



**CODE REFERENCE**

- ALL INSTALLATION AND TESTS SHALL COMPLY WITH BUT NOT LIMITED TO THE FOLLOWING CODES.
- 2016 BUILDING STANDARDS ADMINISTRATIVE CODE PART 1, TITLE 24 C.C.A.
- 2016 CALIFORNIA BUILDING CODE (CBC) PART 2, TITLE 24, C.C.A.
- 2016 CALIFORNIA ELECTRICAL CODE (CEC) PART 3, TITLE 24, C.C.A.
- 2016 CALIFORNIA MECHANICAL CODE (CMC) PART 4, TITLE 24, C.C.A.
- 2016 CALIFORNIA PLUMBING CODE (CPC) PART 5, TITLE 24, C.C.A.
- 2016 CALIFORNIA ENERGY CODE PART 6, TITLE 24, C.C.A.
- 2016 CALIFORNIA FIRE CODE PART 7, TITLE 24, C.C.A.
- 2016 CALIFORNIA REFERENCED STANDARDS PART 12, TITLE 24, C.C.A.
- 2016 AMENDED AQMD RULE 114, RULES AND TESTING METHODS SPECIFIED THEREIN, NPFA 13A-11

**ABBREVIATION / DEFINITION**

ABBREV.	DEFINITION	ABBREV.	DEFINITION	ABBREV.	DEFINITION
ABV	ABOVE	GALV	GALVANIZED	THRU	THROUGH
AP	ACCESS PANEL	HSP	HOUSE KEEPING PAD	TYP	TYPICAL
ARCH	ARCHITECT	HSP	HORSEPOWER	U.L.R.	UP THRU ROOF
BFP	BKGDLOW PREVENTER	MAX	MAXIMUM	U.D.	UNDERCUT DOOR
BEL	BELOW	MIN	MINIMUM	VTR	VENT THROUGH ROOF
BLDG	BUILDING	MECH	MECHANICAL	VVT	VARIABLE VOLUME AND TEMPERATURE OF FLOW
CRH	CUBIC FEET PER HOUR	MEOR	MECHANICAL ENGINEER OF RECORD	WF	WITH
CM	CUBIC FEET PER MINUTE	MTD	MOUNTED	V.D.	VOLUME DAMPER
CLG	CEILING	N/A	NOT AVAILABLE		
CONC	CONCRETE	NC	NORMALLY CLOSED		
CONN.	CONNECTION	NB	NOT IN CONTACT		
CONT	CONTINUATION	NO	NORMALLY OPEN		
CU	COPPER	ORNG	ORANGE		
DET	DETAIL	P	PLUMBING		
DA	DIAMETER	POC	POINT OF CONNECTION		
DN	DOWN	S.A.	SUPPLY AIR		
DWG	DRAWING	SHT	SHEET		
(F)	FUTURE	SOV	SHUT OFF VALVE		
E.A.	EXHAUST AIR	SSG	SIDE SUPPLY GRILLE		
EXBT (E)	EXHBITING	SRG	SIDE RETURN GRILLE		
FF	FRESH FLOOR	SS	STAINLESS STEEL		
FLR	FLOOR	TEMP	TEMPERATURE		
GFM	GALLONS PER MINUTE				

**SYMBOL/ABBREVIATION/DEFINITION**

SYMBOL	ABBREV.	DEFINITION	SYMBOL	ABBREV.	DEFINITION	SYMBOL	ABBREV.	DEFINITION
	DETAL	TOP - ID NUMBER REFERENCE - BOTTOM - SHEET NUMBER		DI	DIGITAL INPUT		FI	FLOW INDICATING CONTROLLER
	SECTION	TOP - ID NUMBER REFERENCE - BOTTOM - SHEET NUMBER		DO	DIGITAL OUTPUT		FS	FLOW SWITCH
	L	DOOR LOUVER		AI	ANALOG INPUT		FT	FLOW TRANSMITTER
	U	DOOR UNDERCUT		AO	ANALOG OUTPUT		TCV	TEMPERATURE CONTROL VALVE
	T	THERMOSTAT			INSTRUMENT MOUNTED LOCALLY		TC	TEMPERATURE CONTROLLER
	H	HUMIDISTAT			INSTRUMENT LOCATED FRONT OF PANEL		TE	TEMPERATURE ELEMENT
	S	CO2 SENSOR			INSTRUMENT MOUNTED REAR OF PANEL		TI	TEMPERATURE INDICATOR
	SD	SMOKE DETECTOR			ELECTRICAL SIGNAL		TEC	TEMPERATURE INDICATING CONTROLLER
		HUMIDIFIER WITH DISPERSION TUBES		MTR	MOTOR		TS	TEMPERATURE SWITCH
	GV	GATE VALVE		INTER	INTERLOCK		TT	TEMPERATURE TRANSMITTER
	GLV	GLOBE VALVE		IA	INSTRUMENT AIR SUPPLY		PI	PRESSURE INDICATOR
	CV	CHECK VALVE		ABV	AUTOMATIC BUTTERFLY VALVE		PC	PRESSURE CONTROLLER
	STR	STRAINER		SV	SOLENOID VALVE		PCV	PRESSURE CONTROL VALVE
	BV	BUTTERFLY VALVE		HX	HEAT EXCHANGER		PE	PRESSURE ELEMENT
	BLV	BALL VALVE		FEW	FLOW ELEMENT (WATER)		PS	PRESSURE SWITCH
	U	UNION		FEA	FLOW ELEMENT (AIR)		PT	PRESSURE TRANSMITTER
	RED	CONCENTRIC REDUCER		HDA	HANDOFF/AUTOMATIC SWITCH		PIC	PRESSURE INDICATING CONTROLLER
	IA	INSTRUMENT AIR		FC	FLOW CONTROLLER		PSV	PRESSURE SUSTAINING VALVE
	DCW	DOMESTIC COLD WATER		FCV	FLOW CONTROL VALVE		PRV	PRESSURE REDUCING VALVE
	CD	CONDENSATE DRAIN		FCD	FLOW CONTROL DAMPER		BDD	BACK DRAFT DAMPER
		PIPE RISE		RAD	RETURN AIR DAMPER		FAD	FRESH AIR DAMPER
		PIPE DROP		SAD	SUPPLY AIR DAMPER		FLCD	FLOW CONTROL DAMPER
		PITCH OF PIPE RISE		DPH	DIFFERENTIAL PRESSURE INDICATOR		PCD	PRESSURE CONTROL DAMPER
		PITCH OF PIPE DROP		DPS	DIFFERENTIAL PRESSURE SWITCH		RAD	RETURN AIR DAMPER
		UNION		DPT	DIFFERENTIAL PRESSURE TRANSMITTER		SAD	SUPPLY AIR DAMPER
		DEAD END, SCREWED CAP						
		FLEXIBLE PIPE CONNECTION						
		VENT OR ATMOSPHERIC RELIEF						
		FUTURE						
		NEW						
	CD	SUPPLY GRILLE						
	RD	RETURN GRILLE						
	EG	EXHAUST GRILLE						
	FD	FIRE DAMPER						
	CSPD	COMBINATION SMOKE/FIRE DAMPER						

**Sheet Index**

SHEET #	SHEET NAME
M001	GENERAL NOTES, SHEET INDEX
M002	SCHEDULES
ME101	PLAN - REMODEL
ME102	PLAN - MEZZANINE
ME103	PLAN - ROOF
ME104	ENLARGED PLANS
ME501	DETAILS
ME502	DETAILS
ME503	DETAILS
ME504	DETAILS
ME501	CONTROLS AND PIPING

**GENERAL NOTES**

- PROVIDE EQUIPMENT WITH A PERMANENT LABEL AFFIXED TO THE EQUIPMENT WHICH WILL EITHER CLEARLY INDICATE THE ROUTINE MAINTENANCE ACTIONS WHICH MUST BE PERFORMED TO MAINTAIN THE EQUIPMENT IN EFFICIENT, OR REFER TO A MAINTENANCE MANUAL IN THE ENGINEERING DEPARTMENT.
- DAMPER MANUFACTURERS LABEL SHALL INDICATE MAXIMUM LEAKAGE OF 3%.
- ALL DUCT INSULATION AND WRAPPING SHALL HAVE A MOLDED HEMMED AND EROSION RESISTANT FACE THAT MEETS THE REQUIREMENTS OF UL954, STANDARD NO. 1410.
- DRAWINGS SHOW PIPE AND DUCTWORK DIAGRAMMATICALLY, ADHERE TO DRAWINGS AS CLOSELY AS POSSIBLE IN LAYOUT WORK. VARY RUN OR PIPING, RUN AND SHAPE OF DUCTWORK AND MAKE OFFSETS DURING PROGRESS OF WORK AS REQUIRED TO MEET STRUCTURAL AND OTHER INTERFERENCES AS APPROVED BY THE ARCHITECT. INSTALL PIPING AND DUCTWORK IN PLUMBED SPACES UNLESSER POSSIBLE. RUN EXPOSED. PIPING AND DUCTWORK PARALLEL TO GLAZ AT RIGHT ANGLE TO BUILDING WALLS, KEEP HORIZONTAL LINES AS CLOSE TO BOTTOM OF STRUCTURE AS POSSIBLE. CONFORM TO CEILING HEIGHTS ESTABLISHED ON ARCHITECTURAL DRAWINGS.
- PROVIDE MANUAL VOLUME DAMPERS AT ALL DUCT BRANCHES FROM MAIN SUPPLY AIR DUCTS TO EACH DIFFUSERS AND AIR GRILLES.
- PROVIDE TURNING VANES IN ALL SQUARE ELBOWS.
- HOLD VERIFY THE LOCATION OF ANVALL, RATED WALLS, FLOORS, ROOFS, PARTITIONS AND CEILING TO DETERMINE THE EXACT NUMBER AND LOCATION OF COMBINATION SMOKE/FIRE DAMPERS THAT MAY BE REQUIRED.
- SEE ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR BUILDING LOCATIONS, DIMENSIONS AND GRADE ELEVATIONS.
- THESE DRAWINGS AND SPECIFICATIONS DO NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY.
- SYMBOLS AND ABBREVIATIONS ARE SHOWN FOR REFERENCE. NOT ALL SYMBOLS AND ABBREVIATIONS MAY BE USED.
- ASBESTOS OR HAZARDOUS WASTE: IT IS UNDERSTOOD AND AGREED THAT THIS CONTRACT DOES NOT CONTEMPLATE THE HANDLING OF ASBESTOS OR ANY HAZARDOUS WASTE MATERIAL. IF ASBESTOS OR ANY HAZARDOUS WASTE MATERIAL IS ENCOUNTERED, NOTIFY THE OWNER'S REPRESENTATIVE IMMEDIATELY, DO NOT DISTURB, HANDLE, OR ATTEMPT TO REMOVE.
- ALL ITEMS ARE EXISTING UNLESS OTHERWISE INDICATED, ITEMS TO BE REPLACED WILL BE NEW.
- ALL ITEMS WITH HATCH LINES SHALL BE REMOVED.
- PROVIDE THERMOSTAT WITH A PERMANENT LABEL.
- PROVIDE PHENOLIC EQUIPMENT TAGS FOR THE FAN COIL UNIT (FCU), PLACE ON CEILING GRID WITH NUMBERING THAT MATCHES THE FCU NUMBERING FOR EASY IDENTIFICATION FROM FLOOR LEVEL.
- REMOVE AND REPLACE PORTION OF CEILING TO FACILITATE REMOVAL AND INSTALLATION OF FCUS. REFER TO ARCHITECTURAL SHEETS FOR INSTALLATION DETAILS.
- FLEXIBLE DUCT CONNECTION TO DIFFUSERS AND REGISTERS TO BE A MINIMUM OF 4" AND A MAXIMUM OF 12" LONG. COVER ALL Joints, SEAMS, CONNECTIONS, ETC. WITH F WIRE WATER BASED DUCT SEALANT (DP 1000, PRODUCT OF DESIGN POLYMERIC). FLEXIBLE DUCTS SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:  
FLEXIBLE DUCTS SHALL CONSIST OF AN EXTERIOR REINFORCED LAMINATED VAPOR BARRIER, 1/2" THICK FIBERGLASS INSULATION (R = 25 AT 70°F), ENCAPSULATED SPRING STEEL WIRE HELIX AND IMPERVIOUS, SMOOTH NON-PERFORATED INTERIOR VINYL LINER. INDIVIDUAL LENGTHS OF FLEXIBLE DUCTS SHALL CONTAIN FACTORY FABRICATED STEEL CONNECTION COLLARS.  
SUPPORT FLEXIBLE DUCTS AT OR NEAR MID-LENGTH WITH 2" WIDE 20 GAUGE STEEL HANGER COLLAR ATTACHED TO THE STRUCTURE WITH AN APPROVED DUCT HANGER. INSTALLATION SHALL MINIMIZE SHARP RADIUS TURNS OR OFFSETS, THE MAXIMUM LENGTH CONNECTING TO TERMINAL OUTLETS SHALL BE 7'.
- PROVIDE ADEQUATE OFFSETS, TRANSITIONS, RISER, AND DROPS TO MEET AUTOMATIC SPRINKLERS, PLUMBING LINES, CONDUT, AND OTHER DUCTS.
- LOCATE ALL THERMOSTATS 4'-0" ABOVE FINISHED FLOOR.
- INCREASE ALL ROUND DUCTS ONE SIZE AT POINT OF CONNECTION TO MAIN DUCT.
- ALL DUCT INSULATION, FLEX-DUCT, PIPE INSULATION, SHALL HAVE A FLAME SPREAD OF NOT MORE THAN 25 AND SMOKE DEVELOPED OF NOT MORE THAN 75.

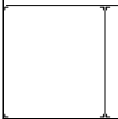


**THE PENN AIR GROUP**

THE LEADER IN HVAC ENERGY SERVICES

5841 LAKESHORE DR.  
CYPRESS, CA 90630

Architect / Engineer Of Record



**ISSUED BLOCKS / HISTORY LOG**

No.	Issued	Date
1	PLAN CHECK SET	04/17/18
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CONSULTANT'S LOGS OR KEY PLAN

Facility  
**5841 LAKESHORE DR.**  
**CYPRESS, CA 90630**

Project

Sheet Title  
**GENERAL NOTES, SHEET INDEX**

Agency Application Number

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2007-001

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Scale

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**M001**



Multi V Indoor Unit Equipment Schedule																						
Equip. ID	Mark	Equip. ID	Model Number	Type	Quantity	Nominal Capacity (BTU/h)			Corrected Capacity (BTU/h)			Entering (Return) Air Temperature (°F)			Fan Airflow (CFM)	Piping Connections (in.)		Power				Weight
						Total Cooling	Sensible Cooling	Heating	Total Cooling	Sensible Cooling	Heating	Cooling DB	Cooling WB	Heating DB		Liquid	Gas	Volts	Phase	Hertz	RLA	
CU-1	-	SFC-1	ARNJ243BGA4	DUCT_HIGH_STATIC	1	24200	18900	27300	24208	18902	23960	81	67	68	671/537/487	3/8	5/8	208-230V	1Ph	60Hz	2.65	83.8
CU-1	-	SFC-2	ARNJ483BR4	DUCT_HIGH_STATIC	1	48100	35617	51200	48115	36104	44935	81	67	68	1,582/1,434/1,176	3/8	5/8	220-240V	1Ph	60Hz	2.3	112
CU-1	-	SFC-7	ARNJ543BR4	DUCT_HIGH_STATIC	1	54000	40528	61400	54017	42105	53887	81	67	68	1,801/1,582/1,434	3/8	5/8	208-230V	1Ph	60Hz	3.5	112
CU-1	-	SFC-3	ARNJ283BR4	DUCT_HIGH_STATIC	1	28000	22100	31500	28009	22102	27646	81	67	68	1,278/1,134/1,007	3/8	5/8	208-230V	1Ph	60Hz	3.5	112
CU-1	-	SFC-4	ARNJ283BR4	DUCT_HIGH_STATIC	1	28000	22100	31500	28009	22102	27646	81	67	68	1,278/1,134/1,007	3/8	5/8	208-230V	1Ph	60Hz	3.5	112
CU-2	-	SFC-5	ARNJ183BGA4	DUCT_HIGH_STATIC	1	19100	14900	21500	19106	14901	18869	81	67	68	537/487/417	3/8	5/8	208-230V	1Ph	60Hz	2.65	83.8
CU-2	-	SFC-6	ARNJ123BGA4	DUCT_HIGH_STATIC	1	12300	9600	13600	12304	9000	11936	81	67	68	477/427/332	3/8	5/8	208-230V	1Ph	60Hz	2.65	83.8
CU-2	-	SFC-12	ARNJ763BR4	DUCT_HIGH_STATIC	1	76400	53500	86000	76424	53506	75477	81	67	68	2,260/1,766/1,766	3/8	3/4	208-230V	1Ph	60Hz	5.2	192
CU-2	-	SFC-8	ARNJ763BR4	DUCT_HIGH_STATIC	1	76400	53500	86000	76424	53506	75477	81	67	68	2,260/1,766/1,766	3/8	3/4	208-230V	1Ph	60Hz	5.2	192
CU-2	-	SFC-11	ARNJ243BGA4	DUCT_HIGH_STATIC	1	24200	18900	27300	24208	18902	23960	81	67	68	671/537/487	3/8	5/8	208-230V	1Ph	60Hz	2.65	83.8
CU-2	-	SFC-10	ARNJ283BR4	DUCT_HIGH_STATIC	1	28000	22100	31500	28009	22102	27646	81	67	68	1,278/1,134/1,007	3/8	5/8	208-230V	1Ph	60Hz	3.5	112
CU-2	-	SFC-9	ARNJ363BR4	DUCT_HIGH_STATIC	1	36200	28700	40600	36211	28703	35632	81	67	68	1,381/1,176/1,049	3/8	5/8	208-230V	1Ph	60Hz	3.5	112

Multi V Outdoor Unit Equipment Schedule - Air																									
Equip. ID	Mark	Model Number	Type	Quantity	Cooling Capacity (BTU/h)		Corrected Capacity (BTU/h)		Fan		Outdoor Temperature (°F)			Efficiency		Refrigerant	Piping Connections (in.)			Power			Sound	Weight	
					Total Cooling	Heating Cooling	Total Cooling	Heating Cooling	Airflow (CFM)	Quantity	Cooling DB	Cooling WB	Heating DB	Cooling LEER (SEER)	Heating COP (HSFP)		Liquid	LP Gas	HP Gas	Volts	Phase	Hertz			MCA
CU-1	-	ARUM14DTE5	HR_Multi V S	1	144000	162000	155594	167194			95	68	37	23.7	3.81	R410A	1/2	1+1/8	7/8	460V	3Ph	60Hz	26.4	83	639
CU-2	-	ARUM216DTE5	HR_Multi V S	1	216000	243000	231036	251758			95	68	37	23	3.74	R410A	5/8	1+1/8	1+1/8	460V	3Ph	60Hz	38.3	88	666

Multi V HR Boxes									
Location	Equip. ID	Model Number	Quantity	Power				Weight	
				Volts	Phase	Hertz	RLA		Lbs
Mezzanine	PRHR022A	1	CU-1	208 / 230V	1Ph	60Hz	Q1.5	45	
Mezzanine	PRHR022A	1	CU-1	208 / 230V	1Ph	60Hz	Q1	40	
Mezzanine	PRHR042A	1	CU-2	208 / 230V	1Ph	60Hz	Q2	49	
Mezzanine	PRHR022A	1	CU-2	208 / 230V	1Ph	60Hz	Q1	40	
Mezzanine	PRHR022A	1	CU-2	208 / 230V	1Ph	60Hz	Q1.5	45	

Equip. ID	Location	Manufacturer	Model	Type/Class	Exhaust Fan Data and Intake Ventilator										Remarks
					CFM	Number of Fans	External Static Press. In. W.C.	RPM	Max B.H.P.	HP	Volts	Hz	Operating Weight Lbs.		
EK-1	Restroom Ceiling	Bloom	744LED	Recessed Fan/LED Light	75	9	0.1	-	25 watts	-	120	1	60	25	0.55 Amps Used by the Ceiling Fan
EK-2	Roof	Cook	135ACEB	Lipblast	1000	1	0.25	441	0.091	0.25	120	1	60	75	Furnish with Factory roof curb and backdraft damper
IV-1	Roof	Cook	16 TR	Downblast	1000	1	0.25	-	-	-	-	-	-	75	Furnish with Factory roof curb and backdraft damper



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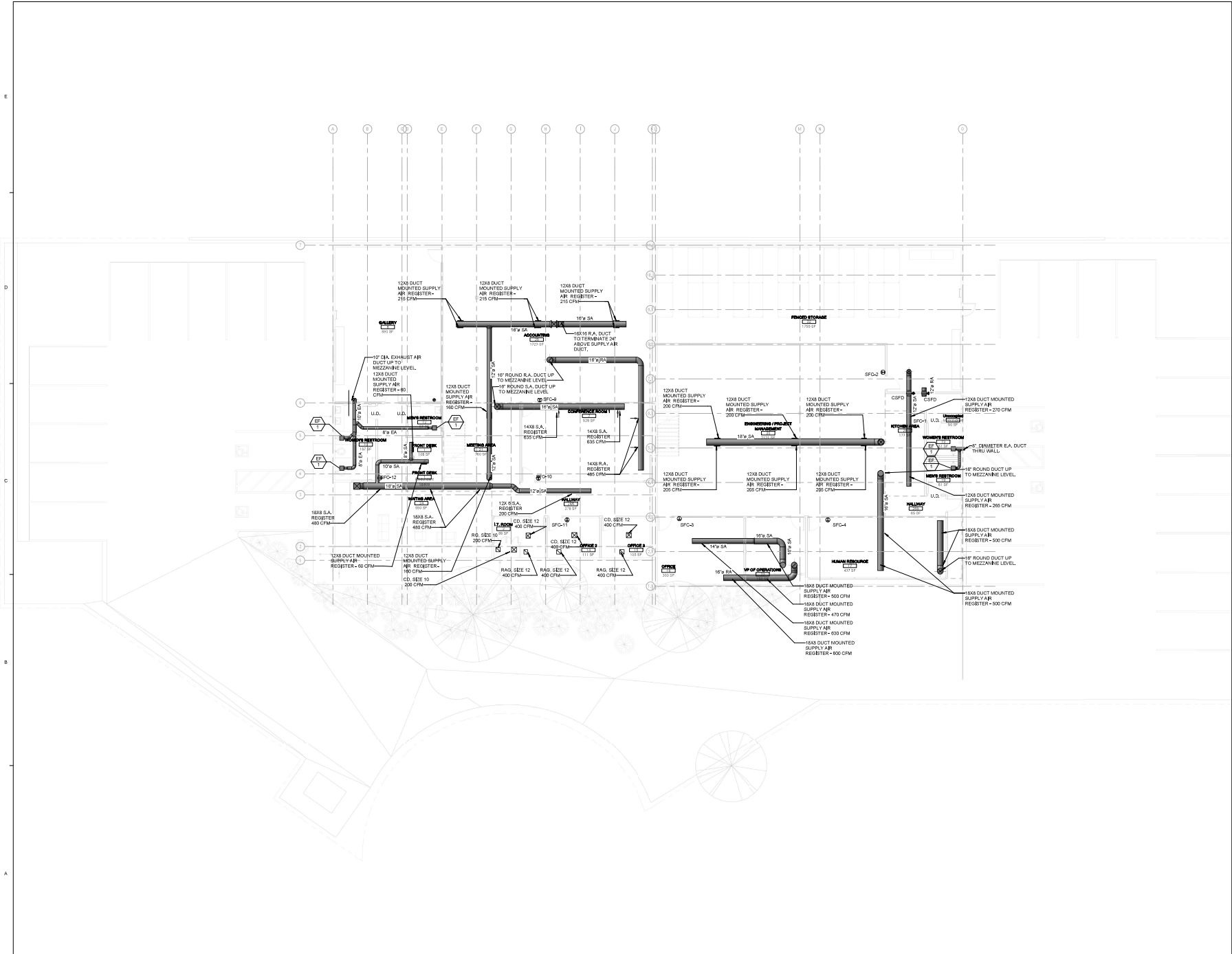
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Sheet Title  
**PLAN - REMODEL**

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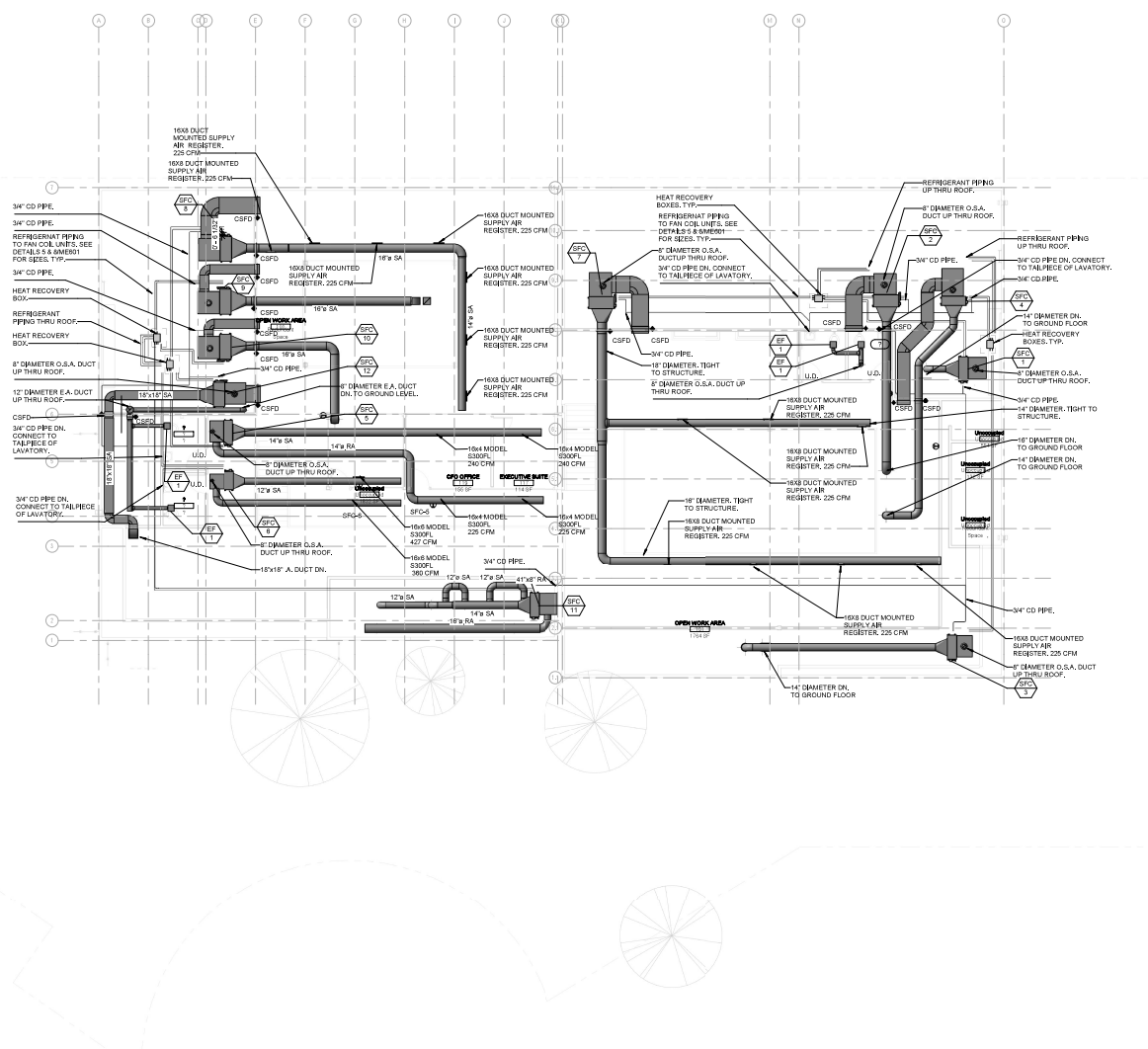
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Sheet Title  
**PLAN - MEZZANINE**

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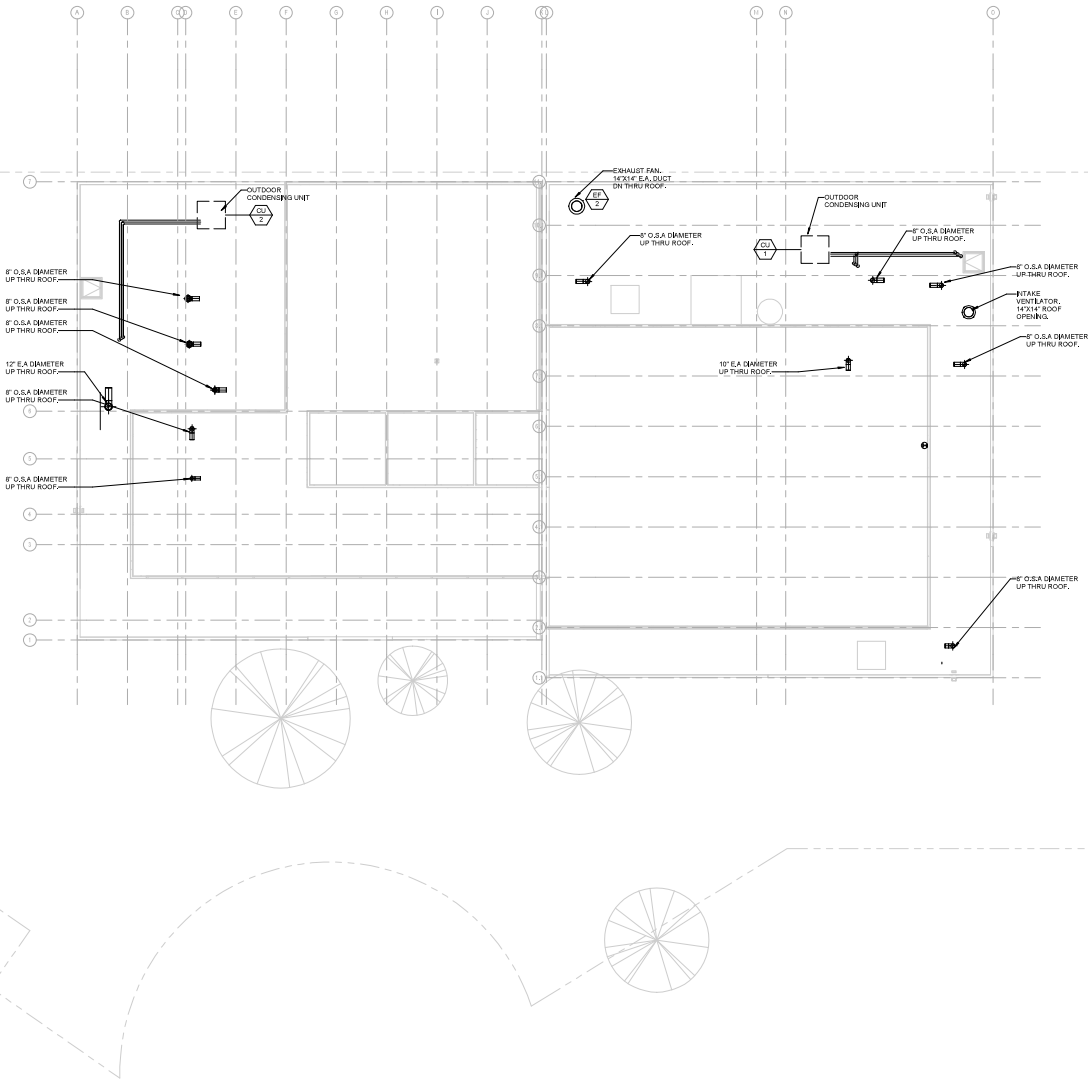
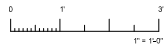
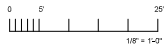
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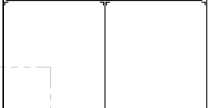
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Sheet Title  
**PLAN - ROOF**

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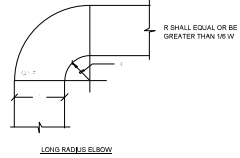
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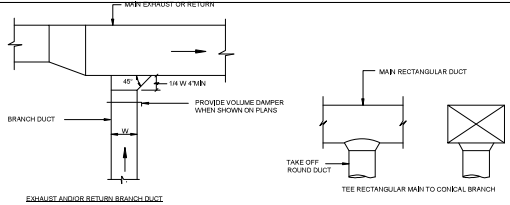
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**ME103**

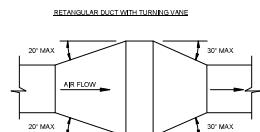
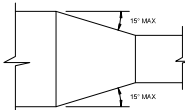
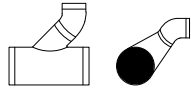
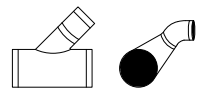
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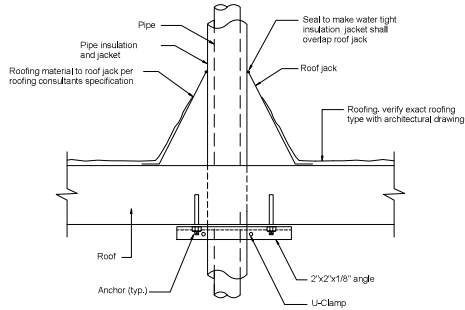
**NOTES:**  
 RECTANGULAR ELBOWS ONLY.  
 1. THE EXTERIOR SURFACE OF ALL RADIUS ELBOWS SHALL BE MADE ROUND.  
 2. ALL STANDARD RADIUS ELBOWS SHOWN ON PLANS MAY BE MADE LONG RADIUS ELBOWS.



TEE RECTANGULAR MAIN TO CONICAL BRANCH



PLAN OR SIDE VIEW



PIPE THRU ROOF

DUCTWORK FITTINGS DETAIL

NTS 4

NTS 1



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 DETAILS

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PROJECT NO.  
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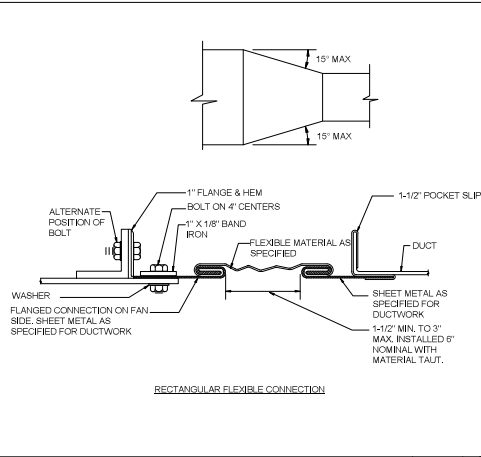
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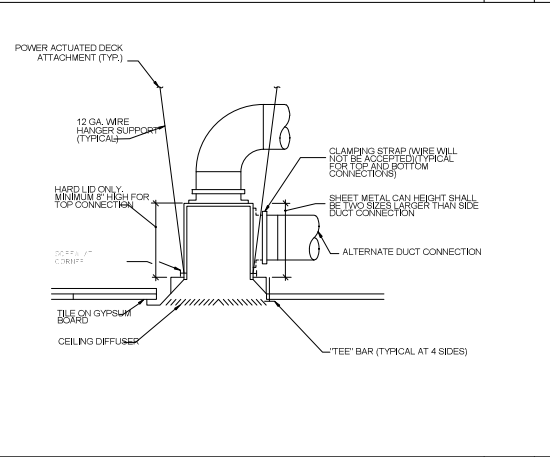
**ME501**

Issue Date / Issue Date

Of Sheets

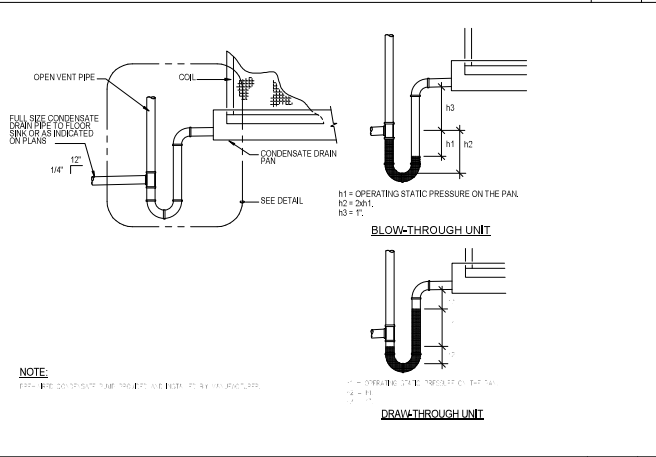


RECTANGULAR FLEXIBLE CONNECTION



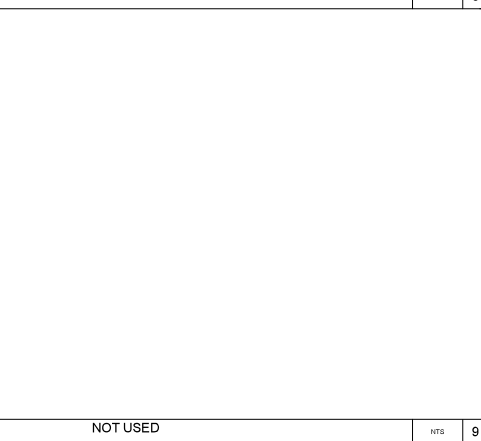
CEILING DIFFUSER MOUNTING DETAIL

NTS 5



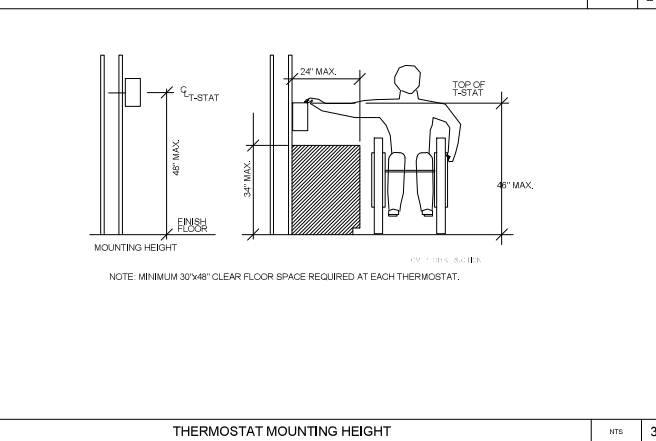
FAN COIL UNIT CONDENSATE DRAIN TRAP

NTS 2



VOLUME DAMPER DETAIL

NTS 6

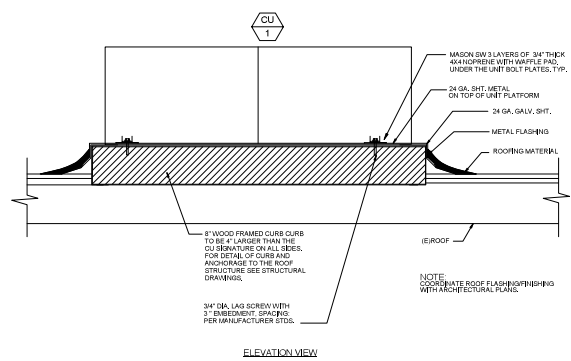
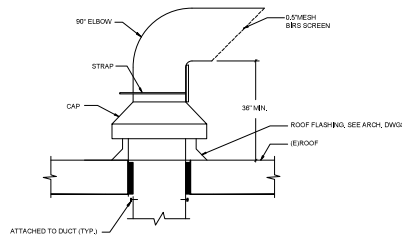


THERMOSTAT MOUNTING HEIGHT

NTS 3

NOT USED

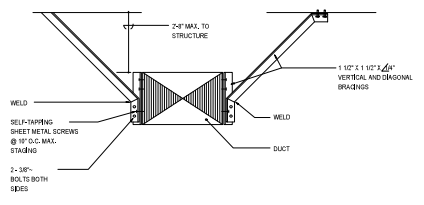
NTS 9



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OSA DUCT INTAKE UP TO ROOF      NTS      4

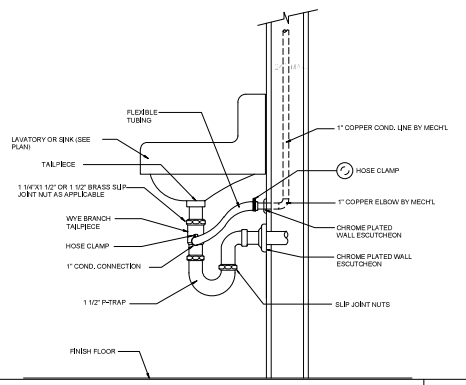
OUTDOOR CONDENSING UNIT ANCHORAGE DETAIL      NTS      1



NOT USED      NTS      8

NOT USED      NTS      5

TYP. DUCT SWAY BRACING DETAIL      NTS      2



NOT USED      NTS      9

NOT USED      NTS      6

CONDENSATE DRAIN CONNECTION DETAIL      NTS      3



**THE PENN AIR GROUP**  
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Architect / Engineer of Record

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Agency Application Number

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PROJECT NO.  
20074001

CONSULTANT PROJ. NO.

Scale

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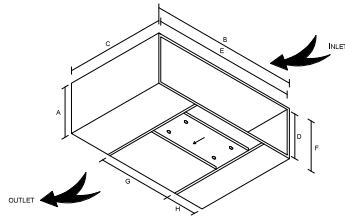
ME502

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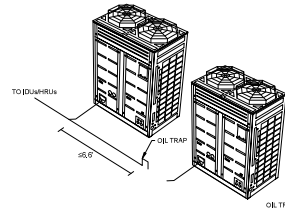
Issue Date

Issue Date

Of Sheets



MODEL	LG UNIT FRAME	RECOMMENDED FILTER SIZE (IN)	FACE VELOCITY @ MAX CFM (FPM)	A	B	C	D	E	F	G	H	WEIGHT (LBS)
FB-1B	ARNJXXXBHA4	(1) 14X20X2	278 @ 650 CFM	10.25	34.75	20	8.75	33.25	11	29	2.87	30
FB-2B	ARNJXXXBGA4	(1) 14X20X2	218 @ 915 CFM	11.83	48.5	20	10.13	45	12.38	29	0	38
FB-3B	ARNJXXXBRA4	(1) 14X20X2	337 @ 1815 CFM	15	48.5	20	13.5	47	15.75	29	0	42
FB-4B	ARNJXXXBA4	(1) 20X20X2	341 @ 2700 CFM	18.12	61.75	20	16.62	60.25	18.87	29	16.38	52



**GENERAL GUIDELINE**  
 CONSULT MANUFACTURERS LITERATURE FOR SPECIFIC CLEARANCE GUIDELINES INCLUDING PROMINENT WALLS AND OTHER AIRFLOW LIMITING OBSTRUCTIONS  
 INVERTED OIL TRAP REQUIRED WHEN A-BRANCH TO OUTDOOR UNIT OR ANOTHER Y-BRANCH IS GREATER THAN 6'-6"  
 45° TURNS DOWNWARD FROM A-BRANCH TO ANOTHER OUTDOOR UNIT OR ANOTHER Y-BRANCH



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No.	Issue	Date
1	PLAN CHECK SET	04/17/18
2	REV SET	05/01/18

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Issue Date Issue Date

**ME503**

Of Sheets

NOT USED

SCALE: 7

BOTTOM LOADED FILTER BOX

SCALE: 4

LG OUTDOOR OIL TRAP DETAIL

SCALE: 1

NOT USED

SCALE: 8

NOT USED

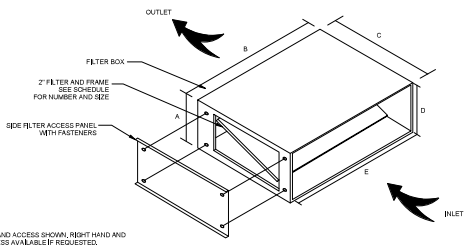
SCALE: 5

LG MULTI V 5 DIMENSIONS AND WEIGHT SCHEDULE

SCALE: 2

MULTI V 5 AIR COOLED CONDENSING UNITS				
NOMINAL TONS	DIMENSIONS			NET WEIGHT (LBS)
	WIDTH	HEIGHT	DEPTH	
6	24-5/8"	66-1/2"	26-3/32"	430
8	48-13/16"	66-1/2"	26-3/32"	507
10	48-13/16"	66-1/2"	26-3/32"	507
12	48-13/16"	66-1/2"	26-3/32"	638
14	48-13/16"	66-1/2"	26-3/32"	638
16	48-13/16"	66-1/2"	26-3/32"	658
18	48-13/16"	66-1/2"	26-3/32"	666
20	48-13/16"	66-1/2"	26-3/32"	666
DUAL FRAME COMBINATIONS				
22	(1) 8 TON			507-639
	(1) 16 TON			
24	(1) 8 TON			507-659
	(1) 16 TON			
26	(1) 8 TON			507-696
	(1) 16 TON			
28	(1) 8 TON			507-696
	(1) 16 TON			
30	(1) 12 TON			639-696
	(1) 18 TON			
32	(1) 14 TON			639-666
	(1) 18 TON			
34	(1) 16 TON			639-686
	(1) 18 TON			

MULTI V 5 AIR COOLED CONDENSING UNITS			
DUAL FRAME COMBINATIONS			
36	(2) 10 TON		507-607-696
	(1) 16 TON		
38	(2) 10 TON		507-607-686
	(1) 18 TON		
40	(1) 10 TON		507-639-666
	(1) 12 TON		
	(1) 18 TON		
	(1) 15 TON		
42	(1) 14 TON		507-639-666
	(1) 18 TON		



NOTE: LEFT HAND ACCESS SHOWN, RIGHT HAND AND BOTTOM ACCESS AVAILABLE IF REQUESTED.

MODEL	LG UNIT FRAME	RECOMMENDED FILTER SIZE (IN)	FACE VELOCITY @ MAX CFM (FPM)	A	B	C	D	E	WEIGHT (LBS)
FB-1	ARNJXXXBHA4	(1) 14X20X2	278 @ 650 CFM	10.25	34.75	20	8.75	33.25	30
FB-2	ARNJXXXBGA4	(1) 14X20X2	218 @ 915 CFM	11.83	48.5	20	10.13	45	38
FB-3	ARNJXXXBRA4	(1) 14X20X2	337 @ 1815 CFM	15	48.5	20	13.5	47	42
FB-4	ARNJXXXBA4	(1) 20X20X2	341 @ 2700 CFM	18.12	61.75	20	16.62	60.25	52

NOT USED

SCALE: 9

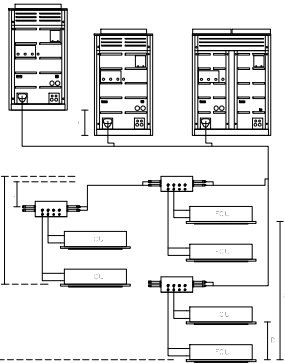
NOT USED

SCALE: 6

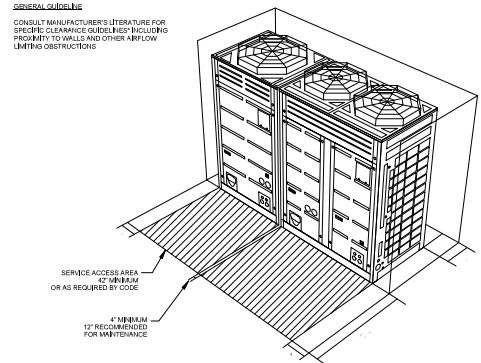
SIDE LOADED FILTER BOX

SCALE: 3

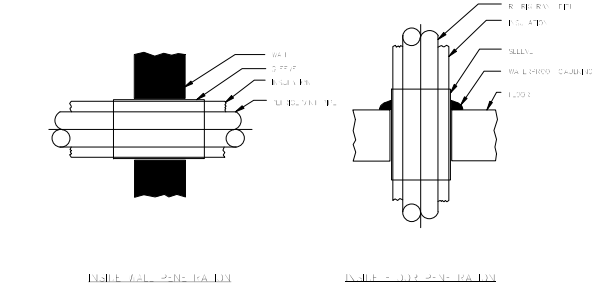




DESCRIPTION	LENGTH
A. MAX. ELEVATION DIFFERENCE BETWEEN HRU AND Y-BRANCH	49'
B. MAX. ELEVATION DIFFERENCE BETWEEN HRU IN SERIES	16'
C. MAX. ELEVATION DIFFERENCE HIGHEST AND LOWEST IDU	131'
D. MAX. ELEVATION DIFFERENCE (DU) FOR SAME HRU	49'
E. MAX. ELEVATION DIFFERENCE HRU AND IDU FOR HRU IN SERIES	49'
F. MAX. ELEVATION DIFFERENCE ODU AND IDU	360'
G. MAX. ELEVATION DIFFERENCE BETWEEN ODU	15.4'
MAX. DISTANCE BETWEEN ODU TO ODU	33'
LONGEST PIPE LENGTH AFTER 1ST BRANCH	131'
MAX. LENGTH OF PARTIAL IDU BETWEEN NEAREST IDU FROM ODU	131'
TOTAL PIPE LENGTH	1200'



**MULTIPLE MODULE INSTALLATION** SCALE: 4



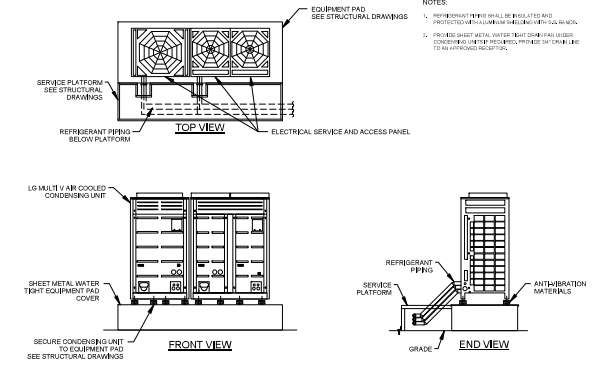
**LG MULTI V INSIDE FLOOR AND WALL REFRIGERANT PIPE PENETRATION** SCALE: 1

NOMINAL TON	DIMENSIONS			NET WEIGHT (LBS)
	WIDTH	HEIGHT	DEPTH	
6	30-1/8"	66-1/2"	26-1/8"	420
8	40-1/8"	66-1/2"	26-1/8"	540
10	46-1/8"	66-1/2"	26-1/8"	540
12	46-1/8"	66-1/2"	26-1/8"	628
14	46-1/8"	66-1/2"	26-1/8"	628

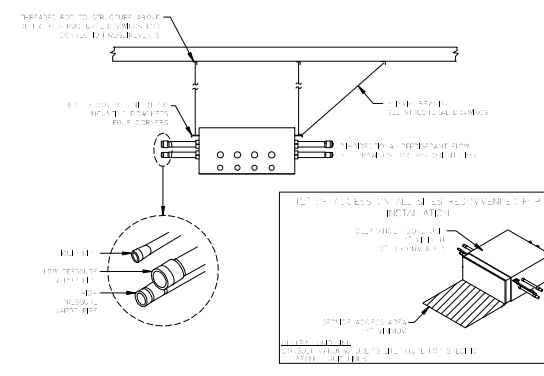
NOMINAL TON	DIMENSIONS			NET WEIGHT (LBS)
	WIDTH	HEIGHT	DEPTH	
16	46-1/8"	66-1/2"	26-1/8"	628
18	46-1/8"	66-1/2"	26-1/8"	628
20	46-1/8"	66-1/2"	26-1/8"	628
22	46-1/8"	66-1/2"	26-1/8"	628
24	46-1/8"	66-1/2"	26-1/8"	628
26	46-1/8"	66-1/2"	26-1/8"	628
28	46-1/8"	66-1/2"	26-1/8"	628

**LG MULTI V AIR COOLED CONDENSING UNITS DIMENSIONS AND WEIGHT SCHEDULE** SCALE: 8

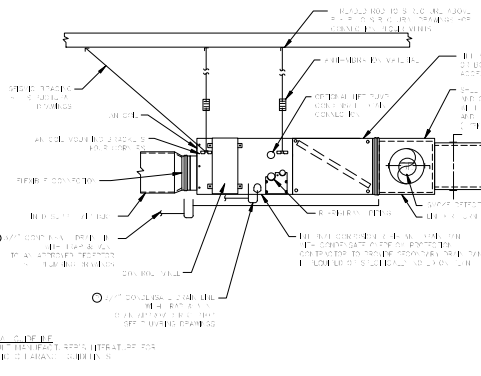
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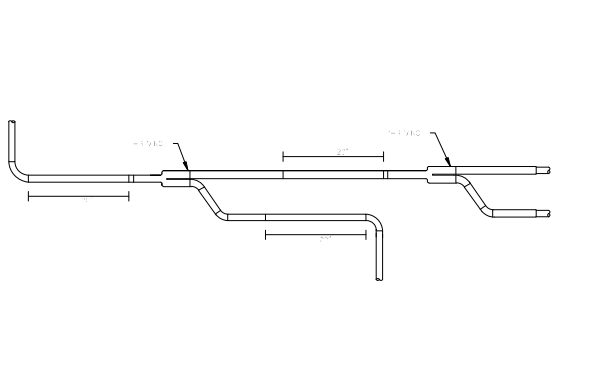
**LG MULTI V AIR COOLED CONDENSING UNIT MOUNTING PLATFORM** SCALE: 2



**LG MULTI V HEAT RECOVERY UNIT MOUNTING DETAIL** SCALE: 9



**LG MULTI V HORIZONTAL FAN COIL MOUNTING DETAIL** SCALE: 6



**Y-BRANCH INSTALLATION** SCALE: 3

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No.	Issue	Date
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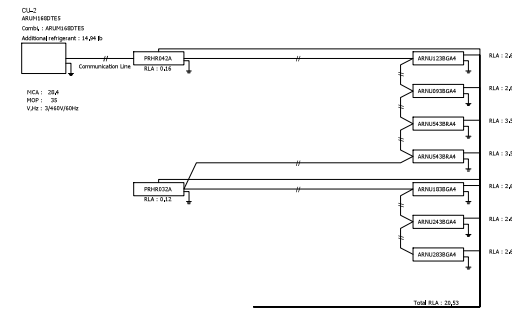
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Sheet Title  
**DETAILS**

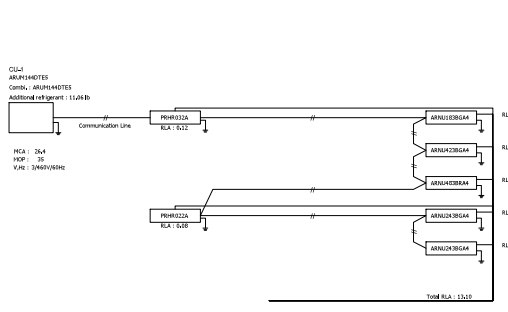
Agency Application Number

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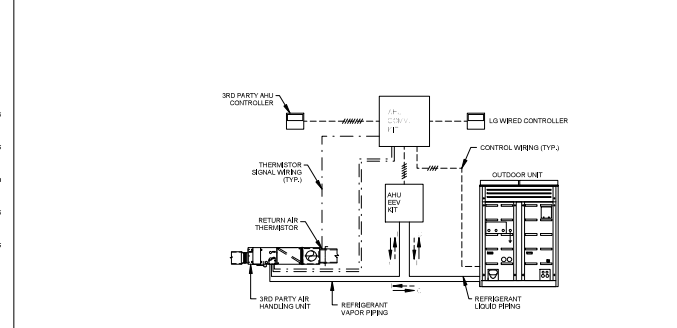
PROJECT NO. 2007-001	CONSULTANT PROJ. NO.
Scale Drawn By: Author	Sheet
Checked By: Chewer	<b>ME504</b>
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# Note  
Power wiring, breaker size, and disconnects shall follow local code or NEC.  
Multi-frame outdoor unit models require a separate power connection for each frame.  
Refer to the most current submittal sheets for applicable electrical data.



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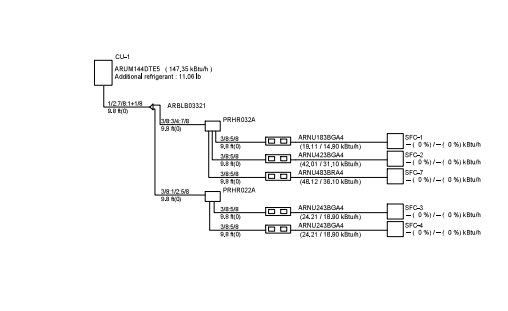
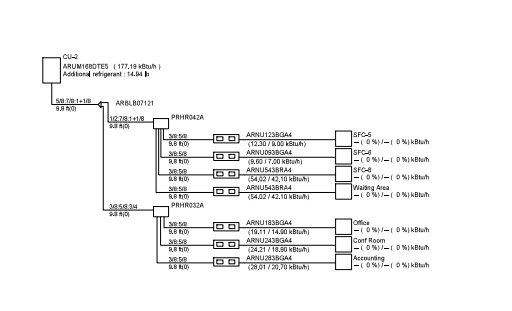


NOTES:  
3RD PARTY AHU CONTROLLER IS REQUIRED.  
LG WIRED CONTROLLED FUNCTIONS AS ERROR CODE DISPLAY ONLY. NO SYSTEM CONTROL AVAILABLE.  
RA TEMPERATURE THERMISTOR CAN BE REPLACED WITH FIXED RESISTOR WHEN AHU CONTROLLER IS USING 3RD PARTY TEMPERATURE SENSORS.

LG MULTI V ELECTRICAL POWER WIRING DIAGRAM - CU-2 SCALE: 7

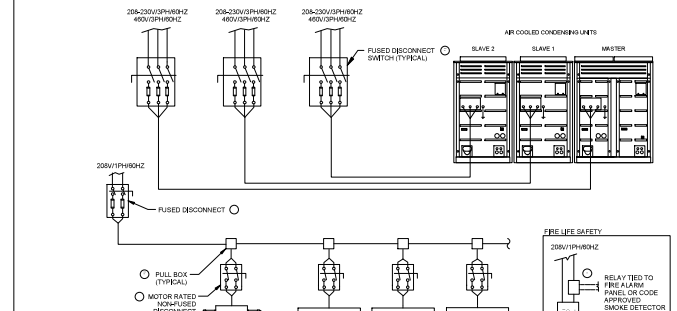
LG MULTI V ELECTRICAL POWER WIRING DIAGRAM - CU-1 SCALE: 4

LG MULTI V ELECTRICAL POWER WIRING DIAGRAM SCALE: 1



LG MULTI V ELECTRICAL POWER WIRING DIAGRAM - CU-2 SCALE: 8

LG MULTI V ELECTRICAL POWER WIRING DIAGRAM - CU-1 SCALE: 5



TRIPLE FRAME OUTDOOR UNIT SCALE: 2

NOT USED SCALE: 9

NOT USED SCALE: 6

NOT USED SCALE: 3



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Sheet Title  
CONTROLS AND PIPING

Agency Application Number

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20074001  
CONSULTANT PROJ. NO.  
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Author  
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Crew  
Issue Date  
Issue Date  
Of  
Sheets  
**ME601**



**SYMBOL / ABBREVIATION / DEFINITIONS**

SYMBOL	ABBREVIATION	DEFINITION
		TOP EQUIPMENT ID BOTTOM EQUIPMENT NUMBER
		TOP FEATURE ID BOTTOM FEATURE NUMBER
		TOP SECTION ID BOTTOM SHEET NUMBER
		KEY NOTE - DEMOLITION
		KEY NOTE - NEW CONSTRUCTION
	1/16-001	DETAIL ID / SHEET NUMBER
		EXISTING FEATURE OR EQUIPMENT TO BE REMOVED
	POC OR D	POINT OF CONNECTION OR DISCONNECTION
	GV, GLV	GATE OR GLOBE VALVE
	CV	CHECK VALVE
	STR	STRAINER
	BV	BALL VALVE (SHUT OFF VALVE)
	UN	UNION
	GC	GAS COCK
	RED	REDUCER
	WHA	WATER HAMMER ARRESTOR
	COTG	CLEAN OUT TO GRADE
	FOD	FLOOR CLEANOUT
		CAPPED
	WCO	WALL CLEANOUT
	HB	HOSE BIB
	RHB	RECESSED HOSE BIB
		VALVE N RISER
		PPRG BRANCH
		RISE UP
		DROP DOWN
		RELIEF VALVE
	PW	PLUGGED WYE
	PT	PLUGGED TEE
		PRESSURE GAUGE
	(E) (NAME)	EXISTING PIPE
		DEMOLITION (REMOVE)
	FLOW	FLOW PITCH OF PIPE
	PTRV	PRESSURE/TEMPERATURE RELIEF VALVE
	FDD	FLOOR DRAIN OR AREA DRAIN
	FS	FLOOR SINK
	RDD	ROOF DRAIN OR OVER FLOOR DRAIN

**DOMESTIC WATER**

	CW	COLD WATER
	(ECW)	EXISTING COLD WATER
	HW	HOT WATER
	(EHW)	EXISTING HOT WATER

**WASTE AND VENT**

		WASTE BELOW
		EXISTING WASTE BELOW
		WASTE ABOVE
		EXISTING WASTE ABOVE
		VENT PIPING
		EXISTING VENT PIPING
	DR	DRAIN (TRAP PRIMERS)
	(E)DR	EXISTING DRAIN (TRAP PRIMERS)

**MISCELLANEOUS SYSTEMS**

	FP	FIRE PROTECTION (MAN)
	(E)FP	EXISTING FIRE PROTECTION (MAN)
	NG	NATURAL GAS (UNDER IPB)
	(E)NG	EXISTING NATURAL GAS
	MPG	MEDIUM PRESSURE GAS (SHOP)
	(E)MPG	EXISTING MEDIUM PRESSURE GAS

**GENERAL NOTES**

FOR THE PURPOSES OF CLARITY AND LEGIBILITY, THE DRAWINGS ARE ESSENTIALLY DIMENSIONAL AND SEES AND LOCATION OF EQUIPMENT ARE DRAWN TO APPROXIMATE SCALE. CONTRACTOR SHALL MAKE USE OF ALL DATA FROM ALL OF THE CONTRACT DOCUMENTS, PLANS AND IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THIS INFORMATION.

DRAWINGS INDICATE SIZE AND TERMINATION OF PIPING AND SUGGEST PROPER ROUTES OF PIPING TO CONFORM TO THE STRUCTURE TO AVOID OBSTRUCTIONS AND TO RECEIVE CLEARANCE. IF EXACT THE INTENTION TO INDICATE ALL NECESSARY OFFSETS AND IT SHALL BE THE RESPONSIBILITY UNDER THIS SECTION TO MAINTAIN PIPING IN SUCH A MANNER AS TO CONFORM TO STRUCTURE AND OBSTRUCTIONS PRESERVE HEADROOM, KEEP OPENINGS AND PASSAGEWAYS CLEAR AND MAKE ALL EQUIPMENT REQUIRING INSPECTION MAINTENANCE EASILY ACCESSIBLE WITHOUT FURTHER INSPECTIONS OR EXTRA COST.

**CONTRACTOR VERIFICATION:**  
BEFORE COMMENCEMENT OF WORK, THE CONTRACTOR SHALL VERIFY THE EXACT LOCATIONS, ELEVATIONS AND CHARACTERISTICS OF ALL UTILITIES AND PIPING AND SHALL MAINTAIN THEM TO THE MORTGAGE OF ANY DISCREPANCIES.

**BUILDING SITUATION:**  
CONTRACTOR SHALL ALSO CAREFULLY INVESTIGATE AND ESTABLISH ON HIS SHOP DRAWINGS THE FIELD LOCATIONS OF (E) SHUT-OFF VALVES ON (E) PIPING SYSTEMS BEING AFFECTED BY THE WORK ON THE CONTRACT IN ORDER TO AVOID PROLONGED SHUT-DOWN PERIODS OF (E) PIPING SYSTEMS DURING INSTALLATION AND CONNECTION OF (N) PIPING SYSTEMS, VALVES AND/OR EQUIPMENT.

**COORDINATION:**  
THE PLUMBING CONTRACTOR SHALL COORDINATE ALL REQUIREMENTS FOR ALL POINTS OF CONNECTION WITH THE GENERAL CONTRACTOR AND OTHER TRADES PRIOR TO BE.

**CONNECTIONS TO EXISTING SERVICES:**  
ALL CONNECTIONS TO EXISTING SERVICES SHALL BE MADE OF SUCH THAT INTERRUPTION TIME WILL BE AS SHORT AS POSSIBLE. THE CONTRACTOR SHALL GIVE THE OWNER'S REPRESENTATIVE CURRENT NOTICE OF SUCH INTERRUPTION AND THE ACTUAL SHUT-DOWN TIME SHALL BE AT A TIME DESIGNATED BY THE OWNER'S REPRESENTATIVE.

**FEATURES:**  
EXACT LOCATIONS, MOUNTING HEIGHTS AND COLORS OF PLUMBING FIXTURES SHALL BE OBTAINED FROM THE ARCHITECTURAL DRAWINGS AND SHALL BE IN COMPLIANCE WITH THE LATEST STATE AND CITY CODES.

**INTERFERENCE:**  
ALL PLUMBING WORK SHALL BE INSTALLED SO AS TO AVOID STRUCTURAL FRAMING.

**ACCESS PANELS:**  
THE CONTRACTOR SHALL COORDINATE THE LOCATION OF ALL CEILING ACCESS PANELS WITH ARCHITECTURAL REFLECTED CEILING PLAN AND THE ELECTRICAL LIGHTING LAYOUT. ACCESS TO SHUT-OFF VALVES, STRAINERS, CIRCUIT BREAKERS, ETC. SHALL BE WITHIN 24" OF ACCESS PANEL.

**PIPING EXPOSED TO WEATHER:**  
ALL PIPING EXPOSED ON ROOF SHALL BE SCHEDULE 40 GALVANIZED STEEL, SUPPORTED WITH APPROVED MANUFACTURED SUPPORT WITH PIPE STRAPS, SUPPORT SHALL BE SET IN MASTIC AT 4'-0" O.C.

**PIPE INSULATION:**  
ALL HOT WATER PIPING SHALL BE INSULATED WITH 1" THICK FOR SIZES UP TO 2", 1-1/2" THICK FOR SIZES 2" AND LARGER. MINIMUM THERMAL RESISTANCE SHALL BE MINIMUM PER CODE. ALL EXPOSED PIPING INSIDE OR OUTSIDE SHALL BE COVERED WITH PLASTIC JACKET, WEATHER PROTECTED AT JOINTS.

**CLEANOUTS:**  
ALL CLEANOUTS SHALL BE INSTALLED WHERE READILY ACCESSIBLE. THE CONTRACTOR SHALL COORDINATE ALL CLEANOUT LOCATIONS WITH EQUIPMENT, CABINETS, ETC. AND THE ARCHITECT PRIOR TO ANY INSTALLATION.

**VENT TERMINATION:**  
ALL PLUMBING FIXTURE VENTS TO TERMINATE A MIN. OF 12" FROM ANY VERTICAL SURFACE AND 10'-0" FROM ANY OUTSIDE AIR INTAKE OR TERMINATED 3'-0" ABOVE.

**WALL SLOPE:**  
ALL PIPING DISCHARGING INTO FLOOR-SINKS AND/OR FLOOR DRAIN TO HAVE A MIN. AIR GAP AS REQUIRED BY LOCAL CODES.

**WALL SLOPE:**  
ALL VALVES, UNIONS, ETC. TO BE THE SAME SIZE AS THE LINE SIZE UNLESS OTHERWISE NOTED ON THE DRAWINGS.

**UNIONS:**  
UNIONS SHALL BE PROVIDED AND INSTALLED AFTER EACH SCREW-TYPE VALVE AND PRIOR TO EQUIPMENT CONNECTIONS.

**CODE COMPLIANCE:**  
ALL WORK AND MATERIAL SHALL BE PERFORMED AND INSTALLED IN COMPLIANCE WITH CODES AS ADOPTED AND AMENDED BY THE JURISDICTION AUTHORITY. NOTHING IN THESE DRAWINGS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THE CODES OR OTHERS APPLICABLE TO THIS PROJECT SEE "CODE ANALYSIS".

**CODE CONFORM:**  
ALL WORK SHALL CONFORM TO LOCAL CODES & ALL OTHER CODES & AUTHORITIES HAVING JURISDICTION.

**PIPE SLOPE:**  
ALL WASTE AND VENT PIPING SHALL SLOPE AT 2% UNLESS OTHERWISE NOTED.

**ACCESSIBILITY:**  
ALL VALVES, TRAP PRIMERS OR OTHER EQUIPMENT SHOWN IN WALLS OR ABOVE NON-ACCESSIBLE CEILINGS SHALL BE INSTALLED WITHIN 24" OF AND BEING AND ACCESS PANEL.

**EQUIPMENT UNDER THIS SECTION OF SPECIFICATION:**  
THE CONTRACTOR SHALL BE RESPONSIBLE FOR ROUTING AND ALL FINAL CONNECTIONS, REFERENCES SHALL BE MADE TO FINAL SHOP DRAWINGS FOR EXACT ROUTING AND LOCATIONS, DIMENSIONS AND ELEVATIONS AND SHALL BE ADHERED TO AS CLOSELY AS POSSIBLE. THE CONTRACTOR SHALL PROVIDE ALL TRAPS (CHROME PLATED CAST BRASS), CLEANOUTS, WATER HAMMER ARRESTORS, STOPS, SHUT-OFF VALVES, VACUUM BREAKERS, BOMBEST WASTE PIPING AND NECESSARY TRIM WHICH MAY BE REQUIRED TO COMPLETE THE INSTALLATION.

**SPECIFICATION:**  
THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH, AND BE CONSIDERED TO BE A PART OF THE SPECIFICATIONS.

**PATCHING:**  
THE CONTRACTOR SHALL BE RESPONSIBLE FOR PATCHING AND REPAIRING ALL AREAS WHICH ARE EXCAVATED AND/OR DAMAGED BY HIS OPERATIONS. IN ADDITION, THE CONTRACTOR SHALL RESTORE TO THEIR ORIGINAL CONDITION ALL PLANTED AREAS DAMAGED BY HIS OPERATIONS.

**EXISTING PIPING DAMAGED:**  
ALL EXISTING PIPING DAMAGED DURING EXCAVATION SHALL BE REPAIRED WITH MATERIALS TO MATCH EXISTING BY THE CONTRACTOR.

**DISPOSAL OF EXISTING:**  
ALL EXISTING PIPING AND EQUIPMENT THAT IS REMOVED SHALL BE DEPOSED OF AS DIRECTED BY THE OWNER'S REPRESENTATIVE.

**SAW CUTTING CORE DRILLING:**  
ALL CUTTING OF PIPING, WALLS AND/OR FLOORS SHALL BE MACHINE SAW CUTTING, HOLES FOR PIPING IN CONCRETE WALLS OR FLOORS SHALL BE DONE USING CORE DRILLING EQUIPMENT.

**INCOMPATIBLE MATERIAL CONNECTION:**  
CONNECTIONS BETWEEN INCOMPATIBLE MATERIALS ABOVE GRADE AND INSIDE THE BUILDING SHALL BE MADE WITH 2 BOLT ELECTRIC UNIONS SEPARATED BY A 12" SECTION OF RED BRASS PIPE.

**EXISTING SERVICES REMOVED:**  
EXISTING SERVICES TO BE REMOVED BY PLUMBING CONTRACTOR, CAP OR PLUG EXISTING SERVICES BELOW FLOOR ABOVE CEILING OR BEHIND WALLS UNLESS OTHERWISE NOTED, DISPOSE OR SET IN STORAGE AS DIRECTED BY OWNER'S REPRESENTATIVE HAVING JURISDICTION.

**EXISTING WASTE BELOW FLOOR:**  
CAP AND ABANDON ALL EXISTING WASTE PIPING BELOW FLOOR EXCEPT INDICATED TO BE REUSED, ROUTER AND CLEAN ALL EXISTING WASTE PIPING TO BE REUSED.

**DEMOLITION OF EXISTING SERVICES:**  
EXISTING SERVICES ABOVE CEILING AND IN EXISTING WALLS BEING DEMOLISHED, THAT IS NOT BEING REUSED, SHALL BE REMOVED UNLESS OTHERWISE NOTED. COORDINATE EXTENT OF DEMOLITION WITH THE ARCHITECT AND THE GENERAL CONTRACTOR.

**REMOVAL OF EXISTING PIPING:**  
ALL EXISTING PLUMBING LINES WHICH ARE TO REMAIN IN USE AND ARE IN THE WAY OF NEW CONSTRUCTION WORK SHALL BE PROTECTED AND MAINTAINED.

**SUBMITTALS AND SHOP DRAWINGS:**  
THE PLUMBING CONTRACTOR SHALL SUBMIT SHOP DRAWINGS ON ALL WORK AND SUBMITTALS ON ALL FIXTURES, EQUIPMENT AND ACCESSORIES FOR REVIEW PRIOR TO ORDERING, FABRICATION AND INSTALLATION.

**SHUT-OFF PIPING AND TOOLS:**  
ALL REQUIRED TYPES OF WATER PIPING AND TUBING SHALL BE REMOVED TO THE FULL BORE OF THE PIPE OR TUBE AND ALL CHIPS SHALL BE REMOVED. ADDITIONALLY, TOOLS USED IN CUTTING OR REAMING SHALL BE KEPT FREE FROM OIL OR GREASE AND WAREHOUSE CLEAN CONTAINERS. IF ANY OILING OCCURRED, THE ITEMS AFFECTED SHALL BE REWORKED AND RINSED.

**SHEET INDEX**

Sheet No.	Sheet Name
P001	GENERAL NOTES, SHEET INDEX
P002	SCHEDULES
P003	PLAN - DEMOLITION
PE001	PLAN - REDUCE
PE002	PLAN - MEZZANINE
PE003	PLAN - ROOF
PE401	ENLARGED PLANS
PE501	DETAILS
PE601	RISER DIAGRAM - WEST BUILDING
PE602	RISER DIAGRAM - EAST BUILDING

**CODE ANALYSIS**

LIST OF 2016 CALIFORNIA CODE OF REGULATIONS (C.C.R.)

ALL INSTALLATION AND TESTS SHALL COMPLY TO BUT NOT LIMITED TO THE FOLLOWING CODES, APPLICABLE CODE AS OF JANUARY 1, 2017

**PART 1**  
2016 CALIFORNIA BUILDING STANDARDS ADMINISTRATIVE CODE, TITLE 24 C.C.R.

**PART 2**  
2016 CALIFORNIA BUILDING CODE, TITLE 24 C.C.R.  
(2015 INTERNATIONAL BUILDING CODE OF THE INTERNATIONAL CODE COUNCIL, WITH CALIFORNIA AMENDMENTS)

**PART 3**  
2016 CALIFORNIA ELECTRICAL CODE, TITLE 24 C.C.R.  
(2014 NATIONAL ELECTRICAL CODE OF THE NATIONAL FIRE PROTECTION ASSOCIATION, NFPA)

**PART 4**  
2016 CALIFORNIA MECHANICAL CODE, TITLE 24 C.C.R.  
(2015 INTERNATIONAL MECHANICAL CODE OF THE INTERNATIONAL ASSOCIATION OF PLUMBING AND MECHANICAL OFFICIALS (IAPMO))

**PART 5**  
2016 CALIFORNIA PLUMBING CODE, TITLE 24 C.C.R.  
(2015 INTERNATIONAL PLUMBING CODE OF THE INTERNATIONAL ASSOCIATION OF PLUMBING AND MECHANICAL OFFICIALS (IAPMO))

**PART 6**  
2016 CALIFORNIA FIRE CODE, TITLE 24 C.C.R.  
(2015 INTERNATIONAL FIRE CODE OF THE INTERNATIONAL CODE COUNCIL)

**PARTIAL LIST OF APPLICABLE STANDARDS:**

2016 CALIFORNIA BUILDING CODE FOR SPS REFERENCED STANDARDS CHAPTER 35  
NFPA 13 AUTOMATIC SPRINKLER SYSTEMS (CALIFORNIA AMENDED) 2016 EDITION  
NFPA 14 STANDPIPE SYSTEMS (CALIFORNIA AMENDED) 2016 EDITION

**ABBREVIATION / DEFINITION**

ABBREVIATION	DEFINITION
ABV	Above
&	And
ADA	American with disabilities act
At	At
AC	Air conditioner
AF	Above finish floor
AP	Access panel
ARCH	Architect
BFP	Backflow preventer
BEL	Below
BLDG	Building
CLG	Ceiling
CONN	Connection or connect
CONN	Connection or connect
CONT	Continuum or continuation
CONTR	Contractor
DET	Detail
DEMCO	Demolition
DM	Diameter
DN	Down
DWG	Drawing
EA	Each
ELEC	Electrical
ELEV	Elevation
EQUIP	Equipment
EXIST(E)	Existing
FE	Fire extinguisher
FF	Finish floor
FHC	Fire hose cabinet
FN	Finish
FLR	Floor
FU	Fixture unit
FV	Flush valve
GR	Grade or ground
GPF	Gallons per flush
GPM	Gallons per minute
GR	Grade or ground
HDR	Header
HP	Hot/booster
HTG	Heating
HTR	Heater
IE	Invert elevation
LOC	Location
MAX	Maximum
MECH	Mechanical
MIN	Minimum
MISC	Miscellaneous
MTD	Mounted
(N)	New
NIC	Not in contract
NO	Normally open
NTS	Not to scale
OD	Over/flow drain
OPNG	Opening
PLUG	Plumbing
POC	Point of connection
POD	Point of disconnect
PRESS	Pressure
PRV	Pressure reducing valve
QTY	Quantity
RPBP	Reduced pressure backflow preventer
SD	Storm drain
SF	Square feet
SOV	Shut-off valve
SS	Stainless steel
TEMP	Temperature
THRU	Through
TOTL	Total
TYP	Typical
UGOS	Under other section
VB	Vacuum breaker
VTR	Vent through roof
WT	Weight
W/	With
WT	Weight
YCO	Yard clean out



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**ISSUED BLOCKS / HISTORY LOG**

No.	Issued	Date
1	PLAN CHECK SET	06/11/18
2	REV. SET	05/01/18

CONSULTANT'S LOG/OFF KEY PLAN

Facility  
**5841 LAKESHORE DR.**  
**CYPRESS, CA 90630**

Project

Sheet Title  
**GENERAL NOTES, SHEET INDEX**

Agency Application Number

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PROJECT NO. 2007-001

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**P001**

Of Sheets



FIXTURE ROUGH-IN SCHEDULE											
I.D.	Abbreviation	Fixture Type	Model	Manufacturer	MINIMUM CONNECTION PIPE SIZE (INCHES)						Remarks
					Waste	Trap	Vent	Cold Water	Hot Water		
FD-1	FD-1	FLOOR DRAIN	-	J.R. SMITH	-	2"	-	-	-	-	ROUND NICKEL BRONZE TOP WITH TRAP PRIMER CONNECTION
HB-1	HB-1	HOSE BIBB	8121	ACORN ENGINEERING	-	-	-	-	-	-	WALL TYPE, CHROME WITH LOOSE KEY HANDLE AND VACUUM BREAKER
L-1	L-1	LAVATORY	0356421	AMERICAN STANDARD	2"	2"	2"	1/2"	1/2"	-	WALL MOUNT, VITREOUS CHINA, J.R. SMITH #1070 CONCRETE ARM CARRIER, CHICAGO #134-2056405050488 SINGLE HOLE MANUAL SUPPLY WATERING FAUCET SET @ 3.0 GPM, VARIATIONAL PROOF SPRAY PERFORATED GRID STRAINER, CHICAGO #1015483P LOOSE KEY STOPS, INTRAP, CHICAGO #1284BMF THERMOSTATIC MIXING VALVE, TRUWING 62 LAVABOARD 2 PIPE COVER.
S-1	S-1	SINK	WDD-22384-185A	JUST	2"	2"	2"	3/4"	3/4"	-	22X36" STAINLESS STEEL, COUNTER MOUNTED, (3) HOLES ON 4" CENTERS, DELTA #91361-05T GOOSENECK KITCHEN FAUCET
WC-1	WC-1	WATER CLOSET	3451.001	AMERICAN STANDARD	4"	INTEGRAL	2"	1 1/4"	-	-	FLOOR MOUNTED, VITREOUS CHINA, SLOAN ROYAL #11-128 MANUAL FLUSH VALVE, BEMIS #19555STR OPEN FRONT ELONGATED SEAT LESS COVER
WC-2	WC-2	WATER CLOSET	3451.001	AMERICAN STANDARD	4"	INTEGRAL	2"	1 1/4"	-	-	FLOOR MOUNTED, VITREOUS CHINA, SET AT ADA ACCESSIBLE HEIGHT, SLOAN ROYAL #11-128 MANUAL FLUSH VALVE, BEMIS #19555STR OPEN FRONT ELONGATED SEAT LESS COVER

ELECTRIC WATER HEATER SCHEDULE										
I.D.	Abbreviation	Equipment Name	Service	Location	Catalog Data		Storage Tank Capacity (Gallons)	Electrical Vol./Phz/Lz	Operating Weight	Remarks
					Manufacturer	Model				
WH-1	WH-1	INSTANTANEOUS WATER HEATER	HOT & COLD WATER	SEE PLANS	EISMAX Inc.	EX3206 ML	-	208V, 1Ph, 3kW	-	HARD WIRED, MULTI-LAVATORY

EQUIPMENT SCHEDULE											
I.D.	Abbreviation	Equipment Name	Service	Location	Catalog Data		Remarks				
					Manufacturer	Model					
GD-1	GD-1	GARBAGE DISPOSER	WASTE	KITCHEN AREA	INGENIKATOR	EVOLUTION EXCEL	MODEL EVOLUTION EXCEL WITH MULTIRING AND SOUNDSEAL TECHNOLOGY, 1.6PH MOTOR, AUTO-REVERSE GRIND SYSTEM, STAINLESS STEEL GRIND CHAMBER AND COMPONENTS.				
TP-1	TP-1	TRAP PRIMER	COLD WATER	SEE PLANS	Precision Plumbing Products	MP-550-115V	ELECTRONIC TRAP PRIMER, 115V, 1Ph				

PIPE MATERIAL SCHEDULE							
Service	Abbrev.	Location		Material	Type	Design Information	
		Inside Bldg.	Outside Bldg.				
COLD WATER	CW	Yes		Copper	L	955 SOLDER	
HOT WATER	HW	Yes		Copper	L	955 SOLDER	
NATURAL GAS	G		Yes	Black Steel	Schedule 40	BLACK STEEL SCHEDULE 40, 2" OR LESS SCREWED FITTING, 3-1/2" OR LARGER WELDED FITTING	
SANITARY SEWER		Yes		Cast Iron	No-Hub Pipe	CAST IRON NO-HUB SOI, PIPE & FITTINGS OR COPPER DWV PIPING AND BRONZE FITTING	
SANITARY VENT		Yes		Cast Iron	No-Hub Pipe	CAST IRON NO-HUB SOI, PIPE & FITTINGS OR COPPER DWV PIPING AND BRONZE FITTING	

EAST BUILDING FIXTURE CHART							
FIXTURE	QTY	GFU	TTL	WGFU	TTL	HWFU	TTL
WATER CLOSET (FV)	4	4	16	5	20	-	-
LAVATORY	4	1	4	1	4	1	4
SINK (Kitchen Area)	1	2	2	1.5	3.5	1.5	5
	-	-	-	-	-	-	-
	-	-	-	-	-	-	-
TOTAL	20	22	22	25.5	55		
EQUIVALENT GPM				39	5		

WATER CALCULATION	
STREET PRESSURE AVAILABLE	MAX = 95 PSI MINIMUM = 45 PSI
PRESSURE AT FURTHEST FIXTURE (WC, FV)	25 PSI
PRESSURE LOSS DUE TO HEIGHT (8 FT X .25 X .39 PSI)	3.9 PSI
PRESSURE LOSS THRU METER (2' METER)	9 PSI
TOTAL LOSS AVAILABLE FOR FRICTION (45-25-20 = 3.9 + 16.1 = 9 + 7.1 PSI)	7.1 PSI
LENGTH OF RUN	
OUTSIDE BUILDING	5 FT
INSIDE BUILDING	191 FT
TOTAL	196 FT
FITTINGS (EQUIVALENT RUN) = 186 FT X (1.25) = 207.5 FT	
ALLOWABLE FRICTION LOSSES (7.1 X .100 = 710 PSI/100FT / 207.5 = (3.4 PSI)	

WATER SIZING CHART										
3.4 PSI/100FT @ MAX 5.0 FT/SEC VELOCITY										
PIPE SIZE	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"	6"
GPM (GALLONS PER MIN)	2	5	10	16	29	60	105	165	290	-
FIXTURE UNITS (FLUSH VALVE)	0	0	0	12	76	270	666	1068	-	-
FIXTURE UNITS (FLUSH TANK)	1	6	13	20	51	175	408	719	1068	-
VELOCITY (FPS)	5	5	5	5	5	5	5	5	5	-

WEST BUILDING FIXTURE CHART							
FIXTURE	QTY	GFU	TTL	WGFU	TTL	HWFU	TTL
WATER CLOSET (FV)	8	4	24	5	30	-	-
LAVATORY	5	1	5	1	5	1	5
	-	-	-	-	-	-	-
	-	-	-	-	-	-	-
	-	-	-	-	-	-	-
TOTAL	11	20	29	35	5		
EQUIVALENT GPM				44	5		

WATER CALCULATION	
STREET PRESSURE AVAILABLE	MAX = 95 PSI MINIMUM = 45 PSI
PRESSURE AT FURTHEST FIXTURE (WC, FV)	25 PSI
PRESSURE LOSS DUE TO HEIGHT (8 FT X .25 X .39 PSI)	3.9 PSI
PRESSURE LOSS THRU METER (2' METER)	9 PSI
TOTAL LOSS AVAILABLE FOR FRICTION (45-25-20 = 3.9 + 16.1 = 9 + 7.1 PSI)	7.1 PSI
LENGTH OF RUN	
OUTSIDE BUILDING	19 FT
INSIDE BUILDING	140 FT
TOTAL	159 FT
FITTINGS (EQUIVALENT RUN) = 159 FT X (1.25) = 198.75 FT	
ALLOWABLE FRICTION LOSSES (7.1 X .100 = 710 PSI/100FT / 198.75 = (3.5 PSI)	

WATER SIZING CHART										
3.5 PSI/100FT @ MAX 5.0 FT/SEC VELOCITY										
PIPE SIZE	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"	6"
GPM (GALLONS PER MIN)	2	5	10	16	29	60	105	165	290	-
FIXTURE UNITS (FLUSH VALVE)	0	0	0	12	76	270	666	1068	-	-
FIXTURE UNITS (FLUSH TANK)	1	6	13	20	51	175	408	719	1068	-
VELOCITY (FPS)	5	5	5	5	5	5	5	5	5	-



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1101 LEONARD BLVD SUITE 100-100

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1	PLAN CHECK SET	05/11/18
2	IBC SET	05/01/18

CONSULTANT'S LOG/OH KEY PLAN

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Sheet Title  
SCHEDULES

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2007-001

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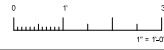
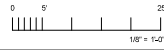
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CONTRACT PROJ. NO.

Sheet

P002

Of Sheets



**SHEET NOTES**

EXISTING PLUMBING FIXTURES AND TRIMS AND ALL ASSOCIATED PIPING TO BE REMOVED, DISPOSED OR SET BY STORAGE AS DIRECTED BY OWNER'S REPRESENTATIVE HAVING JURISDICTION.

EXISTING ELECTRIC WATER HEATER ABOVE CEILING AND ALL ASSOCIATED PIPING TO BE REMOVED.

EXISTING PIPING TO BE REMOVED.

EXISTING 1/2" CW & HOSE BIBS TO BE REMOVED. FIELD VERIFY EXISTING CONDITIONS PRIOR TO START OF WORK.

EXISTING 3/4" GAS UP TO HVAC UNITS ON ROOF TO REMAIN. CAP & REMOVE EXISTING.

EXISTING 4" VENT THROUGH ROOF TO REMAIN.

DISCONNECT EXISTING 3/4" GAS SUPPLY OUTSIDE BUILDING AND REMOVE EXISTING.

DISCONNECT EXISTING 1/2" GAS SUPPLY OUTSIDE BUILDING AND REMOVE EXISTING.

EXISTING 1/4" CW TO FIXTURES TO BE REMOVED. FIELD VERIFY EXISTING CONDITIONS PRIOR TO START OF WORK.

EXISTING 1" GAS TO BE REMOVED. DISCONNECT GAS AT POINT OF PENETRATION THROUGH ROOF. FIELD VERIFY EXISTING CONDITIONS PRIOR TO START OF WORK.

**KEYNOTES**

EXISTING PLUMBING FIXTURES AND TRIMS AND ALL ASSOCIATED PIPING TO BE REMOVED, DISPOSED OR SET BY STORAGE AS DIRECTED BY OWNER'S REPRESENTATIVE HAVING JURISDICTION.

EXISTING ELECTRIC WATER HEATER ABOVE CEILING AND ALL ASSOCIATED PIPING TO BE REMOVED.

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DISCONNECT EXISTING 3/4" GAS SUPPLY OUTSIDE BUILDING AND REMOVE EXISTING.

DISCONNECT EXISTING 1/2" GAS SUPPLY OUTSIDE BUILDING AND REMOVE EXISTING.

EXISTING 1/4" CW TO FIXTURES TO BE REMOVED. FIELD VERIFY EXISTING CONDITIONS PRIOR TO START OF WORK.

EXISTING 1" GAS TO BE REMOVED. DISCONNECT GAS AT POINT OF PENETRATION THROUGH ROOF. FIELD VERIFY EXISTING CONDITIONS PRIOR TO START OF WORK.

**SYMBOLS & ABBREVIATIONS**

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No.	Issued	Date
1	PLAN CHECK SET	06/11/13
2	REV. SET	03/20/13

CONSULTANT'S LOGO OR KEY PLAN

Project  
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Project

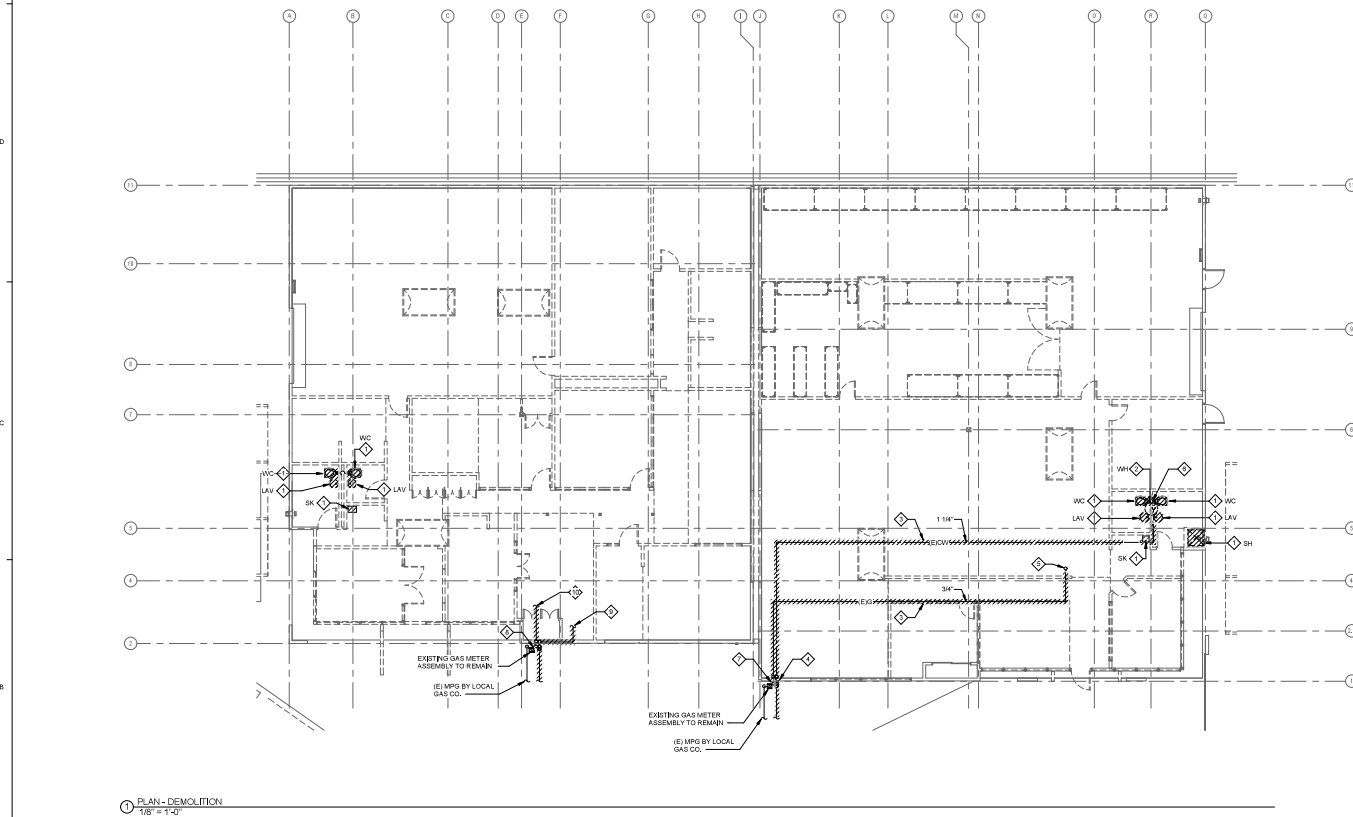
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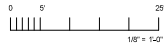
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 Sheet  
**PD101**  
 Of Sheets





**SHEET NOTES**

CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS PRIOR TO START OF WORK. SCOPE WILL DETERMINE EXISTING SANITARY SEWER BELOW GRADE TO IDENTIFY EXACT LOCATION, ELEVATION AND SIZE.



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**ISSUED BLOCKS / HISTORY LOG**

No.	Issued	Date
1	PLAN CHECK SET	06/11/18
2	RFC SET	05/01/18

**KEYNOTES**

- 1. CONNECT NEW 3/4" GAS TO EXISTING CAPPED END. PROVIDE NEW GAS COCK SOV & REE UP WALL. SUPPORT NEW PIPING AGAINST WALL. SEE DETAIL APES01.
- 2. NEW 2" COLD WATER UP W/SOV. SUPPORT NEW PIPING AGAINST WALL. SEE DETAIL APES01.
- 3. CONNECT NEW 1" GAS TO EXISTING CAPPED END. PROVIDE NEW GAS COCK SOV. SUPPORT NEW PIPING AGAINST WALL. SEE DETAILS 2PRE01 & 4PRE01.
- 4. NEW 1" GAS UP. SUPPORT NEW PIPING AGAINST WALL. SEE DETAIL APES01.

CONSULTANT'S LOGO OR KEY PLAN

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Sheet Title  
**PLAN - REMODEL**

Agency Application Number

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PROJECT NO.  
2007-001

Scale  
1/8" = 1'-0"

Drawn By  
Author

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Issue Date  
Issue Date

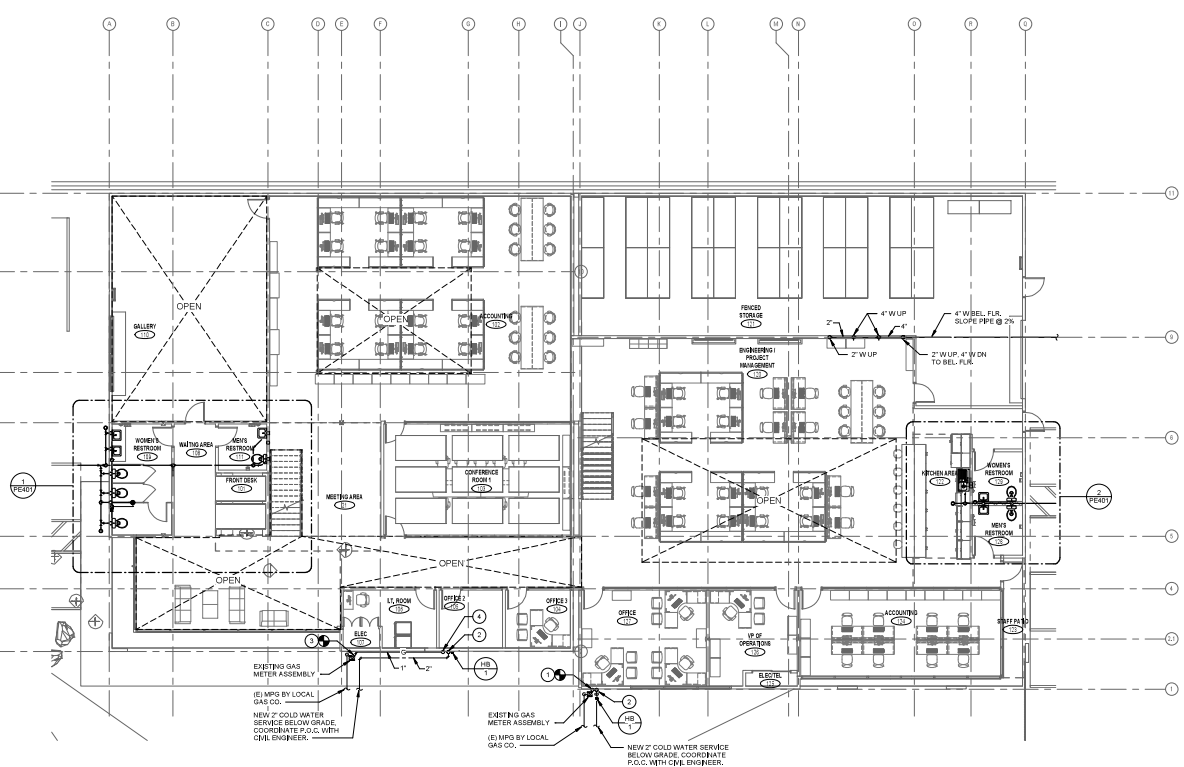
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Sheet

**PE101**

Of Sheets

Of Sheets



1. GROUND LEVEL - FLOOR PLAN  
1/8" = 1'-0"



**SHEET NOTES**

CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS PRIOR TO START OF WORK.



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**ISSUED BLOCKS / HISTORY LOG**

No.	Issued	Date
1	PLAN CHECK SET	06/11/16
2	REV. SET	05/21/16

**KEYNOTES**

- ① CONNECT NEW 3/4" GAS TO EXISTING CAPPED END ABOVE CEILING.
- ② CONNECT NEW 2" TO EXISTING 4" VENT THROUGH ROOF.
- ③ CONTINUE NEW 1" GAS TO POINT OF DISCONNECT BELOW ROOF.

CONSULTANT'S LOGO OR KEY PLAN

Project  
 5941 LAKESHORE DR.  
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Project

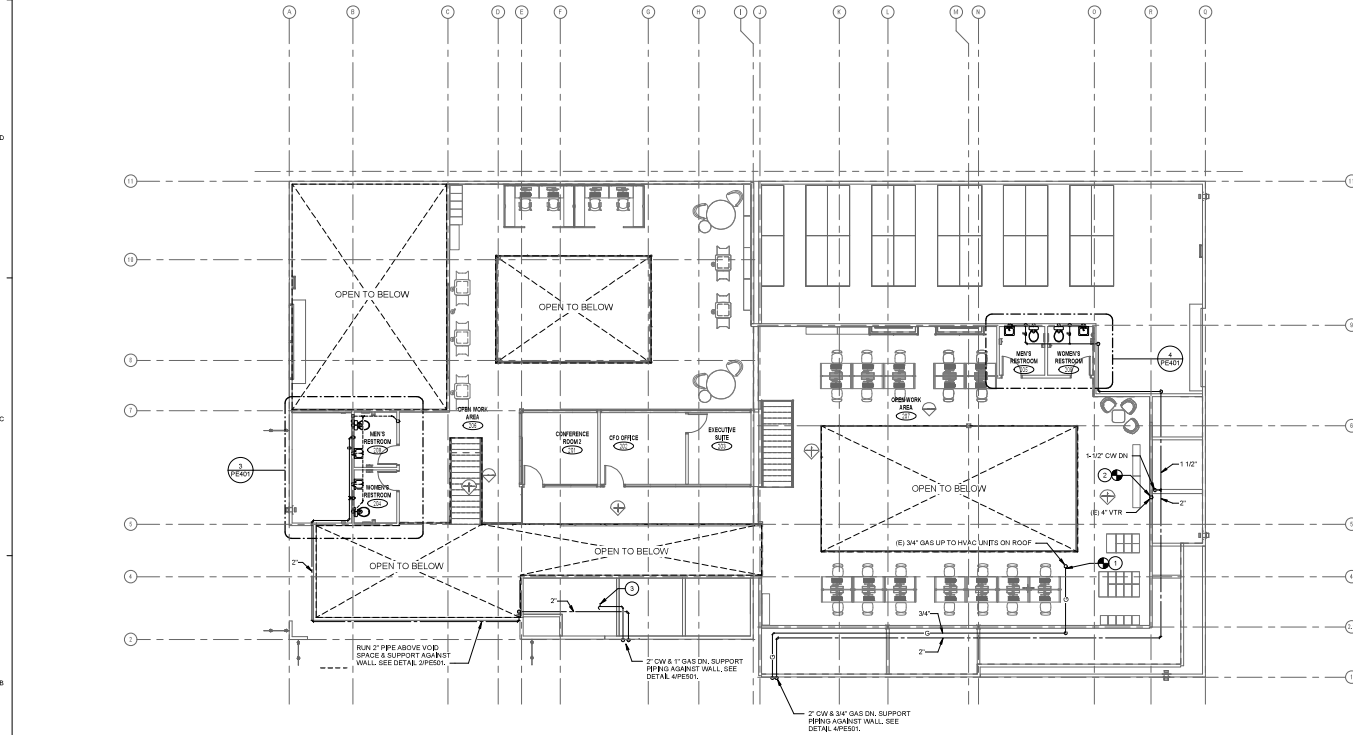
Sheet Title  
**PLAN - MEZZANINE**

Agency Application Number

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**SYMBOLS & ABBREVIATIONS**

PROJECT NO. 2007-001	CONSULTANT PROJECT NO.
Scale 1/8" = 1'-0"	Sheet
Drawn By Author	<b>PE102</b>
Checked By Checker	
Issue Date Issue Date	Of Sheets



① MEZZANINE LEVEL - REMODEL FLOOR PLAN  
 1/8" = 1'-0"



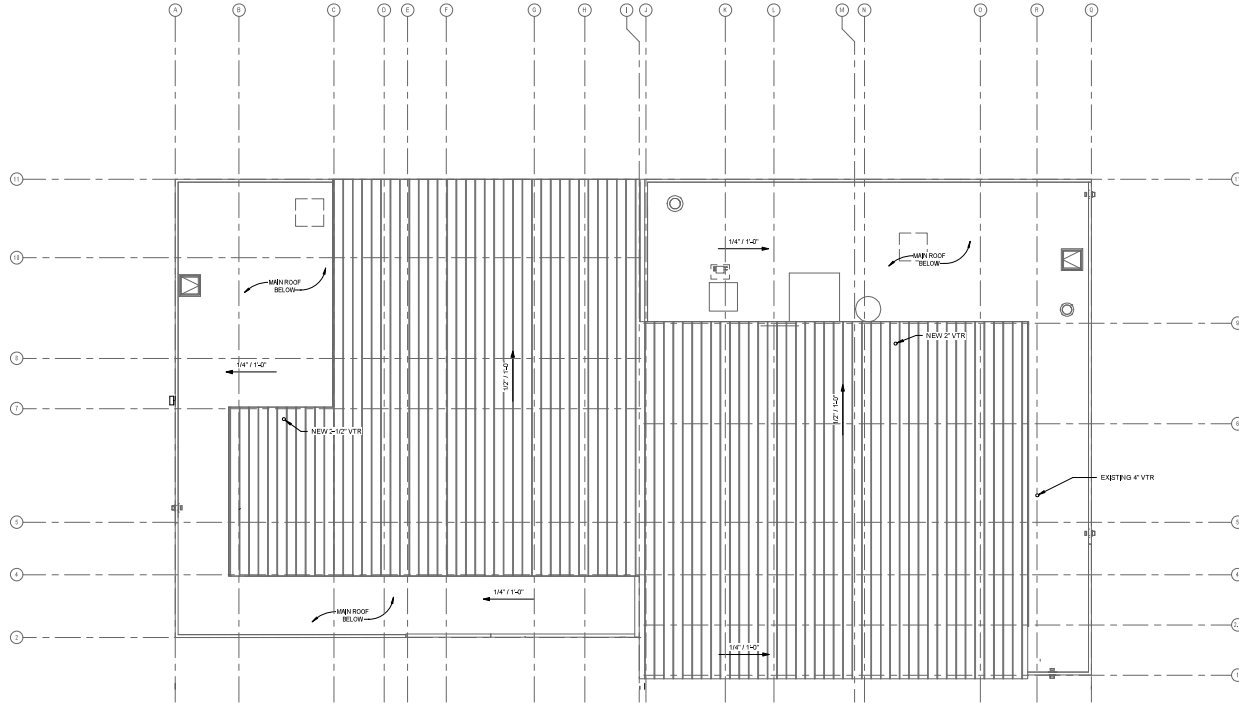
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A



1 ROOF PLAN  
1/8" = 1'-0"

SHEET NOTES

KEYNOTES

SYMBOLS & ABBREVIATIONS

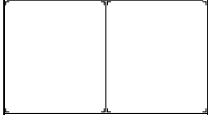


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No.	Issued	Date
1	PLAN CHECK SET	06/11/18
2	REV. SET	05/21/18

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Sheet Title  
PLAN - ROOF

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2007-001

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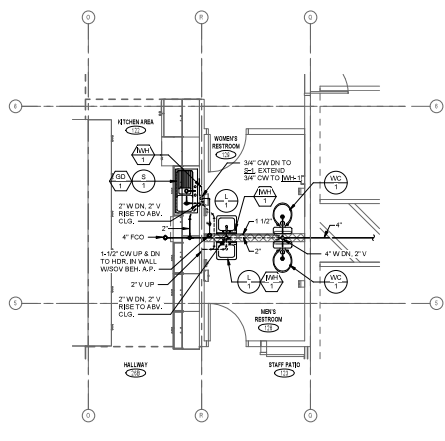
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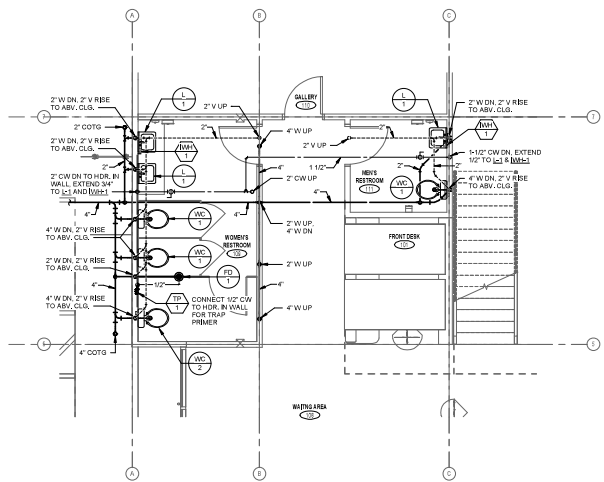
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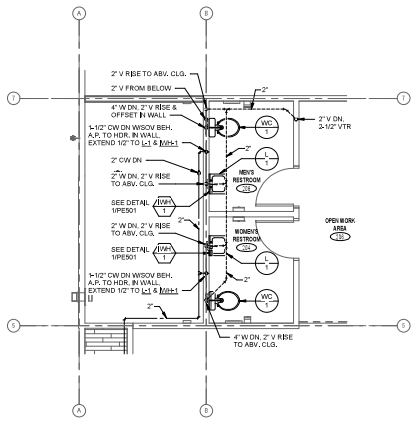




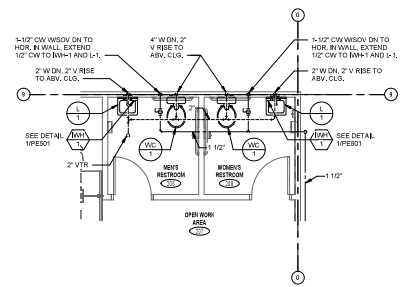
Ground Floor - Men's & Women's restrooms 18-19  
1/4" = 1'-0"



Ground Floor - Men's & Women's restrooms 10 & 12  
1/4" = 1'-0"



Mezzanine - Men's & Women's restrooms 21 & 115  
1/4" = 1'-0"



Mezzanine - Men's & Women's restroom 28 & 120  
1/4" = 1'-0"

SHEET NOTES

KEYNOTES

SYMBOLS & ABBREVIATIONS



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CYPRESS, CA 90630

Architect / Engineer Of Record

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1	PLAN CHECK SET	06/11/14
2	RFP SET	05/01/14

CONSULTANT'S LOGO OR KEY PLAN

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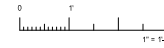
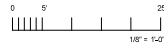
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Agency Application Number

Agency Approval Stamp

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2007-001  
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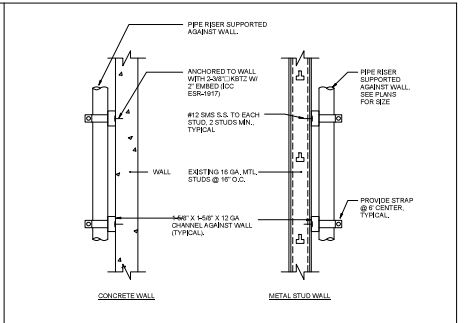
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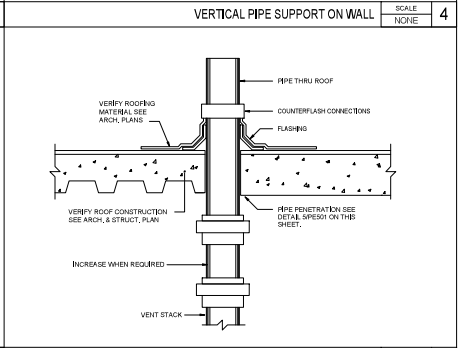
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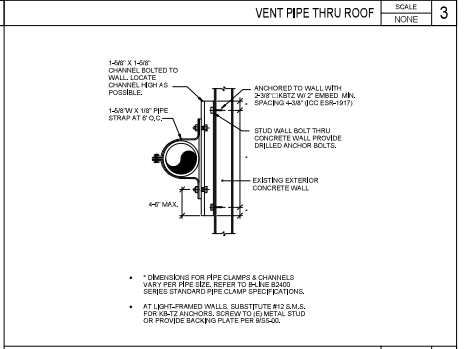
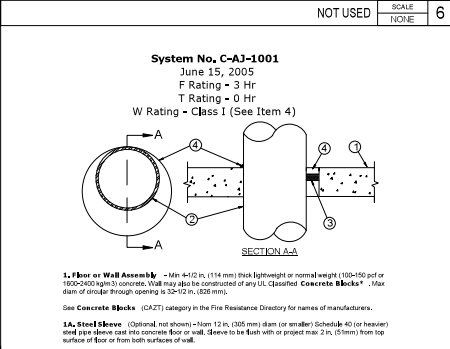
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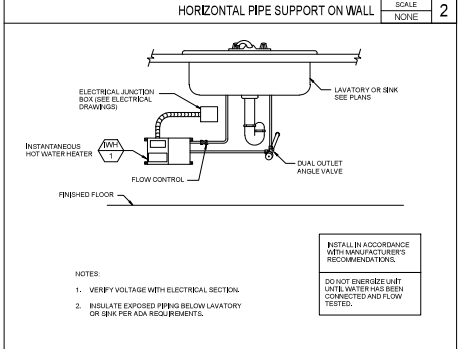
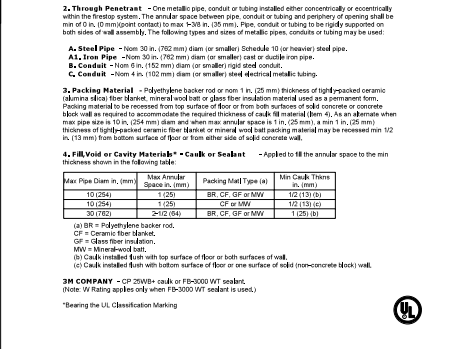
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CONSULTANT'S LOG/OH KEY PLAN

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Project

Sheet Title  
DETAILS

Agency Application Number

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PROJECT NO.	CONTRACT NO.
2007-001	
Scale	Sheet
Drawn By	Author
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Issue Date	Issue Date
	Of

PE501

**System No. C-AJ-1001**  
June 15, 2005  
F Rating - 3 Hr  
T Rating - 0 Hr  
W Rating - Class I (See Item 4)

**1. Floor or Wall Assembly** - Min 4-1/2 in. (114 mm) thick lightweight or normal weight (1000-150 pcf or 1600-2400 kg/m<sup>3</sup>) concrete. Wall may also be constructed of any UL Classified Concrete Blocks\*. Max diam of riser through opening is 30" (762 mm).

See Concrete Blocks (CAZT) category in the Fire Resistance Directory for names of manufacturers.

**1A. Steel Sleeve** (Optional, not shown) - Min 1/2 in. (125 mm) diam (or smaller) Schedule 40 (or heavier) steel pipe sleeve cast into concrete floor or wall. Sleeve to be flush with top surface of floor or wall.

**2. Through Penetrant** - One metallic pipe, conduit or tubing installed either concentrically or eccentrically within the through system. The annular space between pipe, conduit or tubing and penetrant opening shall be min 1/2 in. (12 mm) gap contact to max 3/8 in. (9.5 mm). Pipe, conduit or tubing to be rigidly supported on both sides of wall assembly. The following types and sizes of metallic pipes, conduits or tubing may be used:

**A. Steel Pipe** - Non 30 in. (762 mm) diam (or smaller) Schedule 10 (or heavier) steel pipe.  
**A1. Non Pipe** - Non 30 in. (762 mm) diam (or smaller) cast or ductile iron pipe.  
**B. Conduit** - Non 1 in. (25 mm) diam (or smaller) rigid steel conduit.  
**C. Conduit** - Non 1 in. (25 mm) diam (or smaller) rigid electrical metallic tubing.

**3. Packing Material** - Polyethylene backer rod or non 1 in. (25 mm) thickness of light-packed ceramic (alumina silica) fiber blanket, mineral wool batt or glass fiber insulation material used as a permanent form. Packing material to be recessed from top surface of floor or from both surfaces of solid concrete or concrete block wall as required to accommodate the required thickness of cast-in-place material (Item 4). As an alternate when max pipe size is 10 in. (254 mm) diam and when max annular space is 1/2 in. (12 mm), a min 1 in. (25 mm) thickness of light-packed ceramic fiber blanket or mineral wool batt packing material may be recessed min 1/2 in. (12 mm) from bottom surface of floor or from either side of solid concrete wall.

**4. Fill Void or Cavity Material\*\* - Cast or Sealant** - Applied to fill the annular space to the min thickness shown in the following table:

Max Pipe Diam. in. (mm)	Max Annular Space in. (mm)	Packing Mat'l Type (a)	Min Cast/Thick. in. (mm)
10 (254)	1 (25)	BR, GF or MW	1/2 (13) (b)
10 (254)	1 (25)	GF or MW	1/2 (13) (b)
30 (762)	2-1/2 (64)	BR, GF or MW	1 (25) (b)

(a) BR = Polyethylene backer rod.  
 GF = Ceramic fiber blanket.  
 MW = Mineral wool batt.  
 GF = Glass fiber insulation.  
 MW = Mineral wool batt.  
 (b) Cast/Thick. flush with top surface of floor or both surfaces of wall.  
 (c) Cast/Thick. flush with bottom surface of floor or one surface of solid (non-concrete block) wall.

**3M COMPANY** - GP 25WB+ cast or FB-3000 WT sealant.  
 (Note: W Rating applies only when FB-3000 WT sealant is used.)

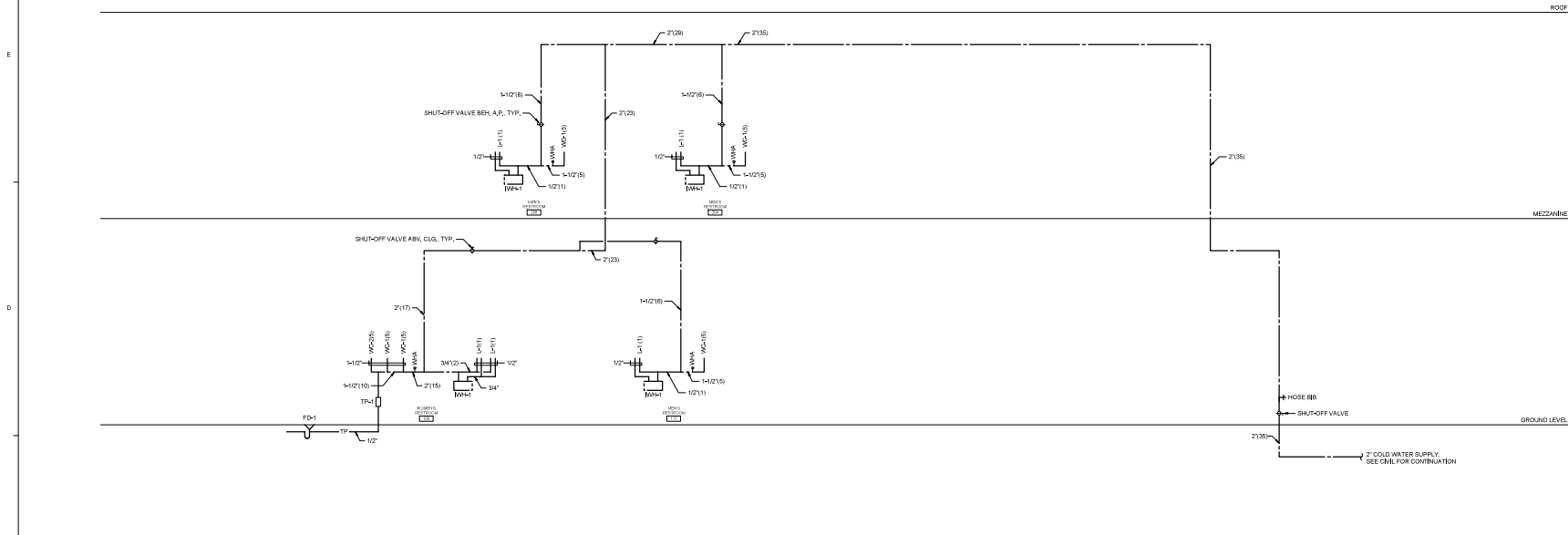
\*bearing the UL Classification Marking



- NOTES:
- VERIFY VOLTAGE WITH ELECTRICAL SECTION.
  - INSULATE EXPOSED PIPING BELOW LAVATORY OR SINK PER ADA REQUIREMENTS.

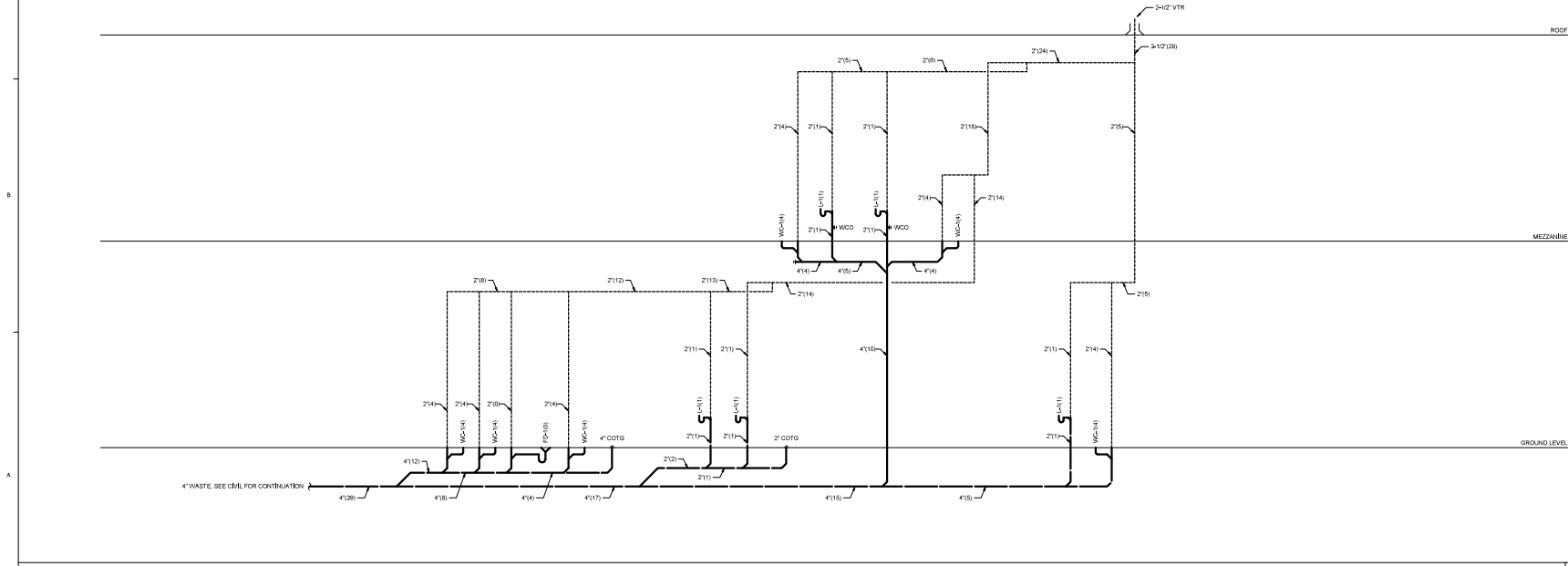
INSTALL IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

DO NOT ENERGIZE UNIT UNTIL WATER HAS BEEN CONNECTED AND FLOW TESTED.



HOT & COLD WATER RISER DIAGRAM - WEST BUILDING

SCALE: NONE 2



SANITARY WASTE & VENT RISER DIAGRAM - WEST BUILDING

SCALE: NONE 1



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Project

Sheet Title  
**RISER DIAGRAMS - WEST BUILDING**

Agency Application Number

Agency Approval Stamp

PROJECT NO:  
2007-001

CONSULTANT PROJ. NO.

Scale

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Author

**PE601**

Checked By

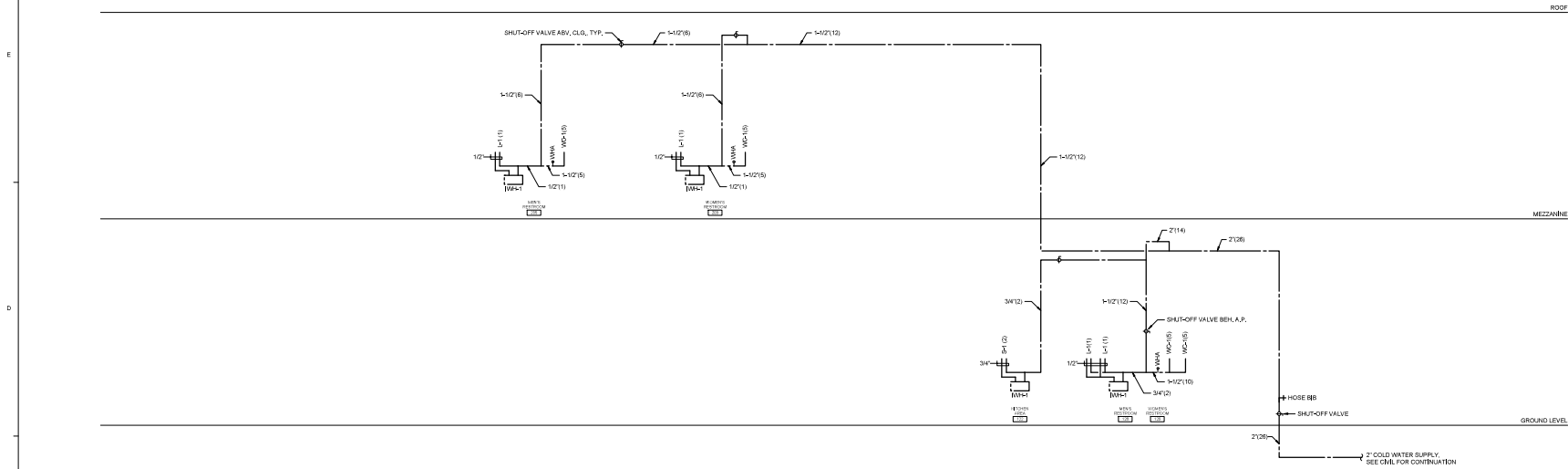
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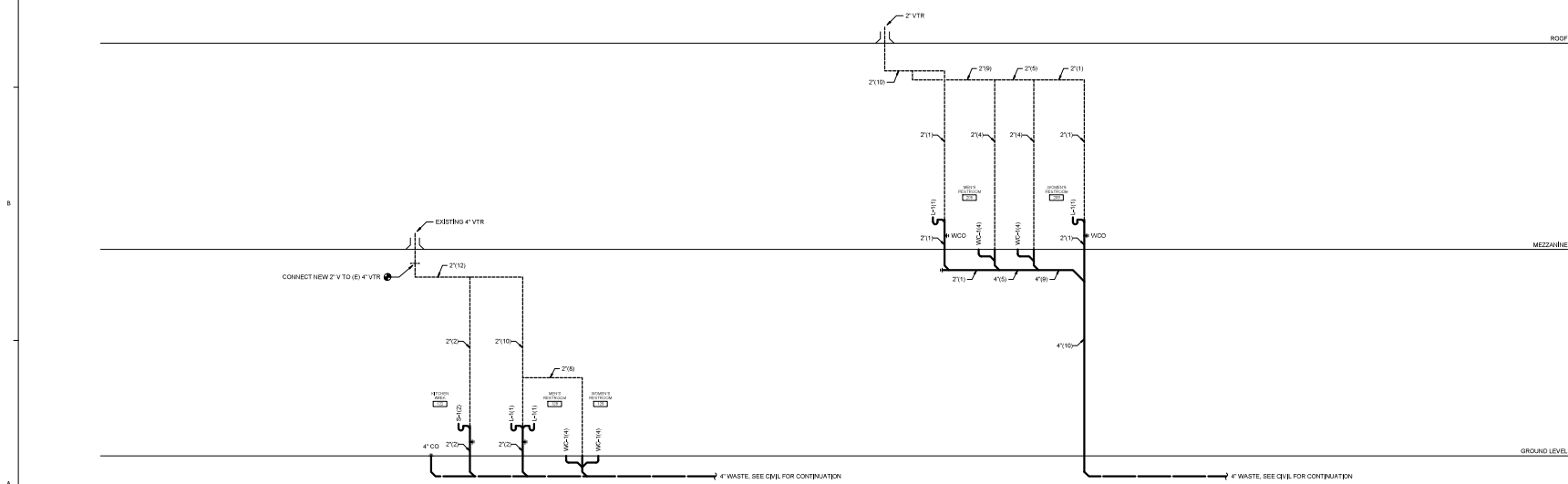
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HOT & COLD WATER RISER DIAGRAM - EAST BUILDING

SCALE: NONE 2



SANITARY WASTE & VENT RISER DIAGRAM - EAST BUILDING

SCALE: NONE 1



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2	REV. SET	12/01/18

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Project

Sheet Title  
RISER DIAGRAMS - EAST BUILDING

Agency Application Number

Agency Approval Stamp

PROJECT NO:  
2007-001

CONSULTANT PROJ. NO.  
Sheet

Scale

Sheet

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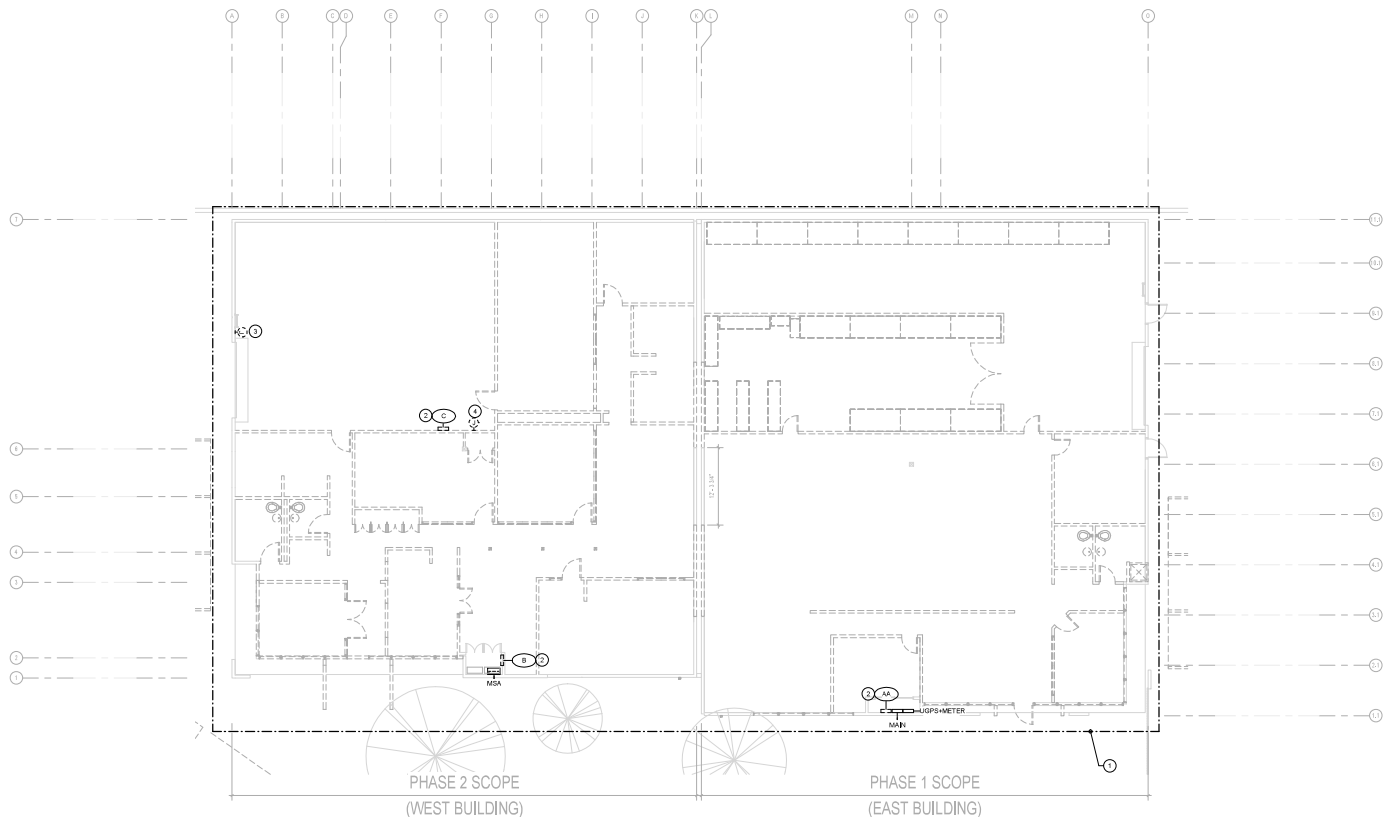
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Of Sheets

Issue Date Issue Date





PLAN - DEMOLITION - FIRST FLOOR  
POWER  
1/8" = 1'-0"

**GENERAL NOTES**

1. ELECTRICAL DRAWINGS ARE DIAGRAMMATIC; ONLY CONTRACTOR TO VERIFY EXACT LOCATION IN FIELD.
2. ELECTRICAL CONTRACTOR TO COORDINATE WITH MECHANICAL, PLUMBING AND OTHER TRADES FOR SEQUENCE OF DEMOLITION.
3. UNLESS OTHERWISE NOTED, EXISTING SERVICE METER, MAIN SWITCHBOARD AND ASSOCIATED ELECTRICAL PANELS TO REMAIN, PROTECT IN PLACE.

**KEY NOTES**

1. UNLESS OTHERWISE NOTED, ELECTRICAL CONTRACTOR TO DISCONNECT AND REMOVE EXISTING RECEPTACLES, WIDOTAPS, TV CONNECTIONS, LOW VOLTAGE EQUIPMENT, FIRE ALARM AND SECURITY SYSTEMS IN THE SCOPE OF WORK AREA. REMOVE ALL EXISTING CONDUIT AND WIRE BACK TO THE LAST SOURCE, TURN BREAKER TO OFF POSITION. ALL WIRE CABLES TO BE REMOVED BACK TO THE TELECOM ROOM.
2. EXISTING PANEL TO BE DISCONNECTED AND REMOVED. REMOVE ALL ASSOCIATED CONDUIT AND WIRE BACK TO LAST SOURCE, TURN BREAKER TO OFF POSITION AND LABEL AS SPARE.
3. EXISTING GARAGE MOTOR TO BE DISCONNECTED AND REMOVED. REMOVE ALL EXISTING CONDUIT AND WIRE TO LAST SOURCE AND SAFE OFF. TO BE REINSTALLED IN REMODEL PHASE. SEE SHEET E101 FOR ADDITIONAL INFORMATION.
4. EXISTING DE CHARGER TO BE DISCONNECTED AND REMOVED. REMOVE ALL EXISTING CONDUIT AND WIRE TO LAST SOURCE AND SAFE OFF. TO BE REINSTALLED IN REMODEL PHASE. SEE SHEET E101 FOR ADDITIONAL INFORMATION.



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1	PLAN CHECK SET	04/10/18
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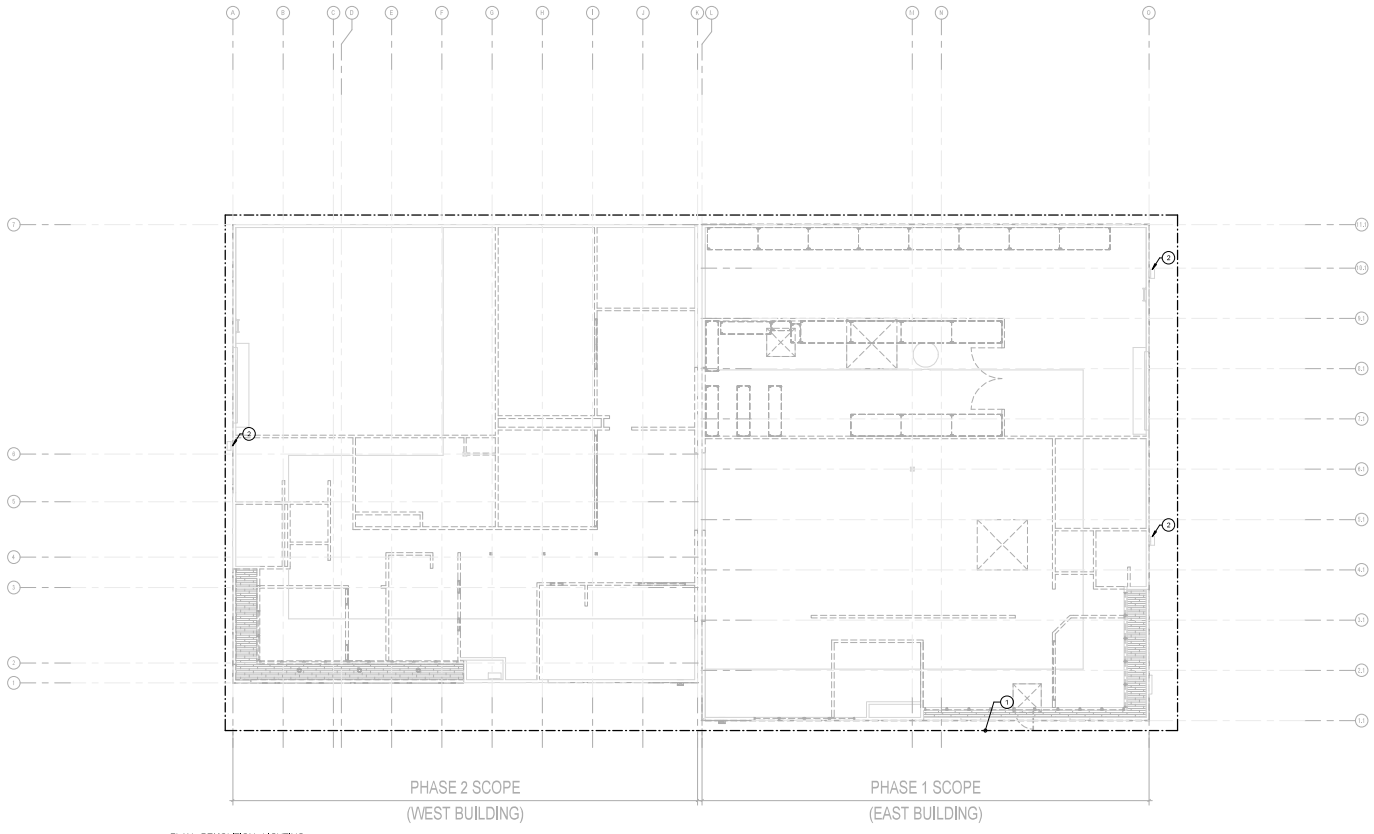
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Sheet Title  
**PLAN - DEMOLITION - POWER**

Agency Application Number

Agency Approval Stamp

PROJECT NO. 20074001	CONSULTANT PROJ. NO.
Scale As indicated	Sheet
Drawn By Author	<b>ED101</b>
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Issue Date	Issue Date
Of	Sheets



1 PLAN - DEMOLITION - LIGHTING  
1/8" = 1'-0"

**GENERAL NOTES**

- ELECTRICAL DRAWINGS ARE DIAGRAMMATIC ONLY. CONTRACTOR TO VERIFY EXACT LOCATION IN FIELD.
- ELECTRICAL CONTRACTOR TO COORDINATE WITH MECHANICAL, PLUMBING, AND OTHER TRADES FOR SEQUENCE OF DEMOLITION.

**KEY NOTES**

- UNLESS OTHERWISE NOTED, DISCONNECT AND REMOVE EXISTING LIGHT FIXTURES, LIGHT SWITCHES, AND BYPASS SWITCHES IN THE SCOPE OF WORK AREA. REMOVE ALL EXISTING CONDUIT AND WIRING TO LAST SOURCE. TURN BREAKER TO OFF POSITION. DISPOSE OF LIGHT FIXTURES PROPERLY.
- EXTERIOR WALL FINISH TO BE REMOVED AND REPLACED IN SAME LOCATION WITH NEW FINISH. REMOVE ASSOCIATED CONDUIT AND WIRE TO LAST SOURCE AND TURN BREAKER OFF.



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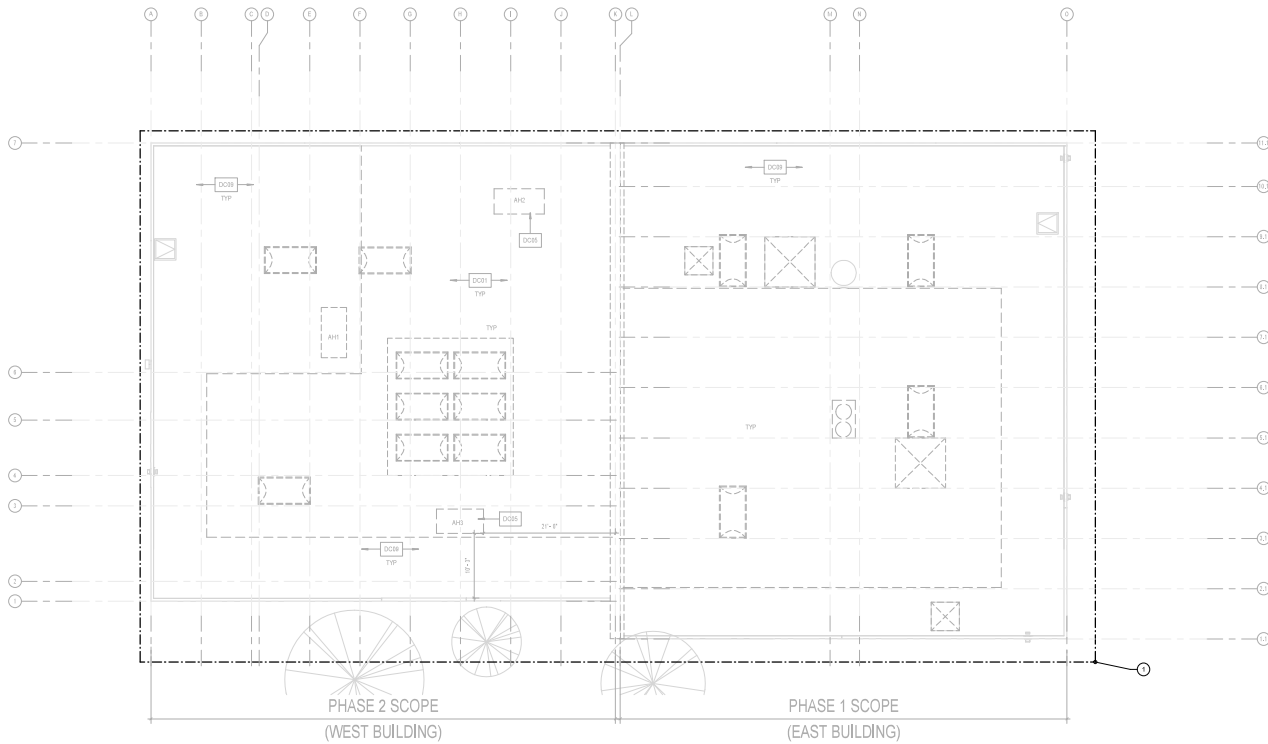
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**PLAN - DEMOLITION - LIGHTING**

Agency Application Number

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PROJECT NO. **2007401** CONSULTANT PROJ. NO.

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**ED102**  
Of Sheets



1 PLAN - DEMOLITION - ROOF  
1/8" = 1'-0"

**GENERAL NOTES**

1. ELECTRICAL DRAWINGS ARE DIAGRAMMATIC; ONLY CONTRACTOR TO VERIFY EXACT LOCATION IN FIELD.
2. ELECTRICAL CONTRACTOR TO COORDINATE WITH MECHANICAL, PLUMBING, AND OTHER TRADES FOR SEQUENCE OF DEMOLITION.

**KEY NOTES**

- 1. UNLESS OTHERWISE NOTED, DISCONNECT AND REMOVE ALL EXISTING RECEPTACLES AND ELECTRICAL EQUIPMENT IN THE ROOF ALONG WITH ITS ASSOCIATED CONDUIT AND CONDUCTORS, DEPOSE ALL MATERIALS PROPERLY.



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Sheet Title  
**PLAN - DEMOLITION - ROOF**

Agency Application Number

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PROJECT NO. **2007401** CONSULTANT PROJ. NO.

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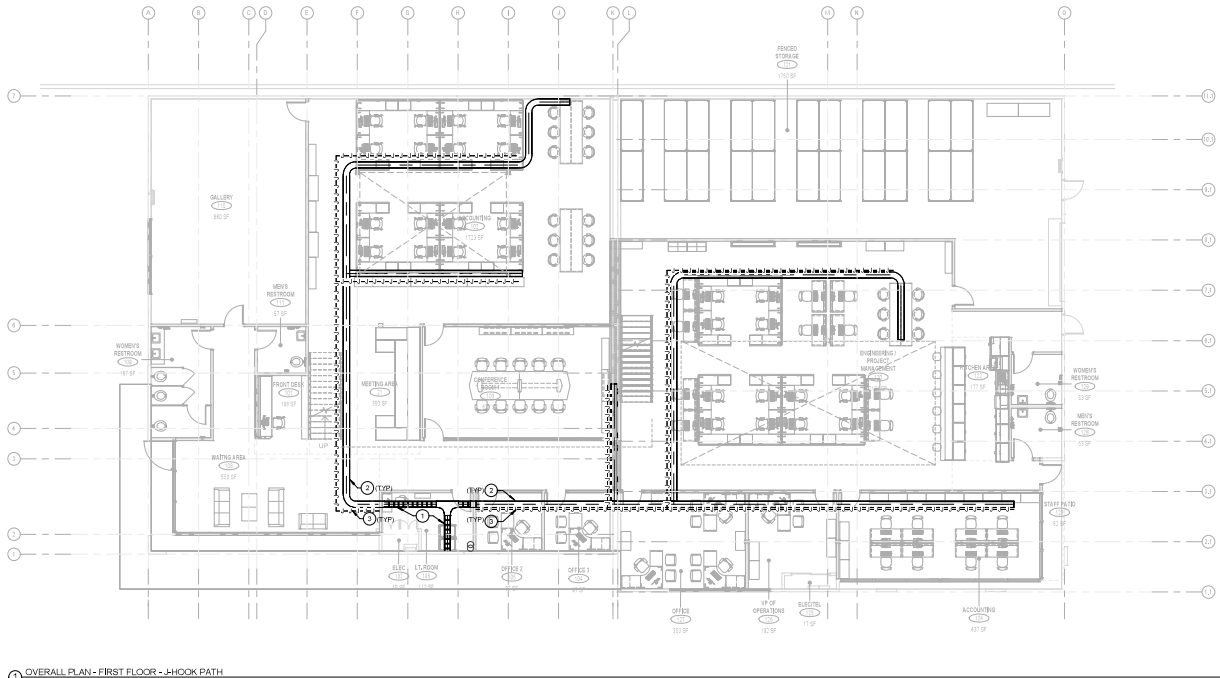
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**ED103**





1 OVERALL PLAN - FIRST FLOOR - J-HOOK PATH  
1/8" = 1'-0"

**GENERAL NOTES**

1. ELECTRICAL DRAWINGS ARE (DIAGRAMMATIC) ONLY. REFER TO ARCHITECTURAL AND MECHANICAL PLANS FOR EXACT LOCATIONS AND MOUNTING HEIGHT FOR ALL DEVICES PRIOR TO ROUGH IN.
2. COORDINATE ALL REQUIREMENTS AND CONNECTIONS FOR SECURITY, FIRE ALARM AND ALL LOW VOLTAGE SYSTEM WITH THE EQUIPMENT MANUFACTURER.
3. CONTRACTOR TO UTILIZE SEPARATE J-HOOK SYSTEM FOR FIRE ALARM, SECURITY AND ALL OTHER LOW VOLTAGE SYSTEMS, RUN J-HOOK PATH PARALLEL WITH CABLE TRAY LAYOUT AND EXTEND AS REQUIRED PER SYSTEM.
4. CABLE TRAY TO BE UTILIZED BY LT. LOW VOLTAGE CABLES ONLY CABLES ONLY.

**KEY NOTES**

- 1 PROVIDE AND INSTALL CHATSWORTH H120715 CABLE RUNWAY IN LT. ELECTRICAL ROOM ONLY.
- 2 PROVIDE AND INSTALL LEGRAND CABLOCEL CP105500 OR EQUIVALENT WITH SOLID BOTTOM THROUGHOUT REMODELED SPACE.
- 3 PROVIDE AND INSTALL SEPARATE J-HOOK SYSTEM AS REQUIRED FOR FIRE ALARM, SECURITY AND ALL OTHER LOW VOLTAGE EQUIPMENT AS REQUIRED.



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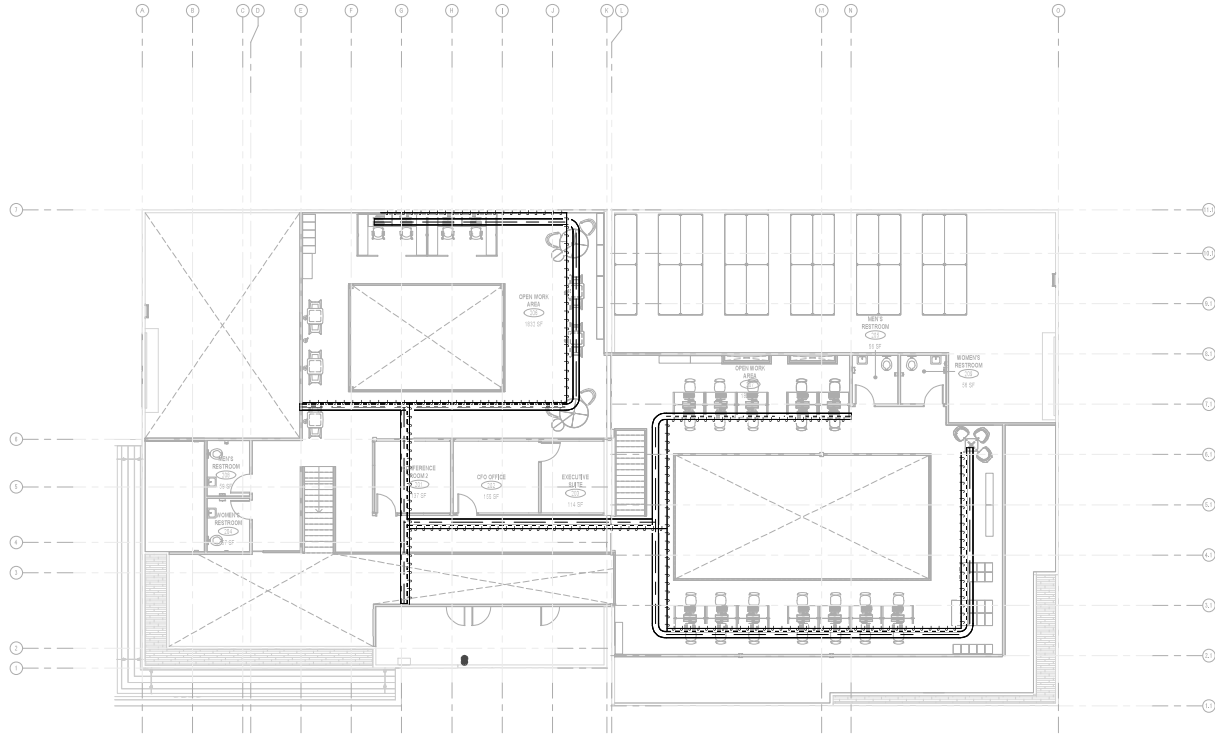
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Sheet Title  
OVERALL - FIRST FLOOR - J-HOOK  
AND CABLE TRAY PLAN

Agency Application Number

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PROJECT NO. 2007A01	CONSULTANT PROJ. NO.
Scale As indicated	Sheet E011
Drawn By Author	Of Sheets
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Issue Date Issue Date	



1 OVERALL PLAN - MEZZANINE - J-HOOK PATH  
1/8" = 1'-0"

**GENERAL NOTES**

- ELECTRICAL DRAWINGS ARE DIAGRAMMATIC; ONLY REFER TO ARCHITECTURAL AND MECHANICAL PLANS FOR EXACT LOCATIONS AND MOUNTING HEIGHT FOR ALL DEVICES PRIOR TO ROUGH IN.
- COORDINATE ALL REQUIREMENTS AND CONNECTIONS FOR SECURITY, FIRE ALARM AND ALL LOW VOLTAGE SYSTEM WITH THE EQUIPMENT MANUFACTURER.
- CONTRACTOR TO UTILIZE SEPARATE J-HOOK SYSTEM FOR FIRE ALARM, SECURITY AND ALL OTHER LOW VOLTAGE SYSTEMS; RUN J-HOOK PATH PARALLEL WITH CABLE TRAY LAYOUT AND EXTEND AS REQUIRED PER SYSTEM.
- CABLE TRAY TO BE UTILIZED BY LT. LOW VOLTAGE CABLES ONLY CABLES ONLY.

**KEY NOTES**

- PROVIDE AND INSTALL SEPARATE J-HOOK SYSTEMS REQUIRED FOR FIRE ALARM, SECURITY, AND ALL OTHER LOW VOLTAGE EQUIPMENT AS REQUIRED.
- PROVIDE INDUSTRIAL LEGGARD CAROLING OR EQUIVALENT WITH SOLID BOTTOM THROUGHOUT REMODELED SPACE.



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2	BID SET	05/01/18

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Project

Sheet Title  
**OVERALL - MEZZANINE - J-HOOK  
AND CABLE TRAY PLAN**

Agency Application Number

Agency Approval Stamp

PROJECT NO. <b>2007A01</b>	CONSULTANT PROJ. NO.
Scale As indicated	Sheet
Drawn By Author	<b>E012</b>
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Issue Date	Issue Date
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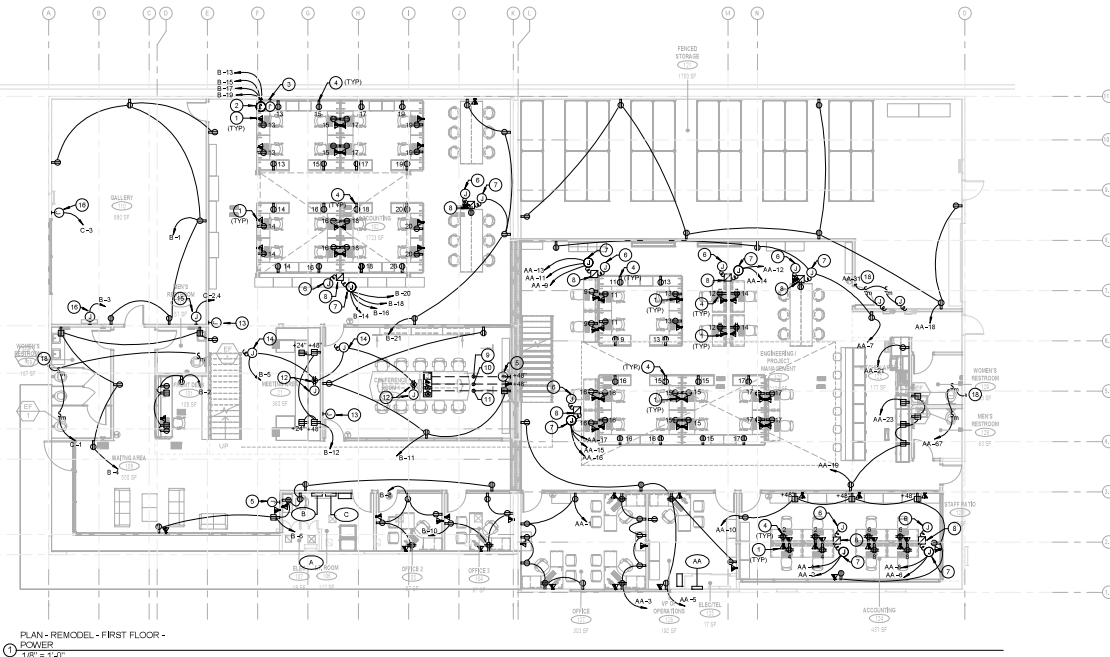


**GENERAL NOTES**

- ELECTRICAL DRAWINGS ARE MAXIMUMS (IE ONLY). REFER TO ARCHITECTURAL PLANS AND IDENTIFY FOR EXACT LOCATIONS AND MOUNTING HEIGHT FOR ALL DEVICES PRIOR TO ROUGH-IN.
- VERIFY EXACT LOCATIONS FOR MECHANICAL EQUIPMENT WITH MECHANICAL CONTRACTOR PRIOR TO INSTALLATION OF CONDUIT.
- ELECTRICAL PLANS GOVERN OVER MECHANICAL AND PLUMBING EQUIPMENT CONTROL. REFER TO MECHANICAL AND PLUMBING PLANS AND SPECIFICATIONS AND PROVIDE ALL LOCATIONS, WIRES, JACKETS, OUTLET BOXES, RELAY SWITCHES, TRANSFORMERS, SENSORS, CONTROL CIRCUITS, ETC. AS REQUIRED FOR A COMPLETE AND OPERABLE MECHANICAL AND PLUMBING INSTALLATION. ALL WIRES SHALL BE INSTALLED IN CODE SIZED CONDUIT.
- LOCATIONS OF SAFETY SWITCHES AND CONNECTIONS FOR MECHANICAL AND PLUMBING EQUIPMENT ARE SHOWN FOR INFORMATION ONLY. VERIFY ACTUAL LOCATIONS WITH EQUIPMENT SUPPLIER AND LOCATE SAFETY SWITCHES TO PROVIDE CODE REQUIRED CLEARANCES AND ACCESS.
- PROVIDE 30' CONDUITS FOR CONTROL, PROVIDE 3/4" BORE, 120V POWER, RELAYS, H.O.A. SWITCHES, ETC. PER MECHANICAL AND PLUMBING WORKING DRAWINGS FOR ALL MECHANICAL AND PLUMBING LIMITS. FIELD COORDINATE WITH MECHANICAL AND PLUMBING PLANS AS REQUIRED.
- PROVIDE GROUND FAULT (GFCI) INTERRUPTER (GFI) PROTECTION FOR RECEPTACLES WITH 120V OR WATER SOURCES PER CODE.
- CONTRACTOR TO COORDINATE THE PLACEMENT OF THE POWER POLE WITH ARCHITECT PRIOR TO ROUGH-IN. MARK THE LOCATION OF THE POWER POLE ON THE FLOOR PRIOR TO ROUGH-IN FOR APPROVAL BY THE ARCHITECT.
- CONTRACTOR TO PROVIDE DEVICE BOXES SIZED IN ACCORDANCE WITH NEC TABLE 314.16(A).
- COORDINATE ALL REQUIREMENTS AND CONNECTIONS FOR SECURITY, FIRE ALARM AND ALL LOW VOLT FIRE SYSTEM WITH THE EQUIPMENT MANUFACTURER.
- CONDUIT FOR SURFACE MOUNTED RECEPTACLE TO BE SURFACE MOUNTED. PROVIDE METAL FASCIAE. RECEPTACLES MOUNTED WITH GFI SHALL TO BE RECESSED. COORDINATE WITH ARCHITECT FOR FACEPLATE AND FINISHES.
- CONTRACTOR TO SUBMIT SUBMITTAL OF FURNITURE PRIOR TO ORDER TO ARCHITECT AND ENGINEER OF RECORD FOR APPROVAL.
- FURNITURE SYSTEM INFORMATION NOT AVAILABLE AT TIME OF DESIGN. CONTRACTOR TO VERIFY WITH ARCHITECT AND EQUIPMENT PLANNER. INCLUDE ALL PARTS, PIECES, AND COST FOR A COMPLETE AND WORKING SYSTEM.

**KEY NOTES**

- CONTRACTOR TO PROVIDE MOUNT AS SHOWN AND INSTALL IN THE ASSIGNED SPACE AT THE FURNITURE. VERIFY EXACT LOCATION WITH ARCHITECT AND FURNITURE MANUFACTURER.
- JUNCTION BOX WITH WIRE WIRE CONNECTION COMPATIBLE WITH HIGH FURNITURE WALL. PROVIDE NEW EMALLE COVER PLATE. VERIFY WITH FURNITURE MANUFACTURER FOR EXACT SPECIFICATIONS. INCLUDE ALL COST FOR A COMPLETE SYSTEM.
- JUNCTION BOX FOR WORK STATION VIDEODATA CONNECTIONS. INCLUDE ALL COST FOR A COMPLETE SYSTEM.
- WORKSTATION RECEPTACLES ARE SHOWN FOR REFERENCE ONLY. RECEPTACLES TO COME PRE-INSTALLED. REFER TO MANUFACTURER CUT SHEETS FOR EXACT LOCATIONS.
- JUNCTION BOX FOR AV BOX FOR TV DISPLAY. COORDINATE EXACT REQUIREMENTS WITH AV ARCHITECT.
- PROVIDE 4" BOX IN CEILING SPACE FOR DATA CONNECTION TO POWER POLE.
- PROVIDE 4" BOX IN CEILING SPACE FOR DATA CONNECTION TO POWER POLE.
- TWO COMPARTMENT POWER POLE. USE LEGRAND AL SERIES 3074-W. CONTRACTOR TO VERIFY CONNECTION TYPE AND LOCATION PRIOR TO ORDER WITH EQUIPMENT VENDOR AND ARCHITECT.
- PROVIDE 2" CONDUIT FOR AV CONNECTIONS TO FLOOR BOX IN CONFERENCE ROOM.
- PROVIDE 1" CONDUIT FOR IT CONNECTIONS TO FLOOR BOX IN CONFERENCE ROOM.
- PROVIDE 1" CONDUIT FOR POWER CONNECTIONS FOR RECEPTACLE TO FLOOR BOX IN CONFERENCE ROOM.
- PROVIDE NEW CEILING MOUNTED RECEPTACLE AND CEILING MOUNTED MOUNT AP FOR OVERHEAD PROJECTION SCREEN. INSTALL PER MANUFACTURER REQUIREMENTS.
- LOCATION FOR PROJECTOR SCREEN POWER. COORDINATE EXACT LOCATION WITH ARCHITECTURAL DRAWINGS. INSTALL PER MANUFACTURER RECOMMENDATIONS.
- PROVIDE 120V POWER FOR PROJECTION SCREEN. COORDINATE EXACT LOCATION WITH ARCHITECT. CONNECT TO CONTROL SWITCH AS REQUIRED. INSTALL PER MANUFACTURER RECOMMENDATION.
- RECONNECT POWER FOR EXISTING CHARGER TO BE RECONNECTED TO NEW PANEL AS SHOWN.
- RECONNECT POWER FOR EXISTING GARAGE MOTOR TO NEW PANEL AS SHOWN.
- JUNCTION BOX AND MOUNTAP FOR FIRE ALARM ANNUNCIATOR. REFER TO FIRE ALARM DRAWINGS FOR EXACT LOCATION AND ACCESSORY DETAILS.
- TO CONNECT DEVICES ON MEZZANINE LEVEL. SEE SHEET E102 FOR CONTINUATION OF CIRCUIT.



PLAN - REMODEL - FIRST FLOOR - POWER  
 1/8" = 1'-0"



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1	FOR CHECK SET	04/11/18
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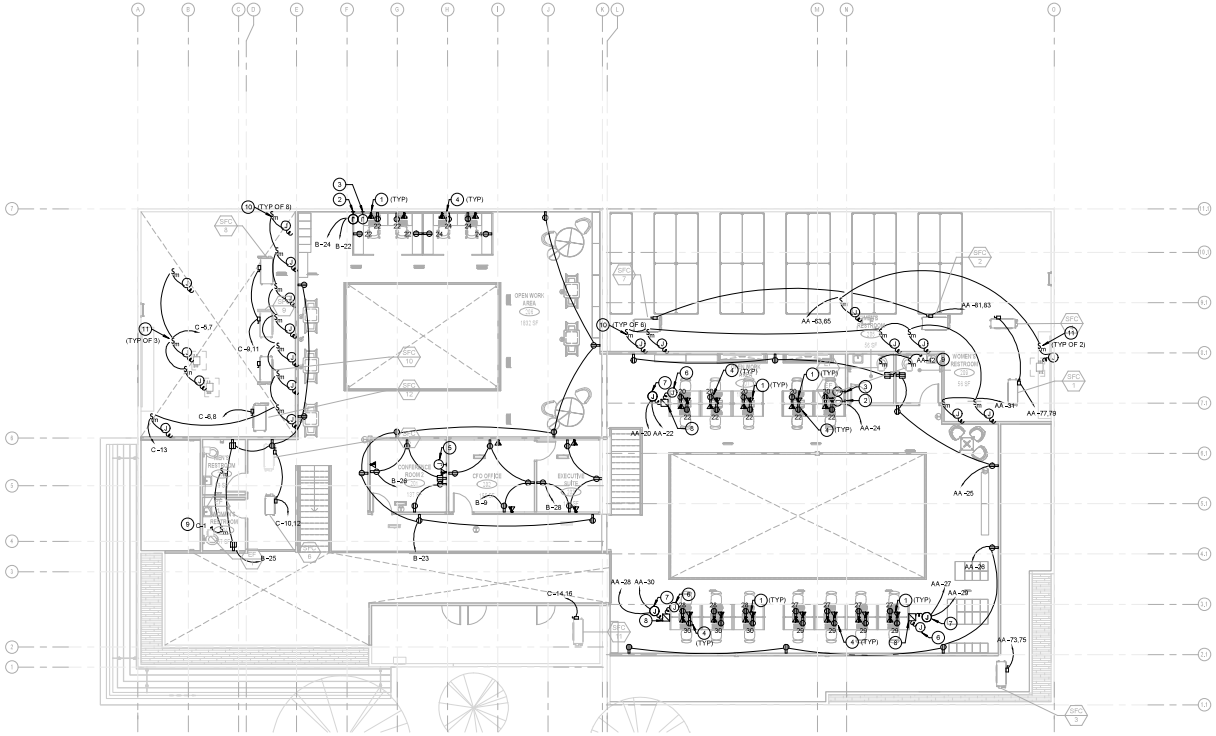
Project

Sheet Title  
**PLAN - REMODEL - FIRST FLOOR - POWER**

Agency Application Number

Agency Approval Stamp

PROJECT NO. 2007-001	CONSULTANT PROJ. NO.
Scale As indicated	Sheet
Drawn By Author	<b>E101</b>
Checked By Checker	
Issue Date	Issue Date
Of	Sheets



PLAN - REMODEL - MEZZANINE - POWER  
1/8" = 1'-0"

**GENERAL NOTES**

1. ELECTRICAL DRAWINGS ARE DIAGRAMMATIC ONLY. REFER TO ARCHITECTURAL PLANS AND ELEVATIONS FOR EXACT LOCATIONS AND MOUNTING HEIGHT FOR ALL DEVICES PRIOR TO ROUGH-IN.
2. VERIFY EXACT LOCATION OF MECHANICAL EQUIPMENT WITH MECHANICAL CONTRACTOR PRIOR TO INSTALLATION OF CONDUIT.
3. ELECTRICAL PLANS DO NOT INDICATE MECHANICAL AND PLUMBING EQUIPMENT CONTROL. REFER TO MECHANICAL AND PLUMBING PLANS AND SPECIFICATIONS AND PROVIDE ALL CONDUITS, WIRES, JUNCTION BOXES, RELAY SWITCHES, THERMOSTATS, SENSORS, CONTROL CIRCUITS, ETC. AS REQUIRED FOR A COMPLETE AND OPERABLE MECHANICAL AND PLUMBING INSTALLATION. ALL WIRES SHALL BE INSTALLED IN CODE SEED CONDUIT.
4. LOCATIONS OF SAFETY SWITCHES AND CONNECTIONS FOR MECHANICAL AND PLUMBING EQUIPMENT ARE SHOWN DIAGRAMMATICALLY. VERIFY ACTUAL LOCATIONS WITH EQUIPMENT SHOP DRAWINGS AND LOCATE SAFETY SWITCHES TO PROVIDE CODE REQUIRED CLEARANCES AND ACCESS.
5. PROVIDE 30\"/>

**KEY NOTES**

1. CONTRACTOR TO PROVIDE MDDTAP AS SHOWN AND INSTALL IN THE ASSIGNED SPACE AT THE FURNITURE. VERIFY EXACT LOCATION WITH ARCHITECT AND TANGRAM.
2. JUNCTION BOX WITH HUBBARD WIRE-WRAP CONNECTION COMPATIBLE WITH NEW FURNITURE WALL. PROVIDE NEW METALLIC COVER PLATE. VERIFY WITH FURNITURE MANUFACTURER TANGRAM EXACT SPECIFICATIONS. INCLUDE ALL COST FOR A COMPLETE SYSTEM.
3. JUNCTION BOX FOR WORK STATION VIDEO/DATA CONNECTIONS. INCLUDE ALL COST FOR A COMPLETE SYSTEM.
4. WORKSTATION RECEPTABLES ARE SHOWN FOR REFERENCE ONLY. RECEPTABLES TO BE PROVIDED BY MANUFACTURER. REFER TO MANUFACTURER CUT SHEETS FOR EXACT LOCATIONS.
5. JUNCTION BOX FOR AV BOX FOR TV DISPLAY. COORDINATE EXACT REQUIREMENTS WITH AV VENDOR.
6. PROVIDE J-BOX IN CEILING SPACE FOR DATA CONNECTION TO POWER POLE.
7. PROVIDE J-BOX IN CEILING SPACE FOR DATA CONNECTION TO POWER POLE.
8. TWO COMPARTMENT POWER POLE. USE LEGRAND AL SERIES 30TH-4V. CONTRACTOR TO VERIFY CONNECTION TYPE AND LOCATION PRIOR TO ORDER. WITH EQUIPMENT VENDOR AND ARCHITECT.
9. CIRCUIT CONTINUATION ON FIRST FLOOR. CONNECT TO EC-1 IN FIRST LEVEL RESTROOM.
10. PROVIDE 120V POWER TO CSPD. SEE MECHANICAL DRAWINGS FOR EXACT LOCATION AND POWER REQUIREMENTS.



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1	PLAN CHECK SET	04/10/18
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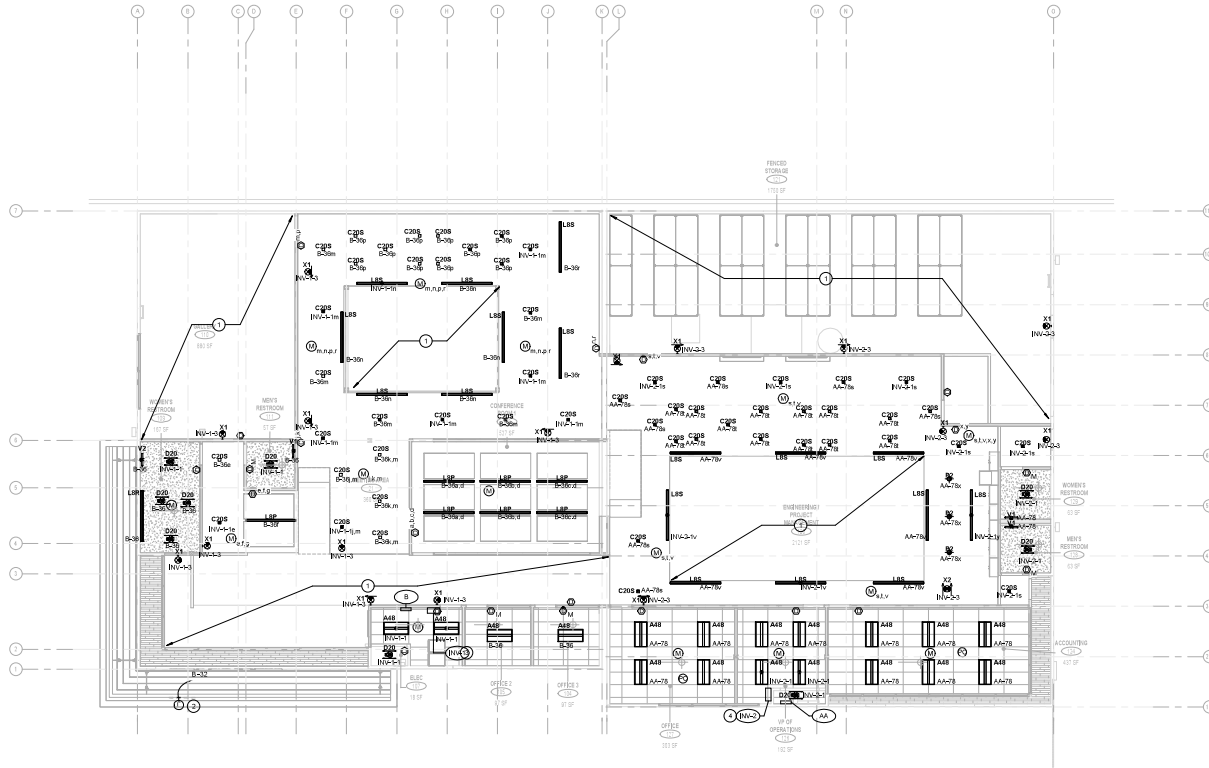
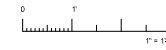
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Sheet Title  
**PLAN - REMODEL - MEZZANINE - POWER**

Agency Application Number

Agency Approval Stamp

PROJECT NO. 2007A001	CONSULTANT PROJ. NO.
Scale As indicated	Sheet
Drawn By Author	<b>E102</b>
Checked By Checker	
Issue Date Issue Date	Of Sheets



PLAN - REMODEL - FIRST FLOOR - LIGHTING  
1/8" = 1'-0"

### GENERAL NOTES

1. CONTROL WILL BE PROVIDED PER TITLE 24 AND UTILIZING N-LIGHT SYSTEM WITH DIMMING RESPONSE CAPABILITY.
2. CONTRACTOR TO ADJUST THE MOTION SENSOR SENSITIVITY PER TITLE 24 REQUIREMENTS AND OWNER REQUEST. INCLUDE ALL COST FOR PROGRAMMING.
3. CONTRACTOR SHALL WORK WITH THE VENDOR TO ADJUST NIGHT PHOTOCELL SENSITIVITY PER TITLE 24.
4. CONTRACTOR SHALL VERIFY CEILING TYPE WITH ARCHITECTURAL REFLECTED CEILING PLANS PRIOR TO PURCHASING OR ROUGHING OF FIXTURES.
5. ELECTRICAL DRAWINGS ARE DIAGRAMATIC ONLY. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATION OF ALL LIGHT FIXTURES.
6. USE EXTENDED RANGE MOTION SENSOR IN CORRIDOR. USE DUAL TECHNOLOGY MOTION SENSOR.
7. EMERGENCY LIGHT FIXTURE TO BE EQUIPPED WITH MICROEMER FOR LITHONIA FIXTURE BALL-TM WITH NIGHT SYSTEM AND MPPSEER FOR NON-NIGHT EMERGENCY FIXTURES.
8. CONTRACTOR TO COORDINATE AND ORDER PROPER FACE AND ARROWS OF EXIT SIGN.
9. CONTRACTOR TO SUBMIT NIGHT LOW VOLTAGE DRAWINGS TO BE REVIEWED BY ENGINEER OF RECORD.
10. SHADED FIXTURES INDICATE EMERGENCY CONNECTED TO INVERTER WITH 90 MINUTES BATTERY BACKUP.
11. INSTALL ALL FIXTURES AS SHOWN.

### KEY NOTES

- ① SEE SHEET E104 FOR FIXTURES IN THIS AREA. TO BE CONTROLLED BY DIMMER SWITCHES ON FIRST LEVEL.
- ② PROVIDE NON JUNCTION BOX FOR 120V POWER TO INTERNALLY ILLUMINATED SIGN.
- ③ CONNECT IN-1 TO PANEL B.
- ④ CONNECT IN-2 TO PANEL AA.



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Sheet Title  
**PLAN - REMODEL - FIRST FLOOR - LIGHTING**

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2007A001

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**E103**

Of Sheets

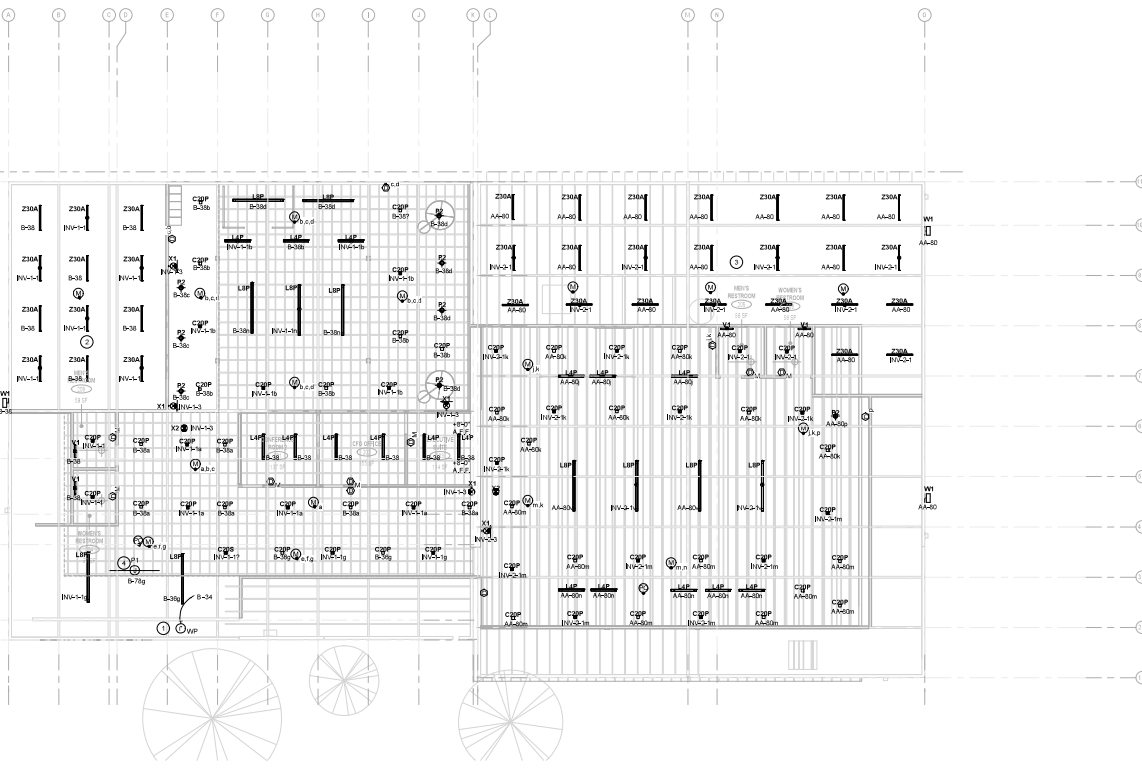


**GENERAL NOTES**

- CONTROL WILL BE PROVIDED PER TITLE 24 AND UTILIZED LIGHT SYSTEM WITH DEMAND RESPONSE CAPABILITY.
- CONTRACTOR TO ADJUST THE MOTION SENSOR SENSITIVITY PER TITLE 24 REQUIREMENTS AND OWNER REQUEST. INCLUDE ALL COST FOR PROGRAMMING.
- CONTRACTOR SHALL WORK WITH THE VENDOR TO ADJUST NIGHT PHOTOCELL SENSITIVITY PER TITLE 24.
- CONTRACTOR SHALL VERIFY CEILING TYPE WITH ARCHITECTURAL REFLECTED CEILING PLANS PRIOR TO PURCHASING OR POSITIONING OF FIXTURES.
- ELECTRICAL DRAWINGS ARE DIAGNOSTIC ONLY. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATION OF ALL LIGHT FIXTURES.
- USE EXTENDED RANGE MOTION SENSOR IN CORRIDOR; USE DUAL TECHNOLOGY MOTION SENSOR.
- EMERGENCY LIGHT FIXTURES TO BE EQUIPPED WITH BATTERIES FOR LITHONIA FIXTURE (MULTI WITH NIGHT SYSTEM AND HPI) OR FOR NON LITHONIA EMERGENCY FIXTURES.
- CONTRACTOR TO COORDINATE AND ORDER PROPER FACE AND ARROWS OF EXIT SIGNS.
- CONTRACTOR TO SUBMIT FLUENT LOW VOLTAGE DRAWINGS TO BE REVIEWED BY ENGINEER OF RECORD.
- SHADED FIXTURES INDICATE EMERGENCY WITH 90 MINUTES BATTERY BACKUP.
- UNLESS OTHERWISE NOTED, MOUNT ALL FIXTURES IN MEZZANINE AREA 10' ABOVE FINISHED FLOOR. REFER TO ARCHITECTURAL ELEVATIONS FOR EXACT CEILING HEIGHTS.

**KEY NOTES**

- PROVIDE JUNCTION BOX FOR 120V POWER AS SHOWN FOR INTERNALLY ILLUMINATED SIGN. CONNECT TO CIRCUIT AS SHOWN.
- FIXTURES IN GALLERY MOUNT AT 13'-0" ABOVE FINISHED FLOOR. TYPICAL OF 12 FIXTURES. CONNECT TO DIMMER SHOWN ON FIRST FLOOR LIGHTING SHEET.
- FIXTURES IN FENCED STORAGE AREA MOUNT 13'-0" ABOVE FINISHED FLOOR. TYPICAL OF 23 FIXTURES. CONNECT TO DIMMER SHOWN ON FIRST FLOOR LIGHTING SHEET.
- APPROXIMATE LOCATION FOR DECORATIVE SUSPENDED LED FIXTURE. CONTRACTOR TO COORDINATE EXACT MOUNTING HEIGHT AND LOCATION WITH ARCHITECT AND OWNER.



PLAN - REMODEL - MEZZANINE - LIGHTING  
1/8" = 1'-0"



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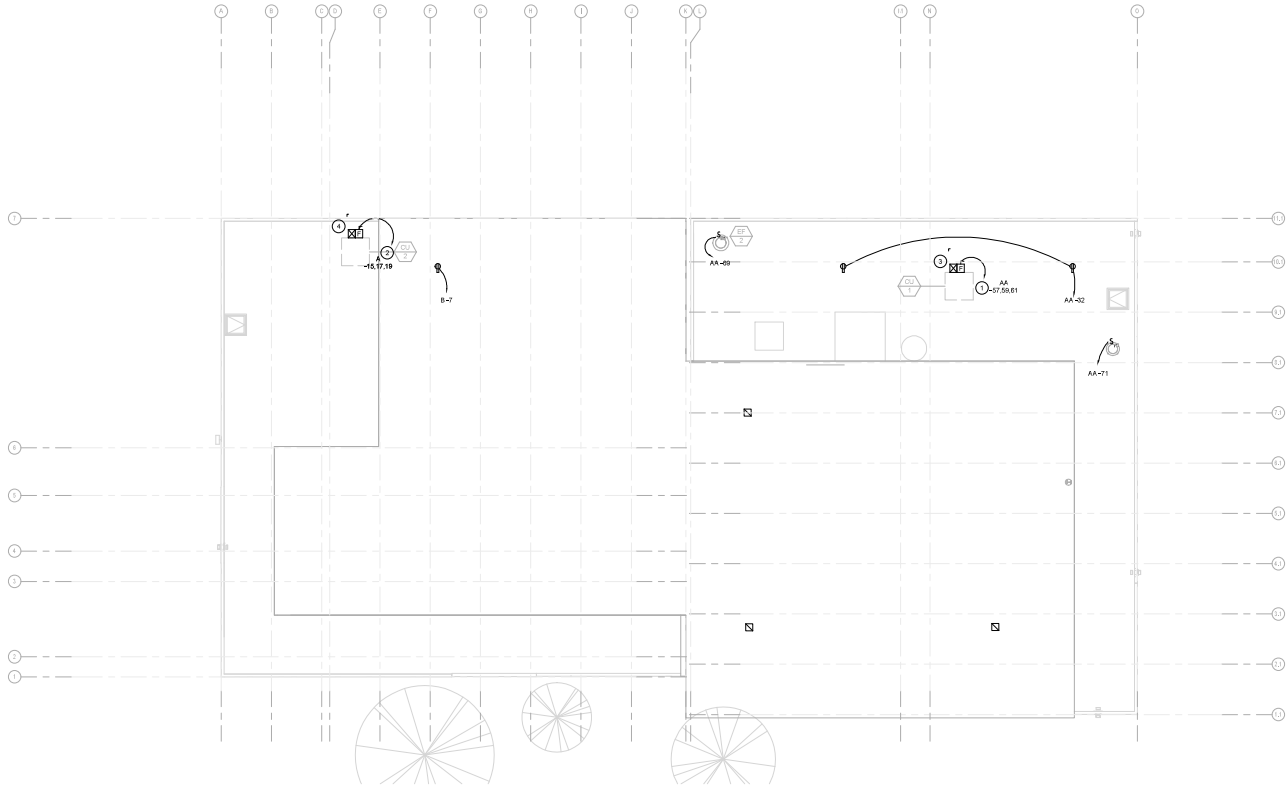
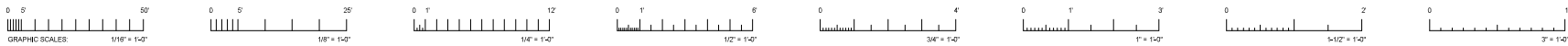
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Sheet Title  
PLAN - REMODEL - MEZZANINE - LIGHTING

Agency Application Number

Agency Approval Stamp

PROJECT NO. 20074001	CONSULTANT PROJ. NO.
Scale As indicated	Sheet E104
Drawn By Author	Checked By Checker
Issue Date Issue Date	Of Sheets



PLAN - REMODEL - ROOF  
1/8" = 1'-0"

### GENERAL NOTES

- ELECTRICAL DRAWINGS ARE DIAGRAMMATIC ONLY. REFER TO ARCHITECTURAL PLANS AND SPECIFICATIONS FOR EXACT LOCATIONS AND MOUNTING HEIGHT FOR ALL DEVICES PRIOR TO ROUGH-IN.
- VERIFY EXACT LOCATION OF MECHANICAL EQUIPMENT WITH MECHANICAL CONTRACTOR PRIOR TO INSTALLATION OF CONDUIT.
- ELECTRICAL PLANS DO NOT INDICATE MECHANICAL AND PLUMBING EQUIPMENT CONTROL. REFER TO MECHANICAL AND PLUMBING PLANS AND SPECIFICATIONS AND PROVIDE ALL CONDUITS, VIBRES, LOCKERS, OUTLET BOXES, RELAY SWITCHES, TIME SWITCHES, SENSORS, CONTROL CIRCUITS, ETC. AS REQUIRED FOR A COMPLETE AND OPERABLE MECHANICAL AND PLUMBING INSTALLATION. ALL WIRES SHALL BE INSTALLED IN CODE SIZED CONDUIT.
- LOCATIONS OF SAFETY SWITCHES AND CONNECTIONS FOR MECHANICAL AND PLUMBING EQUIPMENT ARE SHOWN DIAGRAMMATICALLY. VERIFY ACTUAL LOCATIONS WITH EQUIPMENT SHOP DRAWINGS AND LOCATE SAFETY SWITCHES TO PROVIDE CODE REQUIRED CLEARANCES AND ACCESS.
- PROVIDE 300V, 3PH, HEAVY DUTY COMBO MOTOR STARTER WITH NEMA 3R ENCLASURE WITH HOC SWITCH, 50W CONTROL TRANSFORMER AND 10A RK1 FUSE.
- CONTRACTOR TO PROVIDE DEVICE BOXES SIZED IN ACCORDANCE WITH NEC TABLE 314.16A.

### KEY NOTES

- CONNECT TO EAST MAIN DISTRIBUTION BOARD LOCATED ON FIRST FLOOR. SEE SINGLE LINE DIAGRAM FOR FEEDER REQUIREMENTS AND ADDITIONAL INFORMATION.
- CONNECT TO WEST MAIN DISTRIBUTION BOARD LOCATED ON FIRST FLOOR. SEE SINGLE LINE DIAGRAM FOR FEEDER REQUIREMENTS AND ADDITIONAL INFORMATION.
- PROVIDE 200V, 3PH, HEAVY DUTY COMBO MOTOR STARTER WITH NEMA 3R ENCLASURE WITH HOC SWITCH, 50W CONTROL TRANSFORMER AND 10A RK1 FUSE.
- PROVIDE 200V, 3PH, HEAVY DUTY COMBO MOTOR STARTER WITH NEMA 3R ENCLASURE WITH HOC SWITCH, 50W CONTROL TRANSFORMER AND 10A RK1 FUSE.



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Sheet Title  
**PLAN - REMODEL - ROOF**

Agency Application Number

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Scale As indicated Sheet

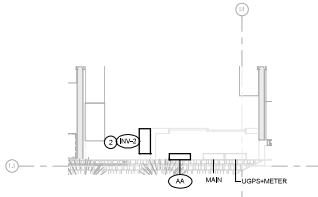
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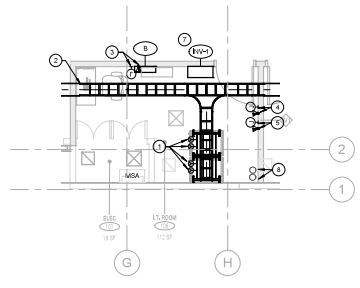
Issue Date Issue Date

**E105**

Of Sheets



① ENLARGED PLAN - FIRST FLOOR - ELEC ROOM 125  
1/4" = 1'-0"



① ENLARGED PLAN - FIRST FLOOR - ELEC ROOM 107 & LT. ROOM 106  
1/4" = 1'-0"

**GENERAL NOTES**

- ELECTRICAL DRAWINGS ARE DIAGNOSTIC ONLY. REFER TO ARCHITECTURAL AND MECHANICAL PLANS FOR EXACT LOCATIONS AND MOUNTING HEIGHT FOR ALL DEVICES PRIOR TO ROUGH IN.
- COORDINATE ALL REQUIREMENTS AND CONNECTIONS FOR SECURITY, FIRE ALARM, AND ALL LOW VOLTAGE SYSTEM WITH THE EQUIPMENT MANUFACTURER.

**KEY NOTES**

- PROVIDE NEW MYERS ILLUMINATOR EM 1800VA INVERTER 14042-664204

**GENERAL NOTES**

- ELECTRICAL DRAWINGS ARE DIAGNOSTIC ONLY. REFER TO ARCHITECTURAL AND MECHANICAL PLANS FOR EXACT LOCATIONS AND MOUNTING HEIGHT FOR ALL DEVICES PRIOR TO ROUGH IN.
- COORDINATE ALL REQUIREMENTS AND CONNECTIONS FOR SECURITY, FIRE ALARM, AND ALL LOW VOLTAGE SYSTEM WITH THE EQUIPMENT MANUFACTURER.

**KEY NOTES**

- PROVIDE NEW L2DR RECEPTABLES TO BE MOUNTED ABOVE RACK AT THE CABLE TRAY.
- PROVIDE AND INSTALL NEW LADDER TYPE CABLE RUNWAY IN ROOM.
- PROVIDE 120V POWER AND DATA FOR NIGHT CONTROLLER LOCATED IN ELECTRICAL ROOM.
- 120V POWER CONNECTION AND MOUNTAP FOR SECURITY ACCESS CONTROL PANEL. SEE SECURITY DRAWINGS FOR EXACT LOCATION AND ADDITIONAL DETAILS.
- 120V POWER CONNECTION AND MOUNTAP FOR FIRE ALARM HEAD IN EQUIPMENT. REFER TO FIRE ALARM DRAWINGS FOR EXACT LOCATION AND ADDITIONAL DETAILS.
- DEDICATED RECEPTABLE AND MOUNTAP FOR FIRE ALARM HEAD IN EQUIPMENT. REFER TO FIRE ALARM DRAWINGS FOR EXACT LOCATION AND ADDITIONAL DETAILS.
- PROVIDE NEW MYERS ILLUMINATOR EM 1800VA INVERTER 14042-664204
- PROVIDE (2) 4" CONDUIT FOR IT CABLES, STUB UP TO MEZZANINE LEVEL.



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Sheet Title  
**ENLARGED PLANS - REMODEL - FIRST FLOOR**

Agency Application Number

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PROJECT NO. 2007A01	CONSULTANT PROJ. NO.
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**DETAILS**

Agency Application Number

Agency Approval Stamp

PROJECT NO.  
**20074001**

Scale  
**12" = 1'-0"**

Drawn By  
**Author**

Checked By  
**Checker**

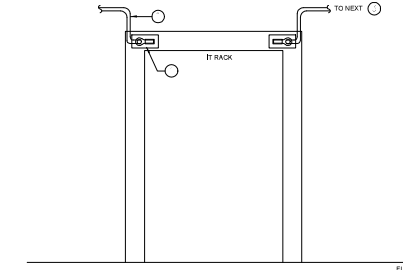
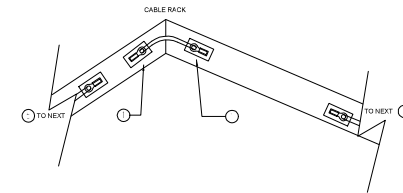
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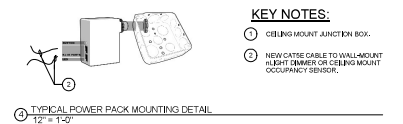
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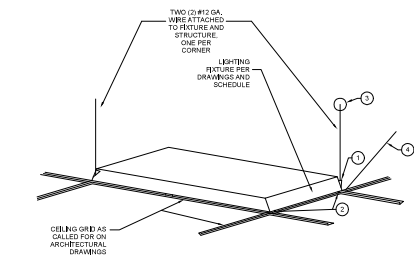
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- KEY NOTES**
- CONTRACTOR SHALL MATCH EXISTING HYDRUS LUGS. HYDRUS NEW EYE BOLT LUGS TO #6 COPPER WIRE. BOLT LUG TO BARE METAL WITH HEX HEAD 1/4X20 BOLT WITH LOCK WASHER AND NUT.
  - #6 GREEN COPPER WIRE FROM RACK TO NEVLY INSTALLED GROUND BUS. INSTALL IN OVERHEAD CABLE TRAY.
  - BOLT ALL RACKS TOGETHER WITH #6 GREEN COPPER JUMPER. USE METHOD FOR BOLTING SIMILAR TO KEYNOTE #1.
  - BOLT ALL CABLE TRAY TOGETHER WITH #6 GREEN COPPER JUMPER. USE METHOD FOR BOLTING SIMILAR TO KEYNOTE #1.
  - #6 GREEN COPPER WIRE FROM CABLE TRAY TO NEVLY INSTALLED GROUND BUS.
- IT CABLE RACK AND SERVER RACK GROUND DETAIL  
12" = 1'-0"



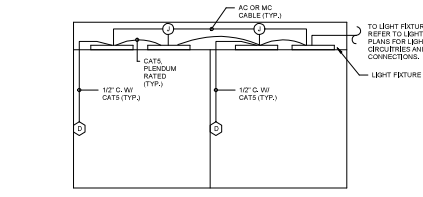
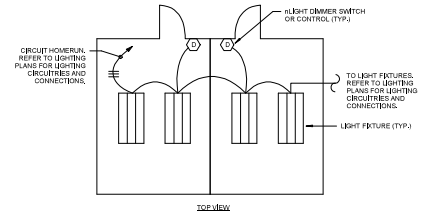
- KEY NOTES:**
- CEILING MOUNT JUNCTION BOX.
  - NEW CAT5E CABLE TO WALL MOUNT HANGIT TRIMER OR CEILING MOUNT OCCUPANCY SENSOR.
- TYPICAL POWER PACK MOUNTING DETAIL  
12" = 1'-0"



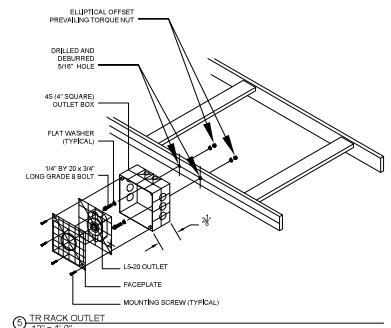
- NOTES:**
- ATTACH WIRE TO FIXTURE AS TIGHT TURN MIN. IN 1 1/2 MAX.
  - TIGHT OR EARTHQUAKE CLIPS SCREW GRID TO FIXTURE @ EACH CORNER.
  - ATTACH HANGER WIRE TO STRUCTURE AS PER STRUCTURAL & ARCHITECTURAL DETAILS.
  - CEILING SYSTEM SPRAY / HANGER WIRE AS OCCUR. SEE PLANS.
- RECESSED LAY-IN GRID FIXTURE MOUNTING DETAIL  
12" = 1'-0"

**GENERAL NOTES:**

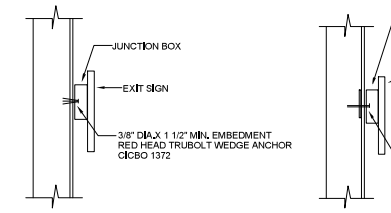
- 1. VERIFY ALL LIGHT CONTROL REQUIREMENT WITH MANUFACTURER FOR A COMPLETE OPERABLE SYSTEM.



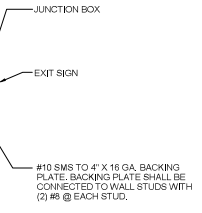
FLIGHT WIRING DIAGRAM DETAIL  
12" = 1'-0"



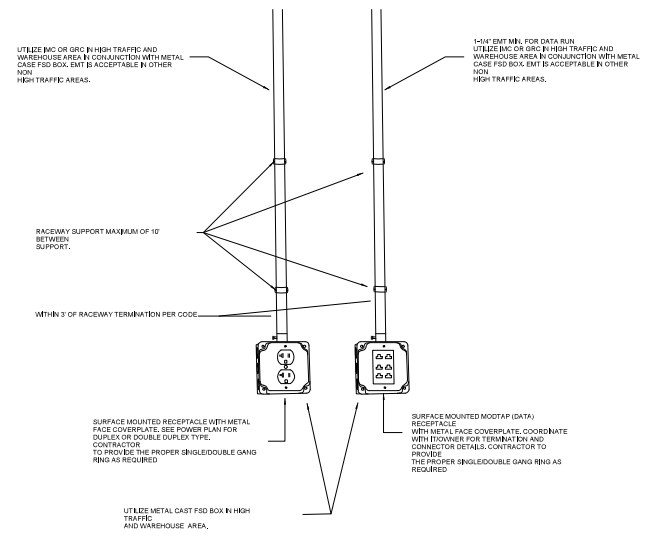
TR RACK OUTLET  
12" = 1'-0"



EXIST SIGN MOUNTING DETAIL 2  
12" = 1'-0"



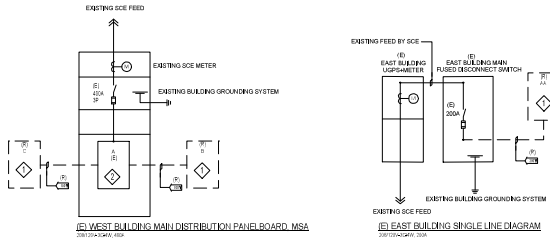
EXIST SIGN MOUNTING DETAIL 1  
12" = 1'-0"



TYPICAL SURFACE MOUNTED POWER AND DATA OUTLET  
12" = 1'-0"

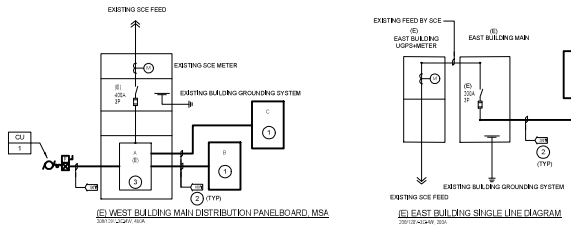
@CONCRETE WALL

@STUDWALL



EXISTING SINGLE LINE DIAGRAM

SCALE NTS 3



NEW SINGLE LINE DIAGRAM

SCALE NTS 2

**GENERAL NOTES**

- UNLESS OTHERWISE NOTED ALL DEVICES ARE EXISTING. PROTECT IN PLACE.
- UNLESS OTHERWISE NOTED, ALL DEVICES SHOWN ARE 3 POLE.
- EQUIPMENT LOCATED ON ROOF OR OUTSIDE SHALL BE WEATHER PROOF ANY TYPE.
- THE SERIES RATED OVERCURRENT PROTECTION DEVICES SHALL BE IDENTIFIED AND LABELED IN ACCORDANCE WITH NEC 110.22.
- ALL FEEDER CONDUITS SHALL HAVE GROUND BUSHINGS INSTALLED AT ALL ENCLOSURES PULL BOXES, BOND GROUND BUSHING WITH EQUIPMENT BOND WIRE.
- ALL PANEL AND EQUIPMENTS SHALL BE FULLY RATED.
- CONTRACTOR SHALL SUBMIT FAULT CURRENT COORDINATION AND ARC FAULT CURRENT STUDY FOR ENGINEER'S REVIEW IF REQUIRED BY THE AUTHORITY HAVING JURISDICTION (AHS) BASED ON THE STUDY. PROVIDE A LABEL INDICATING THE MAXIMUM AVAILABLE FAULT CURRENT.
- NEW ELECTRICAL PANEL SHALL HAVE AT A MINIMUM THE SAME WITHSTANDING RATING (AS) AS THE EXISTING PANEL, IF NOT AVAILABLE PROVIDE 20KNC MINIMUM.
- NEW ELECTRICAL PANEL SHALL BE MANUFACTURED BY Eaton.
- CONTRACTOR TO INCLUDE BUDGET COSTS TO REEED THE MAIN GROUNDING SYSTEM PER CODE FOR WEST AND EAST BUILDING. PROVIDE CONNECTION TO EXISTING UFER GROUND, MAIN COLD WATER PIPE, IRON/STEEL IF AVAILABLE. IF UFER GROUND NOT AVAILABLE, PROVIDE GROUND ROD SYSTEM (66 AWG, 2 RODS, 10' LONG #4, @20' FROM EACH OTHER).

**DEMO KEY NOTES**

- DISCONNECT AND REMOVE EXISTING PANELBOARD ALONG WITH ITS ASSOCIATED CONDUIT AND CONDUCTOR BACK TO THE LAST SOURCE. SAFE OFF ALL EXISTING EQUIPMENT THAT NEEDS TO REMAIN PER OWNER AND ARCHITECT INSTRUCTION, RECONNECT TO NEW ELECTRICAL PANEL.
- DISCONNECT AND REMOVE ALL EXISTING LOAD FROM PANEL "A" ALONG WITH ITS ASSOCIATED CONDUIT AND CONDUCTOR, SAFE OFF ALL EXISTING CB FOR FUTURE USE.

**NEW KEY NOTES**

- NEW 1000/100A-100A BUS 42 CIRCUIT ELECTRICAL PANEL, MAIN LUGS ONLY.
- NEW FEEDER, CONNECT TO EXISTING ELECTRICAL EQUIPMENT AS SHOWN.
- PROVIDE NEW CB AT PANEL A FOR NEW PANEL B AND NEW CB FOR CU-2. SEE PANEL SCHEDULE FOR DETAILS.
- PROVIDE NEW CB AT PANEL A FOR CU-1. SEE PANEL SCHEDULE FOR DETAILS.

**LEGEND:**

- (E) EXISTING TO REMAIN
- (R) EXISTING TO REMOVED
- NEW

**FEEDER SCHEDULE (COPPER)**

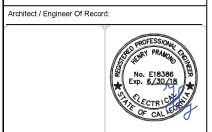
Circuit	WEST FEEDERS			EAST FEEDERS		
	Panel	Panel	Panel	Panel	Panel	Panel
1	MSA	MSA	MSA	MSA	MSA	MSA
2	MSA	MSA	MSA	MSA	MSA	MSA
3	MSA	MSA	MSA	MSA	MSA	MSA
4	MSA	MSA	MSA	MSA	MSA	MSA
5	MSA	MSA	MSA	MSA	MSA	MSA
6	MSA	MSA	MSA	MSA	MSA	MSA
7	MSA	MSA	MSA	MSA	MSA	MSA
8	MSA	MSA	MSA	MSA	MSA	MSA
9	MSA	MSA	MSA	MSA	MSA	MSA
10	MSA	MSA	MSA	MSA	MSA	MSA
11	MSA	MSA	MSA	MSA	MSA	MSA
12	MSA	MSA	MSA	MSA	MSA	MSA
13	MSA	MSA	MSA	MSA	MSA	MSA
14	MSA	MSA	MSA	MSA	MSA	MSA
15	MSA	MSA	MSA	MSA	MSA	MSA
16	MSA	MSA	MSA	MSA	MSA	MSA
17	MSA	MSA	MSA	MSA	MSA	MSA
18	MSA	MSA	MSA	MSA	MSA	MSA
19	MSA	MSA	MSA	MSA	MSA	MSA
20	MSA	MSA	MSA	MSA	MSA	MSA
21	MSA	MSA	MSA	MSA	MSA	MSA
22	MSA	MSA	MSA	MSA	MSA	MSA
23	MSA	MSA	MSA	MSA	MSA	MSA
24	MSA	MSA	MSA	MSA	MSA	MSA
25	MSA	MSA	MSA	MSA	MSA	MSA
26	MSA	MSA	MSA	MSA	MSA	MSA
27	MSA	MSA	MSA	MSA	MSA	MSA
28	MSA	MSA	MSA	MSA	MSA	MSA
29	MSA	MSA	MSA	MSA	MSA	MSA
30	MSA	MSA	MSA	MSA	MSA	MSA
31	MSA	MSA	MSA	MSA	MSA	MSA
32	MSA	MSA	MSA	MSA	MSA	MSA
33	MSA	MSA	MSA	MSA	MSA	MSA
34	MSA	MSA	MSA	MSA	MSA	MSA
35	MSA	MSA	MSA	MSA	MSA	MSA
36	MSA	MSA	MSA	MSA	MSA	MSA
37	MSA	MSA	MSA	MSA	MSA	MSA
38	MSA	MSA	MSA	MSA	MSA	MSA
39	MSA	MSA	MSA	MSA	MSA	MSA
40	MSA	MSA	MSA	MSA	MSA	MSA
41	MSA	MSA	MSA	MSA	MSA	MSA
42	MSA	MSA	MSA	MSA	MSA	MSA
43	MSA	MSA	MSA	MSA	MSA	MSA
44	MSA	MSA	MSA	MSA	MSA	MSA
45	MSA	MSA	MSA	MSA	MSA	MSA
46	MSA	MSA	MSA	MSA	MSA	MSA
47	MSA	MSA	MSA	MSA	MSA	MSA
48	MSA	MSA	MSA	MSA	MSA	MSA
49	MSA	MSA	MSA	MSA	MSA	MSA
50	MSA	MSA	MSA	MSA	MSA	MSA

FEEDER SCHEDULE AND NOTES

SCALE NTS 1

PANEL SCHEDULES

SCALE NTS 2



**ISSUED BLOCKS / HISTORY LOG**

No.	Issued	Date
1	PLAN CHECK SET	06/07/18
2	BID SET	05/01/18

Facility: 5841 LAKESHORE DR. CYPRESS, CA 90630

Project: DIAGRAMS - SINGLE LINE

Agency Application Number: \_\_\_\_\_

Agency Approval Stamp: \_\_\_\_\_

PROJECT NO. 2007A001

Scale: 12" = 1'-0"

Drawn By: Author

Checked By: Checker

Issue Date: Issue Date

CONSULTANT PROJ. NO. \_\_\_\_\_

Sheet: E601

Of: \_\_\_\_\_ Sheets





**OUTDOOR FIXTURE SCHEDULE**

SYMBOL	DESCRIPTION	MANUFACTURER/TYPE	QUANTITY
1	OUTDOOR LIGHT FIXTURE	1	1

**INDOOR FIXTURE SCHEDULE**

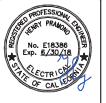
SYMBOL	DESCRIPTION	MANUFACTURER/TYPE	QUANTITY
1	INDOOR LIGHT FIXTURE	1	1



**THE PENN AIR GROUP**  
THE LEADER IN HVAC ENERGY SERVICES

5841 LAKESHORE DR.  
CYPRESS, CA 90630

Architect / Engineer Of Record



**ISSUED BLOCKS / HISTORY LOG**

No.	Issue	Date
1	PLAN CHECK SET	06/11/18
2	BID SET	05/01/18

CONSULTANT LOGS OR REVIEWS

Facility  
5841 LAKESHORE DR.  
CYPRESS, CA 90630

Project

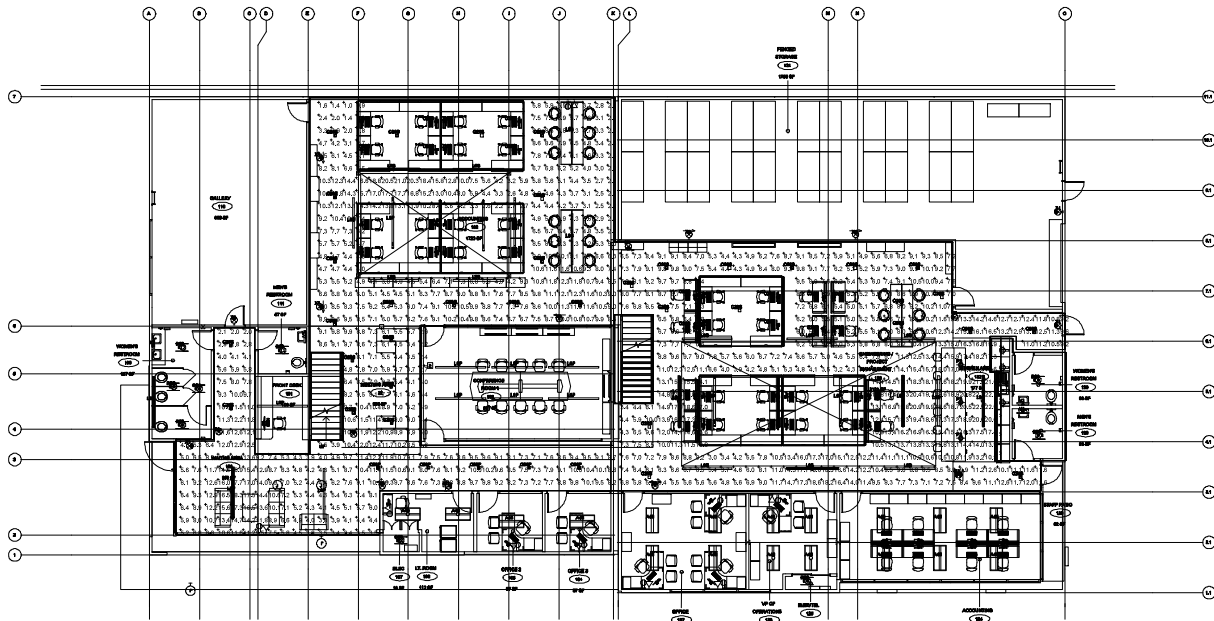
Sheet Title  
**SCHEDULES - LIGHT FIXTURE**

Agency Application Number

Agency Approval Stamp

PROJECT NO. 20074001 CONSULTANT PROJ. NO.

Scale Sheet  
Drawn By Author  
Checked By Checker  
Issue Date Issue Date  
Of Sheets  
**E701**



Plan View  
Scale: 1/8" = 1'-0"

Quantity	Symbol	Area	Perimeter	Volume	Weight
1	---	100	100	100	100

Code	Material	Description	Quantity	Unit	Volume	Weight
LBR	Reinforced concrete	12" x 12" x 12" concrete	100	cu yd	100	100
C20	Reinforced concrete	12" x 12" x 12" concrete	100	cu yd	100	100
LBS	Reinforced concrete	12" x 12" x 12" concrete	100	cu yd	100	100



**THE PENN AIR GROUP**  
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5841 LAKESHORE DR.  
CYPRESS, CA 90630

Architect / Engineer Of Record



**ISSUED BLOCKS / HISTORY LOG**

No.	Issued	Date
1	PLAN CHECK SET	04/07/18
2	BID SET	05/01/18

Facility  
5841 LAKESHORE DR.  
CYPRESS, CA 90630

Project

Sheet Title  
**PHOTOMETRIC - EGRESS - FIRST FLOOR**

Agency Application Number

Agency Approval Stamp

PROJECT NO.  
2007A01

Scale  
1/2" = 1'-0"

Drawn By  
Author

Checked By  
Checker

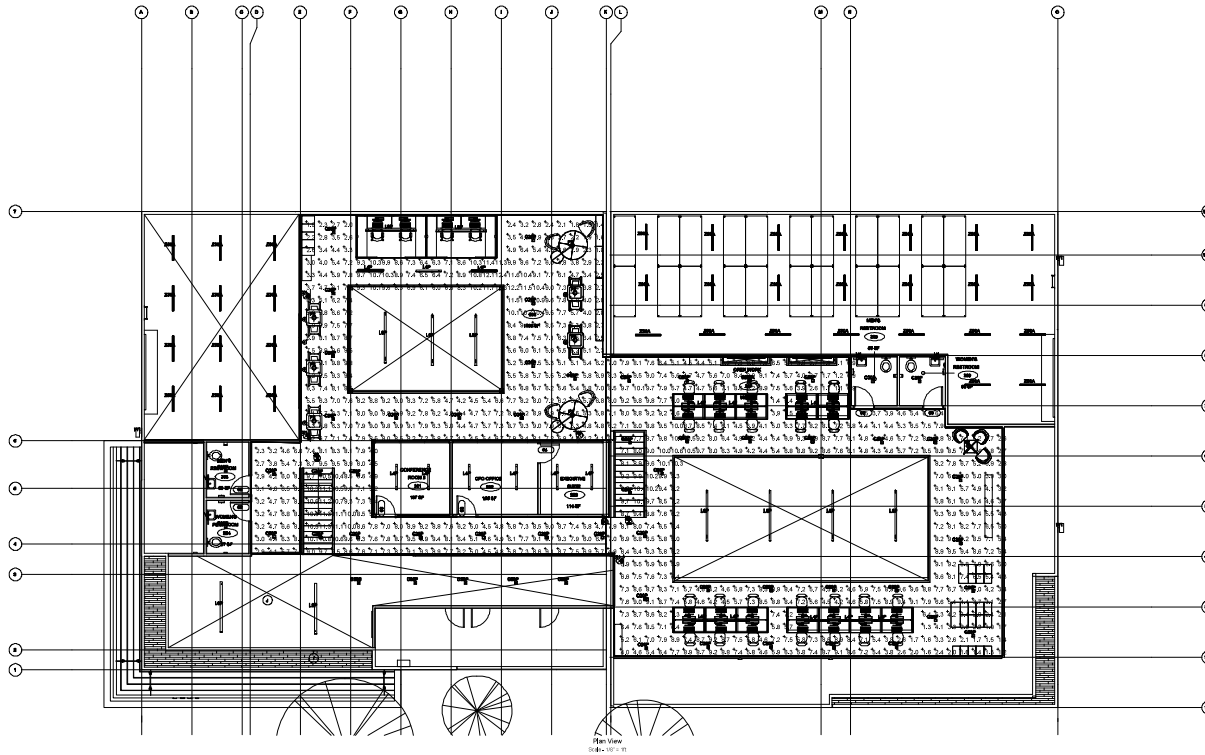
Issue Date  
Issue Date

CONSULTANT PROJ. NO.

Sheet

E801

Of Sheets



Quantity	Description	Unit	Area	Volume	Weight
1	MEZZANINE	SQ. FT.	1,200		
1	EGRESS	SQ. FT.	1,200		

Code	Material	Quantity	Unit	Notes
1	MEZZANINE	1	SQ. FT.	1,200
2	EGRESS	1	SQ. FT.	1,200



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THE LEADER IN HVAC ENERGY SERVICES

5841 LAKESHORE DR.  
CYPRESS, CA 90630

Architect / Engineer Of Record



**ISSUED BLOCKS / HISTORY LOG**

No.	Issued	Date
1	PLAN CHECK SET	04/01/18
2	BID SET	05/01/18

Facility  
5841 LAKESHORE DR.  
CYPRESS, CA 90630

Project

Sheet Title  
**PHOTOMETRIC - EGRESS - MEZZANINE**

Agency Application Number

Agency Approval Stamp

PROJECT NO. 2007A01  
Scale 1/2" = 1'-0"  
Drawn By Author  
Checked By Checker  
Issue Date Issue Date

CONSULTANT PROJ. NO.  
Sheet  
**E802**  
Of Sheets







**STATE OF CALIFORNIA  
INDOOR LIGHTING POWER ALLOWANCE**

**CERTIFICATE OF COMPLIANCE**  
 Certificate of Compliance - Indoor Lighting Power Allowance  
 PENN AIR GROUP TENANT IMPROVEMENT  
 Date: 3/18/2018  
 Project: NRCC-LT10-2 (Page 4 of 4)

**DOCUMENTATION AUTHOR'S DECLARATION STATEMENT**  
 I, the undersigned, certify that the information provided in this Certificate of Compliance is true and correct.  
 I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance.  
 I have reviewed the project drawings and specifications and have verified that the information provided in this Certificate of Compliance is consistent with the information provided on other applicable compliance documents, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.  
 I will ensure that a completed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

**RESPONSIBLE PERSON'S DECLARATION STATEMENT**  
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**STATE OF CALIFORNIA  
INDOOR LIGHTING POWER ALLOWANCE**

**CERTIFICATE OF COMPLIANCE**  
 Certificate of Compliance - Indoor Lighting Power Allowance  
 PENN AIR GROUP TENANT IMPROVEMENT  
 Date: 3/18/2018  
 Project: NRCC-LT10-2 (Page 1 of 4)

A separate page must be filed out for Conditioned and Unconditioned Spaces. This page is only for:  
 CONDITIONED spaces  UNCONDITIONED spaces

**A. SUMMARY TABLES OF LIGHTING POWER ALLOWANCES**  
 1. Using ConsensusDOCS Method for compliance, use only the total in column (a) as total allowed building watts.  
 If using Area Category Method, Tabored Method, or a combination of Area Category and Tabored Method for compliance, use only the total in column (b) as the total allowed building watts.

01	02	03	04
Complete Building Method Allowed Watts, Documented in section B of NRCC-LT10-2 (below on this page)	12552.8		0
Area Category Method Allowed Watts, Documented in section C1 of NRCC-LT10-2 (below on this page)		12552.8	0
Tabored Method Allowed Watts, Documented in section A of NRCC-LT10-2			
TOTAL ALLOWED BUILDING WATTS. Enter number into correct cell on NRCC-LT10-2, Page 2, Row 1	12552.8		0

Check here if building contains both conditioned and unconditioned areas.

**B. COMPLETE BUILDING METHOD LIGHTING POWER ALLOWANCE**

01	02	03	04
TYPE OF BUILDING (from 6.140.6 Table 140.6-B)	WATTS PER FT <sup>2</sup>	COMPLETE BLDG. AREA (ft <sup>2</sup> )	ALLOWED WATTS
OFFICE BUILDING	1595	1595	12552.8
Total Area	1595	1595	12552.8
Total Watts. Enter Total Watts into section A, row 1 (above on this page)			12552.8

**C.1 AREA CATEGORY METHOD TOTAL LIGHTING POWER ALLOWANCES**

01	02	03	04
Area Category Method Allowed Watts, Documented in section C1 of NRCC-LT10-2 (below on this page)	12552.8		0
Tabored Method Allowed Watts, Documented in section A of NRCC-LT10-2			
TOTAL ALLOWED BUILDING WATTS. Enter number into correct cell on NRCC-LT10-2, Page 2, Row 1	12552.8		0

**STATE OF CALIFORNIA  
INDOOR LIGHTING - LIGHTING CONTROLS**

**CERTIFICATE OF COMPLIANCE**  
 Certificate of Compliance - Indoor Lighting - Lighting Controls  
 PENN AIR GROUP TENANT IMPROVEMENT  
 Date: 3/18/2018  
 Project: NRCC-LT10-2 (Page 1 of 3)

**A. Mandatory Lighting Control Declaration Statements (indicate if the measure applies by checking yes or no below.)**

YES	NO	Control Requirements
<input type="checkbox"/>	<input type="checkbox"/>	Lighting shall be controlled by self-contained lighting control devices which are certified to the Energy Commission according to the Title 24 Appliance Efficiency Regulations in accordance with Section 110.9.
<input type="checkbox"/>	<input type="checkbox"/>	Lighting shall be controlled by a lighting control system or energy management control system in accordance with 110.9. An Installation Certificate shall be submitted in accordance with Section 130.4(b).
<input type="checkbox"/>	<input type="checkbox"/>	One or more than one lighting control system shall be installed which has been certified to the Energy Commission in accordance with 110.9 and 130.5. Additionally, an Installation Certificate shall be submitted in accordance with Section 130.4(b).
<input type="checkbox"/>	<input type="checkbox"/>	A Track Lighting Supplementary Occupant Protection Panel shall be installed in accordance with Section 110.9 and Section 130.0. Additionally, an Installation Certificate shall be installed in accordance with Section 130.4(b).
<input type="checkbox"/>	<input type="checkbox"/>	All lighting controls and equipment shall comply with the applicable requirements in 110.9 and shall be installed in accordance with the manufacturer's instructions in accordance with Section 130.1.
<input type="checkbox"/>	<input type="checkbox"/>	All luminaires shall be functionally controlled with manual ON and OFF lighting controls in accordance with Section 130.1(a).
<input type="checkbox"/>	<input type="checkbox"/>	General lighting shall be separately controlled from all other lighting systems in an area. Floor and wall displays, window display, case display, ornament, and special effects lighting shall each be separately controlled on circuits that are 20 amperes or less. When track lighting is used, general, display, ornamental, and special effects lighting shall each be separately controlled, in accordance with Section 130.1(a).
<input type="checkbox"/>	<input type="checkbox"/>	The general lighting of any enclosed area 100 square feet or larger with a connected lighting load that exceeds 0.5 watts per square foot shall meet the multi-level lighting control requirements in accordance with Section 130.1(b).
<input type="checkbox"/>	<input type="checkbox"/>	All installed indoor lighting shall be equipped with controls that meet the applicable Shut-Off control requirements in Section 130.1(c).
<input type="checkbox"/>	<input type="checkbox"/>	Lighting in one or more zones shall be controlled in accordance with the requirements in Section 130.1(d) and shall comply as shown on the plans.
<input type="checkbox"/>	<input type="checkbox"/>	Lighting power in buildings larger than 10,000 square feet shall be capable of being automatically reduced in response to a Demand Responsive Signal in accordance with Section 130.1(e).
<input type="checkbox"/>	<input type="checkbox"/>	Before an occupancy permit is granted for a newly constructed building or area, or a new lighting system serving a building, area, or site is operated for normal use, indoor lighting controls serving the building, area, or site shall be certified as meeting the Acceptance Requirements for Code Compliance in accordance with Section 130.4(a). The controls required to meet the Acceptance Requirements include automatic daylight control, automatic shut-off controls, and demand responsive controls.

**STATE OF CALIFORNIA  
INDOOR LIGHTING - LIGHTING CONTROLS**

**CERTIFICATE OF COMPLIANCE**  
 Certificate of Compliance - Indoor Lighting - Lighting Controls  
 PENN AIR GROUP TENANT IMPROVEMENT  
 Date: 3/18/2018  
 Project: NRCC-LT10-2 (Page 2 of 3)

A separate document must be filed out for Conditioned and Unconditioned Spaces. This page is used only for the following:  
 CONDITIONED SPACES  UNCONDITIONED SPACES

**B. Mandatory and Prescriptive Indoor Lighting Control Schedule, PAF Standards, and Field Inspection Checklist**

Lighting Control Schedule	PAF Credit Calculation <sup>1</sup>															
	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	
Location in Building	Control (in occupancy sensor, automatic time switch, dimmer, automatic daylight, etc.)	Units	DIFFUSERS	DIFFUSERS	DIFFUSERS	DIFFUSERS	DIFFUSERS	DIFFUSERS	DIFFUSERS	DIFFUSERS	DIFFUSERS	DIFFUSERS	DIFFUSERS	DIFFUSERS	DIFFUSERS	
Location in Building	SWITCHES	34	*	*	*	*	*	*	*	*						
Location in Building	NIGHT MOTION SENSOR CEILING	30	*	*	*	*	*	*	*	*						
Location in Building	BEIGHT PHOTOCELL	5	*	*	*	*	*	*	*	*						
IF MULTIPLE PAGES ARE USED, ENTER SUM TOTAL OF Control Credit for all pages HERE (Sum of all Columns 11)											0	0	0	0	0	0

<sup>1</sup> 1. 130.1(a) - Manual area controls: \$140.00; 1. Multi-level: \$120.00; 2. Auto Shut-Off: \$120.00; 3. Mandatory Daylight: \$140.00; 4. Demand Responsive: \$140.00; 5. Additional lighting controls installed to earn a PAF: \$140.00; 6. Prescriptive Secondary 5000K Daylight Controls. As a condition to earn a PAF, an Installation Certificate is also required to be filed out, signed, and submitted.

**STATE OF CALIFORNIA  
INDOOR LIGHTING - LIGHTING CONTROLS**

**CERTIFICATE OF COMPLIANCE**  
 Certificate of Compliance - Indoor Lighting - Lighting Controls  
 PENN AIR GROUP TENANT IMPROVEMENT  
 Date: 3/18/2018  
 Project: NRCC-LT10-2 (Page 3 of 3)

**DOCUMENTATION AUTHOR'S DECLARATION STATEMENT**  
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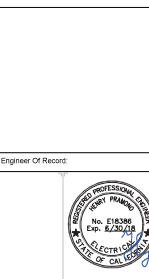
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**CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance**  
 April 2016



THE PENN AIR GROUP  
 THE LEADER IN HVAC ENERGY SERVICES

5841 LAKESHORE DR.  
 CYPRESS, CA 90630



**ISSUED BLOCKS / HISTORY LOG**

No.	Revised	Date
1	PAF CHECK SET	04/10/18
2	BID SET	05/01/18

Facility  
 5841 LAKESHORE DR.  
 CYPRESS, CA 90630

Project

Sheet Title  
 TITLE 24

Agency Application Number

Agency Approval Stamp

PROJECT NO.  
 20074001

Scale  
 Drawn By: Author  
 Check By: Chawak  
 Issue Date: Issue Date

CONSULTANT PROJECT NO.  
 Sheet  
**E902**  
 Of: Sheets