

DOUBLE LINE SYMBOL	DESCRIPTION	SINGLE LINE SYMBOL
	DUCT- FIRST NUMBER IS VISIBLE DIMENSION.	
	RADIUS ELBOW W/VANE(S) (1.5=R/D STANDARD)	
	DUCT SECTION, POSITIVE PRESSURE	
	DUCT SECTION, NEGATIVE PRESSURE	
	DUCT & AIRFLOW UP(LEFT) POSITIVE PRESSURE	
	DUCT & AIRFLOW UP(LEFT) NEGATIVE PRESSURE	
	DUCT & AIRFLOW UP(LEFT) NEG./POS. PRESSURE	
	CHANGE OF ELEVATION=RISE (R), DROP (D)	
	DUCT W/INTERNAL LINING CLEAR INSIDE DIMENSIONS SHOWN	
	ACCESS DOOR=SIDE (L), BOTTOM (M), TOP (R)	
	FLEXIBLE CONNECTOR	
	FLEXIBLE DUCT	
	FD- FIRE DAMPER, SD- SMOKE DAMPER, FSD- FIRE/SMOKE DAMPER.	
	MANUAL VOLUME DAMPER-SPECIFIC TYPE, NO LABEL-BUTTERFLY, OBD-OPPOSED BLADED DAMPER, PBD-PARALLEL BLADE DAMPER	
	MOTORIZED DAMPER OR ZONE CONTROL DAMPER	
	BRANCH TAP-W/45 DEG. ENTRY	
	BRANCH TAP-CONICAL SPIN-IN	
	BRANCH TAP-STRAIGHT SPIN-IN	
	TRANSITION	
	EXISTING DUCTWORK TO BE DEMOLISHED	
	EXISTING DUCTWORK TO REMAIN	
	HVAC - EQUIP AS NOTED	
	AIR DEVICE, SUPPLY- CEILING, CLEAR	
	AIR DEVICE TAG SPIN-IN DIMENSION AIRFLOW (CFM)	
	AIR DEVICE, RETURN- CEILING.	
	AIR DEVICE, EXHAUST- CEILING.	
	AIR DEVICE, SUPPLY- SIDEWALL.	
	AIR DEVICE, RETURN/EXHAUST- SIDEWALL.	

MECHANICAL DRAWING LIST	
M0.1	MECHANICAL GENERAL NOTES, SYMBOL LISTS & ABBREVIATIONS
M0.2	MECHANICAL NOTES
M1.0	MECHANICAL FLOOR & ROOF PLAN
M2.0	MECHANICAL DETAILS (1 OF 2)
M2.1	MECHANICAL DETAILS (2 OF 2)
M3.0	MECHANICAL SCHEDULES

CODE COMPLIANCE
ALL WORK AND MATERIAL SHALL BE PERFORMED AND INSTALLED IN COMPLIANCE WITH THE FOLLOWING CODES AS ADOPTED AND AMENDED BY THE INSPECTING AUTHORITY. NOTHING IN THESE DRAWINGS IS TO BE CONSTRUCTED TO PERMIT WORK NOT CONFORMING TO THESE CODES OR OTHERS APPLICABLE TO THESE PROJECT:
A. INTERNATIONAL BUILDING CODE, 2018 EDITION, WITH GEORGIA AMENDMENTS.
B. INTERNATIONAL MECHANICAL CODE, 2018 EDITION, WITH GEORGIA AMENDMENTS.
C. INTERNATIONAL PLUMBING CODE, 2018 EDITION, WITH GEORGIA AMENDMENTS.
D. INTERNATIONAL FUEL/GAS CODE, 2018 EDITION, WITH GEORGIA AMENDMENTS.
E. INTERNATIONAL ENERGY CONSERVATION CODE, 2015 EDITION, WITH GEORGIA AMENDMENTS.
F. NATIONAL ELECTRICAL CODE 2020, WITH GEORGIA AMENDMENTS.

MECHANICAL ABBREVIATIONS	
BD	BACKDRAFT DAMPER
CDS	CEILING DIFFUSER SUPPLY
SG	SUPPLY GRILLE
CDS	CEILING DIFFUSER SUPPLY
CDR	CEILING DIFFUSER RETURN
CFM	CUBIC FEET OF AIR PER MINUTE
CD	CONDENSATE DRAIN PIPE
DN	DOWN
EER	ENERGY EFFICIENCY RATIO
FC	FLEXIBLE CONNECTION
IEER	INTEGRATED ENERGY EFFICIENCY RATIO
SEER	SEASONAL ENERGY EFFICIENCY RATIO
VD	VOLUME DAMPER
RTU	ROOFTOP UNITS

GENERAL MECHANICAL NOTES AND SPECIFICATIONS

GENERAL

- COORDINATE WORK AMONG ALL DISCIPLINES. IT IS NOT THE INTENT OF THESE DOCUMENTS TO DICTATE WHO MUST DO THE WORK. ALL WORK SHOWN IS THE RESPONSIBILITY OF THE (PRIME) CONTRACTOR.
- FIELD VERIFY ALL CONDITIONS AND MEASURE DIMENSIONS WITHIN THE BUILDING PRIOR TO ORDERING EQUIPMENT AND/OR PROCEEDING WITH INSTALLATION.
- ALL EQUIPMENT SHALL BE FACTORY TESTED, AND CONTRACTOR SHALL VERIFY THEIR CONDITION PRIOR TO INSTALLATION. CONTRACTOR IS RESPONSIBLE FOR EQUIPMENT DAMAGED DURING MOVING AND INSTALLATION.
- EQUIPMENT FOUND DEFECTIVE PRIOR TO FINAL ACCEPTANCE SHALL BE REPLACED AT NO COST TO OWNER.
- SUBMISSION OF BID PROPOSAL, IS CONSIDERED AN ACKNOWLEDGEMENT THAT CONTRACTOR VISITED SITE, AND VERIFIED ALL EXISTING CONDITIONS, AND INCLUDED ANY MODIFICATIONS TO EXISTING AND NEW WORK REQUIRED FOR INSTALLATION OF A COMPLETE AND OPERATIONAL MECHANICAL SYSTEM.
- COORDINATE WITH OWNER AND ENGINEER FOR ANY DISRUPTION IN UTILITY SERVICES, PARTICULARLY THOSE THAT MIGHT AFFECT OTHER BUILDINGS.
- CONTRACTOR SHALL NOT PROCEED WITH ANY WORK INVOLVING A CHANGE IN PROJECT SCOPE OR COST WITHOUT FIRST HAVING OBTAINED ENGINEER'S APPROVAL IN WRITING. UNLESS ENGINEER HAS AGREED TO SUCH CHANGE PRIOR TO IT BEING DONE, AND HAS AGREED THAT AN INCREASE IN COST ASSOCIATED WITH SUCH CHANGE IS WARRANTED; CONTRACTOR WILL NOT BE REIMBURSED FOR SUCH CHANGE.
- TESTING, ADJUSTING AND BALANCING (TAB) CONTRACTOR SHALL BE RETAINED BY THE PRIME CONTRACTOR TAB SHALL NOT BE A PART OF THE MECHANICAL CONTRACT.

CODES AND ORDINANCES

- PERFORM ALL WORK PER LATEST VERSION OF INTERNATIONAL MECHANICAL CODE, AND APPLICABLE LOCAL CODES AND ORDINANCES, UNLESS DRAWINGS OR SPECIFICATIONS HAVE MORE STRINGENT REQUIREMENTS.
- CONTRACTOR IS RESPONSIBLE FOR ALL PERMITS AND FEES ASSOCIATED WITH PROJECT, INCLUDING FEES FOR INSPECTIONS, APPLICATIONS, AND PROVISION OF NEW SERVICES.
- NOTIFY ENGINEER OF ANY ASPECTS OF DESIGN WHICH ARE THOUGHT TO BE IN NONCOMPLIANCE WITH APPLICABLE CODES.

COORDINATION

- REFER TO ARCHITECTURAL AND STRUCTURAL PLANS FOR DETAILS OF CONSTRUCTION, INCLUDING BEAMS, FLOOR AND WALL PENETRATIONS, CHASES, AND REFLECTED CEILING PLANS. VERIFY OPENING SIZES WITH EQUIPMENT FURNISHED.
- COORDINATE ALL WORK WITH OTHER TRADES; COORDINATE SCHEDULE OF WORK WITH ALL SUB-CONTRACTORS TO ACHIEVE SMOOTH FLOW OF CONSTRUCTION.
- CONTRACTOR SHALL REVIEW COMPLETE DOCUMENTS PRIOR TO SUBMITTAL OF PROPOSAL TO GAIN COMPLETE UNDERSTANDING OF PROJECT SCOPE, WORK BY OTHERS, AND MECHANICAL WORK ASSOCIATED WITH OTHER DISCIPLINES.
- ENGINEER/ ARCHITECT MUST BE GIVEN AT LEAST A TEN (10) WORKING DAY NOTICE TO PERFORM ALL TYPES OF INSPECTIONS. COORDINATE WORK SCHEDULE WITH ARCHITECT AND ENGINEER TO PLAN ACCORDINGLY FOR APPROPRIATE INSPECTIONS.
- COORDINATE LIGHT LOCATIONS WITH ELECTRICAL CONTRACTOR PRIOR TO INSTALLATION OF AIR DEVICES. LIGHT LOCATIONS TAKE PRECEDENCE OVER AIR DEVICES.

ECONOMIZER

- FOR SYSTEMS THAT REQUIRE ECONOMIZER, MECHANICAL CONTRACTOR SHALL PROVIDE A CONTROLLER EQUAL TO HONEYWELL JADE ECONOMIZER MODULE W7220. REFER TO ECONOMIZER DETAIL FOR ADDITIONAL INFORMATION.

RETURN AIR SYSTEMS

- MECHANICAL DESIGN ASSUMES A MINIMUM 1" DOOR UNDERCUTS FOR ALL DOORS AND WALL PARTITIONS WITHIN CONDITIONED SPACES.
- CONTRACTOR SHALL IMMEDIATELY NOTIFY THE PROJECT ENGINEER IF ANY DOOR OR PARTITION IS NOT PROVIDED WITH A MINIMUM 1" UNDERCUT OR IF ANY OF THE SPECIFIED SYSTEM RETURN PATHS ARE COMPROMISED DURING CONSTRUCTION IN ANY WAY.
- AT A MINIMUM, THE CONTRACTOR SHALL PROVIDE A FIBERGLASS DUCTED TRANSFER BOOT/GRILL ABOVE CEILING FOR ANY DOOR OR PARTITION THAT IS NOT PROVIDED WITH A MINIMUM 1" UNDERCUT.
- RETURN BOOT SHALL TERMINATE IN NEW RETURN AIR DEVICES. RETURN AIR DEVICES SHALL BE WHITE ALUMINUM PERFORATED LAY-IN TYPE WITH ALL NECESSARY MOUNTING HARDWARE TO MATCH OTHER RETURN DEVICES ON SITE. PROVIDE FRAMED AIR DEVICE IF IN HARD CEILING.

METAL DUCTS

- DRAWINGS ARE DIAGRAMMATIC IN NATURE. FOR CLARITY SAKE, MOST DUCT OFFSETS/RISES/DROPS ARE NOT SHOWN. RECTANGULAR AND ROUND DUCTWORK SHALL BE GALVANIZED STEEL. SIZES SHOWN ARE INSIDE CLEAR DIMENSION.
- PRIOR TO CONSTRUCTION, CONTRACTOR IS REQUIRED TO COORDINATE HEIGHTS OF DUCTWORK LAYOUT WITH EXISTING STRUCTURE, OTHER TRADES, AND PROPOSED CEILING HEIGHT TO CONFIRM ADEQUATE VERTICAL SPACE FOR STACKING.
- CONSTRUCT AND LEAKAGE TEST ALL DUCTWORK BASED ON SMACNA REQUIREMENTS. COORDINATE PRESSURE CLASSES WITH EQUIPMENT SCHEDULES.
- ALL GALVANIZED SHEET METAL DUCT WORK SHALL COMPLY WITH SMACNA'S HVAC DUCT CONSTRUCTION STANDARDS--METAL AND FLEXIBLE.
- USE 2" GLASS FIBER-REINFORCED FABRIC JOINT AND SEAM TAPE. USE WATER BASED JOINT AND SEAM SEALER. USE FIRE RESISTANT SEALER FOR FILLING OPENINGS AROUND DUCT PENETRATIONS THROUGH WALLS. ACCEPTABLE PRODUCTS ARE DOW CORNING, FIRE STOP FOAM AND FIRE STOP SEALER OR EQUAL.
- USE SHEET METAL SCREWS OR BLIND RIVETS COMPATIBLE WITH DUCT MATERIALS WHEN SECURING ALL DUCTWORK TO STRUCTURE.
- PROVIDE TURNING VANES IN ALL SPLITS, TEES AND SWEEP 90 DEGREE ANGLE DUCT FITTINGS. MANUFACTURED TURNING VANES TO BE 1-1/2" WIDE, DOUBLE VANE, CURVED BLADES OF GALVANIZED SHEET STEEL SET 3/4" O.C. ACCEPTABLE MANUFACTURER'S ARE DUCTMATE INDUSTRIES, METALAIRE, WARD INDUSTRIES OR EQUAL.
- WHERE RECTANGULAR TEE FITTINGS ARE SHOWN, PROVIDE FITTING WITH ADJUSTABLE DIVIDER SHEET AND TURNING VANES.
- WHERE RECTANGULAR MAIN AND BRANCH CONNECTIONS ARE SHOWN, PROVIDE EXTRACTOR VANES.
- PROVIDE MANUAL VOLUME CONTROL DAMPERS WHERE SHOWN ON DRAWINGS. DAMPERS TO HAVE NEOPRENE BLADE SEALS AND GALVANIZED STEEL FRAMES, TIE BARS, DAMPER AND BRACKETS. ACCEPTABLE MANUFACTURER'S ARE RUSKIN CO., NAILOR INDUSTRIES, FLEXMASTER OR EQUAL.
- ABOVE INACCESSIBLE CEILINGS AND WHERE DUCT CONFIGURATION DOES NOT ALLOW FOR INSTALLATION OF DAMPER IN DUCTWORK OR DIFFUSER, PROVIDE REMOTE MANUAL DAMPER BY YOUNG REGULATOR, (BOWDEN CABLE CONTROL SYSTEM). CONTRACTOR MAY PROVIDE OPPOSED BLADE DAMPER THAT IS INTEGRAL TO GRD WITH ENGINEER'S APPROVAL.

CITY OF BRUNSWICK, GEORGIA BUILDING DEPARTMENT NOTES

ALL WORK SHALL COMPLY WITH APPLICABLE SECTIONS OF THE INTERNATIONAL BUILDING CODE 2018, AND ALL AMENDMENTS AND RULES AND REGULATIONS OF THE DEPARTMENT OF BUILDINGS TO DATE.

- ALL HEATING AND COOLING LOADS CALCULATED PER ASHRAE/ACCA 183.
- VENTILATION FOR ALL AREA SHALL COMPLY WITH INTERNATIONAL MECHANICAL CODE 2018 CHAPTER 4.
- AS PER 408.2.5 OF INTERNATIONAL ENERGY CONSERVATION CODE 2015, CONSTRUCTION DOCUMENT SHALL REQUIRE THAT, WITHIN 90 DAYS AFTER THE DATE OF SYSTEM ACCEPTANCE, RECORD DRAWINGS OF THE ACTUAL INSTALLATION BE PROVIDED TO THE BUILDING OWNER OR THE DESIGNATED REPRESENTATIVE OF THE BUILDING OWNER.
- TESTS WILL BE CONDUCTED UNDER DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT OR OTHER PERSON HAVING NOT LESS THAN FIVE (5) YEARS OF EXPERIENCE SUPERVISING THE INSTALLATION OF SUCH MECHANICAL SYSTEMS. THE TESTS WILL SHOW COMPLIANCE WITH INTERNATIONAL BUILDING CODE 2018 REQUIREMENTS AS OUTLINES IN SECTION [8c 1704].
- THE LICENSED PROFESSIONAL ENGINEER, ARCHITECT OR OTHER PERSON HAVING NOT LESS THAN FIVE (5) YEARS EXPERIENCE SUPERVISING THE INSTALLATION OF SUCH MECHANICAL SYSTEMS AND CONDUCTING SUCH TESTS WILL FILE DOCUMENTATION AND REPORTS OF TESTS THAT THE SYSTEM COMPLIES WITH THE CONSTRUCTION DOCUMENTS AND APPLICABLE LAWS.
- TESTS OF MECHANICAL SYSTEMS SHALL BE PERFORMED IN ACCORDANCE WITH THE FOLLOWING SECTIONS OF THE INTERNATIONAL MECHANICAL CODE 2018:
 - VENTILATION SYSTEM BALANCING IMC 2018 - 403.1
- THE FOLLOWING WORK ITEMS, COMPONENTS, MATERIALS, CAPACITIES, ETC. SHALL COMPLY WITH THE REFERENCED CODE OR STANDARD:
 - STANDARDS OF HEATING - IMC 2018 - 309.1
 - DUCT CONSTRUCTION AND INSTALLATION- IMC 2018 - 603
 - AIR INTAKES, EXHAUSTS AND RELIEF - IMC 2018 - 401.5
 - AIR FILTERS - IMC 2018 - 605
 - MANUAL AND AUTOMATIC FIRE AND SMOKE CONTROLS FOR AIR DISTRIBUTION SYSTEMS - IMC 2018 - 606
 - GAS FIRED EQUIPMENT - IFGC 2018
- MINIMUM TEMPERATURE TO BE MAINTAINED IN OCCUPIED SPACES DURING HEATING SEASON: 68 DEG. FAHRENHEIT.
- VENTILATION FOR ALL AREA SHALL COMPLY WITH IMC 2018-401.
- A STATEMENT SHALL BE FILED BY THE OWNER OR TENANT IN POSSESSION THAT THE VENTILATION SYSTEM WILL BE KEPT IN CONTINUOUS OPERATION AT ALL TIMES DURING THE NORMAL OCCUPANCY OF THE STRUCTURE AS REQUIRED BY IMC 2018 - 403.3.
- SMOKE DETECTOR SHALL MEET UL268A.
- SMOKE DETECTION SYSTEMS SHALL BE INSTALLED AND SEQUENCED TO FOLLOW CONTROLS OPERATIONS WITH THE REQUIREMENTS OF SECTION IMC 2018 - 606 TO CLOSE DAMPERS AND AUTOMATICALLY STOP THE FAN.
- REFER TO ARCHITECTURAL DRAWINGS FOR REQUIRED FIRE-RATED WALL AND SMOKE WALL CONSTRUCTION AND LOCATION.
- THESE PLANS ARE APPROVED ONLY FOR THE WORK INDICATED ON THE APPLICATION SPECIFICATION SHEET. ALL OTHER MATTERS SHOWN ARE NOT TO BE RELIED UPON OR TO BE CONSIDERED AS EITHER BEING APPROVED OR IN ACCORDANCE WITH APPLICABLE CODES.
- VENTILATION SYSTEMS SHALL BE BALANCED TO MAINTAIN THE MINIMUM VENTILATION AIRFLOW RATE AS SHOWN IN VENTILATION REQUIREMENT TABLE. THIS SYSTEM SHALL BE BALANCED BY APPROVED METHOD. CONTRACTOR TO SUBMIT THE AIR - BALANCE REPORT TO INSPECTOR OF RESPECTIVE BUILDING DEPARTMENT PRIOR TO FINAL INSPECTION.

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MATTRESS WAREHOUSE

FOR CONSTRUCTION : 05.21.24

MECHANICAL GENERAL NOTES, SYMBOL LISTS & ABBREVIATIONS M0.1

SECTION 230713 - DUCT INSULATION

1.1 QUALITY ASSURANCE

SURFACE-BURNING CHARACTERISTICS: ALL INSULATION SHALL HAVE COMPOSITE (INSULATION JACKET OR FACING AND ADHESIVE USED TO ADHERE THE FACING OR JACKET TO THE INSULATION) A FLAME-SPREAD INDEX OF 25, AND SMOKE-DEVELOPED INDEX OF 50 FOR INSULATION INSTALLED INDOOR, 75, AND SMOKE-DEVELOPED INDEX OF 150 FOR INSULATION INSTALLED OUTDOORS; ACCORDING TO ASTM E 84.

1.2 FIELD QUALITY CONTROL

A. FIELD INSPECTIONS: BY OWNER—ENGAGED AGENCY.

1.3 INDOOR DUCT AND PLENUM INSULATION SCHEDULE;

A. CONCEALED, RECTANGULAR, ROUND AND FLAT-OVAL, SUPPLY-RETURN, OUTDOOR-AND EXHAUST-AIR DUCT AND AIR PLENUM INSULATION:

B. FLEXIBLE ELASTOMERIC, MINERAL-FIBER BLANKET, MINERAL-FIBER BOARD OR POLYOLEFIN WITH MINIMUM INSTALLED THERMAL RESISTANCE AS FOLLOWS:

UNCONDITIONED SPACES: R-6

WITHIN BUILDING ENVELOPE ASSEMBLY:

EXTERIOR OF BUILDING: R-8

1.4 ITEMS NOT INSULATED:

1. FIBROUS-GLASS DUCTS.
2. METAL DUCTS WITH DUCT LINER OR SUFFICIENT THICKNESS TO COMPLY WITH ENERGY CODE AND ASHRAE/IESNA 90.1.
3. FACTORY-INSULATED FLEXIBLE DUCTS.
4. FACTORY-INSULATED PLENUMS AND CASINGS.
5. FLEXIBLE CONNECTORS.
6. VIBRATION-CONTROL DEVICES.
7. FACTORY-INSULATED ACCESS PANELS AND DOORS.
8. DUCTS THAT HAVE INTERNAL ACOUSTICAL LINING.

1.5 PRODUCTS

A. THE FOLLOWING INSULATION MANUFACTURERS WILL BE ACCEPTABLE:

1. JOHNS-MANVILLE
2. OWENS-CORNING

1.6 ACOUSTICAL TREATMENT

1. WHERE SHOWN ON THE DRAWINGS, LOW PRESSURE DUCTWORK SHALL BE LINED WITH 1.5" THICK R-6 AS MANUFACTURED BY DUCTMATE, 1-1/2" POUND MINIMUM DENSITY, NEOPRENE COATED, FLEXIBLE, FIBERGLASS DUCT LINER. LINING SHALL COMPLY WITH NFPA 90A AND SHALL HAVE A FLAME SPREAD CLASSIFICATION OF NOT MORE THAN 25 AND A SMOKE DEVELOPED RATING NOT MORE THAN 50. DUCT SIZES WHERE LINING IS INDICATED ON PLANS ARE MINIMUM INSIDE CLEAR DIMENSIONS REQUIRED.

END OF SECTION 230713

THERMOSTATIC CONTROL NOTES:

C403.2.4.1 THERMOSTATIC CONTROLS

THE SUPPLY OF HEATING AND COOLING ENERGY TO EACH ZONE SHALL BE CONTROLLED BY INDIVIDUAL THERMOSTATIC CONTROLS CAPABLE OF RESPONDING TO TEMPERATURE WITHIN THE ZONE. WHERE HUMIDIFICATION OR DEHUMIDIFICATION OR BOTH IS PROVIDED, AT LEAST ONE HUMIDITY CONTROL DEVICE SHALL BE PROVIDED FOR EACH HUMIDITY CONTROL SYSTEM.

EXCEPTION: INDEPENDENT PERIMETER SYSTEMS THAT ARE DESIGNED TO OFFSET ONLY BUILDING ENVELOPE HEAT LOSSES, GAINS OR BOTH SERVING ONE OR MORE PERIMETER ZONES ALSO SERVED BY AN INTERIOR SYSTEM PROVIDED:

1. THE PERIMETER SYSTEM INCLUDES AT LEAST ONE THERMOSTATIC CONTROL ZONE FOR EACH BUILDING EXPOSURE HAVING EXTERIOR WALLS FACING ONLY ONE ORIENTATION (WITHIN ± 45 DEGREES) (0.8 RAD) FOR MORE THAN 50 CONTIGUOUS FEET (15 240 MM); AND
2. THE PERIMETER SYSTEM HEATING AND COOLING SUPPLY IS CONTROLLED BY THERMOSTATS LOCATED WITHIN THE ZONES SERVED BY THE SYSTEM.

C403.2.4.1.2 DEADBAND

WHERE USED TO CONTROL BOTH HEATING AND COOLING, ZONE THERMOSTATIC CONTROLS SHALL BE CAPABLE OF PROVIDING A TEMPERATURE RANGE OR DEADBAND OF AT LEAST 5°F (2.8°C) WITHIN WHICH THE SUPPLY OF HEATING AND COOLING ENERGY TO THE ZONE IS CAPABLE OF BEING SHUT OFF OR REDUCED TO A MINIMUM.

EXCEPTIONS:

1. THERMOSTATS REQUIRING MANUAL CHANGEOVER BETWEEN HEATING AND COOLING MODES.
2. OCCUPANCIES OR APPLICATIONS REQUIRING PRECISION IN INDOOR TEMPERATURE CONTROL AS APPROVED BY THE CODE OFFICIAL.

C403.2.4.1.3 SETPOINT OVERLAP RESTRICTION

WHERE A ZONE HAS A SEPARATE HEATING AND A SEPARATE COOLING THERMOSTATIC CONTROL LOCATED WITHIN THE ZONE, A LIMIT SWITCH, MECHANICAL STOP OR DIRECT DIGITAL CONTROL SYSTEM WITH SOFTWARE PROGRAMMING SHALL BE PROVIDED WITH THE CAPABILITY TO PREVENT THE HEATING SET POINT FROM EXCEEDING THE COOLING SET POINT AND TO MAINTAIN A DEADBAND IN ACCORDANCE WITH SECTION C403.2.4.1.2.

C403.2.4.2 OFF-HOUR CONTROLS

EACH ZONE SHALL BE PROVIDED WITH THERMOSTATIC SETBACK CONTROLS THAT ARE CONTROLLED BY EITHER AN AUTOMATIC TIME CLOCK OR PROGRAMMABLE CONTROL SYSTEM.

EXCEPTIONS:

1. ZONES THAT WILL BE OPERATED CONTINUOUSLY.
2. ZONES WITH A FULL HVAC LOAD DEMAND NOT EXCEEDING 6,800 BTU/H (2 KW) AND HAVING A READILY ACCESSIBLE MANUAL SHUTOFF SWITCH.

C403.2.4.2.1 THERMOSTATIC SETBACK CAPABILITIES

THERMOSTATIC SETBACK CONTROLS SHALL HAVE THE CAPABILITY TO SET BACK OR TEMPORARILY OPERATE THE SYSTEM TO MAINTAIN ZONE TEMPERATURES DOWN TO 55°F (13°C) OR UP TO 85°F (29°C).

C403.2.4.2.2 AUTOMATIC SETBACK AND SHUTDOWN CAPABILITIES

AUTOMATIC TIME CLOCK OR PROGRAMMABLE CONTROLS SHALL BE CAPABLE OF STARTING AND STOPPING THE SYSTEM FOR SEVEN DIFFERENT DAILY SCHEDULES PER WEEK AND RETAINING THEIR PROGRAMMING AND TIME SETTING DURING A LOSS OF POWER FOR AT LEAST 10 HOURS. ADDITIONALLY, THE CONTROLS SHALL HAVE A MANUAL OVERRIDE THAT ALLOWS TEMPORARY OPERATION OF THE SYSTEM FOR UP TO 2 HOURS; A MANUALLY OPERATED TIMER CAPABLE OF BEING ADJUSTED TO OPERATE THE SYSTEM FOR UP TO 2 HOURS; OR AN OCCUPANCY SENSOR.

C403.2.4.2.3 AUTOMATIC START CAPABILITIES

AUTOMATIC START CONTROLS SHALL BE PROVIDED FOR EACH HVAC SYSTEM. THE CONTROLS SHALL BE CAPABLE OF AUTOMATICALLY ADJUSTING THE DAILY START TIME OF THE HVAC SYSTEM IN ORDER TO BRING EACH SPACE TO THE DESIRED OCCUPIED TEMPERATURE IMMEDIATELY PRIOR TO SCHEDULED OCCUPANCY.

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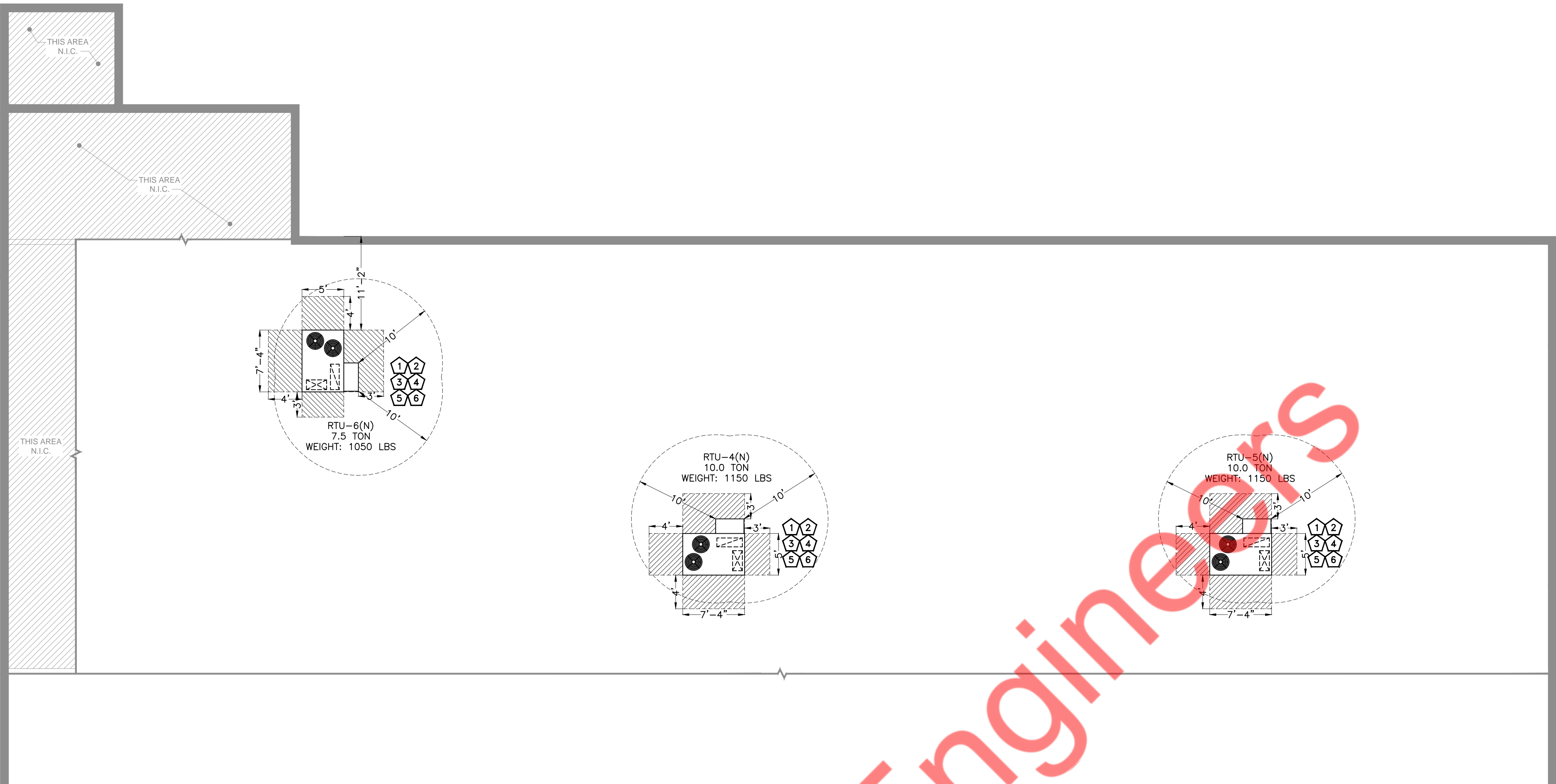
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MECHANICAL NOTES M0.2

- MECHANICAL GENERAL NOTES
- A. EQUIPMENT SIZES, DIMENSIONS AND REQUIRED CONNECTIONS SHALL BE VERIFIED WITH THE ACTUAL EQUIPMENT SELECTED VENDOR DRAWINGS BEFORE FABRICATION OF DUCTWORK, PIPING ETC.
- B. CONTRACTOR SHALL COORDINATE ALL ELECTRICAL REQUIREMENTS FOR ALL HVAC BASED ON ACTUAL EQUIPMENT SELECTED PRIOR TO INSTALLATION.
- C. CONTRACTOR SHALL COORDINATE EQUIPMENT WEIGHTS AND SUPPORTS BASED ON ACTUAL EQUIPMENT SELECTED.
- D. CONTRACTOR TO CONTACT THE LANDLORD'S ROOFING CONTRACTOR FOR ANY NECESSARY PENETRATIONS.
- E. KEEP ALL ADJOINING AREAS ADJACENT TO THE WORK AREAS CLEAN AND FREE OF DEBRIS.
- F. GUARDS SHALL BE PROVIDED WHERE VARIOUS COMPONENTS THAT REQUIRE SERVICE AND ROOF HATCH OPENINGS ARE LOCATED WITHIN 10 FEET OF A ROOF EDGE OR OPEN SIDE OF A WALKING SURFACE AND SUCH EDGE OR OPEN SIDE IS LOCATED MORE THAN 30 INCHES ABOVE THE FLOOR, ROOF, OR GRADE BELOW. THE GUARD SHALL EXTEND NOT LESS THAN 30 INCHES BEYOND EACH END OF COMPONENTS THAT REQUIRE SERVICE. THE TOP OF THE GUARD SHALL BE LOCATED NOT LESS THAN 42 INCHES ABOVE THE ELEVATED SURFACE ADJACENT TO THE GUARD.

MECHANICAL ROOF PLAN KEY NOTES:

- 1 NEW ROOFTOP UNIT IS PROVIDED. PROVIDE FLEXIBLE CONNECTORS ON SUPPLY AND RETURN DUCT CONNECTIONS. SET OUTSIDE AIR AS INDICATED ON ROOFTOP UNIT SCHEDULES. MECHANICAL CONTRACTOR SHALL SCRIBE INTO UNIT POSITION OF OUTSIDE AIR DAMPER AND LABEL OUTSIDE AIR VOLUME AND PERCENT OF OUTSIDE AIR.
- 2 CONNECT DRAIN LINES TO THE NEAREST APPROVED PLACED OF DISPOSAL AS PER LOCAL CODE. REFER PLUMBING PLANS FOR FURTHER DETAILS.
- 3 EXISTING RTU CURB SHALL BE FIELD VERIFIED AND REUSED IF IN GOOD CONDITION. PROVIDE CURB ADAPTER IF REQUIRED.
- 4 COORDINATE FINAL LOCATION OF EQUIPMENT WITH STRUCTURAL DRAWINGS AND CONFIRM THE SAME WITH ARCHITECT/OWNER.
- 5 CONTRACTOR TO FIELD VERIFY THE EXISTING ROOFTOP UNIT LOCATIONS AND TAGS AND REPLACE THE EXISTING RTUS WITH NEW ONES AT THE SAME LOCATION. CONTRACTOR TO PROVIDING THE SAME TAGS TO NEW ROOFTOP UNITS.
- 6 ALL OUTSIDE AIR INTAKE ON THE ROOF SHALL BE MINIMUM 10 FEET AWAY FROM ANY EXHAUST SOURCE.

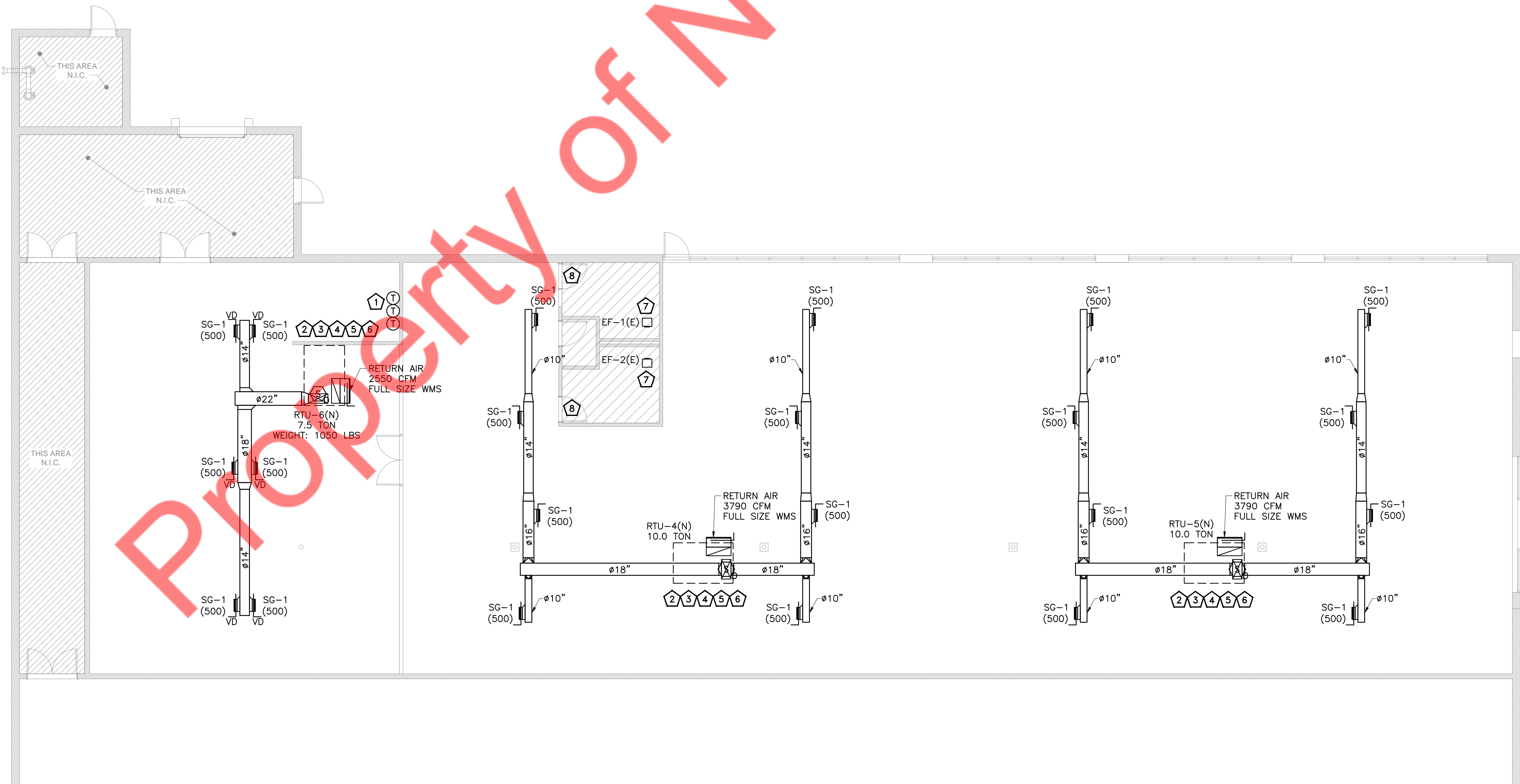


2 MECHANICAL ROOF PLAN
1/8" = 1'-0"

- MECHANICAL GENERAL NOTES
- A. CONTRACTOR TO VISIT SITE TO VERIFY ON FIELD CONDITION ALONG WITH THE DRAWINGS & INFORM THE ENGINEER FOR ANY DISCREPANCIES FOUND BEFORE COMMENCING BIDS.
- B. CONTRACTOR SHALL BALANCE EACH AIR DIFFUSER WITH THE CFM SHOWN PLAN.
- C. DUCTWORK SHOWN ON PLAN ARE SCHEMATIC ONLY. CONTRACTOR SHALL COORDINATE WITH OTHER TRADES FOR DUCTWORK ROUTING, OFFSET AND RUN DUCTWORK INSIDE THE STRUCTURE IF REQUIRED. PROVIDE ANY EXTRA DUCTWORK, FITTINGS, INSULATIONS AND OTHER ACCESSORIES IN ORDER TO COMPLETE THE INSTALLATION.
- D. COORDINATE LOCATIONS AND SIZES OF ROOF OPENINGS WITH OWNER AND STRUCTURE ENGINEERS.
- E. EQUIPMENT SIZES, DIMENSIONS AND REQUIRED CONNECTIONS SHALL BE VERIFIED WITH THE ACTUAL EQUIPMENT SELECTED VENDOR DRAWINGS BEFORE FABRICATION OF DUCTWORK, PIPING ETC.
- F. DUCT SIZES SHOWN ON PLANS ARE CLEAR INSIDE AIR STREAM DIMENSIONS.
- G. CONTRACTOR SHALL COORDINATE ALL ELECTRICAL REQUIREMENTS FOR ALL HVAC BASED ON ACTUAL EQUIPMENT SELECTED PRIOR TO INSTALLATION.
- H. CONTRACTOR SHALL COORDINATE EQUIPMENT WEIGHTS AND SUPPORTS BASED ON ACTUAL EQUIPMENT SELECTED.
- I. ALL EXPOSED ROUND DUCTWORK SHALL BE INTERNALLY INSULATED.
- J. 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.
- K. COORDINATE FINAL LOCATION OF EQUIPMENT WITH STRUCTURAL DRAWINGS.
- L. TAKE NECESSARY PRECAUTIONS TO PREVENT DUST AND DIRT MIGRATING TO OCCUPIED AREAS OF THE BUILDING. THIS INCLUDES BLANKING OFF ANY RETURN AIR GRILLES/ DUCTS IN THE WORK AREA. PROVIDE TEMPORARY EXHAUST FANS, DUCTED DIRECTLY TO OUTDOORS, TO MAINTAIN NEGATIVE PRESSURE WITHIN THE WORK AREA.
- M. KEEP ALL ADJOINING AREAS ADJACENT TO THE WORK AREAS CLEAN AND FREE OF DEBRIS.
- N. MECHANICAL CONTRACTOR TO COORDINATE ALL DUCT WORK, CROSSINGS, OVERLAPPING AND PENETRATIONS WITH SITE CONDITIONS AND AS PER EXISTING JOIST LAYOUT AND BEAM IN FIELD. MODIFY DUCT WORK WHEREVER REQUIRED.
- O. PROVIDE FIRE OR FIRE+SMOKE DAMPER WHEREVER DUCTS ARE CROSSING FIRE/SMOKE RATED WALLS/BARRIERS/SLABS. COORDINATE WITH ARCHITECTURAL DRAWING FOR FIRE RATING OF THE WALLS.
- P. CONTRACTOR TO CONTACT THE LANDLORD'S ROOFING CONTRACTOR FOR ANY NECESSARY PENETRATIONS.

MECHANICAL FLOOR PLAN KEY NOTES:

- 1 LOCATION OF DIGITAL THERMOSTAT CONTROL. INSTALL AND WIRE THE HONEYWELL TH9320WF5003 WIFI 9000 COLOR TOUCH-SCREEN PROGRAMMABLE THERMOSTAT, SIZED 3.5" X 4.5", IN WHITE COLOR. COORDINATE EXACT LOCATION WITH ARCHITECT AND OWNER PRIOR TO ROUGH-IN AND PROVIDE LOCKABLE COVER.
- 2 EXTEND FULL SIZE SUPPLY DUCTWORK FROM ROOFTOP UNITS TO SPACE. EXTEND AS SHOWN. ACOUSTICALLY LINE THE FIRST 10'-0" OF BOTH SUPPLY AND RETURN MAIN DUCTS.
- 3 CONTRACTOR TO PROVIDE RIGID SPIRAL METAL DUCTWORK MADE OF GALVANIZED STEEL. ALL EXPOSED DUCTWORK AND AIR DEVICES TO BE PAINTED WHITE. FINAL FINISH SHALL BE COORDINATED WITH ARCHITECT/ OWNER.
- 4 COORDINATE FINAL LOCATION OF EQUIPMENT WITH STRUCTURAL DRAWINGS AND CONFIRM THE SAME WITH ARCHITECT/OWNER.
- 5 SMOKE DETECTOR SHALL BE FURNISHED/INSTALLED BY MECHANICAL CONTRACTOR AND WIRED BY ELECTRICAL CONTRACTOR TO SHUT DOWN CORRESPONDING RTU UNDER ALARM CONDITIONS. ALL WIRING SHALL BE IN CONDUIT PER N E C SMOKE DETECTOR SHALL BE SYSTEM SENSOR MODEL DH100ACDCLP OR EQUAL.
- 6 PROVIDE REMOTE TEMP. SENSOR MOUNTED IN RETURN DUCT AND WIRE BACK TO T-STAT.
- 7 EXISTING CEILING MOUNTED EXHAUST FAN. INTERCONNECT EXHAUST FAN WITH RTU-4(N). CONTRACTOR TO FIELD VERIFY AND CONFIRM THE CONDITION OF THE EXISTING RESTROOM EXHAUST FAN ALONG WITH ITS ACCESSORIES. IF THE EXISTING EXHAUST FAN IS IN GOOD CONDITION SHALL REMAIN AND REUSE ALONG WITH ITS DUCTWORK, TERMINATION AND CONTROL. PROVIDE BACK DRAFT DAMPER IF REQUIRED. IF FOUND DAMAGE REPLACE WITH NEW ONE OF SAME TYPE.
- 8 PROVIDE 8"x8" DOOR GRILLE.



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

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MECHANICAL
FLOOR & ROOF
PLAN
M1.0



1 DUCT HANGING DETAILS
M2.0 N.T.S

2 ACOUSTICAL DUCT LINING DETAIL
M2.0 N.T.S

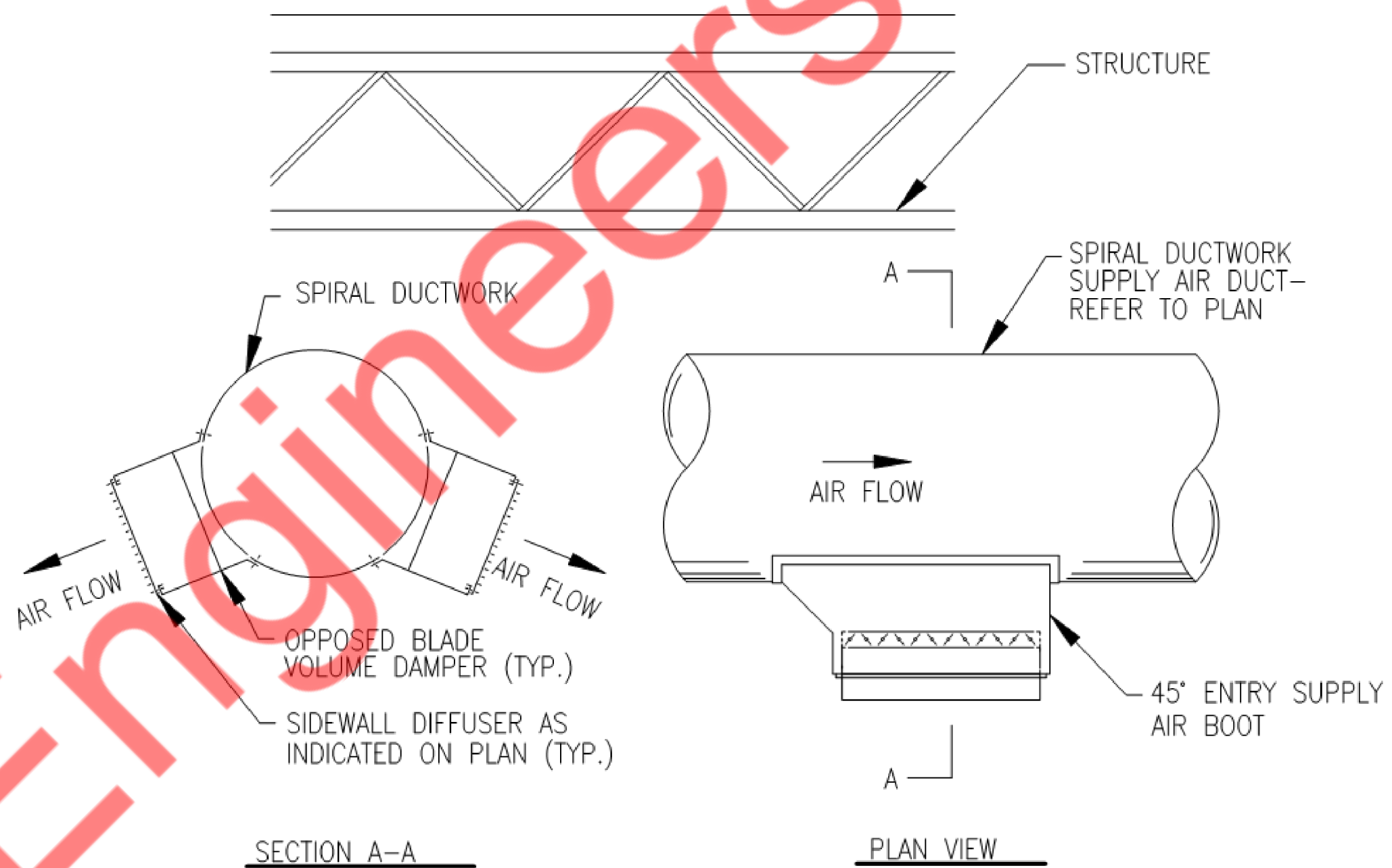


3 TYPICAL ROOF TOP UNIT DETAILS
M2.0 N.T.S

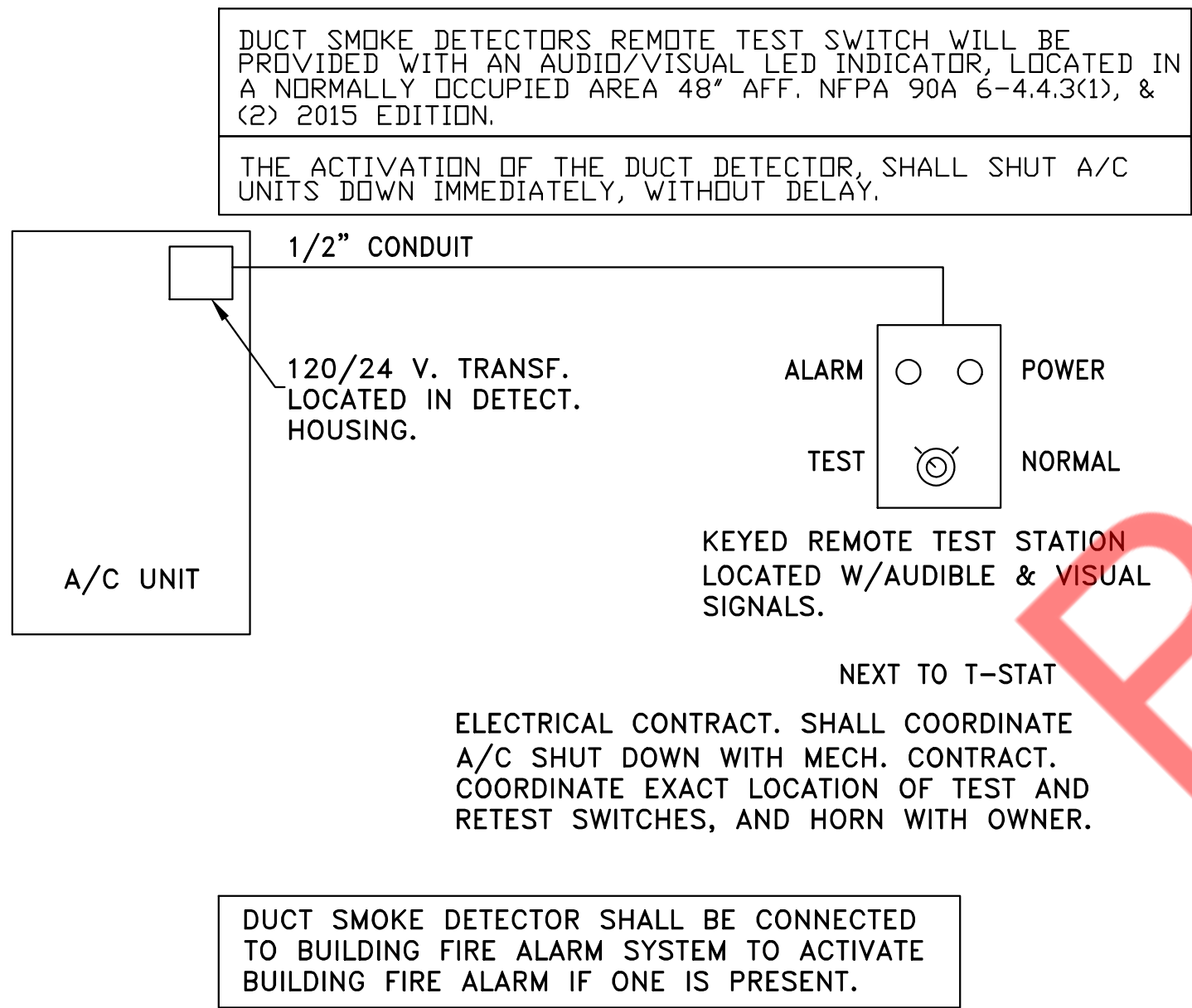
4 ROOF TOP UNIT INSTALLATION

M2.0 N.T.S

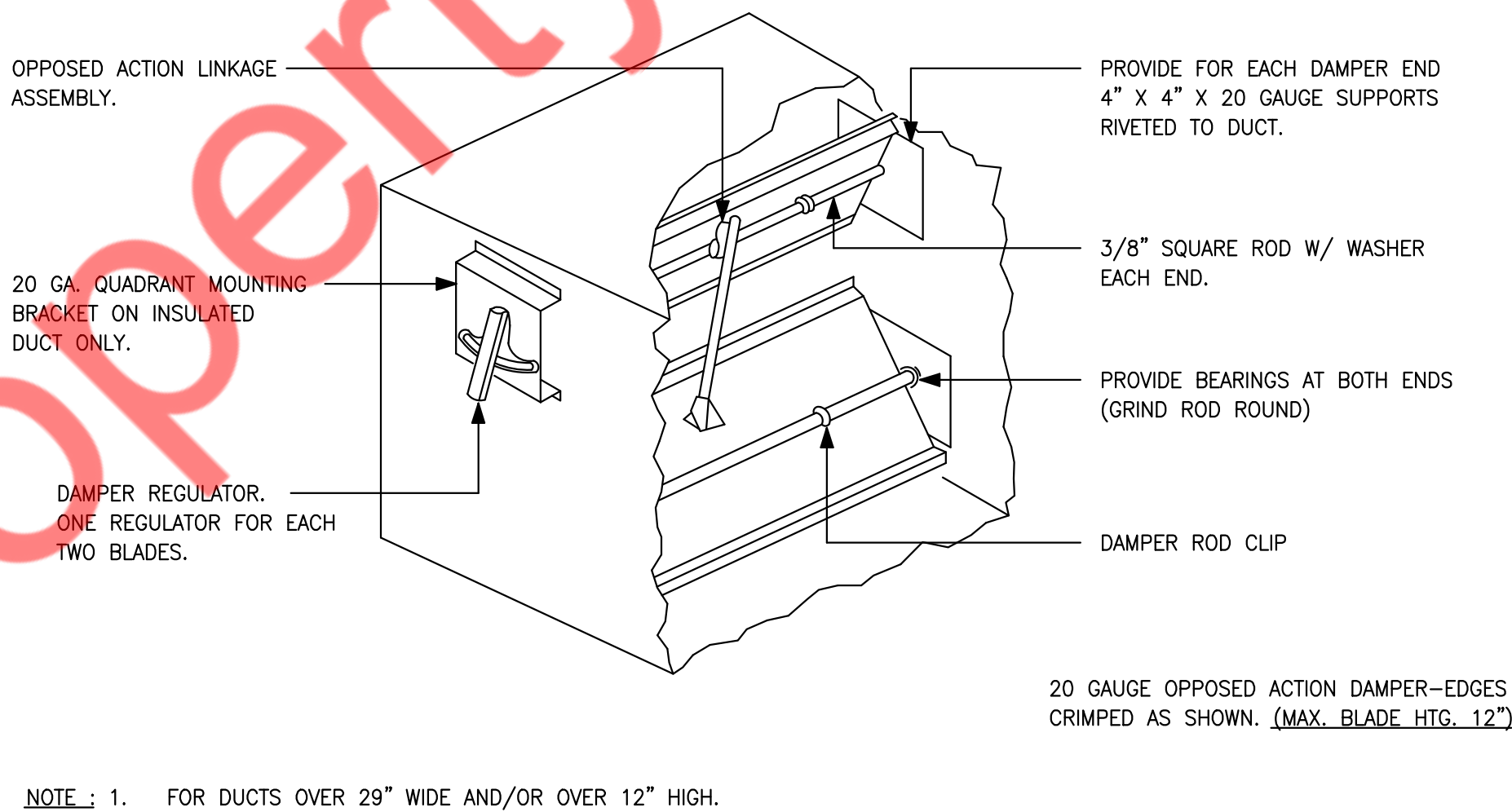
TYPICAL DIFFUSER CONNECTION DETAIL



1
M2.1
DUCT MOUNTED DIFFUSER DETAIL
N.T.S

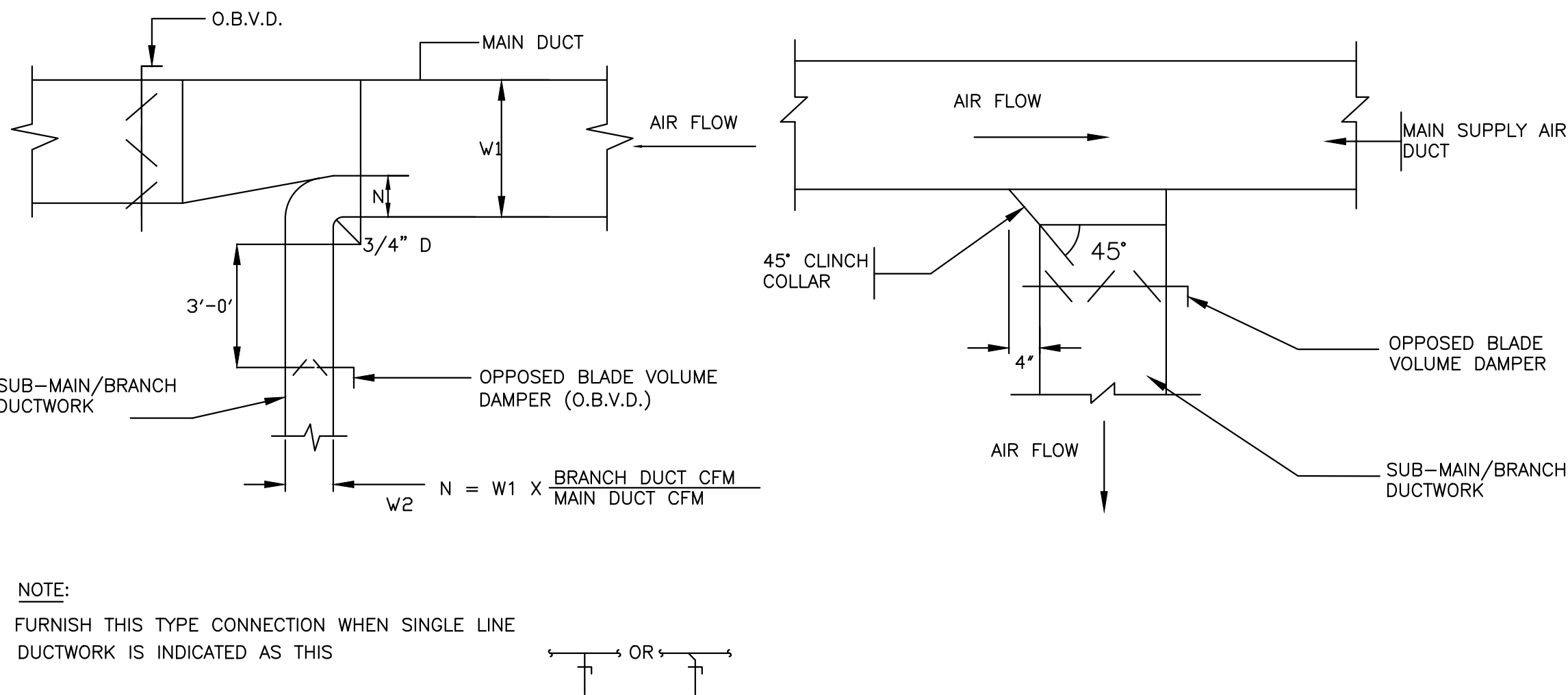


2
M2.1
DUCT DETECTOR DETAIL
N.T.S



NOTE: 1. FOR DUCTS OVER 29" WIDE AND/OR OVER 12" HIGH.

3
M2.1
LOW PRESSURE BALANCING DAMPER
N.T.S



NOTE:
FURNISH THIS TYPE CONNECTION WHEN SINGLE LINE
DUCTWORK IS INDICATED AS THIS

4
M2.1
SUPPLY AIR DUCTWORK SUB-MAIN/BRANCH DUCT CONNECTION
N.T.S

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ROOF TOP UNIT SCHEDULE																			
UNIT ID	MANUFACTURER	STATUS	MODEL	NOMINAL TONS	SUPPLY FAN DATA			GAS HEAT		COOLING DATA		ELECTRICAL DATA				EER	IEER	THERMAL EFFICIENCY (%)	OPERATING WEIGHT (LBS)
					TOTAL CFM	OUTSIDE AIR CFM	EXTERNAL STATIC PRESSURE (IN. W.G.)	INPUT MBH	OUTPUT MBH	TOTAL MBH	SENSIBLE MBH	VOLTS	PHASE	MCA(A)	MOC(PA)				
RTU-6(N)	CARRIER(OR EQUIVALENT)	NEW	48FCMD08	7.5	3000	450	1.0	125	103	90.5	66.0	460	3	19	20	11.2	15.0	82	1050
RTU-4(IN)	CARRIER(OR EQUIVALENT)	NEW	48FCMD12	10.0	4000	210	1.0	180	148	125.8	96.2	460	3	25	30	11.0	15.0	82	1150
RTU-5(IN)	CARRIER(OR EQUIVALENT)	NEW	48FCMD12	10.0	4000	210	1.0	180	148	125.8	96.2	460	3	25	30	11.0	15.0	82	1150
NOTES:																			
1. PROVIDE FULL PERIMETER 14" HIGH ROOF CURB.																			
2. PROVIDE DUCT MOUNTED SMOKE DETECTOR FOR RTUS IN SUPPLY SIDE.																			
3. PROVIDE 2" MERV-8 FILTERS.																			
4. PROVIDE HINGED PANELS FOR FILTER ACCESS, FAN MOTOR ACCESS,COMPRESSOR ACCESS AND CONTROL COMPARTMENT ACCESS.																			
5. CONTRACTOR TO PROVIDE HONEYWELL TH9320WF5D03 WIFI 9000 COLOR TOUCH-SCREEN PROGRAMMABLE THERMOSTAT, SIZED 3.5" X 4.5", IN WHITE COLOR.																			
6. PROVIDE HAIL GUARD.																			
7. PROVIDE NON FUSED DISCONNECT SWITCH.																			
8. PROVIDE DUCT TUBE & FIN COIL SYSTEM.																			
9. PROVIDE WITH DRAIN PAN OVERFLOW SWITCH.																			
10.PROVIDE WITH STANDARD CAP AND PHASE MONITOR SYSTEM.																			
11.PROVIDE MULTISTAGE AIR VOLUME.																			
12.PROVIDE WITH GFCI FLD WIRED.																			
13.PROVIDE ULTRA LOW LEAK ENTHALPHY ECONOMIZER WITH FDD AND BAROMETRIC RELIEF.																			
14.PROVIDE STD/MED/HIGH STATIC DIRECT DRIVE.																			

AIR BALANCE					
UNIT	AREA SERVED	SUPPLY AIR (CFM)	OUTSIDE AIR (CFM)	RETURN AIR (CFM)	EXHAUST AIR (CFM)
RTU-6(N)	SEE PLAN	3000	450	2550	0
RTU-4(N)	SEE PLAN	4000	210	3790	0
RTU-5(N)	SEE PLAN	4000	210	3790	0
TOTAL		7000	870	6340	0
BUILDING PRESSURE:			870	POSITIVE	
NOTES:					
CONTRACTOR TO ADJUST DAMPER ON FRESH AIR TAP TO PROVIDE OUTSIDE AIR AS MENTIONED IN ABOVE TABLE.					

VENTILATION CALCULATION AS PER 2018 IMC WITH GEORGIA AMENDMENTS												
ROOM TAG	AREA	OCCUPANCY AS PER 2018 IMC/1000SQ.FT.	OCCUPANCY AS PER 2018 IMC	NO. OF CHAIR	FINAL OCCUPANCY	CFM/PERSON	CFM/SQ.FT	REQUIRED OA CFM	PROVIDED OA CFM	EXHAUST CFM/SQ.FT./FIXTURE	EXHAUST CFM	PROVIDED EXHAUST CFM
RETAIL SPACE	1912	15	29	0	29	7.5	0.12	447	450	-	-	-
WAREHOUSE	6848	0	0	0	0	10	0.06	411	420	-	-	-
TOTAL	8760	-	-	-	29	-	-	858	870	-	-	-

MECHANICAL AIR TERMINAL DEVICES SCHEDULE							
TAG	SIZE	DESCRIPTION	CONSTRUCTION	FINISH	BASIS OF DESIGN		NOTES
					MANUFACTURER	MODEL	
SG-1	18"x6"	SUPPLY AIR GRILLE	ALUMINIUM	WHITE	TITUS	300FS	ALL
1. PROVIDE STANDARD WHITE FINISH FOR ALL AIR DEVICES UNLESS NOTED OTHERWISE ON PLAN.							
2. CONTRACTOR TO COORDINATE WITH ARCHITECT / OWNER FOR THE FINAL FINISH.							
3. MAX. NC LEVEL 30 OR LESS.							

FAN SCHEDULE										
UNIT ID	MANUFACTURER	CFM	ESP(IN W.G.)	RPM	HP	VOLTS/PH	FLA(A)	WEIGHT (LBS)	MODEL	NOTES
EF-1(E)	S.A.E	S.A.E	S.A.E	S.A.E	S.A.E	S.A.E	S.A.E	S.A.E	S.A.E	1,2,3,4
EF-2(E)	S.A.E	S.A.E	S.A.E	S.A.E	S.A.E	S.A.E	S.A.E	S.A.E	S.A.E	1,2,3,4

NOTES: S.A.E. SAME AS EXISTING. S.A.E. VHS. VERIFY IN FIELD.

- 1) REUSE ALL EXISTING ACCESSORIES ALONG WITH DUCTWORK. REPLACE WITH NEW IF REQUIRED.
- 2) PROVIDE NEW BACK DRAFT DAMPER IF EXISTING FOUND DAMAGED OR NOT PROVIDED.
- 3) INTERLOCK WITH RTU-4(N).
- 4) REPAIR OR REPLACE WITH THE SAME TYPE IF EXISTING FOUND DAMAGED.

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MECHANICAL SCHEDULES M3.0

ELECTRICAL SYMBOLS LIST

GENERAL NOTES
(APPLY TO ALL "E" DRAWINGS)

[illegible]

1. WORK SHALL BE PERFORMED IN STRICT ACCORDANCE WITH THE CURRENT VERSION OF THE STATE ELECTRICAL CODE, 2020 NEC WITH AMENDMENTS, LOCAL JURISDICTION REQUIREMENTS, AND ALL GOVERNING LOCAL CODES, LAWS, AND REGULATIONS.
2. CONTRACTOR SHALL VISIT THE SITE AND BECOME FAMILIAR WITH ALL EXISTING CONDITIONS THAT MAY AFFECT THE WORK. NO ADDITIONAL COMPENSATION WILL BE CONSIDERED FOR FAILURE TO DO SO.
3. CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS, TEST REPORTS, AND CERTIFICATIONS FOR TEMPORARY AND FINAL CERTIFICATE OF OCCUPANCY.
4. FIRE STOP ALL PENETRATIONS OF FIRE RATED CONSTRUCTION IN A CODE APPROVED MANNER IN ORDER TO MAINTAIN FIRE RATING. ALL PENETRATIONS SHALL BE SLEEVED AND SEALED WATERIGHT.
5. SECURE ALL STRUCTURES TO BUILDING STRUCTURE UTILIZING TOGGLE BOLTS (HOLLOW MASONRY), EXPANSION SHIELDS OR INSERTS (CONCRETE AND BRICK), MACHINE SCREWS (METAL), BEAM CLAMPS (FRAMEWORK), WOOD SCREWS (WOOD) OR PAN THRU STRAPS (METAL DECK), NAILS, RAWL PLUGS AND WOOD FLUGS ARE NOT PERMITTED, WHERE REQUIRED, BY STRUCTURE, PROVIDE THRU BOLTS AND FISH PLATES, SUPPORT HORIZONTAL RUNS OF METALLIC RACEWAYS NOT MORE THAN 10 FT APART. SUPPORT RACEWAY RISERS AT EACH FLOOR LEVEL. RUN EXPOSED RACEWAYS PARALLEL WITH OR AT RIGHT ANGLES TO WALLS.
6. LEAVE WIRES WITH SUFFICIENT SLACK TO PERMIT MAKING FINAL CONNECTIONS. RACEWAYS OVER 10 FT LONG IN WHICH WIRING IS NOT INSTALLED: FURNISH FISH WIRE.
7. VERIFY LOCATIONS OF OUTLETS AND SWITCHES IN FINISHED ROOMS WITH ARCHITECTURAL DRAWINGS OF INTERIOR DETAILS AND FINISH. IN CENTERING OUTLETS AND LOCATING BOXES AND OUTLETS, ALLOW FOR OVERHEAD PIPES, DUCTS AND MECHANICAL EQUIPMENT, EQUIPMENT, VARIATIONS IN FIREPROOFING AND PLASTERING, WINDOW AND DOOR TRIM, PANELING, HUNG CEILING AND THE LIKE. CORRECT ANY INACCURACY RESULTING FROM FAILURE TO DO SO WITHOUT EXPENSE TO OWNER.
8. CONTRACTOR SHALL PROVIDE A WARRANTY ON ALL MATERIALS, EQUIPMENT, AND WORKMANSHIP FOR A PERIOD OF ONE YEAR FROM THE DATE OF FINAL ACCEPTANCE.
9. ALL UNUSED MATERIALS AND DEBRIS SHALL BE LEGALLY REMOVED AND DISPOSED OF AWAY FROM THE PREMISES ON A DAILY BASIS.
10. CONTRACTOR SHALL PATCH, PAINT, AND RESTORE EXISTING SURFACES DAMAGED DURING THE COURSE OF THIS CONSTRUCTION TO PRE-EXISTING CONDITIONS OR BETTER.
11. MINIMUM SIZE OF CONDUIT SHALL BE ¾", AND TYPE SHALL BE ELECTRICAL METALLIC TUBING (EMT), UNLESS OTHERWISE NOTED. PROVIDE NYLON DRAG LINE AND CONDUIT CAP FOR ALL EMPTY CONDUITS.
12. CONNECT CONDUIT TO MOTOR CONDUIT TERMINAL BOXES WITH FLEXIBLE CONDUIT (MINIMUM 18 IN. LENGTH AND 50% SLACK). DO NOT TERMINATE IN OR FASTEN RACEWAYS TO MOTOR FOUNDATION.
13. PULL AND JUNCTION BOXES WHERE INDICATED ON THE DRAWINGS SHALL BE CONSIDERED SHOWN AT THEIR APPROXIMATE LOCATION. THE CONTRACTOR SHALL LOCATE THEM AS FIELD CONDITIONS DICTATE. ADDITIONAL PULL AND JUNCTION BOXES NOT SHOWN ON DRAWINGS SHALL BE PROVIDED WHERE REQUIRED BY APPLICABLE CODE PROVISIONS OR WHERE CALLED FOR BY FIELD CONDITIONS. PULL AND JUNCTION BOXES SHALL BE SURFACE TYPE IN UNFINISHED AREAS AND INSTALLED CONCEALED IN FINISHED AREAS, AND ALL COVERS TO PULL & JUNCTION BOXES SHALL BE READILY ACCESSIBLE.
14. SUPPORT PANEL, JUNCTION AND PULLBOXES INDEPENDENTLY TO BUILDING STRUCTURE WITH NO WEIGHT BEARING ON RACEWAYS.
15. FOR EXACT LOCATION AND MOUNTING HEIGHT OF LIGHTING FIXTURES AND SWITCH/RECEPTACLE OUTLETS, REFER TO ARCHITECTURAL REFLECTED CEILING AND POWER PLANS.
16. ALL ELECTRICAL ACCESSORIES AND EQUIPMENT INSTALLED OUTSIDE OR EXPOSED TO WEATHER SHALL HAVE NEMA 3R ENCLOSURES AND SHALL BE TIGHTLY GASKETED FOR A COMPLETE RAINTIGHT INSTALLATION. ALL BUILDING EXTERIOR MOUNTED RECEPTABLES SHALL BE GFCI RATED AND MOUNTED IN WEATHERPROOF ENCLOSURE.
17. ALL ACCESS PANEL LOCATIONS SHALL BE REVIEWED BY ARCHITECT PRIOR TO INSTALLATION.
18. ELECTRICAL CONTRACTOR SHALL COORDINATE THE LOCATION AND INSTALLATION OF NEW WORK WITH THE GENERAL CONTRACTOR AND OTHER ASSOCIATED TRADES IN A TIMELY MANNER. THE CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING ALL DIMENSIONS AND CONDITIONS PRIOR TO CONSTRUCTION. REFER TO ALL GENERAL, MECHANICAL, AND ELECTRICAL, DRAWINGS AND SPECIFICATIONS FOR THIS PROJECT.
19. ALL CONDUITS AND EQUIPMENT TO BE CONCEALED IN FINISHED SPACES UNLESS OTHERWISE NOTED. CONDUITS SHALL BE ENCASED IN THE CONCRETE FLOOR SLAB.
20. ALL EQUIPMENT AND MATERIALS INSTALLED IN PLENUM CEILINGS SHALL BE APPROVED FOR THAT APPLICATION.
21. OUTLET BOXES AND JUNCTION BOXES ON OPPOSITE SIDES OF FIRE-RATED WALLS SHALL BE SEPARATED BY A HORIZONTAL DISTANCE OF NOT LESS THAN 24 INCHES, UNLESS FIRE-RATED FLOORS OR PUTTY PADS ARE UTILIZED.
22. COORDINATE ALL FLOOR PENETRATIONS WITH THE STRUCTURAL AND ARCHITECTURAL DRAWINGS. CONFIRM PENETRATION LOCATIONS WITH THE ENGINEER AND OWNER BEFORE INSTALLATION.
23. COORDINATE THE MOUNTING HEIGHT AND LOCATION OF RACEWAYS, COMMUNICATIONS OUTLETS, AND RECEPTABLES WITH THE ARCHITECTURAL CASEWORK DRAWINGS AND DETAILS. COORDINATE LOCATIONS OF LIGHT FIXTURES, SWITCHES, AND RELATED DEVICES WITH THE ARCHITECTURAL DRAWINGS AND DETAILS.
24. REFER TO ARCHITECTURAL PLANS FOR FINAL LOCATIONS OF ALL LUMINAIRES AND SWITCHES, AND FOR ALL FINISHED CEILING HEIGHTS.
25. REFER TO ARCHITECTURAL PLANS FOR FINAL LOCATIONS OF ALL ELECTRICAL DEVICES, AND FOR FINAL CEILING AND WALL HEIGHTS AND LAYOUTS.
26. LIGHTING FIXTURES PROVIDED WITH EMERGENCY BATTERY PACKS AND INDICATED WITH SWITCH CONTROL SHALL BE WIRED WITH BATTERY CHARGING/SENSING CIRCUIT WIRED AHEAD OF SWITCH CONTROL.
27. NUMBER(S) SHOWN AT RECEPTABLES, JUNCTION BOXES AND EQUIPMENT INDICATES CIRCUIT NUMBERS IN PANELBOARD. PROVIDE WIRE AND CONDUIT TO INTERCONNECT EQUIPMENT AND DEVICES WITH SAME CIRCUIT NUMBERS AND RUN TO PANELBOARD.

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ELECTRICAL SYMBOLS LIST, ABBREVIATIONS & GENERAL NOTES E0.1



LIGHTING FIXTURE SCHEDULE							
TYPE	DESCRIPTION	MANUFACTURER	CATALOGUE#	MOUNTING	VOLTAGE	WATTAGE (W)	REMARK
A	LINEAR SUSPENDED LIGHT	SIGNIFY	290-6-L-B-QQ-08-G-D-E-T-A-6-3-144	SUSPENDED	120	46.6	
EX	EXIT LIGHT	TBD	TBD	WALL	120	3	
Y1	EMERGENCY LIGHT	TBD	TBD	WALL	120	3	

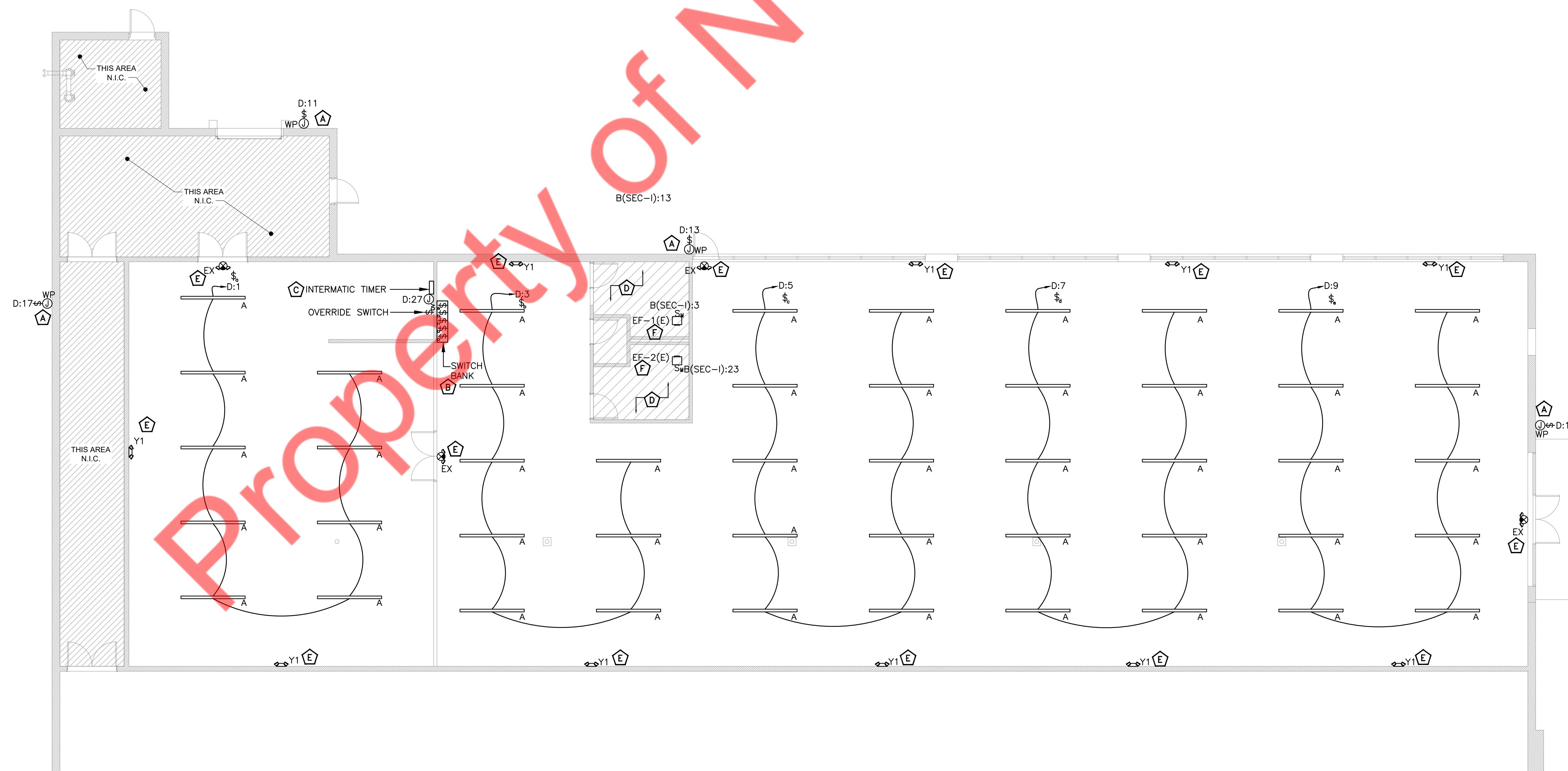
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ELECTRICAL LIGHTING LAYOUT KEYED WORK NOTES:

- 4) JUNCTION BOX WITH TOGGLE SWITCH PER NEC FOR CONNECTION TO BUILDING MOUNTED SIGNING. VERIFY ITS EXACT LOCATION WITH THE LANDLORD/ TENANT AND CONTACT TO SIGN PER MANUFACTURER'S INSTRUCTIONS. CIRCUIT TO PANEL VIA TIMECLOCK AS INDICATED ON PLAN.
- 5) COORDINATE & VERIFY EXACT LOCATION OF SWITCH BANK WITH OWNER/ LANDLORD/ ARCHITECT IN FIELD.
- 6) E.C. SHALL COORDINATE WITH THE OWNER/ LANDLORD/ ARCHITECT FOR EXACT LOCATION OF THE INTERMATIC ET91215C9 ELECTRONIC TIMER IN THE FIELD.
- 7) EXISTING LIGHT FIXTURE IN THE EXISTING RESTROOMS SHALL REMAIN AS IT IS. E.C. SHALL VERIFY THE EXISTING LIGHTING CONTROLS PROVIDED, THEIR OPERATING CONDITIONS IN PLACE. THE EXISTING LIGHTING CONTROLS MAY BE IN CONFLICT WITH THE 2015 ECCC CODES. IF REQUIRED PROVIDE NEW CONTROLS AS PER CODE REQUIREMENT. INFORM ENGINEER/OWNER/ARCHITECT ON RECORD FOR ANY DISCREPANCIES/ISSUES BEFORE COMMENCING ANY WORK. BASE BID ACCORDINGLY.
- 8) CONNECT ALL EMERGENCY EGRESS LIGHTING FIXTURES TO THE NEAREST LIGHTING BRANCH CIRCUIT AHEAD OF ALL SWITCHING AND CONTROLS PER STATE AND LOCAL CODES.
- 9) EXISTING RESTROOM EXHAUST FANS ALONG WITH ITS ELECTRICAL FIXTURE AND CONNECTION SHALL REMAIN AS IT IS AND SHALL REMAIN CONNECTED TO THE EXISTING PANEL. E.C. SHALL VERIFY OPERABLE CONDITION OF THE ELECTRICAL CONNECTION AND PANEL. IF NOT OPERABLE, E.C. SHALL REPAIR AND/OR VERIFY THE EXACT BRANCH BREAKER FEEDING RESPECTIVE EXHAUST FAN. ADJUST THE CIRCUIT NAMES/ BRANCH BREAKERS AS PER ELECTRICAL PANEL. RECONNECT EXHAUST FANS TO RTU-4(X). BASE BID ACCORDINGLY.

ELECTRICAL LIGHTING GENERAL NOTES:

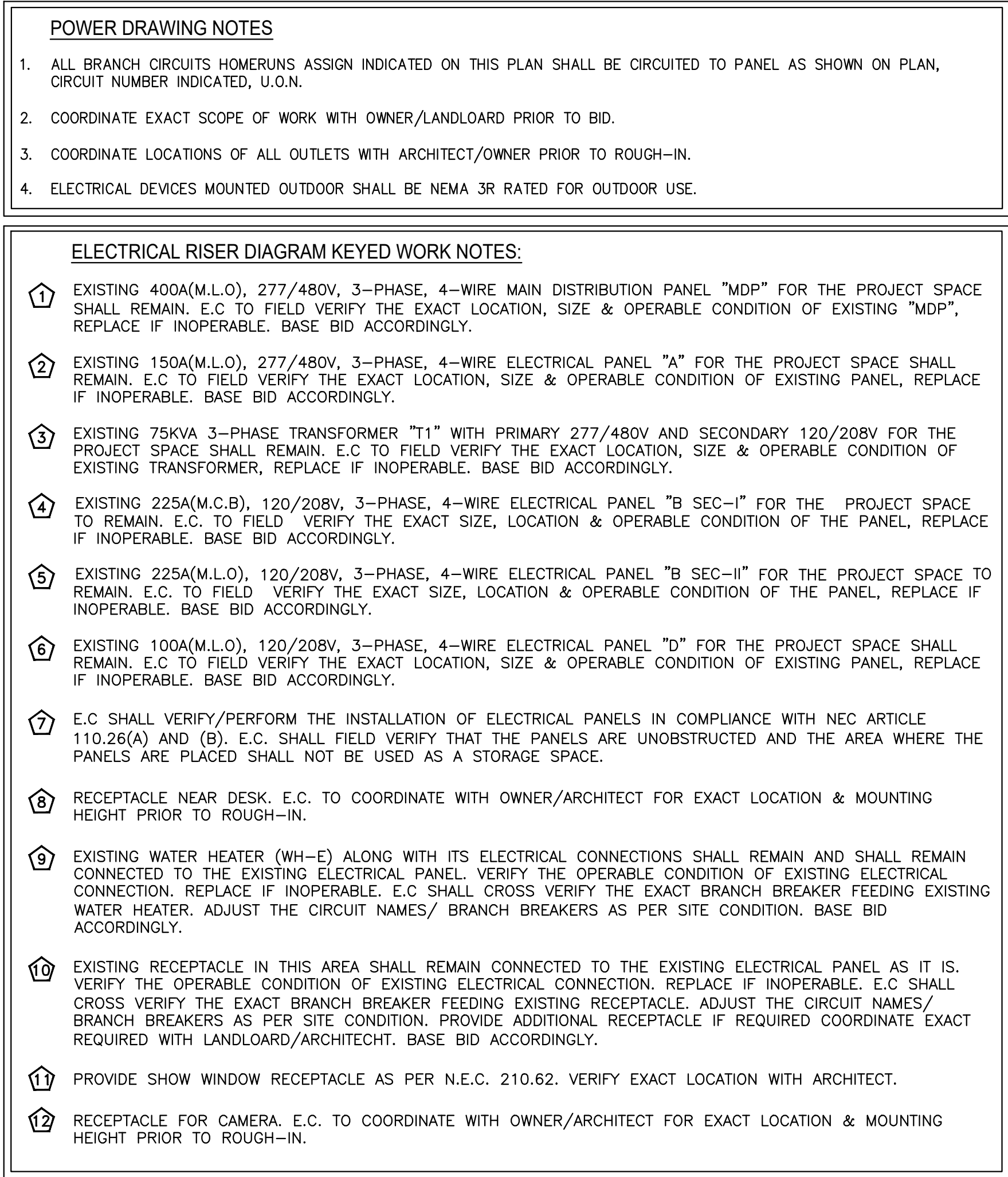
1. ALL EXIT SIGNS, EMERGENCY LIGHTING BATTERY PACKS SHALL BE CONNECTED TO THE LOCAL LIGHTING CIRCUIT AHEAD OF ANY CONTROLS SUCH AS: SWITCHES (DEVICES) & RELAY CONTROLS.
2. ALL LIGHTING, EXCEPT FOR EMERGENCY LIGHTS, SHALL BE CONNECTED TO THE "INTERMATIC T91215CR ELECTRONIC TIMER".
3. EXACT LOCATION OF ALL LUMINAIRES, EXACT MOUNTING HEIGHT SHALL BE COORDINATED WITH ARCHITECTURAL DRAWINGS PRIOR TO ROUGH-IN.
4. MINIMUM CONDUCTOR SIZE FOR 120V BRANCH CIRCUIT SHALL BE 12-AWG WITH HOMERUNS OVER 100 LINEAR FEET, A MINIMUM WIRE SIZE OF 10-AWG SHALL BE PROVIDED FROM FIRST JUNCTION/OUTLET BOX TO TERMINATION POINTS. FOR 120V BRANCH CIRCUITS FOR HOMERUNS OVER 150 LINEAR FEET A MINIMUM WIRE SIZE OF 8-AWG SHALL BE PROVIDED FROM FIRST JUNCTION/OUTLET BOX TO BRANCH CIRCUIT PANELEBOARDS.
5. AL WIRING SHALL BE IDENTIFIED BY PANELEBOARD & CIRCUIT NUMBER(S) IN ALL CABINET, JUNCTION BOXES, WIRING TROUGH, ENCLOSURES, SPLICES OR TERMINATION POINTS, ETC.
6. CONTRACTOR ARE ADVISED TO UPDATE THE EMERGENCY LIGHTING NOTIFICATIONS / QUANTITY PER HIGH DRAUGHTING UPON FINAL INSPECTION OR PER LOCAL A.H.J. REQUIREMENT.



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ELECTRICAL LIGHTING PLAN E1.0

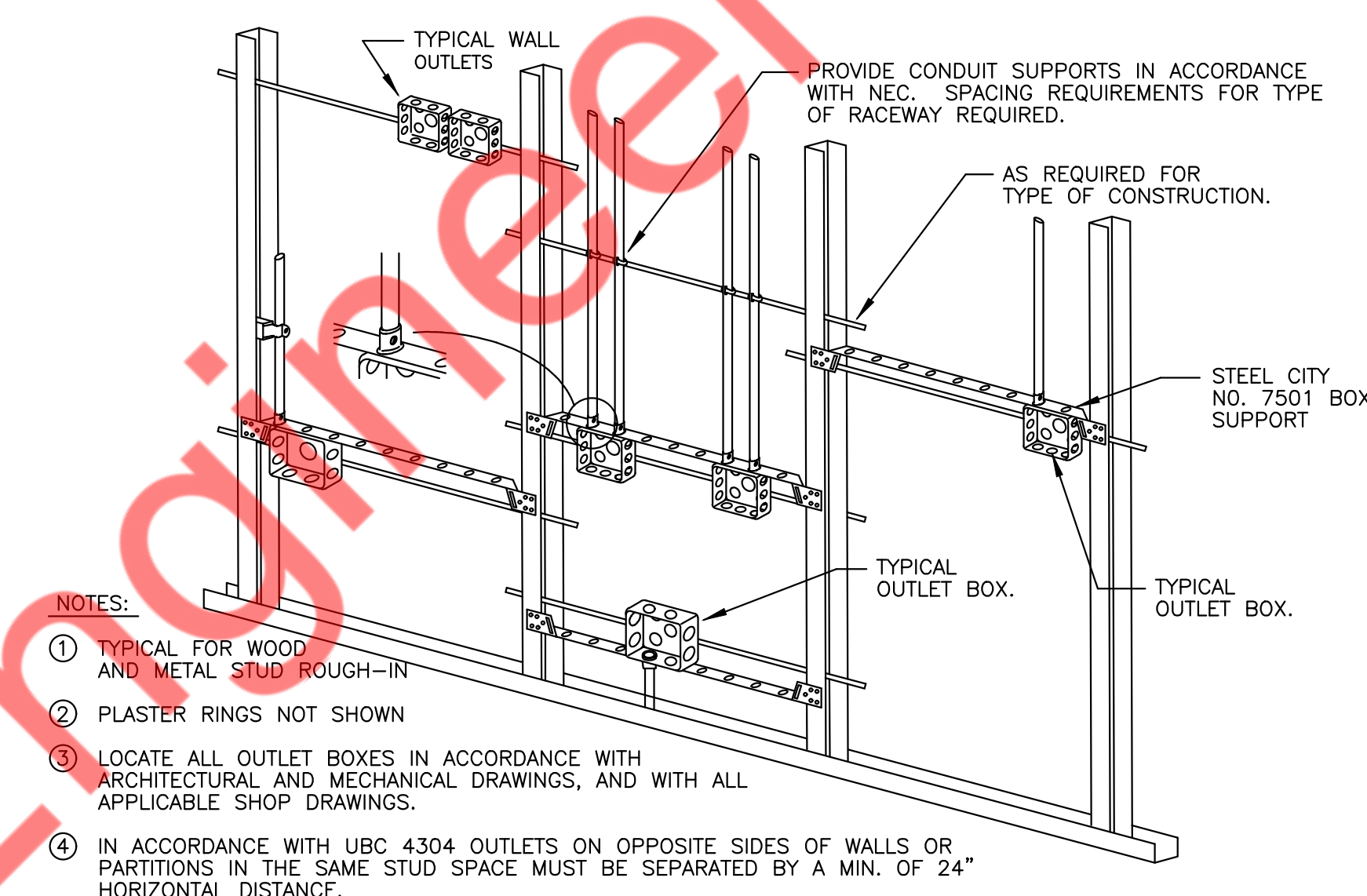


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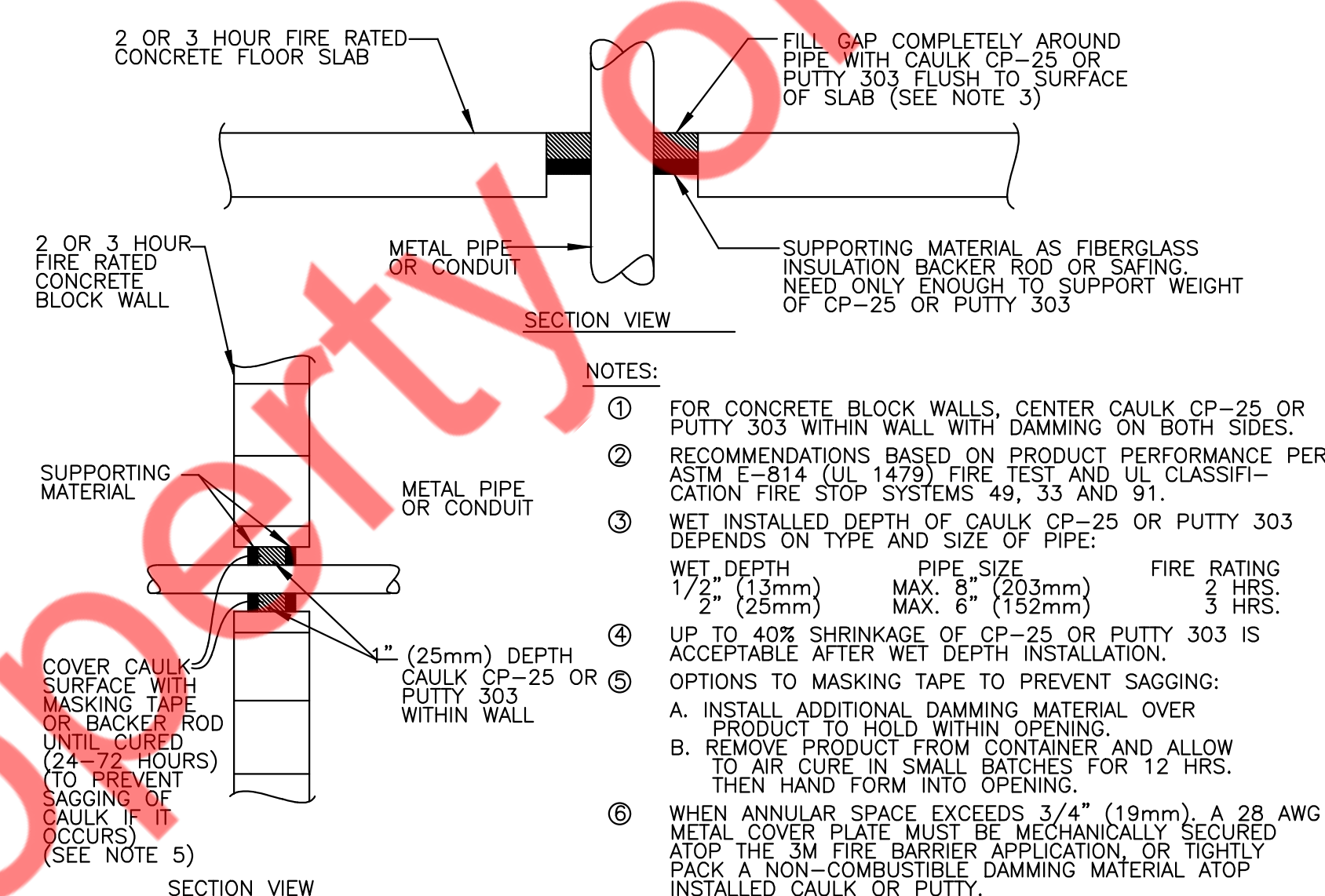
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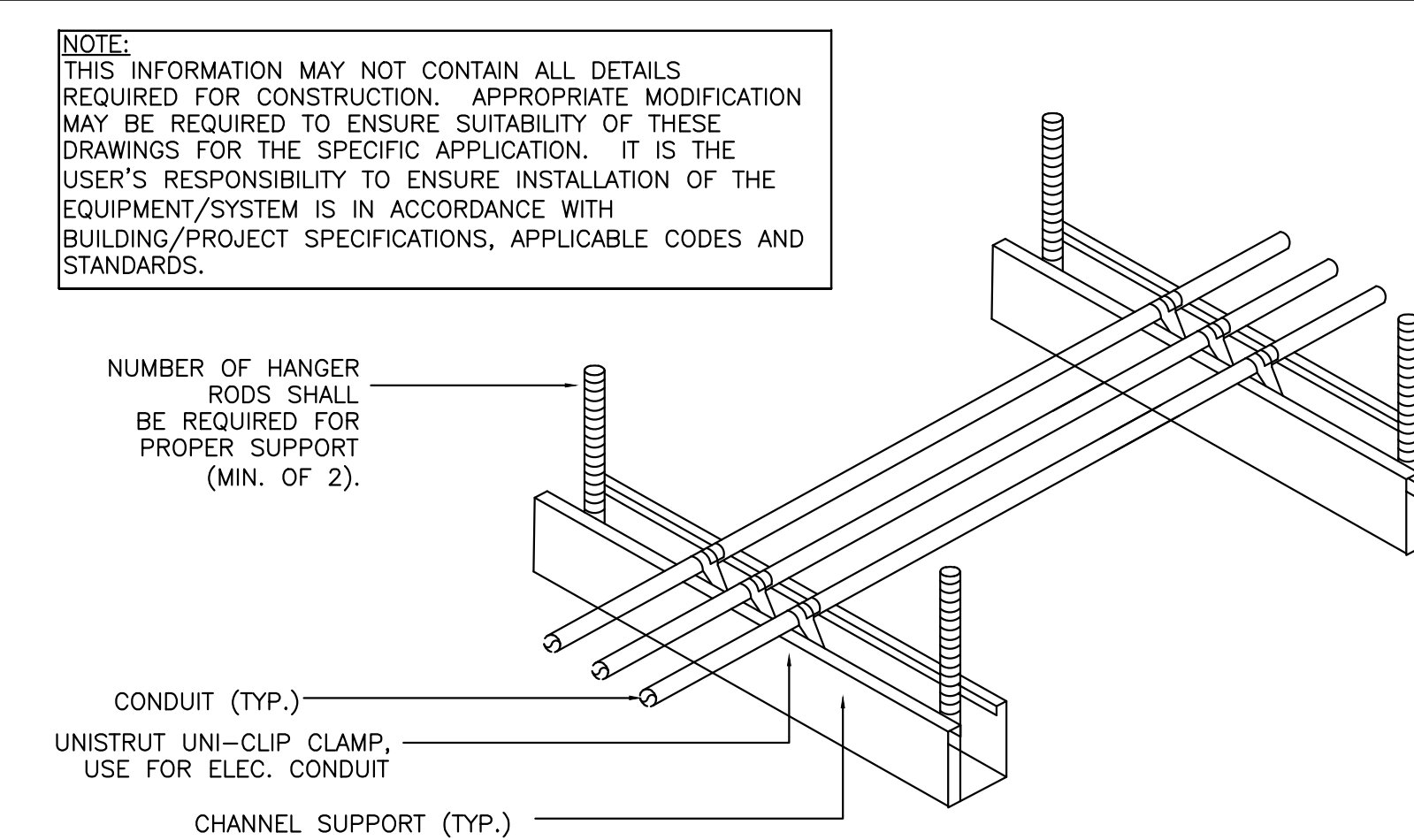
ELECTRICAL ROOF POWER PLAN E2.1



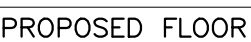
2
E-3.0 N.T.S



3 FIRE STOP DETAIL
E-3.0 N.T.S.



1 CONDUIT SUPPORT DETAIL
E-3.0 N.T.S



- 1 EXISTING 400A, 277/480V, 3-PHASE ELECTRICAL SERVICE FOR THE PROJECT SPACE FROM BASE BUILDING POWER DISTRIBUTION SYSTEM SHALL REMAIN. E.C SHALL GET INFORMATION ABOUT THE EXISTING POWER DISTRIBUTION PRIOR TO COMMENCING ANY WORK AND INFORM ENGINEER ON RECORD FOR ANY DISCREPANCIES PRIOR TO BID.
- 2 EXISTING 400A, 277/480V, 3-PHASE, 4-WIRE ELECTRICAL METER, CT CABINET AND DISCONNECT SWITCH FOR THE PROJECT SPACE SHALL REMAIN. E.C. SHALL COORDINATE WITH BASE BUILDING/LANDLORD/OWNER FOR THE EXACT LOCATION OF THE EXISTING METER AND EXACT POWER DISTRIBUTION IN THE FIELD. E.C. SHALL VERIFY THE OPERABLE CONDITION OF EXISTING METER, CT CABINET AND DISCONNECT SWITCH REPLACE IF FOUND INOPERABLE. BASE BID ACCORDINGLY.
- 3 EXISTING 400A(M.L.O.), 277/480V, 3-PHASE, 4-WIRE MAIN DISTRIBUTION PANEL "MDP" FOR THE PROJECT SPACE SHALL REMAIN. E.C TO FIELD VERIFY THE EXACT LOCATION, SIZE & OPERABLE CONDITION OF EXISTING "MDP", REPLACE IF INOPERABLE. BASE BID ACCORDINGLY.
- 4 EXISTING 150A(M.L.O.), 277/480V, 3-PHASE, 4-WIRE ELECTRICAL PANEL "A" FOR THE PROJECT SPACE SHALL REMAIN. E.C TO FIELD VERIFY THE EXACT LOCATION, SIZE & OPERABLE CONDITION OF EXISTING PANEL, REPLACE IF INOPERABLE. BASE BID ACCORDINGLY.
- 5 EXISTING 75KVA 3-PHASE TRANSFORMER "T3" WITH PRIMARY 277/480V AND SECONDARY 120/208V FOR THE PROJECT SPACE SHALL REMAIN. E.C TO FIELD VERIFY THE EXACT LOCATION, SIZE & OPERABLE CONDITION OF EXISTING TRANSFORMER, REPLACE IF INOPERABLE. BASE BID ACCORDINGLY.
- 6 EXISTING 225A(M.C.B.), 120/208V, 3-PHASE, 4-WIRE ELECTRICAL PANEL "B SEC-I" FOR THE PROJECT SPACE TO REMAIN. E.C. TO FIELD VERIFY THE EXACT SIZE, LOCATION & OPERABLE CONDITION OF THE PANEL, REPLACE IF INOPERABLE. BASE BID ACCORDINGLY.
- 7 EXISTING 225A(M.L.O.), 120/208V, 3-PHASE, 4-WIRE ELECTRICAL PANEL "B SEC-II" FOR THE PROJECT SPACE TO REMAIN. E.C. TO FIELD VERIFY THE EXACT SIZE, LOCATION & OPERABLE CONDITION OF THE PANEL, REPLACE IF INOPERABLE. BASE BID ACCORDINGLY.
- 8 EXISTING 100A(M.L.O.), 120/208V, 3-PHASE, 4-WIRE ELECTRICAL PANEL "D" FOR THE PROJECT SPACE SHALL REMAIN. E.C TO FIELD VERIFY THE EXACT LOCATION, SIZE & OPERABLE CONDITION OF EXISTING PANEL, REPLACE IF INOPERABLE. BASE BID ACCORDINGLY.
- 9 EXISTING FEEDERS SHALL REMAIN. E.C TO VERIFY OPERABLE CONDITION OF FEEDERS IN FIELD AND PROVIDE NEW IF FOUND INOPERABLE. BASE BID ACCORDINGLY.

A. ABOVE RISER DIAGRAM IS FOR REFERENCE PURPOSES ONLY. E.C. SHALL VERIFY EXACT POWER DISTRIBUTION IN FIELD AND INFORM ENGINEER ON RECORD FOR ANY DISCREPANCY.

B. E.C. SHALL VERIFY INCOMING SERVICE AMPERAGE, WIRE SIZING AND DISTRIBUTION.

C. ELECTRICAL CONTRACTOR TO COORDINATE FAULT CURRENT (ISC) RATING WITH UTILITY COMPANY AND AHJ PRIOR TO COMMENCING ANY WORK.

D. E.C. TO VERIFY OPERABLE CONDITIONS OF EXISTING DEVICES IN FIELD. REPLACE/RECTIFY IF FOUND IN OPERABLE. BASE BID ACCORDINGLY.

E. EXISTING ELECTRICAL DISTRIBUTION TO BE MAINTAINED AND UTILIZED TO SERVE PROJECT SPACE. POWER RISER DIAGRAM INDICATED FOR REFERENCE PURPOSES ONLY.



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11

--- ☐ EXISTING ITEM/FEEDER
TO REMAIN

EXISTING ITEM/FEEDER TO BE
DISCONNECTED & REMOVED

FOR CONSTRUCTION : 05.21.24

[illegible]

PANEL: MDP (E)											MOUNTING:		SURFACE				
480Y/277		VOLTS,		3		PHASE,		4		WIRE		LOCATION:		ELECTRICAL ROOM			
NOTE:"NOTE: LIGHTING, R: RECEPTACLES, K:KITCHEN/EQUIPMENTS, C: REFRIGERATION, H: HVAC, M: MOTOR, O:OTHER/MISCELLANEOUS "																	
MAIN CB		NA		MLO:		400A		BUS:		EXISTING		MIN,		FED FROM:		EXISTING DISCONNECT SWITCH	
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							0.00								2		
3	60/3P	SPARE						0.00					SPARE	35/3P	4		
5									0.00						6		
7							0.00								8		
9	35/3P	SPARE						0.00					SPARE	35/3P	10		
11									0.00						12		
13							0.00								14		
15	35/3P	SPARE						0.00					SPARE	35/3P	16		
17									0.00						18		
19						H	5.27			5.27					20		
21	20/3P	RTU-4	1			H	5.27		3#12, #12G, 3/4"C		5.27		SPARE	35/3P	22		
23						H	5.27				5.27				24		
25						H	6.93			6.93					26		
27	30/3P	RTU-5	2			H	6.93		3#10, #10G, 3/4"C		6.93		SPARE	35/3P	28		
29						H	6.93				6.93				30		
31						H	6.93			6.93					32		
33	30/3P	RTU-6	3			H	6.93		3#10, #10G, 3/4"C		6.93		SPACE		34		
35						H	6.93				6.93				36		
37										0.00					38		
39	35/3P	SPARE						0.00			0.00		SPARE	35/3P	40		
41											0.00				42		
43								13.60				13.60	O		44		
45	35/3P	SPARE							13.60			13.60	O	EXISTING 75KVA TRANSFORMER	100A/3P	46	
47										13.60					48		
49								0.21				0.21	O		50		
51	35/3P	SPARE							0.21			0.21	O	PANEL A	150A/3P	52	
53										0.21			O		54		
TOTAL CONNECTED LOAD (KVA)							32.93	32.93	32.93								

PANEL: A (E)											MOUNTING:		SURFACE					
480Y/277		VOLTS,		3		PHASE,		4		WIRE		LOCATION:		ELECTRICAL ROOM				
NOTE:"NOTE: LIGHTING, R: RECEPTACES, K:KITCHEN/EQUIPMENTS, C: REFRIGERATION, H: HVAC, M: MOTOR, O:OTHER/MISCELLANEOUS "																		
MAIN CB		NA		MLO:		400A		BUS:		EXISTING		MIN,		FED FROM:		EXISTING DISCONNECT SWITCH		
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	20	SPARE							0.00								20	2
3	20	SPARE								0.00							20	4
5	20	SPARE									0.50	EXISTING	0.50	L	RESTROOM LIGHTS		20	6
7	20	SPARE							0.00								20	8
9	20	SPARE								0.00							20	10
11	20	SPARE									0.00						20	12
13	20	SPARE							0.00									14
15	20	SPARE								0.00								16
17	20	SPARE									0.00							18
19	20	SPARE							0.00									20
21	20	SPARE								0.00								22
23	20	SPARE									0.00							24
25	20	SPARE							0.00									26
27	20	SPARE								0.00								28
29		SPACE									0.00							30
31		SPACE							0.00									32
33		SPACE								0.00								34
35		SPACE									0.00							36
37		SPACE							0.00									38
39		SPACE								0.00								40
41		SPACE									0.00							42
TOTAL CONNECTED LOAD (KVA)									0.00	0.00	0.50							

PANEL: B(SEC-II)(E)											MOUNTING:		SURFACE				
208Y/120		VOLTS,		3		PHASE,		4		WIRE		LOCATION:		ELECTRICAL ROOM			
NOTE:"NOTE: LIGHTING, R: RECEPTACLES, K:KITCHEN/EQUIPMENTS, C: REFRIGERATION, H: HVAC, M: MOTOR, O:OTHER/MISCELLANEOUS "																	
MAIN CB		225A		MLO:		NA		BUS:		EXISTING		MIN,		FED FROM:		EXISTING 75KVA TRANSFORMER	
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	20	RECEPTACLE ROOF	R	0.54	2#12, #12G, 3/4"	1.26			2#12, #12G, 3/4"	0.72	R	FLOOR RECEPTACLE	20	2			
3	20	EXHAUST FAN#1	M	0.50	EXISTING		1.22		2#12, #12G, 3/4"	0.72	R	FLOOR RECEPTACLE	20	4			
5	20	WATER HEATER RECEPTACLE	R	0.50	EXISTING			1.22	2#12, #12G, 3/4"	0.72	R	FLOOR RECEPTACLE	20	6			
7	20	WATER COOLER RECEPTACLE	R	0.50	2#12, #12G, 3/4"	1.22			2#12, #12G, 3/4"	0.72	R	FLOOR RECEPTACLE	20	8			
9	20	RECEPTACLE-SALES AREA	R	0.54	2#12, #12G, 3/4"		1.26		2#12, #12G, 3/4"	0.72	R	FLOOR RECEPTACLE	20	10			
11	20	RECEPTACLE-SALES AREA	R	0.54	2#12, #12G, 3/4"			0.72	2#12, #12G, 3/4"	0.18	R	FLOOR RECEPTACLE	20	12			
13	20	RECEPTACLE-SALES AREA	R	0.36	2#12, #12G, 3/4"	0.36						SPARE	20	14			
15	20	RECEPTACLE-SALES AREA	R	0.36	2#12, #12G, 3/4"		0.36							16			
17	20	RECEPTACLE-SALES AREA	R	0.18	2#12, #12G, 3/4"			0.18					40/2P	18			
19	20	RECEPTACLE ON DESK	R	0.72	2#12, #12G, 3/4"	0.72						SPARE	20	20			
21	20	RECEPTACLE ON DESK	R	0.72	2#12, #12G, 3/4"		0.72					SPARE	20	22			
23	20	EXHAUST FAN#2	M	0.50	EXISTING			0.50				SPARE	20	24			
25	20	RECEPTACLE-SALES AREA	R	0.54	2#12, #12G, 3/4"	0.54						SPARE	20	26			
27	20	RECEPTACLE-SALES AREA	R	0.54	2#12, #12G, 3/4"		0.54					SPARE	20	28			
29	20	RECEPTACLE-SALES AREA	R	0.36	2#12, #12G, 3/4"			0.36				SPARE	20	30			
31	20	RECEPTACLE-SALES AREA	R	0.36	2#12, #12G, 3/4"	0.36						SPARE	20	32			
33	20	RECEPTACLE-SALES AREA	R	0.36	2#12, #12G, 3/4"		0.36					SPARE	20	34			
35	20	SPARE						0.00				SPARE	20	36			
37	20	SPARE				9.63			EXISTING	9.63	O	PANEL D	100/3P	38			
39	20	SPARE					9.63			9.63	O			40			
41	20	SPARE						9.63		9.63	O			42			
TOTAL CONNECTED LOAD (KVA)						14.09	14.09	12.61									

PANEL SCHEDULE GENERAL NOTES:

- A. ALL CIRCUITING SHOWN IN FOR ELECTRICAL PANEL "MDP", "A", "B(SEC-I)", "B(SEC-II)", "D" ARE FOR REFERENCE PURPOSE ONLY. E.G. SHALL VERIFY CIRCUITING OF THE EXISTING DEVICES IN FIELD AND INFORM ENGINEER FOR DISCREPANCIES.
- B. ELECTRICAL CONTRACTOR TO VERIFY THE EXACT PANEL SIZES AND INCOMING FEEDER SIZE.
- C. E.C. SHALL PROVIDE NEW CIRCUIT BREAKERS IN PLACE OF EXISTING CIRCUIT BREAKERS WHEREVER NECESSARY TO BE IN LINE WITH THE PANEL SCHEDULE.
- D. CHECK COMPATIBILITY OF NEWLY ADDED BREAKER WITH THE EXISTING PANEL BEFORE PURCHASING. BASE BID ACCORDINGLY.

ELECTRICAL PANEL SCHEDULE KEYED WORK NOTES:

1. PROVIDE NEW (1)20/3P BREAKER IN PLACE OF (1)30/3P BREAKER . BASE BID ACCORDINGLY.
2. PROVIDE NEW (1)30/3P BREAKER IN PLACE OF (1)60/3P BREAKER . BASE BID ACCORDINGLY.
3. PROVIDE NEW (1)30/3P BREAKER IN PLACE OF (1)35/3P BREAKER . BASE BID ACCORDINGLY.

PANEL: B(SEC-II)(E)											MOUNTING:		SURFACE					
208Y/120		VOLTS,		3	PHASE,		4	WIRE		LOCATION:		ELECTRICAL ROOM						
NOTE:"NOTE: L:LIGHTING, R: RECEPTACLES, K:KITCHEN/EQUIPMENTS, C: REFRIGERATION, H: HVAC, M: MOTOR, O:OTHER/MISCELLANEOUS "																		
MAIN CB		NA		MLO:		NA		BUS:		EXISTING		MIN,						
											FED FROM:		EXISTING 75KVA TRANSFORMER					
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							
43	20	SPARE							0.00						SPARE	20	44	
45	20	SPARE								0.00					SPARE	20	46	
47	20	SPARE													SPARE	20	48	
49	20	SPARE							0.00		0.00				SPARE	20	50	
51	20	SPARE								0.00					SPARE	20	52	
53	20	SPARE									0.00				SPARE	20	54	
55	20	SPARE							0.00						SPARE	20	56	
57	20	SPARE								0.00					SPARE	20	58	
59	20	SPARE									0.00				SPARE	20	60	
61	20	SPARE							0.00						SPARE	20	62	
63	20	SPARE								0.00					SPARE	20	64	
65	20	SPARE									0.00				SPARE	20	66	
67	20	SPARE							0.00						SPARE	20	68	
69	20	SPARE								0.00					SPARE	20	70	
71	20	SPARE									0.00				SPARE	20	72	
73	20	SPARE							0.00						SPARE	20	74	
75	20	SPARE								0.00					SPARE	20	76	
77	20	SPARE									0.00				SPARE	20	78	
79	20	SPARE							0.00						SPARE	20	80	
81	20	SPARE								0.00					SPARE	20	82	
83	20	SPARE									0.00				SPARE	20	84	
TOTAL CONNECTED LOAD (KVA)									0.00	0.00	0.00							

PLUMBING LEGEND	
SYMBOL	DESCRIPTION
	SAN -- SANITARY SEWER
	VENT PIPING
	COLD WATER
	EXISTING COLD WATER
	GAS PIPING
	PIPE DOWN
	PIPE UP
	GAS COOK
	WCO
	POINT OF NEW CONNECTION

PLUMBING ABBREVIATIONS

CW	COLD WATER
SAN	SANITARY
WH-E	EXISTING WATER HEATER
EX.LAV	EXISTING LAVATORY
EX.WC	EXISTING WATER CLOSET
EX.MS	EXISTING MOP SINK
W.C.	WATER COOLER
EX.	EXISTING
WCO	WALL CLEANOUT

PLUMBING DRAWING LIST

P0.1	PLUMBING SYMBOLS, ABBREVIATIONS & SPECIFICATIONS
P0.2	PLUMBING DETAILS
P1.0	PLUMBING WATER PIPING PLAN
P2.0	PLUMBING SANITARY AND VENT PIPING PLAN
P3.0	GAS PLAN
P4.0	PLUMBING RISERS AND SCHEDULES

CODE COMPLIANCE

ALL WORK AND MATERIAL SHALL BE PERFORMED AND INSTALLED IN COMPLIANCE WITH THE FOLLOWING CODES AS ADOPTED AND AMENDED BY THE INSPECTING AUTHORITY. NOTHING IN THESE DRAWINGS IS TO BE CONSTRUCTED TO PERMIT WORK NOT CONFORMING TO THESE CODES OR OTHERS APPLICABLE TO THESE PROJECT.

- INTERNATIONAL BUILDING CODE, 2018 EDITION, WITH GEORGIA AMENDMENTS.
- INTERNATIONAL MECHANICAL CODE, 2018 EDITION, WITH GEORGIA AMENDMENTS.
- INTERNATIONAL PLUMBING CODE, 2018 EDITION, WITH GEORGIA AMENDMENTS.
- INTERNATIONAL FUEL/GAS CODE, 2018 EDITION, WITH GEORGIA AMENDMENTS.
- INTERNATIONAL ENERGY CONSERVATION CODE, 2015 EDITION, WITH GEORGIA AMENDMENTS.
- NATIONAL ELECTRICAL CODE 2020, WITH GEORGIA AMENDMENTS.

PLUMBING SPECIFICATIONS:

1. BASIC PLUMBING REQUIREMENTS, MATERIALS AND METHODS

1.01 SCOPE

- PROVIDE ALL MATERIAL, TOOLS, SUPERVISION AND LABOR INCLUDING ALL MISCELLANEOUS AND INCIDENTAL ITEMS REQUIRED FOR COMPLETE AND OPERABLE PLUMBING INSTALLATIONS AS SHOWN OR DESCRIBED ON THE DRAWINGS AND IN THESE SPECIFICATIONS.

- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING AND NEW CONDITIONS AND MATERIALS WITHIN THE CONSTRUCTION AREA. ANY DAMAGE CAUSED BY THE CONTRACTOR SHALL BE REPAIRED TO THE OWNER'S SATISFACTION.

- OBTAIN ALL PERMITS, PAY ALL PERMIT FEES AND SCHEDULE ALL REQUIRED INSPECTIONS. COPIES OF ALL PERMITS AND INSPECTION CERTIFICATES SHALL BE FORWARDED TO THE OWNER FOR RECORD.

- THE GENERAL CONDITIONS OF THE CONTRACT AND ALL DIVISION 1 REQUIREMENTS APPLY TO THE WORK OF THIS SECTION.

- THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO SUBMITTING BID TO DETERMINE CONDITIONS AND THE EXTENT OF THE WORK. BY COMMENCING WORK, THE CONTRACTOR ACKNOWLEDGES HIS CONFIRMATION OF ALL CONDITIONS AS ACCEPTABLE WITH REFERENCE TO HIS CONTRACT, SCOPE OF WORK AND BID PRICE. SUCH THAT NO ADDITIONAL COMPENSATION SHALL BE FORTHCOMING FOR UNFORESEEN EXISTING CONDITIONS.

- IN ALL AREAS SUBJECT TO FREEZING CONDITIONS, THE CONTRACTOR SHALL PROVIDE FREEZE PROTECTION FOR ALL DOMESTIC WATER PIPING INSTALLED UNDER HIS CONTRACT.

- ALL ELECTRICAL REQUIREMENTS SHALL BE COORDINATED WITH THE CONTRACTOR FOR ELECTRICAL WORK. THIS CONTRACTOR IS RESPONSIBLE FOR ALL LOW VOLTAGE WIRING EQUIPMENT INSTALLED UNDER HIS CONTRACT. THE CONTRACTOR FOR ELECTRICAL WORK IS RESPONSIBLE FOR LINE VOLTAGE POWER WIRING ONLY.

- COLOR AND FINISH SELECTIONS FOR ALL MATERIALS, INCLUDING PAINTING OF PIPING, SHALL BE AS DIRECTED AND/OR APPROVED BY THE ARCHITECT.

- MINOR DETAILS NOT SHOWN OR SPECIFIED, BUT NECESSARY FOR THE PROPER AND ACCEPTABLE CONSTRUCTION, INSTALLATION OR OPERATION OF ANY PART OF THE WORK AS DETERMINED BY THE ENGINEER SHALL BE INCLUDED AS IF SPECIFIED OR INDICATED ON THE DRAWINGS.

- THIS CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL REQUIREMENTS FOR THE INSTALLATION, CONNECTION, EXTENSION OR MODIFICATION TO ALL UTILITY SERVICES WITH RESPECTIVE PROVIDERS INCLUDING PAYMENT OF ALL ASSOCIATED FEES.

- THE CONTRACTOR IS RESPONSIBLE FOR ALL PAINTING ASSOCIATED WITH CUTTING AND PATCHING. ALL PAINTING IN AREAS WITH COMPLETE FINISH RENOVATIONS SHALL BE PROVIDED BY THE GENERAL CONTRACTOR.

1.02 SUBMITTALS

- SUBMITTAL REQUIREMENTS SHALL BE COORDINATED WITH THE ARCHITECT AND AUTHORITIES HAVING JURISDICTION. UNLESS OTHERWISE DIRECTED, CONTRACTOR SHALL PROVIDE SUBMITTALS AS LISTED BELOW.

- PIPE AND FITTINGS
- VALVES
- HANGERS AND SUPPORTS
- PLUMBING PIPING LAYOUT
- TESTS
- PLUMBING FIXTURES
- WATER HEATERS & ACCESSORIES
- FLOOR DRAINS
- MIXING VALVES
- ALL SCHEDULED PLUMBING EQUIPMENT

- SUBMITTALS FROM SUPPLIERS OR MANUFACTURERS WHICH DO NOT BEAR THE STAMP OF THE SUBMITTING CONTRACTOR INDICATING THAT THE CONTRACTOR HAS REVIEWED THE SUBMITTAL FOR CONFORMANCE WITH THE PROJECT REQUIREMENTS WILL BE RETURNED REJECTED.

- THE ENGINEER'S REVIEW OF SUBMITTALS IS A COURTESY WHICH DOES NOT RELIEVE THE CONTRACTOR FROM CONFORMING WITH THE CONSTRUCTION DOCUMENTS, REGARDLESS OF THE ACTION INDICATED BY THE SHOP DRAWINGS STAMP.

- SUBMIT PROOF OF APPROVAL AND/OR CONFIRMATION OF SATISFACTORY TEST RESULTS TO THE OWNER AND THE ARCHITECT.

- SUBMIT TO THE OWNER'S MAINTENANCE PERSONNEL OPERATION AND MAINTENANCE DATA FOR ALL SYSTEM COMPONENTS, SERVICING REQUIREMENTS, INSPECTION DATA, REPLACEMENT PART NUMBERS AND AVAILABILITY AND CONTACT INFORMATION FOR SERVICE/SUPPLY COMPANY.

- FOR ALL BELOW GRADE PIPING WHERE ACTUAL INSTALLATION DEVIATES FROM CONSTRUCTION DRAWINGS, THE CONTRACTOR SHALL PROVIDE AS-BUILT DRAWINGS INDICATING BELOW GRADE PIPE LOCATIONS DIMENSIONED TO NEAREST COLUMN LINES.

- RECORD AS-BUILT DRAWINGS SHALL BE SUPPLIED TO THE OWNER/TENANT AFTER COMPLETION OF THE WORK SHOWING ANY ALTERATIONS, ADDITIONS AND/OR DELETIONS TO THE SYSTEM(S) INSTALLED.

1.03 SUBSTITUTIONS

- ALL EQUIPMENT SHALL BE PRODUCTS OF THE SPECIFIED MANUFACTURER OR MANUFACTURERS. ALL BIDS SHALL BE BASED ON THE SPECIFIED MANUFACTURER OR MANUFACTURER'S EQUIPMENT. FOR SUBSTITUTIONS OF OTHER MANUFACTURER'S EQUIPMENT TO BE CONSIDERED, THE SUBSTITUTION MUST BE INDICATED PRIOR TO BIDDING WITH THE REASON FOR THE PROPOSED SUBSTITUTION IDENTIFIED, AND THE PROPOSED CREDIT TO THE OWNER INDICATED. THE ENGINEER SHALL DETERMINE THE ACCEPTABILITY OF ANY PROPOSED SUBSTITUTIONS.

- THE CONTRACTOR ASSUMES ALL RESPONSIBILITY FOR COORDINATING THE WORK OF OTHER TRADES WHICH MAY BE AFFECTED BY SUBSTITUTIONS, INCLUDING ALL RELATED COSTS.

1.04 DEFINITIONS

- FURNISH: TO PURCHASE, PROCURE, ACQUIRE AND DELIVER, COMPLETE WITH RELATED ACCESSORIES.

- INSTALL: TO ERCT, MOUNT AND CONNECT, COMPLETE WITH RELATED ACCESSORIES.

- PROVIDE: TO FURNISH AND INSTALL.

- PLUMBING CONTRACTOR, THE CONTRACTOR, THIS CONTRACTOR: THE CONTRACTOR FOR PLUMBING WORK WHICH IS SPECIFIED HEREIN AND SHOWN ON THESE DRAWINGS.

- REFER TO THE INTERNATIONAL PLUMBING CODE 2018 (WITH GEORGIA AMENDMENTS) FOR ADDITIONAL DEFINITIONS.

1.04 DRAWINGS

- THE DRAWINGS ARE DIAGRAMMATIC AND ARE INTENDED TO ILLUSTRATE THE GENERAL ARRANGEMENT AND ROUTING OF PIPING AND GENERAL LOCATIONS OF EQUIPMENT. PRECISE LOCATIONS OF EQUIPMENT, RISERS AND STACKS, AND ROUTING AND ELEVATION OF ALL PIPING SYSTEMS SHALL BE COORDINATED IN THE FIELD WITH THE ARCHITECT. ARCHITECTURAL DRAWINGS, THE WORK OF OTHER TRADES, EXISTING AND NEW BUILDING CONDITIONS AND/OR THE PREFERENCES OF THE OWNER/TENANT AS CONSTRUCTION PROCEEDS. ALL PIPING SHALL BE INSTALLED CONCEALED IN FINISHED SPACES, UNLESS NOTED OTHERWISE.

- PROVIDE ALL NECESSARY INCIDENTAL MATERIALS AND ACCESSORIES REQUIRED TO MAKE THE WORK COMPLETE IN ALL RESPECTS, EVEN IF NOT PARTICULARLY SHOWN OR SPECIFIED.

- REFER TO PLUMBING EQUIPMENT/FIXTURE SCHEDULE ON THE DRAWINGS FOR ALL FIXTURE AND EQUIPMENT SPECIFICATIONS.

- REFER TO FIXTURE CONNECTION SIZE SCHEDULE FOR ALL FIXTURE ROUGHING SIZE REQUIREMENTS.

- VERIFY ALL INDICATED CONDITIONS BEFORE STARTING WORK AND REPORT ANY DISCREPANCIES. THE DRAWINGS REFLECT CONDITIONS WHICH CAN BE REASONABLY INTERPRETED FROM THE EXISTING VISIBLE CONDITIONS OR FROM DRAWINGS AND INFORMATION FURNISHED BY THE OWNER.

- LOCATE ALL FIXTURES AND EQUIPMENT AS PER THE FINAL ARCHITECTURAL DRAWINGS.

1.05 PRODUCTS

A. SANITARY AND VENT PIPING:

- ABOVE GRADE/ UNDERGROUND PIPING SHALL BE CAST IRON PIPE WHICH SHOULD COMPLY WITH ASTM A74; ASTM A883, STANDARD/CISPI 301.

- SLOPE OF DRAINAGE SYSTEM SHALL BE 1/8" PER FOOT OF RUN FOR PIPE OVER 3" (I.D.) AND 1/4" PER FOOT OF RUN FOR PIPE 3" AND SMALLER (I.D.). VENT PIPING SHALL BE PITCHED TO DRAIN.

- ALL CAST IRON SOIL PIPE AND FITTINGS SHALL BE MARKED WITH THE COLLECTIVE TRADEMARK OF THE CAST IRON SOIL PIPE INSTITUTE (CISPI) AND BE LISTED BY NSF INTERNATIONAL.

B. WATER PIPING:

- ABOVE GRADE WATER PIPING SHALL BE TYPE 'L' HARD-DRAWN COPPER TUBE.

- FITTINGS IN DOMESTIC WATER PIPING SHALL BE COPPER OR COPPER ALLOY AS PER TABLE 604.1, 2018 INTERNATIONAL PLUMBING CODE (WITH GEORGIA AMENDMENTS).

- JOINTS SHALL BE MADE WITH LEAD-FREE SOLDER.

- THE ENTIRE DOMESTIC WATER DISTRIBUTION SYSTEM SHALL BE INSULATED INCLUDING ALL VALVES, FITTINGS, ETC.

- COMPLY WITH NSF 61 FOR MATERIALS FOR WATER-SERVICE PIPING AND SPECIALTIES FOR DOMESTIC WATER.

- ALL DOMESTIC WATER PIPING ABOVE GRADE SHALL BE FIRE-RETARDANT, FACTORY-APPLIED JACKET. PROVIDE COLD WATER PIPING WITH FACTORY-APPLIED VAPOR BARRIER. INSULATION REQUIREMENT SHOULD COMPLY SECTION C403.2.10 REFER WITH 2015 INTERNATIONAL ENERGY CONSERVATION CODE (WITH GEORGIA AMENDMENTS) BELOW TABLE.

MINIMUM PIPE INSULATION THICKNESS					
FLUID OPERATING TEMPERATURE RANGE AND USAGE (°F)	INSULATION CONDUCTIVITY		NOMINAL PIPE OR TUBE SIZE (INCHES)		
	CONDUCTIVITY BTU IN./ (H·FT²·°F)	MEAN RATING TEMPERATURE, °F	<1	1 to 1½	4 to 8
105-140	0.21-0.28	100	1.0	1.0	1.5
40-60	0.21-0.27	75	0.5	0.5	1.0

- WATER DISTRIBUTION SYSTEM AS PER INTERNATIONAL ENERGY CONSERVATION CODE (WITH GEORGIA AMENDMENTS) 2015 C404.7, HAVING ONE OR MORE RECIRCULATION PUMPS THAT PUMP WATER FROM A HEATED-WATER SUPPLY PIPE BACK TO THE HEATED-WATER SOURCE THROUGH A COLD-WATER SUPPLY PIPE SHALL BE A DEMAND RECIRCULATION WATER SYSTEM. PUMPS SHALL HAVE CONTROLS THAT COMPLY WITH BOTH OF THE FOLLOWING:

- THE CONTROL SHALL START THE PUMP UPON RECEIVING A SIGNAL FROM THE ACTION OF A USER OF A FIXTURE OR APPLIANCE, SENSING THE PRESENCE OF A USER OF A FIXTURE OR SENSING THE FLOW OF HOT OR TEMPERED WATER TO A FIXTURE FITTING OR APPLIANCE.
- THE CONTROL SHALL LIMIT THE TEMPERATURE OF THE WATER ENTERING THE COLD-WATER PIPING TO 104°F (40°C).

- AS PER INTERNATIONAL ENERGY CONSERVATION CODE (WITH GEORGIA AMENDMENTS) 2015 C404.6.1 HEATED-WATER CIRCULATION SYSTEMS SHALL BE PROVIDED WITH A CIRCULATION PUMP. THE SYSTEM RETURN PIPE SHALL BE A DEDICATED RETURN PIPE OR A COLD WATER SUPPLY PIPE. CONTROLS FOR CIRCULATING HOT WATER SYSTEM PUMPS SHALL START THE PUMP BASED ON THE IDENTIFICATION OF A DEMAND FOR HOT WATER WITHIN THE OCCUPANCY. THE CONTROLS SHALL AUTOMATICALLY TURN OFF THE PUMP WHEN THE WATER IN THE CIRCULATION LOOP IS AT THE DESIRED TEMPERATURE AND WHEN THERE IS NO DEMAND FOR HOT WATER.

- HEATED WATER SUPPLY PIPING SHALL BE IN ACCORDANCE WITH INTERNATIONAL ENERGY CONSERVATION CODE 2015 (WITH GEORGIA AMENDMENTS) SECTION C404.5.1 OR C404.5.2. THE FLOW RATE THROUGH 1/4-INCH PIPING SHALL BE NOT GREATER THAN 0.5 GPM. THE FLOW RATE THROUGH 5/16-INCH PIPING SHALL BE NOT GREATER THAN 1 GPM. THE FLOW RATE THROUGH 3/8-INCH PIPING SHALL BE NOT GREATER THAN 1.5 GPM. HW SYSTEM PIPING IS DESIGNED AS PER MAXIMUM ALLOWED PIPE LENGTH MET 2015 C404.5.1. THE PIPE LENGTH SHALL BE DETERMINED FROM THE NEAREST SOURCE OF HEATED WATER TO THE TERMINATION OF THE FIXTURE SUPPLY PIPE SHALL BE AS PER FOLLOWING TABLE.

NOMINAL PIPE SIZE (INCHES)	MAXIMUM PIPING LENGTH (FEET)	
	PUBLIC LAV	OTHER FIXTURES
3/8"	3'	50'
1/2"	2'	43'
3/4"	0.5'	21'
1"	0.5'	18'
1 1/4"	0.5'	8'
1 1/2"	0.5'	6'
2" OR LARGER	0.5'	4'

C. MIXING VALVES

- VALVE BODY SHALL BE MADE OF CAST BRASS. THE INTERNAL COMPONENTS SHALL BE MADE OF BRASS OR STAINLESS STEEL.

- TYPES A, C & D VALVES: VALVE SHUTS OFF IN FULL COLD POSITION AND MUST PASS THROUGH COLD RANGE BEFORE DELIVERING WARM, AND/OR HOT WATER. TEMPERATURE LIMIT SET AT 105% MAXIMUM DELIVERY TEMPERATURE. IF ONE SUPPLY SHOULD FAIL, THE OTHER WILL AUTOMATICALLY AND INSTANTLY SHUT DOWN. DELIVERY CAPACITY IS 15GPM @ 45 PSIG DIFFERENTIAL.

- TYPES OF VALVES: TYPE A-- THERMOSTATICALLY OPERATED BY MEANS OF BI-METALLIC STRIP, OR EXPANSION BELLOW; TYPE B-- SINGLE HANDLE MECHANICAL MIXER, OR CONTROL HOT AND COLD CONTROL VALVES; TYPE C-- PRESSURE-BALANCING SHOWER VALVE/PISTON OPERATED MIXING VALVE; TYPE D-- BALANCED PRESSURE OPERATED WITH INTEGRAL DIAL THERMOMETER INDICATING DELIVERED WATER TEMPERATURE.
- EACH ELEMENT SHALL BE CONTROLLED BY AN INDIVIDUALLY MOUNTED THERMOSTAT AND HIGH TEMPERATURE CUT-OFF SWITCH. ALL INTERNAL CIRCUITS SHALL BE FUSED. THE OUTER JACKET SHALL BE OF BAKED ENAMEL FINISH AND SHALL BE PROVIDED WITH FULL SIZE CONTROL COMPARTMENT FOR PERFORMANCE OF SERVICE AND MAINTENANCE THROUGH HINGED FRONT PANEL AND SHALL ENCLOSE THE TANK WITH FOAM INSULATION. ELECTRICAL JUNCTION BOX WITH HEAVY DUTY TERMINAL BLOCK SHALL BE PROVIDED. THE DRAIN VALVE SHALL BE LOCATED IN THE FRONT FOR EASE OF SERVICING.

D. HANGERS AND SUPPORTS:

- HANGERS SHALL BE STANDARD STEEL, MALLEABLE OR WROUGHT IRON, AS MANUFACTURED BY GRINNELL OR APPROVED EQUAL, SUITABLE FOR THE TYPE OF CONSTRUCTION. PIPING SHALL NOT BE HUNG FROM OTHER PIPE.

- SECTIONS OF INDIVIDUAL PIPE RUNS SHALL BE SUPPORTED BY CLEVIS HANGERS.

- ALL EQUIPMENT SHALL BE PROVIDED WITH APPROVED SUPPORTS..

- SUPPORTS SHALL BE PROVIDED IN STRICT ACCORDANCE WITH THE RECOMMENDATIONS OF THE PIPING MANUFACTURER.

E. VALVES:

- PROVIDE GATE VALVES, BUTTERFLY OR BALL VALVES FOR SHUT-OFF DUTY ON MAIN AND BRANCH SUPPLY LINES. FOR ALL PIPE RUNS 2" AND SMALLER, PROVIDE BALL FOR ALL PIPE RUNS LARGER THAN 2" AND SMALLER THAN 4", PROVIDE GATE VALVES. PIPING 4" AND LARGER, PROVIDE BUTTERFLY VALVES FOR SHUT-OFF DUTY.

- ALL FIXTURES WITH THE EXCEPTION OF FLUSHMETER-EQUIPPED WATER CLOSETS AND URINALS SHALL HAVE STOP VALVES TO CONTROL SUPPLY TO THE FIXTURE. WHERE SUPPLIES ARE EXPOSED PROVIDE CHROME-PLATED STOPS WITH CHROME-PLATED ESCUTCHEONS ON PIPING PENETRATIONS.

- ALL PLUMBING FIXTURES AND EQUIPMENT TO HAVE SHUT-OFF VALVES ON SUPPLY LINES.

- ALL BRANCH LINES TO HAVE SHUT-OFF VALVES.

- ALL VALVES SHALL BE ACCESSIBLE. PROVIDE ACCESS DOORS WHERE REQUIRED FOR VALVE ACCESS.

- PROVIDE GLOBE VALVES FOR THROTTLING/BALANCING OF THE HOT WATER CIRCULATING SYSTEM.

F. SLEEVES AND ESCUTCHEONS:

- SLEEVES THROUGH STRUCTURAL CONCRETE MEMBERS AND SLEEVES FOR WALLS BELOW GRADE AND FLOORS ON GRADE SHALL BE STANDARD WEIGHT GALVANIZED SCHEDULE 40 STEEL PIPE. SLEEVES THROUGH OTHER THAN STRUCTURAL COMPONENTS OF THE BUILDING SHALL BE 20 GAZ GALVANIZED SHEET METAL WITH LOCK SEAM JOINTS. USG THERMAFIBER SAFING INSULATION SHALL BE INSTALLED BETWEEN PIPE AND SLEEVE.

- PIPE ESCUTCHEON PLATES SHALL BE INSTALLED WHERE EXPOSED PIPING PASSES THROUGH WALLS, CEILINGS, AND FLOORS AND SHALL BE MINIMUM 20 GAZ STEEL. PROVIDE CHROME PLATED ESCUTCHEON PLATES IN FINISHED AREAS.

G. DRAINAGE ACCESSORIES

1. GENERAL:

- INSTALL THE WORK OF THIS SECTION IN ACCORDANCE WITH THE MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS, UNLESS OTHERWISE SPECIFIED.

- SECURE EXTERNAL COMPONENTS IN PLACE WITH VANDAL RESISTANT FASTENERS OR DEVICES WHICH CANNOT BE REMOVED WITHOUT SPECIAL TOOLS.

2. DEVICES:

- CLEANOUT & CLEANOUT PLUG

- THREADED PIPE FITTING OR CAST IRON FERRULE WITH GAS TIGHT CLEANOUT PLUG

- PLUG SHOULD BE CAST BRASS OR BRONZE, WITH THREADED END, AND RASED OR COUNTERSUNK HEAD.

- LUBRICATE THREADS OF CLEANOUT PLUG WITH ANTI-SEIZE LUBRICANT BEFORE FINAL INSTALLATION.

- CLEANOUT WALL PLATE

- IT SHOULD BE ROUND, STAINLESS STEEL OR POLISHED CHROME PLATED BRONZE COVER PLATE WITH STAINLESS STEEL VANDAL RESISTANT FASTENER TO SECURE TO CLEANOUT PLUG.

- CLEANOUT DECK PLATE

- IT SHOULD BE STANDARD DUTY FLOOR CLEANOUT FITTING WITH COATED CAST IRON BODY. ROUND, POLISHED NICKEL BRONZE SCORRATED TOP SECURED TO CLEANOUT PLUG WITH STAINLESS STEEL VANDAL RESISTANT FASTENER; THREADED HEIGHT ADJUSTMENT, CAST IRON HEAD, GAS TIGHT CLEANOUT PLUG, AND CONNECTION TO MATCH PIPING OPTION SELECTED.

3. INDIRECT WASTE FUNNEL

- IT SHOULD BE COMBINATION OF FUNNEL DRAIN AND P TRAP WITH POLISHED CHROME PLATED CAST BRASS CONSTRUCTION WITH 4" TOP DIA., 4" DEEP WITH THREADED OUTLET.

- INSTALL PIPING TO CONSERVE BUILDING SPACE. DO NOT INTERFERE WITH USE OF BUILDING SPACE AND THE WORK OF OTHER TRADES. ALL PIPING RUN IN CEILING SHALL BE INSTALLED TIGHT TO THE STRUCTURE ABOVE.

- VERIFY EXACT LOCATIONS OF ALL EXISTING UTILITIES.

- K. INSTALL PIPING TO ALLOW FOR EXPANSION AND CONTRACTION WITHOUT STRESSING PIPE, JOINTS OR CONNECTED EQUIPMENT. PROVIDE PIPE

- L. ANCHORS, GUIDES AND EXPANSION JOINTS OR LOOPS IN ALL HOT WATER AND HOT WATER CIRCULATING MAIN SUPPLY PIPING AND SEGMENTS OF SUCH PIPE THAT EXCEED 30'-0" IN LENGTH.

- M. IN ALL AREAS WITH FINISHED SURFACES, SYSTEM PIPING AND COMPONENTS SHALL BE CONCEALED ABOVE OR WITHIN FINISHED SURFACES.

- N. INSTALL VALVES WITH STEMS UPRIGHT OR HORIZONTAL. REMOVE PROTECTIVE COATINGS PRIOR TO INSTALLATION.

- O. REDUCTIONS IN PIPE SIZES SHALL BE MADE WITH ONE-PIECE REDUCING FITTINGS. BUSHINGS ARE NOT ACCEPTABLE. USE FLANGED FITTINGS AT THE BASE OF RISERS.

- P. VENT PENETRATIONS THROUGH THE ROOF SHALL BE FLASHED.

- Q. IF WATER PRESSURE EXCEEDS 80 PSI, A WATER PRESSURE REDUCING VALVE SHALL BE INSTALLED IN WATER PIPING AT CONNECTION TO MAIN.

- R. PROVIDE DIELECTRIC FITTINGS BETWEEN DISSIMILAR METALS.

- S. PIPE BACKFLOW PREVENTER DRAINS TO FLOOR DRAIN OR OTHER APPROVED INDIRECT WASTE SOURCE.

- T. PROVIDE ACCESS DOORS/PANELS FOR SERVICE AND ACCESS TO ALL VALVES AND OTHER SYSTEM COMPONENTS ENCLOSED IN WALLS AND CEILINGS. ACCESS DOORS SHALL BE FURNISHED BY THIS CONTRACTOR, INSTALLED BY THE GENERAL CONTRACTOR.

- U. ALL FIXTURES REQUIRING VACUUM BREAKERS SHALL BE EQUIPPED WITH INTEGRAL VACUUM BREAKERS.

- V. ANY PENETRATIONS THROUGH FIRE RATED PARTITIONS, FLOORS, OR CEILINGS SHALL BE STEEL SLEEVED AND SEALED WITH 3M BRAND UL RATED FIRE BARRIER CAULK OR APPROVED EQUAL.

- W. WHEN THE WATER PIPING SYSTEM IS COMPLETE, THOROUGHLY FLUSH ALL DIRT, SEDIMENT, SOLDER, ETC., OUT OF THE SYSTEM, REMOVING ALL STRAINERS, VALVE STEM SEATS, ETC., REQUIRED TO ACCOMPLISH THE FLUSHING.

- X. AT ALL INDIRECT WASTE DRAINS, MAINTAIN AIR GAP AS REQUIRED BY CODE.

- Y. ALL PIPING INSTALLED ON THE ROOF SHALL BE SUPPORTED BY "PILLOW BLOCK" PIPE STANDS AS MANUFACTURED BY MIRO INDUSTRIES, OR APPROVED EQUAL. WOOD PIPE SUPPORTS SHALL NOT BE ACCEPTABLE. PROVIDE TRAFFIC/WALK PADS BELOW ALL PIPE STANDS.

- Z. INSTALL SLEEVES FOR ALL PIPES WHICH PASS THROUGH WALLS, FLOORS, AND CEILINGS. WHERE PIPES ARE TO BE INSULATED, THE SLEEVE SHALL BE LARGE ENOUGH TO ACCOMMODATE INSULATION. SLEEVES SHALL BE FLUSH WITH FINISHED SURFACES AT BOTH ENDS. ON FINISHED SURFACES IN EXPOSED AREAS PROVIDE ESCUTCHEONS COMPATIBLE WITH FINISH.

- PROVIDE WATER HAMMER ARRESTERS ON SUPPLY PIPING TO ALL FLUSHMETER VALVES AND QUICK-CLOSING VALVES.

- UNLESS OTHERWISE INDICATED, TRAPS SEALS AT ALL FLOOR DRAINS SHALL BE MAINTAINED BY AN APPROVED TRAP PRIMING DEVICE.

- MAINTAIN ALL REQUIRED AND RECOMMENDED CLEARANCES FOR ALL PLUMBING SYSTEM COMPONENTS AND EQUIPMENT.

- MAINTAIN MINIMUM 10'-0" CLEARANCE BETWEEN ALL PLUMBING V.T.R.SAND ALL OUTDOOR AIR INTAKES. OFFSET VENT STACKS AND STACK VENTS IF AND AS REQUIRED BELOW ROOF TO MAINTAIN SUCH CLEARANCE. WHETHER OR NOT SUCH OFFSET IS INDICATED ON THE DRAWINGS, PROVIDE ALL REQUIRED SEISMIC SUPPORTS.

2. INSTALLATION

2.01 GENERAL

- ALL WORK WHICH REQUIRES DISRUPTION OF THE ROOFING SHALL BE DONE BY A CONTRACTOR CERTIFIED BY THE ROOFING MANUFACTURER AS REQUIRED TO MAINTAIN ANY EXISTING ROOF WARRANTIES.

- EXTERIOR INSTALLATIONS TO BE WEATHER PROOF IN ALL RESPECTS.

- EXTERIOR MATERIALS AND EQUIPMENT SHALL BE PAINTED TO PREVENT CORROSION, COLOR PER ARCHITECT.

- COORDINATE THE PLUMBING WORK WITH ALL OTHER AFFECTED WORK AND THE CONSTRUCTION SCHEDULE.

- REAM PIPE AND TUBE ENDS. REMOVE BURRS. BEVEL PLAN AND FERROUS END PIPE.

- REMOVE SCALE AND FOREIGN MATERIAL, FROM INSIDE AND OUTSIDE, BEFORE ASSEMBLY.

- PREPARE PIPING CONNECTIONS TO EQUIPMENT WITH FLANGES AND UNIONS.

- COORDINATION WITH THE WORK OF OTHER TRADES IS REQUIRED. PROVIDE OFFSETS IN PIPING SYSTEMS OR MINOR DEVIATIONS TO THE INDICATED PIPE ROUTING IN ORDER TO COORDINATE THE PLUMBING WORK WITH THE WORK OF ALL OTHER TRADES AND THE GENERAL BUILDING CONDITIONS.

- NO DOMESTIC WATER PIPING SHALL BE INSTALLED IN UNHEATED SPACES.

- PRIOR TO DISCONNECTING AND CONNECTING NEW WORK TO EXISTING SYSTEMS, THE PLUMBING CONTRACTOR SHALL NOTIFY THE PROPERTY MANAGER AND OFFER A PROPOSED SCHEDULE OF WORK. ESB WILL AUTHORIZE CONNECTIONS AND COORDINATE NECESSARY SHUT DOWNS AND DRAIN DOWNS AS REQUIRED. SHUT DOWNS AND DRAIN DOWNS MAY BE PERFORMED BY THE PLUMBING CONTRACTOR ONLY AFTER RECEIVING ESB AUTHORIZATION, AND SHOULD BE PERFORMED UNDER SUPERVISION OF ESB PERSONNEL. THREE (3) DAYS ADVANCE NOTICE TO THE PROPERTY MANAGER IS REQUIRED.

- THE PLUMBING CONTRACTOR IS ADVISED THAT DUE TO THE NATURE OF THE OPERATIONS AND TENANT REQUIREMENTS, CONNECTIONS TO EXISTING SYSTEMS MAY HAVE TO BE MADE AFTER REGULAR WORKING HOURS. THE PROPERTY MANAGER WILL ADVISE THE PLUMBING CONTRACTOR OF THE TIME CONSTRAINTS UPON RECEIPT AND APPROVAL OF THE PLUMBING CONTRACTOR'S REQUEST FOR SHUT DOWN AND CONNECTION TO EXISTING SYSTEMS.

- WHEN CONNECTING TO EXISTING STACKS AND RISERS, PROVISION IS TO BE MADE FOR FUTURE EXPANSION. NEW PIPING SHALL BE VALVED OUTLETS ON DOMESTIC WATER RISERS AND PLUGGED OUTLETS ON THE SANITARY AND VENT STACKS.

2.02 ABOVE GRADE

- INSTALL PLUMBING PIPING IN ACCORDANCE WITH RECOGNIZED INDUSTRY PRACTICES TO ENSURE THAT PIPING COMPLIES WITH REQUIREMENTS AND SERVES INTENDED PURPOSES.

- ROUTE PIPING IN AN ORDERLY MANNER, PLUMB AND PARALLEL TO BUILDING STRUCTURE. MAINTAIN GRADIENT. SLOPE PIPING AND ARRANGE SYSTEMS TO DRAIN. IN DOMESTIC WATER SYSTEMS, PROVIDE DRAIN VALVES AT MAIN SHUT-OFF VALVES AND ALL LOW POINTS IN PIPING.

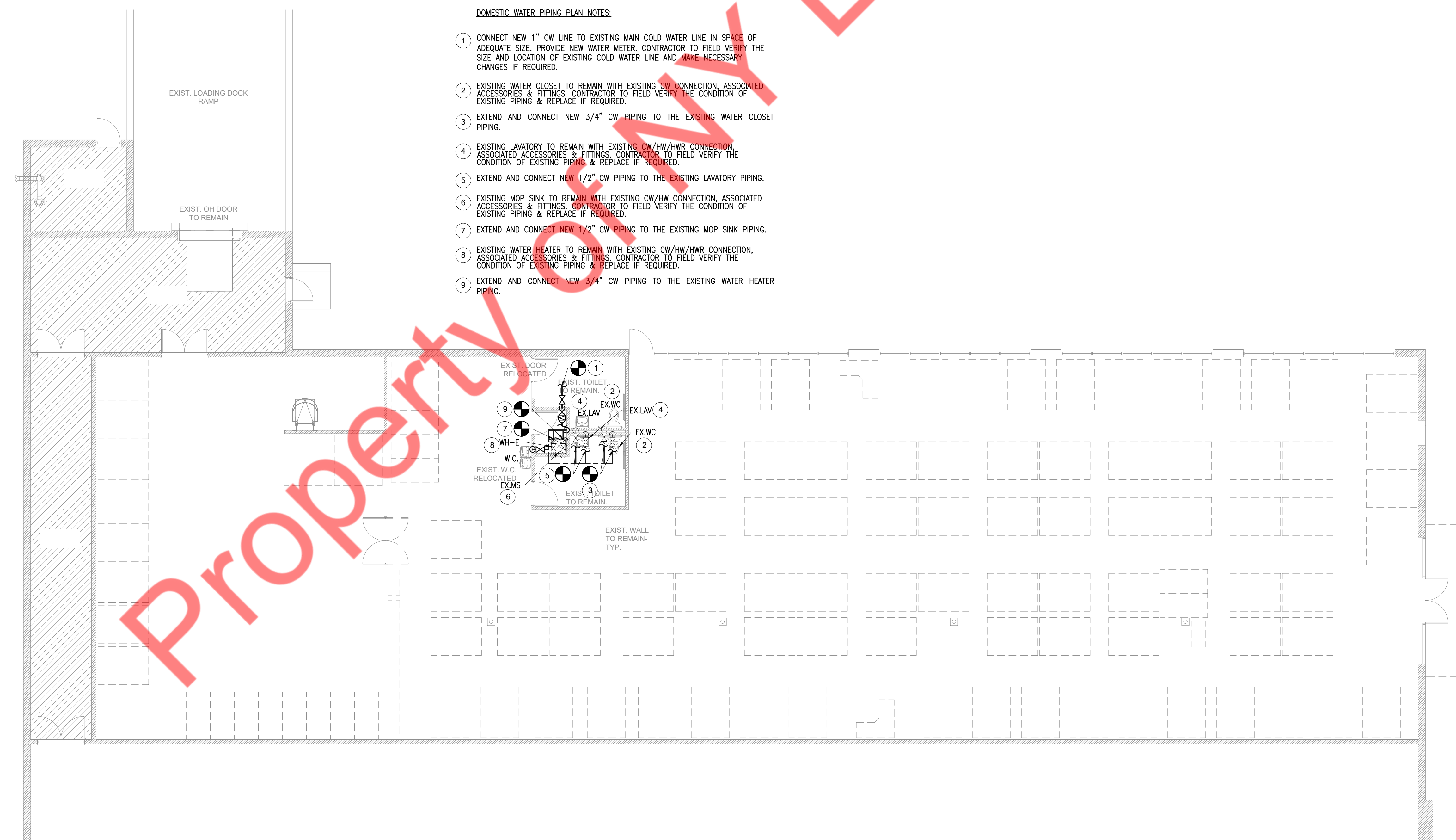


PC TO PROVIDE WATER HAMMER ARRESTERS BY SIOUX CHIEF, PRECISION PLUMBING PRODUCTS, WATTS OR APPROVED EQUIVALENT WITH PISTON AND O-RING CONSTRUCTION, HAVING PDI #WH-201, ASSE #1010 AND ANSI #A112.26.1M CERTIFICATION. INSTALL IN HORIZONTAL OR VERTICAL POSITION, BUT NEVER UPSIDE DOWN. INSTALL IN LINE WITH WATER FLOW DIRECTION IF POSSIBLE. SIZE THE UNITS AS SHOWN ON THE DRAWINGS AND/OR PER THE TABLES SHOWN ABOVE.

3 WATER HAMMER ARRESTER DETAILS

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1 PLUMBING WATER PIPING PLAN
1/8" = 1'-0"



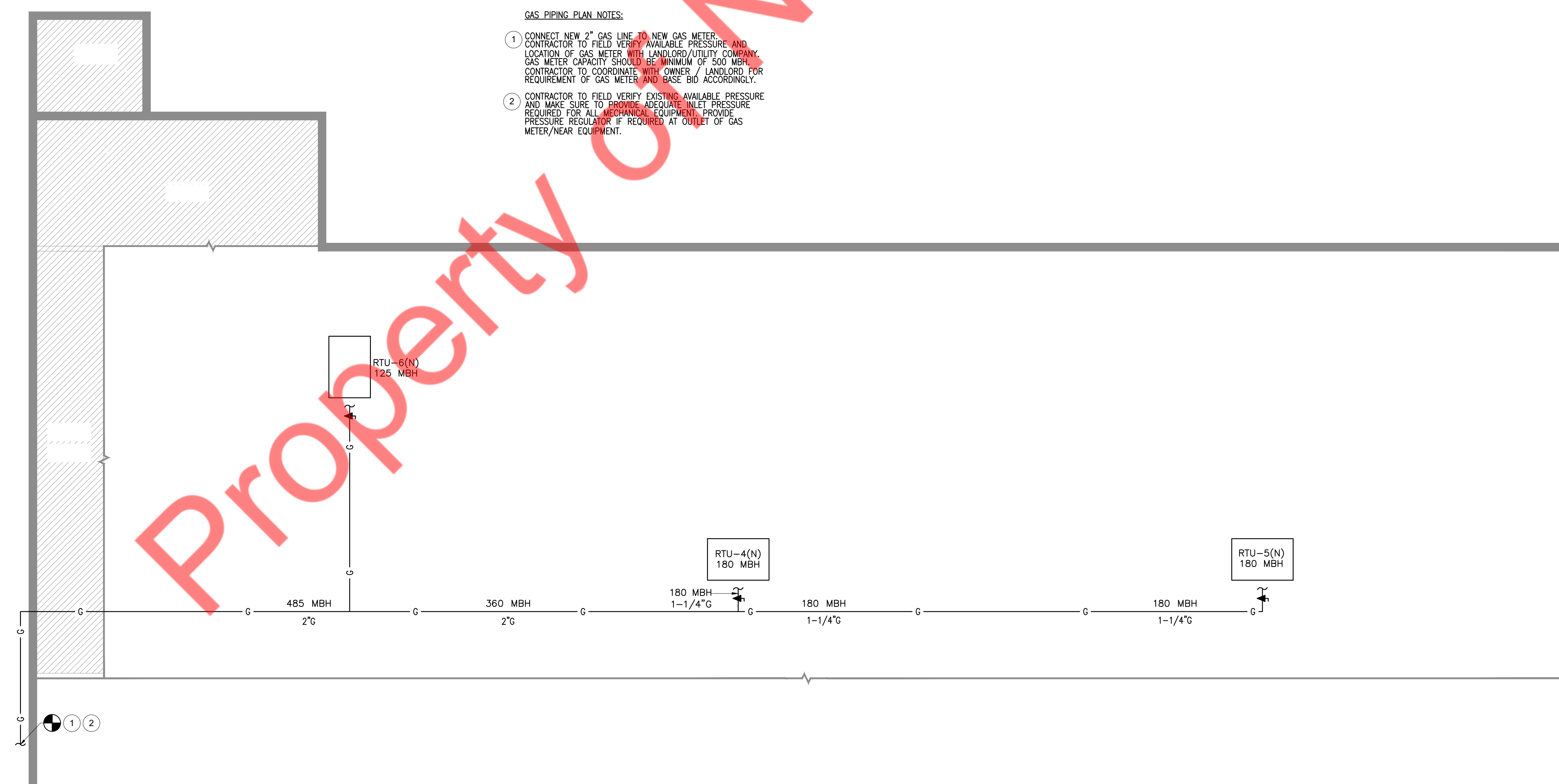
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PLUMBING
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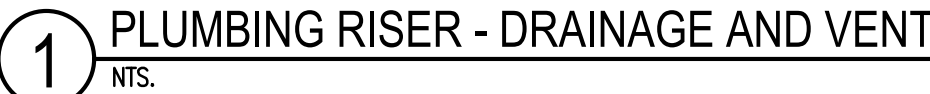


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GAS PLAN P3.0



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



2 PLUMBING RISER - WATER
NTS.

3 PLUMBING RISER - GAS
NTS.

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FOR CONSTRUCTION : 05.21.24

PLUMBING RISERS & SCHEDULES P4.0