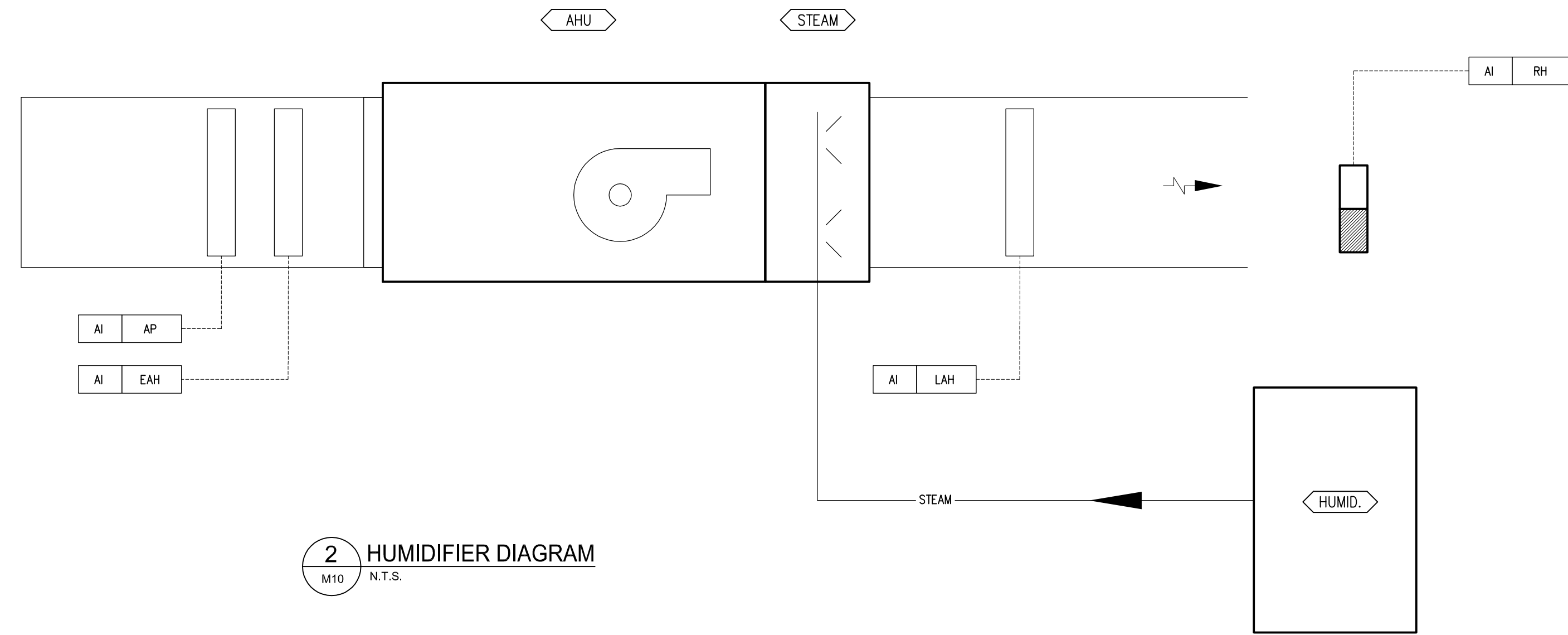


1 BOILERS DIAGRAM
M10 N.T.S.

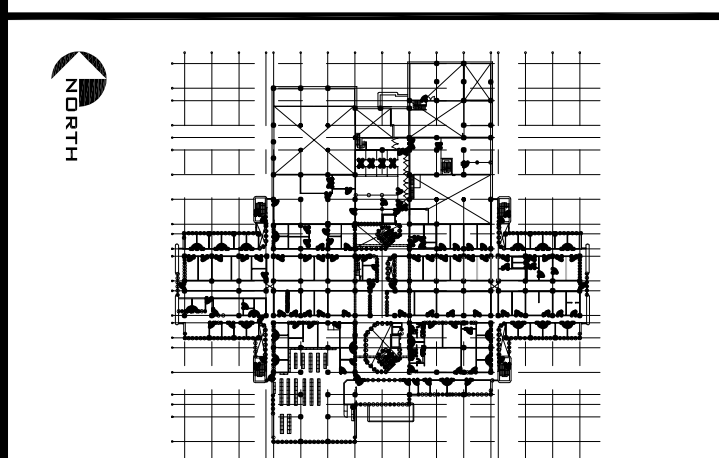
HEATING WATER SYSTEM CONTROLS POINTS				
POINT	DESIGNATION	TYPE	HARDWARE	FUNCTION
P1S	PUMP (P-1) STATUS	DI	CURRENT SENSING RELAY	MONITOR
P1SS	PUMP (P-1) ENABLE/DISABLE	DO	RELAY	CONTROL
P1SP	PUMP (P-1) SPEED	AO	VFD	CONTROL
P2S	PUMP (P-2) STATUS	DI	CURRENT SENSING RELAY	MONITOR
P2SS	PUMP (P-2) ENABLE/DISABLE	DO	RELAY	CONTROL
P2SP	PUMP (P-2) SPEED	AO	VFD	CONTROL
P23S	PUMP (P-23) STATUS	DI	CURRENT SENSING RELAY	MONITOR
P23SS	PUMP (P-23) ENABLE/DISABLE	DO	RELAY	CONTROL
P23SP	PUMP (P-23) SPEED	AO	VFD	CONTROL
P24S	PUMP (P-24) STATUS	DI	CURRENT SENSING RELAY	MONITOR
P24SS	PUMP (P-24) ENABLE/DISABLE	DO	RELAY	CONTROL
P24SP	PUMP (P-24) SPEED	AO	VFD	CONTROL
P1DP	PUMP (P-1/2) DIFFERENTIAL PRESSURE	AI	DIFFERENTIAL PRESSURE SENSOR	MONITOR
P1BV	PUMP (P-1/2) BYPASS VALVE	AO	2-WAY CONTROL VALVE	CONTROL
P23DP	PUMP (P-23/24) DIFFERENTIAL PRESSURE	AI	DIFFERENTIAL PRESSURE SENSOR	MONITOR
P23BV	PUMP (P-23/24) BYPASS VALVE	AO	2-WAY CONTROL VALVE	CONTROL
HST	HEATING SUPPLY TEMPERATURE	AI	TEMPERATURE SENSORS	MONITOR
HRT	HEATING RETURN TEMPERATURE	AI	TEMPERATURE SENSORS	MONITOR
RST	RADIATION SUPPLY TEMPERATURE	AI	TEMPERATURE SENSORS	MONITOR
RRT	RADIATION RETURN TEMPERATURE	AI	TEMPERATURE SENSORS	MONITOR
OAT	OUTSIDE AMBIENT TEMPERATURE	AI	TEMPERATURE SENSORS	MONITOR
3MV	MIXING VALVE	AO	3-WAY MIXING VALVE	CONTROL
MV1	MOTORIZED ISOLATION VALVE 1	AO	MOTORIZED ISOLATION VALVE	CONTROL
MV2	MOTORIZED ISOLATION VALVE 2	AO	MOTORIZED ISOLATION VALVE	CONTROL
MV3	MOTORIZED ISOLATION VALVE 3	AO	MOTORIZED ISOLATION VALVE	CONTROL
ST	SPACE TEMPERATURE	AI	ZONES THERMOSTATS	MONITOR



HUMIDIFIER CONTROLS POINTS				
POINT	DESIGNATION	TYPE	HARDWARE	FUNCTION
AP	AIR PROVING	AI	AIR PROVING SWITCH	MONITOR
EAH	ENTERING AIR HUMIDITY	AI	HUMIDITY SENSOR	MONITOR
LAH	LEAVING AIR HUMIDITY	AI	HUMIDITY SENSOR	MONITOR
RH	ROOM HUMIDITY	AI	HUMIDITY SENSOR	MONITOR

GENERAL NOTES:

- DO NOT SCALE THIS DRAWING. CONTRACTOR SHALL VERIFY ALL DIMENSIONS PRIOR TO INSTALLATION AND REPORT ANY DISCREPANCY TO THE DEPARTMENTAL REPRESENTATIVE.
- CONTRACTOR SHALL INCLUDE FOR AND PROVIDE ALL COORDINATION BETWEEN TRADES AND CONSULTANT ON AND OFF SITE AS REQUIRED FOR INSTALLATION OF MECHANICAL AND ELECTRICAL SYSTEMS. WHERE MINOR REROUTING OF SERVICES IS REQUIRED DUE TO ON-SITE CONDITIONS, IT SHALL BE PERFORMED AT NO ADDITIONAL COST.
- FIRE STOP ALL PIPE PENETRATIONS WHERE THEY PASS THROUGH FIRE RATED WALLS. CONFIRM ON SITE FOR LOCATION OF RATED WALLS AND THEIR RATING IN HOURS.
- CONFORM TO SPECIFICATIONS AND MANUFACTURER GUIDES FOR MATERIALS AND UNITS' INSTALLATION DETAILS.
- CHECK FOR ASBESTOS BEFORE PERFORMING DEMOLITION WORK. ASBESTOS REMOVAL TO BE DONE BY OTHERS.
- PIPING ROUTE AND SIZING WAS DRAFTED BASED ON SITE MARKUPS AND ORIGINAL DRAWINGS. CONTRACTOR SHALL VERIFY ALL DIMENSIONS PRIOR TO INSTALLATION AND REPORT ANY DISCREPANCY TO THE DEPARTMENTAL REPRESENTATIVE.
- PROVIDE TEMPORARY HEATING AS REQUIRED. DO NOT USE NEW EQUIPMENT FOR THIS PURPOSE WITHOUT THE EXPRESS CONSENT OF THE ENGINEER. REFER TO DRAWING M12.
- SCHEDULING OF ALL WORK SHALL BE ARRANGED WITH THE OWNER. COORDINATE THE SHUT-DOWN OF EXISTING UTILITIES AND SERVICES AS REQUIRED FOR CONNECTIONS OF NEW WORK. WORK WITHIN THE BUILDING MAY HAVE TO BE PERFORMED DURING NON-REGULAR HOURS, AND MUST CONFORM TO THE WORK RULES OF THE BUILDING, AS DIRECTED BY THE OWNER.



BUILDING KEY PLAN

LEGEND



revisions	description	date
1	ISSUED FOR CONSTRUCTION	30-JUN-2017
0	ISSUED FOR BAC REVIEW	28-APR-2017

A	detail no.	A
C	location drawing no.	B
	our design no.	C

project

**NHRC
MECHANICAL UPGRADES
BOILERS REPLACEMENT**
NATIONAL HYDROLOGY RESEARCH CENTRE
11 INNOVATION BOULEVARD
SASKATOON, SASKATCHEWAN

drawing

**MECHANICAL CONTROL
AND DIAGRAMS**

Designed By M/G	Conçu par M/G
Date 2017/04/28	(yyyy/mm/dd)
Drawn By M/G	Dessiné par M/G
Date 2017/04/28	(yyyy/mm/dd)
Reviewed By D/H	Examiné par D/H
Date 2017/06/19	(yyyy/mm/dd)
Approved By D/H	Approuvé par D/H
Date 2017/06/23	(yyyy/mm/dd)
Tender NIKOLAS FEHR Project Manager	Administrateur de projets NIKOLAS FEHR
EC Proj no. NHRC-010	Consultant Proj no. 16131
Drawing no.	No. du dessin

M10