

1 LIGHTING PLAN  
1/4" = 1'-0"

# ELECTRICAL GENERAL NOTES:

A. REFER TO ARCHITECTURAL SECTIONS FOR EQUIPMENT ELECTRICAL ROUGH-IN LOCATIONS. VERIFY TREATMENT EQUIPMENT FINAL LOCATIONS WITH ARCHITECT PRIOR TO ROUGH-IN.

# ELECTRICAL LIGHTING KEYED NOTES:

1 PROVIDE POWER TO WEATHER PROOF JUNCTION BOX FOR TENANT SIGN. COORDINATE EXACT MOUNTING LOCATION WITH OWNER PRIOR TO ROUGH-IN.

2 ALL EXTERIOR SIGNAGE SHALL BE CONTROLLED WITH EXTERIOR MOUNTED PHOTOCELL. PHOTOCELL SHALL NOT BE MOUNTED 10' ABOVE GROUND. E.C TO VERIFY LOCATION IN FIELD PRIOR TO ROUGH-IN.

3 CONNECT ALL EMERGENCY EGRESS AND NIGHT LIGHTING FIXTURES TO THE NEAREST LIGHTING BRANCH CIRCUIT AHEAD OF ALL SWITCHING AND CONTROLS PER STATE AND LOCAL CODES.

4 COORDINATE EXACT LOCATION OF DIMMER SWITCH BANK WITH OWNER/ARCHITECT.

LIGHTING CONTROLS:

AREA	CONTROLS
HALLWAY.	LIGHTING IN THESE AREAS SHALL BE CONTROLLED VIA CEILING MOUNTED OCCUPANCY SENSOR. FIXTURES DESIGNATED "--E" (EMERGENCY) TO REMAIN ENERGIZED AT ALL TIMES.
OFFICE/CONSULT, UNISEX, RECOVERY ROOM, BREAK ROOM, TREATMENT ROOM.	WALL MOUNTED OCCUPANCY SENSOR WITH MANUAL SWITCH FOR MANUAL/AUTOMATIC ON/OFF OF FIXTURES WITH FIXTURES DESIGNATED "--E" (EMERGENCY) TO REMAIN ENERGIZED AT ALL TIMES.
PROCESSING ATRIUM, RECEPTION & WAITING.	SWITCH FOR MANUAL ON/OFF OF FIXTURES. FIXTURES DESIGNATED "--E" (EMERGENCY) TO REMAIN ENERGIZED AT ALL TIMES.

LIGHTING CONTROLS NOTES:

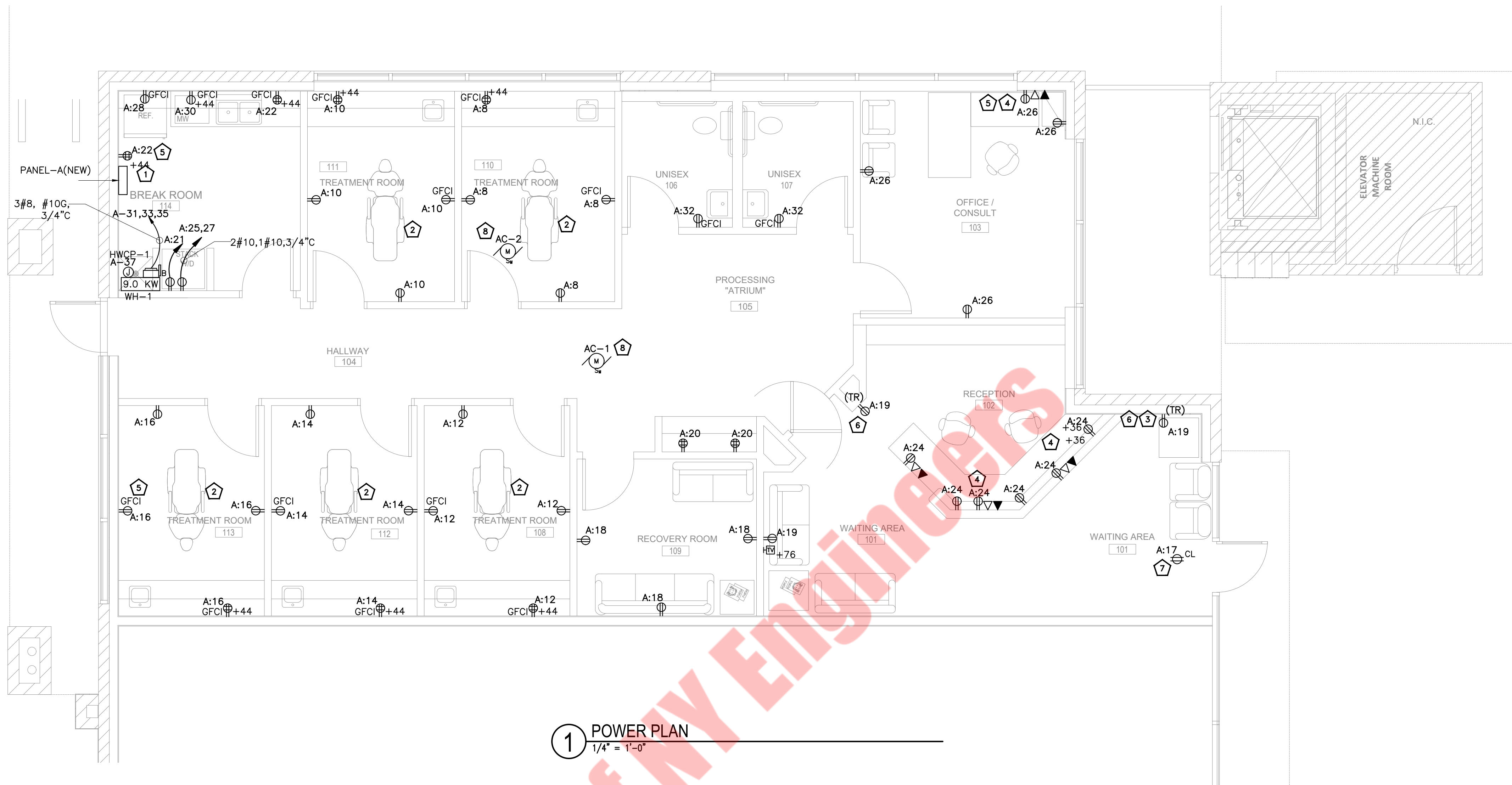
- AUTOMATIC LIGHTING CONTROLS: OCCUPANCY SENSOR SHALL BE CAPABLE OF TURNING OFF LIGHTS WITHIN 20 MINUTES OF ALL OCCUPANT LEAVING THE SPACE AND SHALL BE MANUAL ON.
- ALL ILLUMINATED EXIT SIGN TO HAVE A MAX WATTAGE OF 5 PER SIDE.
- ALL EMERGENCY LIGHT SHALL OPERATE IN EMERGENCY CONDITION.

LIGHTING FIXTURE SCHEDULE

TYPE	DESCRIPTION	MANUFACTURER	CATALOGUE#	MOUNTING	TYPE	VOLTAGE	WATTAGE(W)	REMARK
A	2X2 LED PANEL	COOPER/METALUX	22SP3435	CEILING	LED(DIM)	120/277	32	
B	DOWNLIGHT	COOPER/HALO	H7	CEILING	LED(DIM)	120/277	12.3	
C	SM. PENDENT	POSSINI EURO DEISGN	LDN6 40/15 L06 AR LS MVOLT EZ1(EL)	SUSPENDED	LED	120	4.5	
D	WALL SCONE	POSSINI EURO DEISGN	LDN6 40/15 L06 AR LS MVOLT EZ1(EL)	WALL	HALOGEN	120	60	
E	CHANDELIER	POSSINI EURO DEISGN		SUSPENDED	LED	120	59	
F	UNDER-CABINET PUCK LIGHT	JUNO		UNDERSIDE OF CASE WORK	LED(DIM)	120	3.8	
G	LG. PENDENT	VIENNA FULL SPECTRUM		SUSPENDED	LED(DIM)	120	15	
Y1	EMERGENCY LIGHT	NORA/NSPEC	EMERGENCY LIGHT	WALL	LED	120	2	
EM	EMERGENCY SIGN WITH EXIT LIGHT	NORA/NSPEC	EMERGENCY SIGN WITH EXIT LIGHT	MOUNTED ABOVE DOOR	LED	120	5	
X	EXIT LIGHT	NORA/NSPEC	EMERGENCY SIGN WITH EXIT LIGHT	MOUNTED ABOVE DOOR	LED	120	5	

LIGHT FIXTURE SCHEDULE NOTES:

- COORDINATE FINAL FIXTURE MAKE AND MODEL AND DIMMING WITH ARCHITECT.



# ELECTRICAL GENARAL NOTES:

- A. REFER TO ARCHITECTURAL SECTIONS FOR EQUIPMENT ELECTRICAL ROUGH-IN LOCATIONS. VERIFY TREATMENT EQUIPMENT FINAL LOCATIONS WITH ARCHITECT PRIOR TO ROUGH-IN.

# ELECTRICAL POWER KEYED NOTES:

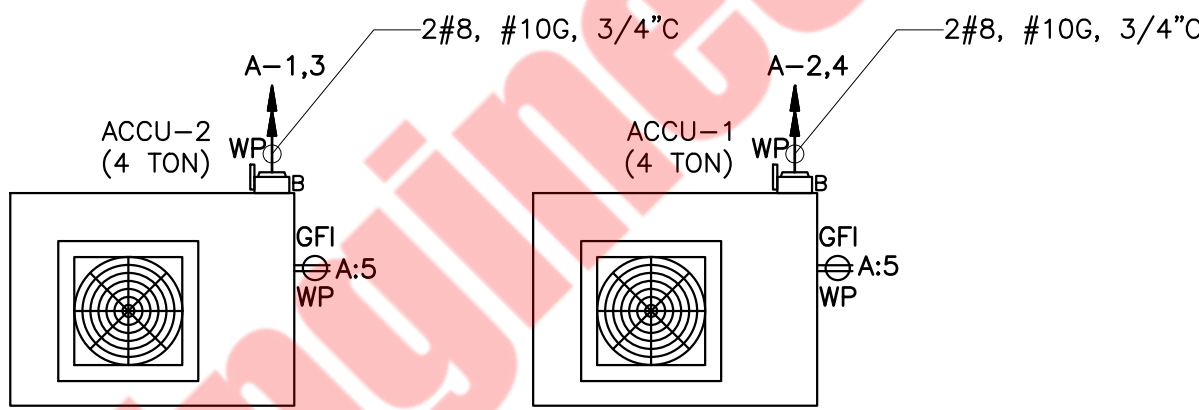
- 1 NEW PROPOSED ELECTRICAL PANEL "A". E.C. TO COORDINATE FINAL LOCATIONS WITH ARCHITECT/OWNER.
- 2 PROVIDE REDUNDANT GROUNDING PER NEC 517. TYPICAL OF ALL TREATMENT ROOM.
- 3 COORDINATE MOUNTING HEIGHT OF RECEPTACLE/DATA WITH OWNER PRIOR TO ROUGH-IN.
- 4 RECEPTACLE FOR PC. E.C. TO COORDINATE MOUNTING HEIGHT OF RECEPTACLE/DATA WITH OWNER/ARCHITECT PRIOR TO ROUGH-IN.
- 5 ALL OUTLETS AT THE EXTERIOR WALL ARE TO BE SURFACE MOUNTED. E.C. SHALL COORDINATE WITH ARCHITECT/OWNER FOR FINAL LOCATION PRIOR TO ROUGH-IN.
- 6 ALL 15/20A RECEPTACLES IN THE WAITING ROOM SHALL BE TAMPER RESISTANCE AS PER 406.12(5).
- 7 PROVIDE CEILING MOUNTED RECEPTACLE FOR SHOW WINDOW AS REQUIRED BY CODE. VERIFY WITH LOCAL ENERGY AGENCY. VERIFY EXACT LOCATION WITH ARCHITECT.
- 8 INDOOR UNIT IS POWERED BY OUTDOOR UNIT.

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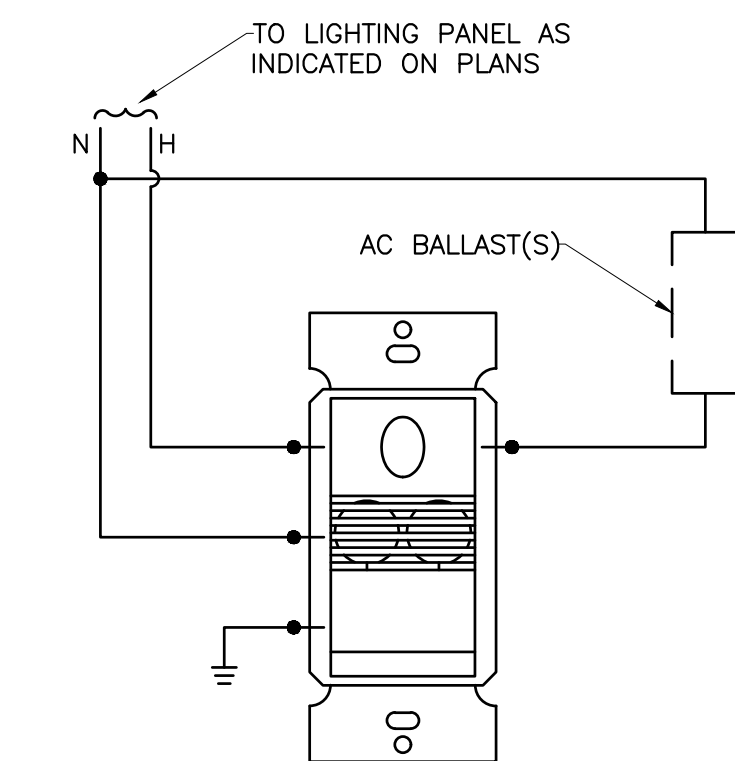
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POWER PLAN - ROOF

1/4" = 1'-0"

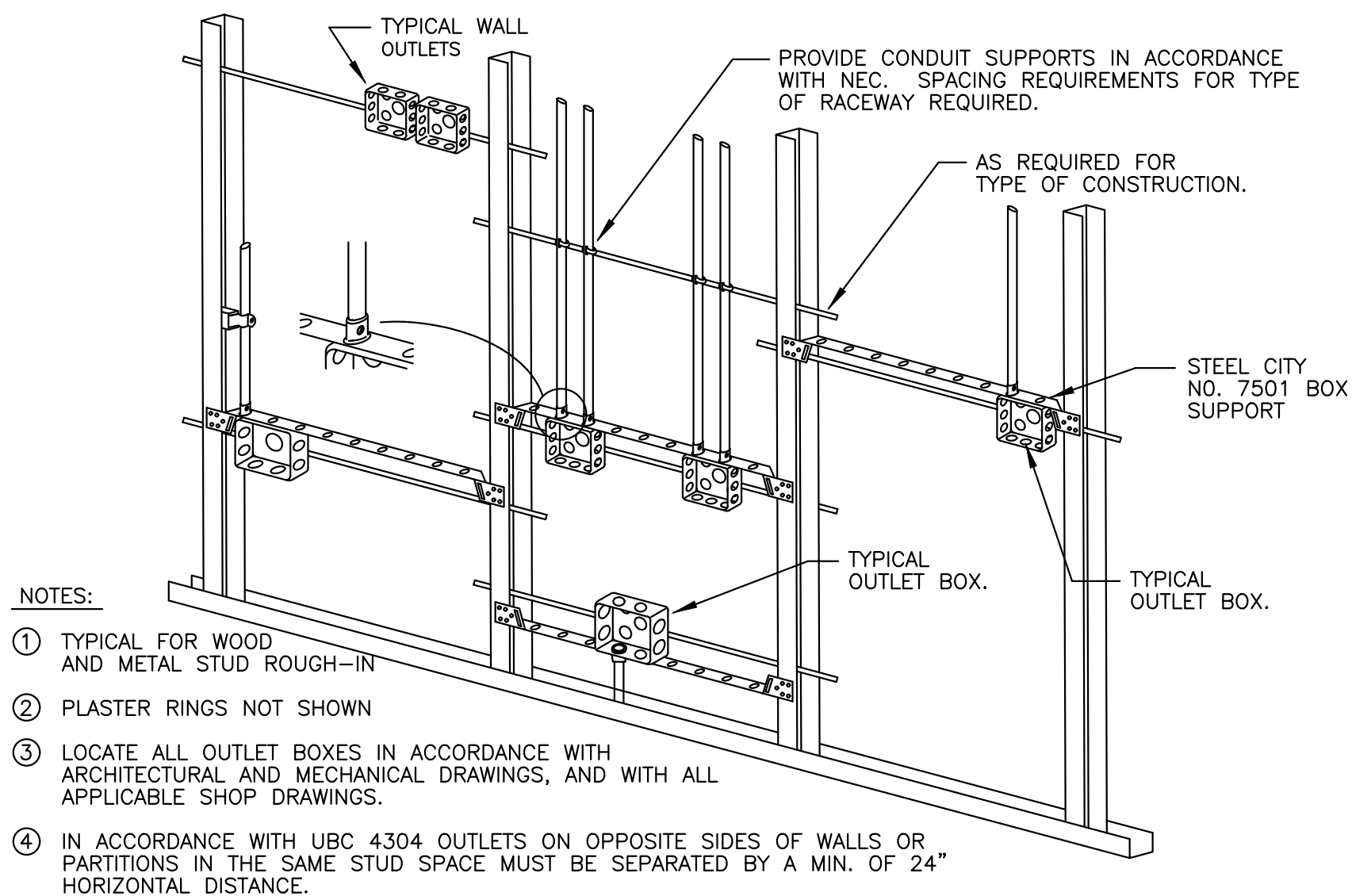
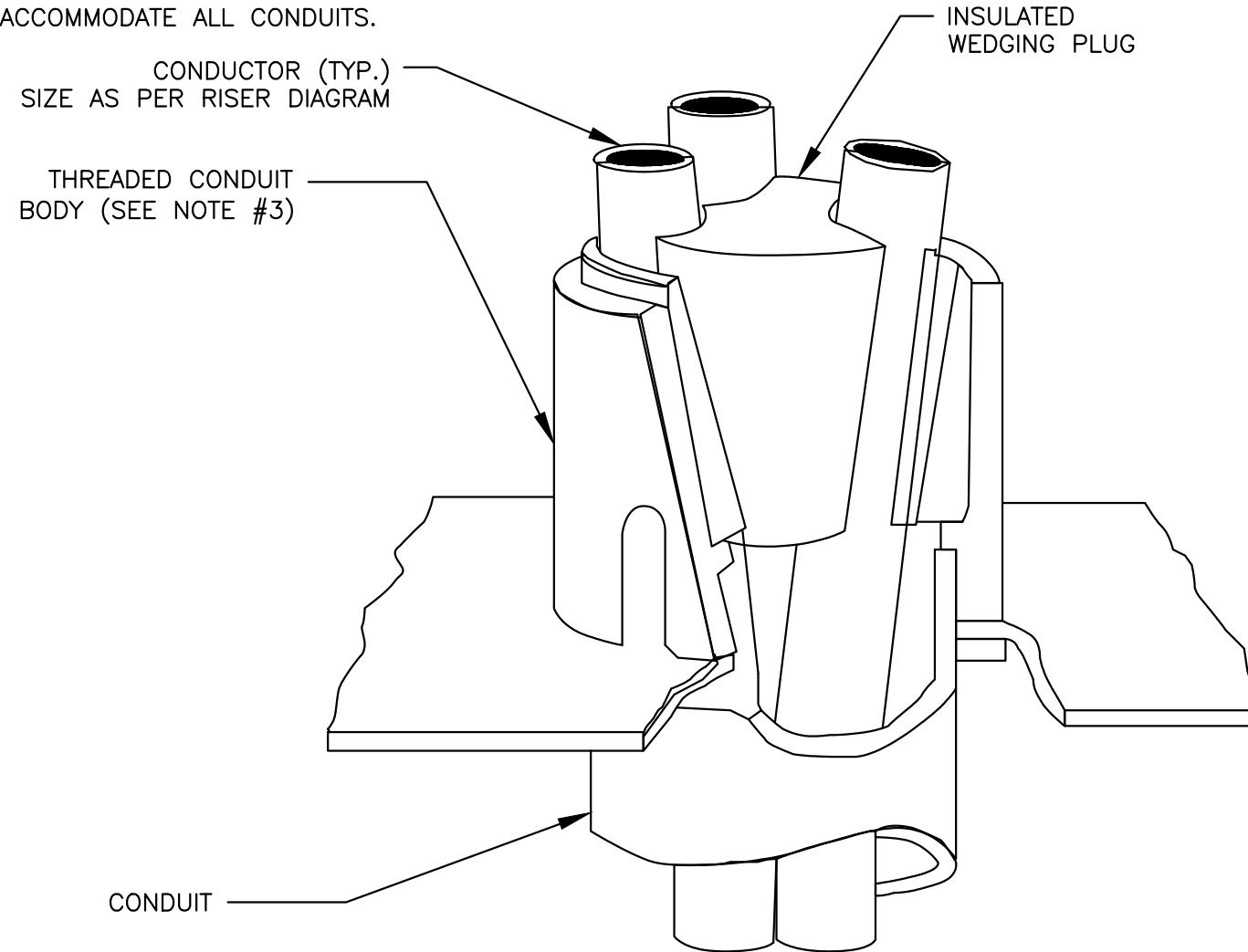






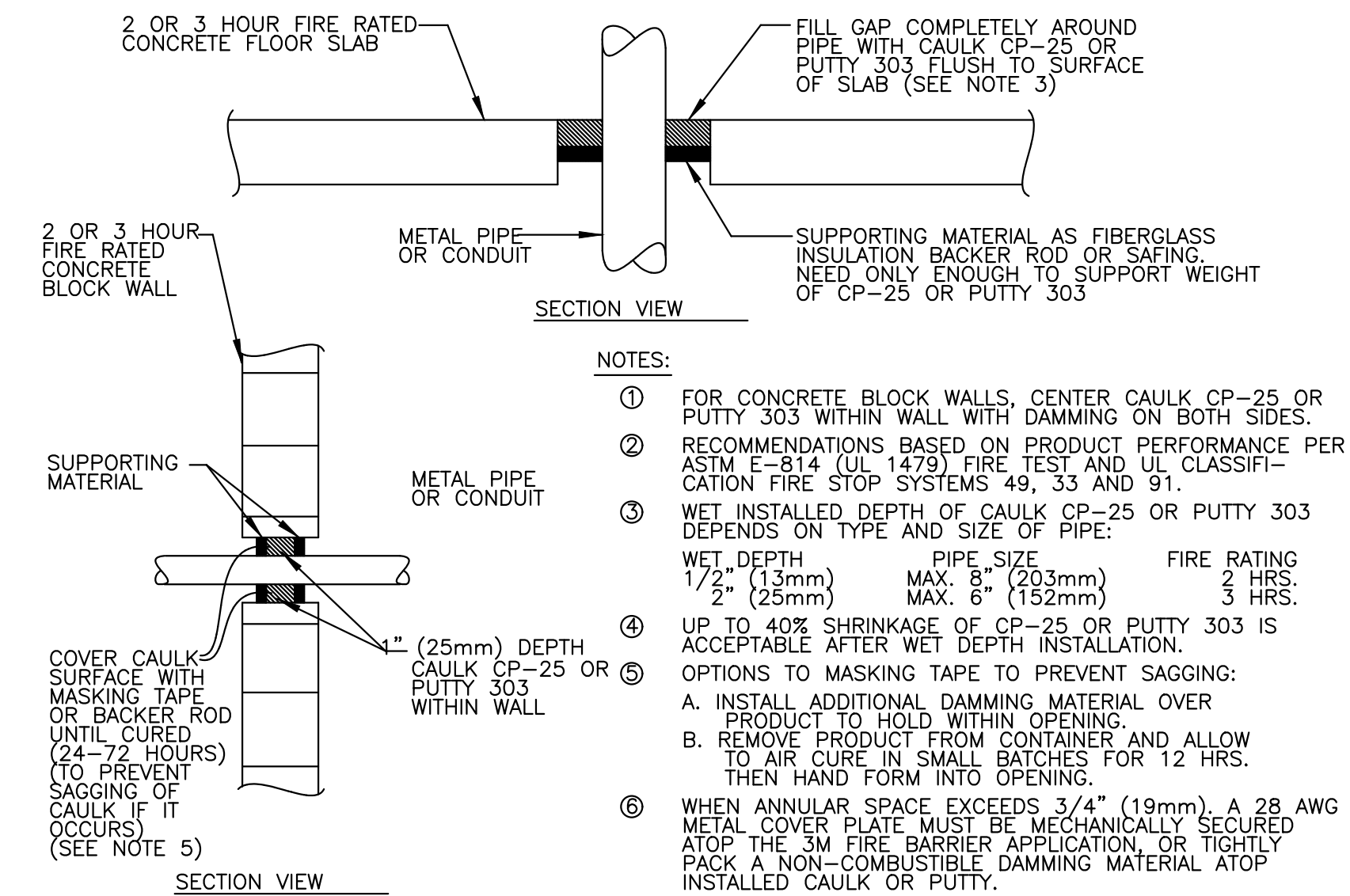
- OCCUPANCY SENSOR SWITCH WIRING DIAGRAM  
SCALE: N.T.S.
- NOTES:
1. ALL LOW VOLTAGE WIRING AND TERMINATIONS TO BE BY ELECTRICAL CONTRACTOR.
  2. OCCUPANCY/VACANCY SENSOR SHALL BE "SENSOR SWITCH" WSX-PDT-SA-WH OR APPROVED EQUAL. ALL EXPOSED CONTROL WIRING SHALL BE IN CONDUIT.

- NOTES:
1. ALL CONDUCTORS IN VERTICAL RACEWAYS SHALL BE SUPPORTED IN ACCORDANCE WITH ARTICLE 300.19 OF NEC. CABLE SUPPORTS SHALL BE LOCATED AT THE INTERVALS REQUIRED BY THE NEC.
  2. CABLE SUPPORT SYSTEM SHALL BE AS MANUFACTURED BY O-Z GEDNEY WITH pOZI-GRIP "S-STYLE" WEDGING PLUG OR APPROVED EQUAL.
  3. FOR THREADLESS CONDUIT (RIGID, IMC OR EMT), ATTACH CONDUIT BODY TO MALE THREADS OF A SET SCREW OR COMPRESSION CONNECT, AS PERMITTED BY SPECIFICATIONS.
  4. PROVIDE PULL BOX AT EACH LOCATION OF CABLE SUPPORTS. PULL BOX SHALL BE SIZED AS PER CODE TO ACCOMMODATE ALL CONDUITS.



- NOTES:
- ① TYPICAL FOR WOOD AND METAL STUD ROUGH-IN
  - ② PLASTER RINGS NOT SHOWN
  - ③ LOCATE ALL OUTLET BOXES IN ACCORDANCE WITH ARCHITECTURAL AND MECHANICAL DRAWINGS, AND WITH ALL APPLICABLE SHOP DRAWINGS.
  - ④ IN ACCORDANCE WITH UBC 4304 OUTLETS ON OPPOSITE SIDES OF WALLS OR PARTITIONS IN THE SAME STUD SPACE MUST BE SEPARATED BY A MIN. OF 24" HORIZONTAL DISTANCE.

2 DETAIL TYPICAL ROUGH-IN REQUIREMENTS  
E300 N.T.S



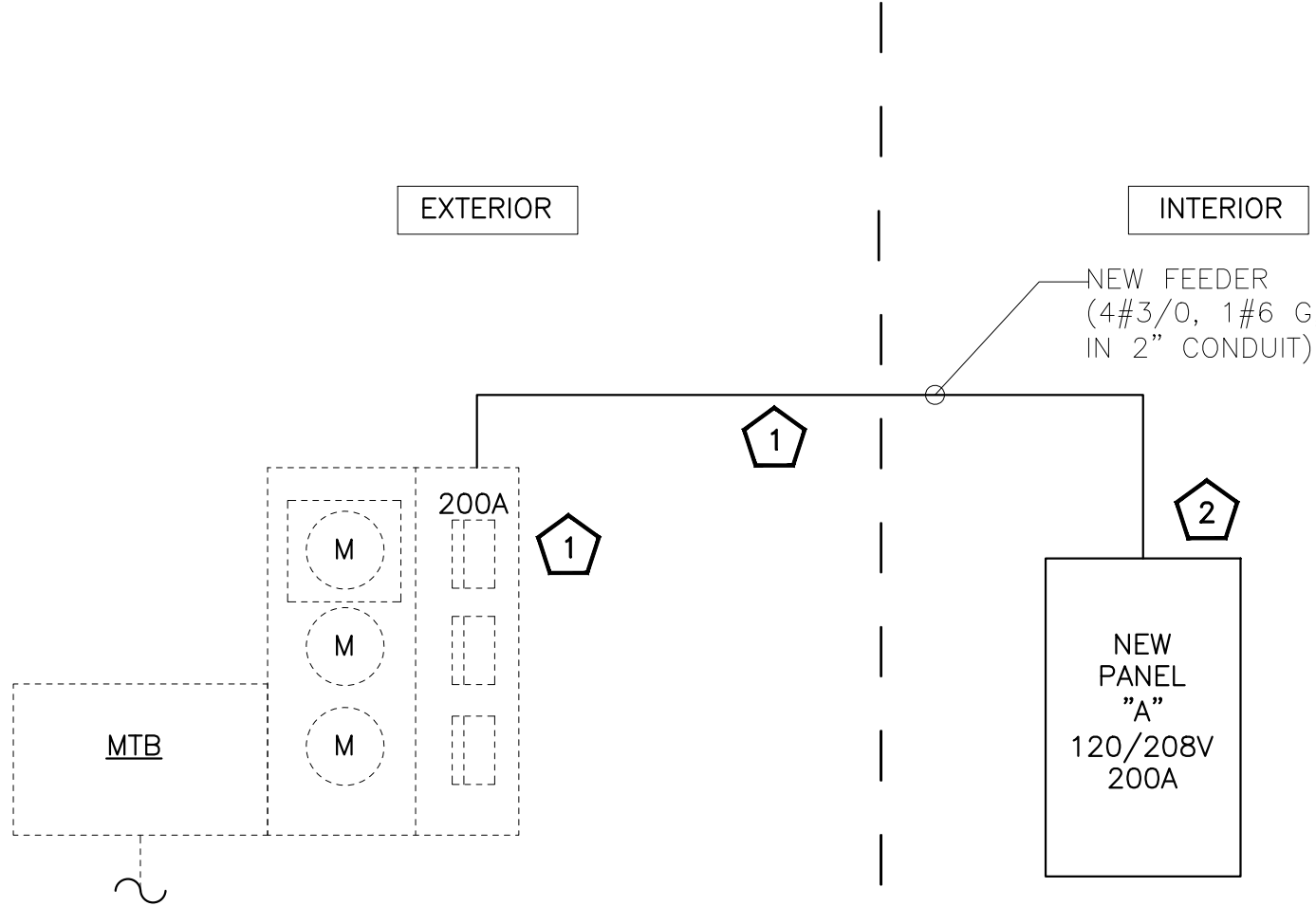
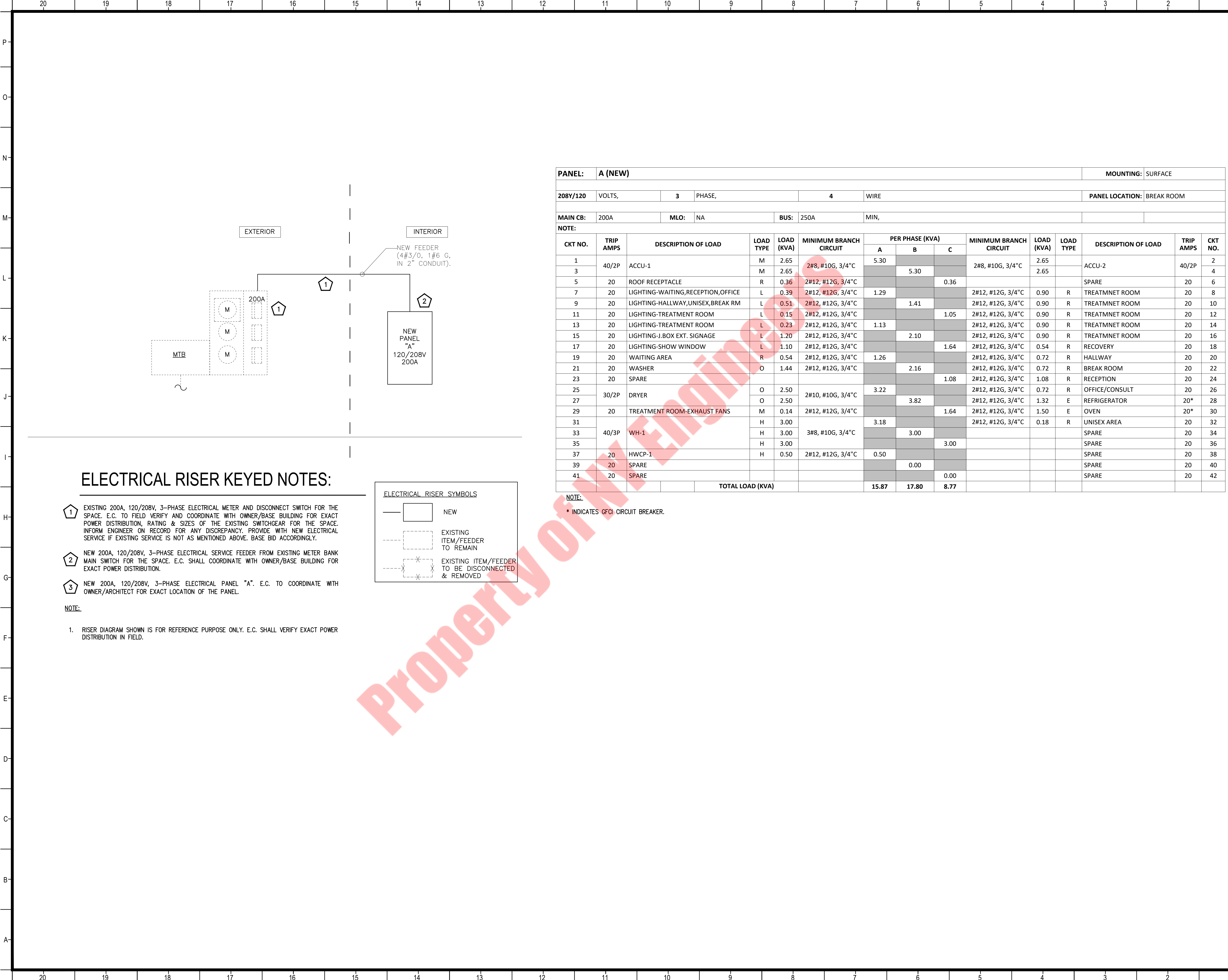
- NOTES:
- ① FOR CONCRETE BLOCK WALLS, CENTER CAULK CP-25 OR PUTTY 303 WITHIN WALL WITH DAMMING ON BOTH SIDES.
  - ② RECOMMENDATIONS BASED ON PRODUCT PERFORMANCE PER ASTM E-814 (UL 1479) FIRE TEST AND UL CLASSIFICATION FIRE STOP SYSTEMS 49, 33 AND 91.
  - ③ WET INSTALLED DEPTH OF CAULK CP-25 OR PUTTY 303 DEPENDS ON TYPE AND SIZE OF PIPE:

PIPE SIZE	PIPE SIZE	FIRE RATING
1/2" (13mm)	MAX. 6" (203mm)	2 HRS.
1/2" (25mm)	MAX. 6" (152mm)	3 HRS.
  - ④ UP TO 40% SHRINKAGE OF CP-25 OR PUTTY 303 IS ACCEPTABLE AFTER WET DEPTH INSTALLATION.
  - ⑤ OPTIONS TO MASKING TAPE TO PREVENT SAGGING:  
A. INSTALL ADDITIONAL DAMMING MATERIAL OVER PRODUCT TO HOLD WITHIN OPENING.  
B. REMOVE PRODUCT FROM CONTAINER AND ALLOW TO AIR CURE IN SMALL BATCHES FOR 12 HRS. THEN HAND FORM INTO OPENING.
  - ⑥ WHEN ANNULAR SPACE EXCEEDS 3/4" (19mm), A 28 AWG METAL COVER PLATE MUST BE MECHANICALLY SECURED ATOP THE 3M FIRE BARRIER APPLICATION OR TIGHTLY PACK A NON-COMBUSTIBLE DAMMING MATERIAL ATOP INSTALLED CAULK OR PUTTY.

4 OCCUPANCY SENSOR SWITCH DETAIL  
E300 N.T.S

3 VERTICAL CABLE SUPPORT DETAIL  
E300 N.T.S

1 FIRE STOP DETAIL  
E300 N.T.S



ELECTRICAL RISER KEYED NOTES:

- 1

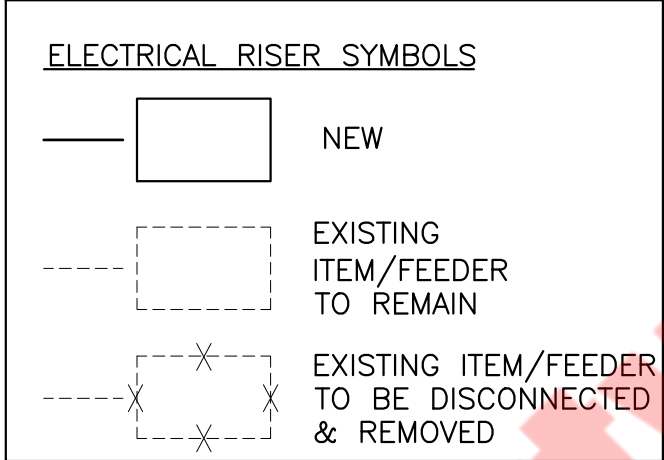
EXISTING 200A, 120/208V, 3-PHASE ELECTRICAL METER AND DISCONNECT SWITCH FOR THE SPACE. E.C. TO FIELD VERIFY AND COORDINATE WITH OWNER/BASE BUILDING FOR EXACT POWER DISTRIBUTION, RATING & SIZES OF THE EXISTING SWITCHGEAR FOR THE SPACE. INFORM ENGINEER ON RECORD FOR ANY DISCREPANCY. PROVIDE WITH NEW ELECTRICAL SERVICE IF EXISTING SERVICE IS NOT AS MENTIONED ABOVE. BASE BID ACCORDINGLY.
- 2

NEW 200A, 120/208V, 3-PHASE ELECTRICAL SERVICE FEEDER FROM EXISTING METER BANK MAIN SWITCH FOR THE SPACE. E.C. SHALL COORDINATE WITH OWNER/BASE BUILDING FOR EXACT POWER DISTRIBUTION.
- 3

NEW 200A, 120/208V, 3-PHASE ELECTRICAL PANEL "A". E.C. TO COORDINATE WITH OWNER/ARCHITECT FOR EXACT LOCATION OF THE PANEL.

NOTE:

1. RISER DIAGRAM SHOWN IS FOR REFERENCE PURPOSE ONLY. E.C. SHALL VERIFY EXACT POWER DISTRIBUTION IN FIELD.

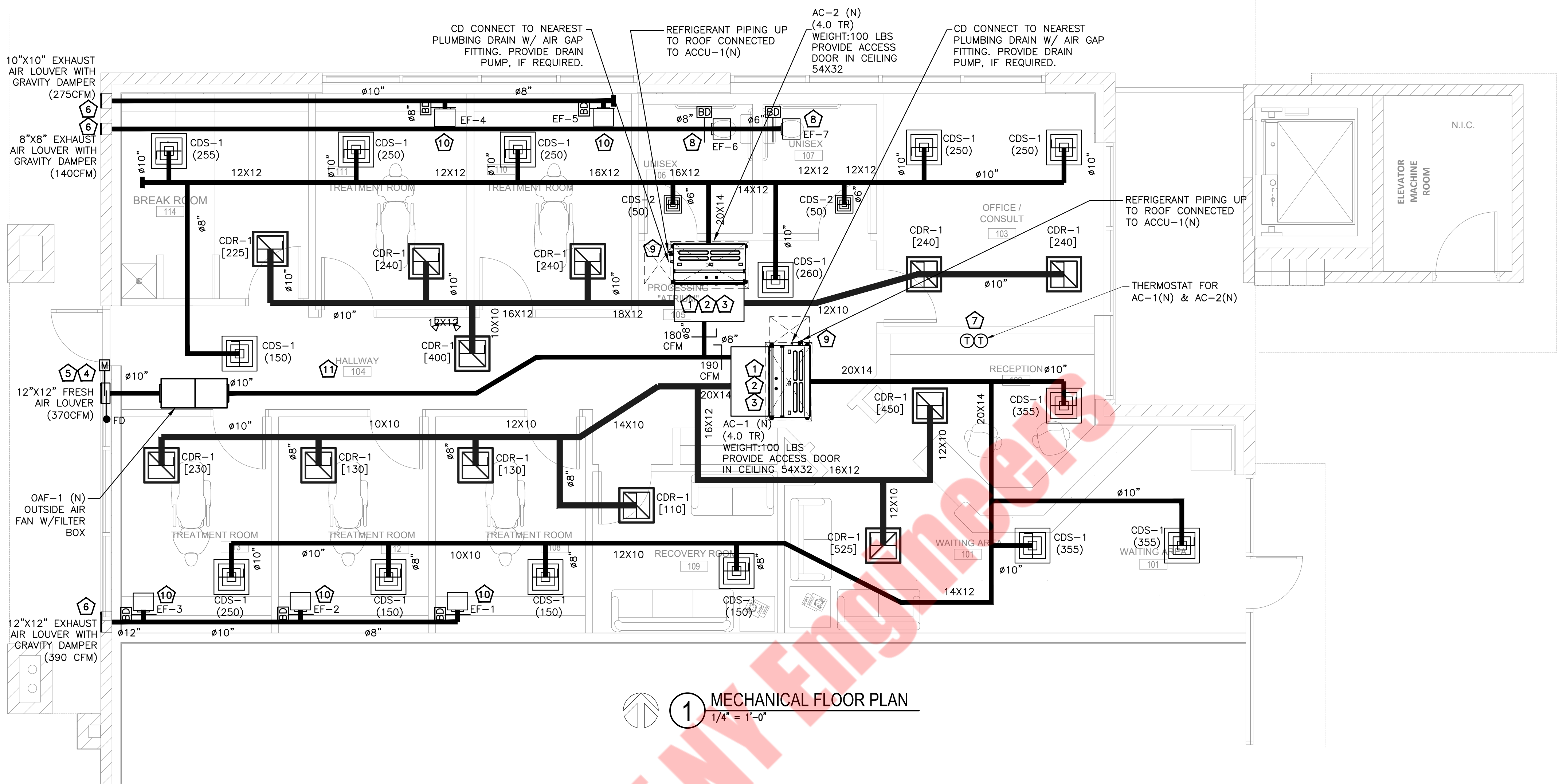


PANEL: A (NEW)										MOUNTING:		SURFACE					
208Y/120		VOLTS,		3		PHASE,		4		WIRE		PANEL LOCATION:		BREAK ROOM			
MAIN CB:		200A		MLO:		NA		BUS:		250A		MIN,					
NOTE:																	
CKT NO.	TRIP AMPS	DESCRIPTION OF LOAD				LOAD TYPE	LOAD (KVA)	MINIMUM BRANCH CIRCUIT	PER PHASE (KVA)			MINIMUM BRANCH CIRCUIT	LOAD (KVA)	LOAD TYPE	DESCRIPTION OF LOAD	TRIP AMPS	CKT NO.
									A	B	C						
1	40/2P	ACCU-1	M	2.65	2#8, #10G, 3/4"C	5.30			2#8, #10G, 3/4"C	2.65		ACCU-2	40/2P	2			
3			M	2.65			5.30	2.65		4							
5	20	ROOF RECEPTACLE	R	0.36	2#12, #12G, 3/4"C			0.36				SPARE	20	6			
7	20	LIGHTING-WAITING,RECEPTION,OFFICE	L	0.39	2#12, #12G, 3/4"C	1.29			2#12, #12G, 3/4"C	0.90	R	TREATMNET ROOM	20	8			
9	20	LIGHTING-HALLWAY,UNISEX,BREAK RM	L	0.51	2#12, #12G, 3/4"C		1.41		2#12, #12G, 3/4"C	0.90	R	TREATMNET ROOM	20	10			
11	20	LIGHTING-TREATMENT ROOM	L	0.15	2#12, #12G, 3/4"C			1.05	2#12, #12G, 3/4"C	0.90	R	TREATMNET ROOM	20	12			
13	20	LIGHTING-TREATMENT ROOM	L	0.23	2#12, #12G, 3/4"C	1.13			2#12, #12G, 3/4"C	0.90	R	TREATMNET ROOM	20	14			
15	20	LIGHTING-J.BOX EXT. SIGNAGE	L	1.20	2#12, #12G, 3/4"C		2.10		2#12, #12G, 3/4"C	0.90	R	TREATMNET ROOM	20	16			
17	20	LIGHTING-SHOW WINDOW	L	1.10	2#12, #12G, 3/4"C			1.64	2#12, #12G, 3/4"C	0.54	R	RECOVERY	20	18			
19	20	WAITING AREA	R	0.54	2#12, #12G, 3/4"C	1.26			2#12, #12G, 3/4"C	0.72	R	HALLWAY	20	20			
21	20	WASHER	O	1.44	2#12, #12G, 3/4"C		2.16		2#12, #12G, 3/4"C	0.72	R	BREAK ROOM	20	22			
23	20	SPARE						1.08	2#12, #12G, 3/4"C	1.08	R	RECEPTION	20	24			
25	30/2P	DRYER	O	2.50	2#10, #10G, 3/4"C	3.22			2#12, #12G, 3/4"C	0.72	R	OFFICE/CONSULT	20	26			
27			O	2.50			3.82	1.32	E	REFRIGERATOR	20*	28					
29	20	TREATMENT ROOM-EXHAUST FANS	M	0.14	2#12, #12G, 3/4"C			1.64	2#12, #12G, 3/4"C	1.50	E	OVEN	20*	30			
31	40/3P	WH-1	H	3.00	3#8, #10G, 3/4"C	3.18			2#12, #12G, 3/4"C	0.18	R	UNISEX AREA	20	32			
33			H	3.00			3.00			SPARE	20	34					
35			H	3.00				3.00			SPARE	20	36				
37	20	HWCP-1	H	0.50	2#12, #12G, 3/4"C	0.50						SPARE	20	38			
39	20	SPARE					0.00					SPARE	20	40			
41	20	SPARE						0.00				SPARE	20	42			
TOTAL LOAD (KVA)						15.87	17.80	8.77									

NOTE:

\* INDICATES GFCI CIRCUIT BREAKER.





1 MECHANICAL FLOOR PLAN  
1/4" = 1'-0"

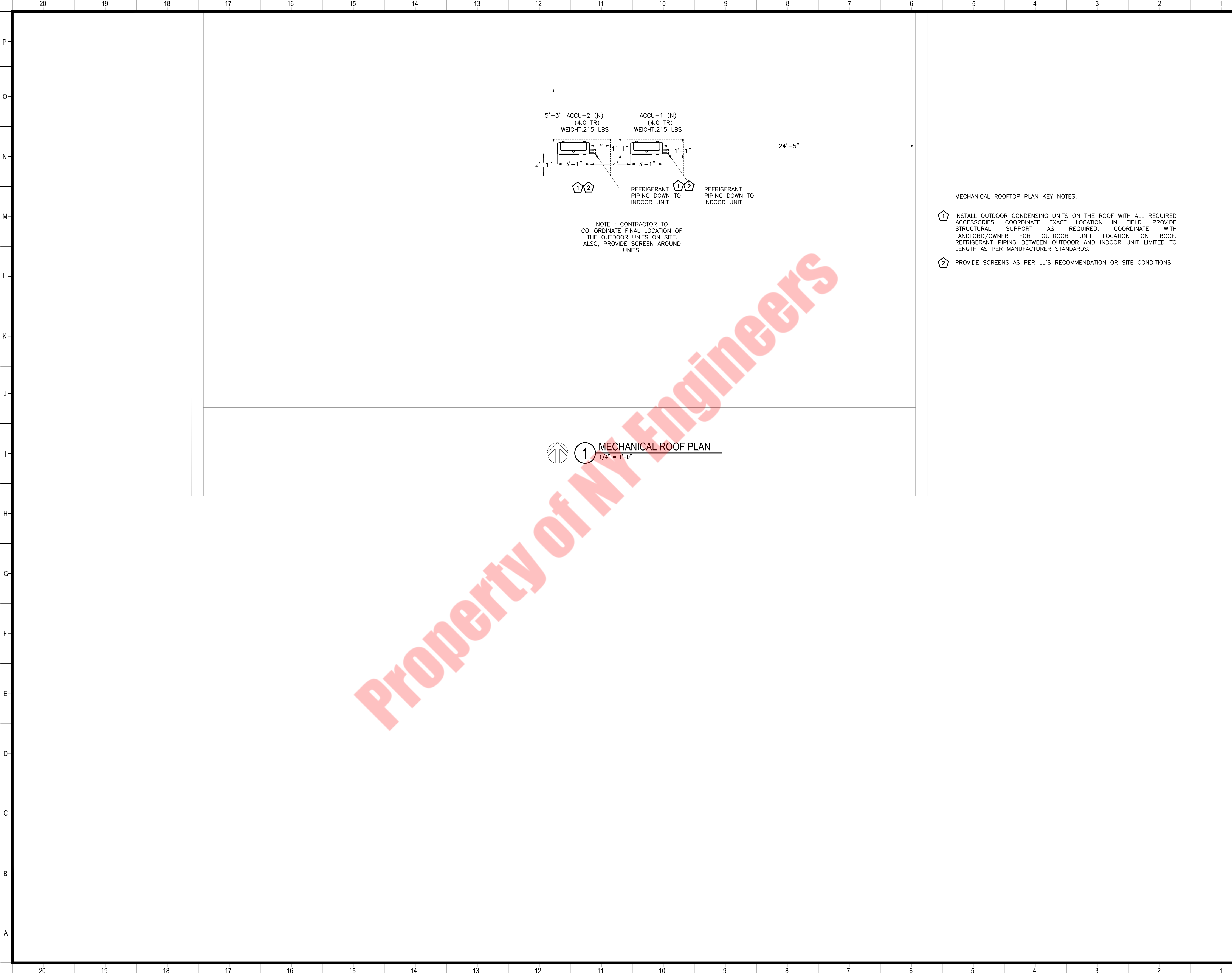
#### MECHANICAL GENERAL NOTES

- CONTRACTOR SHALL BALANCE EACH DEVICE WITH THE CFM SHOWN PLAN.
- NEW PIPING AND DUCTWORK SHOWN ON PLAN ARE SCHEMATIC ONLY. CONTRACTOR SHALL COORDINATE WITH OTHER TRADES FOR PIPING AND DUCTWORK ROUTING. OFFSET AND RUN PIPING, DUCTWORK INSIDE THE STRUCTURE IF REQUIRED. PROVIDE ANY EXTRA PIPING, DUCTWORK, FITTINGS, INSULATIONS AND OTHER ACCESSORIES IN ORDER TO COMPLETE THE INSTALLATION.
- COORDINATE LOCATIONS AND SIZES OF ROOF OPENINGS WITH OWNER AND STRUCTURE ENGINEERS.
- EQUIPMENT SIZES, DIMENSIONS AND REQUIRED CONNECTIONS SHALL BE VERIFIED WITH THE ACTUAL EQUIPMENT SELECTED VENDOR DRAWINGS BEFORE FABRICATION OF DUCTWORK, PIPING ETC.
- DUCT SIZES SHOWN ON PLANS ARE CLEAR INSIDE AIR STREAM DIMENSIONS.
- CONTRACTOR SHALL COORDINATE ALL ELECTRICAL REQUIREMENTS FOR ALL HVAC BASED ON ACTUAL EQUIPMENT SELECTED PRIOR TO INSTALLATION.
- CONTRACTOR SHALL COORDINATE EQUIPMENT WEIGHTS AND SUPPORTS BASED ON ACTUAL EQUIPMENT SELECTED.
- ALL EXPOSED DUCTWORK SHALL BE AS SHOWN, DOUBLE WALL, INSULATED METAL, PRIMED FOR PAINTING. ALL CONCEALED DUCTWORK SHALL BE INSULATED METAL RECTANGULAR UNLESS OTHERWISE ALLOWED IN WRITING BY THE ENGINEER OF RECORD. COORDINATE FINAL FINISH WITH ARCHITECT.
- COORDINATE WITH ALL TRADES FOR MATERIALS IN RATED AND PLENUM SPACES.
- ALL SOURCE OF MECHANICAL INTAKE SHALL MAINTAIN 10 LINEAR FEET SEPARATION BETWEEN ANY SOURCE OF EXHAUST. CONTRACTOR IS RESPONSIBLE TO ADJUST DUCT LENGTH AS NEEDED.
- CONTRACTOR SHALL VISIT SITE PRIOR TO BIDDING PROCESS AND BE FAMILIAR WITH THE SCOPE OF WORK.
- MECHANICAL CONTRACTOR SHALL TAKE ALL INTERFERENCES INTO CONSIDERATION. PROVIDE ALL NECESSARY OFFSETS TRANSITIONS WITH EQUIVALENT AREAS TO MATCH DUCT SIZES AS INDICATED ON DRAWINGS.
- CONTRACTOR SHALL BE FAMILIAR WITH LANDLORD AND TENANT'S STANDARDS, RULES AND REGULATIONS. ALL CRITERIA SHALL BE COMPLIED WITH AND INCLUDED IN THIS BID.
- MAINTAIN ALL MANUFACTURER'S RECOMMENDED SERVICE CLEARANCES FOR ALL EQUIPMENT.
- HVAC DUCTWORK SHALL BE FABRICATED AND ERECTED IN ACCORDANCE WITH ASHRAE AND LATEST SMACNA STANDARDS. PROVIDE TURNING VANES ON ALL ELBOWS.
- ALL SUPPLY AND EXHAUST BRANCH DUCTWORK SHALL HAVE MANUAL VOLUME DAMPERS IN CORRESPONDING RUNOUTS NEAR CONNECTION TO MAIN DUCT.
- NO THERMOSTATS OR SENSOR ARE TO BE LOCATED OVER HEAT PRODUCING EQUIPMENT.
- THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS, LICENSES, DOCUMENTS AND SERVICES RELATED TO INSTALLATION OF WORK.

- CONDUIT IN EXPOSED TO VIEW AREAS TO BE PAINTED TO MATCH ROOF DECK AND/OR WALL COLOR.
- MECHANICAL CONTRACTOR SHALL PATCH ALL OPENINGS IN EXISTING WALLS, FLOORS, AND CEILINGS REMAINING AFTER COMPLETION OF ALL DEMOLITION WORK FOR PROJECT. CONTRACTOR SHALL PATCH ALL OPENINGS TO MATCH SURROUNDING SURFACE FINISHES.
- EXISTING SPRINKLERS TO BE MODIFIED AS REQUIRED TO ACCOMMODATE NEW ROOM/REFLECTED CEILING LAYOUT. SPRINKLERS SHALL BE IN ACCORDANCE WITH N.F.P.A. 13, PER REQUIRED OCCUPANCY HAZARDS.
- FILTERS FOR ALL HVAC UNITS ARE TO BE REPLACED AT THE END OF CONSTRUCTION. CONTRACTOR SHALL SUPPLY (1) ADDITIONAL SET OF FILTERS LABELED FOR THE RESPECTIVE HVAC UNIT TO OWNER AT THE END OF CONSTRUCTION.
- ALL ROOF WORK TO BE DONE BY LANDLORD APPROVED ROOFING CONTRACTOR TO MAINTAIN ROOF WARRANTY.
- MECHANICAL CONTRACTOR TO MOUNT SMOKE DETECTOR REMOTE KEY STATUS AND TEST STATIONS (WITH AUDIO AND VISUAL ALARM) NEXT TO UNIT THERMOSTAT. M.C. TO INDICATE DETECTOR SERVING ROOFTOP UNIT. ALL WIRING SHALL BE BY ELECTRICAL CONTRACTOR IN CONDUIT PER N.E.C. REMOTE STATION SHALL BE A SYSTEM SENSOR MODEL SSK51 OR EQUAL.
- MANUAL VOLUME CONTROL DAMPERS SHALL BE LOCK-TYPE (TYPICAL FOR ALL).
- SHEETMETAL DUCTWORK CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF "SMACNA" STANDARDS. NFPA 90A AND 96, AND THE LATEST EDITION OF THE ASHRAE GUIDE AND DATA BOOKS. ALL DUCTWORKS SIZES INDICATED ON THE PLANS ARE THE INTERNAL DIMENSIONS AND DUCTWORK SIZES SHALL BE INCREASED ACCORDINGLY SHOULD DUCTWORK BE INTERNALLY LINED WITH INSULATION. ALL DUCTWORK SHALL BE SEALED AIR TIGHT AND SHALL NOT ALLOW MORE THAN 10% AIR LEAKAGE THROUGHOUT THE ENTIRE SYSTEM.
- THE MECHANICAL CONTRACTOR HAS THE OPTION OF REVISING DUCTWORK SIZES TO OTHERS OF EQUIVALENT CROSS-SECTIONAL AREA SHOULD SPACE PERMIT.
- DUCTWORK INSULATION:
  - ALL SUPPLY DUCTWORK INSIDE OF THE BUILDING, IN NON-CONDITIONED SPACES, SHALL BE INSULATED WITH DUCT WRAP OF MINIMUM R-8, WITH VAPOR BARRIER. JOINTS SHALL BE STAPLED AND TAPED. AS AN ALTERNATE, THE CONTRACTOR MAY LINE THE DUCTS WITH 1" THICK, 1-1/2# DENSITY FIBERGLASS DUCT LINER.
  - DUCTWORK INSULATION SHALL HAVE A FLAME SPREAD/SMOKE DENSITY RATING NOT EXCEEDING 25/50 PER NFPA PAMPHLET 90A.
- VIBRATION ABSORBING SUPPORTS SHALL BE INSTALLED AS REQUIRED ON ALL EQUIPMENT TO PREVENT TRANSMISSION OF VIBRATION AND NOISE TO THE STRUCTURE. PROVIDE VIBRATION ISOLATION PER A.S.H.R.A.E STANDARDS.

#### HVAC KEY NOTES:

- PROVIDE SECONDARY DRIP PAN UNDER AC UNIT WITH WATER LEAKAGE SENSOR AND ALARM TO SHUT THE UNIT.
- PROVIDE ACOUSTIC ENCLOSURE/WRAP FOR AC UNITS.
- CONNECT REFRIGERANT PIPING FROM BRANCH CONTROLLER TO AC UNIT. COORDINATE LOCATION OF BRANCH CONTROLLER WITH LANDLORD.
- MD TO BE INTERLOCKED WITH AC UNITS.
- LOCATE OUTSIDE AIR INTAKE MIN. 10 FT. AWAY FROM ANY EXHAUST SOURCE AND 10 FT. AWAY FROM PUBLIC WAY.
- EXTENT ALL EXHAUST DUCTS UP TO THE LOUVERS ON REAR WALL. COORDINATE WITH GENERAL CONTRACTOR AND OWNER. PROVIDE FIRE DAMPER AND GRAVITY DAMPER AS NECESSARY.
- LOCATION OF DIGITAL THERMOSTAT CONTROL. INSTALL AND WIRE NEW 7-DAY PROGRAMMABLE THERMOSTAT. COORDINATE EXACT LOCATION WITH ARCHITECT AND OWNER PRIOR TO ROUGH-IN. PROVIDE LOCKABLE COVER.
- CEILING MOUNTED EXHAUST FAN. INTERLOCK EXHAUST FAN WITH LIGHTS IN THIS ROOM. REFER TO ELECTRICAL LIGHTING PLAN. FAN SHALL BE SUSPENDED FROM STRUCTURE ABOVE. VERIFY EXACT LOCATION OF STRUCTURAL MEMBERS PRIOR TO INSTALLATION.
- INSTALL REFRIGERANT PIPING BETWEEN INDOOR AND OUTDOOR UNIT. PROVIDE INSULATION TO REF PIPING AS PER ENERGY CONSERVATION CODE.
- CEILING MOUNTED EXHAUST FAN CONTROLLER VIA. MANUAL ON/OFF SWITCH.
- DEMOLISH/REMOVE EXISTING SPACE CABINET HEATER.



MECHANICAL ROOFTOP PLAN KEY NOTES:

- 1 INSTALL OUTDOOR CONDENSING UNITS ON THE ROOF WITH ALL REQUIRED ACCESSORIES. COORDINATE EXACT LOCATION IN FIELD. PROVIDE STRUCTURAL SUPPORT AS REQUIRED. COORDINATE WITH LANDLORD/OWNER FOR OUTDOOR UNIT LOCATION ON ROOF. REFRIGERANT PIPING BETWEEN OUTDOOR AND INDOOR UNIT LIMITED TO LENGTH AS PER MANUFACTURER STANDARDS.
- 2 PROVIDE SCREENS AS PER LL'S RECOMMENDATION OR SITE CONDITIONS.

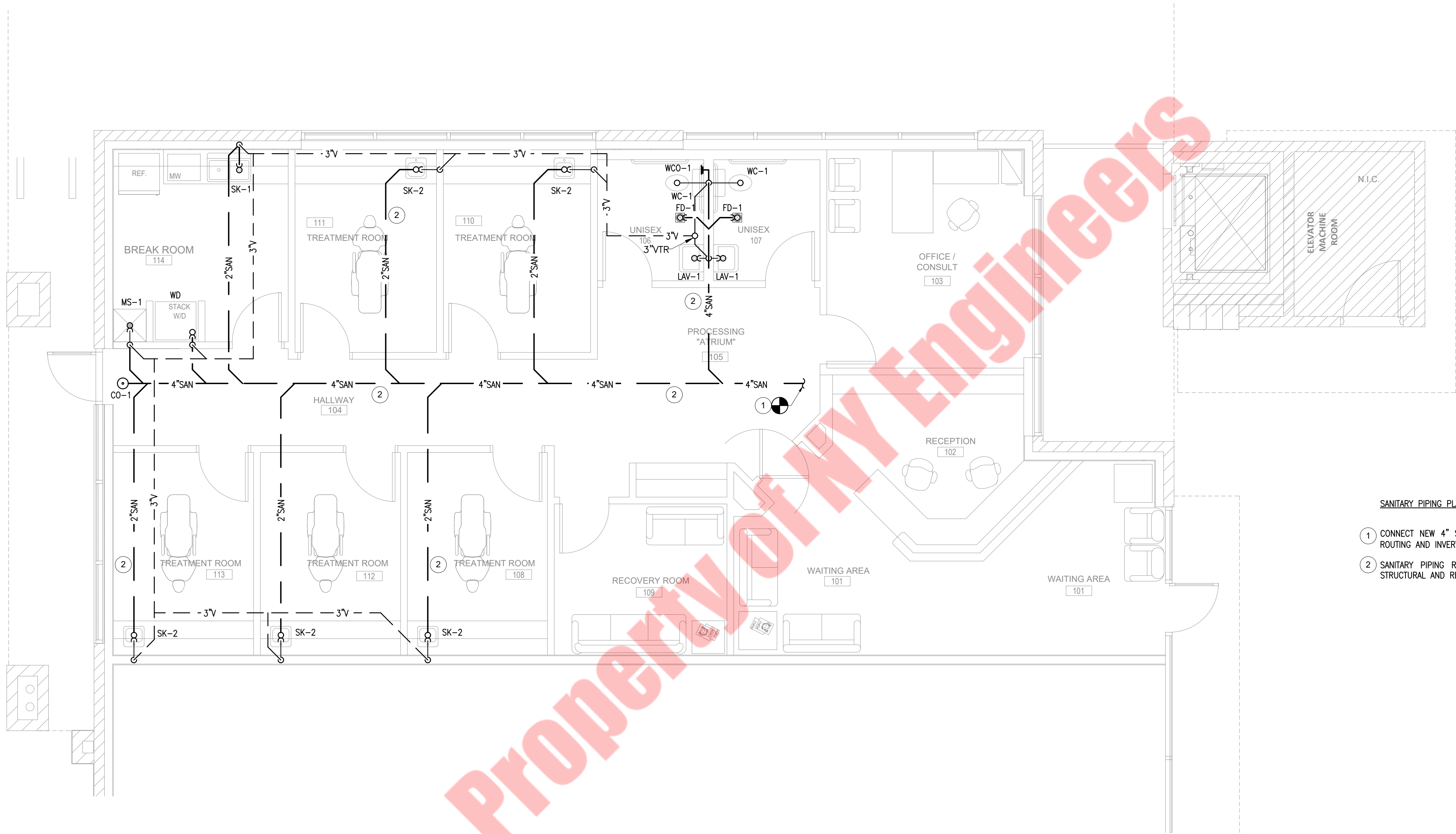


1 MECHANICAL ROOF PLAN  
1/4" = 1'-0"



	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
	HEAT PUMP SPLIT INDOOR UNIT SCHEDULE																			
P	TAG	AREA SERVED	TYPE	TON	TOTAL COOLING CAP. (MBH)	TOTAL HEATING CAP. (MBH)	SUPPLY AIRFLOW (CFM)	OUTSIDE AIR (CFM)	ELECTRICAL DATA		DIMENSIONS (WxDxH) (IN.)	REF. PIPE SIZE (IN.)		WEIGHT (LBS)	MAKE & MODEL NO.					
									PH/VOLT/HZ	MCA (A)		LIQ.	SUCTION							
	AC-1 (N)	SEE PLAN	4 WAY CEILING CASSETTE UNIT	4	46	50	1765	190	INDOOR UNIT IS POWERED BY THE OUTDOOR UNIT		49X28X14	3/8	5/8	100.00	LHN488HV					
	AC-2 (N)	SEE PLAN	4 WAY CEILING CASSETTE UNIT	4	46	50	1765	180	INDOOR UNIT IS POWERED BY THE OUTDOOR UNIT		49X28X14	3/8	5/8	100.00	LHN488HV					
	NOTES :-																			
	1. INOOR UNIT IS POWERED BY OUTDOOR UNIT																			
	2. SUPPLY AIR CFM BASED ON HIGH SPEED. PROVIDE VARIABLE AIRFLOW ADJUSTMENT CONTROL FOR ALL UNITS.																			
	3. REFRIGERANT R410A SHALL BE PROVIDED.																			
	4. PROVIDE ALL ASSOCIATED ACCESSORIES.																			
	5. ALL REFRIGERANT PIPING TO BE SIZED AS PER MANUFACTURERS RECOMMENDATIONS.																			
	6. SEE FLOOR PLAN FOR QUANTITIES.																			
N	7. CONTRACTOR SHALL PROVIDE A LONG LINE SET FOR REFRIGERANT PIPING IN THE EVENT THAT TOTAL REFRIGERANT LENGTH EXCEEDS THE MANUFACTURER'S STANDARD RECOMMENDED LENGTH.																			
	8. PROVIDE DISCONNECT SWITCH & NON-POWERED GFI OUTLET.																			
	9. HINGED ACCESS PANELS AND EXTERNAL GAUGE PORTS/PRESSURE RESETS.																			
	HEAT PUMP SPLIT OUTDOOR UNIT SCHEDULE																			
	TAG	LOCATIO N	INDOOR UNITS SERVED	CAP. (TON)	MAX. COOLING CAP.	MAX. HEATING CAP.	COMPRESSOR TYPE	UNIT DIMENSIONS IN.(WxHxD)	WEIGHT (LBS)	PIPING DIAMETER		ELECTRICAL DATA			SOUND RATING (DBA)	EER	SEER	HSPF	MODEL	
										LIQ.	GAS	PH./V/Hz	MCA (A)	MOCP (A)						
	ACCU-1 (N)	ROOF	AC-1(N)	4	46	50	INVERTER-DRIVEN TWIN ROTARY	37X54X13	215	3/8	5/8	1/208/60	32	40	42	12.5	18.7	11.2	LUU480HHV	
	ACCU-2 (N)	ROOF	AC-2(N)	4	46	50	INVERTER-DRIVEN TWIN ROTARY	37X54X13	215	3/8	5/8	1/208/60	32	40	42	12.5	18.7	11.2	LUU480HHV	
	NOTES :-																			
	1. UNIT SHALL HAVE TEN YEAR EXTENDED WARRANTY FOR COMPRESSORS/PARTS.																			
	2. PROVIDE LOW AMBIENT CONTROL FOR CONDENSING UNIT OPERATION DOWN TO -4°F.																			
	3. PROVIDE COMPRESSOR CYCLE PROTECTOR.																			
	4. SUPPORTS FOR CONDENSER MOUNTING TO BE PROVIDED BY MECH. CONTRACTOR .																			
	5. OUTDOOR REFRIGERANT LINESET TO BE WRAPPED IN UV RESISTANT, FIRE RATED, AND ANTI-MICROBIAL INSULATION PROTECTION BASED ON AIREX-FLEX GUARD OR EQUAL.																			
	6. REFFRIGERANT LINESET PENETRATION THROUGH BUILDING EXTERIOR SEALED BY AIREX TITAN FS OR SS MODEL SERIES DEPENDING UPON WALL CONSTRUCTION.																			
	7. OUDOOR UNITS TO BE LOCATED WITH PROPER CLEARANCES AND MUST PREVENT RE-CIRCULATION OF AIR. COORDINATE WITH MANUFACTURER AND ARCHITECT.																			
	EXHAUST FANS SCHEDULE																			
M	TAG	FLOW RATE	STATIC PRESSURE		ELECTRIC DATA		MAXIMUM LOUDNESS	BASIS OF DESIGN		REMARK										
		CFM	IN W.G.	RPM	WATT	V/PH/HZ		MANUFACTURER	MODEL											
	EF-1	130	0.3	1400	44	115/1/60	36	GREENHECK	SP-A190	1,3,4										
	EF-2	130	0.3	1400	44	115/1/60	36	GREENHECK	SP-A190	1,3,4										
	EF-3	130	0.3	1400	44	115/1/60	36	GREENHECK	SP-A190	1,3,4										
	EF-4	130	0.3	1400	44	115/1/60	36	GREENHECK	SP-A190	1,3,4										
	EF-5	130	0.3	1400	44	115/1/60	36	GREENHECK	SP-A190	1,3,4										
	EF-6	70	0.3	950	16	115/1/60	33	GREENHECK	SP-A110	2,3,4										
L	EF-7	70	0.3	950	16	115/1/60	33	GREENHECK	SP-A110	2,3,4										
	NOTES:																			
	1. PROVIDE LOCALISED ISOLATOR FOR FAN OPERATION.																			
	2. INTERCONNECT WITH LIGHTS IN ROOM. REFER TO ELECTRICAL LIGHTING PLAN.																			
	3. PROVIDE FACTORY MOUNTED AND INSTALLED DISCONNECT.																			
	4. PROVIDE ACCESS DOOR TO SERVICE UNIT IF IN HARD CEILING.																			
K	NOTE: EXHAUST FANS PROVIDED IN TREATMENT ROOMS ARE USED ONLY PERIODICALLY DURING CERTAIN SPECIFIC TREATMENTS DUE TO ODORS & NOT CONTINUOUSLY FUNCTIONAL. ALSO, IT IS UNLIKELY THAT EVERY EXHAUST FAN WOULD BE RUNNING SIMULTANEOUSLY.																			
	MECHANICAL AIR TERMINAL DEVICES SCHEDULE																			
	TAG	SIZE	DESCRIPTION		CONSTRUCTION	FINISH	BASIS OF DESIGN		NOTES											
							MANUFACTURER	MODEL												
	CDS-1	24X24	LOUVERED FACE SUPPLY AIR DIFFUSER		ALUMINUM	WHITE	TITUS	TMS-AA	ALL											
	CDS-2	12X12	LOUVERED FACE SUPPLY AIR DIFFUSER		ALUMINUM	WHITE	TITUS	TMS-AA	ALL											
	CDR-1	24X24	PERFORATED FACE RETURN AIR GRILLE		ALUMINUM	WHITE	TITUS	PAR-AA	ALL											
	1. PROVIDE STANDARD WHITE FINISH FOR ALL AIR DEVICES UNLESS NOTED OTHERWISE ON PLAN.																			
	2. PAINT ALL SURFACES VISIBLE THROUGH FACE OF RETURN AIR GRILLE FLAT BLACK. THIS SHALL INCLUDE PIPING, CONDUIT,																			
	3. PROVIDE FRAME FOR MOUNTING AIR DEVICE IN LAY-IN GRID CEILING UNLESS REFLECTED CEILING PLAN INDICATES HARD																			
	4. UNLESS OTHERWISE NOTED, BRANCH DUCTS SERVING AIR DEVICES SHALL BE SAME SIZE AS NECK OF AIR DEVICE.																			
	5. AIR DEIVCE SHALL BE OF GALVANIZED FINISH WHEN INSTALLED ON EXPOSED DUCTWORK.																			
	FOR ROUND NECK DIFFUSERS:																			
	6" DIA: 0-120 CFM																			
	8" DIA: 125-220CFM																			
	10" DIA: 225-380 CFM																			
	12" DIA:385-600 CFM																			
	(AC-1) VENTILATION CALCULATIONS AS PER INTERNATIONAL MECHANICAL CODE - 2015																			
J	OCCUPANCY CATEGORY	PEOPE OUTDOOR AIR RATE - (Rp)	AREA OUTDOOR AIR RATE - (Ra)	OCCUPANCY DENSITY AS PER 2015 IMC	OCCUPANCY	LARGEST NUMBER OF PEOPLE EXPECTED TO OCCUPY THE ZONE	Rp*Pz	Ra*Az	AREA - (Az)	ZONE AIR DISTRIBUTION EFFECTIVE NESS - Ez	BREATHIN G ZONE OUTDOOR AIRFLOW - (Vbz) Vbz=Rp*Pz+Ra*Az CFM	ZONE OUTDOOR AIRFLOW (Voz) Voz=Vbz/ Ez	ZONE PRIMARY AIRFLOW (Vpz)	EXHAUST AIRFLOW RATE (CFM/SQ. FT OR /FIXT./ 8ACH)	ACTUAL PROVIDED OA (CFM)	ACTUAL PROVIDED EXHAUST (CFM)				
		(CFM/PERSON)	(CFM/SQ.FT.)	P/1,000 SQ.FT.				SQ.FT.												
	AC-1(N)																			
	WAITING AREA + RECEPTION	5	0.06	30	12	10	50	22	367	0.8	72	90	90	0	90	0				
	RECOVERY ROOM	5	0.06	5	1	5	25	6	97	0.8	31	39	40	0	40	0				
	TREATMENT ROOM-1	5	0.06	5	1	2	10	6	106	0.8	16	20	20	8 ACH	20	130				
	TREATMENT ROOM-2	5	0.06	5	1	2	10	6	106	0.8	16	20	20	8 ACH	20	130				
	TREATMENT ROOM-3	5	0.06	5	1	2	10	6	106	0.8	16	20	20	8 ACH	20	130				
	TOTAL								782		152	190	190		190	390				
	(AC-2) VENTILATION CALCULATIONS AS PER INTERNATIONAL MECHANICAL CODE - 2015																			
	OCCUPANCY CATEGORY	PEOPE OUTDOOR AIR RATE - (Rp)	AREA OUTDOOR AIR RATE - (Ra)	OCCUPANCY DENSITY AS PER 2015 IMC	OCCUPANCY	LARGEST NUMBER OF PEOPLE EXPECTED TO OCCUPY THE ZONE	Rp*Pz	Ra*Az	AREA - (Az)	ZONE AIR DISTRIBUTION EFFECTIVE NESS - Ez	BREATHIN G ZONE OUTDOOR AIRFLOW - (Vbz) Vbz=Rp*Pz+Ra*Az CFM	ZONE OUTDOOR AIRFLOW (Voz) Voz=Vbz/ Ez	ZONE PRIMARY AIRFLOW (Vpz)	EXHAUST AIRFLOW RATE (CFM/SQ. FT OR /FIXT./ 8ACH)	ACTUAL PROVIDED OA (CFM)	ACTUAL PROVIDED EXHAUST (CFM)				
		(CFM/PERSON)	(CFM/SQ.FT.)	P/1,000 SQ.FT.					SQ.FT.											
	AC-2(N)																			
	OFFICE/CONSULT	5	0.06	5	1	3	15	10	167	0.8	25	31	35	0	35	0				
	HALLWAY + ATRIUM	0	0.06	0	0	2	0	20	332	0.8	20	25	25	0	25	0				
	BREAKROOM	7.5	0.18	70	9	4	30	23	127	0.8	53	66	70	0	70	0				
	TREATMENT ROOM-4	5	0.06	5	1	2	10	6	107	0.8	16	21	25	8 ACH	25	130				
	TREATMENT ROOM-5	5	0.06	5	1	2	10	7	111	0.8	17	21	25	8 ACH	25	135				
	UNISEX TOILET-1	0	0	0	0	0	0	0	48	0.8	0	0	0	70	0	70				
	UNISEX TOILET-2	0	0	0	0	0	0	0	48	0.8	0	0	0	70	0	70				
	TOTAL								940		131	164	180		180	405				

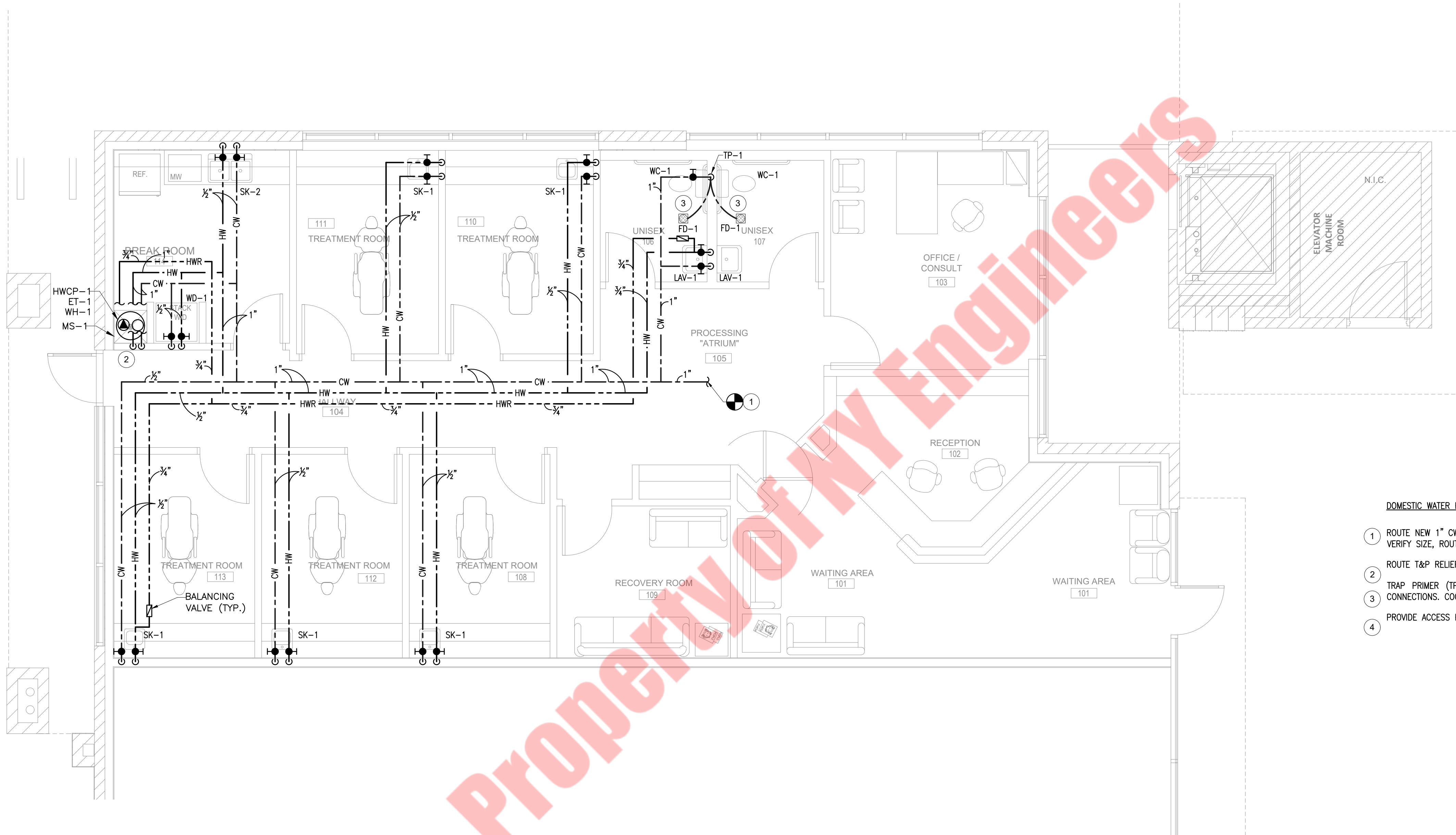




SANITARY PIPING PLAN NOTES:

- 1) CONNECT NEW 4" SANITARY WASTE PIPING TO EXISTING SANITARY WASTE LINE. CONTRACTOR TO FIELD VERIFY SIZE, ROUTING AND INVERT ON SITE.
- 2) SANITARY PIPING RUNNING UNDERGROUND SHOWN FOR REFERENCE. CONTRACTOR TO COORDINATE WITH EXISTING STRUCTURAL AND REROUTE AS REQUIRED TO AVOID ANY CONFLICTS AS PER FIELD CONDITIONS.

1 PLUMBING SANITARY PIPING PLAN  
1/4" = 1'-0"



DOMESTIC WATER PIPING PLAN NOTES:

- 1 ROUTE NEW 1" CW PIPING WITH SHUT OFF VALVE AND TIE-INTO THE EXISTING WATER SERVICE. CONTRACTOR TO FIELD VERIFY SIZE, ROUTING, WATER SUBMETER AND BACKFLOW PREVENTER REQUIREMENTS WITH LANDLORD PRIOR TO BID.
- 2 ROUTE T&P RELIEF TO DRAIN IN MOP SINK.
- 3 TRAP PRIMER (TP-1) EXTEND AND CONNECT 1/2" TRAP PRIMER PIPING TO FLOOR DRAINS WITH TRAP PRIMER CONNECTIONS. COORDINATE ROUTING.
- 4 PROVIDE ACCESS PANELS FOR WATER HAMMER ARRESTORS, CLEANOUTS & SHUT-OFF VALVES AS REQUIRED.

1 PLUMBING DOMESTIC WATER PIPING PLAN  
1/4" = 1'-0"



PLUMBING FIXTURE SCHEDULE					
LEGEND	PLUMBING FIXTURE	CONNECTION SIZE -- INCHES			
		SOIL/WASTE	VENT	COLD WATER	HOT WATER
WC-1	WATER CLOSET	4"	2"	¾"	—
LAV-1	LAVATORY	1½"	2"	½"	½"
SK-1	TREATMENT ROOM SINK	2"	2"	½"	½"
SK-2	BREAKROOM SINK	2"	2"	½"	½"
MS-1	MOP SINK	3"	1½"	¾"	¾"
TP-1	TRAP PRIMER	—	—	½"	—
FD-1	FLOOR DRAIN	3"	—	—	—
WD-1	WASHER DRYER	1½"	2"	½"	½"

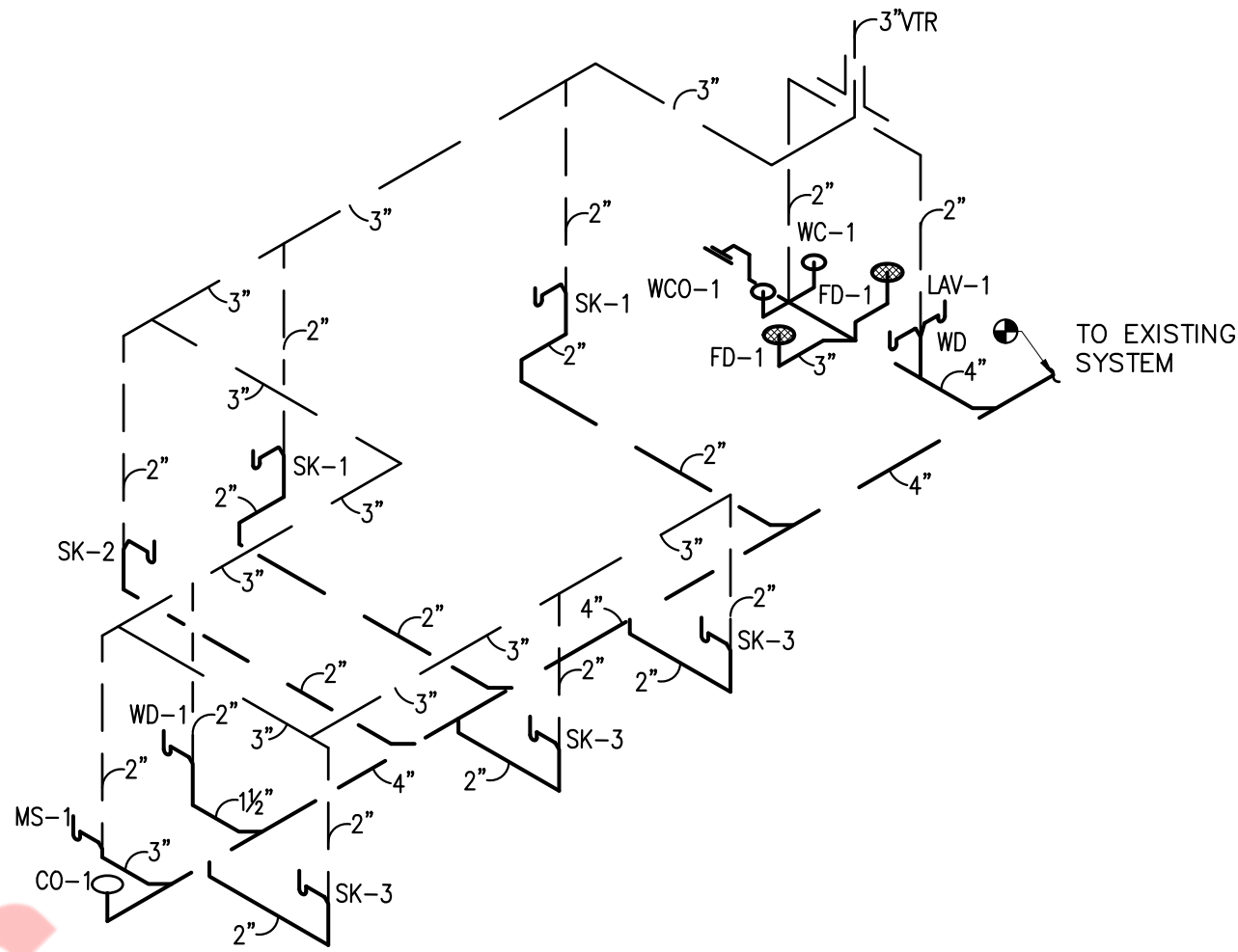
NOTE: CONTRACTOR TO COORDINATE WITH ARCHITECTURAL DRAWINGS FOR ALL PLUMBING FIXTURES SPECIFICATIONS AND MOUNTING HEIGHT INSTALLATION.

HOT WATER HEATER											
TAG No.	NO. OF ELEMENTS	FIXTURES SERVING	STORAGE GALONS	RECOVERY CAP. (GPM @ RISE)	TYPE	ELECTRICAL				MANUFACTURER & MODEL NO.	REMARKS
						VOLTS	PHASE	HERTZ	INPUT KW		
WH-1	2	BREAKROOM SINK, TREATMENT ROOM SINK, WASHING MACHINE, LAVATORY, MOP SINK.	40	36 GPH @ 100°F	ELECTRIC WATER HEATER (SIMULTANEOUS OPERATION)	208	3	60	9	A.O.SMITH DEN-40 (DURA-POWER)	-DIMENSIONS 20.5"DIA X 45.1"H -HEATERS SHALL HAVE 150PSI WORKING PRESSURE.

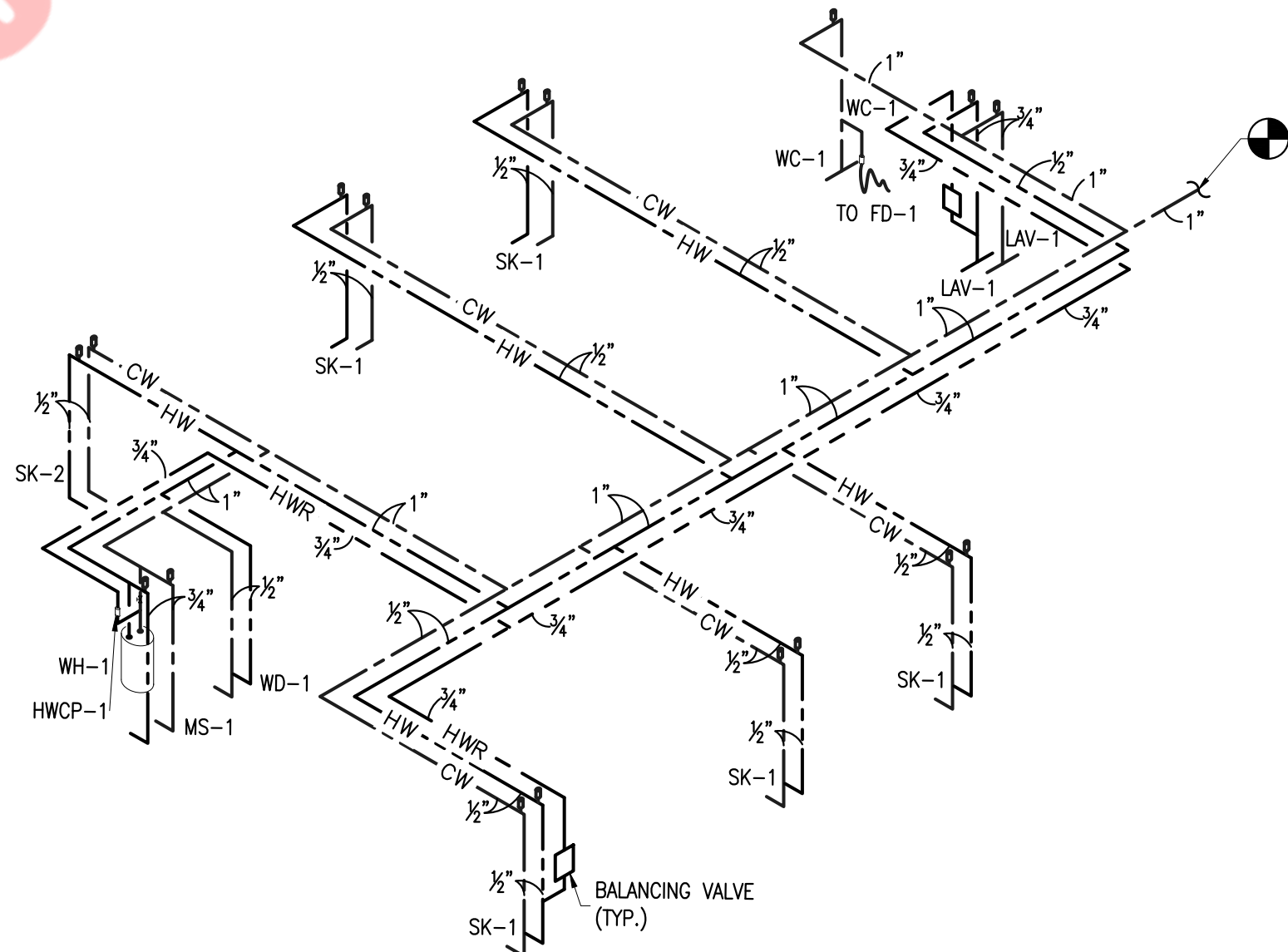
RECIRCULATING PUMP SCHEDULE					
MARK	SERVICE	GPM	TOTAL HEAD FT.	MOTOR HP	MANUFACTURER & REMARKS
HWCP-1	HW RECIRCULATION	2	10	0.115	GRUNDFOS UPS 15-18 BUCS W/AQUASTAT + TIMER

NOTE:  
1. PROVIDE EXPANSION TANK WATTS DETA-5 OR SIMILAR.  
2. VACUUM RELIEF VALVE SHALL CONFIRM WITH ANSI Z21.22.

THERMOSTATIC MIXING VALVE								
ITEM	CAPACITY (GPM)	PRESSURE DROP (PSI)	MINIMUM FLOW (GPM)	MAKE	CW INLET	HIGH TEMP. INLET	LOW TEMP. OUTLET	REMARKS
TMV-1	5	5	0.5	ACORN MV17-1	1/2"	1/2"(140°F)	1/2"(120°F)	-BRONZE BODY AND LEAD FREE CONSTRUCTION -ASSE CERTIFIED



1 PLUMBING RISER - WASTE AND VENT  
NTS.



2 PLUMBING RISER - DOMESTIC WATER  
NTS.

GENERAL NOTES: PLUMBING RISER  
WHEN NOT SHOWN ON PLANS, INDIVIDUAL FIXTURE CONNECTIONS SHALL BE SIZE AS SHOWN ON PLUMBING FIXTURE SCHEDULE.  
  
ISOMETRIC DIAGRAMS ARE FOR SIZING PURPOSES ONLY AND SHALL NOT BE USED FOR MATERIAL TAKE-OFFS, OR BE CONSTRUED TO INDICATE ACTUAL SITE INSTALLATION. CONTRACTOR SHALL COORDINATE EXACT LOCATIONS OF PIPING, DEVICES AND EQUIPMENT WITH BUILDING ELEMENTS AND THE WORK OF OTHER TRADES.  
  
PROVIDE WATER HAMMER ARRESTORS FOR EACH GROUP OF FIXTURES WHETHER INDICATED OR NOT ON PLAN. PROVIDE ACCESS PANEL WHERE LOCATED IN INACCESSIBLE CEILING OR WALL.