

2 FRONT ELEVATION SCALE: 1/16" = 1'-0"

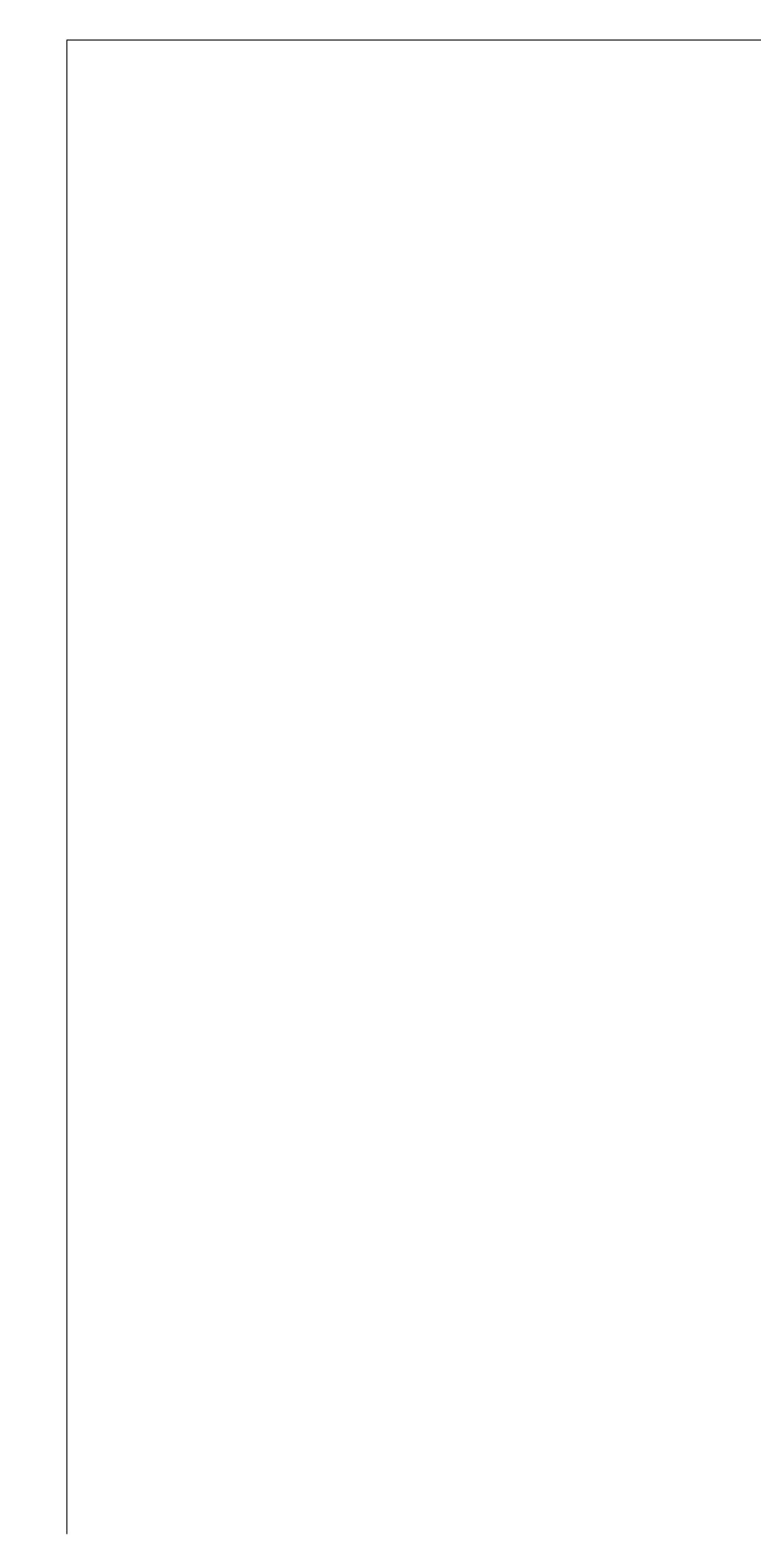
55'-9" MAX. TRAVEL

GENERAL PROJECT NOTES

- 1. CONTRACT DOCUMENTS: CONTRACT DOCUMENTS CONSIST OF THE AGREEMENT, GENERAL CONDITIONS, SPECIFICATIONS, AND DRAWINGS, WHICH ARE COOPERATIVE AND CONTINUOUS. WORK INDICATED OR REASONABLY IMPLIED IN ANY ONE OF THE DOCUMENTS SHALL BE SUPPLIED AS THOUGH FULLY COVERED IN ALL. ANY DISCREPANCIES BETWEEN THE PARTS SHALL BE REPORTED TO THE ARCHITECT PRIOR TO COMMENTED OF WORK
- COMMENCEMENT OF WORK.2. THESE DRAWINGS ARE PART OF THE CONTRACT DOCUMENTS FOR THIS PROJECT. THESE DRAWINGS ARE THE GRAPHIC ILLUSTRATION OF THE WORK TO BE ACCOMPLISHED.
- 3. ORGANIZATION: THE DRAWINGS FOLLOW A LOGICAL, INTERDISCIPLINARY FORMAT: ARCHITECTURAL DRAWINGS (A SHEETS), STRUCTURAL DRAWINGS (S SHEETS), MECHANICAL (M SHEETS), PLUMBING (P SHEETS) AND ELECTRICAL & LIGHTING (E SHEETS).
- 4. CODE COMPLIANCE: ALL WORK, MATERIALS, AND ASSEMBLIES SHALL COMPLY WITH APPLICABLE STATE AND LOCAL CODES, ORDINANCES, AND REGULATIONS. THE CONTRACTOR, SUBCONTRACTORS AND JOURNEYMEN OF THE APPROPRIATE TRADES SHALL PERFORM WORK TO THE HIGHEST STANDARDS OF CRAFTSMANSHIP.
- INTENT: THESE DOCUMENTS ARE INTENDED TO INCLUDE ALL LABOR, MATERIALS, EQUIPMENT AND SERVICES REQUIRED TO COMPLETE THE WORK DESCRIBED HEREIN.
 COORDINATION: THE CONTRACTOR SHALL CAREFULLY STUDY AND COMPARE THE
- DOCUMENTS, VERIFY THE ACTUAL CONDITIONS, AND REPORT ANY DISCREPANCIES, ERRORS, OR OMISSIONS TO THE ARCHITECT PRIOR TO COMMENCING WORK. THE ARCHITECT SHALL CLARIFY OR PROVIDE REASONABLE ADDITIONAL INFORMATION REQUIRED FOR SUCCESSFUL EXECUTION. THE CONTRACTOR SHALL VERIFY AND COORDINATE ALL OPENINGS THROUGH FLOORS, CEILINGS AND WALLS WITH ALL ARCHITECTURAL, INTERIOR, STRUCTURAL, MECHANICAL AND PLUMBING, ELECTRICAL, AND LIGHTING DRAWINGS.
- APPROVED PLANS SHALL BE KEPT IN A PLAN BOX AND SHALL NOT BE USED BY WORKMEN. ALL CONSTRUCTION SETS SHALL REFLECT SAME INFORMATION. CONTRACTOR SHALL MAINTAIN ONE COMPLETE SET OF PLANS ON THE PREMISES IN GOOD CONDITION AT ALL TIMES. GC SHALL BE RESPONSIBLE TO ENSURE THAT ALL WORKING DOCUMENTS ARE THE MOST CURRENT, INCLUDING ALL ADDENDA AND CHANGE ORDERS USED BY THE G.C. AND ALL SUBCONTRACTORS.
- STATED DIMENSIONS TAKE PRECEDENCE OVER GRAPHICS, DO NOT SCALE DRAWINGS. THE ARCHITECT SHALL BE NOTICED OF ANY DISCREPANCY PRIOR TO WORK COMMENCING.
 DISCREPANCIES BETWEEN PORTIONS OF THE CONTRACT DOCUMENTS, DRAWINGS AND SPECIFICATIONS ARE NOT INTENDED. THE CONTRACTOR IS TO CLARIFY ANY SUCH
- DISCREPANCIES PRIOR TO CONTINUING WITH WORK. 10. WORK WITH EXISTING CONSTRUCTION SHALL BE EXAMINED AND VERIFIED BY CONTRACTOR PRIOR TO CONSTRUCTION. IF THEY DIFFER FROM CONDITIONS SHOWN ON THE DRAWINGS, THE CONTRACTOR SHALL NOTIFY THE OWNER AND ARCHITECT SO THAT
- THE DRAWINGS, THE CONTRACTOR SHALL NOTIFY THE OWNER AND ARCHTECT SO THAT MODIFICATIONS CAN BE MADE BEFORE PROCEEDING WITH THE WORK.
 11. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE ALL EXISTING UTILITIES AND STRUCTURE WHETHER SHOWN HEREIN OR NOT AND TO PROTECT THEM FROM DAMAGE. THE CONTRACTOR SHALL BEAR THE EXPENSE OF REPAIR OR REPLACEMENT OF UTILITIES OR OTHER PROPERTY DAMAGED BY OPERATIONS IN CONJUNCTION WITH THE EXECUTION OF THE WORK.
- 12. GENERAL CONTRACTOR TO REFER TO THESE DOCUMENTS AS WELL AS SPECIFICATIONS FOR IDENTIFICATION OF ALL OWNER SUPPLIED ITEMS. ALL ITEMS NOT MARKED AS 'OWNER SUPPLIED' ARE TO BE SUPPLIED BY GC UNLESS OTHERWISE NOTED. ALL ITEMS ARE TO BE INSTALLED BY G.C. G.C. SHALL PROTECT OWNER SUPPLIED ITEMS BEING INSTALLED FROM ON SITE DAMAGE.
- FOR CONSTRUCTION DETAILS NOT SHOWN, USE THE MANUFACTURER'S APPROVED SHOP DRAWINGS/DATA SHEETS IN ACCORDANCE WITH W THE PROJECT SPECIFICATIONS.
 GC SHALL PROVIDE KNOX BOX FOR EMERGENCY ADDRESS IN A LOCATION APPROVED BY
- 14. OC GIALL FROM DE KINCK DOAT ON EMERGENET ADDITED IN A LOCATION AIT ROULD BY THE FIRE DEPARTMENT.
 15. G.C. SHALL MAINTAIN A 'JOB SET' OF DRAWINGS TO BE MARKED UP WITH ALL AS BUILT CHANGES INCLUDING REVISIONS TO DRAWINGS AND ANY CONTRACTOR RECOMMENDATIONS FOR IMPROVEMENTS. THIS SET TO BE DELIVERED BACK TO PROJECT DESIGNER AND ARCHITECT FOLLOWING PROJECT COMPLETION. G.C. IS ENCOURAGED TO FREELY MAKE "NOTES FOR FUTURE IMPROVEMENTS" ON A DAILY BASIS WHILE RECOMMENDATION IS "FRESH". ARCHITECT WILL REVIEW AT SITE VISITS.
- G.C. SHALL MAINTAIN A FAX, DIGITAL CAMERA AND ACCESS TO EMAIL ON SITE AT ALL TIMES.
 CONTRACTOR SHALL VERIEV ALL FIELD CONDITIONS. DIMENSIONS AND FLEVATIONS.
- CONTRACTOR SHALL VERIFY ALL FIELD CONDITIONS, DIMENSIONS AND ELEVATIONS BEFORE PROCEEDING WITH THE WORK. ANY DISCREPANCIES, ERRORS OR OMISSIONS BETWEEN DRAWINGS AND FIELD CONDITIONS ARE TO BE BROUGHT TO THE ATTENTION OF THE ARCHITECT PRIOR TO CONSTRUCTION OR FABRICATION.
 ALL DIMENSIONS ARE TO FACE OF FRAMING OR STRUCTURE, UNLESS NOTED OTHERWISE
- AS 'CLR'. 19. CONTRACTOR TO CHECK AND VERIFY SIZE AND LOCATION OF PLUMBING RUNS AND MECHANICAL EQUIPMENT WITH MECHANICAL AND PLUMBING CONTRACTORS BEFORE CONSTRUCTING WALLS, FLOOR, CEILINGS, CABINETS, EQUIPMENT BASES, ORDERING
- EQUIPMENT OR FIXTURES, ETC.
 20. ALL WINDOW AND DOOR DIMENSIONS ARE SHOWN AS NOMINAL SIZING. G.C. TO REFER TO EXISTING CONDITIONS AND MANUFACTURER'S CLEAR FRAMING REQUIREMENTS PRIOR TO CONSTRUCTION.
- CONTRACTOR SHALL LOCATE AND VERIFY ALL STRUCTURAL CONDITIONS BEFORE PROCEEDING WITH THE WORK. ANY DISCREPANCIES BETWEEN DRAWINGS AND FIELD DIMENSIONS ARE TO BE BROUGHT TO THE ATTENTION OF THE ARCHITECT PRIOR TO CONSTRUCTION.
- CONTRACTOR SHALL CONTINUOUSLY REMOVE DEBRIS FROM SITE AND CLEAN DAILY FOR RESTAURANT OPERATIONS TO REMAIN UNAFFECTED.
 FIRE SAFETY/SPRINKLER SUBCONTRACTOR TO BE FINAL SUB TO INSTALL WORK,
- 23. FIRE SAFETY/SPRINKLER SUBCONTRACTOR TO BE FINAL SUB TO INSTAI FOLLOWING ELECTRICAL AND MECHANICAL INSTALLATIONS.

PROJECT DIRECTORY	SHE	ET INDEX	
OWNER		OVER SHEET BBREVIATIONS AND SYMBOLS	
PAUL NASHAK PAULNASHAK@ME.COM		ITECTURAL	
t. 303.588.2688 ATTN: PAUL NASHAK	T1.0	TITLE SHEET/PROJECT INFORMATION	0039 L
PROJECT DESIGNER	T1.2 A2.1 A7.1	ABBREVIATIONS, MATERIAL SYMBOLS FLOOR PLAN FINISH & FURNITURE PLAN & SCHEDULE	303.415.0036
TRAPP ASSOCIATES 4135 AUTUMN CT. BOULDER, CO 80304	A7.2 A7.3	WALL FINISH PLAN & SCHEDULE REFLECTED CEILING PLAN (RCP)	80304 30
t.303.415.0036 ATTN: TIM TRAPP	A8.2 A8.3	INTERIOR DETAILS RESTROOM ELEVATIONS & DETAILS	СО Ш
ARCHITECT	PLUM	BING	A A BOULDER,
TRAPP ARCHITECTURE 1819 TIMBERLANE DR.	P1.1 P1.2	FIRST FLOOR SEWER PLAN FIRST FLOOR PIPING PLAN	
TRAVERSE CITY, MI 49686 t.970.708.0181	P2.1 P2.2 P3.1	PLUMBING DETAILS & SCHEDULES PLUMBING ISOMETRIC PLUMBING SPECIFICATIONS	
		ANICAL	R S O C I 4135 AUTUMN CT.
STRUCTURAL ENGINEER ASCENT GROUP	M1.1	MECHANICAL PLANS	S S 413
4909 PEARL EAST CIRCLE, STE. 201 BOULDER, CO 80301	M2.1 M3.1	MECHANICAL DETAILS & SCHEDULES MECHANICAL SPECIFICATIONS	
t.303.499.3022 ATTN: MATT BERRY	ELECT	RICAL	
MEP ENGINEER	E1.1 E1.2	FIRST FLOOR POWER PLAN FIRST FLOOR LIGHTING PLAN	
BOULDER ENGINEERING 1717 15TH ST.	E2.1 E3.1	ELECTRICAL DETAILS & SCHEDULES ELECTRICAL SPECIFICATIONS	E OF COLOR
BOULDER, CO 80304 t.303.444.6038 ATTN: MICHAEL VAIR	KITCH	EN	THE OF COLORED
FOOD SERVICE	FS.1	EQUIPMENT PLAN & SCHEDULE	SHEMRYN TRAPP
TUNDRAFMP DESIGN GROUP	FS.2 FS.3 FS 4	PLUMBING PLAN & SCHEDULE ELECTRICAL PLAN & SCHEDULE BLULDING VENTU ATION PLAN & SCHED	No. 401480 C
3625 WALNUT ST. BOULDER, CO 80301	FS.4 FS.5 FS.6	BUILDING VENTILATION PLAN & SCHED. INTERIOR ELEVATIONS INTERIOR ELEVATIONS	1 9.24 - 21Ku
t: 303.440.4142 EXT.7219 ATTN: ROBERT MCLAREN			-D ARO
			ONS N OR S IS IE M AND ISE
			- VERIFY ALL FIELD DIMENSIONS AND CONDITIONS REPORT ANY DISCREPANCIES, ERRORS OR APP ARCHITECTURE PRIOR TO CONSTRUCTION OR NFORMATION CONTAINED IN THESE DRAWINGS IS DRAWINGS AND MAY NOT BE CURRENT TO THE F THE SITE. F THE SITE. F THE SITE. RE SHALL RETAIN ALL STATUARY, COMMON LAW AND IGHTS. THESE DRAWINGS AND RELATED NOT BE DUPLICATED, DISCLOSED OR OTHERWISE CONSENT OF TRAPP ARCHITECTURE.
PROJECT DATA			D DIMENSIONS AND COND REPANCIES, ERRORS OR E PRIOR TO CONSTRUCI TAINED IN THESE DRAWI IAY NOT BE CURRENT TO ALL STATUARY, COMMON AWINGS AND RELATED ED, DISCLOSED OR OTHE P ARCHITECTURE.
BUILDING CODE: 2018 CITY OF LONGMONT AI 2018 INTERNATIONAL BUILD	ING CODE		JIMENSIONS ANI PRIOR TO CONR PRIOR TO CONR AINED IN THESE Y NOT BE CURRI Y NOT BE CURRI L STATUARY, CC MINGS AND REL ARCHITECTURE ARCHITECTURE
2018 INTERNATIONAL PLUM 2018 INTERNATIONAL MECH 2018 INTERNATIONAL FUEL	ANICAL CODE		ELD DIMENSION ISCREPANCIES, URE PRIOR TO UNTAINED IN TO D MAY NOT BE C IN ALL STATUAF NIN ALL STATUAF NIN ALL STATUAF DRAWINGS AND SATED, DISCLOS SAPP ARCHITEC
2018 INTERNATIONAL FUEL 2020 NATIONAL ELECTRICAL 2018 INTERNATIONAL ENER	CODE	ON CODE	' ALL FIELD D ANY DISCRE HITECTURE GES AND MAY GES AND MAY LITE. L RETAIN ALI THESE DRAM DUPLICATED T OF TRAPP /
2018 INTERNATIONAL FIRE (2009 ICC A117.1 ACCESSIBIL	CODE		L VERIFY ALL I L. VERIFY ALL I L. VERIFY ALL I APP ARCHITEC INFORMATION INFORMATION INFORMATION INFORMATION INFORMATION INFORMATION INFORMATION INFORMATION INFORMATION INFORMATION INFORMATION
*BUILDING CONSTRUCTION TYPE: V-A (FULLY S	SPRINKLERED) **		FIELD VERIFICATION CONTRACTOR SHALL VERIFY. MITH THE SITE AND REPORT / OMITTANCES TO TRAPP ARCH DMITTANCES TO TRAPP ARCH - ABRICATION. THE INFORMAT BASED ON EXISTING DRAWING BULT CONDITIONS OF THE SI COPYRIGHT TRAPP ARCHITECTURE SHALL OTHER RESERVED RIGHTS. T DOCUMENTS SHALL NOT BE D WITHOUT WRITTEN CONSENT
·	REQUIRED BY SEC 4 STORY, 70' MA		
**ALLOWABLE FLOOR AREA =	144,000 SF PER	FLOOR ACTUAL: 103,353 SF E 503, 504.2, 506.3)	FIELD VERIFICAT CONTRACTOR SH WITH THE SITE A OMITTANCES TO OMITTANCES TO FABRICATION. TH BASED ON EXIST BUILT CONDITION COPYRIGHT TRAPP ARCHITEC OTHER RESERVE DOCUMENTS SH WITHOUT WRITTE
NOTE: UPPER BUILDING FLOORS			FIELD VERI CONTRACT CONTRACT WITH TANE MITTANE ABRICATIC FABRICATIC BASED ON BUILT CONI BUILT CONI TRAPP ARC OTHER RES DOCUMENT WITHOUT V
FLAME SPEAD RATINGS			
VERTICAL EXITS: CLASS I OTHER EXITS: CLASS II			
ROOMS OR AREAS: CLASS II OR III CLASS I= FLAME SPREAD 0-25			
CLASS 3= FLAME SPREAD 26-75 CLASS 3= FLAME SPREAD 76-200			
*FIRE RESISTANCE RATINGS: (PER TABLE 601) EXTERIOR BEARING WALLS 1-HOU	R		
EXTERIOR NON-BEARING WALLS PER TA	ABLE 602 QUIREMENT		
INTERIOR NON-BEARING WALLS NO RE INTERIOR DEMISING PARTITIONS 1-HOU ROOF- CEILING 1-HOU	R		
FLOOR 1-HOU STRUCTURAL FRAME 1-HOU	R		
**PER BUILDING PERMIT INFORMATI		- BUILDING: 04/27/2017	ELC IAR REET CO
			AN FI ND N DNGMON
PROJECT DESCRIPTION PROPOSED INTERIOR TENANT IMPROVEMENTS T		321.5 SF SF SPACE	BAN BAN BAN LONGMG
SCOPE OF WORK WILL BE THAT REQUIRED TO CF WILL INCLUDE: NEW KITCHEN AND BAR FACILITIE	REATE A NEW RES ES; NEW RESTRO	STAURANT (A-2). WORK OMS, REQUIRED PARTITIONS	
AND MILLWORK. NEW UTILITY WORK WILL INCLU TO ACCOMODATE. MINOR WORK TO EXTERIOR F/	DE NECESSARY N	IEP THROUGHOUT SPACE	II H
SCOPE OF THIS PROJECT.			
PROJECT OCCUPANCY TYPE: GROUP A-2 (I PROJECT SPACE SQUARE FOOTAGE: 2821.5 SF	RESTAURANT)	(PER IBC: 1019.1)	SUBMISSIONS:
	IGE/RESTROOM (NET) AREA:	PERMIT 2021.09.23
493 GS	SF/15 SF/OCC = 77.9 GSF/ 5 SF/	32 OCC.	
KITCHEN/BAF HOST AREA:	R: 859.6 GSF/200 859.6 GSF/200 \$		L L L
	TOTAL OCCL	JPANTS = 56.2 OCC.	
NO. OF EXITS: REQUIRED: 2 PROVIDED: 3			
	SF / 15 SF/OCC =	27 OCC.	I
FIRE SEPARATION RATINGS: (PER TA A-2 (PROJECT SPACE) TO M,	<u> </u>	SPACES): 1-HOUR	PROJE
LUMBING FIXTURES PER IBC 2018 CHAPTER 29:			
MEN OCCUPANCY: WATER CLOSETS REQUIRED: 1 (1 PER 75 C WATER CLOSETS PROVIDED: 1	OCCUPANTS)		
WATER CLOSETS PROVIDED: 1 67% OF FIXTURES (2 OF 3) ALLOWED TO BE LAVATORIES REQUIRED: 1 (1 PER 200 OCCU		C 2018, SECTION 419.2)	SH SH
LAVATORIES REQUIRED: 1 (1 PER 200 OCCU LAVATORIES PROVIDED: 1 WOMEN OCCUPANCY:	. ,		▼ / ∧ 🛱
WATER CLOSETS REQUIRED: 1 (1 PER 75 0 WATER CLOSETS PROVIDED: 1	,		
LAVATORIES REQUIRED: 1 (1 PER 200 OCCU LAVATORIES PROVIDED: 1	JPANTS)		II I I V 8
EMPLOYEE: REQUIRED: 0, PROVIDED: 0 SERVICE SINK: REQUIRED: 1, PROVIDED: 1			

SERVICE SINK: REQUIRED: 1, PROVIDED: 1 DRINKING FOUNTAIN: NONE REQUIRED WITH WAIT SERVICE (PER IPC 2018, SECTION 410.1)



ABBREVIATIONS

AB	ANCHOR BOLT	К	KIP
AC ACOUS	AIR CONDITIONING ACOUSTICAL	KIT KO	KITCHEN KNOCKOUT
ACT	ACOUSTICAL CEILING TILE	KVA	KILO VOLT-AMPERES
AD ADD	AREA DRAIN, ACCESS DOOR ADDENDUM	KW L	KILOWATT LENGTH
ADJ	ADJACENT, ADJUSTABLE	LAM	LAMINATE
AFF ALLM	ABOVE FINISHED FLOOR ALUMINUM	LAQ LAV	LACQUER LAVATORY
ALT	ALTERNATE	LDR	LEADER
ANOD APPROX	ANODIZED APPROXIMATE	LH LIN	LEFT HAND LINEAR
ARCH	ARCHITECTURAL	LL	LIVE LOAD
ASPH AUTO	ASPHALT AUTOMATIC	LP LT	LIGHTING PANEL, LIGHT PROOF LIGHT
AUX	AUXILIARY	MACH	MACHINERY
A/V	AUDIO/VISUAL	MAG	MAGNETIC
AVE AVG	AVENUE AVERAGE	MAS MATL	MASONRY MATERIAL
BATH	BATHROOM	MAX	MAXIMUM
BD	BOARD	MECH MED	MECHANICAL MEDIUM
BET BF	BETWEEN BOARD FEET	MEMB	MEMBRANE
BITUM	BITUMINOUS	MEZZ MFG	MEZZANINE MANUFACTURER
BLDG BLKG	BUILDING BLOCKING	MH	MANHOLE
BM	BENCHMARK, BEAM	MI MIN	MILE MINIMUM
BOT BRG	BOTTOM BEARING	MIN.	MINUTE
BSMT	BASEMENT	MISC MM	MISCELLANEOUS MILLIMETERS
BUR	BUILT-UP ROOF	MO	MASONRY OPENING
CAB	CABINET	MTD MTL	MOUNTED METAL
CAP	CAPACITY	MUL	MULLION
CDOT CEM	Colorado Dept. of Transportation CEMENTITOUS	N	NORTH
CER	CERAMIC	NIC NO	NOT IN CONTRACT NUMBER
CFM CHK	CUBIC FEET PER MINUTE CHALKBOARD	NOM	
CIP CIRC	CAST IN PLACE CIRCUMFERENCE	NRC NTS	NOISE REDUCTION COEFFICIENT NOT TO SCALE
CJ	CONTROL JOINT	OC	ON CENTER
CK CL	CAULKING COLUMN LINE	OD OF	OUTSIDE DIAMETER OUTSIDE FACE
C.L.	Centerline	OFF	OFFICE
C/L CLG	CENTERLINE CEILING	OH OPNG	OPPOSITE HAND OPENING
CLOS	CLOSET	OPP	OPPOSITE
CM CMU	CENTIMETERS CONCRETE MASONRY UNIT	Р	PAINT
CO	CLEAN OUT	PAR	PARALLEL
COL COMB	COLUMN COMBINATION	PBO PC	PROVIDED BY OTHERS PRECAST
CONC	CONCRETE	PCF	POUNDS PER CUBIC FOOT
CONF CONSTR	CONFERENCE CONSTRUCTION	PEN PERF	PENETRATION PERFORATED
CONT	CONTINUOUS	PERIM	PERIMETER
CONTR CORR	CONTRACTOR CORRIDOR, CORRUGATED	PKG P/L	PARKING PLATE, PROPERTY LINE
CPT	CARPET	PLAM	PLASTIC LAMINATE
CT CTR	CERAMIC TILE	PLAS PLBG	PLASTER PLUMBING
CU	COUNTER CUBIC	PLYWD	PLYWOOD
CW	COLD WATER	PNEU POL	PNEUMATIC POLISHED
DAMP DAS	DAMPROOFING Deformed Anchor Stud	POL PR	POLISHED PAIR
DBL	DOUBLE	PREFAB	PREFABRICATED
DEG DEMO		PREFIN PRESTR	PREFINISHED PRESTRESSED
DEMO	DEMOLISH, DEMOLITION DEPARTMENT	PRIM	PRIMARY
DF		PSF PSI	POUNDS PER SQUARE FOOT POUNDS PER SQUARE INCH
DIA DIAG	DIAMETER DIAGONAL	PTD	PAPER TOWEL DISPENSER
DIM	DIMENSIONS	PTR PT	PAPER TOWEL RECEPTACLE POINT
DIV DL	DIVISION DEAD LOAD	PTEN	POST TENSIONED
DN	DOWN	PTN PVC	PARTITION POLYVINYL CHLORIDE
DR DS	DOOR DOWNSPOUT	PVMT	PAVEMENT
DTL DWG		QT	QUARRY TILE
		QTY	QUANTITY
(E) EA	EXISTING EACH	R RAD	RISER RADIUS
EB	EXPANSION BOLT	RBC	RUBBER BASE COVE
EF EJ	EACH FACE EXPANSION JOINT	RBS RBT	RUBBER BASE STRAIGHT RUBBER TILE
EL	ELEVATION	RD	ROOF DRAIN ROAD
ELEC ELEV	ELECTRICAL ELEVATOR	RE RECPT	REFERENCE RECEPTACLE
EMER	EMERGENCY	REFR	REFRIGERATOR
EQ EQUIP	EQUAL EQUIPMENT	REG REINF	REGISTER REINFORCED
ES	EACH SIDE	REM	REMOVE
EST EW	ESTIMATE EACH WAY	REQ'D RESIL	REQUIRED RESILLIENT
EWC	ELECTRIC WATER COOLER	REV	REVISION(S), REVISED
EWH EXG	ELECTRIC WATER HEATER EXISTING	RFL	
EXH	EXHAUST	RH RM	RIGHT HAND ROOM
EXP EXT	EXPANSION, EXPOSED EXTERIOR	RO	ROUGH OPENING
		ROW RP	RIGHT OF WAY ROPE
F FA	FARENHEIT FIRE ALARM	RPM	REVOLUTIONS PER MINUTE
FAC		RVS	REVERSE (SIDE)
FBO FD	FURNISHED BY OTHER FLOOR DRAIN, FIRE DAMPER	SC SD	SOLID CORE SOAP DISPENSER
FDN	FOUNDATION	SEC	SECTION
FE FEC	FIRE EXTINGUISHER FIRE EXTINGUISHER CABINET	SF SHT	STORE FRONT SHEET
FHC	FIRE HOSE CABINET	SHTH	SHEATHING
FH FHMS	FIRE HYDRANT FLAT HEAD MACHINE SCREW	SIM SND	SIMILAR SANITARY NAPKIN DISPOSER
FHV	FIRE HOSE VALVE	SNR	SANITARY NAPKIN RECEPTACLE
FHWS FIG	FLAT HEAD WOOD SCREW FIGURE	SNT SOFF	SEALANT SOFFIT
FIN	FINISH	SPCG	SPACING
FIX FL	FIXTURE FLOW LINE	SPRT SPECS	SUPPORT SPECIFICATIONS
FLG	FLASHING	SPKL	SPRINKLER
FLR FLUOR	FLOOR FLUORESCENT	SPKR SQ	SPEAKER SQUARE
FLEX	FLEXIBLE	SS	STAINLESS STEEL
FOC FOF	FACE OF CONCRETE FACE OF FINISH	STA STD	STATION STANDARD
FOM	FACE OF MASONRY	STL	STEEL
FOS FPM	FACE OF STUDS FEET PER MINUTE	STOR STRUCT	STORAGE STRUCTURAL
FR	FIRE RATED	SUSP	SUSPENDED
FT FTG	FOOT (FEET) FOOTING	SYM SYS	SYMMETRICAL SYSTEM
FURN	FURNISH(ED)	Т	TREAD
FURR FUT	FURRED(ING) FUTURE	TB T&B	TOWEL BAR
FVC	FIRE VALVE CABINET	TBC	TOP AND BOTTOM TOP OF BACK OF CURB
G	GAS	TEL TEM	TELEPHONE
GA	GAUGE	TEMP	TEMPERED TEMPERATURE
GAL GALV	GALLON GALVANIZED	T&G THERM	TONGUE AND GROOVE
GB	GRAB BAR	THK	THERMOSTAT THICK
GC GEN	GENERAL CONTRACTOR GENERATOR	THLD TO	THRESHOLD
GI	GALVANIZED IRON	TOC	TOP OF TOP OF CONCRETE
GL GPM	GLASS GALLONS PER MINUTE	TOS	TOP OF STEEL
GYP	GYPSUM	TOSL TOW	TOP OF SLAB TOP OF WALL
HAS	HEADED ANCHOR STUD	TPD TRANS	TOILET PAPER DISPENSER
HDAS	HEADED DEFORMED ANCHOR STUD	TS	TRANSFER STEEL TUBING
HB HC	HOSE BIB HOLLOW CORE, HANDICAPPED	TV	TELEVISION
HDR	HEADER	TYP UNFIN	TYPICAL UNFINISHED
HDWR HID	HARDWARE HIGH INTENSITY DISCHARGE	UON	UNLESS OTHERWISE NOTED
HM	HOLLOW METAL	UR USG	URINAL U.S. GAUGE
HORIZ HP	HORIZONTAL HORSEPOWER	V	VOLT
HR	HOUR	VAR	VARIES
HT HTR	HEIGHT HEATER	VCT VENT	VINYL COMPOSITION TILE VENTILATION
HVAC	HEATING, VENTILATING AND A/C	VERT	VERTICAL
HW HWH	HOT WATER HOT WATER HEATER	VEST VIN	VESTIBULE SHEET VINYL
HWS	HOT WATER SUPPLY	VOL	VOLUME
HWY	HIGHWAY	VTR VWC	VENT THROUGH ROOF VINYL WALL COVERING
ID	INSIDE DIAMETER	VWC W	VINYL WALL COVERING WEST, WIDE
ILLUM	ILLUMINATOR	W/	WITH
IN INCAN	INCHES INCANDESCENT	WC	WATERCLOSET WOOD
INCL	INCLUDE(D)	WD WDO	WOOD WINDOW
INSUL INT	INSULATION	WGL	WIREGLASS
INTEG	INTEGRAL	W.O. W/O	WHERE OCCURS WITHOUT
INTMED INV	INTERMEDIATE	WP	WATERPROOFING
		W/R WSCT	WATER RESISTANT WAINSCOT
JAN JST	JANITOR	WT	WEIGHT
JS I JT	JOIST JOINT	WWF YD	WELDED WIRE FABRIC
01		w1.1	YARD
01		U	

GRAPHIC STANDARDS

	STRUCTURAL GRID		СС
		·	
	- COLUMN REFERENCE GUIDE		UN OF
A	- COLUMN LETTER		
			СС
	DOOR IDENTIFICATION 	CO COCOCOCOCOCOCOCOCOCOCOCOCOCOCOCOCOCO	PC (G
	GLAZING IDENTIFICATION		ST
(W1)	- GLAZING TYPE		AL
22	NOTE IDENTIFICATION – NOTE NUMBER		BF
<u> </u>	ELEVATION REFERENCE		DP
.	- DATUM POINT		СС
	ROOM/SPACE IDENTIFICATION		GL
OFFICE	- ROOM NAME - ROOM NUMBER		(IN
			BA
\rightarrow	DRAWING SECTION IDENTIFICATION		
A6.12	— DRAWING NUMBER — SHEET NUMBER		RI
	SHEET NUMBER		
			A
	EXTERIOR ELEVATION		М
22	IDENTIFICATION — DRAWING NUMBER	刘顺	FII
A6.12	- SHEET NUMBER		
Y			R
	INTERIOR ELEVATION IDENTIFICATION		
11 A4.2			PL
A4.2	- SHEET NUMBER		
22	ENLARGED DETAIL IDENTIFICATION 		
A3.01	- SHEET NUMBER		
	- AREA OF DRAWING TO BE ENLARGED		
	INTERIOR DETAIL IDENTIFICATION		
XX/I801 —	— DRAWING NUMBER/SHEET NUMBER		
(CQ1)	ARCHITECTURAL FINISH IDENTIFICATION – FINISH TYPE		
	PARTITION TYPE IDENTIFICATION		
A23	PARTITION TYPE RE: PARTITION TYPE SCHEDULE		
	ACOUS PARTITION TYPE IDENTIFICATION		
A26	PARTITION TYPE		
💚	RE: PARTITION TYPE SCHEDULE		
\sim	EQUIPMENT IDENTIFICATION – EQUIPMENT ID NUMBER		

	CONCRETE
	UNDISTURBED EARTH OR COMPACTED FILL
	COMPACTED FILL
2 200000 0 08 00000000000000000000000000	POROUS FILL (GRAVEL)
	STEEL
	ALUMINUM
	BRICK
	CONCRETE MASONRY
	GLASS (IN ELEVATION)
	BATT INSULATION
	RIGID INSULATION
	ACOUSTICAL TILE
	METAL STUD
	FINISH WOOD
	ROUGH WOOD
/////////	PLYWOOD



KEYED NOTES A2.1:

	COMPLETELY FILL RESTROOM WALLS WITH PAPERLESS BATT INSULATION FOR SOUND INSULATION.	17	BUILT-IN BOOTH WOR COORDINATE WITH V INCLUDING BLOCKING
2	TYPE 'K' FIRE EXTINGUISHER LOCATION. CONFIRM FINAL LOCATION WITH INSPECTOR.	18	TWO (2) TYPE W1 WA
3	WALL MOUNTED A/V RACK. FINAL LOCATION BY OWNER.	\frown	PLUMBING.
4	TYPE ABC FIRE EXTINGUISHER LOCATION. CONFIRM FINAL LOCATION WITH INSPECTOR.	(19)	NEW MOVABLE RAILIN EXISTING RAILING DE LESS THAN DISTANCE
5	STAINLESS STEEL CORNER GUARD.	20	EXISTING STOREFRO
6	REFER TO FOOD SERVICE DRAWINGS FOR EQUIPMENT LAYOUT AND SPECIFICATIONS AT KITCHEN, PREP, BAR, ETC. G.C. TO	21	EXISTING PERIMETER
	COORDINATE WITH EQUIPMENT VENDOR ON SPECIFIC REQUIREMENTS.	22	NEW EXTERIOR WALL ATTACH TO STOREFF KITS AND SEAL METH
7	BELOW COUNTER SHELVING/TOP SUPPORT TO BE HEAVY DUTY, BRACKET TYPE DETERMINED BY OWNER. GC TO VERIFY FIELD CONDITIONS AND MAKE RECOMMENDATION	23	EXISTING COLUMN TO
8	NEW MILLWORK STORAGE CABINET, SEE 5/A8.3	(24)	BEER TAP ARRAY - IN
9	EXISTING BUILDING SOFFIT ABOVE. NO WORK THIS AREA.	25	INSTALL STAINLESS S SEAL GAP BETWEEN ADJACENT WALLS AN
10	HOOD ABOVE BY OTHERS, SEE FOOD SERVICE DRAWINGS.	(26)	EXISTING GREASE DU
11	EXISTING DOORS TO REMAIN. G.C. TO VERIFY IF EXISTING HARDWARE, SIGNAGE, AND LIGHTING, IS TO CODE.	20	SERVICE SHEETS FO
12	BACK BAR, REFER TO DETAIL X/AXX FOR MORE INFORMATION.	27	WALK-IN COOLER SH FINAL DIMENSIONS B COORDINATE EQUIPM
13	EXISTING PATIO - NO WORK		UTILITIES, DIMENSION
14	ADD NEW SECTION OF RAILING TO MATCH EXISTING. ANCHOR INTO SLAB SIMILAR TO EXISTING.	28	INSTALL 1/2" CDX PLY WALLS.
15	NEW SERVICE SINK. REFER TO 'P' DRAWINGS FOR ADDITIONAL INFORMATION.	29	INSTALL 3/4" CDX PLY THIS DYE WALL FACE
16	NEW SINGLE DOOR AND FRAME. SEE X/AXX FOR ADDITIONAL INFORMATION.	30	THIS SECTION OF W1 FRAMING. CAP CEILI

RK BY OTHERS THIS LOCATION. G.C. TO VENDOR ON INSTALLATION REQUIREMENTS ALLS WITH 2" AIR GAP BETWEEN FOR ING SECTION ON WEIGHTED FEET. MATCH ESIGN AND FINISH. FINAL LENGTH TO BE 8" E TO RAILING(E) TO STOREFRONT. ONT TO REMAIN 'AS IS' U.O.N. R RAILING TO REMAIN 'AS IS'. . INFILL BETWEEN EXISTING MULLIONS. RONT USING MFR'S RECOMMENDED TRIM HODOLOGY. SEE DETAIL. (9)-O REMAIN NSTALLATION AND FINISH BY OTHERS. STEEL ANGLE CLOSURE TO COMPLETELY I COOLER WALLS AND COOLER TOP TO ND CEILING. UCT CHASE. SEE MECHANICAL AND FOOD OR ADDITIONAL INFORMATION. (21) HOWN FOR GRAPHIC PURPOSES ONLY. BY FOOD SERVICE VENDOR. G.C. TO MENT REQUIREMENTS INCLUDING NS, AND BLOCKING WITH VENDOR. YWOOD BEHIND GYP. BD. FINSH THESE YWOOD IN LIEU OF CEMENT BOARD AT E FOR EQUIPMENT BLOCKING 1 WALL TYPE TO STOP AT B.O. CEILING ING WITH 3/4" CDX DECKING AND PAINT (31) MILLWORK AT ENTRY TBD BY OWNERS AND TRAPP ASSOC.

WALL TYPE LEGEND:

 NEW COOLER WALL. WALL ASSEMBLY PER COOLER MFR. G.C. TO COORDINATE FINAL DIMENSIONS.	
 EXISTING FULL HEIGHT WALL OR COLUMN TO REMAIN	
 EXISTING WALL TO BE REMOVED	
W1: NEW FULL HEIGHT WALL, 3-1/2 +LT. GA. MTL. STUDS ON 16+CENTERS TO STRUCTURE ABOVE <u>U.O.N.</u> 1-LAYER OF 5/8 +GYP BD TO EACH EXPOSED SIDE. TYPE ±WRqGYP. BD. AT RESTROOMS AND PREP.	
W2: NEW FULL HEIGHT 1-HR DEMISING WALL, 5-1/2+LT. GA. MTL STUDS ON 16+CENTERS TO B.O. STRUCTURE. 2-LAYERS OF 5/8+TYPE X GYP BD BOTH SIDES 5-1/2 +LT. GA. MTL STUDS. FILL WALL CAVITY WITH SOUND BATTS.	
W3: NEW FULL HEIGHT WALL, 5-1/2 +LT. GA. MTL STUDS ON 16+CENTERS TO B.O. STRUCTURE. 1-LAYER OF 5/8+TYPE WR GYP BD TO KITCHEN SIDE, 1-LAYER OF ½+CEMENT BD TO GUEST SIDE	
W4: NEW BELOW COUNTER WALL, 5-1/2 +LT. GA. MTL STUDS ON 16 +CENTERS TO B.O. TOP. FINAL HT. PER PLANS. 1-LAYER OF 5/8+TYPE WR GYP BD TO STAFF SIDE, 1-LAYER OF ½+CEMENT BD TO GUEST SIDE	
W5: NEW PARTIAL HT. WALL, 5-1/2 +LT. GA. MTL STUDS ON 16+CENTERS. FINAL HT. PER PLANS. 1-LAYER OF 5/8+TYPE WR GYP BD TO STAFF SIDE, 1-LAYER OF ½+CEMENT BD TO GUEST SIDE	

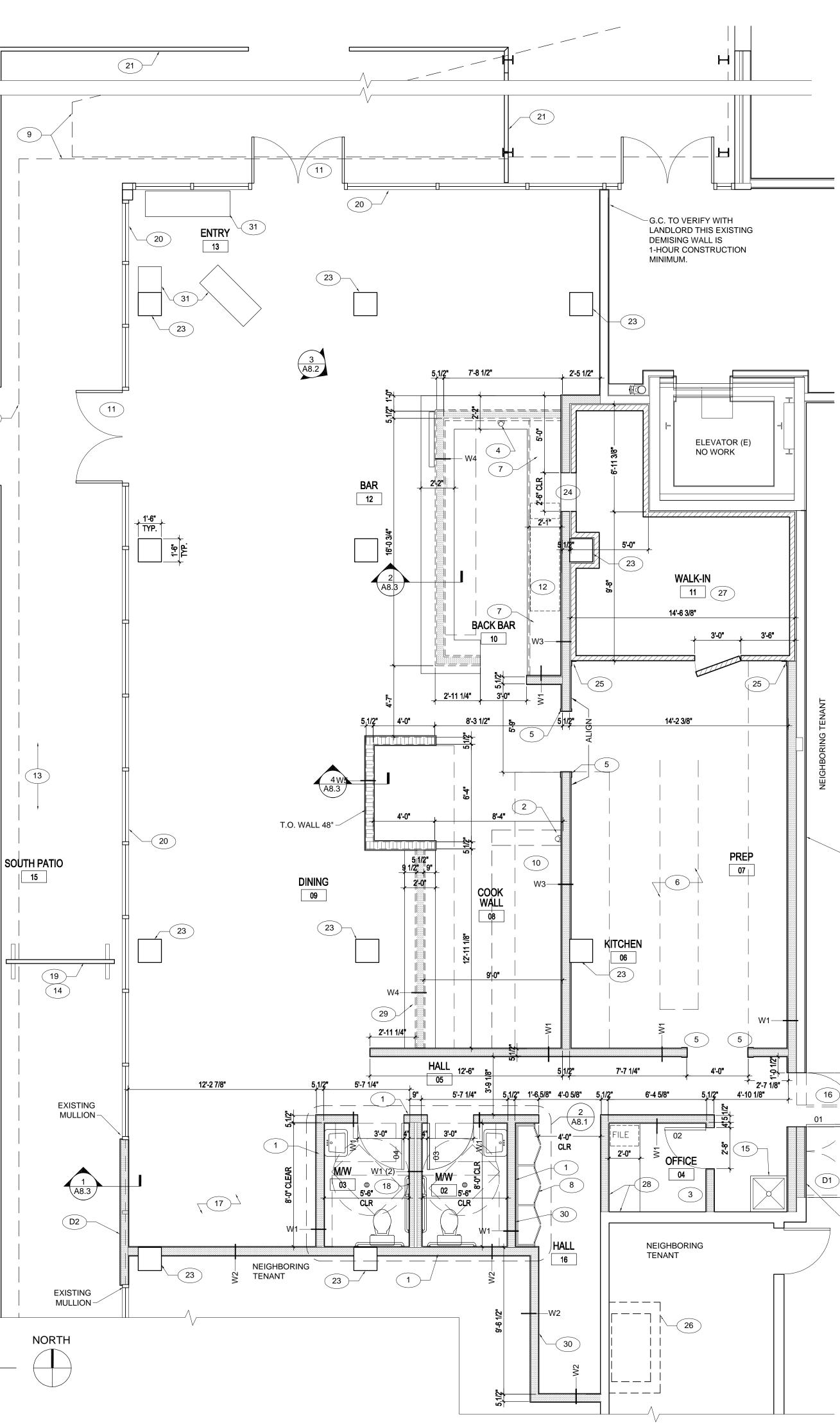
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(9)





FLOOR PLAN GENERAL NOTES

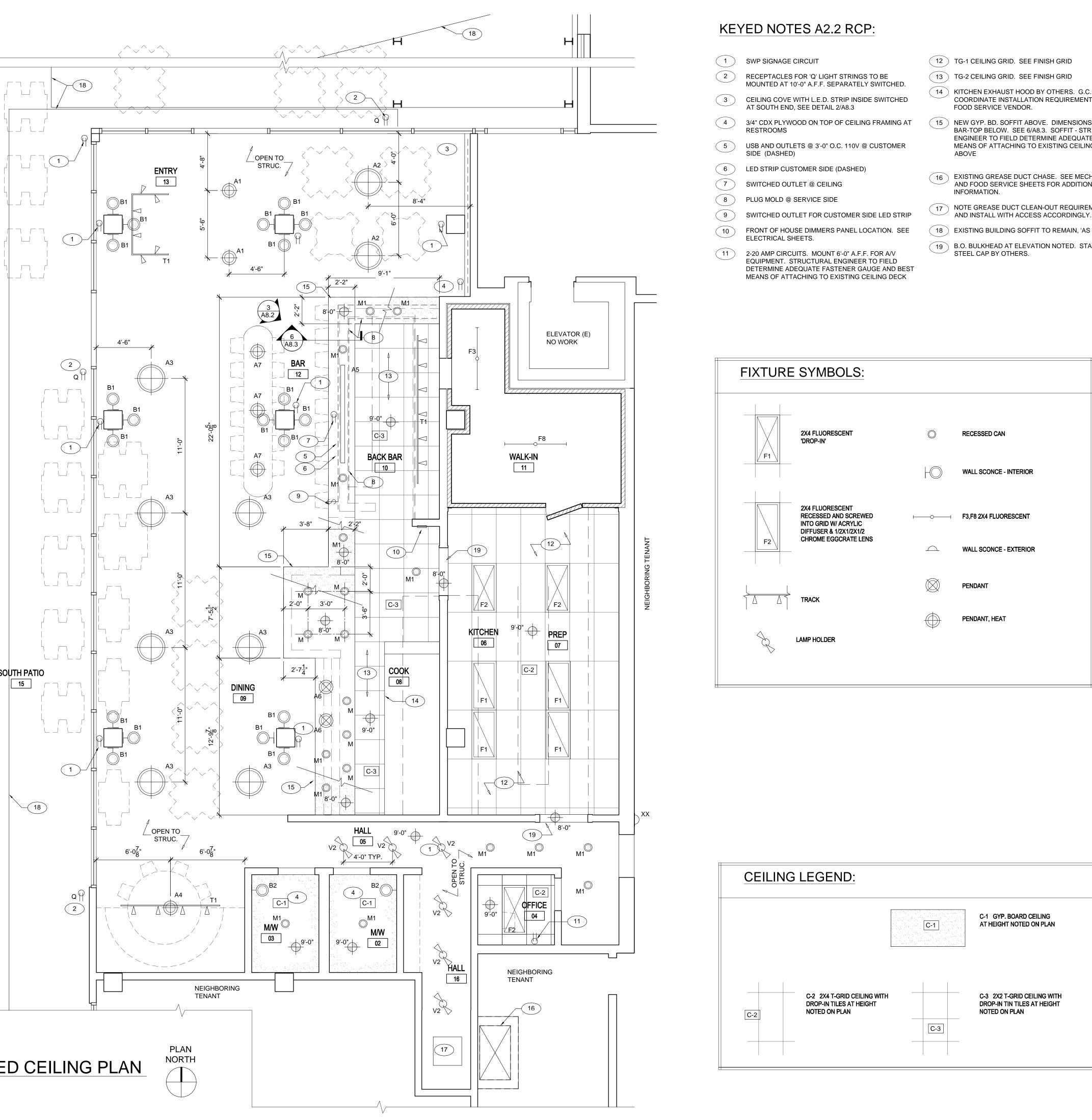
- DIMENSIONS SHOWN ON THIS SHEET ARE STUD TO STUD, UNLESS NOTED OTHERWISE. PROVIDE 5/8" WATER RESISTANT GYPSUM BOARD BEHIND ALL CERAMIC TILE AT WALLS IN RESTROOM
- AREAS. USE 5/8" GYPSUM BOARD AT ALL WALLS, PARTITIONS AND CEILINGS WHERE GYPSUM BOARD
- INDICATED, UNLESS OTHERWISE NOTED OR EXISTING CONDITIONS DICTATE. COORDINATE EXTENT AND LOCATION OF WALL BLOCKING, REINFORCING AND OPENINGS WITH FOOD SERVICE EQUIPMENT SUPPLIER, PREFAB ENCLOSURE CONTRACTOR AND MILLWORK CONTRACTOR. PROVIDE PLYWOOD REINFORCING AND WOOD BLOCKING BEHIND ALL WALL MOUNTED SINKS AND WALL MOUNTED TOILET ROOM ACCESSORIES, GRAB BARS, AND WOOD TRIM. PROVIDE BLOCKING AT ALL BOOTH TABLES FOR ANGLE BRACKET CANTILEVERS AND/OR BOLT DOWN BASES, SEE DETAILS. COORDINATE FINAL LOCATIONS WITH RESTAURANT DESIGNER (AS APPLICABLE). G.C. TO VERIFY FINAL EQUIPMENT LOCATIONS AND DIMENSIONS WITH OWNER'S REP. AND/OR
- EQUIPMENT SUPPLIER PRIOR TO FABRICATING OR INSTALLING ANY MILLWORK.
- REFER TO SHEET A7.1 FOR FURNITURE LAYOUT AND SEATING DATA. BOOTH DIMENSIONS ARE TO FINISH. REFER TO DETAILS ON SHEET AX.X FOR SPECIFIC PLATFORM DIMENSIONS AND CONSTRUCTION. 8. FIRE EXTINGUISHERS SHALL BE PLACED SO THAT THERE IS NO MORE THAN A 75 FOOT TRAVEL DISTANCE TO AN EXTINGUISHER FROM ANY PORTION OF THE BUILDING. THE EXTINGUISHERS SHALL
- HAVE A 2A:10BC RATING. IN ADDITION TO THESE EXTINGUISHERS, 40BC EXTINGUISHERS SHALL BE PROVIDED WITHIN 25 FEET OF ALL KITCHEN EQUIPMENT. PROTECTED BY THE HOOD AND DUCT PROTECTION SYSTEM. RECYCLE EXISTING IF POSSIBLE. 9. EMERGENCY PULLS, STROBES, SIRENS, THERMOSTAT, EMERGENCY LIGHTING SHALL BE LOCATED TO
- COMPLY WITH CODE BUT WITH CONSIDERATION FOR ART WALLS IF REQUIRED BY NEW FLOOR PLAN LAYOUT. AVOID MIDWALL LOCATIONS MINIMALLY. CONTRACTOR TO COORDINATE WITH TRAPP ASSOC. ON FINAL LOCATIONS PRIOR TO WORK. 10. FINAL T.V. LOCATIONS AND ELEVATIONS PER OWNER'S A/V SUB TYPICAL, UNLESS OTHERWISE NOTED.
- 11. NOTE: GC RESPONSIBLE FOR ALL DAMAGE TO TABLES, BOOTHS, LIGHT FIXTURES, SHADES, REPAIR OR REPLACE BY 'TURNOVER' DATE. 12. DEBRIS CONTINUOUSLY TO BE REMOVED BY GC
- ALL WINDOW AND DOOR DIMENSIONS ARE SHOWN AS NOMINAL SIZING. REFER TO MANUFACTURER'S CLEAR FRAMING REQUIREMENTS PRIOR TO CONSTRUCTION. NEW WINDOWS TO BE SIMILAR, INSULATED TYPE. 14. TOP OF WALL (T.O.W.) HEIGHTS SHOWN ARE FROM HIGHEST ADJACENT FINISHED FLOOR TO TOP OF
- WALL FINISH. 15. G.C. TO REFER TO PLUMBING SHEETS FOR LOCATIONS AND INFORMATION REGARDING ALL FLOOR
- DRAINS AND FLOOR SINKS. FOR ALL WALL-MOUNTED AND SEMI- RECESSED MOUNTED EQUIPMENT ACCESSORIES, CABINETS, HANDRAILS, MECHANICAL/ELECTRICAL EQUIPMENT, ETC., PROVIDE AND INSTALL SOLID BLOCKING IN WALL BEHIND.
- WALL BEHIND.
 17. GC TO INSTALL FIRE BLOCKING AS REQUIRED PER CODE. BOOTH PLATFORMS TO NOT EXCEED 100 S.F. OF OPEN FRAMING WITHOUT BLOCKING.
 18. PROVIDE 5/8" CEMENTITIOUS BACKBOARD TO 12" A.F.F. TO NEW WALLS AT COOK, PREP, RESTROOMS AND 48" A.F.F. AT DISHWASHING WITH TYPE WR GYP. BD. ABOVE BOTH CONDITIONS. SLOPE ALL FLOOR AREAS IN KITCHEN RESTROOMS, DISH, BAR, ETC., 1/8" PER FOOT OR MAX ALLOWABLE WHERE FLOOR
- AREAS IN KITCHEIN RESTROOMS, DISH, DAK, ETC., 1/8 FEINT GOT ON MAX ALLOWABLE WHENE FEOR DRAINS OCCUR.
 19. G.C. IS RESPONSIBLE FOR COORDINATING TILE AND PLUMBING SUBS TO ENSURE THAT FLOOR DRAINS AND FEOR SINKS FINISH OUT FLUSH TO THE TOP OF FINISH FLOOR TILE @ SHALLOW END OF FLOOR SLOPE
- 20. UNISTRUT CLIPS REQUIRED AT ALL INDIRECT DRAINS/PIPING/FLOOR SINKS, ETC. 21. ELECTRICAL INSTALLATION SHALL TAKE PRECEDENT OVER MECHANICAL INSTALLATION. MECHANICAL
- 21. ELECTRICAL INSTALLATION STALL TAKE PRECEDENT OVER MILCHARICAL INSTALLATION. MILCHARICAL INSTALLATION.
 22. GC TO REVIEW ALL ROOF-SCUPPER-DOWNSPOUT-DRAINAGE CONDITIONS AROUND SPACE, CLEAN AS REQUIRED. PROVIDE RECOMMENDED SOLUTIONS FOR CONSISTENT, SOUND WATER REMOVAL AWAY FROM SPACE TO ARCHITECT IF PROBLEM EXISTS.
 23. ALL WALLS AND WALL FINISHES TO EXTEND FROM FLOOR TO CEILING DECK ABOVE THROUGHOUT SPACE IN ONE AND WALL FINISHES TO EXTEND FROM FLOOR TO CEILING DECK ABOVE THROUGHOUT
- SPACE U.O.N. 24. 1/2" HIGH MAXIMUM AT FLOORING TRANSITIONS, TYPICAL.

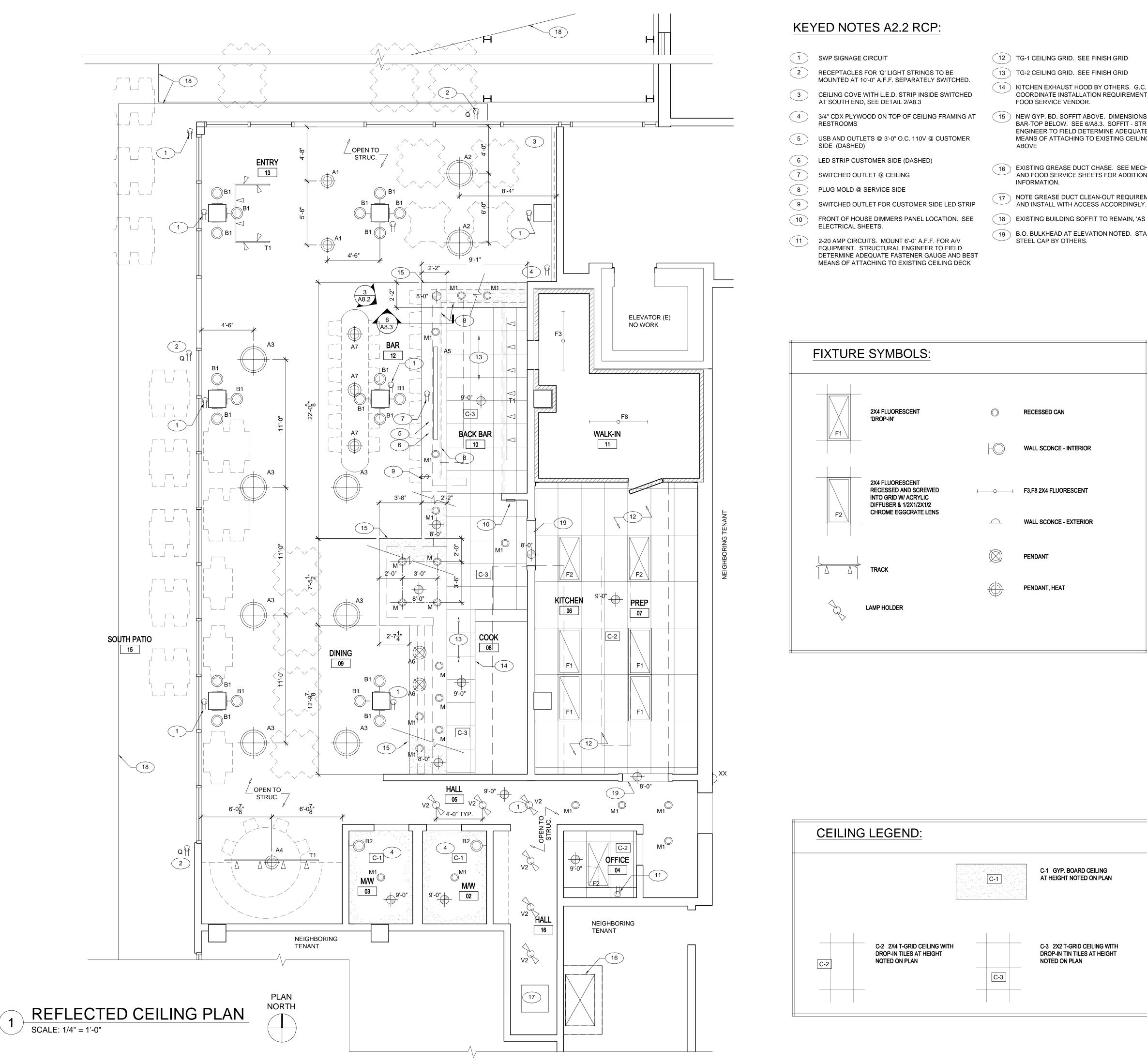
G.C. TO VERIFY WITH DEMISING WALL IS 1-HOUR CONSTRUCTION MINIMUM.



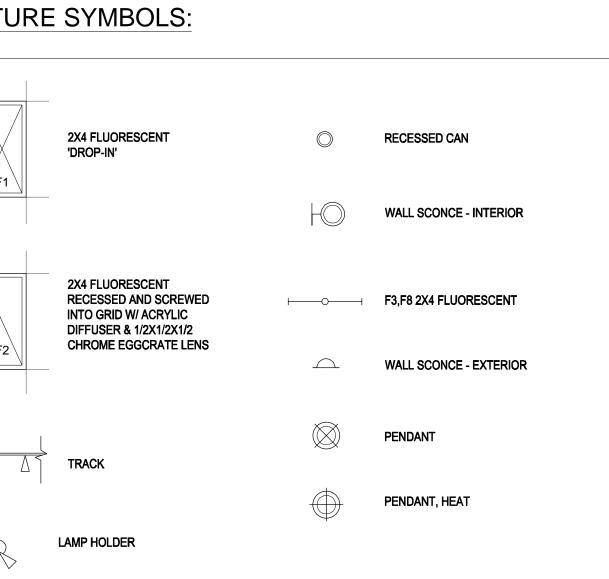
MATCH EXISTING **1-HOUR CONSTRUCTION**







- (14) KITCHEN EXHAUST HOOD BY OTHERS. G.C. TO COORDINATE INSTALLATION REQUIREMENTS WITH
- (15) NEW GYP. BD. SOFFIT ABOVE. DIMENSIONS MATCH BAR-TOP BELOW. SEE 6/A8.3. SOFFIT - STRUCTURAL ENGINEER TO FIELD DETERMINE ADEQUATE BEST MEANS OF ATTACHING TO EXISTING CEILING DECK
- 16 EXISTING GREASE DUCT CHASE. SEE MECHANICAL AND FOOD SERVICE SHEETS FOR ADDITIONAL
- (17) NOTE GREASE DUCT CLEAN-OUT REQUIREMENTS AND INSTALL WITH ACCESS ACCORDINGLY.
- (18) EXISTING BUILDING SOFFIT TO REMAIN, 'AS IS'.
- 19 B.O. BULKHEAD AT ELEVATION NOTED. STAINLESS STEEL CAP BY OTHERS.





LUMINAIRE SCHEDULE

KEY	DESCRIPTION	MANUFACTURER	LAMP	QTY	VOLT	MT.HT. & NOTES	FURN, INSTALL
A1	PENDANT						
A2	PENDANT						
A3	PENDANT					CENTERED ON TABLE	
A4	PENDANT					MOUNT FROM TRACK	
A5	CUSTOM PENDANT	TRAPP ASSOCIATES	TEN (10) 60 W EDISONS				
A6	PENDANT HEAT LAMPS		(1) 50 WATT				
A7	PENDANT						
B1	WALL MOUNT FIXTURE	60W EDISON				MOUNT 7'-0" A.F.F.	
B2	WALL MOUNT FIXTURE						
F1	2X4 FLUORESCENT - W/CLEAR PLASTIC LENS						
F2	2X4 FLUORESCENT WITH XXX EGGCRATE						
М	DOWN CAN WITH BLACK STEP BAFFEL	PROGRESS 8066-31	SATCO 29450 LED PAR 38 NFL, LN 2700K DIMMABLE				BGC
M1	DOWN CAN WITH BLACK STEP BAFFEL	PROGRESS 8175-28	SATCO 529424 PAR 30 2700K DIMMABLE				BGC
Q	FESTOON LIGHTS	TRAPP ASSOC.	11 W S14 LAMP			MOUNT @ 10'-0" A.F.F.	
SWP	SWITCHED PLUG					MOUNT @ T.O. COLUMN / CLG.	
T1	TRACK	WAC HHT 160					
V2	ADJUSTABLE CANS - 1	ТВD	TBD				FBO / BGC
V4	ADJUSTABLE CANS - 2	PEMCRAFT 2110 BLACK	12.5 W LED 2700K 120V DIMMABLE SATCO 529424				FBO / BGC

REFLECTED CEILING PLAN NOTES

- REFER TO BUILDING ELEVATIONS AND SECTIONS FOR EXTERIOR BUILDING MOUNTED LIGHTING. REFER TO FINISH SCHEDULE FOR MISC. ITEMS TO BE FIELD PAINTED. PROVIDE CEILING FINISHES AND HEIGHTS AS INDICATED ON THE FINISH SCHEDULE, UNLESS OTHERWISE NOTED ON THE RCP.
- MECHANICAL AND FIRE. 6.
- LIGHTS TAKES PRIORITY. 7. NOTED.
- 8. SUBCONTRACTOR RESPONSIBLE FOR TRIM TO BE PAINTED SEMI GLOSS OIL TO MATCH CEILING.
- 9.

- 14.
- DIMENSIONS SHOWN ARE BETWEEN FINISH AND/OR CENTER OF FIXTURES. 15.
- WHEREVER POSSIBLE DIMENSIONS BETWEEN LIKE FIXTURES ARE ON DIMENSIONAL GRID. 16. 17. FOR ADDITIONAL MOUNTING INFORMATION REFER TO LUMINAIRE SCHEDULE SHEET A7.4
- 18. PAINT HVAC REGISTERS AND GRILLS TO MATCH ADJACENT SURFACE, WITH OIL BASE. 19. LIGHTING LOCATIONS TO TAKE PRECEDENCE OVER HVAC

LIGHTING NOTES

- BOOTH PLATFORM TO CENTER OF JUNCTION BOX.
- MOUNTING HEIGHT FOR HANGING FIXTURES IS FROM FINISH FLOOR TO BOTTOM OF PENDANT SHADE.
- 5.
- "EXTRAS".
- ELECTRICAL CONTRACTOR SHALL VERIFY SIGNAGE REQUIREMENTS WITH SIGN CONTRACTOR. DO NOT BREAK HEAT FINS ON DIMMERS. USE AT FULL CAPACITY.
- 9. 'NOVA' SERIES
- 10. CONTRACTOR SHALL PROVIDE THREE (3) MATCHING DIMMERS IN ALL CAPACITIES AS OWNER SPARES, LEAVE IN OFFICE FOLLOWING 'TURN-OVER'. 11.
- O.C., 6" IN FROM TOP EDGE.
- PRIOR TO WORK. 14. INTERLOCK ALL TOILET ROOM LIGHT SWITCHES TO TOILET ROOM EXHAUST FANS.
- 15. EC TO PROVIDE TWO 20AMP CIRCUITS TO SOUND SYSTEM RACK, REFER TO FLOOR PLAN FOR LOCATION OF RACK.
- HEIGHTS WITH THE SOUND SYSTEM CONTRACTOR. 17. GC TO PROVIDE THE OWNER WITH INSTRUCTIONS FOR THE OPERATION OF ALL ELECTRICAL SYSTEMS. 18. GC TO PROVIDE THE OWNER WITH THREE (3) SETS OF MAINTENANCE AND OPERATIONS MANUALS FOR ALL ELECTRICAL EQUIPMENT.
- THE RESTAURANT DESIGNER PRIOR TO COMMENCING THE WORK.
- GC TO PROVIDE OUTLET, CONDUIT, ETC., AS REQUIRED BY THE FIRE SUPPRESSION CONTRACTOR. 21.
- 22. EC MUST COORDINATE INSTALLATION OF EXTERIOR 'A6' & 'V2' FIXTURES WITH EC & LANDLORD. 23. GC TO PERFORM FINAL HOOK UP OF POWER OF SIGNAGE.
- 24. NOTE: 1 DOZEN OF EACH SIZE LIGHT BULBS TO BE LEFT ON SITE FOLLOWING PUNCH OUT.
- 26. E.C. TO CENTER IN BOTH DIRECTIONS PENDANTS AT BOOTH TABLES.

REFER TO ELECTRICAL DRAWINGS FOR ADDITIONAL LIGHTING INFORMATION, FIXTURE SCHEDULE AND MOUNTING INFORMATION.

GC S SHALL COORDINATE THE INSTALLATION OF THE FINISH CEILING WITH THE EC TO ASSURE PROPER ALIGNMENT OF LIGHT FIXTURES, MECHANICAL GRILLS, SPRINKLER HEADS, EXITS SIGNS, SPEAKERS, ETC., VERIFY WITH RESTAURANT DESIGNER IF THERE ARE ANY DISCREPANCIES. LIGHTING LAYOUT SHOULD TAKE PRIORITY OVER

ALL LIGHTS, SPEAKERS AND OTHER CEILING MOUNTED EQUIPMENT SHALL BE CENTERED IN THE CEILING TILE UNLESS OTHERWISE NOTED. THE CENTERING OF BOOTH

SPEAKER TRIMS, JUNCTION BOX PLATES, HVAC GRILLES, ETC. SHALL BE PAINTED IN SEMI-GLOSS OIL PAINT BY THE GC TO MATCH THE CEILING ADJACENT, UNLESS OTHERWISE

THE AUDIO SUBCONTRACTOR IS RESPONSIBLE FOR DESIGNATING SPREADER LOCATIONS THROUGHOUT THE FACILITY. FOR PROPER INSTALLATION OF AUDIO EQUIPMENT, THE SUB SHALL COORDINATE ANY PROVISIONS NECESSARY BY THE GC. SUBCONTRACTOR TO SUBMIT PLANS, SPECS, INTENT TO DESIGNER FOR REVIEW. AUDIO

THE GC SHALL COORDINATE WITH THE EC TO PROVIDE PROPER SUPPORT OR BLOCKING REQUIRED FOR ALL LIGHT FIXTURES AS REQUIRED.

10. SPACING OF HANGERS FOR SUSPENDED CEILING MUST NOT BE MORE THAN 4'-8" O.C. FOR SUPPORTING THE ACOUSTICAL CEILING GRID.

11. SUSPENDED ACOUSTICAL GRID SHALL BE CENTERED WITHIN EACH SPACE UNLESS INDICATED OTHERWISE AS A SPECIFIC DIMENSION OR INDICATED GRID STARTING POINT. 12. ALL LIGHTING FIXTURES LOCATED ABOVE FIXED TABLE TOPS ARE TO BE CENTERED IN BOTH DIRECTIONS OVER THE TABLE. CLOCK OUTLETS FOR BOOTH LIGHTING TO BE CENTERED 6" BELOW THE TABLE TOP. GC TO COORDINATE WITH BOOTH MANUFACTURER AND RCP FOR FINAL LOCATION PRIOR TO WORK.

13. ALIGN CEILING DROPS WITH END OF WALL, FACE OF COLUMN ENCLOSURE OR ADJOINING CEILING DROP, ETC. UNLESS OTHERWISE NOTED.

T-GRID TILES TO BE EQUALLY DIMENSIONS AT PERIMETER OF SPACES. ROUND UP TO LARGEST EQUAL DIMENSION.

MOUNTING HEIGHTS FOR WALL MOUNTED FIXTURES ARE TO CENTERLINE OF WALL BRACKET/WALL PLATE. AT BOOTHS, MOUNTING HEIGHT IS MEASURED FROM THE TOP OF

DECORATIVE FIXTURES SHALL BE PROVIDED BY OWNER AND INSTALLED BY THE ELECTRICAL CONTRACTOR. SEE LIGHT FIXTURE SCHEDULE. TRIM RINGS TO BE FIELD PAINTED PRIOR TO INSTALLATION. COORDINATE WITH PAINTING CONTRACTOR, SUBMIT ALL COLORS TO RESTAURANT DESIGNER FOR APPROVAL. ALL LAMPS TO BE PROVIDED AND INSTALLED BY THE ELECTRICAL CONTRACTOR. SEE LIGHT FIXTURE SCHEDULE FOR SPECIFICATIONS. SUPPLY 1 DOZEN OF EA. SIZE FOR

FAN CONTROLLERS SHALL BE PROVIDED AND INSTALLED BY ELECTRICAL CONTRACTOR. SUBMIT SPECIFICATION TO RESTAURANT DESIGNER PRIOR TO ORDERING.

ALL DIMMERS SHALL BE FACTORY BROWN IN COLOR. NOT PAINTED COVER PLATES. PAINT ALL DIMMER CABINETS GLOSS OIL TO MATCH ADJACENT WALL COLOR - LUTRON

CONTRACTOR SHALL MOUNT PLASTIC DIMMER NAME PLATES WITH NAMES PROVIDED BY RESTAURANT DESIGNER BELOW APPLICABLE DIMMERS. 12. PLUG MOLD SHALL BE INSTALLED CONTINUOUSLY UNDER BAR TOP AT BAR DIE AND BE CONTROLLED BY SWITCH LOCATED AT EXIT TO BAR. SOCKETS SHALL BE SET AT 18"

13. EXIT SIGNS AND EMERGENCY LIGHTS SHALL BE CONNECTED AHEAD OF SWITCHES IN CIRCUIT. FIXTURES SHALL AUTOMATICALLY LIGHT UPON LOSS OF POWER. SEE ELECTRICAL DRAWINGS FOR LOCATIONS. WHERE LOCALLY REQUIRED, CIRCUIT A MINIMUM NUMBER OF 24 HOUR EXIT AISLE LIGHTING. CONFIRM ALL LOCATIONS AND FIXTURES WITH RESTAURANT DESIGNER. LOCATE TO PROVIDE NAME. ALLOWABLE WALL AREA FOR ART, COORDINATE WITH RESTAURANT DESIGNER ON FINAL LOCATIONS

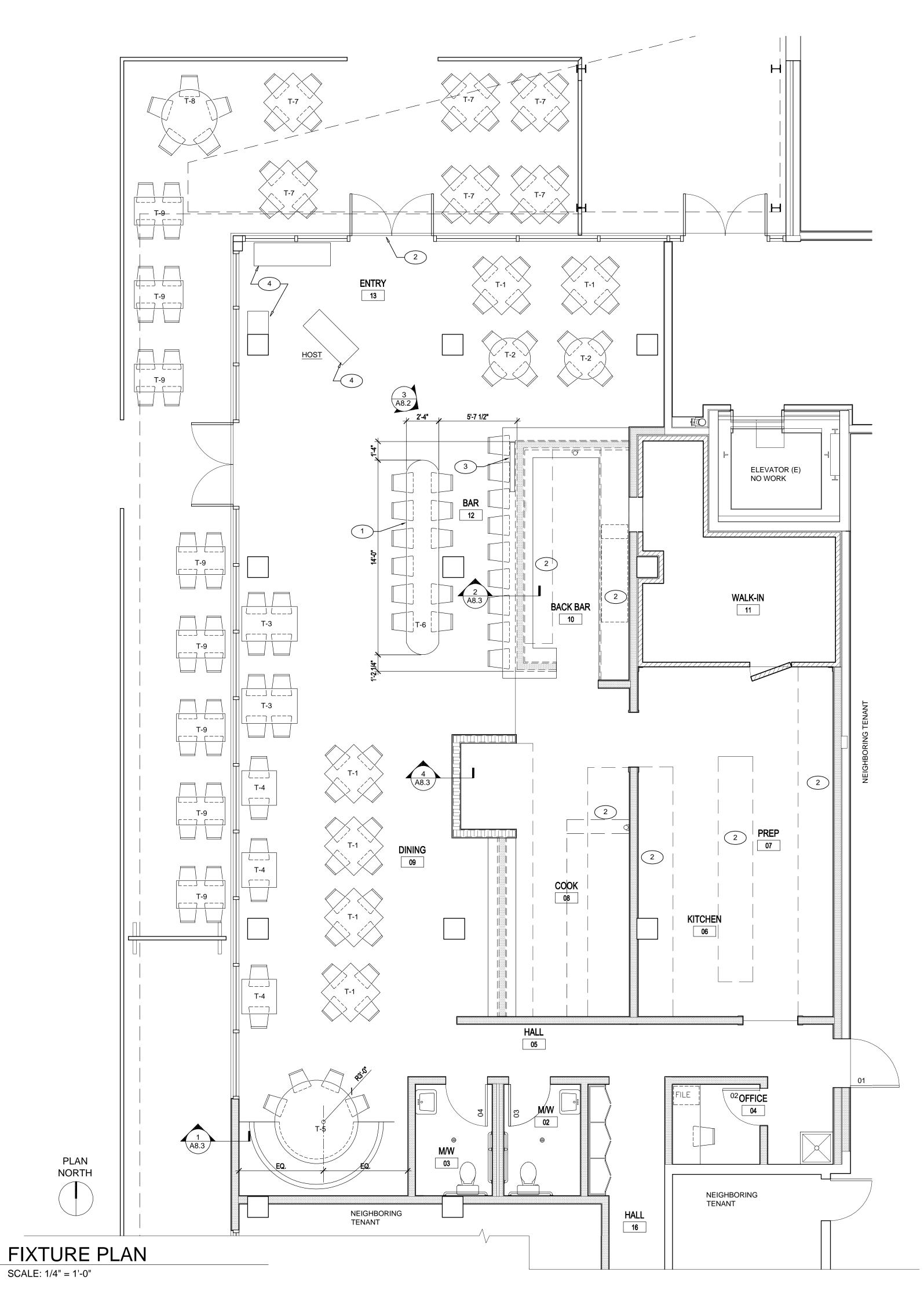
16. THE SOUND SYSTEM EQUIPMENT AND ACCESSORIES ARE TO BE PROVIDED BY THE SOUND SYSTEM CONTRACTOR AND INSTALLED BY THE ELECTRICAL CONTRACTOR. THE ELECTRICAL CONTRACTOR SHALL PROVIDE CONDUITS STUBBED TO THE CEILING SPACE FOR ALL CONTROLS AND SPEAKERS. VERIFY FINAL LOCATIONS AND MOUNTING

19. THE ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR FINAL WIRING OF ALL FOOD SERVICE EQUIPMENT, KITCHEN HOOD FANS, CONTROL PANES, ETC., INCLUDING INTERLOCKS, WIRING, AND HOOK-UPS CONTROL PANEL IS PROVIDED BY HOOD CONTRACTOR. REFER TO FINISH SCHEDULE DRAWINGS, EXHAUST HOOD SHOP DRAWINGS, SAND SIGNAGE SHOP DRAWINGS FOR SPECIFIC EQUIPMENT INFORMATION. IF A CONFLICT EXISTS BETWEEN THESE DOCUMENTS AND THE ELECTRICAL DRAWINGS, CONTACT

20. ALL RECEPTACLES, SWITCHING, ETC., USED IN PUBLIC AREAS ARE TO BE MOUNTED PER A.D.A. REQUIREMENTS.

25. E.C. TO COORDINATE W/ E.E. REQUIREMENTS OF OWNER MEDIA/SECURITY CONSULTANTS.





FIXTURE PLAN NOTES:

- ETC.
- BOOTH WORK AND TABLES TO BE SUPPLIED AND INSTALLED BY OWNER. . GC WILL PROTECT ALL SURFACES DURING CONSTRUCTION. NOTE: GC RESPONSIBLE FOR ALL DAMAGE TO TABLES, BOOTHS, LIGHT FIXTURES, SHADES, REPAIR OR REPLACE BY 'TURNOVER' DATE. 9. FIXTURE TAGS SHOWN IN PLAN IDENTIFY 'TYPICAL' CONDITIONS THROUGHOUT. GC TO CONTACT TRAPP ASSOCIATES FOR CLARITY IF THERE ARE ANY QUESTIONS OR DISCREPANCIES.
- 10. APPLIANCES AND PLUMBING FIXTURES FBO, INSTALLED BGC, U.N.O. 11. GC IS RESPONSIBLE FOR VERIFYING THAT ALL BACK OF HOUSE MATERIALS AND CONSTRUCTION ARE IN ACCORDANCE WITH THE FOOD SERVICE DRAWING DIRECTIVES, ESP. AT AREAS REQUIRING WALL BACKING. 12. REFER TO DETAILS ON SHEET A7.2 FOR ADDITIONAL FINISH INFORMATION ON LOW WALLS AND MILLWORK. 13. COORDINATE EXTENT AND LOCATION OF WALL BLOCKING, REINFORCING AND OPENINGS WITH FOOD SERVICE EQUIPMENT SUPPLIER, PREFAB ENCLOSURE CONTRACTOR AND MILLWORK CONTRACTOR. PROVIDE PLYWOOD REINFORCING AND WOOD BLOCKING BEHIND ALL WALL MOUNTED SINKS AND WALL MOUNTED TOILET ROOM ACCESSORIES, GRAB BARS, AND WOOD TRIM. PROVIDE 2X10 BLOCKING AT ALL
- BOOTH TABLES FOR ANGLE BRACKET CANTILEVERS. COORDINATE FINAL LOCATIONS WITH RESTAURANT DESIGNER. 14. ALL BOOTH DIMENSIONS ARE TO FACE OF PANELING. REFER TO DETAIL FOR TYPICAL END OF BOOTH WALL CONDITION.
- 15. PROVIDE BLOCKING FOR BABY CHANGING STATIONS AS REQUIRED. 16. SURFACE MOUNTED PAPER TOWEL DISPENSERS TO HAVE PLYWOOD BACKING DECKS IF NON-EXISTING. 17. ALL DIMENSIONS ON FIXTURE PLAN ARE SHOWN FINISH TO FINISH, UNLESS NOTED OTHERWISE. 18. EMERGENCY PULLS, STROBES, SIRENS, THERMOSTAT, EMERGENCY LIGHTING SHALL BE LOCATED TO COMPLY WITH CODE BUT WITH CONSIDERATION FOR ART WALLS. COORDINATE WITH RESTAURANT DESIGNER ON FINAL LOCATIONS PRIOR TO WORK.
- 19. AT ALL AC OUTLETS BELOW CABINETS, EC TO PROVIDE GROMMETS FOR CORDS THROUGH TOP, UNO. 20. DEBRIS CONTINUOUSLY TO BE REMOVED FROM SITE BY GC.
- 21. BOOTHS AND BANQUETTE SHOWN FURNISHED AND INSTALLED BY OTHERS. BOOTH BASE BY GC.

	COMMUNITY T
2	AREA OF APPF FOOD SERVICE
3	NEW 24 X 42-3 FACE WITH CC EDGING TBD B
(4)	HOSTESS / WA

SEATI	NG	COUNT	NOTE:	ALL SEAT	ING ABUTTIN	G AISLES TO BE ADA ACCESSIBLE.
TABLE TYPE	QTY.	PROVIDED BY	TYPE	TOTAL	SIZE	DESCRIPTION
T-1	6	FBO	4-TOP	12	36"X36"	FREE-STANDING TABLE, STD HT.
T-2	2	FBO	4-TOP	8	30" DIA.	FREE-STANDING TABLE, STD HT.
T-3	2	FBO	4-TOP	8	30"X48"	FREE-STANDING TABLE, STD HT.
T-4	3	FBO	2-TOP	6	30"X30"	FREE-STANDING TABLE, STD HT.
T-5	1	FBO	8-TOP	8	72" DIA.	4 PERSONS @ CHAIRS, 4 PERSONS @ FIXED
T-6	1	FBO	14-TOP	14	24" X 168"	TABLE BAR HEIGHT
TOTAL INTERIOR:	16			72		
T-7	6	FBO	4-TOP	24	36"X36"	PATIO TYPE FURNITURE
T-8	1	FBO	6-TOP	6	48" DIA.	PATIO TYPE FURNITURE
T-9	8	FBO	4-TOP	32	30" X 42"	PATIO TYPE FURNITURE
TOTAL EXTERIOR:	15			62		

1. GC TO COORDINATE WITH OWNER ON SCHEDULING FOR DELIVERY AND INSTALLATION OF FURNITURE. 2. PRIOR TO FABRICATING, VERIFY FINAL EQUIPMENT CLEARANCE REQUIREMENTS, CUTOUTS, ACCESS OPENINGS, LOCATIONS AND DIMENSIONS, WITH OWNER'S REP. AND/OR EQUIPMENT SUPPLIER AND FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO FABRICATING OR INSTALLING ANY MILLWORK. 3. EC TO PROVIDE WIRING HOLES WITH GROMMETS FOR ALL LIGHTING, T.V.S, COUNTER MOUNTED EQUIPMENT,

- 4. DO NOT SCALE DRAWINGS UNLESS DIRECTED BY ARCHITECT. 5. GC TO COORDINATE BLOCKING REQUIREMENTS AND FINISHES WITH FINISH MILLWORK CONTRACTOR.
- REFER TO DETAIL FOR TYPICAL TABLE SUPPORT BLOCKING AND TRIM REQUIREMENTS 6. ALL FURNITURE SHALL BE FURNISHED AND INSTALLED BY OWNER UNLESS OTHERWISE DIRECTED.

NOTE: REFER TO SHEET A7.2 FOR FINISH NOTES, AND FINISH SCHEDULE.

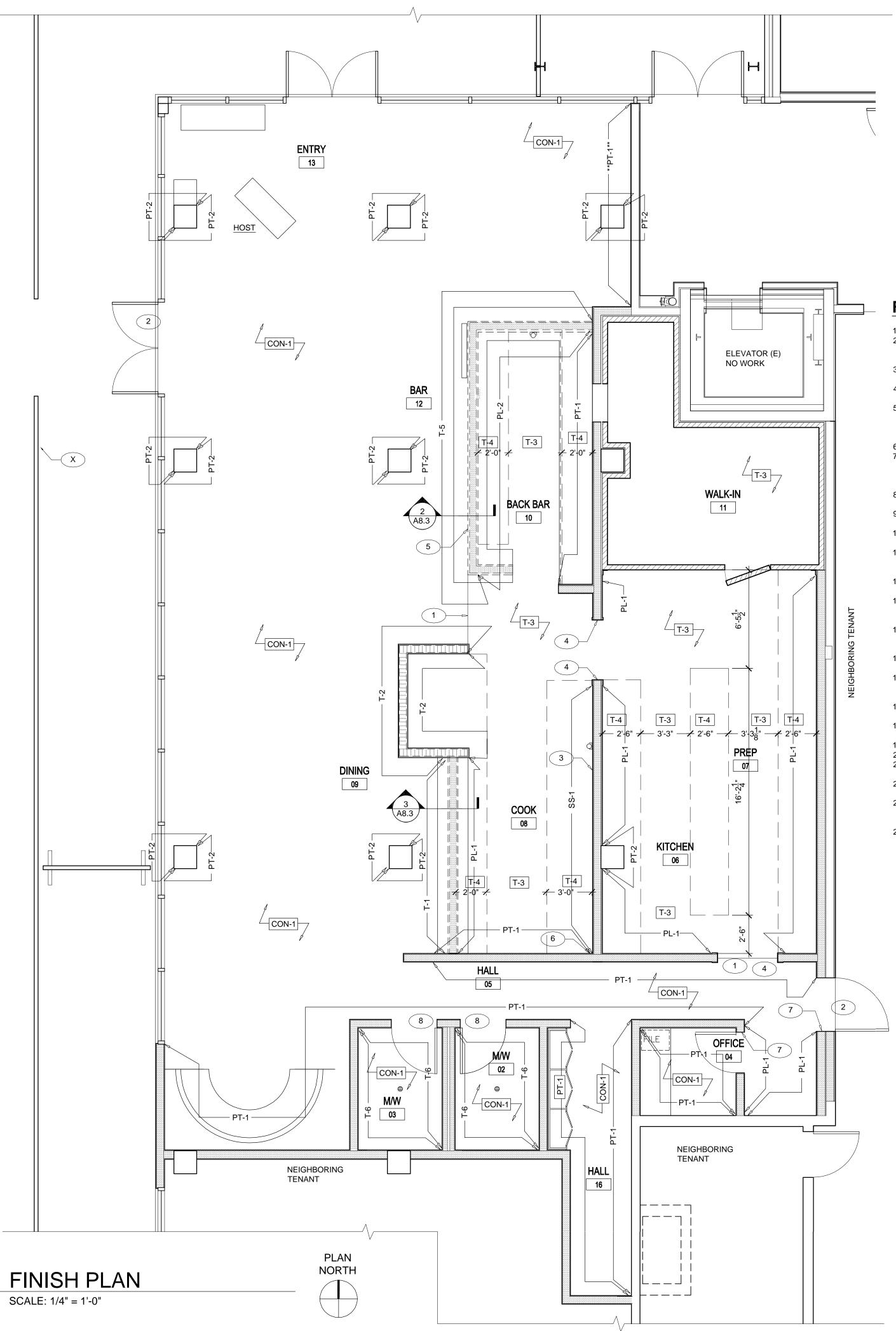
KEYED FIXTURE PLAN NOTES A7.1:

TABLE

- ROXIMATE EQUIPMENT LOCATION. REFER TO E DRAWINGS FOR FINAL EQUIPMENT LOCATIONS
- 3/4 CDX FLIP UP ADA TOP MOUNTED TO BAR DYE ONTINUOUS LOCKING HINGE. TOP FINISH AND BY OWNER AND TRAPP ASSOCIATES.
- 4 HOSTESS / WAIT FURNITURE TBD BY OWNER



CODE / MATL	LOCATION	MFGR / SPEC	NOTES
CON-1	GENERAL CONCRETE FLOORS	MFGR: SCOFIELD LITHOCHROME DYE FINISH: SATIN POLY - 2 COATS COLOR: TBD - TRAPP ASSOCIATES	
PL-1	KITCHEN WALLS	MFGR/NAME: MARLITE NAME/NUM: SYMMETRIX COLOR: WHITE SUBWAY, C-100-G63 TRIM:	
PL-2	BAR DYE	MFGR/NAME: MARLITE NAME/NUM: SYMMETRIX COLOR: BLACK, P-807 TRIM:	
PT-1	GENERAL WALLS	MFGR: TBD FINISH: TBD COLOR: TBD	APPLY TEXTURE AND PAINT
PT-2	CONCRETE COLUMNS STAIN AND SEAL	MFGR: TBD FINISH: TBD COLOR: TBD	
PT-3	-	MFGR: TBD FINISH: TBD COLOR: TBD	
PT-4	-	MFGR: TBD FINISH: TBD COLOR: TBD	
STN-1	-	MFGR: TBD COLOR: TBD OPACITY: TBD	
STN-2	-	MFGR: TBD COLOR: TBD OPACITY: TBD	
T-1	СООК	MAT'L: PORCELIAN, POLISHED MFR/SUPL: HOME DEPOT NAME/PAT: 1000-047-213 RUNNING BOND SIZE: 12 X 24 GROUT: MATCH W/POLYGROUT, 0" GROUT	
T-2	PIZZA OVEN SURROUND	MAT'L: CARRARA MARBLE MFR/SUPL: DAL-TILE NAME/PAT: VENETIAN CALACATTA SIZE: 3X16 W/1X1 EMPERADOR GROUT: DARK M725	
Т-3	KITCHEN WALKWAYS	MAT'L: SURETREAD, QUARRY MFR/SUPL: DAL-TILE NAME/PAT: STORM GRAY 0Q83 SIZE: GROUT: BLACK POLYGROUT OR EPOXY	
T-4	KITCHEN UNDER EQUIPMENT EXTENDS 30" AWAY FROM WALLS	MAT'L: PAVER, QUARRY MFR/SUPL: DAL-TILE NAME/PAT: STORM GRAY 0Q83 SIZE: GROUT: BLACK POLYGROUT OR EPOXY	
T-5	BAR DYE WALL	MAT'L: TILE - TBD MFR/SUPL: NAME/PAT: SIZE: GROUT:	
T-6	RESTROOM WALLS	MAT'L: TILE - TBD MFR/SUPL: NAME/PAT: SIZE: GROUT:	INCLUDE 6" CERAMIC TILE WALL COVE BASE
TG-1	KITCHEN CEILING	MFGR: GRID: ALUM. GRID, WHITE TILES: 24 X 48 VINYL GYP. TILES	
TG-2	BAR / PIZZA CEILING	MFGR: AMERICAN TIN CEILINGS GRID: TILES: 24 X 24	



FINISH PLAN KEYED NOTES:

1 NOSE PROFILE TRANSISTION AT FLOOR TRANSITION TO CONCRETE

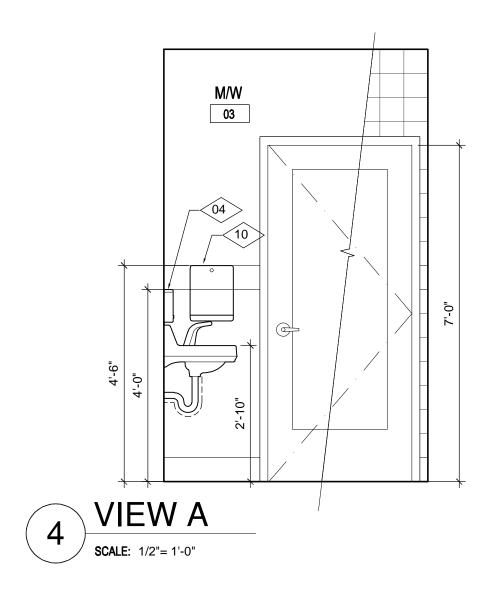
- 2 COORDINATE FLOORING LOCATION WITH KITCHEN EQUIPMENT LOCATION. FLOOR THRESHOLDS TO HAVE BEVEL AND BE 1/2" MAX.
- 3 STAINLESS STEEL PANELS AT OVEN HOOD WALL SUPPLIED BY KITCHEN
- EQUIPMENT SUPPLIER. INSTALLED BY G.C.
 STAINLESS STEEL CORNER GUARD SUPPLIED BY KITCHEN EQUIPMENT
- SUPPLIER, INSTALLED BY G.C. TYPICAL WHERE NOTED ON FLOOR PLAN
- 5 REFER TO TRAPP ASSOCIATES FF&A SHEETS AND PHOTOS FOR INFORMATION REGARDING TILE PATTERN AT THIS AREA.
- 6 END FRP AND TRANSITION INTO NOTED WALL FINISH AT INSIDE CORNER.
- 7 PAINT DOOR AND FRAME TO MATCH ADJACENT FRP, SATIN FINISH, OIL BASE.
- 8 PAINT DOOR FRAME TO MATCH ADJACENT WALL PAINT, SATIN FINISH, OIL BASE

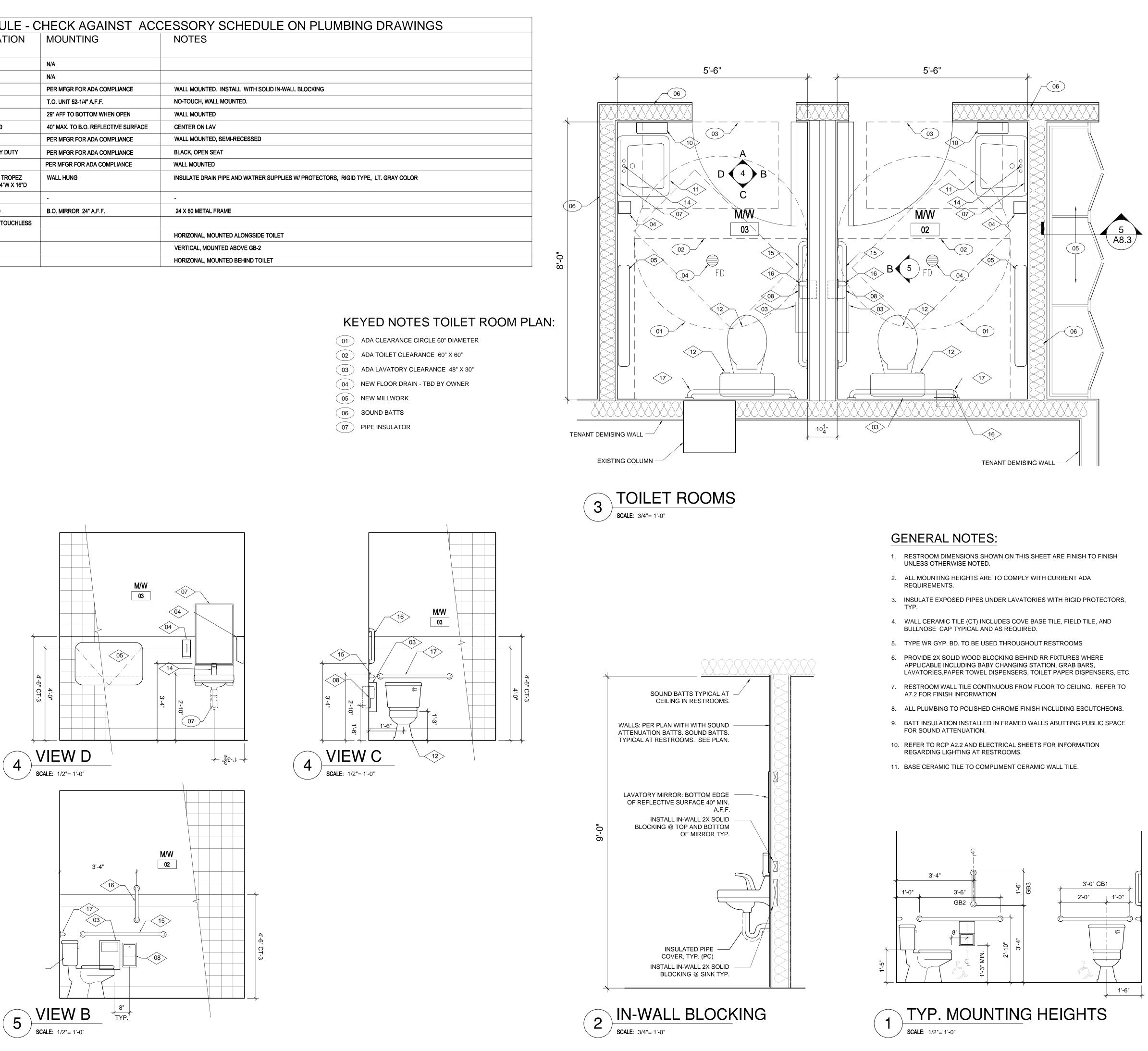
FINISH PLAN GENERAL NOTES:

- DO NOT SCALE DRAWINGS UNLESS DIRECTED BY ARCHITECT.
 GC TO COORDINATE BLOCKING REQUIREMENTS AND FINISHES WITH FINISH MILLWORK CONTRACTOR. REFER TO DETAIL FOR TYPICAL TABLE SUPPORT BLOCKING AND TRIM REQUIREMENTS
- THRESHOLDS AT DOORWAYS SHALL NOT EXCEED 1/2" IN HEIGHT ABOVE FINISH FLOOR, EXCEPT AT RESTROOMS (1").
 TRANSITIONS BETWEEN FLOORING MATERIALS SHALL BE FLUSH, EXCEPT AT
- QUARRY TILE. 5. INSTALL WATERPROOF MEMBRANE AT NEW ALL QUARRY TILE/WALL INTERSECTIONS. MEMBRANE SHALL BE EQUAL TO GRACE CONSTRUCTION PRODUCTS (PERM-A-BARRIER) PROVIDE 6" COV/ED ON SLAD, AND TUDN
- PRODUCTS 'PERM-A-BARRIER'. PROVIDE 6" COVER ON SLAB, AND TURN MEMBRANE UP WALL A MINIMUM OF 18" AFF.
 6. GC WILL PROTECT ALL SURFACES DURING CONSTRUCTION.
 7. NOTE: FINISH TAGS SHOWN IN PLAN IDENTIFY ITYPICALL CONDITIONS
- NOTE: FINISH TAGS SHOWN IN PLAN IDENTIFY 'TYPICAL' CONDITIONS THROUGHOUT, TAGS ON SIMILAR WALL SURFACES AND CONDITIONS SHOULD BE TREATED SIMILARLY. GC TO CONTACT ARCHITECT FOR CLARITY IF THERE ARE ANY QUESTIONS OR DISCREPANCIES ON FINISHES.
 GC TO PROVIDE SAMPLES OF ALL PAINTED AND STAINED MATERIALS FOR OWNER
- AND DESIGNER REVIEW AND APPROVAL PRIOR TO WORK COMMENCING.
 9. GC TO PROVIDE OWNER WITH OUTLINE AND LITERATURE ON MAINTENANCE OF ALL FINISHES.
- GC TO OBTAIN, AND HAVE ON SITE AT ALL TIMES OWNER APPROVED SAMPLES AND DIRECTIONS OF MILLWORK & FINISHES.
 GC IS RESPONSIBLE FOR VERIEVING THAT ALL DACK OF HOUSE MATERIAL OF MEDICAL AND DACK OF M
- GC IS RESPONSIBLE FOR VERIFYING THAT ALL BACK OF HOUSE MATERIALS AND CONSTRUCTION ARE IN ACCORDANCE WITH THE FOOD SERVICE DRAWING DIRECTIVES, ESP. AT AREAS REQUIRING WALL BACKING.
 DEFER TO DETAIL S ON SUFER AT A FOR ADDITIONAL BACKING.
- REFER TO DETAILS ON SHEET A7.1 FOR ADDITIONAL FINISH INFORMATION ON LOW WALLS AND MILLWORK.
 ALL EXPOSED WOOD AT MILLWORK, TRIM, WINDOWS AND DOORS TO RECEIVE
- STAIN AND FINISH, SEE FINISH SCHEDULE. CHAMFER 1/8" ALL OUTSIDE CORNERS AT ALL NEW WOOD DOORS, CASEMENTS AND CABINETS PRIOR TO FINISH.
 14. PROVIDE 5/8" WATER RESISTANT GYPSUM BOARD BEHIND ALL CERAMIC TILE AND FRP AT WALLS IN WAIT STATIONS, KITCHEN, BAR, AND RESTROOM AREAS.
- PROVIDE ALT. PRICE FOR EXTERIOR GYP. BOARD AT SAME AREAS.
 15. USE 5/8" GYPSUM BOARD AT ALL WALLS, PARTITIONS AND CEILINGS WHERE GYPSUM BOARD INDICATED, UNLESS OTHERWISE NOTED.
 16. REFER TO FINISH SCHEDULE, FOR INDICATION OF TYPES, COLORS, ETC., OF ALL
- STONE AND TILE. REFER TO FINISH SCHEDULE AND ROOM ELEVATIONS FOR EXTENT OF WORK.
 ALL BOOTH DIMENSIONS ARE TO FACE OF PANELING. REFER TO DETAIL FOR
- TYPICAL END OF BOOTH WALL CONDITION.18. ALL DIMENSIONS ON FINISH PLAN ARE SHOWN FINISH TO FINISH, UNLESS NOTED OTHERWISE.
- BASE PROFILE TILE WITH TOE AT WALL TILE BOTTOM ROW IN RESTROOM.
 DEBRIS CONTINUOUSLY TO BE REMOVED FROM SITE BY GC.
- SCRUB AND POWER WASH FRP AT WALLS THROUGHOUT BACK OF HOUSE TO 'LIKE NEW' APPEARANCE.
 GENERAL GYP BD WALL TEXTURE THROUGHOUT TO BE KNOCK DOWN TYPE.
- PRIMED.
 23. TILE SUBCONTRACTOR RESPONSIBLE FOR FINAL DRAIN STRAINER VERTICAL HEIGHT AND ALIGNMENT WITH FLOOR PATTERN. SUBCONTRACTOR TO INSURE
- ALL FLOORS WILL SLOPE TO DRAIN. 24. POWER WASH QUARRY FLOORING AND EXISTING FRP AT BACK OF HOUSE
- (KITCHEN) AND BAR AREAS, TYP. FOLLOWING INSTALL.

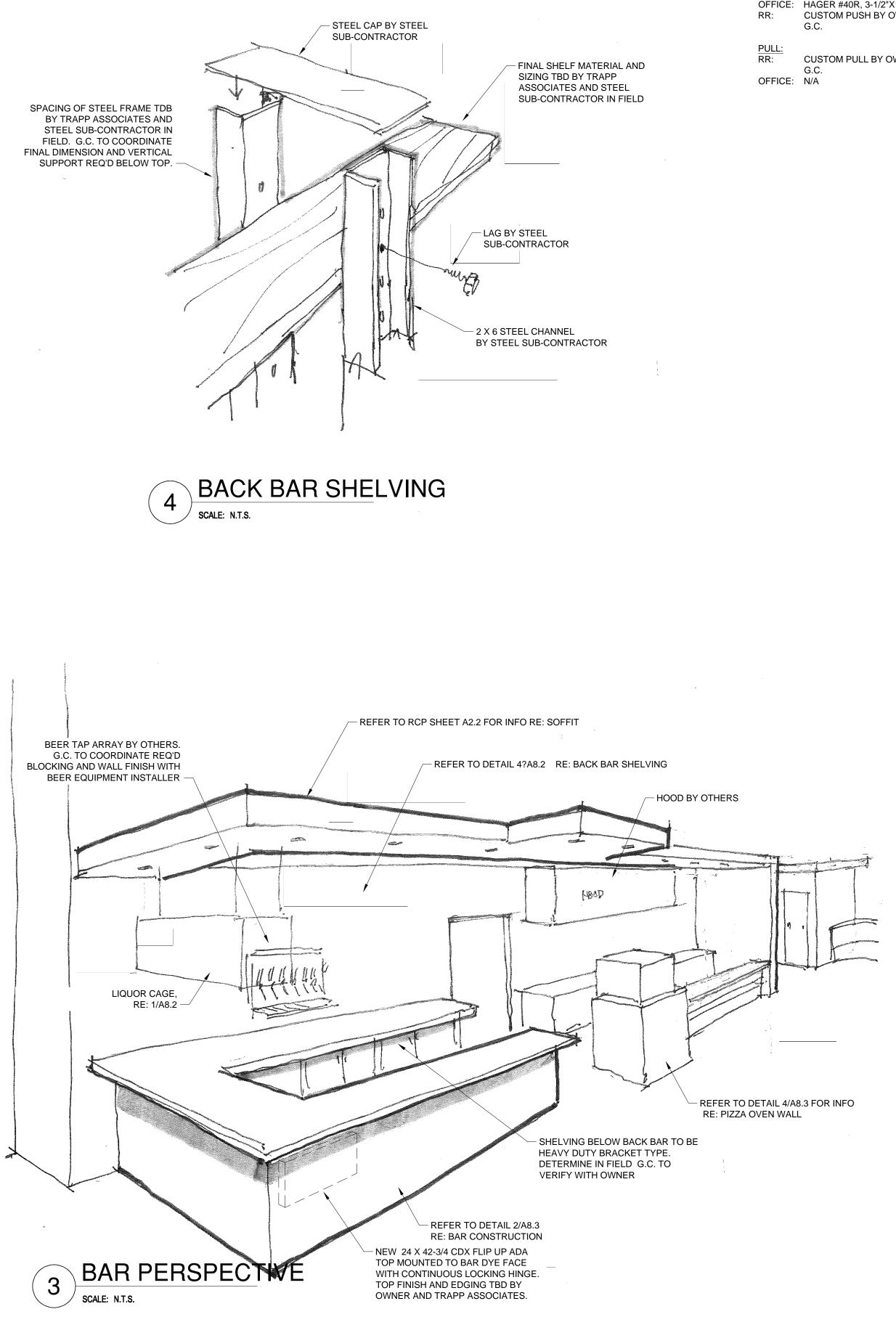


	RESTRO	DOM A	CCESSOR	RY SCHEDULE - C	CHECK AGAINST ACC	CESSORY
	ITEM	QTY.	FURNISH	SPECIFICATION	MOUNTING	NOTES
NO.			INSTALL			
01>	NOT USED	X	FBO, BGC	X	N/A	
02	NOT USED	X	FBO, BGC	X	N/A	
03	SANITARY NAPKIN DISPENSER	2	TBD	BOBRICK #B-254	PER MFGR FOR ADA COMPLIANCE	WALL MOUNTE
04	SOAP DISPENSER	2	TBD	BOBRICK #B-2013	T.O. UNIT 52-1/4" A.F.F.	NO-TOUCH, WA
05	BABY CHANGING STATION	2	TBD	KOALA TBD	29" AFF TO BOTTOM WHEN OPEN	WALL MOUNTE
07	LAVATORY MIRROR	2	TBD	BOBRICK #B-166 1830	40" MAX. TO B.O. REFLECTIVE SURFACE	CENTER ON LA
08	TOILET PAPER DISPENSER	2	TBD	BOBRICK #B-3888	PER MFGR FOR ADA COMPLIANCE	WALL MOUNTE
09	TOILET SEAT	2	TBD	OPEN, BLACK, HEAVY DUTY	PER MFGR FOR ADA COMPLIANCE	BLACK, OPEN S
	PAPER TOWEL DISPENSER	2	FBO/BGC	TBD	PER MFGR FOR ADA COMPLIANCE	WALL MOUNTED
	LAVATORY	2	TBD	SWISS MADISON ST. TROPEZ WHITE, SM-WS 323 24"W X 16"D	WALL HUNG	INSULATE DRAI
12	TOILET	2	TBD	-	-	-
13	ADA MIRROR ???	2	TBD	BOBRICK B-165 2460	B.O. MIRROR 24" A.F.F.	24 X 60 METAL
14	LAVATORY FAUCET	2	TBD	SILVER WATERFALL TOUCHLESS		
15	HOR. GRAB BAR 42" GB-2	2	TBD			HORIZONAL, MO
16	VERT. GRAB BAR 18" GB-3	2	TBD			VERTICAL, MOL
17	HOR. GRAB BAR 36" GB-1	2	TBD			HORIZONAL, MO









HARDWARE:

RR:

HINGES: RR: HAGER #BB-1199, 1-1/2 PAIR, FINISH US10B OFFICE: HAGER #1191, 1-1/2 PAIR, FINISH US10B

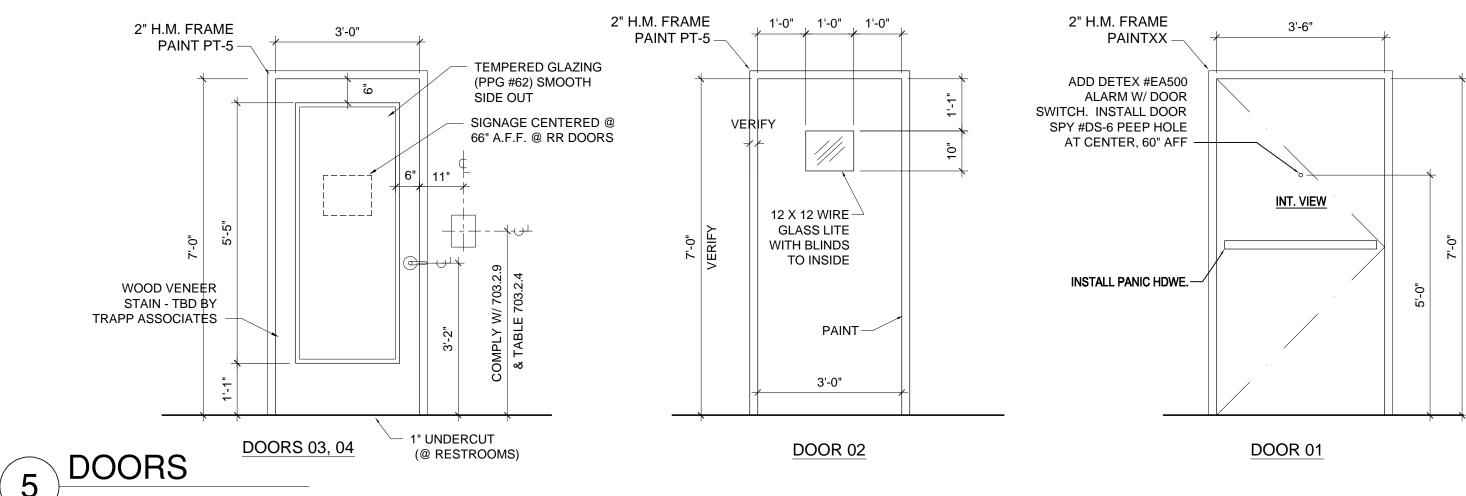
LATCH/LOCK SET(S): RR: N/A OFFICE: YALE 'MONROE', FINISH US32D

KICK PLATE: KYDEX IN DARK BROWN FINISH FOR ALL OFFICE: KYDEX IN DARK BROWN FINISH FOR ALL

PUSH: OFFICE: HAGER #40R, 3-1/2"X15", FINISH US10B - FBO, RR: CUSTOM PUSH BY OWNER, INSTALLED BY G.C.

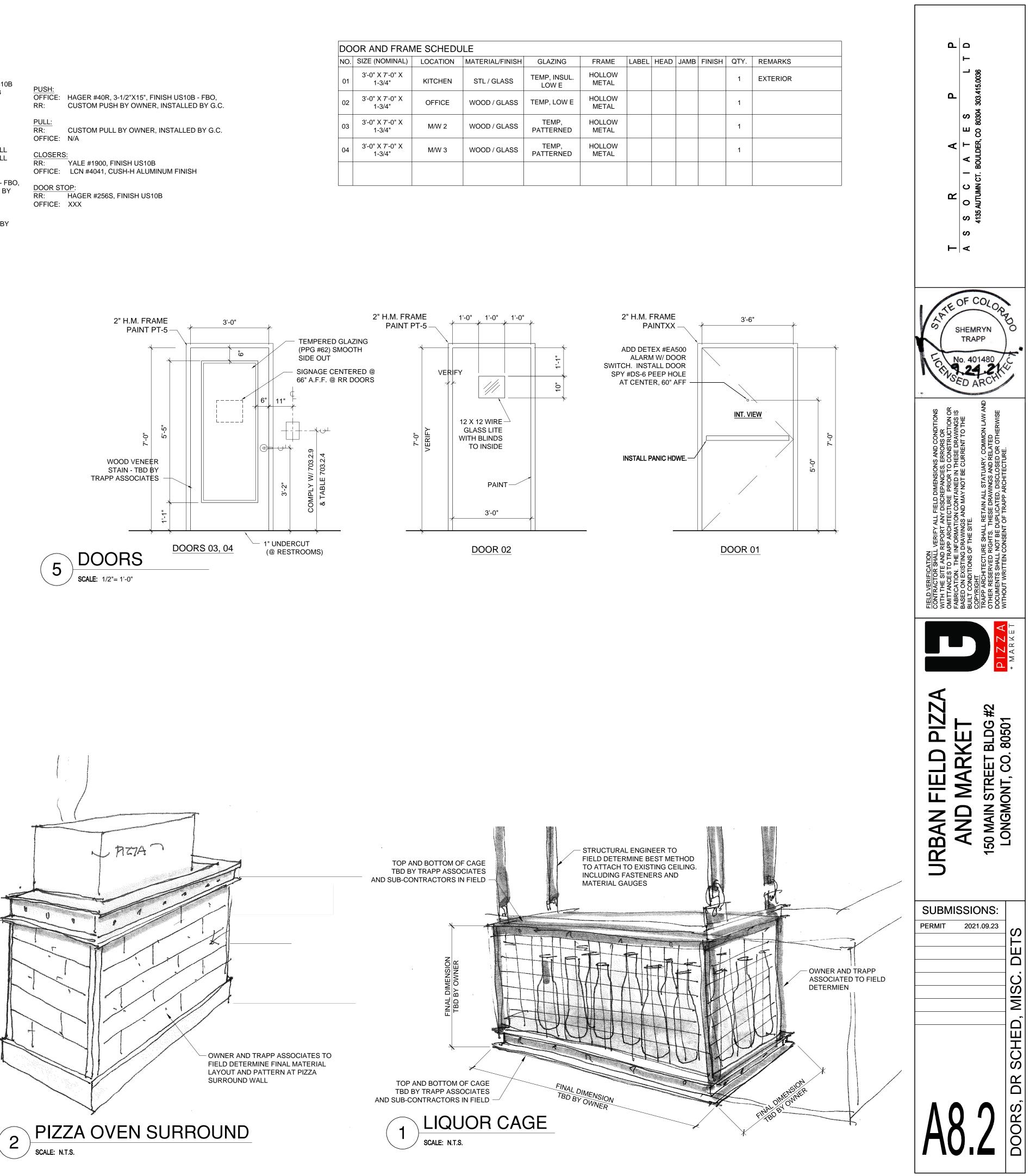
CUSTOM PULL BY OWNER, INSTALLED BY G.C.

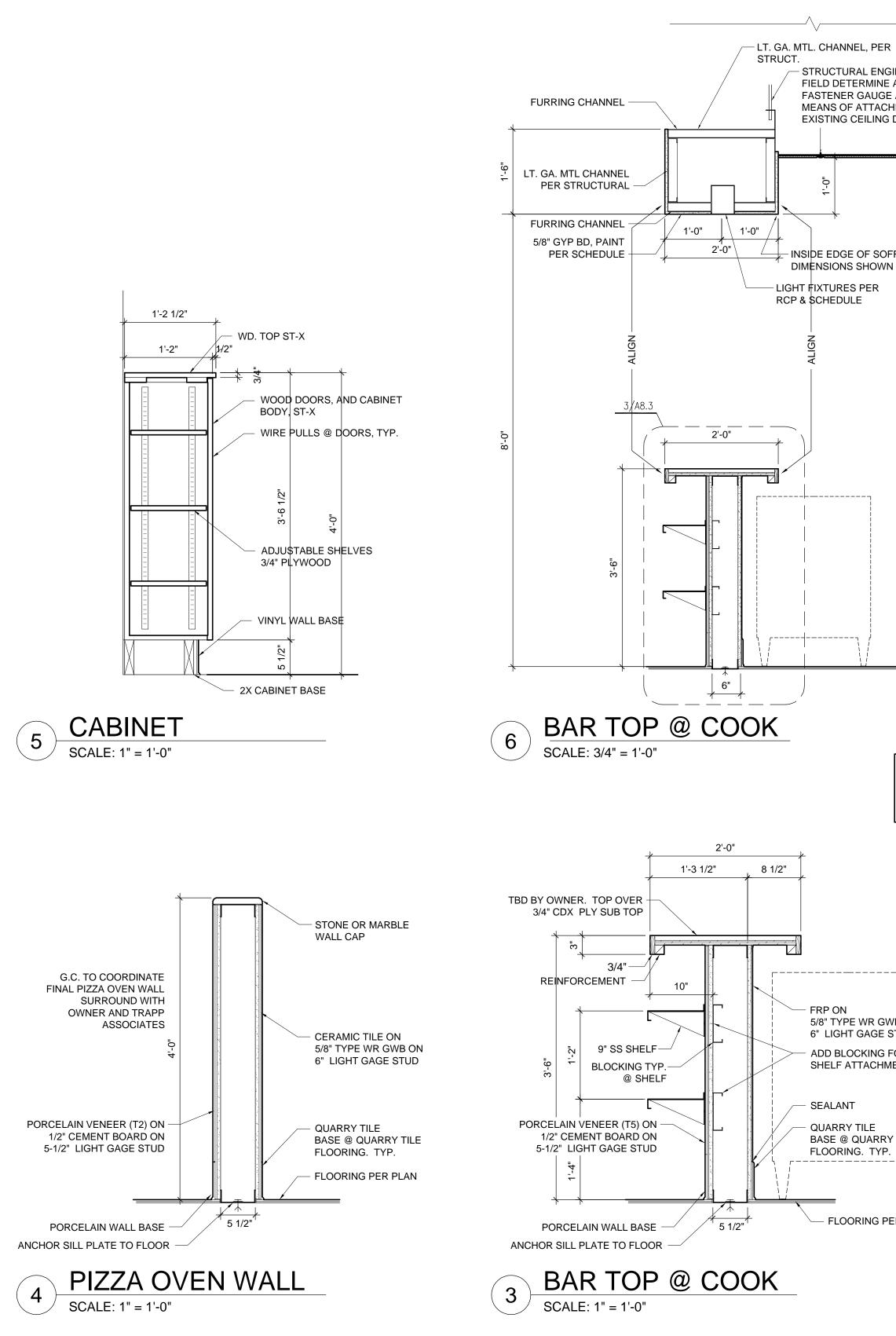
DOOR AND FRAME SCHEDULE											
NO.	SIZE (NOMINAL)	LOCATION	MATERIAL/FINISH	GLAZING	FRAME	LABEL	HEAD	JAMB	FINISH	QTY.	REMARKS
01	3'-0" X 7'-0" X 1-3/4"	KITCHEN	STL / GLASS	TEMP, INSUL. LOW E	HOLLOW METAL					1	EXTERIOR
02	3'-0" X 7'-0" X 1-3/4"	OFFICE	WOOD / GLASS	TEMP, LOW E	HOLLOW METAL					1	
03	3'-0" X 7'-0" X 1-3/4"	M/W 2	WOOD / GLASS	TEMP, PATTERNED	HOLLOW METAL					1	
04	3'-0" X 7'-0" X 1-3/4"	M/W 3	WOOD / GLASS	TEMP, PATTERNED	HOLLOW METAL					1	

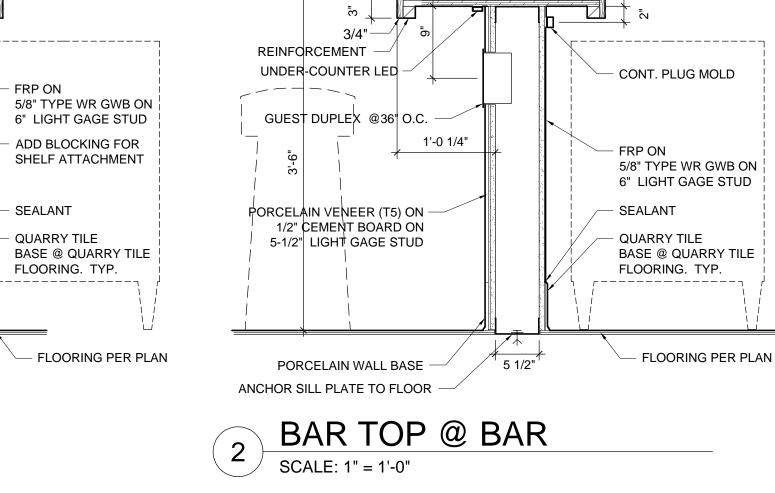












2'-2"

11"

8 1/4"

DETAILS: 2, 3, AND 6: G.C. TO VERIFY ADEQUATE CLEARANCE FROM BOTTOM TO TOP BENEATH COUNTER-TOP WITH FOOD SERVICE VENDOR PRIOR TO WORK

TBD BY OWNER. TOP OVER 3/4" CDX PLY SUB TOP

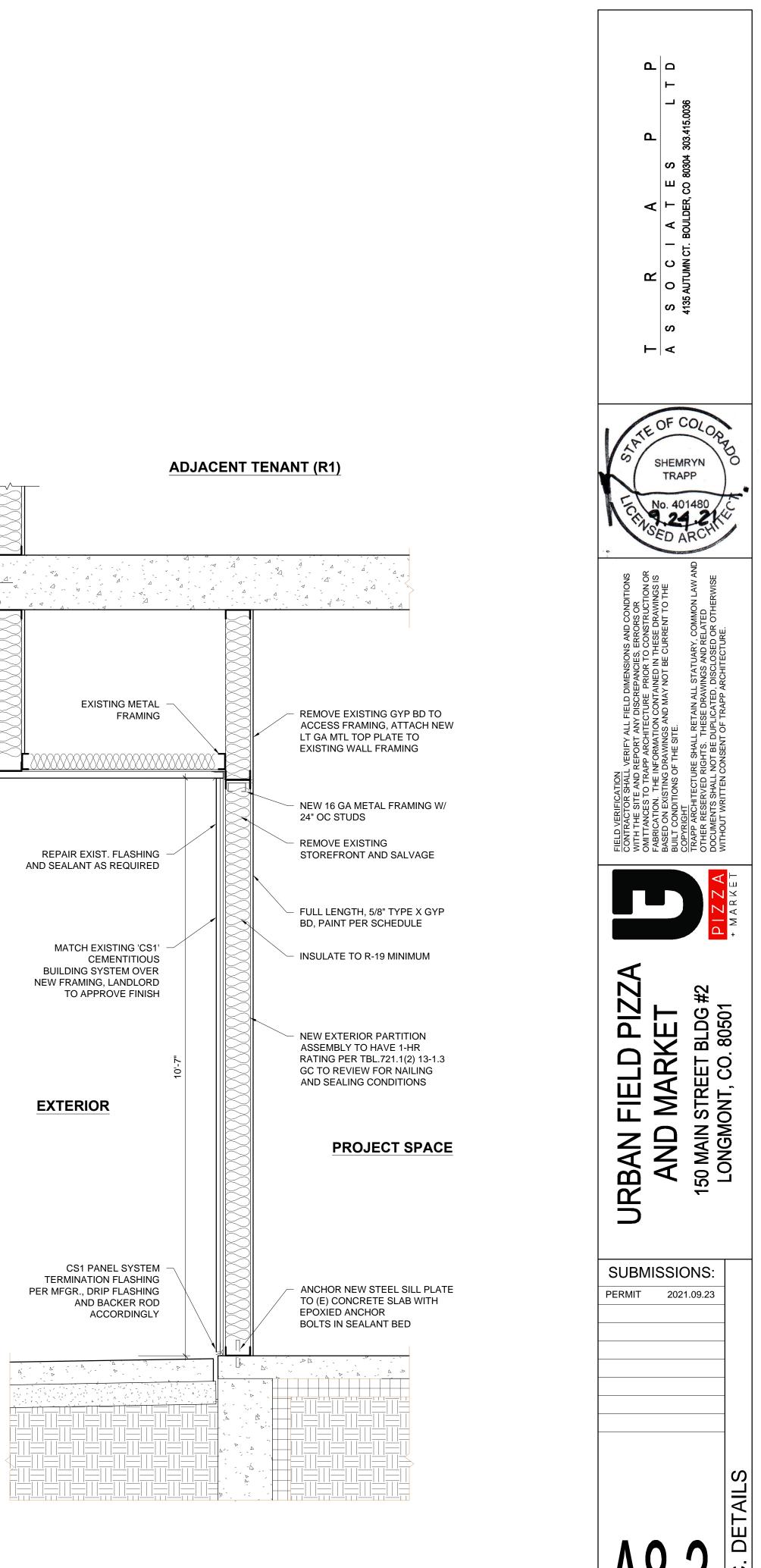
- STRUCTURAL ENGINEER TO FIELD DETERMINE ADEQUATE FASTENER GAUGE AND BEST MEANS OF ATTACHING TO EXISTING CEILING DECK

∠ INSIDE EDGE OF SOFFIT PER

DIMENSIONS SHOWN ON RCP

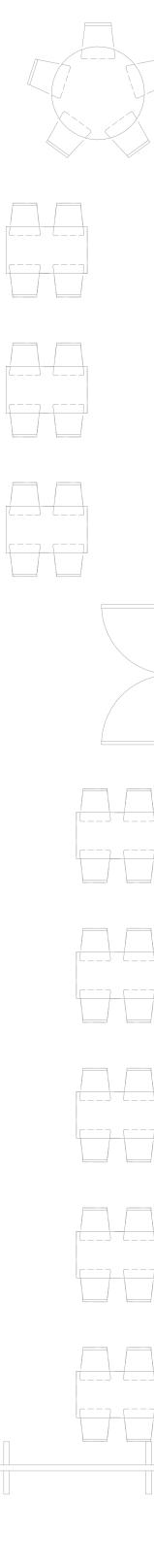
EXISTING SOFFIT TO REMAIN 'AS IS'

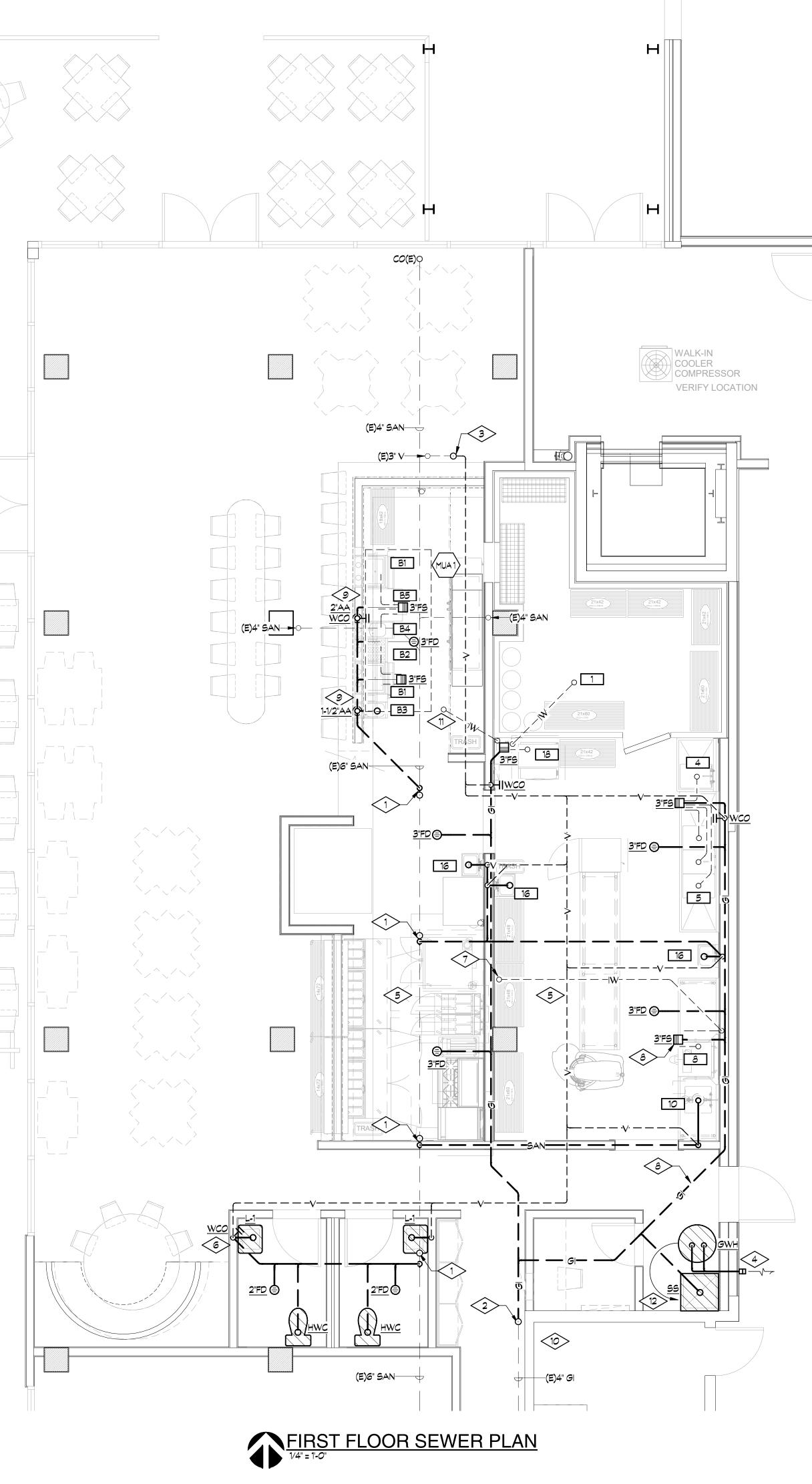
์ 1



INFILL EXTERIOR WALL SECTION SCALE: 3/4" = 1'-0"

MIS





GENERAL NOTES

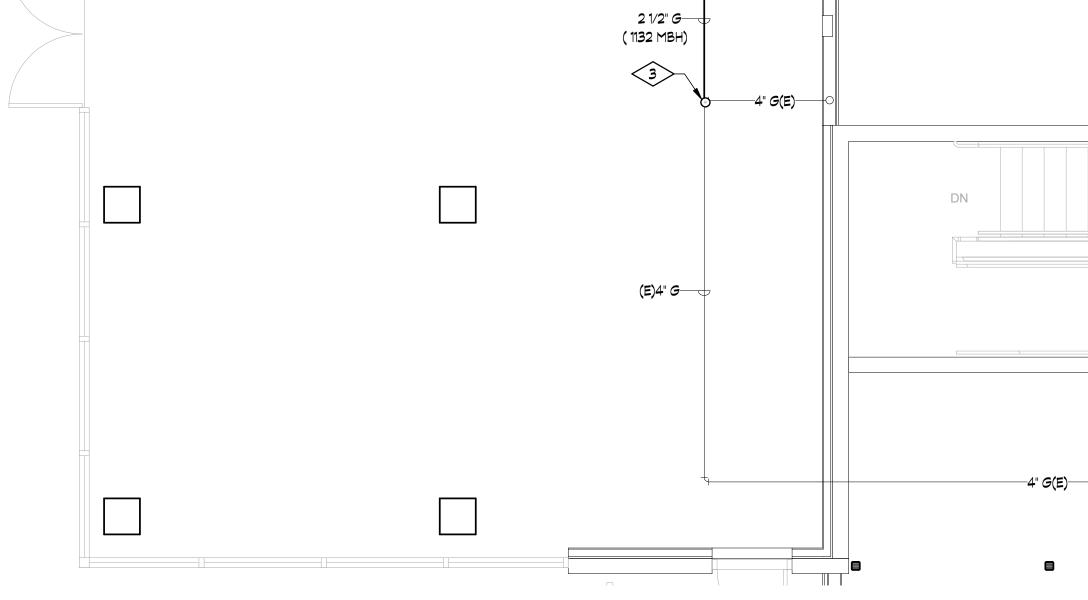
- A. PLUMBING CONTRACTOR TO COORDINATE SCOPING OF THE EXISTING SANITARY LINES PRIOR TO STARTING WORK.
- B. FIELD VERIFY ALL PLUMBING SYSTEMS, PIPE SIZES, LOCATIONS, ROUTING AND SERVICE IN THE AREA OF WORK PRIOR TO THE START OF ANY WORK.
- C. REFER TO SCHEDULES, DIAGRAMS AND ISOMETRIC DIAGRAMS FOR ALL PIPE SIZES NOT SHOWN ON PLAN. PIPE SIZES OF EXISTING PIPING SHOWN ON PLAN ARE TO BE FIELD VERIFIED, NOTIFY ENGINEER OF ANY DISCREPANCIES.
- D. FIELD COORDINATE ALL EQUIPMENT LOCATIONS AND PIPE ROUTINGS WITH ALL NEW AND EXISTING STRUCTURAL, HVAC, LIGHTS AND ALL OTHER DISCIPLINES PRIOR TO BEGINNING WORK.
- E. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ANY AND ALL CUTTING AND PATCHING AS REQUIRED TO ACCOMMODATE HIS/HER WORK, COORDINATE LOCATIONS WITH GENERAL CONTRACTOR.
- F. PLUMBING CONTRACTOR TO COORDINATE INSTALLATION HEIGHTS WITH KITCHEN PLANS PRIOR TO ROUGH-IN. MAKE CONNECTION TO EQUIPMENT AS PER KITCHEN SCHEDULE ON P2.1.
- G. WATER, SEWER, GAS AND ELECTRICAL CONDUITS MUST FIT WITHIN WALLS. CONFLICTS WITH OTHER TRADES MUST BE COORDINATED OR WORK WILL BE REDONE.
- H. COORDINATE ALL ACCESS PANEL LOCATIONS FOR VALVES, SHOCK ARRESTORS, AIR ADMITTANCE VALVES AND ALL OTHER PLUMBING COMPONENTS INVOLVING ACCESS WITH ARCHITECT.
- I. NOT ALL ISOLATION VALVES SHOWN ON PLANS. PROVIDE ISOLATION VALVES ON ALL DOMESTIC WATER BRANCH PIPING. COORDINATE ANY AND ALL ACCESS PANELS WITH ARCHITECT.
- J. EQUIPMENT GAS CONNECTION SIZE PER PLANS OR SAME AS APPLIANCE SIZE, WHICHEVER IS LARGER. TRANSITION DOWNSTREAM OF ALL SHUTOFFS AND REGULATORS AS CLOSE TO APPLIANCE AS POSSIBLE WHEN PLANS CALL FOR LARGER THAN APPLIANCE.
- K. EXPOSED SEWER PIPING (TRAPS & INDIRECT DRAINS) MUST
 BE COPPER, EXCEPT FOR SODA MACHINES (PVC OK). RE:
 PROJECT SPECS.

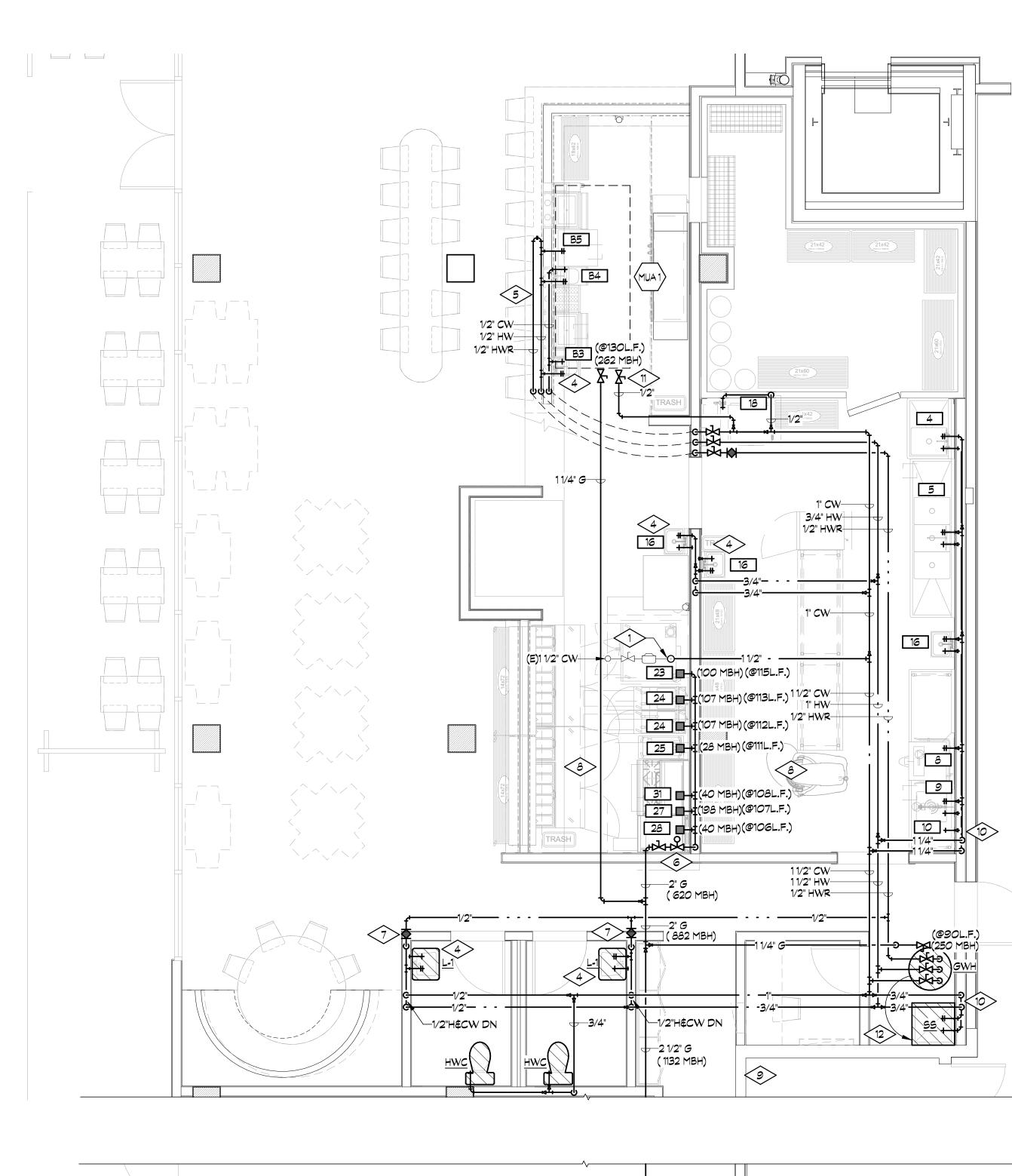
DETAIL NOTES THIS SHEET

- 1. CONNECT TO EXISTING SANITARY LINE STUBBED OUT DURING SHELL. FIELD VERIFY EXACT LOCATION, PIPE ROUTING AND INVERT ELEVATION AT POINT OF CONNECTION PRIOR TO BEGINNING WORK
- 2. CONNECT TO EXISTING GREASE WASTE LINE STUBBED OUT DURING SHELL.FIELD VERIFY EXACT LOCATION, PIPE ROUTING AND INVERT ELEVATION AT POINT OF CONNECTION PRIOR TO BEGINNING WORK
- 3. CONNECT TO EXISTING SANITARY VENT STUBBED OUT DURING SHELL AND EXTEND AS SHOWN.
- 4. 3" CPVC WATER HEATER FLUE & COMBUSTION AIR PIPES. COORDINATE FINAL LOCATION WITH BUILDING OWNER. ROUTE HORIZONTAL TO WALL. SLOPE PIPE AT 1/8"/FT AND TERMINATE AT WALL PER MANUFACTURER'S INSTRUCTIONS. PROVIDE FLUSH TERMINATION ASSEMBLY OR ALUMINUM SHIELDING TO CONCEAL TERMINATION. ANY COVERING MUST MEET MANUFACTURER'S REQUIREMENTS.
- 5. COORDINATE VENT ROUTING TO AVOID DUCTWORK IN THIS AREA.
- 6. WALL CLEANOUT(S) IN RESTROOM MAY NOT BE HIGHER THAN 18"AFF.
- 7. ROUTE DRAIN FROM RPZ TO FLOOR SINK AS SHOWN, DRAIN SIZE TO EQUAL RPZ SIZE.
- 8. THIS SECTION OF SEWER, RELATED BRANCHES & FLOOR DRAINS TO BE JOSAM STAINLESS STEEL PUSHFIT TO A POINT 10' DOWNSTREAM OF DISHMACHINE.
- 9. LOCATE AIR ADMITTANCE VALVE UNDER COUNTER.
- 10. ROUTE ALL PIPING TO AVOID RUNNING OVERHEAD OF ELECTRICAL PANEL(S) IN THIS AREA.
- 11. ROUTE 3/4" DRAIN FROM MUA-1 DOWN ALONG WALL TO FLOOR SINK BELOW. FIELD VERIFY EXACT LOCATION AND PIPE ROUTING PRIOR TO BEGINNING WORK. REFER TO FILL AND DRAIN DETAIL ON P2.1.
- 12. WATER HEATER TO BE LOCATED ABOVE MOP SINK, SHOWN OFFSET FOR CLARITY. SEE DETAIL ON SHEET P2.1.





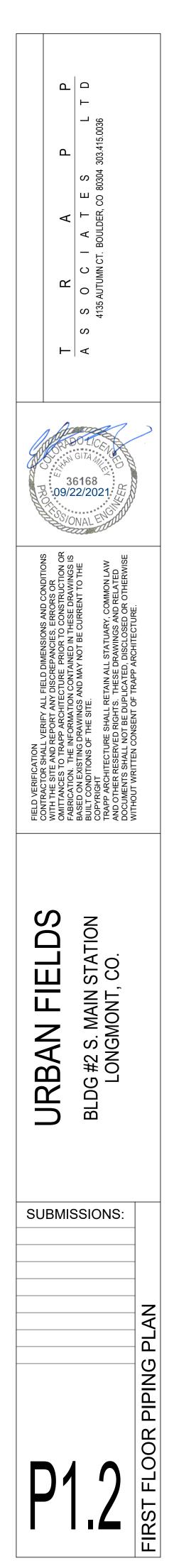


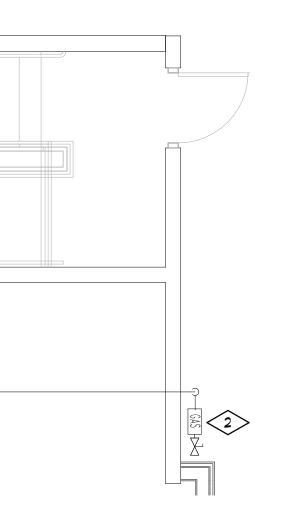


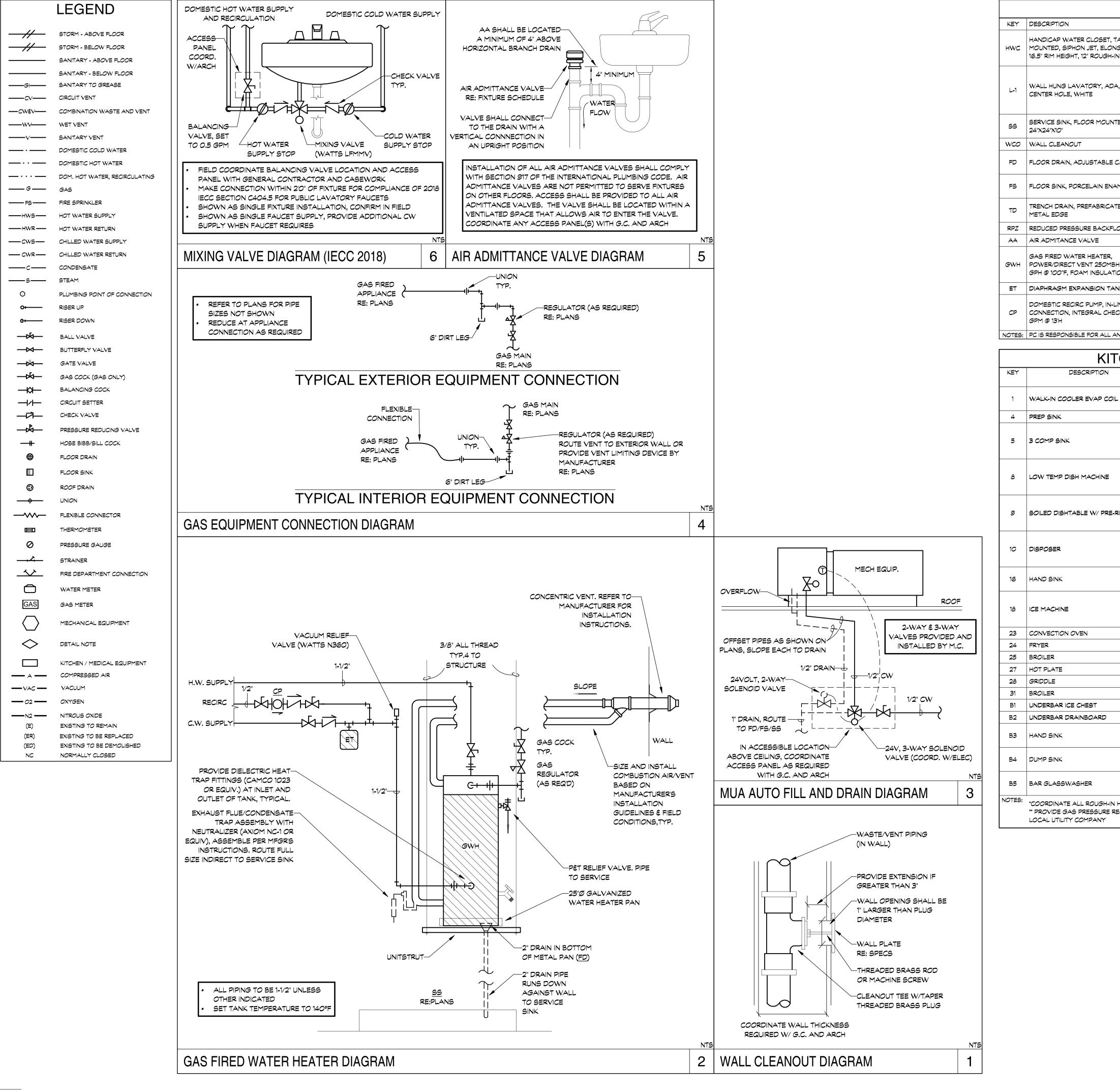
DETAIL NOTES THIS SHEET

- 1. CONNECT NEW 1-1/2" CW TO EXISTING 1-1/2" CW PIPING. PROVIDE RPZ DOWNSTREAM OF EXISTING SUB-METER W/ REMOTE READOUT, AND PRV. VERIFY REQUIREMENTS & COMPATIBILITY OF ALL CW SERVICE EQUIPMENT WITH LANDLORD BEFORE ORDERING.
- 2. EXISTING GAS METER IN LOCATION SHOWN.

- 3. CONNECT TO EXISTING 4" GAS PIPE IN THIS AREA AND EXTEND NEW 2-1/2" GAS LINE TO SPACE AS SHOWN. GAS SIZED FOR 7" W.C. W/ 0.5" PRESSURE DROP. PC TO VERIFY MAX PRESSURE FOR ALL APPLIANCES AND PROVIDE REGULATORS AS NEEDED.
- 4. PROVIDE ASSE 1016, MIXING VALVE (WATTS USG-B) AND CHECK VALVE ON EACH WATER LINE. ADJUST VALVE TO PROVIDE 110F DEG. WATER FOR HANDSINK. LOCATE IN ACCESSIBLE LOCATION BELOW SINK. SEE POINT OF USE DETAIL ON SHEET P2.1.
- 5. RUN PIPING IN MILLWORK/BAR DIE.
- 6. 2" GAS COCK AND MECHANICAL GAS VALVE (BY KEC) IN ACCESSIBLE LOCATION ABOVE CEILING. PROVIDE NECESSARY INTERLOCKS WITH HOOD FIRE PROTECTION SYSTEM. RUN GAS PIPING IN WALL, STUB OUT TO EQUIPMENT W/ QUICK CONNECT FITTINGS PER SCHEDULES AND SPECS, PROVIDE ESCUTCHEONS FOR WALL PENETRATIONS.
- 7. PROVIDE THERMOSTATIC RECIRCULATION VALVE, CIRCUITSETTER CS-1/2-110, IN ACCESSIBLE LOCATION.
- 8. COORDINATE ALL PIPING IN THIS AREA WITH MECHANICAL DUCTWORK / HOOD; DUCTWORK TO TAKE PRIORITY.
- 9. ROUTE ALL PIPING TO AVOID RUNNING OVERHEAD OF ELECTRICAL PANEL(S) IN THIS AREA.
- 10. INSTALL PIPING ON WARM SIDE OF INSULATION.
- 11. 1/2" COLD WATER UP TO MUA-1 ABOVE IN APPROXIMATE LOCATION SHOWN. FIELD VERIFY EXACT LOCATION AND EQUIPMENT CONNECTION REQUIREMENTS. REFER TO FILL AND DRAIN DETAIL ON P2.1.
- 12. WATER HEATER TO BE LOCATED ABOVE MOP SINK, SHOWN OFFSET FOR CLARITY. SEE DETAIL ON SHEET P2.1.







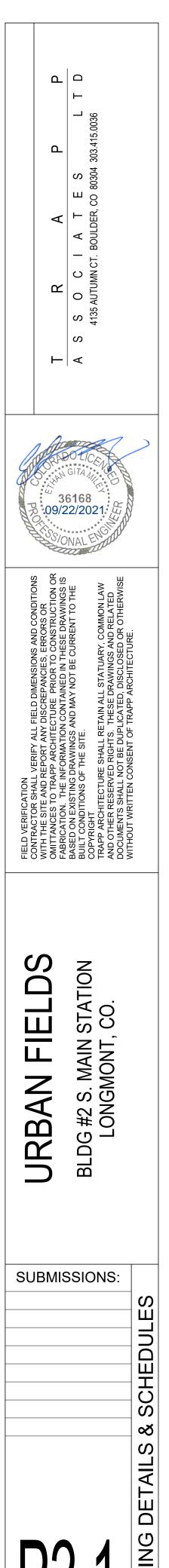
	FITTINGS/ACCESSORIES	MANUFACTURER/CATALOG #
ANK TYPE, FLOOR GATED BOWL, 1.28 GPF, N	OPEN FRONT WHITE PLASTIC SEAT	TOTO CST744EL (ECO DRAKE), SC534
A, VITREOUS CHINA, SINGLE	ELECTRONIC INFRARED SENSOR METERING FAUCET, 0.5 GPM, HYDRO-SELF-POWERED W/BATTERY BACKUP, SINGLE SUPPLY, OFFSET TAILPIECE, INSULATED DRAIN PIPING, PERFORATED STRAINER	ТОТО LT307 ТОТО TEL105-D10E
ED MOLDED STONE	FAUCET WITH VAC.BREAKER,INTEGRAL CHECK VALVES AND SUPPLY STOPS, FLAT SST STRAINER	FIAT MSB2424 CHICAGO FAUCET 897-CCP
	STAINLESS STEEL ACCESS COVER (JOSAM 58600)	JOSAM 58910-19
CAST IRON SUMP	ROUND NIKALOY STRAINER, INLINE TRAP SEAL	JOSAM 30000A SURE SEAL
MELLED, 12"×12"×8"	HALF GRATE, CHLORALLOY MEMBRANE (EXCEPT IN SLAB ON GRADE), INLINE TRAP SEAL	JOSAM 49340A SURE SEAL
ED POLYMER CONCRETE,	LOAD CLASS C, SLOTTED STAINLESS STEEL GRATE (ACO 455D)	ACO K 1005 / 460
OW PREVENTER	STRAINER, SHUTOFF VALVES, AIR GAP	WATTS OO9QTS, 909AG
	PROVIDE ACCESS PANEL AS REQUIRED, COORD. W/ ARCH	STUDOR VENT MINI-VENT
H, 100 GAL CAPACITY, 291 ON, 96% EFFICIENT	PET RELIEF, ASME RATED	STATE SUF100-250NE
NK, 4.4 GALLONS	ASME RATED	AMTROL ST-12
INE, BRONZE, 1/2" UNION CK VALVE, 86W, 120V/1; 2	AUTO TIMER KIT	GRUNDFOS UP 15-18 BUC5

CHEN EQUIPMENT PLUMBING SCHEDULE							
	CONNE	CTION	WA	STE	G	45	COMMENTS
	CW	ΗW	IW	DW	SIZE	MBH	
L			1"				INSULATE WITH 1" ARMAFLEX, IW TO FLOOR DRAIN/SINK, RE: KITCHEN DRAWINGS
	1/2"	1/2"	2"				IW TO FLOOR SINK/DRAIN
	1/2"	1/2"	(3) 2"				CHECK VALVE ON HW (WATTS LF7R, P.C. TO CONFRIM MIN. 140°F WATER TO 3 COMP. SINK, IW TO FLOOR SINK/DRAIN
		3/4"	2"				PROVIDE PRV, PRESS GAUGE, SHOCK ABSORB & VAC BREAKER (WATTS 289), IW TO FLOOR SINK/DRAIN, 41GPH
RINSE	1/2"	1/2"					PROVDE VACUUM BREAKER (WATTS 289) 6" ABOVE FLOOD RIM OF SINK, CHECK VALVE ON HW (WATTS LF7R)
	1/2"			1-1/2"			PROVIDE VACUUM BREAKER, MANUAL SHUTOFF VALVE & SOLENOID VALVE, INTERLOCK SOL. W/ DISPOSER
	1/2"	1/2"		1-1/2"			PROVIDE TEMPERING VALVE (WATTS USG-B) SET TO
	1/2" (FLTRD)		1/2"				PROVIDE MANUAL SHUT-OFF VALVE AND BACKFLOW PREVENTER (WATTS SD-3), PC TO INTERPLUMB THROUGH WATER FILTER (BY OWNER). IW TO FLOOR SINK/DRAIN
					3/4"	100	QUICK CONNECT COUPLING
					3/4"	107	QUICK CONNECT COUPLING
					3/4"	28	QUICK CONNECT COUPLING
					3/4"	198	QUICK CONNECT COUPLING
					3/4"	40	QUICK CONNECT COUPLING
					3/4"	40	QUICK CONNECT COUPLING
			1/2"				IW TO FLOOR SINK/DRAIN
			1"				IW TO FLOOR SINK/DRAIN
	1/2"	1/2"		1-1/2"			PROVIDE TEMPERING VALVE (WATTS USG-B) SET TO
	1/2"	1/2"	1-1/2"				PROVIDE TEMPERING VALVE (WATTS USG-B) SET TO 110°F, IW TO FLOOR SINK
		1/2"	2"				PROVIDE SHOCK ABSORBER (WATTS SERIES 05), IW TO FLOOR SINK/DRAIN, 36 GPH

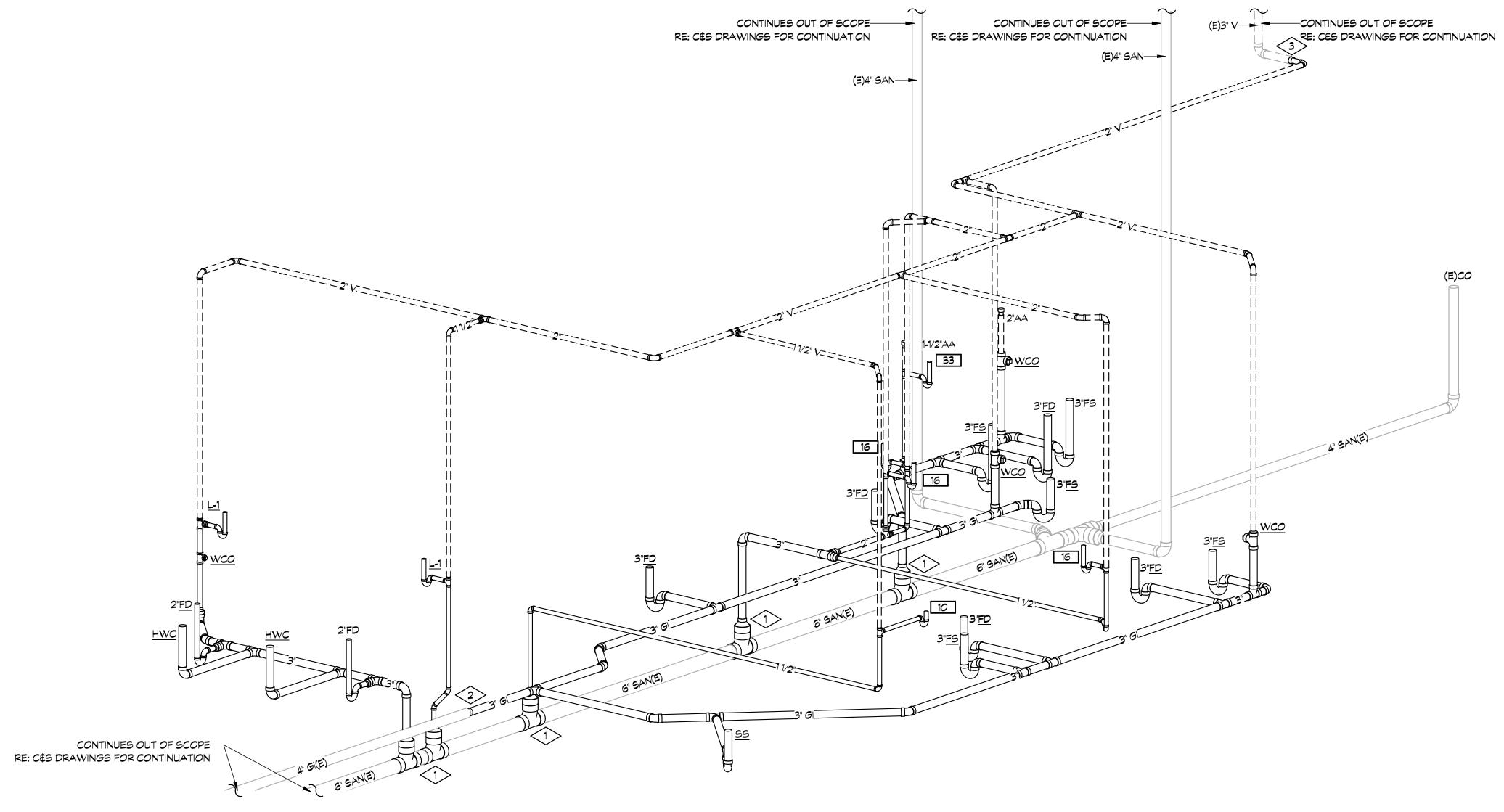
*COORDINATE ALL ROUGH-IN HEIGHTS AND LOCATIONS WITH KITCHEN VENDOR AND/OR OWNER.

** PROVIDE GAS PRESSURE REGULATOR (MAXITROL RV) FOR 14" W.C. IF APPLIANCE IS NOT RATED FOR 14"W.C. MAXIMUM PRESSURE OR IF REQUIRED BY

Hot Water Demand Tank Type Calculation				
Plumbing Fixture	Water Usage (GPH)	# of fixtures	Max GPH per type of fixture	
[#4] PREP SINK(18x24x14)	13	1	13	
[#5] 3-COMP SINK(18x24x14)	39	1	39	
[#8] DISHMACHINE	41	1	41	
[#9] PRE RINSE SPRAYER	32	1	32	
[#16] HAND SINK	5	3	15	
[#B3] UNDERBAR HANDSINK	5	1	5	
[#B4] DUMP SINK	5	1	5	
[#B5] BAR GLASSWASHER	36	1	36	
LAV	5	2	10	
SERVICE SINK	7	1	7	
Sub Total water GPH required by all	fixtures		203	
Altitude Adjusted Total GPH	4,984'	1.19936	244	
Efficiency Adjusted BTU	96%		211,639	
Make: Model, BTU/H STATE: SUF100-250NE, 250MBH				



MU



OVERALL DW&V ISOMETRIC

DETAIL NOTES THIS SHEET

- 1. CONNECT TO EXISTING SANITARY LINE STUBBED OUT DURING SHELL. FIELD VERIFY EXACT LOCATION, PIPE ROUTING AND INVERT ELEVATION AT POINT OF CONNECTION PRIOR TO BEGINNING WORK
- 2. CONNECT TO EXISTING GREASE WASTE LINE STUBBED OUT DURING SHELL.FIELD VERIFY EXACT LOCATION, PIPE ROUTING AND INVERT ELEVATION AT POINT OF CONNECTION PRIOR TO BEGINNING WORK
- 3. CONNECT TO EXISTING SANITARY VENT STUBBED OUT DURING SHELL AND EXTEND AS SHOWN.

PLUMBING FIXTURE PIPE SIZES					
KEY	WASTE SIZE	VENT SIZE			
H/WC	3"	2"			
H/UR	2"	1-1/2"			
L-1	2"	1-1/2"			
LAV	2"	1-1/2"			
2" FD/S	2"	1-1/2"			
3" FD/S	3"	2"			
4" FD/S	4"	2"			
TUB	2"	1-1/2"			
SH	2"	1-1/2"			
S S	3"	2"			
WU	2"	1-1/2"			
KS	2"	1-1/2"			

ALL PIPE SIZES AS INDICATED EXCEPT WHERE NOTED.

FOR BACK TO BACK CONDITIONS, LARGEST DRAIN & VENT SIZE APPLIES.

T R A P P A S S O C I A T E S L T D 4135 AUTUMN CT. BOULDER, CO 80304 303.415.0036	
36168 09/22/2021	
FIELD VERIFICATION FIELD VERIFICATION CONTRACTOR SHALL VERIFY ALL FIELD DIMENSIONS AND CONDITIONS WITH THE SITE AND REPORT ANY DISCREPANCIES, ERRORS OR WITH THE SITE AND REPORT ANY DISCREPANCIES, ERRORS OR OMITTANCES TO TRAPP ARCHITECTURE PRIOR TO CONSTRUCTION OR FABRICATION. THE INFORMATION CONTAINED IN THESE DRAWINGS IS BASED ON EXISTING DRAWINGS AND MAY NOT BE CURRENT TO THE BUILT CONDITIONS OF THE SITE. COPYRIGHT TRAPP ARCHITECTURE SHALL RETAIN ALL STATUARY, COMMON LAW AND OTHER RESERVED RIGHTS. THESE DRAWINGS AND RELATED DOCUMENTS SHALL NOT BE DUPLICATED, DISCLOSED OR OTHERWISE WITHOUT WRITTEN CONSENT OF TRAPP ARCHITECTURE.	
URBAN FIELDS BLDG #2 S. MAIN STATION LONGMONT, CO.	
SUBMISSIONS:	ABING ISOMETRIC
P2.2	LUMBING IS

DIVISION 21 - FIRE SUPPRESSION

SECTION 21 00 00 - COMMON WORK RESULTS FOR FIRE SUPPRESSION

1.01 WORK INCLUDED

- A. The work included by this division of the specifications includes furnishing all labor, materials, equipment, and services, including minor items omitted but necessary to construct and install the complete systems described by the Contract Documents and specified below. "Contractor" refers to the Fire Sprinkler Contractor. The general conditions of the specifications apply and are included in this part of this section. 1. Fire sprinkler systems
- 1.02 SEE SECTION 22 05 00 FOR BASIC MATERIALS AND METHODS

SECTION 21 13 00 - FIRE SUPPRESSION SPRINKLER SYSTEM

1.01 WORK INCLUDED

- A. Provide complete automatic fire protection systems, including but not limited to inside piping, sprinkler heads, valves, hangers and supports, sleeves, fire department connections and accessories, fire hose cabinets, valves. Entire installation shall be as required by the local authorities. Consult with local authorities to determine all local requirements before submitting a bid.
- 1. The sprinkler system(s) shall be as follows: Wet system throughout. Extend the existing wet fire sprinkler system throughout the space, as required by local code.
- B. Secure and pay for all necessary permits and certificates of inspection, and present to Owner with the signed certificates of final inspection.
- C. Coordinate this work with all other trades so as to have a minimum of interference. INSTALLATION SHALL NOT BEGIN UNTIL DUCTWORK IS INSTALLED OR WRITTEN AUTHORIZATION IS MADE BY THE OWNER.
- D. Accomplish all necessary cutting and patching for installation of piping and equipment, and provide all cutting as directed by Architect. Where necessary to cut chases in walls, reinforce walls as directed. After work is installed, patch holes to match original finish.
- E. The system design including pipe sizing and location, configuration of branches and head connections, shall
- accommodate the installation of up/down heads in all areas which may or may not have a dropped ceiling. F. RELATED WORK: Basic materials and methods: Section 22 05 00.

1.02 **QUALITY ASSURANCE**

- A. Sprinkler equipment and installation to be approved by local fire authority.
- B. Provide a complete automatic fire protection system as required. System shall be complete in all respects and in accordance with all applicable codes, ordinances, International Building Code, and NFPA Volume 2, Section 13 and NFPA Volume 2, Section 14.
- C. The system shall be installed by a firm regularly engaged in the design and installation of automatic sprinkler systems in accordance with the requirements of the National Board of Fire Underwriters. Architect may require evidence to support the above qualifications and may reject any proposed installer who cannot show suitable experience.
- D. All materials and equipment used in the installation of the sprinkler system shall be as approved in the Underwriters' Laboratories' list of inspected fire protection equipment and materials, or the Factory Mutual Laboratories' list of approved equipment and fire protection devices involving fire hazard, and shall be the latest product of the manufacturer.
- 1.03 SUBMITTALS
- A. Submit shop drawings showing proposed layout of Fire Protection System, showing actual equipment to be used, complete with such dimensions as are required to accurately install the system, drawn to a minimum scale of 1/8" equals 1'0". Drawings shall be approved by Underwriters and local authority before submission to Architect and Engineer (four

B. Shop drawings shall show all proposed routing of piping. Piping shall be installed to clear all other items of equipment and Architectural and Structural components within the building. Show all details required to make a complete

- installation from the shop drawings. After approval of drawings has been obtained, install the system exactly as shown. Obtain approval from Architect/Engineer to make any changes from shop drawings. C. Shop drawings shall clearly show any piping that will not be concealed in the building structure
- 2.01 ACCEPTABLE MANUFACTURER'S
- A. Equipment shall be by Grinnell, Viking, Star, Reliable, Globe, Crocker-Standards, Central, Potter-Roemer, or approved
- 2.02 INTERIOR FIRE SERVICE PLUMBING
- A. Pipe shall be schedule 40, black seamless steel, ASTM A120, ASTM 53. Pipe 1-1/2" or larger may be schedule 10, grooved black steel pipe. Fittings may be style 74 or 75 "Victaulic" mechanical coupling system for 300 PSI working
- B. Fittings and joints shall be as follows:
- 1. <u>2-1/2" and larger</u> : Welded with standard weight fittings or "Victaulic" fittings.
- 2. <u>2" and smaller</u> : Screwed with 150 lb. malleable iron fittings.
- 2.03 FIRE DEPARTMENT SIAMESE CONNECTION

A. Provide a cast brass flush wall mounted fire department connection, adequately sized for the application with threads, fittings, etc acceptable to the local fire department. Connection shall include drop clapper, pin lug hose thread swivels, pin lug plugs and chain. The connection shall be labelled as directed by the local Fire Department. All components shall be chrome-plated.

2.04 WATER FLOW ALARMS

A. Water flow indicator shall be electric, vane-type detector with two sets of normally open contacts and a time retard to prevent false alarms.

- 2.05 AUTOMATIC SPRINKLERS
- A. Sprinklers shall have temperature ratings as required by NFPA Standard No. 13 for the sprinkler location. Verify exact head types in finished areas with Architect. Provide specific head types as follows. The following are catalog numbers of Grinnell
- 1. Finished areas (ceiling): Semi-recessed, polished chrome pendant heads. Heads shall be Model A with recessed
- 2. Finished areas (wall):Exposed sidewall (Universal Model A). 3. Unfinished areas (ceiling): Exposed pendant or upright head, as required by the application (Universal Model A).
- 4. Areas exposed to freezing temperatures: Dry pendant (Model F 960).
- B. Provide steel sprinkler guards on heads, which are exposed to physical damage.
- 2.06 TAMPER SWITCH
- A. Provide an electric supervisory monitor switch at the required valves. Grinnell Model F640 or as required.

2.07 HORN/LIGHT

- A. Provide an electric combination horn/light, suitable for exterior application, rated for the appropriate voltage. 2.08 PIPING INSTALLATION
- A. All piping shall be concealed wherever possible. Exceptions must be clearly marked on shop drawings and shall not be installed until approved by Architect.
- B. If exposed, piping shall be installed in the most direct, straight, and least obtrusive manner possible, and as close to walls and ceilings as is consistent with good workmanship.
- C. Install piping graded to low points and in manner to make it possible to test and empty entire system. D. Pipe and fittings shall be inspected for soundness and cleaned of all dirt and other foreign matter prior to being installed.
- All damaged pipe and fittings shall be rejected. Heads shall be covered, and system shall be ready for painting. E. Protect open pipe ends whenever work is suspended during construction, to prevent foreign bodies entering and lodging
- therein. Use cast iron or malleable iron caps, or other methods as approved by the Architect

2.09 VALVE IDENTIFICATION

A. Drain valves, test valves, and control valves shall be identified with a stamped metal tag indicating their use.

- 2.10 TESTING
- A. A 1" inspector's test connection shall be installed at the farthest and most remote location in the system with discharge running to the exterior of the building.
- B. All piping and equipment shall be tested and proved tight under a hydrostatic pressure of 150% of the main pressure or 200 psig, whichever is larger. The test shall be conducted for a six-hour continuous period, with not be more than 2 pounds of pressure loss during this period in any part of the system. Any leaks found shall be repaired and the pressure test repeated.
- C. All tests shall be performed in the presence of the Architect or authorized representative of the Owner.
- 2.11 FLUSHING A. Flush piping system thoroughly with clear water to placing automatic sprinkler system in operation.
- 2.12 SPRINKLER CABINET
- A. Provide a reserve sprinkler cabinet with six spare sprinkler heads of each type used. Cabinet shall be equipped with two special sprinkler wrenches. Cabinet shall be a labeled, metal, wall-mounted type with red enamel finish and a rigid hinged and locked door. Two keys shall be provided.

DIVISION 22 - PLUMBING

SECTION 22 05 00 - COMMON WORK RESULTS FOR PLUMBING

1.01 WORK INCLUDED

- A. The work included by this division of the specifications includes furnishing all labor, materials, equipment, and services, including minor items omitted but necessary to construct and install the complete systems described by the Contract Documents and specified below. "Contractor" refers to the Mechanical Contractor. The general conditions of the specifications apply and are included in this part of this section.
- 1. Gas piping system
- 2. Domestic hot and cold water systems
- 3. Interior sanitary sewer system
- 4. Interior storm sewer system and discharge
- 1.02 CODES AND REGULATIONS
- A. Comply with state and local codes, and utility company regulations. Final interpretations will be made by the local inspection authority. The Contractor to verify the governance of the following Codes, including any local amendments and supplementary codes such as the Codes of the National Fire Protection Association:
- 1. Building Code: 2018 International Building Code

3. Mechanical Code:2018 International Mechanical Code 4. Fire Code:

- 5. Gas Code:
- 6. Energy Code: 2018 International Energy Conservation Code 7. Electrical Code 2020 National Electrical Code
- 1.03 EQUIPMENT AND MATERIALS STANDARDS
- with the latest industry standards.
- 1.04 CONTRACT DRAWINGS
- ceiling plans
- 1.05 SHOP DRAWINGS
 - 1. Insulation 2. Valves
 - 3. Plumbing fixtures and appurtenances.
- 4. Pumps

- bid date.
- 1.06 WARRANTY
- intervals during the warranty period. 1.07 PRODUCT HANDLING AND CLEAN UP
- 1.08 CUTTING AND REPAIRING
- 1.09 OPERATING AND MAINTENANCE DATA
- include the following items:
- 3. Instructions on who to call for service during the warranty period.
- 1.10 PERMITS
- 1.11 TEMPORARY SERVICES
- 1.12 COORDINATION
- characteristics before ordering equipment. B. Electrical work performed by this contractor will conform to the standards of Division 26-28. Mechanical equipment motors and controls shall be fu noted or specified. MC = Divis
- Item Combination starters Equipment motors Motor starters & O.L. relays
- Disconnect switches Thermal overload heaters (1) Variable Speed Drives Control relays/transformers
- Temperature control panels Temp. Controls conduit/wiring Actuator and solenoid wiring Pushbuttons & pilot lights

Room thermostats

of the project.

installation.

1.14 AS-BUILT DRAWINGS

1.16 PLAN VERIFICATION

1.15 PROJECT/SITE CONDITIONS

shall be bellows type.

2.02 <u>VALVES</u>

2.03 <u>RELIEF VALVES</u>

2.05 SPECIALTIES

2.06 ELECTRICAL

etc.

2.07 ACCESS PANELS

2.09 START-UP PROCEDURES

2.10 PIPING INSTALLATION

2.04 FLEXIBLE CONNECTORS

Thermostats: line voltage

2. Plumbing Code: 2018 International Plumbing Code

2018 International Fire Code

2018 International Fuel Gas Code

A. Equipment and materials shall be new, UL-listed for the use intended, and free from damage or defect. They shall comply

A. Illustrate the general design and extent of performance required. All dimensions and locations shall be taken from the Architectural drawings. Consult with Architectural plans and locate all ceiling equipment where indicated on reflected

A. Submit products data and/or shop drawings as required by the Architect for the following:

B. Quality of specific equipment is established by manufacturer's catalog number. Alterations caused by any Substitution shall be accomplished at no additional expense to the Owner.

C. Manufacturers not listed may submit for acceptance as an "approved equivalent." Requests for an "equivalent" means "approved equivalent". Four copies of such submittal must be received by the Engineer seven (7) working days prior to

A. The Contractor shall be responsible for the successful operation of mechanical systems, equipment, and materials installed under this Contract for a period of one year from the date of final acceptance. Defective equipment or materials shall be repaired or replaced at no expense to the Owner. Provide four complete service and maintenance calls spaced at equal

A. Equipment shall be left clean and undamaged, to the satisfaction of the Owner. The General Conditions take precedence.

A. The contractor shall be responsible for all cutting, drilling, welding, and repair required for his portion of the work. Coordinate with the Architect. The General Conditions take precedence.

A. Provide the Owner with operating and maintenance instructions (four copies) required for operation of all mechanical systems. Bind the written instructions in a notebook. The General Conditions take precedence. The manuals shall

1. Operating manual and spare parts list for each piece of equipment. 2. Preventive maintenance schedule for lubricating and checking each piece of equipment.

A. The contractor shall pay for all fees, taxes, secure permits, licenses, and inspections required for the project.

A. Provide temporary water service for construction, as required by the General Contractor.

A. Coordinate outlet device and equipment locations with the Architectural Plans and work of other trades. Locate on horizontal and vertical lines to avoid interference and to provide functional use of all equipment. Verify electrical power

according with the following schedule unless otherwise

this contractor will conform to u							
urnished, set in place, and wired							
sion 21-23 $EC = Division 26$ -							
Furn	Set	Power	Control				
By	By	Wiring	Wiring				
MC	EC	EC	MC				
MC	MC	EC					
MC	EC	EC	MC				
EC	EC	EC	MC				
EC	EC	EC					
MC	EC	EC	MC				
MC	MC	EC	MC				
MC	MC	EC	MC				
MC	MC		MC				
MC	MC		MC				
MC	MC		MC				
MC	MC		MC				
EC	EC	EC					

C. The general guideline for the division between control (by MC) wiring and power wiring (by EC) is that power wiring carries the current which energizes a motor, control wiring does not. Control wiring may be 120V, which would be the responsibility of the MC. Control motors are wired by the MC.

D. Examine the site and become aware of existing conditions, utilities, and other issues affecting the satisfactory completion 1.13 DELIVERY, STORAGE, HANDLING

A. Provide necessary hauling and hoisting equipment. Protect the materials of this Division before, during, and after

A. Keep a current set of "as-built" drawings on site. Upon completion of the work, furnish engineer with a reproducible prints showing the "as-built" installation.

A. Visit the site to become familiar with location and the various conditions affecting the work, including existing utilities.

A. After completion of the bidding and selection process, prior to awarding the contract, the contractor must review and verify the contract documents in their entirety, including those of other trades. At this time, discrepancies, conflicts, omissions, etc in the contract documents must be documented. Alterations to the contract will be made at that time to include such items, as well other modifications which might be made by the Owner. After award of the contract, change orders caused by discrepancies, conflicts, omissions in the contract documents will not be allowed.

2.01 EXPANSION JOINTS, GUIDES, AND ANCHORS

A. Provide expansion joints or loops, guides, and anchors in piping to allow for expansion and contractions. Expansion joints

A. Gate valves 2" and smaller shall be cast bronze, rising stem, solid disc, 200 PSI WOG B. Ball valves 2" and smaller shall be cast bronze, full port, stainless steel ball, teflon sets, 400 PSI WOG.

C. Butterfly valves 2" and smaller shall be cast bronze, stainless steel disc, surrounding fluorelastomer seal, 350 PSI WOG. D. Check valves shall be horizontal, swing-cast bronze, bronze disc, 200 PSI WOG. E. Valves shall be domestically manufactured by Milwaukee, Powell, Nibco, or equivalent.

A. Relief valves shall be all-bronze A.S.M.E. rated valves with external test levers, sized in accordance with the instructions of the appropriate manufacturer. Pipe discharge outside or to floor drain where possible and per code. Valves shall be manufactured by Watts or equivalent.

A. Connectors in piping shall be made with molded teflon or neoprene and nylon bellows, metal reinforcing rings, flanged ends and control rods, suitable for 40F to 200F temperature range and 125 lbs. pressure. Alternative shall be stainless steel inner hose with braided exterior sleeve for steel pipe or bronze inner hose with braided exterior sleeve for copper piping. Metra-flex Company, or equivalent.

A. P/T Plugs: 1/4" diameter, brass with Nordel core, Sisco or equivalent. B. Pressure Gauges: 4 1/2" dial type, aluminum housing. Ashcroft 1010 or equivalent. C. Thermometers: 7" red reading mercury type. Palmer Instruments or equivalent.

A. Lugs: Lugs for wiring connections shall be rated for copper and aluminum, and shall have a minimum rating of 75C. B. Electric motors shall be rated for the appropriate application: wet location (TEFC); submersible; explosion proof, VFD's,

A. The Mechanical Contractor shall furnish and install access panels where required for access to equipment. Access panels shall be adequately sized, of a type approved by the Architect and shall be fire or smoke-rated as required. 2.08 EXCAVATION AND BACKFILLING

A. Provide excavating and backfilling for Mechanical Work. Backfill in 12" layers, mechanically tamp to 95% proctor standards. Protect according to OSHA standards. The General Conditions take precedence. Verify the location of underground utilities before excavation; the contractor is responsible for any damage to underground utilities. Restore existing paving, curbs, sod, bushes, etc to match surroundings.

A. Follow manufacturer's recommended procedures in starting up the equipment; damage caused during start-up shall be replaced at no expense to the owner.

A. Install piping plumb and straight, parallel with walls and partitions. Conceal piping within structure whenever practical. Provide drain valves at all low points, vents at all high points, to allow complete drainage. B. Material and methods per ASME, ASTM, ASA, AWS, and National Plumbing Code Handbook

- C. Provide unions or flanges in piping connections to each valve, device, or item of equipment. Install each union or flange to permit the removal of parts and equipment for inspection or cleaning, without disconnecting any piping, except unions or flanges. Provide dielectric unions at locations with dissimilar materials.
- D. Piping on the roof will be supported above the roof on roof pads. The pads shall be approximately 6"Wide by 6" high by the length as required. They shall be made of recycled rubber, rated for 500lbs/ft loading each. The pads will have galvanized steel "C" channel attached to the top, which can accommodate pipe clamps to secure the piping. This configuration of individual piping pads may be expanded to include two pads supporting a trapeze style support where multiple pipes are racked together. The pads are C-series manufactured by Cooper B-line, Erico, or approved equivalent.
- 2.11 HANGERS AND SUPPORTS

A. Support piping and equipment from the structure to prevent sagging, pocketing, swaying, and vibrations, and arranged to provide for expansion and contraction. Brackets, clamps, and hangers shall be steel, except copper hangers will be used with copper piping. Hangers supporting vibrating equipment shall be provided with spring isolators. Chain, perforated iron or wire hangers are not permitted. Hangers will be of a type acceptable to the Engineer, and shall have a capacity and spacing as required by code.

2.12 SLEEVES AND PLATES

A. Provide sleeves and inserts for all mechanical piping. The contractor shall be responsible for the cost of cutting and patching required for piping where sleeves and inserts were not installed or where incorrectly located. Sheetrock joint compound may be used to seal openings in non-rated walls(insulation to be continuous through walls.

- B. Drill holes as required for the installation of hangers required for the mechanical work.
- C. Where sleeves are placed in exterior walls below grade, the space between the pipe or conduit and the sleeves shall be made completely water-tight. D. Seal all piping passing through fire-rated construction with approved material to maintain air-tight, fire-rated integrity,
- with a U.L. listed assembly compatible with the wall or floor assembly being penetrated. 2.13 PIPING TESTING
- A. All piping systems shall be tested and witnessed by the Owner prior to concealment. Protect equipment and fixtures or equipment, isolating them during the test. DWV system shall be sealed and hold water without leaks for 24 hours. Domestic water and hydronic piping shall be air tested at 150 PSIG; natural gas piping shall be air tested at 30 PSIG. Air tests shall be held for one hour without loss of pressure.
- 2.14 CLEANING AND STERILIZATION
- A. After testing, water piping systems shall be filled, operated for a sufficient length of time to completely remove all foreign material, and flushed B. Sterilize the domestic hot and cold water piping in accordance with the local health authority standards. Flush the systems
- with clear water until the residual chlorine content is equal to that of clear water. C. Where there is no water treatment contractor sterilize piping system with chlorine for 24 hours to 50 PPM. Completely
- flush to less than 1 PPM. Local health authority standards take precedence. 2.15 FLEXIBLE PIPE CONNECTIONS

piping at equipment and approximately every 25'.

- A. Provide flexible pipe connection suitable to connect to adjoining piping as specified for pipe joints. Use sized pipe units. Install flexible pipe connectors on pipes connected to equipment supported by vibration isolation.
- 2.16 PIPE IDENTIFICATION A. After completion of the piping or insulation, paint stenciled descriptive abbreviations, including directional arrows, on

END OF SECTION 22 05 00

SECTION 22 07 00 - PLUMBING INSULATION

- 1.01 QUALITY ASSURANCE A. All insulation shall have a composite rating (insulation, jacket and adhesives) not exceeding flame spread 25 and smoke developed 50.
- 2.01 PIPE INSULATION FOR PIPING ABOVE GRADE
- A. Insulation shall be closed-cell, elastomeric pipe insulation having a conductivity of 0.27 at 75 °F mean, with thicknesses as follows:

Pipe Sizes	<1"	1" to 1¼"	> 11/2"
Dom. cold piping	1/2"	1/2"	1"
Roof drain sumps, & horiz. leaders	1/2"	1/2"	1"
Dom. hot & recirc. Piping	1-1/2"	1-1/2"	1-1/2"

B. Insulation shall be Armacell "Armaflex" or equivalent by Johns-Mansville, Owens-Corning.

- C. Exterior piping insulation will be painted with a white solvent based alkyd finish (Armaflex AB or equivalent), including all fittings, valves, etc. Jacket and insulation will be sealed weathertight and installed per manufacturers instructions. Where exposed to physical damage, exterior piping insulation will be covered with aluminum jacket, including all fittings, valves, etc. Jacket and insulation will be sealed weathertight and installed per manufacturers instructions.
- D. All interior underground water (domestic and hydronic) piping shall be insulated with 1" Armaflex, except where noted.

2.02 PIPE INSULATION FOR PIPING BELOW GRADE A. Insulation shall be closed-cell, elastomeric pipe insulation having a conductivity of 0.27 at 75F mean, with thicknesses as follows:

Pipe Sizes	<1"	1" to 1¼"	> 11/2"
Dom. cold piping	1/2"	1/2"	1"
Dom. hot & recirc. Piping	1"	1"	1"

B. Insulation shall be Armacell "Armaflex" or equivalent by Johns-Mansville, Owens-Corning.

C. Exterior piping insulation will be painted with a white solvent based alkyd finish (Armaflex AB or equivalent), including all fittings, valves, etc. Jacket and insulation will be sealed weathertight and installed per manufacturers instructions. Where exposed to physical damage, exterior piping insulation will be covered with aluminum jacket, including all fittings, valves, etc. Jacket and insulation will be sealed weathertight and installed per manufacturers instructions. D. All interior underground water (domestic and hydronic) piping shall be insulated with 1" Armaflex, except where noted.

3.01 PIPE(ELASTOMERIC)

- A. Insulation shall be solid slip-on installed prior to connection. Butt joints shall be sealed with manufacturer's adhesive. Where slit seams must be installed, seal the seam with manufacturer's adhesive. Fittings shall be insulated with meter-cut pieces of insulation according to manufacturer's instructions, or insulated with similar sheet insulation installed according to manufacturer's instructions.
- B. Provide wood blocks and metal hanger shields at support strap locations on horizontal pipe runs. Insulation will not be interrupted for supports, etc.

SECTION 22 10 00 - PLUMBING

1.01 WATER SERVICE

A. Consult with local authorities to provide water service. Provide meter pit, meter yokes, valves, RPZ valves, PRV valves, etc. for complete installation. Connect to a point 5' from building. Coordinate exact point of connection with site contractor before bidding.

1.02 SANITARY SEWER CONNECTION

A. Consult with local authorities and connect to sewer main as required. Connect to a point 5' from building. Coordinate exact point of connection with site contractor before bidding.

2.01 DOMESTIC WATER SYSTEM PIPING

A. Domestic cold, hot, and recirculating hot water piping may be either copper, or PEX, as noted below:

- 1. Copper piping:
- a. Above grade, piping shall be Type L, hard-drawn copper tubing with wrought copper fittings. Solder shall be
- b. Below grade, piping shall be Type K, soft-drawn copper tubing with fittings only where specifically allowed by the architect. Where required, the fittings will be wrought copper. Solder shall be 95/5 tin/antimony, except underground, where it will be silver solder.
- 2. PEX Tubing:
- a. Tubing shall be cross-linked polyethylene using the Engel method of cross-linking. The tubing shall be rated for 80PSI at 200F, and shall be manufactured according to ASTM F 876 and ASTM F 877.
- b. Fittings shall be APR(brass) "Pro-pex" style or equivalent. Manifolds may be copper, brass, or plastic, with balancing controls.
- c. Stub outs to be copper with brass shutoff valves. Stub outs to be properly secured to wall.
- d. Tubing in return air plenums, or other areas designed as air handling plenums, shall be installed to a flame rating of 25/50 according to ASTM E84, whether by spacing, insulation or other approved method.
- e. Tubing shall be as manufactured by Wirsbo or equivalent. 2.02 SOIL, WASTE, AND STORM PIPING
- A. Soil, waste, and vent piping, and storm piping shall be schedule 40 solid core PVC conforming to ASTM D2665 and ASTM D1785 with solvent joints conforming to ASTMD2855, except as noted below. PVC buried below slab shall be installed in conformance with ASTM D2321
- 1. Hubless(No Hub), cast iron soil pipe conforming to CISPI 301 with stainless steel no-hub couplings conforming to CISPI 310 shall be used in return air plenums and other areas designed as air handling plenums, or where specifically required by local code. All cast iron soil pipe and fittings shall be marked with the collective trademark of the Cast
- Iron Soil Pipe Institute and be listed by the NSF International. B. Soil, waste, and storm piping below grade 5' beyond the building may be PVC SDR 35, installed in conformance with ASTM 3034 and utilizing push-on joints.
- C. Storm water piping shall be same as soil and waste piping when concealed and galvanized schedule 40 steel pipe when exposed to physical damage. Fittings shall be cast iron, drainage type.
- 2.03 PLUMBING FIXTURES AND TRIM
- A. Provide plumbing fixtures as specified on the plans. Provide carriers, trim, bolts, caps, etc according to the manufacturer's instructions and as required for a complete installation. All fittings and appurtenances (p-traps, connections, etc) shall be brass; chrome plated brass where visible.
- B. Provide carriers for wall hung or mounted fixtures such as water closets, lavatories, urinals, sinks, etc. The carriers shall

be designed to fit in the wall structure available, and shall transmit the load to the floor. Fixtures will not be supported by the wall structure unless specifically indicated.

2.04 GAS PIPING

- A. Above grade in accessible locations, gas piping shall be schedule 40, black iron pipe with threaded fittings. Fittings shall be made of malleable iron. Gas piping run in return plenums, where allowed by local code, shall have welded joints. B. Regulators shall be Maxitrol, or equivalent, of size and capacity as required.
- 2.05 GAS WATER HEATER(SEALED COMBUSTION)
- A. Water heater shall be as specified on the plans. Heaters shall be approved and listed by the American Gas Association as self-contained, vented water heaters. The tank shall be heavy-gauge, welded steel, glass-lined, foam insulated to conform to ASHRAE 90.1b-1992. The heater shall be rated for 150 PSI and shall have a five-year warranty. The power burner shall be sealed combustion, submerged with spiral internal flue. The controls shall be electronic microprocessor based with digital display and shall include high-limit control and safety shut off. The heater shall include two (2) magnesium anodes and a pressure and temperature relief valve. The heater will be furnished with integral heat traps. Where required by local code, provide ASME certification.
- B. Water heater shall be provided with R 14 insulation. Where factory insulation does not meet insulation requirements, provide aftermarket insulated jacket as required to meet requirements.
- C. Where flue is run thru uninsulated, unconditioned spaces (attics, crawlspaces, etc.), insulate the flue with R8 equivalent insulation.
- D. The water heaters shall be manufactured by A.O. Smith, State, Polaris, Ruud or Bradford-White.
- 2.06 DOMESTIC RECIRCULATING PUMP
- A. Pump shall be 2800 rpm, in-line, centrifugal oil-lubricated, sleeve-bearing pump with flanged piping connections, bronze body, plastic impeller, and having mechanical seals. Motors shall be non-overloading, open drip-proof type. B. The pump shall be furnished with an automatic timer kit.
- C. Manufacturer shall be Bell and Gossett, Paco, Taco, or approved equivalent.
- 3.01 DOMESTIC WATER SYSTEM
- A. Provide drip cocks so that the entire system may be drained. Provide manual air vents at high points in the system where air may be trapped. Provide stops for all fixtures and appliances. Provide a full size ball valve on each branch serving a hose bib.
- B. Provide swing or swivel joints on connections as required to prevent noise or vibration of the piping. Provide fixture stops at all fixtures, hose bibbs, wall hydrants, and Owner-furnished fixtures. Run all piping on warm side of building insulation. Pipe insulation is not considered freeze protection. Provide water hammer arrestors where required. Locate to be accessible or provide access panel.
- 3.02 SOIL, WASTE, AND STORM WATER PIPING
- A. Lay piping true to line and grade so that sewer will have smooth and uniform invert throughout its length. Verify elevations of existing sewer before starting work.
- B. Install a clean-out at the base of each soil stack, at the base of each interior rain-water conductor, at each change in direction, at intervals not over 50 feet interior of building, and every 100 feet exterior to building and elsewhere as shown on the drawings or required by Code. Make clean-outs same size as pipe service, except they need be no larger than 4". Set tops and covers flush with floors and walls. Wall covers shall be round polished stainless steel with centered stainless steel securing screw (Josam 58710). Floor cleanouts shall be flush, cast iron, ABS plug with Nikalloy cover(Josam 56000). Provide floor clamps at each floor for uniform support of stacks.
- C. The entire drain waste and vent, and storm sewer systems shall be watertight and odorproof, including sealing of floor drains and sinks, closet rings, etc.
- 3.03 WATER HEATER INSTALLATION
- A. Install water heaters per manufacturer's instructions. Provide 24 gauge, galvanized steel drain pan, piped with minimum ³/₄" drain, piped to an approved receptor with indirect waste connection per code.
- B. Route the P/T relief valve full sized to approved receptor and discharge per code. Provide expansion device, tank or valve, as required by code, and allowed by the local jurisdiction.
- C. Flue and combustion air ducts shall be provided by the mechanical contractor, unless otherwise noted. Where sealed combustion water heaters are used, the Plumbing Contractor shall install PVC flue and combustion air piping. This piping will be of the size and type recommended by the manufacturer, and use factory recommended discharge/intake fittings as shown on the plans.
- D. Condensing water heaters shall utilize an inline condensate neutralizer. Provide PVC drain from water heater and/or flue with a minimum ¹/₂" drain, piped to an approved receptor with indirect waste connection per code. Verify installation details with manufacturer.

3.04 PLUMBING FIXTURES AND TRIM

- A. Furnish and install a vacuum breaker at each hot and cold water service outlet to which a hose can be attached, including ianitor's faucets.
- B. Provide chrome-plated rigid or flexible supplies to fixtures with stops, reducers, and escutcheons. Insulate stops and supplies at handicapped sinks with Truebro lav guard or equivalent. Bag type covers are not allowed.
- C. Provide chrome plated brass P-traps with slip fittings for all exposed drains. Insulate P-traps at handicapped sinks with Truebro lav guard or equivalent. Bag type covers are not allowed.
- D. Flush valve handles, and flush tank handles, on handicapped water closets shall be located on the wide side of the stall for convenient access and as required by code.
- E. Provide a flexible elastomeric sheet for flashing around all shower drains, roof drains, floor drains, floor sinks, etc except for slabs on grade. The membrane shall be a minimum 0.40 inch thick, made of chlorinated polyethylene, installed per manufacturer's instructions. The flashing membrane for roof drains, floor drains, etc shall be a minimum of 2'x2'. The flashing membrane for shower pans, service sink pans, etc shall have "pigs ear" folds in the corners, extending the membrane up at least 3" above the drain. The membranes shall be manufactured by Chloralloy or equivalent. F. Mount fixtures the following heights above finished floor:
- 1. <u>Water closet</u>: 14"-15" to top of bowl rim;
- Handicapped, 18" to top of bowl rim.
- 2. <u>Urinal</u>: 24" to top of bowl rim;
- Handicapped, 17" to top of bowl rim.
- 3. Lavatory: 31" to top of basin rim;
- Handicapped, 32" to top of basin rim.
- 4. <u>Drinking fountain</u> : 40" to top of basin rim;
- Handicapped, 36" to spout.
- 5. <u>Water closet flush valves</u> : Standard, 11" minimum above bowl rim. Locate flush valves on "wide" side of handicapped toilets.

6. Floor drains: In finished areas, 1/4" - 1/2" below finished floor. In mechanical rooms and other unfinished areas, install at least 1" below floor, except where it would be a stumble hazard. G. Rough-in fixture piping connections in accordance with the following table of minimum sizes or as required for particular

fixtures.

		~~~		
	HW	CW	Waste	Vent
Lavatories	1/2"	1/2"	1-1/2"	1-1/4"
Service sink	1/2"	1/2"	2"	1-1/2"
Drinking fountain		1/2"	1-1/4"	1-1/4"
Water closet (Valve)		1"	3"	2"
Water Closet (tank)		1/2"	3"	2"
Urinals		3/4"	2"	1-1/2"
Floor drains			2"	1-1/2"
Hose bibs		3/4"		
Wash Mach Unit	1/2"	1/2"	2"	1-1/2"
Kitchen equipment SEE SCHEDULE & PLANS				ANS
Owner furnished equipment	SEE SCH	HEDUL	.E & PL.	ANS

3.05 GAS PIPING

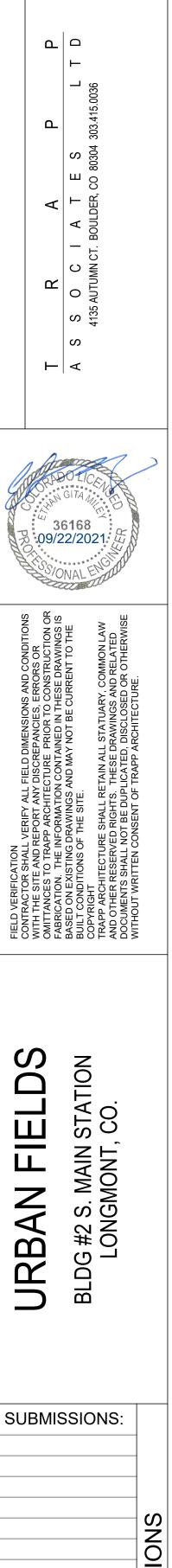
A. Gas distribution system is based on a 6" W.C. natural gas pressure except where noted on plans. Provide all gas-fired equipment with gas pressure regulators or special orifices as required to operate at 5000 ft. elevation. Provide a gas cock and drip leg at each appliance.

B. Gas piping on roof shall be secured to uv resistant Polyethylene foam block; Erico "Pipe Pier". Provide rubberized sheet under pipe support.

C. Piping exposed outside shall be painted with an exterior type latex paint which matches the adjacent roof or wall. D. Appliance connection piping to be per plans or same as appliance size, whichever is larger. Transition downstream of all shutoffs and regulators as close to appliance as possible when plans call for larger than appliance.

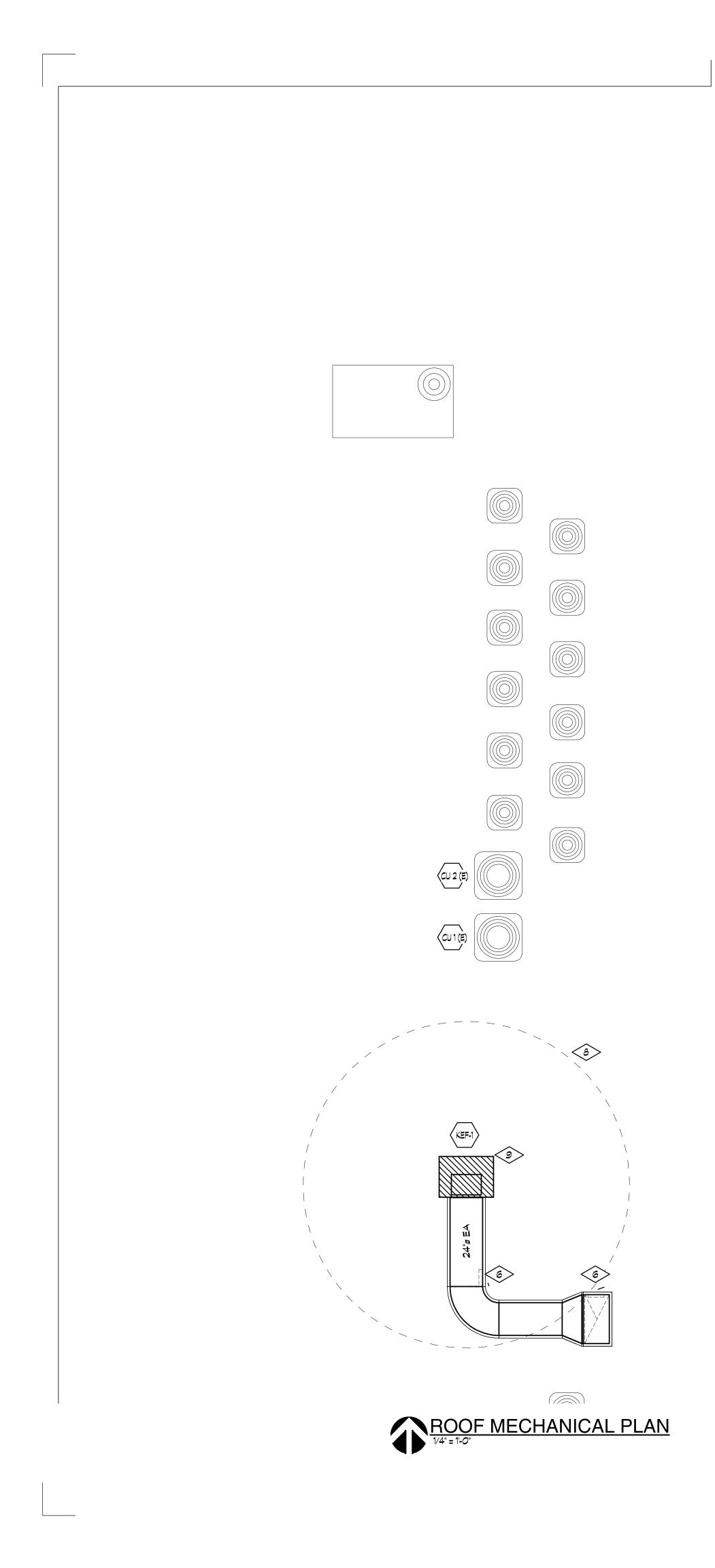
3.06 KITCHEN

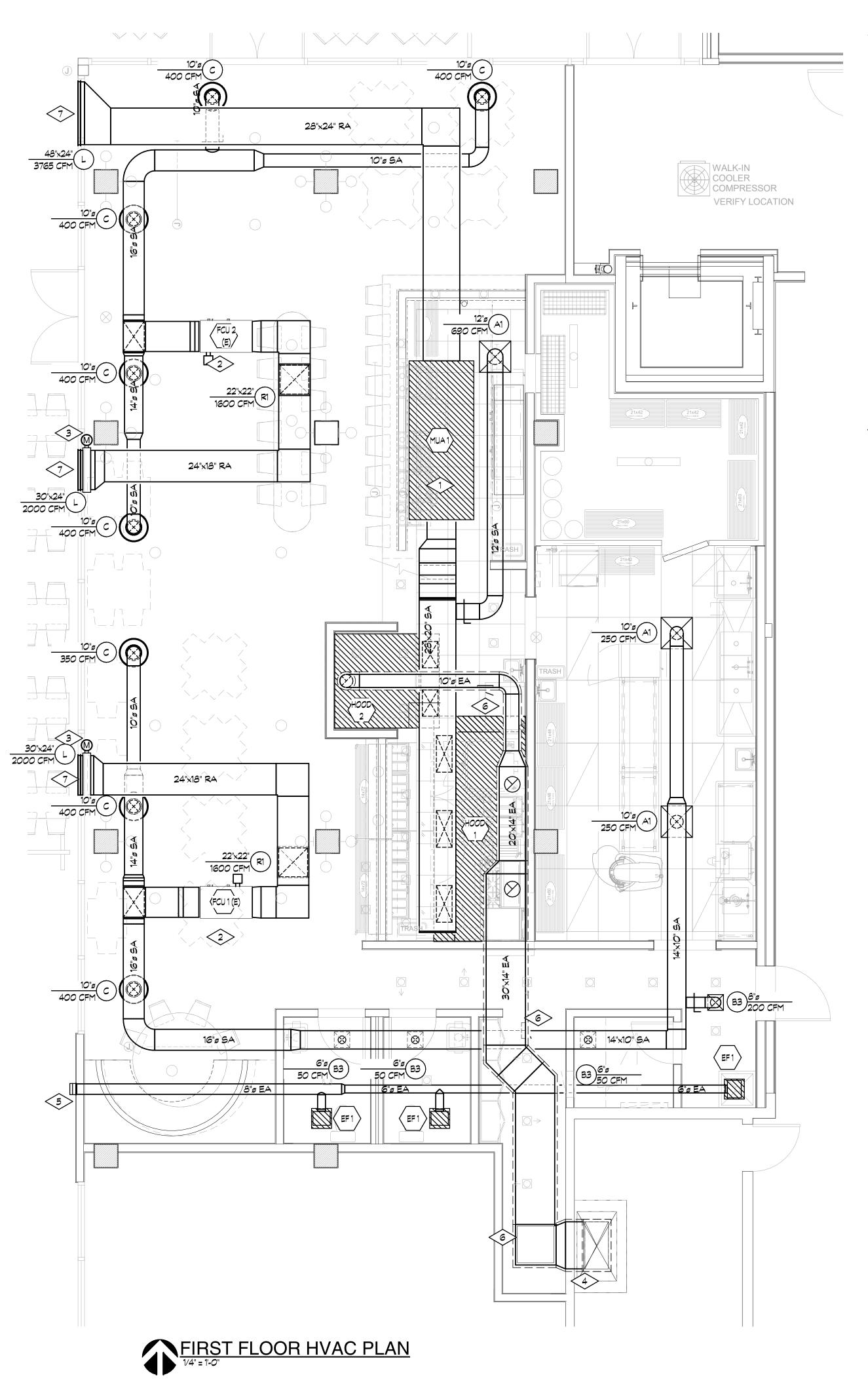
A. Provide final connections to all kitchen equipment in accordance with manufacturer's instructions. Provide stops or shut-off valves for hot and cold water connection; plug cocks or quick- connect couplings for gas appliances. Indirect wastes shall be DWV copper, except at soda machines where plastic pipe shall be used.



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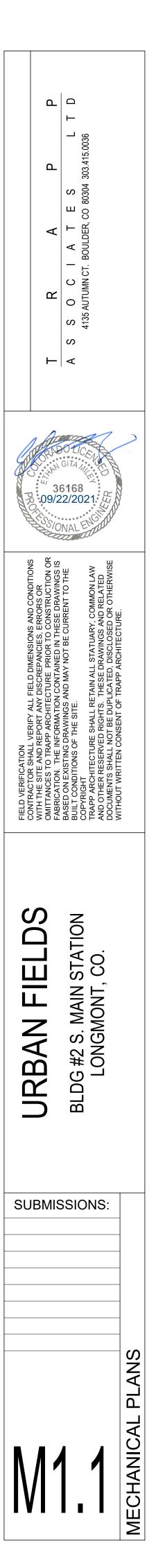


# GENERAL NOTES

- A. FIELD VERIFY EXISTING SIZE AND LOCATION OF DUCTS & TERMINAL BOXES PRIOR TO BEGINNING WORK.
- B. REMOVE EXISTING LOW PRESSURE DUCTWORK/ AIR TERMINAL DEVICES THROUGHOUT SPACE EXCEPT WHERE SPECIFICALLY SHOWN.
- C. INSPECT EXISTING DUCT MAINS & SEAL ANY AUDIBLE AIR LEAKS AS REQUIRED TO ACHIEVE AIR FLOW WITHIN 5% OF NOTED TOTALS. REMOVE ANY DUCT WRAP ON EXPOSED DUCTWORK.
- D. FLEX DUCT MAY NOT BE USED IN EXPOSED LOCATIONS. WHERE CONCEALED, FLEX DUCT RUNS NO LONGER THAN 2', REFER TO SPECIFICATIONS.
- E. GRILLES, REGISTERS & DIFFUSERS & EXPOSED DUCTWORK TO MATCH ADJACENT CEILING/STRUCTURE COLOR. WHERE CEILING IS LIGHT COLOR, MAINTAIN WHITE GRDS. WHERE CEILING/STRUCTURE IS METAL FINISH OR DARK, PAINT GRDS TO MATCH. REFER TO ARCH PLANS FOR FINISHES.
- F. FIELD VERIFY EXISTING DUCT MAINS ARE TIGHT TO STRUCTURE. NOTIFY ENGINEER OF ANY DUCTS NOT TIGHT TO STRUCTURE.
- G. MECHANICAL SYSTEM IS LESS THAN 480,000 BTU/H COOLING AND 600,000 BTU/H HEATING AND IS THEREFORE NOT REQUIRED TO BE COMMISSIONED PER IECC C408.2.

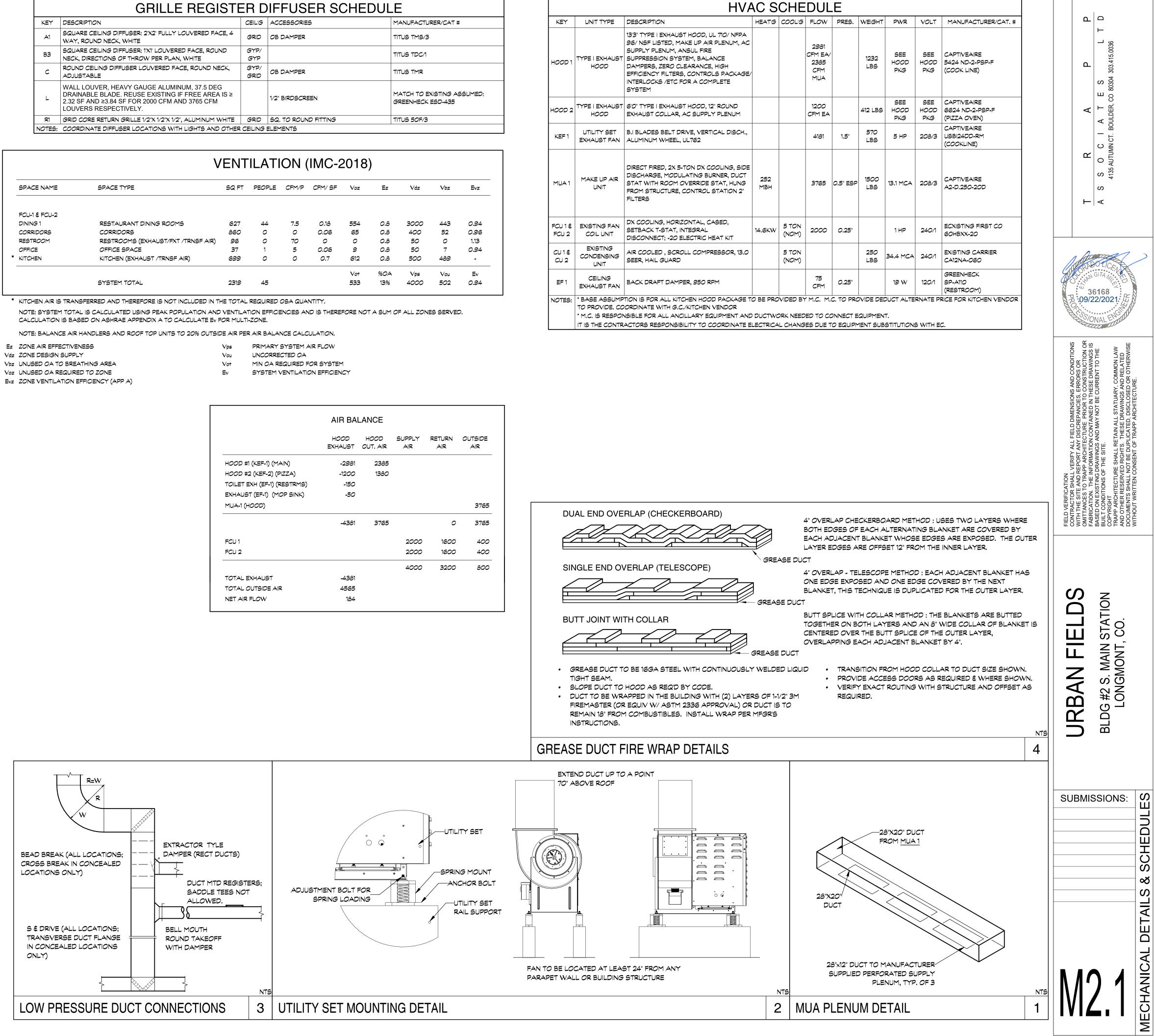
# DETAIL NOTES THIS SHEET

- 1. MOUNT <u>MUA-1</u> FROM STRUCTURE WITHIN SPACE, COORDINATE HANGING REQUIREMENTS WITH CAPTIVE AIRE. DUCT 100% OUTDOOR AIR FROM STOREFRONT.
- 2. EXISTING FAN COIL UNIT  $\underline{FCU-1}$  OR  $\underline{FCU-2}$  TO REMAIN.
- 3. PROVIDE MOTORIZED DAMPER AT OUTDOOR AIR LOUVER TO ALLOW 100% OUTDOOR AIR AND HAVE NORMAL OPERATION FOR 800 CFM OUTDOOR AIR (20% OF <u>FCU-1</u> <u>FCU-2</u> PER AIR BALANCE).
- 4. FIRE SPRINKLER CONTRACTOR TO RELOCATE FIRE SPRINKLER LINE LOCATED IN FRONT OF GREASE DUCT.
- 5. PROVIDE WEATHER CAP AT EXHAUST TERMINATION THROUGH WALL. ENSURE 3' CLEARANCE FROM BUILDING OPENINGS AND 10' CLEARANCE FROM MECHANICAL AIR INTAKES.
- 6. PROVIDE GREASE CLEANOUT EVERY 20' OF RUN AND AT ANY CHANGE OF DIRECTION. 16 GA WELDED STEEL EXHAUST DUCTWORK FROM HOODS TO ROOF IN SHAFT, SIZES AS SHOWN ON PLANS. SLOPE DUCTWORK TO HOOD AT 1/4" PER 12". WRAP DUCTWORK W/ 2 LAYERS OF 3M FIREMASTER OR EQUIV. (ASTM E814) WITHIN BUILDING PER DETAIL ON SHEET M2.1. VERIFY EXACT CLEANOUT LOCATIONS PRIOR TO CONSTRUCTION. TRANSITION TO HOOD & EXHAUST FAN AS REQ'D.
- 7. USE EXISTING PENETRATION AND LOUVER IF POSSIBLE FOR OUTDOOR AIR INTAKE LOCATIONS.
- 8. MAINTAIN 10' CLEARANCE BETWEEN KITCHEN EXHAUST AND ALL AIR INTAKES.
- MOUNT NEW <u>KEF 1</u> ON EXISTING CONCRETE PAD PER DETAIL ON M3.1. ROUTE AND CONNECT 24" GREASE EXHAUST DUCT TO EXISTING GREASE CHASE.



	LEGEND
·	DUCT (INSIDE DIM. SIDE SHOWN
	INSIDE DIM. SIDE NOT SHOWN)
$\boxtimes$	SUPPLY DUCT (SECTION)
	RETURN DUCT (SECTION)
	EXHAUST DUCT (SECTION)
	ROUND DUCT, RIGID
$\rightarrow \rightarrow \rightarrow \rightarrow$	FLEXIBLE DUCT
	FLEXIBLE CONNECTOR
	TURNING VANES
	SUPPLY DIFFUSER (ARROWS INDICATE DISTRIBUTION)
	RETURN REGISTER / GRILLE
$\oplus$	MECHANICAL POINT OF CONNECTION
θ	FIRE DAMPER
٩	SMOKE AND FIRE DAMPER
	THERMOSTAT
	MANUAL BALANCING DAMPER
	MOTORIZED BALANCING DAMPER
— HWS—	HOT WATER SUPPLY
	HOT WATER RETURN
—cws—	CHILLED WATER SUPPLY
	CHILLED WATER RETURN
— c —	CONDENSATE
s	STEAM
0—	- GRILLE / REGISTER / DIFFUSER
$\bigcirc$	MECHANICAL EQUIPMENT
$\diamond$	DETAIL NOTE
	KITCHEN / MEDICAL EQUIPMENT
SA	SUPPLY AIR
OA	
MA RA	
	RETURN AIR EXHAUST AIR
AD	ACCESS DOOR
OBD	OPPOSED BLADE DAMPER
	ROUTE IN JOIST SPACE
(E) (ER)	EXISTING TO REMAIN
	EXISTING TO BE REPLACED
	EXISTING TO BE DEMOLISHED DUCT DETECTOR
њ Ф	REMOTE INDICATING LIGHT

			LOUVE
		Ŕ	GRID C
		NOTES:	COORD
	SPAC	E NAME	
	FCU-1	€ FCU-2	
	DININ	G 1	
	CORR	IDORS	
	REST	ROOM	
	OFFIC	E	
*	KITCH	IEN	
*	KITCH	IEN AIR IS	TRANS
	NOTE	SYSTEM	1 TOTAL
	CALC	ULATION	IS BASE
	NOTE	: BALANC	CE AIR H
Ez	ZONE	AIR EFFE	ECTIVEN
Vdz	ZONE	DESIGN	SUPPLY



LOCATIONS ONLY)

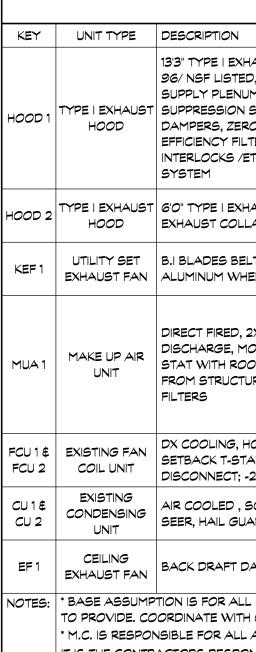
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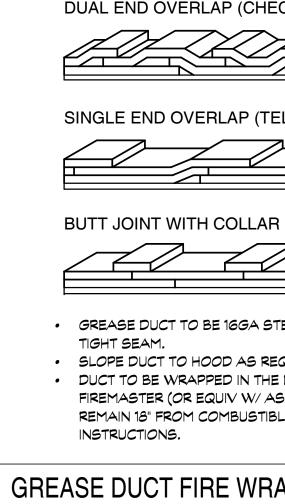
CRIPTION	CEIL'G	ACCESSORIES	MANUFACTURER/CAT #		
ARE CEILING DIFFUSER: 2'X2' FULLY LOUVERED FACE, 4 7, ROUND NECK, WHITE	GRID	OB DAMPER	TITUS TMS/3		
ARE CEILING DIFFUSER: 1'X1' LOUVERED FACE, ROUND <, DIRECTIONS OF THROW PER PLAN, WHITE	GYP/ GYP		TITUS TDC/1		
ND CEILING DIFFUSER LOUVERED FACE, ROUND NECK, JSTABLE	GYP/ GRID	OB DAMPER	TITUS TMR		
L LOUVER, HEAVY GAUGE ALUMINUM, 37.5 DEG INABLE BLADE. REUSE EXISTING IF FREE AREA IS ≥ SF AND ≥3.84 SF FOR 2000 CFM AND 3765 CFM VERS RESPECTIVELY.		1/2" BIRDSCREEN	MATCH TO EXISTING ASSUMED: GREENHECK ESD-435		
CORE RETURN GRILLE 1/2"X 1/2"X 1/2", ALUMINUM WHITE	GRID	SQ. TO ROUND FITTING	TITUS 50F/3		
RDINATE DIFFUSER LOCATIONS WITH LIGHTS AND OTHER CEILING ELEMENTS					

V	VENTILATION (IMC-2018)												
SPACE TYPE	SQ FT	PEOPLE	CFM/P	CFM/ SF	Voz	Ez	Vdz	Vbz	Evz				
RESTAURANT DINING ROOMS	627	44	7.5	0.18	554	0.8	3000	443	0.94				
CORRIDORS	860	0	0	0.06	65	0.8	400	52	0.96				
RESTROOMS (EXHAUST/FXT /TRNSF AIR)	96	0	70	0	0	0.8	50	0	1.13				
OFFICE SPACE	37	1	5	0.06	9	0.8	50	7	0.94				
KITCHEN (EXHAUST /TRNSF AIR)	699	0	0	0.7	612	0.8	500	489	-				
					Vot	%0A	Vps	Vou	Ev				
SYSTEM TOTAL	2319	45			533	13%	4000	502	0.94				

Vps	PRIMARY	SYSTEM	AIR	FLO

	AIR BAI	LANCE			
	HOOD EXHAUST	HOOD OUT. AIR	SUPPLY AIR	RETURN AIR	OUTSIDE AIR
HOOD #1 (KEF-1) (MAIN)	-2981	2385			
HOOD #2 (KEF-2) (PIZZA)	-1200	1380			
TOILET EXH (EF-1) (RESTRMS)	-150				
EXHAUST (EF-1) (MOP SINK)	-50				
MUA-1 (HOOD)					3765
	-4381	3765		0	3765
FCU 1			2000	1600	400
FCU 2			2000	1600	400
			4000	3200	800
TOTAL EXHAUST	-4381				
TOTAL OUTSIDE AIR	4565				
NET AIR FLOW	184				





HVA	AC S	CHE	DUL	E				
	HEAT'G	COOL'G	FLOW	PRES.	WEIGHT	PWR	VOLT	MANUFACTURER/CAT. #
AUST HOOD, UL 710/ NFPA D, MAKE UP AIR PLENUM, AC M, ANSUL FIRE SYSTEM, BALANCE O CLEARANCE, HIGH TERS, CONTROLS PACKAGE/ TC FOR A COMPLETE			2981 CFM EA/ 2385 CFM MUA		1232 LBS	SEE HOOD PKG	SEE HOOD PKG	CAPTIVEAIRE 5424 ND-2-PSP-F (COOK LINE)
AUST HOOD, 12" ROUND AR, AC SUPPLY PLENUM			1200 CFM EA		412 LBS	SEE HOOD PKG	SEE HOOD PKG	CAPTIVEAIRE 6624 ND-2-PSP-F (PIZZA OVEN)
T DRIVE, VERTICAL DISCH., EEL, UL762			4181	1.5"	570 LBS	5 HP	208/3	CAPTIVEAIRE USBI24DD-RM (COOKLINE)
2X 5-TON DX COOLING, SIDE ODULATING BURNER, DUCT OM OVERRIDE STAT, HUNG JRE, CONTROL STATION 2"	252 МВН		3765	0.5" ESP	15 <i>00</i> LBS	13.1 MCA	208/3	CAPTIVEAIRE A2-D.250-20D
ORIZONTAL, CASED, AT, INTEGRAL 20 ELECTRIC HEAT KIT	14.6KW	5 TON (NOM)	2000	0.25"		1 HP	240/1	ECXISTING FIRST CO 60HBXX-20
SCROLL COMPRESSOR, 13.0 ARD		5 TON (NOM)			250 LBS	34.4 MCA	240/1	EXISTING CARRIER CA12NA-060
AMPER, <i>950</i> RPM			75 CFM	0.25"		19 W	120/1	GREENHECK SP-A110 (RESTROOM)

## DIVISION 23 - HEATING, VENTILATING, AND AIR-CONDITIONING

## SECTION 23 05 00 - COMMON WORK RESULTS FOR HVAC

1.01 WORK INCLUDED

- A. The work included by this division of the specifications includes furnishing all labor, materials, equipment, and services, including minor items omitted but necessary to construct and install the complete systems described by the Contract Documents and specified below. "Contractor" refers to the Mechanical Contractor. The general conditions of the specifications apply and are included in this part of this section.
- 1. Heating, ventilating and air conditioning systems
- 2. Temperature control system
- 3. Kitchen supply and exhaust

# 1.02 CODES AND REGULATIONS

- A. Comply with state and local codes, and utility company regulations. Final interpretations will be made by the local inspection authority. The Contractor to verify the governance of the following Codes, including any local amendments and supplementary codes such as the Codes of the National Fire Protection Association:
- 1. Building Code: 2018 International Building Code
- 2. Plumbing Code: 2018 International Plumbing Code
- 3. Mechanical Code:2018 International Mechanical Code 4. Fire Code: 2018 International Fire Code
- 2018 International Fuel Gas Code 5. Gas Code:
- 6. Energy Code: 2018 International Energy Conservation Code
- 7. Electrical Code 2020 National Electrical Code
- 1.03 EQUIPMENT AND MATERIALS STANDARDS
- A. Equipment and materials shall be new, UL-listed for the use intended, and free from damage or defect. They shall comply with the latest industry standards.
- 1.04 CONTRACT DRAWINGS
- A. Illustrate the general design and extent of performance required. All dimensions and locations shall be taken from the Architectural drawings. Consult with Architectural plans and locate all ceiling equipment where indicated on reflected ceiling plans
- 1.05 SHOP DRAWINGS
- A. Submit products data and/or shop drawings as required by the Architect for the following:
- 1. Insulation
- 2. Air handling equipment 3. Grilles, registers, diffusers, louvers
- 4. Fire dampers
- 5. Temperature controls, systems, and components
- B. Quality of specific equipment is established by manufacturer's catalog number. Alterations caused by any Substitution shall be accomplished at no additional expense to the Owner.
- C. Manufacturers not listed may submit for acceptance as an "approved equivalent." Requests for an "equivalent" means "approved equivalent". Four copies of such submittal must be received by the Engineer seven (7) working days prior to bid date
- 1.06 WARRANTY
- A. The Contractor shall be responsible for the successful operation of mechanical systems, equipment, and materials installed under this Contract for a period of one year from the date of final acceptance. Defective equipment or materials shall be repaired or replaced at no expense to the Owner. Provide four complete service and maintenance calls spaced at equal intervals during the warranty period.
- 1.07 PRODUCT HANDLING AND CLEAN UP
- A. Equipment shall be left clean and undamaged, to the satisfaction of the Owner. The General Conditions take precedence. B. HVAC equipment shall not be used during construction as a means to heat or cool the space, unless specific approval is given by the owner. If such equipment is used, it must be completely cleaned and repaired as necessary. Cleaning involves replacing all filters; cleaning all coils and heat exchangers; inspecting fans, plenums, and ductwork and cleaning as directed by the owner.
- 1.08 CUTTING AND REPAIRING
- A. The contractor shall be responsible for all cutting, drilling, welding, and repair required for his portion of the work. Coordinate with the Architect. The General Conditions take precedence.
- 1.09 OPERATING AND MAINTENANCE DATA

A. Provide the Owner with operating and maintenance instructions (four copies) required for operation of all mechanical systems. Bind the written instructions in a notebook. The General Conditions take precedence. The manuals shall include the following items:

- 1. Operating manual and spare parts list for each piece of equipment.
- 2. Preventive maintenance schedule for lubricating and checking each piece of equipment.
- 3. Instructions on who to call for service during the warranty period.
- 1.10 PERMITS
- A. The contractor shall pay for all fees, taxes, secure permits, licenses, and inspections required for the project.
- 1.11 TEMPORARY SERVICES
- A. Provide temporary water service for construction, as required by the General Contractor.

## 1.12 COORDINATION

- A. Coordinate outlet device and equipment locations with the Architectural Plans and work of other trades. Locate on horizontal and vertical lines to avoid interference and to provide functional use of all equipment. Verify electrical power characteristics before ordering equipment.
- B. Electrical work performed by this contractor will conform to the standards of Division 26-28. Mechanical equipment motors and controls shall be furnished, set in place, and wired according with the following schedule unless otherwise noted or specified. MC = Division 21-23 EC = Division 26-28

1	Furn	Set	Power	Control
T.			10.001	
Item	By	By	Wiring	Wiring
Combination starters	MC	EC	EC	MC
Equipment motors	MC	MC	EC	
Motor starters & O.L. relays	MC	EC	EC	MC
Disconnect switches	EC	EC	EC	MC
Thermal overload heaters (1)	EC	EC	EC	
Variable Speed Drives	MC	EC	EC	MC
Control relays/transformers	MC	MC	EC	MC
Temperature control panels	MC	MC	EC	MC
Temp. Controls conduit/wiring	MC	MC		MC
Actuator and solenoid wiring	MC	MC		MC
Pushbuttons & pilot lights	MC	MC		MC
Room thermostats	MC	MC		MC
Thermostats: line voltage	EC	EC	EC	

- C. The general guideline for the division between control (by MC) wiring and power wiring (by EC) is that power wiring carries the current which energizes a motor, control wiring does not. Control wiring may be 120V, which would be the responsibility of the MC. Control motors are wired by the MC.
- D. Examine the site and become aware of existing conditions, utilities, and other issues affecting the satisfactory completion of the project.
- 1.13 DELIVERY, STORAGE, HANDLING A. Provide necessary hauling and hoisting equipment. Protect the materials of this Division before, during, and after installation
- 1.14 AS-BUILT DRAWINGS
- A. Keep a current set of "as-built" drawings on site. Upon completion of the work, furnish engineer with a reproducible prints showing the "as-built" installation.
- 1.15 PROJECT/SITE CONDITIONS
- A. Visit the site to become familiar with location and the various conditions affecting the work, including existing utilities. 1.16 PLAN VERIFICATION
- A. After completion of the bidding and selection process, prior to awarding the contract, the contractor must review and verify the contract documents in their entirety, including those of other trades. At this time, discrepancies, conflicts, omissions, etc in the contract documents must be documented. Alterations to the contract will be made at that time to include such items, as well other modifications which might be made by the Owner. After award of the contract, change orders caused by discrepancies, conflicts, omissions in the contract documents will not be allowed.
- 2.01 EXPANSION JOINTS, GUIDES, AND ANCHORS A. Provide expansion joints or loops, guides, and anchors in piping to allow for expansion and contractions. Expansion joints shall be bellows type.
- 2.02 ELECTRICAL
- A. Lugs: Lugs for wiring connections shall be rated for copper and aluminum, nad shall have a minimum rating of 75C. B. Electric motors shall be rated for the appropriate application: wet location (TEFC); submersible; explosion proof, VFD's,
- 2.03 ACCESS PANELS
- A. The Mechanical Contractor shall furnish and General Contractor shall install access panels where required for access to equipment. The Mechanical Contractor shall include the cost of installation in his bid. Access panels shall be adequately sized, of a type approved by the Architect and shall be fire or smoke-rated as required.
- 3.01 START-UP PROCEDURES
- A. Follow manufacturer's recommended procedures in starting up the equipment; damage caused during start-up shall be replaced at no expense to the owner.
- 3.02 HANGERS AND SUPPORTS

A. Support equipment from the structure to prevent sagging, pocketing, swaying, and vibrations, and arranged to provide for expansion and contraction. Brackets, clamps, and hangers shall be steel, except copper hangers will be used with copper piping. Hangers supporting vibrating equipment shall be provided with spring isolators. Chain, perforated iron or wire hangers are not permitted. Hangers will be of a type acceptable to the Engineer, and shall have a capacity and spacing as required by code.

3.03 LOW EMITTING MATERIALS

- 1. Metal to Metal adhesive: VOC limit of 30g/L.
- 2. Fiberglass adhesive: VOC limit of 80g/L.

# 1.01 GENERAL

- 2.01 TESTING CONDITIONS
- Replace thermal motor overloads as required. 2.02 <u>REPORT</u>

# SECTION 23 07 00 - INSULATION

1.01 QUALITY ASSURANCE developed 50.

# 2.01 PIPE INSULATION FOR PIPING ABOVE GRADE follows:

# Pipe Sizes

Refrigeration (Suction Lines) 1"

- C. Exterior piping insulation will be painted with a white solvent based alkyd finish(Armaflex AB or equivalent), including
- 2.02 REFRIGERANT PIPE INSULATION
- 2.03 DUCT INSULATION, WRAP
- B. Duct wrap shall be installed as follows or as shown on the plans:
- 1. Supply air ducts(heated space): 1-1/2"
- 2. Supply air ducts(unheated space): 2" C. Wrap shall be Johns-Manville "Microlite" or equivalent by Owens-Corning, Certaineed or Knauf.
- 2.04 DUCT LINER
- coated with black-coated mat surface. Liner shall have a "K" value of 0.24/inch at 75F mean.
- 1. Supply air ducts:
- 2. Exterior supply, return, or make up air ducts: 2"
- 4. Outside air intakes within space:
- 5. Treated make up air within space: (not insulated)
- 3.01 <u>PIPE(ELASTOMERIC)</u>
- to manufacturer's instructions.
- interrupted for supports, etc.
- 3.02 DUCT WRAP

3.03 ACOUSTIC DUCT LINER

1.02 QUALITY ASSURANCE

1.03 SERVICE AND GUARANTEE

3.01 SEQUENCE OF OPERATION

system

2.01 THERMOSTATS

1.01 DUCTWORK

B. Sheet Metal:

1.01 <u>SCOPE</u>

A. All sealants & adhesives required for the installation of mechanical & plumbing system within the building envelope shall meet the requirements for low emitting materials as set for in the South Coast Air Quality Management District (SCAQMD) Rule #1168 (or LEED new construction requirements), which includes but is not limited to:

3. Multipurpose construction adhesive: VOC limit of 70 g/L.

# SECTION 23 05 93-TESTING, ADJUSTING, AND BALANCING

A. Balancing shall be done by an independent firm specializing solely in the discipline of balancing air and water systems, and a member of NEBB. Firms desiring to furnish services for this project shall submit for written approval during bidding. All air and hydronic systems shall be balanced using applicable proportionate procedure.

A. (Air) Before adjustments are made, check the system for such items as dirty filters, duct and damper leakage, vibrations, etc. All diffusers, duct sections, etc shall be adjusted to deliver design quantities within 5%. Air quantities shall be tested simulating filters being 50% loaded. Adjust/replace sheaves and belts as required to achieve design air quantities.

A. After all adjustments are made, a detail written report shall be prepared and submitted for approval. Final acceptance of the project will not be made until a satisfactory report is received and field verified. The report shall detail the test equipment and balancing procedures being used; the general status of the system being tested including equipment details; provide data sheets indicating the required and actual CFM of all outlets and inlets.

A. All insulation shall have a composite rating (insulation, jacket and adhesives) not exceeding flame spread 25 and smoke

A. Insulation shall be closed-cell, elastomeric pipe insulation having a conductivity of 0.27 at 75 °F mean, with thicknesses as

1/2" - 1-1/2" >1-1/2"

B. Insulation shall be Armacell "Armaflex" or equivalent by Johns-Mansville, Owens-Corning.

all fittings, valves, etc. Jacket and insulation will be sealed weathertight and installed per manufacturers instructions. Where exposed to physical damage, exterior piping insulation will be covered with aluminum jacket, including all fittings, valves, etc. Jacket and insulation will be sealed weathertight and installed per manufacturers instructions. D. All interior underground water(domestic and hydronic) piping shall be insulated with 1" Armaflex, except where noted.

A. Insulation shall be 1" thick, closed-cell, elastomeric pipe insulation having a conductivity of 0.27 at 75 °F mean: B. Exterior piping insulation will be painted with a white solvent based alkyd finish(Armaflex AB or equivalent), including all fittings, valves, etc. Jacket and insulation will be sealed weathertight and installed per manufacturers instructions. Where exposed to physical damage, exterior piping insulation will be covered with aluminum jacket, including all fittings, valves, etc. Jacket and insulation will be sealed weathertight and installed per manufacturers instructions. C. Insulation shall be Armacell "Armaflex" or equivalent by Johns-Mansville, Owens-Corning.

A. Duct wrap insulation shall be flexible fiberglass insulation, 1 pcf, with factory-applied, reinforced, aluminum foil vapor barrier. Insulation shall have a K-factor of .25 at 75 °F mean.

D. At the contractor's option, the above specified duct wrap may be replaced with duct liner or equal or greater thickness. A. Duct liner shall be 1-1/2 lb density (3.0lb for exterior ducts), constructed of glass fiber liner. The air stream surface is

B. Duct liner shall be installed as follows or as shown on the plans: 1".

3. Return air ducts(within 15' of fan): 1/2"

C. Liner shall be Johns-Manville "Linacoustic" or equivalent by Owens-Corning, Certaineed or Knauf.

A. Insulation shall be solid slip-on installed prior to connection. Butt joints shall be sealed with manufacturer's adhesive. Where slit seams must be installed, seal the seam with manufacturer's adhesive. Fittings shall be insulated with meter-cut pieces of insulation according to manufacturer's instructions, or insulated with similar sheet insulation installed according

B. Provide wood blocks and metal hanger shields at support strap locations on horizontal pipe runs. Insulation will not be

A. Wrap the fiberglass blanket around the ductwork with 2" overlapping flanges stapled at 6" on center. Strip the lap of insulation and staple the facing directly to the overlapped foil. Secure the insulation to the ductwork with 18-gauge galvanized wire at 12" on center. On ducts larger than 48", use mechanical fasteners on the bottom of the duct. B. Tape all joints with 3" wide foil reinforced kraft tape. Tape all pin penetrations or punctures in the facing.

A. Liner shall be secured to all duct surfaces by pressing into wet adhesive, applied to 100% of the duct surface. In addition, liner shall be held in place with insulpins welded to duct and with clips slipped over the pins. Insulpins shall be located per SMACNA Standards. Liner shall be lapped and compressed in all four corners of the duct. Both upstream and downstream transverse edges shall be coated with adhesive, coated a minimum of 1" over the edge in all places.

# SECTION 23 09 00 - AUTOMATIC TEMPERATURE CONTROLS

A. Furnish, install, and place in operation a complete system of automatic temperature controls. The temperature control contractor may be the mechanical contractor or approved sub-contractor.

B. Acceptable automatic temperature control equipment manufacturer's shall be Honeywell, Johnson Controls, or controls furnished by the specific equipment manufacturer.

C. The control system shall include all components and appurtenances necessary to provide a complete system. All wiring for automatic temperature controls, regardless of voltage shall be the responsibility of the ATC Contractor. 120VAC work shall be installed in conformance with requirements of Division 16. The Temperature Control Contractor shall coordinate all electrical work associated with his installation with the Electrical Contractor. Power wiring for all equipment, shall be the responsibility of the Electrical Contractor.

A. Upon completion of the work, instruct the building operating personnel and provide two (2) complete sets of operating and maintenance instruction booklets

B. Submit copies of complete temperature control diagrams with written "sequence of control" and factory-printed specification data sheets covering each control device proposed to be used, prior to installation of any equipment or part or

A. The Contractor shall guarantee the control system installed under this section of the specification to be free from defects in workmanship and material under normal use, and agrees to provide service for one (1) year after acceptance by the Engineer or of beneficial occupancy of the building. Any defects in workmanship or material during this time shall be corrected at no charge to the Owner.

A. HVAC unit thermostats shall be low-voltage, programmable, heating/cooling type with fan on-auto switch. Units shall be Honeywell TH6000 or equivalent

A. HVAC units shall each be controlled by a heating/cooling thermostat.

B. Toilet exhaust fans shall be controlled with associated lights.

C. Dishwasher hood exhaust fan shall be controlled manually.

D. Kitchen hood exhaust fans shall be interlocked with MUA unit for simultaneous operation. Provide fire alarm interlock as required by local inspector and/or fire chief. Unless otherwise required as mentioned above, all will be de-energized by a signal from any hood fire protection system. Kitchen hood exhaust fans shall be automatically activated when cooking commences (via thermostat in hood collar by hood vendor).

E. Activation of a duct detector shall shut down its respective HVAC unit.

# SECTION 23 30 00 - HVAC AIR DISTRIBUTION SYSTEMS

A. General All ductwork shall be constructed strictly according to the latest ASHRAE, SMACNA, and IMC standards. Duct sizes shown are inside clear dimensions; maintain sizes inside lining for lined ducts.

- 1. Sheet metal shall be constructed of coated galvanized steel of lock-forming grade conforming to ASTM Standards A-653/A653M and A-924. Reinforcement shall be constructed of galvanized steel.
- 2. Duct thickness shall conform to the above standards. Where there is a discrepancy, the greater thickness shall apply. Reinforcement, joint type, spacing and thicknesses may be varied at the contractors discretion, in conformance with the above standards, except where specifically noted. Transfer ducts across rated corridors shall be 26 gauge, or as required by Code.
- 3. Round ductwork exposed to the public will be galvanized steel, spiral wound, maintaining in a clean, shiny appearance, and not utilizing visible sealing material. Concealed round ductwork may spiral wound, or snap lock type galvanized steel ductwork.
- 4. Sealing: All longitudinal and transverse joints in ductwork shall be sealed with Mon-Eco Industries Eco Duct Seal 44-50 or equivalent as follows:
- a. Main supply ductwork shall be sealed to SMACNA Class B Standards(3"W.G. or less).
- b. Return, exhaust, and supply ductwork shall be sealed to SMACNA Class B Standards(3"W.G. or less). c. Return, exhaust, and supply ductwork downstream of coils and VAV boxes shall be sealed to SMACNA Class C. (2"W.G. or less).

5. Location: Sheet metal may be used throughout the project.

- C. Flexible Ductwork (Polymer Liner):
- 1. Flexible ductwork shall be constructed of a spring steel helix supporting a plastic core. It shall be insulated with 1" fiberglass having a density of 1 lb./cu.ft. The insulation is sheathed in an copolymer vapor barrier jacket. 2. The duct shall be rated at 10" w.g., and a maximum velocity of 4000 fpm. The duct shall be listed in conformance with UL Standard 181, Class 1
- 3. Flexible duct shall be limited to a maximum length of 2', as a means of connecting boxes, diffusers, etc. to the duct system. Uninsulated flexduct may be used where the adjacent ductwork is uninsulated or unlined.
- 4. Flexduct shall be manufactured by Hart & Cooley, Clevaflex or equivalent.

1.02 SPECIAL DUCT SYSTEMS A. Kitchen hood exhaust.

- 1. Duct shall be constructed strictly according to the latest ASHRAE and SMACNA standards. All duct work shall be constructed of 16-gauge steel or 304 stainless steel, 18-gauge minimum. All duct, and duct to hood joints, with longitudinal seams and transverse joints continuously butt welded. Slope exhaust duct at not less than 1/2"/ft, except where other code requirements require a steeper slope. Duct connections to fans shall be flanged and gasketed to be grease tight.
- 2. Ducts shall be wrapped with a two layers of foil encapsulated, alumina/silica fibrous blanket, in strict accordance with the manufacturer's instructions, and in conformance with ASTM std 2336. Joints shall be butt joints with overlaps. The blanket shall be firmly secured to the duct using carbon steel bands. Blanket shall be 3M Firemaster, Ductwrap or Firewrap, or equivalent.
- 3. Exterior ducts shall be painted with paint rated for 150F, color as selected by the Architect. The duct will be cleaned and primed prior to painting.
- B. Dishmachine:
- 1. The dishmachine exhaust duct shall be a waterproof duct system, suitable for use with saturated air. Where exposed in the kitchen, the duct system shall be constructed of burnished stainless steel with a smooth finish to match the adjacent dishmachine.
- 2. The duct system shall used stainless steel with welded joints in all rectangular portions of the system.
- 3. After the rectangular SST portion of the system transitions to round duct, the system may be made of aluminum with Fernco couplings, PVC pipe with solvent joints, or stainless steel with welded joints. Vertical portions must also be watertight, but aluminum ducts need not use Ferenco couplings if properly configured. Submit alternate material or systems to the engineer for approval. Silicone sealant on conventional aluminum or SST ductwork is not allowed.

# 1.03 DUCT ACCESS DOORS

A. Where motorized dampers, fire dampers, control equipment, etc. are installed in ducts, and for cleaning ductwork, access doors shall be provided in the ducts, made air-tight with gasketed edges. Use Ventlok, or equal, sponge rubber or felt gasketing material. The doors shall be double-wall construction with 1" of rigid insulation fill and shall be attached to the duct with cam latches. Omit access door insulation and double-wall construction if ducts are not specified to be insulated. Access doors shall be constructed of the same materials as the ductwork.

B. Provide access panels where required for access to the "Duct Access Doors." If these access panels are placed in fire-rated walls or ceiling or floor, then the access panel shall have the same rating.

# 1.04 FLEXIBLE CONNECTIONS

A. All supply and exhaust fans and other air handling units with inlet and outlet duct or casing connections shall have a flexible connector in each connection. Connector shall be made of at least one layer of Ventglas, two-side, neoprene-coated, heavy glass fabric, Underwriters' approved and labeled as manufactured by Ventfabrics, Inc.

2.01 GRILLES, REGISTERS, AND DIFFUSERS

A. Provide grilles, registers, and diffusers of the size and type shown on the plans. Grilles, registers, and diffusers shall be made of steel with a baked white enamel finish, or extruded aluminum with clear finish, as indicated for each grille, register, or diffuser. Secure GRD's to structure where connected by flex ductwork, or where required by local code. Paint ductwork visible behind GRD's flat black. G R D's shall be manufactured by Titus, Price, Metallaire, or equivalent.

## 2.02 DUCT DETECTORS

A. Duct smoke detectors shall be solid state photo-electric type. Detector shall include air sampling chamber with sampling tubes extending through the width of the air duct. LED Alarm status indicating lights shall be visible on the front of the detector. Key controller test and reset switches plus an easily accessible test jack shall be provided. They shall include alarm relay contacts (DPDT) capable of handling loads of up to five (5) amperes at 210 VAC or 28 VDC resistive. Unit shall have self-contained power supply requiring 120/220/240V power. Detector shall include a remote indicating light/test switch (this may be deleted if the unit is clearly visible and readily accessible). Provide necessary interlocks with air handlers, smoke dampers, etc as required by the local fire department, including relays, transformers, etc. Detectors Shall be listed by Underwriters' Laboratories for use in air conditioning and ventilating duct systems in compliance with the National Fire Protection Association and Underwriters' Laboratories, Standard UL 167.

# 2.03 EXHAUST FAN, CEILING

A. The ceiling exhaust fan shall have a steel housing with a galvanized or baked enamel finish. An automatic back-draft damper shall be located within the duct connector and have cushioned stops. The fan wheels shall be balanced centrifugal and shall operate at less than 1200 rpm. Fans shall bear the AMCA certified rating seal and the U.L. label. The entire fan, motor, and wheel assembly shall be removable without disturbing the housing. Fan motors shall be grounded and mounted on vibration isolators. Fans shall be Penn Zephyr, Greenheck, Cook Gemini, or approved equivalent.

# 2.04 EXHAUST FAN, UTILITY SET

A. Fan shall be centrifugal, belt-driven, SWSI with non-overloading backward-inclined air foil, aluminum wheel. The housing shall be continuously-welded steel with drain connection. Configure for vertical discharge. Bearings shall be permanently lubricated, sealed ball bearing pillow blocks. Motor and sheaves will be protected in a weatherproof enclosure. Construction shall be non-sparking, listed for use with a Class I kitchen hood. Fan shall be mounted on spring vibration isolators. Assembly will be mounted on a roof curb with galvanized sheetmetal cap, with ½" lip all around. Fans shall be manufactured by Acme, Greenheck, Penn Ventilator, Supreme, or equivalent.

# 2.05 EXHAUST FAN, ROOF

A. The roof-mounted exhaust fans shall have a spun-aluminum housing. The fan wheels shall be dynamically balanced, aluminum, centrifugal BI. The motor shall be belt-drive, open drip-proof type, mounted internally on vibration isolators. Fans shall bear the AMCA certified ratings seal and the U.L. labels for rating under U.L. Std. 762. Fans shall be controlled as scheduled in Section 23 09 00 Controls. Fans shall be Greenheck, Penn, Cook, Acme, Ilg, Carnes, or approved equivalent.

2.06 AIR INTAKE AND DISCHARGE LOUVERS

A. Exterior stationary louvers shall be anodized aluminum 4" blades on 2-7/8" centers at 30 deg with return bends. Louvers shall be weatherproof. Set in frame, secure, and caulk into opening. Provide galvanized steel 1/2", 19-gauge wire mesh behind louver. Size per the plans.

B. Approved manufacturer's shall be Louvers and Dampers, Airstream, Dowco, Ruskin, or Titus.

# 2.07 AIR FILTERS

A. Provide air filters where shown on the drawings. Filters shall be rigid, throw-away type, constructed of pleated fiber materials with metal mesh support maze across both faces of the media. Thickness will be 2", unless 1" is the maximum thickness allowable. Filters shall have a UL listing of Class II and an average 30% (MERV 8) efficiency rating of ASHRAE Std. 52-76. Filters shall be Farr 30-30 or approved equivalent by Air Filters, Inc., Eco-Air, Cambridge, or American Air Filter.

# 2.08 MAKE-UP AIR UNIT (DIRECT FIRED)

- A. Provide a roof-mounted, natural gas, horizontal discharge, direct fired make-up air unit, as shown on the plans. Housing shall be aluminized steel with painted enamel.
- B. Blower shall be centrifugal type with forward curved DWDI wheel, dynamically balanced. The drive sheave shall be adjustable. Motor shall be 1800 RPM, open drip-proof type. Bearings shall be permanently lubricated.
- C. The burner shall be a cast iron burner with stainless steel mixing plate, and shall use a self contained or motorized modulating gas valve with a turn down ratio of 25:1. Burner shall limit the products of combustion to a maximum of 5 ppm carbon monoxide, and 0.5 ppm nitrogen dioxide. Provide an observation in the burner cabinet. Profile plates shall control proper air velocity across the burner. Unit shall have spark ignition.
- D. Unit will have a factory furnished curb.
- E. Unit will have a free-standing evaporative cooling section with 12" thick "munters fill" media, pump, float, fill/drain kit, and mesh intake screen. Intake section shall have a birdscreen and extended surface 2" filter F. Provide a remote control module, recessed mounted. The module will contain "burner on" and "blower on" indicating lamps. It will also contain a "heat-vent-cool" mode switch. The leaving air temperature control dial shall be mounted on
- the control module. The room override thermostat shall be mounted as shown on the drawings. G. Provide a fill and drain kit, complete with all valves, sensors and controls.

# H. Make-up air unit shall be ADF series, manufactured by Reznor or equivalent by Modine, Greenheck, or Captive Air. 3.01 DUCTWORK

- A. Provide duct system, connections, air balancing dampers (opposed blade dampers where the take-off is in inaccessible ceiling), dampers, duct turns, housing, hinged sheet metal doors, and necessary removable access doors for the complete supply, return, and exhaust systems. Provide access doors in ductwork wherever required for observation and maintenance of dampers.
- B. Duct workmanship. Ductwork shall be constructed and erected in a workmanlike manner. Ducts shall be straight and smooth on the inside with neatly finished joints, air-tight, and free from vibration. The internal ends of slip joints shall be made in the direction of the air flow. The ducts shall be securely attached to the building construction in an approved manner. Changes in dimensions and shape of the ducts shall be gradual. Duct sizes fall within the limiting dimensions indicated on the drawings unless otherwise approved.
- C. Duct turns. 900 elbows up to 18" wide and 450 elbows shall consist of an inside radius of not less than half the width of the duct, or be furnished with air foil type duct vanes with 2-1/4" blade spacing. Shop fabricated duct vanes shall conform to details of the Sheet Metal and Air Conditioning Contractors National Association manual.

D. All dimensions shown on drawing are inside dimensions. Contractor shall make allowances for internal lining where

- called for on drawings or elsewhere in this specification.
- E. All junctions, bends, turns, or elbows in all ducts shall have a large radius (centerline radius equal to 1-1/2 times duct width) in the throat in order to minimize the frictional resistance. No short radius turn or junction will be allowed unless turning blades of approved design are provided. Single vane-turning vanes shall be provided for all square turns.
- F. Galvanized or aluminum angle iron strips shall be installed at points where ducts penetrate walls to close off the space between the wall opening and the duct. G. All fittings shall be tack welded on 3" centers and sealed with neoprene sealer to ensure that they do not leak more than 1% when transverse joints are sealed. Areas where galvanize has been burned off shall be painted. Branch takeoffs of
- main shall be 45 degree "wye" type where possible. Conical takeoffs allowed where "wye" won't fit. Paint the inside of ducts flat black, where visible through grilles, registers or diffusers. H. Fittings for round or oval spiral wound ductwork shall be installed per the manufacturer's instructions.

## 3.02 ROOFTOP UNITS(HVAC, MUA, COND, ETC)

- A. Mount rooftop units on 14" H curbs or as noted. Units will be mounted level. Where unit does not completely cover curb, provide galvanized metal cap for weatherproof seal. B. For units with compressors (including HVAC units, condensing units, kitchen condensing units, etc) install at least two
- layers of ¹/₂" gypboard layered with R13 batt insulation for sound attenuation within the roofcurb, beneath the compressor section. Where curbs have been provided over concrete pads, this is not required. C. For units with condensate drains, provide full size PVC traps. Route discharge so condensate freely drains away from unit.
- D. For units with water and/or drain connections, route up within unit or curb where possible.
- E. The roof opening beneath the unit will be closed up and sealed tight; caulk or silicone duct penetrations.
- F. Provide flat working surface adjacent to unit, as required by code, including handrails, access doors, etc. G. Label all units per the plans, or as directed by the Owner, using spray paint and 3" high stencils, or as directed by the building owner.

## 3.03 GREASE PROTECTION SYSTEM

A. Provide a grease protection system around grease fans. This system shall be at least 15" wide, completely around the fan. The system shall be Facilitec G2 Grease Guard XD or equivalent.

# 3.04 AIR FILTERS

- A. Provide three complete sets of pleated, 30% efficient filters: construction phase, replacement just prior to balancing, and replacement set to the Owner. B. Air handlers are not intended to be used during construction for heating or cooling. The construction set is intended to
- protect the equipment during initial startup and preliminary testing. C. Filters shall be installed in factory-assembled filter banks. Enclosure shall be provided with access doors, gaskets to
- provide air-tight seal, and duct or equipment connections. D. Filters shall be manufactured by Farr or American Air Filter.
- 3.05 CONDENSATE DRAIN

A. Provide condensate drain & overflow piping or provide condensate drain piping & overflow float in condensate pan, interlocked with the blower. Size condensate piping as noted on plans, or to match equipment drain outlet size, whichever

## is larger.

3.06 REUSE OF EXISTING EQUIPMENT

- A. Existing HVAC rooftop equipment which is being reused as shown on the drawings must be inspected, tested, and
- cleaned. The inspecting and testing shall consist of: 1. Clean inside of units, including all condensing and evaporator coils, and dirt and dust accumulated in return area and on dampers. This includes removing debris throughout.
- 2. Test economizer for proper operation including complete range of motion.
- 3. Check blower(s) mounting, belts, and bearings. Lubricate bearings and replace belts as required.
- 4. Check refrigeration levels and replace as necessary. Repair any leaks to refrigeration system.
- 5. Check furnace for cracks and rust. Check operating, high limit protection, fan interlock.
- 6. Check wiring, relays, fuses circuit board, and contactors. Repair, reconnect, and re-support as required. Brightly clean any questionable connections. 7. Clean drain pans, condensate traps, and piping.
- 8. Remove abandoned components on roof such as compressors, refrigeration canisters, fan belts, etc 9. Test performance: refrigerant entering/discharge pressures; temperature drop across coil(s); temperature rise across
- furnace B. Provide an estimate to the owner for the cost of repairing any significant damaged components.

## 3.07 SPECIAL DUCT SYSTEMS

- A. Kitchen:
- 1. Kitchen exhaust duct system shall comply with NFPA-96, and ASTM std 2336. Slope at a minimum of 1/4" per foot toward the hood to provide for drainage; for horizontal runs in excess of 75', slope at 1" per foot as required by code. Provide for expansion of 2.2"/10 feet. Provide a cleanout at each change of direction and at each floor. Cleanout door shall be tight fitting, gasketed, constructed to the standard as the ductwork, listed for the use.
- 2. Duct from kitchen hood shall be routed in a code-approved, fire-rated chase. Provide access door at each cleanout. 3. Supports shall be non-combustible, rigid and securely attached to structure, designed for gravity and seismic loads. Fasteners shall not penetrate the duct wall.
- 4. Paint exterior welded black steel with exterior grade paint, to match adjacent walls, or flat black.
- 5. Ducts exposed to view in the restaurant shall be stainless steel.
- 6. Ducts shall be installed in rated shafts, or wrapped with ductwrap. Ductwrap shall be installed in strict conformance with manufacturer's instructions, providing pins, sealing tape, through-penetration materials, access door protection bands, packing materials, etc.
- B. Flue Piping: 1. The gas vent piping shall be installed in full compliance with the terms of its listing, with the manufacturer's
- installation instructions. Maintain minimum clearance to combustibles.
- 2. Provide a vent cap above the roof as required by code.
- 3. Slope and offset flue pipe per code. Route in fire rated shafts where required. Provide a barometric damper where shown or required.

## 3.08 DUCTWORK TESTING

- A. If leakage in excess of 5% of the system design flow is indicated after a balance and adjustment, reseal to eliminate excess leakage. Replace defective material or workmanship at the Contractor's expense and test until the same has met the approval of the Engineer.
- B. All ductwork operating at static pressure in excess of 3" W.G. and exterior ductwork shall be leak-tested per SMACNA standards. A minimum 25% of all ductwork shall be tested and the maximum permitted leakage shall be LMAX = CLP0.65.

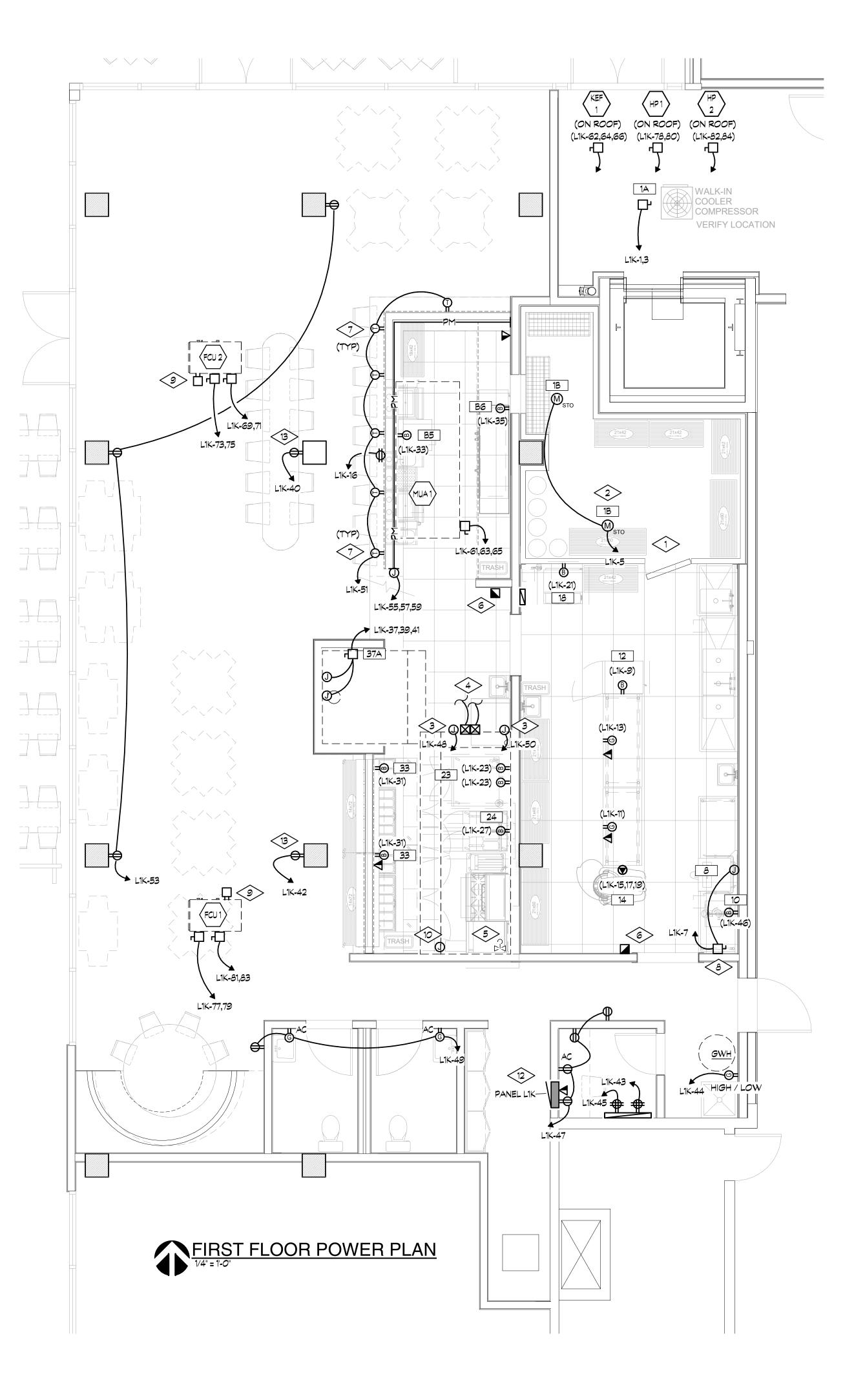


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FIELDS	MAIN STATION IONT, CO.
JRBAN	BLDG #2 S. M LONGMC

SUBMISSIONS:	
	ATIONS
M3.1	CHANICAL SPECIFICATIONS

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# **GENERAL NOTES**

- REDONE.
- B. GFCI PROTECTION:
- 120V RECEPTACLES MARKED "G" = GFCI RECEPTACLE 120V RECEPTACLES MARKED "B" = GFCI BREAKER
- NOTE: WHERE POSSIBLE AND WHERE PERMITTED BY CODE THE ELECTRICIAN SHALL PROVIDE DOWNSTREAM GFCI PROTECTION OF DEVICES WITH A SINGLE GFCI RECEPTACLE. (DEDICATED NEUTRAL SHALL BE PROVIDED FOR GFCI BREAKERS)
- C. COORDINATE ALL DEVICE AND FIXTURE LOCATIONS WITH FURNITURE, EQUIPMENT, MILLWORK AND MECHANICAL SYSTEM (DUCTWORK) LAYOUT PRIOR TO ROUGH-IN.
- D. ALL EXTERIOR ELECTRICAL COMPONENTS SHALL MEET ALL NEC INSTALLATION AND LABELING REQUIREMENTS FOR WET LOCATIONS.
- F. DEVICE MOUNTING LOCATIONS AT COUNTERS: IN "FRONT OF HOUSE AREAS" MOUNT DEVICES BELOW COUNTERS WITH HOLES AND GROMMETS UNLESS NOTED OTHERWISE. IN "BACK OF HOUSE AREAS" MOUNT DEVICES ABOVE COUNTERS.
- G. INTERLOCK HOOD FIRE SUPPRESSION SYSTEM WITH BUILDINGS FIRE ALARM SYSTEM.
- H. THE E.C. SHALL USE THE KITCHEN EQUIPMENT / FOOD SERVICE PLANS TO DIMENSION ROUGH-IN LOCATIONS. THESE PLANS ARE SCHEMATIC AND MAY SHOW DEVICES OFFSET FOR GRAPHIC PURPOSES. DO NOT TAKE DIMENSIONS FROM THESE PLANS TO DETERMINE ROUGH-IN LOCATIONS.

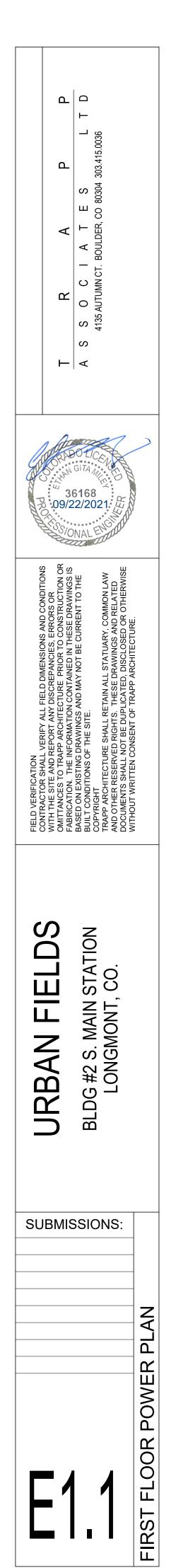
KEY	DESCRIPTION	LOAD	VOLT	CIRCUIT	CONNECTION	REMARKS
1A	WALK-IN COMPRESSOR	2 HP	208/1	(2-#10,#10G) 1/2"C	30/2; 25 FRN	
1B	WALK-IN EVAPORATOR	15 MCA	120/1	(2-#12,#12G) 1/2"C	THERMAL O.L.	
1C	WALK-IN (120V)	30 A	120/1	(2-#8,#10G) 3/4"C	J-BOX	DOOR HEATER INCLUDED
8	LOW TEMP WAREWASHER	12 A	120/1	(2-#12,#12G) 1/2"C	30/2; 15 FRN	
10	DISPOSER	1 HP	120/1	(2-#12,#12G) 1/2"C	5-20R	
12	REACH-IN FREEZER	4.5 A	120/1	(2-#12,#12G) 1/2"C	5-20R	
14	MIXER	20 MCA	220/3	(3-#12,#12 <i>G</i> ) 1/2"C	SPEC. PURPOSE	PROVIDE BUCK/BOOST AS NEEDED
18	ICE MAKER	10.7 A	120/1	(2-#12,#12G) 1/2"C	5-20R	
23	DOUBLE OVEN	6 A	120/1	(2-#12,#12G) 1/2"C	5-20R	TWO CONNECTIONS REQUIRED
24	FRYER (120V)	2 A	120/1	(2-#12,#12G) 1/2"C	5-20R	
33	PIZZA PREP REFRIGERATOR	4.2 A	120/1	(2-#12,#12G) 1/2"C	5-20R	
37A	TWO CHAMBER PIZZA OVEN	56.2 A	208/3	(3-#4,#8G) 1-1/4"C	100/3; 80 FRN	COORD. REQUIRMENTS WITH FINAL SPEC
37B	PIZZA OVEN CONNECTIONS	10.1 KW	208/3	(3-#8,#10G) 3/4"C	J-BOX	(2) CONNECTIONS / NO PROOFER
38	HEAT LAMP	1.2 KW	120/1	(2-#12,#12G) 1/2"C	5-20R	UNIT MOUNTED SWITCH
В5	BACK BAR DISHWASHER	16 A	120/1	(2-#12,#12G) 1/2"C	5-20R	COORD. REQUIRMENTS WITH FINAL SPEC
B6	BACK BAR COOLER	1/3 HP	120/1	(2-#12,#12G) 1/2"C	5-20R	

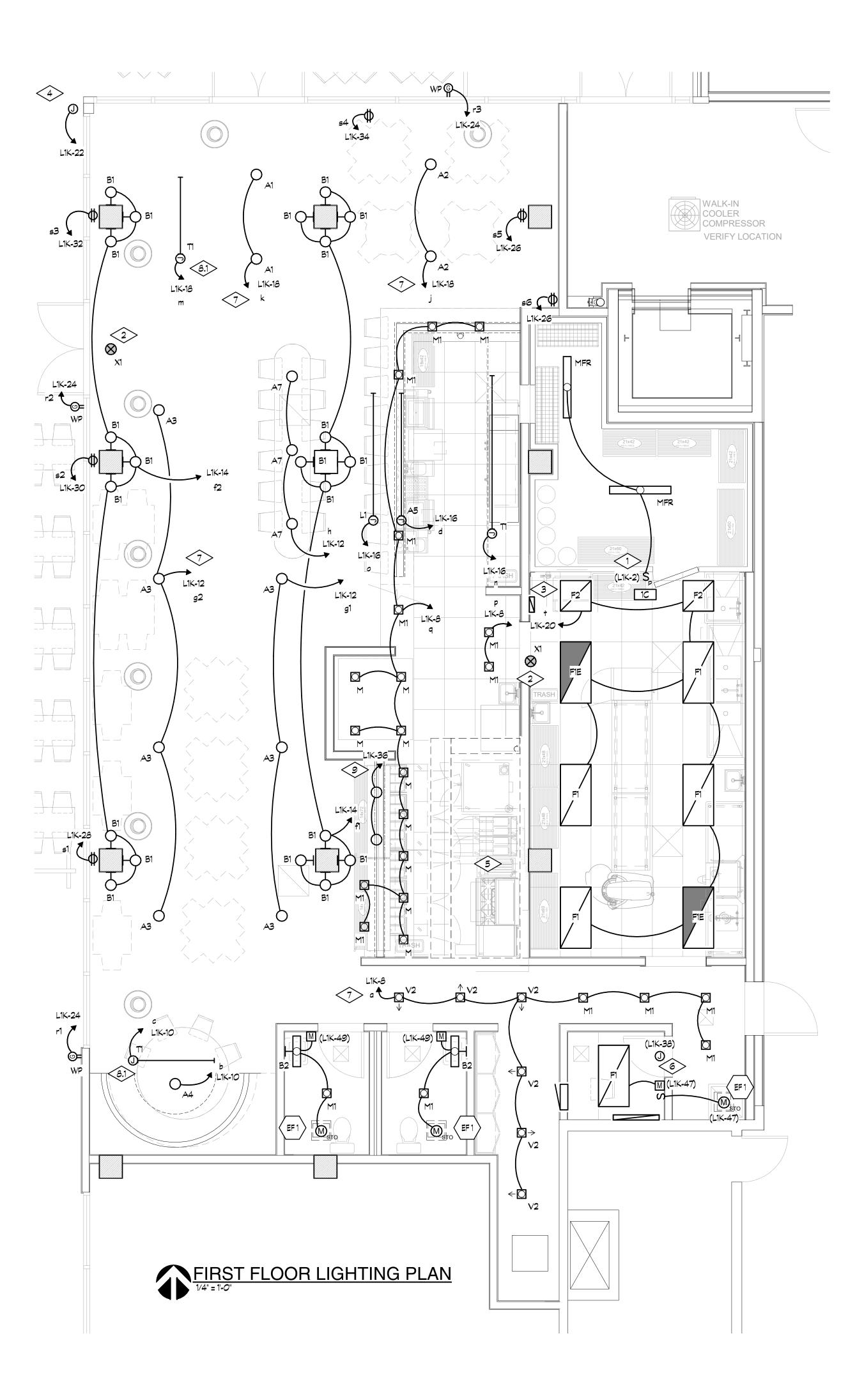
A. ELECTRICAL CONDUITS, WATER, SEWER AND GAS LINES MUST FIT WITHIN KITCHEN WALLS. CONFLICTS WITH OTHER TRADES MUST BE COORDINATED OR WORK WILL BE

E. ALL RECEPTACLES TO BE LABELED WITH PANEL CIRCUIT ID.

# DETAIL NOTES THIS SHEET

- 1. PROVIDE EXPANSION JOINTS AND INTERIOR AND EXTERIOR MOISTURE SEALS FOR ALL CONDUITS ENTERING WALK-IN COOLERS AND FREEZER PER NEC 300.7 AND MANUFACTURER'S RECOMMENDATIONS.
- 2. PROVIDE (5-#12)1/2"C (OR INTER-WIRING AS REQUIRED) FROM EVAP COIL TO REMOTE CONDENSER. VERIFY AND COORDINATE EXACT REQUIREMENTS AND CONNECTION DETAILS W/ REFRIGERATION EQUIPMENT MFG'S SPECIFICATIONS.
- 3. PRE-WIRED EXHAUST HOOD CABINET; PROVIDE CIRCUITS, CONNECTION AND INTER-WIRING FOR FIRE SYSTEM SHUT DOWN, HOOD CONTROLS, HOOD LIGHTS, ETC. DO NOT CONNECT HOOD CONTROLS OR FIRE SYSTEM POWER TO A SHUNT TRIP BREAKER. THE E.C. IS TO COORDINATE THE EXACT LOCATION AND CONNECTION REQUIREMENTS W/ HOOD MANUFACTURER AND KITCHEN DESIGNER INSTALLATION SPECIFICATIONS AND DRAWINGS. ALL MOTOR STARTERS TO BE PROVIDED BY EC.
- 4. EXTEND EXHAUST HOOD LIGHTING AND FAN CONTROL CIRCUIT TO PRE-WIRED HOOD CONTROL PANEL AS REQUIRED. FIELD VERIFY AND COORDINATE INTER-WIRING REQUIREMENTS WITH HOOD MANUFACTURER'S INSTALLATION INSTRUCTIONS.
- 5. MECHANICAL GAS VALVE; INTER-WIRE WITH HOOD FIRE PROTECTION SYSTEM FOR EMERGENCY SHUT-DOWN. COORDINATE EXACT LOCATION AND CONNECTION REQUIREMENTS WITH P.C.
- 6. ANSUL PULL STATION. COORDINATE REQUIREMENTS WITH HOOD PROVIDER.
- 7. COMBINATION USB CHARGER WITH TAMPER RESISTANT 125V, 20 AMP DUPLEX RECEPTACLE MOUNTED AT BACK OF BOOTH 36" ABOVE THE FLOOR PLATFORM, ABOVE THE TABLE TOP, MOUNTED HORIZONTALLY, CENTERED ON THE TABLE TOP, OR BELOW COUNTERTOP AT 36" ABOVE FINISHED FLOOR MOUNTED VERTICALLY. FIELD VERIFY AND COORDINATE DEVICE LOCATION, ROUGH-IN HEIGHT, MOUNTING METHOD AND CONCEALED CONDUIT RUNS WITH MILLWORK (COOPER TR7746 OR EQUAL, COORDINATE COLOR W/ ARCHITECT)."
- 8. DISH MACHINE; FIELD VERIFY LOCATION AND CONNECTION REQUIREMENTS PRIOR TO ROUGH-IN. HOME RUN VIA 20A2P WALL MOUNTED BREAKER TO PANEL L1K; SEE KITCHEN EQUIPMENT SCHEDULE AND ONE LINE DIAGRAM FOR WIRING, CONTROL AND CONNECTION DETAILS.
- 9. PROVIDE SMOKE DETECTOR WITH REMOTE INDICATING AND TEST STATION UPSTREAM OF ANY OA MIXING & INTERLOCK WITH ALL AIR HANDLERS SERVED BY ASSOCIATED DUCTWORK. COORDINATE LOCATION AND CONNECTION REQUIREMENTS WITH M.C.
- 10. MAKE UP AIR CONTROL STATION. COORDINATE EXACT LOCATION WITH M.C.
- 11. PROVIDE POWER AND DATA FOR TELEVISION. COORDINATE MOUNTING HEIGHT WITH ARCHITECT AND BRACKET INSTALLATION WITH MANUFACTURER.
- 12. MAINTAIN MINIMUM WORKING SPACE IN FRONT AND ABOVE ALL ELECTRICAL PANELS PER NEC 110.26 AS REQUIRED.
- 13. POWER FOR TV5, COORDINATE EXACT LOCATION AND QUANITY WITH OWNER. PROVIDE DATA/CABLE CONNECTION AS NEEDED. (MAX - 3 TVs PER CIRCUIT)





# GENERAL LIGHTING NOTES

- A. E.C. SHALL VERIFY THE EXACT LOCATION, MOUNTING HEIGHTS AND QUANTITY OF ALL FIXTURES AND DEVICES WITH THE ARCHITECTURAL DRAWINGS.
- B. E.C. SHALL VERIFY FIXTURE LOCATION, DETAILS, AND QUANTITY OF ALL FIXTURES WITH THE LIGHTING DESIGNER DRAWINGS.
- C. SOME LIGHTING FIXTURES AND DEVICES ARE SHOWN OFFSET ON THE PLAN FOR GRAPHIC PURPOSES. E.C. SHALL COORDINATE THE EXACT LOCATION AND ROUGH-IN HEIGHT OF ALL FIXTURES AND DEVICES.
- D. ALL EMERGENCY EGRESS LIGHTING SHALL COMPLY WITH IBC 1003.2.11
- E. ALL EXTERIOR LIGHTING FIXTURES SHALL BE INSTALLED, SHIELDED AND/OR CONTROLLED IN COMPLIANCE WITH LOCAL ORDINANCES.
- F. ALL EXTERIOR ELECTRICAL COMPONENTS SHALL MEET ALL NEC INSTALLATION AND LABELING REQUIREMENTS FOR WET LOCATIONS.
- G. COORDINATE REQUIRED BLOCKING FOR ADDED CEILING FANS WITH LANDLORD'S REPRESENTATIVE.
- H. LIGHTING SYSTEM FUNCTIONALITY TESTING/COMMISSIONING SHALL BE PERFORMED IN ACCORDANCE WITH IECC 408.3, ADDITIONAL LOCAL JURISDICTIONAL REQUIREMENTS TO BE CONFIRMED WITH BUILDING OFFICIAL PRIOR TO COMPLETION OF PROJECT.
- I. HOMERUN(S) VIA LIGHTING CONTROL STATION; SEE ELECTRICAL ONELINE FOR ADDITIONAL INFORMATION.

KEY	LAMP	DESCRIP [.]
A1	60W MAX	DECORA
A2	60W MAX	DECORA
A3	60W MAX	DECORA"
A4	60W MAX	DECORA"
A5	(10) 60W LAMPS	DECORA"
A7	60W MAX	DECORA"
B1	(1) 60W LAMP	DECORA"
B2	60W MAX	DECORA"
F	36W LED 3500K	2'x4' REC
FI	4800 LUM	ACRYLIC 2'x4' RECI
F1E	36W LED 3500K	ACRYLIC
	4800 LUM	BALLAST
	40W LED 3500K	2'x2' RECI
F2	4800 LUM	ACRYLIC
Σ	15W LED 2700K	DOWNLI
<b>M</b> 1	15W LED 2700K	DOWNLI
L1	96W DRIVER	TAPE LIG
T1/T2	50W HALOGEN	TRACK LI
√2	13W LED 2700K	ADJUSTA
X1	FURN	EXIT SIGN 90 MIN B
X2	FURN	EXIT SIGN 90 MIN B
<i>Z</i> 1	FURN	DOUBLE PACK, +10
Z2	FURN	DIE CAST LOCATIO BATTERY
NOTES:	*NOTIFY ENGINEER O *VERIFY CEILING INSL	F ANY DIS JLATION W

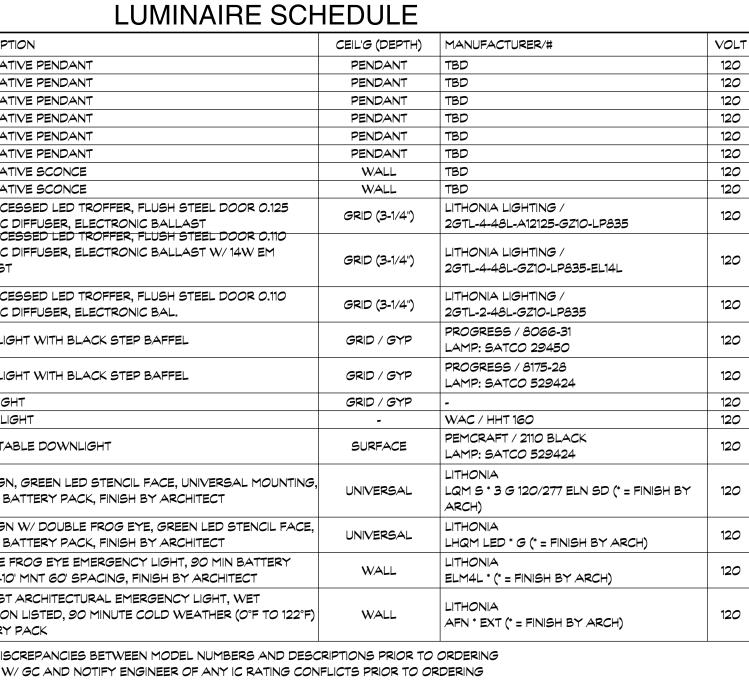
# DETAIL NOTES THIS SHEET

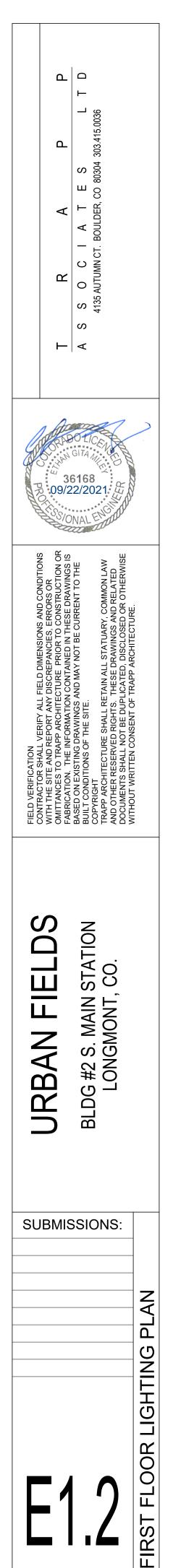
- 1. EXTEND POWER FOR WALK-IN BOX LIGHTS TO REFRIGERATION EQUIPMENT CIRCUIT. RUN ALL CONDUIT ON EXTERNAL TOP OF COOLER. SEE SHEET E1.1 FOR CONTINUATION. PROVIDE INTERIOR / EXTERIOR MOISTURE SEALS AND EXPANSION JOINTS FOR ALL CONDUITS ENTERING THE WALK-IN COOLER AND FREEZER PER NEC 300.7 AND MANUFACTURER'S RECOMMENDATIONS.
- 2. EXTEND POWER FOR EMERGENCY LIGHT TO UN-SWITCHED LIGHTING CIRCUIT SERVING THIS AREA.

PROVIDE A TOGGLE SWITCH WITH PILOT LIGHT AS

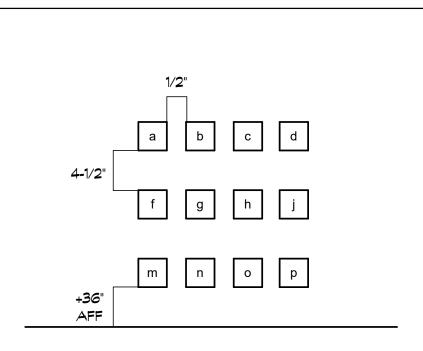
REQUIRED.

- 3. PROPOSED LOCATION FOR LIGHTING SWITCH BANK; SEE LIGHTING CONTROL DETAIL ON <u>THIS SHEET</u> FOR DEVICE TYPES AND CIRCUIT NUMBERS. (COORD. W/ OWNER & FINAL SPEC)
- 4. EXTERIOR SIGNAGE; USE J-BOX INSTALLED UNDER SHELL AND CONNECT TO CIRCUIT SHOWN; FIELD VERIFY AND COORDINATE LOCATION OF EXTERIOR SIGNAGE W/ SHELL. UPON FINAL CONNECTION PROVIDE DISCONNECTING MEANS PER NEC 600.6 COORDINATE THE CONNECTION REQUIREMENTS WITH SIGNAGE VENDOR / MANUFACTURER PRIOR TO ROUGH-IN. HOMERUN VIA LIGHTING CONTACTOR. SEE ONE LINE DIAGRAM FOR CONTROL DETAIL.
- 5. KITCHEN EQUIPMENT VENDOR TO PROVIDE AND INSTALL 42W E26 CFL LAMPS, 2700K FOR HOOD LIGHTING.
- 6. CENTRAL INVERTER SYSTEM: PROVIDE 500W UNIT (ISOLITE E3 SERIES OR EQUAL) TO RUN EMERGENCY LIGHT FIXTURES IN AN EMERGENCY.
- 7. LIGHTS ON CENTRAL INVERTER SYSTEM W/ INTEGRAL TRANSFER SWITCH. DIMMER SHALL BE SHUNT DURING POWER FAILURE.
- 8. PROVIDE CURRENT LIMITER AS SPECIFIED.
  1. 1A
  2. 2A
- 9. POWER FOR 250W HEAT LAMPS (CRES COR / IFW-63-10). PROVIDE CONTROL AT SWITCH BANK (NOTE#3).





	LEGEND	
	MAIN DISTRIBUTION CENTER	
	PANELBOARD ELECTRIC SERVICE METER	1/2"
	CURRENT TRANSFORMER	
	TRANSFORMER	a b c d
	CONCEALED CIRCUIT	4-1/2"
		f g h j
	UNDERGROUND CIRCUIT	
₩ <b>M</b>	WIREMOLD (SURFACE WIREWAY)	
₽M	PLUGMOLD	m n o p
<b>──</b> P-3	HOMERUN TO PANELBOARD (ONE ARROW / CKT,	+36" AFF
(44,46)	PNL & CKT #'S SHOWN) CIRCUIT NUMBER(S)	
(++,+0)	FOR SPECIFIED PANEL	
	CONDUIT TURNS UP CONDUIT TURNS DOWN	
J	JUNCTION BOX / CARD READER	
ß	PORCELAIN LAMP HOLDER (PC: PULL CHAIN)	
0	LIGHT FIXTURE: SURFACE MOUNTED	
O	RECESSED LIGHT FIXTURE	DIMMER SCHEDULE
Ю	WALL MOUNTED LIGHT FIXTURE	
\ ⊗	EXIT LIGHT: DIRECTIONAL ARROW	a 300 L1K-8
	BATTERY PACK	b 150 L1K-10 c 150 L1K-10
	SURFACE FLUORESCENT FIXTURE	d 600 L1K-16
	RECESSED FLUORESCENT FIXTURE	f1         1000         L1K-14           f2         600         L1K-14
Э	SINGLE OUTLET: C-CLOCK (+7'0")	g1 300 L1K-12 g2 300 L1K-12
₽	DUPLEX RECEPTACLE IG: ISOLATED GROUND	g2 300 L1K-12 h 300 L1K-12
©=	S: SAFETY DUPLEX RECEPTACLE - GFCI	j 150 L1K-18 k 150 L1K-18
©= ©=	DUPLEX RECEPTACLE - GFCI BREAKER	m 150 L1K-18
Œ=	DUPLEX RECEPTACLE - TAMPER RESIST	n 300 L1K-16 o MLV L1K-16
⊕	SPLIT WIRE DUPLEX QUADRAPLEX (DOUBLE DUPLEX)	p ELV L1K-8
	COMB. SWITCH / RECEPTACLE	q ELV L1K-8 r1 SW L1K-24
Ś₽` ⊙	FLOOR MOUNTED RECEPTACLE	r2 SW L1K-24
0	SPECIAL PURPOSE (AS NOTED)	r3 SW L1K-24 s1 SW L1K-28
$\overline{\Phi}$	TELEVISION OUTLET	s2 SW L1K-30
Ň	MOTOR OUTLET	s3 SW L1K-32 s4 SW L1K-34
	sto - switched thermal overload TELEPHONE TERMINAL	s5 SW L1K-26
$\nabla$	TELEPHONE OUTLET	s6         SW         L1K-26           t         SW         L1K-20
$\nabla$	FLOOR MTD. TELEPHONE OUTLET	
∇c ▼	COMB. TELE/COMPUTER OUTLET	
S	TOGGLE SWITCH	
	a-switching p-pilot light 2-2 pole k-keyed	
	3-3 way to-thermal overload 4-4 way t-timer	
#	WALL MOUNTED LIGHTING CONTROL DEVICE RE: LIGHTING CONTROL DEVICE SCHEDULE	
	CEILING MOUNTED LIGHTING CONTROL DEVICE	
Ψ	RE: LIGHTING CONTROL DEVICE SCHEDULE	
		LIGHTING CONTROL
ET G	TIME SWITCH PHOTOCELL	1. LIGHTING DESIGN, LAYOUT AND FIXTURE
PE -		FOR SCHEMATIC PURPOSES ONLY; E.C. 9 AND COORDINATE THE EXACT LOCATION
	PUSH-BUTTON STATION	CONFIGURATION, CONNECTION REQUIRED
Ċ	SAFETY SWITCH	LABELING OF ALL FIXTURES AND CONTRO ROUGH-IN.
$\boxtimes$	MOTOR STARTER / LIGHTING CONTACTOR	
М	COMBINATION MOTOR STARTER	2. LIGHTING CONTROL SYSTEM TO BE SLID COORDINATE WITH ARCHITECT WALL SP
R	RELAY	REQUIREMENTS).
FACP	FIRE ALARM CONTROL PANEL	A. DIMMER AND SWITCHES SHALL BE LU (NOVA SERIES). DIMMERS SHALL AL
	ANNUNCIATOR	TYPE OR RESISTIVE (WATTAGE AS SI
Ž	PULL STATION	SERIES TO BE USED FOR LED LOADS NOT REMOVE FINS. USE AT FULL CAP
	HORN	B. COORDINATE LOW VOLTAGE DIMMER
	HORN / LIGHT COMBINATION	CAPACITY WITH LIGHTING MANUFACT C. KEEP MINIMUM SEPARATIONS OF 1/2"
Sa	HORN / STROBE	VERTICAL TO PREVENT OVERHEATING
S	STROBE	D. EACH DIMMER SHALL BE PROVIDED V NAMEPLATE. THE DIMMER NAMES SH
Б	BELL	DETERMINED BY THE RESTAURANT M
	OS & Y VALVE	ONE WEEK AFTER TURNOVER.
E	FLOW SWITCH	3. THE E.C. SHALL VERIFY THE COMPATIBILI
٠	ROOM DETECTOR (SMOKE)	DEVICES AND FIXTURES WITH THE FIXTUR
• т	ROOM DETECTOR (THERMAL)	4. INSTALLATION AND OPERATION OF DIMM
Ŀ	DUCT DETECTOR	FIXTURES SHALL CARRY A FIVE YEAR WA
$\Box$	REMOTE INDICATING LIGHT / TEST SWITCH	5. COORDINATE NEON SIGNAGE AND LIGHT
		WITH OWNER BEFORE INSTALLATION. S'
		BY EC.
$\sim$		6. MOUNT EACH DIMMER IN ITS OWN BOX.
		SEPARATIONS AS SHOWN TO PREVENT OVERHEATING.
⊪—	GROUND CONNECTOR	
$\bigcirc$	MECHANICAL EQUIPMENT	7. NEON SWITCH CONTROLS SUPPLIED BY
$\sim$	DETAIL NOTE	8. FINAL DIMMER CONFIGURATION TO BE CO
$\sim$		SPACE AVAILABLE.
	KITCHEN / MEDICAL EQUIPMENT	
(E) (ER)	EXISTING TO REMAIN	
(ER) (ED)	EXISTING TO BE RELOCATED	LIGHTING CONTROL LEGEND
	EXISTING TO BE DEMOLISHED	

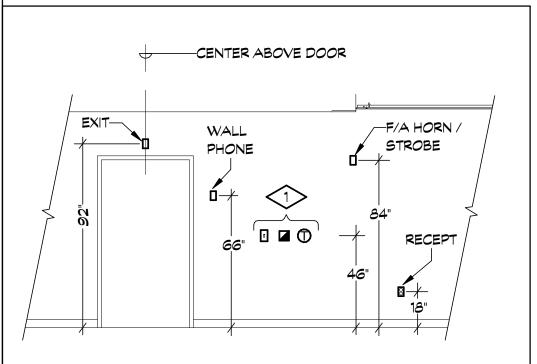


IMMER SCHEDULE										
SW EG	DIMMER	CIRCUIT								
а	300	L1K-8								
b	150	L1K-10								
С	150	L1K-10								
d	600	L1K-16								
f1	1000	L1K-14								
f2	600	L1K-14								
g1	300	L1K-12								
g2	300	L1K-12								
h	300	L1K-12								
j	150	L1K-18								
k	150	L1K-18								
m	150	L1K-18								
n	300	L1K-16								
0	MLV	L1K-16								
р	ELV	L1K-8								
q	ELV	L1K-8								
r1	SW	L1K-24								
r2	SW	L1K-24								
r3	SW	L1K-24								
s1	SW	L1K-28								
s2	SW	L1K-30								
s3	SW	L1K-32								
s4	SW	L1K-34								
s5	SW	L1K-26								
s6	SW	L1K-26								
t	SW	L1K-20								



BHTING DESIGN, LAYOUT AND FIXTURE PLACEMENTS IS R SCHEMATIC PURPOSES ONLY; E.C. SHALL FIELD VERIFY ND COORDINATE THE EXACT LOCATION, LAYOUT, INFIGURATION, CONNECTION REQUIREMENTS AND BELING OF ALL FIXTURES AND CONTROLS PRIOR TO

- BHTING CONTROL SYSTEM TO BE SLIDE DIMMERS (EC TO ORDINATE WITH ARCHITECT WALL SPACE
- QUIREMENTS). DIMMER AND SWITCHES SHALL BE LUTRON SLIDE TYPE (NOVA SERIES). DIMMERS SHALL ALL BE 0-10 VOLT TYPE OR RESISTIVE (WATTAGE AS SHOWN). LUTRON CL
- SERIES TO BE USED FOR LED LOADS AS NOTED . DO NOT REMOVE FINS. USE AT FULL CAPACITY.
- COORDINATE LOW VOLTAGE DIMMER TYPE AND CAPACITY WITH LIGHTING MANUFACTURER.
- KEEP MINIMUM SEPARATIONS OF 1/2" HORIZONTAL & 4-1/2" VERTICAL TO PREVENT OVERHEATING.
- EACH DIMMER SHALL BE PROVIDED WITH AN ENGRAVED NAMEPLATE. THE DIMMER NAMES SHALL BE DETERMINED BY THE RESTAURANT MANAGER, APPROX ONE WEEK AFTER TURNOVER.
- E E.C. SHALL VERIFY THE COMPATIBILITY OF DIMMING VICES AND FIXTURES WITH THE FIXTURE MANUFACTURER.
- TALLATION AND OPERATION OF DIMMING DEVICES AND TURES SHALL CARRY A FIVE YEAR WARRANTY.
- ORDINATE NEON SIGNAGE AND LIGHTING SWITCHING TH OWNER BEFORE INSTALLATION. SWITCHES PROVIDED
- DUNT EACH DIMMER IN ITS OWN BOX. KEEP MINIMUM PARATIONS AS SHOWN TO PREVENT DIMMER
- ON SWITCH CONTROLS SUPPLIED BY EC
- VAL DIMMER CONFIGURATION TO BE COORDINATED WITH ACE AVAILABLE.

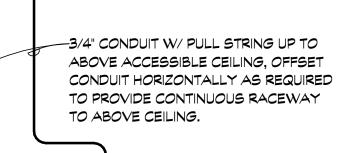


(1) LIGHT SWITCH, FIRE ALARM PULL STATION, THERMOSTAT

NOTE: VERIFY ALL ELEVATIONS W/ ARCHITECTURAL DRAWINGS PRIOR TO ROUGH-IN.

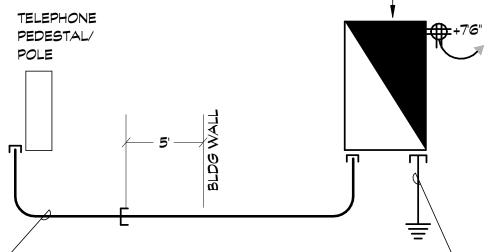
# **DEVICE MOUNTING ELEVATIONS**

PROVIDE ALTERNATE PRICE TO REPLACE STRAIGHT VERTICAL CONDUIT RUNS AND BOXES WITH PLASTER RINGS AND PULLSTRINGS.



TELEPHONE OUTLET; 4 SQ BOX WITH 1 GANG PLASTER RING FOR FLUSH MOUNTING. WHERE REQUIRED, 1 GANG WIREMOLD BOX FOR SURFACE MOUNTING. FURNISH ALL OUTLETS WITH BLANK COVERPLATES. EACH BOX WILL CONTAIN MULTIPLE CABLE CONNECTIONS, WHICH WILL BE INSTALLED BY OTHERS, UNLESS OTHERWISE INDICATED.

TELEPHONE BACKBOARDS 4'X8'X 3/4" FIRE TREATED PLYWOOD, PAINTED WHITE.



(2)3" SCH 40 PVC, ROUTED TO PEDESTAL OR POLE BASE, AS SHOWN ON PLANS OR REQUIRED BY THE TELEPHONE COMPANY. USE LONG RADIUS ELBOWS(SCH 80), AND PROVIDE PULL ROPE.

(#6CU)1/2" C TO COLD WATER PIPE; CONNECT AT ELECTRIC SERVICE POINT OF CONNECTION.

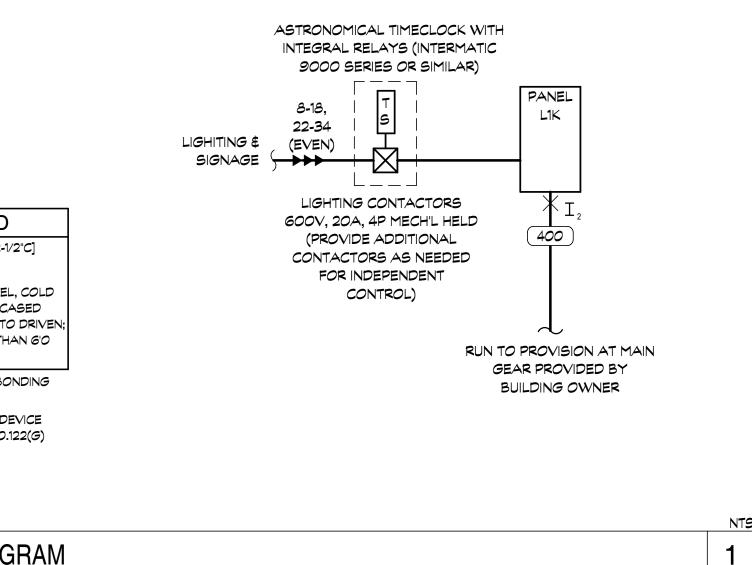
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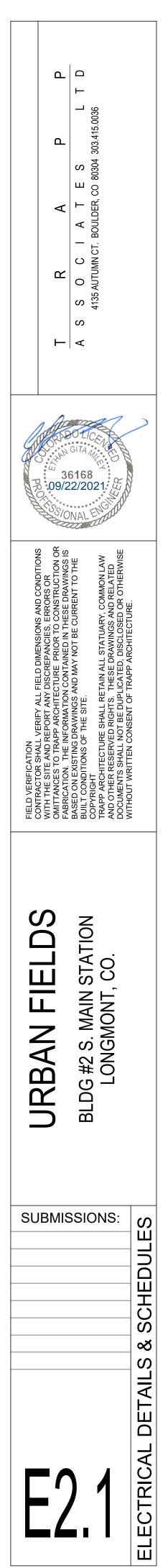
								PAN	JEL	L1	K		-						
5	JPPLY FROM:							``	VOLTS:	120/:	208 Wye							<b>9:</b> 65000	
		10UNTING: FLUSH     PHASES: 3     MAINS TYPE: MLO       ICLOSURE: NEMA 1     WIRES: 4     MAINS RATINGS: 400 A																	
	ENCLOSURE:	NEMA	1						WIRES:	4				<b>m</b>	AIN	s rat	IING:	5: 400 A	
CIRCUIT DES	CRIPTION	L	TRIP	P	вт			4	E	3	0	5		BT	P	TRIP	L	CIRCUIT DESCRIPTION	
1A - WALK-IN C	OMPRESSOR	K	30	2	s	1	1440	128					2	S	1	20	L	1C - WALK-IN (120V)	
				-		3 5			1440	0	1200	•	4	S	1	20		SPARE SPARE	
1B - WALK-IN E' 3 - LOW TEMP V		K	20	1	S	5	1440	100			1800	0	6	S	1	20		0.7.12	
		K	20	1	G	9	1440	486	540	900			8 10	S S	1	20 20		DINNING LIGHTING	
12 - REACH-IN CONV. RECEP		K	20 20	1	G S	11			540	900	180	600	12	5	1	20		DINNING LIGHTING	
CONV. RECEP		K	20	1	5	13	180	1260			100	600	14	5	1	20		DINNING LIGHTING	
CUNV. RECEP	IS - NICH.	<b>_</b>	20			15	100	1260	1921	1240	<u> </u>		16	5	1	20		DINNING LIGHTING	
14 - MI	(50	K	20	3	6	17			1921	1240	1921	540	18	5	1	20		DINNING LIGHTING	
<del>4</del> -  *  .	NEK		20	2	S	19	1921	468			1921	540	20	5	1	20		KITCHEN LIGHTING	
18 - ICE N		ĸ	20	1	G	21	921	400	1284	1200	<b>_</b>		20	5	1	20		SIGNAGE	
23 - DOUBL		K	20	1	ST	23			1204	1200	1440	540	24	5	1	20		FESTOON LIGHTING	
SHUNT TRI				1	ST	25 25		1200				540	24 26	5	1	20		INTERIOR SIGNAGE	
24 - FR		<u></u> К	20	1	ST	25		1200	240	600	,		20 28	5	1	20		SHOW WINDOW	
SHUNT TRI	· _ ·			1	ST	29			240			600	30	5	1	20		SHOW WINDOW	
33 - PIZZA P		<u>к</u>	20	1	G	31	1008	600				000	32	5	1	20		SHOW WINDOW	
B5 - BB DISH		K	20	1	G	33	1000	000	1920	600	,		34	5	1	20		SHOW WINDOW	
B6 - B8 C		K	20	1	G	35			1920		864	500	36	5	1	20		HEAT LAMPS	
D0 - DD C	JOLER		20	1	6	37	6749	180			004	500	38	5	1	20		INVERTER	
37 - PIZZA		K	80	3	s	39	6/49	100	6749	600	<u>,</u>		40	5	1	20	R	TV POWER	
5/ - 1222	OVEN		00	2	9	41			6/49		6749	600	40	5	1	20	R	TV POWER	
		R	20	1	s	43	360	500			6/49	000	44	5	1	20	R	GWH	
		R	20	1	5	45	560	500	360	1920	<b>_</b>		44	5	1	20	K	#10 - DISPOSER	
		R; L		1	5	47			560	1920	1144	240	48	5	1	20	K	HOOD CONTROLS	
RESTROOM		R; L		1	5	49	690	240			11-7-7	240	50	5	1	20	K	FIRE SUPPRESION	
CONV. RECE		R	20	1	5	51	000	240	1080	0			52	S	1	20		SPARE	
CONV. RECEPT		R	20	1	S	53				-	540	0	54	s	1	20		SPARE	
						55	721	0				•	56	G	1	20		SPARE	
PLUG M	OLD	R	20	3	s	57	,	-	721	0			58	G	1	20		SPARE	
						59					721	0	60		1	20		SPARE	
						61	0	0					62						
MUA	1	M	20	3	s	63			0	0			64	54 S 3	5 3 20	5 3 20	M	KEF 1	
						65					0	0	66						
SPAC	E			1		67							68		1			SPACE	
									960				70		1			SPACE	
FC 2	E)	M	20	2	S	69 71					960		72		1			SPACE	
	- 4->			-	-		4800						74		1			SPACE	
FC HEA	T (E)	M	60	2	S	73 75			4800				76		1			SPACE	
	- 4				-	77					4800	2534	78	_					
FC HEA	Т (Е)	M	60	2	S	79	4800	2534					80	S	2	40	M	HP 1 (E)	
	_\				-				960	2534	4		82	-					
FC 1	E)	M	20	2	S	81 83					960	2534	84	S	2	40	M	HP 2 (E)	
			TOTA		DAD.	,	31.71	kVA	32.57	7 kVA	30.77	7 kVA	•			-			
			TOTA					5A		3 A	250								
							1.				BREAK		_	-				PANEL TOTALS	
BHTING -	L 11.86 k				125%				2 kVA		SHUNT TR	۱ <b>۲</b> -	<u></u>	-			<b></b>		
CEPTACLE -	R 7.82 k				00%				2 kVA		GFCI -		G	_				<b>I. LOAD:</b> 95.04 kVA	
DTOR -	M 33.18 k				107%				8 kVA		HANDLE E		- H	_ 1	ГОТ			<b>EMAND:</b> 85.64 kVA	
CHEN -	K 42.19 I				65%				2 kVA		HANDLE T	IE -	Т	_				. CONN.: 264 A	
HER -	0 0 kV	Ά			0%			0	kVA	/	AFCI -		A	_ 1	ГОТ	AL ES	5T. D	<b>EMAND:</b> 238 A	
ISTING -	E O kV	'A			0%			0	kVA	4	STANDAR	2D -	S	]					
is ling -														-					

LOCATION		s	ECO	ONDARY	VOLTAGE	E	Ø	KVA	%Z-*	lsc AVAIL.		" <b>M</b> "	lsc FAUL1
TRANS	I sa			208	3		3	1000	5.32	2776		18.8	52200
LOCATION		VOLT.	Ø	WIRE TYPE	CONDUIT TYPE	WIRE SIZE	#OF RUNS	LENGTH	"C" VALUE	lsc AVAIL.	"F"	"M"	lsc FAUL ⁻
MDC	I 1	208	3	AL	MET	500	2	80	18755	52200	0.927	0.519	27088
L1K	I 2	208	3	AL	MET	250	2	15	12122	27088	0.140	0.878	23771
NOTES: SWITCHE DEDUCT PRICE TO THE SERIES RATIO	DUSE NG. A	SERIES I LL EQUIF	RAT PME	ED EQUI	PMENT AND	D PROV	VIDE TH LY AT1	HE TESTE	ם סכפם מ	OMBINAT	ION USE	о т <i>о о</i> в-	TAIN
	GON												
PROVIDE MARKIN				RANGEON	ZMER (ACI		ED BAS	SED ON %	62 FROM L	JTILITY CO	MPANYI	DESIGN	

	WIRING LEGEND
400	2[(4-250MCM AL, #3 CU G)2-1/2"(
2000A	7[(4-500MCM AL)4"C]
G	(3/0 CU)3/4"C TO BLDG STEEL, C WATER PIPE, CONCRETE ENCASE ELECTRODE; 2[(#6CU)1/2"C] TO D GROUND RODS NOT LESS THAN APART
	D BASED ON SUPPLY-SIDE BOND NEC 250.28(D)(2)
	ND BASED ON OVERCURENT DEVIC OF TAP FEEDER PER NEC 250.122

2 ELECTRICAL ONELINE DIAGRAM





with a U.L. listed assembly compatible with the wall or floor assembly being penetrated.

# **DIVISION 26 - ELECTRICAL**

**SECTION 26 01 00 - GENERAL PROVISIONS** 

## 1.01 WORK INCLUDED:

- A. The work included by this division of the specifications includes furnishing all labor, materials, equipment, and services, including minor items omitted but necessary to construct and install the complete systems described by the Contract Documents and specified below. "Contractor" refers to the Electrical Contractor. The general conditions of the specifications apply and are included in this part of this section.
- 1. Power Distribution System 2. Interior and Exterior Lighting System
- 3. Telephone Raceway System
- 4. Data Raceway System
- 5. Fire Alarm System
- 6. Emergency Lighting System
- 7. Electric Heating System 1.02 CODES AND REGULATIONS
- A. Comply with state and local codes, and utility company regulations. Final interpretations will be made by the local inspection authority. The Contractor to verify the governance of the following Codes, including any local amendments and supplementary codes such as the Codes of the National Fire Protection Association:
  - 1. Building Code: 2018 International Building Code
  - 2. Plumbing Code: 2018 International Plumbing Code
  - 3. Mechanical Code: 2018 International Mechanical Code
  - 4. Fire Code: 2018 International Fire Code
- 5. Gas Code: 2018 International Fuel Gas Code 6. Energy Code: 2018 International Energy Conservation Code
- 7. Electrical Code 2020 National Electrical Code
- 1.03 EQUIPMENT AND MATERIALS STANDARDS:
- A. Equipment and materials shall be new, UL-listed for the use intended, and free from damage or defect. They shall comply with the latest industry standards.
- 1.04 CONTRACT DRAWINGS
- A. Illustrate the general design and extent of performance required. All dimensions and locations shall be taken from the Architectural drawings. Consult with Architectural plans and locate all ceiling equipment where indicated on reflected ceiling plans.
- 1.05 <u>SHOP DRAWINGS</u>
- A. Submit products data and/or shop drawings as required by the Architect for the following:
- 1. Switches, dimmers, receptacles and coverplates
- 2. Switchboards, Panelboards 3. Disconnect switches
- 4. Fuses
- 5. Light fixtures
- 6. Fire alarm system and equipment
- B. Quality of specific equipment is established by manufacturer's catalog number. Alterations caused by any Substitution shall be accomplished at no additional expense to the Owner
- C. Manufacturers not listed may submit for acceptance as an "approved equivalent." Requests for an "equivalent" means "approved equivalent". Four copies of such submittal must be received by the Engineer seven (7) working days prior to bid date
- 1.06 WARRANTY:
- A. The contractor shall be responsible for the successful operation of electrical systems, equipment, and materials installed under this Contract for a period of one year from the date of final acceptance. Defective equipment or materials shall be repaired or replaced at no expense to the Owner.
- 1.07 <u>PRODUCT HANDLING AND CLEAN UP:</u>
- A. Equipment shall be left clean and undamaged, to the satisfaction of the Owner. The General Conditions take precedence. 1.08 CUTTING AND REPAIRING
- A. The contractor shall be responsible for all cutting, drilling, welding, and repair required for his portion of the work. Coordinate with the Architect. The General Conditions take precedence.
- 1.09 OPERATING AND MAINTENANCE DATA:
- A. Provide the Owner with operating and maintenance instructions(four copies) required for operation of all electrical systems. Bind the written instructions in a notebook. The General Conditions take precedence. 1.10 <u>PERMITS:</u>
- A. The contractor shall pay for all fees, taxes, secure permits, licenses, and inspections required for the project.
- 1.11 TEMPORARY SERVICES:
- A. Provide temporary power and lighting as required by the General Contractor, in accordance with OSHA and N.E.C. standards

### 1.12 COORDINATION

- A. Coordinate outlet device and equipment locations with the Architectural Plans and work of other trades. Locate on horizontal and vertical lines to avoid interference and to provide functional use of all equipment. Verify electrical power characteristics before ordering fixtures, equipment, etc.
- B. Mechanical work performed by this contractor will conform to the standards of Division 21-23. Mechanical equipment motors and controls shall be furnished, set in place, and wired according with the following schedule unless otherwise noted or specified. MC = Division 21-23 EC = Division 26-28

1		-		
	Furn	Set	Power	Control
Item	By	By	Wiring	Wiring
Combination starters	MC	EC	EC	MC
Equipment motors	MC	MC	EC	
Motor starters & O.L. relays	MC	EC	EC	MC
Disconnect switches	EC	EC	EC	MC
Thermal overload heaters (1)	EC	EC	EC	
Variable Speed Drives	MC	EC	EC	MC
Control relays/transformers	MC	MC	EC	MC
Temperature control panels	MC	MC	EC	MC
Temp. Controls conduit/wiring	MC	MC		MC
Actuator and solenoid wiring	MC	MC		MC
Pushbuttons & pilot lights	MC	MC		MC
Room thermostats	MC	MC		MC
The sum extense line available	EC	EC	EC	

EC EC EC --Thermostats: line voltage

- C. The general guideline for the division between control(by MC) wiring and power wiring(by EC) is that power wiring carries the current which energizes a motor, control wiring does not. Control wiring may be 120V, which would be the responsibility of the MC. Control motors are wired by the MC.
- D. Examine the site and become aware of existing conditions, utilities, and other issues affecting the satisfactory completion of the project.

### 1.13 DELIVERY, STORAGE, HANDLING:

- A. Provide necessary hauling and hoisting equipment. Protect the materials of this Division before, during, and after installation.
- 1.14 AS-BUILT DRAWINGS:
- A. Keep a current set of "as-built" drawings on site. Upon completion of the work, furnish engineer with a reproducible prints showing the "as-built" installation.
- 1.15 PROJECT/SITE CONDITIONS:
- A. Visit the site to become familiar with location and the various conditions affecting the work, including existing utilities. 2.01 ACCESS PANELS:

A. The electrical Contractor shall furnish and General Contractor shall install access panels where required for access to equipment. The electrical Contractor shall include the cost of installation in his bid. Access panels shall be adequately sized, of a type approved by the Architect and shall be fire or smoke-rated as required.

## 3.01 EXCAVATION AND BACKFILLING:

A. Verify the location of underground utilities before excavation; the contractor is responsible for any damage to underground utilities. Provide excavating and backfilling for electrical work. Backfill in 12" layers, mechanically tamp to 95% proctor standards. Protect according to OSHA standards. The General Conditions take precedence. B. Provide marker tape 12" above exterior underground service conduits(power, telephone, television).

# 3.02 START-UP PROCEDURES:

A. Follow manufacturer's recommended procedures in starting up the equipment; damage caused during start-up shall be replaced at no expense to the owner.

## 3.03 HANGERS AND SUPPORTS:

- A. Support conduit and equipment from the structure to prevent sagging, pocketing, swaying, and vibrations, and arranged to provide for expansion and contraction. Brackets, clamps, and hangers shall be steel or copper of a type, acceptable to the Engineer. Chain, perforated iron or wire hangers are not permitted
- B. Conduit on the roof will be supported above the roof on roof pads. The pads shall be approximately 6"Wide by 6" high by the length as required. They shall be made of recycled rubber, rated for 500lbs/ft loading each. The pads will have galvanized steel "C" channel attached to the top, which can accommodate pipe clamps to secure the conduit. This configuration of individual piping pads may be expanded to include two pads supporting a trapeze style support where multiple conduits are racked together. The pads are C-series manufactured by Cooper B-line or approved equivalent.
- 3.04 SLEEVES AND PLATES
- A. Provide sleeves and inserts for all conduit. The contractor shall be responsible for the cost of cutting and patching required for piping where sleeves and inserts were not installed or where incorrectly located. Sheetrock joint compound may be used to seal openings in non-rated walls(insulation to be continuous through walls.
- B. Drill holes as required for the installation of hangers required for the mechanical work. C. Where sleeves are placed in exterior walls below grade, the space between the pipe or conduit and the sleeves shall be
- made completely water-tight. D. Seal all piping passing through fire-rated construction with approved material to maintain air-tight, fire-rated integrity,

applied using the 75C rating. 2. Connections to fixture ballasts, and wiring runs in or through fixture wiring channels: Insulations listed in table 402.5 of the N.E.C., except for wiring made with asbestos. 2.06 <u>LUGS</u>:

1.01 <u>GENERAL</u>:

2.01 CONDUIT:

2.02 CABLE ASSEMBLIES:

where appropriate.

2.04 CONDUCTORS:

2.05 INSULATION:

the N.E.C.:

1. MC:

2.03 <u>BOXES:</u>

- 2.07 SWITCHES AND RECEPTACLES
- for the box it covers. coverplates may be galvanized steel
- 2.08 DIMMERS:
- equivalent.
- Lutron Nova series or equivalent.
- dimmers are preferred where available.
- E. Dimmers shall be manufactured by Lutron, Hunt, Prescolite, or equivalent

## 3.01 WI<u>RING:</u>

- NEC are allowed. Conductors must be derated per code
- Control wiring may be No. 14 minimum. If distance from panel to first outlet is 75 feet or greater (for 120-volt circuits)

- building lines. G. Direct burial wiring shall not be used.

- wiring is increased for voltage drop.
- installed per the breaker manufacturers instructions.
- 3.02 OUTLET BOXES, DEVICES AND FITTINGS:
- B. Install receptacles vertically, ground pole down.
- gang boxes for multiple-device installation as required.

## SECTION 26 20 00 - SERVICE AND DISTRIBUTION

- 1.01 SERVICE ENTRANCE:
- 1.02 GROUNDING
- B. Supplemental electrode to be installed unless resistance of 25 ohms to earth can be documented.

3.01 WIRING FOR EQUIPMENT:

equipment where required.

SECTION 26 50 00 - LIGHTING

2.01 SAFETY SWITCHES

equivalent.

2.02 <u>FUSES:</u>

size.

## SECTION 26 05 00 - COMMON WORK RESULTS FOR ELECTRICAL

A. Provide complete systems of conductors and raceways using conduit and/or cable assemblies appropriate to the function and location, and specifically approved in chapter three of the N.E.C..

A. The following raceways are approved for use on this project, where approved by the N.E.C.:

1. EMT: Electrical metallic tubing, galvanized 2. GRC: Rigid steel conduit, galvanized

3. PVC: Polyvinyl chloride conduit, schedule 40

4. IMC: Intermediate metal conduit, galvanized

A. The following cable assemblies may be used in the power distribution system in concealed locations, where approved by Metal clad cable

A. Provide galvanized steel outlet and junction boxes, except where otherwise indicated. Boxes shall be a minimum 4" square or octagonal, depth as required. Provide weather-proof type cast boxes with gasket and cast coverplate for exterior outlets or wet locations. Outlet boxes shall be of the proper type and design for the fixture or device to be installed. Through the wall boxes are not permitted. Provide plaster or tile rings for all flush outlets installed where required. Boxes shall be manufactured by Raco, Steel City, National or equivalent.

B. Interior floor boxes shall be non-metallic or cast steel in concrete or slab on grade installations, and shall be rated for the use. Floor boxes above grade shall be non-metallic or stamped steel, rated for the use. Multi-gang boxes shall be used where specified. Coverplates shall be polished brass with 'flip lids' for receptacles and connectors. Provide carpet flanges

A. Provide a complete set of power conductors, rated 600 volts, of the quantity, size and type required for the function. 1. Conductors shall be copper, except where specifically noted. Conductors shall be solid for wire sizes No. 10 AWG and smaller; stranded for No. 8 AWG and larger.

2. Aluminum conductors will be accepted only where specifically indicated by the Contract Documents. Aluminum conductors must be terminated according to the manufacturers instructions, including use of proper joint compound, use with aluminum rated lugs, and proper torqueing of the lugs.

A. Provide wire with the following minimum insulation standards:

1. Branch circuits, panelboard feeders, service entrance conductors: THWN-2, XHHW(90C). The conductors shall be

3. Cord connections: Cords listed in table 400.4 of the N.E.C., except for wiring made with asbestos.

A. Lugs for all equipment will be rated for the use. Lugs will be suitable for copper or aluminum conductors, rated for 75C.

A. Provide specification grade devices throughout. Switches and duplex receptacles may be commercial grade. Devices shall be manufactured by Hubbell, Leviton, General Electric, Bryant, Slater, Pass & Seymour, Inc., Sierra, or Arrow-Hart. B. Except where noted, plates shall be plastic, color to match the devices with matching screws for receptacles, switches, telephone, and TV outlets. Provide blank coverplates for unused outlets. Coverplates for multi-gang boxes shall be sized

C. Devices and their coverplates colors shall be coordinated with Architect and Owner. In mechanical rooms, etc, the

D. In kitchens, and other back of house areas, and in areas with adjacent stainless steel equipment, they shall be brushed aluminum coverplates with white devices. Field verify any areas of doubt with the architect.

A. Incandescent dimmers shall be the linear slide-type with aluminum fins. Dimmers shall be Lutron Nova series or

B. Fluorescent dimmers shall be the linear slide-type with aluminum fins. The dimmers shall be closely coordinated with the ballast type of the specific fixture being controlled and must be field coordinated before ordering. Dimmers shall be

C. LED dimmers must be selected by, or specifically approved by, the specific fixture manufacturer or supplier. Slide type

D. When switches and dimmers are located side by side, switches shall have identical appearance as dimmers. Dimmers shall in no case have heat fins removed or modified.

A. The drawings are schematic in nature; alternative wiring paths, different conduit fill, etc, installed in conformance with the

B. Branch circuits shall use minimum No. 12 AWG wiring for branch circuits, protected by 20 ampere circuit breakers.

or 150 feet or greater (for 277-volt circuits), provide No. 10 AWG.

C. Use PVC in earth or in slabs in contact with earth. Outside the building, install a minimum of 30" below finished grade. D. Where mechanical damage occur, use galvanized rigid steel or intermediate metal conduit.

E. Electric metallic tubing may be used in all applications, except where prohibited by code or otherwise noted.

F. Do not install exposed conduit in areas open to the public. Exposed conduit may be installed at surface-mounted equipment and other locations acceptable to the Architect. Run exposed conduit parallel to, and at right angles with, the

H. Use flexible metallic conduit for connections to motors, fixtures, or other equipment where vibration is encountered. Provide sealtite flexible metallic conduit in wet areas such as kitchens, equipment rooms, on roofs, etc. I. Provide a ground wire in non-metallic conduit and flexible conduit. Ground wires shall be increased in size where circuit

J. Circuits fed through AFCI breakers shall have separate neutrals with no cross or ground connections; wiring shall be

K. Multi-wire branch circuits shall utilize handle ties on breakers, or other grouped disconnecting means per NEC 210.4(B).

A. Install receptacle and telephone outlets 18" to center-line above floor in general locations; install at switch height where

shown in combination; install 46"to center-line in mechanical equipment rooms.

C. Install switch outlets 46" to center-line above floor on latch side of door. Verify door swing prior to installation. Use

D. Install outlets shown on the drawings "back-to-back" with a minimum of 6" lateral separation between them.

A. Power will be available from the secondary side of transformer(s) provided by the utility company. This service shall be 120/208 volt, 3 phase, 4 wire, 60 hertz A.C. for normal power and lighting requirements. General arrangement of the service equipment is shown on the drawings. Load balance the entire system to within 15% per phase.

A. Provide a complete grounding system in accordance with Section 250 of the N.E.C.

A. Provide normal duty, enclosed, fusible and non-fusible safety switches as indicated on the plans. All lugs shall be rated for 75C or 60C copper or aluminum wiring. Provide enclosures suitable for the surrounding area and conditions. Label switches for feeder or motor supplied. The switches shall be manufactured by Square D, I.T.E., G.E., Cutler Hammer, or

A. Provide power fuses of the time-delay type unless otherwise indicated. Fuses shall be manufactured by Bussman, Gould Shawmut, or equivalent. Provide one (1) complete set of fuses for fuse-holding devices, sized according to the motor and/or conductor to be protected. Provide a hinged cover cabinet for storage of spare fuses: three spare fuses of each fuse

A. Provide branch circuits, feeders, junction boxes, disconnect switches, etc as required for a complete system; make power connections to motors and controls for heating, ventilating, air conditioning, plumbing, owner furnished and fire protection equipment as required.

B. Kitchen equipment. Refer to the Kitchen Equipment Contractor's drawings for final sizing, locations, and rough-in heights. The Electrical Contractor shall provide final circuits and connections to kitchen electrical equipment. Sealtite conduit and fittings shall be used on runs inside refrigerated bases and at dish tables.

C. Provide connections to hood fire suppression system(s). The electrical contractor is responsible for wiring the interlock controls for hood related air handling equipment, including low voltage interlocks, and interlocks within building HVAC

# 1.01 EXTERIOR LIGHTING FIXTURES:

A. Provide weather-proof luminaires for mounting as shown. Provide lamps of size and wattage as indicated on the drawings. Provide underground wiring to exterior lighting as shown on the drawings.

## 2.01 INTERIOR LIGHTING FIXTURES:

A. Securely support and anchor fixtures and outlet boxes. Where lighting fixtures are installed in a lay-in grid ceiling system,

secure fixtures to tees by installing earthquake clips at each corner of the fixture. Provide supports required, including structural members if needed. Provide separate junction boxes and wire to recessed fixtures in flexible conduit with Type AF wire, unless acceptable pre-wired fixtures are used. Conceal openings cut in ceilings for recessed fixtures with fixture trim installed. Coordinate installation of recessed fixtures with ceiling installer.

### 2.02 EXTERIOR LIGHTING FIXTURES:

A. Exterior lighting fixtures, raceways, equipment, etc. shall be weather-proof and suitable for temperatures down to -20F. B. Ballast type, lamp wattage, and rated voltage shall be as indicated on the plans. Each ballast shall be of the separatecomponent type, capable of reliable lamp starting down to -20F, and shall have a minimum power factor of .90.

### 2.03 <u>LAMPS:</u> A. Incandescent lamps shall be rated at 130V. H.I.D. and fluorescent lamps shall be as specified on plans with ballasts as

specified in the following specifications. Lamp codes listed are ANSI. All lamps shall be Sylvania, General Electric, or approved equivalent.

B. In porcelain keyless fixtures, provide medium base, self ballasted, A-line shape, fluorescent lamps, GE FLE15/2/A21 or equivalent.

2.04 DRIVERS:

- A. LED drivers shall be electronic-type, labeled as compliant with radio frequency interference (RFI) requirements of FCC Title 47 Part 15, and comply with NEMA SSL 1 "Electronic Drivers for LED Devices, Arrays, or Systems". LED drivers shall have a sound rating of "A", have a minimum efficiency of 85%, and be rated for a THD of less than 20 percent at all input voltages.
- B. Dimmable LED drivers shall be 0-10V type. Dimmable LED drivers shall be capable of dimming without LED strobing or flicker across their full dimming range.
- C. Ballasts and drivers shall be rated for the ambient temperatures in which they are located. Outdoor fixtures shall be equipped with ballasts or drivers rated for reliable starting to -20 degrees F. Indoor fixtures located in areas with direct sunlight or above normal ambient temperatures shall have ballasts or drivers rated at 65 degrees C minimum.
- 2.05 INDOOR LIGHTING CONTROLS:
- A. Provide occupancy and time-clock based lighting control system as shown on drawings. Include power packs, sensors, controllers, transformers, relays, wiring, etc. as required. B. Sequence of operations:
- 1. Occupancy control areas(All interior areas):
- a. Lights will be turned on with occupancy detection.
- b. Lights will be turned off after 10 minutes with no occupancy detection.
- 2.06 OUTDOOR LIGHTING CONTROLS: A. Provide astronomical time switch, lighting control system as shown on drawings. Include contactors, time switches,
  - transformers, selector switches, relays, wiring, etc. as required.
- B. Set time clock(s) to operate contacts as scheduled hours by Owner.
- C. Time clock shall be astronomical seven day programable type. Provide contacts as shown on plans. Time clock shall be readily adjustable

## **DIVISION 27 - COMMUNICATIONS**

## SECTION 27 20 00 - COMPUTER SYSTEM

1.01 DESCRIPTION:

- A. Provide a complete system of raceways, pull boxes, outlet boxes, and terminals. Raceways shall form a complete path up walls and across inaccessible ceilings. Computer wiring may be run wild above accessible ceiling.
- 2.01 <u>CONDUIT</u>
- A. Conduit in the building shall be galvanized EMT, with plastic bushings on ends which are not terminated in a box. 2.02 WALL OUTLETS
- A. Wall outlets shall be 4" square pressed steel boxes, with single gang plaster ring. Connectors and coverplates are to be provided by the computer system installer B. Provide an alternate price for plaster rings at outlet location, and pullstrings in wall up to accessible ceiling, in lieu of
- conduit and boxes. 2.03 WIRING:
- A. Wiring shall be provided by the computer system installer. Wiring run wild in air plenums shall be teflon coated or similarly rated for the application.
- 3.01 EXECUTION:
- A. Provide pull strings in all conduit. B. Field verify all computer outlet locations. Final locations and heights shall be as designated by the Architect or Owner's representative.

SECTION 27 30 00 - TELEPHONE SYSTEM

1.01 DESCRIPTION: A. Provide a complete system of raceways, pull boxes, outlet boxes, and terminals. Raceways shall form a complete path up

- walls and across inaccessible ceilings. Telephone wiring may be run wild above accessible ceiling. B. System will include exterior underground conduit routed to a point of connection(usually a pedestal or a power pole) as
- directed by the telephone company. Exterior conduit shall be sized and installed as directed by the telephone company. 2.01 <u>CONDUIT:</u>
- A. Conduit in the building shall be galvanized EMT, with plastic bushings on ends which are not terminated in a box.
- Exterior underground conduit shall be schedule 40 PVC with solvent joints. B. Wall outlets shall be 4" square pressed steel boxes, with single gang plaster ring. Connectors and coverplates are to be
- provided by the telephone system installer. C. Provide an alternate price for plaster rings at outlet location, and pullstrings in wall up to accessible ceiling, in lieu of conduit and boxes.
- 2.02 TERMINALS:
- A. Telephone terminals shall be constructed of 1/2" thick, fire resistant, interior finish plywood, painted white, sized as shown or required. Provide power and ground connection as required or shown on the plans.
- 2.03 <u>WIRING:</u>
- A. Wiring shall be provided by the telephone system installer. Wiring run in air plenums shall be teflon coated or similarly rated for the application.
- 3.01 EXECUTION:
- A. Provide pull strings in all conduit.

up to accessible ceiling, in lieu of conduit and boxes.

above each connector in 1/"4 high black letters.

**DIVISION 28 - ELECTRONIC SAFETY AND SECURITY** 

provided in conjunction with the control unit.

SECTION 28 10 00 - SECURITY ALARM SYSTEM

- B. Exterior underground conduit shall use long radius, sweep ells. These elbows shall be schedule 80 PVC, or PVC coated GRC conduit
- C. Field verify all telephone outlet locations. Final locations and heights shall be as designated by the Architect or Owner's

A. Provide a complete system of raceways, pull boxes, outlet boxes, and terminals. Raceways shall form a complete path up

A. Conduit in the building shall be galvanized EMT, with plastic bushings on ends which are not terminated in a box.

Exterior underground conduit shall be schedule 40 PVC (schedule 80 PVC radius elbows) with solvent joints.

A. Wall outlets shall be 4" square pressed steel boxes, with single gang plaster ring. Connectors and coverplates are to be

B. Terminal shall contain one type F connector mounted on a brushed aluminum plate. "CATV" will be engraved on plate

A. Wiring shall be provided by the video system installer. Wiring run in air plenums shall be teflon coated or similarly rated

C. Field verify all television outlet locations. Final locations and heights shall be as designated by the Architect or Owner's

A. Provide a complete door security alarm system to audibly and visually annunciate door entry/exit at a master control panel.

A. The annunciator panel shall be comprised of (3) 4 door modules each with individual door reset/bypass pushbuttons with

associated LED's. The annunciator shall contain a common call placed LED, and alarm tone speaker, momentary action

tone silencing push button. The tone silencing circuitry shall automatically reset after the alarm is reset. Each button cap

shall be marked with the door identity. The panel shall be constructed of anodized aluminum, supplied with a recessed

A. The control unit shall include a volume control and be configured for pulsating alarm signal. A power supply shall be

The door alarms may be individually reset at the master control panel as well as by-passed during certain hours of the day.

B. Exterior underground conduit shall use long radius, sweep ells. These elbows shall be schedule 80 PVC conduit.

provided by the video system installer. Provide an alternate price for plaster rings at outlet location, and pullstrings in wall

walls and across inaccessible ceilings. Video wiring may be run wild above accessible ceiling.

## SECTION 27 40 00 - VIDEO SYSTEM

representative.

1.01 DESCRIPTION:

2.01 <u>CONDUIT:</u>

2.03 <u>WIRING:</u>

3.01 EXECUTION:

1.01 DESCRIPTION:

2.02 WALL OUTLETS:

for the application.

representative.

2.01 ANNUNCIATOR PANEL

mounting frame.

2.02 <u>CONTROL UNIT:</u>

2.03 DOOR CONTACTS:

A. Provide pull strings in all conduit.

A. Door contacts shall be normally cl	losed mechanical door contacts.
---------------------------------------	---------------------------------

2.04 <u>WIRING:</u> A. Wiring shall be low voltage 18 AWG, run per the manufacturers instructions. Wiring may be run wild above accessible

ceilings, in raceways in inaccessible locations.

### 2.05 MANUFACTURER:

A. The equipment shall be manufactured by Auth-Florence, Dukane or approved equivalent.

### 3.01 EXECUTION:

A. Install the security alarm system in accordance with the manufacturers instructions.

SECTION 28 30 00 - FIRE ALARM SYSTEM

# 1.01 GENERAL:

A. Add, remove, move or change devices as required to provide a fire alarm system meeting the requirements of the authority having jurisdiction B. Provide equipment manufactured by Simplex Time Recorder Company (System 4000), or equivalent by Fire Lite, Notifier,

or Silent Knight.

1.02 CODES AND REGULATIONS:

A. Fire Alarm system shall comply with NFPA 72(2013 edition).

2.01 MANUAL PULL STATIONS:

A. Manual pull stations shall be double action type made of red lexan with raised white letter; activation shall require two separate and distinct actions. Reset shall require a key common to the control panel. B. Pull stations shall be Simplex 4099-series or equivalent.

# 2.02 SMOKE DETECTORS:

A. Smoke Detectors shall be a dual-chamber, photoelectric type detectors, complete with flashing status-indicating LED for visual supervision. When the detector is actuated, the flashing LED will latch on steady and at full brilliance. The detector may be reset by actuating the control panel reset switch.

B. The detectors shall be Simplex 4098 Series or equivalent.

### 2.03 <u>ALARM HORN/ STROBE:</u>

A. Alarm horn/ strobe shall be combination devices. They shall be polarized and operated by 24VDC. Each horn shall include separate wire lead for in/out wiring. The strobe shall be a xenon flashtube. The lexan lens shall be pyramidal in shape. The units shall have panel module and wiring installed to operate strobes independently when horns are turned off. B. The alarms shall be Simplex 4903 Series or equivalent.

### 2.04 ALARM STROBE:

- A. Alarm strobe shall be a xenon flashtube. The lexan lens shall be pyramidal in shape.
- B. The alarms shall be Simplex 4904 Series or equivalent.

# 2.05 REMOTE ALARM INDICATORS:

A. Remote alarm indicators shall be provided for detectors, which are concealed above ceilings or in locked rooms. The indicators shall include test station switch for detectors above ceilings or in areas difficult to access. The remote alarm or remote alarm/test stations shall be Simplex series 2098 or equivalent.

### 2.06 <u>AUTODIALER:</u> A. Install and wire an auto dialer unit for communication to a central station over leased phone wires. Field coordinate exact details with the Owner or Owner's representative.

### 2.07 MONITOR MODULE

A. Provide an addressable monitor module for supervision of waterflow and tamper switches.

## B. Simplex IAM or equivalent.

2.08 <u>WIRING:</u>

# A. Provide a complete system of raceways, pull boxes, and outlet boxes. Raceways shall form a complete path up walls and across inaccessible ceilings. Wiring may be run wild above accessible ceilings.

- 3.01 INITIATION:
- A. Upon the operation of any manual pull station or automatic initiating device (smoke detector, sprinkler flow switch, etc.): 1. Sound a continuous, audible and visible alarm in the entire building
- 2. Provide description of alarm condition via LCD display at FACP and remote annunciator.
- 3. In addition, provide controls and wiring required for the following functions:
- a. Shut down all air handling units, except exhaust fans.

# b. Send a signal to a remote monitoring station.

3.02 SYSTEM REPRESENTATIVE A. All system representative shall be an authorized engineered systems distributor located within a 50 mile radius of the project

# 3.03 <u>REMOTE INDICATING LIGHTS:</u>

- A. Remote indicating lights shall be provided for existing detectors obscured from view in locked rooms.
- 3.04 COMPONENT PROTECTION A. Provide a wire guard over any detector or horn in an area susceptible to physical damage.

# COMcheck Software Version COMcheckWeb **Interior Lighting Compliance Certificate**

Designer/Contractor:

## Project Information

Energy Code: Project Title: Project Type:

Alteration

2018 IECC

Owner/Agent

Construction Site: 485 2nd Ave

### Longmont, Colorado 80501 Allowed Interior Lighting Power

A Area Category	B Floor Area (ft2)	C Allowed Watts / ft2		D Allowed Watts
1-Dining: Family	2521	0.78		1966
	Total	Allowed W	atts =	1966
Proposed Interior Lighting Power				
Α	В	с	D	E
Fixture ID : Description / Lamp / Wattage Per Lamp / Balla	st Lamps/ Fixture			e (C X D)
Dining: Family (2521 sq.ft.)				
LED: A1: LED A Lamp 9W:	1	2	9	18
LED: A2: LED A Lamp 9W:	1	2	9	18
LED: A3: LED A Lamp 9W:	1	7	9	63
LED: A4: LED A Lamp 6W:	4	1	24	24
LED: A5: LED A Lamp 2.5W:	8	1	250	250
LED: A7: LED A Lamp 9W:	1	3	9	27
LED: F1/F1E: LED Panel 36W:	1	7	36	252
LED: F2: LED Panel 36W:	1	2	40	80
LED: M: LED PAR 15W:	1	9	15	135
LED: M1: LED PAR 15W:	1	15	15	225
LED: L1: DRIVER WATTS: LED Other Fixture Unit 95W:	1	1	96	96
LED: V1: LED Linear 11W:	1	2	13	26
Track Lighting: T1/T2: Wattage based on current limiting device capacity	0	0	480	480
	Тс	tal Propose	ed Watts :	= 1694
Interior Lighting PASSES				
Interior Lighting Compliance Statement Compliance Statement: The proposed interior lighting alteration project repre building plans, specifications, and other calculations submitted with this permi				

building plans, specifications, and other calculations submitted with this permit application. The proposed interior lighting systems have been designed to meet the 2018 IECC requirements in COM*check* Version COM*checkWeb* and to comply with any applicable mandatory requirements listed in the Inspection Checklist. 

Ethan Miley, PE Name - Title

Project Title: Urban Fields Data filename:

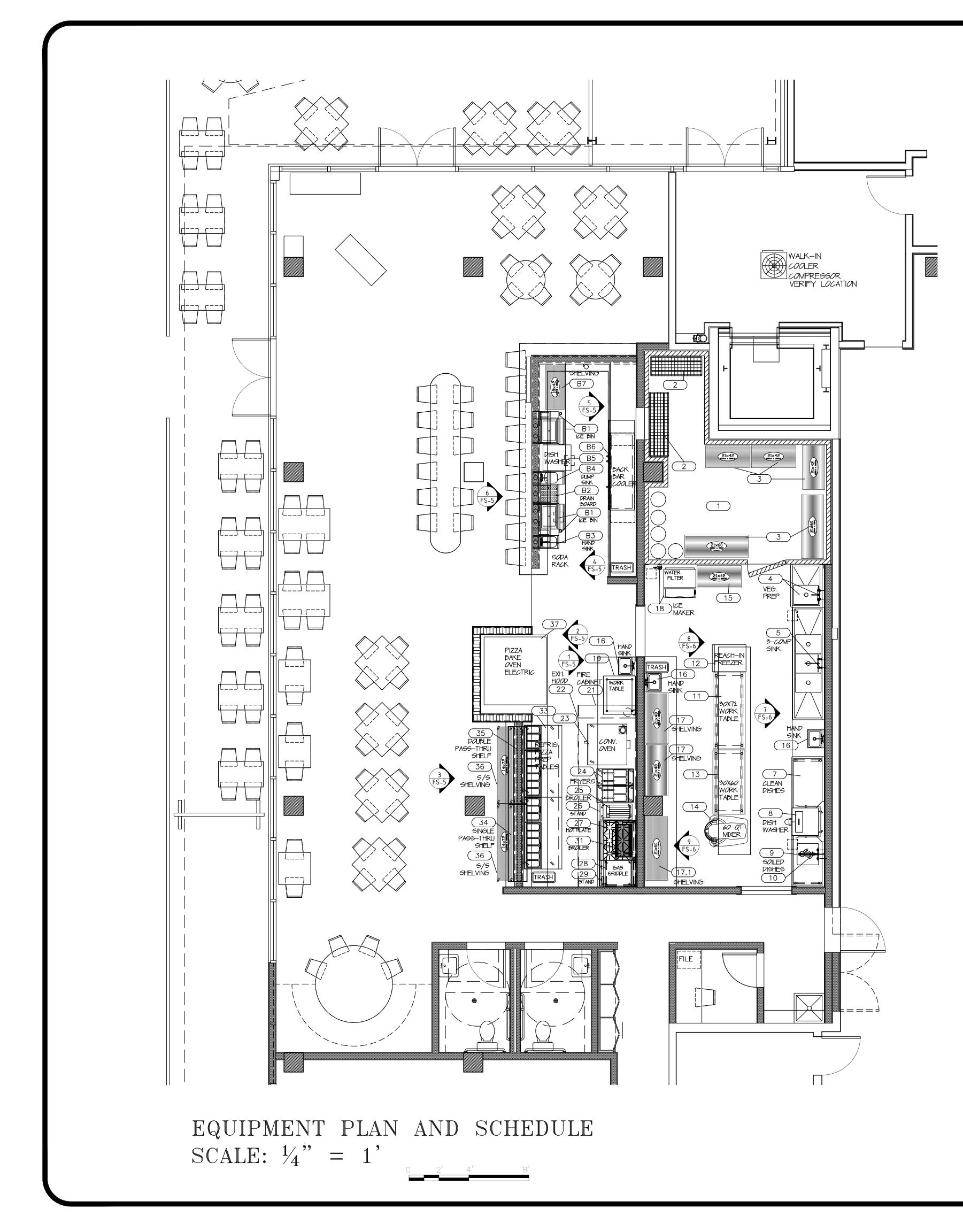
Report date: 09/13/21 Page 2 of 8

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SUBMISSIONS:	_
E3.1	ECTRICAL SPECIFICATIONS

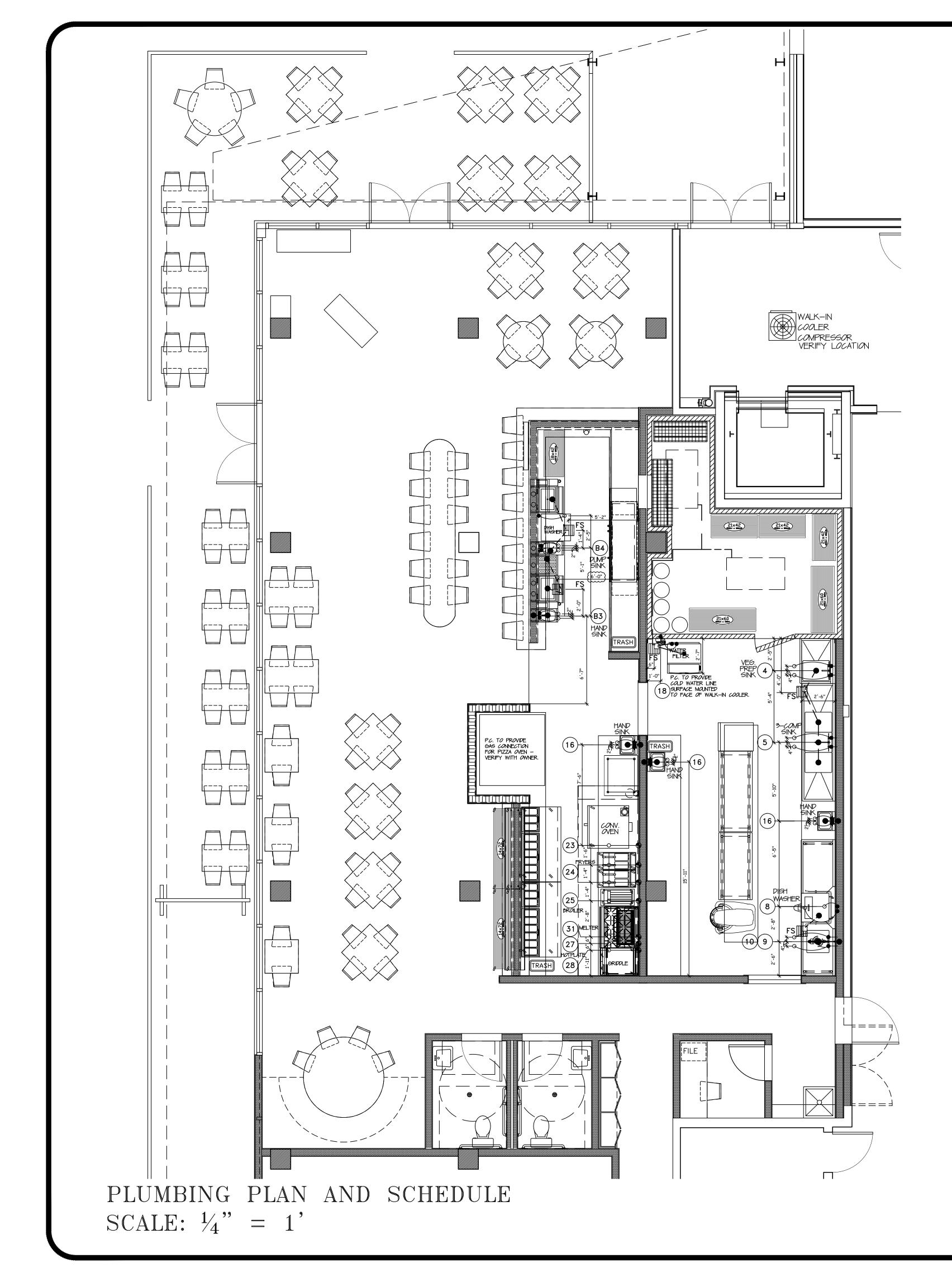
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tem					Fauipment			
No	Qty	Equipment Category	Manufacturer	Model Number	Equipment Remarks			
	1	Cooler, Walk—In	Arctic Industries	Fabricated	w/ Pre-assembled Remote Com			
2	1	Keg Storage Rack	Quantum Foodservice	186054DGY	Two Tier, Epoxy finish			
_	1	Keg Storage Rack						
3	3	Shelving, Wire	Quantum Foodservice	WR74-2142BK	Epoxy finish			
	2	Shelving, Wire	Quantum Foodservice	WR74-2160BK	Epoxy finish			
1	1	Sink, Scullery, 1 Compartment	John Boos & Co.	1B18244-1D18L	w/ Faucet PBF-8-SLF			
5	1	Sink, Scullery, 3 Compartments	John Boos & Co.	3B18244-2D24	w/ Faucet PBF-12-SLF			
6	1	Spare Number						
,	1	Dishtable, Straight, Clean	John Boos & Co.	JDTC-20-48L				
5	1	Warewasher, Door Type, Low Temp	Eco-Labs	ES-2000	LEASED BY OWNER			
)	1	Dishtable, Straight, Soiled	John Boos & Co.	JDTS-20-48R	w/ Pre-Rinse PB-PRW-1LF-X			
0	1	Disposer	InSinkErator	SS-100				
1	1	Table, Work	S/S Fabricated	TBD	BY OWNER			
2	1	Freezer, Reach-In	Turbo Air	M3F19-1-N	on Casters			
3	1	Table, Work	S/S Fabricated	TBD	BY OWNER			
4	1	Mixer, Pizza	Hobart US Foodservice	TBD	BY OWNER			
5	1	Shelving, Wire	Verify	TBD	BY OWNER			
6	3	Hand Sink	John Boos & Co.	PBHS-W-1410-P-SSLR-X	w/ Faucet & Left & Right Splash			
7	2	Shelving, Wire	Verify	TBD	BY OWNER			
7.1	1	Shelving, Wire	Quantum Foodservice	WR74-2160BK	BY OWNER			
8	1	Ice Maker w/ Bin	Manitowoc	UYF0310A	w/ Water Filter- Leased			
9	1	Table, Work	John Boos & Co.	ST6R1.5-3036GSK-X				
0	1	Spare Number						
1	1	Fire Suppression System	Captive Aire	FS-1	BY MC			
22	1	Exhaust Hood	Captive Aire	5430ND-2-PSP-F	BY MC			
3	1	Oven, Double Stacked	Imperial	TBD	BY OWNER			
4	2	Fryer, Deep Fat, Gas w/Filter	Verify	TBD	BY OWNER			
5	1	Broiler, Under-Fired, Gas, Counter	Vollrath	40728				
6	1	Equipment Stand	John Boos	GS6-3015GSK	on Casters			
7	1	Hotplate, Countertop, Gas	Southbend	HDO-36				
8	1	Griddle, Countertop, Gas	Southbend	HDG-24-M				
9	1	Equipment Stand	John Boos & Co.	EES8-3060	on Casters			
0	1	Spare Number						
51	1	Salamander Broiler, Gas	Southbend	P36-RAD				
2	1	Spare Number						
3	2	Refrigerator, Pizza Prep	Turbo Air	TPR-67SD-N				
4	1	Pass-Thru Shelf, Single	John Boos & Co.	PTS16K-1872				
5	1	Pass-Thru Shelf, Double	John Boos & Co.	PTS26K-1872				
6	2	Solid Stainless Shelving	Quantum Food Service	1472SS				
7	1	•	AMPTO	P120E B2X	by the Owner			
, 8	1	Spare Number						
9	1	Spare Number						
9 0	1	Spare Number						
1	1	Ice Bin [(1) Future]	Krowne	 KR19-24-10	w/ Soda Gun Holder, Cover, & R			
2	1	Drain Board	Krowne	KR19-24-10 KR19-GS18				
∠ 3	1	Hand Sink	Krowne	KR19-GS18 KR19-1C	W/ Pight_Side Salach & Saca /Ta			
3 4	1	Dump Sink		KR19-10 KR24-S12C	w/ Right-Side Splash & Soap/To w/ Left-Side Splash & Cabinet b			
	1	I	Krowne					
5 6	1	Dishwasher Raak Par Cabinat Pofrigarated	Eco-Labs	OMEGA 5E BS84	Leased By the Owner			
<b>`</b> D		Back Bar Cabinet, Refrigerated	Krowne	10004	on Casters			





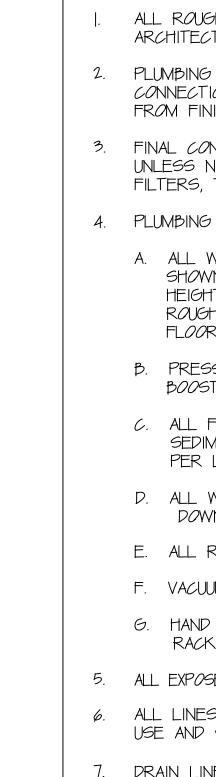


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HOT / COLD WATER ROUGH-IN and CONNECTION DIRECT WASTE ROUGH-IN and CONNECTION INDIRECT WASTE FUEL GAS ROUGH-IN and CONNECTION STEAM SUPPLY ROUGH-IN and CONNECTION STEAM CONDENSATE RETURN ROUGH-IN and CONNECTION
HOSE BIBB, HOT or COLD WATER
HOSE BIBB, HOT and COLD WATER with MIXING VALVE and VACUUM BREAKER FLOOR SINK / NO GRATE (with MINIMUM CONNECTION SIZE)
(with MINIMUM CONNECTION SIZE) FLOOR SINK / HALF GRATE (with MINIMUM CONNECTION SIZE)
FLOOR SINK / 3/4 GRATE (with MINIMUM CONNECTION SIZE)
FLOOR SINK / FULL GRATE (with MINIMUM CONNECTION SIZE) FLOOR DRAIN

REFER to INDICATED NOTE

						<u>כ</u> כ	CH						
ltem No	Qty	Equipment Category	Cold Water Size (in)	Cold Water AFF (in)	Hot Water Size (in)	Hot Water AFF (in)	Direct Drain Size (in)	Direct Drain AFF (in)	Indir Drain Size (in)	Gas Size (in)	MBTUH	Gas AFF (in)	Plumbing Remarks
1	1	Cooler, Walk—in							1				
4	1	Sink, Scullery, 1 Compartment	0.5	18	0.5	18			2				DRAIN TO FLOOR SINK
5	1	Sink, Scullery, 3 Compartments	0.5	18	0.5	18			2				MANIFOLD DRAINS TO FS
8	1	Warewasher, Door Type, Low Temp			0.75	60			2				REQUIRES 120 DEG WATER
10	1	Disposer	0.5	18			1.5	18					CW TEE OFF PRE-RINSE
16	3	Sink, Hand, Wall Mount	0.5	18	0.5	18			2				
18	1	Ice Maker, Undercounter	0.5	18					0.5				FILTERED H2O, DRAIN TO FS
23	1	Oven, Convection, Gas, Double								0.75	100	10	REQUIRES (2) GAS INLETS
24	1	Fryer, Deep Fat, Gas w/Filter								0.75	107	30.0	
25	1	Broiler, Gas, Counter-Top								0.75	28	30.0	
27	1	Hot Plate, Gas								0.75	198	30.0	
28	1	Griddle, Gas								0.75	40	30.0	
31	1	Broiler, Gas								0.75	40	78	
B1	2	Underbar Ice Chest							0.5				DRAIN TO FLOOR SINK
B2	1	Underbar Fillers & Drainboards							1				DRAIN TO FLOOR SINK
B3	1	Underbar Handsink	0.5	31.5	0.5	31.5	1.5	20					
B4	1	Underbar Dump Sink	0.5	31.5	0.5	31.5			1.5				DRAIN TO FLOOR SINK
B5	1	Dishwasher	0.5	16			2.0	8					REQUIRES 120 DEG WATER



# PLUMBING SCHEDULE

# PLUMBING NOTES

I. ALL ROUGH-INS SHOWN RELATE TO FOOD SERVICE EQUIPMENT ONLY. SEE ARCHITECTURAL/ENGINEERING PLANS FOR ADDITIONAL PLUMBING INFORMATION.

2. PLUMBING ROUGH-IN PLAN IS INTENDED TO SHOW LOCATIONS, HEIGHTS, CONNECTION SIZES, POSITIONS AND LOAD REQUIREMENTS. DIMENSIONS ARE FROM FINISHED SURFACES.

3. FINAL CONNECTIONS TO ALL EQUIPMENT TO BE BY THE PLUMBING CONTRACTOR UNLESS NOTED INCLUDING REQUIRED MATERIALS SUCH AS STOPS, VALVES, FILTERS, TRAPS, CHECK VALVES, PRESSURE REDUCING VALVES, PIPING, TUBING, ETC.

4. PLUMBING CONTRACTOR TO FURNISH AND INSTALL THE FOLLOWING AS PER CODE:

A. ALL WATER, WASTE, GAS AND STEAM SERVICE TO POINT OF ROUGH-IN AS SHOWN ON PLAN. ROUGH-INS TO STUB 4" (10 CM) OUT OF WALLS AT HEIGHT INDICATED FROM FINISHED FLOOR TO CENTER OF ROUGH-IN. FLOOR ROUGH-INS TO STUB UP 4" (10 CM) ABOVE FINISHED FLOOR OR CURB. ALL FLOOR OPENINGS ARE TO BE SEALED WATERTIGHT.

B. PRESSURE REDUCING AND/OR REGULATING VALVES FOR DISHWASHERS, BOOSTER HEATERS AND ANY OTHER EQUIPMENT REQUIRED BY MANUFACTURER.

C. ALL FLOOR SINKS COMPLETE WITH TOP GRATES AS INDICATED AND REMOVABLE SEDIMENT BUCKETS SET FLUSH WITH FINISHED FLOOR, UNLESS NOTES OR AS PER LOCAL CODES.

D. ALL WASTE LINES, DIRECT OR INDIRECT, EXCEPT AS NOTED, SHALL BE PITCHED DOWNWARD.

E. ALL REQUIRED GREASE TRAPS.

F. VACUUM BREAKERS AS REQUIRED, EXCEPT FOR THOSE PROVIDED WITH DISPOSER.

G. HAND SINKS, SOAP & TOWEL DISPENSERS, WATER FOUNTAINS, MOP SINKS AND RACKS AS REQUIRED.

5. ALL EXPOSED PIPING AND FITTIINGS IN THE KITCHEN ARE TO BE S/S OR CHROME PLATED. 6. ALL LINES ROUTED THROUGH EQUIPMENT SHALL NOT INTERFERE WITH THE INTENDED USE AND SERVICING OF EQUIPMENT.

7. DRAIN LINES SHALL STOP I" ABOVE THE DRAIN AND INCLUDE A P-TRAP.

8. RECOMMEND 3" FLOOR SINKS WHERE 2" INDIRECT DRAINS ARE USED. DOME STRAINERS MUST BE KEPT CLEAR OF DEBRIS TO PREVENT OVERFLOW.

9. THE HOT WATER REQUIREMENTS FOR FOOD SERVICE OPERATIONS IS 40 DEGREES WITH 65 LBS PRESSURE. TEMPERING, PRESSURE, AND MIXING VALVES ARE TO BE PROVIDED BY THE PC AT ALL REQUIRED SINKS TO PREVENT SCALDING.

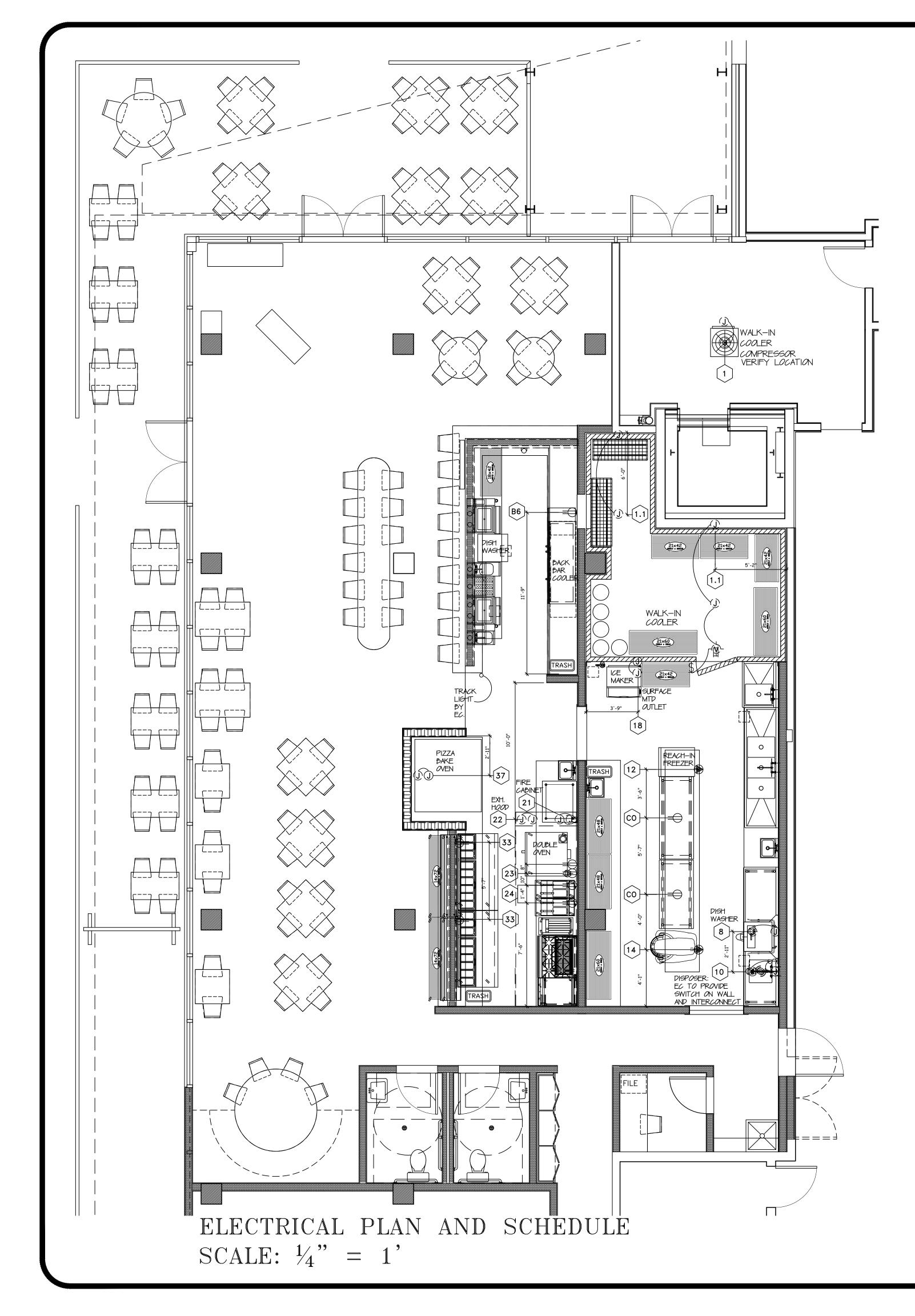
# **1 Group** Design Boulder, Cl 4142 Ext. 7 Stree Malnut (303) Tu 825 **F**N DRA DES RKE $\bigcirc \bigcirc$ O Ŏ $\square$ RA $\mathbb{N}$ LOI SI $\mathbb{N}$ NT N Ţ AI $\bigcirc$ MC LD $\mathcal{O}$ ΟZ JIE 50 LON $\longrightarrow$ N N N N

CONSTRUCTION CONSTRUCTION

SHEET NO.

FS.2

PROJECT NO. 508-2



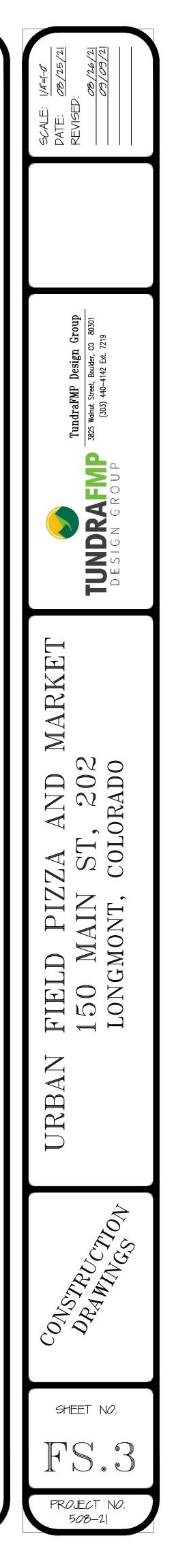
		EL	ECTR	ICAI	_ S(	CHEDL	JL	E				
ltem No	Qty	Equipment Category	Amps	KW	L L	Volts	Phase	Direct	Plug	NEMA	Electrical AFF (in)	FA = From Above Elec Remarks
	1	Cooler, Walk—in Compressor	15.0		2.0	208–230	1	Х			FA	VERIFY LOCATION ON ROOF
1	2	Evaporator Coil, Cooler	15.0			115					FA	FIELD WIRED BY ELECTRICIAN
	1	Lights & Door Heater	5.0			115	1	Х			FA	FIELD WIRED BY ELECTRICIAN
8	1	Warewasher, Door Type, Low Temp	12.0		0.75	115	1	Х			62	VERIFY WITH PROVIDER
10	1	Disposer	11.6		1.0	115	1	Х			12	
12	1	Freezer, Reach-In	4.5		0.3	115	1		Х	5-15P	FA	
14	1	Mixer, Pizza	18.0		2.7	200-240	3	Х		L5-20P	FA	VERIFY WITH OWNER
18	1	lce Maker, Undercounter	10.7	1.2	0.75	115	1	Х		5-15P	12	
21	1	Fire Suppression									FA	VERIFY REQUIREMENTS - BY M.C.
22	1	EXHAUST HOOD									FA	VERIFY REQUIREMENTS - BY M.C.
23	1	Double Oven, Convection, Gas	6.0 EA.	0.5	0.5	115	1			5-15P		(2) OUTLETS @ 36" & 60" AFF
33	2	Refrigerator, Pizza Prep	4.2		0.375	115	1		Х	5-15P	12	
37	1	Pizza Bake Oven, Deck-Type, Electric	56.2	1.8		208	3	Х			FA	VERIFY WITH OWNER
СО	2	Convenience Outlets	15.0			115			Х		FA	TYPE SO CORD WITH RECEPTACLE
B5	1	Dishwasher	16.0		0.75	115						VERIFY WITH PROVIDER
B6	1	Back Bar Cooler			0.3	120	1		Х	5–15P	12	

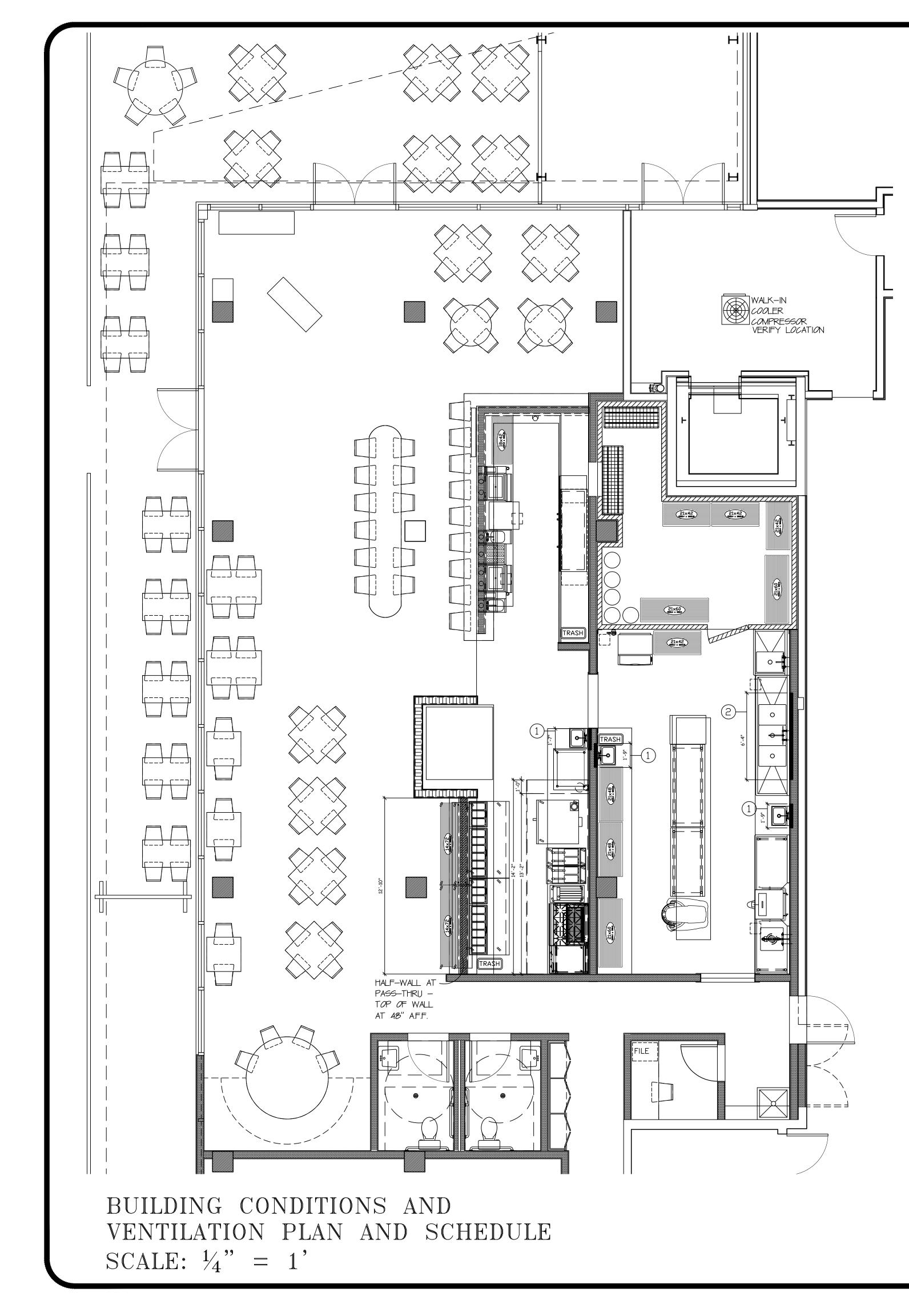
# ELECTRICAL NOTES

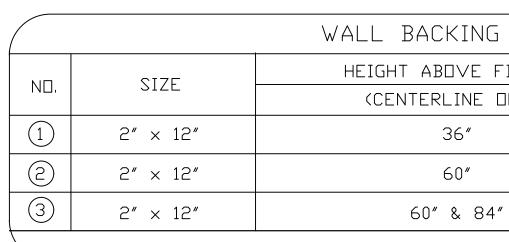
- ELECTRICAL SYSTEM IS DESIGNED FOR 120/208 3 PHASE, 60 HZ.
- 2. ALL ROUGH-INS SHOWN RELATE TO FOODSERVICE EQUIPMENT ONLY. SEE ARCHITECTURAL/ENGINEERING PLANS FOR ADDITONAL INFORMATION.
- 3. ALL LOADS INDICATED ARE ACUTAL AND ARE NOT CIRCUIT BREAKER SIZES UNLESS OTHERWISE NOTED.
- 4. ALL CONVENIENCE OUTLETS ARE TO BE SET HORIZONTALLY.
- 5. ALL ROUGH-IN HEIGHTS INDICATED ARE FROM FINISHED FLOOR TO THE BOTTOM OF THE OUTLET. FLOOR ROUGH-INS TO BE STUBBED UP 4" (10 CM) ABOVE FINISHED FLOOR OR CURB. ALL FLOOR OPENINGS ARE TO BE WATER-TIGHT SEALED.
- 6. FINAL CONNECTIONS TO ALL EQUIPMENT TO BE BY THE ELECTRICAL CONTRACTOR, INCLUDING MATERIALS, UNLESS OTHERWISE NOTED.
- 7. ELECTRICAL CONTRACTOR TO FURNISH AND INSTALL THE FOLLOWING, AS PER CODE:
  - A. ALL JUNCTION-BOXES, OUTLETS, COVER PLATES, SWITCHES ETC., NOT BUILT INTO FIXTURES OR EQUIPMENT. ALL OUTLETS, JUNCTION BOXES, COVER PLATES ETC., IN DISHROOMS, OR AS INDICATED ON SCHEDULES, MUST BE VAPOR-PROOF.
  - B. ALL CORDS SHALL BE U.L. APPROVED AND NEMA RATED.
  - C. 208V PLUGS AND CORDS AS REQUIRED.
  - D. DISCONNECTS OR OTHER DEVICES AS REQUIRED BY CODES.
- 8. WHEN APPLICABLE, ELECTRICAL CONTRACTOR IS TO PROVIDE CONDUIT AND WIRING, INSTALL ELECTRICAL COMPONENTS AND INTERWIRE BETWEEN THE FOLLOWING:
  - A. LIGHT FIXTURES, CHANDELIERS, ETC., LAMPS AND ALL LIGHT FIXTURES ARE TO BE PROVIDED AND INSTALLED BY THE ELECTRICAL CONTRACTOR UNLESS INDICATED ON THE LIGHTING SCHEDULES OR DRAWINGS.

E.C. TO INSTALL OCTAGONAL BOX PROVIDED BY ANSUL DISTRIBUTOR, E.C. TO RUN ½" CONDUIT W/ SWEEP ELBOW ABOVE CEILING

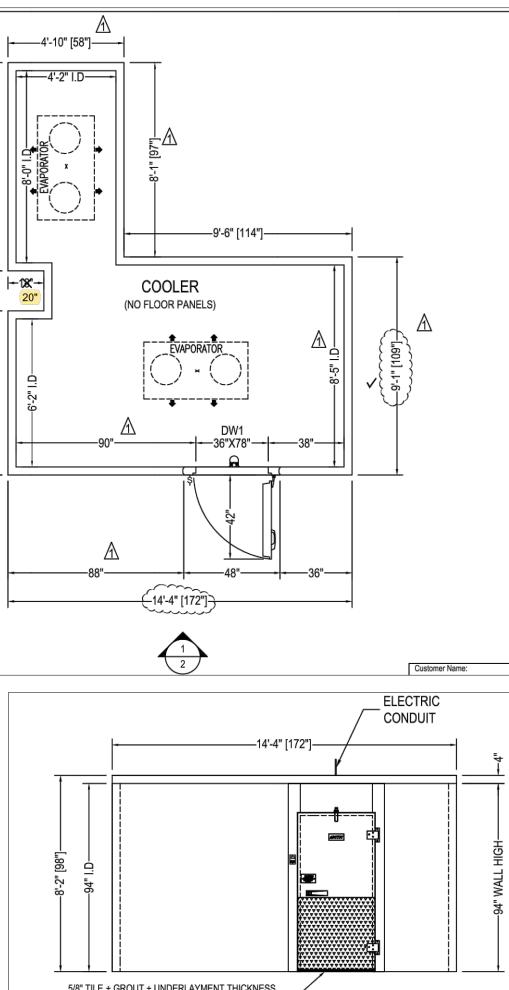
	JUNCTION BOX with FINAL CONNECTIONS to EQUIPMENT
Ĵ	JUNCTION BOX INSTALLED in EQUIPMENT (by K.E.C. or MANUFACTURER)
$\vdash$	DUPLEX CONVENIENCE OUTLET (D.C.O.)
ÉJE	D.C.O. INSTALLED in EQUIPMENT (by K.E.C. or MANUFACTURER)
	POWER OUTLET, 1 PHASE
$\bigcirc$	POWER OUTLET INSTALLED in EQUIPMENT (by K.E.C. or MANUFACTURER)
$\Theta$	POWER OUTLET, 3 PHASE
ß	POWER OUTLET INSTALLED in EQUIPMENT (by K.E.C. or MANUFACTURER)
(J)o	CONDUIT STUB with FINAL CONNECTIONS to EQUIPMENT
Ø	FLOOR OUTLET FLUSH or PEDESTAL MOUNTED
-(Ý-	VAPOR-PROOF LIGHT FIXTURE
\$	SWITCH
——————————————————————————————————————	PLUG MOULDING
	REFER to INDICATED NOTE

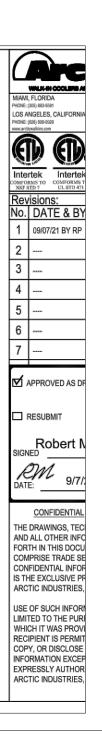


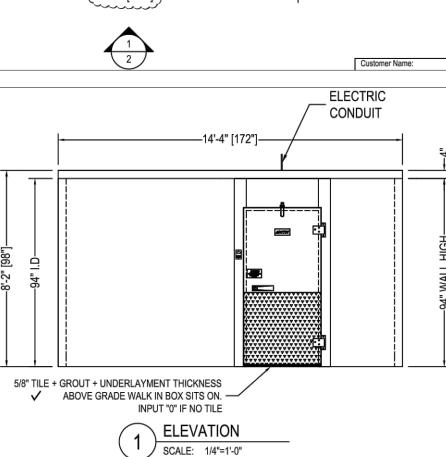




REFRIGERATION SPECIFICATI							CONNECTION		DIMENSIONS(IN)			WEIGHT	BTUH		
TEM	QTY	HP	MANUFACTURE	MODEL	REFRIG	V/P/H	MCA	MCA FANS	INLET	SUCTION	LENGTH	Contract and show it is not seen of any	HEIGHT	LBS	ыли
SCR	DLL,I	REMOT	E PREASSEMBLED, ECONE	ET,AIR-COOLED,35°,OUT	DOOR					A.					
5 1	1	2	RUSSELL C/U	RF0200E4SDA	R448/449	208/230/1/60	19.6		1/2	7/8	38 1/4	28 1/4	21 1/4	215	14875
2	2		RUSSELL COIL C/M	RE6A084ADARE		115/1/60 EC	15.0	2	3/8	5/8	52	28 3/8	11 1/4	80	
ACCI	SSC	RIES													
(1)CC	MPF	ESSO	R STAND U.L 36X72LONG W/	18 LEGS											
NOT	E: A L	ICENS	ED REFRIGERATION INSTA	LLER MUST DECIDE PLA	CEMENT OF EV	PORATOR(S) BA	SE ON	SITE (	CONDITIC	ON S,					
	EVAF	ORAT	OR PLACEMENT ON DRAW	NG SHOULD BE USED F		ONLY,									
	DET		REFRIGERATION SPECIFICA	TIONS ARE AVAILABLE	JPON REQUEST										







SCHEDULE	
FINISHED FLOOR	
]F BACKING)	

REMARKS

WALL SHELF

HANDSINK

WALL CABINET

# BUILDING CONDITIONS/VENTILATION NOTES

ALL WORK INDICATED WITHIN THESE PLANS AND NOTES SHALL BE USED BY OTHERS THAN THE KITCHEN EQUIPMENT CONTRACTOR, UNLESS NOTED.

WALLS, FLOORS, AND CEILINGS IN KITCHEN, PREP, SERVICE, WASHING AND BAR AREAS OR ANY OTHER LOCATION WHERE FOOD OR BEVERAGES ARE PREPARED SHALL BE SMOOTH, EASILY CLEANABLE, NON-ABSORBANT AND DURABLE… WALLS AND CEILINGS SHALL BE LIGHT COLORED.

PARTITION WALLS BETWEEN KITCHEN AREAS AND PUBLIC AREAS SHOULD BE CONSTRUCTED FOR ADEQUATE SOUND CONTROL.

FLOOR LOAD CAPACITY SHALL BE A MINIMUM OF 100 LBS. PER SQUARE FOOT OR AS REQUIRED FOR EQUIPMENT. K.E.C. TO VERIFY ANY WEIGHTS REQUIRED. 5. FINAL DUCT CONNECTIONS TO EQUIPMENT SHALL BE BY MECHANICAL CONTRACTOR.

6. MINIMUM VENTILATION REQUIREMENT: A. KITCHEN, SERVICE, PREP AND WASHING AREAS - 45 TO 60 AIR CHANGES EVERY

- HOUR OR AS DETERMINED BY LOCAL CODES, RULES AND REGULATIONS. STOREROOMS - 2 TO 3 AIR CHANGES EVERY HOUR OR AS DETERMINED BY LOCAL R.
- CODES, RULES AND REGULATIONS. C. DFFICES - 4 AIR CHANGES EVERY HOUR (RECOMMEND AIR CONDITIONING) OR AS DETERMINED BY LOCAL CODES, RULES AND REGULATIONS.
- D. REFRIGERATION CONDENSING UNITS 850 CFM PER H.P. SUPPLY AND EXHAUST.
- E. DTHER AREAS AS REQUIRED BY CODES DR AS NOTED.

F. VERIFY VENTILATION REQUIREMENTS SHOWN ARE IN COMPLIANCE WITH LOCAL CODES. GENERAL CONTRACTOR, OR EQUIVALENT, SHALL;

- A. PROVIDE IN-WALL BACKING AS REQUIRED FOR WALL MOUNTED KITCHEN EQUIPMENT; COORDINATE WITH K,E.C.
- B. SLOPE FLOORS TO FLOOR SINKS, FLOOR DRAINS OR FLOOR TROUGHS.
- C. PROVIDE DOOR/WALL OPENINGS FOR PASSAGE OF ALL KITCHEN EQUIPMENT AREAS.
- D. WALK-IN COOLER/FREEZER DEPRESSIONS SHOULD BE SMOOTH AND TRANSIT-LEVEL WHERE DEPRESSIONS ARE REQUIRED. DEPTH AS NOTED.
- E. FILL EXCESS DEPRESSION AROUND WALK-IN COOLER/FREEZERS WITH GROUT FINISH FLOOR MATERIAL AND COVED BASE AFTER COOLERS/FREEZERS ARE INSTALLED BY K.E.C.
- F. PROVIDE MASONARY PADS WITH TROWEL-SMOOTH AND LEVEL FINISH.

G. PROVIDE FIRE RATED MATERIALS AND/OR INSULATION AS REQUIRED FOR EXHAUST DUCTS, VENT STACKS, HEAT PRODUCING EQUIPMENT, ROOF/WALL PENETRATIONS, ETC; PER LOCAL CODES.

H. PROVIDE COVED-BASE MOULDING OR COVED INTEGRAL FLOOR MATERIALS AS REQUIRED AT ALL JUNCTIONS OF KITCHEN FLOORS AND WALLS.

COMPRESSORS 300 LBS MAX. 3'-6" TYP. VFY W/K.E.C

- HAT SECTION 20 GA. _____ GALVANIZED STEEL BY G.C. - 3/4" PLYWOOD TOP BY G.C. - FLASHING AS REQUIRED BY G.C. - ROOF BY G.C. — 2" × 10" BY G.C. - 3" DIA. ROOF JACK SUPPLIED & INSTALLED BY G.C., RESEAL AFTER REFRIGERATION LINES HAVE BEEN INSTALLED. 1" DIA. ROOF JACK SUPPLIED & INSTALLED BY G.C. RESEAL AFTER ELECTRICAL LINES HAVE BEEN INSTALLED. COMPRESSORS - 28"W X 40"L EACH

250 LBS EA.

REFRIGERATION SYSTEM ROOF CURB DETAIL

**Group** 8 Des Boul MP Stree udraF Walnut **Tu** 825 0 FM PU D DRA 20 KE  $\bigcirc \bigcirc$ ÕÕ  $\square$  $\mathbb{N}$  $\triangleleft$  $\mathbf{Z}$  $\sim$ LOI  $\triangleleft$ NT N Ħ  $\bigcirc$ MC  $\square$ 

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FIE 150 LON

No. S. A. D. S. D. S.

SHEET NO.

PROJECT NO 508-2

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