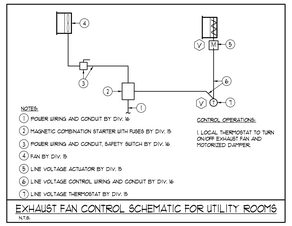
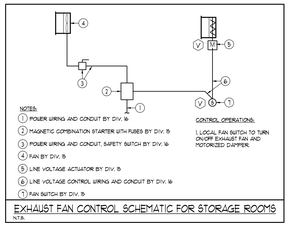
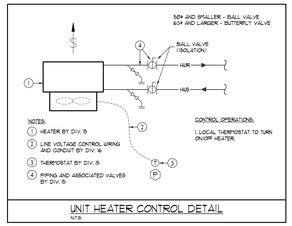


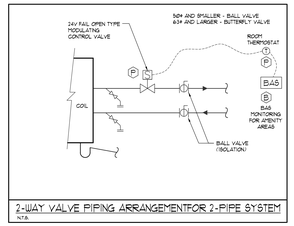
EXHAUST FAN CONTROL SCHEMATIC FOR UTILITY ROOMS
N.T.S.



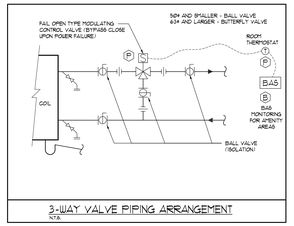
EXHAUST FAN CONTROL SCHEMATIC FOR STORAGE ROOMS
N.T.S.



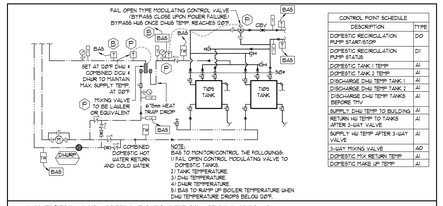
UNIT HEATER CONTROL DETAIL
N.T.S.



2-WAY VALVE PIPING ARRANGEMENTFOR 2-PIPE SYSTEM
N.T.S.

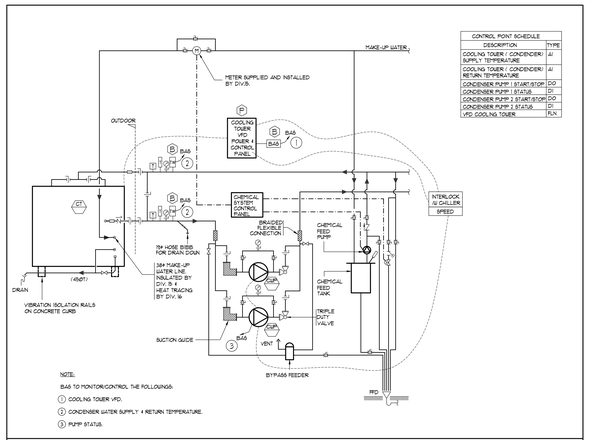


3-WAY VALVE PIPING ARRANGEMENT
N.T.S.



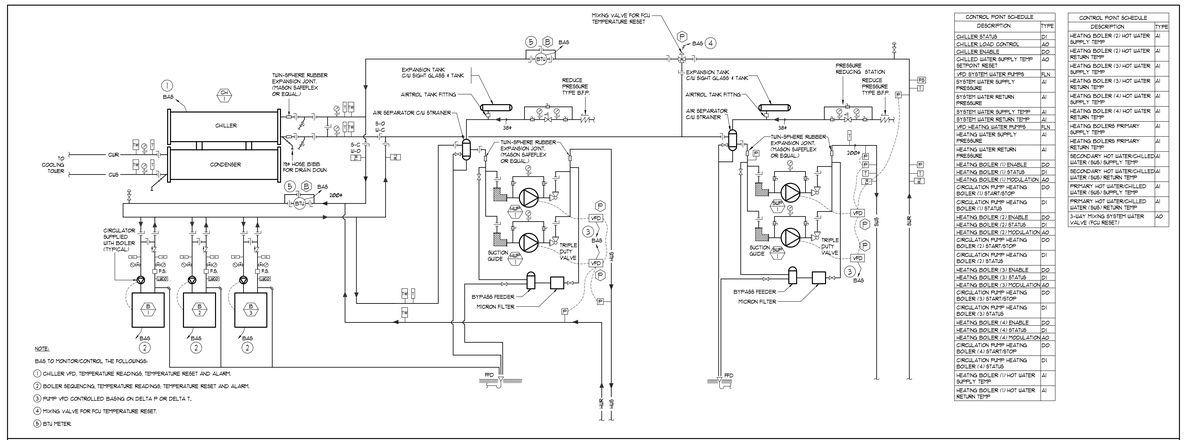
CONTROL POINT SCHEDULE	
DESCRIPTION	TYPE
DOMESTIC RECIRCULATION PUMP START/STOP	DO
DOMESTIC RECIRCULATION PUMP STATUS	DI
DOMESTIC TANK 1 TEMP	AI
DOMESTIC TANK 1 TEMP	AI
DISCHARGE DHW TEMP TANK 1	AI
DISCHARGE DHW TEMP TANKS BEFORE TMV	AI
SUPPLY DHW TEMP TO BUILDING	AI
RETURN HW TEMP TO TANKS AFTER 3-WAY VALVE	AI
SUPPLY HW TEMP AFTER 3-WAY VALVE	AI
3-WAY MIXING VALVE	AO
DOMESTIC MIX RETURN TEMP	AI
DOMESTIC MAKE UP TEMP	AI

DOMESTIC HOT WATER TANK DETAIL (TURBOMAX)
N.T.S.



CONTROL POINT SCHEDULE	
DESCRIPTION	TYPE
COOLING TOWER 1 CONDENSER/ SUPPLY TEMPERATURE	AI
COOLING TOWER 1 CONDENSER/ RETURN TEMPERATURE	AI
CONDENSER PUMP 1 START/STOP	DO
CONDENSER PUMP 1 STATUS	DI
CONDENSER PUMP 2 START/STOP	DO
CONDENSER PUMP 2 STATUS	DI
VFD COOLING TOWER	PLN

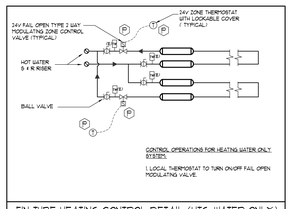
RESIDENTIAL COOLING TOWER CONTROL SCHEMATIC
N.T.S.



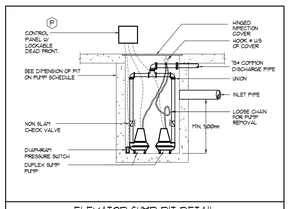
CONTROL POINT SCHEDULE	
DESCRIPTION	TYPE
CHILLER STATUS	DI
CHILLER LOAD CONTROL	AO
CHILLER ENABLE	DO
CHILLED WATER SUPPLY TEMP SETPOINT RESET	AO
VFD SYSTEM WATER PUMPS	PLN
SYSTEM WATER SUPPLY PRESSURE	AI
SYSTEM WATER RETURN PRESSURE	AI
SYSTEM WATER SUPPLY TEMP	AI
SYSTEM WATER RETURN TEMP	AI
VFD HEATING WATER PUMPS	PLN
HEATING WATER SUPPLY PRESSURE	AI
HEATING WATER RETURN PRESSURE	AI
HEATING BOILER (1) ENABLE	DO
HEATING BOILER (1) STATUS	DI
HEATING BOILER (1) MODULATION	AO
CIRCULATION PUMP-HEATING BOILER (1) START/STOP	DO
CIRCULATION PUMP-HEATING BOILER (1) STATUS	DI
HEATING BOILER (2) ENABLE	DO
HEATING BOILER (2) STATUS	DI
HEATING BOILER (2) MODULATION	AO
CIRCULATION PUMP-HEATING BOILER (2) START/STOP	DO
CIRCULATION PUMP-HEATING BOILER (2) STATUS	DI
HEATING BOILER (3) ENABLE	DO
HEATING BOILER (3) STATUS	DI
HEATING BOILER (3) MODULATION	AO
CIRCULATION PUMP-HEATING BOILER (3) START/STOP	DO
CIRCULATION PUMP-HEATING BOILER (3) STATUS	DI
HEATING BOILER (4) ENABLE	DO
HEATING BOILER (4) STATUS	DI
HEATING BOILER (4) MODULATION	AO
CIRCULATION PUMP-HEATING BOILER (4) START/STOP	DO
CIRCULATION PUMP-HEATING BOILER (4) STATUS	DI
HEATING BOILER (1) HOT WATER SUPPLY TEMP	AI
HEATING BOILER (1) HOT WATER RETURN TEMP	AI

CONTROL POINT SCHEDULE	
DESCRIPTION	TYPE
HEATING BOILER (2) HOT WATER SUPPLY TEMP	AI
HEATING BOILER (2) HOT WATER RETURN TEMP	AI
HEATING BOILER (3) HOT WATER SUPPLY TEMP	AI
HEATING BOILER (3) HOT WATER RETURN TEMP	AI
HEATING BOILER (4) HOT WATER SUPPLY TEMP	AI
HEATING BOILER (4) HOT WATER RETURN TEMP	AI
HEATING BOILERS PRIMARY SUPPLY TEMP	AI
HEATING BOILERS PRIMARY RETURN TEMP	AI
SECONDARY HOT WATER/CHILLED WATER/BUS SUPPLY TEMP	AI
SECONDARY HOT WATER/CHILLED WATER/BUS RETURN TEMP	AI
PRIMARY HOT WATER/CHILLED WATER/BUS SUPPLY TEMP	AI
PRIMARY HOT WATER/CHILLED WATER/BUS RETURN TEMP	AI
3-WAY MIXING SYSTEM WATER VALVE (FCU RESET)	AO

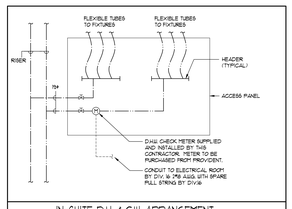
RESIDENTIAL SYSTEM WATER CONTROL SCHEMATIC
N.T.S.



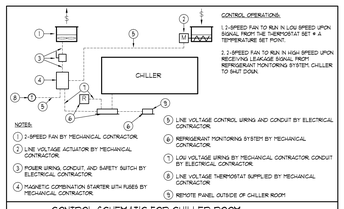
FIN TUBE HEATING CONTROL DETAIL (HTG. WATER ONLY)
N.T.S.



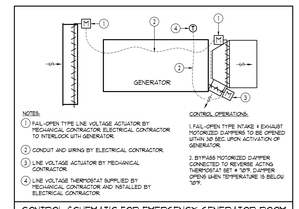
ELEVATOR SUMP PIT DETAIL
N.T.S.



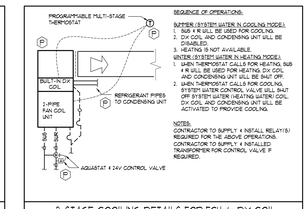
IN-SUITE D.H. & C.W. ARRANGEMENT
N.T.S.



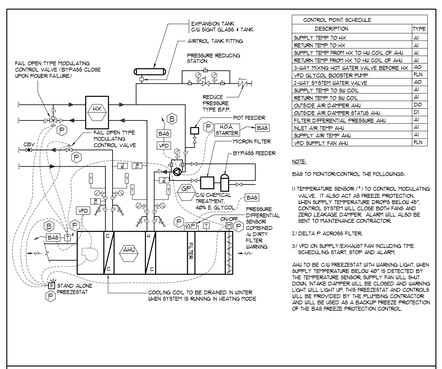
CONTROL SCHEMATIC FOR CHILLER ROOM
N.T.S.



CONTROL SCHEMATIC FOR EMERGENCY GENERATOR ROOM
N.T.S.



2-STAGE COOLING DETAILS FOR FCU /w DX COIL
N.T.S.



CONTROL POINT SCHEDULE	
DESCRIPTION	TYPE
SUPPLY TEMP TO HX	AI
RETURN TEMP TO HX	AI
SUPPLY TEMP FROM HX TO HG COIL OF AHU	AI
RETURN TEMP FROM HX TO HG COIL OF AHU	AI
3-WAY MIXING HOT WATER VALVE BEFORE HX	AO
VFD GLYCOL BOOSTER PUMP	PLN
2-WAY SYSTEM WATER VALVE	AO
SUPPLY TEMP TO BU COIL	AI
RETURN TEMP TO BU COIL	AI
OUTSIDE AIR DAMPER AHU	DO
OUTSIDE AIR DAMPER STATUS AHU	DI
FILTER DIFFERENTIAL PRESSURE AHU	AI
INLET AIR TEMP AHU	AI
SUPPLY AIR TEMP AHU	AI
VFD SUPPLY FAN AHU	PLN

NOTE:
BAS TO MONITOR/CONTROL THE FOLLOWING:
1) TEMPERATURE SENSOR (*) TO CONTROL MODULATING VALVE. IT ALSO ACT AS FREEZE PROTECTION. WHEN SUPPLY TEMPERATURE DROPS BELOW 40°, CONTROL SYSTEM WILL CLOSE BOTH FANS AND ZERO LEAKAGE DAMPER. ALARM WILL ALSO BE SENT TO MAINTENANCE CONTRACTOR.
2) DELTA P ACROSS FILTER.
3) VFD ON SUPPLY/EXHAUST FAN INCLUDING TIME SCHEDULING START, STOP AND ALARM.

AHU TO BE C/W FREEZESTAT WITH WARNING LIGHT. WHEN SUPPLY TEMPERATURE BELOW 40° IS DETECTED BY THE TEMPERATURE SENSOR, SUPPLY FAN WILL SHUT DOWN, HX/HG DAMPER WILL BE CLOSED AND WARNING LIGHT WILL LIGHT UP. THIS FREEZESTAT AND CONTROLS WILL BE PROVIDED BY THE PLUMBING CONTRACTOR, AND WILL BE WIRED AS A BACKUP FREEZE PROTECTION OF THE BAS FREEZE PROTECTION CONTROL.

NON-HEAT RECOVERY AHU CONTROL DETAIL
N.T.S.

GENERAL NOTES:

CONTRACTOR TO PROVIDE LOCAL CONTROLLER TO HAVE SYSTEM FULLY FUNCTIONAL AND TESTED PRIOR TO THE OCCUPANCY. ALL FRESH AIR SYSTEM TO BE COMPLETED WITH LOCAL FREEZE PROTECTION THAT WILL SHUT DOWN FAN AND FRESH AIR MOTORIZED DAMPER WHEN PRESET MINIMUM AIR TEMPERATURE IS REACHED. CONTRACTOR TO SUBMIT SHOP DRAWING TO BOTH ENGINEER AND PROVIDENT FOR APPROVAL. LOCAL CONTROLLER THAT NEEDS TO BE INTERFACED WITH BAS SHALL BE SIEMENS OR EQUAL AND SUBJECT TO PROVIDENT'S APPROVAL.

DATE	NO.	DESCRIPTION	BY
09/23/14	3	ISSUED FOR TENDER	E.P.
07/18/14	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 DEVELOPMENT CORPORATION
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Fax: 905 882-5447

DRAWING TITLE:
CONTROL DETAILS DRAWING

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

DRAWN BY:	CHECKED BY:	SCALE:
G.S.	E.P.	N.T.S.
DATE: FEB. 13	PROJECT NUMBER: 1313	DRAWING NUMBER: M-42 OF 43

Drawing name: \\CADSERVER\Current Dwg\1313\1313 - Revisions Plot\1313-15.dwg - ACCONTROL DETAIL DRAWING.dwg Plotted: Sep 23, 2014 - 4:05pm