ARCHITECTURE

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collins

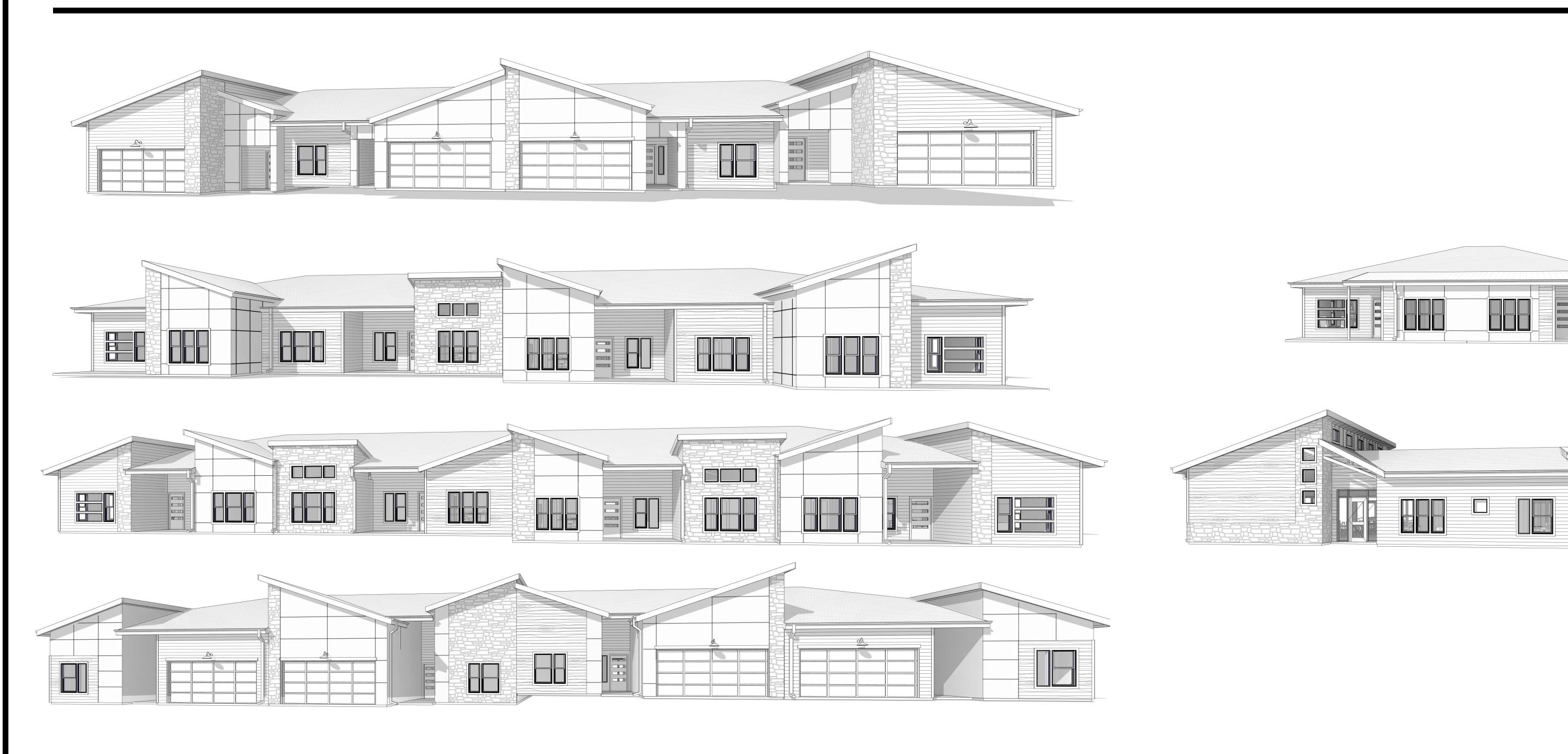
## REUNION AT BLACKWELL

SE SHENANDOAH DRIVE LEE'S SUMMIT, MO 64063

## PERMIT DOCUMENTS

24 AUGUST 2023

COLLINS WEBB #: 21075





GRIFFIN RILEY PROPERTY GROUP 21 SE 29TH TERRACE LEE'S SUMMIT, MO 64082 P: 816.366.7900 www.griffinriley.com

### ARCHITECT

COLLINS | WEBB ARCHITECTURE 307B SW MARKET STREET LEE'S SUMMIT, MISSOURI 64063 P: 816.249.2270 www.collinsandwebb.com

### ELECTRICAL ENGINEER

JSC ENGINEERS 1925 CENTRAL ST KANSAS CITY, MO 64108 P: 816.272.5289 JSCENGINEERS.COM

### STRUCTURAL ENGINEER

STAND STRUCTURAL ENGINEERING INC. 8234 ROBINSON STREET OVERLAND PARK, KS 662074 P: 913.214.2169 www.stand-sei.com

### **CIVIL ENGINEER**

SCHLAGEL ASSOCIATES 14920 W. 107TH STREET LENEXA KS, 66215 P: 913.492.5158 www.Schlagelassociates.com



THE INSTALLATION SHALL COMPLY WITH APPLICABLE LOCAL AND STATE CODES AND ORDINANCES, WITH

THE REGULATIONS OF THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE AND WITH THE

2. THE LATEST EDITIONS OF THE FOLLOWING INDUSTRY STANDARDS, SPECIFICATIONS, AND CODES ARE

A. THE NATIONAL ELECTRICAL MANUFACTURER'S ASSOCIATION STANDARDS.

B. THE NATIONAL ELECTRICAL CODE, INCLUDING LOCAL AMENDMENTS.

C. UNDERWRITER LABORATORIES INCORPORATED STANDARDS.

2. ELECTRICAL INSTALLATION SHALL MEET THE EXISTING CONDITIONS.

THE LENGTH OF TIME BETWEEN DELIVERY AND INSTALLATION.

ELECTRICAL DRAWINGS, USE ACTUAL BUILDING DIMENSIONS.

DISTURBED DURING THE INSTALLATION OF MATERIALS OF OTHER TRADES.

I. COOPERATION WITH OTHER CONTRACTORS

J. RECORD DRAWINGS

REGULATIONS.

PART II - PRODUCTS AND EXECUTION

STEEL, BEAMS, OR OTHER OBSTRUCTIONS.

SERVICES WITH THE GENERAL CONTRACTOR.

FROM THE WORK INDICATED ON THE DRAWINGS.

OWNER. ANY DAMAGE OR LOSS THAT MAY OCCUR DURING THIS PERIOD.

WITH THE CONTRACT DOCUMENTS MAY BE REJECTED BY THE ENGINEER.

D. AMERICAN NATIONAL STANDARDS INSTITUTE.

INSTALLATION.

MINIMUM REQUIREMENTS:

E. INTERNATIONAL BUILDING CODE.

WITH THIS CONDITION AFTER BIDDING

E. STORAGE AND HANDLING OF MATERIAL

G. EXCAVATION, CUTTING, AND FITTING

REQUIREMENTS OF THE POWER, TELEPHONE, AND CATV COMPANIES FURNISHING SERVICES TO THIS

PRIOR TO SUBMITTING A BID FOR ELECTRICAL WORK, THE CONTRACTOR SHALL VISIT THE SITE OF THE

1. DELIVER MATERIALS AND EQUIPMENT TO THE PROJECT IN THE MANUFACTURER'S ORIGINAL, UNOPENED,

OR STORAGE. CONTRACTOR SHALL PROTECT AND BE RESPONSIBLE FOR ANY DAMAGE TO WORK OR

2. ARRANGE FOR TIMELY DELIVERY OF MATERIALS AND EQUIPMENT TO THE JOB SITE IN ORDER TO MINIMIZE

3. COVER AND PROTECT ANY MATERIAL WHICH MAY BE AFFECTED BY THE WEATHER WHILE IN TRANSIT OR

F. CLEANUP

1. KEEP THE PREMISES FREE FROM ACCUMULATION OF WASTE MATERIALS, OR RUBBISH CAUSED BY

REMOVE ALL SURPLUS MATERIALS, TOOLS, ETC., AND LEAVE THE PREMISES BROOM-CLEAN.

MATERIALS UNTIL FINAL ACCEPTANCE BY THE OWNER, AND SHALL MAKE GOOD WITHOUT COST TO THE

STORED AT THE PROJECT SITE. ANY MATERIAL FOUND DEFECTIVE OR NOT INSTALLED IN ACCORDANCE

EMPLOYEES OR WORK UNDER THIS DIVISION OF THE SPECIFICATIONS. AT THE COMPLETION OF THE WORK

PERFORM ALL EXCAVATION AND BACK FILLING REQUIRED FOR WORK PERFORMED UNDER THIS DIVISION OF

THE SPECIFICATIONS. USE EXCAVATED MATERIALS FOR BACKFILL UNLESS OFF SITE MATERIALS ARE

2. PERFORM THE EXCAVATION, CUTTING, FITTING, REPAIRING, AND FINISHING OF THE WORK NECESSARY FOR

THE INSTALLATION OF THE EQUIPMENT OF THIS SECTION. HOWEVER, NO CUTTING OF THE WORK OF

OTHER TRADES OR OF ANY STRUCTURAL MEMBERS SHALL BE DONE WITHOUT THE CONSENT OF THE

THE DRAWINGS INDICATE THE GENERAL ARRANGEMENT AND LOCATIONS OF THE ELECTRICAL WORK. DATA

REVIEW ALL ARCHITECTURAL, STRUCTURAL, AND MECHANICAL DRAWINGS AND ADJUST ALL WORK TO MEET

SPECIFICATIONS, OR REGULATIONS AND CODES GOVERNING THE INSTALLATION SHALL BE BROUGHT TO THE

THE REQUIREMENTS OF CONDITIONS SHOWN. THE ARCHITECTURAL DRAWINGS SHALL TAKE PRECEDENCE

OVER ALL OTHER DRAWINGS. DISCREPANCIES BETWEEN DIFFERENT PLANS, OR BETWEEN DRAWINGS AND

ATTENTION OF THE ENGINEER IN WRITING BEFORE THE DATE OF BID OPENING. IF DISCREPANCIES ARE

NOT REPORTED, THE CONTRACTOR SHALL BID THE GREATER QUANTITY OR BETTER QUALITY, AND

RESPONSIBLE TO FIELD MEASURE AND CONFIRM MOUNTING HEIGHTS AND LOCATION OF ELECTRICAL

COOPERATE WITH THE OTHER TRADES SO THAT THE INSTALLATION OF THE ELECTRICAL OUTLETS AND EQUIPMENT WILL BE PROPERLY COORDINATED. CONDUIT, LIGHTING FIXTURES, AND OTHER EQUIPMENT

2. CAREFULLY VERIFY THE LOCATIONS OF THE OUTLET BOXES AND DETERMINE THAT THEY HAVE NOT BEEN

3. COORDINATE THE LOCATION OF THE TRENCHES AND CONDUITS FOR ELECTRICAL AND TELEPHONE UTILITY

4. COORDINATE HVAC AND PLUMBING EQUIPMENT CONNECTION REQUIREMENTS WITH HVAC AND PLUMBING

EXCLUSIVE PURPOSE OF MAINTAINING A RECORD OF ALL WORK INSTALLED AND TO SHOW ANY DEVIATIONS

1. THE ELECTRICAL CONTRACTOR SHALL MAINTAIN A SET OF DRAWINGS AT THE JOB SITE FOR THE

2. AT THE COMPLETION OF THE PROJECT, ONE SET OF REPRODUCIBLE DRAWINGS, SHOWING ALL RECORD

CONDITIONS, SHALL BE DELIVERED TO THE OWNER FOR ACCEPTANCE PRIOR TO FINAL PAYMENT.

1. ALL MATERIALS SHALL BE NEW AND OF QUALITY AS SPECIFIED ON THE PLANS OR SPECIFICATIONS AND

MUST CARRY THE UNDERWRITER'S LABORATORIES APPROVAL COVERING THE PURPOSE FOR WHICH THEY ARE USED, IN ADDITION TO MEETING ALL REQUIREMENTS OF THE CURRENT APPLICABLE CODES AND

LOCATIONS SHALL BE VERIFIED WITH OTHER TRADES TO AVOID CONFLICT WITH THE PIPING, DUCTWORK,

APPROPRIATE ADJUSTMENTS WILL BE MADE AFTER CONTRACT AWARD. CONTRACTOR SHALL BE

EQUIPMENT WITH RESPECT TO COUNTERS, RADIATION, ETC. DO NOT SCALE DISTANCES OFF THE

PRESENTED ON THESE DRAWINGS ARE AS ACCURATE AS PLANNING CAN DETERMINE, BUT FIELD

VERIFICATION OF ALL DIMENSIONS, LOCATIONS, LEVELS, ETC., TO SUIT FIELD CONDITIONS IS REQUIRED.

PROPOSED CONSTRUCTION AND SHALL THOROUGHLY ACQUAINT HIMSELF WITH EXISTING UTILITIES, AND

WORKING CONDITIONS TO BE ENCOUNTERED, ETC. ALLOWANCE WILL NOT BE MADE FOR NONCOMPLIANCE

LABELED CONTAINERS. PROTECT AGAINST MOISTURE, TAMPERING, OR DAMAGE FROM IMPROPER HANDLING

**ELECTRICAL SPECIFICATIONS** THE ITEMS SPECIFIED HEREIN AND ON DRAWINGS ARE USED AS A STANDARD OF QUALITY. ANY MATERIALS OF EQUAL QUALITY AND AESTHETIC VALUE WILL BE GIVEN CONSIDERATION AS A SUBSTITUTE FOR THE MATERIALS SPECIFIED. NO APPROVAL WILL BE GIVEN TO A SPECIFIC CATALOG NUMBER, MODEL, OR TYPE OF EQUIPMENT, PRIOR TO BIDDING. AFTER BIDDING, THE DECISION OF THE ARCHITECT AND/OR ENGINEER DETERMINING EQUAL MATERIALS WILL BE FINAL 2. THE CONTRACTOR SHALL SUBMIT (3) IDENTICAL BOUND SETS OF SHOP DRAWINGS ON THE FOLLOWING A. LIGHTING FIXTURE CUTS AND PERFORMANCE DATA. B. OUTLINE DRAWINGS AND DATA SHEETS OF EACH PANELBOARD, LOAD CENTERS, AND DISTRIBUTION C. OUTLINE DRAWINGS OF ALL SWITCH GEAR COMPONENTS. E. ALL CIRCUIT BREAKERS INSTALLED IN PANELBOARDS, LOAD CENTERS, AND DISTRIBUTION PANELS. . GROUNDING SHALL COMPLY WITH REQUIREMENTS OF ARTICLE 250. ALL EXPOSED NONCURRENT CARRYING METALLIC PARTS OF ELECTRICAL EQUIPMENT, METALLIC RACEWAY SYSTEMS, METALLIC CABLE ARMOR, GROUNDING CONDUCTOR OF NONMETALLIC SHEATHED CABLES, GROUNDING CONDUCTOR IN NONMETALLIC RACEWAYS, AND GROUNDED CONDUCTORS OF THE WIRING SYSTEM SHALL BE GROUNDED. 2. GROUNDED CONDUCTOR (NEUTRAL) OF THE WIRING SYSTEM SHALL BE CONNECTED TO THE SYSTEM GROUNDING CONDUCTOR AT A SINGLE PLACE IN EACH SYSTEM BY REMOVABLE BONDING JUMPERS, SIZED ACCORDING TO THE APPLICABLE PROVISIONS OF THE NATIONAL ELECTRICAL CODE. THE GROUNDED CONDUCTOR (NEUTRAL) TO THE GROUNDING CONDUCTOR CONNECTION SHALL BE LOCATED IN THE

7. IN INACCESSIBLE LOCATIONS, MAKE CONNECTIONS BY EXOTHERMIC WELD PROCESS.

CONDUCTORS SHALL BE ALUMINUM ALLOY AA-8000 SERIES.

SOLDERLESS BRONZE GROUNDING DEVICES.

BRANCH CIRCUIT WIRING SHALL BE COPPER.

3. ALL CONDUCTORS SHALL BE RATED 600 VOLT.

CONDUCTORS IN THE CONDUIT SYSTEM.

EQUIPMENT NOT TO EXCEED 48".

T & B OR APPLETON, OR EQUAL).

INSTALLATION OF FUTURE WIRE.

INDICATED ON THE DRAWINGS.

F. OUTLET, PULL, AND JUNCTION BOXES

APPROPRIATE COVER PLATES.

WHITE, UNLESS OTHERWISE NOTED.

EQUAL TO TAYMAC SPECIFICATION GRADE.

MINIMUM 2-1/8" DEEP.

G WIRING DEVICES (COMMERCIAL)

PROVIDE SOLID CONDUCTOR FOR 10 AWG AND SMALLER.

22° SHALL BE WRAPPED RIGID GALVANIZED STEEL ELBOWS.

FLASHING SLEEVE. INSTALLATION SHALL BE WATERTIGHT

IN EACH J-BOX.

APPROVED EQUAL.

8. IN ACCESSIBLE LOCATIONS, CONNECTIONS SHALL BE MADE WITH BOLTED THROUGH, APPROVED

1.A. ALUMINUM CONDUCTORS MAY BE UTILIZED FOR SERVICE ENTRANCE AND PANEL FEEDERS.

1. CONDUCTOR SIZES SHOWN ON THE DRAWINGS ARE BASED ON COPPER WIRE. UNLESS OTHERWISE

SPECIFIED, ALL WIRE SHALL BE TYPE XHHW OR SE FOR FEEDERS OR BRANCH CIRCUITS LARGER THAN 4

AWG, TYPE THHN/THWN INSULATION FOR FEEDERS AND BRANCH CIRCUITS 4 AWG AND SMALLER. ALL

2. THE WIRES SHALL BE MARKED WITH COLOR TO SIMPLIFY CIRCUIT IDENTIFICATION. UNLESS OTHERWISE

120V-WHITE [277V-GREY]; LIVE WIRES 480Y/277V SHALL BE BROWN (PHASE A), ORANGE (PHASE B),

AND YELLOW (PHASE C); AND LIVE WIRES 208Y/120V AND 120/240V SHALL BE BLACK (PHASE A), RED

(PHASE B), AND BLUE (PHASE C). WHERE BOTH 208Y/120V AND 120/240V EXIST IN THE SAME BUILDING,

THE CONDUCTORS OF EACH CONFIGURATION SHALL BE SEPARATELY IDENTIFIED (NOT THE SAME COLORS). "HIGH-LEG" PHASE OF DELTA SYSTEM SHALL ALWAYS BE MARKED ORANGE. CIRCUIT SHALL BE LABELED

REQUIRED BY LOCAL ORDINANCES GROUND WIRES SHALL BE GREEN, NEUTRAL WIRES SHALL BE

4. SPLICES IN EXTERIOR PULL BOXES AND MANHOLES SHALL BE WEATHERPROOF USING "SCOTCHCAST"

SPLICE KIT OR APPROVED EQUAL. SEAL ENDS OF CONDUITS AND DUCTS WITH "DUCTSEAL" OR

MINERALAC NO. 100 OR EQUIVALENT AS A LUBRICANT TO FACILITATE THE INSTALLATION OF THE

7. MC CABLE WITH COPPER CONDUCTORS AND GROUND WIRE MAY BE USED WHERE PERMITTED.

1. ALL WIRING SHALL BE INSTALLED IN LISTED METALLIC CONDUIT EXCEPT AS PERMITTED IN OTHER

72". LIQUID-TIGHT FLEXIBLE STEEL CONDUIT SHALL BE FOR OUTDOOR FINAL CONNECTIONS TO

. NO WIRE SHALL BE INSTALLED IN THE CONDUIT SYSTEM UNTIL THE CONDUIT SYSTEM IS COMPLETE. USE

SECTIONS. RGS, WITH A 20 MIL PVC COATING WILL BE USED WHEN IN CONTACT WITH EARTH. IMC MAY

BE USED IN INDOOR LOCATIONS NOT IN CONTACT WITH THE EARTH. EMT MAY BE USED IN INDOOR

LOCATIONS NOT IN CONTACT WITH EARTH, NOT IN CONCRETE SLABS OR WALLS AND NOT SUBJECT TO

DAMAGE. PVC MAY BE USED IN OR BELOW CONCRETE AND DIRECT BURIED IN EARTH. FLEXIBLE STEEL

CONDUIT SHALL BE USED FOR INDOOR FINAL CONNECTIONS TO EQUIPMENT IN LENGTHS NOT TO EXCEED

WHERE CONDUIT ENTERS OUTLET BOXES, FIXTURES OR CABINETS, FIRMLY FASTEN WITH STEEL SET SCREW,

OR INSULATED THROAT CONNECTORS. FIRMLY FASTEN CONDUIT TO THE BUILDING CONSTRUCTION. RUN

LAPPED TO PROVIDE 20 MIL. THICKNESS. TAPE SHALL BE SCOTCH NO. 50 TAPE. CONDUIT AND DUCTS

APPROVED AND CEMENTED JOINTS. PENETRATIONS THROUGH FLOOR SLABS AND BENDS GREATER THAN

NOT UNDER BUILDINGS AND FEEDER DUCTS SHALL BE INSTALLED PER N.E.C. 300-5. MAKE JOINTS WITH

3. COVER METALLIC CONDUIT IN CONTACT WITH EARTH WITH POLYETHYLENE TAPED SPIRAL WRAPPED, 1/2

4. SCHEDULE 40 PVC CONDUIT SHALL BE PERMITTED UNDERGROUND WITH PROPER FITTINGS, ALL UL

FITTINGS AND CONDUIT BODIES SHALL BE STEEL. DIECAST FITTINGS ARE NOT ACCEPTABLE.

7. ALL EMPTY CONDUIT SYSTEMS SHALL HAVE A 200 LB. TEST NYLON PULL STRING TO FACILITATE

8. WIRING, CONDUITS, AND OUTLETS SHALL BE CONCEALED WITH THE BUILDING STRUCTURE, EXCEPT THAT

1. EACH SWITCH, LIGHT, RECEPTACLE OR OTHER OUTLET, SHALL BE PROVIDED WITH A CODE SIZED, STEEL

WATERTIGHT GASKETED COVERS. WHERE BOXES ARE INSTALLED IN FLOORS WITH TILE OR CARPET FLOOR

GROUNDED TYPE. SPECIAL APPLICATION RECEPTACLES SHALL BE INDICATED ON PLANS. MOUNT WITH THE

CERTAIN MOTOR AND LIGHTING FEEDER CONDUITS MAY BE RUN EXPOSED IN CERTAIN AREAS AS

9. CONDUIT PENETRATION THROUGH ROOF SHALL HAVE ROOF FLASHING WITH CAULK TYPE COUNTER

2. BOXES INSTALLED IN POURED CEMENT FLOORS SHALL BE FLUSH TYPE CAST IRON OR STEEL WITH

COVERING, COVERS SHALL BE OF THE RECESSED TYPE TO ACCOMMODATE THE FLOOR COVERING.

3. BOXES INSTALLED FOR THE ALARM, COMPUTER, AND SECURITY SYSTEM SHALL BE PROVIDED WITH

4. BOXES FOR TELEPHONE, COMPUTER, T.V., FIRE ALARM, SECURITY, AND SIMILAR SYSTEMS SHALL BE

1. WALL SWITCHES SHALL BE SPECIFICATION GRADE AC SILENT TYPE SWITCHES, 20A 120/277 VOLT.

3. DEVICE PLATES SHALL BE EQUAL TO SIERRA SMOOTH-LINE PLASTIC WALL PLATES. COLOR SHALL BE

COVER/ENCLOSURE CLEARLY MARKED AND U.L. LISTED SUITABLE FOR WET LOCATIONS WHILE IN USE,

4. RECEPTACLES IN OUTDOOR AND WET LOCATIONS SHALL BE INSTALLED WITH A HINGED OUTLET

2. RECEPTACLES SHALL BE SPECIFICATION GRADE, DUPLEX TYPE. NEMA5-20R, 20 AMPERE, 120VOLT

CONDUIT SIZES SHALL BE AS REQUIRED BY CODE AND AS INDICATED OR SPECIFIED.

10. CONDUITS SHALL BE ROUTED PARALLEL AND PERPENDICULAR TO THE STRUCTURE.

OUTLET BOX. JUNCTION AND PULL BOXES SHALL BE METAL AND CODE SIZED.

COMPRESSION CONNECTORS, OR DOUBLE LOCKNUTS FOR GRC. ALL CONNECTIONS SHALL HAVE BUSHINGS

EXPOSED CONDUIT PARALLEL TO THE BUILDING LINES, SUPPORTED BY APPROPRIATE HANGERS (UNISTRUT,

CIRCUIT BREAKER TYPE AS INDICATED ON DRAWINGS. UNLESS INDICATED OTHERWISE, ALL PANELS SHALL HAVE PANEL BOARD TYPE CONSTRUCTION WITH BOLT-ON CIRCUIT BREAKERS FOR 30 PANELS MANUFACTURERS SHALL BE GENERAL ELECTRIC, SQUARE D, SEIMENS, CUTLER-HAMMER WITH VOLTAGE, SIZES, AND RATINGS AS INDICATED ON DRAWINGS. THE CIRCUIT BREAKERS SHALL BE OPERABLE IN ANY POSITION AND BE REMOVABLE FROM THE FRONT OF THE PANEL BOARD WITHOUT DISTURBING THE ADJACENT UNITS. BRANCH BREAKERS SHALL BE OF SUCH DESIGN THAT COMBINATION OF SINGLE-POLE, DOUBLE-POLE, AND THREE-POLE BREAKERS CAN BE ASSEMBLED ON THE SAME PANEL. EACH BRANCH CIRCUIT SHALL BE CLEARLY NUMBERED. BRANCH AND MAIN TERMINALS SHALL BE SOLDERLESS TYPE. HANDLE TIES TO FORM MULTI-POLE BREAKERS NOT ACCEPTABLE. CIRCUIT BREAKER TYPE AS INDICATED ON DRAWINGS. MANUFACTURERS SHALL BE GENERAL ELECTRIC, SQUARE D, SIEMENS, CUTLER-HAMMER/EATON WITH VOLTAGE, SIZES, AND RATINGS AS INDICATED ON THE CIRCUIT BREAKERS SHALL BE OPERABLE IN ANY POSITION AND BE REMOVABLE FROM THE FRONT OF THE PANEL BOARD WITHOUT DISTURBING THE ADJACENT UNITS. BRANCH BREAKERS SHALL BE OF SUCH DESIGN THAT COMBINATION OF SINGLE-POLE AND DOUBLE-POLE BREAKERS CAN BE ASSEMBLED ON THE SAME PANEL. EACH BRANCH CIRCUIT SHALL BE CLEARLY NUMBERED. BRANCH AND MAIN TERMINALS SHALL BE OF THE SOLDERLESS TYPE. HANDLE TIES TO FORM MULTI-POLE BREAKERS NOT ACCEPTABLE. A. CIRCUIT BREAKERS SHALL BE PLUG-IN TYPE. WIRE TERMINATION FOR PANEL BOARDS AND CIRCUIT BREAKERS SHALL BE LISTED AS SUITABLE FOR 75 PROVIDE A TYPEWRITTEN CIRCUIT INDEX BEHIND CLEAR PLASTIC COVER ON INSIDE OF DOOR.

THE SERVICE ENTRANCE EQUIPMENT SHALL BE AS INDICATED ON THE DRAWINGS. EQUIPMENT SHALL

2. SERVICE ENTRANCE EQUIPMENT SHALL BE PROVIDED WITH A FULLY RATED COPPER OR ALUMINUM BUS.

CARRY THE U.L. LABEL AND SHALL CONFORM TO THE POWER COMPANY REGULATIONS.

HORIZONTALLY TAPERED BUSSING SHALL NOT BE ALLOWED.

INFORMATION SHALL INCLUDE ROOM AND TYPE LOAD SERVED. ALL CIRCUIT BREAKERS SHALL BE IDENTIFIED, INCLUDING SPARES. INDEX CARD FRAME SHALL BE METAL, SECURED TO DOOR. 5. PANEL BOARDS/LOAD CENTERS TO BE PROVIDED WITH COPPER BUSSIING ONLY. PROVIDE ALL LIGHTING FIXTURES, WIRED AND CONNECTED. THE DRAWINGS INDICATE THE FIXTURES FOR EACH LOCATION. PROVIDE LAMPS FOR ALL FIXTURES. THE LAMPS SHALL BE BY THE SAME MANUFACTURER. VERIFY CEILING CONSTRUCTION BEFORE ORDERING RECESSED UNITS. PROVIDE PLASTER FRAMES AND HANGERS AS REQUIRED. CEILING CONSTRUCTION, ARCHITECTURAL ACCESSORIES, VOLTAGE, AND DRIVERS TO MEET THE EXISTING CEILING CONDITION. 2. ALL FIXTURES SHALL BE FED FROM JUNCTION BOXES WITH LIGHT FIXTURE WHIPS (<6'). DAISY-CHAINING

OF FIXTURES IS NOT ALLOWED. FURNISH AND INSTALL TIME SWITCHES, PHOTOCELLS, CONTRACTORS AND FULL LIGHTING CONTROL SYSTEMS AS REQUIRED FOR LIGHTING CONTROLS INDICATED ON THE DRAWINGS. TIME SWITCHES SHALL BE EQUAL TO PARAGON, GENERAL ELECTRIC, TORK, OR INTERMATIC AND SHALL HAVE SIZE AND NUMBER OF POLES AS REQUIRED PHOTOCELLS SHALL BE EQUAL TO TORK OR INTERMATIC WITH VOLTAGE AS INDICATED.

N. TELEPHONE AND CABLE TELEVISION SYSTEMS TELEPHONE WALL OUTLETS SHALL CONSIST OF NO LESS THAN 2-1/8" DEEP BOXES MOUNTED 18" ABOVE THE FLOOR UNLESS OTHERWISE INDICATED. PROVIDE A TERMINAL MOUNTING BOARD FOR THE INCOMING CABLE TELEVISION OUTLETS SHALL CONSIST OF NO LESS THAN 2-1/8" DEEP BOXES MOUNTED 18"

ABOVE THE FLOOR UNLESS OTHERWISE INDICATED. PROVIDE A TERMINAL MOUNTING BOARD FOR THE INCOMING SERVICE CABLE.

GUARANTEE ALL MATERIAL FURNISHED AND ALL WORKMANSHIP PERFORMED FOR A PERIOD OF ONE YEAR FROM DATE OF FINAL ACCEPTANCE OF WORK. ANY DEFECTS DEVELOPING WITHIN THIS PERIOD, TRACEABLE TO MATERIAL FURNISHED AS A PART OF THIS SECTION OR WORKMANSHIP PERFORMED HEREUNDER, SHALL BE MADE GOOD AT NO EXPENSE TO THE OWNER.

COORDINATE CONSTRUCTION OF OPENINGS AND PENETRATING ITEMS TO ENSURE THAT THROUGH-PENETRATION FIRESTOP SYSTEMS ARE INSTALLED ACCORDING TO SPECIFIED AND APPLICABLE

COORDINATE SIZING OF SLEEVES, OPENINGS, CORE-DRILLED HOLES, OR CUT OPENINGS TO ACCOMMODATE HROUGH-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 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. 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.

FIRE SEAL ALL PIPING, CONDUIT, CABLE, ETC PENETRATIONS ROUTED THROUGH FIRE RATED WALLS. 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.

SYMBOLS LEGEND NOTE: THIS IS A MASTER LEGEND AND NOT ALL SYMBOLS, ETC, ARE NECESSARILY USED ON THE DRAWINGS. <u>LIGHTING FIXTURES — SYMBOL/LETTER INDICATES LIGHT FIXTURE AS INDICATED ON FIXTURE SCHEDULE</u> LED FIXTURE (SEE LIGHTING FIXTURE SCHEDULE) FIXTURE WITH EMERGENCY BATTERY DRIVER UNIT TRACK LIGHT DOWNLIGHT FIXTURE WITH EMERGENCY BATTERY DRIVER UNIT WALL MOUNTED FIXTURE WITH EMERGENCY BATTERY DRIVER UNIT PENDANT MOUNTED FIXTURE WITH EMERGENCY BATTERY DRIVER UNIT DOWNLIGHT FIXTURE WALL MOUNTED FIXTURE PENDANT MOUNTED FIXTURE SINGLE FACE EXIT SIGN — UNIVERSAL MOUNTED SINGLE FACE EXIT SIGN W/ DIRECTIONAL ARROWS -DOUBLE FACE EXIT SIGN W/ DIRECTIONAL ARROWS -DUAL HEADED EMERGENCY UNIT COMBO DUAL HEADED EMERGENCY AND EXIT SIGN UNIT POLE MOUNTED SITE LIGHT <u>LIGHTING CONTROLS</u> SINGLE POLE SWITCH @ +48" UNLESS NOTED Sabc SWITCH BANK @ +48" UNLESS NOTED. LOWER CASE LETTER INDICATES FIXTURE CONTROLLED. 3-WAY SWITCH @ +48" UNLESS NOTED S4 4-WAY SWITCH @ +48" UNLESS NOTED DIMMER SWITCH - SIZE AS REQUIRED @ +48" UNLESS NOTED MANUAL MOTOR STARTER SOS WALL SWITCH WITH OCCUPANCY SENSOR. DIGITAL LOW VOLTAGE WALL SWITCH. SWITCH @ +48" UNLESS NOTED. SLV TWO BUTTON DIGITAL LOW VOLTAGE WALL SWITCH. PROVIDES ON/OFF/0-10V DIMMING. SWITCH LIGHTING CONTROLS CEILING MOUNT OCCUPANCY SENSOR LIGHTING CONTROLS POWER PACK SWITCHBOARD, MOTOR CONTROL CENTER OR DISTRIBUTION BOARD 277/480V, 3 PHASE, 4 WIRE PANELBOARD, UNO 120/208V, 3 PHASE, 4 WIRE PANELBOARD, UNO 120/240V, 1 PHASE, 3 WIRE PANELBOARD, UNO TRANSFORMER POWER DEVICES SPECIAL HEAVY DUTY RECEPTACLE @ +18" UNLESS NOTED - SIZE AS NOTED → 1/2 SWITCHED RECEPTACLE @ +18" UNLESS NOTED FIRE RATED POKE THRU WITH TYPE INDICATED FLUSH FLOOR BOX WITH TYPE INDICATED SINGLE RECEPTACLE @ +18" UNLESS NOTED DUPLEX RECEPTACLE @ +18" UNLESS NOTED DOUBLE DUPLEX RECEPTACLE @ +18" UNLESS NOTED

DUPLEX RECEPTACLE INSTALLED ABOVE COUNTERTOP GFCI-RATED DUPLEX RECEPTACLE ARC FAULT RATED DUPLEX RECEPTACLE TAMPER RESISTANT RATED DUPLEX RECEPTACLE

DUPLEX RECEPTACLE WITH WEATHERPROOF COVERPLATE WP @ 18" UNLESS NOTED JUNCTION BOX DISCONNECT SWITCH - SIZE AND TYPE NOTED COMBINATION FUSED STARTER DISCONNECT SWITCH FUSE SIZE AS INDICATED, STARTER SIZE '1'

**AUXILIARY SYSTEMS** MECHANICAL EQUIP. CONNECTION, SEE SCHED. ON MECH. PLAN

TELEPHONE OUTLET@ +18" UNLESS NOTED DATA OUTLET @ +18" UNLESS NOTED

COMBINATION TELEPHONE/DATA OUTLET @ +18" UNLESS NOTED TELEVISION OUTLET @ +60" UNLESS NOTED DOOR CHIME PUSHBUTTON @ +48" UNLESS NOTED

SMOKE DETECTOR HEAT DETECTOR

DUCT SMOKE DETECTOR

REMOTE TEST STATION WITH INDICATING LIGHT. MOUNT AT 48" AFF UNO. AUXILIARY SYSTEM TERMINAL CABINET

————— CONDUIT RUN CONCEALED IN WALL OR ABOVE CEILING ———— CONDUIT RUN BELOW FLOOR OR GRADE

` HOMERUN TO PANELBOARD. INFORMATION AT ARROWS ARE CIRCUIT NUMBERS AND PANELBOARD FOR TERMINATION. REFER TO ASSOCIATED NOTE FOR BRANCH CIRCUIT CONDUCTOR SIZES. 5 INDICATES 1/2" CONDUIT CONCEALED IN CEILING OR WALL WITH (3) CONDUCTORS. (1) PHASE,

(1) NEUTRAL AND (1) GROUND WIRE. ALL ARE #12 AWG UNLESS NOTED OTHERWISE.

(E) OR ETR: DENOTES EXISTING ITEM/EQUIPMENT TO REMAIN

N. DRAWINGS ARE DIAGRAMMATIC AND SHALL NOT BE SCALED. REFER TO ARCHITECTURAL PLANS OR FIELD MEASUREMENTS FOR DIMENSIONS.

B. ALL WORK SHALL COMPLY WITH THE LATEST ADOPTED EDITION OF THE NATIONAL ELECTRICAL CODE (NFPA 70) AND ALL LOCAL BUILDING CODES AND AMENDMENTS.

THIS CONTRACTOR SHALL PERFORM ALL WORK INDICATED AND/OR AS REQUIRED FOR THE PROPER

THE ELECTRICAL SYSTEM DESIGN IS BASED IN PART ON THE SPECIFIED HVAC AND PLUMBING EQUIPMENT. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE THE EXACT LOCATIONS AND ELECTRICAL REQUIREMENTS OF ALL EQUIPMENT BEING FURNISHED. ANY CHANGES TO THE ELECTRICAL SYSTEM DUE TO HVAC EQUIPMENT SUBSTITUTIONS SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.

WIRE SIZE SHALL BE MINIMUM #12 AWG, THWN SOLID COPPER UNLESS OTHERWISE NOTED. PROVIDE GROUND WIRE WHERE REQUIRED BY CODE. INCREASE WIRE SIZE TO COMPENSATE FOR VOLTAGE DROP WHERE TOTAL LENGTH OF ANY BRANCH EXCEEDS 70 FEET.

H. CONNECT ALL EXIT SIGNS AND EMERGENCY LIGHTING UNITS TO THE INDICATED CIRCUIT WITH A SEPARATE AND UN-SWITCHED CONDUCTOR BYPASSING ALL CONTROLS AND CONTACTORS. REFER TO MANUFACTURER'S WRITTEN INSTRUCTIONS FOR PROPER INSTALLATION AND TESTING.

ROUTE ALL EXPOSED, RIGID CONDUIT TIGHT TO STRUCTURE, PARALLEL TO BUILDING LINES AND IN UNISTRUT

COORDINATE WIRE SIZING FOR BRANCH CIRCUITS WITH VOLTAGE DROP CRITERIA CHART.

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SMOTHERS **ENGINEERS** PROFESSIONAL SEAL

MO COA NO. 2012006786 / KS COA NO. E-2818 1925 CENTRAL STREET, SUITE 201 KANSAS CITY, MO 64108 phone: (816) 272-5289 email: jsmothers@jscengineers.com

JSC PROJECT #: 23-046

**ELECTRICAL SPECIFICATIONS &** SYMBOLS

GENERAL NOTES

COORDINATE ALL WORK WITH OTHER TRADES AND EXISTING CONDITIONS AS REQUIRED TO PROPERLY INSTALL ALL SYSTEMS AS INTENDED, WITHIN THE CONFINES OF THE SPACE AVAILABLE, AND WITHOUT INTERFERENCES.

INSTALLATION AND OPERATION OF THE ELECTRICAL SYSTEMS.

F. ALL WIRING SHALL BE IN APPROVED RACEWAY.

CABLE/PIPE TRAY WHERE POSSIBLE. COORDINATE CONDUIT ROUTING AND INSTALLATION WITH OTHER TRADES PRIOR TO ROUGH-IN. SUPPORT CONDUIT FROM STRUCTURE NOT ROOF DECK. MAINTAIN 2" MIN SPACING FROM BOTTOM OF ROOF DECK TO PREVENT ROOFING SCREWS FROM PENETRATING CONDUITS.

ADJUST LIGHT FIXTURES WHERE DUCTWORK RUNS INTERFERE WITH PLACEMENT.

MEP ENGINEER

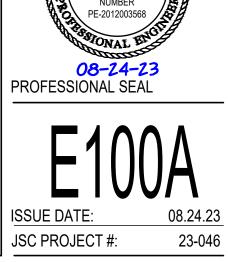
**#KEYED PLAN NOTES** 

PUBLIC ROADWAY LIGHTING DESIGN BY OTHERS.



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**ELECTRICAL SITE LIGHTING DETAILS** 

STREET LIGHT POLE, BRACKET ARM, AND BREAK-AWAY BASE "B" BRACKET ARM LENGTH

"C" SHAFT

LENGTH

BREAK-AWAY BASE

(SEE DETAIL)

(SEE TABLES FOR DIMENSIONS

AND MATERIALS)

USE 2-3/4" O.D. X 1-1/16"

I.D. X 1 THICK WASHER FOR ... 1 DIA. ANCHORAGE ON TOP

AND BOTTOM BOLT CIRCLE

2" SLIPFITTER :

CLAMP-ON STYLE BRACKET ARM PLATES (SEE DETAILS)

POLE SHAFT - ONE PIECE,

VIBRATION DAMPER

ROUND SEANLESS ALUM, TUBING

(FACTORY INSTALLED INTERNALLY)

4" X 6" (MIN.) HAND HOLE W/ -REINFORCED FRAM, COVER AND

KEEPER CHAIN (SEE DETAIL)

GROUND LUG (NOT SHOWN)
OPPOSITE THE HANDHOLE

POLE NUMBERING SHALL WATCH PLANS. STICKERS SHALL BE INSTALLED ON THE STREET

SIDE. IN MEDIANS, STICKER SHALL

CONSISTENTLY FACE THE STREET SIDE TO THE

NORTH OR TO THE EAST, STICKERS SHALL BE

\*- ALUMINUM TUBING PIPES

ARM CONNECTOR OR WELD

BLACK CLASS C FONT

REFLECTIVE BACKGROUND

-LETTERING ON WHITE

GROUND LUG 1-1/2" X

FRAME NOT

1-1/2" X 1/4" ALUM, WITH-3/8" DIA. HOLE OR ALT.

EXTERNALLY MOUNTED

REINFORCED FRAME

INTERNALLY MOUNTED\_ REINFORCED FRAME

-SHALL BE APPROVED BY

THE ENGINEER

10"-0"

12"-0"±

"C" SHAFT

LENSTH

SHOE BASE W/ BOLT

COVERS (SEE DETAIL)

ALUM. WITH

TAPPED HOLE

3/8° DM.¬₀

END

WITHOUT TENON

POLE SHAFT - ONE PIECE, ROUND

SEAMLESS ALUMINUM TUBING

-SEE DETAIL THIS SHEET

GROUND LUG (NOT SHOWN)

-REINFORCED FRAME, COVER AND

MECHANICALLY FASTEN CHAIN TO THE INSIDE - CENTER OF THE HAND HOLE COVER AND TO THE BOTTOM EDGE OF HAND HOLE

12" LONG #35 ALUM, KEEPER

CHAIN (OR APPROVED EQUIVALENT)

KEEPER CHAIN (SEE DETAIL)

OPPOSITE THE HANDHOLE

XVXVXVXVXXXXX 4" x 6" (MIN.) HAND HOLE W/

-GROUND LUG

(SEE TABLES FOR DIMENSIONS AND MATERIALS)

ALTERNATE GROUND LUG

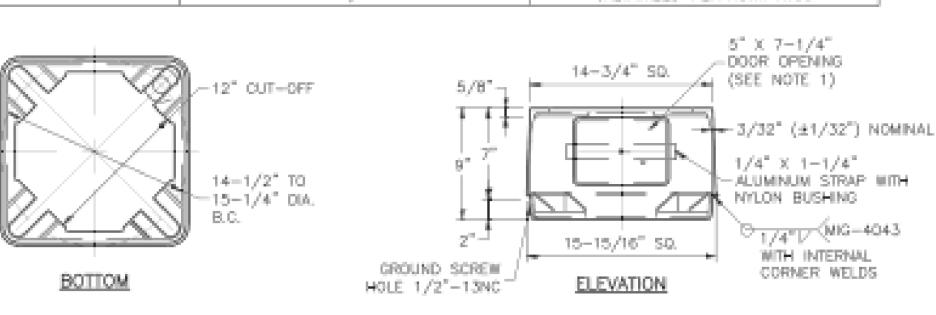
_											-	
DOLE.	MOUNTING	BRACKE	T ARMS			POLE SHAFT		SH0E BASE	ANCHOR BOLTS			
POLE	TYPE HEIGHT (A)	LENGT	TH (B)	BASE	TOP	MIN. WALL	SHAFT LENGTH	BOLT CIRCLE	DIAMETER	LENGTH	HOOK	
0.10		ARM 1	ARM 2	O.D.	0.D.	THICKNESS	(C)	(BC)				
P12	12'	_	_	6"	3"	0.156"	12'-0"	9.5"	0.75" 10NC	25"	3"	
P14	14"	-	-	6"	3"	0.156"	14'-0"	9.5"	0.75" 10NC	25"	3"	
P305	30'	6' or 10'	-	8."	6"	0.188"	26"-6" ±2"	11.0"	1.00" BNC	36"	4"	
P300	30'	6' or 10'	6' or 10'	8"	6"	0.219"	26"-6" ±2"	11.0"	1.00" BNC	36"	4"	
PAGS	40'	6', 10' or 15'	-	в"	6"	0.219"	36"-6" ±2"	11.5	1.00" BNC	36"	4"	
P400	40'	6', 10' or 15'	6', 10' or 15'	10"	6"	0.219"	36"-6" ±2"	14.5	1.00" BNC	48"	4"	

### NOTES:

- 1. ALL POLES, ARMS, AND MISCELLANEOUS EQUIPMENT SHALL CONFORM TO THESE DETAILS AND AS SPECIFIED BY THE LATEST CITY STANDARD SPECIFICATIONS.
- POLE SHAFT SHALL HAVE A SATIN GROUND FINISH.
- 3. ALL HARDWARE (BOLTS, NUTS, WASHERS BUT NOT INCLUDING ANCHOR BOLTS) NOT OTHERWISE SPECIFICALLY DESIGNATED IN THE SPECIFICATIONS OR DETAILS SHALL BE 300-SERIES STAINLESS STEEL. CONFORMING TO ASTM A193 OR A194.
- 4. ANCHOR BOLTS SHALL BE USED WITH CONCRETE BASES. ANCHOR BOLTS SHALL BE STEEL WITH 50,000 PSI MINIMUM YIELD; TOP 10" MIN. GALVANIZED; INCLUDING 8 NUTS AND 8 FLAT WASHERS GALVANIZED TO ASTM A153 STANDARDS, GALVANIZED HEX HEAD BOLTS (SEE POLE FOUNDATION SHEET) SHALL BE USED WITH SCREW-IN ANCHOR BASES. 4 BOLTS, 4 NUTS AND 8 FLAT WASHERS TO PROVIDED WITH EACH ANCHOR.
- 5. ALL WELDING IS TO BE DONE WITH 4043 WELD WIRE. ALL ARMS AND SHAFTS ARE TO BE HEAT-TREATED TO T6 TEMPER AFTER WELDING.
- 6. ANCHOR BOLTS SHALL PROJECT ABOVE THE CONCRETE BASE AS PER MANUFACTURER'S RECOMMENDED.
- THE ALUMINUM STREET LIGHT POLE ASSEMBLY, INCLUDING ANCHORAGE AND LUMINAIRE, SHALL COMPLY WITH THE LATEST CITY STANDARD SPECIFICATIONS AND THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO) LOAD WIND LOADING.
- 8. ALL POLES AND ARMS SHALL BE CLEARLY IDENTIFIED BY THE MANUFACTURER'S NAME, ABBREVIATION OR SYMBOL ENGRAVED ON THE SHAFT, SHOE BASE, HAND HOLE, OR OTHER MEANS SUCH AS TO BE READILY VISIBLE AFTER INSTALLATION.

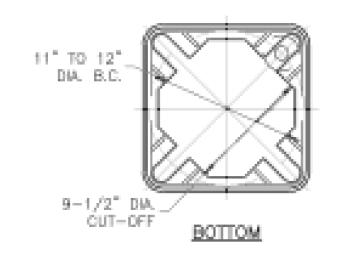
### MATERIAL DATA

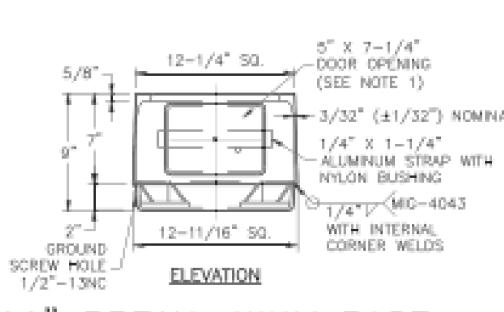
COMPONENT	ALUMINUM ALLOY DESIGNATION	SPECIFICATION
SHOE BASE	356-T6, CAST	ASTM 826 OR 8108
BREAKAWAY BASE	356-T6, CAST	ASTM B108
BOLT COVERS	356 OR 360, CAST	ASTM B26 OR B108
POLE SHAFT	6063-T6, EXTRUDED	ASTM B221 OR B241
GROUND LUG	6061-T5 OR 6063-T6, PLATE	ASTM 8221
REINFORCED HANDHOLE FRAME	356-T6 OR 6061-T6	ASTM B26, B108 OR B221
HANDHOLE COVER	6063-T6	ASTM B209, B221 OR B241
BRACKET ARM & TUBING PIPES	6063-T6	ASTM B221, B241 OR B249
BRACKET ARM MOUNTING PLATES	6061-T6 OR 6063-T6 EXTRUDED	ASTM B221
BRACKET ARM STRUT & ARM CONNECTOR	AU6061-T6 OR 6063-T6 EXTRUDED	ASTM B221, B241 OR B249
POLE CAP	356, CAST	ASTM 826 OR 8108
ANCHOR BOLTS	N/A	GALYANIZED PER ASTM A153

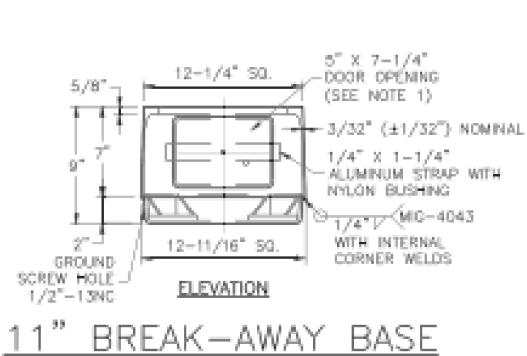


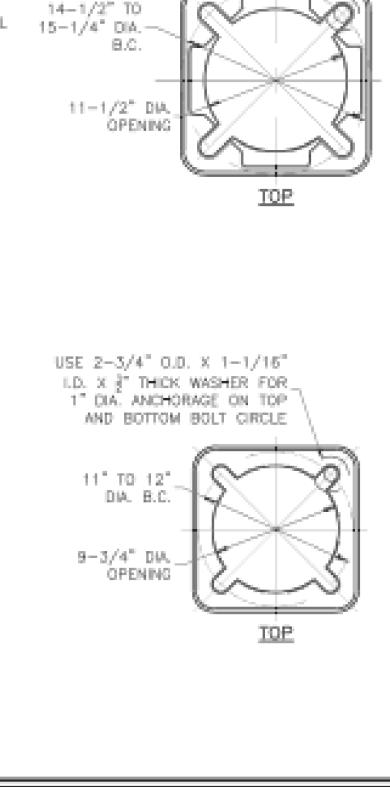
### 15" BREAK-AWAY BASE

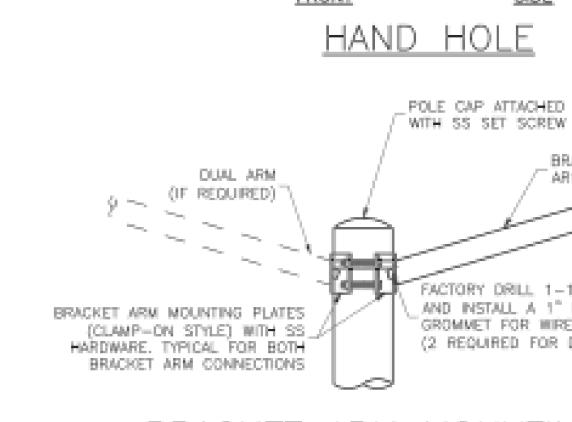
 DOOR SHALL BE ON THE SAME SIDE OF THE POLE AS THE HAND HOLE. BASE CONFORMS TO BREAKAWAY CRITERIA OF AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS (1994).



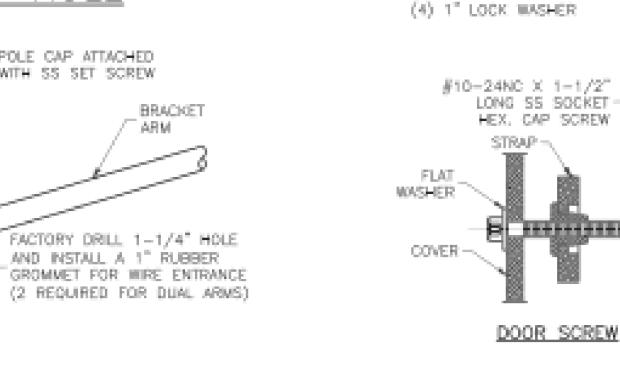


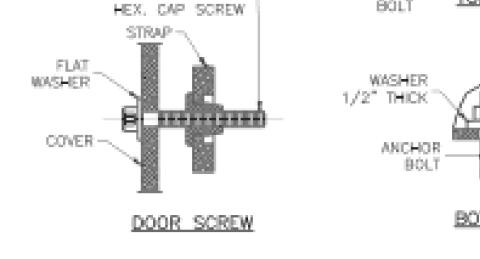






1/4"-20NC X 1/2" LONG HEX\_ HEAD WHITE NYLON SCREWS





(4) 1"-8NC X 4" LONG GALV. HEX HEAD BOLT SAE GR. 5

(4) 1" GALV, HEX, NUT

(4) 1" GALV. FLAT WASHER

(B) 1/2" GALV. WASHER 2-3/4" O.D.

BREAK-AWAY BASE ANCHORAGE

1/2" THICK CONNECTING

(2 REQUIRED FOR DUAL ARMS) BRACKET ARM MOUNTING

MUNICIPAL SITE LIGHTING DETAILS

SCALE : N/A

CIRCLE "BC" 4 - SLOTTED HOLES (1-1/4" X 1-3/4") - POLE BASE 5.5.4- REMOVABLE BOLT COVERS -SHOE BASE S.S.HEX HEAD\_

-DECORATIVE FINIAL

CAST ALUMINUM

- PRISMATIC LENS

CAST ALUMINUM

STRUTS

CAST ALUMINUM

COBRA HEAD STYLE LUMINAIRE

7,500, 12,500, 24,500 LUMEN LED

10,000 LUMEN LED

3" DIA. SLIPFITTER-

LEE'S SUMMIT, MO DET

OLE. CITY OLE

WASHER

Deniver By: DWC Checked by: MP Date: 03/3820 Proj. W.

KANSAS CITY, MO 64108 phone: (816) 272-5289

MEP ENGINEER

JUSTIN R. SMOTHERS

SL-1 MO COA NO. 2012006786 / KS COA NO. E-2818 1925 CENTRAL STREET, SUITE 201 email: jsmothers@jscengineers.com

ARCHITECTURE, LLC REVISION DATES:

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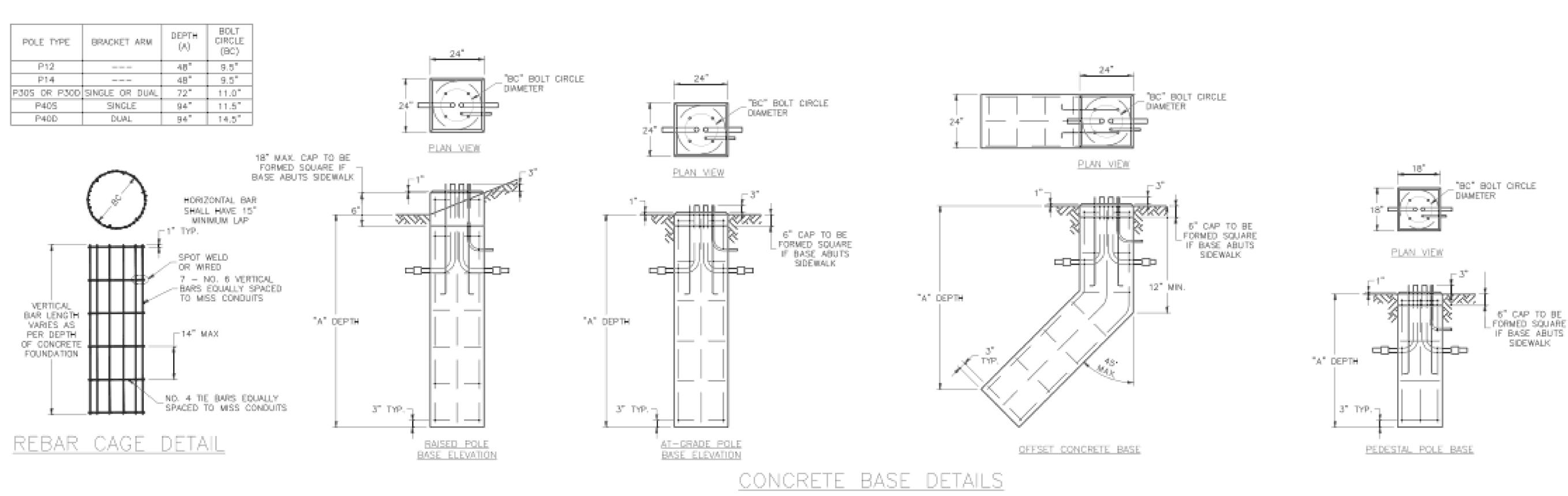
**JSC** 

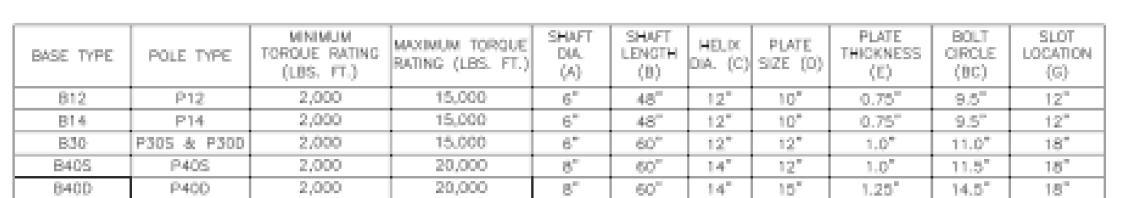
**ENGINEERS** 

MEP ENGINEER

JSC PROJECT #: 23-046

ELECTRICAL SITE LIGHTING **DETAILS** 





90" (TYP) TYPE 1 PLATE 4 HOLES TAPPED

SEE NOTE 3

3" ±.12 X 12" ±.12 SLOT THROUGH BOTH

"1.021" - 8UNS - 2B (SEE NOTE 5)

ALL RADIAL SECTIONS NORMAL TO AXIS

HELD: MUST BE

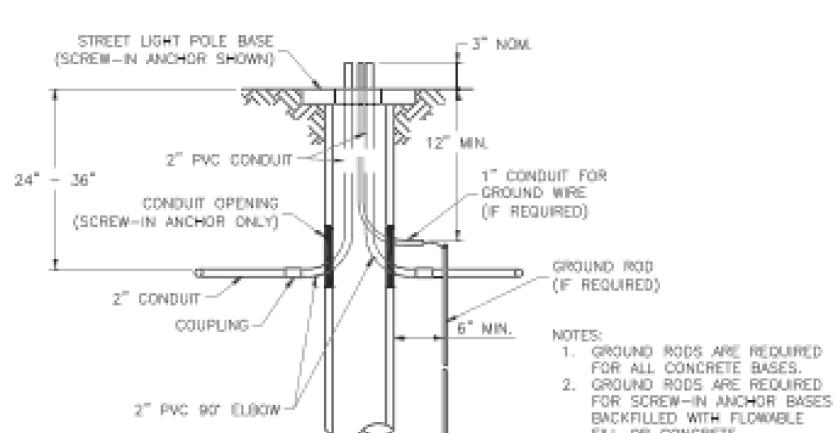
FORMED BY MATCHING

METAL DIE SECTION A-A ±.20 PITCH

"BC" - BOLT CIRCLE DIAMETER ±.060

### NOTES:

- FINISH: HOT DIP GALVANIZE PER ASTM—A153 (LATEST REVISION).
- 2. BASEPLATE TO BE PERPENDICULAR TO SHAFT AXIS (±1") AND HOLE AND CONCENTRIC (±.188 I.D. FIM) TO SHAFT AXIS.
- 3. ALL BASES SHALL BE IDENTIFIED BY THE MANUFACTURER'S INITIALS AND THE ANCHOR TYPE (1 OR 2) PERMANENTLY STAMPED INTO THE TOP PLATE WITH 1/2" LETTERS., THE JULIAN DATE OF MANUFACTURE SHALL BE PERMANENTLY STAMPED IN 1/4" NUMERALS.
- PILOT POINT AND SHAFT AXES TO BE CONCENTRIC (±.125 FIM) AND IN LINE (±2"). 5. TAP 1" HOLES ON THE SPECIFIED BOLT CIRCLE PERPENDICULAR TO THE BASEPLATE. CLEAN AND CHASE THE THREADS AFTER HOT-DIP GALVANIZING SO THAT A BOLT MAY BE INSTALLED.
- HELIX, AND CORE ON ALL WELD AREAS. FLAME CUT IRREGULARITIES PERMISSIBLE:
  - (1) VALLEYS NOT TO EXCEED 3/32 IN. BELOW NOMINAL SURFACE LEVEL.
- (2) PEAKS OR POSITIVE IRREGULARITIES NOT TO EXCEED 1/32 IN. ABOVE NOMINAL SURFACE LEVEL OR INTERSECTIONS OF NOMINAL SURFACES. 8. MANUFACTURER TO HAVE IN EFFECT INDUSTRY RECOGNIZED WRITTEN QUALITY CONTROL FOR ALL MATERIALS AND MANUFACTURING PROCESSES.
- 9. ALL MATERIAL IS TO BE NEW, UNUSED AND MILL TRACEABLE MEETING THE FOLLOWING SPECIFICATIONS: BASEPLATE: ASTM A36-(LATEST REVISION) HOT ROLLED STEEL PLATE (CONFORM TO AASHTO
- TECHNICAL BUL. #270). SHAFT: STEEL PIPE PILES, SEEMLESS OR STRAIGHT WELDED, GRADE 2 PER ASTM A252. ALTERNATE MATERIAL: PIPE TYPE E OR S, GRADE B PER ASTM A53.
- PILOT POINT: ASTM A575-(LATEST REVISION) HOT ROLLED STEEL
- ASTM A325 OR GRADE 5 SAE J429 1" DIAMETER HOT DIP GALVANIZED HEX HEAD BOLT SHALL INCLUDE ONE EACH LOCK AND FLAT WASHER.
- 10. THE DESIGN AND PERFORMANCE INTEGRITY OF THE FOUNDATION SHALL BE VERIFIED BY FULL-SCALE TESTS BY QUALIFIED ENGINEERS INDEPENDENT OF THE MANUFACTURER, CERTIFIED
- ORIENTATION.



**60**0

SO

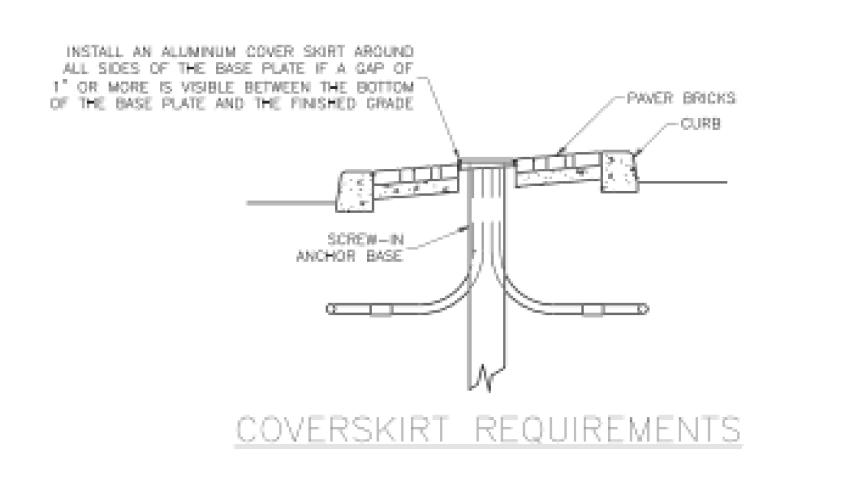
STANDARD DETAILS
TY OF LEE'S SUMMIT, I

Displayed Bly: BANC

Checked by: MP

Date: 03/2020

SL-2



## PREHEAT (ROOM TEMPERATURE 70°F), TUMBLEBLAST, HANDGRIND, AND CLEAN BASEPLATE,

HELIX: ASTM A635-(LATEST REVISION) HOT ROLLED STEEL PLATE

TEST REPORTS SHALL BE PROVIDED UPON REQUEST. 11. FLAME CUT NOTCH OR PROJECTION WILL BE ON THE BASE PLATE TO INDICATE SLOT

SCREW-IN ANCHOR BASE DETAILS

PLATE ±.120

SQUARE

"E" - PLATE THICKNESS-

PLATE FLAT ±.125 WARP-

SEE NOTE 7-

SLOT PARALLEL TO \_ PIPE AXIS ±.063

"A" SHAFT DIAMETER ±.030

"C" - HELIX\_ DIAMETER ±.13

1.25" ±.03 DIA. X\_

12.18" ±.25 LONG

NOTCH FOR SLOT ORIENTATION-

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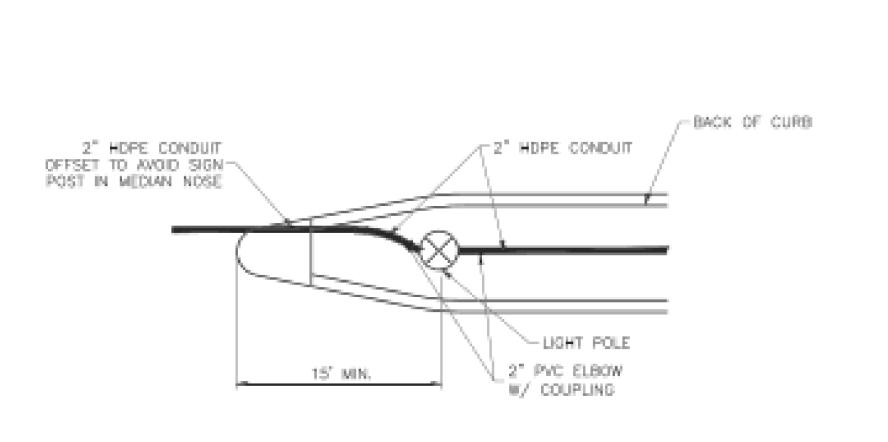
MEP ENGINEER **JSC ENGINEERS** 

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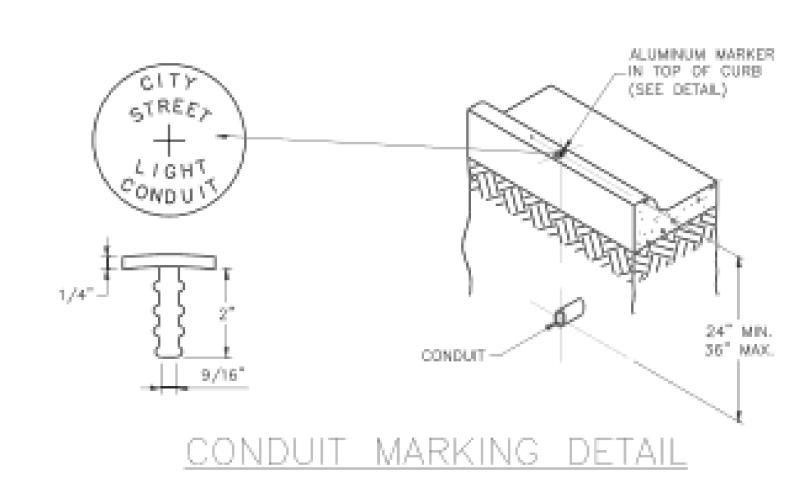
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ELECTRICAL SITE LIGHTING **DETAILS** 



### STREET LIGHT POLE IN MEDIAN



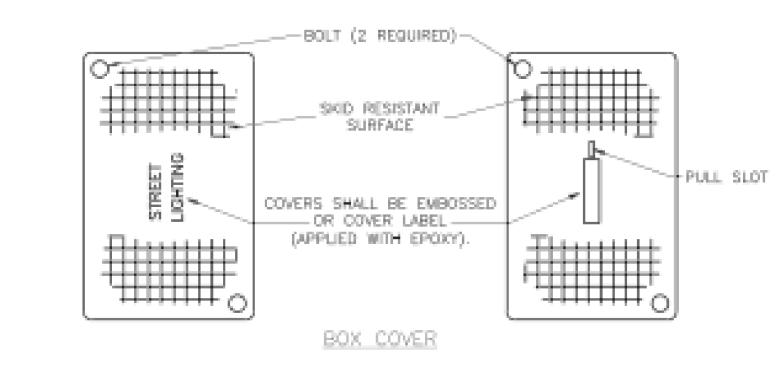
- 1. AN ALUMINUM MARKER SHALL BE PLACED IN THE TOP OF THE CURB DIRECTLY OVER THE
- MARKERS SHALL BE INSTALLED BY DRILLING THE CURB AND EXPOXYING THE MARKER IN PLACE, IF INSTALLED IN A SIDEWALK OR CURB RAMP, THE TOP OF THE MARKER SHALL BE FLUSH WITH THE CONCRETE SURFACE.
- NO DIRECT PAYMENT SHALL BE MADE FOR CONDUIT MARKERS; THEY ARE SUBSIDIARY TO THE INSTALLATION OF CONDUIT.

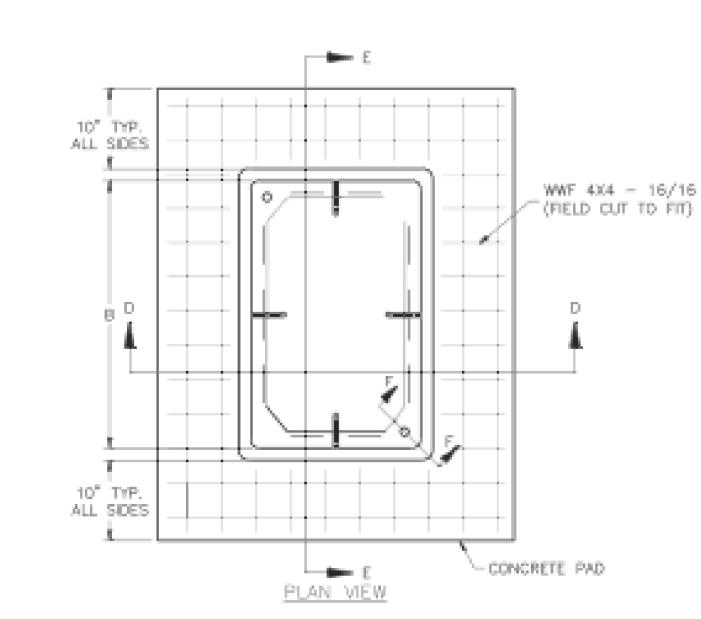


### CONDUIT LOCATIONS

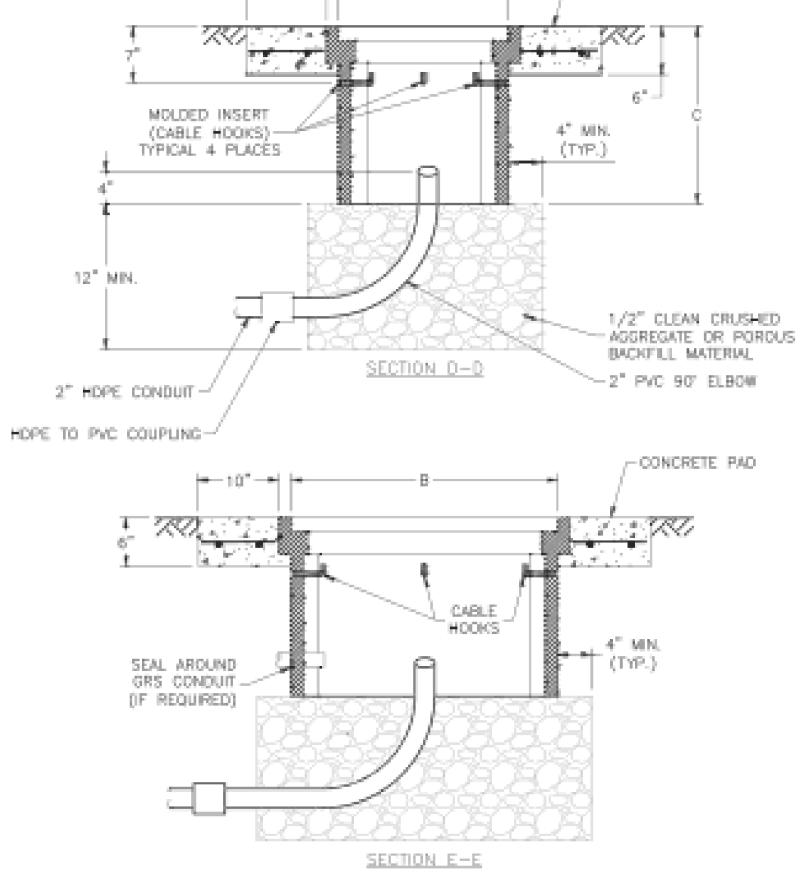
### NOTES:

 BACKFILL UNDER PAVED SURFACES SHALL BE FLOWABLE FILL. 2. THE CONDUIT SHALL NOT BE COVERED UNLESS INSPECTED AND APPROVED BY THE CITY ENGINEER, SO AS TO ENSURE PROPER DEPTH, CORRECT CONDUIT MATERIAL, AND PROPER CONDUIT END TREATMENT.

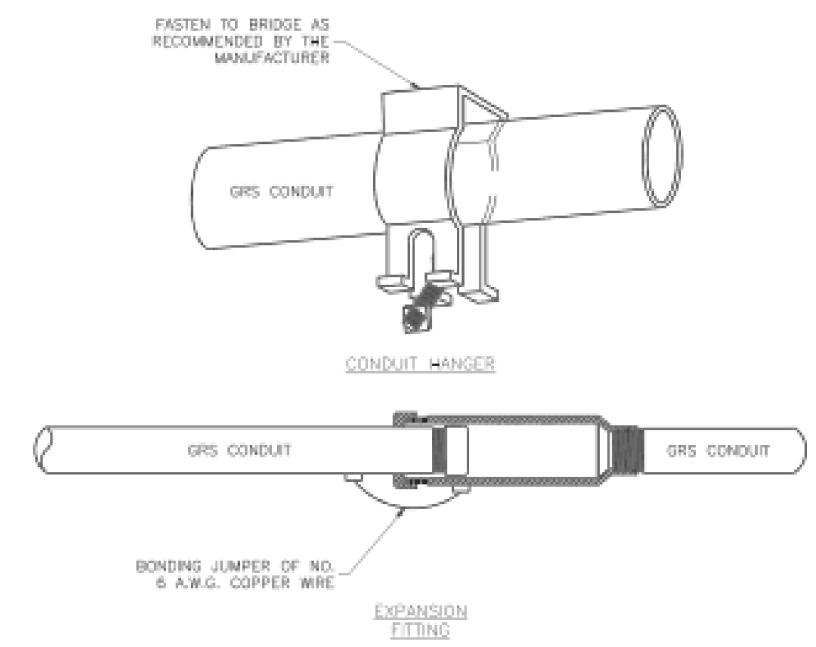




- CONCRETE PAD







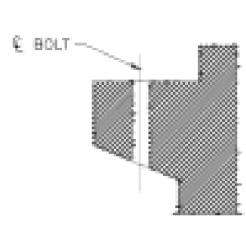
### GRS CONDUIT DETAILS

### NOTES:

- ALL CONDUITS INSTALLED ABOVE GROUND SHALL BE GRS.
- CONDUIT ATTACHED TO BRIDGES SHALL HAVE EXPANSION FITTINGS INSTALLED AT EACH END OF THE BRIDGE AND AT EACH EXPANSION JOINT ON THE BRIDGE. 3. ALL GRS CONDUITS SHALL BE ELECTRICALLY BONDED BY A GROUNDING BUSHING AND
- GROUND WIRE AS DETAILED. INSTALL THE CONDUIT AND CONNECTOR ASSEMBLY TO PERMIT A 1/2" MINIMUM LONGITUDINAL TRAVEL IN EITHER DIRECTION.

NUMBER OF ENTERING/EXITING	BOX TYPE	MINIMUM BOX DIMENSION					
CONDUITS	B000 1172	A	В	С			
1 - 2	TYPE 1 JUNCTION BOX	12"	12"	12"			
3 - 4	TYPE 2 JUNCTION BOX	12"	18"	12"			
> 4	CLASS 1 PULL BOX	17"	30"	22"			

ALL DIMENSIONS SHOWN ARE NOMINAL



- LIFT OPENING REQUIRED ON ALL COVERS.
- 2. PREFORMED BOX WALLS MAY BE EITHER FLARED OR VERTICAL. THE BOTTOM OF BOXES
- 3. IF AN EXTENSION IS USED WITH A PREFORMED BOX, THE LIP OF THE EXTENSION MAY BE INTERIOR OR EXTERIOR. THE EXTENSION SHALL BE COMPATIBLE AND FROM THE SAME

SECTION F-F

- 4. CABLE HOOKS ARE TO BE INCLUDED WITH CLASS 1 PULL BOXES ONLY.
- 5. A CLASS 1 PULL BOX SHALL BE INSTALLED ADJACENT TO EACH 4-CIRCUIT POWER SUPPLY.

Drawn By: BWC Cleecked By: 1887 Date: 03/2020

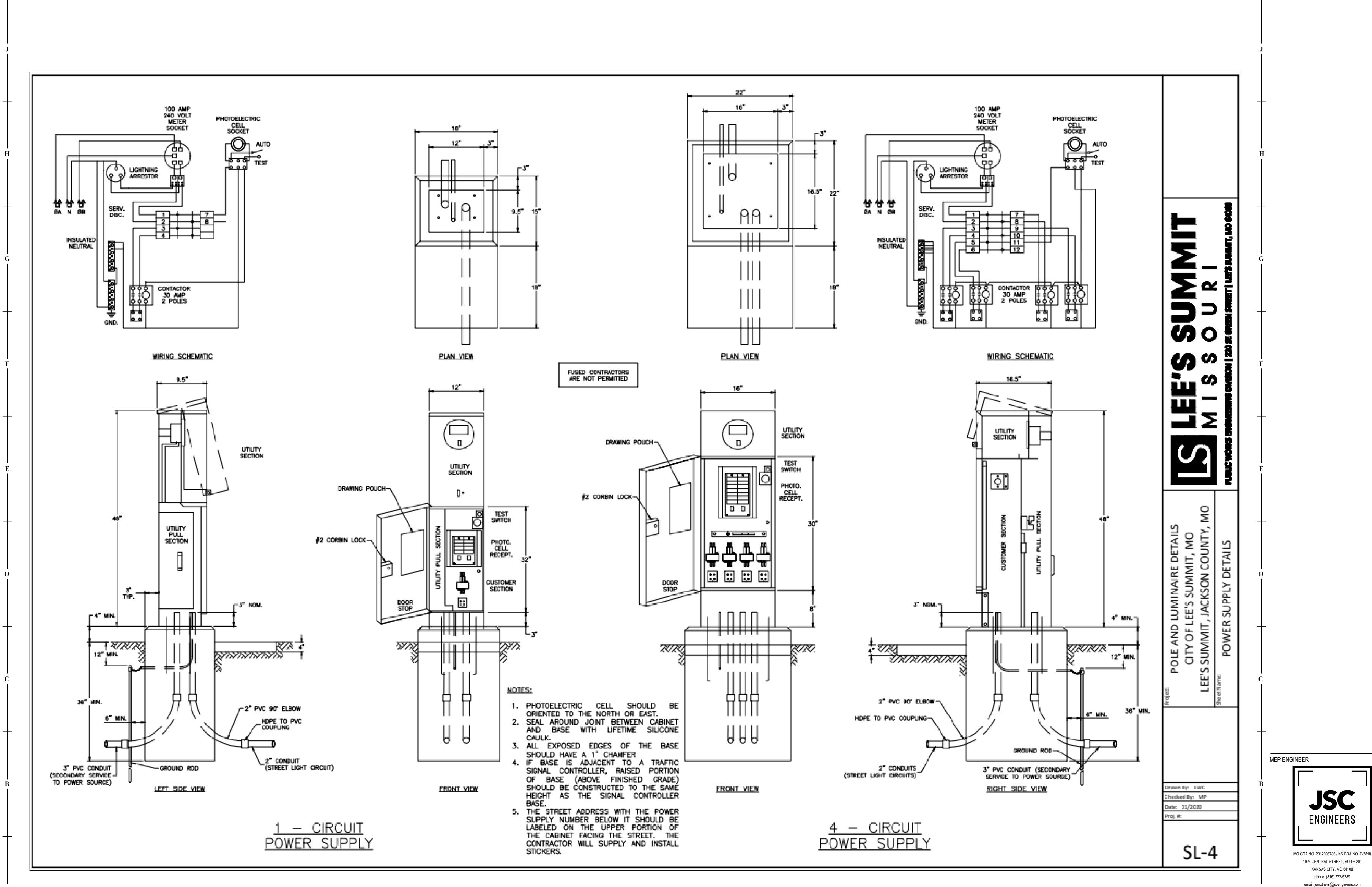
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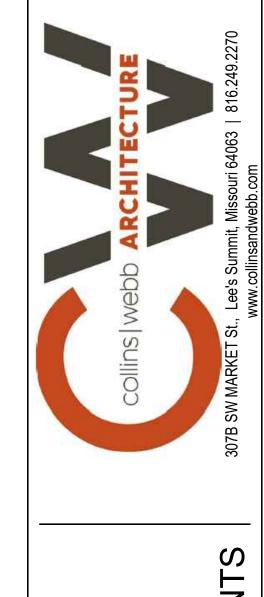
STANDARD I Y OF LEE'S SU MMIT, JACKS

SL-3

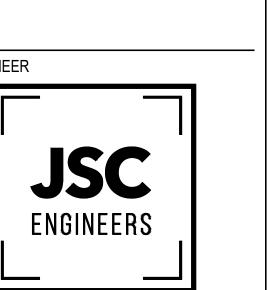
MANUFACTURER.

MUNICIPAL SITE LIGHTING DETAILS





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08-24-23 PROFESSIONAL SEAL ISSUE DATE: JSC PROJECT #:

JUSTIN R. SMOTHERS

PE-2012003568

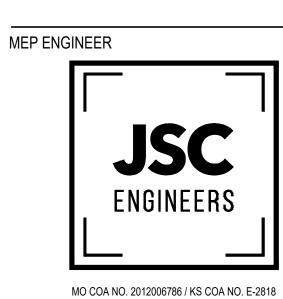
ELECTRICAL SITE LIGHTING **DETAILS** 

MUNICIPAL SITE LIGHTING DETAILS SCALE : N/A



 $\Box$ 

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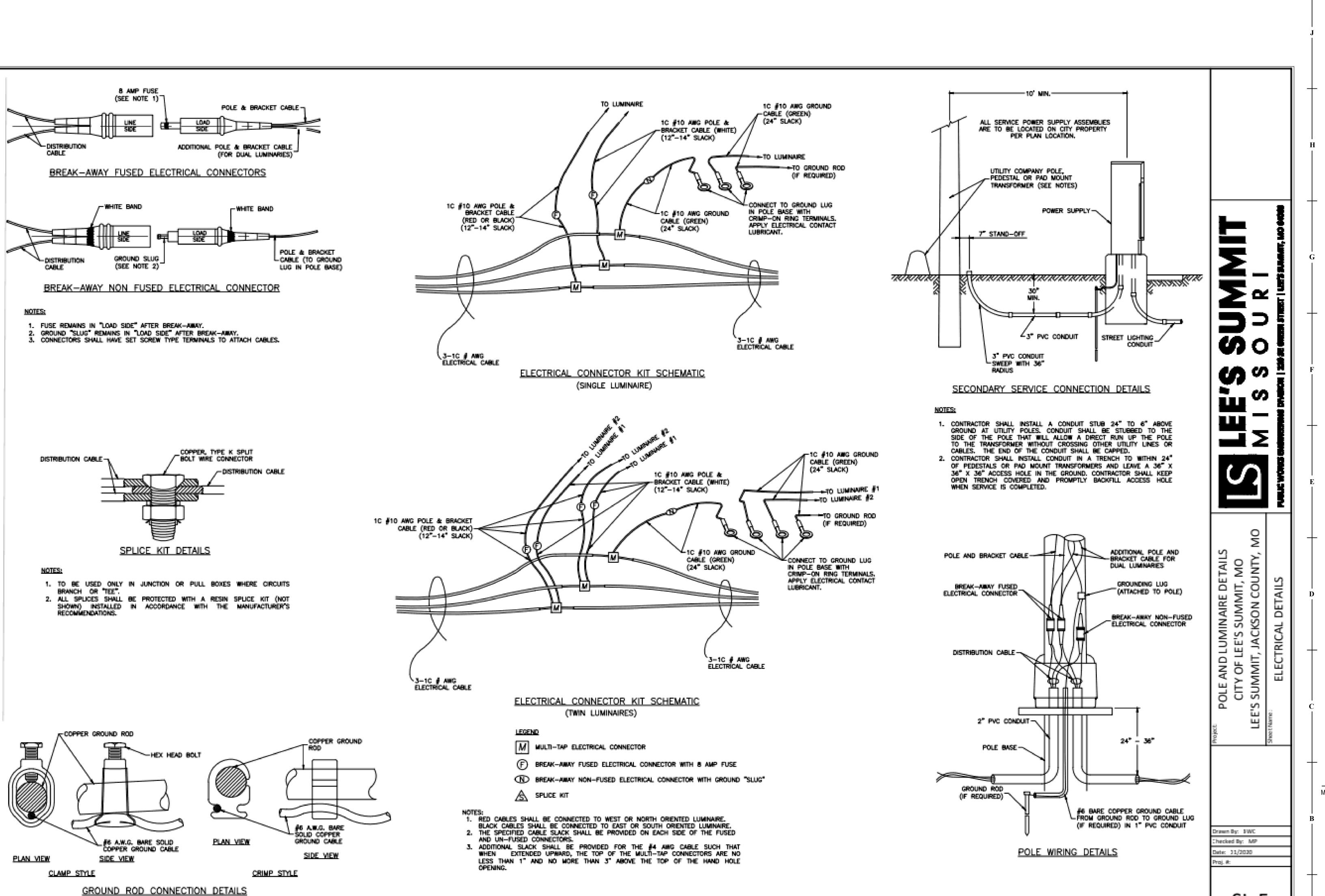


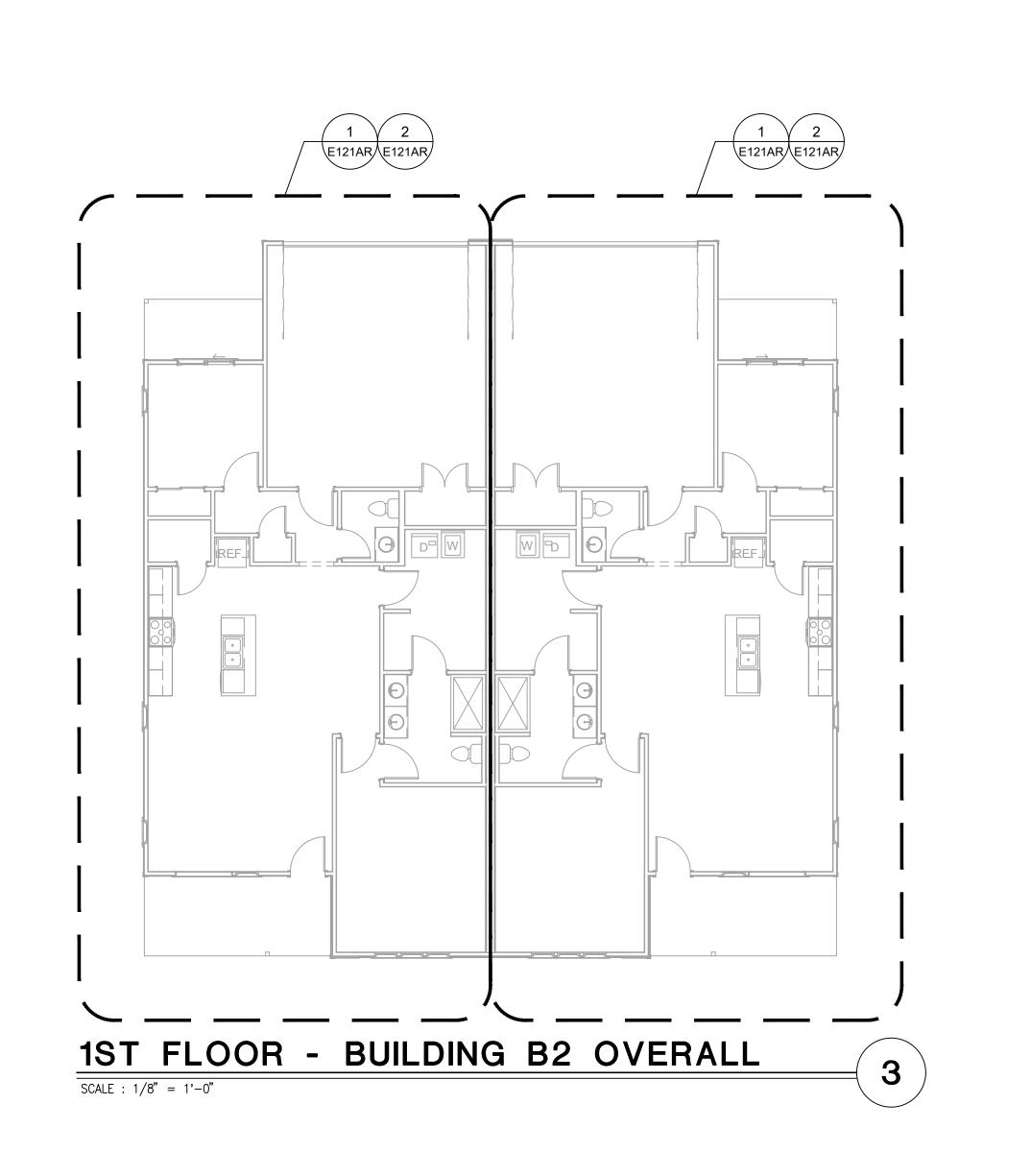
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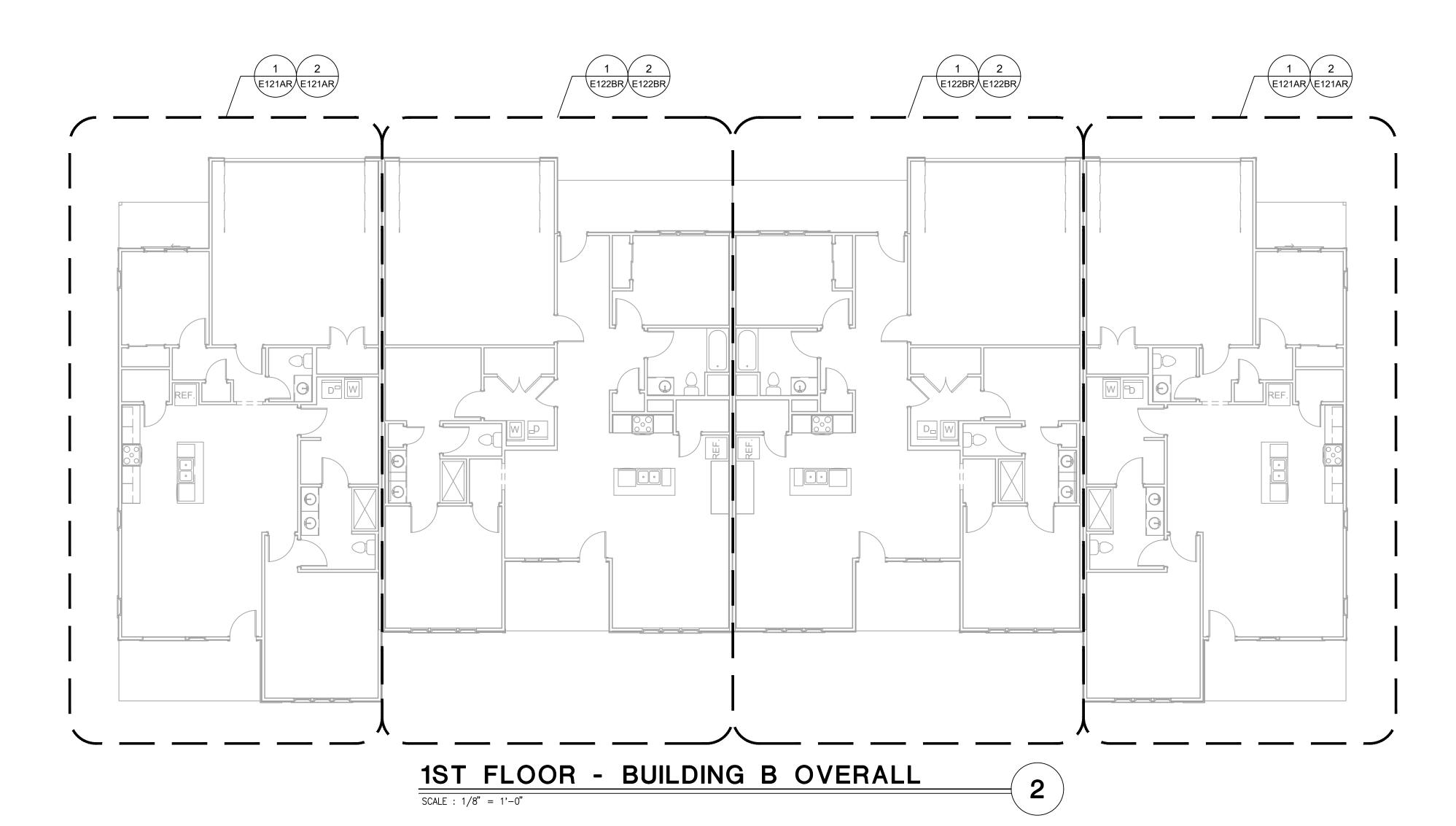
PROFESSIONAL SEAL JSC PROJECT #:

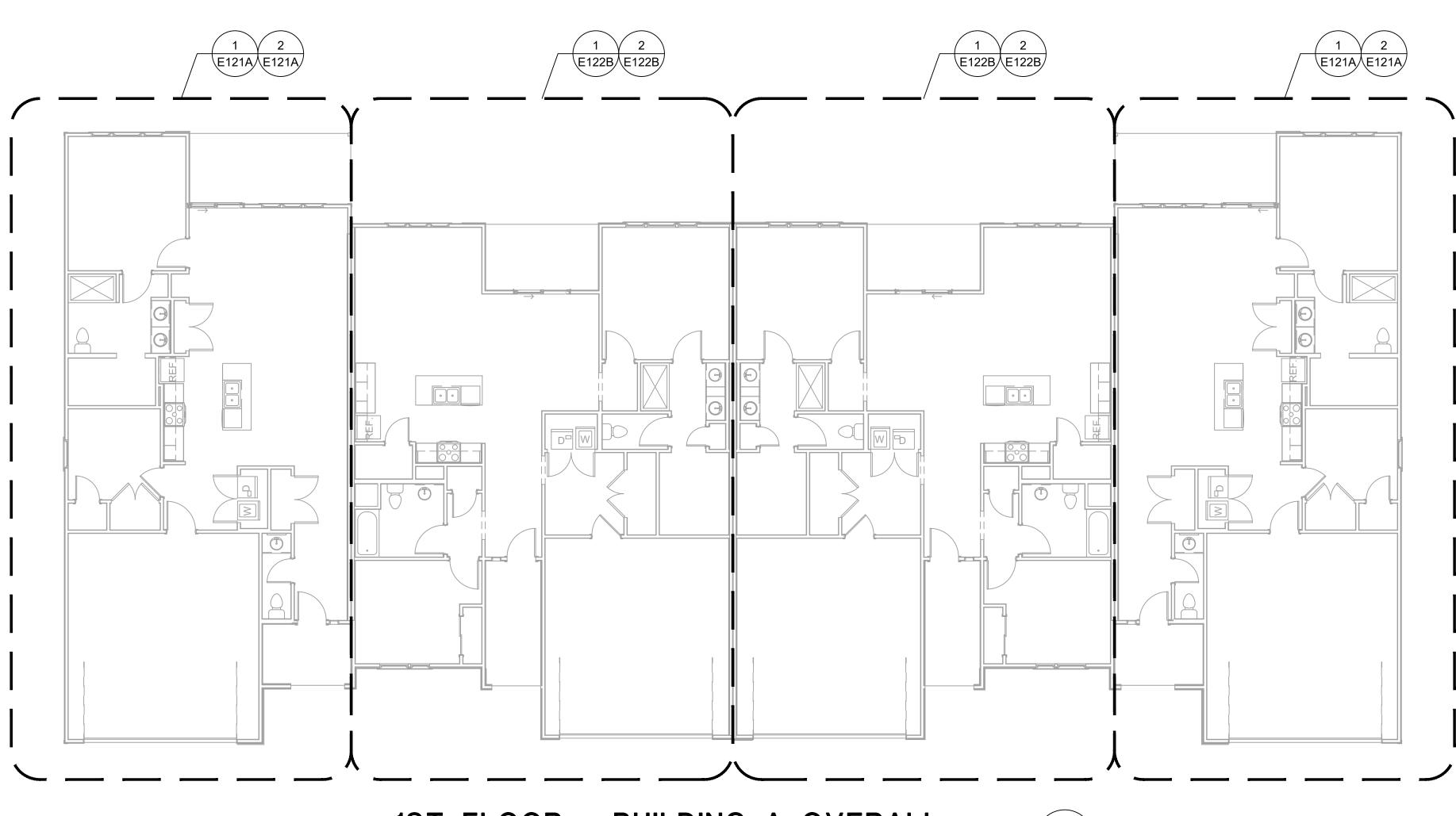
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ELECTRICAL SITE LIGHTING **DETAILS** 









1ST FLOOR - BUILDING A OVERALL

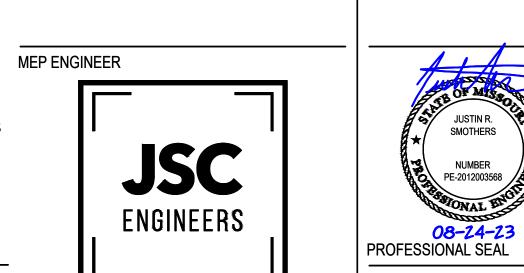
SCALE: 1/8" = 1'-0"



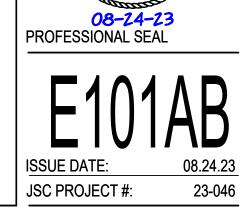
ON AT BLACKWELL

ACCUPANDO A SEINANDO A

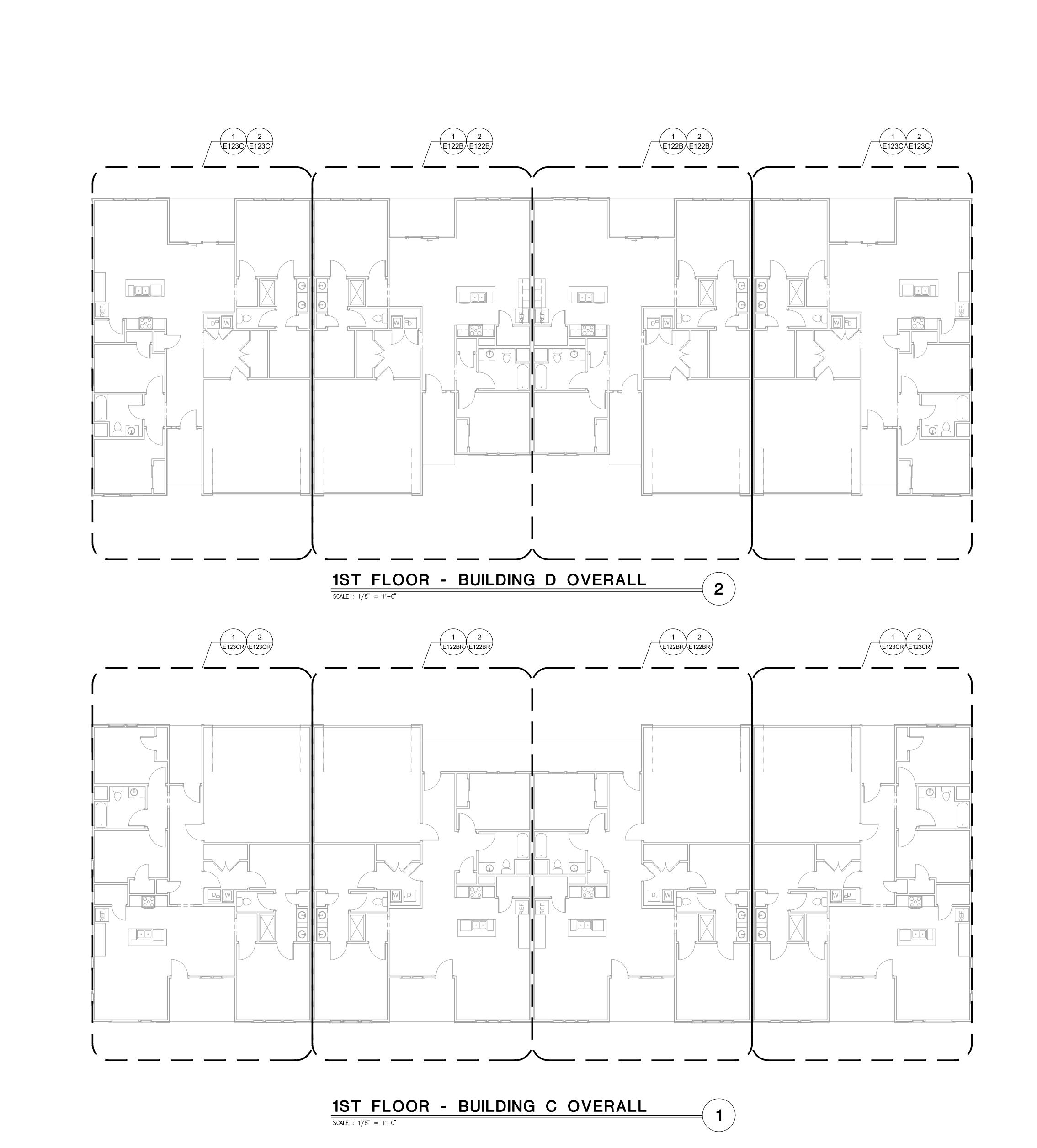
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1925 CENTRAL STREET, SUITE 201
KANSAS CITY, MO 64108
phone: (816) 272-5289
email: jsmothers@jscengineers.com

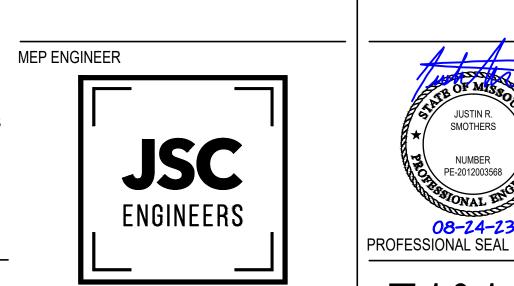


1ST FLOOR OVERALL PLANS BUILDINGS A & B, B2





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 ISSUE DATE:
 08.24.23

 JSC PROJECT #:
 23-046

1ST FLOOR OVERALL PLANS BUILDINGS C & D

ASSUMED IN THIS DRAWING, REFER TO MECHANICAL & PLUMBING ENGINEERED

CONNECTION REQUIREMENTS. 4. GARBAGE DISPOSAL. 120V, ½ HP, CORD & PLUG CONNECTON TO HALF-SWITCHED AFCI RECEPTACLE MOUNTED BELOW SINK. PROVIDE 2 #12 CU, 1 #12CU EGC AT HANDICAP UNITS. MOUNT" SWITCH WITHIN LOWER CABINETS PER ADA GUIDELINES.

CONSTRUCTION. DISCONNECT SWITCH SIZE AND CONNECTION STYLE ARE

DRAWINGS FOR EXACT EQUIPMENT SPECIFICATIONS & ELECTRICAL

**#KEYED PLAN NOTES** 

5. DISHWASHER RECEPTACLE. 120V, 6.2A. PROVIDE 2 #12 CU, 1 #12 CU EGC. CORD AND PLUG CONNECTION TO RECEPTACLE.

6. ELECTRIC COOKTOP, 208V, 1P, 8KW. PROVIDE HARD WIRED CONNECTION TO J-BOX IN CABINET. COORDINATE EXACT LOCATION WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS. PROVIDE LOCKABLE CIRCUIT BREAKER IN PANEL AS DISCONNECTING MEANS TO COMPLY WITH NEC 422.31(B). PROVIDE 3 #8 CU, 1 #10 CU EGC. PROVIDE RECEPTACLE TO MATCH PLUG ON UNIT IF UNIT INSTALLED IS CORD AND PLUG CONNECTED.

7. COMBINATION MICROWAVE AND EXHAUST HOOD. 120V, 15A MAX. COORDINATE EXACT LOCATION WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS. PROVIDE 2 #12 CU, 1 #12 CU EGC. CORD AND PLÜG CONNECTION.

8. REFRIGERATOR 120V, 12A MAX. PROVIDE 2 #12 CU, 1 #12 CU EGC. CORD AND PLUG CONNECTION.

9. TELEVISION. PROVIDE 120V DUPLEX RECEPTACLE, DATA OUTLET AND COAX CABLE (BOTH WIRED BACK TO LOW VOLTAGÈ STRUCTURED MEDIA ENCLOSURE). MOUNT BETWEEN 18" AND 66" AFF. VERIFY MOUNTING HEIGHT PRIOR TO ROUGH-IN.

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11. MOUNT ISLAND/PENSULA RECEPTACLES 12" MAX BELOW TOP OF COUNTER.

12. COMBINATION SMOKE DETECTOR AND CARBON MONOXIDE SENSOR. 120V WITH BATTERY BACK-UP. DETECTORS SHALL BE INTERCONNECTED AND INSTALLED IN ACCORDANCE WITH IRC 314 AND 315,M IF 908.7, NFPA 72 & 74 WITH SPECIAL ATTENTION GIVEN TO THE LOCATION OF THE DETECTOR IN THE VICINITY OF RETURN AIR GRILLES. (PROVIDE SMOKE DETECTOR ONLY WHERE ALLOWED BY

13. PROVIDE LOW-VOLTAGE DOOR BELL SYSTEM WITH TRANSFORMER. PROVIDE LOW-VOLTAGE WIRING FROM TRANSFORMER TO PUSHBUTTTON AND FROM PUSHBUTTON TO CHIME.

14. LOW VOLTAGE STRUCTURED MEDIA ENCLOSURE. COORDINATE REQUIREMENTS. PROVIDE 120V DUPLEX RECEPTACLE. REFER TO MANUFACTURER'S INSTALLATION INSTRUCTIONS. ROUTE 1  $\frac{1}{4}$ "C TO LOCATION OF INCOMING COMMUNICATION FOR BUILDING.

15. CLOTHES WASHER, 120V, 12.0A. PROVIDE 2 #12 CÚ, 1 #12 CÚ EGC, CORD AND PLUG CONNECTION. PROVIDE

NEMA 5-20R RECEPTACLE. D 16. ELECTRIC CLOTHES DRYER, 208V, 1 PH, 5000W, 24A. PROVIDE 14-30R RECEPTACLE. PROVIDE 2 #10 C, 1 #10

CU EGC. 17. RATE OF RISE HEAT DETECTOR. 120V WITH BATTERY BACK-UP. DETECTORS SHALL BE INTERCONNECTED AND INSTALLED IN ACCORDANCE WITH IRC 314 AND 315,M IF 908.7, NFPA 72 & 74. (PROVIDE HEAT DETECTOR ONLY WHERE ALLOWED BY CODE).

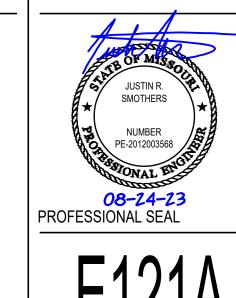
18. DUAL SWITCH FOR SEPARATE CONTROL OF FIXTURE FAN AND LIGHT.

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MEP ENGINEER **JSC** ENGINEERS

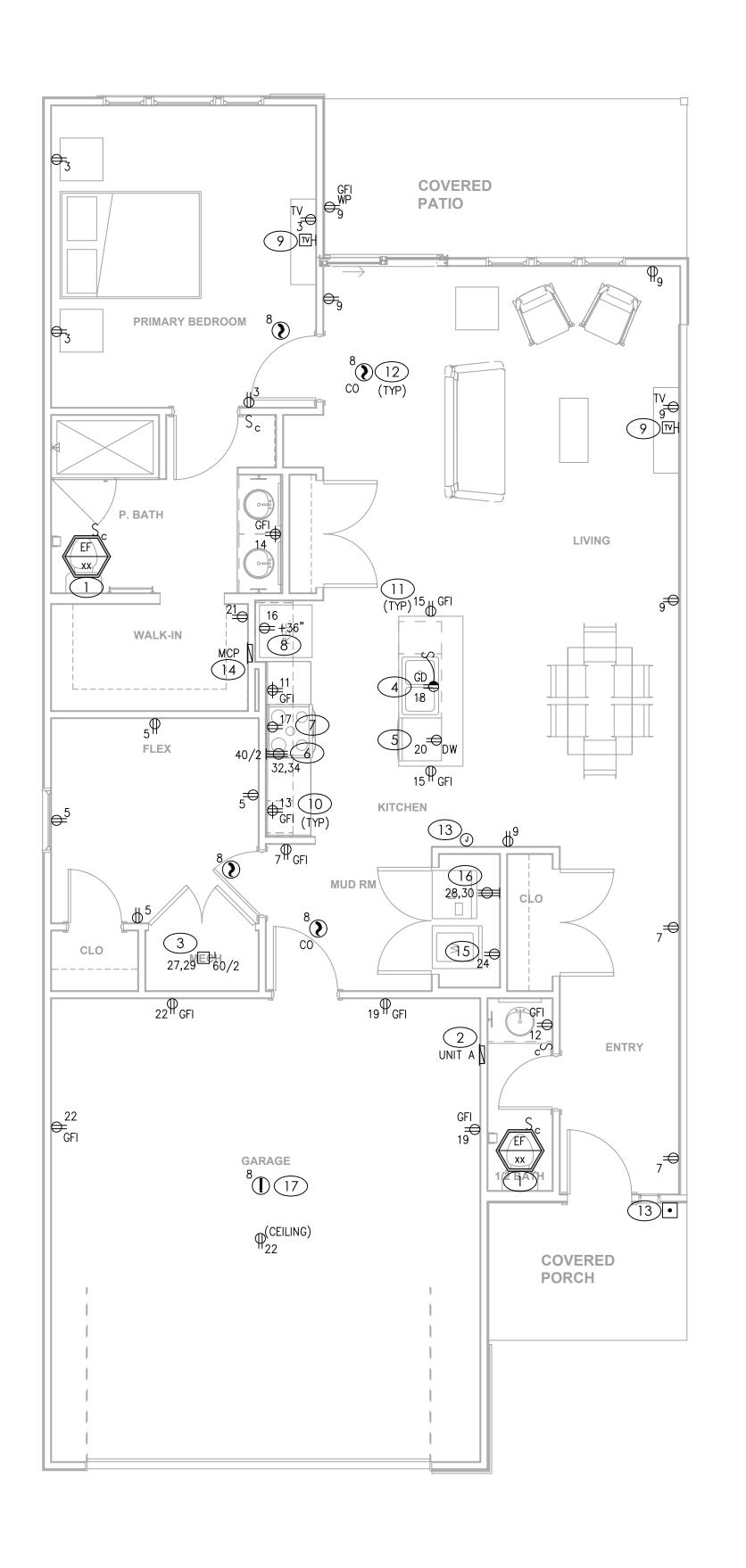
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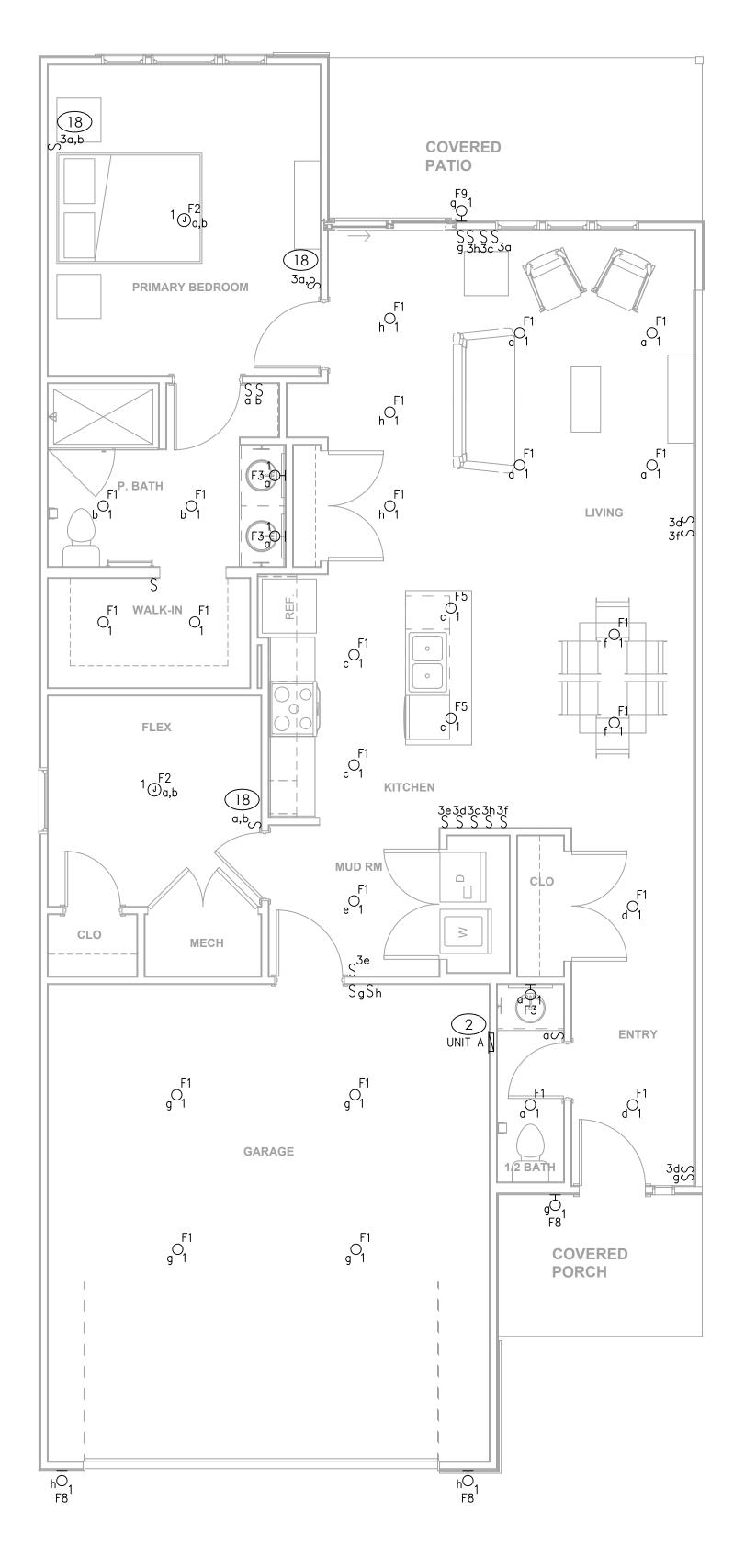


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 23-046

UNIT PLAN A LIGHTING & POWER PLANS





SPECIFICATIONS & ELECTRICAL CONNECTION REQUIREMENTS.

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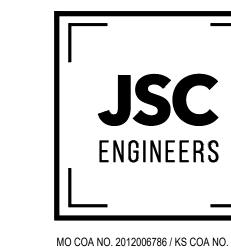
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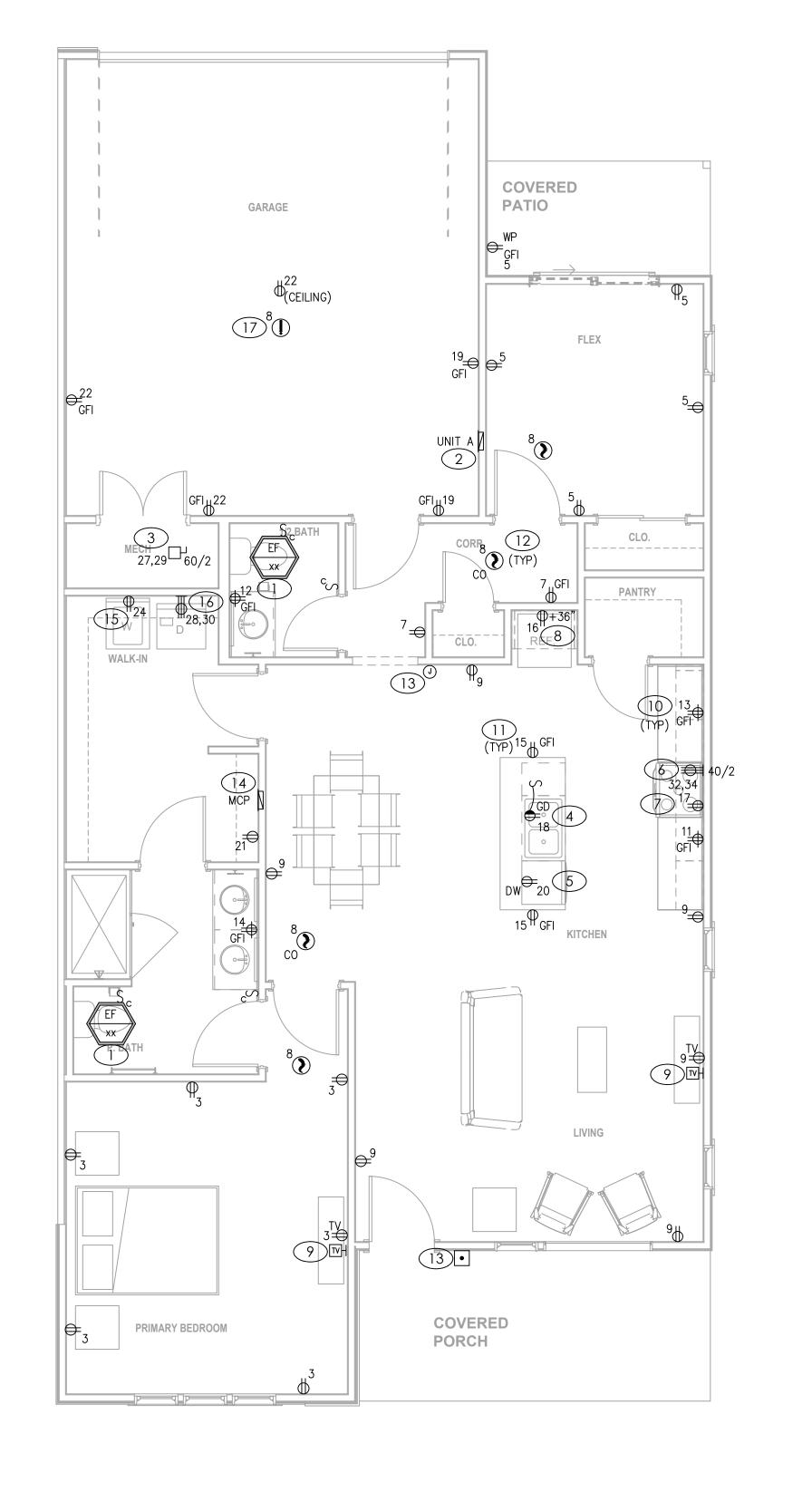
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UNIT PLAN A REVERSED LIGHTING & POWER PLANS



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

COVERED

<del>p----</del>

FLEX

**KITCHEN** 

PATIO

S3eS3cS3f

COVERED

PORCH

GARAGE

MECH

WALK-IN

P. BATH a 1

3a,b 18 PRIMARY BEDROOM

3. MAKE CONNECTION TO DIVISION 22/23 EQUIPMENT PER MANUFACTURER'S RECOMMENDATIONS AND NEC REQUIREMENTS. COORDINATE WORK WITH DIVISION 22/23 CONTRACTOR PRIOR TO CONSTRUCTION. DISCONNECT SWITCH SIZE AND CONNECTION STYLE ARE ASSUMED IN THIS DRAWING, REFER TO MECHANICAL & PLUMBING ENGINEERED DRAWINGS FOR EXACT EQUIPMENT SPECIFICATIONS & ELECTRICAL

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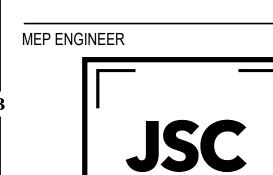
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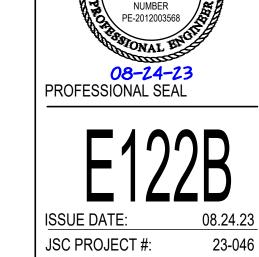
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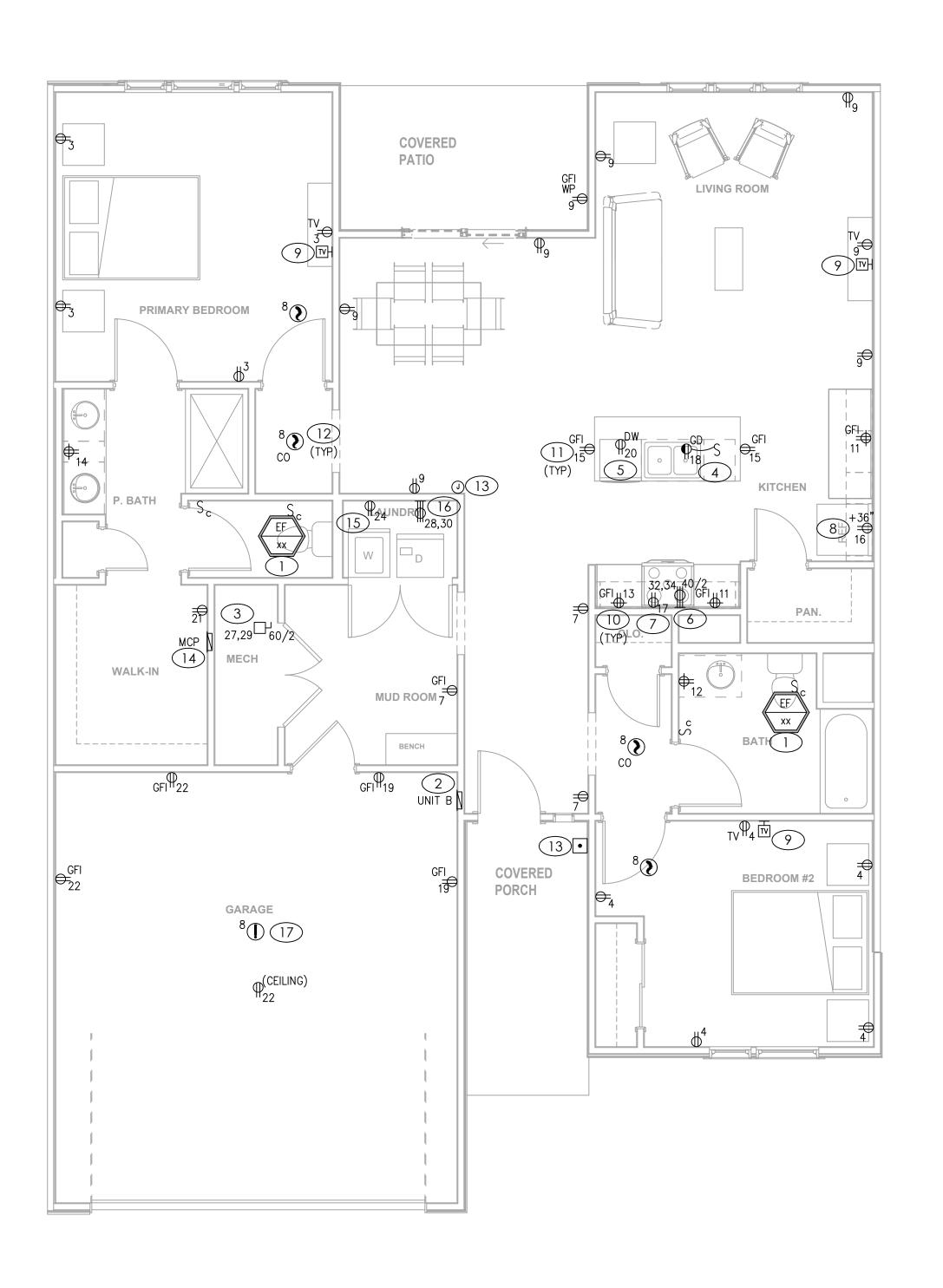
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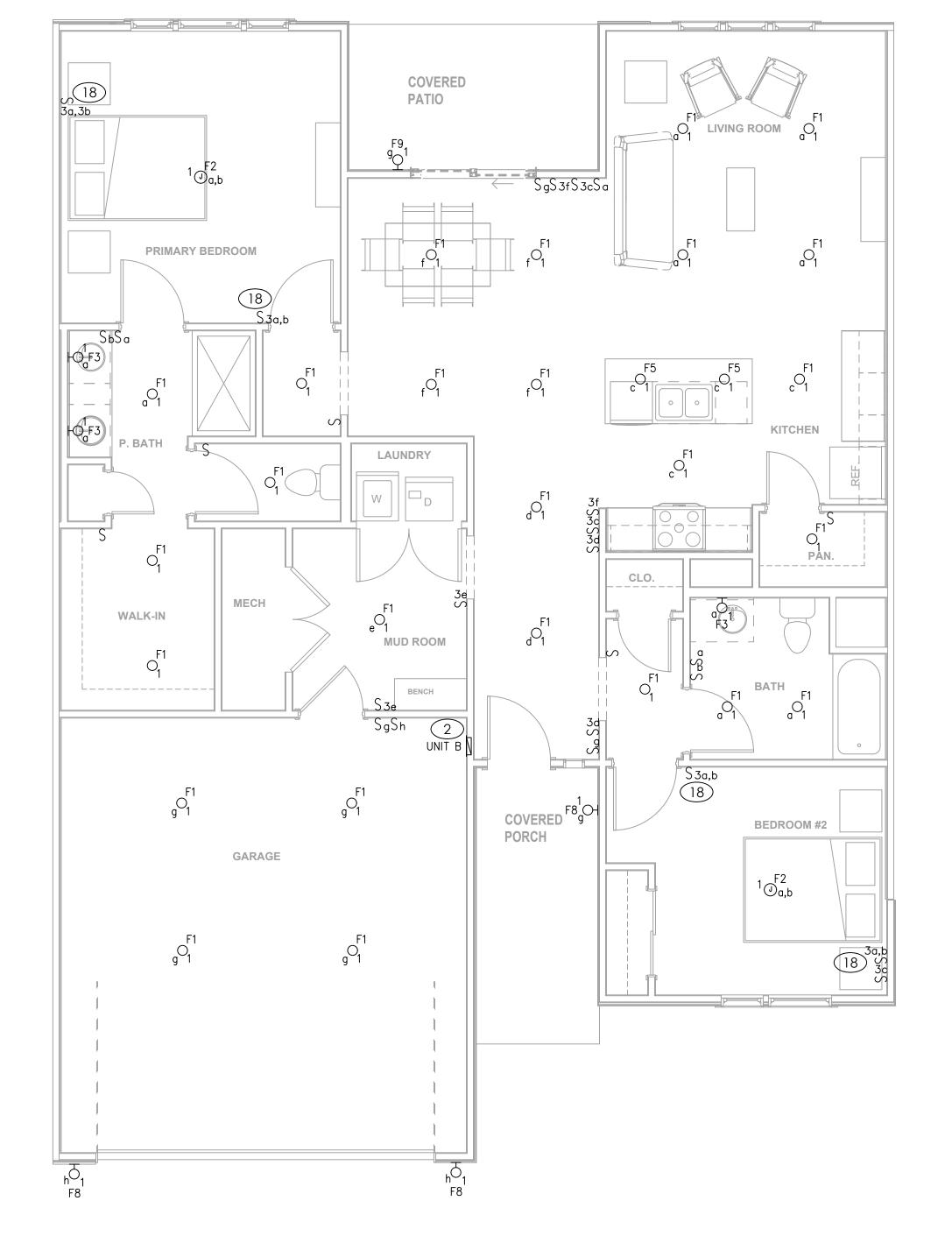
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SMOTHERS

UNIT PLAN B LIGHTING & POWER PLANS





POWER - UNIT PLAN B

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

LIGHTING - UNIT PLAN B

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

CONNECTION REQUIREMENTS. 4. GARBAGE DISPOSAL. 120V, ½ HP, CORD & PLUG CONNECTON TO HALF-SWITCHED AFCI RECEPTACLE MOUNTED BELOW SINK. PROVIDE 2 #12 CU, 1 #12CU EGC AT HANDICAP UNITS. MOUNT SWITCH WITHIN LOWER CABINETS PER ADA GUIDELINES.

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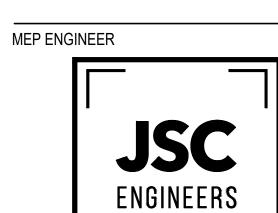
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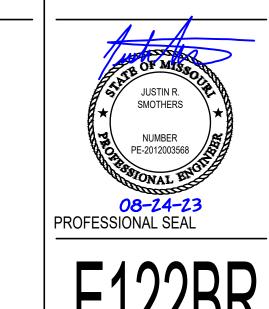
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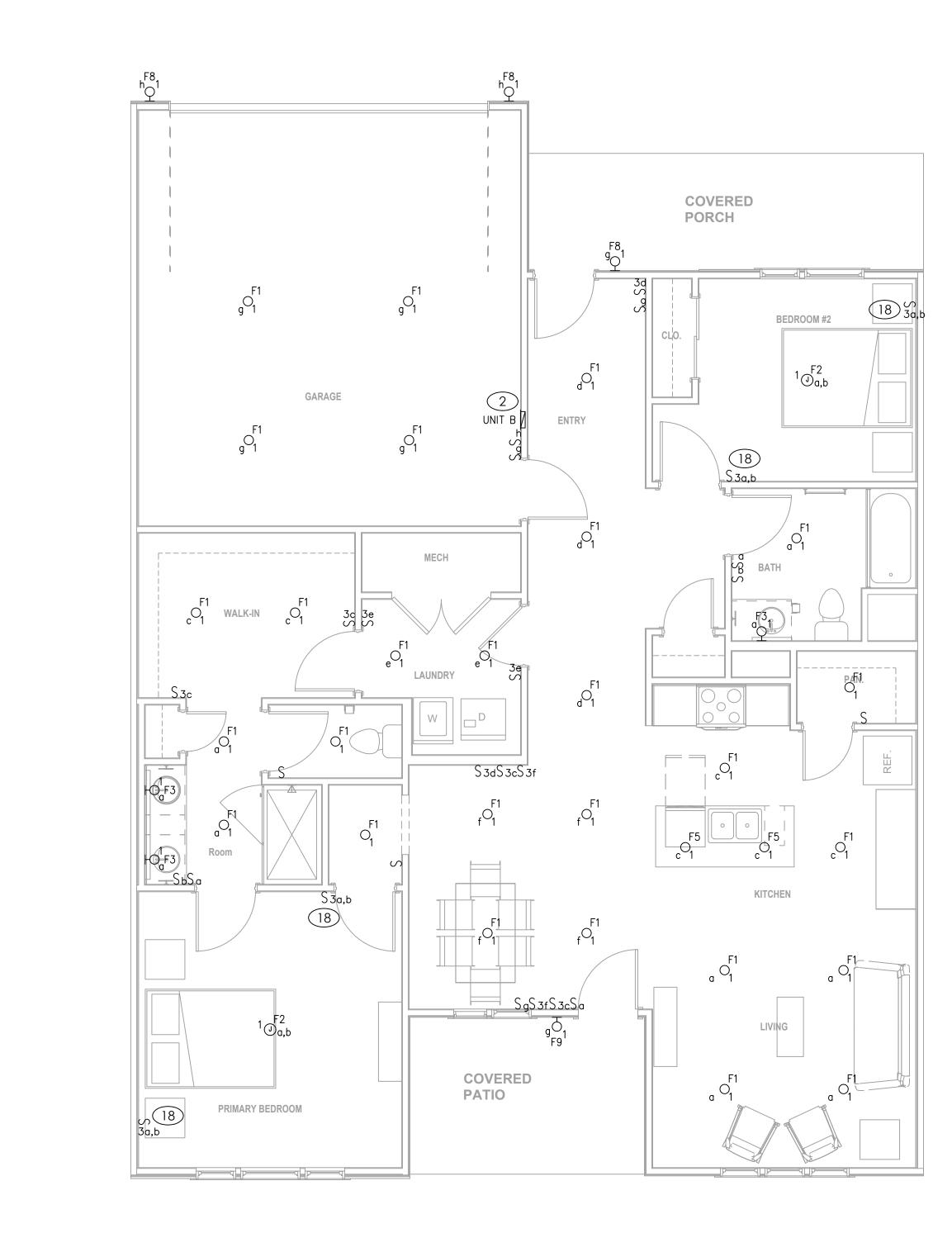
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email: jsmothers@jscengineers.com JSC PROJECT #: 23-046 UNIT PLAN B REVERSED LIGHTING & POWER PLANS



POWER - UNIT PLAN B REVERSED

COVERED PATIO

9 1

Ф(CEILING)

GARAGE

WALK-IN

PRIMARY BEDROOM

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

LIGHTING - UNIT PLAN B REVERSED

**COVERED** 

BEDROOM #2

PORCH

8 12 (TYP)

**KITCHEN** 

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

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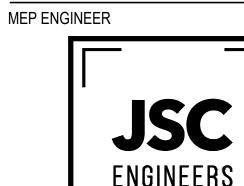
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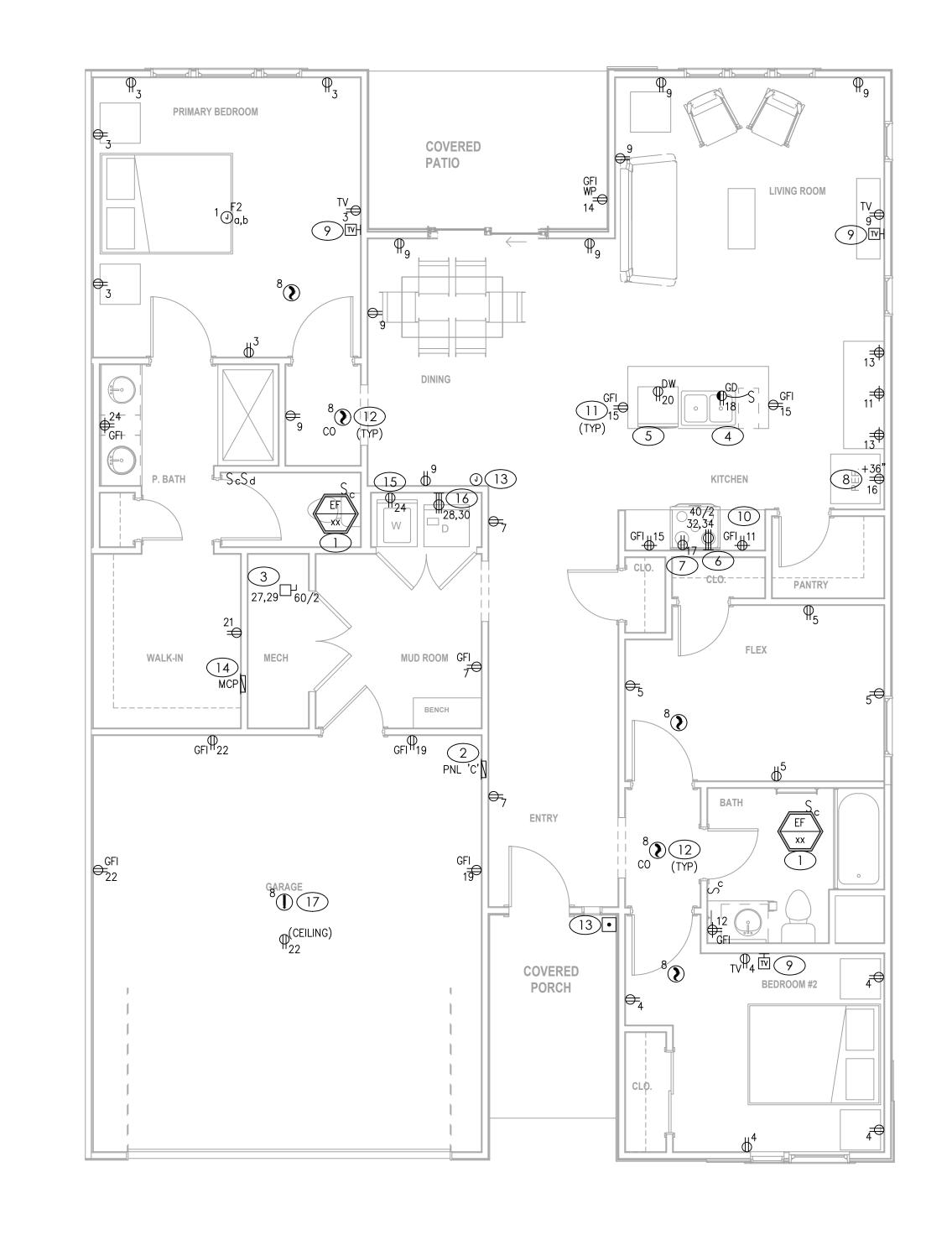


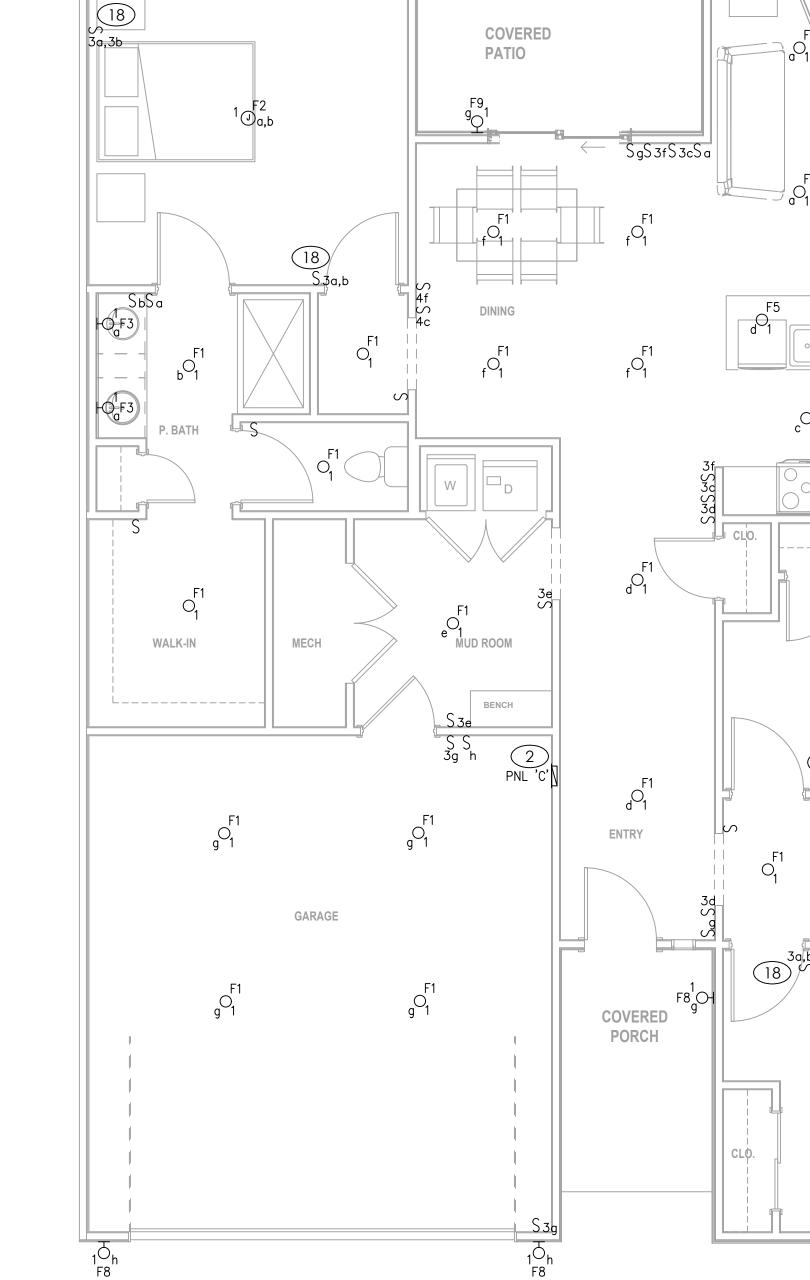
BEDROOM #2

1 (F2) a,b

LIVING ROOM

PANTRY





PRIMARY BEDROOM

SPECIFICATIONS & ELECTRICAL CONNECTION REQUIREMENTS.

4. GARBAGE DISPOSAL. 120V,  $\frac{1}{2}$  HP, CORD & PLUG CONNECTON TO HALF-SWITCHED AFCI RECEPTACLE MOUNTED BELOW SINK. PROVIDE 2 #12 CU, 1 #12CU EGC AT HANDICAP UNITS. MOUNT" SWITCH WITHIN LOWER CABINETS PER ADA GUIDELINES.

5. DISHWASHER RECEPTACLE. 120V, 6.2A. PROVIDE 2 #12 CU, 1 #12 CU EGC. CORD AND PLUG CONNECTION TO RECEPTACLE.

6. ELECTRIC COOKTOP, 208V, 1P, 8KW. PROVIDE HARD WIRED CONNECTION TO J-BOX IN CABINET. COORDINATE EXACT LOCATION WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS. PROVIDE LOCKABLE CIRCUIT BREAKER IN PANEL AS DISCONNECTING MEANS TO COMPLY WITH NEC 422.31(B). PROVIDE 3 #8 CU, 1 #10 CU EGC. PROVIDE RECEPTACLE TO MATCH PLUG ON UNIT IF UNIT INSTALLED IS CORD AND PLUG CONNECTED.

7. COMBINATION MICROWAVE AND EXHAUST HOOD. 120V, 15A MAX. COORDINATE EXACT LOCATION WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS. PROVIDE 2 #12 CU, 1 #12 CU EGC. CORD AND PLÜG CONNECTION.

8. REFRIGERATOR 120V, 12A MAX. PROVIDE 2 #12 CU, 1 #12 CU EGC. CORD AND PLUG CONNECTION.

9. TELEVISION. PROVIDE 120V DUPLEX RECEPTACLE, DATA OUTLET AND COAX CABLE (BOTH WIRED BACK TO LOW VOLTAGE STRUCTURED MEDIA ENCLOSURE). MOUNT BETWEEN 18" AND 66" AFF. VERIFY MOUNTING HEIGHT PRIOR TO ROUGH-IN.

10. FOR KITCHEN AND BATHROOM RECEPTACLES ABOVE COUNTER, COORDINATE LOCATION AND PLACEMENT PRIOR TO ROUGH-IN. IF FULL BACKSPLASH IS USED MOUNT RECEPTACLES VERTICALLY. IFF FULL BACKSPLALSH IS NOT USED MOUNT RECEPTACLES HORIZONTALLY ABOVE BACKSPLASH.

11. MOUNT ISLAND/PENSULA RECEPTACLES 12" MAX BELOW TOP OF COUNTER.

12. COMBINATION SMOKE DETECTOR AND CARBON MONOXIDE SENSOR. 120V WITH BATTERY BACK-UP. DETECTORS SHALL BE INTERCONNECTED AND INSTALLED IN ACCORDANCE WITH IRC 314 AND 315,M IF 908.7, NFPA 72 & 74 WITH SPECIAL ATTENTION GIVEN TO THE LOCATION OF THE DETECTOR IN THE VICINITY OF RETURN AIR GRILLES. (PROVIDE SMOKE DETECTOR ONLY WHERE ALLOWED BY

13. PROVIDE LOW-VOLTAGE DOOR BELL SYSTEM WITH TRANSFORMER. PROVIDE LOW-VOLTAGE WIRING FROM TRANSFORMER TO PUSHBUTTTON AND FROM PUSHBUTTON TO CHIME.

14. LOW VOLTAGE STRUCTURED MEDIA ENCLOSURE. COORDINATE REQUIREMENTS. PROVIDE 120V DUPLEX RECEPTACLE. REFER TO MANUFACTURER'S INSTALLATION INSTRUCTIONS. ROUTE 1  $\frac{1}{4}$ "C TO LOCATION OF INCOMING COMMUNICATION FOR BUILDING.

15. CLOTHES WASHER, 120V, 12.0A. PROVIDE 2 #12 CU, 1 #12 CU EGC, CORD AND PLUG CONNECTION. PROVIDE NEMA 5-20R RECEPTACLE.

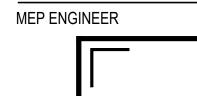
D 16. ELECTRIC CLOTHES DRYER, 208V, 1 PH, 5000W, 24A. PROVIDE 14-30R RECEPTACLE. PROVIDE 2 #10 C, 1 #10 CU EGC.

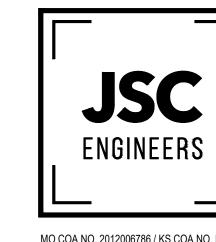
17. RATE OF RISE HEAT DETECTOR. 120V WITH BATTERY BACK—UP. DETECTORS SHALL BE INTERCONNECTED AND INSTALLED IN ACCORDANCE WITH IRC 314 AND 315,M IF 908.7, NFPA 72 & 74. (PROVIDE HEAT DETECTOR ONLY WHERE ALLOWED BY CODE).

18. DUAL SWITCH FOR SEPARATE CONTROL OF FIXTURE FAN AND LIGHT.

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**REVISION DATES:** 





MO COA NO. 2012006786 / KS COA NO. E-2818 1925 CENTRAL STREET, SUITE 201 KANSAS CITY, MO 64108 phone: (816) 272-5289 email: jsmothers@jscengineers.com



JSC PROJECT #: 23-046

UNIT PLAN C REVERSED

LIGHTING & POWER PLANS

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

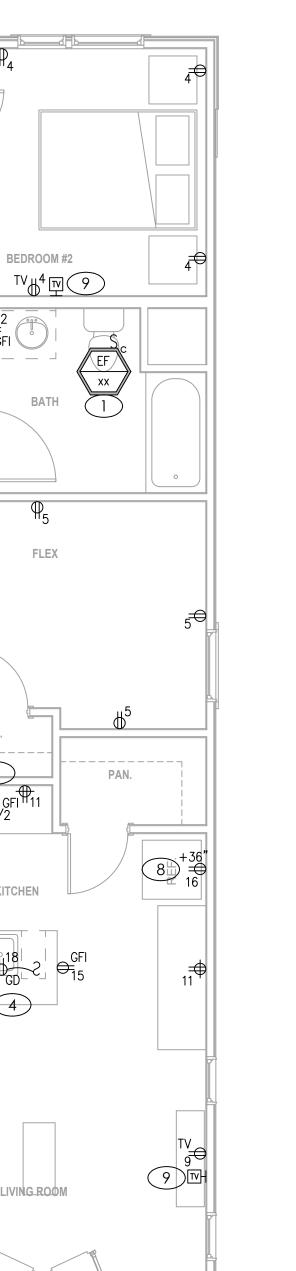
COVERED

**PATIO** 

WALK-IN LAUNDRY P. BATH PRIMARY BEDROOM COVERED LIVING ROOM **PATIO** 

GARAGE

COVERED PORCH



POWER - UNIT PLAN C REVERSED SCALE : 1/4" = 1'-0"

LIGHTING - UNIT PLAN C REVERSED

LIVING ROOM

1⊕<sup>F2</sup> ₀,b

18 BEDROOM #2

/ 18

COVERED

S3dS3fS3c

PORCH

GARAGE

WALK-IN

P. BATH

PRIMARY BEDROOM

MECH

LAUNDRY

ELECTRIC UNIT HEATER SCHEDULE									
MARK	MANUFACTURER	MODEL	WEIGHT	CFM	KW	VOLTAGE/PH	NOTES		
EH-1	REZNOR	EGHB-7	45	700	7.5	240/1	A,B		
REMARKS:									
A.	PROVIDE CEILING MOU	JNT BRACKET.							

B. PROVIDE WITH DISCONNECT SWITCH AND WALL MOUNTED THERMOSTAT.

		DIFFUSER, REGISTER AND GRILLE SCHEDULE													
	MARK	MANUFACTURER	MODEL	FACE TYPE	MOUNTING TYPE	FACE SIZE (IN.)	MAX NC	NOTES							
r F	SUPPLY														
r I	CSD-1	TITUS	OMNI	PLAQUE FACE	SURFACE	24 x 24	25	A,B,C,E							
	DSD-1	TITUS	300RL	DOUBLE DEFLECTION	DUCT MOUNT	DUCT + 1.75	25	A,B,C,E							
	RETURN														
	CRG-1	TITUS	50F	EGGCRATE	SURFACE	12 x 24	25	A-D							
	CRG-2	TITUS	50F	EGGCRATE	SURFACE	24 x 24	25	A-D							
	WRG-1	TITUS	350RL	LOUVERED	SURFACE	DUCT + 1.75	25	A-C							
L	NOTES:														
	Α.	NECK SIZE SHOWN	ON DRAW	/INGS.											
	В.	BAKED ENAMEL FINISH, WHITE													
	C.	FRAME TYPE TO M	FRAME TYPE TO MATCH CEILING CONSTRUCTION, COORDINATE WITH ARCHITECTURAL REFLECTED CEILING PLAN.												

	EXHAUST FAN SCHEDULE											
MARK	MARK AREA SERVED MANUFACTURER MODEL MOUNTING CFM ESP (IN) DRI'						DRIVE	WATTS	ELECT	RICAL	WEIGHT	NOTES
IVIAINI	ANEA SERVED	MANOTACTONEN	WIODEL	LOCATION	CITVI	LSF (IIV)	DIVIVE	WAITS	VOLTS	PHASE	VVLIGITI	NOTES
EF-1	MEN'S RESTROOM - 109	PANASONIC	FV-1115VKL2	CEILING	150	0.1	DIRECT	14.9	120	1	13	A,B,D,F
EF-2	WOMEN'S RESTROOM - 112	PANASONIC	FV-1115VKL2	CEILING	150	0.1	DIRECT	14.9	120	1	13	A,B,D,F
EF-3	PET SPA - 108	PANASONIC	FV-0511VQ1	CEILING	110	0.1	DIRECT	10.6	120	1	11	A-D
EF-4	IT - 107	PANASONIC	FV-0511VQ1	CEILING	110	0.1	DIRECT	10.6	120	1	11	A,B,D,E
NOTES:												
A.	INSTALL EXHAUST FAN PER MAN	NUFACTUER'S WRITT	EN INSTRUCTIO	NS.								
В.	B. PROVIDE FAN SPEED CONTROLLER.											

PROVID	DE FAN SPEED CONTR	OLLER.	
INTERL	OCK WITH LIGHT SW	ITCH.	

PROVIDE GRAVITY BACKDRAFT DAMPER AND INTERGRAL DISCONNECT.

INTERLOCK WITH LINE VOLTAGE COOLING-ONLY THERMOSTAT. CONTINUOUS OPERATION.

PAINT THE INSIDE OF CANS FLAT BLACK.

PROVIDE OPPOSED BLADE DAMPER ADJUSTABLE FROM FACE.

	OUTDOOR AIR CALCULATIONS											
UNIT	ROOM	NUMBER (SQ-F			OCCUPANT DENSITY, PEOPLE/1000 SQ-FT	SPECIFIED OCCUPANCY	OUTDOOR AIRFLOW RATE PER PERSON (Rp), CFM/PERSON	AREA OUTDOOR AIRFLOW RATE IN BREATHING ZONE (Ra), CFM/SQ-FT	ZONE DISTRIBUTION EFFECTIVENESS (Ez)	REQUIRED AIR FLOW CFM		
F-1	GREAT ROOM	100	1450	RECEPTION	25		5	0.06	0.8	419.1		
	LEASING/CONCIERGE	102	162	OFFICE	5		5	0.06	0.8	21.5		
	WORK AREA	308	65	OFFICE	5		5	0.06	0.8	8.6		
	MANAGER	104	115	OFFICE	5		5	0.06	0.8	15.3		
	CONFERENCE	106	144	CONFERENCE ROOM	45		5	0.06	0.8	64.1		
F-2	PET SPA	108	62	STORAGE				0.12	0.8	9.3		
	GYM	113	410	WEIGHT ROOM	10		20	0.06	0.8	166.6		
	CORRIDOR	110	105	COORIDOR				0.06	0.8	7.9		
	MEN'S RESTROOM	109	132	RESTROOM				0.06	0.8	9.9		
	WOMEN'S RESTROOM	112	132	RESTROOM				0.06	0.8	9.9		

+																
		CONDENSING UNIT SCHEDULE														
1						EL	.ECTRICA	۸L		COOLING COIL						
	7	TAG	MFR/MODEL	LOCATION	DIMENSIONS (IN.)	WEIGHT (LBS)	NOMINAL CAPACITY (BTUH)	VOLTAGE (V)	PHASE	HZ	МОСР	MCA	COIL MODEL	REFRIG.	UNIT	NOTES
B	С	CU-1	LENNOX / ML18XC2-048-230A	GRADE	32.25x32.25x35.75	231	48,000	230	1	60	45.0	26.2	C35-48C-2F	R-410A	F-1	A-C
ī		CU-2	LENNOX / ML18XC2-048-230A	GRADE	32.25x32.25x35.75	231	48,000	230	1	60	45.0	26.2	C35-48C-2F	R-410A	F-2	A-C
	NIC	OTES:										•				•

### PROVIDE TIME DELAY ON COMPRESSOR RE-START KIT, CRANKCASE HEATER, AND COMPRESSOR LOCK-OUT WITH AMBIENT BELOW 35°F. MECHANICAL CONTRACTOR SHALL COORDINATE ALL UNIT MOCPS OF ACTUAL INSTALLED EQUIPMENT WITH ELECTRICAL CONTRACTOR INSTALL ON MINIMUM 12" TALL EQUIPMENT PAD

$\top$	GAS FURNACE SCHEDULE																		
		GENERAL DATA					HEATING			FAN DATA				ELECTRICAL					
	TAG	BASIS OF DESIGN MFR/MODEL	FLOW DIRECTION	WEIGHT (LBS)	OUTSIDE AIR	INPUT	ОИТРИТ	AFUE	VENT	TYPE	НР	CEM	ESP (IN WG)	VOLT	PHASE	Н7	МОСР	MCA	NOTES
	TAG	BASIS OF DESIGN MFR/MODEL	FLOW DIRECTION   WEIG	VVLIGITI (LD3)	(CFM)	(BTUH)	(BTUH)	AFUL	VLIVI	ITEL	HIF	CFIVI	LSF (IN WG)	VOLI	FIIASL	112	IVIOCE	IVICA	NOTES
	F-1	LENNOX / ML296UH090XV48C	UPFLOW	223	425	88.000	85.000	96%	CONCENTRIC	VARIABLE	3/4	1600	0.5	120	1	60	15	10.1	A-D

A. EXTERNAL STATIC PRESSURE LISTED REPRESENTS STATIC PRESSURE REQUIRED FOR DUCTWORK AND DIFFUSERS OUTSIDE THE HVAC UNIT COMPLETELY INDEPENDENT OF ANY PRESSURE DROP THROUGH THE HVAC EQUIPMENT

INCLUDING FILTER AND COIL PROVIDE UNIT WITH 7-DAY PROGRAMMABLE HEAT/COOL/AUTO THERMOSTAT

PROVIDE MANUFACTURER'S CONCENTRIC VENT KIT. SIZE AND INSTALL PER MANUFACTURER'S WRITTEN INSTRUCTIONS WHILE ADHERING TO LENGTH AND FITTING LIMITATIONS. PROVIDE SIDE RETURN FILTER KIT

MECHANICAL SPECIFICATIONS

A. PROVIDE ALL LABOR, MATERIALS, AND EQUIPMENT NECESSARY FOR THE COMPLETE INSTALLATION OF

THE MECHANICAL SYSTEMS OUTLINED. B. OBTAIN ALL PERMITS, FEES, LICENSES, INSPECTIONS, AND CERTIFICATIONS OF COMPLIANCE OR APPROVAL AS REQUIRED BY AUTHORITIES. C. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE LAWS, CODES AND

REGULATIONS OF THE GOVERNMENTAL BODIES HAVING JURISDICTION OVER THE SITE. D. ALL TESTING REQUIRED BY AUTHORITIES SHALL BE CONSIDERED PART OF THIS WORK. E. DURING CONSTRUCTION, ALL FIXTURES, EQUIPMENT, PIPE, DUCT, ETC. SHALL BE COVERED, PLUGGED. OR CAPPED AS REQUIRED TO KEEP CLEAN AND UNDAMAGED. ALL DAMAGED ITEMS SHALL BE RESTORED TO ORIGINAL CONDITION OR REPLACED. ALL PROTECTIVE COVERING SHALL BE REMOVED BEFORE FINAL

ACCEPTANCE F. PROVIDE ALL NECESSARY CUTTING AND PATCHING OF WALLS, FLOORS, CEILINGS, AND ROOFS AS NECESSARY. PATCH AROUND ALL OPENINGS SHALL MATCH ADJACENT AREA. COORDINATE ALL ROOFING

WORK WITH OWNER OR RESPONSIBLE PARTY, SO THAT THE EXISTING ROOFING WARRANTY WILL BE MAINTAINFD G. CONTRACTOR SHALL GUARANTEE ALL WORK AND MATERIALS AGAINST DEFECT FOR A PERIOD OF ONE

YEAR FROM FINAL ACCEPTANCE. H. INSPECTION OF THE SITE: THIS CONTRACTOR SHALL THOROUGHLY ACQUAINT HIMSELF WITH THE MEP DRAWINGS, SPECIFICATIONS, DETAIL, AND THE SITE. THIS CONTRACTOR SHALL NOTIFY THE ARCHITECT OF ANY SPECIAL OR UNUSUAL PROBLEMS, CONFLICTS, OR OBSTRUCTIONS THAT AFFECT HIS BID. I. FOR THE PURPOSE OF CLEARNESS AND LEGIBILITY, THE MECHANICAL AND PLUMBING DRAWINGS ARE ESSENTIALLY DIAGRAMMATIC AND DO NOT SHOW ALL OFFSETS AND FITTINGS REQUIRED FOR INSTALLATION. DO NOT SCALE DRAWINGS. THE SIZE AND LOCATION OF EQUIPMENT IS SHOWN TO SCALE WHEREVER POSSIBLE. THE CONTRACTOR SHALL VERIFY ALL CONDITIONS AND DATA AS INDICATED

ON THE DRAWINGS AND IN THE SPECIFICATION SECTIONS WHERE MECHANICAL WORK INTERFACES WITH OTHER TRADES. J. IN THE EVENT OF A CONFLICT OR INCONSISTENCY BETWEEN ITEMS INDICATED ON THE PLANS OR WITH CODE REQUIREMENTS, THE NOTE OR CODE WHICH PRESCRIBES AND ESTABLISHES THE MORE COMPLETE

JOB OR HIGHER STANDARD SHALL PREVAIL K. INSTALL MATERIALS AND SYSTEMS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND APPROVED SUBMITTALS, INSTALL MATERIALS IN PROPER RELATION WITH ADJACENT CONSTRUCTION AND WITH UNIFORM APPEARANCE FOR EXPOSED WORK. COORDINATE WITH WORK OF OTHER SECTIONS. COMPLY WITH APPLICABLE REGULATIONS AND CODE REQUIREMENTS. PROVIDE PROPER CLEARANCES FOR

L. INCLUDE ALL BASIC MATERIALS AND CONSTRUCTION METHODS INCLUDING PIPES, PIPE FITTINGS, AND SPECIALTIES AND SUPPORTING DEVICES, VALVES, PIPE AND VALVE IDENTIFICATION, PUMPS, VIBRATION

M. FURNISH ADEQUATE ACCESS PANELS AND DOORS TO ALLOW FOR FUTURE PIPING ALTERATIONS. REPLACEMENT, AND MAINTENANCE OF PIPING. PROPERLY IDENTIFY ALL ACCESS PANELS AND DOORS.

A. DURING THE COURSE OF CONSTRUCTION, COLLECT AND COMPILE OPERATING INSTRUCTIONS, WIRING DIAGRAMS, CATALOG CUTS, LUBRICATION AND PREVENTIVE MAINTENANCE INSTRUCTIONS, PARTS LISTS, ETC. FOR ALL EQUIPMENT FURNISHED UNDER THIS CONTRACT. B. ALL LITERATURE AND INSTRUCTIONS SHIPPED WITH THE EQUIPMENT SHALL BE SAVED FOR INCLUSION IN

THE OPERATING AND MAINTENANCE MANUALS. C. ALL LITERATURE LISTED ABOVE AND ALL PAPERS LISTING WARRANTIES, ETC. SHALL BE BOUND IN A 3-RING BINDER AND LABELED WITH THE PROJECT NAME, ADDRESS, ARCHITECT, ENGINEER AND CONTRACTORS.

A. MANUFACTURERS, MODEL NUMBERS, ETC. INDICATED OR SCHEDULED ON THE DRAWINGS SHALL BE INTERPRETED AS HAVING ESTABLISHED A STANDARD OF QUALITY AND SHALL NOT BE CONSTRUED AS LIMITING COMPETITION. ARTICLES, FIXTURES, ETC. OF EQUAL QUALITY BY MANUFACTURERS SHALL BE ACCEPTABLE, SUBJECT TO STRUCTURAL AND ELECTRICAL CONSTRAINTS OF THE PROJECT DESIGN. B. THE ELECTRICAL SYSTEM DESIGN IS BASED IN PART ON THE SPECIFIED EQUIPMENT. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE THE ELECTRICAL REQUIREMENTS OF THE EQUIPMENT BEING FURNISHED. ANY CHANGES TO THE ELECTRICAL SYSTEM DUE TO HVAC EQUIPMENT OTHER THAN THE SPECIFIED EQUIPMENT BEING FURNISHED SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.

A. PROVIDE THERMAL OVERLOAD PROTECTION FOR EACH MOTOR PROVIDED BY THIS WORK.

A. CONDENSATE DRAIN AND INDIRECT WASTE (ABOVEGROUND) 1. PVC DWV PIPE, SCHEDULE 40, SOLVENT JOINT.

2. INSTALL AT 1/8" PER FOOT SLOPE.

2. OPERATION AND MAINTENANCE MANUALS:

ASTM B 280, TYPE ACR, HARD DRAWN STRAIGHT LENGTHS, AND SOFT-ANNEALED COILS, SEAMLESS COPPER TUBING.

2. WROUGHT COPPER, ANSI B16.22, STREAMLINED PATTERN, FITTINGS. BRAZED JOINTS, AWS A 5.8 CLASSIFICATION BAG-1 (SILVER).

3. TUBING TO BE FACTORY CLEANED, READY FOR INSTALLATION, AND HAVE ENDS CAPPED TO PROTECT CLEANLINESS OF PIPE INTERIORS PRIOR TO SHIPPING. 4. SIZE AND INSTALLATION OF PIPING SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S

6. INSULATION AND DUCT LINING: A. ALL INSULATIONS AND ACCESSORIES SHALL HAVE A FIRE HAZARD CLASSIFICATION WITH A FLAME SPREAD RATING OF NOT OVER 25, A FUEL CONTRIBUTION RATING OF NOT OVER 50, AND A SMOKE DEVELOPMENT RATING OF NOT OVER 50, IN ACCORDANCE WITH NFPA.

B. PIPE INSULATION (ABOVE GRADE): 1. THE PIPE INSULATION USED SHALL HAVE A THERMAL CONDUCTIVITY OF 0.27 BTU PER IN/HR\*SQ-FT\*\*F OR LESS.

2. FIBERGLASS INSULATION WITH FACTORY APPLIED VAPOR BARRIER, ASJ JACKET, FACTORY APPLIED PRESSURE SEALING LONGITUDE LAP JOINT, NO STAPLES, ZESTON PREMOLDED PVC FITTING COVERS. INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. FLEXIBLE CLOSED CELL ELASTOMERIC THERMAL INSULATION, UNSLIT OR PRESLIT WITH PRESSURE SENSITIVE ADHESIVE SYSTEM FOR CLOSURE AND VAPOR SEALING, EQUAL TO ARMSTRONG AP

ARMAFLEX OR ARMAFLEX 2000. 4. INSULATION SCHEDULE: a. REFRIGERANT SUCTION:

1-1/2" FOR PIPING UP TO 1-1/2",

2" FOR PIPING 1-1/2" AND LARGER. C. DUCTWORK INSULATION: 1. DUCT LINING: 2 LB/CF, THICKNESS AS SCHEDULED, AIR STREAM SIDE COATED, INSTALL PER SMACNA STANDARDS.

DUCT LINING SCHEDULE:

TOTAL 313.1

| 88,000 | 85,000 | 96% | CONCENTRIC | VARIABLE | 3/4 | 1600 | 0.5 | 120 | 1 | 60 | 15 | 10.1 | A-D

a. SUPPLY DUCT: 1/2" THROUGH THE FIRST 10 FEET OF DUCT b. RETURN AIR DUCT: 1/2" THROUGH THE FIRST 10 FEET OF DUCT 3. DUCT COVERING: 3/4 LB/CF, FIBERGLASS BLANKET WITH FACTORY APPLIED VAPOR BARRIER AND FACING. THICKNESS AS SCHEDULED, INSTALLATION IN ACCORDANCE WITH MANUFACTURERS

a. SUPPLY AIR DUCT: b. RETURN AIR DUCT:

c. OUTDOOR AIR / MAKEUP AIR DUCT: 2"

RECOMMENDATIONS. DUCT COVERING SHALL BE MINIMUM R-6.

7. TESTING, BALANCING AND CLEANING A. ALL PIPING SHALL BE TESTED FOR LEAKS BEFORE BEING CONCEALED IN WALL CONSTRUCTION OR COVERED WITH INSULATION. B. DUCTWORK AND PIPING SHALL BE BALANCED BY QUALIFIED BALANCING PERSONNEL WHO HAVE

PREVIOUS EXPERIENCE WITH BALANCING PROCEDURES AND ARE FAMILIAR WITH TESTING AND BALANCING PROCEDURES OF THE ASSOCIATED AIR BALANCE COUNCIL (AABC) OR NATIONAL ENVIRONMENTAL BALANCING BUREAU (NEBB). 1. BALANCING SHALL INCLUDE THE BALANCING OF THE EQUIPMENT AND AIR DISTRIBUTION SYSTEMS TO PROVIDE DESIGN QUANTITIES INDICATED AND VERIFICATION PERFORMANCE OF ALL EQUIPMENT AND AUTOMATIC CONTROLS.

WITH IN 30 DAYS OF THE COMPLETION OF THE TESTING AND BALANCING WORK, SUBMIT THE TEST AND BALANCING REPORT BEARING THE SIGNATURE OF THE TEST AND BALANCE ENGINEER. THE REPORTS SHALL BE CERTIFIED PROOF THAT THE SYSTEMS HAVE BEEN TESTED. ADJUSTED. AND BALANCED IN ACCORDANCE WITH THE REFERENCED STANDARDS: ARE AN ACCURATE REPRESENTATION OF HOW THE SYSTEMS HAVE BEEN INSTALLED AND ARE OPERATING. REPORTS SHALL BE BOUND IN A VINYL BINDER AND THE BINDER LABELLED OR MAY BE AN ELECTRONIC PDF SUBMITTAL.

A. ALL DUCTWORK UNLESS OTHERWISE INDICATED SHALL BE FABRICATED FROM GALVANIZED SHEET STEEL COMPLYING WITH ASTM A 527, LOCKFORMING QUALITY, WITH G60 ZINC COATING IN ACCORDANCE WITH ASTM A 525, AND MILL PHOSPHATIZED FOR EXPOSED LOCATIONS. B. DUCTWORK METAL GAUGES, REINFORCING, ETC SHALL BE CONSTRUCTED IN ACCORDANCE WITH SMACNA "HVAC DUCT CONSTRUCTION STANDARDS," LATEST EDITION FOR A 2" WATER GAUGE STATIC PRESSURE.

C. ALL FITTINGS SHALL BE CONSTRUCTED IN ACCORDANCE WITH SMACNA "HVAC DUCT CONSTRUCTION

STANDARDS." LATEST EDITION. D. RECTANGULAR DUCT: ELBOWS, UNLESS INDICATED OTHERWISE, SHALL BE CONSTRUCTED WITH CENTERLINE RADIUS OF NOT LESS THAN 1.5 DUCT WIDTH OR SQUARE ELBOWS WITH DOUBLE WALL STREAMLINE ELBOWS. 2. TAKE-OFF FITTINGS: BRANCH DUCT TAKE-OFF FITTINGS FOR SUPPLY AND EXHAUST DIFFUSER/REGISTERS SHALL INCLUDE AN INTEGRAL MANUAL VOLUME DAMPER WITH LOCKING

QUADRANT, DAMPER NOT REQUIRED ON RETURN AIR. FOR RECTANGULAR TO ROUND TAKE-OFFS. UTILIZE A "BUCKLEY" MODEL 3300 & 3300D OR EQUAL. 3. RETURN AIR ACOUSTIC ELBOWS AND SOUND BOOTS SHALL BE A SQUARE ELBOW WITH NO

TURNING VANES. 4. SLOPES FOR TRANSITIONS OR OTHER CHANGES IN DIMENSIONS SHALL BE A MINIMUM 1 TO 3. E. ROUND DUCT (SEE INSULATION SECTION FOR SPIRAL DUCT): 1. PROVIDE RADIUS TYPE FITTINGS FABRICATED OF MULTIPLE SECTIONS WITH MAXIMUM 15 DEGREE CHANGE OF DIRECTION PER SECTION. UNLESS SPECIFICALLY DETAILED OTHERWISE, USE 45 DEGREE LATERALS FOR BRANCH TAKEOFF CONNECTIONS. WHERE 90 DEGREE BRANCHES ARE

INDICATED PROVIDE CONICAL TYPE TEES. SLOPES FOR TRANSITIONS OR OTHER CHANGES IN DIMENSIONS SHALL BE MINIMUM 1 TO 3. ROUND LONGITUDINAL SEAM DUCT: USE FOR RIGID METAL DUCT ON LEAVING SIDE OF DUCT IN

CONCEALED LOCATIONS FOR EXTENSION TO FLEX FOR DIFFUSERS. F. SEAL ALL CONCEALED DUCTWORK JOINTS WITH NON-HARDENING, NON-MIGRATING MASTIC SEALANT, AS RECOMMENDED FOR SEALING SEAMS AND JOINTS IN DUCTWORK. OIL BASED CAULKING AND GLAZING COMPOUNDS SHALL NOT BE ACCEPTABLE. DUCTS SHALL BE SEALED TO THE CLASS LEVEL LISTED (1) UNCONDITIONED SPACES: CLASS B CLASS C CLASS B CLASS B (2) CONDITIONED SPACES (PLENUM): CLASS C CLASS C

SUPPLY 2"WC OR LESS EXHAUST <u>return</u> G. DUCT SIZES SHOWN ON THE DRAWINGS ARE SHEET METAL SIZES. INCREASE SHEET METAL SIZES ACCORDINGLY TO ACCOUNT FOR THICKNESS OF DUCT LINER. H. WHETHER SHOWN ON PLANS OR NOT, PROVIDE MANUAL VOLUME DAMPERS IN EACH RUNOUT TO EACH

SUPPLY DIFFUSER OR REGISTER. PROVIDE ACCESS PANELS TO DAMPERS LOCATED ABOVE HARD CEILINGS. I. PROVIDE AUXILIARY STEEL AS REQUIRED TO ADEQUATELY SUPPORT DUCTWORK. J. WHERE DUCTS PASS THROUGH FIRE-RATED FLOORS, WALLS, OR PARTITIONS, PROVIDE FIRESTOPPING

BETWEEN DUCT AND WALL. K. WHERE DUCTS PASS THROUGH INTERIOR PARTITIONS OR EXTERIOR WALLS, AND ARE EXPOSED TO VIEW, CONCEAL SPACE BETWEEN OPENING AND DUCT OR DUCT INSULATION WITH SHEET METAL FLANGES OF SAME GAUGE AS DUCT. OVERLAP OPENING ON 4 SIDES BY AT LEAST 1-1/2". FASTEN TO DUCT AND

9. FLEXIBLE DUCT:

A. ATCO #086 (R-6), OR EQUAL. B. FACTORY APPLIED INSULATION AND VAPOR BARRIER, 1-1/2" THICK.

FLASHING, ETC.) AS REQUIRED FOR A COMPLETE INSTALLATION.

C. MAXIMUM LENGTH OF 6'-0".

A. FLUE FOR GAS FIRED CONDENSING WATER HEATER OR FURNACE SHALL BE AS RECOMMENDED BY THE GAS APPLIANCE MANUFACTURER. FLUES SHALL BE SCHEDULE 40 PVC OR CPVC PER THE

MANUFACTURER'S INSTALLATION REQUIREMENTS. B. PROVIDE MANUFACTURER'S STANDARD ACCESSORY ITEMS INCLUDING BIRD PROOF TOP, STORM COLLAR, ROOF THIMBLE, ETC. AS REQUIRED FOR A COMPLETE INSTALLATION, ROOF THIMBLES THROUGH THE BUILDING ROOF SHALL BE SUITABLE FOR USE WITH THE ROOF PROVIDED. C. FLUES FOR HEATERS SHALL BE DOUBLE WALL TYPE B EQUAL TO METALBESTOS. PROVIDE

MANUFACTURER'S STANDARD FITTING AND ACCESSORIES (ROOF THIMBLE, STORM COLLAR, COUNTER

SHALL SHUT DOWN.

11. SMOKE DETECTORS A. UNITS MOUNTED IN THE DUCTWORK SHALL BE A DUCT MOUNTED UL LISTED PHOTO-ELECTRIC SELF-CONTAINED SMOKE DETECTOR WITH HOUSING. UNITS SHALL BE EQUAL TO SIMPLEX #4098-4687. THE SAMPLING TUBE SHALL BE #2098-9804. LENGTH AS REQUIRED FOR DUCT.

B. DUCT DETECTOR REMOTE TEST STATION SHALL BE SIMPLEX #4098-9842 WITH REMOTE ALARM INDICATOR. POWER-ON INDICATOR, TONE-ALERT, TONE-ALERT SILENCE SWITCH, AND TEST/RESET SWITCH. DEVICES SHALL BE MOUNTED IN APPROVED LOCATION BY LOCAL AHJ. WHERE DUCT SMOKE DETECTORS ARE NOT RESETTABLE FROM THE PROTECTED PREMISES FIRE ALARM SYSTEM, A LISTED ALARM/SUPERVISORY INDICATOR WITH AN INTEGRAL RESET SWITCH SHALL BE PROVIDED. C. PROVIDE AND INSTALL A PHOTO-ELECTRIC SMOKE DETECTOR IN THE RETURN AIR DUCT FOR EACH

HVAC UNIT AS INDICATED ON THE FLOOR PLANS. DETECTORS ARE TO BE PROVIDED WITH A SUB-BASE CONTAINING AUXILIARY RELAY CONTACTS. RELAY CONTACTS SHALL BE WIRED INTO UNIT CONTROL WIRING SO AS TO SHUT DOWN UNIT IN THE CASE OF SMOKE DETECTION. PROVIDE ALL CONTROL WIRING. ELECTRICAL CONTRACTOR SHALL PROVIDE 120V POWER TO EACH DETECTOR. D. SMOKE DETECTORS SHALL BE INTERLOCKED. IN ALARM CONDITION OF A SINGLE DETECTOR ALL UNITS

MECHANICAL SYMBOLS

THIS IS A MASTER LEGEND AND NOT ALL SYMBOLS, ETC, ARE NECESSARILY USED ON THE DRAWINGS.

HVAC EQUIPMENT & DUCTWORK SPIN-IN FITTING WITH MANUAL VOLUME DAMPER

BRANCH DUCT WITH 45° RECTANGLE-ROUND BRANCH FITTING AND MANUAL VOLUME DAMPER ELBOW WITH TURNING VANES RETURN, EXHAUST, OR OUTSIDE AIR DUCT UP RETURN, EXHAUST, OR OUTSIDE AIR DUCT DOWN SUPPLY AIR DUCT UP SUPPLY AIR DUCT DOWN EQUIPMENT WITH FLEXIBLE DUCT CONNECTION

MANUAL VOLUME DAMPER SQUARE TO ROUND TRANSITION — DUCT TRANSITION

BRANCH DUCT DUCT MOUNTED SMOKE DETECTOR (FD) FIRE DAMPER CO2 CARBON DIOXIDE SENSOR

HS HUMIDITY SENSOR (FSD) FIRE SMOKE DAMPER (SD) SMOKE DAMPER

RIGID BRANCH DUCT →

SAME SIZE AS

SP STATIC PRESSURE SENSOR TS TEMPERATURE SENSOR (MD) MOTORIZED DAMPER (H) HUMIDISTAT (BD) BACKDRAFT DAMPER

(VD) VOLUME DAMPER (T) THERMOSTAT CEILING DIFFUSER W/FLEX DUCT (SEE SPECS)

DIFFUSER NECK. EXHAUST FAN

---- NECK SIZE

(INCHES)

— EXHAUST GRILLE ABBREVIATIONS ABOVE FINISHED FLOOR MECHANICAL CONTRACTOR BUIDLING AUTOMATION SYSTEM MIN MINIMUM BACKDRAFT NOISE CRITERIA CFM CUBIC FEET PER MINUTE OUTSIDE AIR RETURN AIR DDC DIRECT DIGITAL CONTROL DIRECT EXPANSION SUPPLY AIR SMOKE DUCT DETECTOR EXHAUST AIR FROM FLOOR ABOVE TO FLOOR ABOVE FFB FROM FLOOR BELOW TO FLOOR BELOW GPM GALLONS PER MINUTE TYP TYPICAL IN WC INCHES OF WATER COLUMN UNO UNLESS NOTED OTHERWISE MAX MAXIMUM

MBH 1000 BTU PER HOUR W/O WITHOUT STANDARD MOUNTING HEIGHTS (AFF, UNLESS NOTES OTHERWISE)

THERMOSTATS (USER ADJUSTABLE) (TOP OF DEVICE) CONTROLS (TOP OF DEVICE)

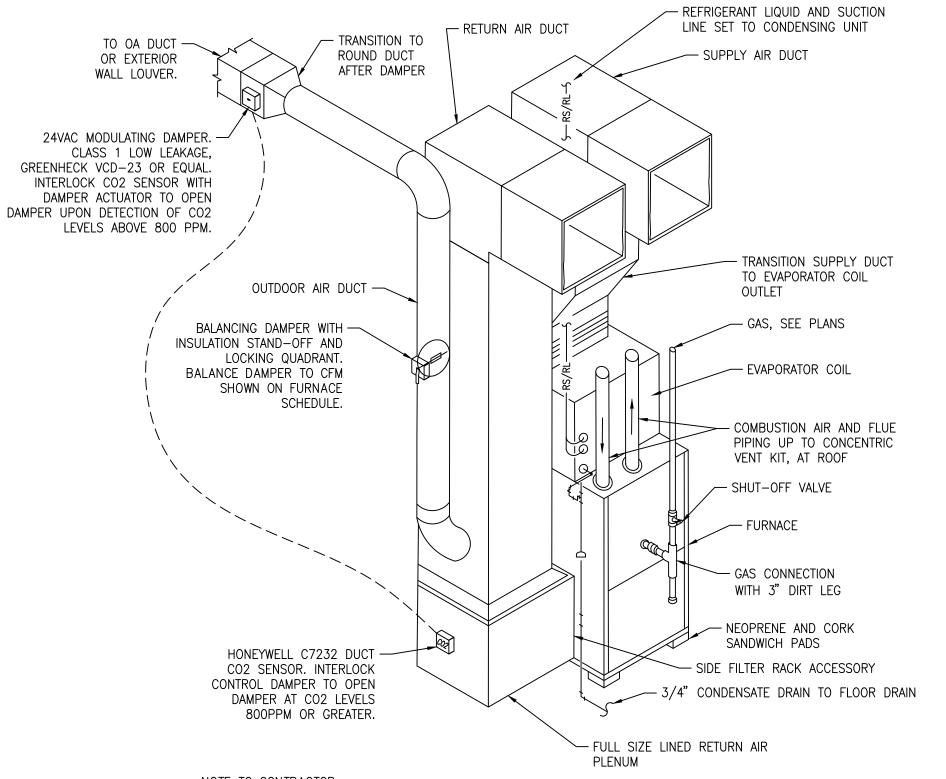
ANNOTATION (#) PLAN WORK NOTE

MECHANICAL EQUIPMENT DESIGNATION (CONTRACTOR FURNISHED AND INSTALLED UNLESS NOTED OTHERWISE)

CONNECTION POINT OF NEW WORK TO EXISTING

 → DETAIL REFERENCE UPPER NUMBER INDICATED DETAIL NUMBER √ M1 / LOWER NUMBER INDICATES SHEET NUMBER

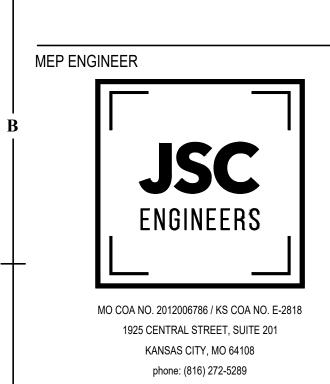
 $\frac{1}{1}$  SECTION CUT DESIGNATION



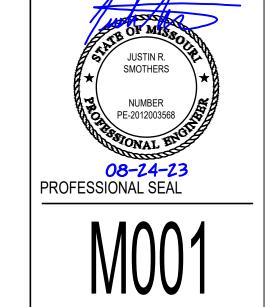
1. ARRANGEMENT SHOWN IS SCHEMATIC. ADJUST AS REQUIRED TO SUIT ACTUAL INSTALLATION CONDITIONS.

**FURNACE DETAIL** 

SCALE : NO SCALE



email: jsmothers@jscengineers.com



JSC PROJECT #:

MECHANICAL SPECIFICATIONS, SCHEDULES, AND SYMBOLS

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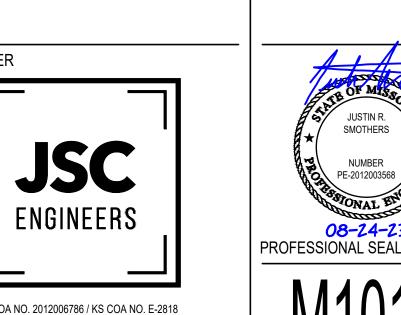
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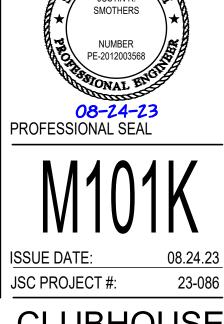
PRIOR TO INSTALLATION.

MANUFACTURER'S INSTRUCTIONS.

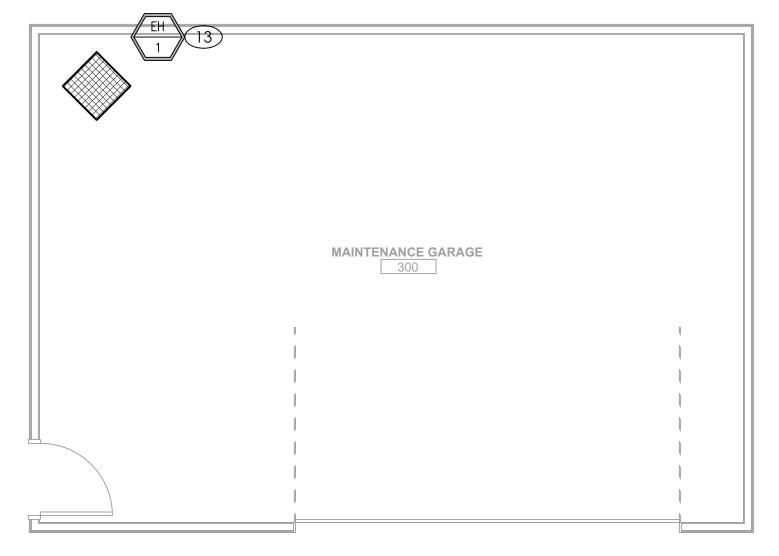
MEP ENGINEER



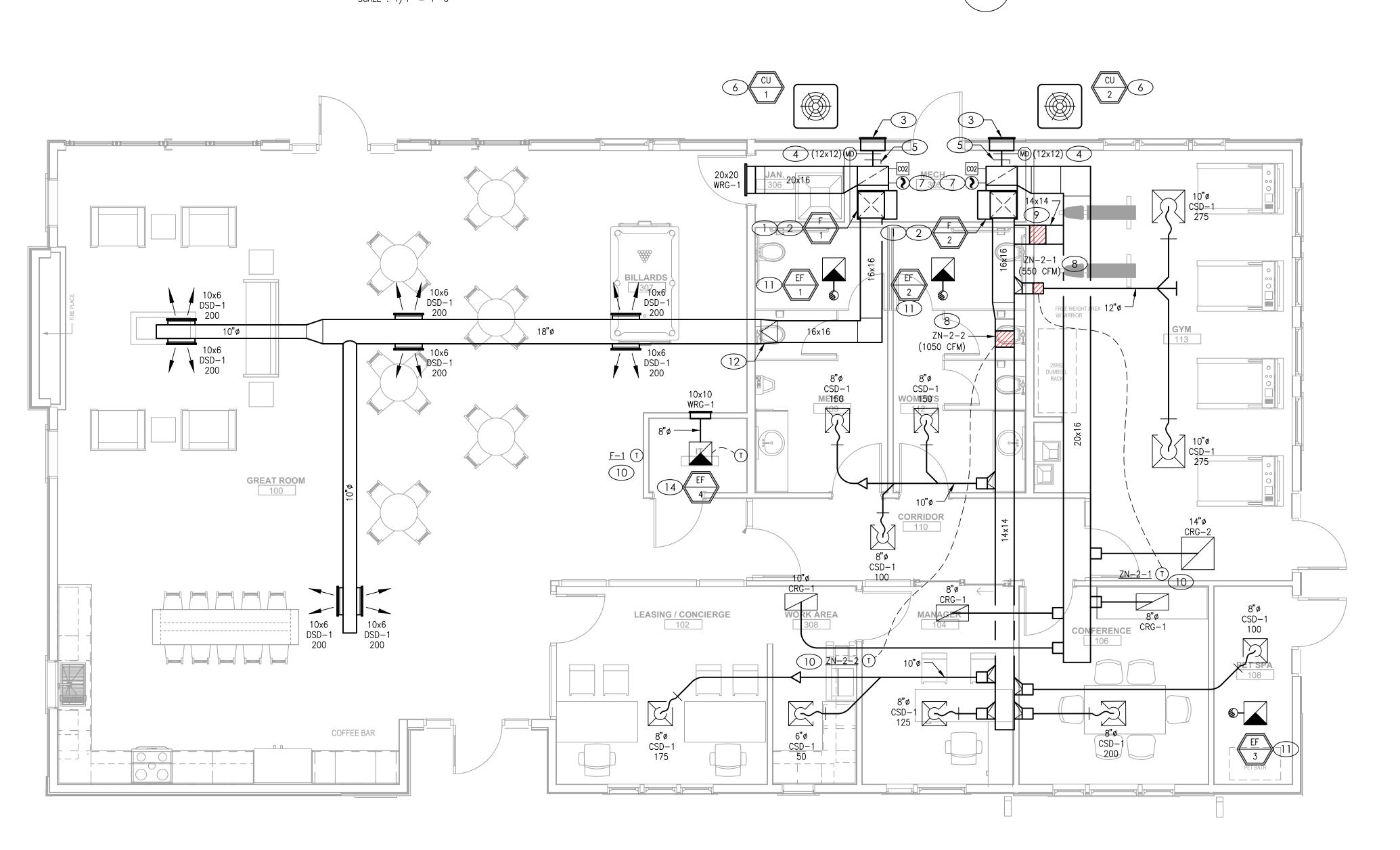
MO COA NO. 2012006786 / KS COA NO. E-2818 1925 CENTRAL STREET, SUITE 201 KANSAS CITY, MO 64108 phone: (816) 272-5289 email: jsmothers@jscengineers.com



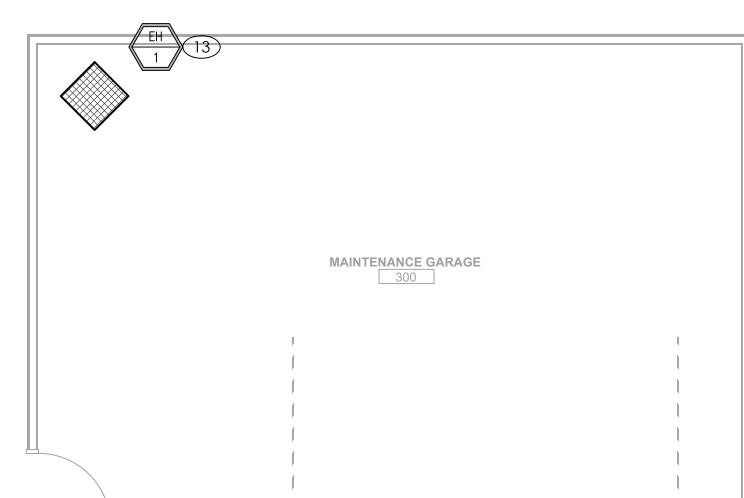
MECHANICAL PLANS - CLUBHOUSE AND MAINTENANCE GARAGE



### MECHANICAL PLAN - MAINTENANCE GARAGE 2 SCALE : 1/4" = 1'-0"



MECHANICAL PLAN - CLUBHOUSE SCALE : 1/4" = 1'-0"



**GENERAL NOTES** 

A. DRAWINGS ARE DIAGRAMMATIC ONLY AND REPRESENT THE GENERAL SCOPE OF WORK. REVIEW THE GENERAL NOTES, SPECIFICATIONS AND PLANS FOR ADDITIONAL REQUIREMENTS THAT MAY NOT BE SPECIFICALLY CALLED OUT IN THIS PORTION OF THE CONSTRUCTION DOCUMENTS. CONFLICTS OR DISCREPANCIES PRIOR TO

NOTIFY ARCHITECT, ENGINEER AND/OR OWNER OF SUBMISSION OF BID. B. COORDINATE INSTALLATION OF MECHANICAL AND PLUMBING SYSTEMS WITH OTHER TRADES TO ENSURE A NEAT AND ORDERLY INSTALLATION AND AVOID CONFLICTS. INSTALL DUCTWORK AND PIPING AS TIGHT TO STRUCTURE AS POSSIBLE. COORDINATE INSTALLATION OF DUCTWORK AND

PIPING TO AVOID CONFLICTS WITH ELECTRICAL PANELS, LIGHTING FIXTURES, ETC. VERIFY DUCT SPACE AVAILABLE ABOVE ALL CEILINGS PRIOR TO ANY FABRICATION OF INSTALLATION. C. OVERHEAD HANGERS AND SUPPORTS FOR EQUIPMENT, DUCTWORK AND PIPING SHALL BE

FASTENED TO BUILDING JOISTS OR BEAMS. DO NOT ATTACH HANGERS AND SUPPORTS TO THE ABOVE FLOOR SLAB OR ROOF. D. ALL ROOF AND WALL PENETRATIONS SHALL BE COORDINATED WITH THE GENERAL CONTRACTOR.

PROVIDE ALL REQUIRED SLEEVES, FLASHINGS, CURBS, REINFORCED ANGLES, SUPPORTING FRAMES, ETC. UNLESS THEY ARE SPECIFICALLY CALLED OUT TO BE FURNISHED BY OTHERS.

E. THE ELECTRICAL SYSTEM DESIGN IS BASED IN PART ON THE SPECIFIED EQUIPMENT. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE THE ELECTRICAL REQUIREMENTS OF THE EQUIPMENT BEING FURNISHED. ANY CHANGES TO THE ELECTRICAL SYSTEM DUE TO EQUIPMENT OTHER THAN THE SPECIFIED EQUIPMENT BEING FURNISHED SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.

### **# KEYED PLAN NOTES**

- 1. FULL SIZE DUCT FROM COIL UP TO CEILING SPACE. CONTINUE DISTRIBUTION AS SHOWN.
- 2. PROVIDE CONCENTRIC VENT FOR FURNACE INSTALLED PER MANUFACTURER'S WRITTEN INSTRUCTIONS. ADHERE TO SIZE AND LENGTH LIMITATIONS. LOCATE VENT A MINIMUM OF  ${f G}$  10'-0" FROM OUTSIDE AIR INTAKE. ROUTE TO NEAREST WALL OR ROOF. COORDINATE LOCATION

WITH GC PRIOR TO INSTALLATION.

- 3. 18"x12"(WxH) LOUVER EQUAL TO RUSKIN MODEL ELF6375DX WITH INSECT SCREEN. PAINT LOUVER COLOR AS DIRECTED BY ARCHITECT OR OWNER. TRANSITION TO DUCT AS REQUIRED. LOCATE LOUVER A MINIMUM OF 10'-0" FROM ANY EXHAUST DISCHARGE.
- 4. PROVIDE GREENHECK VCD-23 CLASS 1A LOW LEAKAGE CONTROL DAMPER WITH 24V ACTUATOR AND LOW VOLTAGE TRANSFORMER. SIZE AS SHOWN. TRANSITION AS REQUIRED TO 12"Ø OUTDOOR AIR DUCT AND CONTINUE TO RETURN AIR DUCT AT UNIT. PROVIDE RETURN AIR DUCT CO2 SENSOR. INTERLOCK CONTROL DAMPER WITH CO2 SENSOR TO OPEN DAMPER UPON DETECTION OF CO2 LEVELS ABOVE 800PPM. SEE DETAIL ON MOO1 FOR ADDITIONAL INFORMATION.
- 5. PROVIDE MANUAL BALANCING DAMPER. BALANCE TO OUTSIDE AIR CFM SHOWN ON FURNACE
- 6. CONDENSING UNIT LEVEL AT GRADE ON PRE-MANUFACTURED PAD. INSTALL PER MANUFACTURER'S INSTRUCTIONS MAINTAINING RECOMMENDED SERVICE CLEARANCES. ROUTE REFRIGERANT LINES THOUGH WALL. WEATHER SEAL REFRIGERANT LINE PENETRATIONS OF BUILDING. PROVIDE ALL RECOMMENDED VALVES, FILTERS, FITTINGS, ETC. AND MAKE ALL NECESSARY CONNECTIONS TO AIR HANDLING UNIT. COORDINATE EXACT LOCATION WITH BUILDING OWNER PRIOR TO INSTALLATION.
- 7. PROVIDE SMOKE DETECTOR IN RETURN AIR DUCT IN COMPLIANCE WITH NFPA 72. DUCT SMOKE DETECTORS SHALL BE INTERLOCKED TO SHUT DOWN ALL UNITS UPON DETECTION OF SMOKE.
- 8. PROVIDE ZONE DAMPER WITH TEMPERATURE SENSOR. SIZE DAMPER AS SHOWN AND VERIFY "(XXXX)" CFM CAPACITY WITH MANUFACTURER. DAMPER SHALL BE EQUAL TO ZONEX MODEL STMPD, STRD, OR STCD, WITH 24V ACTUATOR.
- 9. PROVIDE BYPASS DAMPER SIZED AS SHOWN. DAMPER SHALL BE EQUAL TO ZONEX MODEL STDBP, WITH 24V ACTUATOR. INTERLOCK WITH STATIC PRESSURE SENSOR PER MANUFACTURE'S INSTALLATION INSTRUCTIONS. INSTALL STATIC PRESSURE SENSOR AT LOCATION RECOMMENDED BY ZONE DAMPER SYSTEM.
- 10. LOCATE THERMOSTAT ON WALL AT 54"AFF. COORDINATE EXACT LOCATION WITH OWNER
- 11. ROUTE 8"Ø DUCT UP FROM EXHAUST FAN TO ROOF WEATHER CAP. LOCATE DISCHARGE A MINIMUM OF 10'-0" FROM ANY OUTSIDE AIR
- 12. TRANSITION TO SPIRAL DUCT PRIOR TO ENTERING OPEN CEILING AREA.
- 13. SUSPEND UNIT HEATER FROM OVERHEAD STRUCTURE AS REQUIRED. INSTALL PER
- 14. PROVIDE LINE VOLTAGE COOLING ONLY THERMOSTAT FOR EXHAUST FAN. COORDINATE INSTALLATION WITH ELECTRICAL CONTRACTOR. DISCHARGE EXHAUST DUCT TO WALL GRILLE.

FIXTURE BRANCH CONNECTION SCHEDULE											
FIXTURE COLD WATER HOT WATER WASTE VENT											
DRINKING FOUNTAIN	1/2"	-	1-1/2"	1-1/2"							
FLOOR DRAIN	-	-	3"	1-1/2"							
FLOOR SINK	-	-	3"	2"							
LAVATORY/SINK	1/2"	1/2"	1-1/2"	1-1/2"							
MOP SINK	1/2"	1/2"	3"	2"							
URINAL	3/4"	-	2"	2"							
WATER CLOSET	1"	-	4"	2"							
WATER HEATER	3/4"	3/4"	-	-							
NOTE:	PIPE SIZES SHOWN ARE MINIMUM. MINIMUM SANITARY SIZE										

UNDERGROUND IS 2'

SIMULTANEOUS OPERATION.

### 1-1/2" SUPPLY TO BUILDING -SEE PLANS FOR CONTINUATION HOSE BIBB (FOR SYSTEM DRAIN DOWN), WITH SHUT-OFF VALVE PRESSURE REDUCING VALVE, WATTS — LF25AUB-Z3, 25-75 PSI RANGE. PROVIDE ONLY IF INCOMING PRESSURE IS GREATER THAN 80 PSI. SET AT 75 PSI. REDUCED PRESSURE -ASSEMBLY BACKFLOW UNION (TYP) — PREVENTER (RPZ) 1-1/2" BALL VALVE — PROVIDE PVC PIPE -DISCHARGE TO FLOOR SLEEVE CAST INTO DRAIN WITH AIR GAP FLOOR SLAB AT WATER PIPE PENETRATION. CAULK WATERTIGHT. GRADE -— FLOOR DRAIN STUB MINIMUM 6" ABOVE FLOOR SLAB AND PROVIDE TO CONNECT TO TYPE "L" HARD COPPER TUBE ABOVE PIPING ARRANGEMENT SHOWN IS SCHEMATIC: ADJUST AS REQUIRED TO SUIT ACTUAL INSTALLATION CONDITIONS. PROVIDE REDUCED PRESSURE ASSEMBLY OF MANUFACTURE APPROVED BY LOCAL AUTHORITIES. INSTALL WITH REQUIRED CLEARANCES, IN HORIZONTAL UPRIGHT POSITION, PER 1-1/2" TYPE "K" COPPER -MANUFACTURER'S RECOMMENDATIONS. PROVIDE ANY REQUIRED CERTIFICATION FROM MUNICIPAL WATER MAIN OF TEST OF BACKFLOW PREVENTER TO LOCAL AUTHORITIES. ALL ITEMS SHALL BE APPROVED FOR DOMESTIC WATER SERVICE. INSTALL ENTIRE VALVE TRAIN SUPPORTED FROM WALL BRACKET OR FLOOR STAND, INSTALL SO THAT IT CAN BE EASILY SERVICED PER LOCAL REQUIREMENTS. REFER TO SPECIFICATIONS AND SCHEDULES FOR FURTHER INFORMATION.

DOMESTIC WATER SERVICE ENTRY

SCALE : NO SCALE

### PLUMBING SPECIFICATIONS

- A. PROVIDE ALL LABOR, MATERIALS, AND EQUIPMENT NECESSARY FOR THE COMPLETE INSTALLATION OF
- THE PLUMBING SYSTEMS OUTLINED. B. OBTAIN ALL PERMITS, FEES, LICENSES, INSPECTIONS, AND CERTIFICATIONS OF COMPLIANCE OR APPROVAL AS REQUIRED BY AUTHORITIES.
- C. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE LAWS, CODES AND REGULATIONS OF THE GOVERNMENTAL BODIES HAVING JURISDICTION OVER THE SITE. D. ALL TESTING REQUIRED BY AUTHORITIES SHALL BE CONSIDERED PART OF THIS WORK.
- . DURING CONSTRUCTION, ALL FIXTURES, EQUIPMENT, PIPE, DUCT, ETC. SHALL BE COVERED, PLUGGED, OR CAPPED AS REQUIRED TO KEEP CLEAN AND UNDAMAGED. ALL DAMAGED ITEMS SHALL BE RESTORED TO ORIGINAL CONDITION OR REPLACED. ALL PROTECTIVE COVERING SHALL BE REMOVED BEFORE FINAL ACCEPTANCE
- F. PROVIDE ALL NECESSARY CUTTING AND PATCHING OF WALLS, FLOORS, CEILINGS, AND ROOFS AS NECESSARY. PATCH AROUND ALL OPENINGS SHALL MATCH ADJACENT AREA. COORDINATE ALL ROOFING WORK WITH OWNER OR RESPONSIBLE PARTY, SO THAT THE EXISTING ROOFING WARRANTY WILL BE MAINTAINFD
- G. CONTRACTOR SHALL GUARANTEE ALL WORK AND MATERIALS AGAINST DEFECT FOR A PERIOD OF ONE YEAR FROM FINAL ACCEPTANCE.
- H. INSPECTION OF THE SITE: THIS CONTRACTOR SHALL THOROUGHLY ACQUAINT HIMSELF WITH THE MEP DRAWINGS, SPECIFICATIONS, DETAIL, AND THE SITE. THIS CONTRACTOR SHALL NOTIFY THE ARCHITECT OF ANY SPECIAL OR UNUSUAL PROBLEMS, CONFLICTS, OR OBSTRUCTIONS THAT AFFECT HIS BID. I. FOR THE PURPOSE OF CLEARNESS AND LEGIBILITY, THE MECHANICAL AND PLUMBING DRAWINGS ARE ESSENTIALLY DIAGRAMMATIC AND DO NOT SHOW ALL OFFSETS AND FITTINGS REQUIRED FOR
- INSTALLATION. DO NOT SCALE DRAWINGS. THE SIZE AND LOCATION OF EQUIPMENT IS SHOWN TO SCALE WHEREVER POSSIBLE. THE CONTRACTOR SHALL VERIFY ALL CONDITIONS AND DATA AS INDICATED ON THE DRAWINGS AND IN THE SPECIFICATION SECTIONS WHERE MECHANICAL WORK INTERFACES WITH OTHER TRADES. J. IN THE EVENT OF A CONFLICT OR INCONSISTENCY BETWEEN ITEMS INDICATED ON THE PLANS OR WITH
- CODE REQUIREMENTS, THE NOTE OR CODE WHICH PRESCRIBES AND ESTABLISHES THE MORE COMPLETE JOB OR HIGHER STANDARD SHALL PREVAIL K. INSTALL MATERIALS AND SYSTEMS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND APPROVED SUBMITTALS, INSTALL MATERIALS IN PROPER RELATION WITH ADJACENT CONSTRUCTION AND WITH
- UNIFORM APPEARANCE FOR EXPOSED WORK, COORDINATE WITH WORK OF OTHER SECTIONS, COMPLY WITH APPLICABLE REGULATIONS AND CODE REQUIREMENTS. PROVIDE PROPER CLEARANCES FOR
- L. INCLUDE ALL BASIC MATERIALS AND CONSTRUCTION METHODS INCLUDING PIPES, PIPE FITTINGS, AND SPECIALTIES AND SUPPORTING DEVICES, VALVES, PIPE AND VALVE IDENTIFICATION, PUMPS, VIBRATION
- M. FURNISH ADEQUATE ACCESS PANELS AND DOORS TO ALLOW FOR FUTURE PIPING ALTERATIONS. REPLACEMENT, AND MAINTENANCE OF PIPING. PROPERLY IDENTIFY ALL ACCESS PANELS AND DOORS.

B. ALL LITERATURE AND INSTRUCTIONS SHIPPED WITH THE EQUIPMENT SHALL BE SAVED FOR INCLUSION IN

- 2. OPERATION AND MAINTENANCE MANUALS: A. DURING THE COURSE OF CONSTRUCTION, COLLECT AND COMPILE OPERATING INSTRUCTIONS, WIRING DIAGRAMS, CATALOG CUTS, LUBRICATION AND PREVENTIVE MAINTENANCE INSTRUCTIONS, PARTS LISTS, ETC. FOR ALL EQUIPMENT FURNISHED UNDER THIS CONTRACT.
- THE OPERATING AND MAINTENANCE MANUALS. C. ALL LITERATURE LISTED ABOVE AND ALL PAPERS LISTING WARRANTIES, ETC. SHALL BE BOUND IN A 3-RING BINDER AND LABELED WITH THE PROJECT NAME, ADDRESS, ARCHITECT, ENGINEER AND CONTRACTORS.
- A. MANUFACTURERS, MODEL NUMBERS, ETC. INDICATED OR SCHEDULED ON THE DRAWINGS SHALL BE INTERPRETED AS HAVING ESTABLISHED A STANDARD OF QUALITY AND SHALL NOT BE CONSTRUED AS LIMITING COMPETITION. ARTICLES, FIXTURES, ETC. OF EQUAL QUALITY BY MANUFACTURERS SHALL BE ACCEPTABLE, SUBJECT TO STRUCTURAL AND ELECTRICAL CONSTRAINTS OF THE PROJECT DESIGN. B. THE ELECTRICAL SYSTEM DESIGN IS BASED IN PART ON THE SPECIFIED EQUIPMENT. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE THE ELECTRICAL REQUIREMENTS OF THE EQUIPMENT BEING FURNISHED. ANY CHANGES TO THE ELECTRICAL SYSTEM DUE TO HVAC EQUIPMENT OTHER THAN THE SPECIFIED EQUIPMENT BEING FURNISHED SHALL BE PROVIDED AT NO ADDITIONAL
- A. PROVIDE AN APPROVED WATER HAMMER ARRESTOR FOR EACH PLUMBING FIXTURE SUPPLY AS REQUIRED BY FIXTURE MANUFACTURER.
- B. ALL EXPOSED PIPE IN FINISHED AREAS SHALL BE CHROME PLATED BRASS PIPE, NO FERROUS PIPE. C. PROVIDE CLEANOUTS AT EACH CHANGE IN DIRECTION AND AT 100 FOOT INTERVALS IN STRAIGHT RUNS. D. PROVIDE ACCESS PANELS FOR ALL CONCEALED VALVES AND TRAPS.
- E. CLEANOUTS: 1. VINYL TILE FLOOR (FCO): JR SMITH #4140, OR EQUAL. QUARRY TILE FLOOR (FCO): JR SMITH #4200, OR EQUAL

COST TO THE OWNER.

- CARPETED FLOOR (FCO): JR SMITH #4020-Y, OR EQUAL 4. UNFINISHED FLOOR (FCO): JR SMITH #4020, OR EQUAL.
- 5. WALL (WCO): JR SMITH #4472, OR EQUAL, 24" ABOVE THE FLOOR. 6. GRADE (GCO): JR SMITH #4256, OR EQUAL, WITH HEAVY DUTY CAST IRON BODY AND COVER.
- F. ALL SEWER PIPING LOCATED INSIDE THE BUILDING SHALL BE INSTALLED WITH THE FOLLOWING SLOPES. 1. INSTALL 2-1/2" AND SMALLER PIPE AT 1/4" PER FOOT FALL. 2. INSTALL 3" AND LARGER PIPE AT 1/8" PER FOOT FALL.
- CONDENSATE DRAIN SHALL BE INSTALLED AT 1/8" PER FOOT FALL. G. PROVIDE DIELECTRIC UNIONS WITH APPROPRIATE END CONNECTION TO MATCH THE PIPE SYSTEM IN WHICH INSTALLED (SCREWED, SOLDERED, OR FLANGED). PROVIDE DIELECTRIC UNIONS ON ALL PIPING
- CONNECTIONS TO HOT WATER HEATERS AND EXPANSION JOINTS. H. ALL SEWER PIPING LOCATED EXTERIOR TO THE BUILDING SHALL BE INSTALLED WITH THE FOLLOWING
- 1. INSTALL 4" AND SMALLER PIPE AT A MINIMUM OF 2% SLOPE. 2. INSTALL 6" AND LARGER PIPE AT A MINIMUM OF 1% SLOPE.

GLOBE VALVE: CRANE #7 OR EQUAL.

- A. DOMESTIC COLD, HOT, AND HOT WATER RECIRCULATING (ABOVEGROUND). TYPE L HARD DRAWN COPPER TUBING, ASTM B-88 WITH WROUGHT BRONZE SOLDERED FITTINGS. GATE VALVE: CRANE #428 OR EQUAL.
- 4. BALL VALVE: CRANE #932 OR EQUAL. B. DOMESTIC COLD, HOT, AND HOT WATER RECIRCULATING, 1"-3" (UNDERGROUND). 1. TYPE K HARD OR SOFT DRAWN COPPER TUBING, ASTM B-88 WITH WROUGHT BRONZE SOLDERING
- C. SANITARY SEWER AND VENTS (UNDERGROUND, INTERIOR TO BUILDING). WASTE, DRAIN AND VENT PIPE AND FITTINGS, THROUGHOUT THE BUILDING BELOW THE BASE SLAB TO THE LOCATIONS NOTED OUTSIDE OF THE BUILDING SHALL BE ASTM D2665 POLYVINYL
- CHLORIDE (PVC) DWV PIPE, SCHEDULE 40, SOLVENT JOINT. 2. SEWER LINES SHALL BE LOCATED IN GENERAL AS SHOWN ON THE DRAWINGS. THE EXACT LOCATIONS SHALL BE DETERMINED BY THE CONTRACTOR IN SUCH A MANNER AS TO MAINTAIN
- 3. VENT STACKS SHALL BE EXTENDED FULL SIZE THROUGH THE ROOF AND FLASHED WITH 4 POUND LEAD SHEETS TURNED DOWN INTO THE STACK AT LEAST 2" AND EXTENDED 12" IN ALL DIRECTIONS FROM THE PIPE AT THE ROOF LINE. VENTS THROUGH ROOF SHALL NOT BE LESS THAN 3". PVC PIPING SHALL NOT BE USED FOR VENT PIPING THROUGH THE ROOF, WHERE APPLICABLE FOR ROOFING SYSTEM USED, PROVIDE FLASHING VIA PLEATED EPDM CONE IN LIEU OF LEAD. ALL VENT STACKS IN OR AT OUTSIDE WALLS SHALL BE OFFSET 1'-6" MINIMUM FROM OUTSIDE WALLS BEFORE GOING THROUGH THE ROOF, TO FACILITATE FLASHING.

PROPER CLEARANCES AND SUFFICIENT SLOPE TO ENSURE DRAINAGE.

D. CONDENSATE DRAIN AND INDIRECT WASTE (ABOVEGROUND) 1. DWV. WROUGHT COPPER, ANSI B-16.29.

EXPANSION TANK, AMTROL, —

DRAIN VALVE —

THERM-X-TROL, MODEL ST-5

24" X 24" X 4" HIGH 18 GA. -

GALVANIZED STEEL SAFETY PAN

SYSTEM. SECURE TO WALL PER

MANUFACTURER'S INSTRUCTION

1/2" HW & CW TO MOP SINK.

SEE PLANS FOR LOCATION

WATTS WM-26 HEAVY DUTY WALL MOUNT

WATER HEATER MOUNT AND RESTRAINT

SIZE PIPING PER — PLANS, TYP

140°F HW ≥—

HOT WATER RETURN (HWR) < → ◆

- E. NATURAL GAS PIPING: 1. SCHEDULE 40 BLACK STEEL PIPING: 2" AND SMALLER WITH SCREWED JOINTS AND 150 LB. MALLEABLE IRON SCREWED FITTINGS. PIPE 2-1/2" AND LARGER SHALL USE STANDARD WEIGHT BLACK STEEL WELDING FITTINGS WITH WELDED JOINTS.
- GAS VALVES SHALL BE ROCKWELL 142/143, PLUG VALVE. SUPPORT PIPING AT INTERVALS NOT TO EXCEED THOSE LISTED IN TABLE 415.1 OF THE I.F.G.C.

OR ANVIL. HANGER SPACING SHALL BE IN ACCORDANCE WITH MSS-SP-69.

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- PROVIDE A.G.A. APPROVED SHUT OFF VALVES AND DIRT LEGS AT CONNECTIONS TO ALL FQUIPMENT.
- 5. ALL ELEVATED PRESSURE GAS PIPING (GREATER THAN 14" W.C.) SHALL BE LABELED EVERY 40' WITH SIGNS INDICATING "ELEVATED PRESSURE."
- 6. EPOXY PAINT ALL EXTERIOR GAS PIPING TO PREVENT CORROSION. F. ALL PIPE HANGERS AND SUPPORTS SHALL BE STANDARD PRODUCTS OF GRINNELL, FEE AND MASON,

- PROVIDE, SET. AND PROPERLY LOCATE PIPE SLEEVES AS REQUIRED FOR THIS WORK. ALL SLEEVES SHALL BE OF SUFFICIENT SIZE TO PERMIT PIPE MOVEMENT DUE TO EXPANSION AND
- CONTRACTION AND TO ACCOMMODATE PIPE INSULATION. INTERIOR PARTITIONS: 16 GAUGE GALVANIZED STEEL, PACK BETWEEN PIPE AND SLEEVE WITH FIRE SAFING AND CAULK AT EACH END WITH FIRE RESISTANT SEALANT.
- ROOF: PROSET OR EQUAL, MANUFACTURED PVC SCHEDULE 40 PIPE SLEEVE WITH WATERPROOF SEAL. COORDINATE WITH ROOFING CONTRACTOR AND FLASH AS REQUIRED TO MAINTAIN ROOF
- PLUMBING VENTS: FLASH ROOF VENT INTO ROOFING SYSTEM AS REQUIRED BY THE ROOFING CONTRACTOR TO MAINTAIN THE EXISTING ROOF WARRANTY. ALL PLUMBING VENT TERMINALS SHALL

TERMINATE A MINIMUM OF 12" ABOVE ROOF OR EQUAL TO HEIGHT OF PARAPET, WHICHEVER IS

- H. PROVIDE CHROME PLATED ESCUTCHEONS ON ALL PIPE ENTERING FINISHED AREAS.
- A. ALL INSULATIONS AND ACCESSORIES SHALL HAVE A FIRE HAZARD CLASSIFICATION WITH A FLAME SPREAD RATING OF NOT OVER 25, A FUEL CONTRIBUTION RATING OF NOT OVER 50, AND A SMOKE DEVELOPMENT RATING OF NOT OVER 50, IN ACCORDANCE WITH NFPA. B. PIPE INSULATION (ABOVE GRADE):
- 1. THE PIPE INSULATION USED SHALL HAVE A THERMAL CONDUCTIVITY OF 0.27 BTU PER IN/HR\*SQ-FT\*°F OR LESS. FIBERGLASS INSULATION WITH FACTORY APPLIED VAPOR BARRIER, ASJ JACKET, FACTORY APPLIED PRESSURE SEALING LONGITUDE LAP JOINT, NO STAPLES, ZESTON PREMOLDED PVC FITTING
- COVERS. INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. FLEXIBLE CLOSED CELL ELASTOMERIC THERMAL INSULATION, UNSLIT OR PRESLIT WITH PRESSURE SENSITIVE ADHESIVE SYSTEM FOR CLOSURE AND VAPOR SEALING, EQUAL TO ARMSTRONG AP
- ARMAFLEX OR ARMAFLEX 2000. 4. FOR NON CIRCULATING SYSTEMS THE FIRST 8 FEET OF INLET AND OUTLET PIPING BETWEEN THE TANK AND HEAT TRAP (INCLUDING THE HEAT TRAP) MUST BE INSULATED.
- 5. INSULATION SCHEDULE: a. DOMESTIC COLD WATER:
- b. DOMESTIC HOT WATER: c. HOT WATER RECIRCULATING:
- COVERED WITH INSULATION. B. SEWER AND VENT PIPING SHALL BE HYDROSTATICALLY TESTED WITH NO LESS THAN 10 FEET OF HEAD FOR A PERIOD OF NOT LESS THAN 15 MINUTES, PER THE LOCAL PLUMBING CODE, WITH NO LEAKS. C. DOMESTIC WATER PIPING SHALL BE HYDROSTATICALLY TESTED AT A PRESSURE OF NOT LESS THAN
- THAN 2 HOURS, WITH NO LEAKS. D. BEFORE DOMESTIC WATER PIPING IS PLACED IN SERVICE, ALL DOMESTIC WATER DISTRIBUTION SYSTEMS,
- PPM OF CHLORINE. DURING THE FILLING PROCESS, VALVES AND FAUCETS SHALL BE OPENED SEVERAL TIMES TO ASSURE TREATMENT OF THE ENTIRE SYSTEM. THE TREATED WATER SHALL BE LEFT IN THE SYSTEM FOR 24 HOURS AFTER WHICH TIME THE SYSTEM SHALL BE FLUSHED; IF THE RESIDUAL CHLORINE IS NOT LESS THAN 10 PPM, THE FLUSHING SHALL BE REPEATED. AFTER STERILIZATION SAMPLES OF WATER FROM THE SYSTEM SHALL BE APPROVED BY THE BOARD OF HEALTH.

### 7. TESTING, BALANCING AND CLEANING A. ALL PIPING SHALL BE TESTED FOR LEAKS BEFORE BEING CONCEALED IN WALL CONSTRUCTION OR

- 1-1/2 TIMES THE OPERATING PRESSURE, BUT NOT LESS THAN 60 PSI, FOR A PERIOD OF NOT LESS
- INCLUDING THOSE FOR COLD WATER AND HOT WATER SYSTEMS, SHALL BE FLUSHED, STERILIZED AND CHLORINATED IN ACCORDANCE WITH THE HEALTH DEPARTMENT REGULATIONS. THE SYSTEMS SHALL BE THOROUGHLY FLUSHED OF ALL DIRT AND FOREIGN MATTER, THEN FILLED WITH WATER TREATED WITH 50
- E. NATURAL GAS SYSTEMS SHALL BE TESTED WITH COMPRESSED AIR AT A PRESSURE OF NOT LESS THAN 1-1/2 TIMES THE OPERATING PRESSURE, BUT NOT LESS THAN 50 PSIG FOR A PERIOD OF 2 HOURS WITH NO LEAKS.

### PLUMBING SYMBOLS

**DESCRIPTION** 

<u>SYMBOL</u>

			ı
	ss	SANITARY SEWER (ABOVE GRADE)	
	———ss———	SANITARY SEWER (BELOW GRADE)	
	———GW———	GREASE WASTE (BELOW GRADE)	
	CD	CONDENSATE DRAIN	
	V	VENT PIPING	
		G = GAS PIPING LESS THAN 2 PSI	
	MPG	MPG = GAS PIPING 2 PSI	
		GAS PIPE ON ROOF, G OR MPG	
	CW	COLD WATER PIPING	
		HOT WATER PIPING	
	— — HWR — —	RECIRCULATING HOT WATER	
	——————————————————————————————————————	COMPRESSED AIR	
	<del></del>	PIPE ELBOW DOWN	
	——————————————————————————————————————	PIPE ELBOW UP	
	<b>───</b>	GATE VALVE	
		BACKFLOW PREVENTER	
		CHECK VALVE	
	——-ю	BALL VALVE	
	<del></del>	STRAINER	
		PRESSURE REDUCING VALVE	
	——r5——	PLUG VALVE	
	——————————————————————————————————————	CONTROL VALVE	
		FLOOR CLEANOUT (FCO)	
	<del></del>	CLEANOUT AT GRADE (GCO)	
	<u> </u>	WALL CLEANOUT (WCO)	
		FLOOR DRAIN	
		FLOOR SINK	
	<u> </u>	CAPPED PIPE	
1	i		1

### STANDARD MOUNTING HFIGHTS

(AFF, AFG, UNLESS NOTED OTHERWISE) REFER TO ARCHITECTURAL DRAWINGS FOR PLUMBING FIXTURE MOUNTING HEIGHTS. UNO, INSTALL PLUMBING FIXTURES WITH THE MOUNTING HEIGHTS AS LISTED BELOW WITH FINAL APPROVAL BY

THE ARCHITECT. ADA ACCESSIBLE LAVATORIES 34" FLOOR TO RIM

ADA ACCESSIBLE WATER CLOSET 17" TO 19" FLOOR TO

TOP OF SEAT

N/O NORMALLY OPEN

ORD OVERFLOW ROOF DRAIN

PVC POLYVINYL CHLORIDE

TDH TOTAL DYNAMIC HEAD

TFA TO FLOOR ABOVE

TFB TO FLOOR BELOW

VCP VITRIFIÉD CLAY PIPE

VTR VENT THROUGH ROOF

VS VENT STACK

WC WATER COLUMN

WS WATER STACK

I w∕ with

w/o without

PDI PLUMBING DRAINAGE INSTITUTE

PRV PRESSURE REDUCING VALVE

RPM REVOLUTIONS PER MINUTE

SF SQUARE FEET, SUPPLY FAN

UL UNDERWATER LABORATORIES,

UNO UNLESS NOTED OTHERWISE

WSFU WATER SUPPLY FIXTURE UNIT

### JANITOR'S SINK FAUCET FITTINGS 42" FLOOR TO CENTERLINE

I ABBREVIATIONS AFF ABOVE FINISHED FLOOR AFG ABOVE FINISHED GRADE N/C NORMALLY CLOSED

AHU ABOVE HANDLING UNIT

BFF BELOW FINISHED FLOOR BFG BELOW FINISHED GRADE BOP BOTTOM OF PIPE BOS BOTTOM OF STRUCTURE

BTU BRITISH THERMAL UNIT CPVC CHLORINATED POLYVINYL

CHLORIDE DOWN DFU DRAINAGE FIXTURE UNIT ETR EXISTING TO REMAIN

FD FLOOR DRAIN FFA FROM FLOOR ABOVE FFB FROM FLOOR BELOW FINISHED FLOOR

FLA FULL LOADS AMPS FLR FLOOR GPM GALLON PER MINUTE

IE INVERTED ELEVATION IN WC INCHES OF WATER COLUMN kW KILOWATT MAX MAXIMUM MBH 1000 BTU PER HOUR

ANNOTATION

( # ) PLAN WORK NOTE

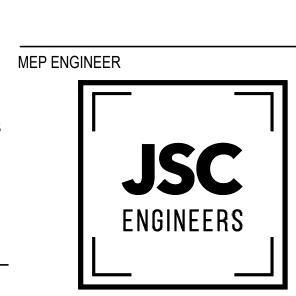
RTU MECHANICAL EQUIPMENT DESIGNATION (CONTRACTOR FURNISHED AND INSTALLED UNLESS NOTED OTHERWISE)

- PLUMBING FIXTURE DESIGNATION

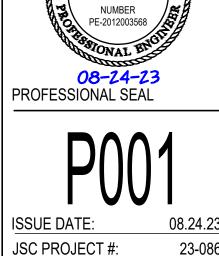
CONNECTION POINT OF NEW WORK TO EXISTING A DETAIL REFERENCE UPPER NUMBER INDICATED DETAIL NUMBER M1 LOWER NUMBER INDICATES SHEET NUMBER

SECTION CUT DESIGNATION

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SMOTHERS

PLUMBING SPECIFICATIONS AND SYMBOLS

ELECTRIC WATER HEATER DETAIL SCALE: NO SCALE

THERMOMETER

- BALL VALVE, TYP.

— UNION, TYP.

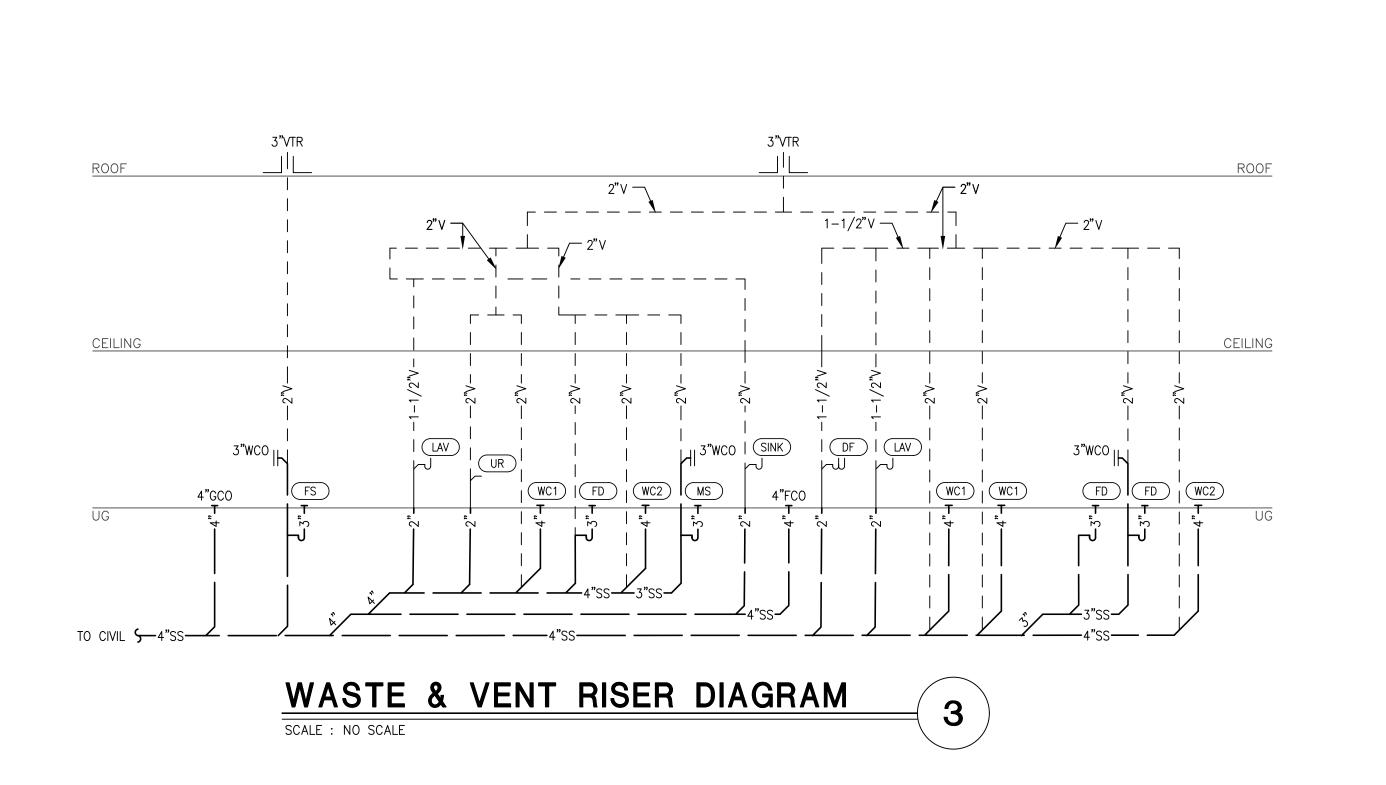
— 3/4" ASME−RATED T&P RELIEF

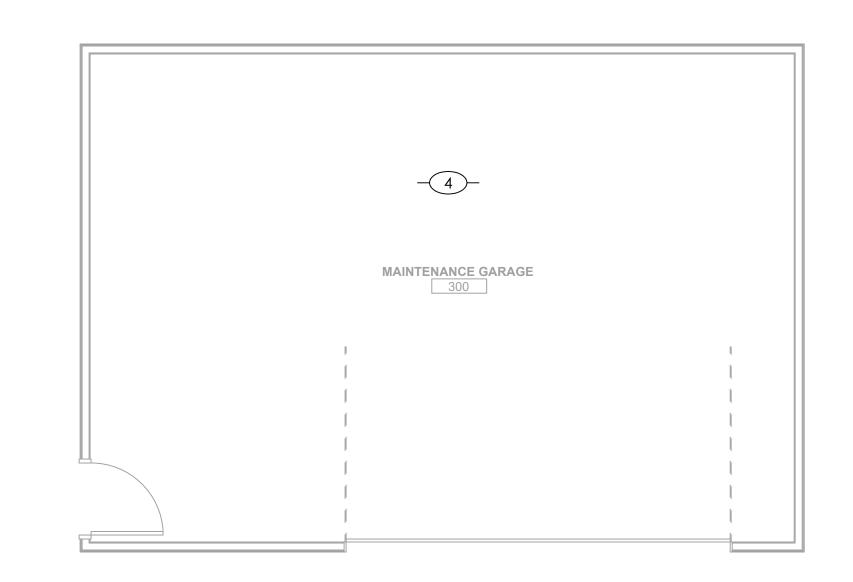
SINK, TERMINATE W/ AIR GAP

VALVE. PIPE FULL SIZE TO MOP

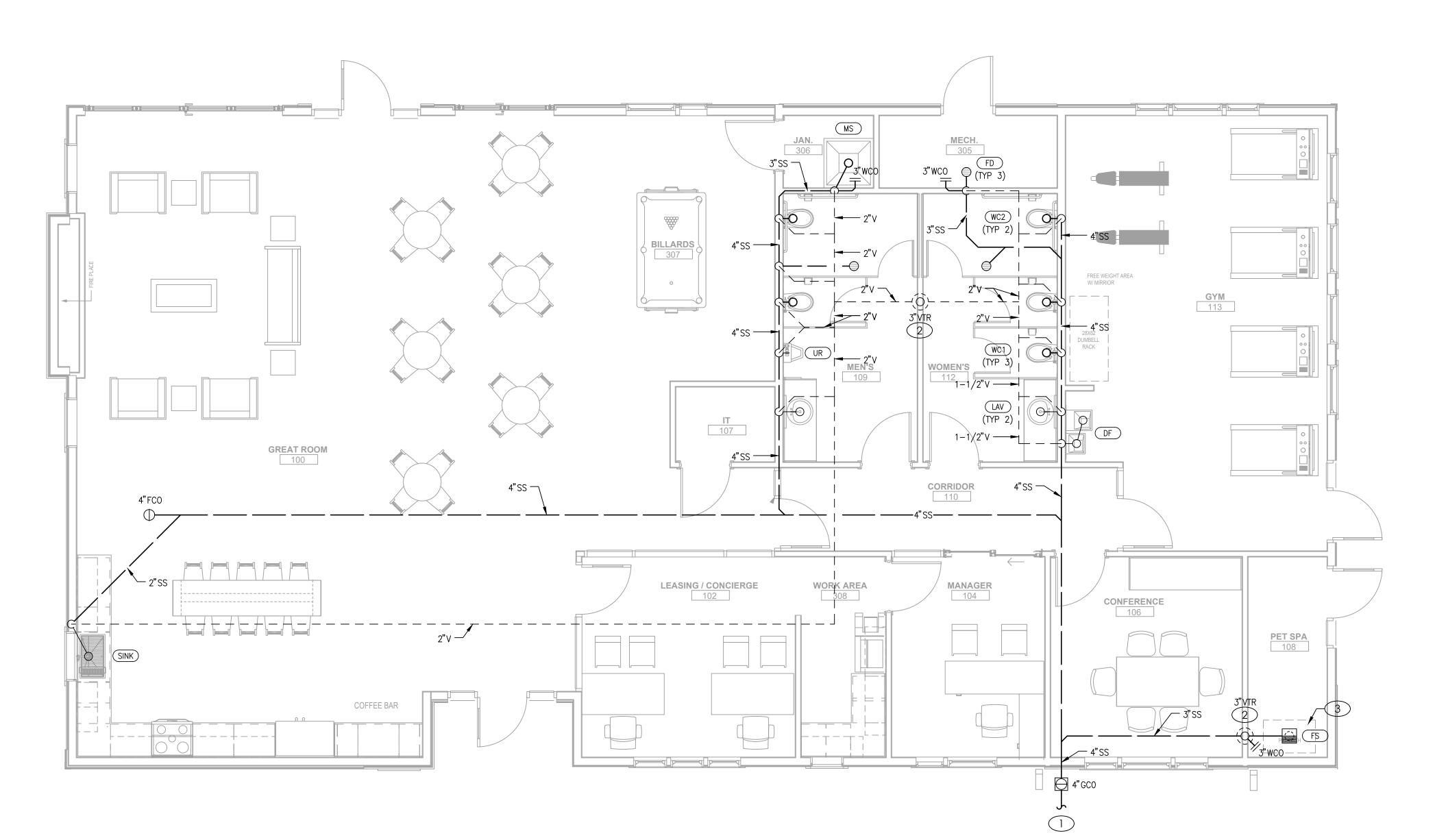
-3/4" SAFETY PAN DRAIN, TERMINATE

AT MOP SINK W/ AIR GAP





WASTE AND VENT PLAN - MAINTENANCE GARAGE 2



WASTE AND VENT PLAN - CLUBHOUSE

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

### GENERAL NOTES

- A. DRAWINGS ARE DIAGRAMMATIC ONLY AND REPRESENT THE GENERAL SCOPE OF WORK. REVIEW THE GENERAL NOTES, SPECIFICATIONS AND PLANS FOR ADDITIONAL REQUIREMENTS THAT MAY NOT BE SPECIFICALLY CALLED OUT IN THIS PORTION OF THE CONSTRUCTION DOCUMENTS. NOTIFY ARCHITECT, ENGINEER AND/OR OWNER OF CONFLICTS OR DISCREPANCIES PRIOR TO SUBMISSION OF BID.
- B. COORDINATE INSTALLATION OF PLUMBING SYSTEMS
  WITH OTHER TRADES TO ENSURE A NEAT AND
  ORDERLY INSTALLATION AND AVOID CONFLICTS.
  INSTALL DUCTWORK AND PIPING AS TIGHT TO
  STRUCTURE AS POSSIBLE. COORDINATE
  INSTALLATION PIPING TO AVOID CONFLICTS WITH
- C. OVERHEAD HANGERS AND SUPPORTS FOR EQUIPMENT, DUCTWORK AND PIPING SHALL BE FASTENED TO BUILDING JOISTS OR BEAMS. DO

NOT ATTACH HANGERS AND SUPPORTS TO THE

ABOVE FLOOR SLAB OR ROOF.

D. REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATION AND MOUNTING HEIGHTS OF PLUMBING

FIXTURES.



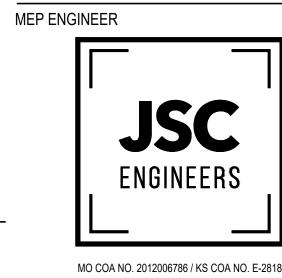
### #KEYED PLAN NOTES

- 1. 4" SANITARY TO UTILITY SERVICE. CONTRACTOR SHALL WORK WITH LOCAL WASTE WATER AUTHORITY AND BEAR ALL COST FOR INSTALLATION OF A NEW SEWER LINE CONNECTING INTO THE SEWER MAIN FOR A COMPLETE INSTALLATION. REFER TO CIVIL PLANS FOR CONTINUATION.
- 2. 3" VENT UP WALL TO 3" VTR. LOCATE VENT MIN. 10'-0" FROM ALL BUILDING OPENINGS AND MIN. 3'-0" FROM EDGE OF ROOF. SEAL PENETRATION WEATHER TIGHT. COORDINATE WITH MECHANICAL CONTRACTOR.
- 3. OWNER PROVIDED FIXTURE. ROUTE DISCHARGE TO FLOOR SINK WITH ADEQUATE AIR GAP. PROVIDE HAIR STRAINER PRIOR TO DISCHARGE TO FLOOR SINK. INSTALL IN ACCESSIBLE
- ${f G}$  4. NO WORK IN MAINTENANCE GARAGE.

# **JION AT BLACKWELL**

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KANSAS CITY, MO 64108
phone: (816) 272-5289
email: jsmothers@jscengineers.com



WASTE AND VENT PLAN CLUBHOUSE

### WATER AND GAS PLAN - MAINTENANCE GARAGE

17/2 May 10/2 May 10/

### WATER AND GAS PLAN - CLUBHOUSE SCALE: 1/4" = 1'-0"

### GENERAL NOTES

- A. DRAWINGS ARE DIAGRAMMATIC ONLY AND REPRESENT THE GENERAL SCOPE OF WORK. REVIEW THE GENERAL NOTES, SPECIFICATIONS AND PLANS FOR ADDITIONAL REQUIREMENTS THAT MAY NOT BE SPECIFICALLY CALLED OUT IN THIS PORTION OF THE CONSTRUCTION DOCUMENTS. NOTIFY ARCHITECT, ENGINEER AND/OR OWNER OF CONFLICTS OR DISCREPANCIES PRIOR TO SUBMISSION OF BID.
- B. COORDINATE INSTALLATION OF PLUMBING SYSTEMS WITH OTHER TRADES TO ENSURE A NEAT AND ORDERLY INSTALLATION AND AVOID CONFLICTS.

  INSTALL DUCTWORK AND PIPING AS TIGHT TO STRUCTURE AS POSSIBLE. COORDINATE INSTALLATION PIPING TO AVOID CONFLICTS WITH
- C. OVERHEAD HANGERS AND SUPPORTS FOR EQUIPMENT, DUCTWORK AND PIPING SHALL BE FASTENED TO BUILDING JOISTS OR BEAMS. DO NOT ATTACH HANGERS AND SUPPORTS TO THE ABOVE FLOOR SLAB OR ROOF.
- D. REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATION AND MOUNTING HEIGHTS OF PLUMBING



### #KEYED PLAN NOTES

- 1. 1-1/2" DOMESTIC WATER SERVICE ENTRANCE.
  CONTRACTOR SHALL WORK WITH THE WATER
  COMPANY FOR THE INSTALLATION OF A NEW
  WATER MAIN ENTRANCE, INCLUDING TAP, METER,
  METER PIT, PIPING, ETC. FOR A COMPLETE
  INSTALLATION. SEE CIVIL PLANS FOR
  CONTINUATION AND LOCATION OF WATER METER.
- 2. PROVIDE 1-1/2" RPZ BACKFLOW PREVENTER.
   INSTALL 24" A.F.F. AND 6" FROM WALL. ROUTE
   DRAIN FROM RPZ TO FLOOR DRAIN. TERMINATE
   DRAIN WITH AIR GAP. SEE DOMESTIC WATER
   SERVICE ENTRY DETAIL.
- SERVICE ENTRY DETAIL.

  3. 1/2"CW TO ICE MAKER OUTLET BOX. INSULATE
- ALL PIPING IN EXTERIOR WALL.

  4. 1/2"CW AND 1/2"HW TO LAVATORY. PROVIDE THERMOSTATIC MIXING VALVE FOR FIXTURE EQUAL TO LEONARD MODEL 170. SET HOT
- 1/2"CW AND 1/2"HW DOWN IN WALL TO OWNER PROVIDED FIXTURE. MAKE CONNECTION PER MANUFACTURER'S INSTALLATION INSTRUCTIONS.

WATER SUPPLY TEMPERATURE TO 110°F.

- 6. 3/4"CW DOWN IN WALL TO URINAL.
- 7. 1"CW DOWN IN WALL TO WATER CLOSET.

  8. MOUNT WATER HEATER ABOVE MOP SINK.
- CONNECT 3/4"CW AND 3/4"HW TO WATER
  HEATER. ROUTE 3/4" T&P RELIEF FROM WATER
  HEATER TO MOP SINK. DISCHARGE WITH
  ADEQUATE AIR GAP.
- LOCATION SHOWN. ROUTE PIPING UNDER COUNTER TO SINK. INSULATE ALL PIPING IN EXTERIOR WALL.

9. 1/2"HW AND 1/2"CW DOWN IN WALL AT

- 10. 1/2"CW DOWN IN WALL TO DRINKING FOUNTAIN.

  11. 1/2"CW AND 1/2"HW DOWN IN WALL TO MOP
- 12. COORDINATE WITH GAS COMPANY FOR INSTALLATION OF TENANT METER WITH CAPACITY FOR 176 MBH @ 11" W.C. PLUMBING CONTRACTOR TO VERIFY ALL EQUIPMENT GAS CAPACITIES AND OPERATING PRESSURES PRIOR TO INSTALLATION OF ANY PIPING.
- 13. PROVIDE DIRT LEG AND SHUT-OFF VALVE PRIOR TO FINAL CONNECTION
- TO FINAL CONNECTION.

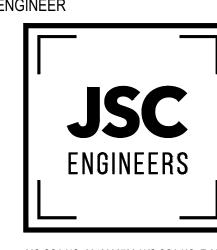
  14. NO WORK IN MAINTENANCE GARAGE.
- 14. NO WORK IN MAINTENANCE GARAGE.15. ROUTE 1" GAS PIPING UP INSIDE EXTERIOR WALL. ALL CONCEALED JOINTS ARE TO BE WELDED OR USE FITTINGS APPROVED FOR CONCEALED USE.

# JNION AT BLACKWEL

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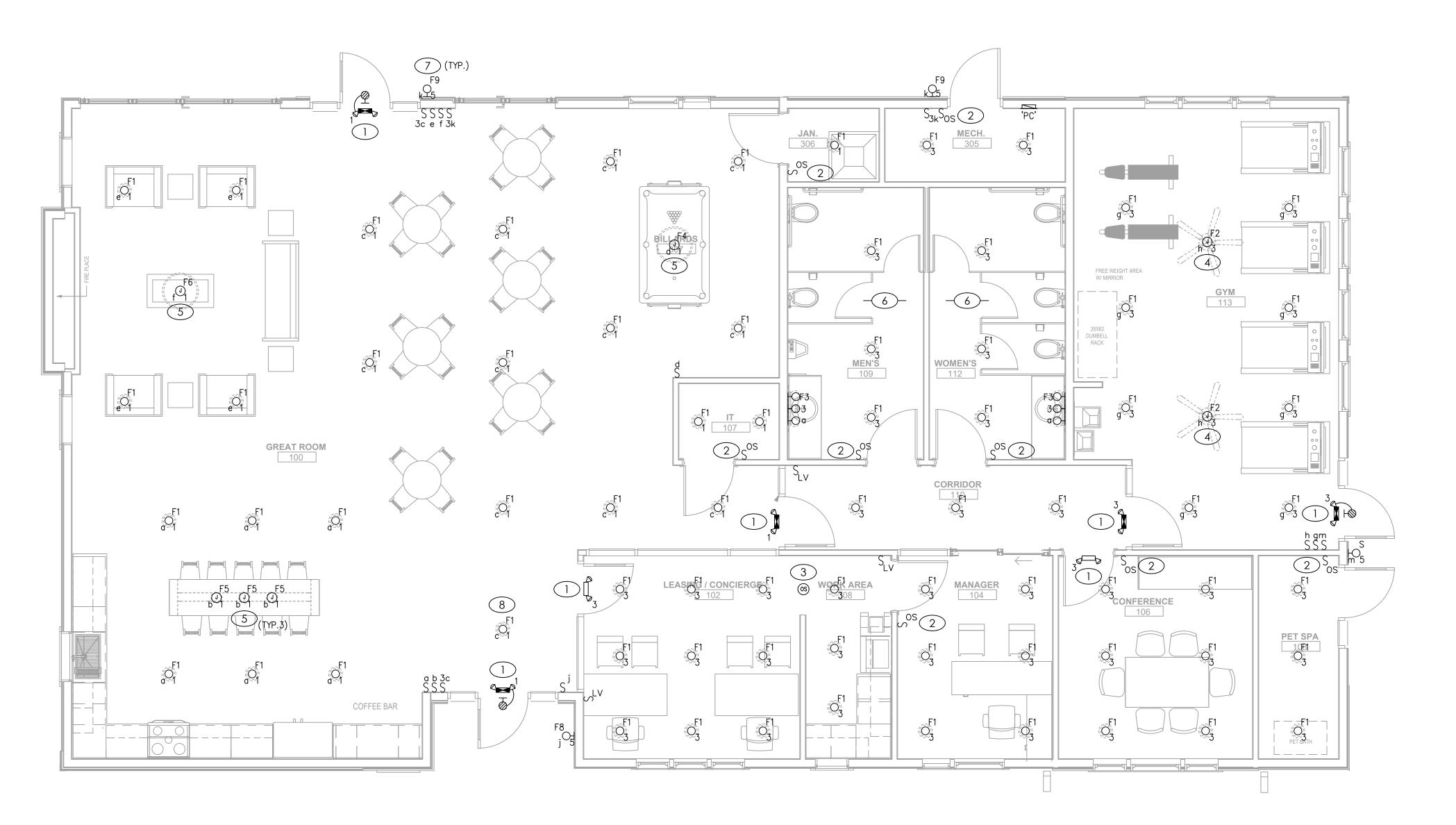
MO COA NO. 2012006786 / KS COA NO. E-2818
1925 CENTRAL STREET, SUITE 201
KANSAS CITY, MO 64108
phone: (816) 272-5289
email: jsmothers@jscengineers.com



WATER AND GAS PLAN CLUBHOUSE

### LIGHTING PLAN - MAINTENANCE GARAGE 2 SCALE : 1/4" = 1'-0"





LIGHTING PLAN - CLUBHOUSE SCALE : 1/4" = 1'-0"





### **#KEYED PLAN NOTES**

- 1. CONNECT EXIT/EMERGENCY LIGHT TO INDICATED CIRCUIT WITH A SEPARATE AND UN-SWITCHED HOT CONDUCTOR BYPASSING ALL CONTROLS AND CONTACTORS.
- 2. WALL SWITCH OCCUPANCY SENSOR. SENSORWORX SWX-100 SERIES OR PRE-BID APPROVED EQUAL. PROVIDE AND MAKE ALL CONNECTIONS PER MANUFACTURER'S RECOMMENDATIONS AND NEC REQUIREMENTS.
- 3. CEILING MOUNTED OCCUPANCY SENSOR. SENSORWORX SWX-200 SERIES OR PRE-BID APPROVED EQUAL. PROVIDE AND MAKE ALL CONNECTIONS PER MANUFACTURER'S RECOMMENDATIONS
- AND NEC REQUIREMENTS. 4. PROVIDE AND SECURE STEEL JUNCTION BOX TO STRUCTURE FOR CEILING FAN
- PER NEC 422.18(A). 5. PROVIDE AND SECURE JUNCTION BOX IN CEILING FOR PENDANT MOUNTED LIGHT
- 6. EXHAUST FAN DERIVES POWER FROM
- CIRCUIT SERVING LIGHTING FIXTURES IN 7. ROUTE EXTERIOR LIGHTING THROUGH

PHOTOCELL. MOUNT PHOTOCELL ON ROOF

AND POINT NORTH. 8. WIRE NIGHTLIGHT FOR CONTINUOUS-ON

OPERATION.

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MEP ENGINEER



LIGHTING PLAN - CLUBHOUSE & MAINTENANCE GARAGE

4. GARBAGE DISPOSAL. 120V,  $\frac{1}{2}$  HP, CORD & PLUG CONNECTON TO HALF-SWITCHED AFCI RECEPTACLE MOUNTED BELOW SINK. PROVIDE 2 #12 CU, 1 #12CU EGC AT HANDICAP UNITS. MOUNT SWITCH WITHIN LOWER CABINETS PER ADA GUIDELINES.

5. ELECTRICAL SERVICE ENTRANCE EQUIPMENT. COORDINATE UTILITY TRANSFORMER LOCATION AND SECONDARY ROUTING TO BUILDING WITH UTILITY SERVICE PROVIDER PRIOR TO CONSTRUCTION. REFER TO SINGLE LINE DIAGRAM ON SHEET E200 FOR MORE INFORMATION.

6. ELECTRIC COOKTOP, 208V, 1P, 8KW. PROVIDE HARD WIRED CONNECTION TO J-BOX IN CABINET. COORDINATE EXACT LOCATION WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS. PROVIDE LOCKABLE CIRCUIT BREAKER IN PANEL AS DISCONNECTING MEANS TO COMPLY WITH NEC 422.31(B). PROVIDE 3 #8 CU, 1 #10 CU EGC. PROVIDE RECEPTACLE TO MATCH PLUG ON UNIT IF UNIT INSTALLED IS CORD AND PLUG CONNECTED.

7. COMBINATION MICROWAVE AND EXHAUST HOOD. 120V, 15A MAX. COORDINATE EXACT LOCATION WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS. PROVIDE 2 #12 CU, 1 #12 CU EGC. CORD AND PLÜG CONNECTION.

8. REFRIGERATOR 120V, 12A MAX. PROVIDE 2 #12 CU, 1 #12 CU EGC. CORD AND PLUG CONNECTION.

9. TELEVISION. PROVIDE 120V DUPLEX RECEPTACLE, DATA OUTLET AND COAX CABLE (BOTH WIRED BACK TO IT ROOM). MOUNT BETWEEN 18" AND 66" AFF. VERIFY MOUNTING HEIGHT PRIOR TO ROUGH-IN.

10. FOR KITCHEN AND BATHROOM RECEPTACLES ABOVE COUNTER. COORDINATE LOCATION AND PLACEMENT PRIOR TO ROUGH-IN. IF FULL BACKSPLASH IS USED MOUNT RECEPTACLES VERTICALLY. IFF FULL BACKSPLALSH IS NOT USED MOUNT RECEPTACLES HORIZONTALLY ABOVE BACKSPLASH.

F 11. MOUNT ISLAND/PENSULA RECEPTACLES 12" MAX BELOW TOP OF COUNTER.

12. COMBINATION SMOKE DETECTOR AND CARBON MONOXIDE SENSOR. 120V WITH BATTERY BACK-UP. DETECTORS SHALL
BE INTERCONNECTED AND INSTALLED IN
ACCORDANCE WITH IRC 314 AND 315,M
IF 908.7, NFPA 72 & 74 WITH SPECIAL ATTENTION GIVEN TO THE LOCATION OF THE DETECTOR IN THE VICINITY OF RETURN AIR GRILLES. (PROVIDE SMOKE DETECTOR ONLY WHERE ALLOWED BY

13. PROVIDE BACKBOX AND CONDUIT FOR CARD READER. COORDINATE EXACT REQUIREMENTS WITH ACCESS CONTROL CONSULTANT PRIOR TO CONSTRUCTION.

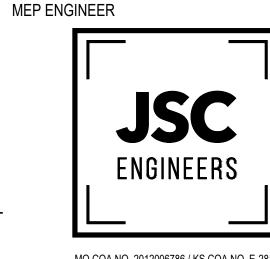
14. PROVIDE JUNCTION BOX AND HOMERUN CIRCUIT FOR GAS FIREPLACE CONTROLS. COORDINATE LOCATION OF JUNCTION BOX WITH FIREPLACE SUPPLIER.

15. JUNCTION BOX FOR CONNECTION TO BUILDING FIRE ALARM CONTROL PANEL BY OTHERS IF APPLICABLE. CONFIRM EXACT LOCATION WITH OWNER/FIRE ALARM CONTRACTOR ON SITE. MAKE CONNECTION ACCORDING TO MANUFACTURER'S LITERATURE AND NFPA REQUIREMENTS.

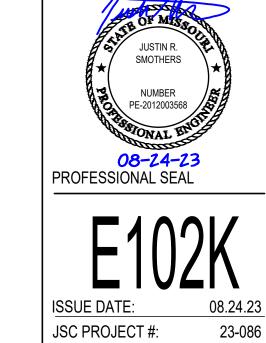
16. MAKE CONNECTION TO DUCT SMOKE DETECTOR BY OTHERS ACCORDING TO MANUFACTURER'S LITERATURE AND NFPA REQUIREMENTS. PROVIDE REMOTE TEST STATION WITH INDICATING LIGHT AT 48"AFF FOR CONNECTION TO DETECTOR.

17. WIRE EXHAUST FAN FOR CONTINUOUS-ON OPERATION. PROVIDE OVERRIDE-OFF MOTOR RATED DISCONNECT ABOVE CEILING AT DEVICE FOR MAINTENANCE.

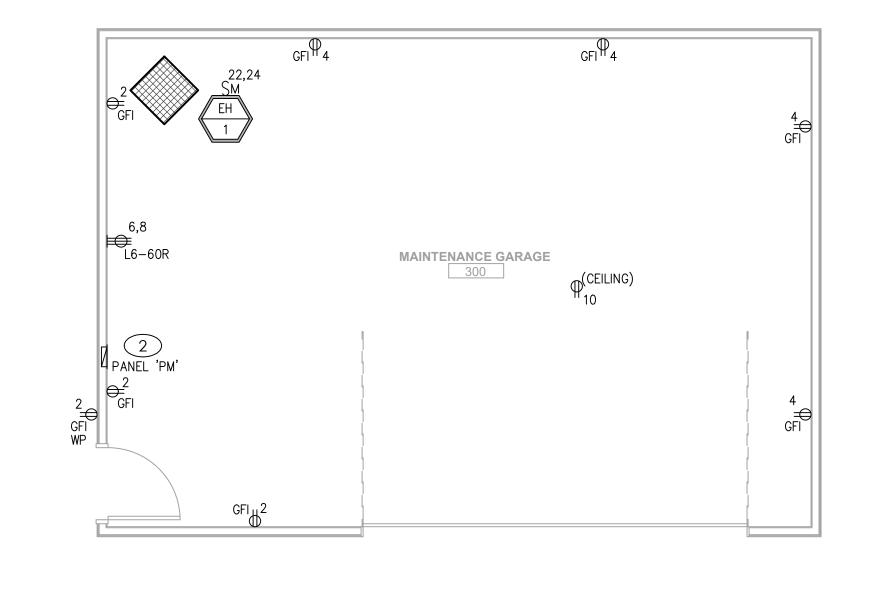
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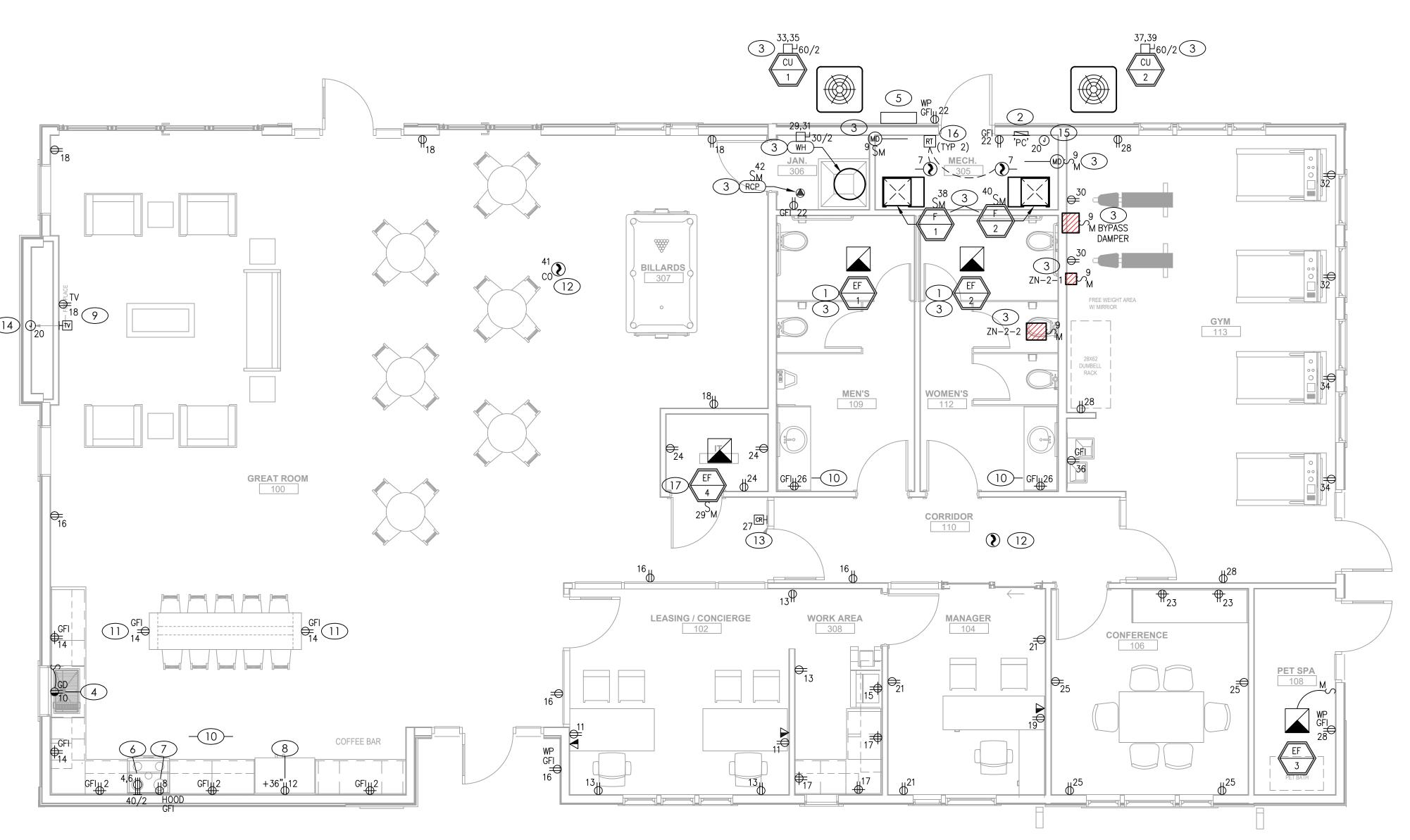
POWER PLAN - CLUBHOUSE & MAINTENANCE GARAGE



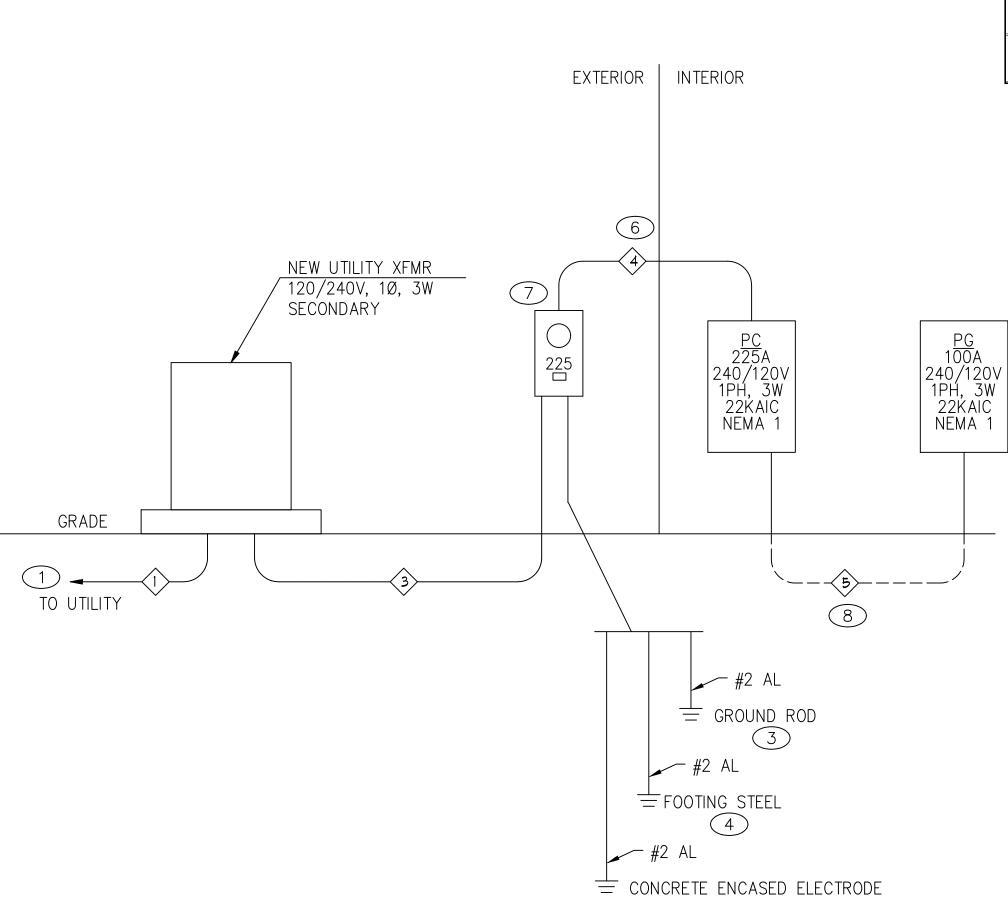
### POWER PLAN - MAINTENANCE GARAGE

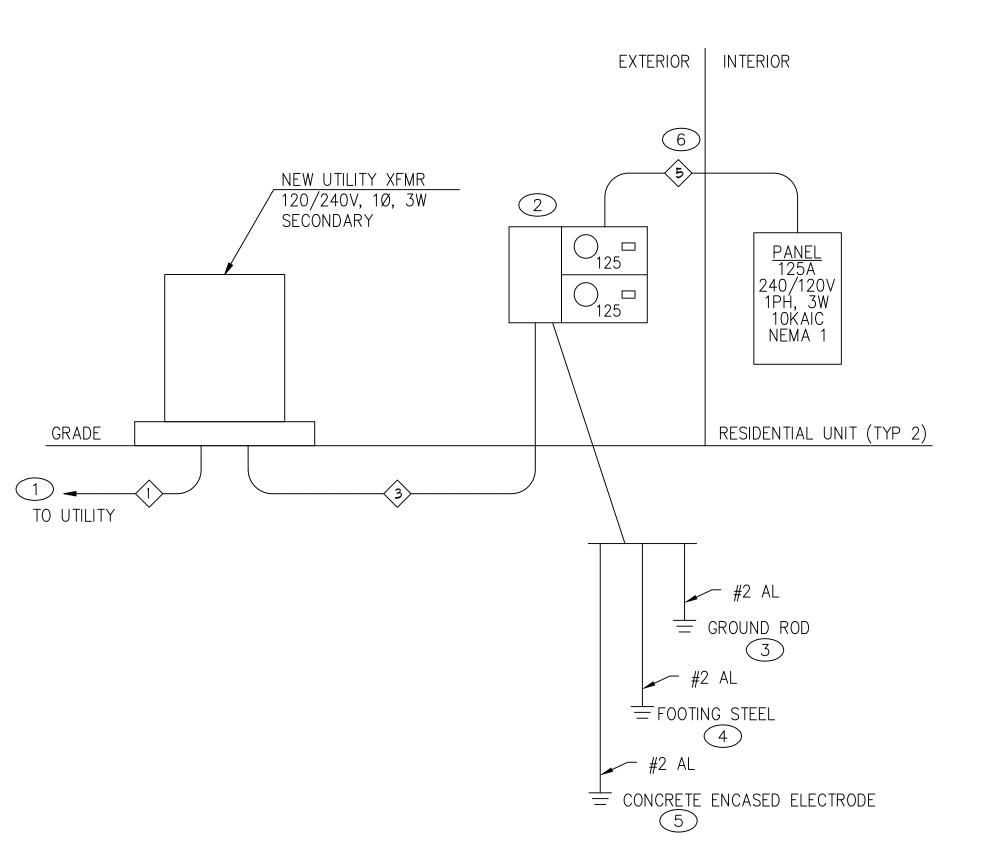
SCALE : 1/4" = 1'-0"





SCALE : NO SCALE





SINGLE LINE DIAGRAM - CLUBHOUSE

SINGLE LINE DIAGRAM - BUILDING B2 (TYP.)

SCALE : N/A

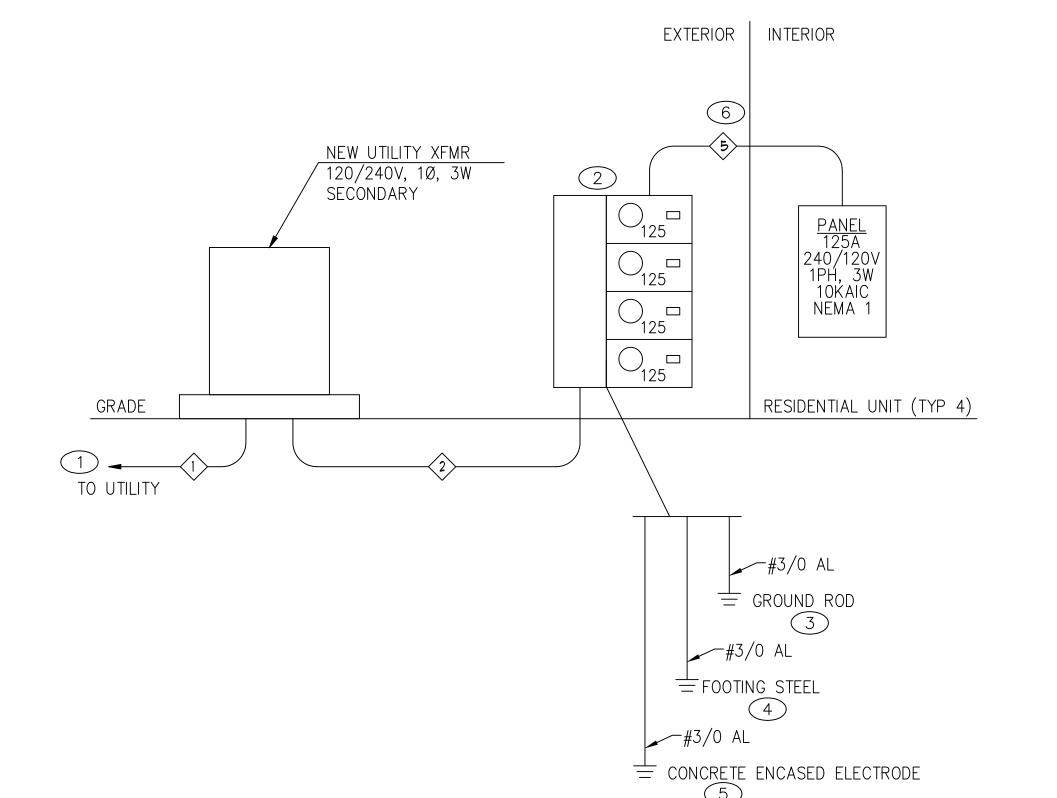
ELECTRICAL LIGHTING SCHEDULE (OR EQUAL, VERIFY ALL SELECTIONS AND FINISHES WITH OWNER OR ARCHITECT PRIOR TO ORDERING). MANUFACTURER **FIXTURE** VOLT MOUNTING LAMP TYPE REMARKS **AMPS** TYPE NAME CATALOG NUMBER 120 HALO SLD612/8030/WH SURFACE INCLUDED LED SURFACE MOUNTED LED DOWNLIGHT, 1200 LUMEN, 3000K, WHITE FINISH 120 **ROYAL PACIFIC** 1057-L SURFACE INCLUDED LED 52" 5-BLADE FAN, 3 SPEED, REVERSIBLE, WITH GLOBE LIGHT KIT, BRUSHED NICKEL FINISH 120 6542-77 INCLUDED LED DUAL VANITY WALL SCONCE, CHROME FINISH MINKA WALL 120 BILLIARDS TABLE PENDANT 100 INCLUDED LED BILLIARDS TABLE PENDANT LIGHT - OWNER SELECTED - \$300/FIXTURE ALLOWANCE OWNER SELECTED PENDANT HOME DECORATION 7434P-15 PENDANT INCLUDED LED COUNTERTOP PENDANT LIGHT, CHROME FINISH 120 120 OWNER SELECTED GREAT ROOM PENDANT 100 PENDANT INCLUDED LED GREAT ROOM PENDANT LIGHT - OWNER SELECTED - \$300/FIXTURE ALLOWANCE 120 COOPER SURFACE INCLUDED LED 4FT LED STRIP - MAINTENANCE GARAGE ST SERIES 120 GRDW24-CNL-L18-120-12CV-WAL INCLUDED LED TERON ENTRY LIGHT, FINISH BY ARCHITECT WALL PATIO LIGHT, BRONZE FINISH 120 NUVO 60-531 WALL INCLUDED LED COOPER LIGHTING SOLUTIONS (CLS) 120 150 WATT POST-TOP LUMINAIRE 150 POST-TOP INCLUDED LED LED POST-TOP FIXTURE - SPECIFICATION PER LEE'S SUMMIT STANDARDS - PROVIDE WITH 150 WATT LAMP PER LSMO STANDARDS. 120 **EMERGI-LITE** INCLUDED LED 12MPR12M-2-LG WALL EMERGENCY LIGHTING UNIT WITH 2 LED LAMPS AND 90 MIN. BATTERY PACK 120 **EMERGI-LITE** W-PR-612M-1-R-2-LA SURFACE INCLUDED LED EMERGENCY EXIT EGRESS COMBO LIGHTING UNIT WITH RED FACE EXIT SIGN AND 90 MIN. BATTERY PACK 120 EMERGI-LITE EF12-D-LED SURFACE INCLUDED LED OUTDOOR EMERGENCY REMOTE EGRESS LIGHTING UNIT 120 **EMERGI-LITE** SURFACE INCLUDED LED W-PREM-SNX-R EMERGENCY EGRESS SIGN WITH RED LETTERS AND 90 MINUTE BATTERY PACK

### # KEYED SLD NOTES

- 1. PROVIDE NEW CONDUIT TO UTILITY SOURCE. VERIFY EXACT LOCATION AND REQUIREMENTS WITH UTILITY PRIOR TO CONSTRUCTION.
- 2. NEW UTILITY METER STACK. COORDINATE EXACT REQUIREMENTS WITH UTILITY PRIOR TO CONSTRUCTION.
- 3. PROVIDE NEW GROUND PER NEC 250.52(A)(5).
- 4. BOND PER NEC 250.52(A)(2).
- 5. PROVIDE NEW GROUND PER NEC 250.52(A)(3).
- 6. COORDINATE EXACT LOCATION OF EXTERIOR PENETRATION INTO THE BUILDING WITH ARCHITECT AND OWNER PRIOR TO CONSTRUCTION.
- 7. NEW SINGLE METER, 225A, 120/240V WITH SERVICE DISCONNECTING MEANS. COORDINATE EXACT REQUIREMENTS WITH UTILITY PRIOR TO CONSTRUCTION.
- 8. DERIVE SERVICE FEEDER FOR GARAGE PANEL FROM SERVICE ENTRANCE EQUIPMENT SERVING BUILDING B. 4 INSTANCES IN PROJECT. REFER TO ELECTRICAL SITE PLAN ON SHEET E101 FOR INSTANCES AND LOCATIONS.

\*\*\*NOTE: ALL 120-VOLT, SINGLE-PHASE, 15- AND 20- AMPERE BRANCH CIRCUITS SUPPLYING OUTLETS OR DEVICES INSTALLED IN DWELLING UNIT KITCHENS, FAMILY ROOMS, DINING ROOMS, LIVING ROOMS, PARLORS, LIBRARIES, DENS, BEDROOMS, SUNROOMS, RECREATION ROOMS, CLOSETS, HALLWAYS, LAUNDRY AREAS, OR SIMILAR ROOMS SHALL BE PROTECTED BY AN ARC-FAULT CIRCUIT-INTERRUPTER ACCORDING TO NEC 210.12(A)(1) THROUGH (6).\*\*\*

FEED	ER SCHEDULE (conductors to be copper unless noted otherwise)
FEEDER NUMBER	CONDUIT AND CONDUCTOR SIZES
1>	(1) 4" CONDUIT FOR UTILITY USE
2>	(2) 3" CONDUIT EACH W/ (3) #350KCMIL AL
3>	(1) 3" CONDUIT W/ (3) #350KCMIL AL
4>	(1) 2-1/2" CONDUIT W/ (3) #300KCMIL AL & 1 #2 AL GND
5>	(1) 1-1/2" CONDUIT W/ (3) #2/0 AL & 1 #4 AL GND



### SINGLE LINE DIAGRAM - BUILDINGS A,B,C,D (TYP.) 1 SCALE : N/A

### **VOLTAGE DROP CRITERIA**

PROVIDE WIRING PER THE TABLE BELOW, UNLESS NOTED OTHERWISE. (NOTE: DISTANCE IS ORTHOGONAL DISTANCE TO CENTER OF LOAD).

120 VOLT - 20 AMP CIRCUITS 0-100 FEET: #12 101-150 FEET: #10 151-200 FEET: #8 201-300 FEET: #6 301-450 FEET: #4

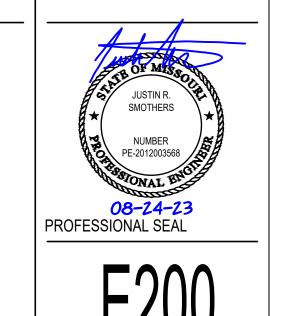
451-750 FEET: #2

601-1000 FEET: #4

<u>277 VOLT - 20 AMP CIRCUITS</u> 0-150 FEET: #12 151-250 FEET: #10 251-400 FEET: #8 401-600 FEET: #6

> MEP ENGINEER **JSC ENGINEERS**

> > MO COA NO. 2012006786 / KS COA NO. E-2818 1925 CENTRAL STREET, SUITE 201 KANSAS CITY, MO 64108 phone: (816) 272-5289 email: jsmothers@jscengineers.com



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ENANDO/ SUMMIT,

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**COLLINS WEBB** 

**REVISION DATES:** 

ARCHITECTURE, LLC

JSC PROJECT #: 23-046

**ELECTRICAL SCHEDULES AND** DIAGRAMS

LINE-SIDE LUGS: MECHANICAL

EQUIPMENT GROUND BUS

AIC RATING: 22000 FULLY RATED

VOLTAMPS/PHASE WIRE BKR P P BKR WIRE VOLTAMPS/PHASE
A B NO. AMP AMP NO. A B

 1,140
 12
 20
 1
 1
 20
 12
 540
 RCPT - KITCHEN COUNTER 1

 950
 12
 20
 1
 2
 40
 8
 3,500
 RCPT - OVEN

SPARE

10,360 10,860

CONN. VA DF

3,000 PWR - RANGE

1.00

PROVISIONAL SPACE

PROVISIONAL SPACE

1.25 TOTAL DEMAND

PROVISIONAL SPACE

PROVISIONAL SPACE

PROVISIONAL SPACE

PROVISIONAL SPACE PROVISIONAL SPACE

SUB-FEED THRU TO MAINTENANCE GARAGE PANEL "PM"

SUBTOTAL

TOTAL DEMAND

FEED THRU CONNECTION: #4/0

LINE-SIDE LUGS: MECHANICAL

EQUIPMENT GROUND BUS

PROVISIONAL SPACE

SERVES: CLUBHOUSE

MOUNTING: SURFACE

LOCATION: MECH 305

3	LTG-CLUBHOUSE INT GYMOFFICES	950	12	20	1	2	40	8	3,500	RCPT-OVEN	4						
5	LTG-CLUBHOUSE EXTERIOR	450	12	20	1	2	20	1	2	20	1	2	40	8	3,500	RCPT-RANGE HOOD	8
7	PWR - DUCT SMOKE DETECTORS	400	12	20	1	1	20	12	500	RCPT-GARBAGE DISPOSAL	10						
9	PWR - ZONE DAMPER/MOTOR DAMPERS	500	12	20	1	1	20	12	500	RCPT-GARBAGE DISPOSAL	10						
11	RCPT-LEASING DESKS	1,000	12	20	1	1	20	12	720	RCPT-KITCHEN COUNTER 2	14						
13	RCPT-LEASING/WORK CONVENIENCE	720	12	20	1	1	20	12	900	RCPT-FOH CONVENIENCE	14						
15	RCPT-WORK AREA ABOVE COUNTER	540	12	20	1	1	20	12	900	RCPT-GREAT ROOM CONVENIENCE	18						
19	RCPT-MANAGER DESK	500	12	20	1	1	20	12	800	PWR-FIRE PLACE	20						
21	RCPT-MANAGER CONVENIENCE	540	12	20	1	1	20	12	540	RCPT-JAN/MECH/EXTERIOR	22						
22	RCPT-CONFERENCE COUNTER	360	12	20	1	1	20	12	540	RCPT-JAN/MECH/EXTERIOR	22						
23	RCPT-CONFERENCE GENERAL	720	12	20	1	1	20	12	540	RCPT-JAN/MECH/EXTERIOR	24						
25	RCPT-CONFERENCE GENERAL	720	12	20	1	1	20	12	540	RCPT-GYM/WEST EQUIP	30						
26	RCPT-GYM/WEST EQUIP	30	SECTION:2														

CONN. VA DF LOAD

1,050 1.00 LRG MOTOR

 SUPP HEAT
 4,500
 1.00
 SHOW WNDW

MISC EQUIP 1,800 1.00 LTG TRACK

SIGN/DISP

1.25 KITCHEN

AIC RATING: 10000 FULLY RATED

SERVES: BUILDING A

4,500 8 40 2 2 40 8

9,000 0 SIGN/DISP 1,450 1.25 KITCHEN

 SUPP HEAT
 1.00
 SHOW WNDW

 MISC EQUIP
 600
 1.00
 LTG TRACK

LOAD CONN. VA DF LOAD CONN. VA DF

1.00 LRG MOTOR

MOUNTING: RECESSED LOCATION: GARAGE

VOLTAMPS/PHASEWIRE BKRPPBKRWIRE VOLTAMPS/PHASEABNO.AMPIAMPNO.AB

24,005 25,335

COOLING

HEATING

TOTAL PNLBD - VA 70,560 RECEPTACLES 36,870 1.0/.5 EXISTING

302 LIGHTING

AMPS 294 MOTORS

GFI = GROUND-FAULT INTERRUPTER CIRCUIT BREAKER

7 \*RCPT - CORR. / LAUNDRY / CORR. 1ST F 900

21 \*RCPT - COMMUNICATIONS CABINET 200

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SMOTHERS

08-24-23 PROFESSIONAL SEAL

MEP ENGINEER **ENGINEERS** MO COA NO. 2012006786 / KS COA NO. E-2818

1925 CENTRAL STREET, SUITE 201

KANSAS CITY, MO 64108 phone: (816) 272-5289 email: jsmothers@jscengineers.com JSC PROJECT #: 23-046

PANELBOARD SCHEDULES

BUS MAIN VOLT	NELBOARD: P AMPS: 125A SIZE/TYPE: 100A MCE TS/PHASE: 120/240V, 1 TION: 1	3	W)			AIC R SER\ MOUI		B: AIN i: SU	TEN JRF	ACE	PC 6 MINIM E GAR	UM FULLY AGE	RATED		LINE-SIDE LUGS: MECH EQUIPMENT GROUI	
CKT	DESCRIPTION	ON			IPS/PHASE			Р	Р						DESCRIPTION	CK <sup>-</sup>
NO.				A	В	_	AMP			AMP		Α	В			NC
	LTG - MAINTENANCE	GARAGE		500		12	20		1	20	12	900			MAINTENANCE GARAGE	2
-	SPARE SPARE						20		1	20 60	12	5.000	720	RCPT - G	GARAGE 2	4
- 1	SPARE			-	20 20	1	2	60	4	5,000	5,000	IKCPI-L	.o-60R	6 8		
-	SPARE						20	1	1	20	12	500	5,000	RCPT - G	SARAGE DOOR	10
-	PROVISIONAL SPACE				20		1	20	12	500			ONAL SPACE	12		
13 PROVISIONAL SPACE									1						ONAL SPACE	14
15	PROVISIONAL SPACE					1	1					PROVISION	ONAL SPACE	16		
17	PROVISIONAL SPACE					1	1					PROVISION	ONAL SPACE	18		
19	PROVISIONAL SPACE							1	1					PROVISION	ONAL SPACE	20
	PROVISIONAL SPACE							1	2	40	8	3,750		PWR - El	H-1	22
23	PROVISIONAL SPACE	-						1					3,750			24
	SUBTOTAL	-		500								10,150	9,470		SUBTOTAL	
	TOTAL PHASE A - VA	10,650	LOAD		CONN. V	A	DF		LO.	AD		CONN. VA		DF		
	AMPS	89	COOLIN	G			0			FRIG				1.00		
	TOTAL PHASE B - VA	9,470	HEATIN	3	7,500		1.00			SN/DIS				1.25		
	AMPS	79	LIGHTIN		500		1.25			CHE				1.00		
	TOTAL PNLBD - VA		RECEP		12,120		1.0/.5			ISTING				1.00	TOTAL DELIVER	
	AMPS	84	MOTOR				1.00			G MO				1.25	TOTAL DEMAND	) (A
			SUPP H				1.00			G TRA	MDW			1.25 1.00	19,185	0 A
DANIE	ELBOARD NOTES		IMISC EC	(UIF			1.00		-   (	JIKA	UT\			1.00	0	<u> </u>

BUS MAIN VOL7	NELBOARD: B (NEW) AMPS: 150A SIZE/TYPE: MLO S/PHASE: 120/240V, 1PH, 3W TON: 1	AIC R SER\ MOUI	ROM: ATING ES: BI NTING ATION:	UILI : RE	DIN	G B SSEC	UTILI LY RA				LINE-SIDE LUGS: MECHANICAL EQUIPMENT GROUND BUS				
CKT NO.	DESCRIPTION		VOLTAM A	PS/PHASE B	WIRE NO.	BKR AMP	Р	Р	BKR AMP	WIRE NO.	VOLTAMI A	PS/PHASE B		DESCRIPTION	CKT NO.
1	*LTG - FIRST FLOOR		550	_	12	20	1	1	20	12	900	_	*I TG - S	ECOND FLOOR	2
3	*RCPT - PRIMARY BEDROOM		000	900	12	20	1	1	20	12	000	720		BEDROOM1	4
5	*RCPT-BEDROOM3		900		12	20	1	1	20	12	720	. = 0		BEDROOM2	6
7	*RCPT - CORR. / LAUNDRY / COF	RR. 1ST F		900	12	20	1	1	20	12		600	*PWR - S	MOKE / HEAT DETECTORS	8
9	*RCPT - DINING / LIVING ROOM		1,440		12	20	1	1	20	12	180		*RCPT-	HALF-BATH GFI	10
11	*RCPT - KITCHEN COUNTER		,	1,200	12	20	1	1	20	12		1,800	*RCPT-	BATH GFI	12
13	*RCPT - KITCHEN COUNTER	1,200		12	20	1	1	20	12	1,800		*RCPT-	P. BATH GFI	14	
15	*RCPT - KITCHEN ISLAND / COU		1,800	12	20	1	1	20	12		800	#RCPT-	REFRIGERATOR	16	
17	*RCPT - MICROWAVE / HOOD		1,500		12	20	1	1	20	12	1,200		#RCPT-	GARBAGE DISPOSAL	18
19	*RCPT - GARAGE GFI'S			360	12	20	1	1	20	12		600	#RCPT -	DISHWASHER	20
21	*RCPT - COMMUNICATIONS CAB	INET	200		12	20	1	1	20	12	360		*RCPT-	GARAGE GFI'S	22
23	*SPARE					20	1	1	20	12		1,800		WASHER	24
25	*SPARE					20	1	1	20				*SPARE		26
27	^PWR - AHU			4,500	8	40	2	2	30	10		2,500	PWR - D	RYER	28
29			4,500								2,500				30
	^PWR - CU			4,500	8	40	2	2	40	8		3,000	PWR - R	ANGE	32
33			4,500								3,000				34
	PROVISIONAL SPACE						1	1						ONAL SPACE	36
	PROVISIONAL SPACE						1	1						ONAL SPACE	38
	PROVISIONAL SPACE						1	1						ONAL SPACE	40
41	PROVISIONAL SPACE						1	1					PROVISI	ONAL SPACE	42
	SUBTOTAL		14,790	14,160							10,660	11,820		SUBTOTAL	
	TOTAL PHASE A - VA 25,450	LOAD		CONN. W	Ą	DF		LO			(	CONN. VA			
	AMPS 212	COOLIN		9,000		1.00			FRIG				1.00		
	TOTAL PHASE B - VA 25,980	HEATING		9,000		0			SN/DIS				1.25		
	AMPS 217	LIGHTIN		1,450				CHE				1.00			
	TOTAL PNLBD - VA 51,430	RECEPT		31,380		1.0/.5			ISTING	1			1.00		_
	AMPS 214	MOTORS				1.00			G MO				1.25	TOTAL DEMAND	
		SUPP HE				1.00				NDW			1.25	32,103 V	
	T DO ADD NOTES	MISC EQ	UIP	600		1.00		LI	G TRA	UN			1.00	134	^
	ELBOARD NOTES * = AFI-TYPE BREAKER ^ = HACR-TYPE BREAKER # = AFI/GFI-TYPE COMBO BREAK	ER													

ANELBOARD: B (NEW) S AMPS: 150A N SIZE/TYPE: MLO .TS/PHASE: 120/240V, 1PH, 3W CTION: 1	AIC R SER\ MOU	FED FROM:  AIC RATING: 10000 FULLY RATED  SERVES: BUILDING B  MOUNTING: RECESSED  LOCATION: GARAGE												
DESCRIPTION		VOLTAM A	PS/PHASE B	WIRE NO.	BKR AMP	Р		BKR AMP	WIRE NO.	VOLTAMI A	PS/PHASE B		DESCRIPTION	CK NC
*LTG - FIRST FLOOR		550		12	20	1	1	20	12	900		*LTG - S	ECOND FLOOR	2
*RCPT - PRIMARY BEDROOM			900	12	20	1	1	20	12		720	*RCPT -	BEDROOM 1	4
*RCPT-BEDROOM3		900		12	20	1	1	20	12	720	. = -	*RCPT -	BEDROOM 2	6
*RCPT - CORR. / LAUNDRY / COF	RR. 1ST F		900	12	20	1	1	20	12		600	*PWR - S	SMOKE / HEAT DETECTORS	8
*RCPT - DINING / LIVING ROOM		1,440		12	20	1	1	20	12	180		*RCPT -	HALF-BATH GFI	10
*RCPT - KITCHEN COUNTER	,	1,200	12	20	1	1	20	12		1,800	*RCPT -	BATH GFI	12	
*RCPT - KITCHEN COUNTER		1,200	,	12	20	1	1	20	12	1,800	,	*RCPT -	P. BATH GFI	14
*RCPT - KITCHEN ISLAND / COU	,	1,800	12	20	1	1	20	12	,	800	#RCPT -	REFRIGERATOR	16	
*RCPT - MICROWAVE / HOOD		1,500	ŕ	12	20	1	1	20	12	1,200		#RCPT -	GARBAGE DISPOSAL	18
*RCPT - GARAGE GFI'S		,	360	12	20	1	1	20	12	,	600	#RCPT -	DISHWASHER	20
*RCPT - COMMUNICATIONS CAB	INET	200		12	20	1	1	20	12	360		*RCPT-	GARAGE GFI'S	22
*SPARE				20	1	1	20	12		1,800	*RCPT-	WASHER	24	
*SPARE				20	1	1	20				*SPARE		26	
^PWR - AHU			4,500	8	40	2	2	30	10		2,500	PWR - D	RYER	28
		4,500								2,500				30
^PWR - CU			4,500	8	40	2	2	40	8		3,000	PWR - R	ANGE	32
		4,500								3,000				34
PROVISIONAL SPACE						1	1					PROVISI	ONAL SPACE	36
PROVISIONAL SPACE						1	1					PROVISI	ONAL SPACE	38
PROVISIONAL SPACE						1	1					PROVISI	ONAL SPACE	40
PROVISIONAL SPACE						1	1					PROVISI	ONAL SPACE	42
SUBTOTAL		14,790	14,160							10,660	11,820		SUBTOTAL	•
TOTAL PHASE A - VA 25,450	LOAD		CONN. V	Ā	DF		LOA	AD.			ONN. VA	DF		
AMPS 212	COOLIN	G	9,000		1.00		REF	RIG				1.00		
TOTAL PHASE B - VA 25,980	HEATING	3	9,000		0		SIG	N/DIS	P			1.25		
AMPS 217	LIGHTIN	G	1,450		1.25		KIT	CHEN	l			1.00		
TOTAL PNLBD - VA 51,430	RECEPT	ACLES	31,380		1.0/.5		EXI	STINC	3			1.00		
AMPS 214	MOTORS		* 18 (18 (18 (18 (18 (18 (18 (18 (18 (18		1.00		LRC	3 MOT	OR		**	1.25	TOTAL DEMAND	
<u> </u>	SUPP HE	EAT			1.00		SH	N WC	NDW			1.25	32,103 \	VΑ
	MISC EQ	UIP	600		1.00		LT	TRA	CK			1.00	134	· A
IELBOARD NOTES														
* = AFI-TYPE BREAKER														
^ = HACR-TYPE BREAKER														
# = AFI/GFI-TYPE COMBO BREAK	FR													
# - MINOLITITE COMIDO DICEAN	L11													

	'S/PHASE: 120/240V, 1F	MOUNTING: RECESSED														
	ION: 1	11, 300					ATION:	–			,					
CKT	DESCRIPTION	N		LVOLTAM	PS/PHASE						MDD	VOLTA MI	DS/DHASE		DESCRIPTION	To
NO.	DEGOTAL TIO	A	В		AMP			AMP	NO.	A	В		DESCRIPTION			
1	*LTG - FIRST FLOOR	550		12	20	1	1	20	12	900		*LTG - SE	COND FLOOR	Ť		
3	*RCPT - PRIMARY BED			900	12	20	1	1	20	12		720	*RCPT-I	BEDROOM 1		
5	*RCPT-BEDROOM3	900		12	20	1	1	20	12	720		*RCPT - I	BEDROOM 2			
7	*RCPT - CORR. / LAUN	DRY/CO	RR. 1ST F		900	12	20	1	1	20	12		600	*PWR - S	MOKE / HEAT DETECTORS	
9	*RCPT - DINING / LIVIN	IG ROOM		1,440		12	20	1	1	20	12	180		*RCPT-I	HALF-BATH GFI	
11	*RCPT - KITCHEN COL	JNTER			1,200	12	20	1	1	20	12		1,800	*RCPT-I	BATH GFI	
13 *RCPT - KITCHEN COUNTER				1,200		12	20	1	1	20	12	1,800		*RCPT-I	P. BATH GFI	
15 *RCPT - KITCHEN ISLAND / COUNTER					1,800	12	20	1	1	20	12		800	#RCPT-	REFRIGERATOR	
17						12	20	1	1	20	12	1,200		#RCPT-	GARBAGE DISPOSAL	
19	19 *RCPT - GARAGE GFI'S				360	12	20	1	1	20	12		600	#RCPT-	DISHWASHER	
21	21 *RCPT - COMMUNICATIONS CABINET			200		12	20	1	1	20	12	360		*RCPT - 0	GARAGE GFI'S	
23 *SPARE							20	1	1	20	12		1,800	*RCPT - \	NASHER	
25	5 *SPARE						20	1	1	20				*SPARE		
27 PWR - AHU				4,500	8	40	2	2	30	10		2,500	PWR - DI	RYER		
29	29											2,500				
31	^PWR - CU				4,500	8	40	2	2	40	8		3,000	PWR - RANGE		
33				4,500								3,000				
35	PROVISIONAL SPACE							1	1					PROVISION	DNAL SPACE	
37	PROVISIONAL SPACE							1	1					PROVISION	DNAL SPACE	
	PROVISIONAL SPACE							1	1						DNAL SPACE	
41	PROVISIONAL SPACE							1	1					PROVISION	DNAL SPACE	
	SUBTOTAL			14,790	14,160							10,660	11,820		SUBTOTAL	
	TOTAL PHASE A - VA	25,450	LOAD		CONN. V	A	DF		LO.	AD			CONN. VA	DF		
	AMPS	212	COOLIN	G	9,000		1.00		REFRIG					1.00		
TOTAL PHASE B - VA 25,980 HEATIN		HEATING	3	9,000		0		SIGN/DISP		SP			1.25			
AMPS 217 LIGHTIN		LIGHTIN	_	1,450		1.25		KIT	CHEN	J			1.00			
	TOTAL PNLBD - VA	51,430	RECEPT	ΓACLES	31,380		1.0/.5		EXI	ISTING	3			1.00		
	AMPS	214	MOTORS				1.00	II		G MOT				1.25	TOTAL DEMAND	
			SUPP H				1.00		ı	OW W	1			1.25	32,103 \	
MISC EQ				)UIP	600		1.00		LTG TRACK					1.00	134	Α

RESIDENTIAL UNIT ELECTRICAL LOAD CALCULATION

(B)(1) | (B)(2) | (B)(3) | (B)(4) | (C)(1-6) | TOTAL VA |

(240V/1PH)

97A

114A

116A

LINE-SIDE LUGS: MECHANICAL

EQUIPMENT GROUND BUS

UNIT FLOOR AREA NEC 220.80 "PART IV. OPTIONAL FEEER AND SERVICE LOAD CALCUALTIONS"

FED FROM:

SERVES: BUILDING C

AIC RATING: 10000 FULLY RATED

UTILITY

\*\*\*HVAC DESIGN IS BY OTHERS — ELECTRICAL LOADING IS ASSUMED

| A/A REV | 1230 | 3690VA | 4500VA | 6000VA | 0VA | 9000VA | 23190VA

B/B REV | 1450 | 4350VA | 4500VA | 6000VA | 0VA | 12500VA | 27350VA

C/C REV | 1584 | 4752VA | 4500VA | 6000VA | 0VA | 12500VA | 27752VA

- CONFIRM WITH MECHANICAL ENGINEERED DRAWINGS PRIOR TO CONSTRUCTION.

\* = AFI-TYPE BREAKER ^ = HACR-TYPE BREAKER # = AFI/GFI-TYPE COMBO BREAKER

PANELBOARD: C (NEW)

BUS AMPS: 150A

MAIN SIZE/TYPE: MLO

PANELBOARD SCHEDULES

PANELBOARD: PC (NEW)

VOLTS/PHASE: 120/240V, 1PH, 3W

1 LTG - CLUBHOUSE INT MAIN 1

3 LTG - CLUBHOUSE INT GYMOFFICES 1

CKT DESCRIPTION

BUS AMPS: 225A

SECTION: 1

SECTION: 2

31 PWR - EF-3

49 SPARE

33 PWR - CU-1 (HACR)

37 PWR - CU-2 (HACR)

43 PWR - WATER HEATER

51 PROVISIONAL SPACE

53 PROVISIONAL SPACE

55 PROVISIONAL SPACE

7 PROVISIONAL SPACE

59 PROVISIONAL SPACE

PANELBOARD NOTES

BUS AMPS: 150A

23 \*SPARE 25 \*SPARE 27 ^PWR - AHU

31 ^PWR - CU

35 PROVISIONAL SPACE 37 PROVISIONAL SPACE

39 PROVISIONAL SPACE

41 PROVISIONAL SPACE

PANELBOARD NOTES

\* = AFI-TYPE BREAKER

^ = HACR-TYPE BREAKER

# = AFI/GFI-TYPE COMBO BREAKER

MAIN SIZE/TYPE: MLO

41 PWR - SMOKE DETECTOR / FACP

SUBTOTAL

AMPS 286
TOTAL PHASE B - VA 36,195
AMPS 302

PANELBOARD: A (NEW)

VOLTS/PHASE: 120/240V, 1PH, 3W

3 \*RCPT - PRIMARY BEDROOM

9 \*RCPT - DINING / LIVING ROOM

15 \*RCPT - KITCHEN ISLAND / COUNTER

TOTAL PHASE B - VA 24,980 HEATING

AMPS 208 LIGHTING

TOTAL PNLBD - VA 49,430 RECEPTACLES 29,380 1.0/.5 EXISTING

SUPP HEAT

AMPS 206 MOTORS

11 \*RCPT - KITCHEN COUNTER 13 \*RCPT - KITCHEN COUNTER

17 \*RCPT - MICROWAVE / HOOD 19 \*RCPT - GARAGE GFI'S

1 \*LTG - FIRST FLOOR

5 \*RCPT-BEDROOM3

OTAL PHASE A - VA 34,365 LOAD

MAIN SIZE/TYPE: MLO