15000 - MECHANICAL SPECIFICATIONS

<u>SECTION 15000 - MECHANICAL REQUIREMENTS</u> GENERAL REQUIREMENTS

- ALL WORK SHALL BE IN ACCORDANCE W/ LATEST EDITION OF INTERNATIONAL BUILDING, MECHANICAL & PLUMBING CODES, CODES AS ADOPTED BY CITY, COUNTY, STATE & ALL OTHER APPLICABLE CODES.
- FURNISH & INSTALL ALL LABOR & MATERIALS REQUIRED FOR COMPLETE, FUNCTIONING, MECHANICAL & PLUMBING SYSTEMS W/ ALL ASSOCIATED EQUIPMENT & APPARATUS AS SHOWN ON PLANS. "PROVIDE" MEANS TO FURNISH & INSTALL.
- OBTAIN & PAY FOR ALL PERMITS REQUIRED FOR EXECUTION OF THIS WORK & SHALL MAKE ARRANGEMENTS FOR MODIFICATIONS TO WATER, GAS & SEWER CONNECTIONS TO 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. 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. WARRANT TO OWNER QUALITY OF MATERIAL, EQUIPMENT, WORKMANSHIP & OPERATION
- OF EQUIPMENT PROVIDED UNDER THESE SPECIFICATIONS FOR ONE YEAR FROM & AFTER COMPLETION OF BUILDING & ACCEPTANCE OF MECHANICAL SYSTEMS BY OWNER. ALL MATERIALS INSTALLED IN PLENUMS SHALL BE NONCOMBUSTIBLE OR HAVE
- FLAME/SMOKE INDEX OF NO MORE THAN 25/50 IN ACCORDANCE W/ ASTM F 84. ROOF PENETRATIONS — MADE BY AUTHORIZED ROOFING CONTRACTOR WHEN REQUIRED.

<u>SECTION 15100 - PLUMBING</u>

- WATER PIPING ALL WATER PIPING SHALL BE 95-5 TIN-ANTIMONY JOINED TYPE L COPPER. INSULATE W/ FIBERGLASS W/ ASJ & PVC COVERS. THINCKNESS IN ACCORDANCE W/ ASHRAE 90.1. WASTE & VENT PIPING - CI BELL & SPIGOT OR HUBLESS CI W/ NEOPRENE GASKET
- FITTINGS W/ STAINLESS STEEL BANDS. SCHED 40 PVC W/ SOLVENT WELDS MAY BE USED WHERE ALLOWED BY LOCAL CODE. PVC NOT ALLOWED IN PLENUMS. ROOF/STORM DRAIN PIPING - CI BELL & SPIGOT OR HUBLESS CI W/ NEOPRENE GASKET FITTINGS W/ STAINLESS STEEL BANDS. 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. GAS PIPING - PROVIDE SCHED 40 CONT. WELD CARBON STEEL W/ CORRESPONDING FITTINGS PROVIDE THREADED FITTINGS PROVIDE IRON BODY-BRASS PLUG GAS STOPS

. VALVES BALL VALVES - 2" & UNDER - BRONZE FULL PORT W/ TEFLOW SEATS, BRONZE

PAINT ALL EXPOSED GAS PIPING ON THE EXTERIOR OF THE BUILDING INCLUDING ON

- BALL & INSULATED HANDLE 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
- FNDS PROVIDE POLYLIRETHANE INSULATION COVER CHECK VALVES - 2" 7 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, 200 PSI-WOG/125 PSI-WSP.

BUTTERFLY VALVES - 3" & LARGER LEVER ASTM A126 CI DRILLED & TAPPED FULL

LUG BODY. 200 PSI-WOG, EXTENDED NECK, BRONZE DISC, STAINLESS STEEL STEM, FIFID-REPLACEABLE FPDM SLEEVE & STEM SEALS. EQUIVALENT VALVE MANUFACTURERS: MILWAUKEE, STOCKHAM, POWELL, RED-WHITE. CRANE, APPOLO, MUELLER, MUESSCO, WATTS, HAYS, ROCKWELL-NORDSTROM.

FIXTURES - SEE SCHEDULES

- FIXTURES: AMERICAN STANDARD, KOHLER, CRANE, ZURN, TOTO STAINLESS STEEL FIXTURES: ELKAY, JUST, MOEN COMMERCIAL
- FITTINGS & SUPPORTS: JOSAM, SMITH, WADE, ZURN, OR JONESPEC
- SEATS: CHURCH. OLSONITE. BEMIS OR BENEKE DRINKING FOUNTAINS: HALSEY TAYLOR, ELKAY, OASIS, OR HAWS. TRIM BY DELTA, ELJER, KOHLER, AMERICAN STANDARD, CRANE, SLOAN.
- FLUSHVALVES: SLOAN, ZURN, TOTO
- DRAINS BY WADE, ZURN, WOODFORD, SMITH, JOSAM. ROOF DRAINS - CAST IRON ROOF DRAIN W/ FLANGE, CI MUSHROOM DOME. 2" DAM

SMITH, WADE, WOODFORD OR ZURN.

FOR OVERFLOW DRAINS WALL HYDRANTS JOSAM SERIES 71000 W/ CONNECTIONS FOR 3/4" PIPE & HOSE. NON-FREEZING W/ KEY, VACUUM BREAKER, LOCKING COVER. EQUIVALENT BY J.R.

EQUIPMENT - SEE SCHEDULES

WATER HEATER - STATE, RHEEM, NATIONAL, A.O. SMITH. PORCELAINIZED GLASSLINED TANK. COLD WATER INLET DROP TUBE. MAGNESIUM ANODE RODS. U.L. SEAL, 160 PS FACTORY TEMPERATURE & PRESSURE RELIEF VALVE. N.S.F. CONSTRUCTION. 3 YR

- SUBMERSIBLE SUMP PUMPS SIMPLEX/DUPLEX SUBMERSIBLE PUMP SYSTEM AS SCHED/SHOWN. PUMP CASING ONE PIECE CAST IRON W/ SUPPORT LEGS, CI SUCTION STRAINER. VERTICAL MOTOR, NEMA-6, NOT LESS THAN HP SCHED & 1750 RPM.
- AUTO-RESET THERMAL /OVERLOAD PROTECTION. RECIRCULATION PUMPS - HORIZONTAL, OIL-LUBRICATED, ALL BRONZE. NON-OVERLOADING MOTOR.

- 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 FROM LINE
- AFTER PIPING IS IN PLACE TEST LINES TO ENSURE NO LEAKS. ALL PIPING & EQUIPMENT SHALL BE SUPPORTED PROPERLY FROM STRUCTURE.
- ESCUTCHEONS PROVIDE NICKEL-BRASS OR CHROME PLATED ON ALL EXPOSED PIPES WHEN PASSING THRU WALL OR CEILING OF FINISHED ROOMS. VERIFY FLOOR MATERIALS USED FROM ARCHITECTURAL PLANS & PROVIDE PROPER
- CLEANOUT TOPS, WHERE THEY OCCUR IN CARPET, QUARRY TILE, VINYL TILE OR CERAMIC TILE. PROVIDE WATER HAMMER ARRESTORS FOR ALL PLUMBING BANKS W/ FIXTURES UTILIZING FLUSH VALVES IN ANY CAPACITY. LOCATE ARRESTER BETWEEN LAST TWO

<u>SECTION 15300 - HVAC</u>

FIXTURES SERVED ON BRANCH LINE.

GENERAL A. PROVIDE COMPLETE HVAC SYSTEM AS SHOWN ON DRAWINGS INCLUDING ALL NECESSARY EQUIPMENT, DUCTWORK, DIFFUSERS, GRILLES, & FILTERS. PROVIDE OPERATING & MAINTENANCE INSTRUCTIONS ON ALL EQUIPMENT.

JURISDICTION.

A. HVAC DUCTWORK SHALL BE GALV SHEET METAL OF GAUGES & JOINT TYPES SPECIFIED IN SMACNA MANUAL. PROVIDE TURNING VANES IN ELBOWS.

ALL HVAC WORK SHALL BE DONE IN STRICT ACCORDANCE W/ ALL REQUIREMENTS OF

LOCAL BUILDING CODE, ASHRAE, NEC, NFPA, & ALL OTHER APPLICABLE CODES HAVING

- VOLUME DAMPERS SHALL BE MANUAL LOCKING BLADE TYPE. ALL DUCTWORK MUST BE SUPPORTED PROPERLY FROM STRUCTURE.
- WRAP ALL SUPPLY & OUTSIDE AIR HVAC DUCTWORK W/ CERTAINTEED 1-1/2" THICK INSULATION W/ VAPOR BARRIER IN CONCEALED LOCATIONS. ALSO LINE FIRST 10' OF SUPPLY DUCTWORK FOR SOUND ATTENUATION (IN ADDITION TO WRAP) LINE ALL RETURN AIR DUCTS & TRANSFER BOOTS W/ 1/2" LINER.

- A. ROOFTOP UNITS AS SCHEDULED. EQUIVALENTS BY TRANE, CARRIER, YORK, LENNOX, AAON. DAIKIN. MIN 14" ROOF CURB. PROVIDE SLOPED CURB AS REQUIRED FOR LEVEL UNIT INSTALLATION. ECONOMIZER W/ BAROMETRIC RELIEF. FIXED DRY BULB
- CONTROL. 2" MERV 7 FILTERS. LOUVERED HAIL GUARDS. 30 DEG LOW AMBIENT. EXHAUST FANS - EQUIVALENT BY COOK, PENN, ACME, GREENHECK, JENNAIRE, TWIN CITY. PROVIDE W/ SPEED CONTROLS FOR ALL FANS LESS THAN 1/3HP TO BE FURNISHED TO E/C FOR MOUNTING AT FAN. PROVIDE W/ 14" MIN. CURB.
- PROVIDE PROGRAMMABLE THERMOSTATS W/ STAGES OF HEATING AND COOLING AS REQUIRED BY STAGES OF HEATING AND COOLING ON SPECIFIED EQUIPMENT. SEVEN (7 DAY PROGRAMMING CAPABILITY W/ 2 OCC/UNOCC PERIODS/DAY. AUTO HEAT/COOL CHANGE OVER. LOCKING SETPOINTS TO PREVENT TAMPERING. PROVIDE W/ AL INTERFACES TO OTHER EQUIPMENT AS REQUIRED. THERMOSTATS BY HONEYWELL, JOHNSON CONTROLS, WHITE-ROGERS, TRANE, CARRIER, AAON, LENNOX, DAIKIN, OR APPROVED FQUAL.

- B. COORDINATE W/ E/C TO PROVIDE ALL WIRING BETWEEN EQUIPMENT, DAMPERS, THERMOSTATS & ALL OTHER REQUIRED CONTROLS & DEVICES. PROVIDE ANY REQUIRED INTERFACES TO FIRE ALARM OR SIMILAR SYSTEMS.
- PROVIDE GROUND-MOUNTED UNITS ON 4", REINFORCED CONCRETE BASE, 4" LARGER THAN UNIT ON EACH SIDE ROOF-MOUNTED UNITS ON EQUIPMENT SUPPORTS OR CURBS. ANCHOR UNITS TO
- PROVIDE FACTORY—AUTHORIZED SERVICE START UP ON EQUIPMENT. TRAIN OWNER'S MAINTENANCE PERSONNEL ON STARTUP, SHUTDOWN, TROUBLESHOOTING, SERVICING,

16000 - ELECTRICAL SPECIFICATIONS

<u>SECTION 16000 - ELECTRICAL REQUIREMENTS</u>

GENERAL REQUIREMENTS

- A. ALL WORK SHALL BE IN ACCORDANCE W/ LATEST EDITION OF INTERNATIONAL BUILDING CODE. NATIONAL ELECTRICAL CODE, NFPA, CODES AS ADOPTED BY CITY, COUNTY,
- STATE & ALL OTHER APPLICABLE CODES. B. ALL MATERIALS & EQUIPMENT SHALL BE NEW & SHALL BEAR U.L. LABEL WHERE APPLICABLE. PROVIDE WATERPROOF EQUIPMENT ENCLOSURES WHERE REQUIRED. C. OBTAIN & PAY FOR ALL PERMITS REQUIRED FOR EXECUTION OF THIS WORK & SHALL
- MAKE ARRANGEMENTS FOR MODIFICATIONS TO ELECTRICAL CONNECTIONS TO BUILDING D. CONTRACTOR SHALL PROVIDE ALL LABOR & MATERIALS REQUIRED TO HAVE COMPLETE FUNCTIONING ELECTRICAL LIGHTING & POWER SYSTEMS TOGETHER W/ ALL ASSOCIATED
- EQUIPMENT & APPARATUS AS SHOWN ON PLANS E. WHERE AN ELECTRICAL DEVICE IS REQUIRED BY CODE BUT NOT SHOWN, IT SHALL BE PROVIDED AS THOUGH FULLY SHOWN & SPECIFIED. CONTRACTOR SHALL 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 THIS CONNECTION FOR ANY ERROR OR NEGLIGENCE ON CONTRACTOR'S PART. G. 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. H. 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. I. ALL MATERIALS INSTALLED IN PLENUMS SHALL BE NONCOMBUSTIBLE OR HAVE

SECTION 16100 - CONDUIT & CONDUCTORS

A. FOLLOW CIRCUITING SHOWN ON PLANS. USE NO CONDUIT SMALLER THAN 1/2" & NO CONDUCTORS SMALLER THAN #12 GA. UNLESS NOTED OTHERWISE. B. WIRE SHALL BE IN NON-FLEXIBLE METALLIC CONDUIT (EMT, IMC OR RMC) FOR ALL

CIRCUITS AND FEEDERS GREATER THAN 30A, LIGHT SWITCH RISERS, KITCHEN CIRCUITS

FLAME/SMOKE INDEX OF NO MORE THAN 25/50 IN ACCORDANCE W/ ASTM E 84.

- C. MC CABLE ACCEPTABLE FOR BRANCH CONVENIENCE CIRCUITS AND LIGHTING CIRCUITS. DO NOT DAISY CHAIN LIGHT FIXTURES. PROVIDE MC LUMINARY CABLE WITH BUILT-IN TWISTED JACKETED PAIR FOR LIGHTING CIRCUITS FOR LIGHTING CONTROLS. PROVIDE HEALTH CARE RATED MC FOR MEDICAL TREATMENT AREAS WHEN NOT IN CONDUIT.
- D. CONDUIT INSTALLED BELOW GRADE SHALL BE SCHEDULE 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.
- T. PROVIDE INTERLOCKING SPACERS FOR MULT RUNS OF UG CONDUITS IN SAME TRENCH. F. LIGHTING & RECEPTACLE CIRCUIT CONDUCTORS SHALL BE COPPER THWN/THHN 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 MANUF RECOMMENDED
- G. CIRCUITS W/ NO. 8 OR LARGER CONDUCTORS, MOTOR CIRCUITS, POWER & FEEDER CIRCUITS & BUILDING SERVICE FEEDERS SHALL BE COPPER THWN/THHN 600 VOLT,
- H. 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.

<u>SECTION 16200 — GROUNDING</u>

- A. SUPPLEMENT GROUNDED NEUTRAL OF SECONDARY DISTRIBUTION SYSTEM W/ EQUIPMENT GROUNDING SYSTEM, INSTALLED SO THAT METALLIC STRUCTURE'S, FNCLOSURES, 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
- B. SYSTEM SHALL COMPLY W/ NATIONAL ELECTRICAL CODE, DRAWINGS & AS SPECIFIED. C. PROVIDE EQUIPMENT GROUND 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

- 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.

- SECTION 16300 ELECTRICAL EQUIPMENT A. JUNCTION BOXES & OUTLET BOXES SHALL BE GALVANIZED KNOCKOUT TYPF. LIGHTING FIXTURE BOXES IN CEILINGS SHALL NOT BE LESS THAN 4" OCTAGONAL
- KNOCKOUT TYPE. OUTLETS SHALL BE INSTALLED IN LOCATIONS SHOWN ON DRAWINGS EXCEPT OUTLETS MAY BE MOVED 4 FEET IN EITHER DIRECTION IF SO DIRECTED, WITHOUT ADDITIONAL COST. BOXES SHALL BE FLUSH MOUNTED ON WALLS FOR
- CONCEALED WORK. GANGABLE BOXES SHALL BE USED IN ALL GYPBOARD SURFACES. A. BRANCH CIRCUIT 208/240V PANELS SHALL BE CAPACITY SHOWN W/ TIN PLATED COPPER BUSSING & BRACED FOR MINIMUM OF 22.000A AIC OR AS OTHERWISE NOTED

OR REQUIRED (SERIES RATED ACCEPTABLE). BOLT ON CIRCUIT BREAKERS. 480V

PANELS SAME EXCEPT 25,000A AIC MIN. MINIMUM 20" WIDE W/ GALV STEEL

- ENCLOSURE W/ HINGED DOOR & KEYED LOCK. COORD TRIM WITH MOUNTING LOCATION. PANELS TO BE RECESSED WHENEVER POSSIBLE. B. DISTRIBUTION PANELS SHALL BE CAPACITY SHOWN & SHALL BE SQUARE D I-LINE W/ TIN PLASTED COPPER BUSSING. 65KAIC MIN OR AS OTHERWISE NOTED/REQ'D. BOLT ON CIRCUIT BREAKERS (SERIES RATED ACCEPTABLE). GALV STEEL ENCLOSURE.
- C. EQUIVALENT BY SQUARE D, SIEMENS, CUTLER HAMMER, OR GE. <u> SECTION 16350 — ELECTRICAL IDENTIFICATION</u>
- A. MANUFACTURED LABELS FOR EACH PANELBOARD & TRANSFORMER. TYPEWRITTEN PANEL SCHEDULES MOUNTED IN PANELS B. PRINTED TAPE STYLE LABEL FOR EACH RECEPTACLE INDICATING PANEL & CIRCUIT #.
- D. BRANCH CIRCUITS IDENTIFY EACH CIRCUIT W/ WIRE MARKERS WHEN ENCLOSURE LABEL AND 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.

C. MANUFACTURED LABELS FOR ALL DISCONNECT SWITCHES INDICATING EQUIPMENT

SECTION 16400 - WIRING DEVICES

- A. CONVENIENCE OUTLETS SPEC GRADE 20 AMP DUPLEX W/ GROUND & SS WALL PLATES. OTHER OUTLETS SHALL BE VERIFIED W/ EQUIPMENT SUPPLIERS FOR PROPER NEMA CONFIGURATIONS. PROVIDE GFIC RATED DEVICES WHERE INDICATED
- AND AS REO'D PER CODE. B. PROVIDE GFIC RATED DEVICES WHERE INDICATED AND ANYWHERE REQUIRED PER THE
- C. PROVIDE AFCI PROTECTION ON ALL CIRCUITS REQUIRED PER THE NEC. D. PROVIDE TAMPER RESISTANT RECEPTACLES ON ALL RECEPTACLES IN PUBLIC AREAS,
- AREAS ACCESSIBLE TO CHILDREN, AND WHERE OTHERWISE REQUIRED TO BE TAMPER RESISTANT PER THE NEC.
- E. LIGHT SWITCHES SPEC GRADE 20 AMP TOGGLE SWITCHES W/ SS WALL PLATES. F. WALL MOTION SWITCHES - SPEC GRADE, PIR, OVERRIDE. G. CEILING MOTION SWITCHES - SPEC GRADE, DUAL TECHNOLOGY, MODEL AS REQ'D BY
- ROOM CONFIGURATION, ALL NECESSARY POWER PACKS AND RELAYS. H. WALL MOTION SWITCHES (BATHROOM) - DUAL RELAY, SPEC GRADE, PIR, 2ND RELAY FOR OPERATION OF EXHAUST FAN DELAY. I. COLOR OF DEVICES AS DIRECTED BY ARCHITECT.
- J. EQUIVALENT DEVICES BY LEVITON, BRYANT, HUBBEL, WATTSTOPPER, LITHONIA, SENSOR

A. ALL OUTLETS, SHALL BE MOUNTED W/ BOTTOM AT 18" AFF & SWITCHES W/ BOTTOM AT 44" ABOVE FINISHED FLOOR UNLESS NOTED OTHERWISE ON PLANS. REFER TO ARCH FOR OTHER REQUIRED ELEVATIONS AND CABINETRY COORDINATION.

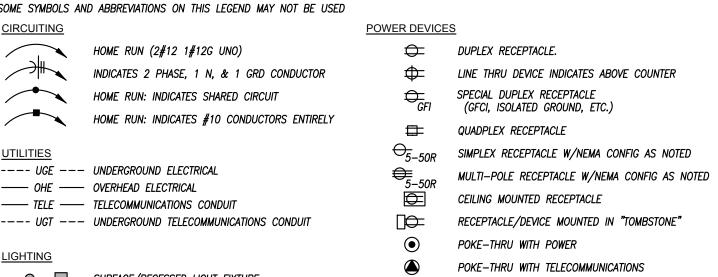
<u>SECTION 16500 – LED LUMINAIRES</u>

LUMINAIRES A. PROVIDE LIGHTING FIXTURES W/ ALL 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. B. REFER TO LIGHTING FIXTURE SCHEDULE PLANS FOR FIXTURE TYPES. C. EQUIVALENT LUMINAIRES BY CREE, COOPER, HUBBELL, INFINITY, LITHONIA, WILLIAMS,

COLUMBIA, EXITRONICS, LITEALARM, EXIDE, MULE, DUALLITE

AB	BREVIATIONS				
A/E	ARCHITECT / ENGINEER	EWT	ENTERING WATER TEMPERATURE	PSI	POUNDS PER SQUARE INCH
ÁFF	ABOVE FINISHED FLOOR	EΧ	EXISTING ITEM	PVC	POLYVINYLCHLORIDE
AFG	ABOVE FINISHED GRADE	FFA	FROM FLOOR ABOVE	RA	RETURN AIR
AG	ABOVE GRADE	FFB	FROM FLOOR BELOW	RE/REF	REFER / REFERENCE
AHJ	AUTHORITY HAVING JURISDICTION	FFC0	FINISHED FLOOR CLEAN OUT	RF	RELIEF FAN
ARCH	ARCHITECT	FGC0	FLUSH GRADE CLEAN OUT	RL	RELOCATED ITEM
BFP	BACKFLOW PREVENTER	FL	FLOW LINE	RPZ	REDUCED PRESSURE ZONE
BG	BELOW GRADE	FLR	FLOOR	RR	RESTROOM
BLDG	BUILDING	FPM	FEET PER MINUTE	SA	SUPPLY AIR
BMS	BUILDING MANAGEMENT SYSTEM	<i>FWCO</i>	FLUSH WALL CLEAN OUT	SPD	SURGE PROTECTIVE DEVICE
С	CONDUIT	G	GROUND / GANG	TA	TRANSFER AIR
CD	CANDELA	G/C	GENERAL CONTRACTOR	TFA	TO FLOOR ABOVE
CD	COLD DECK	GFCI	GROUND FAULT CIRCUIT INTERUPTER	TFB	TO FLOOR BELOW
CLG	COOLING	GPM	GALLONS PER MINUTE	TP	TAMPERPROOF
CM	COORDINATE MOUNTING HEIGHT	HD	HOT DECK	TYP	TYPICAL
CO	CLEAN OUT	HTG	HEATING	UNO	UNLESS NOTED OTHERWISE
CTE	CONNECT TO EXISTING	IG	ISOLATED GROUND	VTR	VENT THROUGH ROOF
DCVA	DOUBLE CHECK VALVE ASSEMBLY	JB	JUNCTION BOX	WP	WEATHERPROOF
DCW	DOMESTIC COLD WATER	LED	LIGHT EMITTING DIODE		
DDC	DIRECT DIGITAL CONTROLS	LWT	LEAVING WATER TEMPERATURE		
DF	DRINKING FOUNTAIN	M/C	MECHANICAL CONTRACTOR		

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



DIVIDED POWER POLE

THERMOSTAT - ELECTRIC

DUCT SMOKE DETECTOR

CLOCK RECEPTACLE

JUNCTION BOX

PUSH BUTTON

 \Box H

MECHANICAL PIPING

PLUMBING PIPING

------ RL ------ REFRIGERANT LIQUID

----- RS ----- REFRIGERANT SUCTION

— D — DRAIN (CONDENSATE)

----- CA ----- COMPRESSED AIR

-----RD ----- RUPTURE DISK

------ RV ------ REFRIGERANT VENT

----- DOMESTIC COLD WATER

---- RECIRCULATING DOMESTIC HOT WATER

------ SAN ----- WASTE ABOVE GRADE OR FLOOR

— — SAN — — WASTE BELOW GRADE OR FLOOR

------ ST ----- STORM ABOVE GRADE OR FLOOR

— — ST — — STORM BELOW GRADE OR FLOOR

— — ST/O — — STORM OVERFLOW BELOW GRADE OR FLOOR

SHUTOFF VALVE IN RISER

AUTO FLOW CONTROL VALVE

BALANCING VALVE

PIPING ELBOW UP

PIPING TEE UP

PIPING TEE DOWN INCREASER / REDUCER

PIPING ELBOW DOWN

PLUG VALVE

PIPING TEE PIPING ELBOW

STRAINER

TEST PLUG

HI LOW
PRESSURE REDUCING VALVE

CHECK VALVE

INLINE STRAINER

----- DOMESTIC HOT WATER

----- V ----- PLUMBING VENT

— G — GAS (NATURAL)

PIPING SYMBOLS

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PIPING SPECIALTIES

— W — WATER SERVICE

— ► SHUTOFF VALVE

FIRE ALARM

<u>LIGHTING</u>

├□ ├○ WALL-MOUNTED LIGHT FIXTURE POLE-MOUNTED LIGHT FIXTURE TIMECLOCK - REFER TO PLANS / DETAILS

<u>EQUIPMENT</u> \Box DISCONNECT SWITCH. RE: PLANS FOR INFORMATION.

- MAGNETIC MOTOR STARTER COMBINATION DISCONNECT SWITCH / MOTOR STARTER TOGGLE-TYPE DISCONNECT. FURNISH WITH THERMAL
- MOTOR PROTECTION WHERE SERVING FANS/PUMPS. SURFACE PANELBOARD RECESSED PANELBOARD
- DISTRIBUTION PANELBOARD SWITCHBOARD. FEEDER/MAIN CIRCUIT BREAKER SECTION AND DISTRIBUTION SECTION.

SOME SYMBOLS AND ABBREVIATIONS ON THIS LEGEND MAY NOT BE USED

HIGH EFFICIENCY ROUND DUCT TAKEOFF

(WITH & WITHOUT MANUAL DAMPER)

(WITH & WITHOUT MANUAL DAMPER)

CONICAL BELLMOUTH ROUND TAKEOFF

ROUND DUCT RUNOUT WITH FLEX DUCT

RETURN GRILLE OR EXHAUST REGISTER

RETURN AND EXHAUST AIR FLOW INDICATOR

REDUCED PRESSURE BACKFLOW PREVENTER

DOUBLE CHECK BACKFLOW PREVENTER

PLUMBING FIXTURE AND CALLOUT

ORD: OVERFLOW ROOF DRAIN

SUPPLY AIR FLOW INDICATOR

INDICATES CONNECT TO EXISTING

TEMPERATURE SENSOR

THERMOSTAT

HUMIDISTAT

PLUMBING FIXTURES/EQUIPMENT

→ HB HOSE BIBB

——□ □ CLEAN OUT

— ₩H WALL HYDRANT

CONTROL WIRING

INDICATES ELEVATION

RD: ROOF DRAIN

DUCTWORK ELBOW (WITH & WITHOUT TURNING VANES)

SPIN-IN ROUND DUCT TAKEOFF

MECHANICAL AND PLUMBING SYMBOL LEGEND

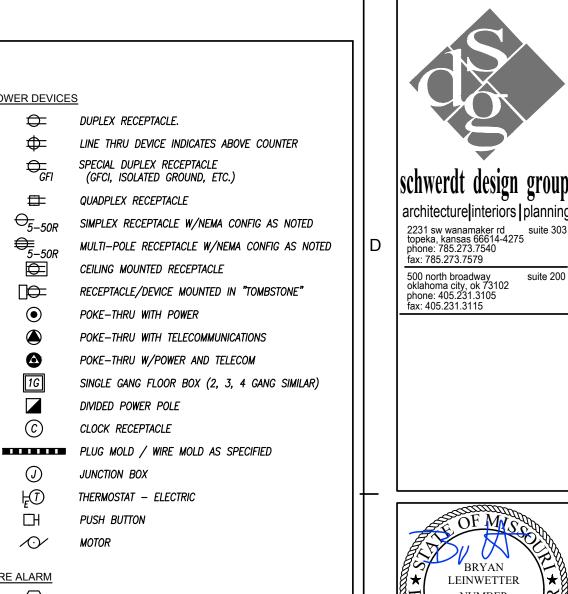
SHEET METAL

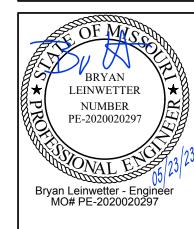
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GENERAL SYMBOLS

GENERAL SYMBOLS INDICATES CONNECT TO EXISTING

INDICATES ELEVATION





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SUBMISSION DATES MAY 23, 2023 JUNE 12, 2023-REV 1

SHEET TITLE MECHANICAL AND ELECTRICAL **SPECIFICATIONS**

PROJECT NUMBER 230117

> SHEET NUMBER **ME-101**

DHW DOMESTIC HOT WATER DHWR DOMESTIC HOT WATER RETURN

EA EXHAUST AIR

ELEV ELEVATION

DN DOWN E/C ELECTRICAL CONTRACTOR

EM EMERGENCY FIXTURE/DEVICE

MCB MAIN CIRCUIT BREAKER MECH MECHANICAL

MLO MAIN LUGS ONLY

NFA NET FREE AREA

ORD OVERFLOW ROOF DRAIN

P/C PLUMBING CONTRACTOR

OA OUTSIDE AIR

2949 SW WANAMAKER DR., TOPEKA, KANSAS 66614 785.273.2447

FIRE SEALING NOTES

AUTHORITIES HAVING JURISDICTION.

- 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 3. DO NOT COVER UP THROUGH-PENETRATION FIRESTOP SYSTEM

INSTALLATIONS UNTIL EXAMINED BY NSPECTOR, IF REQUIRED BY

- 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 INSTALL FILL MATERIALS. USE 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 U.L. 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.

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.
- 2. 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. 4. PROVIDE ALL EMPTY CONDUITS WITH PULL STRINGS AND BUSHED
- 5. CONTRACTOR SHALL CONCEAL ALL CONDUIT, FITTINGS, AND DEVICES FROM VIEW WHERE REASONABLY POSSIBLE.

GENERAL NOTES

- 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 CONTRACTOR SHALL COORDINATE WITH THE OWNER FOR ALL FEES AND DATA NEEDED FOR THIS.

GEN. MECHANICAL NOTES

- 1. COMPLETE INSTALLATION SHALL BE IN ACCORDANCE WITH THE LATEST ADOPTED VERISION 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 ELECTRICAL 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 VERISION 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:
- 3.1. IN ALL HORIZONTAL DRAINS (WITHIN THE BUILDING) NOT MORE THAN 100 FEET APART.
- 3.2. IN BUILDING SEWERS LOCATED NO MORE THAN 100 FEET APART MEASURED FROM THE UPSTREAM ENTRANCE OF THE CLEANOUT. 3.3. 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
- 3.4. AT THE BASE OF EACH WASTE OR SOIL STACK.
- 3.5. NEAR THE JUNCTION OF THE BUILDING DRAIN AND BUILDING SFWFR.

COORDINATION NOTES

- 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 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 ALLOTTED 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
- 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
- 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 LOCATION OF EACH 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 SUBCONTRACOTRS 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 ERECTION 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.

✓—LIGHT POLE

2'-0"Ø

MOUNTING

20' POLE

20' POLE

WALL/SURFACE

RECESSED

FINISH

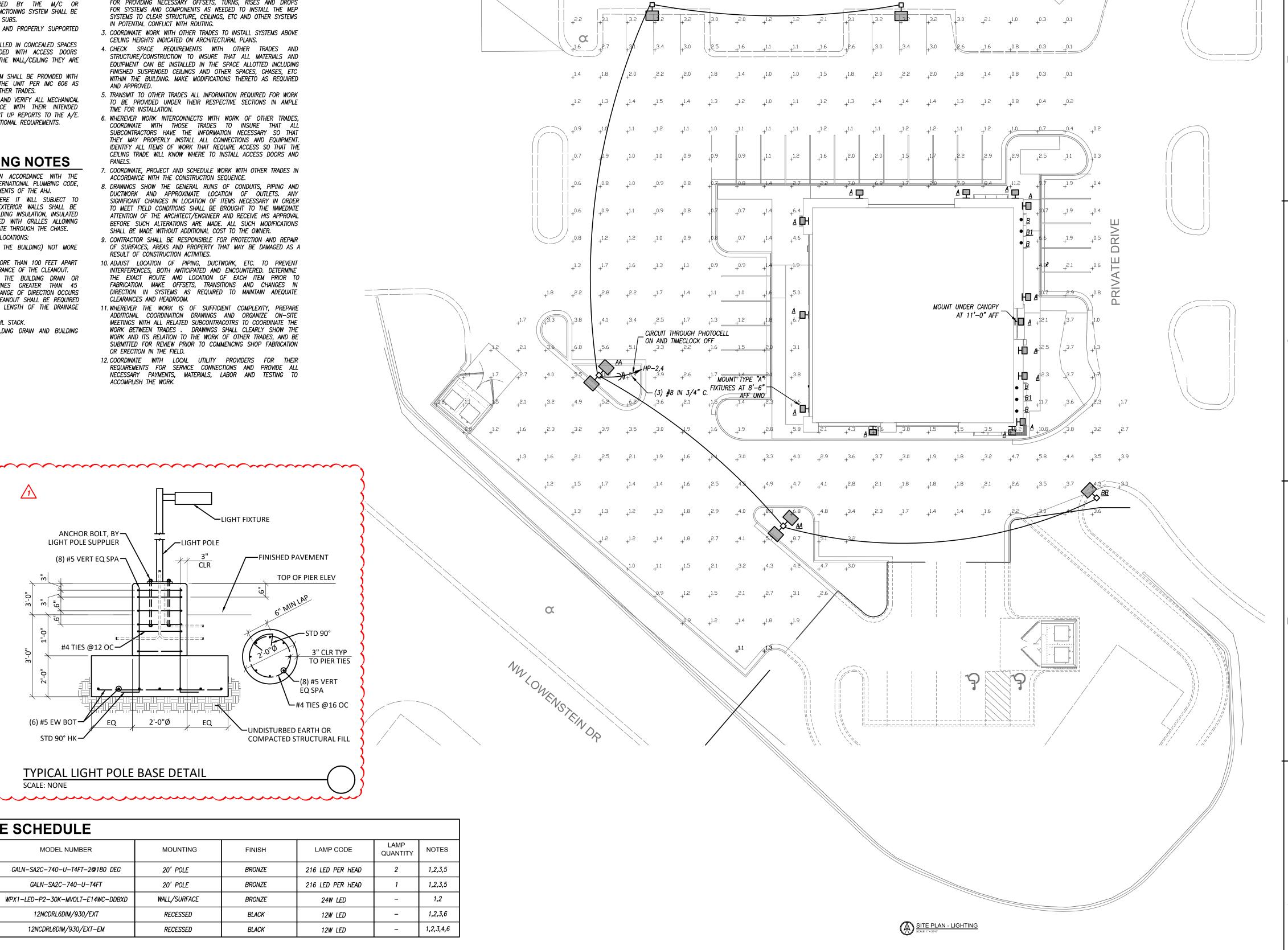
BRONZE

BRONZE

BLACK

BLACK

-LIGHT FIXTURE



NOTES LEGEND

MARK

1 - PROVIDE WET LOCATION RATED FIXTURE

MANUFACTURER

MCGRAW-EDISON

MCGRAW-EDISON

LITHONIA

GREEN CREATIVE

GREEN CREATIVE

- 2 PROVIDE COLD LOCATION RATED DRIVER
- 3 PROVIDE SQUARE STRAIGHT STEEL POLE RATED FOR 100 MPH WIND GUSTS, PRIMED AND PAINTED TO MATCH FIXTURE 4 - PROVIDE EMERGENCY BATTERY

ANCHOR BOLT, BY-LIGHT POLE SUPPLIER

(8) #5 VERT EQ SPA →

#4 TIES @12 OC-

TYPICAL LIGHT POLE BASE DETAIL

5 - PROVIDE ALL ACCESSORIES FOR A COMPLETE INSTALLATION.

LIGHT FIXTURE SCHEDULE

6 - PROVIDE WEATHER PROOF JUNCTION BOX FOR DRIVERS AND ELECTRICAL CONNECTIONS ABOVE SOFFIT

MODEL NUMBER

GALN-SA2C-740-U-T4FT-2@180 DEG

GALN-SA2C-740-U-T4FT

WPX1-LED-P2-30K-MVOLT-E14WC-DDBXD

12NCDRL6DIM/930/EXT

12NCDRL6DIM/930/EXT-EM





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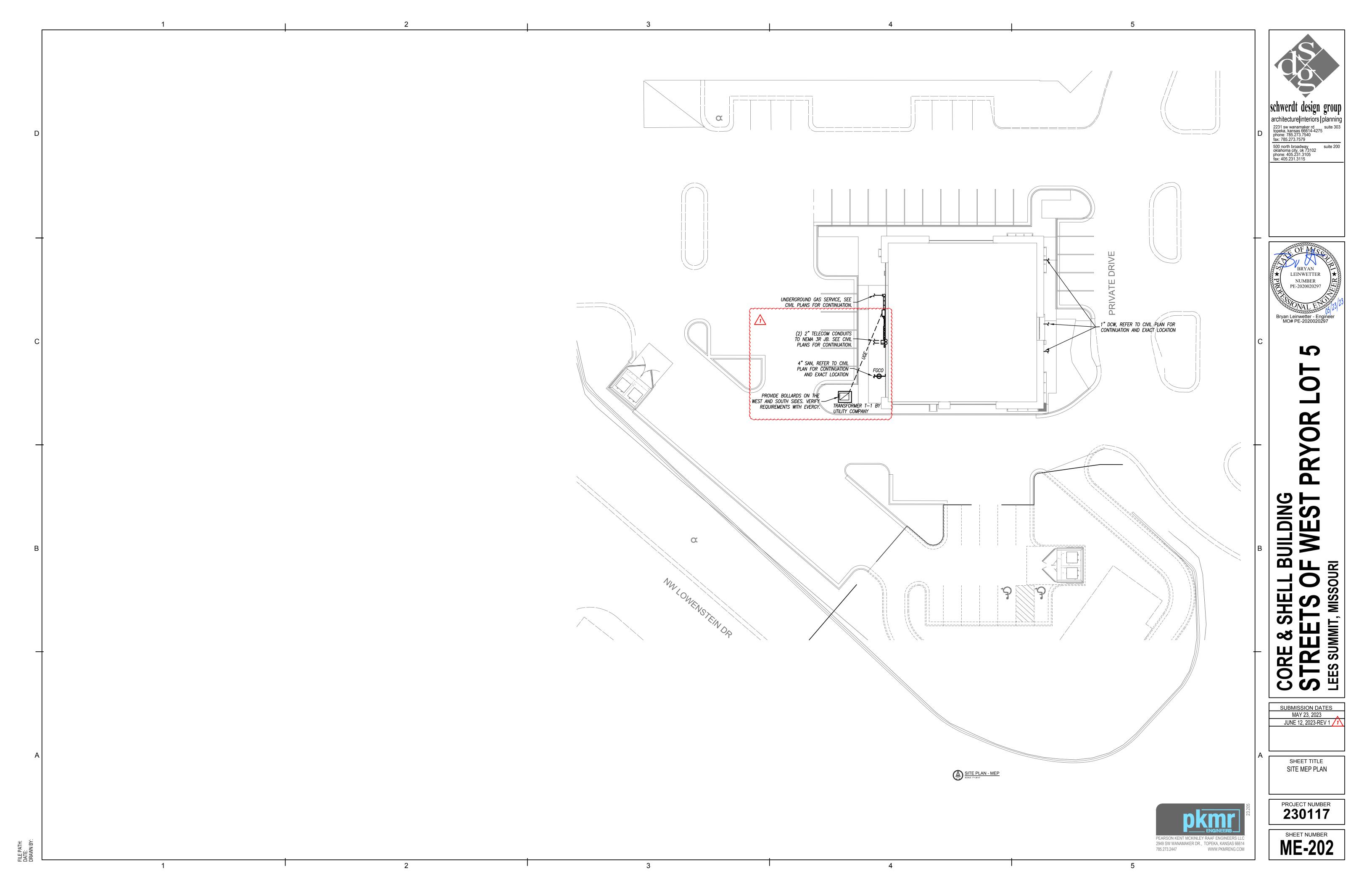
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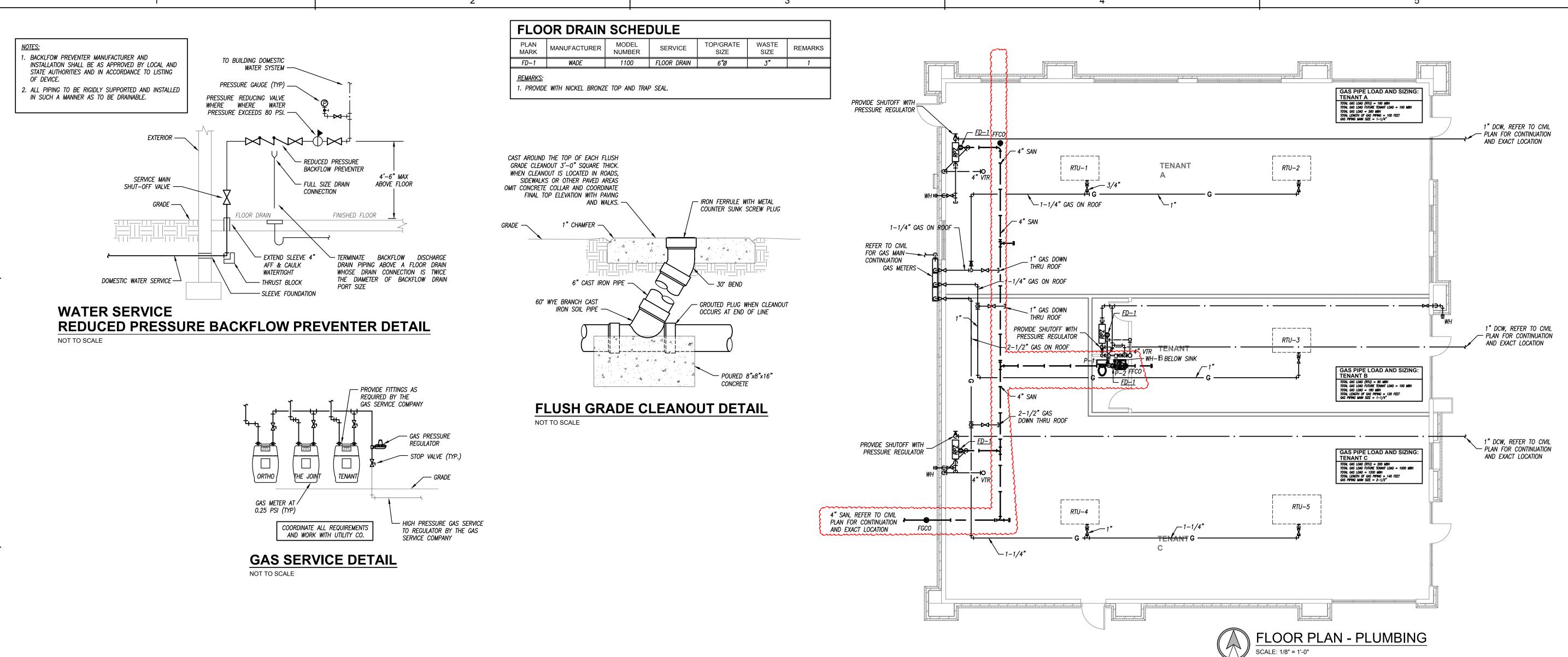
SUBMISSION DATES MAY 23, 2023 JUNE 12, 2023-REV 1

SHEET TITLE SITE PHOTOMETRIC PLAN AND GENERAL NOTES

PROJECT NUMBER 230117

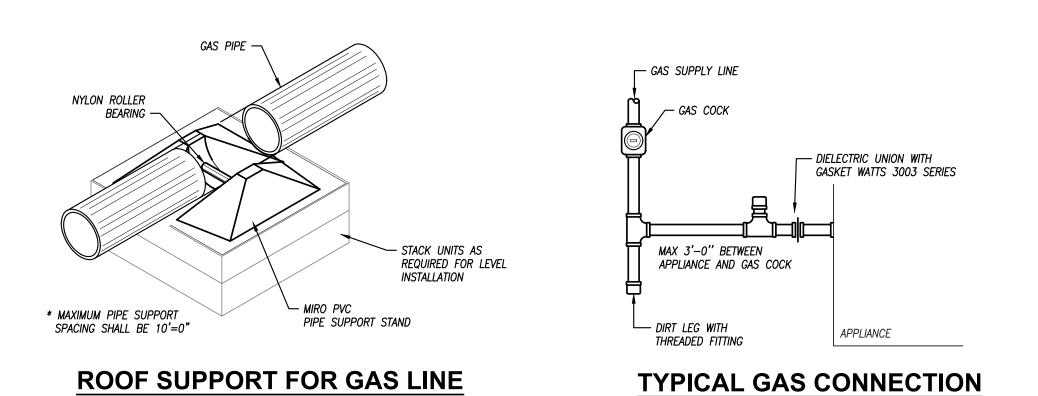
SHEET NUMBER **ME-201**





WATER I		CHEDULE				
PLAN MARK	MANUFACTURER	MODEL NUMBER	GALLONS	CAPACITY	ELECTRICAL	NOTES
WATER HEATER-1	STIEBEL ELTRON	DHC 3-1	INSTANTANEOUS	3.0 KW	120V, 1PH, 30AMP	

NOT TO SCALE



NOT TO SCALE

IPING					FIELD TEST	ALLOWABLE IN	INSULATION		
SYSTEM	SIZE	TYPE/SCHED	MATERIAL	ACCEPTABLE FITTINGS	PRESSURE/TIME	PLENUMS	TYPE	THICKNESS	
DOMESTIC COLD WATER	1/2"-2-1/2"	L	COPPER	SOLDER, PRO-PRESS	130 PSI - 1/2HR	YES	FIBERGLASS W/ ASJ	1/2"	
DOMESTIC HOT WATER & HW RETURN	1/2"-2-1/2"	L	COPPER	SOLDER, PRO-PRESS	130 PSI - 1/2HR	YES	FIBERGLASS W/ ASJ	1"	
NATURAL GAS — ABOVE GRADE	2-1/2 & Up	SCH. 40	STEEL- SEEMED	WELDED	75 PSI – 1HR	YES			
NATURAL GAS — ABOVE GRADE	1/2"-2"	SCH. 40	STEEL- SEEMLESS	THREADED IRON	75 PSI – 1HR	YES			
SOIL & WASTE BELOW GRADE	2"-8"	SCH. 40	PVC	SOLVENT JOINED	10 FT - 1/2HR	NO			
DOM. WATER SERVICE BELOW GRADE	4"-8"	AWWA C151	DUCTILE IRON	AWWA C111. MECH JOINTS	130 PSI - 1/2HR	YES			
DOM. WATER SERVICE BELOW GRADE	1"-3"	К	COPPER	CONTINUOUS TUBING, BRAZED	130 PSI - 1/2HR	YES			
DOM. WATER SERVICE BELOW GRADE	1"-3"	DR 9	HDPE	CONTINUOUS TUBING, FUSED	130 PSI - 1/2HR	NO			

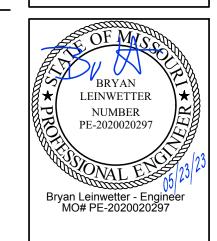
1. ALL PIPING AND MATERIALS IN PLENUMS MUST MEET ASTM E84 FLAME/SMOKE RATING OF 25/50. 2. ALL INSULATION THICKNESSES SHALL MEET ASHRAE 90.1 - 2007 REQUIREMENTS AT A MINIMUM.

3. REFER TO SPECIFICATIONS FOR MORE DETAILED INFORMATION.

PL	UMBING FIXT	URE SCHEDULE								
PLAN	FIXTURE		FITTINGS		PIPE SIZES					
MARK	MODEL	FIXTURE DESCRIPTION	MODEL	FITTINGS DESCRIPTION	WASTE	VENT	DCW	DHW		
P-1	TOTO DRAKE CST744SL	ADA COMPLIANT WATER CLOSET: FLUSH TANK, WHITE ELONGATED BOWL, 1.6 GALLON SIPHON JET FLUSHING SYSTEM, 2-1/8" TRAP DIAMETER, WITH POLISHED CHROME FLUSH HANDLE MOUNTED ON WIDE SIDE OF RESTROOM STALL, WITH HANDLE STOP VALVE AND METAL FLEXIBLE WATER RISER	TOTO SC534	SEAT: WHITE, SOLID PLASTIC, OPEN FRONT, ELONGATED	4"	2"	1/2"			
P-2	AMERICAN STANDARD 0355.012	LAVATORY: WHITE WALL HUNG LAVATORY 20"x18" WITH 4" BACK FAUCET HOLES ON 4" CENTERS, WITH CONCEALED ARM CARRIER. PROVIDE HANDLE STOP VALVES AND FLEXIBLE METAL WATER RISERS.	AMERICAN STANDARD 2175.504	FAUCET: 4" CENTERSET, CHROME FINISH WITH 4" METAL LEVER HANDLE, 1/2" CONNECTIONS, 1.5 GPM MAX FLOWRATE. CHROME PLATED BRASS GRID DRAIN, TAILPIECE, AND P-TRAP INSULATE THE TAILPIECE, P-TRAP, AND WATER RISERS	2"	2"	1/2"	1/2"		



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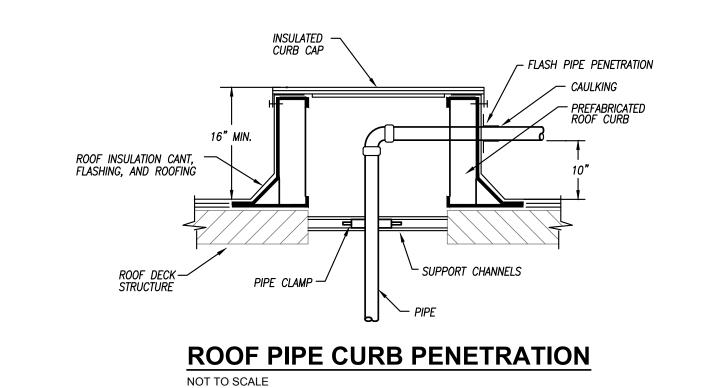
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> SUBMISSION DATES MAY 23, 2023 JUNE 12, 2023-REV 1 /1

> > SHEET TITLE PLUMBING FLOOR PLAN

PROJECT NUMBER 230117

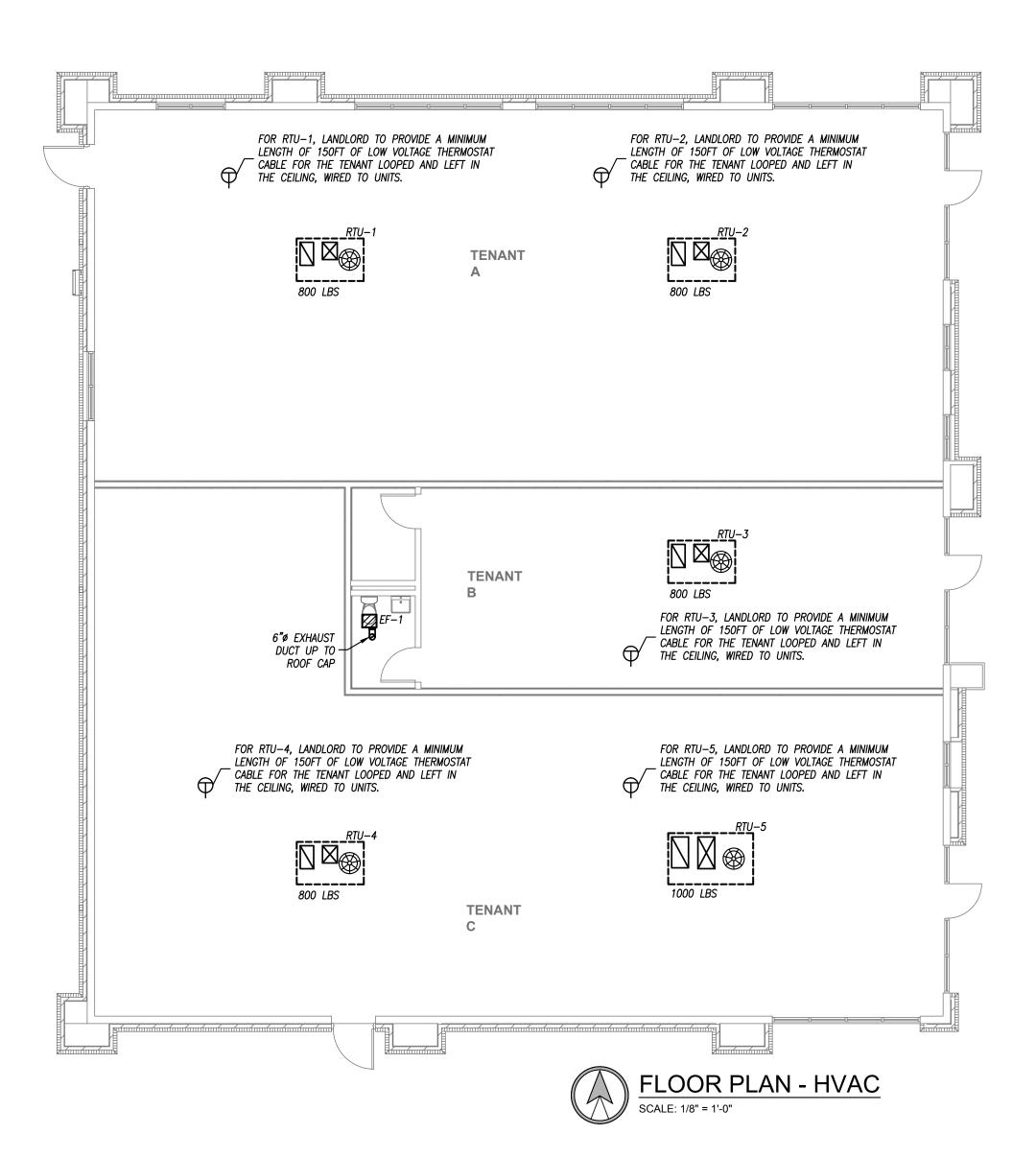
> SHEET NUMBER M-101



RETURN AIR SUPPLY AIR FROM RTU TO RTU — FLEXIBLE CONNECTION (TYPICAL) - INSULATED ROOF CURB (TYPICAL) — FLASH INTO ROOF ROOF INSULATION -AS REQUIRED (TYP.) DECK — - INSULATED ROOF CURB (TYPICAL) STRUCTUAL BRACING/FRAMING. ROOF STRUCTURE -RE: STRUCTURAL PLANS MAINTAIN CONTINUITY OF ROOF DECKING. — ALTERNATING LAYERS. (3) 5/8" SHEETROCK ONLY REMOVE/CUT DECK AT DUCT PENETRATIONS & (3) 1" RAW, RIGID FIBERGLASS BOARD INSULATION.

ROOFTOP UNIT CURB DETAIL NOT TO SCALE

CAULK ANNULAR SPACE (TYPICAL)



RO	ROOF TOP UNIT SCHEDULE - THREE PHASE ELECTRIC WITH GAS HEAT															
PLAN MARK	MANUFACTURER	MODEL NUMBER	SIZE	REFRIGERANT	MINIMUM EFFICIENCY	AIRFLOW	COMPRESSORS	COOLING CAPACITY	CFM	EXTERNAL STATIC	OA CFM	HEATING CAPACITY	ELECTRICAL	WEIGHT	FILTER	NOTES
RTU-1	TRANE	YSC 048 E3	4 TON	R-410A	14 SEER	DOWN	(1) SCROLL	49,000 BTUH	1,600	0.7"	160	80 MBH	208 V., 3 PH, 35 AMP	800 LBS	MERV 13	1,2,3,4
RTU-2	TRANE	YSC 048 E3	4 TON	R-410A	14 SEER	DOWN	(1) SCROLL	49,000 BTUH	1,600	0.7"	160	80 MBH	208 V., 3 PH, 35 AMP	800 LBS	MERV 13	1,2,3,4
RTU-3	TRANE	YSC 048 E3	4 TON	R-410A	14 SEER	DOWN	(1) SCROLL	49,000 BTUH	1,600	0.7"	160	80 MBH	208 V., 3 PH, 35 AMP	800 LBS	MERV 13	1,2,3,4
RTU-4	TRANE	YSC 060 E3	5 TON	R-410A	14 SEER	DOWN	(1) SCROLL	60,100 BTUH	2,000	1.0"	200	80 MBH	208 V., 3 PH, 40 AMP	800 LBS	MERV 13	1,2,3,4
RTU-5	TRANE	YSC 072 E3	6 TON	R-410A	14.6 IEER	DOWN	(1) SCROLL	75,000 BTUH	2,400	1.1"	240	120 MBH	208 V., 3 PH, 50 AMP	1000 LBS	MERV 13	1,2,3,4

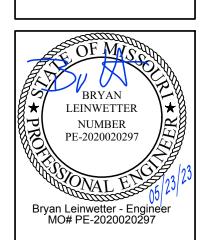
- 1. PROVIDE ROOF CURB, DISCONNECT SWITCH, HAIL GUARDS, AND ECONOMIZER
- 2. PROVIDE WALL MOUNTED 7-DAY PROGRAMMABLE THERMOSTAT
- 3. PROVIDE INTERNAL VIBRATION ISOLATION FOR THE RTU FAN AND COMPRESSORS

EXHA	XHAUST FAN SCHEDULE											
PLAN MARK	MANUFACTURER	MODEL NUMBER	MOUNTING	SERVICE	CFM	STATIC PRESSURE	ELECTRICAL	DRIVE	DISCONNECT	DAMPER	NOTES	
EF-1	GREENHECK	SP-B90	CEILING	EXHAUST	<i>75</i>	1/4"	50 WATTS, 120V, 1 PHASE	DIRECT	YES	BACKDRAFT	1	
IOTES:	·	_					·		·			

^{1.} PROVIDE 12" ROOF CURB WITH CURB CAP MODEL RCC-7 WITH INTEGRAL BIRDSCREEN.



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5 R **5** – BUILDIN() F WES

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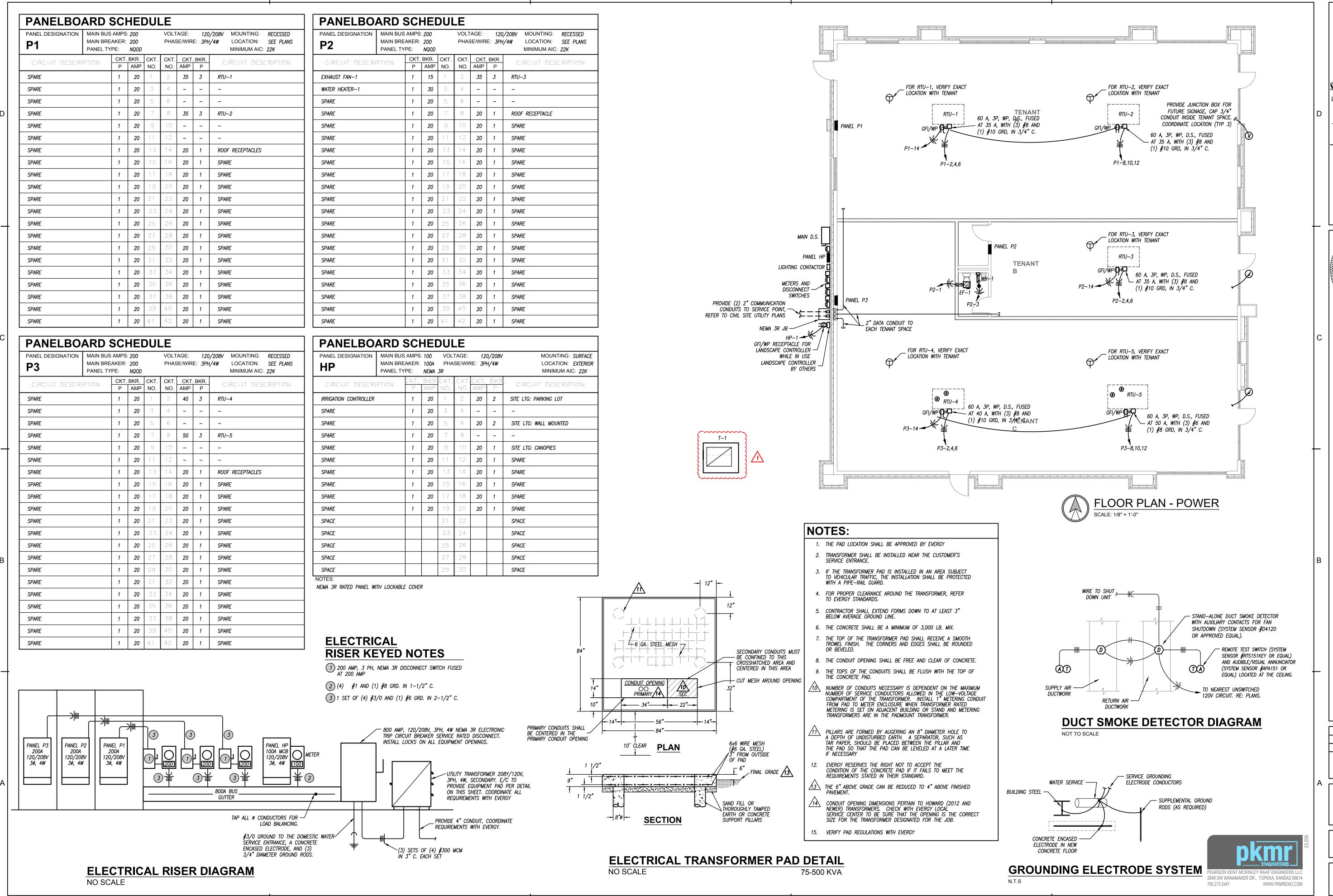
SHEET TITLE HVAC FLOOR PLAN

230117

SHEET NUMBER M-201

ALL DUCTWORK DOWN FROM UNIT AND FIRST -10' OF HORIZONTAL RUN TO BE CONSTRUCTED

ONE PRESSURE CLASS HIGHER THAN SERVICE FOR SOUND AND RIGIDITY.



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L BUILDING
OF WEST PRYOR LOT 5

SUBMISSION DATES

MAY 23, 2023

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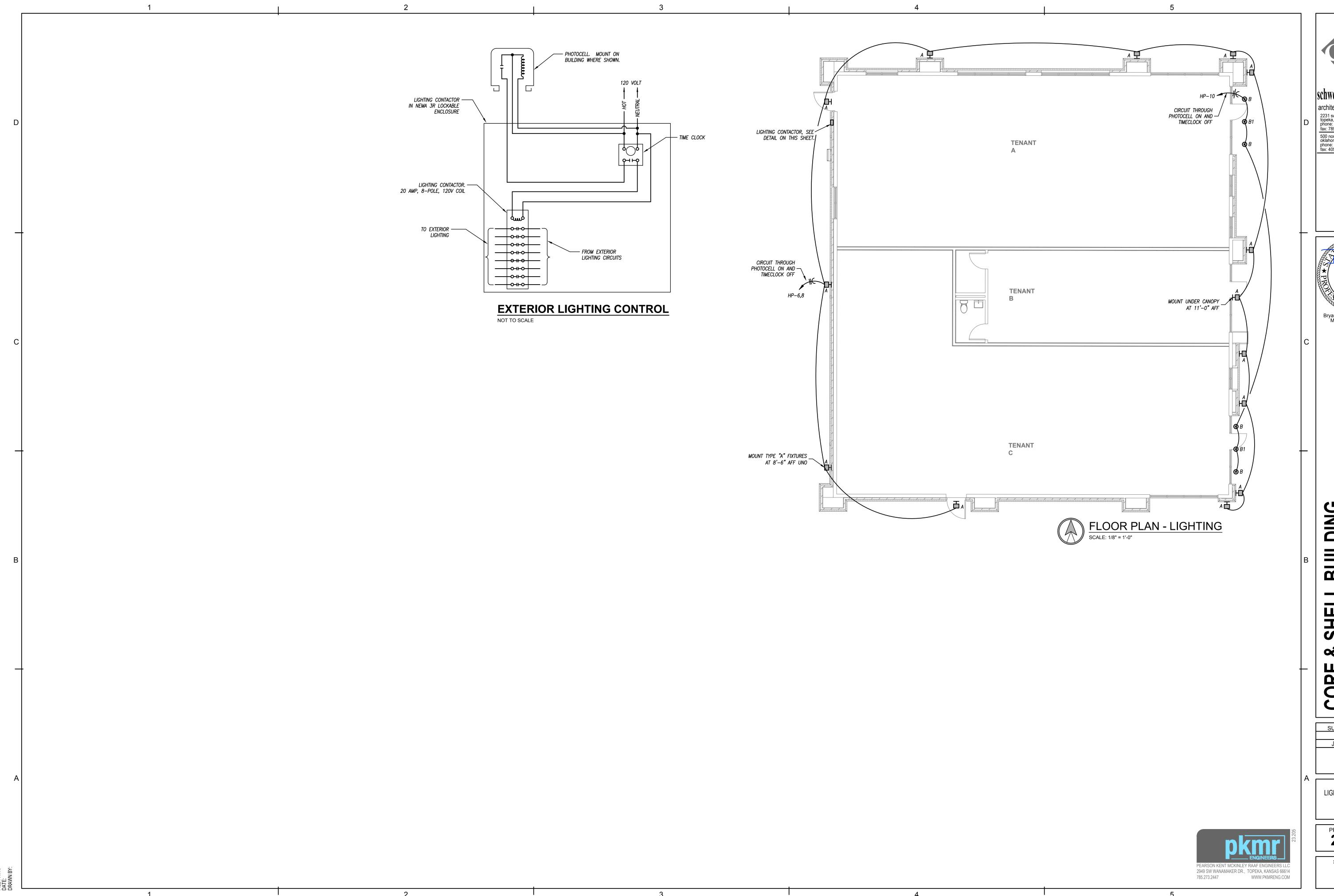
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MAY 23, 2023
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SHEET TITLE POWER FLOOR PLAN

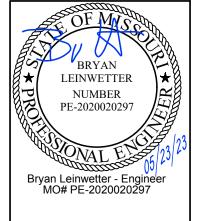
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NG ST PRYOR LOT 5

CORE & SHELL BUILDING
STREETS OF WEST PF
LEES SUMMIT, MISSOURI

SUBMISSION DATES
MAY 23, 2023
JUNE 12, 2023-REV 1

SHEET TITLE LIGHTING FLOOR PLAN

PROJECT NUMBER **230117**

E-201