

FIRE PROTECTION SPECIFICATIONS

I GENERAL

A. General: The work covered consists of furnishing all labor and materials necessary to install, complete and ready for continuous operation, the fire protection systems, apparatus and equipment for the "Host" Storage Room at Portland International Jetway.

B. Shop Drawings: Shop drawings of all specified equipment and apparatus shall be submitted to the Architect for approval.

C. Codes: All equipment and materials furnished under the Fire Protection Sub-Contract and labor and testing performed herein shall be in complete accordance with the Maine State Building Codes, Local Ordinances and Regulations of the City or Town, National Fire Protection Association and insurance regulations and requirements governing such work.

D. Permits: Any and all permits required for installation of any material shall be obtained as part of the work of the Specification including all fees or expenses incurred.

E. Instructions: During the assembly and installation of all Fire Protection systems, the Owner's operating personnel shall be instructed regarding its operation and maintenance. A two (2) week instruction period shall be provided after completion of project. Operation and maintenance manuals shall be required.

F. Guarantee: All materials and equipment furnished and installed shall be guaranteed in writing for one (1) year from the date of acceptance of the building by the Owner.

G. Record Drawings: The Fire Protection Subcontractor shall maintain at the job, at all times, a complete and separate set of blackline prints of the Fire Protection Drawings of his trade on which he shall mark clearly, neatly, accurately and promptly as the work progresses. Two CADD disks, AutoCAD 2000 or compatible system as well as mylar reproducible "As-Built" shall be furnished by the Fire Protection Subcontractor at the job completion. The Fire Protection Contractor's Design Engineer shall certify that the completed installation complies with all applicable codes and underwriters' requirements.

H. Inspection: All work shall be subject to the inspection of the Architect and such other inspectors having jurisdiction. A properly executed certificate of inspection shall be provided.

I. Examination of Site: The Fire Protection Subcontractor, before submitting prices or beginning work, shall thoroughly examine the site and Contract Documents. No claim for extra compensation will be recognized if difficulties which an examination of site conditions and Contract Documents prior to executing Contract would have revealed.

J. Coordination: Coordinate all work installed under this specification with that of all other trades.

K. Protection of Property: Protect all new and existing work before, during and after installation.

L. Tests: The Fire Protection Subcontractor shall perform all tests at the completion of the work and the results furnished to the Owner and Architect in writing.

M. Certificates of Approval: Upon completion of all work, the Fire Protection Subcontractor shall furnish, in duplicate, certificates of inspections from all inspectors and authorities having jurisdiction, notarized letters from the manufacturers stating that authorized factory engineers have inspected and tested the installation of their respective systems and found same to be in perfect operating condition.

N. Contract Drawings: The Contract Drawings are diagrammatic and indicate only the general arrangements of work. It is not the intent of these Drawings to show every pipe, rise, drop, elbow, etc. Any additional work not shown and required to install the fire protection systems shall be included as part of this Contract.

O. Removal Work: Particular care shall be taken to avoid creating hazards on the site or causing disruption of service in the building. All existing equipment to be removed shall be done in a neat and workmanlike manner. All existing equipment to be turned over to the Owner shall be presented to the Owner in good condition at a location designated by the Owner. All other equipment shall be removed from the premises. Remove all abandoned piping and equipment not built into building construction. Where ceiling or walls are removed, all abandoned piping shall be removed and ends of live services capped. Abandoned elements built into walls or located above existing inaccessible ceilings shall remain and ends capped and marked abandoned.

P. Continuity of Services: Services shall be maintained in all areas which will be occupied during the construction period. If an interruption of service becomes necessary, such shall be made only upon consent of the Owner at a time outside normal working hours as he shall designate. Refer to the overall scheduling of the work of the project. Schedule work to conform to this schedule and install work to not delay nor interfere with the progress of the project.

Q. Asbestos Removal: Should this Subcontractor or any of its Sub-Subcontractors encounter any asbestos and/or asbestos related products of materials (the "asbestos materials") during the performance of its work, this Subcontractor shall stop work immediately and so inform the General Contractor and the Owner of the presence of asbestos.

II SCOPE

A. The work of this Section consists of all labor, materials and equipment required to provide all Fire Protection work complete, in place, as shown on the Drawings, specified herein and as necessary for a proper installation.

B. The extent of the Fire Protection shall include, but not be limited to the following:

- Alterations, additions and/or removal of existing automatic wet sprinkler or combination sprinkler and standpipe system within the renovated area in order to conform to new space requirements.

III RELATED WORK

A. The following equipment items and work shall not be the responsibility of this Contractor:

- Cutting and Patching
- Temporary Water, Heat, Fire Protection and Toilet Facilities
- Temporary Power and Lighting
- Flashing and Caulking
- Finish Painting
- Heating, Ventilating and Air Conditioning
- Plumbing
- Electrical Power and Wiring

IV MATERIALS

A. Pipe and Fittings

- Type E: Schedule 10 welded and seamless steel pipe in accordance with ASTM A135 joined with groove fittings and couplings approved for service with grooves rolled on the pipe by an approved groove rolling machine. Minimum wall thickness shall be Schedule 10 for sizes up to 5 inch pipe, 0.134 inch for 6 inch pipe and 0.188 inch pipe for 8 inch pipe and 10 inch pipe. Fittings and couplings shall be designed specifically for use in grooved piping systems and suitable for 175 psi minimum working pressure. Fittings, couplings and gaskets shall be of the same manufacturer.
- Pipe and fittings shall be in accordance with the following:
 - Sprinkler System Type D & E

B. Pipe Sleeves, Hangers, and Supports

- All piping shall be properly supported from building structure in accordance with NFPA Codes and the manufacturer's recommendations. Provide Schedule 40 steel sleeves, extend 1" above floor, make weathertight and seal with material that maintains fire rating. Provide core drilling where required and provide fire rated link seal penetration closures.

C. Valves

- Gate valves shall be OS&Y type iron or bronze body, bronze seated, flanged or threaded ends and UL/FM approved, 175 psi working pressure.
- Check valves shall be swing type iron or bronze body, bronze seated, flanged or threaded ends and UL/FM approved, 200 psi working pressure.
- Globe valves shall be bronze body with threaded ends, 300 psi working pressure.
- Alarm check valves shall be UL/FM approved vertical type for a wet system complete with all trim, excess pressure pump, water motor gang, pressure gauges and drain valves.
- Double check valve assembly shall be approved by authorities having jurisdiction. Seek and secure all applications and permits. Provide test kit and certify installation.

D. Flow Switches

- Flow switches shall be approved type, UL listed, double contacts with adjustable retard dial, cast aluminum saddle, flexible saddle, rubber gasket and dust proof cover.

E. Supervisory Switches

- Supervisory switches for OS&Y valves shall be FM approved, UL listed, double contacts with aluminum case topped for 1/2 inch NPT conduit.

F. Pressure Switches

- Pressure switches shall be FM approved, UL listed, double contacts with aluminum case, brass bellows factory preset and adjustable from 2 PSI to 20 PSI.

G. Sprinklers

- Sprinklers, in general, shall be automatic closed type with temperature ratings to suit installed conditions. Sprinklers shall be located in the center of the ceiling tiles. When the ceiling tile is divided into sections by grooved depressions, the sprinkler shall be located in the center of one of the panels.
- Sprinklers in areas to be finished with ceilings shall be chrome plated pendant type with chrome plated escutcheons. Sprinklers in unfinished spaces shall be natural bronze pendant or upright.
- Spare heads, cabinet and wrench shall be provided in accordance with NFPA 13.

H. Pipe Identification and Valve Tags

- All fire protection piping shall be labeled at each valve, at each branch, at each passage through wall and at intervals of not more than 20 feet with semi-rigid Setmark pipe markers with arrows indicating the direction of flow. All valves shall be tagged with 1-1/2 inch diameter brass tags and numbered in sequence from point of entrance into the building. Valve charts shall be placed under glass, framed and presented to the Owner.

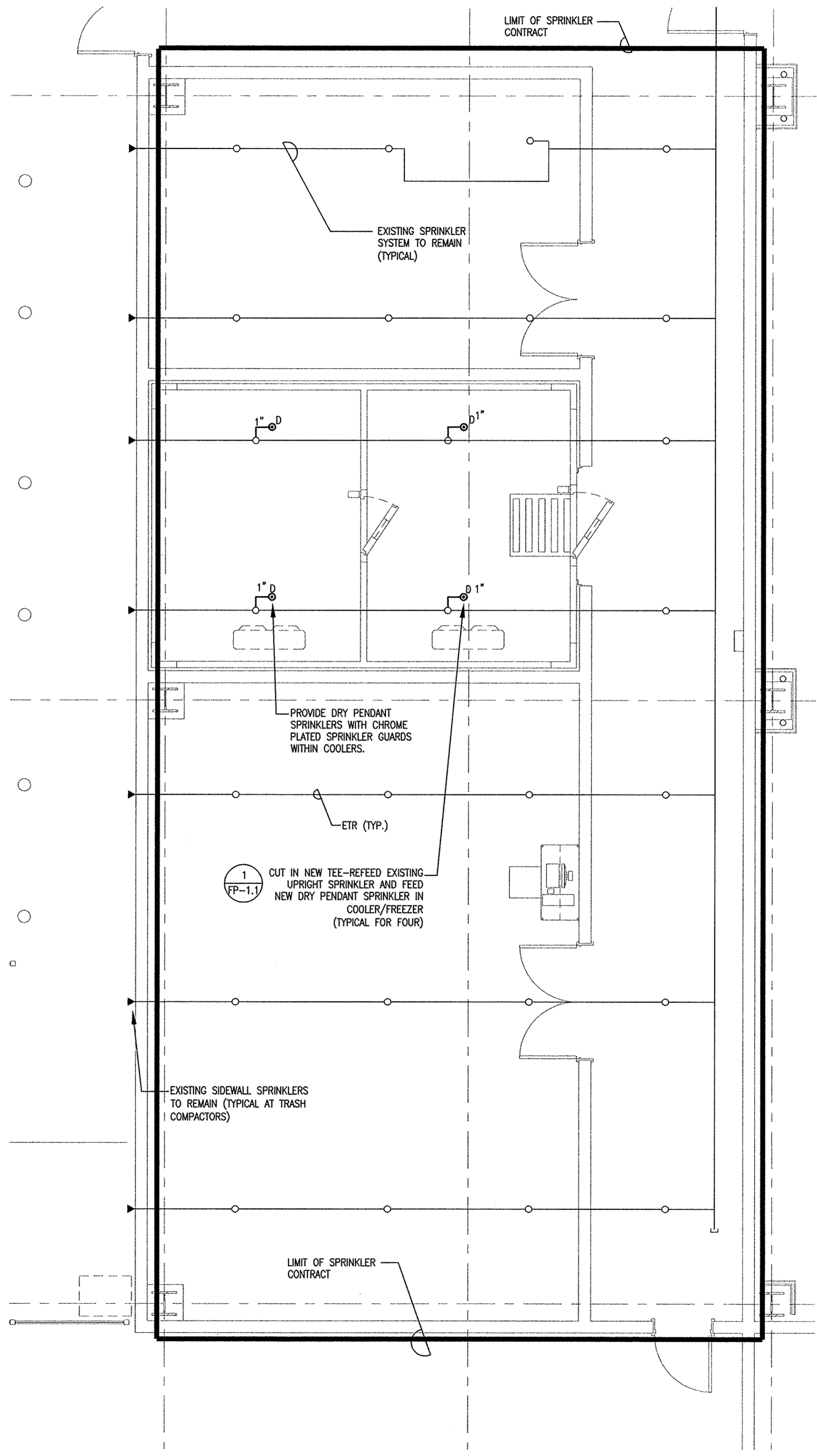
I. Access Panels

- Furnish access panels for access to all concealed parts of the fire protection systems that require accessibility for the proper operation and maintenance of the system. Size shall be sufficient for the purpose, but no less than 12 inches by 18 inches. Access doors shall be prime coated of rust inhibitive paint, continuous hinge and manufactured by Inland Steel Products Company "Milcor".

J. Design Criteria

- Sprinkler systems shall be hydraulically designed and calculated by the Fire Protection Contractor. The Fire Protection Contractor shall submit all required hydraulic calculations to prove the hydraulically most remote areas are being protected. Fabrication drawings and hydraulic calculations shall be submitted and stamped approved by the local fire department and insurance underwriters prior to submitting to the Architect for review. Fabrication drawings and hydraulic calculations shall bear the seal of registration of a qualified Registered Professional Fire Protection Engineer. Maintain a minimum of 10 psi cushion between required pressure and available pressure. Comply with all Underwriters' and code authorities requirements including maximum water flow velocity in the fire protection system.
- Automatic sprinkler systems in areas of light hazard occupancy shall be designed with a minimum design density of .10 GPM per square foot over the hydraulically most remote 1500 square feet. Maximum protection area per sprinkler shall be 225 square feet for upright and pendant sprinklers, and 195 feet for sidewall sprinklers. Provide a 100 GPM hose allowance.
- Automatic sprinkler systems in areas of ordinary hazard occupancy shall be designed with a minimum design density of .15 GPM per square foot over the hydraulically most remote 1500 square feet. Maximum protection area per sprinkler shall be 130 square feet. Provide a 250 GPM hose allowance.

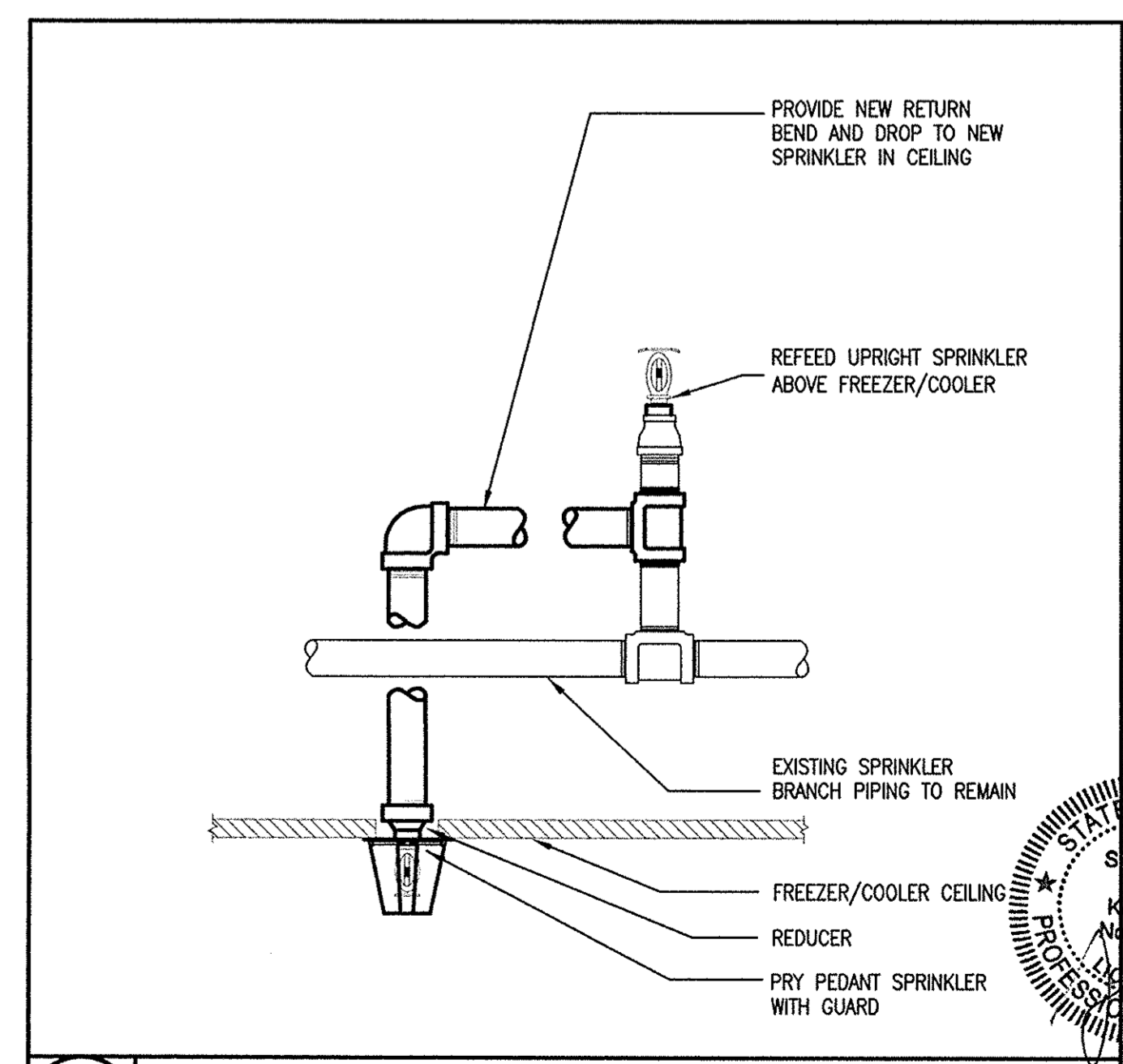
- DRAWING NOTES:**
- ALL NEW ARM OVERS SHALL BE 1" PIPING.
 - PROVIDE DRY PENDANT SPRINKLERS WITH CHROME PLATED SPRINKLER GUARDS WITHIN FREEZERS/COOLERS.
 - SPRINKLERS BEYOND THE LIMIT OF WORK ARE EXISTING TO REMAIN PROVIDED UNDER BASE BUILDING CONTRACT.
 - MATCH BASE BUILDING FOR TEMPERATURE RATING AND MANUFACTURER, FINISH SHALL BE WHITE UNLESS NOTED OTHERWISE.



1 STORAGE ROOM FIRE PROTECTION PLAN
1/4"=1'-0"

FIRE PROTECTION LEGEND

	NEW WORK PIPING (INDICATED AS HEAVY LINE)
	EXISTING TO REMAIN (INDICATED AS LIGHT LINE)
	EXISTING PIPING TO BE REMOVED
	EXISTING EQUIPMENT TO BE REMOVED
	CONNECT TO EXISTING
	WET SPRINKLER PIPE
	PIPE TEE LOOKING UP
	PIPE TEE LOOKING UP
	PIPE ELBOW UP
	PIPE ELBOW DOWN OR DROP
	CONTINUATION
	FLOW IN DIRECTION OF ARROW
	UPRIGHT WET SPRINKLER
	PENDENT WET SPRINKLER
	CONCEALED WET SPRINKLER
	SIDEWALL WET SPRINKLER
	PENDENT DRY SPRINKLER
	NAS NO AUTOMATIC SPRINKLERS
	DIAGRAM NO. & DWG. NO. REFERENCE
	ELECTRIC BELL / WATER MOTOR GONG
	ABOVE FINISHED FLOOR
	ABOVE FINISHED GRADE
	LIMIT OF FIRE PROTECTION CONTRACT
	NOT IN FIRE PROTECTION CONTRACT
	GENERAL CONTRACTOR
	FIRE PROTECTION CONTRACTOR
	PLUMBING CONTRACTOR
	ELECTRICAL CONTRACTOR
	HVAC CONTRACTOR
	FURNISH & INSTALL
	CONTRACTOR FURNISHED / OWNER INSTALLED
	OWNER FURNISHED / CONTRACTOR INSTALLED
	FINISHED FLOOR ELEVATION
	WATER SERVICE ENTRANCE

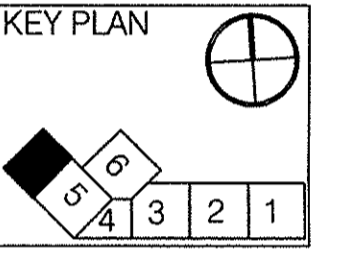


1 TYPICAL CONCEALED SPRINKLER HEAD RETURN BEND DROP WITH UPRIGHT HEAD

Item	Date
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PERMIT	8-23-11



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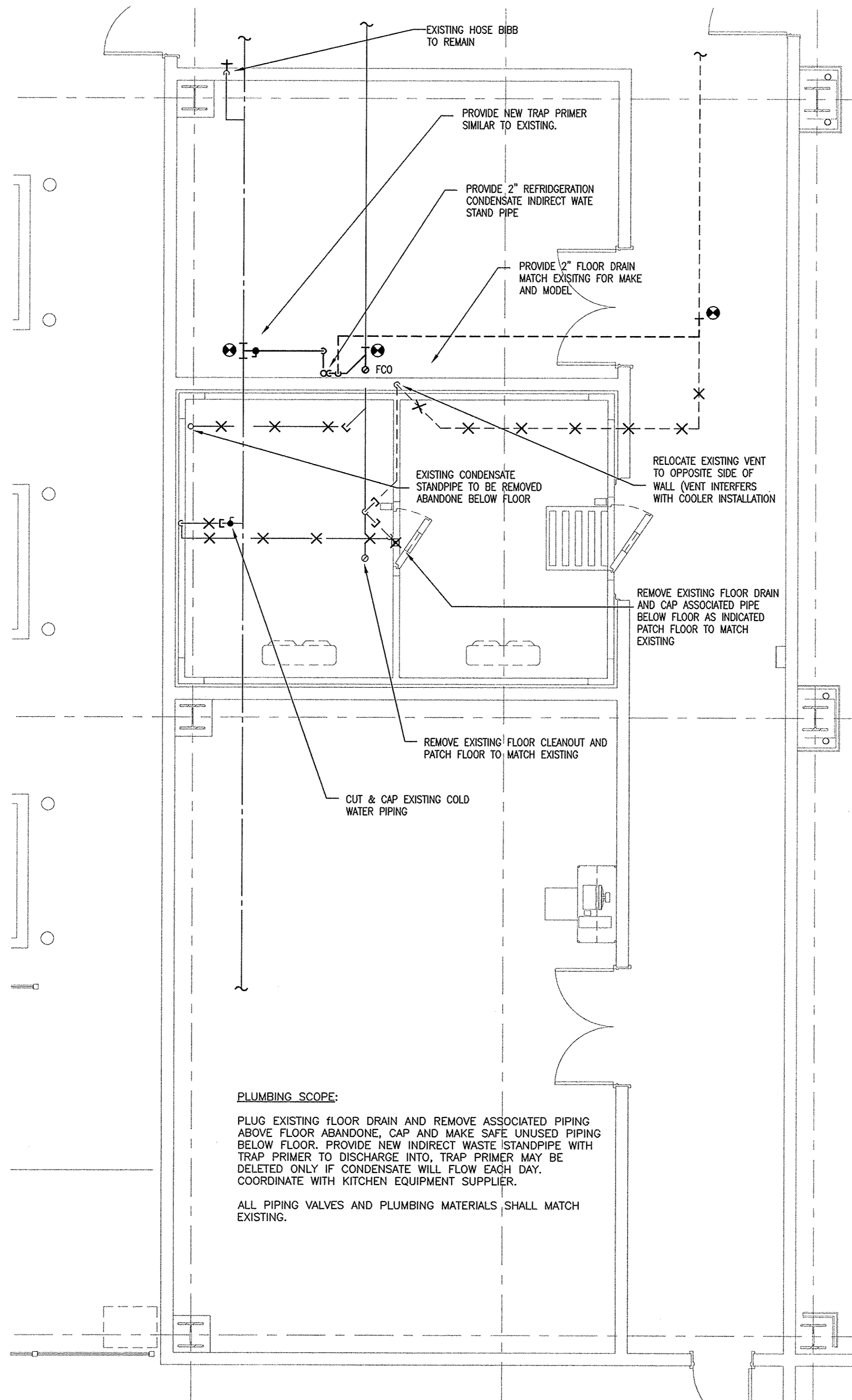
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Fire Protection Plan

FP 1.1

PLUMBING GENERAL NOTES:

- GENERAL NOTES, SYMBOLS LIST AND DETAILS ARE APPLICABLE TO ALL DRAWINGS MARKED P.
- DRAWINGS ARE DIAGRAMMATIC: DETERMINE LOCATIONS OF SYSTEMS AND COMPONENTS IN FIELD.
- ALL PLUMBING WORK SHALL BE IN ACCORDANCE WITH THE PRESIDING PLUMBING CODE AND ALL APPLICABLE LOCAL CODES.
- IT SHALL BE THE RESPONSIBILITY OF THIS CONTRACTOR TO COORDINATE WORK WITH THAT OF ALL OTHER TRADES, INCLUDING (BUT NOT LIMITED TO), ELECTRICAL, HVAC, FIRE PROTECTION, STRUCTURAL AND GENERAL ARCHITECTURE.
- ANY INTERFERENCE SHALL BE BROUGHT TO THE ATTENTION OF THE CONSTRUCTION MANAGER AND THE OWNER'S REPRESENTATIVE, AND RESOLVED PRIOR TO THE INSTALLATION OF THE WORK INVOLVED.
- NO WORK SHALL BE INSTALLED IN VIOLATION OF ANY GOVERNING CODES.
- ALL PIPING PENETRATING CEILINGS AND WALLS SHALL BE INSTALLED WITH CHROME (STAINLESS WHERE NOTED) PLATED ESCUTCHEONS AT THE PENETRATION. ALL PIPING PENETRATING EXTERIOR WALLS AND BE PROTECTED WITH SEALS OF EQUAL RATING AND AS REQUIRED BY LOCAL CODE AUTHORITY. COORDINATE WITH OTHER SECTIONS.
- ALL SLEEVES THROUGH CONCRETE FLOORS AND ALL CORE DRILLING OF CONCRETE FLOORS AND WALLS SHALL BE BY THIS CONTRACTOR.
- PROVIDE INFORMATION AND HARDWARE AS NECESSARY TO COORDINATE WORK.
- VERIFY EXACT SIZES, LOCATIONS, INVERTS AND ELEVATIONS PRIOR TO RUNNING ANY PIPING.
- REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS OF ALL FIXTURES AND EQUIPMENT.
- ALL PIPING THAT PENETRATES FLOORS OR FIRE RATED WALLS SHALL BE FIRE STOPPED W/ HILTI CAULKING PER MANUFACTURERS RECOMMENDATIONS.
- DEMOLITION WORK SHALL BE PERFORMED BY THE GENERAL CONTRACTOR. COORDINATE WITH THE GENERAL CONTRACTOR, ANY WORK WHICH MAY REQUIRE DISCONNECTION OR TEMPORARY CAPPING OF A SYSTEM WHICH SHALL REMAIN OPERATIONAL.
- BEFORE SUBMITTING BID, VISIT AND CAREFULLY EXAMINE SITE TO IDENTIFY EXISTING CONDITIONS AND DIFFICULTIES THAT WILL AFFECT WORK OF THIS SECTION. NO EXTRA PAYMENT WILL BE ALLOWED FOR ADDITIONAL WORK CAUSED BY UNFAMILIARITY WITH SITE CONDITIONS THAT ARE VISIBLE OR READILY CONSTRUED BY EXPERIENCED OBSERVER. SITE VISIT IS PARTICULARLY IMPORTANT BECAUSE THIS IS RENOVATION WORK. REFLECT TO NEW BOILERS REUSING AS MUCH OF THE EXISTING PIPING AS POSSIBLE.



PLUMBING SCOPE:
 PLUG EXISTING FLOOR DRAIN AND REMOVE ASSOCIATED PIPING ABOVE FLOOR ABANDONE, CAP AND MAKE SAFE UNUSED PIPING BELOW FLOOR. PROVIDE NEW INDIRECT WASTE STANDPIPE WITH TRAP PRIMER TO DISCHARGE INTO TRAP PRIMER MAY BE DELETED ONLY IF CONDENSATE WILL FLOW EACH DAY. COORDINATE WITH KITCHEN EQUIPMENT SUPPLIER.
 ALL PIPING VALVES AND PLUMBING MATERIALS SHALL MATCH EXISTING.

1 STORAGE ROOM PLUMBING PLAN
 1/4"=1'-0"

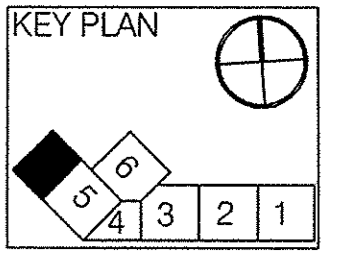
PLUMBING LEGEND

	ETR	LIGHT LINE INDICATES EXISTING PIPING TO REMAIN.
	RE	REMOVE EXISTING PIPING
	CTE	CONNECT TO EXISTING
	C&C	CUT & CAP
	CW	COLD WATER
	FW	FILTERED WATER
	HW	HOT WATER
	S or W	SOIL OR WASTE
	KW	KITCHEN WASTE
	V	VENT
	KV	KITCHEN VENT
	COND	STORM/CONDUCTOR
	CONT	CONTINUATION
	UP	PIPE RISE OR UP
	DN	PIPE DROP OR DOWN
	TEE	PIPE TEE
	SOV	SHUT-OFF VALVE
	PRV	PRESSURE REDUCING VALVE
	CV	CHECK VALVE
	W & T	WASTE & TRAP
	CO	CLEANOUT PLUG
	FCO	FLUSH FLOOR CLEANOUT
	DCO	DANDY CLEANOUT
		CAPPED PIPE
		ARROW INDICATES DIRECTION OF FLOW
		ARROW INDICATES DIRECTION OF SLOPE
		UNION
	TP	TRAP PRIMER
	HB	HOSE BIBB
		DIAGRAM NO. & DWG. NO. REFERENCE
	FD "A"	FLOOR DRAIN & TYPE
	WM	WATER METER
	T	THERMOMETER
	PG	PRESSURE GAUGE WITH PETCOCK
	T&P	TEMPERATURE AND PRESSURE RELIEF VALVE
		VACUUM RELIEF VALVE
	WH-1	WATER HEATER & NUMBER
	VIR	VENT THRU ROOF
	INV	INVERT
	TYP	TYPICAL
	NTS	NOT TO SCALE
	AFF	ABOVE FINISHED FLOOR
	LPC	LIMIT OF PLUMBING CONTRACT
	GC	GENERAL CONTRACTOR
	FPC	FIRE PROTECTION CONTRACTOR
	PC	PLUMBING CONTRACTOR
	EC	ELECTRICAL CONTRACTOR
	HVAC	HVAC CONTRACTOR
	MR	MOP RECEPTOR
	SK	SINK
	F & I	FURNISH & INSTALL
	S=.01	SLOPE = 1/8" PER FOOT
	NO	NORMALLY OPEN
	NC	NORMALLY CLOSED
	F.F.E.	FINISHED FLOOR ELEVATION

Item	Date
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PERMIT	8-23-11



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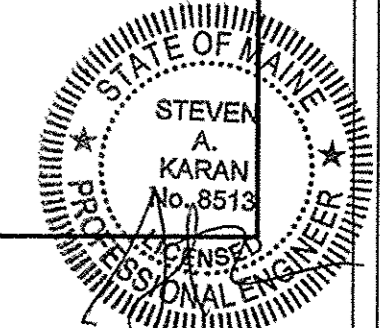
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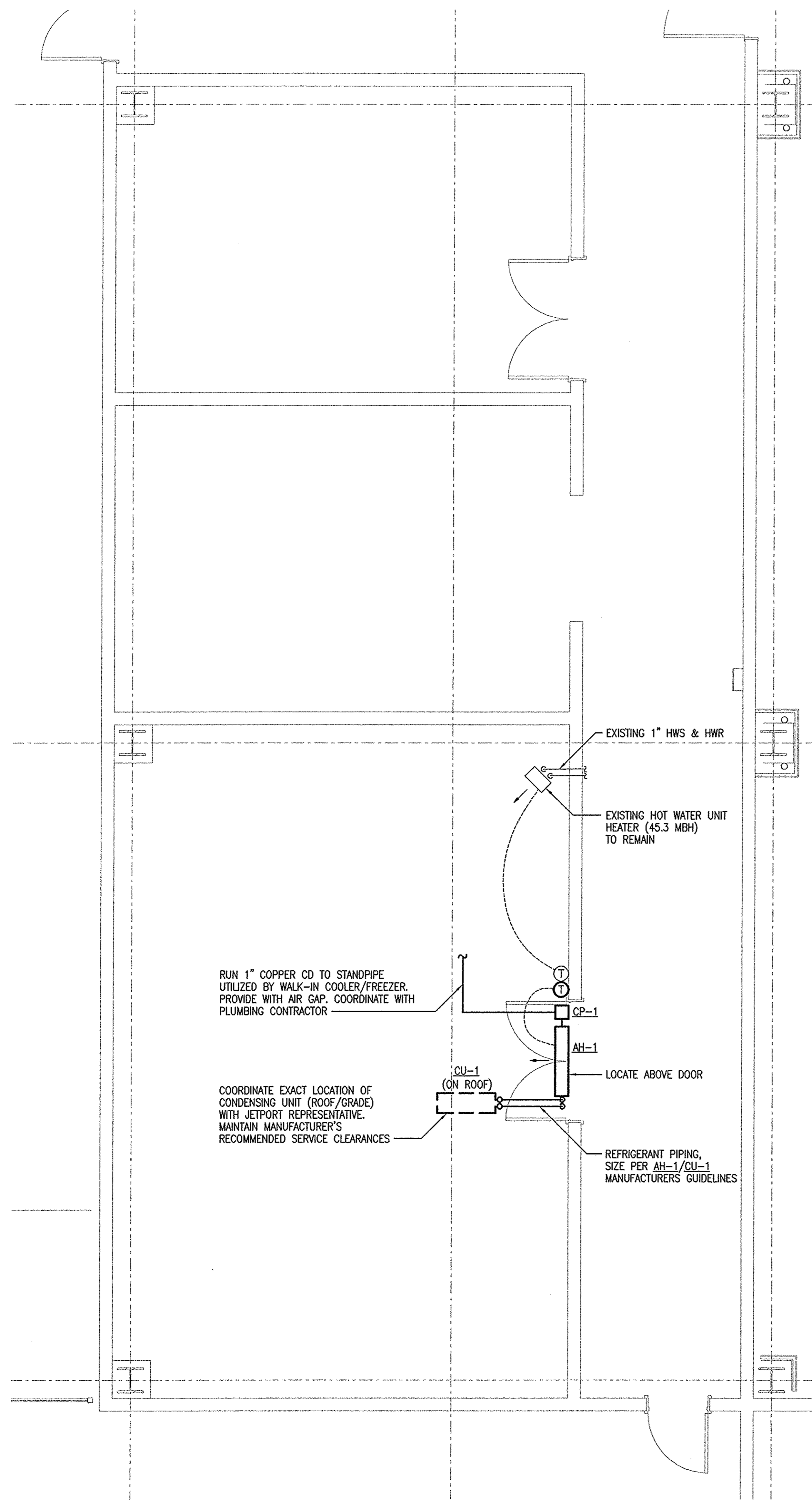
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Plumbing Plan	
P 1.1	





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

HVAC LEGEND	
SYMBOL	DESCRIPTION
##-#	EQUIPMENT TAG
Ⓢ	THERMOSTAT / TEMPERATURE SENSOR
↖	ELBOW UP
↘	ELBOW DOWN
A.F.F.	ABOVE FINISHED FLOOR
AH	AIR HANDLING UNIT
CD	CONDENSATE DRAIN
CP	CONDENSATE PUMP
CU	CONDENSING UNIT
HWR	HOT WATER RETURN
HWS	HOT WATER SUPPLY
MBH	THOUSANDS OF BTU / HOUR
BTU	BRITISH THERMAL UNIT

CONDENSATE PUMP SCHEDULE							
UNIT No.	SERVICE	CAP. GAL.	ELECTRICAL DATA			MANUFACTURER & MODEL No.	REMARKS
			VOLTS	PHASE	Hz		
CP-1	AH-1	1/2	115	1	60	LITTLE GIANT VCMA - 20ULS	①
① PROVIDE WITH SAFETY SWITCH AND CHECK VALVE.							

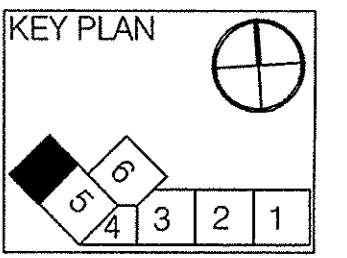
DUCTLESS SPLIT AIR CONDITIONING SYSTEM CONDENSING UNIT SCHEDULE														
GENERAL			PERFORMANCE		ELECTRICAL				PHYSICAL		REMARKS			
TAG	LOCATION	MATCHED AIR HANDLER	NOMINAL TONS	SEER	MCA	MOP	VOLTAGE	PHASE	APPROX WEIGHT (LBS)	MANUFACTURER MODEL	TYPE	RATINGS	FEATURES	INSTALL
CU-1	ROOF	AH-1	1.5	20.0	20	20	208	1	100	SANYO C1872	①	①	①	①②
① SINGLE INDOOR UNIT SYSTEM, R410A REFRIGERANT			① LOW AMBIENT CONTROL DOWN TO 0°F		① DISCONNECT SWITCH		① PROVIDE SPLIT SYSTEM REFRIGERANT PIPING BETWEEN AIR HANDLER AND MATCHED CONDENSING UNIT, SIZED AND CONFIGURED PER THE MANUFACTURER'S RECOMMENDATIONS. ② MOUNT UNIT ON (2) ROOF RAILS, SIMILAR TO GREENHECK MODEL GESR (INSULATED), 14" HIGH, 6" WIDE, WELDED ALUMINUM. RAILS SHALL BE MOUNTED DIRECTLY TO THE ROOF STRUCTURE, THEN ROOFED AND FLASHED WATER TIGHT. COORDINATE WITH LANDLORD.							

DUCTLESS SPLIT AIR CONDITIONING SYSTEM AIR HANDLER SCHEDULE															
GENERAL			PERFORMANCE			ELECTRICAL				PHYSICAL		REMARKS			
TAG	LOCATION	MATCHED COND. UNIT	NOMINAL TONS	TOTAL MBH	SENSIBLE MBH	FAN		MCA	MOP	VOLTAGE	PHASE	MANUFACTURER MODEL	TYPE	RATINGS	FEATURES
						CFM	SPEED								
AH-1	STORAGE	CU-1	1.5	17.5	13.1	523	3 & AUTO	20	20	208	1	SANYO KS1872	①	①	①②③
① WALL MOUNTED			① LOW AMBIENT CONTROL DOWN TO 0°F		① CONDENSATE PUMP		② DISCONNECT SWITCH		③ REMOTE THERMOSTAT						

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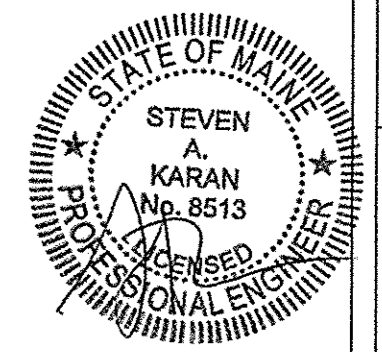
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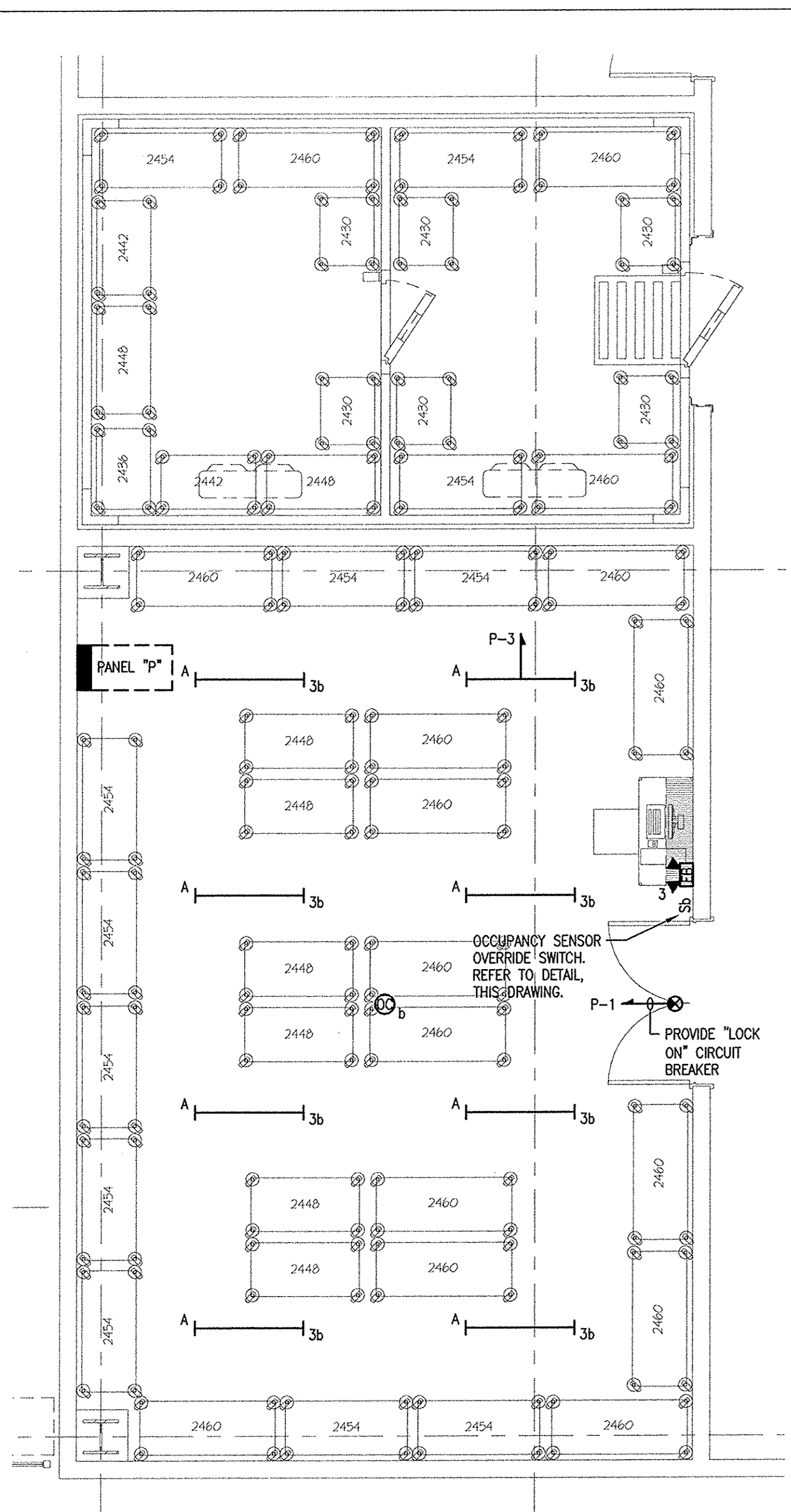
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Mechanical Plan

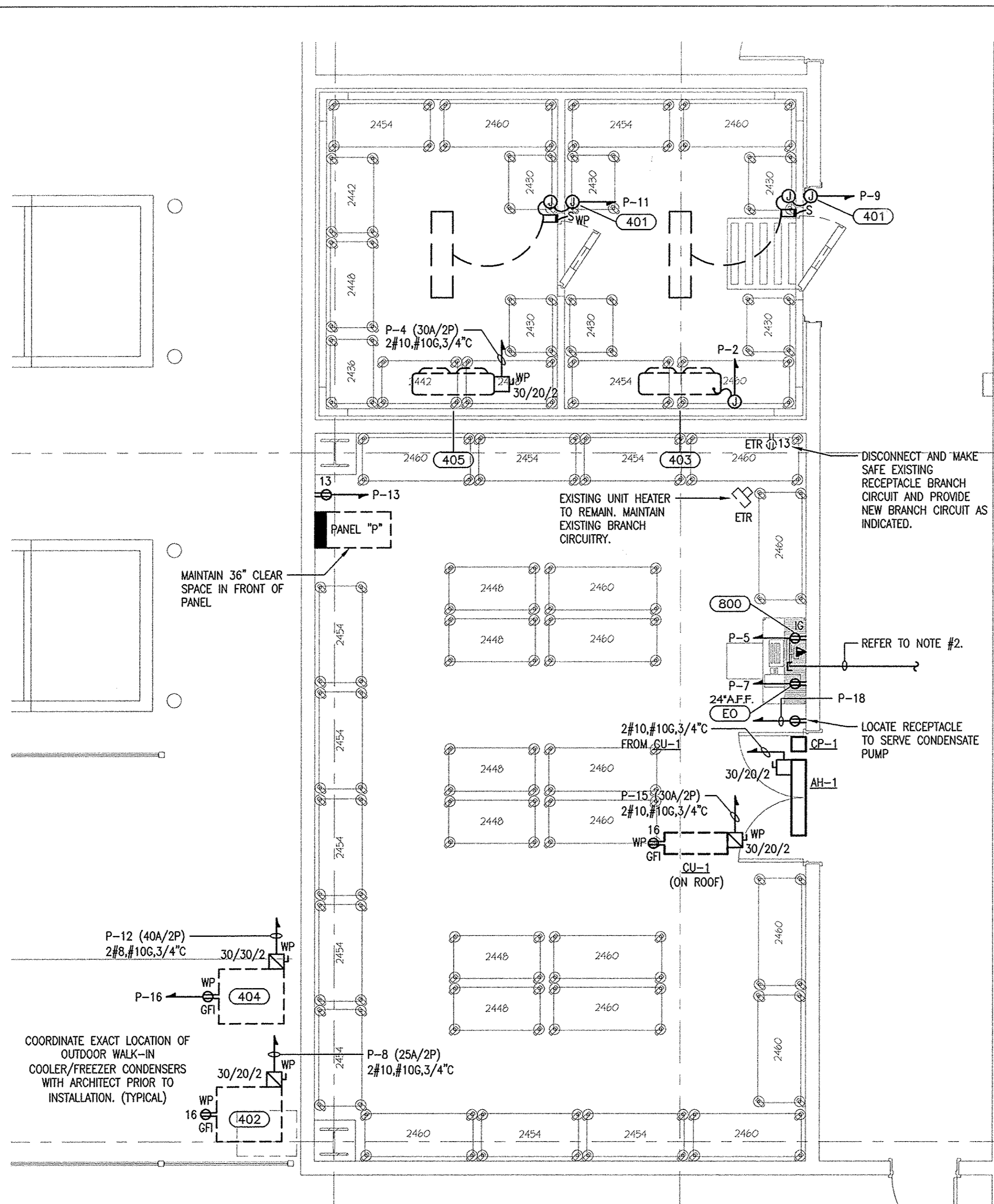


M 1.1



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

NOTES:
1. EXISTING LIGHTING FIXTURES IN STORAGE AREAS TO BE DISCONNECTED, REMOVED, AND BRANCH CIRCUIT MADE SAFE.



2 STORAGE ROOM POWER PLAN
1/4" = 1'-0"

NOTES:
1. COORDINATE EXACT REQUIREMENTS OF WALK-IN COOLER/FREEZER WITH EQUIPMENT SUPPLIER. E.C. SHALL BE RESPONSIBLE FOR ALL WIRING ASSOCIATED WITH COOLER/FREEZER EQUIPMENT AND INTERNAL PARTS AS NECESSARY.
2. THE E.C. SHALL PROVIDE (1) 2" CONDUIT BELOW LEVEL 3 SLAB FROM COMPUTER LOCATION TO STARBUCK'S POS CABINET ON LEVEL 3. TERMINATE AT CEILING WITHIN STARBUCK'S WITH COUPLING. REFER TO ARCHITECTURAL DRAWING A-1.1 FOR EXACT REQUIREMENTS.

LEGEND

- MOUNTING HEIGHTS SHALL BE AS INDICATED UNLESS SHOWN OTHERWISE ON ELECTRICAL DRAWINGS OR ARCHITECTURAL ELEVATIONS
- ALL SYMBOLS MAY NOT BE SHOWN ON PLANS

RACEWAYS AND WIRING

- P4-1 SINGLE PHASE HOMERUN TO PANELBOARD. "P4" DENOTES PANEL, "1" DENOTES CIRCUIT NUMBER, [(1) 20A, 1P CIRCUIT], MINIMUM 2#12 & 1#12G IN 3/4" UNLESS INDICATED OTHERWISE.
- P4-2 MULTI-POLE HOMERUN TO PANELBOARD. "P4" DENOTES PANEL, "2" DENOTES CIRCUIT NUMBER, 20 AMP 3 POLE C/B.

NOTES:
1. GREEN GROUND CONDUCTOR NOT INDICATED BUT SHALL BE INCLUDED IN EACH RACEWAY. SIZE SHALL BE #12AWG UNLESS INDICATED OTHERWISE.

LIGHTING FIXTURES

- A 20 FLUORESCENT LIGHTING FIXTURE SURFACE MOUNTED. "A" DENOTES FIXTURE TYPE, "2" DENOTES CIRCUIT NUMBER, "o" DENOTES SWITCH CONTROL.
- CEILING MOUNTED ILLUMINATED EXIT SIGN
- EMERGENCY BATTERY UNIT

TOGGLE SWITCHES (MOUNTED 48" AFF)

- So SINGLE POLE TOGGLE SWITCH; "o" DENOTES FIXTURE CONTROL
- CEILING MOUNTED OCCUPANCY SENSOR EQUAL TO WATSTOPPER #CI-300

RECEPTACLES (MOUNTED 18" AFF OR AS INDICATED ON ARCHITECTURAL PLANS)

- IG 2 DUPLEX RECEPTACLE, "2" DENOTES CIRCUIT NUMBER, "IG" DENOTES ISOLATED GROUND

TELECOMMUNICATIONS (MOUNTED 18" AFF)

- TELEPHONE OUTLET
- COMPUTER SYSTEM OUTLET
- COMBINATION TELEPHONE/DATA OUTLET

NOTE:
E.C. SHALL PROVIDE A DOUBLE GANG BACK BOX WITH SINGLE GANG REDUCER, 1" CONDUIT AND PULLSTRING STUBBED OUT ABOVE ACCESSIBLE CEILING.

POWER DISTRIBUTION EQUIPMENT

- PANELBOARD, SURFACE MOUNTED
- JUNCTION BOX, SIZE PER NEC
- 30/30 NON-FUSED DISCONNECT SWITCH: "30/3" DENOTES 30 AMP/3 POLE SWITCH
- FUSED DISCONNECT SWITCH: "30/20/3" DENOTES 30 AMP/3 POLE SWITCH, 20 AMP FUSES

LIGHTING FIXTURE NOTES:

1. PROVIDE ACCESSORIES AND MOUNTING HARDWARE FOR ALL FIXTURES.
2. COLORS SHALL BE AS SELECTED BY ARCHITECT.
3. COORDINATE EXACT LOCATION WITH ARCHITECT PRIOR TO ROUGH-IN.
4. ALL COMPACT FLUORESCENT BALLASTS SHALL BE ELECTRONIC TYPE.
5. ALL FLUORESCENT LAMPS SHALL BE 3500K.

BRANCH CIRCUIT WIRING NOTES:

1. WIRING IS SHOWN ON DRAWINGS ONLY FOR SPECIFIC ROUTES OR SPECIAL CONDITIONS.
2. WIRING AND CONDUIT SHALL BE REQUIRED BETWEEN ALL OUTLETS INDICATED WITH CIRCUIT NUMBERS AND PANEL DESIGNATIONS.
3. ALL SWITCH CONTROLS SHALL BE PROVIDED WITH WIRING AND CONDUIT AS REQUIRED.
4. ALTHOUGH ALL BRANCH CIRCUIT WIRING AND CONDUIT IS NOT SHOWN, IT IS THE INTENT OF THESE DOCUMENTS THAT A COMPLETE BRANCH CIRCUIT WIRING SYSTEM BE INSTALLED.
5. A GREEN GROUNDING CONDUCTOR SHALL BE RUN WITH ALL CIRCUITS. VERIFY CONDUIT SIZE TO ENSURE IT CAN ACCOMMODATE ALL PHASE, NEUTRAL AND GROUND CONDUCTORS.
6. ALL 15A AND 20A, 125V RECEPTACLES IN NON-DWELLING TYPE KITCHENS MUST BE GFCI PROTECTED PER NEC ARTICLE 210.8(B)(2).

MISCELLANEOUS

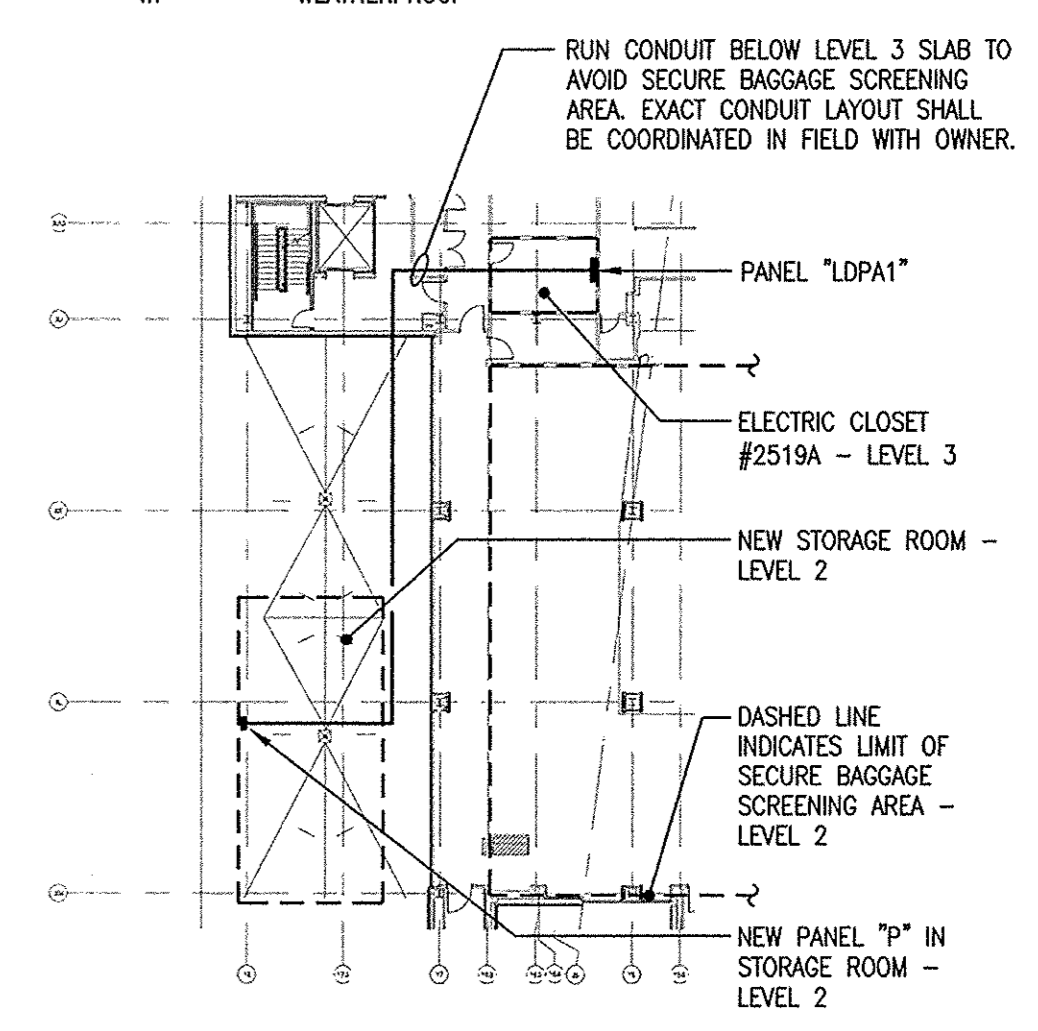
- JUNCTION BOX WITH FLEXIBLE CONNECTION TO EQUIPMENT

MECHANICAL EQUIPMENT TAG ABBREVIATIONS

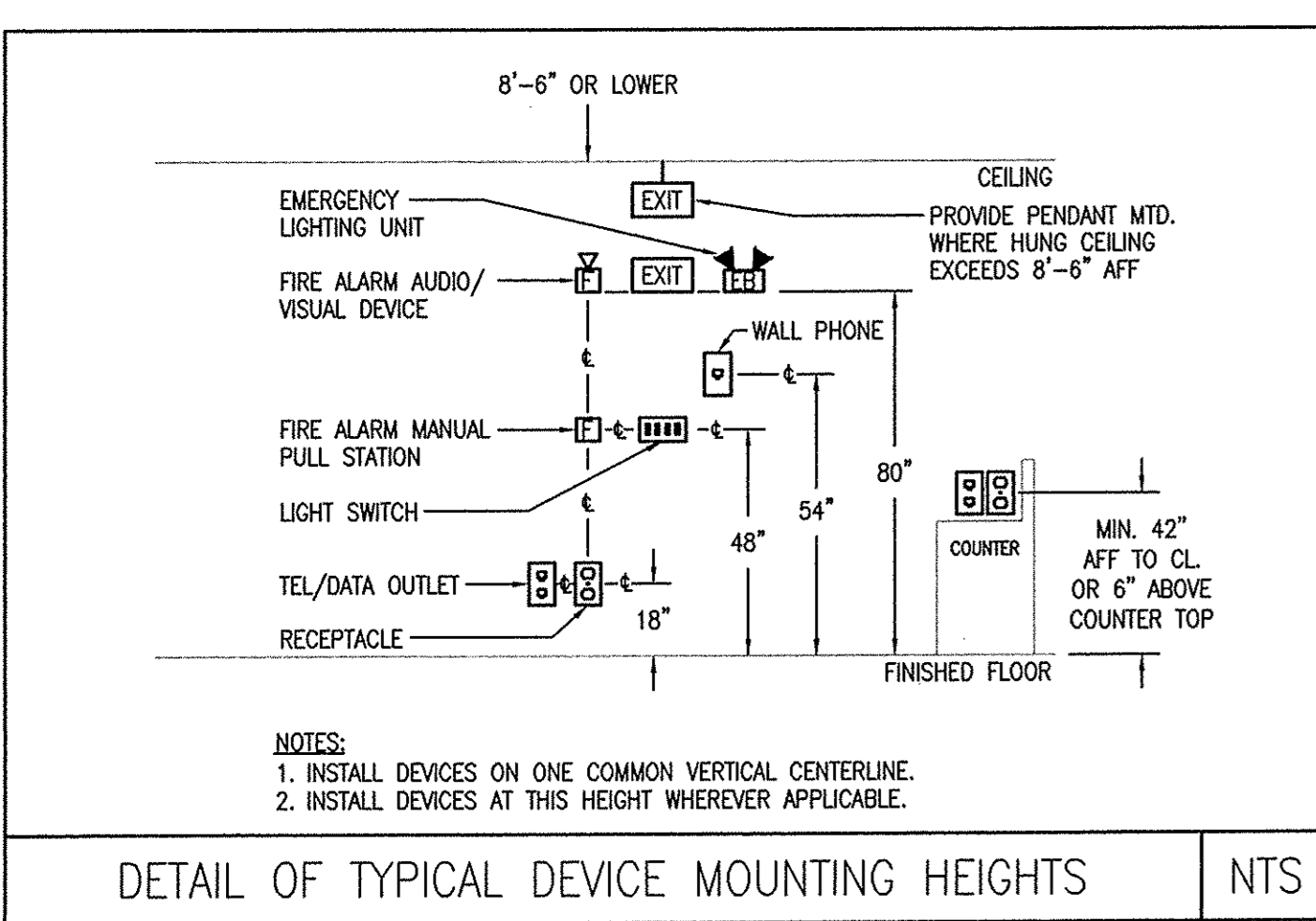
- AH DENOTES EQUIPMENT TYPE
- 2 DENOTES UNIT NUMBER
- AH AIR HANDLING UNIT
- CP CONDENSATE PUMP
- CU CONDENSING UNIT

ABBREVIATIONS

- A AMPERES
- AFF ABOVE FINISHED FLOOR
- AIC AMPERE INTERRUPTING CAPACITY
- AWG AMERICAN WIRE GAUGE
- C CONDUIT
- C/B CIRCUIT BREAKER
- CKT CIRCUIT
- DWG DRAWING
- EC ELECTRICAL CONTRACTOR
- ETR EXISTING TO REMAIN
- G GROUND
- GC GENERAL CONTRACTOR
- GFI GROUND FAULT INTERRUPTER
- KCM ONE THOUSAND CIRCULAR MILS
- KVA KILOVOLT-AMPERES
- KW KILOWATTS
- MCB MAIN CIRCUIT BREAKER
- MLO MAIN LUGS ONLY
- NEC NATIONAL ELECTRICAL CODE
- NTS NOT TO SCALE
- o PHASE
- P POLE
- V VOLT
- W WATT
- WP WEATHERPROOF



4 KEY PLAN
1/32" = 1'-0"

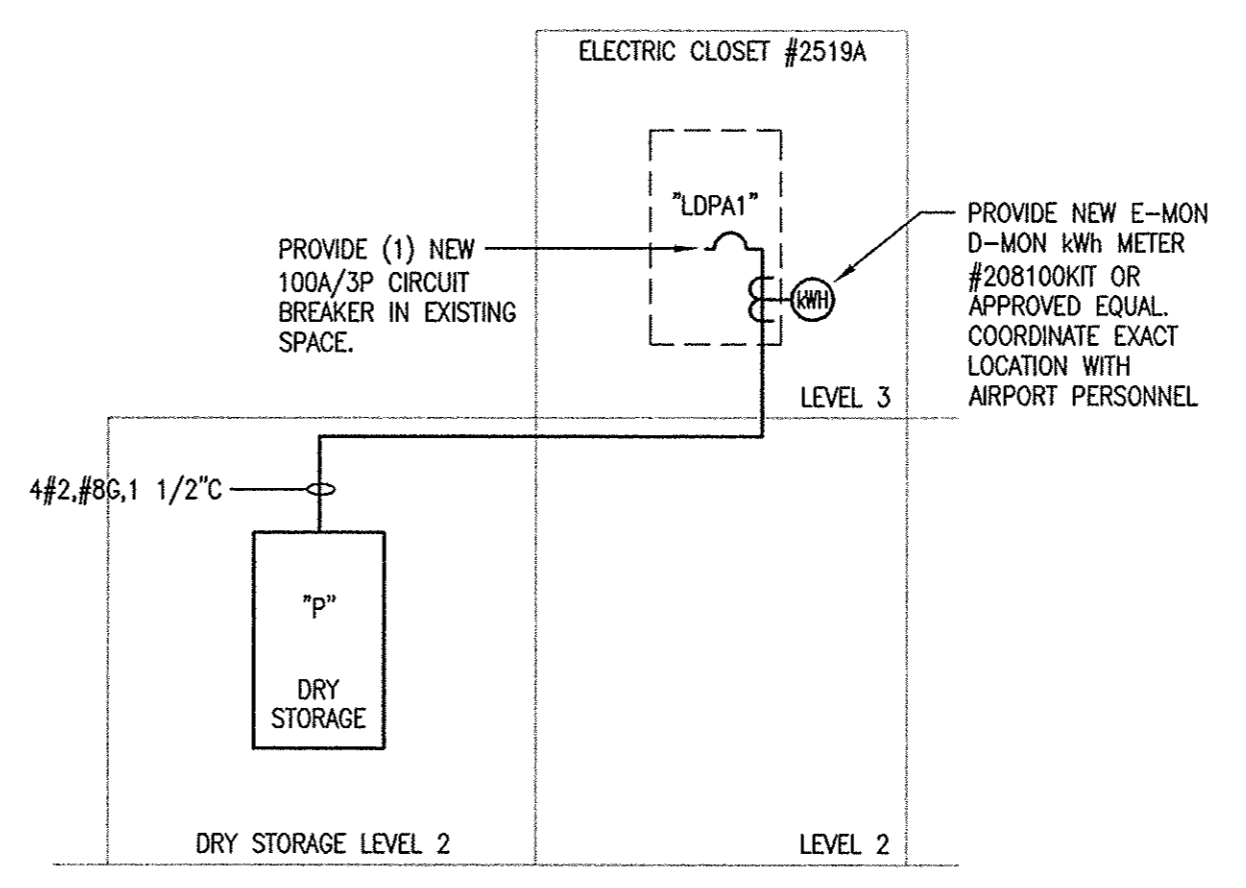


DETAIL OF TYPICAL DEVICE MOUNTING HEIGHTS

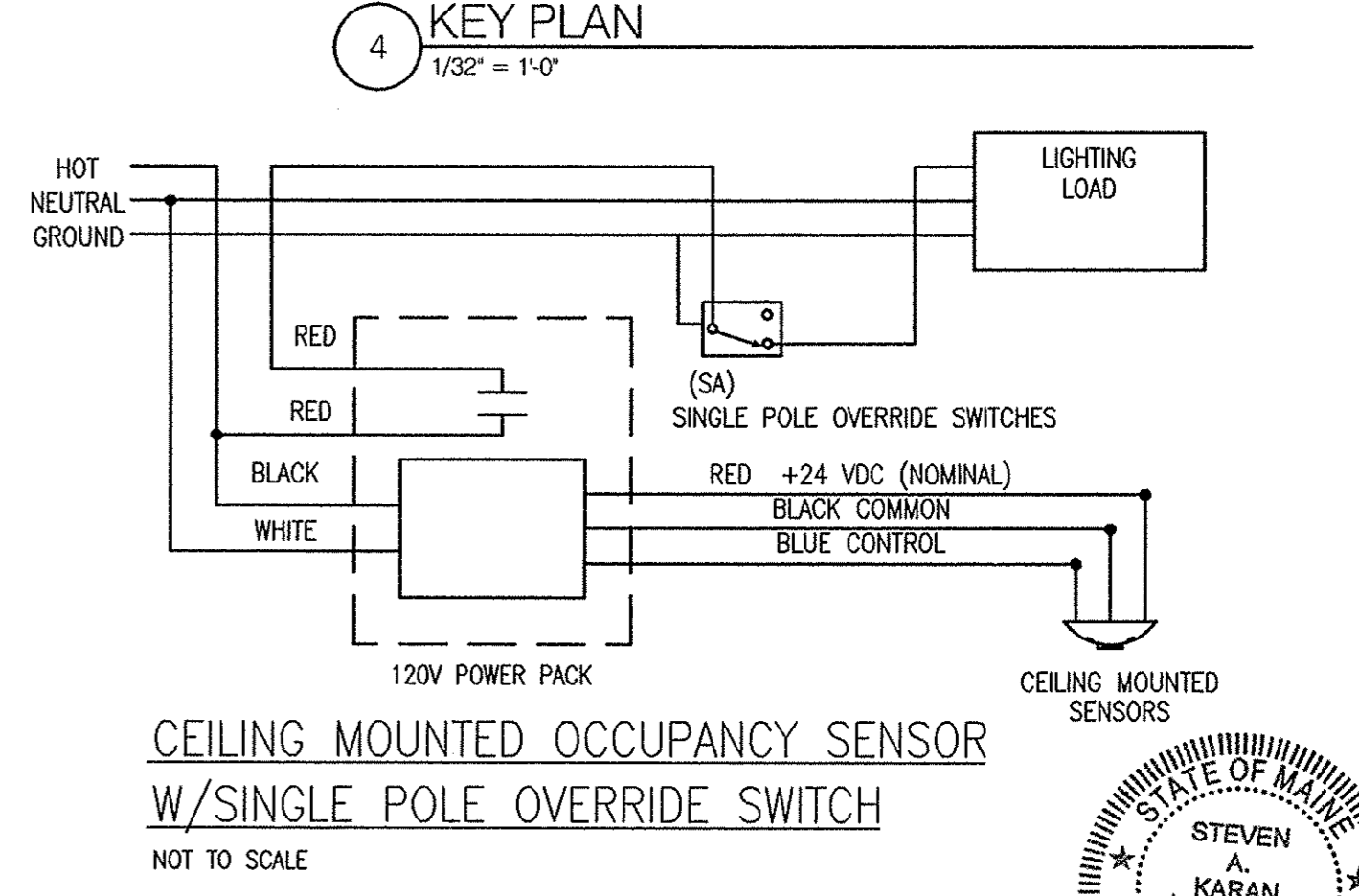
LIGHTING FIXTURE SCHEDULE						
TYPE	DESCRIPTION	MANUFACTURER & CATALOG NUMBER	LAMPS			REMARKS
			NUMBER	TYPE	WATTS	
A	SURFACE MOUNTED ENCLOSED FLUORESCENT STRIP FIXTURE	LIGHTOLIER JS4C232UNVSO	2	32W T8	120	32
o	L.E.D. EXIT SIGN	MATCH BASE BUILDING STANDARD		L.E.D.	120	
LED	SELF-CONTAINED EMERGENCY LIGHTING UNIT	DUAL-LITE LSCI	2	10W HAL	120/6	10

PANELBOARD SCHEDULE																
PANEL DESIGNATION	VOLTS	PHASE	WIRES	BUS SIZE	MLO: MAIN LUGS ONLY MCB: MAIN CRT. BKR.	BRANCH DEVICES							ADDITIONAL BRANCH C.B.'S	REMARKS		
						OVERCURRENT DEVICE	15	20	25	30	40	50			60	70
P	120/208	3	4	100	100	100	1	13	1	2	1					

* INCLUDES SPACES



3 ELECTRICAL RISER DIAGRAM
NOT TO SCALE



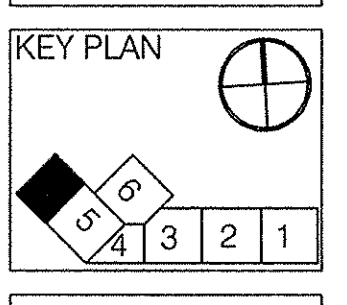
CEILING MOUNTED OCCUPANCY SENSOR W/SINGLE POLE OVERRIDE SWITCH

NOT TO SCALE
1. POWER PACKS ARE NOT SHOWN ON DRAWINGS FOR CLARITY. E.C. SHALL PROVIDE 120V POWER PACKS FOR ALL CEILING MOUNTED OCCUPANCY SENSORS.

Item	Date
ENG. COORD.	6-1-11
PERMIT	8-23-11



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1001 Westbrook Street
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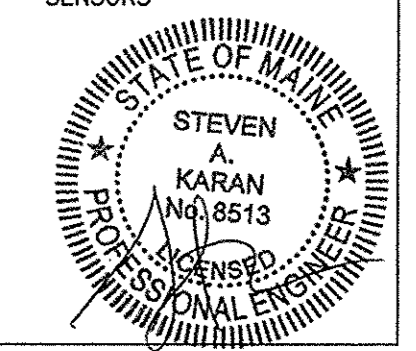
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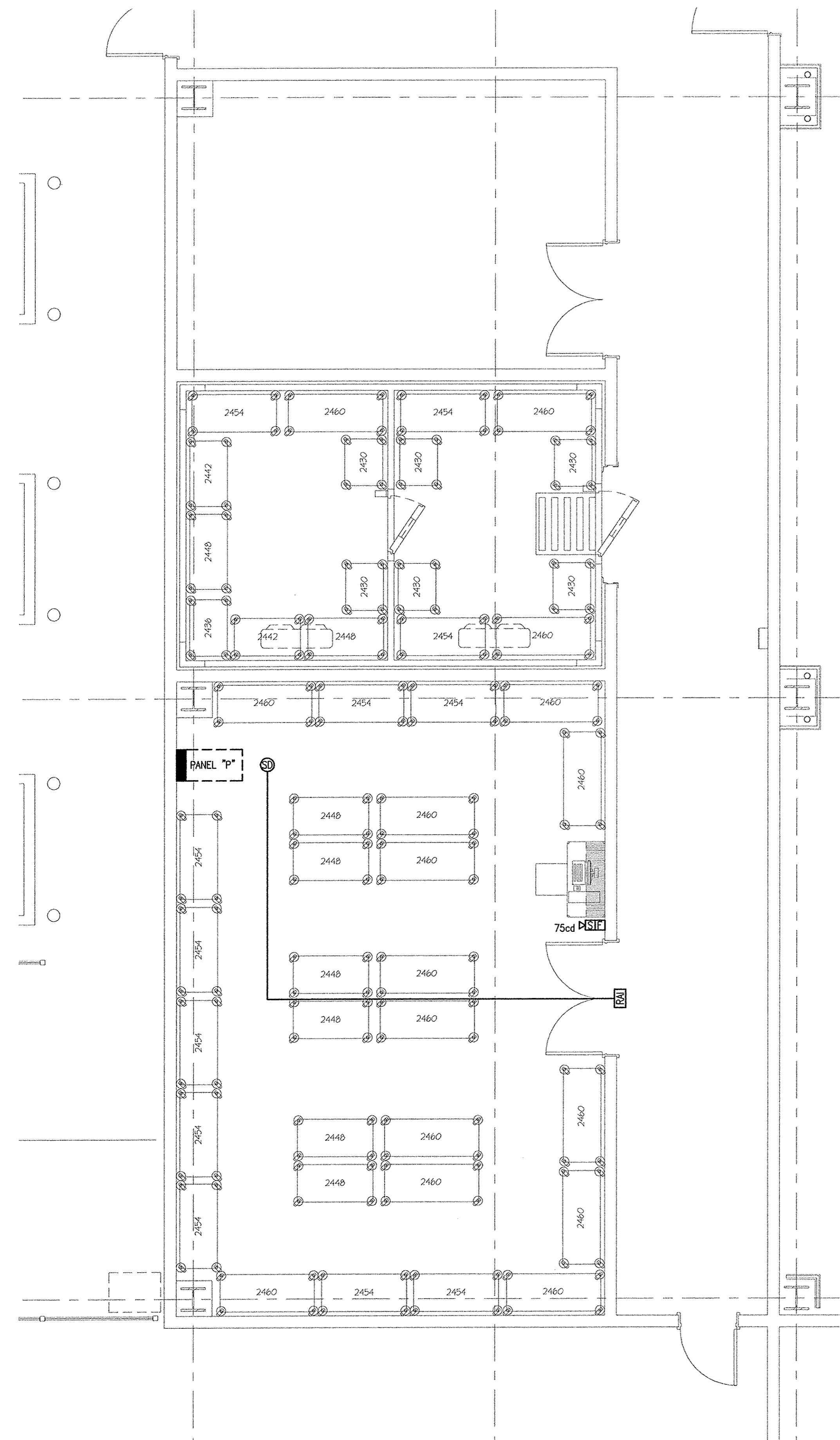
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Job No.:
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Electrical Plan



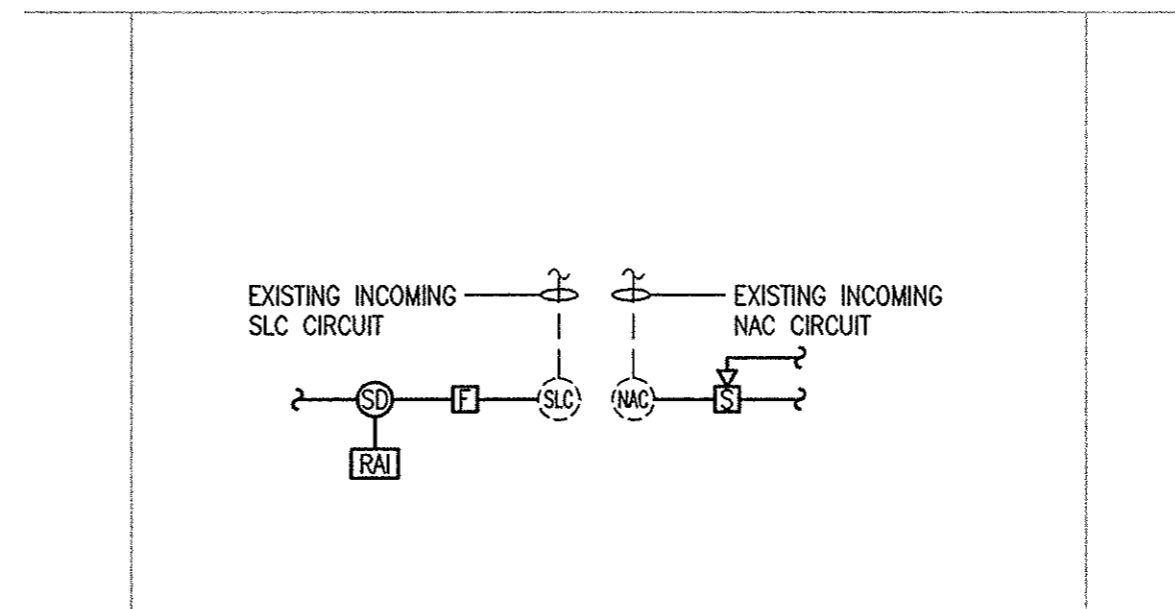
E 1.1



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

LEGEND
 • MOUNTING HEIGHTS SHALL BE AS INDICATED UNLESS SHOWN OTHERWISE ON ELECTRICAL DRAWINGS OR ARCHITECTURAL ELEVATIONS
 • ALL SYMBOLS MAY NOT BE SHOWN ON PLANS

FIRE ALARM SYSTEM
 [MPS] MANUAL PULL STATION MOUNTED 48" AFF
 [SS] SPEAKER STROBE MOUNTED 80" AFF.
 [SD] PHOTOELECTRIC SMOKE DETECTOR
 [RAI] REMOTE ALARM INDICATOR



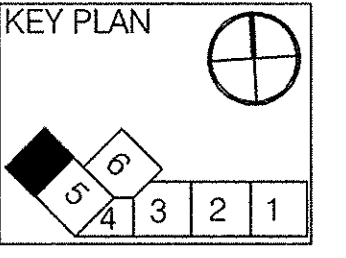
2 FIRE ALARM RISER DIAGRAM
NOT TO SCALE

FIRE ALARM NOTES:
 1. ALL FIRE ALARM WORK ASSOCIATED WITH THE DRY STORAGE TENANT SPACE SHALL CONFORM TO THE CITY OF PORTLAND "STANDARD FOR SIGNALING SYSTEMS FOR THE PROTECTION OF LIFE AND PROPERTY 2011 EDITION" REQUIREMENTS.
 2. COORDINATE EXACT LOCATION OF EXISTING NAC AND SLC CIRCUITS PRIOR TO PROVIDING BID.

Item	Date
ENG. COORD.	6-1-11
PERMIT	8-23-11



**Host Level 2
Dry & Cold Storage**
 Portland Int'l Jetport PWM
 1001 Westbrook Street
 Portland ME 04102



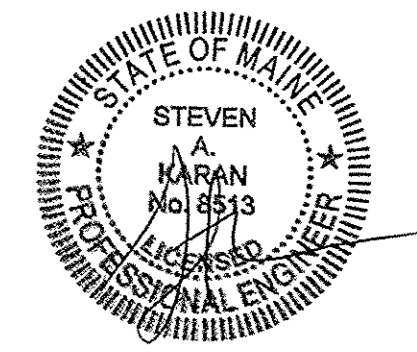
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Job No.:
 Scale: As Noted
 Issued: 8-23-11
 Fire Alarm Plan



ELECTRICAL SPECIFICATIONS

PART 1 - GENERAL

1.01 GENERAL REQUIREMENTS

- A. THESE SPECIFICATIONS AND DRAWINGS ARE INTENDED TO SERVE JOINTLY AS A BASIS UPON WHICH THE CONTRACTOR SHALL SUBMIT A PRICE FOR MATERIAL AND LABOR PROVISIONS.
B. IT IS NOT INTENDED THAT THE PLANS OR SPECIFICATION SHOW OR STATE EVERY DETAILED REQUIREMENT OF THE WORK, BUT RATHER THAT THEY FURNISH ADEQUATE INFORMATION FOR AN EXPERIENCED CONTRACTOR TO PROVIDE A COMPLETELY ACCEPTABLE INSTALLATION.
C. BEFORE SUBMITTING PROPOSAL, EXAMINE ALL PLANS RELATING TO THIS WORK, VERIFY ALL GOVERNING CONDITIONS AT THE SITE, BECOME FULLY INFORMED AS TO THE EXTENT AND CHARACTER OF THE WORK REQUIRED AND ITS RELATION TO THE WORK OF OTHER TRADES.

1.02 SCOPE OF WORK

- A. WITHOUT INTENDING TO LIMIT AND/OR RESTRICT THE SCOPE OF WORK REQUIRED AND SOLELY FOR THE CONVENIENCE OF THE CONTRACTOR, THE WORK OF THIS DIVISION SHALL, IN GENERAL COMPRISE THE FOLLOWING:
1. INSTALLATION OF NEW ELECTRICAL PANELS.
2. FURNISHING AND INSTALLING NEW LIGHTING FIXTURES AND LAMPS.
3. FURNISHING AND INSTALLING NEW FEEDERS, CONDUITS, BRANCH CIRCUIT WIRING, ETC.

1.03 WORK NOT INCLUDED

- A. FURNISHING MOTORS, MOTOR STARTER AND CONTROL DEVICES CONNECTED TO EQUIPMENT FURNISHED UNDER OTHER DIVISIONS OF THE SPECIFICATIONS.
B. FINISH PAINTING.
C. TELEPHONE/DATA WIRING AND DEVICES.

1.04 CODES, PERMITS, AND INSPECTIONS

- A. ELECTRICAL WORK SHALL COMPLY WITH THE APPLICABLE REQUIREMENTS OF THE STATE ELECTRICAL CODE, LOCAL ORDINANCES, AND OTHER AUTHORITIES EXERCISING JURISDICTION OVER ALL ELECTRICAL CONSTRUCTION WORK AND THE PROJECT.
B. NOTHING CONTAINED IN THESE SPECIFICATIONS OR PLANS SHALL BE SO CONSTRUED AS TO CONFLICT WITH ANY LOCAL, MUNICIPAL, AND NATIONAL BOARD OF THE FIRE UNDERWRITERS REGULATIONS GOVERNING THE INSTALLATION OF WORK SPECIFIED HEREIN.
C. ALL REQUIRED PERMITS AND INSPECTION CERTIFICATES SHALL BE OBTAINED, PAID FOR, AND MADE AVAILABLE AT THE COMPLETION OF THE WORK.

1.05 SUBMITTALS AND CERTIFICATIONS

- A. ALL WORK SHALL BE GUARANTEED TO BE FREE FROM DEFECTS, DEFECTIVE MATERIALS OR WORKMANSHIP, AS WELL AS DAMAGE TO THE WORK OF ANY/ALL TRADES RESULTING FROM THE SAME.
B. THE DATE OF ACCEPTANCE SHALL BE THE DATE OF THE FINAL PAYMENT FOR THE WORK OR THE DATE OF A FORMAL NOTICE OF ACCEPTANCE, WHATEVER IS EARLIER.
C. NON-DURABLE ITEMS, SUCH AS ELECTRIC LAMPS, SHALL BE REPLACED UP TO THE DATE OF ACCEPTANCE, SUCH THAT THEY SHALL HAVE HAD NO MORE THAN 100 HOURS USE PRIOR TO THIS DATE.

1.06 SHOP DRAWINGS AND EQUIPMENT SUBMISSIONS

- A. PRIOR TO PURCHASING ANY EQUIPMENT OR MATERIAL, A LIST OF THEIR MANUFACTURERS SHALL BE SUBMITTED FOR APPROVAL.
B. PRIOR TO ASSEMBLING OR INSTALLING THE WORK, CATALOG INFORMATION AND FACTORY ASSEMBLY DRAWINGS, AS REQUIRED FOR A COMPLETE EXPLANATION AND DESCRIPTION OF ALL FIXTURES, DEVICES, DEVICES AND ITEMS OF EQUIPMENT, SHALL BE SUBMITTED FOR APPROVAL.
C. FIELD INSTALLATION DRAWINGS AS REQUIRED TO EXPLAIN FULLY ALL PROCEDURES INVOLVED IN ERECTING, MOUNTING AND CONNECTING ALL ITEMS OF EQUIPMENT.

1.07 SAMPLES

- A. UPON REQUEST BY ARCHITECT OR OWNER, SUBMIT FOR APPROVAL ONE SAMPLE OF EACH OF THE FOLLOWING:
1. EACH TYPE OF LIGHTING FIXTURE.
2. EACH TYPE OF WIRING DEVICE.
3. EACH TYPE OF WIRING DEVICE PLATE.

1.08 AS-BUILT DRAWINGS

- A. THE CONTRACTOR SHALL, WITHIN 15 DAYS OF THE COMPLETION OF THE PROJECT AND PRIOR TO REQUESTING FINAL PAYMENT, SUBMIT AS-BUILT DRAWINGS OF THE ACTUAL INSTALLATION OF THE ELECTRICAL WORK.
B. ALL PARTS OF EQUIPMENT, SUCH AS PANELS, JUNCTION BOXES, SAFETY SWITCHES, MOTOR STARTER, CIRCUIT BREAKERS, CONDUCTORS AND SIMILAR ITEMS SHALL BE IDENTIFIED BY NAME, AT SUPPLY END, "LOAD SUPPLIED", AND AT LOAD END "LOAD SUPPLIED FROM".
C. NEW EQUIPMENT AND MATERIALS SHALL:
1. WHERE NORMALLY SUBJECT TO UNDERWRITER'S LABORATORY INC. LISTING OR LABELING SERVICES, BE SO LISTED OR LABELED.

2.01 WIRING MATERIALS

- A. WIRE AND CABLE SHALL BE COPPER, RATED FOR 600 VOLTS, TYPE THHN FOR BRANCH CIRCUITS AND XHHW FOR FEEDERS.
B. WIRE #10 AWG AND SMALLER SHALL BE SOLID, WIRE #8 AWG AND LARGER SHALL BE STRANDED.
C. WIRING SHALL BE CONSISTENTLY COLOR CODED THROUGHOUT.
D. MINIMUM SIZE:
1. LIGHTING AND POWER: #12 AWG, UNLESS OTHERWISE INDICATED.
2. CONTROL: #14 AWG.
3. 120 VOLT CIRCUITS OVER 100 FEET IN LENGTH AND 277 VOLT CIRCUITS OVER 200 FEET IN LENGTH FROM THE POINT OF SUPPLY TO THE FIRST OUTLET SHALL BE #10 AWG.

2.02 CONDUITS AND RACEWAYS

- A. LIQUID TIGHT FLEXIBLE, GALVANIZED STEEL CONDUIT WITH CONTINUOUS COPPER BONDING CONDUCTOR, SHALL BE USED FOR CONNECTIONS TO MOTORS AND AT OTHER LOCATIONS WHERE VIBRATION MOVEMENT IS ENCOUNTERED.
B. UNLESS OTHERWISE INDICATED OR SPECIFIED ALL WIRING SHALL BE INSTALLED CONCEALED IN CEILING, WALL, SLABS, PIPE CHASES AND FURRED SPACES WHENEVER POSSIBLE.
C. CONDUIT AND FITTINGS SHALL CONFORM TO LATEST ACCEPTABLE STATE CODE AND ALL OTHER CODES HAVING JURISDICTION.

2.03 IDENTIFICATION

- A. ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL TYPEWRITTEN DIRECTORIES BEHIND TRANSPARENT PLASTIC COVERS IN METAL FRAMES, IN ALL NEW AND EXISTING PANELS INDICATING TYPE AND LOCATION OF LOAD BEING SERVED BY INDIVIDUAL CIRCUIT BREAKERS.
B. ALL PARTS OF EQUIPMENT, SUCH AS PANELS, JUNCTION BOXES, SAFETY SWITCHES, MOTOR STARTER, CIRCUIT BREAKERS, CONDUCTORS AND SIMILAR ITEMS SHALL BE IDENTIFIED BY NAME, AT SUPPLY END, "LOAD SUPPLIED", AND AT LOAD END "LOAD SUPPLIED FROM".
C. ALL CONDUIT FITTINGS AND CONNECTORS SHALL BE STEEL WITH INSULATED THROATS. DIE-FORMED ZINC FITTINGS ARE NOT ACCEPTABLE. BUSHINGS SHALL BE PROVIDED AT ALL CONDUIT TERMINATIONS. BUSHINGS LARGER THAN 1" SHALL BE GROUNDING TYPE. PVC BUSHINGS MAY BE UTILIZED ONLY FOR 3/4" BRANCH CIRCUIT CONDUITS TERMINATING AT PANELBOARDS.

2.04 JUNCTION BOXES

- A. JUNCTION BOX AND PULL BOXES SHALL BE PROVIDED WHERE INDICATED OR SPECIFIED AND WHERE NECESSARY TO FACILITATE THE INSTALLATION OF EQUIPMENT OR WIRING.
B. ALL BOXES SHALL BE SIZED IN ACCORDANCE WITH NATIONAL ELECTRIC CODE.
C. BOXES SHALL CONTAIN SUITABLE KNOCKOUTS. BARRIERS SHALL BE FURNISHED AS REQUIRED BY CODE.

2.05 OUTLET BOXES

- A. OUTLET, PULL AND JUNCTION BOXES SHALL BE FABRICATED FROM STEEL AND CONFORM TO UL 50, UL 514, AND NEMA OSL. BOXES FOR INTERIOR LOCATIONS SHALL BE CODE GAUGE, GALVANIZED SHEET STEEL.
B. BOXES SHALL BE SIZED AS REQUIRED BY CODE FOR NUMBER AND GAUGE OF CONDUCTORS THEREIN, EXCEPT WHERE NOTED TO BE LARGER. THE MINIMUM BOX SIZE SHALL BE 4" SQUARE BE 1 1/2" DEEP. COVERS GREATER THAN 50LBS. SHALL BE DIVIDED INTO MULTIPLE SECTIONS.
D. WHERE REQUIRED AND APPROVED BY THE ENGINEER, EXTRA DEEP OR EXTRA SHALLOW OUTLET BOXES SHALL BE USED TO FACILITATE THE INSTALLATION OF THE CONDUIT SYSTEM.

2.06 FASTENINGS, SUPPORTS, AND HANGERS

- A. ALL PARTS OF THE ELECTRICAL INSTALLATION SHALL BE ADEQUATELY SUPPORTED FROM THE BUILDING CONSTRUCTION USING APPROVED CLAMP SCREWS WITH THE INSERTS OF EXPANSION ANCHORS, EXPANSION BOLTS AND TOGGLE BOLTS. "IN NO CASE SHALL THE HUNG CEILING MEMBERS OR WIRES BE USED TO SUPPORT CONDUIT".
B. ALL FASTENING, SUPPORTS, CLAMPS, ANCHORS, AND SIMILAR ITEMS SHALL BE OF TYPE SUITABLE FOR THE PURPOSE.

2.07 WIRING DEVICES

- A. ALL DEVICES SHALL BE SPECIFICATION GRADE, U.L. APPROVED.
B. SINGLE POLE SWITCH, 20 AMP, 120/277 VOLTS. HUBBELL CAT# HBL1221.
C. RECEPTACLE, 20 AMP, 2 POLE, 3 WIRE DUPLEX, 125 VOLT, GROUND TYPE. HUBBELL CAT# 6362 OR APPROVED EQUAL.
D. COLOR AND TYPE OF ALL DEVICE PLATES SHALL BE APPROVED BY ARCHITECT PRIOR TO PURCHASE/INSTALLATION.
E. THE E.C. SHALL PROGRAM ALL OCCUPANCY SENSORS TO THE SATISFACTION OF THE TENANT. AS A MINIMUM, THE E.C. SHALL PROVIDE (4) HOURS OF TRAINING TO THE TENANT. ALL OCCUPANCY SENSORS SHALL BE FULLY PROGRAMMED AT TIME OF FINAL PUNCH-LIST.

2.08 GROUNDING

- A. ALL ENCLOSURES AND NON CURRENT CARRYING METALLIC PARTS OF ELECTRICAL EQUIPMENT, RACEWAY SYSTEMS AND EQUIPMENT GROUND BUSES SHALL BE EFFECTIVELY GROUND TO THE BUILDING GROUNDING SYSTEMS THROUGH THE SYSTEM GROUND CONDUCTORS. METALLIC CONDUITS AND OTHER RACEWAYS AND ENCLOSURES FOR CONDUCTORS SHALL BE METALLIC ALLOY JOINED TOGETHER INTO A CONTINUOUS ELECTRICAL CONDUIT, AS TO PROVIDE EFFECTIVE ELECTRICAL CONTINUITY.
B. GROUND CONTINUITY SHALL BE MAINTAINED THROUGHOUT.

2.09 LIGHTING FIXTURES

- A. ALL LIGHTING FIXTURES SHALL COMPLY WITH THE STATE ELECTRIC CODE AND SHALL BE U.L. APPROVED.
B. ALL LIGHTING FIXTURES SHALL BE APPROVED PRIOR TO PURCHASE.
C. ALL LIGHTING FIXTURES SHALL BE FURNISHED AND INSTALLED COMPLETE WITH NECESSARY COMPONENTS, ACCESSORIES, AND LAMPS OF CORRECT TYPE AND RATING AS INDICATED ON ELECTRICAL DRAWINGS.
D. FIXTURES SHALL BE CAREFULLY SUPPORTED AND ALIGNED WITH NECESSARY HANGERS, SUPPORTING MEMBERS, AND FRAMES FOR PROPER INSTALLATION, ALL AS REQUIRED AND AS APPROVED.

2.10 TELEPHONE SYSTEM

- A. PROVIDE EMPTY CONDUIT WITH PULL LINE 3/4" MINIMUM AT EACH TEL/DATA OUTLET LOCATION. RUN TO THE EXISTING SERVER ROOM ADJACENT TO THE EXISTING SHIPYARD BREWERY ON THE 2ND LEVEL.
B. ALL TELEPHONE/DATA WIRING, JACKS, COVERPLATES, PUNCH DOWN BLOCKS, ETC., ARE FURNISHED AND INSTALLED BY OWNER'S PRIVATE VENDOR.
C. ALL WIRING INSTALLED ABOVE THE CEILING SHALL BE PLENUM RATED TYPE CABLE.

2.11 PANEL BOARDS

- A. PANEL BOARDS SHALL CONSIST OF FACTORY COMPLETED DEAFRONT ASSEMBLIES OF BACK PANS, MAIN BUSES, OVER CURRENT AND SWITCHING UNITS, SHEET METAL CABINETS AND TRIMS. THEY SHALL BE SO DESIGNED THAT SWITCHING AND OVER CURRENT DEVICES CAN BE REPLACED WITHOUT DISTURBING ADJACENT UNITS AND WITHOUT REMOVING THE MAIN BUS CONNECTORS, SO THAT CIRCUITS MAY BE CHANGED WITHOUT MACHINING, DRILLING, OR TAPPING.
B. BUS BARS FOR THEIR MAINS SHALL BE OF COPPER HAVING CURRENT CAPACITIES AS INDICATED AND SIZED FOR SUCH CAPACITIES IN ACCORDANCE WITH UNDERWRITER LABORATORY STANDARDS. UNLESS OTHERWISE NOTED, FULL SIZE NEUTRAL BARS SHALL BE INCLUDED. BUS BAR TAPS FOR PANELS WITH SINGLE POLE BRANCHES SHALL BE ARRANGED FOR SEQUENCE PHASING OF THE BRANCH CIRCUIT DEVICES. BUSHING SHALL BE BRACED THROUGHOUT TO CONFORM TO INDUSTRY STANDARD PRACTICE GOVERNING SHORT CIRCUIT STRESSES IN PANELBOARDS. PHASE BUSHING SHALL BE FULL HEIGHT WITHOUT REDUCTION.
C. A GROUND BUS SHALL BE PROVIDED FOR EACH PANEL. EACH GROUND BUS SHALL BE OF THE SAME MATERIAL AS THE PHASE AND NEUTRAL BUSES.

2.12 BREAKERS

- A. CIRCUIT BREAKERS FOR PANEL OR INDIVIDUAL MOUNTING SHALL BE MOLDED CASE TYPE, QUICK-MAKE, QUICK-BREAK, OR MANUAL OR AUTOMATIC OPERATION.
B. AMPERE RATING AND NUMBER OF POLES SHALL BE AS INDICATED ON THE DRAWINGS.
C. BREAKERS SHALL BE TYPE AS MANUFACTURED BY SQUARE D OR APPROVED EQUAL. MINIMUM CIRCUIT BREAKER INTERRUPTING CAPACITY SHALL BE 10,000 SYM RMS AMPERES.

2.13 FIRE ALARM EXISTING EQUIPMENT

- A. THE EXISTING FACILITY IS EQUIPPED WITH A FIRE ALARM SYSTEM WHICH IS TO BE EXPANDED IN THE WORK AREA. ALL NEW EQUIPMENT SHALL BE OF THE SAME MANUFACTURER AS OF THE EXISTING SYSTEM, INCLUDING PULL STATIONS, SMOKE DETECTORS, DUCT SMOKE DETECTORS, AND AUDIBLE/VISUAL SIGNALS, ETC. ALL NEW HORN/STROBES SHALL BE SYNCHRONIZED WITH EXISTING APPLIANCES.
B. IT SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR TO DETERMINE THE SCOPE OF WORK AND PROPOSED EQUIPMENT WITH THE SUPERINTENDENT OF FIRE ALARMS FOR THE CITY PRIOR TO PURCHASE AND INSTALLATION. THE E.C. SHALL ALSO NOTIFY THE LOCAL FIRE DEPARTMENT AND THE OWNER AT LEAST 48 HOURS IN ADVANCE OF ANY MODIFICATIONS, POSSIBLE DISRUPTION TO, OR ASSOCIATED WORK ON THE EXISTING FIRE ALARM SYSTEM.
C. THE EXISTING FIRE ALARM SYSTEM SHALL BE REPROGRAMMED AS REQUIRED TO INDICATE THE RENOVATED AREAS, REVIEW ZONING WITH THE OWNER'S REPRESENTATIVE AND LOCAL FIRE MARSHALL. THE E.C. SHALL BE RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH THIS WORK.
D. THE E.C. SHALL BE RESPONSIBLE FOR ALL POWER SUPPLIES REQUIRED DUE TO THE NEW DEVICES/APPLIANCES PROVIDED UNDER THIS CONTRACT.
E. THE E.C. SHALL FURNISH BATTERY CALCULATIONS WHICH INCORPORATE ALL EXISTING EQUIPMENT IN ADDITION TO ALL NEW APPLIANCES/DEVICES.

2.14 FIRESTOPPING, SMOKEPROOFING AND WATERPROOFING

- A. PROVIDE FIRESTOP OR SMOKESTOP BETWEEN SLEEVES AND CONDUIT MANUFACTURED BY BIO FIRE SHIELD, INC. OR DOW CORNING CORP. AS FOLLOWS:
1. DOW CORNING SILICONE RTV FOAM.
2. DOW CORNING 96-181 RTV SILICONE ADHESIVE SEALANT.
3. MINERAL FIBER BOARD, MATING AND PUTTY.
B. PROVIDE WATERPROOFING OF ALL MATERIALS WHICH PENETRATE A FLOOR, EXTERIOR WALL SLAB OR ROOF. ALL SLEEVES SHALL EXCEED A MINIMUM OF 3 INCHES ABOVE FLOOR OR ROOF.

PART 3 - EXECUTION

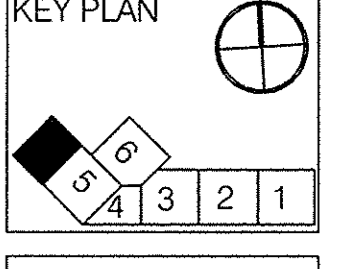
3.01 DEMOLITION AND REMOVAL WORK

- A. REMOVE ALL ELECTRICAL EQUIPMENT, WIRING AND OTHER ELECTRICAL WORK AS REQUIRED, DISCONNECT LOAD AND LINE END OF CONDUCTORS FEEDING DEVICES WHICH ARE TO BE REMOVED OR ABANDONED, REMOVE CONDUCTORS NO LONGER IN USE, CUT BACK TO FLOOR, WALL, OR CEILING AND PLUG BOTH ENDS OF CONCEALED CONDUITS MADE OBSOLETE BY THIS ALTERATION. REMOVE EXPOSED OR ABANDONED CIRCUITS AND OUTLETS. REMOVE MATERIAL AND EQUIPMENT AND DISPOSE OF AS DIRECTED.
B. WHEREVER IT IS REQUIRED TO DISCONNECT OR REMOVE ANY PART OF AN EXISTING CIRCUIT, IMMEDIATELY RECONNECT THAT CIRCUIT OR REESTABLISH SERVICE IN THE REMAINING PORTION OF THE CIRCUIT.
C. THE WORK SHALL ALSO INCLUDE THE REMOVAL OF MATERIALS AS DIRECTED. PRIOR TO REMOVING EQUIPMENT AND MATERIAL FROM PROJECT SITE, THE BUILDING MANAGER OR OWNER WILL INSPECT AND ADVISE WHICH ITEMS WILL BE STORED.
D. WHERE EXISTING RECEPTACLES AND/OR SWITCHES ARE LOCATED IN COLUMNS AND/OR EXTERIOR WALLS, AND ARE NOT TO BE REUSED, REMOVE RECEPTACLE AND CAP OUTLET BOX. RECEPTACLES SHOWN ON PARTITIONS TO BE REMOVED SHALL HAVE ALL WIRING AND CONDUIT REMOVED AS WELL.
E. WHERE PRESENT WORK IS DAMAGED IN THE EXECUTION OF THIS CONTRACT, OR WHERE OPENINGS ARE LEFT DUE TO THE REMOVAL OF CONDUITS, EQUIPMENT, OR APPARATUS, THE SAME SHALL BE REPAIRED OR CLOSED UP TO CORRESPOND IN MATERIAL, QUALITY, SHAPE, AND FINISH WITH THAT OR SIMILAR AND ADJOINING WORK, UNLESS OTHERWISE CALLED FOR.
F. SHOULD ANY DAMAGE DUE TO THE EXECUTION OF THIS CONTRACT OCCUR TO THE FURNITURE, FIXTURES, OR ANY OTHER EQUIPMENT OR APPARATUS, SUCH DAMAGES SHALL BE PROPERLY REPAIRED WITH THE SUPPLY OF NEW ARTICLES AND MADE GOOD WITHOUT EXTRA CHARGE.
G. WHERE REMOVAL OF EXISTING ELECTRICAL EQUIPMENT WILL RESULT IN OUTAGES IN AREA NOT TO BE DEMOLISHED, THIS CONTRACTOR SHALL COORDINATE IN ADVANCE AND OBTAIN THE APPROVAL OF THE BUILDING MANAGER OR OWNER.

Table with 2 columns: Item, Date. Rows include ENG. COORD. (6-1-11) and PERMIT (8-23-11).



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Job No.:
Scale: None
Issued: 8-23-11

Electrical Specifications

E 1.3

