

GENERAL NOTES

- I. ALL DUCTWORK, PIPING & EQUIPMENT IS
- 2. VISIT AND EXAMINE SITE AND BECOME FAMILIAR WITH ALL EXISTING CONDITIONS AFFECTING WORK. NO ALLOWANCES WILL BE MADE BY THE OWNER FOR DIFFICULTIES ENCOUNTERED IN THE WORK ARISING OUT OF CONDITIONS EXISTING AT
- 3. CONDITIONS SHOWN ON PLANS ARE RELATIVE TO THE WORK TO BE PERFORMED. DRAWINGS ARE BASED ON THE BEST INFORMATION AVAILABLE BUT ARE SUBJECT TO VERIFICATION. VERIFY EXACT LOCATION AND ELEVATION OF ALL SERVICES PRIOR TO COMMENCING ANY WORK. FAILURE TO TO PERFORM SUCH VERIFICATIONS WHICH CAUSE DEFICIENCIES SHALL BE CORRECTED AT NO EXPENSE TO OWNER
- 4. CO-ORDINATE INSTALLATION OF DUCTWORK, PIPING, EQUIPMENT ETC. WITH ARCHITECTURAL, STRUCTURAL, ELECTRICAL & FIRE PROTECTION TRADES

| 1 | 26/03/25 | ISSUED FOR TENDER | SMS | |
|------|----------|-------------------|-----|------|
| 0 | 24/02/25 | ISSUED FOR PERMIT | SMS | |
| Rev. | Date | Description | Ву | App. |

BERTHELOT

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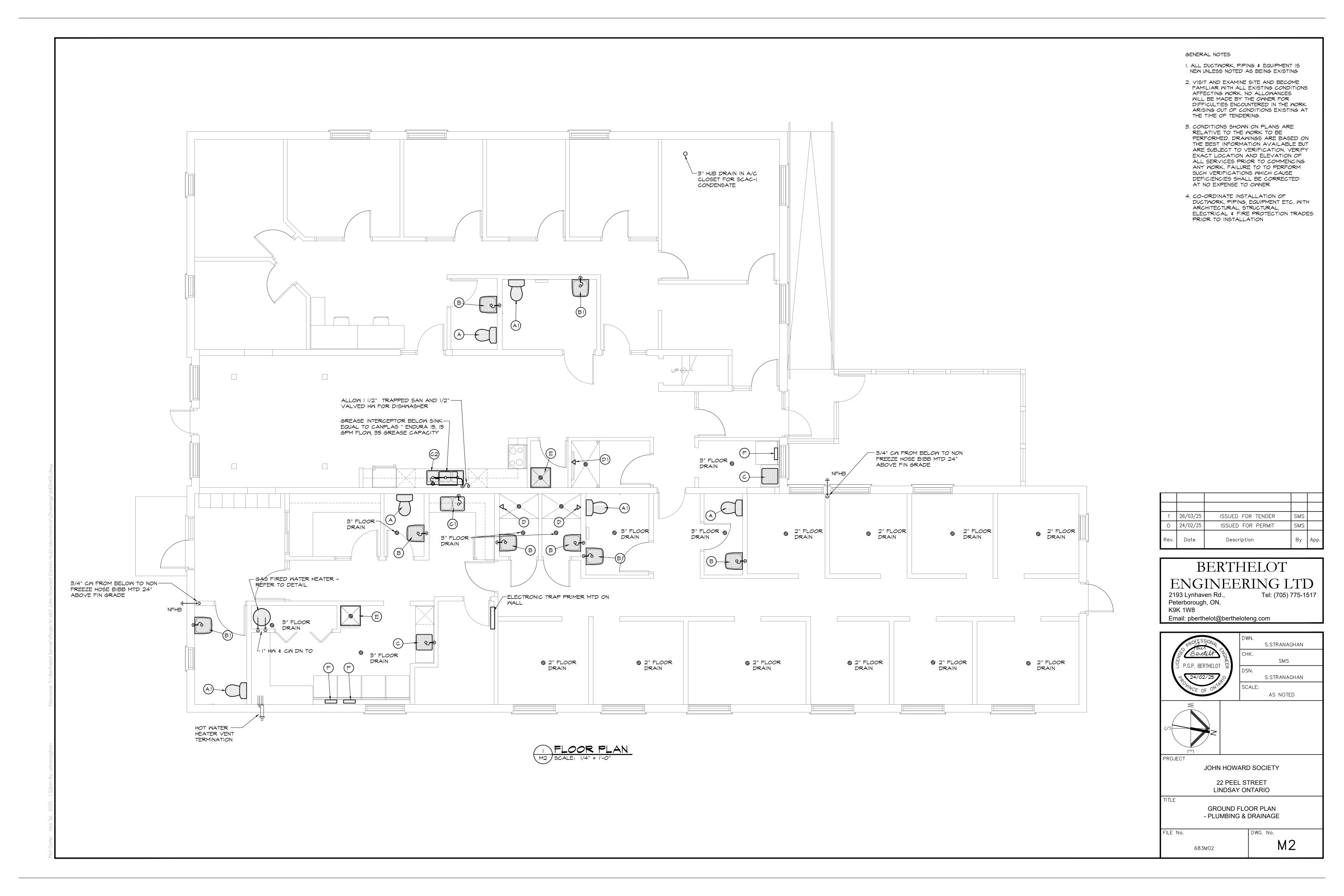
| | S.STRANAGHAN |
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| | S.STRANAGHAN |
| SCALE: | |
| | AS NOTED |

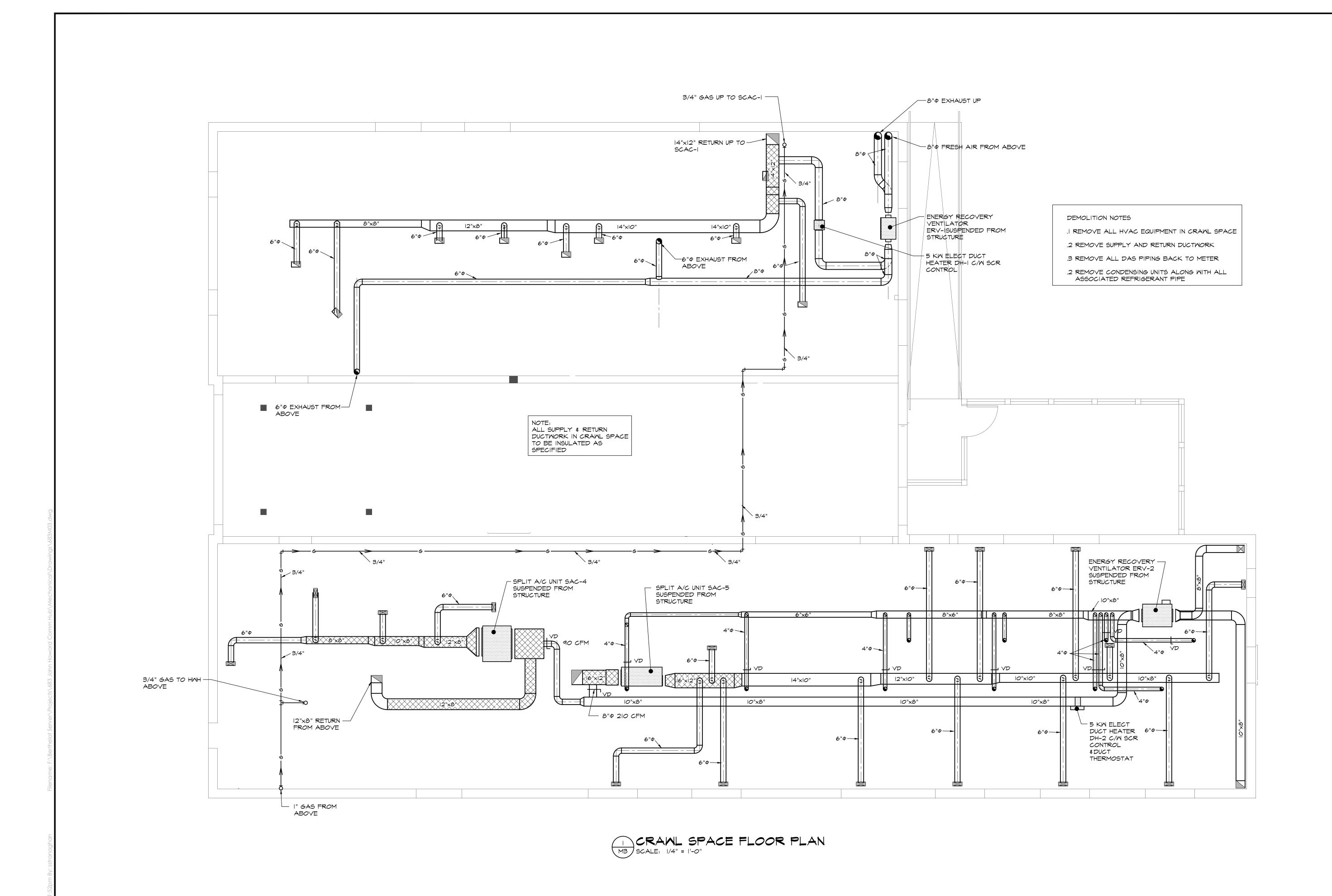
JOHN HOWARD SOCIETY

22 PEEL STREET LINDSAY ONTARIO

CRAWL SPACE FLOOR PLAN - PLUMBING & DRAINAGE

FILE No. DWG. No. M1 683M01





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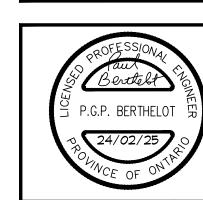
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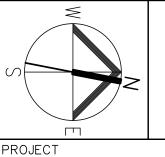
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22 PEEL STREET LINDSAY ONTARIO

TITLE

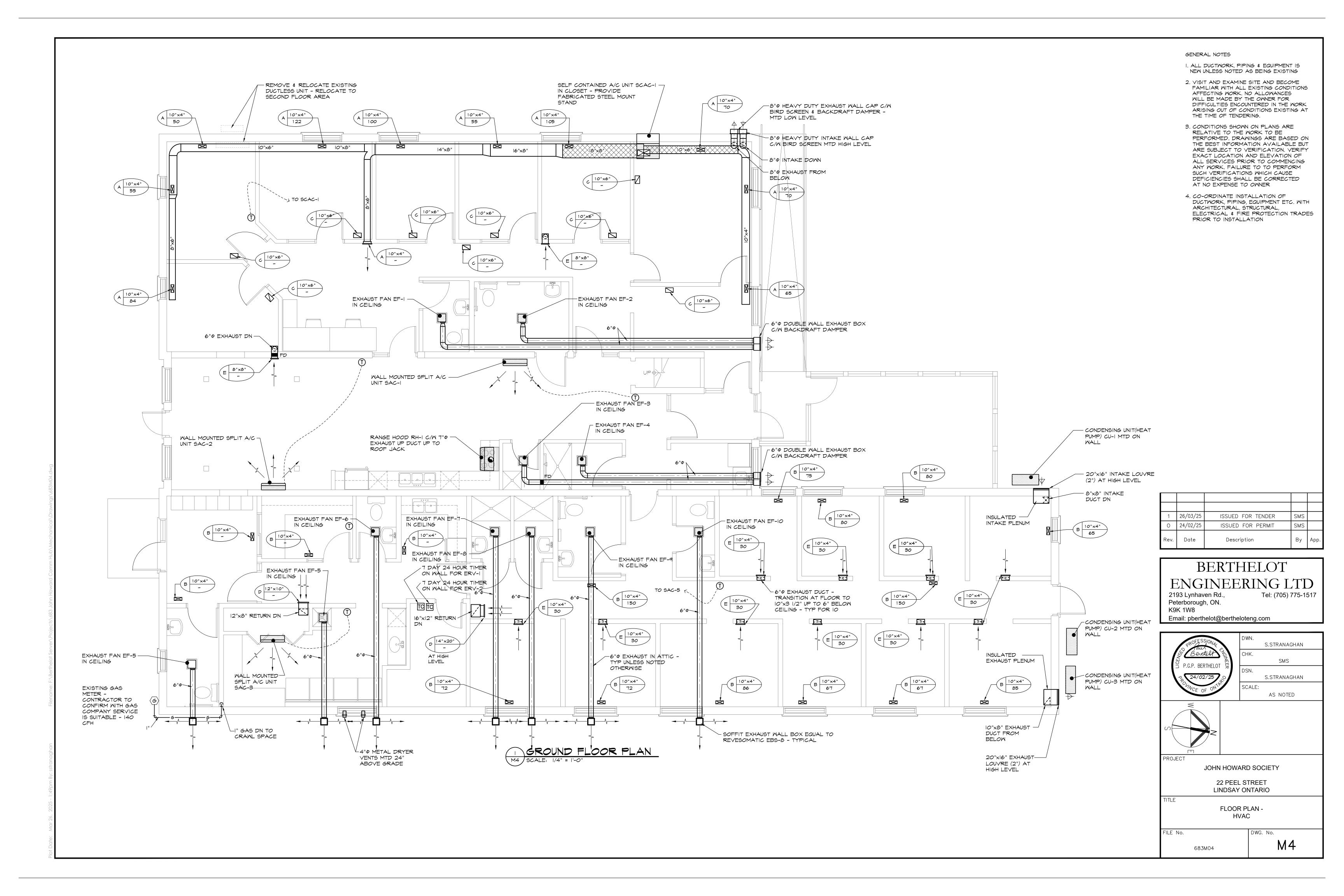
CRAWL SPACE FLOOR PLAN - HVAC

LE No.

683M03

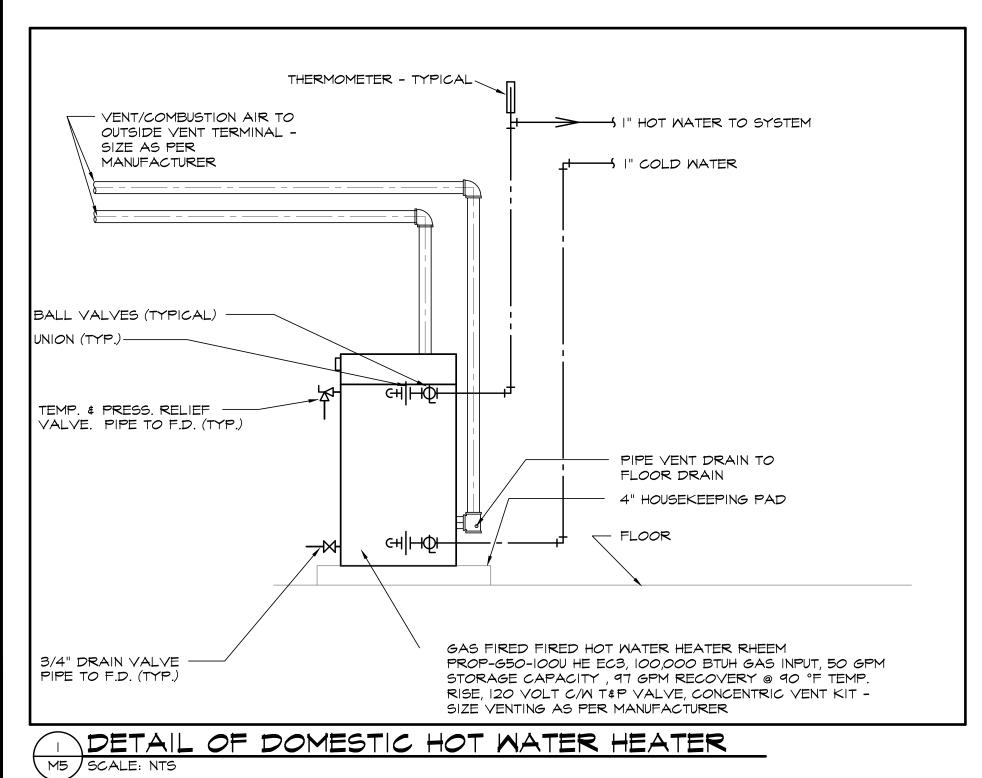
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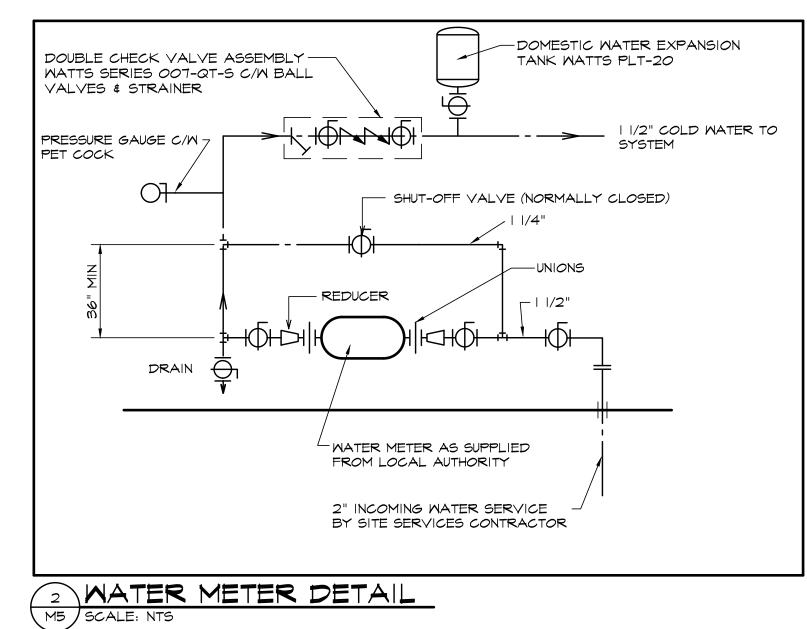
M3



| | | | N, KHOLER | | | | | | |
|-----|-----------------------------|--------------|---------------|---------------|----------|--------|---|---|---|
| NO. | DESCRIPTION | HOT WATER | TEMP WATER | COLD WATER | DRAIN | VENT | FIXTURE MAKE & MODEL | TRIM MAKE & MODEL | REMARKS |
| A | WATER CLOSET | - | - | 1/2: | " | l l/2" | AMERICAN STANDARD "CADET PRO" 215CA.154 FLOOR MTD VITREOUS CHINA, ELONGATED , 54 mm (2 1/8") GLAZED TRAPWAY , LINED FLUSH TANK, 4.8 L (1.07 GAL) FLUSH, CHROME FINISH HANDLE | CENTOCO 820STS.OOI HEAVY DUTY, OPEN FRONT WITH COVER FOR ELONGATED BOWL STAINLESS STEEL CHECK HINGES, METAL WASHERS & STAINLESS STEEL POSTS AND NUTS | C/W FLEXIBLE SUPPLIES & ESCUTCHEONS |
| Al | WATER CLOSET - BARRIER FREE | - | - | 1/2" | 3" | l l/2" | AMERICAN STANDARD "CADET PRO" 215AA.054 FLOOR MTD VITREOUS CHINA, ELONGATED , 54 mm (2 1/8") GLAZED TRAPWAY , LINED FLUSH TANK, 6 L (1.6 GAL) FLUSH, CHROME FINISH HANDLE | CENTOCO 820STS.001 HEAVY DUTY, OPEN FRONT WITH COVER FOR ELONGATED BOWL STAINLESS STEEL CHECK HINGES, METAL WASHERS & STAINLESS STEEL POSTS AND NUTS | C/W FLEXIBLE SUPPLIES & ESCUTCHEONS |
| В | LAVATORY | 1/2" | - | 1/2" | /4" | /4" | AMERICAN STANDARD " MURRO" 0954 004EC VITREOUS CHINA WALL MOUNTED, REAR OVERFLOW, RECESSED SELF DRAINING DECK, IO2mm (4") CENTRES, C/W 0059 020EC SHROUD/KNEE CONTACT GUARD | DELTA 22C551, SINGLE HANDLE, CAST BRASS, CHROME PLATED, 3 1/2" (89 mm) LEVER HANDLE, VANDAL RESISTANT AERATOR, 1.9 L/MIN (0.5 GPM), OFF-SET OPEN GRID STRAINER | MOUNTING HEIGHT AS PER ARCHITECTS DRAWING C/W FIXTURE CARRIER, RIGID SUPPLIES |
| BI | LAVATORY - BARRIER FREE | 1/2" | - | 1/2" | /4" | /4" | TAMIERICAN STANDARD MURRO (M934 (JO4EC | DELTA 22C551, SINGLE HANDLE, CAST BRASS, CHROME PLATED, 3 1/2" (89 mm) LEVER HANDLE, VANDAL RESISTANT AERATOR, 1.9 L/MIN (0.5 GPM), OFF-SET OPEN GRID STRAINER | C/W FIXTURE CARRIER, THERMOSTATIC MIXING VALVE, RIGID SUPPLIES |
| С | SINK - I COMP. | 1/2" | - | 1/2" | l I/2" | /4" | FRANKE LBS6808-1/3, SINGLE BOWL, LEDGE BACK, 20 GUAGE, 18-8 STAINLESS STEEL, EXPOSED FINISHED ARE SATIN FINISHED, 204mm (8") CENTRESET, 89mm (3 1/2") BASKET STRAINER - 508mm(20")×508mm×(20")×203mm(8") DEEP | DELTA IOOLF-HDF SINGLE HANDLE DECK FAUCET, ALL METAL BODY, 22Imm (8 II/16") LONG SWING SPOUT., 8" CENTRES, CERAMIC CARTRIDGE, 5/7 L/min (I.5 GPM), | C/W FLEXIBLE SUPPLIES & ESCUTCHEONS |
| Cl | SINK - 2 COMP | 1/2" | - | 1/2" | l I/2" | /4" | ARE SATIN FINISHED, 204mm (8") CENTRES SET, 89mm (3 1/2") BASKET STRAINER 520mm(20 1/2")×794mm×(3) | DELTA 27C944-LS-TI TWO HANDLE DECK FAUCET, ALL METAL BODY, 152mm (6") GOOSENECK SWING SPOUT., 102mm (4")" CENTRES,HOOD BLADE HANDLES, LIMITED SWING, TEMPERATURE INDICATORS, CERAMIC CARTRIDGE, 5/7 L/min (1.5 GPM), | C/M FLEXIBLE SUPPLIES & ESCUTCHEONS |
| C2 | SINK - 3 COMP. | 1/2" | - | 1/2" | /2" | /4" | FRANKE LBT64 OPCB-I-3 TRIPLE BOWL, LEDGE BACK, 18 GUAGE, 18-10 STAINLESS STEEL, EXPOSED FINISHED ARE SATIN FINISHED, 204mm (8") CENTRES SET, 3 - 89mm (3 1/2") BASKET STRAINER 522mm(20 9/16")x1178mmx(46 3/8")x254mm(10") DEEP | DELTA 100LF-HDF SINGLE HANDLE DECK FAUCET, ALL METAL BODY, 22Imm (8 11/16") LONG SWING SPOUT., 8" CENTRES, CERAMIC CARTRIDGE, 5/7 L/min (1.5 GPM), | C/M FLEXIBLE SUPPLIES & ESCUTCHEONS |
| D | SHOWER | 1/2" | - | 1/2" | 2" | l l/2" | | DELTA TI329I, C/W ROUGH IN VALVE BODY RIOOOO SERIES, PRESSURE BALANCING VALVE, SHOWER ONLY, LEVER METAL HANDLE, MAX 120 DEG ROTATION, 2 GPM SHOWER HEAD, CHROME PLATED ELBOW & ESCUTHCEON | |
| DI | SHOWER - BARRIER FREE | 1/2" | - | 1/2" | 2" | /2" | BY GENERAL CONTRACTOR | DELTA TI3HI52, C/M ROUGH IN VALVE BODY RIOOOO SERIES, PRESSURE BALANCING VALVE, INTEGRAL CHECKS, METAL LEVER HANDLE, HAND SHOWER WITH 610mm STAINLESS STEEL SLIDE BAR, MAX FLOW 4.3L/min (1.5 GPM@80psig) | |
| E | MOP SINK | 1/2" | - | 1/2" | " | l I/2" | FIAT MSB2424, SQUARE, FLOOR MOUNTED, MOLDED STONE, STAINLESS STEEL STRAINER WITH DRAIN | FIAT 830 WALL MOUNTED TWO HANDLE UTILITY FAUCET, CHROME PLATED FINISH, WALL MOUNTED, 204mm (8") CENTRESET, INTEGRAL STOPS, HOSE OUTLET, I52mm (6") SPOUT WITH VACUUM BREAKER AND BUCKET HOOK. | |
| F | LAUNDRY BOX | 1/2" | - | 1/2" | 50 | 1 1/2" | PPP MM-500MLB, STEEL BOX WITH WHITE POWDER COATED FINISH, 50mm DRAIN PIPE CONNECTION WATER HAMMER ARRESTORS, , QUARTER TURN BALL VALVES | | |

APPROVED ALTERNATES: CRANE, MAAX, MOEN, MIROLIN, KHOLER





LEGEND DESCRIPTION SYMBOL SANITARY ABOVE GROUND SANITARY BELOW GROUND DOMESTIC COLD WATER DOMESTIC HOT WATER _____ SANITARY VENT BALL VALVE PLUMBING FIXTURE DESIGNATION co**a**— CLEANOUT (BELOW GROUND & ABOVE GROUND DRAINAGE) CO II— **──I** NFHB NON FREEZE HOSE BIBB SUPPLY DIFFUSER RETURN OR EXHAUST GRILLE SIDEWALL SUPPLY OR RETURN GRILLE 10"x8" TRANSFER SHEET METAL SLEVE IN WALL ABOVE CEILING (2" WIDER THAT WALL THICKNESS) RETURN OR EXHAUST DUCT DOWN OR AWAY)×<[SUPPLY DUCT DOWN OR AWAY SUPPLY DUCT UP OR TOWARDS RETURN OR EXHAUST UP OR TOWARDS I" ACOUSTIC DUCT INSULATION (THICKNESS NOT INCLUDED IN DUCT SIZE SHOWN) TYPE A 8"0 SIZE FLOW (CFM) DIFFUSER DESIGNATION TYPE - REFER TO SCHEDULE SIZE - DIFFUSER NECK OR GRILLE SIZE FLEXIBLE CONNECTION TURNING VANES (DOUBLE THICKNESS) TYPE "B" FIRE DAMPER IN HORIZONTAL OR VERTICAL DUCT BACKDRAFT DAMPER JVD VOLUME DAMPER THERMOSTAT (MTD AT 4'-0" AFF UNLESS OTHERWISE NOTED) T TS TEMPERATURE SENSOR (MTD AT 5'-6" AFF UNLESS OTHERWISE NOTED) THERMOSTAT CONTROL LINE

GENERAL NOTES

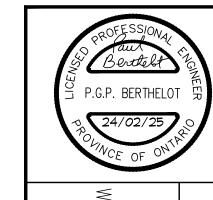
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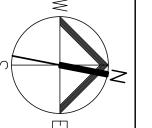
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S.STRANAGHAN
CHK.
SMS
DSN.
S.STRANAGHAN
SCALE:
AS NOTED



PROJECT

JOHN HOWARD SOCIETY

22 DEEL STREET

22 PEEL STREET LINDSAY ONTARIO

DETAILS, SCHEDULE & LEGEND
- MECHANICAL

TILE No.

683M05

DWG. No.

M5

SPLIT AIR CONDITIONING SYSTEM SCHEDULE ALTERNATES : MITSUBISHI ELECTRIC, CARRIER

| | | | | | | | | | | | INDOOR UNIT | | | | | | | | | | OUTDOOR UN | IT - HEAT PUMP . | - LOW TEMP | ERATU | RE | | |
|---------------|-------------|--------------|--------------|----------------|------|-----------------|------|----------|-------|----------|-------------|----------|-----|-------|------------|-----------|-------|------------|---|------------|-------------|------------------|------------|-------|------------------|------|--|
| | | | | | | DLING PACITY | | HE | ATING | CAPACI | ITY | | FAN | | | | | ELECTRICAL | | | | | FLECTRICAL | | LOW | | REMARKS |
| SYSTEM NO. | LOCATION | MANUFACTURER | MODEL NO. | TYPE | | ACITI | HE | AT PUMP | ELECT | RIC HEAT | AIR | FLOW | HP | R.P.N | 1. EXT STA | TIC PRESS | ē | ELECTRICAL | | SYSTEM NO. | MANUFACTURE | MODEL NO | ELECTRICAL | - | AMBIEN CONTRO | | |
| | | | | | KM | MBH | KM | N MBH | KM | MBH | L/S (HI) | cfm (HI) | | | PA | INCH | VOLTS | PH AMPS | - | | | VOLT | S PH MCA | MOCF | CONTRO | /_ | |
| SAC-I | COMMONS | DAIKIN | FTXSI2WVJU9 | WALL | 3.4 | 11.55 | 3.4 | 4 11.55 | NA | NA | 206 | 438 | - | _ | - | - | 240 | l - | - | CU-1 | DAIKIN | 3MXL24MMVJU9 240 | 1 20.1 | 30 | NO | 410A | C/W WIRED REMOTE CONTROLLER, CONDENSATE PUMP, FILTER KIT REFRIGERANT PIPING, & REFRIGERANT, OUTDOOR UNIT C/W ALL REQUIRED ACCESSORIES FOR LOW TEMPERATURE OPERATION - PIPE |
| SAC-2 | COMMONS | DAIKIN | FTXSI2WVJU9 | MALL | 3.4 | 11.55 | 3.4 | 4 11.55 | NA | NA | 206 | 438 | - | - | - | - | 240 | l - | - | | | | | | | | CONDENSATE TO NEAREST DRAIN - |
| SAC-3 | LAUNDRY | DAIKIN | FTXSI2WVJU9 | WALL | 2.9 | 9.88 | 3.1 | .1 10.67 | NA | NA | 206 | 438 | - | - | - | - | 240 | ı - | - | CU-2 | DAIKIN | 3MXL24MMVJU9 240 | 1 20.1 | 30 | NO | 410A | C/W WIRED REMOTE CONTROLLER, CONDENSATE PUMP, FILTER KIT REFRIGERANT PIPING, & REFRIGERANT, OUTDOOR UNIT C/W ALL REQUIRED ACCESSORIES FOR LOW TEMPERATURE OPERATION - PIPE |
| SAC-4 | CRAWL SPACE | DAIKIN | FDMQ158WVJU9 | CONCEALED | 4.1 | 14.12 | 4.4 | 4 14.9 | NA | NA | 211 | 448 | - | - | - | - | 240 | I - | - | 1 | | | | | | | CONDENSATE TO NEAREST DRAIN - |
| SAC-5 | CRAWL SPACE | DAIKIN | FTQ36TAVJUD | AIR HANDLER | 10.3 | 35 | 11.7 | 7 40 | 10 | 34.12 | 496 | 1050 | - | - | - | - | 240 | ı - | - | CU-3 | DAIKIN | RZQ36TBVJUA 240 | 1 29.1 | 40 | NO. | 410A | C/W WIRED REMOTE CONTROLLER, CONDENSATE PUMP, FILTER KIT REFRIGERANT PIPING, & REFRIGERANT, OUTDOOR UNIT C/W ALL REQUIRED ACCESSORIES FOR LOW TEMPERATURE OPERATION - PIPE |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | CONDENSATE TO NEAREST DRAIN - |

| | | | | | | | S | ELF | CON | ITAIN | ED / | AIR (| CON | DITI | ONIN | 16 l | JNIT | SCH | HEI | DULE | | | |
|-------------|----------|--------------|----------------|----------|-----|---------|-------|------|-----|----------|------|-------|------|-----------|--------|------|------|--|-----|----------------|-------|--------------|---|
| UNIT NO. | LOCATION | MANUFACTURER | MODEL | TOTAL CO | | REFRIG. | SEER2 | | | TING CAP | | AIR | FLOW | FAI HP | R.P.M. | EXT. | SP | | | TRICAL MCA MC | MEIG | RATING HT | REMARKS |
| ,,,, | | | | KM | MBH | | | KM | MBH | KM | MBH | L/S | CFM | | | Pa | INCH | | | | KG | LBS | |
| A/C-A | OFFICE | NAPOLEON | P-C40A2-B30A-A | 8.8 | 30 | 410A | 11.7 | 11.7 | 40 | 10.8 | 37 | 437 | 926 | 1/2 | - | 100 | 0.4 | 240 | ı | 23.6 3 |) 166 | 366 | C/W WALL SLEEVE, ARCHITECTURAL GRILLE, INSULATION KIT, PROGRAMMABLE THERMOSTAT WITH AUTO CHANGE OVER |
| | | | | | | | | | | | | | | | | | | | | | | | |

| | | | | | | | | | FAI | N SCH | EDULE | | ALTERNA | ATES : PENN | N, COOK | | |
|------------------|---------------|----------|--------------|--------------------|------------|------|-------|-----------|----------|--------|---------|-----------------|---------|-------------|---------|-----|--|
| FAN | LOCATION | FUNCTION | | FAN TYPE | MODEL | CAPA | ACITY | EXT. STAT | IC PRESS | | | M0 ⁻ | TOR | | MEI | GHT | PEMARKO |
| NO. | LOCATION | FUNCTION | MANUFACTURER | PAN ITPE | NO. | L/S | CFM | ра | inch | R.P.M. | HP OR W | VOLTS | PHASE | RPM | KG | LBS | REMARKS |
| EF-I TO EF-IO | TYP SUITE | EXHAUST | PANASONIC | CEILING EXHAUST | FV-0511VQ1 | 39 | 83 | 62 | 0.25 | 1172 | 10.8 M | 120 | 1 | 1172 | NA | | C/W VIBRATION ISOLATION, ADJUSTABLE SPEED SWITCH ON FAN DISCONNECT SWITCH, BACKDRAFT DAMPER, |
| RH-A | SUITE KITCHEN | EXHAUST | BROAN | RANGE HOOD | 42000 | 89 | 190 | - | - | 2750 | - | 120 | İ | 2750 | - | _ | 30" WIDE C/W STAINLESS STEEL, 2 SPEED, BACKDRAFT DAMPER, LIGHTS & WASHABLE ALUMINUM FILTER |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |

| | | | | | | | H | EAT/EN | NERGY | RECO | OVERY | SCHEI | DULE | | | | OUTDOOR TEMPERATURE CONDITIONS: SUMMER 87°F db/74°F WINTER : -13 °F db |
|-------|-----------|--------------|--------------|-----------|-------------|----------|-----------------|-------------|----------|-----------------|--------|-------|-------|-------|------|------------------------|--|
| T | AREA | | MODEL | | OUTSIDE AIR | 3 | EXHA | UST AIR | | | SUMMER | | ELECT | RICAL | | OPERATING WEIGHT IN | DEMARKS |
| TAG | SERVED | MANUFACTURER | NO. | FLOW, CFM | ESP | FAN (hp) | FLOW, L/S (CFM) | ESP PA (IN) | FAN (hp) | SUPPLY TEMP. | TEMP. | VOLTS | PH | AMP | MOCP | LBS | REMARKS |
| ERV-I | OFFICE | GREENTEK | PREMIER 2.0E | 201 | 0.4 | - | 201 | 0.4 | - | 36°F | 78°F | 120 | ı | 1.4 | 15 | 132 | C/W ALUMINUM CORE, FIELD ADJUSTABLE MOTORS, THREADED ROD HANGERS & FILTERS - 7 DAY 24 HOUR TIMER |
| ERV-2 | DORMITORY | GREENTEK | LCH-4E | 300 | 0.5 | - | 300 | 0.5 | - | 36°F | 78°F | 120 | ı | 4.7 | 15 | 132 | C/W ALUMINUM CORE, FIELD ADJUSTABLE MOTORS, THREADED ROD HANGERS & FILTERS - 7 DAY 24 HOUR TIMER |

| | | | DIFFUSER \$ | GRILLE SCHEDULE |
|------|--------------|----------|-----------------|--|
| TYPE | MANUFACTURER | FUNCTION | MODEL | REMARKS |
| Α | E.H. PRICE | SUPPLY | 520D/F/L/A/BI2 | DOUBLE DEFLECTION, STEEL, OPPOSED BLADE DAMPER, 32mm (I-1/4") FLAT BORDER, CEILING/WALL MOUNTING, SCREW FASTENING WHITE FINISH |
| В | E.H. PRICE | SUPPLY | LBMH16B/750/B12 | ALUMINUM LINEAR BAR GRILLE FOR FLOOR, 1/2" SPACING. 15° DEFLECTION, 3/4" BORDER (MITRED), OPPOSED BLADE DAMPER & WHITE FINISH |
| C | E.H. PRICE | RETURN | LBMH15B/750/B12 | ALUMINUM LINEAR BAR GRILLE FOR FLOOR, 1/2" SPACING. 0° DEFLECTION, 3/4" BORDER (MITRED) & WHITE FINISH |
| D | E.H. PRICE | RETURN | 535/F/L/A/BI2 | STEEL SINGLE BLADE 13mm (1/2") SPACING, 32 (1-1/4") FLAT BORDER, CEILING/WALL MOUNTING, WHITE FINISH |
| E | E.H. PRICE | EXHAUST | 535/F/L/A/BI2 | STEEL SINGLE BLADE 13mm (1/2") SPACING, 32 (1-1/4") FLAT BORDER, CEILING/WALL MOUNTING, WHITE FINISH |
| F | E.H. PRICE | TRANSFER | STGI/BF-BI5 | HEAVY DUTY STEEL DOOR GRILLE, 32(1-1/4") FLAT BORDER BOTH SIDES, ALUMINUM POWDER COAT |

ALTERNATES : METALAIRE , NAILOR

| | | Ē | ELEC' | TRIC | DUC | T HEA | ATER | SCHE | DULE | | |
|-------------|--------------|-------------|-------------------------|------|-----|------------------|--------|-----------------|---------|----------------|------------------------------|
| UNIT NO. | MANUFACTURER | MODEL | DU DIMENSIO WIDTH | | kM | VOLTS/ PHASES | STAGES | AIR FLOW CFM | AT TEMP | CONT. VOLTS | OPTIONS |
| DH-I | THERMOLEC | TER-8-3-240 | გ"Ф | 8"Ф | 3 | 240/1 | SCR | 201 | 32 | 24 | C/W INTEGRAL TEMP CONTROL |
| DH-2 | THERMOLEC | FC | 10" | 8" | 5 | 240/1 | SCR | 300 | 32 | 24 | C/W OPTION 1, 2, 3, 4, 5, 10 |

REQUIRED OPTIONS:

I BUILT-IN DISCONNECT SWITCH 6 LOAD FUSES, HRC TYPE 2 SCR PROPORTIONAL CONTROLLER

7 PILOT LIGHTS 8 FULL BREAK CONTRACTORS 3 SCREENS BOTH SIDES

9 ELECTRONIC ROOM THERMOSTAT RT 4 ELECTRONIC AIR FLOW SENSOR 5 SOLID STATE RELAY (TRIAC) 10 MODULATING DUCT THERMOSTAT - 0 DEG F TO 100 DEG F

II 24 VOLT CONTROL CIRCUIT - FOR CONNECTION

TO BY-PASS BOX CONTROLS

| EXHAUST & INTAKE LOUVRE SCHEDULE | | | | | |
|----------------------------------|--------------|-------|-----------|---|--|
| TYPE | MANUFACTURER | MODEL | THICKNESS | REMARKS | |
| А | VENTEX | 2225 | 2" | 6063-T5, EXTRUDED ALUMINUM, STATIONARY 45° BLADE, 2" DEEP, STORMPROOF LOUVRE SYSTEM, 1/2"x1/2" GALVANIZED 19 GAUGE BIRDSCREEN, COLOUR TO BE SELECTED BY ARCHITECT., | |
| | | | | | |

ALTERNATES : E.H. PRICE

GENERAL NOTES

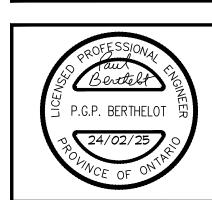
- I. ALL DUCTWORK, PIPING & EQUIPMENT IS NEW UNLESS NOTED AS BEING EXISTING
- 2. VISIT AND EXAMINE SITE AND BECOME FAMILIAR WITH ALL EXISTING CONDITIONS AFFECTING WORK. NO ALLOWANCES WILL BE MADE BY THE OWNER FOR DIFFICULTIES ENCOUNTERED IN THE WORK ARISING OUT OF CONDITIONS EXISTING AT THE TIME OF TENDERING.
- 3. CONDITIONS SHOWN ON PLANS ARE RELATIVE TO THE WORK TO BE PERFORMED. DRAWINGS ARE BASED ON THE BEST INFORMATION AVAILABLE BUT ARE SUBJECT TO VERIFICATION. VERIFY EXACT LOCATION AND ELEVATION OF ALL SERVICES PRIOR TO COMMENCING ANY WORK. FAILURE TO TO PERFORM SUCH VERIFICATIONS WHICH CAUSE DEFICIENCIES SHALL BE CORRECTED AT NO EXPENSE TO OWNER
- 4. CO-ORDINATE INSTALLATION OF DUCTMORK, PIPING, EQUIPMENT ETC. WITH ARCHITECTURAL, STRUCTURAL, ELECTRICAL & FIRE PROTECTION TRADES PRIOR TO INSTALLATION

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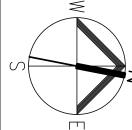
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JOHN HOWARD SOCIETY

22 PEEL STREET LINDSAY ONTARIO

SCHEDULES - MECHANICAL

FILE No. DWG. No. M6 683M05

GENERAL SPECIFICATION

- PROVIDE ALL EQUIPMENT, MATERIALS, LABOUR AND SERVICES, ETC. NECESSARY TO COMPLETE THE WORK. ALL MATERIALS AND EQUIPMENT USED ARE TO BE NEW AND ARE TO HAVE C.S.A. APPROVAL. MATERIALS AND EQUIPMENT ARE SPECIFIED BY NAME TO ESTABLISH A STANDARD OF QUALITY AND WORKMANSHIP. USE ONLY SPECIFIED EQUIPMENT OR ALTERNATES NOTED.
- .2 VISIT AND EXAMINE THE SITE AND BECOME FAMILIAR WITH ALL EXISTING CONDITIONS AFFECTING THE WORK, PRIOR TO SUBMITTING TENDER. NO ALLOWANCES IN COST WILL BE MADE BY THE OWNER FOR ANY DIFFICULTIES ENCOUNTERED IN THE WORK ARISING OUT OF CONDITIONS EXISTING AT THE TIME OF TENDERING.
- .3 OBEY ALL APPLICABLE CODES AND REGULATIONS OF ALL GOVERNING AUTHORITIES HAVING JURISDICTION OVER THE WORK.

OF THE GOVERNING AUTHORITY AND/OR MANUFACTURER'S RECOMMENDATIONS.

- .4 WHERE THE SUPPLY OF AN ITEM IS SPECIFIED GENERALLY ONLY WITHOUT EXTENSIVE DETAIL. THIS IMPLIES THE ITEM AND/OR WORK SHALL CONFORM WITH THE REQUIREMENTS
- .5 CONFORM TO THE BEST PRACTICES APPLICABLE TO THIS TYPE OF WORK. INSTALL ALL EQUIPMENT AND SYSTEMS IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATION BUT CONSISTENT WITH THE GENERAL REQUIREMENTS OF THIS SPECIFICATION.
- ARRANGE AND PAY FOR ALL PERMITS, INSPECTION FEES, CERTIFICATES, ETC. CONNECTED WITH THE MORK.
- .7 OBTAIN FROM THE CONSULTANT TWO EXTRA SETS OF WHITE PRINTS ON WHICH TO NOTE AND CLEARLY MARK ANY APPROVAL DEVIATIONS FROM THE WORK SHOWN ON THE PLANS AS THE JOB PROGRESSES. THESE SETS OF PRINTS SHALL BE KEPT UP TO DATA AND RETURNED TO THE OWNER FOR RECORD PURPOSES AT THE COMPLETION OF THE JOB.
- .8 PERFORM ALL TESTS REQUIRED BY THE AUTHORITIES HAVING JURISDICTION, SUPPLYING THEREFORE ALL NECESSARY EQUIPMENT AND LABOUR.
- .9 GUARANTEE ALL WORK FOR A PERIOD OF ONE YEAR. IT SHALL BE UNDERSTOOD THAT IF ANY DEFECTS BECOME EVIDENT WITHIN THE GUARANTEE PERIOD. ALL NECESSARY REPAIRS AND REPLACEMENTS TO THE WORK SHALL BE MADE WITHOUT COST TO THE OWNER. ALSO PAY FOR MAKING GOOD ANY OTHER WORK DAMAGED THROUGH DEFECTS IN THE WORK OF THIS CONTRACT DURING BOTH CONSTRUCTION AND GUARANTEE PERIODS.
- .IO PROVIDE HANGERS FOR ALL PIPES AND DUCTS AND AVOID ANY DIRECT CONTACT OF DISSIMILAR METALS. SPACE HANGERS TO PREVENT SAGGING OR LOADING JOINTS.
- .II HANGERS SHALL ONLY BE SUSPENDED FROM STRUCTURAL BEARINGS SUCH AS STEEL BEAMS OR TOP CHORD OF JOISTS. WHERE SUCH BEARINGS DO NOT EXISTS, USE NECESSARY
- .12 PROVIDE SUPPORTS FOR EQUIPMENT INSTALLED IN THIS CONTRACT, INCLUDING HANGER RODS AND SPRING VIBRATION ISOLATORS.
- .13 PROVIDE MOTORS AND DRIVES FOR ALL POWERED EQUIPMENT OF CANADIAN MAKE AND LOCALLY SERVICEABLE MANUFACTURE.
- .14 SUBMIT PDF (I) COPY OF SHOP DRAWINGS OF EACH PIECE OF MANUFACTURED EQUIPMENT TO CONSULTANT FOR REVIEW.
- .15 RUN IN ADJUST AND BALANCE THE SYSTEMS FOR PROPER OPERATION.
- .16 ALL EQUIPMENT, PIPING, DUCTWORK, ETC. IS NEW UNLESS NOTED AS BEING EXISTING
- .17 VERIFY EXACT LOCATION AND ELEVATION OF ALL EXISTING SERVICES PRIOR TO
- .18 MAINTAIN ALL NECESSARY INSURANCE TO PROTECT THE OWNER AND ALL TRADES FROM ALL POSSIBLE CLAIMS DURING THE CONSTRUCTION PERIOD.
- .19 DO ALL NECESSARY REQUIRED CUTTING AND PATCHING AS MAY BE REQUIRED TO PERFORM THE WORKS OF THIS CONTRACT. CUTTINGS SHALL BE KEPT TO A MINIMUM, AND SHALL BE PERFORMED WITH CLEAN CUT STRAIGHT EDGES. PATCHING SHALL BE NEAT AND CLEAN AND RESTORE TO ORIGINAL FINISH CONDITIONS USING SIMILAR TYPES TO MATERIALS. USE ONLY TRADES PERSONNEL SKILLED IN THE VARIOUS TYPES OF WORK REQUIRED (ie. MASONS, ROOFERS, ETC.).
- .20 UPON COMPLETION, REMOVE ALL WASTES, MATERIAL, ETC. AND LEAVE SITE IN CLEAN
- .21 AT PROJECT COMPLETION AND PRIOR TO FINAL INSPECTION DELIVER TO THE CONSULTANT THREE (3) COMPLETE SETS OF OPERATION AND MAINTENANCE DATA FOR ALL EQUIPMENT SUPPLIED. SUBMIT THREE (3) VINYL HARD COVERED LOOSE LEAF BINDERS. INFORMATION REQUIRED IN THESE MANUALS IS DATA PERTAINING TO EFFICIENT OPERATING AND MAINTAINING OF EQUIPMENT, INCLUDING EQUIPMENT INSTALLATION INSTRUCTIONS SUPPLIED BY MANUFACTURER. INCLUDE FINAL REVIEWED SHOP DRAWINGS THAT HAVE BEEN SUBMITTED. COMPLETED SUBMISSION MUST BE INDEXED AND DIVIDED BETWEEN INDIVIDUAL COMPONENTS.
- .22 PROVIDE & PAY FOR SERVICES OF FULLY EXPERIENCED TECHNICIAN TO INSTRUCT PERSONNEL DESIGNATED BY THE OWNER IN THE PROPER OPERATION AND MAINTENANCE OF ALL EQUIPMENT INSTALLED UNDER THIS CONTRACT INCLUDING CONTROLS, THERMOSTATS ETC.

SYSTEM FLUSHING AND CLEANING

COMMENCING ANY MORK

- FLUSH AND CLEAN FLUID-CARRYING SYSTEMS AFTER COMPLETION WITH CLEAR WATER AT HIGHEST OBTAINABLE PRESSURE AND VELOCITY. DISCHARGE FLUSHING WATER THROUGH STRAINERS AND OUT THROUGH SYSTEM DRAINS WITH HOSE END. CLEAN STRAINERS. REPEAT FLUSHING OPERATION TO SATISFACTION OF CONSULTANT UNTIL NO FOREIGN MATTER COLLECTS IN STRAINERS. DRAIN AND CLEAN TANKS AND INSPECT TUBING AND PASSAGEWAYS IN MAJOR EQUIPMENT AND CLEAN AS NECESSARY.
- .2 ENSURE THAT VALVES INCLUDING CONTROL VALVES ARE FULLY OPEN DURING FLUSHING.
- .3 PRIOR TO STARTING FANS AND AIR HANDLING EQUIPMENT INSPECT AND CLEAN THE OUTSIDE AND INSIDE OF THE AIR HANDLING SYSTEMS INCLUDING FANS, DUCTS, COILS, AND TERMINAL UNITS TO ENSURE THAT THEY ARE COMPLETELY FREE FROM DUST AND DEBRIS. INSTALL CLEAN FILTERS IN SYSTEMS REQUIRING FILTERS.
- .4 CLEAN POLISHED, PAINTED AND PLATED WORK. CLEAN ALL FIXTURES. REMOVE DEBRIS, SURPLUS MATERIAL AND ALL TOOLS FROM SITE.
- .5 CARRY OUT ADDITIONAL CLEANING OPERATIONS AND CHEMICAL TREATMENT ON SYSTEMS SPECIFIED IN OTHER SECTIONS OF THIS DIVISION. REFER ALSO TO GENERAL REQUIREMENTS FOR GENERAL CLEANUP OF SITE.

ACCESS PANELS AND DOORS

- INSTALL CONCEALED MECHANICAL EQUIPMENT REQUIRING ADJUSTMENT OR MAINTENANCE IN LOCATIONS EASILY ACCESSIBLE THROUGH ACCESS PANELS OR DOORS. INSTALL SYSTEMS AND COMPONENTS TO RESULT IN A MINIMUM NUMBER OF ACCESS PANELS. INDICATE ACCESS PANELS AND DOORS ON 'AS BUILT' DRAWINGS
- .2 PROVIDE OTHER RESPECTIVE DIVISIONS WITH PANELS, DOORS OR FRAMES TOGETHER WITH PERTINENT INSTALLATION INFORMATION. ENSURE ACCESS PANELS AND DOORS ARE INSTALLED IN A MANNER TO MATCH BUILDING MATERIAL AND GRIDS WHERE APPLICABLE.
- .3 IN WALLS, CEILINGS, ETC. USE ACCESS DOORS CONSTRUCTED OF 12 GAUGE STEEL WITH FRAME STYLE COMPATIBLE WITH BUILDING SURFACE IN WHICH IT IS MOUNTED, EQUIPPED WITH CONTINUOUS PIANO HINGES AND SCREWDRIVER OPERATED LATCHES. USE ULC LISTED DOORS IN FIRE RATED WALLS AND CEILINGS. USE ACCESS DOORS MANUFACTURED BY ACUDOR, MIFAB OR LEHAGE. PROVIDE ACCESS DOORS AS FOLLOWS UNLESS OTHERWISE NOTED:
 - FOR ACCESS TO VALVES, BALANCING DAMPERS AND ITEMS REQUIRING ONLY HAND ACCESS USE 225mm X 225mm (9"x9").
- FOR ACCESS TO EQUIPMENT REQUIRING PERSONNEL ENTRY USE 600mm X 600mm (24"x24"). .4 INSTALL AT EACH FIRE DAMPER AN ACCESS DOOR IN DUCT TO ALLOW FOR INSPECTION AND RESETTING OF RELEASE DEVICE. IF DUCT IS ENCLOSED IN AN ARCHITECTURAL FINISH, ALSO PROVIDE AN ACCESS DOOR IN FINISH AS DESCRIBED ABOVE FOR DAMPER ACCESS

PLUMBING & DRAINAGE

- .I SANITARY DRAINAGE AND VENT PIPING ABOVE FLOOR SHALL BE PVC DWV CERTIFIED TO CSABIBI.2. OR TYPE DWY HARD DRAWN COPPER TUBE WITH CAST BRASS SOLDER FITTINGS (USE 95/5 SOLDER), UP TO 63mm (2-1/2") COPPER OVERCAST IRON. NO NON APPROVED PVC TO BE LOCATED IN RETURN AIR CEILING SPACE.
- .2 SANITARY DRAINAGE AND VENT PIPING IN PLENUM SPACE SHALL BE CERTIFIED TO CSA BIBI.2 AND TESTED AND LISTED IN ACCORDANCE WITH CAN/ULC SIO2.2 AND CLEARLY MARKED WITH CERTIFICATION LOGO INDICATING FLAME SPREAD RATING NOT MORE THAN 25 AND SMOKE-DEVELOPED CLASSIFICATION NOT EXCEEDING 50. PIPING EQUAL TO IPEX SYSTEM XFR 15-50 DWV
- .3 SANITARY DRAINAGE AND VENT PIPING BELOW FLOOR SHALL BE ABS-DWV PIPING WITH SOLVENT WELD JOINTS FOR SIZES UP TO 75mm (3"). FOR SIZES 4" AND LARGER USE PVC PIPING WITH RING TITE COUPLINGS TO CSAI82.1 (DR35 OR 28).
- .4 HOT AND COLD WATER PIPING FROM WATER METER TO END OF MAIN SHALL BE TYPE L' HARD DRAWN COPPER TUBE WITH WROUGHT COPPER SOLDER FITTINGS (USE 95/5 SOLDER) AND HOT AND COLD IN SUITES SHALL BE PEX-A, ASTM F876 AND F877 (CAN/CSA-BI37.5). SDR9 CTS.1/2" THRU 3" NOM PIPE SIZE (EQUAL RO UPONOR AQUAPEX).
- .5 DOMESTIC WATER PIPING BELOW FLOOR SHALL BE TYPE 'K' SOFT DRAWN COPPER TUBE WITH BRONZE FLARE FITTINGS FOR SIZES UP TO 50mm (2").

<u>INSULATION</u>

.I COVER COLD WATER PIPING AND ABOVE HORIZONTAL STORM PIPING WITH 25mm (I") THICK JOHNS MANVILLE MICROLOK GLASS FIBRE DUAL TEMPERATURE INSULATION WITH FACTORY APPLIED FIRE RESISTANT GLASS FIBRE REINFORCED KRAFT PAPER AND ALUMINUM FOIL VAPOUR BARRIER, AND ALL SERVICE JACKET. USE PRESSURE SENSITIVE LAP SEALING SYSTEM. INSTALL INSULATION AS PER MANUFACTURERS RECOMMENDATIONS

| INSULATION THICKNESS ON HOT WATER PIPE SIZES | | | | | | | |
|--|-------------------|-----------------|-----------------|-----------------|-------------|--|--|
| TEMPERATURE | NOMINAL PIPE SIZE | | | | | | |
| RANGE DEG F | 3/4" | I" TO I 1/4" | 1/2" TO 3" | 1 1/2" TO 3" | 4" TO 6" | | |
| 105° TO 140° | 1.0" | 1.0" | 1.5" | 1.5" | 1.5" | | |

.2 ALL EXPOSED INSULATIONS SHALL BE COVERED WITH WHITE PVC INSULATED FITTING COVERS AND JACKETING SYSTEM EQUAL TO JOHNS MANVILLE ZESTON 2000. INSTALL AS PER MANUFACTURERS RECOMMENDATIONS

.I BALL VALVES SHALL BE, FULL PORT, PTFE SEATS, O-RING STEM SEAL, SELF CLEANING CHROME PLATED BRASS BALL, VINYL GRIP ON CADMIUM PLATED STEEL HANDLE, SOLDER ENDS WITH PRESSURE RATING OF 600 PSI EQUALS : WATTS, TOYO

PIPELINE SPECIALTIES

ALTERNATES: WATTS, J.R.SMITH, ZURN

SPECIFIED AND AS SHOWN ON PLANS.

- .I TRAP PRIMERS SHALL BE WITH BRONZE BODY, 16mm (5/8") SWEAT CONNECTIONS FOR WATER SUPPLY LINE AND 16mm (5/8") FEMALE IPS OUTLET CONNECTION TO DRAIN. CONNECT TO NEAREST PLUMBING FIXTURE WATER SUPPLY. ALTERNATES: WATTS, J.R.SMITH, ZURN
- .2 ELECTRONIC TRAP PRIMING MANIFOLD SHALL BE EQUAL TO PPP INC MODEL PT SERIES (SIZE AS NUMBER OF TRAPS) 120 VOLT - INSTALL AS PER MANUFACTURES RECOMMENDATIONS
- .3 PIPELINE SHOCK ABSORBERS SHALL BE WITH 18-8 STAINLESS STEEL CONSTRUCTION, AIR CHARGED BELLOWS AND THREADED MALE OUTLETS.

<u>CLEANOUTS</u>

- UNFINISHED AND FINISHED AREA CLEANOUTS SHALL BE WITH BOLTED CLEANOUT PLUG, NICKEL BRONZE FRAME, ROUND FULL OPENING NICKEL BRONZE ACCESS COVER, EXTENDED FERRULE, NEOPRENE GASKETS AND VANDAL PROOF SCREWS. EQUALS: WATTS, J.R.SMITH, ZURN.
- .2 CONCEALED STACK CLEANOUTS SHALL BE ZURN ZSS-1445-1 CAST IRON CLEANOUT TEE AT BASE OF CONCEALED STACKS, AND ROUND STAINLESS STEEL ACCESS COVER. EQUALS: WATTS, J.R.SMITH, ZURN.

FLOOR DRAINS

I FLOOR DRAINS IN WOOD FLOOR TYPE "B" SHALL BE WITH CAST IRON BODY, TRAP PRIMER, I3mm (1/2") THICK 125mm (5") DIAMETER NICKEL TOP, STEEL ANCHOR FLANGE. EQUALS: WATTS/ANCON, J.R. SMITH, ZURN.

PLUMBING INSTALLATION

PLUG OR CAP.

- PROVIDE A COMPLETE DOMESTIC HOT AND COLD WATER DRAINAGE AND VENT TO SERVE FIXTURES AND ITEMS SPECIFIED AND SHOWN ON PLANS. INSTALL AS PER OBC PART 7 AND AUTHORITY HAVING JURISDICTION.
- .2 ROUTE ABOVE GROUND PIPING IN CEILING SPACE OR WALL INTERIORS FOR CONCEALMENT WHERE EVER POSSIBLE UNLESS SPECIFICALLY NOTED OTHERWISE ON DRAWINGS. CO-ORDINATE PIPE INSTALLATION IN WALLS WITH MASON AND OR DRYWALLER OR APPROPRIATE TRADE INVOLVED
- .4 INSTALL ISOLATION VALVES IN EACH BRANCH LINES FROM MAINS AND AT BASE OF EACH RISER. PROVIDE A FIRE RATED ACCESS DOOR AT EACH CONCEALED VALVE.
- .5 INSTALL PIPING STRAIGHT PARALLEL AND CLOSE TO WALLS AND CEILINGS, WITH APPROPRIATE PITCH. USE STANDARD FITTINGS FOR DIRECTION CHANGES.
- .6 INSTALL FLANGES OR UNIONS TO PERMIT REMOVAL OF EQUIPMENT WITHOUT DISTURBING
- .7 PROVIDE COMPLETE DRAINAGE AND VENT SYSTEMS TO SERVE FIXTURES AND ITEMS
- .8 INSTALL PIPING PASSING THROUGH FIRE SEPARATIONS WITH NON-COMBUSTIBLE MATERIAL ONE SIDE OF SEPARATION OR PROVIDE APPROVED FIRE STOPPING DEVICE
- .9 WHERE EXPOSED PIPES PASSES THROUGH FINISHED FLOORS, WALLS OR CEILINGS, PROVIDE CHROME PLATED ESCUTCHEON WITH SET SCREW.
- .IO GRADE HORIZONTAL DRAINAGE AND VENT PIPING LARGER THAN 75mm (3") AT 1.0% OR AS NOTED
- ON DRAWINGS AND SLOPE 75mm (3") AND SMALLER AT 2.0 % MIN .II WHEN PIPE LAYING NOT IN PROGRESS, CLOSE OFF OPEN ENDS OF PIPE WITH WATER TIGHT
- .12 INSTALL CLEANOUTS AS PER THE PLUMBING CODE AND/OR AS SHOWN ON DRAWINGS. ENSURE CLEAN OUTS ARE MADE ACCESSIBLE. WHERE PIPING RUNS CONCEALED IN WALL INSTALL EXTENDED TYPE CLEANOUTS WHERE NECESSARY SO THAT COVER IS LOCATED ON EXPOSED WALL SURFACE.
- .13 INSTALL FLOOR DRAINS SO THAT STRAINER IS FLUSH WITH FINISHED FLOOR AND WITH TRAP PRIMER PIPED TO NEAREST PLUMBING FIXTURE WATER SUPPLY.

INSTALLATION OF PLUMBING FIXTURES

- I CONNECT FIXTURES COMPLETE WITH SUPPLIES AND DRAINS, TRAPPED, SUPPORTED, SANITARY LEVEL AND SQUARE WITH HOT WATER FAUCETS ON THE LEFT.
- .2 PROVIDE CHROME PLATED FLEXIBLE SUPPLIES TO FIXTURES WITH SCREWDRIVER STOPS, REDUCERS AND ESCUTCHEONS.
- .3 PROVIDE CHROME PLATED TRAPS & PIPING EXPOSED TO VEIW UNDER LAVATORIES

DUCTWORK AND ACCESSORIES

MAX. DUCT DIMENSION

.I UNLESS NOTED OTHERWISE CONSTRUCT LOW PRESSURE RECTANGULAR DUCTWORK OF LOCK FORMING PRIME QUALITY GALVANIZED SHEET STEEL WITH ZINC COATING ASTM 525M-80 GUARANTEED TO BEND 180° AND FLATTEN WITHOUT FRACTURE OF GALVANIZATION OR METAL. ENSURE DUCT MATERIAL IS FREE FROM BLISTERS, PITS AND IMPERFECTLY COATED SPOTS, AND IS IN ACCORDANCE WITH ASHRAE AND SMACNA STANDARDS FOR DUCT DESIGN AND METAL GAUGES.

CONSTRUCT DUCTS IN ACCORDANCE WITH FOLLOWING:

LOW PRESSURE

| UP TO 600mm (12") | | 26 | |
|-----------------------|-----------------|------|--|
| , , | | T.T. | |
| 325mm (13") TO 750mm | (30") | 24 | |
| 775mm (31") TO 1350mm | 1 <i>(</i> 54") | 22 | |
| | | | |

.2 CONSTRUCT ROUND GALVANIZED DUCTWORK USING SAME MATERIAL AS RECTANGULAR DUCTMORK EXCEPT DUCT TO BE WOUND HELICOIDALLY TO VARIOUS DIAMETERS REQUIRED, WITH FOUR PLY LOCKSEAM TIGHTLY CLOSED TO PROVIDE A SMOOTH INTERIOR. PROVIDE FITTINGS FOR ROUND DUCTWORK DIE STAMPED, SEAM WELDED, CALIBRATED AND HOT DIPPED GALVANIZED TYPE, NO JOB MADE FITTINGS WILL BE PERMITTED. CONSTRUCT ROUND DUCTS IN ACCORDANCE WITH FOLLOWING:

U.S. GAUGE

200mm (4") TO 400mm (8") DIAMETER - 26 GAUGE 225mm (9") TO 600mm (24") DIAMETER - 24 GAUGE

- .3 CONSTRUCT MANUAL BALANCING DAMPERS OF 18 GAUGE GALVANIZED STEEL MITH 4" MIDE OPPOSED BLADES WITH 3/8" DIAMETER TIE BARS AND DURO DYNE UNXLD QUADRANT SET WITH HEAVY GAUGE INDICATING QUADRANT, LEVER ARM AND WING TYPE LOCKING NUT.
- .4 INSTRUMENT TEST PORTS SHALL BE DURO DYNE MODEL IP-4 18mm (3/4") DIAMETER WITH NEOPRENE GASKETS, SCREW IN CAP AND MOUNTED WITH 2 SCREWS.
- .5 ACOUSTIC INSULATION FOR DUCTWORK SHALL BE JOHNS MANVILLE PERMACOTE LINACOUSTIC, 245mm (I")THICK INTERNAL ACOUSTIC INSULATION RIGID COATED DUCT LINER.
- INSTALL AS RECOMMENDED BY MANUFACTURER. .6 FIRE DAMPERS IN THE HORIZONTAL & VERTICAL DUCTS SHALL BE EQUAL TO RUSKIN DIBD20 TYPE "B" (DYNAMIC SYSTEMS). FIRE DAMPER SHALL BE CONSTRUCTED AND
- TESTED IN ACCORDANCE WITH UL SAFETY STANDARD 555. DAMPER SHALL HAVE I I/2 HOUR FIRE RATING, 212 ° F FUSIBLE LINK AND INCLUDE UL LABELS.
- .7 FLEXIBLE THERMAL INSULATION FOR DUCTWORK SHALL BE EQUAL TO JOHNS MANVILLE MICROLITE FIBRE GLASS DUCT WRAP WITH FOIL, SCRIM, KRAFT FACING. -APPLY | 1/2" THICKNESS TO:
 - ALL MECHANICAL DUCTS UNCONDITIONED SPACES (UNLESS ACOUSTICALLY LINED)
- ALL EXHAUST DUCT FROM WALL/ROOF DOWN TO 10'-0" OR TILL FAN) -APPLY 3" THICKNESS TO:

- ALL MECHANICAL INTAKE DUCTS & PLENUMS

INSTALLATION OF DUCTWORK AND ACCESSORIES

RADIUS ELBOWS ARE NOT ACCEPTABLE.

- PROVIDE COMPLETE SYSTEM OF DUCTWORK, DAMPERS, GRILLES, AND REGISTERS, ETC. REQUIRED FOR COMPLETE AIR HANDLING SYSTEMS.
- .2 DETAILS OF CONSTRUCTION AND MATERIALS NOT SPECIFIED HEREIN MUST CONFORM TO RECOMMENDATIONS OF ASHRAE HANDBOOK, AND SMACNA STANDARDS (LATEST EDITION).
- .4 PRIOR TO ORDERING OR FABRICATING DUCTS, CHECK EXACT SIZES OF OPENINGS AND LOCATIONS FOR ALL DUCTS.
- PROVIDE ELBOWS WITH MINIMUM CENTER LINE RADIUS OF 1 1/2 TIMES DUCT WIDTH. WHERE THIS IS NOT POSSIBLE FIT ELBOWS WITH DOUBLE THICKNESS TURNING VANES. SHORT
- .6 EXPOSED ANGLES MUST BE CLEANED AND PAINTED WITH ONE COAT OF RUST RESISTANT PAINT PRIOR TO INSTALLATION.
- .7 RECTANGULAR DUCTS OVER 450mm (18") WIDE MUST HAVE CROSS BREAKS ON FLAT SECTIONS BETWEEN JOINTS OR JOINTS AND REINFORCING.
- .8 PATTERN LONGITUDINAL SEAM JOINT AFTER PITTSBURGH OR LOCK-GROOVE TYPE LOCK.
- .9 TRANSVERSE JOINTS IN ROUND DUCTS MUST BE CRIMPED AND BEADED SLIP JOINT. TRANSVERSE JOINTS MAY BE CONSIDERED AS REINFORCING.
- .IO INSTALL TRANSVERSE JOINTS WITH THE FOLLOWING MINIMUM CHARACTERISTICS:

| MAX. DUCT DIMENSION | TYPE OF JOINT AND MAX. SPACING | REINFORCING REQUIREDAND MAX. SPACING | |
|--------------------------------|---|--|--|
| UP TO 600mm (12") | DRIVE OR FLAT SLIP AT 2400mm (96") | NONE | |
| 325mm (13") TO 600mm (24") | 25mm (I") STANDING S, BAR OR POCKET ANGLELOCK AT 2400mmm (96") | " X " X "AT 200mm (48") | |
| 625mm (25") TO 1200mm (48") | 38mm (I I/2") STANDING ANGLE BAR OR POCKET LOCK AT 2400mm (96") | /2" × /2" × /8"AT 200mm (48") | |

.II USE STRAP HANGERS FOR DUCT SUPPORT.

.12 UNLESS NOTED OR DETAILED OTHERWISE SUPPORT HORIZONTAL DUCTS AS FOLLOWS:

| MAX. DUCT WIDTH OR HEIGHT | MAX. CENTER DISTANCE | TYPE OF SUPPORT |
|-------------------------------|-------------------------|--|
| UP TO 600mm (12") | 1800mm (72") | TRAPEZE FORMED BY ANGLE 25x25x3mm, 6mm THREADED ROD WITH WASHERS AND LOCKNUTS |
| 325mm (13") TO 600mm (24") | 1200mm (48") | TRAPEZE FORMED BY ANGLE 40×40×3mm, I3mm THREADED ROD WITH WASHERS AND LOCKNUTS |
| 625mm (25") TO 1200mm (48") | 1200mm (48") | AS ABOVE |

UNLESS NOTED OTHERWISE SUPPORT ROUND DUCTS AS FOLLOWS:

| DUCT DIAMETER | MAX. CENTER DISTANCE | TYPE OF SUPPORT |
|----------------------|----------------------------|----------------------------------|
| UP TO 450mm (18") | AS PER MANUFACTURER | "GRIPPLE" WIRE HANGING SYSTEM |

- .13 DO NOT HANG DUCTS FROM ROOF DECK.
- .14 ALL DUCT JOINTS (TRAVERSE) SHALL BE CLASS "C" AND SEALED WITH APPROVED DUCT
- .15 INSTALL FIRE DAMPERS TO SUIT NFPA-90A STANDARD AND MANUFACTURERS INSTRUCTIONS WITH FRAME RIGIDLY SECURED TO WALLS AND OR FLOORS. PROVIDE STEEL SLEEVES, ANGLES, & ALL REQUIRED MATERIALS TO SUIT UL TESTING. PROVIDE BREAKAWAY JOINT AT DUCTS

INSTALLATION OF AIR HANDLING EQUIPMENT

WEATHERPROOF FLEXIBLE CONNECTIONS.

TO SUPPORT AIR HANDLING EQUIPMENT

- INSTALL AIR HANDLING EQUIPMENT, COMPLETE WITH MOTORS, BELT DRIVES GUARDS, VIBRATION ISOLATORS ETC., AS DESCRIBED AND SHOWN ON DRAWINGS. SET EQUIPMENT PLUMB, LEVEL. AND ARRANGE FOR MAXIMUM SERVICABLILITY.
- .2 FOR ROOF MOUNTED EQUIPMENT PROVIDE PREFABRICATED ROOF CURBS. PROVIDE GENERAL CONTRACTOR WITH EXACT LOCATION AND DIMENSIONS REQUIRED FOR CURBS
- .3 AT INLET AND OUTLET OF EACH PIECE OF AIR HANDLING EQUIPMENT, PROVIDE FLEXIBLE CONNECTIONS: WHERE CONNECTIONS ARE EXPOSED TO OUTSIDE BUILDING , PROVIDE
- .4 PROVIDE NECESSARYSTRUCTURAL STEEL MEMBERS, RODS, BRACKETS, BOLTS, NUTS ETC

- I THE CONTRACTOR IS TO INCLUDE ALL MECHANICAL SYSTEM CONTROLS CALLED FOR OR IMPLIED BY THE DRAWINGS AND SPECIFICATIONS, TOGETHER WITH ALL NECESSARY INCIDENTALS WHETHER REFERRED TO OR NOT TO ALLOW ALL SYSTEMS TO FUNCTION COMPLETELY TO THE FULL INTENT OF THE DRAWINGS AND SPECIFICATIONS
- .2 LOW VOLTAGE WIRING (< 50 VOLTS) TO BE BY MECHANICAL CONTRACTOR
- .3 LOW VOLTAGE WIRING TO BE SUITABLE FOR THE USE IN THE RETURN AIR PLENUM (PLENUM RATED LOW VOLTAGE WIRE)
- .4 WIRING IN THE MECHANICAL ROOM, SERVICE ROOMS AND ANY OTHER AREAS WHERE WIRING IS EXPOSED TO VIEW SHALL RUN IN EMT CONDUIT.

CONTROL EQUIPMENT

- I THERMOSTATS FOR SCAC SHALL BE EQUAL TO HONEYWELL COMMERCIAL VISION PRO PREOGRAMMABLE THERMOSTAT. THERMOSTAT TO BE TOUCH SCREEN, CAPABILITY OF HEAT \$ COOL, AUTOMATIC CHANGE OVER, CONTINOUS FAN OPERATION DURING OCCUPIED TIMES. CAPABILE OF OPERATING SYSTEMS AT OCCUPIED/UNOCCUPIED TIMES, CAPABILITY TO HAVE REMOTE TEMPERATURE SENSOR (S), TEMPORARY OCCUPIED SETTINGS (O-4 HRS DURATION)
- .2 THERMOSTATS FOR SAC UNIT ARE TO BE SUPPLIEDBY UNIT MANUFACTURER
- .3 7 DAY 24 HR TIMER SHALL BE EQUAL TO INTERMATIC ETITO5C

CONTROL DESCRIPTION

- .I SCA/C UNITS SCAC-I SHALL BE OPERATED BY ELECTRONIC PROGRAMMABLE THERMOSTAT THERMOSTAT SET POINTS SHALL AS DIRECTED BY OWNER. FAN SHALL RUN CONTINUOUSLY DURING BUILDING OCCUPIED TIMES.
- .2 SAC UNITS SAC-1,2,3,4,\$ 5 SHALL BE OPERATED BY MANUFACTURER SUPPLIED PROGRAMMABLE THERMOSTAT. THERMOSTAT SET POINTS SHALL AS DIRECTED BY OWNER, FAN SHALL RUN
- CONTINUOUSLY DURING BUILDING OCCUPIED TIMES.
- .3 EXHAUST FAN EF-I TO EF-IO SHALL START/STOP BY LIGHTING CONTROL (BY ELECTRICAL) .4 ERV-I & ERV-2 SHALL START STOP WITH 7 DAY 24 HR TIMER - START/STOP SET TIME AS

BALANCING OF AIR SYSTEM

DIRECTED BY OWNER

- BALANCING OF SYSTEMS MUST BE DONE BY A REPUTABLE QUALIFIED FIRM EXPERIENCED IN THIS TYPE OF WORK.
- .2 RUN-IN COMPLETE HEATING AND VENTILATING SYSTEM. AFTER CLEANING SYSTEM REMOVE FILTERS AND RE-INSTALL. LUBRICATE SHAFTS, SHEAVES, BEARINGS, ETC. IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
- .3 BALANCE, ADJUST AND PUT PARTS OF SYSTEM INTO PROPER WORKING ORDER, ADJUST DAMPERS, CONTROLS, FAN SPEEDS, ETC., IN ORDER THAT PROPER DISTRIBUTION AND FLOW QUANTITIES ARE OBTAINED SO THAT COMPLETE JOB WILL BE LEFT READY FOR REGULAR OPERATION, ALL TO SATISFACTION OF CONSULTANT. SETTING UP AND BALANCING OF COMPLETE HEATING AND VENTILATING SYSTEMS TO BE DONE BY A TECHNICIAN
- .4 BALANCE AIR SYSTEMS TO OBTAIN AIR FLOW CONDITIONS SPECIFIED AND GIVEN ON DRAWINGS. AFTER BALANCING HAS BEEN COMPLETE PREPARE AN AIR BALANCE REPORT INDICATING THE FOLLOWING. THREE COPES TO BE SUBMITTED TO CONSULTANT.
- .5 BALANCING OF AIR SYSTEM

FANS AND MOTORS:

- FAN RPM
- MOTOR RPM
- MOTOR CURRENT FOR ALL PHASES - MOTOR VOLTAGE FOR ALL PHASES

EXPERIENCED IN THIS TYPE OF WORK.

- STATIC PRESSURE AT FAN INLET - STATIC PRESSURE AT FAN DISCHARGE

- AIR CAPACITY

VOLUME - FRESH AND RETURN AIR VOLUMES

DIFFUSERS AND GRILLES

- AIR CAPACITY AT EACH OUTLET

3. CONDITIONS SHOWN ON PLANS ARE RELATIVE TO THE WORK TO BE

I. ALL DUCTWORK, PIPING & EQUIPMENT IS

2. VISIT AND EXAMINE SITE AND BECOME

WILL BE MADE BY THE OWNER FOR

THE TIME OF TENDERING.

FAMILIAR WITH ALL EXISTING CONDITIONS AFFECTING WORK. NO ALLOWANCES

DIFFICULTIES ENCOUNTERED IN THE WORK

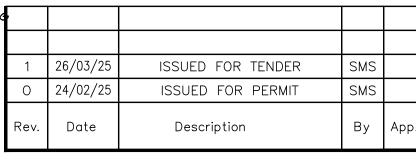
ARISING OUT OF CONDITIONS EXISTING AT

NEW UNLESS NOTED AS BEING EXISTING

GENERAL NOTES

- PERFORMED. DRAWINGS ARE BASED ON THE BEST INFORMATION AVAILABLE BUT ARE SUBJECT TO VERIFICATION. VERIFY EXACT LOCATION AND ELEVATION OF ALL SERVICES PRIOR TO COMMENCING ANY WORK. FAILURE TO TO PERFORM SUCH VERIFICATIONS WHICH CAUSE DEFICIENCIES SHALL BE CORRECTED
- 4. CO-ORDINATE INSTALLATION OF DUCTWORK, PIPING, EQUIPMENT ETC. WITH ARCHITECTURAL, STRUCTURAL, ELECTRICAL & FIRE PROTECTION TRADES PRIOR TO INSTALLATION

AT NO EXPENSE TO OWNER



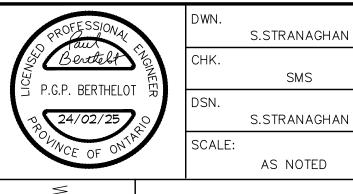
BERTHELOT ENGINEERING LTD

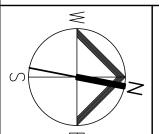
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SPECIFICATIONS - MECHANICAL