MARCH 1, 2023 **PERMIT SET**





MEP ENGINEER



13300 West 98th Street Tel: (913) 492-2400

Lenexa, KS 66215

DRAWING INDEX

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C04	GENERAL LAYOUT	X X	X
C05	PAVEMENT PLAN	X X	X
C06	GRADING PLAN	X X	X
C07	STANDARD DETAILS 1	X X	X
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A-005	CODE PLAN	X	X
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DE101	ELECTRICAL - DEMOLITION PLAN	Х	Х
E101	ELECTRICAL - LIGHTING	Х	Х
E201	ELECTRICAL - POWER	Х	Х



CIVIL ENGINEER

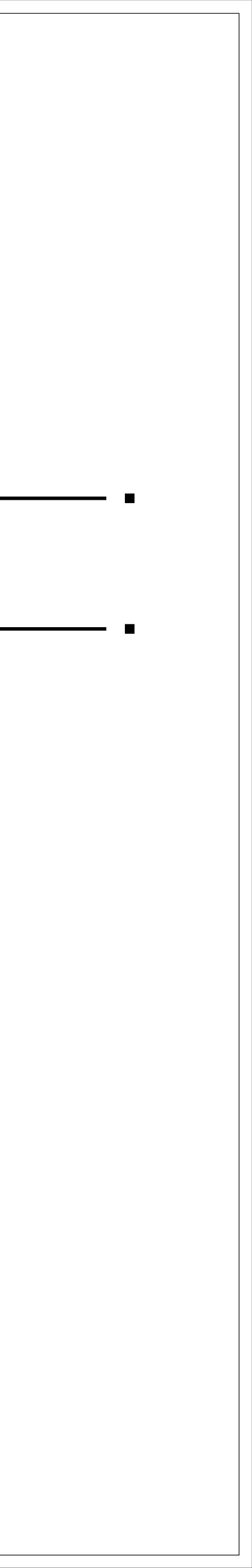


8653 Penrose Lane Lenexa, KS 66219 Tel: (913) 317-9500

> PROJECT LOCATION







LEGEND

	Existing Section Line		Proposed Right-of-Way
	Existing Right-of-Way Line		Proposed Property Line
	Existing Lot Line		Proposed Lot Line
	Existing Easement Line		Proposed Easement
	Existing Curb & Gutter		Proposed Curb & Gutter
	Existing Sidewalk		Proposed Sidewalk
	Existing Storm Sewer		Proposed Storm Sewer
	Existing Storm Structure		Proposed Storm Structure
	Existing Waterline	A	Proposed Fire Hydrant
055045045043	Existing Gas Main	WATER WATER WATER	Proposed Waterline
	Existing Sanitary Sewer		Proposed Sanitary Sewer
S	Existing Sanitary Manhole	\$	Proposed Sanitary Manhole
	Existing Contour Major		Proposed Contour Major
	Existing Contour Minor		Proposed Contour Minor
			Future Curb and Gutter
U/E	Utility Easement		
SS/E	Sanitary Sewer Easement	A/E	Access Easement
D/E	Drainage Easement	T/E	Temporary Easement

Legal Description

Lot 3, SUMMIT FAIR, FIRST PLAT LOTS 1-7, LOT 9, TRACTS A, B, D, AND E, a subdivision in the city of Lee's Summit, Jackson County, Missouri

Civil Engineer Renaissance Infrastructure Consulting Mick Slutter 400 E. 17th Street Kansas Citv. MO 64108 (816) 800-0950

Architect Yaeger Architecture Jessica Wardle 8655 Penrose Lane, Ste 300 Lenexa, KS 66219 (913) 742-8024

FLOOD PLAIN NOTE

According to the FEMA Flood Insurance Rate Map Number 29095C0417G, revised January 20, 2017, portions of this tract lie in: OTHER AREAS, ZONE X, defined as areas determined to be outside the 0.2% annual chance floodplain, OTHER FLOOD AREAS, ZONE X (Future Base Flood), defined as areas of 1% annual chance flood based on future conditions hydrology, and ZONE AE, Special Flood Hazard areas subject to inundation by the 1% annual chance flood, Base Flood Elevations determined.

The information concerning locations of underground utilities shown hereon which are not visible from the surface, has been taken from the records and field locations of the various utility companies and has not been field verified by this company. These locations are not to be construed as accurate or exact.



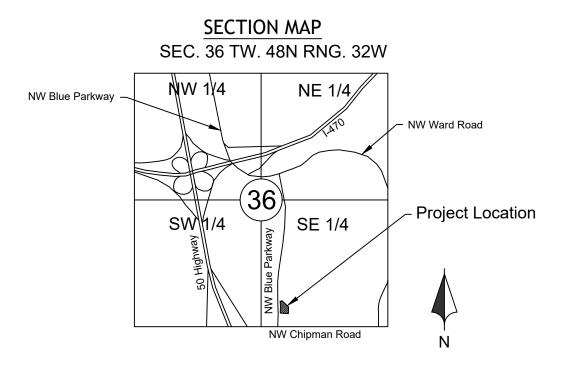
Summer Moon Coffee

Lee's Summit, Jackson County, Missouri Section 36, Township 48N, Range 32W

Construction Documents







GENERAL NOTES

- Drawings for Roads and Sewers, of the City of Lee's Summit, the City of Lee's Summit's standards shall override.
- 2. The contractor shall provide evidence that his insurance meets the requirements of the City of Lee's Summit. All traffic control shall be in conformance with the Manual of Uniform Traffic Control Devices (MUTCD). 3
- 5. The contractor shall be responsible for the restoration of the right-of-way and for damaged improvements such as curbs, driveways, sidewalks, street light and latest City standards and to the City's satisfaction.
- restore the right-of-way, or adjacent properties to original or better condition.
- The contractor shall remove existing trees and shrubbery within the right-of-way adjacent to future thoroughfare improvements. 8. The contractor shall sod all disturbed areas within the public street right-of-way unless otherwise noted on the plans or if specific written approval is granted by the City.
- details.

- shall possess adequate flow characteristics to fill all voids.
- contractor shall repair all damages at his expense.
- in the right-of-way shall be in conformance with the City Traffic Control Requirements.

- 22. Contractor shall restore all disturbed right-of-way upon project completion. 23. Prior to construction, contractor shall install pre-construction erosion control measures.

Sheet	List Table
Sheet Number	Sheet Title
C01	Title Sheet
C02	Existing Conditions
C03	Area Plan
C04	General Layout
C05	Pavement Plan
C06	Grading Plan
C07	Standard Details 1

1. All work in public easements and right of way and all erosion control work must comply with the latest edition of the Technical Provisions & Standard Drawings for Roads and Sewers, of the City of Lee's Summit, Jackson County, Missouri. If any general notes conflict with the Technical Provisions & Standard

4. The contractor is responsible for the protection of all property corners and section corners. Any property corners and/or section corners disturbed or damaged by construction activities shall be reset by a Registered Land Surveyor licensed in the State of Missouri, at the contractor's expense.

traffic signal junction boxes, traffic signal loop lead ins, signal poles, irrigation systems, etc. Damaged improvements shall be repaired in conformance with the

6. The contractor is responsible for providing erosion and sediment control BMPs to prevent sediment from reaching paved areas, storm sewer systems, drainage courses and adjacent properties. In the event the prevention measures are not effective, the contractor shall remove any debris, silt, or mud and

9. All public street sidewalk ramps constructed will be required to comply with the Americans with Disabilities Act (ADA) and Lee's Summit, Missouri sidewalk

11. Excavation for utility work in public street right-of-way requires a Right-of-Way Work Permit from the Public Works Department, in addition to all other permits. 12. All work shall be confined within easements and/or construction limits as shown on the plans.

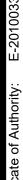
13. Curb stakes and hubs shall be provided at all high points, low points, ADA ramp openings, and on each side of all curb inlets when setting string line. 14. Any existing and/or temporary storm sewer pipes and box culverts to be abandoned in place shall be grouted using a slurry grout mixture meeting a 7-day compressive strength of 100-150 psi. The slurry grout mixture of fly ash, cement, fine aggregate, forming agents and water shall be approved by the City and

15. All existing utilities indicated on the drawings are according to the best information available to the engineer; however, all utilities actually existing may not be shown. The contractor shall be responsible for contacting all utility companies for an exact field location of each utility prior to any construction. All utilities, shown and un-shown, damaged through the negligence of the contractor shall be repaired or replaced by the contractor at his expense. 16. The contractor will be responsible for all damages to existing utilities, pavement, fences, structures, and other features not designated for removal. The

17. By use of these construction documents the contractor hereby agrees that he shall be solely responsible for the safety of the construction workers and the public. The contractor agrees to hold the engineer and owner harmless for any and all injuries, claims, losses, or damages related to the project. 18. The contractor will be responsible for providing all signage, barricades, lighting, etc., as required for temporary traffic control during the construction of this project. Maintenance of the temporary traffic control devices will be the contractor's responsibility. All traffic control in conduction with construction

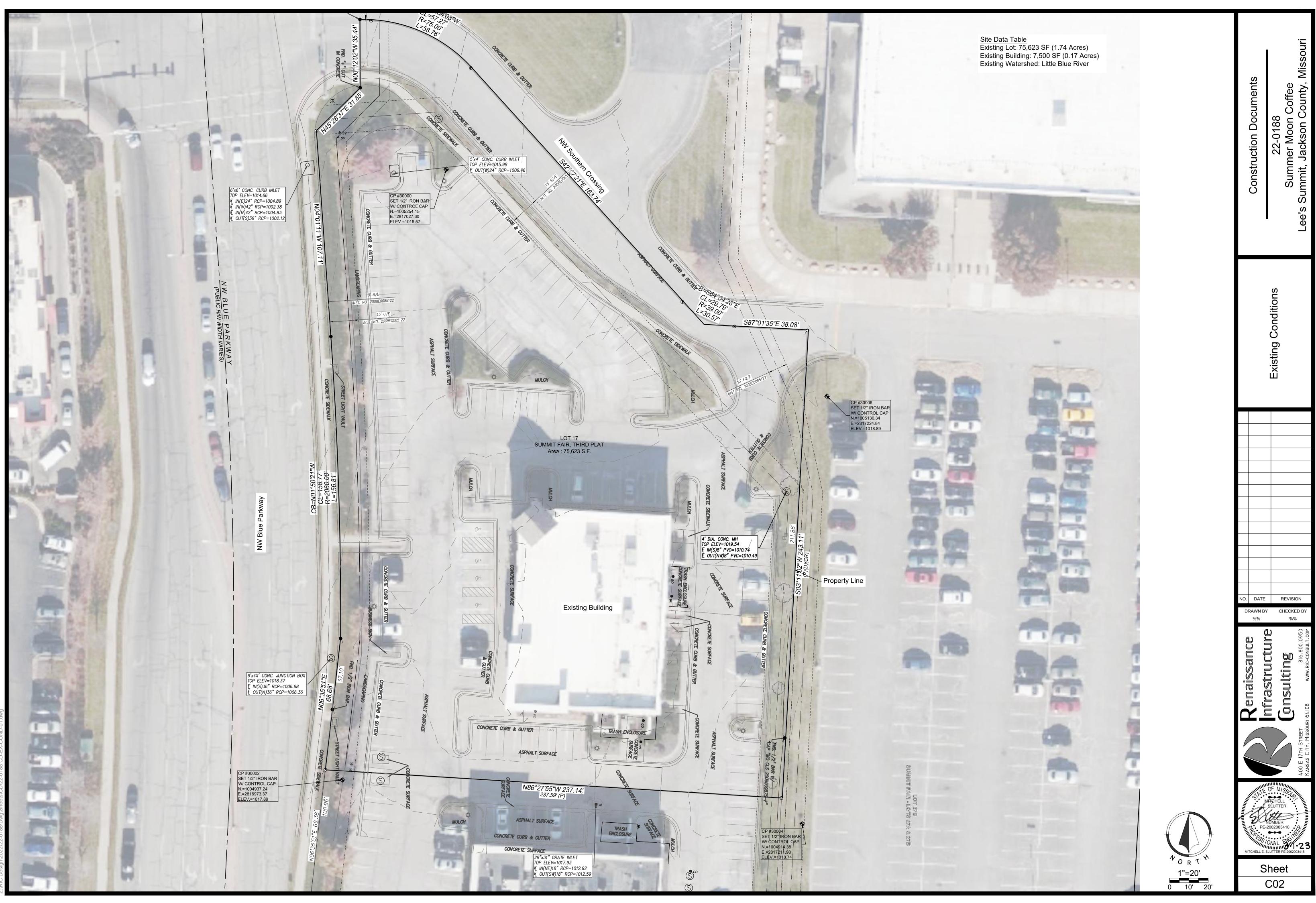
19. Geogrid, footings, or other elements of retaining wall(s) cannot encroach into the right of way, public easements, or adjacent private property. 20. All building and life safety issues shall comply with the 2012 International Fire Code and local amendments as adopted by Lee's Summit, Missouri. 21. Contractor shall be responsible for obtaining all permits including land disturbance, right-of-way, hauling, etc., with Public Works prior to construction.

Constructio Sheet <u>-itle</u> IO. DATE REVISION DRAWN BY CHECKED BY %% %% structure enaissance nsulting $\overline{\mathbf{U}}$ ل ل MHTCHELL NUMBER • PE-2002003418 SIONAL SIY .2 MITCHELL E. SLUTTER F

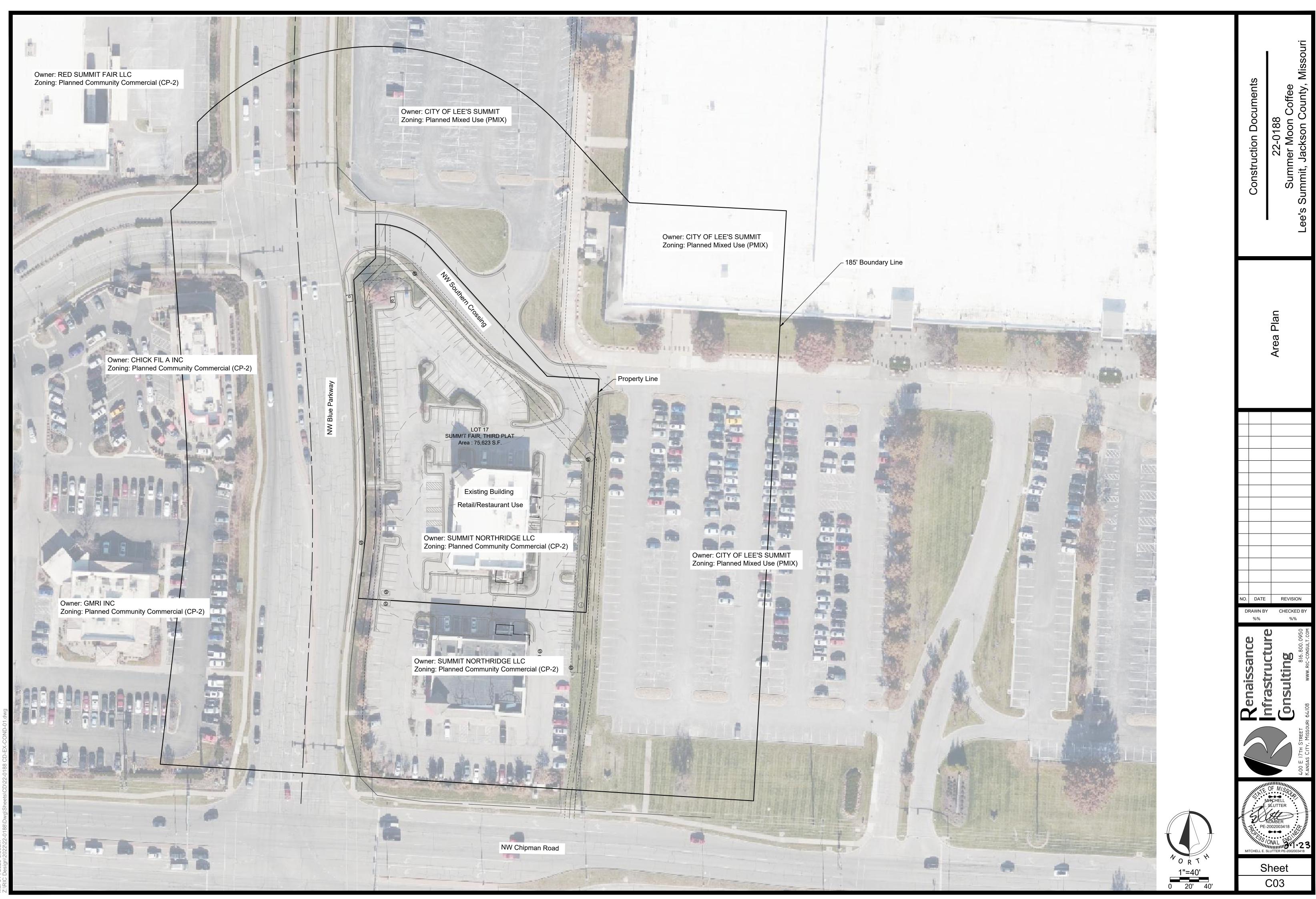


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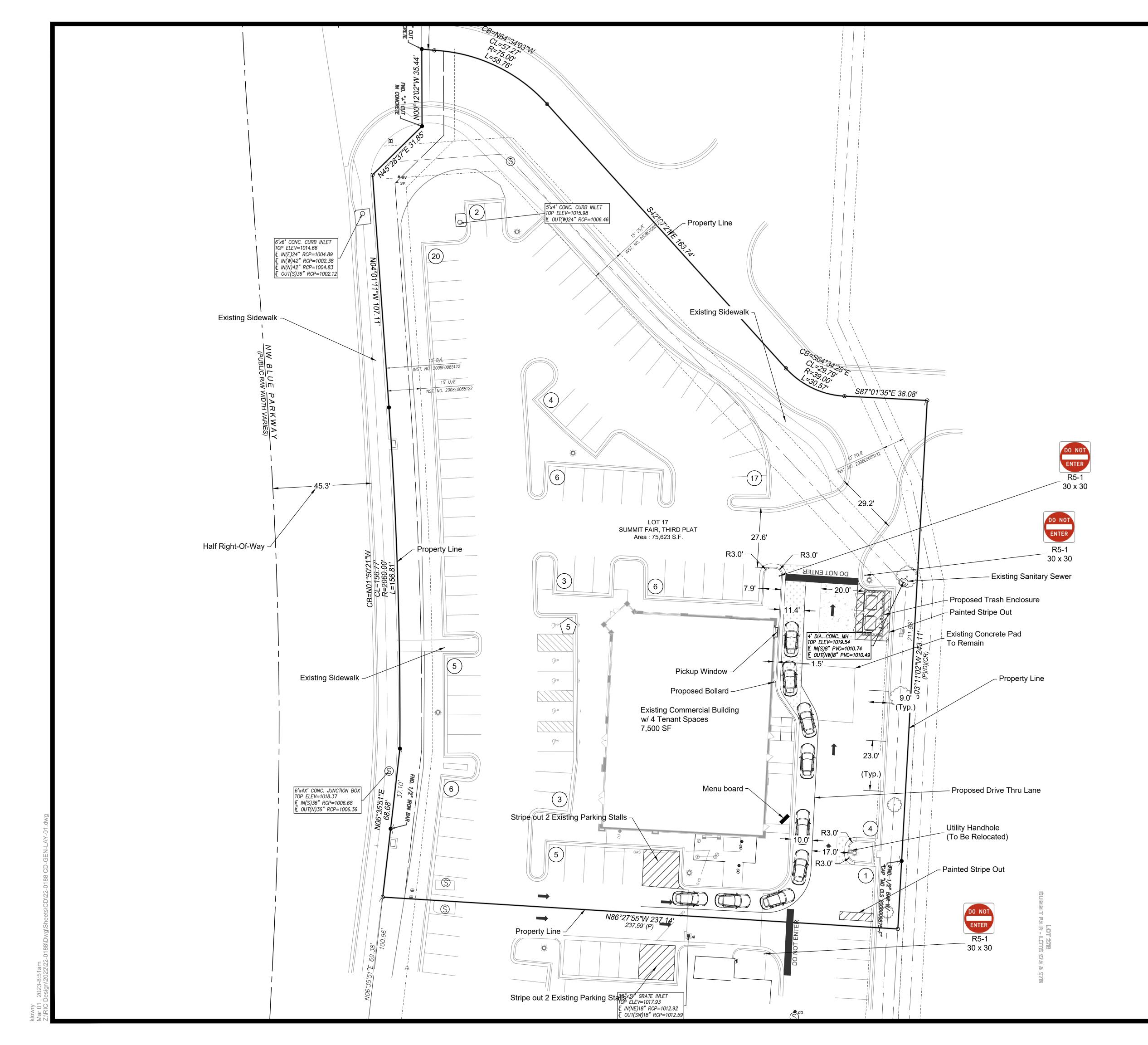
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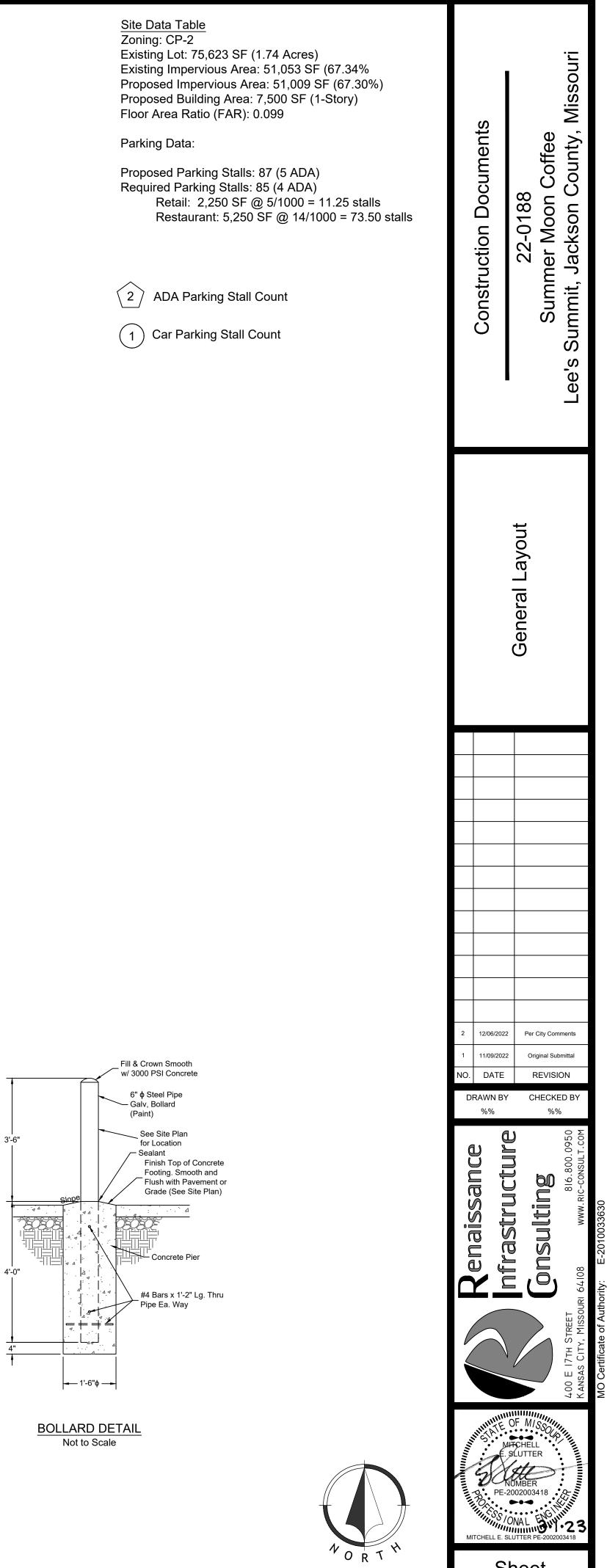


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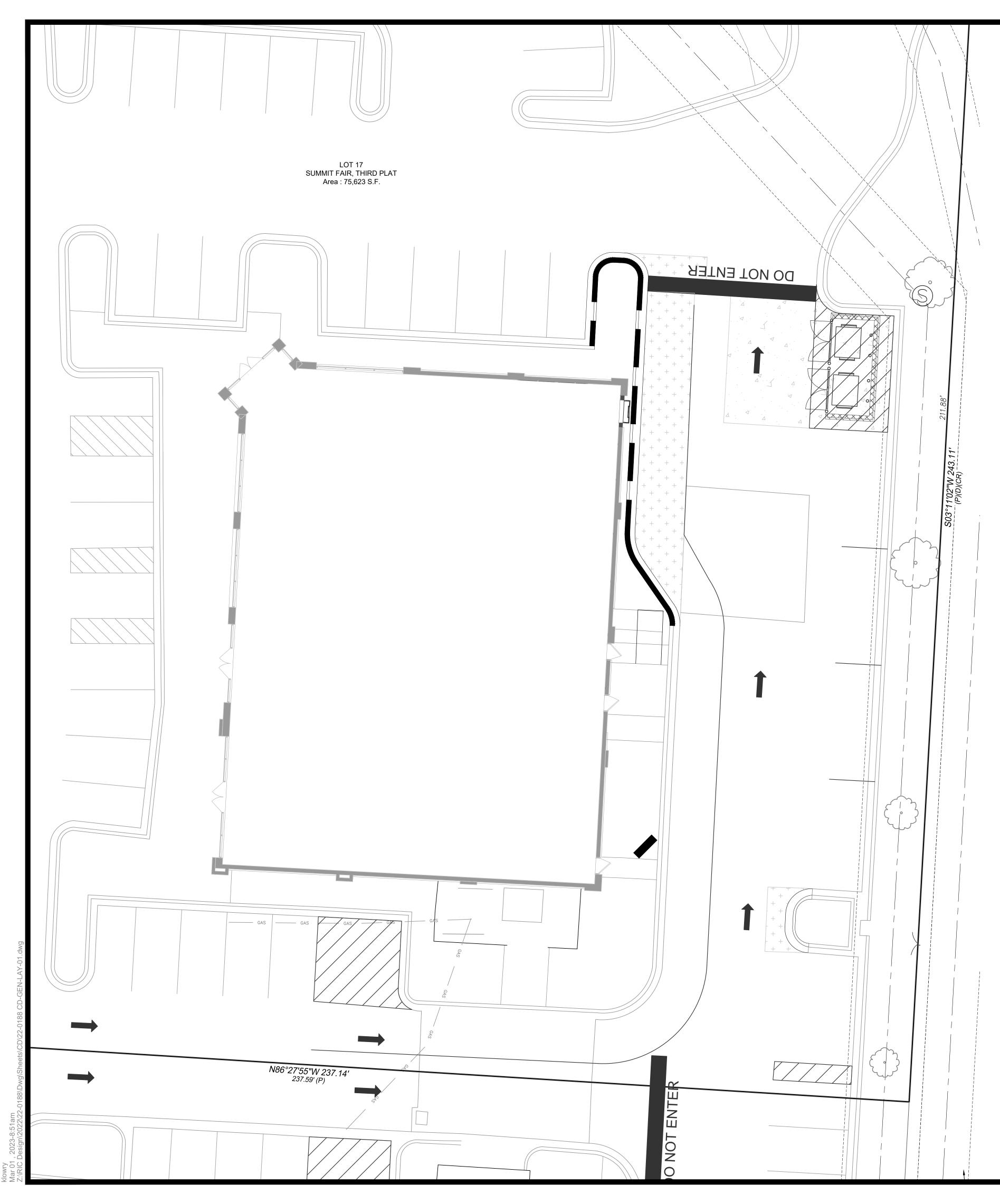
3'-6

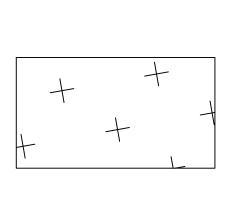


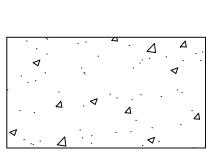
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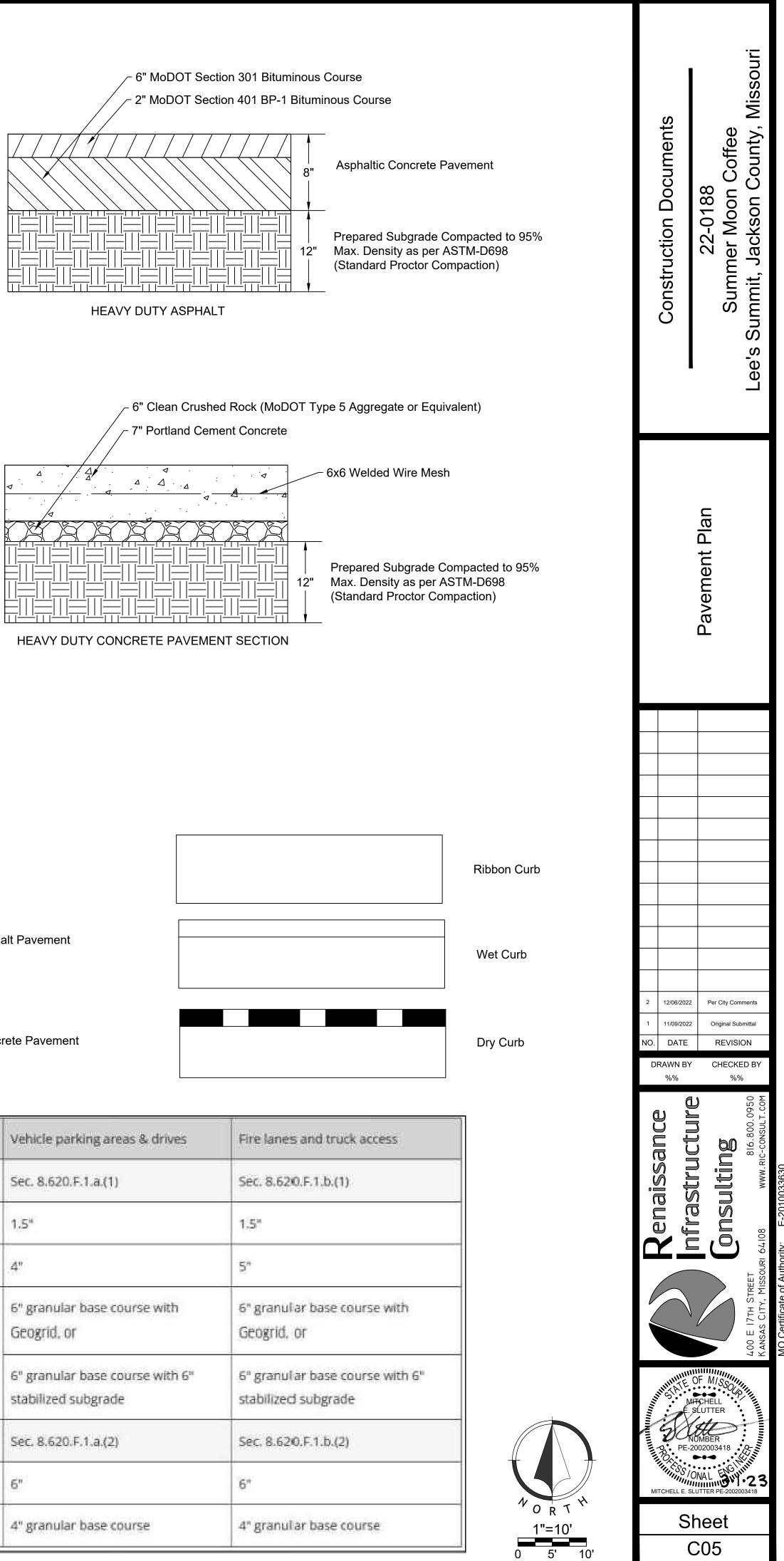
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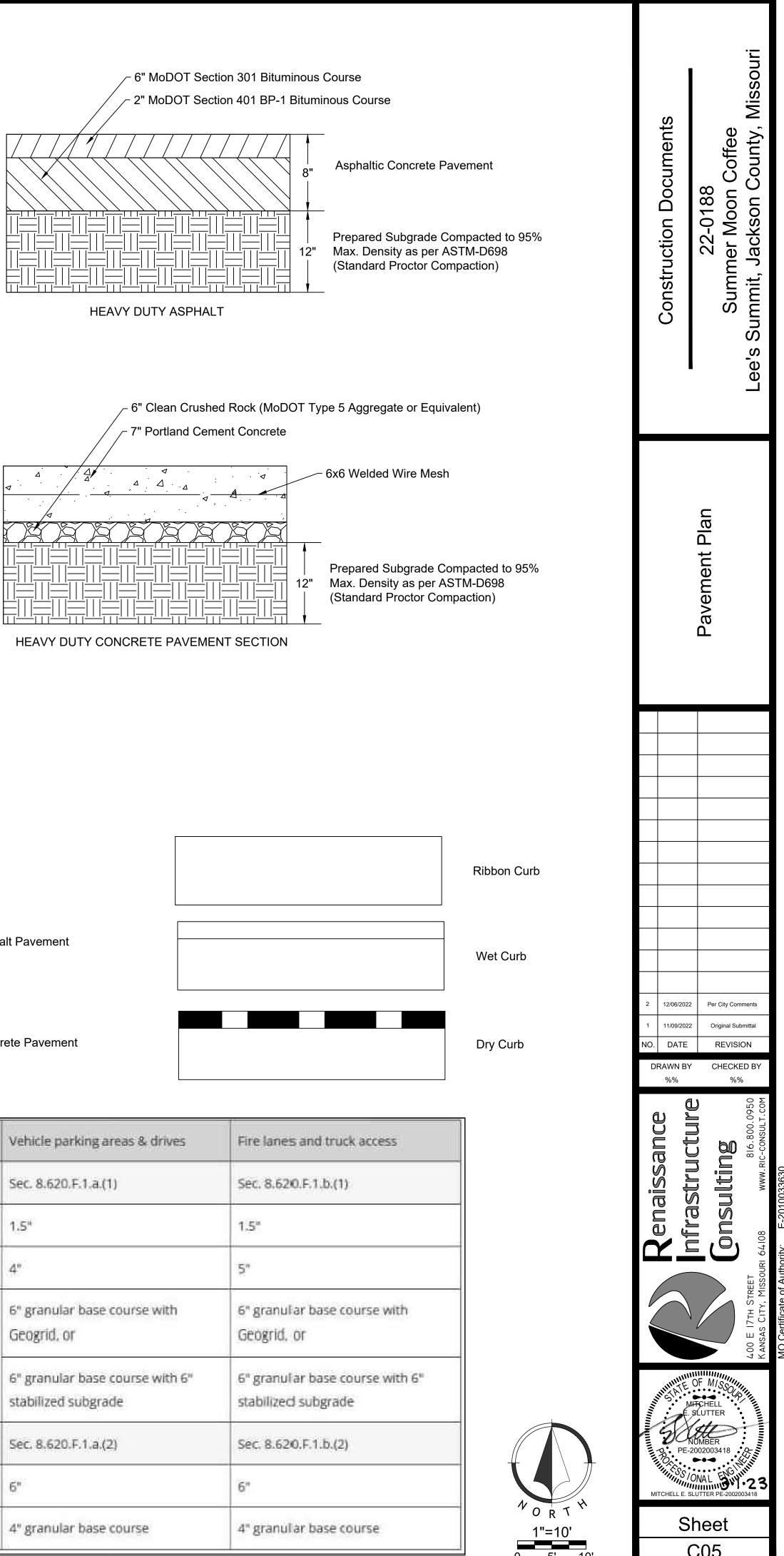
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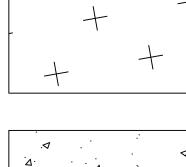










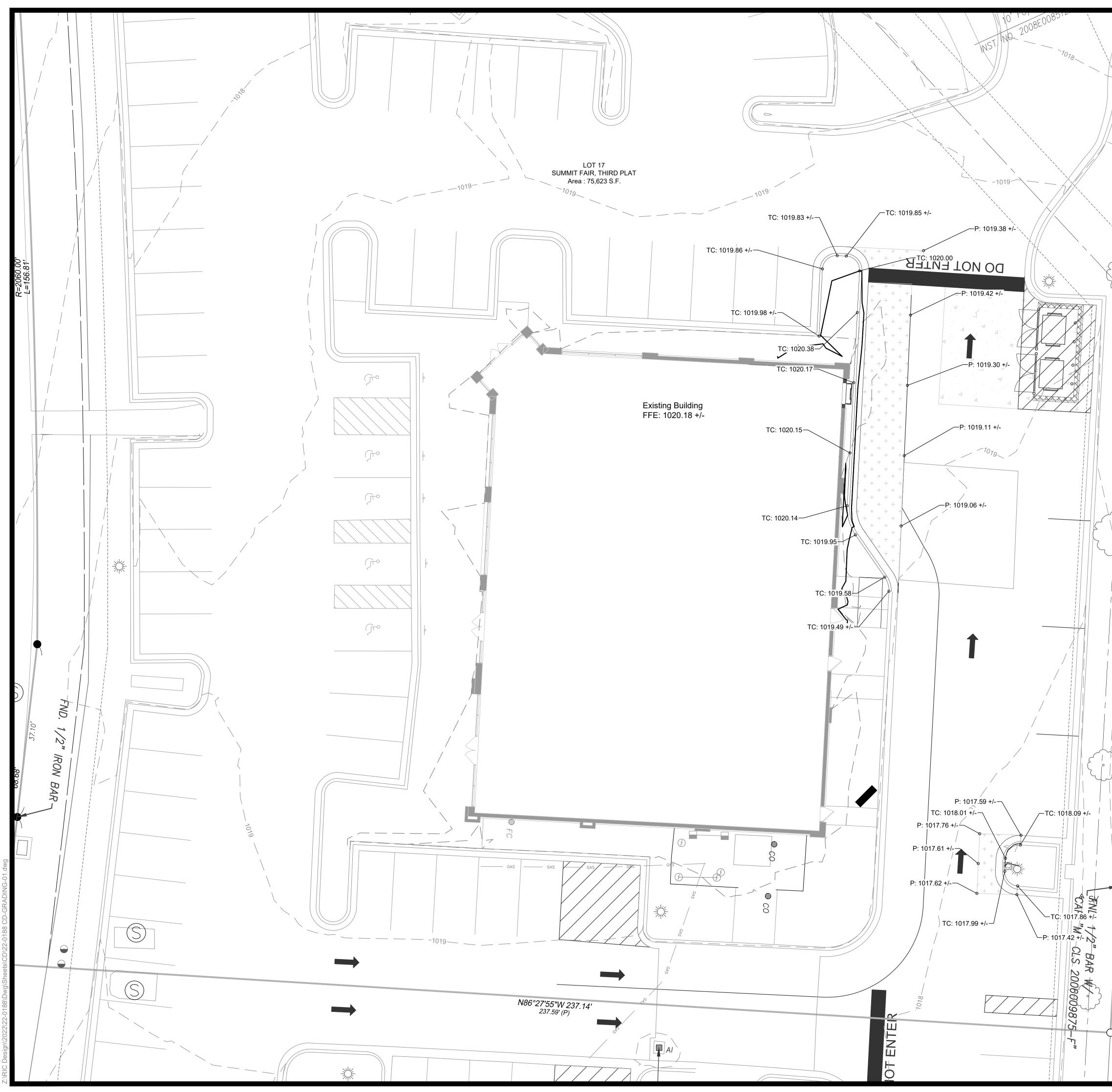


Proposed Asphalt Pavement

Δ Δ. ⊿ . Δ ⊿..

Proposed Concrete Pavement

	Vehicle p
Asphait	Sec. 8.620
Asphalt surface course	1.5*
Asphalt base course	4"
Subgrade	6" granul Geogrid, i
	6" granul stabilized
Concrete	Sec. 8.620
Concrete — Full depth	6"
Subgrade	4" granul

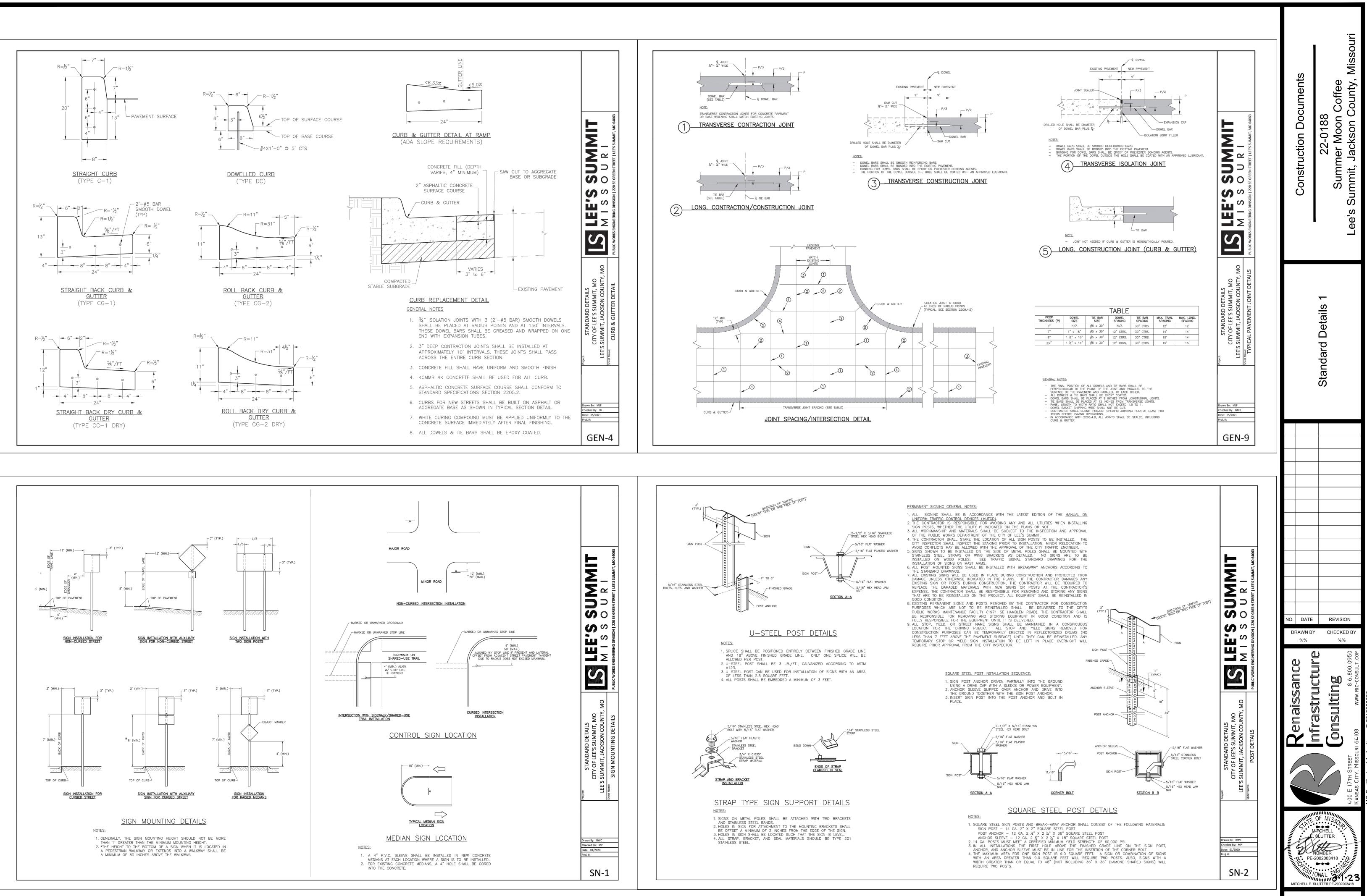


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S03°11'02''W 243.11'	211.88'	
LEGEND Proposed Major Contour Proposed Minor Contour Proposed Minor Contour Existing Major Contour Existing Major Contour Existing Major Contour Existing Major Contour Proposed Minor Contour Existing Major Contour Proposed Minor Contour Existing Major Contour Hereit Existing Grade		
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DRAWN BY NO. DATE NO. DATE NO. DATE Sheet CO6	Grading Plan	Construction Documents 22-0188 Summer Moon Coffee Lee's Summit, Jackson County, Missouri

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Sheet C07 ite of Authority: E-2010

	\bigcirc		CUH
	@ @ A	AT	CUH CUST CUYD
	A A/C	ACRE AIR CONDITION(ING) (ED)	CW D
	A/C UNIT AB	AIR CONDITIONING UNIT ANCHOR BOLT	D DBL
	AB ABBVR ABV	ABBREVIATION ABOVE	DEG DEMO
	ACC ACCU	ACCESSIBLE AIR COOLED CONDENSING UNIT	DEPT
	ACI ACOUS	AMERICAN CONCRETE INSTITUTE ACOUSTICAL	DF DH
	ACOUS	ACOUSTICAL INSULATION	DIA or Ø DIFF
D	-	ACOUSTICAL PANEL ACOUSTIC	DIM DIR
	ACT	ACOUSTICAL CEILING TILE AMERICANS WITH DISABILITIES ACT OF 1992	DISP
	ADDL	ADDITIONAL ADDENDUM	DIV
	ADH ADJ	ADHESIVE ADJUSTABLE, ADJACENT	
	AE AFF	ARCHITECT/ ENGINEER ABOVE FINISH FLOOR	DN DO
	AFG AGG	ABOVE FINISHED GRADE AGGREGATE	DOC DOZ
	AHJ AHU	AUTHORITIY HAVING JURISDICTION AIR HANDLING UNIT	DP DR
	AIA	AMERICAN INSTITUTE OF ARCHITECTS OR AMERICAN INSURANCE ASSOCIATION	DRWR DS
	AIEE AISC	AMERICAN INSTITUTE OF ELECTRICAL ENGINEERS AMERICAN INSTITUTE OF STEEL CONSTRUCTION	DSGN DT
	AISI ALT	AMERICAN AND STEEL INSTITUTE ALTERNATE	DTL DW
		ALUMINUM ANCHOR	DWG E
	ANOD ANSI APC	ANODIZED AMERICAN NATIONAL STANDARDS INSITUTE	E E.F.
	APC APT APX	ACOUSTICAL PANEL CEILING APARTMENT APPROXIMATE	EA EC
	ARCH ASCE	ARCHITECT (ARCHITECTURAL) AMERICAN SOCIETY OF CIVIL ENGINEERS	ED EF
	ASME	AMERICAN SOCIETY OF MECHANICAL ENGINEERS ASPHALT	EIFS EJ
	ASTM AUTO	AMERICAN SOCIETY FOR TESTING AND MATERIALS AUTOMATIC	EL ELEC ELEM
	AVE AVR	AVENUE AVERAGE	ELEM ELEV ELEV
	AWG AWN	AMERICAN WIRE GAUGE AWNING	ELEV ENAM ENCI
	AWT B	ACOUSTICAL WALL TREATMENT	ENCL ENGR ENVIR
-	B BD B.O.F.	BASE BOARD BOTTOM OF FOOTING	ENVIR EOS EP
	B.O.M B.O.W.	BILL OF MATERIAL BOTTOM OF WALL	EPDM EPS
	B/B B/O	BACK-TO-BACK BY OTHERS	EQ EQP
	BAT BD	BATTEN BOARD	EQUIP EQUIV
	BDRM BITUM	BEDROOM BITUMINOUS	ETC ETR
	BLDG BLDV	BUILDING BOULEVARD	EW EWC
	BLK BLKG BLW	BLOCK BLOCKING BELOW	EWH EXC
	BLVV BM BO	BELOW BENCHMARK, BEAM BOTTOM OF	EXCV EXH
	BOT BP	BOTTOM BLUE PRINT (OR B/P)	EXIST EXP EXT
	BR BRG	BEDROOM	F F.C.O.
	BRZ BSMT	BRONZE BASEMENT	F/F FA
	BTW BTWN	BETWEEN BETWEEN	FAAP FACP
	BUR BV	BUILT-UP ROOFING BUTTERFLY VALVE	FAO FBD
	BVL BW C	BEVELED BOTH WAYS	FBO FCB
	C C.C. C.D.	CENTER TO CENTER CONSTRUCTION DOCUMENT	FCU FD
	C.F.M. C.O.	CUBIC FEET PER MINUTE CLEANOUT	FE FEC
	CAB CAD	CABINET CADMIUM OR COMPUTER-AIDED DRAFTING	FFE FFL FGL
	CALC CAS	CALCULATION CASEMENT	FIN FIXT
	CB CBORE	CARRIAGE BOLT, CATCH BASIN COUNTERBORE	FL FLOR
3	CCTV CD	CLOSED-CIRCUIT TELEVISION CABINET DOOR	FLOUR
	CD CEM	CONSTRUCTION DOCUMENTS, CONTRACT DOCUMENTS CEMENT	FLSH FND
	CERT CF/CI	CERTIFY, CERTIFICATE, CERTIFICATION CONRACTOR FURNISHED/ CONTRACTOR INSTALLED	FNDN FO
	CF/OI CFCI	CONTRACTOR FURNISHED/ OWNER INSTALLED GROUND-FAULT CIRCUIT-INTERRUPTER	FOC FOF
	CFS CG	CUBIC FEET PER SECOND CORNER GUARD	FOM FOS
	CH CHBD CHEM	COAT HOOK CHALK BOARD	FOW FPL
	CHEM CI CIP	CHEMICAL CAST IRON CAST-IN-PLACE	FRJS FRM
	CIP CIR CJ	CAST-IN-PLACE CIRCLE CONTROL JOINT, CONSTRUCTION JOINT	FRP FRPF
	CJT CL	CONTROL JOINT CENTERLINE	FRTW FS
	CL CLG	CLOSET CEILING	FT FTG
	CLK CLO	CAULKING CLOSET	FUR FURN
	CLR CLRM	CLEAR CLASSROOM	FW FWC G
	CM CMU	CENTIMETER CONCRETE MASONRY UNIT	G.T. GA
	CNR CNTR	CORNER COUNTER	GAL GALV
	CO COL	CLEAN OUT COLUMN	GALV GALV ST GB
	CONC CONF	CONCRETE CONFERENCE	GC GEN
	CONN CONST	CONNECT(ION) CONSTRUCT	GF GFCI
	CONSTR CONT	CONSTRUCTION CONTINUOUS	GFRC GFRG
4	CONTR COORD	CONTRACT (OR) COORDINATE, COORDINATION	GI GL
	CORR CPT CRES	CORRIDOR, CORRUGATED CARPET CORROSION-RESISTANT STEEL	GL BLK GLB
	CRES CRPT CSINK	CORROSION-RESISTANT STEEL CARPET COUNTERSINK	GLBK GLU LAN
	CSINK CSK CSWK	COUNTERSINK COUNTERSINK CASEWORK	GLZ GPM
	CSWK CT CTR	CASEWORK CERAMIC TILE CENTER	GRD GSF
	CTRL	CONTROL CUBIC	GT GWB GWT
25 AM	CUFT	CUBIC FOOT	GYM
2/17/2023 11:52:25 AM			
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CABINET UNIT HEATER CUSTODIAL CUBIC YARD COLD WATER, CASEMENT WINDOW DEEP, DEPTH DOUBLE DEGREE DEMOLITION DEPARTMENT DETAIL DRINKING FOUNTAIN DOUBLE HUNG DIAMETER DIA or Ø DIFFERENCE DIMENSION DIRECTION DISPENSER DISTANCE DIVIDE, DIVISION DEAD LOAD DAMPPROOFING DAMPER DOWN DITTO DOCUMENT DOZEN DAMPPROOFING DOOR DRAWER DOWNSPOUT DESIGN DRAIN TILE DETAIL DISHWASHER DRAWING EAST EXHAUST FAN EACH ELECTRICAL CONTRACTOR EDGE DISTANCE EACH FACE EXTERIOR INSULATION AND FINISH SYSTEM EXPANSION JOINT ELEVATION ELECTRIC(AL) ELEMENTARY ELEVATION ELEVATOR ENAMEL ENCLOSURE ENGINEER ENVIRONMENT EDGE OF SLAB ELECTRIC PANEL ETHYLENE PROPYLENE DIENE MONOMER EXPANDED POLYSTYRENE BOARD EQUAL EQUIPMENT EQUIPMENT EQUIVALENT ET CETERA EXISTING TO REMAIN EACH WAY ELECTRIC WATER COOLER ELECTRIC WATER HEATER EXCAVATE EXCAVATE EXHAUST EXISTING EXPAND, EXPANSION EXTERIOR FLOOR CLEANOUT FACE-TO-FACE FIRE ALARM FIRA ALARM ANNUNCIATOR PANEL FIRE ALARM CONTROL PANEL FINISH ALL OVER FIBERBOARD FURNISHED BY OTHERS FIBER CEMENT BOARD FAN COIL UNIT FLOOR DRAIN FIRE EXTINGUISHER FIRE EXTINGUISHER CABINET FINISHED FLOOR ELEVATION FINISHED FLOOR LEVEL FIBERGLASS FINISH FIXTURE FLOOR LEVEL FLUORESCENT FLOUR FLOURESCENT FLOOR FLASHING FOUNDATION FOUNDATION FINISHED OPENING FACE OF CONCRETE FACE OF FINISH FACE OF MASONRY FACE OF STUDS FACE OF WALL FIREPLACE FIRE RESISTIVE JOINT SYSTEM FRAM(D) FIBERGLASS REINFORCED PLASTIC FIREPROOF FIRE RETARDANT TREATED WOOD FAR SIDE FOOT, FEET FOOTING, FITTING FURRED FURNITURE FIRE WALL FABRIC WALL COVERING GLAZED TILE GAGE GALLON GALVANIZED GALV STL GALVANIZED STEEL GRAB BAR GENERAL CONTRACTOR GENERAL, GENERATOR **GROUND-FAULT CIRCUIT-INTERRUPTER** GROUND FAULT CIRCUIT INTERRUPTER GLASS FIBER RINFORCED CONCRETE GFRG GLASS FIBER REINFORCED GYPSUM GALVANIZED IRON GLASS, GROUND LEVEL GL BLK GLASS BLOCK GLUE LAMINATED BEAM GLASS BLOCK GLUED LAMINATED BEAM GLU LAM GLAZING GALLONS PER MINUTE GRADE GROSS SQUARE FEET GROUT GYPSUM WALL BOARD GLAZED WALL TILE GYMNASIUM

GYP GYP BD GYP PLAS HCP HD HDCP HDPE HDR HDW HDWD HM HO HOR HORIZ HR HRS HSS HTG HVAC HW HWD HYD INCAND INCL INFO INS INSUL INT INTERM INV ISO J-BOX JAN JAN CLO JCT KPL LAB LAM LAV LB LBL LBS LDD LIN LKR LKR RM LL LLH LLV LM LOA IT LTG LVL LVR MACH MACH RM MAHOG MAINT MAS MATL MAX MBR MBW MC MDF MDO ME MECH MECH RM MED MFG. MFR MH MIN MIR MISC MKR BD MLB MLD MM MMB MO MOD MOD BIT MOW MTD MTL MULL MWK NEC NIC NO or # NOM NORM NSF NTS O/A 0/0 OAL OBS OC OD OF/ OI OF/CI OFF

OH

4

ABBREVIATIONS

5

SCALE: NTS SHEET SIZE: ARCH E1 30" x 42"

GYPSUM GYPSUM BOARD GYPSUM PLASTER
HOSE BIB HOSE BIBB HANDICAP, HOLLOW CORE HANDICAPPED HEAVY DUTY HANDICAPPED (BETTER IF REFERRED TO AS "ACCESSIBLE") HIGH-DENSITY POLYETHYLENE HEADER HARDWARE HARDWOD HOLLOW METAL HOLD OPEN HORIZONTAL HORIZON HOUR
HOT ROLLED STEEL HOLLOW STRUCTURAL SECTION HEIGHT HEATING HIGH VOLTAGE HEATING, VENTILATING AND AIR CONDITIONING HOT WATER HARDWARE HYDRANT
IN ACCORDANCE WITH INNER DIAMETER INVERT ELEVATION INCH INCH, INCHES INCANDESCENT INCLUDE INFORMATION INSULATE INSULATE INSULATION
INTERMEDIATE INVERT INTERNATIONAL ORGANIZATION FOR STANDARDS JUNCTION BOX JANITOR JANITOR CLOSET JUNCTION JOINT JUNIOR JOIST
KILN DRIED, KNOCK DOWN 1000 POUNDS KITCHEN KILOMETER KNOCK OUT KICK PLATE KILOWATT LENGTH, LITER, ANGLE
LABORATORY LAMINATE(D) LAVATORY POUND LABEL POUND LOAD LIMITED DIMENSION DRAWING LINEAL FEET, LINEAR FEET LINEAR FEET LATENT HEAT, LEFT HAND
LIBRARY LINEAR LOCKER LOCKER ROOM LIVE LOAD LONG LEG HORIZONTAL LONG LEG VERTICAL LIST OF MATERIALS LENGTH OVERALL LINOLEUM TILE, LIGHT LIGHT LIGHT LIGHTING LAMINATED VENEER LUMBER
LOUVER METER MATCHLINE MACHINE ROOM MAHOGANY MAINTENANCE MASONRY MATERIAL MAXIMUM MEMBER MEASUREMENT BETWEEN WIRES
MEASOREMENT BETWEEN WIRES MEDICINE CABINET, MECHANICAL CONTRACTOR MEDIUM DENSITY FIBERBOARD MEDIUM DENSITY OVERLAY MATCH EXISTING MECHANICAL, MECHANIC MECHANICAL ROOM MEDIUM MANUFACTURING MANUFACTURER MANHOLE
MINIMUM MIRROR MISCELLANEOUS MARKERBOARD MICRO LAMINATE BEAM MOULDING MILIMETER MEMBRANE MASONRY OPENING MODULE
MODIFIED BITUMEN MEASUREMENT OVER WIRES MOUNTED METAL, MATERIAL MULLION MILLWORK NORTH NOT APPLICABLE NATIONAL ELECTRICAL CODE
NOT IN CONTRACT NUMBER NOMINAL NORMAL NET SQUARE FEET NOT TO SCALE NON-OPERABLE WINDOW SECTION OVERALL OUT TO OUT
OVERALL LENGTH OBSCURE ON CENTER OUTSIDE DIAMETER OWNER FURNISHED/ OWNER INSTALLED OWNER FURNISEHD/ CONTRACTOR INSTALLED OFFICE OVERHANG

OH DR	OVERHEAD DOOR
OP	OPAQUE
OPG	OPENING
OPH	OPPOSITE HAND
OPNG	OPENING
OPP	OPPOSITE
OPT	OPTIONAL, OPTIMUM
OSB P	ORIENTATED STRAND BOARD
P.L.	PROPERTY LINE (OR PARTS LIST)
PA	PUBLIC ADDRESS
PAR	PARALLEL
PART	PARTIAL
PAT	PATTERN
PBD	PARTICLE BOARD
PBF	PREFABRICATED
PC	PLUMBING CONTRACTOR
PCC	PORTLAND CEMENT CONCRETE
PCF	POUNDS PER CUBIC FOOT
PCS	PIECES
PERF	PERFORATE, PERFORATED
PERIM	PERIMETER
PH	TOILET PAPER HANGER
PL	PLATE, PROPERTY LINE
PL GL	PLATE GLASS
PL.	PLASTER
PLAM	PLASTIC LAMINATE
PLAS	PLASTER, PLASTIC
PLBG	PLUMBING
PLF	POUNDS PER LINEAR FOOT
PLT	PLATE
PLYWD	PLYWOOD
PMT	PAINT(ED)
PNL POL	PANEL
POLY	POLYETHYLENE (PLASTIC)
PORC	PORCELAIN
PORT	PORTABLE
POS	POSITIVE
PR PRCST	PAIR
	PREFABRICATED PREFINISHED
PRELIM	PRELIMINARY PREFORMED
PRKG	PARKING PROJECT
PROP	PROPERTY PARTITION
PSF	POUNDS PER SQUARE FOOT POUNDS PER SQUARE INCH
PT	POST TENSIONED, PRESSURE TREATED
PTD	PAPER TOWER DISPENSER
Ptd.	PAINTED
PTN	PARTITION
PVC	POLYVINYL CHLORIDE (PLASTIC)
PVMT	PAVEMENT
PWR	POWER
QT	QUARRY TILE
QTR	QUARTER
QTY R	QUANTITY
R	RISER, RADIUS, HEAT RESISTANCE
R&S	ROD AND SHELF
R.D.L.	ROOF DRAIN LEADER
RA	RETURN AIR
RAD	RADIUS, RADIATOR
RB	RUBBER BASE, RESILIENT BASE
RC	REINFORCED CONCRETE
RC	ROOFING CONTRACTOR
RCP RD	REFLECTED CEILING PLAN
RE	ROOF DRAIN, ROD REINFORCED
REBAR	REINFORCING BAR
REC	RECESSED
REF	RECREATION ROOM REFERENCE, REFRIGERATOR
REFR	REF
REG	REGISTER, REGULATION
REINF	REINFORCE(ED)
REQD	REQUIRED
	REQUIRED RESILIENT
RFG	REVISION ROOFING
RFI	REQUEST FOR INFORMATION
RFL	REFLECT(ED)
RFP	REQUEST FOR PROPOSAL
RH	RIGHT HAND, ROOF HATCH
RM	ROOM
RO	ROUGH OPENING
ROW	RIGHT OF WAY
RTF	RUBBER TILE FLOOR
RTU	ROOF TOP UNIT
RV	ROOF VENT
RW	RESCUE WINDOW
RWB	RUBBER WALL BASE
S S	SOUTH
S.D.	SMOKE DETECTOR
SA	SUPPLY AIR
SAB	SOUND ATTENUATION BATTS
SAN	SANITARY
SC	SOLID CORE, SHADING COEFFICIENT
SCH	SCHEDULE
SCHED	SCHEDULE
SCN	SCREEN
SD	SOAP DISPENSER, SMOKE DETECTOR
SECT	SECTION
SF	SQUARE FOOT, SAFETY FACTOR
SGD	SLIDING GLASS DOOR
SGT	STRUCTURAL GLAZED TILE
SH	SHELF
SHR	SHOWER
SHT	SHEET
SHTH	SHEATHING SHEATHING
SIM	SIMILAR
SKL	SKYLIGHT
SLB SLD	SLAB SLIDER(ING) SANITARY NARKIN DISPENSED
SND	SANITARY NAPKIN DISPENSER
SOG	SLAB ON GRADE
SPC	SUSPENDED SPLASTER CEILING
SPEC	SPECIFICATION(S)
Specs.	SPECIFICATIONS
SPKR	SPEAKER
SQ	SOLIARE
SQ	SQUARE
SQ. FT.	SQUARE FEET
SQ. IN.	SQUARE INCHES
SQ. IN.	SQUARE INCHES
SS	STAINLESS STEEL
SST	STAINLESS STEEL
STC STD	STAINLESS STEEL SOUND TRANSMISSION CLASS STANDARD
STL	STANDARD STEEL STORAGE
STOR	STORAGE
STR	STRUCTURAL
STRM	STOREROOM
STRUCT STV	STOREROOM STRUCTURAL STOVE
SUB SUB FL	STOVE SUBSTITUTE SUBFLOOR
SUSP SUSP CLG	SUBFLOOR SUSPENDED SUSPENDED CEILING

SV	
	SAFETY VALVE, SHEET VINYL
SW	SHEAR WALL
SWBD SY	SWITCHBOARD SQUARE YARD
SYM	SYMBOL
SYS	SYSTEM
T T	
Т Т & В	TREAD TOP AND BOTTOM
T&G	TONGUE AND GROOVE
T&B	TOP AND BOTTOM
T&G	TONGUE AND GROOVE TOP OF
Т.О. Т.О.В.	TOP OF TOP OF BEAM
T.O.C.	TOP OF CURB OR TOP OF CON
T.O.F.	TOP OF FOOTING
T.O.J. T/O	TOP OF JOIST TOP OF
TB	THROUGH BOLT, TOWEL BAR
TECH	TECHNICAL, TECHNOLOGY
TEL	
TEMP TERR	TEMPORARY, TEMPERATURE, TERRAZZO
THERM	THERMAL
THK	THICKNESS
THRU	THROUGH
TK TK BD	TIGHT KNOT TACK BOARD
TMPD	TEMPERED
TMPD GL	TEMPERED GLASS
TOC TOF	TOP OF CONCRETE TOP OF FOOTING, TOP OF FLO
TOF	TOP OF POOTING, TOP OF PLO
TOPO	TOPOGRAPHY
TOS	TOP OF STEEL
TOW TPD	TOP OF WALL TOILET PAPER DISPENSER
TS	TUBULAR STEEL
TTC	TELEPHONE TERMINAL CLOSE
TV	TELEVISION
TYP U	TYPICAL
U	HEAT TRANSFER COEFFICIEN
UC	UNDERCUT
UGND	UNDERGROUND
UH UL	UNIT HEATER UNDERWRITERS LABORATORI
UNF	UNFINISHED
UNFIN	UNFINISH(ED)
UNO	UNLESS NOTED OTHERWISE
UON UTIL	UNLESS OTHERWISE NOTED UTILITY
UV	UNIT VENTILATOR
V	
V	
V.B. VA.	VAPOR BARRIER VOLTAGE
VA. VAR	VARIES, VARIATION, VARNISH
VB	VAPOR BARRIER, VINYL BASE
VCT	VINYL COMPOSITE TILE
VENT	VENTILATION
VENT VERT VEST VG	VENTILATION VERTICAL VESTIBULE VERTICAL GRAIN
VENT VERT VEST VG VIF	VENTILATION VERTICAL VESTIBULE VERTICAL GRAIN VERIFY IN FIELD
VENT VERT VEST VG VIF VIN	VENTILATION VERTICAL VESTIBULE VERTICAL GRAIN VERIFY IN FIELD VINYL SHEET
VENT VERT VEST VG VIF	VENTILATION VERTICAL VESTIBULE VERTICAL GRAIN VERIFY IN FIELD
VENT VERT VG VIF VIN VOC VOL VR	VENTILATION VERTICAL VESTIBULE VERTICAL GRAIN VERIFY IN FIELD VINYL SHEET VOLATILE ORGANIC COMPOUN VOLUME VAPOR RETARDER
VENT VERT VG VIF VIN VOC VOL VR VRN	VENTILATION VERTICAL VESTIBULE VERTICAL GRAIN VERIFY IN FIELD VINYL SHEET VOLATILE ORGANIC COMPOUN VOLUME VAPOR RETARDER VENEER
VENT VERT VG VIF VIN VOC VOL VR	VENTILATION VERTICAL VESTIBULE VERTICAL GRAIN VERIFY IN FIELD VINYL SHEET VOLATILE ORGANIC COMPOUN VOLUME VAPOR RETARDER
VENT VERT VG VIF VIN VOC VOL VR VRN VUH VWC W	VENTILATION VERTICAL VESTIBULE VERTICAL GRAIN VERIFY IN FIELD VINYL SHEET VOLATILE ORGANIC COMPOUN VOLUME VAPOR RETARDER VENEER VERTICAL UNIT HEATER VERTICAL WALL COVERING
VENT VERT VG VIF VIN VOC VOL VR VRN VUH VWC W W	VENTILATION VERTICAL VESTIBULE VERTICAL GRAIN VERIFY IN FIELD VINYL SHEET VOLATILE ORGANIC COMPOUN VOLUME VAPOR RETARDER VENEER VENTICAL UNIT HEATER VERTICAL WALL COVERING WATT, WEST, WIDTH
VENT VERT VG VIF VIN VOC VOL VR VRN VUH VWC W W W W W	VENTILATION VERTICAL VESTIBULE VERTICAL GRAIN VERIFY IN FIELD VINYL SHEET VOLATILE ORGANIC COMPOUN VOLUME VAPOR RETARDER VENEER VERTICAL UNIT HEATER VERTICAL WALL COVERING
VENT VERT VG VIF VIN VOC VOL VR VRN VUH VWC W W	VENTILATION VERTICAL VESTIBULE VERTICAL GRAIN VERIFY IN FIELD VINYL SHEET VOLATILE ORGANIC COMPOUN VOLUME VAPOR RETARDER VENEER VENEER VERTICAL UNIT HEATER VERTICAL UNIT HEATER VERTICAL WALL COVERING WATT, WEST, WIDTH WATT, WEST, WIDTH
VENT VERT VEST VG VIF VIN VOC VOL VR VRN VUH VWC W W W W W W W W W W W W W W W W W W	VENTILATION VERTICAL VESTIBULE VERTICAL GRAIN VERIFY IN FIELD VINYL SHEET VOLATILE ORGANIC COMPOUN VOLUME VAPOR RETARDER VENEER VERTICAL UNIT HEATER VERTICAL UNIT HEATER VERTICAL WALL COVERING WATT, WEST, WIDTH WATT, WEST, WIDTH WATER CLOSET (TOILET) WALK-IN CLOSET WITH WITHOUT
VENT VERT VEST VG VIF VIN VOC VOL VR VRN VUH VWC W W W W W VUH VWC W W W W VUH VWC W W W W VO W W W W W W W W W W W W	VENTILATION VERTICAL VESTIBULE VERTICAL GRAIN VERIFY IN FIELD VINYL SHEET VOLATILE ORGANIC COMPOUN VOLUME VAPOR RETARDER VENEER VERTICAL UNIT HEATER VERTICAL UNIT HEATER VERTICAL WALL COVERING WATT, WEST, WIDTH WATT, WEST, WIDTH WATER CLOSET (TOILET) WALK-IN CLOSET WITH WITHOUT WALL TO WALL
VENT VERT VEST VG VIF VIN VOC VOL VR VRN VUH VWC W W W W W W W W W W W W W W W W W W	VENTILATION VERTICAL VESTIBULE VERTICAL GRAIN VERIFY IN FIELD VINYL SHEET VOLATILE ORGANIC COMPOUN VOLUME VAPOR RETARDER VENEER VERTICAL UNIT HEATER VERTICAL UNIT HEATER VERTICAL WALL COVERING WATT, WEST, WIDTH WATT, WEST, WIDTH WATER CLOSET (TOILET) WALK-IN CLOSET WITH WITHOUT
VENT VERT VEST VG VIF VIN VOC VOL VR VRN VUH VWC W W W W W W.C. W.I.C. W/ W/O W/W WB	VENTILATION VERTICAL VESTIBULE VERTICAL GRAIN VERIFY IN FIELD VINYL SHEET VOLATILE ORGANIC COMPOUN VOLUME VAPOR RETARDER VENEER VERTICAL UNIT HEATER VERTICAL UNIT HEATER VERTICAL WALL COVERING WATT, WEST, WIDTH WATT, WEST, WIDTH WATER CLOSET (TOILET) WALK-IN CLOSET WITH WITHOUT WALL TO WALL WOOD BASE
VENT VERT VEST VG VIF VIN VOC VOL VR VRN VUH VWC W W W W W.C. W/ W/O W/W W/O W/W WD WDW	VENTILATION VERTICAL VESTIBULE VERTICAL GRAIN VERIFY IN FIELD VINYL SHEET VOLATILE ORGANIC COMPOUN VOLUME VAPOR RETARDER VENEER VERTICAL UNIT HEATER VERTICAL UNIT HEATER VERTICAL WALL COVERING WATT, WEST, WIDTH WATT, WEST, WIDTH WATER CLOSET (TOILET) WALK-IN CLOSET WITH WITHOUT WALL TO WALL WOOD BASE WALL COVERING, WATER CLOSE WOOD WINDOW
VENT VERT VEST VG VIF VIN VOC VOL VR VRN VUH VWC W W W W.C. W/ W/O W/W W/O W/W W/O W/W W/O W/W W/O W/W W/O W/W	VENTILATION VERTICAL VESTIBULE VERTICAL GRAIN VERIFY IN FIELD VINYL SHEET VOLATILE ORGANIC COMPOUN VOLUME VAPOR RETARDER VENEER VERTICAL UNIT HEATER VERTICAL UNIT HEATER VERTICAL WALL COVERING WATT, WEST, WIDTH WATT, WEST, WIDTH WATER CLOSET (TOILET) WALK-IN CLOSET WITH WITHOUT WALL TO WALL WOOD BASE WALL COVERING, WATER CLOSE WOOD WINDOW WIDE FLANGE
VENT VERT VEST VG VIF VIN VOC VOL VR VRN VUH VWC W W W W W.C. W/ W/O W/W W/O W/W WD WDW	VENTILATION VERTICAL VESTIBULE VERTICAL GRAIN VERIFY IN FIELD VINYL SHEET VOLATILE ORGANIC COMPOUN VOLUME VAPOR RETARDER VENEER VERTICAL UNIT HEATER VERTICAL UNIT HEATER VERTICAL WALL COVERING WATT, WEST, WIDTH WATT, WEST, WIDTH WATER CLOSET (TOILET) WALK-IN CLOSET WITH WITHOUT WALL TO WALL WOOD BASE WALL COVERING, WATER CLOSE WOOD WINDOW
VENT VERT VEST VG VIF VIN VOC VOL VR VRN VUH VWC W W W W W W W W W W W W W W W W W W	VENTILATION VERTICAL VESTIBULE VERTICAL GRAIN VERIFY IN FIELD VINYL SHEET VOLATILE ORGANIC COMPOUN VOLUME VAPOR RETARDER VENEER VERTICAL UNIT HEATER VERTICAL UNIT HEATER VERTICAL WALL COVERING WATT, WEST, WIDTH WATT, WEST, WIDTH WATER CLOSET (TOILET) WALK-IN CLOSET WITH WITHOUT WALL TO WALL WOOD BASE WALL COVERING, WATER CLOS WOOD WINDOW WIDE FLANGE WATER HEATER, WALL HUNG WROUGHT IRON WINDOW
VENT VERT VEST VG VIF VIN VOC VOL VR VRN VUH VWC W W W W W W W W W W W W W W W W W W	VENTILATION VERTICAL VESTIBULE VERTICAL GRAIN VERIFY IN FIELD VINYL SHEET VOLATILE ORGANIC COMPOUN VOLUME VAPOR RETARDER VENEER VERTICAL UNIT HEATER VERTICAL UNIT HEATER VERTICAL WALL COVERING WATT, WEST, WIDTH WATT, WEST, WIDTH WATER CLOSET (TOILET) WALK-IN CLOSET WITH WITHOUT WALL TO WALL WOOD BASE WALL COVERING, WATER CLOS WOOD WINDOW WIDE FLANGE WATER HEATER, WALL HUNG WROUGHT IRON WINDOW WALL, WATER LEVEL
VENT VERT VEST VG VIF VIN VOC VOL VR VRN VUH VWC W W W W W W W W W W W W W W W W W W	VENTILATION VERTICAL VESTIBULE VERTICAL GRAIN VERIFY IN FIELD VINYL SHEET VOLATILE ORGANIC COMPOUN VOLUME VAPOR RETARDER VENEER VERTICAL UNIT HEATER VERTICAL WALL COVERING WATT, WEST, WIDTH WATER CLOSET (TOILET) WALK-IN CLOSET WITH WITHOUT WALK-IN CLOSET WITH WITHOUT WALL TO WALL WOOD BASE WALL COVERING, WATER CLOS WOOD WINDOW WIDE FLANGE WATER HEATER, WALL HUNG WROUGHT IRON WINDOW WALL, WATER LEVEL WIRE MESH
VENT VERT VEST VG VIF VIN VOC VOL VR VRN VUH VWC W W W W W W W W W W W W W W W W W W	VENTILATION VERTICAL VESTIBULE VERTICAL GRAIN VERIFY IN FIELD VINYL SHEET VOLATILE ORGANIC COMPOUN VOLUME VAPOR RETARDER VENEER VERTICAL UNIT HEATER VERTICAL UNIT HEATER VERTICAL WALL COVERING WATT, WEST, WIDTH WATT, WEST, WIDTH WATER CLOSET (TOILET) WALK-IN CLOSET WITH WITHOUT WALL TO WALL WOOD BASE WALL COVERING, WATER CLOS WOOD WINDOW WIDE FLANGE WATER HEATER, WALL HUNG WROUGHT IRON WINDOW WALL, WATER LEVEL WIRE MESH WATER PROOFING, WEATHERI
VENT VERT VEST VG VIF VIN VOC VOL VR VRN VUH VWC W W W W W W W W W W W W W W W W W W	VENTILATION VERTICAL VESTIBULE VERTICAL GRAIN VERIFY IN FIELD VINYL SHEET VOLATILE ORGANIC COMPOUN VOLUME VAPOR RETARDER VENEER VERTICAL UNIT HEATER VERTICAL UNIT HEATER VERTICAL WALL COVERING WATT, WEST, WIDTH WATER CLOSET (TOILET) WALK-IN CLOSET WITH WITHOUT WALL TO WALL WOOD BASE WALL COVERING, WATER CLOS WOOD WINDOW WIDE FLANGE WATER HEATER, WALL HUNG WROUGHT IRON WINDOW WALL, WATER LEVEL WIRE MESH WATER PROOFING, WEATHERI WEATHERPROOF WATER REPELENT, WEATHERI
VENT VERT VEST VG VIF VIN VOC VOL VR VRN VUH VWC W W W W W W W W W W W W W W W W W W	VENTILATION VERTICAL VESTIBULE VERTICAL GRAIN VERIFY IN FIELD VINYL SHEET VOLATILE ORGANIC COMPOUN VOLUME VAPOR RETARDER VENEER VERTICAL UNIT HEATER VERTICAL UNIT HEATER VERTICAL WALL COVERING WATT, WEST, WIDTH WATER CLOSET (TOILET) WALK-IN CLOSET WITH WITHOUT WALL TO WALL WOOD BASE WALL COVERING, WATER CLOS WOOD WINDOW WIDE FLANGE WATER HEATER, WALL HUNG WROUGHT IRON WINDOW WALL, WATER LEVEL WIRE MESH WATER REPELENT, WEATHER WEATHER RESISTIVE BARRIEF
VENT VERT VEST VG VIF VIN VOC VOL VR VRN VUH VWC W W W W W W W W W W W W W W W W W W	VENTILATION VERTICAL VESTIBULE VERTICAL GRAIN VERIFY IN FIELD VINYL SHEET VOLATILE ORGANIC COMPOUN VOLUME VAPOR RETARDER VENEER VERTICAL UNIT HEATER VERTICAL UNIT HEATER VERTICAL WALL COVERING WATT, WEST, WIDTH WATER CLOSET (TOILET) WALK-IN CLOSET WITH WITHOUT WALL TO WALL WOOD BASE WALL COVERING, WATER CLOS WOOD WINDOW WIDE FLANGE WATER HEATER, WALL HUNG WROUGHT IRON WINDOW WALL, WATER LEVEL WIRE MESH WATER PROOFING, WEATHERI WEATHERPROOF WATER REPELENT, WEATHERI
VENT VERT VEST VG VIF VIN VOC VOL VR VRN VUH VWC W W W W W W W W W W W W W W W W W W	VENTILATION VERTICAL VESTIBULE VERTICAL GRAIN VERIFY IN FIELD VINYL SHEET VOLATILE ORGANIC COMPOUN VOLUME VAPOR RETARDER VENEER VERTICAL UNIT HEATER VERTICAL UNIT HEATER VERTICAL WALL COVERING WATT, WEST, WIDTH WATER CLOSET (TOILET) WALK-IN CLOSET WITH WITHOUT WALL TO WALL WOOD BASE WALL COVERING, WATER CLOS WOOD WINDOW WIDE FLANGE WATER HEATER, WALL HUNG WROUGHT IRON WINDOW WALL, WATER LEVEL WIRE MESH WATER REPELENT, WEATHER WEATHER RESISTIVE BARRIER WEATHER RESISTIVE BARRIER WEATHER RESISTIVE BARRIER
VENT VERT VEST VG VIF VIN VOC VOL VR VRN VUH VWC W W W W W W W W W W W W W W W W W W	VENTILATION VERTICAL VESTIBULE VERTICAL GRAIN VERIFY IN FIELD VINYL SHEET VOLATILE ORGANIC COMPOUN VOLUME VAPOR RETARDER VENEER VERTICAL UNIT HEATER VERTICAL UNIT HEATER VERTICAL WALL COVERING WATT, WEST, WIDTH WATER CLOSET (TOILET) WALK-IN CLOSET WITH WITHOUT WALL TO WALL WOOD BASE WALL COVERING, WATER CLOS WOOD WINDOW WIDE FLANGE WATER HEATER, WALL HUNG WROUGHT IRON WINDOW WINDOW WALL, WATER LEVEL WIRE MESH WATER PROOFING, WEATHERI WEATHER PROOF WATER REPELENT, WEATHERI WEATHER RESISTIVE BARRIER WEATHER RESISTIVE BARRIER
VENT VERT VEST VG VIF VIN VOC VOL VR VRN VUH VWC W W W W W W W W W W W W W W W W W W	VENTILATION VERTICAL VESTIBULE VERTICAL GRAIN VERIFY IN FIELD VINYL SHEET VOLATILE ORGANIC COMPOUN VOLUME VAPOR RETARDER VENEER VERTICAL UNIT HEATER VERTICAL UNIT HEATER VERTICAL WALL COVERING WATT, WEST, WIDTH WATER CLOSET (TOILET) WALK-IN CLOSET WITH WITHOUT WALL TO WALL WOOD BASE WALL COVERING, WATER CLOS WOOD WINDOW WIDE FLANGE WATER HEATER, WALL HUNG WROUGHT IRON WINDOW WALL, WATER LEVEL WIRE MESH WATER REPELENT, WEATHER WEATHER RESISTIVE BARRIER WEATHER RESISTIVE BARRIER WELDED WIRE FABRIC
VENT VERT VEST VG VIF VIN VOC VOL VR VRN VUH VWC W W W W W W W W W W W W W W W W W W	VENTILATION VERTICAL VESTIBULE VERTICAL GRAIN VERIFY IN FIELD VINYL SHEET VOLATILE ORGANIC COMPOUN VOLUME VAPOR RETARDER VENEER VERTICAL UNIT HEATER VERTICAL UNIT HEATER VERTICAL WALL COVERING WATT, WEST, WIDTH WATER CLOSET (TOILET) WALK-IN CLOSET WITH WITHOUT WALL TO WALL WOOD BASE WALL COVERING, WATER CLOS WOOD WINDOW WIDE FLANGE WATER HEATER, WALL HUNG WROUGHT IRON WINDOW WINDOW WALL, WATER LEVEL WIRE MESH WATER PROOFING, WEATHERI WEATHER PROOF WATER REPELENT, WEATHERI WEATHER RESISTIVE BARRIER WEATHER RESISTIVE BARRIER
VENT VERT VEST VG VIF VIN VOC VOL VR VRN VUH VWC W W W W.C. W/ W/O W/W W/W	VENTILATION VERTICAL VESTIBULE VERTICAL GRAIN VERIFY IN FIELD VINYL SHEET VOLATILE ORGANIC COMPOUN VOLUME VAPOR RETARDER VENEER VERTICAL UNIT HEATER VERTICAL UNIT HEATER VERTICAL WALL COVERING WATT, WEST, WIDTH WATER CLOSET (TOILET) WALK-IN CLOSET WITH WITHOUT WALL TO WALL WOOD BASE WALL COVERING, WATER CLOS WOOD WINDOW WIDE FLANGE WATER HEATER, WALL HUNG WROUGHT IRON WINDOW WALL, WATER LEVEL WIRE MESH WATER PROOFING, WEATHERI WEATHER RESISTIVE BARRIER WEATHER RESISTIVE BARRIER WELDED WIRE FABRIC WELDED WIRE MESH
VENT VERT VEST VG VIF VIN VOC VOL VR VRN VUH VWC W W W W W W W W W W W W W W W W W W	VENTILATION VERTICAL VESTIBULE VERTICAL GRAIN VERIFY IN FIELD VINYL SHEET VOLATILE ORGANIC COMPOUN VOLUME VAPOR RETARDER VENEER VERTICAL UNIT HEATER VERTICAL UNIT HEATER VERTICAL WALL COVERING WATT, WEST, WIDTH WATER CLOSET (TOILET) WALK-IN CLOSET WITH WITHOUT WALL TO WALL WOOD BASE WALL COVERING, WATER CLOS WOOD WINDOW WIDE FLANGE WATER HEATER, WALL HUNG WROUGHT IRON WINDOW WALL, WATER LEVEL WIRE MESH WATER PROOFING, WEATHERI WEATHER RESISTIVE BARRIERI WEATHER RESISTIVE BARRIERI WELDED WIRE FABRIC WELDED WIRE FABRIC WELDED WIRE MESH

Y

YD

3

NCRETE

, TEMPERED

OOR, TOP OF FRAME

RIES

JND

OSET

2

RPROOF R RESISTANT

TER STOP

1. ALL WORK SHALL CONFORM WITH APPLICABLE BUILDING CODES, REGULATIONS, AND ORDINANCES. CONTRACTOR SHALL OBTAIN ALL REQUIRED PERMITS.

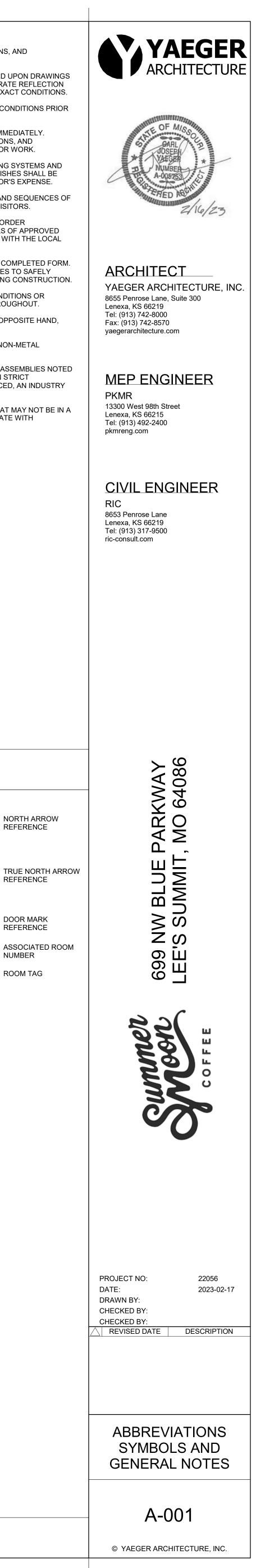
2. INFORMATION ON THE DRAWINGS REGARDING EXISTING CONDITIONS IS BASED UPON DRAWINGS FURNISHED BY THE OWNER. THE INFORMATION IS BELIEVED TO BE AN ACCURATE REFLECTION OF THE EXISTING CONDITIONS BUT IS IN NO WAY INTENDED TO GUARANTEE EXACT CONDITIONS.

- 3. CONTRACTOR AND/OR SUPPLIER SHALL FIELD VERIFY DIMENSIONS AND SITE CONDITIONS PRIOR TO FABRICATION OF NEW ASSEMBLIES, PRODUCTS, AND EQUIPMENT. 4. THE CONTRACTOR SHALL REPORT ALL DISCREPANCIES TO THE ARCHITECT IMMEDIATELY.
- FAILURE OF THE CONTRACTOR TO PERFORM SURVEY, FIELD VERIFY CONDITIONS, AND COORDINATE WORK DOES NOT RELIEVE CONTRACTOR OF RESPONSIBILITY FOR WORK. 5. CONTRACTOR SHALL TAKE PRECAUTIONS TO MAINTAIN AND PROTECT EXISTING SYSTEMS AND
- FINISHES WHICH ARE TO REMAIN. ANY DAMAGES TO SUCH SYSTEMS AND FINISHES SHALL BE REPAIRED IN A MANNER ACCEPTABLE TO THE ARCHITECT AT THE CONTRACTOR'S EXPENSE. 6. CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE MEANS, METHODS, AND SEQUENCES OF
- CONSTRUCTION AND THE SAFETY OF ALL CONSTRUCTION PERSONNEL AND VISITORS. 7. ALL FIRE, LIFE-SAFETY SYSTEMS MUST BE MAINTAINED IN PROPER WORKING ORDER
- THROUGHOUT THE DURATION OF THE WORK. PORTABLE FIRE EXTINGUISHERS OF APPROVED TYPE ARE TO BE PLACED WITHIN THE CONSTRUCTION AREA IN ACCORDANCE WITH THE LOCAL FIRE DEPARTMENT INSPECTOR OR MARSHAL.
- 8. THE CONSTRUCTION DOCUMENTS REPRESENT A STABLE STRUCTURE IN THE COMPLETED FORM. THE CONTRACTOR SHALL PROVIDE ANY TEMPORARY BRACING AND/OR SHORES TO SAFELY DECONSTRUCT AND CONSTRUCT THE BUILDING AND PREVENT DAMAGE DURING CONSTRUCTION.
- 9. "TYPICAL" / "TYP." AS USED IN THESE DOCUMENTS SHALL MEAN THAT THE CONDITIONS OR DIMENSION IS THE SAME OR REPRESENTATIVE FOR SIMILAR CONDITIONS THROUGHOUT.
- 10. "SIM." AS USED IN THESE DOCUMENTS IS REPRESENTATIVE FOR SIMILAR OR OPPOSITE HAND, MIRRORED, CONDITIONS. 11. ALL DISSIMILAR METAL MATERIALS SHALL BE ISOLATED WITH AN APPROVED NON-METAL
- ISOLATION MATERIAL. 12. REFER TO LIFE SAFETY DRAWINGS FOR LOCATIONS OF FIRE RATED WALLS. ASSEMBLIES NOTED TO BE FIRE-RATED (ONE HOUR, TWO HOUR, ETC.) SHALL BE CONSTRUCTED IN STRICT COMPLIANCE WITH THE FIRE TEST REFERENCED OR, IF NO TEST IS REFERENCED, AN INDUSTRY RECOGNIZED FIRE-TEST APPLICABLE TO THE ASSEMBLY.
- 13. REFER TO ALL OTHER DISCIPLINE'S DRAWINGS FOR MORE INFORMATION THAT MAY NOT BE IN A SINGLE DISCIPLINE'S DRAWING SET. CONTRACTOR TO NOTIFY AND COORDINATE WITH ARCHITECT ANY ISSUES THAT CONFLICT WITH THE NEW WORK.

GENERAL PROJECT NOTES SCALE: NTS

PX KEY NOTE REFERENCE S6A PARTITION TYPE NORTH EQUIPMENT/ACCESSORY TAG $(\mathbf{x}\mathbf{x})$ REFERENCE TRUE NORTH XXX SIGNAGE MARK AND LOCATION DOOR MARK REFERENCE XXX XXX _____X__ FINISH FLOOR REFERENCE NUMBER Room name 101 ROOM TAG 150 SF PL PROPERTY LINE GRID BUBBLE REFERENCE (**x**) 1 A101 1 SIM BLDG. SECTION REFERENCE A101 1 (A101) SIM WALL SECTION REFERENCE SIM $\begin{pmatrix} 1 \\ A101 \end{pmatrix}$ DETAIL SECTION REFERENCE VIEW NO EXTERIOR ELEVATION REFERENCE VIEW NO/SHEET NO INTERIOR ELEVATION REFERENCE FIXED REFERENCE ELEVATION OR DATUM

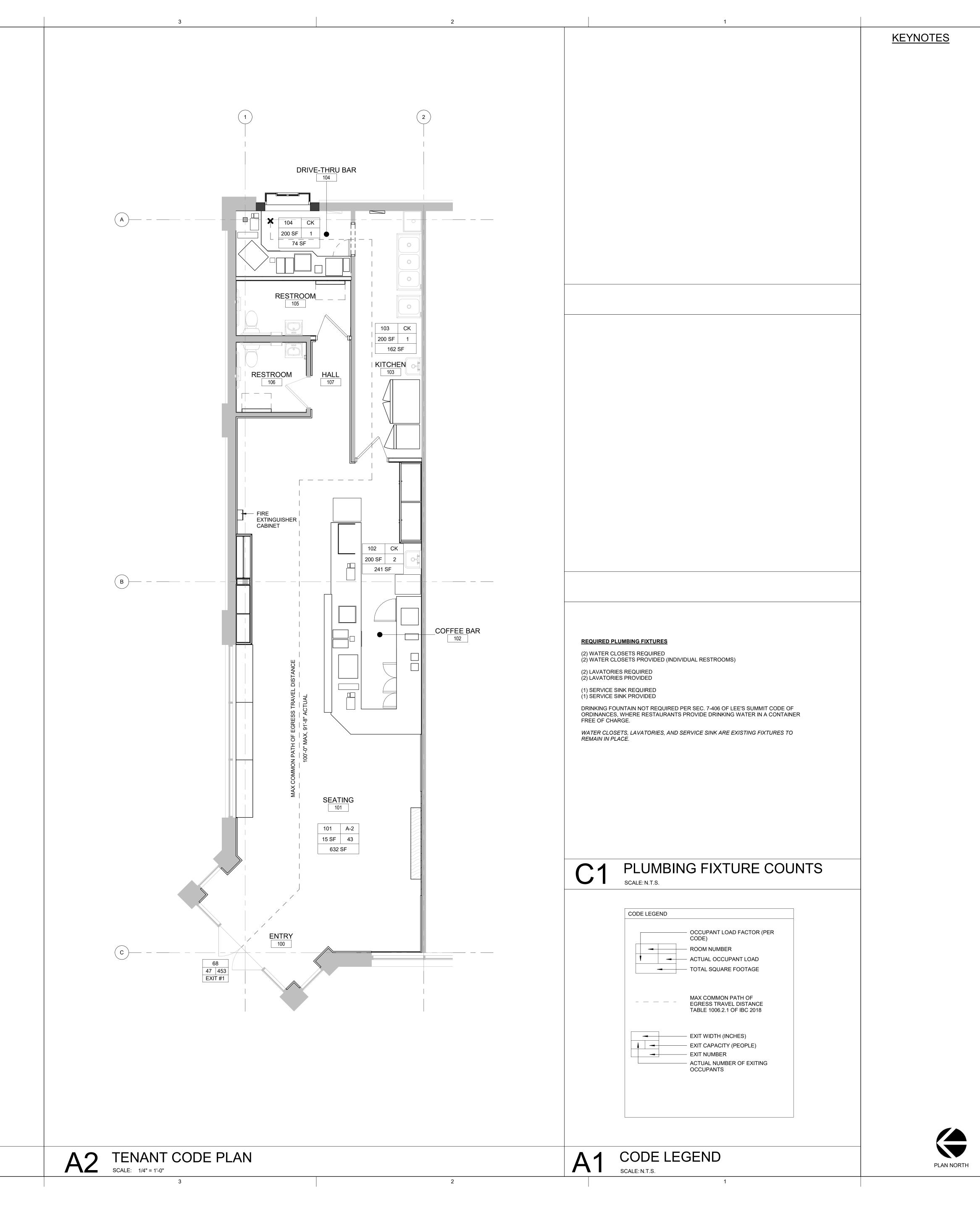
SPOT ELEVATION NAME ELEV.



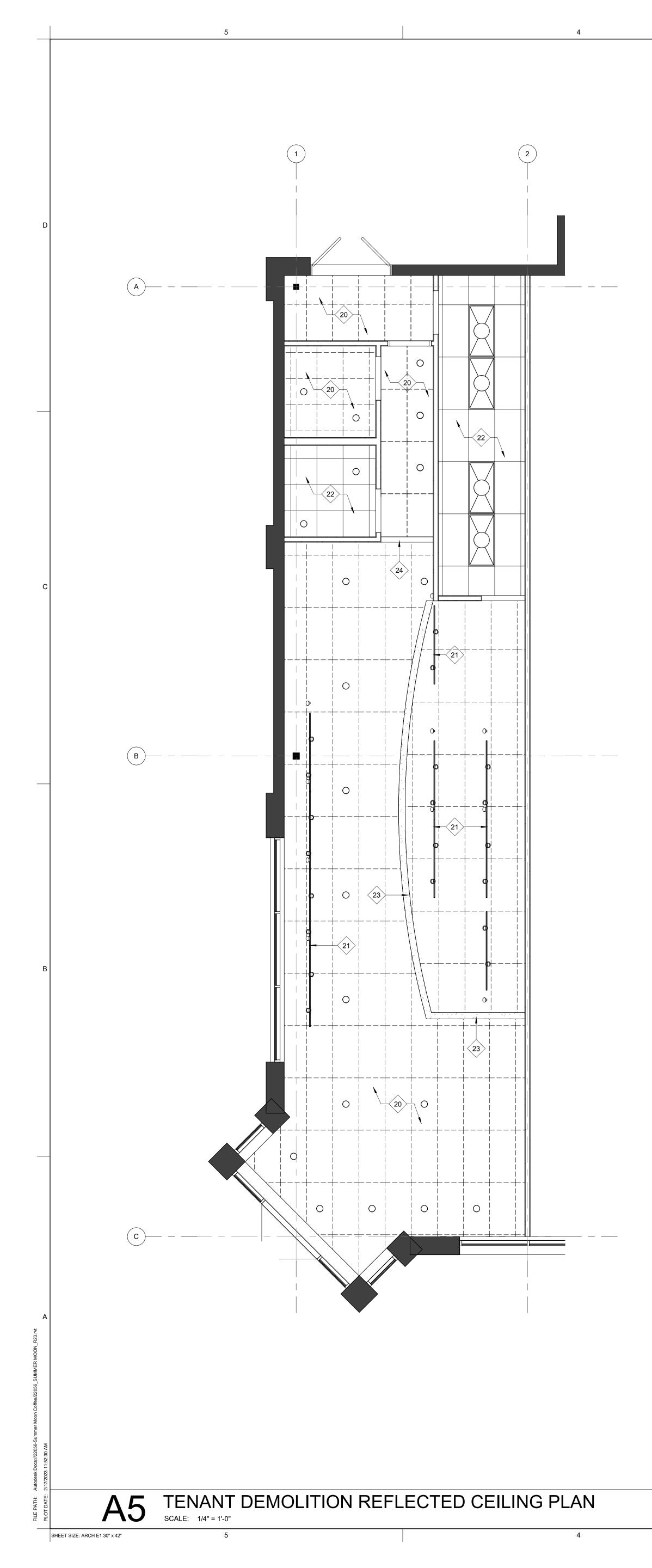
		r 313 2018
CODE ANALYSIS:		
TYPE OF CONSTRUCTION:		INTERIOR REMODEL
FACILITY NAME:		SUMMER MOON COFFEE
FACILITY ADDRESS:		699 NW BLUE PARKWAY
		LEE'S SUMMIT, MO 64086
CODE REGULATIONS:		
BUILDING CODE:		2018 INTERNATIONAL BUILDING CODE
		2018 INTERNATIONAL PLUMBING CODE 2017 NATIONAL ELECTRICAL CODE
ELECTRICAL CODE: GAS CODE:		
GAS CODE: FIRE PREVENTION:		2018 INTERNATIONAL FUEL GAS CODE 2018 INTERNATIONAL FIRE CODE
OCCUPANCY CLASSIFICATION:	(SECTION 302)	GROUP B BUSINESS
CONSTRUCTION TYPE:	(TABLE 504.3)	V-B
SPRINKLERS:	(SECTION 903)	TENANT SPACE IS CURRENTLY SPRINKLERED
ALLOWABLE BUILDING STORIES:	(TABLE 504.4)	2 STORIES
ACTUAL BUILDING STORIES:		1 STORY
BASE ALLOWABLE BUILDING AREA:	(TABLE 506.2)	9,000 SF
ACTUAL BUILDING AREA:		7,612 SF
TOTAL TENANT AREA:		1,510 SF
SPRINKLER SYSTEM PER SECTION 903 (NFPA 101):		PROVIDED (NFPA 13)
PORTABLE FIRE EXTINGUISHERS (NFPA 101):		PROVIDED (NFPA 10)
MANUAL FIRE ALARM SYSTEM PER (NFPA 101):		PROVIDED
MANUAL FIRE ALARIN STSTEIN FER (NFFA 101).		
OCCUPANCY LOAD FACTORS PER (TABLE 1004.1.2)		47 PEOPLE
FOR INDIVIDUAL ROOM CALCULATIONS AND EXITING OCCUPANT LOADS:		RE: SHEET A-005
NUMBER OF REQUIRED EXITS:	(SECTION 1006)	
REQUIRED NUMBER OF EXITS:		(1) ONE
EXITS PROVIDED:		(1) ONE
EXIT TRAVEL DISTANCE (TABLE 1017.2):		300 FT (WITH SPRINKLER)
DEAD END CORRIDOR (SECTION 1020.4):		NOT TO EXCEED 50 FT (WITH SPRINKLER)

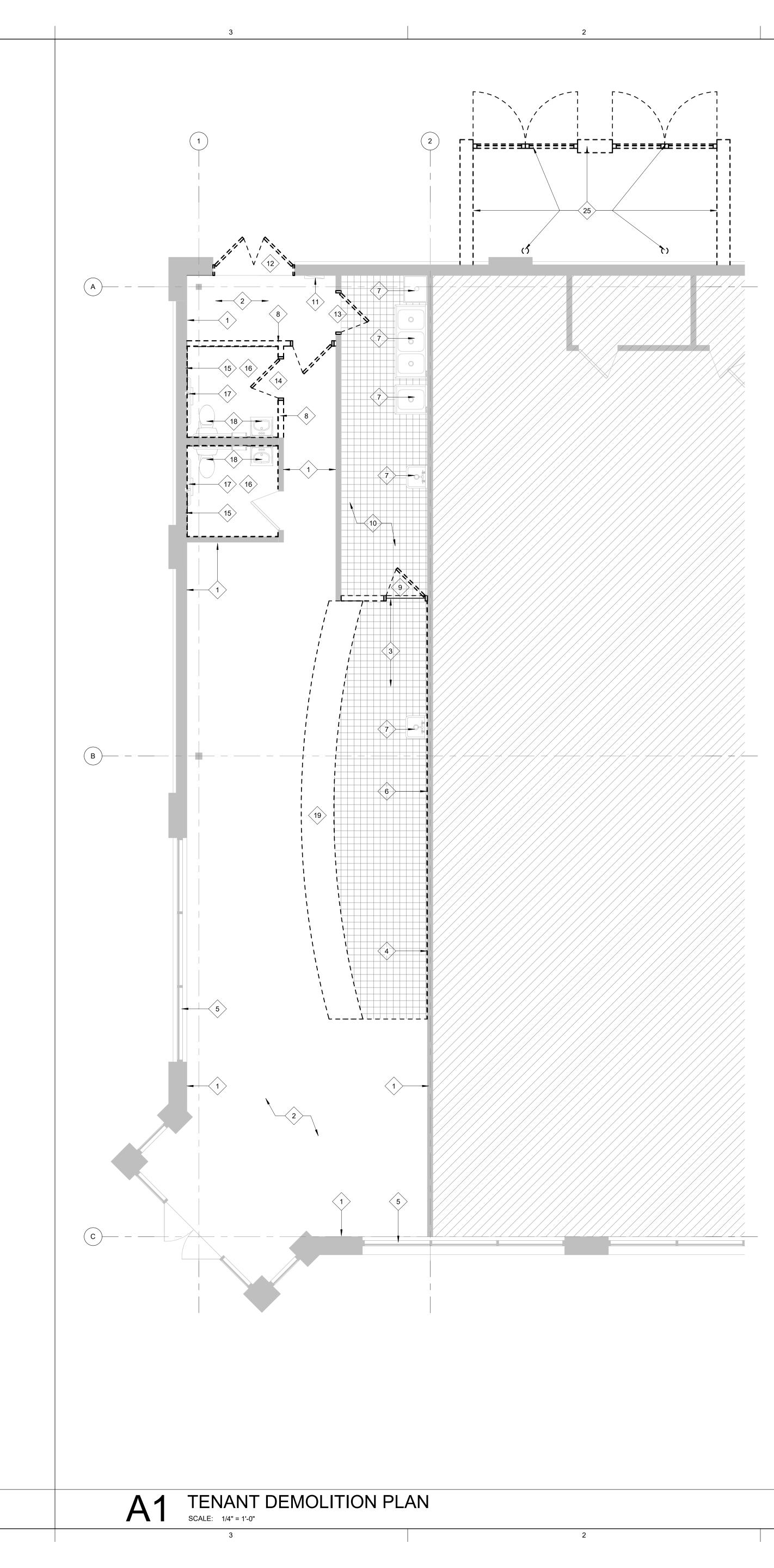


SHEET SIZE: ARCH E1 30" x 42"









DEMOLITION PLAN LEGEND

	WALL TO REMAIN
===	WALL TO BE REMOVED
	DOOR AND FRAME TO BE DEMOLISHED
\wedge	

REMAIN

EXISTING DOOR AND FRAME TO

GENERAL DEMOLITION NOTES

1. THE CONTRACTOR IS RESPONSIBLE FOR ALL DEMOLITION AND THE SUBSEQUENT DISPOSAL AND/OR RECYCLING OF ALL MATERIALS.

1

- 2. REFER TO SHEET A-001 FOR GENERAL NOTES AND INFORMATION APPLICABLE TO ALL PROJECT WORK.
- 3. GENERAL CONTRACTOR SHALL INVESTIGATE ALL FIELD CONDITIONS RELEVANT TO DEMOLITION. COORDINATE ANY DISCREPANCIES FOUND WITH ARCHITECT BEFORE COMMENCING WITH DEMOLITION WORK. REFER TO THE OTHER DISCIPLINES' DRAWINGS AS WELL AS OTHER ARCHITECTURAL DRAWINGS FOR ADDITIONAL DEMOLITION AND FOR COORDINATION WITH NEW WORK.
- 4. DEMOLISH ALL INTERIOR CEILING FINISHED TO EXPOSE STRUCTURE.
- 5. REFER TO MECHANICAL DRAWINGS FOR EXTENT OF HVAC DEMOLITION. NOTE ALL MECHANICAL DUCTS AND EQUIPMENT TO BE REUSED.
- 6. REFER TO PLUMBING DRAWINGS FOR EXTENTS OF PLUMBING FIXTURE DEMOLITION. NOTE ALL PLUMBING FIXTURES TO REUSED, INCLUDING WATER CLOSETS, LAVATORIES, HAND SINKS, AND SERVICE SINKS. 7. REFER TO ELECTRICAL DRAWINGS FOR EXTENTS OF ELECTRICAL, LIGHTING,
- AND TELECOMMUNICATION SYSTEMS TO BE DEMOLISHED. NOTE ITEMS TO BE REUSED.
- 8. ALL DIMENSIONS OF EXISTING ELEMENTS ARE APPROXIMATE. FIELD VERIFY ALL DIMENSIONS AS REQUIRED.
- 9. PROTECT FROM DAMAGE OR SOILING, ALL EXISTING CONSTRUCTION INDICATED TO REMAIN. OR INDICATED TO BE REUSED. SALVAGED. REINSTALLED, OR OTHERWISE INDICATED TO REMAIN. REPAIR OR REPLACE DAMAGED ITEMS TO THE SATISFACTION OF THE OWNER AT NO ADDITIONAL COST.
- 10. REMOVE ALL LOOSE / PEELING PAINT FROM EXISTING WALL SURFACES TO REMAIN AND PREPARE FOR APPLICATION OF NEW WALL FINISH.
- 11. DEMOLISH ALL INTERIOR FLOOR FINISHES DOWN TO STRUCTURE / CONCRETE. FIX AND PREPARE ALL SURFACES, AS REQUIRED, TO RECEIVE NEW FINISH.

1

<u>KEYNOTES</u>

- DEMOLITION KEYNOTES
- . REMOVE BLACK TILE WALL BASE FROM ALL WALLS. PATCH AND REPAIR GYPSUM BOARD AND PREP FOR NEW BASE FINISH.
- . PREP FLOOR TO RECEIVE NEW FLOORING AS SCHEDULED. PATCH ANY HOLES IN CONCRETE FROM CASEWORK OR PARTITION REMOVAL
- 3. REMOVE EXISTING QUARRY TILE BEHIND SERVING COUNTER UP TO DOOR TO KITCHEN. QUARRY TILE INSIDE KITCHEN SHALL REMAIN IN PLACE. REMOVE ALL TILE SETTING BED MATERIAL FROM CONCRETE SUBSTRATE. PENDING CONDITION OF CONCRETE SUBSTRATE, A GRIND AND

SEAL CONCRETE FINISH IS

- FOR EPOXY FLOOR FINISH IF CONCRETE CONDITION IS TOO POOR FOR A GRIND AND SEAL FINAL FINISH. 4. REMOVE ALL WALL TILE. PATCH AND REPAIR GYPSUM BOARD TO RECEIVE
- 5. SALVAGE WINDOW ROLLER SHADES FOR REUSE. TEMPORARILY REMOVE SHADES TO PAINT WALLS AND REINSTALL IN SAME LOCATION.

NEW FINISH PER SCHEDULE.

- 6. REMOVE ALL SHELVING, SIGNAGE, AND WOOD TRIM. PATCH AND REPAIR GYPSUM BOARD TO RECEIVE NEW FINISH PER SCHEDULE.
- EXISTING PLUMBING FIXTURE SHALL REMAIN IN PLACE. PROTECT DURING CONSTRUCTION. 8. REMOVE EXISTING PARTITION. PATCH
- AND REPAIR ADJOINING PARTITIONS TO REMAIN. 9. RELOCATE EXISTING ELIASON DOOR
- AND FRAME. REFER TO NEW WORK PLANS. 10. EXISTING FINISHES INSIDE KITCHEN SHALL REMAIN IN PLACE. QUARRY TILE FLOORING, STAINLESS STEEL WALL
- PANELS, AND LAY-IN CEILING SHALL REMAIN. PROTECT DURING CONSTRUCTION. 11. EXISTING ELECTRICAL PANEL SHALL
- 12. DEMO EXISTING DOUBLE SWINGING DOORS AND HOLLOW METAL FRAME. REFER TO NEW CONSTRUCTION PLANS FOR NEW AUTOMATIC DRIVE-THRU WINDOW AND WALL INFILL SPECIFICATIONS.

REMAIN IN PLACE.

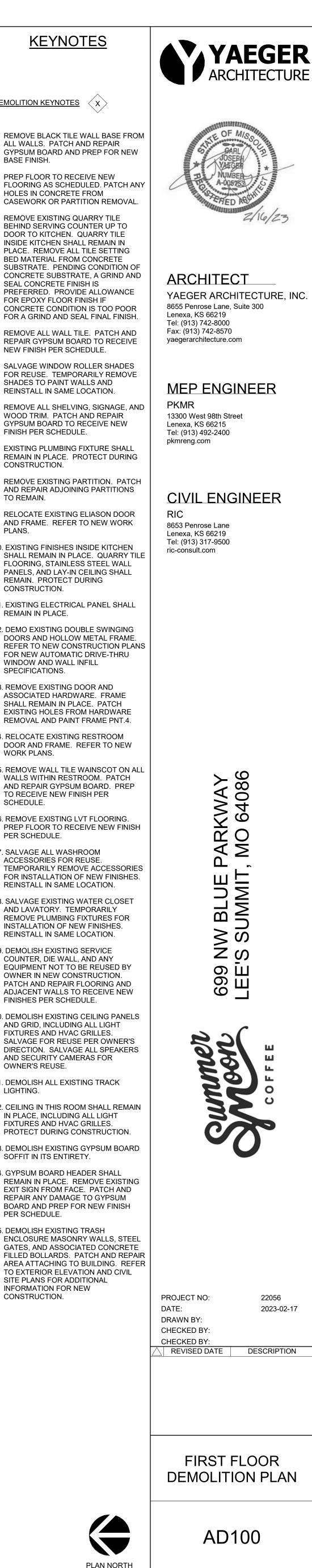
- 13. REMOVE EXISTING DOOR AND ASSOCIATED HARDWARE. FRAME SHALL REMAIN IN PLACE. PATCH EXISTING HOLES FROM HARDWARE REMOVAL AND PAINT FRAME PNT.4.
- 14. RELOCATE EXISTING RESTROOM DOOR AND FRAME. REFER TO NEW WORK PLANS.
- 15. REMOVE WALL TILE WAINSCOT ON ALL WALLS WITHIN RESTROOM. PATCH AND REPAIR GYPSUM BOARD. PREP TO RECEIVE NEW FINISH PER SCHEDULE.
- 16. REMOVE EXISTING LVT FLOORING. PREP FLOOR TO RECEIVE NEW FINISH PER SCHEDULE.
- 17. SALVAGE ALL WASHROOM ACCESSORIES FOR REUSE. TEMPORARILY REMOVE ACCESSORIES FOR INSTALLATION OF NEW FINISHES. REINSTALL IN SAME LOCATION.
- **18. SALVAGE EXISTING WATER CLOSET** AND LAVATORY. TEMPORARILY REMOVE PLUMBING FIXTURES FOR INSTALLATION OF NEW FINISHES. REINSTALL IN SAME LOCATION.
- 19. DEMOLISH EXISTING SERVICE COUNTER, DIE WALL, AND ANY EQUIPMENT NOT TO BE REUSED BY OWNER IN NEW CONSTRUCTION. PATCH AND REPAIR FLOORING AND ADJACENT WALLS TO RECEIVE NEW FINISHES PER SCHEDULE.
- 20. DEMOLISH EXISTING CEILING PANELS AND GRID, INCLUDING ALL LIGHT FIXTURES AND HVAC GRILLES. SALVAGE FOR REUSE PER OWNER'S DIRECTION. SALVAGE ALL SPEAKERS AND SECURITY CAMERAS FOR OWNER'S REUSE. 21. DEMOLISH ALL EXISTING TRACK
- LIGHTING. 22. CEILING IN THIS ROOM SHALL REMAIN IN PLACE, INCLUDING ALL LIGHT

FIXTURES AND HVAC GRILLES.

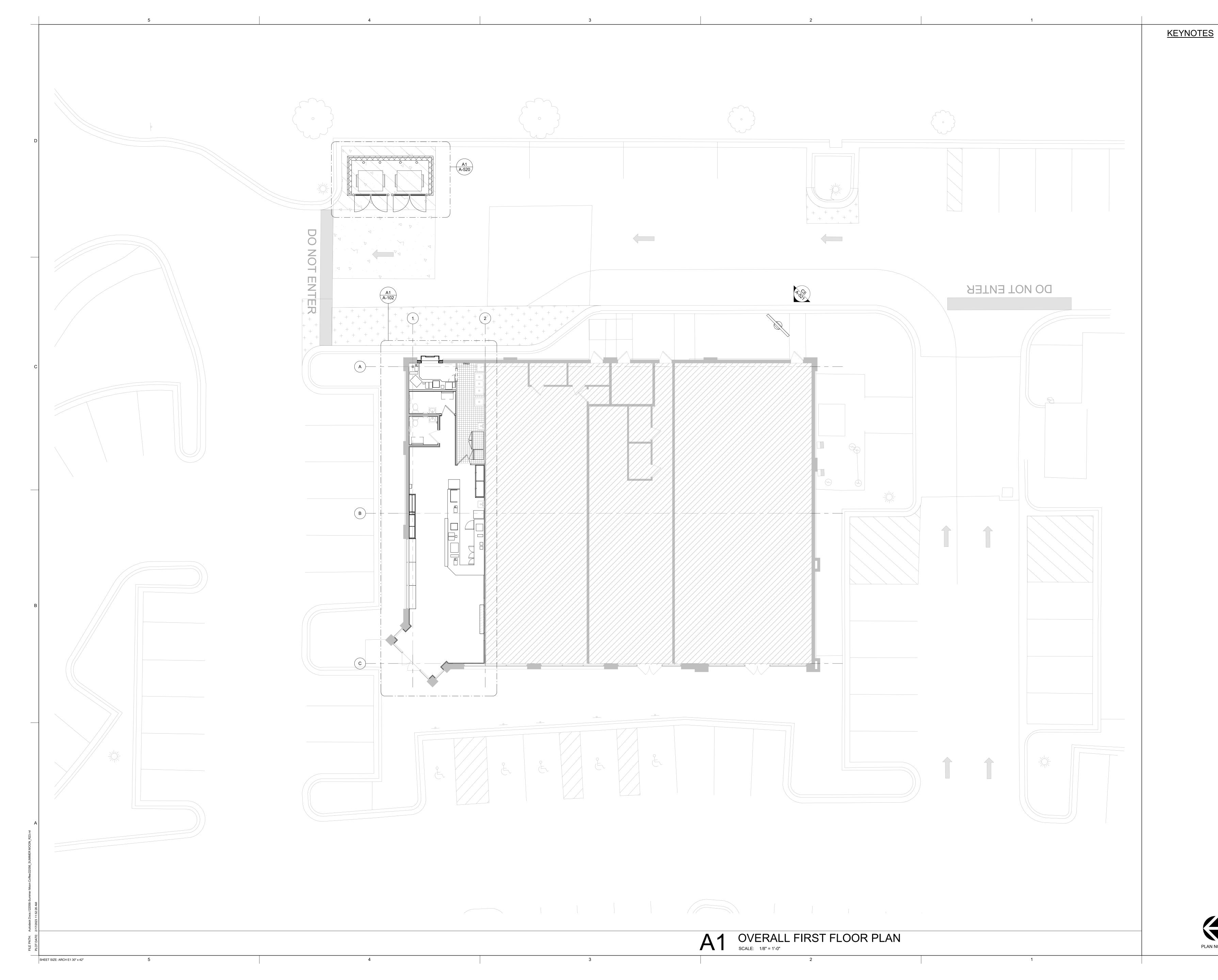
- PROTECT DURING CONSTRUCTION. 23. DEMOLISH EXISTING GYPSUM BOARD SOFFIT IN ITS ENTIRETY.
- 24. GYPSUM BOARD HEADER SHALL REMAIN IN PLACE. REMOVE EXISTING EXIT SIGN FROM FACE. PATCH AND REPAIR ANY DAMAGE TO GYPSUM BOARD AND PREP FOR NEW FINISH PER SCHEDULE.
- 25. DEMOLISH EXISTING TRASH ENCLOSURE MASONRY WALLS, STEEL GATES, AND ASSOCIATED CONCRETE FILLED BOLLARDS. PATCH AND REPAIR AREA ATTACHING TO BUILDING. REFER TO EXTERIOR ELEVATION AND CIVIL SITE PLANS FOR ADDITIONAL INFORMATION FOR NEW

CONSTRUCTION.

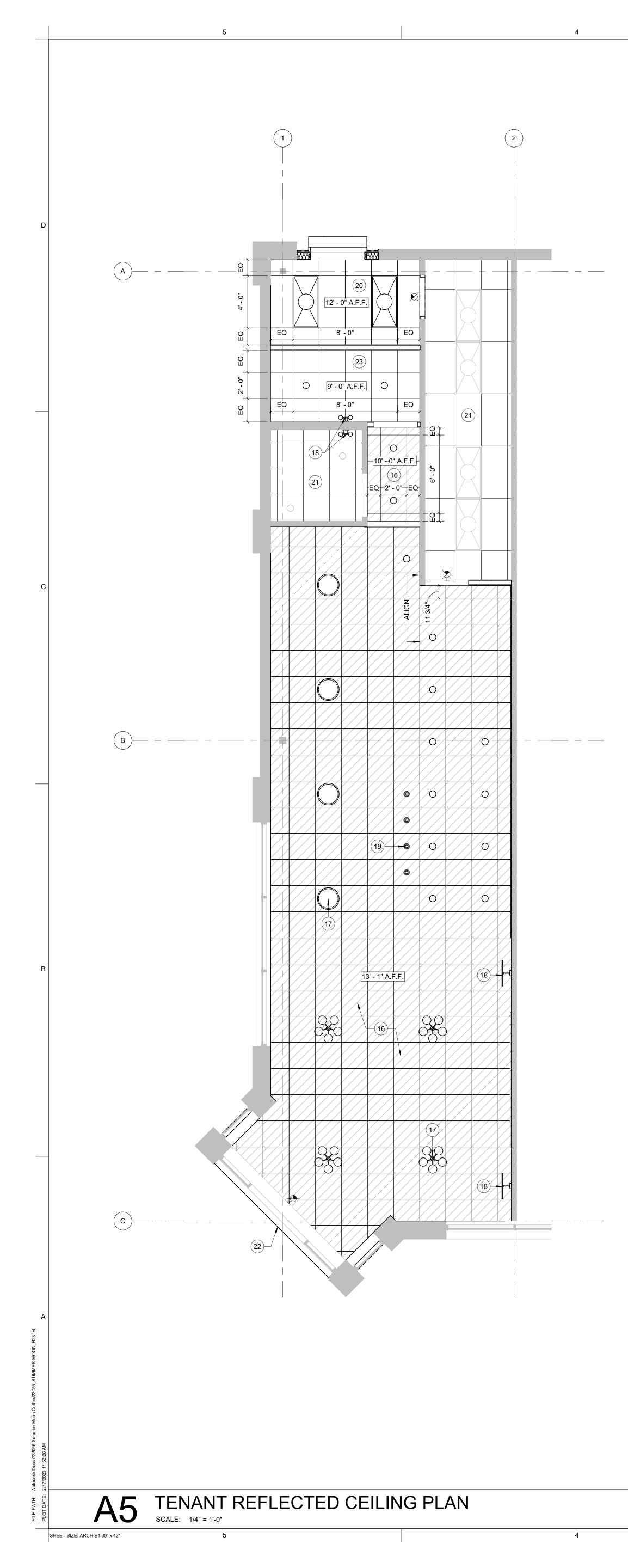




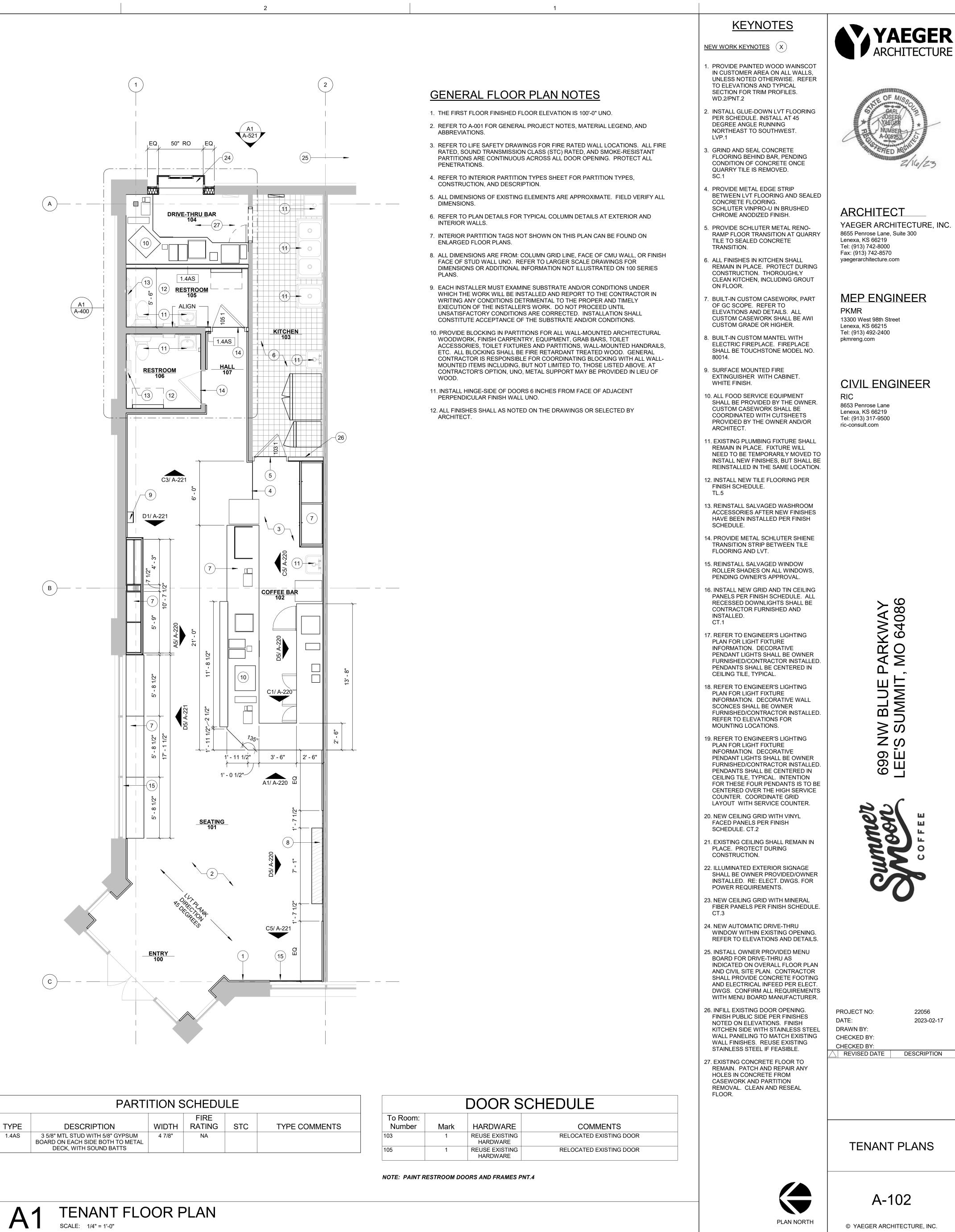
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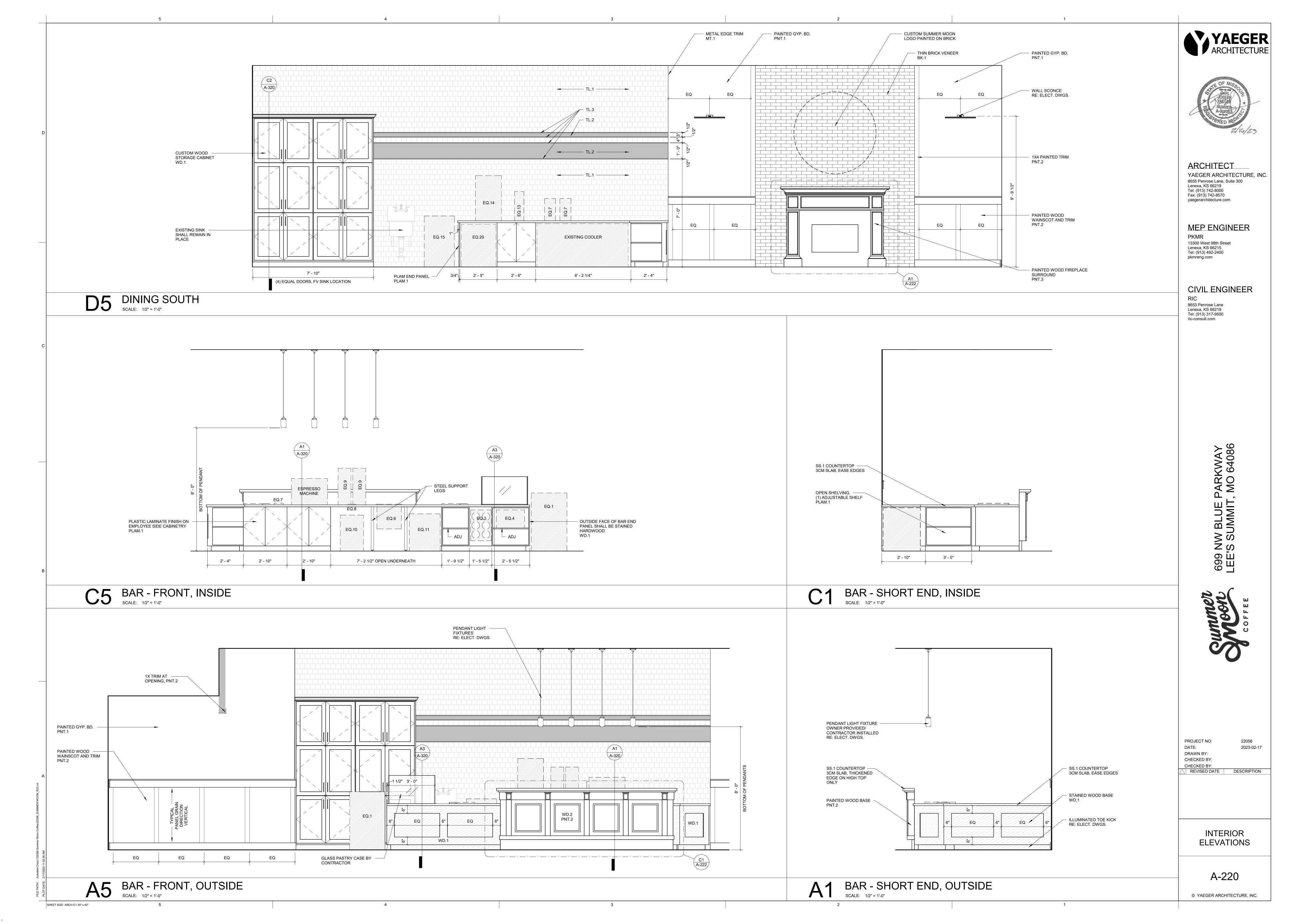


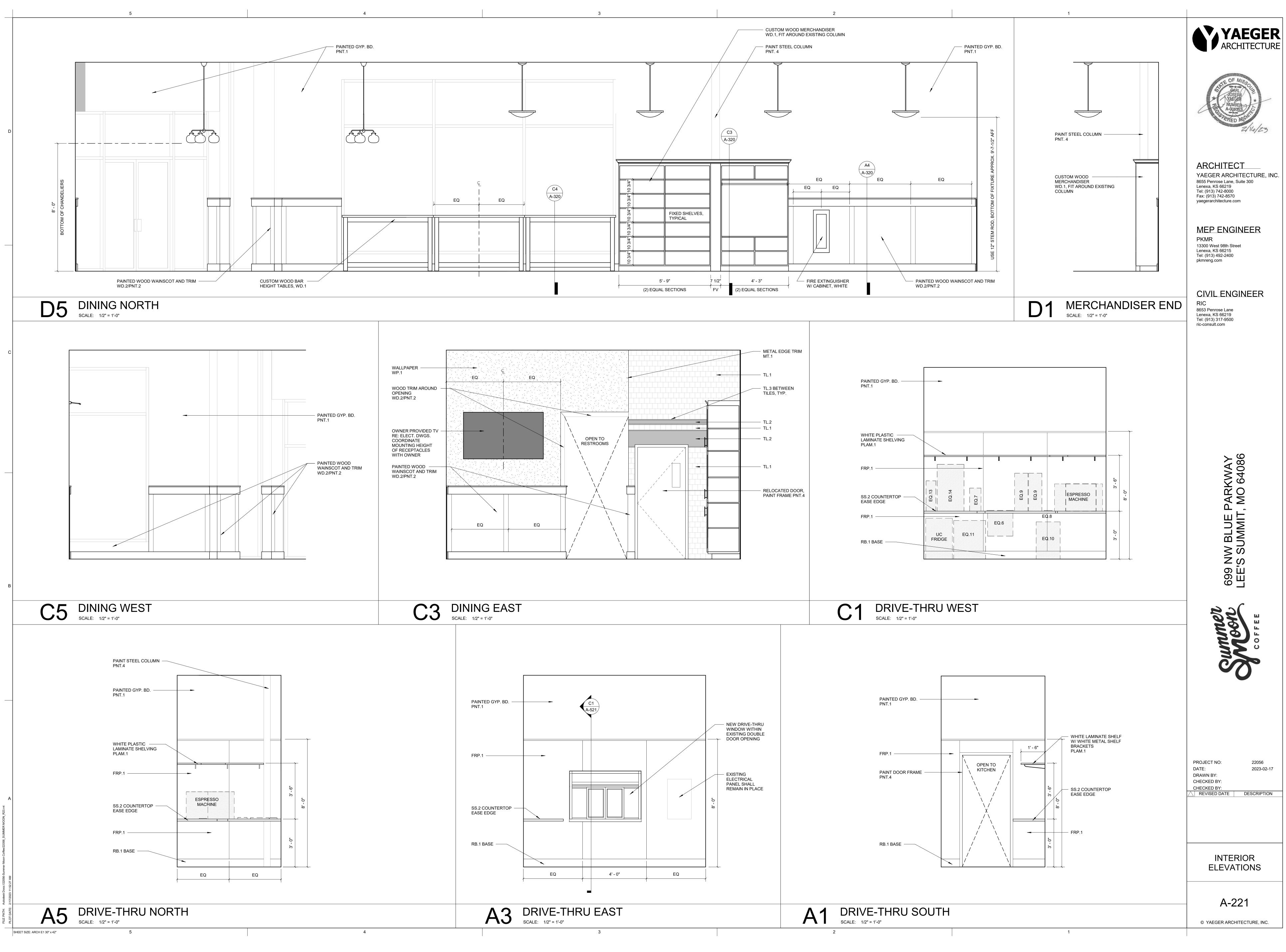




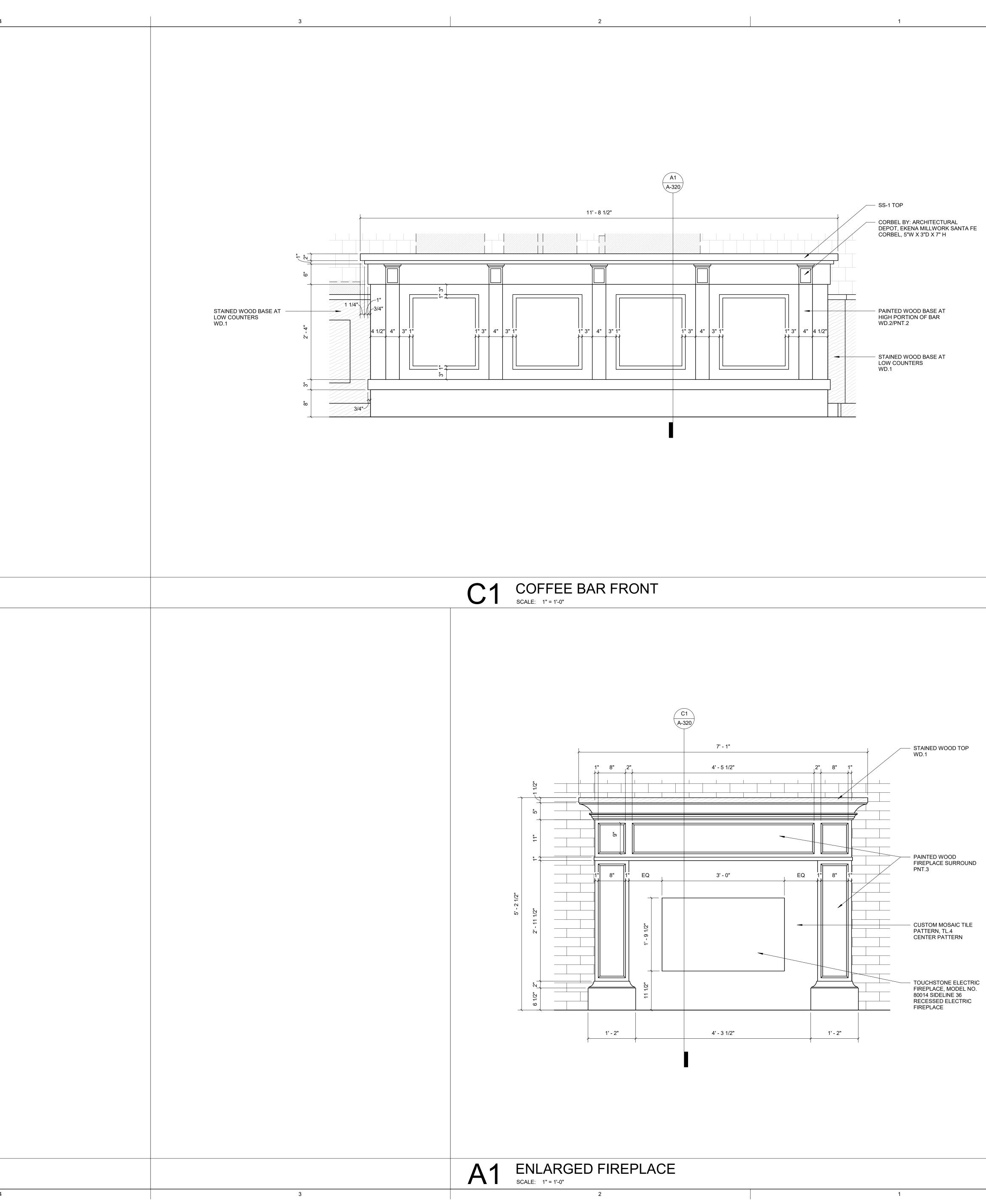
REFLECT	ED CEILING PLAN
	GYPSUM BOARD CEILING
++	2X4 SUSPENDED CEILING PANEL SYSTEM
	2X2 SUSPENDED CEILING PANEL SYSTEM
	2X2 SUSPENDED CEILING PANEL SYSTEM TIN CEILING PANEL FINISH
	RECTANGULAR LIGHT FIXTURE
0	RECESSED CIRCULAR DOWNLIGHT
\bigcirc	PENDANT FIXTURE
	CHANDELIER FIXTURE
X'-X" A.F.F.	CEILING HEIGHT
	WALL MOUNTED EXIT SIGN

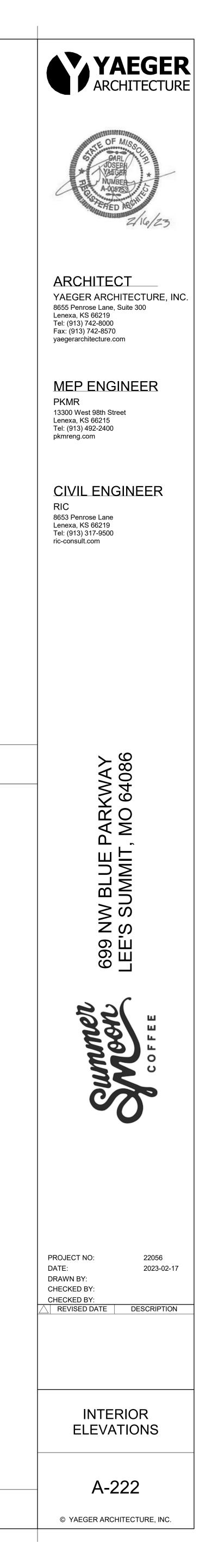


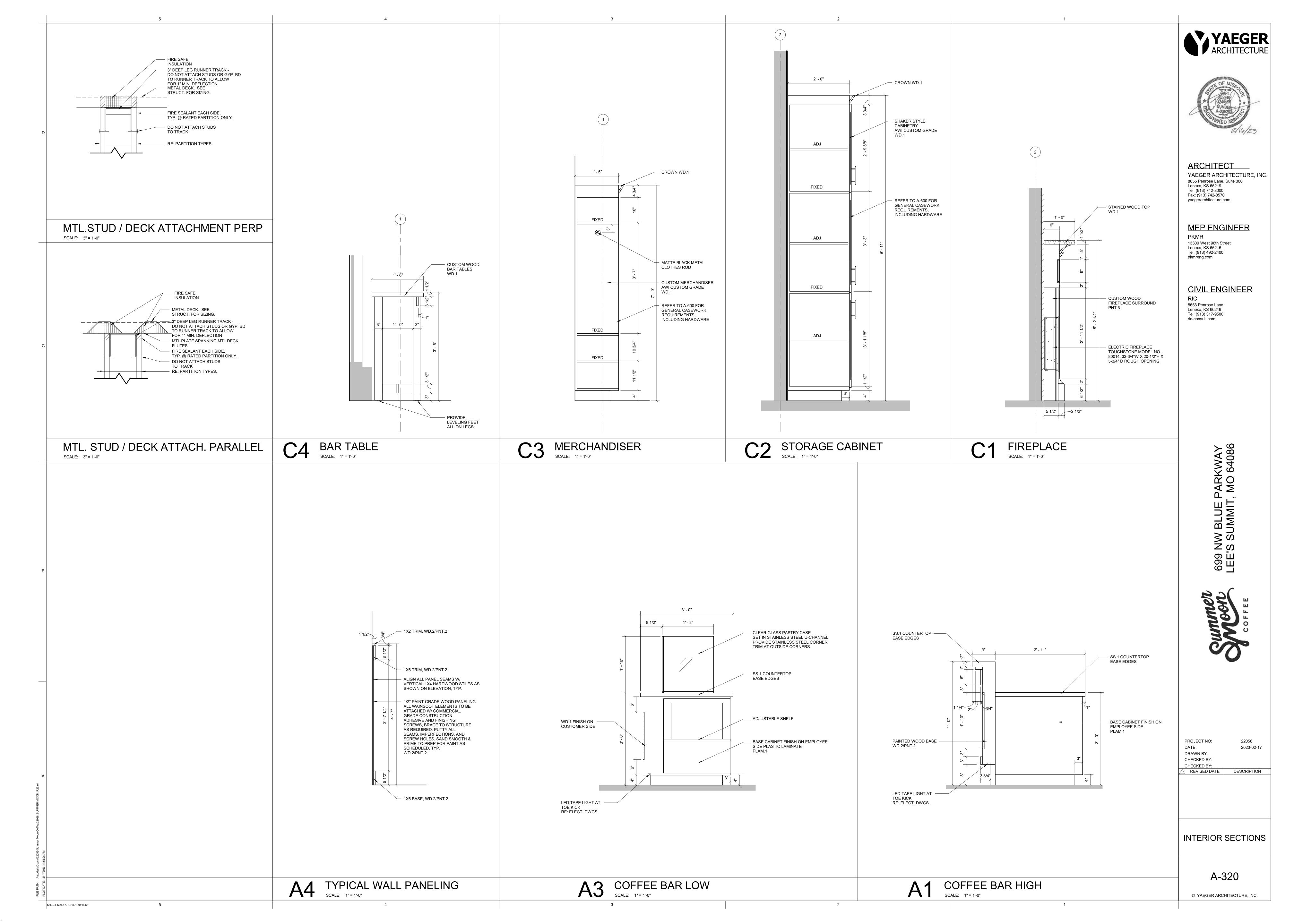


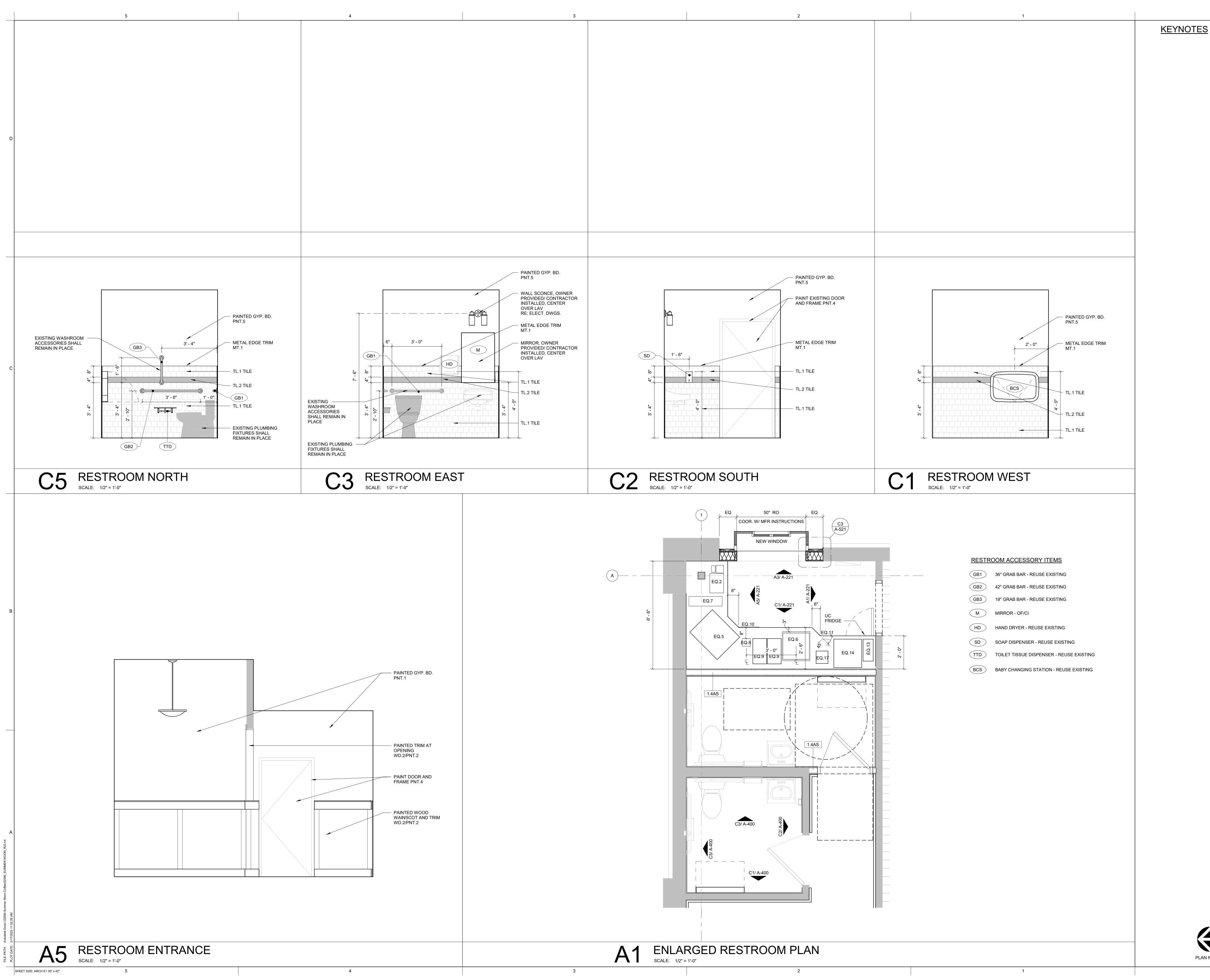


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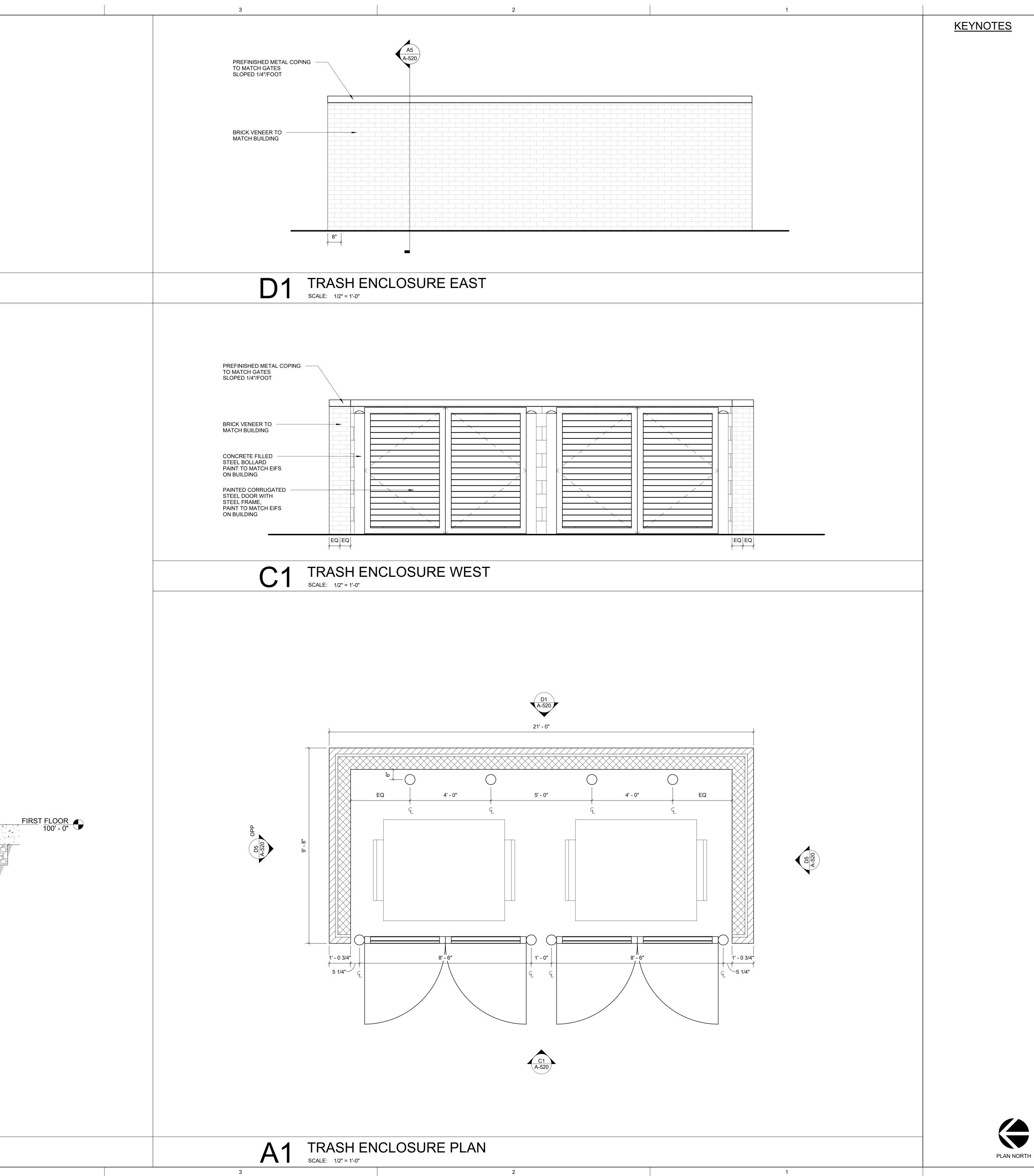




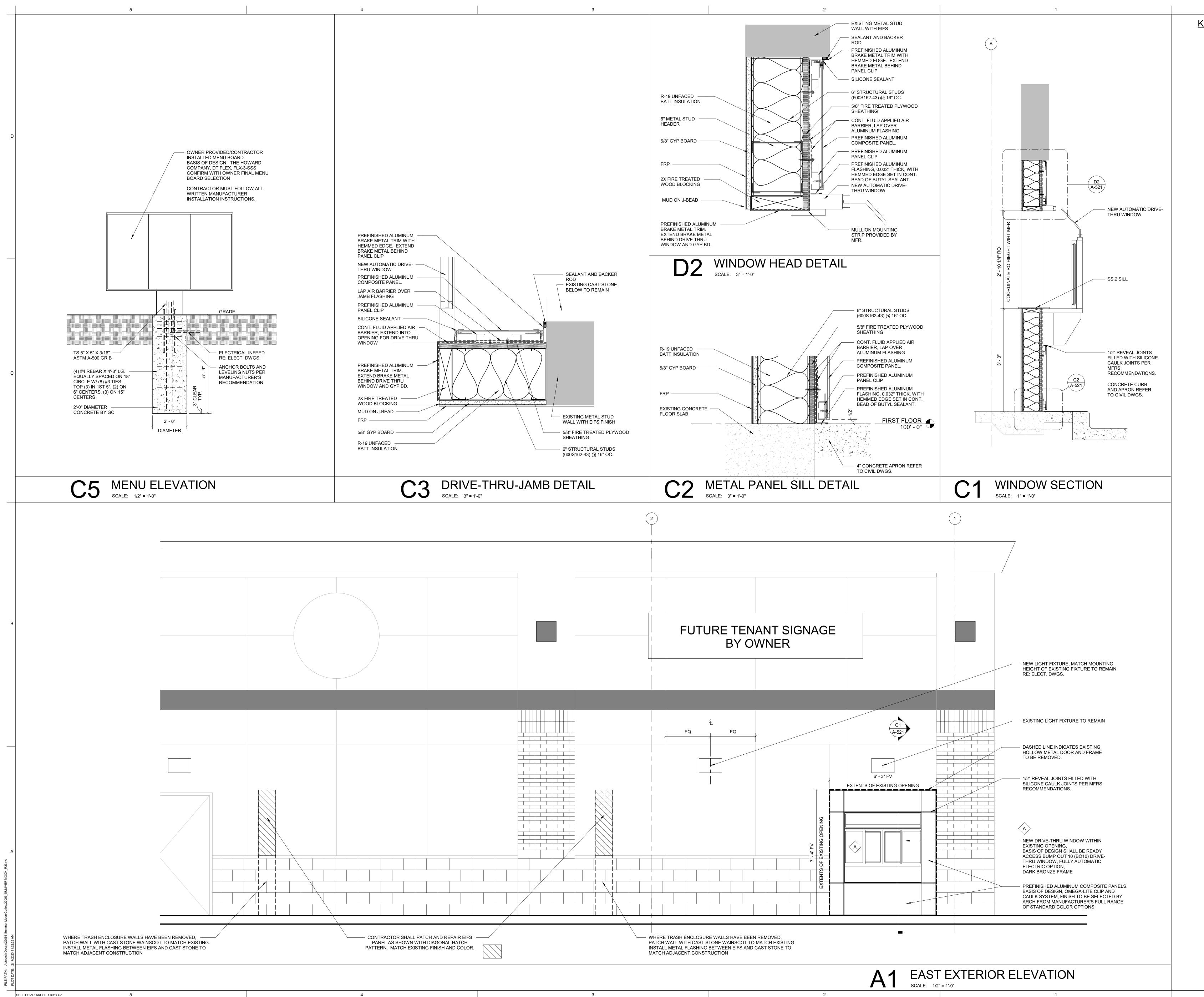




	5	4
		A5 A-520
	PREFINISHED METAL COPING - TO MATCH GATES SLOPED 1/4"/FOOT	
	BRICK VENEER TO	
D	MATCH BUILDING	
		8"
D5	TRASH ENCLO SCALE: 1/2" = 1'-0"	SURE SOUTH
	PREFINISHED METAL COPIN	۷G – _
	TO MATCH GATES SLOPED 1/4"/FOOT	Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z
С		
	8" BOND BEAM WITH (2) #4 CONTINUOUS REBAR	
	BRICK VENEER TO MATCH BUILDING	
	8" CMU WALL, FULLY	
	GROUTED AT REINFORCED VERTICAL CELLS, WITH #5 VERTICAL @ 24" O.C.	, 1'-0 3/4" X X X
	FLUID APPLIED WEATHER BARRIER	
	8" CMU BOND BEAM WITH (2) #4 CONTINUOUS REBAR AT	
	MIDWALL LAP FLUID APPLIED WEATHI BARRIER OVER WALL FLASH	
В	WEEP VENTS AT HEAD — JOINTS 32" OC MAX	
	BREAK METAL FLASHING – WITH HEMMED EDGE	
	CONCRETE SLAB RE: CIVIL 4" GRAVEL BASE	
	GROUT FILLED BASE BLOCK AND CAVITY	
	#5 DOWEL @ 24" O.C. ——	
	#4 TIES @ 18" O.C. ———	
A	(3) #5 CONTINUOUS TOP & BOTTOM	
MER MOON_R23.r		
offee/22056_SUMN		2'-6"
6-Summer Moon C		
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PLOT DATE: 2/17	TRASH ENCLO SCALE: 1 1/2" = 1'-0"	SURE SECTION
SHEET SIZE: ARCH E1 30" x 42"	SCALE: 1 1/2" = 1:-0" 5	4







<u>KEYNOTES</u>



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	• • • • • • • • •	INTERIOF			
CODE	MANUFACTURER	MODEL OR ITEM NO.	COLOR	PRODUCT DESCRIPTION	COMMENTS
1 BRICK K.1	MCNEAR BRICK	MODULAR FLAT	VERONA	THIN BRICK VENEER	MORTAR COLOR TBD FROM MANUFACTURER'S FULL RANGE
A. I	MONEAN BRICK	MODULAR FLAT	VERONA	THIN BRICK VENEER	MORTAR COLOR TBD FROM MANUFACTURER'S FULL RANGE
CEILING TILE					
Г.1	AMERICAN TIN CEILINGS	PATTERN #2	MATTE WHITE	24" X 24" TIN CEILING WITH GRID	WHITE GRID
Г.2	ARMSTRONG	KITCHEN ZONE	WHITE	24" X 48" VINYL FACED CEILING PANELS WITH GRID	WHITE 15/16" GRID
7.3	ARMSTRONG	DUNE	WHITE	24" X 24" MINERAL FIBER CEILING PANEL WITH GRID	WHITE 15/16" GRID
SEALED CONCRETE					
2.1	-	-	-	GRIND AND SEALED CONCRETE FLOOR	PENDING CONDITION OF CONCRETE ONCE QUARRY TILE IS REMOVED
LVP /P.1	SLCC FLOORING	BORROWED SCENERY	CITRON	GLUE DOWN LVP FLOORING	INSTALL AT 45 DEGREE ANGLE RUNNING NORTHEAST TO SOUTHWES
1.1		BORROWED SCENER	CITION		INSTALL AT 43 DEGREE ANGLE ROMAING NORTHEAST TO SOUTHWES
METAL TRIM					
T.1	SCHLUTER	JOLLY	BRUSHED GRAPHITE	METAL EDGE TRIM FOR TILE	SIZE PER TILE THICKNESS
6 PAINT					
NT.1	SHERWIN WILLIAMS	EMERALD	PURE WHITE SW7055	INTERIOR PAINT, FOR GYPSUM BOARD	EGGSHELL FINISH
NT.2	SHERWIN WILLIAMS	PROCLASSIC WATERBORNE INTERIOR ACRYLIC ENAMEL	ENDLESS SEA SW9150	SUBSTRATE INTERIOR PAINT, FOR WOOD SUBSTRATE	SEMI-GLOSS FINISH
NT.3	SHERWIN WILLIAMS	PROCLASSIC WATERBORNE INTERIOR ACRYLIC ENAMEL	TRICORN BLACK SW6258	INTERIOR PAINT, FOR WOOD SUBSTRATE	
IT.4	SHERWIN WILLIAMS	PROCLASSIC INTERIOR WATERBASED ACRYLIC ALKYD	PURE WHITE SW7055	INTERIOR PAINT, FOR METAL DOORS AND	
				FRAMES	
NT.5	SHERWIN WILLIAMS	EMERALD	ENDLESS SEA SW9150	INTERIOR PAINT, FOR GYPSUM BOARD SUBSTRATE	SATIN FINISH
3 SOLID SURFACE					
5.1	MSI	QUARTZ SLAB	CARRARA MARMI	3CM SLAB	EASE EDGE, TYPICAL, FOLLOW ALL MANUFACTURER RECOMMENDATIONS FOR SUPPORTING COUNTERTOP
S.2	CORIAN	1/2" THICK SOLID SURFACE COUNTERTOP OVER	GLACIER WHITE	1/2" SOLID SURFACE COUNTERTOP, SUPPORT WITH 3/4" MOISTURE RESISTANT PLYWOOD SUBSTRATE AND STEEL WALL BRACKETS	1.5" BUILT UP EDGE, EASE EDGE, COORDINATE WALL BRACKET PLACEMENT WITH OWNER'S EQUIPMENT
TILE					
.1	DALTILE	COLOR WHEEL CLASSIC	0190 ARTIC WHITE	4X4, GLOSSY TILE	BRICK LAY, GROUT - CUSTOM CHARCOAL #60
.2	DALTILE	RETRO ROUNDS	CANVAS BLACK GLOSS #RR14		GROUT - CUSTOM CHARCOAL #60
3	DALTILE	JOLLY PENCIL TRIM	ARTIC WHITE	1/2" X 12" TRIM	GROUT - CUSTOM CHARCOAL #60
4	AMERICAN OLEAN	CUSTOM MOSIC PATTERN (SEE PHOTO BELOW OF PATTERN)	ICE WHITE (A25), SERENITY (A50) AND DISCOVERY (A36)	CUSTOM MOSAIC PATTERN	GROUT - CUSTOM CHARCOAL #60
5	MSI	KASBAH	-	8" SQUARE FLOOR TILE	MATTE, GROUT - CUSTOM CHARCOAL #60
WOOD					
D.1	-	-	MINWAX HEIRLOOM OAK	SELECT WHITE OAK	STAIN AND SEAL WITH SATIN FINISH
D.2	-	-	PAINT PNT.2	PAINT GRADE WOOD	PAINTED FINISH
WALLPAPER					
P.1	MDC	CUSTOM SUMMER MOON PRINT	CUSTOM	WALLCOVERING	-
2 BASE B.1	ROPPE	6" RUBBER BASE WITH STANDARD TOE	CHARCOAL	RUBBER BASE	
ו.כ.				NODDLIVDAGL	[
B FRP					
RP.1	MARLITE	STANDARD FRP	P151 LIGHT GRAY	4X8 SHEETS	USE MATCHING TOP CAP AND JOINT TRIMS
4 PLASTIC LAMINATE					

GENERAL FINISH NOTES

1. INSTALL ALL FINISH MATERIALS PER MANUFACTURER'S WRITTEN INSTRUCTIONS.

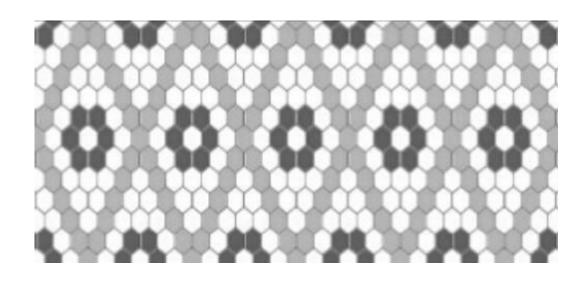
2. PAINT HOLLOW METAL DOOR FRAMES PNT.4, UNLESS NOTED OTHERWISE.

3. ALL CASEWORK SHALL BE AWI CUSTOM GRADE OR HIGHER.

3

3

TL.4 CUSTOM MOSAIC PATTERN

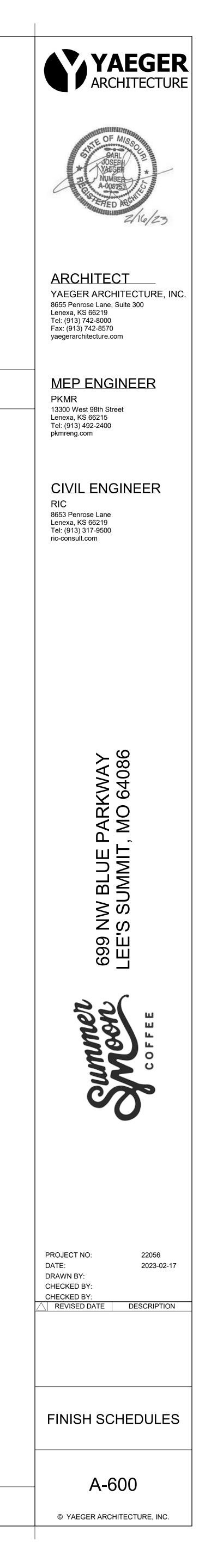


CUSTOM CASEWORK SPECIFICATIONS ALL CUSTOM ARCHITECTURAL CASEWORK AND MILLWORK SHALL BE AWI CUSTOM GRADE OR HIGHER • WD.1 SHALL BE SELECT WHITE OAK, STAINED PER SCHEDULE. FINISH WITH SATIN POLYURETHANE • WD.2 SHALL BE PAINT GRADE HARDWOOD, PAINTED PER SCHEDULE. CABINETRY SHALL BE FULL OVERLAY CONSTRUCTION. • ALL CABINET DOORS SHALL USE EUROSTYLE, CONCEALED HINGES. ALL CABINET DOORS SHALL USE PULLS BY HOUSE OF ANTIQUE HARDWARE; BRIXTON CABINET PULL, 7-9/16", COLOR: SABLE FABRICATOR SHALL COORDINATE CASEWORK WITH ALL OWNER PROVIDED FOOD SERVICE EQUIPMENT. SOME PIECES OF EQUIPMENT REQUIRE PARTICULAR CLEARANCES AND CUTOUTS. CASEWORK SPECS D1

SCALE: NTS

1

INTERIOR FINISH SCHEDULE A1 SCALE:



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	SHEET SIZE: ARCH E1 30" x 42"	5	

ELECTRICAL SYMBOL LEGEND SOME SYMBOLS AND ABBREVIATIONS ON THIS LEGEND MAY NOT BE USED

HOME RUN (2)#12W, (1)#12G UNLESS NOTED OTHERWISE INDICATES 2 PHASE, 1 N, AND 1 GND CONDUCTORS

HOME RUN. SECOND SYMBOL INDICATES SHARED CIRCUIT.

HOME RUN. SECOND SYMBOL DENOTES #10 CONDUCTORS.

<u>CIRCUITING</u> **UTILITIES**

<u>LIGHTING</u>

RCS-1

TC

------OHE--------OVERHEAD ELECTRICAL FEEDER AND/OR CONDUITS — UGC — UNDERGROUND ELECTRICAL FEEDER AND/OR CONDUITS ------TELE ABOVE-GRADE TELECOMMUNICATIONS CONDUIT(S) — — TELE — TELECOMMUNICATIONS CONDUIT(S) BELOW GRADE

	GRID-MOUNTED TROFFER LIGHT FIXTURE
	EMERGENCY/EGRESS LIGHT FIXTURE
	CRITICAL / STANDBY LIGHT FIXTURE
0	STRIP LIGHT FIXTURE
•	SURFACE/RECESSED LIGHT FIXTURE
Ю	WALL-MOUNTED LIGHT FIXTURE
Ъ	POLE-MOUNTED LIGHT FIXTURE
\otimes	EXIT LIGHT (WALL / CEILING MOUNTED)
P	BATTERY-OPERATED EMERGENCY LIGHT (WALL-MTD)
N A	BATTERY-OPERATED EMERGENCY LIGHT (CEILING-MTD) COMBINATION WALL-MOUNTED EXIT LIGHT / BATTERY-OPERATED EMERGENCY LIGHT LIGHT SWITCH - SINGLE POLE
3	LIGHT SWITCH - 3-WAY
4	LIGHT SWITCH - 4-WAY
<	LIGHT SWITCH - KEY
2	LIGHT SWITCH - DIMMER
<i>⊃L</i>	LIGHT SWITCH - WITH PILOT LIGHT
М	WALL-MOUNTED MOTION SENSOR.
]→	WALL (CORNER) - MOUNTED MOTION SENSOR.
\rangle	CEILING-MOUNTED MOTION SENSOR.
3	SWITCHBANK. REFER TO PLANS / DETAILS.

WALL-MOUNTED MOTION SENSOR.
WALL (CORNER) - MOUNTED MOTION SENSOR.
CEILING-MOUNTED MOTION SENSOR.
SWITCHBANK. REFER TO PLANS / DETAILS.

LOW-VOLTAGE DATALINE SWITCH - RE: DETAILS.

REMOTE CONTROL SWITCH AS SCHEDULED. TIMECLOCK. REFER TO PLANS / DETAILS.

POWER DEVICES	3
Ð	DUPLEX RECEPTACLE
\$	LINE THROUGH DEVICE INDICATES ABOVE COUNTER
¢	SWITCHED RECEPTACLE. MOUNT UPSIDE DOWN.
₽	QUAD-PLEX RECEPTACLE
$\Theta_{\overline{5-20R}}$	SIMPLEX RECEPTACLE W/ NEMA CONFIG AS NOTED
€ 14-50R	MULTI-POLE RECEPTACLE W/ NEMA CONFIG AS NOTED
$\overline{\mathbf{O}}$	CEILING-MOUNTED RECEPTACLE
	RECEPTACLE/DEVICE MOUNTED IN "TOMBSTONE"
J	JUNCTION BOX
۲	FIRE-RATED POKE-THRU - POWER ONLY
	POKE-THRU WITH DATA JACKS
Ø	POKE-THRU WITH POWER AND DATA
FB	SINGLE GANG FLOOR BOX (2,3,4 GANG SIMILAR)
	DIVIDED (HIGH/LOW VOLTAGE) POWER POLE
	PLUG MOLD / WIRE MOLD AS SPECIFIED.
<u> </u>	

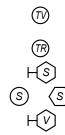
3

PUSH BUTTON Ы

TELEF

PHONE/DAT/	<u>A</u>
\triangleleft	TELEPHONE JACK LOCATION (SINGLE-GANG BOX W/ (1)3/4" C. TO ABOVE ACCESSIBLE CEILING)
\triangleleft	LINE THROUGH DEVICE INDICATES ABOVE COUNTER
◀	DATA JACK LOCATION (DOUBLE-GANG BOX W/ (2)3/4" CONDUITS TO ABOVE ACCESSIBLE CEILING)
◀	TELE/DATA JACK LOCATION (DOUBLE-GANG BOX W/ (2)3/4" C. TO ABOVE ACCESSIBLE CEILING)
\triangleleft 1V	PHONE OUTLET WITH NUMBER OF PHONE JACKS AS INDICATED - REFER TO DETAILS FOR ADDITIONAL INFORMATION
◀ 1D	DATA OUTLET WITH NUMBER OF DATA JACKS AS INDICATED - REFER TO DETAILS FOR ADDITIONAL

- TELE/DATA OUTLET WITH NUMBER OF PHONE AND DATA JACKS AS INDICATED - REFER TO DETAILS.
- (W)WIRELESS INTERNET TRANSMITTER.
- AUDIO/VISUAL



TELEVISION JACK LOCATION (SINGLE-GANG BOX W/ (1)3/4" C. TO ABOVE ACCESSIBLE CEILING)
REVERSE TELEVISION JACK LOCATION (CABLE TO HEAD END)
WALL-MOUNTED SPEAKER LOCATION (SINGLE-GANG BOX)
CEILING SPEAKER LOCATION (SINGLE-GANG BOX)
VOLUME CONTROL LOCATION (SINGLE GANG BOX)

FIRE ALARM	
- F	MANUAL PULL STATION (DUAL-ACTION)
D	SMOKE DETECTOR
$\langle D \rangle$	DUCT SMOKE DETECTOR
(H)	HEAT DETECTOR
©	CARBON MONOXIDE DETECTOR
■ WF	WATER FLOW SWITCH
■ <i>TS</i>	TAMPER SWITCH
× ⁷⁵	WALL-MOUNTED FA STROBE WITH CANDELA RATING. 15cd RATING UNLESS OTHERWISE NOTED ON PLANS.
	WALL-MOUNTED FA HORN/STROBE WITH CANDELA RATING. 15cd UNLESS OTHERWISE NOTED ON PLANS.
$\Box \triangleleft$	WALL-MOUNTED FIRE ALARM HORN
	WALL-MOUNTED FIRE ALARM SPEAKER
30	WALL-MOUNTED FA SPEAKER/STROBE WITH CANDELA RATING. 15cd UNLESS OTHERWISE NOTED ON PLANS.
75	CEILING-MOUNTED FA STROBE LIGHT WITH CANDELA RATING. MIN. OF 15cd RATING.
X 30	CEILING-MOUNTED COMBINATION HORN/STROBE WITH CANDELA RATING. MIN. OF 15cd RATING.
30	CEILING-MOUNTED COMBINATION SPEAKER/STROBE WITH CANDELA RATING. MIN. OF 15cd RATING.
	CEILING-MOUNTED FIRE ALARM SPEAKER
R	FIRE ALARM RELAY
IAM	INDIVIDUAL ADDRESSABLE MODULE
ZAM	ZONE ADDRESSABLE MODULE
FACP	FIRE ALARM CONTROL PANEL
FAAP	FIRE ALARM ANNUNCIATOR PANEL
FAEC	FIRE ALARM AUXILIARY POWER SUPPLY
D _{120 V}	SINGLE / MULTI-STATION 120V SMOKE ALARM
DH	DOOR HOLD-OPEN
<u>EQUIPMENT</u>	
D	DISCONNECT SWITCH. RE: PLANS FOR INFORMATION.

LP	DISCONNECT SWITCH. RE: PLANS FOR INFORMATION.
\boxtimes	MAGNETIC MOTOR STARTER
\boxtimes	COMBINATION DISCONNECT SWITCH / MOTOR STARTER
\$	TOGGLE-TYPE DISCONNECT SWITCH. WHERE USED FOR MOTORS, PROVIDE W/ THERMAL PROTECTION.
	SURFACE-MOUNTED PANELBOARD
	RECESSED PANELBOARD
	DISTRIBUTION PANELBOARD
	SWITCHBOARD. FEEDER/MAIN CIRCUIT BREAKER SECTION AND DISTRIBUTION SECTION.
NERAL SYMBC	DLS
\oplus	INDICATES CONNECT TO EXISTING

EQUIPMENT TAG. REFER TO CONNECTIONS SCHEDULE(S) FOR ELECTRICAL CONNECTIONS AND LOAD INFORMATION FOR EQUIPMENT (KITCHEN, SHOP, ETC.)

ABBREVIATIONS

- A/E ARCHITECT / ENGINEER AFF ABOVE FINISHED FLOOR
- AFG ABOVE FINISHED GRADE
- AG ABOVE GRADE AHJ AUTHORITY HAVING JURISDICTION
- AHU AIR HANDLING UNIT
- ARCH ARCHITECT BFP BACKFLOW PREVENTER
- BG BELOW GRADE BLDG BUILDING
- BMS BUILDING MANAGEMENT SYSTEM
- C CONDUIT CD CANDELA
- CD COLD DECK
- CLG COOLING CM COORDINATE MOUNTING HEIGHT
- CO CLEANOUT
- CTE CONNECT TO EXISTING DCVA DOUBLE CHECK VALVE ASSEMBLY
- DCW DOMESTIC COLD WATER
- DDC DIRECT DIGITAL CONTROLS DF DRINKING FOUNTAIN
- DHW DOMESTIC HOT WATER
- DHWR DOMESTIC HOT WATER RETURN DIA DIAMETER
- DN DOWN

4

- E/C ELECTRICAL CONTRACTOR
- EA EXHAUST AIR EDF ELECTRIC DRINKING FOUNTAIN

- ELEV ELEVATION
- EM EMERGENCY FIXTURE/DEVICE EWT ENTERING WATER TEMPERATURE
- EX EXISTING ITEM
- FFA FROM FLOOR ABOVE
- FFB FROM FLOOR BELOW FFCO FINISH FLOOR CLEANOUT
- FGCO FINISH GRADE CLEANOUT FL FLOW LINE
- FLR FLOOR
- FP FIRE PROTECTION FPM FEET PER MINUTE
- FWCO FLUSH WALL CLEANOUT G GROUND / GANG
- G/C GENERAL CONTRACTOR
- GFCI GROUND FAULT CIRCUIT INTERRUPTER GPM GALLONS PER MINUTE
- HD HOT DECK
- HTG HEATING IG ISOLATED GROUND
- JB JUNCTION BOX
- LED LIGHT EMMITING DIODE LWT LEAVING WATER TEMPERATURE
- M/C MECHANICAL CONTRACTOR
- MA MIXED AIR MAU MAKE UP AIR UNIT
- MCB MAIN CIRCUIT BREAKER
- MECH MECHANICAL MH MANHOLE

- MLO MAIN LUGS ONLY
- NFA NET FREE AREA NL NIGHT LIGHT
- OA OUTSIDE AIR
- ORD OVERFLOW ROOF DRAIN P/C PLUMBING CONTRACTOR
- PSI POUNDS PER SQUARE INCH
- PVC POLYVINYL CHLORIDE
- RA RETURN AIR RE/REF REFER TO / REFERENCE
- RF RELIEF FAN
- RL RELOCATED ITEM
- RR RESTROOM
- SA SUPPLY AIR
- ST SHUNT TRIP
- TA TRANSFER AIR
- TFB TO FLOOW BELOW
- TYP TYPICAL
- UNO UNLESS NOTED OTHERWISE
- VRF VARIABLE REFRIGERANT FLOW
- WCO WALL CLEANOUT
- WP WEATHERPROOF

GENERAL NOTES

(XXX

- 1. SOME ROOM NAMES MAY NOT BE SHOWN FOR PURPOSE OF CLARIFYING PLAN. REFER TO ARCHITECTURAL PLANS FOR REFERENCE TO ROOM NAMES NOT SHOWN. 2. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO MAINTAIN AND KEEP AT THE JOB SITE, AN UP TO DATE SET OF "RECORD DRAWINGS" SHOWING ALL CHANGES FROM THE ORIGINAL PLANS. THE CONTRACTOR SHALL DELIVER THE "RECORD DRAWINGS" TO THE ENGINEER AT THE CONCLUSION OF THE PROJECT
- ELECTRONICALLY. 3. THESE DRAWINGS ARE DIAGRAMMATIC. THE CONTRACTOR SHALL VERIFY ALL CONDITIONS (NEW AND EXISTING), DIMENSIONS, AND CLEARANCES PRIOR TO THE COMMENCEMENT OF WORK AND SHALL INCLUDE ALL COSTS, EQUIPMENT, MATERIAL ACCESSORIES. ETC. REQUIRED FOR A FULLY COMPLETE. FUNCTIONAL AND CODE COMPLIANT INSTALLATION. 4. FINAL LOCATIONS OF ALL DEVICES, LIGHT FIXTURES, EQUIPMENT ETC SHALL BE
- INDICATED ON THE ARCHITECTURAL DRAWINGS. ALL DIMENSIONAL INFORMATION SHALL BE OBTAINED FROM ARCHITECTURAL PLANS. NO DIMENSIONAL INFORMATION SHALL BE OBTAINED FROM MEP DRAWINGS. 5. THE CONTRACTOR SHALL OBTAIN ALL REQUIRED PERMITS, APPROVALS, LICENSES, ETC. AS NEEDED FOR THE COMPLETE INSTALLATION AND PROJECT. THE

FIRE SEALING NOTES

- 1. COORDINATE CONSTRUCTION OF OPENINGS AND PENETRATING ITEMS TO ENSURE THAT THROUGH-PENETRATION FIRESTOP SYSTEMS ARE INSTALLED ACCORDING TO SPECIFIED AND APPLICABLE UL REQUIREMENTS. 2. COORDINATE SIZING OF SLEEVES, OPENINGS, CORE-DRILLED HOLES, OR CUT
- OPENINGS TO ACCOMMODATE THROUGH-PENETRATION FIRESTOP SYSTEMS. 3. DO NOT COVER UP THROUGH-PENETRATION FIRESTOP SYSTEM INSTALLATIONS UNTIL EXAMINED BY INSPECTOR, IF REQUIRED BY AUTHORITIES HAVING JURISDICTION 4. COMPATIBILITY: PROVIDE THROUGH-PENETRATION FIRESTOP SYSTEMS THAT ARE
- COMPATIBLE WITH ONE ANOTHER; WITH THE SUBSTRATES FORMING OPENINGS; AND WITH THE ITEMS. IF ANY, PENETRATING THROUGH-PENETRATION FIRESTOP SYSTEMS, UNDER CONDITIONS OF SERVICE AND APPLICATION, AS DEMONSTRATED BY THROUGH-PENETRATION FIRESTOP SYSTEM MANUFACTURER BASED ON TESTING AND FIELD EXPERIENCE.
- 5. PROVIDE COMPONENTS FOR EACH THROUGH-PENETRATION FIRESTOP SYSTEM THAT ARE NEEDED TO INSTALLEUL MATERIALS. LISE ONLY COMPONENTS SPECIFIED BY THROUGH-PENETRATION FIRESTOP SYSTEM MANUFACTURER AND APPROVED BY QUALIFIED TESTING AND INSPECTING AGENCY FOR FIRESTOP SYSTEMS INDICATED.
- 6. PROVIDE SLEEVES THROUGH ALL FIRE-RATED WALLS AND FILL VOIDS SURROUNDING SLEEVES AND INTERIOR TO SLEEVES AROUND PIPING WITH FIRE STOP PUTTY WITH UL LISTED 3 HOUR RATING INSTALLED AS PER MANUFACTURERS RECOMMENDATIONS.
- 7. FIRE SEAL ALL PIPING, CONDUIT, CABLE, ETC PENETRATIONS ROUTED THROUGH FIRE RATED WALLS. 8. PROVIDE FIRE RATED ENCLOSURES OR WRAPS ON LIGHT FIXTURES AND OTHER ITEMS PENETRATING FIRE RATED CEILINGS, FLOOR/CEILING/ CEILING/ROOF ASSEMBLIES TO MAINTAIN UL LISTING FOR CONSTRUCTION.

- CONTRACTOR SHALL COORDINATE WITH THE OWNER FOR ALL FEES AND DATA NEEDED FOR THIS.
- TFA TO FLOOR ABOVE
- TP TAMPER PROOF
- VTR VENT THROUGH ROOF
- WG WIRE GUARD

3

- RPZ REDUCED PRESSURE ZONE
- SPD SURGE PROTECTIVE DEVICE

MECHANICAL AND PLUMBING SYMBOL LEGEN	10

	NICAL AND PLUMBING AND ABBREVIATIONS ON THIS LEGEND MAY NOT BE		L LEGEND
SHEET METAL		MECHANICAL PIP	
	HIGH-EFFICIENCY DUCT TAKEOFF (WITH AND WITHOUT MANUAL DAMPER)		DRAIN (CONDENSATE)
түт түт түт			REFRIGERANT LIQUID
	SPIN-IN ROUND DUCT TAKEOFF		
141 141			REFRIGERANT VENT
	CONICAL BELLMOUTH ROUND DUCT TAKEOFF		RUPTURE DISK
-44- -44-			CHILLED WATER SUPPLY
FH+++++XX4	ROUND DUCT TAKEOFF WITH FLEX DUCT RUNOUT (MAXIMUM FLEX DUCT LENGTH IS 6'-0")	CWR	
		——————————————————————————————————————	CHILLED/HOT WATER SUPPLY CHILLED/HOT WATER RETURN
	DUCTWORK ELBOWS (WITH AND WITHOUT TURNING VANES)	——————————————————————————————————————	HOT WATER SUPPLY
- <u></u> ∕		——————————————————————————————————————	HOT WATER RETURN
	FD: FIRE DAMPERFS: FIRE/SMOKE DAMPERSD: SMOKE DAMPERBD: BACKDRAFT DAMPER (GRAVITY)	CTWS	COOLING TOWER WATER SUPPLY
		CTWR	COOLING TOWER WATER SOFFLY
	AUTOMATIC MOTORIZED DAMPER		STEAM (ANY #'S DENOTE PRESSURE)
		STM	CONDENSATE RETURN (ANY #'S DENOTE PRESSURE)
<u>8"Ø</u> GD <u>225</u>	SUPPLY DIFFUSER AND CALLOUT (NECK SIZE, TYPE, AND CFM)	CR	CONDENSATE RETORN (ANT #3 DENOTE PRESSORE)
	LINEAR/SLOT DIFFUSER		
22x22 🕞 🌄		PLUMBING PIPING	2
	RETURN GRILLE (NECK SIZE AND TYPE, MAY ALSO INCLUDE CFM)		DOMESTIC COLD WATER
$\sum \frac{10 \times 10}{10 \times 10}$	EXHAUST GRILLE (NECK SIZE AND TYPE, MAY ALSO INCLUDE		DOMESTIC HOT WATER
-	CFM), LY AIR FLOW INDICATOR		- RECIRCULATING DOMESTIC HOT WATER
∧►	RETURN OR EXHAUST AIR FLOW INDICATOR		WASTE ABOVE GRADE OR FLOOR
\oplus	THERMOSTAT	SAN	WASTE BELOW GRADE OR FLOOR
$\overline{\mathbf{H}}$	TEMPERATURE SENSOR	— — SAN — —	PLUMBING VENT
-H -	HUMIDISTAT		
	CONTROL WIRING	W	WATER SERVICE
		ST	STORM DRAIN ABOVE GRADE OR FLOOR
MEDICAL GAS		— — ST· — —	STORM DRAIN BELOW GRADE OR FLOOR
MV	MEDICAL VACUUM PIPING	ST/0	STORM OVERFLOW ABOVE GRADE OR FLOOR STORM OVERFLOW BELOW GRADE OR FLOOR
0	OXYGEN PIPING		SOFT COLD WATER
NO	NITROUS OXIDE PIPING	SCW	SOFT HOT WATER
MA	MEDICAL COMPRESSED AIR PIPING	SHW	SOFT RECIRCULATING HOT WATER
N	NITROGEN PIPING		REVERSE OSMOSIS WATER
CO	CARBON DIOXIDE PIPING		DE-IONIZED WATER
V/	VACUUM VENT PIPING	DI	
WAGD	WASTE ANESTHETIC GAS DISPOSAL PIPING	G I P	NATURAL GAS
GV	MEDICAL GAS VENT PIPING		
⊢∙x	MEDICAL GAS INLET/OUTLET W/DESIGNATION (RE: PIPE	NP	NON-POTABLE WATER
⊨∙s	MEDICAL SLIDE		COMPRESSED AIR
MA	MEDICAL GAS ALARM WIRING CONNECTION	ACID	ACID WASTE
PS	MEDICAL GAS ALARM WIRING - PRESSURE SWITCH	ACID	
		——PD	PUMPED DISCHARGE (FROM SUMP PUMPS / EJECTORS)
	MEDICAL GAS ALARM WIRING - TRANSDUCER	FIRE SPRINKLER	,
			FIRE SPRINKLER PIPING/SERVICE
GENERAL SYMBO	DLS		FIRE SPRINKLER HEAD - PENDANT
\bigcirc	INDICATES CONNECT TO EXISTING		FIRE SPRINKLER HEAD - FEINDANT FIRE SPRINKLER HEAD - SIDEWALL
$f_{L?}$			FIRE DEPARTMENT SIAMESE CONNECTION
Ψ_{-}	INDICATES ELEVATION	I —I⊗I—	POST INDICATOR VALVE
W&V	PLUMBING RISER CALLOUT (TYPE/RISER NO.)		
#1	(W&V = WASTE AND VENT, WAT = DOMESTIC WATER)		

$\rightarrow \rightarrow \rightarrow$	SHUTOFF VALVE
—>×	SHUTOFF VALVE IN RISER
	BALANCING VALVE
O	PIPING ELBOW UP
	PIPING ELBOW DOWN
—+ + +—	PIPING TEE
—+ ₁	PIPING ELBOW
	PIPING TEE UP
	PIPING TEE DOWN
— 4 —	INCREASER/REDUCER
+	UNION
]	CAP
_++++ +	PIPE FLEX
	3-WAY VALVE
	CHECK VALVE
- , -	Y-STRAINER
╶+ᢕᢩᡰ᠆	IN-LINE (BASKET) STRAINER
	AUTOMATIC 2-WAY CONTROL VALVE
	AUTOMATIC 3-WAY CONTROL VALVE
	SOLENOID VALVE

1

PIPING SYMBOLS

PIPING SPECIAL	TIES
	PRESSURE AND TEMPERATURE GAUGE (WITH COCK)
	THERMOMETER
-0-	PRESSURE REDUCING VALVE
	RELIEF VALVE
U 1 + ,	WATER HAMMER ARRESTOR
PIPING FIXTURE	<u>S / EQUIPMENT</u>
—	HOSE BIBB
-E	WALL HYDRANT
þ 回	CLEANOUTS
RPZ	REDUCED PRESSURE BACKFLOW PREVENTER
DCPB	DOUBLE CHECK BACKFLOW PREVENTER
$\bigcup_{\underline{WC-1}} \boxed{\underline{S-1}}$	PLUMBING FIXTURE AND CALLOUT
	FLOOR DRAIN, AREA DRAIN, OR FLOOR SINK
\bigcirc	ROOF DRAIN OR OVERFLOW ROOF DRAIN

COORDINATION NOTES

(XXX)

1. COORDINATE REQUIREMENTS FOR INSTALLATION OF SYSTEMS AND EQUIPMENT WITH ALL OTHER TRADES. 2. THE CONTRACTOR SHALL COORDINATE THE ROUTING AND PATH OF ALL SYSTEMS, CONDUITS, PIPES, DUCTS, ETC WITH THE POSITION AND LAYOUT OF THE STRUCTURE. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING NECESSARY OFFSETS, TURNS, RISES AND DROPS FOR SYSTEMS AND COMPONENTS AS NEEDED

FOR FOUIPMENT (KITCHEN SHOP FTC)

EQUIPMENT TAG. REFER TO CONNECTIONS SCHEDULE(S)

FOR ELECTRICAL CONNECTIONS AND LOAD INFORMATION

- TO INSTALL THE MEP SYSTEMS TO CLEAR STRUCTURE, CEILINGS, ETC AND OTHER SYSTEMS IN POTENTIAL CONFLICT WITH ROUTING. 3. COORDINATE WORK WITH OTHER TRADES TO INSTALL SYSTEMS ABOVE CEILING HEIGHTS INDICATED ON ARCHITECTURAL PLANS. 4. CHECK SPACE REQUIREMENTS WITH OTHER TRADES AND STRUCTURE/CONSTRUCTION TO INSURE THAT ALL MATERIALS AND EQUIPMENT CAN BE INSTALLED IN THE SPACE ALL OTTED INCLUDING FINISHED SUSPENDED CEILINGS
- AND OTHER SPACES, CHASES, ETC WITHIN THE BUILDING. MAKE MODIFICATIONS THERETO AS REQUIRED AND APPROVED. 5. TRANSMIT TO OTHER TRADES ALL INFORMATION REQUIRED FOR WORK TO BE PROVIDED UNDER THEIR RESPECTIVE SECTIONS IN AMPLE TIME FOR INSTALLATION. 6. WHEREVER WORK INTERCONNECTS WITH WORK OF OTHER TRADES, COORDINATE WITH THOSE TRADES TO INSURE THAT ALL SUBCONTRACTORS HAVE THE INFORMATION NECESSARY SO THAT THEY MAY PROPERLY INSTALL ALL CONNECTIONS AND EQUIPMENT. IDENTIFY ALL ITEMS OF WORK THAT REQUIRE
- ACCESS SO THAT THE CEILING TRADE WILL KNOW WHERE TO INSTALL ACCESS DOORS AND PANELS. 7. COORDINATE, PROJECT AND SCHEDULE WORK WITH OTHER TRADES IN ACCORDANCE WITH THE CONSTRUCTION SEQUENCE 8. DRAWINGS SHOW THE GENERAL RUNS OF CONDUITS, PIPING AND DUCTWORK AND
- APPROXIMATE LOCATION OF OUTLETS. ANY SIGNIFICANT CHANGES IN LOCATION OF ITEMS NECESSARY IN ORDER TO MEET FIELD CONDITIONS SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE ARCHITECT/ENGINEER AND RECEIVE HIS APPROVAL BEFORE SUCH ALTERATIONS ARE MADE. ALL SUCH MODIFICATIONS SHALL BE MADE WITHOUT ADDITIONAL COST TO THE OWNER.
- 9. CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTION AND REPAIR OF SURFACES, AREAS AND PROPERTY THAT MAY BE DAMAGED AS A RESULT OF CONSTRUCTION ACTIVITIES. 10. ADJUST LOCATION OF PIPING, DUCTWORK, ETC. TO PREVENT INTERFERENCES,
- BOTH ANTICIPATED AND ENCOUNTERED. DETERMINE THE EXACT ROUTE AND I OCATION OF FACH ITEM PRIOR TO FABRICATION MAKE OFFSETS TRANSITIONS AND CHANGES IN DIRECTION IN SYSTEMS AS REQUIRED TO MAINTAIN ADEQUATE
- CLEARANCES AND HEADROOM. 11. WHEREVER THE WORK IS OF SUFFICIENT COMPLEXITY, PREPARE ADDITIONAL COORDINATION DRAWINGS AND ORGANIZE ON-SITE MEETINGS WITH ALL RELATED SUBCONTRACTORS TO COORDINATE THE WORK BETWEEN TRADES . DRAWINGS SHALL CLEARLY SHOW THE WORK AND ITS RELATION TO THE WORK OF OTHER TRADES. AND BE SUBMITTED FOR REVIEW PRIOR TO COMMENCING SHOP
- FABRICATION OR FRECTION IN THE FIELD 12. COORDINATE WITH LOCAL UTILITY PROVIDERS FOR THEIR REQUIREMENTS FOR SERVICE CONNECTIONS AND PROVIDE ALL NECESSARY PAYMENTS, MATERIALS, LABOR AND TESTING TO ACCOMPLISH THE WORK.

RENOVATION NOTES

- 1. DISCONNECT AND REMOVE ANY EQUIPMENT. PIPING OR DUCTWORK THAT WAS INSTALLED AS PART OF THE BUILDING SHELL THAT IS NOT NEEDED OR CONFLICTS WITH THIS BUILD OUT.
- 2. EXISTING UNDERGROUND PIPING LOCATIONS ARE ESTIMATED BASED UPON ANTICIPATED ROUTINGS. FIELD VERIFY EXACT LOCATIONS DURING CONSTRUCTION AND PROVIDE ALL NECESSARY MODIFICATIONS.
- 3. SAWCUT GRADE FLOOR SLABS TO INSTALL NEW PIPING, MECHANICAL SYSTEMS, ELECTRICAL FLOOR BOXES AND ALL ASSOCIATED CONDUIT, ETC. PATCH FLOOR TO MAKE LIKE NEW AFTER INSTALLATION TAKE CARE TO LOCATE EXISTING CONDUIT
- ETC AND AVOID CUTTING EXISTING CONDUITS BY NOT OVER-CUTTING SLAB DEPTH. 4. SAWCUT AND CORE DRILL OPENINGS AS REQUIRED FOR ABOVE GRADE SLAB PENETRATIONS. X-RAY SLABS TO ASCERTAIN STEEL AND EXISTING CONDUIT PENETRATIONS PRIOR TO CUTTING. VERIFY OPENINGS WITH STRUCTURAL
- ENGINEER PRIOR TO CUTTING. 5. HOMERUN CIRCUITS TO 20 AMP, SINGLE POLE BREAKERS IN PANELBOARDS INDICATED. UTILIZE SPARE BREAKERS MADE AVAILABLE BY DEMOLITION, IF NO

2

SPARE BREAKER IS AVAILABLE PROVIDE NEW BREAKER 6. EXISTING CIRCUITING MAY BE RE-USED WHERE POSSIBLE, AND SAME COMPLIES WITH ALL APPLICABLE SECTIONS OF THE SPECIFICATIONS. . CONCEAL NEW CIRCUITING IN WALLS WHERE POSSIBLE. FOR NEW DEVICES INSTALLED ON EXISTING SOLID WALLS. CONCEAL CIRCUITING IN WIREMOLD COORDINATE FINISH AND GENERAL ROUTING OF WIREMOLD WITH ARCHITECT TO BE

AS CONCEALED AND/OR ROUTED IN A NEAT AND ORGANIZED CONSISTENT MANNER.

- GENERAL MECHANICAL NOTES DEMOLITION NOTES
- COMPLETE INSTALLATION SHALL BE IN ACCORDANCE WITH THE LATEST ADOPTED VERSION OF THE INTERNATIONAL MECHANICAL CODE, LOCAL AND STATE CODES, AND REQUIREMENTS OF THE AHJ. 2. ANY POWER FOR CONTROL SYSTEMS TO BE PROVIDED BY E/C IS INDICATED ON
- FLECTRICAL PLANS ANY ADDITIONAL LINE VOLTAGE OR LOW VOLTAGE POWER REQUIRED BY THE M/C OR SUBCONTRACTORS TO HAVE A FULLY FUNCTIONING SYSTEM SHALL BE PROVIDED BY THE M/C CONTRACTOR OR SUBS.
- 3. ALL EQUIPMENT SHALL BE ADEQUATELY AND PROPERLY SUPPORTED AND FASTENED FROM STRUCTURE 4. ALL EQUIPMENT AND ACCESSORIES INSTALLED IN CONCEALED SPACES REQUIRING ACCESS SHALL BE PROVIDED WITH ACCESS DOORS MEETING ANY FIRE
- REQUIREMENTS OF THE WALL/CEILING THEY ARE INSTALLED. 5. EACH AIR HANDLING UNIT OVER 2000CFM SHALL BE PROVIDED WITH A SMOKE DETECTOR TO SHUT DOWN THE UNIT PER IMC 606 AS REQUIRED BY AHJ.
- COORDINATE WITH OTHER TRADES. 6. START UP AND ADJUST ALL EQUIPMENT AND VERIFY ALL MECHANICAL SYSTEMS IN OPERATE IN ACCORDANCE WITH THEIR INTENDED PURPOSES. SUBMIT BALANCE AND START UP REPORTS TO THE A/E. REFER TO SPECIFICATIONS FOR ANY ADDITIONAL REQUIREMENTS.

GENERAL PLUMBING NOTES

- 1. COMPLETE INSTALLATION SHALL BE IN ACCORDANCE WITH THE LATEST ADOPTED VERSION OF THE INTERNATIONAL PLUMBING CODE, LOCAL AND STATE CODES, AND REQUIREMENTS OF THE AHJ. 2. NO PIPING SHALL BE INSTALLED WHERE IT WILL SUBJECT TO FREEZING TEMPERATURES. PIPING IN EXTERIOR WALLS SHALL BE INSTALLED ON THE WARM
- SIDE OF BUILDING INSULATION, INSULATED AND THE CHASE SHALL BE VENTILATED WITH GRILLES ALLOWING INDOOR AMBIENT CONDITIONS TO CIRCULATE THROUGH THE CHASE. 3. PROVIDE CLEANOUTS IN THE FOLLOWING LOCATIONS:
- 1. IN ALL HORIZONTAL DRAINS (WITHIN THE BUILDING) NOT MORE THAN 100 FEET APAR 2. IN BUILDING SEWERS LOCATED NO MORE THAN 100 FEET APART MEASURED FROM THE UPSTREAM ENTRANCE OF THE CLEANOUT. 3. EACH CHANGE OF DIRECTION OF THE BUILDING DRAIN OR HORIZONTAL WASTE
- OR SOIL LINES GREATER THAN 45 DEGREES. WHERE MORE THAN ONE CHANGE OF DIRECTION OCCURS IN A RUN OF PIPING, ONLY ONE CLEANOUT SHALL BE REQUIRED FOR EACH 40 FEET OF DEVELOPED LENGTH OF THE DRAINAGE PIPING. 4. AT THE BASE OF EACH WASTE OR SOIL STACK. 5. NEAR THE JUNCTION OF THE BUILDING DRAIN AND BUILDING SEWER.

GENERAL ELECTRICAL NOTES

- 1. COMPLETE INSTALLATION SHALL BE IN ACCORDANCE WITH THE LATEST ADOPTED VERSION OF THE NATIONAL ELECTRICAL CODE, LOCAL AND STATE CODES, AND
- REQUIREMENTS OF THE AHJ. COORDINATE LOCATIONS OF RECEPTACLES, SWITCHES, ETC. WITH ARCHITECTURAL CASEWORK AND ELEVATIONS.
- 3. REFER TO MOUNTING HEIGHTS DETAIL FOR MOUNTING HEIGHTS OF ALL DEVICES NOT INDICATED OTHERWISE. PROVIDE ALL EMPTY CONDUITS WITH PULL STRINGS AND BUSHED ENDS.
- 5. CONTRACTOR SHALL CONCEAL ALL CONDUIT, FITTINGS, AND DEVICES FROM VIEW WHERE REASONARI Y POSSIRI E 6. ALL CONDUCTOR SIZES INDICATED ON DRAWINGS ARE FOR COPPER CONDUCTORS UNLESS SPECIFICALLY NOTED OTHERWISE. ALUMINUM CONDUCTORS MAY BE USED ONLY UNDER THE FOLLOWING CONDITIONS:
- CONTRACTOR SHALL INCLUDE A DEDUCT ALTERNATE FOR USE OF SAME WITH BIDS, FOR OWNER ACCEPTANCE. AL CONDUCTORS MAY ONLY BE USED ON FEEDERS 100A OR GREATER - NO EXCEPTIONS. ALUMINUM CABLING SHALL BE COMPACTED ALUMINUM (STABILOY).
- PROVIDE COMPRESSION-TYPE ONE-HOLE OR TWO-HOLE LUG TERMINATIONS. PROVIDE ANTI-OXIDANT COMPOUND AT TERMINATIONS. CABLE TERMINATIONS SHALL BE MARKED "AL/CU". FINAL SIZES OF CONDUCTORS TO BE CONFIRMED BY ENGINEER
- ALUMINUM SERVICE CONDUCTORS MUST HAVE "AA-8000" SERIES LABELING ON CABLE JACKETS PER EVERGY REQUIREMENTS - NO EXCEPTIONS. ENGINEER RESERVES FINAL RIGHT TO ACCEPT/DENY USE OF ALUMINUM CONDUCTORS FOR PART OR ALL OF PROJECT.

- 1 ALL WORK SHOWN DARK AND DASHED IS TO BE DEMOLISHED. WORK SHOWN LIGHT IS EXISTING TO REMAIN. 2. REFER TO ARCHITECTURAL PLANS FOR FURTHER EXTENT OF
- DEMOLITION REQUIREMENTS. 3. ALL EXISTING PIPING SCHEDULED FOR DEMOLITION THAT ROUTES BELOW SLAB SHALL BE GROUND FLUSH WITH FLOOR, PLUGGED
- AND THE FLOOR PATCHED TO MATCH SURROUNDING FLOOR. 4. COORDINATE ALL DEMOLITION WORK WITH OWNER. 5. CONTACT UTILITY LOCATING SERVICE TO LOCATE EXACT
- LOCATION OF UTILITIES BELOW GRADE. 6. MAINTAIN ALL EXISTING DEVICES, EQUIPMENT, ASSOCIATED CIRCUITS ETC. SHOWN AS EXISTING TO REMAIN OR OTHERWISE UNRELATED TO THE SCOPE OF THE PROJECT IN WORKING ORDER.
- CONTRACTOR SHALL REMOVE LAY-IN CEILINGS, LIGHT FIXTURES, ETC. AS REQUIRED FOR CONSTRUCTION WHERE NEEDED PRIOR TO DEMOLITION AND REPLACE SAME AFTER CONSTRUCTION. EXISTING CONDUITS ABOVE CEILINGS SHALL BE RELOCATED
- AND/OR TEMPORARILY REMOVED TO FACILITATE THE INSTALLATION OF NEW EQUIPMENT. 8. THE OWNER SHALL REMOVE ALL ITEMS THEY DESIRED TO SALVAGE PRIOR TO CONSTRUCTION BEGINNING. 9. NOTES AND DRAWINGS ARE BASED UPON A FIELD EXAMINATION
- OF THE SITE AND MAY NOT INDICATE ALL ITEMS. THE CONTRACTOR SHALL VISIT THE SITE AND BECOME FAMILIAR WITH THE SITE AND THE SCOPE OF WORK FOR THE CONTRACT PRIOR TO BID. ANY EXISTING CONDITION WHICH IS APPARENT OR COULD BE REASONABLY INFERRED FROM A VISIT TO THE SITE SHALL NOT BE THE BASIS FOR A CHANGE IN THE CONTRACT AMOUNT. 10. REFER TO NEW WORK PLANS FOR ANY ITEMS THAT MAY REQUIRE
- RELOCATION AFTER DEMOLITION. 11. PROPERLY DISPOSE OF ALL DEMOLISHED ITEMS OFF SITE. 12. REMOVE ALL MISCELLANEOUS CONDUITS, PIPES, ETC, THOUGH NOT SPECIFICALLY SHOWN ON PLAN. THAT ARE EITHER UNUSED OR WILL BECOME UNUSED DUE DEMOLITION ACTIVITIES, IN ORDER TO PROVIDE A "CLEAN" SPACE FOR THE OWNER.
- 13. PROTECT ALL EXISTING SURFACES AND EQUIPMENT DURING CONSTRUCTION. EXISTING ITEMS TO REMAIN SHALL BE ADEQUATELY PROTECTED FROM DEMOLITION AND NEW CONSTRUCTION WORK, AS REQUIRED. ANY ITEMS DAMAGED OR MARRED SHALL BE ADEQUATELY CLEANED OR REPLACED TO THE OWNERS SATISFACTION TO ORIGINAL CONDITION BEFORE
- CONSTRUCTION. 14. PATCH ANY HOLES IN STRUCTURE CREATED BY REMOVAL OF DUCTWORK, CONDUITS, PIPES, ETC. 15. REMOVE ALL ITEMS SHOWN IN WALLS TO BE DEMOLISHED. ALL
- ELECTRICAL CONDUIT AND WIRING SHALL BE REMOVED BACK TO PANELBOARDS AND PROPERLY TERMINATED. 16. SAW CUT FLOOR FOR THE INSTALLATION OF NEW SANITARY PIPING. REFER TO PLUMBING PLANS SHOWING NEW WORK.
- 17. SAVE, CLEAN, AND RE-LAMP ALL LIGHT FIXTURES NOTED AS BEING RELOCATED. REFER TO NEW WORK PLANS AND LIGHT FIXTURE SCHEDULE FOR DESCRIPTIONS, QUANTITIES, AND LOCATIONS OF FIXTURES TO BE RE-USED.

SHEET INDEX

MEP001 COVER SHEET MEP002 THROUGH PENETRATION DETAILS MEP101 SPECIFICATIONS MEP102 SPECIFICATIONS MEP103 SPECIFICATIONS MEP201 ROOF DMP101 HVAC DEMOLITION PLAN

M101 MECHANICAL - HVAC

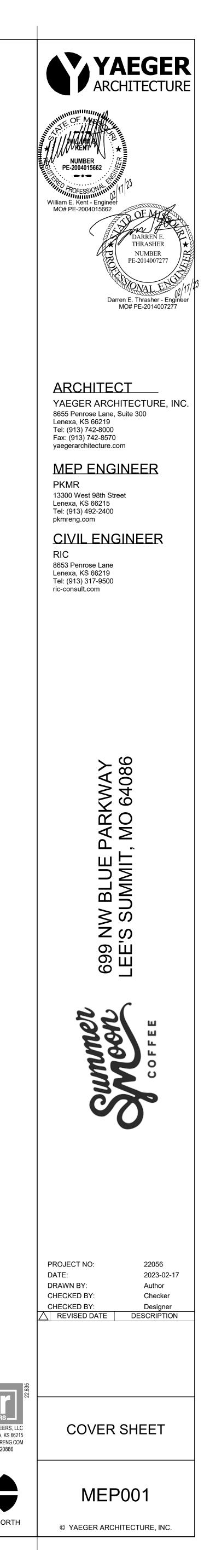
P101 PLUMBING

DE101 ELECTRICAL - DEMOLITION PLAN E101 ELECTRICAL - LIGHTING E201 ELECTRICAL - POWER









FILE PATH: C:\Users\matt perry\Documents\22.635 mep.central_23_matt.perry7ZWGX.rvt PLOT DATE: 2/17/2023 7:48:19 AM	В	С	D
SHEET SIZE: ARCH E1 30" x 42"			
5			

GENERAL MECHANICAL/ELECTRICAL SPECIFICATIONS

GENERAL MECHANICAL, ELECTRICAL AND PLUMBING REQUIREMENTS 1. APPLICABILITY

- A. These general requirements apply to all divisions (21, 22, 23, 26, 27, 28). Refer to individual divisions as included for specific information regarding each trade or scope of work. 2. <u>GENERAL REQUIREMENTS</u>
- A.Furnish & install all labor & materials required for complete, functioning, mechanical & plumbing systems w/ all associated equipment & apparatus as shown on plans.
- B. Obtain & pay for all permits required for execution of this work & shall make arrangements for modifications to water, gas & sewer connections to building as C.All materials shall be new & shall bare UL label where applicable.
- D. Visit site & observe conditions under which work will be done. Any discrepancies shall be called to architect's attention. No subsequent allowance will be made in contract for any error or negligence on contractor's part.
- E. Final acceptance of work shall be subject to condition that all systems, equipment, apparatus & appliances operate satisfactorily as designed & intended. Work shall include required adjustment of systems & control
- equipment installed under these specifications. F. Warrant to owner quality of materials, equipment, workmanship & operation of equipment provided under these specifications for one year from & after
- completion of building & acceptance of mechanical systems by owner. G.All materials installed in plenums shall be noncombustible or have flame/smoke index of no more than 25/50 in accordance w/ ASTM e 84. H. Requirements under Division one & general & supplementary conditions of these specifications shall be part of this section. Contractor shall become thoroughly acquainted w/ its contents as to requirements that affect this Division
- of work required under this section includes material Equipment appliances Transportation. Services. & labor required to complete entire system as required by drawings & specifications. I. The specifications & drawings for project are complementary, & portions of work
- described in one, shall be provided as if described in both. In event of discrepancies, notify engineer & request clarification prior to proceeding w/ work 3. EXTENT OF CONTRACT WORK

A.Provide MEP systems indicated on drawings, specified or reasonably implied. In addition to specific equipment called out in plans and specifications, provide

- every device, component, programming, interlocking and accessory necessary for proper operation and completion of totally functional MEP systems.
- B. In case of an inconsistency between the Drawings and Specifications or within either document, the better quality or the greater quantity of work shall be provided in accordance with the Architect or Engineer's interpretation.
- C.In no case will claims for "Extra Work" be allowed for work about which Contractor could have been informed before bids were taken.
- D. Contractor shall become familiar with equipment provided by other contractors that require plumbing connections and controls.
- E. Electrical work required to install and control plumbing equipment, which is not shown on plans or specified under Division 26. shall be included in Contractor's base bid proposal.
- F. All automatic temperature control devices shall be mounted as indicated in automatic temperature control section of specifications.
- G.The cost of larger wiring, conduit, control and protective devices resulting from installation of equipment which was not used for basis of design as outlined in specifications shall be paid for by the supplying Contractor at no cost to Owner or Architect Engineer
- H. Contractor shall be responsible for providing supervision to other trade Contractors to insure that required connections, interlocking and interconnection of MEP equipment is made to attain intended control sequences and system operation.
- I. Contractor shall obtain complete MEP data on shop drawings and shall list this data on an approved form that shall be presented on request, to other trade Contractors Data shall be complete with wiring diagrams received to date and shall contain necessary data on electrical components of plumbing equipment such as HP, voltage, amperes, watts, locked rotor current to allow other trade Contractors to order support or other equipment coordinated as required in his 4. DEFINITIONS
- A.Whenever used in these specifications or drawings, following terms shall have indicated meanings: B. Furnish: term "Furnish" is used to mean "supply & deliver to project site. Ready
- for unloading, unpacking, assembly. Installation & similar operations. C.Install: term "Install" is used to describe operations at project site including actual "unloading, unpacking. Assembly. Erection. Placing. Anchoring. Applying, working to dimension. Finishing, curing, protecting, cleaning. & similar operations.
- D. Provide: term "Provide" means "to Furnish & Install. Complete & ready for intended use." furnished by owner or furnished by others: item will be furnished by owner or others. It is to be installed & connected under requirements of this Division, complete & ready for operation, including items incidental to work, including services necessary for proper installation & operation. Installation shall
- be included under guarantee required by this Division. E. Engineer: where referenced in this Division, "Engineer" is engineer of record & design professional for work under this Division, & is consultant to, & an authorized representative of, architect. As defined in general &/or supplementary conditions. When used in this Division. It means increased involvement by. & obligations to, engineer, in addition to involvement by. & obligations to, "Architect"
- F. AHJ: local code &/or inspection agency (authority) having jurisdiction over work. G.The terms "Approved equal", "Equivalent". Or "Equal" are used synonymously & shall mean "accepted by or acceptable to engineer as equivalent to item or manufacturer specified".
- H. The term "approved" shall mean labeled, listed. Or both. By nationally recognized testing laboratory (e.g. UL. ETL. CSA). & acceptable to AHJ over this project. 5. PREBID SITE VISIT
- A.Prior to submitting bid. Visit site of proposed work & become fully informed as to conditions under which work is to be done. Failure to do so will not be considered sufficient justification to request or obtain extra compensation over & above contract price.
- 6. MATERIAL & WORKMANSHIP A.Provide new material, equipment. & apparatus under this contract unless otherwise stated herein. Of best quality normally used for purpose in good
- commercial practice & free from defects. Model numbers listed in specifications or shown on drawings are not necessarily intended to designate required trim, written descriptions of trim govern model numbers. B. Pipe, fittings, specialties & valves shall be manufactured in USA. Work performed under this contract shall provide neat & "workmanlike" appearance when completed to satisfaction of architect & engineer. Workmanship shall be finest possible by experienced mechanics. Installations shall comply w/ applicable codes & laws. Complete installation shall function as designed & intended w/ respect to efficiency, capacity, noise level. etc. Abnormal noise caused by rattling equipment, piping, ducts, air devices & squeaks in rotating components will not be acceptable. In general materials & equipment shall be of commercial specification grade in quality. Light duty & residential equipment is
- not acceptable. C.Remove from premises waste material present from work, including cartons, crating, paper, stickers, &/or excavation material not used.
- D. Clean equipment installed under this contract to present neat & clean installation at completion. E. Repair or replace public & private property damaged as result of work performed
- under this contract to satisfaction of authorities & regulations having jurisdiction. 7. COORDINATION A.Coordinate work w/ other trades so various components of systems will be
- installed at proper time will fit available space & will allow proper service access for maintenance. Components which are installed without regard to above shall be relocated at no additional cost to owner. B. Obtain equipment submittal information for all pieces of equipment to be
- connected to from other trades that clearly indicates all connection requirements, locations, sizes, and similar requirements. Obtain this information in ample time to coordinate other trade submittals and equipment coordination. Where requirements differ from that on plans or differs from provisions made in the work, immediately notify the architect/engineer. Do not proceed with work that is incompatible with equipment provided. C.Unless otherwise indicated, general contractor will provide chases & openings in
- building construction required for installation of systems specified herein. Contractor shall furnish general contractor w/ information where chases & openings are required. D. Keep informed as to work of other trades engaged in construction of project &
- execute work in manner as to not interfere w/ or delay work of other trades. Figured dimensions shall be taken in preference to scale dimensions. E. Contractor shall take his own measurements at building, as variations may
- occur. Contractor will be held responsible for errors that could have been avoided by proper checking & inspection.

connection, and operation.

electrical.

applicable:

progress.

remedy impacts.

ORDINANCES & CODES

10. <u>STANDARDS</u>

work.

12. <u>SUBSTITUTIONS</u>

included

for comparison.

as an alternate.

materials and equipment required.

new. unused and without damage.

F. Provide materials w/ trim that will properly fit types of ceiling, wall. Or floor finishes actually installed. Model numbers listed in specifications or shown on drawings are not intended to designate required trim. G.Coordinate construction operations included in different sections of the

- specifications to ensure efficient and orderly installation of each part of the work. Coordinate construction operations, included in different sections, that depend on each other for proper installation, connection, and operation. H. Each contractor shall coordinate its construction operations with those of other contractors and entities to ensure efficient and orderly installation of each part of the work. Each contractor shall coordinate its operations with operations, included in different sections, that depend on each other for proper installation,
- I. Schedule construction operations in sequence required to obtain the best results where installation of one part of the work depends on installation of other components, before or after its own installation
- J. Coordinate installation of different components with other contractors to ensure maximum accessibility for required maintenance, service, and repair. K. Make adequate provisions to accommodate items scheduled for later installation. L. Where availability of space is limited, coordinate installation of different components to ensure maximum performance and accessibility for required
- maintenance, service, and repair of all components, including mechanical and M.Prepare coordination drawings if limited space availability necessitates maximum utilization of space for efficient installation of different components or if coordination is required for installation of products and materials fabricated by separate entities. Content: project-specific information. drawn accurately to scale. Do not base coordination drawings on reproductions of the contract
- documents or standard printed data. Include the following information, as 1) Indicate functional and spatial relationships of components of architectural, structural, civil, mechanical, and electrical systems. 2) Indicate required installation sequences.
- 3) Indicate dimensions shown on the contract drawings and make specific note of dimensions that appear to be in conflict with submitted equipment and minimum clearance requirements. Provide alternate sketches to architect for resolution of such conflicts. Minor dimension changes and difficult installations will not be considered changes to the contract. N. Meetings: conduct project coordination meetings at regular intervals. Project coordination meetings are in addition to specific meetings held for other purposes, such as progress meetings and preinstallation conferences.
- 1) Attendees: each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the conference shall be familiar with project and authorized to conclude matters relating to the work. Notify architect of meeting. 2) Agenda: review and correct or approve minutes of the previous coordination meeting. Review other items of significance that could affect
- 3) Combined contractor's construction schedule: review progress since the last coordination meeting. Determine whether each contractor is on time, ahead or behind schedule, in relation to construction schedule. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the contract time. Discuss
- impact of various contractor schedules upon other contractors and how to 4) Review present and future needs of each contractor present O.After shop drawings have been reviewed and approved by all parties, transmit a set of submittals to each other trade (eq Plumbing, Mechanical, Electrical,
- Controls, etc) that will interface with installation. Each other contractor shall review the submittal for coordination and return a stamped submittal indicating they have reviewed the submittal for coordination purposes. ARCHITECTURAL VERIFICATION AND RELATED DOCUMENTS
- A.Contractor shall consult all Architectural Drawings and specifications in their entirety incorporating and certifying all millwork, furniture, and equipment rough-in including utility characteristics such as voltage, phase, amperage, pipe sizes. duct sizes. including height, location and orientation. Shop drawings incorporating these requirements should be submitted to the Architect for
- approval prior to installation or rough in. A.Work performed under this contract shall. At minimum, be in conformance w/ applicable national, state & local codes having jurisdiction B. Installation work performed under this contract shall be in strict compliance w/
- current applicable codes adopted by local AHJ including any amendments & standards as set forth by National Fire Protection Association (NEPA) Underwriters Laboratories (UL), Occupational Safety & Health Administration (OSHA). American Society of Mechanical Engineers (ASME), American Society of Heating, Refrigeration, & Air Conditioning Engineers (ASHRAE). American national standards institute (ANSI), American Society of Testing Materials (ASTM) & other national standards & codes where applicable.
- C.Where contract documents exceed requirements of referenced codes. Standards, etc., contract documents shall take precedence. D. Procure & pay for permits & licenses required for accomplishment of work herein described. Where required, obtain. Pay for & furnish certificates of inspection to owner. Contractor will be held responsible for violations of law.
- A.Drawings and specifications indicate minimum construction standard. Should any work indicated be sub standard to any ordinances, laws, codes, rules or regulations bearing on work, Contractor shall promptly notify Architect Engineer in writing before proceeding with work so that necessary changes can be made. However, if the Contractor proceeds with work knowing it to be contrary to any ordinances, laws, rules, and regulations, Contractor shall thereby have assumed full responsibility for and shall bear all costs required to correct non complying
- 11. PROTECTION OF EQUIPMENT & MATERIALS A.Store & protect from damage equipment & materials delivered to job site. Cover as required to protect from dirt & damage. Plug or cap open ends of ductwork & piping systems while stored & installed during construction when not in use to prevent entrance of debris into systems. Equipment & material that has been damaged by construction activities will be rejected, & contractor is obligated to furnish new equipment & material of like kind. Keep premises broom clean from foreign material created during work performed under this contract. Piping,
- equipment, etc. Shall have neat & clean appearance at completion. A.The base bid shall include only products from manufacturers specifically named in drawings & specifications. No substitution will be considered prior to receipt of bids unless written request for approval to bid has been received by engineer at least ten calendar days prior to date for receipt of bids. Request shall include name of material or equipment for substitution & complete description of proposed substitute including drawings, cuts, performance & test data & other information for evaluation. Statement setting forth changes in other materials,
- equipment or other work that incorporation of substitute would require shall be B. The intent of these specifications is to allow ample opportunity for Contractor to use his ingenuity and abilities to perform the work to his and the Owner's best
- advantage, and to permit maximum competition in bidding on standards of C.Material and equipment installed under this contract shall be first class quality,
- D. In general, these specifications identify required materials and equipment by naming one or more manufacturer's brand, model, catalog number and/or other identification. The first named manufacturer or product is used as the basis for design; other manufacturers named must furnish products consistent with specifications of first named product as determined by Engineer. Base bid proposal shall be based only on materials and equipment by manufacturers
- named, except as hereinafter provided. E. Where materials or equipment are described but not named, provide required items of first quality, adequate in every respect for intended use. Such items shall be submitted to Architect Engineer for review prior to procurement.
- F. Materials and equipment proposed for substitutions shall be equal to or superior to that specified in construction, efficiency, utility, aesthetic design, and color as determined by Architect Engineer whose decision shall be final and without further recourse. Physical size of substitute brand shall be no larger than space provided including allowances for access for installation and maintenance.
- Requests must be accompanied by complete descriptive and technical data including manufacturer's name, model and catalog number, photographs or cuts, physical dimensions, operating characteristics and any other information needed G.The burden of proof of merit of proposed substitute is upon proposer. Engineer's
- decision of approval or disapproval to bid of proposed substitution shall be final. Terms approved", "approved equal", & "equal" refer to approval by engineer as an acceptable alternate bid. No substitutions will be considered that are not bid H. No material substitutions shall be considered for approval after to award of
- contract. Coordinate & verify w/ other trades whether or not substituted equipment can be installed as shown on construction drawings without modification to associated systems or architectural or engineering design.

- Include additional costs for architectural & engineering design fees in bid if drawing modifications are required because of substituted equipment. 13. SHOP DRAWINGS
- A.Equipment to be furnished under this contract, items requiring coordination between contractors & sheet metal ductwork fabrication drawings. Before submitting shop drawings verify equipment submitted is mutually compatible & suitable for intended use & will fit available space & allow ample room for maintenance. Engineer's checking & subsequent approval of such shop drawings will not relieve contractor from responsibility for errors in dimensions, details, size of members, quantities, omissions of components or fittings; coordination of electrical requirements; or for coordinating items w/ actual building conditions. Proceed w/ procurement & installation of equipment only after receiving
- approved shop drawings relative to each item. B. Submittal data shall be neatly organized, identified & indexed. Each item or model number shall be clearly marked & accessories indicated. Label catalog data w/ equipment identification acronym or number as used on drawings & include performance curves, capacities, sizes, materials, finishes, wiring diagrams & deviations from specified equipment or materials. Mark out inapplicable items. Shop drawings will be returned without review if above mentioned requirements are not met.
- C.Requirements shall be met electronically & submitted as pdf in files less than D. Contractor's stamp, which shall certify that stamped drawings have been checked by contractor, comply w/ drawings & specifications, & have been
- coordinated w/ other trades E. Transmit submittals as early as required to support project schedule. Allow for two weeks a/e review time, plus duplication of this time for resubmittals, if required. Transmit submittals as soon as possible after notice to proceed & before construction starts. Engineer's submittal reviews will not relieve contractor from responsibility for errors in dimensions, details, size of members, or
- quantities; or for omitting components or fittings; or for not coordinating items w/ actual building conditions F. Final copies shall be furnished to owner as part of O&M documents in hard & electronic formats. 14. OPERATION & MAINTENANCE INSTRUCTIONS
- A.Collect & compile complete brochure of equipment furnished & installed on this project. Include operational & maintenance instructions, manufacturer's catalog sheets, wiring diagrams, parts lists, approved shop drawings, test & balance reports, & descriptive literature as furnished by equipment manufacturer. Include an inside cover sheet that lists project name, date, owner, architect, consulting engineer, general contractor, sub-contractor, & an index of contents. Submit three copies of literature bound in 3-ring binders w/ index & tabs separating equipment types to architect at termination of work. Final approval of plumbing systems will be withheld until manual is received & deemed complete by architect & engineer. Provide "as-built" drawings (see Division 1 & general conditions)
- B. These requirements may shall also be provided to the owner in a well organized pdf electronic submission & delivered on a DVD or USB thumbdrive. . <u>TRAINING</u>
- A.Provide factory trained & authorized representative to train owner's designated personnel on operation & maintenance of equipment provided for this project. Provide training to include but not be limited to an overview of system &/or equipment as it relates to facility as whole; operation & maintenance procedures & schedules related to startup & shutdown, troubleshooting, servicing, preventive maintenance & appropriate operator intervention; & review of data included in operation & maintenance manuals. Submit certification letter to architect stating that owner's designated representative has been trained as specified herein. Letter shall include date, time, attendees & subject of training. Contractor & owner's representative shall sign certification letter indicating agreement that training has been provided. Schedule owner training w/ at least 7 days' advance notice.
- 16. <u>SPARE PARTS</u> A. Furnish to owner, w/ receipt one set of spare filters of each type required for each unit. In addition to spare set of filters, install new filters prior to testing, adjusting, & balancing work & before turning system over to owner. B. Furnish one complete set of belts for each fan.
- 17. EQUIPMENT LABELS: A.Material and thickness: multilaver, multicolor, plastic labels for mechanical engraving, 1/16 inch thick, and having predrilled holes for attachment hardware. Black letters on white background.
- B. Minimum label size: length and width vary for required label content, but not less than 2-1/2 by 3/4 inch. C.Minimum letter size: 1/4" for name of units if viewing distance is less than 24 inches, 1/2" for viewing distances up to 72" & proportionately larger lettering for
- greater viewing distances. Include secondary lettering two-thirds to three-fourths the size of principal lettering. **18. WARRANTIES**
- A.Warrant each system & each element thereof against all defects due to faulty workmanship design or material for period of 12 months from date of substantial completion unless specific items are noted to carry longer warranty in construction documents or manufacturer's standard warranty exceeds 12 months. Remedy all defects, occurring within warranty period(s) stated in general conditions & Division 1. Warranties shall include labor & material. Make repairs or replacements without any additional costs to owner. Perform remedial work
- promptly, upon written notice from engineer or owner. B. At time of substantial completion, deliver to owner all warranties in writing & properly executed including term limits for warranties extending beyond one year period. Each warranty instrument being addressed to owner & stating commencement date & term.
- 9. <u>CUTTING & PATCHING</u> A.Perform cutting of walls, floors, ceilings, etc. As required to install work under this
- section. Obtain permission from architect prior to cutting. Do not cut or disturb structural members without prior approval from architect. Cut holes as small as possible. General contractor shall patch walls, floors, etc. As required by work under this section. Patching shall match original material & construction. Repair & refinish areas disturbed by work to condition of adjoining surfaces in manner satisfactory to architect. 0. EXCAVATION AND BACKFILL
- A.Perform necessary excavation to receive work. Provide necessary sheathing, shoring, cribbing, tarpaulins, etc. For this operation, and remove it at completion of work. Perform excavation in accordance with appropriate section of these specifications, and in compliance with osha safety standards. B. Excavate trenches of sufficient width to allow ample working space, and no
- deeper than necessary for installation work. C.Conduct excavations so no walls or footings are disturbed or injured. Backfill excavations made under or adjacent to footing with selected earth or sand and tamp to compaction required by architect_engineer. Mechanically tamp backfill
- under concrete and pavings in six inch layers to 95% standard density, reference Division 2. D. Backfill trenches and excavations to required heights with allowance made for settlement. Tamp fill material thoroughly and moistened as required for specified compaction density. Dispose of excess earth, rubble and debris as directed by
- architect. E. When available, refer to test hole information on architectural or civil drawings or specifications for types of soil to be encountered in excavations.
- 1. <u>ROUGH-IN</u> A.Coordinate rough-in w/ general construction & other trades. Conceal piping & conduit rough-in except in unfinished areas & where otherwise shown. 2. STRUCTURAL STEEL
- A.Structural steel used for support of equipment, ductwork & piping shall be new, clean, & conform to ASTM a-36. Support mechanical components from building structure. Do not support mechanical components from ceilings, other mechanical or electrical components, & other non-structural elements.
- 23. ACCESS DOORS A.Provide access doors in ceilings, walls, etc. Where indicated or required for access or maintenance to concealed valves & equipment installed under this section. Provide concealed hinges, screwdriver-type lock, anchor straps; manufactured by Milcor, Zurn, Titus, or equal. Obtain architect's approval of type, size. Location & color before ordering. 24. PENETRATIONS
- A.Seal mechanical floor, exterior wall & roof penetrations watertight & weathertight Seal around mechanical penetrations w/ 3M CP-25 fire barrier caulk (thickness as required & recommended by manufacturer) to maintain resistance rating of fire-rated assemblies. Provide prefabricated roof curbs manufactured by Custom Curb, Pate, Thycurb or approved equal. Provide roof curb w/ factory installed wood nailer: welded. 18 gauge galvanized steel shell, base plate & flashing: 1-1/2" thick, 3 pound rigid insulation; fully mitered 3-inch raised cant; cover of weather-resistant, weather-proof material & pipe collar of weather-resistant
- material w/ stainless steel pipe clamps. Make roof penetrations by authorized roofing contractor when required. 5. MOTORS & STARTERS
- A.Provide motors & starting equipment where not furnished w/ equipment package. Motors shall have copper windings, class b insulation, & standard squirrel cage w/ starting torque characteristics suitable for equipment served. Motors for air handling equipment shall be selected for quiet operation. Each motor shall be

- checked for proper rotation after electrical connection has been completed. Provide dripproof enclosure for locations protected from weather & not in air stream of fan; & totally enclosed fan cooled enclosure for motors exposed to weather. Motors shall be manufactured by Century, GE, Westinghouse, or approved equal. Provide every motor, except fractional horsepower single phase motors w/ an approved type of "built-in" thermal overload protection, w/ motor starter. Each starter shall be provided w/ overload heaters sized to motor rating & every three phase motor starter shall have overload heaters in each phase. Ambient compensated heaters shall be installed wherever necessary. Unless noted otherwise, motor starters shall be furnished by Division 22/23 contractor for installation & connection by Division 26 contractor. Starters shall be Allen-Bradley, Clark, Furnas, Square D, or approved equal. 26. ELECTRICAL WIRING
- A.Line voltage wiring shall be provided by Division 26. Line voltage control & interlock wiring for mechanical systems shall also be provided by Division 26 contractor. Low voltage control wiring shall be provided by Division 22/23 contractor. Furnish wiring diagrams to Division 26 contractor as required for proper equipment hookup. Coordinate w/ Division 26 contractor actual wire sizing amps for submitted mechanical equipment to ensure proper installation 27. DISCONNECT SWITCHES
- A.Provide heavy-duty horsepower rated safety switches rated in accordance with NEMA enclosed switch standard KS 1 1969 and I98 standard. B. Each piece of electrical equipment shall be provided with a disconnecting
- C.Equivalents by: GE, Eaton, Siemens, Square D. 28. REFRIGERANT & OIL
- A.Provide full refrigerant & oil charge in refrigeration systems. Maintain for full term of warranty. 29. EQUIPMENT FURNISHED BY OTHERS
- A.Provide necessary equipment & accessories that are not provided by equipment supplier or owner to complete installation of cooking equipment, washing equipment, etc., furnished by others, in locations as indicated on drawings &/or described in general notes to this contractor. Equipment & accessories not provided by equipment supplier may include flues, vents, intakes, associated roof jacks & caps to outdoors, dampers. In-line fans, roof fans, control interlocks, etc. As required for proper operation of complete system in accordance w/ manufacturer's instructions. Contractor shall be responsible for correct rough-in dimensions, & shall verify same w/ architect &/or equipment supplier prior to service installations.
- 30. SETTING, ADJUSTMENT AND EQUIPMENT SUPPORTS A.Work shall include mounting, alignment and adjustment of systems and equipment. Set equipment level on adequate foundation and provide proper anchor bolts and isolation as shown, specified or required by manufacturers in installation instructions. Level, shim and grout equipment bases as recommended by manufacturer. Mount motors, align and adjust drive shafts and
- belts according to manufacturer's instructions. B. Equipment failures resulting from improper installation or field alignment shall be repaired or replaced by Contractor at no cost to Owner. C.Floor or pad mounted equipment shall not be held in place solely by its own dead
- weight. Include anchor fastening in all cases. D. Provide floor or slab mounted equipment with 3 1/2" high concrete bases unless specified otherwise. Individual concrete pad shall be no less than 4" wider and 4" longer than equipment, and shall extend no less than 2" from each side of equipment.
- E. Provide each piece of equipment or apparatus suspended from ceiling or mounted above floor level with suitable structural support, platform or carrier in accordance with best-recognized practice. Verify that structural members of buildings are adequate to support equipment and unless otherwise indicated on plans or specified, arrange for their inclusion and attachment to building structure. Provide hangers with vibration isolators. F. Submit details of hangers, platforms and supports together with total weights of
- mounted equipment to Architect_Engineer for review before proceeding with fabrication or installation. MISCELLANEOUS REMODELING WORK A.Remove all unused equipment, ductwork, piping & associated supports. Cap ductwork & piping at mains & seal air & water tight. Provide items of HVAC systems modification required because of building remodeling, as noted on drawings or necessary for proper operation. Match existing materials &
- construction techniques when modifying existing systems unless specifie otherwise. Coordinate additional requirements w/ general contractor & architect. Seal airtight existing ductwork required to be abandoned in place or not in use at termination of work. Cap & seal weathertight existing roof curbs & roof openings to be abandoned in place as result of equipment removal. Clean & rebalance existing ductwork, diffusers, registers, & grilles intended for reuse as required or as indicated on drawings. Clean & refurbish existing HVAC equipment intended for reuse as required for proper operation including replacement of filters, belts, motors, remote controls, & safety interlocks. 32. BUILDING OPERATION
- A.Comply w/ schedule of operations as outlined in architectural portions of this specification. Building shall be in continuous operation. Accomplish work requiring interruption of building operation at time when building is not in operation, & only w/ written approval of building owner &/or tenant. Coordinate interruption of building operation w/ owner &/or tenant minimum of seven days in advance of work.
- B. The following Work shall be performed at night or weekend other than holiday weekends as directed and coordinated with the Owner: All tie-in, cut-over and modifications to the existing electrical system and other existing system requiring tie-ins or modifications shall be arranged and scheduled with the Owner to be done at a time as to maintain continuity of the service and not interfere with normal building operations. 33. VIBRATION ISOLATION
- A.Provide vibration isolation equipment & materials by single manufacturer. Amber booth, kinetics noise control, mason industries, inc., vibration eliminator co., inc., & vibration mounting & controls. General requirements: select vibration isolators by weight distribution to produce uniform deflection. Isolators shall operate in linear portion of their load versus deflection curves. Spring isolators shall have 50 percent excess capacity without becoming coil bound. Coat vibration isolators w/ factory-applied paint. Coat vibration isolators exposed to weather & corrosion w/ factory-applied protection. Install & adjust isolators in accordance w/ manufacturers instructions.
- 4. <u>FIRE BARRIERS</u> A.General: for penetrations through fire-resistance-rated constructions, including both empty openings and openings containing penetrating items, provide through-penetration firestop systems that are produced and installed to resist spread of fire according to requirements indicated, resist passage of smoke and other gases, and maintain original fire-resistance rating of construction penetrated. 35. <u>WELDING</u>
- A.Contractor shall be responsible for quality of welding and suitability of welding procedures. All welding shall be in accordance with American Welding Society standard B3.0 and ANSI standard b31.1 B. Welded pipe joints shall be made by certified welding procedures and welders.
- Welding electrodes shall be type and material recommended by electrode manufacturer for materials to be welded. All pipe and fittings ends shall be beveled a minimum of 30 degrees prior to welding. C.Only welders who have successfully passed welder qualifications tests in
- previous 12 months for type of welding required shall do welding. Each welder shall identify his work with a code marking before starting any welded pipe fabrication. Contractor shall submit three copies of a list of welders who will work on project listing welders' code, date and types of latest gualification test passed by each welder.
- D. Welded joints shall be fusion welded in accordance with level AR3 of American Welding Society standard AWS D10.9 "Standard For Qualification Of Welding Procedures And Welders For Pipe And Tubing". Welders qualified under national certified pipe welding bureau will be acceptable. E. Bevel all piping and fittings in accordance with recognized standards by flame
- cutting or mechanical means. Align and position parts so that branches and fittings are set true. Make changes in direction of piping systems with factory made welding fittings. Make branch connections with welding tees or forged

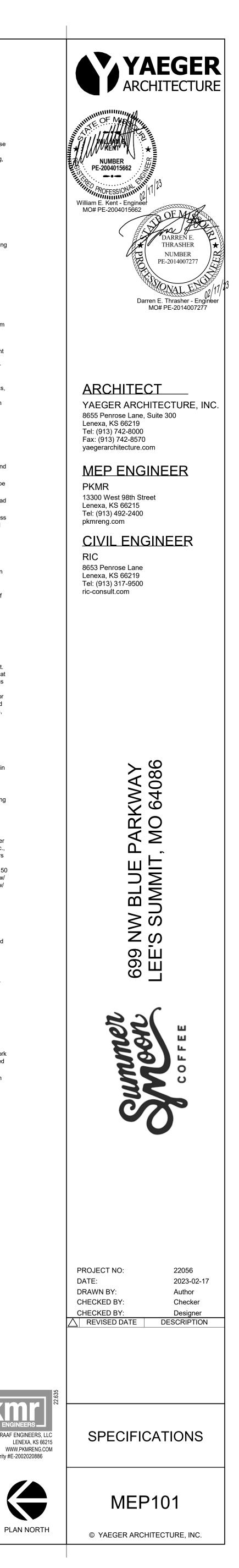
END OF GENERAL MEP REQUIREMENTS











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MECHANICAL SPECIFICATIONS

- DIVISION 210000 FIRE SPRINKLER SYSTEM MODIFICATIONS
- 1. FIRE SPRINKLER GENERAL REQUIREMENTS A.Refer to GENERAL MECHANICAL, ELECTRICAL & PLUMBING requirements 2. SYSTEM DESCRIPTION
- A.Provide modifications to existing wet or combination wet/dry sprinkler system as required for building, or area of work shown on drawings, complete w/ alarm valves, drain valves, mains, risers, branches, sprinkler heads, test pipes, gauges, exterior electric bell & dialers as shown or required. Coordinate all wiring & conduit for a complete & functional installation.
- B. An approved automatic sprinkler contractor shall perform all work under this heading. System shall be installed in strict accordance w/ NFPA 13 Underwriters Laboratories (UL), & must be acceptable to owner's insurer, authority having jurisdiction & all applicable local, state & national codes & standards. Where contract documents exceed requirements of referenced codes, standards, etc., contract documents shall take precedence C.Sprinkler system shall be certified. Contractor shall retain certification until
- contractor turns copies of certificates & permits over to owner. Contractor shall be approved & state licensed for design & installation of fire protection systems. Work done under this section shall be performed only by a contractor whose workmen are experienced & regularly engaged in installation of fire protection
- D. System shall be hydraulically designed. Design of sprinkler system shall coordinate main & branch lines w/ structure, ceilings, piping, ductwork & light fixtures. Entire building shall be sprinkled.
- E. Work shall include, but shall not necessarily be limited to following: design & installation of a complete wet-pipe fire protection sprinkler system for project space. Portions of systems subject to freezing or temperatures below 40' f shall be protected against freezing as required by NFPA 13. Contractor shall be responsible for repairs & for all costs incurred from damage caused by freezing of fire protection system
- 3. SYSTEM DESIGN
- A.This contractor shall verify design criteria & rating hazards with owner's insurer prior to designing system. Waterflow & pressure test data shall be acquired before system is calculated & be dated not more than 12 months prior to submittal of sprinkler drawings. B. Contractor shall verify with authority having jurisdiction any minimum safety
- factor requirements. Regardless, demand shall not be less than 10% below supply at demand point.
- C.The contractor shall be fully responsible for hydraulic calculations, arrangements for & cost of flow tests, final system design, & layout of all components of system as required for approval by owner's insurer, authority having jurisdiction & all applicable local, state & national codes & standards
- D. The contractor shall be fully responsible for coordinating system layout with other contractors. Changes to system design due to lack of coordination shall be paid for by contractor. E. Sprinkler spacing shall conform to NFPA 13. Extended coverage sprinklers shall
- not be used in unfinished (shell) spaces. Hydraulic area of operation shall not be reduced as allowed by NFPA 13 for areas utilizing quick response sprinklers. 4. SHOP DRAWINGS
- A.Shop drawings & hydraulic calculations shall be furnished to architect &/or engineer, for his approval. Architect will forward one set to contractor after final approval. Submitted shop drawings shall bear a stamp indicating approval by authority having jurisdiction. Provide drawings electronically in pdf format.
- B. Shop drawings shall meet requirements of NFPA 13 & shall include following: 1) Submit working plans per NFPA 13 including layout drawings of complete overhead sprinkler system indicating relationship of sprinkler piping & sprinklers to all other overhead items including ceiling grid & tiles, light fixtures, diffusers, registers, grilles, ductwork, etc. Location of risers, piping, etc., shall be as inconspicuous as possible & shall fulfill all functional requirements. System design capabilities & water demands shall also be noted on drawings.
- 2) Submit complete details & sections as required to clearly define & clarify design, including a materials list describing all proposed materials by manufacturer's name & catalog number. 3) Hydraulic calculations.
- 4) Product data for all fire sprinkler system components. Provide next to sprinkler riser main, a printed sheet, protected by glass or a transparent plastic cover, giving brief instructions regarding control, emergency procedure & other data as required by NFPA 13. For hydraulically designed
- systems, a placard must be permanently attached to riser indicating location, & basis of design (discharge density & system demand). 5. SYSTEM MANUAL A.Upon completion of installation, & as a condition of its acceptance, contractor
- shall compile three 8-1/2" by 11" manuals, firmly bound in heavyweight plastic or paper cover to withstand hard use. Loose-leaf binding is not acceptable. Manuals shall be delivered to architect, & shall contain following items: 1) Identification clearly visible on or through cover, name of project & "fire
- sprinkler system manual". 2) Neatly typed index at front with all emergency information clearly identified. 3) Complete list of all system components with manufacturer's names, catalog numbers, & all data for ordering parts.
- 4) One copy of record drawings, as described above. 5) All information required to secure emergency repairs or service.
- 6) Contractor's "material & test certificate(s) for sprinkler system", as described in NFPA 13.
- 6. SPRINKLER HEADS A.Sprinkler heads - as required by NFPA 13 manufactured by Viking, Reliable, Type and Victaulic Semi recessed chrome plated brass where exposed. Sidewall where required. Rough brass where concealed & exposed in
- mechanical rooms. Concealed heads where located in sheet rock ceilings Provided w/ necessary hardware for mounting into hard or acoustical ceilings. Reference architectural drawings for ceiling types & locations. Where no ceilings occur, provide standard brass upright or pendant as required by construction. B. Sprinkler heads shall be underwriters-approved, automatic spray type.
- Temperature rating of heads shall be 165 deg f., except furnish 212 deg f. Heads where required. C.Location of sprinkler heads is not shown on drawings but nevertheless shall be furnished & installed to meet requirements of specifications & NFPA. Center
- heads in 2x2 tile spacing in acoustic ceilings. Location of heads shall be as approved by architect. Provide head guards where required by NFPA. Furnish spare heads & wrenches mounted in metal cases where directed by architect & as required by NFPA. 7. PIPE, FITTINGS, & HANGERS
- A.Sprinkler piping 2-1/2" & larger shall be schedule 10 or schedule 40 black steel. Sprinkler piping 2" & smaller shall be schedule 40. Pipes shall have welded, threaded, or mechanically joined fittings, based on pipe material & size per NFPA 13 requirements. Piping shall be UL listed & FM approved.
- B. Acceptable alternatives to schedule 10 & schedule 40 pipe shall be manufactured to standards recognized by NFPA 13. Threaded pipe shall have a corrosion resistance rating of 1.0 or greater. Crimp-type couplings shall not be used. Threadable thinwall pipe with corrosion resistance rating less than 1.0 not permitted.
- C.Hangers shall be of type & spacing to support pipes & meet approval of UL & FM. Hangers shall be attached to structural components only. Support risers from structure below. Do not support exposed risers from clamps above floor. D. Conceal mains back or above construction in finished areas. Piping shall be
- designed to provide maximum head room in all areas. Piping shall not pierce ductwork. E. Pitch all dry pipe sprinkler piping to drain according to NFPA requirements, without exception & without traps. Wet pipe sprinkler systems may be pitched to
- drain or run level, but piping must be installed straight & true, without traps. F. Provide drain valves & inspector test valves as necessary to drain system & meet requirements of NFPA.
- 8. TESTING & ACCEPTANCE

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- A.Upon completion of each phase of installation, each system shall be tested in conformance with local code requirements & as noted below. Contractor shall furnish all labor & equipment required to properly test all sprinkler equipment installed under this contract & he shall assume all costs involved in making tests, & repairing &/or replacing all damage resulting therefrom. B. Upon completion of systems installation, & prior to acceptance by engineer &
- owner, this contractor shall make general operating tests to demonstrate that all equipment & systems are in proper working order, & are functioning in conformance with intent of drawings & specifications. C.After completion of installation, test, retest, & make all corrections necessary to
- secure acceptance by fire marshal &/or any other authority having jurisdiction. Furnish all test equipment & personnel required. D. After completion of all installation, tests, etc., & prior to final acceptance date, contractor shall instruct building owner & his selected personnel in operation of
- sprinkler system & procedure to conduct quarterly main drain tests as required by NFPA 25. 9. EXECUTION
- A.All modifications & additions shall be performed without hampering proper

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- resolve conflicts. as required.
- monitoring panel as required. snugly around piping.
- H. Piping shall be routed parallel to building lines. I. Seal all fire protection floor, wall & roof penetrations watertight & weathertight.

END OF DIVISION 210000 DIVISION 220000 - PLUMBING 1. PLUMBING GENERAL REQUIREMENTS

- requirements PIPING & INSULATION
- ASHRAE 90.1.
- PIPING IDENTIFICATION
- wording prior to purchase of pipe markers.
- . VALVES B. Ball valves - 2" & under - bronze full port w/ teflon seats. bronze ball & insulated
- handle polyurethane insulation cover.
- E. Installation
- gas conveyed in system.
- 5. <u>FIXTURES</u>

- E. Seats: Church, Olsonite, Bemis Or Beneke.
- H. Flushvalves: Sloan, Zurn, Toto I. Drains by Wade, Zurn, Woodford, Smith, Josam.
- overflow drains
- Wade. Woodford or Zurn.
- 6. PLUMBING EQUIPMENT

- and pipe to floor drain.
- and strainer.
- vacuum breaker in plain brass finish.
- shall be Watts series 8 non-removable type.

PLUMBING EXECUTION

from line.

- operation of remaining system. Shop drawing submittals shall indicate by calculation total system compliance
- B. Provide installation of water flow switches & tamper switches on bypass lines & shut off valves. Wiring by electrical contractor. Coordinate w/ fire alarm system. C.Submit drawings & calculations to state fire marshall, owner's insurance company & local building officials for approval.
- D. Furnish all gauges, pumps, compressors & equipment required to perform tests. Coordinate all scheduling & work with other trades so as to prevent conflicts, & to ensure orderly progress of work, with a minimum of delays. When sprinkler piping is installed without coordinating with other trades & conflicts occur, sprinkler piping shall be relocated as required at no additional cost to owner to
- E. Piping in areas having ceilings, other than underside of roof deck, shall be concealed. Piping in areas without ceilings may be exposed but kept at a minimum distance from deck. All piping shall be clean & free of rust. Install system such that all piping is rigidly secured & supported. All ductwork, lights, structural members & main runs of piping shall take precedence over sprinkler piping. Cutting of structural members for passage of sprinkler pipes or hangers will not be permitted. All horizontal piping in ceiling space shall be at an elevation above top of light fixtures & air outlets to allow for access to light fixtures & air outlets without removing horizontal piping. Route all sprinkler piping & provide all offsets, bends, & elbows around all mechanical, electrical, & structural members
- F. Contractor shall coordinate with fire alarm contractor &/or electrical contractor connection of fire sprinkler alarm devices to fire alarm system or fire sprinkler G.Where exposed piping passes through finish work, chrome plated (or other finish
- acceptable to architect) split wall plates or escutcheons shall be installed to fit
- Caulk around fire protection penetrations with approved fire barrier caulk as required to maintain fire resistance rating of fire-rated assemblies.
- A.Refer to GENERAL MECHANICAL, ELECTRICAL AND PLUMBING
- A.Water piping all water piping shall be 95-5 tin-antimony joined type L copper. Insulate w/ fiberglass w/ ASJ & PVC covers. Thickness in accordance w/
- B. Waste & vent piping CI bell & spigot below grade or hubless CI w/ neoprene gasket fittings w/ stainless steel bands above grade. Sched 40 PVC w/ solvent welds may be used where allowed by local code. PVC not allowed in plenums. C.Roof/storm drain piping - CI bell & spigot below grade or hubless CI w/ neoprene gasket fittings w/ stainless steel bands above grade. Sched 40 PVC w/ solvent welds may be used where allowed by local code. PVC not allowed in plenums. Insulate w/ min 1/2" fiberglass pipe wrap w/ ASJ jacket.
- A.Provide pipe markers and flow direction arrows at 10'_0" maximum spacing to identify piping in mechanical rooms and 20'_0" maximum spacing in all other
- B. Pipe marker nomenclature/colors shall meet applicable ANSI standard and OSHA requirements from Seaton or equal. Submit for approval list of colors and
- A.Equivalent valves listed on current comparison charts of specified valve manufacturers by Milwaukee, Stockham, Powell, Red-White, Crane, Apollo, Mueller Muessco Watts Havs Rockwell-Nordstrom
- C.Balancing valves Armstrong model CBV I or CBV II, 125 psi-wp at 250 degrees f., meter connections w/ built-in check valves screwed or flanged ends. Provide
- D. Check valves 2" & smaller screwed or solder bronze check valve, 200 psi-wog/125 psi-wsp, teflon or bronze disc & seat ring. 2-1/2" & larger flanged, ASTM 126 iron body, bronze trimmed, 200psi-wog/125 psi-wsp.
- 1) Install necessary valves within piping systems to provide required flow control, to allow isolation for inspection, maintenance and repair of each piece of equipment or fixture, and on each main and branch service loop. 2) Each valve shall be installed so that it is easily accessible for operation, visual inspection, and maintenance and wherever possible, gate, check and ball valves shall be installed on a horizontal run with the handle upright and within 15 degrees of vertical. Butterfly valves shall be installed with the stem in the horizontal position and the handle at 90 degrees from vertical. 3) Valves installed in piping systems shall be compatible with system maximum test pressure, pipe materials, pipe joining method, and fluid or
- A.See schedules for further requirements and specific fixtures. B. Fixtures: American Standard, Kohler, Crane, Zurn, Toto. C.Stainless steel fixtures: Elkay, Just, Moen Commercial
- D. Fittings & supports: Josam, Smith, Wade, Zurn, Or Jonespec.
- F. Drinking fountains: Halsey Taylor, Elkay, Oasis, Or Haws.
- G.Trim by Moen, Delta, Eljer, Kohler, American St&Ard, Crane, Sloan.
- J. Roof drains cast iron roof drain w/ flange, CI mushroom dome. 2" dam for
- K. Wall hydrants Josam series 71000 w/ connections for ³/₄" pipe & hose. Non-freezing w/ key, vacuum breaker, locking cover. Equivalent by J.R. Smith,
- L. Downspout nozzels Wade series 3940 cast bronze downspout nozzles w/ threaded outlet & flange to secure nozzle to wall.
- A.See schedules for further requirements and specific equipment. B. Tank Water heaters - State, Rheem, National, A.O. Smith, Porcelainized glasslined tank. Cold water inlet drop tube. Magnesium anode rods. UL seal, 160 psi, factory temperature & pressure relief valve. NSF. construction. 3 yr warranty C.Backflow preventers provide where shown on plans or as required by Code/AHJ the following types of backflow preventers. Provide isolation value ahead of backflow preventers. Equivalent backflow prevents by Watts, Febco, Lawler. 1) Reduced pressure zone principle (1/4"-1/2"); watts series 009 reduced pressure backflow preventer complete with strainers and valves.
- 2) Reduced pressure zone principle (3/4"-10"): watts series 909 reduced pressure backflow preventer complete with strainers and valves. Provide isolation valve ahead of backflow preventers. Provide with air gap fitting 3) Double check valve (1/2"-2"): watts series 007 double check valve assembly complete with ball type test cocks, full port ball valve shut offs
- 4) Pressure vacuum breakers (3/8"-1/2"): watts series 008qt pressure vacuum
- breaker for anti-spill applications, with integral ball valve shut offs. 5) Atmospheric vacuum breaker (1/4"-3"): watts series 288a atmospheric 6) Hose bibb vacuum breakers vacuum breakers for hose end connections
- A.Provide unions or flanged joints in each pipe line preceding connections to equipment to allow removal for repair or replacement. Provide all screwed & control valves w/ unions adjacent to each connection. Provide screwed end
- valves w/ union adjacent to valve unless valve can be otherwise easily removed

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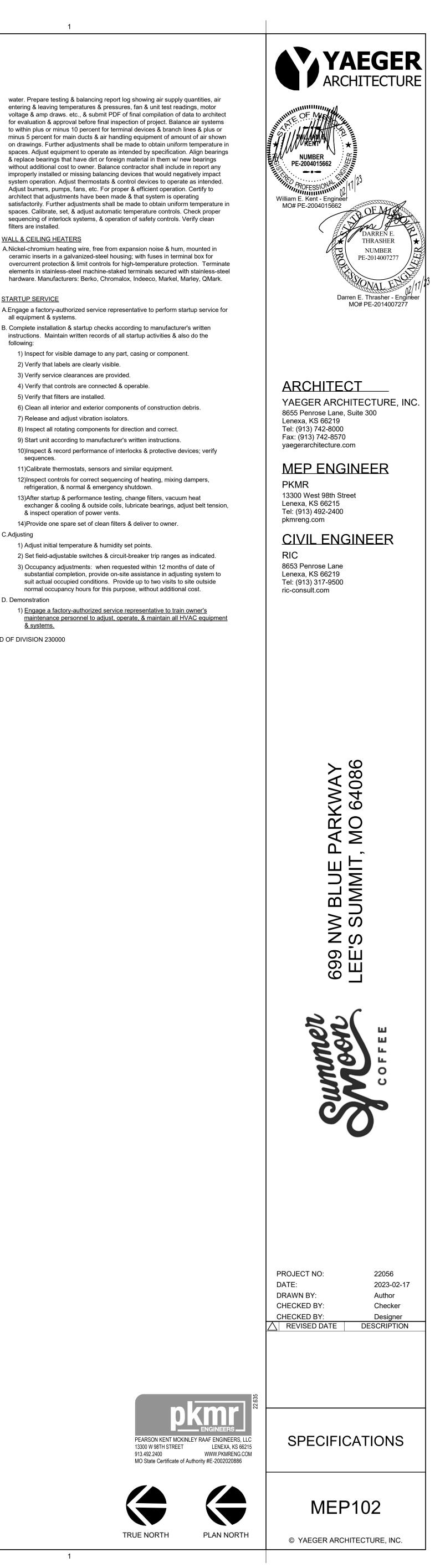
- B. All piping shall be properly supported with hangers and supports specifically intended for that purpose. Provide clevis hangers, unistrut brackets and pipe clamps and similar systems. Protect integrity of insulation and provide rigid insulation inserts or pipe saddles as necessary.
- C.After piping is in place test lines to insure no leaks. D. All piping & equipment shall be supported properly from structure.

- E. Escutcheons provide nickel-brass or chrome plated on all exposed pipes when passing thru wall or ceiling of finished rooms. F. Verify floor materials used from architectural plans & provide proper cleanout
- tops, where they occur in carpet, guarry tile, vinyl tile or ceramic tile. G.Provide water hammer arrestors for all plumbing banks w/ fixtures utilizing flush valves in any capacity. Locate arrester between last two fixtures served on branch line.
- END OF DIVISION 220000 **DIVISION 230000 - MECHANICAL**
- . MECHANICAL GENERAL REQUIREMENTS A.Refer to GENERAL MECHANICAL, ELECTRICAL & PLUMBING requirements
- 2. SHEET METAL WORK A.HVAC ductwork shall be galv sheet metal of gauges & joint types specified in SMACNA manual. Provide turning vanes in elbows.
- B. Coordinate routing of ductwork w/ other contractors such that piping, electrical conduit, & associated supports are not routed through ductwork. Construct supply ducts to meet SMACNA positive pressure of 3" WG. Construct return. outdoor & exhaust ductwork upstream of fans to meet SMACNA negative pressure of 1" WG. construct exhaust ductwork downstream of fans to meet SMACNA positive pressure of 1" WG.
- C.Seal ductwork w/ heavy liquid sealant, Hardcast Irongrip 601, Design Polymer DP 1010, United McGill duct sealer or approved equal, applied according to sealant manufacturer's instructions. D. Ducts shall be connected to fans, fan casings & fan plenums by means of
- flexible connectors. Flexible connectors shall be neoprene coated glass cloth canvas connections, Duro-Dyne, Elgen, Ventfabric or equal. Flexible connectors shall have flame spread of 25 or less & smoke developed rating not higher than 50. Make airtight joints & install w/ minimum 1-1/2" slack.
- E. All ductwork must be supported properly from structure. 3. DUCTWORK SPECIALTIES
- A.Flexible ducts Thermaflex or equal sound rated type G-KM insulated. (duct w/o published acoustical attenuation ratings not acceptable). Take off fitting shall be hi-eff style w/ locking damper. Maximum length of flexible ductwork shall be
- B. Diffusers & grilles see schedule. Equivalent by Price, Tuttle & Bailey, Titus, Metal-Aire, Krueger. Coordinate color, mounting w/ duct, ceilings, architect. Select air devices to limit room noise level to no higher than NC-30 unless otherwise shown. Provide devices w/ soft plastic gasket to make an airtight seal against mounting surface. Coordinate final location, frame, & mounting type of air devices w/ architectural reflected ceiling plans. Submit complete shop drawings including information on noise level, pressure drop, throw, cfm for each air device, styles, borders, etc. Clearly marked w/ specified equipment number. Provide ceiling supply air diffusers & return air grilles of lay-in or surface mounted type as required to be compatible w/ ceiling construction. Provide ceiling diffusers & grilles w/ white enamel finish unless noted otherwise. Provide slot plenums by diffuser manufacturer. Plenums shall be internally insulated by manufacturer.
- C.Provide balancing dampers, manufactured by Ruskin, Greenheck, Nailor Industries, Cesco, Louvers & Dampers, Pottorff or approved equal, where 'shown on drawings & wherever necessary for complete control of air flow. Splitter dampers shall be controlled by locking guadrants; provide young regulator or ventlok end bearings for damper rod. Rectangular volume dampers shall be opposed blade interlocking type. Round volume dampers shall be butterfly type consisting of circular blade mounted to shaft.
- D. Fire Dampers Static & dynamic: UL 555. Closing rating up to 4" WG static pressure class & min. 4000-fpm velocity. Rating of 1-1/2 & 3 hours as req'd. Curtain type with blades outside airstream except when located behind grille where blades may be inside airstream. Provide with mounting sheet metal
- E. Fire/Smoke & Smoke Dampers Multiple-blade type; galvanized steel frame & construction. UL 555S. Roll-formed blades, horizontal, interlocking, 0.034-inchthick, galvanized sheet steel. Leakage Class L. Rated pressure & velocity to exceed design airflow conditions. Provide with mounting sheet metal mounting sleeve to suit installation location. Damper Motors: two-position action. Electrical Connection: 115 V, single phase, 60 Hz. Coordinate voltage with Fire alarm contractor prior to ordering. Where building is not equipped with a fire alarm system, provide a stand alone 120v smoke detector & remote LED indicator light mounted in ceiling below duct detector. Mount detector within 5' of damper & provide all necessary wiring & interconnections to damper & detector & relays/power supplies. Power open, locked & reset, spring closed. F. Damper leakage for outside air dampers shall not exceed 6.5 cfm/square foot in
- full closed position at 4" wg pressure differential across damper. Reference manufacturer & model number for outside air dampers is Ruskin model CD-50. 4. DUCT INSULATION WORK
- A.Duct insulation & wraps shall meet flame/smoke rating of 25/50 per ASTM E 84. B. Line all low pressure supply & return air ductwork w/ 1/2" liner. Line all medium pressure supply w/ 1" liner.
- C.Line all transfer boots w/ 1/2" liner D. Do no wrap exposed spiral ducts. Provide pre-manufactured 1/2" or 1" round liner for all exposed round ducts. Contractor has the option to use double wall perforated lined round spiral ducts for exposed ducts. Wrap all concealed round supply HVAC ductwork w/ Certainteed 1-1/2" thick insulation w/ vapor barrier in
- concealed locations or in unfinished shell spaces. E. Wrap all outside air HVAC ductwork w/ Certainteed 1-1/2" thick insulation w/ vapor barrier in concealed locations. Exposed installations shall use 1-1/2" thick rigid board insulation or lined with 1" liner.
- 5. <u>EXHAUST FANS</u> A.Equivalent by Cook, Penn, Acme, Greenheck, Jennaire, Captive Air.
- B. Bearings shall be designed for 200,000 hours operation. Variable pitch motor sheaves shall be standard C.Fans shall be furnished with acceptable electrical disconnect & birdscreen. Provide single phase motor equipped fans with motor rated start relay. Provide
- multiphase motor equipped fans with magnetic motor starter. Provide local disconnect means for all fans. Coordinate location of starter & disconnects with other trades.
- D. Ceiling & Cabinet Exhaust Fans Available Manufacturers: Cook, Penn, Acme, Greenheck, Jennaire, Panasonic. Shall bear the AMCA Certified Ratings Seal for sound and air performance. Provide speed controls to be furnished to E/C for mounting at fan. Provide wall/roof jacks as indicated on plans.
- E. Centrifugal Roof Fan Fan covers shall be aluminum specifically designed to withstand high wind loads. Wheels 12" in diameter & larger shall have air foil or medium foil blades. The motor & drive compartment shall be positively externally ventilated. Drive components shall be isolated from the structure. Horsepower shall not exceed the values shown & oversize motors will not be acceptable. Furnished with acceptable electrical disconnect & birdscreen. Single phase motors shall have integral overload protection. V-belt drives shall be adjustable & provided with automatic tensioner. Direct drive fans shall be supplied with speed controls & located at the fan. This speed control shall be furnished to electrical contractor for mounting. Provide minimum 14" tall (min 8" above roof insulation) roof curb designed to mate with the unit & provide support & a watertight installation. Provide sloped curb as required for level unit installation Provide electric motorized backdraft dampers to open when fan motor is started. When motor voltage differs from damper motor voltage, provide relay & control transformer with fan o provide proper voltage for damper operation. MECHANICAL EXECUTION
- A.Coordinate w/ e/c to provide all wiring between equipment, dampers, thermostats & all other required controls & devices. M/C is responsible for all control & interlock wiring unless specifcally shown on electrical drawings. All electrical work shall comply w/ electrical specifications.
- B. All piping shall be properly supported with hangers & supports specifically intended for that purpose. Provide clevis hangers, unistrut brackets & pipe clamps & similar systems. Protect integrity of insulation & provide rigid insulation inserts or pipe saddles as necessary
- C.All exterior control wiring shall be in conduit.
- D. Provide any required interfaces to fire alarm or similar systems. E. Provide ground-mounted units on 4", reinforced concrete base, 6" larger than
- unit on each side. F Roof-mounted units on equipment supports or curbs sloped as reg'd. Anchor units to supports. Coordinate all requirements to maintain roof warranties.
- G.Provide factory-authorized service start up on equipment. Train owner's maintenance personnel on startup, shutdown, troubleshooting, servicing, preventive maintenance.
- H. Provide clean filters at time of project turnover. 7. FINAL TESTING & ADJUSTMENTS
- A.Final system testing. Balancing & adjustments shall be performed by contractor certified by NEBB, AABC or other approved agency. Perform test readings on fans, units, coils, etc. & adjust equipment to deliver specified amounts of air or

water. Prepare testing & balancing report log showing air supply quantities, air entering & leaving temperatures & pressures, fan & unit test readings, motor voltage & amp draws. etc., & submit PDF of final compilation of data to architect for evaluation & approval before final inspection of project. Balance air systems to within plus or minus 10 percent for terminal devices & branch lines & plus or minus 5 percent for main ducts & air handling equipment of amount of air shown on drawings. Further adjustments shall be made to obtain uniform temperature in spaces. Adjust equipment to operate as intended by specification. Align bearings & replace bearings that have dirt or foreign material in them w/ new bearings without additional cost to owner. Balance contractor shall include in report any improperly installed or missing balancing devices that would negatively impact system operation. Adjust thermostats & control devices to operate as intended. Adjust burners, pumps, fans, etc. For proper & efficient operation. Certify to architect that adjustments have been made & that system is operating satisfactorily. Further adjustments shall be made to obtain uniform temperature in spaces. Calibrate, set, & adjust automatic temperature controls. Check proper

- filters are installed. . WALL & CEILING HEATERS
- A.Nickel-chromium heating wire, free from expansion noise & hum, mounted in ceramic inserts in a galvanized-steel housing; with fuses in terminal box for overcurrent protection & limit controls for high-temperature protection. Terminate elements in stainless-steel machine-staked terminals secured with stainless-steel hardware. Manufacturers: Berko, Chromalox, Indeeco, Markel, Marley, QMark.
- 8. STARTUP SERVICE
- all equipment & systems. B. Complete installation & startup checks according to manufacturer's written instructions. Maintain written records of all startup activities & also do the
- following 1) Inspect for visible damage to any part, casing or component.
- 2) Verify that labels are clearly visible.
- 3) Verify service clearances are provided. 4) Verify that controls are connected & operable.
- 5) Verify that filters are installed.
- 6) Clean all interior and exterior components of construction debris.
- 7) Release and adjust vibration isolators. 8) Inspect all rotating components for direction and correct.
- 9) Start unit according to manufacturer's written instructions. 10)Inspect & record performance of interlocks & protective devices; verify
- sequences. 11)Calibrate thermostats, sensors and similar equipment.
- 12)Inspect controls for correct sequencing of heating, mixing dampers, refrigeration, & normal & emergency shutdown.
- 13)After startup & performance testing, change filters, vacuum heat exchanger & cooling & outside coils, lubricate bearings, adjust belt tension, & inspect operation of power vents. 14)Provide one spare set of clean filters & deliver to owner.
- C.Adjusting
- 1) Adjust initial temperature & humidity set points.
- 2) Set field-adjustable switches & circuit-breaker trip ranges as indicated. 3) Occupancy adjustments: when requested within 12 months of date of substantial completion, provide on-site assistance in adjusting system to suit actual occupied conditions. Provide up to two visits to site outside normal occupancy hours for this purpose, without additional cost. D. Demonstration
- 1) Engage a factory-authorized service representative to train owner's maintenance personnel to adjust, operate, & maintain all HVAC equipment <u>& systems.</u>

END OF DIVISION 230000







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ELECTRICAL SPECIFICATIONS SECTION 26000 - ELECTRICAL 1. GENERAL ELECTRICAL REQUIREMENTS A.Refer to GENERAL MECHANICAL, ELECTRICAL & PLUMBING requirements. B. Wiring of Mechanical Equipment 1) Provide all raceways & power wiring for all division 23 equipment requiring electrical connections, including, but not limited to, pumps, water heaters, & HVAC equipment, & all line voltage control & interlock wiring not provided under division 23. Connect per manufacturers' wiring diagrams. Coordinate with division 23 for disconnects furnished w/ equipment, & provide all disconnect switches as required. After installing wiring, verify that each motor load has correct phase rotation. 2) Verify actual "maximum overcurrent protection" (MOCP) device ratings & "minimum circuit ampacity" (MCA) conductor sizing for mechanical equipment from equipment nameplate. Base electrical installations on actual required amperages, which may vary somewhat from conductor & equipment sizes shown on drawings: however, in no case, reduce size of conductors indicated on drawings without authorization from engineer. Provide properly sized electrical wiring & equipment without extra cost to owner. Notify engineer of all changes required in electrical installation due to equipment variances so that effects on feeders, branch circuits, panelboards, fuses & circuit breakers can be checked prior to purchasing & installation. Be responsible for coordinating w/ division 23 to verify actual ampacities & correct sizes of all conductors & overcurrent protective devices for all equipment, & correct overload heaters for all motors, when starters are provided under division 26. C.Wiring of Thermostats. Time, & Temperature Controls 1) Provide all raceways, power wiring, & line-voltage control and interlock wiring not provided under division 23, for all thermostats, temperature control devices, & controls, including, but not limited to, night-stats, water heater interlocks, time switches & override timers. See mechanical drawings for locations & temperature control diagrams. Low-voltage conductors for thermostats & temperature control system may be run exposed above finished accessible ceilings, if approved & listed for this purpose, but shall be installed in conduit within walls & where exposed in work areas. 2. CONDUIT & CONDUCTORS A.Follow circuiting shown on plans. Use no conduit smaller than 3/4" & no conductors smaller than #12 ga. Unless noted otherwise. B. Conductors #10 and smaller shall be solid. C.If no conductor size is indicated on drawings for branch circuit, provide conductors & conduit sized per NFPA 70 & based on indicated branch circuit overcurrent protective device (OCPD) rating & number of poles. D. Wire shall be in non-flexible metallic conduit (EMT, IMC or RMC) for: 1) All circuits & feeders greater than 30A. Kitchen circuits. 3) Home runs. E. MC cable acceptable for branch convenience circuits & lighting circuits. Do not daisy chain light fixtures. Provide cable whips of sufficient lengths to allow for relocating each light fixture within 5-foot radius of its installed location, but not exceeding 6 feet in unsupported lengths. 1) Do not use MC cable for following: homeruns to panelboards, where exposed to view or damage, hazardous locations, in concrete, block walls or wet locations, & when disallowed by local AHJ or landlord. 2) Provide health care rated MC for patient care areas (as defined by the NEC) when not in conduit. F. Lighting & receptacle circuit conductors shall be copper THHN-THWN-2 600 volt, 75 deg c, color coded as described under applicable codes. No romex, plastic flex tubing etc permitted. Light fixture wire insulation shall have temp rating not less than individual fixture manufacturers recommended rating. G.Circuits w/ no. 8 or larger conductors, motor circuits, power & feeder circuits & building service feeders shall be copper THHN-THWN-2 600 volt, 75 deg c. H. All materials used to terminate, splice or tap conductors: designed for, properly sized for, & UL listed for specific application & conductors involved, & installed in strict accordance w/ manufacturer's recommendations, using the manufacturer's recommended tools. I. Where wiring is indicated as installed, but connection is indicated "future" or "by other division, trades, or contracts", leave minimum 3-foot "pigtail" at box, tape ends of conductors, & cover box. J. Number of conductors in specific raceway "home run" is indicated w/ cross lines (tick marks) on each "circuit run" on drawings. In general, direction of branch

- circuit "home run" routing is indicated on drawings, complete w/ circuit numbers & panelboard designation. Continue all such "home run" wiring to designated panelboard, as though "circuit runs" were indicated in their entirety. K. Wiring shall have insulation of proper color to match NEC color code. In larger sizes, where properly colored insulation is not available, use vinyl plastic electrical tape of appropriate color around each conductor at all termination points, junction & pull boxes. 3. <u>GROUNDING</u>
- A.Supplement grounded neutral of secondary distribution system w/ equipment grounding system, installed so that metallic structures, enclosures, raceways, junction boxes, outlet boxes, cabinets, machine frames, portable equipment & other conductive items operate continuously at ground potential & provide low impedance path for ground fault currents. B. System shall comply w/ national electrical code, drawings & as specified.
- C.Provide equipment around bus in base of low voltage, switchgear brazed or otherwise adequately connected by an approved method to ground rods.
- D. Provide in conduit green insulated copper ground conductor to main metallic water service entrance & connect by means of adequate ground clamps. E. Equipment grounding conductors for branch circuit home runs shown on
- drawings shall indicate an individual & separate ground conductor for that branch circuit which shall be terminated at branch circuit panelboard, switchboard, or other distribution equipment.
- F. Provide low voltage distribution system w/ separate green insulated equipment grounding conductor for each single or three-phase feeder. Single phase 120 volt branch circuits for lighting & power shall consist of phase & neutral conductors & green ground conductor installed in common conduit which shall serve as grounding conductor.
- G.Grounding conductors shall be as shown on plans or if not specifically shown shall be no smaller than that required by NEC. 4. RACEWAY INSTALLATION A.Install all conductors & cable in raceways continuous without taps or splices. Splice or tap only in approved boxes & enclosures w/ approved solderless
- connectors, or crimp connectors & terminal blocks for control wiring, & keep to minimum required. Insulate all splices, taps, & joints as required by codes. B. Install all circular raceways concealed above suspended ceilings or concealed in walls or floors wherever possible except where otherwise indicated. 1) All conduit, junction boxes, etc. Above ceilings shall be supported from
- structure. Pipe sleeves, hangers & supports shall be furnished & set & contractor shall be responsible for proper & permanent locations. 2) Support all conductors & cables in vertical installations, as required by NFPA 70, by installing cable supports or plug-type conduit riser supports, or wire-mesh safety grips. C.Conduit installed below grade shall be Schd. 80 PVC heavy wall plastic conduit
- meeting NEMA standards & UL listed for underground & exposed use. Provide GRS radius bends & risers as conduits rise above grade or above floor slab. D. Provide GRS for all conduits run exposed to weather or exposed to other hazardous conditions. Provide any GRS installed below grade w/ corrosion
- resistant bonded-plastic or approved mastic coating. This shall include 90-degree elbow below grade & entire vertical transition to above grade. E. Provide interlocking spacers for multiple runs of UG conduits in same trench. F. All other raceway may be EMT where approved by local code. Use compression type fittings for EMT, w/ all fittings UL listed for environment in which they are
- G.Use FMC for final connection to each motor & transformer, & to any device that would otherwise transmit motion, vibration, or noise. Use LFMC where exposed to liquids, vapors or sunlight. 1) Provide all FMC & LFMC w/ an insulated bonding conductor.
- H. Install raceways parallel & perpendicular to building lines. I. Install raceways to requirements of structure & to requirements of all other work on project. Install raceway to clear all openings, depressions, pipes, ducts. reinforcing steel, & other immovable obstacles. Install raceways set in forms for concrete structure in such manner that installation will not affect strength of structure.
- J. Install raceways continuous between connections to outlets, boxes & cabinets w/ minimum possible number of bends & not more than equivalent of four 90-degree bends between connections. Use manufactured elbows for all 45- & 90-degree bends, unless approved by engineer in advance. Make other bends smooth & even & without flattening raceway or flaking galvanizing or enamel. Radii of bends shall be as long as possible & never shorter than corresponding trade elbow. Use long radius elbows where necessary, indicated, or both.
- K. Securely fasten raceways in place w/ approved straps, hangers & steel supports as required. Attach raceway supports to building structure. Hang single raceways for feeders w/ malleable split ring hangers w/ rod & turnbuckle suspension from

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- inserts spaced not over 10 feet apart in construction above. L. Clamp groups of horizontal feeder raceways to steel channels that are suspended from inserts spaced not over 10 feet apart in construction above. Securely clamp vertical feeder raceways to structural steel members attached to structure. Install cable clamps for support of vertical feeders where required. Add raceway supports within 12 inches of all bends, on both sides of bends. Do not
- support raceways from suspended ceiling components. M.Ream raceway ends, thoroughly clean raceways before installation, & keep clean after installation. Plug or cover openings & boxes as required to keep raceways clean during construction & fish all raceways clear of obstructions before pulling conductors wires. Provide raceways of ample size for pulling of wire & not smaller than code requirements & not less than 3/4", unless indicated otherwise on drawings.
- N. Protect all raceway installations against damage during construction. Repair all raceways damaged or moved out of line after roughing-in to meet engineer's approval without additional cost to owner.
- O.Align & install true & plumb all raceway terminations at panelboards, switchboards, motor control equipment & junction boxes.
- P. Install approved expansion/deflection fittings where raceways pass through (if embedded) or across (if exposed) expansion joints. Q.Install pull wire in each empty raceway that is left for installation of conductors or
- cables under other divisions or contracts. Use polypropylene or monofilament plastic line. Leave min. 24" slack at each end. R. Make all joints & connections in manner that will ensure mechanical strength & electrical continuity.
- S. Effectively seal raceways, by installing conduit fitting at boundary of two spaces, & filling it w/ an approved pliable material, after conductors or cables have been installed & tested, whenever raceways pass from non-cooled to cooled spaces or transition from outside facility or enclosure to inside, whether buried or exposed. 5. BUSHINGS & LOCKNUTS
- A.Rigidly terminate conduits entering sheet metal enclosures to enclosure w/ bushing & locknut on inside & locknut or an approved hub on outside. Conduit shall enter enclosure squarely. B. Provide bushings & locknuts made of galvanized malleable iron w/ sharp,
- clean-cut threads. Where EMT enters box, provide approved EMT compression connectors. C.Use insulated, grounding, or combination, bushings wherever connection is subject to vibration or moisture when required by NFPA 70, or both.
- 6. JUNCTION & OUTLET BOXES A.All boxes including light fixture, switch, receptacle, & similar outlet boxes: National Electrical, Appleton, Steel City, Raco, or approved equal, galvanized steel knockout boxes, suitable in design to purpose they serve & space they occupy. Size as required for specific function or as required by NFPA 70, whichever is larger.
- 1) Lighting fixture boxes in ceilings shall not be less than 4" octagonal knockout type. B. Set all outlet boxes in walls, columns, floors, or ceilings so they are flush w/ finished surface, accurately set, & rigidly secured in position. Provide plaster rings, extension rings &/or masonry rings as req'd for flush mounting. Provide
- approved cast outlet boxes, w/ hubs & weatherproof covers, in all areas subject to damp, wet, or harsh conditions. C.Coordinate locations of outlet boxes. Outlets are only approx located on small scale drawings. Use great care in actual location by consulting various large scale detailed drawings used by other division trades, & by securing definite
- locations from architect. D. All outlets, shall be mounted w/ bottom at 18" AFF & switches w/ bottom at 44" AFF floor unless noted otherwise on plans. Refer to arch for other required elevations & cabinetry coordination.
- ELECTRICAL IDENTIFICATION A.Manufactured labels for each Panelboard & Transformer. Typewritten panel schedules mounted in panels. Where electrical equipment is installed as service entrance equipment, contractor shall furnish & install nameplate listing the following: Equip Short-Circuit Current Rating in Amps (RMS SYM), as indicated on the drawings, Whether or not equipment is fully or series-rated, Available Fault Current in Amps. Contractor shall perform available fault current calculation to obtain available fault at Service Equipment, Date fault current calculations were performed.
- B. Printed tape style label for each receptacle indicating Panel & Ckt #. C.Manufactured labels for all disconnect switches indicating equipment served. D. Branch circuits - identify each circuit w/ wire markers when enclosure label & wire colors do not provide enough information to identify each circuit without tracing. Feeders & branch circuit home runs w/ wire marker w/ Panel & Ckt #. Box covers above lay-in ceilings neatly marked w/ indelible marker. E. Fire alarm - nameplate on each fire alarm terminal cabinet. Label all wiring.
- 8. DIGITAL LIGHTING CONTROLS A.Provide DLM systems consisting of lighting control panels, room controllers, motion sensors, daylight sensors, & other other controls as necessary to achieve lighting switching & dimming control indicated on the drawings.
- B. Provide all interconnecting wiring, controls, programming & owner training for the system(s). C.Provide systems by: Cooper, Hubbell, Leviton, Phillips, Sensor Switch, Watt
- Stopper, Lutron, nLight. D. Execution:
- 1) Calibrate all sensor time delays & sensitivity for proper detection of occupants & energy savings. Adjust time delays.
- 2) Provide documentation of room by room system configuration including: sensor parameters, time delays, sensitivities, & daylighting setpoints, sequence of operation, load parameters. 3) Post start-up tuning - 30 days after occupancy contractor shall adjust sensors to meet the owner's requirements. Provide a detailed report to the
- architect / owner of post start-up activity. PANELBOARDS A.Branch circuit 208/240v panels shall be capacity shown w/ tin plated copper bussing & braced for minimum of 10.000a aic or as otherwise noted or required
- (series rated acceptable). Bolt on circuit breakers. 480v panels same except 14,000a aic min. or as otherwise noted. Minimum 20" wide w/ galv steel enclosure w/ hinged door & keyed lock. Coord trim w/ mounting location. Typewritten card directory. B. Distribution panels shall be capacity shown & shall be Square D I-Line w/ tin
- plated copper bussing. 65kaic min or as otherwise noted/reg'd. Bolt on circuit breakers (series rated acceptable). Galv steel enclosure. CB's labeled w/ plastic printed labels to load served. C.Equivalent by Square D, Siemens, Cutler Hammer, Or GE.
- 10. CIRCUIT BREAKERS IN EXISTING PANELBOARDS A.Provide new circuit breakers, for installation in existing panelboards, of same
- manufacturer, type & short circuit current interrupting ratings as existing panelboard circuit breakers.
- 11. WIRING DEVICES A.Color of devices as directed by architect.
- B. Convenience outlets: 1) Spec grade 20 amp duplex w/ ground & SS wall plates. Other outlets shall be verified w/ equipment suppliers for proper NEMA configurations. Provide GFCI rated devices where indicated & as req'd per code.
- 2) Equivalent devices by Cooper/Eaton, Hubbell, Leviton, Pass & Seymour/Legrand C.Switches:
- 1) Light switches spec grade 20 amp toggle switches w/ SS wall plates. 2) Wall motion switches - spec grade, PIR, override. 3) Ceiling motion switches - spec grade, dual technology, model as req'd by
- room configuration, all necessary power packs & relays. 4) Wall motion switches (bathroom) - dual relay, spec grade, PIR, 2nd relay for operation of exhaust fan delay.
- 5) Dimmer Switches: Modular, full-wave, solid-state units with integral, quiet on-off switches, with audible frequency and EMI/RFI suppression filters. Continuously adjustable slider; with single-pole or three-way switching. Comply with UL 1472. 600W or 1200W as required by load. Incandescent Lamp Dimmers: 120 V: control shall follow square-law
- dimming curve. On-off switch positions shall bypass dimmer module. LED Dimmers: Modular; compatible with dimming drivers in fixture(s); if other than 0-10V dimming is provided, verify dimmer is compatible with driver for full range of dimming (100-10%). 6) Equivalent devices by Leviton, Bryant, Hubbell, Wattstopper, Lithonia,
- Sensor Switch. D. Weatherproof cover plates:

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- 1) Provide GFCI receptacles for weatherproof receptacles. 2) For wet locations: in-use NEMA 3R, UL-labeled plates die cast metal and
- lockable. 3) For damp locations: UL-listed for wet locations w/ cover(s) closed; die-cast aluminum or type 302 SS; single-cover for switches & vertically mounted receptacles; double-cover for horizontally mounted receptacles; self-closing

- 12. DISCONNECT (SAFETY) SWITCHES
- A.Disconnect (safety) switches: Square D, Siemens, Cutler Hammer, or General Electric fused or non-fused (as indicated on drawings or required) NEMA KS1, heavy duty, externally operated, visible-blade safety switches; NEMA enclosure type indicated on drawings or suitable for environment in which installed. Based on fusible switch & fuse sizes indicated, include class R, J, or L fuse provisions as applicable.
- B. Where indicated, provide fusible switches permanently labeled as suitable for use as service entrance equipment, w/ integral & separate neutral & ground assemblies, suitable for sizes of conductors indicated. Do not double-lug any terminations not specifically listed as suitable for more than one conductor. C.Provide switches where not furnished w/ starting equipment, at all other points required by NFPA 70, & where indicated on drawings.
- 13. LUMINAIRES, LAMPS & BALLASTS
- A.Refer to lighting fixture schedule plans for fixture types. B. Equivalent luminaires by Hubbell, Infinity, Lithonia, Williams, Eaton [Cooper]. C.Fluorescent Fixtures: 1) I amps shall be type recommended by fixture manuf I amp none above
- manuf recommended max wattage. Color temperature shall be coordinated throughout project, with generally 4100k interior lamps and min 85 CRI. Equivalent lamps by G.E., Venture, Phillips Or Sylvania. 2) Ballasts - Fluorescent - electronic, <20%THD, Equivalent by Advance,
- G.E., Motorola, Or Magnetek. D. LED Fixtures:
- 1) Lamps & modules: Philips, General Electric, Osram/Sylvania, Cree, Nichia. 2) LED components, lamps, drivers, and fixtures shall comply with: PCC 47 CER Part 15: UL 8750: ANSI/NEMA Standards C78 377, NEMA SSI -1 C82.77, IESNA Standards TM-16-05, RP-16, LM-79, LM-80 and TM-21. 3) Drivers shall be integral to the fixture unless otherwise shown or specified.
- E. Emergency ballasts/drivers/batteries/inverters shall be Bodine, lota. Coordinate voltages and outputs for min. 90 minute operation with fixtures scheduled and controls indicated and provided. F. Execution:
- 1) Provide lighting fixtures w/ lamps & accessories req'd for hanging. Coord mounting of lighting fixtures w/ architect & G/C. Additional fixture supports shall be provided by E/C. Supports shall comply w/ latest edition of NEC. Provide lighting fixture securing clips as required. Consult arch plans for ceiling types & provide surface & recessed lighting fixtures w/ appropriate mounting components & accessories.
- 2) Fixtures mounted in fire rated ceilings shall be provided & installed w/ fire rated enclosures to maintain ceiling integrity. 3) Poles & support components: comply w/ AASHTO LTS-4. Provide steel
- poles in color as specified or selected by architect. Provide bolt covers. Provide concrete base for pole & ground rod. 14. ADJUSTING. ALIGNING & TESTING
- A.Adjust, align, & test all electrical equipment on this project provided under this division & all electrical equipment furnished by others for installation or wiring under this division for proper operation. Test all systems & equipment according to requirements in NETA ATS (latest edition) & all additional requirements specified
- B. In following sections. Maintain following on project premises at all times: true RMS reading voltmeter, true RMS reading ammeter, & megohmmeter insulation resistance tester. Provide test data readings as requested or as required by enaineer
- 15. <u>SYSTEM START UP</u>
- A.Prior to starting up electrical systems: 1) Check all components & devices.
- 2) Lubricate items accordingly. 3) Tighten screws & bolts for connectors & terminals according to
- manufacturer's published torque-tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486a & UL 486b. 4) Check & record building's service entrance voltage, grounding conditions,
- grounding resistance, & proper phasing. B. Replace all burned-out lamps & lamps used for temporary construction lighting in permanent light fixtures. C.After all systems have been inspected & adjusted, confirm all operating features
- required by drawings & specifications & make final adjustments as necessary. END OF DIVISION 26000
- SECTION 27000 COMMUNICATIONS
- 1. GENERAL ELECTRICAL REQUIREMENTS A.Refer to GENERAL MECHANICAL, ELECTRICAL & PLUMBING requirements.
- 2. <u>TELECOMMUNICATIONS SYSTEMS PROVISIONS</u> A.Provide incoming telephone and/or data service raceways as indicated on drawings or as required by serving telecommunications company.
- B. Provide 3/4-inch thick plywood board, fire-retardant- treated & stamped FRT, securely anchored to wall, at location & of size as indicated on drawings. C.Provide flush mounted telephone and/or data outlet boxes w/ 3/4-inch EMT
- stub-up concealed to accessible ceiling space at locations as indicated on drawings.
- 3. BACKBOARDS
- A.Backboards: Plywood, fire-retardant treated, 3/4"X48"X96". END OF DIVISION 27000

SECTION 28000 - SAFETY & SECURITY

B. Install all wiring in raceway.

Fire Marshal & AHJ.

similar systems.

accessible ceilings.

D. Execution:

END OF DIVISION 28000

- 1. <u>GENERAL ELECTRICAL REQUIREMENTS</u>
- A.Refer to GENERAL MECHANICAL, ELECTRICAL & PLUMBING requirements. 2. EXISTING FIRE ALARM SYSTEM MODIFICATIONS A.Provide following new equipment, compatible w/, or of same manufacturer as,
- existing fire alarm control panel & system, at locations indicated on drawings, as required by building codes, landlord, or all three, & connect to existing fire alarm control panel: 1) Additional initiating devices, indicating appliances, & interconnecting
- circuits. 2) Additional zone modules required by new zoning.

Horn/strobes shall meet all requirements of ADA.

3) New amplifiers & other equipment that may be required to incorporate new initiating devices & indicating appliances into existing system.

4) A new zone map, including all existing zones & all new zones, framed,

mounted under glass, & installed adjacent to fire alarm control panel.

C.Where acceptable to AHJ, plenum rated cables may be used above suspended

1) Submit shop drawings w/ wiring diagrams & battery calcs for approval to

dampers, door hold opens, power to door locks & access control & other

3) Installed & tested per NFPA 72 & applicable sections of NFPA 70. Provide

annunciator(s), manual stations, automatic fire detectors, smoke detectors,

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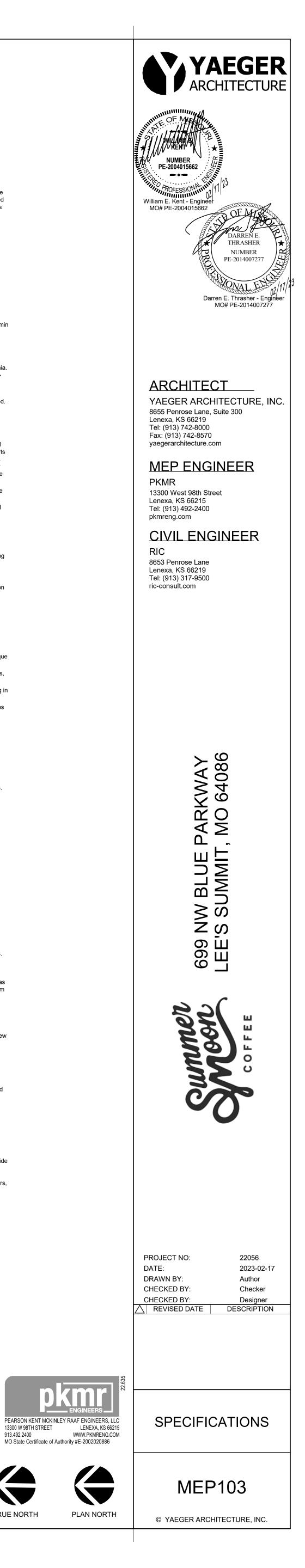
audible & visible notification appliances, wiring, terminations, electrical

complete fire alarm system as described herein & shown to be wired.

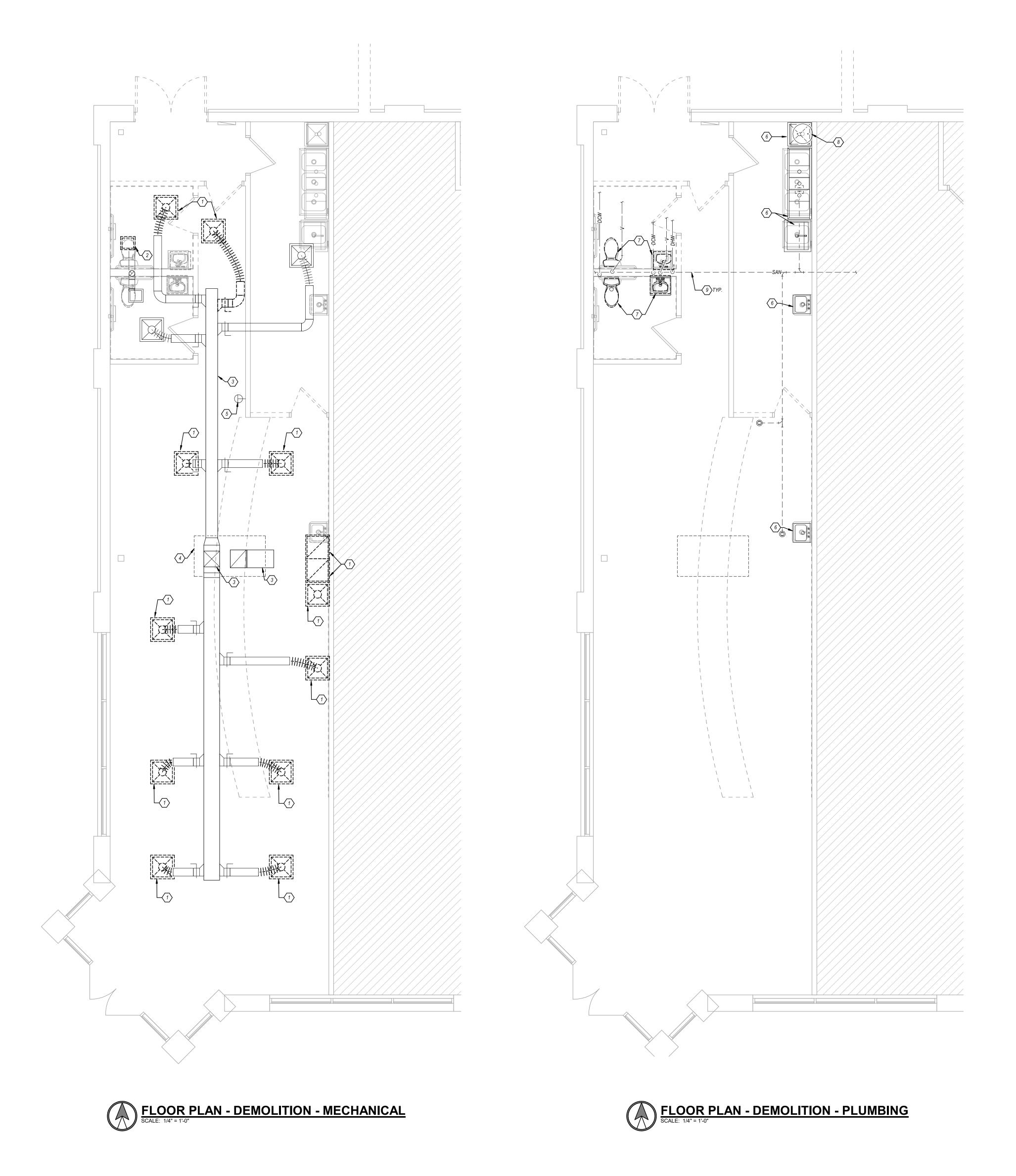
connected, & in first class condition. Include sufficient control unit(s),

boxes, & all necessary material for complete operating system.

2) Coordinate to provide power & shutdown or operation of fire/smoke



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GENERAL DEMOLITION NOTES 1. REFER TO GENERAL DEMOLITION NOTES ON MEP COVER SHEET FOR ADDITIONAL REQUIREMENTS OF WORK.

EXAMPLE NOTES - DEMOLITION

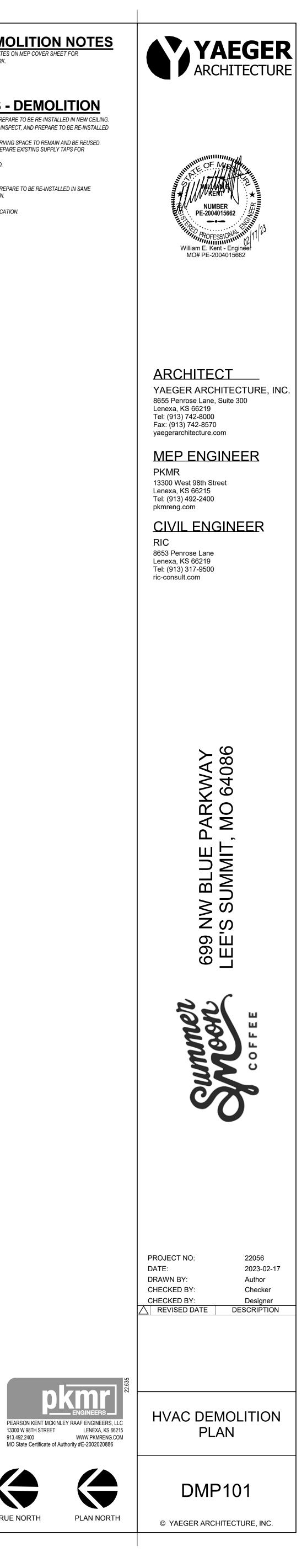
- 1 REMOVE DIFFUSER/GRILLE. CLEAN AND PREPARE TO BE RE-INSTALLED IN NEW CEILING. 2 REMOVE EXISTING EXHAUST FAN. CLEAN, INSPECT, AND PREPARE TO BE RE-INSTALLED
- IN NEW BATHROOM CEILING. 3 EXISTING DUCT MAIN SUPPLY/RETURN SERVING SPACE TO REMAIN AND BE REUSED. FIELD CONFIRM EXACT LOCATION AND PREPARE EXISTING SUPPLY TAPS FOR
- CONNECTION TO NEW DIFFUSERS. 4 EXISTING RTU TO REMAIN AND BE REUSED.

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- 5 EXISTING THERMOSTAT TO REMAIN. 6 EXISTING FIXTURE TO REMAIN.7 REMOVE EXISTING FIXTURE CLEAN AND PREPARE TO BE RE-INSTALLED IN SAME
- LOCATION AFTER RESTROOM RENOVATION. 8 EXISTING WATER HEATER TO REMAIN.
- 9 EXISTING PIPING. FIELD VERIFY EXACT LOCATION.

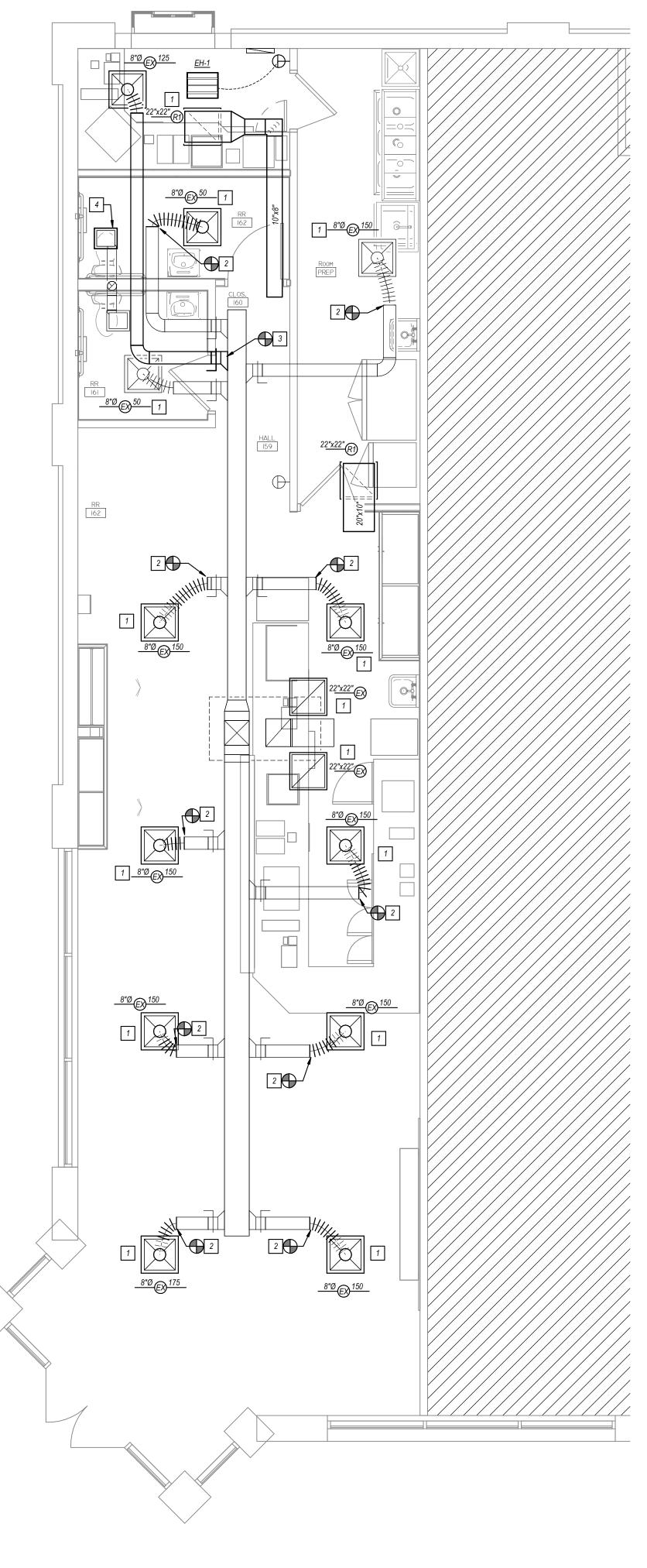


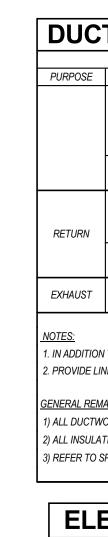


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GRILLE, REGISTER MANUFACTURER MARK MODEL REMARKS PROVIDE WITH ALL NECESSARY MOUNTING HARDWARE. PROVIDE WITHOUT SCREW HOLES WHERE USED IN GRID CEILING.

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MARK EH-1 <u>REMARKS:</u>

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FLOOR PLAN - HVAC

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R ,	AND DIFFUSE	R SCHE	DULE					
	DESCRIPTION	BORDER TYPE	FACE SIZE (IN.)	NECK SIZE	VOLUME DAMPER	MATERIAL	FINISH	REMARKS
	SQUARE CEILING DIFFUSER	GRID	24x24	AS INDICATED	NO	STEEL	WHITE	
	GRILLE WITH 3/4" SPACING AND 35° DEFLECTION	GRID	24x24	20x20	NO	STEEL	WHITE	
	GRILLE WITH 3/4" SPACING AND 35° DEFLECTION	GRID	24x24	20x20	NO	STEEL	WHITE	

)	TWORK INSULATION SCHEDULE								
	D	UCT		IN	NOTES				
	DUTY	LOCATION	STYLE	MATERIAL	APPLICATION	THICKNESS	NOTES		
		CONCEALED	RECTANGULAR	FIBERGLASS	LINED	1/2"			
	LOW PRESSURE / VELOCITY	CONCEALED	ROUND	MINERAL FIBER	WRAPPED	1-1/2"			
	LOW FRESSORE / VELOCITY	EXPOSED	RECTANGULAR	FIBERGLASS	LINED	1/2"			
		EXPOSED	ROUND	FIBERGLASS	LINED	1/2"			
	ALL	UNCONDITIONED ATTICS	ALL	MINERAL FIBER	WRAPPED	1-1/2"	1		
	ALL	EXTERIOR	ALL	FLEXIBLE ELASTOMERIC	WRAPPED	2"			
		CONCEALED	RECTANGULAR	FIBERGLASS	LINED	1/2"			
	LOW PRESSURE / VELOCITY	CONCEALED	ROUND	MINERAL FIBER	WRAPPED	1-1/2"			
		RETURN/TRANSFER BOOTS	RECTANGULAR	FIBERGLASS	LINED	1/2"			
	ALL	UNCONDITIONED ATTICS	ALL	MINERAL FIBER	WRAPPED	1-1/2"	1		
	ALL	EXTERIOR	ALL	FLEXIBLE ELASTOMERIC	WRAPPED	2"			
	LOW PRESSURE / VELOCITY	CONCEALED	RECTANGULAR	FIBERGLASS	LINED	1/2"			
	LOW FRESSORE/ VELOCITY	CONCEALED	ROUND	FIBERGLASS	LINED	1/2"	2		

1. IN ADDITION TO OTHER SCHEDULED INSULATION. 2. PROVIDE LINER ONLY WITHIN 10' OF FAN FOR ACCOUSTICS.

GENERAL REMARKS (APPLICABLE TO ALL TYPES):

1) ALL DUCTWORK, INSULATION AND MATERIALS IN PLENUMS MUST MEET ASTM E84 FLAME/SMOKE RATING OF 25/50. 2) ALL INSULATION THICKNESSES SHALL MEET ASHRAE 90.1 - 2010 REQUIREMENTS AT A MINIMUM. 3) REFER TO SPECIFICATIONS FOR MORE DETAILED INFORMATION FOR INSULATION PRODUCTS AND SYSTEMS.

	MANUFACTURER	MODEL	DESCRIPTION	CFM	КW	TEMP.	ELECT	RICAL	REMARKS
	MANUFACTURER	WODEL	DESCRIPTION	CEW	r.vv	RISE	VOLTAGE	PHASE	INEIWARKS
	QMARK	CDF-SE	CEILING HEATER	300	2.5	26 °F	208	1	1

PROVIDE WITH WALL-MOUNTED THERMOSTAT AND INTEGRAL DISCONNECT.

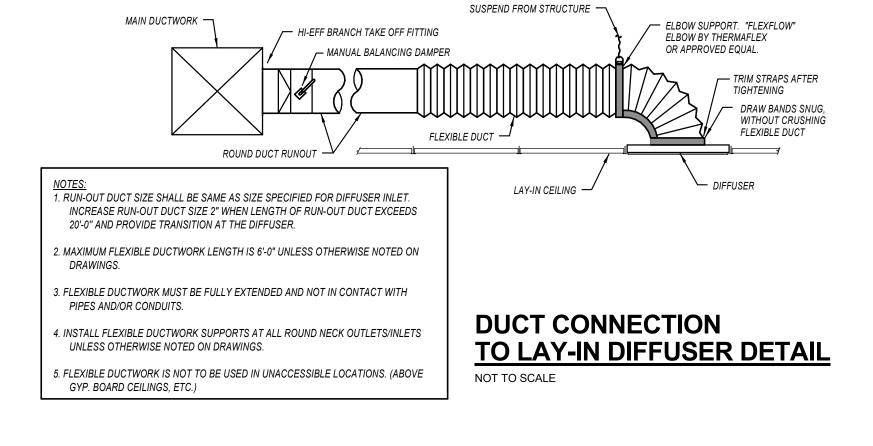
GENERAL HVAC NOTES

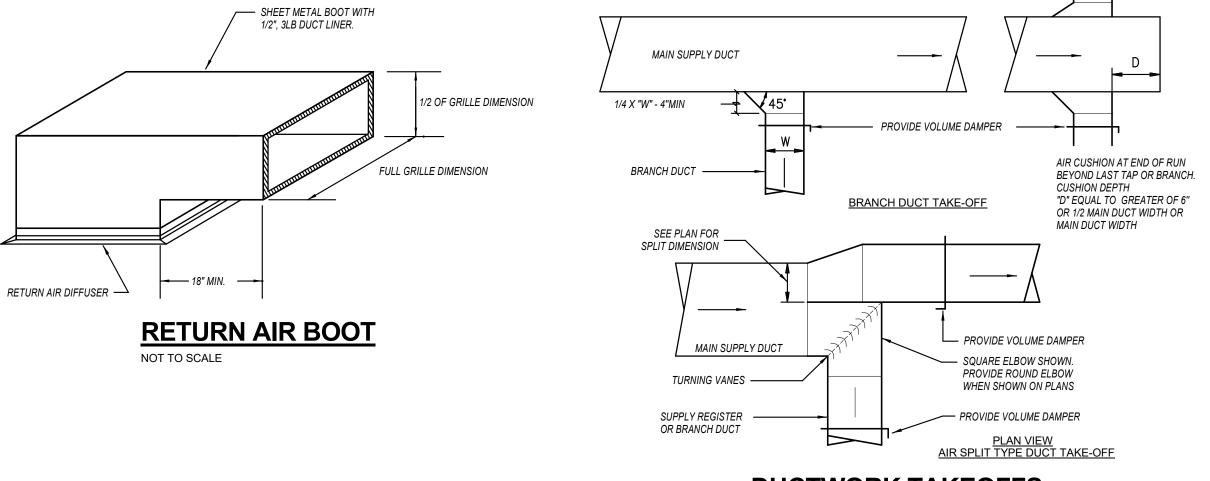
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- REFER TO GENERAL NOTES ON MEP COVER SHEET FOR ADDITIONAL REQUIREMENTS OF WORK.
 ROUND BRANCH DUCT RUNOUTS AND FLEXIBLE DUCT SHALL BE THE SAME SIZE AS THE DIFFUSER NECK UNLESS NOTED OTHERWISE.
- 3. MAXIMUM FLEXIBLE DUCT LENGTH SHALL BE 5'-0". MAXIMONT LEARBLE DOOT LEARGTT STALL DE 3-0.
 ALL RUNOUTS TO TERMINAL BOXES SHALL BE ONE SIZE LARGER THAN BOX INLETS UNLESS NOTED OTHERWISE.
- 5. ALL AIR DISTRIBUTION DEVICES SHALL HAVE LOCKABLE VOLUME CONTROL DEVICES.
- 6. ALL 90 DEGREE TURNING ELBOWS SHALL BE SMOOTH ROUND OR SQUARE WITH TURNING VANES. 7. DUCT SIZES SHOWN ON PLANS ARE INSIDE FREE AREA.
- 8. PROVIDE ACCESS DOORS IN DUCTS AHEAD OF ALL AUTOMATIC, FIRE, AND SMOKE DAMPERS. 9. FOR BALANCING THE OUTSIDE AIRFLOW QUANTITIES, REFER TO HVAC SCHEDULES.

☑ KEYED NOTES - HVAC

- 1 EXISTING DIFFUSER/GRILLE RELOCATED IN NEW CEILING. BALANCE TO NEW AIRFLOWS AS SHOWN.
- 2 CONNECT NEW SUPPLY DUCT TO EXISTING TAP FOR RELOCATED DIFFUSER. EXACT LOCATION TO BE FIELD CONFIRMED. 3 PROVIDE NEW TAP TO EXISTING MAIN.
- 4 EXISTING EXHAUST FAN RELOCATED IN NEW CEILING. RECONNECT TO EXISTING EXHAUST DUCT.

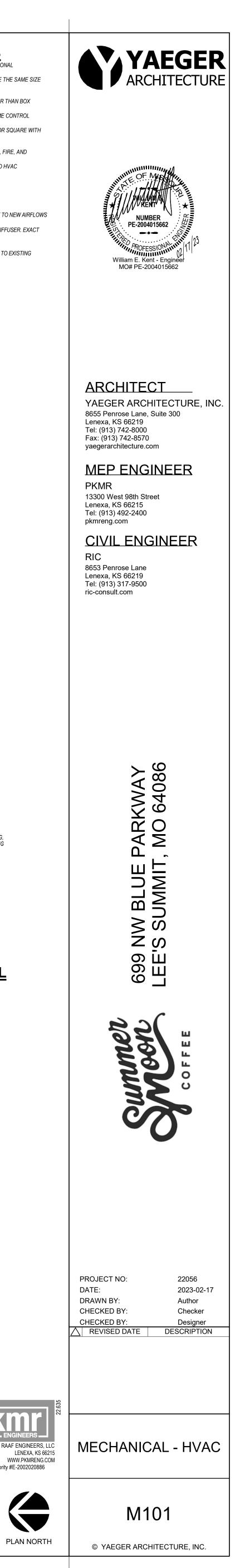




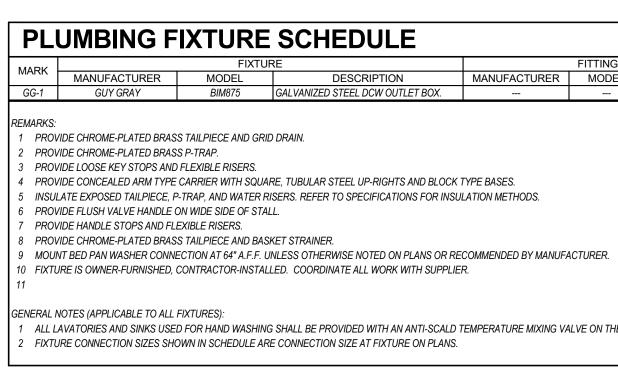
DUCTWORK TAKEOFFS







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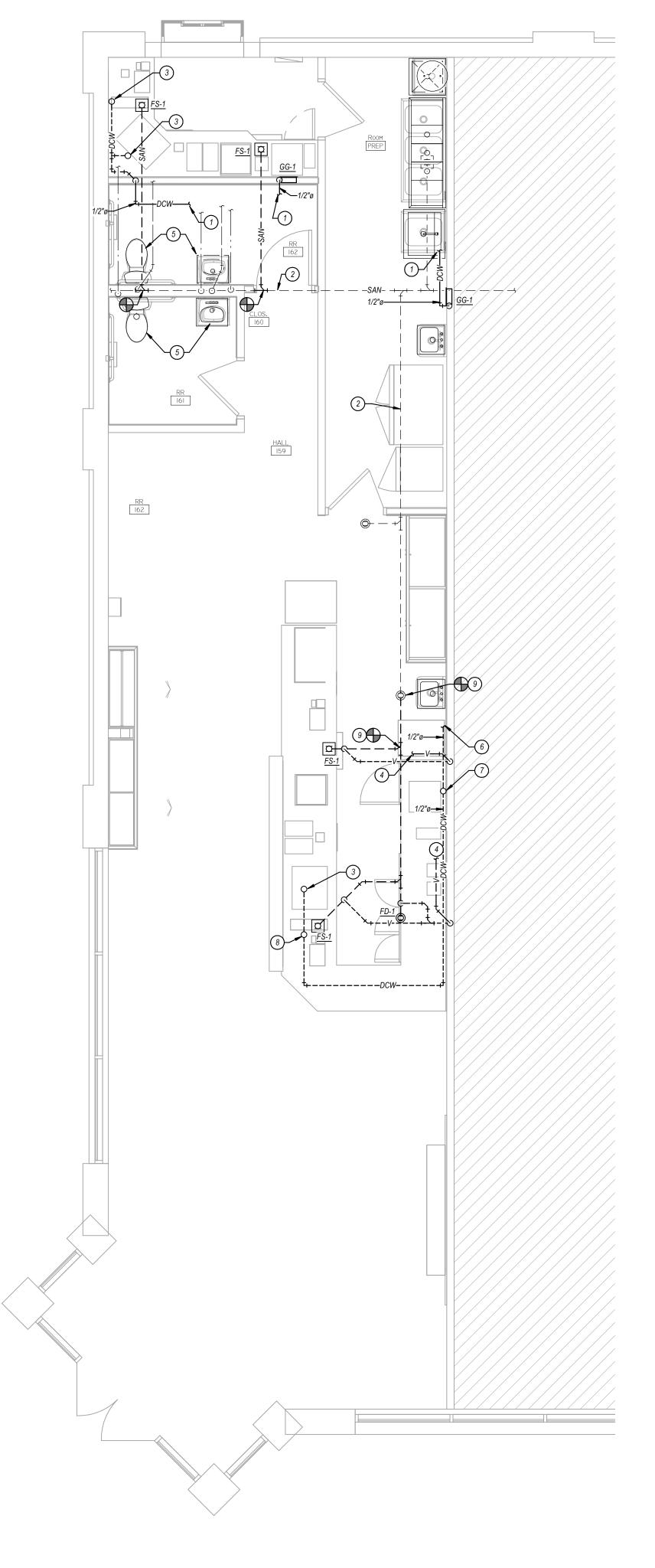
PIPING M

DOMESTIC COLD WATER DOMESTIC COLD WATER - I DOMESTIC HOT WATER & H

SANITARY WASTE BELOW (VENT ABOVE GRADE VENT BELOW GRADE

<u>REMARKS:</u>

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MANUFACTURER MODEL DESCRIPTION REMARKS DHW DCW WASTE VENT

1 ALL LAVATORIES AND SINKS USED FOR HAND WASHING SHALL BE PROVIDED WITH AN ANTI-SCALD TEMPERATURE MIXING VALVE ON THE HOT WATER SUPPLY - REFER TO DETAIL.

IATERIAL AND INSULATION SCHEDULE								
	PI	PING			FIELD TEST	ALLOWABLE	INSULA	TION
Л	SIZE	MATERIAL	TYPE/SCHED	ACCEPTABLE FITTINGS	PRESSURE/TIME	IN PLENUMS	TYPE	THICKNESS
	1/2" - 2-1/2"	Copper	L	Solder, Pro-Press	130 PSI - 1/2 HR	Yes	Fiberglass w/ASJ	1/2"
BELOW GRADE	1/2"-1-1/4"	Copper	K	Continuous Tubing, Brazed	130 PSI - 1/2 HR	N/A		
HW RETURN	1/2" - 2-1/2"	Copper	L	Solder, Pro-Press	130 PSI - 1/2 HR	Yes	Fiberglass w/ASJ	1"
GRADE	2"-8"	PVC	Schedule 40	Solvent Joined	10 FT - 1/2 HR	N/A		
	1-1/2"-4"	PVC	Schedule 40	Solvent Joined	10 FT - 1/2 HR	No		
	1-1/4"-2"	PVC	Schedule 40	Solvent Joined	10 FT - 1/2 HR	N/A		

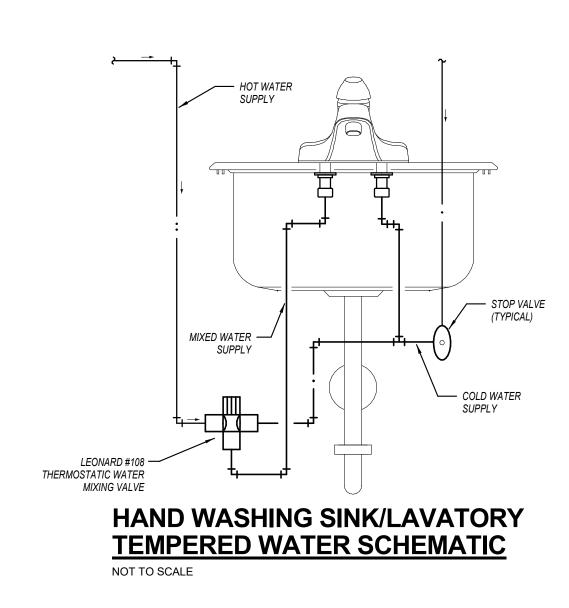
1 ALL PIPING AND MATERIALS IN PLENUMS MUST MEET ASTM E84 FLAME/SMOKE RATING OF 25/50. ALL INSULATION THICKNESSES SHALL MEET ASHRAE 90.1 - 2007 REQUIREMENTS AT A MINIMUM.

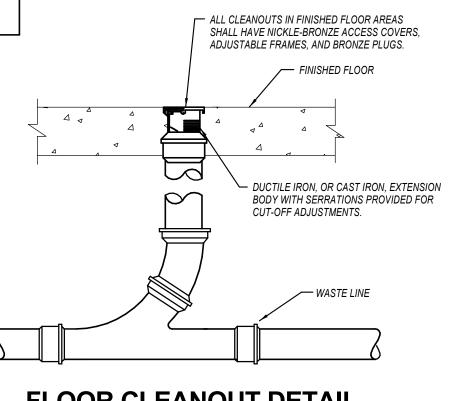
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REFER TO SPECIFICATIONS FOR MORE DETAILED INFORMATION. WELDED PIPING IS REQUIRED FOR GAS PIPING WHEN: A) PIPING IS AT OR OVER 2PSI; B) WHEN PIPING OF ANY PRESSURE IS ROUTED THROUGH CONCEALED SPACES.

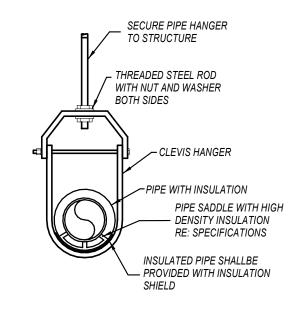
FLOOR DRAIN SCHEDULE

MARK	MANUFACTURER	MODEL	SERVICE	TOP/GRATE SIZE	WASTE SIZE	REMARKS		
FD-1	WATTS	FD-100A-6-2	FLOOR DRAIN	6"	2"	1		
FS-1 WATTS FS-712 FLOOR SINK 8" 2" 2								
	<u>S:</u> DVIDE WITH NICKEL BRON DVIDE WITH HALF GRATE.	ZE TOP.						

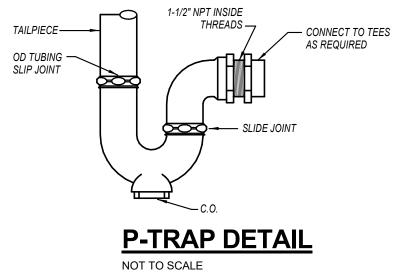


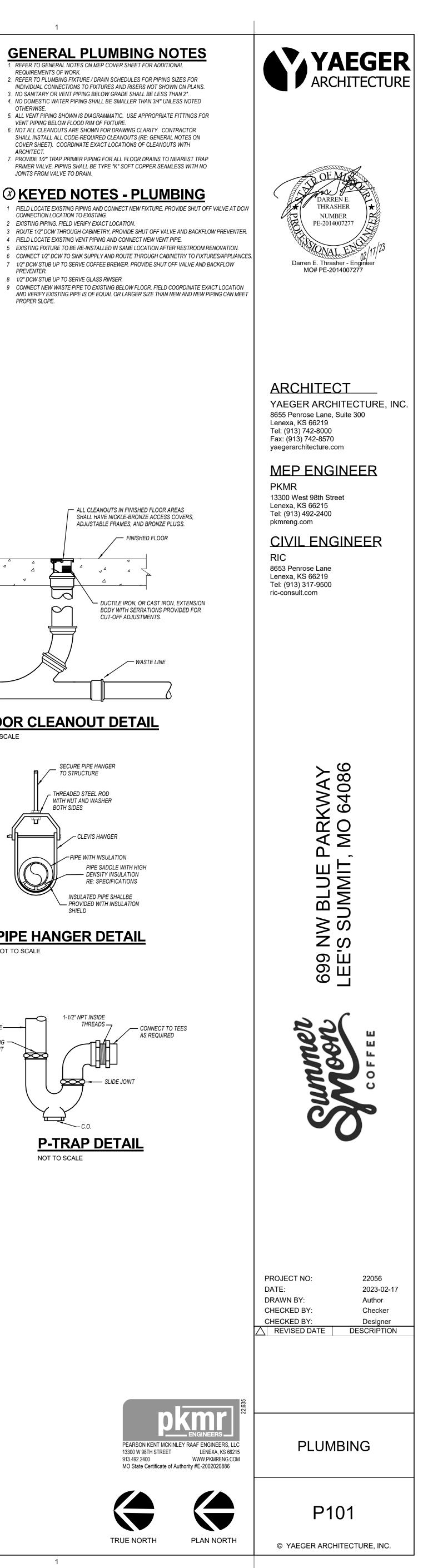


FLOOR CLEANOUT DETAIL NOT TO SCALE



PIPE HANGER DETAIL NOT TO SCALE







1



1. REFER TO GENERAL NOTES ON MEP COVER SHEET FOR ADDITIONAL REQUIREMENTS OF WORK. 2. REFER TO PLUMBING FIXTURE / DRAIN SCHEDULES FOR PIPING SIZES FOR

1

- INDIVIDUAL CONNECTIONS TO FIXTURES AND RISERS NOT SHOWN ON PLANS. 3. NO SANITARY OR VENT PIPING BELOW GRADE SHALL BE LESS THAN 2".
- 4. NO DOMESTIC WATER PIPING SHALL BE SMALLER THAN 3/4" UNLESS NOTED OTHERWISE. ALL VENT PIPING SHOWN IS DIAGRAMMATIC. USE APPROPRIATE FITTINGS FOR VENT PIPING BELOW FLOOD RIM OF FIXTURE.
- 6. NOT ALL CLEANOUTS ARE SHOWN FOR DRAWING CLARITY. CONTRACTOR SHALL INSTALL ALL CODE-REQUIRED CLEANOUTS (RE: GENERAL NOTES ON
- COVER SHEET). COORDINATE EXACT LOCATIONS OF CLEANOUTS WITH ARCHITECT.
- 7. PROVIDE 1/2" TRAP PRIMER PIPING FOR ALL FLOOR DRAINS TO NEAREST TRAP PRIMER VALVE. PIPING SHALL BE TYPE "K" SOFT COPPER SEAMLESS WITH NO JOINTS FROM VALVE TO DRAIN.

EXAMPLE OF CONTERMENTS INCLUDE OF CONTENTS

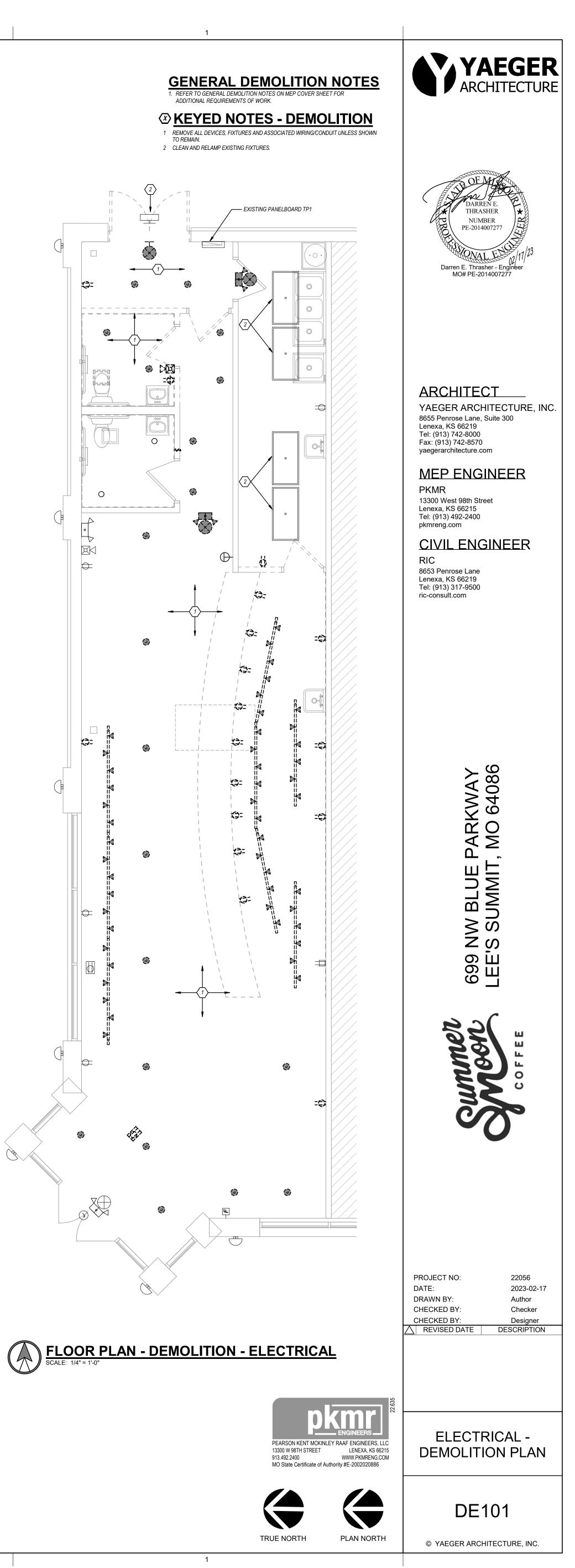
- 1 FIELD LOCATE EXISTING PIPING AND CONNECT NEW FIXTURE. PROVIDE SHUT OFF VALVE AT DCW CONNECTION LOCATION TO EXISTING.
- 2 EXISTING PIPING. FIELD VERIFY EXACT LOCATION. 3 ROUTE 1/2" DCW THROUGH CABINETRY, PROVIDE SHUT OFF VALVE AND BACKFLOW PREVENTER. 4 FIELD LOCATE EXISTING VENT PIPING AND CONNECT NEW VENT PIPE.
- 5 EXISTING FIXTURE TO BE RE-INSTALLED IN SAME LOCATION AFTER RESTROOM RENOVATION. 6 CONNECT 1/2" DCW TO SINK SUPPLY AND ROUTE THROUGH CABINETRY TO FIXTURES/APPLIANCES.
- 7 1/2" DCW STUB UP TO SERVE COFFEE BREWER. PROVIDE SHUT OFF VALVE AND BACKFLOW PREVENTER.

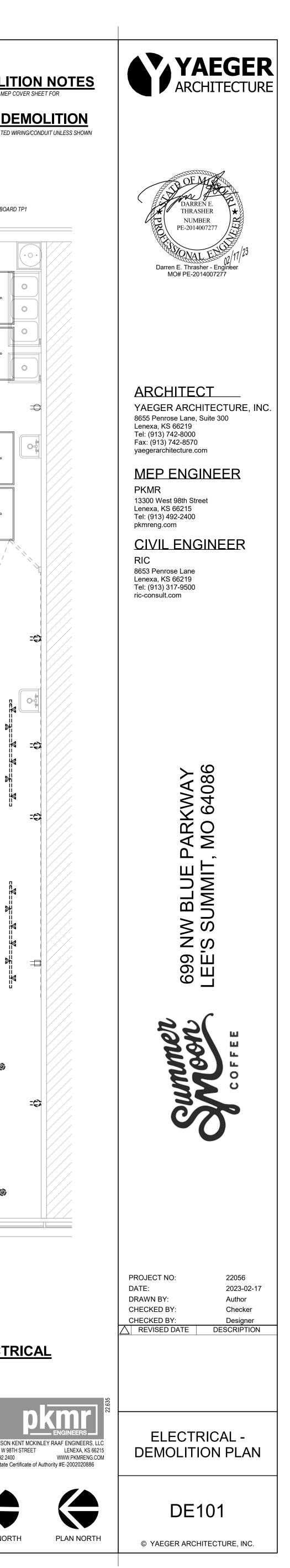
PROPER SLOPE.

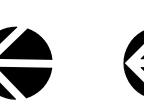
8 1/2" DCW STUB UP TO SERVE GLASS RINSER. 9 CONNECT NEW WASTE PIPE TO EXISTING BELOW FLOOR. FIELD COORDINATE EXACT LOCATION AND VERIFY EXISTING PIPE IS OF EQUAL OR LARGER SIZE THAN NEW AND NEW PIPING CAN MEET

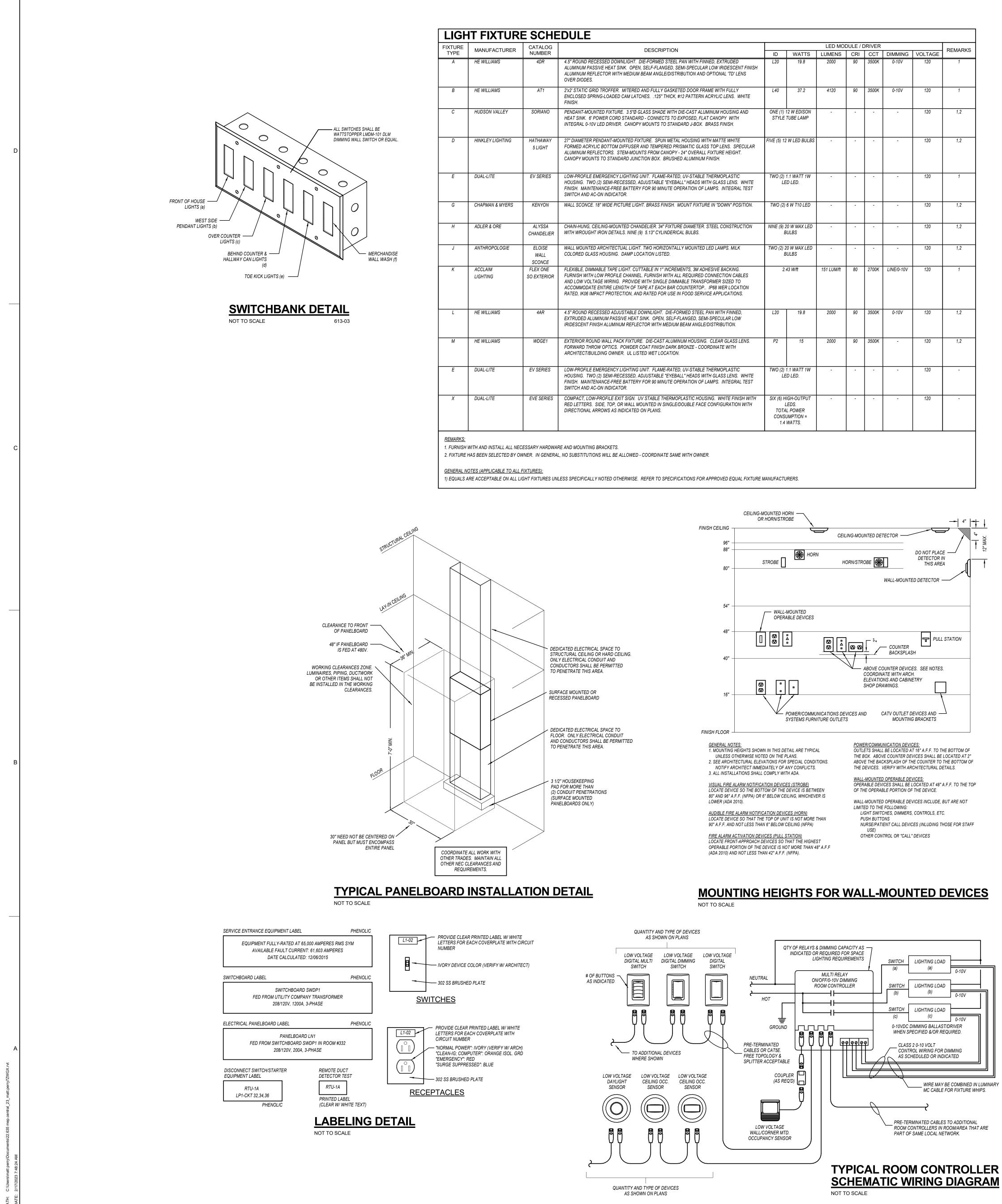
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	SHEET SIZE: ARCH E1 30" x 42"	5	

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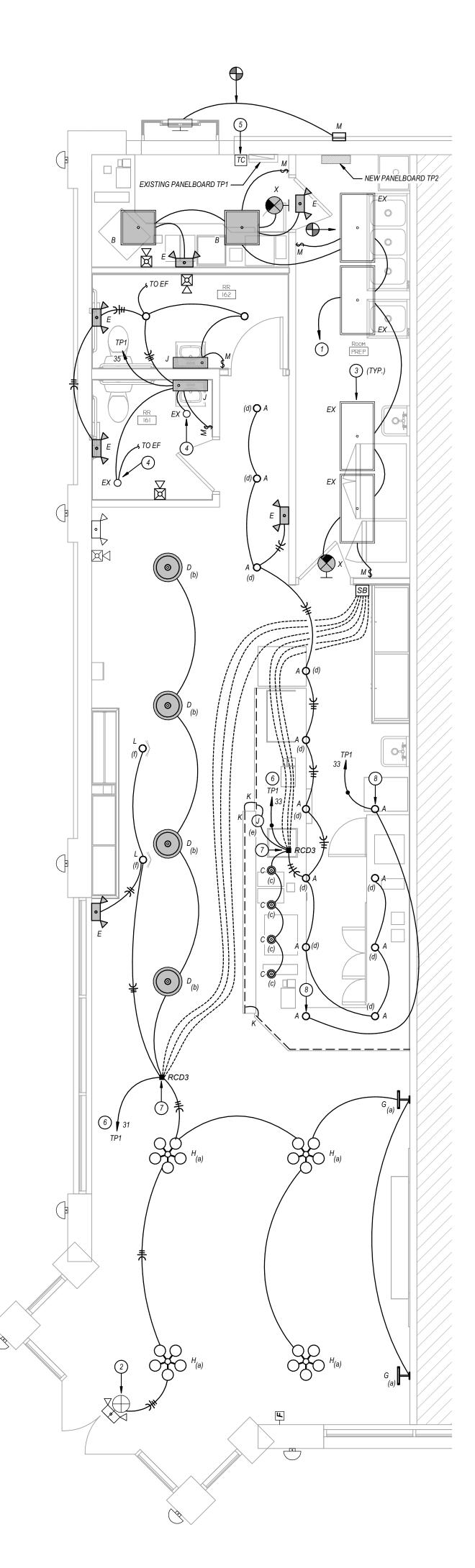
SHEET SIZE: ARCH E1 30" x 42"

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	E SCHE				LED MO	DULE / I				
JFACTURER	NUMBER	DESCRIPTION	ID	WATTS	LUMENS	CRI	ССТ	DIMMING VOLTAGE		REMARKS
LIAMS	4DR	4.5" ROUND RECESSED DOWNLIGHT. DIE-FORMED STEEL PAN WITH FINNED, EXTRUDED ALUMINUM PASSIVE HEAT SINK. OPEN, SELF-FLANGED, SEMI-SPECULAR LOW IRIDESCENT FINISH ALUMINUM REFLECTOR WITH MEDIUM BEAM ANGLE/DISTRIBUTION AND OPTIONAL 'TD' LENS OVER DIODES.	L20 19.8		2000	90	3500K	0-10V	120	1
LIAMS	AT1	2'x2' STATIC GRID TROFFER. MITERED AND FULLY GASKETED DOOR FRAME WITH FULLY ENCLOSED SPRING-LOADED CAM LATCHES125" THICK, #12 PATTERN ACRYLIC LENS. WHITE FINISH.	L40	37.2	4120	90	3500K	0-10V	120	1
DN VALLEY	SORIANO	PENDANT-MOUNTED FIXTURE. 3.5"Ø GLASS SHADE WITH DIE-CAST ALUMINUM HOUSING AND HEAT SINK. 6' POWER CORD STANDARD - CONNECTS TO EXPOSED, FLAT CANOPY WITH INTEGRAL 0-10V LED DRIVER. CANOPY MOUNTS TO STANDARD J-BOX. BRASS FINISH.		12 W EDISON TUBE LAMP	-	-	-	-	120	1,2
EY LIGHTING	HATHAWAY 5 LIGHT	27" DIAMETER PENDANT-MOUNTED FIXTURE. SPUN METAL HOUSING WITH MATTE WHITE FORMED ACRYLIC BOTTOM DIFFUSER AND TEMPERED PRISMATIC GLASS TOP LENS. SPECULAR ALUMINUM REFLECTORS. STEM-MOUNTS FROM CANOPY - 24" OVERALL FIXTURE HEIGHT. CANOPY MOUNTS TO STANDARD JUNCTION BOX. BRUSHED ALUMINUM FINISH.	FIVE (5) 12	-	-	-	-	120	1,2	
ITE	EV SERIES	LOW-PROFILE EMERGENCY LIGHTING UNIT. FLAME-RATED, UV-STABLE THERMOPLASTIC HOUSING. TWO (2) SEMI-RECESSED, ADJUSTABLE "EYEBALL" HEADS WITH GLASS LENS. WHITE FINISH. MAINTENANCE-FREE BATTERY FOR 90 MINUTE OPERATION OF LAMPS. INTEGRAL TEST SWITCH AND AC-ON INDICATOR.		1.1 WATT 1W ED LED.	-	-	-	-	120	1
IAN & MYERS	KENYON	WALL SCONCE. 18" WIDE PICTURE LIGHT. BRASS FINISH. MOUNT FIXTURE IN "DOWN" POSITION.	TWO (2) 6 W T10 LED		-	-	-	-	120	1,2
& ORE	ALYSSA CHANDELIER	CHAIN-HUNG, CEILING-MOUNTED CHANDELIER. 34" FIXTURE DIAMETER. STEEL CONSTRUCTION WITH WROUGHT IRON DETAILS. NINE (9) 5.13" CYLINDERICAL BULBS.		20 W MAX LED 3ULBS	-	-	-	-	120	1,2
POPOLOGIE	ELOISE WALL SCONCE	WALL MOUNTED ARCHITECTUAL LIGHT. TWO HORIZONTALLY MOUNTED LED LAMPS. MILK COLORED GLASS HOUSING. DAMP LOCATION LISTED.		20 W MAX LED BULBS	-	-	-	-	120	1,2
IM NG	FLEX ONE SO EXTERIOR	FLEXIBLE, DIMMABLE TAPE LIGHT. CUTTABLE IN 1" INCREMENTS, 3M ADHESIVE BACKING. FURNISH WITH LOW PROFILE CHANNEL. FURNISH WITH ALL REQUIRED CONNECTION CABLES AND LOW VOLTAGE WIRING. PROVIDE WITH SINGLE DIMMABLE TRANSFORMER SIZED TO ACCOMMODATE ENTIRE LENGTH OF TAPE AT EACH BAR COUNTERTOP IP68 WER LOCATION RATED, IK06 IMPACT PROTECTION, AND RATED FOR USE IN FOOD SERVICE APPLICATIONS.	2.	43 W/ft	151 LUM/ft	80	2700K	LINE/0-10V	120	1
LIAMS	4AR	4.5" ROUND RECESSED ADJUSTABLE DOWNLIGHT. DIE-FORMED STEEL PAN WITH FINNED, EXTRUDED ALUMINUM PASSIVE HEAT SINK. OPEN, SELF-FLANGED, SEMI-SPECULAR LOW IRIDESCENT FINISH ALUMINUM REFLECTOR WITH MEDIUM BEAM ANGLE/DISTRIBUTION.	L20	19.8	2000	90	3500K	0-10V	120	1,2
LIAMS	WDGE1	EXTERIOR ROUND WALL PACK FIXTURE. DIE-CAST ALUMINUM HOUSING. CLEAR GLASS LENS. FORWARD THROW OPTICS. POWDER COAT FINISH DARK BRONZE - COORDINATE WITH ARCHITECT/BUILDING OWNER. UL LISTED WET LOCATION.	P2 15		2000	90	3500K	-	120	1,2
ITE	EV SERIES	LOW-PROFILE EMERGENCY LIGHTING UNIT. FLAME-RATED, UV-STABLE THERMOPLASTIC HOUSING. TWO (2) SEMI-RECESSED, ADJUSTABLE "EYEBALL" HEADS WITH GLASS LENS. WHITE FINISH. MAINTENANCE-FREE BATTERY FOR 90 MINUTE OPERATION OF LAMPS. INTEGRAL TEST SWITCH AND AC-ON INDICATOR.		1.1 WATT 1W ED LED.	-	-	-	-	120	-
ITE	EVE SERIES	COMPACT, LOW-PROFILE EXIT SIGN. UV STABLE THERMOPLASTIC HOUSING. WHITE FINISH WITH	SIX (6) HIGH-OUTPUT		-	-	- 1	-	120	-

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3



GENERAL LIGHTING NOTES 1. REFER TO GENERAL NOTES ON MEP COVER SHEET FOR ADDITIONAL

REQUIREMENTS OF WORK. 2. LIGHT FIXTURES INDICATED AS EMERGENCY FIXTURES ARE TO FUNCTION AS NIGHT LIGHTS UNLESS SPECIFICALLY SHOWN SWITCHED.

Ø KEYED NOTES - LIGHTING

- 1 CONNECT TO EXISTING KITCHEN LIGHTING CIRCUIT 2 EXISTING EXIT LIGHT TO REMAIN. RECIRCUIT TO NEW LIGHTS. 3 EXISTING LIGHT TO REMAIN. CIRCUIT NEW LIGHT (TYPE 'B') TO EXISTING CIRCUIT.
- 4 EXISTING LIGHT TO BE RECIRCUITED TO NEW LIGHTS.
- 5 EXISTING TIME CLOCK FOR MASTER OFF OF COMMON AREA LIGHTS. 6 ROUTE CIRCUIT THROUGH TIME CLOCK FOR MASTER OFF FUNCTION.
- 7 COORDINATE DIMMING WIRING AND CONFIGURATION WITH FIXTURES AND ROOM CONTROLLER. 8 DO NOT SWITCH FIXTURE. LIGHT IS TO REMAIN ON AT ALL TIMES.

LIGHTING CONTROLS

<u>SYMBOLS</u>

- WALL SWITCH VACANCY SENSOR: PASSIVE INFRARED, 120/277V, WALL SWITCH DECORA STYLE SENSOR. (WATTSTOPPER PW-101, OR EQUAL)
- ROOM CONTROLLER LOW VOLTAGE DIMMING SWITCHES: PUSHBUTTON SWITCHES ΨID WITH LED INDICATING LIGHTS. SINGLE GANG IN DECORA STYLE FACEPLATE. (WATTSTOPPER LMDM-101)
- RCD# ROOM CONTROLLER: DIGITAL ON/OFF 0-10V DIMMING ROOM CONTROLLER. 120/277V INPUT. # INDICATES NUMBER OF RELAYS (STD 1-3, UNITS SHALL BE GANGED FOR MORE THAN 3 RELAYS/ZONES) (WATTSTOPPER LMRC-200 SERIES OR EQUAL)

TRAINING AND PROGRAMMING

- OWNER TRAINING: • PROVIDE FACTORY REPRESENTATIVE TRAINING TO OWNER FOR EACH LIGHTING CONTROL SYSTEM UTILIZED, INCLUDING PROGRAMMING FOR SCHEDULING AND OPERATION OF EACH ROOM PER OWNER DIRECTION.
- PROVIDE RECORD OF TIME DELAY SETTINGS ON ALL SENSOR DEVICES FOR OWNER USE. SENSOR ADJUSTMENTS AND SETTINGS: • SYSTEMS SHALL BE SET/PROGRAMMED TO OPERATE TYPICALLY IN MANUAL ON/AUTO
- OFF MODE. 1. SET WALL MOUNTED MOTION SENSOR TO MANUAL ON MODE. 2.SET POWER PACKS AND ROOM CONTROLLERS CONTROLLED BY MOTION SENSORS TO
- MANUAL ON AND CONTROL WITH MOMENTARY WALL SWITCH. PROVIDE FINAL SETTINGS/ADJUSTMENTS PER OWNER'S DIRECTION.

CONTROLS SEQUENCES

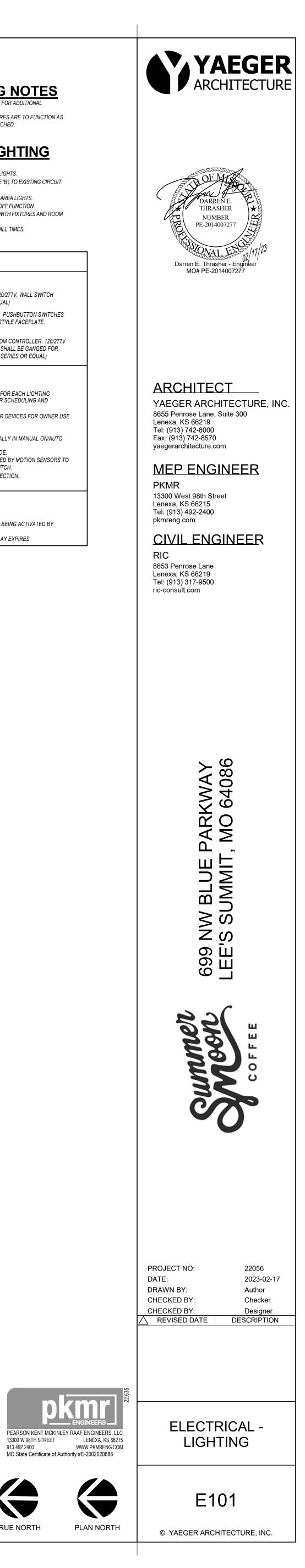
- WALL-MOUNTED LINE VOLTAGE SENSORS: • TURN ON LIGHTS IN ROOM/AREA UPON BUTTON ON SENSOR BEING ACTIVATED BY
- TURN OFF LIGHTS AFTER NO MOTION IS DETECTED AND DELAY EXPIRES.





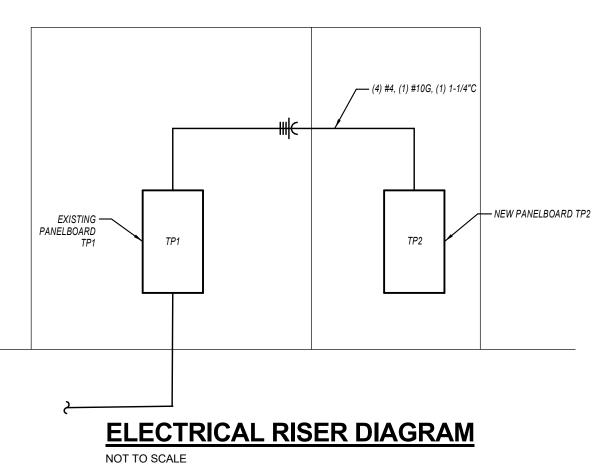
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FLOOR PLAN - LIGHTING



KIT	CHEN EQUIPMENT	CONNEC	TION SC	HEDUL	E						EXISTING SIN	IGLE-SE	CTION F	PAN	ELB	OAF	RD S	CHE	DUL	E
ITEM	ITEM NAME / DESCRIPTION	CONNECTION	MTG. HT.	VOLTS/PH	AMPS	PANEL	CIRCUIT	WIRE	NOTES							MAIN L		5: 400	SCO	CR RATING (AIC):
EQ-1	OPEN AIR MERCH	CORD & PLUG	N/A	120/1P	4.2	TP2	1	(2)#12, #12G, 3/4"C	1, 2	-	PANEL DESIGNATION				#	MAIN I	BREAKEF	R: 250		. ,
EQ-2.1	POS	CORD & PLUG	OVER COUNTER	120/1P	1.5	TP1	13	(2)#12, #12G, 3/4"C	1,2		MOUNTING	i: -			Е́Ц	,	VOLTAGE	: 208/120		
EQ-2.2	POS	CORD & PLUG	OVER COUNTER	120/1P	1.5	TP2	3	(2)#12, #12G, 3/4"C	1, 2		LOCATION	l: -			301	PHA	ASE/WIRE	: 3Ø, 4W		
EQ-4	MICROWAVE	CORD & PLUG	UNDER COUNTER	120/1P	10.0	TP1	38	(2)#12, #12G, 3/4"C	1, 2	1	RECORDENCE	PHASE	C/B			C/B		PHASE		
EQ-5.1	ESPRESSO MACHINE	CORD & PLUG	OVER COUNTER	208/1P	20.0	TP1	8,10	(2)#12, #12G, 3/4"C	1, 2		DESCRIPTION	A B	C TRIP F	POLE	POL	E TRI	P A	В	С	DESCRIP
EQ-5.2	ESPRESSO MACHINE	CORD & PLUG	OVER COUNTER	208/1P	20.0	TP1	19,21	(2)#12, #12G, 3/4"C	1, 2		AUTOMATIC DRIVE WINDOW	600	20	1 ·	1 2 1	20	180			ROC
EQ-6.1	REFRIGERATED COLD FOOD WELL	CORD & PLUG	OVER COUNTER	120/1P	8.3	TP1	25	(2)#12, #12G, 3/4"C	1, 2	EX		4318		3	3 4 1	20		1080		E
EQ-6.2	REFRIGERATED COLD FOOD WELL	CORD & PLUG	OVER COUNTER	120/1P	8.3	TP2	5	(2)#12, #12G, 3/4"C	1, 2		AC UNIT		4318 50	3 5	5 6 1	20			400	
EQ-9.1	GRINDER	CORD & PLUG	OVER COUNTER	120/1P	15.0	TP1	23	(2)#12, #12G, 3/4"C	1, 2			4318		7	7 8		1200			
EQ-9.2	GRINDER	CORD & PLUG	OVER COUNTER	120/1P	15.0	TP2	7	(2)#12, #12G, 3/4"C	1, 2	G	REC: BATHROOMS & HALLWAY	720	20	1 9) 10 ²	20		1200		EQ-5.1 ESPRI
EQ-9.3	GRINDER	CORD & PLUG	OVER COUNTER	120/1P	15.0	TP1	29	(2)#12, #12G, 3/4"C	1, 2	G	JCT: HAND DRYER		1800 20	1 1	1 12 1	20			1800	EG
EQ-9.4	GRINDER	CORD & PLUG	OVER COUNTER	120/1P	15.0	TP1	4	(2)#12, #12G, 3/4"C	1, 2	G	EQ-2.1 & EQ21	360	20	1 1	3 14 1	20	1800			EG
EQ-13.1	BULK COFFEE BLENDER	CORD & PLUG	OVER COUNTER	120/1P	9.0	TP1	17	(2)#12, #12G, 3/4"C	1, 2	G	JCT: HAND DRYER	1800	20	1 1	5 16 1	20		1000		EQ-27E.2
EQ-13.2	BULK COFFEE BLENDER	CORD & PLUG	OVER COUNTER	120/1P	9.0	TP2	6	(2)#12, #12G, 3/4"C	1, 2	G	EQ-13.1 BULK GRINDER		1080 20	1 1	7 18 1	20			463	K
EQ-14.1	COFFEE BREWER	CORD & PLUG	OVER COUNTER	120/1P	15.0	TP1	27	(2)#12, #12G, 3/4"C	1, 2	G	EQ-5.2 ESPRESSO MACHINE	1200	20	1	9 20	20	2250			
EQ-14.2	COFFEE BREWER	CORD & PLUG	OVER COUNTER	120/1P	15.0	TP2	4	(2)#12, #12G, 3/4"C	1, 2		EQ-5.2 ESPRESSO MACHINE	1200	20	2	1 22 4	30		2250		L.
EQ-15	KEGERATOR	CORD & PLUG	N/A	120/1P	8.3	TP2	14	(2)#12, #12G, 3/4"C	1, 2	G	EQ-9.1 GRINDER		1800 20	1 2	3 24 1	20			1440	EQ-2
EQ-17.1	BLENDER	CORD & PLUG	OVER COUNTER	120/1P	15.0	TP1	12	(2)#12, #12G, 3/4"C	1, 2	G	EQ-6.1 REF COLD FOOD WELL	1000	20	1 2	5 26 1	20	1000			EQ-27E.3
EQ-17.2	BLENDER	CORD & PLUG	OVER COUNTER	120/1P	15.0	TP1	14	(2)#12, #12G, 3/4"C	1, 2	G	EQ-14.1 COFFEE BREWER	1800	20	1 2	7 28			4780		
EQ-17.3	BLENDER	CORD & PLUG	OVER COUNTER	120/1P	15.0	TP2	8	(2)#12, #12G, 3/4"C	1, 2		EQ-9.3 GRINDER		1080 20	1 2	9 30 3	60			4500	PA
EQ-17.4	BLENDER	CORD & PLUG	OVER COUNTER	120/1P	15.0	TP2	10	(2)#12, #12G, 3/4"C	1, 2		LIGHTS:FRONT HOUSE	925	20	1 3	1 32		6364			
EQ-19E	TRIPLE UNDER COUNTER REFRIGERATOR	CORD & PLUG	OVER COUNTER	120/1P	10.0	TP2	12	(2)#12, #12G, 3/4"C	1, 2		LIGHTS: BAR + HALL	369	20	1 3	3 34 2	20		1250		SPAC
EQ-20.1	SINGLE UNDER COUNTER REFRIGERATOR	CORD & PLUG	UNDER COUNTER	120/1P	10.0	TP2	2	(2)#12, #12G, 3/4"C	1, 2		LIGHTS: BATHROOM		202 20	1 3	5 36 2	20			1250	SFAU
EQ-20.2	SINGLE UNDER COUNTER REFRIGERATOR	CORD & PLUG	UNDER COUNTER	120/1P	10.0	TP2	9	(2)#12, #12G, 3/4"C	1, 2		MENU BOARD	500	20	1 3	7 38 1	20	1200			EQ
EQ-21	GEN REC		OVER COUNTER	120/1P	1.5	TP1	13 (W/ EQ2.1)	(2)#12, #12G, 3/4"C	1, 2		SPARE	-	20	1 3	9 40 1	20		-		
EQ-23	ICE MACHINE AND STORAGE BIN	CORD & PLUG	UNDER COUNTER	120/1P	12.0	TP1	24	(2)#12, #12G, 3/4"C	1, 2		SPARE		- 20	1 4	1 42 1	20			-	
EQ-27E.1	REACH IN REFRIGERATOR	CORD & PLUG	N/A	120/1P	10.0	TP1	4	(2)#12, #12G, 3/4"C	1, 2		TOTAL	S 8903 10207	10280				13994	11560	9853 T	OTALS
EQ-27E.2	REACH IN REFRIGERATOR	CORD & PLUG	N/A	120/1P	10.0	TP1	16	(2)#12, #12G, 3/4"C	1, 2											
										-		PANELBOARD S							CONNE	ECTED PHASE LO
NOTES:											LOAD DESCRIPTION	CONNECTED	DEMAND		CODE MI	N. (VA)		PHAS	SE	VA
	IDE RECEPTACLE FOR CONNECTION TO CORD AND	PLUG EURNISHED WITH E									LIGHTS	1,959	1.25		2,44			Α		22,897
	DINATE EXACT NEMA CONFIGURATION OF PLUGS			UIPMENT SUBMITTA	N S PRIOR TO BEG	INNING WORK					RECEPTACLES	37,784	10KVA + 50% RES	ST	23,8	92		В		21,767
2.0001											MOTORS	0	1.25 x LARGEST + SUM OF	REST	0			С		20,134
											AIR CONDITIONING	12,954	1.00		12,9	54		ΤΟΤΑ	LS	64,797
											SPACE HEATING	4,000	0.00		0					
											HEAT PUMP	0	1.00		0			<u>REMARKS:</u>		
											CONTINUOUS	4,500	1.25		5,62	25		1. EXISTING	G PANELBO	JARD TP1
											NON-CONTINUOUS	0	1.00		0			2. EXISTINO	G CIRCUIT	BREAKERS MAY BE F
											MISC. LOADS 1	3,600	1.00		3,60			WHERE PO	SSIBLE. PI	ROVIDE NEW CIRCUIT
													SIZING L	.OAD:	48,5	20		AS REQUIF	RED.	

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SHEET SIZE: ARCH E1 30" x 42"

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SINGLE-SECTION PANELBOARD SCHEDULE

SIZING LOAD (AMPS):

135

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	PANEL DESIGNATION: TP2 MOUNTING: -							+		AIN LUG IAIN BRI			SCCR RATING (AI		
								CIRCUIT #			LTAGE:				
	LOCATION:	-						5		PHASE	E/WIRE:	3Ø, 4W			
	DESCRIPTION		PHASE		С	/B] 7	5	C/B			PHASE		DESCI	
	DESCRIPTION	А	В	С	TRIP	POLE			POLE	TRIP	А	В	С	DESCR	
;	EQ-1 OPEN AIR MERCH	504			20	1	1	2	1	20	1000			EQ-20.1 SINGL	
;	EQ-2.2 POS		180		20	1	3	4	1	20		1800		EQ-14.2	
;	EQ-6.2 REF COLD WELL			1000	20	1	5	6	1	20			1000	EQ-13.2 BULK	
3	EQ-9.2 GRINDER	1800			20	1	7	8	1	20	1800				
3	EQ-20.2 SINGLE UNDER CTR REF		1000		20	1	9	10	1	20		1800			
	FIREPLACE HEATER			1500	20	1	11	12	1	20			1000	EQ-19E TRIPL	
	REC: GENERAL	1080			20	1	13	14	1	20	180			L	
	-		0		-	1	15	16	1	-		-			
	-			-	-	1	17	18	1	-			-		
	-	-			-	1	19	20	1	-	-				
	-		-		-	1	21	22	1	-		-			
	-			-	-	1	23	24	1	-			-		
	TOTALS	3384	1180	2500							2980	3600	2000	TOTALS	
			BOARD												
								CON	NECTED PHASE						

LOAD DESCRIPTION	CONNECTED	DEMAND	CODE MIN. (VA)		
LIGHTS	0	1.25	0		
RECEPTACLES	14,144	10KVA + 50% REST	12,072		
MOTORS	0	1.25 x LARGEST + SUM OF REST	0		
AIR CONDITIONING	0	0.00	0		
SPACE HEATING	1,500	1.00	1,500		
HEAT PUMP	0	1.00	0		
CONTINUOUS	0	1.25	0		
NON-CONTINUOUS	0	1.00	0		
MISC. LOADS 1	0	1.00	0		
		SIZING LOAD:	13,572		
		SIZING LOAD (AMPS):	38		

CON	NECTED PHASE
PHASE	VA
A	6,364
В	4,780
С	4,500
TOTALS	15,644
REMARKS:	
<u> </u>	

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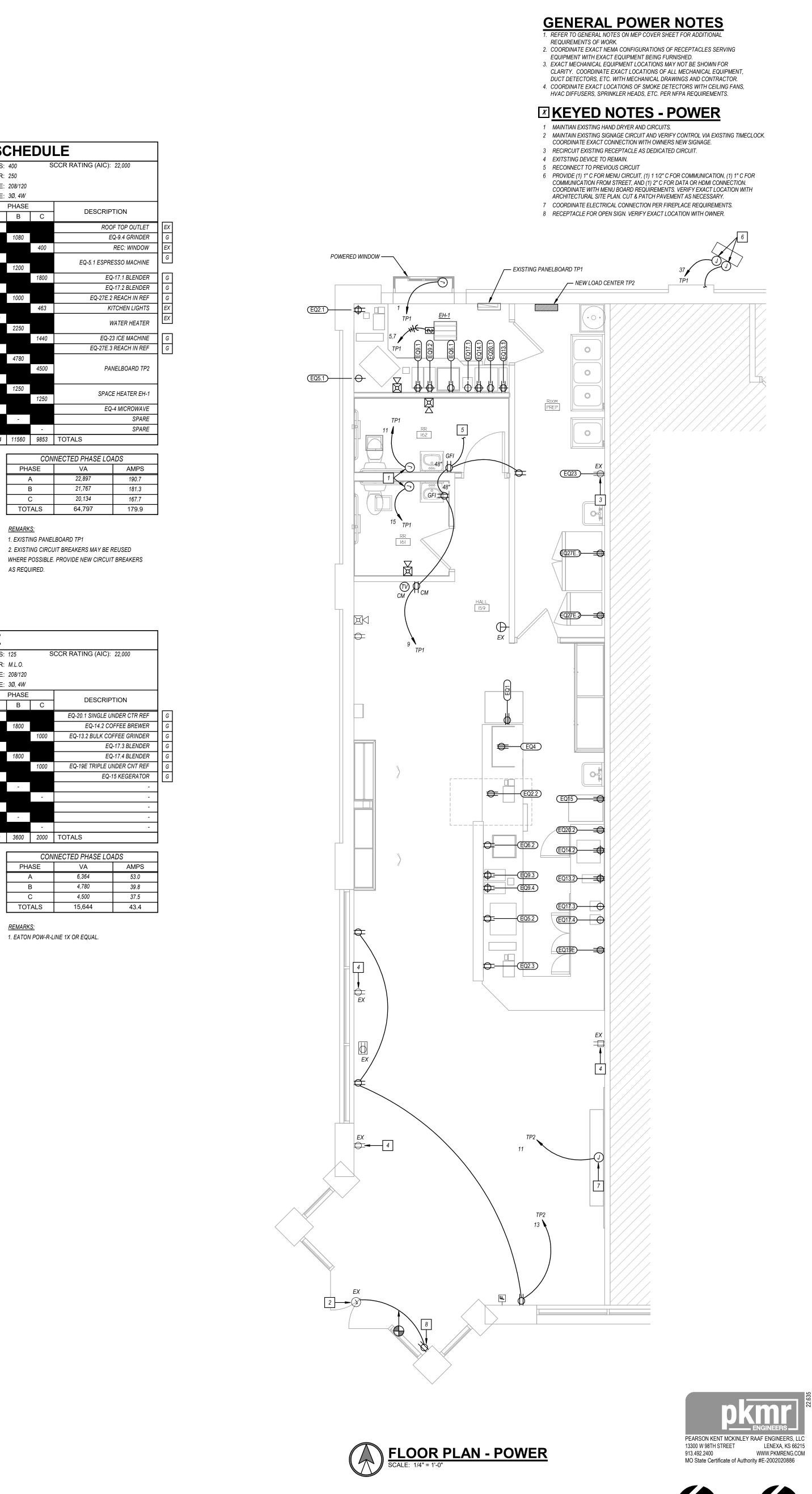
PANELBOARD BREAKER KEYED NOTES G FURNISH GFCI-PROTECTED BREAKER.

EX EXISTING CIRCUIT BREAKER.

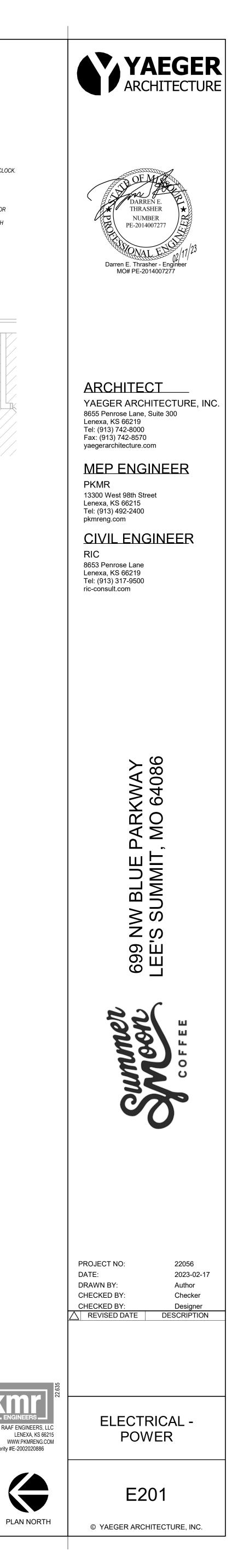
EXISTING PANELBOARD WORK

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- 1. ALL BREAKERS IN EXISTING PANELBOARDS ARE EXISTING TO REMAIN UNLESS INDICATED OTHERWISE ON THE PANELBOARD SCHEDULES. 2. EXISTING BREAKERS, CIRCUITS, AND LOADS ARE SHOWN LIGHT. NEW LOADS, BREAKERS, AND CIRCUITS ARE SHOWN DARK.
- 3. EXISTING LOAD VALUES ARE ASSUMED AND/OR BASED OFF EXISTING DRAWINGS. 4. AVAILABILITY OF CIRCUITS IN EXISTING PANELBOARDS IS BASED ON FIELD OBSERVATION AND EXISTING CIRCUIT DIRECTORIES. CONTRACTOR SHALL FIELD VERIFY ACTUAL CONDITIONS AND PROVIDE WORK ACCORDING TO INTENTION OF CONTRACT DOCUMENTS. ACTUAL CIRCUITS AVAILABLE DUE TO DEMOLITION,
- CIRCUITS THAT ARE REQUIRED TO REMAIN, AND PANELBOARD AVAILABILITY MAY BE DIFFERENT THAN INDICATED. 5. FAULT CURRENT RATINGS AND/OR TYPES OF NEW BREAKERS IN EXISTING PANELBOARDS SHALL MATCH THE
- TYPE AND AIC RATING OF THE EXISTING BREAKERS IN ORDER TO MAINTAIN THE FAULT CURRENT RATING OF THE PANELBOARD.
- 6. PROVIDE NEW TYPED CIRCUIT DIRECTORIES FOR ALL PANELBOARDS WITH UPDATED CIRCUIT INFORMATION AS SHOWN AND/OR FIELD-VERIFIED.



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TRUE NORTH