DAMPER THAT SHALL BE CONTROLLED BY THE FIRE ALARM CONTROL PANEL WITH 120V DRY CONTACT RELAY.

**PACKAGED ROOFTOP AIR CONDITIONING UNIT SCHEDULE**

SYMBOL	UNIT ARRANGEMENT	FILTER DATA		SUPPLY FAN PERFORMANCE DATA							COOLING DATA				GAS HEATING DATA		COMPRESSOR DATA			CONDENSER CONDITIONS		UNIT ELECTRICAL DATA		MANUFACTURER / MODEL #	REMARKS											
		SIZE	QTY.	MAX CFM	EXT. S.P.	MIN O.A. CFM	INLET VANES	QTY.	FAN TYPE	FAN OP. BHP	FAN RPM	V/ø/HZ	COIL TYPE	EER	AREA (S.F.)	TOTAL	MBH SENS.	ENT. DB	ENT. WB	ROW(S) FINS/IN.	STAGES	INPUT	OUTPUT			QTY.	COMP. HP	REF. TYPE	R.L.A. PER COMP.	L.R.A. PER COMP.	V/ø/HZ	OUTDOOR DB	OUTDOOR WB	V/ø/HZ	M.C.A.	MOCP
RTU-1	DOWNFLOW	16x20x2	16	11,000	2.0	1650	-	1	FC	6.95	670	208/3/60	MICROCHANNEL	-	31.7	318	234	80	67	3/15	2	600/425	486/344.5	2	-	R410A	44.0/50.5	304/315	208/3/60	95	67	208/3/60	150.7	250	TRANE YCD-330-B-E-H	PROVIDE WITH HONEYWELL RAPIDZONE CONTROL PANEL.
RTU-2	DOWNFLOW	16x20x2	16	11,000	2.0	1650	-	1	FC	6.95	670	208/3/60	MICROCHANNEL	-	31.7	318	234	80	67	3/15	2	600/425	486/344.5	2	-	R410A	44.0/50.5	304/315	208/3/60	95	67	208/3/60	150.7	250	TRANE YCD-330-B-E-H	PROVIDE WITH HONEYWELL RAPIDZONE CONTROL PANEL.

PROVIDE ROOF TOP UNITS WITH PHASE MONITOR & CIRCUIT BREAKER, HOT GAS BYPASS REHEAT, FULLY MODULATING COMPARATIVE ENTHALPHY ECONOMIZER, CONDENSER COIL GUARD, CLOGGED FILTER & FAN FAILURE SWITCHES W/ S.A. SENSING TUBE, STAINLESS STEEL GAS HEAT EXCHANGER, VIBRATION ISOLATION, BURGLAR BARS, LOW AMBIENT KIT, THROUGH THE BASE GAS & ELECTRICAL, 120 VOLT 15A POWERED CONVENIENCE OUTLET & WEATHER PROOF LIGHT (INCLUDING ANY TRANSFORMERS AS NEEDED), HINGED ACCESS DOOR PANELS, MERV-13 2" PLEATED FILTERS, RETURN AND SUPPLY DUCT MOUNTED SMOKE DETECTOR & DISCHARGE AIR TEMPERATURE SENSOR KIT. COORDINATE INSTALLATION WITH ALL OTHER TRADES. COORDINATE EXACT POSITION ON ROOF AND PENETRATIONS WITH ARCHITECTURAL AND STRUCTURAL.

**FAN SCHEDULE**

TAG	LOCATION	SERVICE	TYPE	CFM	E.S.P. (IN. W.G.)	HP	FAN MOTOR DATA				MOTOR CONTROLLER TYPE	MOTOR CONTROLLER NEMA SIZE	MANUFACTURER & MODEL NO.	REMARKS
							RPM	FLA	VOLT	PHASE				
EF-1	ROOF	EXHAUST	UPBLAST	1650	.20	1/3	1,487	3.5	208	3	SWITCH	NEMA 3R	GREENHECK CUBE-121	PROVIDE WITH: BIRDSCREEN AND ROOF CURB.
EF-2	ROOF	EXHAUST	UPBLAST	150	.20	1/60	1,550	2.4	208	3	SWITCH	NEMA 3R	GREENHECK CUE-060-D	PROVIDE WITH: BIRDSCREEN AND ROOF CURB.

**LOUVER SCHEDULE**

TAG	LOCATION	FUNCTION	BLADE STYLE	WIDTH/HEIGHT (IN.)	FRAME DEPTH (IN.)	CFM	FREE AREA (SQ. FT)	MATERIAL	FINISH	REMARKS
L-1	ELEVATOR MECHANICAL ROOM	TRANSFER AIR	-	18/12	2"	150	0.675	STEEL FRAME	COORDINATE WITH ARCHITECT	NAILOR 61DG-FR. COLOR BY ARCHITECT, FIRE RATING TO MATCH.
L-2	PUBLIC RESTROOM	TRANSFER AIR	-	24/12	2"	300	0.9	STEEL FRAME	COORDINATE WITH ARCHITECT	NAILOR 61DG. COLOR BY ARCHITECT.

**1 MECHANICAL - NEW MAIN LEVEL FLOOR PLAN**  
SCALE: 1/8"=1'-0"

**SRI LAKSHMI TEMPLE  
NEW ADDITION**

117 WAVERLY STREET  
ASHLAND, MA 01721

Joyce Design Partnership  
Architecture • Interior Design

111 PERKINS STREET SUITE 215  
BOSTON MA 02130  
(617) 522-0718

ABERJONA ENGINEERING INC

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Issue	Date
PERMIT SET ( CORE & SHELL)	10.15.2014

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**MECHANICAL - NEW MAIN  
LEVEL FLOOR PLAN**

Scale AS NOTED Drawn by TJL Verified by JPK

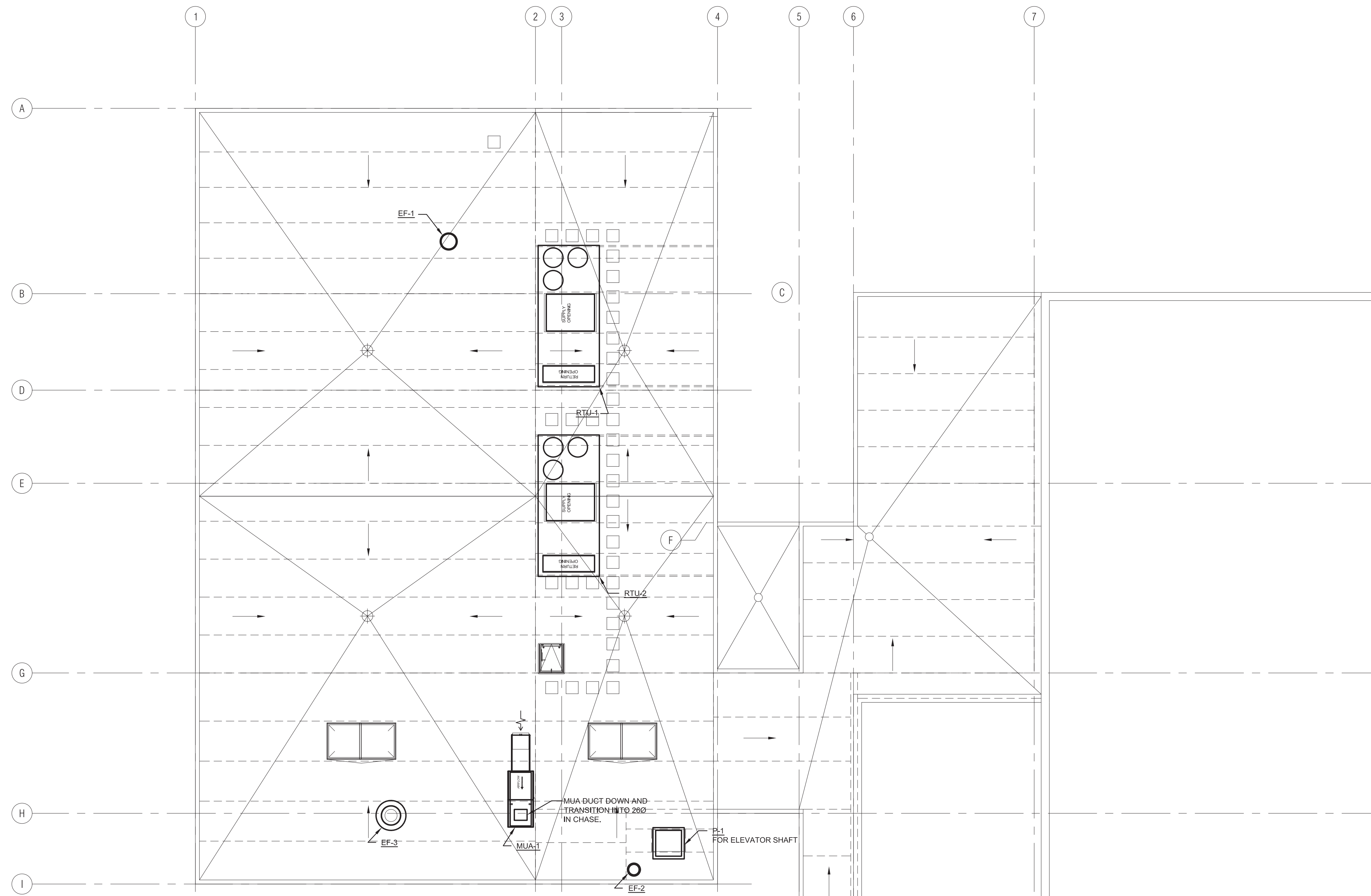
Sheet #

**M-101**

Project # 1203020

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**MAKE-UP AIR FAN INFORMATION**

TAG	FAN UNIT MODEL #	BLOWER	HOUSING	TAG	CFM	ESP.	RPM	H.P.	Ø	VOLT	FLA	WEIGHT (LBS.)	REQUIRED INPUT GAS PRESSURE	GAS TYPE	INPUT BTUs	OUTPUT BTUs
MUA-1	A2-D.250-G15	G15-PB	A2-D.250	MUA-1	2895	1.000	970	3.000	3	208	9.5	820.40	7 in. w.c. - 14 in. w.c.	Natural	232607	213998

**ELEVATOR LOUVERED PENTHOUSE**

TAG	DIMENSIONS (WIDTH X DEPTH X HEIGHT)	FREE AREA (SQ FT)	MANUFACTURER	MODEL NUMBER	REMARKS
P-1	30"x30"x18"	4.44	McDERMOTT METAL WORKS CORP.	PEV-400	PROVIDE WITH 3' HIGH ROOF CURB, BIRD SCREEN, AND FINISH BY ARCHITECT. ROOF CURB SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS WITH FLASHING AND COUNTER FLASHING BY CONTRACTOR. PROVIDE WITH MANUFACTURER INCLUDED SMOKE DAMPER THAT SHALL BE CONTROLLED BY THE FIRE ALARM CONTROL PANEL WITH 120V DRY CONTACT RELAY.

ALTERNATIVE: McDERMOTT METAL WORKS CORP. PENTHOUSE MODEL # M-445PH

**MECHANICAL - NEW ROOF PLAN**  
SCALE: 1/8"=1'-0"

**PACKAGED ROOFTOP AIR CONDITIONING UNIT SCHEDULE**

SYMBOL	UNIT ARRANGEMENT	FILTER DATA		SUPPLY FAN PERFORMANCE DATA							COOLING DATA					GAS HEATING DATA			COMPRESSOR DATA			CONDENSER CONDITIONS		UNIT ELECTRICAL DATA		MANUFACTURER / MODEL #	REMARKS									
		SIZE	QTY.	MAX CFM	EXT. S.P.	MIN O.A. CFM	INLET VANES	QTY.	FAN TYPE	FAN OP. BHP	FAN RPM	V/ø/HZ	COIL TYPE	EER	AREA (S.F.)	MBH TOTAL	ENT. DB°	ENT. WB°	ROW(S) FINS/IN.	STAGES	INPUT	OUTPUT	QTY.	COMP. HP	REF. TYPE			R.L.A. PER COMP.	L.R.A. PER COMP.	V/ø/HZ	CONDENSER DB°	OUTDOOR WB°	V/ø/HZ	M.C.A.	MCCP	
RTU-1	DOWNFLOW	16x20x2	16	11,000	2.0	1650	-	1	FC	6.95	670	208/3/60	MICROCHANNEL	-	31.7	318	234	80	67	3/15	2	600/425	486/344.5	2	-	R410A	44.0/50.5	304/315	208/3/60	95	67	208/3/60	150.7	200	TRANE YCD-330-B-E-H	PROVIDE WITH HONEYWELL RAPIDZONE CONTROL PANEL.
RTU-2	DOWNFLOW	16x20x2	16	11,000	2.0	1650	-	1	FC	6.95	670	208/3/60	MICROCHANNEL	-	31.7	318	234	80	67	3/15	2	600/425	486/344.5	2	-	R410A	44.0/50.5	304/315	208/3/60	95	67	208/3/60	150.7	200	TRANE YCD-330-B-E-H	PROVIDE WITH HONEYWELL RAPIDZONE CONTROL PANEL.

Ⓜ PROVIDE ROOF TOP UNITS WITH PHASE MONITOR & CIRCUIT BREAKER, HOT GAS BYPASS REHEAT, FULLY MODULATING COMPARATIVE ENTHALPY ECONOMIZER, CONDENSER COIL GUARD, CLOGGED FILTER & FAN FAILURE SWITCHES W/ S.A. SENSING TUBE, STAINLESS STEEL GAS HEAT EXCHANGER, VIBRATION ISOLATION, BURGLAR BARS, LOW AMBIENT KIT, THROUGH THE BASE GAS & ELECTRICAL, 120 VOLT 15A POWERED CONVENIENCE OUTLET & WEATHER PROOF LIGHT (INCLUDING ANY TRANSFORMERS AS NEEDED), HINGED ACCESS DOOR PANELS, MERV-13 2" PLEATED FILTERS, RETURN AND SUPPLY DUCT MOUNTED SMOKE DETECTOR & DISCHARGE AIR TEMPERATURE SENSOR KIT. COORDINATE INSTALLATION WITH ALL OTHER TRADES. COORDINATE EXACT POSITION ON ROOF AND PENETRATIONS WITH ARCHITECTURAL AND STRUCTURAL.

**FAN SCHEDULE**

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EF-1	ROOF	EXHAUST	UPBLAST	1650	.20	1/3	1,487	3.5	208	3	SWITCH	NEMA 3R	GREENHECK CUBE-121	PROVIDE WITH: BIRDSCREEN AND ROOF CURB.
EF-2	ROOF	EXHAUST	UPBLAST	150	.20	1/60	1,550	2.4	208	3	SWITCH	NEMA 3R	GREENHECK CUE-060-D	PROVIDE WITH: BIRDSCREEN AND ROOF CURB.
EF-3	ROOF	EXHAUST	UPBLAST	3619	2.0	3	1,061	9.5	208	3	SWITCH	NEMA 3R	CAPTIVEAIRE NCA24HPFA	PROVIDE WITH: ROOF CURB.

**SRI LAKSHMI TEMPLE  
NEW ADDITION**

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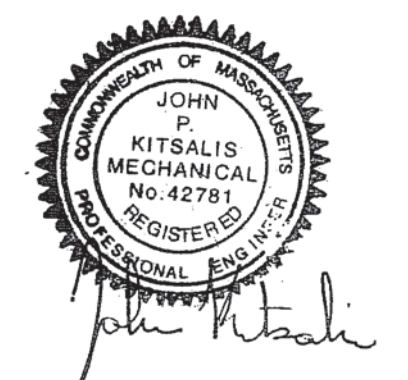
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**MECHANICAL -  
NEW ROOF PLAN**

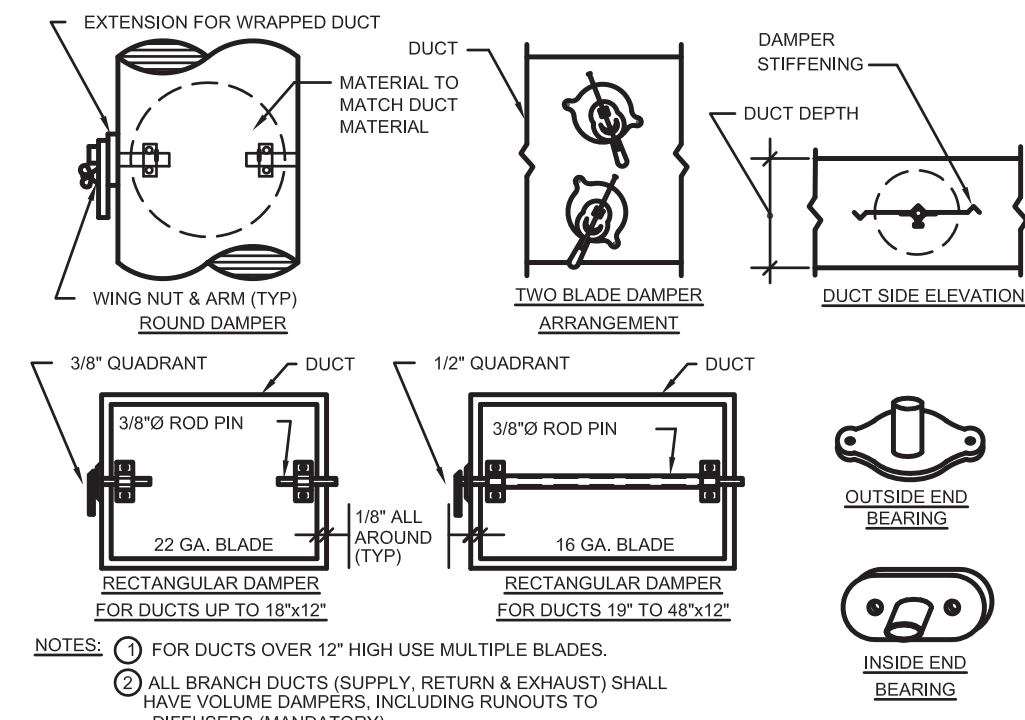
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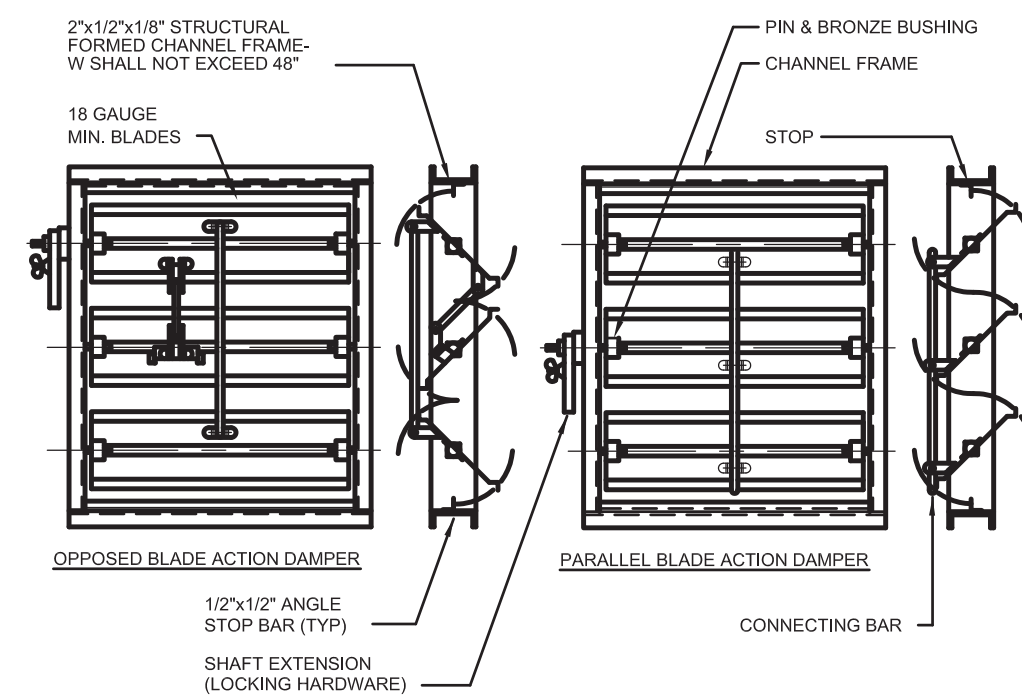
**M-102**

Project #

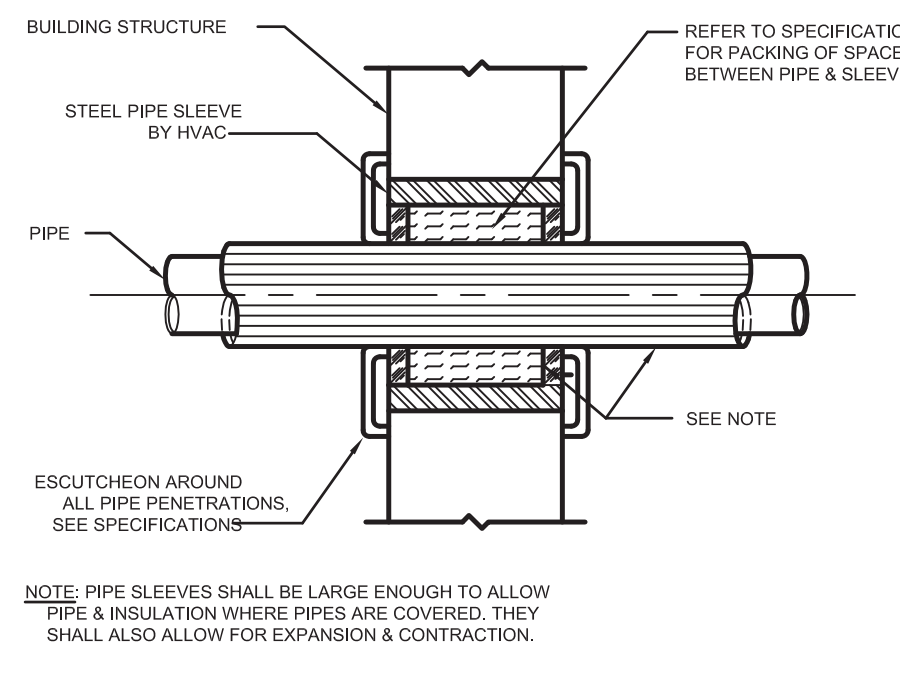
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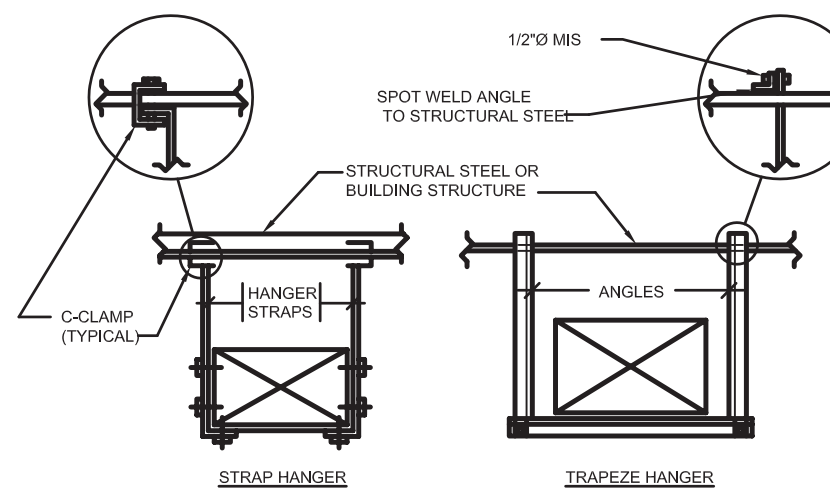
**VOLUME DAMPER DETAIL (SINGLE BLADE)**  
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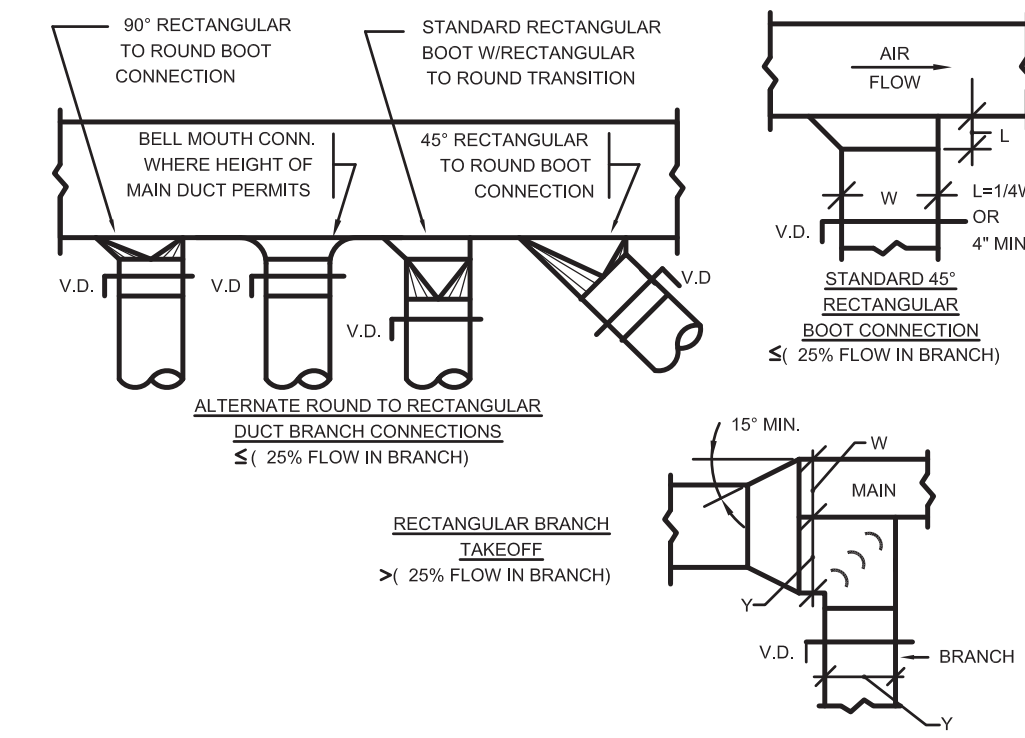
**VOLUME DAMPER DETAIL (MULTIPLE BLADE)**  
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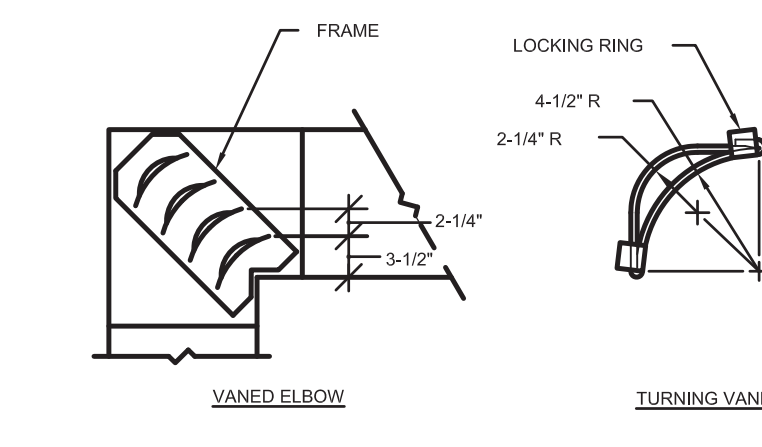
**PIPE SLEEVE THROUGH WALL DETAIL**  
NOT TO SCALE



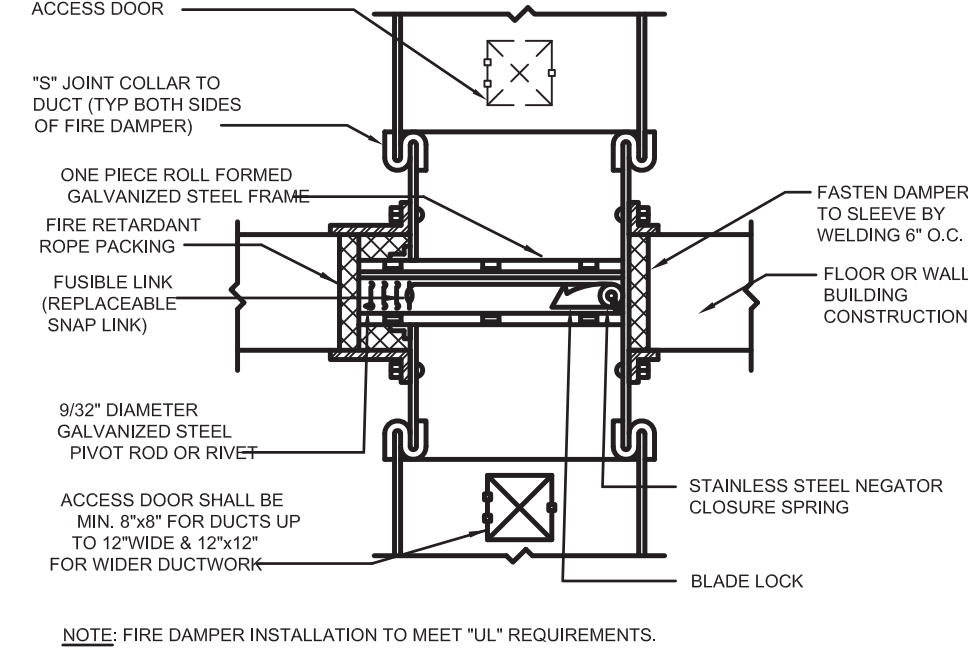
**DUCT HANGER DETAIL (LOW VELOCITY)**  
NOT TO SCALE



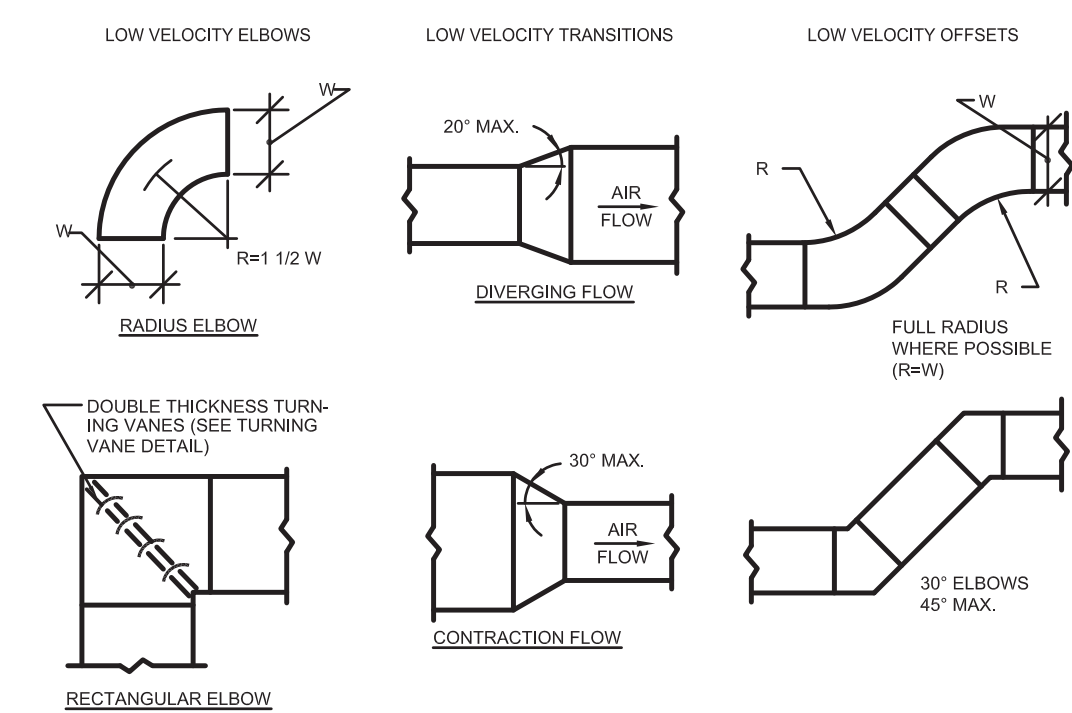
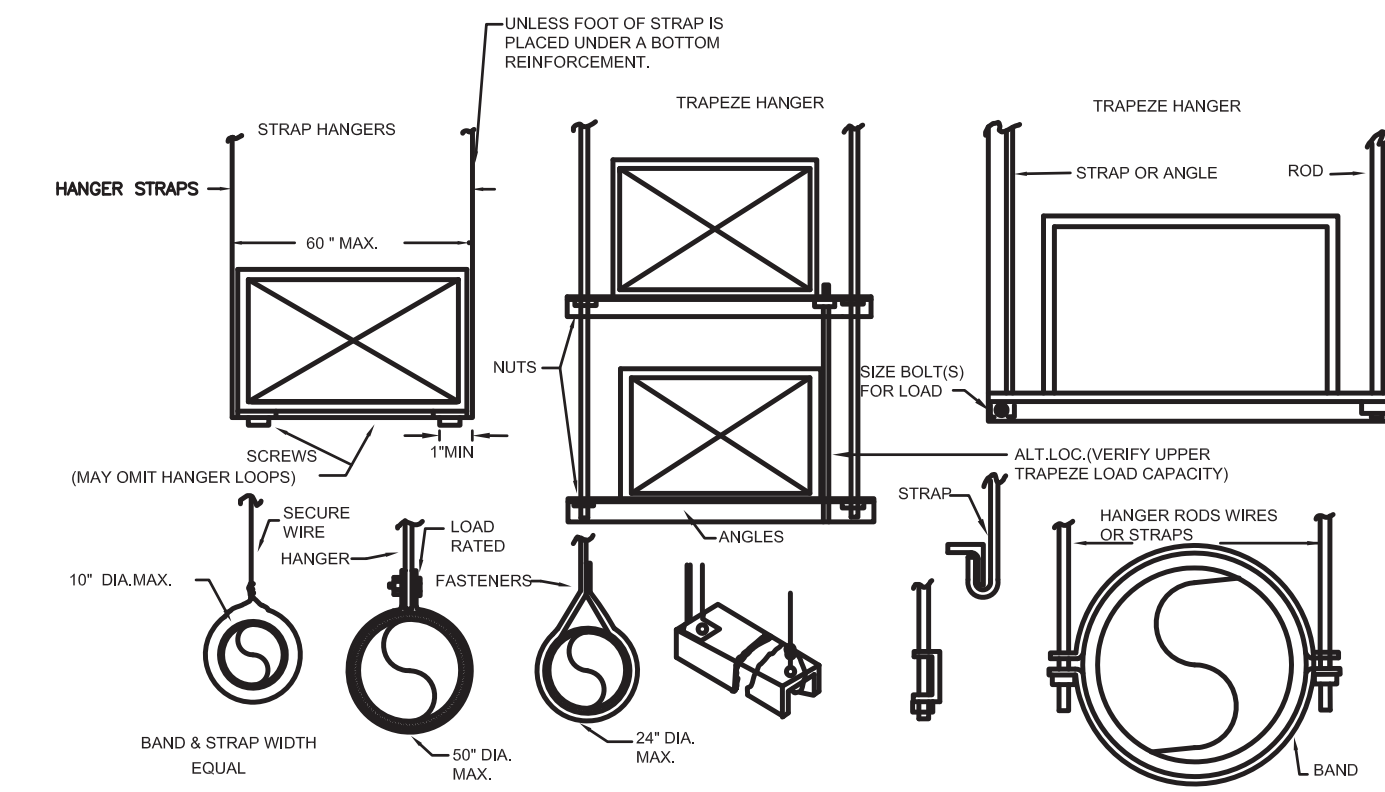
**LOW VELOCITY BRANCH TAKE-OFFS**  
NOT TO SCALE



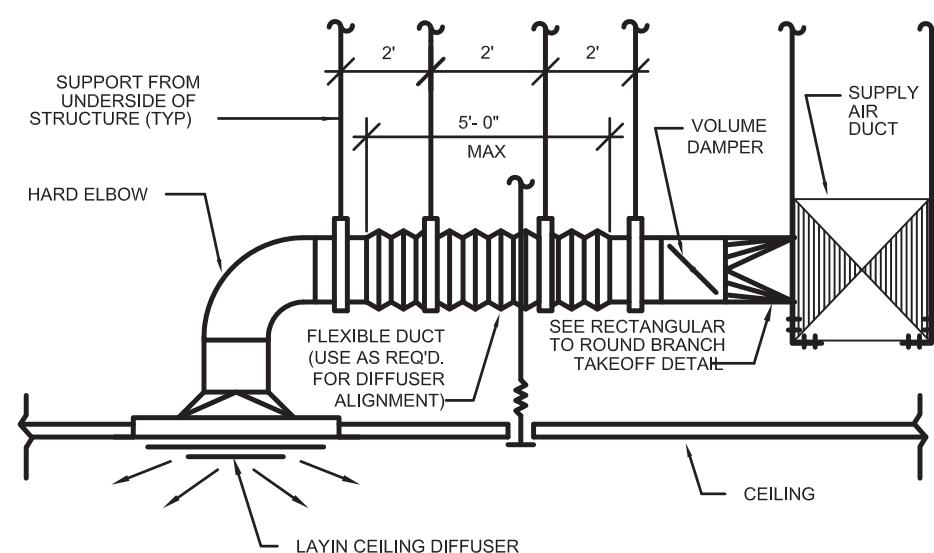
**DOUBLE THICKNESS TURNING VANES FOR SQUARE ELBOW**  
NOT TO SCALE



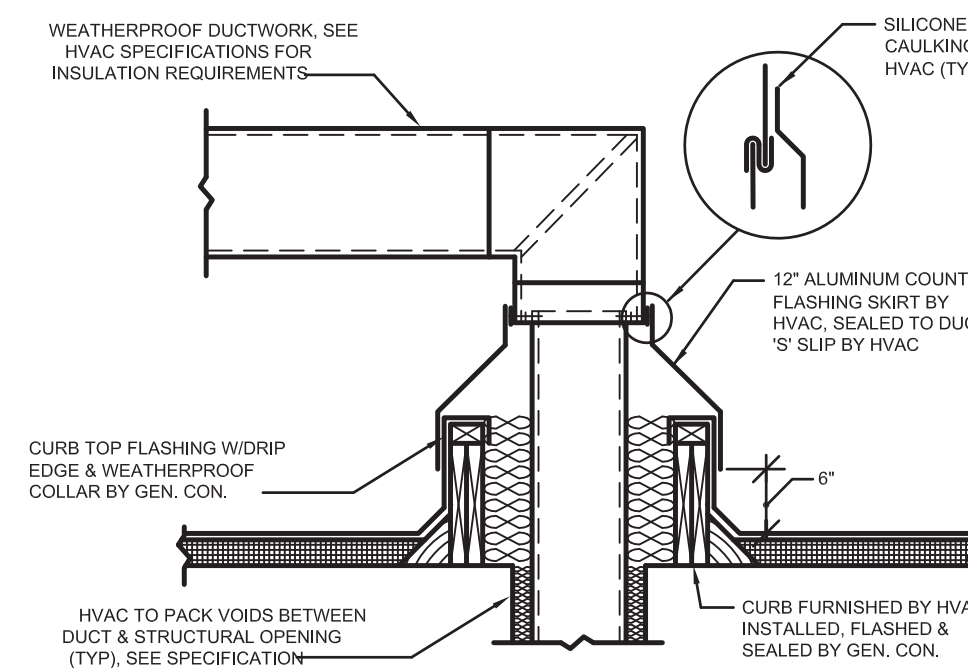
**FIRE DAMPER W/BLADES OUTSIDE THE AIR STREAM**  
NOT TO SCALE



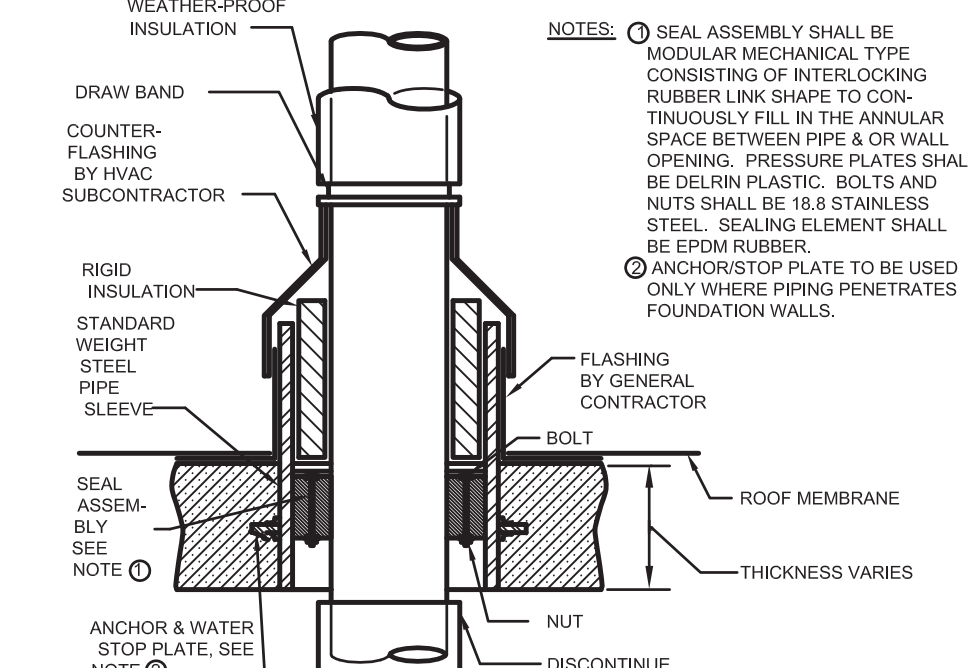
**LOW VELOCITY TRANSITIONS OFFSETS AND ELBOWS**  
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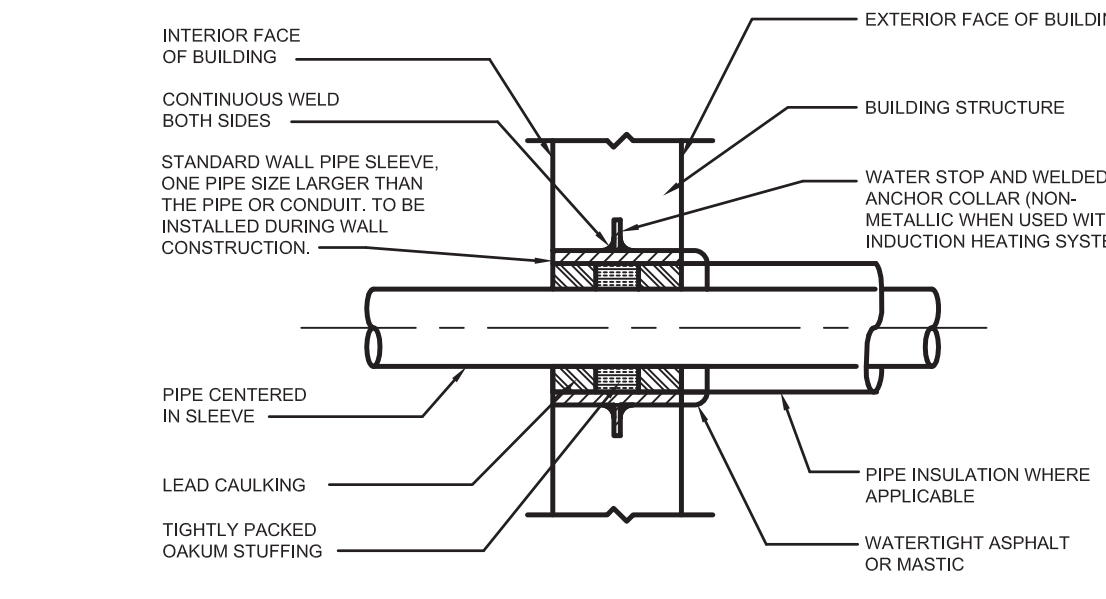
**CEILING DIFFUSER BRANCH DUCTS**  
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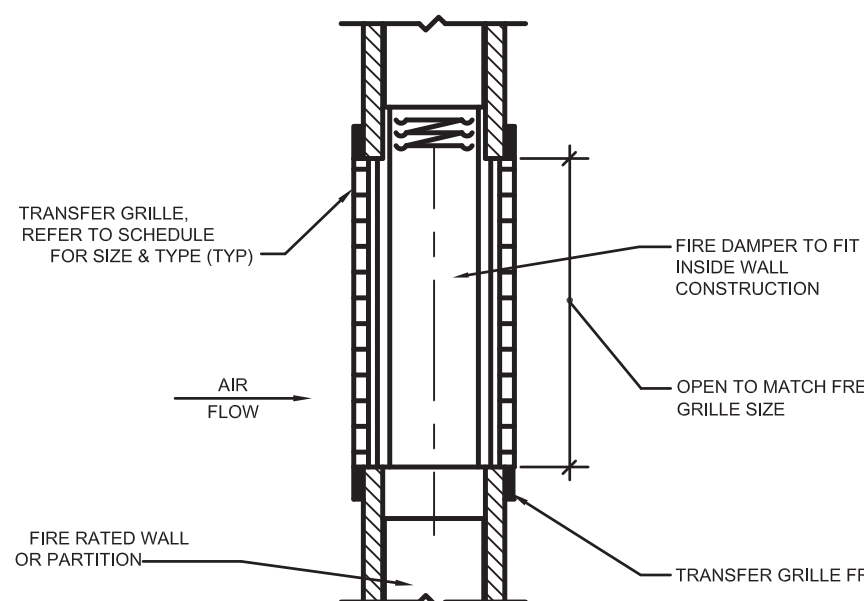
**DUCTWORK ROOF PENETRATION DETAIL**  
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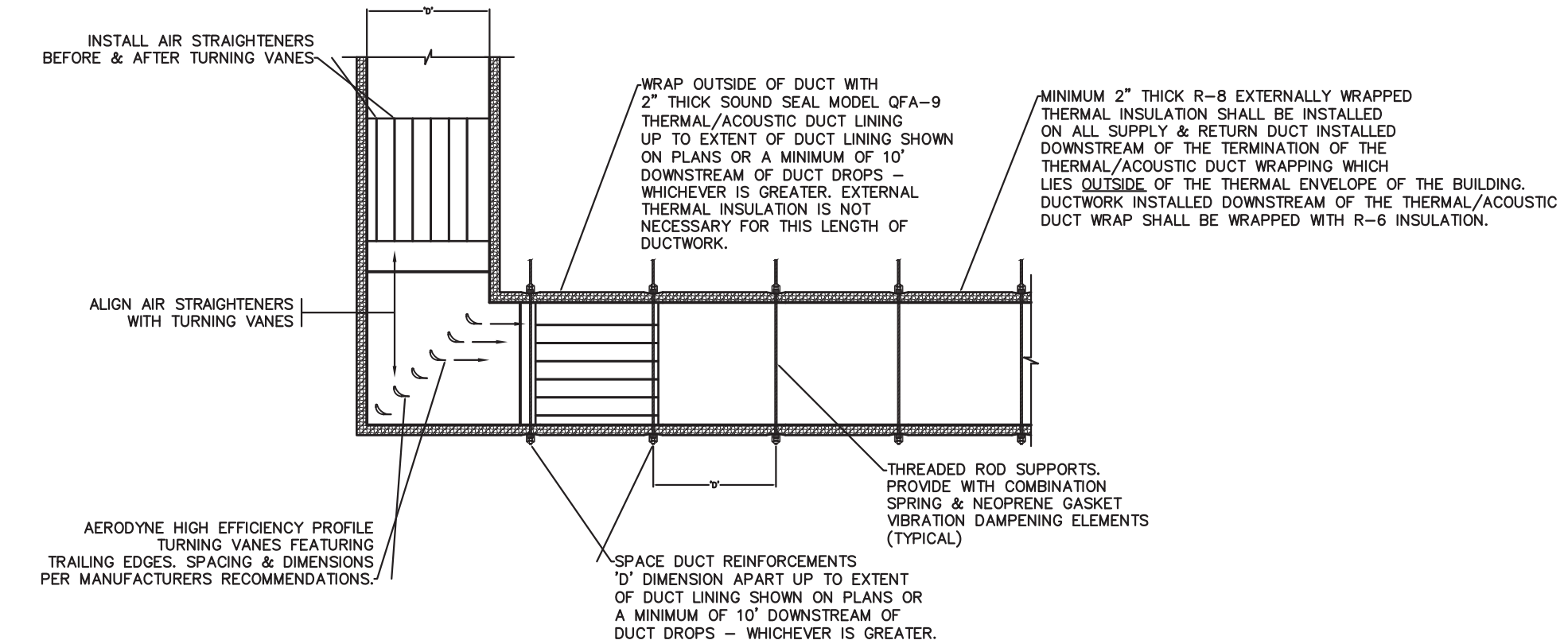
**DUCTWORK ROOF PENETRATION DETAIL**  
NOT TO SCALE



**PIPE PENETRATION THROUGH WALL DETAIL (BELOW GROUND)**  
NOT TO SCALE



**TRANSFER GRILLE THROUGH FIRE RATED PARTITION**  
NOT TO SCALE



**TYPICAL THERMAL & ACOUSTICAL SUPPLY/RETURN DUCT LINING DETAIL**  
NOT TO SCALE

**SRI LAKSHMI TEMPLE  
NEW ADDITION**

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ASHLAND, MA 01721



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**MECHANICAL - DETAILS**

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**M-200**

Project # 1203020



SRI LAKSHMI TEMPLE  
NEW ADDITION

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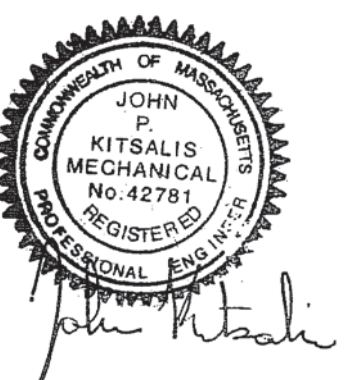
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Sheet Title

MECHANICAL - GREASE HOOD DETAILS

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Sheet #

M-400

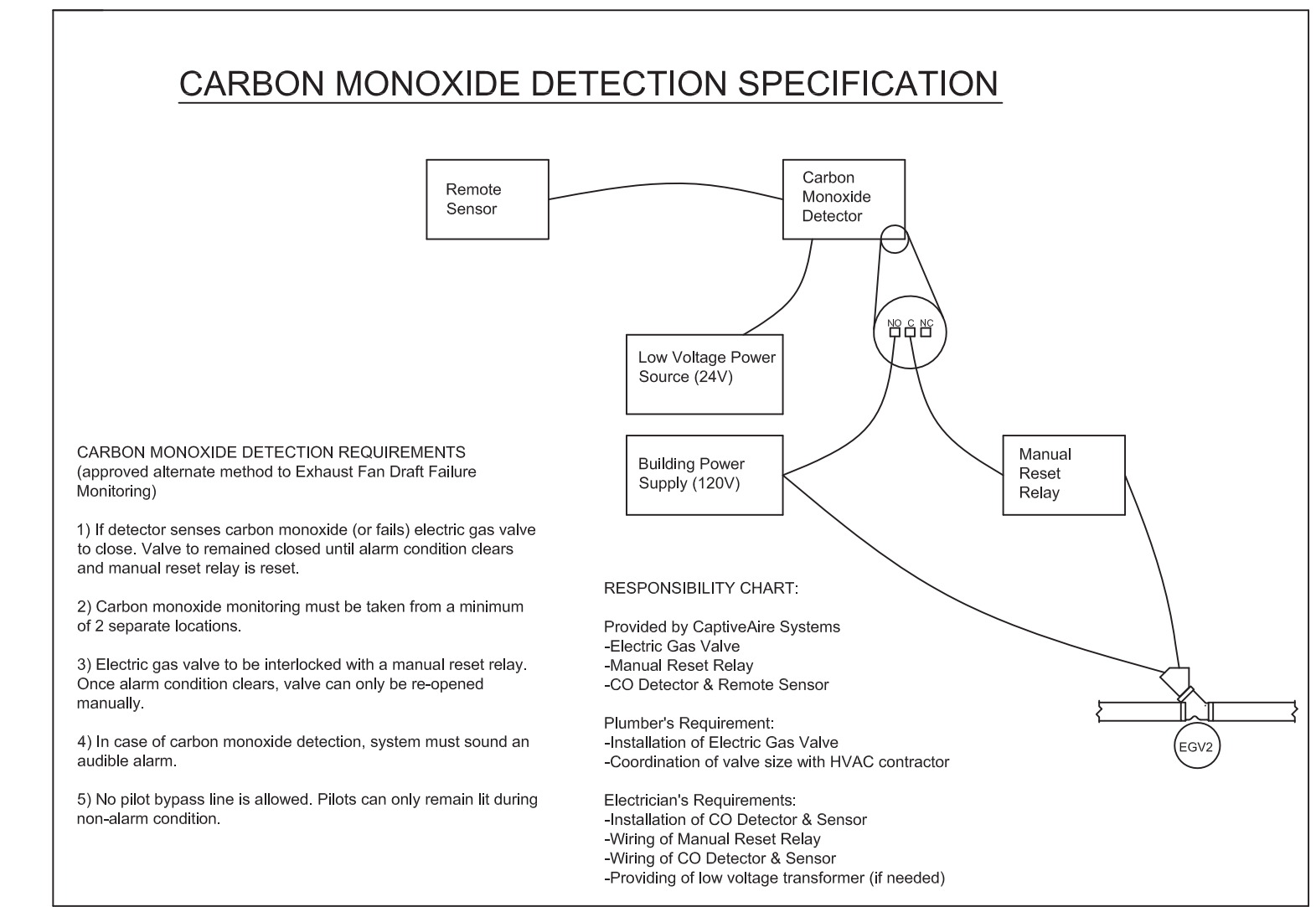
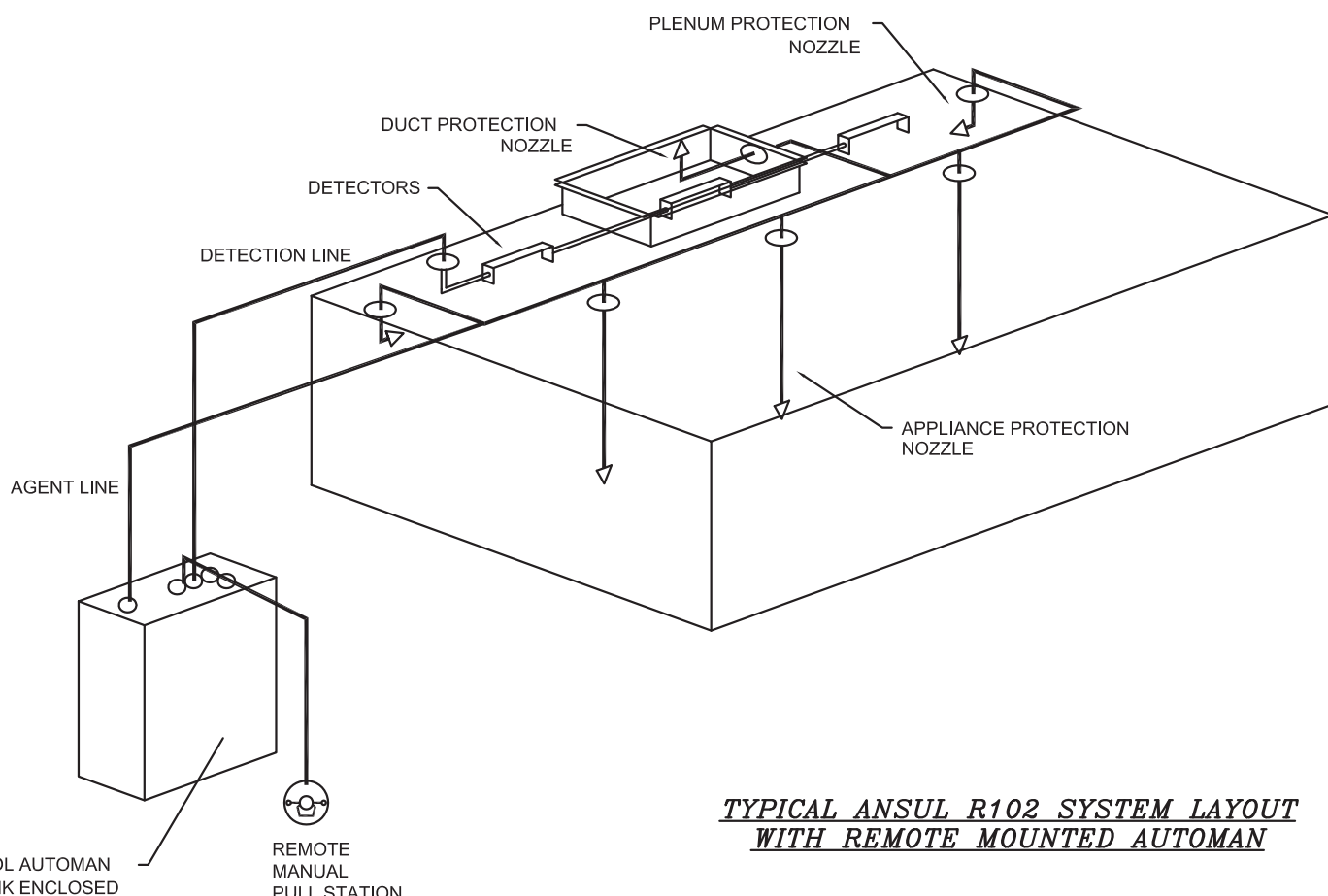
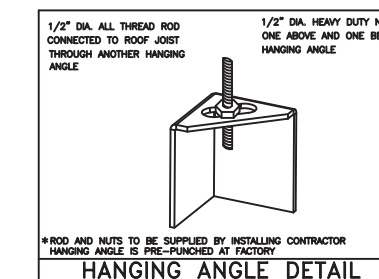
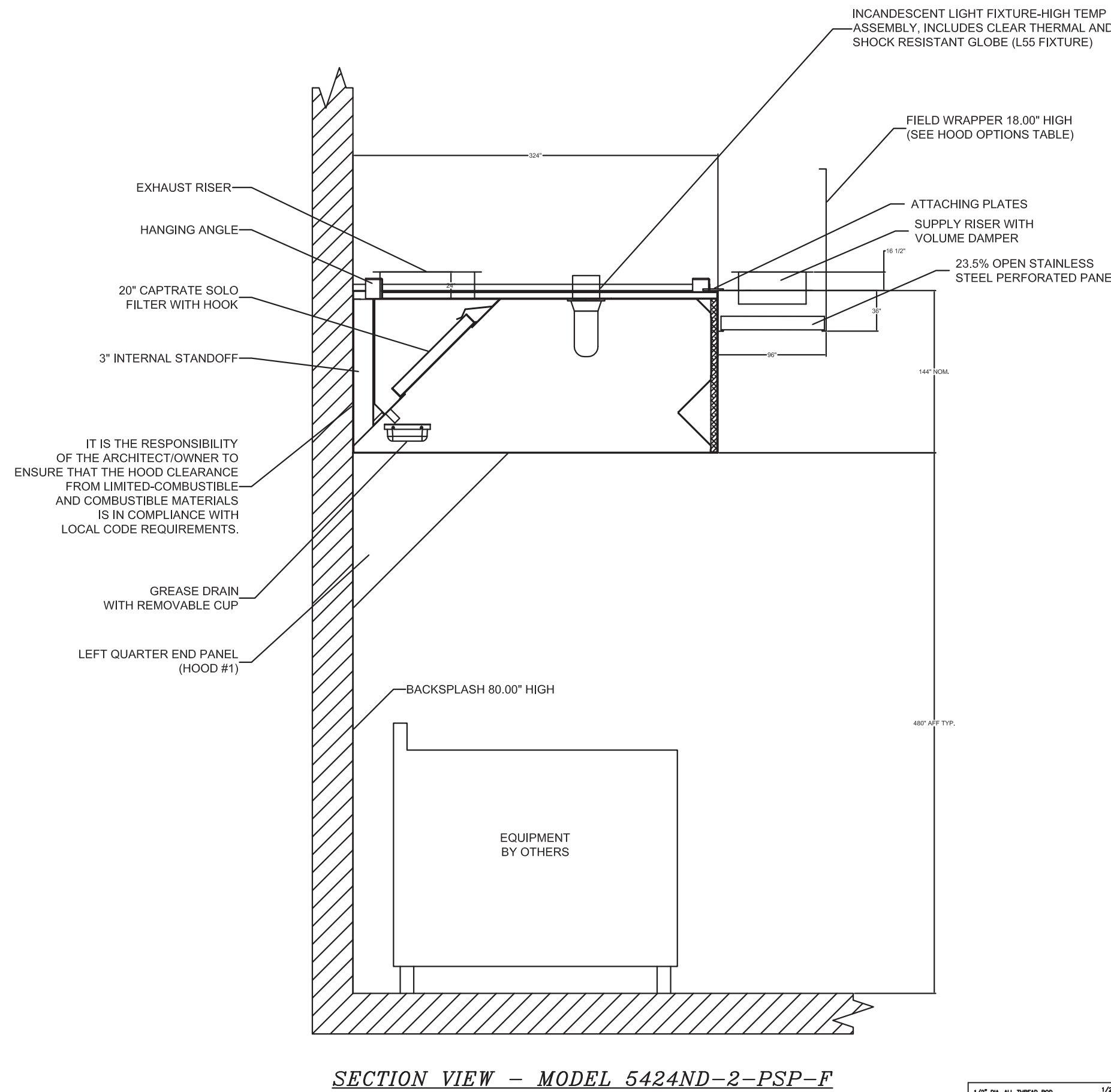
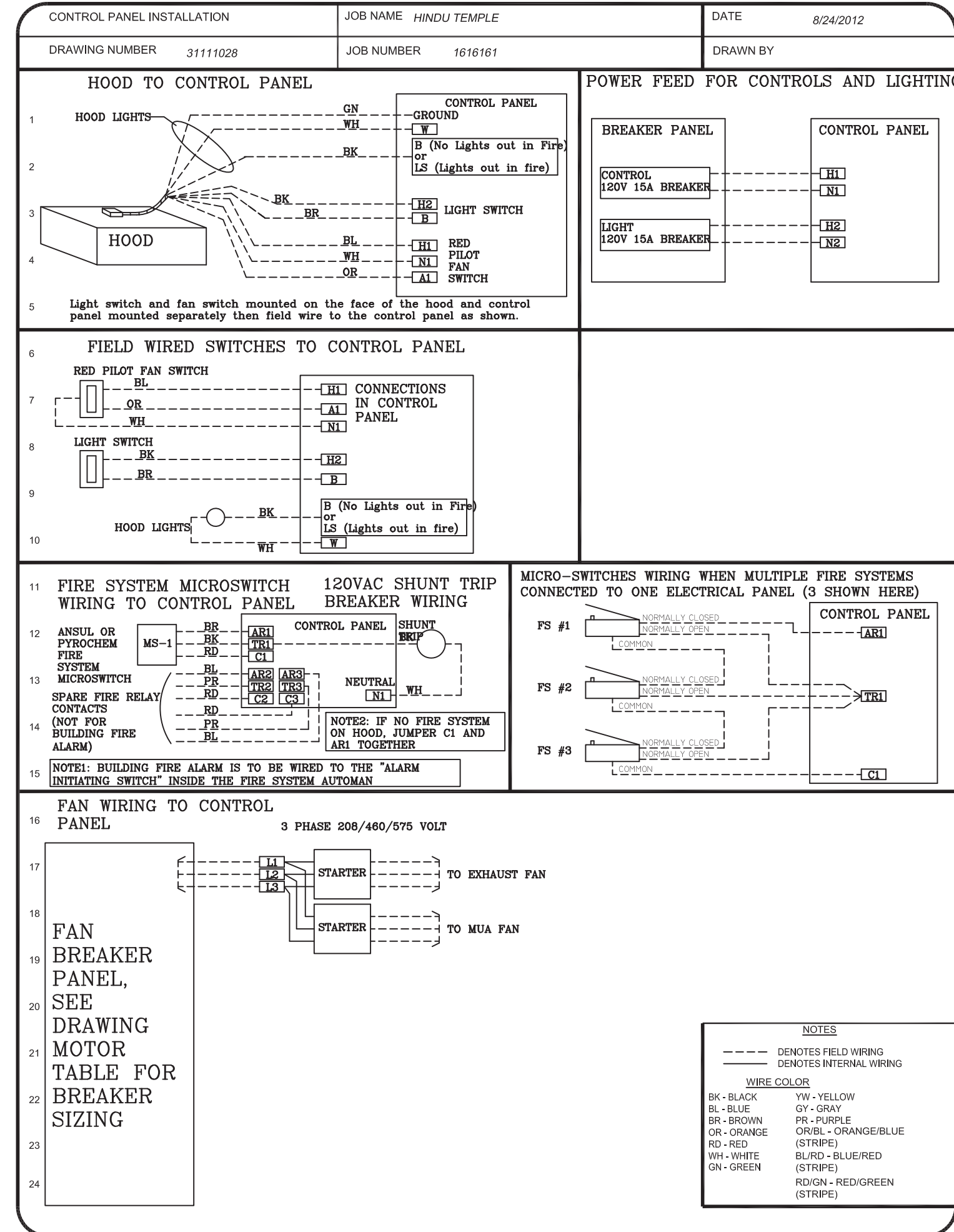
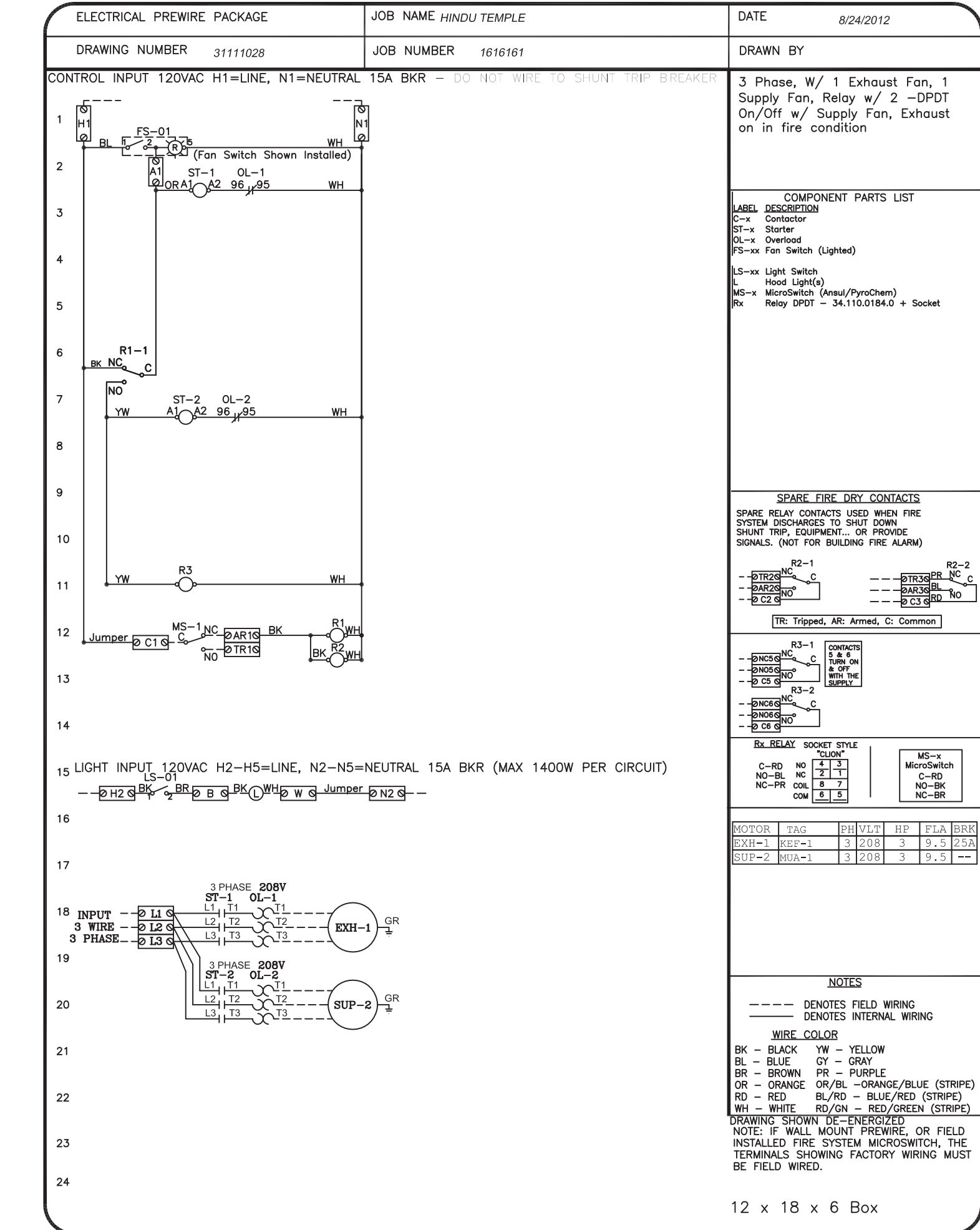
Project # 1203020

ELECTRICAL PACKAGES

NO.	TAG	PACKAGE #	LOCATION	SWITCHES		OPTION	FANS CONTROLLED				
				LOCATION	QUANTITY		TYPE	Ø	H.P.	VOLT	FLA
1		31111028	Wall Mount in SS Box	SS Wall Mount Box	1 Light 1 Fan	Exhaust in Fire, Relay w/ 2-DPDT on/off w/ Sup Fan	Exhaust	3	3,000	208	9.5
							Supply	3	3,000	208	9.5

SPECIFICATIONS: ELECTRICAL PACKAGE (SEE TABLE FOR DETAILS)  
A PRE-WIRED ELECTRICAL CONTROL PACKAGE SHALL BE PROVIDED TO OPERATE THE HOOD LIGHTS AND FANS. THE WIRING OPTION, LOCATED IN A HINGED COVERED ELECTRICAL BOX, SHALL INCLUDE A STAINLESS STEEL SWITCH PANEL CONSISTING OF LIGHT SWITCH(ES) AND RED-LIGHTED FAN SWITCH(ES), A STARTER/OVERLOAD ASSEMBLY FOR EACH 3 PHASE FAN, NUMBERED INPUT/OUTPUT TERMINAL STRIPS, AND A TERMINAL STRIP FOR DOUBLE-DUAL FIRE SYSTEM MICROSWITCH CONNECTION. ONE MICROSWITCH IS WIRED TO A RELAY FOR SUPPLY FAN SHUTDOWN AND A RELAY FOR ADDITIONAL FIRE SYSTEM ACTIVATED DRY CONTACTS, AND THE OTHER MICROSWITCH REMAINS OPEN FOR CONNECTION OF BUILDING FIRE ALARM SYSTEM (DRY CONTACTS). A WIRING DIAGRAM SHOWING THE CONNECTIONS OF THESE PARTS IS LOCATED ON THE DOOR.

ELECTRICAL CONDUIT DROPS FROM THE FAN(S) SHALL BE CONNECTED TO THE NUMBERED TERMINAL STRIP. CONDUIT BETWEEN THE PRE-WIRE PACKAGE AND THE FAN(S) SHALL BE SUPPLIED BY THE ELECTRICAL CONTRACTOR.



MECHANICAL - GREASE HOOD DETAILS  
SCALE: NTS





SRI LAKSHMI TEMPLE  
NEW ADDITION

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ASHLAND, MA 01721

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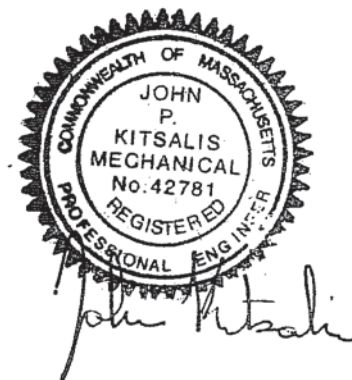
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PLUMBING -  
FOUNDATION PLAN

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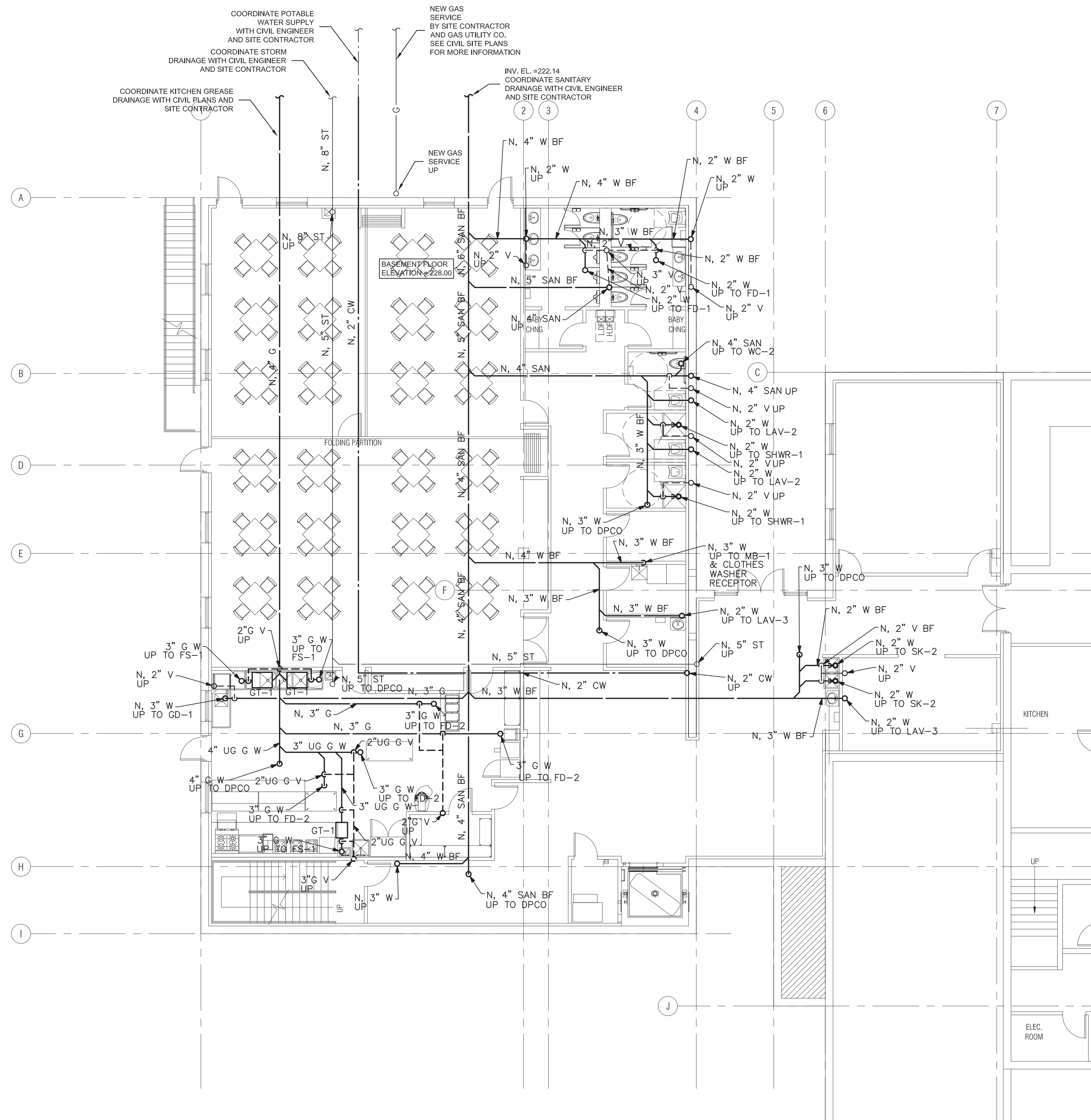
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P-010

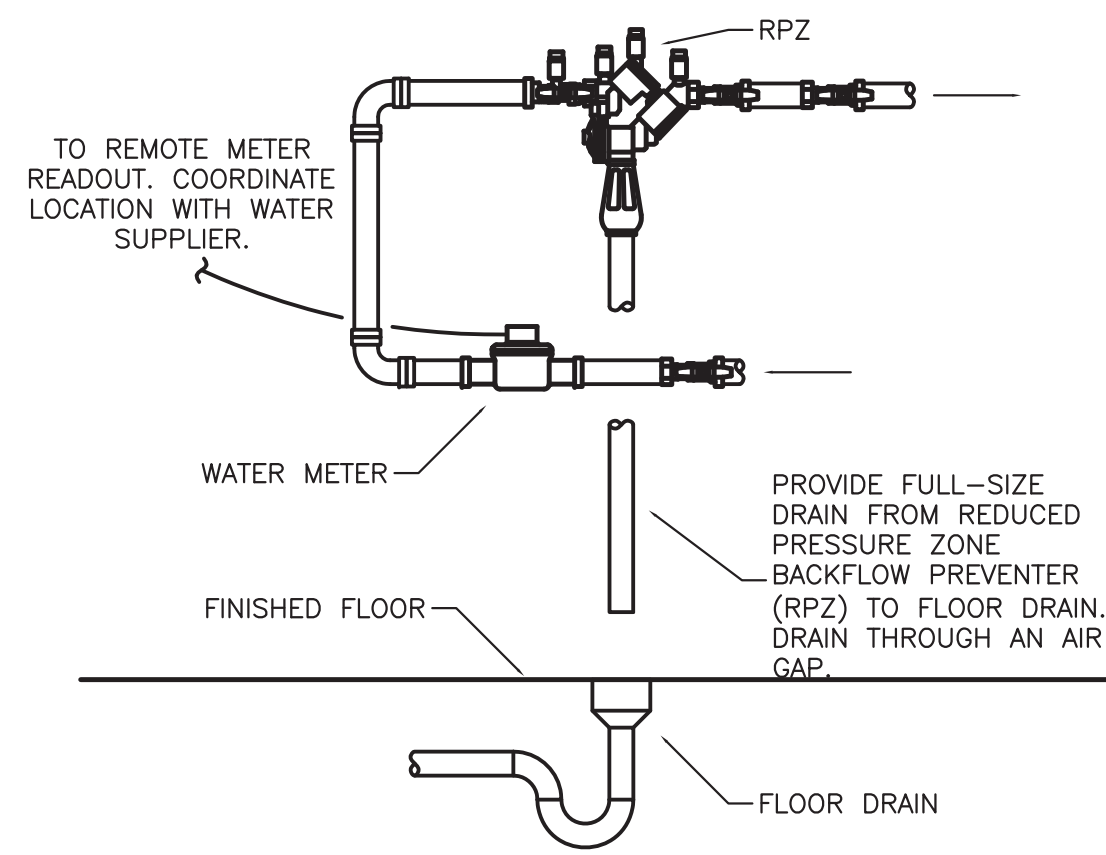
Project #

1203020

- GENERAL NOTES**
- CONTRACTOR SHALL INSULATE ALL PIPING ABOVE THE CEILING.
  - CONTRACTOR SHALL COORDINATE WORK WITH ALL TRADES.
  - CONTRACTOR SHALL USE CAST IRON PIPING FOR ALL DRAINAGE ABOVE CEILING AREAS.
  - PROVIDE TRAP PRIMER FOR ALL PLUMBING FIXTURES. ONE TRAP PRIMER PER TRAP. COLD WATER CONNECTIONS TO TRAP PRIMERS NOT SHOWN ON PLANS FOR REASONS OF CLARITY
  - CONTRACTOR SHALL COORDINATE CLEANOUT COVER PLATES WITH ARCHITECT.
  - CONTRACTOR SHALL TAG ALL PIPING WITH STICKERS DESIGNATING FLUID TYPE



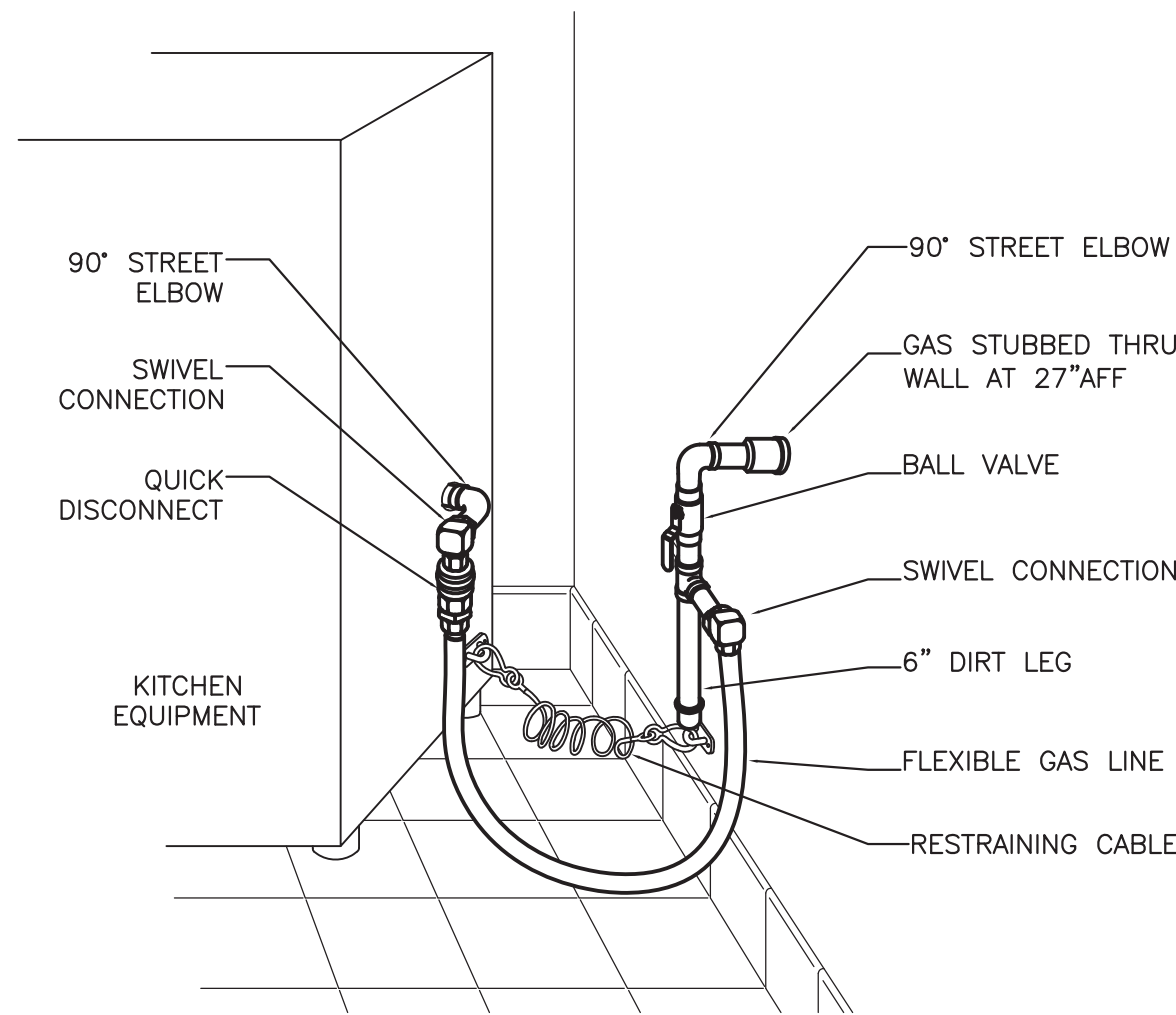
1 PLUMBING - FOUNDATION PLAN  
SCALE: 1/8"=1'-0"



**NOTES:**

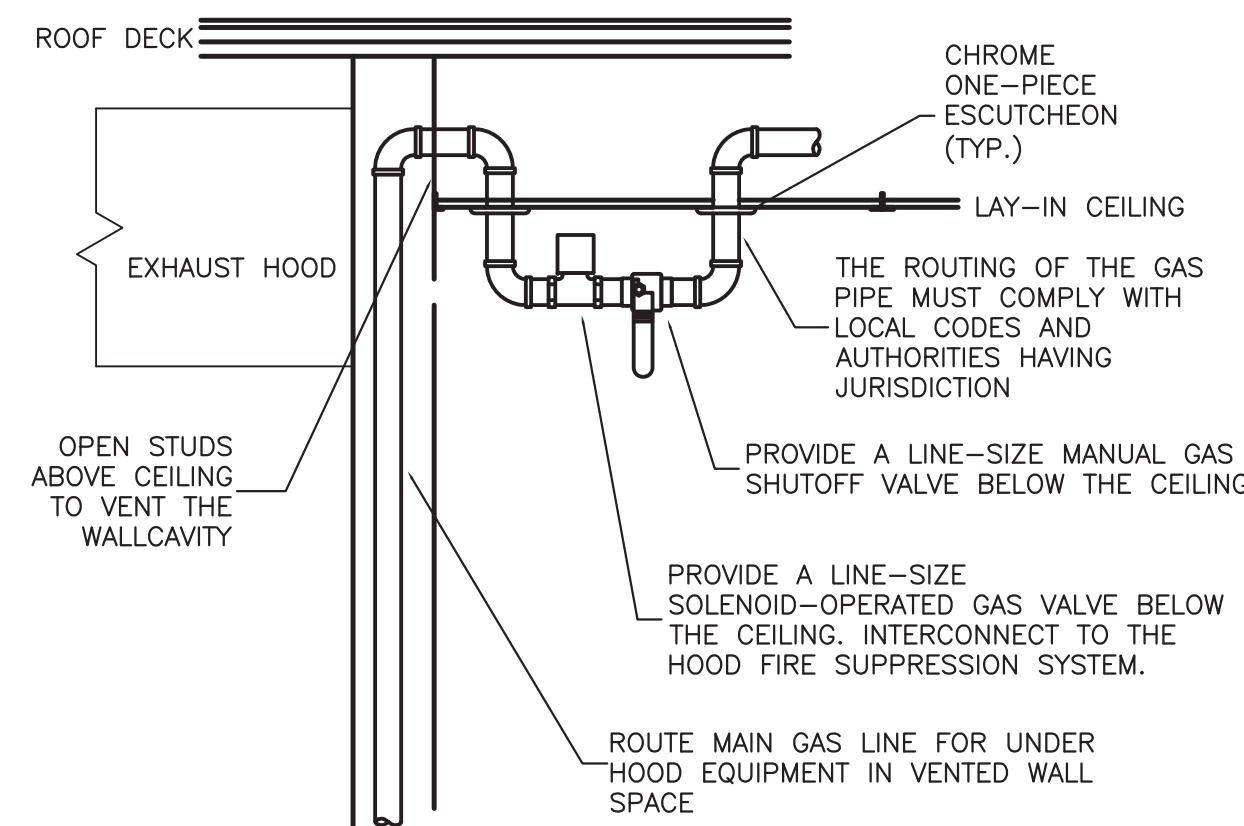
MAKE NECESSARY ARRANGEMENTS WITH WATER COMPANY TO INSTALL NEW WATER SERVICE PER LOCAL CODES & WATER COMPANY REGULATIONS AND PAY ALL CHARGES. SERVICE SHALL BE SIZED PER THE PLUMBING PLAN & INSTALLED IN STRICT ACCORDANCE OF WATER COMPANY REGULATIONS. ANCHOR METER, BACKFLOW PREVENTER, AND PIPING TO THE WALL OR THE FLOOR. CERTIFY THE BACKFLOW PREVENTER PER THE WATER COMPANY'S REQUIREMENTS.

**4 WATER SERVICE ENTRY DETAIL**  
NOT TO SCALE



ARRANGEMENT SHOWN IS SCHEMATIC. ADJUST TO SUIT ACTUAL CONDITIONS. MAKE FINAL CONNECTION TO EQUIPMENT AS RECOMMENDED BY MANUFACTURER. PROVIDE WELDED FITTINGS/JOINTS IN ANY CONCEALED, UNSLEEVED LOCATION.

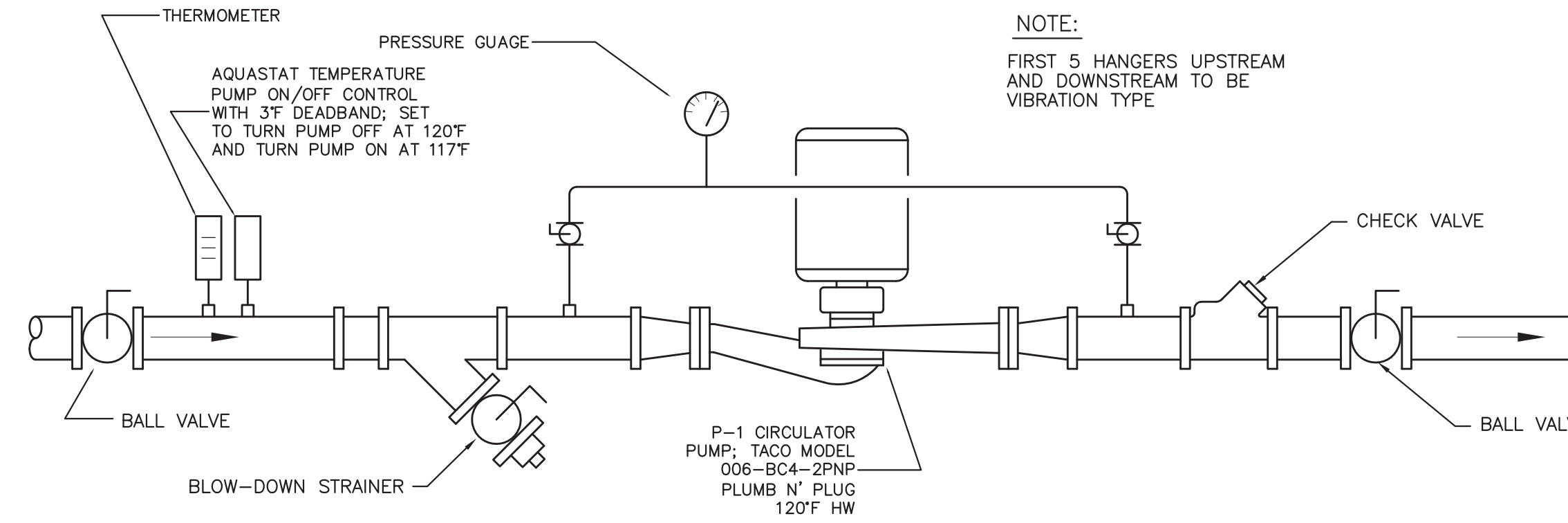
**3 KITCHEN GAS EQUIPMENT DETAIL**  
NOT TO SCALE



**SEQUENCE OF OPERATIONS:**

- NORMAL MODE:**
- WHEN HOOD FAN IS ENERGIZED SOLENOID VALVE IS TO OPEN.
  - ON A LOSS OF POWER OR IF THE FAN IS DE-ENERGIZED THE VALVE IS TO CLOSE.
- EMERGENCY MODE:**
- UPON ACTUATION OF THE FIRE SUPPRESSION SYSTEM OR A SIGNAL FROM THE FIRE ALARM, THE SOLENOID VALVE IS TO CLOSE

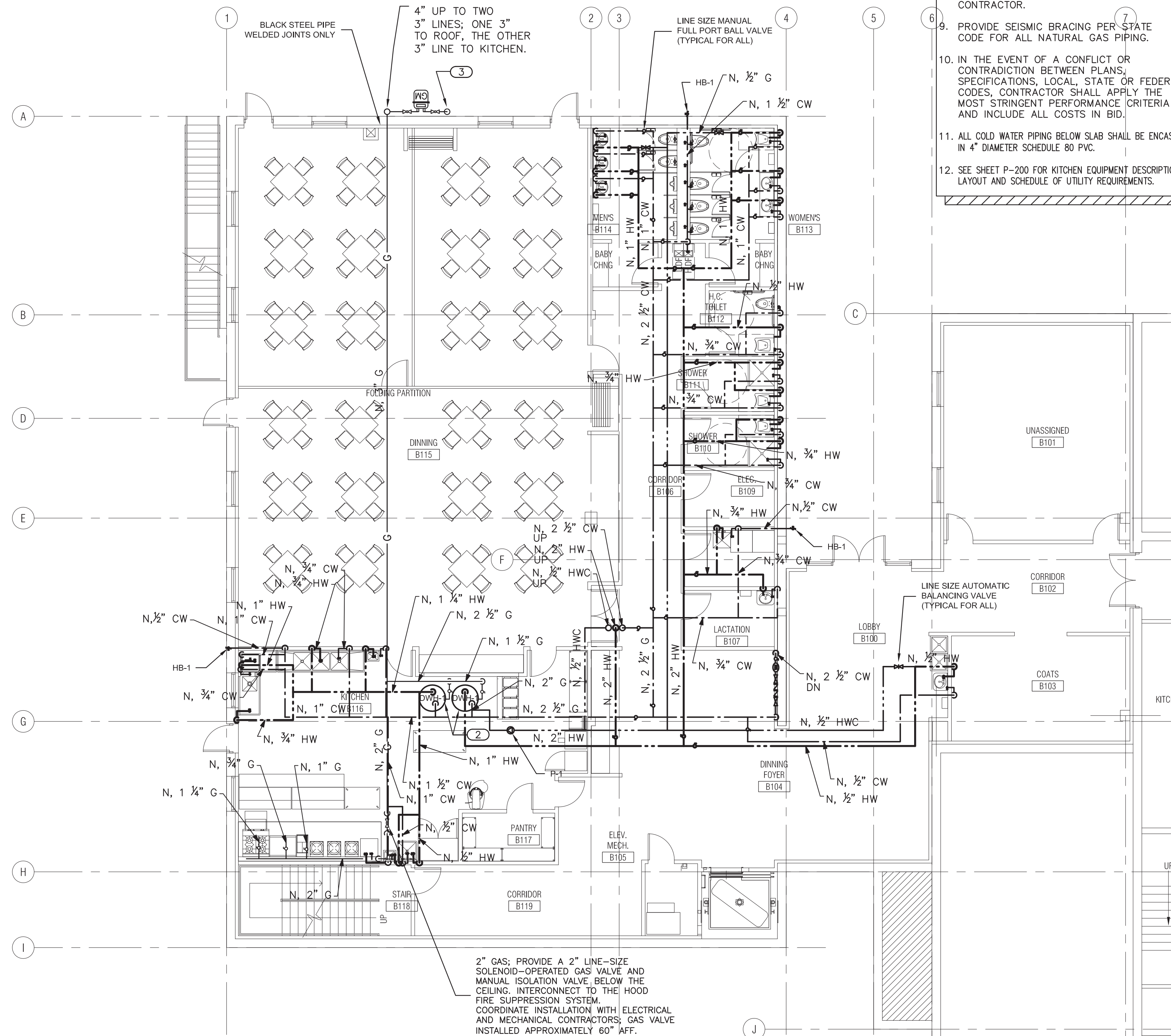
**2 KITCHEN GAS SHUTOFF DETAIL**  
NOT TO SCALE



**5 PLUMBING - (P-1) DOMESTIC HOT WATER IN-LINE CIRCULATOR PUMP**  
SCALE: NONE

**KEYED NOTES**

- PROVIDE 2" POTABLE WATER METER, REDUCED PRESSURE BACKFLOW PREVENTER, AND ISOLATION BALL VALVES FOR NEW 2" POTABLE WATER SERVICE; NOT ALL COMPONENTS SHOWN FOR REASONS OF CLARITY. CONTRACTOR MAY VERTICALLY OFFSET THE PIPING COMPONENTS AS NEEDED FOR THE INSTALLATION. ALL WATER SERVICE ENTRANCE PIPING COMPONENTS SUCH AS THE BACKFLOW PREVENTER SHALL BE LISTED FOR EITHER VERTICAL OR HORIZONTAL INSTALLATION.
- DWH-1 PVI PLATINUM 399 L.A-PN 399CFH, 70 GAL, 310 GPH RECOVERY MA PLUMBING BOARD APPROVAL CODE: P3-0312-413.  
3/4" NPT NATURAL GAS INLET CONNECTION. 2" CW & HW DROPS, 18 GAL POTABLE WATER EXPANSION TANK, VACUUM BREAKER, AND WAGS VALVE IN SAFE PAN; PROVIDE STRUCTURAL SUPPORT.  
P&T RELIEF AND DRIP PAN DRAIN TO FD-1 WITH AIR GAP. LOCATION OF BOTH DWHs SHOWN FOR DIAGRAMMATIC PURPOSES ONLY. CONTRACTOR SHALL DETERMINE EXACT DWHs INSTALLATION LOCATION WITH OWNER. INCLUDE IN BID EXTRA MATERIALS AND LABOR FOR FIELD LOCATING DWH INSTALLATION LOCATION WITH OWNER.
- COORDINATE INSTALLATION OF NEW 3,000 CFH GAS SERVICE AT 7" W.C. PRESSURE WITH SITE CONTRACTOR AND NATURAL GAS UTILITY COMPANY.



**1 PLUMBING - NEW LOWER LEVEL SUPPLY PLAN**  
SCALE: 1/8" = 1'-0"

**GENERAL NOTES**

- CONTRACTOR SHALL INSULATE ALL PIPING ABOVE THE CEILING.
- CONTRACTOR SHALL COORDINATE WORK WITH ALL TRADES.
- CONTRACTOR SHALL USE CAST IRON PIPING FOR ALL DRAINAGE ABOVE OFFICE AREAS.
- PIPE ROUTING IS SHOWN DIAGRAMMATICALLY ON PLUMBING DRAWINGS AND SHALL BE ADJUSTED FOR ARCHITECTURAL, STRUCTURAL, MECHANICAL AND ELECTRICAL CLEARANCES AND LIMITATIONS AND FOR EQUIPMENT SELECTION. FURNISH AND INSTALL ALL ELEMENTS REQUIRED TO COMPLETE INTENDED PIPING SYSTEMS WHETHER OR NOT THESE ELEMENTS ARE SPECIFICALLY SHOWN ON DRAWINGS OR CALLED FOR IN SPECIFICATIONS.
- CONTRACTOR SHALL COORDINATE CLEANOUT COVER PLATES WITH ARCHITECT.
- CONTRACTOR SHALL TAG ALL PIPING WITH STICKERS DESIGNATING FLUID TYPE.
- COORDINATE GAS METER, METER PIPING, AND GAS LOADS WITH UTILITY.
- CONTRACTOR SHALL PROVIDE SELF REGULATING HEAT TRACE FOR ALL PIPING OUTSIDE BUILDING THERMAL ENVELOPE. PROVIDE THERMOSTAT FOR CONTROL. COORDINATE WITH ELECTRICAL CONTRACTOR.
- PROVIDE SEISMIC BRACING PER STATE CODE FOR ALL NATURAL GAS PIPING.
- IN THE EVENT OF A CONFLICT OR CONTRADICTION BETWEEN PLANS, SPECIFICATIONS, LOCAL STATE OR FEDERAL CODES, CONTRACTOR SHALL APPLY THE MOST STRINGENT PERFORMANCE CRITERIA AND INCLUDE ALL COSTS IN BID.
- ALL COLD WATER PIPING BELOW SLAB SHALL BE ENCASED IN 4" DIAMETER SCHEDULE 80 PVC.
- SEE SHEET P-200 FOR KITCHEN EQUIPMENT DESCRIPTION, LAYOUT AND SCHEDULE OF UTILITY REQUIREMENTS.

**SRI LAKSHMI TEMPLE NEW ADDITION**

117 WAVERLY STREET  
ASHLAND, MA 01721



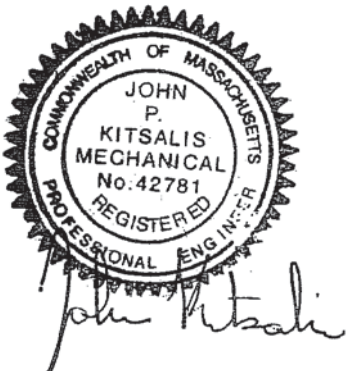
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**PLUMBING - NEW LOWER LEVEL SUPPLY PLAN**

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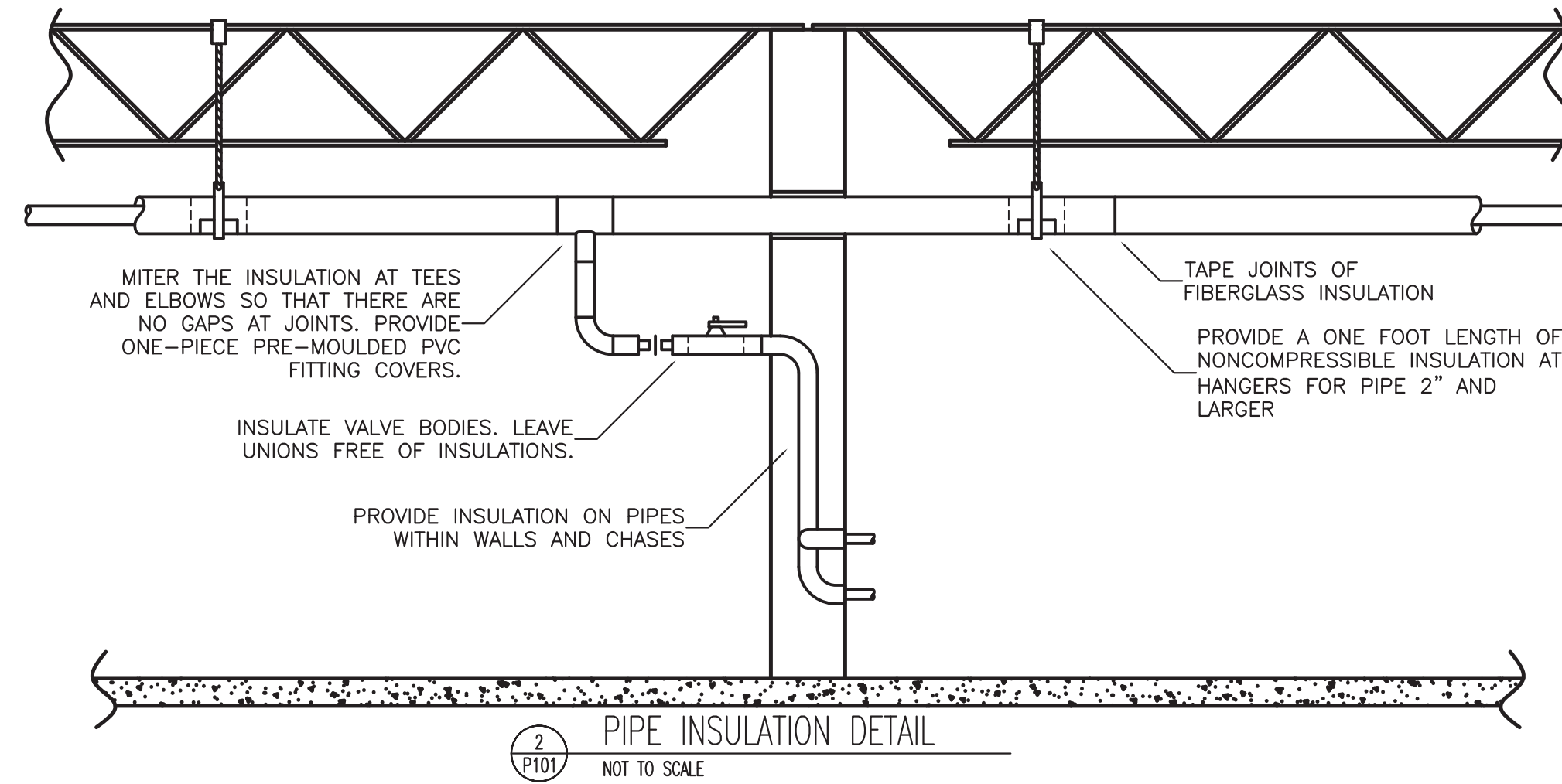
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Project #

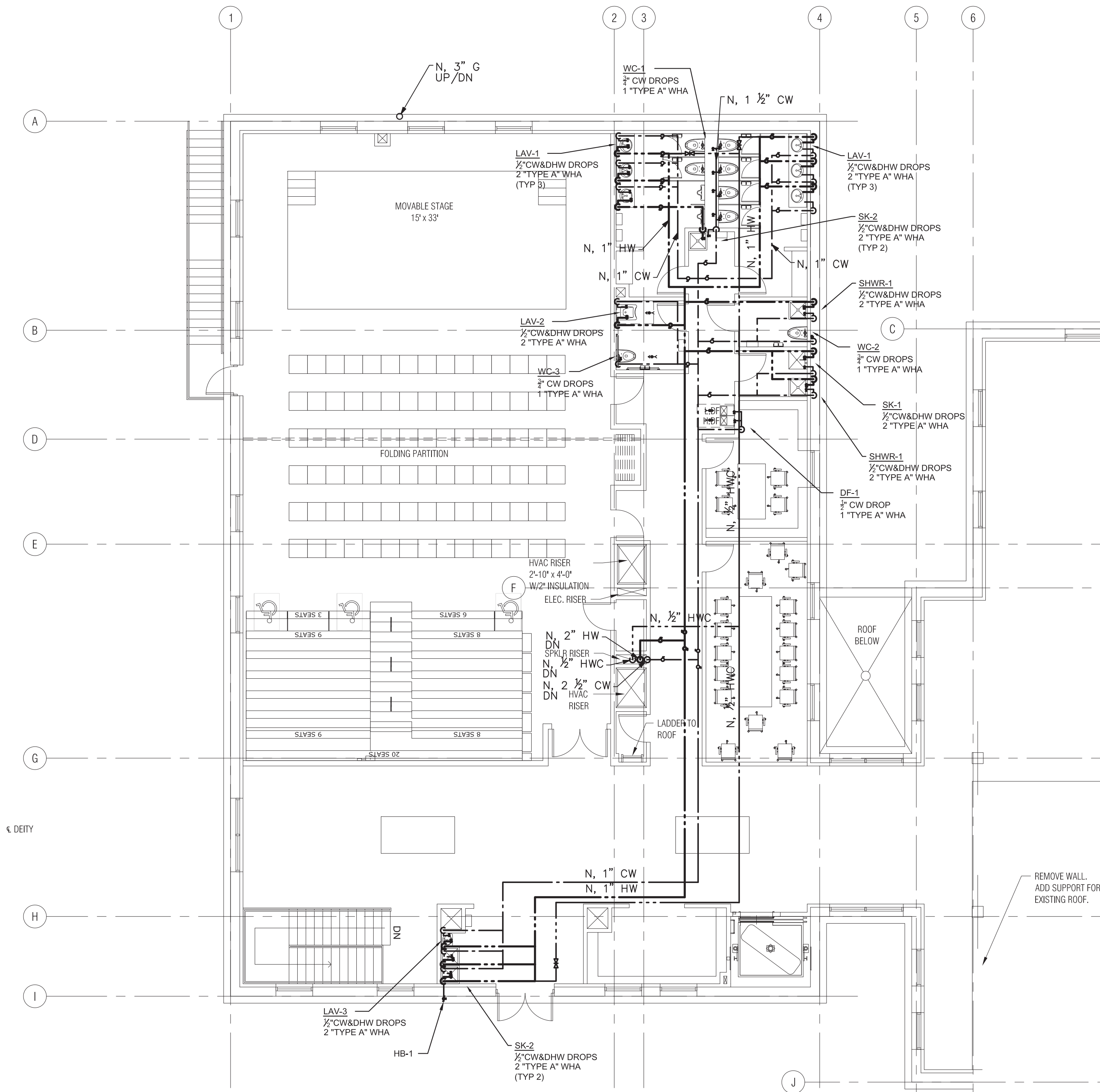
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**GENERAL NOTES**

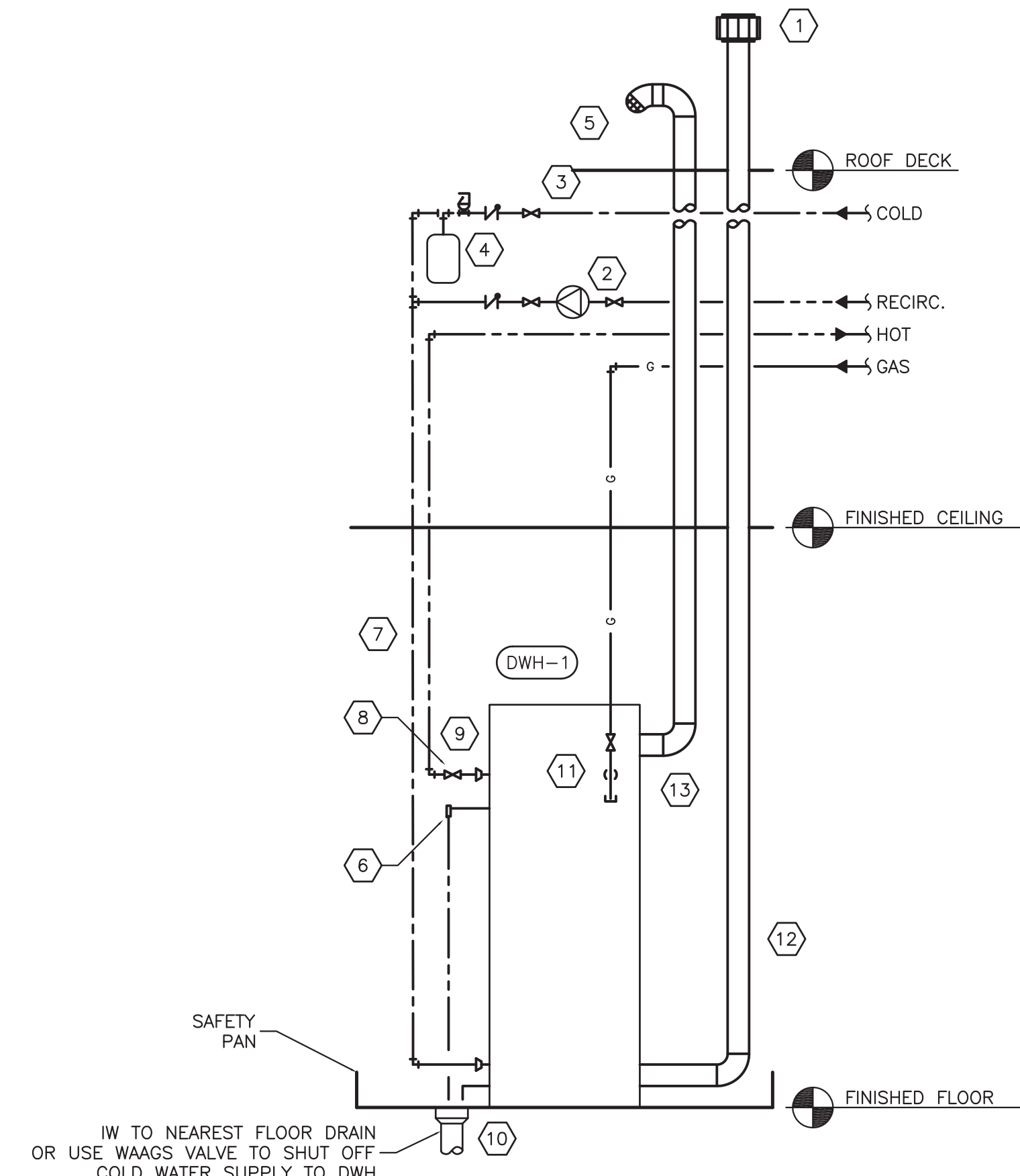
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2. CONTRACTOR SHALL COORDINATE WORK WITH ALL TRADES.
3. CONTRACTOR SHALL USE CAST IRON PIPING FOR ALL DRAINAGE ABOVE CEILING AREAS.
4. PROVIDE TRAP PRIMER FOR ALL PLUMBING FIXTURES. ONE TRAP PRIMER PER TRAP. COLD WATER CONNECTIONS TO TRAP PRIMERS NOT SHOWN ON PLANS FOR REASONS OF CLARITY.
5. CONTRACTOR SHALL COORDINATE CLEANOUT COVER PLATES WITH ARCHITECT.
6. CONTRACTOR SHALL TAG ALL PIPING WITH STICKERS DESIGNATING FLUID TYPE.



**PIPE INSULATION DETAIL NOTE(S):**  
 PROVIDE INSULATION ON INTERIOR COLD AND HOT WATER PIPING, CONDENSATE DRAIN PIPE, AND STORM PIPE. REFER TO SPECIFICATIONS FOR FURTHER INFORMATION REGARDING INSULATION. INSTALL ITEMS PER SPECIFICATIONS AND MANUFACTURER'S INSTRUCTIONS. MAINTAIN VAPOR BARRIER ON COLD WATER AND CONDENSATE PIPING BY MEANS OF SEALANT AND TAPE. FLAME SPREAD AND SMOKE-DEVELOPED INDEXES SHALL NOT EXCEED 25/50. SEAL EXPOSED ENDS OF FIBERGLASS INSULATION WITH ADHESIVE MASTIC.



**1 PLUMBING - NEW MAIN LEVEL SUPPLY PLAN**  
 SCALE: 1/8" = 1'-0"



**WATER HEATER INSTALLATION NOTES**

- A. CLEAN INLET STRAINERS AFTER CONSTRUCTION HAS BEEN COMPLETED AND PRIOR TO TURNOVER OF THE BUILDING TO THE OWNER.
- B. INSTALL PIPING WITH AS FEW ELBOWS AS POSSIBLE.
- C. MAINTAIN REQUIRED CLEARANCES TO COMBUSTIBLE MATERIALS.
- D. ADJUST WATER HEATER TO A SETPOINT OF 110° F.

**2 WATER HEATER DETAIL**  
 NOT TO SCALE

**WATER HEATER DETAIL NOTES**

1. PROVIDE RAIN CAP AT FLUE TERMINATION THROUGH ROOF.
2. PROVIDE RECIRCULATION PUMP P-1 AS SHOWN. SUPPORT PUMP FROM WALL OR STRUCTURE ABOVE THE PUMP. PUMP SHALL BE CONTROLLED BY A TIME CLOCK SET FOR THE OCCUPIED HOURS OF THE STORE AND AN AQUASTAT INSTALLED ON THE RECIRC. PIPE UPSTREAM FROM THE PUMP.
3. PROVIDE LINE-SIZE CHECK VALVES IN COLD AND RECIRCULATION WATER PIPES AS SHOWN.
4. PROVIDE EXPANSION TANK ET-1 AS SHOWN. SUPPORT TANK FROM WALL OR STRUCTURE ABOVE.
5. PROVIDE A SCREENED AIR INTAKE ABOVE THE ROOF PER THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.
6. PROVIDE PRESSURE RELIEF VALVE. PIPE PRESSURE RELIEF VALVE TO FLOOR DRAIN.
7. INSULATE EXPOSED AND CONCEALED HOT AND COLD WATER PIPING TO WITHIN 3" OF THE WATER HEATER.
8. PROVIDE LINE-SIZE BALL VALVES IN COLD AND HOT WATER PIPES AS SHOWN.
9. IF THE COLD, HOT, OR GAS PIPE LINE SIZE AS SHOWN ON THE PLUMBING PLANS IS LARGER THAN THE WATER HEATER CONNECTION SIZES, PROVIDE REDUCERS WITHIN 6" OF THE WATER HEATER.
10. PIPE PRESSURE RELIEF VALVE DISCHARGE AND WATER HEATER CONDENSATE DRAIN TO THE FLOOR DRAIN. DRAIN THROUGH AN AIR GAP.
11. PROVIDE AN EXPOSED DRIP LEG AND LINE-SIZE GAS VALVE ON THE GAS SERVICE TO THE WATER HEATER.
12. PROVIDE A 4"Ø PVC FLUE FROM WATER HEATER TO THE POINT OF DISCHARGE.
13. PROVIDE A 4"Ø PVC INTAKE PIPE FROM THE WATER HEATER TO THE POINT OF INTAKE.

**SRI LAKSHMI TEMPLE  
 NEW ADDITION**

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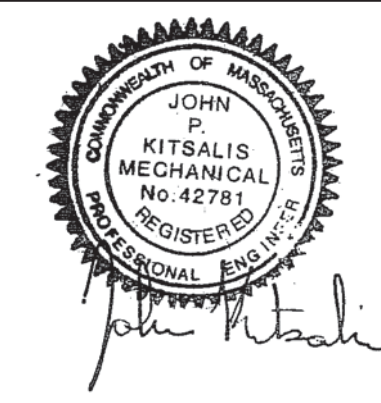
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Sheet Title

**PLUMBING - NEW MAIN  
 LEVEL SUPPLY PLAN**

Scale AS NOTED	Drawn by TJL	Verified by JPK
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Sheet #

**P-101**

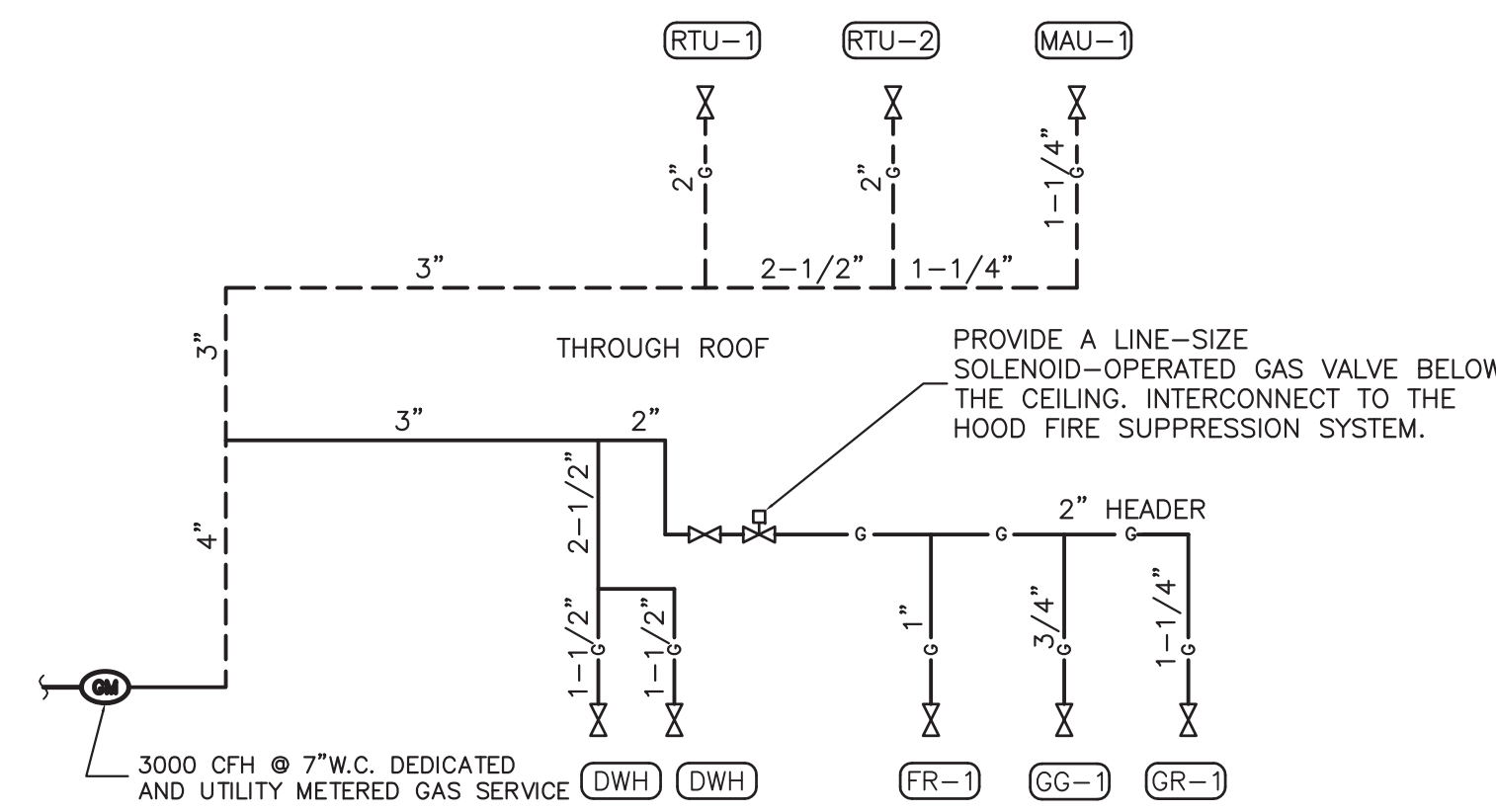
Project # 1203020

**GENERAL NOTES**

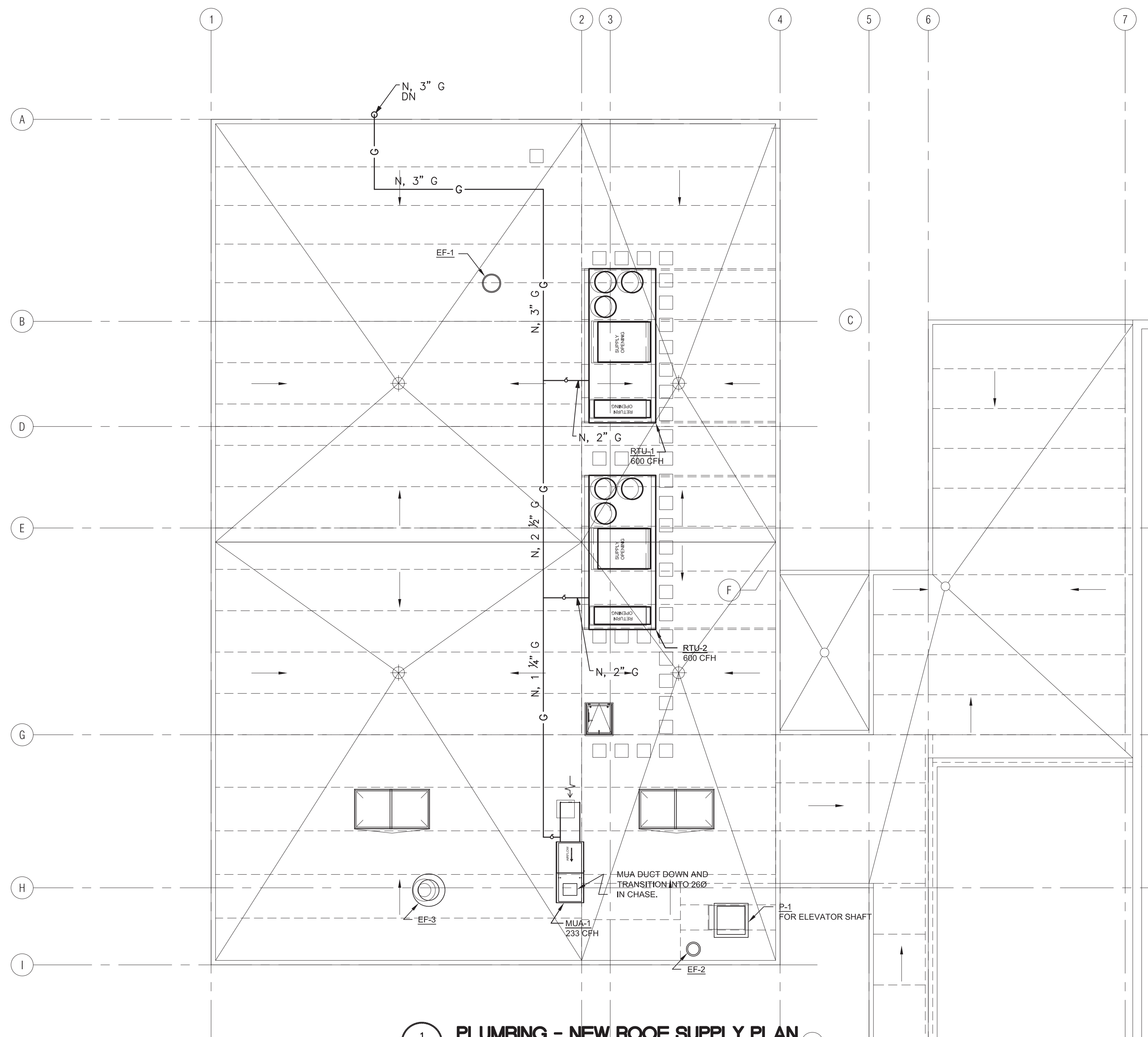
- CONTRACTOR SHALL INSULATE ALL PIPING ABOVE THE CEILING.
- CONTRACTOR SHALL COORDINATE WORK WITH ALL TRADES.
- CONTRACTOR SHALL USE CAST IRON PIPING FOR ALL DRAINAGE ABOVE CEILING AREAS.
- PROVIDE TRAP PRIMER FOR ALL PLUMBING FIXTURES. ONE TRAP PRIMER PER TRAP. COLD WATER CONNECTIONS TO TRAP PRIMERS NOT SHOWN ON PLANS FOR REASONS OF CLARITY.
- CONTRACTOR SHALL COORDINATE CLEANOUT COVER PLATES WITH ARCHITECT.
- CONTRACTOR SHALL TAG ALL PIPING WITH STICKERS DESIGNATING FLUID TYPE

CONNECTED GAS LOAD			
FIXTURE	TAG	LOAD [MBH]	EQUIVALENT LENGTH FROM METER [FT]
DOMESTIC WATER HTR	DWH	399	120
DOMESTIC WATER HTR	DWH	399	120
FLATOP GAS GRILLE	GG-1	60	140
GAS RANGE	GR-1	225	150
ROOFTOP UNIT	RTU-1	600	55
ROOFTOP UNIT	RTU-2	600	45
MAKEUP AIR UNIT	MAU-1	233	200
FRYER	FR-1	122	130
FOOD WARMER	FW-1	-	-
<b>TOTAL</b>		<b>2,638</b>	<b>MAX: 200</b>

- NOTES:  
 1. PRESSURE REQUIRED AFTER METER: 7" W.C.  
 2. DISTANCES ARE APPROXIMATE



3 P-5 GAS DISTRIBUTION DIAGRAM NIS



1 P-102 PLUMBING - NEW ROOF SUPPLY PLAN SCALE: 1/8" = 1'-0"

**SECTION 15198 - NATURAL GAS PIPING**

**PART 1 - GENERAL**

**1.1 SECTION REQUIREMENTS**

- A. Quality Assurance: Comply with NFPA 54 and the Plumbing Code.

**PART 2 - PRODUCTS**

**2.1 PIPE, TUBE, AND SPECIALTIES**

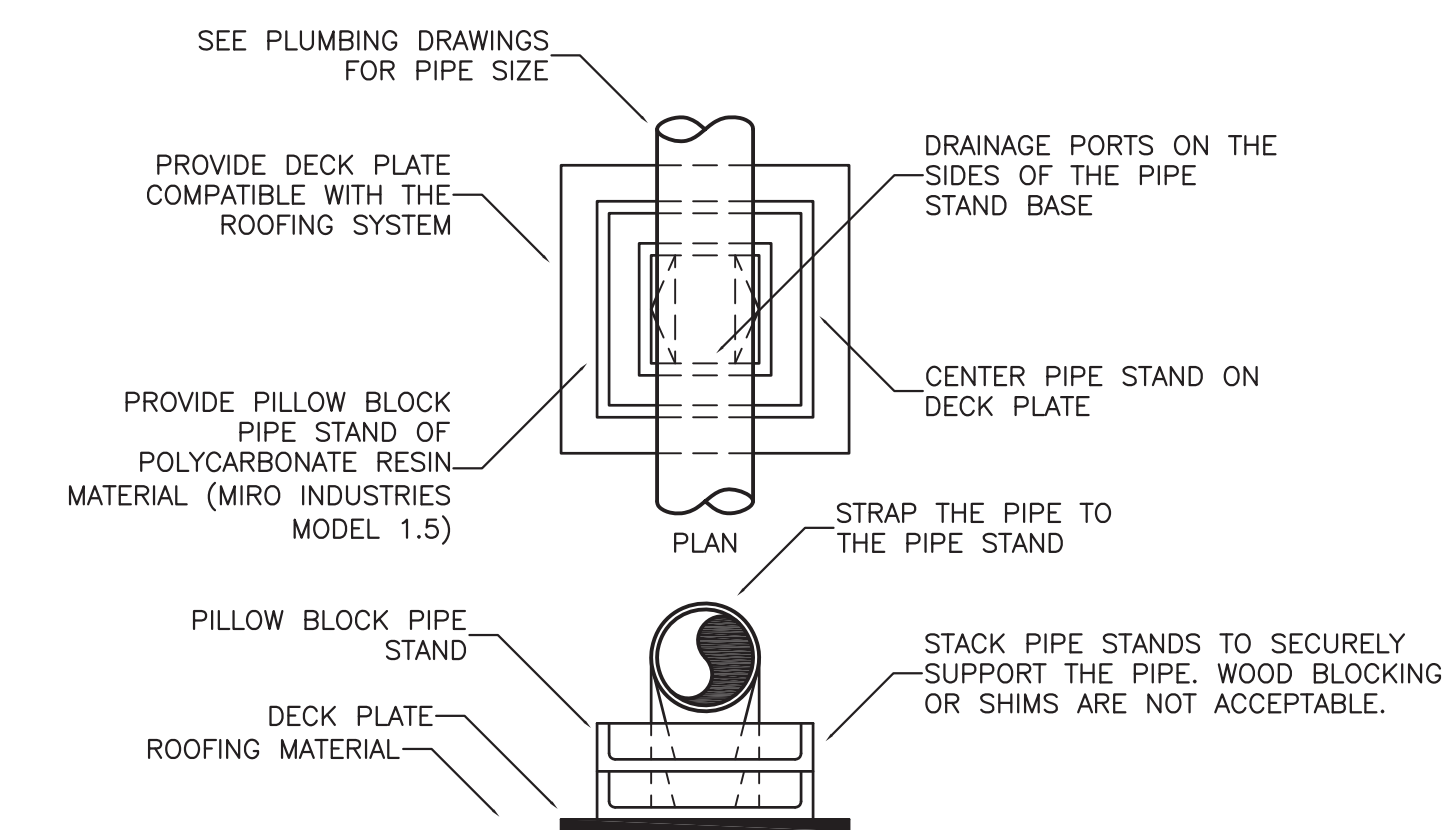
- A. Steel Pipe: ASTM A 53, Type S (Seamless), Grade B, Schedule 40, plain ends.
- B. Malleable Iron Threaded Fittings: ASME B16.3, Class 150.
- C. Manual Valves: Comply with standards listed or, if appropriate, to ANSI Z21.15.
- D. Gas Stops: AGA certified, bronze-body, plug type with bronze plug, for 2-psig or less natural gas. Include AGA stamp, flat or square head or lever handle, and threaded ends complying with ASME B1.20.1.
- E. Gas Valves: 150-psig WOG, cast-iron or bronze body, bronze plug, straightaway pattern, square head, tapered-plug type.
- F. Gas Pressure Regulators: ANSI Z21.18, single stage, steel jacketed, corrosion resistant pressure regulators. Include atmospheric vent, elevation compensator. Regulator pressure ratings, inlet and outlet pressures, and flow volume in cubic feet per hour of natural gas at specific gravity are as indicated.
- G. Line Gas Pressure Regulators: Inlet pressure rating not less than system pressure.
- H. Flexible Connectors: ANSI Z21.24, copper alloy.
- I. Strainers: Bronze body, Y-pattern, full size of connecting piping. Include stainless-steel screens with 3/64 inch perforations and a pressure rating of 125-psig- minimum, WOG working pressure.

**PART 3 - EXECUTION**

**3.1 INSTALLATION**

- A. Close equipment shutoff valves before turning off gas to premises or section of piping. Perform leakage test as specified to determine that all equipment is turned off in affected piping section.
- B. Install shutoff valve, downstream from gas meter, outside building at gas service entrance.
- C. Install gas stops for shutoff to appliances with NPS 2" or smaller low pressure gas supply.
- D. Drips and Sediment Traps: Install drips at points where condensate may collect. Include outlets of gas meters. Locate where readily accessible to permit cleaning and emptying. Do not install where condensate would be subject to freezing.
- E. Install gas piping at uniform slope of 0.1 percent upward toward risers.
- F. Use eccentric reducer fittings to make reductions in pipe sizes. Install fittings with level side down.
- G. Connect branch piping from top or side of horizontal piping.
- H. Install strainers on supply side of each control valve, gas pressure regulator, solenoid valve, and elsewhere as indicated.
- I. Install valves in accessible locations, protected from damage. Tag valves with metal tag indicating piping supplied. Attach tag to valve with metal chain.
- J. Install gas valve upstream from each gas pressure regulator. Where two gas-pressure regulators are installed in series, valve is not required at second regulator.
- K. Connect gas piping to equipment and appliances with shutoff valves and unions. Install gas valve upstream from and within 72 inches of each appliance using gas. Install union or flanged connection downstream from valve.
- L. Inspect, test, and purge piping according to NFPA 54, Part 4, "Gas Piping Inspection, Testing, and Purging", and requirements of authorities having jurisdiction.

END OF SECTION 15198



2 P102 ROOFTOP PIPING SUPPORT NOT TO SCALE

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NEW ADDITION**

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**PLUMBING - NEW ROOF  
SUPPLY PLAN**

Scale AS NOTED	Drawn by T.JL	Verified by JPK
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Sheet #

**P-102**

Project #

1203020

**GENERAL NOTES**

- CONTRACTOR SHALL INSULATE ALL PIPING ABOVE THE CEILING.
- CONTRACTOR SHALL COORDINATE WORK WITH ALL TRADES.
- CONTRACTOR SHALL USE CAST IRON PIPING FOR ALL DRAINAGE ABOVE CEILING AREAS.
- PROVIDE TRAP PRIMER FOR ALL PLUMBING FIXTURES. ONE TRAP PRIMER PER TRAP. COLD WATER CONNECTIONS TO TRAP PRIMERS NOT SHOWN ON PLANS FOR REASONS OF CLARITY.
- CONTRACTOR SHALL COORDINATE CLEANOUT COVER PLATES WITH ARCHITECT.
- CONTRACTOR SHALL TAG ALL PIPING WITH STICKERS DESIGNATING FLUID TYPE.
- CONTRACTOR SHALL NOT CROSS OVER ELECTRICAL ROOM, OR ANY ELECTRICAL EQUIPMENT WITH ANY TYPE OF PLUMBING PIPE. COORDINATE PLUMBING INSTALLATION WITH ALL OTHER TRADES.

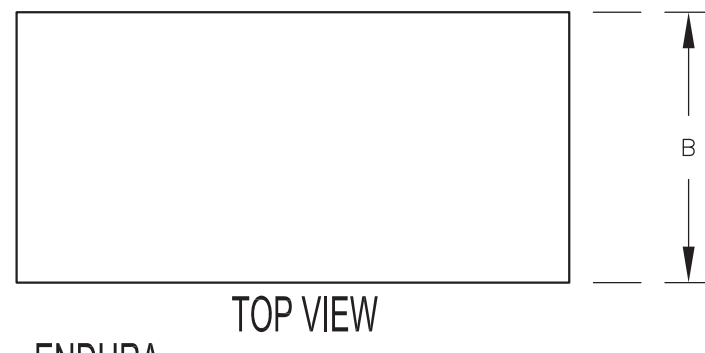
**MASSACHUSETTS STATE PLUMBING CODE FOR DETAIL 2/P200:**

248 CMR SECTION 10.12: INDIRECT WASTE PIPING  
 (1) **INDIRECT WASTES REQUIRED**  
 (A) FOOD HANDLING ESTABLISHMENTS.  
 1. FOOD HANDLING ESTABLISHMENTS ENGAGED IN THE STORAGE, PREPARATION, SELLING, SERVING, PROCESSING, OR IN ANY MANNER THE HANDLING OF FOOD SHALL PROVIDE: **INDIRECT WASTE PIPING FOR REFRIGERATORS, REFRIGERATOR COILS, WALK-IN FREEZERS OR COOLERS, ICE COMPARTMENTS, ICE MAKING MACHINES, STEAM KETTLES, STEAM TABLES, POTATO PEELERS, EGG BOILERS, COFFEE URNS, COFFEE, SODA AND BEVERAGE TRAYS AND ALL SIMILAR TYPES OF ENCLOSED EQUIPMENT.**  
 2. DISHWASHING PRE-RINSE SINKS INSTALLED IN COMBINATION WITH A COMMERCIAL DISHWASHER, POT SINKS, SCULLERY SINKS AND OTHER SINKS ARE EXCLUDED FROM THE INDIRECT WASTE REQUIREMENT AND SHALL BE DIRECTLY CONNECTED TO THE SANITARY DRAINAGE SYSTEM.  
 3. SINGLE COMPARTMENT CULINARY/PRODUCE SINKS OR INDIVIDUAL CULINARY/PRODUCE SINK COMPARTMENTS SPECIFICALLY DESIGNATED AND \*LABELED FOR PRODUCE PREPARATION SHALL CONVEY THE WASTE FROM THESE FIXTURES OR COMPARTMENTS INDIRECTLY TO A PROPERLY TRAPPED AND VENTED FLOOR SINK. **THE PRODUCE PREPARATION COMPARTMENT SHALL BE AUTHORIZED AND APPROVED BY THE LOCAL BOARD OF HEALTH OR OTHER DESIGNATED MUNICIPAL HEALTH OFFICIAL.**  
 4. THE PRODUCE PREPARATION LABEL MUST BE A LAMINATED SIGN WITH LETTERS TWO-INCHES IN HEIGHT THAT READS: **"THIS COMPARTMENT ONLY IS DESIGNATED FOR PRODUCE PREPARATION."**  
 5. **ALL INDIRECT WASTE SHALL DISCHARGE THROUGH AN AIR GAP OR AIR BREAK INTO A PROPERLY TRAPPED AND VENTED RECEPTOR EXCEPT THAT AN AIR GAP IS REQUIRED WHERE THE INDIRECT WASTE PIPE MAY BE UNDER VACUUM (LESS THAN ATMOSPHERIC PRESSURE).**

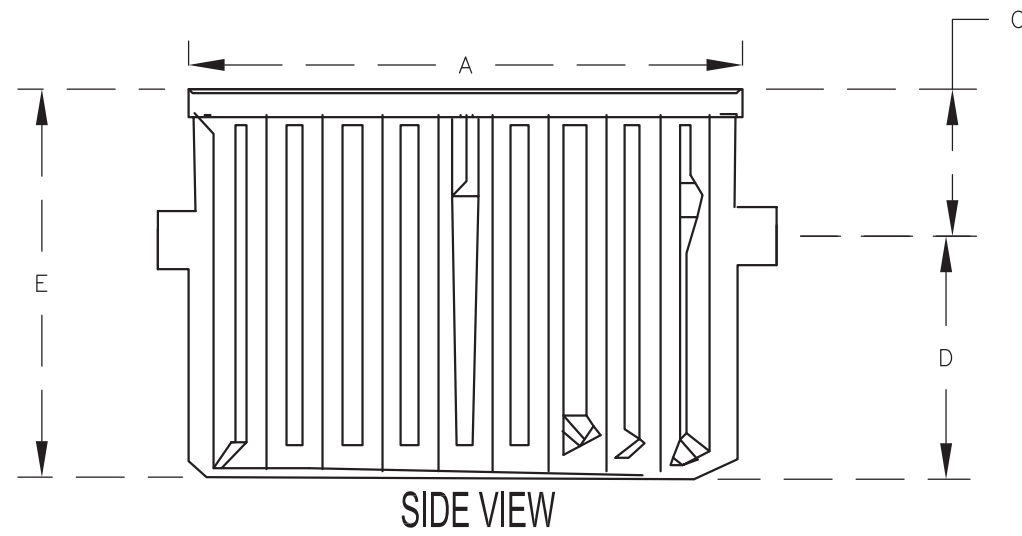
**KEYED NOTES**

- CONTRACTOR SHALL INSTALL RECESSED 50 GPM RATED GREASE TRAP TO HANDLE THE INDIRECT WASTE OF THE DISHWASHER. INDIRECT WASTE PIPING SHALL BE IN ACCORDANCE TO THE EQUIPMENT SCHEDULE SHOWN ON 3/P300.
- CONTRACTOR SHALL INSTALL RECESSED 50 GPM RATED GREASE TRAP TO HANDLE THE INDIRECT WASTE OF THE STEAMER AND HAND SINK. INDIRECT WASTE PIPING SHALL BE IN ACCORDANCE TO THE EQUIPMENT SCHEDULE SHOWN ON 3/P300.
- CONTRACTOR SHALL INSTALL RECESSED 50 GPM RATED GREASE TRAP TO HANDLE THE INDIRECT WASTE OF THE THREE COMPARTMENT SINK AND HAND SINK. INDIRECT WASTE PIPING SHALL BE IN ACCORDANCE TO THE EQUIPMENT SCHEDULE SHOWN ON 3/P300.
- CONTRACTOR SHALL INSTALL CLOTHES WASHER STANDPIPE RECEPTOR WITH TRAP AND TRAP PRIMER FROM ADJACENT MOP BASIN 3" WASTE DRAINAGE LINE.

**248 CMR 10.09: INTERCEPTORS, SEPARATORS AND HOLDING TANKS**  
 (2) GREASE TRAPS AND INTERCEPTORS WHEN INSTALLED INSIDE OF BUILDINGS.  
 (C) PLUMBING FIXTURES TO BE PROTECTED BY GREASE TRAPS AND INTERCEPTORS SHALL INCLUDE: **(SEE 248 CMR FIGURE 22)**  
 1. POT SINKS (WITH BOWL DEPTHS EXCEEDING TEN INCHES);  
 2. SCULLERY SINKS (WITH BOWL DEPTHS EXCEEDING TEN INCHES);  
 3. FLOOR DRAINS;  
 4. FLOOR SINKS;  
 5. AUTOMATIC DISHWASHERS REGARDLESS OF TEMPERATURE;  
 6. PRE-RINSE SINKS;  
 7. SOUP KETTLES OR SIMILAR DEVICES;  
 8. WOK STATIONS; AND  
 9. AUTOMATIC HOOD WASH UNITS;



**ENDURA GREASE INTERCEPTORS**  
 ENDURA GREASE INTERCEPTOR  
 Includes Flow Control Fittings



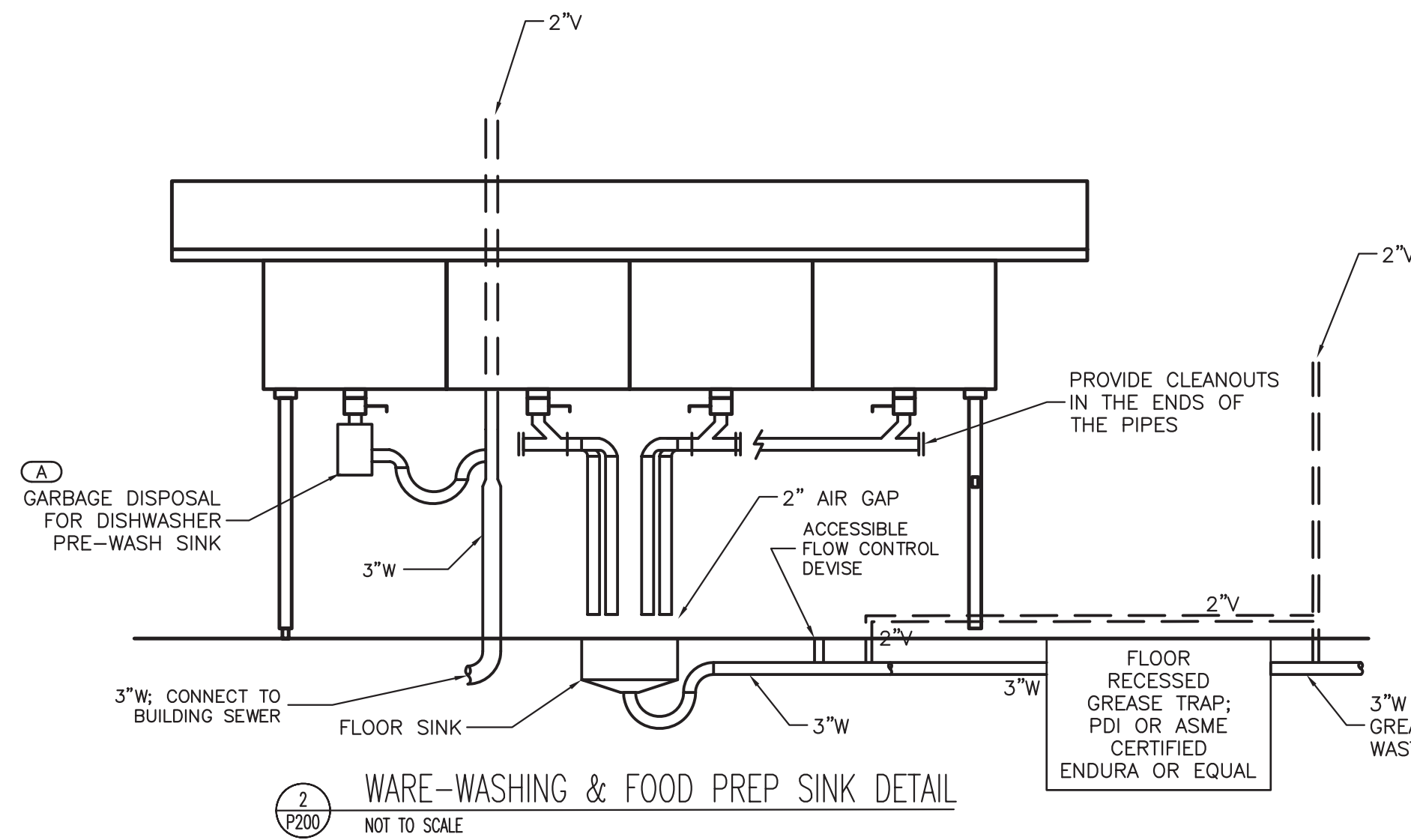
PART NUMBER	FLOW RATE	GREASE CAPACITY	A	B	C	D	E	INLET/OUTLET
3915A02	15 g.p.m.	30	23-3964	17-12	3-1/2	12-13/16	16-5/16	3
3920A02	20 g.p.m.	40	23-3964	17-12	3-1/2	12-13/16	16-5/16	3
3925A03	25 g.p.m.	50	23-3964	17-12	4-7/8	12-13/16	16-5/16	3
3935A03	35 g.p.m.	70	31	23-12	5	12-1/2	17-1/2	3
3950A03	50 g.p.m.	100	31	23-12	5	18-1/2	23-1/2	3
3935A04	35 g.p.m.	70	31	23-12	5	12-1/2	17-1/2	3
3950A04	50 g.p.m.	100	31	23-12	5	18-1/2	23-1/2	3

\* Tested and certified to Standard PDI-G101 of the Plumbing and Drainage Institute.  
**GREASE INTERCEPTORS: (3" OR 4" NO-HUB CONNECTION), PLUMBING AND DRAINAGE INSTITUTE (PDI) APPROVED, AND MANUFACTURED IN COMPLIANCE WITH ASME A112.14.3-2000. INTERNATIONAL ASSOCIATION OF PLUMBING AND MECHANICAL OFFICIALS (IAPMO) LISTED.**

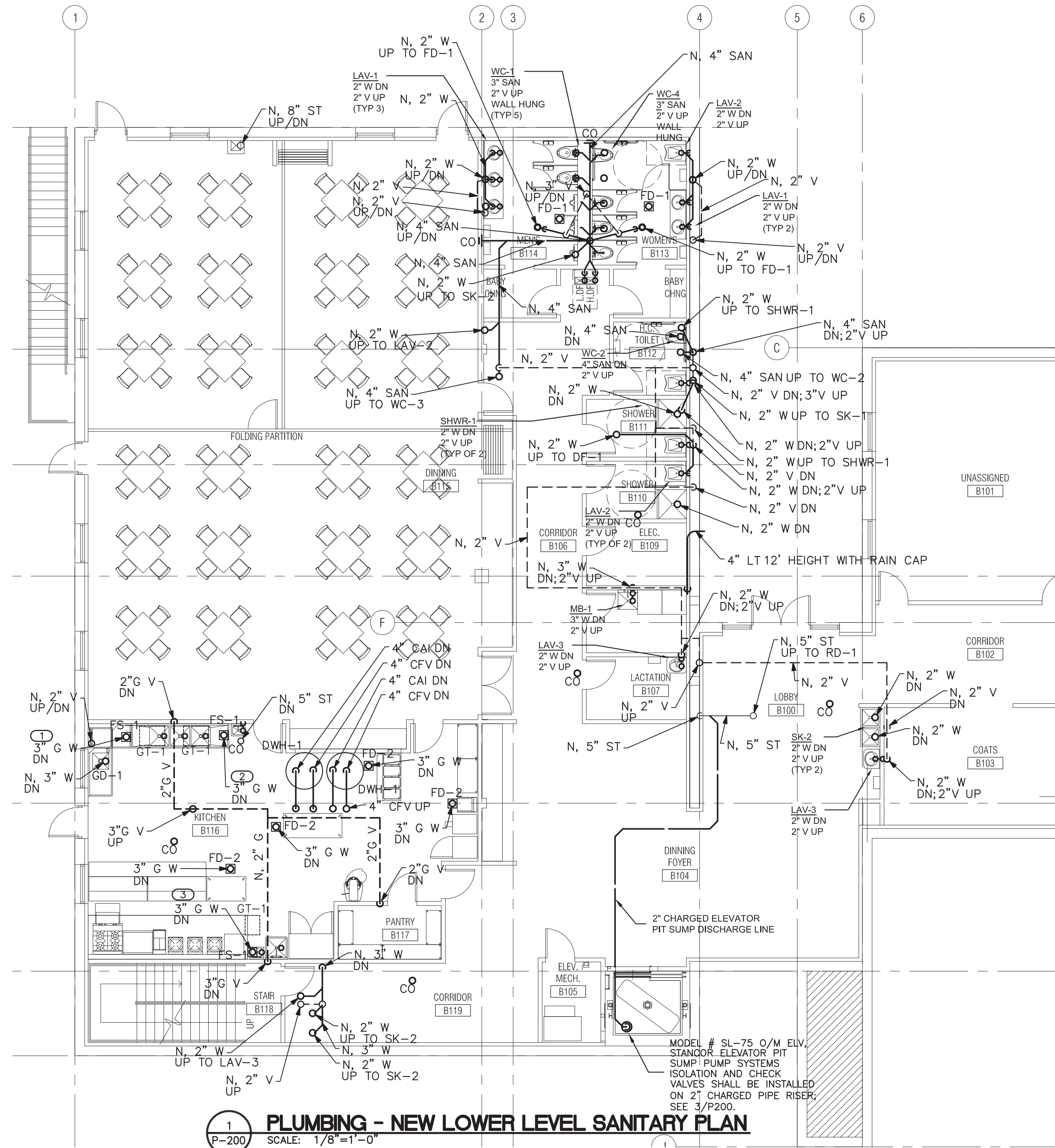
- TANK: DIMENSIONS PER DETAIL ABOVE. COPOLYMER POLYPROPYLENE 10% GLASS FILLED.
- COVER: DIMENSIONS PER DETAIL ABOVE. FLUSH-FIT TO TANK GLASS-FILLED NYLON 6 10% GLASS FILLED, WITH FOAM SILICONE GASKET. SECURED WITH A QUICK-CONNECT LATCHING SYSTEM.
- BAFFLES: REMOVABLE COPOLYMER POLYPROPYLENE 10% GLASS FILLED BAFFLES.
- INCLUDED ARE FLOW CONTROL DEVICE, INTEGRATED EXTERNAL CLEANOUT AND AIR-INTAKE TEE. INJECTION-MOLDED PVC, COMPLIANT WITH ASTM D2665. INCLUDE OPTIONAL PVC EXTENSION ACCESS SLEEVE KIT FOR IN-FLOOR INSTALLATIONS.
- EXTENSION SETS: OPTIONAL COPOLYMER POLYPROPYLENE 10% GLASS FILLED, INCLUDE EXTENSION SETS (I.E. RISERS) FOR IN-FLOOR INSTALLATIONS REQUIRING ADJUSTMENT TO FINISHED FLOOR LEVEL.

**KEYED NOTES**

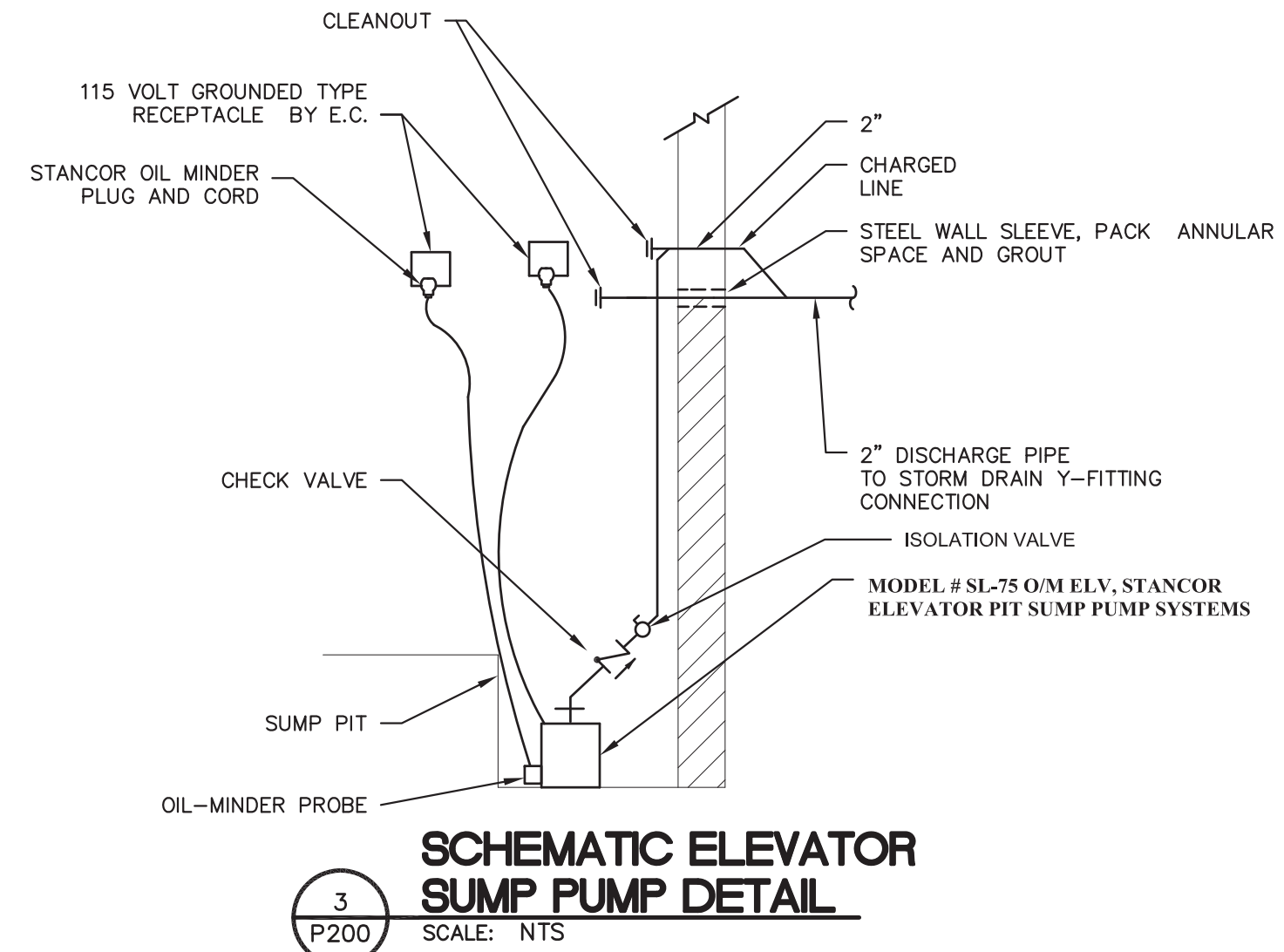
- CONTRACTOR SHALL INSTALL GFCI020T -GE SUPER CAPACITY CONTINUOUS FEED DISPOSER; DESIGNATED AS GD-1 FOR DISHWASHER PRE-WASH SINK.



**WARE-WASHING & FOOD PREP SINK DETAIL**  
 NOT TO SCALE



**PLUMBING - NEW LOWER LEVEL SANITARY PLAN**  
 SCALE: 1/8"=1'-0"



**SCHEMATIC ELEVATOR SUMP PUMP DETAIL**  
 SCALE: NTS

**SRI LAKSHMI TEMPLE NEW ADDITION**

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**PLUMBING - NEW LOWER LEVEL SANITARY PLAN**

Scale	Drawn by	Verified by
AS NOTED	TJL	JPK

Sheet # **P-200**  
 Project # 1203020

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Sheet Title

PLUMBING - NEW MAIN LEVEL  
SANITARY PLAN

Scale AS NOTED	Drawn by TJL	Verified by JPK
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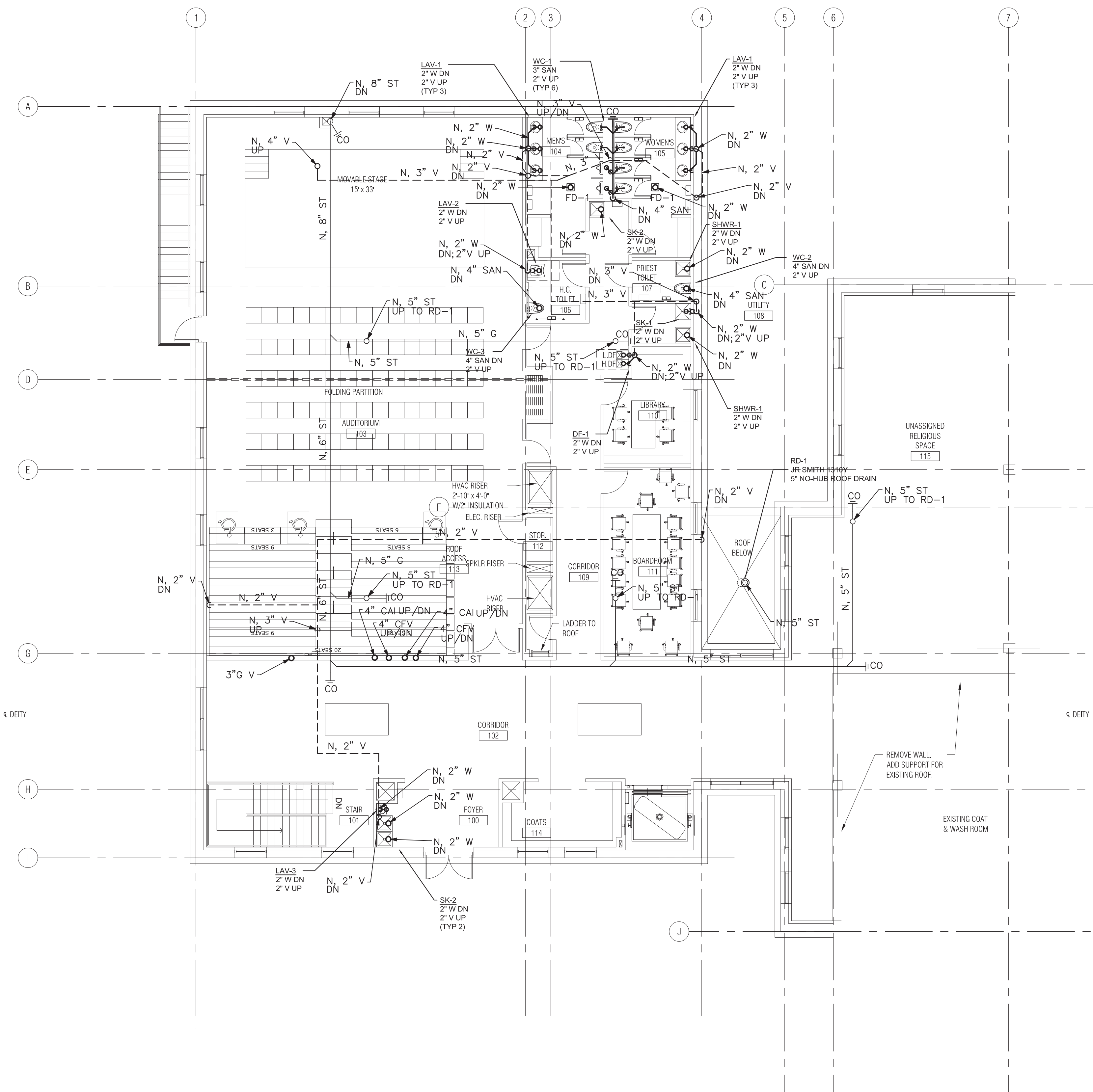
Sheet #

P-201

Project #

1203020

- GENERAL NOTES**
1. CONTRACTOR SHALL INSULATE ALL PIPING ABOVE THE CEILING.
  2. CONTRACTOR SHALL COORDINATE WORK WITH ALL TRADES.
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  4. PROVIDE TRAP PRIMER FOR ALL PLUMBING FIXTURES. ONE TRAP PRIMER PER TRAP. COLD WATER CONNECTIONS TO TRAP PRIMERS NOT SHOWN ON PLANS FOR REASONS OF CLARITY
  5. CONTRACTOR SHALL COORDINATE CLEANOUT COVER PLATES WITH ARCHITECT.
  6. CONTRACTOR SHALL TAG ALL PIPING WITH STICKERS DESIGNATING FLUID TYPE



**1** PLUMBING - NEW MAIN LEVEL SANITARY PLAN  
P-201 SCALE: 1/8"=1'-0"

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NEW ADDITION

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Sheet Title

PLUMBING - ROOF STORM  
DRAINAGE PLAN

Scale AS NOTED	Drawn by TJL	Verified by JPK
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Sheet #

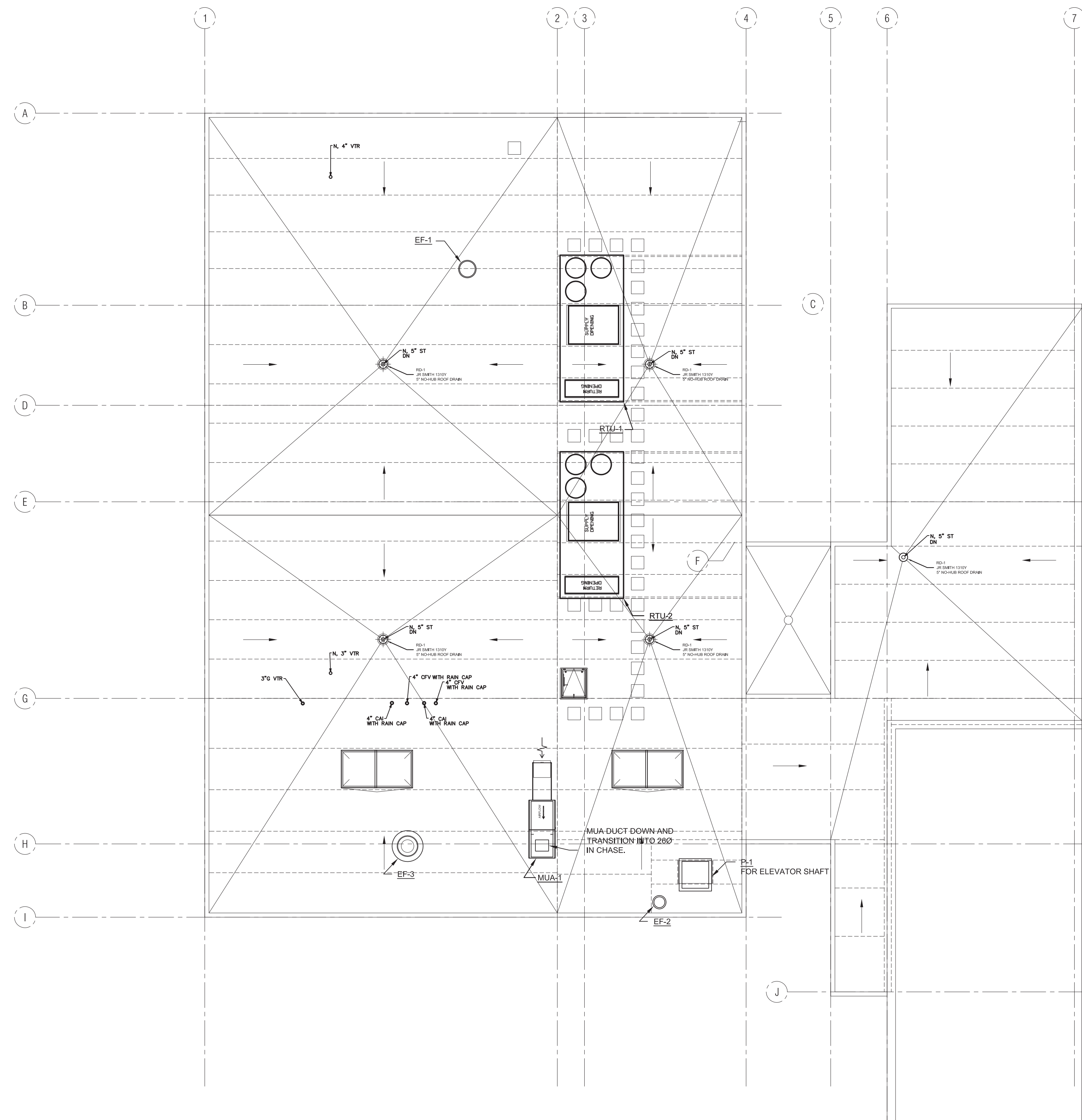
P-202

Project #

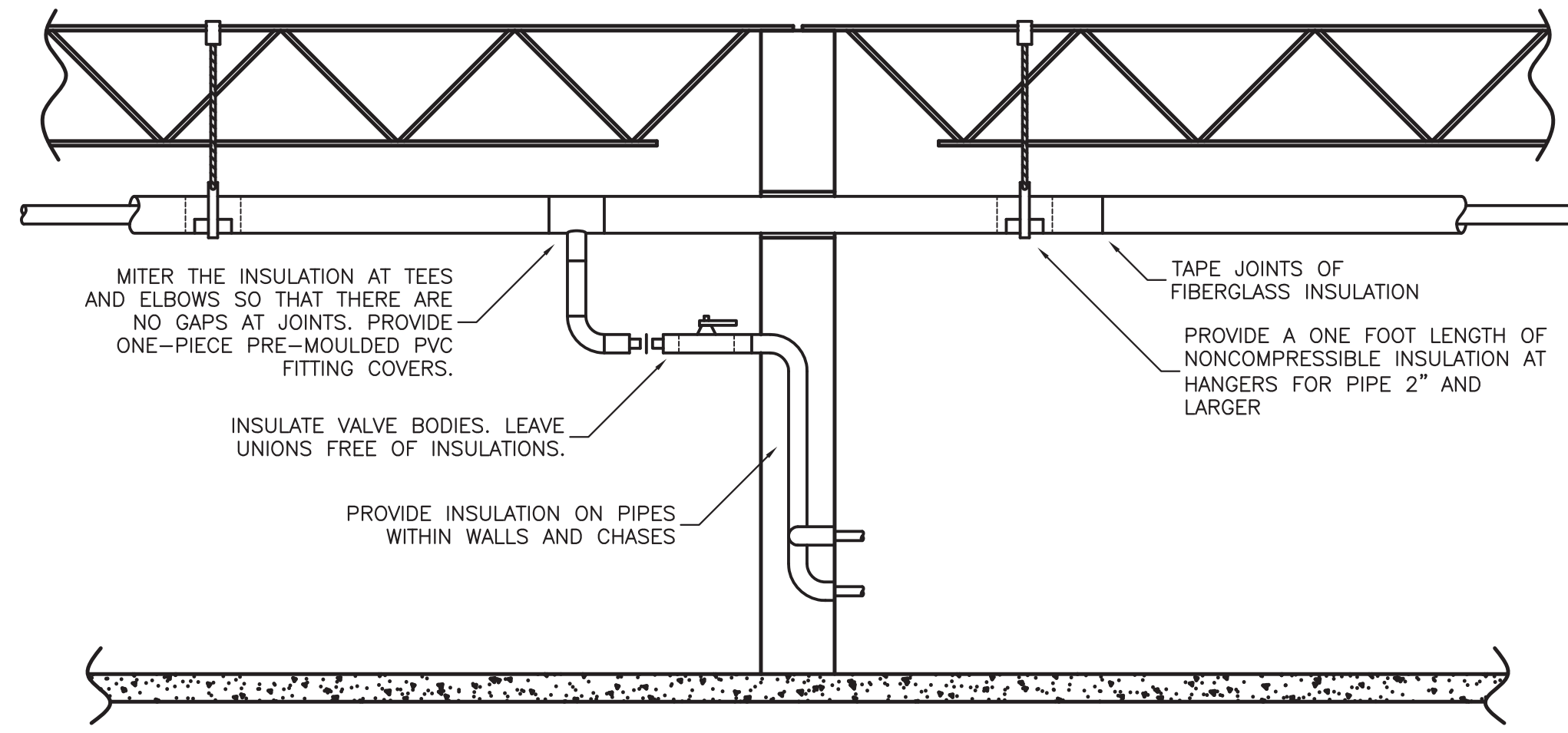
1203020

GENERAL NOTES

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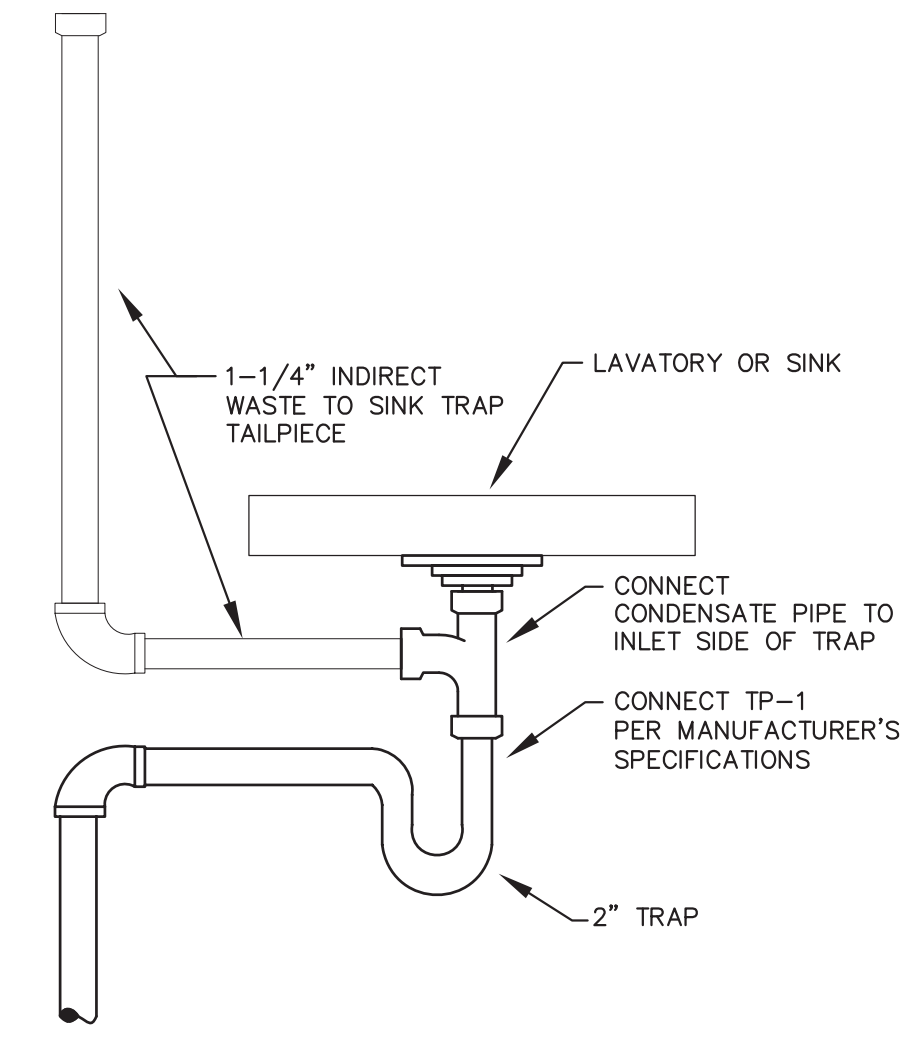


1 PLUMBING - ROOF STORM DRAINAGE PLAN  
P-202 SCALE: 1/8"=1'-0"

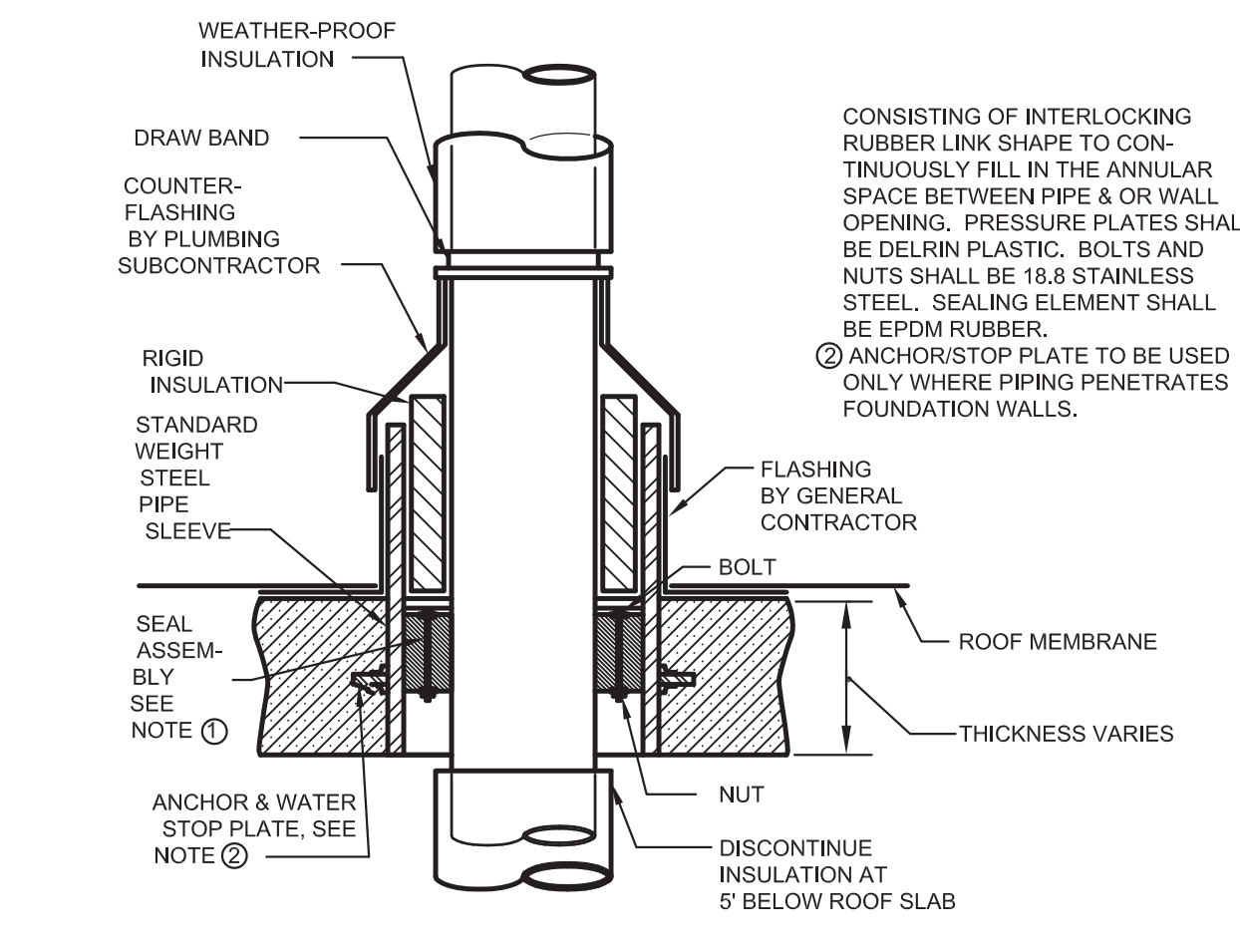


PROVIDE INSULATION ON INTERIOR COLD AND HOT WATER PIPING, CONDENSATE DRAIN PIPE, STORM PIPE AND UP TO 5' FROM THE ROOFLINE PENETRATION FOR VENT THRU ROOF PIPE. REFER TO SPECIFICATIONS FOR FURTHER INFORMATION REGARDING INSULATION. INSTALL ITEMS PER SPECIFICATIONS AND MANUFACTURER'S INSTRUCTIONS. MAINTAIN VAPOR BARRIER ON COLD WATER AND CONDENSATE PIPING BY MEANS OF SEALANT AND TAPE. FLAME SPREAD AND SMOKE-DEVELOPED INDEXES SHALL NOT EXCEED 25/50. SEAL EXPOSED ENDS OF FIBERGLASS INSULATION WITH ADHESIVE MASTIC.

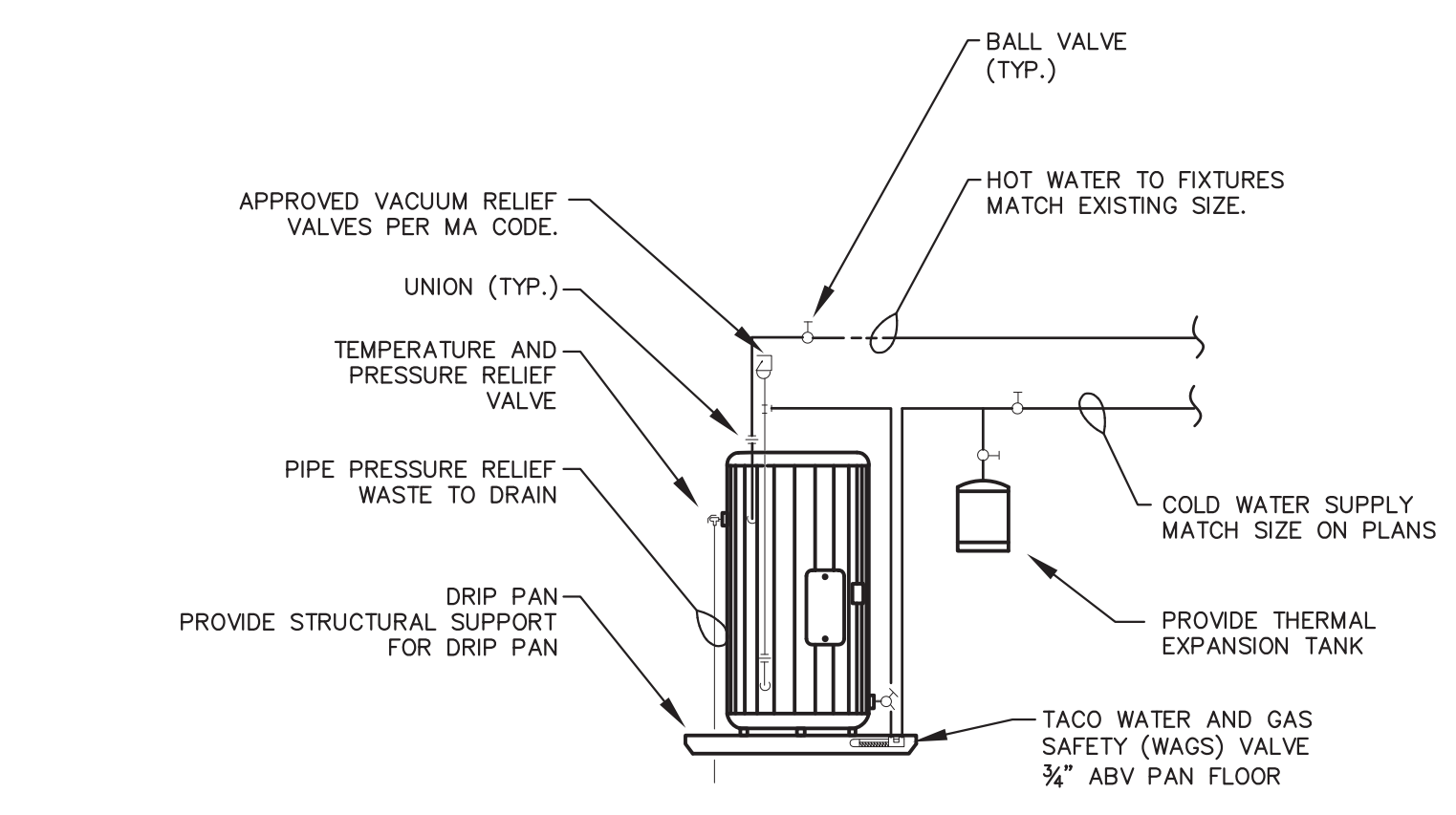
**8 PLUMBING - PIPE INSULATION DETAIL**  
SCALE: NTS



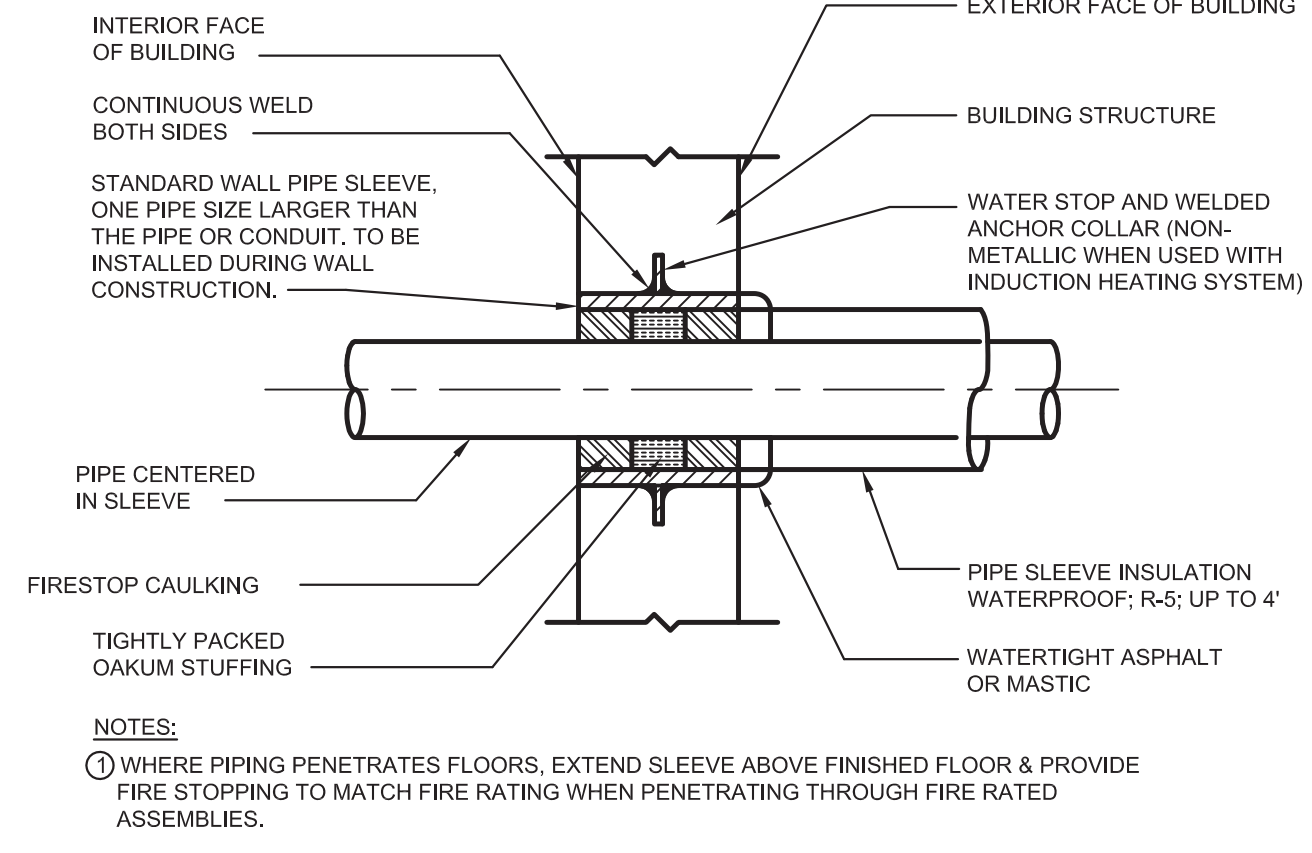
**6 PLUMBING - INDIRECT WASTE**  
SCALE: NTS



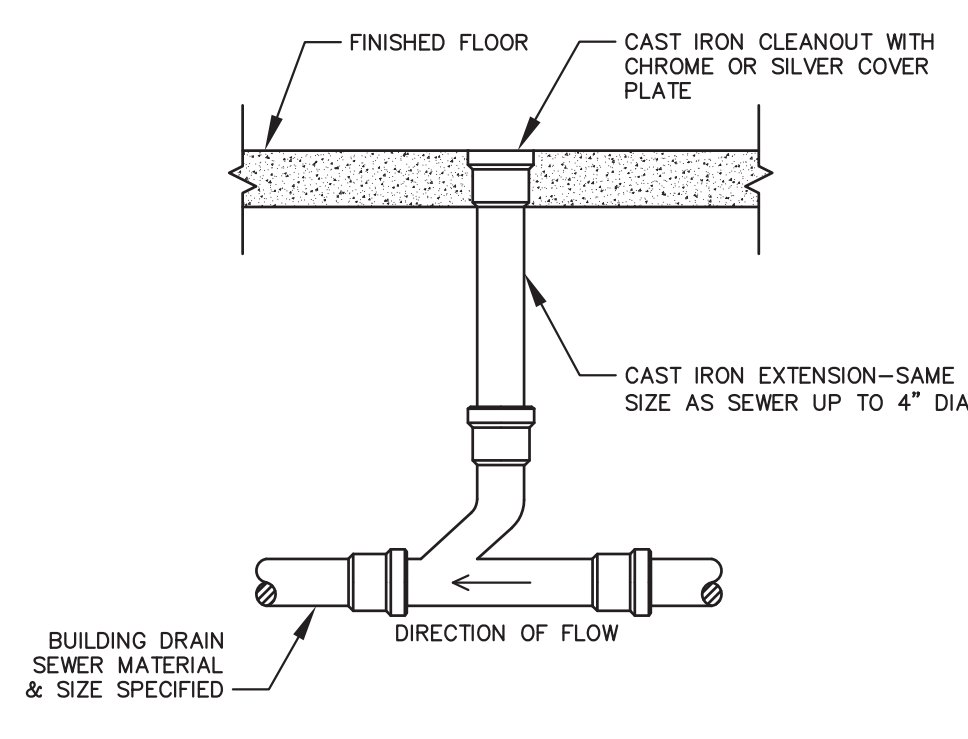
**5 PLUMBING - PIPE THROUGH ROOF DETAIL**  
SCALE: NTS; CONFIRM FLASHING AND COUNTER FLASHING WITH GC, ROOFER AND ARCHITECT.



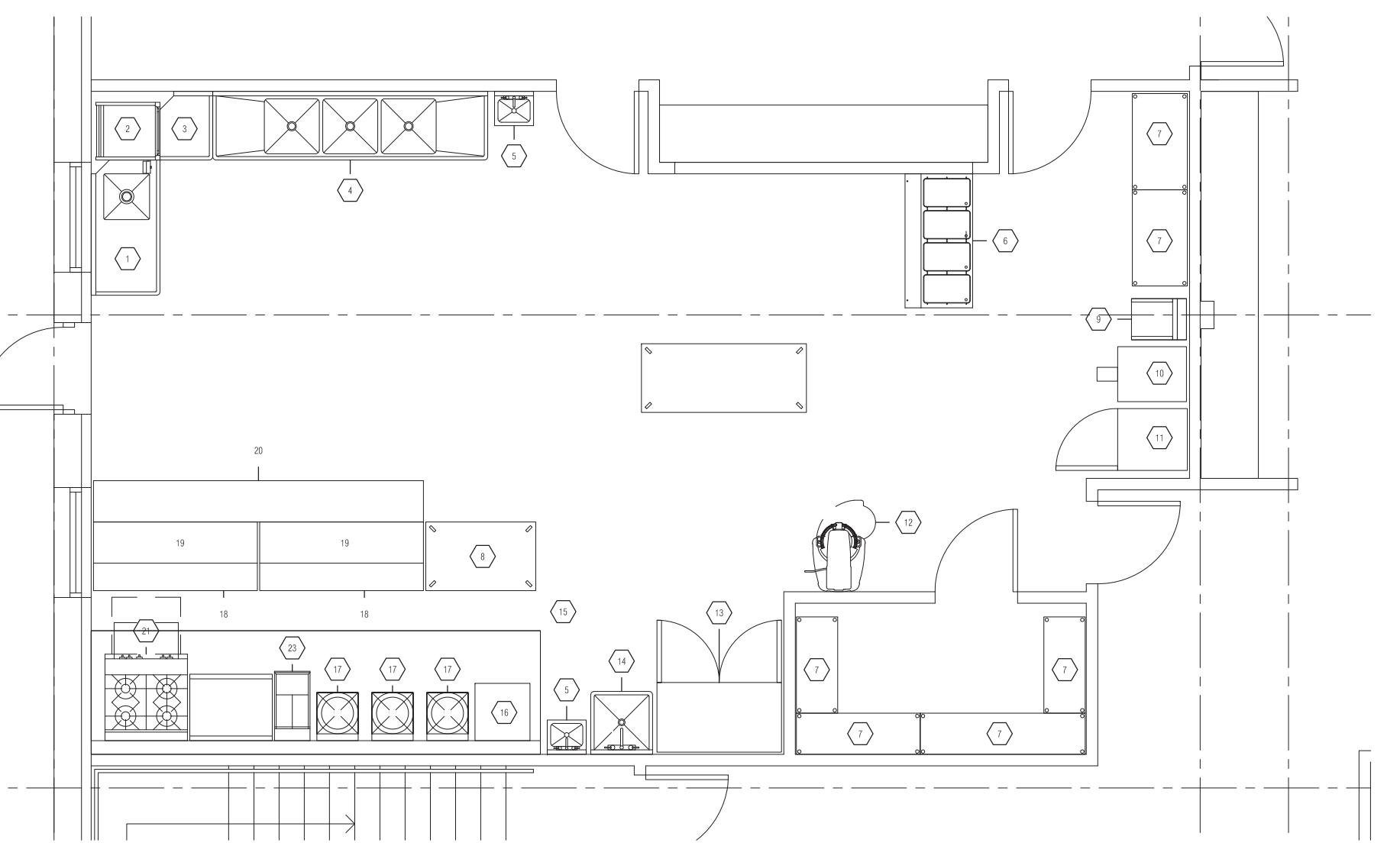
**1 PLUMBING - DOMESTIC HOT WATER HEATER DETAIL**  
SCALE: NTS



**4 PLUMBING - PIPE THROUGH WALL DETAIL**  
SCALE: NTS



**7 PLUMBING - INTERIOR FLOOR CLEANOUT DETAIL**  
SCALE: NTS



**2 PLUMBING - KITCHEN LAYOUT AND EQUIPMENT IDENTIFICATION**  
SCALE: 3/16"=1'-0"

SCHEDULE OF EQUIPMENT																													
Item	Qty.	Description	Electrical						Water				Waste				Natural Gas				Flue	Manufacturer	Model No.	Notes/Remarks					
			Amps	KW	HP	Volts	Conn	Type, Min. Amp	Hertz	Phase	Cold	Hot	AFF	Direct	AFF	Indirect	AFF	Gas Pressure	Gas Flow (CFH)	Connection Size					Gas Regulator	Size			
1	1	Dishable, Soiled																						Advance Tabco	DTS-560-60L				
2	1	Dishwasher, Door Type	36.6	15.8	1	208-230v				50	60	3	1/2"	1/2"	18"	3/4"	3/4"	18"	3/4"	FPT	1-1/2"	MPT	9"			Hoshizaki	JWE-620UA-6B		
3	1	Dishable, Cleaned																								Advance Tabco	DTC-530-24R		
4	1	Sink, (3) Compartment*(2) Faucets													1/2"	1/2"	18"				2"	9"				Turbo Air	TSB-3-D2		
5	2	Hand Sink(2)													1/2"	1/2"	18"				2"	9"				Turbo Air	TSS-1-H		
6	1	Serving Counter	14.4			208-240v			NEMA 6-20	25	60	3														Duke Mfg.	E304SW		
7	6	Shelving Unit																								AMCO Corp	1428CP		
8	2	Stainless Steel Table																								Seidman Brothers	Prep Table		
9	1	Rice Mixer							3/4	200-240																			
10	1	Mixer Grinder	37.0		10	208			NEMA L21-30P	50	60	3														Hobart	4246+ Build-Up		
11	1	Freezer, Reach-In	7.8		1/2	115v			NEMA 5-15P	60	1															Turbo Air	TSF-23SD		
12	1	Food Mixer	5.7		3/4	200-240v				50	60	3														Hobart	HL300-1		
13	1	Refrigerator	9.2		1/2	115v			NEMA 5-15P	60	1															Turbo Air	TSF-23SD		
14	1	Hand Sink													1/2"	1/2"	18"				2"	9"				Turbo Air	TSB-1-N		
15	1	Exhaust Hood																											
16	1	Steamer	46.1	15		208v				50	60	3	1/2"	1/2"	18"	1/2"	NPT				2"	9"				Solaris	EPX-5-5		
17	1	Stock Pot																									Turbo Air	TASP-18	79,000 BTU
18	1	Work Top Cooler	7.0		1/3					60	1																		
19	2	Double Overshelf																											
20	1	Dish Cabinet																									Advance Turbo	DC-812	
21	1	Range, Gas (heavy-duty)				208-240v				60	1																Southbend	P360-XX	225,000 BTU
22	1	Griddle, Gas																									Star Mfg.	636TD	60,000 BTU
23	1	Fryer								120																	Pitco Frialator	45C+	122,000 BTU

KITCHEN APPLIANCE SCHEDULE - EQUIPMENT BY OWNER, COMPLETE INSTALLATION BY CONTRACTOR

**3 PLUMBING - KITCHEN EQUIPMENT REQUIREMENT SPREADSHEET**  
SCALE: NTS  
NOTE: SEE 2/P-300 FOR LOCATION OF EQUIPMENT IN KITCHEN.

SRI LAKSHMI TEMPLE  
NEW ADDITION

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Item	Description	Quantity	Unit	Notes

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Sheet Title

PLUMBING - SCHEDULES AND DETAILS

Scale	Drawn by	Verified by
AS NOTED	T.J.L.	J.P.K.

Sheet #

P-300

Project # 1203020



PLUMBING FIXTURE / EQUIPMENT SCHEDULE																
TAG	FIXTURE	MANUFACTURER	MODEL NUMBER	DESCRIPTION	CONNECTION SIZES			QUANTITY	FIXTURE UNITS (EACH)				FIXTURE UNITS (TOTAL)			
					HW	CW	WASTE		CW	HW	TOTAL	SAN	CW	HW	TOTAL	SAN
WC-1, 2,3,4	WATER CLOSETS (WCs)	PER OWNERS SPECIFICATIONS	PER OWNERS SPECIFICATIONS	ALL WCs SHALL HAVE WHITE SEAT ELONGATED, OPEN FRONT. FOR ADA WCs MOUNT SEAT 17" TO 19" A.F.F. MAX AT ADA HEIGHT.	--	1-1/2"	4"	SEE PLANS	5	--	5	6	--	--	--	--
LAV-1, 2,3	RESTROOM HAND SINK	PER OWNERS SPECIFICATIONS	PER OWNERS SPECIFICATIONS	WALL HUNG, VITREOUS CHINA, FURNISH COMPLETE WITH WALL HANGER, GRID STRAINER. PROVIDE "TRUBRO" HANDI-LAV-GUARD #102 KIT.	1/2"	1/2"	1-1/2"	SEE PLANS	1.5	1.5	2	1	--	--	--	--
HS-1,2	KITCHEN HAND SINKS	PER OWNERS SPECIFICATIONS	PER OWNERS SPECIFICATIONS	SEE EQUIPMENT SCHEDULE 3/P300 ON SHEET P300	1/2"	1/2"	INDIRECT WASTE	SEE PLANS	1.5	1.5	2	1	--	--	--	--
SK-1,2	SINK	PER OWNERS SPECIFICATIONS	PER OWNERS SPECIFICATIONS	PER OWNERS SPECIFICATIONS	1/2"	1/2"	2"	SEE PLANS	1.5	1.5	2	1	--	--	--	--
SHWR-1	SHOWER	PER OWNERS SPECIFICATIONS	PER OWNERS SPECIFICATIONS	PER OWNERS SPECIFICATIONS	3/4"	3/4"	2"	SEE PLANS	1.5	1.5	2	1	--	--	--	--
MB-1	MOP BASIN	PER OWNERS SPECIFICATIONS	PER OWNERS SPECIFICATIONS	PER OWNERS SPECIFICATIONS	1/2"	1/2"	3"	SEE PLANS	2.25	2.25	3	5	--	--	--	--
FD-2	FLOOR DRAIN	PER OWNERS SPECIFICATIONS	PER OWNERS SPECIFICATIONS	NO-HUB CAST-IRON FLOOR DRAIN, STAINLESS STEEL METAL RING AND STRAINER INSTALL TRAP PRIMER AND TRAP PRIMER COLD WATER CONNECTION, NOT SHOWN ON PLANS FOR REASONS OF CLARITY.	--	--	3"	SEE PLANS	--	--	--	5	--	--	--	--
FS-1	FLOOR SINK	PER OWNERS SPECIFICATIONS	PER OWNERS SPECIFICATIONS	HEAVY DUTY CAST IRON FLOOR SINK WITH STRAINER AND GRATE	--	--	3"	SEE PLANS	--	--	--	5	--	--	--	--
SK	THREE COMPARTMENT SINK	PER OWNERS SPECIFICATIONS	PER OWNERS SPECIFICATIONS	PER OWNERS SPECIFICATIONS	3/4"	3/4"	TO FS-1	SEE PLANS	3	3	4	--	--	--	--	--
SK	PREP SINK	PER OWNERS SPECIFICATIONS	PER OWNERS SPECIFICATIONS	PER OWNERS SPECIFICATIONS	3/4"	3/4"	TO FS-1	SEE PLANS	3	3	4	--	--	--	--	--
FD-1	FLOOR DRAIN	PER OWNERS SPECIFICATIONS	PER OWNERS SPECIFICATIONS	NO-HUB CAST-IRON FLOOR DRAIN, STAINLESS STEEL METAL RING AND STRAINER INSTALL TRAP PRIMER AND TRAP PRIMER COLD WATER CONNECTION, NOT SHOWN ON PLANS FOR REASONS OF CLARITY.	--	--	2"	SEE PLANS	--	--	--	4	--	--	--	--
BFP-1	REDUCED PRESSURE BACKFLOW PREVENTER	PER OWNERS SPECIFICATIONS	PER OWNERS SPECIFICATIONS	REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTER WITH AUTOMATIC DIFFERENTIAL RELIEF VALVE	--	2-1/2"	--	SEE PLANS	--	--	--	--	--	--	--	--
RH-1	FREEZE PROOF ROOF HYDRANT	HOEPTNER	2131R	AUTOMATIC DRAINING, FREEZELESS WALL HYDRANT WITH ANTI-SIPHON VACUUM BREAKER HOEPTNER PRODUCTS (408) 847-7615	--	3/4"	--	SEE PLANS	1	--	1	--	--	--	--	--
HB-1	FREEZE PROOF HOSE BIBB	PER OWNERS SPECIFICATIONS	PER OWNERS SPECIFICATIONS	PER OWNERS SPECIFICATIONS	--	1/2"	--	SEE PLANS	--	--	--	--	--	--	--	--
ET-1	EXPANSION TANK	AMTROL	ST-42VC	18 GALLON TANK VOLUME, 11 GALLON ACCEPTANCE CAPACITY	--	1/2"	--	SEE PLANS	--	--	--	--	--	--	--	--
P-1	RECIRCULATING PUMP	TACO	006-BC4-2PNP	DOMESTIC HOT WATER CARTRIDGE-TYPE CIRCULATOR WITH INTEGRAL TIMER AND AQUASTAT	1/2"	--	--	SEE PLANS	--	--	--	--	--	--	--	--
HB-2	FROST FREE LAWN FAUCET	ARROWHEAD	455BFP14	PROVIDE COMMERCIAL FROST FREE HYDRANT BDX	--	3/4"	--	SEE PLANS	--	--	--	--	--	--	--	--
GT-1	GREASE TRAP	ENDURA	GT-1	PROVIDE COMMERCIAL FLOOR RECESSED GREASE REMOVAL SYSTEM TYPE GREASE TRAP THAT IS PDI OR ASME CERTIFIED PER STATE PLUMBING CODE REQUIREMENTS.	--	--	3"	SEE PLANS	--	--	--	--	--	--	--	--
									TOTALS				--	--	--	--

WATER HEATER SCHEDULE										
MARK	DESCRIPTION	MANUFACTURER AND MODEL NO.	SUPPLIER	STORAGE	INPUT MBH	RECOVERY	WATER CONN.	WEIGHT	TANK DIAMETER	NOTES
DWH-1	TWO GAS FIRED WATER HEATERS, INTERCONNECTED SO THAT EITHER CAN BACK UP THE OTHER BY MANUAL CONTROL.	PVI PLATINUM 399 L A-PN 399CFH, TOTAL 310 GPH RECOVERY MA PLUMBING BOARD APPROVAL CODE: P3-0312-413	PVI	70 GALLON	399	310 GPH @ 70° RISE	2" HOT & COLD	1040 LBS.	36" DIAMETER	399 CFH OF NATURAL GAS

1 PLUMBING - PLUMBING FIXTURE SCHEDULE  
P-301 SCALE: NTS

SRI LAKSHMI TEMPLE  
NEW ADDITION

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PLUMBING - SCHEDULES  
AND DETAILS

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Sheet #

P-301

Project # 1203020

SRI LAKSHMI TEMPLE  
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Issue	Date
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Sheet Title

PLUMBING -  
SPECIFICATIONS

Scale AS NOTED	Drawn by T.J.L	Verified by J.P.K
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Sheet #

P-400

Project #

1203020

SECTION 15055 - COMMON PIPING REQUIREMENTS

PART 1 - GENERAL

A. SECTION REQUIREMENTS

1. Comply with the requirements of the Building Code and the local authority having jurisdiction.

PART 2 - PRODUCTS

2.1 SUPPORTING DEVICES

- A. Hanger and Pipe Attachments: Factory fabricated with galvanized coatings; nonmetallic coated for hangers in direct contact with copper tubing.
- B. Building Attachments: Powder actuated type, drive pin attachments with pullout and shear capacities appropriate for supported loads and building materials; UL listing and FM approval for fire protection systems.
- C. Mechanical Anchor Fasteners: Insert-type attachments with pullout and shear capacities appropriate for supported loads and building materials; UL listing and FM approval for fire protection systems.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install piping free of sags and bends.
  - B. Install fittings for changes in direction and branch connections.
  - C. Install sleeves for pipes passing through concrete and masonry walls, gypsum-board partitions, and concrete floor and roof slabs.
  - D. Exterior Wall, Pipe Penetrations: Mechanical sleeve seals installed in steel or cast iron pipes for wall sleeves.
  - E. Fire Barrier Penetrations: Seal pipe penetrations with through-penetration firestop systems.
  - F. Install unions adjacent to each valve and at final connection to each piece of equipment.
  - G. Install dielectric unions and flanges to connect piping materials of dissimilar metals in gas piping.
  - H. Install dielectric coupling and nipple fittings to connect piping materials of dissimilar metals in water piping.
  - I. Provide full ring escutcheons at plumbing penetrations through walls or ceilings. Tightly seal escutcheons to the adjacent surface.
- 3.2 HANGERS AND SUPPORTS
- A. Install building attachments within concrete or to structural steel. Install additional attachments at concentrated loads, including valves, flanges, guides, strainers, expansion joints, and at changes in direction of piping.
  - B. Install powder actuated drive pin fasteners in concrete after concrete is cured. Do not use in lightweight concrete or in slabs less than 4 inches thick.
  - C. Install mechanical anchor fasteners in concrete after concrete is cured. Do not use in lightweight concrete or in slabs less than 4 inches thick.
  - D. Support fire protection system piping independent of other piping.
  - E. Load Distribution: Install hangers and supports so piping live and dead loading and stresses from movement will not be transmitted to connected equipment.
- END OF SECTION 15055

SECTION 15080 - MECHANICAL INSULATION

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

- A. Submittals: Product Data for each type of mechanical insulation.
- B. Quality Assurance: Labeled with maximum flame-spread rating of 25 and maximum smoke developed rating of 50 according to ASTM E 84.

PART 2 - PRODUCTS

2.1 PIPE INSULATION

- A. Preformed Glass Fiber Pipe Insulation: ASTM C 547, Class 1, with factory applied, all purpose, vapor retarder jacket.
- B. Polyolefin Pipe Insulation: Unicellular polyethylene, preformed pipe insulation. Comply with ASTM C 534, Type I, except for density.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install vapor barriers on insulated pipes with surface operating temperatures below 60 deg F.
  - B. Insulate fittings, valves, and specialties.
  - C. Seal vapor barrier penetrations for hangers, supports, anchors, and other projections.
  - D. Coat glass fiber pipe insulation ends with vapor barrier coating.
  - E. Roof Penetrations: Apply insulation for interior applications to a point even with the top of the roof flashing.
  - F. Exterior Wall Penetrations: For penetrations of below grade exterior walls, terminate insulation flush with mechanical sleeve seal.
  - G. Interior Walls and Partitions Penetrations: Apply insulation continuously through walls and partitions, except fire rated walls and partitions.
  - H. Fire Rated Walls and Partitions Penetrations: Terminate insulation at penetrations through fire rated walls and partitions. Seal around penetration with through penetration firestop systems.
  - I. Floor Penetrations: Terminate insulation at the underside of the floor assembly and at the floor support at top of floor. Seal around penetration with through penetration firestop systems.
  - J. Glass Fiber Insulation Installation: Bond insulation to pipe with adhesive. Seal seams and joints with vapor barrier compound.
  - K. Interior Piping System Applications: Insulate the following piping systems:
    1. Domestic hot and cold water.
    2. Exposed sanitary drains of fixtures for the disabled.
    3. Refrigerant piping.
  - L. Do not apply insulation to the following systems, materials, and equipment:
    1. Flexible connectors.
    2. Fire protection piping systems.
    3. Sanitary drainage and vent piping.
    4. Chrome plated pipes and fittings, except for plumbing fixtures for the disabled.
  - M. Piping specialties, including air chambers, unions, strainers, check valves, plug valves, and flow regulators.
  - N. Pipe Insulation Thickness Application Schedule: Insulate piping with the following materials and thicknesses:
    1. Domestic Hot and Cold Water: 1/2-inch preformed glass fiber pipe insulation.
    2. Sanitary Drains: 1/2-inch polyolefin pipe insulation.
- END OF SECTION 15080

SECTION 15110 - VALVES

PART 1 - GENERAL (Not Applicable)

PART 2 - PRODUCTS

2.1 GENERAL DUTY VALVES

- A. End Connections: Threads shall comply with ANSI B1.20.1. Flanges shall comply with ANSI B16.1 for cast iron valves and ANSI B16.24 for bronze valves. Solder-joint connections shall comply with ANSI B16.18.
- B. Ball Valves: Rated for 150 psig saturated steam pressure, 400 psig WOG pressure; 2 piece construction; with bronze body, standard (or regular) port, chrome plated brass ball, replaceable "Teflon" or "TFE" seats and seals, blowout proof stem, and vinyl covered steel handle.
- C. Plug Valves: Rated at 150 psig WOG; bronze body, with straightaway pattern, square head, and threaded ends.
- D. Swing Check Valves: Class 125, cast bronze body and cap; with horizontal swing, Y-pattern, and bronze disc.
- E. Valves for Copper Tube: Solder ends, except provide threaded ends for heating hot water and low pressure steam service.
- F. Valves for Steel Pipe: Threaded ends.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Use gate and ball valves for shutoff duty and ball for throttling duty.
  - B. Locate valves for easy access and provide separate support where necessary.
  - C. Install valves for each fixture and item of equipment.
  - D. Install valves in horizontal piping with stem at or above center of pipe.
  - E. Install valves in a position to allow full stem movement.
  - F. Install check valves for proper direction of flow in horizontal position with hinge pin level.
- END OF SECTION 15110

SECTION 15140 - DOMESTIC WATER PIPING

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

- A. Performance Requirements: Unless otherwise indicated minimum pressure requirements for water piping are as follows:
  1. Service Entrance Piping: 100 psig.
  2. Domestic Water Piping: 80 psig.
- B. Comply with NSF 14 "Plastic Piping Components and Materials."
- C. Comply with NSF 61 "Drinking Water System Components -- Health Effects."

PART 2 - PRODUCTS

2.1 PIPES AND TUBES

- A. Hard Copper Tube: ASTM B 88, Types L and M, water tube, drawn temper.
- B. PVC Plastic, Water Pipe: ASTM D 1785, Schedule 80, plain ends.

2.2 FITTINGS

- A. Wrought Copper, Solder Joint Pressure Fittings: ASME B 16.22.
- B. Cast Copper Alloy, Solder Joint Pressure Fittings: ASME B 16.18.
- C. Bronze Flanges: ASME B 16.24, Classes 150 and 300.
- D. Copper Unions: ASME B 16.18, cast copper alloy body, hexagonal stock, with ball and socket joint, metal to metal seating surfaces, and solder joint, threaded, or solder joint and threaded ends. Threads complying with ASME B 1.20.1.
- E. PVC Plastic, Schedule 80, Socket Type Pipe Fittings: ASTM D 2467.

2.3 JOINING MATERIALS

- A. Solder Filler Metal: ASTM B 32, lead free.
- B. Brazing Filler Metals: AWS A5.8, alloys to suit system requirements.
- C. Solvent Cements: As recommended by manufacturer.
- D. Plastic Pipe Seals: ASTM F 477, elastomeric gasket.

PART 3 - EXECUTION

3.1 VALVE APPLICATIONS

- A. Install gate valves close to main on each branch and riser serving two or more plumbing fixtures or equipment connections and where indicated.
  - B. Install gate or ball valves on inlet to each plumbing equipment item, on each supply to each plumbing fixture not having stops on supplies, and elsewhere as indicated.
  - C. Install drain valve at base of each riser, at low points of horizontal runs, and where required to drain water distribution piping system.
  - D. Install swing check valve on discharge side of each pump and elsewhere as indicated.
  - E. Install ball valves in each hot water circulating loop and discharge side of each pump.
- 3.2 PIPING INSTALLATIONS
- A. Install hangers and supports at intervals indicated in the applicable plumbing code and as recommended by pipe manufacturer.
  - B. Support vertical piping at each floor.
- 3.3 INSPECTING AND CLEANING
- A. Inspect and test piping systems following procedures of authorities having jurisdiction.
  - B. Clean and disinfect water distribution piping following procedures of authorities having jurisdiction.
- END OF SECTION 15140

SECTION 15150 - SANITARY WASTE AND VENT PIPING

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

- A. Minimum Pressure Requirement for Soil, Waste and Vent: 10 feet head.
- B. Comply with CISPI's "Case Iron Soil Pipe and Fittings Handbook".

PART 2 - PRODUCTS

2.1 PIPES AND TUBES

- A. Cast iron, DWV Pipe: ASTM A 74 Hub and Spigot Pipe Extra Heavy Class.

2.2 FITTINGS

- A. Cast iron, DWV Pipe Fittings: ASTM C 564 Gaskets.

PART 3 - EXECUTION

3.1 PIPE APPLICATIONS

- A. For waste and vent piping applications use Hub and Spigot Cast Iron pipe and fittings with non-toxic rubber gaskets.

3.2 PIPING INSTALLATION

- A. Install cleanout and extension to grade at connection of building sanitary drain and building sanitary sewer.
- B. Locate drainage piping runouts as close as possible to bottom of floor slab supporting fixtures or drains.

3.3 INSPECTION

- A. Inspect and test piping systems following procedures of authorities having jurisdiction.
- END OF SECTION 15150

SECTION 15198 - NATURAL GAS PIPING

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

- A. Quality Assurance: Comply with NFPA 54 and the Plumbing Code.

PART 2 - PRODUCTS

2.1 PIPE, TUBE, AND SPECIALTIES

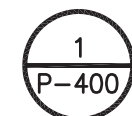
- A. Steel Pipe: ASTM A 53, Type S (Seamless), Grade B, Schedule 40, plain ends.
- B. Malleable Iron Threaded Fittings: ASME B16.3, Class 150.
- C. Manual Valves: Comply with standards listed or, if appropriate, to ANSI Z21.15.
- D. Gas Stops: AGA certified, bronze-body, plug type with bronze plug, for 2-psig or less natural gas. Include AGA stamp, flat or square head or lever handle, and threaded ends complying with ASME B1.20.1.
- E. Gas Valves: 150-psig WOG, cast-iron or bronze body, bronze plug, straightaway pattern, square head, tapered-plug type.
- F. Gas Pressure Regulators: ANSI Z21.18, single stage, steel jacketed, corrosion resistant pressure regulators. Include atmospheric vent, elevation compensator. Regulator pressure ratings, inlet and outlet pressures, and flow volume in cubic feet per hour of natural gas at specific gravity are as indicated.
  1. Line Gas Pressure Regulators: Inlet pressure rating not less than system pressure.

- G. Flexible Connectors: ANSI Z21.24, copper alloy.
- H. Strainers: Bronze body, Y-pattern, full size of connecting piping. Include stainless-steel screens with 3/64 inch perforations and a pressure rating of 125-psig- minimum, WOG working pressure.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Close equipment shutoff valves before turning off gas to premises or section of piping. Perform leakage test as specified to determine that all equipment is turned off in affected piping section.
  - B. Install shutoff valve, downstream from gas meter, outside building at gas service entrance.
  - C. Install gas stops for shutoff to appliances with NPS 2" or smaller low pressure gas supply.
  - D. Drips and Sediment Traps: Install drips at points where condensate may collect. Include outlets of gas meters. Locate where readily accessible to permit cleaning and emptying. Do not install where condensate would be subject to freezing.
  - E. Install gas piping at uniform slope of 0.1 percent upward toward risers.
  - F. Use eccentric reducer fittings to make reductions in pipe sizes. Install fittings with level side down.
  - G. Connect branch piping from top or side of horizontal piping.
  - H. Install strainers on supply side of each control valve, gas pressure regulator, solenoid valve, and elsewhere as indicated.
  - I. Install valves in accessible locations, protected from damage. Tag valves with metal tag indicating, "Regulator supplied." Attach tag to valve with metal chain.
  - J. Install gas valve upstream from each gas pressure regulator. Where two gas-pressure regulators are installed in series, valve is not required at second regulator.
  - K. Connect gas piping to equipment and appliances with shutoff valves and unions. Install gas valve upstream from and within 72 inches of each appliance using gas. Install union or flanged connection downstream from valve.
  - L. Inspect, test, and purge piping according to NFPA 54, Part 4, "Gas Piping Inspection, Testing, and Purging", and requirements of authorities having jurisdiction.
- END OF SECTION 15198



PLUMBING - SPECIFICATIONS  
SCALE: NTS

**FIRE PROTECTION NOTES:**

- 1) AREAS SHALL BE DESIGNED LIGHT HAZARD WITH SPRINKLER HEADS NOT EXCEEDING 225 SQUARE FEET. EXCEPT FOR THE KITCHEN WHICH IS ORDINARY HAZARD GROUP 1 NOT TO EXCEED 130 SQUARE FEET.
- 2) CONTRACTOR SHALL ABIDE BY THE LOCAL FIRE PROTECTION CODE, NFPA AND STATE CODE.
- 3) ALL NEW VALVES ON THE FIRE PROTECTION SYSTEM TO BE ELECTRICALLY SUPERVISED. TYPE AND EXACT LOCATION OF FLOW, PRESSURE AND SUPERVISORY SWITCHES SHALL BE ACCOMPLISHED BETWEEN THE DIFFERENT RESPONSIBLE TRADES.
- 4) ALL NEW SPRINKLERS SHALL BE MATCH BASE BUILDING STANDARD.
- 5) ALL NEW SPRINKLERS SHALL BE AS FOLLOWS UNLESS NOTED OTHERWISE:  
 K-FACTOR: 5.6  
 ORIFICE DIAMETER: 1/2"  
 TEMPERATURE RATING: ORDINARY  
 RESPONSE: MATCH BASE BUILDING STANDARD
- 6) LOCATION OF SPRINKLERS IN CEILING TILES:  
 A) REFER TO ARCHITECTURAL REFLECTED CEILING PLANS AND ROOM FINISH SCHEDULES FOR CEILING TILE TYPES.  
 B) IN STANDARD 2 BY 4 CEILING TILES, LOCATE SPRINKLERS IN THE CENTER OF TILES.  
 C) IN STANDARD 2 BY 4 CEILING TILES WHICH SIMULATE 2 BY 2 CEILING TILES, LOCATE SPRINKLERS IN THE CENTER OF THE 2 BY 2 AREA.
- 7) MATERIALS:  
 A) ALL PIPING 1" - 2" SHALL BE SCHEDULE 40 BLACK STEEL PIPING WITH THREADED CAST IRON FITTINGS. (SCHEDULE 10 PIPE WILL NOT BE ALLOWED).  
 B) ALL PIPING 2-1/2" OR LARGER SHALL BE SCHEDULE 10 BLACK STEEL PIPING WITH GROOVED TYPE FITTINGS AND MECHANICAL COUPLINGS.
- 8) ALL SPRINKLER WORK SHALL BE IN STRICT CONFORMANCE WITH NFPA-13 "STANDARD FOR INSTALLATION OF SPRINKLER SYSTEMS", STATE BUILDING CODE, AND THE OWNER'S INSURANCE COMPANY.
- 9) CONTRACTOR SHALL COORDINATE DRAINING OF SPRINKLER SYSTEM WITH BUILDING PLUMBING DRAINAGE.
- 10) THE BASE BUILDING "CONTRACT DRAWINGS" AND "SPECIFICATIONS" INCLUDING ALL RESPECTIVE ADDENDA AND BULLETINS SHALL FORM A PART OF THIS WORK. ALL WORK SHALL BE SUBJECT TO RESPECTIVE PROVISIONS THEREOF.
- 11) REFER TO ARCHITECTURAL DRAWINGS FOR HUNG CEILING HEIGHTS AND CONSTRUCTION. WHERE WORK BETWEEN THIS DRAWING AND ARCHITECTURAL PLANS ARE IN CONFLICT, ADVISE PRIOR TO INSTALLATION OF PIPING.
- 12) WORK SHALL BE COORDINATED WITH ALL OTHER TRADES, NOTIFY ENGINEER TO AVOID CONFLICTS.
- 13) SPRINKLER CONTRACTOR SHALL ADJUST AND/OR ADD SPRINKLERS AS REQUIRED UTILIZING ARCHITECT'S REFLECTED CEILING PLAN FOR LOCATION OF LIGHTS, DIFFUSERS, CABLE TRAYS, ETC...
- 14) ALL EQUIPMENT SHALL BE APPROVED BY OWNER'S INSURANCE COMPANY.
- 15) LAYOUT OF SPRINKLERS ARE FOR BUILDING DEPARTMENT USE ONLY. SPRINKLER CONTRACTOR SHALL PREPARE FINAL SPRINKLER LAYOUT AND SHOP DRAWINGS INCLUDING HYDRAULIC CALCULATIONS AND OBTAIN ALL APPROVALS AS REQUIRED. CONTRACTOR SHALL PERFORM A HYDRANT FLOW TEST AND/OR FIRE PUMP TEST WHICH WILL BE USED FOR CONTRACTOR'S HYDRAULIC CALCULATIONS.
- 16) CONTRACTOR SHALL NOT INSTALL ANY SPRINKLER PIPING THAT WILL INTERFERE WITH THE MAINTENANCE/REMOVAL/INSTALLATION OF HVAC EQUIPMENT.
- 17) SPRINKLER CONTRACTOR MUST FILE APPLICATION FOR AND SUBMIT EVIDENCE OF A VALID SPRINKLER SYSTEM IMPAIRMENT PERMIT TO BUILDING MANAGEMENT WHEN SCHEDULING ALL SPRINKLER SYSTEM MODIFICATIONS. ALL SHUTDOWNS WILL BE PERFORMED BY BUILDING ENGINEERING PERSONNEL EXCLUSIVELY, UNLESS OTHERWISE PERMITTED BY BUILDING MANAGEMENT.
- 18) CONTRACTOR SHALL DETERMINE BEST LOCATION FOR ROUTING/RE-ROUTING ALL ASSOCIATED SPRINKLER LINES. PIPE ROUTING SHOWN SHALL BE USED AND ANY ADDITIONAL OFFSETS OR FITTINGS REQUIRED FOR PROPER INSTALLATION, COORDINATION WITH OTHER TRADES, AND/OR TO MAINTAIN PROPER CLEARANCES SHALL BE PROVIDED. VERIFY EXISTING STRUCTURAL, MECHANICAL, ELECTRICAL INSTALLATIONS AND AVOID ANY/ALL OBSTRUCTIONS OR INTERFERENCES WITH FIRE PROTECTION PIPE ROUTING.
- 19) ALL SPRINKLERS MOUNTED IN CEILING SHALL BE LOCATED A MINIMUM OF 4" AWAY FROM ANY WALLS, CEILING HEIGHT CHANGES OR ANY OTHER VERTICAL INTERSECTING SURFACE.
- 20) PROVIDE SPRINKLERS ABOVE AND BELOW EXPOSED HORIZONTAL OBSTRUCTIONS/DUCT WORK 4 FEET OR WIDER.
- 21) PROVIDE HEAD GUARDS ON SPRINKLERS IN ELECTRIC, TELEPHONE AND ELEVATOR EQUIPMENT ROOMS.
- 22) CUTTING OF STRUCTURAL AND/OR ARCHITECTURAL MEMBERS TO BE DONE ONLY WITH THE WRITTEN APPROVAL OF THE ARCHITECT.
- 23) FIRE STOP ALL PENETRATIONS OF SMOKE/FIRE WALLS, CEILINGS, FLOORS, ROOFS, ETC. FLASH AND COUNTERFLASH ROOF PENETRATIONS.
- 24) PROVIDE ACCESS PANELS TO ALL VALVES ABOVE NON-ACCESSIBLE CEILINGS AND CHASES.
- 25) METHODS OF HANGING PIPES, HEADERS AND BRANCHES SHALL BE IN ACCORDANCE WITH NFPA-13.
- 26) ALL VALVES FOR FIRE SERVICE SHALL BE LISTED BY THE UNDERWRITER'S LABORATORIES, INC. AND THE FACTORY MUTUAL LABORATORIES. VALVES SHALL BE FACTORY MARKED "UL" AND "FM", 175 PSI WORKING PRESSURE.
- 27) ALL POWER WIRING SHALL BE ACCOMPLISHED UNDER THE ELECTRICAL DIVISION. ALL CONTROL AND INTERLOCK WIRING SHALL BE ACCOMPLISHED UNDER THIS SECTION OF THE SPECIFICATIONS IN ACCORDANCE WITH THE REQUIREMENTS IN THE ELECTRICAL DIVISION. COORDINATE ALL ELECTRICAL ITEMS WITH ELECTRICAL CONTRACTOR.
- 28) SPRINKLERS SHALL COVER THE ENTIRE AREA OF THE ROOM INCLUDING ALCOVES. SPRAY SHALL NOT BE BLOCKED BY WALLS OR PARTITIONS.
- 29) MAINTAIN A MINIMUM OF 18 INCHES FROM THE BOTTOM OF THE SPRINKLER DEFLECTOR TO THE TOP OF STORAGE/FILE STORAGE.
- 30) CONTRACTOR SHALL CONDUCT A THOROUGH EXAMINATION OF THE PREMISES PRIOR TO PREPARING A PROPOSAL. ANY CHANGES TO THE DESIGN MADE NECESSARY BY FIELD CONDITIONS SHALL BE CONVEYED TO THE ENGINEER PRIOR TO PREPARATION OF A PROPOSAL. NO ADDITIONAL COSTS BEYOND THE PROPOSAL PRICE WILL BE ACCEPTED FOR FIELD CONDITIONS THAT COULD HAVE BEEN DETERMINED BY AN INSPECTION OF THE PREMISES.
- 31) ALL FIRE PROTECTION SYSTEMS ARE SHOWN SCHEMATICALLY. IT IS NOT THE INTENT OF THESE PLANS TO SHOW ALL LISTED COMPONENTS, SUCH AS PIPING, FITTINGS, VALVES, ETC. CONTRACTOR IS RESPONSIBLE FOR PROVIDING WORKING PLANS AND FOR INSTALLING SYSTEM PER APPLICABLE CODES.
- 32) PROVIDE A PERMANENTLY ATTACHED HYDRAULIC DESIGN INFORMATION SIGN STATING THE REQUIRED DESIGN CRITERIA FOR EACH HYDRAULICALLY DESIGNED SYSTEM.
- 33) INSPECTOR'S TEST VALVE SHALL NOT EXCEED 7 FEET ABOVE THE FINISHED FLOOR.

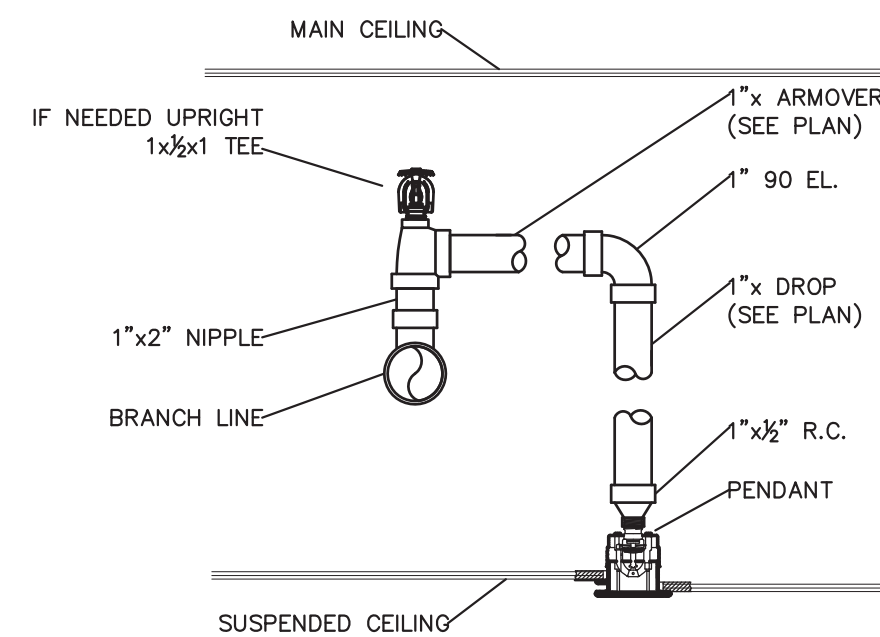
- 33) THE SPRINKLER PIPING LAYOUT AND PIPE SIZES SHOWN ON THE CONTRACT DOCUMENTS ARE TO DEFINE THE DESIGN INTENT FOR COMPETITIVE BIDDING AND FOR PRELIMINARY SUBMISSION TO THE AUTHORITIES HAVING JURISDICTION. THE WORK OF THE CONTRACT INCLUDES HYDRAULIC CALCULATIONS AND FABRICATION SHOP DRAWINGS AND WORKING PLANS FOR THE ACTUAL INSTALLATION CONDITIONS.
- 34) FIRE PROTECTION PIPING SHALL BE SEISMICALLY BRACED ACCORDING TO NFPA 13 REQUIREMENTS.
- 35) FIRE PROTECTION CONTRACTOR SHALL OBTAIN ALL PERMITS ARE REQUIRED FOR THE COMPLETE INSTALLATION OF THE FIRE PROTECTION SYSTEM.
- 36) FIRE PROTECTION SYSTEM SHALL BE DRAINABLE TO OUTSIDE GRADE OR SUMP PUMP LOCATED IN BASEMENT. COORDINATE WITH PLUMBING CONTRACTOR TO VERIFY CAPACITY.
- 37) CONTRACTOR SHALL PROTECT ALL CONCEALED COMBUSTIBLE SPACES PER NFPA 13 REQUIREMENTS.
- 38) ALL FIRE PROTECTION PIPING SHALL BE SEISMICALLY BRACED IN ACCORDANCE WITH ALL APPLICABLE LAWS AND MANUFACTURER'S SPECIFICATIONS. FOR SEISMIC BRACING USE ONLY SOLID STRUCTURAL MEMBERS. WIRE RESTRAINTS SHALL NOT BE ACCEPTED.

**FIRE PROTECTION ABBREVIATIONS:**

- CTE - CONNECT NEW TO EXISTING
- D - DRY
- E - EXISTING TO REMAIN
- EC - EXTENDED COVERAGE
- EX - REMOVE EXISTING
- F - FAHRENHEIT
- FCA - FLOOR CONTROL ASSEMBLY
- GPM - GALLONS PER MINUTE
- N - NEW
- SF - SQUARE FEET
- TS - TAMPER SWITCH
- WFS - WATER FLOW SWITCH
- WFS - WATER FLOW SWITCH
- ER or R - RELOCATE EXISTING

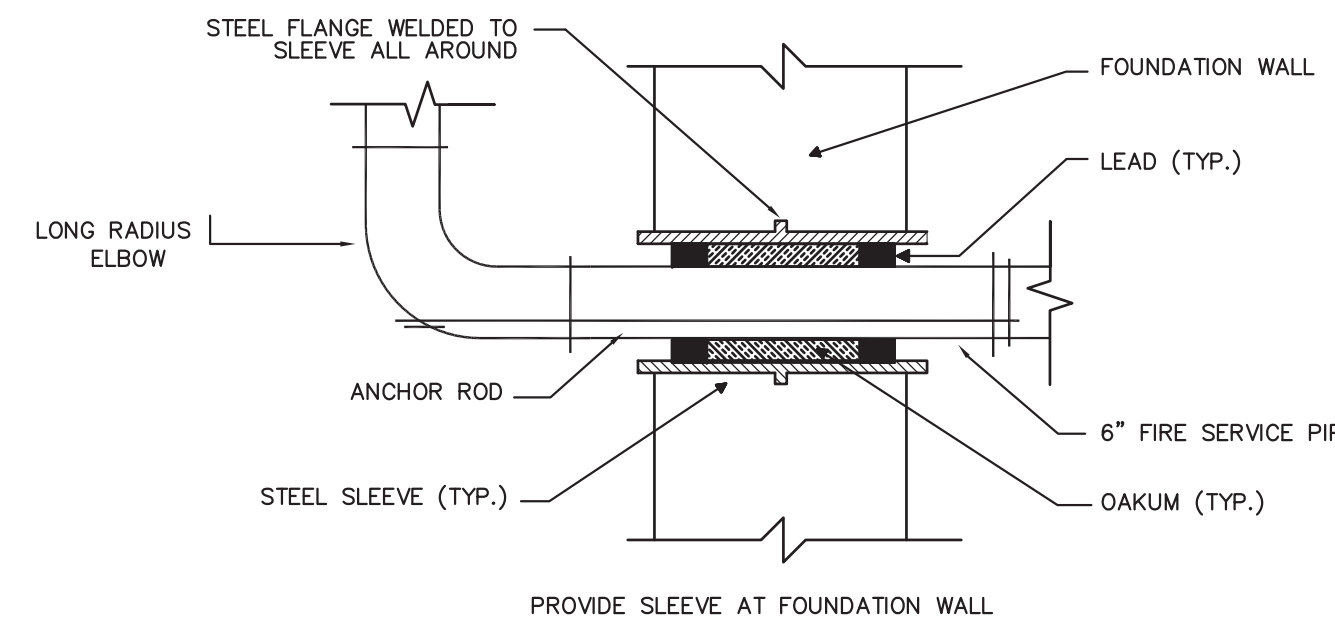
**FIRE PROTECTION SYMBOLS:**

- - NEW CONCEALED PENDANT QUICK RESPONSE SPRINKLER FOR COMMERCIAL AREAS.
- - NEW UPRIGHT QUICK RESPONSE SPRINKLER FOR COMMERCIAL AREAS.
- ⊙ - EXISTING CONCEALED PENDANT QUICK RESPONSE SPRINKLER
- ⊙ - EXISTING UPRIGHT QUICK RESPONSE SPRINKLER
- EX ⊙ - REMOVE EXISTING PENDANT SPRINKLER
- EX ⊙ - REMOVE EXISTING UPRIGHT SPRINKLER
- ..... - REMOVE EXISTING PIPING
- - EXISTING PIPING
- - NEW PIPING
- ⊠ - DISCONNECT FROM EXISTING
- ⊕ - CONNECT TO EXISTING



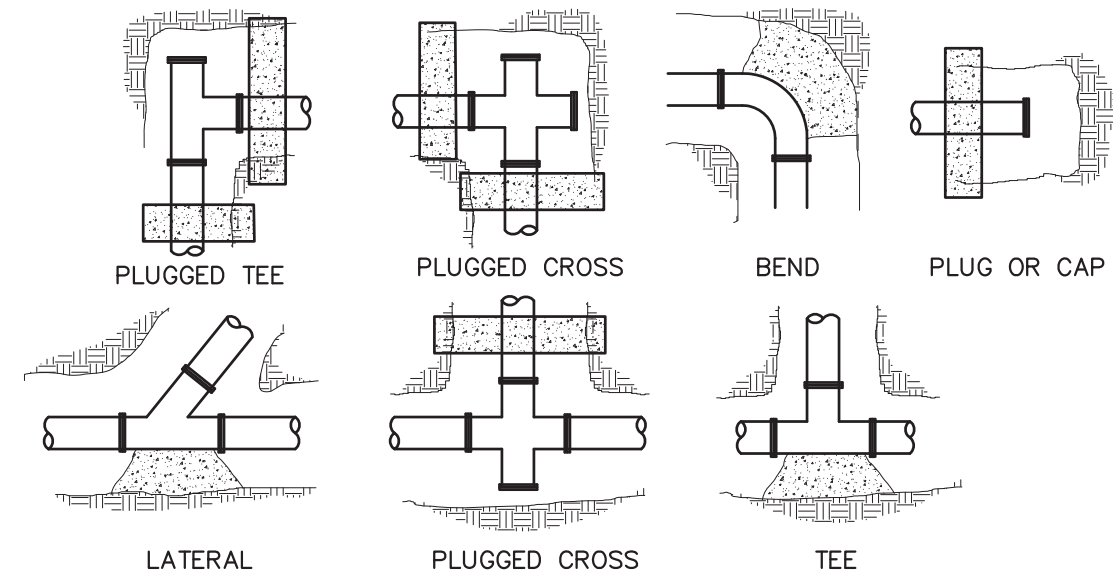
2  
FP-000

**FIRE PROTECTION - RETURN BEND ASSEMBLY W/ UPRIGHT FOR SPRINKLER SPACE PROTECTION**  
SCALE: NTS



3  
FP-1

**FIRE SERVICE SLEEVE DETAIL**  
SCALE: NOT TO SCALE



**CONCRETE THRUST BLOCK SCHEDULE**

(BEARING AREA OF THRUST BLOCKS IN SQUARE FEET)

FITTING SIZE (INCHES)	90° BEND, TEE, OR PLUGGED CROSS	45° BEND	22½° BEND	1½\"/>
4	01.9	01.3	---	---
6	04.0	02.1	01.3	---
8	07.1	03.9	02.0	01.3
12	16.0	08.8	04.5	02.3
16	28.4	15.5	08.0	04.0
24	64.0	34.9	18.1	09.1

ABOVE BEARING AREAS BASED ON TEST PRESSURE OF 150 P.S.I. & AN ALLOWABLE SOIL BEARING STRENGTH OF 1500 POUNDS PER SQUARE FOOT. TO COMPUTE BEARING AREAS FOR DIFFERENT TEST PRESSURES & SOIL BEARING STRESSES, USE THE FOLLOWING EQUATION.

BEARING AREAS = (TEST PRESSURE/150) X (1500/SOIL BEARING STRESS) X (TABLE VALUE)

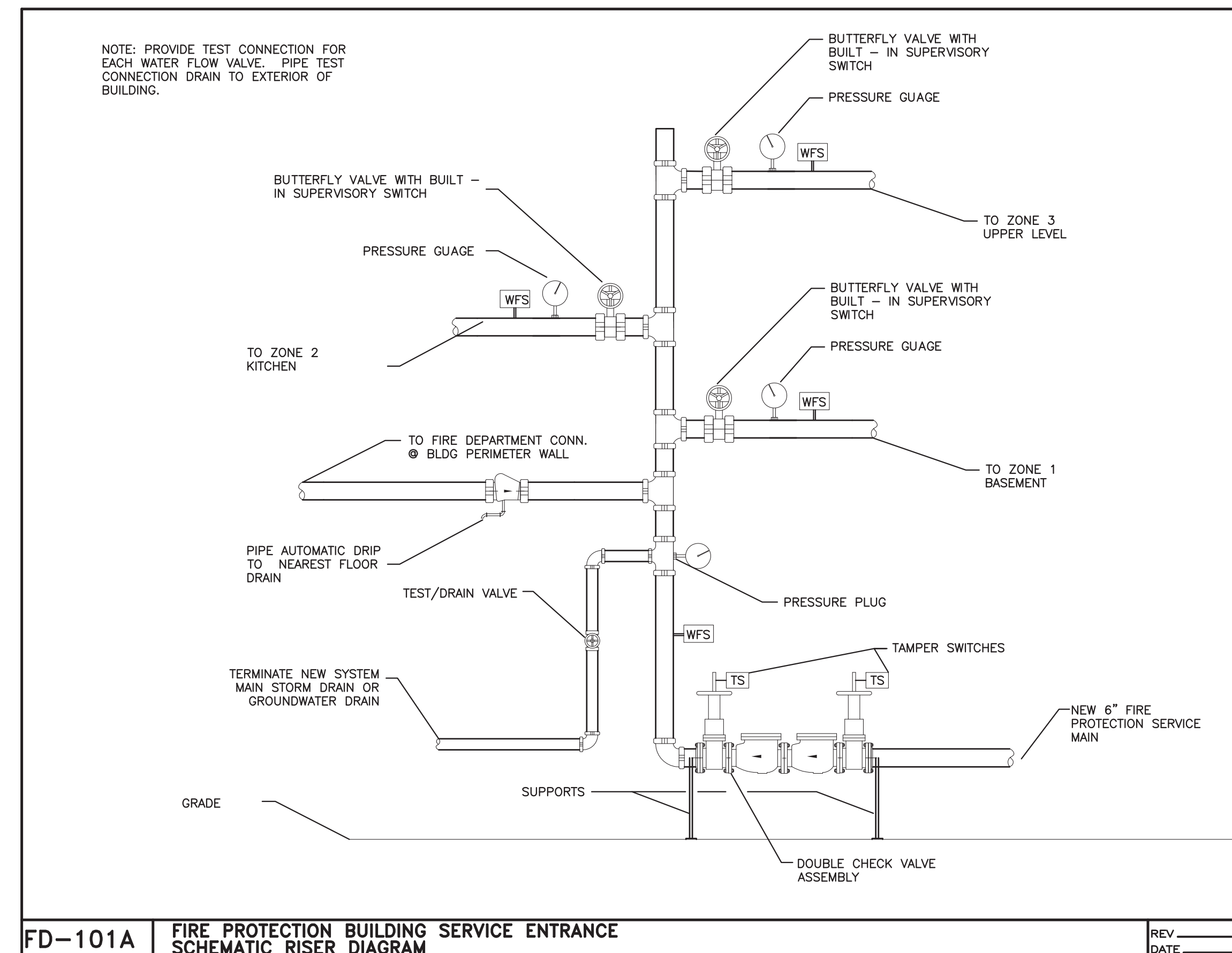
**NOTES:**

1. STRADDLE BLOCKS REQUIRED WHERE LINES MAY BE EXTENDED IN FUTURE.
2. CONCRETE THRUST BLOCKING TO BE POURED AGAINST UNDISTURBED EARTH.
3. KEEP CONCRETE CLEAR OF JOINT & ACCESSORIES.
4. THE REQUIRED THRUST BEARING AREAS FOR SPECIAL CONNECTIONS ARE SHOWN ENCRICLED ON THE PLANS: e.g. 15 INDICATES 15 SQUARE FEET BEARING AREA REQUIRED.
5. IF NOT SHOWN ON PLANS, REQUIRED BEARING AREAS AT FITTING SHALL BE AS INDICATED ABOVE, ADJUST IF NECESSARY, TO CONFORM TO THE TEST PRESSURE(S) & ALLOWABLE SOIL BEARING STRESS(ES) STATED IN THE SPECIAL PROVISIONS.
6. BEARING AREAS & SPECIAL BLOCKING DETAILS SHOWN ON PLANS TAKE PRECEDENCE OVER BEARING AREAS & BLOCKING DETAILS SHOWN ON THIS STANDARD DETAIL. BEARING AREA OF THRUST BLOCKS ARE IN SQUARE FEET.

**THRUST BLOCK TYPICAL INSTALLATION**

1  
FP-000

**FIRE PROTECTION - SYMBOLS, NOTES, AND DETAILS**  
SCALE: NTS



**FD-101A FIRE PROTECTION BUILDING SERVICE ENTRANCE SCHEMATIC RISER DIAGRAM**

**SCHEDULE OF FIRE PROTECTION DRAWINGS**

DWG. #	DESCRIPTION	REV #
FP-000	FIRE PROTECTION - SYMBOLS, NOTES AND DETAILS	-
FP-100	FIRE PROTECTION - NEW LOWER LEVEL FLOOR PLAN	-
FP-101	FIRE PROTECTION - NEW MAIN LEVEL FLOOR PLAN	-

**SRI LAKSHMI TEMPLE  
NEW ADDITION**

117 WAVERLY STREET  
ASHLAND, MA 01721



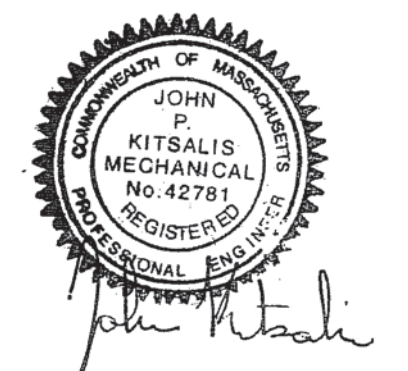
111 PERKINS STREET SUITE 215  
BOSTON MA 02130  
(617) 522-0718



1 MOUNT VERNON STREET  
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781-729-6188



Building Systems & Commissioning Engineers  
Massachusetts  
30 Turnpike Road, Suite #1, Southborough, MA 01772  
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Issue	Date
PERMIT SET ( CORE & SHELL)	10.15.2014

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**FIRE PROTECTION - SYMBOLS, NOTES AND DETAILS**

Scale	Drawn by	Verified by
AS NOTED	TJL	JPK

Sheet #

**FP-000**

Project # 1203020

SRI LAKSHMI TEMPLE  
NEW ADDITION

117 WAVERLY STREET  
ASHLAND, MA 01721

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Architecture • Interior Design

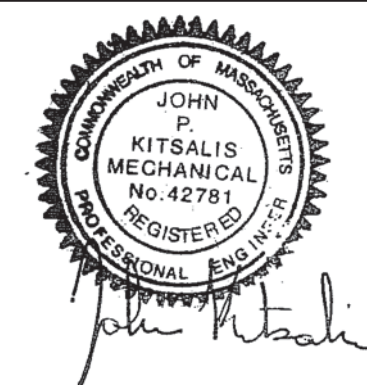
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Sheet Title

**FIRE PROTECTION - NEW  
LOWER LEVEL FLOOR PLAN**

Scale AS NOTED Drawn by TJL Verified by JPK

Sheet #

**FP-100**

Project #

1203020



NEW 6" UNDER GROUND  
FIRE SERVICE (UG FS):  
COORDINATE WITH CIVIL  
ENGINEER, WATER  
DEPARTMENT AND SITE  
CONTRACTOR.

**1 FIRE PROTECTION - NEW LOWER LEVEL FLOOR PLAN**  
FP-100 SCALE: 1/8"=1'-0"

SRI LAKSHMI TEMPLE  
NEW ADDITION

117 WAVERLY STREET  
ASHLAND, MA 01721



Architecture • Interior Design

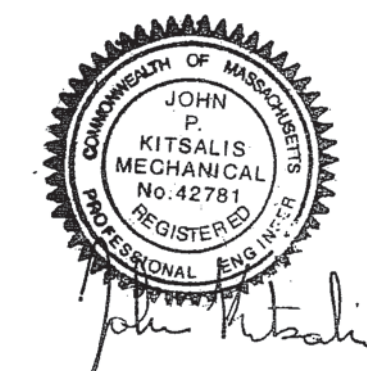
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Issue	Date
PERMIT SET ( CORE & SHELL)	10.15.2014

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Sheet Title

**FIRE PROTECTION - NEW  
MAIN LEVEL FLOOR PLAN**

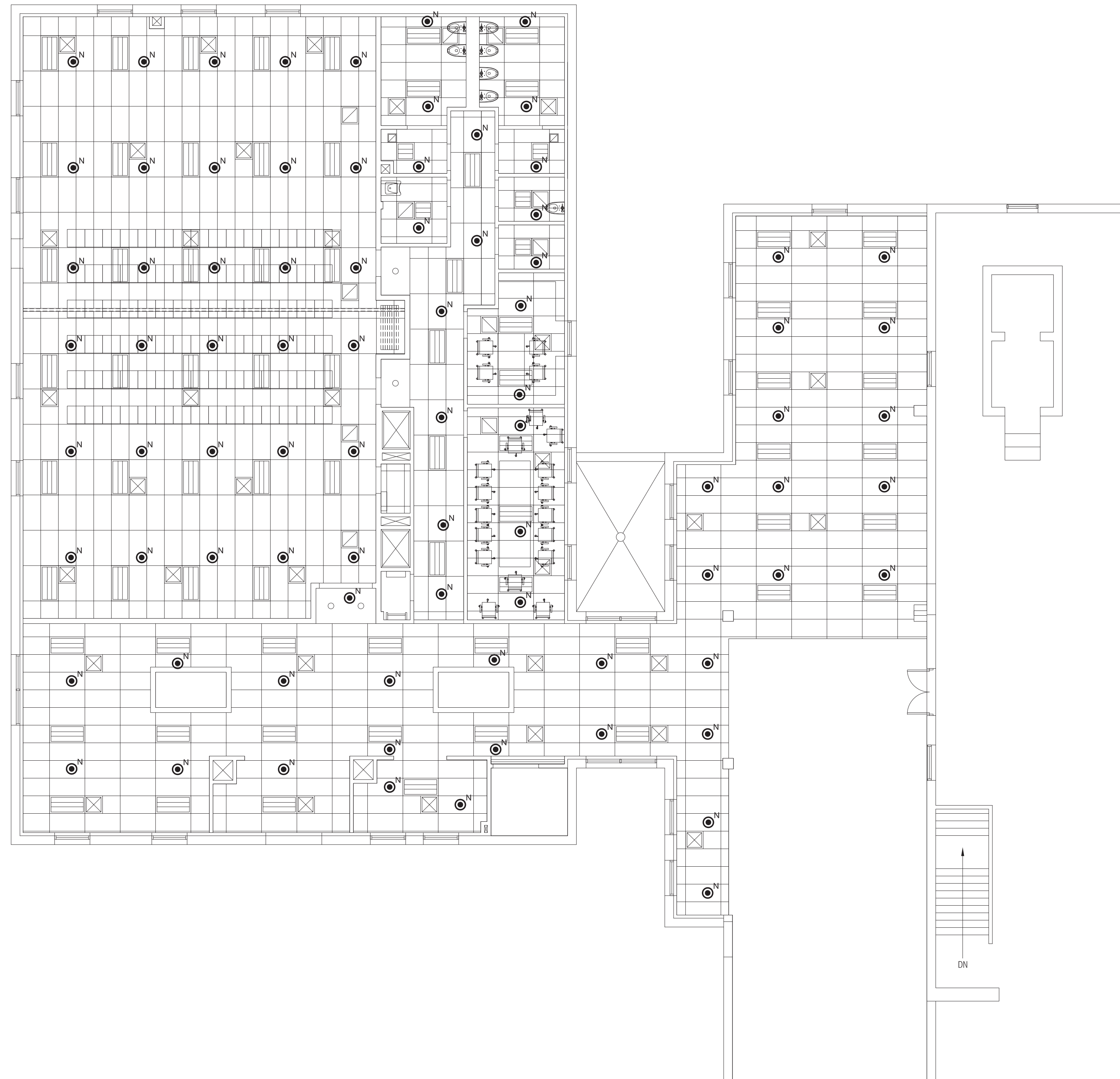
Scale	Drawn by	Verified by
AS NOTED	TJL	JPK

Sheet #

**FP-101**

Project #

1203020



**1** FIRE PROTECTION - NEW MAIN LEVEL FLOOR PLAN  
FP-101 SCALE: 1/8"=1'-0"

# SYMBOLS

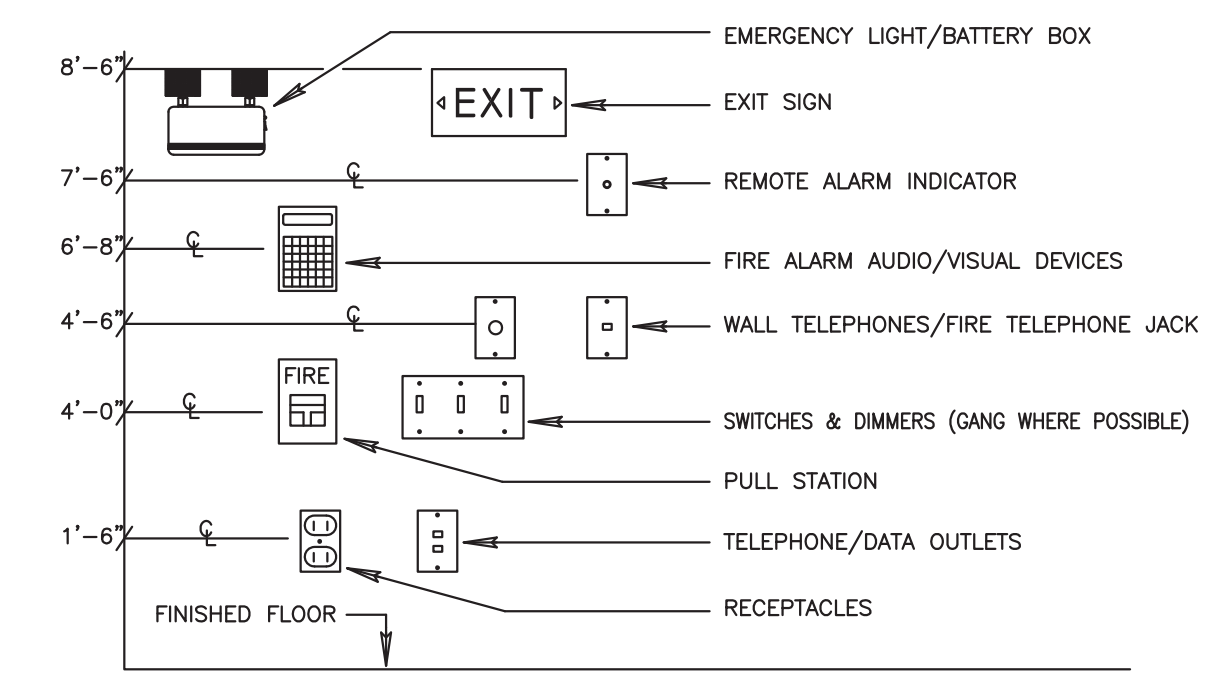
- SW - SPLIT CIRCUIT RECEPTACLE, NEMA 5-20R WITH TOP RECEPTACLE SWITCHED
- - SPLIT CIRCUIT RECEPTACLE, NEMA 5-20R
- - RECEPTACLE, DUPLEX, NEMA 5-15R
- - RECEPTACLE, DUPLEX, NEMA 5-20R
- - RECEPTACLE, DUPLEX, NEMA 5-20R, DEDICATED
- - RECEPTACLE, DOUBLE DUPLEX, NEMA 5-15R
- - RECEPTACLE, DOUBLE DUPLEX, NEMA 5-20R
- - RECEPTACLE, SPECIAL PURPOSE, 208V
- - TELEPHONE OUTLET, BOX AND PULL STRING IN 1" CONDUIT UP TO ACCESSIBLE CEILING
- - DATA OUTLET, BOX AND PULL STRING ONLY IN 1" CONDUIT UP TO ACCESSIBLE CEILING
- - TELEPHONE/DATA OUTLET, BOX, CONDUIT, AND CAT 6 PLENUM RATED CABLE PER TEL/DATA NOTES. 000: NO CABLES; 1" CONDUIT AND PULL STRING CORRESPONDING TO COVER PLATE LABEL 100: CAT6 CABLES - 1 TELEPHONE CABLE + 0 DATA CABLE + 0 SPARE CABLE PHONE (GREEN) / DATA (YELLOW) / SPARE (GREY) / SPARE (BLUE)
- - JUNCTION BOX
- - METER, KWH, CHECK.
- - FLOOR RECESSED MOUNTED DUPLEX ELEC RECEPTACLE - BRASS PLATE
- - FLOOR RECESSED MOUNTED QUADRIPLUX ELEC RECEPTACLE - BRASS PLATE
- - FLOOR RECESSED MOUNTED TELEPHONE RECEPTACLE - BRASS PLATE
- - FLOOR RECESSED MOUNTED DATA RECEPTACLE - BRASS PLATE
- - JUNCTION BOX, DIMENSIONS AS SHOWN
- - METER, KWH, CHECK.
- - NEMA 3R 200A DISCONNECT SWITCH, 3-POLE, 240V
- - NEMA 3R 200A FUSED DISCONNECT SWITCH, WITH 175A FUSES, 3-POLE, 240V
- - NEMA MOTOR STARTER, SIZE ON PLANS
- - MOTOR, FAN OR PUMP AS NOTED (FURNISHED BY OTHERS)
- - EMERGENCY POWER PANELBOARD, SURFACE MOUNTED
- - PANELBOARD, SURFACE MOUNTED
- - PANELBOARD, FLUSH MOUNTED
- - SWITCH, SINGLE POLE; 20A, 277V
- - DIMMING SWITCH
- - SWITCH, DOUBLE POLE, SINGLE THROW; 20A, 277V
- - SWITCH, 3-WAY; 20A, 277V
- - SWITCH, 4-WAY; 20A, 277V
- - SWITCH, FAN CONTROL, FURNISHED BY MC, WIRED BY EC
- - MOTOR RATED SWITCH; 30A, 480V, 2-POLE
- - SWITCH WITH INTEGRATED OCCUPANCY SENSOR AND AMBIENT LIGHT PHOTOCELL; LEVITON ODS15-ID OR EQUAL
- - LIGHT FIXTURE, DIMENSION AS SHOWN
- - EMERGENCY POWER LIGHT FIXTURE
- - LIGHT FIXTURE, WALL SCONCE
- - LIGHT FIXTURE, WALL WASHER DOWNLIGHT
- - LIGHT FIXTURE, DOWNLIGHT
- - EXIT SIGN, CEILING MOUNTED
- - EXIT SIGN, WALL MOUNTED
- - RELAY
- - GROUNDING ELECTRODE
- - HVAC EQUIPMENT
- - PUSH-BUTTON
- - SERIES RATED NAMEPLATE
- - THERMOSTAT, 115V, FBO, WIRED BY EC
- - TEL/DATA JUNCTION BOX WITH CONDUIT & PULL STRING TO ACCESSIBLE CEILING
- - THERMOSTAT, LV, FBO, WIRED BY EC
- - CLOSE CIRCUIT TELEVISION OUTLET BOX, CONDUIT, AND PULL STRING ONLY
- - WEATHER PROOF JUNCTION BOX WITH LIQUID TIGHT WHIP TO WATER HEATER
- - FLUSH FLOOR BOX WITH SPLIT POWER/DATA
- - FLUSH FLOOR BOX WITH SPLIT POWER/DATA
- - 2P, 30A 240V, WP SWITCH MOUNTED IN WEATHER PROOF JUNCTION BOX WITH LIQUID TIGHT WHIP TO WATER HEATER
- - FLUSH FLOOR BOX, SPLIT POWER/DATA WITH FMC WHIP TO WORKSTATION ONE FOR POWER, ONE FOR TEL/DATA AT EACH LOCATION
- - JUNCTION BOX WITH FMC WHIP TO WORKSTATION ONE FOR POWER, ONE FOR TEL/DATA AT EACH LOCATION.
- - CEILING MTD MOTION SENSOR
- - TRANSFORMER
- - STEEL PLUGMOLD RACEWAY AND MULTI-OUTLET ASSEMBLIES - 60" LONG (WIRING, 3-WIRE #12 THIN, 1 HOT, 1 NEUTRAL AND 1 GROUND, 1 CIRCUIT, WITH INSTALLED GROUNDING CONDUCTOR, WITH 10 SINGLE OUTLETS (15A) SPACED 6") - MODEL: WH 2068506, BY "PLUGMOLD SYSTEMS".
- - OUTDOOR, WEATHERPROOF, GROUND FAULT INTERRUPTER RECEPTACLE, DUPLEX NEMA 5-20R
- - UTILITY METER

# SUBSCRIPTS & ABBREVIATIONS

- AC - AIR CONDITIONING UNIT
- ACCU - AIR COOLED CONDENSING UNIT
- ACT - ABOVE COUNTER TOP
- AFC - ABOVE FINISHED CEILING
- AFCI - ARC FAULT CIRCUIT INTERRUPTER
- AF - ABOVE FINISHED FLOOR
- AH - AIR HANDLER
- AIC - AMPERES INTERRUPTING CAPACITY
- BCT - BELOW COUNTER TOP
- BFC - BELOW FINISHED CEILING
- C/B - CIRCUIT BREAKER
- CC - CONTROLS CONTRACTOR
- Cd - INDICATES THE CANDELA RATING OF THE STROBE
- CO - ELECTRICAL METALLIC TUBING (EMT)
- C - RMC OR EMT
- CP - CONTROL PANEL
- DED - DEDICATED
- DN - DEDICATED NEUTRAL
- DW - DISHWASHER
- E - EXISTING TO REMAIN
- EC - ELECTRICAL CONTRACTOR
- EP - EMERGENCY POWER
- EF - EXHAUST FAN
- EHA - ELECTRONIC HYDRAULIC ACTUATOR
- EW - ELECTRIC WATER HEATER
- EX - EXISTING
- ELEV - ELEVATOR
- EMT - ELECTRICAL METALLIC TUBING
- ER - RELOCATED EXISTING
- ERV - ENERGY RECOVERY VENTILATOR
- ETR - EXISTING TO REMAIN
- ETL - ETL TESTING LABORATORIES
- ELUG - ELECTRICAL LIGHTING UNDER-GROUND
- EUG - ELECTRICAL UNDER-GROUND
- F - FUTURE
- FACP - FIRE ALARM CONTROL PANEL
- FATC - FIRE ALARM TERMINAL CABINET
- FBO - FURNISHED BY OTHERS
- FD - FUSED DISCONNECT
- GD - GARBAGE DISPOSAL
- GFI - GROUND FAULT INTERRUPTER
- GFIC - GROUND FAULT INTERRUPTER
- HOA - HANDS OFF AUTO
- IG - ISOLATED GROUND
- LAC - LOCATED ABOVE CEILING
- LC - LIGHTING CONTACTOR
- LP - LASER PRINTER
- LSV - LIQUID SENSING VALVE
- LTG - LIGHTING
- MC - MECHANICAL CONTRACTOR
- MCC - MOTOR CONTROL CENTER
- MC-CABLE - METAL CLAD CABLE
- N - NEW DEVICE
- NEMA - NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
- NL - NIGHT LIGHT (FIXTURE NOT SWITCHED)
- NM - NONMETALLIC CABLE
- NP - NORMAL POWER
- NTS - NOT TO SCALE
- PA - PUBLIC ADDRESS
- PC - PLUMBING CONTRACTOR
- PEF - POWERED EXHAUST FAN
- QTY - QUANTITY
- REC - RECEPTACLE
- RECEP - RECEPTACLE
- REF - REFRIGERATOR
- RMC - RIGID METALLIC CONDUIT
- RTU - ROOFTOP UNIT
- SCA - SHORT CIRCUIT AMPERES
- SPE - SIGNAL POWER EXPANDER
- SW - SWITCH
- TBD - TO BE DETERMINED
- TC - TIME CLOCK
- TIB - TELEPHONE INTERCONNECTION BACKBOARD 4'x4'x3/4" PLYWOOD MOUNTED ON WALL
- TUG - TELEPHONE UNDER-GROUND
- UL - UNDERWRITERS LABORATORIES
- UNO - UNLESS NOTED OTHERWISE
- WP - WEATHER PROOF

# GENERAL NOTES

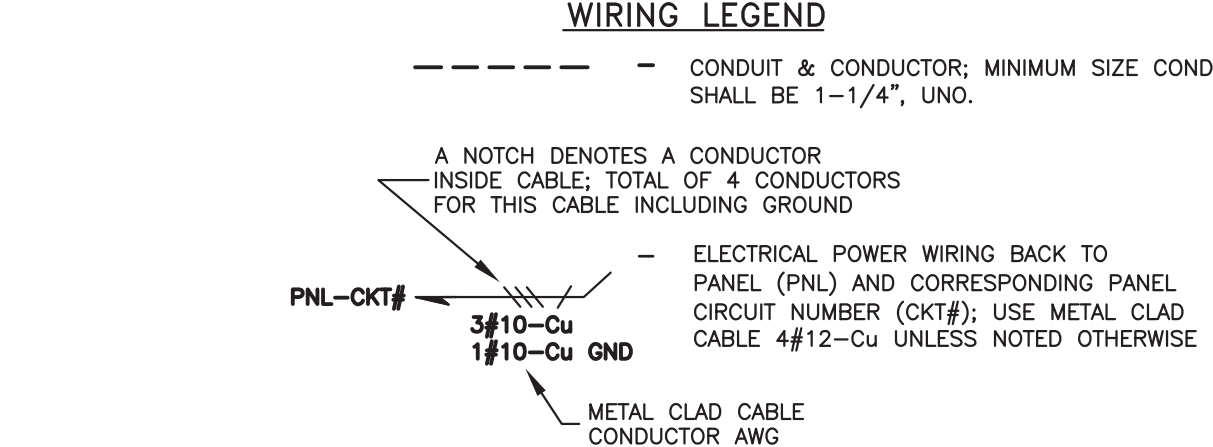
- 1) ALL ELECTRICAL WORK, EQUIPMENT, RACEWAYS, CABLES, WIRING AND DEVICES ARE NEW, U.N.O.
- 2) ALL RECEPTACLES MTD 18" A.F.F. U.N.O.
- 3) ALL SWITCHES MTD 48" A.F.F.
- 4) ALL DEVICES TO MATCH BUILDING STYLES U.N.O.
- 5) CONTRACTOR SHALL COORDINATE MAIN ELECTRIC SERVICE REQUIREMENTS WITH ELECTRIC UTILITY.
- 6) ALL CONCEALED CIRCUITS SHALL BE RATED 20A, FED WITH 600V, 4#12-CU METAL-CLAD CABLE (MC-CABLE) THAT IS U.L. LISTED FOR ITS INTENDED SERVICE, U.N.O. ALL EXPOSED CIRCUITS SHALL BE RATED 20A WITH 600V, 4#12-CU IN 1" ELECTRICAL METALLIC TUBING WITH WEATHER/WATER PROOF RATED CONNECTIONS. ALL NORMALLY OCCUPIED AREAS SHALL HAVE CONCEALED CIRCUITS.
- 7) ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE LATEST VERSION OF THE STATE'S ELECTRICAL CODE.
- 8) THE ELECTRICAL CONTRACTOR SHALL REFER TO THE STRUCTURAL, PLUMBING, HVAC, FIRE PROTECTION, FIRE ALARM, AND ARCHITECTURAL DRAWINGS BEFORE INSTALLING ANY ELECTRICAL EQUIPMENT.
- 9) ALL WIRE, TERMINATION'S, & DEVICES SHALL BE RATED 75°C.
- 10) ALL EXPOSED WIRING SHALL BE IN E.M.T.
- 11) THE ELECTRICAL CONTRACTOR SHALL CONFIRM THE CURRENT DRAW ON ANY REREWIRED CIRCUITS DOES NOT EXCEED 79% OF THE CIRCUITS OVERCURRENT PROTECTIVE DEVICE.
- 12) ALL COMPONENTS FURNISHED BY THE EC SHALL BE UL LISTED FOR THEIR INTENDED USE.
- 13) CONTRACTOR SHALL PROVIDE FULLY RATED ELECTRICAL EQUIPMENT OF THEIR NAMEPLATE VALUES.
- 14) THE EC SHALL PROVIDE BOX, CONDUIT AND PULL STRING FOR COMMUNICATION CABLES. THE WIRING OF THESE SYSTEMS IS BY OTHERS.
- 15) ALL WIRING SHALL BE ROUTED PERPENDICULAR TO COLUMN LINES.
- 16) CONTRACTOR SHALL COORDINATE ELECTRICAL SYSTEM SHORT-CIRCUIT WITHSTAND AND INTERRUPT WITH THE ELECTRIC UTILITY.
- 17) ALL RECEPTACLES, SWITCHES, FACEPLATES, AND FASTENERS SHALL BE NEW, LISTED AND COMMERCIAL GRADE WITHIN PROJECT SCOPE AREA. COORDINATE ALL WALL PLATE TRIMS AND COLORS WITH ARCHITECT.
- 18) ALL CEILING MOUNTED DEVICES SHALL BE MOUNTED IN THE CENTER OF TILES.
- 19) EC SHALL REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATION OF ALL DEVICES.
- 20) OUTLET BOXES SHALL NOT BE INSTALLED BACK-TO-BACK.
- 21) CONTRACTOR SHALL MATCH ALL ELECTRICAL DEVICES, COVER PLATES, RECEPTACLES AND THE PLATES AND THE LIKE. TRIMS, FINISHES AND COLORS SHALL BE COORDINATED THROUGH THE ARCHITECT.
- 22) CONTRACTOR SHALL PROVIDE FULLY RATED SHORT-CIRCUIT WITHSTAND AND CURRENT INTERRUPT ELECTRICAL EQUIPMENT FOR THIS PROJECT. CONTRACTOR SHALL PROVIDE A COMPLETE SHORT-CIRCUIT STUDY COORDINATED WITH THE AVAILABLE SHORT-CIRCUIT CURRENT FROM THE ELECTRICAL UTILITY SUPPLY. THE SHORT-CIRCUIT STUDY SHALL BE USED TO COORDINATE THE SHORT-CIRCUIT RATING OF THE ELECTRICAL EQUIPMENT. CONTRACTOR SHALL SUBMIT AS AN ADD-ALTERNATE A LISTED SERIES-COMBINATION RATED ELECTRICAL DISTRIBUTION SYSTEM THAT HAS BEEN COORDINATED WITH THE SHORT-CIRCUIT STUDY. CONTRACTOR SHALL BEAR COMPLETE AND TOTAL RESPONSIBILITY FOR ALL UL LISTED SERIES-COMBINATION RATED EQUIPMENT AND DISTRIBUTION.
- 23) ELECTRICAL CONTRACTOR SHALL PROVIDE SEPARATE CONDUIT FROM THAT OF THE POWER CIRCUIT FOR ALL MECHANICAL EQUIPMENT CONTROLS WIRING. THE CONTROLS CONDUIT AND CABLE IS FROM THE SPACE THERMOSTAT TO THE HVAC EQUIPMENT.
- 24) EC SHALL GUARANTEE ALL WORK PERFORMED AS PART OF THIS CONTRACT IS FREE FROM DEFECTS FOR A PERIOD OF ONE YEAR FROM THE DATE OF ACCEPTANCE. EC SHALL REPLACE OR REPAIR ANY DAMAGED OR DEFECTIVE DEVICES OR WORK FREE OF CHARGE DURING THIS PERIOD.
- 25) A MANUFACTURER'S SPEC SHEET (INCLUDING CATALOG NUMBER AND SHOP DRAWINGS) SHALL BE SUBMITTED FOR APPROVAL ON ALL FIXTURES, DEVICES AND EQUIPMENT PRIOR TO PURCHASING.
- 26) ALL CONDUCTORS SUPPLYING POWER TO HEATING EQUIPMENT SHALL BE COPPER CONDUCTOR WITH RATED 90°C MIN INSULATION.
- 27) ALL WIRING SHALL BE IDENTIFIED WITH PANELBOARD AND CIRCUIT NUMBERS IN ALL JUNCTION BOXES, TROUGH, POINTS OF TERMINATION, ETC..
- 28) EC SHALL CLEAN, VACUUM & TIGHTEN ALL CONNECTIONS IN ANY ELECTRICAL DISTRIBUTION EQUIPMENT THAT IS TO BE RE-USED.
- 29) ALL KNOCKOUTS IN ALL ENCLOSURES SHALL BE SEALED.
- 30) PANELBOARDS SHALL BE DOOR-IN-DOOR TRIM STYLE. ENTIRE TRIM & INTERIOR DOOR SHALL BE HINGED. ALL PANELBOARDS SHALL BE FURNISHED WITH COPPER BUSES.
- 31) EC SHALL BE RESPONSIBLE FOR PROVIDING AN UPDATED TYPED CIRCUIT DIRECTORY FOR ALL PANELBOARDS (NEW & EXISTING) THAT ARE EFFECTED BY THE CONSTRUCTION.
- 32) EC SHALL PROVIDE ENGRAVED NAMEPLATES FOR ALL PANELBOARDS, JUNCTION BOXES, DISCONNECT SWITCHES AND MOTOR STARTERS.
- 33) ALL POWER WIRING IN ELECTRICAL AND MECHANICAL ROOMS AND TO ELECTRICAL/MECHANICAL EQUIPMENT SHALL BE ARMOR-CLAD CABLE OR IN RMC OR EMT.
- 34) CONTRACTOR SHALL UTILIZE THE MOST STRINGENT SPECIFICATIONS IN THESE DOCUMENTS. IF THERE ARE ANY CONFLICTS OR CONTRADICTIONS, THE MOST STRINGENT SPECIFICATIONS SHALL APPLY.
- 34) TELEPHONE AND DATA CABLES RAN IN RETURN AIR PLENUMS SHALL BE TEFLON COATED AND PLENUM RATED. THE WIRING OF THESE SYSTEMS SHALL BE PRICED AS AN ADD-ALTERNATE.
- 35) CONTRACTORS SHALL MAINTAIN ALL FIRE RATINGS WITH CONDUCTOR FIRE RATED FLOOR/CEILING/WALL PENETRATIONS WITH LISTED MATERIALS AND INSTALLATION METHODS.
- 36) CONTRACTOR SHALL CONDUCT A THOROUGH EXAMINATION OF THE PREMISES PRIOR TO PREPARING A PROPOSAL. ANY CHANGES TO THE DESIGN MADE NECESSARY BY FIELD CONDITIONS SHALL BE CONVEYED TO THE ENGINEER PRIOR TO PREPARATION OF A PROPOSAL. NO ADDITIONAL COSTS BEYOND THE PROPOSAL PRICE WILL BE ACCEPTED FOR FIELD CONDITIONS THAT COULD HAVE BEEN DETERMINED BY AN INSPECTION OF THE PREMISES.



NOTES  
 1. DEVICES SHALL BE INSTALLED ON A COMMON VERTICAL CENTERLINE WHEREVER POSSIBLE.  
 2. ALL DEVICES SHALL BE INSTALLED AT MOUNTING HEIGHTS AS INDICATED ON THIS DETAIL, U.N.O.

WIRING DEVICE, STANDARD MOUNTING HEIGHTS FOR TYPICAL DEVICES  
 SCALE: 2 E-000

- ### GENERAL PROJECT NOTES
- 1) CONTRACTOR SHALL PROVIDE SUBMITTALS, SHOP DRAWINGS AND COORDINATION DRAWINGS WITH ALL OTHER TRADES.
  - 2) FINAL "AS-BUILT" SHALL BE FURNISHED AT THE END OF THIS PROJECT TO OWNER, ARCHITECT AND ENGINEER.
  - 3) WHERE THE CONTRACTOR PROPOSES TO USE AN ITEM OF EQUIPMENT OTHER THAN THAT SPECIFIED OR DETAILED ON THE DRAWINGS, WHICH REQUIRES ANY REDESIGN OF THE STRUCTURE, PARTITIONS, WIRING, OR ANY OTHER PART OF THE MECHANICAL, ELECTRICAL, OR ARCHITECTURAL LAYOUT, ALL SUCH REDESIGN; AND ALL NEW DRAWINGS AND DETAILING REQUIRED THEREOF SHALL, WITH THE APPROVAL OF THE ARCHITECT, BE PREPARED BY THIS CONTRACTOR AT HIS EXPENSE.
  - 4) THE CONTRACTOR SHALL REVIEW THE CIVIL SITE PLAN FOR WATER, SEWER, GAS AND ELECTRIC SERVICE UTILITIES TO THE BUILDING. THE CONTRACTOR SHALL INCORPORATE IN BID TO BRINGING UTILITIES TO "POINT OF USE" OR UTILITY METER DESIGNATED AREAS AS SHOWN ON THESE PLANS, AND INCORPORATE ALL ASSOCIATED EARTHWORK COSTS IN BID.



### SCHEDULE OF ELECTRICAL DRAWINGS

DWG. #	DESCRIPTION	REV #
ELECTRIC POWER & LIGHTING		
E-000	ELECTRICAL - SYMBOLS, NOTES, AND DETAILS	--
ED-100	ELECTRICAL - EXISTING AND REMOVALS	--
E-100	ELECTRICAL - NEW POWER PLAN	--
E-200	ELECTRICAL - NEW LIGHTING PLAN	--
E-300	FIRE ALARM - ABBREVIATIONS, NOTES AND DETAILS	--
E-301	FIRE ALARM - SELECTIVE REMOVALS	--
E-302	FIRE ALARM - NEW FLOOR PLAN	--
E-400	ELECTRICAL - SPECIFICATIONS	--

# CONTRACTOR COORDINATION SCHEDULE

THE FOLLOWING TABLE SHOULD BE USED TO CLARIFY THE SCOPE OF WORK FOR THE COMPONENTS ASSOCIATED WITH MULTIPLE TRADES LISTED BELOW.

MC - MECHANICAL CONTRACTOR    GC - GENERAL CONTRACTOR    EVC - ELEVATOR CONTRACTOR  
 EC - ELECTRICAL CONTRACTOR    PC - PLUMBING CONTRACTOR  
 CC - CONTROLS CONTRACTOR    SC - SPRINKLER CONTRACTOR

NO.	COMPONENT	FURNISHED BY	INSTALLED BY	WIRED BY	TERMINATED BY	PLUMB/PIPE CONNECTION	CONTROL WIRING	FIRE ALARM OVERRIDE CONTROL	*REMARKS
1	HVAC EQUIPMENT	MC	MC	EC	EC	--	CC	--	
2	DOMESTIC HOT WATER HEATERS	PC	PC	EC	EC	PC	--	--	
3	UNIT HEATERS	MC	MC	EC	EC	--	--	--	
4	LINE VOLTAGE THERMOSTATS	MC	MC	EC	EC	--	--	--	

# SRI LAKSHMI TEMPLE NEW ADDITION

117 WAVERLY STREET  
 ASHLAND, MA 01721



111 PERKINS STREET SUITE 215  
 BOSTON MA 02130  
 (617) 522-0718



1 MOUNT VERNON STREET  
 WINCHESTER, MA 01890  
 781-729-6188



Building Systems & Commissioning Engineers  
 Massachusetts  
 30 Turnpike Road, Suite #1, Southborough, MA 01772  
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Sheet Title

# ELECTRICAL - SYMBOLS, NOTES AND DETAILS

Scale	AS NOTED	Drawn by	TJL	Verified by	JPK
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# E-000

Project # 1203020







SRI LAKSHMI TEMPLE  
NEW ADDITION

117 WAVERLY STREET  
ASHLAND, MA 01721



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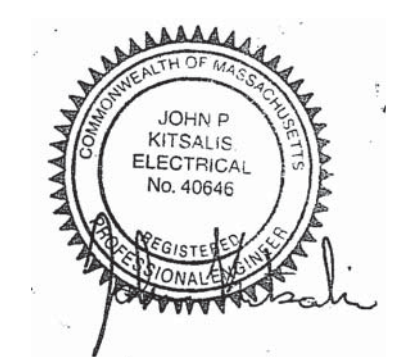
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Sheet Title

ELECTRICAL - NEW MAIN  
LEVEL POWER PLAN

Scale AS NOTED	Drawn by TJL	Verified by JPK
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Sheet #

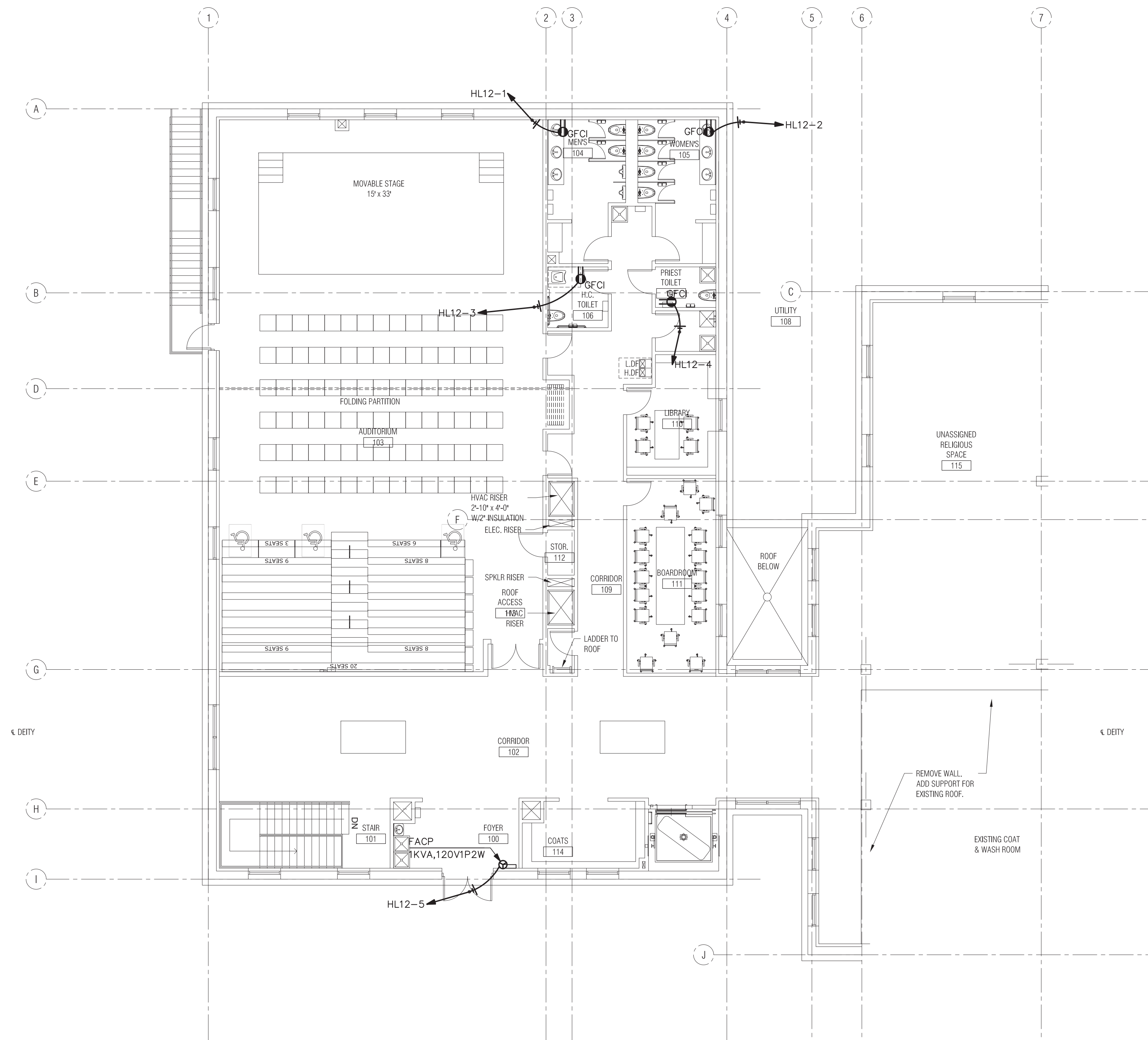
E-102

Project #

1203020

ELECTRICAL POWER PLAN NOTES:

- ALL COMPONENTS ARE NEW UNO.
- EC AND GC SHALL COORDINATE ALL FLOOR CORES AND TRENCHING WITH OTHER TRADES AND BUILDING MANAGEMENT.
- CONTRACTOR SHALL CONDUCT A THOROUGH EXAMINATION OF THE PREMISES PRIOR TO PREPARING A PROPOSAL. ANY CHANGES TO THE DESIGN MADE NECESSARY BY FIELD CONDITIONS SHALL BE CONVEYED TO THE ENGINEER PRIOR TO PREPARATION OF A PROPOSAL. NO ADDITIONAL COSTS BEYOND THE PROPOSAL PRICE WILL BE ACCEPTED FOR FIELD CONDITIONS THAT COULD HAVE BEEN DETERMINED BY AN INSPECTION OF THE PREMISES.
- CONTRACTOR SHALL COORDINATE ALL ELECTRICAL WIRING TO MECHANICAL EQUIPMENT WITH OTHER TRADES.
- EC TO WIRE ALL CONTROL SWITCHES TO EXHAUST FANS AS SHOWN IN MECHANICAL DRAWINGS.
- EC SHALL PROVIDE BOX, CONDUIT AND PULL STRING ONLY FOR TELE/DATA COMMUNICATION CABLES. THE WIRING OF THESE SYSTEMS IS BY OTHERS.
- ALL HVAC COMPONENTS EF, TSTATS, AND ROOF-TOP UNITS SHALL BE FURNISHED BY MC. EC SHALL BE RESPONSIBLE ONLY FOR ELECTRICAL WIRING AND ELECTRICAL EQUIPMENT.
- COORDINATE ALL UNDERGROUND CONDUIT SYSTEMS WITH ALL OTHER TRADES, UTILITIES, CIVIL SITE PLAN AND DIG-SAFE.
- EC SHALL VERIFY ALL MECHANICAL EQUIPMENT ELECTRICAL REQUIREMENTS WITH MC PRIOR TO ANY WIRING. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR APPROVAL, AND COORDINATION DRAWINGS WITH ALL OTHER TRADES PRIOR TO INSTALLATION.
- CONTRACTOR SHALL COORDINATE ALL ELECTRICAL DEVICE (WIREMOLD, DUPLEX RECEPTACLES, TEL/DATA OUTLETS AND THE LIKE) LOCATIONS WITH ARCHITECTURAL AND FURNITURE PLANS FOR EXACT MOUNTING HEIGHTS.
- CONTRACTOR SHALL COORDINATE ALL WIRING WITH PROJECT MANUFACTURER SHOP DRAWING SUBMITTALS, EQUIPMENT LOCATIONS, STRUCTURAL COMPONENTS, AND ARCHITECTURAL DRAWINGS.
- CONTRACTOR SHALL OBTAIN FROM BANK OR ARCHITECT THE "ALARM & VIDEO LAYOUT" DRAWINGS AND ASSOCIATED SPECIFICATIONS OF THIS PROJECT, AND INCORPORATE ALL ASSOCIATED MATERIAL AND LABOR INVOLVED FOR THESE DOCUMENTS IN BASE-BID AS A SEPARATE ITEM.
- CONTRACTOR SHALL INCLUDE IN BASE-BID AN ALLOWANCE FOR COORDINATING EACH ELECTRICAL DEVICE, RECEPTACLE, TEL/DATA OUTLETS, SECURITY SYSTEM COMPONENTS WITH EQUIPMENT SUBMITTALS, FIELD CONDITIONS, MILWORK FURNISHINGS AND EQUIPMENT LOCATIONS. CONTRACTOR SHALL PROVIDE ALL RECEPTACLES IN EASILY ACCESSIBLE LOCATIONS. IF FIELD CONDITIONS REQUIRE RELOCATION OF ANY DEVICE CONTRACTOR SHALL PERFORM THE WORK FREE OF ANY ADDITIONAL CHARGES.
- EC SHALL CONSULT MECHANICAL PLANS AND SPECIFICATIONS FOR INSTALLATION LOCATIONS OF DSDs AND PSDs.
- EC SHALL VERIFY ALL MECHANICAL EQUIPMENT ELECTRICAL REQUIREMENTS WITH MC PRIOR TO ANY WIRING. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR APPROVAL, AND COORDINATION DRAWINGS WITH ALL OTHER TRADES PRIOR TO INSTALLATION.
- ALL WIRING AND ELECTRICAL EQUIPMENT SHALL BE LISTED FOR THEIR INTENDED USE.
- ELECTRICAL CONTRACTOR SHALL REVIEW MECHANICAL HVAC AND PLUMBING PLANS AND INTEGRATE ALL SYMBOLS AND DEVICES IN ELECTRICAL PLANS FOR PROVIDING THE ELECTRICAL POWER WIRING AND GROUNDING REQUIREMENTS OF THE HVAC AND PLUMBING SYSTEM.



1  
E-102 ELECTRICAL - NEW MAIN LEVEL POWER PLAN  
SCALE: 1/8" = 1'-0"

SRI LAKSHMI TEMPLE  
NEW ADDITION

117 WAVERLY STREET  
ASHLAND, MA 01721



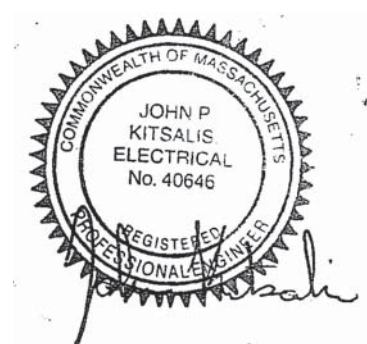
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Sheet Title

**ELECTRICAL - NEW ROOF  
POWER PLAN**

Scale	Drawn by	Verified by
AS NOTED	TJL	JPK

Sheet #

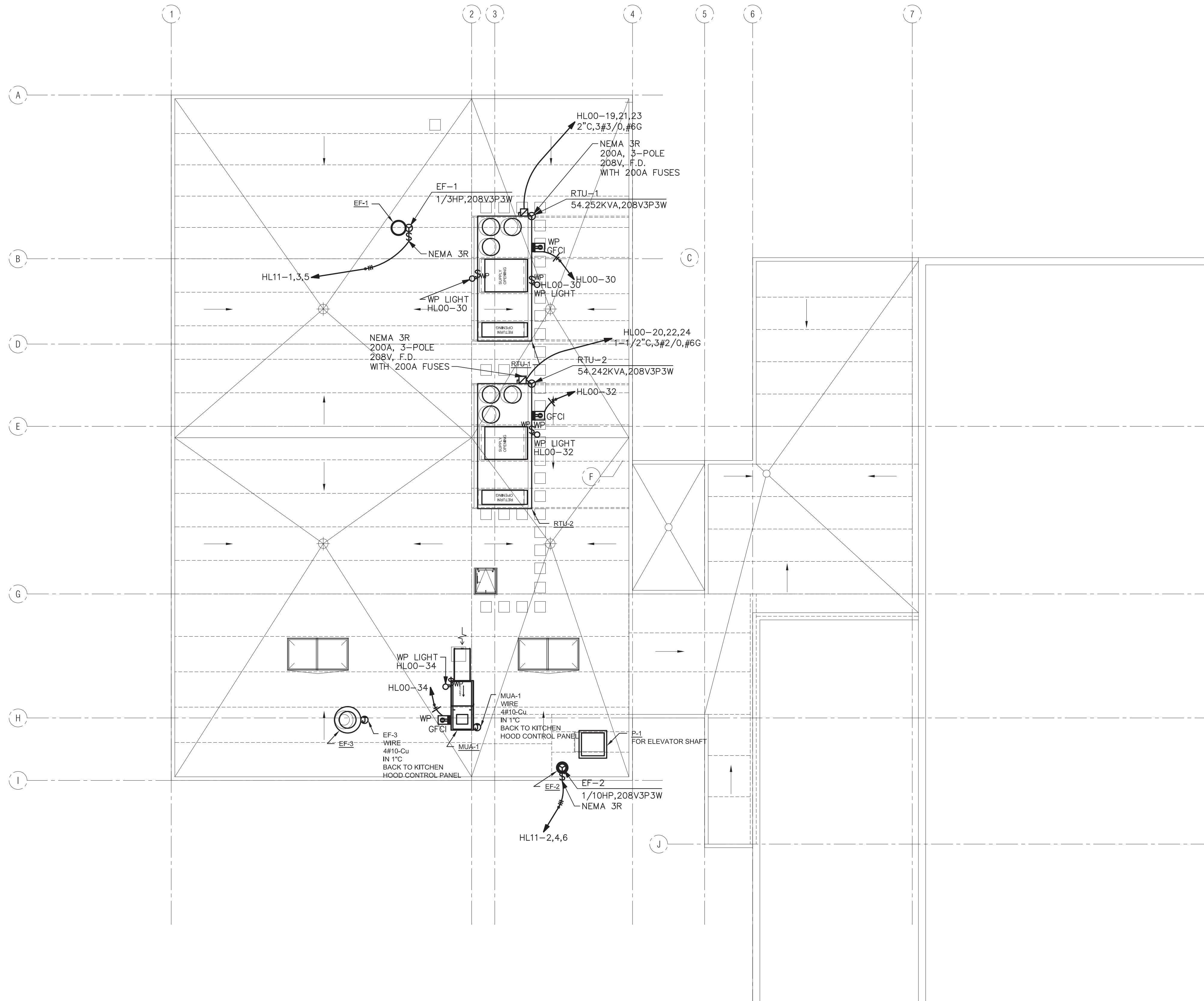
**E-103**

Project #

1203020

**ELECTRICAL POWER PLAN NOTES:**

- ALL COMPONENTS ARE NEW UNO.
- EC AND GC SHALL COORDINATE ALL FLOOR CORES AND TRENCHING WITH OTHER TRADES AND BUILDING MANAGEMENT.
- CONTRACTOR SHALL CONDUCT A THOROUGH EXAMINATION OF THE PREMISES PRIOR TO PREPARING A PROPOSAL. ANY CHANGES TO THE DESIGN MADE NECESSARY BY FIELD CONDITIONS SHALL BE CONVEYED TO THE ENGINEER PRIOR TO PREPARATION OF A PROPOSAL. NO ADDITIONAL COSTS BEYOND THE PROPOSAL PRICE WILL BE ACCEPTED FOR FIELD CONDITIONS THAT COULD HAVE BEEN DETERMINED BY AN INSPECTION OF THE PREMISES.
- CONTRACTOR SHALL COORDINATE ALL ELECTRICAL WIRING TO MECHANICAL EQUIPMENT WITH OTHER TRADES.
- EC TO WIRE ALL CONTROL SWITCHES TO EXHAUST FANS AS SHOWN IN MECHANICAL DRAWINGS.
- EC SHALL PROVIDE BOX, CONDUIT AND PULL STRING ONLY FOR TELE/DATA COMMUNICATION CABLES. THE WIRING OF THESE SYSTEMS IS BY OTHERS.
- ALL HVAC COMPONENTS EF, TSTATS, AND ROOF-TOP UNITS SHALL BE FURNISHED BY MC. EC SHALL BE RESPONSIBLE ONLY FOR ELECTRICAL WIRING AND ELECTRICAL EQUIPMENT.
- COORDINATE ALL UNDERGROUND CONDUIT SYSTEMS WITH ALL OTHER TRADES, UTILITIES, CIVIL SITE PLAN AND DIG-SAFE.
- EC SHALL VERIFY ALL MECHANICAL EQUIPMENT ELECTRICAL REQUIREMENTS WITH MC PRIOR TO ANY WIRING. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR APPROVAL, AND COORDINATION DRAWINGS WITH ALL OTHER TRADES PRIOR TO INSTALLATION.
- CONTRACTOR SHALL COORDINATE ALL ELECTRICAL DEVICE (WIREMOLD, DUPLEX RECEPTACLES, TEL/DATA OUTLETS AND THE LIKE) LOCATIONS WITH ARCHITECTURAL AND FURNITURE PLANS FOR EXACT MOUNTING HEIGHTS.
- CONTRACTOR SHALL COORDINATE ALL WIRING WITH PROJECT MANUFACTURER SHOP DRAWING SUBMITTALS, EQUIPMENT LOCATIONS, STRUCTURAL COMPONENTS, AND ARCHITECTURAL DRAWINGS.
- CONTRACTOR SHALL OBTAIN FROM BANK OR ARCHITECT THE "ALARM & VIDEO LAYOUT" DRAWINGS AND ASSOCIATED SPECIFICATIONS OF THIS PROJECT, AND INCORPORATE ALL ASSOCIATED MATERIAL AND LABOR INVOLVED FOR THESE DOCUMENTS IN BASE-BID AS A SEPARATE ITEM.
- CONTRACTOR SHALL INCLUDE IN BASE-BID AN ALLOWANCE FOR COORDINATING EACH ELECTRICAL DEVICE, RECEPTACLE, TEL/DATA OUTLETS, SECURITY SYSTEM COMPONENTS WITH EQUIPMENT SUBMITTALS, FIELD CONDITIONS, MILWORK FURNISHINGS AND EQUIPMENT LOCATIONS. CONTRACTOR SHALL PROVIDE ALL RECEPTACLES IN EASILY ACCESSIBLE LOCATIONS. IF FIELD CONDITIONS REQUIRE RELOCATION OF ANY DEVICE CONTRACTOR SHALL PERFORM THE WORK FREE OF ANY ADDITIONAL CHARGES.
- EC SHALL CONSULT MECHANICAL PLANS AND SPECIFICATIONS FOR INSTALLATION LOCATIONS OF DSDs AND PSDs.
- EC SHALL VERIFY ALL MECHANICAL EQUIPMENT ELECTRICAL REQUIREMENTS WITH MC PRIOR TO ANY WIRING. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR APPROVAL, AND COORDINATION DRAWINGS WITH ALL OTHER TRADES PRIOR TO INSTALLATION.
- ALL WIRING AND ELECTRICAL EQUIPMENT SHALL BE LISTED FOR THEIR INTENDED USE.
- ELECTRICAL CONTRACTOR SHALL REVIEW MECHANICAL HVAC AND PLUMBING PLANS AND INTEGRATE ALL SYMBOLS AND DEVICES IN ELECTRICAL PLANS FOR PROVIDING THE ELECTRICAL POWER WIRING AND GROUNDING REQUIREMENTS OF THE HVAC AND PLUMBING SYSTEM.



**1 ELECTRICAL - NEW ROOF POWER PLAN**  
E-103 SCALE: 1/8"=1'-0"

**SRI LAKSHMI TEMPLE  
NEW ADDITION**

117 WAVERLY STREET  
ASHLAND, MA 01721

**Joyce Design Partnership**  
Architecture • Interior Design

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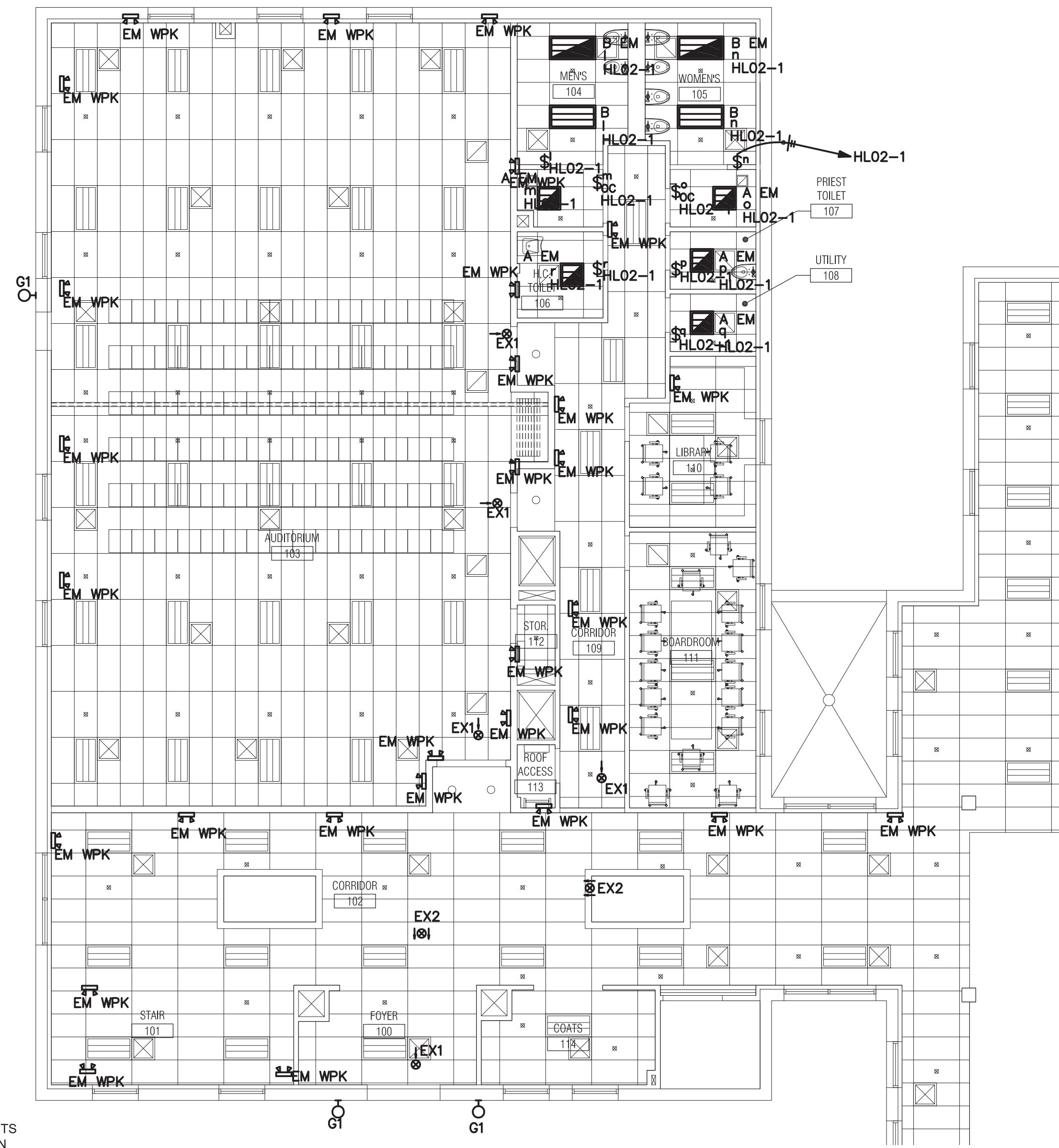
**ELECTRICAL -  
NEW LIGHTING PLAN**

Scale	Drawn by	Verified by
AS NOTED	TJL	JPK

Sheet #

**E-200**

Project # 1203020



**1 ELECTRICAL - NEW MAIN LEVEL LIGHTING PLAN**  
E-200 SCALE: 1/8"=1'-0"

**LIGHTING NOTES:**

- L1) ALL COMPONENTS ARE NEW, UNO.
- L2) LIGHT FIXTURE QUANTITIES AND TYPES ARE FOR REFERENCE ONLY. EC SHALL REFER TO REFLECTED CEILING PLAN IN DETERMINING EXACT LIGHT FIXTURE QUANTITIES AND TYPES. CONTRACTOR SHALL INCLUDE IN BID ALL WIRING, CIRCUITS, HOMERUNS, AND SWITCHING TO ACCOMMODATE THE REFLECTED CEILING PLAN LIGHT FIXTURE QUANTITIES AND LIGHT FIXTURE TYPES.
- L3) COUNT FIXTURE QUANTITIES AND TYPES FROM ELECTRICAL AND ARCHITECTURAL PLANS.
- L4) CONTRACTOR SHALL MATCH FLUORESCENT LAMPS SHOWN ON SCHEDULE TO THEIR CORRESPONDING BALLAST. FOR ALL OUTDOOR FIXTURES, USE BALLAST WITH LOW AMBIENT TEMPERATURE START OPERATION.
- L5) EC SHALL REFER TO ARCHITECTURAL PLANS FOR SPECIFIC CEILING TYPES AND HEIGHTS.
- L6) CONTRACTOR SHALL PROVIDE THE DIMMING BALLAST MANUFACTURERS RECOMMENDED DIMMING SWITCH. INSTALL ALL SYSTEMS PER MANUFACTURERS RECOMMENDATIONS.
- L7) REFER TO MANUFACTURER FOR TYPE OF SWITCHES FOR EXTERIOR SIGNAGES. EXTERIOR SIGNAGE FIXTURES SUCH AS P & M.
- L8) ALL OUTSIDE SITE LIGHTING SHALL BE CONTROLLED VIA TIME CLOCKS AND PHOTOCELLS, USE TORK TIMECLOCK MODEL 930L WITH TORK PHOTOCELL MODEL 2101.
- L9) CONTRACTOR SHALL VERIFY CURRENT DRAW OF ALL LIGHTING CIRCUITS. LIGHTING CIRCUITS SHALL NOT BE USED FOR RECEPTACLES.
- L10) CONTRACTOR SHALL REFER TO ARCHITECTS DRAWINGS FOR EXACT MODEL AND MAKE FOR ALL LIGHTING FIXTURES. CONFIRM ALL COLORS, FINISHES, AND TRIMS WITH ARCHITECT FOR ALL LIGHTING FIXTURES.
- L11) GC SHALL PERFORM A COORDINATION STUDY TO RESOLVE ANY CEILING PLENUM CLEARANCE/SPACE-USE CONFLICTS THAT MAY OCCUR BETWEEN THE TRADES HVAC, PLUMBING AND ELECTRICAL.
- L12) GC SHALL COORDINATE CEILING PLENUM EQUIPMENT, PIPING, WIRING, ETC., BETWEEN THE MC AND EC. THE GC SHALL IDENTIFY ALL POSSIBLE PROBLEM AREAS FROM THE HVAC, FIRE PROTECTION AND LIGHTING PLANS AND COORDINATE BETWEEN SUBCONTRACTORS TOWARDS RESOLUTION. THE ARCHITECT AND ENGINEER SHALL BE NOTIFIED BEFORE ANY FIELD CHANGES TAKE PLACE TO ACCOMMODATE PLENUM SPACE-USE / CLEARANCE CONFLICTS.
- L13) LIGHTING FIXTURES WHICH ARE DESIGNATED WITH THE "NIGHT-LIGHT" (NL) DESIGNATION; THESE FIXTURES SHALL NOT BE SWITCHED.
- L14) CONTRACTOR SHALL REPLACE ALL EXISTING EXIT SIGNS WITH NEW PER MAKE/MODEL SPECIFIED ON FIXTURE SCHEDULE FOR ALL AREAS AFFECTED BY THE RENOVATION WORK. CONTRACTOR SHALL VERIFY EXIT SIGN DIRECTIONAL SIGNALS AND MOUNTING AND INCORPORATE IN REPLACEMENT MODEL AND ITS EXACT LOCATION FOR INSTALLATION.
- L15) ALL EXISTING EXIT SIGNS SHALL BE REPLACED WITH NEW EXIT SIGNS. MINIMUM STANDARD SHALL BE LIGHTALARMS SPLED-W-R.
- L16) ALL EMERGENCY WALL PACK LIGHTING FIXTURES SHALL BE REPLACED WITH NEW; SEE SHEET ED-100.

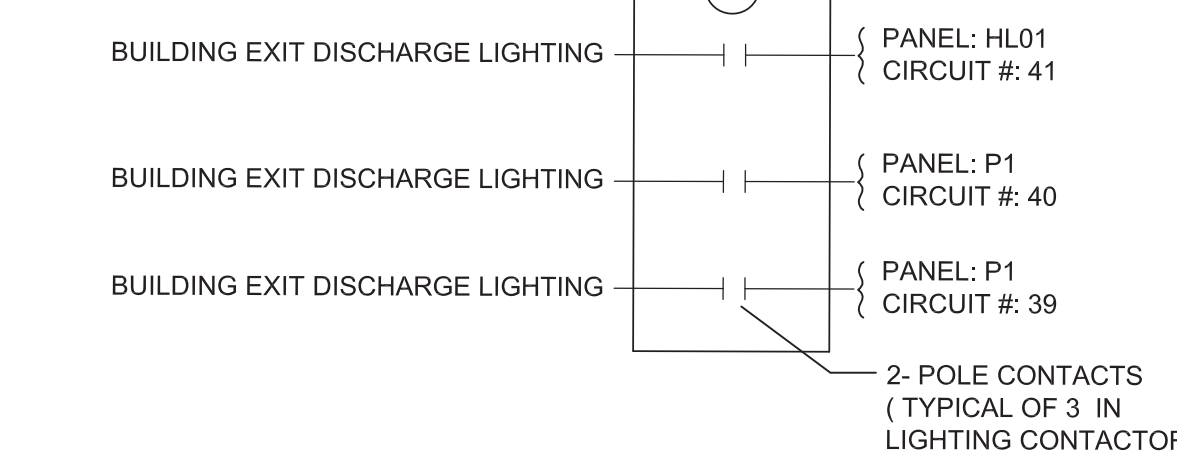
**SWITCH SCHEDULE**

CALLOUT	SYMBOL	NOTE 1	QUANTITY
Fourway Switch	\$4	COMMERCIAL GRADE; 120-277V, 20A COLOR & TRIM BY ARCHITECT	2
Light Switch	\$	COMMERCIAL GRADE; 120-277V, 20A COLOR & TRIM BY ARCHITECT	18
Occupancy Sensor Light Switch	\$oc	COMMERCIAL GRADE OCCUPANCY SENSOR; LEVITON ODS15-ID	4
Threeway Switch	\$3	COMMERCIAL GRADE; 120-277V, 20A	2

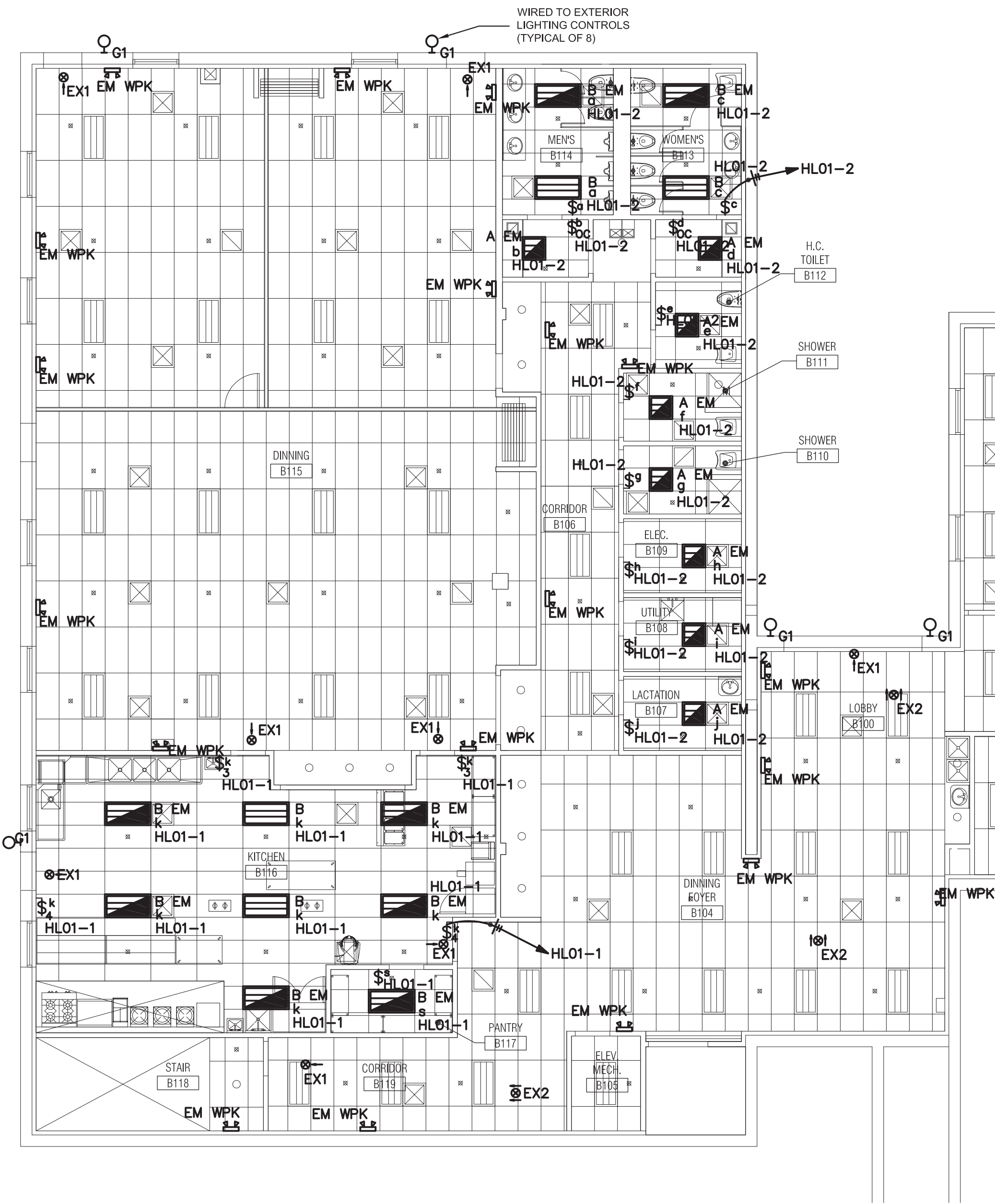
TIMECLOCK TORK #7000 ZL SERIES; ON PERIOD CONTROLLED BY PHOTOCELL AND OFF PERIOD CONTROLLED BY TIMECLOCK.

PHOTOCELL TORK #2100 SERIES MOUNTED AT HIGHEST POINT ON NORTH SIDE OF BUILDING. ORIENT TO SENSE SKY LIGHT AND NOT AREA LIGHTING.

6-POLE, 240VOLT, 30AMP LIGHTING CONTACTOR: SQUARE "D" TYPE "L" SERIES" OR EQUAL. LOCATE NEXT TO PANEL SERVING BRANCH CIRCUITS BEING CONTROLLED.



**EXTERIOR LIGHTING CONTROL DIAGRAM**  
NOT TO SCALE



**2 ELECTRICAL - NEW LOWER LEVEL LIGHTING PLAN**  
E-200 SCALE: 1/8"=1'-0"

**LUMINAIRE SCHEDULE**

CALLOUT	SYMBOL	LAMP	DESCRIPTION	BALLAST	MOUNTING	MODEL	INPUT WATTS	VOLTS	QUANTITY
A EM	[Symbol]	(2) 2 LAMP, T8	LIGHTOLIER COFAIRE HP SERIES 2X2 INCLUDE 90MIN EMERGENCY BATTERY BACKUP POWER	ELECTRONIC	CEILING	LIGHTOLIER, CFS2GPF217UNVHI	64	120V 1P 2W	13
B	[Symbol]	(2) 34W 2 LAMP, T8	LIGHTOLIER COFAIRE HP SERIES 2X4	ELECTRONIC	CEILING	LIGHTOLIER, CFS2GPF217UNVHI	59	120V 1P 2W	6
B EM	[Symbol]	(2) 2 LAMP, T8	LIGHTOLIER COFAIRE HP SERIES 2X4 INCLUDE 90MIN EMERGENCY BATTERY BACKUP POWER	ELECTRONIC	CEILING	LIGHTOLIER, CFS2GPF217UNVHI	64	120V 1P 2W	10
EM WPK	[Symbol]	(2) 0110258	SLIM LITE - SL1 Series	ELECTRONIC	CEILING	DUAL-LITE, SL1 POWER FROM LOCAL NORMAL LIGHTING POWER CIRCUIT	11	120V 1P 2W	49
EX1	[Symbol]	(1) LED	CEILING MOUNTED EXIT SIGN	ELECTRONIC	CEILING	LIGHTALARMS PREMIUM DIE CAST EDGE-LIT EXIT SIGN POWER FROM LOCAL NORMAL LIGHTING POWER CIRCUIT	4	120V 1P 2W	13
EX2	[Symbol]	(1) LED	EXIT SIGNAGE DOUBLE FACE & ARROWS	ELECTRONIC	CEILING	LIGHTALARMS: SPLED W RC D 2DC POWER FROM LOCAL NORMAL LIGHTING POWER CIRCUIT	3	120V 1P 2W	5
G1	[Symbol]	(4) 4W	WEATHERPROOF LED WALL SCONCE	ELECTRONIC	CEILING	DUAL-LITE MODEL# PGN-Z-HTR	16	120V 1P 2W	8
WP LIGHT	[Symbol]	(1) 60W 60W	WEATHER PROOF WORK LIGHT	ELECTRONIC	SURFACE		64	120V 1P 2W	4

SRI LAKSHMI TEMPLE  
NEW ADDITION

117 WAVERLY STREET  
ASHLAND, MA 01721

Joyce Design Partnership  
Architecture • Interior Design

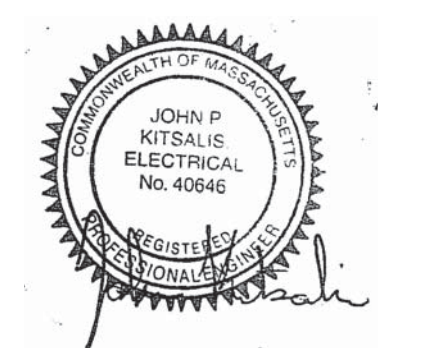
111 PERKINS STREET SUITE 215  
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ABERJONA ENGINEERING INC

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Issue	Date
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Sheet Title

FIRE ALARM - SCHEDULES AND DETAILS

Scale	Drawn by	Verified by
AS NOTED	TJL	JPK

Sheet #

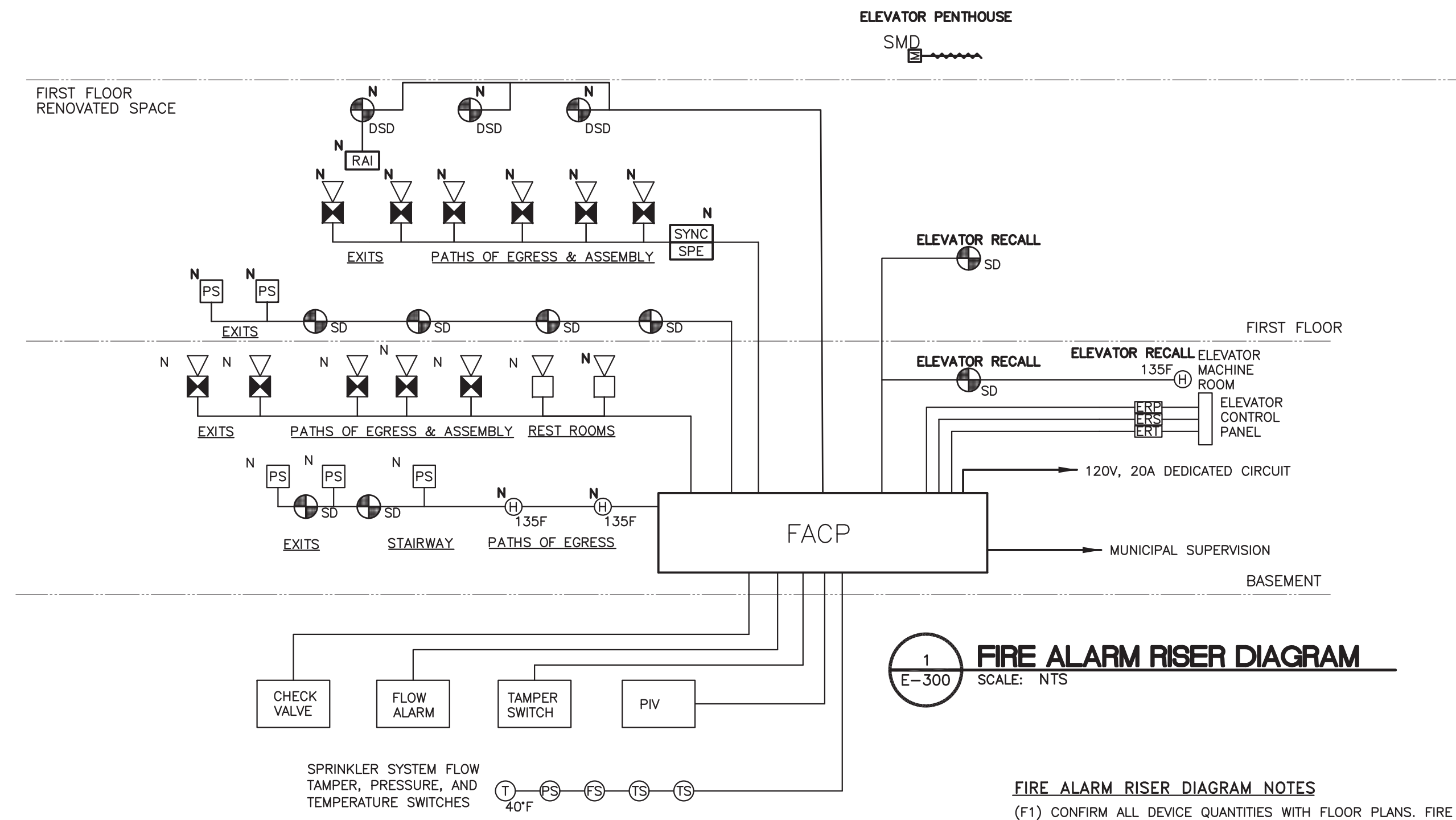
E-300

Project #

1203020

FIRE ALARM NOTES:

- (F1) FIRE ALARM INSTALLATION CONTRACTOR SHALL OBTAIN A COPY OF THE FIRE ALARM REGULATIONS FROM THE ASHLAND, MA FIRE PREVENTION DEPARTMENT, BUREAU OF FIRE PREVENTION. THESE REGULATIONS ARE PART OF THE PROJECT'S CONSTRUCTION DOCUMENTS AND THE CONTRACTOR SHALL REVIEW ALL LOCAL REGULATIONS PRIOR TO SUBMITTING BID. IF THERE IS ANY CONFLICT BETWEEN WHAT IS SHOWN ON THE DRAWINGS AND LOCAL REGULATIONS THEN LOCAL REGULATIONS SHALL TAKE PRIORITY. CONTRACTOR SHALL INFORM ENGINEER IF ANY CONFLICTS ARISE PRIOR TO SUBMITTING BID. CONTRACTOR SHALL PROVIDE FINAL "AS-BUILT" DRAWINGS AT THE END OF THIS PROJECT.
- (F2) NEW AUDIO/STROBES SHALL BE ADA AND NFPA 72 APPROVED. CANDELA RATING AS NOTED.
- (F3) NEW AUDIO/STROBES SHALL HAVE A 1 WATT AUDIO OUTPUT.
- (F4) AUDIO/STROBES SHALL BE MTD. 80" A.F.F. OR 6" BELOW CEILING HEIGHT WHICHEVER IS LESS.
- (F5) SMOKE DETECTORS SHALL BE PHOTOELECTRIC TYPE.
- (F6) THE TESTING OF THE FIRE ALARM SYSTEM SHALL BE INCLUDED IN THE CONTRACT OF THE EC.
- (F7) EC SHALL CONFIRM THAT THE CURRENT DRAW ON THE AUDIO RISER IS NOT EXCEEDED DUE TO THE CURRENT DRAW OF EACH NEW AUDIO/STROBE.
- (F8) ALL WIRING SHALL TERMINATE ON TERMINAL BOARDS IN SPACE FATC.
- (F9) EC SHALL FURNISH, INSTALL, AND WIRE REMOTE ALARM INDICATORS (RAI) AND REMOTE ALARM INDICATORS WITH TEST SWITCHES (RAITS) AS INDICATED ON THE PLANS. EC SHALL FURNISH AND INSTALL ENGRAVED NAMEPLATES FOR EACH RAI AND RAITS. EACH ENGRAVED NAMEPLATE SHALL HAVE THE UNIQUE NAME FOR EACH ROOM OR DEVICE IT IS MONITORING.
- (F10) EC SHALL CONFIRM THAT THERE ARE NO OPEN OR SHORTED FIRE ALARM CIRCUITS PRIOR TO FACP TIE IN AND TEST.
- (F11) ALL WIRING FOR FIRE ALARM DEVICES SHALL BE TWISTED SHIELDED TYPE, #16 AWG SOLID COPPER IN 1/2" RMC OR METAL CLAD CABLE PAINTED RED.
- (F12) ALL AUDIO/STROBES SHALL BE SYNCHRONIZED.
- (F13) CONTRACTOR SHALL PERFORM ALL BATTERY CALCULATIONS FOR THE FIRE ALARM SYSTEM TO MEET ALL NFPA 72 REQUIREMENTS. ANY BATTERY UPGRADES, ADDITIONS OR MODIFICATIONS TO MEET ALL STATE AND LOCAL REQUIREMENTS.
- (F14) CONTRACTOR SHALL PERFORM A SITE SURVEY BEFORE SUBMITTING BID.
- (F15) FINAL FIRE DEPARTMENT ACCEPTANCE TESTING OF THE FIRE ALARM SYSTEM SHALL BE INCLUDED IN THE CONTRACT OF THE CONTRACTOR. TESTING SHALL INCLUDE ALL AUXILIARY INITIATING, CONTROL, AND INDICATING FUNCTIONS AS REQUIRED BY THE AUTHORITY HAVING JURISDICTION.
- (F16) THE CONTRACTOR SHALL PREPARE A CERTIFICATION OF COMPLETION PRIOR TO FIRE DEPARTMENT ACCEPTANCE TEST.
- (F17) DOOR CONTROL:  
THE FIRE ALARM SYSTEM SHALL OVERRIDE ALL SECURITY SYSTEM ELECTRIC DOOR LOCKS WHICH EMERGENCY DOORS OR ARE PRIMARY PATHS OF EGRESS. ALL MAGNETIC DOOR HOLDERS IN THE PREMISES SHALL BE RELEASED.
- (F18) OUTSIDE BEACON & MUNICIPAL FIRE DEPARTMENT CONNECTION:  
A. PROVIDE 200 Cd WP BEACON FOR EACH TENANT SPACE.  
B. PROVIDE TIE AND PROGRAMMING INTO EXISTING WALGREENS FACP.
- (F19) ZONE WIRING:  
A. SHALL BE ADDRESSABLE.  
B. SHALL BE CLASS A FOR INITIATING DEVICES AND NOTIFICATION APPLIANCES.
- (F20) FINAL "AS-BUILT" DRAWINGS AND DOCUMENTATION -  
THE CONTRACTOR SHALL PROVIDE REPRODUCIBLE DRAWINGS DETAILING THE FOLLOWING:  
- SCHEMATICS OF ALL COMPONENT INTERCONNECTIONS  
- ASSEMBLY DRAWINGS OF ALL CONTROL PANELS  
- CONNECTION DIAGRAMS OF TERMINAL OR MODULE CABINETS  
- LOCATION OF END OF THE LINE COMPONENTS  
- MANUALS FOR ALL CONTROL PANELS  
- CUT SHEETS FOR EACH DEVICE  
- BATTERY CALCULATIONS  
- SYSTEMWIDE RISER DIAGRAM WITH INITIATING, INDICATING AND CONTROL DEVICES
- (F21) MINIMUM BATTERY AND WIRING REQUIREMENTS:  
A. BOX AND CONDUIT MARKINGS:  
BOXES, CABINETS OR ENCLOSURES CONTAINING FIRE ALARM COMPONENTS OR TERMINATIONS SHALL BE RED AND CLEARLY MARKED "FIRE ALARM". CONDUIT SHALL BE MARKED WITH A 2" WIDE RED STRIPE EVERY 10' AND WITHIN 3' OF EACH BOX.  
B. TERMINATION'S:  
CABLE TERMINATION'S SHALL BE MADE ON TERMINAL STRIPS WITH EACH WIRE LABELED IN THE FOLLOWING WAY:  
- INPUT OR OUTPUT ZONE  
- ZONE NUMBER  
- LINE VOLTAGE  
- POLARITY  
C. BATTERY CALCULATIONS  
THE CONTRACTOR SHALL SIZE THE AMPERE-HOUR OF THE BATTERIES BASED ON THE FOLLOWING:  
- MANUFACTURERS DATA SHEETS FOR ALL INDICATING AND INITIATING COMPONENTS.  
- MANUFACTURERS DATA SHEETS ON ALL FIRE ALARM SYSTEM ELECTRIC POWER CONSUMING COMPONENTS.  
THE BATTERIES SHALL BE SIZED TO HANDLE THE GREATER OF A OR B, WHICHEVER IS GREATER:  
A. 60 HOURS IN THE STANDBY MODE FOLLOWED BY 5 MINUTES IN THE ALARM MODE  
B. 15 MINUTES IN THE ALARM MODE  
D. FIRE ALARM TERMINAL CABINETS  
CONTRACTOR SHALL PROVIDE A NEMA 4, RED CABINET APPROXIMATELY 24" X 18" X 6" DEEP IN EACH OF THE FOLLOWING LOCATIONS:  
- RECEIVING
- (F22) GUARANTEE:  
A. THE FIRE ALARM SYSTEM SHALL BE FREE FROM DEFECTS IN WORKMANSHIP AND MATERIALS UNDER NORMAL USE AND SERVICE FOR A PERIOD OF ONE YEAR FROM THE DATE OF ACCEPTANCE. ANY EQUIPMENT SHOWN TO BE DEFECTIVE IN WORKMANSHIP OR MATERIAL SHALL BE REPAIRED, REPLACED OR ADJUSTED FREE OF CHARGE. THE DATE OF ACCEPTANCE SHALL BE THE DATE OF FINAL APPROVAL OF THE FIRE DEPARTMENT.
- (F23) FIRE ALARM SYSTEM -  
A. RECOMMENDED FIRE ALARM MANUFACTURERS ARE NOTIFIER, EDWARDS, SIEMENS, FCI.  
B. SYSTEM TYPE -  
THE FIRE ALARM CONTRACTOR SHALL PROVIDE AN ADDRESSABLE FIRE ALARM SYSTEM.
- (F24) CONFIRM ALL DEVICE QUANTITIES WITH FLOOR PLANS. ACTUAL FIRE ALARM DEVICE COUNTS SHALL BE DONE WITH FIRE ALARM FLOOR PLANS. PROVIDE AS PART OF THE DOCUMENTATION AN "AS-BUILT" RISER DIAGRAM AT THE END OF THE PROJECT.



1  
E-300  
SCALE: NTS  
FIRE ALARM RISER DIAGRAM

FIRE ALARM RISER DIAGRAM NOTES

- (F1) CONFIRM ALL DEVICE QUANTITIES WITH FLOOR PLANS. FIRE ALARM RISER DIAGRAM SHALL BE USED AS A SYSTEM INTEGRATION DIAGRAM ONLY. ACTUAL FIRE ALARM DEVICE COUNTS SHALL BE DONE WITH FIRE ALARM FLOOR PLANS. PROVIDE AS PART OF THE DOCUMENTATION AN "AS-BUILT" RISER DIAGRAM AT THE END OF THE PROJECT THAT SHOWS ALL WIRING, DEVICE ADDRESSES (ZONING), BATTERY AMPERE-HOUR AND VOLTAGE DROP CALCULATIONS.
- (F2) GROUNDING CONDUCTOR NOT SHOWN IN FIRE ALARM RISER DIAGRAM FOR REASONS OF CLARITY.

FIRE ALARM SEQUENCE OF OPERATION:

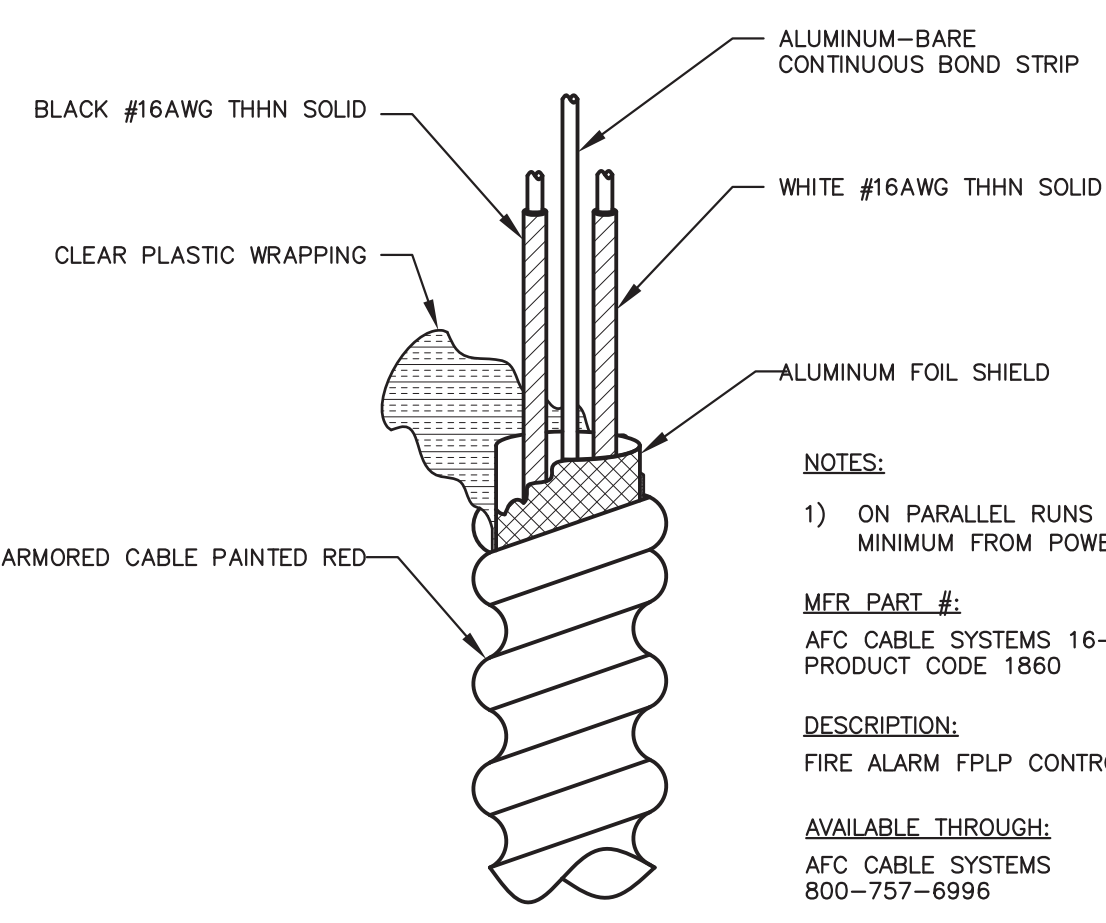
- UPON ACTIVATION OF ANY DOUBLE ACTION PULL STATION, SMOKE DETECTOR, HEAT DETECTOR, DUCT SMOKE DETECTOR, OR SPRINKLER MONITORING DEVICE, SUCH AS FLOW SWITCH:
- SEQ1- UPON ACTIVATION OF FIRE ALARM THE FACP SHALL NOTIFY THE MUNICIPAL FIRE DEPARTMENT THROUGH THE MASTERBOX.
- SEQ2- ACTIVATE THE VOICE/STROBE AND STROBE EVACUATION SYSTEM.
- SEQ3- INDICATE THE ZONE OR DEVICE OF ACTIVATION ON THE FACP AND REMOTE ANNUNCIATOR(S).
- SEQ4- RELEASE ALL FIRE DOORS (MAGNETIC HOLD) CONNECTED TO THE FIRE ALARM SYSTEM.
- SEQ5- RELEASE ALL PATH OF EGRESS ELECTRIC/MAGNETIC SECURITY LOCKS CONNECTED TO THE FIRE ALARM SYSTEM.

SUBSCRIPTS & ABBREVIATIONS

- AFF - ABOVE FINISHED FLOOR  
ACT - ABOVE COUNTER TOP  
Cd - INDICATES THE CANDELA RATING OF THE STROBE  
CO - CARBON MONOXIDE  
CP - CONTROL PANEL  
DACT - DIGITAL ALARM RECEIVER/TRANSMITTER  
EMT - ELECTRICAL METALLIC TUBING  
E - EXISTING  
EC - ELECTRICAL CONTRACTOR  
ER - EXISTING, RELOCATED  
F - FUTURE  
FA - FIRE ALARM  
FACP - FIRE ALARM CONTROL PANEL  
FARA - FIRE ALARM REMOTE ANNUNCIATOR  
FATC - FIRE ALARM TERMINAL CABINET  
FBO - FURNISHED BY OTHERS  
FMC - FLEXIBLE METAL CONDUIT  
FUAC - FURNISHED UNDER ANOTHER CONTRACT  
MC - MECHANICAL CONTRACTOR  
MTD - MOUNTED  
N - NEW DEVICE  
NP - NORMAL POWER  
SPE - SIGNAL POWER EXPANDER  
TBD - TO BE DETERMINED  
UNO - UNLESS NOTED OTHERWISE  
WP - WEATHER PROOF

SYMBOLS

- PS-1 - PULL STATION  
SD - SMOKE DETECTOR, PHOTOELECTRIC TYPE  
H 135F - HEAT DETECTOR, FIXED TEMPERATURE AS INDICATED  
75 Cd 90 DBA - VOICE-STROBE W/CANDELLA & AUDIO LEVEL  
M - MASTERBOX  
PSD - PLENUM SMOKE DETECTOR  
K - FIRE DEPARTMENT KEY VAULT  
RAI - REMOTE ALARM INDICATOR  
RAITS - REMOTE ALARM INDICATOR WITH TEST INDICATOR SWITCH  
200 - 200 CANDELA EXTERIOR STROBE  
SYNC - SYNCHRONIZATION MODULE  
SPE - AUDIO/STROBE SIGNAL POWER EXPANDER  
DSD - DUCT SMOKE DETECTOR  
RM - RADIO MASTERBOX  
SP - SIGNAL POWER?  
DACT - DIGITAL ALARM COMMUNICATOR TRANSMITTER  
SMD - SMOKE DAMPER



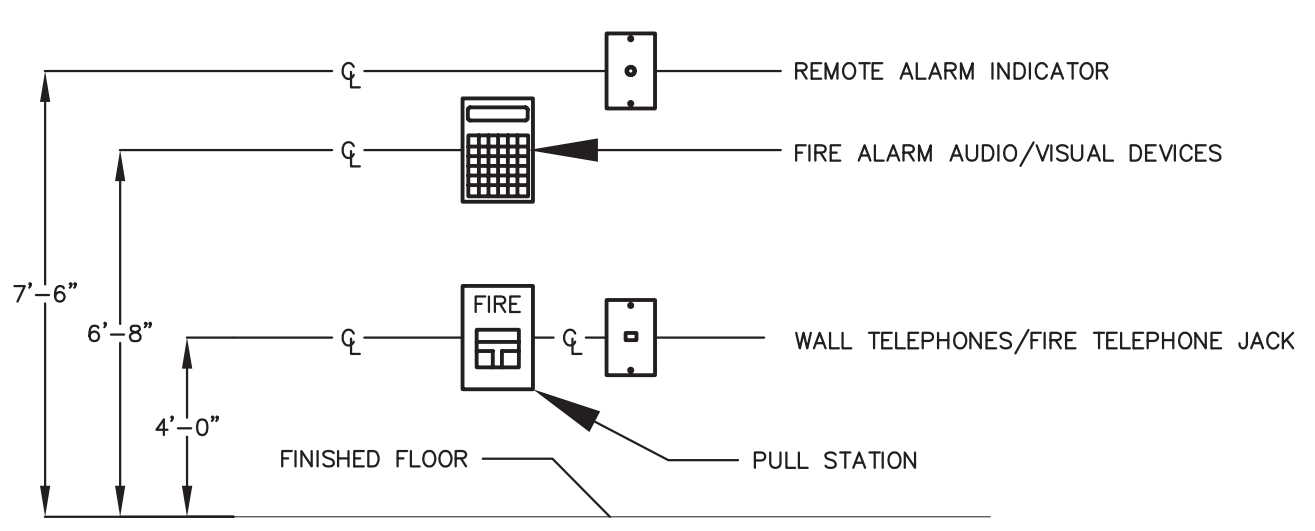
NOTES:  
1) ON PARALLEL RUNS EC SHALL MAINTAIN A 1" CLEARANCE MINIMUM FROM POWER & TEL/DATA CONDUCTORS.

MFR PART #:  
AFC CABLE SYSTEMS 16-2/1 TSP  
PRODUCT CODE 1860

DESCRIPTION:  
FIRE ALARM FPLP CONTROL CABLE

AVAILABLE THROUGH:  
AFC CABLE SYSTEMS  
800-757-6996

1  
E-300  
SCALE: NTS  
TYP FPLP, 16/2 TSP, ARMORED CABLE PAINTED RED



NOTES:  
1. DEVICES SHALL BE INSTALLED ON A COMMON VERTICAL CENTERLINE WHEREVER POSSIBLE.  
2. ALL DEVICES SHALL BE INSTALLED AT MOUNTING HEIGHTS AS INDICATED ON THIS DETAIL, UNO.

2  
E-300  
SCALE: NTS  
WIRING DEVICE, STANDARD MOUNTING HEIGHTS FOR TYPICAL DEVICES

1  
E-300  
SCALE: NTS  
FIRE ALARM - SCHEDULES AND DETAILS

SCHEDULE OF FIRE ALARM DRAWINGS

DWG. #	DESCRIPTION	REV #
<b>FIRE ALARM</b>		
E-300	FIRE ALARM - SCHEDULES AND DETAILS	-
E-301	FIRE ALARM - NEW BASEMENT FLOOR PLAN	-
E-302	FIRE ALARM - NEW FIRST FLOOR PLAN	-

**FIRE ALARM METHODOLOGY, SEQUENCE OF OPERATION & TESTING – LOWER LEVEL FLOOR:**

THE FIRE ALARM SYSTEM IS DESIGNED TO MEET THE FIRE ALARM SIGNALING SYSTEM REQUIREMENTS OF THE MASSACHUSETTS BUILDING CODE. AUXILIARY FUNCTIONS SUCH AS ELEVATOR RECALL, & HVAC ROOFTOP UNIT SHUTDOWN ARE ADDITIONS TO THE AUTOMATIC SMOKE DETECTORS, HEAT DETECTORS, AUXILIARY SWITCHES, MANUAL FIRE ALARM PULL STATIONS, & SUPERVISION REQUIREMENTS:

1. FIRE PROTECTIVE SIGNALING SYSTEM INITIATING MANUAL PULL STATIONS ARE PROVIDED NOT MORE THAN FIVE FEET AWAY FROM AT ALL FLOOR EXITS & MOUNTED 48" ABOVE THE FINISHED FLOOR.
2. FIRE PROTECTIVE SIGNALING SYSTEM NOTIFYING VOICE STROBE COVERAGE IS PER 2002 NFPA 72 PUBLIC MODE. THE AMERICAN WITH DISABILITIES ACT (ADA), & 780 CMR REQUIREMENTS FOR SPACING, CANDELA, & VOICE ALARM AMPLITUDE.
3. AUXILIARY FUNCTION ELEVATOR RECALL IS TIED INTO THE MAIN FIRE ALARM SYSTEM THROUGH THE ELEVATOR LOBBY SMOKE DETECTORS. UPON A ELEVATOR LOBBY SMOKE DETECTOR INITIATION, ELEVATOR MACHINE ROOM SMOKE DETECTOR & ELEVATOR LOBBY SMOKE DETECTORS, THE FIRE ALARM SYSTEM SHALL RECALL THE ELEVATOR TO AN ALTERNATE SAFE FLOOR.
4. AUXILIARY FUNCTION HVAC ROOFTOP UNIT SHUTDOWN IS TIED INTO THE MAIN FIRE ALARM SYSTEM THROUGH THE FIRST FLOOR SPRINKLER CONTROL VALVE FLOW SWITCH OR INITIATION OF ITS SUPPLY AIR DUCT SMOKE DETECTOR.
5. AUXILIARY FUNCTION SPRINKLER SYSTEM ALARMS, FLOW SWITCHES, & TAMPER SWITCHES MONITORING SHALL BE TIED INTO THE MAIN FIRE ALARM SYSTEM.
6. ANY AUXILIARY FUNCTION INITIATING DEVICE OR MANUAL PULL STATION SHALL ACTIVATE THE FIRE ALARM SYSTEM TO PERFORM ALL THE NECESSARY AUXILIARY CONTROL FUNCTIONS & ACTIVATE THE MASTERBOX TO COMMUNICATE THE FIRE ALARM TO THE CAMBRIDGE FIRE DEPARTMENT. THE FIRE ALARM SYSTEM SHALL ANNUNCIATE ALL INITIATING FIRE ALARM DEVICES & ANNUNCIATE ON THE FIRST FLOOR MAIN STREET ENTRANCE AND REMOTE ALARM ANNUNCIATOR.
7. WHEN THE FIRE ALARM SYSTEM IS ACTIVATED, ALL VOICE STROBES SHALL IN SYNCHRONIZED MANNER ALARM FOR BUILDING EVACUATION AS DESCRIBED PER 780 CMR & THE 2002 NFPA 72.
8. TESTING OF ALL PROTECTIVE SIGNALING SYSTEM & AUXILIARY FUNCTIONS THAT CONSTITUTE THE FIRE ALARM SYSTEM SHALL BE COORDINATED WITH THE FIRE DEPARTMENT. ALL 2002 NFPA 72 TESTING REQUIREMENTS, ALONG WITH THOSE OF THE AUTHORITY HAVING JURISDICTION SHALL BE MET. CONTRACTOR SHALL COORDINATE FIRE ALARM TESTING WITH ALL OTHER PROJECT CONTRACTORS TO CONFIRM ALL AUXILIARY FUNCTIONS AS DEFINED IN THIS NARRATIVE REPORT FOR THE FIRST FLOOR.

**FIRE ALARM NOTES:**

- F1) ALL VOICE/STROBES SHALL BE ADA APPROVED & SYNCHRONIZED. CANDELA RATING AS NOTED.
- F2) VOICE/STROBES SHALL BE MOUNTED 80" A.F.F OR 6" BELOW CEILING.
- F3) ELEVATOR LOBBY SMOKE DETECTORS SHALL BE PHOTOELECTRIC TYPE.
- F4) THE TESTING OF THE FIRE ALARM SYSTEM SHALL BE INCLUDED IN THE CONTRACT OF THE EC. THE EC SHALL BEAR THE COST OF ANY FEES FROM THE FIRE DEPARTMENT & FOR ANY OTHER AUTHORITY HAVING JURISDICTION MANDATORY FIRE ALARM TESTING & COMMISSIONING.
- F5) EC SHALL PROVIDE SIGNAL POWER EXPANDERS IF THE QUANTITY OF VOICE STROBES EXCEED THE FIRE ALARM SYSTEMS CAPABILITY. EC SHALL PLAN PRIMARY & BATTERY BACKUP POWER & ALL ASSOCIATED WIRING TO ACCOMPLISH THIS PORTION OF THE WORK.
- F6) ALL DEVICES SHALL BE LISTED FOR USE WITH THE BASE BUILDING FIRE ALARM SYSTEM.
- F7) EC SHALL PROVIDE NAME PLATES FOR REMOTE ALARM INDICATORS WITH TEST SWITCH FOR THE CONCEALED FIRE ALARM INDICATING DEVICE WHICH IT IS MONITORING. RAITS ARE NOT SHOWN ON FLOOR PLANS, BUT EC IS RESPONSIBLE FOR RAITS OF ALL CONCEALED FA INDICATING DEVICES.
- F8) ALL CONCEALED SMOKE/HEAT DETECTORS SHALL HAVE CORRESPONDING REMOTE ALARM ANNUNCIATORS.
- F9) EC SHALL PROVIDE A FIRE ALARM RELEASE ON ALL BUILDINGS EGRESS DOOR MAGNETIC LOCKS. EC IS RESPONSIBLE FOR TESTING.
- F10) ALL APPLICABLE NOTES & DETAILS ON ALL OTHER FA SHEETS SHALL ALSO APPLY TO THIS SHEET.
- F11) ASSEMBLY SPACE SMOKE DETECTORS HAS BEEN PROVIDED WITH A ZONE DISABLE SWITCH TO PREVENT NUISANCE ALARMS DURING RELIGIOUS ACTIVITIES; A TROUBLE SIGNAL WILL CONTINUOUSLY ANNUNCIATE UNTIL THE SMOKE DETECTORS HAVE BEEN ENABLED IN THIS ZONE.
- F13) FIRE ALARM & ELEVATOR CONTROL CIRCUITS ARE TO SUPPORT ELEVATOR RECALL PER 2002 NFPA 72. ELEVATOR RECALL SHALL BE INITIATED FROM ELEVATOR LOBBY SMOKE DETECTORS &/OR ELEVATOR MACHINE ROOM SMOKE DETECTOR.
  1. THERE WILL BE NO SPRINKLER IN MACHINE ROOM, ELEVATOR PIT, OR ELEVATOR HOISTWAY PER MA BUILDING BOARD MORATORIUM. THEREFORE, AS PER NFPA 72, NO SMOKE OR HEAT DETECTORS SHALL BE LOCATED IN THE ELEVATOR HOISTWAY OR ELEVATOR PIT BECAUSE THOSE AREAS ARE NOT SPRINKLERED.
  2. THERE WILL BE NO ELECTRICAL SHUNT TRIP PER MA BUILDING BOARD MORATORIUM.
  3. THERE IS AN AUXILIARY CONTACT ON THE 200A FUSED DISCONNECT FEEDING THE ELEVATOR CONTROL PANEL AS PART OF BATTERY LOWERING SAFETY FEATURE.
  4. PER 2002 NFPA 72 YOU WILL BE GIVEN THREE SIGNALS FROM THE FIRE ALARM CONTROL PANEL (FACP), THESE THREE SIGNALS WILL BE GENERATED BY THE ELEVATOR MACHINE ROOM SMOKE DETECTOR AND ELEVATOR LOBBY SMOKE DETECTORS.
    - A. IF ELEVATOR LOBBY SMOKE DETECTOR ACTIVATES OTHER THAN THE DESIGNATED SAFE FLOOR ELEVATOR LOBBY SMOKE DETECTOR THEN THE FACP WILL SEND OUT AN ELEVATOR RECALL SECONDARY (ERS) SIGNAL TAKING THE ELEVATOR TO A SAFE DESIGNATED FLOOR TO BE DETERMINED BY ELEVATOR PROVIDER, FOR EXAMPLE, THE FIRST FLOOR, AS THE DESIGNATED SAFE FLOOR.
    - B. IF THE DESIGNATED SAFE FLOOR ELEVATOR LOBBY SMOKE DETECTOR ACTIVATES, THEN THE FACP WILL SEND OUT AN ELEVATOR RECALL PRIMARY (ERP) SIGNAL TAKING THE ELEVATOR TO A SAFE FLOOR OTHER THAN THE DESIGNATED SAFE FLOOR INITIATED BY THE ERS SIGNAL.
 IF THE ELEVATOR MACHINE ROOM SMOKE DETECTOR ACTIVATES, THEN AN ELEVATOR RECALL TERTIARY (ERT) SIGNAL IS SENT FROM THE FACP TO THE ELEVATOR CONTROL PANEL FOR THE ELEVATOR TO GO TO A SAFE FLOOR THAT MAY BE AN ALTERNATE FLOOR THAN THOSE DESIGNATED BY THE ERP & ERS SIGNALS.



**1 FIRE ALARM - NEW LOWER LEVEL FLOOR PLAN**  
E-301 SCALE: 1/8"=1'-0"

**SRI LAKSHMI TEMPLE  
NEW ADDITION**

117 WAVERLY STREET  
ASHLAND, MA 01721



111 PERKINS STREET SUITE 215  
BOSTON MA 02130  
(617) 522-0718



1 MOUNT VERNON STREET  
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Building Systems & Commissioning Engineers  
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30 Turnpike Road, Suite #1, Southborough, MA 01772  
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Issue	Date
PERMIT SET ( CORE & SHELL)	10.15.2014

Stamp

Sheet Title

**FIRE ALARM - NEW LOWER  
LEVEL FLOOR PLAN**

Scale AS NOTED	Drawn by TJL	Verified by JPK
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Sheet #

**E-301**

Project #

1203020

SRI LAKSHMI TEMPLE  
NEW ADDITION

117 WAVERLY STREET  
ASHLAND, MA 01721

Joyce Design Partnership  
Architecture • Interior Design

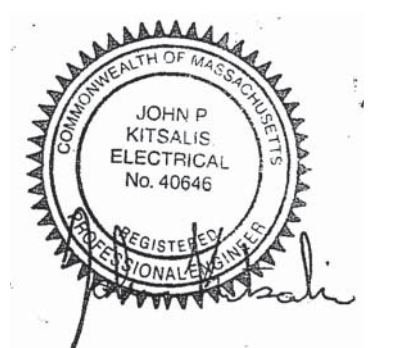
111 PERKINS STREET SUITE 215  
BOSTON MA 02130  
(617) 522-0718

ABERJONA ENGINEERING INC

1 MOUNT VERNON STREET  
WINCHESTER, MA 01890  
781-729-6188

New England  
Engineering

Building Systems & Commissioning Engineers  
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30 Turnpike Road, Suite #1, Southborough, MA 01772  
Tel: (508) 485-4633 Fax: (508) 485-1830



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Sheet Title

**FIRE ALARM - NEW MAIN  
LEVEL FLOOR PLAN**

Scale AS NOTED Drawn by RYM Verified by JPK

Sheet #

**E-302**

Project #

1203020

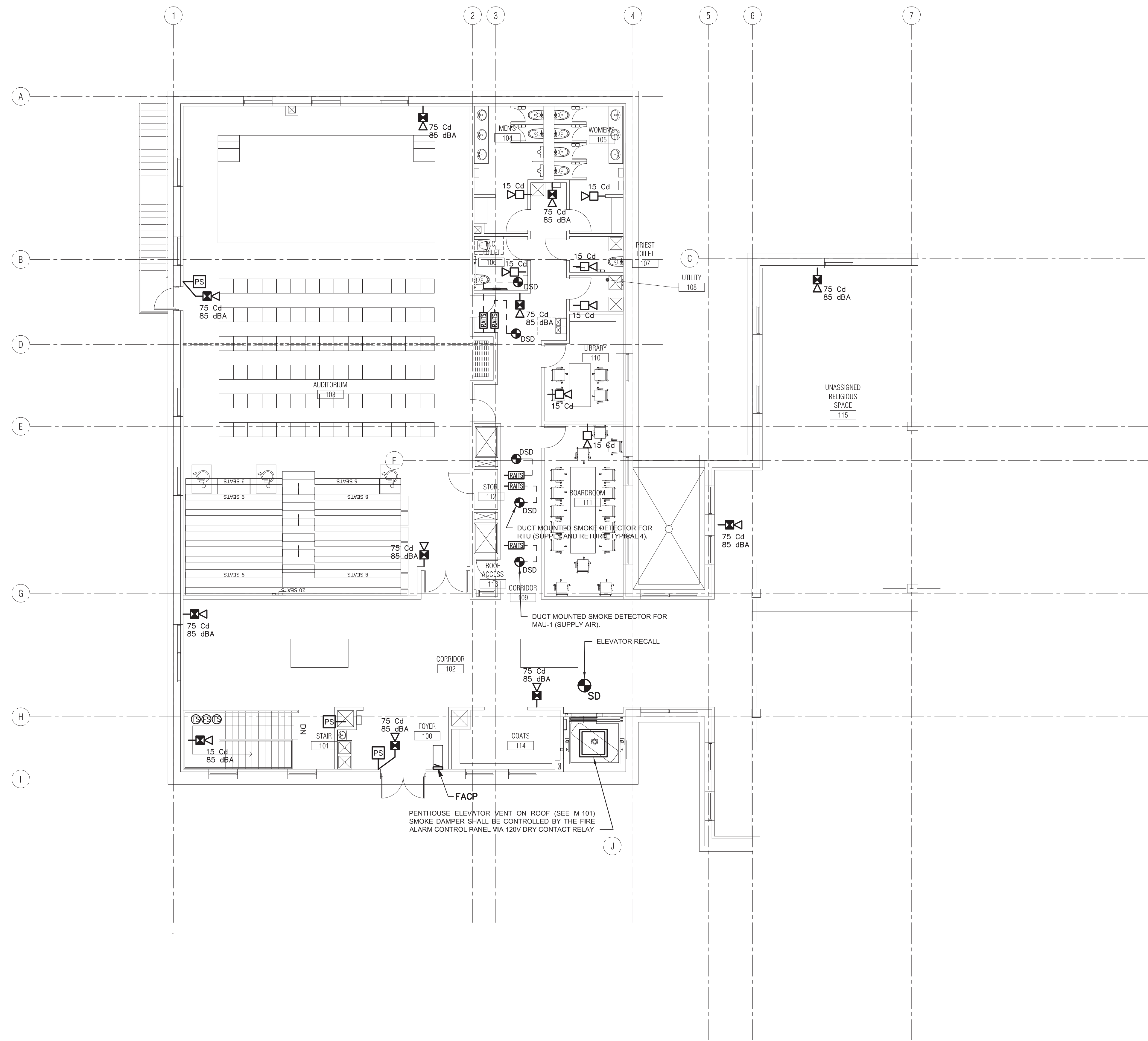
**FIRE ALARM METHODOLOGY, SEQUENCE OF OPERATION & TESTING – FIRST FLOOR:**

THE FIRE ALARM SYSTEM IS DESIGNED TO MEET THE FIRE ALARM SIGNALING SYSTEM REQUIREMENTS OF THE MASSACHUSETTS BUILDING CODE. AUXILIARY FUNCTIONS SUCH AS ELEVATOR RECALL, & HVAC ROOFTOP UNIT SHUTDOWN ARE ADDITIONS TO THE AUTOMATIC SMOKE DETECTORS, HEAT DETECTORS, AUXILIARY SWITCHES, MANUAL FIRE ALARM PULL STATIONS, & SUPERVISION REQUIREMENTS:

1. FIRE PROTECTIVE SIGNALING SYSTEM INITIATING MANUAL PULL STATIONS ARE PROVIDED NOT MORE THAN FIVE FEET AWAY FROM AT ALL FLOOR EXITS & MOUNTED 48" ABOVE THE FINISHED FLOOR.
2. FIRE PROTECTIVE SIGNALING SYSTEM NOTIFYING VOICE STROBE COVERAGE IS PER 2002 NFPA 72 PUBLIC MODE. THE AMERICAN WITH DISABILITIES ACT (ADA), & 780 CMR REQUIREMENTS FOR SPACING, CANDELA, & VOICE ALARM AMPLITUDE.
3. AUXILIARY FUNCTION ELEVATOR RECALL IS TIED INTO THE MAIN FIRE ALARM SYSTEM THROUGH THE ELEVATOR LOBBY SMOKE DETECTORS. UPON A ELEVATOR LOBBY SMOKE DETECTOR INITIATION, ELEVATOR MACHINE ROOM SMOKE DETECTOR & ELEVATOR LOBBY SMOKE DETECTORS, THE FIRE ALARM SYSTEM SHALL RECALL THE ELEVATOR TO AN ALTERNATE SAFE FLOOR.
4. AUXILIARY FUNCTION HVAC ROOFTOP UNIT SHUTDOWN IS TIED INTO THE MAIN FIRE ALARM SYSTEM THROUGH THE FIRST FLOOR SPRINKLER CONTROL VALVE FLOW SWITCH OR INITIATION OF ITS SUPPLY AIR DUCT SMOKE DETECTOR.
5. AUXILIARY FUNCTION SPRINKLER SYSTEM ALARMS, FLOW SWITCHES, & TAMPER SWITCHES MONITORING SHALL BE TIED INTO THE MAIN FIRE ALARM SYSTEM.
6. ANY AUXILIARY FUNCTION INITIATING DEVICE OR MANUAL PULL STATION SHALL ACTIVATE THE FIRE ALARM SYSTEM TO PERFORM ALL THE NECESSARY AUXILIARY CONTROL FUNCTIONS & ACTIVATE THE MASTERBOX TO COMMUNICATE THE FIRE ALARM TO THE CAMBRIDGE FIRE DEPARTMENT. THE FIRE ALARM SYSTEM SHALL ANNUNCIATE ALL INITIATING FIRE ALARM DEVICES & ANNUNCIATE ON THE FIRST FLOOR MAIN STREET ENTRANCE AND REMOTE ALARM ANNUNCIATOR.
7. WHEN THE FIRE ALARM SYSTEM IS ACTIVATED, ALL VOICE STROBES SHALL IN SYNCHRONIZED MANNER ALARM FOR BUILDING EVACUATION AS DESCRIBED PER 780 CMR & THE 2002 NFPA 72.
8. TESTING OF ALL PROTECTIVE SIGNALING SYSTEM & AUXILIARY FUNCTIONS THAT CONSTITUTE THE FIRE ALARM SYSTEM SHALL BE COORDINATED WITH THE FIRE DEPARTMENT. ALL 2002 NFPA 72 TESTING REQUIREMENTS, ALONG WITH THOSE OF THE AUTHORITY HAVING JURISDICTION SHALL BE MET. CONTRACTOR SHALL COORDINATE FIRE ALARM TESTING WITH ALL OTHER PROJECT CONTRACTORS TO CONFIRM ALL AUXILIARY FUNCTIONS AS DEFINED IN THIS NARRATIVE REPORT FOR THE FIRST FLOOR.

**FIRE ALARM NOTES:**

- F1) ALL VOICE/STROBES SHALL BE ADA APPROVED & SYNCHRONIZED. CANDELA RATING AS NOTED.
- F2) VOICE/STROBES SHALL BE MOUNTED 80" A.F.F OR 6" BELOW CEILING.
- F3) ELEVATOR LOBBY SMOKE DETECTORS SHALL BE PHOTOELECTRIC TYPE.
- F4) THE TESTING OF THE FIRE ALARM SYSTEM SHALL BE INCLUDED IN THE CONTRACT OF THE EC. THE EC SHALL BEAR THE COST OF ANY FEES FROM THE FIRE DEPARTMENT & FOR ANY OTHER AUTHORITY HAVING JURISDICTION MANDATORY FIRE ALARM TESTING & COMMISSIONING.
- F5) EC SHALL PROVIDE SIGNAL POWER EXPANDERS IF THE QUANTITY OF VOICE STROBES EXCEED THE FIRE ALARM SYSTEMS CAPABILITY. EC SHALL PLAN PRIMARY & BATTERY BACKUP POWER & ALL ASSOCIATED WIRING TO ACCOMPLISH THIS PORTION OF THE WORK.
- F6) ALL DEVICES SHALL BE LISTED FOR USE WITH THE BASE BUILDING FIRE ALARM SYSTEM.
- F7) EC SHALL PROVIDE NAME PLATES FOR REMOTE ALARM INDICATORS WITH TEST SWITCH FOR THE CONCEALED FIRE ALARM INDICATING DEVICE WHICH IT IS MONITORING. RAITS ARE NOT SHOWN ON FLOOR PLANS, BUT EC IS RESPONSIBLE FOR RAITS OF ALL CONCEALED FA INDICATING DEVICES.
- F8) ALL CONCEALED SMOKE/HEAT DETECTORS SHALL HAVE CORRESPONDING REMOTE ALARM ANNUNCIATORS.
- F9) EC SHALL PROVIDE A FIRE ALARM RELEASE ON ALL BUILDINGS EGRESS DOOR MAGNETIC LOCKS. EC IS RESPONSIBLE FOR TESTING.
- F10) ALL APPLICABLE NOTES & DETAILS ON ALL OTHER FA SHEETS SHALL ALSO APPLY TO THIS SHEET.
- F11) ASSEMBLY SPACE SMOKE DETECTORS HAS BEEN PROVIDED WITH A ZONE DISABLE SWITCH TO PREVENT NUISANCE ALARMS DURING RELIGIOUS ACTIVITIES; A TROUBLE SIGNAL WILL CONTINUOUSLY ANNUNCIATE UNTIL THE SMOKE DETECTORS HAVE BEEN ENABLED IN THIS ZONE.



**1 FIRE ALARM - NEW UPPER LEVEL FLOOR PLAN**  
302 SCALE: 1/8"=1'-0"

