PREPARED BY: A. DYE

STAFF REPORT: 04-14-2021 MEETING PREI APPLICATION NUMBER: 21-7155 ADDRESS: 4100 THIRD AVENUE HISTORIC DISTRICT: WILLIS-SELDEN APPLICANT: CHRISTIAN CONGORA, ARCHITECT;4100 THIRD STREET, LLC. PROPERTY OWNER: 4100 THIRD STREET, LLC DATE OF PROVISIONALLY COMPLETE APPLICATION: 03-22-2021 DATE OF STAFF SITE VISIT: 03-26-2021

SCOPE: NEW HVAC EQUIPMENT ON ROOF; ADD DOORWAY ON REAR

EXISTING CONDITIONS

The single story structure on the northeast corner of W. Alexandrine and Third Avenue was constructed in 1926 and replaced a two-family residential frame house with detached garage. The building is an example of "stripped classicism", a 20th-century style that offered simplified but recognizable classic features, here seen in the use of dentil trim and unadorned medallions, while the overall massing eliminated traditional decorative detailing. The streamlined, rounded corner was another modern detail that added fluidity to the design and allowed further emphasis of the horizontality of the building. Limestone tile covers the Alexandrine and Third Avenue facades, while brick covers the north and east facades.



PROPOSAL

Within this application, the following scope of work is proposed:

- Install new light fixtures at existing junction boxes in the limestone facades.
 - Install two new copper blade signs on the south façade on Alexandrine Street:
 - Hanging sign over the entrance shall be 1'-8" wide x 2'-3" high;
 - Wall sign shall be 3'-0" wide x 4"-2" high (top will be 8'-7" from grade; bottom will be 4'5" from grade).

- Create an opening for a new egress (double) door on the east elevation, and new concrete slab.
- Place four concrete slabs between the north wall of the building and the adjacent building to the north for garbage bins; install gates for enclosure.
- Install new mechanical equipment, supported by a new structural platform. Equipment will be enclosed with a decorative screen height is 3'-6" at northern end and steps up to 5'-6" at southern end. A ladder will be affixed to the north elevation to access the equipment.

STAFF OBSERVATIONS AND RESEARCH

- The New Center Historic District was established in 2011.
- The trash enclosure gates at the rear elevation will be in line with the structure, however the gates adjacent to the front/character-defining elevation will be recessed slightly.
- The full set of drawings were submitted as part of this application. To aid the Commission's review, the following pages are most relevant to this staff report:
 - A1-00 Floor Plan
 - A1-01 Roof Plan
 - A2-00 Elevations
 - A3-00 Sections
 - A5-01 Mechanical Equipment Screening Details
 - C1.0 Survey
 - C2-00 Site Plan

ISSUES

- The distinctive character-defining features of this building are the minimally designed classic details, its simplicity of form, low horizontal massing and smooth surfaces. Installing an equipment enclosure on the roof introduces color, pattern, and verticality to the structure and a dominant massing which counters the tenents of the historical design and horizontality of the building. It is staff's opinion the equipment will be less intrusive if installed with no screening as this would allow for visual breaks between the equipment, minimizing its visual mass.
- HDC staff requested the following additional details for the proposal; the applicant did not reply in time for inclusion in the staff report.
 - The height of the parapet and photograph of the existing roof
 - Reason for equipment enclosure
 - Heights of rooftop equipment and explanation for the increased height of the enclosure wall

RECOMMENDATION

Section 21-2-78, Certificate of Appropriateness

Recommendation One

It is staff's opinion the installation of the equipment enclosure will alter the features and spaces that characterize the property. Staff therefore recommends the Commission deny a Certificate of Appropriateness for the work as proposed because it does not meet the Secretary of the Interior Standards for Rehabilitation, specifically Standards:

1) A property shall be used for its historic purpose or be placed in a new use that requires minimal change to the defining characteristics of the building and its site and environment.

2) The historic character of a property shall be retained and preserved. The removal of historic materials or alteration of features and spaces that characterize a property shall be avoided.

Recommendation Two

It is staff's opinion the erection of a trash enclosure at the north end of the parcel, the addition of a double door and concrete slab on the east elevation, the two signs proposed for the south façade, and the lighting fixtures to be installed at existing junction boxes, will not will alter the features and spaces that characterize the property. Staff therefore recommends the

Commission issue a Certificate of Appropriateness for the work as proposed because it meets the Secretary of the Interior Standards for Rehabilitation and the Elements of Design for this historic district.

Staff recommends the Certificate of Appropriateness be issued with the following conditions:

- The applicant will identify the locations of the two different light fixtures,
- The material and finish of the hanger for the entry sign will be noted,
- The installation method of the two signs will be noted,
- The material and finish of the ladder will be noted, and
- Catalog cuts for the new door and gate enclosure will be submitted.

Vecino Restaurant



March 9, 2021

Detroit Historic District Commission 2 Woodward Avenue Detroit, Michigan 48226

Re: BLD2021-00555 Vecino Restaurant 4100 Third Avenue Detroit, Michigan 48201

HDC Staff,

The following is a description of the rehabilitation effort for 4100 3rd Avenue, located in the Willis-Selden Historic District. The existing commercial building was constructed in the 1930s as a single-story commercial building. We will be rehabilitating the structure to become a restaurant.

Existing Condition

The existing building is a brick masonry load bearing structure. The exterior is clad in limestone on two sides facing Alexandrine Street and Third Avenue. There are existing junction box locations bored into the limestone. The other facades facing away from the streets are common brick masonry. All four facades are in good condition. New storefront windows, corner entry door and sliding glass doors were recently installed. The interior has been gutted, with the exception of the concrete floors which remain. The roof was recently redone and is in good condition.

Rehabilitation

The limestone facades are in good condition and will remain as is. The existing common brick masonry facades are in good condition with some areas requiring attention for repair and replacement due to water damage over the years.

Alterations

- New light fixtures will be installed at the existing junction box locations in the limestone facades. New signage will be installed on the south façade on Alexandrine Street.
- A new egress door opening will be made in the east brick masonry façade, and a new concrete slab will be built outside the door.
- The gap between the building and the adjacent structure to the north will become a new garbage area and will be enclosed on both sides with two new gates.
- The existing roof is in good condition and will remain as is. New mechanical equipment will be installed and be supported by a new structural platform. All the mechanical equipment will be surrounded by a decorative screen.

Thank you,

Chris Gongora | AIA | Designer II Christian Hurttienne Architects 2111 Woodward Avenue, Suite 201 Detroit, MI 48201 www.cha-c.com



WEST ELEVATION

1



2 SOUTH ELEVATION



3 EAST ELEVATION



VECINO SIGNAGE LOCATION DETAIL ISSUED: 2021.03.09







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2 BLADE SIGN PLAN

3 ENLARGED SOUTH ELEVATION



VECINO SIGNAGE LOCATION DETAIL ISSUED: 2021.03.09

SCALE: 3/8" = 1'-0'

SK-2

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1 ENLARGED SOUTH ELEVATION





SCALE: 3/8" = 1'-0'

SK-3

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Lightray 6102/86102 Up and Down Wall Sconce

By Maxim Lighting

Product Options

Finish Architectural Bronze Brushed Aluminum Light Option: Incandescent , LED

Details

- Removable water-tight screw lens
- Designed in 2014
- Material: Aluminum
- UL Listed Wet
- Made In China

Dimensions

Fixture: Width 5", Height 15.75", Depth 6.5", Weight 3.75 Lbs., 5.73 Lbs.

Lighting

- Incandescent Option: Two 65 Watt (685 Lumens) 120 Volt E26 Medium Base Incandescent Lamp(s) (Not Included)
- LED Option: 15 Watt (2100 Lumens) 120 Volt Integrated LED: Color Temp: 3000K

Additional Details

Product URL:

https://www.lumens.com/lightray-6102-86102-up-and-down-wall-sconce-by-m axim-lighting-MXLP88587.html **Rating:** UL Listed Wet

Product ID: MXLP88587

Prepared by:

Prepared for: Project: Room: Placement: Approval:

Created March 3rd, 2021



Notes:





Dome Outdoor Wall Sconce

By Troy RLM Lighting



Product Options

Finish: Black , Blue , Galvanized , Gloss White , Red , Tahitian Teal , Textured Bronze Size: 14 Inch , 16 Inch Arm Length: 18 Inch , 30 Inch

Details

- Designed to reflect light in a downward direction
- Glass Solite diffuser, Gloss White lens ring
- Dimmable with a standard incandescent dimmer (not included)
- Round wallplate
- 3/4" IP Curve arm
- Painted White shade interior; Galvanized version has Galvanized shade interior
- Material: Aluminum
- Shade Material: Aluminum
- UL Listed Wet
- Warranty: Limited 1 Year
- Made In USA

Dimensions

14 Inch Option Fixture: Width 14", Height 9.88", 11.88", Depth 24", 36", Weight 16Lbs, 17Lbs

14 Inch Option Wall Plate: Depth 2", Diameter 5.88"

16 Inch Option Fixture: Width 16", Height 10.63", 12.63", Depth 25", 37", Weight 18Lbs, 19Lbs

16 Inch Option Wall Plate: Depth 2", Diameter 5.88"

Lighting

 One 72 Watt (1490 Lumens) 120 Volt E26 Medium Base Halogen Lamp(s) (Not Included)

Additional Details

Product URL:

https://www.lumens.com/dome-outdoor-wall-sconce-by-troy-rlm-lighting-RLMP 151965.html Rating: UL Listed Wet

Product ID: RLMP151965

Prepared by:

Prepared for: Project: Room: Placement: Approval:

Created March 3rd, 2021



Notes:

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PERFORATED



A stunning combination of functionality and aesthetics – the Perforated Panel Series provides necessary airflow and/or shade to a structure without sacrificing style or design. Virtually any shape and pattern can be perforated into the panels and used for a myriad of applications.

Technical Information:

System Depth - 1 ¼" – 4" nominal, including Tapered and Shadow Material - Aluminum, VMZINC[®], Copper and Stainless Steel

Panel Joints - 1/2" nominal standard (1/8" – 1" available)

Perforations - Most sizes, shapes and locations. Please speak with a Dri-Design representative about specific requests.

Finish - Available in all Dri-Design finishes

Weight - Varies based on material type

Panel Size Parameters:

Please refer to the specific material section of the design guide for the correct size parameters of the material you intend to use.





Antique Copper



Cascade



Ponderosa

Snowfall

Bluestone



Tahitian Copper

S

Q



Weathered Zinc

MUA FAN INFORMATION - Job#2817284

ı	FAN UNIT ND.	TAG	FAN UNIT MODEL #	BLOWER	HOUSING	CFM	ESP.	RPM	H.P.	B.H.P.	ø	VOLT	FLA	WEIGHT (LBS.)	SONES	BURNER EFFICIENCY(%)	
	1		EA3-D.500-G18	G18-PB	A3-D.500	5500	0.250	601	3.000	1.6880	3	208	8.7	924	8.8	92	

GAS FIRED MAKE-UP AIR UNIT(S)

FAN UNIT ND.	TAG	INPUT BTUs	DUTPUT BTUs	TEMP. RISE	REQUIRED INPUT GAS PRESSURE	GAS TYPE
1		484239	445500	75 deg F	7 in. w.c 14 in. w.c.	Natural

FAN OPTIONS

FAN UNIT ND.	TAG	OPTION (Qty Descr.)
		1 - Low Fire Start
1		1 - Inlet Pressure Gauge, 0-35"
		1 - Manifold Pressure Gauge, -5 to 15" wc

FAN #1 EA3-D.500-G18 - HEATER

1. DIRECT GAS FIRED HEATED MAKE UP AIR UNIT WITH 18" BLOWER AND 12" BURNER.

- 2. INTAKE HODD WITH EZ FILTERS
- 3. DOWN DISCHARGE AIR FLOW RIGHT -> LEFT 4. LOW FIRE START. ALLOWS THE BURNER CIRCUIT TO ENERGIZE WHEN THE MODULATION CONTROL IS IN A LOW FIRE POSITION.
- 5. GAS PRESSURE GAUGE, 0-35", 2.5" DIAMETER, 1/4" THREAD SIZE
- 6. GAS PRESSURE GAUGE, -5 TO +15 INCHES WC., 2.5' DIAMETER, 1/4' THREAD SIZE

EA3-D.500-G18.5500 Heated Make-Up Air Supply Unit

SUPPLY SIDE HEATER INFORMATION:

WINTER TEMPERATURE = 0°F. TEMP. RISE = 75°F. BTUS CALCULATED DFF STANDARD AIR DENSITY DUTPUT BTUS AT ALTITUDE DF 0.0 ft. = 445500 INPUT BTUS AT ALTITUDE DF 0.0 ft. = 484239



Direct Fired (DF) Profile Plate Assembly

<u>Diract Fined Profile Plate Specifications</u> <u>Description</u> <u>Direct Fined</u> burners shall have patented (US Patent No: US662952382), self-adjusting profile plates designed to ensure proper all velocity and pressure drop across the burner. Profile plates shall allow burners to achieve clean combustion by Uniting by-product levels to a maximu of Spon of carbon noncoide (CD), and US59n of ritrogen dioide OM22). Application

<u>Application</u> Spring-loaded burner profile plates are engineered to autonatically react to the nonentum of a fresh air stream, without the need for any notors or actuators to nechanically adjust them. Vith this feature, all IF units are designed for denand control ventilation (DCV) requirements.

<u>Certifications:</u> All profile plate assemblies shall be included in the DF unit's ETL listing and comply with combined safety standards ANSI 2834 and CSA 3.7 (non-recirculating DF heaters) and ANSI 283.18 (recirculating DF heaters).

<u>General Construction</u> -Profile plates shall be formed from G90 galvanized steel. -Profile plates shall be nounted along the same plane as the discharge of the burner. -Profile plates shall be nounted along the same plane as the discharge of the burner. -Besign shall incorporate properly torqued, pernamently nounted spring hinges.







info@HoodFilters.com | 877.394.9731



48HC High Efficiency Gas Heat/Electric Cooling Packaged Rooftop 3 to 12.5 Nominal Tons



Product Data





C10222









CURBS & WEIGHTS DIMENSIONS - 48HC 07-09

Fig. 5 - Dimensions 48HC 07-09

CURBS & WEIGHTS DIMENSIONS - 48HC 07-09 (cont.)



CURBS & WEIGHTS DIMENSIONS - 48HC 07-09 (cont.)



Fig. 7 - Service Clearance

C10577

LOC	DIMENSION	CONDITION
	48—in (1219 mm)	Unit disconnect is mounted on panel
	18–in (457 mm)	No disconnect, convenience outlet option
~	18–in (457 mm)	Recommended service clearance
	12–in (305 mm)	Minimum clearance
	42-in (1067 mm)	Surface behind servicer is grounded (e.g., metal, masonry wall)
В	36–in (914 mm)	Surface behind servicer is electrically non-conductive (e.g., wood, fiberglass)
	Special	Check for sources of flue products within 10-ft of unit fresh air intake hood
6	36–in (914 mm)	Side condensate drain is used
C	18–in (457 mm)	Minimum clearance
	48in (1219 mm)	No flue discharge accessory installed, surface is combustible material
D	42–in (1067 mm)	Surface behind servicer is grounded (e.g., metal, masonry wall, another unit)
D	36–in (914 mm)	Surface behind servicer is electrically non-conductive (e.g., wood, fiberglass)
	Special	Check for adjacent units or building fresh air intakes within 10-ft of this unit's flue outlet

NOTE: Unit not designed to have overhead obstruction. Contact Application Engineering for guidance on any application planning overhead obstruction or for vertical clearances.





ROOF CURB





SYMBOLS

NOTE: SOME SYMBOLS MAY NOT BE APPLICABLE.

EXISTING MASONRY WALL CONSTRUCTION.

NEW METAL-FRAMED WALL CONSTRUCTION

ARCHITECTURE GENERAL NOTES

- 1. ALL NEW WALL AND PARTITION CONSTRUCTION IS TO BE PER WALL ASSEMBLY A1, SHEET A5-00 UNLESS OTHERWISE NOTED.
- ALL WALL ASSEMBLIES LOCATED AT OR ADJACENT TO AN EXISTING EXTERIOR WALL, OR ARE LOCATED ADJACENT TO A 'COLD-ZONE', ARE TO RECEIVE A MINIMUM OF R-21 INSULATION, WITH VAPOR BARRIER (WARM SIDE), PER CODE.
- 3. GENERAL CONTRACTOR TO PROVIDE BLOCKING WHERE REQUIRED TO SUPPORT MILLWORK, STOREFRONT EQUIPMENT, OR OTHER FINISHES.

RCP SYMBOLS

NC

SΥ

TE: SOME S	SYMBOLS I	MAY NOT BE APPLICABLE / NOT TO SCALE.
MBOL	N0.	DESCRIPTION
•	.'A.	4" RECESSED FIXTURE
•	'B'	4" RECESSED FIXTURE
Q	'C'	WALL SCONCE
	'D'	WALL SCONCE (WATER / WEATHERPROOF)
	'E'	2'x2' LAY-IN FIXTURE
	'F'	2'x4' LAY-IN FIXTURE
- ф -		JUNCTION BOX









1 ROOF PLAN ORIGINAL IMAGE SCALE: 3/16" = 1'-0"



2 A3-00

~





ROOF (LOW POINT) ELEVATION: 15'-7½" AFF

A3-00

— NEW MECHANICAL EQUIPMENT SCREEN. SEE A5-01 FOR DETAILS

7 A5-01

EXISTING 8x6 — STEEL BEAM























DOOR SCHEDULE

		DOOR	TYPE	FRAME	HDW		
N0.	SIZE	MATERIAL/FINISH		MATERIAL/FINISH	SET	LOCATION	REMARKS
100	EXISTING	EXISTING	-	EXISTING	-	ENTRY	EXISTING ENTRY DOOR.CONFIRM LOCKING WITH TENANT
103	1 3/4" x 2'-8" x 7'-0"	WOOD / PAINT	А	WOOD / PAINT	-	STORAGE	
104	1 3/4" x 3'-0" x 7'-0"	WOOD / PAINT	А	WOOD / PAINT	1	RESTROOM	
105	1 3/4" x 3'-0" x 7'-0"	WOOD / PAINT	А	WOOD / PAINT	-	RESTROOM	
106	1 3/4" x 3'-0" x 7'-0"	PER MANUFACTURER - BLACK	В	PER MANUFACTURER - BLACK	-	KITCHEN	ELIASON SCP-12 SINGLE DOOR
107	EXISTING	EXISTING	-	EXISTING	-	REAR DOOR	EXISTING ENTRY DOOR, CONFIRM LOCKING WITH TENANT
108	1 3/4" x 3'-0" x 7'-0"	WOOD / PAINT	А	WOOD / PAINT	3	RESTROOM	
109	1 3/4" x 3'-0" x 7'-0"	WOOD / PAINT	А	WOOD / PAINT	3	STORAGE	
111	1 3/4" x 6'-0" x 7'-0"	ALUMINUM / GLASS	С	ALUMINUM	-	EXTERIOR	DOUBLE DOOR

LIGHT FIXTURE SCHEDULE

N0.	FIXTURE TYPE / MOUNTING	MANUFACTURER	MODEL		LAM	1PS		FINISH	NOTES
				TYPE	VOLTS	QTY.	COLOR TEMP.		
А	RECESSED LIGHT	TBD	TDB	LED	-	8	3000K	TBD	WET LOCATION
В	RECESSED LIGHT	TBD	TDB	LED	-	10	3000K	TBD	WET LOCATION
С	WALL SCONCE	TBD	TDB	LED	-	9	3000K	TBD	-
D	WALL SCONCE	TBD	TDB	LED	-	11	3000K	TBD	WET LOCATION
Е	2x2 LAY-IN FIXTURE	TBD	TDB	LED	-	4	3000K	TBD	-
F	2x4 LAY-IN FIXTURE	TBD	TDB	LED	-	4	3000K	TBD	-

FINISH FLOOR

ROOM FINISH SCHEDULE

N0.	ROOM NAME	FLOOR WALLS				CEI	LING	MILLWORK							NOTES			
		FIELD	ACCENT	BASE	NORTH	SOUTH	EAST	WEST	CEILING	BEANS/ TRUSSES	COUNTER	FRAMES	DOORS	TOE KICK	INTERIOR	SHELF	PULLS KNOBS	
100	ENTRY	CC-01	-	WB-01	-	BR-01	BR-01	BR-01	PT-01	PT-01	-	-	-	-	-	-	-	-
101	DINING	CC-01	-	WB-01	PT-01	BR-01	BR-01	BR-01	PT-01	PT-01	-	-	-	-	-	-	-	-
102	BAR	EP-01	-	VT-01	-	-	TL-01	-	PT-01	PT-01	-	-	-	-	-	-	-	PROVIDE FRP-02 ON INSIDE OF LOW WALL AT BAR.
103	CORRIDOR	CC-01	-	WB-01	PT-01	-	BR-01	PT-01	PT-01	PT-01	-	-	-	-	-	-	-	-
104	RESTROOM	CC-01	-	WB-01	PT-03	PT-03	PT-03	PT-03	PT-11	-	-	-	-	-	-	-	-	-
105	RESTROOM	CC-01	-	WB-01	PT-03	PT-03	BR-01	PT-03	PT-11	-	-	-	-	-	-	-	-	-
106	KITCHEN	EP-01	-	VT-01	TL-01	TL-01	TL-01	TL-01	ACT-01	-	-	-	-	-	-	-	-	-
107	KITCHEN	EP-01	-	VT-01	FRP-01	FRP-01	FRP-01	FRP-01	ACT-01	-	-	-	-	-	-	-	-	-
108	STORAGE	EP-01	-	VT-01	PT-02	PT-02	PT-02	PT-02	PT-12	-								
109	RESTROOM	EP-01	-	VT-01	PT-02	PT-02	PT-02	PT-02	PT-12	-								
110	STORAGE	EP-01	-	VT-01	PT-02	PT-02	PT-02	PT-02	PT-12	-								

FINISH SCHEDULE KEY

APP.	N0.	MATERIAL	LOCATION & USE DESCRIPTION	MANUFACTURER	MODEL	COLOR	TEXTURE FINISH	SIZE	GROUT/GRID	NOTES
\vdash	CC-01	CONCRETE	NEW CONCRETE SLAB THROUGHOUT	-	-	-	GROUND / POLISHED	-		GROUND AND PO
R	EP-01	FOOD SERVICE EPOXY COATING	102 BAR, 106 AND 107 KITCHEN	-	-	-	-	-	-	LIMIT GRIT COATI
FLOC	WB-01	WOODBASE	100 ENTRY, 101 DINING, 103 CORR., 104, 105 REST.	-	-	TBD	TBD	3 1/2 " X 3 1/4"	-	-
	VT-01	VINYL BASE	102 BAR, 106, 107 KIT, 108 REST, 109 REST, 110 STOF	R FLEXCO	BASE 2000	TBD	-	4 1/5" X 120"	-	-
	BR-01	BRICK	EXISTING BRICK WALLS	-	-	-	CLEAR MATTE SEALER	-	-	EXISTING.
	P-01	PAINT	101 DINING, 102 BAR, 103 CORRIDOR	SHERWIN WILLIAMS	-	TBD	LOW SHEEN EGG SHELL	-	-	EXISTING JOISTS
_	P-02	PAINT	108 STOR, 109 RESTROOM, 110 STOR	SHERWIN WILLIAMS	-	TBD	LOW SHEEN EGG SHELL	-	-	-
WAI	P-03	PAINT	104 RESTROOM, 105 RESTROOM	SHERWIN WILLIAMS	-	TBD	LOW SHEEN EGG SHELL	-	-	-
	FRP-0	1 FRP PANEL	102 BAR, 106, 107 KIT, 108 REST, 109 REST, 110 STOP	2 _	-	WHITE	-	-	-	-
	FRP-0	2 FRP PANEL	SEE 1/A5-00 FOR LOW WALL DETAIL	-	-	BLACK	-	-	-	-
	TL-01	1	SEE 1/A5-00 FOR LOW WALL DETAIL	-	-	BLACK	-	-	-	DECORATIVE TILE
	ACT-01	I CEILING TILE	102 BAR, 106 KITCHEN	TBD	TBD	TBD	TBD	TBD	TBD	DECORATIVE TILE
97	P-10	PAINT	EXPOSED EXISTING CEILING	SHERWIN WILLIAMS	-	TBD	FLAT	-	-	-
CEILIN	P-11	PAINT	NEW GYP. CEILINGS IN RESTROOMS	SHERWIN WILLIAMS	-	TBD	FLAT	-	-	-
	P-12	PAINT	NEW GYP. CEILINGS IN BACK OF HOUSE	SHERWIN WILLIAMS	-	TBD	FLAT	-	-	-
	CT-01	TBD	BAR COUNTER TOP	-	-	-	-	-	-	
	CT-02	TBD	COUNTER TOP	-	-	-	-	-	-	

SCHEDULE GENERAL NOTES

- REFER TO PLANS, SPECIFICATIONS AND OTHER DRAWINGS WITHIN THESE CONTRACT DOCUMENTS FOR ADDITIONAL INFORMATION.
- 2. CONTRACTOR TO FIELD VERIFY ALL WINDOW AND DOOR OPENING (MASONRY OR OTHER) DIMENSIONS.
- 3. DOOR MANUFACTURER / CONTRACTOR IS TO FIELD VERIFY AND MEASURE ALL MASONRY AND ROUGH DOOR OPENINGS (EXISTING AND PROPOSED). VERIFY ALL EXISTING HEAD, SILL, JAMB CONDITIONS AND PROVIDE A COMPLETED DOOR SCHEDULE FOR OWNER'S AND ARCHITECT'S REVIEW PRIOR TO ORDERING / MANUFACTURING OF UNITS.
- 4. OWNER TO VERIFY AND SPECIFY ALL DOOR, FRAME, LOCKING, AND HARDWARE REQUIREMENTS; GENERAL CONTRACTOR TO COORDINATE.
- DOOR MANUFACTURER / CONTRACTOR IS TO FIELD VERIFY AND MEASURE ALL MASONRY AND ROUGH DOOR OPENINGS (EXISTING AND PROPOSED), DOOR OPERATION AND SWING OF DOORS PRIOR TO ORDERING OF HARDWARE.
- 6. REFER TO PLANS, SPECIFICATIONS AND OTHER DRAWINGS WITHIN THESE CONTRACT DOCUMENTS FOR ADDITIONAL INFORMATION.
- 7. PROVIDE SILENCERS ON ALL DOORS AND DRAWERS.
- 8. PROVIDE 'SOFT-CLOSING' DRAWER GLIDES FOR ALL DRAWERS.
- PROVIDE CONCEALED 'SOFT-CLOSING' HINGES FOR ALL CABINET DOORS.
- 10. ALL PLUMBING FIXTURES AND PLUMBING FIXTURE LOCATIONS ARE TO BE SPECIFIED BY OWNER, COORDINATED BY PLUMBING ENGINEER, GENERAL CONTRACTOR AND PLUMBER. THE PLUMBING FIXTURE SCHEDULE ON THIS SHEET IS INFORMATIONAL ONLY, THE DOCUMENTS PREPARED BY THE PLUMBING ENGINEER GOVERN. IF AN ERROR OR CONFLICT OCCURS BETWEEN THESE SCHEDULES / DRAWINGS AND THOSE OF THE PLUMBING ENGINEER IT SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF ARCHITECT, PLUMBING ENGINEER AND OWNER, BEFORE PROCEEDING WITH THE WORK. ANY PARTY (GENERAL CONTRACTOR, PLUMBING CONTRACTOR OR OTHER) WHO FAIL TO DO SO TAKE FULL RESPONSIBILITY OF ANY ERRORS, CONFLICTS, SCHEDULE AND COST IMPLICATIONS.
- 11. ALL ELECTRICAL LIGHT FIXTURES AND LIGHT FIXTURE LOCATIONS ARE TO BE SPECIFIED BY ARCHITECT, COORDINATED BY ELECTRICAL ENGINEER, GENERAL CONTRACTOR AND ELECTRICIAN. THE LIGHT FIXTURE SCHEDULE ON THIS SHEET IS INFORMATIONAL ONLY, THE DOCUMENTS PREPARED BY THE ELECTRICAL ENGINEER GOVERN. IF AN ERROR OR CONFLICT OCCURS BETWEEN THESE SCHEDULES / DRAWINGS AND THOSE OF THE ELECTRICAL ENGINEER IT SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF ARCHITECT, ELECTRICAL ENGINEER AND OWNER, BEFORE PROCEEDING WITH THE WORK. ANY PARTY (GENERAL CONTRACTOR, ELECTRICAL CONTRACTOR OR OTHER)WHO FAIL TO DO SO TAKE FULL RESPONSIBILITY OF ANY ERRORS, CONFLICTS, SCHEDULE AND COST IMPLICATIONS.
- 12. ALL EQUIPMENT AND EQUIPMENT LOCATIONS ARE TO BE SPECIFIED BY OWNER, COORDINATED BY ELECTRICAL ENGINEER, GENERAL CONTRACTOR AND ELECTRICIAN. THE EQUIPMENT SCHEDULE ON THIS SHEET IS INFORMATIONAL ONLY, THE DOCUMENTS PREPARED BY THE ELECTRICAL ENGINEER GOVERN. IF AN ERROR OR CONFLICT OCCURS BETWEEN THESE SCHEDULES / DRAWINGS AND THOSE OF THE ELECTRICAL ENGINEER IT SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF ARCHITECT, ELECTRICAL ENGINEER AND OWNER, BEFORE PROCEEDING WITH THE WORK. ANY PARTY (GENERAL CONTRACTOR, ELECTRICAL CONTRACTOR OR OTHER) WHO FAIL TO DO SO TAKE FULL RESPONSIBILITY OF ANY ERRORS, CONFLICTS, SCHEDULE AND COST IMPLICATIONS.
- 13. PREPARATION AND APPLICATION / INSTALLATION OF ALL FINISHES IS TO BE PER MANUFACTURERS SPECIFICATIONS.
- 14. INSTALL VINYL COVE BASE AT ALL LOCATIONS ADJACENT TO FRP WALL PANELS OR AS OTHERWISE REQUIRED IN THE PREPARATION, DISHWASHING, COOKING, DRY STORAGE, BAR AND JANITOR'S CLOSET.

LEGAL DESCRIPTION (AS PROVIDED)

(Per Tax Description: 04000816)

N ALEXANDRINE W W45 FT OF LOTS 1 & 2 BLK 96 CASS FARM SUB L1 P175-7 PLATS, W C R 4/34 45X113 .

(Per Tax Description: 04000817-8)

N ALEXANDRINE W E 30 FT OF W 75 FT OF 1 & 2 BLK 96 CASS FARM SUB L1 P175-7 PLATS, W C R 4/34 30X113.

BEARING REFERENCE

Bearings are based on Michigan State Plane Coordinate System 1983, NAD83 (2011), International Feet, Ground.

BENCHMARKS

City of Detroit Vertical Control System (1969 update of 1960 adjustment)

CITY BM NO. 30-353: FD MARK ON DISK 10' NORTH OF BACK OF CURB ALEXANDRINE STREET, 7' EAST OF BACK OF CURB SECOND AVENUE. ELEV = 140.59

BM A:

TOP NUT ON HYDRANT 25'± SOUTH FROM CENTERLINE WEST ALEXANDRINE AND 44'± EAST FROM CENTERLINE 3RD AVENUE. ELEV = 142.72

BM B:

TOP NUT ON HYDRANT 23'± SOUTH FROM CENTERLINE WEST ALEXANDRINE AND 300'± EAST FROM CENTERLINE 3RD AVENUE. ELEV = 143.32

SURVEYOR'S OBSERVATIONS

At the time of this survey, there was visible or physical evidence of potential encroachments. Other encroachments may or may not still exist on or off the subject property.

The following observations were made at the time of survey:

- 1 North Adjoiner's building wall appears to lie a maximum distance of 0.1 feet over Subject's property line.
- 2 East Adjoiner's fence appears to lie a maximum distance of 0.7 feet over Subject's property line.
- $\sqrt{3}$ Subject's West building wall appears to lie a maximum distance of 0.3 feet over the property line.
- Subject's South building wall appears to lie a maximum distance of 0.1 feet over the property line.

MISCELLANEOUS NOTES

- There is direct access to the subject property via Third Avenue & W. Alexandrine, both are public right-of-ways.
- 2. The locations of all utilities shown on the survey are from visible surface evidence and plans obtained from the utility owners, if available at time of survey.
- 3. The posted addresses on site is 4100 Third Ave & 702 W Alexandrine.
- 4. At the time of this survey, there was no observable surface evidence of earth
- moving work, building construction or building additions within recent months. 5. At the time of this survey, there was no observable evidence of any recent changes in street right-of-way lines either completed or proposed, and available from the controlling jurisdiction.
- 6. At the time of this survey, there was no observable evidence of any recent street or sidewalk construction or repairs.
- 7. The Property surveyed and shown hereon is the same property described in Schedule A of

FLOOD ZONE

FEMA map scales do not supply sufficient level of detail to plot accurately. Zones if plotted herein are approximate.

By scaled map location and graphic plotting only, the subject property appears to lie entirely in Zone (X) Areas determined to be outside of the 0.2% annual chance floodplain according to the Flood Insurance Rate Map for the County of Wayne County, Community Panel No. 26163C0280E, Effective Date February 2, 2012.

ZONING:

A Zoning report or letter was not provided to the surveyor as required by 2016 ALTA/NSPS Standards Table A Items 6(a) & 6(b).

PARKING:

There are no striped parking spaces on the subject property.

REFERENCE DRAWINGS

WM:	DWSD
Received:	5/12/2016
SAN:	DWSD
Received:	5/12/2016
GAS:	DTE GAS
Received:	5/11/2016
PHONE: Received:	
ELEC:	DTE-ELECTRIC
Received:	5/13/2016
CABLE:	COMCAST/ROCKET FIBER/WINDSTREAM/X.O.
Received:	5/10/2016

EXISTING	STORM STRU	ICTURES
STRUCTURE	RIM ELEV.	PIPES
(10562) CBS	139.10	TOP OF WATER =139.99
(10597) CBS	138.95	TOP OF WATER =135.95
(10599) STMH	139.89	FULL OF SAND TO RIM

DRAWING NUMBER: C-1.0

SYMBOLS

NOTE: SOME SYMBOLS MAY	NOT BE APPLICABLE.
<u> </u>	PROPERTY LINE
-00	EXISTING FENCE LINE
\boxtimes	EXISTING SITE LIGHT

CONTRACTOR'S NOTE

THE LOCATIONS OF 3 WORKING DAYS EXISTING UNDERGROUND **BEFORE YOU DIG** UTILITIES ARE SHOWN IN AN CALL MISS DIG APPROXIMATE WAY. THE 1-800-482-7171 🔳 CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. HE AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADHERING TO ALL APPLICABLE LOCAL, STATE, AND FEDERAL STANDARDS, SPECIFICATIONS, AND GUIDELINES FOR CONSTRUCTION.

SITE PLAN GENERAL NOTES

- THIS SITE AND BUILDING PLAN IS DIAGRAMMATIC IN NATURE. ALL BOUNDARIES, LOCATIONS, TOPOGRAPHY, 7. ALL DEBRIS AND EXCESS EXCAVATED MATERIAL MUST BE LEGAL MEETS AND BOUNDS, IMPROVEMENTS, MONUMENTS, LEGALLY DISPOSED OFF ETC. ARE TO BE VERIFIED BY THE OWNER'S LAND SURVEYOR AND AND CIVIL ENGINEER.
- 2. THE GENERAL CONTRACTOR IS TO VERIFY ALL SITE CONDITIONS, PROPERTY BOUNDARIES, LOCATION OF ALL EXISTING AND NEW PHYSICAL IMPROVEMENTS, DIMENSIONS, GRADES, AND MONUMENTS PRIOR TO THE COMMENCEMENT OF WORK. THE GENERAL CONTRACTOR IS TO HAVE THE SITE 'STAKED-OUT' BY A PROFESSIONAL LAND SURVEYOR PRIOR TO THE COMMENCEMENT OF WORK. REPORT ANY DISCREPANCIES TO THE ARCHITECT IMMEDIATELY FOR RESOLUTION PRIOR TO THE COMMENCEMENT OF WORK.
- 3. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST MICHIGAN DEPARTMENT OF TRANSPORTATION DESIGN STANDARDS OR OF THE CITY OF DETROIT.
- 4. ALL WORK SHALL BE DONE IN CONFORMANCE WITH THE RULES AND REGULATIONS PERTAINING TO SAFETY ESTABLISHED BY OSHA AND ALL LOCAL CODES AND REQUIREMENTS.
- DEMOLITION EQUIPMENT SHALL BE SELECTED AND OPERATED SUCH THAT STRUCTURES, UTILITIES AND OTHER WORK THAT ARE TO REMAIN WILL NOT BE DAMAGED AND CAUSE INJURY TO WORKERS.
- 6. THE CONTRACTOR SHALL TAKE ADEQUATE PRECAUTION TO PROTECT EXISTING UNDERGROUND UTILITIES OR STRUCTURES NOT SCHEDULED FOR REMOVAL. THE CONTRACTOR WILL BE RESPONSIBLE FOR ANY DAMAGE TO ANY EXISTING UTILITIES NOT SCHEDULED FOR REMOVAL OR ABANDONMENT (WHETHER SHOWN ON THE PLAN OR NOT) DURING THE CONSTRUCTION OF THIS PROJECT.

PATCH, REPAIR AND REPLACE ANY ROADWAY AREAS ADJACENT TO CONSTRUCTION DAMAGED BY CONSTRUCTION PROCESSES. ALL WORK SHALL BE PERFORMED TO REPLACE DAMAGED OR MISSING PAVING TO THE EXISTING OR BETTER CONDITION THAN ORIGINALLY ENCOUNTERED, IN ACCORDANCE WITH THE LATEST MICHIGAN DÉPARTMENT OF TRANSPORTATION, CITY OF DETROIT DEPARTMENT OF TRANSPORTATION OR ANY OTHER APPLICABLE LOCAL,

111'-11"

102'-11" EXISTING BUILDING

NEW CONCRETE FROST SLAB ON GRADE. SEE DETAIL ON C2-00

4100 THIRD STREET

EXISTING SIDEWALK TO REMAIN

THIRD STREET

_OCATION PLAN

ALL WORK IS TO BE DONE IN ACCORDANCE WITH THE RULES AND

REGULATIONS OF THE LOCAL JURISDICTION. UNLESS OTHERWISE AGREED UPON, THE GENERAL CONTRACTOR IS RESPONSIBLE FOR

PERFORMED AND WILL RETAIN AND PAY FOR ALL REQUIRED INSPECTIONS DURING THE COURSE OF THE WORK.

REGULATIONS, AND ANY APPLICABLE OSHA GUIDELINES.

SECURING ALL BUILDING PERMITS AS REQUIRED FOR WORK TO BE

PROVIDE SAFE AND SECURE JOBSITE PRIOR TO, DURING, AND AFTER WORK. PROVIDE ALL NECESSARY SAFETY DEVICES, LIGHTING, AND BARRIERS AS NECESSARY - ESPECIALLY AROUND ALL STAIR, ELEVATOR,

AND ROOF PENETRATIONS IN ACCORDANCE WITH LOCAL CODES AND

THE GENERAL CONTRACTOR SHALL VISIT THE SITE BEFORE PROVIDING A PRICE AND BE AWARE OF EXISTING CONDITIONS TO THE EXTENT AND INFLUENCE OF THE WORK.

DO NOT SCALE DRAWINGS FOR DIMENSIONS AND / OR SIZES. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD MEASURING EXISTING CONDITIONS PRIOR TO THE BEGINNING OF WORK, AND

PERIODICALLY DURING PROGRESS OF WORK TO VERIFY ALL CRITICAL DIMENSIONS. ANY DEVIATIONS FROM DIMENSIONS INDICATED ON

ANY DISCREPANCIES FOUND IN THE DRAWINGS, DIMENSIONS, EXISTING

CONDITIONS, OR ANY APPARENT ERROR IN CLASSIFYING OR SPECIFYING

DRAWINGS ARE TO BE APPROVED BY ARCHITECT, PRIOR TO

GENERAL NOTES

CONSTRUCTION.

GENERAL NOTES

- CAP, PATCH, AND REPAIR ALL HOLES AND SURFACES IN AND CEILINGS WHERE ARCHITECTURAL, STRUCTURAL, M ELECTRICAL, OR PLUMBING ITEMS ARE TO BE REMOVED.
- NEATLY SAW CUT AND REMOVE CONCRETE AS REQUIRED PLACEMENT OF NEW INSTALLATIONS OF PLUMBING, NEG CAPPING OF EXISTING, AND INSTALLATION OF NEW FOUN
- PREPARE ALL DEMOLITION AREAS FOR NEW FINISHES.
- THE GENERAL CONTRACTOR IS TO COORDINATE ALL WOR OWNER'S PERSONNEL TO AVOID ANY INTERFERENCE OR OPERATIONS.
- THE GENERAL CONTRACTOR FOR A PERIOD OF ONE YEAR OF COMPLETION AND ACCEPTANCE BY OWNER, SHALL AD OR REPLACE AT NO COST TO THE OWNER ANY ITEM OF EQ MATERIAL, OR WORKMANSHIP FOUND TO BE DEFECTIVE AFFECTED WITHIN THE SCOPE OF THE CONTRACT.

SYMBOLS

A A

SHEET SEQUENCE NUMBER NUMBER IDENTIFYING EA SHEET TYPE DESIGNATOR 0 - GENERAL (SYMBOLS. 1 - PLANS (HORIZONTAL 2 - ELEVATIONS (VERTICA 3 - SECTIONS, DETAILS, D

	PROJECT INFORMATION		ISSUANCE	DRAWING LIST	
DRS, , RK. N	PROJECT ADDRESS: 4100 THIRD STREET, DETROIT, MI 48201 PROJECT DESCRIPTION: RENOVATION OF EXISTING COMMERCIAL BUILDING INTO NEW RESTAURANT APPLICABLE CODES: ALL WORK SHALL CONFORM TO APPLICABLE GOVERNING CODES, INCLUDING BUT NOT LIMITED TO: 1. 2015 MICHIGAN REHABILITATION CODE FOR EXISTING BUILDINGS - WORK AREA METHOD ALTERATION LEVEL 3 2. 2015 MICHIGAN MECHANICAL CODE 3. 2017 MICHIGAN ELECTRICAL CODE	MEP COORDINATION	PERMIT REVIEW		
OR	4. 2015 MICHIGAN PLUMBING CODE BUILDING DATA: ZONING DISTRICT: SD2 BUILDING DATA:	20200917	20210129		
	A. TYPE OF CONSTRUCTION: 111B - LOAD-BEARING BRICK MASONRY WITH CONCRETE FLOOR AND WOOD ROOF CONSTRUCTION B. STORIES ABOVE GRADE 1 C. BUILDING AREAS (GROSS) EXISTING 1. TOTAL BUILDING AREA (GROSS) 2, 994 SQFT D. OCCUPANCY 94 E. BUILDING HEIGHTS FROM GRADE FLOOR-TO-FLOOR 1. FIRST LEVEL 0'-0" (A.G.) 17'-4" 2. ROOF + 16'-7" (A.G.) - 3. ALLOWABLE			GENERAL SHEETS A-000 COVER G1-00 BUILDING OCCUPANCY DIAGRAMS SITE AND CIVIL ENGINEERING SHEETS C-1.0 EXISTING LAND SURVEY C2-00 SITE PLAN ARCHITECTURAL SHEETS	
	F. PARKING NONE PROVIDED	•		D1-00 DEMOLITION PLAN A1-00 ARCHITECTURE PLAN A1-01 ROOF PLAN A2-00 EXTERIOR ELEVATIONS A3-00 SECTIONS	
		•		 A4-00 INTERIOR ELEVATIONS A4-01 INTERIOR ELEVATIONS A4-02 INTERIOR ELEVATIONS A5-00 ARCHITECTURAL DETAILS A5-01 MECH. EQUIP. SCREEN DETAILS 	
				A6-00 SCHEDULES STRUCTURAL SHEETS S001 GENERAL NOTES S100 PLANS AND DETAILS S300 TYPICAL DETAILS	
				MECHANICAL ENGINEERING SHEETSM0-00MECHANICAL LEGENDS NOTES AND SCHEDULESM0-01MECHANICAL SPECIFICATIONSM1-01MECHANICAL HVAC FLOOR PLANM1-02MECHANICAL HVAC ROOF PLANM6-00MECHANICAL LEGENDS NOTES AND SCHEDULESM6-01MECHANICAL LEGENDS NOTES AND SCHEDULES	
	STATE OF MICHICS BRIAN V. HURTTIENNE MICHITECT There No. 33302		• •	PLUMBING ENGINEERING SHEETSP0-00PLUMBING LEGENDS NOTES AND SCHEDULESP0-01PLUMBING SPECIFICATIONSP0-02PLUMBING DETAILSP1-01PLUMBING SANITARY FLOOR PLANP1-02PLUMBING SANITARY FLOOR PLANP1-03PLUMBING DOMESTIC WATER AND GAS FLOOR PLANP1-04PLUMBING GAS ROOF PLANP6-00PLUMBING SCHEDULES	
	SIGNATURE BLOCK			ELECTRICAL ENGINEERING SHEETS E0-00 ELECTRICAL GENERAL NOTES E0-01 ELECTRICAL ONE LINE DIAGRAM E0-02 ELECTRICAL SPECIFICATION E0-03-1ELECTRICAL DETAILS E0-03-2ELECTRICAL DETAILS E1-01 ELECTRICAL POWER PLAN	
]	NAME OF AUTHORIZED REPRESENTATIVE	-		E1-02 ELECTRICAL POWER ROOF PLAN E1-03 ELECTRICAL LIGHTING FLOOR PLAN E6-00 ELECTRICAL LIGHTING SCHEDULE E6-01 ELECTRICAL PANEL SCHEDULE	
	(Owner) 	-			
	 (General Contractor)	-			

	A PRODUCT OR ITS USE IS TO BE POINTED OUT TO THE ARCHITECT PRIOR TO COMMENCEMENT OF WORK. ADDENDA WILL BE ISSUED AS NECESSARY AND WILL BECOME PART OF THE CONTRACT DOCUMENTS. FOR THOSE DISCREPANCIES NOT BROUGHT TO THE ATTENTION OF THE ARCHITECT, IT WILL BE ASSUMED THAT THE CONTRACTOR HAS BID THE MORE EXPENSIVE METHOD OF CONSTRUCTION.
6.	THE GENERAL CONTRACTOR / SUB-CONTRACTORS ARE TO VERIFY ALL CONDITIONS PRIOR TO THE BEGINNING OF CONSTRUCTION OF ANY TRADE. NOTIFY ARCHITECT OF ANY DISCREPANCIES WITHIN THE PLANS, DRAWINGS, OR OBVIOUS FIELD CONDITIONS WHICH PROHIBIT THE WORK

- FROM BEING BUILT, AS SHOWN. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR THE MEANS, METHODS, SEQUENCES, AND PROCEDURES OF CONSTRUCTION.
- THE GENERAL CONTRACTOR IS TO COORDINATE ALL CIVIL, ARCHITECTURAL, MECHANICAL, PLUMBING, ELECTRICAL, AND STRUCTURAL TRADES.
- THE GENERAL CONTRACTOR IS TO PRESERVE, TAKE CARE OF, AND COORDINATE WITH THE UTILITY COMPANIES AND SUB-CONTRACTORS.
- SHOP DRAWINGS / SUBMITTALS / SAMPLES ARE TO BE SUBMITTED TO THE ARCHITECT FOR APPROVAL BEFORE PROCEEDING WITH ALL ITEMS
- WHICH REQUIRE FABRICATION. CHANGES IN THE WORK SHALL BE INITIATED THROUGH CONSTRUCTION DIRECTIVES. CONTRACTOR SHALL NOT PROCEED WITH EXECUTION OF CHANGES WITHOUT WRITTEN APPROVAL FROM OWNER OF CHANGE ORDER NOTING CHANGES TO CONTRACT PRICE AND TIME.
- THE STRUCTURE HAS BEEN DESIGNED TO BE SELF SUPPORTING AND STABLE AFTER THE BUILDING IS FULLY COMPLETED. IT IS THE GENERAL CONTRACTOR'S SOLE RESPONSIBILITY TO DETERMINE THE ERECTION PROCEDURES AND SEQUENCING TO ENSURE THE SAFETY OF THE BUILDING AND ITS COMPONENT PARTS DURING ERECTION. THIS
- NCLUDES THE ADDITION OF TEMPORARY BRACING, SHORING, SUPPORT, GUYS, OR TIE-DOWNS IF NECESSARY. ENSURE ALL FIRE AND LIFE SAFETY ITEMS THAT ARE EXISTING AND REQUIRED, REMAIN OPERATIONAL DURING CONSTRUCTION.
- MAINTAIN ALL REQUIRED FIRE RATINGS / SEPARATIONS IN WALLS AND CEILINGS AS REQUIRED BY THE APPLICABLE BUILDING CODE, AND RULES AND PER THE RULES AND REGULATIONS OF THE LOCAL JURISDICTION.
- EXECUTE FIRE WATCH AND PREVENTION PROCEDURES ON SITE DURING FIELD CUTTING AND WELDING OPERATIONS MEETING THE OWNERS REQUIREMENTS.
- PROVIDE NECESSARY TEMPORARY CONSTRUCTION BARRIERS BETWEEN EXISTING AND NEW CONSTRUCTION SPACES (DEMOLITION AREA). MAINTAIN LEGAL EXITING SYSTEMS AND EGRESS FOR BOTH SPACES PER LOCAL CODES. PROVIDE SIGNAGE TO DESIGNATE THE EXITS AND SEPARATION OF THE SPACES.
- EXISTING CONSTRUCTION NOT UNDERGOING ALTERATION IS TO REMAIN UNDISTURBED. WHERE SUCH EXISTING CONDITIONS NOT UNDERGOING ALTERATION ARE DISTURBED AS A RESULT OF THE OPERATIONS OF THE CONTRACT, ALL ADVERSELY AFFECTED CONDITIONS MUST BE REPAIRED OR REPLACED BY THE CONTRACTOR AS REQUIRED TO THE SATISFACTION OF THE ARCHITEC
- ANY DAMAGE TO NEW OR EXISTING CONSTRUCTION CAUSED BY THE CONTRACTOR'S NEGLIGENCE OR INADEQUATE PROTECTIVE OR SECURITY MEASURES DURING CONSTRUCTION ARE TO BE CORRECTED AT THE GENERAL CONTRACTOR'S EXPENSE.
- PROVIDE ADEQUATE SHORING AND SUPPORT OF ALL STRUCTURAL ITEMS TO BE REMOVED IN ACCORDANCE WITH STRUCTURAL ENGINEERS OCUMENTS / SPECIFICATIONS, LOCAL CODES AND REGULATIONS, AND ANY APPLICABLE OSHA GUIDELINES. DEMOLITION OF ALL PORTIONS OF THE STRUCTURE TO BE REMOVED
- SHALL BE DONE WITH THE UTMOST CARE, USING TOOLS AND METHODS SUBJECT TO OWNER'S APPROVAL. ALL POSSIBLE CARE SHALL BE TAKEN TO AVOID DAMAGING, SHOCK, OR VIBRATION TO PORTIONS OF THE EXISTING STRUCTURE TO REMAIN. IF DEMOLITION OF EXISTING STRUCTURE IS REQUIRED TO ACCESS A
- SPACE OR COMPLETE CONSTRUCTION, AND IT IS NOT INDICATED ON THE DOCUMENTS; NOTIFY ARCHITECT TO HAVE A STRUCTURAL ENGINEER REVIEW THE SCOPE OF DEMOLITION REQUIRED AND PROVIDE EITHER AN APPROVAL OR DOCUMENTS TO INSTRUCT THE METHODS OF DEMOLITION.
- REMOVE AND / OR RELOCATE ALL MECHANICAL, PLUMBING, AND LECTRICAL ITEMS INCLUDING PIPING, FIXTURES, EQUIPMENT DUCTWORK, WIRING, DEVICES, PANELS, AND ACCESSORIES AS REQUIRED REFER TO MECHANICAL, ELECTRICAL, AND PLUMBING DOCUMENTS FOR FURTHER DIRECTION PRIOR TO START OF DEMOLITION.
- THE GENERAL CONTRACTOR AND DEMOLITION CONTRACTOR, SHALL VERIFY THE EXISTENCE AND LOCATIONS, AND ELEVATIONS OF ALL EXISTING UTILITIES INCLUDING EXISTING WATER, SEWERS / STORM MAINS, DRAINS, ELECTRICAL AND GAS SERVICES, ETC., IN THE DEMOLITION AREAS BEFORE PROCEEDING WITH THE WORK. ALL DISCREPANCIES SHALL BE DOCUMENTED AND REPORTED TO THE ARCHITECT
- REMOVE ALL MATERIALS AND DEBRIS CREATED DURING THE DEMOLITION AND/OR THE CONSTRUCTION PROCESS AND DISPOSE OFF SITE IN A SAFE AND LEGAL MANNER.

ISSUED FOR:

PERMIT REVIEW

01.29.2021

VECINO RESTAURANT

4100 Third Avenue, Detroit, MI, 48201

DEMOLITION PLAN ORIGINAL IMAGE SCALE: 3/16" = 1'-0"

SYMBOLS

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EXISTING TO REMA

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NOTE: SOME SYMBOLS MAY NOT BE APPLICABLE. EXISTING FLOOR CONSTRUCTION TO BE REMOVED.

EXISTING CONCRETE MASONRY UNIT WALL CONSTRUCTION TO BE REMOVED.

DEMOLITION GENERAL NOTES

- 1. PROVIDE SAFE AND SECURE JOBSITE PRIOR TO, DURING, AND AFTER WORK. PROVIDE ALL NECESSARY SAFETY DEVICES, LIGHTING, AND BARRIERS AS NECESSARY - ESPECIALLY AROUND ALL FLOOR AND ROOF PENETRATIONS IN ACCORDANCE WITH LOCAL CODES AND REGULATIONS, AND ANY APPLICABLE OSHA GUIDELINES.
- 2. CONTACT ARCHITECT IMMEDIATELY PRIOR TO DEMOLITION OF ANY DISCREPANCIES FOUND BETWEEN THE DOCUMENTS AND FIELD CONDITIONS.
- 3. PROVIDE ADEQUATE SHORING AND SUPPORT OF ALL STRUCTURAL ITEMS BOTH TO BE REMOVED AND TO REMAIN IN ACCORDANCE WITH STRUCTURAL ENGINEERS DOCUMENTS / SPECIFICATIONS, LOCAL CODES AND REGULATIONS, AND ANY APPLICABLE OSHA GUIDELINES.
- 4. IF DEMOLITION OF EXISTING STRUCTURE IS REQUIRED TO ACCESS A SPACE OR COMPLETE CONSTRUCTION, AND IT IS NOT INDICATED ON THE DOCUMENTS; NOTIFY ARCHITECT TO HAVE A STRUCTURAL ENGINEER REVIEW THE SCOPE OF DEMOLITION REQUIRED AND PROVIDE EITHER AN APPROVAL OR DOCUMENTS TO INSTRUCT THE METHODS OF DEMOLITION.
- PROVIDE NECESSARY TEMPORARY CONSTRUCTION BARRIERS BETWEEN EXISTING AND NEW CONSTRUCTION SPACES (DEMOLITION AREA). MAINTAIN LEGAL EXITING SYSTEMS AND 5. EGRESS FOR BOTH SPACES PER LOCAL CODES.
- 6. REMOVE ALL EXISTING WALL FINISHES ON ALL EXISTING WALLS TO REMAIN, INCLUDING MASONRY. PATCH, REPAIR, AND REPLACE EXISTING WALL STRUCTURE. PROVIDE NAILERS OR BLOCKING AS REQUIRED IN PREPARATION TO DESCRIPTION FOR SUPER. RECEIVE NEW WALL FINISHES.
- GENERAL CONTRACTOR IS TO PROTECT ALL ASSEMBLIES/SPACES/AREAS FROM WEATHER AT ALL TIMES AND DURING ENTIRETY OF PROJECT.

ROOF CURB

SYMBOLS

NOTE: SOME SYMBOLS MAY NOT BE APPLICABLE.

EXISTING MASONRY WALL CONSTRUCTION.

NEW METAL-FRAMED WALL CONSTRUCTION

ARCHITECTURE GENERAL NOTES

- 1. ALL NEW WALL AND PARTITION CONSTRUCTION IS TO BE PER WALL ASSEMBLY A1, SHEET A5-00 UNLESS OTHERWISE NOTED.
- ALL WALL ASSEMBLIES LOCATED AT OR ADJACENT TO AN EXISTING EXTERIOR WALL, OR ARE LOCATED ADJACENT TO A 'COLD-ZONE', ARE TO RECEIVE A MINIMUM OF R-21 INSULATION, WITH VAPOR BARRIER (WARM SIDE), PER CODE.
- 3. GENERAL CONTRACTOR TO PROVIDE BLOCKING WHERE REQUIRED TO SUPPORT MILLWORK, STOREFRONT EQUIPMENT, OR OTHER FINISHES.

RCP SYMBOLS

NC

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TE: SOME S	SYMBOLS I	MAY NOT BE APPLICABLE / NOT TO SCALE.
MBOL	N0.	DESCRIPTION
•	.'A.	4" RECESSED FIXTURE
•	'B'	4" RECESSED FIXTURE
Q	'C'	WALL SCONCE
	'D'	WALL SCONCE (WATER / WEATHERPROOF)
	'E'	2'x2' LAY-IN FIXTURE
	'F'	2'x4' LAY-IN FIXTURE
- ф -		JUNCTION BOX

1 ROOF PLAN ORIGINAL IMAGE SCALE: 3/16" = 1'-0"

2 A3-00

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ROOF (LOW POINT) ELEVATION: 15'-7½" AFF

A3-00

— NEW MECHANICAL EQUIPMENT SCREEN. SEE A5-01 FOR DETAILS

7 A5-01

EXISTING 8x6 — STEEL BEAM

DOOR SCHEDULE

		DOOR	TYPE	FRAME	HDW		
N0.	SIZE	MATERIAL/FINISH		MATERIAL/FINISH	SET	LOCATION	REMARKS
100	EXISTING	EXISTING	-	EXISTING	-	ENTRY	EXISTING ENTRY DOOR.CONFIRM LOCKING WITH TENANT
103	1 3/4" x 2'-8" x 7'-0"	WOOD / PAINT	А	WOOD / PAINT	-	STORAGE	
104	1 3/4" x 3'-0" x 7'-0"	WOOD / PAINT	А	WOOD / PAINT	1	RESTROOM	
105	1 3/4" x 3'-0" x 7'-0"	WOOD / PAINT	А	WOOD / PAINT	-	RESTROOM	
106	1 3/4" x 3'-0" x 7'-0"	PER MANUFACTURER - BLACK	В	PER MANUFACTURER - BLACK	-	KITCHEN	ELIASON SCP-12 SINGLE DOOR
107	EXISTING	EXISTING	-	EXISTING	-	REAR DOOR	EXISTING ENTRY DOOR, CONFIRM LOCKING WITH TENANT
108	1 3/4" x 3'-0" x 7'-0"	WOOD / PAINT	А	WOOD / PAINT	3	RESTROOM	
109	1 3/4" x 3'-0" x 7'-0"	WOOD / PAINT	А	WOOD / PAINT	3	STORAGE	
111	1 3/4" x 6'-0" x 7'-0"	ALUMINUM / GLASS	С	ALUMINUM	-	EXTERIOR	DOUBLE DOOR

LIGHT FIXTURE SCHEDULE

N0.	FIXTURE TYPE / MOUNTING	MANUFACTURER	MODEL		LAMPS			FINISH	NOTES			
				TYPE	VOLTS	QTY.	COLOR TEMP.					
А	RECESSED LIGHT	TBD	TDB	LED	-	8	3000K	TBD	WET LOCATION			
В	RECESSED LIGHT	TBD	TDB	LED	-	10	3000K	TBD	WET LOCATION			
С	WALL SCONCE	TBD	TDB	LED	-	9	3000K	TBD	-			
D	WALL SCONCE	TBD	TDB	LED	-	11	3000K	TBD	WET LOCATION			
Е	2x2 LAY-IN FIXTURE	TBD	TDB	LED	-	4	3000K	TBD	-			
F	2x4 LAY-IN FIXTURE	TBD	TDB	LED	-	4	3000K	TBD	-			

FINISH FLOOR

ROOM FINISH SCHEDULE

N0.	ROOM NAME		FLOOR			WA	LLS		CEI	LING	NG MILLWORK NOTES		MILLWORK		NOTES			
		FIELD	ACCENT	BASE	NORTH	SOUTH	EAST	WEST	CEILING	BEANS/ TRUSSES	COUNTER	FRAMES	DOORS	TOE KICK	INTERIOR	SHELF	PULLS KNOBS	
100	ENTRY	CC-01	-	WB-01	-	BR-01	BR-01	BR-01	PT-01	PT-01	-	-	-	-	-	-	-	-
101	DINING	CC-01	-	WB-01	PT-01	BR-01	BR-01	BR-01	PT-01	PT-01	-	-	-	-	-	-	-	-
102	BAR	EP-01	-	VT-01	-	-	TL-01	-	PT-01	PT-01	-	-	-	-	-	-	-	PROVIDE FRP-02 ON INSIDE OF LOW WALL AT BAR.
103	CORRIDOR	CC-01	-	WB-01	PT-01	-	BR-01	PT-01	PT-01	PT-01	-	-	-	-	-	-	-	-
104	RESTROOM	CC-01	-	WB-01	PT-03	PT-03	PT-03	PT-03	PT-11	-	-	-	-	-	-	-	-	-
105	RESTROOM	CC-01	-	WB-01	PT-03	PT-03	BR-01	PT-03	PT-11	-	-	-	-	-	-	-	-	-
106	KITCHEN	EP-01	-	VT-01	TL-01	TL-01	TL-01	TL-01	ACT-01	-	-	-	-	-	-	-	-	-
107	KITCHEN	EP-01	-	VT-01	FRP-01	FRP-01	FRP-01	FRP-01	ACT-01	-	-	-	-	-	-	-	-	-
108	STORAGE	EP-01	-	VT-01	PT-02	PT-02	PT-02	PT-02	PT-12	-								
109	RESTROOM	EP-01	-	VT-01	PT-02	PT-02	PT-02	PT-02	PT-12	-								
110	STORAGE	EP-01	-	VT-01	PT-02	PT-02	PT-02	PT-02	PT-12	-								

FINISH SCHEDULE KEY

APP.	N0.	MATERIAL	LOCATION & USE DESCRIPTION	MANUFACTURER	MODEL	COLOR	TEXTURE FINISH	SIZE	GROUT/GRID	NOTES
⊢	CC-01	CONCRETE	NEW CONCRETE SLAB THROUGHOUT	-	-	-	GROUND / POLISHED	-		GROUND AND PO
R	EP-01	FOOD SERVICE EPOXY COATING	102 BAR, 106 AND 107 KITCHEN	-	-	-	-	-	-	LIMIT GRIT COATI
FLOC	WB-01	WOODBASE	100 ENTRY, 101 DINING, 103 CORR., 104, 105 REST.	-	-	TBD	TBD	3 1/2 " X 3 1/4"	-	-
	VT-01	VINYL BASE	102 BAR, 106, 107 KIT, 108 REST, 109 REST, 110 STOF	R FLEXCO	BASE 2000	TBD	-	4 1/5" X 120"	-	-
	BR-01	BRICK	EXISTING BRICK WALLS	-	-	-	CLEAR MATTE SEALER	-	-	EXISTING.
	P-01	PAINT	101 DINING, 102 BAR, 103 CORRIDOR	SHERWIN WILLIAMS	-	TBD	LOW SHEEN EGG SHELL	-	-	EXISTING JOISTS
_	P-02	PAINT	108 STOR, 109 RESTROOM, 110 STOR	SHERWIN WILLIAMS	-	TBD	LOW SHEEN EGG SHELL	-	-	-
WAI	P-03	PAINT	104 RESTROOM, 105 RESTROOM	SHERWIN WILLIAMS	-	TBD	LOW SHEEN EGG SHELL	-	-	-
	FRP-0	1 FRP PANEL	102 BAR, 106, 107 KIT, 108 REST, 109 REST, 110 STOP	2 _	-	WHITE	-	-	-	-
	FRP-0	2 FRP PANEL	SEE 1/A5-00 FOR LOW WALL DETAIL	-	-	BLACK	-	-	-	-
	TL-01	1	SEE 1/A5-00 FOR LOW WALL DETAIL	-	-	BLACK	-	-	-	DECORATIVE TILE
	ACT-01	I CEILING TILE	102 BAR, 106 KITCHEN	TBD	TBD	TBD	TBD	TBD	TBD	DECORATIVE TILE
97	P-10	PAINT	EXPOSED EXISTING CEILING	SHERWIN WILLIAMS	-	TBD	FLAT	-	-	-
CEILIN	P-11	PAINT	NEW GYP. CEILINGS IN RESTROOMS	SHERWIN WILLIAMS	-	TBD	FLAT	-	-	-
	P-12	PAINT	NEW GYP. CEILINGS IN BACK OF HOUSE	SHERWIN WILLIAMS	-	TBD	FLAT	-	-	-
	CT-01	TBD	BAR COUNTER TOP	-	-	-	-	-	-	
	CT-02	TBD	COUNTER TOP	-	-	-	-	-	-	

SCHEDULE GENERAL NOTES

- REFER TO PLANS, SPECIFICATIONS AND OTHER DRAWINGS WITHIN THESE CONTRACT DOCUMENTS FOR ADDITIONAL INFORMATION.
- 2. CONTRACTOR TO FIELD VERIFY ALL WINDOW AND DOOR OPENING (MASONRY OR OTHER) DIMENSIONS.
- 3. DOOR MANUFACTURER / CONTRACTOR IS TO FIELD VERIFY AND MEASURE ALL MASONRY AND ROUGH DOOR OPENINGS (EXISTING AND PROPOSED). VERIFY ALL EXISTING HEAD, SILL, JAMB CONDITIONS AND PROVIDE A COMPLETED DOOR SCHEDULE FOR OWNER'S AND ARCHITECT'S REVIEW PRIOR TO ORDERING / MANUFACTURING OF UNITS.
- 4. OWNER TO VERIFY AND SPECIFY ALL DOOR, FRAME, LOCKING, AND HARDWARE REQUIREMENTS; GENERAL CONTRACTOR TO COORDINATE.
- DOOR MANUFACTURER / CONTRACTOR IS TO FIELD VERIFY AND MEASURE ALL MASONRY AND ROUGH DOOR OPENINGS (EXISTING AND PROPOSED), DOOR OPERATION AND SWING OF DOORS PRIOR TO ORDERING OF HARDWARE.
- 6. REFER TO PLANS, SPECIFICATIONS AND OTHER DRAWINGS WITHIN THESE CONTRACT DOCUMENTS FOR ADDITIONAL INFORMATION.
- 7. PROVIDE SILENCERS ON ALL DOORS AND DRAWERS.
- 8. PROVIDE 'SOFT-CLOSING' DRAWER GLIDES FOR ALL DRAWERS.
- PROVIDE CONCEALED 'SOFT-CLOSING' HINGES FOR ALL CABINET DOORS.
- 10. ALL PLUMBING FIXTURES AND PLUMBING FIXTURE LOCATIONS ARE TO BE SPECIFIED BY OWNER, COORDINATED BY PLUMBING ENGINEER, GENERAL CONTRACTOR AND PLUMBER. THE PLUMBING FIXTURE SCHEDULE ON THIS SHEET IS INFORMATIONAL ONLY, THE DOCUMENTS PREPARED BY THE PLUMBING ENGINEER GOVERN. IF AN ERROR OR CONFLICT OCCURS BETWEEN THESE SCHEDULES / DRAWINGS AND THOSE OF THE PLUMBING ENGINEER IT SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF ARCHITECT, PLUMBING ENGINEER AND OWNER, BEFORE PROCEEDING WITH THE WORK. ANY PARTY (GENERAL CONTRACTOR, PLUMBING CONTRACTOR OR OTHER) WHO FAIL TO DO SO TAKE FULL RESPONSIBILITY OF ANY ERRORS, CONFLICTS, SCHEDULE AND COST IMPLICATIONS.
- 11. ALL ELECTRICAL LIGHT FIXTURES AND LIGHT FIXTURE LOCATIONS ARE TO BE SPECIFIED BY ARCHITECT, COORDINATED BY ELECTRICAL ENGINEER, GENERAL CONTRACTOR AND ELECTRICIAN. THE LIGHT FIXTURE SCHEDULE ON THIS SHEET IS INFORMATIONAL ONLY, THE DOCUMENTS PREPARED BY THE ELECTRICAL ENGINEER GOVERN. IF AN ERROR OR CONFLICT OCCURS BETWEEN THESE SCHEDULES / DRAWINGS AND THOSE OF THE ELECTRICAL ENGINEER IT SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF ARCHITECT, ELECTRICAL ENGINEER AND OWNER, BEFORE PROCEEDING WITH THE WORK. ANY PARTY (GENERAL CONTRACTOR, ELECTRICAL CONTRACTOR OR OTHER)WHO FAIL TO DO SO TAKE FULL RESPONSIBILITY OF ANY ERRORS, CONFLICTS, SCHEDULE AND COST IMPLICATIONS.
- 12. ALL EQUIPMENT AND EQUIPMENT LOCATIONS ARE TO BE SPECIFIED BY OWNER, COORDINATED BY ELECTRICAL ENGINEER, GENERAL CONTRACTOR AND ELECTRICIAN. THE EQUIPMENT SCHEDULE ON THIS SHEET IS INFORMATIONAL ONLY, THE DOCUMENTS PREPARED BY THE ELECTRICAL ENGINEER GOVERN. IF AN ERROR OR CONFLICT OCCURS BETWEEN THESE SCHEDULES / DRAWINGS AND THOSE OF THE ELECTRICAL ENGINEER IT SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF ARCHITECT, ELECTRICAL ENGINEER AND OWNER, BEFORE PROCEEDING WITH THE WORK. ANY PARTY (GENERAL CONTRACTOR, ELECTRICAL CONTRACTOR OR OTHER) WHO FAIL TO DO SO TAKE FULL RESPONSIBILITY OF ANY ERRORS, CONFLICTS, SCHEDULE AND COST IMPLICATIONS.
- 13. PREPARATION AND APPLICATION / INSTALLATION OF ALL FINISHES IS TO BE PER MANUFACTURERS SPECIFICATIONS.
- 14. INSTALL VINYL COVE BASE AT ALL LOCATIONS ADJACENT TO FRP WALL PANELS OR AS OTHERWISE REQUIRED IN THE PREPARATION, DISHWASHING, COOKING, DRY STORAGE, BAR AND JANITOR'S CLOSET.

ELECTRIC	AL POWER LEGEND
φ	DUPLEX RECEPTACLE
₽	DUPLEX RECEPTACLE – CEILING MOUNTED
Ð	DUPLEX RECEPTACLE – FLOOR MOUNTED
	POKE THRU – POWER
•	DUPLEX RECEPTACLE – ABOVE COUNTER TOP
•	ISOLATED GROUND DUPLEX RECEPTACLE
	DOUBLE DUPLEX RECEPTACLE
<u>₩</u>	DOUBLE DUPLEX RECEPTACLE – CEILING MOUNTED
	DOUBLE DUPLEX RECEPTACLE - 1000K MOUNTED
₩ •	DOUBLE DUPLEX RECEPTACLE - ABOVE COUNTER TOP
₩	ISOLATED GROUND DOUBLE DUPLEX RECEPTACLE
Ψ	
	GFCI RECEPTACLE – ABOVE COUNTER TOP
φ	SINGLE RECEPTACLE
Φ	SINGLE RECEPTACLE – CEILING MOUNTED
	SPECIAL RECEPTACLE
	WELDING RECEPTACLE
PD	POWER AND DATA FURNITURE FEED
Sx	SWITCH (X DENOTES TYPE OF SWITCH)
-	EMERGENCY "OFF" PUSH BUTTON STATION
o	PUSHBUTTON OR SELECTOR CONTROL SWITCH
0	PUSHBUTTON CONTROL SWITCH - 1 BUTTON - EXIST./DEMO
Θ	SPECIAL POWER CONNECTION TO EQUIPMENT
0	JUNCTION BOX
Ø	3 PHASE MOTOR
6	SINGLE PHASE MOTOR
	NON-FUSED DISCONNECT SWITCH
	FUSED DISCONNECT SWITCH
	COMBINATION MOTOR STARTER
+	TELEPHONE RECEPTACLE - ABOVE COUNTER TOP
	DATA RECEPTACLE
	POKE THRU – DATA
₹	DATA RECEPTACLE – ABOVE COUNTER TOP
V	TELEPHONE/DATA RECEPTACLE
	POKE THRU – TEL./DATA
₹	TELEPHONE/DATA RECEPTACLE – ABOVE COUNTER TOP
	RECESSED LIGHTING/RECEPTACLE PANEL
	RECESSED LIGHTING/RECEPTACLE PANEL - EXISTING
	SURFACE LIGHTING/RECEPTACLE PANEL
	SURFACE LIGHTING/RECEPTACLE PANEL - EXISTING
	MAIN DISTRIBUTION PANEL
	TELEPHONE TERMINAL CABINET
CP	CONTROL PANEL
DCP	DOOR CONTROL PANEL
K	SEVEN DAY CONTROLLER
	POWER POLE
C	LIGHTING CONTACTOR
M	METER
•	CONDUIT UP
•	CONDUIT DOWN
s (),	LINE BREAK SYMBOL
	WIRE RUN
B-1	HOME RUN TO PANEL – CIRCUIT NO NOTED
	NEW CONSTRUCTION

ELECTRICA	L LIGHTING LEGEND
	2'x4' FLUORESCENT FIXTURE
	1'x4' FLUORESCENT FIXTURE
	2'x2' FLUORESCENT FIXTURE
	1'x2' FLUORESCENT FIXTURE
	2'x4' FLUORESCENT FIXTURE (EMERGENCY LIGHT)
	1'x4' FLUORESCENT FIXTURE (EMERGENCY LIGHT)
	2'x2' FLUORESCENT FIXTURE (EMERGENCY LIGHT)
	1'x8' INDUSTRIAL OR STRIP FIXTURE
⊢⊶⊣	1'x4' INDUSTRIAL OR STRIP FIXTURE
F	WALL MOUNT FOR STRIP FIXTURE
0	ROUND SHAPE LIGHT FIXTURE
	ROUND SHAPE LIGHT EMERGENCY/NIGHT LIGHT FIXTURE
♀	WALLWASHER FIXTURE
₽/₽	WALL MOUNTED FIXTURE
R	LIGHT REEL
×	FIXTURE TYPE IDENTIFIER
	BATTERY OPERATED EMERGENCY LIGHT UNIT
А	REMOTE HEAD – EMERGENCY LIGHT UNIT
⊗∕✿	EXIT LIGHT - CEILING MOUNTED
H⊗∕H⊅	EXIT LIGHT – WALL MOUNTED
•	BLANK FOR EXIT LIGHT
НФ	EXIT LIGHT – BI-DIRECTIONAL
Sx	LIGHTING SWITCH (X DENOTES TYPE OF SWITCH)
S ₃	THREE WAY LIGHTING SWITCH
S₄	FOUR WAY LIGHTING SWITCH
S⊳	DIMMER LIGHTING SWITCH

	L SPECIAL SYSTEM LEGEND
F	FIRE ALARM PULL STATION
Ę	FIRE ALARM AUDIO VISUAL DEVICE
ĒO	FIRE ALARM STROBE
	SMOKE DETECTOR
В	BELL – CEILING MOUNTED
B	BELL – WALL MOUNTED
©	CABLE OUTLET
FS	FLOW SWITCH
TS	TAMPER SWITCH
WT	WATCH TOUR STATION
М	MONITOR MODULE
	HEAT DETECTOR
FACP	FIRE ALARM CONTROL PANEL
FAAP	FIRE ALARM ANNUNCIATOR PANEL
К	CONTROL MODULE
Н	HORN
Ю	CLOCK – WALL MOUNTED
œ	CLOCK – 2–FACE – WALL MOUNTED
Θ	CLOCK – CEILING MOUNTED
Ċ	ELAPSE TIME INDICATOR
SP	SPEAKER – CEILING MOUNTED
San T	SPEAKER – WALL MOUNTED
\heartsuit	VOLUME CONTROL
н <u>Ď</u> -	MOTION DETECTOR - WALL MOUNTED
- <u>`</u> ¢-	MOTION DETECTOR - CEILING MOUNTED
\odot	MICROPHONE JACK
	CARD READER
□/*⊄	CARD READER - EXISTING/DEMOLITION
-	MAGNETIC LOCK
<i>□ 4,</i>	MAGNETIC LOCK - EXISTING/DEMOLITION
I	INTERCOM STATION
®	CORD REEL
	CLOSED CIRCUIT VIDEO CAMERA
Ō	THERMOSTAT

NOTE: SOME SYMBOLS AND ABBREVIATIONS SHOWN MAY NOT APPLY TO THIS PROJECT

ELECTRICAL CODE:

PROJECT IS DESIGNED AND SUBMITTED PER NEC 2017 (STATE OF MICHIGAN ELECTRICAL CODE) 2017 NATIONAL ÉLECTRICAL CODE WITH PART 8 AMENDMENTS EFFECTIVE JANUARY 4, 2019

ENERGY CODE:

MBC 2015 (MICHIGAN BUILDING CODE 2015) – CHAPTER 13& MEC 2015 (MICHIGAN ENERGY CODE 2015) – CHAPTERS 1 THROUGH 6 & MICHIGAN ENERGY CODE, PART 10A. RULES (ANSI/ASHRAE/IES STANDARD 90.1-2013) EFFECTIVE SEPTEMBER 20, 2017

GENERAL ELECTRICAL NOTES:

- OTHERWISE AS BEING PROVIDED BY THE OWNER.
- CODES, LAWS ORDINANCES AND REGULATIONS.
- 5. ALL WIRE SHALL BE STRANDED COPPER, #12AWG MINIMUM, TYPE THHN/XHHW INSULATION RATED 75 DEGREES C, 600 VOLTS UNLESS NOTED OTHERWISE ON THE PLANS. WIRE SIZES LARGER THAN #12AWG SHALL BE STRANDED COPPER TOO.
- LOCATION OF ELECTRICAL EQUIPMENT IS DIAGRAMMATIC AND SHOWS THE DESIGN INTENT ONLY. CONTRACTOR SHALL COORDINATE WITH THE PLANS OF ALL OTHER BE PROVIDED AND INSTALLED BY THE CONTRACTOR.
- 7. ALL ITEMS INCIDENTAL TO AND/OR REQUIRED TO COMPLETE THE INSTALLATION SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR.
- 8. ALL ELECTRICAL EQUIPMENT, INCLUDING CONDUIT AND WIRING SHALL BE NEW AND UNUSED UNLESS NOTED OTHERWISE.
- TO MECHANICAL PIPING.
- OTHERWISE. HOME RUNS THAT EXCEED 70 FEET IN LENGTH SHALL BE #10. USE OF MC CABLES PER NEC ARTICLE 330 IS PERMITTED.
- BOXES AND CONDUITS WITH PANDUIT CORP. 'INSTA-CODE' PIPE MARKERS OR AN ENGINEER APPROVED EQUIVALENT PRODUCT.
- 14. PROVIDE CIRCUIT I.D. ON THE INSIDE OF ALL RECEPTACLES, CONSISTENT WITH EXISTING METHODS.
- 15. COORDINATE WITH ARCHITECTURAL PLANS FOR EXACT LOCATIONS OF LIGHTS, SWITCHES, RECEPTACLES, AND WIRING DEVICES.
- THESE DESIGN CONTRACT DRAWINGS.
- 250.66.
- AUTHORITY HAVING JURISDICTION BEFORE AND AFTER PLACEMENT OF FIRE SEAL MATERIALS.
- 19. PROVIDE POWER TO ALL MOTORIZED DAMPERS.
- 20. REPAIR AREAS DAMAGED DURING CONSTRUCTION TO MATCH ADJACENT AREAS WITH RESPECT TO BOTH COLOR AND FINISH.
- THE CONDUIT RUN. 22. IDENTIFY NEW BRANCH CIRCUITS AT THE PANEL AND AT THE LOAD OUTLET, RECEPTACLE AND SWITCH. IDENTIFY THE PURPOSE OF INDIVIDUAL CIRCUIT BREAKERS, SAFETY SWITCHES AND MOTOR STARTERS BY MEANS OF NAMEPLATES AS INDICATED.
- 110.34.
- ON THE ELECTRICAL ONE-LINE DIAGRAM OR EQUAL RATING AS ELECTRICAL PANEL.
- CONDUCTORS USING A COMMON NEUTRAL MUST ORIGINATE FROM DIFFERENT PHASES.
- CIRCUIT WIRING. HOME RUNS SHALL BE EMT CONDUIT & WIRE.
- 27. ALL CIRCUITS SHALL INCLUDE GROUND WIRES.
- 28. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR ELECTRICAL POWER CONNECTIONS TO ALL OWNER FURNISHED SYSTEMS FURNITURE.
- 29. NEC: ALL WORK SHALL BE INSTALLED PER THE LATEST EDITION OF THE N.E.C. AND ALL STATE AND LOCAL CODES HAVING JURISDICTION. 30. EXCEPT WHERE SHOWN OTHERWISE, INSTALL EQUIPMENT AND DEVICES AT THE FOLLOWING HEIGHTS:
- 1. RECEPTACLES (WALL): 18" A.F.F. TO CENTER 2. RECEPTACLES (ABOVE COUNTER): 44" A.F.F. TO CENTER
- 3. RECEPTACLES (UNFINISHED AREA): 48" A.F.F. TO TOP
- 4. SURFACE RACEWAY RECEPTACLE STRIPS: 42" A.F.F. TO BOTTOM 5. LIGHT SWITCHES: 48" A.F.F. TO TOP
- 6. TELEPHONE OUTLETS (WALL PHONE): 54" A.F.F. TO CENTER
- 7. TELEPHONE/DATA OUTLETS: 18" A.F.F. TO CENTER
- 8. CLOCK OUTLETS: 88" A.F.F. TO CENTER 9. FIRE ALARM PULL STATIONS: 48" A.F.F. TO TOP
- 10. FIRE ALARM HORN/STROBES: 80" A.F.F. TO BOTTOM OR 6" BELOW CEILING (WHICHEVER IS LOWER)
- 11. CARD READERS: 48" A.F.F. TO CARD SLOT
- 12. SECURITY SYSTEM CONTROLS: 48" A.F.F. TO TOP 13. THERMOSTATS/HVAC CONTROLS: 48" A.F.F. TO TOP
- 14. ELECTRICAL PANELS: 72" A.F.F. TO TOP
- 15. SAFETY SWITCHES/MOTOR STARTERS: 72" A.F.F. TO TOP (EXCEPT TOP OF HANDLE SHALL NOT EXCEED 78" A.F.F.) 16. MOTOR CONTROL PUSHBUTTONS: 60" A.F.F. TO CENTER
- 31. ALL GROUNDING ELECTRODES THAT ARE PRESENT AT EACH BUILDING OR STRUCTURE MUST BE BONDED TOGETHER TO FORM THE GROUNDING SYSTEM PER 250.50: USED AS A PART OF GROUNDING ELECTRODE SYSTEM)). NEC 250.52(A)(1)
- b. METAL FRAME OF THE BUILDING OR STRUCTURE (WHERE EFFECTIVELY GROUNDED) NEC 250.52(A)(2) c. CONCRETE ENCASED ELECTRODE (ENCASED AT LEAST 2" OF CONCRETE) NEC 250.52(A)(3)
- d. GROUND RING NEC 250.52(A)(4) e. GROUND ROD NEC 250.52(A)(5)
- INSTALLED AND USED.
- BASED ON NEC TABLE 250-66 USING THE UNGROUNDED SERVICE CONDUCTOR SIZE.
- NEC TABLE 250-122 USING THE FEEDER CIRCUIT OVERCURRENT DEVICE SIZE OR THE SEPARATELY DERIVED SYSTEM OVER CURRENT DEVICE SIZE.
- 34. BOND HOT AND COLD WATER PIPING SYSTEMS.
- 36. COORDINATE ALL CONSTRUCTION WORK WITH ARCHITECTURAL PHASING.
- 37. NO DIAGONAL CONDUIT RUNS WILL BE ALLOWED. ALL CONDUIT RUNS SHALL BE PARALLEL TO BUILDING STRUCTURAL STEEL.
- ON THE DRAWINGS OR SPECIFIED. REFER TO MECHANICAL DRAWING CONTROL DIAGRAMS AND MECHANICAL EQUIPMENT SHOP DRAWINGS.

ALL NECESSARY NEW ELECTRICAL EQUIPMENT REQUIRED FOR THE WORK PROPOSED SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR UNLESS NOTED

2. THE CONTRACTOR SHALL COMPLY WITH, AND ALL WORK AND MATERIALS SHALL CONFORM TO THE REQUIREMENTS OF ALL APPLICABLE FEDERAL, STATE AND LOCAL

3. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS AND CERTIFICATES OF INSPECTIONS FOR ALL WORK.

4. ALL CONDUIT USED SHALL BE ELECTRICAL METALLIC TUBING (EMT) TYPICALLY EXCEPT AREAS ON BUILDINGS EXTERIOR WHICH SHALL BE RIGID GALVANIZED STEEL CONDUIT ONLY AND SHALL BE CONNECTED TO CAST, GASKETED OUTLET OR DEVICE BOXES ONLY. UNDERGROUND CONDUITS SHALL BE PVC SCHEDULE 40 OR SCHEDULE 80 PER SPECIFICATIONS UNLESS OTHERWISE NOTED ON DRAWINGS. USE OF MC CABLES INSTEAD OF CONDUIT IS PERMITTED NEC ARTICLE 330.

DISCIPLINES AND THEIR INSTALLERS FOR THE EXACT LOCATIONS OF ALL EQUIPMENT. PULL BOXES OR JUNCTION BOXES, THOUGH NOT SHOWN ON THE PLANS, SHALL

9. RECESSED FIXTURES SHALL MAINTAIN A 3" MINIMUM CLEARANCE TO ADJACENT COMBUSTIBLE MATERIALS UNLESS LABELED AS 'IC RATED'.

10. ALL CONDUITS SHALL BE CONCEALED IN CEILING, FLOORS OR WALLS UNLESS NOTED OTHERWISE OR AS DIRECTED BY THE ENGINEER OR OWNER.

11. CONDUITS SHALL BE ROUTED PARALLEL OR PERPENDICULAR TO WALLS AND/OR CEILING WHEREVER POSSIBLE. ROUTE NO CONDUITS DIRECTLY BENEATH AND PARALLEL

12. SINGLE PHASE LIGHTING AND RECEPTACLE HOMERUNS TO POWER AND LIGHTING PANELS SHALL TYPICALLY CONSIST OF 1/2"C. 2#12, #12GND. UNLESS NOTED 13. ALL CIRCUIT RUNS SHALL BE IDENTIFIED WITHIN EACH JUNCTION BOX WITH THE PROPER CIRCUIT NUMBER/DESCRIPTION OF EACH CIRCUIT ENTERING THE BOX. LABEL

16. THE CONTRACTOR SHALL RECORD ON AS-BUILT DRAWINGS ALL SIZES, MATERIAL, ELEVATIONS AND/OR LOCATIONS OF ALL ELECTRICAL EQUIPMENT THAT DEVIATE FROM

17. BOND RACEWAYS AND THE FRAMES AND ENCLOSURES OF MOTORS, BREAKERS, SWITCHES, AND OTHER ELECTRICAL EQUIPMENT TO THE BUILDING GROUNDING SYSTEM. INSTALL AN INSULATED EQUIPMENT GROUND CONDUCTOR IN EACH RACEWAY OR CONDUIT. SIZE EQUIPMENT GROUND CONDUCTOR IN ACCORDANCE WITH NEC TABLE

18. SEAL AROUND CONDUIT PENETRATIONS THROUGH INTERIOR WALLS AND FLOORS SEPARATING AREAS TO RESTORE ORIGINAL FIRE RATING; USE A UL CLASSIFIED FIRE SEALANT. SEAL PENETRATIONS THROUGH ROOF AND EXTERIOR WALLS TO MAKE WATERPROOF. REQUEST INSPECTION OF FIRE SEALS BY ELECTRICAL INSPECTOR FROM

21. PROVIDE A PULL STRING IN ALL DATA OUTLET CONDUITS OF NYLON, BRAIDED POLYESTER OR PROPYLENE (100# TEST), INSTALLED WITH 12" SLACK AT EACH END OF

23. PROVIDE AND MAINTAIN A CLEAR WORKING SPACE ABOUT ELECTRIC EQUIPMENT SWITCHBOARDS, PANELBOARDS, ETC.) IN ACCORDANCE WITH NEC ARTICLES 110.26 AND

24. PROVIDE CIRCUIT BREAKERS AND FUSES WITH UL LISTED INTERRUPTING RATING (RMS SYMMETRICAL AMPERES) GREATER THAN THE AVAILABLE FAULT CURRENT SHOWN 25. ARRANGE CONNECTIONS FOR SINGLE PHASE CIRCUITS TO ACHIEVE THREE PHASE LOAD BALANCE WITHIN 20% OF THE AVERAGE PHASE LOAD CURRENT. UNGROUNDED

26. ALL WIRING SHALL BE IN ELECTRICAL METALLIC TUBING (EMT) UNLESS PLENUM RATED PER N.E.C. MC TYPE CONDUIT/WIRING SYSTEM (WITH GALV. OR ALUM. ARMOR) MAY BE USED ABOVE CEILING AREAS PER N.E.C. FOR CONNECTION TO LIGHT FIXTURES (MAX. LENGTH = 6'-0''), AND VERTICALLY IN WALLS FOR RECEPTACLE BRANCH

a. METAL UNDERGROUND WATER PIPE (INTERIOR METAL WATER PIPING LOCATED MORE THAN 5 FEET FROM THE POINT OF ENTRANCE TO THE BUILDING SHALL BE NOT

WHERE NONE OF THESE GROUNDING ELECTRODE EXIST, ONE OR MORE OF THE GROUNDING ELECTRODES SPECIFIED IN 250.52(A)(4) THROUGH (A)(8) SHALL BE 32. INSTALL AN INSULATED THROAT GROUNDING BUSHING ON EACH METALLIC SERVICE ENTRANCE CONDUIT. BOND TO GROUND BUS USING CONDUCTOR THAT IS SIZED 33. INSTALL AN INSULATED THROAT GROUNDING BUSHING ON EACH METALLIC FEEDER CONDUIT. BOND TO GROUND BUS USING CONDUCTOR THAT IS SIZED BASED ON

35. ALL JUNCTION BOXES IN FIRE RATED WALLS SHALL BE PROTECTED BY 3M FIRE BARRIER MOLDABLE PUTTY PADS MPP+ OR APPROVED EQUAL UL LISTED PRODUCT.

38. PROVIDE AND CONNECT ALL CONTROL WIRING REQUIRED FOR THE PROPER OPERATION OF THE MECHANICAL SYSTEMS, EXCEPT WHERE SPECIFICALLY SHOWN OTHERWISE

ELECTRICAL NOTES:

- 1. SEE LEGEND, NOTES AND FLOOR PLANS.
- 2. NEC: ALL WORK SHALL BE INSTALLED PER THE CURRENT ADOPTED EDITION OF THE LATEST N.E.C. AND ALL STATE AND LOCAL CODES HAVING JURISDICTION.
- (XXXX) 3. AVAILABLE 3Ø FAULT CURRENT (RMS, SYM. AMPS).
 - 4. ALL EQUIPMENT IS SUBJECT TO UTILITY COMPANY SERVICES APPROVAL.
 - 5. UTILITY COMPANY SERVICE REPRESENTATIVE WILL DESIGNATE LOCATION OF PRIMARY CABLES AND CONDUITS.
 - 6. SEE LATEST UTILITY COMPANY SERVICE SERVICE GUIDELINES AND DETAILS FOR INSTALLATION DETAILS AND EQUIPMENT REQUIREMENTS.
 - 7. METER BOX SHALL BE SUPPLIED, INSTALLED AND WIRED BY ELECTRICAL CONTRACTOR. SEE UTILITY COMPANY SERVICE GUIDELINES AND DETAILS.
 - 8. CONTACT UTILITY COMPANY SERVICE REPRESENTATIVE TO VERIFY ALL EQUIPMENT REQUIREMENTS.
 - 9. ALL EQUIPMENT, FUSES AND CABLES MUST BE APPROVED BY UTILITY COMPANY SERVICE BEFORE ORDERING.
 - 10. DO NOT ORDER OR INSTALL ANY EQUIPMENT WITHOUT UTILITY COMPANY SERVICE PLANNER APPROVAL.

NOTE: EQUIPMENT. SERIES RATED

Bussmann ⁻	FC ² available fault current calculator
Project Name: Fault Name: System: wail. Fault Current L-L-L (Amps): Voltage L-L (Volts): Calculation Performed On: Calculation performed via the Cooper Bus	Trane - RTU Available Fault Current Main Switchboard Three-Phase 42,575 208 Oct 24, 2013 @ 2:25pm ssmann Available Fault Current Calculator v1.3
NOTE: PROVIDE AVAILABLE LABELS PER NEC 1 SAMPLE ABOVE.	FAULT CURRENT 10.24. SEE

ALI	JMINUM	FE
1.	INSTALL ALUMII FEEDERS AND	NUM F BRANC
2.	UL-LISTED AA- COMPACT-STRA	-8000 NDED
3.	ALL TERMINAL	LUGS
4.	COPPER AND A	ALUMIN .ESS D
5.	ALUMINUM CAN	INOT E

ALL SHORT CIRCUIT CALCULATIONS ARE DONE FOR FULLY RATED EQUIPMENT IS APPROVED FOR USE WHEN FULLY COMPLIES WITH NEC 240.86 SERIES RATING ARTICLE.

EEDERS:

FEEDERS PER MANUFACTURER RECOMMENDATIONS. ALUMINUM NCH WIRING IS ONLY ALLOWED ON CIRCUIT 100A AND LARGER. SERIES CONDUCTORS, XLPE INSULATION, AND CONDUCTORS SHALL BE USED.

S SHALL BE RATED FOR ALUMINUM AND COPPER CONDUCTORS. INUM CONDUCTOR SHALL NOT MAKE CONTACT WITH EACH OTHER DEVICE IS UL LISTED AND IDENTIFIED FOR THIS PURPOSE.

BE USED TO DIRECTLY TERMINATE TO MOTORS DUE TO THE CURRENT UL LISTING LIMITATION ON MOTORS. RUNNING ALUMINUM TO THE DISCONNECTING MEANS AND RUNN COPPER WIRING TO THE MOTOR.

DRAMNG NO.	SEAL	REVISIONS		STRUCTURAL ENGINEER	MEP ENGINEER	CONTRACTOR NOTE
Ε	ELECTF DIAGRA	DATE 1. 012921	VECINO RESTAURANT		Suite Troy,	CHRISTIAN CHRISTIAN 2111 WOO 313.825.2 ALL CONTRACTO SUB-CONTRACTO OR BOTH) ARE CONDITIONS, DII STATED OR NOT THE SPECIFICAT WORK. IF A DIM BETWEEN THESE THE EXISTING / BROUGHT TO THACTONS, DI STATED OR NOT THE SPECIFICAT WORK. IF A DIM BETWEEN THESE THE EXISTING / BROUGHT TO THACTONS, DI STATED OR NOT THE SPECIFICAT WORK. IF A DIM BETWEEN THESE THE EXISTING / BROUGHT TO THACTONS, DIM STATED OR NOT THE SPECIFICAT WORK. IF A DIM BETWEEN THESE THE EXISTING / BROUGHT TO THACTONS, DIM STATED OR NOT THE SPECIFICAT WORK. IF A DIM BETWEEN THESE THE EXISTING / BROUGHT TO THACTONS, SCHOOL CONFLICTS, SCHOOL
0-	MICAL C	DESCRIF Permit re	4100 3RD AVE, DETROIT, MI 48201		W Big Beaver Rd 1305 41 48084	HURTTIENN DWARD A DWARD A 2005 ORS (GENERAL O TO VERIFY AND MENSIONS, GUAN T, WITHIN THESE TO VERIFY AND MENSIONS, GUAN TO VERIFY AND MENSIONS, GUAN TO VERIFY AND MENSIONS, GUAN TO VERIFY AND MENSIONS, GUAN THE THE STORE TO VERIFY AND MENSIONS, GUAN TO VERIFY AND TO VERIFY AND TO VERIFY AND TO VERIFY AND MENSIONS, GUAN TO VERIFY AND TO VERIFY AND TO VERIFY AND TO VERIFY AND TO VERIFY AND TO VERIFY AND TO VERIFY AND TO VERIFY AND TO VERIFY AND TO VERIFY AND TO VERIFY AND TO VERIFY AND TO VERIFY AND TO VERIFY A
01		PTION VIEW	PERMIT REVIEW		SOLUTION RING Phone/Fax 248.247.1193 ww.sse-mep.com sse@sse-mep.com 2041004	E ARCHITECTS VENUE, #201, M CHA-C.C XONTRACTOR, OR AGENTS OF EITHER COORDINATE ALL DRAWINGS AND WITHIN DAMENCING WITH THE R OR CONFLICT OCCURS E SPECIFICATIONS OR DITIONS, IT SHALL BE TTENTION OF THE R OR CONFLICT OCCURS E SPECIFICATIONS OR DITIONS, IT SHALL BE TTENTION OF THE G WITH THE WORK, ANY SUB-CONTRACTORS, R OR BOTH) WHO FAIL DISTINCT OF ANY ENRORS; T IMPLICATIONS.
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ELECTRICAL SPECIFICATIONS 16000 - GENERAL ELECTRICAL REQUIREMENTS

A. The contract form, the general conditions, the supplementary general conditions, the special conditions, the instructions to bidders shall form an integral part of this section of the specifications.

16010 - WORK INCLUDED

- A. Electrical contractor shall provide all items, articles, materials, operations or methods mentioned, listed, or scheduled on drawings or in these specifications including all labor, materials, equipment, and incidentals necessarily required for the complete and proper operation of all systems installed under this contract.
- B. The installation of all products, systems, components shall be made so that all parts function together as a workable system, complete with all accessories necessary for proper operation. When installation is complete, all equipment shall be operative and in proper adjustment.
- C. All work shall be performed in conformity with the acceptable trade practices so as to contribute to efficiency of operations, minimum maintenance, maximum accessibility and siahtliness.
- D. To accomplish these results, the electrical contractor shall consult the architect and engineer's plans covering the various other trades work, the field layouts of the contractors for these other trades, and their approved shop drawing. Coordinate the installation of electrical equipment with the work of other trades to avoid interferences and to insure proper operation and proper clearance about installed equipment.
- E. Contractor shall examine the site prior to submittal of bids to familiarize himself with field conditions which may impact his conformance to the contract documents work to be performed. Submittal of bids attest to this contractor's knowledge of site conditions and his ability to perform his work as called for in these contract documents. This contractor shall assume full and complete responsibility for conclusions drawn from site examination. Requests for additional fees to complete required electrical work due to lack of knowledge of existing field conditions will not be accepted.
- F. Where active electric or other services are encountered during the performance of this contract, the electrical contractor shall protect, brace, and support them as required to maintain their proper operation. Do not prevent, interrupt, or disturb operation of existing services that are to remain. Relocate existing services as required, with owner's approval.
- 3. These specifications and accompanying drawings are intended to describe and provide for finished work. They are intended to be cooperative, and what is called for by either shall be as binding as if called for by both. The Contractor shall understand that the work herein described shall be complete in every detail.
- H. The Drawings are not intended to be scaled for rough-in measurements nor to serve as shop drawings. Field measurements necessary for ordering materials and fitting the installation to the building construction and arrangement shall be taken by the Contractor. Electrical Contractor shall check latest Architectural drawings and locate light switches where door swings are different from electrical drawings.
- Where job conditions require reasonable changes in equipment locations and arrangement, such changes shall be made without extra cost to the Owner, if requested before work is installed.
- J. Electrical Contractor shall cooperate with all other Contractors and Subcontractors performing work on this project as necessary to achieve a complete, neatly fitted installation for each condition. To that end, Contractor shall consult the Drawings and Specifications for all trades involved to determine nature and extent of work specified in other Sections which adjoins or attaches to his work. Cost of repairs of alterations of work in place made necessary by failure to observe said requirements shall be paid for by Contractor so failing. (See also Articles above and provisions of GENERAL CONDITIONS concerning jurisdictions.)
- K. Electrical Contractor shall confer with other Contractors and Subcontractors at the site to coordinate his work with theirs in view of job conditions to the extent that interferences may be eliminated and that maximum head room and clearance may be obtained. In the event that interferences develop, the Owner's Engineer's decision will be final as to which trade shall relocate its work, and no additional compensation will be allowed for the moving of conduit or equipment to clear such interferences.
- Where bulky equipment cannot be delivered or installed without unduly delaying concrete or masonry work. Contractor shall arrange for leaving openings in floors, walls or roofs, as necessary for installation. He also shall arrange for the subsequent closing of the openings. Arrangements for and closures of the openings shall be subject to Owner's representative's approval and all costs therefore shall be paid by Contractor requiring such provisions.
- M. Electrical Contractor shall "build in" his work and shall be responsible for holding his work in place while concrete is being poured and while walls are being laid. He shall have competent men available at all times to see that his work is well in advance of the Mason Contractor and that his work is coordinated with other trades.
- N. Any and all cutting of the building made necessary by the improper location of this work, or by the failure to build such work into the structure, shall be done at the expense of the Electrical Contractor.
- 0. No cutting or burning of holes through beams or other structural members shall be done without the specific permission of the Architect and the Owner's Engineer.
- P. All openings in walls, ceilings, or floors made by the Electrical Contractor shall be neatly patched by him to comply with the rating of the wall, after other work is done. At the discretion of the Architect, cutting and patching of work in place shall be done by the Contractor whose work is impaired, but the cost of such work shall be paid by the Electrical Contractor.
- Q. All measurements necessary for the proper installation of materials or apparatus shall be taken in the field. The Contractor will be held responsible for the correct fit of work installed.
- R. Electrical Contractor will be held responsible for all damage to the work installed by others that may be caused by his work or by anyone employed by him. Patching and replacing of damaged work will be done by the trade whose work was damaged and as directed by the Owner's representative, but the cost of same shall be paid by the Electrical Contractor.
- S. Electrical Contractor shall expedite his work in order to conform to the dates outlined in the General Contractor's progress schedule and where necessary shall work overtime at his own expense so that all work may be completed within the time originally outlined. See TIME OF COMPLETION AND GENERAL CONDITIONS for additional scheduling requirements.
- Responsibility for care and protection of electrical work rests with the Electrical Contractor until it has been tested and accepted. After delivery, before and after installation, protect equipment and materials against theft, injury or damage from all causes.
- U. For extra electrical work which may be proposed, this Contractor shall furnish to the Engineer an itemized breakdown of the estimated cost of materials and labor required to complete said work. The Electrical Contractor shall proceed only after receiving a written order from the Engineer establishing the agreed price and describing the work to be done.
- V. All electrical circuits shall be tested as soon as conductors are installed, and final tests shall be made in presence of Owner's Engineers when all work is complete. If required circuits are not properly controlled and insulated, Electrical Contractor shall make necessary changes and repairs at no expense to the Owner. All electric motors shall be checked for proper rotation and phasing.
- W. Electrical contractor shall provide 3" high concrete housekeeping pad for mounting of all free-standing electrical equipment, I.E. distribution panels, motor control centers, transformers, etc.

16030 - RULES, CODES, AND STANDARDS

- local, state, and federal government, and other authorities having lawful jurisdiction.
- B. All electrical work and equipment shall conform to the following regulations and codes: The National Electrical Code, latest adopted edition. 2. All Michigan State code amendments
- C. All installed equipment shall bear the UL seal of approval for its intended purpose.
- D. Where jurisdictional rules require the assistance of workers of the electrical trade, in the handling of equipment furnished by others or in the work of other trades, this Contractor shall provide such required assistance.
- E. Where the requirements of these contract documents are in conflict with the codes and regulations of governing agencies, the most stringent shall apply.

16040 - EQUIPMENT SUBSTITUTIONS

- the drawings, which requires any redesign of the structure, partitions, foundations, piping, wiring or any other part of the mechanical, electrical or architectural layouts, all such redesian and all new drawings and detailing required thereof shall be prepared by the Contractor at his own expense and only with approval of the Architects/Engineer. The contractor shall also pay any additional costs of the work resulting from the redesign.
- B. Where such approved deviation requires a different quantity and arrangement of ductwork, piping, wiring conduit, and equipment from that specified or indicated on the drawings, the Contractor shall furnish and install any such ductwork, piping, structural supports, insulation, controllers, motors, starters, electrical wiring, conduit, etc., and any other additional equipment required by the system, at no additional cost to the Owner.
- known as a "standard".
- standards and shall list this standard in the space provided on his proposal form. If the bidder fails to name a selected standard, it shall be assumed he is consenting to have the Owner make a selection
- E. Bidders may submit for consideration, substitutions for the standards specified, provided:
- provided such substitute is approved by the Owner's Engineer.
- Owner's Engineer prior to the award of the Contract.
- F. If the bidder names no substitute, the standards specified shall be used. No substitutes will be
- G. In all cases where the choice of more than one make or style of article or material is specified. the final selection of the make or style rests with the Owner. Where the Contractor will require an adjustment in his bid due to such selection by Owner, he shall be required to state in his bid the make or style of the article or material specified upon which his bid is based, and the amount to be added or deducted from his bid if other styles or materials specified are selected by owner. In the absence of such statement in the bid form, the Owner may select any make or style without incurring any price change.

16050 - MINOR DEVIATIONS

- establish the desired outlines and characteristics of such equipment. Minor deviations will be permitted to allow manufacturers specified to bid on their nearest stock equipment.
- B. Manufacturers catalog or model number mentioned in the Specifications or indicated on the Drawings are intended to be used as guides and shall not be interpreted as taking precedence over specific ratings or duties called for or shown, which modify stipulations in such cataloas. In all cases, the manufacturer shall verify the duties specified with the particular characteristics of the equipment he

16060 - SHOP DRAWINGS

- representative for approval before fabrication of the items. Shop drawings shall indicate name of project and name of Contractor.
- equipment, materials and details to satisfy himself that they conform with the intent of Engineer's drawings and specifications. Drawings found to be inaccurate or otherwise in error are to be returned to the Subcontractors for correction before submitting same to the Engineers.
- C. The checking and approving of shop drawings by the Engineers shall be construed as assisting, but not relieving, the Contractor from the responsibility for errors and/or omissions which may exist good by the Contractor at no additional cost to owner.
- sections as to required supply voltages (i.e., motors). Where conflict arises at later date due to approved shop drawings, it shall be the responsibility of this Contractor to provide all necessary equipment, materials, and labor to supply the necessary electrical service for proper operation of supplied equipment at no additional cost to Owner.

16080 – PACKAGE EQUIPMENT

- complete with all associated electrical components by those trades.
- located devices to leave ready for operation except for a single incoming power service.
- C. Any special work to be provided under this Division of the Specifications outside the definition of package Equipment listed hereinafter.
- D. Package Equipment as specified herein shall include but not be limited to the following:
- 1. Mechanical equipment 2. Security equipment

A. All work shall be performed in strict conformance with all applicable rules, codes and regulations of

A. Where the Contractor proposes to use an item of equipment other than that specified or detailed on

C. The name or make of any article, device, material, form of construction, fixture, etc., named in this specification, or on drawings whether or not the words, "or Owner approved equal" are used shall be

D. Where two or more standards are named together, bidder shall base his proposal upon any of the

1. Name the substitute bid on, and the addition or deductions they will make to or from their bid,

2. Complete specifications and descriptions of the substitutes bid upon shall be furnished to the

allowed after the award of the Contract, except with the approval of the Owner's Engineer.

A. Dimensions and ratings of equipment herein specified or indicated on the Drawings are intended to

intends to offer for approval, and shall offer only items which comply with Specification requirements.

A. Complete shop drawings for all electrical manufactured items shall be submitted to the owner's

B. Contractor shall thoroughly check all shop drawings with regards to measurements, sizes of

thereon. Where errors or omissions are discovered at a later date, they must accordingly be made

D. It is the responsibility of the Contractor to submit shop drawings which are in conformance with the design drawings. This Contractor shall coordinate equipment specified or called for under Division 15 inconsistencies in electrical/mechanical drawings concerning the installation of equipment covered by

A. "Package Equipment" shall be defined as Mechanical, Architectural, Civil, or other Trades equipment and which is specified in other Divisions of this Specification and which shall be furnished and installed

B. Package Equipment shall include control wiring, control device, fused switch type or circuit breaker disconnecting device, starters, control transformers with secondaries as specified by this Division, interlocks, relays, conduit, wire, terminal blocks, wiring and device identification, etc., for integral as well as remotely

equipment shall be noted on the Contract Drawings accompanying these Specifications or in the Package

16110 – CONDUIT

- A. All conduit shall conform to the following regulatory requirements:
- 1. Rigid steel conduit ANSI C80.1
- 2. Intermediate metal conduit ANSI C80.6
- 3. Electrical metallic tubing ANSI C80.3
- 4. Rigid nonmetallic conduit NEMA TC2, Schedule 40
- B. Minimum conduit size shall be 1/2".
- C. Conduit Uses Shall Be As Follows:
- 1. Outdoor exposed: Use rigid galvanized steel conduit or intermediate metal conduit
- 2. Indoor office or finished area: use electrical metallic tubing. Flexible metallic tubing may be used in ceiling spaces for lighting fixture final connection (maximum 6' length). EMT, MC cable may be used - 15' max. Iength - use EMT for home runs to room area.
- 3. Indoor work areas: Use rigid galvanized steel conduit.
- 4. Conduit in slab or below floor slab: use rigid nonmetallic conduit.
- ^{5.} Final connections to vibrating equipment shall be made using flexible steel conduit (maximum 3 ft. length), use liquid — tight flexible metal ("sealtite") or non metallic conduit in wet or damp locations.
- 6. All home runs shall be in conduit. No flexible conduit of any type allowed for home runs.
- D. Indoors Wiring Methods As Follows:
- 1. Connection to vibrating equipment (including transformers and hydraulic, pneumatic, electric solenoid or motor driven equipment): Flexible metal conduit, except in wet or damp locations use liquid tight flexible metal conduit.
- 2. Use MC cable and Electrical Non-metallic Tubing (ENT) in applications allowed by NFPA 70.
- 3. Damp or Wet Locations: PVC conduit.
- 4. Exposed: Rigid metallic conduit to 8'-0" A.F.F., EMT above 8'-0" A.F.F.
- 5. Concealed: Electrical metallic tubing.
- 6. Boxes and Enclosures: NEMA 250, Type 1, except in damp or wet locations use NEMA 250, Type 4, cast aluminum.
- 7. Install raceways, boxes, enclosures, and cabinets as indicated, according to manufacturer's written instructions.
- 8. Conceal conduit and electrical metallic tubing, unless otherwise indicated, within finished walls, ceilings, and floors.
- Use raceway fittings compatible with raceway and suitable for use and location. Use threaded rigid steel conduit fittings, unless otherwise indicated. For EMT use set screw type, steel only.
- F. Install exposed raceways parallel to or at right angles to nearby surfaces or structural members, and follow the surface contours as much as practical.
- G. Join raceways with fittings designed and approved for the purpose and make joints right. Use bonding bushings or wedges at connections subject to vibration. Use bonding jumpers where joints cannot be made tight. Use insulating bushings to protect conductors.
- H. Install pull wires in empty raceways. Use No. 14 AWG zinc-coated steel or monofilament plastic line having not less than 200-lb (90-kg) tensile strength. Leave not less than 24 inches of slack pull wire at each end of the conduit.
- Stub-up Connections: Extend conductors to equipment with rigid steel conduit; flexible metal conduit may be used 6 inches above the floor (Maximum 6' length).
- J. Bond all conduit installations per N.E.C., install separate grounding conductor in all PVC and flexible metal conduit runs.
- K. Where conduits are run below grade, electrical contractor shall place a detectable warning tape above the entire length of the conduit run. Tape shall be run at 6" below finish grade. Detectable warning tape shall be acid and alkali - resistant polyethylene film warning tape manufactured for marking and identifying underground utilities, minimum 6" (150mm) wide, 4 mils (0.1mm) thick, continuously inscribed with a description of utility with metallic core encased with a protective jacket for corrosion protection, detectable by a metal detector when tape is buried up to 30 inches (750mm) deep, colored as follows:
- RED Electric YELLOW - Gas, oil, steam, and dangerous materials
- ORANGE Telephone and other communications
- M. Acceptable manufacturers of conduit and conduit fittings shall be as follows:
- 1. Steel Conduit, Rigid and Intermediate:
- Allied Midwest Republic Trianale
- 2. Steel Conduit, Electrical Metal Tubing:
- Allied Midwest Republic
- Triangle
- 3. Flexible Metal Conduit, Liquid Tight:
- Electri-Flex Sealtite-Anaconda
- 4. Flexible Metal Conduit:
- Acme American Metal Mouldina Triangle
- 5. Conduit Fittings Conduit Manufacturers listed for conduits heretofore are acceptable for fittings, in addition to the following:
- For EMT use set screw type Steel Only
- Crouse-Hinds Hubbell
- 0.Z./Gedney/Electric Co. Thomas & Betts
- Conduit and Outlet Boxes: 6. Arrow—Hart
- Bryant Crouse-Hinds
- Hubbell Thomas & Betts Appleton

N	. Size of Bends: Bends of rigid conduit shall be made so that the conduit will not be damaged and the internal diameter of the conduit will not be affectively reduced. The radius of the curve of the inner
	edge of any field bend shall not be less than shown in Table below: Conduit Radius of
	Size Conduit Bends Inches Inches 3/4" 5
	1 6 1 1/4" 8
	1 1/2" 10 2 12 2 1/2" 15
	3 1/2 18 4" 24
0	 Number of Bends: A run of conduit shall not contain more than the equivalent of four quarter bends (360 degree total).
1	<u> 6120 – WIRE AND CABLE</u>
A.	Building wire and cable shall be minimum No. 12 AWG copper conductor for power and lighting circuits, control
В.	Use wire rated 600v insulation type for use as follows:
	1. Power and lighting — THHN/THWN 2. Control — THHN/THWN
C.	3. Control Panels - THHN/THWN/MTW Acceptable Manufacturers, building wire and cable:
	1. Okonite 2. Pirelli
П	3. Rome 4. Triangle
D.	Acceptable Manufacturers, Wire Label:
E.	2. Westline
	Acceptable Manufacturer, Tape: 1. 3–M
F.	Acceptable Manufacturers, Lug and Wire Connectors:
	1. Buchanen 2. Burndy 3. O.Z./Gedney Electric Co. 4. Thomas & Betts
G.	Connectors and Splices: Wiring connectors of size, ampacity rating, material, and type and class for application and for service indicated
H.	Twisted—Pair Plenum: 7—strand, tinned—copper conductors (size per plan drawings); Teflon insulation; overall aluminum/polyester shield and No. 22 AWG tinned—copper drain wire; Teflon jacket; suitable for use in air—handling spaces.
١.	Install wires and cables according to the NECA's "Standard of Installation".
J.	Wiring at Outlets: Install with at least 12 inches of slack conductor at each outlet.
K.	Where multiple conductors are installed in common conduit they shall be installed in a single pull. Use cable pulling lubricants as necessary and do not exceed manufacturer's pulling tension to avoid damage to insulation.
L.	Control wiring: All control wiring shall be red All wires from other power sources shall be yellow All DC wiring shall be blue
0.	Run separate grounding conductor with all circuits.
	Provide and install all required fusible or non-fusible disconnect switches
,	shown on the drawings. All switches shall be heavy duty type in a NEMA 1 enclosure when mounted indoors, or a NEMA 3R enclosure, when mounted outdoors. Switches shall be quick-make, quick-break with a mechanical dual cover interlock.
E	Acceptable Manufacturers of Safety Disconnect Switches Shall Be as Follows:
	1. Square D 2. Siemens — I.T.E.
<u>1</u>	<u>6170 – MOTORS</u>
Α.	
<u>16</u> A.	210 - PANELBOARDS Panelboards shall conform to the latest NEMA, UL and NEC standards and the
В.	following ratings and data. Shall be dead front type with surface mounted galvanized steel cabinet, prime coated, with an internal assembly of circuit breakers. Trims shall have hinged and locked doors with glass or heavy plastic covered circuit directories to also indicate voltage, phase, and capacity as indicated on drawing. All locks shall be keyed alike. Boxes shall be galvanized, and front assembly shall be painted with a prime and finish coat of manufacturer's standard finish. Panels shall have main lugs or main circuit breaker as indicated on drawings.
C.	Circuit breakers shall be molded plastic case type, AC rated, bolt on, quick-make, quick-break, with trip free common operating handle, position indication, and common trip for 2 and 3 pole circuit breakers from thermal-magnetic trip device. Trip ratings and number of poles shall be as indicated on the drawings
D.	Panelboards shall be UL listed. Main bus bars shall extend the full height of the enclosure being provided regardless of branch circuit positions being called for on the schedules.
E.	Panelboard directories shall designate the lighting fixtures, etc. controlled by each branch circuit in the panel. The required information shall be neatly typewritten on directories in each panel circuit.

F. Acceptable manufacturers of panelboards are as follows:

1. Square D

2. Siemens – I.T.E.

3. GE

	011	DESCRIPTION								
		DESCRIPTION Wolk In Cooler		120	PHASE		HP	KVV		ELECTRICAL NOTES (SEE SCHEDULE)
0.1	1	Tyanaratar Caslar	DIRECT	120		15.0 CIR				F
0.1	1	Evaporator, Cooler	DIRECT	120		1.0	0/4			
0.Z	1		DIRECT	208		7.4	3/4		RUUF	MOCP: 15 Amps
J3 2.4	1	vvalk-in Freezer	DIRECT	120		15.0 CIR				F
ა. I ე. ე	1	Evaporator, Freezer	DIRECT	208		9.8	1 1/0			MOOD: 25 Americ
3.Z	1	Condensing Unit		208		12.0	1-1/2		RUUF	MOCP: 25 Amps
00	1	Pasta Extruder	L0-15P	208		10.8				
107	1			208	3	9.0	3		DFA 70"	
13	1		DIRECT	208						6
00	1	Condensate Hood	DIRECT	120		15.0 CIR	4/4			
0.1	1	Exnaust Fan	DIRECT	120	1	3.8	1/4		ROOF	1
JI 01	1	vvarewasner, Door Type, High Temp		208	3	49.0	1/6		05"	1
			5-15P	120		2.0	1/0		24"	
04	1		5-152	120		4.0	1/4		24"	
80	1	Espresso Machine, 2 Group, Traditional	DIRECT	208	1	30.0	4/40		24"	
09	1	Undercounter Refrigerator	5-15P	120	1	2.0	1/10	0.05	24"	
10	1	Espresso Grinder, Doser	5-15P	120	1	45.0.010		0.35	50"	0
00	1	Exnaust Hood, French Top	DIRECT	120	1	15.0 CIR			DFA	
0.1	1	Fire Suppression System	DIRECT	120	1	15.0 CIR	4/0		DFA	H
0.2	1	Exnaust Fan	DIRECT	208	3	1.9	1/2		RUUF	
0.3	1	Make Up Alr	DIRECT	208	3	18.8	5		ROOF	MOCP: 30 Amps
1.1	1	Refrigerated Base	5-15P	120	1	8.5			24"	
J2	1	Exhaust Hood, Hearth Grill	DIRECT	120	1	15.0 CIR			DFA	G
2.1	1		DIRECT	120	1	15.0 CIR			DFA	H
2.2	1		DIRECT	208	3	5.9	2		ROOF	G
4.1	1	Fire Suppression System	DIRECT	120	1	15.0 CIR			DFA	H
05	1	Combi, Electric	DIRECT	208	3	60.0			24"	
5.2	1	Ventless Hood	5-15P	120	1	15.0 CIR			50"	
06	1	Blast Chiller, Undercounter	DIRECT	208	1	11.7		2.3	12"	-
)7	1	Exhaust Hood, Pasta	DIRECT	120	1	15.0 CIR			DFA	G
7.1	1	Fire Suppression System	DIRECT	120	1	15.0 CIR			DFA	H
7.2	1	Exhaust Fan	DIRECT	208	3	4.6	1-1/2		ROOF	G
12	1	S/S Expo Counter w/ Prep and Hand Sink	DIRECT						24"	M
13	1	Undercounter Refrigerator	5-15P	120	1	4.8	1/4			Power supplied from rough-in for #512.
14	1	Undercounter Refrigerator	5-15P	120	1	4.5	1/4			Power supplied from rough-in for #512.
15	1	Center Plating Island	DIRECT	100					STUB-UP	N
16	1	Undercounter Refrigerator	5-15P	120		2.0	1/6			Power supplied from rough-in for #515.
17	1	Worktop Refrigerated	5-15P	120		2.46	1/5			Power supplied from rough-in for #515.
18	1	Worktop, Freezer	5-15P	120		4.8	1/4			Power supplied from rough-in for #515.
19	1	Undercounter Retrigerator	5-15P	120		4.8	1/4			Power supplied from rough-in for #515.
)5	1	Glasswasher	5-15P	120		3.5			24"	
J6	1	Back Bar Cooler	5-15P	120		7.0	1/4		24"	
6.1	1	Back Bar Cooler	5-15P	120	1	7.0	1/4		24"	
07	1	Underbar Refrigeration	5-15P	120	1	1.8	1/5		24"	
11	1	Undercounter Ice Maker, Square Cube	5-15P	120	1 1	7.5			24"	

- COIL OF CIRCUIT BREAKER IN PANELS AS INDICATED. IN CASE OF FIRE, POWER TO THE HOOD SHALL BE SHUT DOWN.
- $\langle 3 \rangle$ SEE ELECTRICAL REQUIREMENTS SCHEDULE FOR RECEPTACLES AND JUNCTION BOXES INSTALLING IN KITCHEN AND BAR AREA.
- $\langle 4 \rangle$ PROVIDE AND INSTALL OUTLETS FOR EACH PIECE OF EQUIPMENT REQUIRED TO MATCH AND MATE EQUIPMENT PLUG IN KITCHEN. 120 VOLT OUTLETS INSTALLED SHALL BE GFI TYPE. COORDINATE AND VERIFY WITH EQUIPMENT INSTALLER.
- (5) FIRE ANSUL SYSTEM: ELECTRICAL REQ'D TO INTERCONNECT SYSTEM W/ALL APPLIANCES BELOW HOOD TO DISCONNECT WHEN SYSTEM ACTIVATES. FIELD VERIFY.
- (6) E.C. TO PROVIDE 4" OCTAGON J.B. FLUSH IN WALL 48" A.F.F. WITH EMPTY 1/2" CONDUIT EXTENDED 6" ABOVE FINISHED CEILING FOR FIRE ANSUL SYSTEM REMOTE PULL STATION.
- $\langle 7 \rangle$ E.C. TO VERIFY REQUIREMENTS FOR INTERLOCKING FIRE ANSUL SYSTEM WITH ELECTRICAL PANEL (FOR POWER SHUT-OFF TO COOKING EQUIPMENT), EXHAUST FANS AND MAKE-UP AIR UNIT. (FIELD VERIFY).
- COORDINATE WITH MECHANICAL CONTRACTOR FOR INTERLOCKING $\langle 8 \rangle$ OF EXHAUST FAN KEF-1, KEF-2, KEF-3 AND KEF-4 STARTER WITH MAU-1.
- (9) GFI RECEPTACLE IN WEATHER PROOF BOX.
- (10) (2)2" EMPTY UNDERGROUND PVC CONDUITS TO INCOMING TELEPHONE/DATA SERVICE. PROVIDE PULL STRING. FIELD VERIFY EXACT LOCATION.
- (1) CENTER PLATING ISLAND. SEE SCHEDULE ELECTRICAL NOTES-NOTE N.
- (12) S/S EXPO COUNTER W/PREP AND HAND SINK. SEE ELECTRICAL NOTES- NOTE M.

SCHEDULE ELECTRICAL NOTES:

Note: Schedule notes pertain to individual items as indicated in the electrical schedule.

A Electrical Trades to provide conduit & wire time delay relay, solenoid valve and control panel for disposer.

B. Existing equipment to be resused - Verify requirements with Owner.

C. Owner provided equipment - Verify requirements with Owner or Owner's vendor.

D. Equipment item N.I.C.

E. Electrical Trades to provide & connect power to the demand defrost controller located on evaporator coils.

- **F**. Power for lights, alarm, door heat and heat tape.
- G. Coordinate exact interconnections between exhaust hood, MUA unit and exhaust fans with manufacturer's shop drawings.

H. Coordinate exact interconnections between exhaust hood, fire suppression system and building alarm system with exhaust hood and fire suppression system manufacturer's shop drawings. I. Electrical trades to provide interconnection from dish machine exhaust fan and vent fan control on dish machine. Fan to activate when dish machine is started and turn off when dish machine

J. Electrical Trades to coordinate and provide data requirements and final termination point for POS system with Owner.

K. Provide minimum 20 amp. circuit for this equipment.

L. Electrical Trades to interconnect table limit switch provided by FSEC with dish machine.

M. Electrical Trades to rough power out of wall, provide conduit, wiring and receptical to/in each empty j-box provided within counter by FSEC. To support FSEC provided equipment items to be

installed in or on counter.

N. Electrical Trades to stub-up power, provide conduit, wiring and receptical to/in each empty j-box provided within counter by FSEC. To support FSEC provided equipment items to be installed in or on counter.

O. Item to be installed in cabinet base, coordinate space and access with General Contractor.

P. Electrical Trades to provide 120V receptical, low voltage wiring and network connection on top of walk-in box near access panel for Kolpak's Arctic Fox Controller (or similar monitoring system). Verify exact requirements with maufacturer's approved shop drawings.

Q. Provide 3-wires plus ground.

GENERAL DRAWING NOTES:

- GN1. BOX DEPTH: COORDINATE WALL BOX DEPTH WITH OTHER TRADES FOR PROPER PLACEMENT DUE TO WALL COVERING THICKNESS
- GN2. WIRE: ALL 20 AMP 120V,1PH AND 208V,1PH CIRCUITS ARE 1/2"C, 2#12 & #12G WITH DEDICATED NEUTRAL. HOMERUNS OVER 70 FEET ARE #10 AWG. USE OF MC CABLES PER NEC ARTICLE 330 IS PERMITTED ONLY IN AREA WHERE IS NOT VISIBLE (DRYWALL OR CEILING TILES).
- CONDUIT ROUTING: CONCEAL CONDUITS IN WALLS, FLOORS OR ABOVE GN3. CEILINGS FOR NEW FINISHED AREAS.
- PANEL SCHEDULES: PROVIDE NEATLY TYPED PANEL DIRECTORIES FOR ALL GN4. PANELBOARDS. DESIGNATE LOAD SERVED BY EACH CIRCUIT. REQUIRED INFORMATION SHALL BE COMPLETED FOR EACH CIRCUIT IN PANEL.
- ELECTRICAL CONTRACTOR SHALL COORDINATE AND VERIFY WITH THE GN5. EQUIPMENT EXACT LOCATION OF ALL ELECTRICAL AND DATA OUTLETS INDICATED TO BE MOUNTED ON INDIVIDUAL PIECES OF EQUIPMENT. MATCH AND MATE EQUIPMENT PLUG.
- GN6. THE ELECTRICAL CONTRACTOR SHALL COORDINATE LOCATION AND HEIGHT OF ALL OUTLETS W/ ARCHITECTURAL ELEVATION DRAWINGS AND TECHNOLOGY DRAWINGS PRIOR TO PROCEEDING WITH WORK. NOTIFY ARCHITECT AND ENGINEER OF ANY DISCREPANCIES PRIOR TO PROCEEDING WITH WORK.
- EACH BRANCH CIRCUIT HOMERUN SHALL HAVE NO MORE THAN THREE GN7. CIRCUITS. PROVIDE 3P BREAKER IF SHARING NEUTRAL. EACH BRANCH CIRCUIT HOMERUN SHALL HAVE A SEPARATE GREEN INSULATED EQUIPMENT GROUNDING CONDUCTOR.
- SEE LEGEND AND PANEL BOARD SCHEDULES. GN8.
- AT THE END OF THE CONSTRUCTION BALANCE ALL PANEL PHASES AND GN9. RECIRCUIT THEM IN PANELS IF PHASE BALANCE IS MORE THAN 20%.
- GN10. COORDINATE MECHANICAL EQUIPMENT LOCATIONS WITH MECHANICAL TRADES. REFER TO MECHANICAL SCHEDULE SHEETS FOR ELECTRICAL REQUIREMENTS FOR MECHANICAL EQUIPMENT. PROVIDE ALL CONNECTIONS, STARTERS, DISCONNECTS, ETC. AS REQUIRED BY SCHEDULES AND WHERE NOTED ELSEWHERE. WHERE CIRCUIT SIZES ARE SHOWN ON THE ELECTRICAL DRAWINGS THAT DIFFER FROM WHAT IS INDICATED ON THE MECHANICAL SCHEDULES, PROVIDE THE CIRCUIT OF HIGHER AMPACITY.
- VERIFY REQUIREMENTS OF ALL MECHANICAL EQUIPMENT WITH SHOP GN11. DRAWINGS SUBMITTALS. NOTIFY ENGINEER OF ANY CONFLICTS BETWEEN EQUIPMENT SUBMITTALS AND ELECTRICAL DRAWINGS.
- GN12. ALL PENETRATION THROUGH ALL WALLS SHALL BE SEALED WITH HILTI FIRE STOP.
- GN13. PROVIDE AND INSTALL FIRE STOP MATERIAL FOR ALL SLEEVES PASSING THROUGH FLOORS AND FIRE RATED WALLS. PACK SLEEVES WITH FIRE STOP MATERIAL AFTER CABLES ARE INSTALLED. COORDINATE AND VERIFY WALLS AND FLOOR RATINGS WITH ARCHITECTURAL DRAWINGS.
- REFER TO ARCHITECTURAL ELEVATIONS AND TECHNOLOGY DRAWINGS PRIOR GN14. TO ROUGHING-IN OUTLETS, CEILING MOUNTED DEVICES ETC. COORDINATE ALL MOUNTING HEIGHTS AND LOCATIONS WITH ARCHITECTURAL AND TECHNOLOGY DRAWINGS. COORDINATE THE MOUNTING HEIGHTS OF OUTLETS ABOVE COUNTER TOP, SINKS, ETC. WITH ARCHITECTURAL ELEVATIONS AND THE TRADES INSTALLING THE WORK.
- PROVIDE AND INSTALL CONDUITS, JUNCTION BOXES AND ALL DEVICES GN15. RECESSED IN NEW BLOCK WALLS IN ALL FINISHED AREAS. ALL DEVICES INSTALLED IN UNFINISHED AREAS AND MECHANICAL/ELECTRICAL ROOMS SHALL BE SURFACE MOUNTED.
- GN16. NEC: ALL WORK SHALL BE INSTALLED PER THE CURRENT ADOPTED EDITION OF THE N.E.C. AND ALL STATE AND LOCAL CODES HAVING JURISDICTION.
- ALL WIRING INSTALLED IN OPEN CEILING AREAS OR OTHERWISE VISIBLE GN17. FROM ANY POINT ON FLOOR (POWER WIRING) SHALL BE INSTALLED IN CONDUITS. PAINT CONDUITS TO MATCH WALL/CEILING COLOR.
- THESE DRAWINGS REPRESENT THE GENERAL EXTENT AND ARRANGEMENT OF GN18. SYSTEMS, BUT ARE NOT TO BE CONSIDERED FABRICATION DRAWINGS. COORDINATE WITH OWNER TRADES, AND PROVIDE EACH SYSTEM COMPLETE, INCLUDING ALL NECESSARY COMPONENTS, FITTINGS, AND OFFSETS.
- INSTALL SYSTEMS SUCH THAT REQUIRED CLEARANCE AND SERVICE ACCESS GN19. SPACE IS PROVIDED AROUND ALL MECHANICAL AND ELECTRICAL EQUIPMENT, AND AROUND ANY COMPONENTS WITH REQUIRE SERVICE ACCESS.
- COORDINATE AND PROVIDE ACCESS DOORS WITHIN INACCESSIBLE CEILING, GN20. SHAFT, AND CHASE AREAS FOR ALL COMPONENTS WHICH REQUIRE SERVICE ACCESS. REFER TO ARCHITECTURAL DRAWINGS FOR CEILING TYPES.
- GN21. PROVIDE SUPPLEMENTARY STEEL AS REQUIRED FOR THE PROPER SUPPORT OF ALL SYSTEMS.

GENERAL DRAWING NOTES:

- WIRE: ALL 20 AMP 120V,1PH AND 208V,1PH CIRCUITS GN1. ARE 1/2"C, 2#12 & #12G WITH DEDICATED NEUTRAL. HOMERUNS OVER 70 FEET ARE #10 AWG. USE OF MC CABLES PER NEC ARTICLE 330 IS PERMITTED ONLY IN AREA WHERE IS NOT VISIBLE (DRYWALL OR CEILING TILES).
- GN2. EACH BRANCH CIRCUIT HOMERUN SHALL HAVE NO MORE THAN THREE CIRCUITS. PROVIDE 3P BREAKER IF SHARING NEUTRAL. EACH BRANCH CIRCUIT HOMERUN SHALL HAVE A SEPARATE GREEN INSULATED EQUIPMENT GROUNDING CONDUCTOR.
- SEE LEGEND AND PANELBOARD SCHEDULES. GN3.
- AT THE END OF THE CONSTRUCTION BALANCE ALL PANEL GN4. PHASES AND RECIRCUIT THEM IN PANELS IF PHASE BALANCE IS MORE THAN 20%.
- COORDINATE MECHANICAL EQUIPMENT LOCATIONS WITH GN5. MECHANICAL TRADES. REFER TO MECHANICAL SCHEDULE SHEETS FOR ELECTRICAL REQUIREMENTS FOR MECHANICAL EQUIPMENT. PROVIDE ALL CONNECTIONS, STARTERS, DISCONNECTS, ETC. AS REQUIRED BY SCHEDULES AND WHERE NOTED ELSEWHERE. WHERE CIRCUIT SIZES ARE SHOWN ON THE ELECTRICAL DRAWINGS THAT DIFFER FROM WHAT IS INDICATED ON THE MECHANICAL SCHEDULES, PROVIDE THE CIRCUIT OF HIGHER AMPACITY.
- GN6. VERIFY REQUIREMENTS OF ALL MECHANICAL EQUIPMENT WITH SHOP DRAWINGS SUBMITTALS. NOTIFY ENGINEER OF ANY CONFLICTS BETWEEN EQUIPMENT SUBMITTALS AND ELECTRICAL DRAWINGS.
- ALL PENETRATION THROUGH ALL WALLS SHALL BE SEALED GN7. WITH HILTI FIRE STOP.
- GN8. PROVIDE AND INSTALL FIRE STOP MATERIAL FOR ALL SLEEVES PASSING THROUGH FLOORS AND FIRE RATED WALLS. PACK SLEEVES WITH FIRE STOP MATERIAL AFTER CABLES ARE INSTALLED. COORDINATE AND VERIFY WALLS AND FLOOR RATINGS WITH ARCHITECTURAL DRAWINGS.
- NEC: ALL WORK SHALL BE INSTALLED PER THE CURRENT GN9. ADOPTED EDITION OF THE N.E.C. AND ALL STATE AND LOCAL CODES HAVING JURISDICTION.
- GN10. THESE DRAWINGS REPRESENT THE GENERAL EXTENT AND ARRANGEMENT OF SYSTEMS, BUT ARE NOT TO BE CONSIDERED FABRICATION DRAWINGS. COORDINATE WITH OWNER TRADES, AND PROVIDE EACH SYSTEM COMPLETE, INCLUDING ALL NECESSARY COMPONENTS, FITTINGS, AND OFFSETS.
- INSTALL SYSTEMS SUCH THAT REQUIRED CLEARANCE AND GN11. SERVICE ACCESS SPACE IS PROVIDED AROUND ALL MECHANICAL AND ELECTRICAL EQUIPMENT, AND AROUND ANY COMPONENTS WITH REQUIRE SERVICE ACCESS.
- GN12. COORDINATE AND PROVIDE ACCESS DOORS WITHIN INACCESSIBLE CEILING, SHAFT, AND CHASE AREAS FOR ALL COMPONENTS WHICH REQUIRE SERVICE ACCESS. REFER TO ARCHITECTURAL DRAWINGS FOR CEILING TYPES.
- GN13. PROVIDE SUPPLEMENTARY STEEL AS REQUIRED FOR THE PROPER SUPPORT OF ALL SYSTEMS.

KEY DRAWING NOTES:

(1) GFI RECEPTACLE PROVIDED WITH MECHANICAL UNIT.

じ RCH CHRISTIAN HURTTIENNE ARCHITECTS 2111 WOODWARD AVENUE, #201, MI #8201 313.825.2005 CHA-C.CO ALL CONTRACTORS (GENERAL CONTRACTOR, SUB-CONTRACTORS, MEMBERS OR AGENTS OF EITHER OR BOTH) ARE TO VERIFY AND COORDINATE ALL CONDITIONS, DIMENSIONS, QUANTITIES AND DETAILS, STATED OR NOT, WITHIN THESE DRAWINGS AND WITHIN THE SPECIFICATIONS BEFORE COMMENCING WITH THE WORK. IF A DIMENSIONAL ERROR OR CONFLICT OCCURS BETWEEN THESE DRAWINGS, THE SPECIFICATIONS OR THE EXISTING / PROPOSED CONDITIONS, IT SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE ARCHITECT, BEFORE PROCEEDING WITH THE WORK. ANY PARTY (GENERAL CONTRACTOR, SUB-CONTRACTORS, MEMBERS OR AGENTS OF EITHER OR BOTH) WHO FAIL TO DO SO TAKE FULL RESPONSIBILITY OF ANY ERRORS, CONFLICTS, SCHEDULE AND COST IMPLICATIONS. 3250 W Big Beaver Rd Suite #305 Troy, MI 48084 Phone/Fax 248.247.1193 www.sae-mep.com sae@sae-mep.com 2041004 820 4 Ζ \triangleleft Δ Σ \geq REVIE \triangleleft DETROIT, REST, PERMIT VECINO Ц Х \triangleleft **3RD** 4100 DESCRIPTION DATE 1. 012921 PERMIT REVIEW ELECTRICAL POWER ROOF PLAN **E1-02**

GENERAL DRAWING NOTES:

- GN1. SEE LEGEND AND LIGHTING FIXTURE SCHEDULE.
- THESE DRAWINGS REPRESENT THE GENERAL EXTENT AND ARRANGEMENT GN2. OF SYSTEMS, BUT ARE NOT TO BE CONSIDERED FABRICATION DRAWINGS. COORDINATE WITH OWNER TRADES, AND PROVIDE EACH SYSTEM COMPLETE, INCLUDING ALL NECESSARY COMPONENTS, FITTINGS, AND OFFSETS.
- GN3. INSTALL SYSTEMS SUCH THAT REQUIRED CLEARANCE AND SERVICE ACCESS SPACE IS PROVIDED AROUND ALL MECHANICAL AND ELECTRICAL EQUIPMENT, AND AROUND ANY COMPONENTS WITH REQUIRE SERVICE ACCESS.
- GN4. COORDINATE AND PROVIDE ACCESS DOORS WITHIN INACCESSIBLE CEILING, SHAFT, AND CHASE AREAS FOR ALL COMPONENTS WHICH REQUIRE SERVICE ACCESS. REFER TO ARCHITECTURAL DRAWINGS FOR CEILING TYPES.
- GN5. PROVIDE SUPPLEMENTARY STEEL AS REQUIRED FOR THE PROPER SUPPORT OF ALL SYSTEMS.
- GN6. BOX DEPTH: COORDINATE WALL BOX DEPTH WITH OTHER TRADES FOR PROPER PLACEMENT DUE TO WALL COVERING THICKNESS.
- GN7. INSTALL NO FIXTURE FINISHED TRIMS, REFLECTORS, LAMPS, ETC. BEFORE ALL GYPSUM BOARD INSTALLATIONS HAVE BEEN COMPLETED AND PAINTED AND ALL OTHER CONSTRUCTION WORK THAT GENERATES DUST OR AIRBORN DEBRIS HAS BEEN COMPLETED. ANY FIXTURES REQUIRING FINAL CLEANING SHALL BE CLEANED USING ONLY THE FIXTURE MANUFACTURER'S RECOMMENDED METHOD(S).
- FIXTURES DAMAGED BY INSTALLATION PRIOR TO THE SIGNIFICANT GN8. COMPLETION OF OTHER WORK IN THE PROJECT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE.
- GN9. PROVIDE AND INSTALL CONDUITS, JUNCTION BOXES AND ALL DEVICES CONCEALED IN WALLS OR ABOVE CEILINGS FOR ALL FINISHED AREAS. ALL DEVICES INSTALLED IN UNFINISHED AREAS AND MECHANICAL/ELECTRICAL ROOMS SHALL BE SURFACE MOUNTED.
- GN10. ALL PENETRATION THROUGH ALL WALLS SHALL BE SEALED WITH HILTI FIRE STOP.
- GN11. PROVIDE AND INSTALL FIRE STOP MATERIAL FOR ALL SLEEVES PASSING THROUGH FLOORS AND FIRE RATED WALLS. PACK SLEEVES WITH FIRE STOP MATERIAL AFTER CABLES ARE INSTALLED. COORDINATE AND VERIFY WITH ARCHITECTURAL DRAWINGS.
- GN12. COORDINATE THE EXACT LOCATION OF ALL CEILING MOUNTED DEVICES WITH THE ARCHITECTURAL REFLECTED CEILING PLAN.
- GN13. SEE POWER PLANS FOR PANELBOARD LOCATIONS AND SCHEDULES. GN14. NEC: ALL WORK SHALL BE INSTALLED PER THE CURRENT ADOPTED EDITION OF THE N.E.C. AND ALL STATE AND LOCAL CODES HAVING JURISDICTION.
- GN15. DO NOT INSTALL WALL SWITCHES BEHIND DOOR OR OBSTRUCTED BY FURNITURE. VERIFY AND COORDINATE WITH DOOR SWING BEFORE INSTALLATION. IT IS CONTRACTOR RESPONSIBILITY TO RELOCATE ANY WALL SWITCHES OBSTRUCTED BY DOOR BEFORE FINAL PUNCH LIST.
- GN16. ALL WIRING INSTALLED IN OPEN CEILING AREAS OR OTHERWISE VISIBLE FROM ANY POINT ON FLOOR (POWER WIRING, CONTROL WIRING, LOW VOLTAGE WIRING ETC.) SHALL BE INSTALLED IN CONDUITS.
- GN17. WIRE: ALL 20 AMP 120V,1PH CIRCUITS ARE 1/2"C, 2#12 & #12G WITH DEDICATED NEUTRAL. HOMERUNS OVER 70 FEET ARE #10 AWG. USE OF MC CABLES PER NEC ARTICLE 330 IS PERMITTED ÖNLY IN AREA WHERE IS NOT VISIBLE (DRYWALL OR CEILING TILES).
- GN18. ALL EMERGENCY LIGHTING FIXTURES ARE SHOWN HALF SHADED ON FLOOR PLAN. ALL EMERGENCY LIGHTING FIXTURES SHALL BE SUPPLIED WITH FACTORY INSTALLED EMERGENCY BALLAST TO PROVIDE MIN. 1,100 LUMENS FOR 90 MIN. COMPATIBLE WITH LIGHTING FIXTURES SHOWN ON THE FLOOR PLAN. IF FACTORY INSTALLED BALLAST IS NOT AVAILABLE PROVIDE COMPATIBLE EMERGENCY BALLAST BY BODINE OR APPROVED EQUAL WITH REMOTE TEST SWITCH AND CHARGING INDICATOR.
- GN19. CONNECT EXIT LIGHTS, EMERGENCY LIGHTING FIXTURE AND BATTERY OPERATED EMERGENCY LIGHTS TO UN-SWITCHED LIGHTING CIRCUIT IN THAT AREA AHEAD OF LOCAL SWITCHING.
- GN20. ALL WIRING IS NOT SHOWN ON FLOOR PLAN. SEE DETAILS AND MANUFACTURER INSTALLATION REQUIREMENTS. WIRE TO CIRCUIT NUMBER AS SHOWN.

KEY DRAWING NOTES:

- (1) SEE OCCUPANCY SENSORS AND SWITCH SCHEDULE.
- (2) LOW VOLTAGE OCCUPANCY SENSORS WIRING IS NOT SHOWN ON FLOOR PLANS. SEE MANUFACTURERS WIRING DETAILS. USE WIRING SIZE PER THAT TABLE AS REQUIRED.
- $\langle \overline{3} \rangle$ SEE SAME FLOOR FOR CONTINUATION.
- $\langle 4 \rangle$ PROVIDE AND INSTALL JUNCTION BOX AND WIRING FOR OWNER PROVIDED SIGNAGE. SIGNAGE SHALL BE CONTROLLED VIA LIGHTING CONTROL PANEL AND PHOTO EYE. COORDINATE AND VERIFY EXACT LOCATION WITH ARCHITECTURAL.
- (5) nPOD GFX LIGHTING CONTROL SWITCH.
- 6 FRESCO LIGHTING CONTROL PANEL. FIELD VERIFY EXACT LOCATION.
- $\langle 7 \rangle$ OUTDOOR LIGHTING SHALL BE CONTROLLED VIA LIGHTING CONTROL PANEL AND PHOTO EYE.
- $\langle 8 \rangle$ SEE SAME SHEET FOR CONTINUATION.

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FLOOR PLAN

F1 - 03

-VIA LCP-B-9 TO B-8 $\langle 7 \rangle$

LIGH	HTING FIXTURE SCHEDULE:	
1. WHERE APPROVE 2. COORI	E A SINGLE MANUFACTURER IS INDICATED FOR A LIGHTING FIXTURE, NO SUBSTITUTIONS WILL BE ALLOWED. WHERE "OR D EQUAL" IS INDICATED, EQUIVALENT FIXTURE BY OTHER MANUFACTURES WITH SAME PERFORMANCE WILL BE CONSIDERED. DINATE FIXTURE TRIM WITH CEILING TYPE.	
TYPE	DESCRIPTION	WATTAGE
A	SEE ARCHITECTURAL DRAWINGS FOR LIGHTING FIXTURE SCHEDULE.	
В	SEE ARCHITECTURAL DRAWINGS FOR LIGHTING FIXTURE SCHEDULE.	
С	SEE ARCHITECTURAL DRAWINGS FOR LIGHTING FIXTURE SCHEDULE.	
D	SEE ARCHITECTURAL DRAWINGS FOR LIGHTING FIXTURE SCHEDULE.	
E	SEE ARCHITECTURAL DRAWINGS FOR LIGHTING FIXTURE SCHEDULE.	
F	SEE ARCHITECTURAL DRAWINGS FOR LIGHTING FIXTURE SCHEDULE.	
G	SEE ARCHITECTURAL DRAWINGS FOR LIGHTING FIXTURE SCHEDULE.	
OA	SEE ARCHITECTURAL DRAWINGS FOR LIGHTING FIXTURE SCHEDULE.	-w
EM	CONTEMPORARY COMMERCIAL DESIGN LED EMERGENCY LIGHTING UNIT. HOUSING IS STANDARD WHITE THERMOPLASTIC WITH A COMPACT AND LOW—PROFILE CONTEMPORARY DESIGN. ELM2L FEATURES TWO, HIGH PERFORMANCE LEDS WITH ACRYLIC LENS RATED AT 1.2 WATTS EACH AND DELIVERING A TOTAL OF 220 LUMENS IN A LINEAR PATTERN. TYPICAL LED LAMP LIFE IS 10 YEARS. LITHONIA CAT. #ELM2L OR APPROVED EQUAL.	4.8W
EX	EXIT SIGN, RED LETTERS, L.E.D. LIGHT SOURCE, DIRECTIONAL CHEVRON ARROWS AS REQUIRED, MATTE BLACK BRUSHED ALUMINUM FACE. LITHONIA LIGHTING CATALOG #LQM—S—3—R—120/277 OR APPROVED EQUAL.	3W
EXM	COMBO EXIT AND EMERGENCY LED LIGHTING UNIT, TWIN LED LAMP HEADS OPERATE IN EMERGENCY (DC INPUT) MODE WITH 12 SERIES—PARALLEL WHITE LEDS IN EACH HEAD. PROVIDES REDUNDANT LIGHT SOURCES TO ENSURE EMERGENCY LIGHTING PERFORMANCE. THE TYPICAL LIFE OF THE EXIT LED LAMP IS 10 YEARS. CURRENT—LIMITING CHARGER MAXIMIZES BATTERY LIFE AND MINIMIZES ENERGY CONSUMPTION. 120V. LITHONIA CAT. #LHQM—LED—R OR APPROVED EQUAL.	3W

EMERGENCY LIGHTING FIXTURES "EM/BL"

1. ALL EMERGENCY LIGHTING FIXTURES ARE SHOWN HALF SHADED ON FLOOR PLAN. ALL EMERGENCY LIGHTING FIXTURES SHALL BE SUPPLIED WITH FACTORY INSTALLED EMERGENCY BALLAST (EM/BL) TO PROVIDE MIN. 1,100 LUMENS FOR 90 MIN. COMPATIBLE WITH LIGHTING FIXTURES SHOWN ON THE FLOOR PLAN.

IF FACTORY INSTALLED BALLAST IS NOT AVAILABLE PROVIDE COMPATIBLE EMERGENCY BALLAST BY BODINE OR APPROVED EQUAL WITH REMOTE TEST SWITCH AND CHARGING INDICATOR TO PROVIDE MIN. 1,100 LUMENS FOR 90 MIN.

<u>OCCUP/</u>	ANCY SENS	OR AND SWITCH	ES SCHEDUL	<u>_E:</u>					
SYMBOL	MANUF.	MODEL NO.	COLOR	MIN. LIGHT LEVEL SETTING	TIME DELAY SETTING	VOLTAGE LEVEL	POWER PACK	MOUNTED	REMARKS
S	SEE SPECS	_	AS DIRECTED BY ARCHITECT	N/A	N/A	120/277V	N/A	WALL	LINE VOLTAGE TOGGLE SWITCH
SD	SEE SPECS	-	AS DIRECTED BY ARCHITECT	N/A	N/A	120/277V	N/A	WALL	LINE VOLTAGE DIMMER SWITCH, ARCHITECTURAL PRESET SLIDE DIMMER COMPATIBLE WITH LAMPS AS INDICATED ON DRAWINGS.
S20	ACUITY	WSX PDT XX	AS DIRECTED BY ARCHITECT	30Fc	20 min.	120/277V	NO	WALL	NO CONTROL PANEL NEEDED. 0-800W, ONE LIGHTING LEVEL
S30	ACUITY	WSX PDT 2P XX	AS DIRECTED BY ARCHITECT	30FC	20 min.	120/277V	NO	WALL	NO CONTROL PANEL NEEDED. 0-800W, DUAL LIGHTING LEVEL
Swd	ACUITY	WSX PDT D XX	AS DIRECTED BY ARCHITECT	_	20 min.	120V 277V	NO	WALL	DIMMABLE AUTOMATIC WALL SWITCH, 10-500W, UP TO 300sf, 10% TO 100% DIMMING
Strs	ACUITY	PTS 720	AS DIRECTED BY ARCHITECT	_	20 min.	120/277V	NO	WALL	DIGITAL TIME SWITCH, 0-800W, LINE VOLTAGE
Slv	ACUITY	сн хх	AS DIRECTED BY ARCHITECT	_	_	LOW VOLTAGE	NO	WALL	WORKING WITH PANEL. LOW VOLTAGE SWITCH
Snp	ACUITY	nPODM	AS DIRECTED BY ARCHITECT	_	-	LOW VOLTAGE	NO	WALL	WORKING WITH PANEL. LOW VOLTAGE SWITCH
SnPX	ACUITY	nPOD GFX	AS DIRECTED BY ARCHITECT	_	_	LOW VOLTAGE	NO	WALL	WORKING WITH PANEL. LOW VOLTAGE SWITCH
- <u>`</u> ф́-	ACUITY	CM PDT XX	AS DIRECTED BY ARCHITECT	_	20 min.	LOW VOLTAGE	YES	CEILING	NO PANEL, LOW VOLTAGE CEILING DUAL TECHNOLOGY (PIR/MICROPHONICS) SENSOR
-ऴ҉- _D	ACUITY	CM PDT ADC	AS DIRECTED BY ARCHITECT	_	20 min.	LOW VOLTAGE	YES	CEILING	CEILING SENSOR WITH PHOTOCELL AND DIMMING FOR DAYLIGHT CONTROL. WILL BE USED CLOSE TO WINDOWS.
CX 100	ACUITY	WV PDT 16	AS DIRECTED BY ARCHITECT	20Fc	20 min.	24VDC	YES	CEILING/WALL	NO PANEL, LOW VOLTAGE CEILING DUAL TECHNOLOGY (PIR/MICROPHONICS) SENSOR
PP	ACUITY	nPP16	N/A	_	-	120/277V	N/A	SEE FLOOR PLANS	DUAL VOLTAGE RELAY PACK. 120/277V, 15VDC, 16A LOAD
PPD	ACUITY	nPP16 D EFP	N/A	_	-	120/277V	N/A	SEE FLOOR PLANS	DUAL VOLTAGE RELAY PACK WITH 0-10V DIMMING OUTPUT. 120/277V, 15VDC, 16A, 1/2HP LOAD
(EP) _D	ACUITY	nPP16 D ER EFP	N/A	_	-	120/277V	N/A	SEE FLOOR PLANS	DUAL VOLTAGE EMERGENCY RELAY PACK WITH 0-10V DIMMING OUTPUT. 120/277V, 15VDC, 16A, 1/2HP LOAD

nLIGHT NETWORKED DIGITAL LIGHTING CONTROL SYSTEM SHALL BE USING SENSORS STARTING WITH NXXX AS MENTIONED ABOVE.

DESIGN BASED ON ACUITY SENSORS.

. DEVICE FINISHES SHALL BE AS DETERMINED BY ARCHITECT.

2. IF ONE OF THE "OTHER ACCEPTABLE PRODUCT" SENSORS ARE USED, CONTRACTOR SHALL PROVIDE ADDITIONAL SENSORS AS NEEDED TO COMPLETELY COVER THE SPACE SERVED. QUANTITIES ON DRAWINGS ARE BASED ON THE COVERAGE OF THE BASIS-OF-DESIGN SENSORS. EXACT LOCATIONS OF ALL SENSORS SHALL BE AS RECOMMENDED BY MANUFACTURER. 3. ALL OCCUPANCY/VACANCY SENSOR TIME DELAYS SHALL BE 20 MINUTES, UNLESS NOTED OTHERWISE.

4. PROVIDE ALL LOW-VOLTAGE WIRING NEEDED FOR A FULLY OPERATIONAL SYSTEM (CAT 5E, 0-10V VIOLET-AND-GRAY, ANY OTHER MANUFACTURER-RECOMMENDED CABLING, PLENUM-RATED WHERE IN AIR HANDLING SPACES, IN DEDICATED CONDUIT SYSTEM WHERE NOT ABOVE ACCESSIBLE CEILINGS, IN DEDICATED SLEEVES WHERE PENETRATING PARTITIONS).

5. FOR CAT5E "PLUG-AND-PLAY" SYSTEMS, AT LEAST ONE WALL SWITCH IN EACH ROOM SHALL HAVE AN OPEN CAT5E PORT (SO THAT THERE IS AN EASILY ACCESSIBLE OPEN PORT). 6. PROVIDE ALL PROGRAMMING NEEDED TO SET UP SENSORS, POWER PACKS AND LOW-VOLTAGE SWITCHES.

. ALL MANUAL CONTROL MOUNTING HEIGHTS SHALL BE 48" AFF TO THE TOP. LOAD CONTROLLERS SHALL BE LOCATED ABOVE THE NEAREST ACCESSIBLE CEILING (PLENUM-RATED WHERE IN AIR HANDLING SPACES).

ARE SUFFICIENT OUTPUTS AND IF ROOMS CAN STILL OPERATE INDEPENDENTLY OF ONE ANOTHER. LOAD CONTROLLERS SHALL BE THE DIMMING TYPE WITH 0-10V WIRING IN ROOMS WHERE SWITCHES ARE THE DIMMING TYPE OR WHERE PHOTOSENSORS ARE PRESENT. 9. SEE SPECIFICATIONS FOR MORE DETAILS.

NOTE:

1. ALL EXTERIOR LIGHTING FIXTURES SHALL BE PROVIDED WITH OCCUPANCY SENSOR TO COMPLY WITH LATEST ADOPTED ENERGY CODE.

2. FUNCTIONAL PERFORMANCE TEST WILL BE CONDUCTED PER C408.2.3 OF 2015 MICHIGAN ENERGY CODE / ASHRAE 90.1– 2013.

3. PRELIMINARY COMMISSIONING REPORT PER C408.2.4 OF 2015 MICHIGAN ENERGY CODE / ASHRAE 90.1- 2013 SHALL BE PROVIDED BY DESIGN PROFESSIONAL.

4. ACCEPTANCE OF REPORT SHALL BE PROVIDED PER C408.2.4.1 OF 2015 MICHIGAN ENERGY CODE / ASHRAE 90.1 – 2013 FOR BUILDING OR PORTION.

8. PROVIDE LOAD CONTROLLERS IN QUANTITIES NÉEDED TO SERVE THE NUMBER OF ZONES INDICATED ON THE DRAWINGS. ROOMS MAY SHARE LOAD CONTROLLERS IF THERE

NOTE: SOME SYMBOLS AND ABBREVIATIONS SHOWN MAY NOT APPLY TO THIS PROJECT

LIGHTING CONTROLS TESTING:

POST INSTALLATION FUNCTIONAL PERFORMANCE TESTING CERTIFICATION SHALL BE PROVIDED TO MUNICIPALITY SUCH THAT THE INSTALLED LIGHTING CONTROLS MEET OR EXCEED ALL DOCUMENTED PERFORMANCE CRITERIA. THIS TESTING SHALL BE DONE BY APPROVED THIRD PARTY PER ASHRAE 2013 9.4.3. SEE BELOW.

ALL LIGHTING CONTROLS SHALL COMPLY WITH ASHRAE 90.1 2013. LIGHTING CONTROL DEVICES AND CONTROL SYSTEMS SHALL BE TESTED PER ASHRAE 90.1 2013 SECTION 9.4.3. THE INDIVIDUAL(S) RESPONSIBLE FOR THE FUNCTIONAL TESTING SHALL NOT BE DIRECTLY INVOLVED IN EITHER THE DESIGN OR CONSTRUCTION OF THE PROJECT AND SHALL PROVIDE DOCUMENTATION CERTIFYING THAT THE INSTALLED LIGHTING CONTROLS MEET OR EXCEED ALL DOCUMENTED PERFORMANCE CRITERIA.

TYPE: NE	MA S [.]	1 1	(NEW)	M		4004	.07 Z		0,			
LUCATION.	3	IUNAGE	#100	IVI <i>F</i>	\ \ .	4004	. IVI.	L.U.			NATING. 42,000	A.I.C.
	#	BKR	CIRCUIT DESCRIPTION	Н	L	VA	04.0	VA	1 H	1	CIRCUIT DESCRIPTION	BKR
* *	1	30A-2P	ESPRESSO MACHINE #408	1,1,1	К	2,250	L1	1,019	K		EVAPOR, FREEZER #103.1	20A-2P
	3		XXX		K	2,250	L2	1,019	K		XXX	
* *	5	20A-2P	ICE MAKER #213		K	1,300	L3	800	M		XXX	
	7		XXX		K	1,300	L1	800	M		KEF-1	20A-3P
	9	20A-1P	SPARE		G	100	L2	800	M		XXX	1000
	11		XXX	1	K	5,884	L3		G		SHUNT ACCESSORY SPACE	
*	13	70A-3P	WAREWASHER #301		K	5,884	L1	900	M		XXX	1
	15		XXX	1.1	K	5,884	L2	900	M		KEF-2	20A-3P
	17		SHUNT ACCESSORY SPACE		G		L3	900	M		XXX	1
* *	19	15A-2P	PASTA EXTRUDER #206		K	1,123	L1		G		SHUNT ACCESSORY SPACE	-
	21	1	XXX	11	K	1,123	L2	300	М		XXX	
	23		XXX		K	1,081	L3	300	M		KEF-3	15A-3P
* *	25	20A-3P	60 QUART MIXER #207		K	1,081	L1	300	M		XXX	1
	27		XXX		K	1,081	L2		G		SHUNT ACCESSORY SPACE	
	29	15A-2P	CONDENSING UNIT #100.2		K	770	L3	300	M		XXX	1
	31		XXX		K	770	L1	300	M		KEF-4	15A-3P
	33	25A-2P	CONDENSING UNIT #103.2		K	1,310	L2	300	M		XXX	
	35		XXX		K	1,310	L3		G		SHUNT ACCESSORY SPACE	
	37		XXX		М	4,419	L1	1,047	M		XXX	1
	39	50A-3P	RTU-1		Μ	4,419	L2	1,047	M		MAU-1	15A-3P
	41		XXX		М	4,419	L3	1,047	M		XXX	
	43		XXX		Μ	4,419	L1		G		SHUNT ACCESSORY SPACE	
	45	50A-3P	RTU-2		Μ	4,419	L2	2,056	M		XXX	1
	47		XXX	6 B.	Μ	4,419	L3	2,056	M		MAU-1 COND.	30A-3P
*	49	20A-2P	BLAST CHILLER #506		K	1,150	L1	2,056	M		XXX	
	51		XXX		K	1,150	L2	10.00	G		SHUNT ACCESSORY SPACE	
	53		SHUNT ACCESSORY SPACE		G		L3	2,056	M		XXX	
	55	20.00	XXX	1.121	K	6,300	L1	2,056	M		MAU-1 COND.	30A-3P
*	57	60A-3P	COMBIOVEN #505	e din j	K	6,300	L2	2,056	M		XXX	-
	59		XXX		K	6,300	L3	1.000	G		SHUNT ACCESSORY SPACE	
	61		SHUNT ACCESSORY SPACE		G	1	L1		G		SPARE	20A-1P
	63				G	1.000	L2		G		SPARE	20A-1P
	65	20A-1P	SPARE		G		L3		G		SPARE	20A-1P
	67	20A-1P	SPARE		G		L1		G	1	SPARE	20A-1P
	69	20A-1P	SPARE		G		L2		G		SPARE	20A-1P
	71	20A-1P	SPARE	15	G	-	L3		G		SPARE	20A-1P
	73	20A-1P	SPARE	11	G		L1		G		SPARE	20A-1P
	75				G		L2		G			
	77	200A-2P	SUBFEED PANEL LP-B		G	13,475	L3		G			
	79		XXX		G	13,475	L1		G			
	81			1	G		L2		G			
	83				G		13		G	1		

DEMAND LOAD: 116.62 KVA DEMAND AMP: 323.95 AMP

* – PROVIDE SHUNT TRIP CIRCUIT BREAKER

**- PROVIDE GFI CIRCUIT BREAKER

	- ∟ FMA	1	(NEW)	01			/	,	,	
	1: 5	STORAGE	#108	MA	۹IN	: 200/	4. N	I.L.O.		RATING: 42,000 A.I.C.
	#	BKR	CIRCUIT DESCRIPTION		1	VA		VA	1	CIRCUIT DESCRIPTION BKR #
	1	20A-1P	RECEPTACLE-DINING #101		D	1,200	L1	1,440	C	LT-#104,105,107-110,EF-1,2,3 20A-1P 2
	3	20A-1P	RECEPTACLE-DINING #101		D	1,400	L2	1,320	C	LTG-KITCHEN, BAR, CORR. 20A-1P 4
	5	20A-1P	GFI RECEPTACLE-CO2		K	480	L1	1,020	C	LIGHTING-DINING #101 20A-1P 6
	7	15A-1P	UNDERCABI. ICE MAKER #611		K	900	L2	720	C	LIGHTING-OUTDOOR 20A-1P 8
	9	15A-1P	GLASS WASHER #605		ĸ	420	L1	1,000	C	SIGN 20A-1P 10
	11	15A-1P	BACK BAR COOLER #606.1		K	840	L2	500	G	FRESCO LTG CONTR. PANEL 20A-1P 12 **:
	13	15A-1P	POS #612		K	1,000	L1	500	K	HOOD-#507 15A-1P 14 *
	15	15A-1P	UNDERBAR REF. #607		K	216	L2	10.00	G	SHUNT ACCESSORY SPACE 16
	17	15A-1P	POS #612		ĸ	1,000	L1	500	K	VENTLESS HOOD-#505.2 15A-1P 18 *
	19	15A-1P	BACK BAR COOLER #606		K	840	L2		G	SHUNT ACCESSORY SPACE 20
	21	15A-1P	ESPRESSO GRINDER #410		K	350	L1	500	ĸ	FIRE SUPP. SYSTEM #504.1 15A-1P 22 *
	23	15A-1P	U. COUNTER REF. #409		K	240	L2		G	SHUNT ACCESSORY SPACE 24
	25	20A-1P	GFI RECEPKITCHEN		K	800	L1	500	K	FIRE SUPP. SYSTEM #507.1 15A-1P 26 *
	27	15A-1P	U. COUNTER REF. #514		K	540	L2	1	G	SHUNT ACCESSORY SPACE 28
	29	15A-1P	U. COUNTER REF. #513		K	576	L1	240	K	U. COUNTER REF. #401 15A-1P 30
	31	15A-1P	U. COUNTER REF. #516		ĸ	240	L2	480	K	U. COUNTER FREEZER #404 15A-1P 32
	33	15A-1P	U. COUNTER REF. #519		K	576	L1	1,200	K	WALK-IN COOLER #100 15A-1P 34
	35	15A-1P	WORKTOP REFR. #517		ĸ	296	L2	192	K	EVAPOR., COOLER #100.1 20A-1P 36
	37	15A-1P	WORKTOP, FREEZER #518		K	576	L1	1,200	K	WALK-IN FREEZER #103 15A-1P 38
*	39	15A-1P	FIRE SUPP. SYSTEM #500.1		K	500	L2	1,000	K	GFI RECEPKITCHEN 20A-1P 40
	41		SHUNT ACCESSORY SPACE		G		L1	800	D	GFI RECEPOUT DOOR 20A-1P 42
*	43	15A-1P	FIRE SUPP. SYSTEM #502.1		K	500	L2	1,030	G	(2) WH-1 IGNITION, CP-1 20A-1P 44
	45		SHUNT ACCESSORY SPACE		G		L1	1,020	ĸ	REFRIGERATED BASE #501.1 15A-1P 46 *
*	47	15A-1P	HOOD-#300		K	500	L2		G	SHUNT ACCESSORY SPACE 48
	49		SHUNT ACCESSORY SPACE		G		L1	500	ĸ	HOOD-#502 15A-1P 50 *
	51	20A-1P	GFI RECEPTLT.		D	600	L2		G	SHUNT ACCESSORY SPACE 52
	53	20A-1P	RECEPTA STOR#110, CORR.		D	600	L1	500	K	HOOD-#500 15A-1P 54 *
	55	20A-1P	GFI RECEPTACLE-CO2		K	480	L2	1	G	SHUNT ACCESSORY SPACE 56
	57	20A-1P	GFI RECEPTACLE-CO2		K	480	L1	1.00	G	SPARE 20A-1P 58
	59	20A-1P	SPARE		G		L2		G	SPARE 20A-1P 60
	61	20A-1P	SPARE		G		L1		G	SPARE 20A-1P 62
	63	20A-1P	SPARE		G		L2		G	64
	65	20A-1P	SPARE		G		L1	500	G	LTG CONTROL PANEL LCP-B 20A-1P 66 **

DEMAND LOAD: 26.95 KVA DEMAND AMP: 129.56 AMP

* – PROVIDE SHUNT TRIP CIRCUIT BREAKER

* * – PROVIDE GFI CIRCUIT BREAKER *** – PROVIDE LOCK–IN CIRCUIT BREAKER

LIG MOL LOC	HTING CO JNTING: FLU ATION: STO	ONTROL PANEL: LCP—B Sh Rage #108	POWER NUMBE ENCLOS	SUPPLY: 12(R OF RELAY: SURE: NEMA)V. 16 1
RELAY	LIGHTING	LOAD	SWITCH/	SWITCH/	
NO.	CIRCUIT	CONTROLLED	SENSOŔ	SENSOŔ	
1	B-4	LIGHTING-KITCHEN #106	LV SWITCH	ТС/РНОТО	LIGHTING-OL
2	B-4	LIGHTING-KITCHEN #106	LV SWITCH	тс/рното	SIGN
3	B-4	LIGHTING-BAR #102	LV SWITCH	LV SWITCH	LIGHTING-CC
4	B-4	LIGHTING-BAR #102	LV SWITCH	_	SPARE
5	B-6	LIGHTING-DINING #101	LV SWITCH	_	SPARE
6	B-6	LIGHTING-DINING #101	LV SWITCH	-	SPARE
7	B-6	LIGHTING-DINING #101	LV SWITCH	-	-
8	B-8	LIGHTING-OUTDOOR	ТС/РНОТО	-	-

ENCLOSURE:	FLUSH	MOUNTED

FEEDER SIZE: SEE ONE LINE DIAGRAM

MANUFACTURER TYPE: nLIGHT LIGHTING PANEL	: acuity :: lp-b				
NG-OUTDOOR	B-8	9			
	B-10	10			
NG-CORRIDOR	B-4	11			
	_	12			
	_	13			
	_	14			
	-	15			
	-	16			

	CHRISTIAN 2111 WOO 313 825 2		E ARCHITECTS	320
CONTRACTOR NOTE	ALL CONTRACTO SUB-CONTRACTO OR BOTH) ARE CONDITIONS, DIM STATED OR NOT THE SPECIFICATI WORK. IF A DIM BETWEEN THESE THE EXISTING / BROUGHT TO THAR ARCHITECT, BEF PARTY (GENERA MEMBERS OR AN TO DO SO TAKE CONFLICTS, SCH	RS (GENERAL CO ORS, MEMBERS (TO VERIFY AND IENSIONS, QUAN IENSIONS, QUAN ISONS, QUAN ISONS, QUAN ISONS, QUAN ISONS, QUAN ISONS, QUAN ISONS, QUAN ISONS, QUAN ISONS, QUAN ISON ISON ISON ISON ISON ISON ISON ISO	DNTRACTOR, R AGENTS OF EITHER COORDINATE ALL TITES AND DETAILS, DRAWINGS AND WITHIN MMENCING WITH THE COR CONFLICT OCCURS SPECIFICATIONS OR DITIONS, IT SHALL BE TENTION OF THE WITH THE WORK. ANY SUB-CONTRACTORS, COR BOTH) WHO FAIL BILITT OF ANY ERRORS; T IMPLICATIONS.	
MEP ENGINEER	Suite #	Hig Beaver Rd 305 1 48084	SOLUTION RING Phone/Fax 248.247.1193 www.sse-mep.com see@sse-mep.com 2041004	
STRUCTURAL ENGINEER				
	VECINO RESTAURANT	4100 3RD AVE, DETROIT, MI 48201	PERMIT REVIEW	
EVISIONS	DATE 1. 012921	DESCRIP PERMIT REV	TION new	
SEAL	ELECTR	MICOPE MICOPE MASI BYCUNE NO. BYCUNE SYMPHICE SYMPHI	Dez of anel	
DRAMING NO.	E	5-()1	

OCCUPANCY DIAGRAM ORIGINAL IMAGE SCALE: 3/16" = 1'-0"

OCCUPANT LOAD

SECTION 1004 - OCCUPANT LOAD:

TABLE 1004.1.2 MAXIMUM FLOOR AREA ALLOWANCES PER OCCUPANT

TYPE	SQUARE FOOTAGE	OCCUPANT LOAD FACTOR	NUMBER OF OCCUPANTS
IRY STORAGE	249	300 GROSS	1
IRY STORAGE	10	300 GROSS	1
CIAL KITCHEN	861	200 GROSS	5
CIAL KITCHEN	98	200 GROSS	1
Y - CONCENTRATED	103	7 NET	15
Y - UNCONCENTRATED	1066	15 NET	72
		TOTAL OCCUPANTS:	95

	<u>GENERAL NOTES</u>	<u>GENERAL_NOTES</u>					
1.	SEE STRUCTURAL DRAWINGS FOR EXACT LOCATIONS AND PARTITIONS.	24.	ALL EQUIPMENT, DUCTWORK, PIPING, CONTROLS, ETC. TO BE INSTALLED PER				
2.	COORDINATE ALL LOCATIONS, SIZES, AND ELEVATIONS OF ALL SLEEVES THROUGH WALLS	0.5	MICHIGAN ENERGY CODE.				
7	AND SLABS WITH STRUCTURAL AND (ARCHITECTURAL) DRAWINGS.	25.	WHEN TESTED IN ACCORDANCE WITH ASTM C 411 AND THE APPLICABLE PROVISIONS				
4.	ALL WORK AND MATERIALS SHALL CONFORM TO THE CURRENT EDITION OF THE	26.	ALL FLEXIBLE DUCT AND CONNECTORS MUST BE TESTED IN ACCORDANCE WITH UL				
	MICHIGAN REFRIGERATION AND MICHIGAN MECHANICAL CODES, ORDINANCES, AND REGULATIONS: STATE HEALTH AND SAFETY REGULATIONS, STATE FIRE MARSHAL, LOCAL		181. LENGTH NOT TO EXCEED 8'.				
	FIRE DEPARTMENT AND HEALTH DEPARTMENT AND ALL OTHER AUTHORITIES HAVING JURISDICTION.	27.	ALL DUCTS MUST BE SEALED IN ACCORDANCE WITH THE PROVISIONS IN THE INTERNATIONAL ENERGY CONSERVATION CODE.				
5.	COORDINATE INSTALLATION OF MECHANICAL WORK SO AS TO AVOID UNNECESSARY JOB DELAYS OR INTERFERENCE WITH ALL OTHER TRADES.	28.	ALL DUCTWORK SHOULD BE SUPPORTED AT MINIMUM 10' INTERVAL, UNLESS NOTED OTHERWISE IN CONTRACT DOCUMENT.				
6.	OBTAIN ALL FIELD APPROVALS ON MECHANICAL WORK FROM REGULATING AGENCIES WHERE REQUIRED	29.	ALL FILTERS SHALL MEET 603, 604 & 605 OF MECHANICAL CODE.				
7.	GUARANTEE ALL LABOR AND MATERIALS FOR ONE YEAR FROM DATE OF COMPLETION.	30.	ALL DUCT SMOKE DETECTORS MUST BE INSTALLED IN ACCORDANCE WITH NFPA 72 (606.3).				
8.	CONTRACTOR SHALL RECORD ON AS-BUILT DRAWINGS ALL SIZES, MATERIAL, ELEVATIONS, AND LOCATIONS OF ALL THE EQUIPMENT AND DUCTWORK THAT DEVIATE FROM THE	31.	TYPE OF REFRIGERANT, QUANTITY, APPLICATION AND USE SHALL COMPLY WITH SECTION 1102.2, 1104.3, TABLE 1103.1 OF MICHIGAN MECHANICAL CODE.				
9	ALL MODEL NUMBER USED TO BE VERIFIED WITH MANUFACTURER FOR DESIGN INTENT	32.	ALL FIRE DAMPERS SHALL BE DYNAMIC FIRE DAMPERS.				
	SHOWN ON DESIGN DOCUMENT.	33.	CONTRACTOR IS RESPONSIBLE TO LIST ALL MODIFICATION TO ORIGINAL DOCUMENT DURING SHOP DRAWING PROCESS. IT SHOULD CLEARLY MENTION THE CHANGES				
10.	ALL EQUIPMENT, DEVICES, ACCESSORIES, ETC. TO BE INSTALLED PER MANUFACTURER'S RECOMMENDATION.		BEING MADE TO THE PARTS, OPTIONS, MATERIAL, CAPACITY, ETC. THAT IS DIFFERENT THAN WHAT IS SHOWN ON DOCUMENT. CONTRACTOR WILL REMAIN RESPONSIBLE FOR THE PERFORMANCE OPERATION WARRANTY ALL REQUIRED MODIFICATIONS FTC. FOR				
11.	PLUMBER SHALL PROVIDE FULL SIZE CONDENSATE DRAIN FROM AIR CONDITIONING UNITS (WITH DEEP SEAL TRAP AND UNION) AND DISCHARGE TO THE NEAREST APPROVED		THE PRODUCT.				
	ŘECEPTOR.	34.	CONTRACTOR TO PROVIDE ALL FITTINGS, ELBOWS, OFFSETS FOR PIPING & DUCTWOF TO SUIT SITE CONDITION.				
12.	ALL CONTROL WIRING 120 V OR LESS SHALL BE MECHANICAL CONTRACTOR'S RESPONSIBILITY.	35.	PAINT ALL INSIDE DUCT SURFACES (COLOR BLACK) THAT ARE VISIBLE FROM SPACES USED BY PEOPLE.				
13.	INSTALLATION OF VENTILATION OR HEAT PRODUCING EQUIPMENT SHALL BE IN ACCORDANCE WITH NFPA PAMPHLET 91, NFPA 211, NFPA 31 AND NFPA 54 AS APPLICABLE.	36.	PROVIDE INSULATION AS REQUIRED PER ASHRAE 90.1–2013 FOR ALL PIPING, DUCTWORK FOR HVAC SYSTEM.				
14.	ALL HVAC WORK SHALL BE IN COMPLIANCE WITH NFPA 90A AND 90B, AS APPLICABLE AND IN STRICT ACCORDANCE WITH MANUFACTURER'S INSTALLATION INSTRUCTION.	37.	UNLESS NOTED OTHERWISE ALL DUCTWORK @ 1000FPM, DUCTWORK FROM MAIN DUCT TO DIFFUSER SHALL MATCH NECK SIZE.				
15.	ALL UNITARY CONTROLLER SHALL INCLUDE LON CARD.	38.	ALL MOTOR STARTERS LOCATION TO BE IDENTIFIED DURING CONSTRUCTION AT SITE				
16.	ALL ACCESSORIES, SENSORS, DEVICES INCLUDING FLOW SENSOR, PRESSURE SENSOR TEMPERATURE SENSOR, CONTROL VALVES, SWITCHES, TRANSDUCERS, SHALL BE PROVIDED BY THE CONTRACTOR TO ACHIEVE SEQUENCE OF OPERATION FOR HVAC	39.	PROVIDE 4" CONCRETE BASE FOR ALL FLOOR MOUNTED EQUIPMENT WITH MIN. 6" OVERHANG.				
47	SYSTEM.	40.	ALL RETURN AIR DUCTWORK SHALL HAVE 1" (MIN.) ACOUSTIC LINED INSULATION.				
17.	ELECTRICAL TO BE DESIGN OR BUILD AND COORDINATE WITH ELECTRICAL CONTRACTOR FOR NEW CIRCUIT BREAKER, FUSED DISCONNECT, STARTERS, ETC.	41.	ALL DUCT SIZES AS SHOWN ARE CLEAR AREA FOR PASSAGE OF AIR.				
18.	PROVIDE SMOKE DETECTOR IN SUPPLY AND MAIN RETURN DUCT. FOR ALL HVAC UNIT CONNECT TO BUILDING FIRE ALARM SYSTEM.	42.	ALL DUCTWORK SHALL BE CLASS A TYPE.				
19.	ALL MODEL NUMBERS AS SHOWN ARE FOR REFERENCE ONLY, CONTRACTOR IS RESPONSIBLE FOR THE PERFORMANCE AS SHOWN ON SCHEDULE. VERIEY MODEL	43.	FOR APPROVAL, CONTROL CONTRACTOR SHALL SUBMIT ALL SHOP DRAWINGS INCLUDING WIRING DIAGRAM, SEQUENCE OF OPERATION FOR ALL EQUIPMENT.				
	NUMBER WITH MANUFACTURER.	44.	PROVIDE FIRE RATED ACCESS PANEL SIZED TO REPLACE WHOLE UNIT.				
20.	ALL DUCTWORK TO BE INSTALLED PER SMACNA STANDARD & EQUIPMENT MANUFACTURER'S PUBLISHED CONNECTION DETAIL.	45.	ALL MECHANICAL EQUIPMENT SHALL BE INSTALLED WITH ACCESS AND SERVICE SPACE PER MICHIGAN MECHANICAL CODE SECTION 306. MAINTAIN WALL RATINGS.				
21.	VERIFY DUCT & PIPE CHASE TO BE ADEQUATE TO INSTALL DUCT & PIPE AS SHOWN INCLUDING INSULATION & SUPPORT.	46.	CONTRACTOR NEED TO PROVIDE DUCT FABRICATION SHOP DRAWINGS FOR APPROVAL UNLESS NOTED OTHERWISE.				
22.	PROVIDE FIRE, SMOKE OR COMBINATION FIRE/SMOKE DAMPER FOR ALL RATED PARTITION WHETHER SHOWN ON PLAN OR NOT. SEE ARCHITECTURAL LIFE SAFETY PLAN. INCLUDING ALL SHAFT PENETRATION WALLS, FLOOR PENETRATION & EXIT CORRIDOR.						
23.	PROVIDE DUCT SMOKE DETECTORS AND NOTIFICATION DEVICE IN SPACE.						

MECHANICAL:

COMMERCIAL: MMC 2015 (MICHIGAN MECHANICAL CODE 2015) EFFECTIVE APRIL 12, 2017 FUEL GAS: IFGC 2015 (INTERNATIONAL FUEL GAS CODE 2015) EFFECTIVE APRIL 20, 2015

ENERGY CODE:

COMMERCIAL: MBC 2015 (MICHIGAN BUILDING CODE 2015) - CHAPTER 13& MEC 2015 (MICHIGAN ENERGY CODE 2015) - CHAPTERS 1 THROUGH 6 & MICHIGAN ENERGY CODE, PART 10A. RULES (ANSI/ASHRAE/IES STANDARD 90.1–2013) EFFECTIVE SEPTEMBER 20, 2017

ALL SUBMIT ALL SHOP DRAWINGS OPERATION FOR ALL EQUIPMENT.

	MECHANICAL LEGEND										
BBR.	DESCRIPTION	SYMBOL	ABBR.	DESCRIPTION							
	DUCT	c7									
		Žc	CC	COOLING COIL							
FC	DUCT FLEXIBLE CONNECTION	H									
	RECTANGULAR TO ROUND DUCT CONVERT.		нс	HEATING COIL							
SAD	SUPPLY AIR DUCT UP	——-Ю	UP	PIPE ELBOW UP							
	RETURN AIR DUCT UP		DN	PIPE ELBOW DOWN							
	EXHAUST AIR DUCT UP		MAV	MANUAL AIR VENT							
	RETURN AIR GRILLE W/ ACOUST. BOOT		AD	ACCESS DOOR							
RAG	RETURN AIR GRILLE		A/C	AIR CONDITIONING							
ER	EXHAUST AIR REGISTER		AFF	ABOVE FINISHED FLOOR							
EG	EXHAUST AIR GRILLE		AHU	AIR HANDLING UNIT							
DL	DOOR LOUVER		DB	DRY BULB TEMPERATURE							
	RECTANGULAR ELBOW DOWN		DDC	DIRECT DIGITAL CONTROL							
	RECTANGULAR ELBOW UP		DX	DIRECT EXPANSION							
	SQUARE ELBOW WITH TURNING VANES		(E)	EXISTING							
			EA	EXHAUST AIR							
STAT	THERMOSTAT		EAT	ENTERING AIR TEMPERATURE							
	DIRECTION OF AIR FLOW		EDB	ENTERING DRY BULB TEMPERATURE							
VD	VOLUME DAMPER (MANUALLY ADJUSTED)		ESP	EXTERNAL STATIC PRESSURE (IN. WC.)							
BDD	BACK DRAFT DAMPER		EWB	ENTERING WET BULB TEMPERATURE							
IOD	MOTOR OPERATED DAMPER		EWT	ENTERING WATER TEMPERATURE							
FD	FIRE DAMPER(HORIZONTAL DUCT RUN)		FPM	FEET PER MINUTE							
FD	FIRE DAMPER(VERTICAL DUCT RUN)		GC	GENERAL CONTRACTOR							
SD	SMOKE DAMPER(HORIZONTAL DUCT RUN)		GLY	GLYCOL							
SD	SMOKE DAMPER (VERTICAL DUCT RUN)		GPM	GALLONS PER MINUTE							
FSD	FIRE/SMOKE DAMPER(HORIZONTAL DUCT RUN)		HP	HORSEPOWER							
SD	FIRE/SMOKE DAMPER(VERTICAL DUCT RUN)		HVAC	HEATING, VENTILATING & AIR CONDITIONING							
POC	POINT OF CONNECTION		LAT	LEAVING AIR TEMPERATURE							
P	PUMP		LWT	LEAVING WATER TEMPERATURE							
	COLD WATER SUPPLY		MBH	THOUSAND BTU'S PER HOUR							
1WS	HOT WATER SUPPLY		MCA								
IWR	HUT WATER RETURN		NC	NOISE CRITERIA							
TWS	COOLING TOWER WATER SUPPLY		UA E i								
	COOLING TOWER WATER RETURN		RA	RETURN AIR							
WHS WHR	HEATING HOT WATER SUPPLY		RPM	REVOLUTIONS PER MINUTE							
			SA								
	CONDENSATE LINE			TOTAL STATIC DESCUES (IN WO)							
				TUTAL STATIC PRESSURE (IN. WC.)							
	BUTTERFLY VALVE		ØNO	DHASE DOUND							
	DRESSURE RECHLATING VALVE	<u>_</u>	STD	STRAINER							
	CHECK VALVE (SWINC)		т								
	CHECK VALVE		I								
	CONTROL VALVE (2-WAY)			WATED							
	CONTROL VALVE (3-WAY)			INDUCTION LINIT CHILLED WATER SUDDLY /DETURN							
~ • ?\/A			IHWS/R	INDUCTION LINIT HOT WATER SUPPLY/RETURN							
PG	PRESSURE GAUGE WITH GAUGE COCK		DDC								
	DEMOLITION ITEM		RMS	RUILDING MANACEMENT SYSTEM OF DDO							
REA	RELIEF AIR		A.F.F	ABOVE FINISHED FLOOR							

NOTE: SOME SYMBOLS AND ABBREVIATIONS SHOWN MAY NOT APPLY TO THIS PROJECT.

MECHANICAL GENERAL

A. PROVIDE MATERIALS AND EQUIPMENT AND EXECUTE THE WORK, INCLUDING ALL TESTING AND INSPECTIONS, IN COMPLIANCE WITH THE APPLICABLE PROVISIONS OF FEDERAL, STATE AND LOCAL GOVERNMENT LAWS, ORDINANCES, REFERENCED CODES AND STANDARDS CURRENT AS OF THE ISSUE DATE OF THESE DRAWINGS INCLUDING THE GOVERNING LAWS. ORDINANCES, CODES AND STANDARDS CONSTITUTE MINIMUM REQUIREMENTS. ALL MORE STRINGENT REQUIREMENTS SHALL MODIFY, SUPPLEMENT AND SUPERCEDE APPLICABLE PORTIONS OF GOVERNING LAWS, ORDINANCES, CODES AND STANDARDS.

B. CONTRACTOR SHALL PRESENT CERTIFICATE TO THE OWNER'S REPRESENTATIVE THAT ALL APPLICABLE BUILDING PERMITS HAVE BEEN SECURED PRIOR TO STARTING ANY WORK AND PROVIDE THE OWNER WITH ALL REQUIRED CERTIFICATES OF FINAL APPROVAL FROM THE GOVERNING JURISDICTIONS AT COMPLETION OF THE WORK. PROVIDE ALL SHOP DRAWINGS AS REQUIRED IN FOLLOWING SECTIONS.

C. REFER TO ALL GENERAL NOTES ON DRAWING FOR ADDITIONAL REQUIREMENTS

MECHANICAL EQUIPMENT SHALL HAVE DECALS AND TAGS TO INDICATE LIFTING AND RIGGING, SERVICE AREAS AND CAUTION IDENTIFICATION FOR SAFETY TO ASSIST SERVICE PERSONNEL.

UNIT NAMEPLATE SHALL BE PROVIDED IN TWO LOCATIONS ON THE EQUIPMENT. AFFIX TO THE EXTERIOR OF THE EQUIPMENT AND TO THE INTERIOR OF THE CONTROL COMPARTMENT ACCESS DOOR.

SHOP DRAWINGS

NO APPARATUS OR EQUIPMENT SHALL BE SHIPPED FROM STOCK OR FABRICATED UNTIL SHOP DRAWINGS HAVE BEEN REVIEWED AND STAMPED "REVIEW COMPLETED", "APPROVED" OR "APPROVED AS NOTED".

B. PROVIDE DETAILED SHOP DRAWINGS (SEPIAS) OF ALL SHEET METAL DUCTWORK WITH NECESSARY SECTIONS, DETAILS, DIMENSIONS, ETC. SUBMIT AMCA CERTIFIED PERFORMANCE CURVES FOR EACH FAN INDICATING IT'S OPERATING POINT, EFFICIENCY, STARTING TIME, DATA RELATIVE TO SOUND LEVELS. ALL SHEET METAL SHOP DRAWINGS SHALL BEAR INDEPENDENT BALANCE AGENCY (AABC) APPROVAL STAMP BEFORE SHOP DRAWINGS ARE SUBMITTED TO THE ARCHITECT FOR APPROVAL.

C. SUBMIT FOR APPROVAL, SHOP DRAWINGS FOR ALL EQUIPMENT, INCLUDING MATERIALS, VALVES, HEATING SPECIALTIES, WIRING DIAGRAMS AND CONTROL DIAGRAMS INCLUDING, BUT NOT LIMITED TO THE ITEMS LISTED BELOW. WHERE ITEMS ARE REFERRED TO BY SYMBOL NUMBERS ON THE DRAWINGS AND SPECIFICATIONS, ALL SUBMITTALS SHALL BEAR THE SAME SYMBOL NUMBERS. ALL DRAWINGS SHALL CONTAIN THE PROJECT NAME AND PROJECT NUMBER. NO LOOSE SHEETS SHALL BE SUBMITTED UNLESS A COVER SHEET IS ATTACHED.

D. PROVIDE THE FOLLOWING EQUIPMENT SHOP DRAWINGS: VALVES, TEMPERATURE AND PRESSURE GAUGES, PACKAGED HVAC EQUIPMENT, EXHAUST FANS, UNIT HEATERS, GRILLES, REGISTERS, INSULATION, VIBRATION ISOLATORS, TEMPERATURE CONTROLS AND THERMOSTATS.

APPROVAL OF SHOP DRAWINGS DOES NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITIES TO CONFORM TO THE DESIGN INTENT OF THE CONTRACT DOCUMENTS. APPROVAL OF SHOP DRAWINGS IS INTENDED TO BE FOR GENERAL CONFORMANCE WITH THE CONSTRUCTION DOCUMENTS ONLY. ANY INSTALLED EQUIPMENT WHICH REQUIRES WORK BY OTHER TRADES SHALL BE COORDINATED WITH THOSE TRADES. REFER TO OTHER TRADES BID DOCUMENTS.

CODES, PERMITS AND FEES

A. UNLESS OTHERWISE INDICATED, ALL REQUIRED PERMITS, LICENSES, INSPECTIONS, APPROVALS AND FEES FOR MECHANICAL WORK SHALL BE SECURED AND PAID FOR BY THIS CONTRACTOR. ALL WORK SHALL CONFORM TO ALL APPLICABLE CODES, RULES AND REGULATIONS.

B. RULES OF LOCAL UTILITY COMPANIES SHALL BE COMPLIED WITH.

C. ALL WORK SHALL BE EXECUTED IN ACCORDANCE WITH THE RULES AND REGULATIONS SET FORTH IN LOCAL AND STATE CODES. WHERE THE DRAWINGS AND OR SPECIFICATIONS INDICATE MATERIALS OR CONSTRUCTION IN EXCESS OF CODE REQUIREMENTS, THE DRAWINGS ANDOOR SPECIFICATIONS SHALL GOVERN.

BASIC MATERIALS AND METHODS

A. PROVIDE ALL ITEMS, ARTICLES, MATERIALS, OPERATIONS AND METHODS LISTED. MENTIONED OR SCHEDULED ON DRAWINGS ANDTOR HEREIN, INCLUDING ALL LABOR, MATERIALS, EQUIPMENT AND INCIDENTALS NECESSARY AND REQUIRED FOR THEIR COMPLETION. THE WORK SHALL INCLUDE INSTALLATION, CLEANING AND TESTING OF COMPLETE AND OPERATING HVAC, TEMPERATURE CONTROL. AND OTHER SPECIAL SYSTEMS.

MECHANICAL SPECIFICATIONS

HEATING AND VENTILATING

A. GENERAL

REFER TO SCHEDULES FOR CAPACITIES, ACCESSORIES AND LEVEL OF QUALITY.

B. CONTROLS

UNITS SHALL BE ORDERED AND INSTALLED WITH MANUFACTURED STANDARD CONTROLS. SCOPE OF CONTROLS WORK SHALL BE COORDINATED WITH MECHANICAL CONTRACTOR, CONTROLS CONTRACTOR AND GENERAL CONTRACTOR.

REFER TO SCHEDULES FOR EQUIPMENT REQUIREMENTS.

SYSTEM TESTING AND BALANCING

A. ALL HVAC SYSTEMS SHALL BE TESTED AND BALANCED TO DEMONSTRATE THAT SPECIFIED CAPACITIES AND PROPER CONTROL FUNCTIONING HAS BEEN ATTAINED. FAN SYSTEMS ARE NOT TO BE COMPLETED PRIOR TO RUNNING PERFORMANCE TESTS, AND PRIOR TO TRAINING AND INSTRUCTION OF THE OWNER'S PERSONNEL IN SYSTEM OPERATION.

B. ENGAGE THE SERVICES OF AN INDEPENDENT CERTIFIED TEST AND BALANCE AGENCY THAT SPECIALIZES IN AND WHOSE BUSINESS IS LIMITED TO THE TESTING AND BALANCING OF AIR CONDITIONING SYSTEMS AND IS NOT AFFILIATED IN ANY WAY WITH MANUFACTURER, SUPPLIER, OR INSTALLATION CONTRACTOR. THE AGENCY SELECTED SHALL BE CERTIFIED BY ASSOCIATED AIR BALANCE COUNCIL (AABC) OR NATIONAL ENVIRONMENTAL BALANCING BUREAU (NEBB).

C. TAKE CHARGE OF AND DIRECT THE PERFORMANCE TESTS AND SUBMIT A COMPLETE REPORT ON SAME TO THE ARCHITECT. REFER TO "PERFORMANCE TESTS" IN THIS SECTION OF THE SPECIFICATIONS.

D. EXAMINE THE AIR HANDLING SYSTEMS TO SEE THAT THEY ARE FREE FROM OBSTRUCTIONS. DETERMINE THAT ALL DAMPERS AND REGISTERS ARE OPEN, THAT MOVING EQUIPMENT IS LUBRICATED, THAT FILTERS ARE FUNCTIONING, AND PERFORM OTHER INSPECTION AND MAINTENANCE ACTIVITIES NECESSARY FOR PROPER OPERATION OF THE SYSTEMS.

E. DEMONSTRATE THAT THE AIR HANDLING EQUIPMENT PERFORMS AS SPECIFIED. ADJUST VARIABLE TYPE PULLEYS AND VOLUME DAMPERS, WHERE NECESSARY TO ACHIEVE DESIGN AIR VALUES.

F. PERFORM THIS WORK IN ACCORDANCE WITH THE PROCEDURES AND STANDARDS DESCRIBED IN THE SMACNA "BALANCING AND ADJUSTMENT MANUAL". REPORTS ARE TO BE MADE ON SMACNA FORMS OR FACSIMILIES THEREOF.

G. TESTING AND BALANCING OF ALL AIR SYSTEMS SHALL BE PERFORMED BY A SINGLE AGENCY IN COMPLETE ACCORDANCE WITH THE AABC "STANDARDS AND INSTRUMENTATION'S FORM NUMBER 81266 VOLUME NUMBER 1" AS PUBLISHED BY AABC, INCLUDING ALL CURRENT REVISIONS THERETO OR BY NATIONAL ENVIRONMENT AL BALANCING BUREAU (NEBB).

PERFORMANCE TESTS

A. A PERFORMANCE TEST SHALL BE RUN ON ALL MECHANICAL SYSTEMS IN THE PRESENCE OF THE ARCHITECT OR THE OWNER'S REPRESENTATIVE, THE OWNER'S OPERATIONS PERSONNEL, AND UNDER THE DIRECTION OF THE TESTING AND BALANCING TRADE. THE DURATION OF THE TEST SHALL BE A MINIMUM OF 8 HOURS OF CONTINUOUS SUCCESSFUL OPERATION (WITH NO DOWN TIME) IN WEATHER SUCH THAT A REASONABLE LOAD IS PLACED ON THE EQUIPMENT, AIR TEMPERATURES, VOLTAGES, AMPERAGES RPM'S, ETC., SHALL ALL BE TAKEN AND RECORDED HOURLY. AT THIS TIME, ANY ADJUSTMENTS TO AIRFLOW, ETC. SHALL BE MADE.

B. WHERE THE TIME OF YEAR PRECLUDES WEATHER TESTING OF EITHER SYSTEM, THEN SYSTEM OPERATION SHALL BE SIMULATED TO FACILITATE TESTING AT REQUIRED AIR TEMPERATURES, RESULTS RECORDED AND ANY ADJUSTMENTS SHALL BE PERFORMED AT THIS TIME.

SHEET METAL

A. ALL DUCTWORK SHALL BE GALVANIZED SHEET METAL AS INDICATED ON THE DRAWINGS OR AS DIRECTED HEREIN. ALL SHEET METAL WORK SHALL BE IN ACCORDANCE WITH LATEST EDITIONS OF SMACNA "HVAC DUCT CONSTRUCTION STANDARDS, METAL AND FLEXIBLE" MANUALS, NFPA 90A AND 96, AND THE LATEST EDITION OF THE ASHRAE GUIDE AND DATA BOOKS. ALL DUCTWORK SIZES INDICATED ON THE PLANS ARE THE INTERNAL DIMENSIONS.

LEAKAGE THROUGHOUT THE ENTIRE SYSTEM.

C. SHEET METAL DUCTWORK SHALL BE SMOOTH INSIDE AND TRUE TO SIZE.

D. DUCTWORK FITTINGS SHALL BE PER SMACNA STANDARDS, RADIUS TURNS ON SUPPLY AIR DUCTS SHALL BE 1 1 2 TIMES THE DUCT WIDTH, MINIMUM. WHERE SPACE OR CLEARANCES REQUIRES THE USE OF MITERED TURNS, PROVIDE HIGH PERFORMANCE DOUBLE THICKNESS TURNING VANES EQUAL TO AEROMDYNE "HEP".

E. PROVIDE FACTORY MANUFACTURED TEST HOLE UNITS IN DUCTWORK WHERE REQUIRED TO FACILITATE AIR BALANCE.

F. DUCT CONSTRUCTION AND SUPPORT DESIGN SHALL BE PER SMACNA. MINIMUM DUCT DESIGN IS PRESSURE CLASS 2" WG. ALL DUCTWORK FROM THE AIR HANDLING UNIT FAN AND OR STAND-ALONE FAN (EXHAUST) TO A MAIN DUCT DAMPER (CONTROL) SHALL BE DESIGNED FOR THE MAXIMUM TOTAL FAN OUTPUT PRESSURE. (THIS IS TO PREVENT DUCT FAILURE IN CASE WHERE A MAIN DUCT DAMPER CLOSES BY DESIGN OR MALFUNCTION). ALL OTHER DUCTWORK SHALL BE DESIGNED FOR THE MAXIMUM SYSTEM EXTERNAL FAN OUTPUT PRESSURE.

G. ALL RECTANGULAR DUCTWORK SHALL BE IN ACCORDANCE WITH THE LATEST SMACNA STANDARDS WITH REGARD TO DUCT GAGE THICKNESS, REINFORCEMENT SPACING, BRACING, HANGERS, AND SUPPORTS, ALL LONGITUDINAL SEAMS SHALL BE MADE WITH A PITTSBURGH LOCK (TYPE L-1). TRANSVERSE JOINTS SHALL BE MADE WITH A POCKET LOCK (TYPE T-17) FOR DUCTWORK UP TO 3" WG.

PAINT APPLIED. COORDINATE WITH ARCHITECTURAL TRADES.

I. AT EACH POINT OF CONNECTION OF DUCTWORK TO FANS, PROVIDE A FLEXIBLE CONNECTION EQUAL TO VENTFABRICS, INC. "VENTGLAS L.A.", NOT LESS THAN 6" IN LENGTH AND MADE OF HEAVY GRADE FABRIC DOUBLE COATED WITH NEOPRENE AND PROVIDED WITH A SUITABLE FRAME AT EACH END, ARRANGED FOR BOLTING TO THE INLET OR OUTLET OF FAN AND DUCTWORK, RESPECTIVELY.

J. FLEXIBLE CONNECTORS ON DUCTWORK TO AIR HANDLING EQUIPMENT SHALL HAVE A MAXIMUM FLAMELSMOKE DEVELOPED RATING NOT TO EXCEED 25N50. K. PROVIDE VOLUME DAMPERS IN THE DUCT SYSTEMS WHERE SHOWN ON PLANS AND WHERE

. PROVIDE FACTORY FABRICATED VOLUME DAMPERS IN ALL SUPPLY AND EXHAUST BRANCH DUCTS AND OTHERS WHERE INDICATED ON DRAWINGS. VOLUME DAMPERS SHALL BE CONSTRUCTED IN ACCORDANCE WITH APPLICABLE SMACNA STANDARDS.

M. MANUAL VOLUME DAMPERS SHALL BE MADE OF GALVANIZED STEEL 18 GAUGE OR HEAVIER. DAMPERS FOR DUCTWORK UP TO 12 INCHES DEEP SHALL BE ONE BLADE CARRIED ON A 3V8 INCH SQUARE STEEL ROD MOUNTED IN THE SIDE OF DUCT WITHOUT FRAME AND FITTED WITH A LOCKING TYPE QUADRANT. SINGLE BLADE HAND DAMPERS UP TO 12 INCHES WIDTH MAY BE USED. DAMPERS FOR DUCTS OF GREATER DEPTH SHALL BE MULTI-BLADE TYPE, MAXIMUM BLADE WIDTH 12 INCHES UP TO 30 INCHES BLADE LENGTH, 8 INCHES MAXIMUM WIDTH OVER 30 INCHES LENGTH. BLADES SHALL BE MOUNTED IN FRAME AND INTERCONNECTED FOR OPERATION FROM ONE LOCKING TYPE HAND QUADRANT.

FIRE DAMPERS AND FIRETSMOKE COMBINATION DAMPERS

A. FIRE DAMPERS

FIRE DAMPERS SHALL BE LABELED ACCORDING TO UL 555. FIRE RATING: 1 1L2 HOURS (MINIMUM). COORDINATE WITH ARCHITECTURAL PLANS.

FRAME: CURTAIN TYPE WITH BLADES OUTSIDE AIRSTREAM; FABRICATED WITH ROLL-FORMED, 0.034" THICK GALVANIZED STEEL; WITH MITERED AND INTERLOCKING CORNERS.

MOUNTING SLEEVE: FACTORY OR FIELD INSTALLED, GALVANIZED SHEET STEEL.

MINIMUM THICKNESS: 0.052 THICK AS INDICATED AND OF LENGTH TO SUIT APPLICATION.

EXCEPTIONS: OMIT SLEEVE WHERE DAMPER FRAME WIDTH PERMITS DIRECT ATTACHMENT OF PERIMETER MOUNTING ANGLES ON EACH SIDE OF WALL OR FLOOR, AND THICKNESS OF DAMPER FRAME COMPLIES WITH SLEEVE REQUIREMENTS.

MOUNTING ORIENTATION: VERTICAL OR HORIZONTAL AS INDICATED.

BLADES: ROLL-FORMED, INTERLOCKING, 0.034" THICK, GALVANIZED SHEET STEEL. IN PLACE OF

HORIZONTAL DAMPERS: INCLUDE BLADE LOCK AND STAINLESS-STEEL CLOSURE SPRING. FUSIBLE LINKS: REPLACEABLE, 165 DEG F RATED.

B. FIREUSMOKE COMBINATION DAMPERS

COMBINATION FIRE AND SMOKE DAMPERS SHALL BE LABELED ACCORDING TO UL 555. FIRE RATING: 1 1A2 HOURS (MINIMUM). COORDINATE WITH ARCHITECTURAL PLANS. FRAME AND BLADES: 0.064" THICK, GALVANIZED SHEET STEEL

B. ALL DUCTWORK SHALL BE SEALED AIR TIGHT AND SHALL NOT ALLOW MORE THAN 10M AIR

H. CONTRACTOR SHALL USE DEGREASER, CLEAN AND PREP ALL EXPOSED DUCTWORK TO HAVE

REQUIRED TO INSURE PROPER SYSTEM BALANCING.

INTERLOCKING BLADES, USE FULL-LENGTH, 0.034" THICK, GALVANIZED-STEEL BLADE CONNECTORS.

MOUNTING SLEEVE: FACTORY-INSTALLED, 0.052" THICK, GALVANIZED SHEET STEEL; LENGTH TO SUIT WALL OR FLOOR APPLICATION.

DAMPER MOTORS: TWO-POSITION ACTION.

MOUNTING ORIENTATION: VERTICAL OR HORIZONTAL AS INDICATED.

HORIZONTAL DAMPERS: INCLUDE BLADE LOCK AND STAINLESS-STEEL CLOSURE SPRING. FUSIBLE LINKS: REPLACEABLE, 165 DEG F RATED.

MOTORS: OIL-IMMERSED AND SEALED GEAR TRAINS.

SPRING-RETURN MOTORS: EQUIP WITH AN INTEGRAL SPIRAL-SPRING MECHANISM WHERE INDICATED. ENCLOSE ENTIRE SPRING MECHANISM IN A REMOVABLE HOUSING DESIGNED FOR SERVICE OR ADJUSTMENTS. SIZE FOR RUNNING TORQUE RATING OF 150" E LB E FT AND BREAKAWAY TORQUE RATING OF 150" E LB FT.

ELECTRICAL CONNECTION: 115 V, SINGLE PHASE, 60 Hz. COORDINATE WITH CONTROLS AND ELECTRICAL CONTRACTORS.

C. DUCT-MOUNTING ACCESS DOORS

GENERAL DESCRIPTION: FABRICATE DOORS AIRTIGHT AND SUITABLE FOR DUCT PRESSURE CLASS. DOOR: DOUBLE WALL, DUCT MOUNTING, AND RECTANGULAR; FABRICATED OF GALVANIZED SHEET METAL WITH INSULATION FILL AND THICKNESS AS INDICATED FOR DUCT PRESSURE CLASS.

FRAME: GALVANIZED SHEET STEEL, WITH BEND-OVER TABLES AND FOAM GASKETS.

PROVIDE NUMBER OF HINGES AND LOCKS AS FOLLOWS:

INCLUDE 1"x1" BUTT OR PIANO HINGE AND CAM LATCHES.

LESS THAN 12" SQ .: SECURE WITH TWO SASH LOCKS.

UP TO 18" SQ .: TWO HINGES AND TWO SASH LOCKS. UP TO 24"x48": THREE HINGES AND TWO COMPRESSION LATCHES WITH OUTSIDE HANDLES. SIZES 24"x48" AND LARGER: ONE ADDITIONAL HINGE.

ACCESS POINTS SHALL BE PERMANENTLY IDENTIFIED ON THE EXTERIOR BY A LABEL HAVING LETTERS NOT LESS THAN 0.5" IN HEIGHT READING: FIREESMOKE DAMPER OR FIRE DAMPER.

FLEXIBLE AIR DUCTWORK

A. INSULATED FLEXIBLE AIR DUCTS SHALL BE U.L. 181 LISTED WITH TRILAMINATE OF ALUMINUM FOIL, FIBERGLASS AND POLYESTER INNER LINER ON GALVANIZED STEEL HELIX WITH R-5.0 RATING. FIBERGLASS INSULATION SHALL HAVE 25R50 FLAMENSMOKE FIRE RETARDANT VAPOR BARRIER JACKET.

B. ALL CONNECTIONS TO DIFFUSERS ARE TO BE MADE WITH ADJUSTABLE CLAMPS AND TIGHTENED AIRTIGHT.

C. MANUFACTURERS: CLEVAFLEX OR FLEXMASTER TYPE 5.

DUCTWORK CONSTRUCTION

A. LOW PRESSURE DUCTWORK:

LONGITUDINAL JOINTS SHALL BE PITTSBURGH TYPE AND SHALL BE SEALED WITH MINNESOTA MINING & MANUFACTURING COMPANY'S (3M) EC-800 OR AS APPROVED SEALING COMPOUND AS SHOWN ON DRAWING.

TRANSVERSE JOINTS SHALL BE STANDING "S" SLIP TYPE FOR HORIZONTAL JOINTS UP TO AND INCLUDING 40" WIDTH, AND REINFORCED BAR SLIP (CLEAT) JOINT FOR 41" TO 84" WIDTH; AND 1-1/2" ANGLE REINFORCED SLIP TYPE JOINT FOR DUCTS OVER 84".

DRIVE SLIP TYPE FOR VERTICAL JOINTS.

ALL DUCTS WIDER THAN 48" SHALL BE PROVIDED WITH 1-1.2" x 1-102" x 1T8" ANGLE IRON STIFFENERS ON ALL SIDES ON MAXIMUM OF 48" CENTER.

B. HANGERS FOR DUCTWORK:

ALL SHEET METAL DUCTWORK SHALL BE SECURELY SUPPORTED ON APPROVED HANGERS OR SADDLES AS REQUIRED.

RECTANGULAR HORIZONTAL DUCTWORK SHALL BE SUPPORTED BY ROUND STEEL RODS, THREADED AT BOTH ENDS AND BOLTED THROUGH THE SUPPORTING STEEL ACROSS THE DUCT.

SUPPORTING STEEL SHALL BE AS FOLLOWS:

DUCT SIZE (MAXIMUM DIMENSION) SUPPORT STEEL SPACING

UP TO 26" 2" X 3 1'" STRAP 8'-0" 27" TO 48" (INCLUSIVE) L 1-1'2" X 1-12" X 158" 8'-0" 49" TO 59" (INCLUSIVE) L 2" X 2" X 118" OVER 60" L 2-1C2" X 2-1L2" X 3216" 5'-0"

ALL DUCTWORK AND PIPING INSIDE THE BUILDING SHALL BE SUSPENDED FROM THE TOP CHORD OF BAR JOIST AT PANEL POINTS ONLY. DO NOT CONNECT TO THE ROOF DECK. DUCTWORK AND PIPES LOCATED ON THE ROOF ARE TO BE MOUNTED ON "PATE" EQUIPMENT OR PIPE SUPPORTS. EQUIPMENT CURBS SHALL BE TYPE ES-1 OR ES-5 FOR INSULATED ROOFS. CONTRACTOR HAS THE OPTION TO USE "MIRO INDUSTRIES" EQUIPMENT OR PIPE SUPPORTS.

ALL SHARP ENDS AND EDGES SHALL BE GROUND DOWN SMOOTH OR COVERED TO PREVENT INJURY TO PERSONNEL.

HANGER RODS, ANGLES AND STRAPS SHALL BE ATTACHED TO BEAM CLAMPS, CONCRETE INSERTS, AND APPROVED ANCHORS. ALL SUCH DEVICES SHALL BE UNDERWRITER'S LABORATORIES APPROVED. INSERTS AND ANCHORS SHALL BE SET IN COOPERATION WITH ALL TRADES INVOLVED.

C-CLAMPS SHALL NOT BE USED FOR ATTACHING HANGERS.

INSULATION - GENERAL

A. THE CONTRACTOR SHALL FURNISH ALL LABOR AND MATERIALS NECESSARY FOR THE INSTALLATION OF THERMAL INSULATION ON ALL HOT AND COLD SURFACES WHICH REQUIRE INSULATION FOR HEAT OR COLD CONSERVATION, COMFORT OF OCCUPANTS, EFFICIENCY OR EASE OF OPERATION OR TO PREVENT CONDENSATION OR DRIPPING. THE INSULATION SHALL BE COMPLETE AND EFFECTIVE THROUGHOUT THE BUILDING.

A. ALL INSULATION MATERIALS SHALL BE CLASS A BY UNDERWRITER'S LABORATORIES. STANDARD FIBERGLASS INSULATION SHALL BE MINIMUM 5 LB. DENSITY AND SHALL HAVE UL RATING NOT EXCEEDING 25 FLAME SPREAD, 35 FUEL CONTRIBUTED AND 50 SMOKE DEVELOPED. ACCESSORIES SUCH AS ADHESIVE, MASTICS, CEMENTS AND CLOTH FOR FITTINGS SHALL BE PERMANENTLY FIRE AND SMOKE RESISTANT. CHEMICALS USED FOR TREATING PAPER IN JACKET LAMINATES SHALL BE UNAFFECTED BY WATER OR HUMIDITY.

BE EQUAL TO OWENS-CORNING FIBERGLASS COMMERCIAL GRADE TYPE 100. ENSURE INSULATION IS CONTINUOUS THROUGH INSIDE WALLS, PACK AROUND DUCTS WITH FIRE PROOF SELF-SUPPORTING INSULATION MATERIAL, PROPERLY SEALED.

A. FANS SHALL BE AS SCHEDULED WITH ACCESSORIES ON DRAWINGS. FANS SHALL BEAR AMCA SEAL FOR RATED SOUND AND AIR PERFORMANCE. ALL UNITS TO BE VANDAL-PROOF AND COVERS TO BE BOLTED SECURE.

AFTER THE VISUAL INSPECTION, ALL FANS SHALL BE TESTED AT FULL SYSTEM STATIC PRESSURES BY OPERATING THE SYSTEM FANS.

ALL REPAIRS MUST BE DONE IN A MANNER SATISFACTORY TO THE ENGINEERS FIELD REPRESENTATIVE.

B. THE CONTRACTOR SHALL GUARANTEE THE ENTIRE INSTALLATION OF THE DUCT SYSTEMS TO FUNCTION SATISFACTORILY AGAINST THE SPECIFIED SYSTEM TOTAL STATIC PRESSURE. DEFECTS DUE TO IMPROPER MATERIALS, WORKMANSHIP, AND LEAKS SHALL BE CORRECTED WITHOUT ADDITIONAL COST TO THE OWNER. OTHER WORK AFFECTED AS A RESULT OF THE ABOVE MENTIONED DEFECTS SHALL ALSO BE MADE GOOD WITHOUT COST TO THE OWNER. THE ENTIRE SYSTEM SHALL BE LEFT IN PROPER OPERATING CONDITION, ACCEPTABLE TO THE ENGINEER'S FIELD REPRESENTATIVE. OIL CANNING OF DUCTS WILL NOT BE ACCEPTABLE.

JURISDICTION.

B. SMOKE DETECTORS SHALL HAVE SAMPLING TUBES AND AUXILIARY CONTACTS FOR FAN SHUTDOWN. SMOKE DETECTORS SHALL BE CONNECTED TO THE BUILDING FIRE ALARM SYSTEM.

WIRING

CONTROLS INSTALLATION

A. PROVIDE 24X7 PROGRAMMABLE THERMOSTAT FOR EACH ROOF TOP UNIT B. KEF-1, KEF-2 & KEF-3 SHALL BE INTERLOCKED WITH MAU-1. WHEN MAU-1 IS ON, KEF-1, KEF-2 & KEF-3 SHALL ALSO BE ON.

C. KEF-4 SHALL BE INTERLOCKED WITH RTU-1.

INSULATION - MATERIALS

B. MANUFACTURERS: CERTAIN TEED SAINT GOBAIN, OWENS CORNING, JOHNS-MANSVILLE, ARMSTRONG CORK COMPANY.

DUCT INSULATION

A. ALL CONCEALED SUPPLY AND RETURN AIR DUCTS SHALL BE INSULATED PER ASHRAE STANDARD 90.1, GENERAL REQUIREMENTS.

B. CONCEALED DUCTWORK SHALL BE INSULATED WITH FACED DUCTWRAP 1" THICK, ONE (1) LB.DCU.FT. DENSITY WITH FACTORY-APPLIED "FRK" VAPOR BARRIER JACKET OR LAMINATED ALUMINUM FOIL, OPEN MESH GLASS FIBER REINFORCING MESH SCRIM AND FLAMEPROOF KRAFT PAPER. INSULATION SHALL

FINISH INSULATION NEATLY AT HANGERS, SUPPORTS AND OTHER PROTRUSIONS.

LOCATE COVER SEAMS IN LEAST VISIBLE LOCATIONS.

C. ALL SUPPLY AND RETURN AIR DUCTWORK SHALL BE INSULATED ACCORDING TO THE ASHRAE 90.1 ENERGY STANDARDS. GENERAL REQUIREMENTS FOR INSULATION SHALL BE R-6 FOR SUPPLY AND RETURN DUCTS IN AN UNCONDITIONED SPACE OR R-8 OUTSIDE THE BUILDING, R-8 INSULATION INSTALLED BETWEEN SUPPLY AND RETURN DUCTS AND BUILDING EXTERIOR WHEN DUCTS ARE PART OF THE BUILDING ASSEMBLY.

GRILLES, REGISTERS AND CEILING DIFFUSERS

A. REFER TO SCHEDULE ON DRAWINGS FOR CAPACITIES, SIZES AND TYPES.

B. GRILLES AND REGISTERS PERFORMANCE SHALL BE BASED ON TESTS CONDUCTED IN ACCORDANCE WITH ADC STANDARDS 1062 A2, "AIR DIFFUSING EQUIPMENT TEST CODE" AND ASHRAE STANDARD 3368 "METHOD OF TESTING FOR RATING THE ACOUSTIC PERFORMANCE OF AIR CONTROL AND TERMINAL DEVICES AND SIMILAR EQUIPMENT."

C. GRILLES, REGISTERS AND DIFFUSERS SHALL BE MANUFACTURED BY PRICE, TITUS, CARNES, OR KRUEGER. PROVIDE DAMPERS AT EACH DIFFUSER AND REGISTER. PROVIDE OPTIONS PER SCHEDULE ON DRAWINGS.

EXHAUST AIR FANS

ALL TESTS SHALL BE CONDUCTED IN THE PRESENCE OF THE TESTING AND BALANCING TRADES.

SMOKE DETECTORS (SYSTEMS OVER 2000 CFM):

A. WHERE REQUIRED BY LOCAL CODE, FURNISH AND INSTALL IN THE RETURN AIR DUCT OF EACH AIR HANDLING UNIT. A SELF-CONTAINED, IONIZATION-TYPE DUCT SMOKE DETECTOR DESIGNED TO MOUNT TO A DUCT USING SAMPLING TUBES ACROSS THE DUCT TO SENSE THE AIR. UNIT SHALL BE MANUALLY RESET AND SHALL HAVE A SET OF CONTACTS FOR FAN SHUT DOWN AS WELL AS FOR REMOTE ALARMING. SMOKE DETECTORS SHALL BE IN ACCORDANCE WITH THE LATEST ADOPTED EDITIONS OF NFPA 90A AND THE INTERNATIONAL MECHANICAL CODE OF THE LOCAL AUTHORITY HAVING

C. SMOKE DETECTORS THAT ARE NOT VISABLE SHALL HAVE REMOTE INDICATION DEVICE (LIGHT OPTION) FOR UNIT STATUS CONDITION.

A. ALL WIRING SHALL COMPLY WITH LOCAL AND NATIONAL ELECTRIC CODES AND THE MANUFACTURER'S PUBLISHED INSTALLATION MANUAL

B. PROVIDE LAMINATED COLOR CODED WIRING DIAGRAM TO MATCH FACTORY INSTALLED WIRING AND BE PROVIDED IN BOTH POINT TO POINT AND LADDER DIAGRAM FORMAT AND AFFIXED TO THE INTERIOR OF THE CONTROL COMPARTMENT ACCESS DOOR.

THERMOSTATS

A. IN GENERAL, ALL THERMOSTATS, INCLUDING SENSORS, ETC. SHALL BE PROVIDED BY THE HVAC EQUIPMENT MANUFACTURER PROVIDED.

B. MECHANICAL TRADES SHALL FURNISH AND INSTALL ALL REQUIRED AUTOMATIC TEMPERATURE CONTROLS, INCLUDING WIRING, TRANSFORMERS, 7-DAY PROGRAMMABLE THERMOSTATS FOR PROPER OPERATION OF THE HVAC SYSTEM. WIRING SHALL BE IN ACCORDANCE WITH N.E.C. STANDARDS. COORDINATE WITH CONTROLS AND ELECTRICAL CONTRACTORS.

D. EF-1, EF-2 & EF-3 SHALL BE SWITCH CONTROLLED.

MECHANICAL HVAC FLOOR PLAN

GENERAL NOTES:

- GN1. ALL DUCT SUPPORT SHALL BE PROVIDED WITH ADEQUATE SPACE FOR PIPING & CONDUIT ABOVE DUCTWORK.
- GN2. SEE M0-00, M6-00 & M6-01 FOR LEGENDS, SCHEDULES AND NOTES.
- GN3. ALL EXPOSED DUCTWORK SHALL BE ROUND. DUCT PAINT COLOR BY ARCHITECTS.
- GN4. COORDINATE DUCTWORK WITH PIPING, STORM DRAIN, ETC. PRODUCE WORKING SHOP DRAWING.
- GN5. SEE ARCHITECTURAL DRAWING FOR LIFE SAFETY.GN6. COORDINATE FINAL THERMOSTAT LOCATION WITH OWNER/ARCHITECT.

KEY DRAWING NOTES:

- 1 PROVIDE CEILING MOUNTED EXHAUST FAN AS SHOWN ON PLAN. EXHAUST AIR DUCT RUN THRU WALL. PROVIDE WALL CAP. CAP COLOR BY ARCHITECT. SEE SCHEDULE FOR DETAILS.
- (2) EXHAUST DUCT UP TO ROOF MOUNTED EXHAUST FAN. SEE SCHEDULE FOR DETAILS.
- (3) SUPPLY AND RETURN AIR DUCT DOWN FROM ROOF TOP UNIT.
- 4 PROVIDE WALL MOUNTED PROGRAMMABLE THERMOSTAT FOR EACH ROOF TOP UNIT. PROVIDE INSULATION BOARD TO SEPARATE THERMOSTAT FROM THE WALL FOR THERMOSTAT IN BAR/ DINING AREA.
- (5) REFRIGERATION EQUIPMENT FOR WALK-IN COOLERS DESIGNED BY OTHERS.
- 6 PROVIDE BELLMOUTH OPENING ON RETURN AIR DUCT WITH RETURN AIR GRILL.

MECHANICAL HVAC ROOF PLAN SCALE: 3/16"=1'-0"

GENERAL NOTES:

- GN1. SEE MO-OO, M6-OO & M6-O1 FOR SCHEDULES, NOTES & LEGENDS.
- GN2. COORDINATE DUCTWORK WITH PIPING, STORM DRAIN, ETC. PRODUCE WORKING SHOP DRAWING.
- GN3. SEE ARCHITECTURAL DRAWING FOR LIFE SAFETY TO PROVIDE APPROPRIATE DAMPERS.
- GN4. MAINTAIN MINIMUM 10'-0" DISTANCE FROM ROOF EDGE FOR ALL HVAC UNITS. OTHERWISE PROVIDE HANDRAIL.
- GN5. TERMINATE ALL VENTS 3'-0" ABOVE ANY FORCED AIR INLET LOCATED WITH IN 10'-0".
- GN6. TERMINATE ALL EXHAUST DUCTS 3'-0" FROM ROOF EDGE.
- GN7. REFRIGERANT PIPING LENGTHS AND INSTALLATION SHALL BE PER MANUFACTURER'S RECOMMENDATIONS.
- GN8. FLUE AND COMBUSTION AIR LENGTH AND INSTALLATION SHALL BE PER MANUFACTURER'S RECOMMENDATION.

KEY DRAWING NOTES:

- (1) PROVIDE ROOF TOP AS SHOWN ON PLAN. SEE SCHEDULE FOR DETAILS.
- 2 PROVIDE MAKE UP AIR UNIT. SEE SCHEDULE FOR DETAILS.
- 3 PROVIDE ROOF MOUNTED EXHAUST FAN AS SHOWN ON PLAN. SEE SCHEDULE FOR DETAILS.

	ROC	FTOP	UNIT SO	CHEDU	LE								
							SUPPLY	FAN				COOLI	NG
Т,	AG	IEER	LOCATION	MANUF.	SERVES	(FM	ESP	впр	E	AT	L	٩T
						MAX SA MIN OA (I		(IN. WG.)		DB	WB	DB	W
RT	Ū−1	13.8	ROOF	CARRIER	KITCHEN	2650	700	0.7	1.08	80	67.2	56.2	55
RT	Ū-2	13.8	ROOF	CARRIER	DINING	2800	755	0.7	1.19	80.3	67.4	55.8	55
	NOT	<u>ES:</u>	1 2 3	INSTALL PE PROVIDE L DISCONNEC STAINLESS	ER MANUFACTURER'S INIT MOUNTED MOTOR CT. STEEL HEAT EXCHAN	RECOMMENI STARTER / GER.	DATION. AND		(4) (5)) PROVIDE 10'-0" A) PROVIDE RECOMME	HAND RAIL WAY FROM VIBRATION ENDATION.	FOR UNI ANY ROO ISOLATION	ts a f ed i pei

	CHEN I	MAKE-		<u>r unit</u>	S
	CAS		′ FAN		
TAG	TYPE	CF	M	E.S.P	ŀ
		MINIMUM	DESIGN		
MAU-1	NATURAL	3500	4667	0.6	7
		1 2 3 4 5 6 7) PROVIDE S) INSTALLATI RECOMMEN) PROVIDE D) PROVIDE N) DX COOLIN) PROVIDE N POWERED) PROVIDE U VENTILATIC	STARTER & NOATION. DISCHARGE MERV-8 FII NG. ROOF MOUN FROM THE JNIT CONTR N CAPABIL	DIS ARAI AIR LTRA UN ROLL ITY.

	EN MAU CON	IDENSING UNIT SO	<u>2</u> ⊢
CONDENSER NO.	MANUF.	FAN UNIT MODEL	т
1		ADM3_D 500_018_MPU	
2	A.D.M AIR CONTROL	ADM3-D.300-G18-MP0	
(1.) PROVIDE ALL REFI ACCESSORIES AS 2.) SUCTION SERVICE	RIGERANT PIPING DEVISES AND REQUIRED AND CHARGED REF VALVE AND PRESSURE GAUGE	RIGI

DIFF	DIFFUSERS. GRILLES & REGISTER USE AS SCHEDULED UNLESS NOTED OTHERWISE ON PLANS.												
TAG	TYPE	CFM RANGE	NECK	FACE	MANUFACTURER	MODEL							
А	SUPPLY	0-350	8"ø	24X24	TITUS	ΟΜΝΙ							
В	B SUPPLY 0-300 10"ø 22 ½"ø TITUS TMRA TYPE 3												
С	C RETURN 0-1200 18X14 24X24 TITUS 50F												
D RETURN 0-2800 36X24 38X26 TITUS 350RL													
E SUPPLY 0-300 14X6 16X8 TITUS 300RL													
(1) ALI (2) CC (3) N.((4) PR (5) PR (6) AN (7) CC (8) ALI (9) PR PL	L CEILING DI DORDINATE DI C. VALUE 30 ROVIDE ALL E ROVIDE ACCES Y SPECIAL G DLOR TO MAT L SOFFIT GR OVIDE 12X12 ANS.	FFUSER ARE FFUSER TYPE OR LESS. DUCT TRANSIT SS PANEL FO RILLE/DIFFUS CH CEILING O ILLE SHALL E 2 FACE(5"Ø N	4-WAY THE TO BE U ION AT THE R MANUAL SER/REGIST OR BY ARC BE OPPOSE	IROW UNLES SED WITH C E NECK AS BALANCE E FER REQUIRE CHITECT/ OV ED BLADE D S-OMNI-AA	SS NOTED OTHERWIS CEILING LAYOUT. REQUIRED. DAMPER IN HARD C ED IS NOTED ON P WNER. DAMPER.) DIFFUSER WHERE	SE. EILING & WALL. 'LAN. SHOWN ON							

CAPA	CITY @95°I	F AMBIENT TE	MP.			Н		ELEC				
WB	SENS. MBH	TOTAL MBH	OA CONDITIONS DB/WB	EAT TEMP, DB	OA TEMP DB	LAT (MAX.)	INPUT MBH(NET)	OUTPUT MBH(MIN)	NO. STAGES	MODEL	VOLTAGE PHASE	MC (AM
5.9	66.47	93.21	91/75	48.9	-10.0	90	180	148	2 STAGE	48HCRD08; 7.5 TONS	208V/3ø	46
5.6	72.18	102.88	91/75	47.1	-10.0	90	180	148	2 STAGE	48HCRD09; 8.5 TONS	208V/3ø	46

ARE LESS THEN DGE.

ER MANUFACTURER'S

6 PROVIDE 24X7 PROGRAMMABLE THERMOSTAT.

7 PROVIDE ROOF CURB AS PER MANUFACTURER'S RECOMMENDATION.

8 VERIFY SUPPLY CFM WITH PLAN.

9 PROVIDE DUCT SMOKE DETECTORS IN SUPPLY AND RETURN DUCT AND VISUAL NOTIFICATION IN SPACE.

10 PROVIDE UNIT MOUNTED GFI RECEPTACLE IN WEATHER PROOF BOX POWERED FROM UNIT.

9 ROOF CURB.

(12) DOWNTURN PLENUM.

(10) VFD.

r unit	INIT SCHEDULE (TO BE COORDINATED WITH KITCHEN SUPPLIER)																
′ FAN	FAN		COOLING CAPACITY		/ AT	SENS.	TOTAL	TEMP	HEATING CAPACITY		MANUFACTURER	MODEL	VOLT/PH.	МСА	MOCP	WEIGHT	REMARKS
E.S.P	HP	DB	WB	DB	WB	MBH MBH	MBH	RISE	INPUT MBH	OUTPUT MBH	MANOFACTORER	MODEL		AMPS	S AMPS	LBS	
0.6	3.0	95.0	78.0	81.1	71.5	68.3	120	80 ° F	437.653	402.641	A.D.M AIR CONTROL	ADM3-D.500-G18-MPU	208V/3ø	10.9	15	1850	123456789101112

STARTER & DISCONNECT.

TION & CLEARANCE PER MANUFACTURER'S

DISCHARGE AIR TEMPERATURE CONTROL.

MERV-8 FILTRATION WEATHER HOOD.

ROOF MOUNTED GFI RECEPTACLE IN WEATHER PROOF BOX

FROM THE UNIT. UNIT CONTROLLER WITH DEMAND CONTROL

CHEDULE: ELECTRICAL VLT./PH. MCA MOP REMARKS TONNAGE SEER 12321.4 208V/3ø 14 30 5 123208V/3ø 21.4 5 14 30

RIGERANT.

3.) PROVIDE STARTER & DISCONNECT.

KI	KITCHEN EXHAUST FAN SCHEDULE (TO BE COORDINATED WITH KITCHEN SUPPLIER)											
TAG	TYPE	SERVES	CFM	ESP	HP	FAN RPM	ELEC. VLT./PH.	WEIGHT Ibs.	MANUF./MODEL (DESIGN BASIS)	REMARKS		
KEF-1	ROOF MOUNTED	PASTA LINE HOOD-#507	2167	1.2	1.5	1119	208V/ 3ø	158	A.D.M AIR CONTROL AUB18	123456789		
KEF-2	ROOF MOUNTED	HEARTH HOOD HOOD—#502	1933	1.7	2.0	1278	208V/ 3ø	280	A.D.M AIR CONTROL AHV-18DD	123456789		
KEF-3	ROOF MOUNTED	FRENCH TOP HOOD HOOD-#500	567	0.6	0.5	1219	208V/ 3ø	101	A.D.M AIR CONTROL AUB11	123456789		
KEF-4	ROOF MOUNTED	CONDENSATE HOOD HOOD-#300	0.5	1125	208V/ 3ø	89	A.D.M AIR CONTROL AUB11	1246781011				
<u>NOTE</u>	NOTES:											
(1.) (2.) (3.)	PROVIDE STAR PROVIDE ALL I PROVIDE CONT INTERLOCKS W AIR UNIT.	TER AND DISCONNECT. MOUNTING HARDWARE. ROL COMPONENTS AND ITH KITCHEN MAKE—UP	() () ()	 4. VIBRATI MANUF/ 5. PROVID 6. PROVID 	ON ISOLA ACTURER E GREASE E ROOF (TION PER RECOMMENDA E BOX. CURB.	TION.	 (7.) WELDED STEI (8.) COORDINATE (9.) VFD, (10.) STAINLESS S 	EL DUCT CONSTRUCTION. ROOF OPENINGS WITH GC. TEEL DUCTWORK.			

IC	TOILET EXHAUST FAN SCHEDULE												
TAG	SERVES	TYPE	CFM	ESP	HP/W	FAN RPM	DRIVE TYPE	ELEC. VLT./PH.	MANUFACTURER/ MODEL (DESIGN BASIS)	REMARKS			
EF-1	TLT.	CEILING MOUNTED	70	0.375	80.2 W	950	DIRECT	120V/1ø	GREENHECK SP-B110	1234			
EF-2	TLT.	CEILING MOUNTED	70	0.375	80.2 W	950	DIRECT	120V/1ø	GREENHECK SP-B110	1234			
EF-3	TLT.	CEILING MOUNTED	70	0.375	80.2 W	950	DIRECT	120V/1ø	GREENHECK SP-B110	1234			
NOTES: 1 PROVIDE STARTER AND DISCONNECT. 3 SWITCH CONTROL. 2 VERIFY FAN LOCATION AT SITE. 4 BACKDRAFT DAMPER.													

RICAL										
CA //P)	MOP (AMP)	UNIT WEIGHT (LBS)	REMARKS							
6	50	1252	123456789101112							
6	50	1257	12345678910111213							

(12) UNITS SHALL COMPLY WITH ASHRAE 90.1 2013

8 OPEN/CLOSE OUTSIDE AIR DAMPER.

(1) MAU SHALL BE INTERLOCKED WITH KEF-1, KEF-2 AND KEF-3.

(10) STAINLESS STEEL DUCTWORK. (11) INTERLOCK WITH RTU-1

RCH CHRISTIAN HURTTIENNE ARCHITECTS 2111 WOODWARD AVENUE, #201, MI #8201 313.825.2005 CHA-C.COM ALL CONTRACTORS (GENERAL CONTRACTOR, SUB-CONTRACTORS, MEMBERS OR AGENTS OF EITHER OR BOTH) ARE TO VERIFY AND COORDINATE ALL CONDITIONS, DIMENSIONS, QUANTITIES AND DETAILS, STATED OR NOT, WITHIN THESE DRAWINGS AND WITHIN THE SPECIFICATIONS BEFORE COMMENCING WITH THE WORK. IF A DIMENSIONAL ERROR OR CONFLICT OCCURS BETWEEN THESE DRAWINGS, THE SPECIFICATIONS OR THE EXISTING / PROPOSED CONDITIONS, IT SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE ARCHITECT, BEFORE PROCEEDING WITH THE WORK. ANY PARTY (GENERAL CONTRACTOR, SUB-CONTRACTORS, MEMBERS OR AGENTS OF EITHER OR BOTH) WHO FAIL TO DO SO TAKE FULL RESPONSIBILITY OF ANY ERRORS, CONFLICTS, SCHEDULE AND COST IMPLICATIONS. SYSTEMS SOLUTION SZ50 W Big Beaver Rd Suite #305 Troy, MI 48084 Phone/Fox 248.247.1193 www.sse-mep.com see0sse-mep.com 2041004 <u>___</u> .820 4 Ζ \triangleleft \mathbf{Y} M \geq $\overline{}$ REVIE RESTAU DETROIT, PERMIT AVE VECINO **3**RD 4100 DESCRIPTION DATE 1. 012921 PERMIT REVIEW MASIC MECHANICAL LEGENDS NOTES AND SCHEDULES **M6-00**

"SSE"									"SSE"
	CEPT		ASI	HRAE STD.	62.1-201	3 COMPLIAN			VENTI
	WITHO	ABLE IN	ELEVE				HELP		
RESET/CLEAR	PR			PROJECT NA	ME:	TTSA Schmu	cks Brewery		R
			1	PROJECT NU DATE:	MBER:	2041004 08.19.20			
(AHU-1, ETC.)	RT	U-2		DESIGN OA 1	EMP.:	-10		1	(AHU-1, E
RECORD NUMBER >>>>	1	2	3	4	5	6	7		
ZONE NUMBER (EG: 1-1, 1-2)	BAR	RM-101	RM-102	RM-103					ZONE NUMBER (
OCCUPANCY CATEGORY NUMBER (SEE TABLE 6-1)	21	19	37	26		-			OCCUPANCY CATE
OCCUPANCY CATEGORY	Bars, cocktail lounges	Restaura nt dining rooms	Office space	Corridor s	0	0	0		OCCUPANCY C
PEOPLE OUTDOOR AIR RATE (CFM/PERSON) (Rp)	7.5	7.5	5.0	0.0	0.0	0.0	0.0		PEOPLE OUTDOO (CFM/PERSOI
AREA OUTDOOR AIR RATE (CFM/SQ. FT.) (Ra)	0.18	0.18	0.06	0.06	0.00	0.00	0.00		AREA OUTDOOR (CFM/SQ. FT.
ZONE FLOOR AREA (SQ. FT.) (Az)	150	780	163	308					ZONE FLOOR ARI (Az)
NORMAL OCCUPANCY - IF KNOWN (EG. ONE PER OFFICE) (NUMBER OF PEOPLE) PEAK OCCUPANCY - IF KNOWN (EG. MEETING IN AN OFFICE) (NUMBER OF PEOPLE) IF SPACE IS INTERMITTENT USAGE (EG. CONFERENCE ROOM) (SPACE HEIGHT - FT.)									NORMAL OCCUPAN (EG. ONE PER (NUMBER OF PEAK OCCUPANC (EG. MEETING IN (NUMBER OF IF SPACE IS INTERW (EG. CONFERENCE RO HEIGHT -
CORRECTED OCCUPANCY FOR INTERMITTENT USAGE SPACES	0	0	0	0	0	0	0		CORRECTED OCC INTERMITTENT US (NUMBER OF
CALCULATED OCCUPANCY (NUMBER OF PEOPLE) (Pz)	0.0	0.0	0.0	0.0	0.0	0.0	0.0		CALCULATED O (NUMBER OF PE
DEFAULT OCCUPANCY (NUMBER OF PEOPLE) (Pz)	15.0	54.6	0.8	0.0	0.0	0.0	0.0		DEFAULT OCC (NUMBER OF PEO
DESIGN OCCUPANCY (CALCULATED, IF KNOWN OR DEFAULT)	15	55	1	0	0	0	0		DESIGN OCC (CALCULATED, IF KNO
PEOPLE OUTDOOR AIR (CFM) (Rp x Pz)	113	413	5	0	0	0	0	-	PEOPLE OUTDOO (Rp x P
AREA OUTDOOR AIR (CFM) (Ra x Az)	27	140	10	18	0	0	0	-	AREA OUTDOOR (Ra x A
BREATHING ZONE OUTDOOR AIRFLOW (CFM) (Vbz)	140	553	15	18	0	0	0		BREATHING ZONE OU
AIR DISTRIB. CONFIG. NUMBER (SEE TABLE 6-2)	1	1	1	1					AIR DISTRIB. CON
ZONE AIR DISTRIBUTION EFFECTIVENESS (Ez)	1.0	1.0	1.0	1.0	0.0	0.0	0.0		ZONE AIR DIST
ZONE OUTDOOR AIRFLOW (CFM) (Voz)	140	553	15	18					ZONE OUTDOOR (CFM)
DESIGN PRIMARY AIRFLOW TO ZONE (INCL. PRIMARY OA & RA) (CFM) (Vpz)	500	1850	200	200					DESIGN PRIMARY AIR (INCL. PRIMARY OA &
MINIMUM VAV AIRFLOW TO ZONE (INCL. PRIMARY OA & RA) (CFM) (Vdz)					-			-	MINIMUM VAV AIRFLOW PRIMARY OA & RA
ZONE PRIMARY OUTDOOR AIR FRACTION (Zp)	0.28	0.30	0.07	0.09	0.00	0.00	0.00		ZONE PRIMARY OUTDO
NORMAL ZONE OCCUPANCY (EITHER KNOWN OR DEFAULT)	15	55	1	0	0	0	0	-	NORMAL ZONE C
SYSTEM POPULATION (SUM OF NORMAL OCCUPANCIES) (Ps)	7	71				<u>I</u>	CALC.		SYSTEM POP
ZONE POPULATION (LARGEST TYPICAL OCCUPANCY)	7	/1		FOR OPT	IMIZATIOI MUM VAV	N, ADD TO / AIRFLOW	0		ZONE POPU (LARGEST TYPICAL
OCCUPANT DIVERSITY (SYSTEM POPULATION / SUM OF DESIGN POPULATION) (D)	1.	00		OA QUAN WHEN F CHANG	TITY IS C REQ'D. O/	OPTIMIZED A INTAKE S THAN:	0.0		OCCUPANT DIVERSITY POPULATION / SU POPULATION
UNCORRECTED OUTDOOR AIR INTAKE (CFM) (Vou)	7	26		REQUIRE	DOAINT	AKE FLOW	752		UNCORRECTED OUTE
MAXIMUM ZONE PRIMARY OUTDOOR AIR FRACTION (Zp)	0.:	299				1			MAXIMUM ZONE PRIMA FRACTION
DEFAULT SYSTEM VENTILATION EFFICIENCY (Ev)	0.	90		AUT	O-OPTI	MIZE			DEFAULT SYSTEM EFFICIENC
SYSTEM PRIMARY AIRFLOW (CFM)	27	750	+						SYSTEM PRIMARY AI
AVERAGE OUTDOOR AIR FRACTION	0.	26							AVERAGE OUTDOOF
DISCHARGE OUTDOOR AIR FRACTION	0.28	0.30	0.07	0.09	0.00	0.00	0.00		DISCHARGE OUTDOC
ZONE VENTILATION EFFICIENCY (Evz)	0.98	0.97	1.19	1.17					ZONE VENTILATION EF
CALCULATED SYSTEM VENTILATION EFFICIENCY (APPENDIX A) (Ev) = MINIMUM (Evz) MULTIPLE ZONE RECIRC. SYSTEM	0.	97						1	CALCULATED SYSTE EFFICIENCY (AF (Ev) = MINIMU MULTIPLE ZONE RE
REQUIRED OA INTAKE FLOW (CFM) (Vot)	7	52							REQUIRED OA INTAK (Vot)

			ASI	HRAE STD.	62.1-2013	COMPLIAN	ICE	
VENTILATION FOR A	CCEPTA	ABLE IN	DOOR				HELP	
RESET/CLEAR	PRI			PROJECT NA PROJECT NU	ME: MBER:	VECINO RES	RAURANT	
R HANDLING UNIT TAG NUMBER	RT	U-1		DATE: DESIGN OA T	TEMP.:	11.23.20 -10		
RECORD NUMBER >>>>	1	2	3	4	5	6	7	
ZONE NUMBER (EG: 1-1, 1-2)	RM-107	RM-106	RM-108	RM-110				-
CUPANCY CATEGORY NUMBER (SEE TABLE 6-1)	22	22	36	36				
OCCUPANCY CATEGORY	Kitchen (cooking)	Kitchen (cooking)	Occupiab le storage	Occupiab le storage	0	0	0	
PEOPLE OUTDOOR AIR RATE (CFM/PERSON) (Rp)	7.5	7.5	5.0	5.0	0.0	0.0	0.0	
AREA OUTDOOR AIR RATE (CFM/SQ. FT.) (Ra)	0.12	0.12	0.06	0.06	0.00	0.00	0.00	
ZONE FLOOR AREA (SQ. FT.) (Az)	464	440	53	60				
RMAL OCCUPANCY - IF KNOWN (EG. ONE PER OFFICE) (NUMBER OF PEOPLE) EAK OCCUPANCY - IF KNOWN								
(NUMBER OF PEOPLE) SPACE IS INTERMITTENT USAGE ONFERENCE ROOM) (SPACE HEIGHT - FT.)								
ORRECTED OCCUPANCY FOR ITERMITTENT USAGE SPACES (NUMBER OF PEOPLE)	0	0	0	0	0	0	0	
CALCULATED OCCUPANCY (NUMBER OF PEOPLE) (Pz)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
DEFAULT OCCUPANCY (NUMBER OF PEOPLE) (Pz)	9.3	8.8	0.1	0.1	0.0	0.0	0.0	
DESIGN OCCUPANCY ULATED, IF KNOWN OR DEFAULT) (NUMBER OF PEOPLE) (Pz)	10	9	1	1	0	0	0	
EOPLE OUTDOOR AIR (CFM) (Rp x Pz)	75	68	5	5	0	0	0	
AREA OUTDOOR AIR (CFM) (Ra x Az)	56	53	3	4	0	0	0	
THING ZONE OUTDOOR AIRFLOW (CFM) (Vbz)	131	120	8	9	0	0	0	
IR DISTRIB. CONFIG. NUMBER (SEE TABLE 6-2)	1	1	1	1				
ZONE AIR DISTRIBUTION EFFECTIVENESS (Ez)	1.0	1.0	1.0	1.0	0.0	0.0	0.0	
ZONE OUTDOOR AIRFLOW (CFM) (Voz)	131	120	8	9				
IGN PRIMARY AIRFLOW TO ZONE . PRIMARY OA & RA) (CFM) (Vpz)	1300	1200	50	50				
UM VAV AIRFLOW TO ZONE (INCL. RIMARY OA & RA) (CFM) (Vdz)								
PRIMARY OUTDOOR AIR FRACTION (Zp)	0.10	0.10	0.16	0.17	0.00	0.00	0.00	
NORMAL ZONE OCCUPANCY EITHER KNOWN OR DEFAULT) (NUMBER OF PEOPLE)	10	9	1	1	0	0	0	
SYSTEM POPULATION OF NORMAL OCCUPANCIES) (Ps)	2	1					CALC.	
ZONE POPULATION ARGEST TYPICAL OCCUPANCY) (SUM (Pz))	2	1		FOR OPT KEY "MINI TO :	IMIZATION MUM VAV ZONE'' (C	I, ADD TO AIRFLOW FM):	0	
PANT DIVERSITY (SYSTEM OPULATION / SUM OF DESIGN POPULATION) (D)	1.	00		OA QUAN WHEN F CHANG	NTITY IS O REQ'D. OA E IS LESS	NTAKE THAN:	0.0	
ORRECTED OUTDOOR AIR INTAKE (CFM) (Vou)	20	68		REQUIREI ((D OA INTA CFM) (Vo	KE FLOW	288	
IUM ZONE PRIMARY OUTDOOR AIR FRACTION (Zp)	0.1	172		AUT	0-0PTIM	IZE		
EFAULT SYSTEM VENTILATION EFFICIENCY (Ev)	1.	00						
TEM PRIMARY AIRFLOW (CFM) (Vps)	26	00						
RAGE OUTDOOR AIR FRACTION (Xs)	0.	10						
HARGE OUTDOOR AIR FRACTION (Zd)	0.10	0.10	0.16	0.17	0.00	0.00	0.00	
CULATED SYSTEM VENTIL ATION	1.00	1.00	0.94	0.93				
EFFICIENCY (APPENDIX A) (Ev) = MINIMUM (Evz)	0.	93						
UIRED OA INTAKE FLOW (CFM) (Vot)	28	88						

PLUMBING PIPE AND FITTING SPECIFICATIONS

- A. SOIL, WASTE, VENTS AND STORM DRAINS:
 1. IN BUILDING ABOVE GRADE, USE SERVICE WEIGHT. NO-HUB OR NEO-LOCK CAST IRON OR PVC PIPE AND FITTINGS WITH STAINLESS STEEL CINCH BANDS CONFORMING TO CISPI 301. IN BUILDING BELOW GRADE, USE PVC SANITARY PIPING. PIPE AND FITTINGS SHALL BEAR NSF SEAL OF APPROVAL AND MADE IN USA LEBELS.
- B. DOMESTIC WATER PIPING (ABOVE GRADE):
- 1. HOT, COLD AND HOT WATER RETURN:
 - a) USE PEX TUBING FOR WATER PIPING SYSTEM INSIDE BUILDING CHASES. INSTALL PER MANUFACTURER'S RECOMMENDATIONS AND ALL APPLICABLE CODES.
- C. NATURAL GAS PIPING:
- IN BUILDING, ABOVE AND BELOW GRADE; ASTM A-120 OR A-53 SCHEDULE 40 BLACK STEEL THREADED PIPE 2" AND LESS WITH BLACK MALLEABLE IRON SCREWED FITTINGS CONFORMING TO ANSI-B16.3. PROVIDE 5 MIL POLYETHYLENE WRAP WHEN APPLIED BELOW GRADE. 2½"AND LARGER SHALL BE WELDED.
- 2. OUTSIDE BUILDING, BELOW GRADE: USE HDPE GAS PIPE WITH BUTT FUSION JOINTS CONFORMING TO ASTM 3408 WITH SDR OF 13.0, RATED FOR GAS SERVICE.
- 3. USE CSST FLEXIBLE GAS PIPING SYSTEM INSIDE BUILDING CHASES. INSTALL PER MANUFACTURER RECOMMENDATIONS AND ALL APPLICABLE CODES.
- 4. ALL NATURAL GAS PIPE UP IN SHAFT AND ABOVE HARD CEILING SHOULD BE WELDED STEEL.

NOTE : SOME SYMBOLS & ABBREVIATIONS SHOWN MAY NOT APPLY TO PROJECT

GENERAL PLUMBING NOTES

- 1. SEE ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS OF ALL PLUMBING FIXTURES.
- 2. COORDINATE ALL LOCATION, SIZE AND ELEVATIONS OF ALL SLEEVES THROUGH WALLS AND SLABS WITH STRUCTURAL AND ARCHITECTURAL DRAWINGS.
- 3. PROVIDE SHUT OFF VALVE TO ALL FIXTURES, SILL COCK, APPLIANCES OR MECHANICAL EQUIPMENT UNLESS NOTED OTHERWISE.
- VERIFY DEPTHS, SIZES, LOCATIONS, ETC., OF EXISTING UTILITIES IN THE FIELD INCLUDING POINTS OF CONNECTIONS BEFORE STARTING WORK.
- 5. ALL WORK AND MATERIALS WILL CONFORM TO THE LATEST EDITION OF THE INTERNATIONAL PLUMBING AND BUILDING CODES AND ALL OTHER AUTHORITIES HAVING JURISDICTION. DESIGN TO COMPLY MICHIGAN PLUMBING CODE.
- 6. COORDINATE INSTALLATION OF PLUMBING WORK SO AS TO AVOID UNNECESSARY JOB DELAYS OR INTERFERENCE WITH ALL OTHER TRADES.
- 7. OBTAIN ALL FIELD APPROVALS ON PLUMBING WORK FROM REGULATING AGENCIES WHERE REQUIRED. CONTRACTOR TO PAY ALL RELATED FEES.
- 8. ALL VALVES CONCEALED IN CEILING OR WALLS SHALL BE PROVIDED WITH 12"x12" ACCESS PANELS.
- 9. WATER SUPPLY AND DRAIN LINES UNDER LAVATORIES AND SINK SHALL BE INSULATED AND JACKETED WITH ADA APPROVED PROCESS. CONTRACTOR TO VERIFY AND REMOVE ALL SHARP OR ABRASIVE SURFACES UNDER SINKS AND LAVATORIES.
- 10. ALL OPENINGS FOR PIPING THROUGH FIRE—RATED ENCLOSURES SHALL BE CAULKED AS REQUIRED BY CODE TO MAINTAIN FIRE RATING. INCLUDING OPENINGS IN EXISTING BUILDING.
- 11. PLUMBING CONTRACTOR SHALL PROVIDE FULL SIZE CONDENSATE DRAIN FROM ALL AIR CONDITIONING EQUIPMENT (WITH DEEP SEAL TRAP AND UNION) AND DISCHARGE TO THE NEAREST APPROVED RECEPTOR, COORDINATE FOR TRAP HEIGHT.
- 12. HOT AND COLD WATER PIPE INSULATION SHALL HAVE A SMOKE/FLAME SPREAD RATINGS OF 25/50 AS DEFINED BY NFPA.
- 13. FAUCETS AND PLUMBING FIXTURES SHALL BE OF THE WATER CONSERVATION TYPE AND COMPLY WITH THE STATE APPLIANCE ENERGY STANDARDS.
- 14. RUN ALL SANITARY PIPING AT 1% MINIMUM SLOPE.
- 15. ALL HORIZONTAL PIPING LINES EXTENDED AND CONNECTED TO EQUIPMENT ARE TO BE RUN AT HIGHEST POSSIBLE ELEVATION AND NOT LESS THAN 6" ABOVE FINISHED FLOOR, TO ALLOW CLEARANCE FOR CLEANING. PIPING IS TO BE CONCEALED WHEREVER IS POSSIBLE.
- 16. PLUMBING CONTRACTOR SHALL PROVIDE, ALL PIPING MATERIALS, INCLUDING VALVES, PRESSURE REGULATORS, TRAPS, STRAINERS ETC., FROM ROUGH IN LOCATION TO EQUIPMENT AND MAKE FINAL CONNECTION. SUPPLY LINES TO EACH INDIVIDUAL PIECE OF EQUIPMENT SHALL BE PROVIDED WITH PERMANENT NAME TAGS IDENTIFYING SAME.
- 17. GUARANTEE ALL LABOR AND MATERIALS ONE YEAR FROM DATE OF SUBSTANTIAL COMPLETION.
- 18. CONTRACTOR SHALL RECORD ON AS-BUILT DRAWINGS ALL SIZES, MATERIALS, ELEVATIONS, AND LOCATIONS OF ALL PIPES THAT DEVIATE FROM THE DESIGN CONTRACT DRAWINGS.
- 19. REFER TO ARCHITECTURAL DRAWINGS AND COORDINATE WITH OWNER FOR PHASING LIMITATIONS ON SEQUENCE OF CONSTRUCTION, IF ANY.
- 20. ALL CORES REQUIRED THROUGH CONCRETE FLOOR SHALL BE CORED. JACK-HAMMERING WILL NOT BE ALLOWED.
- 21. ARCHITECT/OWNER IS NOT AWARE OF ANY ASBESTOS IN THE BUILDING, IF ANY IS FOUND TO BE REMOVED AND DISPOSED PER CODE BY OTHERS.
- 22. ALL EXISTING PIPING, VALVES, FIXTURES, EQUIPMENT, AND ACCESSORIES WHETHER SHOWN OR NOT, ARE TO REMAIN AS IS UNLESS NOTED OTHERWISE.
- 23. PATCH & REPAIR ALL DAMAGED FINISHES RESULTING FROM WORK WITHIN EXISTING BUILDING.
- 24. CONTRACTOR TO PROVIDE POINT OF USE MIXING VALVE FOR ALL LAVATORIES & HAND SINKS..
- 25. ALL PLUMBING WORK TO BE PERMITTED, INSPECTED AND TESTED PRIOR TO COVERING (BY WALL, PARTITION, HARD CEILING ETC.). CONTRACTOR TO COORDINATE WITH INSPECTORS.
- 26. CONTRACTOR TO PROVIDE ALL FITTINGS, ELBOWS, OFFSETS FOR ALL PIPING TO SUIT SITE CONDITION.
- 27. ALL CONDENSATE DRAIN LINE SHOULD BE INSULATED WITH VAPOR BARRIER.
- 28. PROVIDE INSULATION FOR ALL HORIZONTAL STORM PIPE.

PLUMBING LEGEND									
CANDU									
		SANITARY RELOW EE OR OPOLIND							
SAN	SAN	SANITARY ABOVE F.F. OR GROUND							
— — SD — —	SD	STORM DRAIN BELOW F.F. OR GROUND							
	SD	STORM DRAIN ABOVE F.F. OR GROUND							
	CW	COLD WATER SUPPLY							
	HW	HOT WATER SUPPLY							
	HWR	HOT WATER RETURN							
GAS	GAS	NAURAL GAS PIPE							
	V	SANITARY VENT ABOVE F.F.							
	V	SANITARY VENT BELOW F.F.							
ю		RISE IN PIPE							
ен		DROP IN PIPE							
<u>— ю</u>		TEE UP							
		TEE DOWN							
		DIRECTION OF FLOW							
		DIRECTION OF SLOPE DOWN							
II	U	UNION (DIELECTRIC IF CALLED FOR)							
		BALL VALVE							
Ţ	CV	CHECK VALVE							
X		PRESSURE REDUCING VALVE							
		BALANCING VALVE WITH CHECK VALVE							
—-ı √ ⊢—-		BALANCE COCK							
}~	BV	BALANCING VALVE							
×	COTG	CLEANOUT TO GRADE							
ф	FCO	FLOOR CLEANOUT							
II	wco	WALL CLEANOUT							
₿	FD	FLOOR DRAIN							
•	POC	POINT OF CONNECTION							
M		GAS OR WATER METER							
	w/	WITH							
	A.F.F.	ABOVE FINISHED FLOOR							
	F.F.	FINISHED FLOOR							
	GRD.	GRADE							
	(E)	EXISTING							
	INT.	INTEGRAL							
	DN	DOWN							
	ARCH.	ARCHITECT							
	VA	VALVE							
	ABV	ABOVE							
	BEL	BELOW							
	SHT	SHEET							
	 IF								
		LINIESS NOTED OTHERWISE							
	U.N.U.	VENT THOUGH ROOF							
	V.I.K.								
	B.G.								
	IYP.								
	NC	NORMALLY CLOSED							
	CFH	CUBIC FEET/HOUR							

PLUMBING GENERAL

A. PROVIDE MATERIALS AND EQUIPMENT AND EXECUTE THE WORK, INCLUDING ALI TESTING AND INSPECTIONS, IN COMPLIANCE WITH THE APPLICABLE PROVISIONS OF FEDERAL, STATE AND LOCAL GOVERNMENT LAWS, ORDINANCES, REFERENCED CODES AND STANDARDS CURRENT AS OF THE ISSUE DATE OF THESE DRAWINGS INCLUDING THE GOVERNING LAWS, ORDINANCES, CODES AND STANDARDS CONSTITUTE MINIMUM REQUIREMENTS. ALL MORE STRINGENT REQUIREMENTS OF THE CONTRACT DOCUMENTS SHALL MODIFY, SUPPLEMENT AND SUPERCEDE APPLICABLE PORTIONS OF GOVERNING LAWS, ORDINANCES, CODES AND STANDARDS.

B. CONTRACTOR SHALL PRESENT CERTIFICATE TO THE OWNER THAT ALL APPLICABLE BUILDING PERMITS HAVE BEEN SECURED PRIOR TO STARTING ANY WORK AND PROVIDE THE OWNER WITH ALL REQUIRED CERTIFICATES OF FINAL APPROVAL FROM THE GOVERNING JURISDICTIONS AT COMPLETION OF THE WORK. PROVIDE ALL SHOP DRAWINGS AS REQUIRED IN FOLLOWING SECTIONS.

C. MAKE ALL CONNECTIONS TO EXISTING SYSTEMS DURING DESIGNATED PERIODS UPON APPROVAL OF THE OWNER AND AT NO INCREASE IN CONTRACT SUM.

D. COORDINATE EXACT LOCATION OF NEW CONSTRUCTION TO AVOID ANY INTERFERENCE BETWEEN PIPING, WIRING, LIGHTING FIXTURES, DUCTWORK, BUILDING EQUIPMENT AND STRUCTURAL CONSTRUCTION.

E. PROVIDE LABOR, INCLUDING FIELD ERECTION AND SUPERVISION, MATERIALS, EQUIPMENT AND ANCILLARIES AND COORDINATE, PROCURE, FABRICATE, DELIVER, ERECT OR INSTALL, INTERFACE WITH EXISTING WORK, START, DEBUG AND TEST ALL SYSTEMS AS NECESSARY TO PROVIDE THE OWNER WITH A COMPLETE, OPERATING FACILITY IN CONFORMANCE WITH THE CONSTRUCTION BID DOCUMENTS.

F. ALL CUTTING AND PATCHING THAT MAY BE NECESSARY FOR THE INSTALLATION OF THE PLUMBING CONTRACTOR'S WORK SHALL BE PERFORMED AND REPAIRED BY THE TRADE WHOM NORMALLY PERFORMS THAT WORK AND PAID FOR BY THE PLUMBING CONTRACTOR. NO CUTTING OF THE BUILDING STRUCTURAL SYSTEM SHALL BE PERFORMED WITHOUT THE WRITTEN CONSENT OF THE ARCHITECT BEING PREVIOUSLY OBTAINED.

G. SHOP DRAWINGS

NO APPARATUS OR EQUIPMENT SHALL BE SHIPPED FROM STOCK OR FABRICATED UNTIL SHOP DRAWINGS HAVE BEEN REVIEWED AND STAMPED "REVIEW COMPLETED ", "APPROVED" OR "NOT APPROVED".

SUBMIT FOR APPROVAL, SHOP DRAWINGS FOR ALL EQUIPMENT AND SYSTEM LAYOUT (PIPING) INCLUDING MATERIALS, VALVES, PLUMBING SPECIALTIES, PIPE HANGERS, WIRING DIAGRAMS AND CONTROL DIAGRAMS INCLUDING, BUT NOT LIMITED TO THE ITEMS LISTED BELOW. WHERE ITEMS ARE REFERRED TO BY SYMBOL NUMBERS ON THE DRAWINGS AND SPECIFICATIONS, ALL SUBMITTALS SHALL BEAR THE SAME SYMBOL NUMBERS. ALL DRAWINGS SHALL CONTAIN THE PROJECT NAME, AND PROJECT NUMBER. NO LOOSE SHEETS SHALL BE SUBMITTED UNLESS A COVER SHEET IS ATTACHED.

PROVIDE THE FOLLOWING EQUIPMENT SHOP DRAWINGS:

VALVES, TEMPERATURE AND PRESSURE GAUGES, PUMPS AND CONTROLS, WATER HEATERS, MIXING VALVES, PLUMBING FIXTURES, PROPRESS COPPER FITTINGS, PLUMBING SPECIALTIES, PIPE INSULATION, VIBRATION ISOLATORS, CAST IRON SANITARY AND VENT PIPE, WATER CONDITIONING PRODUCTS, RELATED PRV'S AND UNDERGROUND GAS PIPING.

APPROVAL OF SHOP DRAWINGS DOES NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITIES TO CONFORM TO THE DESIGN INTENT OF THE CONTRACT DOCUMENTS. APPROVAL OF SHOP DRAWINGS IS INTENDED TO BE FOR GENERAL CONFORMANCE WITH THE CONSTRUCTION DOCUMENTS ONLY. ANY INSTALLED EQUIPMENT WHICH REQUIRES WORK BY OTHER TRADES, SHALL BE COORDINATED WITH THOSE TRADES. REFER TO OTHER TRADES BID DOCUMENTS.

H. CODES, PERMITS AND FEES

UNLESS OTHERWISE INDICATED, ALL REQUIRED PERMITS, LICENSES, INSPECTIONS, APPROVALS AND FEES FOR PLUMBING WORK SHALL BE SECURED AND PAID FOR BY THIS CONTRACTOR. ALL WORK SHALL CONFORM TO ALL LOCAL APPLICABLE CODES, RULES AND REGULATIONS.

RULES OF LOCAL UTILITY COMPANIES SHALL ALSO BE COMPLIED WITH. BEFORE SUBMITTING HIS BID. THE PLUMBING CONTRACTOR SHALL VERIFY WITH EACH UTILITY COMPANY SUPPLYING SERVICE TO THIS PROJECT, THAT ALL SPECIALTY VALVES AND METERS REQUIRED WILL BE PROVIDED. THE PLUMBING CONTRACTOR SHALL INCLUDE THESE COSTS IN HIS BID. (NO ADDITIONAL PAYMENTS WILL BE MADE FOR INSTALLATION OF SUCH ITEMS. EXCEPT IN CASES WHERE THE REQUIREMENTS OF THE UTILITIES COMPANIES MAY CHANGE AFTER THE BID HAS BEEN SUBMITTED.)

ALL WORK SHALL BE EXECUTED IN ACCORDANCE WITH THE RULES AND REGULATIONS SET FORTH IN LOCAL AND STATE CODES. (THE CONTRACTOR SHALL PREPARE ANY DETAILED DRAWINGS OR DIAGRAMS WHICH MAY BE REQUIRED BY THE GOVERNING AUTHORITIES.) WHERE THE DRAWINGS ANDAOR SPECIFICATIONS INDICATE MATERIALS OR CONSTRUCTION IN EXCESS OF CODE REQUIREMENTS, THE DRAWINGS AND OR SPECIFICATIONS SHALL GOVERN.

I. ACCESS DOORS

ACCESS DOORS SHALL BE PROVIDED TO MAKE ALL SHUT OFF VALVES, BALANCING VALVES OR THERMOSTATIC WATER MIXING VALVES LOCATED ABOVE HARD CEILINGS ACCESSIBLE FOR CLEANING, SERVICE AND MAINTENANCE. ACCESS DOORS SHALL BE FURNISHED BY PLUMBING TRADES AND INSTALLED BY ARCHITECTURAL TRADES. PLUMBING TRADES SHALL INCLUDE THE FULL COST OF THE WORK TO BE DONE BY OTHERS. TIMELY DELIVERY TO THE ARCHITECTURAL TRADES IS ESSENTIAL, SO AS NOT TO INTERRUPT THE SEQUENCE OF CONSTRUCTION. WHERE VALVES OR OTHER PLUMBING DEVICES ARE WITHIN EASY REACH OF THE OPERATOR, PROVIDE 12" X 12" ACCESS DOOR. WHERE OPERATOR MUST PASS THROUGH OPENING TO REACH THE DEVICE, PROVIDE 24" X 24" ACCESS DOOR.

ACCESS DOORS FOR NON-FIRE RATED CONSTRUCTION: UNLESS OTHERWISE INDICATED ON THE DRAWINGS OR SPECIFIED, PROVIDE HINGED FLUSH TYPE STEEL FRAMED ACCESS DOORS WITH CONCEALED HINGES, SCREWDRIVER-OPERATED FLUSH LOCK, FACTORY-APPLIED RUST-INHIBITIVE PRIMER PAINT FINISH AND FLANGE OR CASING HEAD TRIM AS REQUIRED TO SUIT WALL OR CEILING CONSTRUCTION. FOR MASONRY CONSTRUCTION, USE MILCOR STYLE M STANDARD, OR APPROVED EQUIVALENT. FOR GYPSUM BOARD OR OTHER DRYWALL CONSTRUCTION USE MILCOR STYLE DW, OR APPROVED EQUIVALENT. FOR ACOUSTICAL TILE CEILINGS, USE RECESS PANEL TYPE, SUCH AS MILCOR STYLE AT, OR APPROVED EQUIVALENT.

FIRE RATED ACCESS DOORS: WHEN ACCESS DOORS ARE LOCATED IN FIRE RATED WALLS OR CEILINGS, THEY MUST BEAR THE UNDERWRITERS' LABORATORIES, INC. LABEL WITH TIME DESIGN RATING EQUAL TO OR EXCEEDING THAT OF THE WALL OR CEILING.

LOCATION: ALL ACCESS DOOR LOCATIONS MUST BE APPROVED BY THE ARCHITECT. APPROVED MANUFACTURES SHALL BE: MILCOR, MEADOWCRAFT, KARP ASSOCIATES.

PLUMBING SPECIFICATIONS

WHERE AVAILABLE.

BASIC MATERIALS AND METHODS:

A. PROVIDE ALL ITEMS, ARTICLES, MATERIALS, OPERATIONS AND METHODS LISTED, MENTIONED OR SCHEDULED ON DRAWINGS ANDIOR HEREIN, INCLUDING ALL LABOR, MATERIALS, EQUIPMENT AND INCIDENTALS NECESSARY AND REQUIRED FOR THEIR COMPLETION. THE WORK SHALL INCLUDE INSTALLATION, CLEANING AND TESTING OF COMPLETE AND OPERATING, PLUMBING-PIPING, TEMPERATURE CONTROL AND OTHER SPECIAL SYSTEMS.

B. GRAVITY-FLOW SANITARY AND RELATED VENT (ABOVE GROUND)

JOINTS SHALL BE STAINLESS STEEL SHIELD AND RUBBER SLEEVE. CONNECTIONS TO UNDERGROUND SYSTEM SHALL BE MADE WITH PUSH-ON JOINTS,

C. GRAVITY FLOW SANITARY AND RELATED VENT (BELOW GROUND)

BELOW GROUND SOIL AND WASTE PIPING SHALL BE STANDARD WEIGHT HUB AND SPIGOT CAST IRON SOIL PIPE, TAR COATED INSIDE AND OUTSIDE OR PVC DWV.

TRANSITIONS FROM CAST IRON SOIL PIPE TO ANOTHER PIPE MATERIAL SHALL BE MADE WITH JOINT ADAPTERS, APPLICABLE FOR SUCH INSTALLATION PER MANUFACTURERS INSTRUCTIONS.

D. DOMESTIC WATER PIPING (ABOVE GROUND) PIPING SHALL BE TYPE "K" OR "L" HARD DRAWN SEAMLESS COPPER TUBE. MUELLER "STREAMLINE" OR EQUAL.

TUBING JOINTS SHALL BE SOLDER TYPE, WITH 95-5 TIN-ANTIMONY SOLDER, OR SILVABRITE 100, OR "VIEGA" PROPRESS SOLDERLESS PRESS CONNECTION USING "RIDGID" POWER TOOLS AND SPECIFIC TOOL JAWS TO COMPLETE THE CONNECTION.

FITTINGS SHALL BE WROUGHT COPPER SOLDER JOINT, OR SOLDERLESS PRESS TYPE WITH "SMART CONNECT" FEATURE AND EPDM SEALING ELEMENT RATED FOR THIS APPLICATION WITH NSF APPROVAL STAMP ON FITTINGS.

BALL VALVES SHALL BE 600 PSIG WOG, BRONZE BODY, FULL PORT, 2 PIECE CONSTRUCTION WITH BLOW-OUT PROOF STEM.

METALS.

BUSHINGS.

DISTRIBUTION TUBING SHALL BE EITHER TYPE "L" SOFT COPPER OR PEX MATERIAL AS APPROVED IN THE CURRENT MICHIGAN PLUMBING CODE. THERE SHALL BE NO JOINTS BELOW OR LOCATED IN THE CONCRETE FLOOR SLAB. TUBING SHALL BE INSTALLED IN CONTINUOUS LENGTHS FROM THE POINTS OF SLAB PENETRATION SHOWN ON PLANS.

TRANSITION FITTINGS SHALL BE USED TO CONNECT DISSIMILAR MATERIALS. SUCH AS. COPPER TO PEX. PEX FITTING JOINING MAY BE DONE BY EITHER OF TWO METHODS; ASTM F-1807 BRASS BARBED FITTINGS AND COPPER PRESS BANDS OR STAINLESS STEEL SLEEVE AND BRONZE BARBED FITTINGS, SIMILAR TO "VIEGA NORTH AMERICA"

F. NATURAL GAS PIPING (ABOVE GROUND)

VALVES SHALL NOT BE LOCATED IN ANY AIR PLENUM. PORTIONS OF A GAS PIPING SYSTEM INSTALLED IN CONCEALED LOCATIONS SHALL NOT HAVE UNIONS, TUBE FITTINGS, OR RUNNING THREADS. PROVIDE SHUT-OFF COCKS ON ALL BRANCH PIPING TO REGULATORS AND EQUIPMENT.

COORDINATE WITH LOCAL AUTHORITIES FOR OTHER REQUIREMENTS.

G. NATURAL GAS PIPING (UNDERGROUND)

GAS PIPING MATERIAL SHALL BE IN ACCORDANCE WITH THE SECTIONS RELATED TO PLASTIC PIPE, TUBING AND FITTINGS. PLASTIC PIPE SHALL BE LABELED FOR "GAS" WITH "ASTM D 2513" MARKINGS FOR OUTSIDE UNDERGROUND ONLY.

GAS PIPING JOINING SHALL BE IN ACCORDANCE WITH APPLICABLE CODE REQUIREMENTS. PLASTIC PIPE, TUBING AND FITTINGS SHALL BE JOINED PER MANUFACTURERS RECOMMENDATIONS. HEAT FUSION JOINTS SHALL BE MADE IN ACCORDANCE WITH QUALIFIED PROCEDURES. HEAT FUSION FITTINGS SHALL BE MARKED "ASTM D 2513". PLASTIC PIPING JOINTS AND FITTINGS FOR LIQUIFIED PETROLEUM GAS PIPING SYSTEMS IN ACCORDANCE WITH NFPA 58.

NO CORROSION PROTECTION REQUIRED FOR PLASTIC PIPE. CONTRACTOR SHALL PROVIDE AND INSTALL A TRACER WIRE ON ALL UNDERGROUND GAS PIPING.

H. PIPE HANGERS AND SUPPORTS

THE PLUMBING CONTRACTOR SHALL PROVIDE PIPE HANGERS AND SUPPORTS AS REQUIRED. APPROVED MANUFACTURERS SHALL BE: GRINNELL, CARPENTER-PATTERSON, FEE-MASON OR MICHIGAN HANGER CO.

GENERALLY ALL SUPPORT COMPONENTS SHALL CONFORM TO MANUFACTURERS' STANDARDIZATION SOCIETY SPECIFICATION SP-69.

HANGERS SHALL ADEQUATELY SUPPORT THE PIPING SYSTEM. THEY SHALL BE LOCATED NEAR OR AT CHANGES IN PIPING DIRECTION, WITHIN 1"-0" OF EVERY FITTING AND CONCENTRATED LOAD. THEY SHALL PROVIDE VERTICAL ADJUSTMENT TO MAINTAIN PITCH REQUIRED FOR PROPER DRAINAGE ANDIOR VENTING. THEY SHALL ALLOW FOR EXPANSION AND CONTRACTION OF THE PIPING. HANGERS SHALL BE FASTENED TO BUILDING STEEL MEMBERS WHEREVER PRACTICAL AND HUNG FROM TRUSS OR JOIST PANEL POINTS ONLY.

PIPING SHALL BE NO-HUB SERVICE WEIGHT CAST IRON PIPE.

JOINTS SHALL BE NEOPRENE COMPRESSION GASKET.

CHECK VALVES SHALL BE 400 PSIG WOG, BRONZE BODY.

DIELECTRIC COUPLINGS SIMILAR TO EPCO SHALL BE USED AT JOINTS OF DISSIMILAR

PROVIDE ALL NECESSARY SPECIALTY TRANSITION FITTING WHERE A CHANGE IN MATERIAL OCCURS (COPPER CPVC) COPPER SWEAT, INCLUDING ALL NECESSARY

E. DOMESTIC WATER PIPING (BELOW GROUND)

INSTALLATION SHALL BE IN ACCORDANCE WITH THE METHODS AS DESCRIBED IN THE INTERNATIONAL FUEL GAS CODE NFPA 58 AND THEIR RELATED SECTIONS.

GAS PIPING MATERIAL SHALL COMPLY WITH ONE OF THE STANDARDS LISTED IN THE INTERNATIONAL FUEL GAS CODE.

CORROSION PROTECTION, PROTECTIVE COATING AND WRAPPING SHALL BE IN ACCORDANCE WITH THE INTERNATIONAL FUEL GAS CODE AND NFPA 58.

INSTALLATION SHALL BE IN ACCORDANCE WITH THE METHODS AS DESCRIBED IN THE INTERNATIONAL FUEL GAS CODE, NFPA 58 AND THEIR RELATED SECTIONS.

NO VALVES SHALL BE ALLOWED IN UNDERGROUND DISTRIBUTION PIPING.

I. JOINING OF PIPE

THREADED JOINTS SHALL HAVE AMERICAN NATIONAL STANDARD TAPER PIPE THREADS. REAM PIPE ENDS AND REMOVE BURRS AFTER THREADING. MAKE UP JOINTS USING ON APPROVED COMPOUND APPLIED TO THE MALE THREADS ONLY.

SOLDER JOINTS: TUBING OR PIPE SHALL BE CUT SQUARE AND BURRS REMOVED. BOTH THE INSULATION SHALL BE COMPLETE AND EFFECTIVE THROUGHOUT THE BUILDING. INSIDE OF FITTINGS AND OUTSIDE OF TUBING OR PIPE SHALL BE WELL CLEANED WITH STEEL WOOL BEFORE SWEATING. CARE SHALL BE TAKEN TO PREVENT ANNEALING OF FITTINGS AND HARD DRAWN TUBING WHEN MAKING CONNECTIONS. JOINTS SHALL BE MADE WITH 95 5 TIN-ANTIMONY SOLDER.

J. WELDING OF PIPE

SURFACE OF ALL PARTS TO BE WELDED SHALL BE THOROUGHLY CLEANED AND SHALL BE FREE FROM ALL PAINT, OIL, RUST OR SCALE BEFORE BEING WELDED.

FLANGES SHALL BE WELDED TO PIPE BY MEANS OF WELDING NECK FLANGES. BLIND FLANGES SHALL BE MADE WITH WELDING NECK FLANGES AND BLIND FLANGES. CAPS ON SMALLER LINES SHALL BE SCREWED ON FOR EASY REMOVAL.

WELDING SHALL BE DONE IN ACCORDANCE WITH THE WELDING PROCEDURES OF THE NATIONAL CERTIFIED PIPE WELDING BUREAU OR OTHER APPROVED PROCEDURE CONFORMING TO THE REQUIREMENTS OF THE A.S.M.E. BOILER AND PRESSURE VESSEL CODE OR THE A.S.A. CODE FOR THE PRESSURE PIPING. NO WELDER SHALL BE EMPLOYED ON THE WORK THAT HAS NOT FULLY QUALIFIED UNDER THE ABOVE-SPECIFIED PROCEDURE AND SO CERTIFIED BY A MEMBER OF A LOCAL CHAPTER OF THE NATIONAL CERTIFIED PIPE WELDING BUREAU OR SIMILAR LOCALLY RECOGNIZED TESTING AUTHORITY.

ALL FITTINGS SHALL BE SEAMLESS STEEL WELDING TYPE OF WEIGHT REQUIRED FOR THE SERVICE OR AS HEREIN SPECIFIED.

TURNS IN PIPING SHALL BE MADE WITH LONG RADIUS ELBOWS.

BRANCH TAKE-OFFS SHALL BE MADE WITH FACTORY MADE STRAIGHT OR REDUCING TEES, OR WELDOLETS OF BUTT, SOCKET OR THREADED TYPE SIMILAR THOSE MANUFACTURED BY BONNEY FORGE. WELDOLETS SHALL PROVIDE 100R PIPE STRENGTH FOR ALL SIZES, WEIGHTS AND SCHEDULES.

MITERING, NOTCHING OR DIRECT WELDING OF PIPE TO THE MAIN TO FORM TEES AND ELBOWS OR OTHER SIMILAR TYPE CONSTRUCTION WILL NOT BE PERMITTED.

VALVES AND EQUIPMENT SHALL NOT BE WELDED INTO THE PIPING SYSTEM. SCREWED TYPE UNIONS OR COMPANION FLANGES SHALL BE USED TO ALLOW FOR REMOVAL WITHOUT CUTTING OF PIPE.

PROVIDE A FIRE RESISTANT MAT OR BLANKET TO PROTECT THE STRUCTURE AND ADEQUATE FIRE PROTECTION EQUIPMENT AT ALL LOCATIONS WHERE WELDING IS DONE.

K. CHARACTER OF PIPE WORK

PIPING SHALL BE LOCATED OR OFFSET AS REQUIRED TO CLEAR OTHER TRADES WORK. TO AVOID INTERFERENCE WITH OTHER PIPING HAVING PRECEDENCE, TO CONCEAL THEM MORE READILY OR TO ALLOW FOR MAXIMUM HEADROOM. PIPING AND CONDUIT IN FINISHED AREAS SHALL BE CONCEALED (WHEREVER POSSIBLE).

ALL CUT ENDS SHALL HAVE BURRS REMOVED AND ENDS REAMED.

INTERIOR OF ALL SERVICE PIPING SUCH AS WATER, AIR, ETC. SHALL BE CLEANED FREE OF DIRT AND IMPURITIES BEFORE PIPES ARE PUT IN PLACE. PIPING SHALL BE FLUSHED CLEAN AT COMPLETION.

NO PIPING SHALL BE RUN ABOVE ANY ELECTRICAL DEVICE, PANEL, SWITCHGEAR, ETC. PIPING SHALL BE OFFSET TO CONFORM TO THIS REQUIREMENT WHETHER INDICATED ON THE DRAWINGS OR NOT.

ALL PIPING SHALL BE PROPERLY PITCHED FOR DRAINING AND VENTING AS REQUIRED.

UNDERGROUND LINES SHALL BE LAID ON SOLID EARTH WITH PIPE EVENLY SUPPORTED THROUGHOUT LENGTH OF PIPE.

CAP ALL OPENINGS WITH SUITABLE PLUGS OR CAPS DURING CONSTRUCTION.

KEEP HOT AND COLD LINES AT LEAST SIX (6) INCHES APART.

EACH TRADE IS WARNED TO MAKE CERTAIN THAT ALL PIPING, FITTINGS, VALVES, THREADS AND JOINTS ARE FREE FROM DEFECTS AND ARE TIGHTLY FITTED. WHERE LEAKS OCCUR, THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING DEFECTIVE PORTIONS OF THE SYSTEM, AS WELL AS REPAIRING DAMAGES TO FINISH PORTIONS OF THE BUILDING OR ITS CONTENTS AT NO EXTRA COST.

L. VALVES

VALVES SHALL BE AS MANUFACTURED BY NIBCO, OR APOLLOSCONBRACO.

AS FAR AS POSSIBLE, VALVES SHALL BE BY ONE MANUFACTURER. VALVES SHALL BE DESIGNED FOR EACH SPECIFIC PRESSURE, TEMPERATURE AND

APPLICATION. FLANGED VALVES SHALL HAVE FLANGE DRILLING TO SUIT JOINING PIPE FLANGES.

ALL BALL VALVES SHALL BE TWO-PIECE, FULL PORT DESIGN WITH CHROME PLATED OR STAINLESS STEEL BALL AND BRONZE BODY.

DO NOT USE GATE VALVES FOR THROTTLING FLOW.

PROVIDE CHECK VALVES WHERE NECESSARY IN THE SYSTEM TO PREVENT BACKFLOW. ALL MAINS, BRANCH MAINS AND BRANCHES SHALL BE VALVED SO AS TO PROVIDE MEANS OF SHUTTING DOWN THE COMPLETE SYSTEM OR SO THAT BRANCH LINES OR BRANCH MAINS MAY BE SHUT DOWN WITHOUT REQUIRING SHUTDOWN OF MAIN. (THESE VALVES SHALL BE INSTALLED WHETHER SHOWN ON DRAWINGS OR NOT.)

PROVIDE BALL VALVES FOR SHUTTING OFF EACH GROUP OF FIXTURES OR EQUIPMENT TO PERMIT REPAIRS WITHOUT INTERFERING WITH THE REMAINDER OF THE SYSTEM.

PROVIDE VACUUM BREAKERS AND ANTI-SIPHON FITTINGS ON WATER PIPING SYSTEMS BEFORE ALL REQUIRED EQUIPMENT CONNECTIONS. ALL HOSE END SPIGOTS AND HOSE CONNECTIONS, ETC. INSTALL BACKFLOW DEVICE ON ALL WATER LINES TO EQUIPMENT WHERE LOCAL CODE REQUIRES THE INSTALLATION IN STRICT ACCORDANCE WITH LOCAL CODES AND OR AUTHORITIES HAVING JURISDICTION.

CONTRACTOR SHALL COMPLETELY TAG AND LABEL ALL VALVES AND PROVIDE A COMPLETE VALVE CHART INDICATING LOCATION, FUNCTION AND EQUIPMENT SERVED. M. INSULATION - GENERAL

THE CONTRACTOR SHALL FURNISH ALL LABOR AND MATERIALS NECESSARY FOR THE INSTALLATION OF THERMAL INSULATION ON ALL HOT AND COLD SURFACES WHICH REQUIRE INSULATION FOR HEAT OR COLD CONSERVATION, COMFORT OF OCCUPANTS. EFFICIENCY OR EASE OF OPERATION OR TO PREVENT CONDENSATION OR DRIPPING.

ALL INSULATION MATERIALS SHALL BE CLASS A BY UNDERWRITER'S LABORATORIES. STANDARD PIPING FIBERGLASS INSULATION SHALL BE MINIMUM 5 LB. DENSITY AND SHALL HAVE U.L. RATING NOT EXCEEDING 25 FLAME SPREAD, 35 FUEL CONTRIBUTED AND 50 SMOKE DEVELOPED. ACCESSORIES SUCH AS ADHESIVE, MASTICS, CEMENTS, AND CLOTH FOR FITTINGS SHALL BE PERMANENTLY FIRE AND SMOKE RESISTANT. CHEMICALS USED FOR TREATING PAPER IN JACKET LAMINATES SHALL BE UNAFFECTED BY WATER OR HUMIDITY.

APPROVED MANUFACTURERS: CERTAIN TEEDJSAINT GOBAIN, OWENS CORNING, JOHNS-MANSVILLE OR ARMSTRONG CORK COMPANY.

THERMAL INSULATION SHALL BE APPLIED TO THE FOLLOWING PIPING:

TROWELLED ON BEVEL. INSULATION SHALL BE APPLIED TO PIPE LINES AND EQUIPMENT ONLY AFTER THEY HAVE BEEN INSPECTED, TESTED, CLEANED AND DRIED BY THE CONTRACTOR AND SO APPROVED BY THE OWNER'S FIELD REPRESENTATIVE. INSULATION SHALL BE DRY BEFORE AND DURING APPLICATION. FINISHING SHALL BE DONE AT OPERATING

CONDITIONS. THE INSULATION ON PIPING SHALL BE NEATLY AND TIGHTLY APPLIED WITH UNBROKEN LENGTHS AND WITH THE ENDS OF THE SECTIONS FIRMLY BUTTED TOGETHER.

THE INSULATION ON PIPING SHALL BE EXTENDED THROUGH ALL SLEEVES IN ORDER TO PRODUCE A CONTINUOUS APPLICATION. INSULATE ALL PIPING PASSING THROUGH SLEEVES.

ALL DOMESTIC WATER MAINS AND BRANCHES TO RECEIVE 1" THICK FIBERGLASS INSULATION. ALL IN-WALL DOMESTIC WATER PIPING TO RECEIVE 112" THICK FIBERGLASS INSULATION WITH PVC COVERS.

N. EXCAVATION AND BACKFILL DO ALL EXCAVATING AND BACKFILLING REQUIRED FOR ALL UNDERGROUND WORK AND EQUIPMENT PROVIDED UNDER THIS CONTRACT. AFTER PIPE IS INSTALLED, TESTED AND INSPECTED, BACKFILL TRENCHES TO GRADE OR UNDERSIDE OF FLOOR SLABS. BACKFILL UNDER BUILDINGS SHALL BE CLEAN SAND. BACKFILL FOR OTHER LOCATIONS MAY BE EXCAVATED DIRT, IF APPROVED BY THE ARCHITECT'S FIELD REPRESENTATIVE. APPLY BACKFILL IN LAYERS NOT OVER 8 INCHES THICK, THEN COMPACTED. COMPACT ALL BACKFILL TO AT LEAST 95T OR MAXIMUM DENSITY AT OPTIMUM MOISTURE

CONTENT.

WALLS OF TRENCHES SHALL NOT BE CAVED IN FOR BACKFILLING. WHERE EARTH IS UNSTABLE, PROVIDE SHORING AND SHEET PILING, AS MAY BE NECESSARY TO SUPPORT THE BANKS AND PREVENT MOVEMENT OF EARTH INTO THE TRENCH. NO TRENCH SHALL BE EXCAVATED BELOW THE SAFE ANGLE OF REPOSE FOR THE SOIL ADJACENT TO ANY FOOTING, AS DETERMINED BY THE ARCHITECT, NOR SHALL ANY TRENCHING BE DONE IN SUCH A MANNER AS TO ENDANGER THE STABILITY OF ANY WORK IN PLACE.

SEWERS AND PIPING.

SAME SIZE AND QUALITY AS USED FOR COARSE AGGREGATE FOR CONCRETE. ALL EXCAVATED MATERIAL IN EXCESS OF THE QUANTITY REQUIRED FOR BACKFILLNG SHALL BE HAULED AWAY FROM THE PREMISES OR DISPOSED OF BY DUMPING IN THE AREAS DESIGNATED BY THE ARCHITECT.

0. MATERIALS TESTS

PERFORM ALL TESTS REQUIRED BY STATE, CITY, COUNTY ANDEOR OTHER AGENCIES HAVING JURISDICTION, AND AS INDICATED HEREIN.

PROVIDE ALL MATERIALS, EQUIPMENT, WATER, COMPRESSED AIR, ETC. AND LABOR REQUIRED FOR THE TESTS.

PIPING UNDER HYDROSTATIC PRESSURE TEST SHALL NOT LOSE MORE THAN 2 PSI FOR A PERIOD OF 5 HOURS UNDER TEST PRESSURE. EXAMINE PIPING FOR LEAKAGE.

PIPING UNDER AIR PRESSURE TEST SHALL NOT LOSE MORE THAN 2F OF TEST PRESSURE FOR A PERIOD OF 1 HOUR. TEST SHALL BE PERFORMED WITH AMBIENT TEMPERATURE APPROXIMATELY CONSTANT.

TESTS SHALL BE AS REQUIRED BY AGENCIES HAVING JURISDICTION. WHERE NO TESTING REQUIREMENTS EXIST, OR WHERE SUCH REQUIREMENTS ARE LESS STRINGENT THAN THOSE LISTED BELOW, TESTS SHALL BE AS LISTED BELOW. VALVE OFF OR REMOVE ALL GAUGES, EQUIPMENT, ETC., WHICH MAY BE DAMAGED BY TESTS.

1. DOMESTIC WATER PIPING, COMPRESSED AIR PIPING SHALL BE TESTED AT 150-PSI HYDROSTATIC PRESSURE.

2. RAIN CONDUCTORS SHALL BE TESTED AT MINIMUM 5-PSI AIR PRESSURE OR HYDROSTATIC.

HYDROSTATIC.

P. PERFORMANCE TESTS

SYSTEM OPERATION.

Q. DISINFECTION OF POTABLE WATER SYSTEM

PLUMBING CONTRACTOR SHALL PURGE ALL POTABLE WATER SYSTEM OF DELETERIOUS MATER AND DISINFECT PRIOR TO UTILIZATION AS PRESCRIBED BY THE LOCAL HEALTH AUTHORITY OR WATER PURVEYOR HAVING JURISDICTION. IN THE ABSENCE OF A PRESCRIBED METHOD, THE PROCEDURE DESCRIBED IN EITHER AWWA C651 OR AWWA C652.

1. DOMESTIC WATER PIPING AND RELATED VALVES.

INSULATE FITTINGS AND VALVES. DO NOT INSULATE FLEXIBLE CONNECTIONS AND EXPANSION JOINTS. TERMINATE INSULATION NEATLY WITH PLASTIC MATERIAL

REMOVE WATER. WHICH MAY ACCUMULATE OR BE FOUND IN THE TRENCH EXCAVATIONS AND KEEP ALL TRENCHES CLEAR OF WATER DURING THE LAYING OF

WHENEVER THE BOTTOM OF THE TRENCH IS SOFT. THE EXCAVATIONS SHALL BE CARRIED TO AT LEAST 8 INCHES BELOW THE BOTTOM OF THE PIPE AND REFILLED WITH GRAVEL OR CRUSHED STONE. GRAVEL FILL USED FOR THIS PURPOSE SHALL BE THE

PIPING INSTALLED ON BACKFILL SHALL BE PLACED ON A GRILLAGE OF CONCRETE. PIPING SHALL NOT BE BURIED IN ASHES, CINDERS, OR STONE.

3. SANITARY PIPING SHALL BE TESTED AT MINIMUM 5-PSI AIR PRESSURE OR

THE PLUMBING SYSTEM SHALL BE TESTED AND BALANCED TO DEMONSTRATE THAT SPECIFIED CAPACITIES AND PROPER CONTROL FUNCTIONING HAS BEEN ATTAINED. ALL TESTING AND BALANCING IS TO BE COMPLETED PRIOR TO RUNNING PERFORMANCE TESTS, AND PRIOR TO TRAINING AND INSTRUCTION OF THE OWNER'S PERSONNEL IN

PLUMBING CONTRACTOR SHALL REVIEW APPLICABLE STATE AND LOCAL CODE REQUIREMENTS FOR CLEANING PROCEDURES ON DRINKING WATER SYSTEMS.

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	FOODSERVICE PLUMBING SCHEDULE														
ITEM	QTY.	DESCRIPTION	CW SIZE	CW HT.	HW SIZE	HW HT.	FW SIZE	FW HT.	IW SIZE	DW SIZE	DW HT.	GAS SIZE	GAS HT.	MBTU	PLUMBING NOTES (SEE SCHEDULE)
100.1	1	Evaporator, Cooler							3/4"						
103.1	1	Evaporator, Freezer							3/4"						L
200	1	Exhaust Hood, Prep Kitchen													
200.1	1	Fire Suppression System													Н, К
200.2	1	Exhaust Fan													
200.3	1	Make Up Air													J
201	1	Stock Pot Range										3/4"	30"	90.0	G
202	1	Hand Sink w/ Side Splashes	1/2"	14"	1/2"	14"				1-1/2"	21"				
203	1	Worktable, L- Shape							2"						D
203.1	1	Faucet, Splash Mount	1/2"	14"	1/2"	14"									
208	1	Prep Sink, 1- Compartment	4 (0)		1 /0 !!				2"						D
208.1	1	Faucet, Splash Mount	1/2"	14"	1/2"	14"	4 /0"		(0) 0/4"						
213	1	Ice Maker W/ Bin	4 /0"	1.4"	1/0"	1.4"	1/2**	STUB-UP	(Z) 3/4"	4.4/0"	01"				B, D, Filtered water being provided by #314
215	1	Hand Sink W/ Side Splasnes	1/2**	14	1/2"	14				1-1/2	21"				1
300	1														
300.1	1	Exiloust Fall Warewasher, Door Type, High Temp	1/2"	12"	1/2"	65"			2"						I D. E. 120° E min incoming water
302	1	Soiled Dishtable w/ Dish Drop Shelf	1/2	12	1/2	05			2"						
302 1	1	Pre-Rinse Faucet Splash Mount	1/2"	14"	1/2"	14"			2						
305	1	Clean Dishtable w/ 3-Compartment Sink							(3) 2"						
305.1	1	Pre-Rinse Faucet w/ Add on Faucet. Splash Mount	1/2"	14"	1/2"	14"			(*) =						
305.2	1	Faucet, Splash Mount	1/2"	14"	1/2"	14"									
309	1	Hand Sink w/ Side Splashes	1/2"	14"	1/2"	14"				1-1/2"	21"				
314	1	Water Filter	3/4"	60"											В
400	1	S/S Counter w/ Prep and Hand Sink							2"	1-1/2"	STUB-UP				D
403	1	Faucet, Deck Mount	1/2"	STUB-UP	1/2"	STUB-UP									
405	1	Faucet, Deck Mount	1/2"	STUB-UP	1/2"	STUB-UP									
406	1	Ice Bin, Drop In							1/2"						D
407	1	Water Filler Faucet					1/2"	STUB-UP							B, Filtered water being provided by #314
407.1	1	Drip Tray							1/2"						D
408	1	Espresso Machine, 2 Group, Traditional					1/2"	14"	1-1/2"						B, D, Filtered water being provided by #314
500	1	Exhaust Hood, French Top													
500.1	1	Fire Suppression System													H, K
500.2	1	Exhaust Fan										4 "	20"	25.0	
501		HD Range, 18, French Hol Top											30	35.0	
502	1	Exhaust Hood, Health Ghill													
502.1	1	Exhaust Fan													
504	1	Exhaust Hood Combi													
504.1	1	Fire Suppression System													н. к
504.2	1	Exhaust Fan													
505	1	Combi Oven					1/2"	30"				3/4"	30"	83.5	B, D, G, Filtered water being provided by #505.1, plumbing trades to provide (1) 3/4" hose bibb connections.
505.1	1	Water Filter - Combi Oven	1/2"	72"											В
507	1	Exhaust Hood, Pasta													
507.1	1	Fire Suppression System													Н, К
507.2	1	Exhaust Fan													
508	1	Pasta Cooker, Gas, 18"	1/2"	30"					1"			1"	30"	45.0	D, G
509	1	Range, Gas, 4-Burner, 36"										1"	30"	210.0	G, Plumbing trades to have 1" gas loop for #509 & #511.
510	1	Salamander, Gas, Wall Mount, 36"										3/4"	69"	30.0	
511	2	HD Range, 18", French Hot Top										1"	30"	210.0	G, Plumbing trades to have 1" gas loop for #509 & #511.
512	1	S/S Expo Counter w/ Prep and Hand Sink	4./0"	4 4 11	4/08				2"	1-1/2"	21"				
512.1	1	Faucet, Deck Mount	1/2"	14"	1/2"	14"									
012.2 600	<u></u> າ	raucel, Deck Mount	1/2"	14"	1/2"	14"			2/4"						
600	<u>ა</u>	Nixology Linit	1/2"	10"	1/2"	10"			3/4 (2) 1 1/2"						D. Plumbing trades to split 1/2" CW/ to fauget, glass ringer and disper well fauget
602	3 1	Drainboard Cabinet 24"	1/2	12	1/2	12			(2) 1-1/2 1/2"						
602	2	Hand Sink	1/2"	12"	1/2"	12"			1_1/2"						
605	1	Glasswasher	1/2"	12"	1/2"	12"			1-1/2"						D. Min 130° F - Max 150°F incoming HW supply
609	1	Drip Tray with Glass Rinser	1/2"	30"					1/2"						D
610	3	Drainboard Cabinet, 18"							1/2"						D
611	1	Undercounter Ice Maker, Square Cube	1		1	1	1/2"	12"	3/4"	1		1		1	B, D, Filtered water being provided by #314
			-		-	-	-	-	-	-			.	-	

SCHEDULE PLUMBING NOTES: Note: The following notes pertain to individual items as indicated in the plumbing schedule. A. Plumbing trades to branch 1/2" cold water from rough-in for pre-rinse faucet to disposer cold water inlet. All interconnections from disposer, solenoid valve, flow control valve & vacuum breaker are by Plumbing Trades. B. Water filter provided by FSEC, to be installed by plumbing trades. Plumbing trade to install filter and provide interconnection from rough-in to filter and from filter to cold water inlet of equipment. C. Item has special water requirements, test water to verify total dissolved solids. If level is 30 ppm or higher, mechanical trades to provide conditioned water. **D.** Indirect waste line extended to floor sink by Plumbing Trades. **E.** 1/2" cold water supply for waste water tempering kit. Kit to be installed by plumbing trades. G. Gas quick disconnect hose assembly & restraining cable provided by FSEC to be installed by Plumbing Trades. to fire protection system for fuel shut-off to cooking equipment beneath exhaust hoods upon activation of fire protection system. I. Coordinate ductwork connection size and requirements with manufacturers's shop drawing. J. Coordinate ductwork & gas service connection to MUA unit with manufacturer's shop drawing. L. Evaporator coil indirect waste line extended to floor sink by FSEC. **M.** Existing equipment item - Verify utility requirements with Owner or Owner 's Vendor. N. Equipment item N.I.C.

GENERAL NOTES:

- GN1. ROUTING OF UNDER FLOOR PIPING TO BE CAREFULLY COORDINATED WITH EXISTING FOUNDATION.
- GN2. ALL INFORMATION PROVIDED ON PLUMBING SCHEDULE SHEETS APPLIES.
- GN3. MAXIMUM DISTANCE BETWEEN FLOOR CLEANOUTS SHALL NOT EXCEED 50'-0". MAINTAIN 18" CLEARANCE AROUND CLEANOUT AS DICTATED BY CODE.
- GN4. ALL PIPING INSTALLED IN CEILING SPACE SHALL BE COORDINATED WITH DUCTWORK AND ALL OTHER TRADES AS REQUIRED.
- GN5. PLUMBING CONTRACTOR SHALL REFER TO ARCHITECTURAL PLANS FOR A.D.A. PLUMBING FIXTURE AND STANDARD MOUNTING HEIGHTS.
- GN6. AT ALL DISSIMILAR METAL CONNECTIONS PROVIDE AND INSTALL DIELECTRIC UNIONS IMMEDIATELY TO MINIMIZE USE OF GALVANIZED PIPE MATERIAL.
- GN7. ALL PIPING PENETRATIONS THROUGH FIRE RATED WALLS TO BE SEALED "AIR TIGHT" WITH APPROVED SEALANT APPLIED ALL AROUND PENETRATION.
- GN8. ALL PIPING SHALL BE COORDINATED WITH CEILING AND HIDDEN AS MUCH AS POSSIBLE.
- GN9. ALL FLOOR DRAINS SHALL HAVE TRAP PRIMER. SEE PLUMBING DETAILS.
- GN10. GENERAL CONTRACTOR IS RESPONSIBLE FOR TESTING OF SANITARY AND VENTING.

KEY DRAWING NOTES:

- (1) PROVIDE NEW SANITARY AND VENT CONNECTIONS FOR NEW PLUMBING FIXTURES. SEE SIZE ON PLAN.
- 2 VENT UP THROUGH WALL OR CEILING AND PASSES OUT THROUGH ROOF. COORDINATE EXACT LOCATION WITH WALLS OR CEILING IN SPACE ABOVE.
- $\langle 3 \rangle$ SANITARY PIPE CONNECT TO NEAREST SANITARY MAIN. FIELD VERIFY EXACT LOCATION AT SITE.
- 4 PROVIDE GREASE TRAP FOR THREE COMPARTMENT SINK. SEE SCHEDULE FOR DETAIL.

F. Provide high temperature waste line capable of withstanding temperatures above 140F provided by Pluming Trades.

H. Mechanically operated gas shut-off valve provided by FSEC to be installed by plumbing trades. FSEC to interconnect

K. Coordinate interconnections with hood and building alarm system with exhaust hood manufacturer's shop drawing.

PLUMBING SANITARY ROOF PLAN SCALE: 3/16"=1'-0"

<u>GENERAL NOTES:</u>

- GN1. ALL INFORMATION PROVIDED ON PLUMBING SCHEDULE SHEETS APPLIES.
- GN2. AT ALL DISSIMILAR METAL CONNECTIONS PROVIDE AND INSTALL DIELECTRIC UNIONS IMMEDIATELY TO MINIMIZE USE OF GALVANIZED PIPE MATERIAL.
- GN3. DO NOT INSTALL PLUMBING VENTS WITHIN 10'-0" OF ANY ROOF TOP UNITS OR FRESH AIR UNITS/INTAKE. COORDINATE WITH MECHANICAL CONTRACTOR.
- GN4. GENERAL CONTRACTOR IS RESPONSIBLE FOR TESTING OF SANITARY AND VENTING.

	FOODSERVICE PLUMBING SCHEDULE														
ITEM	QTY	DESCRIPTION	CW SIZE	CW HT	HW SIZE	HW HT	FW SIZE	FW HT	IW SIZE	DW SIZE	DW HT	GAS SIZE	GAS HT	MBTU	PLUMBING NOTES (SEE SCHEDULE)
100.1	1	Evaporator, Cooler	on olee				I II OILL		3/4"	DITOLL		0,10 0122			
103.1	1	Evaporator, Freezer							3/4"						
200	1	Exhaust Hood. Prep Kitchen													
200.1	1	Fire Suppression System													Н, К
200.2	1	Exhaust Fan													· · · · · · · · · · · · · · · · · · ·
200.3	1	Make Up Air													J
201	1	Stock Pot Range										3/4"	30"	90.0	G
202	1	Hand Sink w/ Side Splashes	1/2"	14"	1/2"	14"				1-1/2"	21"				
203	1	Worktable, L- Shape							2"						D
203.1	1	Faucet, Splash Mount	1/2"	14"	1/2"	14"									
208	1	Prep Sink, 1- Compartment							2"						D
208.1	1	Faucet, Splash Mount	1/2"	14"	1/2"	14"									
213	1	Ice Maker w/ Bin					1/2"	STUB-UP	(2) 3/4"						B, D, Filtered water being provided by #314
215	1	Hand Sink w/ Side Splashes	1/2"	14"	1/2"	14"				1-1/2"	21"				
300	1	Condensate Hood													1
300.1	1	Exhaust Fan													l
301	1	Warewasher, Door Type, High Temp	1/2"	12"	1/2"	65"			2"						D, E, 120° F min incoming water.
302	1	Soiled Dishtable w/ Dish Drop Shelf							2"						D
302.1	1	Pre-Rinse Faucet, Splash Mount	1/2"	14"	1/2"	14"			(a) -						
305	1	Clean Dishtable w/ 3-Compartment Sink							(3) 2"						D
305.1	1	Pre-Rinse Faucet w/ Add on Faucet, Splash Mount	1/2"	14"	1/2"	14"									
305.2	1	Faucet, Splash Mount	1/2"	14"	1/2"	14"				4.4/01	0.4#				
309	1	Hand Sink w/ Side Splashes	1/2"	14"	1/2"	14"				1-1/2"	21"				
314	1	Water Filter	3/4"	60"					0"	4.4/0"					В
400	1	S/S Counter W/ Prep and Hand Sink	1/0"		1/0"				Ζ	1-1/2"	STUB-UP				
403	1	Faucet, Deck Mount	1/2"		1/2"										
405	1		1/2	310B-0F	1/2	310B-0F			1/2"						
400	1	Water Filler Faucet					1/2"		1/2						D B. Filtered water being provided by #31/
407	1						1/2	310B-0F	1/2"						D, Thered water being provided by #314
407.1	1	Espresso Machine, 2 Group, Traditional					1/2"	14"	1_1/2"						B D Filtered water being provided by #314
500	1	Exhaust Hood French Top					1/2	17	1-1/2						
500.1	1	Fire Suppression System													н к
500.2	1	Exhaust Fan													
501	2	HD Range, 18", French Hot Top										1"	30"	35.0	G
502	1	Exhaust Hood, Hearth Grill													1
502.1	1	Fire Suppression System													Н, К
502.2	1	Exhaust Fan													
504	1	Exhaust Hood, Combi													1
504.1	1	Fire Suppression System													Н, К
504.2	1	Exhaust Fan													
505	1	Combi Oven					1/2"	30"				3/4"	30"	83.5	B, D, G, Filtered water being provided by #505.1, plumbing trades to provide (1) 3/4" hose bibb connections.
505.1	1	Water Filter - Combi Oven	1/2"	72"											В
507	1	Exhaust Hood, Pasta													
507.1	1	Fire Suppression System													н, к
507.2	1	Exhaust Fan													
508	1	Pasta Cooker, Gas, 18"	1/2"	30"					1"			1"	30"	45.0	D, G
509	1	Range, Gas, 4-Burner, 36"										1"	30"	210.0	G, Plumbing trades to have 1" gas loop for #509 & #511.
510	1	Salamander, Gas, Wall Mount, 36"										3/4"	69"	30.0	
511	2	HD Range, 18", French Hot Top							0"	4.4/0"	0.4"	1"	30"	210.0	G, Plumbing trades to have 1" gas loop for #509 & #511.
512	1	5/5 Expo Counter W/ Prep and Hand Sink	4/0"	A 411	4/0"	4 4 11			2"	1-1/2"	21"				
512.1	1	raucet, Deck Mount	1/2"	14"	1/2"	14"									
012.2 600	1		1/2"	14"	1/2"	14"			2/4"						
600	<u>ა</u>	Mixeleav Unit	1/0"	10"	1/0"	10"			3/4 (2) 1 1/2"						D. Plumbing trades to split 1/2" CW to fauget, aloss ringer and disper well fauget
602	<u>ح</u>	Mixology Utili Drainboard Cabinet 24"	1/2	12	1/2	12			(∠) I-I/Z 1/2"						D, Framony trades to split 1/2. Ow to laucet, glass thisel and dipper well laucet.
602	י ר		1/2"	10"	1/2"	12"			1_1/2"						
605	<u> </u>	Glasswasher	1/2	12	1/2	12 12"			1_1/2"						D Min 130° F - Max 150°E incoming HW supply
600	1	Drin Tray with Glass Rinser	1/2"	30"	1/2	12	<u> </u>		1/2"						
610	3	Drainboard Cabinet 18"	1/2						1/2"						D
611	1	Undercounter Ice Maker Square Cube					1/2"	12"	3/4"		l				B. D. Filtered water being provided by #314
	•	enter outro los mator, oquaro Oubo	1		<u> </u>		112	12	0,1			I			-, -,

SCHEDULE PLUMBING NOTES: Note: The following notes pertain to individual items as indicated in the plumbing schedule. A. Plumbing trades to branch 1/2" cold water from rough-in for pre-rinse faucet to disposer cold water inlet. All interconnections from disposer, solenoid valve, flow control valve & vacuum breaker are by Plumbing Trades. **B.** Water filter provided by FSEC, to be installed by plumbing trades. Plumbing trade to install filter and provide interconnection from rough-in to filter and from filter to cold water inlet of equipment. **C.** Item has special water requirements, test water to verify total dissolved solids. If level is 30 ppm or higher, mechanical trades to provide conditioned water. **D.** Indirect waste line extended to floor sink by Plumbing Trades. **E.** 1/2" cold water supply for waste water tempering kit. Kit to be installed by plumbing trades. **G.** Gas quick disconnect hose assembly & restraining cable provided by FSEC to be installed by Plumbing Trades. to fire protection system for fuel shut-off to cooking equipment beneath exhaust hoods upon activation of fire protection system. I. Coordinate ductwork connection size and requirements with manufacturers's shop drawing. J. Coordinate ductwork & gas service connection to MUA unit with manufacturer's shop drawing. L. Evaporator coil indirect waste line extended to floor sink by FSEC. **M.** Existing equipment item - Verify utility requirements with Owner or Owner 's Vendor. N. Equipment item N.I.C.

GENERAL NOTES:

- GN1. ROUTING OF UNDER FLOOR PIPING TO BE CAREFULLY COORDINATED WITH EXISTING FOUNDATION.
- GN2. ALL INFORMATION PROVIDED ON PLUMBING SCHEDULE SHEETS APPLIES.
- GN3. ALL PIPING INSTALLED IN CEILING SPACE SHALL BE COORDINATED WITH DUCTWORK AND ALL OTHER TRADES AS REQUIRED.
- GN4. PLUMBING CONTRACTOR SHALL REFER TO ARCHITECTURAL PLANS FOR A.D.A. PLUMBING FIXTURE AND STANDARD MOUNTING HEIGHTS.
- GN5. AT ALL DISSIMILAR METAL CONNECTIONS PROVIDE AND INSTALL DIELECTRIC UNIONS IMMEDIATELY TO MINIMIZE USE OF GALVANIZED PIPE MATERIAL.
- GN6. ALL PIPING PENETRATIONS THROUGH FIRE RATED WALLS TO BE SEALED "AIR TIGHT" WITH APPROVED SEALANT APPLIED ALL AROUND PENETRATION.
- GN7. ALL PIPING SHALL BE COORDINATED WITH CEILING AND HIDDEN AS MUCH AS POSSIBLE.
- GN8. ALL FIXTURES SHALL BE PROVIDED WITH DEDICATED SHUT-OFF VALVES WHETHER SHOWN OR NOT ON PLAN, UNLESS NOTED OTHERWISE.

KEY DRAWING NOTES:

- 1 PROVIDE NEW WATER METER WITH BACKFLOW PREVENTER FOR COLD WATER MAIN. SEE SIZE ON PLAN.
- $\langle 2 \rangle$ PROVIDE NEW GAS METER WITH PRESSURE REGULATOR FOR NEW GAS MAIN. SEE SIZE ON PLAN. SEE SCHEDULE FOR DETAIL.
- $\langle 3 \rangle$ PROVIDE NEW COLD WATER AND HOT WATER CONNECTION FOR NEW PLUMBING FIXTURES.
- 4 PROVIDE NEW GAS WATER HEATERS. SEE SIZE ON PLAN. SEE SCHEDULE FOR DETAIL.
- $\langle 5 \rangle$ RUN FLUE AND COMBUSTION AIR LINES FOR WATER HEATER THROUGH WALL. PROVIDE INSECT/BIRD SCREEN.
- 6 PROVIDE RECIRCULATION PUMP NEAR WATER HEATERS FOR HOT WATER RETURN LINE. SEE SCHEDULE FOR DETAIL.
- (7) RUN HOT WATER RETURN LINE FROM THE FURTHEST PLUMBING FIXTURE.
- (8) PROVIDE NEW GAS CONNECTION FOR NEW KITCHEN EQUIPMENTS. SEE SIZE ON PLAN.
- 9 PROVIDE SOLENOID VALVE FOR MAIN GAS LINE SERVING KITCHEN. VERIFY EXACT LOCATION AT SITE.
- 10 PROVIDE COLD WATER CONNECTION WITH BACKFLOW PREVENTER & PRESSURE REGULATOR FOR WATER FILTERS.

F. Provide high temperature waste line capable of withstanding temperatures above 140F provided by Pluming Trades.

- H. Mechanically operated gas shut-off valve provided by FSEC to be installed by plumbing trades. FSEC to interconnect

K. Coordinate interconnections with hood and building alarm system with exhaust hood manufacturer's shop drawing.

NORTH

PLUMBING GAS ROOF PLAN SCALE: 3/16"=1'-0"

GENERAL NOTES:

- GN1. ALL INFORMATION PROVIDED ON PLUMBING SCHEDULE SHEETS APPLIES.
- GN2. AT ALL DISSIMILAR METAL CONNECTIONS PROVIDE AND INSTALL DIELECTRIC UNIONS IMMEDIATELY TO MINIMIZE USE OF GALVANIZED PIPE MATERIAL.

KEY DRAWING NOTES:

1 PROVIDE NEW GAS CONNECTION FOR NEW HVAC UNITS. SEE SIZE ON PLAN.

PLUMBING FIXTURE SPECIFICATIONS

WC-1: PROVIDE KOHLER WELLWORTH CLASSIC CLASS FIVE TOILET MODEL K-3575. THE TWO PIECE TOILET CONTAINS TOILET TANK MODEL K-4436 AND THE BOWL MODEL K-4198. THE ELONGATED BOWL OFFERS ADDED ROOM AND COMFORT. THE TANK HAS 1.28 GALLONS PER FLUSH. IT INCLUDES STANDARD LEFT-HAND TRIP LEVER. PROVIDE KOHLER PUREFRESH ELONGATED TOILET SEAT MODEL K-5588.

WC-2: PROVIDE KOHLER ARCHER COMFORT HEIGHT TOILET MODEL K-3551. THE ELONGATED TOILET HAS ROUGH-IN SIZE 12". THE TWO PIECE TOILET CONSISTS OF BOWL MODEL K-4356 AND TANK MODEL K-4431. THE TOILET HAS AQUAPISTON FLUSHING WITH A FLOW RATE OF 1.28 GPF. THE FLOOR MOUNT TOILET OFFERS A CHAIR-HEIGHT OF 16-1/2". PROVIDE KOHLER CACHET QUIET-CLOSE ELONGATED TOILET SEAT MODEL K-4636. INSTALL WATER CLOSET PER ADA COMPLIANT.

<u>L-1</u>: PROVIDE KOHLER CAXTON UNDER COUNTER LAVATORY MODEL $\overline{K-2210}$. IT IS MADE OF VITREOUS CHINA AND HAS AN EXTERIOR DIMENSION OF 19-1/4"L X 16-1/4"W. PROVIDE KOHLER JULY SINGLE HOLE BATHROOM SINK FAUCET MODEL K-16027-4-CP.

E	PLUMBING FIXTURE SCHEDULE												
TAG	FIXTURE	SAN	V	Т	CW	нw	REMARKS						
WC-1	WATER CLOSET	3"	2"	3"	1/2"	_	FLOOR MOUNT; TANK TYPE						
WC-2	WATER CLOSET	3"	2"	3"	1/2"	_	ADA; FLOOR MOUNT; TANK TYPE						
L-1	LAVATORY	1 1/2"	1 1/4"	1 1/2"	1/2"	1/2"	COUNTER MOUNT, PROVIDE MX-1 MIXING VALVE						
HS-1	HAND SINK	1 1/2"	1 1/4"	1 1/2"	3/4"	3/4"	BY OTHERS; PROVIDE MX-1 MIXING VALVE						
PR-1	PREP SINK	1 1/2"	1 1/4"	1 1/2"	1/2"	1/2"	BY OTHERS; PROVIDE MX-1 MIXING VALVE						
S-1	SINK	1 1/2"	1 1/4"	1 1/2"	3/4"	3/4"	BY OTHERS; PROVIDE MX-1 MIXING VALVE						
S-2	SINK	1 1/2"	1 1/4"	1 1/2"	3/4"	3/4"	BY OTHERS; PROVIDE MX-1 MIXING VALVE						
S-3	3 COMPARTMENT SINK	2"	1 1/4"	1 1/2"	3/4"	3/4"	BY OTHERS; PROVIDE MX-1 MIXING VALVE						
S-4	SINK	1 1/2"	1 1/4"	1 1/2"	3/4"	3/4"	BY OTHERS; PROVIDE MX-1 MIXING VALVE						
S-5	SINK	1 1/2"	1 1/4"	1 1/2"	3/4"	3/4"	BY OTHERS; PROVIDE MX-1 MIXING VALVE						
S-6	SINK	1 1/2"	1 1/4"	1 1/2"	3/4"	3/4"	BY OTHERS; PROVIDE MX-1 MIXING VALVE						
S-7	MIXOLOGY UNIT	1 1/2"	1 1/4"	1 1/2"	3/4"	3/4"	BY OTHERS; PROVIDE MX-1 MIXING VALVE						
S-8	HAND SINK	1 1/2"	1 1/4"	1 1/2"	3/4"	3/4"	BY OTHERS; PROVIDE MX-1 MIXING VALVE						
MS-1	MOP SINK	3"	2"	3"	3/4"	3/4"	BY OTHERS; PROVIDE MX-1 MIXING VALVE						
DW-1	DISHWASHER	1 1/2"	1 1/4"	1 1/2"	_	1/2"	BY OTHERS						
WW-1	WARE WASHER	1 1/2"	1 1/4"	1 1/2"	_	1/2"	BY OTHERS						
FD-1	FLOOR DRAIN	3"	_	3"	_	_	ZURN Z-415-3NH-6B-VP. TYPE "B" STRAINER, VANDAL PROOF GRATE PROVIDE TRAP PRIMER-TRAP PRIMER INFO ON THIS SHEET						
FD-2	FLOOR DRAIN	4"	-	4"	-	_	ZURN Z-1901-4NH-1-33, FULL GRATE PROVIDE TRAP PRIMER-TRAP PRIMER INFO ON THIS SHEET						
FS-1	FLOOR SINK	3"		3"	Ι	_	ZURN MODEL Z–1900–2 SANI FLOR RECEPTOR 12X12X6						
wco	WALL CLEANOUT		FULL S	IZE, SEE	PLANS		ZURN Z-1446-A-VP-4NL, ROUND SMOOTH S.S. COVER W/ SCREW						
FCO	FLOOR CLEANOUT		FULL S	IZE, SEE	PLANS		ZURN Z-1400 ADJUSTABLE FLOOR CLEANOUT						

	LUMBING EQUIPME	NT SCHE	DULE			
TAG	EQUIPMENT	SIZE	RECO. AT 100°F GPM	NAT. GAS INPUT MBH	ELEC.	REMARKS
WH-1 (TYP.2)	WATER HEATER	100 GAL	291 /EACH	250	120V 1ø	BRADFORD WHITE COMMERCIAL EF SERIES ULTRA HIGH EFFICIENCY GAS WATER HEATER MODEL EF-100T-250E-3N(A); WITH DRAIN PAN
MX-1	3/4" MIXING VALVE	0.25-4 GPM	-	_	_	LEONARD MOD. 170A-LF-BP WATER MIXING VALVE
BFP-1	BACKFLOW PREVENTER	2"	-	-	-	ZURN/WILKINS MODEL 375XL
BFP-2	BACKFLOW PREVENTER	1/2"	-	-	_	ZURN/WILKINS MODEL 375XL
CP-1	RE CIRCULATED PUMP	4 GPM	_	-	115V 1ø	TACO IN-LINE CIRCULATOR PUMP 101-031 SERIES MODEL IL008-SF6; 10' HEAD; 1/25 HP; 3250 RPM
GT-1	GREASE TRAP	35 GPM 70 LBS	_	_	-	ZURN GT2700–35; 35 GPM; 4" INLET/OUTLET CAPACITY:70 Ibs OF GREASE
		•				•

TRAP PRIMER INFORMATION:

MBH RATING FOR EQUIPMENT IS

CUBIC FEET /HOUR

180

180

437.653

600

858.5

2256.153

225.6

2481.753

DETERMINED BY THE MANUFACTURER.

CONTRACTOR SHOULD PROVIDE PRESSURE REGULATOR FOR EACH EQUIPMENT. VENT REGULATOR FOR INDOOR EQUIPMENT INDIVIDUALLY FROM REGULATOR TO OUTSIDE THE BUILDING. COORDINATE WITH HVAC CONTRACTOR.

GAS LOAD (ESTIMATE) : 314

SERVICE

KITCHEN

DINING

FLOOR

FLOOR

KITCHEN

+10% SAFETY FACTOR:

TOTAL CUBIC FEET/HOUR:

SUB TOTAL:

EQUIVALENT PIPE LENGTH: $\pm 150'-0"$

SYSTEM SIZED FOR 0.6 SPECIFIC GRAVITY

GAS AND DELIVERY OF 0.25 PSI WITH A

SYSTEM DESIGN AND INSTALLATION IS FOR

PRESSURE DROP OF 0.5 INCH WATER

TAG

RTU-1

RTU-2

MAU-1

WH-1

(TYP.2)

KITCHEN

NOTES :

COLUMN.

NATURAL GAS.

EQUIPMENT

PROVIDE ZURN GREEN DRAIN 6D SERIES Z SHIELD MODEL Z1072 TRAP SEAL DEVICE (OR APPROVED EQUAL).

-½"CW NPT INLET/OUTLET -ADJUSTABLE TO LINE PRESSURE

-OPERATING RANGE 35 TO 75 PSIG

-MACHINED FROM CORROSION RESISTANT BRASS -PISTON OPERATED

-ADJUSTABLE PRESSURE

-INCLUDES INTEGRAL VACUUM BREAKER PORTS

INSTALL ON COLD FRESH WATER LINES 1½" OR LESS.

*ALL FLOOR DRAINS SHALL HAVE TRAP PRIMER UNLESS NOTED OTHERWISE

-FOR EVERY 20 FEET OF FLOOR DRAIN TRAP MAKE-UP WATER LINE THE PRIMER MUST BE AT MINIMUM 12" ELEVATION FROM THE FINISH FLOOR.

PLUMBING:

COMMERCIAL: MPC 2015 (MICHIGAN PLUMBING CODE 2015) EFFECTIVE APRIL 20, 2017

FUEL GAS: IFGC 2015 (INTERNATIONAL FUEL GAS CODE 2015) EFFECTIVE APRIL 20, 2015

ENERGY CODE:

COMMERCIAL: MBC 2015 (MICHIGAN BUILDING CODE 2015) – CHAPTER 13 & MEC 2015 (MICHIGAN ENERGY CODE 2015) – CHAPTERS 1 THROUGH 6 & MICHIGAN ENERGY CODE, PART 10A. RULES (ANSI/ASHRAE/IES STANDARD 90.1-2013) EFFECTIVE SEPTEMBER 20, 2017

	ESIGN CR	TERIA				
The structure is designed for the following live lo weight of the structure. Where applicable, the live Building Code.	ads, in addition t e loads are redu	to the lateral loa ced in accorda	ads, super-impo nce with the pro	osed dead loads, and sel ovisions of the governing		
				CODE REFERENCE		
Risk Category	П			IBC Table 1604.5 ASCE Table 1.5-1		
	LIVE LOA	DS				
				CODE REFERENCE		
Roof Live Load	20 PSF			ASCE Table 4-1		
	SNOW LO	ADS				
				CODE REFERENCE		
Ground Snow Load	Pg =20 PSF			ASCE Figure 7-1		
Flat Roof Snow Load	Pf = 25 PSF	(minimum)		ASCE Section 7.3		
Exposure Factor	Ce = 1.0			ASCE Table 7-2		
Importance Factor	I = 1.0			ASCE Table 1.5-2		
Thermal Factor	Ct = 1.0			ASCE Table 7-3		
Snow loads adjacent to vertical projections, on lo effects of drifting.	ower roofs adjace	ent to high roof	s, or sloped roc	ofs are increased for the		
	WIND LO	ADS				
				CODE REFERENCE		
Ultimate Design Wind Speed (3 sec. gust)	Vult = 115 M	PH		ASCE Figure 26.5-1A		
Nominal Design Wind Speed	Vasd = 89 M	PH		IBC Section 1609.3.1		
Exposure Category	В			ASCE Section 26.7.3		
Internal Pressure Coefficient	± 0.18 (Enclo	osed)		ASCE Section 26.11-1		
Components and Cladding	Per Code Re	equirements Ba	sed on Above	ASCE Chapter 30		
	ROOF COMPO	NENTS		1		
	Zone 1	Zone 2	Zone 3	CODE REFERENCE		
Support Beams (A > 100 SF)	27.42 PSF	32.49 PSF	32.49 PSF	ASCE Table 30.7-2		
Roof Sheathing (A = 50 SF)	29.95 PSF	40.11 PSF	47.72 PSF	ASCE Table 30.7-2		
Deck Fasteners (A < 10 SF)	29.95 PSF	50.26 PSF	75.65 PSF	ASCE Table 30.7-2		
	WALL COMPO	NENTS		1		
	Zone 4	Zone 5		CODE REFERENCE		
A = 100 SF	27.42 PSF	28.56 PSF		ASCE Table 30.7-2		
A = 50 SF	27.42 PSF	31.07 PSF		ASCE Table 30.7-2		
A = 10 SF Refer to ASCE 7-10 for zone definitions. Calcula	29.70 PSF	36.55 PSF	f design compo	ASCE Table 30.7-2		
are for use with ASCE 7-10 load combinations (i. factor Kd = 0.85 , per ASCE Table 26.6-1.	.e. 0.6 factor for	ASD and 1.0 fa	ctor for LRFD)	, and include directionalit		
	SEISMIC LO	DADS				
				CODE REFERENCE		
Seismic Importance Factor	le = 1.0			ASCE Table 1.5-2		
Short Period Mapped Spectral Response Acceleration Parameter (5% of Critical Damping)		ASCE Section 11.4.1				
1.0 sec. Mapped Spectral Response Acceleratio Parameter (5% of Critical Damping)	n S1 = 0.047 g	1		ASCE Section 11.4.1		
Soil Site Class	D			ASCE Section 11.4.2		
Design Spectral Response Acceleration Parame (for short period)	ter SDS = 0.103	3 g	ASCE Section 11.4.4			
(1 sec. period)	SD1 = 0.075	g		ASCE Section 11.4.4		
Seismic Design Category	В			ASCE Section 11.6		
Seismic Force Resisting System	Intermediate Walls	Reinforced Ma	sonry Shear	ASCE Table 12.2-1		
Analysis Procedure	Equivalent L	ateral Force		ASCE Section 12.8		

10 PSF

Roof

GENERAL STRUCTURAL NOTES

- The structural notes are intended to augment the d Drawings, Specifications and the Structural notes, t The Structural drawings form an integral part of Cor Mechanical, Electrical, Civil/Site drawings and Spe with the requirements shown in the other componer
- Typical details and other sections/details apply to o 3. sections/details, even if they are not specifically ref
- The Contractor shall be responsible for means, me 4.
- The structure is designed to be self-supporting and 5. Documents. Contractor shall determine erection pro and its component parts during erection. This include
- necessary. Contractor shall retain ownership of suc Construction shall comply fully with the applicable 6. edition, and all requirements specified in the codes
- drawings. This shall not be construed to mean that because they are more stringent than the code requ code.
- 7. Governing Building Code – Michigan (Internatio sections refer to the version and effective date iden Governing Building Code.
- Work constructed per these drawings shall be insp 8. compliance with the requirements shown on the D Building Code, local building department and the C nspector. Project site visits by the Engineer do not

SHOP DRAWINGS

- Submit shop drawings for review as indicated in m 1.
- Use of Engineering Drawings as erection drawings 2.
- Allow in the schedule detailing, fabrication and ere 3. drawing submittal by the Structural Engineer. Subr intervals (not more than 70 drawings per submittal addition to the review time required by other projec prior to the first submittal.
- Review of shop drawings and other submittals by 4. responsibility to check the shop drawings prior to s of shop drawings not conforming to the Constructio preparer.
- Shop drawings are an aid for field placement and a ensure that construction is in accordance with the I general compliance with the Contract Documents. not guarantee that the shop drawings are correct n Documents.
- 6. Contractor shall provide a set of approved shop dra the local building department and to the project site
- Notes on submitted shop drawings for work "by oth 7. Contractor shall coordinate responsibility for materi Structural Engineer.
- Contractor shall verify all relevant dimensions and e 8. Manufacturer's certified equipment drawings. Conti equipment, such as elevator openings, mechanical shall be provided on the shop drawings prior to sub provide such dimensions on submitted shop drawing

MECHANICAL & ELECTRICAL EQUIPMENT

Mechanical and electrical equipment weights assu equipment weight varies from that listed, consult with submittal.

SHORING AND BRACING

- Contractor shall provide temporary shoring and bra 1. underground utilities as follows: Where shown or noted on the Drawings. Where existing construction is to be altered Where existing construction is not undergo a result of the work of this contract. As required for safe erection, installation of When needed for Contractor's "means and е.
- Shoring and bracing shown on the Drawings is con-2 conditions, shoring and bracing calculations, metho support, and work sequence phasing with new cons
- Shoring and bracing shall be performed by a Contra 3. similar size and scope of shoring and bracing project
- Shoring and bracing shall be designed by a Profest 4. minimum 5 years demonstrated experience in simi loads and methods shall conform to applicable coo unless conservative estimates that do not affect de Architect/Structural Engineer.
- Contractor shall submit drawings and calculations 5. showing complete design including temporary cond
- Before starting work, Contractor shall perform cond 6. and interior finishes, including photographic docume
- During the shoring and bracing operations, Contrac 7. Keep the existing and new construction in a Monitor existing and new construction to o Take immediate steps to prevent distress, C.
- Contractor shall continuously monitor the shoring 8. all field connections are completed according to the work by the Testing Agency.
- After completion of shoring and bracing and completion 9. repair any damage to the existing and new construct the Owner and Architect/Structural Engineer.

STRUCTURAL STEEL

- 1. Design, fabrication and erection of structural steels Construction (AISC) 360 Specification for Structura Resistance Factor Design LRFD.
- 2. Structural steel shall conform to the following ASTM W Shapes Miscellaneous shapes and plates
- Anchor rods shall conform to ASTM F1554 Grade 3.
- Structural steel bolting shall be ASTM A325 type N 4. A490 N, pre-tensioned or slip-critical type bolts are
- ASTM A490 bolts in tension shall be pre-tensioned 5.

	<u>STRU</u>	CTURAL STEEL CONT.	POST-	-INSTALLED ANCHORS	
drawings and specifications. Should conflicts exist between the the strictest provision shall govern.	0		1.	Post-installed anchors in	nclude all mechan
ontract Documents, which include Architectural, Structural, ecifications. Contractor shall coordinate the Structural drawings ents of the Contract Documents.	6.	Shear connectors shall conform to the requirements of "Structural Weiding Code – Steel" of the American Welding Society, ANSI/AWS D1.1, F_u = 65 ksi, as manufactured by Nelson Stud Welding, Div. of TRW, or approved substitute, and welded as per Manufacturer's written instructions.	2.	Use only code approved Construction Document	anchors with val s. Submit ICC-ES
conditions that are similar to the conditions described in the ferenced on the plans.	7.	Welding shall be done with appropriate E70 series electrodes compatible with the new and existing steel. Welds and welding procedures shall conform to, and welders shall be qualified in accordance with, the "Structural Welding Code - Steel" of the American Welding Society, ANSI/AWS D1.1.	3.	for approval. Installer of post-installec	l anchors shall be
ethods, sequences and procedures of construction. d stable after it is fully completed per requirements of Contract	8.	Detailing shall be performed using rational engineering design and standard practice in accordance with the Contract Documents. The typical details shown are approximate only and do not indicate the required number of bolts or weld sizes, unless specifically noted.	4. 5.	Clean existing concrete between steel and conc Drill smaller diameter pi	surface to solid st rete. Alternatively ot hole in existing
rocedures and sequence, and ensure the safety of the building udes the addition of temporary bracing, guys or tie-downs if uch material after completion of the project.	9.	Contractor shall submit for review, typical connection details and calculations sealed by a Professional Engineer registered in the State in which the Project is being constructed for proposed connections and for connections not specifically designed and detailed. Follow the details shown where specific connections are detailed.	6.	reinforcing. If existing reinforcing is Engineer for review.	found, shift hole to
provisions of OSHA and the local Governing Codes, current s shall be adhered to as if they were called for or shown on the t requirements set forth on the drawing may be modified	10.	Contractor shall submit for review, engineered drawings showing shop fabrication details, field assembly details and erection diagrams for all structural steel. Show at minimum all details included in these Contract Documents with	7.	Install mechanical anch and procedure detailed	ors and adhesive in ICC-ESR Evalu
quirements or because they are not specifically required by	11.	additional erection details as required to completely define the interconnection of structural steel pieces. Fabricator shall be AISC Certified or have an AISC equivalent Quality Assurance program as certified by a qualified	8.	Special Inspections are as specified in ICC-ESF	required for all me Evaluation Repo
onal) Building Code 2015. Standards listed in structural note ntified in the REFERENCED STANDARDS Chapter in the	12.	Anchor rods, base plates and bearing plates shall be located and built into connecting work, pre-set by templates or similar method prior to concrete placement. Plates shall be set in full beds of non-shrink grout.	9.	Adhesive for rebar and a applications as applicab be based on ACI 355.4	anchors in concre le, in accordance Temperature Cate
bected by an Independent Testing Agency retained to ensure rawings. Special Inspections required by the Governing Contract Documents shall be performed by a qualified Special I	13.	Contractor shall reference Architectural drawings for miscellaneous shapes and plates not shown on structural drawings. These items shall be shop welded to the structural framing sections to minimize field welding.	10.	concrete that has been of the following anchors a	cured for at least : re approved. Sub
t constitute or replace inspection.	14.	The length, dimension and connection detail from new structural member to existing structures shall be field verified before fabrication. Field modifications to the fabricated member or connection are not allowed without prior approval by the Structural Engineer. Contractor shall submit sketches or shop drawings detailing proposed modifications for approval.		Anchor Type: Screw Anchors	Approved Anch Hilti Kwik HUS-I
s by the Contractor is strictly prohibited.	15.	Non-composite beam connections shall be capable of supporting minimum 50% of the Maximum Total Uniform		Steel Drop-In Anchor	Hilti HDI/HDI-L
rection - a minimum of 10 working days for review of each shop mit shop drawings in reasonable quantities at reasonable	16.	Load, AISC Steel Construction Manual, unless specifically noted on the Drawings. Beam connections shall be standard AISC approved connections. Extended shear plate connections protruding		Expansion Anchors	Hilti Kwik Bolt T
l per week). The 10 working days stated herein, will be in ct team members. Submit a shop drawing submittal schedule	17.	from column web only approved where beams/girders on either side of column web have equally loaded bays. Simple shear connections shall be capable of end rotation as per the requirements of the AISC Specification,			Hilti Kwik Bolt 3 Hilti Kwik Bolt 3
the Structural Engineer does not relieve the Contractor of the submittal. Errors and omissions associated with the preparation	18.	Simple Connections, Specification Section J1.2 and Manual Part 10. Connections shall be shop welded in accordance with latest AWS Specifications for E70XX electrodes and field		Adhesive Anchors	Hilti HIT-HY200 Hilti HIT-HY70 +
on Documents are the responsibility of the shop drawing	19.	Contractor shall install A325 or AS1M A490 bolts in accordance with the "Specification for Structural Joints Using ASTM		Note: Refer to plan note	s, details and/or s
are superseded by the Contract Documents. Contractor shall latest Contract Documents. Shop drawing review is only for Review of the shop drawings by the Structural Engineer does	20.	A325 of A490 Boits. Shag tight condition shall be achieved using an impact wherein, to bring the connected piles into firm contact, except where noted as slip-critical, pre-tensioned or finger tight. Contractor shall provide slip-critical connections at braced frames, moment connections, beams and columns			
rawings bearing the review stamp of the Structural Engineer, to	21.	supporting cranes and equipment, mechanical penthouse and elevator room framing and where bolts are in tension. Contractor shall provide 3/4" diameter shoulder bolts, double nuts or tack welded nuts finger tight to allow vertical			
e.	22.	movement with lock washers at slotted connections of wind columns or as noted. Where field welding to existing structural steel is indicated, contractor shall thoroughly clean all surfaces to receive			
rials, connections, etc. prior to shop drawing submittal to the		weld, removing rust, paint, dirt and other foreign matter in area of work. Provide fire watch protection acceptable to the Owner.			
elevations for equipment installations against purchased tractor shall coordinate dimensions that depend upon specific	23. 24.	Beams shall be fabricated with the natural camber up. Provide cambers as indicated on the drawings. Stiffener plates and bearing stiffeners are to be provided in pairs.			
bmittal to the Structural Engineer. Contractor's failure to ings will result in shop drawing return without review.	25.	Clean steel per SSPC-SP3 and shall receive one shop coat of paint. Omit paint at holes for slip critical type connections, at structural steel to be fireproofed, encased or in contact with concrete, and on top flange of beams receiving shear connectors.			
imed for structural design are shown on the plans. If the vith the Architect/Structural Engineer prior to steel shop drawing	26.	Contractor shall control erection procedures and sequences with relation to temperature differentials, especially with respect to structural steel framing into concrete walls, beams or columns.			
	27.	Contractor shall provide temporary bracing as required to ensure stability of the structure under full design loads until the permanent bracing is in place. Provide necessary shoring where required during construction.			
acing of existing construction, new construction, and	28.	Shop and Field Testing of welds and/or bolts shall be as follows: a. All welds shall be visually inspected; 15% at random shall be measured. b. Fillet welds for beam and girder shear connection plates (10% at random) shall be checked by magnetic			
ed or disturbed until permanent support is in place. Joing alteration and is to remain undisturbed but is disturbed as		 particle (ASTM E709) for final pass only. c. Check 100% of continuity plate fillet welds by magnetic particle on last layers. d. Ultrasonically test 100% of full penetration welds (ASTM E94 & E1032). 			
of new construction, equipment, etc. Id methods" of construction and other safety related issues.		 e. Ultrasonically test 100% of partially penetration column splice welds. f. Visually inspect that all bolted connections are made with proper fastener components, are fabricated properly and the bolted joint is drawn into firm contact. 			
nceptual. Contractor shall be responsible for verifying existing ods of installation, transfer of loads through to final load		 g. Check by calibrated torque wrench 25% of bolts in each slip critical shear connection, but not less than two (2) bolts per connection. h. Inspect all expansion anchors and adhesive (epoxy) anchors according to manufacturer's 			
ractor with minimum 5 years demonstrated experience in ects.		 recommendations. Pull test minimum 5% and minimum 2 of each application of location and anchor type. Ultrasonically test for laminations in column flanges at moment connections to columns with flanges over 1-1/2 inch thickness. Test prior to fabrication, after fabrication and after final field welding of beam to column flange 			
ssional Engineer registered in the State of the Project with ilar size and scope of shoring and bracing projects. Design	29.	Welding shall be inspected by an AWS Certified Welding Inspector (CWI).			
des. Soil and material strengths shall be verified by tests, effections and deformations are approved by the	30.	Contractor shall schedule work to allow the above testing requirements to be completed.			
sealed and signed by the Contractor's Professional Engineer ditions, final conditions and sequence of work.	<u>EXIST</u> 1.	Contractor shall visit the site and become familiar with the existing conditions.			
dition survey of the existing building structure, exterior façade nentation and submit survey to the Owner for record.	2.	Existing building dimensions and conditions shown are based upon original drawings or partial survey and have not been completely field verified. The Owner and Architect/Structural Engineer take no responsibility for the accuracy of existing dimensions shown. Contractor shall field measure existing dimensions prior to shop drawing preparation			
ctor shall: a safe condition. detect any signs of distress or deformation.	3.	and fabrication. The analysis of the existing structure is based upon information shown on original drawings.			
, deformation or damage.	4.	Contractor shall verify conditions covering or affecting the structural work; obtain and verify all dimensions and elevations to ensure the proper strength, fit and location of the structural work; report to the Architect/Structural			
e Contractor's design and issue approval for inspection of the		Engineer any and all conditions/discrepancies which may interfere with or otherwise affect or prevent the proper execution and completion of the new work in compliance with the Construction Documents. All discrepancies shall be fully resolved prior to commencing work.			
letion of work requiring shoring and bracing, Contractor shall uction, without any cost to the Owner, and to the satisfaction of	5.	Existing construction not undergoing alteration is to remain undisturbed. Where such construction is disturbed as a result of the operations of this contract, Contractor shall repair or replace as required and to the satisfaction of the Architect/Structural Engineer and Owner's Representative.			
shall be in accordance with the American Institute of Steel al Steel Buildings and the Steel Construction Manual, Load and	6.	Contractor shall verify the existence, location and elevation of existing utilities, sewers, drains, etc. in demolition areas before proceeding with the work. All discrepancies shall be documented and reported to the Architect/Structural Engineer and Owner's Representative for resolution.			
M specifications and minimum yield strength:	7. 8	Contractor shall provide fire watch during field cutting and welding operations, meeting the Owner's requirements.			
A572 Gr. 50 $F_y = 50$ ksi A36 $F_y = 36$ ksi	ο.	Contractor shall provide temporary protection to prevent damage from the weather and vendelism.			
36, unless noted Grade 55 or other on Drawings. N, 3/4" diameter snug tight except where other size, ASTM	J. 10.	Contractor shall coordinate work with the Owner's personnel to avoid any interference in their operations.			
e indicated.					

POST-INSTALLED ANCHORS

Post-installed anchors include all mechanical and adhesive anchors noted on Construction Documents. All postinstalled anchors shall conform to AC193 for mechanical anchors and AC308 for adhesive anchors.

Use only code approved anchors with valid ICC-ESR Evaluation Report for use in base material shown on the Construction Documents. Submit ICC-ESR Evaluation Report to Structural Engineer and Special Inspection Agent for approval.

Installer of post-installed anchors shall be trained by anchor Manufacturer.

Clean existing concrete surface to solid structural concrete. Grind smooth for full steel contact and to prevent gaps between steel and concrete. Alternatively, provide non-shrink grout in all voids between steel and base material. Drill smaller diameter pilot hole in existing concrete and check for existing reinforcing. Do not cut or damage existing reinforcing.

If existing reinforcing is found, shift hole to avoid existing reinforcing. Submit location of new hole to Structural Engineer for review.

Install mechanical anchors and adhesive anchors in strict accordance with Manufacturer's written recommendations and procedure detailed in ICC-ESR Evaluation Report.

Special Inspections are required for all mechanical and adhesive anchors. Inspect and test post-installed anchors as specified in ICC-ESR Evaluation Report.

Adhesive for rebar and anchors in concrete has been designed based on cracked concrete and seismic applications as applicable, in accordance with ACI 355.4 and ICC-ES AC308. Design adhesive bond strength shall be based on ACI 355.4 Temperature Category A with installation into dry holes, using a carbide drill bit into cracked concrete that has been cured for at least 21 days.

The following anchors are approved. Submittals for alternative equal anchors will be reviewed by Structural

Engineer and approved at their discretion. ICC-ESR Report No. Base Material Anchor Type: Approved Anchor

ew Anchors	Hilti Kwik HUS-EZ	ESR-3027 ESR-3056	Concrete Grouted Masonry
el Drop-In Anchor	Hilti HDI/HDI-L Hilti HDI-P	(n/a) (n/a)	Concrete Precast Concrete
ansion Anchors	Hilti Kwik Bolt TZ Hilti Kwik Bolt 3	ESR-1917 ESR-2302	Concrete Concrete (un-cracked only)
	Hilti Kwik Bolt 3	ESR-1385	Grouted Masonry
esive Anchors	Hilti HIT-HY200 SAFESE Hilti HIT-HY70 + HAS/RE Hilti HIT-HY70 + HAS/RE	T ESR-3187 BAR ESR-3342 BAR ESR-2682	Concrete Grouted Masonry Hollow Masonry

Note: Refer to plan notes, details and/or schedules for diameter of anchor rods or size of rebar used and the embed

CONSULTING ENGINEERS

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STEEL BEAM

REFER TO PLAN TYP.

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