

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 Starbucks 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. Guarantees: 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 Owner, 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

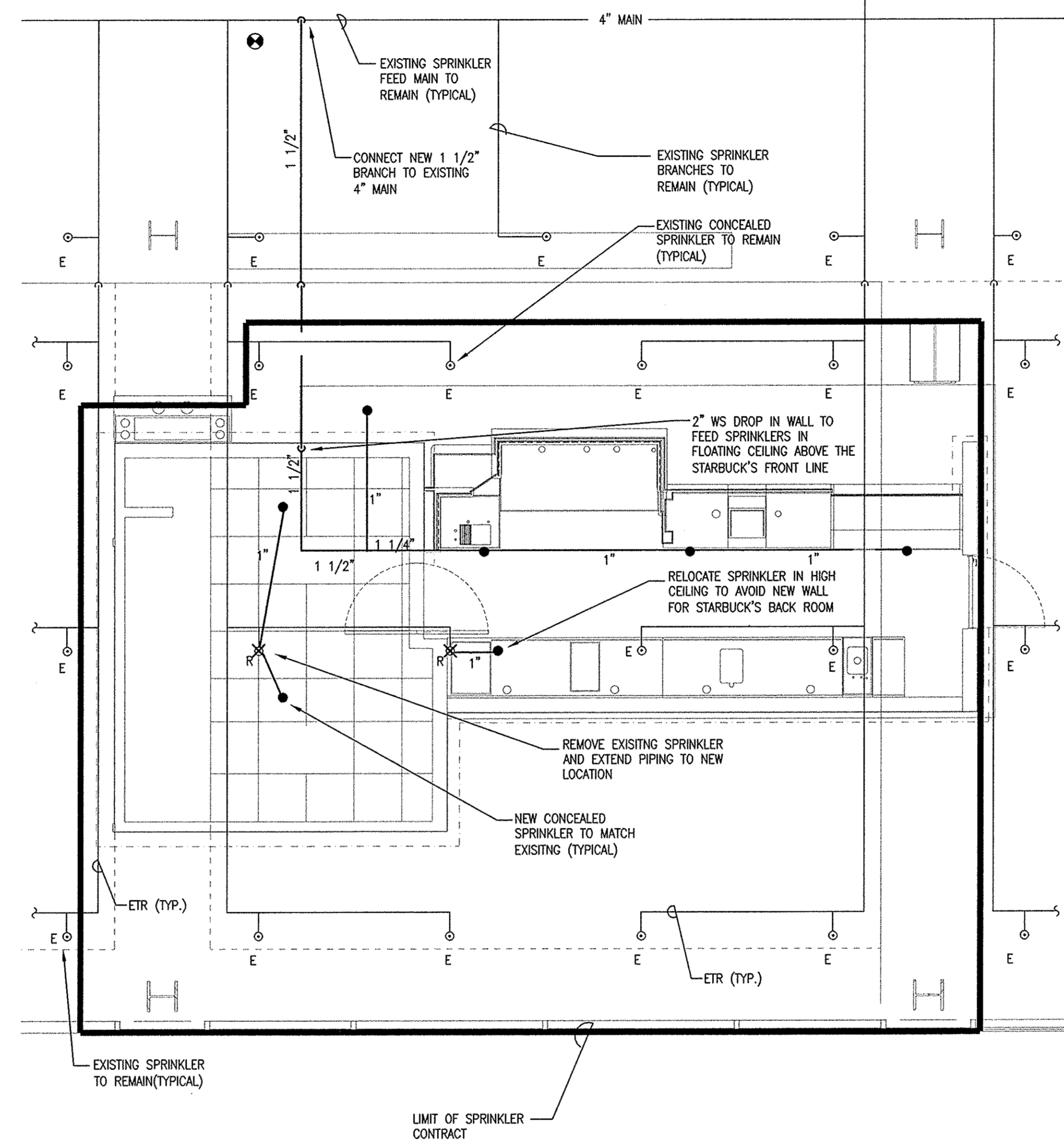
A. The following equipment items and work shall not be the responsibility of this Contractor:

- Cutting and Patching
- Temporary Water, Heat, Fire Protection and Toilet Facilities
- Temporary Power and Lighting
- Flashing and Caulking
- Finish Pointing
- 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
 - 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 watertight and seal with material that maintains fire rating. Provide core drilling where required and provide fire rated link seal penetration closures.
 - 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 gong, 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.
- 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.
- 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.
- 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.
- 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.

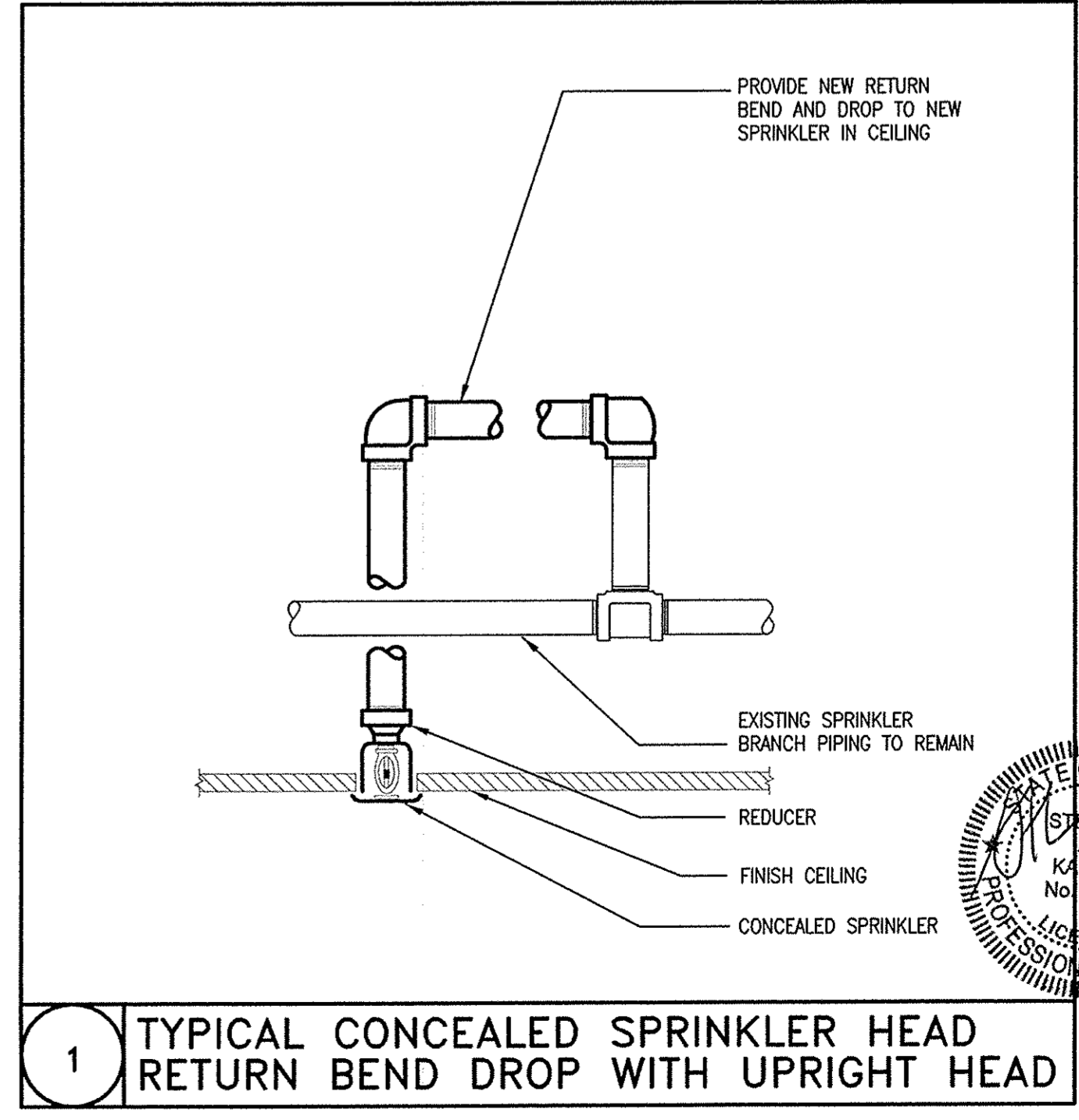
- Pipe Identification and Valve Tags
- All fire protection piping shall be labeled at each valve, at each branch, at each passage through wall and at intervals of not more than 20 feet with semi-rigid Setmark pipe markers with arrows indicating the direction of flow. All valves shall be tagged with 1-1/2 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.
- 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".
- 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 pendent sprinklers, and 196 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.


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
	WS WET SPRINKLER PIPE
	PIPE TEE LOOKING UP
	PIPE TEE LOOKING UP
	UP PIPE ELBOW UP
	DN/DROP PIPE ELBOW DOWN OR DROP
	CONT CONTINUATION
	FLOW IN DIRECTION OF ARROW
	UPRIGHT WET SPRINKLER
	P PENDENT WET SPRINKLER
	C CONCEALED WET SPRINKLER
	S SIDEWALL WET SPRINKLER
	PD PENDENT DRY SPRINKLER
	NAS NO AUTOMATIC SPRINKLERS
	DIAGRAM NO. & DWG. NO. REFERENCE
	EB ELECTRIC BELL / WATER MOTOR GONG
	AFF ABOVE FINISHED FLOOR
	AFG ABOVE FINISHED GRADE
	LFPC LIMIT OF FIRE PROTECTION CONTRACT
	NFPC NOT IN FIRE PROTECTION CONTRACT
	GC GENERAL CONTRACTOR
	FPC FIRE PROTECTION CONTRACTOR
	PC PLUMBING CONTRACTOR
	EC ELECTRICAL CONTRACTOR
	HWAC HVAC CONTRACTOR
	FI FURNISH & INSTALL
	CFOI CONTRACTOR FURNISHED / OWNER INSTALLED
	OFCI OWNER FURNISHED / CONTRACTOR INSTALLED
	FFE FINISHED FLOOR ELEVATION
	WSE WATER SERVICE ENTRANCE

1 FIRE PROTECTION STARBUCK'S 1/4"=1'-0"

- DRAWING NOTES:**
- ALL NEW ARM OVERS SHALL BE 1" PIPING.
 - SPRINKLERS BEYOND THE LIMIT OF WORK ARE EXISTING TO REMAIN PROVIDED UNDER BASE BUILDING CONTRACT.
 - INSTALL ALL SPRINKLER WITH-IN CENTER OF TILE.
 - MATCH BASE BUILDING FOR TEMPERATURE RATING AND MANUFACTURER, FINISH SHALL BE WHITE UNLESS NOTED OTHERWISE.
 - PROVIDE NEW SPRINKLERS IN FLOATING CEILING FED FROM SYSTEM ABOVE.

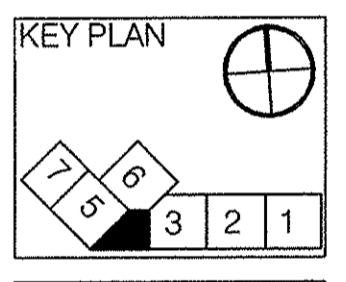


1 TYPICAL CONCEALED SPRINKLER HEAD RETURN BEND DROP WITH UPRIGHT HEAD

Item	Date
PERMIT	7/20/11



Starbucks Coffee
Portland Int'l Jetport PWM
1001 Westbrook Street
Portland ME 04102



HMS Host
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F: (508) 230-0265
E: ber@ber-engineering.com

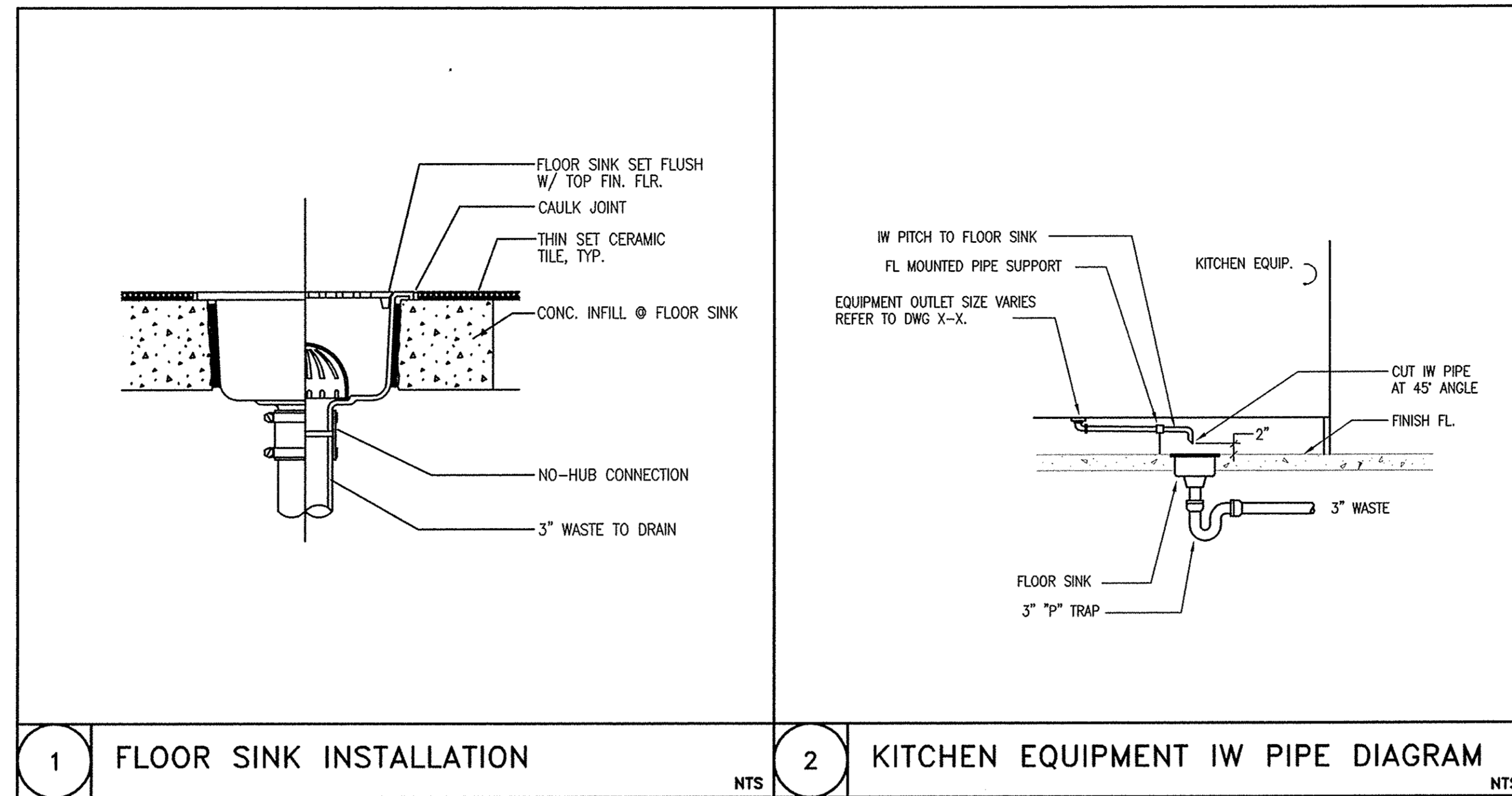
Starbucks Coffee Company
2401 Utah Avenue South
#800
Seattle WA 98134
T: (206) 318-1575
Contact: Tara Byrne
E: tara.byrne@starbucks.com

LLOYD ARCHITECTS
Two High Cliff, Plymouth MA 02360
TEL: (508) 746-4646
FAX: (508) 746-1336
E-MAIL: info@lloydarch.com

Job No.: 11400
Scale: As noted
Issued: 7/20/11
SPRINKLER PLAN & DETAILS STARBUCK'S

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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

PLUMBING SCHEDULE

Design ID	Count	Old Tag(s)	Description	Comments	Responsibility
Cold Water Service					
10153	1	P385; P374; P376; P384	Faucet - Water Tower - 12in		SB
10726	5	P804	Drain Grate Half Square - 12in		GC
Food Service Equipment					
10874	1	E574; E575; E578	Insta Hot Top		SB
Other Plumbing Fixtures					
10152	1	P380	Faucet - Double Laboratory with Bent Riser Spout		SB
10215	2	P377	Faucet - Double Laboratory with Swing Spout		SB
10447	1	P355; P365	Wall Mounted Pre Rinse Sprayer		SB
10597	1	P354; P364	Faucet - Single Handle		SB
10943	1	P367	Faucet - Single Laboratory with Swing Spout		SB
11003	1	P352; P387	Faucet - Dipperwell		SB
Sinks					
10505	1	P080	Sink - Rinse Drop In - 27x20in		SB
10549	1	P393	Sink-Work Drop In SST-12x20in		SB
10581	1	P021; P032; P065	Sink - Hand Sink ADA Wall Mounted with Splash SST		SB
10602	1	P061	Sink - 3 Comp SST - 72in		SB
Special Water Systems					
13077	1		Filter - Head Single		SB
13078	1		Filter - Carbon Filter Cartridge with Scale Reduction		SB
13080	1		Filter - Head Quad		SB
13081	4		Filter - Carbon Filter Cartridge		SB
13082	1		Filter - Water Softener Twin		SB

SPECIALTY EQUIPMENT SCHEDULE

Design ID	Count	Old Tag(s)	Description	Comments	Responsibility
Food Service - Appliances & Equipment					
10341	1	P012	Ice - Bin Drop In 95lb		SB
10495	1	E152; E155; E183; E184; E185; E191; E194	Brewer Dual		SB
10738	1	E360	Ice - Bin 250lb		SB
10917	4	E806; E610	Brewer Server		SB

STARBUCKS EQUIPMENT SCHEDULE (BY KEC)

ITEM	QTY.	DESCRIPTION	SERVICES						REMARKS
			I.W.	W	V	CW	HW	FW	
10581	1	HAND SINK	-	1 1/2"	-	1/2"	1/2"	-	SUPPLIED BY OWNER, PROVIDE FINAL CONNECTIONS
10215	2	RINSE SINK FAUCET	-	-	-	1/2"	1/2"	-	SUPPLIED BY OWNER, PROVIDE FINAL CONNECTIONS
10153	1	TOWER 14" WATER DISPENSER	1"	-	-	-	1/2"	-	SUPPLIED BY OWNER, PROVIDE FINAL CONNECTIONS
10152	1	FAUCET PREP. SINK	-	-	-	1/2"	1/2"	-	SUPPLIED BY OWNER, PROVIDE FINAL CONNECTIONS
10495	1	BREWER - TWIN COLUMBIA	-	-	-	-	3/8"	-	SUPPLIED BY OWNER, PROVIDE FINAL CONNECTIONS
10738	1	ICE MACHINE	1"	-	-	-	1/2"	-	SUPPLIED BY OWNER, PROVIDE FINAL CONNECTIONS
11003	1	FAUCET DIPPERWELL	1"	-	-	1/2"	1/2"	-	SUPPLIED BY OWNER, PROVIDE FINAL CONNECTIONS
10874	1	INSTA HOT DISPENSER	-	-	-	-	1/2"	-	SUPPLIED BY OWNER, PROVIDE FINAL CONNECTIONS
10943	1	COLD DRINK STATION	1"	-	-	1/2"	1/2"	-	SUPPLIED BY OWNER, PROVIDE FINAL CONNECTIONS

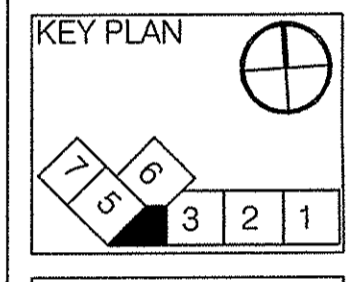
DRAIN SCHEDULE

I.D.	MANUFACTURER	MODEL	LOCATION	OUTLET	STR	REMARKS
PS-1	ZURN	Z1830	AT KITCHEN EQUIPMENT	NOTED	-	INDIRECT WASTE DRAINS FOR KITCHEN EQUIPMENT
-	-	-	-	-	-	-
-	-	-	-	-	-	-

NOTES: RUN DRAINS ALONG FLOOR AND PROVIDE 90 ABOVE FLOOR SINK TO MINIMIZE SPLASHING DUE TO SMALL DRAIN SIZE.

Item	Date
PERMIT	7/20/11

Starbucks Coffee
 Portland Int'l Jetport PWM
 1001 Westbrook Street
 Portland ME 04102



HMS Host
 6905 Rockledge Drive
 Bethesda, MD 20817
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 F: (240) 694-4643
 C: (240) 274-6417
 E: scott.reimink@hmsdhost.com

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 46 Main Street
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 F: (508) 230-0265
 E: ber@ber-engineering.com

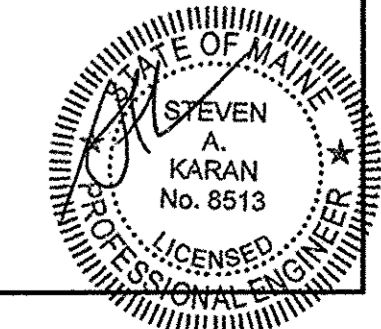
Starbucks Coffee Company
 2401 Utah Avenue South
 #800
 Seattle, WA 98134
 T: (206) 318-1575
 Contact: Tara Flynn
 E: tara.flynn@starbucks.com

LLOYD ARCHITECTS
 Two High Cliff, Plymouth, MA 02360
 T: (508) 746-4646
 F: (508) 746-1236
 E: MAIL: info@lloydarch.com

Job No: 11400
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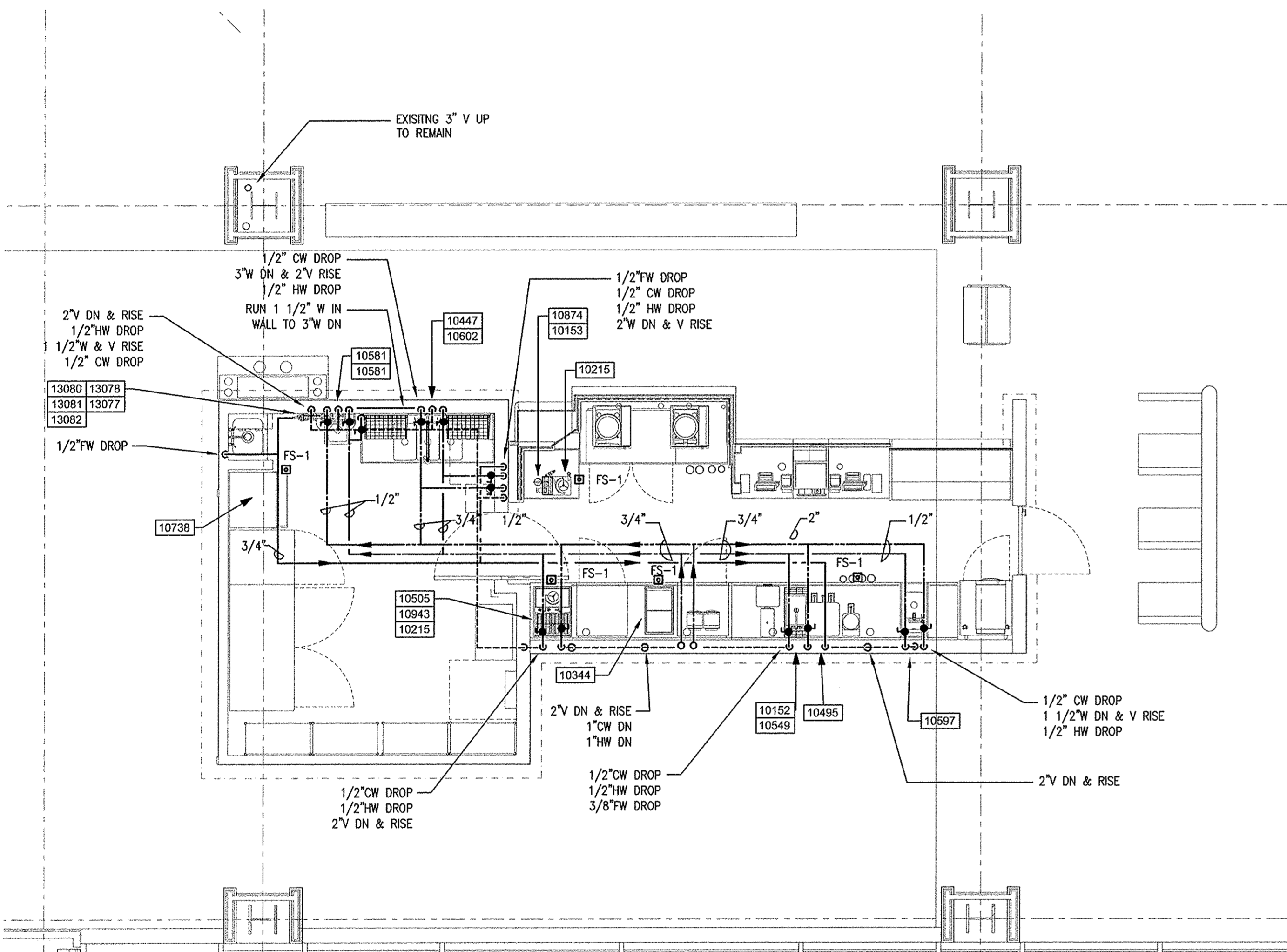
PLUMBING LEGEND, NOTES AND DETAILS

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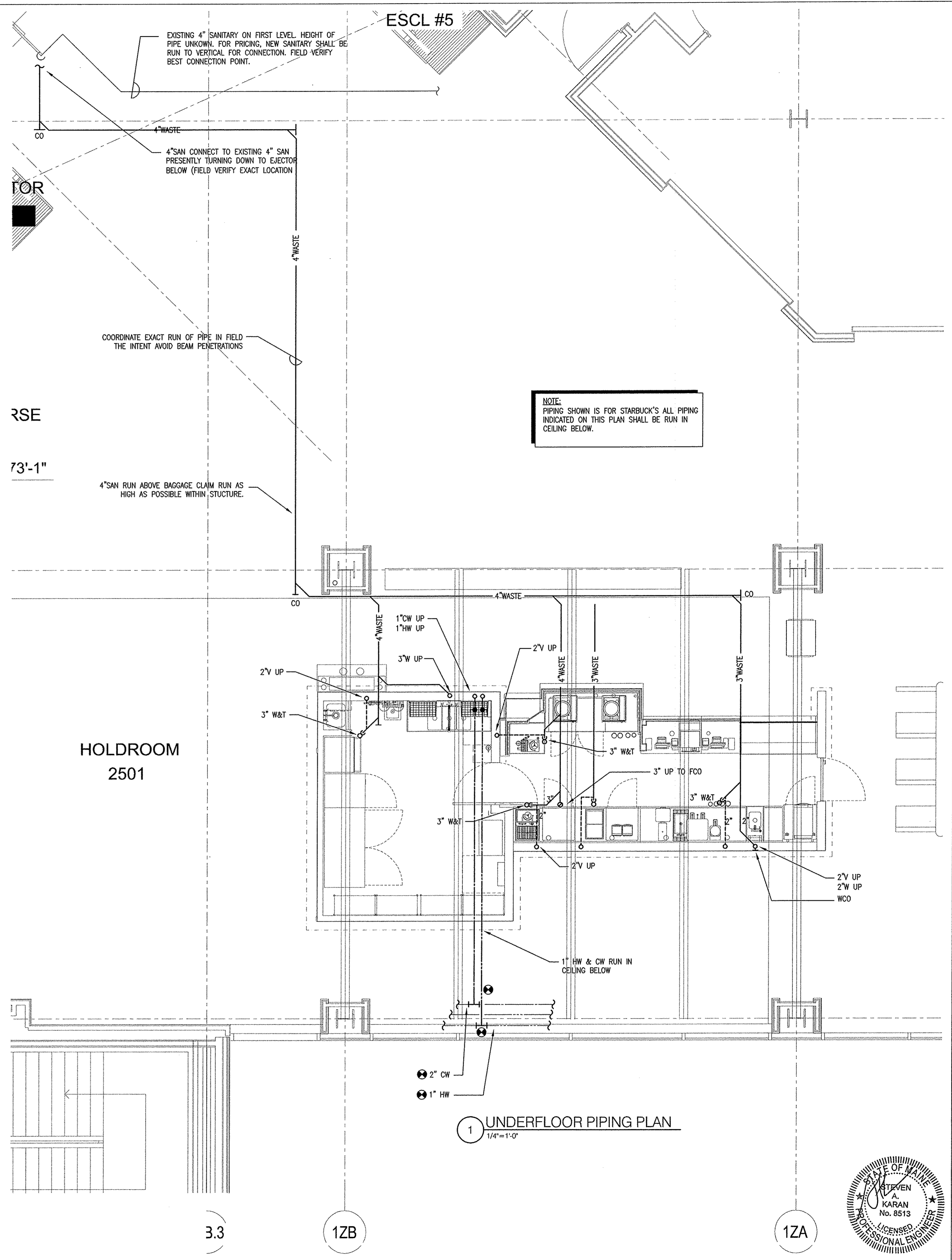
Host PWM Starbucks

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2 ABOVE FLOOR PIPING PLAN
1/4"=1'-0"

- DRAWING NOTES:**
- EQUIPMENT SUPPLIED BY OWNER, ALL FINAL CONNECTIONS AND DISTRIBUTION PIPING SHALL BE PROVIDED BY THE PLUMBING CONTRACTOR.
 - PLUMBING CONTRACTOR SHALL SET TEMPERATURE LIMIT STOPS AT HAND SINKS TO 110°.
 - HOT WATER SUPPLIED TO TENANT AT 115°
 - SEE KITCHEN EQUIPMENT AND ARCHITECTURAL DRAWINGS FOR COUNTER SECTIONS AND MEASURED LOCATIONS OF ROUGH-IN BELOW COUNTERS.



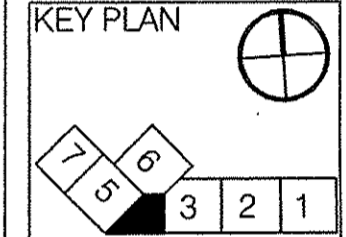
1 UNDERFLOOR PIPING PLAN
1/4"=1'-0"

NOTE:
PIPING SHOWN IS FOR STARBUCKS'S ALL PIPING INDICATED ON THIS PLAN SHALL BE RUN IN CEILING BELOW.

Item	Date
PERMIT	7/20/11



Starbucks Coffee
Portland Int'l Jetport PWM
1001 Westbrook Street
Portland ME 04102



HMS Host
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C: (240) 274-6417
E: scott.rcrimin@hmshost.com

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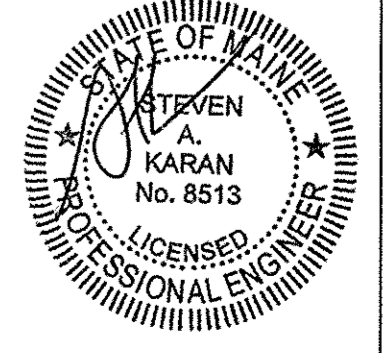
Starbucks Coffee Company
2401 Duak Avenue South
#800
Seattle WA 98134
T: (206) 218-1575
Contact: Tara Byrne
E: tara.byrne@starbucks.com

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PRELIMINARY
STARBUCKS
LAYOUTS

P 2.0



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PLUMBING SPECIFICATIONS

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R. Seismic Restraints: Installation of Plumbing equipment, accessories and components shall be in accordance with the Seismic Requirements identified in the Maine State Building Code.

SCOPE

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

- B. The extent of the Plumbing work shall include, but not be limited to the following:
 1. Alterations, additions and/or removal of existing plumbing systems and fixtures within the renovated area in order to conform to new space requirements.
 2. Installation of toilet room accessories.
 3. Core Drilling.
 4. Insulation of all existing cold water, hot water, hot water recirculation and conductors systems piping, valves and fittings made bare as a result of asbestos abatement. When connecting to existing insulated systems provide new insulation for three feet on either side of the new connection.
 5. Furnishing of Access Panels.

III RELATED WORK

A. The following equipment items and work shall be the responsibility of others:

1. Cutting and Patching
2. Flashing and Caulking
3. Finish Painting
4. Heating, Ventilating and Air Conditioning
5. Fire Protection
6. Electrical Power and Wiring
7. Furnishing of Toilet Room Accessories
8. Installation of Access Panels
9. Food Service Equipment

IV MATERIALS

A. Pipe and Fittings

1. Type A: (Potable and Non-potable Water)

Type K hard drawn copper tubing with wrought copper sweat fittings joined with approved 95/5 lead free tin antimony solder.

2. Type B: (Potable and Non-potable Water)

Type L hard drawn copper tubing with wrought copper sweat fittings joined with approved 95/5 lead free tin antimony solder.

3. Type C: (Sanitary, Waste and Vent, Storm)

No hub cast iron soil pipe and fittings joined with approved stainless steel mechanical couplings with neoprene gaskets.

4. Type D: (Waste and Vent smaller than 2")

Type DWV hard drawn seamless copper tubing with wrought copper drainage fittings joined with 95/5 lead free tin antimony solder.

5. Type F: (Vents)

Schedule 40 galvanized steel pipe with galvanized cast iron drainage fittings joined with threaded connections.

6. Pipe and fittings shall be in accordance with the following:

- a. Cold Water Type A or B
- b. Hot Water Supply and Recirculation Type A or B
- c. Sanitary Waste and Vent Type C or F
- d. Waste and Vent Smaller than 2" Type D
- e. Indirect Waste Piping smaller than 1 1/2" Type
- f. Indirect Waste Piping 1 1/2" and larger Type

B. Insulation

1. All domestic cold and hot water supply and recirculation pipe, fittings and valves shall be insulated with heavy density rigid fiberglass with a vapor barrier and all purpose jacket with self-sealing lap joint. Valves and fittings shall be insulated with Zeston Hi-Lo insulation and covered with 25/50 rated PVC covers secured with vapor retarder mastic.

2. All horizontal roof drainage pipe, roof drain bodies and the bend into vertical position shall be insulated in the manner described for cold and hot water.

3. Waste, cold water and hot water beneath handicapped lavatories shall be insulated with Brocor Products Series 500 Insulation Kit for P trap assembly and hot water and cold water angle valve assembly. Kit shall be white flexible vinyl insulation secured with nylon fasteners supplied, foam inserts, antimicrobial.

4. Insulation thickness shall be as follows:

Cold Water = 1/2"
Hot Water Supply and Recirculation up to 4" = 1"

C. Pipe Sleeves, Hangers and Supports

1. All piping shall be properly supported from the building structure in accordance with Local Codes and manufacturer's recommendations. Hangers for insulated piping shall be oversized and furnished with a sheetmetal insulation shield to allow the insulation to pass through uncut. Provide Schedule 40 pipe sleeves, extend 1 inch above floor, make watertight and pack with material that shall maintain fire rating. Provide core drilling where required and provide fire rated link seal penetration closures.

D. Valves

1. All shut off valves on cold water, hot water, and hot water recirculation piping from 1/2 inch up to and including 2 inch shall be Apollo Series 77-200, solder end, bronze body ball valve, chrome-plated bronze ball, 600 psi WOG, full port ball valve.

2. All shut off valves on cold water, hot water and hot water recirculation piping 1/2 inch, shall be Apollo Series 70-200, solder end, bronze body ball valve, chrome-plated bronze ball, 600 psi WOG.

3. All check valves on cold water, hot water and hot water recirculation piping three inches and less in size shall be Nibco Figure No. S-413-W, solder end, bronze body swing check, bronze disc, 200 psi WOG.

4. All drain valves shall be 1/2 inch Apollo Model 78-103 with Watts No. BA hose connection vacuum breaker, cap with chain of length as required.

1. Backflow preventers 2 inches and smaller shall be reduced pressure principle, all bronze, Watts Series U-009-QTS for cold water and hot water including bronze strainer, valves, air gap fittings test cocks and spare parts kit. Run vent to nearest floor drain or similar open receptor. Pressure gauges shall be installed on the supply and discharge side of each backflow preventer assembly. Each pressure gauge assembly shall include TRERICE 600-C gauge, 0-160 psi dial range, 735-2 valve and 872-1 snubber. Furnish to the Owner one Watts TK-9 Model A Test Kit. This Contractor shall act as the Owner's agent in seeking approval from the Department of Environmental Protection or their designee. This Contractor shall submit all Plans, Specifications, and Applications required for approval and shall pay all fees. Approvals shall be secured prior to the purchase and installation of backflow preventers. Test and certify backflow preventer.

E. Floor Drains

1. Floor drains shall be cast iron body with weepholes and flushing collar. Grates shall be polished chrome-plated brass in finished areas and coated cast iron in unfinished areas.

F. G. Wall Hydrants

1. Wall hydrants shall be all bronze, non-freeze type, polished brass face, loose key operated with integral vacuum breaker backflow preventer.
2. Hydrants shall be set 18 inches above outside grade and not more than 100 feet apart.

I. Plumbing Fixtures

1. In general, all plumbing fixtures shall have chrome-plated faucets, stops and traps. All supply stop valves shall be brass body and stem and have threaded or sweat solder inlet. Provide wall escutcheons. Fixtures and trim shall be of the same manufacturer similar to Kohler, Eljer or American Standard.

2. All lavatory or "handwashing sink" controls, where applicable, shall be adjusted by installing Plumber prior to the final inspection. Controls shall be set to deliver water at a maximum temperature of 110 degrees F, where faucet temperatures can not be set at faucet, provide power point of use mixing valve.

J. Pipe Identification and Valve Tags

1. All plumbing systems shall be labeled at each valve, at each branch, at each pipe passage through wall and at intervals of not more than 20 feet with color coded 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 origin. Valve charts shall be placed under glass, framed and presented to the Owner.

K. Cleanouts

1. Cleanouts shall be iron body with heavy brass plug and raised nut, same size as pipe for piping up to four inches and not less than four inches in size for piping larger than four inches and closed gas tight. Floor cleanouts in carpeted areas shall have carpet cleanout markers. Floor cleanouts shall not be located beneath partitions, casework, non-portable equipment or similar installation conditions. End cleanouts on no hub cast iron shall be Josam Series 5890-20. End cleanouts on copper waste shall be Nibco 816. Flush floor cleanout shall be Josam Series 56000-2-22-41 in concrete floors. The last flush floor cleanout before exiting the building shall be Josam Series 58910-20. Wall cleanouts and concealed dandy cleanouts on no hub cast iron shall be Josam Series 58910-19 with Series 58900 cleanout plug with center screw length as required. End cleanouts on polypropylene piping shall be Fuscel fitting cleanout adapter with threaded plug.

L. Water Hammer Arrestors (Shock Absorbers)

1. Maintenance-free water hammer arrestors shall be furnished and installed in accessible locations at all locations in the water systems where quick acting valves are installed as well as wherever hammer may occur.
2. Water hammer arrestors shall be similar to the following Joy R. Smith model numbers. Sizing and placement shall be in accordance with PDI Standard PDI-WH-201 and the manufacturer's recommendations.

Type	Fixture	Unit Ratings	Model
SA-A	1-11	Joy R. Smith 5005	
SA-B	12-32	Joy R. Smith 5010	
SA-C	33-80	Joy R. Smith 5020	

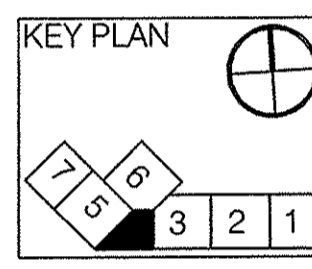
M. Access Panels

Furnish access panels for access to all concealed parts of the plumbing 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.

Item	Date
PERMIT	7/20/11



Starbucks Coffee
Portland Intl Jetport PVM
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Portland ME 04102



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Job No.: 11400
Scale: As noted
Issued: 7/20/11

PLUMBING SPECIFICATIONS

P 3.0

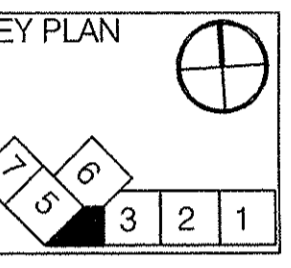


Host PVM Starbucks

Item	Date
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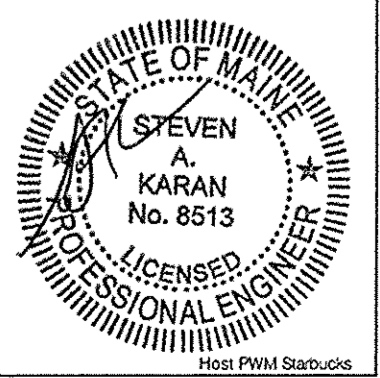
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MECHANICAL PLAN

M1.0



HVAC LEGEND	
SYMBOL	DESCRIPTION
○	PIPING ELBOW TURNED UP
◐	PIPING ELBOW TURNED DOWN
□	DIFFUSER & GRILLE TAG
##-#	EQUIPMENT TAG
Ⓢ	THERMOSTAT
AH	AIR HANDLING UNIT
CD	CONDENSATE DRAIN
CU	CONDENSING UNIT
DN	DOWN
EXH	EXHAUST
F	FAN

TAG LEGEND
 TYPICAL FOR ##
 DIFFUSER/GRILLE TAG

DUCTLESS SPLIT AIR CONDITIONING SYSTEM AIR HANDLER SCHEDULE															
GENERAL		PERFORMANCE				ELECTRICAL			PHYSICAL		REMARKS				
TAG	LOCATION	MATCHED COND. UNIT	NOMINAL TONS	TOTAL COOLING BTUH	FAN CFM	SPEED	MINIMUM OUTSIDE AIR CFM	MCA	MOP	VOLTAGE	PHASE	MANUFACTURER MODEL	TYPE	FEATURES	INSTALL
AH-1	ABOVE CLG	CU-1	2.0	24,200	600	3	0	20	20	208	1	SANYO KS2472	①	① ② ③	①

① R410A, COOLING ONLY, LOW AMBIENT CAPABILITY DOWN TO 0°F, WALL MOUNTED
 ② CONDENSATE DRAIN PUMP
 ③ WASHABLE ANTI-MOLD AIR FILTER
 ① REFRIGERANT PIPING, CONDENSATE PIPING, CONDENSATE PUMP, CONTROL WIRING AND CONDUIT, POWER WIRING AND CONDUIT, RELAYS, AND OTHER DEVICES SHALL BE CONCEALED. LOCATE CONDENSATE PUMP AND OTHER DEVICES REQUIRING ACCESS IN ACCESSIBLE LOCATIONS; COORDINATE LOCATIONS WITH THE ARCHITECT AND PROVIDE ACCESS PANELS WHERE REQUIRED.

DIFFUSER AND GRILLE SCHEDULE				
GENERAL		PHYSICAL		REMARKS
TAG	SIZE (IN)	MANUFACTURER MODEL	TYPE	FEATURES
(A18)	18x6	TITUS 350RL	①	①

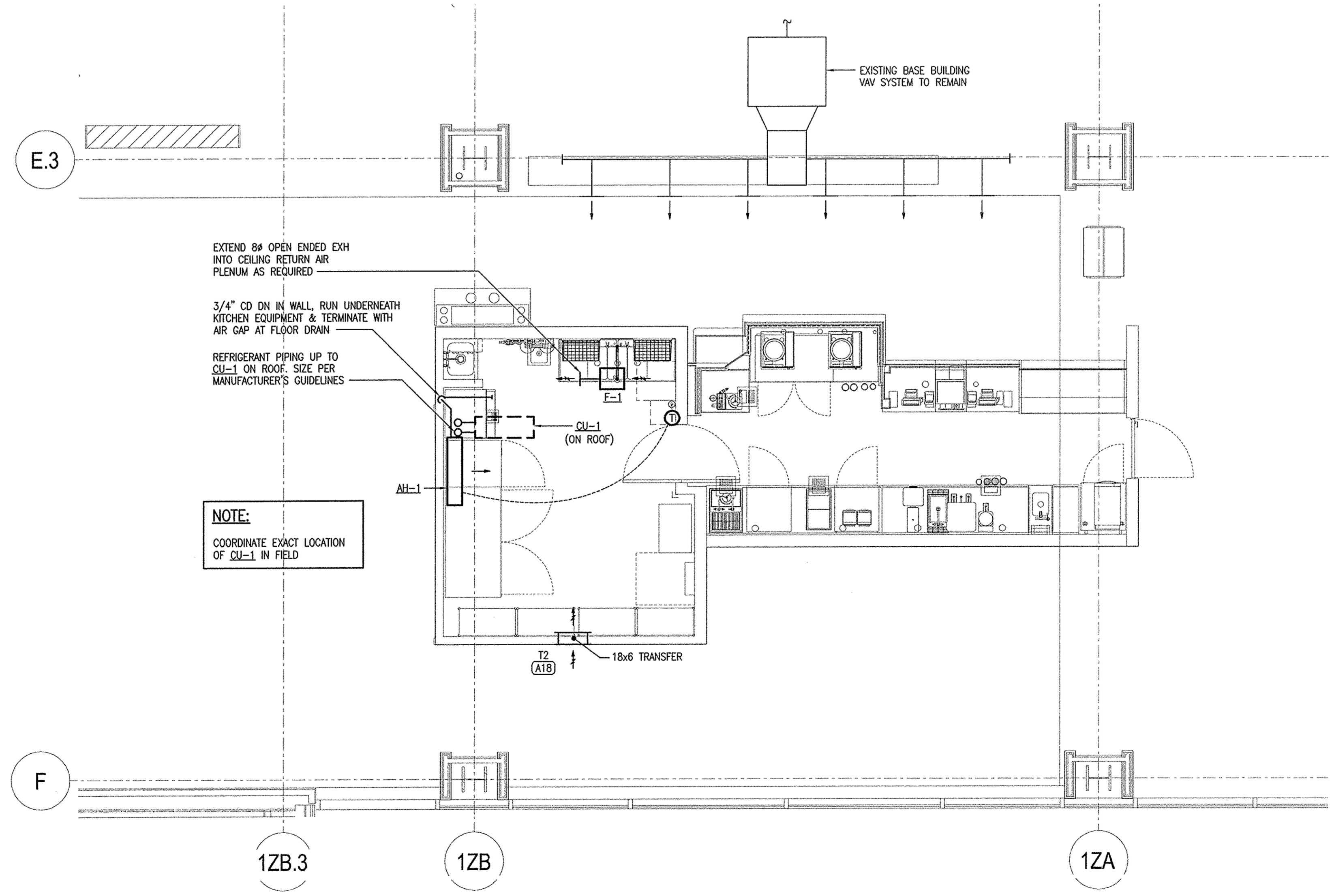
① TRANSFER GRILLE, 35° FIXED BLADES ON 3/4" CENTERS, BLADES PARALLEL TO LONG DIMENSION, STEEL, WHITE
 ① SURFACE MOUNT

CONDENSING UNIT SCHEDULE												
GENERAL			PERFORMANCE		ELECTRICAL				PHYSICAL		REMARKS	
TAG	LOCATION	MATCHED AIR HANDLER	NOMINAL TONS	TOTAL COOLING BTUH	MCA	MOP	VOLTAGE	PHASE	APPROX WEIGHT (LBS)	MANUFACTURER MODEL	TYPE	INSTALL
CU-1	ROOF	AH-1	2.0	24,200	20	20	208	1	30	SANYO CL2472	①	① ②

① R410A, COOLING ONLY, LOW AMBIENT CAPABILITY DOWN TO 0°F
 ② MOUNT UNIT ON (2) ROOF RAILS. RAILS SHALL BE MOUNTED DIRECTLY TO THE ROOF STRUCTURE, THEN ROOFED AND FLASHED WATER TIGHT.
 ① PROVIDE SPLIT SYSTEM REFRIGERANT PIPING BETWEEN AIR HANDLER AND MATCHED CONDENSING UNIT, SIZED AND CONFIGURED PER THE MANUFACTURER'S RECOMMENDATIONS. ROUTE PIPING CONCEALED TO THE GREATEST EXTENT POSSIBLE. SEAL PIPING PENETRATIONS WATERTIGHT.

FAN SCHEDULE														
GENERAL		PERFORMANCE				ELECTRICAL				PHYSICAL		REMARKS		
TAG	LOCATION	CFM	ESP (IN WG)	RPM	SONES	WATTS	VOLTAGE	PHASE	HZ	APPROX WEIGHT (LBS)	MANUFACTURER MODEL	TYPE	FEATURES	INSTALL
F-1	BACK ROOM	150	0.10	851	2.0	173	115	1	60	15	GREENHECK SP-B200	①	① ② ③ ④ ⑤	① ②

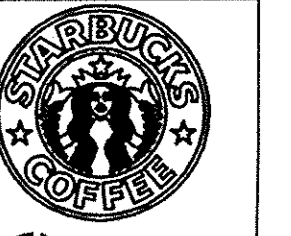
① CEILING EXHAUST FAN
 ① CORROSION RESISTANT GRILLE
 ② VIBRATION ISOLATION KIT
 ③ PLUG-TYPE DISCONNECT SWITCH
 ④ UNIT MOUNTED SPEED CONTROLLER FOR AIR BALANCING
 ⑤ MOTION DETECTOR, GRILLE MOUNTED & WIRED
 ① FAN SHALL BE CONTROLLED BY UNIT MOUNTED MOTION DETECTOR
 ② ADJUST SPEED CONTROLLER TO CFM SPECIFIED



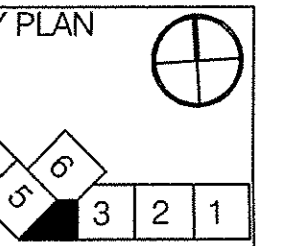
1 MECHANICAL FLOOR PLAN
 1/4" = 1'-0"

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Item	Date
PERMIT	7/20/11



Starbucks Coffee
 Portland Int'l Jetport PWM
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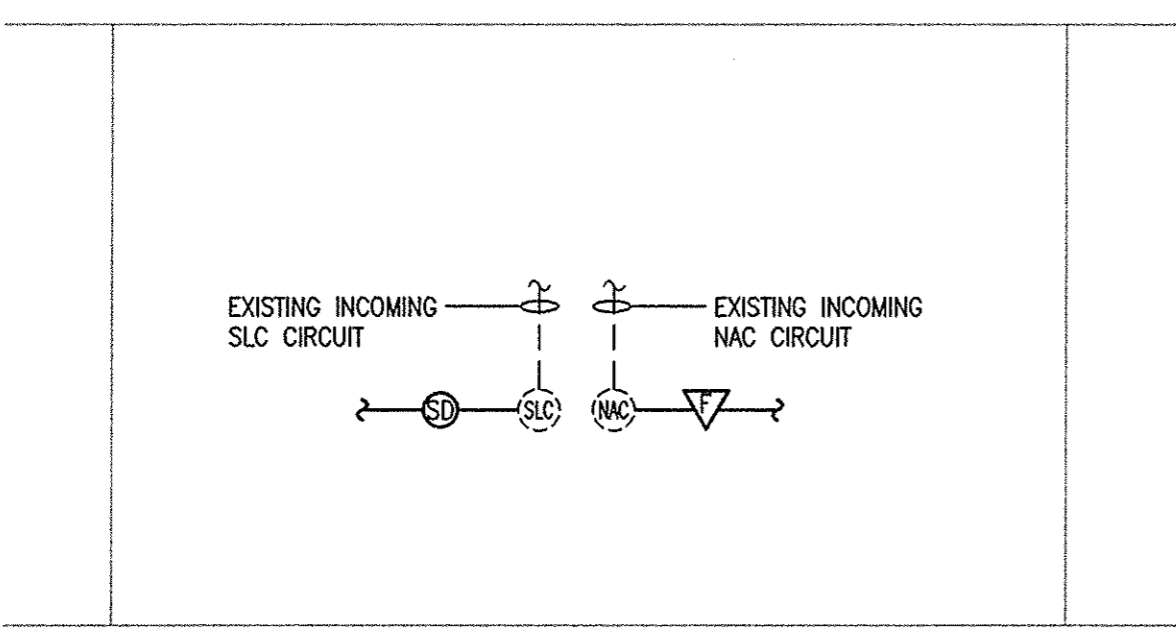
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Job No.: 11400
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FIRE ALARM PLANS

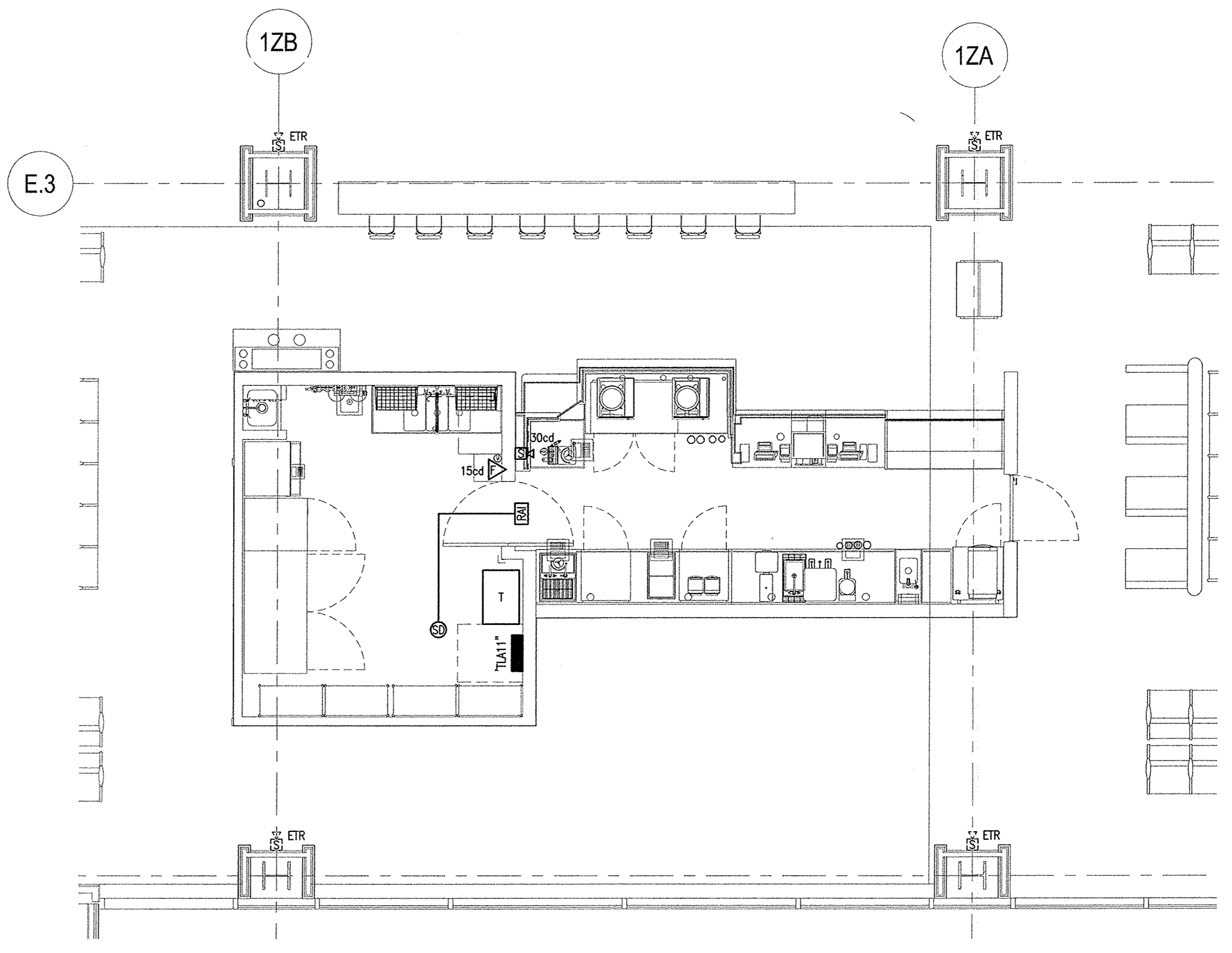
E 2.0

- 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**
- ☐ MANUAL PULL STATION MOUNTED 48" AFF
 - ☒ SPEAKER STROBE MOUNTED 80" AFF.
 - ▽ VISUAL ONLY UNIT MOUNTED 80" AFF.
 - ⊙ PHOTOELECTRIC SMOKE DETECTOR
 - RTS REMOTE TEST STATION FOR DUCT SMOKE DETECTOR WITH NAMEPLATE LABELED ACCORDINGLY
 - RAI REMOTE ALARM INDICATOR

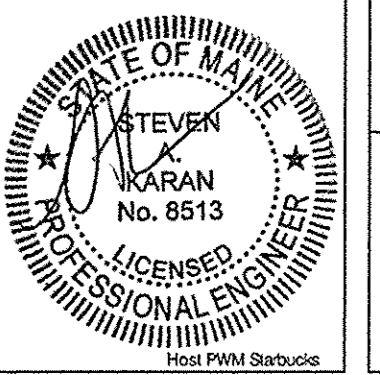


2 FIRE ALARM RISER DIAGRAM
 NOT TO SCALE

- FIRE ALARM NOTES:**
1. ALL FIRE ALARM WORK ASSOCIATED WITH THE STARBUCKS 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.



1 FIRE ALARM PLAN
 1/4"=1'-0"



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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 DETAIL REQUIRED FOR THE WORK...

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...

1.05 GUARANTEES 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, SHALL BE REPLACED OR REPAIRED AS DIRECTED FOR DURATION OF ONE YEAR, FROM THE DATE OF ACCEPTANCE.
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.

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. THREE (3) PAPER SETS OF DRAWINGS, SAME SCALE AS THE DESIGN SET UNLESS OTHERWISE INDICATED IN THE SPECIFICATIONS, AND THREE (3) CD DISKS WITH AutoCAD 2007 OR LATER VERSIONS OF THE AS-BUILTS ARE REQUIRED FOR SUBMISSION TO THE ARCHITECT ENGINEER.

1.09 TESTS

- A. BEFORE AN APPLICATION FOR THE FINAL ACCEPTANCE OF THE WORK WILL BE CONSIDERED, ALL TESTS DEEMED NECESSARY BY THE ARCHITECT TO SHOW PROPER EXECUTION OF THE WORK SHALL HAVE BEEN PERFORMED AND COMPLETED IN THE PRESENCE OF AN ARCHITECT'S REPRESENTATIVE. SCHEDULE OF ALL TESTING PROCEDURES SHALL BE ARRANGED TO SUIT THE CONVENIENCE OF THE ARCHITECT.

1.10 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".

PART 2 - PRODUCTS

- 2.01 EQUIPMENT AND MATERIALS
A. ALL EQUIPMENT AND MATERIALS FOR PERMANENT INSTALLATION SHALL BE THE PRODUCTS OF RECOGNIZED MANUFACTURERS AND SHALL BE NEW.
B. NEW EQUIPMENT AND MATERIALS SHALL:
1. WHERE NORMALLY SUBJECT TO UNDERWRITER'S LABORATORY INC. LISTING OR LABELING SERVICES, BE SO LISTED OR LABELED.

2.02 OUTLET BOXES

- A. OUTLET, PULL AND JUNCTION BOXES SHALL BE FABRICATED FROM STEEL AND CONFORM TO UL 50, UL 514, AND NEMA OS1. BOXES FOR INTERIOR LOCATIONS SHALL BE CASTE GAUGE, GALVANIZED SHEET STEEL.
B. BOXES SHALL CONTAIN SUITABLE KNOCKOUTS. BARRIERS SHALL BE FURNISHED AS REQUIRED BY CODE.
C. 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.

2.03 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 CABLES BELONG OR WIRES BE USED TO SUPPORT CONDUIT".
B. ALL FASTENING, SUPPORTS, CLAMPS, ANCHORS, AND SIMILAR ITEMS SHALL BE OF TYPE SUITABLE FOR THE PURPOSE.

2.04 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# 5362 OR APPROVED EQUAL.

2.05 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 CONDUCTOR, AS TO PROVIDE EFFECTIVE ELECTRICAL CONTINUITY.
B. GROUND CONTINUITY SHALL BE MAINTAINED THROUGHOUT.

2.06 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.

2.07 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 CHASSES AND FURRED SPACES WHENEVER POSSIBLE.

2.08 PANEL BOARDS

- A. PANEL BOARDS SHALL CONSIST OF FACTORY COMPLETED DEADFRONT 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. BUSSING SHALL BE BRACED THROUGHOUT TO CONFORM TO INDUSTRY STANDARD PRACTICE GOVERNING SHORT CIRCUIT STRESSES IN PANELBOARDS. PHASE BUSSING SHALL BE FULL HEIGHT WITHOUT REDUCTION.

2.09 TRANSFORMER RATING TAPS

- 15 KVA AND LESS (2) 5% FCBN
30 KVA AND ABOVE (2) 2 1/2% FCAN AND (4) 2 1/2% FCBN

2.10 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.

2.11 INDIVIDUALLY MOUNTED DRY TYPE THREE PHASE TRANSFORMERS

- A. PROVIDE INDIVIDUALLY MOUNTED DRY TYPE THREE PHASE TRANSFORMERS IN ACCORDANCE WITH THE FOLLOWING:
1. THEY SHALL BE OF THE INDOOR VENTILATED TYPE.
2. THEY SHALL BE FOR 60 HERTZ OPERATION.
3. THEY SHALL HAVE A DELTA CONNECTED HIGH SIDE RATED FOR 480 VOLTS AND A WYE CONNECTED LOW SIDE RATED FOR 120/208 VOLTS, 3 PHASE, 4 WIRE, GROUNDING TAPALS.
4. THEY SHALL HAVE FULL CAPACITY TAPS ABOVE AND BELOW NORMAL AS FOLLOWS:

2.12 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 AUDIO/VISUAL SIGNALS, ETC. ALL NEW HORNS/STROBES SHALL BE SYNCHRONIZED WITH EXISTING APPLIANCES.
B. IT SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR TO REVIEW 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.

2.13 FIRE STOPPING, 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 95-081 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 EXTEND A MINIMUM OF 3 INCHES ABOVE FLOOR OR ROOF.

2.14 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.

2.15 FIRE STOPPING, 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 95-081 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 EXTEND 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.

3.02 DEMOLITION AND REMOVAL WORK

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3.03 DEMOLITION AND REMOVAL WORK

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3.05 DEMOLITION AND REMOVAL WORK

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