

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

GENERAL AND ACOUSTIC NOTES:

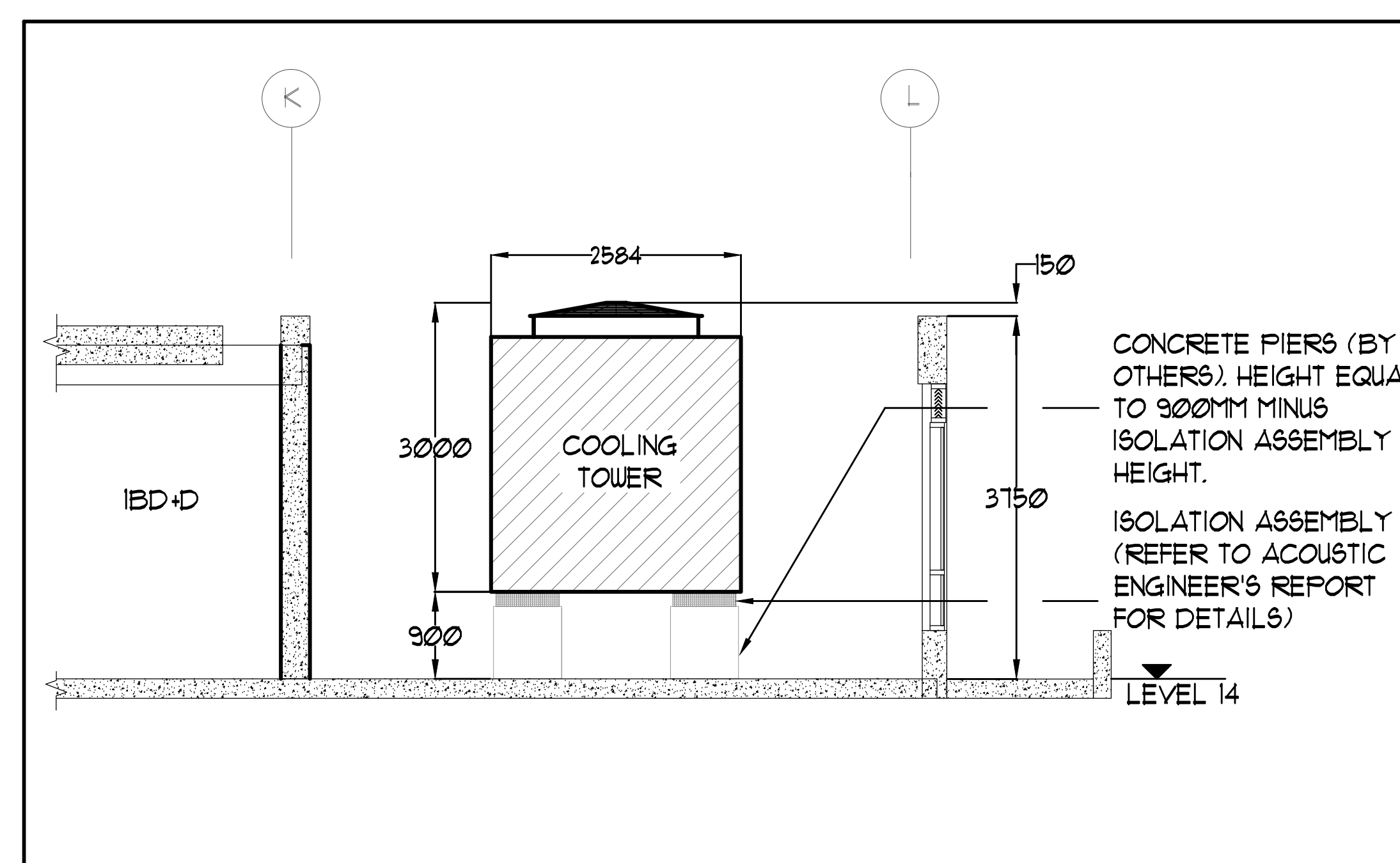
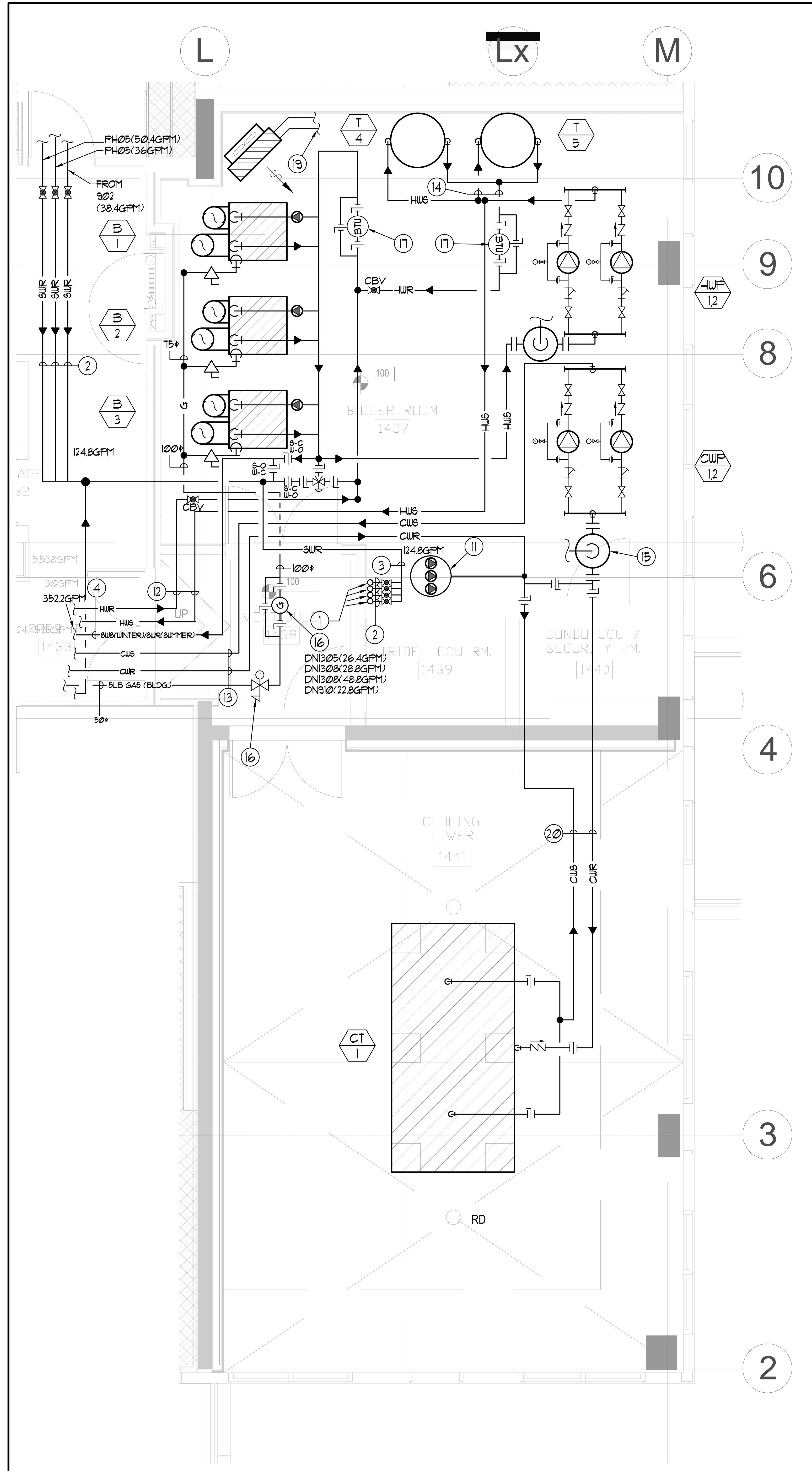
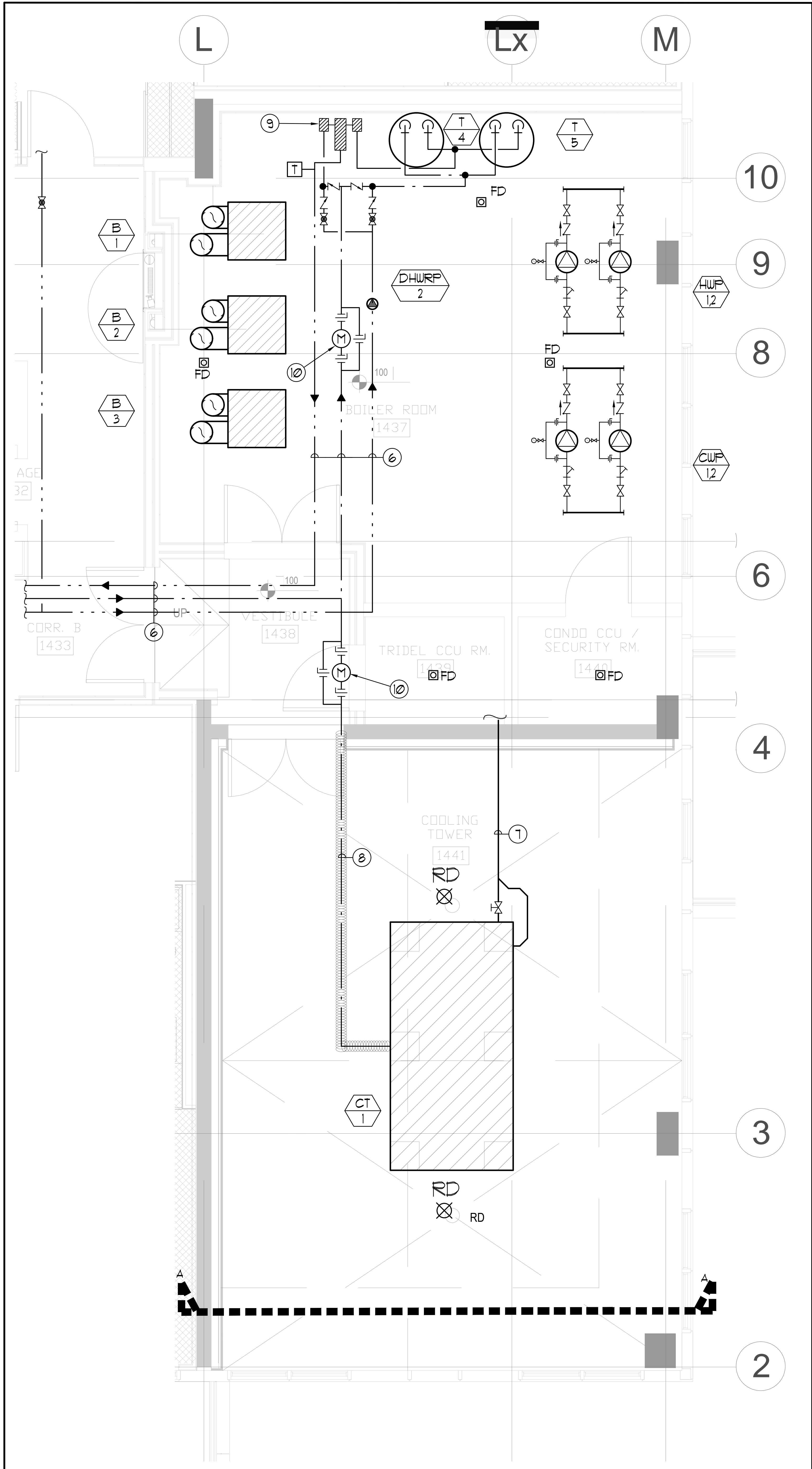
- CONTRACTOR SHALL CO-ORDINATE ARCHITECTURAL, STRUCTURAL, LIGHTING, HVAC AND SPRINKLER DRAWINGS TO AVOID AREAS OF CONFLICT AND TO MAINTAIN CEILING HEIGHTS.
- CONTRACTOR SHALL REPORT ALL DISCREPANCIES AND AREA OF CONFLICTS TO THE ENGINEER PRIOR TO WORK BEGINS.
- REFER TO ACOUSTIC ENGINEER'S REPORT FOR ACOUSTIC TREATMENT REQUIRED.
- FIRE DAMPERS ARE REQUIRED TO BE LISTED AND ARE TO HAVE FIRE-PROTECTION RATING OF THE PENETRATED FIRE SEPARATION.
- THE PIPING PENETRATING THE VARIOUS FIRE SEPARATION IS REQUIRED TO BE FIRESTOPPED WITH A LISTED FIRESTOPPING MATERIAL IN ACCORDANCE WITH CBC ARTICLE 3-15-1.
- 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.
- MAIN FRESH AIR SHAFT TO BE CAJ 25MM THICK ACOUSTIC DUCT LINER STARTING FROM THE MECHANICAL FENTHOUSE AND DOWN THREE FLOORS.
- 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.
- BOILERS AND HEAT EXCHANGERS SHALL BE SUPPORTED ON DOUBLE-LAYER NEOPRENE-STEEL-NEOPRENE RUBBER PADS BETWEEN THE SUPPORT CHANNELS AND THE HOUSEKEEPING PADS BELOW.
- CUP, AND HUP 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 30MM STATIC DEFLECTION, WITH NEOPRENE ELEMENT IN SERIES AND RUBBER PADS IN HANGER SADDLES.
- ALL BASE MOUNTED PUMPS SHALL BE MOUNTED CAJ CONCRETE INERTIA BASES SUPPORTED ON STEEL SPRINGS WITH A STATIC DEFLECTION OF AT LEAST 15" AND INCLUDING AT LEAST TWO LAYERS OF WAFFLED NEOPRENE PADS BELOW.
- SMALLER PUMPS MAY BE SUPPORTED USING PIPE STANDS UNDER THE ELBOWS (NOT DIRECTLY FROM THE CASING ITSELF) WITH 30MM 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.
- ALL VFD'S TO BE MOUNTED ON RUBBER PADS.
- 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.
- ALL INTAKE OR EXHAUST DUCT TO BE CAJ 25MM EXTERNAL INSULATION 3M FROM EXTERIOR WALL.
- ALL PIPES 50MM DIA AND LARGER SUPPORTED FROM WITHIN MECHANICAL ROOM SHALL BE ISOLATED FROM SLAB ABOVE USING SPRINGS WITH AT LEAST 25MM STATIC DEFLECTION AND A NEOPRENE-IN-SHEAR ELEMENT WITH AT LEAST 6MM STATIC DEFLECTION IN SERIES, PLUS RUBBER PADS IN HANGER SADDLES.
- 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.
- 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.
- ALL DUCT ELBOWS TO BE CAJ TURNING VANES.
- ALL DUCTWORK TO BE SEALED ALONG SEAMS AND AT JOINTS.
- ALL RUBBER PADS OR MOUNTS USED FOR ISOLATION SHALL BE 45 DUROMETER OR LOWER.
- ALL HOUSEKEEPING PADS TO BE ISOLATED FROM FLOOR SLAB WITH DURACOUSTIC PADS. REFER TO ACOUSTIC ENGINEER'S REVIEW REPORT AND ISOLATED HOUSEKEEPING PAD DETAIL ON DETAILS DRAWING.

370mm CLEAR FLOOR TO UNDERSLAB

NOTES:

- 50+ SUR FROM BELOW.
- 50+ SUR.
- 75+ SUR.
- 150+ SUR.
- 15+ DHUR.
- 63+ DCU (Hz), 63+ DHU (Hz) & 50+ DHUR (Hz).
- 100+ COOLING TOWER DRAIN #10 TO BE CONNECTED TO NEAREST SAN DRAIN.
- 38+ MAKEUP WATER LINE CAJ HEAT TRACING. HEAT TRACING BY ELECTRICAL CONTRACTOR TO INSULATE AND JACKET PIPE.
- DOMESTIC HOT WATER MIXING VALVE. REFER TO DOMESTIC RISER AND MANUFACTURER'S INSTALLATION MANUAL FOR PIPING DETAILS.
- PULSE TYPE WATER METER CAJ BY-PASS TO BE SUPPLIED AND INSTALLED BY THIS CONTRACTOR.
- CHEMICAL TANK CAJ BUILT-IN PUMPS. SEE SCHEMATICS FOR DETAILS.
- 100+ HUS & HUR.
- 150+ HUS & HUR.
- 63+ HUS & HUR.
- AIR SEPARATOR AND EXPANSION TANK. SEE SCHEMATICS FOR DETAILS.
- GAS METER CAJ BYPASS TO BE SUPPLIED AND INSTALLED BY THIS CONTRACTOR. GAS METER TO BE PURCHASED FROM PROVIDENT.
- BTU METER CAJ BYPASS TO BE SUPPLIED AND INSTALLED BY THIS CONTRACTOR. BTU METER TO BE PURCHASED FROM PROVIDENT.
- 5 LB TO LOW PRESSURE (1" WC) GAS REGULATOR.
- 25+ HUS & R TO BE CONNECTED TO HUS & R MAINS.
- 150+ CUS & R.

| LEGEND   |                                     |
|----------|-------------------------------------|
| SYMBOL   | DESCRIPTION                         |
| [Symbol] | APPLY AIR DRIVER                    |
| [Symbol] | APPLY AIR TRIPPER                   |
| [Symbol] | LINEAR SUPPLY DIFFUSER              |
| [Symbol] | TEMPERAT                            |
| [Symbol] | FAN MOTOR                           |
| [Symbol] | RETURN AIR GRILLE                   |
| [Symbol] | EXHAUST AIR GRILLE                  |
| [Symbol] | APPLY DUCT UP                       |
| [Symbol] | RETURN DUCT UP                      |
| [Symbol] | RETURN DUCT DOWN                    |
| [Symbol] | EXHAUST DUCT UP                     |
| [Symbol] | EXHAUST DUCT DOWN                   |
| [Symbol] | FIRE DAMPER                         |
| [Symbol] | BALANCING DAMPER                    |
| [Symbol] | MOTORIZED DAMPER                    |
| [Symbol] | MOTORIZED FIRE DAMPER               |
| [Symbol] | BACKDRIFT DAMPER                    |
| [Symbol] | OPPOSED BLADE VALVE CONTROL DAMPER  |
| [Symbol] | COIL                                |
| [Symbol] | TURNING VANES                       |
| [Symbol] | FLEXIBLE CONNECTION                 |
| [Symbol] | ACOUSTIC INSULATION                 |
| [Symbol] | TYPE OF EQUIPMENT                   |
| [Symbol] | REFERENCE CONNECTION                |
| [Symbol] | TYPE OF RISER OR GRILLE             |
| [Symbol] | SHALL BE OFFERED ABOVE RISK USE     |
| [Symbol] | ANALOG (CM OR LSI)                  |
| [Symbol] | SECTORS (3 PHASE / PHASE)           |
| [Symbol] | IN-RATE BY-PASSER MOTOR             |
| [Symbol] | FAN MOTOR / IN-RATE BY-PASSER MOTOR |
| [Symbol] | CO SENSOR                           |
| [Symbol] | GAS LINE                            |
| [Symbol] | GAS METER                           |
| [Symbol] | GAS STOP                            |
| [Symbol] | PRESSURE REDUCING VALVE             |
| [Symbol] | BANITARY ABOVE GRADE                |
| [Symbol] | BANITARY BELOW GRADE                |
| [Symbol] | OTHER ABOVE GRADE                   |
| [Symbol] | OTHER BELOW GRADE                   |
| [Symbol] | DOMESTIC HOT WATER                  |
| [Symbol] | DOMESTIC HOT WATER                  |
| [Symbol] | DOMESTIC HOT WATER RECIRCULATION    |
| [Symbol] | WATER METER                         |
| [Symbol] | FLOOR DRAIN                         |
| [Symbol] | RUNNEL FLOOR DRAIN                  |
| [Symbol] | AREA DRAIN                          |
| [Symbol] | ROOF DRAIN                          |
| [Symbol] | SLAB DRAIN                          |
| [Symbol] | AREA DRAIN                          |
| [Symbol] | B1-LEVEL AREA DRAIN                 |
| [Symbol] | CATCH BASIN                         |
| [Symbol] | BANITARY TRAP                       |
| [Symbol] | ELBOW UP                            |
| [Symbol] | ELBOW DOWN                          |
| [Symbol] | WALL CLEANOUT                       |
| [Symbol] | FLOOR CLEANOUT                      |
| [Symbol] | HOSE BIBB                           |
| [Symbol] | NON-FREEZE HOSE BIBB                |
| [Symbol] | GLUE VALVE                          |
| [Symbol] | GATE VALVE                          |
| [Symbol] | BALL VALVE                          |
| [Symbol] | BUTTERFLY VALVE                     |
| [Symbol] | PRESSURE REDUCING VALVE             |
| [Symbol] | CHECK VALVE                         |
| [Symbol] | CAP                                 |
| [Symbol] | COMPRESSED AIR OUTLET               |
| [Symbol] | BACKFLOW PREVENTER                  |
| [Symbol] | CIRCUIT BALANCING VALVE             |
| [Symbol] | MULTIPLE PIPES                      |
| [Symbol] | DENOTES NO. OF PIPES                |
| [Symbol] | TEMPERATURE SENSOR                  |
| [Symbol] | TEMPERATURE                         |
| [Symbol] | 3-WAY MODULATING VALVE              |
| [Symbol] | 2-WAY MODULATING VALVE              |
| [Symbol] | 17-PORT THERMOWEL                   |
| [Symbol] | CAJ 12" BRUSHING & 12" PLUS         |
| [Symbol] | FLOOR ELEVATION ABOVE LEVEL         |
| [Symbol] | HEADROOM FLOOR TO US LEVEL          |



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

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

SECTION A-A N.T.S.

| NO. | DESCRIPTION                   | DATE | BY |
|-----|-------------------------------|------|----|
| 1   | BASED FOR SITE INSPECTION #13 |      | EP |
| 2   | BASED FOR SITE INSPECTION #14 |      | EP |
| 3   | BASED FOR SITE INSPECTION #15 |      | EP |
| 4   | BASED FOR SITE INSPECTION #16 |      | EP |
| 5   | BASED FOR PERMIT              |      | EP |
| 6   | BASED FOR PERMIT              |      | EP |
| 7   | BASED FOR PERMIT              |      | EP |
| 8   | BASED FOR PERMIT              |      | EP |
| 9   | BASED FOR PERMIT              |      | EP |
| 10  | BASED FOR PERMIT              |      | EP |

| REVISIONS  |   |
|--|---|
| 1  | CONTRACTOR MUST CHECK AND VERIFY ALL DIMENSIONS AND CONDITIONS ON THE JOB AND REPORT DISCREPANCIES TO THE ENGINEER BEFORE PROCEEDING WITH THE WORK. THIS DRAWING IS THE PROPERTY OF THE ENGINEER AND NOT BE RETURNED FROM COMPLETION OF THE WORK. |
| DRAWINGS ARE NOT TO BE SCALED  |   |
|  |   |
| 175 West Beaver Creek Road Unit 31<br>Richmond Hill, Ontario L4B 3M1<br>Tel: 905-882-5445<br>Fax: 905-882-5441 |   |
| PROJECT TITLE:<br><b>60 ALEXANDRA PARK</b><br>BLOCK II<br>38 CAMERON STREET<br>TORONTO                         |   |
| DATE:  | SCALE:  |
| FEB, 13  | 1:25  |
| PROJECT NUMBER:  | DRAWING NUMBER:   |
| M-33   | M-33  |

Drawing name: \\20250000\Projects\60 Alexandra Park\015\1333-1334-1335 - Mechanical Piping Layout.dwg  
 Plotter: Jan 24, 2015 - 2:47 PM  
 User: G.S.