

- MECHANICAL GENERAL NOTES:
1. ALL WORK SHALL COMPLY WITH ALL LOCAL AND STATE CODES AND AUTHORITIES HAVING JURISDICTION.
 2. THE CONTRACTOR SHALL SECURE AND PAY FOR ALL REQUIRED PERMITS AND ARRANGE ALL REQUIRED INSPECTIONS.
 3. THE CONTRACTOR SHALL COORDINATE HIS WORK WITH OTHER CONTRACTORS AND TRADES.
 4. THESE DRAWINGS, AS PREPARED, ARE DIAGRAMMATIC BUT SHALL BE FOLLOWED AS CLOSELY AS CONSTRUCTION OF THE PROJECT AND THE WORK OF THE TRADES WILL PERMIT. EQUIPMENT LOCATIONS INDICATED ARE APPROXIMATE. COORDINATE EXACT LOCATIONS AND REQUIRED CLEARANCES WITH EQUIPMENT SUPPLIER AND ALL TRADES PRIOR TO INSTALLATION.
 5. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL THE EQUIPMENT INDICATED WITHIN THE MECHANICAL DRAWINGS UNLESS OTHERWISE NOTED. ALL EQUIPMENT SHALL BE UL LISTED. VERIFY LOCATION AND DIMENSIONS IN THE FIELD PRIOR TO FABRICATION AND / OR INSTALLATION.
 6. EACH UNIT GENERATING CONDENSATE SHALL BE PROVIDED WITH A CONDENSATE DRAIN WITH EXTERNAL, 4" DEEP P-TRAP. EXTEND DRAIN TO A ROOF MOUNTED SPLASH PAD OR AN ACCEPTABLE LOCATION REQUIRED BY CODE.
 7. DUCT SIZES SHOWN ON DRAWINGS ARE CLEAR INSIDE DIMENSION.
 8. ALL METAL DUCT AND AIR DISTRIBUTION DEVICES SHALL BE INSULATED WITH R-6, (75 DENSITY FOIL-BACKED INSULATION WITH FIRE AND SMOKE RATING 25-50).
 9. ALL DUCTWORK SHALL BE FABRICATED, INSTALLED, SEALED, AND INSULATED PER THE LATEST ISSUE OF SMACNA LOW-VELOCITY DUCT MANUAL.
 10. ALL FLEX DUCT SHALL BE UL LISTED, R-6, FOIL-BACKED, CLASSIFIED AS A CLASS 1 AIR DUCT. MAXIMUM LENGTH IS TO BE 14'-0" PER DROP OR PER LOCAL CODE.
 11. THE CONTRACTOR SHALL COORDINATE DIFFUSER LOCATIONS ON SITE WITH THE MOST RECENT REFLECTED CEILING PLAN.
 12. THE CONTRACTOR IS TO MAKE ALL LOW-VOLTAGE WIRING CONNECTIONS FOR ALL HVAC EQUIPMENT INCLUDING TEMPERATURE CONTROLS, ROOF TOP UNITS, SMOKE DETECTORS AND CONTRACTOR PANEL.
 13. THE ENTIRE INSTALLATION SHALL BE GUARANTEED FREE OF DEFECTS AND CONTRACTOR SHALL REPAIR AND / OR REPLACE ANY DEFECTIVE MATERIALS OR EQUIPMENT AT NO COST TO THE OWNER FOR A MINIMUM PERIOD OF ONE YEAR FROM THE DATE OF ACCEPTANCE BY ARCHITECT OR ENGINEER.
 14. ALL WORK SHALL BE SUBJECT TO THE ACCEPTANCE AND APPROVAL OF THE ARCHITECT AND OWNER. THE ARCHITECT SHALL BE NOTIFIED OF ANY AND ALL DISCREPANCIES BETWEEN FIELD CONDITIONS AND THE CONTRACT DOCUMENTS BEFORE PROCEEDING WITH THAT PORTION OF THE WORK. FAILURE OF PROPER NOTIFICATION DOES NOT RELIEVE THE CONTRACTOR. THE CONTRACTOR SHALL CORRECT ANY AND ALL WORK ARISING FROM SUCH FAILURE TO COORDINATE DISCREPANCIES TO THE SATISFACTION OF THE ARCHITECT WITHOUT ADDITIONAL COST TO THE OWNER.
 15. THE CONTRACTOR SHALL, UPON COMPLETION OF PROJECT, PERFORM A COMPLETE TEST AND BALANCE OF ALL EQUIPMENT. PROVIDE A WRITTEN REPORT TO THE ARCHITECT. ALL CAPACITIES MUST BE SET TO WITHIN ±10% OF AMOUNTS INDICATED ON THE FLOOR PLAN AND SCHEDULES.
 16. THE CONTRACTOR SHALL VERIFY EXACT LOCATION OF TRUSSES AND MODIFY DUCTWORK ACCORDINGLY.
 17. PROVIDE FIRE OR FIRE+SMOKE DAMPER WHEREVER DUCTS ARE CROSSING FIRE/SMOKE RATED WALLS/ BARRIERS. COORDINATE WITH ARCHITECTURAL DRAWING FOR FIRE RATING OF THE WALLS.
 18. PROVIDE CORD-OPERATED DAMPERS IN INACCESSIBLE CEILING.
 19. INSTALL SPIRAL/ROUND DUCT IN OPEN AREAS AND RECTANGULAR DUCTING IN CEILING AREAS. PROVIDE INTERNAL INSULATION FOR EXPOSE DUCTING AND EXTERNAL INSULATION FOR DUCTING IN CEILING SPACE.
 20. GC TO PROVIDE WIRING CONNECTION AND SENSORS FROM ALL HVAC EQUIPMENTS TO EMS

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

- KEY NOTES**
1. EXTEND FULL SIZE SUPPLY & RETURN DUCTWORK FROM RTU TO SPACE. EXTEND AS SHOWN, ACOUSTICALLY LINE THE FIRST 10'-0" OF BOTH SUPPLY AND RETURN MAIN DUCTS. CONNECT RETURN AIR DUCT WITH NEW GRILLES AS SHOWN.
 2. CONTRACTOR SHALL CLEAN AND REFURBISH EXISTING DUCT SMOKE DETECTOR IN SUPPLY DUCTWORK TO "LIKE NEW" CONDITION. UPON DETECTION OF SMOKE, RTU WILL SHUTDOWN AND ACTIVATE ALARM. COORDINATE INSTALLATION LOCATION WITH ACCESS REQUIREMENT. ENSURE SMOKE DETECTOR IS IN GOOD WORKING ORDER. PROVIDE NEW IF REQUIRED.
 3. PROVIDE NEW EXHAUST FAN. ROUTE NEW EXHAUST DUCT UP THROUGH ROOF AS SHOWN ON PLAN. TERMINATE EXHAUST DUCT AT ROOF WITH GOOSENECK AND INSECT SCREEN. ENSURE TERMINATION POINT IS MINIMUM 10' AWAY FROM ANY FRESH AIR INTAKE. COORDINATE WITH ARCHITECT OR STRUCTURAL ENGINEER FOR NEW ROOF OPENINGS. EXHAUST FANS TO BE INTERLOCKED WITH MOTION SENSOR.
 4. EXISTING TEMPERATURE SENSORS FOR (E)RTU-1 & (E)RTU-2 TO BE RE-USED & RELOCATED. CONTRACTOR TO VERIFY IN FIELD. REPLACE IN KINDS IF DAMAGED. COORDINATE WITH EXISTING UNIT MANUFACTURER FOR COMPATIBLE CONTROLS AS REQUIRED.
 5. EXISTING THERMOSTATS FOR (E)RTU-1 & (E)RTU-2 TO BE RE-USED & RELOCATED. CONTRACTOR TO VERIFY IN FIELD. REPLACE WITH NEW IF DAMAGED. COORDINATE WITH EXISTING UNIT MANUFACTURER FOR COMPATIBLE CONTROLS AS REQUIRED.
 6. PROVIDE NEW PROGRAMMABLE THERMOSTAT WITH LOCKING COVER. COORDINATE LOCATION ON SITE WITH ARCHITECT / OWNER. SEAL WALL OPENINGS WITH CAULK. COORDINATE LOCATION ON SITE WITH GENERAL CONTRACTOR AND EQUIPMENT.
 7. PROVIDE WALL MOUNTED REMOTE TEMP SENSOR AND WIRE BACK TO T-STAT. MOUNT AT 48" ABOVE THE FLOOR. COORDINATE WITH ARCHITECT FOR FINAL LOCATION.
 8. CONTRACTOR SHALL PROVIDE NEW DUCT SMOKE DETECTOR IN SUPPLY DUCTWORK. UPON DETECTION OF SMOKE, RTU WILL SHUTDOWN AND ACTIVATE ALARM. COORDINATE INSTALLATION LOCATION WITH ACCESS REQUIREMENT.
 9. PROVIDE TRANSFER DUCT BELOW CEILING OF SIZE 38X20 SIZE WITH RETURN AIR GRILLE ON BOTH SIDES.

MECHANICAL LEGEND

	CEILING SUPPLY AIR DIFFUSER (SAD)		VOLUME DAMPER
	CEILING RETURN AIR DIFFUSER (RAD)		TYPE OF AIR DEVICE
	THERMOSTAT		AIR QUANTITY (CFM)
	TEMPERATURE SENSOR		X, Y, Z INCHES, SIDE OF DUCT SHOWING
	NEW DUCTWORK		DUCT MOUNTED SMOKE DETECTOR
	EXISTING DUCT TO REMAIN		EXISTING
	GRAVITY DAMPER		NEW
			FIELD CONNECTION
			DOOR UNDER CUT
			SAME AS EXISTING
			TRANSFER DUCT
			WIRE MESH

DEMOLITION NOTE

EXISTING FLEXIBLE DUCTWORK, SUPPLY & RETURN DIFFUSERS TO BE REMOVED AND SCRAPPED. CONTRACTOR TO COORDINATE WITH ARCHITECT PRIOR TO BID.

NOTE:
SYMBOL LIST SHOWN IS FOR GENERAL REFERENCE ONLY. THE PRESENCE OF A SYMBOL DOES NOT IMPLY ITS USE ON THIS PROJECT. REFER TO DRAWINGS FOR SPECIFIC SYMBOLS USED.

MECHANICAL AIR TERMINAL DEVICES SCHEDULE							
TAG	SIZE	NECK SIZE	CFM RANGE	DESCRIPTION	BASIS OF DESIGN		NOTES
					MANUFACTURER	MODEL	
SAD-1	24x24	14 Ø	500-690	SUPPLY AIR DIFFUSER	TITUS	TMS	1-4
		12 Ø	300-500				
SAD-2	12x12	8 Ø	120-250	SUPPLY AIR DIFFUSER	TITUS	TMS	1-4
		6 Ø	50-100				
RAG-1	50x26	48X24	2450-3350	DOUBLE DEFLECTION DUCT MOUNTED GRILLE	TITUS	350FL	1-4
RAG-2	38x20	36x18	1600-1740	DOUBLE DEFLECTION DUCT MOUNTED GRILLE	TITUS	350FL	1-4

NOTES:

- PROVIDE STANDARD WHITE FINISH FOR ALL AIR DEVICES UNLESS NOTED OTHERWISE ON PLAN.
- PROVIDE FRAME FOR MOUNTING AIR DEVICE IN LAY-IN GRID CEILING UNLESS REFLECTED CEILING PLAN INDICATES HARD CEILING. IN AREAS WITH HARD CEILINGS, PROVIDE FRAMES FOR SURFACE MOUNTING.
- UNLESS OTHERWISE NOTED, BRANCH DUCTS SERVING AIR DEVICES SHALL BE SAME SIZE AS NECK OF AIR DEVICE.
- AIR DEVICE SHALL BE OF GALVANIZED FINISH WHEN INSTALLED ON EXPOSED DUCTWORK.

VENTILATION CALCULATION									
ROOM NAME	AREA	NUMBER OF PEOPLE/1000sq.ft AS PER 2018 IMC	NUMBER OF PEOPLE 2021 IMC	FINAL PEOPLE NO.	CFM AS PER 2018 IMC		CALCULATED VENT CFM	PROVIDED OAI	TOILET EXHAUST CFM
					CFM/PERSON	CFM/SQ.FT			
SALES	7905	15	119	120	7.5	0.12	1849	1850	-
RECEIVING	1621	2	4	4	10	0.12	235	235	-
BREAK ROOM	80	100	8	8	7.5	0.18	74	75	-
OFFICE	79	5	1	1	5	0.06	10	20	-
HALL	165	0	0	0	0	0.06	10	15	-
CORRIDOR	111	0	0	0	0	0.06	7	15	-
TOILET -1	74	0	0	0	0	0	0	-	70
TOILET -2	73	0	0	0	0	0	0	-	70
GRAND TOTAL	10108							2210	140

AIR BALANCE	
OA	+2205
EXHAUST	-140
BUILDING PRESSURE	+2065

MECHANICAL FAN SCHEDULE											
TAG	QUANTITY	FLOW RATE	STATIC PRESSURE		ELECTRIC DATA			MAXIMUM LOUDNESS	BASIS OF DESIGN		REMARK
			EXTERNAL	INTERNAL	SPEED	HP	V/PH/HZ		DBA	MANUFACTURER	
(N)EF-1, (N)EF-2	2	70	0.5	900	46(WATT)	115/60/1	48	GREENHECK	SP-A200	1,4,5	

NOTES:

- PROVIDE FACTORY MOUNTED AND INSTALLED DISCONNECT.
- PROVIDE ACCESS DOOR TO SERVICE UNIT IF IN HARD CEILING.
- INSTALL AS PER MANUFACTURERS RECOMMENDATION.
- COORDINATE WITH ELECTRICAL CONTRACTOR.

RTU SCHEDULE																				
UNIT NO.	MANUFACTURER & MODEL NUMBER	LOCATION	NOMINAL TR	SUPPLY CFM	MIN OA CFM	C.O.P.	EER/IEER	REFRIG TYPE	FAN DATA			COOLING DATA		HEATING DATA		ELECTRICAL DATA			OPER. WT. (LBS)	
									ESP (IN. WG)	FAN RPM	MOTOR DATA BHP	CAP. TOTAL (MBH)	CAP. SENS. (MBH)	SUPP. ELECTRICAL HEAT(KW)	MCA (A)	MOCP (A)	VOLT	PH		HZ
(N)RTU-3	DAIKIN DFC1803D000001S	ROOF	15	6000	1100	0	11/14.2	R-410A	1.0	1600	3.5	172	123	21.6	114	125	208/230	3	60	1724

NOTES FOR RTU:

- ALL EQUIPMENTS MUST BE HIGH EFFICIENT, MEETING OR EXCEEDING THE BRAND MINIMUM REQUIREMENTS.
- ENTHALPY ECONOMIZER WITH BAROMETRIC RELIEF AND FDD.
- PROVIDE 8-WIRE, 24VAC, AUTOMATIC CHANGEOVER, 2 STAGE HEAT/COOL, REMOTELY PROGRAMMABLE THERMOSTAT.
- PROVIDE 5-MINUTE ANTI-SHORT CYCLE TIMER.
- PROVIDE THRU THE BASE ELECTRICAL AND SINGLE POINT CONNECTION.
- PROVIDE WITH 14" ROOF CURB. CONTRACTOR SHALL FIELD INSULATE. SHIP ASAP AHEAD OF UNIT.
- PROVIDE UNPOWERED CONVENIENCE OUTLET.
- PROVIDE WITH FACTORY INSTALLED DISCONNECT.
- PROVIDE UNIT WITH HAIL GUARD.
- PROVIDE WITH MOTORIZED DAMPER AND OUTSIDE AIR INTAKE HOOD.
- PROVIDE MANUFACTURER'S MOTOR AND DRIVE PACKAGE AS REQUIRED TO MEET SCHEDULED AIR CAPACITIES AND PRESSURE DROP.
- PROVIDE WITH RETURN AIR SMOKE DETECTOR.
- PROVIDE 2" THROWAWAY FILTERS.
- PROVIDE ALL COMPRESSORS WITH 5 YEAR WARRANTY.
- PROVIDE HOT GAS REHEAT. IT SHOULD BE LIMITED TO <240 MBH AT 50% AND >240 MBH AT 25%.

2 SCHEDULES

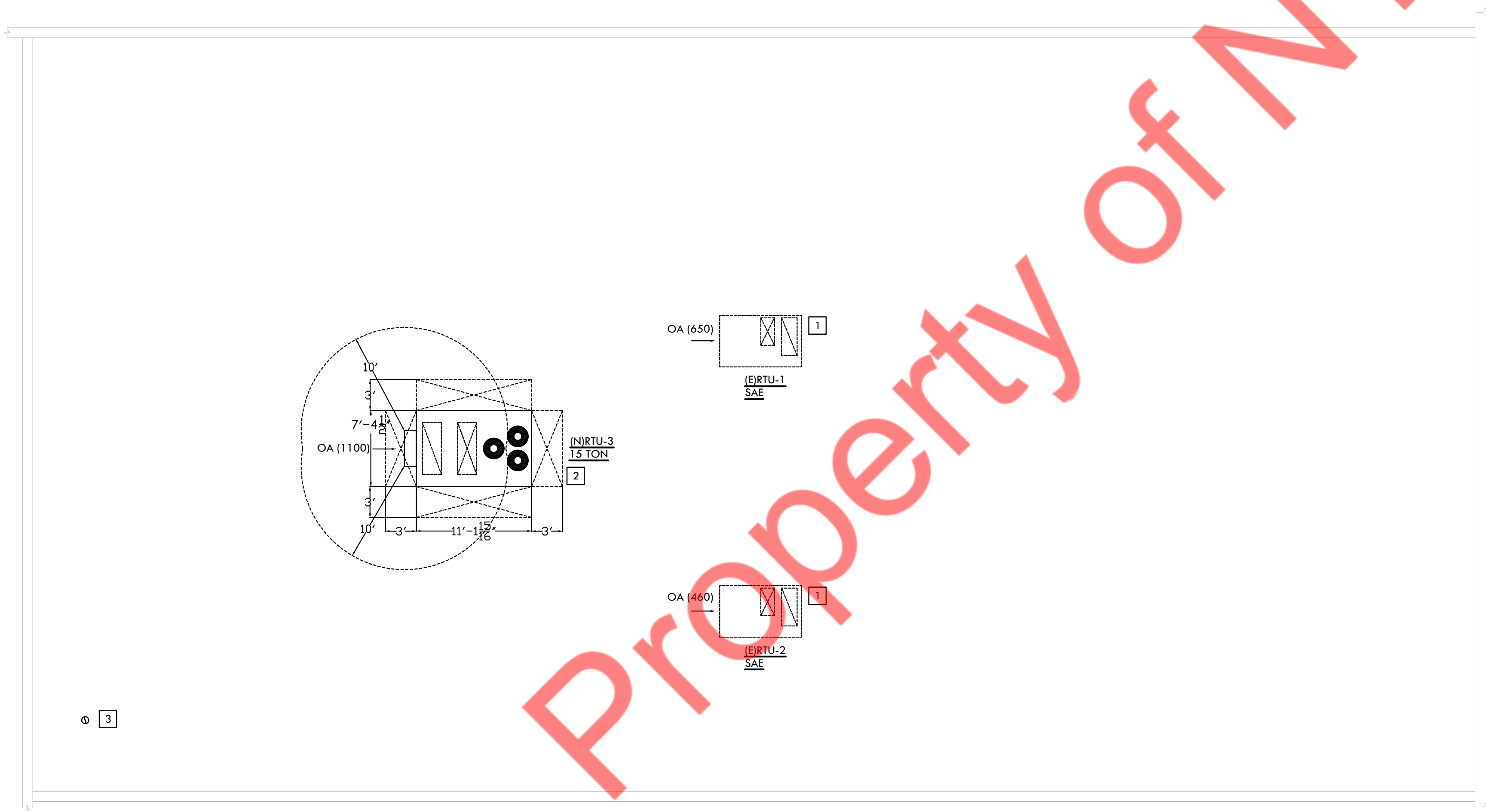
KEY NOTES

- EXISTING MECHANICAL ROOFTOP UNITS TO REMAIN. CLEAN AND REFURBISH TO "LIKE-NEW" CONDITION. REPAIR/REPLACE ANY ACCESSORIES AS REQUIRED TO PROVIDE A FULLY FUNCTIONING. VERIFY IN FIELD PRIOR TO BID. CONTRACTOR TO ENSURE SA & RA CFM OF ALL THE EXISTING RTU'S TO BE BALANCED AS PER THE AS-BUILT CONDITIONS OR AS SHOWN ON THE PLANS. BALANCE OUTSIDE AIR OF EACH RTU TO MATCH TOTAL OA REQUIREMENT OF THE SPACE. ENSURE OA CFM OF EACH RTU SHOULD NOT EXCEED 25% OF THE RTU SA CFM. NOTIFY ARCHITECT/ENGINEER OF ANY DISCREPANCIES PRIOR TO BID. OA INTAKE SHOULD BE 10' AWAY FROM ANY EXHAUST OPENINGS.
- CONDENSATE DRAIN FROM RTU SHALL BE CONVEYED TO AN APPROVED PLACE OF DISPOSAL. SUCH PIPING SHALL MAINTAIN A MINIMUM 1% HORIZONTAL SLOPE IN DIRECTION OF DISCHARGE.
- AS PER 2018 IMC ALL EXHAUSTS ON THE ROOF SHALL TERMINATE NOT LESS THAN 10 FT. FROM ALL MECHANICAL AIR INTAKES, 3 FEET FROM EXTERIOR WALLS AND ROOFS. BATHROOM EXHAUST SHALL TERMINATE 24" ABOVE ROOF WITH GOOSENECK AND BIRD SCREEN.

MECHANICAL LEGEND

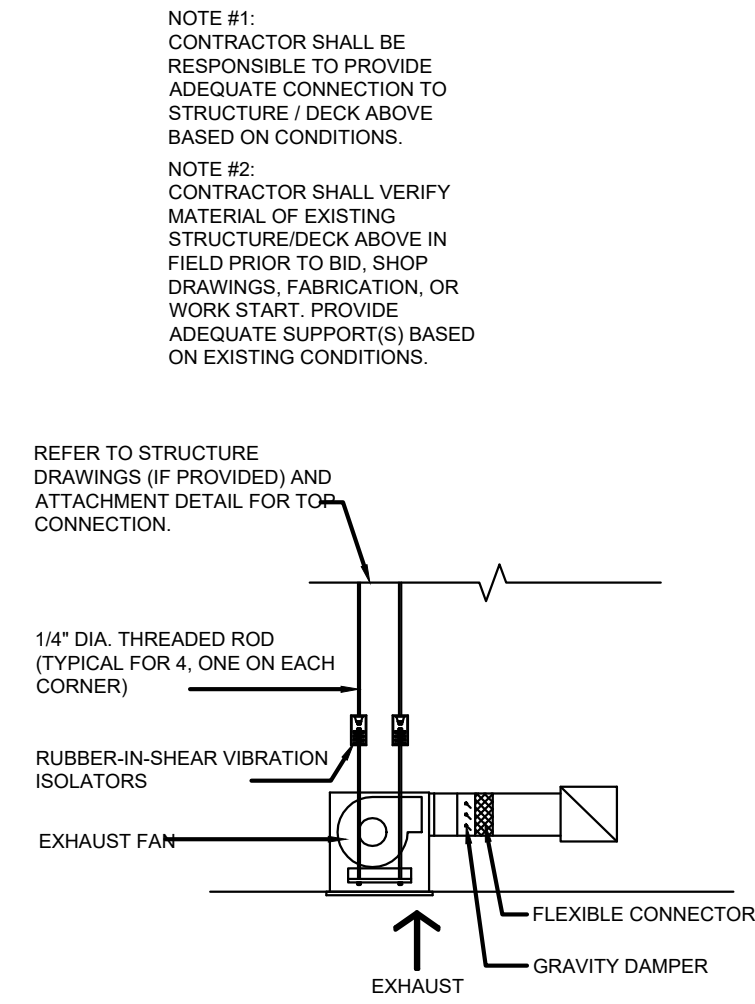
	CEILING SUPPLY AIR DIFFUSER (SAD)		VOLUME DAMPER
	CEILING RETURN AIR DIFFUSER (RAD)		TYPE OF AIR DEVICE
	THERMOSTAT		AIR QUANTITY (CFM)
	TEMPERATURE SENSOR		X, INCHES, SIDE OF DUCT SHOWING
	NEW DUCTWORK		DUCT MOUNTED SMOKE DETECTOR
	EXISTING DUCT TO REMAIN		EXISTING
	GRAVITY DAMPER		NEW
			FIELD CONNECTION
			DOOR UNDER CUT
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1 MECHANICAL ROOF PLAN

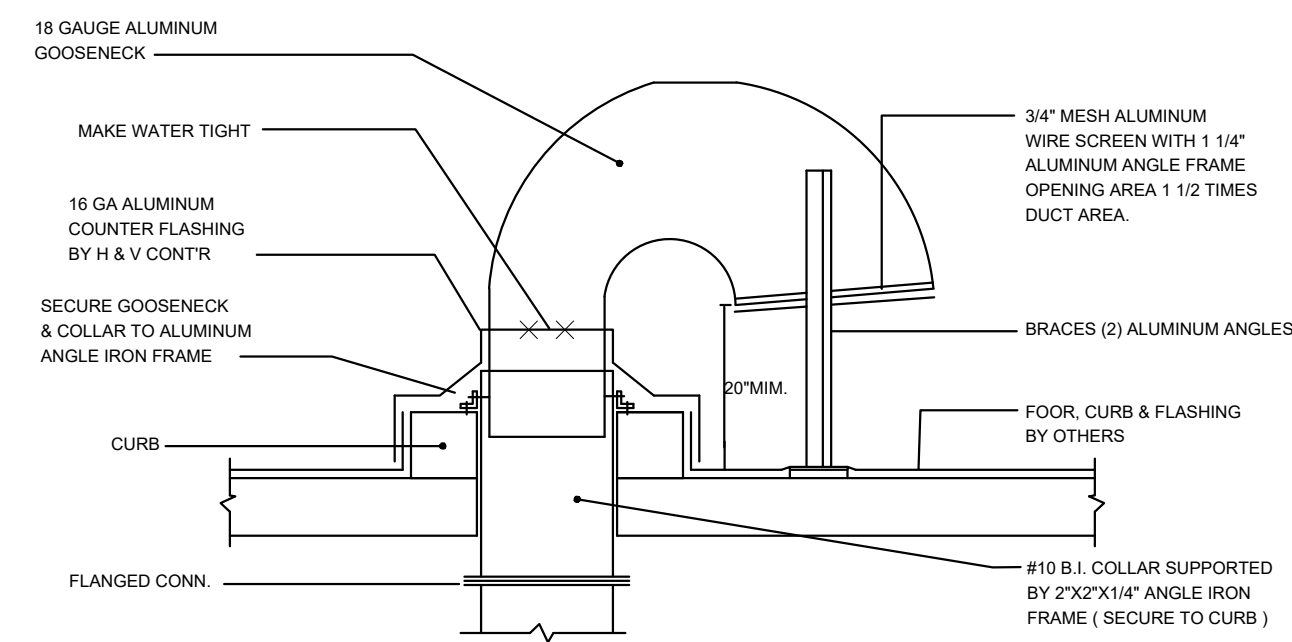
1/8" = 1' 0"



CEILING EXHAUST FAN DETAIL

SCALE NTS

1

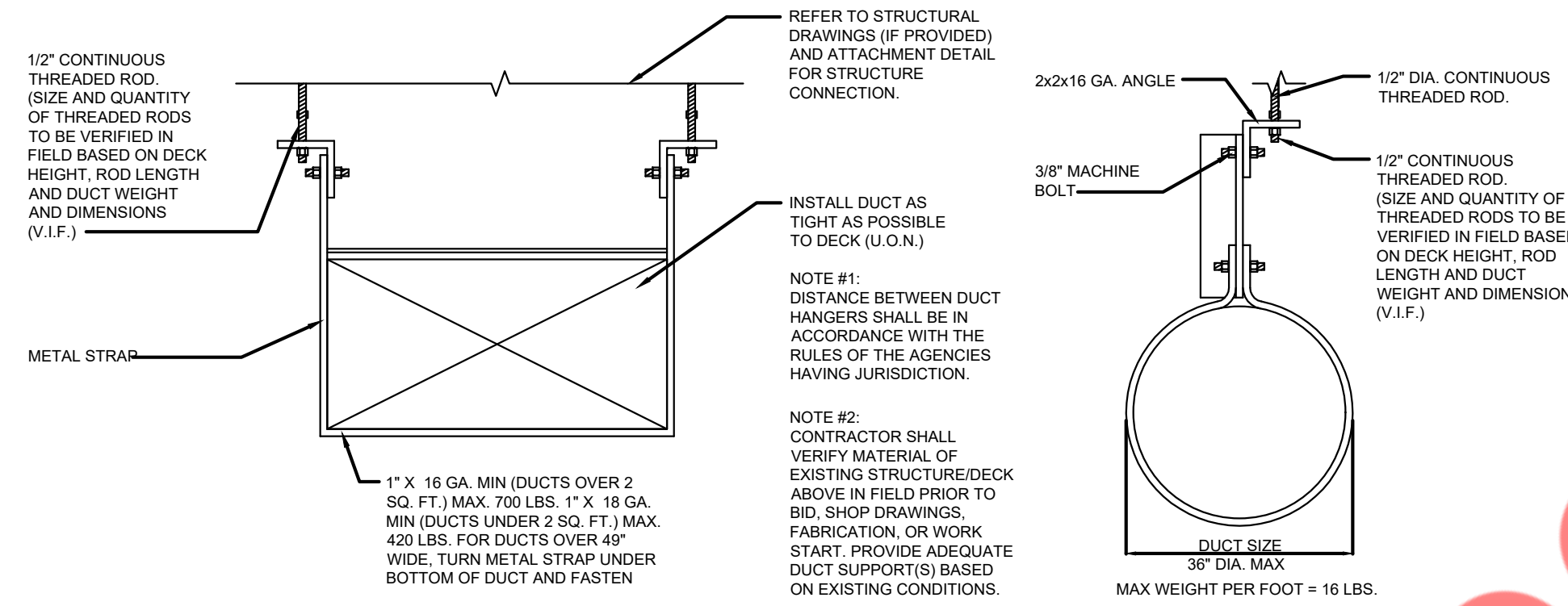


ROOF GOOSENECK DETAIL

SCALE NTS

2

NOTE #2: CONTRACTOR SHALL VERIFY MATERIAL OF EXISTING STRUCTURE/DECK ABOVE IN FIELD PRIOR TO BID. SHOP DRAWINGS, FABRICATION, OR WORK START. PROVIDE ADEQUATE SUPPORT(S) BASED ON EXISTING CONDITIONS.



DUCTWORK SUPPORT DETAIL

NOT TO SCALE

MAX. SIDE INCHES	RECTANGULAR DUCTS MIN. GALV. SHT. GAUGE	ALUMINUM MIN. B & S GAUGE
THROUGH 12	26 (0.022 IN.)	24 (0.020 IN.)
13 THROUGH 30	24 (0.028 IN.)	22 (0.025 IN.)
31 THROUGH 54	22 (0.034 IN.)	20 (0.032 IN.)
55 THROUGH 84	20 (0.040 IN.)	18 (0.040 IN.)
OVER 84	18 (0.052 IN.)	16 (0.051 IN.)

ROUND DUCT SUPPORT DETAIL

NOT TO SCALE

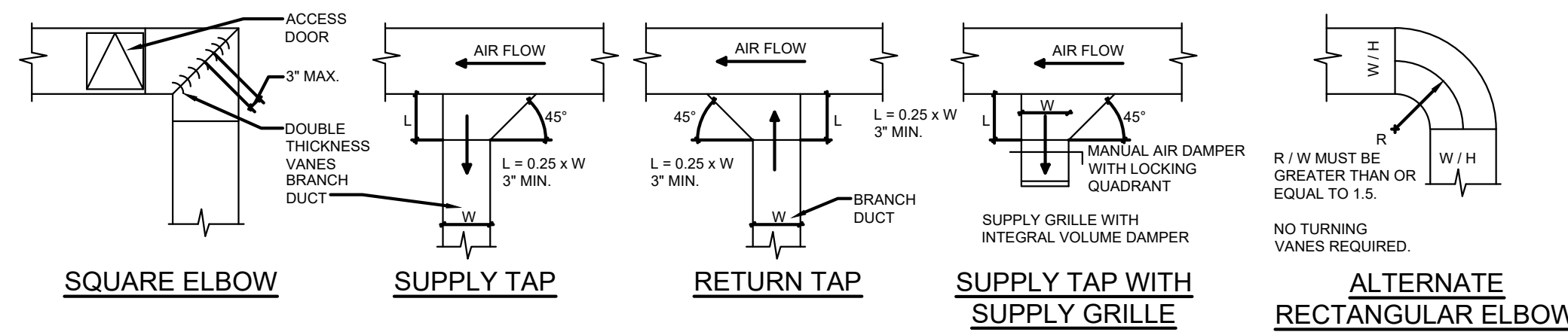
DIAMETER INCHES	SPIRAL SEAM DUCT STEEL MIN. GALV. SHT. GAUGE	ROUND DUCTS LONGITUDINAL SEAM DUCT STEEL MIN. GALV. SHT. GAUGE	FITTINGS STEEL MIN. GALV. SHT. GAUGE
THROUGH 12	26 (0.019 IN.)	26 (0.022 IN.)	26 (0.022 IN.)
13 THROUGH 18	26 (0.022 IN.)	24 (0.028 IN.)	24 (0.028 IN.)
19 THROUGH 28	24 (0.028 IN.)	22 (0.034 IN.)	22 (0.034 IN.)
29 THROUGH 36	22 (0.034 IN.)	20 (0.040 IN.)	20 (0.040 IN.)
37 THROUGH 52	20 (0.040 IN.)	18 (0.052 IN.)	18 (0.052 IN.)

DUCT SUPPORT DETAIL

SCALE NTS

SCALE NTS

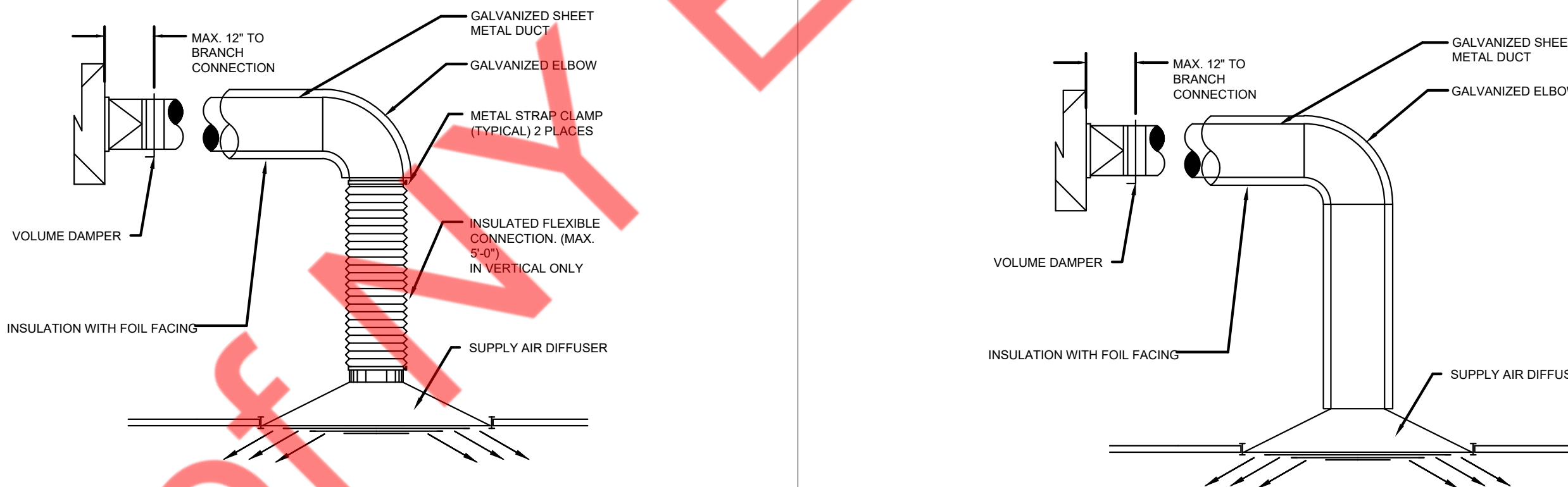
3



STANDARD DUCTWORK DETAILS

SCALE NTS

4



STANDARD DIFFUSER DETAIL WITH FLEXIBLE DUCT

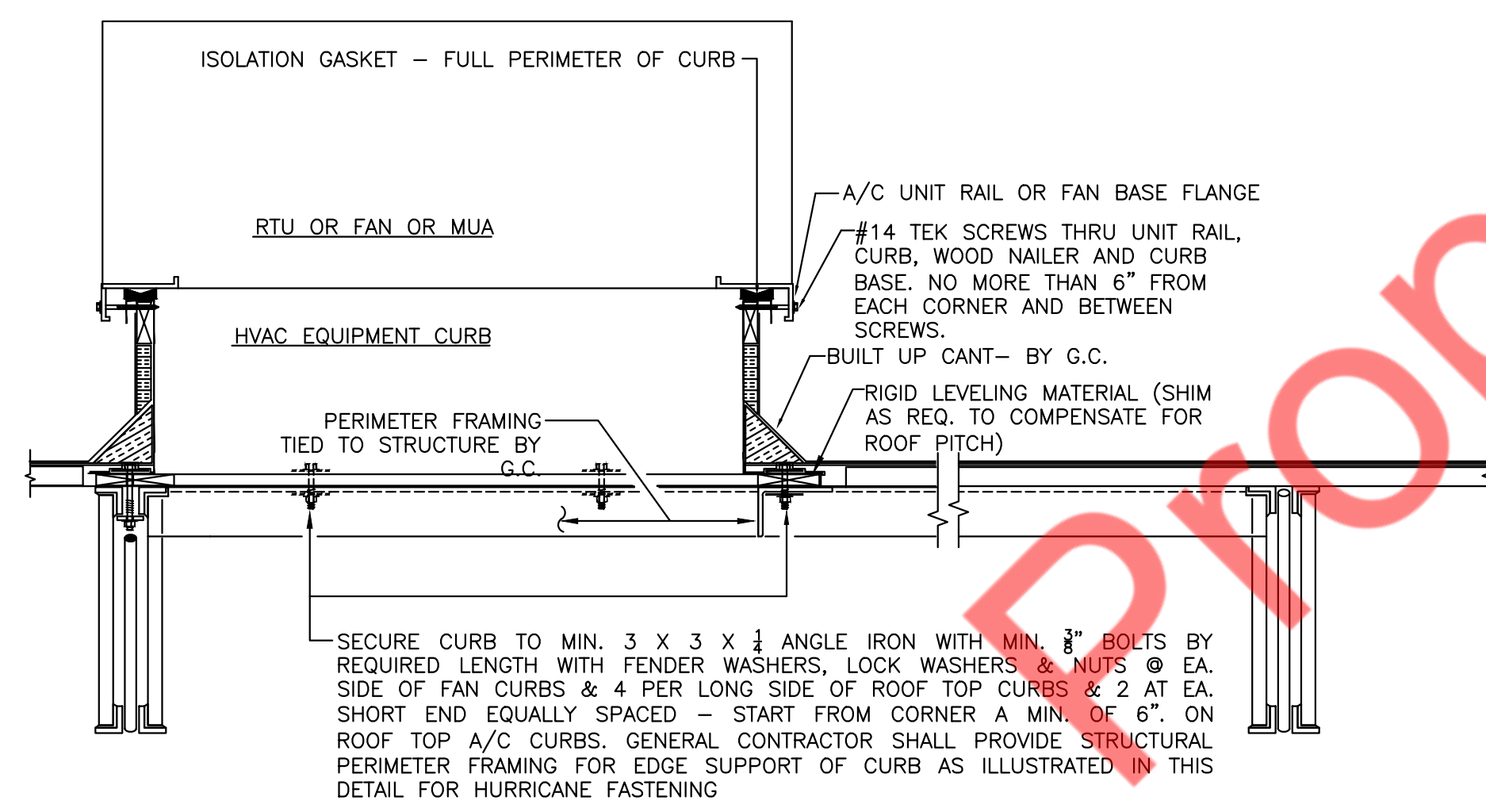
SCALE NTS

5

STANDARD DIFFUSER DETAIL WITH RIGID DUCT

SCALE NTS

6



TYPICAL ROOF TOP UNIT DETAIL

SCALE NTS

7

---	NEW
---	EXISTING

ELECTRICAL POWER SYMBOLS

SYMBOL	DESCRIPTION
⊕	BUZZER - TORK MODEL #TA725 W/ TRANSFORMER MODEL #TA592.
⊕	COMMERCIAL GRADE PUSH BUTTON
⊕	DUPLEX RECEPTACLE
⊕	125/250V NEMA L14-20-R 4 PRONG TWIST LOCK
⊕	QUAD RECEPTACLE
⊕	CEILING MOUNTED DUPLEX RECEPTACLE
⊕	DISCONNECT
⊕	POWER POLE - WHITE
⊕	PHONE JACK @ REGISTER
⊕	VOICE/DATA PORT = RJ-11, RJ-45 DATA JACK, PHONE COMBO @ OFFICE
⊕	PROVIDE OCCUPANCY LIGHT SENSOR
⊕	20 AMP TOGGLE SWITCH
⊕	EXISTING FIXTURE/OUTLET
⊕	JUNCTION BOX

POWER KEYNOTES

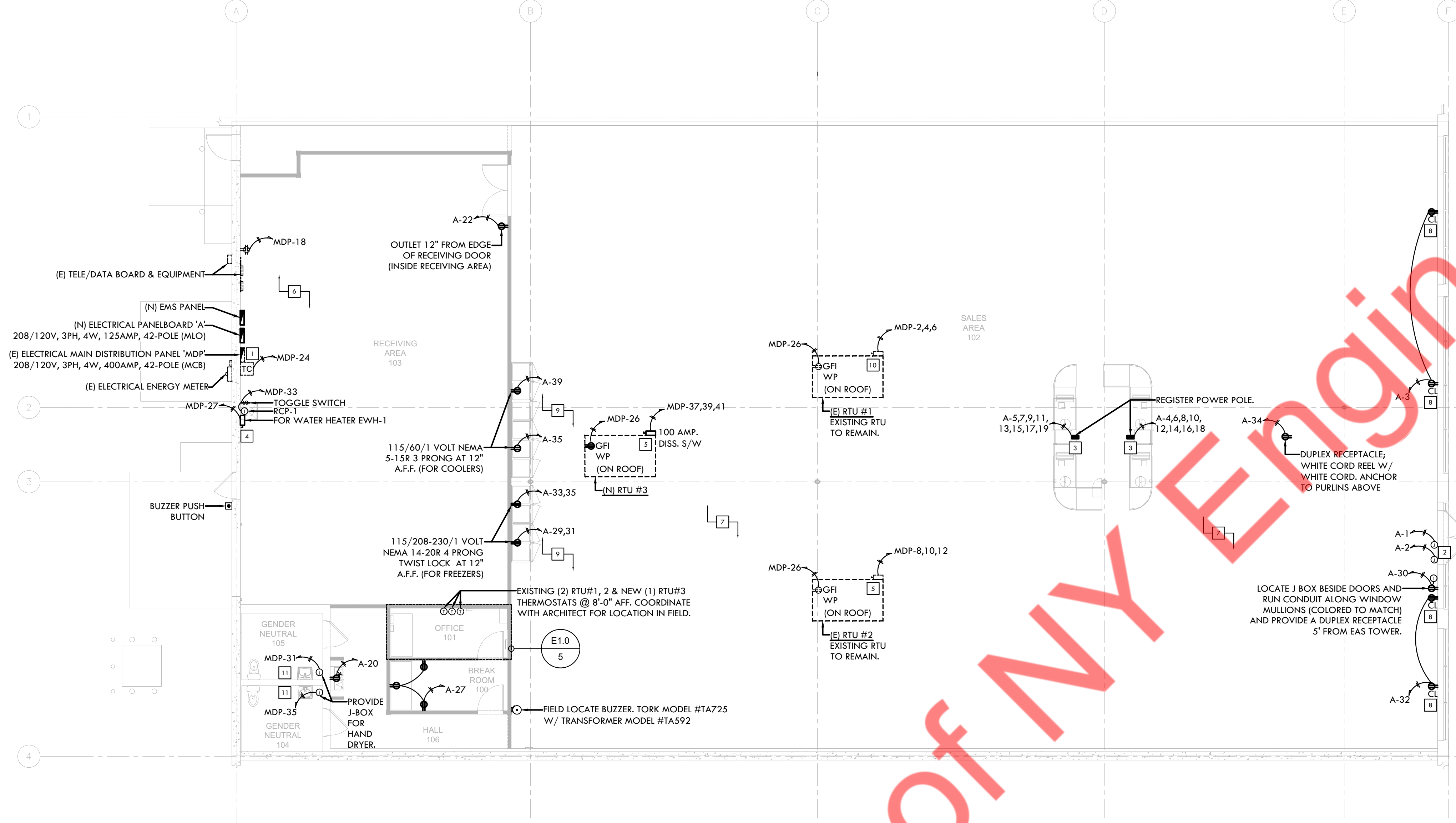
- EXISTING ELECTRICAL PANEL & EQUIPMENT TO REMAIN. PROVIDE CLEARANCE AS PER NEC FOR ALL ELECTRICAL EQUIPMENT. REFER TO E5.0 - ELECTRICAL PANEL SCHEDULE & RISER DIAGRAM SHEET FOR ADDITIONAL INFORMATION. COORDINATE EXACT LOCATION WITH OWNER PRIOR TO ROUGH-IN.
- JUNCTION BOX FOR STORE SIGN, E.C. TO FIELD VERIFY EXISTING CONNECTION FOR STORE FRONT SIGN IS PRESENT IN THE FIELD AND IN OPERABLE CONDITION. IF YES, REUSE EXISTING CONNECTION. ELSE PROVIDE NEW AS SHOWN IN THE PLAN. COORDINATE EXACT REQUIREMENT AND LOCATION WITH ARCHITECT/OWNER.
- NEW POWER POLE AT SALES CHECKOUT. CONTRACTOR SHALL PROVIDE (8-QTY) 20A-1P WITH (4-QTY) ISOLATED GROUND AND LOCKING TAB BACK AT SOURCE PANEL AND BRANCH CIRCUITRY/FEEDERS (2#12GRD-3/4"C). REFER TO POWER POLE DETAILS FOR ADDITIONAL INFORMATION.
- NEW DISCONNECT FOR NEW ELECTRICAL WATER HEATER. PROVIDE ONE 20A-1P BREAKER IS SOURCE PANEL(2#12, 1#12GRD-3/4"C)
- COORDINATE EXACT LOCATION OF HVAC EQUIPMENT WITH MECHANICAL CONTRACTOR/OWNER/ARCHITECT. E.C TO FIELD VERIFY EXISTING RECEPTACLE IS PRESENT WITHIN 25FT OF EACH HVAC EQUIPMENT. IF NOT, PROVIDE NEW WEATHER PROOF 20A GFI DUPLEX RECEPTACLE WITHIN 25FT OF THE HVAC EQUIPMENT AND CIRCUIT TO TENANT PANELBOARD AS SHOWN IN PLAN. BASE BID ACCORDINGLY.
- EXISTING RECEPTACLES ON EXISTING TO REMAIN WALLS TO REMAIN AT SAME LOCATION AND IN SAME CIRCUIT. E.C TO FIELD VERIFY THE OPERABLE CONDITION OF EXISTING RECEPTACLES AND CIRCUITS. REPLACE IF INOPERABLE.
- CONTRACTOR SHALL CONFIRM THE FINAL NUMBER AND LOCATION OF OUTLETS IN SALES AREA WITH THE FINAL "POPSHELF" FIXTURE PLAN.
- E.C. SHALL FIELD VERIFY THE OPERABLE CONDITION OF EXISTING SHOW WINDOW RECEPTACLE. REUSE IF POSSIBLE. OTHERWISE, PROVIDE NEW SHOW WINDOW RECEPTACLE AS PER PLANS AND NEC 210.62 IF REQUIRED.
- COORDINATE EXACT LOCATION OF EQUIPMENT WITH OWNER/ARCHITECT. CONTRACTOR SHALL ALSO COORDINATE EXACT POWER REQUIREMENT AND RECEPTACLE TYPE FOR EQUIPMENT WITH EQUIPMENT VENDOR/MANUFACTURER.
- ALL OUTDOOR ELECTRICAL EQUIPMENT SHALL BE NEMA 3R RATED. COORDINATE EXACT ELECTRICAL REQUIREMENT WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN. CIRCUIT FACTORY INSTALLED RECEPTACLE AS REQUIRED. OTHERWISE PROVIDE NEW AS SHOWN.
- IF THERE ARE ANY EXISTING OUTLETS/RECEPTACLES IN THE RESTROOMS, COVER THEM WITH BLANK PLATES UNLESS IT IS USED FOR THE HAND DRYER.

ELECTRICAL SPECIFICATIONS

- ALL EXPOSED WIRING SHALL BE CONTAINED IN CONDUIT OF PROPER SIZE.
- ALL WIRING SHALL CONFORM TO LOCAL, STATE, AND FEDERAL CODES.
- ELECTRICAL SERVICE TO BE MINIMUM 400 AMP, 3-PHASE (PREFERRED) OR 600 AMP, SINGLE PHASE OR LARGER IF REQUIRED BY CODE OR ELECTRICAL LOAD.
- REGISTER POWER POLES - VERIFY REGISTER CONFIGURATION ON FINAL FIXTURE PLAN BEFORE ORDERING AND INSTALLATION OF ELECTRICAL COMPONENTS. CUSTOM BUILT POWER POLE ASSEMBLY AVAILABLE FROM D&P CUSTOM LIGHTS & PRODUCTS INC. PHONE # (800) 251-2200 OR (615) 350-7800, 7111 COCKRILL BEND INDUSTRIAL ROAD, NASHVILLE, TN 37209.
- EXTERIOR EXPOSED PHONE LINES TO BE INSTALLED IN RIGID CONDUIT. PROVIDE EMERSON 3/4" x 5-FT. METALLIC CABLE U-GUARD #755 OR EQUAL.
- ELECTRIC PANELS TO BE LABELED CORRECTLY WITH LEGIBLE PRINT.
- LOW VOLTAGE VENDOR TO PROVIDE AND INSTALL ONE (1) 24 GA., 4 TWISTED-PAIR, CATEGORY-FIVE (CAT5) DATA CABLE WITH MODULAR COMBO RJ-11/RJ-45 JACK AT MANAGER'S OFFICE. CABLE TO BE RUN FROM JACK TO DATA HUB LOCATION WITH 6'-0" LEFT COILED FOR INSTALLATION TO DATA HUB. A RJ-45 MALE FITTING SHOULD BE CRIMPED ON THIS END. DOLLAR GENERAL STORE OPENING TEAM WILL MAKE FINAL CONNECTION INTO THE DATA HUB.

GENERAL NOTES

- ALL WORK SHALL BE IN STRICT CONFORMANCE WITH THE LATEST NATIONAL ELECTRIC CODE AND APPLICABLE STATE CODES.
- OBTAIN AND PAY ALL FEES FOR PERMITS AND OBTAIN APPROVALS FROM AUTHORITIES HAVING JURISDICTION.
- GUARANTEE ALL MATERIALS AND LABOR FOR ONE YEAR FROM THE FINAL ACCEPTANCE DATE OF THE OWNER.
- PROVIDE ALL NECESSARY CUTTING, PATCHING, EXCAVATING AND BACK FILL TO ACCOMMODATE ELECTRIC WORK. FIRE SEAL ALL WALL AND FLOOR PENETRATIONS WITH A UL LISTED FOAM SEALANT.
- UNLESS OTHERWISE NOTED, LOCATE THE FOLLOWING ITEMS AT HEIGHTS LISTED BELOW:
 - SWITCHES AND CONTROLS +4'-0" AFF TO THE TOP OF DEVICE.
 - RECEPTACLES: +18" TO CENTERLINE
 - EXPOSED UNFINISHED AREAS (INDOORS): EMT WITH COMPRESSION FITTINGS. USE WIREMOLD IN FINISHED AREAS WHERE IT IS IMPOSSIBLE TO CONCEAL WORK.
 - CONCEALED ABOVE CEILING OR IN STUD WALL: EMT, TYPE IMC CABLE (METAL CLAD).
 - FINAL CONNECTIONS TO MOTORS (INDOORS): FLEXIBLE METAL TUBING.
 - FINAL CONNECTIONS TO MOTORS (OUTDOORS): LIQUID TIGHT FLEX.
 - EXPOSED OUTDOORS: INTERMEDIATE METAL CONDUIT (IMC).
 - BURIED IN EARTH: PVC SCHEDULE 40.
 - UNDERGROUND PRIMARY ELECTRIC SERVICE CONDUITS: PER UTILITY COMPANY REQ'S.
- GENERALLY ALL WORK IN FINISHED AREAS SHALL BE CONCEALED. CONSULT ARCHITECT FOR DIRECTION WHERE WORK CANNOT BE CONCEALED.
- PROVIDE ALL LIGHTING FIXTURES AND LAMPS.
- OUTLET BOXES CONCEALED SHALL BE STAMPED STEEL. OUTLET BOXES EXPOSED TO THE WEATHER SHALL BE CAST ALUMINUM.
- ALL WIRE SHALL BE TYPE THWN (WET LOCATIONS), THHN (DRY LOCATIONS), #12 GAUGE COPPER, MINIMUM SIZE. USE TYPES THWN, THHN OR XHHW FOR FEEDERS AND TYPES THWN/THHN FOR BRANCH CIRCUITS #10 AND SMALLER.
- PLATES ON CONCEALED OUTLETS SHALL BE PLASTIC. COLOR TO BE SELECTED BY THE ARCHITECT.
- GROUNDING SHALL CONFORM TO THE LATEST NATIONAL ELECTRICAL CODE.
- SAFETY SWITCHES SHALL BE HEAVY DUTY, SQUARE D OR EQUAL BY G.E. OR ITE.
- PROVIDE PHOTOELECTRIC TYPE DUCT SMOKE DETECTORS WITH REMOTE TEST STATIONS.
- ELECTRICAL CONTRACTOR SHALL VERIFY ELECTRICAL REQUIREMENTS OF MECHANICAL, PLUMBING AND OWNER SUPPLIED EQUIPMENT PRIOR TO ORDERING AND RUNNING CIRCUITING.
- CABLE TV, VOICE, DATA, SECURITY, SOUND SYSTEM WORK TO BE DONE UNDER SEPARATE CONTRACTS WITH THE OWNER.
- PROVIDE A PULL WIRE IN ALL EMPTY CONDUITS.
- ALL ACCESS DOORS REQUIRED IN GENERAL CONSTRUCTION ARE TO BE PROVIDED AND INSTALLED BY THE GENERAL CONTRACTOR. IT IS THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR TO IDENTIFY SIZE, TYPE AND LOCATION OF SUCH DOORS FOR PROPER ACCESS TO ALL CONCEALED ELECTRICAL EQUIPMENT, JUNCTION BOXES AND OTHER RELATED ITEMS. THE ELECTRICAL CONTRACTOR SHALL IDENTIFY THESE REQUIREMENTS ON A COORDINATED SHOP DRAWING.

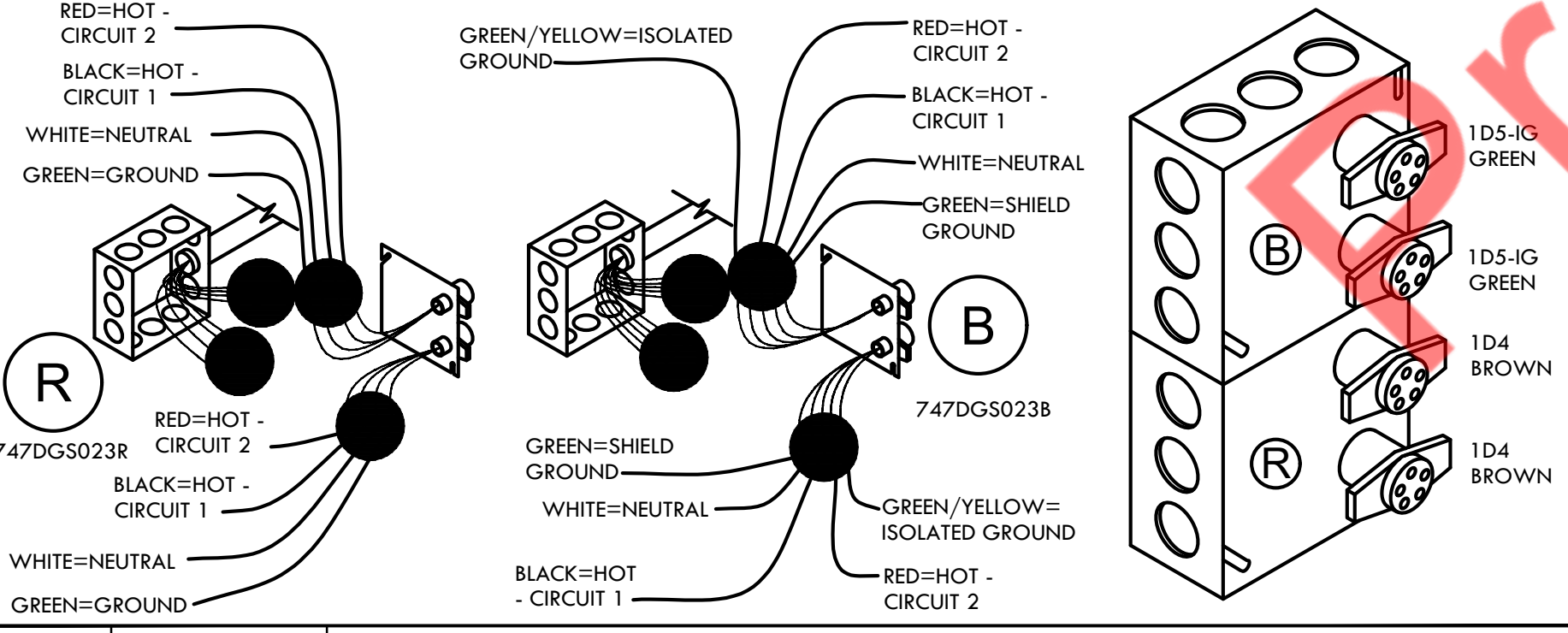


*NOTE: VERIFY FINAL LOCATION OF ALL ELECTRICAL WITH THE FINAL FIXTURE LAYOUT PLAN PROVIDED BY STORE PLANNING.

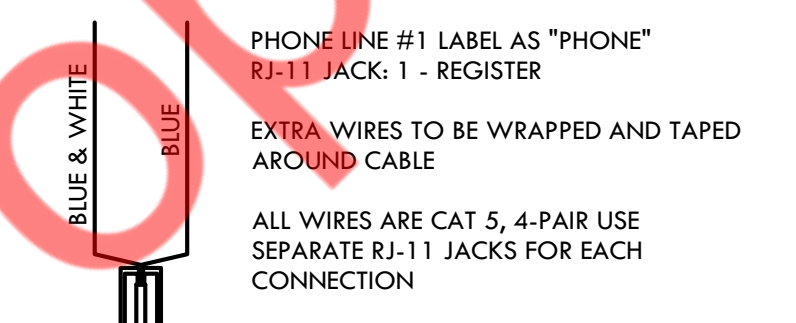
1 SCALE 1/8" = 1' - 0" ELECTRICAL POWER PLAN

REGISTER ELECTRICAL COMPONENTS			
QTY	PART NUMBER	DESCRIPTION	VENDOR
1	747DGS023B	DUAL CIRCUIT POWER KIT WITH ISOLATED GROUND	D & P
1	747DGS023R	DUAL CIRCUIT POWER KIT	D & P
1	747DGS044-12BK	12" 2CH REGULAR POLE W/2-C & 1-D CONNECTOR DRW #2004-12	
1	747DGS032A	10" CABLE KIT (SET OF 4 WHIPS)	

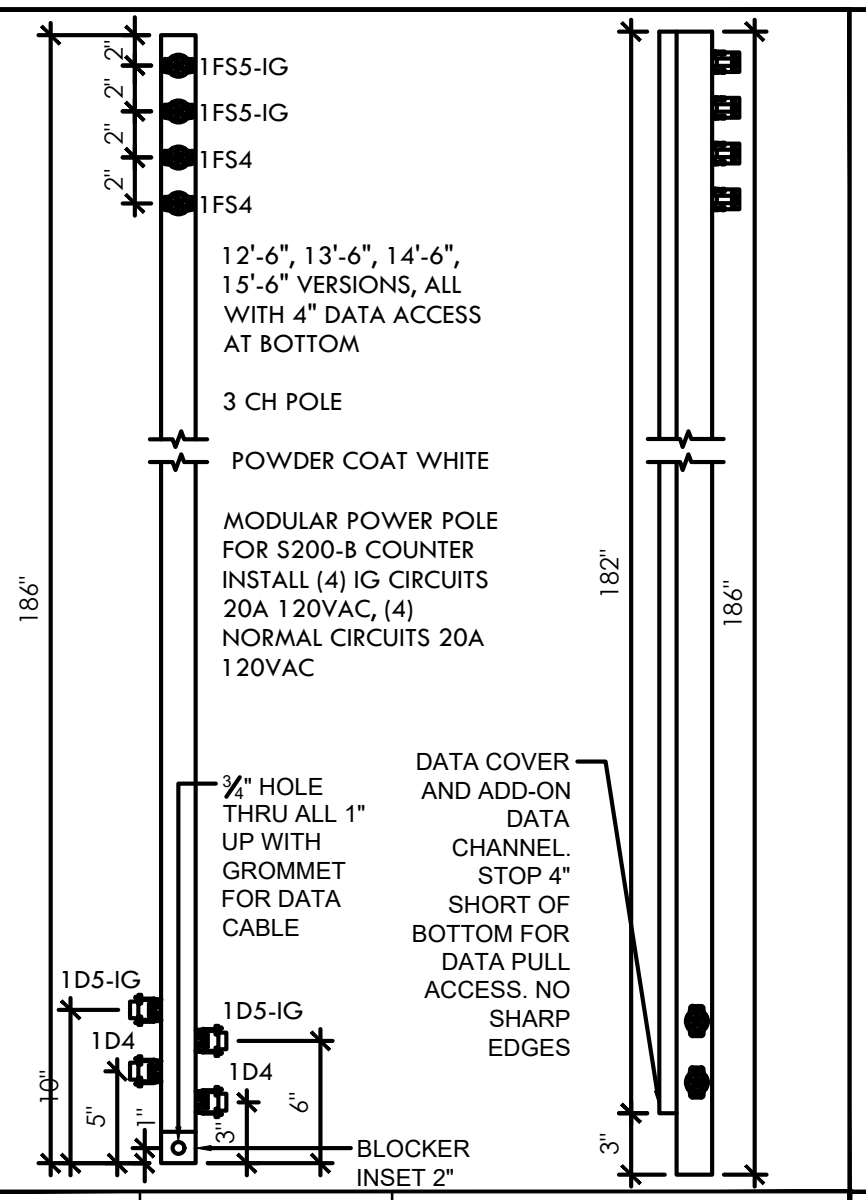
*NOTE: BEFORE ORDERING AND INSTALLATION OF ELECTRICAL COMPONENTS FOR REGISTERS, CONSULT FINAL FIXTURE PLAN FOR NUMBER AND LOCATION.
 MAXIMUM CIRCUITS FOR REGISTERS:
 • CIRCUITS AT MAIN REGISTER - (9) 110V
 • CIRCUITS AT ISLAND REGISTER - (3) 110V



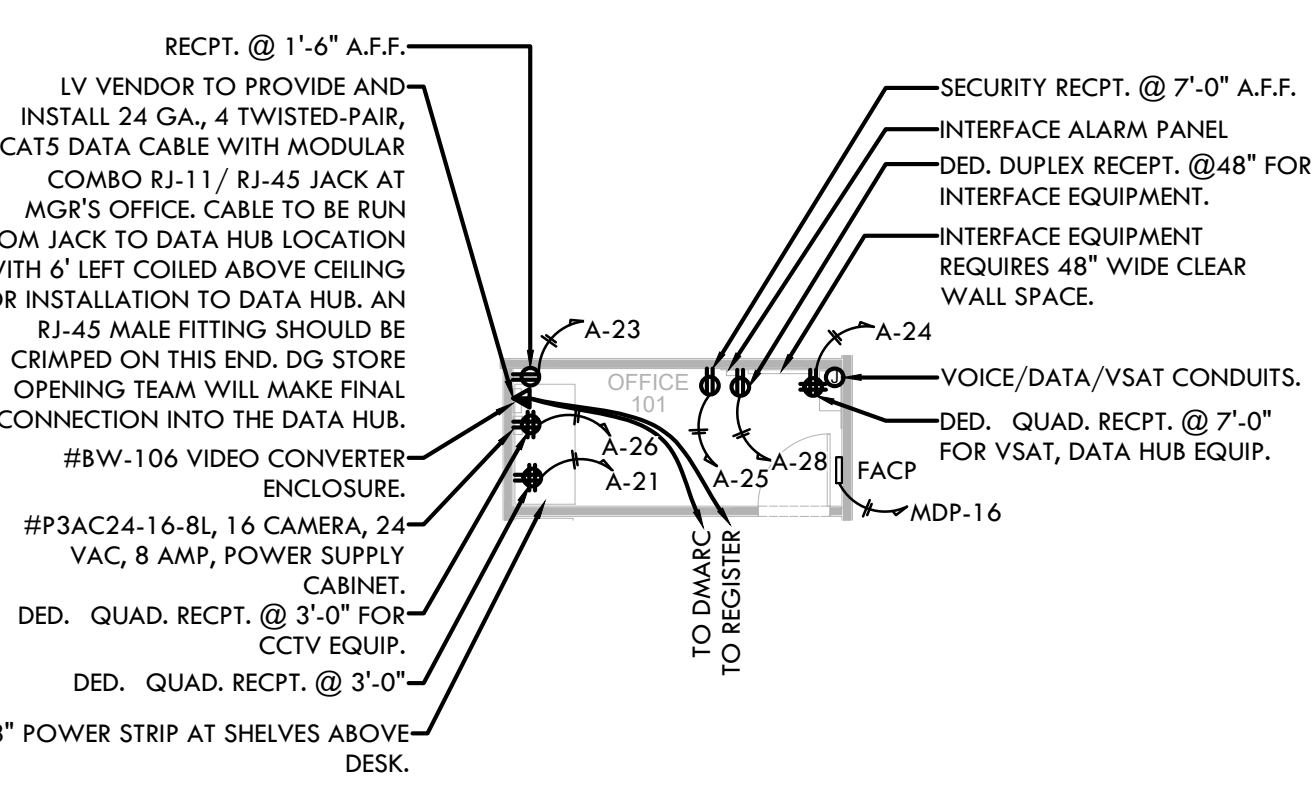
2 SCALE N.T.S. REGISTER DETAILS



3 SCALE N.T.S. PHONE WIRING FOR REGISTER



4 SCALE N.T.S. POWER POLE DETAILS

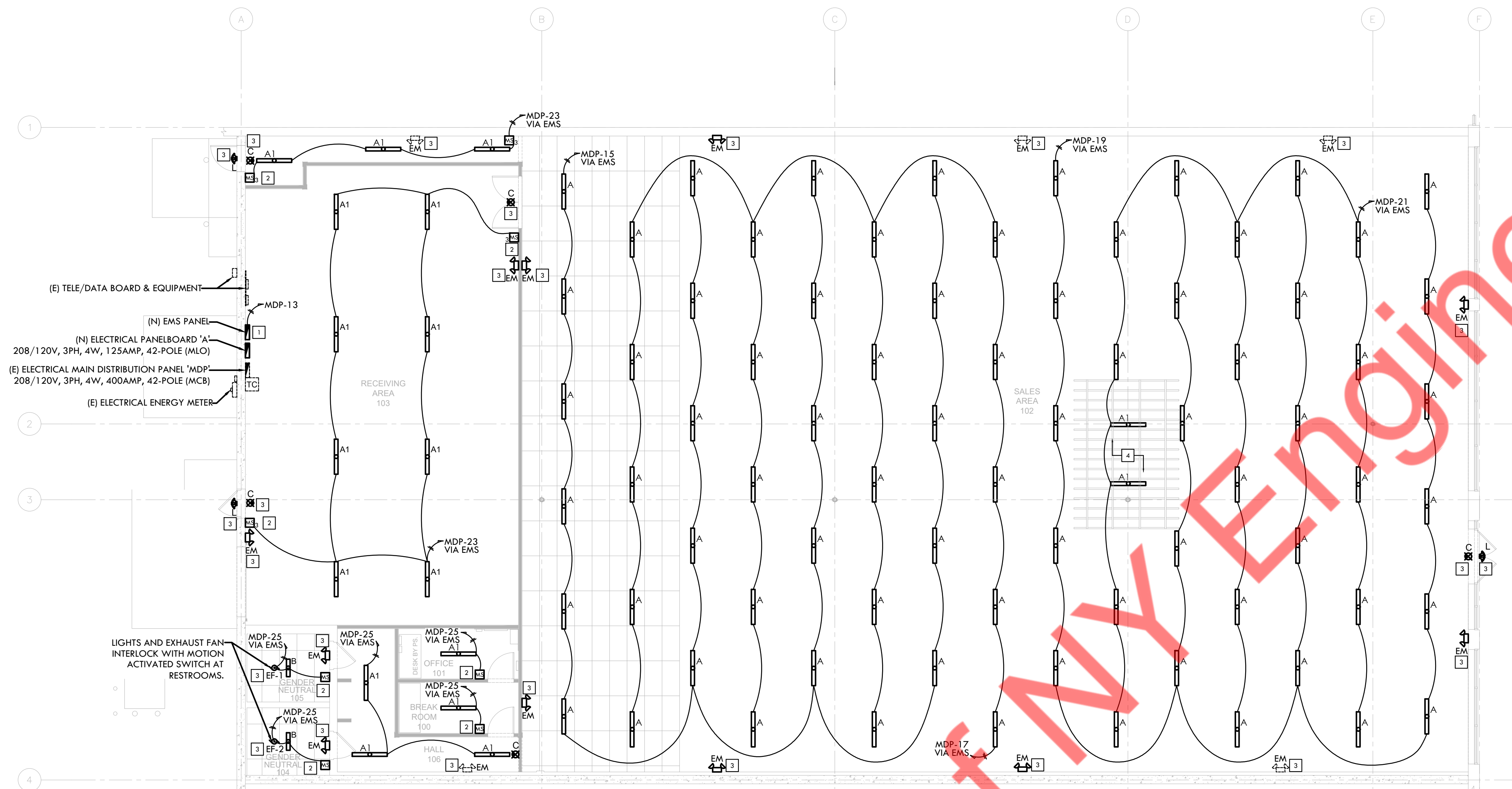


5 SCALE 1/8" = 1' - 0" ENLARGED OFFICE POWER LAYOUT

LEGEND:
 ——— NEW
 - - - - - EXISTING

LIGHTING KEYNOTES

- 1 NEW EMS PANEL. COORDINATE EXACT LOCATION WITH ARCHITECT/OWNER IN FIELD.
- 2 PROVIDE NEW MOTION SENSOR SWITCH MOUNTED AT +46" A.F.F.
- 3 TIE NEW/EXISTING/RELOCATED EMERGENCY LIGHT & EXIT SIGN WITH MINIMUM 90-MINUTES BATTERY BACK-UP TO AREA LIGHTING BRANCH CIRCUIT AHEAD OF CONTROLS AS SHOWN ON PLAN.
- 4 MOUNT FIXTURES WITHIN CLOUD AT 10'-6" A.F.F.



LIGHTING SCHEDULE

SYM.	TYPE	MANUF.	PART NUMBER	DESCRIPTION	QTY.
—	A	USLED	PJF1-1-4-1-50-ID-50-1	4' LED STRIP, (1) 5FT. VERTICAL POWER CABLES WITH SURFACE MOUNTING CLIPS	76
—	A1	USLED	PJF1-1-4-1-50-ID-50-1	4' LED FIXTURE AERIAL MNT. INCLUDES (2) 8' CABLES	18
—	B	USLED	LTR2-1-UNV-50-15-6R-C-WH	2' LED FIXTURE SURFACE MOUNT	2
—	C	USLED	04-CRW2-LED	LED EXIT SIGN	PER CODE
—	D	USLED	04-CRW2-LED-2-W	EMERGENCY LIGHT/EXIT COMBO (2) HEADS	PER CODE
—	E	USLED	04-EL1-LED	EMERGENCY LIGHT (2) HEADS	PER CODE
—	F	USLED	04-RHLED	EMERGENCY RECESS LIGHT (1) HEAD	PER CODE
—	G	USLED	WPR2-30-50-5R	WALL PACK	0
—	H	ETI	FR8WMBZ	CONE ACENT LIGHTS OVER CHECKOUT MOUNTED AT 7' TO BOTTOM OF FIXTURE	4
—	I	ETI	F10341	SHADE ACENT LIGHTS OVER HOME MOUNTED AT 8' TO BOTTOM OF FIXTURE	5
—	J	ETI	F10214	GLOBE ACENT LIGHTS OVER HBA MOUNTED AT 8' TO BOTTOM OF FIXTURE	5
—	K	ETI	K5-3/2053 PAR38-1350-40-MV/1	TRACK LIGHTS, MOUNTED TO GRID OR AT 14' AFFE OPEN CEILING	15 TRACKS 5 HEADS
—	L	ETI	EL2502	WET LOCATION EMERGENCY LIGHT	2

HOOKER HANGER TO BE USED TO MOUNT LIGHT FIXTURES TO CEILING
 GRID: HUBBELL - C3ET ULTRONA LIGHTING - HRC1148
 KOD LEEK
 352-789-4587
 hrc@hrc.com
 AL, DE, FL, GA, IA, IL, IN, KS, KY, MD, MI, MN, MO, MS, NC, ND, NE, OH, SC, SD, TN, VA, WI, WV (NLI)

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

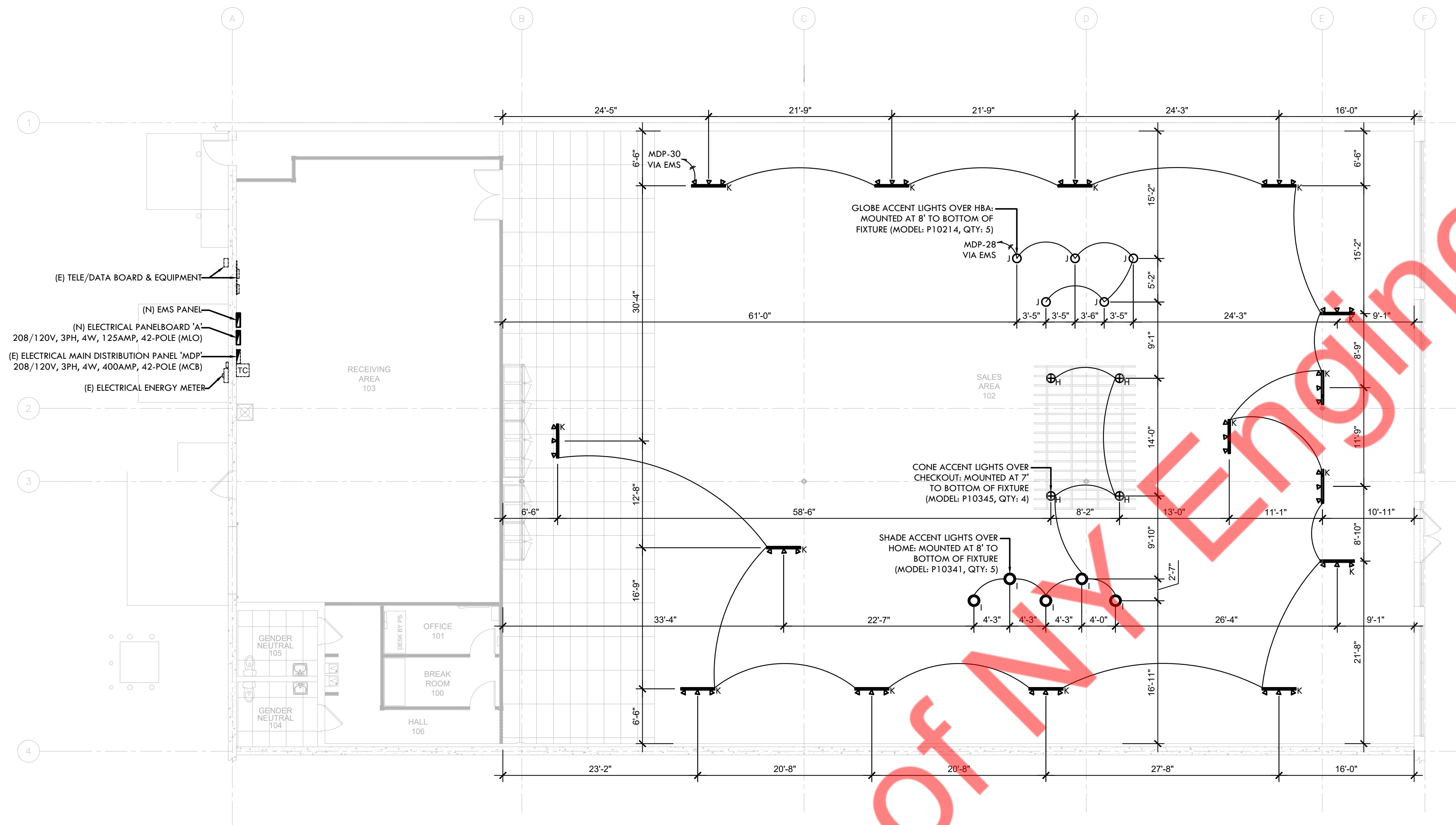
CONTRACTOR TO COORDINATE WITH OWNER FOR THE EXACT LIGHTING CONTROLS. REFER TO PRODUCT SPECIFICATION PRIOR TO INSTALLATION.

MS - WALL MOTION OCCUPANCY SENSOR AT +46" A.F.F. CENTER OF SWITCH. SENSOR "ON" SETTING TO BE SET TO AUTOMATIC IN FIELD.

LIGHTING LEGEND

SYM.	TYPE	MANUF.	PART NUMBER	DESCRIPTION	QTY.
	A	USLED	P1F1-1-4-1-30JD-30-1	3' LED STRIP, 11.25FT. VERTICAL POWER CABLES WITH SURFACE MOUNTING CLIPS	78
	A1	USLED	P1F1-1-4-1-58JD-58-1	4' LED FIXTURE AERIAL MNT. INCLUDES (2) 8' CABLES	18
	B	USLED	1TR2-1-LINV-58-15-AR-C-V1H	2' LED FIXTURE SURFACE MOUNT	2
	C	USLED	04-CRW2-LED	LED EXIT SIGN	PER CODE
	D	USLED	04-CRW2-LED-2-W	EMERGENCY LIGHT/EXIT COMBO (2) HEADS	PER CODE
	E	USLED	D4-EL1-LED	EMERGENCY LIGHT (2) HEADS	PER CODE
	F	USLED	D4-RHRLED	EMERGENCY EXPRESS LIGHT (1) HEAD	PER CODE
	G	USLED	WPR2-30-50-88	WALL PACK	0
	H	ETI	PRSWMBZ	CONE ACCENT LIGHTS OVER CHECKOUT, MOUNTED AT 7' TO BOTTOM OF FIXTURE	4
	I	ETI	P10341	SHADE ACCENT LIGHTS OVER HOME, MOUNTED AT 8' TO BOTTOM OF FIXTURE	5
	J	ETI	P10214	GLOBE ACCENT LIGHTS OVER HBA, MOUNTED AT 8' TO BOTTOM OF FIXTURE	5
	K	ETI	K5-3/2053/ PAR38-1350-40-MV/*	TRACK LIGHTS: MOUNTED TO GRID OR AT 11' AFF IF OPEN CEILING.	15 TRACKS 45 HEADS

HOOKER HANGER TO BE USED TO MOUNT LIGHT FIXTURES TO CEILING GRID. HUBBELL - CZEIT LITHONIA LIGHTING - HRC1146. ROD LEAK. 352.789.4587. rlee@rodleak.com. AL, DE, FL, GA, IA, IL, IN, KS, KY, MD, MI, MN, MO, MS, NC, ND, NE, OH, SC, SD, TN, VA, WA, WV, (NJ).



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

GENERAL NOTES

- LIGHTING SPECIFICATIONS:**
- RECEIVING AREA LIGHTS, IF NOT INDICATED ON SHEET 'E2', TO BE SPACED EVENLY FROM FRONT AND REAR WALL OF RECEIVING AREA.
 - NIGHT LIGHTING: INCLUDES THREE LIGHT FIXTURES IN CENTER ROW OF SALES AREA AND AT LEAST ONE FIXTURE NEAR ELECTRIC PANELS AND EMERGENCY EXIT DOOR IN RECEIVING AREA. ADDITIONAL LIGHT FIXTURES MAY BE REQUIRED TO PROVIDE MINIMAL LIGHTING FROM ENTRY TO ELECTRICAL BREAKER PANEL. NIGHT LIGHTING TO HAVE ITS OWN DEDICATED CIRCUIT.
 - EMERGENCY / EXIT SIGNS AND LIGHTS: INSTALL EMERGENCY LIGHTS AND SIGNS THROUGHOUT THE BUILDING IN COMPLIANCE WITH ALL APPLICABLE CODES.
- CEILING NOTES:**
- PAINT EXISTING AIR DIFFUSERS AND RETURN AIR GRILLS IN THEIR ENTIRETY WHEN THEY ARE RE-USED.
 - PROVIDE AND INSTALL NEW CEILING GRID AT SALES AREA IF REQUIRED, RESTROOMS, HALL, BREAK ROOM AND OFFICE.
 - PROVIDE AND INSTALL NEW CEILING TILES AT SALES AREA IF REQUIRED, RESTROOMS, HALL, BREAK ROOM AND OFFICE.
 - PROVIDE AND INSTALL NEW EMERGENCY LIGHTING AND EXIT LIGHTING AS REQUIRED BY LOCAL CODES.
 - PROVIDE AND INSTALL FIRE EXTINGUISHERS AS REQUIRED BY LOCAL CODES.
- LIGHTING NOTES:**
- OPEN CEILING: AIR CRAFT WIRE SHOULD BE UTILIZED TO SUSPEND LIGHTS TO SPECIFIED HEIGHT.
 - STRIP LIGHTS MOUNTED AT 11' AFF.
 - STRIP LIGHTS IN TRELIS ARE TO BE MOUNTED UNDER THE TRELIS AT 10'-6" AFF.
 - TRACK LIGHTS ARE TO BE HUNG FROM UNISTRUIT AT 11' AFF.
 - PENDANT LIGHTS IN HBA AND HOME ARE TO BE MOUNTED AT 8' AFF.
 - PENDANT LIGHTS OVER THE REGISTER ARE TO BE HUNG AT 4' ABOVE THE TOP OF THE REGISTER COUNTER.
 - ACT CEILING: STRIP LIGHTS AND TRACKS ARE TO BE MOUNTED TO THE GRID. PENDANT LIGHTS ARE TO BE SUSPENDED BY AIR CRAFT WIRE TO ACHIEVE SPECIFIED HEIGHT.
 - STRIP LIGHTS IN TRELIS ARE TO BE MOUNTED UNDER THE TRELIS AT 10'-6" AFF. USE AIR CRAFT WIRE.
 - PENDANT LIGHTS IN HBA AND HOME ARE TO BE MOUNTED AT 8' AFF.
 - PENDANT LIGHTS OVER THE REGISTER ARE TO BE HUNG AT 4' ABOVE THE TOP OF THE REGISTER COUNTER.

*NOTE:
VERIFY FINAL QUANTITIES IN FIELD PRIOR TO ORDERING AND INSTALLATION.

*NOTE:
ALL WORK RELATED TO HVAC HAVE TO BE CARRIED OUT BY LICENSED HVAC CONTRACTOR. COORDINATE WITH MECHANICAL FOR EXACT REQUIREMENT.

*NOTE:
PLAN IS DIAGRAMIC ONLY!! HOLD CONDUIT TIGHT TO STRUCTURE ABOVE AND RUN AS HIGH AS POSSIBLE ALONG PERIMETER WALLS TO RECEIVING AREA.

SYMB	DESCRIPTION	CABLE TYPE	SUPPLIER	INSTALLER	NOTES
OT	OUTDOOR AIR TEMP (501-1122) MOUNTED 8'-0" A.F.F.	BELDEN 8761 OR EQUIVALENT (22AWG, 2C, STRANDED, SHIELDED)	EMS SUPPLIER	GENERAL CONTRACTOR	(1) PER RECEIVING ENTRY
ST	SUPPLY TEMP (201-0041) IN SUPPLY DUCT	BELDEN 8761 OR EQUIVALENT (22AWG, 2C, STRANDED, SHIELDED)	EMS SUPPLIER	GENERAL CONTRACTOR	(1) PER HVAC UNIT
TS	TOUCHSCREEN THERMOSTAT (810-1600) 8'-0" A.F.F.	8C T-STAT CABLE	EMS SUPPLIER	GENERAL CONTRACTOR	(1) PER HVAC UNIT ZONE
●	RJ-11/RJ-45 DATA JACK PHONE COMBO	CAT-5 DATA CABLE (24AWG, 4 TWISTED PAIR)	GENERAL CONTRACTOR	GENERAL CONTRACTOR	(1) AT OFFICE COMPUTER CART
MS	MOTION SENSOR SWITCH	LEVITON EZ-FIND ODS-10-IDW	GENERAL CONTRACTOR	GENERAL CONTRACTOR	(1) PER RESTROOM (1) PER BREAK ROOM (1) PER OFFICE

SENSOR KEYNOTES

1. INSTALL THERMOSTATS 8'-0" AFF. THE EXACT MOUNTING LOCATION OF THE THERMOSTAT "TS" MAY VARY DEPENDING ON THE STORE LAYOUT AND DUCT CONFIGURATION.

2. PHONE LINE #1 - TWO RJ-11 PORTS. ONE (1) LOCATED IN OFFICE W/RJ-45 DATA JACK COMBO AND ONE (1) AT REGISTER. 24 GA. CAT 5, 4-PAIR TWISTED WIRE ONLY. USE BLUE AND BLUE & WHITE WIRES. HOOK TO LINE #1 TERMINAL IN RJ-11 JACK EACH PHONE JACK TO HAVE DEDICATED, SEPARATE HOME RUN TO DMARC. LABEL AS "PHONE" AT THE DESTINATION AND AT DMARC. PHONE COMPANY PROVIDES FINAL HOOK UP TO DMARC ONLY. PHONE LINE #2 - RJ-11 PHONE JACK SUPPLIED AND WIRED BY CONTRACTOR.

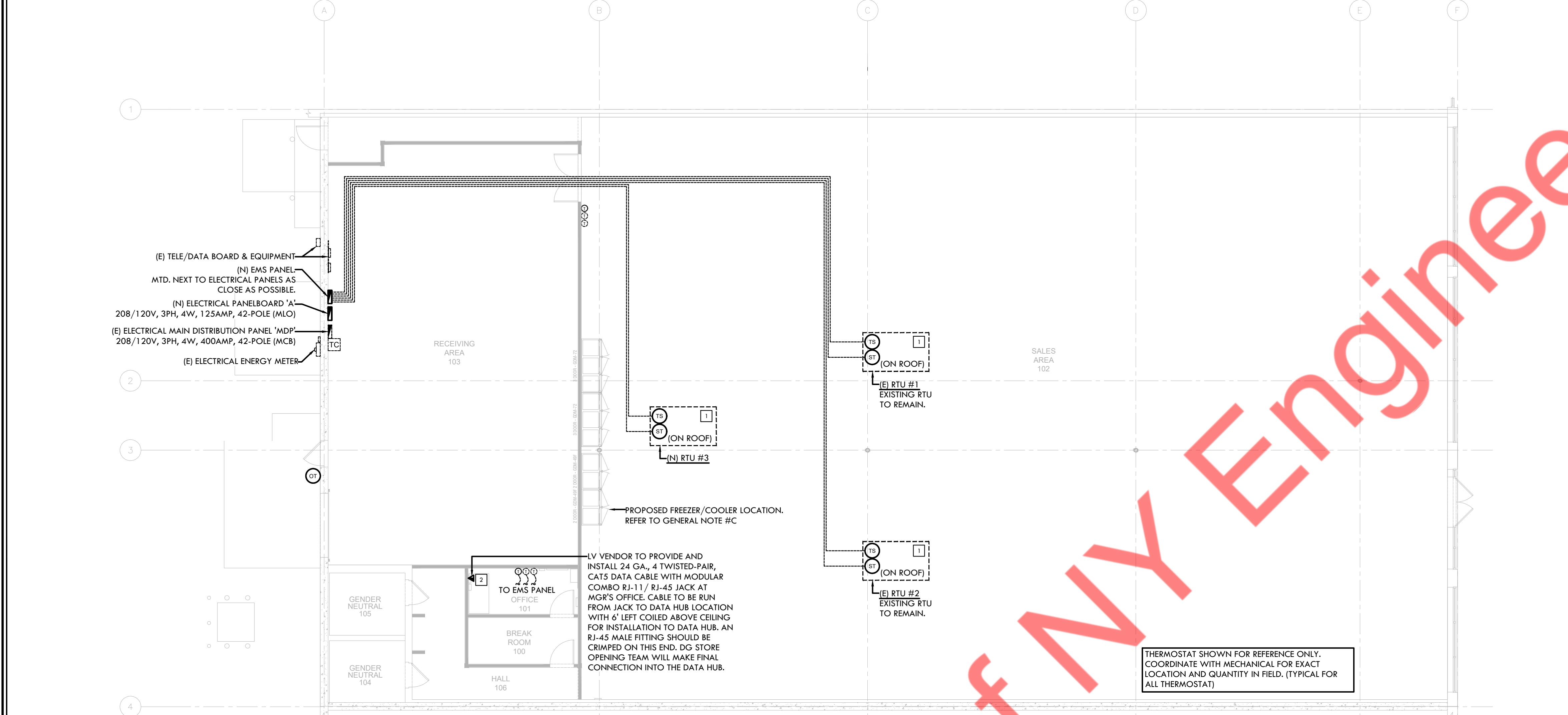
GENERAL NOTES

A. REFER TO E1 FOR GENERAL CONTRACTOR RESPONSIBILITIES. E.C. MAY USE CABLE TRAY FOR LOW VOLTAGE CABLES, SEE 2/E2.

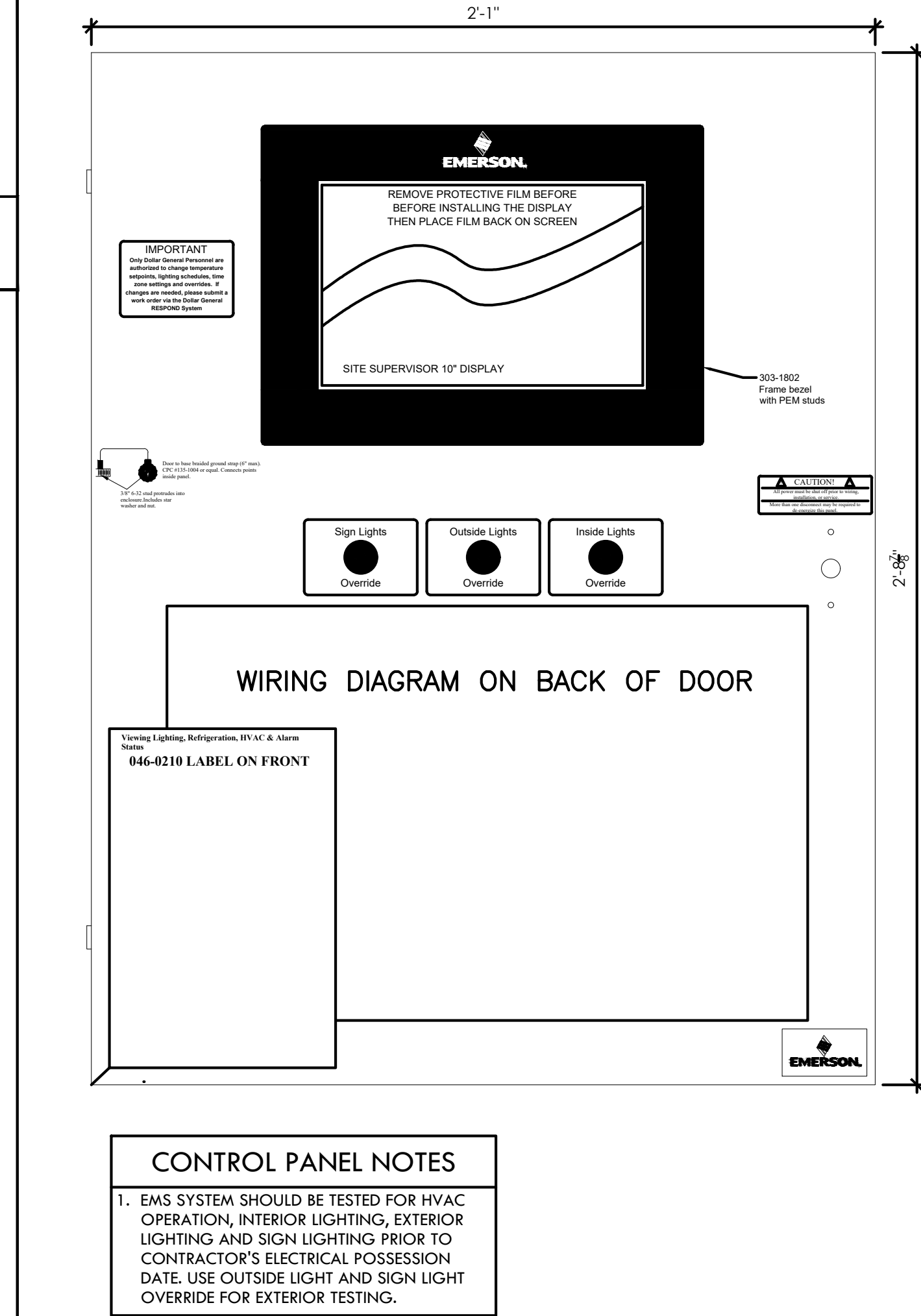
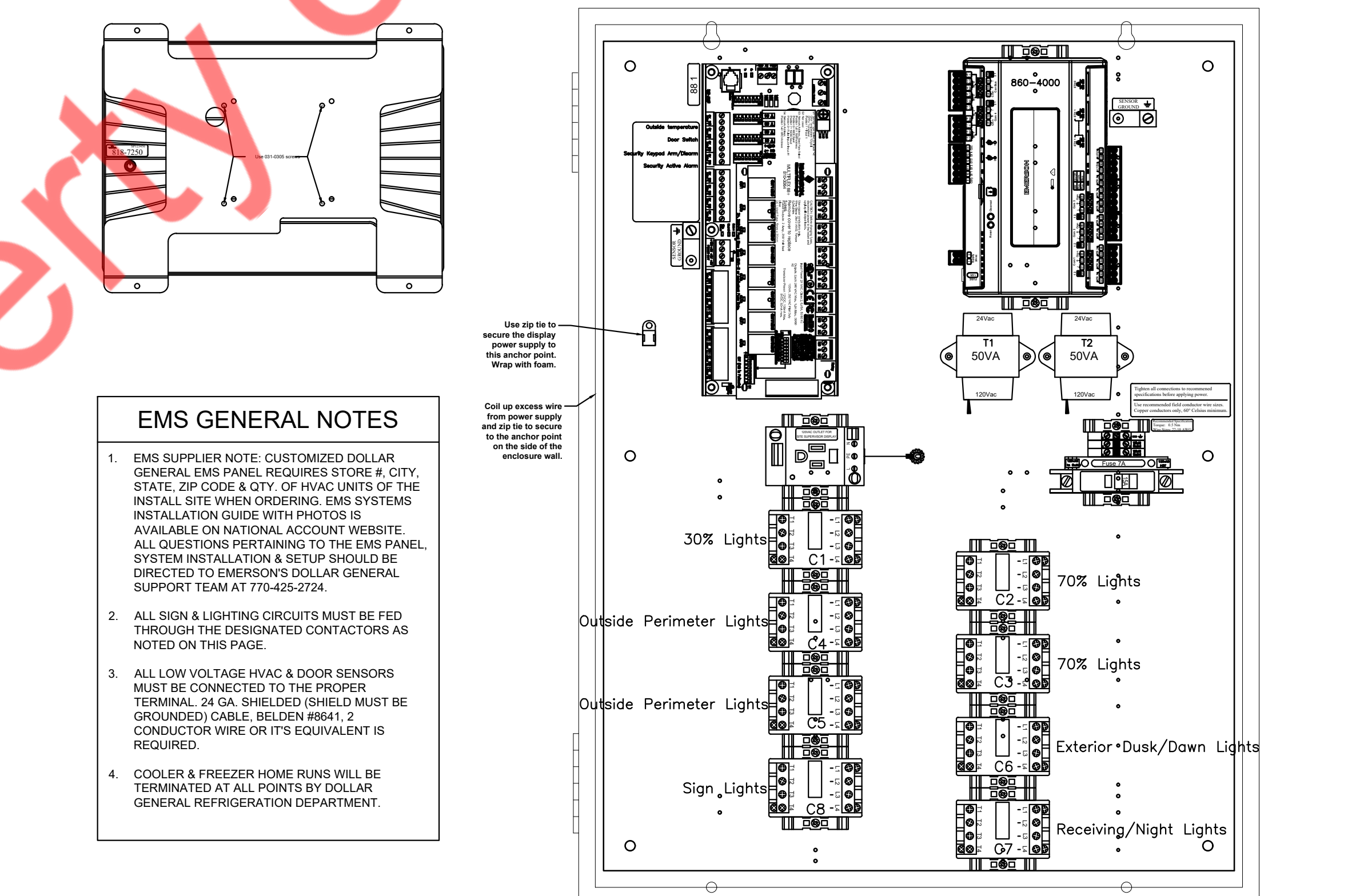
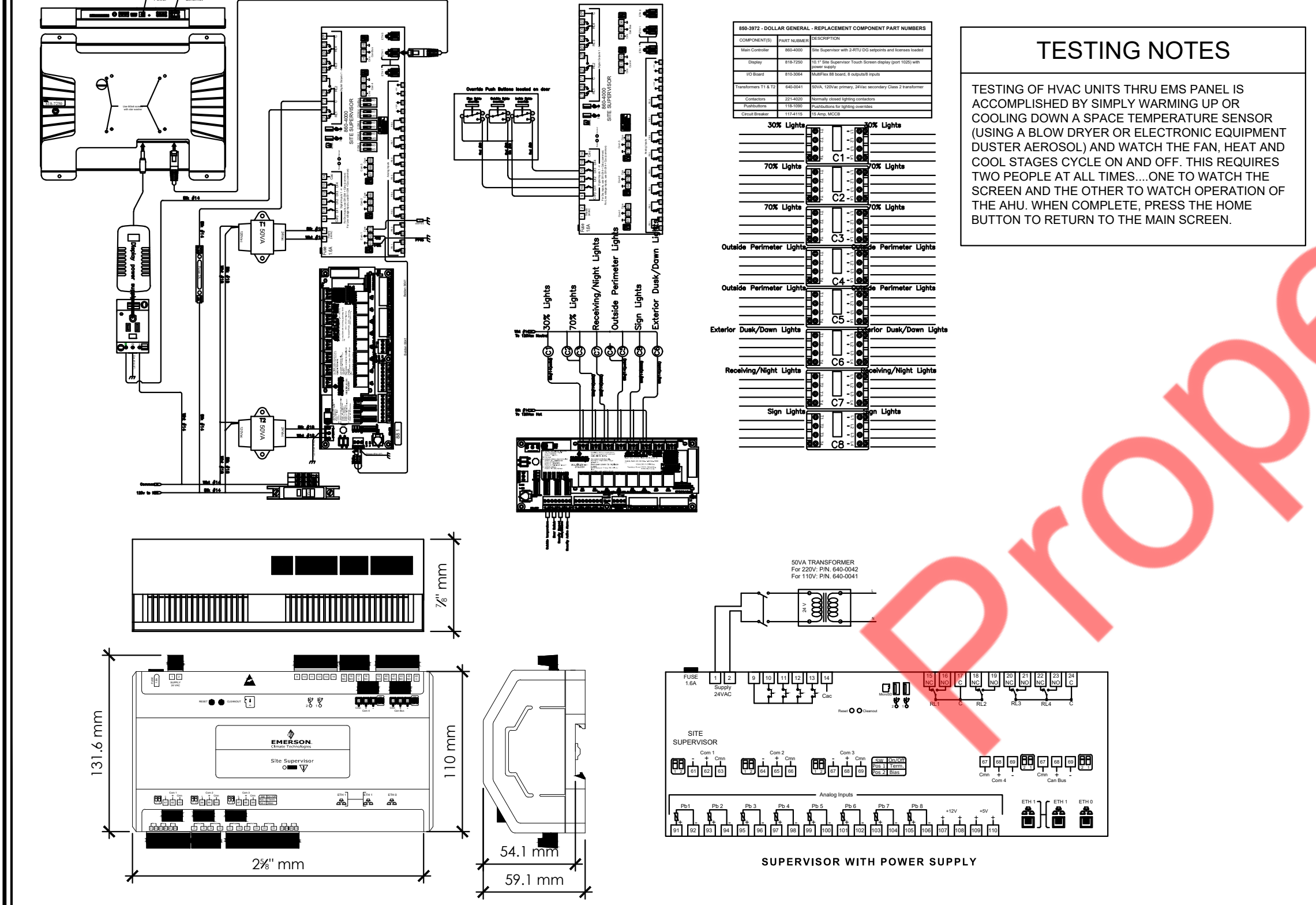
B. RUN CONDUIT FROM SENSORS TO BOTTOM OF STRUCTURE.

C. REFRIGERATION UNITS TO BE CONNECTED TO EMS PANEL BY DOLLAR GENERAL REFRIGERATION CONTRACTOR.

REQUIRED NATIONAL ACCOUNT VENDORS		CONTACT INFORMATION SUBJECT TO CHANGE	
COMPANY - PHONE #	CONTACTS	REQUIRED ITEMS	
EMERSON CLIMATE TECHNOLOGIES - ALL QUESTIONS PERTAINING TO THE EMS PANEL SYSTEM INSTALLATION & SETUP SHOULD BE DIRECTED TO EMERSON'S DOLLAR GENERAL SUPPORT TEAM AT 615-855-5960	WEBSITE: http://dollargeneralbid.emerson.com USER NAME: dollargeneralbid PASSWORD: \$General1	EMS SUPPLIER NOTE: CUSTOMIZED DOLLAR GENERAL EMS PANEL REQUIRES STORE #, CITY, STATE, ZIP CODE & QTY. OF HVAC UNITS FOR THE INSTALL SITE WHEN ORDERING. EMS SYSTEMS INSTALLATION GUIDE WITH PHOTOS IS AVAILABLE ON NATIONAL ACCOUNT WEBSITE.	



1 SCALE 1/8" = 1' - 0" ELECTRICAL EMS/LOW VOLTAGE PLAN



2 SCALE N.T.S. CONTROL WIRING DIAGRAM

3 SCALE N.T.S. CPU TERMINAL DIAGRAM

4 SCALE N.T.S. PROGRAM CONTROLLER DETAIL

ELECTRICAL PANEL SCHEDULE																			
PANELBOARD		MDP	VOLTAGE	120 / 208 V	PHASE	WIRE		3		4									
PANEL TYPE		PRL-1a	MAINS	400A MCB	BUS RATING	400A		AIC RATING		35K AMPS									
NEMA TYPE ENCLOSURE		1	MOUNTING	SURFACE	OPTIONS	POW-R-LINE C		NOTE											
CKT. NO.	EQT. TAG	CKT. TAG	DESCRIPTION	POLE	WIRE SIZE	BKR. SIZE	TOTAL WATTS	PHASE	TOTAL WATTS	BKR. SIZE	WIRE SIZE	POLE	DESCRIPTION	CKT. TAG	EQT. TAG	CKT. NO.			
1		(N)	NEW PANEL-A	3	3	100	8,000	A	5,760	80	4	3	RTU-1	(E)		2			
3		(N)					8,000	B	5,760							4			
5		(N)					8,000	C	5,760							6			
7		(E)	SPARE	1	10	30	2,500	A	5,760							8			
9		(E)					2,500	B	5,760	80	4	3	RTU-2	(E)		10			
11		(E)	SPARE	1	10	30	2,000	C	5,760							12			
13	TC	(N)	EMS PANEL	1	12	20	500	A		20		1	SPARE	(E)		14			
15	(N)	(N)	SALES LIGHTING	1	12	20	1,200	B	500	20	12	1	FIRE ALARM	(N)		16			
17	(N)	(N)	SALES LIGHTING	1	12	20	1,200	C	180	20	12	1	REC_TELEPHONE	(E)		18			
19	(N)	(N)	SALES LIGHTING	1	12	20	1,200	A		20		1	SPARE	(E)		20			
21	(N)	(N)	SALES LIGHTING	1	12	20	1,200	B		20		1	SPARE	(E)		22			
23	(N)	(N)	LIGHTING_RR_CORRI & RECEIVING	1	12	20	1,000	C	100	20	12	1	TIME CLOCK	(E)		24			
25	(N)	(N)	LIGHTING_OFFICE_BR_RM & HALL	1	12	20	500	A	540	20	12	1	GFI/WP RTU OUTLETS	(E)		26			
27	(N)	(N)	EWH-1	1	12	20	1,650	B	500	20	12	1	SALES DECORATIVE LIGHTING	(N)		28			
29	(E)	(N)	SPARE	1	12	20	C	750	20	12	1	SALES TRACK LIGHTING	(N)		30				
31	(N)	(N)	HAND DRYER	1	12	20	1,500	A		20		1	SPARE	(E)		32			
33	(E)	(N)	RCP-1	1	12	20	180	B		20		1	SPARE	(E)		34			
35	(N)	(N)	HAND DRYER	1	12	20	1,500	C	1,500							36			
37		(N)					13,700	A	1,500	20	12	3	EXISTING FAN	(E)		38			
39		(N)	NEW RTU-3	3	1	125	13,700	B	1,500							40			
41		(N)					13,700	C								42			

ALL PHASES TO BE BALANCED TO WITHIN 7%
A= 41,460 WATTS
B= 42,450 WATTS
C= 41,450 WATTS

(E) EXISTING TO REMAIN
(N) NEW CIRCUIT
GFCI GROUND FAULT CURRENT INTERRUPTER
IG CIRCUITS WITH ISOLATED GROUND
TC CIRCUITS ON TIMECLOCK
EMS ROUTING TO THE EMS PANEL
C BREAKER LOCK
a,b,c SWITCHES CONTROLLING LIGHTS

TOTAL CONNECTED LOAD	118,360	WATTS	329	AMPS
TOTAL DEMAND LOAD	119,198	WATTS	331	AMPS

ELECTRICAL PANEL SCHEDULE																			
PANELBOARD		A	VOLTAGE	120 / 208 V	PHASE	WIRE		3		4									
PANEL TYPE		NEW	MAINS	MLO	BUS RATING	125A		AIC RATING		22KA									
NEMA TYPE ENCLOSURE		1	MOUNTING	SURFACE	OPTIONS	NOTE				NEW PANEL									
CKT. NO.	EQT. TAG	CKT. TAG	DESCRIPTION	POLE	WIRE SIZE	BKR. SIZE	TOTAL WATTS	PHASE	TOTAL WATTS	BKR. SIZE	WIRE SIZE	POLE	DESCRIPTION	CKT. TAG	EQT. TAG	CKT. NO.			
1	TC	(N)	SIGNAGE	1	12	20	1,200	A	1,200	20	12	1	SIGNAGE	(N)	TC	2			
3		(N)	REC_SHOW WINDOW	1	12	20	1,000	B	360	20	12	1	POWER POLE GREEN	(N)(C)		4			
5		(N)(C)	POWER POLE GREEN	1	12	20	360	C	360	20	12	1	POWER POLE BROWN	(N)(C)		6			
7		(N)(C)	POWER POLE BROWN	1	12	20	360	A	360	20	12	1	POWER POLE GREEN	(N)(C)		8			
9		(N)(C)	POWER POLE GREEN	1	12	20	360	B	360	20	12	1	POWER POLE BROWN	(N)(C)		10			
11		(N)(C)	POWER POLE BROWN	1	12	20	360	C	360	20	12	1	POWER POLE GREEN	(N)(C)		12			
13		(N)(C)	POWER POLE GREEN	1	12	20	360	A	360	20	12	1	POWER POLE BROWN	(N)(C)		14			
15		(N)(C)	POWER POLE BROWN	1	12	20	360	B	360	20	12	1	POWER POLE GREEN	(N)(C)		16			
17		(N)(C)	POWER POLE GREEN	1	12	20	360	C	360	20	12	1	POWER POLE BROWN	(N)(C)		18			
19		(N)(C)	POWER POLE BROWN	1	12	20	360	A	180	20	12	1	REC_GFI_DRINKING FOUNTAIN	(N)		20			
21		(N)	REC_QUAD_OFFICE MGR DESK	1	12	20	360	B	180	20	12	1	REC_RECEIVING AREA	(N)		22			
23		(N)	REC_OFFICE	1	12	20	360	C	360	20	12	1	REC_QUAD_OFFICE_VSAT/DATA HUB	(N)		24			
25		(N)(C)	REC_SECURITY	1	12	20	360	A	360	20	12	1	REC_QUAD_CCTV	(N)(C)		26			
27		(N)	REC_BREAK RM	1	12	20	1,500	B	360	20	12	1	REC_INTERFACE PANEL	(N)(C)		28			
29		(N)(C)					1,000	C	360	20	12	1	EAS TOWER	(N)		30			
31		(N)(C)	FREEZER	1	12	20	1,000	A	1,000	20	12	1	REC_SHOW WINDOW	(N)		32			
33		(N)(C)	FREEZER	1	12	20	1,000	B	360	20	12	1	REC_DISPLAY/CORD REEL	(N)		34			
35		(N)(C)					1,000	C	1,000	20	12	1	EMS PANEL	(N)		36			
37		(N)(C)	COOLER	1	12	20	900	A		20			SPARE			38			
39		(N)(C)	COOLER	1	12	20	900	B		20			SPARE			40			
41		(N)(C)	SPARE	1	12	20		C		20			SPARE			42			

ALL PHASES TO BE BALANCED TO WITHIN 7%
A= 8,000 WATTS
B= 7,460 WATTS
C= 6,240 WATTS

(E) EXISTING TO REMAIN
(N) NEW CIRCUIT
GFCI GROUND FAULT CURRENT INTERRUPTER
IG CIRCUITS WITH ISOLATED GROUND
TC CIRCUITS ON TIMECLOCK
EMS ROUTING TO THE EMS PANEL
C BREAKER LOCK
a,b,c SWITCHES CONTROLLING LIGHTS

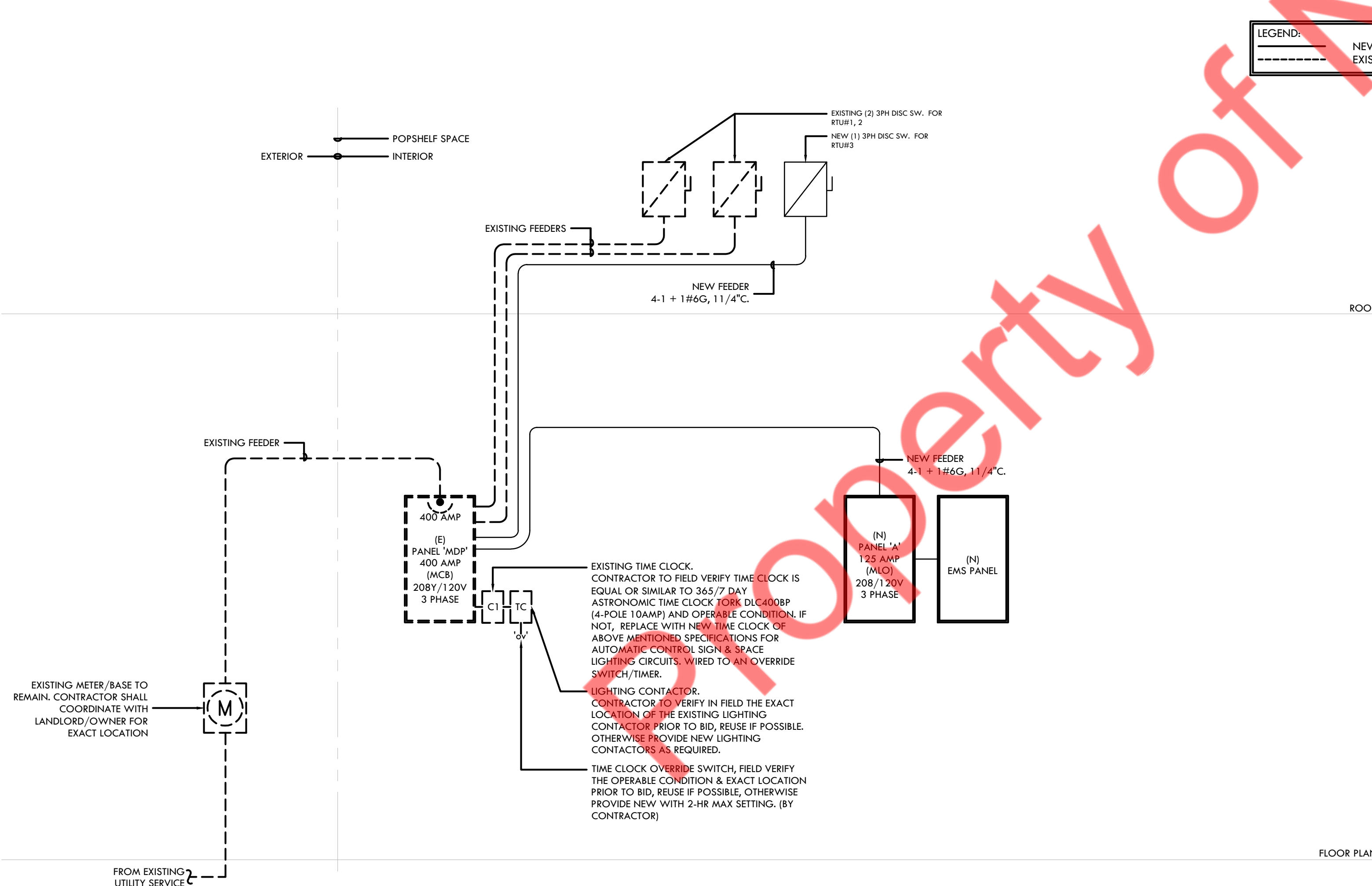
TOTAL CONNECTED LOAD	21,700	WATTS	61	AMPS
TOTAL DEMAND LOAD	22,800	WATTS	64	AMPS

EXISTING PANELBOARD KEYED NOTE: #

1. NEW BREAKERS MAY BE REQUIRED FOR USE IN THE EXISTING PANELBOARD TO MATCH RATING INDICATED IN THE PANEL SCHEDULE. PRIOR TO BID/PRICING, THE ELECTRICAL CONTRACTOR SHALL VERIFY ALL EXISTING-TO-REMAIN PANELBOARD MANUFACTURER AND MODEL NUMBER TO ENSURE THAT REPLACEMENT BREAKERS ARE AVAILABLE. WHERE BREAKER AVAILABILITY ISSUES ARISE, NOTIFY THE PROJECT MANAGER PRIOR TO BID/PRICING.

2. DESIGNATED CIRCUIT NUMBER SHOWN ON THE PANEL SCHEDULE FOR A CERTAIN LOAD, MAY BE DIFFERENT THAN THE ACTUAL CIRCUIT NUMBER IN THE EXISTING PANELBOARD. ALL EXISTING-TO-REMAIN ELECTRICAL LOADS SHALL REMAIN CONNECTED TO THE SAME BREAKER AND CIRCUIT DESIGNATION. AVAILABLE SPARES AND SPACES SHALL BE UTILIZED TO FEED THE NEW LOADS.

ELECTRICAL PANEL SCHEDULE



- ALL CONDITIONS TO BE FIELD VERIFIED BEFORE SUBMITTING BID.
 - CONTRACTOR TO MAINTAIN FIRE RATING OF PARTITION NEW ELECTRICAL EQUIPMENT IS BEING SECURED TO.
 - ALL ELECTRICAL WORK BEING SHOWN IN SCHEMATIC IS EXISTING UNLESS OTHERWISE NOTED.
 - CONTRACTOR IS RESPONSIBLE FOR CHECKING ALL VOLTAGES ON PLANS UPON FIRST VISIT TO THE SITE. THE INCOMING SERVICE SHOULD CORRESPOND TO THE SPECIFICATIONS FOR THE LIGHTING FIXTURES AND THE H.V.A.C. EQUIPMENT AND BE PROPERLY NOTED ON THE ELECTRICAL PANEL DIAGRAMS AND RISERS. ANY DISCREPANCIES SHOULD BE REPORTED TO THE ARCHITECT IMMEDIATELY.
 - HVAC CIRCUIT BREAKERS SHALL BE "HACK" TYPE WHERE REQUIRED BY EQUIPMENT NAMEPLATE PER N.E.C.
 - CONTRACTOR SHALL FIELD VERIFY EXACT A.L.C. RATING OF LANDLORDS DISTRIBUTION EQUIPMENT, FURNISH AND INSTALL TENANTS SYSTEM TO MATCH.
 - ELECTRICAL CONTRACTOR SHALL BALANCE ALL PANELS AND ELECTRICAL EQUIPMENT TO (10%) BETWEEN PHASES: A/B B/C, - A/C REGARDLESS OF CIRCUITING INDICATED.
 - PROPER CLEARANCE MUST BE MAINTAINED ABOUT ELECTRICAL EQUIPMENT PER N.E.C. FIELD VERIFY EXACT MOUNTING SPACE AVAILABLE IN ELECTRICAL ROOM/AREA PRIOR TO INSTALLATION OF ELECTRICAL EQUIPMENT.
 - CONTRACTOR SHALL MAKE ALL FINAL ELECTRICAL CONNECTIONS FOR A COMPLETE ELECTRICAL DISTRIBUTION SYSTEM.
 - ALL ELECTRICAL WORK SHALL BE INSTALLED SO AS TO READILY ACCESSIBLE FOR OPERATING, SERVICING, MAINTAINING & REPAIRING.
- ELECTRICAL WORK BEING SHOWN IN SCHEMATIC IS EXISTING UNLESS OTHERWISE NOTED.**
- CONTRACTOR TO VERIFY EXISTING SERVICE WIRE / CONDUIT DURING BIDDING STAGE AND REPORT TO TENANT ARCHITECT ANY DISCREPANCIES THAT IS DIFFERENT THAN SHOWN ON PLANS.
- CONTRACTOR TO PROVIDE NEW NAME PLATE ON TENANT'S METER FOR IDENTIFICATION.
- ANY PENETRATION THROUGH FIRE-RESISTANT/ RATED WALLS, PARTITIONS, FLOORS AND CEILINGS SHALL BE FIRE STOPPED USING APPROVED METHODS TO MAINTAIN FIRE RESISTANT RATING. COORDINATE WITH LANDLORD REPRESENTATIVE FOR REQUIREMENTS.
- CONTRACTOR TO PROVIDE PHYSICAL LABELS INDICATING PANEL AND CIRCUIT NUMBERS ON ALL EQUIPMENT AND RECEPTACLES CORRESPONDING TO THE PANEL SCHEDULE. IN ADDITION, THE KITCHEN EQUIPMENT SCHEDULE SHOULD BE PLACED INSIDE EACH PANEL.
- CONTRACTOR TO VERIFY IN FIELD THE EXACT USE OF THE EXISTING LIGHTING CONTRACTORS PRIOR TO BID, REUSE IF POSSIBLE, PROVIDE NEW IF REQUIRED.

ELECTRICAL LOAD SUMMARY					
DESCRIPTION	NEC CONNECTED kW	VOLT	PHASE	NEC DEMAND FACTOR	NEC DEMAND kW
LIGHTING- 120V	9.2	120	1	1.25	11.4
RECEPTACLES	14.9	120	1	>10kW=10+[0.5*(kW-10)]	12.5
STOREFRONT SIGN	2.4	120	1	1.25	3.0
S/W OUTLETS	2.0	120	1	1.25	2.5
EF-1	4.5	208	1	1.00	4.5
REF. EQUIPMENT	5.8	208	1	1.00	5.8
ROOFTOP UNITS	75.7	208	3	1.00	75.7
HOT WATER HEATER	1.7	120	1	1.00	1.7
TOTALS	116.1				117.0

NOTES:
* USE GREATER VALUE OF THE TWO CATEGORIES.
** 125% OF THE LARGEST MOTOR OR COMPRESSOR IN SYSTEM APPLIED ONLY ON ONE UNIT.
*** N.E.C. ARTICLE 220-12 REQUIREMENT (200 VA PER FOOT OF SHOW WINDOW) MINUS ACTUAL SHOW WINDOW LIGHTING KVA.

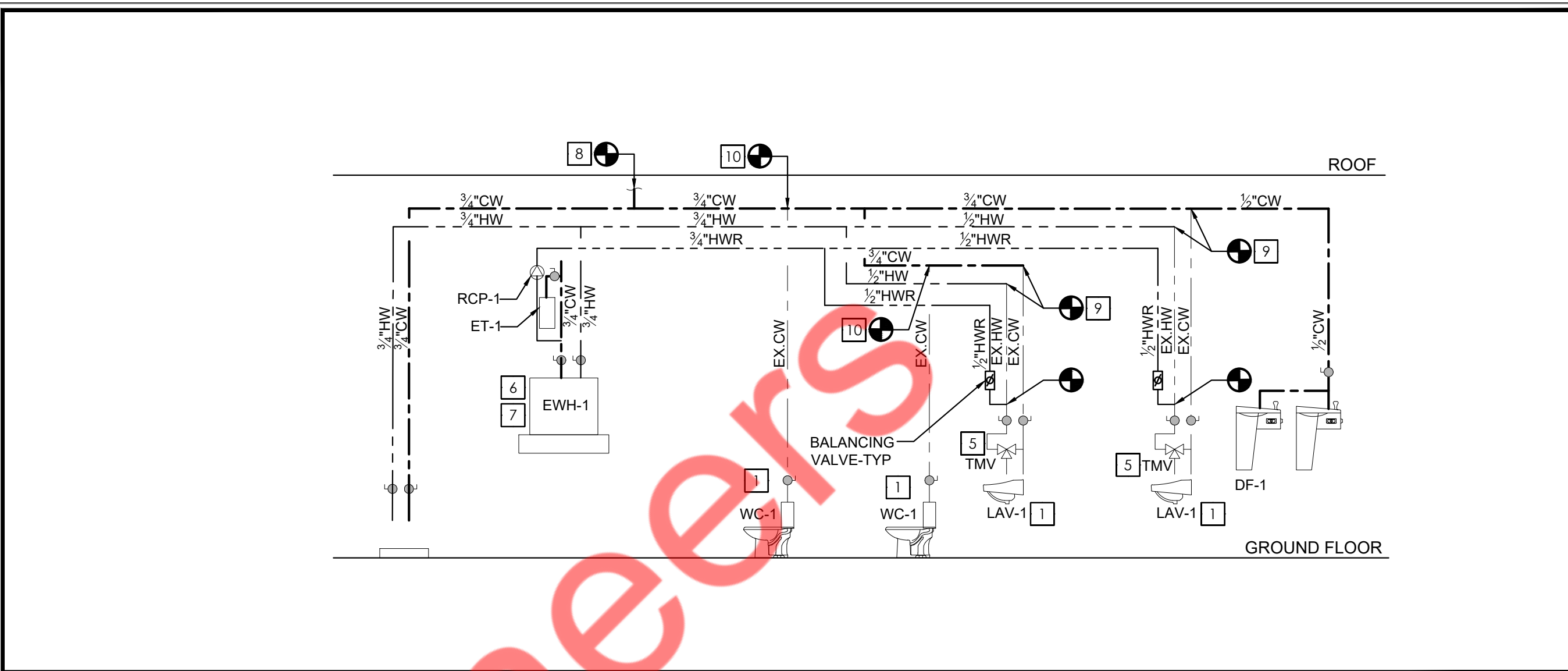
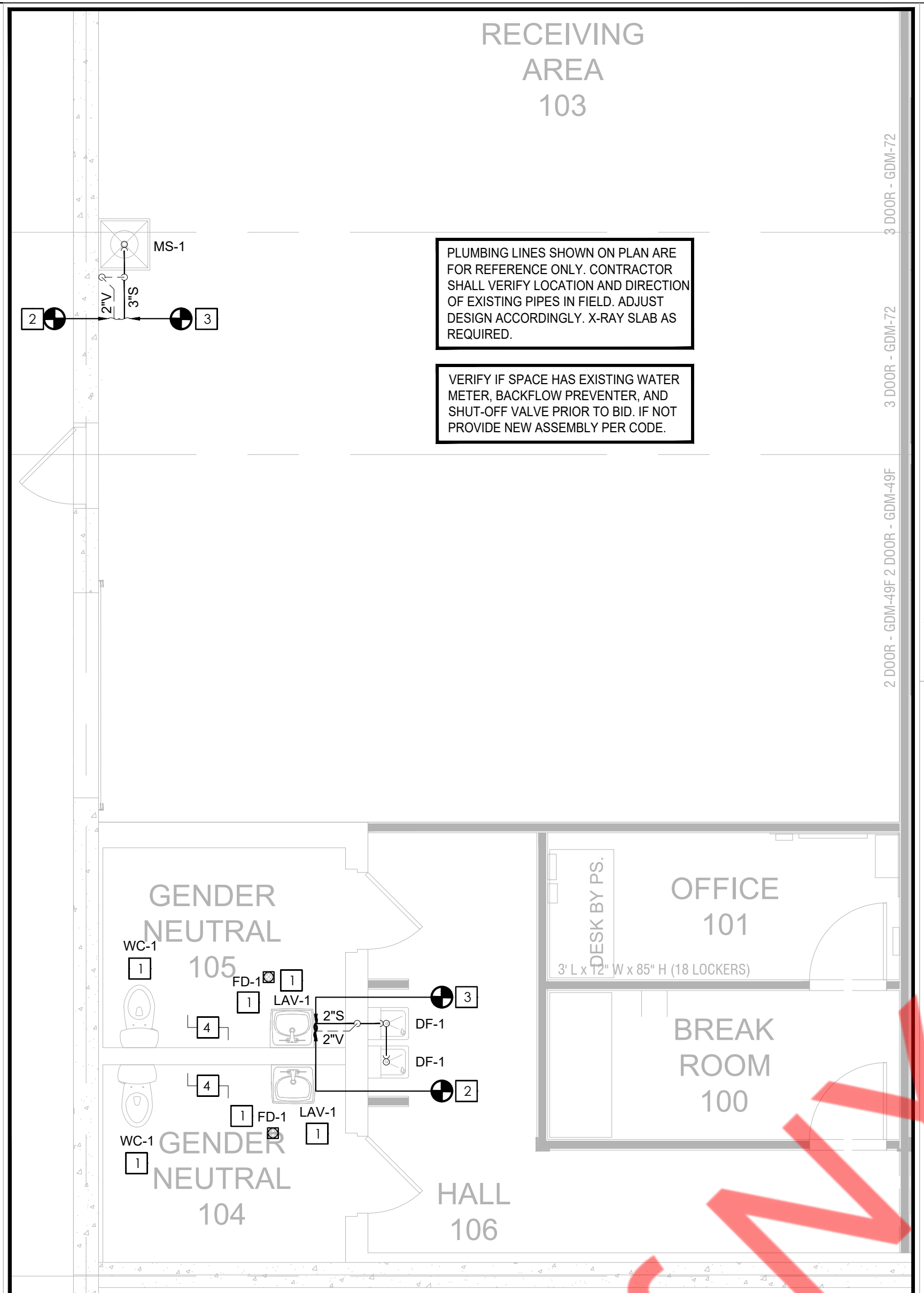
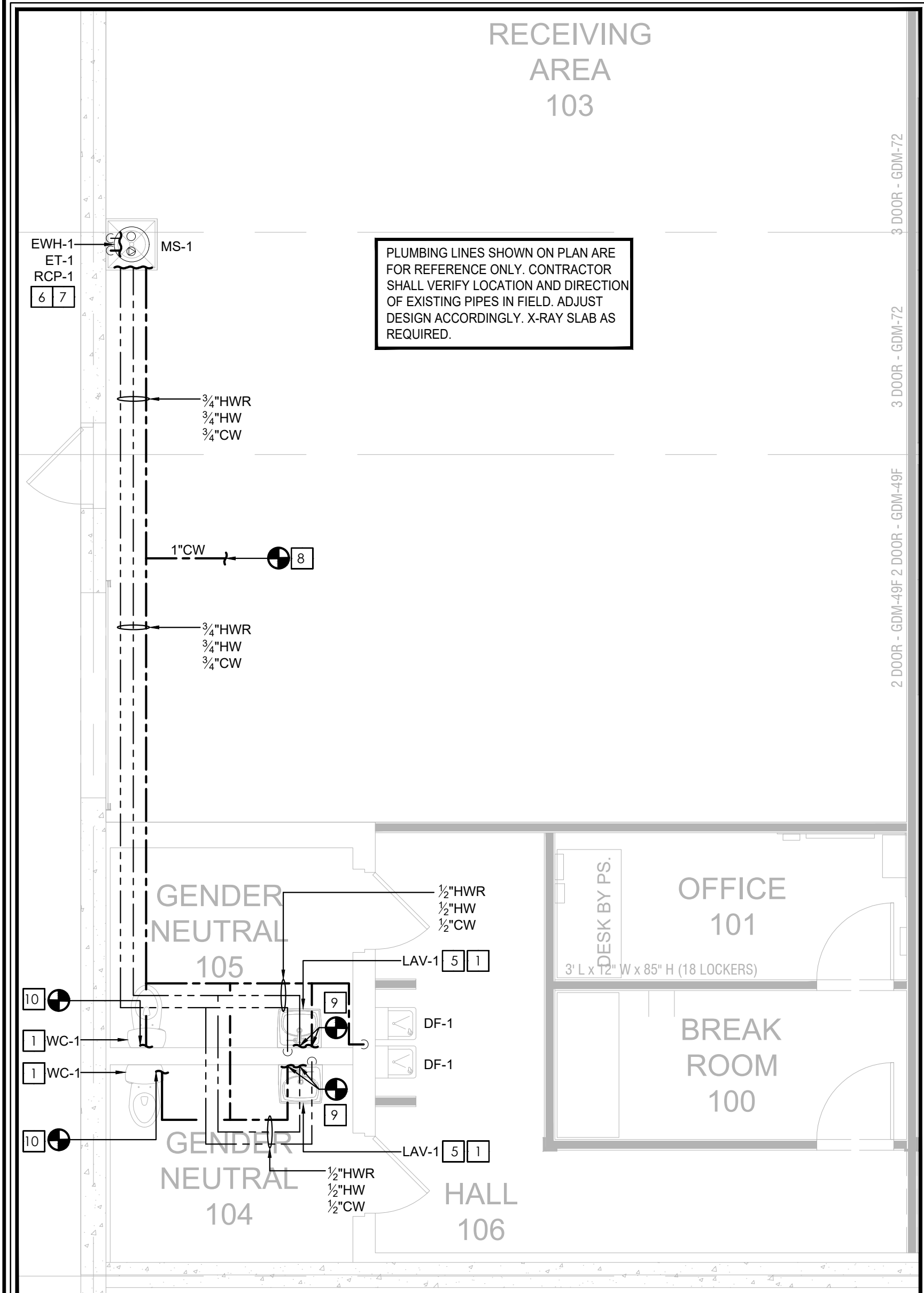
N.E.C. DEMAND kVA x 1,000
SYSTEM VOLTAGE x 1.732

117.0	x 1000 =	116,998	324.8 AMPS	USE (EXISTING) 400AMP SERVICE.
208	x 1.732 =	360		

- VERIFY THE FOLLOWING PRIOR TO BID/ PRICING:**
- EXISTING CONDUIT AND FEEDERS SIZE BETWEEN TENANT SPACE AND LANDLORD SWITCHBOARD.
 - EXISTING MAIN SERVICE DISCONNECT RATING.
 - EXISTING METER.
- IF THE EXISTING SERVICE DISCONNECT AND FEEDERS ARE RATED FOR LESS THAN THE RATING SHOWN ON THIS RISER, NOTIFY THE PROJECT MANAGER AND ENGINEER IMMEDIATELY PRIOR TO SUBMITTING BID/ PRICING PACKAGE SO DRAWINGS CAN BE REVISED AND UPDATED ACCORDINGLY

RISER DIAGRAM

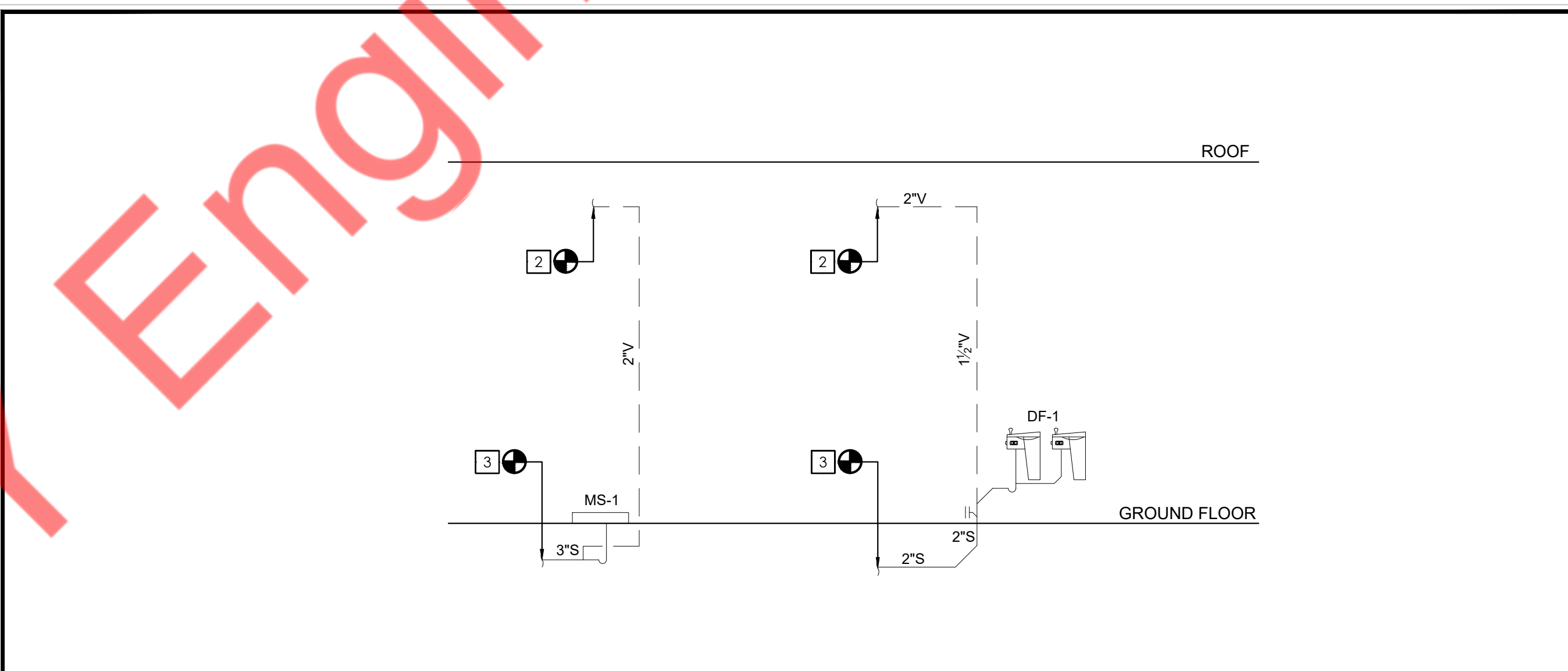
RISER NOTES & LOAD SUMMARY



1 DOMESTIC WATER PLAN
SCALE: 1/4"=1'-0"

2 SANITARY & VENT PLAN
SCALE: 1/4"=1'-0"

5 DOMESTIC WATER RISER
SCALE: N.T.S.



6 SANITARY RISER
SCALE: N.T.S.

3 PLUMBING KEY NOTES
SCALE: N.T.S.

1	EXISTING WATER CLOSET, LAVATORY & FLOOR DRAIN TO BE REPLACED WITH NEW FIXTURES IN THE EXISTING LOCATIONS WITH THE EXISTING SANITARY, VENT AND WATER LINES WITH ASSOCIATED ACCESSORIES AND FITTINGS TO REMAIN. CONTRACTOR TO VERIFY IN FIELD, CONDITION OF EXISTING PIPING AND REPLACE IF PIPES ARE NOT IN GOOD CONDITION.
2	CONTRACTOR SHALL CONNECT NEW VENT LINE TO EXISTING VENT LINE / VTR FOR THE SPACE. MODIFY AND EXTEND EXISTING VENT LINES AS REQUIRED. VERIFY SIZE, ROUTING, LOCATION, & CONNECTION POINT PRIOR TO BID. NOTIFY ARCHITECT/ENGINEER WITH ANY DISCREPANCIES PRIOR TO BID PRIOR.
3	CONTRACTOR SHALL CONNECT NEW SANITARY LINE TO EXISTING SANITARY LINE FOR SPACE. MODIFY AND EXTEND EXISTING SANITARY LINES AS REQUIRED. PROVIDE REQUIRED PITCH TO EXISTING SANITARY LINE AS REQUIRED. CONTRACTOR TO VERIFY EXACT LOCATION, ROUTING, SIZE, INVERT, DIRECTION OF FLOW AND CONNECTION POINT OF SANITARY LINE PRIOR TO BID. NOTIFY ARCHITECT/ENGINEER WITH ANY DISCREPANCIES PRIOR TO BID.
4	CONTRACTOR TO COORDINATE WITH CLIENT AND FILED VERIFY THE EXISTING SANITARY AND WATER MAIN LINES IN THE SPACE ARE IN GOOD CONDITION. REPLACE THE PIPES IF NOT IN GOOD CONDITION AND NOTIFY THE ENGINEER IF ANY DISCREPANCIES IN THE FILED PRIOR TO BID.
5	PROVIDE THERMOSTATIC MIXING VALVE SET AT 110°F WITH RE-CIRCULATION LINE.
6	NEW ELECTRIC HOT WATER HEATER EWH-1, RCP-1 AND ET-1 INSTALLED ABOVE MOP-SINK, REFER PLUMBING FIXTURE SCHEDULE
7	CONTRACTOR SHALL DRAIN WATER HEATER, RELIEF VALVE, AND DRAIN PAN INDIRECTLY TO MOP SINK PER LOCAL CODE.
8	CONTRACTOR SHALL CONNECT NEW 1" COLD WATER LINE TO EXISTING COLD WATER LINE FOR SPACE. MODIFY AND EXTEND EXISTING WATER LINES AS REQUIRED. CONTRACTOR TO VERIFY SIZE, LOCATION, ROUTING & CONNECTION POINT PRIOR TO BID. NOTIFY ARCHITECT/ENGINEER OF ANY DISCREPANCIES PRIOR TO BID. CONTRACTOR SHALL CO-ORDINATE WITH LANDLORD FOR SUB-METER AND BACKFLOW PREVENTER REQUIREMENT FOR OUR SPACE.
9	CONTRACTOR TO CONNECT NEW 1/2" HOT AND COLD WATER LINE TO THE EXISTING WATER LINES FOR THE LAVATORY. CONTRACTOR TO VERIFY IN FIELD, ROUTING, SIZE, AND CONDITION OF EXISTING PIPE.
10	CONTRACTOR TO CONNECT NEW 3/4" COLD WATER LINE TO THE EXISTING WATER LINES FOR THE WATER CLOSET. CONTRACTOR TO VERIFY IN FIELD, ROUTING, SIZE, AND CONDITION OF EXISTING PIPE.

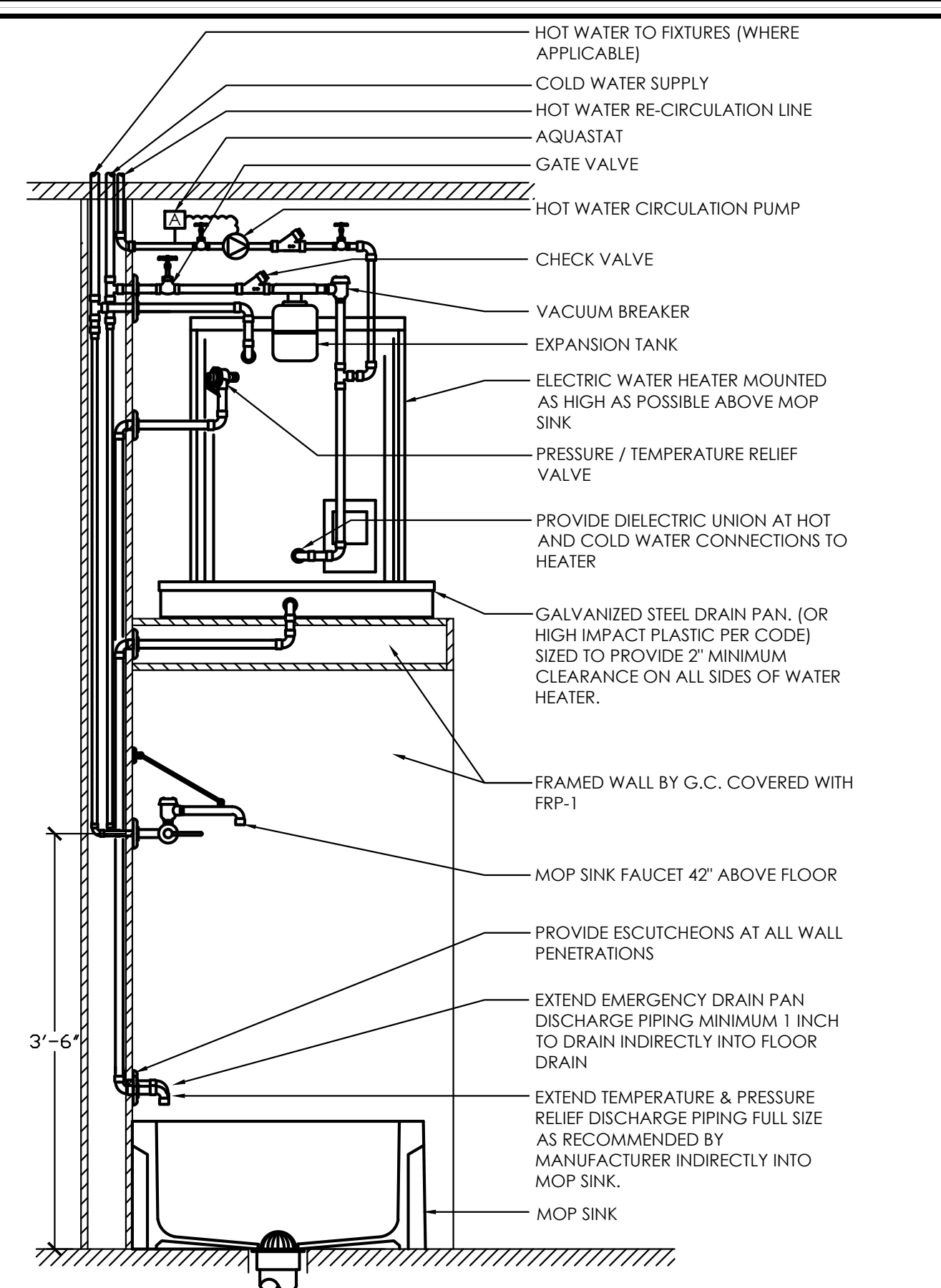
4 PLUMBING FIXTURE SCHEDULE
SCALE: N.T.S.

DESCRIPTION	MANUFACTURER / CATALOG NO.
MOP SINK (MS-1)	24" X 24" MOLDED STONE MOP SERVICE BASIN, WITH 3" DRAIN. FIAT #MSB-2424 OR EQUAL. PROVIDE SERVICE FAUCET WITH PAIL HOOK & INTEGRAL VACUUM BREAKER, MOP BRACKET, FLAT STAINLESS STEEL STRAINER AND HOSE & BRACKET. FIAT #830 AA, 889 CC, 1453 BB & 832 AA OR EQUAL. PROVIDE SUPPLIES AND P-TRAP
WATER HEATER (EWH-1)	PROVIDE 10 GALLON ELECTRIC WATER HEATER, 1.65KW @ 120V WITH MANUFACTURER SUPPLIED TEMPERATURE AND PRESSURE RELIEF VALVE. (A.O. SMITH #EJC-10, OR EQUAL). PROVIDE THERMAL EXPANSION TANK. (AMTROL THERM-X-TROL ST-5, OR EQUAL AND RE-CIRCULATION PUMP. GRUNDFOS ALPHA-2). EXPANSION TANK SUPPORT: IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE ADEQUATE SUPPORT FOR THE EXPANSION TANK. SUPPORT TO ADJACENT WALL OR FROM EXISTING STRUCTURE ABOVE WITH UNISTRUT. DO NOT SUPPORT FROM PIPE ALONE. PROVIDE DRAIN PAN UNDER WATER HEATERS PROVIDE SEISMIC STRAPPING ON WATER HEATERS. TERMINATE (EWH-1) DRAIN LINE IN MOP SINK (MS-1). PROVIDE FULL SIZE T&P RELIEF LINE. REFER TO WATER HEATER DETAIL FOR ADDITIONAL INFORMATION.
ADA LAVATORY (LAV-1)	20"X18" WALL HUNG ADA LAVATORY W/ FRONT OVERFLOW, CONCEALED HANGERS & 4" CENTERS. AMERICAN STANDARD LUBERNE #0355.012 OR EQUAL. FAUCET SHALL BE POLISHED CHROME-PLATED CAST BRASS BODY WITH 4" SPOUT, 4" BRASS WRIST BLADE, 0.5 GPM SPRAY AND GRID STRAINER DRAIN. AMERICAN STANDARD MONTERREY #5502.175 WITH WATTS MODEL USG-B-M1 TEMPERING VALVE OR EQUAL. INSULATE EXPOSED DRAIN & WATER PIPES WITH TRUEBRO LAV GUARD KIT #102 E-Z. PROVIDE SUPPLIES, STOP VALVES AND P-TRAP.
ADA WATER CLOSET (WC-1)	FLOOR MOUNTED ADA VITREOUS CHINA ELONGATED 1.6 FLUSH GALLON CLOSE COUPLED TWO PIECE SIPHON JET WATER CLOSET. FLUSH TANK WITH 12" ROUGH-IN. AMERICAN STANDARD CHAMPION 4 "RIGHT HEIGHT" #2002.014 OR EQUAL WITH ALTERNATE TANK ASSEMBLY #4286.804 (RIGHT HAND TRIP LEVER). PROVIDE STOP VALVE, FLEXIBLE SUPPLY LINE, OPEN FRONT SEAT (AMERICAN STANDARD #5901.100 OR EQUAL).
DRINKING FOUNTAIN (DF-1)	TWO-STATION, WALL MOUNTED, ELECTRIC DRINKING FOUNTAIN, BARRIER-FREE ACCESS (ADA), FRONT ONLY EASY TOUCH CONTROL, HIGH UNIT ON RIGHT. ELKY #EZSTDLLC OR EQUAL. PROVIDE SUPPLY, STOP VALVE & P-TRAP. PROVIDE CANE APRON AS REQUIRED.
WALL HYDRANT (WH-1)	FREEZE-PROOF WALL HYDRANT WITH BRONZE BODY & ANTI-SIPHON VACUUM BREAKER, BOX AND LOCKING COVER. PROVIDE WITH HOSE CONNECTION AND MOUNT AT 24" ABOVE GRADE. WOODFORD #B65 OR EQUAL.
FD-1	ZURN Z415-6B-P FLOOR DRAIN WITH "TYPE B" ROUND STRAINER AND 1/2" TRAP PRIMER CONNECTION.

7 PLUMBING LEGEND
SCALE: N.T.S.

	EXISTING HOT WATER PIPING (EX-HW)
	EXISTING COLD WATER PIPING (EX-CW)
	DOMESTIC COLD WATER PIPING (CW)
	DOMESTIC HOT WATER PIPING (HW)
	DOMESTIC HOT WATER PIPING RETURN (HWR)
	SANITARY PIPE
	VENT PIPE
	FIELD CONNECTION
	HOT WATER CIRCULATING PUMP (HWCP)
	TOP CONNECTION, 45° OR 90°
	BOTTOM CONNECTION
	PIPE UP
	PIPE DOWN
	FLOOR CLEANOUT (PLAN / RISER VIEW) (FCO)
	BALL / GATE RELIEF VALVE
	WALL CLEANOUT (PLAN / RISER VIEW) (WCO)

NOTE: SYMBOL LIST SHOWN IS FOR GENERAL REFERENCE ONLY. THE PRESENCE OF A SYMBOL DOES NOT IMPLY ITS USE ON THIS PROJECT. REFER TO DRAWINGS FOR SPECIFIC SYMBOLS USED.



8 WATER HEATER DETAIL
SCALE: N.T.S.

1. IT IS THE INTENT OF THESE SPECIFICATIONS TO PROVIDE A COMPLETE INSTALLATION FOR FINISHED WORK, TESTED AND READY FOR OPERATION. THE WORK THROUGHOUT SHALL BE EXECUTED IN THE BEST AND MOST THOROUGH MANNER UNDER THE DIRECTION OF AND TO THE SATISFACTION OF THE OWNER.

2. ALL MATERIALS REQUIRED FOR THIS WORK SHALL BE NEW, UNUSED, BEST OF ITS RESPECTIVE KINDS, AND FREE FROM DEFECTS AND OF FIRST CLASS QUALITY. BASIS OF QUALITY SHALL BE LATEST STANDARDS OF ASTM, ANSI FEDERAL SPECIFICATIONS OR OTHER ACCEPTABLE STANDARDS.

3. THE PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR THEIR WORK UNTIL ITS COMPLETION AND FINAL ACCEPTANCE AND SHALL REPLACE ANY OF THE SAME WHICH MAY BE DAMAGED, LOST OR STOLEN WITHOUT ADDITIONAL COST TO THE OWNER.

4. THE PLUMBING CONTRACTOR SHALL GUARANTEE ALL WORK PERFORMED AND MATERIALS INSTALLED TO BE FREE FROM INHERENT DEFECTS AND SHALL KEEP IN REPAIR AND REPLACE ANY DEFECTIVE MATERIALS OF WORKMANSHIP, FREE OF COST TO THE TENANT (OWNER) FOR A PERIOD OF ONE (1) YEAR AFTER THE OPENING FOR BUSINESS.

5. ALL WORK SHALL BE DONE ACCORDING TO THE REQUIREMENTS OF ALL APPLICABLE CODES AND LEASE CRITERIA (IF APPLICABLE) AND SHALL RECEIVE THE APPROVAL OF ALL AUTHORITIES HAVING JURISDICTION. PREPARE ALL REQUIRED DOCUMENTS, DRAWINGS AND PERFORM ALL REQUIRED TESTS AND PAY ALL REQUIRED CHARGES TO OBTAIN THESE APPROVALS.

6. SUBMIT THREE (3) SETS OF SHOP DRAWINGS IDENTIFIED WITH PROJECT NAME OF THE FOLLOWING (1) ELECTRIC HOT WATER HEATER OR RISERATOR (2) PLUMBING FIXTURES AND TRIM. CONTRACTOR SHALL SUBMIT SHOP DRAWING OF PIPING LAYOUT TO THE OWNER FOR THEIR FILE.

7. THE PLUMBING SUBCONTRACTOR IS A SUBCONTRACTOR OF THE TENANT'S GENERAL CONTRACTOR.

8. NOTHING AND BORING OF STRUCTURAL STEEL MEMBERS IS NOT PERMITTED, WHEN HANGING FROM STRUCTURAL STEEL ONLY HANG FROM TOP FLANGE OF BEAMS AND TOP CHORDS ONLY AT PANEL POINTS OF JOISTS / TRUSSES.

I. WORK RESPONSIBILITY

1. FURNISH ALL LABOR, MATERIALS, EQUIPMENT AND CONTRACTORS FOR A COMPLETE, SAFE INSTALLATION OF PLUMBING WORK IN FULL CONFORMITY WITH REQUIREMENTS OF ALL AUTHORITIES HAVING JURISDICTION AS INDICATED ON DRAWINGS AND/OR HEREIN SPECIFIED, INCLUDING IN GENERAL THE FOLLOWING:

2. SANITARY DRAINAGE CONNECTIONS TO PLUMBING FIXTURES AND EQUIPMENT REQUIRING SAME WITH FINAL CONNECTIONS TO EXISTING PREINSTALLED OUTLETS PROVIDED BY PRIOR TENANT(S) OR LANDLORD. PLUMBER SHALL VERIFY EXACT LOCATION OF WASTE PIPE OUTLET BEFORE SUBMITTING BID AND NOTIFY THE ARCHITECT OF ANY LOCATION DISCREPANCIES. PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR ANY CONCRETE SAWCUTTING REQUIRED TO MAKE THE FINAL CONNECTION TO THE EXISTING WASTE PIPING OR CAPPED OUTLET(S). SAWCUTTING, EXCAVATING, BACKFILLING AND NEW CONCRETE MUST MEET WITH THE LANDLORD'S APPROVAL.
A. SNAKE SANITARY FOR A DISTANCE OF 100 FEET AND REPORT ANY BLOCKAGE.
B. TEST WATER PRESSURE TO INSURE MINIMUM OF 50 PSI.

3. COMPLETE VENT SYSTEM. ALL FIXTURES INDIVIDUALLY VENTED WITH FINAL CONNECTION THROUGH ROOF OR TO EXISTING LANDLORD SUPPLIED COMMON VENT. ROOF PENETRATION AND FLASHING TO BE PERFORMED BY LANDLORD'S ROOFER (IF APPLICABLE). COST OF ROOF PENETRATION AND FLASHING TO BE PART OF THIS CONTRACT, UNLESS NOTED OTHERWISE IN BID PROPOSAL (IF APPLICABLE).

4. DOMESTIC WATER SUPPLY SYSTEM INCLUDING CONNECTION TO EXISTING CAPPED OUTLET AND FINAL CONNECTIONS TO PLUMBING FIXTURES AND EQUIPMENT REQUIRING SAME. VERIFY EXACT LOCATION AND SIZE BEFORE SUBMITTING BID.

5. INSULATION OF ALL HOT AND COLD WATER PIPING, INCLUDING UNDER LAVATORY A.D.A. PIPE WRAPPINGS.

6. FURNISH AND INSTALL WATER METER (IF APPLICABLE) ACCESSIBLE TO UTILITY COMPANY OR LANDLORD'S REPRESENTATIVE FOR MONITORING WATER, BUT METER SHOULD IN NO WAY BE IN THE PATH OF THE A.D.A./CABO-ANSI, 5'-0" CIRCULAR PATTERN.

II. GENERAL ITEMS

1. SLEEVES: PROVIDE #22 GAGE GALVANIZED IRON PIPE SLEEVES FOR PIPING THROUGH WALLS AND FLOOR, PACK WITH NON-ASBESTOS ROPE AND FILL WITH EXPANDO NON-SHRINKING CEMENT.

2. ESCUTCHEONS: PROVIDE EXPOSED PIPING, BOTH BARE AND COVERED, WITH CP CAST BRASS ESCUTCHEONS WHERE PASSING THROUGH FLOORS, CEILINGS, WALLS OR PARTITIONS.

3. HANGERS AND SUPPORTS: SUPPORT HORIZONTAL DRAINAGE PIPING AT LEAST EVERY 5 FEET OR AT EVERY HUB. COPPER TUBING EVERY 7 FEET AND STEEL PIPE EVERY 10 FEET WITH "CLEVIS" HANGERS AND INSULATION PROTECTION SHIELDS. PIPING SHALL NOT BE SUPPORTED FROM BRIDGING OR OTHER PIPING. ONLY SUPPORT FROM TOP FLANGES OF BEAMS AND TOP CHORDS AT PANELS OF JOIST AND TRUSSES. PROVIDE SWAY AND SEISMIC BRACING WHERE REQUIRED BY CODES.

4. TEST: TEST PIPING AND PROVE TIGHT FOR AT LEAST TWO HOURS IN ACCORDANCE WITH REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION AND/OR AS SPECIFIED. TEST SHALL BE PERFORMED IN THE PRESENCE OF OWNER'S REPRESENTATIVE AND LOCAL INSPECTOR. TEST SHALL BE REPEATED IF NECESSARY UNTIL FINAL APPROVAL OF SYSTEM IS OBTAINED.

A. TEST DRAINAGE AND VENT PIPING BY FILLING WITH WATER TO OVERFLOWING AT ROOF. WATER LEVEL TO REMAIN.
B. TEST WATER PIPING WITH WATER 1 1/2 TIMES THE WORKING PRESSURE.

5. SLOPE WASTE LINES 2 INCHES AND SMALLER NOT LESS THAN 1/4 INCH PER FOOT. SLOPE LARGER MAINS NOT LESS THAN 1/8 INCH PER FOOT.

6. INSTALL A CLEANOUT AT BASE OF EACH SOIL STACK, AT EACH CHANGE IN DIRECTION, AT INTERVALS NOT OVER 50 FEET AND ELSEWHERE AS SHOWN ON DRAWINGS OR REQUIRED BY LOCAL CODE. CLEANOUTS SHALL NOT BE INSTALLED IN PUBLIC AREAS WITHOUT SPECIFIC PERMISSION BY TENANT'S CONSTRUCTION MANAGER.

III. MATERIALS

1. DRAINAGE AND VENT PIPING: EXTRA HEAVY HUB AND SPIGOT CAST IRON SOIL CONFORMING ASTM A74, ASTM 888, CIPS1301 WITH RUBBER GASKETS CONFORMING TO ASTM C564. NO-HUB CAST IRON TO HAVE HEAVY DUTY, TYPE 304 STAINLESS STEEL COUPLINGS CONFORMING TO ASTM A 688, TYPE 304 STAINLESS STEEL SHIELD, TYPE 304 STAINLESS STEEL BANDS AND SLEEVE. NPS 1 1/2" TO NPS 4": 3" WIDE SHIELD WITH 4 BANDS; NPS 5" TO NPS 10": 4" WIDE BAND WITH 6 BANDS.

2. WATER PIPING BELOW SLAB: TYPE K HARD COPPER TUBING, WITH CAST BRONZE OR WROUGHT COPPER SOLDER JOINT FITTINGS USING 95-5 SOLDER. WATER PIPING ABOVE SLAB: TYPE L HARD COPPER TUBING USING SILVER SOLDER. ALL WATER SUPPLY PIPING TO CONFORM TO NSF/ANSI 61 AND ASTM B 75, ASTM B 88, ASTM B 251, OR ASTM B 447. ALL PIPE FITTINGS SHALL CONFORM TO ASSE 1061, ASME B 16.15, ASME B 16.18, ASME B 16.22, ASME B 16.23, ASME B 16.26, AND ASME B 16.29.

3. WATER HAMMER ARRESTERS: PROVIDE ON HOT AND COLD WATER BRANCHES TO FIXTURES, J. R. SMITH HYDROTRIC MODEL 5020 FOR UP TO 60 FIXTURE UNITS. WATER HAMMER ARRESTERS SHALL CONFORM TO ASSE 1010.

4. VALVES: GATE VALVE WATTS SERIES B-3000, CHECK VALVE WATTS SERIES B-5000, BALL VALVE

WATTS SERIES B6080 OR B6081 FULL PORT. ALL VALVES 1/2" TO 2" BRONZE BODY. VALVES SHALL CONFORM TO NSF/ANSI 61.

5. PRESSURE AND TEMPERATURE RELIEF VALVE: WATTS REGULATING CO. MODEL 10L. T&P RELIEF VALVE SHALL CONFORM TO ANSI Z21.22.

6. PRESSURE REDUCING VALVE: WATTS SERIES 25AUB BRONZE BODY WITH INTEGRAL S/S STRAINER, SEALED GAGE FOR 1/2" TO 2 1/2" DIA. TO 300 PSI. PRESSURE REDUCING VALVE SHALL CONFORM TO ASSE 1003.

7. PRESSURE GAUGE: AMETEK DIV. OF U.S. GAUGE SERIES P-500, UP TO 4-1/2" DIA. 1/4" STEM, ALUMINUM CASE, BLACK FINISH.

8. AIR VENT: HOFFMAN #79 WATER MAIN VENT VALVE.

9. VACUUM RELIEF VALVE: WATTS MODEL N36-M1 BRASS BODY, 1/2" NPT LINE SIZE. VACUUM RELIEF VALVES SHALL CONFORM TO ANSI Z21.22.

10. TRAP PRIMER: PRECISION PLUMBING PRODUCTS INC. MODEL P1-500 UP TO FOUR CONNECTIONS. OPTIONAL DISTRIBUTION UNIT REQUIRED FOR 2, 3 AND FOUR DRAIN LINES. TRAP PRIMER TO CONFORM TO ASSE 1018 OR ASSE 1044.

11. MIXING VALVE: WATTS SERIES MM MIXING VALVE, 1/2" LINE SIZE. MIXING VALVE SHALL CONFORM TO ASSE 1017.

IV. INSULATION

1. ALL HOT AND COLD WATER PIPING AND FITTINGS SHALL BE INSULATED WITH 1" THICK RIGID FIBERGLASS WITH VAPOR BARRIER UNIVERSAL JACKET PASTED WITH VAPOR BARRIER CEMENT. VAPOR BARRIER NOT REQUIRED ON HOT WATER PIPING.

2. ALL ADA CONFORMING, WHEELCHAIR ACCESSIBLE LAVATORY P-TRAP AND ANGLE VALVE ASSEMBLIES TO BE COVERED WITH THE MOLDED, ANTIMICROBIAL TRUBRO, INC "LAV-GUARD" UNDERSINK PROTECTIVE PIPE COVER MODEL #103.

V. SPECIFIC PLUMBING SPECIFICATIONS

1. INSTALL NEW ONLY IF EXISTING DOES NOT MEET CURRENT ADA/CABO-ANSI (AS APPLICABLE) STANDARDS, OR IS DAMAGED, NOT IN WORKING ORDER OR NOT EXISTING AS APPLICABLE.

2. IT IS THIS CONTRACTOR'S RESPONSIBILITY TO SUPPLY HANDICAPPED TOILET FIXTURES, IF REQUIRED BY CODE OR NOTED ON THE DRAWINGS, UTILIZING THE SPECIFICATION ABOVE AS A STANDARD AND MEETING CODE REQUIREMENTS. SPACING OF FIXTURES TO BE COORDINATED WITH THE GENERAL CONTRACTOR AS WELL AS THE PLUMBING INSPECTOR'S REQUIREMENTS.

VI. LANDLORD'S CRITERIA

1. THE PLUMBING CONTRACTOR IS TO BECOME FAMILIARIZED WITH LANDLORD'S CRITERIA FOR THIS LOCATION AND INCLUDE ANY WORK REQUIRED OF THIS CRITERIA, WHICH IS NOT SPECIFICALLY NOTED IN THESE DRAWINGS AND SPECIFICATIONS.

FIELD VERIFY ALL CONDITIONS

DESIGN DRAWINGS ARE SCHEMATIC. THIS CONTRACTOR SHALL VISIT THE SITE PRIOR TO BIDDING OR AWARD OF CONTRACT TO INSPECT EXISTING FIELD CONDITIONS. THIS CONTRACT SHALL INCLUDE ALL LABOR AND MATERIALS NECESSARY FOR FIELD MODIFICATIONS DUE TO EXISTING CONDITIONS.

THE CONTRACTOR SHALL CONTACT THE ARCHITECT, ENGINEER OR OWNER PRIOR TO BIDDING FOR INTERPRETATIONS AND CLARIFICATIONS OF THE DESIGN AND INCLUDE IN HIS BID ALL COSTS TO MEET THE DESIGN INTENT. CLARIFICATIONS MADE BY THE ARCHITECT, ENGINEER OR OWNER AFTER BIDDING WILL BE FINAL AND SHALL BE IMPLEMENTED AT CONTRACTORS COST.

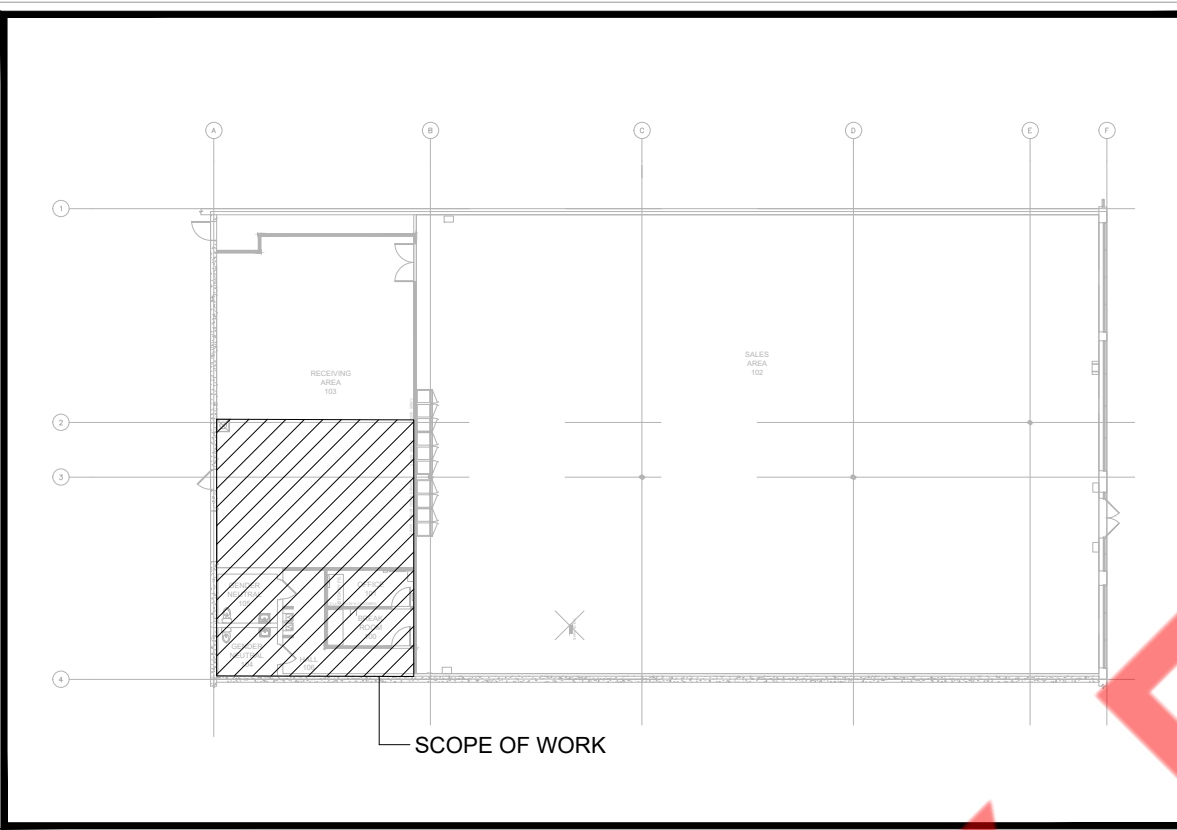
BIDDING CONTRACTORS SHALL HAVE A WORKING KNOWLEDGE OF LOCAL CODES AND ORDINANCES AND SHALL INCLUDE IN THEIR BIDS THE COSTS FOR ALL WORK INSTALLED IN STRICT ACCORDANCE WITH GOVERNING CODES. THE PLANS AND SPECIFICATIONS NOT WITHSTANDING, THE CONTRACTOR SHALL ALERT ARCHITECT, ENGINEER OR OWNER OF ANY APPARENT DISCREPANCIES BETWEEN GOVERNING CODES AND DESIGN INTENT.

CONTRACTOR TO CO-ORDINATE WITH ARCHITECT AND OWNER FOR FINAL LOCATION OF HOSE BIB, PROVIDE WATER SUPPLY CONNECTION AND ROUTE WITH ADEQUATE SIZE AS PER FILED CONDITIONS.

CONTRACTOR TO VERIFY EXACT LOCATION, ROUTING, SIZE, INVERT, DIRECTION OF FLOW OF EXISTING SANITARY LINE AND CONNECTION POINT OF SANITARY LINE PRIOR TO BID

IDENTIFIER	DESCRIPTION
CW	COLD WATER
DN	DOWN
EQUIP	EQUIPMENT
EX / E	EXISTING
GC	GENERAL CONTRACTOR
HW	HOT WATER
HWR	HOT WATER RETURN
(N)	NEW FIXTURE/EQUIPMENT
S	SANITARY
V	VENT
V.I.F.	VERIFY IN FIELD
EWB	ELECTRIC WATER HEATER
ET	EXPANSION TANK
RCP	RE-CIRCULATION PUMP
WC	WATER CLOSET
LAV	LAVATORY
MS	MOP SINK
DF	DRINKING FOUNTAIN
FD	FLOOR DRAIN

2 ABBREVIATIONS
SCALE: N.T.S.



3 KEY PLAN
SCALE: N.T.S.

1 PLUMBING GENERAL NOTES
SCALE: N.T.S.