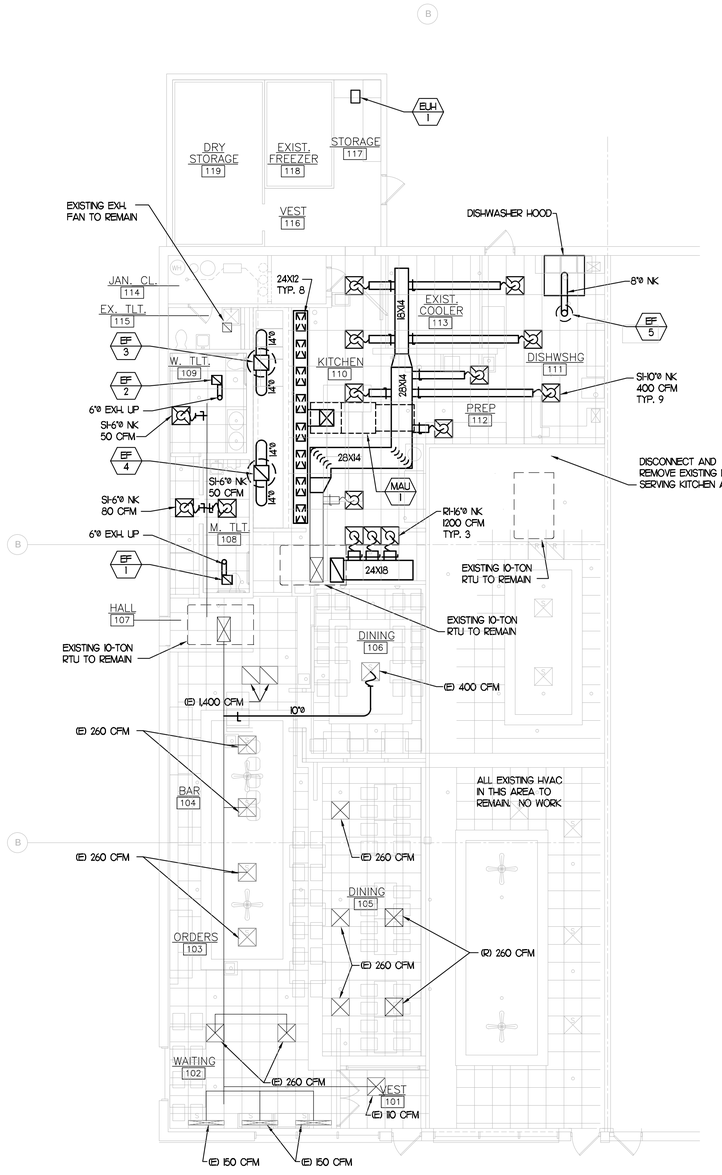
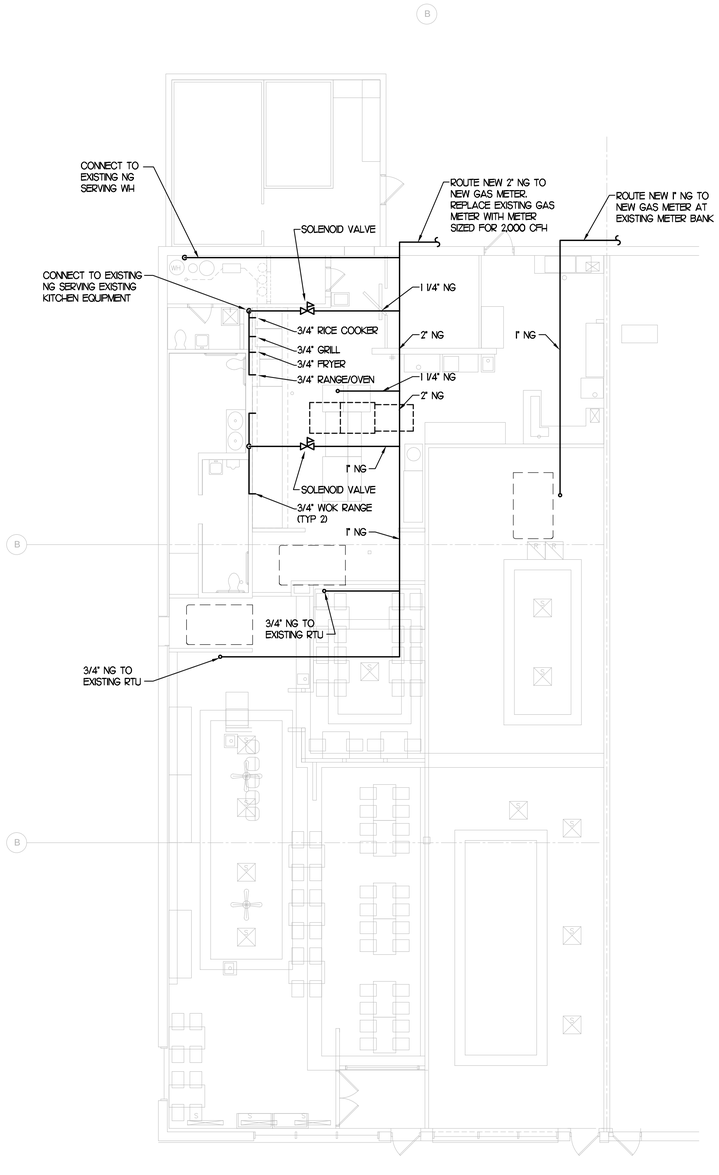


MECHANICAL FLOOR PLAN
SCALE : 1/8" = 1'-0"



GAS PIPING PLAN
SCALE : 1/8" = 1'-0"

PROJECT NORTH

MECHANICAL GENERAL NOTES

1. CODES

THE WORK SHALL COMPLY WITH ALL APPLICABLE LOCAL, MUNICIPAL, AND NATIONAL CODES. WHERE THE CONSTRUCTION DOCUMENTS INDICATE MORE RESTRICTIVE REQUIREMENTS THE CONSTRUCTION DOCUMENTS SHALL GOVERN. HOWEVER, THE CONSTRUCTION DOCUMENTS SHALL NOT BE INTERPRETED AS AUTHORITY TO VIOLATE AND CODE OR REGULATION.

2. DRAWINGS AND SPECIFICATIONS

THE CONTRACTOR SHALL BE RESPONSIBLE FOR READING AND COMPLYING WITH BOTH THE DRAWINGS AND SPECIFICATIONS. IN THE EVENT OF A CONFLICT OR INCONSISTENCY BETWEEN THE DRAWINGS, NOTES, SPECIFICATIONS, OR CODES, THE REFERENCE WHICH PROVIDES THE MORE COMPLETE OR HIGHER STANDARD SHALL PREVAIL.

3. INTERPRETATION OF THE DOCUMENTS

CAREFULLY COMPARE THE DRAWINGS AND SPECIFICATIONS, CHECKING MEASUREMENTS AND CONDITIONS UNDER WHICH THIS INSTALLATION IS TO BE MADE. FOR CLARIFICATION BETWEEN VARIOUS DRAWINGS, BETWEEN DRAWINGS OR SPECIFICATION, OR BETWEEN SECTIONS OF THE SPECIFICATION, THE MATTER SHALL BE REFERRED TO THE ENGINEER BEFORE ANY WORK IS EXECUTED. THE CONTRACTOR SHALL STATE IN THEIR PROPOSAL ANY EXCEPTIONS NECESSARY TO MAKE THIS A COMPLETE, READY TO USE INSTALLATION. IF NOT STATED IN THE PROPOSAL, IT WILL NOT BE CONSIDERED EXTRA.

4. MECHANICAL DRAWINGS

THE MECHANICAL DRAWINGS ARE DIAGRAMMATIC AND SHALL NOT BE SCALED. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL DOORS, WALLS, FURNITURE, EQUIPMENT, ETC.. THE LOCATION OF DUCTWORK AND PIPING SYSTEM COMPONENTS ARE SCHEMATIC. THE EXACT LOCATION OF THESE SYSTEM COMPONENTS SHALL BE DETERMINED BY THE CONTRACTOR IN THE FIELD. THE CONTRACTOR SHALL CONFIRM THE DIMENSIONS OF THE ACTUAL EQUIPMENT TO BE SUPPLIED FOR THIS PROJECT, AND VERIFY CLEARANCES PRIOR TO STARTING WORK.

5. SITE EXAMINATION

BEFORE SUBMITTING A BID, THE CONTRACTOR SHALL VISIT THE SITE, EXAMINE THE PREMISES, AND MAKE A THOROUGH SURVEY OF THE EXISTING CONDITIONS. THE SUBMISSION OF A PROPOSAL WILL BE CONSTRUED AS EVIDENCE THAT SUCH AN EXAMINATION HAS BEEN MADE. NO CONSIDERATION OR ALLOWANCE WILL BE GRANTED FOR FAILURE TO VISIT THE SITE OR FOR LATER CLAIMS FOR LABOR, EQUIPMENT, MATERIALS REQUIRED, OR FOR DIFFICULTIES ENCOUNTERED WHICH COULD HAVE BEEN FORESEEN HAD SUCH AN SITE EXAMINATION BEEN MADE.

6. COORDINATION WITH OTHER TRADES

THE MECHANICAL CONTRACTOR SHALL OBTAIN A COMPLETE SET OF ARCHITECTURAL AND ENGINEERING DOCUMENTS AND COORDINATE WITH ELECTRICAL, PLUMBING, ARCHITECTURAL, AND OTHER TRADES FOR EXACT DIMENSIONS, CLEARANCES, EQUIPMENT LOCATIONS, AND OTHER ADDITIONAL SCOPES OF WORK THAT MAY NOT BE SHOWN ON THE MECHANICAL PLANS.

7. PERMITS, APPLICATIONS AND RELEASES

THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS INSPECTIONS, APPLICATIONS, RELEASES AND FEES REQUIRED BY LOCAL, STATE AND FEDERAL AGENCIES FOR THE EXECUTION OF THIS WORK. SCHEDULING OF ALL REQUIRED INSPECTIONS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

8. FIRE STOPPING

ALL PENETRATIONS IN WALL, FLOOR OR CEILINGS SHALL BE SUITABLY CLOSED UP AND SEALED WITH AN INTUMESCENT FIRE STOPPING COMPOUND LISTED IN THE MOST RECENT FACTORY MUTUAL RESEARCH CORPORATION (FMRC) APPROVAL GUIDE. FIRE STOPPING PRODUCTS SHALL BE MANUFACTURED BY 3M CO.

9. OWNER FURNISHED EQUIPMENT

EQUIPMENT THAT WILL BE FURNISHED BY THE OWNER WILL BE INDICATED ON A SEPARATE SCHEDULE. THE CONTRACTOR SHALL COORDINATE WITH THE OWNER FOR DELIVERY SCHEDULES. THE CONTRACTOR IS TO ASSUME THAT ON SITE STORAGE MAY NOT BE AVAILABLE WHEN COORDINATING DELIVERY OF EQUIPMENT. THE CONTRACTOR, IN COORDINATION WITH THE OWNER'S REPRESENTATIVE, WILL INSPECT THE DELIVERY FOR ACCURACY AND SHIPMENT DAMAGE AND ACCEPTING THE EQUIPMENT. THE CONTRACTOR SHALL BE RESPONSIBLE TO STORE, PROTECT AND ULTIMATELY INSTALL THE EQUIPMENT.

10. EQUIPMENT

ALL MATERIALS AND EQUIPMENT USED IN THIS INSTALLATION SHALL BE NEW, AND HAVE THE APPROPRIATE UL LISTING AND LABEL.

11. MISCELLANEOUS SUPPORTING MEMBERS

ALL ANGLES CHANNELS, AND OTHER MISCELLANEOUS STEEL, BOLTS, RODS, ETC.. REQUIRED TO SUPPORT LIGHT FIXTURE, CONDUIT, RACEWAY, LADDER TRAY, OR OTHER ELECTRICAL EQUIPMENT OR DEVICES SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR.

12. SAFETY

THE CONTRACTOR SHALL TAKE ALL STEPS NECESSARY TO ENSURE THE SAFETY OF THE OWNERS EMPLOYEES, BUILDING EMPLOYEES AND GUESTS, AS WELL AS THEIR OWN FORCES, BY ADEQUATELY PROTECTING ANY EXPOSED LIVE CONDUCTORS, OR DEVICES THROUGHOUT THE COURSE OF THIS WORK.

13. MANUFACTURER'S INSTALLATION INSTRUCTIONS

THE MANUFACTURER'S INSTALLATION INSTRUCTIONS FOR EACH MECHANICAL APPLIANCE OR PIECE OF EQUIPMENT SHALL BE AVAILABLE TO BUILDING DEPARTMENT INSPECTORS AT THE JOB SITE FOR EACH INSPECTION. LISTING AND LABELING SHALL ALSO BE MADE AVAILABLE.

NEVILLE ENGINEERING SERVICE, INC.
24020 RIVERWALK CT, SUITE 122, PLAINFIELD IL 60544
815-200-3544 IL DESIGN #184.006531

A+M ARCHITECTS, LLC
40 Landover Parkway, Suite 3
Hawthorn Woods, Illinois 60047
TEL: 847.726.9517

C:\logo\sterlin.jpg

430 East IL Route 22 / Half Day Road
Lake Zurich, Illinois 60047
847.307.4400 Fax 847.307.4410

CONSULTANTS

I HAVE PREPARED, OR CAUSED TO BE PREPARED UNDER MY DIRECT SUPERVISION, THE ATTACHED PLANS AND SPECIFICATIONS AND STATE THAT, TO THE BEST OF MY KNOWLEDGE AND BELIEF AND TO THE EXTENT OF MY CONTRACTUAL OBLIGATION, THEY ARE IN COMPLIANCE WITH ALL THE APPLICABLE CODES, INCLUDING THE ENVIRONMENTAL BARRIERS ACT (410 ILCS) AND THE ILLINOIS ACCESSIBLITY CODE (71 ILL. ADM. CODE 400), OF:

NORTHBROOK, ILLINOIS

ISSUE FOR	DATE
PRELIMINARY SCOPE	05/30/18
PLAN APPROVAL	06/07/18
PROGRESS	06/15/18

DRAWN BY:	
APPROVED:	
PROJECT NO.	
DATE	

TENANT IMPROVEMENTS FOR:

JIMMYS THAI RESTAURANT

405 LAKE-COOK ROAD RD.
DERRFIELD., ILLINOIS

SHEET DESCRIPTION
MECHANICAL PLANS

JOHN K. NEVILLE
062-053269
LICENSED PROFESSIONAL ENGINEER OF ILLINOIS

JULY 8, 2018
EXPIRES 11/30/2019

SHEET NUMBER
M-1.0

SHEET of

MAKEUP AIR UNIT SCHEDULE (MAU-)

TAG	SERVICE	FAN			HEATING (GAS)			ELECTRICAL			UNIT WEIGHT (LBS)	MANUFACTURER	MODEL NUMBER	NOTES
		CFM	S.P.	H.P.	INPUT (MBH)	OUTPUT (MBH)	HEATING STAGES	VOLT.	FLA	MOCP				
MAU-1	KITCHEN HOOD	7,525	0.5	7.5	622.7	572.9	MOD	460/3/60	10.6	30	1,066	CAPTIVE AIRE	A3-D.750-G18	1

NOTES:

1. DIRECT GAS FIRED ROOFTOP HEATGED MAKEUP AIR UNIT. INTAKE HOOD WITH EZ FILTERS. DOWN DISCHARGE. MOTORIZED BACKDRAFT DAMPER. DIRECT FIRED HEATERS W/EXTENDED SHAFT, GALVANIZED CONSTRUCTION. LOW FIRE START. GAS IRESSIRE GAIGE. SEPARATE 120VAC WIRING PACKAGE FOR MAKE-UP AIR UNITS. OPTION MUST BE SELECTED WHEN MOUNTING VFD IN PREWIRE PANEL OR WITH DCV PACKAGE. PROVIDES SEPARATE 120VAC INPUT TO SUPPLY FAN. THIS 120V SIGNAL MUST BE RUN BY ELECTRICIAN FROM DCV TO MUA SWITCH.

EXHAUST FAN SCHEDULE (EF-)

TAG	SERVICE	CFM	S.P.	H.P.	R.P.M.	VOLTAGE	WEIGHT	MANUFACTURER	MODEL #	NOTES
EF-1	M. TOILET 108	150	.375"	145 W	1300	120/1/60	-	COOK	GC 164	1
EF-2	W. TOILET 109	75	.375"	33 W	900	120/1/60	12	COOK	GC 146	1
EF-3	KITCHEN HOOD	4,000	1.5"	5.0	1,300	460/3/60	216	CAPTIVE AIRE	DU200HFA	2
EF-4	KITCHEN HOOD	4,000	1.5"	5.0	1,300	460/3/60	216	CAPTIVE AIRE	DU200HFA	2
EF-5	DISHWASHER HOOD	500	.5"	0.25	1,400	120/1/60	50	CAPTIVE AIRE	DU12HFA	3

NOTES:

1. CEILING MOUNTED EXHAUST FAN WITH INTEGRAL BACKDRAFT DAMPER AND DISCONNECT. SUPPORT FROM STRUCTURE ABOVE WITH NEOPRENE VIBRATION ISOLATORS.
2. ROOF-MOUNTED UPBLAST KITCHEN EXHAUST FAN, UL 762 AND 705 LISTED. WEATHERPROOF DISCONNECT, HIGH HEAT OPERATION, GREASE CLASSIFICATION TESTING, 18" HIGH ROOF CURB.
3. ROOF-MOUNTED UPBLAST KITCHEN EXHAUST FAN, UL 705 VARIABLE SPEED CONTROL, WEATHERPROOF DISCONNECT, THERMAL OVERLOAD PROTECTION, HIGH HEAT PERATION,. EXHAUST FAN MUST OPERATE CONTINUOUSLY WHILE EXHAUSTING AIR AT 300F.

ELECTRIC UNIT HEATER SCHEDULE (EUH-)

TAG	LOCATION	HEATING DATA			ELECTRICAL		MANUFACTURER	MODEL	NOTES
		TOTAL MBH	KW	AIRFLOW (CFM)	VOLTS/PH/HZ	AMPS			
EUH-1	VESTIBULE 116	33.8	5.0	400	460/3	6.1	MARKEL	F2FUH05C03	1

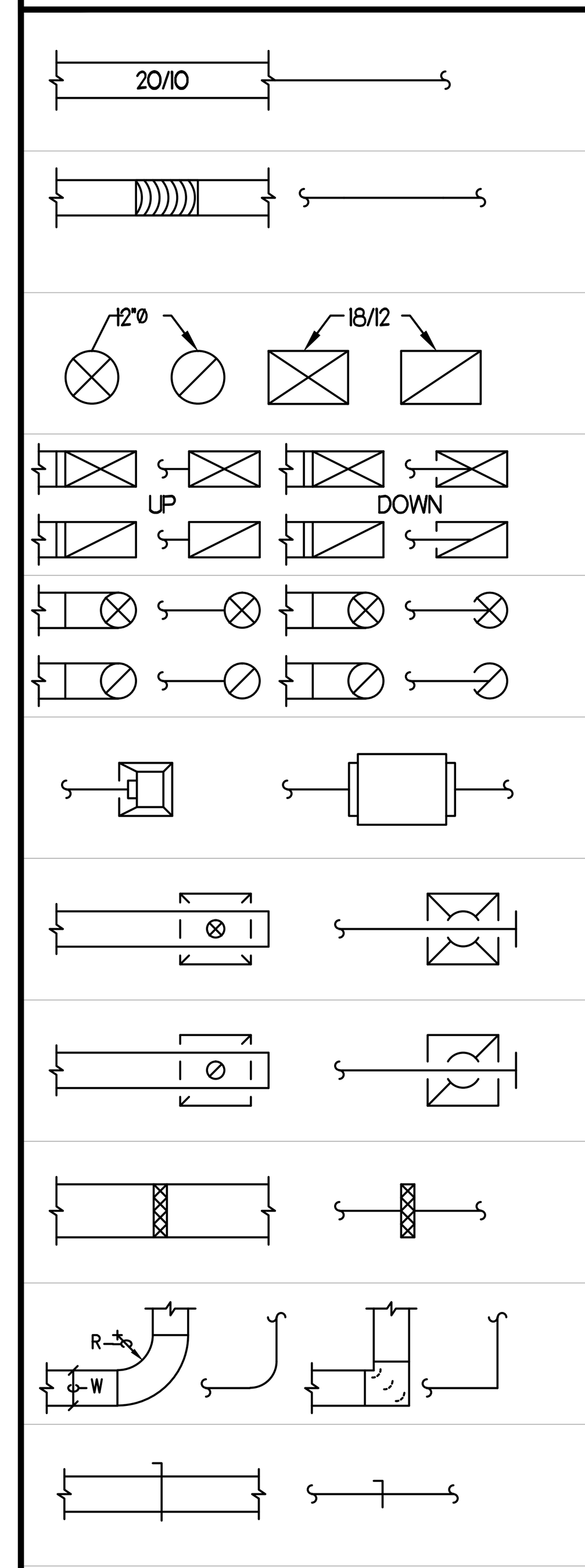
NOTES:

1. SUSPENDED FAN FORCED UNIT HEATERS. 18 GAUGE STEEL CABINET WITH POWDER COATED FINISH, OVERHEAT PROTECTION, COPPER CLAD STEEL HEATING ELEMENT, AND LOUVER DISCHARGE. PROVIDE WALL MOUNTED THERMOSTAT.

IMC VENTILATION SCHEDULE

ROOM NO.	ROOM NAME	FLOOR AREA (S.F.)	NO. OF PEOPLE/ FIXTURES	CODE REQUIRED OUTDOOR AIRFLOW RATE			CODE REQUIRED VENTILATION			SUPPLY AIR	EXHAUST AIR (CFM)	(ZP)	ROOM FUNCTION	SYSTEM	
				PEOPLE (CFM/PER)	AREA (CFM/SF)	EXHAUST AIR (CFM)	OUTSIDE AIR (Vbz)	OUTSIDE AIR (Voz)	EXHAUST AIR (CFM)					SUPPLY	EXHAUST
101	VESTIBULE	63	-	-	-	-	-	-	-	100	-	-	CORRIDOR	RTU-1	-
102	WAITING	295	6	7.5	0.18	-	98	123	-	800	-	0.153	DINING	RTU-1	-
103	PICKUP	220	2	7.5	0.18	-	55	68	-	500	-	0.137	DINING	RTU-1	-
104	BAR	330	6	7.5	0.18	-	104	131	-	500	-	0.261	DINING	RTU-1	-
105	DINING	465	36	7.5	0.18	-	354	442	-	1,300	-	0.340	DINING	RTU-1	-
106	DINING	241	20	7.5	0.18	-	193	242	-	700	-	0.345	DINING	RTU-1	-
107	HALL	147	-	-	-	-	-	-	-	-	-	-	CORRIDOR	RTU-1	-
108	M TOILET	77	-	-	-	75	-	-	75	50	75	-	TOILET ROOM	RTU-1	EF-1
109	W TOILET	95	-	-	-	75	-	-	75	50	75	-	TOILET ROOM	RTU-1	EF-2
110	KITCHEN	547	-	-	-	0.7	-	-	383	1,800	4,000	-	KITCHEN	RTU-2	EF-3,4
111	DISHWASHING	289	-	-	-	0.7	-	-	202	1,200	-	-	KITCHEN	RTU-2	-
112	PREP	123	-	-	-	0.7	-	-	86	600	500	-	KITCHEN	RTU-2	EF-5
113	COOLER	112	-	-	-	-	-	-	-	-	-	-	-	-	-
114	JAN CLOSET	96	-	-	-	-	-	-	-	-	-	-	JAN CLOSET	-	-
115	EXISTING TOILET	38	-	-	-	75	-	-	75	-	75	-	TOILET ROOM	-	EXIST EF
	TOTAL	3,138	70				804	1005	896	7,600	4,725				

DUCTWORK SYMBOL LIST



DOUBLE LINE TO SINGLE LINE TRANSITION. FIRST NUMBER IN DIMENSION IS SIDE SHOWN.

ROUND FLEXIBLE DUCT. DOUBLE LINE AND SINGLE LINE SHOWN.

SUPPLY AND RETURN AIR DUCT SECTIONS, ROUND AND RECTANGULAR. FIRST NUMBER IN DIMENSION IS SIDE ARROW POINTS TO.

90 DEGREE SQUARE ELBOWS WITH TURNING VANES, UP AND DOWN. SUPPLY AND RETURN AIR DUCTS SHOWN.

90 DEGREE ROUND ELBOWS, UP AND DOWN. SUPPLY AND RETURN AIR DUCTS SHOWN.

CEILING AND DUCT MOUNTED EXHAUST FANS EF

ROUND NECK SUPPLY AIR DIFFUSER WITH VOLUME DAMPER AT TAKE-OFF

ROUND NECK RETURN OR EXHAUST AIR DIFFUSER WITH VOLUME DAMPER AT TAKE-OFF

FLEXIBLE DUCT CONNECTION.

LONG RADIUS ELBOWS, R = W AS PER SMACNA, AND RECTANGULAR ELBOWS WITH TURNING VANES, CONSTRUCTED AS PER SMACNA

MANUAL VOLUME DAMPER, "VD" TEXT DESIGNATION MAY OR MAY NOT BE PRESENT

○ THERMOSTAT

MECHANICAL ABBREVIATIONS

A AIR OR COMPRESSED AIR
AC AIR CONDITIONING
ACD AUTOMATIC CONTROL DAMPER
AD ACCESS DOOR
AF AIR FOIL
AMP AMPERE
AP ACCESS PANEL
APD AIR PRESSURE DROP
AS AIR STREAM
ATC AUTOMATIC TEMPERATURE CONTROL
ATM ATMOSPHERE
BDD BACK-DRAFT DAMPER
BHP BRAKE HORSEPOWER
BI BACKWARDS INCLINED
BOD BOTTOM OF DUCT
BTU BRITISH THERMAL UNIT
BTUH BTU PER HOUR
CENT CENTER OR CENTRIFUGAL
CF CUBIC FEET
CFM CUBIC FEET PER MINUTE
CO CARBON MONOXIDE
CONN CONNECTION
D DRAIN
DB DRY BULB (TEMPERATURE)
DEG DEGREE
DDC DIRECT DIGITAL CONTROL
DIA DIAMETER
DIM DIMENSION
DP DIFFERENTIAL PRESSURE
EA EACH OR EXHAUST AIR
EAT ENTERING AIR TEMPERATURE
EF EXHAUST FAN
ESP EXTERNAL STATIC PRESSURE
ET EXPANSION TANK
EUH ELECTRICAL UNIT HEATER
EXH EXHAUST
EXT EXTERNAL
EXP EXPANSION
F FAHRENHEIT
FA FREE AREA OR FIRE ALARM
FC FLEXIBLE CONNECTION
FD FLOOR DRAIN
FI.D. FIRE DAMPER
FLA FULL LOAD AMPS
FLEX FLEXIBLE
FPM FEET PER MINUTE
FPS FEET PER SECOND
FRP FIBERGLASS REINFORCED PLASTIC
FS FLOW SWITCH
FT FEET
G GAS
GA GAUGE
GAL GALLONS
GALV GALVANIZED
GR GRADE
HD HEAD
HP HORSEPOWER OR HIGH POINT
HR HOUR
HTG HEATING
HZ HERTZ (CYCLES PER SECOND)
ID INSIDE DIAMETER
IN INCHES
KW KILOWATT
LAT LEAVING AIR TEMPERATURE
LB POUND
LF LINEAR FEET
LP LOW POINT
LRA LOCKED ROTOR AMPS
LVR LOUVER
LVDR LOUVERED DOOR
LVG LEAVING
MAX MAXIMUM
MBH 1000 BTUH
MCA MINIMUM CIRCUIT AMPS
MECH MECHANICAL
MIN MINIMUM
MU MAKE-UP WATER
MUA MAKE-UP AIR
NC NOISE CRITERIA OR NORMALLY CLOSED
NO NORMALLY OPEN
NOM NOMINAL
OA OUTSIDE AIR
OAI OUTSIDE AIR INTAKE
OC ON CENTER
OD OUTSIDE DIAMETER
ODP OPEN DRIP PROOF
OV OUTLET VELOCITY
PCF POUNDS PER CUBIC FOOT
PD PRESSURE DROP
PH PHASE
PRV PRESSURE REDUCING VALVE
PSI POUNDS PER SQUARE INCH
PSIA POUNDS PER SQUARE INCH - ABSOLUTE
PSID POUNDS PER SQUARE INCH - DIFFERENTIAL
PSIG POUNDS PER SQUARE INCH - GAUGE
PVC POLYVINYL CHLORIDE
R RADIUS
RA RETURN AIR
RET RETURN
RH RELATIVE HUMIDITY
RLA RUNNING LOAD AMPS
RLF RELIEF
RPM REVOLUTIONS PER MINUTE
RTU ROOF-TOP UNIT
SA SUPPLY AIR
SCR SCREEN
SCT SATURATED CONDENSING TEMPERATURE
SD SMOKE DETECTOR OR SMOKE DAMPER
SE SMOKE EXHAUST
SEN SENSIBLE
SHC SENSIBLE HEAT CAPACITY
SP STATIC PRESSURE
SF SQUARE FEET
SS STAINLESS STEEL
SUP SUPPLY
T TEMPERATURE OR THERMOSTAT
TEFC TOTALLY ENCLOSED FAN COOLED
TEMP TEMPERATURE
TSTAT THERMOSTAT
TON 12,000 BTUH (COOLING CAPACITY)
TYP TYPICAL
UC UNDERCUT (DOOR)
V VOLTS
VAV VARIABLE AIR VOLUME
VD VOLUME DAMPER
VEL VELOCITY
VFD VARIABLE FREQUENCY DRIVE
WB WET BULB TEMPERATURE
WC WATER COLUMN
WG WATER GAUGE
WMS WIRE-MESH SCREEN

NEVILLE
ENGINEERING SERVICE, INC.
24020 RIVERWALK CT, SUITE 122, PLAINFIELD IL 60544
815-200-3844 IL DESIGN #184.006531

ARCHITECTS, L.L.C.
A+M ARCHITECTS, LLC
40 Landover Parkway, Suite 3
Hawthorn Woods, Illinois 60047
TEL: 847.726.9517

C:\logo\sterlin.jpg

430 East IL Route 22 / Half Day Road
Lake Zurich, Illinois 60047
847.307.4400 Fax 847.307.4410

CONSULTANTS

I HAVE PREPARED, OR CAUSED TO BE PREPARED UNDER MY DIRECT SUPERVISION, THE ATTACHED PLANS AND SPECIFICATIONS AND STATE THAT, TO THE BEST OF MY KNOWLEDGE AND BELIEF AND TO THE EXTENT OF MY CONTRACTUAL OBLIGATION, THEY ARE IN COMPLIANCE WITH ALL THE APPLICABLE CODES, INCLUDING THE ENVIRONMENTAL BARRIERS ACT (410 ILCS) AND THE ILLINOIS ACCESSIBLITY CODE (71 ILL. ADM. CODE 400), OF:

NORTHBROOK, ILLINOIS

JOHN K NEVILLE 062-053269 LICENSED PROFESSIONAL ENGINEER OF ILLINOIS

John K. Neville

JULY 8, 2018
EXPIRES 11/30/2019

ISSUE FOR	DATE
PRELIMINARY SCOPE	05/30/18
PLAN APPROVAL	06/07/18
PROGRESS	06/15/18

DRAWN BY:

APPROVED:

PROJECT NO.

DATE

TENANT IMPROVEMENTS FOR:

JIMMYS THAI RESTAURANT

405 LAKE-COOK ROAD RD.
DERRFIELD., ILLINOIS

SHEET DESCRIPTION

MECHANICAL SCHEDULES

SHEET NUMBER

M-2.0

SHEET of

HOOD INFORMATION – Job#3464953

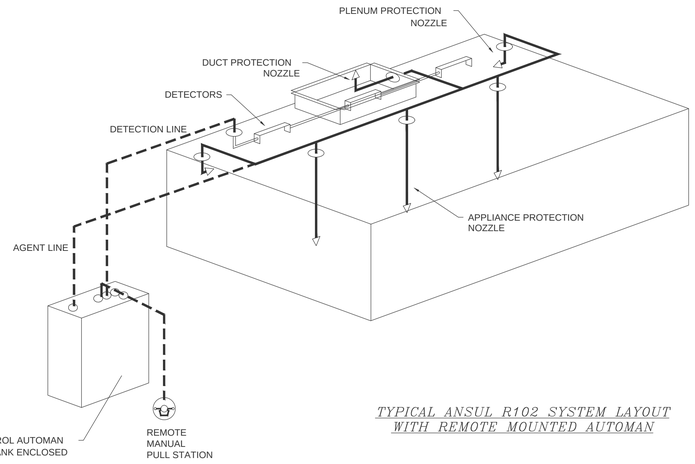
HOOD NO.	TAG	MODEL	LENGTH	MAX. COOKING TEMP.	EXHAUST PLENUM								TOTAL SUPPLY CFM	HOOD CONSTRUCTION	HOOD CONFIG.	
					TOTAL EXH. CFM	RISER(S)									END TO END	ROW
						WIDTH	LENG.	HEIGHT	DIA.	CFM	VEL.	S.P.				
1		5430 ND-2-PSP-F	12' 4"	600 Deg.	4000			4"	14"	2000	1871	-1.055"	3200	430 SS Where Exposed	LEFT	ALONE
								4"	14"	2000	1871	-1.055"				
2		5430 ND-2-PSP-F	12' 4"	600 Deg.	4000			4"	14"	2000	1871	-1.055"	3200	430 SS Where Exposed	RIGHT	ALONE
								4"	14"	2000	1871	-1.055"				
3		5424 VHB-G	4' 6"	700 Deg.	500			4"	8"	500	1432	-0.095"	0	430 SS 100%	ALONE	ALONE

HOOD INFORMATION

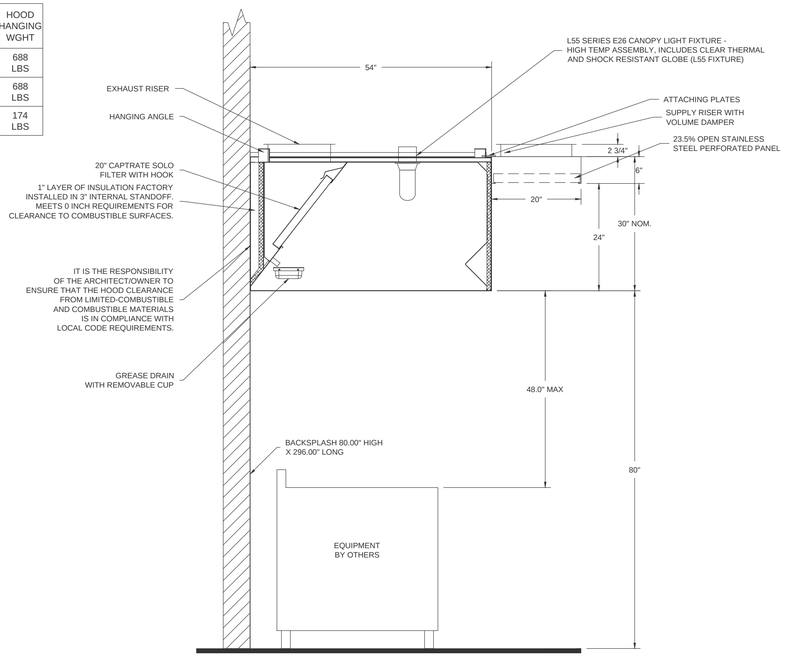
HOOD NO.	TAG	FILTER(S)					LIGHT(S)			UTILITY CABINET(S)					FIRE SYSTEM PIPING	HOOD HANGING WGHT
		TYPE	QTY.	HEIGHT	LENGTH	EFFICIENCY @ 7 MICRONS	QTY.	TYPE	WIRE GUARD	LOCATION	SIZE	FIRE SYSTEM		ELECTRICAL	SWITCHES		
												TYPE	SIZE	MODEL #	QUANTITY		
1		Captrate Solo Filter	9	20"	16"	85% See Filter Spec.	4	L55 Series E26	NO	Wall Mnt	12"x60"x24"	Ansul R102	3.0/3.0/3.0	DCV-2111	1 Light 1 Fan	YES	688 LBS
2		Captrate Solo Filter	9	20"	16"	85% See Filter Spec.	4	L55 Series E26	NO							YES	688 LBS
3							0									NO	174 LBS

PERFORATED SUPPLY PLENUM(S)

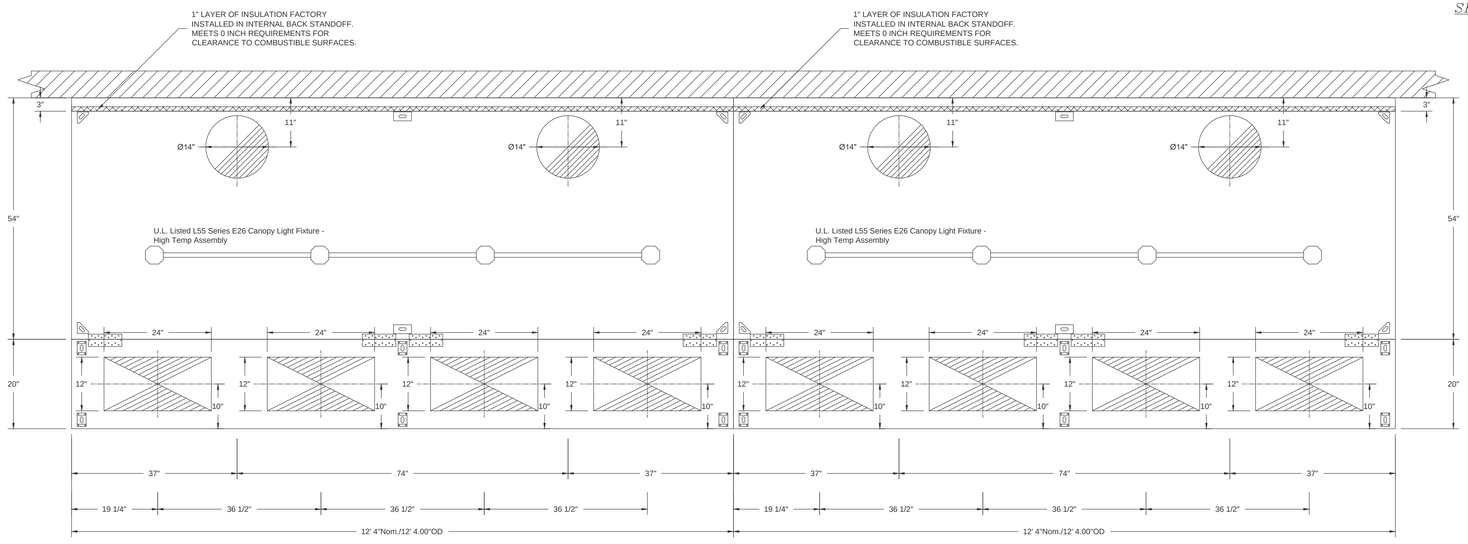
HOOD NO.	TAG	POS.	LENGTH	WIDTH	HEIGHT	TYPE	RISER(S)				
							WIDTH	LENG.	DIA.	CFM	S.P.
1		Front	148"	20"	6"	MUA	12"	24"		800	0.278"
						MUA	12"	24"		800	0.278"
						MUA	12"	24"		800	0.278"
						MUA	12"	24"		800	0.278"
2		Front	148"	20"	6"	MUA	12"	24"		800	0.278"
						MUA	12"	24"		800	0.278"
						MUA	12"	24"		800	0.278"
						MUA	12"	24"		800	0.278"



TYPICAL ANSUL R102 SYSTEM LAYOUT WITH REMOTE MOUNTED AUTOMAN



SECTION VIEW – MODEL 5430ND-2-PSP-F



PLAN VIEW – Hood #1
12' 4.00" LONG 5430ND-2-PSP-F
NOTE: Additional hanging angles provided for hoods 12' and longer.

PLAN VIEW – Hood #2
12' 4.00" LONG 5430ND-2-PSP-F
NOTE: Additional hanging angles provided for hoods 12' and longer.

NEVILLE ENGINEERING SERVICE, INC.
24020 RIVERWALK CT, SUITE 122, PLAINFIELD IL 60544
815-200-3544 IL DESIGN #184.006531

JOHN K NEVILLE 062-053269 LICENSED PROFESSIONAL ENGINEER OF ILLINOIS

JULY 8, 2018
EXPIRES 11/30/2019

A+M ARCHITECTS, LLC
40 Landover Parkway, Suite 3
Hawthorn Woods, Illinois 60047
TEL: 847.726.9517

C:\logo\sterlin.jpg

430 East IL Route 22 / Half Day Road
Lake Zurich, Illinois 60047
847.307.4400 Fax 847.307.4410

CONSULTANTS

I HAVE PREPARED, OR CAUSED TO BE PREPARED UNDER MY DIRECT SUPERVISION, THE ATTACHED PLANS AND SPECIFICATIONS AND STATE THAT, TO THE BEST OF MY KNOWLEDGE AND BELIEF AND TO THE EXTENT OF MY CONTRACTUAL OBLIGATION, THEY ARE IN COMPLIANCE WITH ALL THE APPLICABLE CODES, INCLUDING THE ENVIRONMENTAL BARRIERS ACT (410 ILCS) AND THE ILLINOIS ACCESSIBLITY CODE (71 ILL. ADM. CODE 400), OF:
NORTHBROOK, ILLINOIS

ISSUE FOR	DATE
PRELIMINARY SCOPE	05/30/18
PLAN APPROVAL	06/07/18
PROGRESS	06/15/18

DRAWN BY:
APPROVED:
PROJECT NO.
DATE

TENANT IMPROVEMENTS FOR:
JIMMYS THAI RESTAURANT
405 LAKE-COOK ROAD RD.
DERRFIELD., ILLINOIS

SHEET DESCRIPTION
HOOD DETAILS

SHEET NUMBER
M-3.0
SHEET of

NEVILLE
ENGINEERING SERVICE, INC.
24020 RIVERWALK CT, SUITE 122, PLAINFIELD IL 60544
815-200-3844
IL DESIGN #184.006531

SPECIFICATIONS

SCOPE: THIS SPECIFICATION REQUIRES ALL MATERIALS, EQUIPMENT, AND LABOR NECESSARY TO MAKE A COMPLETE AND ACCEPTABLE MECHANICAL INSTALLATION AS SPECIFIED HEREIN AND SHOWN ON DRAWINGS. PROVIDE ALL ITEMS, ARTICLES, OPERATIONS, OR METHODS LISTED, MENTIONED, OR SCHEDULED HEREIN OR ON THE DRAWINGS, INCLUDING ALL LABOR, MATERIALS, EQUIPMENT, AND INCIDENTALS NECESSARY AND REQUIRED FOR COMPLETION OF THE WORK.

REGULATIONS, CODES, AND STANDARDS: CURRENT CODE REQUIREMENTS SHALL BE SATISFIED. WHERE REQUIRED BY LOCAL, STATE, OR FEDERAL AUTHORITY HAVING JURISDICTION, NO EQUIPMENT WILL BE ACCEPTED UNLESS IT BEARS THE ACCEPTANCE LABEL OF AN APPROPRIATE TESTING AGENCY.

SHOP DRAWINGS: SUBMIT TO THE PROJECT ENGINEER, FOR APPROVAL, SHOP DRAWINGS FOR ALL EQUIPMENT LISTED IN THE CONSTRUCTION DOCUMENTS IN ACCORDANCE WITH THE GENERAL CONDITIONS AND SUPPLEMENTARY CONDITIONS. SUBMITTALS SHALL INCLUDE AS A MINIMUM THE FOLLOWING:

A. PRODUCT DATA: MANUFACTURER'S LITERATURE DESCRIBING ITEM. MODEL NUMBERS PROPOSED SHALL BE IDENTIFIED WHEN THE LITERATURE DESCRIBES MORE THAN (1) ITEM.
B. OPERATION CURVES: FOR ALL FANS SHOWING CAPACITIES, PRESSURES, HORSEPOWER, AND EFFICIENCY SHALL BE PROVIDED.
C. MANUFACTURER'S SUBMITTAL: SHOWING ELECTRICAL AND MECHANICAL REQUIREMENTS AND CONNECTION LOCATIONS SHALL BE PROVIDED.
D. MAINTENANCE DATA: SUBMIT MAINTENANCE DATA AND PARTS LIST FOR EACH TYPE OF EQUIPMENT REQUIRING PERIODIC MAINTENANCE.

ALL SHOP DRAWINGS SUBMITTED SHALL BE STAMPED, DATED, AND SIGNED BY THE CONTRACTOR TO CERTIFY THAT THEY HAVE BEEN CHECKED BY HIM AS TO CAPACITIES, DIMENSIONS, SPACE REQUIREMENTS AND LIMITATIONS, AND ANY AND ALL OTHER REQUIREMENTS, AND FOUND ACCEPTABLE. APPROVAL OF SHOP DRAWINGS BY THE PROJECT ENGINEER SHALL NOT RELIEVE CONTRACTOR FROM FULFILLING OPERATIONAL REQUIREMENTS, OR FURNISHING ALL MATERIAL AND EQUIPMENT SPECIFIED OR NOTED, WHETHER OR NOT SPECIFICALLY SHOWN ON THE SHOP DRAWINGS. THE QUANTITY TO BE SUBMITTED SHALL BE THE NUMBER REQUIRED BY THE GENERAL CONTRACTOR.

AS-BUILT DRAWINGS: THE CONTRACTOR SHALL SUBMIT AT COMPLETION ONE (1) SET OF MARKED-UP CONTRACT DRAWINGS WHICH SHOW ALL MODIFICATIONS TO THE CONTRACT AND CHANGES OF LOCATIONS, MATERIALS, OR CONFIGURATIONS. THIS SET SHALL BE SUBMITTED WITH THE OPERATING MANUALS TO THE PROJECT ENGINEER.

OPERATING MANUALS: PROVIDE THREE (3) MANUALS, EACH WITH A COMPLETE SET OF COPIES OF SHOP DRAWINGS REQUIRED FOR THE PROJECT AS WELL AS VALVE CHARTS, MANUFACTURER'S TESTING, CLEANING AND MAINTENANCE INSTRUCTIONS, LIST OF MATERIALS FOR MAINTENANCE, PARTS LIST, WIRING DIAGRAMS, AND NAME AND ADDRESS OF AUTHORIZED SERVICE ORGANIZATIONS AND SUPPLIERS. INFORMATION SHALL BE BOUND IN 8½"X11" THREE-RING, LOOSE-LEAF BINDER, AND INDEXED IN ACCORDANCE WITH THESE SPECIFICATIONS. BINDER COVER SHALL IDENTIFY JOB NAME, DATE, AND NAME AND ADDRESS OF CONTRACTOR, ARCHITECT, AND ENGINEER. MANUALS SHALL BE SUBMITTED TO THE PROJECT ENGINEER FOR REVIEW OF MATERIAL PRIOR TO THE FINAL INSPECTION. MANUALS WILL BE RETURNED TO THE CONTRACTOR FOR THE SUBMITTAL TO THE OWNER AT THE TIME OF SYSTEM INSTRUCTION.

SYSTEM START-UP: AT A TIME SET BY THE CONTRACTOR, AND AGREED TO BY THE OWNER, ARRANGE TO PLACE EQUIPMENT IN OPERATION. HAVE A FACTORY AUTHORIZED TECHNICIAN ASSIST IN THE EQUIPMENT START-UP AND MAKE NECESSARY ADJUSTMENTS TO PROVE SATISFACTORY OPERATION PRIOR TO TURNING FACILITY OVER TO OWNER. ALL EQUIPMENT SHALL BE RUN FOR THREE 8-HOUR TEST PERIODS. ANDY IRREGULARITIES, FAULTY EQUIPMENT, ETC., SHALL BE REPAIRED OR REPLACED PRIOR TO FINAL INSPECTION AND ACCEPTANCE. AFTER TESTING, ALL EQUIPMENT SHALL BE FRESHLY OILED, FILTERS REPLACED WITH CLEAN MEDIA, AND INSTALLATION COMPLETELY FINISHED PRIOR TO ACCEPTANCE.

OWNER INSTRUCTION: CONTRACTOR SHALL ARRANGE, IN WRITING, WITH THE OWNER, PRIOR TO FINAL INSPECTION, A DATE OR DATES TO INSTRUCT THE OWNER, AND THE OWNER'S DESIGNATED REPRESENTATIVES, IN THE OPERATION AND MAINTENANCE OF THE SYSTEM.

FINAL INSPECTION: UPON COMPLETION OF ALL WORK, THE CONTRACTOR SHALL SUBMIT FOR APPROVAL THE FOLLOWING DATA:

1. BALANCE REPORTS
2. MAINTENANCE MANUALS

AFTER RECEIVING APPROVAL OF THE ABOVE, THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER IN WRITING AND MAKE ARRANGEMENTS FOR A FINAL INSPECTION. AFTER THE FINAL INSPECTION IS MADE, THE CONTRACTOR WILL RECEIVE A LIST OF ITEMS REQUIRING ADJUSTMENT, CORRECTION, REPLACEMENT, OR COMPLETION. THE CONTRACTOR SHALL COMPLY COMPLETELY WITH ALL THE LISTED REQUIREMENTS WITHIN THIRTY (30) DAYS OF THE RECEIPT OF LIST. SHOULD THE CONTRACTOR FAIL TO PERFORM WITHIN THIS TIME LIMIT, THE PROJECT ENGINEER AND/OR OWNER RESERVES THE RIGHT TO HAVE THE WORK COMPLETED BY OTHERS AND THE COST DEDUCTED FROM THE CONTRACT PRICE.

DISPOSAL: ALL MATERIALS AND EQUIPMENT SHOWN, OR INDICATED TO BE REMOVED AND NOT REINSTALLED OR RELOCATED, SHALL BECOME PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE OWNER'S PROPERTY UNLESS SPECIFIED TO THE CONTRARY.

GUARANTEE: THE CONTRACTOR SHALL GUARANTEE ALL WORKMANSHIP AND MATERIALS SUPPLIED BY HIM FOR ONE (1) YEAR AFTER ACCEPTANCE OF THE WORK IN HIS CONTRACT. IF, DURING THE GUARANTEE PERIOD, ANY DEFECTS OF FAULTY MATERIALS ARE FOUND, HE SHALL CORRECT IMMEDIATELY AND REPAIR ANY DAMAGE TO OTHER MATERIALS OR INSTALLATIONS CAUSED BY THE DEFECT.

EXTENDED WARRANTIES: WHEN EQUIPMENT IS FURNISHED BY THE CONTRACTOR, OR MANUFACTURER, WITH A WARRANTY LONGER THAN ONE (1) YEAR, THE CONTRACTOR SHALL PROVIDE THE OWNER WITH A COPY ALONG WITH RECEIPTS OR OTHER DOCUMENTS NECESSARY FOR FUTURE WARRANTY REPAIRS. UNLESS OTHERWISE REQUIRED, EXTENDED WARRANTIES ARE FOR EQUIPMENT ONLY, NOT MATERIALS OR LABOR TO INSTALL.

MATERIALS AND EQUIPMENT: ALL EQUIPMENT AND MATERIALS TO BE INCORPORATED IN THIS CONTRACT WORK SHALL BE NEW AND OF THE MAKES AND TYPES AS SPECIFIED AND CONTRACTED FOR. NO REMOVED EQUIPMENT SHALL BE RE-INSTALLED OR RE-USED.

PROPOSED EQUIPMENT AND MATERIALS: THIS CONTRACTOR SHALL SUBMIT A COMPLETE LIST OF PROPOSED EQUIPMENT AND MATERIALS, DESIGNATING MANUFACTURER'S NAME AND MODEL NUMBER OR TYPE, FOR PROJECT ENGINEER'S APPROVAL. CONTRACTOR SHALL MAKE SUCH SUBMITTAL WITHIN 15 DAYS AFTER NOTICE TO PROCEED AND BEFORE ORDERING ANY MATERIAL OR EQUIPMENT. APPROVAL OF SUCH A LIST SHALL IN NO WAY RELIEVE THE CONTRACTOR FROM RESPONSIBILITY OF SUBMITTING SHOP DRAWINGS, NOR SHALL IT CONSTITUTE FINAL APPROVAL SHOULD THE SHOP DRAWINGS BE FOUND TO BE PARTIALLY OR WHOLLY NOT IN FULL AGREEMENT WITH SPECIFICATION REQUIREMENTS.

INSTALLATION: INSTALLATION OF ALL MATERIAL, ITEMS OR EQUIPMENT AS SHOWN ON DRAWINGS OR DESCRIBED IN SPECIFICATIONS SHALL CONFORM AS NEARLY AS POSSIBLE TO MANUFACTURER'S RECOMMENDED PROCEDURE, UNLESS DESIGNATED OTHERWISE. SHOULD SELECTION OF APPROVED ALTERNATE EQUIPMENT REQUIRE REVISIONS, THIS CONTRACTOR SHALL MAKE ALL CHANGES TO ACCOMMODATE SUCH EQUIPMENT. CONTRACTOR SHALL PREPARE DRAWINGS OF REVISIONS FOR APPROVAL BY PROJECT ENGINEER PRIOR TO BEGINNING WORK. CHANGES AND DRAWINGS SHALL BE MADE AT NO CHANGE IN CONTRACT AMOUNT.
REGULATIONS, CODES AND STANDARDS: THIS CONTRACTOR SHALL OBTAIN ALL PERMITS AND LICENSES AND PAY ALL FEES IN CONNECTION WITH SAME FOR WORK PERFORMED UNDER DIVISION 15.

OPENINGS, CHASES AND RECESSES: THIS CONTRACTOR SHALL GIVE GENERAL CONTRACTOR, IN SUFFICIENT TIME, ALL DIMENSIONS NEEDED FOR THE PROPER CONSTRUCTION AND LOCATION OF FORMS, CHASES AND OTHER OPENINGS WHICH MAY BE REQUIRED FOR THE INSTALLATION OF ALL EQUIPMENT, PIPE, DUCTS AND MATERIALS UNDER THIS CONTRACT.

PROTECTION OF EQUIPMENT: PROTECT AGAINST INJURY FROM WEATHER ALL BUILDING MATERIALS, SUPPLIES, TOOLS, EQUIPMENT, AND FIXTURES INSTALLED OR TO BE INSTALLED, WITH SUITABLE AND SUBSTANTIAL COVERS. COST OF REPLACING OR REPAIRING EQUIPMENT AND FIXTURES MADE NECESSARY BY FAILURE TO PROVIDE SUITABLE PROTECTION SHALL BE PAID BY THIS CONTRACTOR. RESPONSIBILITY FOR THE CARE AND PROTECTION OF MECHANICAL EQUIPMENT AND WORK SHALL REMAIN WITH THIS CONTRACTOR UNTIL IT HAS BEEN TESTED AND ACCEPTED. PROTECT EQUIPMENT OUTLETS, PIPE, DUCT, AND CONDUIT OPENINGS WITH TEMPORARY PLUGS, CAPS, OR APPROVED DEVICES.

PROTECT DEVICES: ALL GEARS, BELTS, AND MOVING PARTS ARE TO BE AMPLY PROTECTED BY SUBSTANTIAL, NEAT, AND APPROVED PERMANENT GUARDS, CASINGS, OR RAILINGS AS THE CASE MAY REQUIRE AND IN SUCH MANNER AS TO FULLY COMPLY WITH ALL LOCAL, STATE, AND FEDERAL REGULATIONS.

CLEANING: AFTER ALL FIXTURES, MATERIALS, AND APPARATUS HAVE BEEN SET AND READY FOR USE, AND BEFORE THIS CONTRACTOR LEAVES THE JOB, HE SHALL THOROUGHLY CLEAN ALL EQUIPMENT FURNISHED AND SET BY HIM REMOVING ALL STICKERS, RUST STAINS, GREASE, CEMENT, AND OTHER FOREIGN MATTER OR DISCOLORATION ON EQUIPMENT, LEAVING EVERY PART IN ACCEPTABLE CONDITION, READY FOR USE. CONTRACTOR SHALL REMOVE FROM THE SITE ALL DEBRIS RESULTING FROM HIS WORK, LEAVING BUILDING IN CLEAN CONDITION, SUITABLE FOR OCCUPANCY. VACUUM CLEAN INTERIOR OF ALL AIR HANDLING UNITS BEFORE COMPLETION AND PROVIDE NEW FILTERS JUST BEFORE TURNING OVER TO OWNER.

GAS PIPING: GAS PIPING SHALL BE STEEL PIPE WITH MALLEABLE-IRON FITTINGS AND THREADED JOINTS FOR PIPE SIZES 2" AND SMALLER AND STEEL PIPE WITH WROUGHT-STEEL FITTINGS AND WELDED JOINTS FOR SIZES 2-1/2" AND LARGER. PIPE SHALL BE ASTM A 53/A 53M, BLACK STEEL, SCHEDULE 40. MALLEABLE-IRON THREAD FITTINGS SHALL BE ASME B16.3, CLASS 150 STANDARD PATTERN. WROUGHT-STEEL WELDING FITTINGS SHALL BE ASTM A 234/A 234M FOR BUTT WELDING AND SOCKET WELDING. INDOOR MOVABLE-APPLIANCE FLEXIBLE CONNECTORS TO COMPLY WITH ANSI Z21.75. PROVIDE DIRTLEG, UNION, AND ONE-PIECE BRONZE BALL VALVES AT ALL EQUIPMENT CONNECTIONS. PROVIDE PRESSURE REGULATORS AT ALL DROPS IN PRESSURE. ALL PIPING ON ROOF TO BE SUPPORTED BY MIRO ADJUSTABLE PIPE SUPPORTS. ROLLER PAINT ALL EXTERIOR GAS PIPING WITH TWO COATS GREY OIL-BASED ENAMEL PAINT. PREPARE SURFACE BY SCRAPING OR BRUSHING ANY LOOSE PAINT OR DEBRIS. TYP.

DIRECT GAS-FIRED MAKEUP AIR UNITS: FAN SHALL BE G90 GALVANIZED STEEL, ROOF MOUNTED, BELT DRIVE, FORWARD CURVED FILTERED SUPPLY FAN. FAN SHALL BE LISTED BY ETL AND CONFORMS TO UL705. THE FAN SHALL BE CONSTRUCTED OF HEAVY GAUGE G90 GALVANIZED STEEL. DOORS ARE REMOVABLE FOR EASY ACCESS TO INTERIOR COMPONENTS. INTAKE HOOD SHALL BE DESIGNED WITH LARGE INTAKE AREA TO ASSURE LOW PRESSURE DROP AND MAXIMUM WEATHER RESISTANCE. WEATHER HOOD SHALL INCLUDE 2" WASHABLE FILTERS AND INLET SCREEN. THE BASE SHALL BE CONSTRUCTED OF GALVANIZED STEEL AND STRUCTURAL REINFORCED. FORWARD CURVED CENTRIFUGAL BLOWER WHEEL BALANCED IN TWO PLANES AND DONE IN ACCORDANCE WITH AMCA STANDARD 204-96. THE WHEEL BLADES SHALL BE AERODYNAMICALLY DESIGNED TO MINIMIZE TURBULENCE, INCREASE EFFICIENCY AND REDUCE NOISE. MOTORS SHALL BE HEAVY DUTY BALL BEARING TYPE AND FURNISHED AT THE SPECIFIED VOLTAGE, PHASE AND ENCLOSURE. MOTOR MOUNTING PLATE SHALL BE CONSTRUCTED OF HEAVY GAUGE GALVANIZED STEEL AND SHALL BE DESIGNED TO PROVIDE EASY ADJUSTMENT OF BELT TENSION. SHAFTS SHALL BE PRECISION GROUND AND POLISHED. HEAVY DUTY, PRE-LUBRICATED BEARINGS SHALL BE SELECTED FOR A MINIMUM (L50) LIFE IN EXCESS OF 200,000 HOURS OPERATION AT MAXIMUM CATALOGED OPERATING SPEED. BELTS SHALL BE OIL AND HEAT RESISTANT, NON-STATIC TYPE. DRIVES SHALL BE CAST TYPE, PRECISION MACHINED AND KEYED AND SECURED ATTACHED TO THE FAN AND MOTOR SHAFTS. DRIVES SHALL BE SIZED FOR A MINIMUM OF 150% OF THE INSTALLED MOTOR HORSEPOWER. ACCEPTABLE MANUFACTURERS ARE CAPTIVE AIRE, MODINE, AND REZNOR.

EXHAUST FANS: PROVIDE STANDARD PREFABRICATED INLINE EXHAUST FANS OF TYPE AND SIZE INDICATED, MODIFIED AS NECESSARY TO COMPLY WITH REQUIREMENTS AND AS REQUIRED TO COMPLETE INSTALLATION. PROVIDE FACTORY-WIRED NON-FUSABLE TYPE DISCONNECT SWITCH AND THERMAL OVERLOAD PROTECTION.

APPROVED MANUFACTURERS ARE GREENHECK, LOREN COOK, PENN VENTILATOR, AND ACME.

ROOF-MOUNTED CENTRIFUGAL ROOF EXHAUST FANS: FAN SHALL BE SPUN ALUMINUM, ROOF MOUNTED, DIRECT DRIVEN, DOWNBLAST CENTRIFUGAL EXHAUST FENTILATOR. FAN SHALL BE LISTED BY UNDERWRITERS LABORATORIES (UL 705). FAN SHALL BEAR THE AMCA CERTIFIED RATINGS SEAL FOR SOUND AND AIR PERFORMANCE. FAN SHALL BE OF BOLTED AND WELDED CONSTRUCTION UTILIZING CORROSION RESISTANT FASTENERS. THE SPUN ALUMINUM STRUCTURAL COMPONENTS SHALL BE CONSTRUCTED OF MINIMUM 16 GAUGE MARINE ALLOY ALUMINUM, BOLTED TO A RIGID ALUMINUM SUPPORT STRUCTURE. WHEEL SHALL BE CENTRIFUGAL BACKWARD INCLINED, CONSTRUCTED OF 100% ALUMINUM, INCLUDING A PRECISION MACHINED CAST ALUMINUM HUB. MOTOR SHALL BE NEMA DESIGN B WITH A MINIMUM OF CLASS B INSULATION RATED FOR CONTINUOUS DUTY AND FURNISHED AT THE SPECIFIED VOLTAGE, PHASE, AND ENCLOSURE. APPROVED MANUFACTURERS ARE GREENHECK, LOREN COOK, PENN VENTILATOR, AND ACME. ROOF CURB SHALL BE MINIMUM 14" HIGH ONE PIECE CURB TO MATCH ROOF PITCH WITH 1" INSULATION.

AIR DISTRIBUTION: PROVIDE AND INSTALL ALL RIGID DUCTWORK AS SHOWN ON THE DRAWINGS AND AS HEREIN SPECIFIED. CONSTRUCT DUCTWORK AND APPARATUS CASINGS OF GALVANIZED STEEL CONFORMING TO SMACNA "LOW PRESSURE DUCT CONSTRUCTION STANDARDS 1976". CONSTRUCT DIVIDED FLOW FITTINGS WITH SADDLE TAP WELDED TO DUCT FITTING BODY. ALL CONNECTIONS SHALL BE BELL-MOUTHED AND SMOOTH WITH LONG RADIUS BENDS.

INSULATED FLEXIBLE DUCT SHALL BE INSULATED, SOUND ATTENUATING, LOW VELOCITY TYPE, AND SHALL COMPLY WITH NFPA 90A AND 90B, AND BE US 181 CLASS LABELED. DUCT SHALL BE FACTORY FORMED COMPOSED OF A SPIRAL WOUND, CORROSION RESISTANT WIRE BONDED TO AN INNER FABRIC LINER, INSULATED WITH FIBERGLASS WITH A C FACTOR OF 0.23 OR LESS, AND WITH AN OUTER VAPOR BARRIER OF FIBERGLASS REINFORCED METALIZED FILM. OUTER VAPOR BARRIER CONSTRUCTED OF POLYETHYLENE IS NOT ACCEPTABLE. THE DUCT SHALL BE RATED FOR 6" OF POSITIVE PRESSURE AND SHALL NOT EXCEED 6' IN LENGTH.

PROVIDE MANUAL, SINGLE, OR MULTI-BLADE BALANCING DAMPERS AS INDICATED CONSTRUCTED IN ACCORDANCE WITH SMACNA STANDARDS. DAMPERS SHALL HAVE A PROTECTIVE COAT OF RED ZINC CHROMATE PRIMER OVER A BOND COAT.

PROVIDE MANUFACTURED TURNING VANES IN ALL ELBOWS CONSTRUCTED OF 1½" WIDE CURVED BLADES SET AT ¾" O.C., SUPPORTED WITH BARS PERPENDICULAR TO BLADES SET AT 2" O.C. AND SET INTO SIDE STRIPS SUITABLE FOR MOUNTING IN DUCTWORK.

PROVIDE FLEXIBLE DUCT CONNECTIONS WHEREVER DUCTWORK CONNECTS TO VIBRATION ISOLATED EQUIPMENT AND WHERE SHOWN OR NOTED. CONSTRUCT FLEXIBLE CONNECTIONS OF NEOPRENE-COATED FLAMEPROOF FABRIC CRIMPED INTO DUCT FLANGES FOR ATTACHMENT TO DUCT AND EQUIPMENT. PROVIDE ADEQUATE JOINT FLEXIBILITY TO ALLOW FOR THERMAL, AXIAL, TRANSVERSE, AND TORSIONAL MOVEMENT, AND ALSO CAPABLE OF ABSORBING VIBRATIONS OF CONNECTED EQUIPMENT.

IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE MISCELLANEOUS ITEMS NECESSARY TO PROVIDE A COMPLETE AND PROPER INSTALLATION IN THE TYPES OF WALLS AND CEILINGS USED IN THE PROJECT AS SHOWN IN THE GENERAL CONSTRUCTION PLANS.

PROVIDE MANUFACTURER'S STANDARD CEILING AIR DIFFUSERS AND GRILLES WHERE SHOWN; OF SIZE, SHAPE, CAPACITY, AND TYPE INDICATED; CONSTRUCTED OF MATERIALS AND COMPONENTS AS INDICATED, AND AS REQUIRED FOR COMPLETE INSTALLATION. PROVIDE DIFFUSERS AND GRILLES WITH BORDER STYLES THAT ARE COMPATIBLE WITH ADJACENT CEILING SYSTEMS, AND THAT ARE SPECIFICALLY MANUFACTURED TO FIT INTO THE CEILING MODULE WITH ACCURATE FIT AND ADEQUATE SUPPORT.

KITCHEN EXHAUST DUCT
EXHAUST DUCTS SERVING TYPE I EXHAUST HOODS SHALL BE MADE OF CARBON SHEET STEEL, MINIMUM 16 GA WITH WELDED SEEMS AND JOINTS. INSTALL KITCHEN HOOD EXHAUST DUCTS WITHOUT DIPS AND TRAPS THAT MAY HOLD GREASE, AND SLOPED A MINIMUM OF 2 PERCENT TO DRAIN GREASE BACK TO THE HOOD. INSTALL FIRE-RATED ACCESS PANEL ASSEMBLIES AT EACH CHANGE IN DIRECTION AND AT MAXIMUM INTERVALS OF 20 FEET AND NOT MORE THAN 10 FEET FROM CHANGES IN DIRECTION GREATER THAN 45 DEGREES.

FIRE DAMPERS
STATIC AND DYNAMIC FIRE DAMPERS SHALL BE RATED AND LABELED ACCORDING TO UL 555. DAMPERS SHALL HAVE FIRE RATING OF 1-1/2 HOURS AND CLOSING RATING IN DUCTS UP TO 4" STATIC PRESSURE CLASS AND MINIMUM 2,000 FPM VELOCITY. FIRE DAMPERS SHALL BE CURTAIN TYPE WITH BLADES OUTSIDE AIRSTREAM.

DUCT INSULATION AND ACOUSTICAL LINING:

FURNISH AND INSTALL INSULATION AND/OR LINING WHERE SHOWN ON PLANS OR SPECIFIED BELOW. ALL DUCT SIZES NOTED ON DRAWINGS ARE AIRWAY SIZES WITHOUT SOUND LINING INCLUDED; ADJUST SHEET METAL SIZES ACCORDINGLY. INSULATION PRODUCTS SHALL BE MANUFACTURED BY ONE OF THE FOLLOWING MANUFACTURERS:

1. MANVILLE CORP.
2. OWENS-CORNING FIBERGLASS CORP.
3. CERTAIN-TEED CORP.
4. KNAUF

A. DUCT INSULATION:

1. ALL CONCEALED SUPPLY DUCTWORK NOT SOUND LINED AND RUN-OUTS TO AIR DIFFUSERS: 1-1/2" FLEXIBLE GLASS FIBER WITH ALL SERVICE VAPOR BARRIER JACKET, MINIMUM 0.75 PCF DENSITY.

2. INSULATED FLEXIBLE DUCT: UL 181, CLASS 1, 2-PLY VINYL FILM, BLACK POLYMER FILM, MULTIPLE LAYERS OF ALUMINUM LAMINATE, OR ALUMINUM LAMINATE AND POLYESTER FILM WITH LATEX ADHESIVE, SUPPORTED BY HELICALLY WOUND, SPRING-STEEL WIRE; FIBROUS-GLASS INSULATION; POLYETHYLENE OR ALUMINIZED VAPOR BARRIER FILM. ALL SUPPLY AND RETURN AIR DUCTWORK CONNECTIONS TO EACH AIR SUPPLY OUTLET AND RETURN INLET: 5' LENGTH MAXIMUM LENGTH.

3. ALL COVERINGS OVER ACCESS PANELS SHALL BE REMOVABLE. MARK KITCHEN HOOD EXHAUST DUCT ACCESS PANELS WITH "ACCESS PANEL, DO NOT OBSTRUCT". METAL CORNER BEADS SHALL BE INSTALLED ON ALL EXPOSED DUCTS LESS THAN EIGHT FEET ABOVE FLOOR.

4. FIRE-RATED BLANKET: HIGH-TEMPERATURE, FLEXIBLE, BLANKET INSULATION WITH FSK JACKET THAT IS TESTED AND CERTIFIED TO PROVIDE A 2-HOUR FIRE RATING BY AN NRTL ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION.

C. GREASE DUCT INSULATION:

1. GREASE DUCT SHALL BE INSULATION WITH FLEXIBLE BLANKET COMPOSED OF HIGH TEMPERATURE FIBERS CLASSIFIED FOR APPLICATIONS TO 2192f AND FULLY ENCAPSULATED IN A DURABLE GLASS FIBER REINFORCED FOIL FACING. UL LISTED FOR 1 AND 2 HOUR FIRE RESISTIVE ENCLOSURE PROTECTION, ZERO CLEARANCE FOR KITCHEN EXHAUST DUCTS. 1-1/2" THICK, 6 PCF DENSITY.

2. SYSTEM REQUIRES TWO LAYERS OF INSULATION APPLIED DIRECTLY TO THE DUCT WITH TIGHT BUTT JOINTS AT ALL SEAMS ON BOTH LAYERS. THE FIRST LAYER OF INSULATION IS CUT TO A LENGTH SUFFICIENT TO WRAP AROUND THE DUCT AND PROVIDE A TIGHT BUTT JOINT WHERE THE BLANKET ENDS MEET. ADJACENT BLANKETS ON THE FIRST LAYER ARE BUTTED TIGHTLY TOGETHER WITH LONGITUDINAL SEAMS OFFSET MINIMUM 6:. THE SECOND LAYER OF INSULATION IS INSTALLED IN THE SAME METHOD AS THE FIRST LAYER, WITH SEAMS BETWEEN LAYERS OFFSET A MINIMUM OF 6". BANDING AND/OR PINNING IS USED TO PERMANENTLY SECURE THE INSULATION TO THE DUCT.

3. PRODUCTS TO INCLUDE FIREMASTER FASTWRAP XL BY MORGAN THERMAL CERAMICS. OTHER PRODUCTS ACCEPTABLE BY SUBMITTAL

TEST AND BALANCE

TEST AND ADJUST ALL MECHANICAL SYSTEMS AND EQUIPMENT TO ASSURE PROPER BALANCE AND OPERATION. PERFORM TESTS IN ACCORDANCE WITH NEBB OR AABC, AND ASHRAE STANDARDS. SUBMIT COMPLETED TEST AND BALANCE REPORT TO OWNER'S REPRESENTATIVE. BALANCE CONTRACTOR SHALL BE AN INDEPENDENT CERTIFIED TEST AND BALANCE CONTRACTOR, WITH NEBB OR AABC CERTIFICATION. BALANCE ALL SYSTEMS TO WITHIN 5% OF AIRFLOWS INDICATED ON DRAWINGS, AND REPORT ALL DISCREPANCIES TO HVAC INSTALLER FOR CORRECTION. MARK FINAL BALANCE POSITIONS ON DAMPERS WITH PERMANENT MARKER.

ENERGY CODE

ALL MECHANICAL SYSTEMS TO MEET THE REQUIREMENTS OF THE 2015 IECC.

DEMAND CONTROL VENTILATION PROVIDED FOR SPACES GREATER THAN 500 S.F. AND GREATER THAN 25 PEOPLE PER 1,000 S.F. OCCUPANT DENSITY AND SERVED BY SYSTEMS WITH AIR SIDE ECONOMIZER, AUTO MODULATING OUTSIDE AIR DAMPER CONTROL, OR DESIGN AIRFLOW GREATER THAN 3,000 CFM.

SUPPLY AND RETURN AIR DUCTS AND PLENUMS SHALL BE INSULATED WITH A MINIMUM OF R-6 INSULATION WHERE LOCATED IN UNCONDITIONED SPACES AND WHERE LOCATED OUTSIDE THE BUILDING WITH A MINIMUM OF R-12 INSULATION.

LONGITUDINAL AND TRANSVERSE JOINTS, SEAMS AND CONNECTIONS OF SUPPLY AND RETURN DUCTS OPERATING AT A STATIC PRESSURE LESS THAN OR EQUAL TO 2 INCHES WATER GUAGE SHALL BE SECURELY FASTENED AND SEALED WITH WELDS, GASKETS, MASTICS, MASTIC-PLUS-EMBEDDED=FABRIC SYSTEMS OR TAPES INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTION.

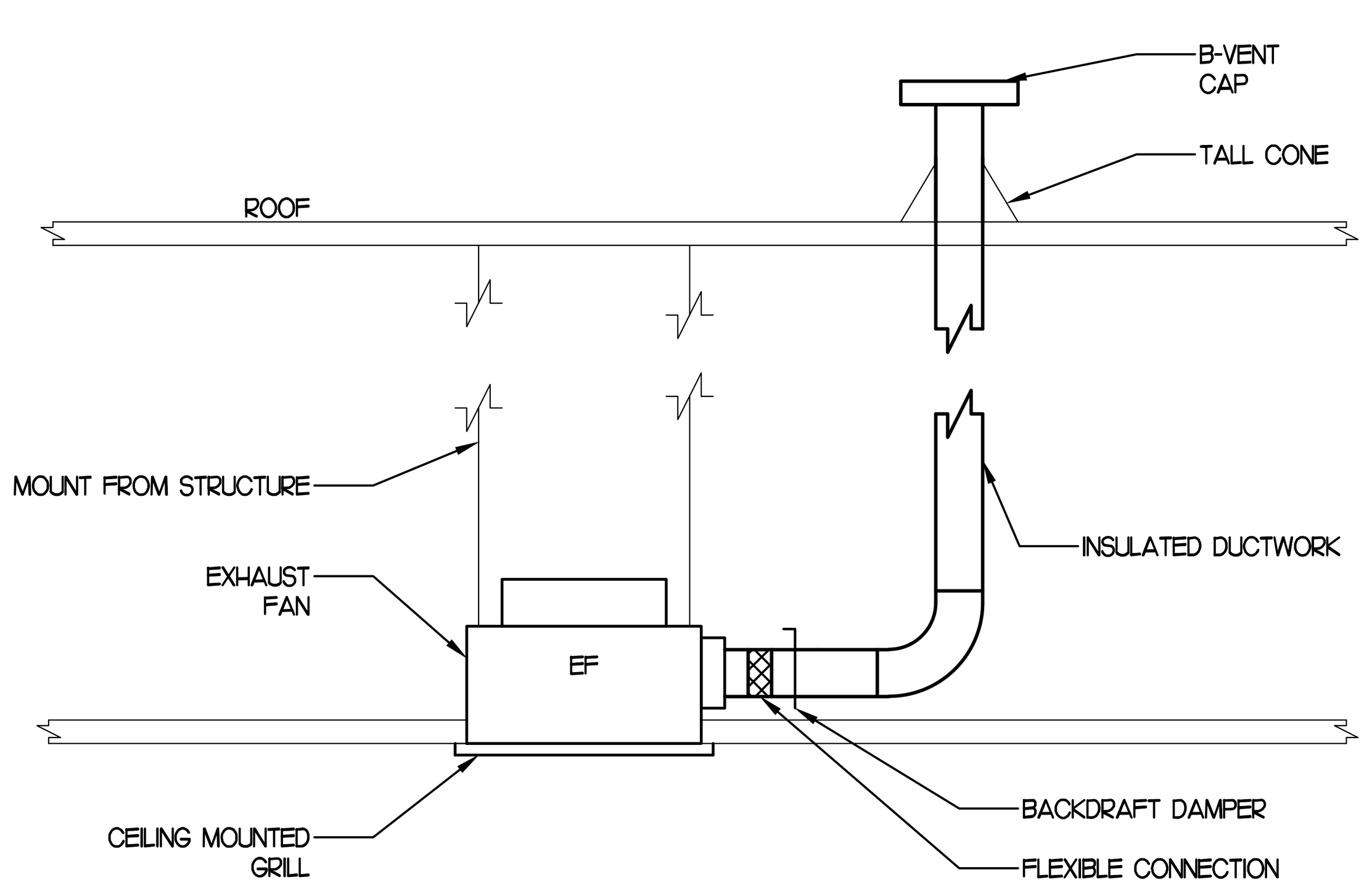
PROVIDE BALANCING DAMPERS AT EACH BRANCH DUCT.

PROVIDE O&M INSTRUCTIONS FOR SYSTEMS AND EQUIPMENT TO THE BUILDING OWNER OR DESIGNATED REPRESENTATIVE. MANUALS TO BE PROVIDED WITHIN 90 DAYS OF SYSTEM ACCEPTANCE.

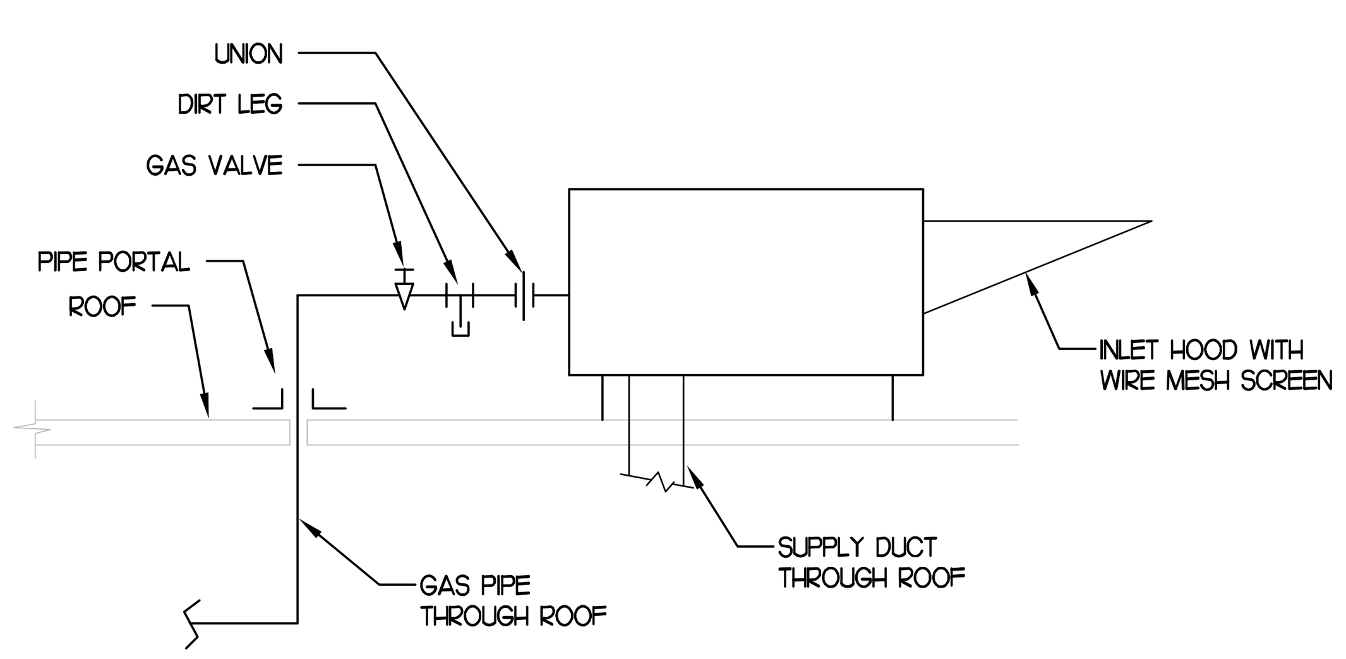
HVAC SYSTEMS AND EQUIPMENT CAPACITY DOES NOT EXCEED CALCULATED LOADS.

HEATING AND COOLING TO EACH ZONE IS CONTROLLED BY A THERMOSTAT CONTROL MINIMUM ONE HUMIDITY CONTROL DEVICE PER INSTALL HUMIDIFICATION/DEHUMIDIFICATION SYSTEM. THERMOSTATIC CONTROLS TO HAVE A 5F DEADBAND. WHERE A ZONE HAS A SEPARATE HEATING AND A SEPARATE COOLING THERMOSTATIC CONTROL LOCATED WITHIN THE ZONE, A LIMIT SWITCH, MECHANICAL STOP OR DIRECT DIGITAL CONTROL SYSTEM WITH SOFTWARE PROGRAMMING SHALL BE PROVIDED WITH THE CAPABILITY TO PREVENT THE HEATING SET POINT FROM EXCEEDING THE COOLING SET POINT AND TO MAINTAIN A DEADBAND. EACH ZONE SHALL BE PROVIDED WITH THERMOSTATIC SETBACK CONTROLS THAT ARE CONTROLLED BY EITHER AN AUTOMATIC TIME CLOCK OR PROGRAMMABLE CONTROL SYSTEM. AUTOMATIC START CONTROLS SHALL BE PROVIDED FOR EACH HVAC SYSTEM. THE CONTROLS SHALL BE CAPABLE OF AUTOMATICALLY ADJUSTING THE DAILY START TIME OF THE HVAC SYSTEM IN ORDER TO BRING EACH SPACE TO THE DESIRED OCCUPIED TEMPERATURE IMMEDIATELY PRIOR TO SCHEDULED OCCUPANCY.

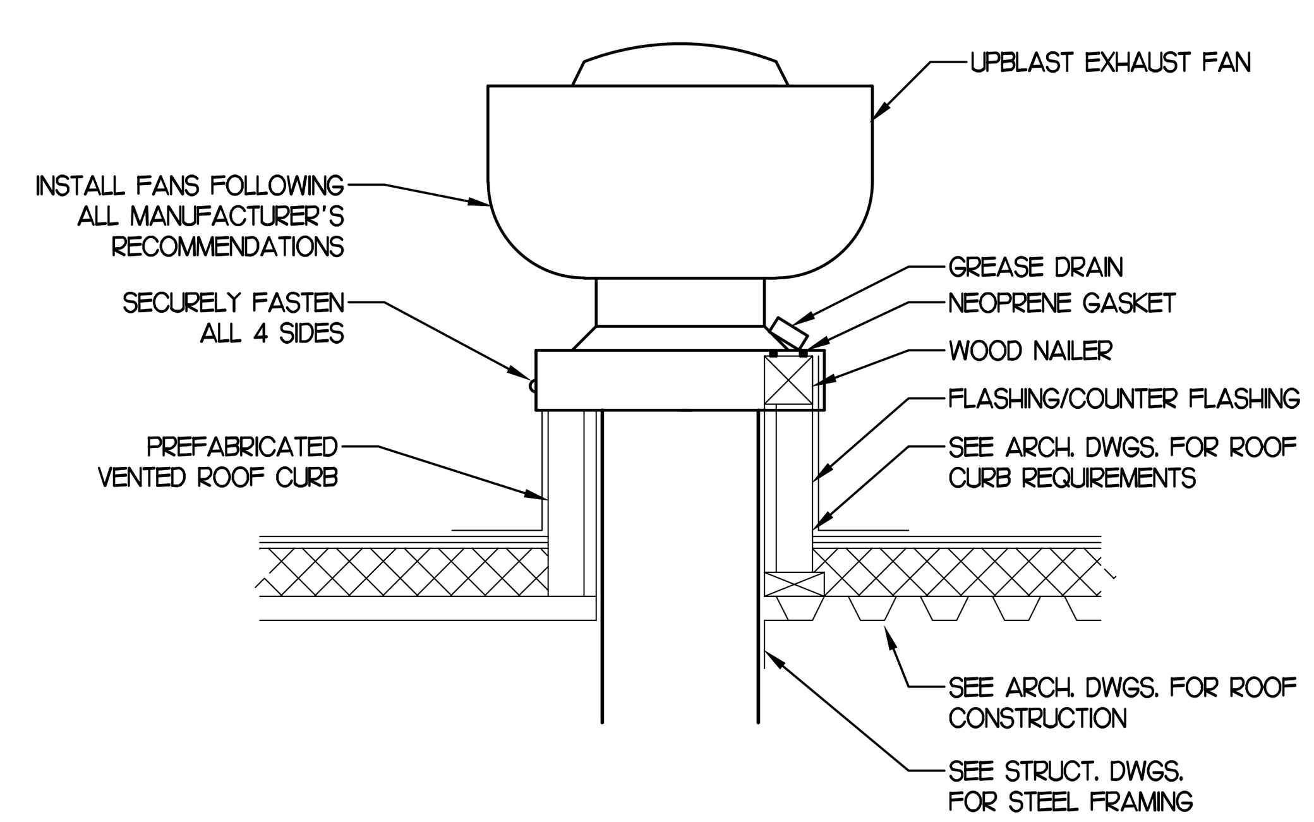
SYSTEM COMMISSIONING: PRIOR TO FINAL INSPECTION, CONTRACTOR MUST PROVIDE A SYSTEM COMMISSIONING REPORT.



1 CEILING MOUNTED EXHAUST FAN
M-3.0 NO SCALE



2 MAKEUP AIR UNIT DETAIL
M-3.0 NO SCALE



3 KITCHEN EXHAUST FAN DETAIL
M-3.0 NO SCALE

JOHN K NEVILLE
062-053269
LICENSED PROFESSIONAL ENGINEER OF ILLINOIS

JULY 8, 2018
EXPIRES 11/30/2019

A+M ARCHITECTS, LLC
40 Landover Parkway, Suite 3
Hawthorn Woods, Illinois 60047
TEL: 847.726.9517

C:\logo\sterlin.jpg
430 East IL Route 22 / Half Day Road
Lake Zurich, Illinois 60047
847.307.4400 Fax 847.307.4410

CONSULTANTS

I HAVE PREPARED, OR CAUSED TO BE PREPARED UNDER MY DIRECT SUPERVISION, THE ATTACHED PLANS AND SPECIFICATIONS AND STATE THAT, TO THE BEST OF MY KNOWLEDGE AND BELIEF AND TO THE EXTENT OF MY CONTRACTUAL OBLIGATION, THEY ARE IN COMPLIANCE WITH ALL THE APPLICABLE CODES, INCLUDING THE ENVIRONMENTAL BARRIERS ACT (410 ILCS) AND THE ILLINOIS ACCESSIBLITY CODE (71 ILL. ADM. CODE 400), OF:
NORTHBROOK, ILLINOIS

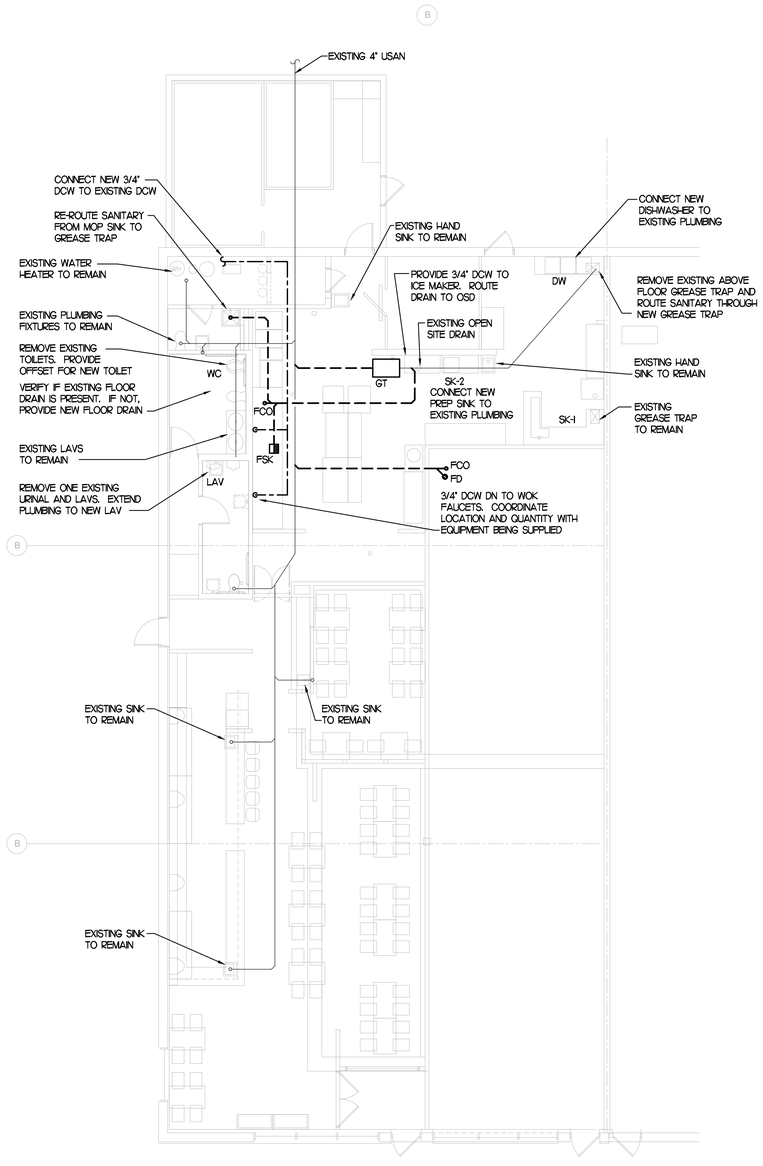
ISSUE FOR	DATE
PRELIMINARY SCOPE	05/30/18
PLAN APPROVAL	06/07/18
PROGRESS	06/15/18

DRAWN BY:
APPROVED:
PROJECT NO.
DATE

TENANT IMPROVEMENTS FOR:
JIMMYS THAI RESTAURANT
405 LAKE-COOK ROAD RD.
DERRFIELD., ILLINOIS

SHEET DESCRIPTION
MECHANICAL SPECIFICATIONS

SHEET NUMBER
M-3.0
SHEET of



PROJECT

PLUMBING FLOOR PLAN

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

0 8' 16'

PLUMBING GENERAL NOTES

1. CODES

THE WORK SHALL COMPLY WITH ALL APPLICABLE LOCAL, MUNICIPAL, AND NATIONAL CODES. WHERE THE CONSTRUCTION DOCUMENTS INDICATE MORE RESTRICTIVE REQUIREMENTS THE CONSTRUCTION DOCUMENTS SHALL GOVERN. HOWEVER, THE CONSTRUCTION DOCUMENTS SHALL NOT BE INTERPRETED AS AUTHORITY TO VIOLATE AND CODE OR REGULATION.

2. DRAWINGS AND SPECIFICATIONS

THE CONTRACTOR SHALL BE RESPONSIBLE FOR READING AND COMPLYING WITH BOTH THE DRAWINGS AND SPECIFICATIONS. IN THE EVENT OF A CONFLICT OR INCONSISTENCY BETWEEN THE DRAWINGS, NOTES, SPECIFICATIONS, OR CODES, THE REFERENCE WHICH PROVIDES THE MORE COMPLETE OR HIGHER STANDARD SHALL PREVAIL.

3. INTERPRETATION OF THE DOCUMENTS

CAREFULLY COMPARE THE DRAWINGS AND SPECIFICATIONS, CHECKING MEASUREMENTS AND CONDITIONS UNDER WHICH THIS INSTALLATION IS TO BE MADE. FOR CLARIFICATION BETWEEN VARIOUS DRAWINGS, BETWEEN DRAWINGS OR SPECIFICATION, OR BETWEEN SECTIONS OF THE SPECIFICATION, THE MATTER SHALL BE REFERRED TO THE ENGINEER BEFORE ANY WORK IS EXECUTED. THE CONTRACTOR SHALL STATE IN THEIR PROPOSAL ANY EXCEPTIONS NECESSARY TO MAKE THIS A COMPLETE, READY TO USE INSTALLATION, IF NOT STATED IN THE PROPOSAL, IT WILL NOT BE CONSIDERED EXTRA.

4. SITE EXAMINATION

BEFORE SUBMITTING A BID, THE CONTRACTOR SHALL VISIT THE SITE, EXAMINE THE PREMISES, AND MAKE A THOROUGH SURVEY OF THE EXISTING CONDITIONS. THE SUBMISSION OF A PROPOSAL WILL BE CONSTRUED AS EVIDENCE THAT SUCH AN EXAMINATION MADE. NO CONSIDERATION OR ALLOWANCE WILL BE GRANTED FOR FAILURE TO VISIT THE SITE OR FOR LATER CLAIMS FOR LABOR, EQUIPMENT, MATERIALS REQUIRED, OR FOR DIFFICULTIES ENCOUNTERED WHICH COULD HAVE BEEN FORESEEN HAD SUCH AN SITE EXAMINATION BEEN MADE.

5. COORDINATION WITH OTHER TRADES

THE MECHANICAL CONTRACTOR SHALL OBTAIN A COMPLETE SET OF ARCHITECTURAL AND ENGINEERING DOCUMENTS AND COORDINATE WITH ELECTRICAL, PLUMBING, ARCHITECTURAL, AND OTHER TRADES FOR EXACT DIMENSIONS, CLEARANCES, EQUIPMENT LOCATIONS, AND OTHER ADDITIONAL SCOPES OF WORK THAT MAY NOT BE SHOWN ON THE MECHANICAL PLANS.

6. PERMITS, APPLICATIONS AND RELEASES

THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS INSPECTIONS, APPLICATIONS, RELEASES AND FEES REQUIRED BY LOCAL, STATE AND FEDERAL AGENCIES FOR THE EXECUTION OF THIS WORK. SCHEDULING OF ALL REQUIRED INSPECTIONS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

7. FIRE STOPPING

ALL PENETRATIONS IN WALL, FLOOR OR CEILINGS SHALL BE SUITABLY CLOSED UP AND SEALED WITH AN INTUMESCENT FIRE STOPPING COMPOUND LISTED IN THE MOST RECENT FACTORY MUTUAL RESEARCH CORPORATION (FMRC) APPROVAL GUIDE. FIRE STOPPING PRODUCTS SHALL BE MANUFACTURED BY 3M CO.

8. OWNER FURNISHED EQUIPMENT

EQUIPMENT THAT WILL BE FURNISHED BY THE OWNER WILL BE INDICATED ON A SEPARATE SCHEDULE. THE CONTRACTOR SHALL COORDINATE WITH THE OWNER FOR DELIVERY SCHEDULES. THE CONTRACTOR IS TO ASSUME THAT ON SITE STORAGE MAY NOT BE AVAILABLE WHEN COORDINATING DELIVERY OF EQUIPMENT. THE CONTRACTOR, IN COORDINATION WITH THE OWNER'S REPRESENTATIVE, WILL INSPECT THE DELIVERY FOR ACCURACY AND SHIPMENT DAMAGE AND ACCEPTING THE EQUIPMENT. THE CONTRACTOR SHALL BE RESPONSIBLE TO STORE, PROTECT AND ULTIMATELY INSTALL THE EQUIPMENT.

9. EQUIPMENT

ALL MATERIALS AND EQUIPMENT USED IN THIS INSTALLATION SHALL BE NEW, AND HAVE THE APPROPRIATE UL LISTING AND LABEL.

10. MISCELLANEOUS SUPPORTING MEMBERS

ALL ANGLES CHANNELS, AND OTHER MISCELLANEOUS STEEL, BOLTS, RODS, ETC. REQUIRED TO SUPPORT LIGHT FIXTURE, CONDUIT, RACEWAY, LADDER TRAY, OR OTHER ELECTRICAL EQUIPMENT OR DEVICES SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR.

11. SAFETY

THE CONTRACTOR SHALL TAKE ALL STEPS NECESSARY TO ENSURE THE SAFETY OF THE OWNERS EMPLOYEES, BUILDING EMPLOYEES AND GUESTS, AS WELL AS THEIR OWN FORCES, BY ADEQUATELY PROTECTING ANY EXPOSED LIVE CONDUCTORS, OR DEVICES THROUGHOUT THE COURSE OF THIS WORK.

12. FIXTURES

ALL NEW AND REPLACED PLUMBINGFIXTURES SHALL BE LABELED WATERSENSE PRODUCT AS SPECIFIED BY THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY.

13. DISTRIBUTION PIPE

ANY WATER DISTRIBUTION PIPE HAVING BEEN TERMINATED OR IS AN UNUSED SEGMENT SHALL HAVE NO "DEAD ENDS". NO SEGMENT OF PIPE WITH A DEVELOPED LENGTH OF MORE THAN TWO FEET SHALL BE PERMITTED.

14. EXISTING PLUMBING

ALL EXISTING PLUMBING THAT MAY POSE A HEALTH OR SAFETY HAZARD MUST BE REVISED TO MEET ILLINOIS PLUMBING CODE. ALL UNUSED WATER PIPING TO BE CAPPED WITHIN 2' OF MAIN.

15. BALL VALVES

ALL BALL VALVES 1 1/2" AND BELOW FOR DOMESTIC WATER SHALL BE OF LEAD FREE TYPE 1417 (a) 1 SWDA.

16. MIXING VALVES

PROVIDE NEW THERMOSTATIC MIXING VALVE AT ALL EXISTING AND NEW LAVS

JOHN K NEVILLE 062-053269 LICENSED PROFESSIONAL ENGINEER OF ILLINOIS

JULY 9, 2018
EXPIRES 11/30/2019

NEVILLE
ENGINEERING SERVICE, INC.
24020 RIVERWALK CT, SUITE 122, PLAINFIELD IL 60544
815-200-3544 IL DESIGN #184.006531

A+M ARCHITECTS, LLC
40 Landover Parkway, Suite 3
Hawthorn Woods, Illinois 60047
TEL: 847.726.9517

C:\logo\sterlin.jpg

430 East IL Route 22 / Half Day Road
Lake Zurich, Illinois 60047
847.307.4400 Fax 847.307.4410

CONSULTANTS

I HAVE PREPARED, OR CAUSED TO BE PREPARED UNDER MY DIRECT SUPERVISION, THE ATTACHED PLANS AND SPECIFICATIONS AND STATE THAT, TO THE BEST OF MY KNOWLEDGE AND BELIEF AND TO THE EXTENT OF MY CONTRACTUAL OBLIGATION, THEY ARE IN COMPLIANCE WITH ALL THE APPLICABLE CODES, INCLUDING THE ENVIRONMENTAL BARRIERS ACT (410 ILCS) AND THE ILLINOIS ACCESSIBILITY CODE (71 ILL. ADM. CODE 400), OF:

NORTHBROOK, ILLINOIS

ISSUE FOR	DATE
PRELIMINARY SCOPE	05/30/18
PLAN APPROVAL	06/07/18
PROGRESS	06/15/18

DRAWN BY:	
APPROVED:	
PROJECT NO.	
DATE	

TENANT IMPROVEMENTS FOR:

JIMMYS THAI RESTAURANT

405 LAKE-COOK ROAD RD.
DERRFIELD., ILLINOIS

SHEET DESCRIPTION

PLUMBING FLOOR PLAN

SHEET NUMBER

P-1.0

SHEET of

PLUMBING FIXTURE SCHEDULE

TAG	FIXTURE	MATERIAL	MANUFACTURER	MODEL	MOUNTING	FAUCET/FLUSH VALVE		NOTES
						MANUFACTURER	MODEL	
WC	WATER CLOSET ADA	WHITE VITREOUS CHINA	AMERICAN STANDARD	2467.016	FLOOR	-	-	FLOOR-MOUNTED TWO-PIECE ELONGATED BOWL PRESSURE-ASSISTED TOILET. ADA. 1.6 GPF. 12" ROUGH-IN. PROVIDE ANTIMICROBIAL OPEN FRONT SEAT WITHOUT COVER. COORDINATE TRIP LEVER WITH WIDE SIDE OF FIXTURE
LAV	LAVATORY SINK	WHITE VITREOUS CHINA	AMERICAN STANDARD	0954.004	WALL MOUNTED	SYMMONS	S-20-G	WALL HUNG LAVATORY, VITREOUS CHINA, REAR OVERFLOW, RECESSED SELF-DRAINING DECK WITH OPTIONAL KNEE SHROUD SINGLE-HANDLE MANUAL FAUCET, CHROME FINISH. 0.5 GPM. GRID DRAIN.
SK-1	3-COMPARTMENT SINK	STAINLESS STEEL	-	-	FLOOR MOUNTED	-	-	FLOOR MOUNTED 3-COMPARTMENT SINK PROVIDED BY OWNER. CONNECT TO EXISTING PLUMBING SUPPLIES AND WASTE
SK-2	PREP SINK	STAINLESS STEEL	-	-	FLOOR MOUNTED	-	-	STAINLESS STEEL FABRICATED SINGLE-BOWL PREP SINK PROVIDED BY OWNER.
TMV	THERMOSTATIC MIXING VALVE	-	SYMMONS	7-200-CK	-	-	-	ALL BRONZE REMOVABLE PISTON AND THERMAL MOTOR. ROUGH BRONZE FINISH. PROVIDE WITH CHECKS. 3/4" INLETS AND OUTLET.
GT	GREASE INTERCEPTOR	STEEL	ZURN	Z1172-1200	IN-FLOOR	-	-	LARGE CAPACITY ACID RESISTANT COATED INTERIOR AND EXTERIOR FABRICATED STEEL GREASE INTERCEPTOR, 150 GPM), 4" INLET AND OUTLET.
FD	FLOOR DRAIN	HDPE	JOSAM WADE ZURN	J-3000A W-1005TD Z-415	FLOOR MOUNTED	-	–	CAST IRON BODY, BOTTOM OUTLET, ADJUSTABLE COLLAR, POLISHED NICKEL BRONZE, LIGHT DUTY STRAINER.

PLUMBING SYMBOLS SCHEDULE

SYMBOL	DESCRIPTION
	BALANCING VALVE
	BALL VALVE
	CHECK VALVE
	GAS VALVE
	GATE VALVE
	TEMPERATURE & PRESSURE RELIEF VALVE
	SOLENOID VALVE OR ELECTRIC ACTUATED
	THERMOSTATIC MIXING VALVE
	BACKFLOW PREVENTER (DOMESTIC)
	REDUCER / INCREASER
	UNION
	PIPE RISER
	PIPE DROP
	END CAP
	HOSEBIBB
	FLOOR OR YARD CLEANOUT (CO , YCO)
	FLOOR DRAIN, NUMBER AND SIZE
	STORM SEWER PIPING
	COLD WATER PIPING
	HOT WATER PIPING
	HOT WATER RETURN PIPING
	VENT PIPING
	STORM SEWER PIPING

PLUMBING ABBREVIATIONS

AG	ABOVEGROUND SANITARY
AV	ACID VENT
AW	ACID WASTE
CU	COPPER
DCW	DOMESTIC COLD WATER
DDCV	DOUBLE-DETECTOR CHECK VALVE
DHW	DOMESTIC HOT WATER
DHWR	DOMESTIC HOT WATER RETURN
EWC	ELECTRIC WATER COOLER
EWT	ENTERING WATER TEMPERATURE
FCO	FLOOR CLEAN-OUT
FD	FLOOR DRAIN
FPHB	FROST-PROOF HOSE BIBB
GAL	GALLON
HB	HOSE BIBB
IW	INDIRECT WASTE
KW	KITCHEN WASTE
LAV	LAVATORY
LBS	POUNDS
LWT	LEAVING WATER TEMPERATURE
OB	OUTLET BOX
OFD	OVERFLOW DRAIN
OSD	OPEN SITE DRAIN
RD	ROOF DRAIN
RPZ	REDUCED-PRESSURE BACKFLOW PREVENTER
SAN	SANITARY
SH	SHOWER
SK	SINK
STM	STORM
TMV	THERMOSTATIC MIXING VALVE
UR	URINAL
USAN	UNDERGROUND SANITARY
USTM	UNDERGROUND STORM
WC	WATER CLOSET
WCO	WALL CLEANOUT
WH	WATER HEATER

NEVILLE ENGINEERING SERVICE, INC.
24020 RIVERWALK CT, SUITE 122, PLAINFIELD IL 60544
815-200-3544 IL DESIGN #184.006531

PLUMBING SPECIFICATIONS

SCOPE: THIS SPECIFICATION REQUIRES ALL MATERIALS, EQUIPMENT, AND LABOR NECESSARY TO MAKE A COMPLETE AND ACCEPTABLE MECHANICAL INSTALLATION AS SPECIFIED HEREIN AND SHOWN ON DRAWINGS.
PROVIDE ALL ITEMS, ARTICLES, OPERATIONS, OR METHODS LISTED, MENTIONED, OR SCHEDULED HEREIN OR ON THE DRAWINGS, INCLUDING ALL LABOR, MATERIALS, EQUIPMENT, AND INCIDENTALS NECESSARY AND REQUIRED FOR COMPLETION OF THE WORK.

REGULATIONS, CODES, AND STANDARDS: CURRENT CODE REQUIREMENTS SHALL BE SATISFIED. WHERE REQUIRED BY LOCAL, STATE, OR FEDERAL AUTHORITY HAVING JURISDICTION, NO EQUIPMENT WILL BE ACCEPTED UNLESS IT BEARS THE ACCEPTANCE LABEL OF AN APPROPRIATE TESTING AGENCY.

SHOP DRAWINGS: SUBMIT TO THE PROJECT ENGINEER, FOR APPROVAL, SHOP DRAWINGS FOR ALL EQUIPMENT LISTED IN THE CONSTRUCTION DOCUMENTS IN ACCORDANCE WITH THE GENERAL CONDITIONS AND SUPPLEMENTARY CONDITIONS. SUBMITTALS SHALL INCLUDE AS A MINIMUM THE FOLLOWING:

A. PRODUCT DATA: MANUFACTURER'S LITERATURE DESCRIBING ITEM. MODEL NUMBERS PROPOSED SHALL BE IDENTIFIED WHEN THE LITERATURE DESCRIBES MORE THAN (1) ITEM.
B. OPERATION CURVES: FOR ALL FANS SHOWING CAPACITIES, PRESSURES, HORSEPOWER, AND EFFICIENCY SHALL BE PROVIDED.
C. MANUFACTURER'S SUBMITTAL: SHOWING ELECTRICAL AND MECHANICAL REQUIREMENTS AND CONNECTION LOCATIONS SHALL BE PROVIDED.
D. MAINTENANCE DATA: SUBMIT MAINTENANCE DATA AND PARTS LIST FOR EACH TYPE OF EQUIPMENT REQUIRING PERIODIC MAINTENANCE.

ALL SHOP DRAWINGS SUBMITTED SHALL BE STAMPED, DATED, AND SIGNED BY THE CONTRACTOR TO CERTIFY THAT THEY HAVE BEEN CHECKED BY HIM AS TO CAPACITIES, DIMENSIONS, SPACE REQUIREMENTS AND LIMITATIONS, AND ANY AND ALL OTHER REQUIREMENTS, AND FOUND ACCEPTABLE. APPROVAL OF SHOP DRAWINGS BY THE PROJECT ENGINEER SHALL NOT RELIEVE CONTRACTOR FROM FULFILLING OPERATIONAL REQUIREMENTS, OR FURNISHING ALL MATERIAL AND EQUIPMENT SPECIFIED OR NOTED, WHETHER OR NOT SPECIFICALLY SHOWN ON THE SHOP DRAWINGS. THE QUANTITY TO BE SUBMITTED SHALL BE THE NUMBER REQUIRED BY THE GENERAL CONTRACTOR.

AS-BUILT DRAWINGS: THE CONTRACTOR SHALL SUBMIT AT COMPLETION ONE (1) SET OF MARKED-UP CONTRACT DRAWINGS WHICH SHOW ALL MODIFICATIONS TO THE CONTRACT AND CHANGES OF LOCATIONS, MATERIALS, OR CONFIGURATIONS. THIS SET SHALL BE SUBMITTED WITH THE OPERATING MANUALS TO THE PROJECT ENGINEER.

OPERATING MANUALS: PROVIDE THREE (3) MANUALS, EACH WITH A COMPLETE SET OF COPIES OF SHOP DRAWINGS REQUIRED FOR THE PROJECT AS WELL AS VALVE CHARTS, MANUFACTURER'S TESTING, CLEANING AND MAINTENANCE INSTRUCTIONS, LIST OF MATERIALS FOR MAINTENANCE, PARTS LIST, WIRING DIAGRAMS, AND NAME AND ADDRESS OF AUTHORIZED SERVICE ORGANIZATIONS AND SUPPLIERS. INFORMATION SHALL BE BOUND IN 8½"XII" THREE-RING, LOOSE-LEAF BINDER, AND INDEXED IN ACCORDANCE WITH THESE SPECIFICATIONS. BINDER COVER SHALL IDENTIFY JOB NAME, DATE, AND NAME AND ADDRESS OF CONTRACTOR, ARCHITECT, AND ENGINEER. MANUALS SHALL BE SUBMITTED TO THE PROJECT ENGINEER FOR REVIEW OF MATERIAL PRIOR TO THE FINAL INSPECTION. MANUALS WILL BE RETURNED TO THE CONTRACTOR FOR THE SUBMITTAL TO THE OWNER AT THE TIME OF SYSTEM INSTRUCTION.

SYSTEM START-UP: AT A TIME SET BY THE CONTRACTOR, AND AGREED TO BY THE OWNER, ARRANGE TO PLACE EQUIPMENT IN OPERATION. HAVE A FACTORY AUTHORIZED TECHNICIAN ASSIST IN THE EQUIPMENT START-UP AND MAKE NECESSARY ADJUSTMENTS TO PROVE SATISFACTORY OPERATION PRIOR TO TURNING FACILITY OVER TO OWNER. ALL EQUIPMENT SHALL BE RUN FOR THREE 8-HOUR TEST PERIODS, ANY IRREGULARITIES, FAULTY EQUIPMENT, ETC., SHALL BE REPAIRED OR REPLACED PRIOR TO FINAL INSPECTION AND ACCEPTANCE. AFTER TESTING, ALL EQUIPMENT SHALL BE FRESH-LY OILED, FILTERS REPLACED WITH CLEAN MEDIA, AND INSTALLATION COMPLETELY FINISHED PRIOR TO ACCEPTANCE.

OWNER INSTRUCTION: CONTRACTOR SHALL ARRANGE, IN WRITING, WITH THE OWNER, PRIOR TO FINAL INSPECTION, A DATE OR DATES TO INSTRUCT THE OWNER, AND THE OWNER'S DESIGNATED REPRESENTATIVES, IN THE OPERATION AND MAINTENANCE OF THE SYSTEM.

FINAL INSPECTION: UPON COMPLETION OF ALL WORK, THE CONTRACTOR SHALL SUBMIT FOR APPROVAL THE FOLLOWING DATA:

1. MAINTENANCE MANUALS

AFTER RECEIVING APPROVAL OF THE ABOVE, THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER IN WRITING AND MAKE ARRANGEMENTS FOR A FINAL INSPECTION. AFTER THE FINAL INSPECTION IS MADE, THE CONTRACTOR WILL RECEIVE A LIST OF ITEMS REQUIRING ADJUSTMENT, CORRECTION, REPLACEMENT, OR COMPLETION. THE CONTRACTOR SHALL COMPLY COMPLETELY WITH ALL THE LISTED REQUIREMENTS WITHIN THIRTY (30) DAYS OF THE RECEIPT OF LIST. SHOULD THE CONTRACTOR FAIL TO PERFORM WITHIN THIS TIME LIMIT, THE PROJECT ENGINEER AND/OR OWNER RESERVES THE RIGHT TO HAVE THE WORK COMPLETED BY OTHERS AND THE COST DEDUCTED FROM THE CONTRACT PRICE.

DISPOSAL: ALL MATERIALS AND EQUIPMENT SHOWN, OR INDICATED TO BE REMOVED AND NOT REINSTALLED OR RELOCATED, SHALL BECOME PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE OWNER'S PROPERTY UNLESS SPECIFIED TO THE CONTRARY.

EQUIPMENT PADS, FOUNDATIONS, AND PITS: PROVIDE ALL NECESSARY EQUIPMENT PADS, FOUNDATIONS, AND PITS WHICH ARE REQUIRED AS PART OF THIS PROJECT. COST OF CONSTRUCTING THESE SHALL BE A PART OF THE RESPECTIVE MECHANICAL INSTALLATION. EACH FLOOR MOUNTED PIECE OF EQUIPMENT SHALL BE PROVIDED WITH A 4" HIGH CONCRETE BASE, PLUMB AND SMOOTH. CONCRETE SHALL BE COMPOSED OF ONE PART PORTLAND CEMENT, TWO PARTS CLEAN, SHARP SAND, AND FOUR PARTS CRUSHED STONE OR GRAVEL ½" TO ¾" IN SIZE, MINIMUM 3500 PSI STRENGTH ACHIEVED IN 28 DAYS. BASES SHALL BE ATTACHED TO THE BUILDING FLOOR WITH EXPANSION BOLTS ON 3' CENTERS, MINIMUM OF TWO BOLTS PER BASE. EXPANSION BOLTS SHALL BE SET PRIOR TO POURING SUCH THAT BOLT HEADS WILL BE CONCEALED WITHIN THE POURED BASE. BASE EXPANSION BOLTS SET IN MEMBRANE FLOORS SHALL BE PLACED SO AS NOT TO IMPAIR INTEGRITY OF THE WATERPROOF MEMBRANE. PROVIDE ALL NECESSARY ANCHOR BOLTS FOR EQUIPMENT SUPPLIED. PROVIDE LAYOUT DIMENSIONS AND ANCHOR BOLT INSERTS FOR ANY OTHER CONTRACTOR REQUIRED TO CONSTRUCT THESE.

GUARANTEE: THE CONTRACTOR SHALL GUARANTEE ALL WORKMANSHIP AND MATERIALS SUPPLIED BY HIM FOR ONE (1) YEAR AFTER ACCEPTANCE OF THE WORK IN HIS CONTRACT. IF, DURING THE GUARANTEE PERIOD, ANY DEFECTS OF FAULTY MATERIALS ARE FOUND, HE SHALL CORRECT IMMEDIATELY AND REPAIR ANY DAMAGE TO OTHER MATERIALS OR INSTALLATIONS CAUSED BY THE DEFECT.

MATERIALS AND EQUIPMENT: ALL EQUIPMENT AND MATERIALS TO BE INCORPORATED IN THIS CONTRACT WORK SHALL BE NEW AND OF THE MAKES AND TYPES AS SPECIFIED AND CONTRACTED FOR. NO REMOVED EQUIPMENT SHALL BE RE-INSTALLED OR RE-USED.

PROPOSED EQUIPMENT AND MATERIALS: THIS CONTRACTOR SHALL SUBMIT A COMPLETE LIST OF PROPOSED EQUIPMENT AND MATERIALS, DESIGNATING MANUFACTURER'S NAME AND MODEL NUMBER OR TYPE, FOR PROJECT ENGINEER'S APPROVAL. CONTRACTOR SHALL MAKE SUCH SUBMITTAL WITHIN 15 DAYS AFTER NOTICE TO PROCEED AND BEFORE ORDERING ANY MATERIAL OR EQUIPMENT. APPROVAL OF SUCH A LIST SHALL IN NO WAY RELIEVE THE CONTRACTOR FROM RESPONSIBILITY OF SUBMITTING SHOP DRAWINGS, NOR SHALL IT CONSTITUTE FINAL APPROVAL SHOULD THE SHOP DRAWINGS BE FOUND TO BE PARTIALLY OR WHOLLY NOT IN FULL AGREEMENT WITH SPECIFICATION REQUIREMENTS.

INSTALLATION: INSTALLATION OF ALL MATERIAL, ITEMS OR EQUIPMENT AS SHOWN ON DRAWINGS OR DESCRIBED IN SPECIFICATIONS SHALL CONFORM AS NEARLY AS POSSIBLE TO MANUFACTURER'S RECOMMENDED PROCEDURE, UNLESS DESIGNATED OTHERWISE. SHOULD SELECTION OF APPROVED ALTERNATE EQUIPMENT REQUIRE REVISIONS, THIS CONTRACTOR SHALL MAKE ALL CHANGES TO ACCOMMODATE SUCH EQUIPMENT. CONTRACTOR SHALL PREPARE DRAWINGS OF REVISIONS FOR APPROVAL BY PROJECT ENGINEER PRIOR TO BEGINNING WORK. CHANGES AND DRAWINGS SHALL BE MADE AT NO CHANGE IN CONTRACT AMOUNT.

REGULATIONS, CODES AND STANDARDS: THIS CONTRACTOR SHALL OBTAIN ALL PERMITS AND LICENSES AND PAY ALL FEES IN CONNECTION WITH SAME FOR WORK PERFORMED UNDER DIVISION 15.

OPENINGS, CHASES AND RECESSES: THIS CONTRACTOR SHALL GIVE GENERAL CONTRACTOR, IN SUFFICIENT TIME, ALL DIMENSIONS NEEDED FOR THE PROPER CONSTRUCTION AND LOCATION OF FORMS, CHASES AND OTHER OPENINGS WHICH MAY BE REQUIRED FOR THE INSTALLATION OF ALL EQUIPMENT, PIPE, DUCTS AND MATERIALS UNDER THIS CONTRACT.

PROTECTION OF EQUIPMENT: PROTECT AGAINST INJURY FROM WEATHER ALL BUILDING MATERIALS, SUPPLIES, TOOLS, EQUIPMENT, AND FIXTURES INSTALLED OR TO BE INSTALLED, WITH SUITABLE AND SUBSTANTIAL COVERS. COST OF REPLACING OR REPAIRING EQUIPMENT AND FIXTURES MADE NECESSARY BY FAILURE TO PROVIDE SUITABLE PROTECTION SHALL BE PAID BY THIS CONTRACTOR. RESPONSIBILITY FOR THE CARE AND PROTECTION OF MECHANICAL EQUIPMENT AND WORK SHALL REMAIN WITH THIS CONTRACTOR UNTIL IT HAS BEEN TESTED AND ACCEPTED. PROTECT EQUIPMENT OUTLETS, PIPE, DUCT, AND CONDUIT OPENINGS WITH TEMPORARY PLUGS, CAPS, OR APPROVED DEVICES.

PROTECT DEVICES: ALL GEARS, BELTS, AND MOVING PARTS ARE TO BE AMPLY PROTECTED BY SUBSTANTIAL, NEAT, AND APPROVED PERMANENT GUARDS, CASINGS, OR RAILINGS AS THE CASE MAY REQUIRE AND IN SUCH MANNER AS TO FULLY COMPLY WITH ALL LOCAL, STATE, AND FEDERAL REGULATIONS.

CLEANING: AFTER ALL FIXTURES, MATERIALS, AND APPARATUS HAVE BEEN SET AND READY FOR USE, AND BEFORE THIS CONTRACTOR LEAVES THE JOB, HE SHALL THOROUGHLY CLEAN ALL EQUIPMENT FURNISHED AND SET BY HIM REMOVING ALL STICKERS, RUST STAINS, GREASE, CEMENT, AND OTHER FOREIGN MATTER OR DISCOLORATION ON EQUIPMENT, LEAVING EVERY PART IN ACCEPTABLE CONDITION, READY FOR USE. CONTRACTOR SHALL REMOVE FROM THE SITE ALL DEBRIS RESULTING FROM HIS WORK, LEAVING BUILDING IN CLEAN CONDITION, SUITABLE FOR OCCUPANCY. VACUUM CLEAN INTERIOR OF ALL AIR HANDLING UNITS BEFORE COMPLETION AND PROVIDE NEW FILTERS JUST BEFORE TURNING OVER TO OWNER.

MATERIALS

A. COPPER TUBE AND FITTINGS
   1. COPPER DWV TUBE: ASTM B 306, DRAINAGE TUBE, DRAWN TEMPER.

B. PVC PIPE AND FITTINGS
   1. SOLID-WALL PVC PIPE: ASTM D 2665, DRAIN WASTE, AND VENT.
   2. ADHESIVE PRIMER: ASTM F 656.
   3. SOLVENT CEMENT: ASTM D 2564.

PIPE AND FITTINGS:

A. POTABLE WATER IN BUILDING ABOVEGROUND, COLD, HOT, TEMPERED, AND RE-CIRCULATING
   1. COPPER, TYPE L, 3" AND SMALLER, HARD TEMPER WITH CAST BRONZE OR WROUGHT COPPER FITTINGS, OR WITH BRASS OR BRONZE FLARE FITTINGS. JOINTS SHALL BE MADE WITH 95/5 TIN/ANTIMONY SOLDER OR BRAZED. SOLDER CONTAINING LEAD SHALL NOT BE USED. FLUX SHALL BE NON-CORROSIVE TYPE.

B. UNDERGROUND WASTE AND VENT
   1. SOLID WALL PVC PIPE, PVC SOCKET FITTINGS, AND SOLVENT-CEMENTED JOINTS.

D. ABOVEGROUND WASTE AND VENT
   1. COPPER DWV TUBE, COPPER DRAINAGE FITTINGS, AND SOLDERED JOINTS.
   2. SOLID WALL PVC PIPE, PVC SOCKET FITTINGS, AND SOLVENT-CEMENTED JOINTS.

VALVES: ALL VALVES OF ONE TYPE SHALL BE OF ONE MANUFACTURER AND WITH NAME OR TRADEMARK OF MANUFACTURER CAST OR STAMPED ON BODY OF VALVE.

- VALVES FOR WATER 3" AND SMALLER SHALL BE BALL TYPE VALVES WITH A MINIMUM PRESSURE RATING OF 600 WOG, BRONZE BODY MATERIAL, SCREWED ENDS, TWO-PIECE CONSTRUCTION, STEM SHALL HAVE BRASS/TEFLON SEALS, AND CHROME PLATED VALVE.

FURNISH AND INSTALL REQUIRED VALVES FOR PROPER FLOW CONTROL, ISOLATION FOR INSPECTION, MAINTENANCE AND REPAIR OF EACH PIECE OF EQUIPMENT, EACH MAIN, AND BRANCH SERVICE LINE.

UNIONS: PROVIDE UNIONS IN ALL PIPING CONNECTING TO EQUIPMENT SUBJECT TO REPAIR OR REMOVAL.

A. UNIONS SHALL BE OF THE SAME MATERIAL AND FINISH AS THE PIPING SYSTEM. AVOID UNIONS IN STRAIGHT PIPE RUNS OR IN CONCEALED LOCATIONS.
   1. STEEL PIPING SIZES 2" AND SMALLER: MALLEABLE IRON UNIONS WITH GROUND JOINT BRASS TO IRON SEAT, 150 LB. WORKING PRESSURE. GRINNELL 463, STOCKHAM 694, BLACK OR GALVANIZED.
   2. COPPER PIPING: ALL PIPE SIZES: COPPER, GROUND JOINT UNION. CHASE 402, MUELLER WC407.

MAKE ALL REDUCTIONS IN PIPE SIZE WITH ECCENTRIC OR CONCENTRIC, AS APPROPRIATE, REDUCING FITTINGS TO ALLOW FOR COMPLETE GRAVITY DRAINING OF LINES. USE NO BUSHINGS. ALL PIPE NIPPLES SHALL BE OF THE SAME MATERIAL AS LINES IN WHICH THEY OCCUR. MINIMUM SIZE OF WATER PIPING SHALL BE ½" EXCEPT WITHIN 12" OF PLUMBING FIXTURE. SUPPORT ALL PIPING ADEQUATELY TO PREVENT SAG AND POCKETING.

A. CONCEALED PIPING: ALL PIPING SHALL BE CONCEALED EXCEPT AS OTHERWISE SHOWN OR SPECIFIED. PIPING TO BE CONCEALED MUST BE ROUGHED IN AND INSULATED, IF REQUIRED, BEFORE PERMANENT WALLS OR CEILINGS ARE INSTALLED.

B. EXPOSED PIPING: INSTALL EXPOSED PIPING AS CLOSE TO CEILINGS AND BEAMS AS POSSIBLE, MAINTAINING HIGHEST POSSIBLE HEADROOM CONSISTENT WITH THE CORRECT PITCHING OF THE PIPE.

C. THREADED PIPE: ALL SCREW THREADS SHALL BE AMERICAN STANDARD TAPER PIPE THREAD. USE GRAPHITE OR TEFLON TAPE AS LUBRICANT FOR ASSEMBLING. LUBRICATION OF THREADED JOINTS WILL BE ALLOWED ONLY ON THE MALE PIPE THREADS.

SANITARY WASTE PIPING SPECIALTIES:
A. FLOOR DRAINS: FLOOR DRAINS SHALL BE THE DEEP SEAL TYPE AND FILLED WITH VEGETABLE OIL WHERE SUBJECT TO EVAPORATION.
B. FLOOR CLEANOUTS: ADJUSTABLE FLOOR CLEANOUT, DURA-COATED CAST IRON BODY WITH GAS AND WATERTIGHT ABS TAPERED THREAD PLUG AND ROUND SCORIATED CAST IRON EXTRA-HEAVY-DUTY SECURED TOP ADJUSTABLE TO FLOOR FINISH. ZURN Z-1400 OR EQUAL

PRESSURE TESTS: ALL PIPING AND RELATED EQUIPMENT SHALL PROVE TIGHT UNDER REQUIRED TESTS. CONTRACTOR SHALL PROVIDE ALL NECESSARY INSTRUMENTS, GAUGES, APPARATUS, AND PERSONNEL TO PERFORM THE TESTS. ALL TESTS FOR PIPING SYSTEMS, EXCEPT FINAL TESTS OF COMPLETE SYSTEM, SHALL BE MADE BEFORE PIPE IS COVERED, CONCEALED, OR CONNECTED TO FIXTURES AND EQUIPMENT. REMOVE OR PROTECT FROM DAMAGE EQUIPMENT NOT INTENDED TO BE SUBJECTED TO TEST PRESSURES REQUIRED. ALL TEST PRESSURES SHALL REMAIN CONSTANT FOR THE REQUIRED PERIOD WITHOUT ADDITION TO THE TESTING MEDIUM. ALL TESTS SHALL BE MADE IN THE PRESENCE OF THE PROJECT ENGINEER'S DULY AUTHORIZED REPRESENTATIVE. TESTS REQUIRED SHALL NOT BE LESS THAN THE FOLLOWING AND NOT LESS THAN THE APPLICABLE CODES:

A. INTERIOR SEWER AND VENTS: PNEUMATIC, 5 PSIG, 15 MINUTES
B. POTABLE WATER: HYDROSTATIC, 150 PSIG, 2 HOURS

ALL PIPE SHALL PROVE ABSOLUTELY TIGHT FOR THE ENTIRE DURATION OF THE TEST AS EVIDENCED BY BOTH VISUAL INSPECTION AND PRESSURE GAUGE READABLE TO ONE PSIG INCREMENTS. IF ANY LEAK OCCURS, THE CONTRACTOR SHALL MAKE REPAIR OR OTHER CORRECTIVE ACTION AND CONDUCT THE TEST AGAIN.

DISINFECTING AND CLEANING: ALL PIPING SYSTEMS SHALL BE THOROUGHLY CLEANED AND DISINFECTED PRIOR TO OPERATION AND/OR CONNECTION TO EXISTING SYSTEMS. WHERE NEW SYSTEMS CONNECT TO TO EXISTING, PROVIDE VALVES, DRAINS, ETC., TO ISOLATE THE NEW FOR PROPER CLEANING.

PLUMBING INSULATION: INSULATION SHALL COMPLY WITH ASHRAE, NFPA, ANSI/ASTM, AND FEDERAL SPECIFICATIONS. INSULATION PRODUCTS SHALL BE MANUFACTURED BY ONE OF THE FOLLOWING MANUFACTURERS:

1. MANVILLE CORP.
2. OWENS-CORNING FIBERGLASS CORP.
3. CERTAIN-TEED CORP.
4. KNAUF

PLUMBING PIPING SHALL BE INSULATED WITH FIBERGLASS PIPE INSULATION MADE OF MOLDED HEAVY DENSITY RESIN BONDED INORGANIC GLASS FIBERS THAT COME IN ONE-PIECE, 36" LONG, HINGED SECTIONS WITH FACTORY APPLIED ASJ WRAP. INSULATION TO HAVE A 0.24 BTU/IN/HR*FT2*F. ALL INSULATION TYPES SHALL HAVE FIRE AND SMOKE HAZARD CLASSIFICATION RATINGS FOR EACH INSULATION TYPE AS A COMPOSITE UNIT ASSEMBLY. COMPOSITE ASSEMBLY SHALL CONSIST OF BASIC INSULATION BODY, JACKET OR FACING, AND ADHESIVE BINDING JACKET OF FACING TO INSULATION BODY. RATINGS SHALL NOT EXCEED A FLAME SPREAD CLASSIFICATION OF 25 AND SMOKE DEVELOPED CLASSIFICATION OF 50. ALL INSULATION PRODUCTS, OR THEIR SHIPPING CARTONS OR PACKAGES SHALL BEAR A LABEL INDICATING THAT FLAME AND SMOKE RATINGS DO NOT EXCEED THE STATED REQUIREMENTS.

WHERE PIPE IS SUPPORTED FROM THE INSULATION SUCH AS WITH CLEVIS HANGERS, INSTEAD OF FROM THE PIPE ITSELF, INSERTS AND PROTECTION SHIELDS SHALL BE UTILIZED.

PIPING FROM A WATER HEATER TO THE TERMINATION OF THE HEATED WATER FIXTURE SUPPLY PIPE SHALL BE INSULATED. ON BOTH THE INLET AND OUTLET PIPING OF A STORAGE WATER HEATER OR HEATED WATER STORAGE TANK, THE PIPING TO A HEAT TRAP OR THE FIRST 8 FEET OF PIPING, WHICH-EVER IS LESS SHALL BE INSULATED. DOMESTIC HOT WATER 1\1/4" AND BELOW TO BE INSULATED WITH 1" INSULATION. DOMESTIC HOT WATER PIPING 1\1/2" AND ABOVE TO BE INSULATED WITH 1\1/2" INSULATION.

INSULATE ALL PVC PIPING IN PLENUM CEILINGS WITH INSULATION HAVING A FLAME SPREAD CLASSIFICATION OF 25 AND SMOKE DEVELOPED CLASSIFICATION OF 50. AVOID INSTALLING PVC PIPING IN PLENUM CEILINGS.

PLUMBING FIXTURES AND TRIM: COMPLY WITH ALL APPLICABLE PORTIONS OF THE ILLINOIS PLUMBING CODE, ANSI STANDARDS, PDI STANDARDS, FEDERAL STANDARDS, UL COMPLIANCE, STATE STANDARDS, LOCAL STANDARDS, AND 1990 AMERICANS WITH DISABILITIES ACT (ADA).

APPROVED MANUFACTURERS' LIST: AMERICAN STANDARD, CRANE, ELJER, UNIVERSAL-RUNDLE, KOHLER, CHICAGO FAUCET, DELTA FAUCET, SPEAKMAN, SLOAN VALVE, BENECK, FORBES-WRIGHT, AND OLSONITE.

WATER CLOSETS INSTALLED IN ACCESSIBLE STALLS SHALL HAVE THE FLUSH HANDLE MOUNTED ON THE WIDE SIDE OF THE ROOM. ALL WATER CLOSETS SHALL BE EQUIPPED WITH SEATS OF SMOOTH, NON-ABSORBENT MATERIAL. ALL SEATS OF WATER CLOSETS PROVIDED FOR PUBLIC USE SHALL BE AN ANTIMICROBIAL PLASTIC MATERIAL AND OPEN-FRONT STYLE. NOW WATER CLOSET SEAT SHALL BE MORE THAT I 1/2 INCHES THICK.

WATER SUPPLIES & TRAPS: FURNISH ALL NECESSARY SUPPLIES, WASTES, TRAPS, STOPS, AND CONNECTORS FROM THE ROUGHED-IN SERVICE TO FIXTURES. EXPOSED FLUSH, WASTE, AND SUPPLY PIPES AT THE FIXTURES SHALL BE POLISHED CHROMIUM PLATED BRASS PIPE. STOP VALVES, FLUSH VALVES, ESCUTCHEONS, ETC., SHALL BE HEAVY CAST BRASS WITH POLISHED CHROMIUM PLATING. WATER LINES TO EACH FIXTURE SHALL BE EQUIPPED WITH CHROME PLATED BRASS, LOOSE KEY STOP VALVES. SCREW DRIVER STOPS SHALL BE PROVIDED WITH ALL FLUSH VALVES. PROVIDE VACUUM BREAKERS FOR FLUSH VALVES.

N-FLOOR GREASE INTERCEPTOR
RECESSED MOUNTED EPOXY COATED STEEL GREASE INTERCEPTOR WITH GASKETTED SOLID STEEL COVER, HEX HEAD CENTER BOLTS, REMOVABLE BAFFLE ASSEMBLY, DEEP SEAL TRAP WITH CLEANOUT, NO HUB CONNECTIONS, AND EXTERNAL CAST IRON FLOW CONTROL FITTINGS. PROVIDE EXTENSION TO DECREASE INVERT ELEVATION. ACCEPTABLE MANUFACTURERS, WASTE, DRAINAGE AND ZURN.

JOHN K. NEVILLE
062-053269
LICENSED PROFESSIONAL ENGINEER
OF
ILLINOIS

JULY 8, 2018
EXPIRES 11/30/2019

A+M ARCHITECTS, LLC
40 Landover Parkway, Suite 3
Hawthorn Woods, Illinois 60047
TEL: 847.726.9517

C:\logo\sterlin.jpg

430 East IL Route 22 / Half Day Road
Lake Zurich, Illinois 60047
847.307.4400 Fax 847.307.4410

CONSULTANTS

I HAVE PREPARED, OR CAUSED TO BE PREPARED UNDER MY DIRECT SUPERVISION, THE ATTACHED PLANS AND SPECIFICATIONS AND STATE THAT, TO THE BEST OF MY KNOWLEDGE AND BELIEF AND TO THE EXTENT OF MY CONTRACTUAL OBLIGATION, THEY ARE IN COMPLIANCE WITH ALL THE APPLICABLE CODES, INCLUDING THE ENVIRONMENTAL BARRIERS ACT (410 ILCS) AND THE ILLINOIS ACCESSIBLITY CODE (71 ILL. ADM. CODE 400), OF:
NORTHBROOK, ILLINOIS

ISSUE FOR	DATE
PRELIMINARY SCOPE	05/30/18
PLAN APPROVAL	06/07/18
PROGRESS	06/15/18

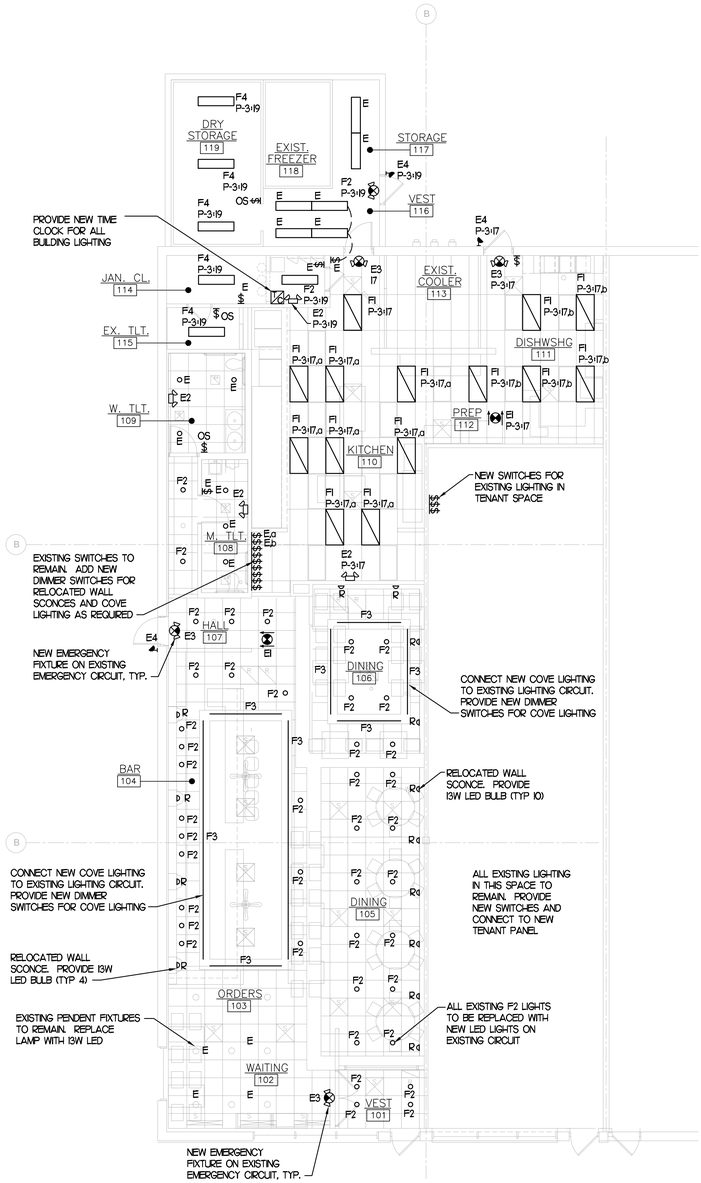
DRAWN BY:
APPROVED:
PROJECT NO.
DATE

TENANT IMPROVEMENTS FOR:
JIMMYS THAI RESTAURANT
405 LAKE-COOK ROAD RD.
DERRFIELD., ILLINOIS

SHEET DESCRIPTION
PLUMBING EQPT SCHEDULES

SHEET NUMBER
P-2.0

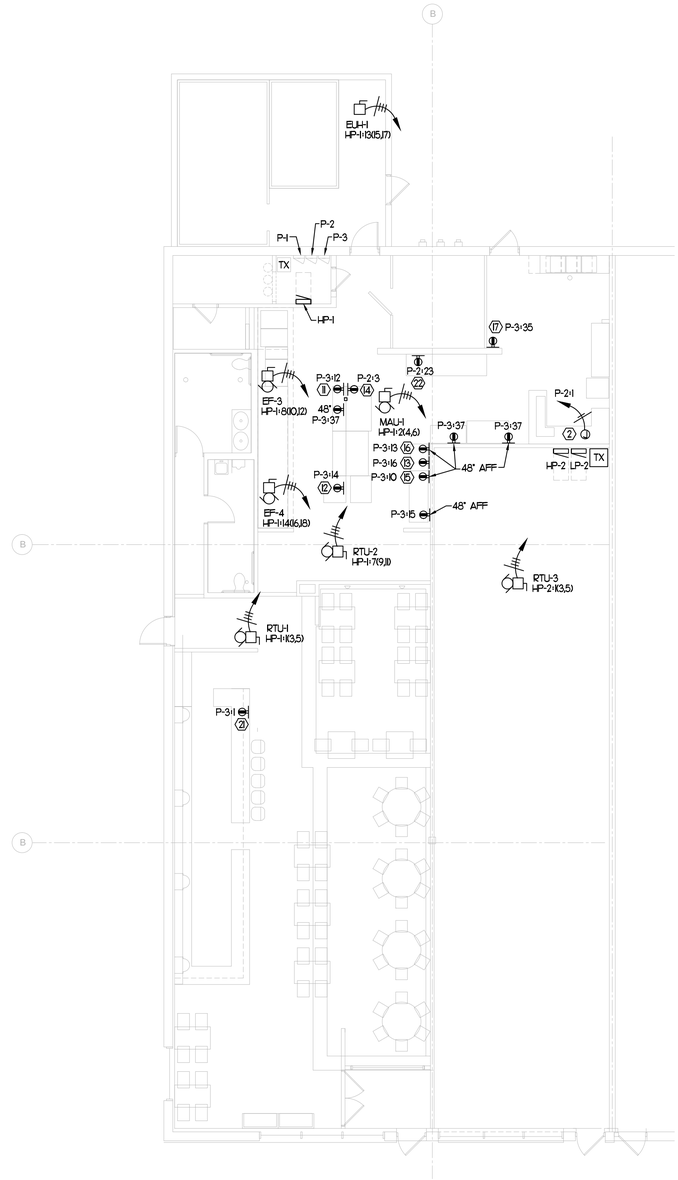
SHEET of



ELECTRICAL LIGHTING PLAN

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

PROJECT



ELECTRICAL POWER PLAN

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

PROJECT

ELECTRICAL NOTES

I. CODES

THE WORK SHALL COMPLY WITH ALL APPLICABLE LOCAL MUNICIPAL, AND NATIONAL CODES. WHERE THE CONSTRUCTION DOCUMENTS INDICATE MORE RESTRICTIVE REQUIREMENTS THE CONSTRUCTION DOCUMENTS SHALL GOVERN. HOWEVER, THE CONSTRUCTION DOCUMENTS SHALL NOT BE INTERPRETED AS AUTHORITY TO VIOLATE AND CODE OR REGULATION.

2. DRAWINGS AND SPECIFICATIONS

THE CONTRACTOR SHALL BE RESPONSIBLE FOR READING AND COMPLYING WITH BOTH THE DRAWINGS AND SPECIFICATIONS. IN THE EVENT OF A CONFLICT OR INCONSISTENCY BETWEEN THE DRAWINGS, NOTES, SPECIFICATIONS, OR CODES, THE REFERENCE WHICH PROVIDES THE MORE COMPLETE OR HIGHER STANDARD SHALL PREVAIL.

3. INTERPRETATION OF THE DOCUMENTS

CAREFULLY COMPARE THE DRAWINGS AND SPECIFICATIONS, CHECKING MEASUREMENTS AND CONDITIONS UNDER WHICH THIS INSTALLATION IS TO BE MADE. FOR CLARIFICATION BETWEEN VARIOUS DRAWINGS, BETWEEN DRAWINGS OR SPECIFICATION, OR BETWEEN SECTIONS OF THE SPECIFICATION, THE MATTER SHALL BE REFERRED TO THE ENGINEER BEFORE ANY WORK IS EXECUTED. THE CONTRACTOR SHALL STATE IN THEIR PROPOSAL ANY EXCEPTIONS NECESSARY TO MAKE THIS A COMPLETE, READY TO USE INSTALLATION. IF NOT STATED IN THE PROPOSAL, IT WILL NOT BE CONSIDERED EXTRA.

4. ELECTRICAL DRAWINGS

THE ELECTRICAL DRAWINGS ARE DIAGRAMMATIC AND SHALL NOT BE SCALED. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL DOORS, WALLS, FURNITURE, EQUIPMENT, ETC.. THE LOCATION OF RACEWAY SYSTEM COMPONENTS IS SCHEMATIC. THE EXACT LOCATION OF RACEWAY SYSTEM COMPONENTS SHALL BE DETERMINED BY THE CONTRACTOR IN THE FIELD. THE CONTRACTOR SHALL CONFIRM THE DIMENSIONS OF THE ACTUAL EQUIPMENT TO BE SUPPLIED FOR THIS PROJECT, AND VERIFY CLEARANCES AND ROUGH-INS PRIOR TO STARTING WORK.

5. SITE EXAMINATION

BEFORE SUBMITTING A BID, THE CONTRACTOR SHALL VISIT THE SITE, EXAMINE THE PREMISES, AND MAKE A THOROUGH SURVEY OF THE EXISTING CONDITIONS. THE SUBMISSION OF A PROPOSAL WILL BE CONSTRUED AS EVIDENCE THAT SUCH AN EXAMINATION HAS BEEN MADE. NO CONSIDERATION OR ALLOWANCE WILL BE GRANTED FOR FAILURE TO VISIT THE SITE OR FOR LATER CLAIMS FOR LABOR, EQUIPMENT, MATERIALS REQUIRED, OR FOR DIFFICULTIES ENCOUNTERED WHICH COULD HAVE BEEN FORESEEN HAD SUCH AN SITE EXAMINATION BEEN MADE.

6. COORDINATION WITH OTHER TRADES

THE ELECTRICAL CONTRACTOR SHALL OBTAIN A COMPLETE SET OF ARCHITECTURAL AND ENGINEERING DOCUMENTS AND COORDINATE WITH MECHANICAL, PLUMBING, ARCHITECTURAL, AND OTHER TRADES FOR EXACT DIMENSIONS, CLEARANCES, ROUGH-IN LOCATIONS, AND OTHER ADDITIONAL SCOPES OF WORK THAT MAY NOT BE SHOWN ON THE ELECTRICAL PLANS. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL 120 VOLT (AND HIGHER) AC POWER TO OTHER TRADES EQUIPMENT AND HARDWARE. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO, CONTROLS, FIRE AND SECURITY SYSTEMS, MOTORIZED DOORS, DAMPERS, LIFTS, AND OTHER SYSTEMS. UNLESS SPECIFICALLY NOTED OTHERWISE ON THE ELECTRICAL PLANS, THE ELECTRICAL CONTRACTOR SHALL FURNISH ALL SAFETY DISCONNECT SWITCHES TO MECHANICAL EQUIPMENT.

7. PERMITS, APPLICATIONS AND RELEASES

THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS INSPECTIONS, APPLICATIONS, RELEASES AND FEES REQUIRED BY LOCAL, STATE AND FEDERAL AGENCIES FOR THE EXECUTION OF THIS WORK. SCHEDULING OF ALL REQUIRED INSPECTIONS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

8. FIRE STOPPING

ALL PENETRATIONS IN WALL, FLOOR OR CEILINGS SHALL BE SUITABLY CLOSED UP AND SEALED WITH AN INTUMESCENT FIRE STOPPING COMPOUND LISTED IN THE MOST RECENT FACTORY MUTUAL RESEARCH CORPORATION (FMRC) APPROVAL GUIDE. FIRE STOPPING PRODUCTS SHALL BE MANUFACTURED BY 3M CO.

9. OWNER FURNISHED EQUIPMENT

EQUIPMENT THAT WILL BE FURNISHED BY THE OWNER WILL BE INDICATED ON A SEPARATE SCHEDULE. THE CONTRACTOR SHALL COORDINATE WITH THE OWNER FOR DELIVERY SCHEDULES. THE CONTRACTOR IS TO ASSUME THAT ON SITE STORAGE MAY NOT BE AVAILABLE WHEN COORDINATING DELIVERY OF EQUIPMENT. THE CONTRACTOR, IN COORDINATION WITH THE OWNER'S REPRESENTATIVE, WILL INSPECT THE DELIVERY FOR ACCURACY AND SHIPMENT DAMAGE AND ACCEPTING THE EQUIPMENT. THE CONTRACTOR SHALL BE RESPONSIBLE TO STORE, PROTECT AND ULTIMATELY INSTALL THE EQUIPMENT.

10. EQUIPMENT

ALL MATERIALS AND EQUIPMENT USED IN THIS INSTALLATION SHALL BE NEW, AND HAVE THE APPROPRIATE UL LISTING AND LABEL.

11. MISCELLANEOUS SUPPORTING MEMBERS

ALL ANGLES CHANNELS, AND OTHER MISCELLANEOUS STEEL, BOLTS, RODS, ETC., REQUIRED TO SUPPORT LIGHT FIXTURE, CONDUIT, RACEWAY, LADDER TRAY, OR OTHER ELECTRICAL EQUIPMENT OR DEVICES SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR.

12. PANEL BOARDS

ALL PANEL BOARDS SHALL BE PROVIDED WITH TYPEWRITTEN DIRECTORIES. SEE PANEL SCHEDULES ON THE DRAWINGS AND SPECIFICATION 16050 FOR COMPLETE IDENTIFICATION AND LABELING REQUIREMENTS.

13. SAFETY

THE CONTRACTOR SHALL TAKE ALL STEPS NECESSARY TO ENSURE THE SAFETY OF THE OWNERS EMPLOYEES, BUILDING EMPLOYEES AND GUESTS, AS WELL AS THEIR OWN FORCES, BY ADEQUATELY PROTECTING ANY EXPOSED LIVE CONDUCTORS, OR DEVICES THROUGHOUT THE COURSE OF THIS WORK.

14. EQUIPMENT CONNECTIONS

PROVIDE FINAL CONNECTIONS FOR ALL EQUIPMENT FURNISHED UNDER OTHER DIVISIONS AND FOR ALL OWNER FURNISHED EQUIPMENT. PROVIDE A FLEXIBLE LIQUID TIGHT CONNECTION TO ALL VIBRATION PRODUCING EQUIPMENT.

15. TEMPORARY LIGHTING, POWER, FIRE, AND SAFETY

PROVIDE TEMPORARY LIGHTING AND POWER AS REQUIRED IN AREAS UNDERGOING WORK DURING CONSTRUCTION. FURNISH AND INSTALL ONE OSHA APPROVED PIGTAIL SOCKET WITH 150-WATT LAMP FOR EVERY 500 SQUARE FEET OF FLOOR SPACE AND A MINIMUM 1 PER ROOM. THE TEMPORARY LIGHTING SHALL BE LEFT IN PLACE UNTIL PERMANENT LIGHTING IS COMPLETELY OPERATIONAL.

FURNISH AND INSTALL POWER OUTLETS TO A TOTAL ONE FOR EVERY 2000 SQUARE FEET OR PART THEREOF OF FLOOR AREA AND THESE SHALL BE 15 AMP, SINGLE PHASE RECEPTACLES FOR EITHER 110 OR 220 VOLTS AS DIRECTED BY THE GENERAL CONTRACTOR. COORDINATE FOR ADDITIONAL TEMPORARY POWER REQUIREMENTS WITH OTHER TRADES AND PROVIDE AN ADEQUATE INSTALLATION.

COMPLY WITH NFPA 241 FOR SAFEGUARDING DURING CONSTRUCTION AND ALTERATION OPERATIONS. IN ADDITION, ANY OPENINGS IN FIRE RATED SEPARATIONS BETWEEN OCCUPIED AND UNOCCUPIED (OR OPERATIONAL AND NON-OPERATIONAL) AREAS SHALL BE SEALED AT THE END OF EACH WORK DAY WITH AN APPROPRIATE FIRE RATED ENCLOSURE OR SEALANT. DO NOT COMPROMISE EXISTING SECURITY OR FIRE ALARM SYSTEMS SERVING THE OCCUPIED OR OPERATIONAL AREAS.

16. UTILITY POWER COORDINATION

THE CONTRACTOR SHALL PERFORM ALL COORDINATION AND SCHEDULING OF LOCAL UTILITY POWER COMPANY WORK EFFORT. ANY EXCESS FACILITIES CHARGES WILL BE PAID BY THE OWNER WITHOUT MARK-UP. CONTRACTOR SHALL WORK REQUIRED FOR THE NEW SERVICE.

17. CABLING

BRANCH CIRCUITS TO RECEPTACLES, LIGHTING AND MISC. SMALL LOADS (15 OR 20 AMP CIRCUITS), UNLESS SPECIFICALLY NOTED OTHERWISE, SHALL BE 2 - #12, 1 - #12 GRD, 3/4" C. A SEPARATE NEUTRAL AND GROUND SHALL BE RUN FOR EACH CIRCUIT. SEE NOTE BELOW FOR ADDITIONAL REQUIREMENTS.

GENERAL BRANCH CIRCUITS SHALL BE PERMITTED AS MULTIWIRE CIRCUITS. ALL CONDUCTORS OF A MULTIWIRE BRANCH CIRCUIT SHALL ORIGINATE FROM THE SAME PANELBOARD OR SIMILAR DISTRIBUTION EQUIPMENT.

EACH MULTIWIRE BRANCH CIRCUIT SHALL BE PROVIDED WITH A MEANS THAT WILL SIMULTANEOUSLY DISCONNECT ALL UNGROUNDED CONDUCTORS AT THE POINT WHERE THE BRANCH CIRCUIT ORIGINATES.

JOHN K NEVILLE 062-053269 LICENSED PROFESSIONAL ENGINEER OF ILLINOIS

JULY 8, 2018
EXPIRES 11/30/2019

NEVILLE ENGINEERING SERVICE, INC.
24020 RIVERWALK CT, SUITE 122, PLAINFIELD IL 60544
815-200-3544 IL DESIGN #184.006531

A+M ARCHITECTS, LLC
40 Landover Parkway, Suite 3
Hawthorn Woods, Illinois 60047
TEL: 847.726.9517

C:\logo\sterlin.jpg

430 East IL Route 22 / Half Day Road
Lake Zurich, Illinois 60047
847.307.4400 Fax 847.307.4410

CONSULTANTS

I HAVE PREPARED, OR CAUSED TO BE PREPARED UNDER MY DIRECT SUPERVISION, THE ATTACHED PLANS AND SPECIFICATIONS AND STATE THAT, TO THE BEST OF MY KNOWLEDGE AND BELIEF AND TO THE EXTENT OF MY CONTRACTUAL OBLIGATION, THEY ARE IN COMPLIANCE WITH ALL THE APPLICABLE CODES, INCLUDING THE ENVIRONMENTAL BARRIERS ACT (410 ILCS) AND THE ILLINOIS ACCESSIBLITY CODE (71 ILL. ADM. CODE 400), OF:

NORTHBROOK, ILLINOIS

ISSUE FOR	DATE
PRELIMINARY SCOPE	05/30/18
PLAN APPROVAL	06/07/18
PROGRESS	06/15/18

DRAWN BY:	
APPROVED:	
PROJECT NO.	
DATE	

TENANT IMPROVEMENTS FOR:

JIMMYS THAI RESTAURANT

405 LAKE-COOK ROAD RD.
DERRFIELD., ILLINOIS

SHEET DESCRIPTION

ELECTRICAL PLANS

SHEET NUMBER

E-1.0

SHEET of

LIGHT FIXTURE SCHEDULE

FIXT. NO.	DESCRIPTION	MANUFACTURER & MODEL NUMBER		VOLTAGE	LAMP QTY. & TYPE	REMARKS
F1	2'x4' PRISMATIC TROFFER	LITHONIA	2TL4 72L RW A19 EZI LP835	MULTI-VOLT	67W LED	ONE-PIECE, COLD-ROLLED STEEL HOUSING, .156" ±19 PRISMATIC LENS. UL LISTED. 7,200 LUMEN, 3500K.
F2	6" LED DOWNLIGHT	GOTHAM	EVO-35/22-6AR-MVOLT	MULTI-VOLT	32W LED	LED DOWNLIGHT, SEMI-SPECULAR DIFFUSER, CLEAR FINISH, WHITE TRIM RINGS. HIGH EFFICIENT LED DRIVER, THERMALLY PROTECTED, RESETTING, HPF, UL LISTED.
F3	LED COVE LIGHT	LUMINI	LL4.4 35K NATURAL WHITE	MULTI-VOLT	LED	LED STRIP LITE. FLEXIBLE CONDUIT BOARD. MULTIPLE START/END CONNECTORS. PROVIDE CONTINUOUS RUNS WITH LED L-CONNECTORS AT CORNERS. 4.4 W/FT. PROVIDE PSD POWER SUPPLIES AS NECESSARY.
F4	LED STRIPLIGHT	LITHONIA	ZLIN L48 5000LM FST MVOLT 40K 80CRI WH	MULTI-VOLT	34W LED	COLD ROLLED STEEL, HIGH GLOSS BAKED WHITE ENAMEL, STANDARD DIFFUSE SNAP ON ACRYLIC LENS 4,700 LM, 4000K 80 CRI
E1	EXIT SIGN	LITHONIA	LQM-S-W-3-R-120/277-ELN	MULTI-VOLT	LED	3/4" STROKE x 6" HIGH RED LETTERS READING "EXIT" ON STENCIL FACE, UNIVERSAL MOUNT, DIRECTIONAL INDICATIONS AS SHOWN ON DRAWINGS, 120 VOLT OPERATION, NICKEL-CADMIUM BATTERY BACK 90 MINUTE BATTERY LIFE.
E2	EMERGENCY LIGHT	LITHONIA	ELM2-LED	MULTI-VOLT	LED	SURFACE MOUNT LED EMERGENCY LIGHT, 6V NICKEL CADMIUM BATTERY, WHITE POLYCARBONATE HOUSING, FULLY ADJUSTABLE LAMP HEADS, AC ON LIGHT, TEST SWITCH, OVERLOAD AND SHORT CIRCUIT PROTECTION 90 MINUTE BATTERY LIFE.
E3	COMBINATION EXIT/EM LIGHT	LITHONIA	LHQM LED	MULTI-VOLT	4.3W LED	8" TALL THERMOPLASTIC HOUSING, INTERCHANGEABLE FACEPLATE, TWIN LED LAMP HEADS, INTEGRATED TEST SWITCH/PILOT LIGHT, SHORT CIRCUIT PROTECTION, 90-MINUTE BATTERY LIFE.
E4	REMOTE EMERGENCY LIGHT HEAD	LITHONIA	ELA T QWP	MULTI-VOLT	(2) L5W LED	TWIN HEAD, QUANTUM LED SERIES ADJUSTABLE LAMP HEAD, WEATHER-PROOF, STANDARD GRAY CAST ALUMINUM, SEALED AND GASKETED.

NOTE: ALL LAMPS TO BE 3500K, UNLESS OTHERWISE NOTED.

PANEL SCHEDULE — PANEL HP-1

SURFACE MOUNT: X | FLUSH MOUNT | MAIN BREAKER: X, 100 AMPS | MAIN LUG ONLY: ____ AMPS | DOUBLE MAIN LUGS

PANEL: PANEL HP-1 | JOB NO.: JIMMY THAI

MAIN BUS 100 AMPS | VOLTAGE 480 V | PHASE ____ P | WIRE ____ W | AIC RATING ____ AMPS

CKT. NO.	BREAKER POLE	BREAKER AMP	BREAKER CLASS	DESCRIPTION	LOAD IN KVA LTG	REC	MTR	CKT. NO.	BREAKER POLE	BREAKER AMP	BREAKER CLASS	DESCRIPTION	LOAD IN KVA LTG	REC	MTR
1							6.30	A 2							2.50
3	3	25		RTU-1 (DINING)			6.30	B 4	3	20		MAKEUP AIR UNIT			2.50
5							6.30	C 6							2.50
7							6.30	A 8							1.80
9	3	25		RTU-1 (DINING)			6.30	B 10	3	20		EXHAUST FAN 4			1.80
11							6.30	C 12							1.80
13							1.70	A 14							1.80
15	3	20		EUH-1			1.70	B 16	3	20		EXHAUST FAN 5			1.80
17							1.70	C 18							1.80
19				SPACE				A 20				SPACE			
21				SPACE				B 22				SPACE			
23				SPACE				C 24				SPACE			
25				SPACE				A 26				SPACE			
27				SPACE				B 28				SPACE			
29				SPACE				C 30				SPACE			
31				SPACE				A 32				SPACE			
33				SPACE				B 34				SPACE			
35				SPACE				C 36				SPACE			
37				SPACE				A 38				SPACE			
39				SPACE				B 40				SPACE			
41				SPACE				C 42				SPACE			

P-P VOLTS 480

CONNECTED LOAD - PHASE A	0	0	20.4
CONNECTED LOAD - PHASE B	0	0	20.4
CONNECTED LOAD - PHASE C	0	0	20.4
TOTALS	0.0	0.0	61.2
TOTAL CONNECTED LOAD (KVA)			61.2

PHASE LOADING	PH A	PH B	PH C
CONNECTED LOAD (KVA)	20.4	20.4	20.4
CONNECTED LOAD (AMPS)	73.6	73.6	73.6

NOTES

PANEL SCHEDULE — PANEL HP-1

SURFACE MOUNT: X | FLUSH MOUNT | MAIN BREAKER: X, 100 AMPS | MAIN LUG ONLY: ____ AMPS | DOUBLE MAIN LUGS

PANEL: PANEL HP-1 | JOB NO.: JIMMY THAI

MAIN BUS 100 AMPS | VOLTAGE 480 V | PHASE ____ P | WIRE ____ W | AIC RATING ____ AMPS

CKT. NO.	BREAKER POLE	BREAKER AMP	BREAKER CLASS	DESCRIPTION	LOAD IN KVA LTG	REC	MTR	CKT. NO.	BREAKER POLE	BREAKER AMP	BREAKER CLASS	DESCRIPTION	LOAD IN KVA LTG	REC	MTR
1							6.30	A 2							
3	3	25		RTU-1			6.30	B 4	3	100		TRANSFORMER			
5							6.30	C 6							
7				SPACE				A 8				SPACE			
9				SPACE				B 10				SPACE			
11				SPACE				C 12				SPACE			
13				SPACE				A 14				SPACE			
15				SPACE				B 16				SPACE			
17				SPACE				C 18				SPACE			
19				SPACE				A 20				SPACE			
21				SPACE				B 22				SPACE			
23				SPACE				B 24				SPACE			
25				SPACE				A 26				SPACE			
27				SPACE				B 28				SPACE			
29				SPACE				C 30				SPACE			
31				SPACE				A 32				SPACE			
33				SPACE				B 34				SPACE			
35				SPACE				C 36				SPACE			
37				SPACE				A 38				SPACE			
39				SPACE				B 40				SPACE			
41				SPACE				C 42				SPACE			

P-P VOLTS 480

CONNECTED LOAD - PHASE A	0	0	6.3
CONNECTED LOAD - PHASE B	0	0	6.3
CONNECTED LOAD - PHASE C	0	0	6.3
TOTALS	0.0	0.0	18.9
TOTAL CONNECTED LOAD (KVA)			18.9

PHASE LOADING	PH A	PH B	PH C
CONNECTED LOAD (KVA)	6.3	6.3	6.3
CONNECTED LOAD (AMPS)	22.7	22.7	22.7

NOTES

PANEL SCHEDULE — PANEL #1

SURFACE MOUNT: X | FLUSH MOUNT | MAIN BREAKER: X, 200 AMPS | MAIN LUG ONLY: ____ AMPS | DOUBLE MAIN LUGS

PANEL: PANEL #1 | JOB NO.: JIMMY'S THAI

MAIN BUS 200 AMPS | VOLTAGE 208 V | PHASE 3 P | WIRE 4 W | AIC RATING 22K AMPS

CKT. NO.	BREAKER POLE	BREAKER AMP	BREAKER CLASS	DESCRIPTION	LOAD IN KVA LTG	REC	MTR	CKT. NO.	BREAKER POLE	BREAKER AMP	BREAKER CLASS	DESCRIPTION	LOAD IN KVA LTG	REC	MTR
1	1	20		EXISTING LIGHTS SOUTH REST	1.00			A 2	1	20		EXISTING KITCHEN FREEZER		0.30	
3	1	20		EXISTING LIGHTS SOUTH REST	1.00			B 4	2	20		EXISTING NORTH COOLER			
5	1	20		EXISTING OUTLETS SOUTH		0.50		C 6				EXISTING NORTH COOLER			
7	1	20		EXISTING OFFICE				A 8				EXISTING FREEZER			
9	1	20		EXIST COMP OUTLETS				B 10				EXISTING BACK FREEZER			
11	1	20		EXISTING LIGHTS SOUTH REST	0.50			C 12							
13	1	20		EXISTING LIGHTS SOUTH REST	0.50			A 14							2.00
15	1	20		EXISTING OUTLETS SOUTH		0.50		B 16	3	20		EXISTING ROOF CONDENSER			2.00
17	1	20		EXISTING OUTLET FIRE ALARM		0.10		C 18							2.00
19	1	20		EXISTING BOILER				A 20							2.00
21								B 22	3	20		EXISTING ROOF CONDENSER			2.00
23	3	30		SPARE				C 24							2.00
25								A 26							2.00
27	1			SPACE				B 28	3	15		EXISTING ROOF CONDENSER			2.00
29	1			SPACE				C 30							2.00
31	1			SPACE				A 32							2.00
33								B 34	3	15		UNKNOWN			2.00
35								C 36							2.00
37								A 38							
39								B 40							
41								C 42							

P-P VOLTS 208

CONNECTED LOAD - PHASE A	1.5	0.3	8
CONNECTED LOAD - PHASE B	1	0.5	8
CONNECTED LOAD - PHASE C	0.5	0.6	8
TOTALS	3.0	1.4	24.0
TOTAL CONNECTED LOAD (KVA)			28.4

PHASE LOADING	PH A	PH B	PH C
CONNECTED LOAD (KVA)	9.8	9.5	9.1
CONNECTED LOAD (AMPS)	81.6	79.1	75.8

NOTES
EXISTING PANEL TO REMAIN. VERIFY EXISTING UNUSED CIRCUITS AND PROVIDE NEW PANEL DIRECTORY

PANEL SCHEDULE — PANEL #2

SURFACE MOUNT: X | FLUSH MOUNT | MAIN BREAKER: X, 200 AMPS | MAIN LUG ONLY: ____ AMPS | DOUBLE MAIN LUGS

PANEL: PANEL #2 | JOB NO.: JIMMY'S THAI

MAIN BUS 200 AMPS | VOLTAGE 208 V | PHASE 3 P | WIRE 4 W | AIC RATING 22K AMPS

CKT. NO.	BREAKER POLE	BREAKER AMP	BREAKER CLASS	DESCRIPTION	LOAD IN KVA LTG	REC	MTR	CKT. NO.	BREAKER POLE	BREAKER AMP	BREAKER CLASS	DESCRIPTION	LOAD IN KVA LTG	REC	MTR
1	1	20		**DISHWASHER (2)**			1.40	A 2	1	20		EXISTING BACK LIGHTS	1.00		
3	1	20		**STEAM TABLE (14)**			1.50	B 4	1	20		EXISTING FRONT OUTLETS	1.00		
5				BAD				C 6	1	20		EXISTING KITCHEN OUTLETS		0.50	
7	2	20		NOT USED				A 8	1	20		EXISTING FREEZER		0.50	
9								B 10	1	20		EXISTING KITCHEN OUTLETS		0.50	
11	1	20		HOOD		0.50		C 12	1	20		EXISTING KITCHEN OUTLETS		0.50	
13	1	2						A 14	1	20		EXISTING COMP. OUTLET BY COFFEE		0.30	
15	1	20		EXISTING HAND DRYER		0.50		B 16	1	20		EXISTING COMP. OUTLET BY CBAR		0.30	
17	1	20		EXISTING HAND DRYER		0.50		C 18	1	20		EXISTING PLUG MOLD		0.30	
19	2	20		REMOVED HOOD FAN				A 20	1	20		EXISTING PLUG MOLD		0.30	
21								B 22	1	20		EXISTING FREEZER BY BAR		0.30	
23	1	20		**ICE MAKER OUTLET (22)**			1.10	C 24	1	20		EXISTING FREEZER BY BAR		0.30	
25					1.50	0.30	8.00	A 26	1	20		EXISTING BAR OUTLETS		0.50	
27	3	100		PANEL P-1	1.00	0.50	8.00	B 28	1	20		EXISTING BAR OUTLETS		0.50	
29					0.50	0.60	8.00	C 30	1	20		SPARE			
31								A 32							
33								B 34							
35								C 36							
37								A 38							
39								B 40							
41								C 42							

P-P VOLTS 208

CONNECTED LOAD - PHASE A	2.5	1.9	9.4
CONNECTED LOAD - PHASE B	2	2.6	9.5
CONNECTED LOAD - PHASE C	0.5	3.2	9.1
TOTALS	5.0	7.7	28.0
TOTAL CONNECTED LOAD (KVA)			40.7

PHASE LOADING	PH A	PH B	PH C
CONNECTED LOAD (KVA)	13.8	14.1	12.8
CONNECTED LOAD (AMPS)	114.9	117.4	106.6

NOTES
EXISTING PANEL TO REMAIN. VERIFY EXISTING UNUSED CIRCUITS AND PROVIDE NEW PANEL DIRECTORY

PANEL SCHEDULE — PANEL #3

SURFACE MOUNT: X | FLUSH MOUNT | MAIN BREAKER: X, 200 AMPS | MAIN LUG ONLY: ____ AMPS | DOUBLE MAIN LUGS

PANEL: PANEL #3 | JOB NO.: JIMMY'S THAI

MAIN BUS 200 AMPS | VOLTAGE 208 V | PHASE 3 P | WIRE 4 W | AIC RATING 22K AMPS

CKT. NO.	BREAKER POLE	BREAKER AMP	BREAKER CLASS	DESCRIPTION	LOAD IN KVA LTG	REC	MTR	CKT. NO.	BREAKER POLE	BREAKER AMP	BREAKER CLASS	DESCRIPTION	LOAD IN KVA LTG	REC	MTR
1	1	20		**POP DISPENSER (21)**		0.30		A 2	1	20		EXISTING BACK ROOM LIGHTS	0.70		
3	1	20		NOT USED				B 4	1	20		EXISTING TOILET ROOM	0.40		
5	1	20		EXISTING BAR LIGHTS				C 6	1	20		EXISTING BOILER ROOM			
7	1	20		EXISTING BAR LIGHTS				A 8	1	20		EXISTING EXIT LIGHTS	0.10		
9	1	20		EXISTING BAR LIGHTS				B 10	1	20		**MICROWAVE (15)**		1.20	
11	1	20		EXISTING OUTLET BY COFFEE MAKER				C 12	1	20		**PREP COOLER (11)**		0.70	
13	1	20		**RICE WARMER (16)**		0.10		A 14	1	20		**PREP COOLER (12)**		0.70	
15	1	20		**COFFEE MAKER**		1.00		B 16	1	20		**COOLER**		0.70	
17	1	20		EXISTING KITCHEN LIGHTS	0.90			C 18							
19	1	20		EXISTING KITCHEN LIGHTS				A 20	1	30		UNKNOWN			
21	1	20		EXISTING KITCHEN LIGHTS				B 22							
23								C 24							
25	3	15		NOT USED				A 26	3	15		UNKNOWN			
27								B 28							
29	1	20		EXISTING COMP. OUTLET FRONT				C 30	1	20					
31	1	20		EXISTING COMP. OUTLET FRONT				A 32	1	20					
33	1	20		EXISTING KITCHEN ISLAND OUTLETS				B 34	1	20					
35	1	20		**FRIDGE (17)**		1.30		C 36	2	20		SPARE			
37	1	20		**GENERAL KITCHEN RECEPTACLES**		0.54		A 38							
39								B 40							
41								C 42							

P-P VOLTS 208

CONNECTED LOAD - PHASE A	0.8	1.64	0
CONNECTED LOAD - PHASE B	0.4	2.9	0
CONNECTED LOAD - PHASE C	0.9	2	0
TOTALS	2.1	6.5	0.0
TOTAL CONNECTED LOAD (KVA)			8.6

PHASE LOADING	PH A	PH B	PH C
CONNECTED LOAD (KVA)	2.4	3.3	2.9
CONNECTED LOAD (AMPS)	20.3	27.5	24.1

NOTES
EXISTING PANEL TO REMAIN. VERIFY EXISTING UNUSED CIRCUITS AND PROVIDE NEW PANEL DIRECTORY

PANEL SCHEDULE — LP2-1

SURFACE MOUNT: X | FLUSH MOUNT | MAIN BREAKER: X, 200 AMPS | MAIN LUG ONLY: ____ AMPS | DOUBLE MAIN LUGS

PANEL: LP2-1 | JOB NO.: JIMMY'S THAI

MAIN BUS 200 AMPS | VOLTAGE 208 V | PHASE 3 P | WIRE 4 W | AIC RATING 22K AMPS

CKT. NO.	BREAKER POLE	BREAKER AMP	BREAKER CLASS	DESCRIPTION	LOAD IN KVA LTG	REC	MTR	CKT. NO.	BREAKER POLE	BREAKER AMP	BREAKER CLASS	DESCRIPTION	LOAD IN KVA LTG	REC	MTR
1	1	20		EXISTING LIGHTING	1.00			A 2	1	20		RTU RECEPTACLE		0.18	
3	1	20		EXISTING LIGHTING	1.00			B 4	1	20		SPARE			
5	1	20		EXISTING LIGHTING	1.00			C 6	1	20		SPARE			
7	1	20		SPARE				A 8	1	20		SPARE			
9	1	20		SPARE				B 10	1	20		SPARE			
11	1	20		SPARE				C 12	1	20		SPARE			
13	1	20		SPARE				A 14	1	20		SPARE			
15	1	20		SPARE				B 16	1	20		SPARE			
17	1	20		SPARE				C 18	1	20		SPARE			
19	1	20		SPARE				A 20	1	20		SPARE			
21	1	20		SPARE				B 22	1	20		SPARE			
23	1	20		SPARE				C 24	1	20		SPARE			
25	1	20		SPARE				A 26	1	20		SPARE			
27	1	20		SPARE				B 28	1	20		SPARE			
29	1	20		SPARE				C 30	1	20		SPARE			
31				SPACE				A 32				SPACE			
33				SPACE				B 34				SPACE			
35				SPACE				C 36				SPACE			
37				SPACE				A 38				SPACE			
39				SPACE				B 40				SPACE			
41				SPACE				C 42				SPACE			

P-P VOLTS 208

CONNECTED LOAD - PHASE A	1	0.18	0
CONNECTED LOAD - PHASE B	1	0	0
CONNECTED LOAD - PHASE C	1	0	0
TOTALS	3.0	0.2	0.0
TOTAL CONNECTED LOAD (KVA)			3.2

PHASE LOADING	PH A	PH B	PH C
CONNECTED LOAD (KVA)	1.2	1.0	1.0
CONNECTED LOAD (AMPS)	9.8	8.3	8.3

NOTES
NEW ELECTRICAL PANEL FED FROM NEW TRANSFORMER

NEVILLE ENGINEERING SERVICE, INC.
24020 RIVERWALK CT, SUITE 122, PLAINFIELD IL 60544
815-200-3544 IL DESIGN #184.006531

A+M ARCHITECTS, LLC
40 Landover Parkway, Suite 3
Hawthorn Woods, Illinois 60047
TEL: 847.726.9517

C:\logo\sterlin.jpg

430 East IL Route 22 / Half Day Road
Lake Zurich, Illinois 60047
847.307.4400 Fax 847.307.4410

CONSULTANTS

I HAVE PREPARED, OR CAUSED TO BE PREPARED UNDER MY DIRECT SUPERVISION, THE ATTACHED PLANS AND SPECIFICATIONS AND STATE THAT, TO THE BEST OF MY KNOWLEDGE AND BELIEF AND TO THE EXTENT OF MY CONTRACTUAL OBLIGATION, THEY ARE IN COMPLIANCE WITH ALL THE APPLICABLE CODES, INCLUDING THE ENVIRONMENTAL BARRIERS ACT (410 ILCS) AND THE ILLINOIS ACCESSIBILITY CODE (71 ILL. ADM. CODE 400), OF:

NORTHBROOK, ILLINOIS

ISSUE FOR	DATE
PRELIMINARY SCOPE	05/30/18
PLAN APPROVAL	06/07/18
PROGRESS	06/15/18

DRAWN BY:

APPROVED:

PROJECT NO.

DATE

TENANT IMPROVEMENTS FOR:

JIMMYS THAI RESTAURANT

405 LAKE-COOK ROAD RD.
DERRFIELD., ILLINOIS

SHEET DESCRIPTION

ELECTRICAL SCHEDULES

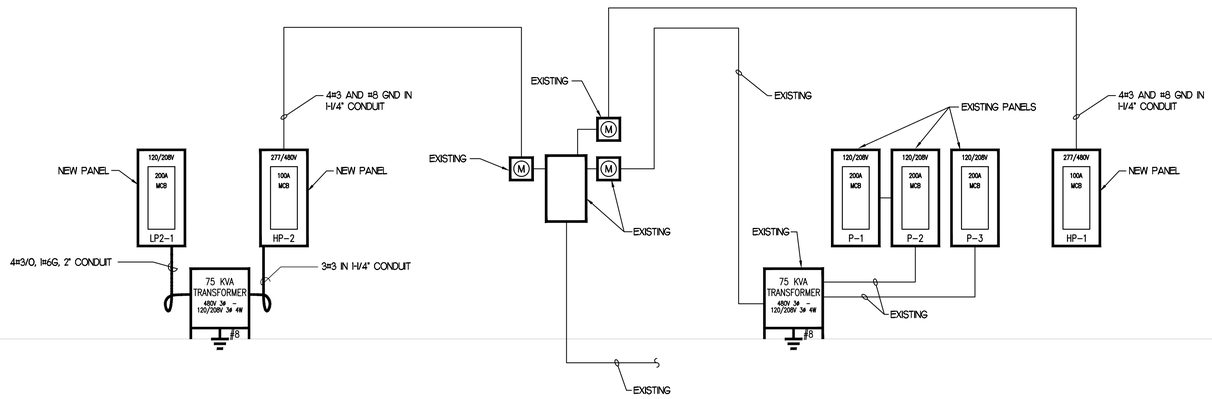
SHEET NUMBER

E-2.0

SHEET of

JOHN K. NEVILLE
062-053269
LICENSED PROFESSIONAL ENGINEER
OF
ILLINOIS

JULY 8, 2018
EXPIRES 11/30/2019



ELECTRICAL ONE-LINE DIAGRAM

ELECTRICAL SYMBOL LIST

	RECESSED 2X4 LIGHT FIXTURE
	SURFACE MOUNTED 1X4 LIGHT FIXTURE
	RECESSED OR SURFACE MOUNTED ROUND DOWNLIGHT FIXTURE
	SUSPENDED PENDANT DOWNLIGHT FIXTURE
	WALL MOUNTED SCONCE FIXTURE - MOUNT 7' A.F.F.
	CEILING FAN
F1 3a	"F" INDICATES FIXTURE TYPE, REFER TO LIGHTING FIXTURE SCHEDULE FOR DESCRIPTION AND MOUNTING
F2 1a	"3" INDICATES CIRCUIT NUMBER "a" INDICATES SWITCH CONTROL
	WALL MOUNTED LED EMERGENCY LIGHT WITH BATTERY BACK-UP
	LED EXIT SIGN WITH BATTERY BACK-UP - CEILING MOUNTED - HATCHED REGION INDICATES EXIT FACE ORIENTATION
	COMBINATION EM/EXIT FIXTURE
^{a}	SINGLE POLE SWITCH - LETTER INDICATES SWITCH CONTROL
^{D}	DIMMING SWITCH
^{OS}	WALL SWITCH WITH OCCUPANCY SENSOR
	WALL MOUNT OCCUPANCY SENSOR
	LIGHTING CONTROL TIME CLOCK
	DUPLEX RECEPTACLE
	DOUBLE DUPLEX RECEPTACLE
	DUPLEX RECEPTACLE MOUNTED ABOVE COUNTER
	DUPLEX RECEPTACLE - GFCI TYPE
	DUPLEX RECEPTACLE MOUNTED ABOVE COUNTER - GFCI TYPE
	ELECTRICAL BRANCH PANEL
	CONNECTION TO MOTOR EQUIPMENT - SEE EQUIPMENT CONNECTION SCHEDULE
	NON-FUSED DISCONNECT SWITCH - SEE EQUIPMENT CONNECTION SCHEDULE
	VOICE/DATA ROUGH-IN W/ 1" CONDUIT STUBBED TO ABOVE CEILING ROUGH-IN ONLY (WIRING BY OTHERS)

MOUNTING HEIGHTS FOR ELECTRICAL DEVICES

DEVICE	MOUNTING HEIGHTS
LIGHT SWITCHES, WALL MOUNTED OCCUPANCY SENSORS	48" TO CENTERLINE OF BOX. EXCEPTION: 44" MAXIMUM TO TOP ABOVE COUNTERS WHICH ARE 20"-25"D.
DISCONNECT SWITCHES, MOTOR STARTERS, MOTOR PUSH BUTTON STATIONS	60" TO CENTERLINE.
WALL MOUNTED EXIT SIGNS	90" TO CENTERLINE OF SIGN OR CENTERED IN WALL AREA BETWEEN TOP OF DOOR AND CEILING.
CEILING MOUNTED EXIT SIGNS	80" TO BOTTOM FIXTURE.
RECEPTACLES	16" TO BOTTOM OF BOX. EXCEPTION: 44" MAXIMUM TO TOP ABOVE COUNTERS WHICH ARE 20"-25"D.
SPECIAL OUTLETS OR RECEPTACLES	16" TO BOTTOM OF BOX OR AS NOTED ON DRAWINGS. EXCEPTION: 44" MAXIMUM TO TOP ABOVE COUNTERS WHICH ARE 20"-25"D.
DATA/COMMUNICATION OR TELEPHONE OUTLETS	16" TO BOTTOM OF BOX.
FIRE ALARM MANUAL PULL STATIONS	48" TO CENTERLINE OF BOX - NOT MORE THAN 5'-0" FROM EXIT.
FIRE ALARM AUDIBLE ONLY DEVICE	NOT LESS THAN 90" TO TOP OR 6" BELOW CEILING, WHICH EVER IS HIGHER.
FIRE ALARM VISUAL ONLY DEVICE OR A COMBINATION AUDIBLE AND VISUAL DEVICE	80" TO BOTTOM OF DEVICE OR NOT MORE THAN 96" TO TOP.
WALL MOUNTED REMOTE INDICATOR LIGHT	80" TO CENTERLINE OF DEVICE OR 6" BELOW CEILING, WHICHEVER IS LOWER.

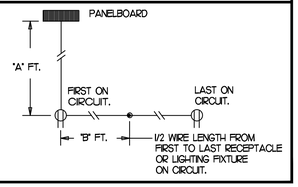
NOTES:
1. ALL DIMENSIONS ARE CONSIDERED FROM FINISHED FLOOR AND, UNLESS NOTED OTHERWISE, SHALL NOT VARY. RAISED FLOORS SHALL BE CONSIDERED FINISHED FLOOR.
2. ALL DIMENSIONS SHALL BE COORDINATED WITH ARCHITECTURAL DETAILS AND MAY BE ADJUSTED TO CONFORM WITH ARCHITECTURAL REQUIREMENTS AS LONG AS NO CODE RESTRICTION IS VIOLATED.
3. OUTLETS INSTALLED LOWER THAN 15" AFF (FORWARD REACH) AND 9" AFF (SIDE REACH) ARE IN VIOLATION OF ADA.

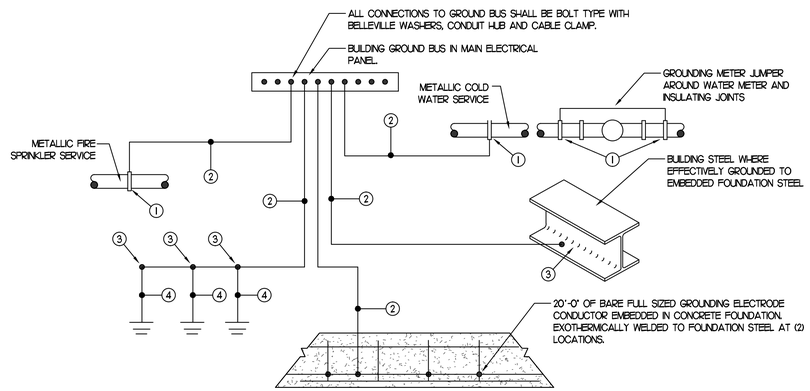
SPECIAL NOTES:
1. EXIT SIGNS SHALL NOT BE INSTALLED SO THAT IT BLOCKS FIRE ALARM VISUAL DEVICES.
2. FOR LIGHTING FIXTURES MOUNTING HEIGHTS SEE SCHEDULE AND DRAWINGS.

WIRE SIZING TABLE

FOR MULTI-VOLT-20A BRANCH CIRCUITS ONLY (UNLESS NOTED OTHERWISE)

IF DISTANCE (A+B) IN FEET IS: (SEE DIAGRAM AT RIGHT)	USE COPPER WIRE IN METALLIC CONDUIT, AWG SIZE AS FOLLOWS ON ENTIRE CIRCUIT AND SIZE CONDUIT ACCORDINGLY.
0' TO 100'	#12 AWG (MIN)
100' TO 175'	#10 AWG
175' TO 300'	#8 AWG
300' TO 450'	#6 AWG (MAX.)





1 / E-3.0 SERVICE GROUNDING DETAIL
NO SCALE

SERVICE GROUND DETAIL GENERAL NOTES

1. WHEN AVAILABLE, ELECTRICAL CONTRACTOR SHALL PROVIDE ALL GROUNDING MEANS INDICATED. CONTRACTOR TO REFER TO ONE-LINE DIAGRAM FOR GROUNDING ELECTRODE SIZING. CONTRACTOR SHALL REFER ELECTRICAL SPECIFICATION FOR SPECIFICS OF GROUNDING SYSTEM INSTALLATION AND MATERIALS.

SERVICE GROUND DETAIL KEYED NOTES

1. THOMAS & BETTS 3900 BU GROUND CLAMP WITH 3/4" CONDUIT HUB AND CABLE CLAMP.
2. FULL SIZE GROUNDING ELECTRODE.
3. EXOTHERMICALLY WELDED (TYPICAL).
4. DRIVEN GROUND RODS 3/4" x 10' COPPER - LOCATION SHOWN ON PLAN.

JOHN K. NEVILLE
062-053269
LICENSED PROFESSIONAL ENGINEER
OF
ILLINOIS

JULY 8, 2018
EXPIRES 11/30/2019

NEVILLE
ENGINEERING SERVICE, INC.
24020 RIVERWALK CT, SUITE 122, PLAINFIELD IL 60544
815-200-3544 IL DESIGN #184.006531

A+M ARCHITECTS, LLC
40 Landover Parkway, Suite 3
Hawthorn Woods, Illinois 60047
TEL: 847.726.9517

C:\logo\sterlin.jpg

430 East IL Route 22 / Half Day Road
Lake Zurich, Illinois 60047
847.307.4400 Fax 847.307.4410

CONSULTANTS

I HAVE PREPARED, OR CAUSED TO BE PREPARED UNDER MY DIRECT SUPERVISION, THE ATTACHED PLANS AND SPECIFICATIONS AND STATE THAT, TO THE BEST OF MY KNOWLEDGE AND BELIEF AND TO THE EXTENT OF MY CONTRACTUAL OBLIGATION, THEY ARE IN COMPLIANCE WITH ALL THE APPLICABLE CODES, INCLUDING THE ENVIRONMENTAL BARRIERS ACT (410 ILCS) AND THE ILLINOIS ACCESSIBLITY CODE (71 ILL. ADM. CODE 400), OF:
NORTHBROOK, ILLINOIS

ISSUE FOR	DATE
PRELIMINARY SCOPE	05/30/18
PLAN APPROVAL	06/07/18
PROGRESS	06/15/18

DRAWN BY:
APPROVED:
PROJECT NO.
DATE

TENANT IMPROVEMENTS FOR:
JIMMYS THAI RESTAURANT
405 LAKE-COOK ROAD RD.
DERRFIELD., ILLINOIS

SHEET DESCRIPTION
ELECTRICAL NOTES AND DIAGRAMS

SHEET NUMBER
E-3.0

SHEET of

SPECIFICATIONS

SCOPE: THIS SPECIFICATION REQUIRES ALL MATERIALS, EQUIPMENT, AND LABOR NECESSARY TO MAKE A COMPLETE AND ACCEPTABLE ELECTRICAL INSTALLATION AS SPECIFIED HEREIN AND SHOWN ON DRAWINGS. PROVIDE ALL ITEMS, ARTICLES, OPERATIONS, OR METHODS LISTED, MENTIONED, OR SCHEDULED HEREIN OR ON THE DRAWINGS, INCLUDING ALL LABOR, MATERIALS, EQUIPMENT, AND INCIDENTALS NECESSARY AND REQUIRED FOR COMPLETION OF THE WORK.

REGULATIONS, CODES, AND STANDARDS: CURRENT CODE REQUIREMENTS SHALL BE SATISFIED. WHERE REQUIRED BY LOCAL, STATE, OR FEDERAL AUTHORITY HAVING JURISDICTION, NO EQUIPMENT WILL BE ACCEPTED UNLESS IT BEARS THE ACCEPTANCE LABEL OF AN APPROPRIATE TESTING AGENCY.

SHOP DRAWINGS: SUBMIT TO THE PROJECT ENGINEER, FOR APPROVAL, SHOP DRAWINGS FOR ALL EQUIPMENT LISTED IN THE CONSTRUCTION DOCUMENTS IN ACCORDANCE WITH THE GENERAL CONDITIONS AND SUPPLEMENTARY CONDITIONS. SUBMITTALS SHALL INCLUDE AS A MINIMUM THE FOLLOWING:

A. PRODUCT DATA: MANUFACTURER'S LITERATURE DESCRIBING ITEM. MODEL NUMBERS PROPOSED SHALL BE IDENTIFIED WHEN THE LITERATURE DESCRIBES MORE THAN (1) ITEM.
B. MANUFACTURER'S SUBMITTAL: SHOWING ELECTRICAL REQUIREMENTS AND CONNECTION LOCATIONS SHALL BE PROVIDED.
C. MAINTENANCE DATA: SUBMIT MAINTENANCE DATA AND PARTS LIST FOR EACH TYPE OF EQUIPMENT REQUIRING PERIODIC MAINTENANCE.

ALL SHOP DRAWINGS SUBMITTED SHALL BE STAMPED, DATED, AND SIGNED BY THE CONTRACTOR TO CERTIFY THAT THEY HAVE BEEN CHECKED BY HIM AS TO CAPACITIES, DIMENSIONS, SPACE REQUIREMENTS AND LIMITATIONS, AND ANY AND ALL OTHER REQUIREMENTS, AND FOUND ACCEPTABLE. APPROVAL OF SHOP DRAWINGS BY THE PROJECT ENGINEER SHALL NOT RELIEVE CONTRACTOR FROM FULFILLING OPERATIONAL REQUIREMENTS, OR FURNISHING ALL MATERIAL AND EQUIPMENT SPECIFIED OR NOTED, WHETHER OR NOT SPECIFICALLY SHOWN ON THE SHOP DRAWINGS. THE QUANTITY TO BE SUBMITTED SHALL BE THE NUMBER REQUIRED BY THE GENERAL CONTRACTOR.

AS-BUILT DRAWINGS: THE CONTRACTOR SHALL SUBMIT AT COMPLETION ONE (1) SET OF MARKED-UP CONTRACT DRAWINGS WHICH SHOW ALL MODIFICATIONS TO THE CONTRACT AND CHANGES OF LOCATIONS, MATERIALS, OR CONFIGURATIONS. THIS SET SHALL BE SUBMITTED WITH THE OPERATING MANUALS TO THE PROJECT ENGINEER.

OPERATING MANUALS: PROVIDE THREE (3) MANUALS, EACH WITH A COMPLETE SET OF COPIES OF SHOP DRAWINGS REQUIRED FOR THE PROJECT INCLUDING, MANUFACTURER'S TESTING, CLEANING AND MAINTENANCE INSTRUCTIONS, LIST OF MATERIALS FOR MAINTENANCE, PARTS LIST, WIRING DIAGRAMS, AND NAME AND ADDRESS OF AUTHORIZED SERVICE ORGANIZATIONS AND SUPPLIERS. INFORMATION SHALL BE BOUND IN 8½"X11" THREE-RING, LOOSE-LEAF BINDER, AND INDEXED IN ACCORDANCE WITH THESE SPECIFICATIONS. BINDER COVER SHALL IDENTIFY JOB NAME, DATE, AND NAME AND ADDRESS OF CONTRACTOR, ARCHITECT, AND ENGINEER. MANUALS SHALL BE SUBMITTED TO THE PROJECT ENGINEER FOR REVIEW OF MATERIAL PRIOR TO THE FINAL INSPECTION. MANUALS WILL BE RETURNED TO THE CONTRACTOR FOR THE SUBMITTAL TO THE OWNER AT THE TIME OF SYSTEM INSTRUCTION.

OWNER INSTRUCTION: CONTRACTOR SHALL ARRANGE, IN WRITING, WITH THE OWNER, PRIOR TO FINAL INSPECTION, A DATE OR DATES TO INSTRUCT THE OWNER, AND THE OWNER'S DESIGNATED REPRESENTATIVES, IN THE OPERATION AND MAINTENANCE OF THE SYSTEM.

FINAL INSPECTION: UPON COMPLETION OF ALL WORK, THE CONTRACTOR SHALL SUBMIT FOR APPROVAL THE FOLLOWING DATA:

1. TESTING REPORTS
2. MAINTENANCE MANUALS

AFTER RECEIVING APPROVAL OF THE ABOVE, THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER IN WRITING AND MAKE ARRANGEMENTS FOR A FINAL INSPECTION. AFTER THE FINAL INSPECTION IS MADE, THE CONTRACTOR WILL RECEIVE A LIST OF ITEMS REQUIRING ADJUSTMENT, CORRECTION, REPLACEMENT, OR COMPLETION. THE CONTRACTOR SHALL COMPLY COMPLETELY WITH ALL THE LISTED REQUIREMENTS WITHIN THIRTY (30) DAYS OF THE RECEIPT OF LIST. SHOULD THE CONTRACTOR FAIL TO PERFORM WITHIN THIS TIME LIMIT, THE PROJECT ENGINEER AND/OR OWNER RESERVES THE RIGHT TO HAVE THE WORK COMPLETED BY OTHERS AND THE COST DEDUCTED FROM THE CONTRACT PRICE.

GUARANTEE: THE CONTRACTOR SHALL GUARANTEE ALL WORKMANSHIP AND MATERIALS SUPPLIED BY HIM FOR ONE (1) YEAR AFTER ACCEPTANCE OF THE WORK IN HIS CONTRACT. IF, DURING THE GUARANTEE PERIOD, ANY DEFECTS OF FAULTY MATERIALS ARE FOUND, HE SHALL CORRECT IMMEDIATELY AND REPAIR ANY DAMAGE TO OTHER MATERIALS OR INSTALLATIONS CAUSED BY THE DEFECT.

EXTENDED WARRANTIES: WHEN EQUIPMENT IS FURNISHED BY THE CONTRACTOR, OR MANUFACTURER, WITH A WARRANTY LONGER THAN ONE (1) YEAR, THE CONTRACTOR SHALL PROVIDE THE OWNER WITH A COPY ALONG WITH RECEIPTS OR OTHER DOCUMENTS NECESSARY FOR FUTURE WARRANTY REPAIRS. UNLESS OTHERWISE REQUIRED, EXTENDED WARRANTIES ARE FOR EQUIPMENT ONLY, NOT MATERIALS OR LABOR TO INSTALL.

MATERIALS AND EQUIPMENT: ALL EQUIPMENT AND MATERIALS TO BE INCORPORATED IN THIS CONTRACT WORK SHALL BE NEW AND OF THE MAKES AND TYPES AS SPECIFIED AND CONTRACTED FOR. NO REMOVED EQUIPMENT SHALL BE RE-INSTALLED OR RE-USED.

INSTALLATION: INSTALLATION OF ALL MATERIAL, ITEMS OR EQUIPMENT AS SHOWN ON DRAWINGS OR DESCRIBED IN SPECIFICATIONS SHALL CONFORM AS NEARLY AS POSSIBLE TO MANUFACTURER'S RECOMMENDED PROCEDURE, UNLESS DESIGNATED OTHERWISE. SHOULD SELECTION OF APPROVED ALTERNATE EQUIPMENT REQUIRE REVISIONS, THIS CONTRACTOR SHALL MAKE ALL CHANGES TO ACCOMMODATE SUCH EQUIPMENT. CONTRACTOR SHALL PREPARE DRAWINGS OF REVISIONS FOR APPROVAL BY PROJECT ENGINEER PRIOR TO BEGINNING WORK. CHANGES AND DRAWINGS SHALL BE MADE AT NO CHANGE IN CONTRACT AMOUNT.

REGULATIONS, CODES AND STANDARDS: THIS CONTRACTOR SHALL OBTAIN ALL PERMITS AND LICENSES AND PAY ALL FEES IN CONNECTION WITH SAME FOR WORK PERFORMED UNDER DIVISION 15.

OPENINGS, CHASES AND RECESSES: THIS CONTRACTOR SHALL GIVE GENERAL CONTRACTOR, IN SUFFICIENT TIME, ALL DIMENSIONS NEEDED FOR THE PROPER CONSTRUCTION AND LOCATION OF FORMS, CHASES AND OTHER OPENINGS WHICH MAY BE REQUIRED FOR THE INSTALLATION OF ALL EQUIPMENT, PIPE, DUCTS AND MATERIALS UNDER THIS CONTRACT.

PROTECTION OF EQUIPMENT: PROTECT AGAINST INJURY FROM WEATHER ALL BUILDING MATERIALS, SUPPLIES, TOOLS, EQUIPMENT, AND FIXTURES INSTALLED OR TO BE INSTALLED, WITH SUITABLE AND SUBSTANTIAL COVERS. COST OF REPLACING OR REPAIRING EQUIPMENT AND FIXTURES MADE NECESSARY BY FAILURE TO PROVIDE SUITABLE PROTECTION SHALL BE PAID BY THIS CONTRACTOR. RESPONSIBILITY FOR THE CARE AND PROTECTION OF MECHANICAL EQUIPMENT AND WORK SHALL REMAIN WITH THIS CONTRACTOR UNTIL IT HAS BEEN TESTED AND ACCEPTED. PROTECT EQUIPMENT OUTLETS, PIPE, DUCT, AND CONDUIT OPENINGS WITH TEMPORARY PLUGS, CAPS, OR APPROVED DEVICES.

CLEANING: AFTER ALL FIXTURES, MATERIALS, AND APPARATUS HAVE BEEN SET AND READY FOR USE, AND BEFORE THIS CONTRACTOR LEAVES THE JOB, HE SHALL THOROUGHLY CLEAN ALL EQUIPMENT FURNISHED AND SET BY HIM REMOVING ALL STICKERS, RUST STAINS, GREASE, CEMENT, AND OTHER FOREIGN MATTER OR DISCOLORATION ON EQUIPMENT, LEAVING EVERY PART IN ACCEPTABLE CONDITION, READY FOR USE. CONTRACTOR SHALL REMOVE FROM THE SITE ALL DEBRIS RESULTING FROM HIS WORK, LEAVING BUILDING IN CLEAN CONDITION, SUITABLE FOR OCCUPANCY.

UTILITY COMPANIES: CONTACT UTILITY COMPANIES AND ADVISE OF PROPOSED WORK PRIOR TO THE START OF ANY EXCAVATION.

CONDUIT AND FITTINGS

ALL CONDUIT SHALL BE THINWALL WITH SET SCREW FITTINGS. ALL CONNECTORS SHALL HAVE INSULATED BUSHINGS OR THROAT-TYPE BUSHINGS.

SURFACE RACEWAY SHALL BE WIREMOLD NO. 500 OR NO. 700.

BOXES AND COVERS

ALL BOXES SHALL BE OF PROPER SIZE AND SHAPE FOR ALL CONDUITS AND CONDUCTORS ENTERING THEM.

CABLE AND WIRE

ALL WIRE SHALL HAVE COPPER CONDUCTORS AND BE LISTED BY UNDERWRITERS LABORATORIES, INC. ALL WIRE SHALL BE TYPE THWN 75°C. INSULATION FOR SIZES NO. 6 TO 500 MCM AND TYPE THHN 90°C. INSULATION FOR SIZES NO. 12 TO NO. 8.

ELECTRICAL WIRING DEVICES

SCHEDULE OF ALL ELECTRICAL DEVICES:

DEVICE	MANUFACTURER'S NAME AND CATALOG NUMBER	RATING
SINGLE POLE SW.	HUBBELL #1221-1 BRYANT #4901-1 A-H #1991-1	20 AMP @ 120 V.
THREE WAY SW.	HUBBELL #1223-1 BRYANT #4903-1 A-H #1993-1	20 AMP @ 120 V.
DUPLEX CONVENIENCE OUTLET	HUBBELL #5352-1 BRYANT #5362-1 A-H #5739-S-1	20 AMP @ 120 V.
DUPLEX GROUND FAULT CIRCUIT INTERRUPTING	HUBBELL #GF5352-1 BRYANT #GF5352-1 A-H #GF5352-1 GROUND	20 AMP @ 120 V.

FLOOR BOXES SHALL BE STANDARD RECESSED METAL BOXES, SIZED AS REQUIRED FOR THE QUANTITY OF DEVICES INDICATED ON THE ELECTRICAL PLAN. THE FLOOR BOXES SHALL HAVE BLACK COVER PLATES.

WET LOCATION RECEPTACLES SHALL HAVE AN ENCLUSRE THAT IS WEATHERPROOF WHETHER OR NOT THE ATTACHMENT PLUG CAP IS INSERTED.

WIRING DEVICE PLATES

ALL DEVICE PLATES SHALL BE FURNISHED WITH PROPER OPENINGS FOR THE DEVICE WITH WHICH IT IS BEING USED. WHERE REQUIRED, MULTIPLE GANG PLATES FOR CORRECT COMBINATION SHALL BE USED WITH THE PROPER OPENING FOR THE DEVICE WITH WHICH THEY ARE BEING USED. THE PLATES SHALL BE COLOR AS SELECTED BY ARCHITECT.

OPENINGS IN CONSTRUCTION

OPENINGS BETWEEN CONDUIT AND FLOORS OR WALLS THROUGH FIRE OR SMOKE BARRIERS SHALL BE CLOSED WITH FIRE STOP MATERIAL TO MAINTAIN FIRE OR SMOKE BARRIER RATING. FIRE STOP MATERIAL SHALL BE DOW CORNING 3-6548 SILICONE RTV FOAM, CHASE TECHNOLOGY CORP. CTC PR-855 FIRE RESISTANT FOAM SEALANT, 3M, 303 FIRE BARRIER, T & B S-101 FIRE BARRIER OR NELSON FLAMESEAL.

INSTALLATION OF RACEWAYS AND CONDUITS

ALL CONDUIT SHALL BE CONCEALED IN WALL CONSTRUCTION AND/OR ABOVE CEILING CONSTRUCTION EXCEPT IN MECHANICAL EQUIPMENT ROOMS, WHERE IT MAY BE EXPOSED AT THE CEILING OR ON WALLS. THE ROUTING OF CONDUIT SHOWN ON THE DRAWINGS IS DIAGRAMMATIC ONLY, AND THIS CONTRACTOR SHALL INSTALL CONDUIT AS REQUIRED TO COMPLETE THE SYSTEMS SO AS NOT TO INTERFERE WITH OTHER TRADES IN BOTH ELEVATION AND LOCATION. INSTALL FLEXIBLE CONDUIT FOR FINAL CONNECTIONS FOR ALL RECESSED LIGHTING FIXTURES, (FLUORESCENT AND INCANDESCENT), AND ALL VIBRATION GENERATING EQUIPMENT EXCEPT WHERE FLEXIBLE LIQUID-TIGHT IS SPECIFICALLY CALLED FOR. A MAXIMUM LENGTH OF FLEXIBLE STEEL CONDUIT SHALL BE LIMITED TO 6'-0".

INDOOR OCCUPANCY / VACANCY SENSORS

WALL-SWITCH SENSOR: 180 DEGREE FIELD OF VIEW, WITH A MINIMUM COVERAGE AREA OF 2,100 SQ. FT. PIR SENSING TECHNOLOGY. SP SWITCH. VACANCY SENSOR MANUAL ON. ACCEPTABLE MANUFACTURERS: COOPER HUBBELL, LEVITON, SENSOR SWITCH, LUTRON, NSI, WATT STOPPER

WIRING JOINTS

MAKE ALL BRANCH CIRCUIT JOINTS FOR WIRE UP TO AND INCLUDING NO. 10 AWG WITH EXPANDABLE STEEL SPRING AND POLYPROPYLENE BODY-TYPE CONNECTORS AND WIRE NUTS MANUFACTURED BY IDEAL, SCOTCH, BUCHANAN OR ARCHITECT/ENGINEER APPROVED EQUAL.

HEIGHTS OF WALL SWITCHES AND RECEPTACLES

FOR ADDITIONS OR ALTERATIONS, DETERMINE THE EXACT HEIGHT OF EACH LIGHT, RECEPTACLE OUTLETS, AND OUTLET BOXES ON THE PREMISES AND EXAMINE THE GENERAL DRAWINGS AND DETAILS TO SEE THAT OUTLETS ARE PROPERLY SPACED AND LOCATED WITH RELATION TO THE INTERIOR FINISH AND TREATMENT. MOUNTING HEIGHTS SHALL BE HELD AS NEAR AS POSSIBLE TO THE CENTERLINE OF THE EQUIPMENT. FOR NEW CONSTRUCTION, SEE TABLE ON FIRST E-SHEET.

TELEPHONE/DATA CONDUIT SYSTEM

IN GENERAL, ALL OUTLETS SHOWN SHALL HAVE A 1" EMPTY CONDUIT STUBBED INTO CORRIDOR CEILING OR INTO CEILING SPACE WHERE THE CEILING TILE IS REMOVABLE. THE CONDUITS SHALL BE STUBBED INTO AREAS THAT ARE ACCESSIBLE FOR INSTALLATION OF TELEPHONE CABLES. THE CONDUIT STUBS SHALL BE FURNISHED WITH PLASTIC BUSHINGS.

IN CERTAIN AREAS WHERE THE CEILINGS ARE PLASTER OR CONCEALED SPLINE TILE, A COMPLETE CONDUIT SYSTEM FROM OUTLET TO TERMINAL CABINETS SHALL BE INSTALLED. ALL TELEPHONE/DATA OUTLETS SHALL BE FURNISHED WITH BLANK COVERPLATES. THE COVERPLATES SHALL BE OF THE SAME MATERIAL AND FINISH AS OTHER DEVICE PLATES IN THE PROJECT.

ALL TELEPHONE/DATA OUTLETS SHALL BE 4" X 4" X 2-1/8" DEEP BOXES WITH SINGLE SQUARE CUT COVER. INSTALL ALL CONDUITS WITH NYLON FISH LINES TO FACILITATE THE EASY INSTALLATION OF TELEPHONE CABLES. ALL OUTLETS SHALL BE MOUNTED AS NOTED ELSEWHERE IN THIS SPECIFICATIONS, EXCEPT FOR UNITS INDICATED AS WALL OUTLETS WHICH SHALL BE MOUNTED 48" ABOVE THE FLOOR.

ELECTRICAL CONTRACTOR TO PROVIDE AND INSTALL DATA AND PHONE CABLING.

PANELBOARDS

ALL PANELBOARDS SHALL BE OF THE CIRCUIT BREAKER, DEAD FRONT TYPE WITH SEPARATE GROUND BUS AND SHALL BE FOR THE VOLTAGE AS INDICATED ON THE DRAWINGS AND IN THE PANELBOARD SCHEDULES.

PHASE, NEUTRAL, AND GROUND BUSSES SHALL BE HARD-DRAWN COPPER. CONDUCTOR CONNECTORS SHALL BE MECHANICAL TYPE AND HARD-DRAWN COPPER.

GROUND BUS SHALL BE ADEQUATE FOR FEEDER AND BRANCH-CIRCUIT EQUIPMENT GROUNDING.

PANELBOARD BACK BOXES AND TRIM SHALL BE FACTORY FINISHED STEEL AND SHALL BE RATED NEMA 250 TYPE 1 FOR INDOOR LOCATIONS; TYPE 3R FOR OUTDOOR LOCATIONS; AND TYPE 4X FOR KITCHEN LOCATIONS.

PANELBOARDS SHALL BE FULLY RATED TO INTERRUPT SYMMETRICAL SHORT-CIRCUIT CURRENT AVAILABLE AT TERMINALS

PANELBOARD SHALL BE LISTED BY UL AND BEAR UL LABEL.

PANELBOARDS SHALL BE MARKED WITH MAXIMUM SHORT CIRCUIT CURRENT ON THE OUTSIDE OF EACH PANEL AND ABOVE THE DOOR; AN ARC FLASH HAZARD WARNING SIGN; AND A PERMANENTLY ATTACHED AND ENGRAVED SIGN AS SPECIFIED UNDER "IDENTIFICATION OF EQUIPMENT" SHALL BE INSTALLED INDICATING THE POWER SYSTEMS, VOLTAGE, ETC, IN 1/4" LETTERS, I.E., (120/ 208 VOLT, 3 PHASE, 4 WIRE, PANEL A).

1. BRANCH TYPE PANELBOARD
   a. ACCEPTABLE MANUFACTURERS
      - EATON ELECTRICAL
      - GENERAL ELECTRIC
      - SIEMENS
      - DQUARE D
   b. DOORS: CONCEALED HINGES; SECURED WITH FLUSH LATCH AND TUMBLER LOCK; KEYED ALIKE.
   c. MAINS: LUGS OR CIRCUIT BREAKER AS INDICATED ON PANEL SCHEDULE.
   d. BRANCH OVERCURRENT PROTECTIVE DEVICE: BOLT-ON CIRCUIT BREAKERS.

GROUNDING

INSTALL ALL OUTLETS WITH A GREEN JUMPER WIRE FROM THE GROUND TERMINAL OF THE OUTLET TO A GROUNDING LUG IN THE OUTLET BOX. INSTALL SEPARATE GREEN GROUND WIRE (IN ADDITION TO BRANCH CIRCUIT CONDUCTORS) AND BOND TO ELECTRICAL EQUIPMENT WHERE FLEXIBLE METAL CONDUIT AND LIQUID TIGHT FLEXIBLE CONDUIT IS USED AS A FINAL CONNECTION TO ELECTRICAL EQUIPMENT, BOND THE GREEN CONDUCTOR TO CONDUIT SYSTEM IN THE LAST JUNCTION BOX AND TO ALL ELECTRICAL EQUIPMENT, I.E., LIGHTING FIXTURES, MOTORS AND OTHER EQUIPMENT.

THE COMPLETE GROUNDING SYSTEM SHALL BE DONE WITH GROUNDING CONDUCTORS THROUGHOUT THE ENTIRE PROJECT INSTALLATION. SEPARATE GROUNDING CONDUCTORS FOR ALL BRANCH CIRCUITS ARE NOT SHOWN ON THE DRAWINGS, BUT SHALL BE INCLUDED IN ALL RACEWAYS AS IF SET FORTH ON THE DRAWINGS. SEPARATE GROUNDING CONDUCTORS SHALL BE INSTALLED IN ALL BRANCH CIRCUITS. GROUNDING CONDUCTORS SHALL BE INSTALLED IN THE SAME CONDUIT RUNS AS THE PHASE AND NEUTRAL CONDUCTORS. THE SIZE OF THE GROUNDING CONDUCTORS SHALL BE IN STRICT ACCORDANCE WITH TABLE NO. 250-122 OF THE 1999 EDITION OF THE NATIONAL ELECTRICAL CODE.

DISCONNECT SWITCHES

ALL DISCONNECT SWITCHES SHALL BE HEAVY-DUTY MULTIPLE POLE ENCLOSED-TYPE SAFETY SWITCHES. ALL SWITCHES SHALL BE THE FUSIBLE TYPE WITH REJECTION-TYPE FUSE CLIPS.

ALL SWITCHES SHALL BE NEMA 1 OR 3R ENCLOSURES AND SHALL BE UL LISTED.

EACH DISCONNECT SWITCH SHALL BE FURNISHED WITH AN ENGRAVED PLASTIC OR METAL STRIP AS SPECIFIED UNDER "IDENTIFICATION OF EQUIPMENT" PERMANENTLY ATTACHED TO OUTSIDE COVER, INDICATING DEVICE USAGE OR EQUIPMENT CONTROLLED, SUCH AS FAN EF-1. NUMBER SHALL BE THE SAME AS THOSE ON DRAWINGS AND TEMPERATURE CONTROL DIAGRAMS.

ENCLOSED CIRCUIT BREAKERS

PROVIDE INDIVIDUALLY ENCLOSED MOLDED CASE CIRCUIT BREAKERS AS SHOWN ON THE PLANS. ALL CIRCUIT BREAKERS SHALL MEET FEDERAL SPECIFICATION W-C-375B AND BOTH CIRCUIT BREAKER AND THE ENCLOSURE SHALL BE UL LISTED.

MOLDED CASE CIRCUIT BREAKERS SHALL HAVE OVERCENTER TOGGLE-TYPE MECHANISMS, PROVIDING QUICK-MAKE, QUICK-BREAK ACTION. BREAKERS SHALL BE CALIBRATED FOR OPERATION IN AN AMBIENT TEMPERATURE OF 40° C. EACH CIRCUIT BREAKER SHALL HAVE TRIP INDICATION BY HANDLE POSITION AND SHALL BE TRIP-FREE. THREE POLE BREAKERS SHALL BE COMMON TRIP. EACH CIRCUIT BREAKER SHALL HAVE A PERMANENT TRIP UNIT CONTAINING INDIVIDUAL THERMAL AND MAGNETIC TRIP ELEMENTS IN EACH POLE.

CIRCUIT BREAKERS WITH FRAME SIZES GREATER THAN 100 AMPERES SHALL HAVE VARIABLE MAGNETIC TRIP ELEMENTS WHICH ARE SET BY A SINGLE ADJUSTMENT. A BUTTON SHALL BE PROVIDED ON THE COVER FOR MECHANICALLY TRIPPING THE CIRCUIT BREAKER. THE CIRCUIT BREAKERS SHALL BE CONSTRUCTED TO ACCOMMODATE THE SUPPLY CONNECTIONS AT EITHER END OF THE CIRCUIT BREAKER.

BREAKER SHALL BE UL LISTED WITH A SHORT CIRCUIT CURRENT RATING OF 42,000 RMS SYMMETRICAL AMPERES.

NEUTRALS SHALL BE FURNISHED IN DEVICE ENCLOSURE. NEUTRALS SHALL BE INSULATED AND ARE TO BE GROUNDABLE FOR USE IN SERVICE ENTRANCE APPLICATIONS.

ENCLOSURES SHALL BE NEMA 1, FURNISHED WITH KNOCKOUTS WHERE PRACTICAL, AND SHALL BE FABRICATED FROM SHEET STEEL WHICH CONFORMS TO UL 50. THE ENCLOSURE SHALL BE GIVEN AN ELECTRO DEPOSITED, GRAY BAKED ENAMEL FINISH. PADLOCKING PROVISIONS SHALL BE PROVIDED TO ALLOW LOCKING THE CIRCUIT BREAKER IN THE "OFF" POSITION. ENCLOSURES SHALL BE UL LISTED.

ENCLOSED BREAKERS SHALL BE MANUFACTURED BY SQUARE D, GENERAL ELECTRIC OR SIEMENS ITE.

FORWARD SUBMITTALS TO ARCHITECT/ENGINEER FOR REVIEW.

LIGHT FIXTURES

FURNISH EACH FIXTURE WITH LAMPS AS NOTED ON THE FIXTURE SCHEDULE. ALL FIXTURES SHALL BE UL LISTED.

PROVIDE ALL LIGHT FIXTURES AS SHOWN ON THE DRAWINGS AND AS HEREINAFTER SPECIFIED.

FIXTURES SHALL HAVE SPECIFIED FINISH. WHERE FINISH IS NOT MENTIONED, IT SHALL BE OBTAINED FROM THE ARCHITECT/ENGINEER.

ALL RECESSED FIXTURES SHALL BE SUITABLE FOR INSTALLATION IN THE CEILING AND/OR THE SUSPENSION SYSTEM THEY ARE TO BE INSTALLED IN. CHECK THE FIXTURE TYPES AGAINST THE APPROVED TYPE OF CEILING MATERIAL IN EACH ROOM AND INSTALL THE PROPER FLUORESCENT FIXTURE TRIMS TO FIT THE CEILING SUSPENSION SYSTEM.

FORWARD A BOUND BROCHURE OF ALL LIGHTING FIXTURES INDICATING FIXTURE TYPES, FINISHES, LAMPS, DETAILS, ETC. TO THE ARCHITECT/ENGINEER FOR REVIEW. SEE LIGHT FIXTURE SCHEDULE ON THE DRAWINGS FOR ADDITIONAL INFORMATION.

EXIT LIGHTING SYSTEM

CONNECT ALL EXIT LIGHTING UNITS TO AN UNSWITCHED CIRCUIT ORIGINATED FROM THE SAME BRANCH CIRCUIT AS ADJACENT CORRIDOR LIGHTING FIXTURES.

ALL EXIT FIXTURES AS NOTED IN LIGHT FIXTURE SCHEDULE ON THE DRAWINGS SHALL BE OF THE SELF-CONTAINED TYPE WITH THE FOLLOWING ITEMS:

1. MAINTENANCE FREE, RECHARGEABLE, NICKEL CADMIUM BATTERY HAVING A 10 YEAR LIFE RATING AND WARRANTY AND CAPABLE OF POWERING THE CONNECTED LAMPS FOR 1-1/2 HOURS TO 87-1/2% OF INITIAL NOMINAL BATTERY VOLTAGE.
2. AUTOMATIC CHARGER WITH MULTI-RATE, SOLID-STATE RECTIFIER WITH SENSING DEVICE AND CHARGE TRANSFORMER TO CHARGE THE BATTERY TO 100% OF BATTERY CAPACITY WITHIN 12 HOURS FOLLOWING FULL RATED LOAD DISCHARGE TO 87-1/2% NOMINAL VOLTAGE.
3. TEST SWITCH TO SIMULATE A POWER FAILURE AND TO CYCLE THE CHARGING CIRCUIT.
4. AUTOMATIC TRANSFER SWITCH TO IMMEDIATELY ENERGIZE ALL LAMPS CONNECTED TO UNIT UPON FAILURE OF NORMAL POWER.
5. PILOT AND READY LIGHT.
6. MOUNT INTEGRAL BATTERY AND CHARGER EMERGENCY PACK WITHIN THE EXIT HOUSING AND ACCESSIBLE FOR SERVICE WITHOUT REMOVING EXIT SIGN FROM ITS MOUNTING.
7. LED LAMPS.

THESE UNITS SHALL BE FULLY AUTOMATIC WITH SOLID-STATE SWITCHING. UPON NORMAL AC POWER FAILURE, TWO EMERGENCY LAMPS WILL OPERATE ON BATTERY POWER FOR THE MINIMUM REQUIRED 1-1/2 HOURS WITHOUT REDUCING BATTERY VOLTAGE LOWER THAN 87-1/2% OF NOMINAL RATED VOLTAGES AS REQUIRED BY NEC AND OSHA. UPON RESTORATION OF REGULAR POWER SUPPLY, THE UNIT SHALL SWITCH BACK TO NORMAL MODE AND CHARGER SHALL REPLENISH BATTERY WITHIN 24 HOURS.

FORWARD SUBMITTALS TO ARCHITECT/ENGINEER FOR REVIEW.

BATTERY-OPERATED EMERGENCY LIGHT (SURFACE)

PROVIDE WHERE SHOWN ON THE DRAWINGS, SURFACE SELF-CONTAINED, BATTERY-OPERATED EMERGENCY LIGHTING UNIT.

THE SURFACE, BATTERY-OPERATED EMERGENCY LIGHTING UNITS SHALL BE SUITABLE FOR CEILING MOUNTING WITH PROPER MOUNTING BRACKETS AT A HEIGHT AS INDICATED ON THE DRAWINGS. UNIT SHALL HOUSING SHALL BE THERMOPLASTIC. UNIT SHALL HAVE REMOVABLE COVER TO PROVIDE FULL ACCESS TO BATTERY, CHARGER, FUSES, WIRING AND OTHER COMPONENTS. FINISH SHALL BE MATTE WHITE AND CHROME LAMPHEADS.

THE SURFACE BATTERY-OPERATED, EMERGENCY LIGHTING UNITS SHALL BE COMPLETE WITH THE FOLLOWING:

1. TWO ADJUSTABLE LED LAMPHEADS.
2. 3.6V PREMIUM GRADE, NICKEL CADMIUM BATTERY WITH 10 YEAR EXPECTED LIFE.
3. ENVIRONMENTALLY COATED, SOLID STAGE CHARGER, LOW VOLTAGE DISCONNECT.
4. FULLY ADJUSTABLE 1.5WATT, GLARE-FREE LIGHTING HEADS.
5. INJECTION-MOLDED, FLAME RETARDANT, HIGH IMPACT, THERMOPLASTIC HOUSING.
6. LOW-PROFILE TEST SWITCH AND LED CHARGE RATE INDICATOR LIGHT
7. REGULATED CHARGE VOLTAGE
8. AC LOCKOUT
9. OVERLOAD/SHORT CIRCUIT PROTECTION
10. BROWN OUT PROTECTION
11. UL 924 LISTED.

CONNECT UNIT TO AN UNSWITCHED 120 VOLT CIRCUIT. THIS CIRCUIT SHALL BE THE SAME CIRCUIT THAT SERVES THE CORRIDOR OR AREA LIGHTING.

FORWARD SUBMITTALS TO ARCHITECT/ENGINEER FOR REVIEW.

SUPPORT FOR LIGHT FIXTURES

SUPPORT ALL FIXTURES FROM THE BUILDING STRUCTURE AND NOT FROM THE CEILING SUSPENSION SYSTEM (SUCH AS A T-BAR SYSTEM FOR A SUSPENDED ACOUSTICAL TILE CEILING). SUPPORT THE FIXTURES FROM THE BAR JOISTS, FLOOR STRUCTURE OR ROOF STRUCTURE ABOVE WITH THREADED HANGERS, WASHERS AND NUTS. INSTALL MINIMUM OF TWO HANGERS FOR EACH FIXTURE. WHERE A FIXTURE OCCURS UNDER DUCTS, THE WIDTH OF DUCT SHALL BE SPANNED WITH METAL FRAMING CHANNEL SUSPENDED AND SUPPORTED AT BOTH ENDS AND THE FIXTURE ATTACHED TO THE METAL FRAMING CHANNEL.

WHERE RECESSED FIXTURES OCCUR IN GRID SYSTEM FIXTURES SHALL BE SECURELY FASTENED TO THE GRID SYSTEM MEMBERS WITH SAFETY TEE BAR CLIPS. FURNISH AND INSTALL 4 CLIPS PER FIXTURE.

FIRE ALARM DEVICES

VISUAL SIGNAL APPLIANCES SHALL BE PROVIDED IN EACH OF THE FOLLOWING AREAS: MEETING ROOMS, RESTROOMS, HALLWAYS, LOBBIES, AND ANY OTHER GENERAL OR COMMON USE AREAS. BATHROOMS SHALL ALSO REQUIRE VISUAL ALARMS.

TRANSFORMERS

TRANSFORMERS SHALL BE AS MANUFACTURED BY SCHNEIDER ELECTRIC OR APPROVED EQUAL.

ALL INSULATING MATERIALS ARE TO EXCEED NEMA ST20 STANDARDS AND BE RATED FOR 220 °C UL COMPONENT RECOGNIZED INSULATION SYSTEM.

TRANSFORMERS 15 KVA AND LARGER SHALL BE 150 °C TEMPERATURE RISE ABOVE 40 °C AMBIENT. TRANSFORMERS 25 KVA AND LARGER SHALL HAVE A MINIMUM OF 4-2.5% FULL CAPACITY PRIMARY TAPS. EXACT VOLTAGES AND TAPS TO BE AS DESIGNATED ON THE PLANS OR THE TRANSFORMER SCHEDULE.

THE MAXIMUM TEMPERATURE OF THE TOP OF THE ENCLOSURE SHALL NOT EXCEED 50 °C RISE ABOVE A 40 °C AMBIENT.

TRANSFORMERS SHALL BE LOW LOSS TYPE. EFFICIENCY SHALL BE TESTED IN ACCORDANCE WITH NEMA TP-2 AND CSA 802.2-00.

TRANSFORMER COILS SHALL BE OF THE CONTINUOUS WOUND CONSTRUCTION AND SHALL BE IMPREGNATED WITH NON HYGROSCOPIC, THERMOSETTING VARNISH.

ALL CORES TO BE CONSTRUCTED WITH LOW HYSTERESIS AND EDDY CURRENT LOSSES. MAGNETIC FLUX DENSITIES ARE TO BE KEPT WELL BELOW THE SATURATION POINT TO PREVENT CORE OVERHEATING. CORES FOR TRANSFORMERS GREATER THAN 500 KVA SHALL BE CLAMPED UTILIZING INSULATED BOLTS THROUGH THE CORE LAMINATIONS TO ENSURE PROPER PRESSURE THROUGHOUT THE LENGTH OF THE CORE. THE COMPLETED CORE AND COIL SHALL BE BOLTED TO THE BASE OF THE ENCLOSURE, BUT ISOLATED BY MEANS OF RUBBER VIBRATION-ABSORBING MOUNTS. THERE SHALL BE NO METAL-TO-METAL CONTACT BETWEEN THE CORE AND COIL AND THE ENCLOSURE EXCEPT FOR A FLEXIBLE SAFETY GROUND STRAP. SOUND ISOLATION SYSTEMS REQUIRING THE COMPLETE REMOVAL OF ALL FASTENING DEVICES WILL NOT BE ACCEPTABLE.

THE CORE OF THE TRANSFORMER SHALL BE VISIBLY GROUNDED TO THE ENCLOSURE BY MEANS OF A FLEXIBLE GROUNDING CONDUCTOR SIZED IN ACCORDANCE WITH APPLICABLE UL AND NEC STANDARDS.

THE TRANSFORMER ENCLOSURES SHALL BE VENTILATED AND BE FABRICATED OF HEAVY GAUGE, SHEET STEEL CONSTRUCTION. THE ENTIRE ENCLOSURE SHALL BE FINISHED UTILIZING A CONTINUOUS PROCESS CONSISTING OF DEGREASING, CLEANING, AND PHOSPHATIZING, FOLLOWED BY ELECTROSTATIC DEPOSITION OF POLYMER POLYESTER POWDER COATING AND BAKING CYCLE TO PROVIDED UNIFORM COATING OF ALL EDGES AND SURFACES. THE COATING SHALL BE UL RECOGNIZED FOR OUTDOOR USE. THE COATING COLOR SHALL BE ANSI 49.

SOUND LEVELS SHALL BE WARRANTED BY THE MANUFACTURER NOT TO EXCEED THE FOLLOWING: 15 TO 50 KVA:45 DB; 51 TO 150 KVA: 50 DB; 151 TO 300 KVA: 55 DB; 301 TO 500 KVA: 60 DB.

NEVILLE
ENGINEERING SERVICE, INC.
24020 RIVERWALK CT, SUITE 122, PLAINFIELD IL 60544
815-200-3844 IL DESIGN #184.006531

JOHN K NEVILLE
062-053269
LICENSED PROFESSIONAL ENGINEER OF ILLINOIS

John K. Neville
JULY 8, 2018
EXPIRES 11/30/2019

A+M ARCHITECTS, LLC
40 Landover Parkway, Suite 3
Hawthorn Woods, Illinois 60047
TEL: 847.726.9517
ARCHITECTS, L.L.C.

C:\logo\sterlin.jpg

430 East IL Route 22 / Half Day Road
Lake Zurich, Illinois 60047
847.307.4400 Fax 847.307.4410

CONSULTANTS

I HAVE PREPARED, OR CAUSED TO BE PREPARED UNDER MY DIRECT SUPERVISION, THE ATTACHED PLANS AND SPECIFICATIONS AND STATE THAT, TO THE BEST OF MY KNOWLEDGE AND BELIEF AND TO THE EXTENT OF MY CONTRACTUAL OBLIGATION, THEY ARE IN COMPLIANCE WITH ALL THE APPLICABLE CODES, INCLUDING THE ENVIRONMENTAL BARRIERS ACT (410 ILCS) AND THE ILLINOIS ACCESSIBLITY CODE (71 ILL. ADM. CODE 400), OF:

NORTHBROOK, ILLINOIS

ISSUE FOR	DATE
PRELIMINARY SCOPE	05/30/18
PLAN APPROVAL	06/07/18
PROGRESS	06/15/18

DRAWN BY:

APPROVED:

PROJECT NO.

DATE

TENANT IMPROVEMENTS FOR:

JIMMYS THAI RESTAURANT

405 LAKE-COOK ROAD RD.
DERRFIELD., ILLINOIS

SHEET DESCRIPTION

ELECTRICAL SPECIFICATIONS

SHEET NUMBER

E-4.0

SHEET of