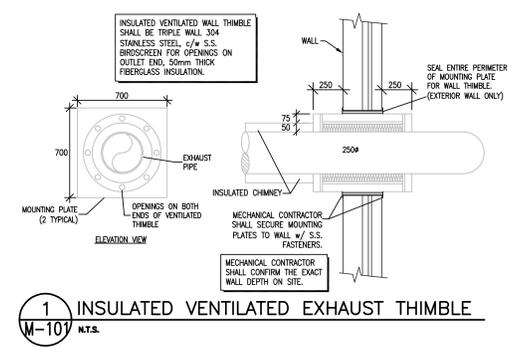
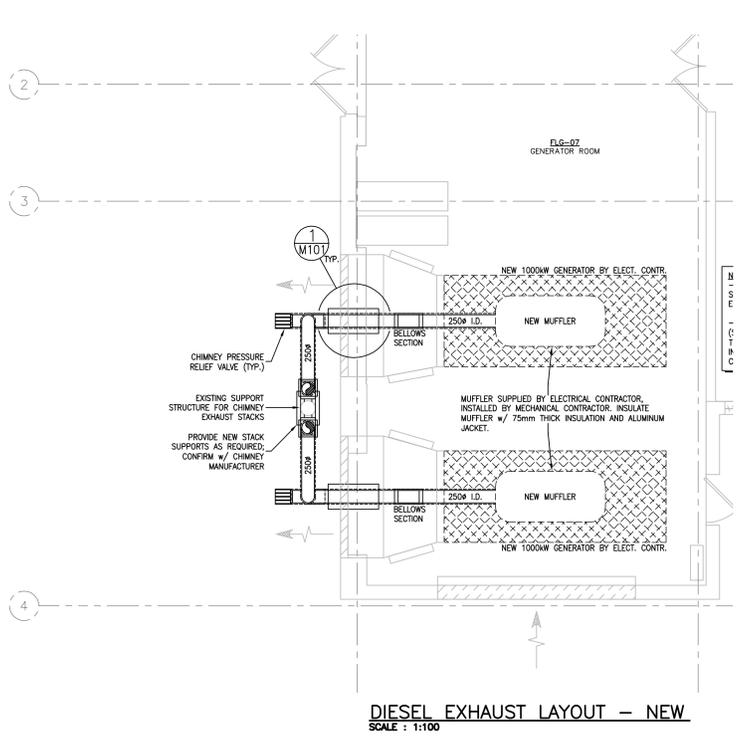
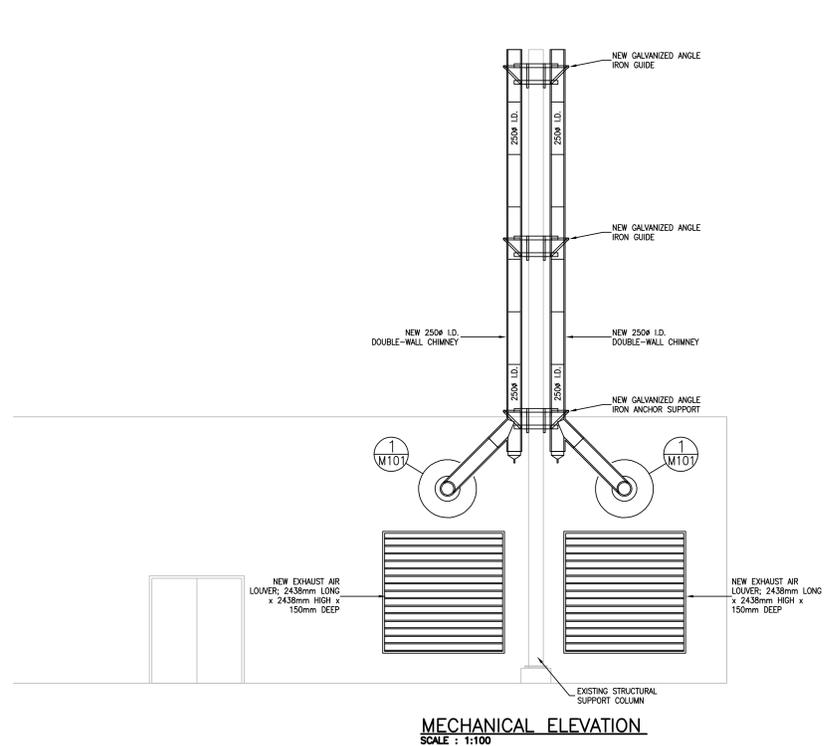
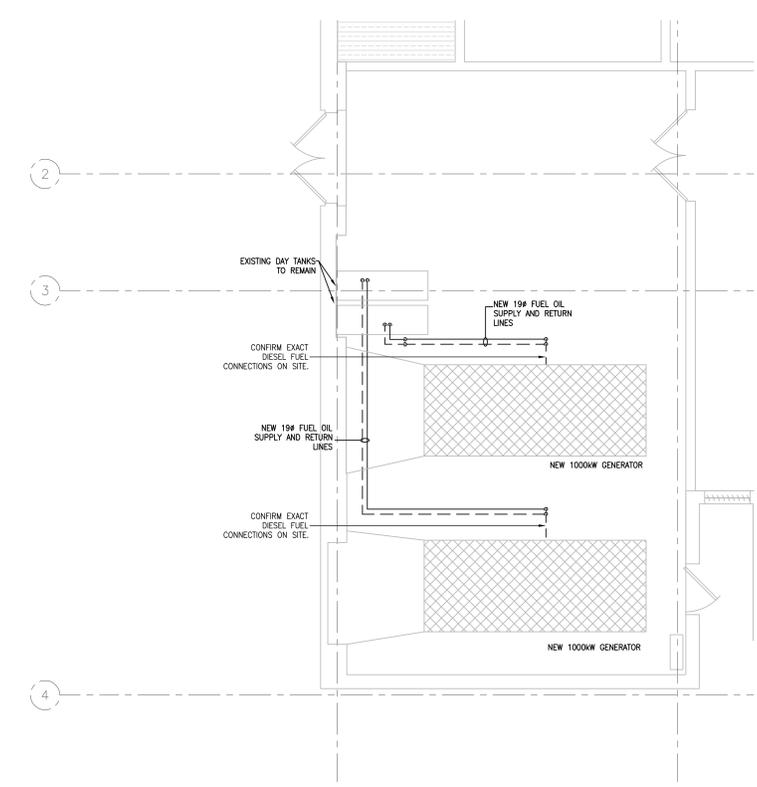
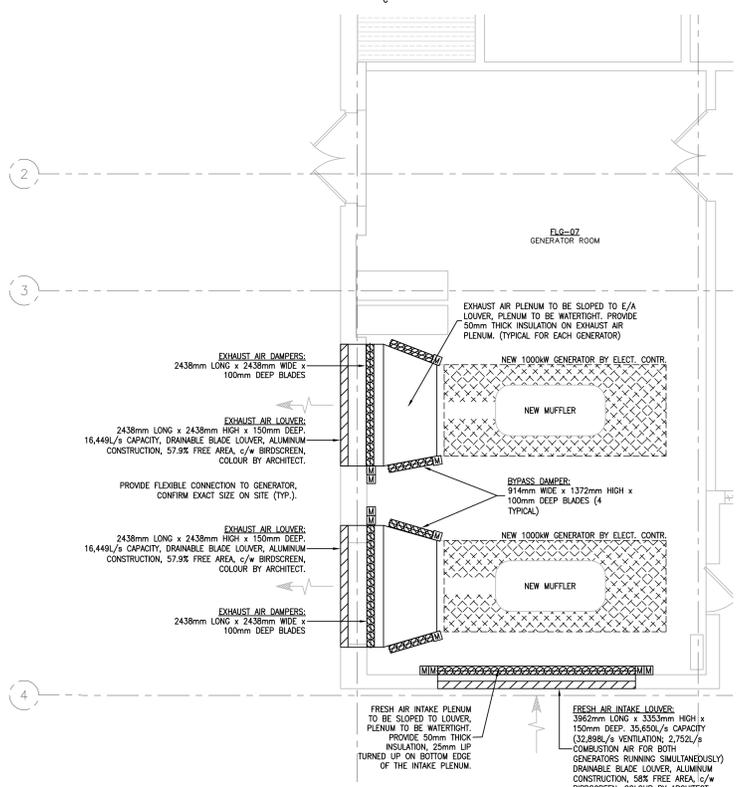
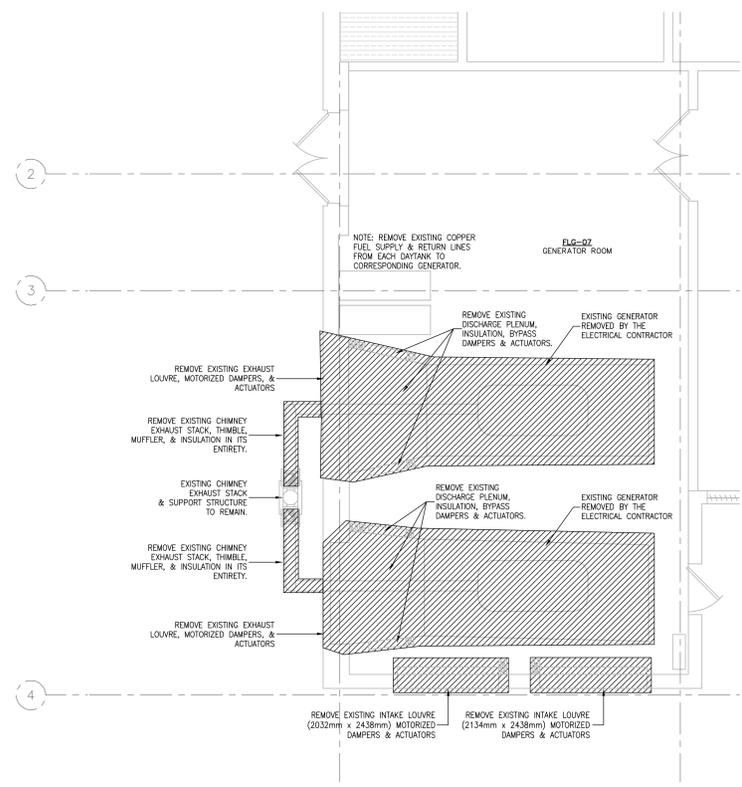


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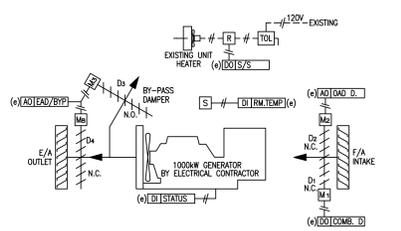
ALL DIMENSIONS SHOWN ON STRUCTURAL DRAWINGS ARE FOR REFERENCE PURPOSES ONLY. REFER TO ARCHITECTURAL DRAWINGS FOR DIMENSIONS.



SEQUENCE OF OPERATION:
ON A CALL FOR HEAT, AUXILIARY SWITCH ON TSTAT (T1) CLOSURES AND ENGAGES THE UNIT HEATERS. WHEN GENERATOR STARTS, THE COMBUSTION AIR DAMPER (D1) IS OPENED AND AIR FROM THE COOLING RADIATOR IS DIRECTED TO THE NORMALLY OPEN BY-PASS DAMPER (D3) TO THE ROOM ON A RISE IN ROOM TEMPERATURE, BY-PASS DAMPER (D3) WILL BEGIN TO MODULATE CLOSED AND THE NORMALLY CLOSED FRESH AIR AND EXHAUST AIR DAMPERS (D2&4) WILL MODULATE OPEN TO MAINTAIN TEMPERATURE SETPOINT. ALL MODULATING DAMPERS WORK TOGETHER TO MAINTAIN TEMPERATURE SETPOINT.

NOTE:
ALL CONTROL COMPONENTS AND WIRING SHALL BE PROVIDED BY THE CONTROLS CONTRACTOR. THE CONTROLS CONTRACTOR (i.e. CONTROLS & EQUIPMENT) SHALL BE A SUB-CONTRACTOR TO THE MECHANICAL CONTRACTOR.

THE FOLLOWING IS A LIST OF NEW BACNET INPUT SIGNALS FROM THE NEW ELECTRICAL EQUIPMENT:
(a) [D1] SWITCH/SENSOR DIGITAL WIRELESS
(a) [D2] AUTOMATIC TRANSFER SWITCH #1
(a) [D3] GENERATOR PARALLELING CONTROL SWITCH/SENSOR



LEGEND
D1 DAMPER No.1, COMBUSTION AIR INSULATED DAMPER
D2 DAMPER No.2, FRESH AIR INSULATED DAMPER
D3 DAMPER No.3, BY-PASS INSULATED DAMPER (2 TYP.)
D4 DAMPER No.4, EXHAUST AIR INSULATED DAMPER
M1 COMBUSTION AIR DAMPER ACTUATOR, BELIMO, 24V, TWO POSITION.
M2 F/A DAMPER ACTUATOR, BELIMO 24V, MODULATING.
M3 BY-PASS AIR DAMPER ACTUATOR, BELIMO 24V, MODULATING.
M4 E/A DAMPER ACTUATOR, BELIMO 24V, MODULATING.
S1 TEMPERATURE SENSOR, 0-100
S2 OUTPUT 24V AUXILIARY SWITCH AND TEMPERATURE DISPLAY.

NOTES:
- ALL MOTORIZED DAMPERS ARE NEW AND SHALL BE SUPPLIED BY THE CONTROLS CONTRACTOR & INSTALLED BY THE MECHANICAL CONTRACTOR.
- ALL DAMPER ACTUATORS ARE NEW AND SHALL BE SUPPLIED & INSTALLED BY THE CONTROLS CONTRACTOR.
- CONFIRM THE QUANTITY OF DAMPER ACTUATORS WITH THE NUMBER OF DAMPER SCHEMATIC.



4	ISSUED FOR TENDER	09/23/2016
3	RE-ISSUED FOR 100% REVIEW	07/18/2016
2	ISSUED FOR 100% REVIEW	06/15/2016
1	ISSUED FOR 70% REVIEW	04/05/2016

BIO GENERATOR UPGRADES FOR CAMPUS HEATING SYSTEM
BEDFORD INSTITUTE OCEANOGRAPHY
DARTMOUTH - NS
MECHANICAL LAYOUTS AND DETAILS

designed TDM
date MAR 2016
drawn LAH
date MAR 2016
approved
date
Tender Submission
PWSC Project Manager Administrateur de projets TPSGC
project number no. du projet
R.080319.001
drawing no. no. du dessin
M-101