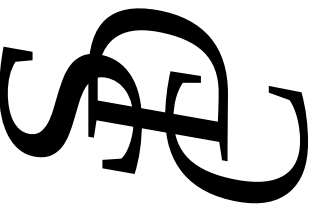


GLOSS' NAILS
470 NW CHIPMAN ROAD
LEES SUMMIT, MISSOURI

ENGINEERING, INC.
Consulting Structural and Civil Engineers

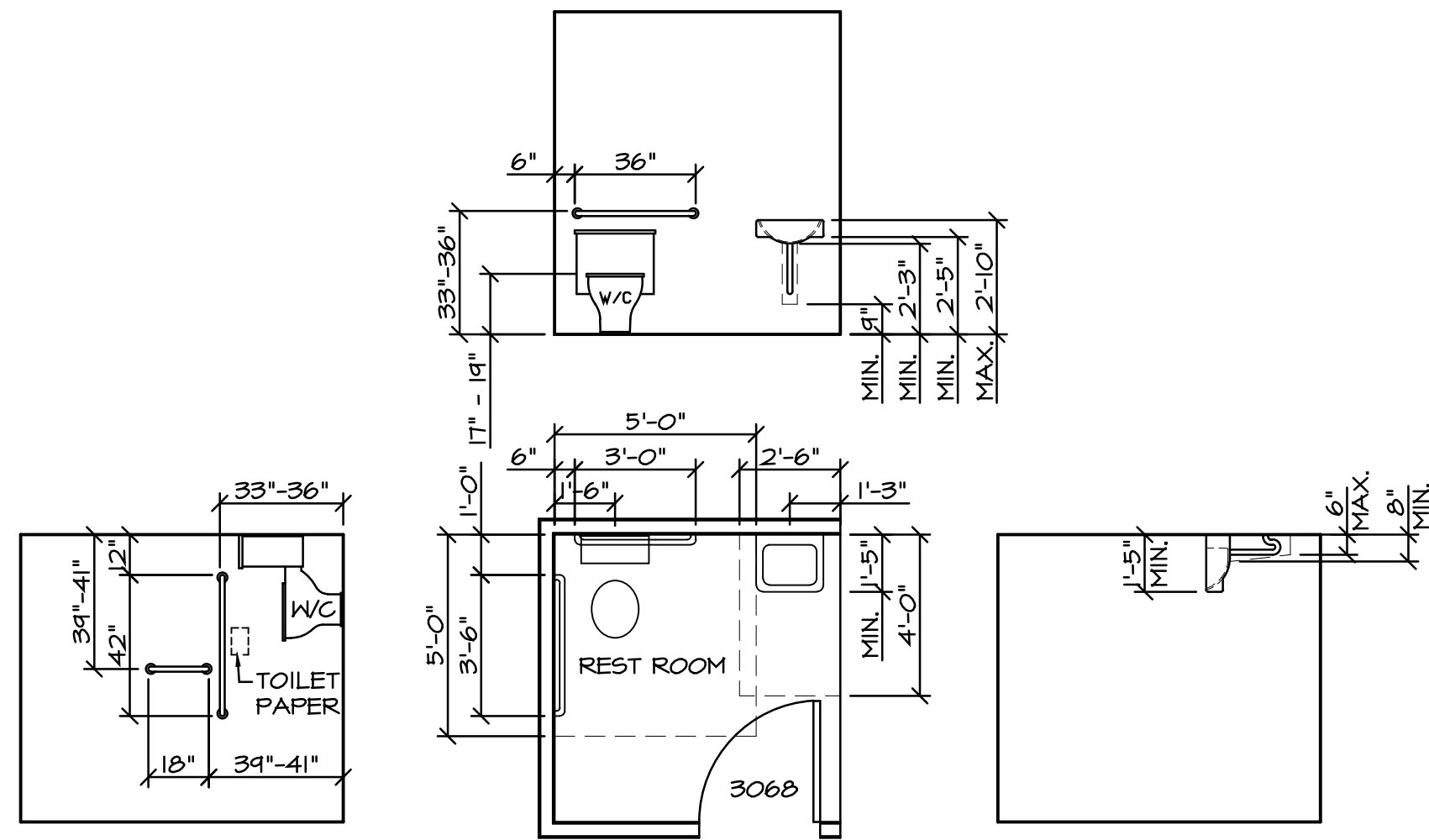
5907 Raytown Trafficway
Raytown, Missouri 64133
816-356-1445 Fax: 816-356-1477



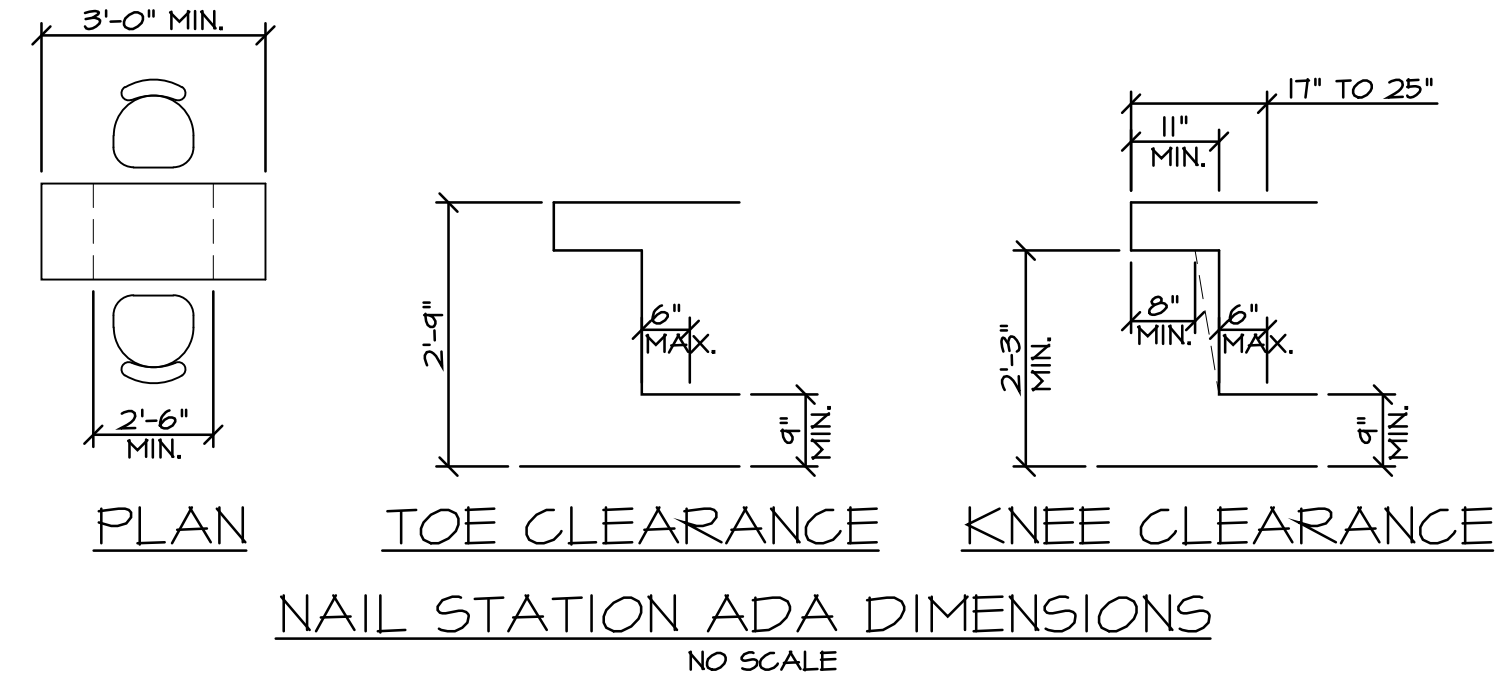
DATE:	6/15/20
REVISION	
1	7/9/20
2	
3	
4	

DWG.

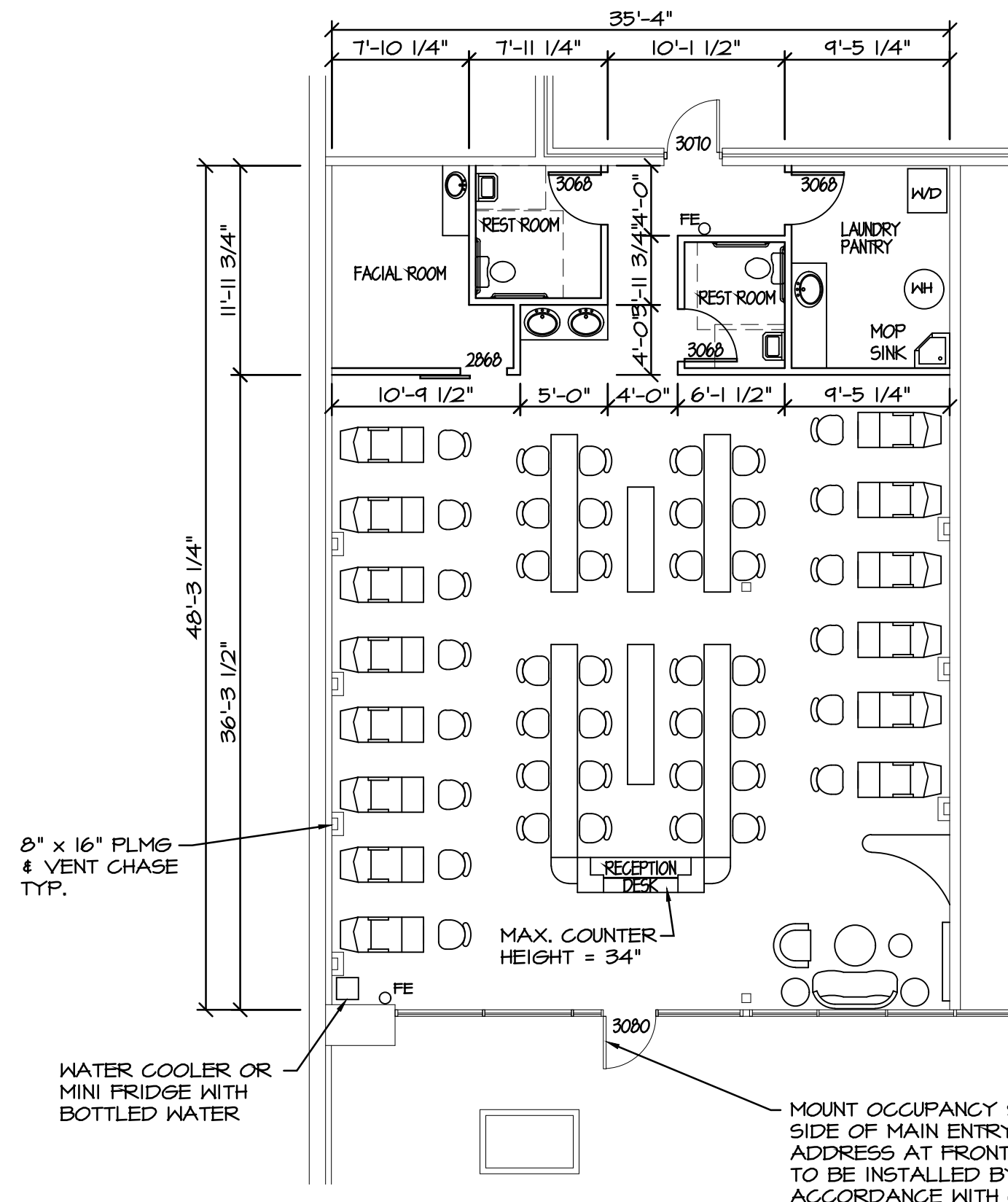
1



REST ROOM ADA DIMENSIONS
SCALE: 1/4" = 1'-0"



NAIL STATION ADA DIMENSIONS
NO SCALE



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



NEW WALLS / DOORS
EXIST. WALLS / DOORS

TENANT FLOOR AREA = 1,808 SQ. FT.
OCCUPANT LOAD = 62 (14 PEDICURE STATIONS @ 2 PER CHAIR)
(14 MANICURE STATIONS @ 2 PER TABLE)
(86 S.F. WAITING AREA @ 15 S.F. / OCC.)

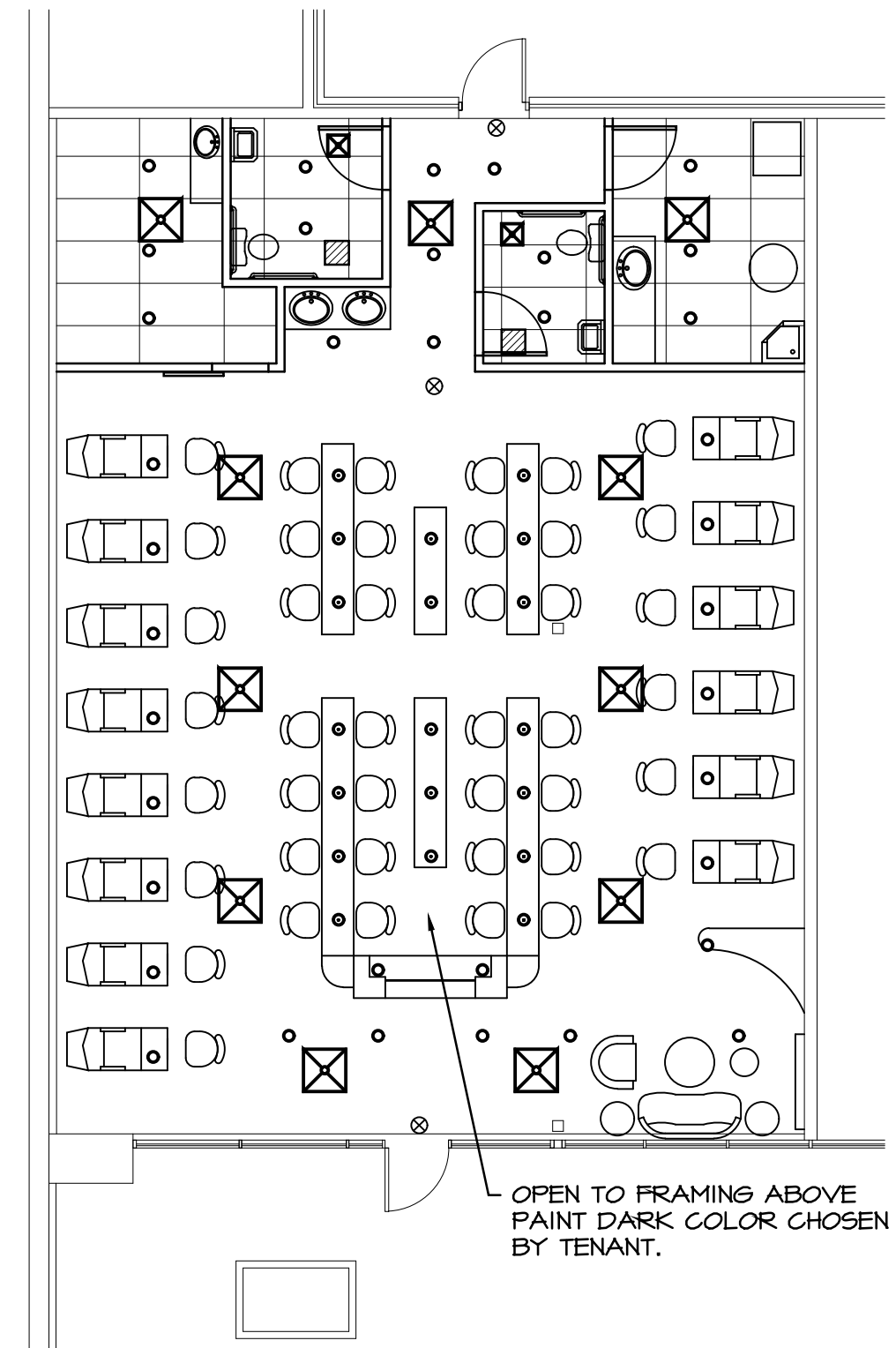
OCCUPANCY GROUP = B
CONSTRUCTION TYPE = II-B

ALL WORK SHALL CONFORM TO:

GOVERNING BUILDING CODE = 2018 IBC
MECHANICAL CODE = 2018 IMC
PLUMBING CODE = 2018 IPC
ELECTRICAL CODE = 2017 NEC
FIRE CODE = 2018 IFC
FUEL GAS CODE = 2018 IFGC
ANSI A117.1-2017

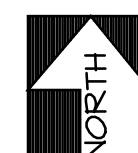
NOTES:

1. CONTRACTOR TO PROVIDE 6" x 20 GA SHEET METAL OR WOOD BLOCKING AT WALL STUDS TO SECURE GRAB BARS AT REST ROOMS.
2. DOOR HANDLES, PULLS, LATCHES, LOCKS, AND OTHER DEVICES SHALL CONFORM TO IBC SECTION 1008.1.4 AND IBC CHAPTER 11 FOR ACCESSIBILITY.
3. INTERIOR WALLS SHALL CONSIST OF METAL STUDS AT 16" ON CENTER WITH 1/2" GYPSUM BOARD EACH SIDE.
4. VERIFY ADDRESSING ON FRONT AND REAR DOORS. IF NOT PRESENT OR DAMAGED, PROVIDE NEW NUMBERS WITH MIN. HEIGHT OF 4" AND MIN. STROKE OF 1/2".
5. PROVIDE 2 - 5 LB. TYPE 2A-10BC FIRE EXTINGUISHER IN A CONSPICUOUS LOCATION ALONG NORMAL PATH OF TRAVEL. MOUNT NO HIGHER THAN 48" OFF THE FLOOR AND INSTALL LOCATION SIGNS ABOVE THE EXTINGUISHERS. EXTINGUISHERS SHALL BE TAGGED.
6. VERIFY PRESENCE OF SMOOTH, HARD, NON-ABSORBANT WALL SURFACE WITHIN 24" OF MOP SINK AND TOILETS. COMPLIANT SURFACE SHALL BE MINIMUM 48" A.F.F.



NOTE: CEILING HEIGHT = 8'-0" A.F.F.

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

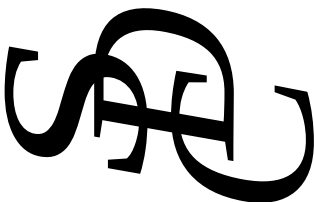


GLOSS NAILS
470 NW CHIPMAN ROAD
LEES SUMMIT, MISSOURI

ENGINEERING, INC.

Consulting Structural and Civil Engineers

5907 Raytown Trafficway
Raytown, Missouri 64133
816-356-1445 Fax: 816-356-1477



DATE:	6/15/20
REVISION	
1	7/9/20
2	
3	
4	

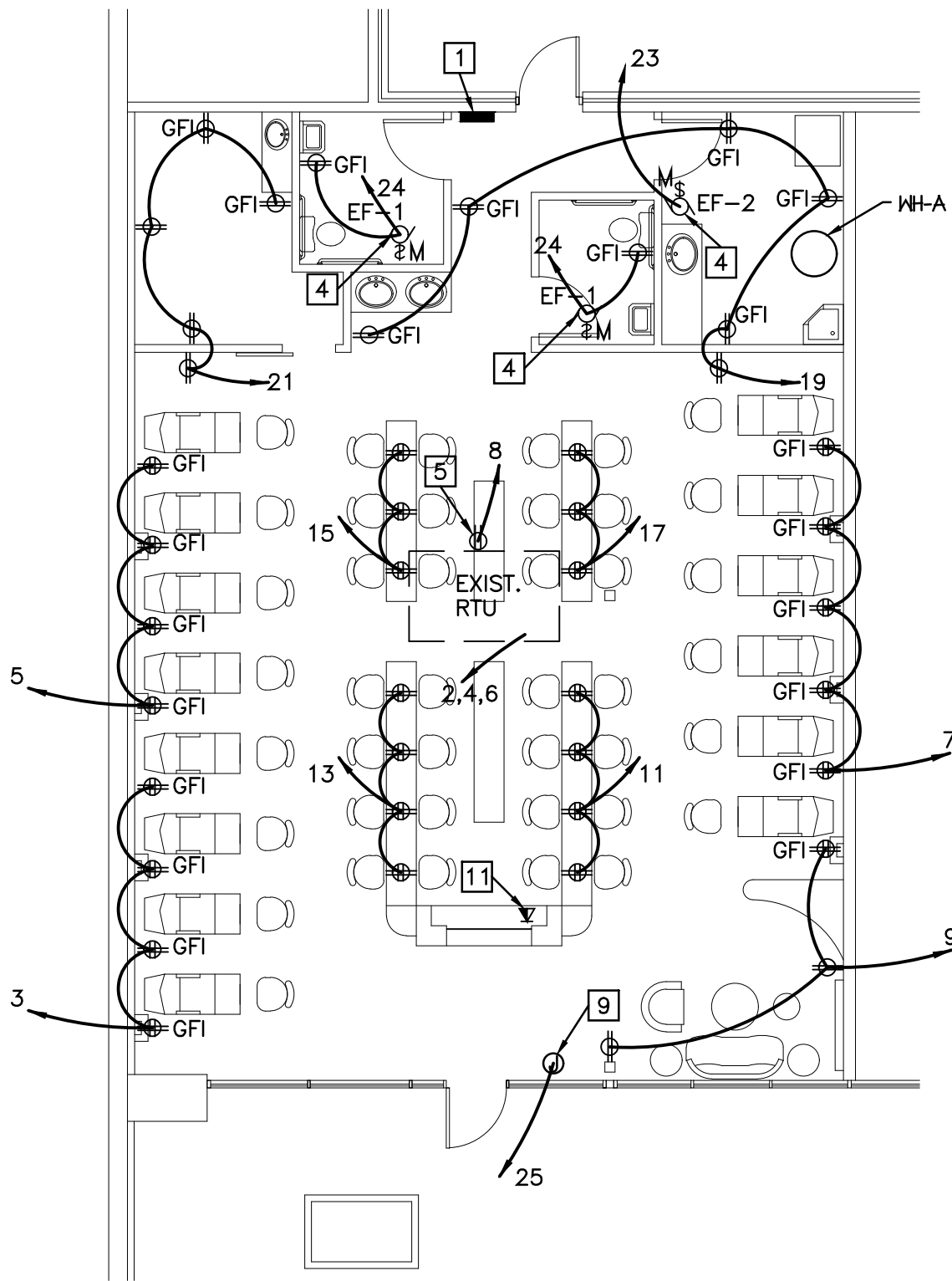
DWG. *E 1*

ELECTRICAL GENERAL NOTES

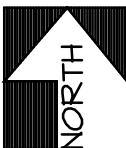
- A. ALL CONDUITS SHALL HAVE A MINIMUM OF 2-#12 AWG Cu AND 1-#12 AWG Cu GROUND IN 1/2" MINIMUM SIZE CONDUIT, UNLESS NOTED OTHERWISE.
- B. SEE SHEET E3 FOR SCHEDULES, DETAILS, LEGEND AND NOTES.

ELECTRICAL PLAN NOTES

- 1 EXIST. 225 AMP PANEL D1L. SEE PANEL SCHEDULE SHEET E3.
- 2 NOT USED
- 3 NOT USED
- 4 FAN AND MOTOR. CONNECT EXHAUST FAN TO OVERHEAD LIGHT SWITCH FOR SIMULTANEOUS OPERATION.
- 5 EXISTING RECEPTACLE AT ROOFTOP UNIT.
- 6 NOT USED
- 7 NOT USED
- 8 NOT USED
- 9 JUNCTION BOX FOR SIGN POWER.
- 10 NOT USED
- 11 COORDINATE INSTALLATION OF DEVICES WITH MILLWORK AND OWNER.
- 12 NOT USED



ELECTRICAL POWER PLAN
SCALE: 1/8" = 1'-0"



GLOSS' NAILS
470 NW CHIPMAN ROAD
LEES' SUMMIT, MISSOURI

ELECTRICAL GENERAL NOTES

- A. ALL CONDUITS SHALL HAVE A MINIMUM OF 2-#12 AWG Cu AND 1-#12 AWG Cu GROUND IN 1/2" MINIMUM SIZE CONDUIT, UNLESS NOTED OTHERWISE.
- B. SEE SHEET E3 FOR SCHEDULES, DETAILS, LEGEND AND NOTES.

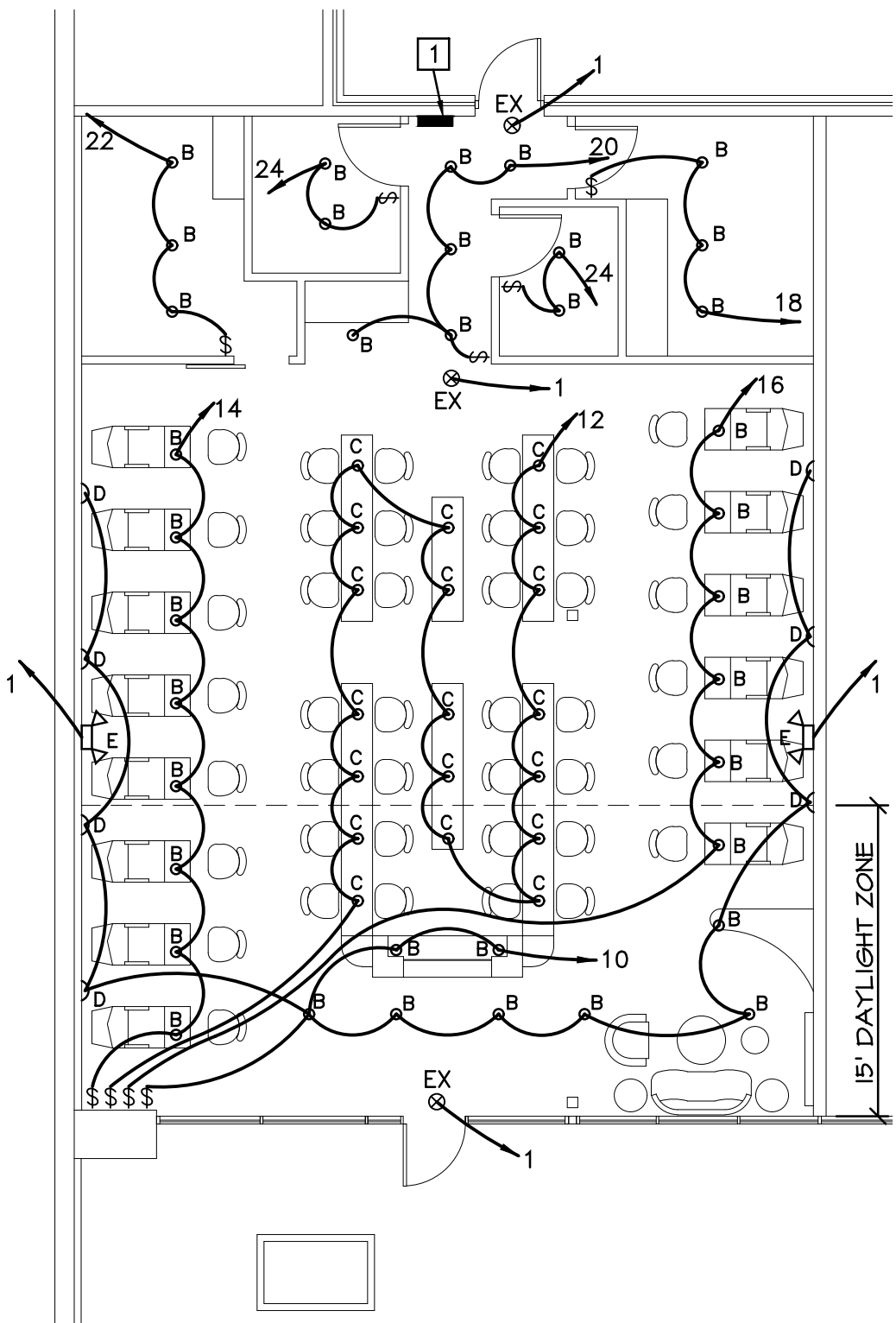
ELECTRICAL PLAN NOTES

- 1 EXIST. 225 AMP PANEL D1L. SEE PANEL SCHEDULE SHEET E3.
- 2 NOT USED
- 3 NOT USED
- 4 NOT USED
- 5 NOT USED

ELECTRIC LIGHTING LOAD CALCULATIONS

FIXTURE ID: DESCRIPTION / LAMP / WATTAGE / BALLAST	LAMPS / FIXTURE	NUMBER OF FIXTURES	FIXTURE WATTAGE	TOTAL WATTAGE	WATTS PER SQ. FOOT
SHOP AREA = 1703 SQ. FT.					
NOT USED					
CAN LIGHT B: 75W LED	1	37	11	407	0.24
DROP LIGHTS C: 45W LED	1	19	9	171	0.10
WALL SCONCES D: 45W LED	1	7	9	63	0.04
TOTALS		63		641	0.38

AREA DESCRIPTION / TYPE	AREA (SQ. FT.)	ALLOW WATTS PER SQ. FT.	ALLOW WATTAGE
SHOP AREA / WORKSHOP	1703	1.4	2384



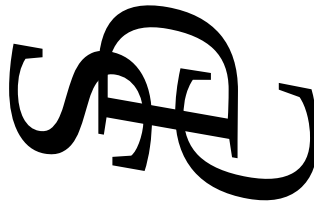
ELECTRICAL LIGHTING PLAN
SCALE: 1/8" = 1'-0"



ENGINEERING, INC.

Consulting Structural and Civil Engineers

5907 Raytown Trafficway
Raytown, Missouri 64133
816-356-1445 Fax: 816-356-1477

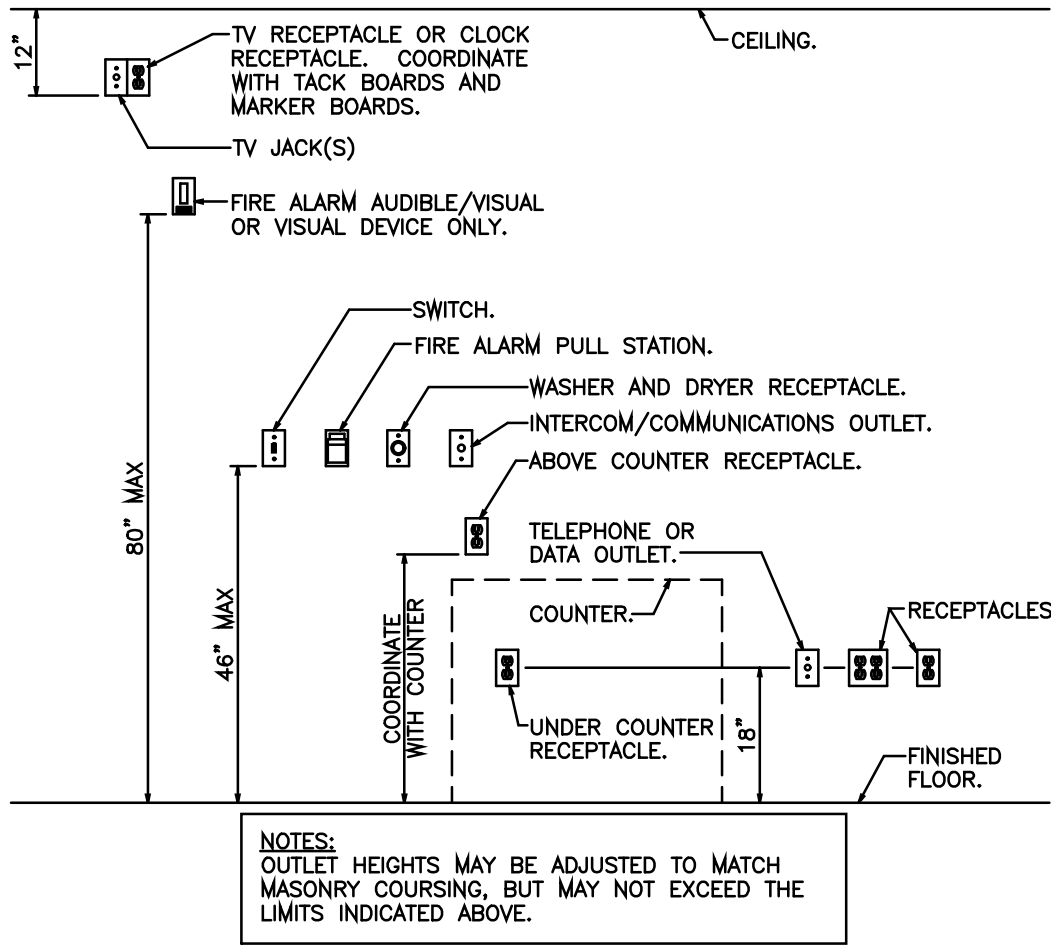


DATE:	6/15/20
REVISION	
1	
2	
3	
4	

DWG. E2

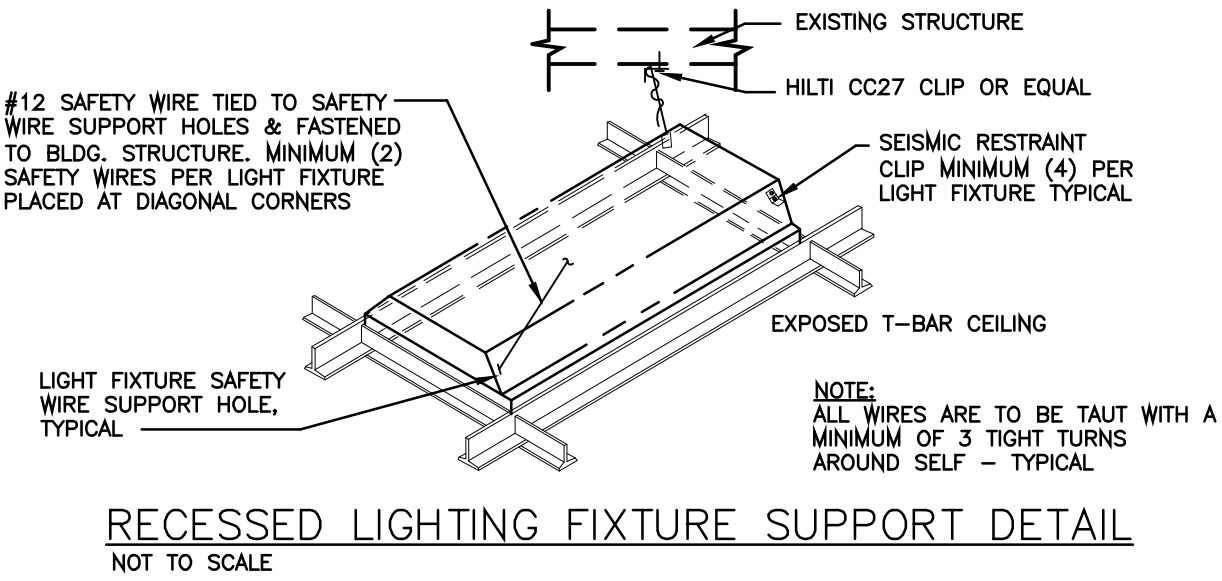
ELECTRICAL NOTES:

- 1 ALL CONDUIT AND WIRING SHALL BE SECURELY FASTENED TO STUDS.
- 2 PLACE ALL RECEPTACLES 18" A.F.F. EXCEPT AS NOTED OTHERWISE. PROVIDE STAINLESS STEEL COVER PLATES.
- 3 PLACE ALL SWITCHES @ 46" A.F.F. PROVIDE STAINLESS STEEL SWITCH PLATES.
- 4 ALL CONDUCTORS SHALL BE COPPER. ALUMINUM CONDUCTORS SHALL NOT BE USED.
- 5 ELECTRICAL CONTRACTOR SHALL LABEL ALL CIRCUITS IN PANEL W/ROOMS & DEVICES.
- 6 ALL PENETRATIONS WITHIN RATED WALLS & FLOORS MUST BE UL LISTED. CAULK SHALL BE HILTI PRODUCT #FS611A OR EQUIVALENT
- 7 SWITCH & OUTLET HEIGHTS NOTED ON PLANS SHALL BE TO THE BOTTOM OR CENTER OF THE BOX.
- 8 COMPLY WITH CURRENT LOCAL, FEDERAL, AND STATE LAWS, CODES, RULES, AND REGULATIONS AS WELL AS THE REGULATIONS OF THE NATIONAL ELECTRIC CODE (NEC).
- 9 AFTER COMPLETION OF THE WORK DESCRIBED IN THESE SPECIFICATIONS AND SHOWN ON THE DRAWINGS, CONTRACTOR SHALL THOROUGHLY CLEAN ALL EQUIPMENT, REMOVING SHIPPING LABELS AND STICKERS. REMOVE ANY DEBRIS, CRATING, CARTONS, ETC., AND LEAVE ALL INSTALLATIONS FINISHED AND READY FOR OPERATION AND OCCUPANCY.
- 10 INSTALL SYSTEM BRANCH CIRCUITING AND SWITCH AS INDICATED ON THE DRAWINGS. INSTALL ALL WIRING IN STEEL RACEWAY; EMT OR IMC. MINIMUM RACEWAY SIZE IS 1/2". USE COMPRESSION TYPE FITTINGS. CONDUIT INSTALLATIONS THROUGHOUT THE PROJECT SHALL BE RUN PARALLEL OR AT RIGHT ANGLES TO BUILDING LINES AND SURFACES AND SHALL BE INSTALLED NEATLY AND IN ACCORDANCE THE NEC. MC CABLE MAY BE USED WHERE ALLOWED BY LOCAL CODES.
- 11 MINIMUM WIRE SIZE SHALL BE #12 AWG COPPER. CONDUCTORS #8 AWG AND LARGER SHALL BE STRANDED COPPER WITH THHN INSULATION FOR DRY LOCATIONS AND RHW FOR WET LOCATIONS. SPLICE BRANCH CIRCUITS WITH 3M "SCOTCHLOK", T & B "STA-KON" OR EQUAL.
- 12 ALL OUTLET & JUNCTION BOXES SHALL BE STEEL, WITH ACCESSORIES AS REQUIRED.
- 13 RECEPTACLES SHALL BE HEAVY DUTY, 20 AMPERE, 125 VOLT, DUPLEX, NEMA 5-20R, GRAY COLORED, PASS & SEYMOUR OR EQUAL.
- 14 SWITCHES SHALL BE HEAVY DUTY, 20 AMPERE, 125 VOLT, GRAY COLORED.
- 15 FACEPLATES SHALL BE STAINLESS STEEL, CONFIGURATION TO MATCH DEVICE.
- 16 DISCONNECT SWITCHES SHALL BE 240 VOLT, HEAVY DUTY SIZED PER DRAWING AND PER LOAD REQUIREMENTS, SQUARE-D OR EQUAL.
- 17 PROVIDE AND INSTALL INSULATED COPPER GROUND WIRES FOR EACH BRANCH CIRCUIT AND FOR GROUNDING ELECTRICAL EQUIPMENT PER NEC.
- 18 EXIT AND EMERGENCY LIGHTS MUST BE CONNECTED TO 'HOT' UNSWITCHED LEG OF CIRCUIT INDICATED.
- 19 FURNISH AND INSTALL NEW PANEL BOARDS SURFACE MOUNTED WITH BOLT-ON CIRCUIT BREAKERS, COPPER BUSSINGS, GROUND AND NEUTRAL BUS, GE TYPE AQ OR EQUAL ITE OR SQUARE D.
- 20 ALLOWANCES ARE TO BE INCLUDED FOR UNFORESEEN CONDITIONS THAT MAY EFFECT THE CONTRACTOR'S SCOPE OF WORK. MINOR DEVIATIONS REQUIRED FOR ACCOMPLISHING THE INTENT OF THIS DESIGN ARE TO BE INCLUDED IN THAT ALLOWANCE.
- 21 ELECTRICAL DESIGN HAS BEEN BASED ON THE INSTALLATION OF 75°C CONDUCTORS CONNECTED TO TERMINAL LUGS AND EQUIPMENT U.L. LISTED FOR A MINIMUM 75°C. CONDUCTORS TERMINATED ON EQUIPMENT WITH A LOWER RATING (60°C) OR NO RATING SHOWN TO HAVE CONDUCTOR SIZE INCREASED TO CONFORM TO N.E.C. TABLE 310-16 AND U.L. NO. 489 REQUIREMENTS.
- 22 SWITCHBOARDS, PANELBOARDS, DISCONNECT SWITCHES, TRANSFORMERS AND CONTACTORS ARE TO BE "LISTED" AND "IDENTIFIED" AS RATED FOR A MINIMUM OF 75°C CONDUCTOR TERMINATION.
- 23 ALL CONDUIT INSTALLED INDOORS TO BE ELECTRICAL METALLIC TUBING (EMT), MINIMUM 1/2" OR AS NOTED OTHERWISE. CONDUCTORS TO BE A MINIMUM OF #12 THHN/THWN. COPPER UNLESS NOTED OTHERWISE. BRANCH CIRCUIT RUNS WITH NO MARKS OR IDENTIFICATION ARE TO BE PROVIDED WITH ONE HOT, ONE NEUTRAL & ONE EQUIPMENT GROUND CONDUCTOR. MC CABLE MAY BE USED WHERE ALLOWED BY LOCAL CODES.
- 24 ALL EMPTY CONDUITS SHALL BE PROVIDED WITH A PULL WIRE.
- 25 ELECTRICAL CONTRACTOR TO INCLUDE GROUND WIRE IN ALL RACEWAYS. SIZE RACEWAYS AS NECESSARY TO COMPLY WITH N.E.C.
- 26 REFER TO ARCHITECTURAL REFLECTED CEILING PLAN AND DETAILS FOR THE EXACT LOCATION OF ALL LIGHTING FIXTURES AND ANY OTHER EQUIPMENT INSTALLED IN THE CEILING SYSTEM. VERIFY EXACT MOUNTING HEIGHTS AND FINISHES WITH ARCHITECT PRIOR TO ROUGH-IN.
- 27 CONTRACTOR SHALL COORDINATE INSTALLATION OF ELECTRICAL WORK ABOVE THE CEILING TO PROVIDE THE GREATEST POSSIBLE CLEARANCE FOR INSTALLATION OF PLUMBING AND MECHANICAL INSTALLATION. CONDUIT RUNS TO BE RUN THROUGH TRUSSES WHERE POSSIBLE.
- 28 ELECTRICAL CONTRACTOR TO VERIFY EXACT PLACEMENT OF ALL DEVICES SHOWN ON THE ELECTRICAL CONSTRUCTION DOCUMENTS WITH ARCHITECTURAL, MECHANICAL AND PLUMBING DRAWINGS PRIOR TO FINAL PLACEMENT.
- 29 DRAWINGS ARE DIAGRAMMATIC AND ARE NOT TO BE SCALED. SEE THE ARCHITECTURAL PLANS AND FIELD VERIFY DIMENSIONS.
- 30 FIELD VERIFY THE EXISTING CONDITIONS AND MAKE ALLOWANCES FOR SAME.
- 31 ALL ELECTRICAL WORK SHALL COMPLY WITH NEC 2005.
- 32 ALL WIRING ABOVE GRADE SHALL BE IN METALLIC CONDUIT. ALL BELOW GRADE SHALL BE IN PVC.
- 33 COORDINATE ALL WORK WITH OTHER TRADES TO AVOID CONFLICTS. COORDINATION DOES NOT MEAN "I WAS HERE FIRST."
- 34 ALL WIRING IN FINISHED SPACES SHALL BE CONCEALED, UNLESS NOTED OTHERWISE.
- 35 THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING A COMPLETE AND FUNCTIONAL SYSTEM IN ACCORDANCE WITH THE INTENT OF THE PLANS, WHETHER OR NOT EVERY ELEMENT THEREOF IS SPECIFICALLY CALLED OUT.
- 36 COORDINATE EQUIPMENT ROUGH-IN CONNECTION REQUIREMENTS.
- 37 COORDINATE INSTALLATION OF DEVICES AT COUNTERS WITH ARCHITECTURAL PLANS.
- 38 ALL RECEPTACLES INSTALLED IN BATHROOMS AND OUTDOORS SHALL BE GFCI TYPE OR PROTECTED BY A GFCI DEVICE.
- 39 LIGHT FIXTURES SHALL BE AS INSTALLED COMPLETE WITH REQUIRED MOUNTING HARDWARE, LAMPS, ETC.
- ACCEPTABLE MANUFACTURERS FOR ELECTRICAL PRODUCTS:
- CONDUIT - REPUBLIC, APPLETON, GOULD, KILLARK, WHEATLAND, TRIANGLE, YOUNGSTOWN, REGAL, BELL ELECTRIC, CARLON
- MC CABLE - AMERICAN FLEXIBLE CONDUIT COMPANY, CERRO, COLEMAN
- CONDUCTORS - ADVANCE WIRE AND CABLE, CERRO WIRE AND CABLE, GENERAL CABLE CORP., HITEMP WIRES, PHELPS DODGE, ROME CABLE CORP., SOUTHWIRE COMPANY, OKONITE COMPANY, TRIANGLE, ESSEX, CRESCENT
- CONNECTORS FOR CONDUCTORS #8 AWG AND SMALLER - 3-M "SCOTCHLOK", AMP, BURNDY, EAGLE, GOULD, IDEAL, JOSLYN, O-Z GEDNEY, PYLE NATIONAL, THOMAS AND BETTS
- CONNECTORS FOR CONDUCTORS #8 AWG AND GREATER - BURNDY
- FIRE SEALING - 3M, BIO-FIRE SEAL, FLAME SAFE FIRE STOP
- OUTLET BOXES - RACO, STEEL CITY, APPLETON
- POKE-THRU'S - HUBBELL, STEEL CITY, RACEWAY COMPONENTS
- SURFACE RACEWAY - WIREMOLD
- WIREWAY - SQUARE D, WIREMOLD, GENERAL ELECTRIC, HOFFMAN
- CABINETS AND ENCLOSURES - HOFFMAN, SQUARE D, ELECTRIC PANELBOARD, PARKER ELECTRICAL MFG.
- WIRING DEVICES - BRYANT, GENERAL ELECTRIC, HUBBELL, LEVITON, PASS & SEYMOUR
- RECEPTACLES - HUBBELL, PASS & SEYMOUR, BRYANT, GENERAL ELECTRIC, LEVITON
- SWITCHES - HUBBELL, PASS & SEYMOUR, BRYANT, GENERAL ELECTRIC, LEVITON
- WALL BOX DIMMERS - LUTRON, PRESOLITE, LIGHTOLIER
- GROUNDING AND BONDING - BURNDY, B-LINE SYSTEMS, CROUSE HINDS, GOULD, GENERAL ELECTRIC, IDEAL INDUSTRIES, THTS, THOMAS AND BETTS, WESTERN ELECTRIC
- PANELBOARDS & TRANSFORMERS - SQUARE D, GENERAL ELECTRIC, SIEMENS, CUTLER HAMMER
- BREAKERS - SQUARE D, GENERAL ELECTRIC, SIEMENS, CUTLER HAMMER
- MOTOR STARTERS - SQUARE D, GENERAL ELECTRIC, SIEMENS, CUTLER HAMMER, WESTINGHOUSE
- LAMPS - OSRAM/SYLVANIA, PHILIPS, GENERAL ELECTRIC, VENTURE
- INDOOR ELECTRONIC FLUORESCENT BALLASTS - ADVANCE, MAGNETEK, MOTOROLA, OSRAM/SYLVANIA



TYPICAL OUTLET MOUNTING HEIGHTS
NOT TO SCALE

PANEL		MAIN		120/208		VOLTS		■ 225. A. BUS		□ SERVICE ENTRANCE	
				3		PHASE		■ 225. A. MAIN BREAKER		□ SUBFEED LUGS	
				4		WIRE		■ MAIN LUGS ONLY		■ FEED THRU LUGS	
22,000		AIC									
CIR NO.	CIRCUIT DESCRIPTION	CIR BRKR AMPS	POLES	LOAD	CIR NO.	CIRCUIT DESCRIPTION	CIR BRKR AMPS	POLES	LOAD		
1	EMERGENCY LTS	20	1	198	2	RTU-1	45	3	1500		
3	RECEPTILES	20	1	1440	4	-	-	-	1500		
5	RECEPTILES	20	1	1440	6	-	-	-	1500		
7	RECEPTILES	20	1	1800	8	ROOF RECEPT.	20	1	180		
9	RECEPTILES	20	1	720	10	LIGHTS	20	1	151		
11	RECEPTILES	20	1	1440	12	LIGHTS	20	1	171		
13	RECEPTILES	20	1	1440	14	LIGHTS	20	1	88		
15	RECEPTILES	20	1	1080	16	LIGHTS	20	1	66		
17	RECEPTILES	20	1	1080	18	LIGHTS	20	1	33		
19	RECEPTILES	20	1	1080	20	LIGHTS	20	1	55		
21	RECEPTILES	20	1	900	22	LIGHTS	20	1	33		
23	EF-2	20	1	373	24	REST ROOMS	20	1	600		
25	SIGN JB	20	1	180	26	SPARE	20	1	-		
27	SPARE	20	1	-	28	SPARE	20	1	-		
29	SPARE	20	1	-	30	SPARE	20	1	-		
31	SPARE	20	1	-	32	SPARE	20	1	-		
33	-	-	-	-	34	SPARE	20	1	-		
35	-	-	-	-	36	SPARE	20	1	-		
37	-	-	-	-	38	SPARE	20	1	-		
39	-	-	-	-	40	SPARE	20	1	-		
41	-	-	-	-	42	-	-	-	-		
SUBTOTAL CONNECTED LOAD		WATTS		13,171		WATTS		5877			
TOTAL CONNECTED LOAD		WATTS		19,048		WATTS					
		DEMAND FACTORS:									
		LIGHTS @ 100		%		=		839		WATTS	
		RECEPTS @ 100/50		%		=		13,140		WATTS	
		OTHER @ 100		%		=		5069		WATTS	
		TOTAL DEMAND LOAD =						19,048		WATTS	
■ SURFACE MOUNTED										DEMAND CURRENT	
□ FLUSH MOUNTED										53 AMPS	



RECESSED LIGHTING FIXTURE SUPPORT DETAIL
NOT TO SCALE

LIGHT FIXTURE SCHEDULE

TYPE	MANUFACTURER	LAMP	VOLTS WATTS	DESCRIPTION
A	NOT USED			
B	LITHONIA 601 REFLECTOR AND LC6 MRI HOUSING OR EQUAL	75W LED	120 11	RECESSED INCANDESCENT CAN LIGHT.
C	SELECTED BY OWNER	45W LED	120 9	DROP LIGHT.
D	SELECTED BY OWNER	45W LED	120 9	WALL SCONCE.
E	LITHONIA AFN B EXT	2 - 6 W LED	120 21	WALL MOUNT EMERGENCY LIGHT WITH (2) 6W LED, ALUMINUM HOUSING, EXTERIOR OPTION, 90 MIN. BATTERY BACK UP.
EX	EXISTING EXIT LIGHT	LED	120 25	EXIT/EMERGENCY COMBINATION.

ELECTRICAL SYMBOLS LEGEND

	HOME RUN TO PANEL, CIRCUIT NUMBERS, PHASE, NEUTRAL AND GROUND CONDUCTORS INDICATED. ALL CONDUCTORS TO BE #12 EXCEPT WHERE NOTED. CONDUIT TO BE 1/2" OR AS NOTED ON PLANS AND SPECIFICATIONS.		TELEPHONE/DATA OUTLET WITH 3/4" CONDUIT TO ABOVE CEILING.
	CONDUIT WITH 3 #12 CONDUCTORS.		TELEPHONE OUTLET WITH 3/4" CONDUIT TO ABOVE CEILING.
	FLUORESCENT LIGHT FIXTURE.		TELEVISION OUTLET WITH 3/4" CONDUIT TO ABOVE CEILING.
	FLUORESCENT STRIP LIGHT FIXTURE.		PANELBOARD, TOP 6'-0".
	CEILING MOUNTED EXIT LIGHT.		JUNCTION BOX.
	SINGLE POLE SWITCH		DISCONNECT SWITCH.
	THREE-WAY SWITCH		MOTOR CONNECTION.
	MANUAL MOTOR SWITCH.	NL	NIGHT LIGHT.
	20 AMP DUPLEX RECEPTACLE	WP	WEATHERPROOF.
	GROUND FAULT DUPLEX RECEPTACLE, MOUNTED 6" ABOVE COUNTER TOP OR AS NOTED ON ARCH. DRAWINGS.	AFF	ABOVE FINISHED FLOOR.
	20 AMP QUADRAPLEX RECEPTACLE		
	GROUND FAULT QUADRAPLEX RECEPTACLE, MOUNTED 6" ABOVE COUNTER TOP OR AS NOTED ON ARCH. DRAWINGS.		

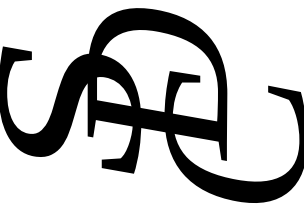
COPYRIGHT 2020 BY
SDC ENGINEERING, INC.
DRAWINGS MAY NOT BE
DUPLICATED WITHOUT
WRITTEN PERMISSION.

GLOSS NAILS
470 NW CHIPMAN ROAD
LEES SUMMIT, MISSOURI

ENGINEERING, INC.

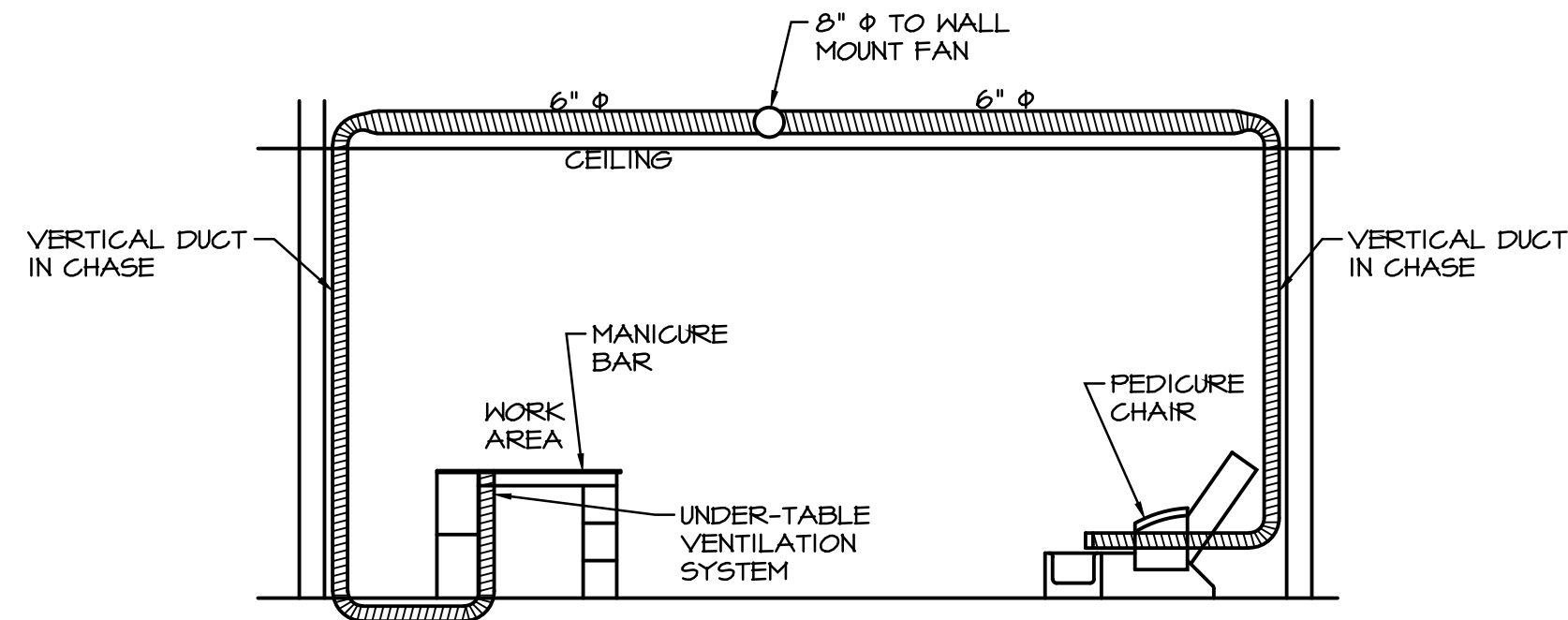
Consulting Structural and Civil Engineers

5907 Raytown Trafficway
Raytown, Missouri 64133
816-356-1445 Fax: 816-356-1477



DATE:	6/15/20
REVISION	
1	7/9/20
2	
3	
4	

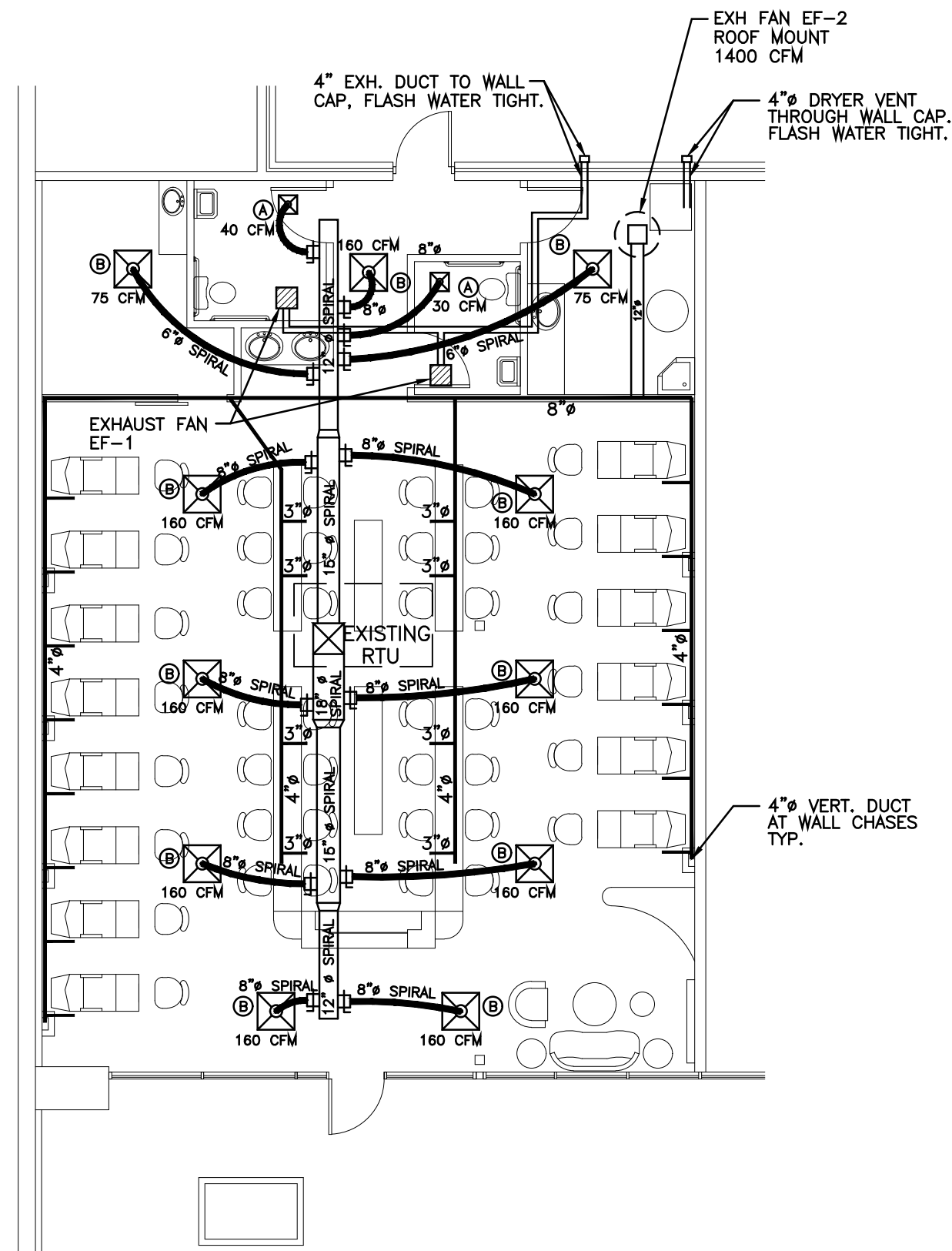
E3



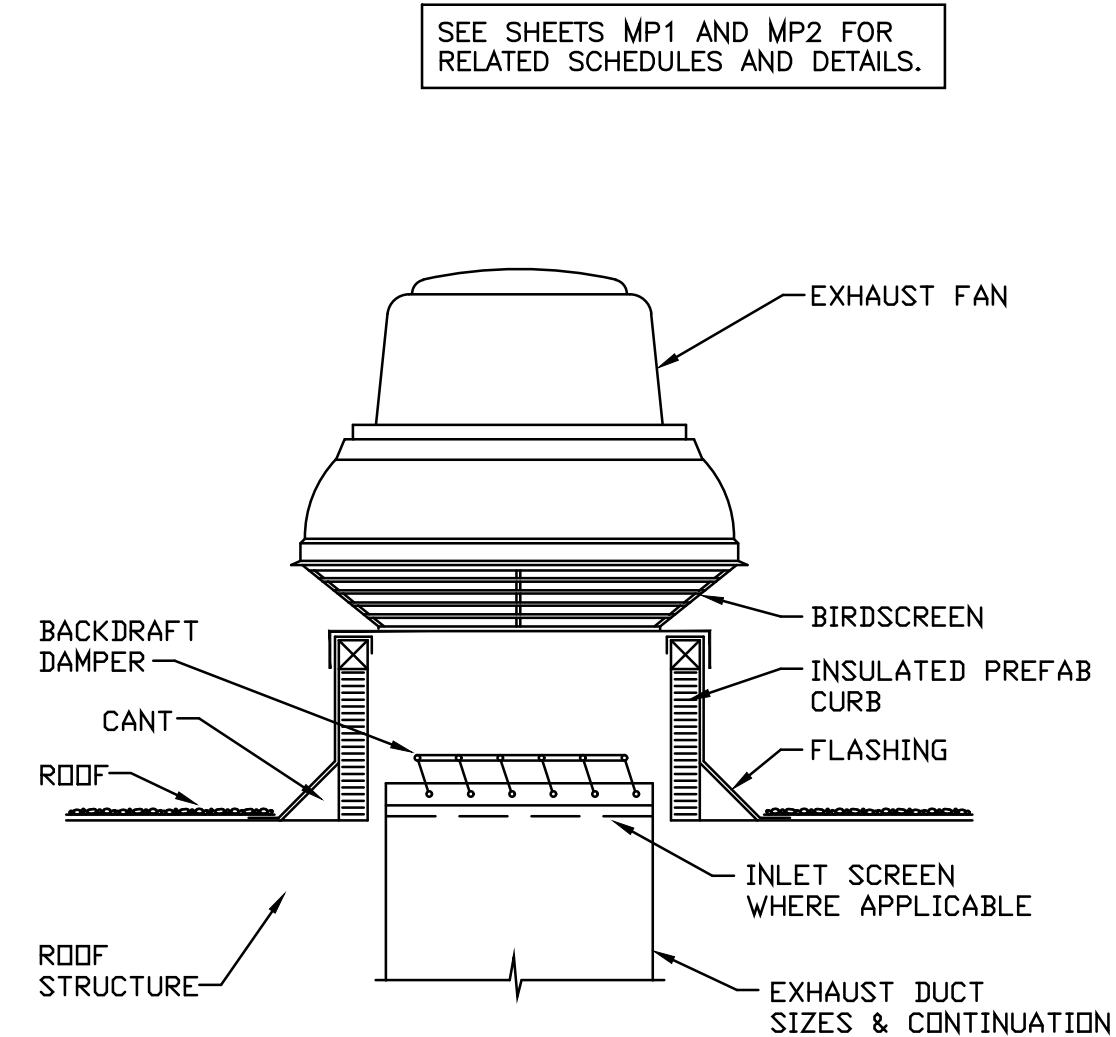
GENERIC STATION EXHAUST DETAIL
NO SCALE

EXHAUST FAN EF-1 SERVICE RESTROOM, BROAN #686, 80 CFM @ 1/10" SP, 120V-1Ø, 1/6 HP FAN MOTOR. EXTEND 5"Ø EXHAUST DUCT THRU ROOF. PROVIDE BACKDRAFT PROTECTION AT COMMON DUCT. INTERLOCK WITH LIGHT SWITCH.
EXHAUST FAN EF-2 SERVING NAILS, COOK ACE-D-135C11D, 1431 CFM @ 3/8" SP, 120V-1Ø, 1/6 HP FAN MOTOR @ 1140 RPM. PROVIDE ROOF CURB, BIRD SCREEN, BACKDRAFT DAMPER AND SEAL WATER TIGHT. PROVIDE SHIELD BELOW FAN TO DEFLECT DISCHARGE UPWARD.
REQUIRED SOURCE CAPTURE EXHAUST AIR CALCULATIONS PER IMC TABLE 403.3.1.1, 28 STATIONS $(28) \times (50 \text{ CFM/STATION}) = 1400 \text{ CFM F.A.}$
REQUIRED EXHAUST AIR CALCULATIONS - NAIL WORK ROOM PER IMC TABLE 403.3.1.1, 1703 SQ. FT. $(1703) \times (0.6 \text{ CFM/SQ. FT.}) = 1022 \text{ CFM F.A.}$
TOTAL EXHAUST AIR CALCULATIONS $1022 \text{ CFM} < 1400 \text{ CFM}$ - ADDITIONAL EXHAUST AIR REQUIRED. SIZE FAN FOR 1400 CFM.
FRESH AIR CALCULATIONS $\text{OCCUPANT DENSITY} = 1703 \times 25 / 1000 = 42.6$ $\text{AIRFLOW RATE} = 42.6 \text{ OCCUPANTS} \times 20 \text{ CFM} = 852 \text{ CFM}$ $\text{AREA AIRFLOW RATE} = 1703 \times 0.12 \text{ CFM} = 204 \text{ CFM}$ $\text{TOTAL AIRFLOW RATE} = 1056 \text{ CFM}$

- NOTES:**
- EXHAUST VENTS SHALL BE LOCATED NO CLOSER THAN 10' FROM AIR INTAKE OF RTU'S. OFFSET VENTS AS REQ'D.
 - ALL ROOF PENETRATIONS SHALL BE COORDINATED WITH LANDLORD APPROVED ROOF CONTRACTOR.



HVAC FLOOR PLAN
SCALE: 1/8" = 1'-0"



ROOF EXHAUST EF-2
NO SCALE

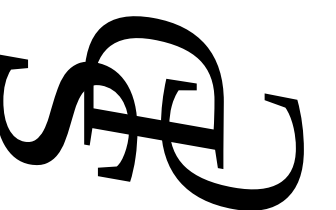
AIR BALANCE SCHEDULE						
ROOM	AREA	OCCUPANTS	PEOPLE OUTDOOR AIRFLOW	AREA OUTDOOR AIRFLOW	TOTAL REQUIRED AIRFLOW	TOTAL AIRFLOW ADJUSTED FOR EXHAUST
		25 / 1000 S.F.	20 CFM / OCC	12 CFM / S.F.		
WORK AREA	1375	34.4	688	165	853	1400
REST ROOM	59	1.5	30	7	37	37
REST ROOM	45	1.1	22	5	27	27
FASCIAL ROOM	105	2.6	52	13	65	65
LAUNDRY ROOM	119	3.0	60	14	74	74
TOTAL	1703	42.6	852	204	1056	1603

COPYRIGHT 2020 BY SDC ENGINEERING, INC. DRAWINGS MAY NOT BE DUPLICATED WITHOUT WRITTEN PERMISSION.

GLOSS NAILS
470 NW CHIPMAN ROAD
LEES SUMMIT, MISSOURI

ENGINEERING, INC.
Consulting Structural and Civil Engineers

5907 Raytown Trafficway
Raytown, Missouri 64133
816-356-1445 Fax: 816-356-1477



DATE:	6/15/20
REVISION	
1	7/9/20
2	8/1/20
3	
4	

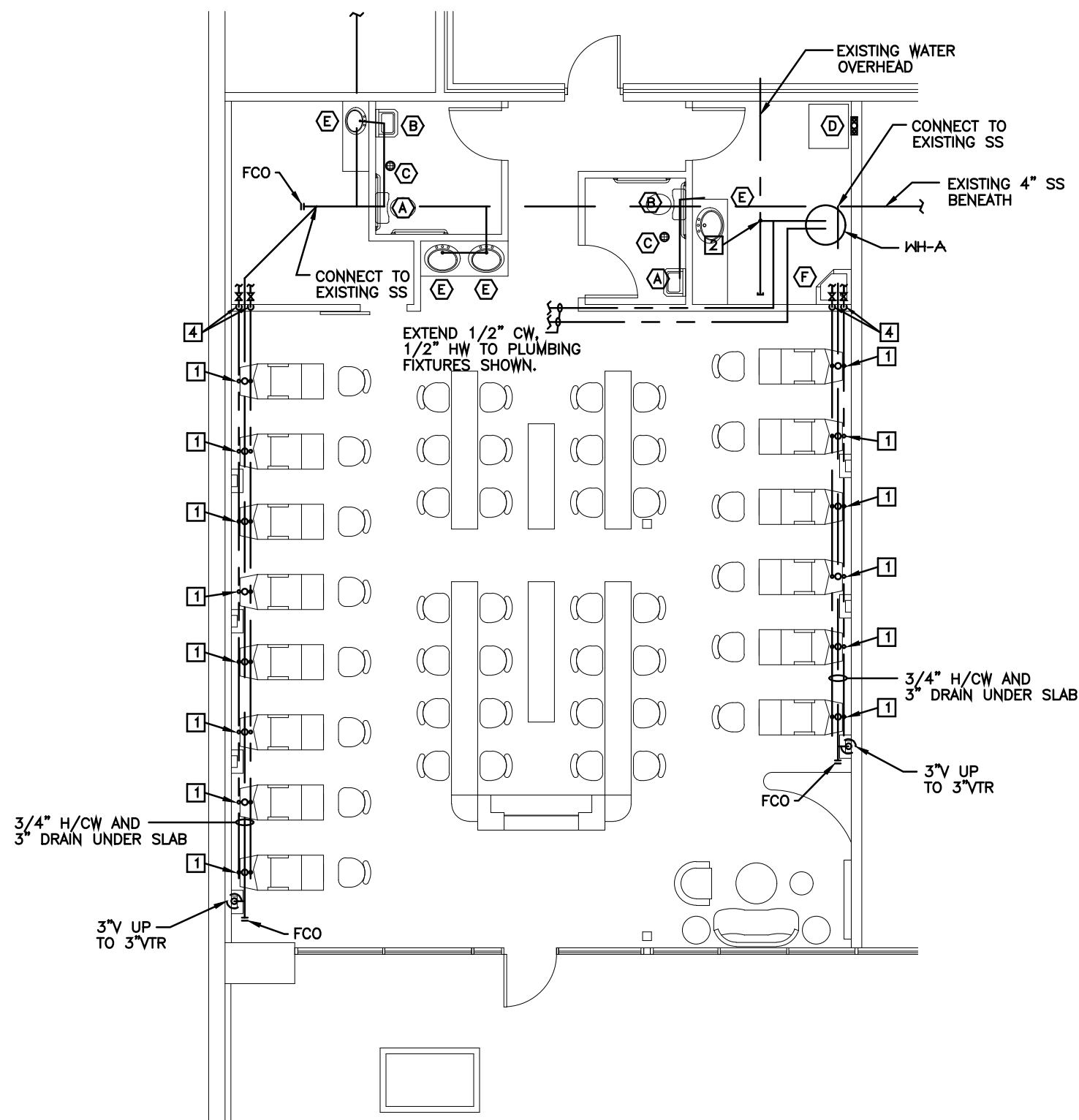
DWG. **M1**

GLOSS NAILS
470 NW CHIPMAN ROAD
LEES SUMMIT, MISSOURI

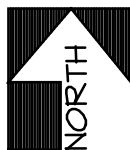
FLOOR PLAN NOTES

- [1] TYPICAL PEDICURE STATION (14 LOCATIONS) IN CHASE, 1/2" H/CW VALVED, 2" TRAPPED DRAIN. EACH CHAIR TO BE EQUIPPED WITH INTEGRAL VENT AND BACKFLOW PREVENTER CONFORMING TO IPC TABLE 608.1. FINAL CONNECTION BY PLUMBING CONTRACTOR.
- [2] EXISTING CW MAIN OVERHEAD. EXISTING 1" CW TAP W/ VALVE.
- [3] NOT USED.
- [4] TYPICAL HOT/COLD WATER VALVED OVERHEAD. TURN DOWN WALL TO CHASE.

SEE SHEETS MP1 AND MP2 FOR
RELATED SCHEDULES AND DETAILS.



PLUMBING FLOOR PLAN
SCALE: 1/8" = 1'-0"

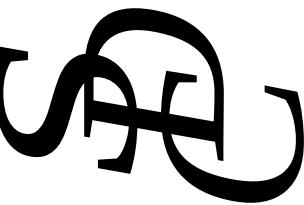


NOTES: WATER LINES ABOVE CEILING SHALL BE INSULATED.

ENGINEERING, INC.

Consulting Structural and Civil Engineers

5907 Raytown Trafficway
Raytown, Missouri 64133
816-356-1445 Fax: 816-356-1477



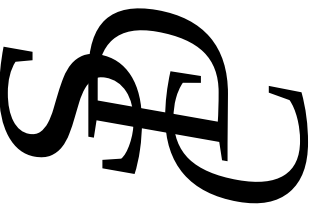
DATE:	6/15/20
REVISION	
1	7/9/20
2	
3	
4	

DWG. P1

GLOSS' NAILS
470 NW CHIPMAN ROAD
LEES' SUMMIT, MISSOURI

ENGINEERING, INC.
Consulting Structural and Civil Engineers

5907 Raytown Trafficway
Raytown, Missouri 64133
816-356-1445 Fax: 816-356-1477



DATE:	6/15/20
REVISION	
1	
2	
3	
4	

MP1

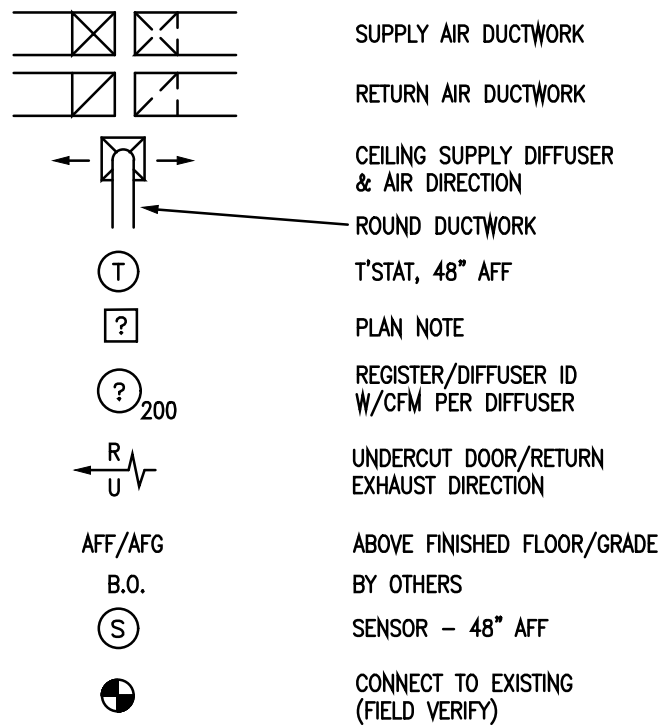
HVAC GENERAL REQUIREMENTS

- ALL WORK SHALL BE DONE IN ACCORDANCE WITH LOCAL BUILDING, MECHANICAL, PLUMBING CODES NATIONAL ELECTRICAL CODE, NATIONAL FIRE PROTECTION CODE, EPA REGULATIONS, AND OCCUPATIONAL SAFETY AND HEALTH ACT.
- CONTRACTOR SHALL INCLUDE ALL LABOR, MATERIAL, AND EQUIPMENT TO PROVIDE COMPLETE AND FUNCTIONING INSTALLATIONS, AND ALL MATERIAL AND EQUIPMENT SHALL BE NEW UNLESS OTHERWISE SPECIFIED.
- CONTRACTOR SHALL PROTECT ALL EXISTING WORK TO REMAIN, AND SHALL REPAIR ANY DAMAGED INCIDENTAL TO PERFORMANCE OF NEW WORK.
- INTERFERENCE WITH OWNERS OPERATIONS OR INTERRUPTION OF SERVICES SHALL BE FULLY COORDINATED WITH OTHERS.
- ACCEPTANCE OF WORK SHALL BE SUBJECT TO OWNER'S REPRESENTATIVE APPROVAL OF WORK IN PLACE AS WELL AS SHOP DRAWINGS AND SAMPLES OF MATERIALS AND EQUIPMENT WHICH SHALL BE CHECKED BY CONTRACTOR BEFORE SUBMITTAL.
- CONTRACTOR SHALL SUBMIT MARKED UP CLEAN PRINTS OF AS-BUILT CONDITIONS SHOWING CONCEALED DEVIATIONS FROM DESIGN.
- CONTRACTOR SHALL KEEP PREMISES OF WORK AREA CLEAN DAILY, BROOM CLEAN AT PROJECT COMPLETION, AND SHALL REMOVE ALL REFUSE FROM SITE REGULARLY.
- CONTRACTOR SHALL BECOME COMPLETELY FAMILIAR WITH EXISTING CONDITIONS BEFORE STARTING NEW WORK. CONCEALED CONDITIONS SHALL BE ADDRESSED WITH DUE CAUTION SUCH THAT UTILITIES AND SYSTEMS ARE PROTECTED.
- CONTRACTOR SHALL CUT AND PATCH HOLES IN EXISTING CONSTRUCTION AS REQUIRED FOR NEW WORK WITH DUE CAUTION SUCH AS STRUCTURAL AND WEATHER-PROOF INTEGRITY IS MAINTAINED WITHOUT IMPARTMENT.
- CONTRACTOR SHALL WARRANTY ALL NEW WORK FOR A PERIOD OF ONE YEAR FROM DATE OF ACCEPTANCE AND SHALL REPAIR OR REPLACE AND DEFECTIVE WORK INCLUDING MATERIAL, LABOR AND EQUIPMENT AT NO ADDITIONAL COST TO THE OWNER.
- EXISTING CONDITIONS INDICATED ON THE DRAWINGS ARE TAKEN FROM THE BEST INFORMATION AVAILABLE ON PREVIOUS CONTRACT DRAWINGS AND FROM VISUAL SITE INSPECTIONS AND ARE NOT TO BE CONSTRUCTED AS "AS-BUILT" CONDITIONS, BUT ARE TO INDICATE THE INTENT OF THIS WORK.
- UNLESS SPECIFIED OTHERWISE, ALL EXISTING MATERIAL AND EQUIPMENT SHOWN OR REQUIRED TO BE REMOVED FROM EXISTING CONSTRUCTION AND NOT SHOWN TO BE REUSED OR TURNED OVER TO THE CONTRACTOR AND SHALL BE PROMPTLY REMOVED FROM THE SITE.
- ALL PERMITS AND LICENSES THAT ARE REQUIRED BY GOVERNING AUTHORITIES FOR THE PERFORMANCE OF MECHANICAL AND ELECTRICAL WORK SHALL BE PROCURED AND PAID FOR BY THE CONTRACTOR.
- CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION OF ALL EQUIPMENT IN SUCH A MANNER AS TO CONTROL THE TRANSMISSION OF NOISE AND VIBRATION FROM ANY INSTALLED EQUIPMENT OR SYSTEM, SO THE SOUND LEVEL SHALL NOT EXCEED NC35, IN ANY OCCUPIED SPACE. CONTRACTOR SHALL BE RESPONSIBLE FOR THE CORRECTION OF ANY OBJECTIONABLE NOISE IN ANY OCCUPIED AREA DUE TO IMPROPERLY INSTALLED EQUIPMENT.
- MECHANICAL CONTRACTOR SHALL COORDINATE EXACT DUCT DIMENSIONS AND ROUTING WITH ARCHITECTURAL REFLECTED CEILING PLAN AND THE LAYOUT OF RECESSED LIGHT FIXTURES SHOWN ON ELECTRICAL DRAWINGS AND MAKE ONLY APPROVED CHANGES TO MAINTAIN SPECIFIED CEILING HIEGHTS.
- MECHANICAL CONTRACTOR SHALL COORDINATE EXACT LOCATION OF DIFFUSERS, REGISTERS AND GRILLS WITH ARCHITECTURAL REFLECTED CEILING PLAN AND ELECTRICAL LIGHT LAYOUT.
- MECHANICAL CONTRACTOR SHALL COORDINATE EXACT LOCATIONS OF ROOF TOP EQUIPMENT AND DUCT PENETRATIONS WITH STRUCTURAL.
- MECHANICAL CONTRACTOR SHALL SIZE AND INSTALL REFRIGERANT PIPING TO EQUIPMENT AS RECOMMENDED BY EQUIPMENT MANUFACTURER, INCLUDE ALL NECESSARY CONTROLS AND INTERLOCK WIRING, INSULATE SUCTION PIPING WITH 3/4"THICK ARMAFLEX (OUTDOOR INSULATION SHALL BE ULTRAVIOLET PROTECTED).
- MECHANICAL CONTRACTOR SHALL PROVIDE SMOKE DETECTOR IN SUPPLY AIR DUCT OF AIR HANDLING SYSTEMS OF 2000 CFM OR LARGER CAPACITY FOR THE AUTOMATIC SHUT-OFF OF THE SYSTEM UPON SIGNAL FROM THE SMOKE DETECTOR. EQUAL TO FENWALL DN31; BRK DH1851AC OR ROBERT SHAW 2650-150 SERIES.
- RECTANGULAR DUCT TO BE CONSTRUCTED OF PRIME GALVANIZED SHEET METAL LINED WITH 1/2", 3 lb. DENSITY FIBERGLASS INSUALTION. ROUND FLEXIBLE DUCT TO BE THERMAFLEX TYPE MKC OR EQUAL WITH 1" FIBERGLASS INSUALTION EXTERNALLY WRAPPED. PLANS REFLECT COMPENSATION OF 1/2" INTERIOR INSULATION LINER.
- MECHANICAL CONTRACTOR SHALL PROVIDE AND INSTALL TURNING VANES AND VOLUME EXTRACTOR WHERE SHOWN ON DRAWINGS AND AS REQUIRED FOR SMOOTH AIRFLOW.
- MECHANICAL CONTRACTOR SHALL VISIT THE JOB SITE PRIOR TO SUBMITTING A BID. FIELD CHECK AND VERIFY EXACT SIZE AND LOCATION OF ALL EXISTING EQUIPMENT AND REPORT ANY DISCREPANCIES TO THE ENGINEER IMMEDIATELY.
- MECHANICAL CONTRACTOR SHALL COORDINATE ALL WIRING AND ELECTRICAL INTERLOCKS WITH THE ELECTRICAL CONTRACTOR.
- FIRE DAMPERS ARE REQUIRED AT EACH FIRE RATED WALL, CEILING AND FLOOR DUCT PENETRATION AS SHOWN OR NOTED ON MECHANICAL AND ARCHITECTURAL FLOOR PLANS. (SEE DETAIL). FIELD IDENTIFY DUCT SIZE FOR SPECIFIC DAMPER SIZES, AND PROVIDE ACCESS PANELS AS REQUIRED FOR EACH FIRE DAMPER.
- MECHANICAL CONTRACTOR TO INSTALL NEW CEILING DIFFUSERS SHOWN, IN NEW REFLECTED CEILING PLAN CONFIGURATION. SEE ARCHITECTURAL AND ELECTRICAL PLANS FOR COORDINATION, SPEAKERS AND ALARM SYSTEMS.

DIFFUSER AND REGISTER SCHEDULE

(A)	TITUS	TDC-4A	6"x6"	WHITE	SUPPLY
(B)	TITUS	TMS-8"ø	24"x24"	WHITE	SUPPLY
(C)	TITUS	25RL	24"x24"	WHITE	RETURN
(D)	TITUS	25RL	8"x8"	WHITE	EXHAUST

HVAC SYMBOLS

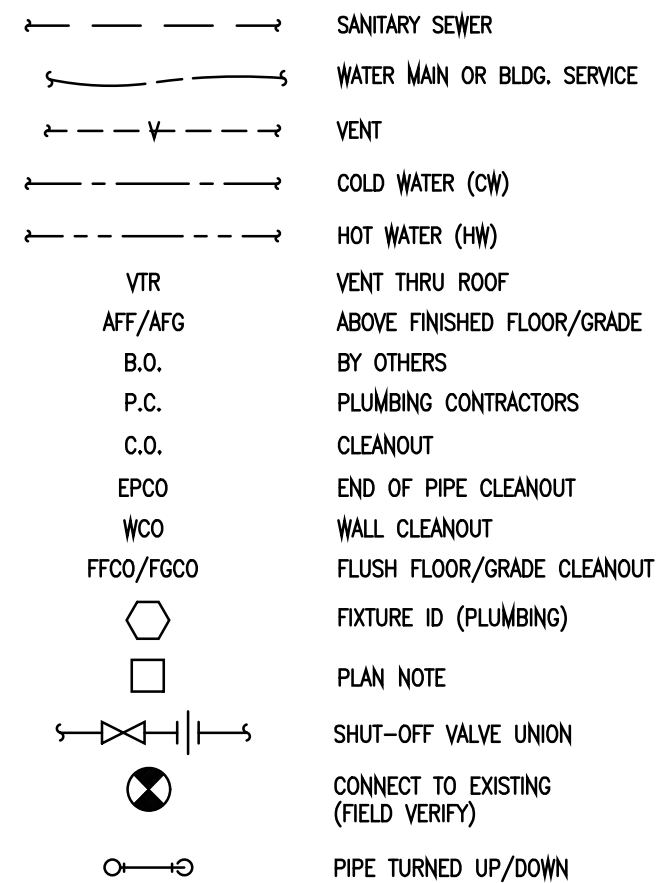


ALL METAL ROOFING, LOUVERS, VENTS, FLUES, METAL FLASHING AND ETC. SHALL BE INSTALLED (FACTORY PAINTED) TO MATCH ROOF MATERIAL. (COLOR SELECTED BY ARCHITECT).

PLUMBING GENERAL REQUIREMENTS

- ALL WORK SHALL BE DONE IN ACCORDANCE WITH LOCAL BUILDING, MECHANICAL, PLUMBING CODES NATIONAL ELECTRICAL CODE, NATIONAL FIRE PROTECTION CODE, EPA REGULATIONS, AND OCCUPATIONAL SAFETY AND HEALTH ACT.
- CONTRACTOR SHALL INCLUDE ALL LABOR, MATERIAL, AND EQUIPMENT TO PROVIDE COMPLETE AND FUNCTIONING INSTALLATIONS, AND ALL MATERIAL AND EQUIPMENT SHALL BE NEW UNLESS OTHERWISE SPECIFIED.
- CONTRACTOR SHALL PROTECT ALL EXISTING WORK TO REMAIN, AND SHALL REPAIR ANY DAMAGED INCIDENTAL TO PERFORMANCE OF NEW WORK.
- INTERFERENCE WITH OWNERS OPERATIONS OR INTERRUPTION OF SERVICES SHALL BE FULLY COORDINATED WITH OTHERS.
- ACCEPTANCE OF WORK SHALL BE SUBJECT TO OWNER'S REPRESENTATIVE APPROVAL OF WORK IN PLACE AS WELL AS SHOP DRAWINGS AND SAMPLES OF MATERIALS AND EQUIPMENT WHICH SHALL BE CHECKED BY CONTRACTOR BEFORE SUBMITTAL.
- CONTRACTOR SHALL SUBMIT MARKED UP CLEAN PRINTS OF AS-BUILT CONDITIONS SHOWING CONCEALED DEVIATIONS FROM DESIGN.
- CONTRACTOR SHALL KEEP PREMISES OF WORK AREA CLEAN DAILY, BROOM CLEAN AT PROJECT COMPLETION, AND SHALL REMOVE ALL REFUSE FROM SITE REGULARLY.
- CONTRACTOR SHALL BECOME COMPLETELY FAMILIAR WITH EXISTING CONDITIONS BEFORE STARTING NEW WORK. CONCEALED CONDITIONS SHALL BE ADDRESSED WITH DUE CAUTION SUCH THAT UTILITIES AND SYSTEMS ARE PROTECTED.
- CONTRACTOR SHALL CUT AND PATCH HOLES IN EXISTING CONSTRUCTION AS REQUIRED FOR NEW WORK WITH DUE CAUTION SUCH AS STRUCTURAL AND WEATHER-PROOF INTEGRITY IS MAINTAINED WITHOUT IMPARTMENT.
- CONTRACTOR SHALL WARRANTY ALL NEW WORK FOR A PERIOD OF ONE YEAR FROM DATE OF ACCEPTANCE AND SHALL REPAIR OR REPLACE AND DEFECTIVE WORK INCLUDING MATERIAL, LABOR AND EQUIPMENT AT NO ADDITIONAL COST TO THE OWNER.
- EXISTING CONDITIONS INDICATED ON THE DRAWINGS ARE TAKEN FROM THE BEST INFORMATION AVAILABLE ON PREVIOUS CONTRACT DRAWINGS AND FROM VISUAL SITE INSPECTIONS AND ARE NOT TO BE CONSTRUCTED AS "AS-BUILT" CONDITIONS, BUT ARE TO INDICATE THE INTENT OF THIS WORK.
- UNLESS SPECIFIED OTHERWISE, ALL EXISTING MATERIAL AND EQUIPMENT SHOWN OR REQUIRED TO BE REMOVED FROM EXISTING CONSTRUCTION AND NOT SHOWN TO BE REUSED OR TURNED OVER TO THE CONTRACTOR AND SHALL BE PROMPTLY REMOVED FROM THE SITE.
- ALL PERMITS AND LICENSES THAT ARE REQUIRED BY GOVERNING AUTHORITIES FOR THE PERFORMANCE OF PLUMBING WORK SHALL BE PROCURED AND PAID FOR BY THE CONTRACTOR.
- CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION OF ALL EQUIPMENT IN SUCH A MANNER AS TO CONTROL THE TRANSMISSION OF NOISE AND VIBRATION FROM ANY INSTALLED EQUIPMENT OR SYSTEM, SO THE SOUND LEVEL SHALL NOT EXCEED NC35, IN ANY OCCUPIED SPACE. CONTRACTOR SHALL BE RESPONSIBLE FOR THE CORRECTION OF ANY OBJECTIONABLE NOISE IN ANY OCCUPIED AREA DUE TO IMPROPERLY INSTALLED EQUIPMENT.
- PLUMBING CONTRACTOR SHALL VISIT THE JOB SITE PRIOR TO SUBMITTING A BID. FIELD VERIFY ALL UTILITIES LOCATION, SIZE ACCESSIBILITY AND FEES. REPORT ANY DISCREPANCIES TO THE ENGINEER/ARCHITECT IMMEDIATELY.
- PLUMBING CONTRACTOR TO PROVIDE WHEELHANDLE STOPS AND WATER HAMMER ARRESTORS ON ALL HOT & COLD WATER LINE PRIOR TO CONNECTION TO EACH FIXTURES.
- PLUMBING CONTRACTOR TO CONNECT ALL GAS (PROPANE) LINES TO GAS FIRED EQUIPMENT THRU GAS COCK, UNION & DIRT LEG. (PER AGA STANDARDS).

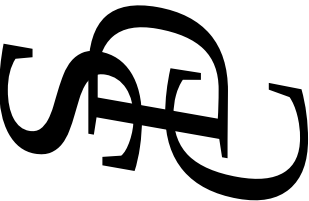
PLUMBING SYMBOLS



GLOSS' NAILS
470 NW CHIPMAN ROAD
LEES' SUMMIT, MISSOURI

ENGINEERING, INC.
Consulting Structural and Civil Engineers

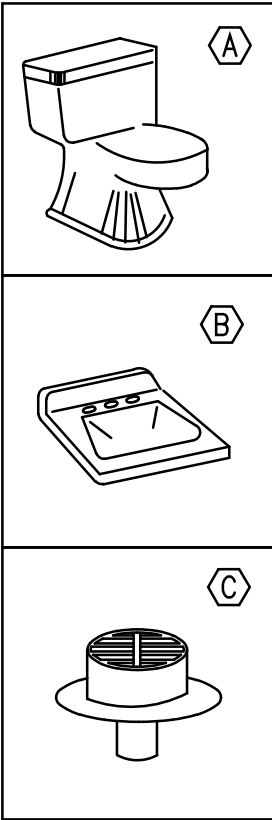
5907 Raytown Trafficway
Raytown, Missouri 64133
816-356-1445 Fax: 816-356-1477



DATE:	6/15/20
REVISION	
1	7/9/20
2	
3	
4	

MP2

PLUMBING FIXTURE SCHEDULE

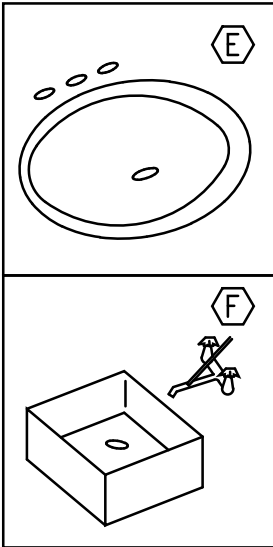


WATER CLOSET - AMERICAN STANDARD #2108.408 VITREOUS CHINA, ELONGATED FLOOR OUTLET, SIPHON JET ACTION, TANK TYPE TOILET W/WHITE, SOLID PLASTIC OPEN FRONT SEAT LESS COVER. PROVIDE FLEXIBLE SUPPLY PIPE WITH WHEEL HANDLE STOP. 1/2", 4"WASTE, 2"VENT.

HCWC - HANDICAPPED WC AMERICAN STANDARD. 2108.408. 18" A.F.F. TO RIM.

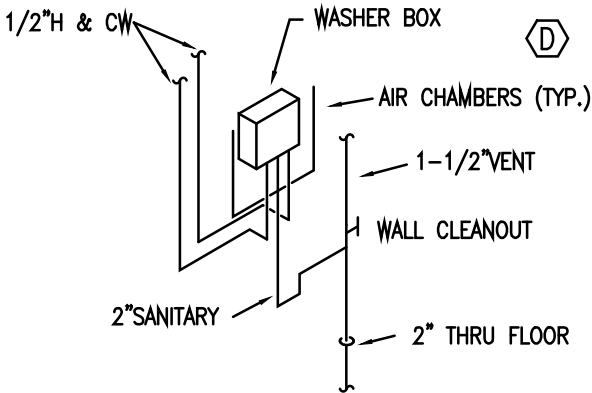
LAVATORY - AMERICAN STANDARD #9141.011 WALL HUNG VITREOUS CHINA WHITE WITH 7516.172 FAUCET DRAIN PACKAGE. PROVIDE CONCEALED WALL SUPPORT. 1/2"H & CW, 1-1/2"WASTE, 1-1/2"VENT, 2" BELOW SLAB. MOUNTING HT. 31"A.F.F. HANDICAPPED LAVATORY: #9141.011 W/7516.172 GOOSENECK FAUCET AND 4" WRIST BLADE.

FLOOR DRAIN - JOSAM 32000 CAST IRON, ROUND 7" NIKOLAY MEDIUM DUTY LOOSE SET ANTI-TILTING GRATE. SIZE TO SUIT PIPE SIZE AS SHOWN ON DWG. OR EQUAL.

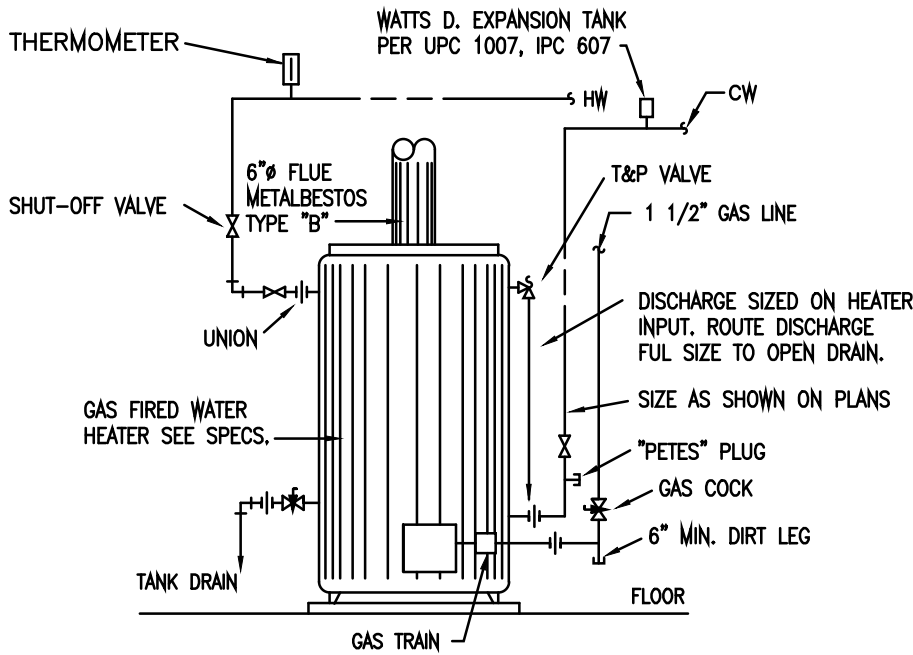


LAVATORY: AMERICAN STANDARD #0475.020 VITREOUS CHINA, OVAL COUNTERTOP WITH 7516.172 FAUCET WITH POP-UP DRAIN, FLEXIBLE HOSE SUPPLIES, WHEEL HANDLE STOPS AND "P" TRAP. PROVIDE SELF-RIMMING TYPE WITH CHROME FINISH HANDLES. COORDINATE INSTALLATION WITH CABINET SUPPLIER. GOOSENECK SPOUT AND 4" BLADES. 1/2" H/CW, 2" WASTE, 1-1/2" VENT.

JANITOR SINK - WILLIAMS MODEL MTB-24"x24" FLOOR MOUNTED BASIN W/AMERICAN STANDARD 8341.075 FAUCET WITH VACUUM BREAKER. INCLUDE VINYL BUMPER FOR EXPOSED SIDE & PROVIDE P-TRAP FOR DRAIN. 1/2"H & CW, 3"WASTE, 2"VENT.



WASHER BOX - GUY GRAY #BED-200 OR CATCH-A-DRIP C-150 WITH 1/2"H & CW VALVES ON 2" STANDPIPE DRAIN W/TRAP ABOVE FLOOR. SEE RISER SCHEMATIC.



WATER HEATER A, AMERICAN MODEL HCG3-119T300-4N, 119 GALLON NATURAL GAS REQUIRING 1 1/2" GAS LINE FOR 388 GPH RECOVERY @ 90° RISE. FURNISH WITH T&P VALVE WITH AGA RATING OF MIN. 10% ABOVE BTU INPUT OF HEATER. VALVES SET FOR 150 PSI @ 210 WATER. THERMO-BOND PROTECTIVE COATED THERMOSTAT TUBE OF LENGTH REQ'D. FOR INSERTION INTO HOTTEST WATER IN TANK. INSTALL VALVE DIRECTLY TO HEATER WITHOUT ELBOWS AND/OR COUPLINGS. EXTEND FULL-SIZE COPPER DRAIN LINE FROM VALVE TO WITHIN 6" OF FLOOR DRAIN.

APPROVED EQUALS: JR SMITH, RUUD, RHEEM CO., PVI INDUSTRIES, AO SMITH.

NATURAL GAS WATER HEATER WH-A
NO SCALE APPROX. 1848 LBS. OPERATING WEIGHT

SCHEDULE OF PIPE AND FITTING MATERIAL

SERVICE	MATERIAL	JOINTS	FITTINGS	NOTES
CONDENSATE DRAINS	COPPER "M" HARD	SOLDERED OD BRAZED	WROUGHT COPPER OR CAST BRONZE	①
VENTS AND WASTE LINES (ABOVE GROUND)	PVC SCHED 40 ASTM-D 1785	PVC SCHED 40	PVC	①
SOIL LINES CELL CLASS 12454B (BELOW GROUND) - UNDER SLAB	PVC SCHED 40	PVC SCHED 40 ASTM-D-3212	PVC ASTM-D 1785 SOLVENT WELDED NOT ALLOWED	②
REFRIGERANT AND DOMESTIC WATER PIPE - (BELOW GROUND) SMALLER THAN 3"	COPPER "K" SOFT DRAWN	SOLDERED OR BRAZED	WROUGHT COPPER OR CAST BRONZE	⑥ ⑦ ⑧
DOMESTIC WATER PIPE (ABOVE GROUND)	COPPER "L" HARD ASTM C-200	SOLDERED OR BRAZED	WROUGHT COPPER OR CAST BRONZE	⑦ ⑧
SEWER LINE PIPING (BELOW GROUND) NOT UNDER SLAB	VCP EXTRA STRENGTH ASTM C-700	COMPRESSION TYPE ASTM C-425 SYNTHETIC RUBBER SEALS	ASTM C-700	① ②
GAS PIPE (BELOW GROUND)	SCHEDULE 40, BLACK STEEL-X-TRUE COATED AND WRAPPED	CAST IRON	CAST IRON MALLEABLE IRON	③ ④
GAS PIPE (ABOVE GROUND)	SCHEDULE 40 BLACK STEEL	SCREWED	CAST IRON MALLEABLE IRON	③ ⑤

NOTES

- PVC OR ABS SCHEDULE 40, SOLVENT WELDED JOINTS MAY BE USED ONLY WITH WRITTEN AUTHORIZATION OF APPROVAL BY LOCAL INSPECTING AUTHORITY SUBMITTED BELOW TO ARCHITECT AND ENGINEER PRIOR TO BIDDING. CONDITIONS OF NOTE ② BELOW. SCR-35 SANITARY PIPE WHEN APPROVED.
- NO PVC OR ABS TO BE USED IN TYPE II CONSTRUCTION, THROUGH OR IN RETURN AIR PLENUMS, IN CITIES WHERE SUCH MATERIAL IS NOT ACCEPTABLE; OR BELOW BUILDING SLAB OR DRIVEWAY SURFACES.
- SCREWED GAS CONNECTION FOR 2" AND SMALLER; WELDED CONNECTION FOR 2" AND LARGER, AND IN RETURN AIR PLENUMS.
- THREADS AND WELDS PAINTED PRIOR TO WRAPPING, ALL EXTERIOR PIPING (ESPECIALLY ON ROOF) TO BE PAINTED (COLOR BY ARCHITECT) TO MATCH ADJACENT SURFACE. PROVIDE CATHODIC UNDERGROUND PROTECTION ON GAS PIPING AS RECOMMENDED BY LOACL KPL GAS SERVICE (FOR GOVERNING AUTHORITY)
- CONNECT ALL GAS TO EQUIPMENT THROUGH GAS COCK, UNION AND DIRT LEG.
- NO WATER FITTINGS OR CONNECTIONS BELOW FLOOR SLAB. MAKE GRADUAL BEND OR RADIUS.
- PROVIDE WATER HAMMER ARRESTORS PRIOR TO CONECTION OF HOT/COLD WATER LINES TO PLUMBING FIXTURES. COLD WATER LINES TO PLUMBING FIXTURES. ALL POTABLE WATER SYSTEMS SOLDERING TO BE 95/5, TIN/ANTIMONIAL OR UL, BOCA, IPC APPROVAL FOR SUBSTITUTION.
- ALTERNATE MATERIAL: CROSS-LINKED POLYETHYLENE (PEX) PLASTICE TUBING MEETING STANDARDS ASTM F 877 AND CSA B137.5. SDC ENGINEERING, INC. DOES NOT RECOMMEND USE OF THIS MATERIAL DUE TO CONCERNS OF COMPATIBILITY WITH MATERIALS IN THE CONCRETE AND FITTING INSTALLATION IRREGULARITIES THAT MAY RESULT IN LEAKAGE. PEX INSTALLATION SHALL CONFORM TO IPC SECTION 605.17.

PIPING INSULATION SCHEDULE

PIPE SYSTEM	INSULATION	THICKNESS	TEMP.
DOMESTIC HOT & COLD HORIZONTAL MAINS ONLY		1/2"	-20°F TO 70°F
HANDICAP "P" TRAP & HOT WATER UNDER LAVATORY'S		1/2"	-20°F TO 70°F

NOTE: ALL HORIZONTAL HOT & COLD WATER MAINS ARE TO BE INSULATED. VERTICAL MAINS AS NOTED OR SHOWN ON PLANS.

INSULATE IN CONDITIONED AND UNCONDITIONED SPACES.

* WASTE & VENT PIPING WITHIN 6 LINEAR FEET OR ROOF DRAIN OR PIPING SHALL BE INSULATED AS PER FOLLOWING ROOF DRAIN INSULATION: FIBERGLASS PIPE INSULATION - (UP TO 10" SIZES) PREFORMED FIBERGLASS UL LISTED, 0.30 BTU-IN/H-SF THERMAL CONDUCTIVITY AT 150°F, WITH ALL SERVICE JACKET, DOUBLE SELF SEALING LAP WITH 0.02 PERM./IN. OWENS CORNING ASJ-SSL-11.

PLUMBING CONNECTION/MOUNT.

FIXTURE	HOT WATER	COLD WATER	WASTE	VENT
LAVATORY OR SINK	1/2"	1/2"	1-1/2"	1-1/2"
WATER CLOSET W/FV		1"	4"	3"
WATER CLOSET, TANK TYPE		1/2"	4"	3"
SERVICE SINKS	1/2"	1/2"	2"	1-1/2"
DRINKING FOUNTAINS		1/2"	1-1/4"	1-1/4"

FIXTURE	MOUNTING HEIGHT
LAVATORY OR SINK	31" FLOOR TO RIM
HANDICAPPED LAVATORIES	34" FLOOR TO RIM
WATER CLOSET	15" FLOOR RIM
HANDICAPPED WATER CLOSET	18" FLOOR TO RIM

PLUMBING CONTRACTOR TO REFERENCE PLUMBING FLOOR PLANS AND DETAIL SHEET AND SPECIFICATIONS FOR SPECIFIC FIXTURE IDENTIFICATION USED.