PLUMBING GENERAL NOTES

I. GENERAL REQUIREMENTS:

- PLUMBING CONTRACTOR IS TO FURNISH AND PAY FOR ALL LABOR, MATERIAL, EQUIPMENT, PERMITS & FEES REQUIRED FOR THE COMPLETE INSTALLATION OF ALL SYSTEMS IN THIS SECTION OF WORK.
- ALL WORK IS TO BE PERFORMED IN ACCORDANCE WITH NC PLUMBING CODE AND ALL OTHER APPLICABLE CODES. PC IS TO COORDINATE W/ G.C. IN REGARDS TO PROJECT TIMELINE, WORK HOURS, AS WELL AS ANY BONDING OR INSURANCE REQUIREMENTS.
- ALL PLUMBING FIXTURES AND PLUMBING SYSTEM EQUIPMENT SHALL BE PROVIDED COMPLETE WITH ALL ACCESSORIES, HANGERS, VALVES, STOPS, TAILPIECES, TRAPS, FAUCETS, STRAINERS, ETC REGARDLESS OF PRESENCE ON PLANS. SEE FIXTURE SCHEDULE.
- ALL EQUIPMENT, MATERIALS AND INSTALLATION SHALL BE GUARANTEED TO BE FREE OF DEFECTS FOR A PERIOD OF ONE (1) YEAR AFTER FINAL ACCEPTANCE OF WORK OR IN ACCORDANCE WITH THE MANUFACTURER'S STANDARD GUARANTEE, IF LONGER. EXISTING EQUIPMENT IS EXCLUDED FROM WARRANTY REQUIREMENT.
- THESE DRAWINGS ARE DIAGRAMMATIC AND SHOW GENERAL LOCATION AND ARRANGEMENT OF ALL MATERIALS AND EQUIPMENT. THE DRAWINGS SHALL BE FOLLOWED AS CLOSELY AS BUILDING CONSTRUCTION AND ALL OTHER WORK WILL PERMIT.
- DO NO SCALE DRAWINGS FOR MEASUREMENT.
- INFORMATION GIVEN IN SCHEDULES INCLUDES BOTH DESCRIPTION OF PRODUCT AND MANUFACTURER'S MODEL #. IF CONFLICT IS PRESENT BETWEEN DESCRIPTION AND MODEL #, EQUIPMENT DESCRIPTION SHALL TAKE PRECEDENT. IN CASE OF CONFLICT BETWEEN THE PLANS AND NOTES/SPECIFICATIONS OR CONFLICT BETWEEN INFORMATION PRESENTED ON THE PLANS OR IN THE NOTES/SPECIFICATIONS, THEN THE MOST RESTRICTIVE SHALL TAKE PRECEDENT.
- BEFORE BID PC IS RESPONSIBLE FOR CLARIFYING W/ G.C. ANY CONFUSION IN REGARDS TO RESPONSIBILITY OF WORK TO BE PERFORMED OR MATERIALS TO BE PROVIDED. THE SUBMITTAL OF THE BID BY THE CONTRACTOR WILL BE HELD AS PROOF THAT THE CONTRACTOR UNDERSTANDS THOROUGHLY AND COMPLETELY THE SCOPE OF THE WORK INVOLVED, AND HAS INCLUDED ON THE BID ALL THE NECESSARY ITEMS TO CARRY OUT THIS SECTION OF WORK.
- AS SOON AS POSSIBLE (AND NOT MORE THAN 30 DAYS) AFTER CONTRACT IS SIGNED, THE PC SHALL PROVIDE SUBMITTALS OF PLUMBING EQUIPMENT HE/SHE INTENDS TO PURCHASE FOR REVIEW AND COMMENT BY THE ENGINEER. ENGINEER IS TO APPROVE SUBMITTALS BEFORE EQUIPMENT IS ORDERED.
- 10. P.C. & G.C. SHALL CONSULT OWNER OR OWNER'S REPRESENTATIVE REGARDING DISPOSAL, STORING OR RESALE OF ALL DEMO/REMOVED EQUIPMENT AND
- ALL EXISTING EQUIPMENT AND SYSTEMS ARE ASSUMED BY ENGINEER TO BE IN GOOD WORKING ORDER. BEFORE BEGINNING WORK P.C. IS TO ENSURE ANY EQUIPMENT & SYSTEMS TO REMAIN ARE PROPERLY FUNCTIONING. NOTIFY G.C. IMMEDIATELY IF PROBLEMS ARE DISCOVERED.
- 12. ALL QUESTIONS MUST BE SUBMITTED IN RFI FORMAT TO THE ARCHITECT AND MUST BE ADDRESSED BY THE APPROPRIATE DESIGNER OF RECORD PROIR TO BECOMING A PROPOSED CHANGE ORDER.

II. DIVISION OF WORK:

- ALL ROOF PENETRATIONS, FLASHING, ETC ARE TO BE PERFORMED BY ROOFING CONTRACTOR.
- ALL LOW VOLTAGE WIRING RELATED TO PLUMBING EQUIPMENT AND SYSTEMS IS THE RESPONSIBILITY OF THE PLUMBING CONTRACTOR. ALL HIGH VOLTAGE CONNECTIONS TO PLUMBING EQUIPMENT, INCLUDING DISCONNECTS TO BE PROVIDED AND INSTALLED BY E.C.
- G.C. TO BE RESPONSIBLE FOR PROVIDING AND INSTALLING ANY ACCESS DOORS RELATED TO PLUMBING SYSTEM (W/ EXCEPTION OF CLEANOUT COVERS, BY P.C.). P.C. RESPONSIBLE FOR COMMUNICATING TO G.C. SIZE AND LOCATION OF REQ'D
- PLUMBING CONTRACTOR IS TO EMPLOY THE SERVICES OF THE G.C. FOR CUTTING AND PATCHING OF WALLS, FLOORS & CEILINGS RELATED TO THE INSTALLATION OF
- 5. G.C. RESPONSIBLE FOR PAINTING OF GAS PIPING ON EXTERIOR OF BUILDING. P.C. RESPONSIBLE FOR CLEANING AND PREPARING PIPING FOR PAINT, COORDINATE
- G.C. TO BE RESPONSIBLE FOR PROVIDING AND INSTALLING ANY WATER HEATER PLATFORMS, EITHER FLOOR/WALL MOUNTED OR SUSPENDED. P.C. TO COMMUNICATE REQ'S TO G.C.
- 7. ALL GAS PIPING IS BY PLUMBING CONTRACTOR.

PLUMBING EQUIPMENT & SYSTEMS.

8. WATER HEATER VENT BY MECHANICAL CONTRACTOR.

III. MATERIALS:

- 1. ALL MATERIALS SHALL BE NEW UNLESS OTHERWISE SHOWN OR SPECIFIED.
- 2. ALL MATERIALS INSTALLED IN RETURN PLENUM ARE TO BE PLENUM RATED.
- PIPING MATERIALS AND FITTINGS SHALL BE AS FOLLOWS: WASTE & VENT (ABOVE & BELOW SLAB): PVC PIPE, PVC SOCKET FITTINGS, AND SOLVENT-CEMENTED
- FITTINGS DOMESTIC WATER (BELOW SLAB)

TYPE 'K' COPPER

DOMESTIC WATER (ABOVE SLAB): TYPE 'L' COPPER WITH SWEATED SOCKET FITTINGS. THREADED FITTINGS MAY BE USED AT VALVES, FIXTURES & SIMILAR. GAS PIPING (ABOVE SLAB):

SCHEDULE 40 BLACK STEEL PIPE W/ THREADED FITTINGS. APPROVED FLEXIBLE GAS PIPING MAY BE USED AT CONNECTION TO EQUIPMENT.

- INSULATION IS REQUIRED ON ALL WATER SUPPLY PIPING (COLD & HOT) ABOVE FINISHED FLOOR. INSULATION TO BE EQUAL TO "ARMAFLEX" PIPE INSULATION W/ SEALED OR TAPED SEAMS. CW LINE INSULATION TO BE MIN. $\frac{1}{2}$ " THICK. HW LINE INSULATION TO HAVE A MINIMUM R FACTOR OF 6.5 (1") OR IN ACCORDANCE W/ LOCAL CODES WHICHEVER IS GREATER.
- PROVIDE HANGERS & SUPPORTS APPROVED FOR USE BY 2012 NC PLUMBING
- ANY PLUMBING FIXTURES WITH A COMMON SHUT-OFF VALVE (I.E. PRE-RINSE, KITCHEN SINK, MOP SINK) ARE TO INCLUDE A CHECK VALVE ON THE HOT & COLD WATER VALVES TO PREVENT INTERCONNECTION OF HOT & COLD WATER LINES.

IV. COORDINATION:

- BEFORE BEGINNING WORK INVERT ELEVATIONS SHALL BE ESTABLISHED. PC IS TO ENSURE PROPER SLOPES OF ALL WASTE AND STORM PIPING CAN BE MAINTAINED, CONTACT ENGINEER IMMEDIATELY IF PROBLEM/ISSUE IS DISCOVERED.
- P.C. TO COORDINATE LOCATION OF ALL ROOF PENETRATIONS W/ ROOFING CONTRACTOR, MECHANICAL CONTRACTOR & LANDLORD. P.C. & M.C. TO COORDINATE TO ENSURE NO PLUMBING VENTS ARE LOCATED WITHIN 10' OF ANY OUTSIDE AIR INTAKES.
- P.C. TO COORDINATE W/ G.C. AND ARCH PLANS TO ENSURE NECESSARY BACKING/SUPPORTS ARE INSTALLED TO ALLOW INSTALLATION OF PLUMBING FIXTURES.
- THE PLUMBING CONTRACTOR SHALL COORDINATE CLOSELY WITH ALL OTHER TRADES TO AVOID CONFLICT AND ENSURE OTHER TRADES PROVIDE MEASURES TO ACCOMMODATE PLUMBING WORK (I.E. ACCESS DOORS, SLAB/WALL/ROOF OPENINGS, ELECTRICAL CONNECTIONS, ETC)
- PIPING SHOULD BE COORDINATED WITH ALL STRUCTURAL FOOTINGS AND FOUNDATIONS. PIPE SHOULD BE OFFSET TO AVOID CONTACT WITH FOOTINGS AND FOUNDATION WALLS. IF PIPING MUST RUN UNDERNEATH A FOOTING OR THROUGH A FOUNDATION WALL, THE PIPE MUST BE INSTALLED WITH A RELIEVING ARCH OR IN A PIPE SLEEVE.
- P.C. TO REFER TO ARCHITECTURAL DRAWINGS FOR MOUNTING HEIGHTS OF PLUMBING FIXTURES.

- P.C. TO FOLLOW MANUFACTURER'S INSTRUCTIONS WHEN INSTALLING PLUMBING EQUIPMENT. ENSURE REQUIRED MAINTENANCE ACCESS AND CLEARANCES ARE MAINTAINED. IF CONFLICT EXISTS BETWEEN THESE PLANS AND MFG INSTRUCTIONS CONTACT ENGINEER.
- P.C. RESPONSIBLE FOR EXECUTING ALL CODE REQUIRED TESTS AND INSPECTIONS, INCLUDING BUT NOT LIMITED TO, LEAK & PRESSURE TESTING OF GAS, WASTE, VENT & WATER PIPING AND SANITIZING OF WATER PIPING.
- ENSURE PIPING LOCATED ON EXTERIOR WALLS (OR OTHER WALLS EXPOSED TO FREEZING CONDITIONS) IS INSTALLED ON WARM-SIDE OF WALL INSULATION.
- ANY NOTCHING, DRILLING, BORING OR OTHER ALTERATION TO BUILDING STRUCTURE SHALL BE PERFORMED IN A CODE APPROVED METHOD AND NOT THREATEN THE INTEGRITY OF THE BUILDING STRUCTURE.
- SUPPORT ALL PIPING IN ACCORDANCE W/ 2012 NC PLUMBING CODE. ANY SUSPENDED MATERIALS SHALL BE DIRECTLY SUPPORTED BY THE BUILDING
- PROVIDE A U.L. LISTED ASSEMBLY FOR ALL PENETRATIONS THRU FIRE RATED WALLS, FLOORS & CEILINGS.
- PENETRATIONS OF ALL EXTERIOR WALLS, FLOORS AND CEILINGS SHALL BE SEALED IN AN AIR TIGHT MANNER AND IN ACCORDANCE W/ 2012 NCECC APPENDIX 2 DETAILS.
- CLEANOUT PLUGS SHALL BE INSTALLED IN ACCORDANCE WITH PLUMBING CODE REQUIREMENTS. PROVIDE CLEANOUTS AS PLANS INDICATED AND AT THE BASE OF ALL WASTE STACKS, AT EVERY FOUR 45 DEGREE TURNS, AT EVERY 100 FEET, AND AT THE BASE OF ALL ROOF LEADERS. CLEANOUTS SHALL BE PLACED IN READILY ACCESSIBLE LOCATIONS.
- SUPPLY BRANCH LINES SERVING MORE THAN (1) FIXTURE SHALL INCLUDE SHUT-OFF VALVE, LABEL VALVE AND LOCATE AS CLOSE TO RISER/MAIN AS POSSIBLE. (NCPC
- 10. VALVES NOT DIRECTLY AT EQUIPMENT SHALL BE LABELED INDICATING THE FIXTURE OR AREA SERVED. (NCPC 606.4)
- 11. WATER HEATER SHALL BE FILLED WITH WATER AND PURGED AS SOON AS INSTALLED
- 12. COPPER PIPING SHALL BE PROTECTED AGAINST CONTACT WITH MASONRY OR DISSIMILAR METALS. ALL HANGERS, SUPPORTS, ANCHORS, AND CLIPS SHALL BE COPPER OR COPPER PLATED. WHERE COPPER PIPING IS CARRIED ON IRON TRAPEZE HANGERS WITH OTHER PIPING, SATISFACTORY AND PERMANENT ELECTROLYTIC ISOLATION MATERIAL SHALL PROTECT THE COPPER AGAINST CONTACT WITH OTHER METALS.

OR IN NO EVENT LATER THAN GAS/ELECTRIC HOOK-UP.

- WHERE COPPER PIPING IS SLEEVED THROUGH MASONRY, SLEEVES SHALL BE COPPER OR RED BRASS. WHERE COPPER MUST BE CONCEALED IN A MASONRY PARTITION OR AGAINST MASONRY, CONTACT SHALL BE PREVENTED BY COATING THE COPPER HEAVILY WITH ASPHALTIC ENAMEL AND PROVIDING 15# ASPHALT SATURATED FELT BETWEEN THE PIPE AND MASONRY.
- 14. ALL PIPE INSULATION SHALL RUN CONTINUOUSLY THROUGH FLOORS, WALLS, AND PARTITIONS. PIPE INSULATION SHALL BE MITERED AT ELBOWS AND TEES TO ENSURE COMPLETE COVERAGE OF PIPING.
- 15. PROVIDE SHUT OFF VALVES ON THE FIXTURE SUPPLY TO EACH PLUMBING FIXTURE,

APPLIANCE, OR MECHANICAL EQUIPMENT.

- 16. VACUUM BREAKERS SHALL BE PROVIDED FOR ALL FIXTURES TO WHICH HOSES MAY BE ATTACHED. VACUUM BREAKERS SHALL BE PERMANENTLY ATTACHED.
- 17. THE PLUMBING CONTRACTOR SHALL PROVIDE WATER HAMMER PROTECTION ON ALL WATER DISTRIBUTION PIPING SERVING EQUIPMENT W/ QUICK CLOSING VALVES (ICE MAKERS, DISHWASHERS, FLUSH VALVES, WASHING MACHINES, WATER COOLERS, ETC.) SEE SHOCK ARRESTOR SCHEDULE.
- 18. ACCESS DOORS TO BE PROVIDED FOR ALL VALVES AND DEVICES REQUIRING ACCESS WHEN LOCATED IN WALLS OR ABOVE INACCESSIBLE CEILING CONSTRUCTION. ACCESS DOORS TO BE RATED WHERE INSTALLED IN RATED
- 19. THE PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL PLUMBING EQUIPMENT FROM FOREIGN MATERIAL DURING CONSTRUCTION (PAINT, SPACKLE, ETC.). UPON COMPLETION OF WORK THE PLUMBING CONTRACTOR SHALL CLEAN, WASH, ETC ALL ITEMS AND EQUIPMENT WITHIN HIS SCOPE OF WORK AND LEAVE ALL ITEMS BRIGHT AND CLEAN.
- 20. PROVIDE PRESSURE REDUCING VALVE IF INCOMING WATER PRESSURE EXCEEDS 80
- 21. NO INSULATION PERMITTED ON BACKFLOW PREVENTOR ASSEMBLY.

PLUMBING FIXTURE SPECIFICATIONS AND CONNECTION SCHEDULE

									FAUCET/VALV	'E		DRA	AIN			PIPE S	SIZES			
MAF	RK	FIXTURE	TYPE	MANUFACTURER	MODEL NO.	MATERIAL	STYLE	MANUFACT. MODEL NO.	SPOUT	HANDLES	CENTERS	TYPE	SIZE	SUPPLIES AND STOPS	WASTE		CW	HW	MOUNTING	REMARKS
P-1		WATER CLOSET	FLUSH TANK	american Standard	2835.128	VITREOUS CHINA	ADA ELONGATED	-	-	-	-	-	-	WATTS Q894AC12	3"	2"	у "	1	FLOOR	PROVIDE OPEN FRONT SEAT WITH NO LID.
P-2	2	LAVATORY	UNDER MOUNT	KOHLER	K-2881	VITREOUS CHINA	ADA UNDERMOUNT) AMER. STD. 6055.202 (W/ MIX VALVE)	CENTER	AUTO	4" 3-HOLE	GRID	1½"	WATTS Q894AB20	2"	""	ارا 2	ار 2	UND. CNTR.	W/ 1.0 GPM AERATOR. BARRIER FREE. DC PWR.
P-3	3	URINAL	WALL HUNG	american Standard	6590.001	VITREOUS CHINA	ADA TOP-SPUD	AMER. STD. 6063.101	-	-	-	-	-	-	2 ^{II}	1½"	3 ₄ "	1	WALL	SEE ARCH PLAN FOR MTG. HEIGHT. 1.0 GPF. AUTO VALVE (BATTERY POWERED).
P-4	ļ	SHOWER	PRE-FAB	BY OTHERS	BY OTHERS	FIBERGLASS	WALK-IN	-	-	-	-	FLOOR	2"	-	2"	11/2"	ارا 2	ا _ي ا 2	FLOOR	W/ PRESS. BAL. VALVE. SELECTION BY OTHERS.
P-4	w	SHOWER	PRE-FAB	BY OTHERS	BY OTHERS	FIBERGLASS	WALK-IN	-	-	-	-	FLOOR	2 ¹¹	-	2"	1½"	ار 2	ا _ي ا 2	FLOOR	W/ PRESS. BAL. VALVE. W/ OVERHEAD & HAND HELD SHOWER. SELECTION BY OTHERS.
P-4.	ŀA	SHOWER	PRE-FAB	BY OTHERS	BY OTHERS	FIBERGLASS	ADA	symmons s-4701	-	LEVER	-	FLOOR	2"	-	2"	1½"	ار 2	ا _ل ا ا	floor $\left\langle \right.$	SHOWER SELECTION BY OTHERS. W/ HAND SHOWER & SLIDE BAR. COORD. SEAT & BARS W/ ARCH.
P-5		WATER COOLER	HI-LO	-	-	-	-	-	-	-	-	-		WATTS LFQC894A	11/2"	1½"	у ₂ "	-	WALL	RE-UES EXISTING FIXTURE. NEW ACCESSORIES.
P-6	5	WATER CLOSET	FLUSH TANK	-	-	1 1	ADA -	-	-	-	-	-	-	WATTS Q894AC12	გ"	2"	h _п	1	FLOOR	RE-USE EXISTING FIXTURE. CONFIRM ADA. PROVIDE OPEN FRONT SEAT WITH NO LID. NEW ACCESSORIES.
P-7		SINK (22" x 19")	DROP-IN	-	-	- - -	- -	- -	-	-	-	CRUMB CUP	11/2"	WATTS Q894AB20	2"	11/2"	ν ₂ "	/ ₂ "	COUNTER	RE-USE EXISTING FIXTURE. NEW ACCESSORIES.
НВ		HOSE BIB	ANGLE	ZURN	Z1341-BFP	BRONZE	-	-	-	-	-	-	-	-	1	-	ارا 2	1	WALL	W/ VACUUM BREAKER. LOOSE KEY TYPE.
FD		FLOOR DRAIN	FINISHED FLOOR	ZURN	FD-2209	PVC	ADJUSTABLE	-	-	-	-	-	-	-	SEE PLAN	1	1	1	FLOOR (W/ BRASS GRATE. W/ DEEP SEAL TRAP.
FCC	0 (FLOOR CLEANOUT	ADJUSTABLE	ZURN	CO-2450	PVC BODY, NICKEL CVR.	FINISHED FLOOR	-	-	-	-	-	-	-	SEE PLAN	-	-	1	FLOOR	
WH	H-1	WATER HEATER	GAS DIR. VENT	RANAII WATER HEATERS	RL94i	TANKLESS GAS	WALL MTD.	-	-	-	-	-	-	-	1	-	3 ₄ "	3/II 4	WALL	199 MBH INPUT. 115V. 6GPM @ 50°F RISE. SET TO 110°F. SEE DETAIL.
WH	H-2	WATER HEATER	GAS DIR. VENT	RANAII WATER HEATERS	RL94i	TANKLESS GAS	WALL MTD.	-	-	-	-	-	-	-	1	-	3/ ₄ "	3 ₄ "	WALL	199 MBH INPUT. 115V. 6GPM @ 50°F RISE. SET TO 110°F. SEE DETAIL.

FLOOR DRAIN DETAIL

BRAND ARRESTORS ONLY.

- I. ALL FIXTURE COLORS & FINISHES TO BE APPROVED BY OWNER & ARCHITECT BEFORE PURCHASING. PROVIDE P-TRAP AND SUPPLY LINE SAFETY COVERS FOR ALL ADA SINK AND LAVATORY INSTALLATIONS.
- 3. WATER CLOSET HANDLES TO BE LOCATED ON "WIDE SIDE" OF STALL FOR ADA FIXTURES.

SEE DETAIL SHEET FOR ADDITIONAL ITEMS TO BE PROVIDED/INSTALLED W/ FIXTURES LISTED	ABOVE.

ENTURE LIVITO		NEO A MODEL (OR FOUND)
FIXTURE UNITS	UNIT SIZE (CONN. SIZE)	MFG & MODEL (OR EQUAL)
IND. FIXTURE	SEE FIXTURE SCHEDULE	SIOUX CHIEF "MINI-RESTER"
1-11	A (1/2")	SIOUX CHIEF "HYDRA-RESTER"
12 - 32	B (3/4")	SIOUX CHIEF "HYDRA-RESTER"
33-60	C (1")	SIOUX CHIEF "HYDRA-RESTER"
61-113	D (1")	SIOUX CHIEF "HYDRA-RESTER"
114-154	E (1")	SIOUX CHIEF "HYDRA-RESTER"

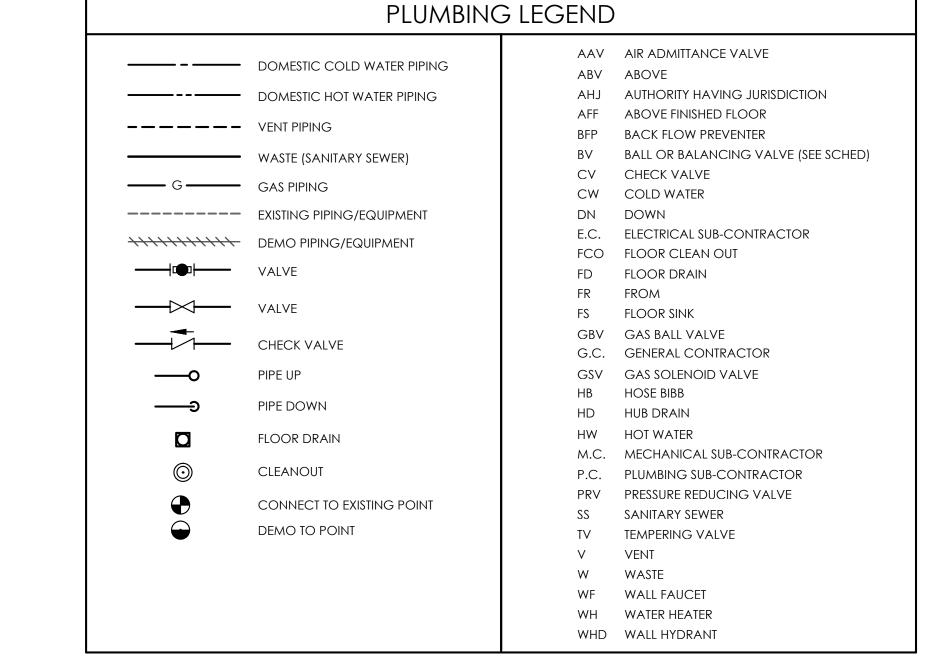
		VALVE SC	HEDULE
	TAG	DESCRIPTION	MFG & MODEL (OR EQUAL)
	BV-1	FULL-PORT BALL VALVE	WATTS LFB6081
	BV-2	BALANCING VALVE	BELL & GOSSETT CB (CIRCUIT SETTER PLUS, W/ TEST PORTS)
	CV-1	DBL CHECK VALVE	WATTS SD-2-MF (<1/2"), WATTS 9D (1/2"+)
	CV-2	BRONZE CHECK VALVE	WATTS CV
	PRV-1	PRESS. RED. VALVE	WATTS 223-S (SET TO 40 PSI)
	GBV-1	GAS BALL VALVE	APOLLO 80 SERIES
	GSV-1	GAS SOLENOID VALVE	BY OTHERS
$\angle 1 $	NOTES:	1	

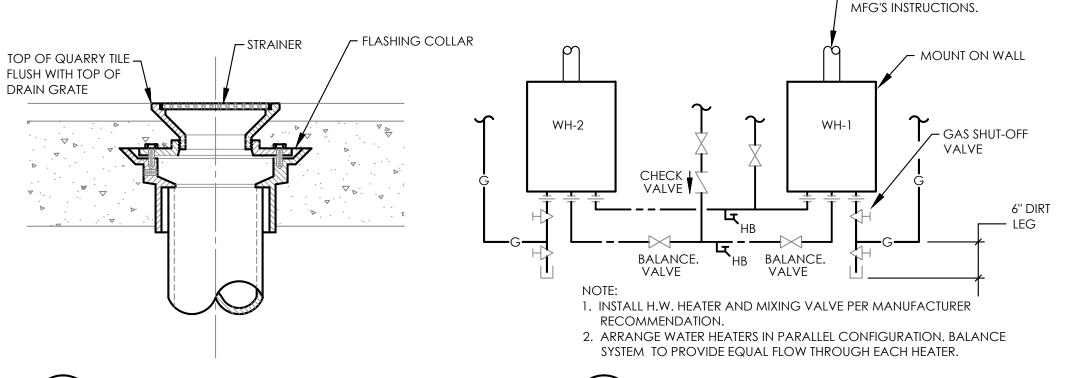
SEE PLAN, RISERS, SCHEDULES FOR ARRESTER LOCATIONS. IF LOCATION NOT

INDICATED INSTALL IN ACCORDNCE W/ MFG GUIDELINES.

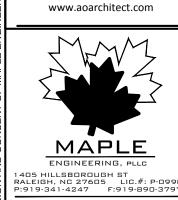
SEE PLAN FOR SIZE. VALVE SIZE TO EQUAL LINE SIZE. BALL VALVES TO INCLUDE REMOVABLE HANDLES. B. IF AVAILABLE, VALVES MAY BE THREADED Φ R SWEATED CONNECTIONS. USE EXTREME CARE AND LOW TEMP SOLDER TO PROTECT VALVE SEATS IF SWEATED CONNECTIONS ARE USED.

> TOP SUITABLE FOR FINISHED FLOOR, TILE, CARPET, CONC., ETC. FINISH FLOOR LEVEL





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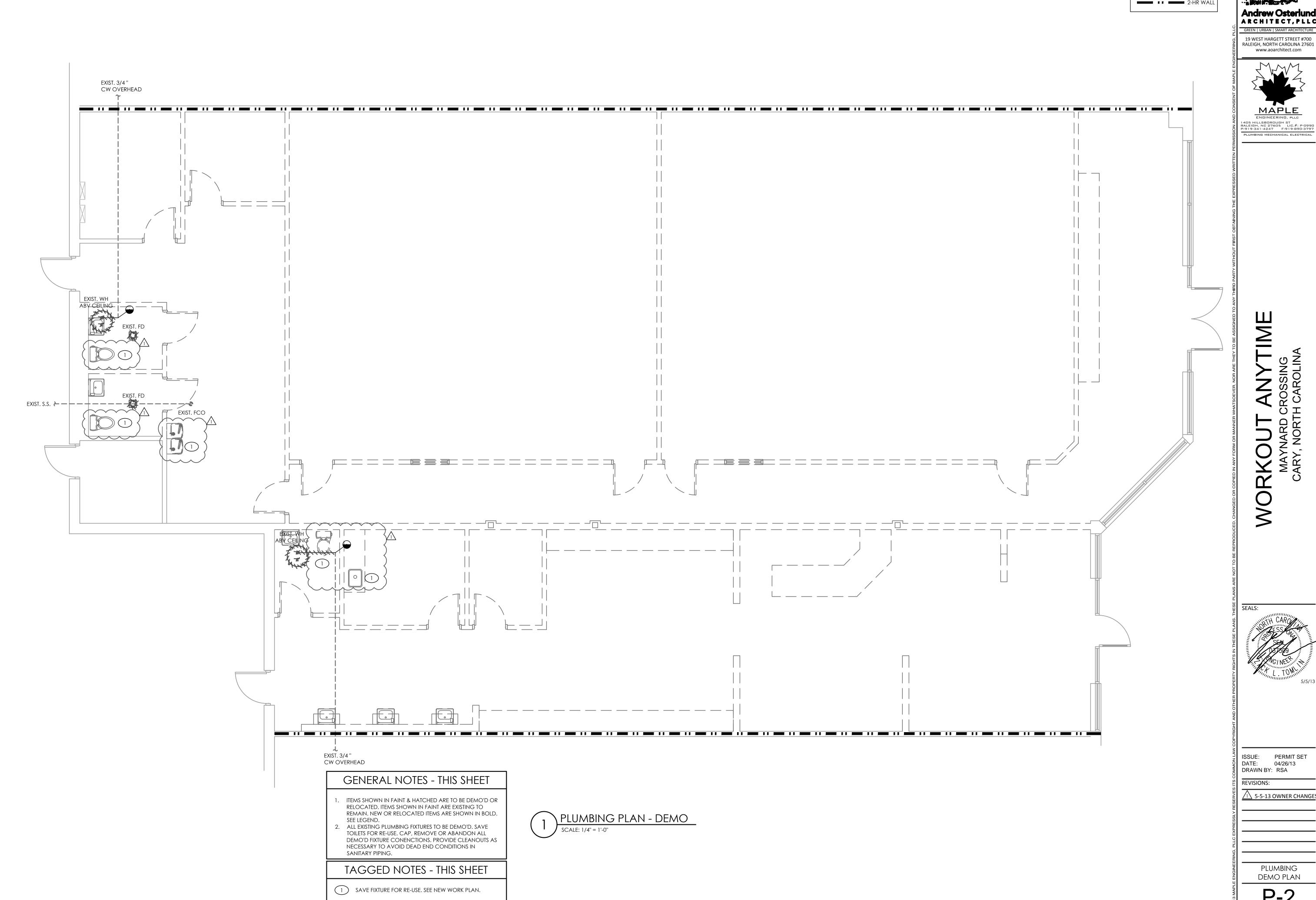
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PLUMBING

SCHEDULES

WATER HEATER DETAIL

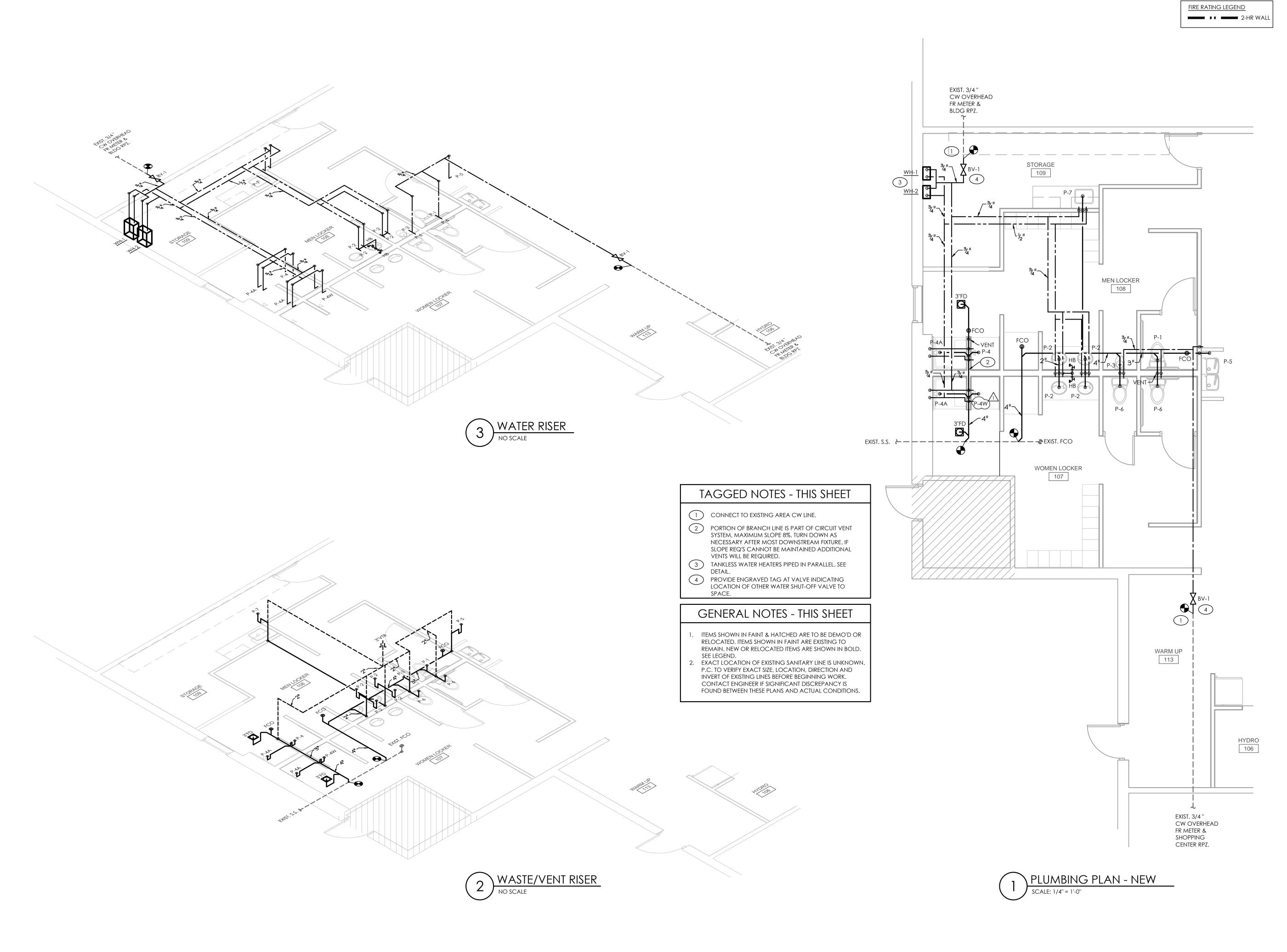
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FIRE RATING LEGEND

P-2



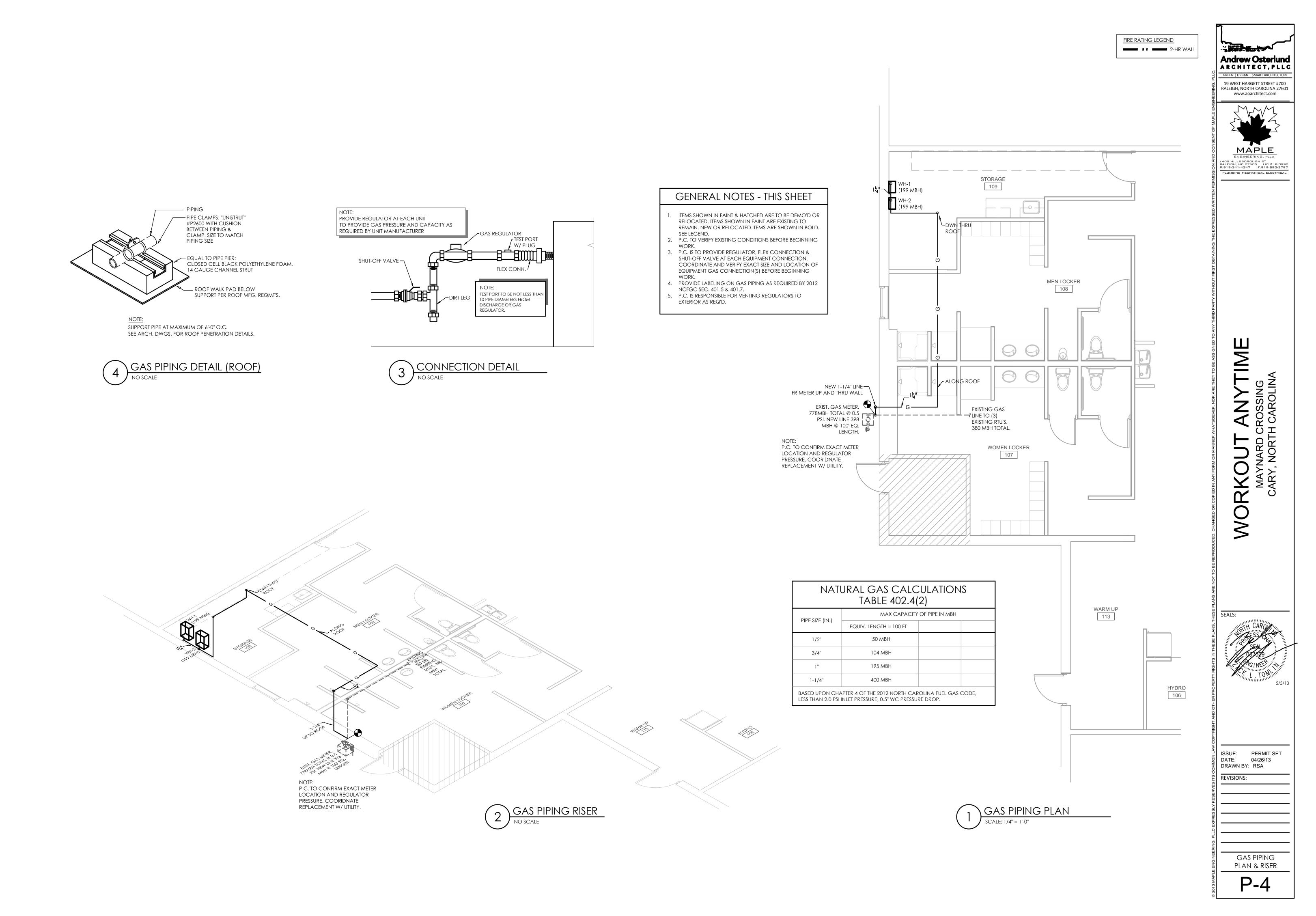
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ISSUE: PERMIT SET DATE: 04/26/13 DRAWN BY: RSA

REVISIONS:

5-5-13 OWNER CHANGES

PLUMBING PLAN & RISERS P-3



HVAC GENERAL NOTES

I. GENERAL REQUIREMENTS:

- MECHANICAL CONTRACTOR IS TO FURNISH AND PAY FOR ALL LABOR, MATERIAL EQUIPMENT, PERMITS & FEES REQUIRED FOR THE COMPLETE INSTALLATION OF ALL SYSTEMS IN THIS SECTION OF WORK.
- 2. ALL WORK IS TO BE PERFORMED IN ACCORDANCE WITH NC MECHANICAL CODES AND ALL OTHER APPLICABLE CODES. MC IS TO COORDINATE W/ G.C. IN REGARDS TO PROJECT TIMELINE, WORK HOURS, AS WELL AS ANY BONDING OR INSURANCE
- ALL MECHANICAL EQUIPMENT SHALL BE PROVIDED COMPLETE WITH ALL ACCESSORIES, HANGERS, SUPPORTS, CONTROLS, ETC FOR A FULLY FUNCTIONING SYSTEM REGARDLESS OF PRESENCE ON PLANS.
- 4. ALL EQUIPMENT, MATERIALS AND INSTALLATION SHALL BE GUARANTEED TO BE FREE OF DEFECTS FOR A PERIOD OF ONE (1) YEAR AFTER FINAL ACCEPTANCE OF WORK OR IN ACCORDANCE WITH THE MANUFACTURER'S STANDARD GUARANTEE, IF LONGER. ALL COMPRESSORS ARE TO INCLUDE FIVE (5) YEAR WARRANTY. EXISTING EQUIPMENT IS EXCLUDED FROM WARRANTY REQUIREMENT.
- 5. THESE DRAWINGS ARE DIAGRAMMATIC AND SHOW GENERAL LOCATION AND ARRANGEMENT OF ALL MATERIALS AND EQUIPMENT. THE DRAWINGS SHALL BE FOLLOWED AS CLOSELY AS BUILDING CONSTRUCTION AND ALL OTHER WORK WILL
- 6. DO NO SCALE DRAWINGS FOR MEASUREMENT.
- 7. ALL DUCT DIMENSIONS SHOWN ARE INTERIOR DUCT DIMENSIONS.
- 8. INFORMATION GIVEN IN SCHEDULES INCLUDES BOTH DESCRIPTION OF PRODUCT AND MANUFACTURER'S MODEL #. IF CONFLICT IS PRESENT BETWEEN DESCRIPTION AND MODEL #, EQUIPMENT DESCRIPTION SHALL TAKE PRECEDENT. IN CASE OF CONFLICT BETWEEN THE PLANS AND NOTES/SPECIFICATIONS OR CONFLICT BETWEEN INFORMATION PRESENTED ON THE PLANS OR IN THE NOTES/SPECIFICATIONS, THEN THE MOST RESTRICTIVE SHALL TAKE PRECEDENT.
- 9. BEFORE BID MC IS RESPONSIBLE FOR CLARIFYING W/ G.C. ANY CONFUSION IN REGARDS TO RESPONSIBILITY OF WORK TO BE PERFORMED OR MATERIALS TO BE PROVIDED. THE SUBMITTAL OF THE BID BY THE CONTRACTOR WILL BE HELD AS PROOF THAT THE CONTRACTOR UNDERSTANDS THOROUGHLY AND COMPLETELY THE SCOPE OF THE WORK INVOLVED, AND HAS INCLUDED ON THE BID ALL THE NECESSARY ITEMS TO CARRY OUT THIS SECTION OF WORK.
- 10. AS SOON AS POSSIBLE (AND NOT MORE THAN 30 DAYS) AFTER CONTRACT IS SIGNED, THE MC SHALL PROVIDE SUBMITTALS OF MECHANICAL EQUIPMENT HE/SHE INTENDS TO PURCHASE FOR REVIEW AND COMMENT BY THE ENGINEER. ENGINEER IS TO APPROVE SUBMITTALS BEFORE EQUIPMENT IS ORDERED.
- 11. M.C. & G.C. SHALL CONSULT OWNER OR OWNER'S REPRESENTATIVE REGARDING DISPOSAL, STORING OR RESALE OF ALL DEMO/REMOVED EQUIPMENT AND MATERIALS.
- 12. ALL EXISTING EQUIPMENT AND SYSTEMS ARE ASSUMED BY ENGINEER TO BE IN GOOD WORKING ORDER. BEFORE BEGINNING WORK M.C. IS TO ENSURE ANY EQUIPMENT & SYSTEMS TO REMAIN ARE PROPERLY FUNCTIONING. NOTIFY G.C. IMMEDIATELY IF PROBLEMS ARE DISCOVERED.
- 13. ALL QUESTIONS MUST BE SUBMITTED IN RFI FORMAT TO THE ARCHITECT AND MUST BE ADDRESSED BY THE APPROPRIATE DESIGNER OF RECORD PROIR TO BECOMING A PROPOSED CHANGE ORDER.
- 14. UPON COMPLETION OF WORK M.C. IS TO PROVIDE OWNER W/ COMPLETE BOUND SET OF ALL EQUIPMENT OPERATION & MAINTENANCE MANUALS, PACKAGE IS ALSO TO INCLUDE AND WARRANTY & GUARANTEE INFORMATION.
- 15. M.C. IS TO PROVIDE TRAINING TO OWNER OR OWNER'S REPRESENTATIVE IN REGARDS TO OPERATION, FUNCTION, AND MAINTENANCE OF ALL MECHANICAL EQUIPMENT, CONTROLS, ETC.

II. DIVISION OF WORK:

- ALL ROOF WORK INCLUDING PENETRATIONS, OPENINGS, FLASHING, CURB INSTALLS, ETC ARE TO BE PERFORMED BY ROOFING CONTRACTOR. M.C. RESPONSIBLE FOR PROVIDING ANY ROOF CURBS, EQUIPMENT RAILS, VENTS, ETC AND COMMUNICATING ALL REQ'S WITH G.C. & ROOFING CONTRACTOR.
- ALL LOW VOLTAGE WIRING RELATED TO MECHANICAL EQUIPMENT AND SYSTEMS IS THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR (ANY LOW VOLTAGE FIRE ALARM WIRING TO BE BY E.C.). ALL HIGH VOLTAGE CONNECTIONS TO MECHANICAL EQUIPMENT, TO BE PROVIDED AND INSTALLED BY E.C. (SEE EQUIPMENT SCHEDULE FOR DISCONNECT RESPONSIBILITY).
- 3. G.C. TO BE RESPONSIBLE FOR PROVIDING AND INSTALLING ANY ACCESS DOORS (WALL, FLOOR, CEILING) RELATED TO MECHANICAL SYSTEM. M.C. RESPONSIBLE FOR COMMUNICATING TO G.C. SIZE AND LOCATION OF REQ'D ACCESS DOOR(S).
- 4. MECHANICAL CONTRACTOR IS TO EMPLOY THE SERVICES OF THE G.C. FOR CUTTING AND PATCHING OF WALLS, FLOORS & CEILINGS RELATED TO THE INSTALLATION OF MECHANICAL EQUIPMENT & SYSTEMS.
- 5. G.C. RESPONSIBLE FOR PAINTING OF ANY EXPOSED DUCT, PIPING, GRILLES, ETC. M.C. RESPONSIBLE FOR CLEANING AND PREPARING ITEMS FOR PAINT, COORDINATE
- 6. G.C. TO BE RESPONSIBLE FOR PROVIDING AND INSTALLING ANY ACCESS PLATFORMS, GUARD RAILS, LADDERS, CONCRETE PADS. M.C. TO COMMUNICATE
- 7. G.C. TO BE RESPONSIBLE FOR PROVIDING AND INSTALLING ANY WALL LOUVERS BRICK VENTS OR SIMILAR. M.C. TO PROVIDE AND INSTALL ANY WALL CAPS.
- 8. ALL GAS PIPING IS BY PLUMBING CONTRACTOR.
- 9. WATER HEATER VENT BY MECHANICAL CONTRACTOR.

III. MATERIALS

- 1. ALL MATERIALS SHALL BE NEW UNLESS OTHERWISE SHOWN OR SPECIFIED.
- 2. ALL MATERIALS INSTALLED IN RETURN PLENUM ARE TO BE PLENUM RATED.
- 3. PROVIDE HANGERS & SUPPORTS APPROVED FOR USE BY 2012 NC MECHANICAL CODE.
- 4. ALL MAIN DUCTWORK (SUPPLY, RETURN, EXHAUST, OUTSIDE AIR) SHALL BE GALVANIZED SHEET METAL CONSTRUCTED IN ACCORDANCE WITH SMACNA STANDARDS. RUNOUTS FROM MAIN/BRANCH DUCTS MAY BE FLEXIBLE DUCT CONFORMING TO THE REQUIREMENTS OF UL 181 FOR CLASS 1 FLEXIBLE AIR DUCTS. MAX. LENGTH OF FLEX PER RUNOUT TO BE 6'-0" UNLESS SHOWN OTHERWISE.
- 5. NO FLEXIBLE DUCT ALLOWED FOR NEGATIVE PRESSURE EXHAUST APPLICATIONS.
- 6. ALL SUPPLY AND RETURN DUCTWORK AND PLENUMS SHALL BE INSULATED. INSULATION OF DUCTWORK IN UNCONDITIONED SPACE SHALL BE MINIMUM R-5 PER 2012 NCECC. INSULATION OF DUCTWORK OUTSIDE BUILDING THERMAL ENVELOPE (I.E. ROOF, ATTIC, CRAWLSPACE) SPACE SHALL BE MINIMUM R-8 PER 2012 NCECC.
- 7. CONCEALED SHEET METAL SUPPLY & RETURN DUCT MAY BE EXTERNALLY INSULATED WITH MINERAL FIBER BOARD OR BLANKET OR MAY BE INTERNALLY INSULATED WITH ACOUSTICAL DUCT LINER. EXPOSED SPIRAL DUCTWORK DOES NOT REQUIRE INSULATION UNLESS OTHERWISE NOTED (WHEN INSTALLED IN CONDITIONED SPACE).
- 8. OUTSIDE AIR DUCTWORK SHALL BE WRAPPED WITH 1" FIBERGLASS DUCT WRAP WITH VAPOR BARRIER.
- 9. ALL MAIN DUCTWORK (INCLUDING EXHAUST) TO BE SEALED ACCORDING TO 2012 NCECC AND AT A MINIMUM INCLUDE SEALING OF ALL DUCT SEAMS W/ NON-HARDENING MASTIC. SEALING BY TAPE ALONE NOT ALLOWED.
- 10. CONDENSATE DRAIN PIPING AND FITTINGS SHALL BE SCHEDULE 40 PVC. DRAINS FROM AIR HANDLING UNITS SHALL BE TRAPPED (2" MINIMUM). TRAPS ON INTERIOR OF BUILDINGS TO BE INSULATED.
- 11. VENT MATERIAL SERVING ANY GAS FIRED APPLIANCE TO BE LISTED & LABELED, PER MFG'S INSTRUCTIONS AND 2012 NC MECHANICAL CODE. IF CONFLICT IS NOTED CONTACT ENGINEER.
- 12. PLASTIC PIPE IS NOT ACCEPTABLE FOR GAS FIRED APPLIANCE VENTING UNLESS PIPING IS LISTED & LABELED FOR SUCH INSTALLATIONS.
- 13. ALL DAMPERS TO INCLUDE SET SCREW OR SIMILAR FEATURE FOR LOCKING IN
- 14. ALL FIRE SEALANTS TO BE U.L. LISTED AND APPROVED FOR USE W/ APPROPRIATE U.L PENETRATION DETAIL.
- 15. ALL PROGRAMMABLE THERMOSTATS TO INCLUDE BATTERY BACK-UP AND HAVE CAPABILITY TO SETBACK TO 55°F (HEATING) & 85°F (COOLING). AUTO-CHANGEOVER THERMOSTATS TO HAVE A MIN. 5°F DEADBAND.

IV. COORDINATION:

- THE MECHANICAL CONTRACTOR SHALL COORDINATE CLOSELY WITH ALL OTHER TRADES TO AVOID CONFLICT AND ENSURE OTHER TRADES PROVIDE MEASURES TO ACCOMMODATE MECHANICAL WORK (I.E. ACCESS DOORS, SLAB/WALL/ROOF OPENINGS, ELECTRICAL CONNECTIONS, ETC).
- 2 MECHANICAL CONTRACTOR SHALL VERIEY LOCATION OF ALL PENETRATIONS FOR RELIEF HOODS, OUTSIDE AIR HOODS, LOUVERS, AND WALL CAPS WITH ARCHITECT &
- 3. M.C. TO COORDINATE LOCATION OF ALL ROOF PENETRATIONS W/ ROOFING CONTRACTOR & LANDLORD. P.C. & M.C. TO COORDINATE TO ENSURE NO PLUMBING VENTS OR ANY OTHER SOURCES OF BUILDING EXHAUST ARE LOCATED WITHIN 10' OF ANY OUTSIDE AIR INTAKES.
- 4. LOCATE CEILING DIFFUSERS IN ACCORDANCE WITH ARCHITECTURAL REFLECTED CEILING PLANS (IF PROVIDED).

V. EXECUTION:

ABOVE FINISHED FLOOR.

- M.C. TO FOLLOW MANUFACTURER'S INSTRUCTIONS WHEN INSTALLING MECHANICAL EQUIPMENT. ENSURE REQUIRED MAINTENANCE ACCESS AND CLEARANCES ARE MAINTAINED. IF CONFLICT EXISTS BETWEEN THESE PLANS AND MFG INSTRUCTIONS CONTACT ENGINEER.
- 2. ALL PENETRATIONS THROUGH EXTERIOR WALLS & ROOF SHALL BE FLASHED & COUNTER-FLASHED IN A WATERPROOF MANNER.
- 3. SEAL ALL PENETRATIONS OF RATED WALLS, CEILING, FLOORS IN ACCORDANCE W/ APPROPRIATE U.L. PENETRATION DETAIL.
- 4. INSTALL ALL CONTROL DEVICES, INCLUDING THERMOSTATS AND SWITCHES, 4'-0"
- INDEPENDENT CERTIFIED TEST AND BALANCE CONTRACTOR SHALL BALANCE SYSTEM TO AIR QUANTITIES INDICATED ON PLANS AND IN ACCORDANCE W/ 2012 NCECC SEC. 503.2.9. M.C. TO PROVIDE OWNER'S REPRESENTATIVE & ENGINEER WITH COMPLETE BALANCE REPORT. MC RESPONSIBLE FOR PROVIDING ANY DAMPERS, VALVES, PORTS, ETC. NECESSARY FOR A COMPLETE SYSTEM BALANCE.
- 5. PENETRATIONS OF NON-RATED WALLS, PARTITIONS AND FLOOR OF COMBUSTIBLE CONSTRUCTION SHALL BE FIRESTOPPED WITH MATERIALS EQUIVALENT TO TWO INCHES OF WOOD. FIRESTOPPING SHALL COMPLY WITH ASTM E-814.
- ANY NOTCHING, DRILLING, BORING OR OTHER ALTERATION TO BUILDING STRUCTURE SHALL BE PERFORMED IN A CODE APPROVED METHOD AND NOT THREATEN THE INTEGRITY OF THE BUILDING STRUCTURE.
- 8. SUPPORT ALL DUCTWORK AND PIPING IN ACCORDANCE W/ 2012 NC MECHANICAL CODE. ANY SUSPENDED MATERIALS SHALL BE DIRECTLY SUPPORTED BY THE BUILDING
- 9. PENETRATIONS OF ALL EXTERIOR WALLS, FLOORS AND CEILINGS SHALL BE SEALED IN AN AIR TIGHT MANNER AND IN ACCORDANCE W/ 2012 NCECC APPENDIX 2 DETAILS. ALL PENETRATIONS OF WALLS, FLOORS & CEILINGS IN RETURN OR EXHAUST PLENUMS SHALL BE SEALED IN AN AIR TIGHT MANNER.
- 10. DUCT ACCESS DOORS TO BE PROVIDED AT ALL FIRE, RADIATION & SMOKE DAMPERS, SMOKE DETECTORS, CLEANOUTS AND ANY OTHER CODE REQUIRED LOCATIONS.
- 11. THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL MECHANICAL EQUIPMENT FROM FOREIGN MATERIAL DURING CONSTRUCTION (PAINT, SPACKLE, ETC.). UPON COMPLETION OF WORK THE MECHANICAL CONTRACTOR SHALL CLEAN, WASH, ETC ALL ITEMS AND EQUIPMENT WITHIN HIS SCOPE OF WORK AND LEAVE ALL ITEMS BRIGHT AND CLEAN.

EXISTING GAS/ELEC RTU SCHEDULE ELECTRICAL DATA GENERAL DATA ENT. AIR | TOTAL | SENS. | # OF | REHEAT | INPUT | esp motor fan ambient OUTPUT VOLTAGE MCA MOCP NOM. EER WT. MANUF. 'OFWG) (HP) \mid RPM \mid DB/WB (°F) \mid DB/WB (°F) \mid TON. (SEER) (LBS) (MBH) SERVED (MBH) STAGES (MBH) (MBH) (MBH) (V/PH) MODEL CARRIFR 0.70" MFG 93/76 150.0 GYM 550 1.0 N/A 120.0 208/3Ø 18TCFA07A2A CARRIER 0.70" MFG 70.0 115.0 11.0 702 1,2 GYM 550 1.0 93/76 80/67 56.0 N/A 92.0 208/3Ø RTU-2 36.0 ISTCEA07A2A5

N/A

115.0

92.0

208/3Ø

CONTROL W/ MOTION SENSOR (BY EC)

ARE ON IN EITHER MEN'S OR WOMEN'S

FAN TO OPERATE WHEN LIGHTS

LOCKER ROOM.

NOTES:

GYM

2400

1. EXISTING UNIT. M.C. TO ENSURE UNIT IS IN GOOD WORKING ORDER AND RE-BALANCE TO AIRFLOWS INDICATED. PROVIDE NEW THERMOSTAT. SEE THERMOSTAT SPEC.

0.70"

400

						FAN SC	CHEDULE				
UNIT NO.	SERVICE	AREA SERVED	CFM	S.P.	RPM	TYPE & ARRANGEMENT	MIN. MOTOR HP & VOLTAGE	MANUFACTURER & MODEL NO.	DRIVE	CONTROL SCHEME	NOTES
EF-1	EXHAUST	LOCKER RM	800	0.45"	MFG	CENTRIFUGAL, DOWNBLAST	1/4 HP 120V/1Ø	GREENHECK G-099-A	DIRECT	В	1,2,5,6
EF-2	EXHAUST	HYDRO	210	0.30"	MFG	CEILING, CENTRIFUGAL	83 WATTS ~~~120\/1\@~~~	GREENHECK ~~~\$P -A25 0~~~~	DIRECT	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	1,2,3,4
EF-3	EXHAUST	TANNING	600	0.30"	MFG	IN-LINE, CENTRIFUGAL	1/6 HP 120V/1Ø	GREENHECK SQ-100-B	DIRECT	Α	1,2,3,4,5
EF-4	EXHAUST	TANNING	600	0.30"	MFG	IN-LINE, CENTRIFUGAL	1/6 HP 120V/1Ø	GREENHECK SQ-100-B	DIRECT	А	1,2,3,4,5

80/67

70.0

56.0

NOTES:

- 1. SCREEN
- 4. INTEGRAL DISCONNECT SWITCH
- 2. BACKDRAFT DAMPER 5. SPEED CONTROLLER
- 3. COLOR BY ARCHITECT
- W/ MFG INSULATED ROOF CURB.

₹			

MFG

1.0

93/76

DIFFUSER SCHEDULE MODULE FRAME **MANUFACTURER** SYMBOL CFM PATTERN SERVICE NOTES DAMPER | MATERIAL SIZE SIZE TYPE & MODEL NO. $\langle A \rangle$ AS NOTED **AS NOTED** PERF. NO STEEL NOTE 2 TITUS PAS LAY-IN 1,2,3 PERF. AS NOTED **AS NOTED** 12x24 LAY-IN NO ALUM. NOTE 2 EXHAUST TITUS PAR-AA AS NOTED **AS NOTED** 12x12 **SURFACE** PERF. NO ALUM. EXHAUS NOTE 2 TITUS PAR-AA **AS NOTED** N/A 24x24 LAY-IN PERF. NO STEEL RETURN TITUS PAR 1,2,3

AS NOTED

GENERAL - MC RESPONSIBLE FOR VERIFYING QTY, COLOR & FRAME TYPE OF DIFFUSERS/GRILLES BEFORE ORDERING. PROVIDE SQR TO RND TRANSTIONS & PLENUMS AS NECESSARY.

1. DIFFUSER DESIGNATIONS ON PLANS AS FOLLOWS:

EXISTING -

NECK SIZE.

8x4

AS NOTED ABOVE

AIR QUANTITY

2. FINISH TO MATCH / BE ABLE MATCH CEILING OR WALL OR DOOR.

3. FACTORY INSULATION BACKING ON GRILLES EXPOSED TO NON-CONDITIONED AREAS. ALTERNATELY, FIELD SUPPLY AND INSTALL.

4. EXISTING DIFFUSER, CLEAN & RE-BALANCE TO AIRFLOW INDICATED, REPLACE IF DAMAGED.

Supplied CFM 400

					culations 2 NCMC Chp 4					
AH/RTU:	RTU-1	Spaces:	Cardio A	Area						
Occupancy	Area (sqft)	Occ. Density (ppl/1000 sqft)	# People	CFM/Sqft	CFM/Person	Area CFM	People CFM	Total Gross CFM	Vent. Eff*	Req'd CFM
Cardio/Selectorize	615	40	24.6	0.06	20	36.9	492	528.9	1	529
Cardio/Selectorize (Nat. Vent.)	800	Oper Openings:	40	Sqft	40	/	800	5.0%	>4.0%	0
*Ceiling Supply Cool Air (Space will be	unoccupied	or only partially o	occupied wl	hen in heati	ng)				Req'd CFM plied CFM	529 550

AH/RTU:	RTU-2	Spaces:	Weight	Lifting/Lo	cker Room	S				
Occupancy	Area (sqft)	Occ. Density (ppl/1000 sqft)	# People	CFM/Sqft	CFM/Person	Area CFM	People CFM	Total Gross CFM	Vent. Eff*	Req'd CFM
Free Weights	1423	10	14.23	0.06	20	85.38	284.6	369.98	1	370
Men's Locker	147	æ	-	0.5	(=)	74	-	74	Exhaust	74
Women's Locker	139	-	-	0.5	(= 0)	70	-	70	Exhaust	70
Ceiling Supply Cool Air (Space will be	unoccupied	or only partially o	ccupied w	hen in heati	ng)	•		Total	Req'd CFM	370
								Sup	plied CFM	550

AH/RTU): RTU-3	Spaces:	Office S	pace/Tar	nning/Hydro					
Occupancy	Area (sqft)	Occ. Density (ppl/1000 sqft)	# People	CFM/Sqft	CFM/Person	Area CFM	People CFM	Total Gross CFM	Vent. Eff*	Req'd CFM
Entry (Nat. Vent.)	232	Oper Openings:	20	Sqft	20	/	232	8.6%	>4.0%	0
Hydro	26	10	1	0.06	20	1.56	20	21.56	1	22
Office - 102	31	5	1	0.06	5	2	5	7	1.0	7
Office - 103	32	5	1	0.06	5	2	5	7	1.0	7
Path	288	5	1.44	0.06	0	17	0	17	1.0	17
Storage	61	0	0	0.12	0	7	0	7	1.0	7
Tanning - 104	28	10	1	0.06	20	1.68	20	21.68	1	22
Tanning - 105	28	10	1	0.06	20	1.68	20	21.68	1	22
Warm-up	167	20	3.34	0.06	20	10.02	66.8	76.82	1	77
*Ceiling Supply Cool Air (Space will b	e unoccupied	or only partially of	ccupied w	hen in heati	ng)			Total	Req'd CFM	180

THERMOSTAT SPEC.

M.C. IS TO PROVIDE AND INSTALL NEW THERMOSTATS FOR EXISTING RTU'S. EACH T-STAT IS TO INCLUDE A MASTER CONTROLLER LOCATED AT THE RECEPTION DESK (SEE PLAN) WITH A REMOTE TEMPERATURE SENSOR (SEE PLAN FOR LOCATION).

EACH T-STAT IS TO BE AUTO-CHANGEOVER TYPE W/ 5°F DEAD

EACH T-STAT IS TO BE CAPABLE OF RECEIVING AN ON/OFF (OPEN/CLOSED) AUXILIARY INPUT SIGNAL FROM THE SPACE LIGHTING/OCCUPANY CONTROLLER WHICH WILL TOGGLE THE THERMOSTAT BETWEEN OCCUPIED AND UNOCCUPIED MODE.

VERIFY T-STAT SETPOINTS W/ TENANT/OWNER.

ISTCEA07A2A5

T-STAT IS TO BE INCLUDE NUMBER OF HEATING AND COOLING STAGES AS REQUIRED BY RTU'S.

MECHANICAL LEGEND

RECTANGULAR DUCT ROUND METAL DUCT FLEX/RIGID ROUND DUCT ELBOW WITH TURNING VANES VOLUME DAMPER SUPPLY TAP WITH VOLUME DAMPER SUPPLY TAP SUPPLY DIFFUSER/GRILLE OR RISER RETURN REGISTER/GRILLE OR RISER

EXHAUST REGISTER/GRILLE OR RISER SIDEWALL DIFFUSER/GRILLE

CEILING EXHAUST FAN T-STAT MASTER CONTROLLER

DUCT SMOKE DETECTOR

REMOTE TEMPERATURE SENSOR 3/4" DOOR UNDER CUT CONNECT TO EXISTING

DEMO TO THIS POINT EXISTING EQUIP. OR DUCT TO BE REMOVED ---- EXISTING EQUIPMENT/DUCTWORK

ENERGY REQUIREMENTS:

MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT METHOD OF COMPLIANCE

PRESCRIPTIVE X ENERGY COST BUDGET THERMAL ZONE EXTERIOR DESIGN CONDITIONS WINTER DRY BULB SUMMER DRY BULB 93 INTERIOR DESIGN CONDITIONS WINTER DRY BULB SUMMER DRY BULB RELATIVE HUMIDITY 50% BUILDING HEATING LOAD (MBH) 94.3 BUILDING COOLING LOAD (MBH) 180.0 MECHANICAL SPACING CONDITIONING SYSTEM **EXISTING** DESCRIPTION OF UNIT HEATING EFFICIENCY EXISTING **COOLING EFFICIENCY EXISTING**

HEAT OUTPUT OF UNIT

EXISTING COOLING OUTPUT OF UNIT **EXISTING** TOTAL BOILER OUTPUT CHILLER TOTAL CHILLER OUTPUT LIST EQUIPMENT EFFICIENCIES EXISTING

DESIGNER'S STATEMENT: TO THE BEST OF MY KNOWLEDGE AND BELIEF, THE DESIGN OF THIS BUILDING COMPLIES WITH THE MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT REQUIREMENTS OF THE N.C.S. ENERGY CODE.

NAME: ZACK L. TOMLIN, PE TITLE: MECHANICAL ENGINEER Andrew Osterlund ARCHITECT, PLLC 19 WEST HARGETT STREET #700 RALEIGH, NORTH CAROLINA 27601 www.aoarchitect.com



PERMIT SET DATE: 04/26/13 DRAWN BY: RSA

REVISIONS: /1 5-5-13 OWNER CHANGE

MECHANICAL

SCHEDULES & NOTES

Andrew Osterlund

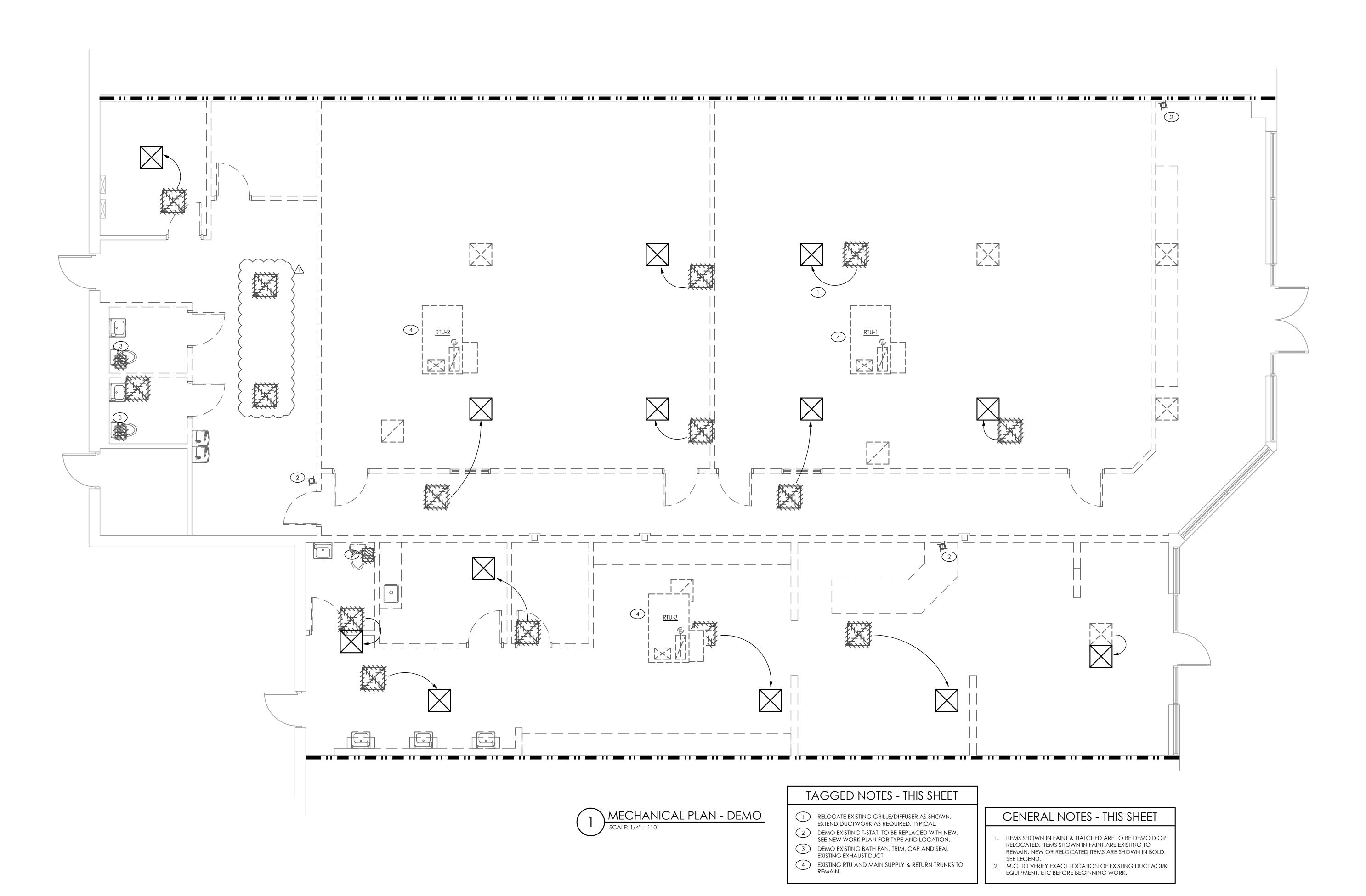
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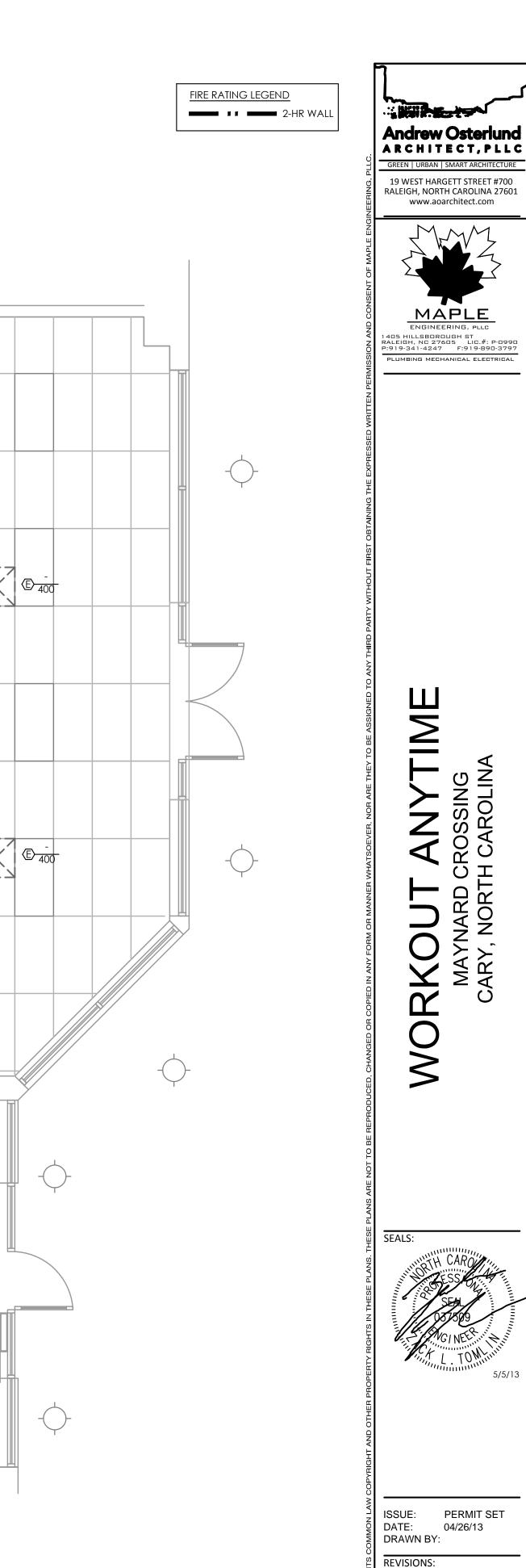
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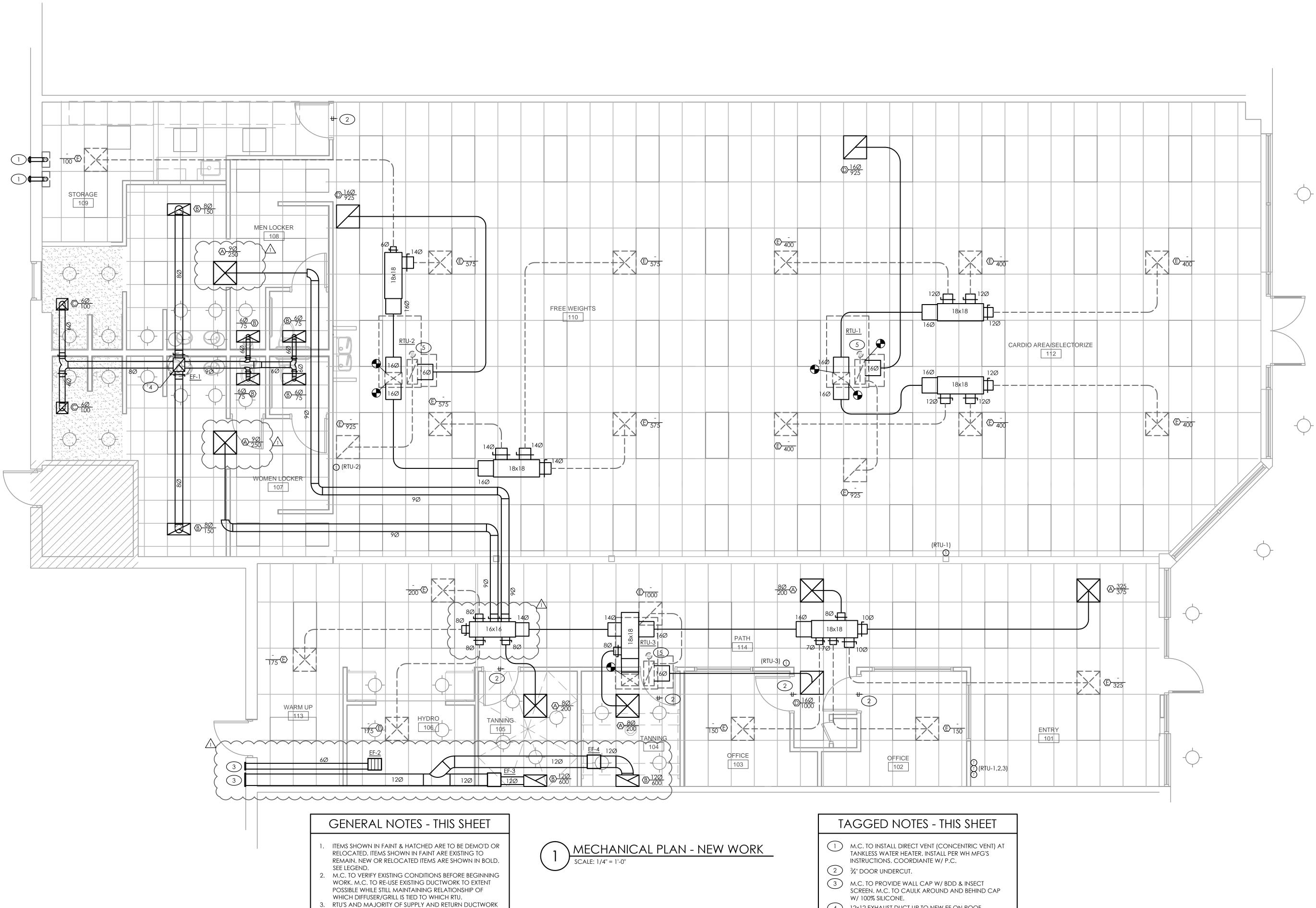
5-5-13 OWNER CHANGES

MECHANICAL DEMO
PLAN

M-2







ARE EXISTING.

(4) 12x12 EXHAUST DUCT UP TO NEW EF ON ROOF.

& BLDG FA SYSTEM.

EXISTING SMOKE DETECTOR. M.C. TO ENSURE UNIT IS IN GOOD WORKING ORDER. WIRED TO AH SHUTDOWN

MECHANICAL PLAN - NEW WORK M-3

PERMIT SET

5-5-13 OWNER CHANGES

MAPLE

Andrew Osterlund

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MAPLE
ENGINEERING, PLLC

ISSUE: PERMIT SET DATE: 04/26/13 DRAWN BY: RSA

VOLUME DAMPER WITH
3/8" LOCKING QUADRANT
AND END BEARING.
(WHERE ACCESIBLE)

- CIRCULAR CLAMP

DIFFUSER DETAIL

FINISHED

CEILING SURFACE

NOTES:

1. PROVIDE INSULATED REGISTER BOOT/PLENUM BOX IF NECESSARY.

2. RETURN APPLICATION IS SIMILAR, ALL ELBOWS IN RETURN APPLICATION TO BE INSULATED SHEET METAL (NO FLEX ELBOWS).

DIAMETER "D" | ELBOW.

FLEX DUCT TURN INTO DIFFUSER TO BE REPLACED

BY INSULATED SHEET METAL ELBOW FOR (3) FARTHEST CEILING DIFFUSERS FROM AIR HANDLER. THERMAFLEX "FLEX FLOW ELBOW"

SUPPORT MAY BE USED IN LIEU OF SHEET METAL

DIFFUSER/GRILLE (COORD. FRAME TYPE)

-REDUCER OR

TRANSITION

(IF NECESSARY)

SQUARE TO ROUND

SUPPLY AIR DUCT.

ROUND SHEET

METAL DUCT. \neg

FLARED SHOULDER & SPIN IN COLLAR W/ INTEGRAL SCOOP.

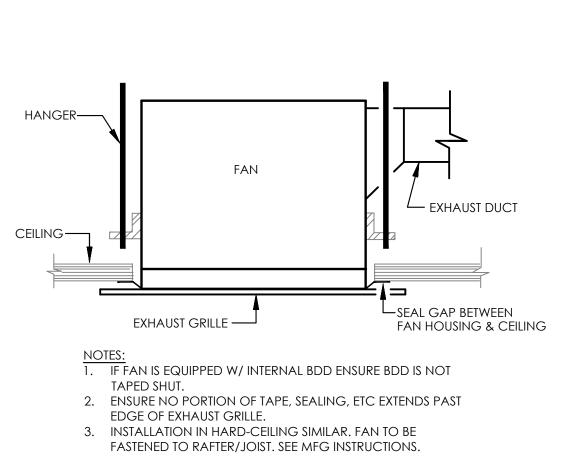
REVISIONS:

MECHANICAL DETAILS

EXHAUST FAN — MFG. ROOF CURB W/ 1" INSUL. & NAILOR — EXHAUST DUCT FLANGE FASTENED TO NAILOR Flashing — BACK DRAFT DAMPER BUILT-UP — ROOFING SEE ADDITIONAL DETAIL(S) FOR EXHAUST DUCT — GREASE EXHAUST FAN INSTALLATION..



2 EXHAUST FAN (CEILING) DETAIL
NO SCALE



GENERAL ELECTRICAL NOTES

I. GENERAL REQUIREMENTS:

- ELECTRICAL CONTRACTOR IS TO FURNISH AND PAY FOR ALL LABOR, MATERIAL, EQUIPMENT, PERMITS & FEES REQUIRED FOR THE COMPLETE INSTALLATION OF ALL SYSTEMS IN THIS SECTION OF
- ALL WORK IS TO BE PERFORMED IN ACCORDANCE WITH NEC AND ALL OTHER APPLICABLE CODES. EC IS TO COORDINATE W/ G.C. IN REGARDS TO PROJECT TIMELINE, WORK HOURS, AS WELL AS ANY BONDING OR INSURANCE REQUIREMENTS.
- 3. ALL ELECTRICAL & LIGHTING EQUIPMENT SHALL BE PROVIDED COMPLETE WITH ALL ACCESSORIES, HANGERS, SUPPORTS, CONTROLS, ETC FOR A FULLY FUNCTIONING SYSTEM REGARDLESS OF PRESENCE ON PLANS.
- . ALL EQUIPMENT, MATERIALS AND INSTALLATION SHALL BE GUARANTEED TO BE FREE OF DEFECTS FOR A PERIOD OF ONE (1) YEAR AFTER FINAL ACCEPTANCE OF WORK OR IN ACCORDANCE WITH THE MANUFACTURER'S STANDARD GUARANTEE, IF LONGER. EXISTING EQUIPMENT IS EXCLUDED FROM WARRANTY REQUIREMENT.
- THESE DRAWINGS ARE DIAGRAMMATIC AND SHOW GENERAL LOCATION AND ARRANGEMENT OF ALL MATERIALS AND EQUIPMENT. THE DRAWINGS SHALL BE FOLLOWED AS CLOSELY AS BUILDING CONSTRUCTION AND ALL OTHER WORK WILL PERMIT.
- 6. DO NO SCALE DRAWINGS FOR MEASUREMENT.
- INFORMATION GIVEN IN SCHEDULES INCLUDES BOTH DESCRIPTION OF PRODUCT AND MANUFACTURER'S MODEL #. IF CONFLICT IS PRESENT BETWEEN DESCRIPTION AND MODEL #, EQUIPMENT DESCRIPTION SHALL TAKE PRECEDENT. IN CASE OF CONFLICT BETWEEN THE PLANS AND NOTES/SPECIFICATIONS OR CONFLICT BETWEEN INFORMATION PRESENTED ON THE PLANS OR IN THE NOTES/SPECIFICATIONS, THEN THE MOST RESTRICTIVE SHALL TAKE
- BEFORE BID EC IS RESPONSIBLE FOR CLARIFYING W/ G.C. ANY CONFUSION IN REGARDS TO RESPONSIBILITY OF WORK TO BE PERFORMED OR MATERIALS TO BE PROVIDED. THE SUBMITTAL OF THE BID BY THE CONTRACTOR WILL BE HELD AS PROOF THAT THE CONTRACTOR UNDERSTANDS THOROUGHLY AND COMPLETELY THE SCOPE OF THE WORK INVOLVED, AND HAS INCLUDED ON THE BID ALL THE NECESSARY ITEMS TO CARRY OUT THIS SECTION OF
- 9. AS SOON AS POSSIBLE (AND NOT MORE THAN 30 DAYS) AFTER CONTRACT IS SIGNED, THE EC SHALL PROVIDE SUBMITTALS OF EQUIPMENT HE/SHE INTENDS TO PURCHASE FOR REVIEW AND COMMENT BY THE ENGINEER. ENGINEER IS TO APPROVE SUBMITTALS BEFORE EQUIPMENT IS ORDERED.
- 10. E.C. & G.C. SHALL CONSULT OWNER OR OWNER'S REPRESENTATIVE REGARDING DISPOSAL, STORING OR RESALE OF ALL DEMO/REMOVED EQUIPMENT AND MATERIALS.
- 11. ALL EXISTING EQUIPMENT AND SYSTEMS ARE ASSUMED BY ENGINEER TO BE IN GOOD WORKING ORDER. BEFORE BEGINNING WORK E.C. IS TO ENSURE ANY EQUIPMENT & SYSTEMS TO REMAIN ARE PROPERLY FUNCTIONING. NOTIFY G.C. IMMEDIATELY IF PROBLEMS ARE DISCOVERED.
- 12. ALL QUESTIONS MUST BE SUBMITTED IN RFI FORMAT TO THE ARCHITECT AND MUST BE ADDRESSED BY THE APPROPRIATE DESIGNER OF RECORD PROIR TO BECOMING A PROPOSED

II. DIVISION OF WORK:

- ALL LOW VOLTAGE WIRING RELATED TO MECHANICAL EQUIPMENT AND SYSTEMS IS THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR (ANY LOW VOLTAGE FIRE ALARM WIRING TO BE BY E.C.). ALL HIGH VOLTAGE CONNECTIONS TO MECHANICAL EQUIPMENT, TO BE PROVIDED AND INSTALLED BY E.C. (SEE EQUIPMENT SCHEDULE FOR DISCONNECT RESPONSIBILITY).
- ELECTRICAL CONTRACTOR IS TO EMPLOY THE SERVICES OF THE G.C. FOR CUTTING AND PATCHING OF WALLS, FLOORS & CEILINGS RELATED TO THE INSTALLATION OF ELECTRICAL EQUIPMENT & SYSTEMS.
- G.C. RESPONSIBLE FOR PAINTING OF ANY EXPOSED CONDUIT, WIRE, BOXES ETC. E.C. RESPONSIBLE FOR CLEANING AND PREPARING ITEMS FOR PAINT, COORDINATE W/ G.C.
- 4. E.C. TO COORDINATE W/ G.C. PRIOR TO BID REGARDING HIRING OF FIRE ALARM, DATA/TELE & SECURITY SUB-CONTRACTORS (IF APPLICABLE).

III. MATERIALS:

- ALL MATERIAL, DEVICES, APPLIANCES, AND EQUIPMENT SHALL BE NEW UNLESS OTHERWISE NOTED AND SHALL CONFORM TO THE STANDARDS OF THE UNDERWRITER'S LABORATORIES, INC., AND THE NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION.
- 2. ALL MATERIALS INSTALLED IN RETURN PLENUM ARE TO BE PLENUM
- 3. PROVIDE HANGERS & SUPPORTS APPROVED FOR USE BY NEC.
- 4. ALL FIRE SEALANTS TO BE U.L. LISTED AND APPROVED FOR USE W/ APPROPRIATE U.L. PENETRATION DETAIL.
- CONDUCTORS SHALL BE COPPER RATED AT NOT LESS THAN 600 VOLTS.MINIMUM SIZE SHALL BE #12 AWG UNLESS OTHERWISE NOTED ON THE DRAWINGS. ALL WIRE #8 AWG AND LARGER SHALL BE STRANDED. ALL CONDUCTORS #10 AND SMALLER MAY BE SOLID OR STRANDED, UNLESS OTHERWISE NOTED. CONDUCTOR INSULATION SHALL BE TYPE THHN UNLESS OTHERWISE NOTED. ALL EXTERIOR CABLE OR OTHER WIRE EXPOSED TO SUNLIGHT SHALL BE RATED FOR EXTERIOR USE & SUNLIGHT RESISTANT.
- ALL WIRING SHALL BE INSTALLED IN GALVANIZED RIGID CONDUIT, INTERMEDIATE METAL CONDUIT, OR EMT, EXCEPT AS ALLOWED BELOW. EMT SHALL NOT BE USED IN OR UNDER CONCRETE SLABS, OR IN MASONRY WALLS. USE SCHEDULE 40 PVC OUTDOORS WHERE NOT SUBJECT TO PHYSICAL DAMAGE OR BELOW FLOOR SLAB. MINIMUM CONDUIT SIZE TO BE 1/2". TYPE MC AND AC CABLE MAY BE USED WHERE PERMISSIBLE BY NEC. FLEXIBLE CONDUIT SHALL BE USED FOR CONNECTIONS TO VIBRATING EQUIPMENT AND LUMINAIRES, BUT SHALL NOT EXCEED 6' IN
- METAL CONDUIT COUPLINGS TO BE COMPRESSION TYPE OR THREADED WHEN ACCESSIBLE TO BUILDING OCCUPANTS. METAL COUNDUIT COUPLINGS MAY BE SET-SCREW TYPE WHEN CONCEALED IN BUILDING STRUCTURE OR LOCATED MORE THAN 10' AFF. PLASTIC CONDUIT COUPLINGS TO BE SOCKET GLUED

- 8. FUSES 0 600 AMPS SHALL BE UL CLASS "RK-1" LOW PEAK DUAL ELEMENT TIME DELAY WITH 200,000 AMPERE INTERRUPTING RATING AS MANUFACTURED BY BUSSMANN, UNLESS NOTED
- ALL TERMINALS/LUGS SHALL BE 60/75° RATED. ALL TERMINALS, SPLICING CONNECTORS, LUGS, ETC SHALL BE IDENTIFIED FOR USE WITH THE MATERIAL (CU/AL) OF THE CONDUCTOR AND SHALL BE PROPERLY INSTALLED.
- 10. RECEPTACLES IN COMMERCIAL AREAS SHALL BE 20 AMP COMMERCIAL SPECIFICATION GRADE EQUAL TO HUBBELL SERIES. GROUND FAULT RECEPTACLES SHALL BE EQUAL TO COOPER VGF SERIES.
- 11. LIGHTING SWITCHES SHALL BE 20 AMP COMMERCIAL SPECIFICATION GRADE EQUAL TO HUBBELL SERIES.
- 12. ALL EXTERIOR FIXTURES AND DEVICES SHALL BE RATED FOR OPERATION AT 0° F AND SHALL BE DAMP OR WET LABELED AS REQUIRED.

IV. COORDINATION:

- THE ELECTRICAL CONTRACTOR SHALL COORDINATE CLOSELY WITH ALL OTHER TRADES TO AVOID CONFLICT AND ENSURE OTHER TRADES PROVIDE MEASURES TO ACCOMMODATE ELECTRICAL WORK (I.E. ACCESS DOORS, SLAB/WALL/ROOF OPENINGS, ETC).
- LOCATE LIGHTS IN ACCORDANCE WITH ARCHITECTURAL REFLECTED CEILING PLANS (IF PROVIDED).
- 3. E.C. TO COORDINATE ELEVATION OF WALL MOUNTED LIGHTS (INTERIOR & EXTERIOR) W/ ARCHITECT/ARCH PLANS.
- 4. E.C. TO COORDINATE W/ P.C. & M.C. REGARDING POWER AND FIRE ALARM CONNECTIONS TO MECHANICAL AND PLUMBING EQUIPMENT.
- E.C. TO VERIFY ALL REQUIREMENTS AND COORDINATE EXACT LOCATION OF INCOMING ELECTRICAL SERVICE WITH LOCAL POWER COMPANY PRIOR TO PROJECT START-UP. NOTIFY ENGINEER OF ANY CHANGES AS MAY BE REQUIRED.
- 6. E.C. TO VERIFY DEVICE PLATE COLOR AND MATERIAL WITH ARCHITECT PRIOR TO PURCHASE.

V. EXECUTION:

- 1. E.C. TO FOLLOW MANUFACTURER'S INSTRUCTIONS WHEN INSTALLING ELECTRICAL EQUIPMENT. ENSURE REQUIRED MAINTENANCE ACCESS AND CLEARANCES ARE MAINTAINED. IF CONFLICT EXISTS BETWEEN THESE PLANS AND MFG INSTRUCTIONS CONTACT ENGINEER.
- A COMPLETE GROUNDING SYSTEM SHALL BE PROVIDED AND INSTALLED IN ACCORDANCE WITH ARTICLE 250 OF THE NEC, AND AS SHOWN ON THE DRAWINGS.
- 3. PROVIDE A PULLWIRE IN ALL EMPTY CONDUITS.
- 4. PROVIDE A TYPED DIRECTORY IN ALL PANELBOARDS CLEARLY DESCRIBING THE LOCATION OF AND TYPE OF LOAD BEING SERVED FOR ALL CIRCUITS. PROVIDE ENGRAVED PHENOLIC NAMEPLATES FOR ALL PANELBOARDS AND DISCONNECT SWITCHES, WHITE LETTERS ON BLACK BACKGROUND.
- PROVIDE LABELING ON SERVICE EQUIPMENT INDICATING AVAILABLE FAULT CURRENT IN ACCORDANCE W/ NEC 110.24.
- ALL PENETRATIONS THROUGH EXTERIOR WALLS & ROOF SHALL BE FLASHED & COUNTER-FLASHED IN A WATERPROOF MANNER.
- 7. SEAL ALL PENETRATIONS OF SMOKE PARTITIONS OR FIRE RATED WALLS, CEILING, FLOORS IN ACCORDANCE W/ APPROPRIATE U.L. PENETRATION DETAIL AND NC BUILDING CODE.
- 8. PENETRATIONS OF NON-RATED WALLS, PARTITIONS AND FLOOR OF COMBUSTIBLE CONSTRUCTION SHALL BE FIRESTOPPED WITH MATERIALS EQUIVALENT TO TWO INCHES OF WOOD. FIRESTOPPING SHALL COMPLY WITH ASTM E-814.
- ANY NOTCHING, DRILLING, BORING OR OTHER ALTERATION TO BUILDING STRUCTURE SHALL BE PERFORMED IN A CODE APPROVED METHOD AND NOT THREATEN THE INTEGRITY OF THE BUILDING STRUCTURE.
- 10. SUPPORT ALL CONDUIT AND EQUIPMENT IN ACCORDANCE W/ NEC. ANY SUSPENDED MATERIALS SHALL BE DIRECTLY SUPPORTED BY THE BUILDING STRUCTURE.
- 11. PENETRATIONS OF ALL EXTERIOR WALLS, FLOORS AND CEILINGS SHALL BE SEALED IN AN AIR TIGHT MANNER AND IN ACCORDANCE W/ 2012 NCECC APPENDIX 2 DETAILS.
- 12. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL ELECTRICAL EQUIPMENT FROM FOREIGN MATERIAL DURING CONSTRUCTION (PAINT, SPACKLE, ETC.). UPON COMPLETION OF WORK THE ELECTRICAL CONTRACTOR SHALL CLEAN, WASH, ETC ALL ITEMS AND EQUIPMENT WITHIN HIS SCOPE OF WORK AND LEAVE ALL ITEMS BRIGHT AND
- 13. IN REQUIRED FIRE RATED WALLS AND PARTITIONS, OPENINGS FOR INSTALLATION OF BOXES THAT ARE GREATER THAN 16 SQUARE INCHES SHALL BE PROTECTED AS REQUIRED BY U.L.
- 14. UNLESS OTHERWISE INDICATED THE ELECTRICAL CONTRACTOR AT HIS/HER DISCRETION MAY COMBINE MULTIPLE CIRCUITS INTO A SINGLE CONDUIT AND DE-RATE WIRE. COMBINING AND DE-RATING IS TO BE DONE IN STRICT ACCORDANCE W/
- 15. DEVICES INCLUDING GFCI PROTECTION MUST HAVE THEIR TESTING MEANS READILY ACCESSIBLE. PROVIDE REMOTE TESTING MEANS OR GFCI BREAKER FOR GFCI RECEPTACLES AND SIMILAR DEVICES WHICH ARE NOT READILY ACCESSIBLE (I.E. BEHIND EQUIPMENT, AT CEILING, ETC). (NEC 210.8).
- 16. COORDINATE WITH THE CABLE TV AND TELEPHONE UTILITIES FOR SERVICE ENTRANCE AND CABLING REQUIREMENTS PRIOR TO ANY PURCHASING. INSTALLATION MUST COMPLY WITH THEIR RESPECTIVE REGULATIONS AND REQUIREMENTS.
- 17. ALL EXIT & EMERGENCY LIGHTS ARE TO BE CIRCUITED TO UN-SWITCHED LEG OF LOCAL NORMALLY ON LIGHTING
- 18. RECEPTACLE, LIGHT SWITCHES AND OTHER CONTROL DEVICES ARE TO BE INSTALLED IN ACCORDANCE W/ ANSI A117.1 AND ADA REQ'S CONCERNING HEIGHT AND ACCESSIBILITY.

A A DIC	A 4 A N II I F	CATALOG	LA	AMP DATA	VOLTS	ВА	LLAST DATA	INPUT	MOUNTING	DECORPTION
MARK	MANUF.	NUMBER	NO.	TYPE	VOLIS	NO.	TYPE	WATTS	MOUNTING	DESCRIPTION
Α	-	-	-	-	120	1	-	128W	LAY-IN	EXISTING RECESSED 2X4. RE-LAMP AS REQUIRED. CLEAN OR REPLACE DIRTY LENSES. REPLACE FIXTURES ANY DAMAGED OR BROKEN FIXTURES.
С	-	-	-	-	120	ı	-	10 W MAX	RECESSED	RECESSED LED DOWN LIGHT. SELECTION BY OTHERS.
D	LITHONIA	LF6N	1	26W TRT	120	1	ELECTRONIC	26W	RECESSED	6" RECESSED CAN/DOWNLIGHT. CLEAR GLASS LENS. WET LOCATION LISTED.
Е	LITHONIA	2SP8 G	2	17W T8	120	1	GEB10IS	34W	LAY-IN	2x2 2-LAMP ACRYLIC LENSED LAY-IN RECESSED TROFFER
F	-	-	-	-	120	1	-	300 W MAX	SURFACE	CEILING FAN. SELECTION BY OTHERS. NO LIGHT KIT.
G	-	-	-	-	120	1	-	60 W MAX	WALL	WALL SCONCE, TBD BY OWNER
4	LITHONIA	ELM2	2	5.4 W	120, 277	-	-	1.2	SEE PLAN	GEN. PURPOSE EMERGENCY LIGHT. (2) ADJ. HEADS. BATTERY BACK-UP.

- BI-LEVEL LIGHTING IS INDICATED INBOARD AND OUTBOARD LAMPS SHALL BE SWITCHED SEPARATELY.
- EXIT AND EMERGENCY LIGHTING FIXTURES SHALL BE CIRCUITED TO AN UNSWITCHED LEG OF A NORMALLY ON LOCAL LIGHTING CIRCUIT (UNLESS NOTED OTHERWISE), INCLUDE 90 MINUTE BATTERY BACKUP & TESTING MEANS.
- PROVIDE DISCONNECT FOR LUMINAIRES WITH LINEAR FLUORESCENT LAMPS AND/OR SERVICEABLE BALLASTS PER NEC 410.130(G). FIXTURES WITH A STANDARD FACTORY INSTALLED EMERGENCY OPTION SHOULD USE THAT WHERE "EMC" IS SHOWN.
- ALL LAMPS OF A SINGLE FIXTURE TYPE INSTALLED IN EACH AREA/ROOM/SPACE ARE TO BE OF SAME TEMPERATURE/COLOR

LIGHTING SYSTEMS

NCECC SECTION 505 & 506

LIGHTING POWER DENSITY CALCULATION COMPLIANCE INTERIOR LIGHTING POWER DENSITY CALCULATION PER TABLE 505.5.2. SEE LIGHTING FIXTURE SCHEDULE FOR FIXTURE INFORMATION.

INTERIOR WATTAGE SPECIFIED VS. ALLOWED

FIXTURE SCHEDULE FOR FIXTURE INFORMATION.

506.2.3 ENERGY RECOVERY VENTILATION SYSTEM

FIXTURES.

TRADABLE EXTERIOR WATTAGE SPECIFIED VS. ALLOWED

NONTRADABLE EXTERIOR WATTAGE SPECIFIED VS. ALLOWED

SEE NOTE VS. SEE NOTE EXTERIOR LIGHTING POWER DENSITY CALCULATION PER TABLE 505.6.2. SEE LIGHTING

EXIST. VS. EXIST.

<u>NA</u> VS. <u>NA</u>

TO THE BEST OF MY KNOWLEDGE AND BELIEF, THE DESIGN OF THIS BUILDING COMPLIES WITH THE LIGHTING SYSTEMS REQUIREMENTS OF THE NORTH CAROLINA ENERGY CONSERVATION CODE, SECTION 505 & 506 AND ANY LOCAL AMENDMENTS THEREOF.

NAME: TITLE: ELECTRICAL ENGINEER

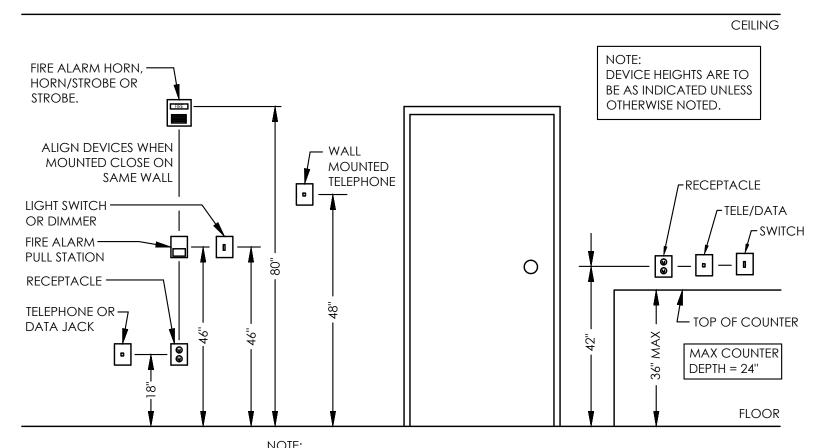
DESIGNER STATEMENT:

ADDITIONAL PRESCRIPTIVE COMPLIANCE NOT APPLICABLE (RENOVATION PROJECT) 506.2.1 MORE EFFICIENT MECHANICAL EQUIPMENT 506.2.2 REDUCED LIGHTING POWER DENSITY ____

506.2.4 HIGHER EFFICIENCY SERVICE WATER HEATING 506.2.5 ON-SITE SUPPLY OF RENEWABLE ENERGY 506.2.6 AUTOMATIC DAYLIGHTING CONTROL SYSTEMS

E.C. TO PROVIDE ALTERNATE PRICE FOR SEE SHEET E-4 FOR LIGHTING CONTROLLER REPLACING ALL EXISTING TO REMAIN LAY-IN SPEC. AND ASSOCIATED INFORMATION. CF TROFFERS W/ EQUIVALENT LED LAY-IN

EXEMPT FROM ENERGY CODE PER 2012 NCECC SEC. 101.4.3 EXEPCTION "G". WATTAGE OF INSTALLED LIGHTING (1,280 W) IS LESS THAN WATTAGE OF DEMO'D LIGHTING (1,430 W). 2012 NCECC SEC 101.4.4 DOES NOT APPLY, NO CHANGE OF OCCUPANCY OR USAGE PATTERN.



MOUNTING LOCATIONS OF RECEPTACLES, SWITCHES AND ALL OTHER CONTROL DEVICES SHALL BE IN ACCORDANCE WITH ANSI A117.1 AND ADA REQUIREMENTS (FHA REQ'S FOR MULTI-FAMILY AND RESIDENTIAL PROJECTS)

TYPICAL DEVICE MOUNTING HEIGHTS

WALL SWITCH MICROPHONIC OCCUPANCY SENSOR EQUAL TO SENSOR SWITCH MODEL WS PDT. TIME DELAYS 20 MINUTES FOR ON/OFF. CEILING MOUNTED MICROPHONIC OCCUPANCY SENSOR EQUAL TO SENSOR SWITCH MODEL CM PDT 10. TIME DELAYS 30 MINUTES FOR ON/OFF. THE CONTRACTOR IS TO PROVIDE AND INSTALL ALL RELAYS, CONTROLS, SWITCHES, ETC FOR A FULLY FUNCTIONING SYSTEM REGARDLESS OF PRESENCE OR ABSENCE ON PLANS.

MOTION SENSOR (STAND-ALONE) LEGEND

SEE LIGHTING CONTROLLER SPECS FOR MOTION AND DAYLIGHTING SENSORS PROVIDED AS PART OF LIGHTING CONTROL PACKAGE.

ELECTRICAL SYMBOL LEGEND

CIRCUIT CONDUCTORS CONCEALED IN FLOOR, WALL OR CEILING. ARROWHEAD INDICATES HOMERUN TO PANEL NOTED. INDICATES HOT LEG OF CIRCUIT TO BE CARRIED OVER TO NEXT DEVICE. SEE PLANS FOR CONTROL SCHEME.

JUNCTION BOX CEILING MOUNTED.

JUNCTION BOX FLOOR MOUNTED.

 \Rightarrow

Ю

 \bullet

AFF

AFG

E.C.

FPN

G.C.

M.C.

P.C.

WP

UON

FACP

SMP

JUNCTION BOX WALL MOUNTED AT HEIGHT INDICATED ON DRAWINGS.

SINGLE POLE SWITCH, 20A, 120/277 VOLT, 48" A.F.F. TO CENTER. "3" INDICATES 3-WAY SWITCH.

"4" INDICATES 4-WAY SWITCH. "D" INDICATES DIMMER SWITCH OF TYPE TO SUIT LOAD. "K" INDICATES KEY OPERATED SWITCH.

"M" INDICATES 120V, 20A MOTOR RATED TOGGLE SWITCH. INDICATES FLUORESCENT FIXTURES DUAL SWITCHED, INBOARD/OUTBOARD SWITCHED

SINGLE RECEPTACLE, 20 AMP, 120 VOLT, 18" A.F.F. TO CENTER.

DUPLEX RECEPTACLE, 20 AMP (15 AMP RESIDENTIAL, UON), 120 VOLT, 18" A.F.F. TO CENTER. "GFI" INDICATES GROUND FAULT CIRCUIT INTERRUPTER TYPE. "WP" INDICATES WEATHERPROOF.

"EWC" INDICATES MOUNT GFI RECEPTACLE INSIDE ENCLOSURE OF WATER COOLER. "ASW" INDICATED ABOVE SHOW WINDOW PER NEC REQUIREMENTS.

QUADRUPLEX RECEPTACLE, AS ABOVE, 18" A.F.F. DUPLEX RECEPTACLE, AS ABOVE, SPLIT WIRED, TOP HALF SWITCHED, 18" A.F.F.

DUPLEX RECEPTACLE, AS ABOVE, MOUNTED 6" ABOVE COUNTER TOP OR 4" ABOVE BACKSPLASH, AS APPROPRIATE, OR AT HEIGHT INDICATED.

DUPLEX RECEPTACLE, AS ABOVE, MOUNTED 6" ABOVE COUNTER TOP OR 4" ABOVE BACKSPLASH, AS APPROPRIATE, OR AT HEIGHT INDICATED, WITH GFI PROTECTION. RECESSED FLUSH FLOOR DUPLEX RECEPTACLE WITH BRASS COVERPLATE. COORDINATE

208V RECEPTACLE, SEE PLANS FOR NEMA CONFIGURATION.

"MS" INDICATES MOTOR STARTER OF TYPE TO SUIT LOAD.

EXACT FINISH WITH ARCHITECT AND OWNER.

TELEPHONE OUTLET, 18" A.F.F. TO CENTER OR ALIGN MOUNTING HEIGHT WITH ADJACENT DEVICE, UNLESS OTHERWISE NOTED. PROVIDE $\frac{3}{4}$ " CONDUIT TO ACCESSIBLE CEILING. ALIGN MOUNTING HEIGHT WITH ADJACENT DEVICE.

DATA OUTLET, 18" A.F.F. TO CENTER OR ALIGN MOUNTING HEIGHT WITH ADJACENT DEVICE, UNLESS OTHERWISE NOTED. PROVIDE 1" CONDUIT TO ACCESSIBLE CEILING.

TELEPHONE/DATA OUTLET, 18" A.F.F. TO CENTER OR ALIGN MOUNTING HEIGHT WITH ADJACENT DEVICE, UNLESS OTHERWISE NOTED. PROVIDE 1" CONDUIT TO ACCESSIBLE

HEAVY DUTY FUSIBLE/NON-FUSIBLE DISCONNECT SWITCH, NUMBERS INDICATE FRAME SIZE, NUMBER OF POLES AND FUSING. PROVIDE NEMA 1 ENCLOSURE INSIDE. PROVIDE NEMA 3 ENCLOSURE FOR ALL SWITCHES LOCATED OUTSIDE. "FPN" INDICATES FUSE PER EQUIPMENT NAMEPLATE "NF" INDICATES NON-FUSED.

208Y/120V PANEL, SURFACE OR RECESS MOUNTED, SEE SCHEDULE FOR DETAILS.

480Y/277V PANEL, SURFACE OR RECESS MOUNTED, SEE SCHEDULE FOR DETAILS. FAN PROVIDED AND INSTALLED BY MECHANICAL CONTRACTOR WIRED BY ELECTRICAL CONTRACTOR. PROVIDE DISCONNECTING MEANS AS REQUIRED.

WATER HEATER, PROVIDED AND INSTALLED BY PLUMBING CONTRACTOR, WIRED BY ELECTRICAL CONTRACTOR. PROVIDE DISCONNECTING MEANS AS REQUIRED.

RECESSED MOUNTED 2x4 FLUORESCENT TROFFER, SEE FIXTURE SCHEDULE FOR DETAILS.

WALL MOUNTED LIGHTING FIXTURE, SEE FIXTURE SCHEDULE FOR DETAILS.

SURFACE, RECESSED OR GROUND MOUNTED LIGHTING FIXTURE, SEE FIXTURE SCHEDULE FOR

DEMO'D LIGHT FIXTURE OR SIMILAR. 4///4

ELECTRIC UTILITY METER LOCATION.

DEMO'D RECEPTACLE OR SIMILAR.

ELECTRICAL ABBREVIATIONS

DIMENSION INDICATES HEIGHT ABOVE FINISHED FLOOR AT WHICH CENTER OF DEVICE IS TO BE MOUNTED. ABOVE FINISHED FLOOR. ABOVE FINISHED GRADE.

FUSE PER EQUIPMENT NAMEPLATE REQUIREMENTS.

GENERAL CONTRACTOR.

ELECTRICAL CONTRACTOR.

MECHANICAL CONTRACTOR

PLUMBING CONTRACTOR. INDICATES DEVICE TO HAVE WEATHERPROOF COVER.

UNLESS OTHERWISE NOTED.

FIRE ALARM CONTROL PANEL.

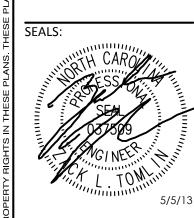
SPRINKLER MONITORING PANEL.

NIGHT LIGHT, LIGHT NOT SWITCHED.

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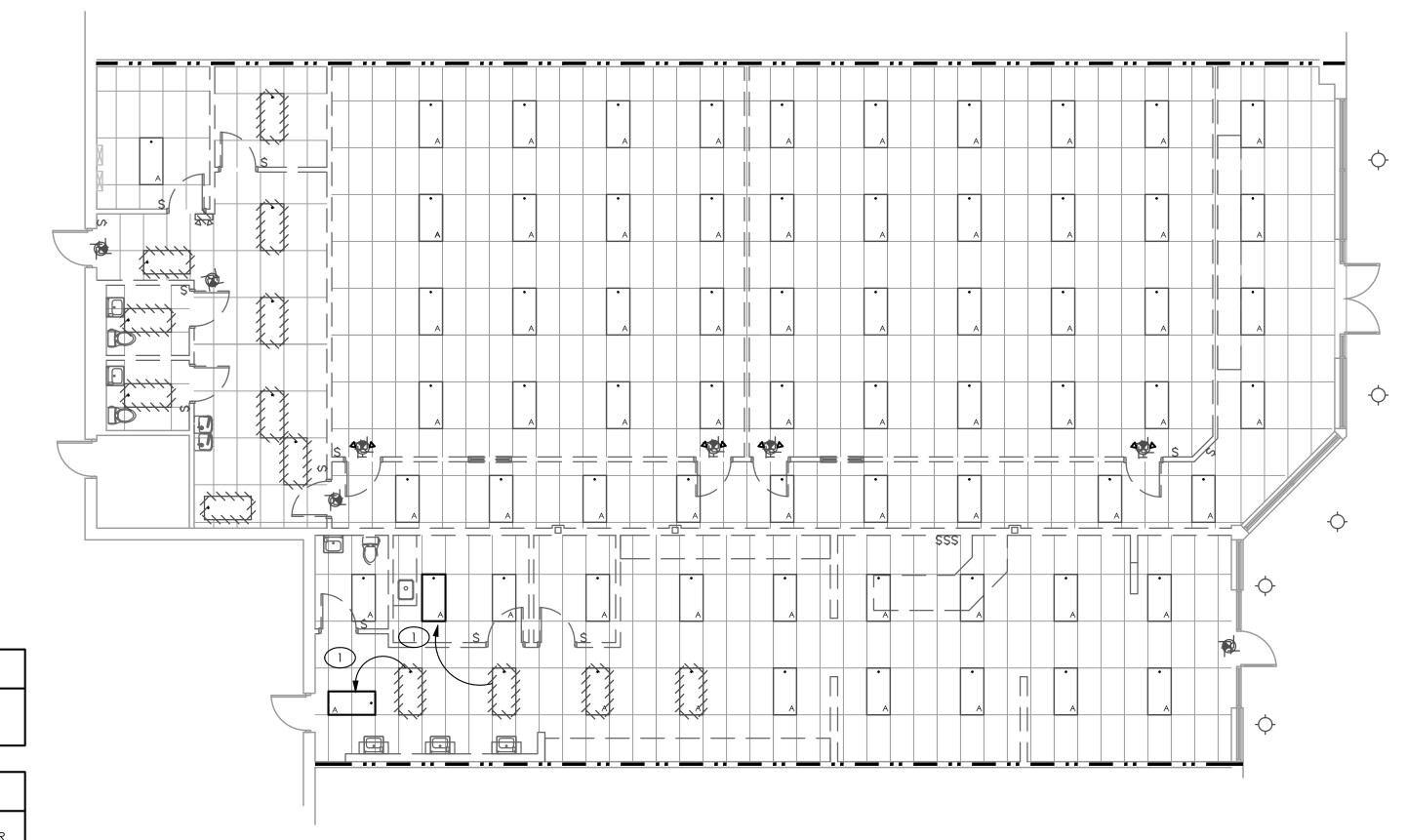
UMBING MECHANICAL ELECTRICA



PERMIT SET DATE: 04/26/13 DRAWN BY: JMS

REVISIONS:

ELECTRICAL SCHEDULES & NOTES



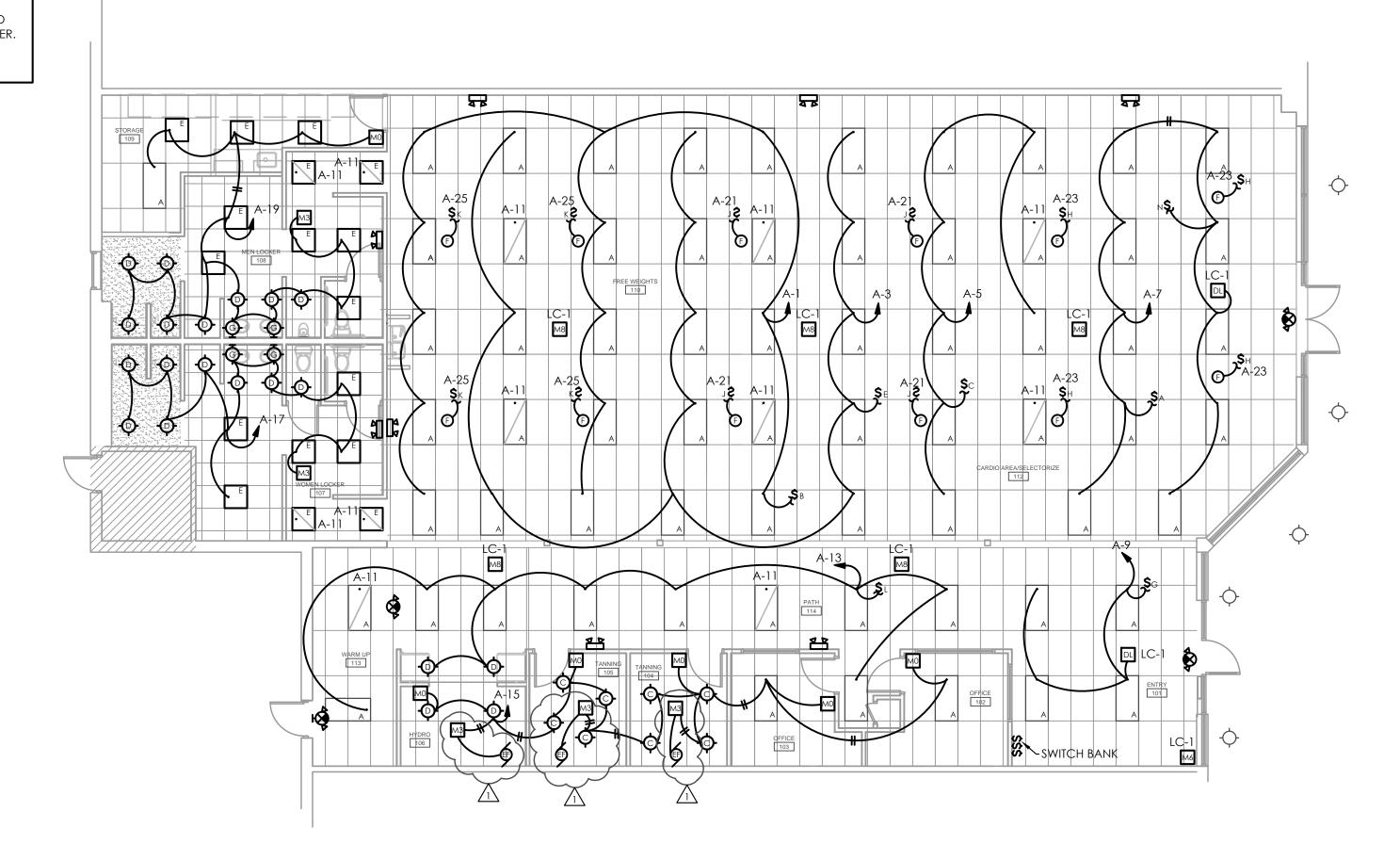
TAGGED NOTES - THIS SHEET

1 RE-LOCATE EXISTING LIGHT FIXTURE AS SHOWN.

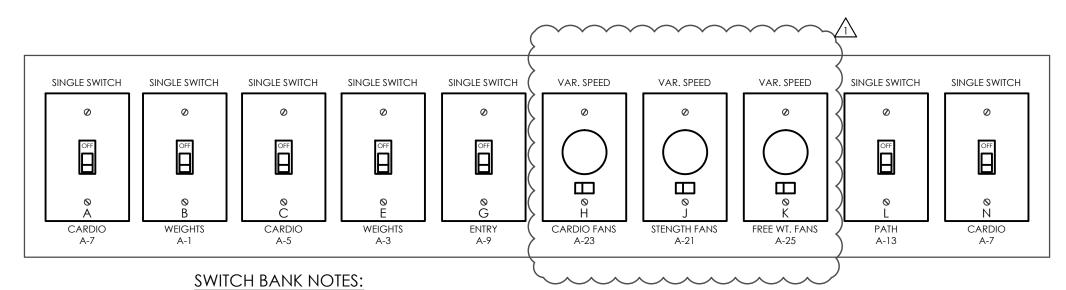
GENERAL NOTES - THIS SHEET

- ITEMS SHOWN IN FAINT & HATCHED ARE TO BE DEMO'D OR RELOCATED. ITEMS SHOWN IN FAINT ARE EXISTING TO REMAIN. NEW OR RELOCATED ITEMS ARE SHOWN IN BOLD. SEE LEGEND.
- 2. E.C. TO VERIFY EXISTING CONDITIONS BEFORE BEGINNING
- 3. E.C. TO RE-LAMP AND/OR CLEAN FIXTURES AS REQUIRED.
- REPLACE ANY DAMAGED OR BROKEN FIXTURES. 4. DAYLIGHTING (DL) AND MOTION SENSORS (M#) LABELED "LC-1" ARE TO BE WIRED TO SPACE LIGHTING CONTROLLER. SEE SPECS.

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



ELECTRICAL LIGHTING PLAN - NEW



1. COORDINATE EXACT SWITCH TYPE W/ OWNER AND FIXTURES & BALLAST(S) BEING CONTROLLED.

- 2. LABEL SWITCHES W/ DESIGNATION SHOWN (I.E. "A", "AN", "W", ETC) & CIRCUIT #.
- 3. PROVIDE PLACARD AT EACH SWITCH INDICATING AREA CONTROLLED.
- 4. HIGHEST POSITION OF HIGHEST SWITCH TO BE NO GREATER THAN 48" AFF (ANSI A117.1)



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MAPLE
ENGINEERING, PLLC

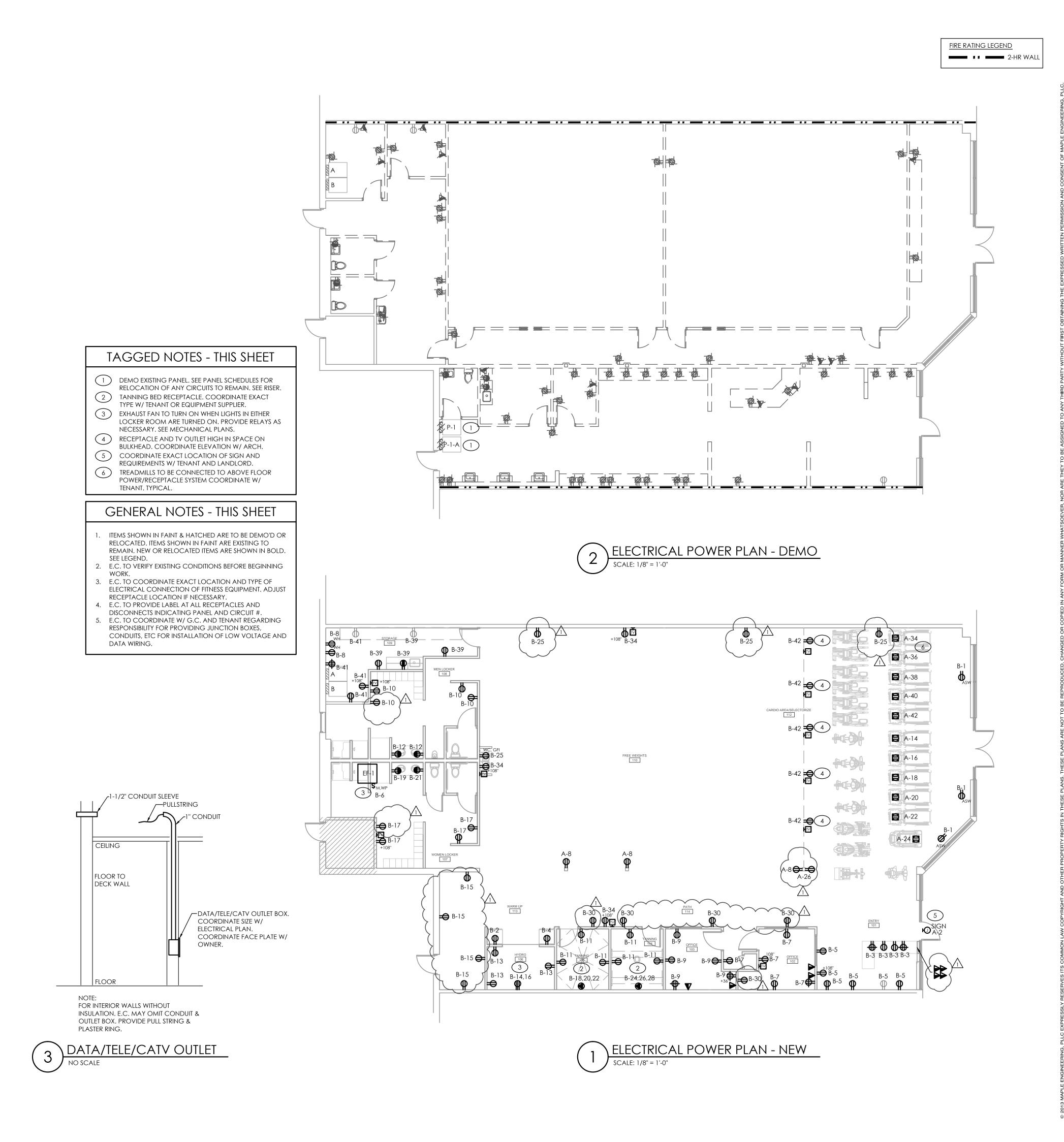
SEALS:

PERMIT SET 04/26/13 ISSUE: DATE: DRAWN BY:

REVISIONS: 5-5-13 OWNER CHANGES

ELECTRICAL

LIGHTING PLAN E-2



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SEALS:

ISSUE: DATE:

DRAWN BY:

REVISIONS:

PERMIT SET 04/26/13

/ 5-5-13 OWNER CHANGES

ELECTRICAL POWER PLAN

E-3

5/5/2013 3:12 PM AOA-1217-F03.DWG

1.	EXISTING PANEL. RE-USE EXISTING BREAKERS WHERE POSSIBLE, PROVIDE NEW BREAKERS AS NEEDEI
	EXISTING BREAKERS/CIRCUITS SHOWN IN SHADED. DEMO ALL UNUSED EXISTING CIRCUITS AND

BREAKERS. PROVIDE HACR BREAKERS FOR HVAC EQUIPMENT.

TOTAL CONNECTED kVA:

PANEL RMS SYM. AMPS: EXISTING

- GFI PROVIDE GFCI BREAKER FOR CIRCUIT. RTU CIRCUIT TO BE RELOCATED FROM DEMO'D PANEL "P-1" OR "P-1A" FIELD CONFIRM. PROVIDE NEW
- BREAKER AND EXTEND CIRCUIT AS REQUIRED. 5. C - CIRCUIT THROUGH CONTACTORS AS REQUIRED. FAN TO TURN ON WHEN LIGHTS ARE ON IN EITHER MEN OR WOMEN'S LOCKER ROOMS.

								STO	RAGE							3 PHASE, 4 WI	RE
	VOLTAGE: 208Y/120V						PA	١N	EL	: A	\					FLUSH MOUNT	ĒD
	AMPS: 600-MCB						LC	DAD P	ER PHA	.SE						NEMA	۱ ۱
	-DESCRIPTION-	POLE	WIRE SIZE	BRK SIZE	CKT #	/	4		В		<u> </u>	CKT#	BRK SIZE	WIRE SIZE	POLE	-DESCRIPTION-	\exists
LC	LTS: WEIGHTS	1	12	20	1	1.6	1.2					2	20	12	1	SIC	N.
LC	LTS: WEIGHTS	1	12	20	3			1.6	0			4	-	-	1	SPA	CE
LC	LTS: CARDIO	1	12	20	5					0.9	0	6	-	-	1	SPA	CE
LC	LTS: CARDIO	1	12	20	7	1.3	0.6					8	20	12	1	REC: COLUM	1S
LC	LTS: ENTRY	1	12	20	9			0.5	0			10	-	-	1	SPA	CE
SWD	LTS: NIGHTLIGHTS	1	12	20	11					1.0	0	12	-	-	1	SPA	CE
LC	LTS: PATH	1	12	20	13	1.3	1.8					14	20	10	1	EXERCISE EQUIPME	۱TV
	LTS: HYDRO/TAN/OFFICE	1	12	20	15			0.4	1.8			16	20	10	1	EXERCISE EQUIPME	VT .
S,GFI	LTS: WOMENS LOCKER	1	12	20	17					0.4	1.8	18	20	10	1	EXERCISE EQUIPME	۱TV
S,GFI	LTS: MENS LOCKER	1	12	20	19	0.6	1.8					20	20	10	1	EXERCISE EQUIPME	۱TV
LC	CEILING FANS	1	12	20	21			1.2	1.8			22	20	10	1	EXERCISE EQUIPME	۱TV
LC	CEILING FANS	1	12	20	23					1.2	1.8	24	20	10~	\prec	EXERCISE EQUIPME	虹
LC	CEILING FANS	1	12	20	25	1.2	1.8					26	20	10	1	EXERCISE EQUIPME	۱T/
	SPACE	1	-	-	27			0	0			28	}' }'	}' }'	}	SPA	E
	SPACE	1	-	-	29					0	0	30	ı	ı	1	SPA	CE
	SPACE	1	-	-	31	0	0					32	ı	ı	1	SPA	CE
	SPACE	1	-	-	33			0	1.8			34	20	10	1	EXERCISE EQUIPME	۱T/
	SPACE	1	-	-	35					0	1.8	36	20	10	1	EXERCISE EQUIPME	۱T/
	SPACE	1	-	-	37	0	1.8					38	20	10	1	EXERCISE EQUIPME	۱T/
	SPACE	1	-	-	39			0	1.8			40	20	10	1	EXERCISE EQUIPME	۱T/
	SPACE	1	-	-	41					0	1.8	42	20	10	1	EXERCISE EQUIPME	۱T/
	TOTAL	. CON	NECT	ED k'	VA:	15	5.0).9 6.6	10).7		DEM.	AND	kVA:	118.9	
	PAN	EL RMS	S SYN	1. AM	IPS:	EXIS	TINC	- <u>-</u>			(D	EMAI	ND A	MPS:	330.0	

1. EXISTING PANEL. RE-USE EXISTING BREAKERS WHERE POSSIBLE, PROVIDE NEW BREAKERS AS NEEDED.

DEMO ALL UNUSED EXISTING CIRCUITS AND BREAKERS. 2. SWD - PROVIDE SWD/HID RATED BREAKERS...

3 PHASE, 4 WIRE

FLUSH MOUNTED

VENDING MACHINES

EXHAUST FAN (EF-1)

REC: MEN'S LOCKER

HYDROMASSAGER

TANNING BED

TANNING BED

REC: PATH

SPACE

RTU-3

REC: TV

DEMAND kVA: 118.9

DEMAND AMPS: 330.0

REC: TV

VENDING MACHINES GF

WATER HEATERS

REC: MEN'S LOCKER GFI

-DESCRIPTION-

NEMA

PROVIDE HACR BREAKERS FOR HVAC EQUIPMENT.

GFI - PROVIDE GFCI BREAKER FOR CIRCUIT. 5. LC - CIRCUIT THROUGH AREA LIGHTING CONTROLLER. SEE NOTES, SPECS, AND DETAILS.

MS - CIRCUIT VIA LOCAL MOTION SENSORS BY WATTSTOPPER OR EQUAL (SEE PLAN). 7. SEE MFG INSTRUCTIONS FOR SPECIFIC WIRING INFORMATION. PROVIDE "NON-LOOPED" ISOLATED GROUNDING CONDUCTOR AND NEUTRAL CONDUCTOR.

_LIGHTING/FAN CIRCUIT(S). TYP. → ZONE 1 (TREADMILLS) (CIR.# A-7) MOTION SENSOR(S) DAYLIGHT SENSOR(S) ➤ ZONE 2 (RECEPTION) (CIR.# A-9) → ZONE 3 (WEIGHTS, CARDIO) (CIR.# A-1,3,5 & 13) CEILING FANS (CIR.# A-21,23 & 25) 120V/24V RELAY ►► LV INPUT TO HVAC T-STAT'S SEE PLAN FOR EXACT NUMBER AND LOCATION OF INPUT SENSORS. CONTROLLER → SIGN CIRCUIT(S) (LOCATE @ ELEC PANELS)

PANEL "A & B" LOAD SUMMARY

kVA DEM. kVA

CONN. FACT. DEM.

11.2 1.25 14.0

1st 10 kVA | 10.0 | 1.0 | 10.0

REMAINDER 6.0 0.5 3.0

ELEC HEAT | 0.0 | 1.00 | 0.0

REMAINDER 21.5 1.0 21.5

3.6 1.0 3.6

21.6 | 1.0 | 21.6

14.0 | 1.0 | 14.0

5.0 1.0 5.0

1.2 | 1.25 | 1.5

330.0

118.9

LARGEST MOTOR 10.5 1.25 13.1

TOTAL 108.8

SHOW-WINDOW (32 FEET @ 125%) 0.6 13.3 8.0

LOAD TYPE

LOADS ON 600AMP MCB

LIGHTS (5,617 SQFT @ 2 W/SQFT > CONN. LOAD)

VENDING MACHINES, WATER COOLER, TV'S

EXERCISE EQUIPMENT

TANNING BEDS

HYDROMASSAGER

SIGN

CEILING FANS

TOTAL AMPS @ 208 V 3 PHASE

PANEL "A" IS FED THRU FROM PANEL "B"

RECEPTACLES

HVAC & R

LIGHTING CONTROLLER DETAIL

LIGHTING CONTROLLER SPECS

E.C. TO PROVIDE SUBMITTAL PACKAGE OF LIGHTING CONTROL SYSTEM AND ALL COMPONENTS BEFORE ORDERING EQUIPMENT.

LIGHTING CONTROL/RELAY PANEL TO BE EQUAL TO LEVITON EX-MAX PLUS RELAY PANEL (MODEL #R24BD-216). 120V INPUT. MINIMUM OF (12) 20-AMP OUTPUT RELAYS. LOCATE PANEL NEXT TO ELECTRICAL POWER PANEL. INTERNAL ASTRONOMICAL TIME CLOCK W/ AUTO SUNRISE/SUNSET FEATURE. PANEL TO BE CAPABLE OF INDEPENDENT CONTROL OF A MINIMUM OF (6) INDEPENDENT ZONES (LIGHTING ZONES, 1,2,3, CEILING FANS, HVAC T-STATS, AND SIGN CIRCUIT). ENSURE RELAYS ARE RATED FOR THE TYPE OF LOAD BEING CONTROLLED (I.E. LIGHTS,

CEILING MOTION SENSOR TO BE EQUAL TO LEVITON OSC15-RIW. LOW VOLTAGE INPUT AND OUTPUT. SET TO 15 MINUTES.

MOTORS, ETC).

CORNER MOTION SENSOR TO BE EQUAL TO LEVITON

OSW12-RMW. LOW VOLTAGE INPUT AND OUTPUT. SET TO 15 MINUTES. 110° VIEWING ANGLE.

DAYLIGHTING SENSOR TO BE SELECTED BY LEVITON BASED ON PROJECT CONDITIONS. CONSULT MFG.

E.C. TO PROVIDE 120V INPUT, 24V OUTPUT RELAY FOR CONNECTION BY M.C. TO RTU THERMOSTAT'S.

LIGHTING CONTR. SEQ. OF OPER.

SIGN LIGHTING CONTROLLER IS TO BE PROGRAMMED TO TURN SIGN CIRCUIT(S) "ON" 30 MINUTES PRIOR TO SUNSET AND TO TURN SIGN CIRCUIT(S) "OFF" 30 MINUTES AFTER SUNRISE 7-DAYS A

CIRCUIT(S) TO HVAC/T-STAT RELAY TO BE NORMALLY "OFF". UPON ACTIVATION OF ANY AREA MOTION SENSOR THE HVAC/T-STAY RELAY CIRCUIT(S) IS TO BE SWITCHED "ON" AND STAY "ON" UNTIL NO INPUT SIGNAL IS BEING RECEIVED FROM ANY AREA MOTION SENSOR. SEE MECHANICAL T-STAT SPEC FOR MORE INFORMATION.

LIGHTING ZONE 1 (TREADMILLS) CIRCUIT(S) SERVING LIGHITNG ZONE 1 ARE TO BE NORMALLY OFF. UPON ACTIVATION OF ANY AREA MOTION SENSOR THE LIGHTS IN ZONE 1 ARE TO TURN "ON" AND STAY "ON" UNTIL NO INPUT SIGNAL IS BEING RECEIVED FROM ANY AREA MOTION SENSOR OR UNTIL THE AREA DAYLIGHTING SENSOR INDICATES

LIGHTING ZONE 2 (RECEPTION) CIRCUIT(S) SERVING LIGHITNG ZONE 2 ARE TO BE NORMALLY OFF. UPON ACTIVATION OF ANY AREA MOTION SENSOR THE

AMPLE DAYLIGHT IS AVAILABLE.

LIGHTS IN ZONE 2 ARE TO TURN "ON" AND STAY "ON" UNTIL NO INPUT SIGNAL IS BEING RECEIVED FROM ANY AREA MOTION SENSOR OR UNTIL THE AREA DAYLIGHTING SENSOR INDICATES AMPLE DAYLIGHT IS AVAILABLE. LIGHTING ZONE 3 (WEIGHTS, CARDIO)

CIRCUIT(S) SERVING LIGHITNG ZONE 3 ARE TO BE NORMALLY OFF. UPON ACTIVATION OF ANY AREA MOTION SENSOR THE LIGHTS IN ZONE 3 ARE TO TURN "ON" AND STAY "ON" UNTIL NO INPUT SIGNAL IS BEING RECEIVED FROM ANY AREA MOTION SENSOR.

CIRCUIT(S) SERVING AREA CEILING FANS ARE TO BE NORMALLY OFF. UPON ACTIVATION OF ANY AREA MOTION SENSOR THE AREA CEILING FANS ARE TO TURN "ON" AND STAY "ON" UNTIL NO INPUT SIGNAL IS BEING RECEIVED FROM ANY AREA MOTION SENSOR.



RISER DIAGRAM NOTES: 1. ALL ITEMS ARE EXISTING. RISER SHOWN FOR REFERENCE ONLY.

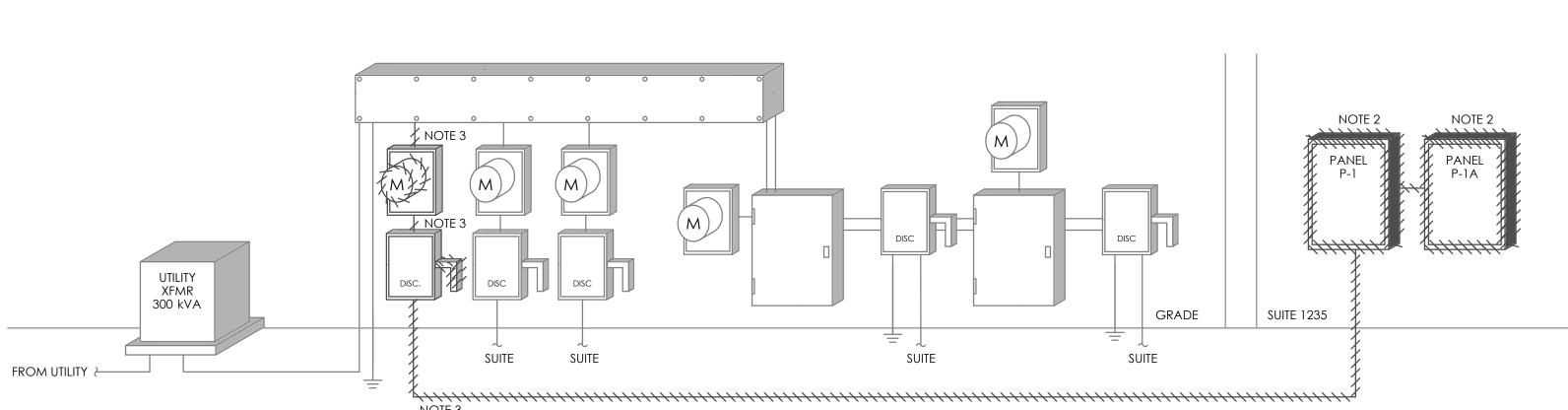
2. E.C. TO CONFIRM PRESENCE OF GROUNDING/BONDING SYSTEM (NEC 250).

3. EXISTING 600 AMP DISCONNECT, FUSED AT 600 AMPS. E.C. TO CONFIRM. CONTACT ENGINEER IF

OF LESSER AMPACITY. 4. EXISTING (2) SETS OF (4) #350kcmil CU, #1 CU GND. E.C. TO CONFIRM. CONTACT ENGINEER IF OF

LESSER AMPACITY.

5. EXISTING PANELS IN "FEED THRU" CONFIGURATION.



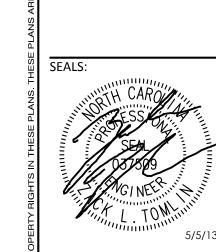
ELECTRICAL POWER RISER - SUITE 1235

RISER DIAGRAM NOTES:

1. ALL ITEMS ARE EXISTING OR TO BE DEMO'D NO NEW WORK.

2. DEMO EXISTING PANELS. RELOCATE RTU CIRCUIT TO REMAIN TO PANEL'S "A" & "B". SEE PANEL

SCHEDULES AND RISER. 3. ABANDON EXISTING FEEDER, DISCONNECT AND METER BASE. LEAVE CONDUIT IN SPACE FOR POSSIBLE RECONNECTION OF SERVICE.



NOTE 5

H 600A MLO

208Y/120V

PANEL

600A MCB

208Y/120V

NOTE 4

SUITE 1237

GRADE

Andrew Osterlund

ARCHITECT, PLLC

19 WEST HARGETT STREET #700

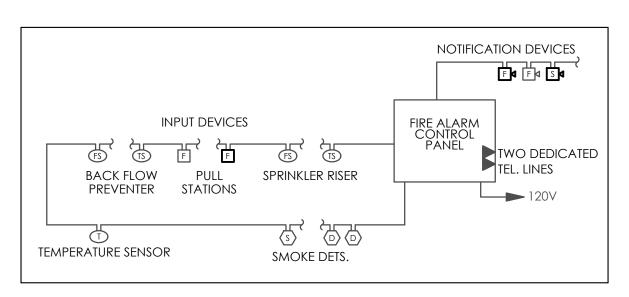
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PERMIT SET DATE: 04/26/13 DRAWN BY: JMS

REVISIONS: /1 5-5-13 OWNER CHANGE

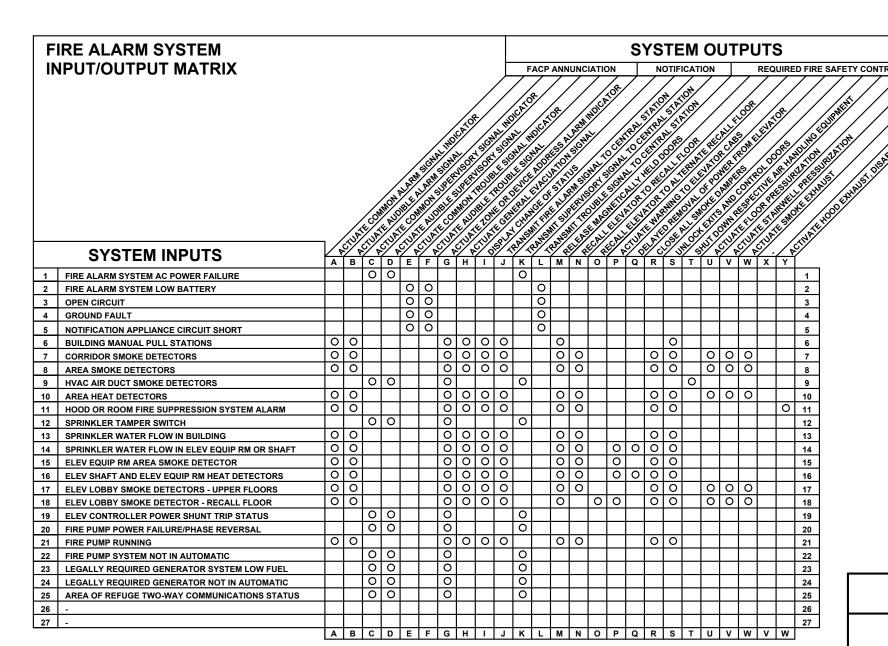
PANEL SCHEDULES & RISER



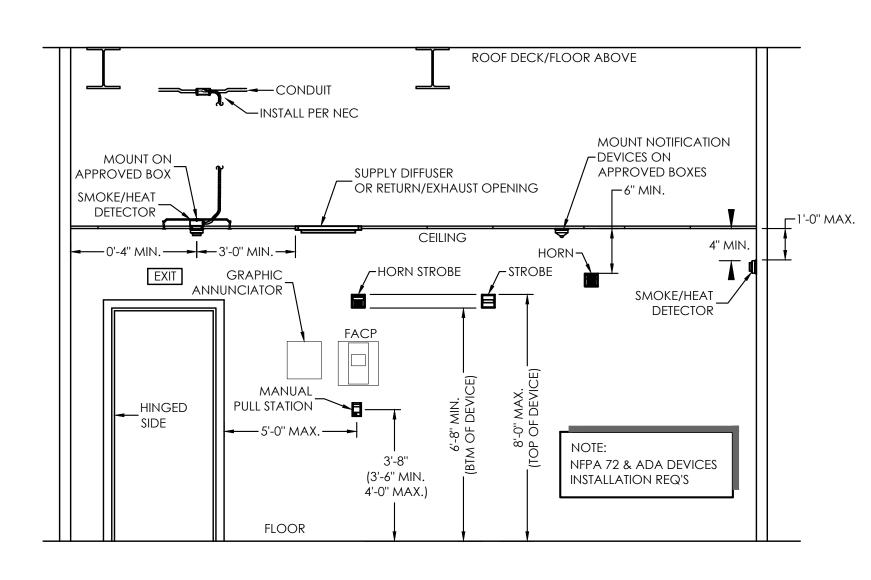
RISER NOTES:

- 1. FIRE ALARM SYSTEM IS EXISTING. COORDINATE NEW DEVICES WITH EXISTING FA SYSTEM TYPE, MODEL, AND REQUIREMENTS. PROVIDE ALL PROGRAMMING AND FINAL CONNECTION BY A FACTORY TRAINED TECHNICIAN.
- 2. EXISTING FIRE ALARM DEVICES ARE SHOWN IN FAINT. NEW OR RELOCATED DEVICES ARE SHOWN IN **BOLD**.
- 3. RISER IS GENERIC IN NATURE. CONTRACTOR TO FIELD VERIFY EXACT LAYOUT AND









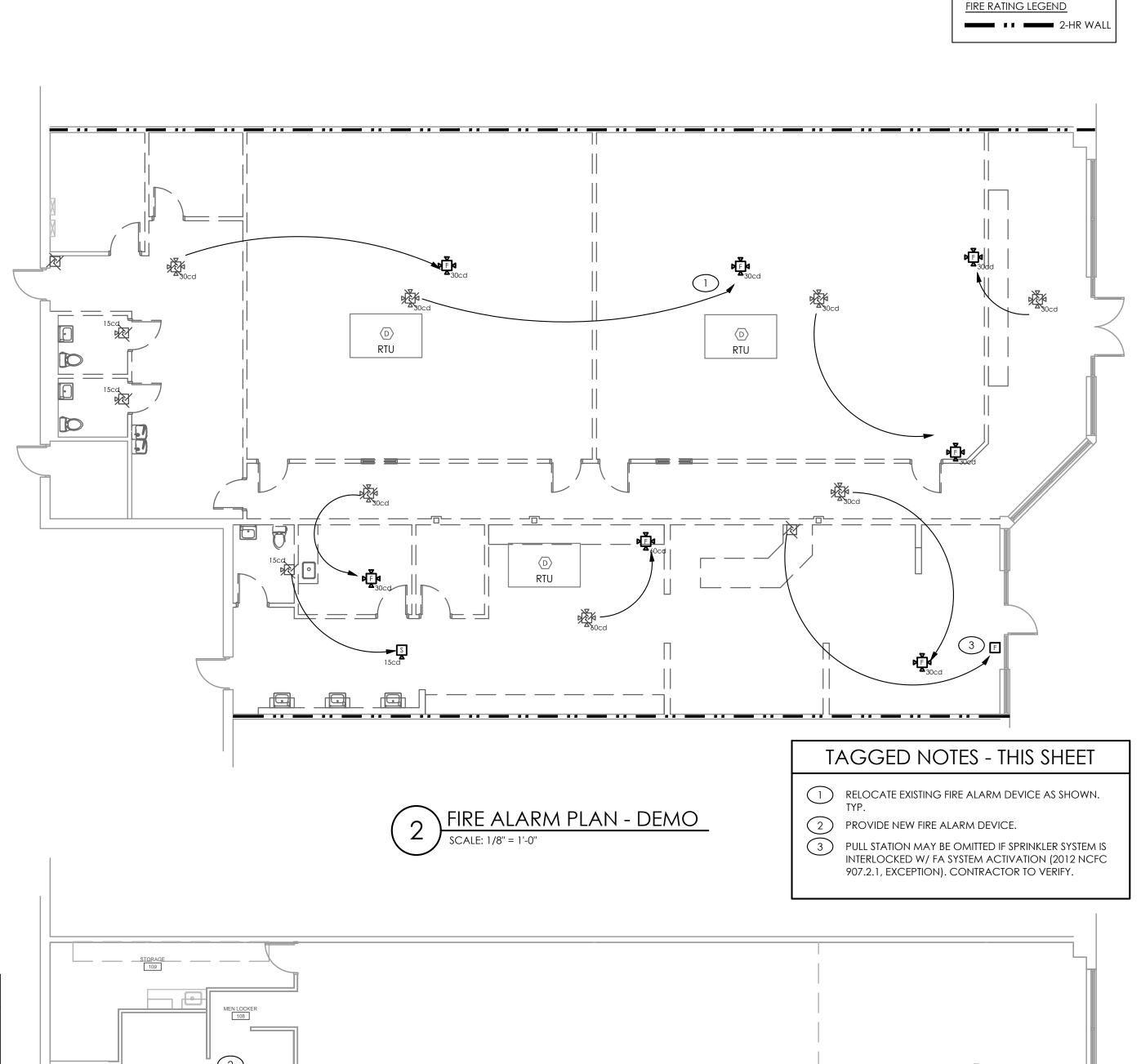
FIRE ALARM DEVICE LOCATIONS

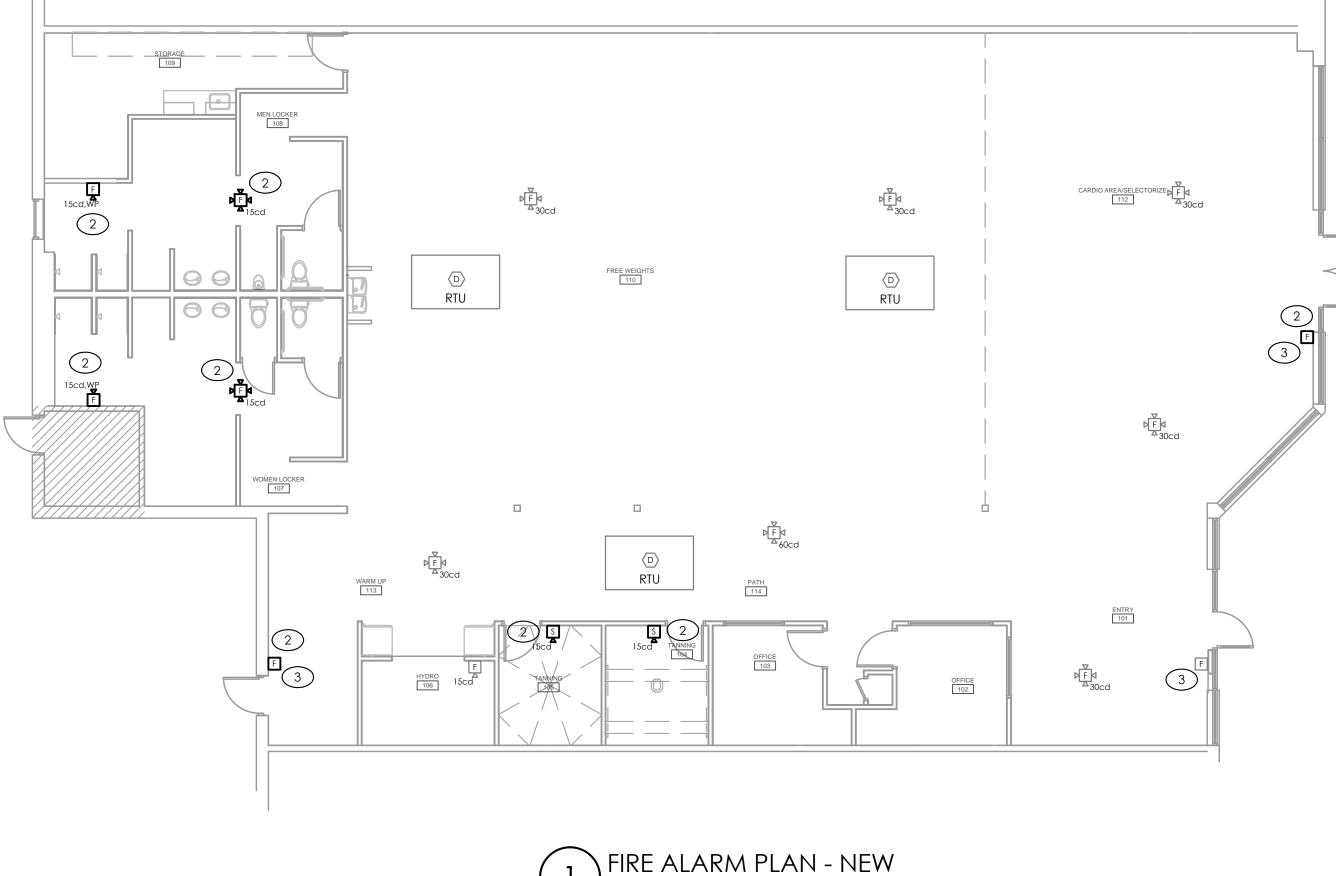
GENERAL FIRE ALARM NOTES

- . EXISTING FIRE ALARM DEVICES ARE SHOWN IN FAINT. NEW OR RELOCATED DEVICES ARE SHOWN IN **BOLD**. SEE LEGEND.
- 2. THE FIRE ALARM CONTRACTOR IS TO BE HELD TO THE SAME REQUIREMENTS AS THE ELECTRICAL CONTRACTOR. FIRE ALARM CONTRACTOR SHALL REVIEW ELECTRICAL PLANS AND ELECTRICAL "GENERAL NOTES" BEFORE COMPLETING BID.
- 3. FIRE ALARM CONTRACTOR IS TO VERIFY EXISTING FIRE ALARM SYSTEM HAS BATTERY AND VOLTAGE CAPACITY TO HANDLE ADDITIONAL DEVICES. PROVIDE FIRE ALARM SHOP DRAWINGS IF REQ'D TO LOCAL AHJ.
- 4. AUDIBLE FIRE ALARM NOTIFICATION APPLIANCES SHALL PROVIDE A SOUND PRESSURE LEVEL OF 15DBA ABOVE THE AVERAGE AMBIENT SOUND PRESSURE LEVEL AT ALL LOCATIONS WITHIN THE OCCUPIABLE SPACE. TYPICAL AVERAGE AMBIENT SOUND PRESSURE LEVELS ARE GIVEN IN NFPA 72 TABLE A-4-3.2.
- 5. IF THREE OR MORE FIRE ALARM SYSTEM VISUAL NOTIFICATION APPLIANCES ARE LOCATED WITHIN AN OBSERVERS FIELD OF VIEW (135°) AND WITHIN 55'-0" OF THE OBSERVER, THEN THE DEVICES SHALL BE SYNCHRONIZED.
- 6. FIRE ALARM DEVICES ARE TO BE INSTALLED IN ACCORDANCE WITH NFPA 72 AND 'ADA'.
- 7. ALL FIRE ALARM WIRING SHALL BE IN CONDUIT OR AS ALLOWED BY NEC OR LOCAL AHJ.
- 8. ELECTRICAL CONTRACTOR SHALL PROVIDE AN UPDATED FIRE ALARM LAYOUT PLAN AT THE FACP.
- 9. TESTING OF THE FIRE ALARM SYSTEM SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR.
- 10. CONTRACTOR TO ENSURE ALL EXISTING DEVICES ARE FUNCTIONING PROPERLY AND CANDELLA RATING IS AS INDICATED.

FIRE ALARM SYMBOL LEGEND \mathbf{X} FIRE ALARM CONTROL PANEL, SEMI-FLUSH MOUNTED. ΑN FIRE ALARM SYSTEM ANNUNCIATOR PANEL, 48" A.F.F. F FIRE ALARM SYSTEM MANUAL PULL STATION, 48" A.F.F. F**4** FIRE ALARM SYSTEM ALARM INDICATING DEVICE, HORN/STROBE, 80" A.F.F. \$ 4 FIRE ALARM SYSTEM ALARM INDICATING DEVICE, STROBE, 80" A.F.F. 闡 FIRE ALARM SYSTEM ALARM INDICATING DEVICE, HORN/STROBE, CEILING. ø**∑**ø FIRE ALARM SYSTEM ALARM INDICATING DEVICE, STROBE, CEILING. M FIRE ALARM SYSTEM ALARM INDICATING DEVICE, MINI-HORN. 80" A.F.F. FIRE ALARM SYSTEM ALARM INDICATING DEVICE, MINI-HORN/STROBE 80" A.F.F. **⊢**4 **(S)** FIRE ALARM SYSTEM CEILING MOUNTED SMOKE DETECTOR, MULTI-MODE TYPE. "R" INDICATES FOR ELEVATOR RECALL FUNCTION AND INTERLOCK WITH ELEVATOR CONTROLLER. \bigcirc FIRE ALARM SYSTEM DUCT SMOKE DETECTOR, PROVIDED AND WIRED BY E.C., INSTALLED BY DH MAGNETIC DOOR HOLDER (SUPPLIED WITH DOOR HARDWARE), CONNECT TO LOCAL SMOKE DETECTOR. (ZI) FIRE ALARM SYSTEM TAMPER SWITCH. FIELD COORDINATE EXACT QUANTITY AND LOCATIONS. FS FIRE ALARM SYSTEM FLOW SWITCH. FIELD COORDINATE EXACT QUANTITY AND LOCATIONS. FIRE ALARM SYSTEM ROOM TEMPERATURE SUPERVISORY SWITCH. ALARM SHALL INDICATE A (T) DECREASE IN ROOM TEMP TO BELOW 40°F AND ITS RESTORATION TO ABOVE 40°F. FIELD COORDINATE EXACT QUANTITY AND LOCATIONS. 120V MULTI-STATION SMOKE DETECTOR WITH BATTERY BACK-UP. CONNECT TO NEAREST 120V CIRCUIT. FOR UNITS WITH 2 OR MORE SMOKE DETECTORS, DETECTORS MUST BE INTERLOCKED SUCH THAT THEY ALL ALARM AT ONE TIME. "ADA" - UNITS SHALL HAVE 177CD STROBE NOTIFICATION IN SLEEPING AREAS. \Diamond ANSUL HOOD SYSTEM "ALARM" OUTPUT. F₫ NEW OR RELOCATED DEVICE ("WP" INDICATED WEATHER PROOF) F⊲ EXISTING DEVICE TO REMAIN

DEMO'D DEVICE OR DEVICE TO BE RELOCATED.





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FIRE ALARM PLAN

04/26/13

DATE:

REVISIONS:

DRAWN BY: JMS

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