

SPECIFICATIONS AND INSTRUCTIONS:

GENERAL:

- Contractor shall make necessary provisions to ensure locations of all services and elevations are as shown on the drawings.
- Contractor to coordinate all mechanical work with Architectural, Structural and Electrical drawings.
- Contractor is responsible for obtaining all mechanical construction permits required and all applicable fees for completing the project.
- No changes are allowed without the prior written consent of the Engineer of Record.
- The routing and layout of all services shall is for schematic representation only. The contractor is responsible for ensuring that the work is installed in the location without any conflict with architectural, structural or electrical devices and if conflicts exist, to coordinate with the Engineer of Record to mitigate the conflicts and come up with cost effective alternatives.
- Mechanical contractor shall maintain a minimum of 1500mm of cover on all mechanical services.
- Mechanical drawings indicate general location and route to be followed by mechanical systems and do not show all details in some cases. The contractor is responsible for installing a fully operating system.
- For all equipment installations, refer to the manufacturer's instructions.

UTILITY SERVICES:

- Mechanical contractor shall verify point of connection to site utility service prior to starting any new work.
- Mechanical Contractor's failure to properly coordinate all site services shall not be a justification for additional charges.

WALL PENETRATIONS AND PATCHWORK:

- Where ever applicable, all holes made in walls or surfaces for mechanical installations shall be installed with a sleeve.
- Provide fire rated caulking in all wall penetrations that are fire rated after the installation of the services.

HEATING AND VENTILATION:

- All ductwork installed shall be galvanized steel, lock forming quality. All fabrication shall be done in accordance with ASHRAE handbooks and all applicable codes.
- Sealants and gasketing to be water resistant, fire resistant and in accordance with applicable standards.
- Ducts shall be sealed with the right materials - DO NOT USE duct tape.
- All duct dimensions shown on plans shall be internal clear dimensions. Where ducts are to be installed with acoustic lining or internal insulation, maintain inside clear dimensions consistent with the duct sizing designated on the drawings.
- Provide adequately sized access panels to dampers, equipment and valves. Provide proper labels on suspend ceiling tiles to identify locations with mechanical components.
- Provide return air openings where indicated

- Provide acoustic seal around ducts and sound traps at penetrations through sound baffles.
- Provide balancing dampers as indicated on drawings and at points on low pressure supply, return and exhaust ducts.
- No variation of duct configuration or sizes is permitted unless approved by the Engineer of Record.
- Round ducts to be of the spiral lock seam type only.
- All ductwork, duct supports and hangers to be installed as per the SMACNA duct manual.
- The minimum sheet thickness for low pressure ducts including fittings shall be as follows:

Rectangular ducts
305mm wide: .55mm
330mm to 760mm wide: .70mm

Round ducts
305mm wide: .55mm
350mm to 560mm wide: .70mm
- Fiber glass duct is not acceptable
- Seal all ducts to provide an air tight system.
- Do not use flexible duct to change directions: Maximum length of flexible duct to be used is 900mm.
- Provide flexible gasketed joints between ductwork and equipment.
- Prior to installation of insulation, ensure surface and insulation is clean and dry prior to and during installation.
- Ensure that insulation is continuous through inside partitions.
- Finish and seal insulation neatly at all hangers, supports, access doors, fire dampers and other protrusions.

PLUMBING:

- Provide all necessary piping, material and labour for the system as indicated and to conform to the latest revision of the Alberta Plumbing and Drainage Code.
- All piping above 15PSIG shall undergo a hydrostatic test at 1.5X the design pressure for 2 hours to determine if there are any leaks present.
- All piping shall be firmly supported and securely braced according to Alberta Building Code, Part 6, using single ring or trapeze type hangers.
- Provide manual air vents where shown and/or required for elimination of air from high points in piping.
- Provide drains where shown and/or required to allow servicing of the system. Each drain outlet to be valved with a gate valve and provided with a nipple and threaded cap.
- Drainage and vent piping shall be copper or cast iron with mechanical joints.
- All piping to be protected during construction to prevent debris and dirt from getting into pipe.
- All new cold piping to be insulated with a vapour barrier jacket with a "K" value at 24 degrees of 0.035 W/M degrees C.
- All new hot piping to be insulated with a fibrous glass insulation with a "K" value at 24 degrees of 0.035 W/M degrees C.
- All gas piping materials and work to be completed in accordance with CSA B149-1-00 natural gas and propane installation code.

- All gas steel pipe to be in accordance with ASTM A53, SCHED 40, seamless, NPS $\frac{1}{2}$ to 2, screwed NPS 2 $\frac{1}{2}$ and above.
- Provide pressure reducing, regulating and relief valves required for compatibility between equipment and building natural gas distribution system.
- Test all systems in accordance with the requirements of the Authority having jurisdiction.
- Paint all gas piping with one coat of yellow paint.

ELECTRIC HEATERS:

- Install a baseboard heater at the entrance opening areas in accordance with manufacturers specifications.

FURNACES:

- Install a roof mounted makeup furnace unit for kitchen.
- The makeup furnace unit shall be outdoor rated.
- The model of the makeup furnace unit shall be Lennox Model G-140M-140S and shall be interlocked with the kitchen exhaust hood fan also located on the rooftop.
- The main furnace shall be outdoor rated and mounted on the roof as per KFR Engineering mechanical design drawings.











EXHAUST FAN:

- Install a roof mounted makeup furnace unit for kitchen.
- The makeup furnace unit shall be outdoor rated.

ADDITIONAL INFORMATION:

- Before commencing any construction, contractor shall clear any doubts or design errors with the Engineer of record.
- The client reserves the right to procure any material or specialized services from others.
 - For all mechanical equipment, the contractor shall provide actual equipment ratings if they differ from proposed ratings, to the Engineer of record in the form of a final report for review and approval.
 - After completion of all mechanical work, submit to the Engineer of record all documentation and paperwork for completion of as-built drawings.
 - Contractor shall provide 1 year warranty on all installations and workmanship in the facility.
 - All locations of equipment are approximate and not drawn to scale. Contractor shall exercise good judgement and standard commercial construction practice to mount devices in accordance with Alberta Building code requirements and other applicable standards.
 - In the event of conflict with other device installations, precedence shall be given to mechanical components and the electrical components shall be re-positioned accordingly.
 - Before making any changes, the Engineer of Record must be consulted for Approval.
 - Final construction inspection to be completed by Engineer of Record and inspector with the Authority having Jurisdiction prior to completion of architectural finishing.

MECHANICAL DRAWINGS LEGEND:

LEGEND	
Item	Description
CO	Clean out
FD	Floor drain
TSP	Trap seal primer
DCW	Domestic cold water
DHW	Domestic hot water
SAN	Sanitary piping
VTR	Vent through Roof
	P-Trap
	Pressure reducing Valve
	Shut off Valve
	Balancing Damper
	Supply duct - Up/Down
	Return duct - Up/Down
	Elbow with turning vanes
	Thermostat
	Utility service meter
	Combination Fire and smoke damper

General Notes

- This drawing is to be read in conjunction with all other technical specifications provided. Any discrepancies found on these drawings should be verified with the Designer before any portion of the works are constructed. Only architectural design drawings and structural drawings should be used for the dimensional information for the construction of the building.
- All dimensions are in feet and inches unless noted otherwise.
- For specifications and general instructions, see drawing M1
- Engineer of Record to inspect all work after installation and prior to final architectural finishing to ensure conformity to Alberta Building Code requirements. No architectural completion work to commence prior to Engineer's sign off on mechanical work and inspection by the authority having jurisdiction.
- Contractor shall make all necessary provisions to deliver a complete Installation in accordance with standard commercial practice and all applicable standards and codes.

ISSUED FOR CONSTRUCTION

PERMIT / SEAL INFORMATION:

PERMIT TO PRACTISE LICENSE NO: P12183



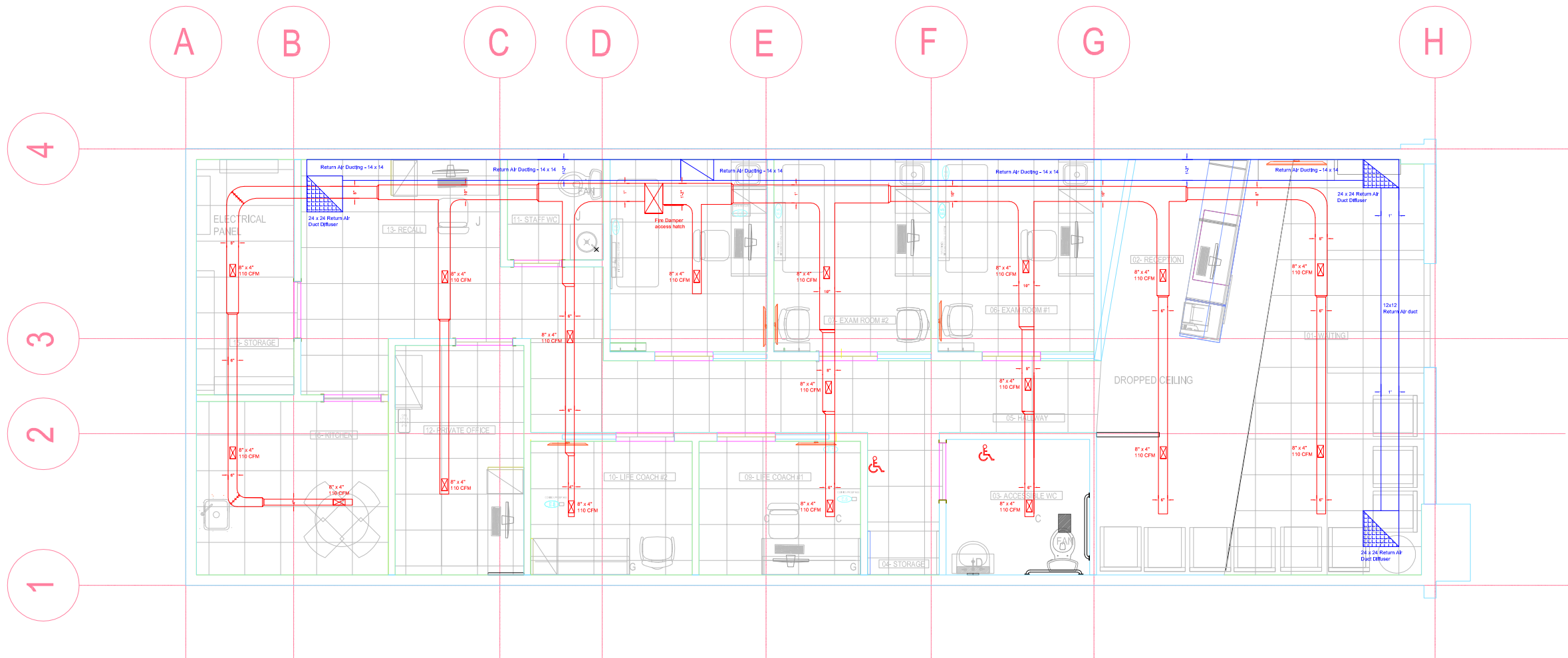
B	Building Permit	Sep/15
A	Owner Review	Sep/15
No.	Revision/Issue	Date



BURHANI
ENGINEERING AND
CONSTRUCTION LTD
566 Saddleback Road
Edmonton AB, T6J 4Z3
Tel: 1-780-430-1776

Pure Health Care Clinic
4210 Gateway Boulevard
Edmonton, Alberta

Project	Sheet
Mechanical Notes	M1
Date Sept 15th, 2015	
Scale 1:30	



M2 HVAC System
Scale: 1/4" = 1' - 0"

HVAC SYSTEM	
1.	Return air ducting in common space only - Ceiling Open above drop ceiling.
2.	Supply air ducting, based on sizing of furnace: Size of furnace RTU-6: 105000 BTU Heating, 1600 CFM, 47000 BTU Cooling, 4Ton. Information from M200, Arrow Engineering Drawing
3.	NOTE: If there is a conflict between HVAC ducting and fire suppression system, contractor shall notify Engineer of record and bypass the suppression piping and take an alternate route for ductwork

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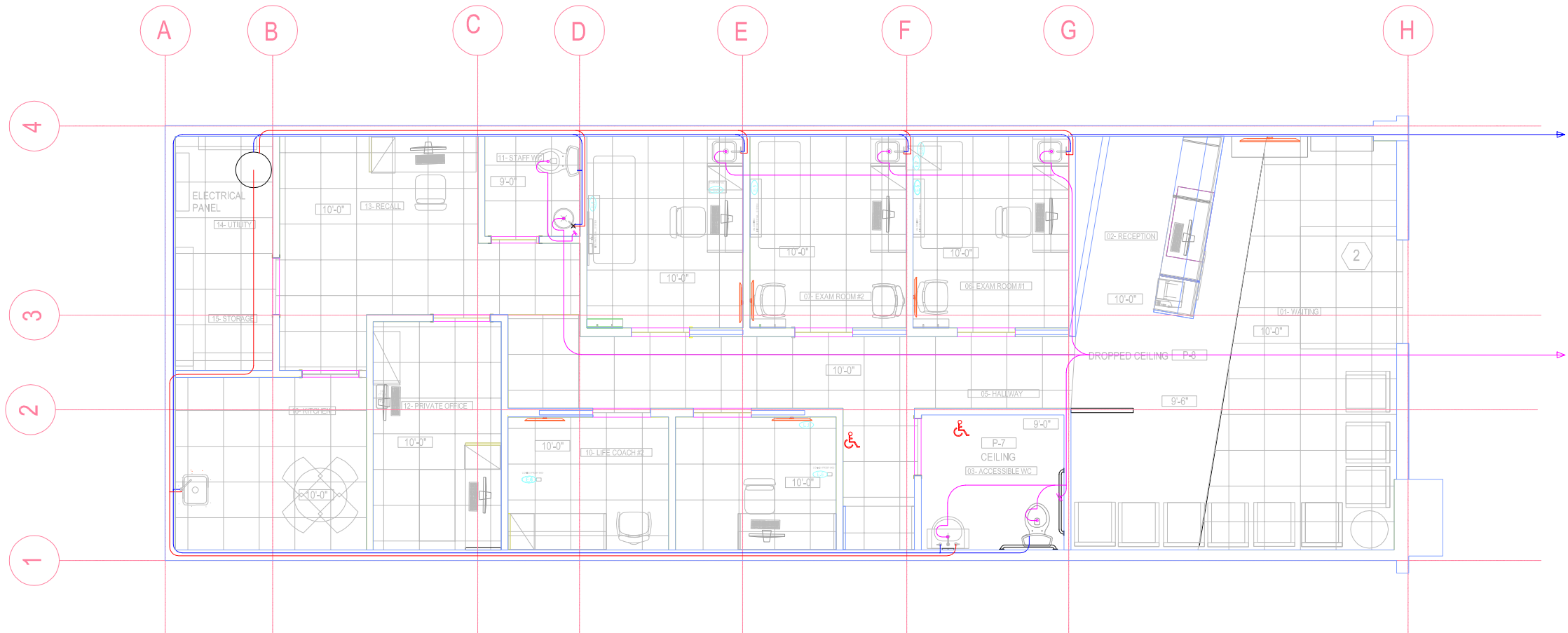


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Project	HVAC	Sheet	M2
Date	Sept 28th, 2015		
Scale	1:30		

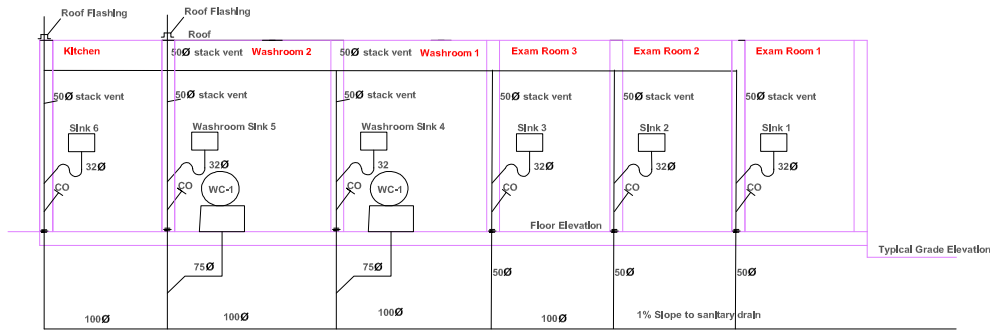
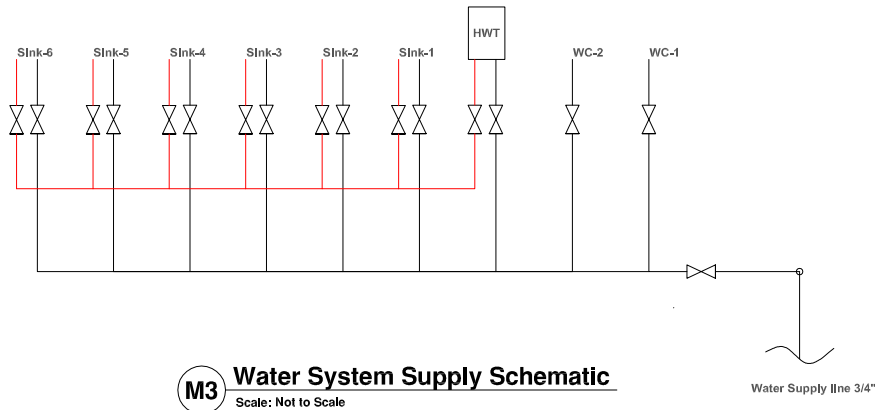


DISTRIBUTION SYSTEM NOTES	
1.	For additional information on the Equipment systems, refer to Architectural drawings
2.	All receptacles to be duplex receptacles, commercial grade unless otherwise specified

M3 Plumbing
Scale: 1/4" = 1' - 0"

- Sanitary Line
- Domestic Cold Water (DCW)
- Domestic Hot Water (DHW)

NOTE:
Domestic Water piping to be installed in the ceiling space above the false ceiling.



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Project	Plumbing	Sheet
Date	Sept 28th, 2015	M3
Scale	1:30	

PLUMBING EQUIPMENT AND PIPE SCHEDULE	
DESIGNATION	MANUFACTURER/MODEL
Lavatory	American Standard, Yorkdale Sink 0203 000, Self Rimming
Lavatory Faucets	American Standard 7385.00 reliant 3 single control centre set.
Kitchen Sinks	Commercial grade sinks - Purchased by owner based on facility requirement.
Hot water tank	10L Electrical under counter water tank, typical
Water supply piping	ASTM B88, Seamless copper water tube, Type K, Hard temper
Copper fittings	ANSI B16.22, wrought copper alloy water joint pressure fittings
Concrete embedded PVC pipe	CSA B137.3, PVC, Schedule 40, Rigid, White
Embedded PVC pipe fittings	CSA B137.3, PVC, Schedule 40, Rigid White
PVC pipe and fittings for sanitary drain (Above floor)	CSA B181.2 PVC Class 12454B, Type DWV
Sanitary Vent	ASTM B306, Seamless copper water tube, Type DWV, hard temper .
Flexible tube to lavatory and water closet	Durable braided steel tube

M4 **Plumbing Schedule**
Scale: 1/4" = 1' - 0"

MECHANICAL EQUIPMENT SCHEDULE		
DESIGNATION	MANUFACTURER/MODEL	NOTES
Bathroom ventilation fan	Typical, 50W, 1000CFM light commercial units	
Hot water tank		Install unit as indicated on drawings or in alternative location as directed by owner.
Flre Extinguishers	Garrison heavy duty 6A80BC fire extinguisher: Commercial unit for Class A, B and C fires. Comes with 5 year manufacturer warranty	Install unit surface mounted as per manufacturer's instructions, using manufacturer provided brackets. Optional fully enclosed covers may be installed at the discretion of the owner.

M4 **Equipment Schedule**
Scale: 1/4" = 1' - 0"

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2. **All** dimensions are in feet and inches unless noted otherwise.

3. For specifications and general instructions, see drawing M1

4. Engineer of Record to inspect **all** work after installation and prior to final architectural finishing to ensure conformity to Alberta Building Code requirements. **No** architectural completion work to commence prior to Engineer's sign off on mechanical work and inspection by the authority having jurisdiction.

5. Contractor **shall** make **all** necessary provisions to deliver a complete installation in accordance with standard commercial practice and **all** applicable standards and codes.

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Project

Schedules

Date

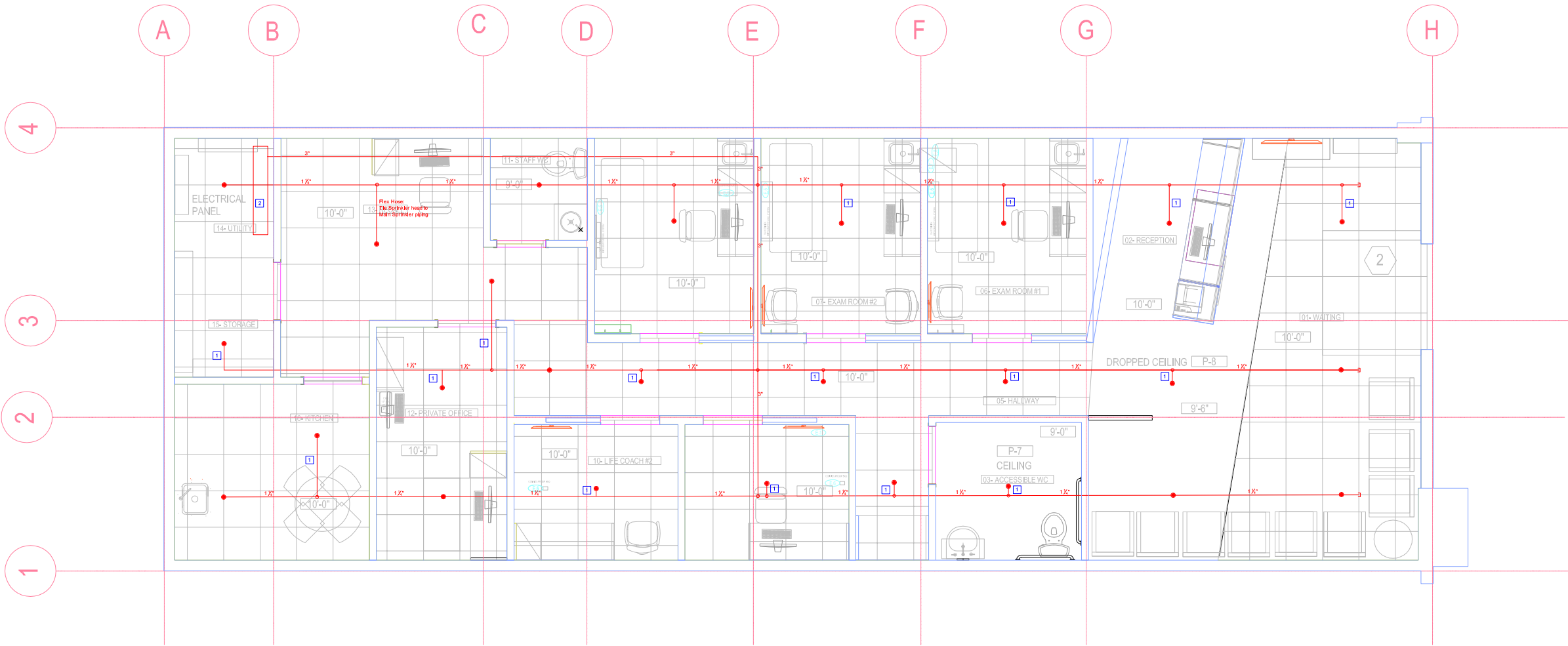
Sept 28th, 2015

Scale

1:30

Sheet

M4



M5 Sprinkler System - Head Locations
Scale: 1/4" = 1' - 0"

SPRINKLER SYSTEM NOTES		SPRINKLER SYSTEM NOTES		SPRINKLER SYSTEM NOTES	
1.	Flex Hose: Tie in Sprinkler head to sprinkler system piping: Flexibility for placement: Contractor to finalize onsite	6.	Provide higher temperature sprinkler heads if located near heat sources as required. Provide head guards where sprinklers are subject to damage.	11.	Water Pressure in Building - 150 PSI: Location of new sprinkler heads are final. All other mechanical and electrical devices to be adjusted around sprinkler head locations
2.	Sprinkler tree location and design criteria not defined - To be provided by others	7.	Suspended lighting and ducts max 4 ft. wide, to be minimum of 18" below sprinkler deflector. Coordinate on site. Provide heads below ducts over 4 ft. wide.		
3.	Fire department piping final location and sizing by others: Information not provided. Final location to comply with Alberta Fire Code: 45m from Hydrant location and 3-5m from Entrance location.	8.	Piping materials: 1" - SCH 40 - Threaded fittings 1-1/4" to 2" - Dyna Flow Grooved fittings 2-1/2" to 6" = SCH 10 - Grooved Fittings		
4.	Installation of sprinkler design shall conform to NFPA standards. Contractor to verify design with Design Engineer and discuss additional sprinkler heads and locations prior to installation.	9.	Sufficient heat to prevent freezing near vestibules and doors by others.		
5.	This building has been designed to NFPA 13, 2002: Ordinary hazard, Group II	10.	All equipment and devices to be ULC listed for their use and installed as per their listing. All sprinkler heads to be installed in conformance to this listing, specifically with reference to ceiling slope, distance from ceiling, distance from obstruction etc.		

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Project Sprinkler System	Sheet M5
Date Sept 16th, 2015	
Scale 1:30	