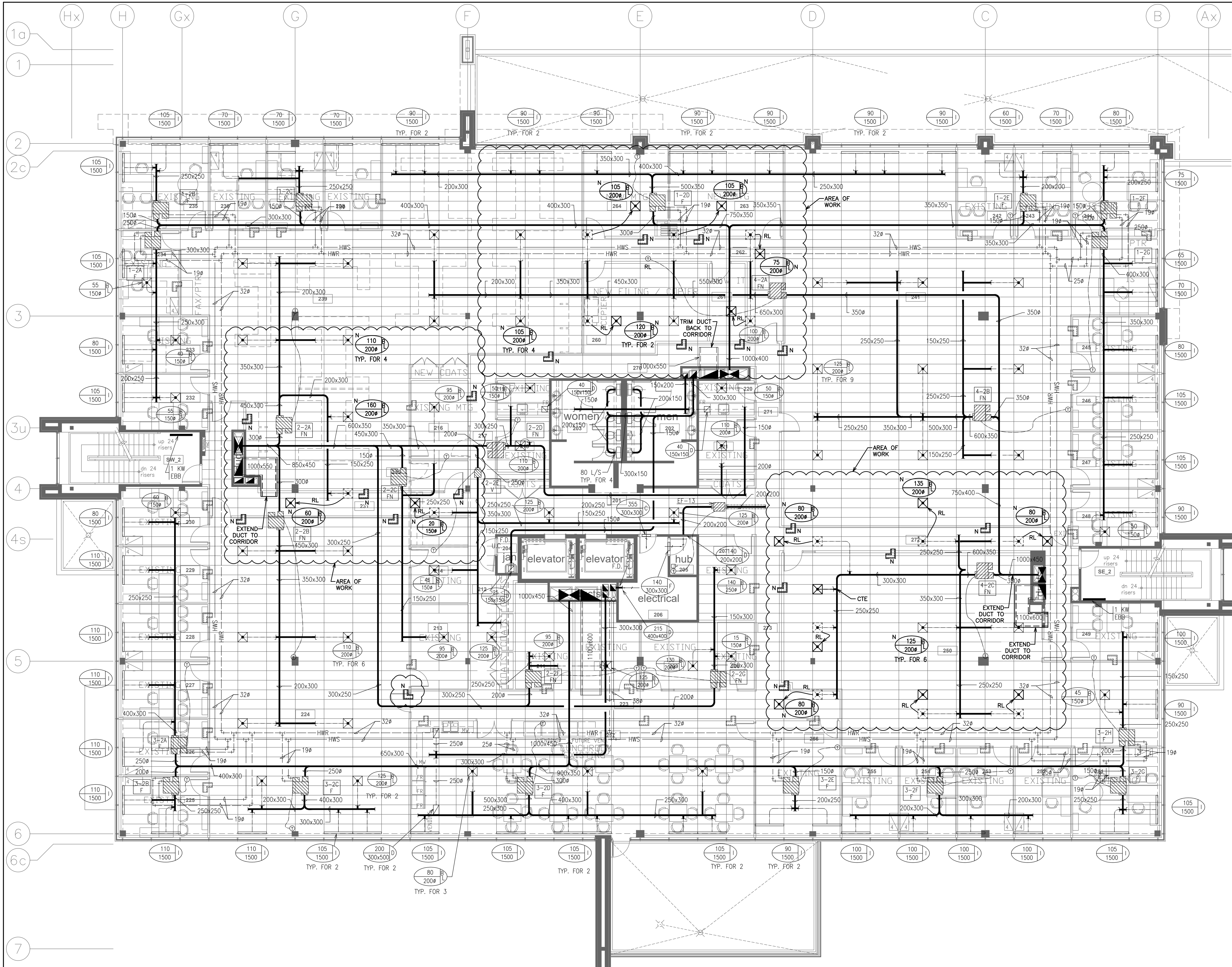




- NOTES:
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 - TENDERING OF THESE DOCUMENTS IS DONE UNDER THE MUTUAL UNDERSTANDING THAT ALL CONTRACTORS ARE EXPERIENCED AND LICENSED IN THE WORKS BEING PROVIDED AND THAT ALL COMPONENTS OF A FULLY FUNCTIONING SYSTEM WILL BE INCLUDED WHETHER SHOWN OR NOT SHOWN BUT IMPLIED FOR A COMPLETE SYSTEM.
 - ALL DETAILS SHOWN ARE SCHEMATIC BY NATURE AND ARE TO BE USED FOR SCOPE OF WORK PURPOSES ONLY. COORDINATE WITH ALL TRADES AND MANUFACTURERS BEST PRACTICES AND DIRECTIONS.
 - THE CONSULTANT RESERVES THE RIGHT TO MAKE REASONABLE CHANGES REQUIRED TO ACCOMMODATE CONDITIONS ARISING DURING THE PROGRESS OF THE WORK, AT NO EXTRA COST TO THE OWNER.

HVAC LEGEND	
	SUPPLY, RETURN AIR DUCT UP (RECT)
	SUPPLY, RETURN AIR DUCT DOWN (RECT)
	SUPPLY, RETURN AIR DUCT UP (ROUND)
	SUPPLY, RETURN AIR DUCT DOWN (ROUND)
	EXISTING HVAC TO REMAIN
	EXISTING HVAC TO BE REMOVED
	DIFFUSER, EXHAUST AIR GRILLE
	LINEAR SUPPLY GRILLE
	A- GRILLE/DIFFUSER TYPE B- DIFFUSER NECK C- AIR QUANTITY (CFM)
	SENSOR AND ASSOCIATED CONTROL WIRING
	FLEXIBLE DUCT CONNECTION
	DIRECTION OF AIR FLOW
	DOOR GRILLE
	CEILING TRANSFER DUCT
	THERMOSTAT EQUAL TO HONEYWELL TB8220U: 7-DAY PROGRAMMABLE C/W AUTO CHANGEOVER
	TIME CLOCK
	N, RL, D

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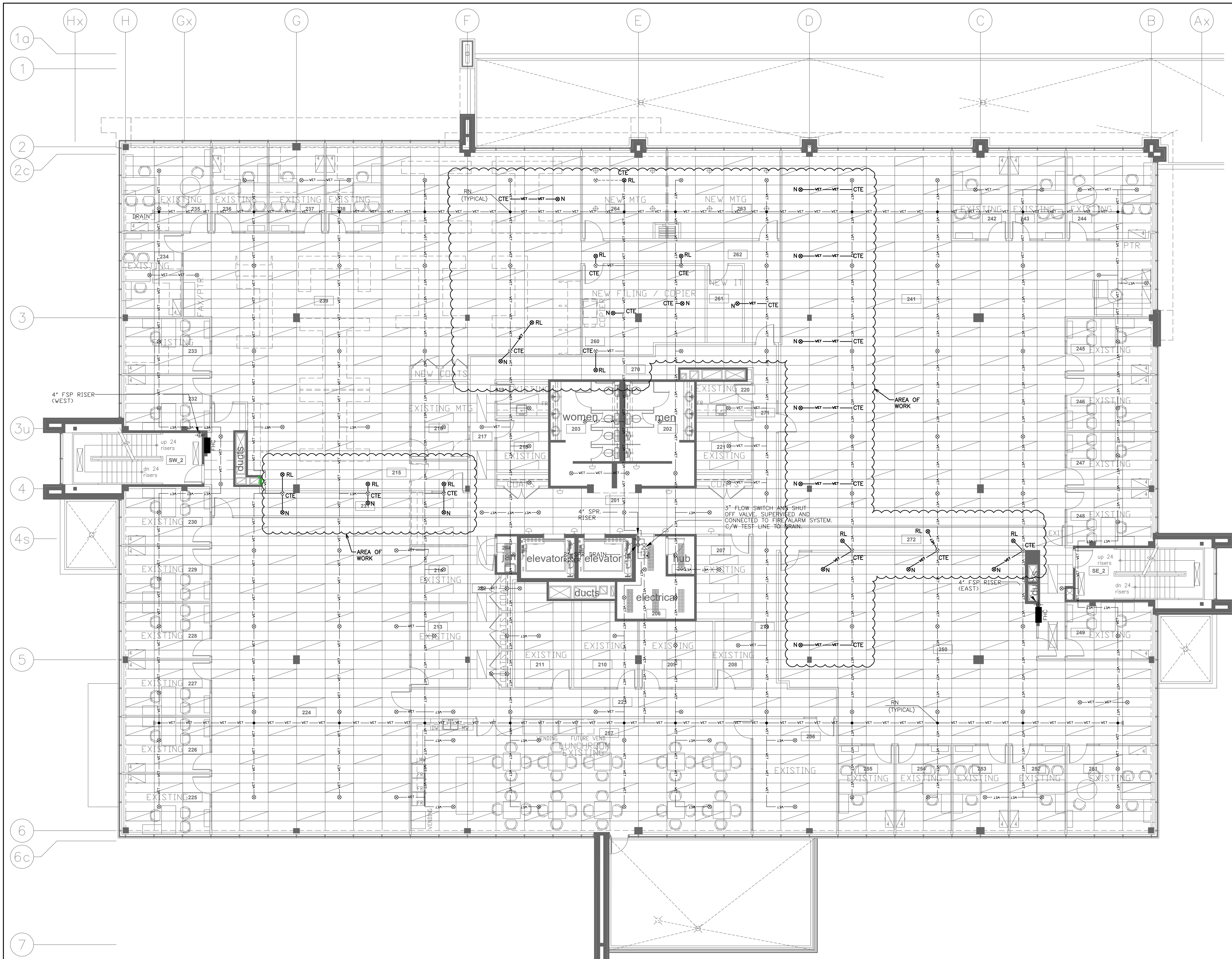
1320 AIRPORT BLVD @ TAUNTON RD WEST OSHAWA
DURHAM CHILDRENS AID SOCIETY 2ND FLOOR RENO

MECHANICAL HVAC LAYOUT

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SPRINKLER LEGEND	
— VET — VET — VET —	SPRINKLER LINE
⊙	PENDENT SPRINKLER HEAD, NEW HEADS TO MATCH EXISTING.
~	PIPE BREAK/CONTINUATION
N, RL, D	NEW, RELOCATE, DEMOLISH

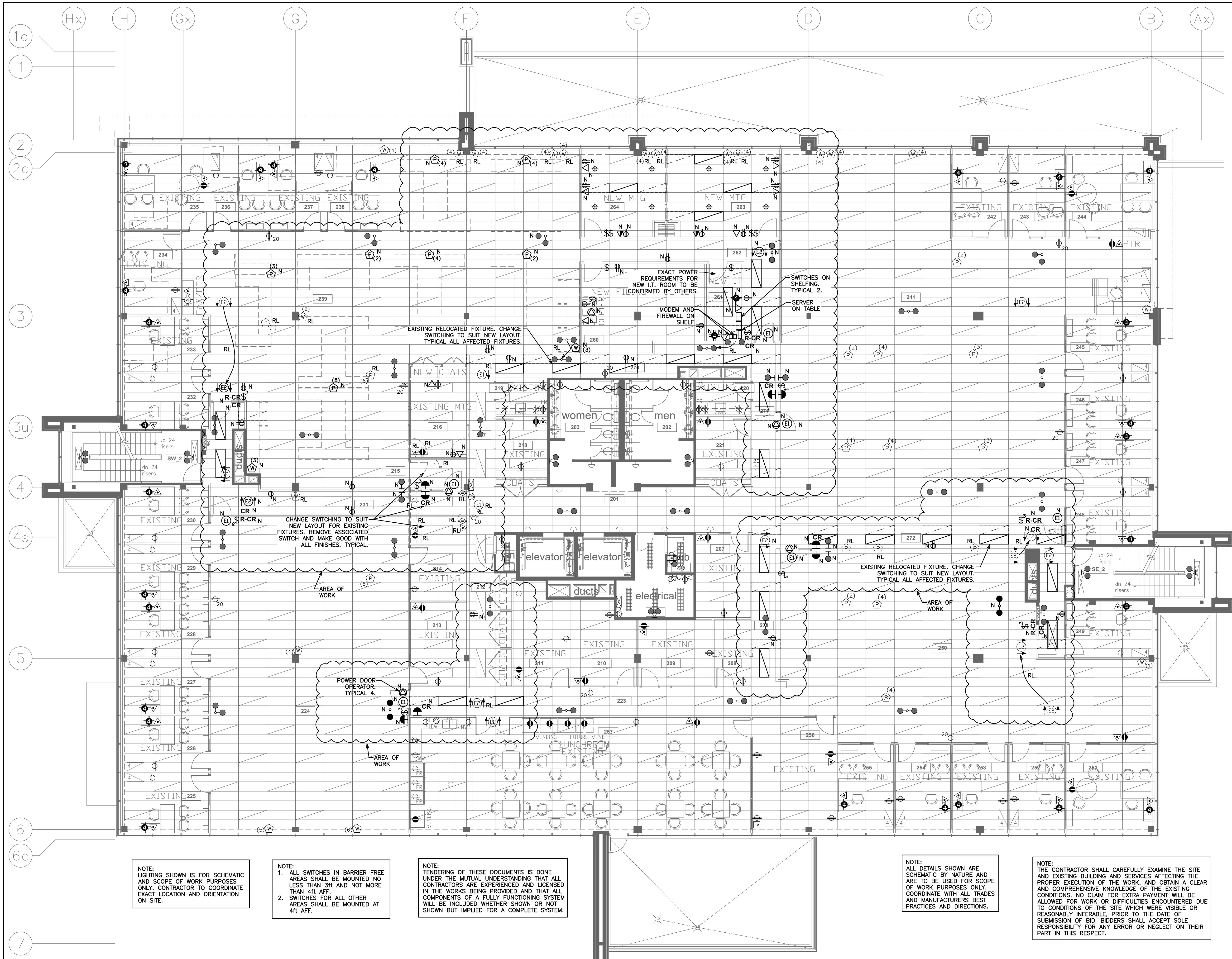
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MECHANICAL SPRINKLER LAYOUT

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LIGHTING LEGEND	
\$\$\$	SINGLE POLE, SINGLE THROW TOGGLE SWITCH, ONE, TWO, OR THREE GANGED ('3' DENOTES 3-WAY)
	EXISTING 20"x60" RECESSED FLUORESCENT FIXTURE C/W AIR HANDLING SLOTS FOR RETURN AND SUPPLY AIR BOOTS. FIXTURES TO BE C/W 347V BALLASTS AND 800 SERIES T8 LAMPS, COLOUR 3500K WITH A MINIMUM COLOUR RENDERING INDEX OF 70. FIXTURES C/W 27 CELL x3" DEEP SILVER PARABOLIC LENSES.
	RELOCATED EXISTING OR NEW TO MATCH EXISTING FIXTURE C/W AIR HANDLING SLOTS FOR RETURN AND SUPPLY AIR BOOTS TO MATCH EXISTING NOTED ABOVE
	EXISTING FIXTURE TO BE REMOVED OR RELOCATED
	NEW LED RECESSED POT LIGHT, DIMMABLE TYPE FIXTURE, TO MATCH EXISTING WITHIN SECOND FLOOR. EXACT MODEL TO BE CONFIRMED ON SITE.
	EXIT SIGN, EXIT SIGN WITH DIRECTIONAL ARROWS. NEW FIXTURES ARE TO MATCH EXISTING.
	EMERGENCY LIGHT (SINGLE OR DOUBLE). NEW FIXTURES ARE TO MATCH EXISTING.
	BACK UP BATTERY PACK
N, RL, D	NEW, RELOCATE, DEMOLISH

POWER LEGEND	
	NEW WALL MOUNTED RECEPTACLE
	EXISTING WALL MOUNTED RECEPTACLE
	EXISTING WALL MOUNTED RECEPTACLE, ISOLATED GROUND OUTLETS
	EXISTING QUAD PLATE OUTLETS, 15 AMP, 115V DUPLEX OUTLET, AND 15 AMP, 115V DUPLEX ISOLATED GROUND OUTLET
	EXISTING SINGLE GANG 2 OUTLET FACE PLATE, FOR DATA/VOICE JACKS
	NEW VOICE, DATA COMBO
	NEW DATA ONLY OUTLET BOX - WALL BOX, OUTLET & 3/4" CONDUIT C/W PULL STRING UP WALL BACK TO SOURCE
	NEW VOICE ONLY OUTLET BOX - WALL BOX, OUTLET & 3/4" CONDUIT C/W PULL STRING UP WALL TO CEILING SPACE
	EXISTING POWER POLE POWER ENTRY INTO FURNITURE SYSTEM. ELECTRICAL CONTRACTOR TO SUPPLY ADEQUATE POWER & COMMUNICATIONS CABLING IN CEILING TO SUPPLY NUMBER OF WORKSTATIONS (SHOWN IN BRACKETS). 5FT OF EXTRA CABLING ABOVE CEILING TO ALLOW FURNITURE ADJUSTMENTS AT INSTALL.
	EXISTING WALL POWER POLE POWER ENTRY INTO FURNITURE SYSTEM. ELECTRICAL CONTRACTOR TO SUPPLY ADEQUATE POWER & COMMUNICATIONS CABLING IN WALL OR COLUMN TO SUPPLY NUMBER OF WORKSTATIONS (SHOWN IN BRACKETS). PROVIDE ELBOW CONNECTION AT BASE FEED LOCATION.
	EXISTING BARRIER FREE DOOR OPERATOR BUTTON TO MEET CBC 3.8.3.3, 3.8.3.12 REQUIREMENTS, MOUNTED AT 1067mm (42") A.F.F.
	EXISTING BARRIER FREE DOOR OPERATOR CARD READER BUTTON TO MEET CBC 3.8.3.3, 3.8.3.12 REQUIREMENTS, MOUNTED AT 1067mm (42") A.F.F. TO OPERATE IN CONJUNCTION WITH ELECTRIC STRIKE LOCK ON DOOR
	EXISTING CARD READER FOR ELECTRIC STRIKE LOCK ON DOOR. SUPPLY & INSTALL ALL ASSOCIATED HARDWARE AND COMPONENTS.
	EXISTING RELEASE BUTTON FOR CARD READER AS NOTED, TO BE MOUNTED @ 42" A.F.F. SUPPLY & INSTALL ALL ASSOCIATED HARDWARE AND COMPONENTS.
	120V POWER SUPPLY DOOR OPERATOR
N, RL, D	NEW, RELOCATE, DEMOLISH

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ELECTRICAL LAYOUT



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GENERAL ELECTRICAL NOTES	
1. GENERAL:	
1.1. ARRANGE FOR ESA INSTALLATION PERMIT AND INSPECTION AND FORWARD A COPY OF THE CERTIFICATE TO THE ENGINEER UPON ACCEPTANCE.	
1.2. ENSURE THAT ALL ELECTRICAL EQUIPMENT SUPPLIED BY OTHER TRADES IS SUITABLE FOR THE RESPECTIVE VOLTAGE. CONFIRM POWER REQUIREMENTS OF ALL OWNER SUPPLIED EQUIPMENT.	
1.3. ALL CUTTING AND PATCHING REQUIRED FOR THE WORK OF THIS DIVISION SHALL BE CARRIED OUT Y THIS DIVISION. NO CHASING BLOCKWORK WILL BE ALLOWED. BE RESPONSIBLE AND PAY FOR ANY DAMAGE TO THE BUILDING INCURRED BY WORK OF THIS DIVISION.	
1.4. SUBMIT 4 COPIES OF SHOP DRAWINGS FOR REVIEW AND RECORDS.	
1.5. ALL MATERIALS USED THROUGHOUT SHALL BE NEW, OF BEST QUALITY C.S.A. APPROVED AND OF ONE MANUFACTURE. WHEREVER TRADE NAMES ARE NOT USED TO DESCRIBE MATERIALS, THESE MATERIALS SHALL BE OF BEST AVAILABLE QUALITY AND MANUFACTURE. OBTAIN AND PAY FOR SPECIAL HYDRO INSPECTION OF SPECIFIED NON--C.S.A. ELECTRICAL EQUIPMENT.	
1.6. PROVIDE ALL CONDUIT, WIRING, BOXES, SWITCHES, OUTLETS, DEVICES, ETC., AS REQUIRED. MAKE FINAL CONNECTIONS TO VIBRATING EQUIPMENT WITH FLEXIBLE CONDUIT.	
1.7. PROVIDE ALL HANGERS, INSERTS AND SUPPORTS OF APPROVED TYPES REQUIRED FOR THE WORK OF THIS DIVISION. PROVIDE CONDUIT FOR ALL SERVICES PENETRATING THE FLOOR SLAB. SEAL ALL PENETRATIONS THROUGH FLOOR SLABS WITH AN APPROVED NON--SHRINK, WATERPROOF AND FIREPROOF SEALANT APPROVED BY ARCHITECT. NO CONDUITS OR EQUIPMENT SHALL BE MOUNTED DIRECTLY FROM ROOF DECK. PROVIDE ALL NECESSARY UNISTRUT OR OTHER MOUNTING DETAILS TO ENABLE SUPPORT FROM TOP CHORD OF JOISTS.	
1.8. ALL CONDUIT SHALL BE RIGID STEEL THICK WALLED OR EMT THINWALL WITH STEEL SET SCREW COUPLINGS AND CONNECTORS WITH INSULATED THROATS UNLESS OTHERWISE NOTED. EXPOSED CONDUITS AND WIREMOLD CHANNELS SHALL BE NEAT IN APPEARANCE, RUN PARALLEL TO BUILDING LINES AND CONCENTRIC RIGHT ANGLE BENDS ONLY SHALL BE USED.	
1.9. ALL EMPTY CONDUITS SHALL BE COMPLETE WITH NYLON FISH WIRE.	
1.10. ALL WIRING SHALL BE MINIMUM #12 GAUGE COPPER, EXCEPT AS OTHERWISE NOTED. ALL WIRING SHALL BE 600 VOLT TYPE RW90. BX CABLE MAY BE USED WHERE PERMITTED BY CODE IN CEILING SPACE FOR FINAL CONNECTION TO LIGHT FIXTURE AND FROM CEILING DISTRIBUTION BOXES DOWN PARTITIONS TO RECEPTACLES ONLY. MINIMUM SIZE WIRING FOR DC WIRING SHALL BE #10 GAUGE. MAXIMUM VOLTAGE DROP SHALL NOT EXCEED 2 PERCENT.	
1.11. PROVIDE GROUND WIRES WITH ALL FEEDERS AND CIRCUITS IN ACCORDANCE WITH APPLICABLE CODES AND HYDRO REQUIREMENTS. PROVIDE MAIN GROUND TO HYDRO APPROVAL.	
1.12. CO--ORDINATE WITH OTHER TRADES IN LAYING OUT OF THE WORK SO AS NOT TO CONFLICT WITH THE WORK OF OTHER TRADES. CARRY OUT WORK PROMPTLY WHICH MAY INTERFERE WITH THE WORK SCHEDULE OF OTHER TRADES.	
1.13. MECHANICAL TRADES WIRING: PROVIDE ALL CONDUIT, WIRING, SPLITTERS, OUTLET BOXES AND DISCONNECT SWITCHES AS SHOWN. ALL MOTORS, STARTERS AND CONTROL WIRING PROVIDED UNDER DIVISION 15. INSTALL ALL STARTERS AND WIRE COMPLETE.	
1.14. CLEARLY MARK ALL EXPOSED CONDUIT, PULL BOXES, JUNCTION BOXES, ETC., TO INDICATE THE NATURE OF THE SERVICE.	
1.15. INSTALL ALL LIGHTING AND POWER CIRCUITS TO MEET CODES.	
1.16. PROVIDE LAMACOID NAMEPLATES AND TYPEWRITTEN DIRECTORIES FOR ALL PANELS.	
1.17. CLEAN AND TEST ALL EQUIPMENT BEFORE FINAL ACCEPTANCE IS GIVEN FOR THE WORK.	
1.18. AFTER THE WORK IS COMPLETED, GIVE A WRITTEN GUARANTEE FOR ONE YEAR COVERING WORKMANSHIP AND MATERIALS. REPAIR OR REPLACE WITHOUT EXPENSE TO THE OWNER, ANY DEFECTS DUE TO WORKMANSHIP OR MATERIALS WHICH IN THE OWNER'S OPINION, ARE NOT DUE TO MISUSE OR NEGLECT.	
2. MATERIALS	
2.1. COVER PLATES:	
2.1.1. COVER PLATES FOR RECEPTACLES, SWITCHES, PILOT LIGHTS, TELEPHONE OUTLETS AND OTHER DEVICES REQUIRING COVER PLATES FOR FLUSH MOUNTED BOXES SHALL BE METAL, STAINLESS STEEL #18--8,TYPE 302, UNLESS OTHERWISE NOTED.	
2.1.2. WEATHERPROOF COVER PLATES SHALL BE DIECAST CORROSION RESISTANT ALUMINUM TYPE WITH TWO SEPARATE LIDS FOR DUPLEX RECEPTACLES SUITABLE FOR MOUNTING ON F.S. TYPE BOXES. ALL WEATHERPROOF COVER PLATES SHALL HAVE RUBBER OR NEOPRENE GASKETS.	
2.1.3. PLATES FOR SURFACE MOUNTED CAST BOXES SHALL BE GALVANIZED FORMED STEEL TYPE. COVER PLATES FOR FLUSH MOUNTED EQUIPMENT SHALL BE SUPPLIED OF QUALITY AND PERFORMANCE SPECIFIED BY THE MANUFACTURER OF THE EQUIPMENT.	
2.1.4. COVER PLATES SHALL NOT CARRY MANUFACTURER'S NAME.	
2.1.5. COVER PLATES OF QUALITY SPECIFIED SHALL BE PASS & SEYMOUR, BRYANT LEVITON, SMITH & STONE OR HARVEY HUBBELL.	
2.2. LIGHT SWITCHES:	
2.2.1. SWITCHES SHALL BE, UNLESS OTHERWISE INDICATED, BRYANT QUIET TYPE WITH WHITE SPECIFICATION GRADE FOR 120V AND HEAVY DUTY GRADE FOR 347V. LIGHT SWITCHES OF QUALITY AS MANUFACTURED BY BRYANT, P & S, ARROW HART, LEVITON AND HUBBELL SHALL BE CONSIDERED AS ACCEPTABLE AS SPECIFIED ALTERNATES.	
2.3. RECEPTACLES:	
2.3.1. RECEPTACLES SHALL BE, UNLESS OTHERWISE INDICATED, U GROUND TYPE, WHITE SCREW TERMINAL TYPE.	
2.3.2. RECEPTACLES SHALL BE SPECIFICATION GRADE.	
2.3.3. CONFIRM ALL LOCATIONS AND OUTLETS PRIOR TO INSTALLATION. ALLOW TO RELOCATE ANY OUTLET WITHIN 10"--0" OF SPECIFIED LOCATION, PRIOR TO INSTALLATION.	
2.3.4. PROVIDE ALL CONCRETE WORK REQUIRED FOR ELECTRICAL WORK IN ACCORDANCE WITH ARCHITECTURAL DIVISION OF SPECIFICATION.	
2.4. DISCONNECTS:	
2.4.1. DISCONNECT SWITCHES FOR HVAC EQUIPMENT MUST BE INSTALLED WITHIN 10'.	
2.4.2. MOTORS OTHER THAN AIR CONDITIONERS MUST HAVE DISCONNECT WITHIN SIGHT AND 30' OF THE MOTOR AND/OR STARTER.	
2.5. CONDUITS:	
2.5.1. EMT (ELECTRICAL METALLIC TUBING) MUST BE USED IN THE FOLLOWING INDOOR APPLICATIONS:	
2.5.1.1. ALL EXPOSED AREAS (USE WIREMOLD ON EXPOSED WALLS IN FINISHED AREAS WHERE EXPOSED WIRING HAS BEEN APPROVED).	
2.5.1.2. T--BAR CEILING SPACES	
2.5.1.3. ATTIC SPACES	
2.5.1.4. CRAWL SPACES	
2.5.2. LIQUIDTIGHT MUST BE USED IN THE FOLLOWING INDOOR AND OUTDOOR APPLICATIONS:	
2.5.2.1. LAST 5' FOR FINAL CONNECTION TO INDOOR MECHANICAL EQUIPMENT	
2.5.2.2. ALL OUTDOOR WIRING	
2.5.3. FLEXIBLE CABLE IS ONLY ACCEPTABLE IN THE FOLLOWING INDOOR APPLICATIONS:	
2.5.3.1. LAST 5' FOR FINAL CONNECTION TO LIGHTING AND SMALL EQUIPMENT/COMPONENTS IN CEILING SPACES	
2.5.3.2. CONCEALED IN DRYWALL WALLS AND DRYWALL CEILINGS	
2.5.3.3. THROUGH HOLES IN CONCRETE, BRICKS OR STEEL STUDS PROVIDED IT IS NOT SUBJECT TO MECHANICAL DAMAGE.	
2.5.4. ROMEX IS AN ACCEPTABLE ALTERNATE FOR ALL INDOOR WIRING IN WOOD CONSTRUCTION BUILDINGS	
2.5.5. WHERE CEILING SPACE IS USED AS A RETURN AIR PLENUM, ALL WIRING SHALL CONFORM TO CODES FOR THIS APPLICATION.	

GENERAL REQUIREMENTS FOR MECHANICAL WORK	
1. SCOPE OF WORK	
1.1. CONFORM TO THE APPLICABLE PROVISIONS OF THE GENERAL CONDITIONS OF THE CONTRACT.	
1.2. THE ESA CERTIFICATE SHALL APPLY TO AND BE PART OF EACH OF THE SECTIONS COVERING THE MECHANICAL TRADES WORK.	
1.3. COMPLY WITH THE REQUIREMENTS OF THE CURRENT EDITION OF THE O.B.C., ALL OTHER APPLICABLE CODES, REGULATIONS, BY--LAWS AND OFFICIAL STANDARDS ACCORDING TO THE REQUIREMENTS AND INTERPRETATIONS OF THE AUTHORITIES HAVING JURISDICTION. THESE CODES AND STANDARDS CONSTITUTE AN INTEGRAL PART OF THESE SPECIFICATIONS. IN CASE OF CONFLICT, THE CODES TAKE PRECEDENCE OVER THE CONTRACT DOCUMENTS.	
2. EXAMINATION OF SITE AND INFORMATION	
2.1. EACH SUBCONTRACTOR, BEFORE PRICING, SHALL EXAMINE THE SITE, THE ARCHITECTURAL, STRUCTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS AND THEY SHALL FAMILIARIZE THEMSELVES WITH THE BUILDING CONSTRUCTION AND FINISH IN ORDER THAT THEIR TENDER MAY INCLUDE EVERYTHING NECESSARY FOR THE PROPER COMPLETION OF THE WORK.	
3. RELATIONSHIP TO OTHER TRADES	
3.1. THIS SUBCONTRACTOR SHALL CONFER WITH ALL OTHER CONTRACTORS INSTALLING EQUIPMENT, PIPING, OTHER WORK, FOUNDATIONS, ETC., WHICH MAY AFFECT THEIR INSTALLATION, AND THEY SHALL ARRANGE THEIR EQUIPMENT, PIPING, ETC., IN PROPER RELATION WITH OTHER APPARATUS, AND WITH THE BUILDING CONSTRUCTION. THIS SUBCONTRACTOR SHALL ALSO CONFIRM THE ELECTRICAL CHARACTERISTICS OF THE PROJECT AND ORDER EQUIPMENT ACCORDINGLY.	
3.2. SPECIAL CARE SHALL BE TAKEN IN THE INSTALLATION OF ALL WORK, TO SEE THAT THEY ALL COME WITHIN THE LIMITS ESTABLISHED BY THE FINISH LINES OF ALL WALLS, FLOORS, CEILINGS, ETC.	
3.3. THIS SUBCONTRACTOR SHALL NOTIFY THE CONTRACTOR AND OTHER SUBCONTRACTORS WHO ARE CONCERNED, OF ALL OPENINGS, FOUNDATION WORK, HANGERS, INSERTS, ANCHORS, OR OTHER PROVISIONS NECESSARY IN THEIR WORK FOR THE INSTALLATION OF THE SUBCONTRACTORS WORK, AND THEY SHALL FURNISH ALL INFORMATION AND NECESSARY MATERIALS IN AMPLE TIME SO THAT PROPER PROVISIONS CAN BE MADE FOR SAME, AND SHALL SUPPLY AND CORRECTLY AND ACCURATELY PLACE ALL INSERTS, SLEEVES, ANCHORS, ETC.	
3.4. FAILURE TO COMPLY WITH THESE REQUIREMENTS ON THE PART OF THIS SUBCONTRACTOR WILL RENDER THEM RESPONSIBLE FOR THE COST OF CUTTING OPENINGS, INSTALLING HANGERS AND OTHER PROVISIONS AT A LATER DATE, AND THE SUBSEQUENT PATCHING, ETC., THEREBY REQUIRED.	
3.5. NO CUTTING SHALL BE DONE WITHOUT PERMISSION. ALL SUCH WORK SHALL BE DONE BY TRADES--PERSONS SKILLED IN AND CERTIFIED FOR THIS PARTICULAR TRADE.	
3.6. EACH SUBCONTRACTOR IS TO BE AN EXPERT IN THEIR TRADE.	
4. REQUIREMENTS OF INSPECTION DEPARTMENTS	
4.1. ALL WORK SHALL BE INSTALLED IN ACCORDANCE WITH ALL LAWS AND REGULATIONS OF ALL AUTHORITIES HAVING JURISDICTION IN EACH CASE, PARTICULARLY ALL AFFECTED DEPARTMENTS OF THE MUNICIPALITY AND THE PROVINCE. ELECTRICAL EQUIPMENT SUPPLIED MUST CONFORM TO THE REGULATIONS OF C.S.A. AND THE LOCAL UTILITY. ANYTHING NECESSARY TO MAKE THE WORK COMPLY WITH THESE REQUIREMENTS SHALL BE PROVIDED BY THIS SUBCONTRACTOR WITHOUT ADDITIONAL COST TO THE OWNERS IF IT REASONABLY COULD HAVE BEEN FORESEEN WHEN TENDERING.	
4.2. EACH SUBCONTRACTOR SHALL PREPARE DRAWINGS IN ADDITION TO ENGINEER'S DRAWINGS AS MAY BE REQUIRED BY VARIOUS INSPECTION DEPARTMENTS HAVING JURISDICTION, AND OBTAIN THEIR APPROVAL BEFORE PROCEEDING WITH THE WORK.	
4.3. IN THE EVENT THAT THE INSPECTION DEPARTMENT'S REQUEST DEVIATES FROM THE ENGINEER'S LAYOUT, THE SUBCONTRACTOR SHALL CONSULT ENGINEER BEFORE PROCEEDING WITH THE SAME. IT SHALL BE NOTED THAT ENGINEER'S DRAWINGS ARE GENERALLY ACCEPTABLE TO INSPECTION DEPARTMENTS AND MINOR SUPPLEMENTS NEED ONLY BE MADE BY SUBCONTRACTORS.	
5. CERTIFICATES, PERMITS, FEES	
5.1. SUBCONTRACTORS SHALL GIVE ALL NECESSARY NOTICES, OBTAIN ALL REQUIRED PERMITS AND PAY ALL FEES INCLUDING PAYMENT FOR STREET CONNECTIONS TO STORM, SANITARY, WATER AND GAS IN ORDER THAT THE WORK HEREIN SPECIFIED MAY BE CARRIED OUT AND THEY SHALL FURNISH ANY CERTIFICATES NEEDED AS EVIDENCE THAT THE WORK INSTALLED CONFORMS WITH THE LAWS AND REGULATIONS OF THE MUNICIPALITY AND PROVINCE.	
6. GUARANTEE	
6.1. THIS SUBCONTRACTOR SHALL GUARANTEE ALL MATERIAL AND WORKMANSHIP USED IN THE WORK TO BE IN STRICT ACCORDANCE WITH THE SPECIFICATIONS, OF BEST QUALITY AND TYPE OBTAINABLE TO GIVE FIRST--CLASS CONSTRUCTION AND PROPER EFFICIENT OPERATION, AND FREE FROM ANY DEFECTS. ANY SUCH DEFECTS WHICH MAY APPEAR IN ANY OF THE WORK WITHIN ONE YEAR AFTER WRITTEN ACCEPTANCE OF THEIR WORK, SHALL BE REPAIRED AND REPLACED BY THIS SUBCONTRACTOR WITHOUT ADDITIONAL EXPENSE TO THE OWNER. WHERE SUCH DEFECTS OCCUR, THIS SUBCONTRACTOR SHALL BE HELD RESPONSIBLE FOR ALL COSTS INCURRED IN MAKING THE DEFECTIVE WORK GOOD. THIS SHALL NOT OBSOLETE ANY LONGER WARRANTIES ON SPECIFIC ITEMS OF EQUIPMENT.	
6.2. ALL INJURIES TO ADJACENT WORK, PARTICULARLY PLASTER, WOOD FINISHES OR OTHER MATERIALS, OR DAMAGE TO OTHER EQUIPMENT, CAUSED BY SUCH DEFECTS OF THIS SUBCONTRACTOR'S WORK OR BY SUBSEQUENT REPLACEMENT AND REPAIR, SHALL BE MADE GOOD AT THE EXPENSE OF THIS SUBCONTRACTOR. ALL REPAIR WORK SHALL BE DONE BY TRADES RESPONSIBLE FOR THE ORIGINAL WORK.	
7. DRAWINGS	
7.1. THE DRAWINGS SHOW THE APPROXIMATE LOCATION FOR SPECIAL APPARATUS AND THE MATERIALS THROUGHOUT THE BUILDING. THE ARRANGEMENT SHOWN ON THE DRAWING IS MORE OR LESS DIAGRAMMATIC AND AS SUCH APPROXIMATE ONLY, AND MAY BE ALTERED, AS APPROVED BY THE ENGINEER, TO MEET REQUIREMENTS OF THE APPARATUS, ETC., AND OF THE BUILDING. EACH SUBCONTRACTOR SHALL BE HELD RESPONSIBLE FOR ALL MEASUREMENTS FOR THEIR WORK THROUGHOUT, AND THEY SHALL ARRANGE THEIR PIPING, WIRING AND APPARATUS TO CONFORM TO THE ARCHITECTURAL AND STRUCTURAL DETAILS IN A SATISFACTORY MANNER AND SHALL CO--OPERATE WITH OTHER CONTRACTORS TO ENSURE THAT WORK SHALL MEET ALL REQUIREMENTS OF DIVERSE CONTRACTS.	
7.2. ITEMS SHOWN ON THE DRAWINGS BUT NOT SPECIFIED OR SPECIFIED BUT NOT SHOWN SHALL BE INCLUDED.	
7.3. ITEMS OBVIOUSLY REQUIRED TO PROVIDE A COMPLETE WORKING SYSTEM BUT NOT SPECIFIED NOR SHOWN SHALL BE INCLUDED.	
8. RESPONSIBILITY AND LIABILITY	
8.1. EACH SUBCONTRACTOR SHALL SUPERVISE THE LAYING OUT OF THEIR WORK AND SHALL ARRANGE IT IN CO--OPERATION WITH OTHER WHO MAY BE WORKING ON THE PREMISES WHILE THE WORK OF THIS CONTRACT IS IN PROGRESS. THEY SHALL PROTECT FINISHED AND UNFINISHED WORK OF THIS CONTRACT AND/OR WORK OF OTHERS ON THE PREMISES UNTIL THE COMPLETED WORK HAS BEEN ACCEPTED.	
8.2. THE SUBCONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES OR INCONSISTENCIES FOUND IN THE DRAWINGS OR SPECIFICATIONS BEFORE SUBMITTING THEIR TENDER. THEY SHALL ABIDE BY DECISIONS GIVEN TO THEM IN WRITING WITH REGARD TO SAME. EACH SUBCONTRACTOR IS CAUTIONED THAT THE WORK AS SHOWN IS INTENDED TO BE COMPLETE IN ALL RESPECTS AND THAT FAILURE ON THEIR PART TO NOTIFY THE ENGINEER OF ANY DISCREPANCIES WILL NOT RELIEVE THEM OF THE RESPONSIBILITY OF COMPLETING THE WORK AS INTENDED AT THE CONTRACT PRICE.	
9. CLEAN--UP	
9.1. DURING THE COURSE OF CONSTRUCTION, EACH SUBCONTRACTOR SHALL KEEP THEIR WORK TIDY AND NOT ALLOW AN ACCUMULATION OF DEBRIS RESULTING FROM THEIR WORK.	
9.2. UPON COMPLETION OF THEIR WORK THEY SHALL LEAVE THE PREMISES IN A BROOM--CLEAN CONDITION.	
10. PROTECTION	
10.1. SUBCONTRACTORS ARE TO PROTECT THEIR WORK FROM CONSTRUCTION DIRT OR DAMAGE FROM ANY CAUSE. SECURELY PLUG AND CAP ALL OPENINGS IN PIPE, EQUIPMENT AND FIXTURES TO PREVENT OBSTRUCTIONS.	
11. ELECTRICAL WIRING AND CONTROLS	
11.1. ALL POWER WIRING FOR MECHANICAL EQUIPMENT SHALL BE DONE BY THE ELECTRICAL DIVISION. THE MECHANICAL TRADES SHALL PROVIDE STARTERS, THERMOSTATS, VALVES, CONTROL TRANSFORMERS, RELAYS, ETC. ALL CONTROL WIRING SHALL BE DONE BY THE MECHANICAL CONTRACTOR, UNLESS OTHERWISE NOTED ELSEWHERE IN THIS SPECIFICATION.	

HVAC NOTES			
1. GENERAL			
1.1. COORDINATE EXACT LOCATION OF GRILLES AND DIFFUSERS WITH REFLECTED CEILING PLAN OR LIGHTING PLAN IF AVAILABLE.		INSTALLATION MUST CONFORM TO LATEST NFPA/CUA 90A SPECIFICATIONS. ONLY USE ULC APPROVED EQUIPMENT. PROVIDE DUCT ACCESS DOORS AND BREAK AWAY FLANGES FOR ALL FIRE DAMPERS IN CONFORMANCE WITH CODE AND INSTALLATION INSTRUCTIONS.	TUBE INSERTION WITH CAM--ACTION HANDLE, MOULDED NEOPRENE GASKET AND EXPANSION PLUG, ZINC COATED STEEL CONSTRUCTION.
1.2. CONFIRM EXACT LOCATION OF THERMOSTATS/SENSORS WITH OWNER. MOUNT THERMOSTATS/SENSORS AT 4' ABOVE FINISHED FLOOR. ENSURE THERMOSTAT/SENSOR LOCATIONS WILL NOT BE AFFECTED BY DIRECT SUNLIGHT, COLD WALLS OR MILLWORK.			4.2. FLEXIBLE CONNECTIONS
1.3. PROVIDE 4" FLEXIBLE CONNECTIONS AT ALL DUCT CONNECTIONS TO AIR HANDLING UNITS.		3. TESTS AND BALANCING	4.2.1. PROVIDE FLEXIBLE CONNECTIONS AT AIR HANDLING UNITS WITH UL APPROVED FABRIC OF 6" MINIMUM WIDTH AND WEIGHING NOT LESS THAN 0.8136kg/m².
1.4. PROVIDE ACOUSTIC INSULATION IN FIRST 5' OF SUPPLY AND RETURN AIR DUCTS OFF AIR HANDLING UNITS AND AS INDICATED ON DRAWINGS.		3.1. BALANCING DAMPERS SHALL BE INSTALLED AT ALL TAKE--OFFS FROM BRANCH DUCTS, AND ALL BRANCH DUCT CONNECTIONS TO MAIN DUCTS. BALANCING DAMPERS SHALL BE MANUALLY OPERATED OPPOSED BLADE TYPE, SPLITTER TYPE OR BUTTERFLY TYPE. COMPLETE WITH LOCKING QUADRANT OPERATOR.	4.3. INSULATION
1.5. PROVIDE EXTERNAL INSULATION ON ALL SUPPLY AIR DUCTS AND ON ALL EXHAUST DUCTS WITHIN 10' OF OUTSIDE WALLS AND ROOF.		3.2. AIR TEST AND BALANCE SHALL BE PERFORMED BY AN INDEPENDENT AIR BALANCING COMPANY. THE AIR BALANCING COMPANY SHALL BE APPROVED BY THE ENGINEER.	4.3.1. PROVIDE 1" INTERNAL ACOUSTIC INSULATION ON: 4.3.1.1. THE FIRST 5' OFF SUPPLY AND RETURN DUCTS OFF ALL AIR HANDLING UNITS.
1.6. BRANCH DUCTWORK TO DIFFUSERS TO BE SAME SIZE AS DIFFUSER NECK.		3.3. SCOPE OF BALANCING WORK:	4.3.2. PROVIDE 1" EXTERNAL INSULATION ON: 4.3.2.1. ALL INDOOR & OUTDOOR REFRIGERATION PIPING 4.3.2.2. ALL SUPPLY AIR DUCTS WHICH ARE NOT LOCATED IN A RETURN AIR PLENUM.
1.7. PROVIDE TURNING VANES IN ALL SQUARE ELBOWS FOR SUPPLY AIR DUCTS.		3.3.1. ALL LISTED AIR HANDLING SYSTEMS SHALL BE BALANCED TO WITHIN 5% OF THE NOTED DESIGN AIR VOLUMES AS PER PLANS AND SPECIFICATIONS.	4.3.2.3. EXHAUST DUCTS THROUGH ATTICS AND 10' BACK FROM WALL
1.8. FLEXIBLE DUCT SHALL BE MAXIMUM 10' IN LENGTH AND SHALL BE SECURELY FASTENED TO DUCTS AND DIFFUSERS. PROVIDE HANGERS AND FLEXIBLE DUCTWORK WITHOUT SHARP 90'S, SAGGING, OR CRUSHING OF DUCT.		3.3.2. THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR MAKING THE HVAC SYSTEM FULLY OPERATIONAL TWO WEEKS BEFORE TURNOVER TO THE OWNER. THIS WILL INCLUDE THE REQUIREMENT TO INSTALL CLEAN FILTERS IN ALL RELATED HVAC EQUIPMENT BEFORE TIME OF AIR TESTING AND TO MAKE ALL AIR SYSTEMS FULLY OPERATIONAL.	4.3.3. PROVIDE 2" EXTERNAL INSULATION ON: 4.3.3.1. ALL SUPPLY AND RETURN AIR DUCTS THROUGH ATTICS OR UN--INSULATED AREAS
1.9. PROVIDE TRAP AT OUTLET OF DRAIN FOR ROOFTOP HVAC EQUIPMENT.			5. CONTROL WIRING
1.10. PROVIDE FIRE STOPPING AROUND OPENINGS THROUGH FIRE SEPARATIONS.		4. MATERIALS	5.1. ALL CONTROL WIRING SHALL BE RUN PARALLEL TO BUILDING LINES AND TIGHT TO ROOF DECK OR WALLS.
2. FIRE DAMPERS		4.1. DUCTWORK	5.2. ALL CONCEALED INDOOR CONTROL WIRING SHALL BE RUN IN LVT.
2.0. PROVIDE FIRE DAMPERS AT ALL FIRE SEPARATIONS. FIRE DAMPERS SHALL BE C/W LINKAGE OUT OF THE AIR STREAM. FIRE DAMPER RATING TO MATCH THE RATING OF THE SEPARATION CROSSED.		4.1.1. IN CONFORMANCE WITH SMACNA, ASHRAE, OBC, NFPA 90A	5.3. ALL EXPOSED INDOOR CONTROL WIRING IN UNFINISHED AREAS, T--BAR CEILING SPACES, ATTICS AND CRAWL SPACES SHALL BE RUN IN EMT CONDUIT WITH FINAL CONNECTION IN BX TO EQUIPMENT/COMPONENTS.
		4.1.2. SHEET METAL SHALL BE BEST QUALITY LOCK FORMING GALVANIZED SHEET METAL, GALVANIZING SHALL BE TO ASTM A525 (G90), HAVING A THICKNESS OF 0.054mm AND WEIGHING NOT LESS THAN 0.31kg/m² ON EACH SURFACE.	5.4. ALL OUTDOOR CONTROL WIRING SHALL BE RUN IN LIQUIDTIGHT.
		4.1.3. PROVIDE INSTRUMENTATION TEST PORTS IN DUCTS FOR PILOT	5.5. FLEXIBLE CABLE MUST BE STRAPPED TO SUPPORT WITHIN 12" OF TERMINATION BOX OR EQUIPMENT.

EXISTING VAV BOX SCHEDULE						
BOX DESIGNATION	COOLING AIRFLOW--L/S (MAX/MIN)	HEATING AIRFLOW--L/S	HEATING CAPACITY (MBH)	WATER FLOW L/S (GPM)	BOX MODEL #	
1--2A/F	440/110	220	11.6	0.10 (1.5)	2010	
1--2B/F	210/55	105	7.8	0.06 (0.95)	2006	
1--2C/F	210/55	105	7.8	0.06 (0.95)	2006	
1--2D/F	990/250	495	18.7	0.12 (1.9)	3012	
1--2E/F	130/35	65	5.8	0.04 (0.63)	2006	
1--2F/F	155/40	80	6.4	0.04 (0.63)	2006	
1--2G/F	565/140	280	14.6	0.10 (1.5)	3010	
2--2A/FN	660/165	330	---	---	3012	
2--2B/FN	660/165	330	---	---	3012	
2--2C/FN	190/50	95	---	---	2006	
2--2D/FN	320/80	160	---	---	2008	
2--2E/FN	440/110	220	---	---	10	
2--2F/FN	220/55	110	---	---	2008	
2--2G/FN	285/70	140	---	---	2008	
3--2A/F	580/145	290	14.6	0.10 (1.5)	3010	
3--2B/F	220/55	110	7.8	0.05 (0.79)	2008	
3--2C/F	570/140	285	14.6	0.10 (1.5)	3010	
3--2D/F	870/220	435	34.1	0.18 (2.8)	3012	
3--2E/F	180/45	90	6.8	0.04 (0.63)	2006	
3--2F/F	400/100	200	10.5	0.07 (1.1)	2010	
3--2G/F	210/50	105	7.5	0.05 (0.79)	2006	
3--2H/F	235/60	120	8.1	0.05 (0.79)	2008	
4--2A/FN	1045/260	525	---	---	4014	
4--2B/FN	1125/280	565	---	---	4014	
4--2C/FN	1125/280	565	---	---	4014	
LEGEND:						
AC SYSTEM FLOOR 3--1A F BOX NUMBER TYPE						
TYPE "F" VAV BOXES SHALL BE E.H. PRICE FDV SERIES FAN POWERED TERMINAL UNITS C/W FILTERS AND WATER REHEAT COILS.						
TYPE "V" VAV BOXES SHALL BE E.H. PRICE SDV SERIES SINGLE DUCT TERMINAL UNITS.						
TYPE "FN" VAV BOXES SHALL BE E.H. PRICE FDV SERIES FAN POWERED TERMINAL UNITS C/W FILTERS AND WITHOUT WATER REHEAT COILS.						

SPRINKLER NOTES:	
1. CONFIRM EXISTING CONDITIONS PRIOR TO PRICING AND INSTALLATION.	
2. CONTRACTOR SHALL DETERMINE BEST ROUTING OF SPRINKLER PIPING BY COORDINATING WITH ALL DRAWINGS. COORDINATE WITH ALL OTHER TRADES ON SITE PRIOR TO INSTALLATION OF PIPING.	
3. PROVIDE FIRE STOPPING AROUND ALL OPENINGS THROUGH FIRE SEPARATIONS.	
4. ALL REQUIRED CUTTING AND CORING BY SPRINKLER CONTRACTOR. ALL PATCHING BY GENERAL CONTRACTOR.	

2	ISSUED FOR PERMIT	SEP 04	G.O.	G.V.W.O.	
1	ISSUED FOR COORDINATION	SEP 03	G.O.	G.V.W.O.	
NO.	REVISION	DATE	BY	APPROVED	
REVISIONS					
1320 AIRPORT BLVD @ TAUNTON RD WEST OSHAWA DURHAM CHILDRENS AID SOCIETY 2ND FLOOR RENO					
NOTES AND SCHEDULES					
 D.G. Biddle & Associates Limited consulting engineers and planners 96 KING STREET EAST • OSHAWA, ON L1H 1B6 PHONE (905)576-8500 • FAX (905)576-9730 INFO@DGBIDDLE.COM					
REGISTERED PROFESSIONAL ENGINEER B. V. V. OSBORNE 100136545 Sept 4/20 PROVINCE OF ONTARIO		SCALE: 1/8" = 1'		PROJECT NO. 120700	
		DRAWN BY: B.C.A.		DRAWING NO.	
		DESIGN BY: B.C.A.		ME4	
		CHECKED BY: G.V.W.O.		CAD FILE: 120700 W1	
		DATE: SEPT 2020		PLOT DATE: 09/04/20 SUBMISSION: PERMIT	