



ETL HOOD LISTING DETAIL	
EXHAUST CFM=LENGTH OF HOOD X CFM/LIN.FT. (LOAD)	
SUPPLY CFM=EXHAUST CFM X PERCENTAGE REQUIRED	
TOTAL DUCT AREA=144 X	CFM FMH(*)
DUCT LENGTH=	TOTAL DUCT AREA
DUCT DEPTH	
*CAPTIVE-AIR VENTILATION DUCT 5025 AND 5026 COMPLIANT WITH AN EXHAUST VELOCITY OF 1500-1800 FPM AND A SUPPLY VELOCITY OF 1000 FPM.	
CALCULATIONS UTILIZED	
CAPTIVE-AIR HOODS ARE BUILT IN COMPLIANCE WITH:	
	
ETL 3054084-01 STANDARD 70	Intertek
	
BILT 3054084-01 STANDARD 70	BILT 3054084-01 STANDARD 70

BUILDING CODES	
CAPTIVE-AIR HOODS HAVE OPTIONAL CLEARANCE REDUCTION SYSTEMS AVAILABLE AS FOLLOWS:	
<u>MATERIAL</u>	<u>CLEARANCE REDUCTION SYSTEM</u>
NON-COMBUSTIBLE	NONE REQUIRED
LIMITED-COMBUSTIBLE	3" UNINSULATED STANDOFF
COMBUSTIBLE	1" INSULATED STANDOFF

CLEARANCE TO COMBUSTIBLES

INSTALLATION

1. ALL ELECTRICAL "FIELD" CONNECTIONS AND RELATED INTERCONNECTIONS BY ELECTRICAL CONTRACTORS.
2. ALL PLUMBING "FIELD" CONNECTIONS AND RELATED INTERCONNECTIONS BY PLUMBING CONTRACTORS.
3. HANGING BRACKETS LOCATED AND WELDED AS SHOWN ON PLANS. ALL OTHER HANGING MATERIALS PROVIDED BY INSTALLING CONTRACTOR.
4. ALL CONNECTIONS FROM CAPTIVE--ARE DUCT PER MECHANICAL CONTRACTORS' RESPONSIBILITY.
5. PROVIDING PERMIT TO CONSTRUCTION IN EVENT OF FIRE.
6. EXHAUST FANS TO TURN ON IN PLANTS.
7. ALL LIGHTS FIXTURES SHOWN INSTALLED BY CAPTIVE--ARE FACTORY PREWIRED. INTERCONNECTIONS BETWEEN MOTORS AND SWITCHES BY ELECTRICAL CONTRACTORS.
8. LAMPS FOR LIGHT FIXTURES BY INSTALLING CONTRACTORS.
9. SEISMIC RESTRAINTS ARE RESPONSIBILITY OF INSTALLING CONTRACTOR.
10. INSTALLING CONTRACTORS ASSUME ALL RELATED RESPONSIBILITY FOR VERIFICATION OF DIMENSIONAL DATA CONTAINED ON THESE PLANS FOR ACCURACY, INTEGRATION, AND ADMINISTRATION OF CODE REQUIREMENTS IN EFFECT PRIOR TO ANY PROCEEDING FOR PRODUCTION OF EQUIPMENT SHOWN.

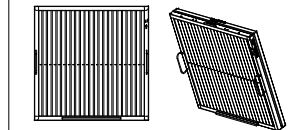
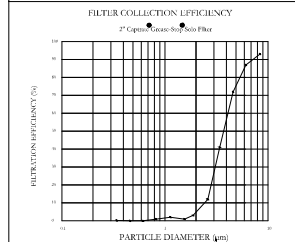
BALANCE

11. KITCHEN HOODS MUST BE BALANCED WITH KITCHEN.
12. KITCHEN SHALL BE NEGATIVE WITH RESPECT TO DINING AREA.
13. RESTAURANT SHALL BE POSITIVE WITH RESPECT TO AMBIENT PRESSURE.

ADDITIONAL

14. WRITTEN HOOD DIMENSIONS HAVE PRECEDENCE OVER SCALE.
15. SIGNED AND "APPROVED" COPIES OF THIS DOCUMENT MUST BE RECEIVED BY THE FACTORY PRIOR TO COMMENCEMENT OF FABRICATION.

GENERAL NOTES



CaptiveAire Captrate Solo Filter
ETL Listed Grease Extracting Filters
Made From 430 Stainless Steel

FILTER DETAIL

HOOD INFORMATION - Job#2534612													
HOOD NO.	TAG	MODEL	LENGTH	MAX. COOKING TEMP.	EXHAUST PLENUM RISER(S)					HOOD CONSTRUCTION	HOOD CONFIG.		
					TOTAL EXH. CFM	WIDTH	LENG.	DIA.	CFM		S.P.	END TO END	ROW
1		4824 VHB	6' 0.00'	700 Deg.	1250	7'	24"		1250	-0.142"	430 SS 100%	ALONE	ALONE

HOOD INFORMATION[illegible]

HOOD OPTIONS

HOOD NO.	TAG	OPTION
1		FIELD WRAPPER 18.00' High Front, Left, Right, Back
		RIGHT QUARTER END PANEL 23' Top Width, 0' Bottom Width, 23' High 430 SS
		LEFT QUARTER END PANEL 23' Top Width, 0' Bottom Width, 23' High 430 SS
		BALANCE DAMPERS
		FINISHED BACK - GROUND/POLISH 72.00' Long

ELECTRICAL PACKAGES - Job#2532982

NO.	TAG	PACKAGE #	LOCATION	SWITCHES		OPTION	FANS CONTROLLED				
				LOCATION	QUANTITY		TYPE	#	HP.	VOLTS	FLA
1		SC-310110FP	Wall Mount In SS Box	SS Wall Mount Box	1 Light 1 Fan	Smart Controls Thermostatic Control	Exhaust	3	2,000	208	5.8

JOB NO	MODEL NUMBER	DRAWN BY	SYMBOLIC TYPE	DESCRIPTION OF OPERATION
2532982	SC-310110FP		INSTALL	3 Phase w/ control for 1 Exhaust Fan, Exhaust on in Fire, Lights out in Fire, Fans On/Off Thermostatically Controlled. Room temperature sensor shipped loose for field installation.
	JOB NAME		DATE	DWG NO
	AND PIZZA Barracks Row_R72_R4	1/12/2016	ECP #1-1	

BREAKER PANEL TO CONTROL PANEL

Responsibility: Electrician
BREAKER SIZE SHOWN IS THE MAXIMUM ALLOWED

BREAKER PANEL	WIRING	CONTROL PANEL
BREAKER 1PH 120 V 15 A	Hot Neutral Ground	CONTROL POWER. DO NOT WIRE TO SHUNT TRIP BREAKER. 1ST HOOD LIGHT BREAKER SHARED W/ CONTROL POWER. SWITCH #1 Hot: O H10 Neutral: O N10 Ground: O GND0
BREAKER 3PH 208 V MCA: 7.2 A MOCB: 15 A	LINE LINE Ground	LINE: O L10 LINE: O L20 LINE: O L30 Ground: O GND0 EXH-1

CONTROL PANEL TO FANS

Responsibility: Electrician

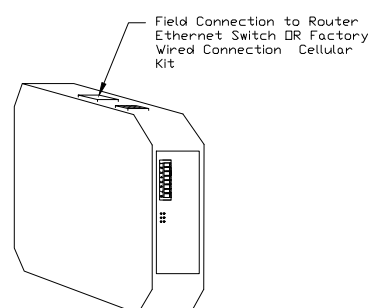
CONTROL PANEL	WIRING	FANS
Load Wiring ST-1 WIRE DIRECT TO STARTER	T10 T20 T30 GND0 LOAD LEG 1 LOAD LEG 2 LOAD LEG 3 GROUND	FAN: 01 EXH-1 WIRE TO DISCONNECT PCU SWITCH IF MULTIPLE PCUS ON JOB, WIRE EACH SWITCH IN SERIES BEFORE RETURNING TO PCU TERMINAL BLOCK.

CONTROL PANEL TO ACCESSORY ITEMS

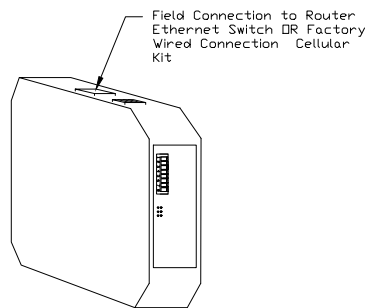
Responsibility: Electrician

CONTROL PANEL	WIRING	COMPONENT
CONTROL PANEL TO FIRE SYSTEM MICROSWITCH	O C10 O A10 O C10 O A10 WIRE C1 TO COMMON (1). WIRE A1 TO NORMALLY CLOSED (2). C1 TO A1 SHOULD HAVE CONTINUITY WHEN ARMED.	MICROSWITCH 1 1-C 2-NC 3-4ND GAP OFF MS-1 4ND GAP OFF MS-2 4ND GAP OFF

CONTROL PANEL TO SWITCHES	WIRING	DESCRIPTION
CONTROL PANEL TO HOOD LIGHTS 1400 W MAX	O B10 O W10 O GND0 BLACK WHITE GREEN	ALL SWITCHES FACTORY WIRED CAT-5 CONNECTION WIRE TO J-BOX ON TOP OF HOOD
CONTROL PANEL TO WORLD WIDE WEB	COMM CAT-5 ETHERNET CONNECTION	WIRE DIRECTLY TO COMMUNICATION MODULE. SEE CASLINK OWNERS MANUAL FOR FURTHER INSTRUCTIONS.
CONTROL PANEL TO KITCHEN TEMP SENSOR	T1A0 T1B0 ROOM TEMP	WIRE TO "CONTROL BOARD". SENSOR MOUNTED IN ROOM AWAY FROM HEAT SOURCES. SEE MANUAL
CONTROL PANEL TO DUCT SENSOR	T2A0 T2B0 HOOD 1 RISER 1	WIRE TO "CONTROL BOARD". SENSOR MOUNTED IN EXHAUST DUCT
CONTROL PANEL SIGNAL FOR EXTERNAL SHUNT TRIP	O S10 O N10 HOT TO SHUNT COIL NEUTRAL FROM SHUNT COIL	ST TERMINAL IS ENERGIZED IN FIRE CONDITION.
CONTROL PANEL SPARE FIRE SYSTEM DRY CONTACT	O C20 O A20 COMMON NORMALLY OPEN	SPARE CONTACTS USED WHEN FIRE SYSTEM DISCHARGES TO DISABLE EQUIPMENT OR PROVIDE SIGNALS. (NOT FOR BUILDING FIRE ALARM WHICH MUST BE WIRED DIRECTLY TO THE ANSUL ALARM INITIATING SWITCH LOCATED IN ANSUL AUTOMAN)
CONTROL PANEL TO EXTERNAL SWITCH	O H10 O D10 BMS SWITCH	SIGNAL SWITCH THROUGH BMS WILL ACTIVATE ZONE1 FANS AND LIGHTS



CASlink Monitor and Control



CASlink Monitor and Control

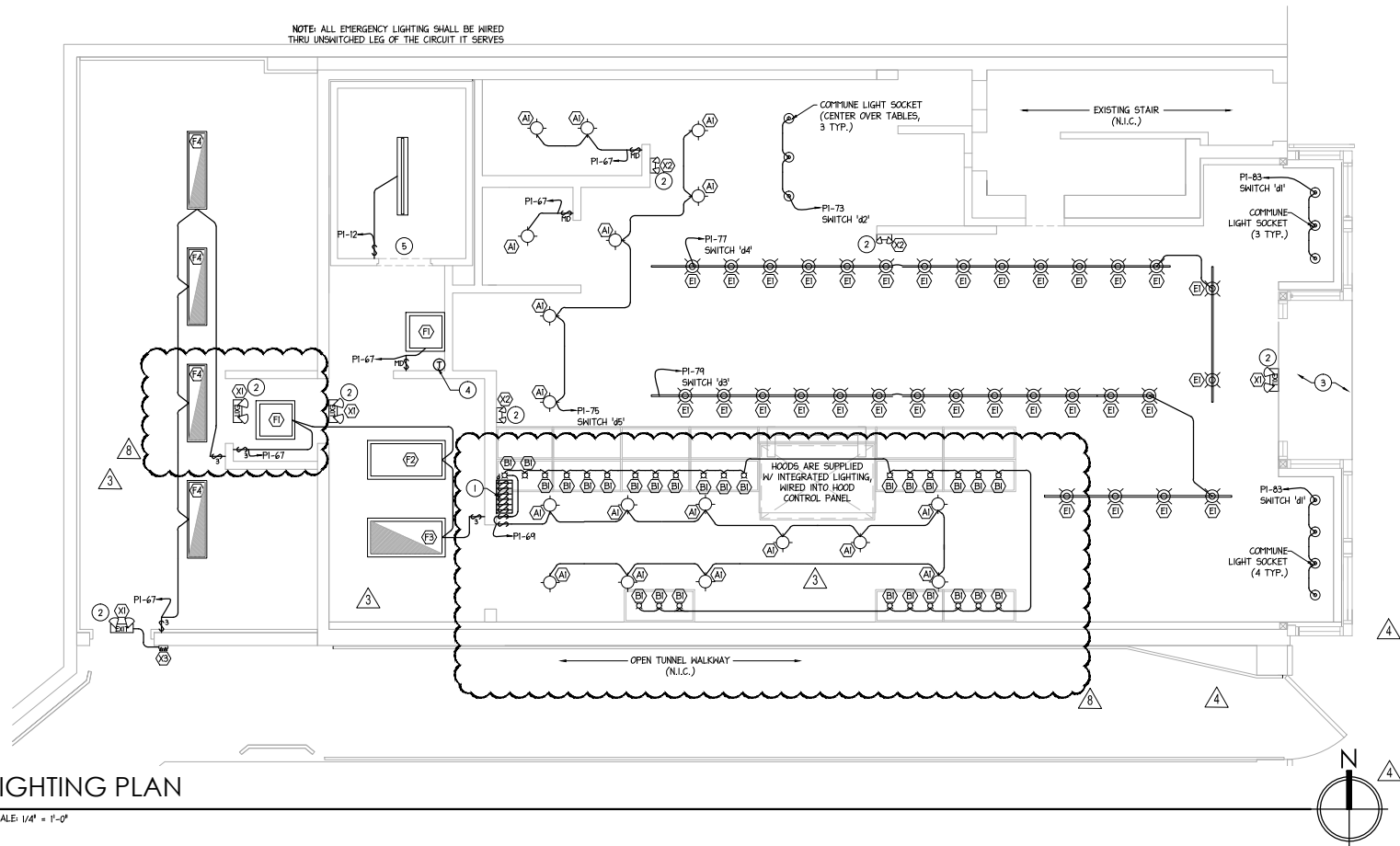
[illegible]

PROJECT	140326	DATE	10/14/2015
CAD ID	140326M4.0	DRN BY	JDB
SCALE	AS NOTED	CHK BY	MWM
CASE NO. 18770B M-4.1 EXHIBIT NO. 7C REVISION 8			

1 LIGHTING PLAN

SCALE: 1/4" = 1'-0"

NOTE: ALL EMERGENCY LIGHTING SHALL BE WIRED THRU UNSWITCHED LEG OF THE CIRCUIT IT SERVES



LEGEND

	LIGHTING FIXTURE, LETTER IN CIRCLE INDICATES SCHEDULED FIXTURE. TYPE - BRANCH CIRCUIT IS INDICATED AT END OF FEEDER RUN.
	EMERGENCY LIGHT FIXTURES (SEE LIGHT FIXTURE SCHEDULE)
	FLUORESCENT LIGHT 2'x4' LAY-IN TYPE - LENSED
	FLUORESCENT LIGHT WITH BATTERY BACKUP
	FLUORESCENT LIGHT 2'x2' LAY-IN TYPE - LENSED
	RECESSED DOWNLIGHT W/FLUSH TRIM
	CUSTOM DECORATIVE PENDANT LIGHT
	CUSTOM PENDANT LIGHT
	LED TRACK LIGHTING HEAD
	SINGLE POLE SWITCH - LETTER SUBSCRIPT INDICATES SWITCH CIRCUIT - 20 AMP, 120-277 VOLT MOUNT 4'-0" AFF UNLESS OTHERWISE NOTED
	THREE WAY SWITCH - 20 AMP, 120-277 VOLT MOUNT 4'-0" AFF UNLESS OTHERWISE NOTED
	MOTION DETECTOR SWITCH
	DIMMER SWITCH
	JUNCTION BOX

DIMMER SCHEDULE

CIRCUIT #	SWITCH	TYPE OF FIXTURE TAG	TYPE	WATT/ FIXTURE	NO. OF FIXTURE	LOAD WATTAGE	DIMMER RATING
PI-83	'01'	CORPENE LIGHT SOCKET	INCAN.	60	7	420	1000H
PI-73	'02'	CORPENE LIGHT SOCKET	INCAN.	60	3	180	1000H
PI-79	'03'	(E)	LED	28	17	480	1000H
PI-77	'04'	(E)	LED	28	15	420	1000H
PI-75	'05'	(A)	LED	50	5	250	400H

NOTES:

- * NUMBER, TYPE & RATING OF FIXTURE SHALL BE VERIFIED WITH APPROVED LIGHT FIXTURE PACKAGE, PRIOR TO ORDERING THE DIMMER SWITCHES.
- * IF TRANSFORMER ARE NOT AN INTEGRAL PART OF LOW VOLTAGE FIXTURE, REQUIRED TRANSFORMER SHALL BE PROVIDED @ NO EXTRA COST BY E.C. SUBMIT PRODUCT DATA. TRANSFORMER SHALL BE DRY TYPE CLASS II WITH IN LINE SECONDARY FUSE. WHENEVER DIMMER RATING SPECIFIED ARE NOT AVAILABLE, THE NEXT HIGHER RATING SHALL BE USED.

KEYED NOTES

- 1 EXACT LOCATION OF SWITCH BANK SHALL BE FIELD VERIFIED WITH THE OWNER'S REPRESENTATIVE
- 2 EMERGENCY LIGHTING SHALL BE WIRED THRU UNSWITCHED LEG OF THE CIRCUIT IT SERVES.
- 3 EXISTING LIGHT FIXTURES TO REMAIN. ELECTRICAL CONTRACTOR TO RE-LAMP, AND RE-BALLAST EXISTING AND RELOCATED LIGHT FIXTURES AS NEEDED.
- 4 THERMOSTAT SEE MECHANICAL DRAWING
- 5 FOR WALK-IN COOLER LIGHTS, E.G. TO COORDINATE WITH EQUIPMENT VENDOR FOR CONNECTION POINTS, SWITCHING AND OTHER REQUIREMENTS

LIGHT FIXTURE SCHEDULE

ITEM	TYPE	LOCATION	IMAGE	MANUFACTURER	MODEL NO.	VOLT.	LAMP DATA			DIMMABLE	DESCRIPTION	QTY	CSI
							TYPE	QTY	WATT				
A-SERIES: RECESSED LIGHTING													
A1	RECESSED DOWNLIGHT	KITCHEN BOH		EUROFASE www.eurofase.com	TE111TR-02	120V	MR-16	1	50W	Y	RECESSED ADJUSTABLE DOWNLIGHT TRIM FINISH TO MATCH ADJACENT CEILING COLOR (BLACK OR WHITE) SHADE: BLACK		X
A2	RECESSED DOWNLIGHT	KITCHEN BOH		LITHONIA LIGHTING 800.855.7153 www.lithonia.com	501-MB-LED	120V	3000K LED	1	10.8W	Y	RECESSED ADJUSTABLE LED DOWNLIGHT. MATTE BLACK		X
B-SERIES: WALL AND CEILING MOUNT LIGHTING													
B1	PUCK LIGHT	OVERBAR		WAC LIGHTING 866.786.2100 www.waclighting.com	HWLED87-BK	3000K LED		1	4.8W	Y	LED PUCK LIGHT. MUST USE DIMMABLE DRIVER. SHOULD BE RECESSED INTO THE OVERBAR		X
D-SERIES: PENDANT LIGHTING													
D1W	MEDIUM DECORATIVE PENDANT	COMMUNITY TABLE		SCHOOLHOUSE ELECTRIC JOSHUA MCCOUGALL 971.242.8277 jhm@schoolhouseelectric.com	FACTORY LIGHT NO. 6 SHADE: WHITE CORD: WHITE VINYL PORCELAIN INSULATOR. WHITE LENGTH: 8'-0" FIXTURE TO BE 6'-4" AFF	NONINCANDESCENT		1	150W	Y	12" DIA. SHADE		X
D1B	MEDIUM DECORATIVE PENDANT	COMMUNITY TABLE		SCHOOLHOUSE ELECTRIC JOSHUA MCCOUGALL 971.242.8277 jhm@schoolhouseelectric.com	FACTORY LIGHT NO. 6 SHADE: BLACK CORD: BLACK VINYL PORCELAIN INSULATOR. BLACK LENGTH: 8'-0" FIXTURE TO BE 6'-4" AFF	NONINCANDESCENT		1	150W	Y	12" DIA. SHADE		X
D2W	LARGE DECORATIVE PENDANT	DINING ROOM		SCHOOLHOUSE ELECTRIC JOSHUA MCCOUGALL 971.242.8277 jhm@schoolhouseelectric.com	FACTORY LIGHT NO. 7 SHADE: WHITE CORD: WHITE VINYL PORCELAIN INSULATOR. WHITE LENGTH: 8'-0" FIXTURE TO BE 6'-4" AFF	NONINCANDESCENT		1	150W	Y	16" DIA. SHADE		X
D2B	LARGE DECORATIVE PENDANT	DINING ROOM		SCHOOLHOUSE ELECTRIC JOSHUA MCCOUGALL 971.242.8277 jhm@schoolhouseelectric.com	FACTORY LIGHT NO. 7 SHADE: BLACK CORD: BLACK VINYL PORCELAIN INSULATOR. BLACK LENGTH: 8'-0" FIXTURE TO BE 6'-4" AFF	NONINCANDESCENT		1	150W	Y	16" DIA. SHADE		X
E-SERIES: TRACK AND MONOPONT LIGHTING													
E1	TRACK LIGHT	PERIMETER		WAC LIGHTING www.waclighting.com	HEADS: WAC JLED20F27-BK TRACK: WAC J74-BK	2700K LED WITH 25' BEAM SPREAD		1	28W	Y	DIRECTIONAL LED HEAD, DIMMABLE. FINISH: BLACK. HEIGHT: TO ALIGN WITH TOP OF SERVICE LINE STEEL STRUCTURE		X
E2	MONOPONT TRACK HEAD	PERIMETER		WAC LIGHTING www.waclighting.com	WAC JLED20F27-BK	2700K LED WITH 25' BEAM SPREAD		1	28W	Y	DIRECTIONAL LED HEAD, DIMMABLE. FINISH: BLACK. HEIGHT: TO ALIGN WITH TOP OF SERVICE LINE STEEL STRUCTURE		X
F-SERIES: FLUORESCENT LIGHTING													
F1	RECESSED LENSED DOWNLIGHT	BOH		MODERN BRIGHT TECHNOLOGY TIM BULLER 443.542.7325 tim@right-ec.com	RG-22-2-24-120-8-W	120V	22" TSHO	2	24W	Y	LENSED RECESSED FLUORESCENT GRID TROFFER		X
F2	2'x4' LAY-IN FLUORESCENT TROFFER			MODERN BRIGHT TECHNOLOGY TIM BULLER 443.542.7325 tim@right-ec.com	RG-24-3-32-120-8-W	120V	48" TB	3	32W				X
F3	2'x4' LAY-IN FLUORESCENT TROFFER			MODERN BRIGHT TECHNOLOGY TIM BULLER 443.542.7325 tim@right-ec.com	RG-24-3-32-120-8-W-B2	120V	48" TB	3	32W		WITH BATTERY BACKUP		X
F4	1'x4' STRIPS FLUORESCENT SUSPENDED			MODERN BRIGHT TECHNOLOGY TIM BULLER 443.542.7325 tim@right-ec.com	9-3-32-41V-B1	120V	48" TB	3	32W		SUSPENDED MOUNTING WITH BATTERY BACKUP		X
EXIT SERIES: LIGHTING													
EX1	EXIT SIGN	THROUGHOUT			CONTRACTOR TO SUPPLY. EXIT LIGHT COMPANY LED OR SIMILAR	120V	LED				STANDARD EXIT SIGN WITH BATTERY BACKUP. BLACK HOUSING.		X
X1	EXIT SIGN BLACK HOUSING	LITHONIA			LHQM-LED-8-R-WRS	120V	LED				STANDARD EXIT SIGN WITH BATTERY BACKUP. BLACK HOUSING.		X
X2	EXIT SIGN BLACK HOUSING	LITHONIA			ELM6-4-8	120V	LED				STANDARD EXIT SIGN WITH BATTERY BACKUP. BLACK HOUSING.		X
X3	REMOTE EMERGENCY LIGHT	LITHONIA			ELA-T-20W P4-0309	120V	LED				STANDARD EXIT SIGN WITH BATTERY BACKUP. BLACK HOUSING.		X

KEY:
CSI: Contractor Supplied, Contractor Installed
CSI: Owner Supplied, Contractor Installed
TED: To Be Determined

NOTES:
* All wall & ceiling mounted specified lighting may require additional wall & ceiling blocking as necessary to support the new lighting. The general contractor is required to provide & install all the necessary substrate & blocking to support any and all the items called out on this lighting schedule. The general contractor is also required to provide & install any and all wiring, junction boxes, switches & rewirepower feeds required to accommodate the new lighting.
* GENERAL ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR THE INSTALLATION OF ALL OWNER SUPPLIED LIGHTING TO INCLUDE ALL SPECIFIED LAMPING FOR ALL OWNER SUPPLIED LIGHTING FIXTURES THAT ARE SPECIFIED ON THIS LIGHTING SCHEDULE.
* SUBMIT ALL FIXTURES TO OWNER FOR APPROVAL PRIOR TO ORDERING
* CONTRACTOR SHALL ADJUST EMERGENCY LIGHTING TO PROVIDE 1 FC. ALONG ALL PATHS OF EGRESS

CLIENT DATA

&pizza

cornerstone
Consulting Engineers & Architectural, Inc.

1176 N. Irving Street - Allentown, PA 18109
Phone: 610-820-8200 - Fax: 610-820-3706
www.cornerstoneinc.com

Pennsylvania Region
Lehigh Valley Region
Philadelphia Region
610-820-8200
215-352-5600
610-820-1770

NO.	BY	DESCRIPTION	DATE
1	JDB	REVISED PER CLIENT COMMENTS	22 FEB 2015
2	JDB	REVISED PER CLIENT COMMENTS	23 MAR 2015
3	JDB	REVISED PER CLIENT COMMENTS	27 APR 2015
4	JDB	REVISED PER ALTERNATE EQUIPMENT LAYOUT	26 JULY 2015
5	JDB	REVISED PER REVIEW COMMENTS, A/E, HVAC LAYOUT	13 NOV 2015
6	JDB	REVISED PER CLIENT COMMENTS	30 NOV 2015
7	JDB	REVISED PER CLIENT COMMENTS	3 FEB 2016
8	JDB	REVISED PER A/E COMMENTS	



PROJECT LOCATION

&pizza
TENANT INSTALLATION
405 8TH STREET SE
BARRACKS ROW
WASHINGTON D.C. 20003
LOT 0036 OF SQUARE 0902

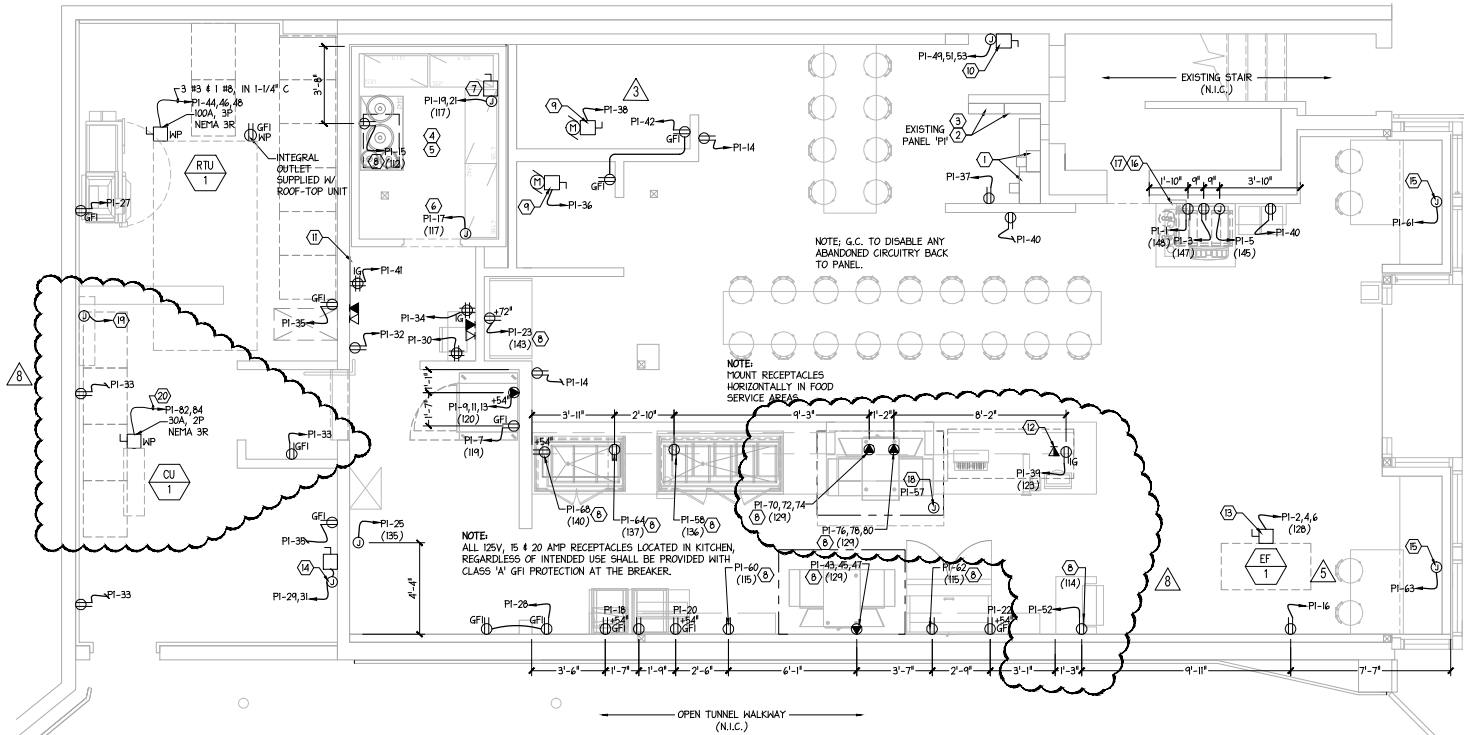
TITLE

LIGHTING
PLAN & SCHEDULES

PROJ. #	14-0326	DATE	11/13/15
CAD. ID.	H0326E1.0	DRN BY	BM
SCALE	AS NOTED	CHK BY	MWM

E-1.0

REVISION 8



- KEYED NOTE** NOTE: VERIFY ALL PROPOSED EQUIPMENT POWER REQUIREMENT W/ SUPPLIER PRIOR TO ROUGH-IN
- EXISTING ELECTRICAL METER W/ MAIN SERVICE DISCONNECT SWITCH TO REMAIN.
 - EXISTING PANEL#1 120/208V, 3P, 4W, 400A MLO, 84 S. TO REMAIN
 - FOR ANY EXISTING CIRCUIT BREAKER, THE E.C. IS TO TRACE AND VERIFY THAT THE CIRCUIT IS UTILIZED. IF IS NOT, THE E.C. IS TO REMOVE THE CIRCUIT BACK TO PANEL AND LABEL THE BREAKER AS SPARE.
 - E.C. TO COORDINATE WITH EQUIPMENT VENDOR FOR CONNECTION POINTS, SWITCHING AND OTHER REQUIREMENTS
 - E.C. TO PROVIDE SEALS AND EXPANSION COUPLING ON ALL CONDUITS.
 - E.C. TO PROVIDE CIRCUIT AND CONNECTION TO COOLER ENTER DOOR HEATER. COORDINATE LOCATION & REQUIREMENTS WITH EQUIPMENT SUPPLIER.
 - 30A N.F. DISCONNECT FOR WALK-IN COOLER (ABOVE CEILING), VERIFY ACTUAL WIRING REQUIREMENT W/ UNITS SUPPLIES
 - E.C. SHELL VERIFY ACTUAL WIRING REQUIREMENT W/ UNITS SUPPLIES
 - DISCONNECT SWITCH FOR THE EXHAUST FAN INTERLOCK W/ HVAC PANEL (SEE MECH. DRAWINGS)
 - J-BOX FOR BWH-1, REFER TO THE NAMEPLATE TO DETERMINE THE POWER REQUIREMENTS
 - INSTALL NEW FRP FOR TEL/DATA DEMARCATION AND POS EQUIPMENTS.
 - PROVIDE 1" CONDUIT AND PULL WIRE, FOR POS EQUIPMENT COORDINATE LOCATION OF POS EQUIPMENT AT SITE. RUN CONDUIT TO DEMARCATION IN OFFICE.
 - DISCONNECT FOR EXHAUST FANS. CIRCUIT EXHAUST FAN "THROUGH" STARTER IN EXHAUST SYSTEM WIRING INTERLOCK BOX FURNISHED BY EXHAUST HOODS SUPPLIER. (VERIFY REQUIREMENT W/ UNITS SUPPLIES)
 - J-BOX FOR PRESSURE WASHING SYSTEM (VERIFY ACTUAL WIRING REQUIREMENT W/ UNITS SUPPLIES)
 - J-BOX FOR SIGN (G.C. TO VERIFY LOCATION W/SIGNAGE MFG.)
 - EXISTING SUB-PANEL TO BE REMOVED.
 - THE E.C. IS TO TRACE ALL EXISTING CIRCUIT BREAKERS AND VERIFY THAT THE CIRCUIT IS UTILIZED. IF NOT, THE E.C. IS TO REMOVE THE CIRCUIT BACK TO PANEL. FOR ANY UTILIZED CIRCUIT BREAKER, E.C. TO RE-ROUTE AS REQUIRED TO THE EXISTING PANEL 'P'
 - J-BOX FOR HOOD (VERIFY ACTUAL WIRING REQUIREMENT W/ UNITS SUPPLIES)
 - J-BOX FOR (IF-1) INDOOR UNIT, POWER FOR THE OUTDOOR UNIT (VERIFY ACTUAL WIRING REQUIREMENT W/ UNITS SUPPLIES)
 - 30A, 2PH, 4W, 3R ROOF MOUNTED DISCONNECT SWITCH FOR (CU-1) OUTDOOR UNITS. (VERIFY ACTUAL WIRING REQUIREMENT W/ UNITS SUPPLIES)

POWER PLAN

SCALE: 1/4" = 1'-0"

LEGEND

- DUPLEX RECEPTACLE - 2 POLE, 3 WIRE, 20 AMP, 125 VOLT, NEMA 5-20R, MOUNT 1'-6" (CENTERLINE) AFF UNLESS OTHERWISE NOTED.
- DUPLEX RECEPTACLE WITH GROUND FAULT CIRCUIT INTERRUPTING CAPACITY - MOUNT 1'-6" (CENTERLINE) AFF UNLESS OTHERWISE NOTED
- ISOLATED GROUND DUPLEX RECEPTACLE, MOUNT 1'-6" (CENTERLINE) A.F.F. UNLESS OTHERWISE NOTED.
- WEATHERPROOF DUPLEX RECEPTACLE WITH GROUND FAULT CIRCUIT INTERRUPTING CAPACITY - MOUNT 2'-0" (CENTERLINE) AFF UNLESS OTHERWISE NOTED
- QUAD RECEPTACLE (2-DUPLEX RECEPTACLES IN THE SAME BOX), 20 AMP, 125 VOLT, NEMA 5-20R, MOUNT 1'-6" (CENTERLINE) AFF UNLESS OTHERWISE NOTED.
- SPECIALTY RECEPTACLE - RECEPTACLE SHALL MATCH PLUG TYPE OF EQUIPMENT
- EXHAUST FAN (COORDINATE WITH MECHANICAL DRAWINGS)
- JUNCTION BOX
- PANELBOARD - SURFACE MOUNT - MOUNT 6'-0" AFF TO TOP OF HIGHEST BREAKER
- TELEPHONE OUTLET BOX - MOUNT 1'-6" AFF UNLESS OTHERWISE NOTED
- DATA OUTLET BOX (FEMALE RJ45 JACK W/CAT-5 NETWORKING CABLE)
- COMBINATION VOICE AND DATA OUTLET
- DISCONNECT SWITCH - NUMBER OF POLES, AMPERE RATING, VOLTAGE, NEMA TYPE ENCLOSURE AS INDICATED - MOUNT 4'-6" AFF TO CENTERLINE OF HANDLE, OR AS NOTED.
- FUSED DISCONNECT SWITCH - NUMBER OF POLES, AMPERE RATING, FUSE SIZE, VOLTAGE, NEMA TYPE ENCLOSURE AS INDICATED - MOUNT 4'-6" AFF TO CENTERLINE OF HANDLE OR AS NOTED.
- CEILING MOUNTED OUTLETS

GENERAL NOTES

- DIMENSION ARE GIVEN FROM FACE OF STUDS, FLOORS, OR COLUMN CENTER LINES.
- ELECTRICAL CONTRACTOR SHALL PROVIDE FOR ALL ROUGH IN, HOME RUNS & FEEDERS AND FINAL CONNECTION TO KITCHEN EQUIPMENT.
- CONTRACTOR IS RESPONSIBLE FOR:
 - ALL WIRING, FITTINGS AND LABOR UP TO AND INCLUDING FINAL CONN. TO EQUIPMENT.
 - INTERMIXING VENTILATOR, FIRE PROTECTION, WASTE DISPOSAL, REMOTE REFRIGERATION AND DETERGENT PUMPING SYSTEMS.
 - PROVISION OF AREA SUB-PANELS IN LIEU OF DISCONNECT SWITCHES WHERE POSSIBLE.
 - COORDINATION OF PANELBOARDS WITH EQUIPMENT LOCATIONS AND REQUIREMENTS.
 - PROVISION OF SHUNT-TRIP BREAKER FOR COOKING EQUIPMENT AS REQUIRED.
 - 1" EMPTY CONDUITS FOR CONTROL/COMPUTER WIRING, P.O.S. AS REQUIRED BY OWNER.
 - ROUGH-IN OF ALL CONVENIENCE OUTLETS.
- INSTALLATION OF ACCESSORIES AND FITTINGS PROVIDED LOOSE WITH FOOD SERVICE EQUIPMENT - BY ELECTRICAL CONTRACTOR.
- CONDUIT AND WIRES FROM TIME CLOCK TO FREEZER EVAPORATOR COIL FROM POWER. RUN CONDUIT AND WIRE OUTSIDE COOLER W/ FINAL ENTRY POINT AT FREEZER COIL - BY ELECTRICAL CONTRACTOR.
- INTERCONNECTION OF HEAT TRACE (PROVIDED BY ELECTRICAL CONTRACTOR) ON FREEZER COIL. DRAIN BY ELECTRICAL CONTRACTOR - HEAT TRACE TO BE CONNECTED TO FREEZING CYCLE TERMINALS AND BE ENERGIZED DURING FREEZING CYCLE AND OF DURING DEFROST CYCLE.
- OBTAIN A COPY OF CUT SHEET FOR APPROVED KITCHEN EQUIPMENT. COORDINATE ALL ROUGH IN REQUIREMENTS PRIOR TO ANY INSTALLATION. REPORT TO ENGINEER IF THERE ARE ANY CONFLICTS.
- ALL 15 AND 20 AMPS RECEPTACLES IN KITCHEN AND PANTRY SHALL BE GFI TYPE.
- ALL RECEPTACLES IN PANTRY & KITCHEN SHALL BE PROVIDED WITH STAINLESS STEEL COVER. ANY RECEPTACLES INSTALLED BELOW 42" SHALL BE WATER PROOF.
- MECHANICAL FASTENING TO STOREFRONT/ WINDOW SYSTEM IS NOT PERMITTED.
- ALL WORK TO BE PERFORMED IN FULL ACCORDANCE WITH ALL APPLICABLE CODES RELATING TO HOOK-UP, INSTALLATION AND WIRING OF EQUIPMENT. OMISSIONS OR ERRORS ON THE SCHEDULE DO NOT RELIEVE THE ELECTRICIAN FROM COMPLETE FINAL CONNECTION RESPONSIBILITY.
- ALL EMPTY CONDUIT TO HAVE PULL WIRE

ELECTRICAL EQUIPMENT SCHEDULE

ITEM NO	QTY	EQUIPMENT CATEGORY	PLUG	DIRECT	VOLTS	PH	CYCLE	AMP	KW	HP	NEMA	AFF (IN)	ELECTRICAL REMARKS
114	1	REFRIGERATED SELF-SERVICE CASE	X		120	1	60	11.0			5-15P	18	
115	2	REFRIGERATED SANDWICH UNIT	X		115			7.9		3/8	5-15P	18	
117	1	WALK-IN COOLER	X		115	1	60	1.8			DN		VERIFY WITH MANUFACTURER'S DRAWINGS
117A	1	WALK-IN COOLER CONDENSOR	X		208-230	1	60	7.4		3/4	DN		VERIFY WITH MANUFACTURER'S DRAWINGS
120	1	DOYON PROOFER	X		208	3	60	23.7	7.6		15-30P	18	
123	1	POS SYSTEM	X		120	1	60	5.0			5-15P	18	DEDICATED CIRCUIT AND CONDUIT FOR DATA. VERIFY UTILITIES
128	1	EXHAUST HOOD	X		120	1	60	11.0			DN		VERIFY WITH MANUFACTURER'S DRAWINGS
			X		208	3	60	4.4		1-1/2	DN		
129	3	OVEN, CONVEYOR	X		208-240	3	60	40.0			15-50P	18	
135	1	DISPOSER	X		115	1	60	8.4		1/2	5-15P	18	
136	1	DROP-IN, COLD PAN	X		115	1	60	7.0		1/4	5-15P	18	
137	1	DROP-IN, COLD PAN	X		115	1	60	4.0		1/5	5-15P	18	
140	1	DOUGH SHEETER	X		120	1	60	3.7			5-15P	18	
143	1	REFRIGERATED SELF-SERVICE CASE	X		120	1	60	16.0	1.6		5-20P	72	
145	1	ICE MAKER	X		115	1	60	11.7			72		
147	1	BAG IN BOX	X		120	1	60	8.0		1/3	5-15P	18	
148	1	SODA, ICE & BEVERAGE DISPENSER	X		115	1	60	10.0			5-15P	48	

CURRENT RATING	TYPE	2 POLE - WIRE NO GROUND		2 POLE - 3 WIRE GROUNDING		1 POLE 4 WIRE GROUNDING
		125V	250V	125V	250V	125/250V
15A	STRAIGHT BLADE					
	Twist Lock					
20A	STRAIGHT BLADE					
	Twist Lock					
30A	STRAIGHT BLADE					
	Twist Lock					
50A	STRAIGHT BLADE					
	Twist Lock					
60A	STRAIGHT BLADE					
	Twist Lock					

CLIENT DATA

&pizza

cornerstone
Consulting Engineers & Architectural, Inc.

1176 N. Irving Street - Allentown, PA 18109
Phone: 610-820-8200 - Fax: 610-820-3706
WWW.CORNERSTONEINC.COM

Philadelphia Region 215-502-5600
Lehigh Valley Region 610-820-8200
Pottsville Region 717-659-1770

REVISIONS

NO	BY	DESCRIPTION	DATE
1	JDB	REVISED PER CLIENT COMMENTS	22 FEB 2015
2	JDB	REVISED PER CLIENT COMMENTS	23 FEB 2015
3	JDB	REVISED PER CLIENT COMMENTS	23 MAR 2015
4	JDB	REVISED FOR ALTERNATE EQUIPMENT LAYOUT	27 APR 2015
5	JDB	REVISED FOR REVIEW COMMENTS, ALT. HVAC LAYOUT	28 JULY 2015
6	JDB	REVISED PER CLIENT COMMENTS	13 NOV 2015
7	JDB	REVISED PER CLIENT COMMENTS	30 NOV 2015
8	JDB	REVISED PER ANC COMMENTS	3 FEB 2016



PROJECT LOCATION

&pizza
TENANT INSTALLATION
405 8TH STREET SE
BARRACKS ROW
WASHINGTON D.C. 20003
LOT 0036 OF SQUARE 0902

TITLE

POWER PLAN, NOTES &
EQUIPMENT SCHEDULE

PROJ. # 14-0326 DATE 11/13/15
CAD ID: H03262.0 DRN BY JDB
SCALE AS NOTED CHK BY MWM

E-2.0

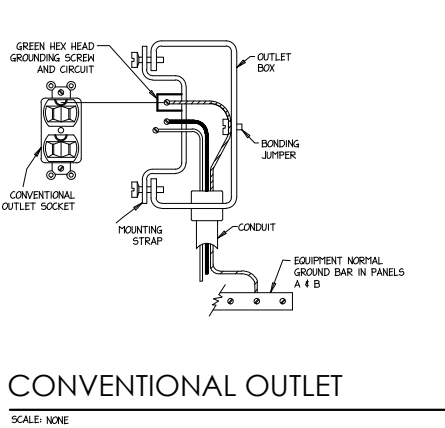
REVISION 8

EXISTING PANELBOARD 'P1'																
208/120V, 3 Phase, 4 Wire, 400A, MAIN LUGS ONLY																
BRANCH CIRCUIT				LOADING (VA)				BRANCH CIRCUIT								
#	DESCRIPTION	TYPE	PH	WIRE	BRK	KVA	A PHASE	B PHASE	C PHASE	KVA	BRK	WIRE	PH	TYPE	DESCRIPTION	#
1	SODA, ICE & BEVERAGE DISP (148)	3	1	#12	20	1.20	1.73			0.53	15	#12	3	4	EF-1	2
3	BAG IN BOX (147)	3	1	#12	20	0.96		1.49		0.53				4	" " "	4
5	ICE MAKER (145)	3	1	#12	20	1.53			2.06	0.53				4	" " "	6
7	PROOFER HOLDING CABINET (119)	3	1	#12	20	1.41	1.41								SPACE	8
9	THERMALIZER OVEN (120)	3	3	#10	30	2.84		2.84			20	#12	1		SPARE	10
11	" " "	3				2.84			3.04	0.20	20	#12	1	1	WALK-IN LIGHT	12
13	" " "	3				2.84	3.20			0.36	20	#12	1	2	DINING AREA OUTLET	14
15	COMPLETE DRAFT SYSTEM (112)	3	1	#10	30	2.34		2.70		0.36	20	#12	1	2	DINING AREA OUTLET	16
17	WALK-IN COOLER (117) VERIFY	3	1	#12	20	0.30			0.66	0.36	20	#12	1	2	BACK KITCHEN OUTLET	18
19	WALK-IN COOLER (117) VERIFY	4	2	#12	20	0.80	1.16			0.36	20	#12	1	2	BACK KITCHEN OUTLET	20
21	" " "	4				0.80		1.16		0.36	20	#12	1	2	BACK KITCHEN OUTLET	22
23	REFRIGERATED (143) GFCI ONLY	3	1	#12	20	1.60			1.60	0.00	20	#12	1		SPARE	24
25	DISPOSER (135)	3	1	#12	20	1.00	1.10			0.10	20	#12	1	3	6WH-1	26
27	TRASH & UTILITY OUTLET	2	1	#8	40	0.36		0.90		0.54	20	#12	1	2	BACK KITCHEN OUTLET	28
29	POWER WASH (VERIFY)	3	2	#8	40	3.12			3.62	0.50	20	#12	1	3	HVAC PANEL	30
31	" " "	3				3.12	3.48			0.36	20	#12	1	2	OFFICE OUTLET	32
33	BACK UTILITY OUTLET	2	1	#12	20	0.36		0.72		0.36	20	#12	1	2	OFFICE OUTLET	34
35	BACK UTILITY OUTLET	2	1	#12	20	0.94			0.64	0.10	20	#12	1	4	EXHAUST FAN RESTROOM	36
37	ELEC. CL. OUTLET	2	1	#12	20	0.36	0.46			0.10	20	#12	1	4	EXHAUST FAN ADA RESTROOM	38
39	POS	2	1	#12	20	0.18		0.54		0.36	20	#12	1	2	DINING AREA OUTLET	40
41	PHONE PANEL	3	1	#12	20	0.20			0.56	0.36	20	#12	1	2	RESTROOM OUTLET	42
43	OVEN CONVEYOR (129)	3	3	#8	50	4.80	13.44			8.64	100	#8	3	4	RTU-1	44
45	" " "	3				4.80		13.44		8.64				4	" " "	46
47	" " "	3				4.80		13.44		8.64				4	" " "	48
49	6WH-1	3	3	#6	60	5.00		5.00			20	#12	1		SPARE	50
51	" " "	3				5.00		5.00			20	#12	1	3	SPARE	52
53	" " "	3				5.00			6.32	1.32	20	#12	1	3	REFRIGERATED PAST PIZZA (114)	54
55	SPACE					0.00					20	#12	1	3	SPARE	56
57	HOOD LIGHTS & PANEL	1	1	#12	15	0.20		1.64		1.44	20	#12	1	3	REFRIGERATED, PREP STATION (136)	58
59	SPACE							0.95	0.95	0.95	20	#12	1	3	SANDWICH/SALAD Prep UNITS (115)	60
61	SIGN FRONT	1	1	#12	20	1.20	2.15			0.95	20	#12	1	3	SANDWICH/SALAD Prep UNITS (115)	62
63	SIGN FRONT	1	1	#12	20	1.00		2.20		1.20	20	#12	1	3	REFRIGERATED, SAUCE TATION (137)	64
65	SPACE								0.00	0.00	20	#12	1	3	SPARE	66
67	BACK LIGHTS	1	1	#12	20	0.92	1.37			0.45	20	#12	1	3	DOUGH SHEETER (140)	68
69	SERVICE LINE LIGHTING	1	1	#12	20	0.60		5.40		4.80	50	#8	3	3	OVEN CONVEYOR (129)	70
71	SPACE								4.80	4.80				3	" " "	72
73	DINING AREA LIGHTING DIMMER '02'	1	1	#12	20	0.18	4.98			4.80				3	" " "	74
75	CORRIDOR AREA LIGHTING DIMMER '05'	1	1	#12	20	0.25		5.05		4.80	50	#8	3	3	OVEN CONVEYOR (129)	76
77	DINING AREA LIGHTING DIMMER '04'	1	1	#12	20	0.45			5.25	4.80				3	" " "	78
79	DINING AREA LIGHTING DIMMER '03'	1	1	#12	20	0.48	9.28								" " "	
81	SPARE	1	1	#12	20			1.90		1.90	30	#10	2	4	CU-1	82
83	LIGHTING FRONT DIMMER '01'	1	1	#12	20	0.42			2.32	1.90				4	" " "	84
TOTAL CONNECTED LOAD						44.76	44.98	45.26	135.00 KVA							

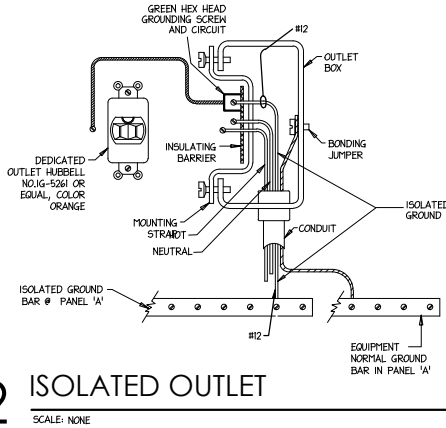
ELECTRICAL LOAD SUMMARY:			
LOAD TYPE	CONNECTED / MULTI DEMAND LOAD		
1.) LIGHTING	5.90	1.25	7.37
2.) RECEPTACLES	5.58	1.00	5.58
3.) APPLIANCES & KITCHEN EQUIP	90.41	0.65	58.77
4.) HVAC/REFRIG.	33.11	1.00	33.11
5.) OTHER	0.00	1.00	0.00
TOTAL LOAD:	## KVA		104.83 KVA
TOTAL AMPS @ 208V-3 PH.	375.0 AMPS		291.2 AMPS

NOTES:
* THE INSTALLATION SHALL COMPLY WITH NEC 2008. NON-METALLIC SHEATHED CABLE NOT PERMITTED IN EXPOSED, SUSPENDED OR DROPPED CEILINGS
* ALL 120 VOLT, SINGLE PHASE IS 4 20 AMP RECEPTACLES IN KITCHEN TO HAVE GFCI PROTECTION.

ELECTRICAL SPECIFICATIONS																
1. GENERAL: PROVIDE ALL MATERIALS AND LABOR FOR A COMPLETE ELECTRICAL SYSTEM. ELECTRICAL SERVICE, EXISTING TO REMAIN.																
3. TELEPHONE SERVICE: MAKE ALL ARRANGEMENTS WITH LOCAL TELEPHONE COMPANY AND PAY ALL CHARGES AND FEES FOR A NEW TELEPHONE SERVICE.																
4. EXCAVATING AND BACKFILL: PROVIDE ALL EXCAVATING FOR UNDERGROUND CONDUITS. CONDUITS OUTSIDE THE BUILDING SHALL BE PROVIDED WITH 24" OF COVER. BACKFILL TO ORIGINAL COMPACTION.																
5. OUTLET AND JUNCTION BOXES: A BOX SHALL BE PROVIDED AT EACH AND EVERY OUTLET LOCATION INDICATED ON THE DRAWINGS AND AS REQUIRED AT JUNCTIONS AND PULL POINTS. SWITCH, TELEPHONE AND RECEPTACLE BOXES SHALL BE USED WHERE MORE THAN ONE DEVICE IS TO BE INSTALLED IN A SINGLE LOCATION.																
6. PULL BOXES: PULL BOXES SHALL BE PROVIDED IN LONG RUNS, OR WHERE EXCESS TURNS ARE ENCOUNTERED, AND ELSEWHERE AS REQUIRED BY CODE.																
7. CONDUCTORS: ALL WIRES SHALL BE COPPER, TYPE THHN OR THWN RATED 600 VOLTS. NO WIRE SMALLER THAN NO. 12 SHALL BE USED FOR LIGHTING, CONVENIENT OUTLETS OR POWER OUTLETS. ALUMINUM WIRE SHALL NOT BE PERMITTED.																
8. SPLICES AND TAPS: SPLICES AND TAPS SHALL BE MADE ONLY IN APPROVED BOXES APPROVED IDENTIFICATION TYPE PRESSURE CONNECTORS INSTALLED WITH A CRIMP TOOL.																
9. IDENTIFYING NAMEPLATE: EACH PANELBOARD, SAFETY SWITCH, TRANSFORMER, STARTER OR OTHER MAJOR ELECTRICAL ITEM OF EQUIPMENT SHALL BE IDENTIFIED WITH A PLASTIC ENGRAVED NAMEPLATE.																
10. PANELBOARDS--GENERAL: THE MAKEUP OF THE PANELBOARDS SHALL BE AS INDICATED ON THE DRAWINGS. THE PANELBOARDS SHALL BE PROVIDED WITH FLUSH LOCKS, TYPED-IN CIRCUIT DIRECTORIES, AND NECESSARY TRIMS. PANELBOARD BUSES SHALL BE COPPER. MULTI-POLE BREAKER SHALL BE ONE PIECE, COMMON TRIP WITH SINGLE HANDLE.																
11. LOW VOLTAGE PANELBOARD: PANELBOARDS SHALL BE RATED FOR 208/230 VOLT SERVICE. BUSES SHALL BE COPPER AND BREAKERS SHALL BE RATED FOR 10,000 AMPERES SYMMETRICAL. GROUND BARS SHALL BE PROVIDED. PANELBOARDS SHALL BE SQUARE '10', OR APPROVED EQUAL.																
12. SAFETY SWITCHES: SAFETY SWITCHES SHALL BE FURNISHED WITH RATINGS, NUMBER OF POLES, ETC. AS INDICATED, FUSED OR NONFUSED AS NOTED, G.E. TYPE TH ALL IN GENERAL PURPOSE ENCLOSURES. PROVIDE DISCONNECTS FOR EXTERIOR DEVICES. FUSED DISCONNECTS ON SERVICE SHALL LIMIT THE FAULT CURRENT TO THE COMPUTED AMPERAGE. NEMA 3R ENCLOSURES SHALL BE PROVIDED FOR SWITCHES LOCATED OUTSIDE. SWITCHES FOR MOTORS SHALL BE HORSEPOWER RATED. SWITCHES SHALL BE GENERAL ELECTRIC, SQUARE D, OR ITE.																
13. MOTOR CONTROLLERS: FURNISH MAGNETIC STARTERS FOR ALL MOTORS, UNLESS PROVIDED AS PART OF PACKAGED EQUIPMENT. PROVIDE WITH HAND-OFF-AUTOMATIC FEATURE AND EXTRA CONTACTS FOR INTERLOCKING. CONTROLLERS MAY BE COMBINATION STARTER/DISCONNECT SWITCH. CONTROLLERS SHALL BE TYPE SQUARE '10' UNLESS OTHERWISE NOTED.																
14. LIGHTING FIXTURES: LIGHTING FIXTURES SHALL BE AS SCHEDULED ON THE DRAWINGS. ALL FIXTURES SHALL BE PROVIDED COMPLETE WITH LAMPS AND ACCESSORIES FOR MOUNTING. FIXTURES INDOORS SHALL HAVE THERMAL PROTECTION INTEGRAL WITH BALLAST. FIXTURES OUTDOORS SHALL BE SUITABLE FOR NET LOCATIONS. ALL BALLASTS SHALL BE OF THE ENERGY SAVING TYPE.																
15. LAMPS: FLUORESCENT LAMPS SHALL BE T8 TYPE WITH ENERGY SAVING ELECTRIC BALLASTS. INCANDESCENT LAMPS SHALL BE RATED 120 VOLTS, INSIDE FROSTED.																
16. WIRING DEVICES: WIRING DEVICES SHALL BE SPECIFICATION GRADE, GROUNDING 6 TYPE, WHITE IN COLOR, OF THE TYPE AND CAPACITY REQUIRED. ISOLATED GROUND RECEPTACLES SHALL BE ORANGE WITH GROUNDING CONDUCTOR CONNECTED TO EQUIPMENT GROUNDING BAR IN ELECTRICAL PANEL. MANUFACTURER SHALL BE HUBBELL, BRYANT, GENERAL ELECTRIC, P AND S OR EQUAL.																
17. DEVICE PLATES: DEVICE PLATES SHALL BE OF THE SAME MANUFACTURER AS THE DEVICE AND SHALL BE STAINLESS STEEL.																
18. FUSES: ALL FUSES INDICATED IN SAFETY SWITCHES SHALL BE DUAL ELEMENT TYPE FOR MOTORS AND CURRENT LIMITING TYPE FOR FEEDERS.																
19. WIRWAYS: WIRWAYS SHALL BE ALL GALVANIZED, SIZES AS SHOWN, NEMA RATED. DERATE CONDUCTORS IN WIRWAY BY 50%.																
20. GROUNDING: THE GROUNDED NEUTRAL OF THE SECONDARY DISTRIBUTION SYSTEM SHALL BE SUPPLEMENTED BY AN EQUIPMENT GROUNDING SYSTEM TO PROPERLY SAFEGUARD THE EQUIPMENT AND PERSONNEL. THE GROUNDING SYSTEM SHALL COMPLY WITH ALL REQUIREMENTS OF NATIONAL ELECTRICAL CODE.																
21. TELEPHONE SYSTEM: A SYSTEM OF CONDUITS WITH PLYWOOD BOARD, CONDUIT, BOXES, PULL WIRES AND DEVICE PLATES SHALL BE PROVIDED FOR THE TELEPHONE SYSTEM. ALL TELEPHONE WIRING SHALL BE INSTALLED IN CONDUIT.																
22. EQUIPMENT CONNECTIONS: ALL ELECTRICAL EQUIPMENT FURNISHED IN THE BUILDING CONTRACT SHALL BE ROUGHED-IN AND FULLY CONNECTED, INCLUDING ANY REQUIRED INTERCONNECTING WIRING.																
23. TESTING: AFTER THE INSTALLATION OF THE ELECTRICAL SYSTEM HAS BEEN COMPLETED, THE CONTRACTOR SHALL CONDUCT OPERATING TESTS FOR ENGINEER'S APPROVAL. ALL EQUIPMENT SHALL BE DEMONSTRATED TO OPERATE IN ACCORDANCE WITH THE REQUIREMENTS OF THESE SPECIFICATIONS. TEST REPORTS SHALL BE PROVIDED FOR THE FOLLOWING: A. WIRE AND CABLE TESTS. B. GROUNDING SYSTEM TESTS. C. VOLTAGE AND CURRENT READINGS FOR EACH FEEDER AND MOTOR CIRCUIT. D. OPERATION OF LIGHTING AND RECEPTACLE CIRCUITS WITH ASSOCIATED SWITCHING AND CONTROLS. E. RUNNING OF MOTORS WITH DEMONSTRATION OF CONTROLS AND INTERLOCKS. F. CIRCUITS SHALL BE TESTED FOR CORRECT POLARITY AND GROUNDING.																
24. ALL DUPLEX RECEPTACLES MOUNTED AT 18" (CENTERLINE) A.F.F. UNLESS NOTED OTHERWISE.																
25. VERIFY MOUNTING HEIGHTS OF ALL RECEPTACLES WITH EQUIPMENT SUPPLIED PRIOR TO INSTALLATION.																
26. ALL EQUIPMENT ELECTRICAL RECEPTACLES ARE DIMENSIONED TO CENTERLINE OF BOX FROM A.F.F.																
27. ELECTRICAL CONTRACTOR TO PROVIDE CORD AND PLUS CONNECTIONS FOR EQUIPMENT AS REQUIRED.																
28. PROVIDE HACR BREAKER IN PANEL AND NEMA 3R NON-FUSED DISCONNECT AT HVAC UNITS.																

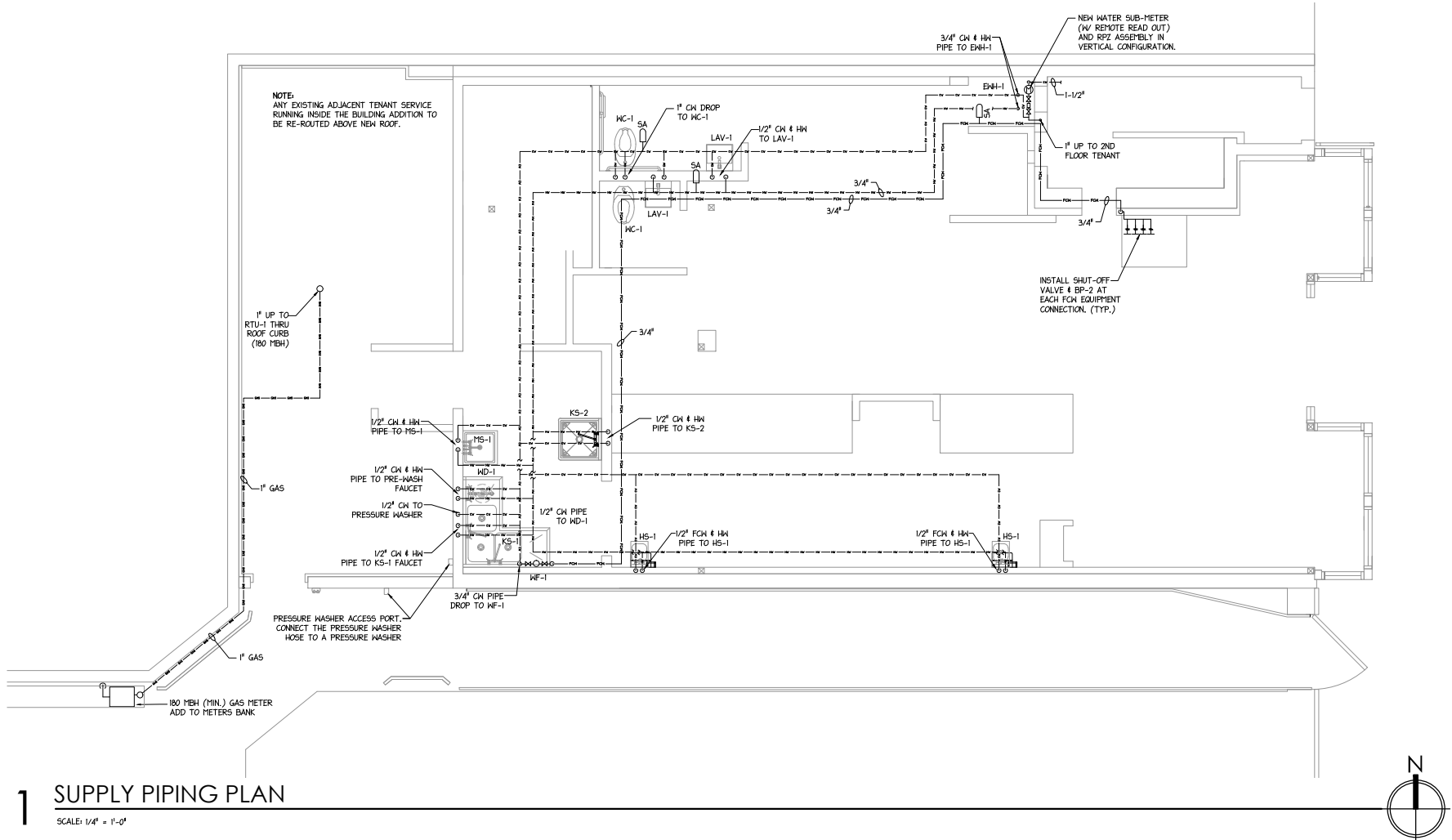


1 CONVENTIONAL OUTLET
SCALE: NONE



PLUMBING FIXTURE SCHEDULE

	KEY	FINISH MATERIAL	MANUFACTURER / MODEL	SPECIFICATION / SIZE	NOTES
PLUMBING FIXTURES	MS-1	Mop Sink	Aero 3MP-2116-6	Stainless Steel Mop Sink	Provide W/ Aero S-70 Faucet
	KS-1	3-Compartment Sink	John Boos # 3BCS-184-2D18	Stainless Steel Corner Sink, with John Boos Pre-finse Faucet #BKF-SM-PR-WBAF12G & Main Faucet BK Resources # BKF-12-G	Routed thru GT-1 (see detail)
	KS-2	1-Compartment Prep Sink	BK Resources # BKS-1-24-14S	Finish: Stainless Steel - 1/2" CW, 1/2" HW NPT - Supply unit with Heavy Duty Faucet BKS-12-G	
	HS-1	Hand Sink	BK Resources # BKHS-D-SS-SS-P-G	Finish: Stainless Steel - 1/2" CW, 1/2" HW NPT, 1.25" x 1.5" Trap, 2" Drain, 1.5" Vent	Unit supplied w/ faucet from mfg.
	WF-1	Water Filter	Aqua Pure - # ICE260-S	3/4" CW NPT - Supply unit with replacement cartridges - # HF60	
	SA	Shock Absorber	J.R. Smith # 5005-A		
	EW-H-1	Electric Water Heater	State - # SSE50	3/4" CW, 3/4" HW NPT - 15KW, 208V, 3Ph - 88 Gal. first hour rating @ 80F Temp. rise.	Set internal thermostat to 130° F.
	FD-1	Floor Drain	J.R. Smith - # 2005-B-NB-U-P050	3" trap - Supply unit with "Provent" trap guard	
	TP-1	Trap Primer	Automatic trap primer J.R. Smith 2699-1		
	FS-1	Flush Mount Floor Sink	J.R. Smith - #3040-NB-21-P050	3" trap - Supply unit with "Provent" trap guard	Supply with stainless steel grate & trap guard
	TD-1	Trench Drain	Zurn - Z890-Z-E3-DGE	3" side drain	
	WD-1	Waste Disposar	INSINKERATOR # SS-50-12A-MRS	Heavy Duty Disposar, 1/2"-14 NPT Water Inlet, 1-1/2" Drain	115/1/60, 8.4 Amps, Provide with #7 collar adaptor for welding into 3 comp. sink
	RDOF	Roof Drain w/ Over Flow	Zurn - Z164-4-1H-Z-G	4" trap	
	GT-1	Grease Interceptor	Canplas Endura # 3935A-03	Flush mounted unit - 70 lb capacity @ 35 GPM Supply unit w/ extension fitting as required, Flow Control & Air intake.	
	BP-1	Main Backflow Preventer	Watts - Series # 909	Series 909, with bronze strainer	Verify Config. w/ Municipal Authority
	BP-2	Food Service Backflow Preventer	Watts - Series # SD3-MF	Spill-Resistant Pressure Vacuum Breaker	Installation not necessary at food service equipment w/ integral backflow devices
	FCO	Floor Cleanout	J.R. Smith - # 4020 - NBTR	See plan & diagrams for sizing	
	WCO	Wall Cleanout	J.R. Smith - # 9776		
	LAV-1	Lavatory	WS Bathroom Collections # LVQ 803 18-3/10	Wall Mounted sink with overflow from Ceramica Collection, Supply with MACF faucet # FA400-109, 06 Satin Chrome finish	Contractor to provide blocking for sink installation, provide thermostatic mixing valve. Provide steel support for sink.
	WC-1	Toilet	Kohler # Highcrest Bowl K-4302 White with Kohler Lustra Commercial seat K-4671-C Black	Supply with Kohler touchless DC Toilet Flushometer K-10957, Chrome Finished, 1" CW supply	



SUPPLY PIPING PLAN

SCALE: 1/4" = 1'-0"

GENERAL PLUMBING SPECIFICATIONS

- CONTRACTOR SHALL FURNISH AND INSTALL ALL FIXTURES AND MATERIAL NECESSARY TO COMPLETE THE PLUMBING SYSTEM AS SHOWN AND/OR NOTED ON THE DOCUMENTATION. ALL WORK TO BE COMPLETE IN A NEAT AND WORKMAN-LIKE MANNER IN ACCORDANCE WITH THE LATEST REVISION OF THE STANDARDS.
 - INTERNATIONAL PLUMBING CODE
 - ANSI STANDARDS
 - ASME STANDARDS
 - ASTM STANDARDS
 - INTERNATIONAL FUEL GAS CODE
- WATER PIPING:
 - BELOW FINISHED FLOOR SLAB TYPE "K" DRAWN COPPER TUBING WITH NO JOINTS.
 - ABOVE FINISHED FLOOR SLAB TYPE "L" HARD DRAWN COPPER TUBING WITH WROUGHT COPPER OR CAST BRASS FITTINGS.
 - ALL JOINTS SHALL BE PROPERLY REAMED TO FULL BORE, CLEANED, FLUXED, AND SWEAT SOLDERED USING (LEAD FREE) FLUX AND SOLDER. COPPER TUBING SHALL BE SUPPORTED AT EACH FIXTURE AND AT INTERVALS NOT EXCEEDING 10'-0" FOR VERTICAL PIPING RUNS AND AT INTERVALS NOT EXCEEDING 6'-0" FOR HORIZONTAL PIPING RUNS.
 - INSULATION:
 - 2" AND SMALLER WILL BE INSTALLED WITH ARMAFLEX PIPE INSULATION HAVING A MINIMUM WALL THICKNESS OF ONE HALF INCH.
 - 2 1/2" AND LARGER WILL BE INSTALLED WITH FIBERGLASS PIPE INSULATION HAVING A MINIMUM WALL THICKNESS OF ONE HALF INCH.
- CONTRACTOR SHALL INSURE THAT THE WATER HEATER UNIT IS COMPLETELY FILLED WITH WATER PRIOR TO START UP.
- DRAIN, WASTE AND VENT PIPING:
 - PIPING TO BE INSTALLED SHALL BE SCHEDULE 40 PVC PIPING, PVC PIPING IN ANY AIR PLENUM TO BE WRAPPED IN 3M PLENUM WRAP.
 - SUPPORTS AND HANGERS:
 - SUPPORT ALL VERTICAL PIPING WITH A RISER CLAMP AT EVERY 10'-0" WITH A RISER CLAMP WHERE POSSIBLE OR RIDGED SUPPORTS, SECURELY FASTEN TO THE BUILDING STRUCTURE
 - FIXTURE BENDS, TRAPS AND SIMILAR BRANCHES SHALL BE FIRMLY SECURED AGAINST MOVEMENT IN ANY DIRECTION
 - SUPPORT ALL HORIZONTAL PIPING ABOVE GRADE WITH ALL THREAD ROD, CLEVIS HANGERS AND SWAT PREVENTION, HANGER TO BE INSTALLED AT EVERY JOINT IMMEDIATELY ADJACENT TO THE COUPLING, BUT NOT TO EXCEED 4'-6" ON CENTER.
 - SUPPORT ALL HORIZONTAL PIPING BELOW GRADE FIRMLY ON THE BOTTOM OF THE TRENCH TO INSURE SUPPORT FOR THE ENTIRE LENGTH OF PIPING.
 - ALL HORIZONTAL PIPING SUPPORTS AND HANGERS TO BE INSTALLED AT 4'-6" INTERVALS AS TO KEEP IT IN ALIGNMENT AND TO PREVENT SAGGING.
- CONTRACTOR SHALL ROUTE EQUIPMENT AND SINK INDIRECT WASTE DRAINS TO VARIOUS OPEN SITE DRAINS, FUNNEL DRAINS, FLOOR DRAINS AND HOP RECEPTORS AS INDICATED ON THE DRAWINGS AND PROVIDE THE NECESSARY AIR GAPS.
- ALL DRAINAGE PIPING SHALL BE SLOPED AT 1/8" PER FOOT FOR PIPING 3" AND LARGER, AND 1/4" PER FOOT FOR PIPING 2-1/2" AND SMALLER, IN THE DIRECTION OF FLOW.
- PIPE SLEEVES:
 - ALL PIPE PENETRATIONS THROUGH FLOORS AND WALLS SHALL BE SLEEVED, PACKED, AND CAULKED TIGHT WITH AN APPROVED ELASTOMETRIC WATERPROOF SEALANT, AND A CHROME PLATED BRONZE ESCUTCHEON PLATE SHALL BE PROVIDED.
- FOR ROOF PENETRATIONS REFER TO DETAILS.
- CONTRACTOR SHALL OBTAIN ALL REQUIRED INSTALLATION PERMITS FROM LOCAL AUTHORITIES AND MAKE ARRANGEMENTS FOR ANY REQUIRED INSPECTIONS.
- CONTRACTOR SHALL MAKE ALL FINAL CONNECTIONS OF THE WATER SUPPLY, DRAIN, AND VENT PIPING TO EQUIPMENT AND SERVICES AS SHOWN ON THE PLUMBING DRAWINGS.
- CONTRACTOR SHALL PERFORM (ALL REQUIRED) ON SITE TESTING OF PLUMBING SYSTEMS AND SHALL INCLUDE THE COST OF THIS TESTING IN HIS BID. PLUMBING PIPING SYSTEMS SHALL BE LEAK/PRESSURE TESTED AND THE WATER SERVICE PIPING DISINFECTED AS PER THE AUTHORITY HAVING JURISDICTION. GAS PIPING SHALL BE TESTED IN ACCORDANCE WITH THE IFGC.
- ALL DIMENSIONS AND EXISTING CONDITIONS SHALL BE CHECKED AND VERIFIED BY THE CONTRACTOR AT THE SITE BEFORE PROCEEDING WITH ANY WORK.
- PRIOR TO STARTING CONSTRUCTION, DETERMINE EXACT INVERT ELEVATION, SIZE, DEPTH AND LOCATION OF EXISTING UTILITIES WHERE CONNECTIONS ARE TO BE MADE OR INTERSECTIONS OCCUR. NOTIFY ARCHITECT OR ENGINEER OF ANY DISCREPANCY BETWEEN DRAWINGS AND ACTUAL FIELD CONDITIONS. WORK BACK TOWARD BUILDING FROM UTILITY CONNECTION FOR ALL PIPING SYSTEMS.
- VERIFY WITH OWNER, PRIOR TO STARTING CONSTRUCTION, THE LOCATION OF ALL ON-SITE UNDERGROUND UTILITIES AND TANKS.
- PROVIDE THREE (3) ELBOW SWING JOINTS FOR ALL DOMESTIC HOT WATER BRANCH CONNECTIONS TO MAINS.
- INSTALL ALL SHOCK ABSORBERS IN ACCORDANCE WITH THE LATEST "PLUMBING AND DRAINAGE INSTITUTE STANDARD" FOR WATER HAMMER ARRESTORS.
- RUN ALL UNDERGROUND PIPING WITH THE FOLLOWING DEPTH OF COVER. TAKE CARE BACKFILLING THE TRENCH WITHOUT DAMAGING PIPE.
 - DRAINAGE - 3'-0"
 - WATER - 5'-0"
 - NATURAL GAS - AS REQUIRED BY LOCAL GAS UTILITY
- LOCATE ACCESS PANELS IN NON-ACCESSIBLE CEILINGS AND WALLS FOR ALL VALVES, SHOCK ABSORBERS, CLEANOUTS AND ALL OTHER ITEMS THAT REQUIRE ACCESS TO PROPERLY MAINTAIN OR SERVICE THE BUILDING, REFER TO DRAWINGS AND SPECIFICATIONS.
- PROVIDE CLEANOUTS AT THE BASE OF ALL SANITARY DRAINAGE CONDUCTORS
- CONTRACTOR TO NOTIFY ENGINEER IF THE MAIN PRESSURE EXCEEDS 80 PSI, AND/OR IF THE WATER PRESSURE FROM THE STREET IS INSUFFICIENT BY THE STANDARDS OF THE ANWA.
- PRESSURE RELIEF VALVES SHALL MEET ANSI AND ASME STANDARDS.
- PLUMBING PIPING SYSTEMS AND EQUIPMENT SHALL BE SEISMICALLY SUPPORTED. SEE STRUCTURAL DRAWINGS FOR SEISMIC HAZARD EXPOSURE GROUP, SEISMIC PERFORMANCE CATEGORY AND IMPORTANCE FACTOR.
- ROOF SUPPORTS SHALL BE NAPA PRODUCTS MODEL MB-HACS WITH PIPE CLAMP. SUPPORT PLATES SHALL BE SECURED TO ROOF STRUCTURAL STEEL. SPACING OF SUPPORTS SHALL NOT EXCEED 10'-0" O.C. SUPPORT PLATE UNDERSIDE AND PERIMETER SHALL BE SEALED WITH APPROVED MASTIC.
- FABRICATE AND INSTALL GAS PIPING IN ACCORDANCE WITH ANSI B31.2 "FUEL GAS PIPING", NFPA 54 "NATURAL FUEL GAS CODE", NFPA 58 "STORAGE AND HANDLING OF LIQUEFIED PETROLIUM GASES", IAPMO "UNIFORM MECHANICAL CODE", AND ALL AUTHORITIES HAVING JURISDICTION.
 - BUILDING DISTRIBUTION PIPING:
 - PIPE SIZE 2" AND SMALLER: BLACK STEEL PIPE; SCHEDULE 40, MALLEABLE-IRON THREADED FITTINGS.
 - PIPE SIZE 2-1/2" AND LARGER: BLACK STEEL PIPE; SCHEDULE 40; WROUGHT-STEEL BUTTWELDING FITTINGS.
 - SPACING BETWEEN STEEL PIPE SUPPORTS SHALL NOT EXCEED 12'-0" IN HORIZONTAL AND 15'-0" IN VERTICAL DIRECTIONS.
 - GAS COCKS:
 - GAS COCKS 2" AND SMALLER: 160 PSI NON-SHOCK WOG, BRONZE STRAIGHTWAY COCK, FLAT OR SQUARE HEAD, THREADED ENDS.
 - GAS COCKS 2-1/2" AND LARGER: 125 PSI NON-SHOCK WOG, IRON BODY BRONZE MOUNTED, STRAIGHTWAY COCK, SQUARE HEAD, FLANGED ENDS.
 - MASTER GAS CONTROL VALVE: BRONZE BODY, PACKLESS, SINGLE SEAT, EXPLOSION-PROOF, SOLENOID OPERATED, NORMALLY CLOSED, UL-APPROVED, AUTOMATIC RESET, 120 VOLT.
- GROUND GAS PIPING ELECTRICALLY AND CONTINUOUSLY WITHIN PROJECT, AND BOND TIGHTLY TO GROUNDING CONNECTION.
- INSTALL DRIP-LEGS IN GAS PIPING WHERE INDICATED, AND WHERE REQUIRED BY CODE OR REGULATION.
- INSTALL "TEE" FITTING WITH BOTTOM OUTLET PLUGGED OR CAPPED, AT BOTTOM OF PIPE RISERS.
- USE DIELECTRIC UNIONS WHERE DISSIMILAR METALS ARE JOINED TOGETHER.
- INSTALL PIPING WITH 1/4" PER FOOT (1/8") DOWNWARD SLOPE IN DIRECTION OF FLOW.
- INSULATE GAS PIPING EXPOSED TO FREEZING TEMPERATURES.
- UTILITY COMPANY TO PROVIDE GAS SERVICE, METER, AND REGULATOR TO INDICATED LOCATION WITH SHUTOFF AT TERMINUS.

FIXTURE UNIT & FLOW ANALYSIS				
FIXTURE DESCRIPTION	QUANTITY	FIXT. UNITS WATER/WASTE	TOTAL F.U. WATER	TOTAL F.U. WASTE
WATER CLOSET	2	10/4	20	8
LAVATORY	2	2/1	4	2
HAND SINK	2	2/1	4	2
PRESSURE WASHER	1	2/0	2	-
WATER FILTER	1	4/0	4	-
1-COMP. SINK	1	3/2	3	2
2-COMP. SINK (TO FS-1)	1	4/0	4	-
FLOOR DRAINS & SINKS	9	0/4	0	36
TRENCH DRAIN	1	0/5	0	5
TOTAL FIXTURE UNITS =			41	
TOTAL WASTE =				55
PEAK WATER DEMAND → 41 F.U. APPROXIMATELY 47.0 G.P.M. @ 40 MIN. P.S.I. (ASSUMED PRESSURE)				
SERVICE: 1" METER & SERVICE PIPE W/ 1-1/2" DISTRIBUTION PIPE @ 150' MAX. DEVELOPED LENGTH (SEE PIPE RISER DRAWING P-3.0 FOR SECOND FLOOR PIPE SIZE)				

PIPING SYMBOL LEGEND			
	GAS PIPING		WATER CLOSET
	DOMESTIC COLD WATER		LAVATORY
	DOMESTIC HOT WATER		HAND SINK
	FILTERED COLD WATER		3 COMP SINK
	INDIRECT WASTE		1-COMP PREP SINK
	SANITARY SEWER		MOP SINK
	TEMPERED WATER		GAS FIRED WATER HEATER
	VENT PIPING		
	CONNECT NEW TO EXISTING		
	PRESSURE REDUCING VALVE		
	RELIEF VALVE TEMPERATURE AND PRESSURE		
	GAUGE WITH GAUGE COCK		
	THERMOMETER		
	UNION		
	BALL VALVE-MANUAL		
	BACKFLOW PREVENTER		
	FLOOR CLEANOUT		
	WALL CLEANOUT		
	CONCENTRIC REDUCER		
	DIRECTION OF FLOW		
	FLOOR SINK		
			FLOOR DRAIN
			HOSE BIBB
			OUTSIDE WALL HYDRANT
			PIPE DROPPING DOWN
			PIPE RISING UP
			SHOCK ABSORBER
			STRAINER
			SINK CHECK VALVE

CLIENT DATA

&pizza

cornerstone
Consulting Engineers & Architectural, Inc.

1176 N. Irving Street . Allentown . PA 18109
Phone: 610-820-8200 . Fax: 610-820-3706

WWW.CORNERSTONEINC.COM

Lehigh Valley Region

Philadelphia Region

Pennco Region

REVISIONS

NO	BY	DESCRIPTION	DATE
1	JDB	REVISED PER CLIENT COMMENTS	22 FEB 2015
2	JDB	REVISED PER CLIENT COMMENTS	22 FEB 2015
3	JDB	REVISED PER CLIENT COMMENTS	23 MAR 2015
4	JDB	REVISED FOR ALTERNATE EQUIPMENT LAYOUT	27 APR 2015
5	JDB	REVISED FOR REVIEW COMMENTS, ALT. HVAC LAYOUT	28 JULY 2015
6	JDB	REVISED PER CLIENT COMMENTS	13 NOV 2015
7	JDB	REVISED PER CLIENT COMMENTS	30 NOV 2015
8	JDB	REVISED PER ANC COMMENTS	3 FEB 2016



PROJECT LOCATION

&pizza
TENANT INSTALLATION
405 8TH STREET SE
BARRACKS ROW
WASHINGTON D.C. 20003

LOT 0036 OF SQUARE 0902

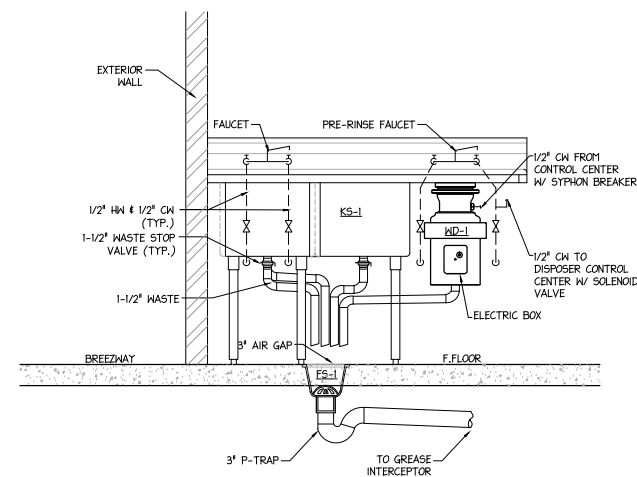
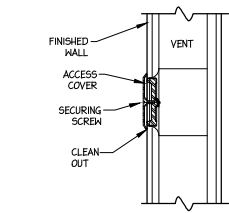
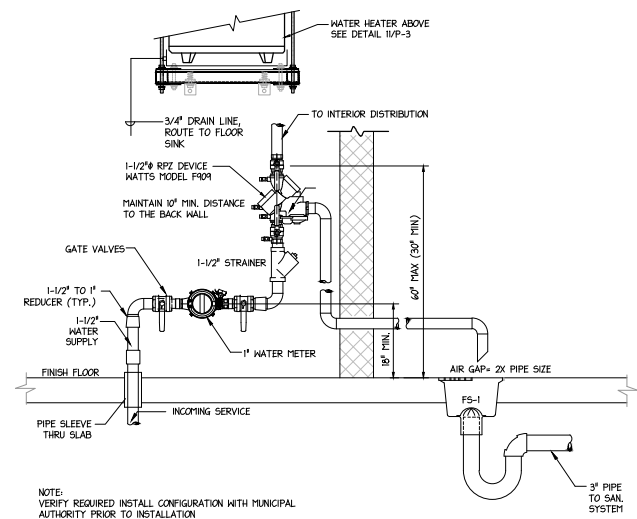
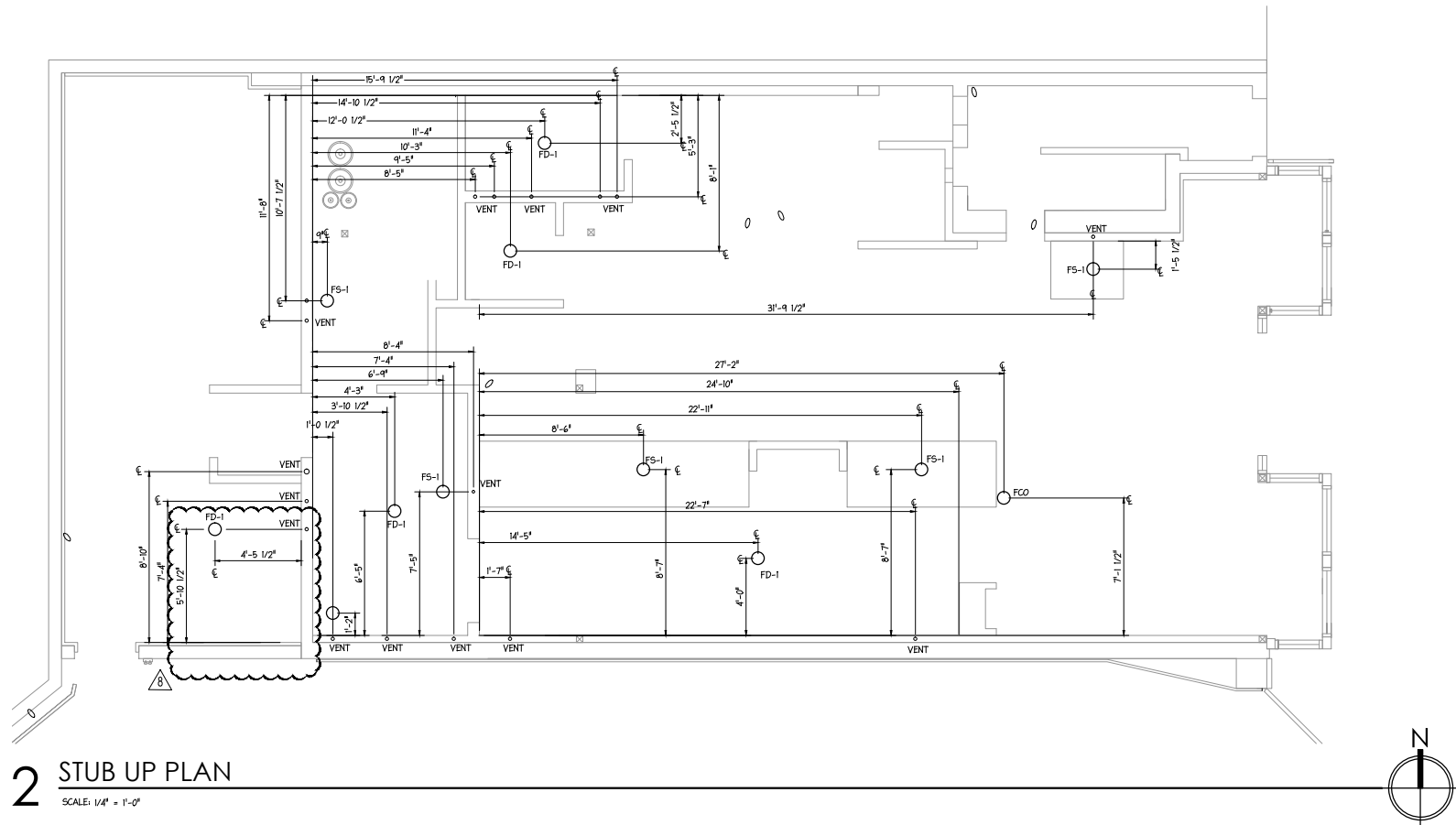
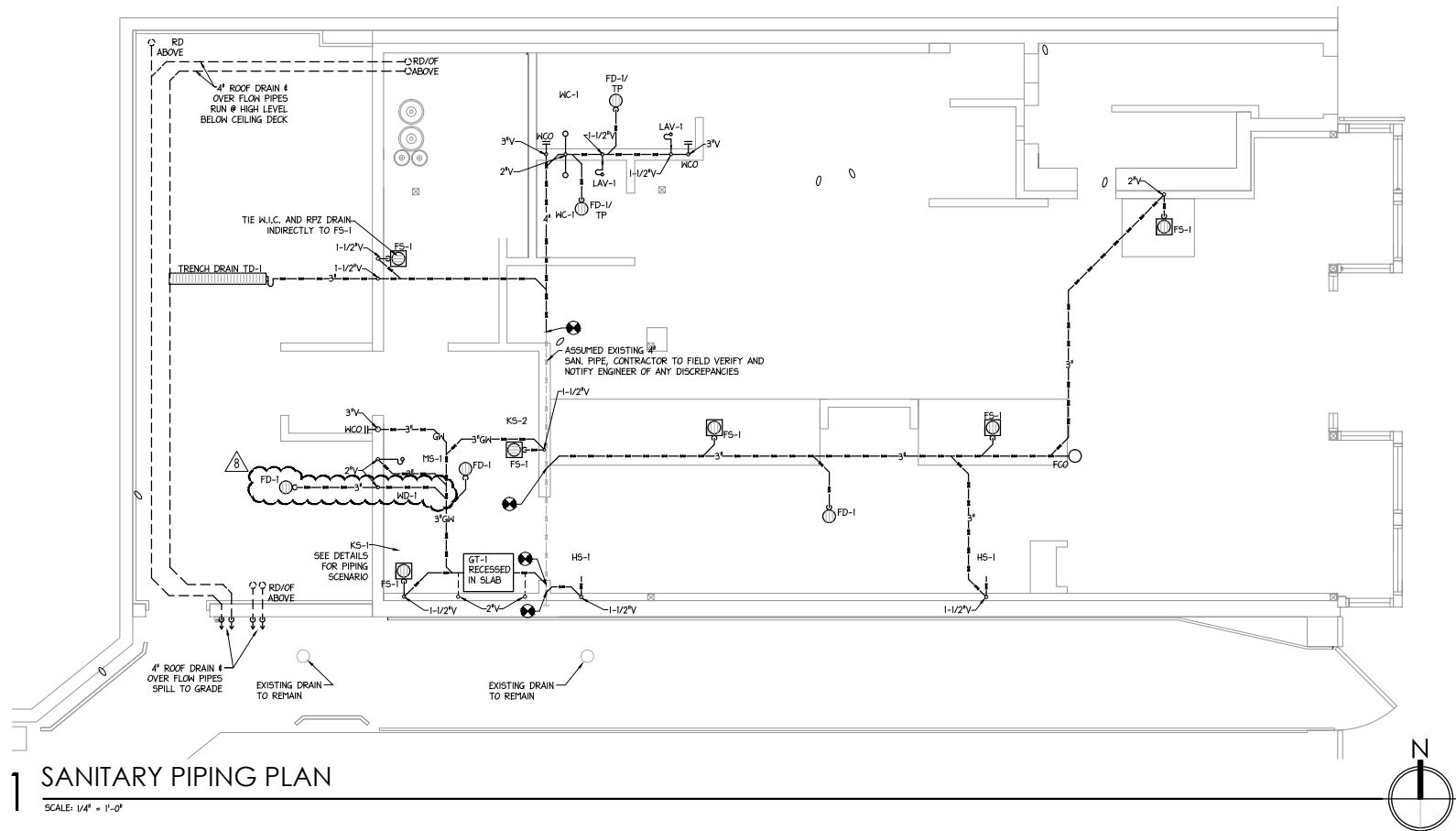
TITLE

SUPPLY PIPING PLAN,
PLUMBING NOTES &
SCHEDULES

PROJ. #	14-0326	DATE	11/13/15
CAD ID.	140326P10	DRN BY	WPL
SCALE	NOTED	CHK BY	MWM

P-1.0

REVISION 8



- R.P.Z. NOTES:**
1. RPZ TO BE MINIMUM 12" FROM BLDG. WALL WITH TEST COCKS ON EXTERIOR SIDE. TEST COCKS ARE TO HAVE A MINIMUM 12" CLEARANCE TO ANY OBSTRUCTIONS.
 2. THESE DEVICES MUST BE PROTECTED AGAINST FREEZING.
 3. TEST COCKS MUST BE POSITIONED TO FACILITATE TESTING.
 4. A GRAVITY DRAIN LARGE ENOUGH TO RECEIVE MAXIMUM FLOW MUST BE PROVIDED. (3" MIN.)
 5. DRAINS CANNOT BE SUBJECT TO FLOODING AND MUST BE SCREENED.
 6. PROPER MAINTENANCE MUST BE PERFORMED.
 7. DEVICE FROM NYS APPROVED LIST.
 8. DEVICE MUST BE SUPPORTED TO THE BACK WALL WITH THREADED RODS AND CLEVIS HANGERS.
 9. A SEPARATE SHUT-OFF VALVE MUST BE INSTALLED.
 10. PLUMBING CONTRACTOR TO VERIFY INCOMING WATER SERVICE CONFIGURATION W/ LOCAL MUNICIPALITY
 11. ALL MATERIAL BEFORE BACK FLOW PREVENTER TO BE BEASS, COPPER OR DUCTILE IRON.
 12. AIR GAP FITTINGS ARE NOT ALLOWED.

CLIENT DATA

cornerstone

Consulting Engineers & Architectural, Inc.

1176 N. Irving Street · Allentown · PA 18109

Phone: 610-820-8200 · Fax: 610-820-3706

WWW.CORNERSTONEINC.COM

Peconic Region

570-859-1770

Lehigh Valley Region

610-820-8200

Philadelphia Region

215-502-5600

NO	BY	DESCRIPTION	DATE
1	JDB	REVISED PER CLIENT COMMENTS	22 FEB 2015
2	JDB	REVISED PER CLIENT COMMENTS	23 FEB 2015
3	JDB	REVISED PER CLIENT COMMENTS	23 MAR 2015
4	JDB	REVISED FOR ALTERNATE EQUIPMENT LAYOUT	27 APR 2015
5	JDB	REVISED FOR REVIEW COMMENTS, ALT. HVAC LAYOUT	28 JULY 2015
6	JDB	REVISED PER CLIENT COMMENTS	13 NOV 2015
7	JDB	REVISED PER CLIENT COMMENTS	30 NOV 2015
8	JDB	REVISED PER ANC COMMENTS	3 FEB 2016

DISTRICT OF COLUMBIA

SEALED

PROFESSIONAL ENGINEER

PROJECT LOCATION

TENANT INSTALLATION

405 8TH STREET SE

BARRACKS ROW

WASHINGTON D.C. 20003

LOT 0036 OF SQUARE 0902

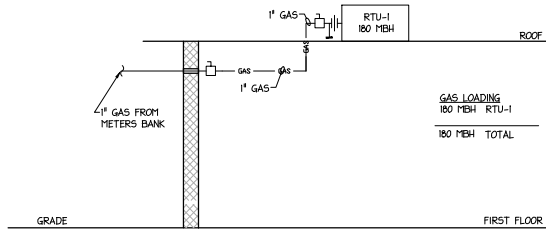
TITLE

SANITARY PIPING, STUB-UP PLANS & DETAILS

PROJ. #	14-0326	DATE	11/13/15
CAD ID	140326P20	DRN BY	WPL
SCALE	NOTED	CHK BY	MWM

P-2.0

REVISION 8

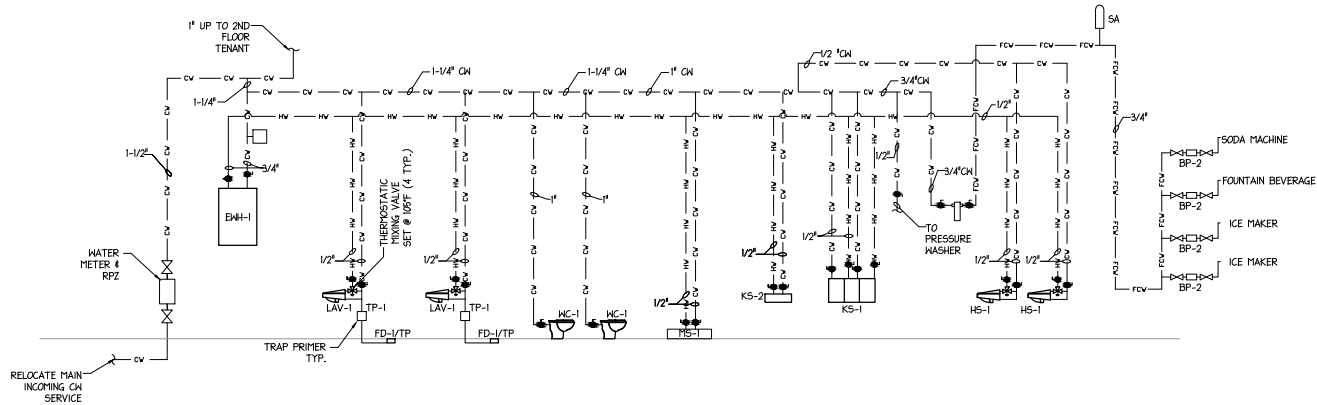


NOTE: INSTALL DIRT LEG @ EA. CONNECTION.

ASSUMED PRESSURE @ LESS THAN 2 PSI
@ 6 SPECIFIC GRAVITY W/
0.5\"/>

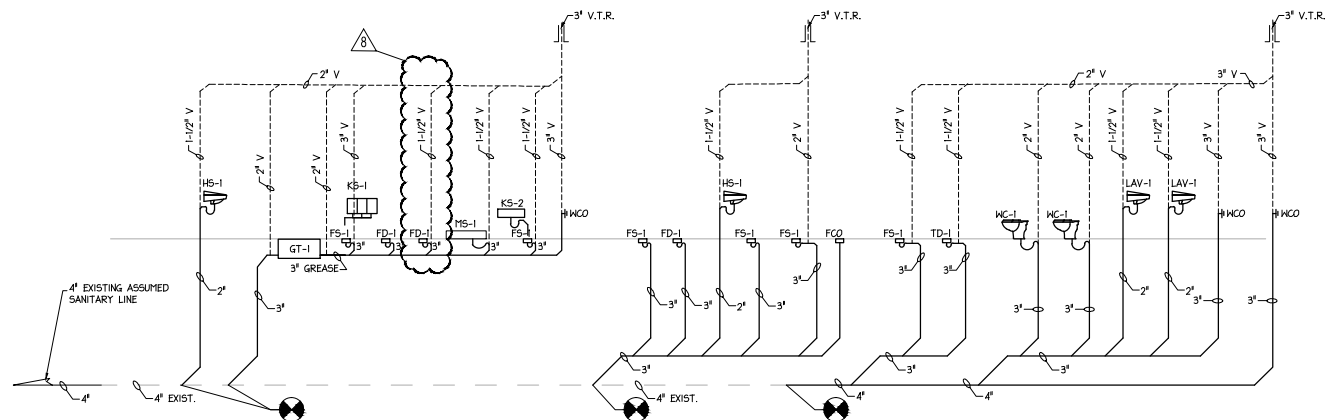
1 GAS PIPING RISER DIAGRAM

SCALE: NONE



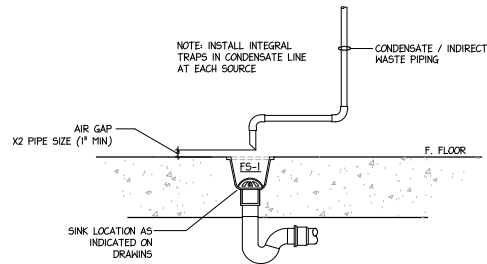
2 WATER SUPPLY PIPING RISER DIAGRAM

SCALE: NONE



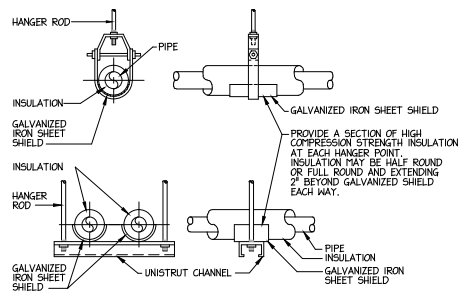
3 SANITARY PIPING RISER DIAGRAM

SCALE: NONE



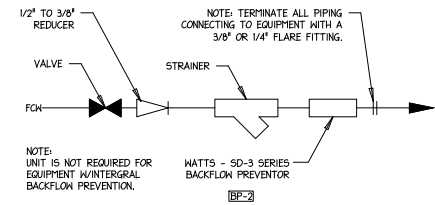
4 INDIRECT WASTE DETAIL

SCALE: NONE



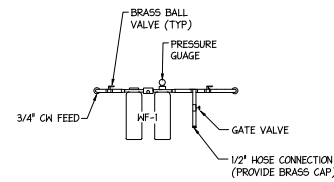
5 PIPE HANGER DETAILS

SCALE: NONE



6 FOOD SERVICE CONNECTION

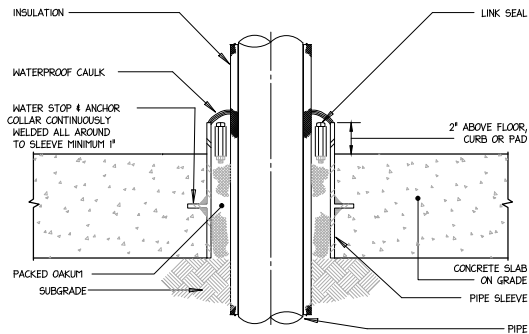
SCALE: NONE



NOTES:
1. INSTALL ESCUTCHEON PLATES AT WALL TRANSITIONS
2. ALL EXPOSED PIPE SHALL HAVE INSULATED FORMED SHROUDS

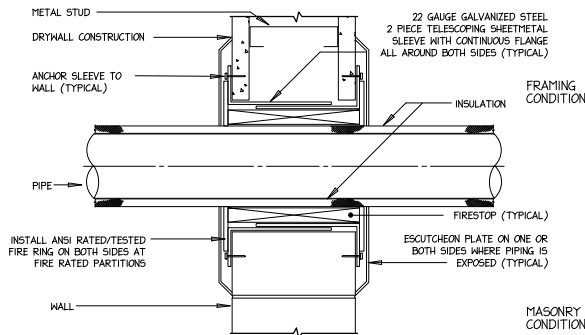
7 WATER FILTER ELEVATION

SCALE: NONE



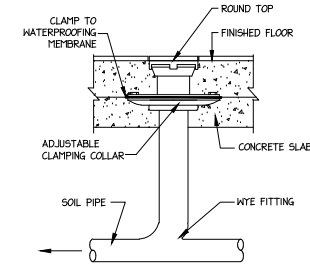
8 PIPE SLEEVE THRU SLAB

SCALE: NONE



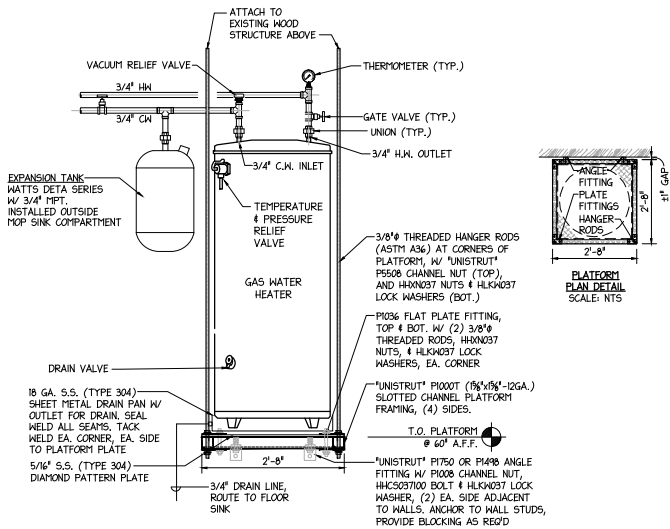
9 TYPICAL PIPE SLEEVE THRU WALL

SCALE: NONE



10 FLOOR CLEANOUT DETAIL

SCALE: NONE



11 ELECTRIC WATER HEATER DETAIL

SCALE: NONE

CLIENT DATA

&pizza

cornerstone
Consulting Engineers & Architectural, Inc.

1176 N. Irving Street - Allentown, PA 18109
Phone: 610-820-8200 - Fax: 610-820-3706
WWW.CORNERSTONEINC.COM

Pennsylvania Region
Lehigh Valley Region
Philadelphia Region
215-502-5600
610-820-8200
570-839-1770

NO.	BY	DESCRIPTION	DATE
1	JDB	REVISED PER CLIENT COMMENTS	22 FEB 2015
2	JDB	REVISED PER CLIENT COMMENTS	23 MAR 2015
3	JDB	REVISED PER CLIENT COMMENTS	27 APR 2015
4	JDB	REVISED PER ALTERNATE EQUIPMENT LAYOUT	28 JULY 2015
5	JDB	REVISED PER REVIEW COMMENTS, ALT. HVAC LAYOUT	13 NOV 2015
6	JDB	REVISED PER CLIENT COMMENTS	30 NOV 2015
7	JDB	REVISED PER REVIEW COMMENTS	3 FEB 2016
8	JDB	REVISED PER ANC COMMENTS	



PROJECT LOCATION

&pizza
TENANT INSTALLATION
405 8TH STREET SE
BARRACKS ROW
WASHINGTON D.C. 20003
LOT 0036 OF SQUARE 0902

TITLE

PLUMBING RISER
DIAGRAMS & DETAILS

PROJ. #	14-0326	DATE	11/13/15
CAD ID.	140326P30	DRN BY	WPL
SCALE	NOTED	CHK BY	MWM

P-3.0

REVISION 8

GENERAL CONDITIONS SPECIFICATION

(CONT. FROM SHT. SP-3.0)

3.2 PREPARATION

- CONCRETE SURFACES:
 - INSTALL ONLY ON SURFACES WHICH ARE DRY, SOUND, AND WELL BRUSHED, WIPING FREE FROM DUST, DIRT, OIL, GREASE, AND OTHER CONTAMINANTS BY MECHANICALLY BLOWN COMPRESSED AIR IF SO REQUIRED.
 - AT OPEN JOINTS, REMOVE DUST BY MECHANICALLY BLOWN COMPRESSED AIR IF SO REQUIRED.
 - USE SOLVENT TO REMOVE OIL AND GREASE, WIPING THE SURFACES WITH CLEAN RAGS.
 - WHERE SURFACES HAVE BEEN TREATED, REMOVE THE SURFACE TREATMENT BY SANDBLASTING OR WIRE BRUSHING.
 - REMOVE LAITANCE AND MORTAR FROM JOINT CAVITIES.
 - WHERE BACKSTOP IS REQUIRED, INSERT THE APPROVED BACKUP INTO THE JOINT CAVITY TO THE DEPTH RECOMMENDED BY SEALANT MANUFACTURER.
- STEEL SURFACES:
 - STEEL SURFACES IN CONTACT WITH SEALANT:
 - SANDBLAST AS REQUIRED TO ACHIEVE ACCEPTABLE SURFACE FOR BOND.
 - IF SANDBLASTING IS NOT PRACTICAL, OR WOULD DAMAGE ADJACENT FINISH, SCRAPE THE METAL OR WIRE BRUSH TO REMOVE MILL SCALE.
 - USE SOLVENT TO REMOVE OIL AND GREASE, WIPING THE SURFACES WITH CLEAN RAGS.
 - REMOVE PROTECTIVE COATINGS ON STEEL BY SANDBLASTING OR BY USING A SOLVENT WHICH LEAVES NO RESIDUE.
- ALUMINUM SURFACES:
 - ALUMINUM SURFACES IN CONTACT WITH SEALANT:
 - REMOVE TEMPORARY PROTECTIVE COATINGS, DIRT, OIL, AND GREASE.
 - WHEN MASKING TAPE IS USED FOR PROTECTIVE COVER, REMOVE THE TAPE PRIOR TO APPLYING THE SEALANT.
 - USE ONLY SUCH SOLVENTS TO REMOVE PROTECTIVE COATINGS AS ARE RECOMMENDED FOR THAT PURPOSE BY THE MANUFACTURER OF THE ALUMINUM WORK, AND WHICH ARE NON-STAINING.

3.3 INSTALLATION OF BACKUP MATERIAL

- USE ONLY THE BACKUP MATERIAL RECOMMENDED BY THE MANUFACTURER OF THE SEALANT USED, AND APPROVED FOR THE PARTICULAR INSTALLATION, COMPRESSING THE BACKUP MATERIAL 25% TO 50% TO ACHIEVE A POSITIVE AND SECURE FIT.
- WHEN USING BACKUP OF TUBE OR ROD STOCK, AVOID LENGTHWISE STRETCHING OF THE MATERIAL. DO NOT TWIST, BEND OR Braid HOOD OR ROD BACKUP STOCK.

3.4 PRIMING

- USE ONLY THE PRIMER RECOMMENDED BY THE MANUFACTURER OF THE SEALANT, AND APPROVED FOR THE PARTICULAR INSTALLATION, APPLYING IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AS APPROVED BY THE OWNER'S REPRESENTATIVE.

3.5 BOND-BREAKER INSTALLATION

- PROVIDE AN APPROVED BOND-BREAKER WHERE RECOMMENDED BY THE MANUFACTURER OF THE SEALANT, ADHERING STRICTLY TO THE INSTALLATION RECOMMENDATIONS AS APPROVED BY THE OWNER'S REPRESENTATIVE.

3.6 INSTALLATION OF SEALANTS

- PRIOR TO START OF INSTALLATION IN EACH JOINT, VERIFY THE JOINT TYPE ACCORDING TO DETAILS ON THE DRAWINGS, OR AS OTHERWISE DIRECTED BY THE OWNER'S REPRESENTATIVE, AND VERIFY THAT THE REQUIRED PROPORTION OF WIDTH OF JOINT TO DEPTH OF JOINT HAS BEEN SECURED.
- EQUIPMENT:
 - APPLY SEALANT UNDER PRESSURE WITH POWER-ACTUATED OR HAND GUN, OR BY OTHER APPROPRIATE MEANS.
 - USE GUNS WITH NOZZLE OF PROPER SIZE, AND PROVIDING SUFFICIENT PRESSURE TO COMPLETELY FILL THE JOINTS AS DESIGNED.
 - THOROUGHLY AND COMPLETELY MASK JOINTS WHERE THE APPEARANCE OF SEALANT ON ADJACENT SURFACES WOULD BE OBJECTIONABLE.
- INSTALL THE SEALANT IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS, THOROUGHLY FILLING JOINTS TO THE RECOMMENDED DEPTH.
- TOOL JOINTS TO THE PROFILE SHOWN ON THE DRAWINGS, OR AS OTHERWISE REQUIRED IF SUCH PROFILES ARE NOT SHOWN ON THE DRAWINGS.
- PRECAUTIONS:
 - INSTALL THE SEALANT IN STRICT ACCORDANCE WITH THE MANUFACTURER'S PRINTED INSTRUCTIONS AND WARNINGS.
 - PROVIDE PROPER AND ADEQUATE VENTILATION DURING THE APPLICATION, DURING INSTALLATION, AND UNTIL PROPERLY CURED OR DRY.
 - PROVIDE PROPER AND ADEQUATE APPLICATION, STORAGE, AND DISPOSAL OF THE SEALANT TO PREVENT POTENTIAL OF AN ENVIRONMENTAL HAZARD.
- CLEANING UP:
 - REMOVE MASKING TAPE IMMEDIATELY AFTER JOINTS HAVE BEEN TOOLED.
 - CLEAN ADJACENT SURFACES FREE FROM SEALANT AS THE INSTALLATION PROGRESSES, USING SOLVENT OR CLEANING AGENT RECOMMENDED BY THE MANUFACTURE OF THE SEALANT USED.

SECTION 0810 - METAL DOORS AND FRAMES

PART 1 - GENERAL

- DESCRIPTION
 - WORK INCLUDED: PROVIDE METAL DOORS AND FRAMES, WHICH ARE NOT SPECIFICALLY DESCRIBED IN OTHER SECTIONS OF THESE SPECIFICATIONS, WHERE SHOWN ON THE DRAWINGS, AS SPECIFIED HEREIN, AND AS NEEDED FOR A COMPLETE AND PROPER INSTALLATION.

PART 2 - PRODUCTS

2.1 METAL DOORS

- TYPE AND DESIGN:
 - PROVIDE FULL-FLUSH DESIGN, IN DIMENSIONS AND TYPES SHOWN ON THE DRAWINGS, LABELED OR NON-LABELED AS INDICATED ON THE DOOR SCHEDULE IN THE DRAWINGS, IN 8 GAGE FOR INTERIOR DOORS AND 16 GAGE FOR EXTERIOR DOORS, PROPERLY REINFORCED FOR THE FINISH HARDWARE DESCRIBED IN SECTION 0870 OF THESE SPECIFICATIONS.
 - PROVIDE GRD GALVANIZATION ON ALL EXTERIOR DOORS AND FRAMES.
- DOORS SHALL BE FLUSH TYPE, HEAVY DUTY, GRADE II, 1-3/4" THICK.
- FINISH:
 - PRE-CLEAN AND SHOP PRIME (WITH BAKED-ON ZINC CHROMATE PAINT) EACH DOOR FOR FINISH PAINTING WHICH WILL BE PERFORMED AT THE JOB SITE UNDER SECTION 0900 OF THESE SPECIFICATIONS.
- ACCEPTABLE PRODUCTS:
 - COMPLY WITH APPLICABLE REQUIREMENTS OF STEEL DOOR INSTITUTE "RECOMMENDED SPECIFICATIONS FOR STANDARD STEEL DOORS AND FRAMES" (SDI-100), EXCEPT AS OTHERWISE INDICATED BY SPECIFIC REQUIREMENTS ON DRAWINGS OR THESE SPECIFICATIONS.
 - UNDERWRITER'S LABORATORIES INC. (UL) AND FACTORY MUTUAL (FM) AS REQUIRED FOR FIRE RATED ASSEMBLIES.
 - COLD ROLLED STRETCHER LEVELLED STEEL FACE SHEETS FULL FLUSH CONSTRUCTION, CONFORMING WITH ASTM A36.
 - FACE SHEETS CONNECTED TOGETHER WITH CONTINUOUS VERTICAL STEEL STIFFENERS SPACED 6" MAXIMUM ON CENTER.
 - FACE SHEETS TO MEET AT BOTH EDGES OF DOOR AND WELD TO INTERNAL 1/4 GAGE CONTINUOUS STRIP. DRESSED JOINT FIELD, WELDED JOINT SMOOTH.
 - CLOSE AND REINFORCE TOP AND BOTTOM OF DOOR WITH CHANNELS, FULL WIDTH OF DOOR.
 - EXTERIOR DOORS SHALL HAVE TOPS CLOSED (WATERPROOF) BY 1/4 GAGE CONTINUOUS CHANNEL WELDED, FILLED, AND GROUND SMOOTH. TOPS MUST NOT COLLECT WATER.
 - PROVIDE DOOR WITH POLYSTYRENE CORE, UNLIMITED TO INSIDE FACES FOR INSULATION AND SOUND DEADENING.
 - CONCEALED REINFORCEMENT FOR HARDWARE (SAME AS FOR FRAMES).
- ACCEPTABLE MANUFACTURERS: PROVIDE DOORS BY ONE OF THE FOLLOWING ACCEPTABLE MANUFACTURERS:
 - D-SERIES DOORS BY FLYING, (800) 263-7515.
 - H-1, H-2, H-3, H-4, H-5, H-6, H-7, H-8, H-9, H-10, H-11, H-12, H-13, H-14, H-15, H-16, H-17, H-18, H-19, H-20, H-21, H-22, H-23, H-24, H-25, H-26, H-27, H-28, H-29, H-30, H-31, H-32, H-33, H-34, H-35, H-36, H-37, H-38, H-39, H-40, H-41, H-42, H-43, H-44, H-45, H-46, H-47, H-48, H-49, H-50, H-51, H-52, H-53, H-54, H-55, H-56, H-57, H-58, H-59, H-60, H-61, H-62, H-63, H-64, H-65, H-66, H-67, H-68, H-69, H-70, H-71, H-72, H-73, H-74, H-75, H-76, H-77, H-78, H-79, H-80, H-81, H-82, H-83, H-84, H-85, H-86, H-87, H-88, H-89, H-90, H-91, H-92, H-93, H-94, H-95, H-96, H-97, H-98, H-99, H-100, H-101, H-102, H-103, H-104, H-105, H-106, H-107, H-108, H-109, H-110, H-111, H-112, H-113, H-114, H-115, H-116, H-117, H-118, H-119, H-120, H-121, H-122, H-123, H-124, H-125, H-126, H-127, H-128, H-129, H-130, H-131, H-132, H-133, H-134, H-135, H-136, H-137, H-138, H-139, H-140, H-141, H-142, H-143, H-144, H-145, H-146, H-147, H-148, H-149, H-150, H-151, H-152, H-153, H-154, H-155, H-156, H-157, H-158, H-159, H-160, H-161, H-162, H-163, H-164, H-165, H-166, H-167, H-168, H-169, H-170, H-171, H-172, H-173, H-174, H-175, H-176, H-177, H-178, H-179, H-180, H-181, H-182, H-183, H-184, H-185, H-186, H-187, H-188, H-189, H-190, H-191, H-192, H-193, H-194, H-195, H-196, H-197, H-198, H-199, H-200, H-201, H-202, H-203, H-204, H-205, H-206, H-207, H-208, H-209, H-210, H-211, H-212, H-213, H-214, H-215, H-216, H-217, H-218, H-219, H-220, H-221, H-222, H-223, H-224, H-225, H-226, H-227, H-228, H-229, H-230, H-231, H-232, H-233, H-234, H-235, H-236, H-237, H-238, H-239, H-240, H-241, H-242, H-243, H-244, H-245, H-246, H-247, H-248, H-249, H-250, H-251, H-252, H-253, H-254, H-255, H-256, H-257, H-258, H-259, H-260, H-261, H-262, H-263, H-264, H-265, H-266, H-267, H-268, H-269, H-270, H-271, H-272, H-273, H-274, H-275, H-276, H-277, H-278, H-279, H-280, H-281, H-282, H-283, H-284, H-285, H-286, H-287, H-288, H-289, H-290, H-291, H-292, H-293, H-294, H-295, H-296, H-297, H-298, H-299, H-300, H-301, H-302, H-303, H-304, H-305, H-306, H-307, H-308, H-309, H-310, H-311, H-312, H-313, H-314, H-315, H-316, H-317, H-318, H-319, H-320, H-321, H-322, H-323, H-324, H-325, H-326, H-327, H-328, H-329, H-330, H-331, H-332, H-333, H-334, H-335, H-336, H-337, H-338, H-339, H-340, H-341, H-342, H-343, H-344, H-345, H-346, H-347, H-348, H-349, H-350, H-351, H-352, H-353, H-354, H-355, H-356, H-357, H-358, H-359, H-360, H-361, H-362, H-363, H-364, H-365, H-366, H-367, H-368, H-369, H-370, H-371, H-372, H-373, H-374, H-375, H-376, H-377, H-378, H-379, H-380, H-381, H-382, H-383, H-384, H-385, H-386, H-387, H-388, H-389, H-390, H-391, H-392, H-393, H-394, H-395, H-396, H-397, H-398, H-399, H-400, H-401, H-402, H-403, H-404, H-405, H-406, H-407, H-408, H-409, H-410, H-411, H-412, H-413, H-414, H-415, H-416, H-417, H-418, H-419, H-420, H-421, H-422, H-423, H-424, H-425, H-426, H-427, H-428, H-429, H-430, H-431, H-432, H-433, H-434, H-435, H-436, H-437, H-438, H-439, H-440, H-441, H-442, H-443, H-444, H-445, H-446, H-447, H-448, H-449, H-450, H-451, H-452, H-453, H-454, H-455, H-456, H-457, H-458, H-459, H-460, H-461, H-462, H-463, H-464, H-465, H-466, H-467, H-468, H-469, H-470, H-471, H-472, H-473, H-474, H-475, H-476, H-477, H-478, H-479, H-480, H-481, H-482, H-483, H-484, H-485, H-486, H-487, H-488, H-489, H-490, H-491, H-492, H-493, H-494, H-495, H-496, H-497, H-498, H-499, H-500, H-501, H-502, H-503, H-504, H-505, H-506, H-507, H-508, H-509, H-510, H-511, H-512, H-513, H-514, H-515, H-516, H-517, H-518, H-519, H-520, H-521, H-522, H-523, H-524, H-525, H-526, H-527, H-528, H-529, H-530, H-531, H-532, H-533, H-534, H-535, H-536, H-537, H-538, H-539, H-540, H-541, H-542, H-543, H-544, H-545, H-546, H-547, H-548, H-549, H-550, H-551, H-552, H-553, H-554, H-555, H-556, H-557, H-558, H-559, H-560, H-561, H-562, H-563, H-564, H-565, H-566, H-567, H-568, H-569, H-570, H-571, H-572, H-573, H-574, H-575, H-576, H-577, H-578, H-579, H-580, H-581, H-582, H-583, H-584, H-585, H-586, H-587, H-588, H-589, H-590, H-591, H-592, H-593, H-594, H-595, H-596, H-597, H-598, H-599, H-600, H-601, H-602, H-603, H-604, H-605, H-606, H-607, H-608, H-609, H-610, H-611, H-612, H-613, H-614, H-615, H-616, H-617, H-618, H-619, H-620, H-621, H-622, H-623, H-624, H-625, H-626, H-627, H-628, H-629, H-630, H-631, H-632, H-633, H-634, H-635, H-636, H-637, H-638, H-639, H-640, H-641, H-642, H-643, H-644, H-645, H-646, H-647, H-648, H-649, H-650, H-651, H-652, H-653, H-654, H-655, H-656, H-657, H-658, H-659, H-660, H-661, H-662, H-663, H-664, H-665, H-666, H-667, H-668, H-669, H-670, H-671, H-672, H-673, H-674, H-675, H-676, H-677, H-678, H-679, H-680, H-681, H-682, H-683, H-684, H-685, H-686, H-687, H-688, H-689, H-690, H-691, H-692, H-693, H-694, H-695, H-696, H-697, H-698, H-699, H-700, H-701, H-702, H-703, H-704, H-705, H-706, H-707, H-708, H-709, H-710, H-711, H-712, H-713, H-714, H-715, H-716, H-717, H-718, H-719, H-720, H-721, H-722, H-723, H-724, H-725, H-726, H-727, H-728, H-729, H-730, H-731, H-732, H-733, H-734, H-735, H-736, H-737, H-738, H-739, H-740, H-741, H-742, H-743, H-744, H-745, H-746, H-747, H-748, H-749, H-750, H-751, H-752, H-753, H-754, H-755, H-756, H-757, H-758, H-759, H-760, H-761, H-762, H-763, H-764, H-765, H-766, H-767, H-768, H-769, H-770, H-771, H-772, H-773, H-774, H-775, H-776, H-777, H-778, H-779, H-780, H-781, H-782, H-783, H-784, H-785, H-786, H-787, H-788, H-789, H-790, H-791, H-792, H-793, H-794, H-795, H-796, H-797, H-798, H-799, H-800, H-801, H-802, H-803, H-804, H-805, H-806, H-807, H-808, H-809, H-810, H-811, H-812, H-813, H-814, H-815, H-816, H-817, H-818, H-819, H-820, H-821, H-822, H-823, H-824, H-825, H-826, H-827, H-828, H-829, H-830, H-831, H-832, H-833, H-834, H-835, H-836, H-837, H-838, H-839, H-840, H-841, H-842, H-843, H-844, H-845, H-846, H-847, H-848, H-849, H-850, H-851, H-852, H-853, H-854, H-855, H-856, H-857, H-858, H-859, H-860, H-861, H-862, H-863, H-864, H-865, H-866, H-867, H-868, H-869, H-870, H-871, H-872, H-873, H-874, H-875, H-876, H-877, H-878, H-879, H-880, H-881, H-882, H-883, H-884, H-885, H-886, H-887, H-888, H-889, H-890, H-891, H-892, H-893, H-894, H-895, H-896, H-897, H-898, H-899, H-900, H-901, H-902, H-903, H-904, H-905, H-906, H-907, H-908, H-909, H-910, H-911, H-912, H-913, H-914, H-915, H-916, H-917, H-918, H-919, H-920, H-921, H-922, H-923, H-924, H-925, H-926, H-927, H-928, H-929, H-930, H-931, H-932, H-933, H-934, H-935, H-936, H-937, H-938, H-939, H-940, H-941, H-942, H-943, H-944, H-945, H-946, H-947, H-948, H-949, H-950, H-951, H-952, H-953, H-954, H-955, H-956, H-957, H-958, H-959, H-960, H-961, H-962, H-963, H-964, H-965, H-966, H-967, H-968, H-969, H-970, H-971, H-972, H-973, H-974, H-975, H-976, H-977, H-978, H-979, H-980, H-981, H-982, H-983, H-984, H-985, H-986, H-987, H-988, H-989, H-990, H-991, H-992, H-993, H-994, H-995, H-996, H-997, H-998, H-999, H-1000, H-1001, H-1002, H-1003, H-1004, H-1005, H-1006, H-1007, H-1008, H-1009, H-1010, H-1011, H-1012, H-1013, H-1014, H-1015, H-1016, H-1017, H-1018, H-1019, H-1020, H-1021, H-1022, H-1023, H-1024, H-1025, H-1026, H-1027, H-1028, H-1029, H-1030, H-1031, H-1032, H-1033, H-1034, H-1035, H-1036, H-1037, H-1038, H-1039, H-1040, H-1041, H-1042, H-1043, H-1044, H-1045, H-1046, H-1047, H-1048, H-1049, H-1050, H-1051, H-1052, H-1053, H-1054, H-1055, H-1056, H-1057, H-1058, H-1059, H-1060, H-1061, H-1062, H-1063, H-1064, H-1065, H-1066, H-1067, H-1068, H-1069, H-1070, H-1071, H-1072, H-1073, H-1074, H-1075, H-1076, H-1077, H-1078, H-1079, H-1080, H-1081, H-1082, H-1083, H-1084, H-1085, H-1086, H-1087, H-1088, H-1089, H-1090, H-1091, H-1092, H-1093, H-1094, H-1095, H-1096, H-1097, H-1098, H-1099, H-1100, H-1101, H-1102, H-1103, H-1104, H-1105, H-1106, H-1107, H-1108, H-1109, H-1110, H-1111, H-1112, H-1113, H-1114, H-1115, H-1116, H-1117, H-1118, H-1119, H-1120, H-1121, H-1122, H-1123, H-1124, H-1125, H-1126, H-1127, H-1128, H-1129, H-1130, H-1131, H-1132, H-1133, H-1134, H-1135, H-1136, H-1137, H-1138, H-1139, H-1140, H-1141, H-1142, H-1143, H-1144, H-1145, H-1146, H-1147, H-1148, H-1149, H-1150, H-1151, H-1152, H-1153, H-1154, H-1155, H-1156, H-1157, H-1158, H-1159, H-1160, H-1161, H-1162, H-1163, H-1164, H-1165, H-1166, H-1167, H-1168, H-1169, H-1170, H-1171, H-1172, H-1173, H-1174, H-1175, H-1176, H-1177, H-1178, H-1179, H-1180, H-1181, H-1182, H-1183, H-1184, H-1185, H-1186, H-1187, H-1188, H-1189, H-1190, H-1191, H-1192, H-1193, H-1194, H-1195, H-1196, H-1197, H-1198, H-1199, H-1200, H-1201, H-1202, H-1203, H-1204, H-1205, H-1206, H-1207, H-1208, H-1209, H-1210, H-1211, H-1212, H-1213, H-1214, H-1215, H-1216, H-1217, H-1218, H-1219, H-1220, H-1221, H-1222, H-1223, H-1224, H-1225, H-1226, H-1227, H-1228, H-1229, H-1230, H-1231, H-1232, H-1233, H-1234, H-1235, H-1236, H-1237, H-1238, H-1239, H-1240, H-1241, H-1242, H-1243, H-1244, H-1245, H-1246, H-1247, H-1248, H-1249, H-1250, H-1251, H-1252, H-1253, H-1254, H-1255, H-1256, H-1257, H-1258, H-1259, H-1260, H-1261, H-1262, H-1263, H-1264, H-1265, H-1266, H-1267, H-1268, H-1269, H-1270, H-1271, H-1272, H-1273, H-1274, H-1275, H-1276, H-1277, H-1278, H-1279, H-1280, H-1281, H-1282, H-1283, H-1284, H-1285, H-1286, H-1287, H-1288, H-1289, H-1290, H-1291, H-1292, H-1293, H-1294, H-1295, H-1296, H-1297, H-1298, H-1299, H-1300, H-1301, H-1302, H-1303, H-1304, H-1305, H-1306, H-1307, H-1308, H-1309, H-1310, H-1311, H-1312, H-1313, H-1314, H-1315, H-1316, H-1317, H-1318, H-1319, H-1320, H-1321, H-1322, H-1323, H-1324, H-1325, H-1326, H-1327, H-1328, H-1329, H-1330, H-1331, H-1332, H-1333, H-1334, H-1335, H-1336, H-1337, H-1338, H-1339, H-1340, H-1341, H-1342, H-1343, H-1344, H-1345, H-1346, H-1347, H-1348, H-1349, H-1350, H-1351, H-1352, H-1353, H-1354, H-1355, H-1356, H-1357, H-1358, H-1359, H-1360, H-1361, H-1362, H-1363, H-1364, H-1365, H-1366, H-1367, H-1368, H-1369, H-1370, H-1371, H-1372, H-1373, H-1374, H-1375, H-1376, H-1377, H-1378, H-1379, H-1380, H-1381, H-1382, H-1383, H-1384, H-1385, H-1386, H-1387, H-1388, H-1389, H-1390, H-1391, H-1392, H-1393, H-1394, H-1395, H-1396, H-1397, H-1398, H-1399, H-1400, H-1401, H-1402, H-1403, H-1404, H-1405, H-1406, H-1407, H-1408, H-1409, H-1410, H-1411, H-1412, H-1413, H-1414, H-1415, H-1416, H-1417, H-1418, H-1419, H-1420, H-1421, H-1422, H-1423, H-1424, H-1425, H-1426, H-1427, H-1428, H-1429, H-1430, H-1431, H-1432, H-1433, H-1434, H-1435, H-1436, H-1437, H-1438, H-1439, H-1440, H-1441, H-1442, H-1443, H-1444, H-1445, H-1446, H-1447, H-1448, H-1449, H-1450, H-1451, H-1452, H-1453, H-1454, H-1455, H-1456, H-1457, H-1458, H-1459, H-1460, H-1461, H-1462, H-1463, H-1464, H-1465, H-1466, H-1467, H-1468, H-1469, H-1470, H-1471, H-1472, H-1473, H-1474, H-1475, H-1476, H-1477, H-1478, H-1479, H-1480, H-1481, H-1482, H-1483, H-1484, H-1485, H-1486, H-1487, H-1488, H-1489, H-1490, H-1491, H-1492, H-1493, H-1494, H-1495, H-1496, H-1497, H-1498, H-1499, H-1500, H-1501, H-1502, H-1503, H-1504, H-1505, H-1506, H-1507, H-1508, H-1509, H-1510, H-1511, H-1512, H-1513, H-1514, H-1515, H-1516, H-1517, H-1518, H-1519, H-1520, H-1521, H-1522, H-1523, H-1524, H-1525, H-1526, H-1527, H-1528, H-1529, H-1530, H-1531, H-1532, H-1533, H-1534, H-1535, H-1536, H-1537, H-1538, H-1539, H-1540, H-1541, H-1542, H-1543, H-154