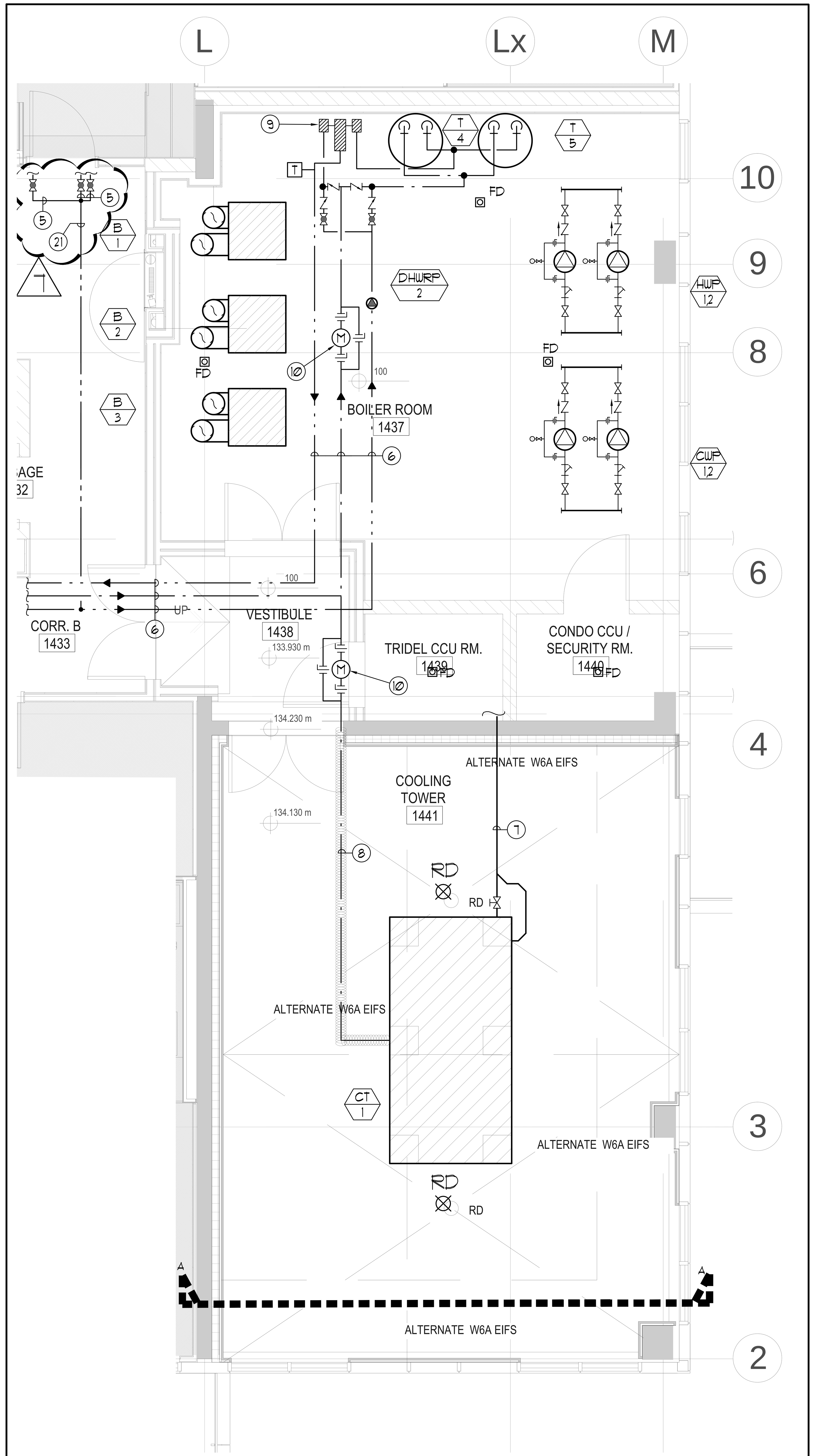
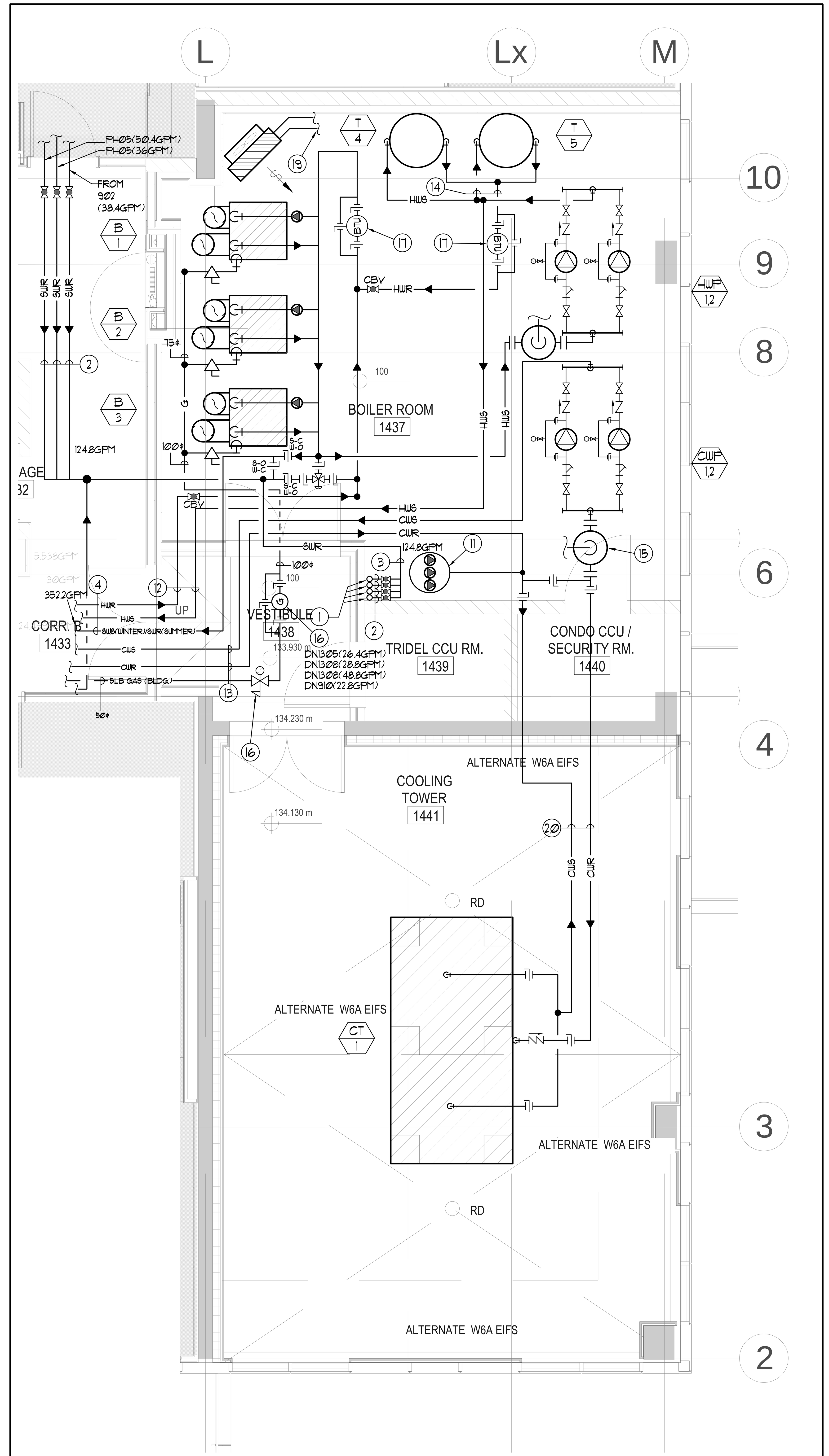
ALL PIPING CONNECTIONS TO BE READ IN CONJUNCTION WITH PIPING SCHEMATIC AND REPORT ANY DISCREPANCIES TO ENGINEER PRIOR TO COMMENCEMENT OF WORK.



ENLARGED COOLING TOWER & BOILER ROOM P&D LAYOUT | SCALE 1:25



ENLARGED COOLING TOWER & BOILER ROOM HVAC PIPING LAYOUT | SCALE 1:25

GENERAL AND ACOUSTIC NOTES:

1) CONTRACTOR SHALL CO-ORDINATE ARCHITECTURAL, STRUCTURAL, LIGHTING, HVAC AND SPRINKLER DRAWINGS TO AVOID AREAS OF CONFLICT AND TO MAINTAIN CEILING HEIGHTS.

2) CONTRACTOR SHALL REPORT ALL DISCREPANCIES AND AREA OF CONFLICTS TO THE ENGINEER PRIOR TO WORK BEGINS.

3) REFER TO ACOUSTIC ENGINEER'S REPORT FOR ACOUSTIC TREATMENT REQUIRED.

4) FIRE DAMPERS ARE REQUIRED TO BE LISTED AND ARE TO HAVE FIRE-PROTECTION RATING OF THE PENETRATED FIRE SEPARATION.

5) THE PIPING PENETRATING THE VARIOUS FIRE SEPARATION IS REQUIRED TO BE FIRESTOPPED WITH A LISTED FIRESTOPPING MATERIAL IN ACCORDANCE WITH OBC ARTICLE 3-1.9-1.

6) THE FIRE HOSE CABINETS THAT ARE RECESSED INTO THE EXIT STAIR SHAFTS ARE REQUIRED TO BE SEPARATED FROM THE EXIT STAIR BY A 2 HR. FIRE SEPARATION.

7) MAIN FRESH AIR SHAFT TO BE C/W 25MM THICK ACOUSTIC DUCT LINER STARTING FROM THE MECHANICAL PENTHOUSE AND DOWN THREE FLOORS.

8) COOLING TOWER SHALL BE ISOLATED USING DISCRETE SPRING ISOLATORS, SPRING MOUNT SHALL HAVE A MINIMUM STATIC DEFLECTION OF 50MM WITH EXTRA DOUBLE-LAYER PADS BELOW (NSN). TWIN-SPHERE RUBBER EXPANSION JOINTS THAT ARE RATED FOR OUTDOOR USE, SHALL BE PROVIDED BETWEEN THE COOLING TOWER AND ATTACHED PIPING.

9) BOILERS AND HEAT EXCHANGERS SHALL BE SUPPORTED ON DOUBLE-LAYER NEOPRENE-STEEL-NEOPRENE RUBBER PADS BETWEEN THE SUPPORT CHANNELS AND THE HOUSEKEEPING PADS BELOW.

10) CWP, AND HWP SHALL BE DECOUPLED FROM THE ATTACHED PIPING USING TWIN-SPHERE RUBBER EXPANSION JOINTS ON BOTH THE SUCTION AND DISCHARGE SIDES. FOR VIL PUMPS, THESE EXPANSION JOINTS ARE TYPICALLY LOCATED IN THE VERTICAL SECTION ABOVE THE SUCTION STRAINER AND SHUT-OFF VALVE. THE PUMPS AND DIRECTLY ATTACHED PIPING (UP TO THE TWIN-SPHERE JOINT) SHALL BE SUSPENDED FROM MECHANICAL ROOM ROOF SLAB USING SPRING ISOLATOR WITH MINIMUM 38MM STATIC DEFLECTION, WITH NEOPRENE ELEMENT IN SERIES AND RUBBER PADS IN HANGER SADDLES.

11) ALL BASE MOUNTED PUMPS SHALL BE MOUNTED C/W CONCRETE INERTIA BASES SUPPORTED ON STEEL SPRINGS WITH A STATIC DEFLECTION OF AT LEAST 1.5" AND INCLUDING AT LEAST TWO LAYERS OF WAFFLED NEOPRENE PADS BELOW.

12) SMALLER PUMPS MAY BE SUPPORTED USING PIPE STANDS UNDER THE ELBOWS (NOT DIRECTLY FROM THE CASING ITSELF), WITH 38MM DEFLECTION SPRING ISOLATORS PLUS NEOPRENE. SMALL PUMPS SHALL BE ISOLATED USING NEOPRENE-IN-SHEAR ISOLATORS FOR THE FIRST 3 POINTS OF SUPPORT ON EITHER SIDE OF THE PUMP.

13) ALL VFD'S TO BE MOUNTED ON RUBBER PADS.

14) IN-LINE, ROOF-MOUNTED AND CABINET FANS SHALL BE ISOLATED WITH SPRINGS OR NEOPRENE-IN-SHEAR MOUNTS. SIDEWALL FANS SHALL BE ISOLATED USING NEOPRENE MOUNTS, OR PADS.

15) ALL INTAKE OR EXHAUST DUCT TO BE C/W 25MM EXTERNAL INSULATION 3M FROM EXTERIOR WALL.

16) ALL PIPES 50MM DIA AND LARGER SUPPORTED FROM WITHIN MECHANICAL ROOM SHALL BE ISOLATED FROM SLAB ABOVE USING SPRING WITH AT LEAST 25MM STATIC DEFLECTION, AND A NEOPRENE-N-SHEAR ELEMENT WITH AT LEAST 6MM STATIC DEFLECTION IN SERIES, PLUS RUBBER PADS IN HANGER SADDLES.

17) ALL PIPES LESS THAN 50MM DIA. SUPPORTED FROM WITHIN MECHANICAL ROOM SHALL BE ISOLATED WITH THICK RUBBER PADS, OR FOAM RUBBER SLEEVES IN PIPE CLAMPS. POT FEEDERS, PRVS AND OTHER ANCILLARY EQUIPMENT MUST BE SIMILARLY ISOLATED.

18) ALL MAIN VERTICAL PIPE RISERS REQUIRE VIBRATION ISOLATION. NONE OF THESE PIPES MAY TOUCH THE SLAB OR ANY PENETRATED PARTITION. ALL RISER ANCHORS MUST INCLUDE 1-INCH THICK NSN ISOLATION PADS, TO BE HELD IN PLACE WITH HORIZONTAL STEEL PLATES WELDED TO BRACKETS THAT ARE IN TURN WELDED TO THE RISER. BOLTING THROUGH THE PADS IS NOT ACCEPTABLE.

19) FOR THE MAIN RISERS, ANY PIPE GUIDES USED IN CONNECTION WITH EXPANSION JOINTS OR LOOPS MUST BE ISOLATED WITH RUBBER PADS AND SLEEVES WHERE FASTENED TO THE BUILDING STRUCTURE.

20) ALL DUCT ELBOWS TO BE C/W TURNING VANES.

21) ALL DUCTWORK TO BE SEALED ALONG SEAMS AND AT JOINTS.

22) ALL RUBBER PADS OR MOUNTS USED FOR ISOLATION SHALL BE 45 DUROMETER OR LOWER.

23) ALL HOUSEKEEPING PADS TO BE ISOLATED FROM FLOOR SLAB WITH DURACOUSTIC PADS. REFER TO ACOUSTIC ENGINEER'S REVIEW REPORT AND ISOLATED HUOSEKEEPING PAD DETAIL ON DETIALS DRAWING.

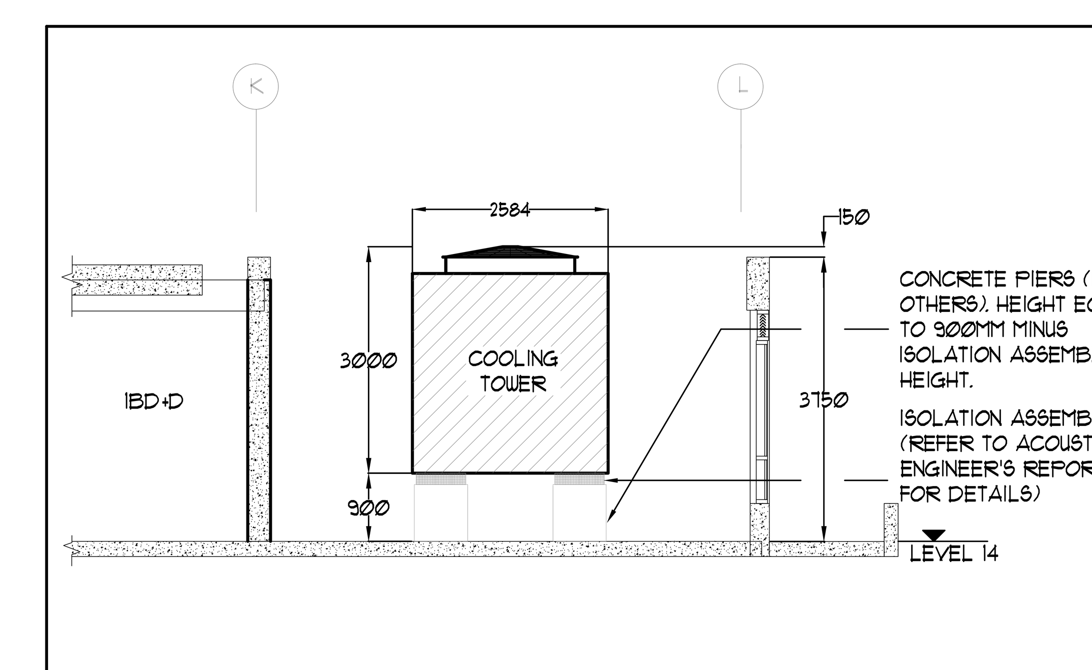
3270mm CLEAR FLOOR TO UNDERSLAB

NOTES:

1. 50ϕ SWR FROM BELOW.
2. 50ϕ SWR.
3. 75ϕ SWR.
4. 150ϕ SWR.
5. 19ϕ DHWR.
6. 63ϕ DCW (Hz), 63ϕ DHW (Hz) & 50ϕ DHWR (Hz).
7. 100ϕ COOLING TOWER DRAIN @1% TO BE CONNECTED TO NEAREST SAN DRAIN.
8. 38ϕ MAKEUP WATER LINE C/W HEAT TRACING. HEAT TRACING BY ELECTRICAL CONTRACTOR. THIS CONTRACTOR TO INSULATE AND JACKET PIPE.
9. DOMESTIC HOT WATER MIXING VALVE. REFER TO DOMESTIC RISER AND MANUFACTURER'S INSTALLATION MANUAL FOR PIPING DETAILS.
10. PULSE TYPE WATER METER C/W BY-PASS TO BE SUPPLIED AND INSTALLED BY THIS CONTRACTOR.
11. CHEMICAL TANK C/W BUILT-IN PUMPS. SEE SCHEMATICS FOR DETAILS.
12. 100ϕ HWS & HWR
13. 150ϕ HWS & HWR
14. 63ϕ HWS & HWR
15. AIR SEPERATOR AND EXPANSION TANK. SEE SCHEMATICS FOR DETAILS.
16. GAS METER C/W BYPASS TO BE SUPPLIED AND INSTALLED BY THIS CONTRACTOR. GAS METER TO BE PURCHASED FROM PROVIDENT.
17. BTU METER C/W BYPASS TO BE SUPPLIED AND INSTALLED BY THIS CONTRACTOR. BTU METER TO BE PURCHASED FROM PROVIDENT.
18. 5 LB TO LOW PRESSURE (7" WC) GAS REGULATOR.
19. 25ϕ HWS & R TO BE CONNECTED TO HWS & R MAINS.
20. 150ϕ CWS & R.
21. 25ϕ DHWR. (7)

LEGEND MECHANICAL

SYMBOL	DESCRIPTION
	SUPPLY AIR DIFFUSER
	SUPPLY AIR TROFFER
	LINEAR SUPPLY DIFFUSER
	THERMOSTAT
	FAN SWITCH
	RETURN AIR GRILLE
	EXHAUST AIR GRILLE
	SUPPLY DUCT UP
	SUPPLY DUCT DOWN
	RETURN DUCT UP
	RETURN DUCT DOWN
	EXHAUST DUCT UP
	EXHAUST DUCT DOWN
FD	FIRE DAMPER
BD	BALANCING DAMPER
M	MOTORIZED DAMPER
MFD	MOTORIZED FIRE DAMPER
BDD	BACKDRAFT DAMPER
OBD	OPPOSED BLADE VOLUME CONTROL DAMPER C/W LOCKING QUADRANT
	TURNING VANES
	FLEXIBLE CONNECTION
	ACOUSTIC INSULATION
	TYPE OF EQUIPMENT / EQUIPMENT IDENTIFICATION
	TYPE OF DIFFUSER OR GRILLE / GRILLE SIZE OR DIFFUSER NECK SIZE / AIRFLOW (CFM OR L/S)
	STARTER (3 PHASE , 1 PHASE)
	IN-SUITE ERV MASTER SWITCH
	FAN SWITCH / IN-SUITE ERV OVERRIDE BUTTON
CO	CO SENSOR
G	GAS LINE
G	GAS METER
	GAS COCK
	PRESSURE REDUCING VALVE
	SANITARY ABOVE GRADE
	SANITARY BELOW GRADE
	STORM ABOVE GRADE
	STORM BELOW GRADE
	DOMESTIC COLD WATER
	DOMESTIC HOT WATER
	DOMESTIC HOT WATER RECIRCULATION
	SANITARY VENT
M	WATER METER
FD	FLOOR DRAIN
FFD	FUNNEL FLOOR DRAIN
HD	HUB DRAIN
RD	ROOF DRAIN
SLD	SLAB DRAIN
AD	AREA DRAIN
BLAD	BI-LEVEL AREA DRAIN
CB	CATCH BASIN
	SANITARY TRAP
	ELBOW UP
	ELBOW DOWN
CO	WALL CLEANOUT
CO	FLOOR CLEANOUT
HB	HOSE BIBB
NFHB	NON-FREEZE HOSE BIBB
	GLOBE VALVE
	GATE VALVE
	BALL VALVE
	BUTTERFLY VALVE
	PRESSURE REDUCING VALVE
	CHECK VALVE
	CAP
	COMPRESSED AIR OUTLET
	BACKFLOW PREVENTER
	CIRCUIT BALANCING VALVE
	MULTIPLE PIPES / - DENOTES NO. OF PIPES
T	TEMPERATURE SENSOR
	THERMOMETER
	2-WAY MODULATING VALVE
	3-WAY MODULATING VALVE
TW	1/2"x4"(D) THERMOWELL C/W 1/2" BUSHING & 1/2" PLUG
XXX	FLOOR ELEVATION ABOVE LEVEL / FLOOR ELEVATION THIS LEVEL / HEADROOM (FLOOR TO U/S HEIGHT)



SECTION A-A | N.T.S.

DATE	NO.	DESCRIPTION	BY
07/28/15	7	ISSUED FOR SITE INSTRUCTION #M-6	E.P.
06/24/15	6	ISSUED FOR SITE INSTRUCTION #M-5	E.P.
05/12/15	5	ISSUED FOR SITE INSTRUCTION #M-4	E.P.
04/21/15	4	ISSUED FOR CITY COMMENTS	E.P.
09/23/14	3	ISSUED FOR TENDER	E.P.
07/10/14	2	RE-ISSUED FOR PERMIT	E.P.
05/30/14	1	ISSUED FOR PERMIT	E.P.

MARK VOID ALL PRINTS DATED PREVIOUS TO FINAL DATE ABOVE

REVISIONS

CONTRACTOR MUST CHECK AND VERIFY ALL DIMENSIONS AND CONDITIONS ON THE JOB AND REPORT DISCREPANCIES TO THE ENGINEERS BEFORE PROCEEDING WITH THE WORK. THIS DRAWING IS THE PROPERTY OF THE ENGINEERS AND MUST BE RETURNED UPON COMPLETION OF THE WORK.

DRAWINGS ARE NOT TO BE SCALED

NOVA TREND ENGINEERING GROUP LTD

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Richmond Hill, Ontario L4B 3M1
Tel: 905 882-5445
Fax: 905 882-5447

DRAWING TITLE: MPH MECHANICAL LAYOUT

PROJECT TITLE: SQ ALEXANDRA PARK BLOCK 11
38 CAMERON STREET
TORONTO ONTARIO

DRAWN BY:	CHECKED BY:	SCALE:
G.S.	E.P.	1:25
DATE:	PROJECT NUMBER:	DRAWING NUMBER:
FEB, 13	1313	M-33 OF 43