

PUMP SCHEDULE							
MARK	GPM	HEAD- FT.	RPM	HP	VOLTS/ø	TYPE	SERVICE
CW1	1200	60	1750	25	480/3	HORIZONTAL SPLIT CASE	CHILLED WATER
CW2	1200	60	1750	25	480/3	HORIZONTAL SPLIT CASE	CHILLED WATER
PHW1	482	18	1750	5	480/3	END SUCTION	PRIMARY HOT WATER
PHW2	482	18	1750	5	480/3	END SUCTION	PRIMARY HOT WATER
HW1	964	80	1750	30	480/3	HORIZONTAL SPLIT CASE	SECONDARY HOT WATER-BUILDING
CT1	1422	40	1150	20	480/3	HORIZONTAL SPLIT CASE	CONDENSER WATER
CT2	1422	40	1150	20	480/3	HORIZONTAL SPLIT CASE	CONDENSER WATER
ER1	109	24	1750	1 1/2	480/3	END SUCTION	ENERGY RECOVERY
ER2	89	24	1750	1 1/2	480/3	END SUCTION	ENERGY RECOVERY
ER3	154	24	1750	1 1/2	480/3	END SUCTION	ENERGY RECOVERY
ER4	128	24	1750	1 1/2	480/3	END SUCTION	ENERGY RECOVERY
HW2	12.5	17	1750	1/3	115/1	IN - LINE	SECONDARY HOT WATER-ANIMAL HOUSE

REMARKS:
1. CONSTANT SPEED
2. VARIABLE SPEED
3. ACTUAL FLOW RATE AS DICTATED BY CHILLER SELECTION
4. 30% ETHYLENE GLYCOL SOLUTION

BOILER SCHEDULE				
NO.	NET WATER RATING-MBH	INPUT NAT. GAS MBH	NO. 2 OIL GPH	BURNER VOLTS/ø
1	4817	6921	49.9	480/3
2	4817	6921	49.9	480/3

CHILLER SCHEDULE							
NO.	TONS	EVAPORATOR			CONDENSER		
		LCWT-F	GPM	MAX. P.D.	EW-T-F	GPM	MAX. P.D.
1	500	42	1200	22'	85	1422	22'
2	500	42	1200	22'	85	1422	22'

EXHAUST FAN SCHEDULE									
NO.	CFM	S.P. IN.	HP	AMPS	RPM	VOLTS/ PHASE	WHEEL DIA. IN.	TYPE	SERVICE
1	4000	1/2	3/4	-	777	480/3	22.25	B.I. CENTRIFUGAL	MECH. RM.
2	3000	1/2	3/4	-	968	480/3	18.25	B.I. CENTRIFUGAL	BOILER RM.
3	3050	3/4	3/4	-	791	480/3	22.25	B.I. CENTRIFUGAL	ANIMAL HOLDING
4	750	3/4	1/3	-	1245	115/1	12.25	B.I. CENTRIFUGAL	RADIOISOTOPE
5	310	3/8	1/4	-	1200	115/1	11.19	INLINE CENTRIFUGAL	FLAMMABLE STOR.

- ① THERMOSTATICALLY CONTROLLED
② FURNISH & INSTALL DISCONNECT SWITCH AT FAN LOCATION
③ BELT DRIVE
④ DIRECT DRIVE
⑤ EXPLOSIONPROOF CONSTRUCTION AND MOTOR

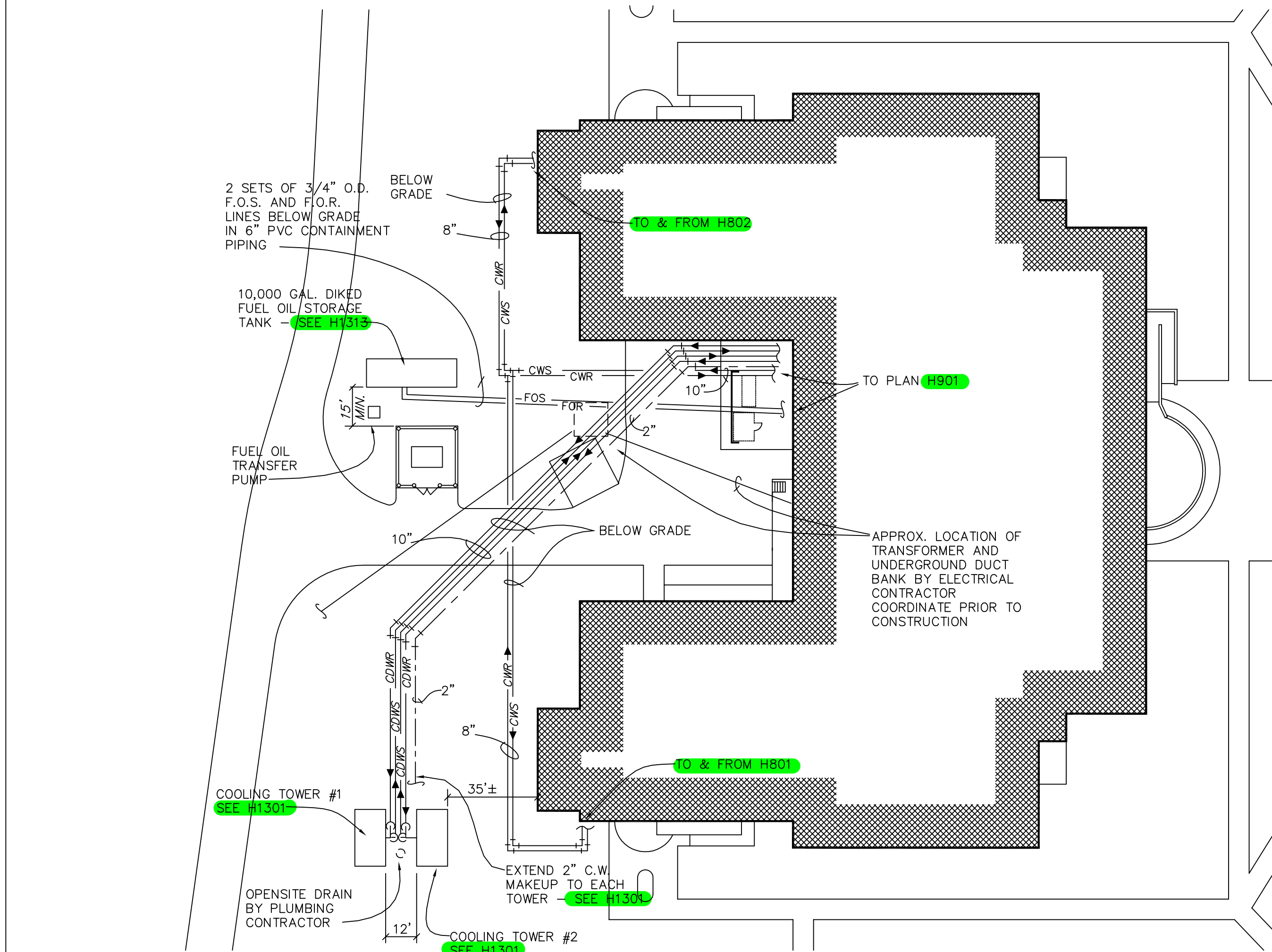
H&AC UNIT SCHEDULE																			
NO.	FAN					COOLING COIL ①					REHEAT COIL ②				ELECTRIC PREHEAT COIL				
	S.A. CFM	O.A. CFM	ESP IN.	RPM	HP	VOLTS/ PHASE	TC MBH	SHC MBH	EDB °F	EWB °F	SST °F	CAP MBH	EDB °F	VALVE		KW TOTAL	STAGES	KW PER STAGE	VOLTS/ø
														SIZE	CV				
1	2500	2500	0.30	1150	1 1/2	480/3	198.8	97.7	95	80	48.1	125.0	40	1"	12	30	3	10	480/3

- ① 500 FPM MAXIMUM COIL FACE VELOCITY
② BASED ON 200° EWT, 180° LWT AND 500 FPM MAXIMUM COIL FACE VELOCITY

FUME EXHAUST SCHEDULE ①			
PLAN DESIGNATION	DESCRIPTION	CFM	MOTORIZED DAMPERS (NO. OF) ②
[C1]	CABINET	50	4"ø
[C2]	CABINET	150	4"ø
[C3]	DARK ROOM	200	4"ø
[B1]	BENCH EXHAUSTED THIS FLOOR	125	8"ø
[B2]	BENCH EXHAUSTED THIS FLOOR	250	10"ø
[H1]	CANOPY HOOD	400	8"ø COLLAR
[S1]	SNORKEL	100	4"ø
[S2]	SNORKEL	50	4"ø
[U1]	UMBILICAL	1600	-
[U2]	UMBILICAL	800	-

- ① DOES NOT INCLUDE FUME HOODS - LF PLANS
② DUCT COLLAR OFF BACKSPASH AT 48" A.F.F.
③ ALL EXHAUST INLETS SHALL HAVE MANUAL DAMPERS FOR BALANCING PURPOSES

CONDENSING UNIT SCHEDULE				
NO.	MBH NET	SST F	AMBIENT AIR TEMP. F	VOLTS/ø
1	198.8	48.1	95	480/3



H1 01 SCIENCE BUILDING
PARTIAL SITE PLAN
SCALE: 1" = 40'-0"

COOLING TOWER SCHEDULE									
NO.	GPM	EWT F	LWT F	AMBIENT AIR WB = F	FAN			SUMP HEAT	
					CFM	HP	VOLTS/ø	KW	VOLTS/ø
1	1450	95	85	80	181,800	40	480/3	24	480/3
2	1450	95	85	80	181,800	40	480/3	24	480/3

SLOT DIFFUSER SCHEDULE									
DESIGNATION	DESIGN CFM RANGE	LENGTH IN.	SLOTS ④		BLOW PATTERN ①	THROW FT. ②	DUCT CONNECTION DIA.-IN.	MAX. NC. ③	CEILING TYPE
			NO.	SIZE (IN.)					
A	50-200	24	2	1	1 WAY	18	9	30	ATC
B	50-200	24	2	1	2 WAY	14	9	27	ATC
C	50-400	48	2	1	2 WAY	14	10	27	ATC
D	50-400	48	2	1	1 WAY	18	10	30	ATC
E	50-600	48	3	1	2 WAY	20	12	32	ATC
F	50-800	48	4	1	2 WAY	18	12	30	ATC
G	50-400	24	4	1	2 WAY	18	10	30	ATC
H	50-400	48	2	1	2 WAY	14	10	27	GYP. BD.

- ① SPLIT IN WIDTH OF DIFFUSER (2-WAY DISCHARGES)
② BASED ON 150 FPM VELOCITY AT LOWER AND UPPER DESIGN CFM
③ BASED ON MAXIMUM CFM AND 8db ROOM ATTENUATION
④ MAXIMUM TOTAL PRESSURE LOSS TO BE 0.20" FOR 1 SLOT DISCHARGE AND 0.10" FOR 2 SLOT DISCHARGE

H&AC LEGEND

	DUCTWORK INDICATES RISE IN DUCT IN DIRECTION OF ARROW - USE 45° ELBOWS WHEREVER POSSIBLE
	ROUND FLEXIBLE DUCTWORK
	SUPPLY AIR CFM
	CONTINUOUS DIFFUSER SIZE IN INCHES
	EXHAUST AIR CFM
	SIZE OF OPPOSED BLADE VOLUME CONTROL DAMPER IN INCHES
	SUPPLY AIR CFM
	V.A.V. SLOT DIFFUSER TYPE "E" - SEE SCHEDULE
	SUPPLY AIR CFM
	DIFFUSER SIZE IN INCHES, THROAT - FACE
	EXHAUST AIR CFM
	REGISTER SIZE IN INCHES
	DUCT SIZE IN INCHES WITH 1" DUCT LINER AS REQUIRED
	DUCT SIZE IN INCHES WITHOUT DUCT LINER
	FLAT OVAL DUCT DIMENSIONS IN INCHES - MAJOR AXIS x MINOR AXIS
	10" ROUND DUCT
	MANUAL MOTOR SENTINEL - 40" A.F.F.
	ELECTRICAL OUTLET BY ELECTRICAL CONTRACTOR
	A.F.C. ABOVE FINISHED CEILING
	A.F.F. ABOVE FINISHED FLOOR
	A.F.G. ABOVE FINISHED GRADE
	B.A.S. BUILDING AUTOMATION SYSTEM
	B.D. BACKDRAFT DAMPER
	B.F.C. BELOW FINISHED CEILING
	B.F.F. BELOW FINISHED FLOOR
	B.F.G. BELOW FINISHED GRADE
	COND. CONDENSATE
	E.B. EXHAUST BLOWER
	E.F. EXHAUST FAN
	EX. EXHAUST
	E.U. EXHAUST UNIT
	F.D.2 FIRE DAMPER IN 2 HOUR RATED WALL OR FLOOR
	H&AC HEATING AND AIR CONDITIONING
	M.S. MOTOR STARTER
	N.I.C. NOT IN CONTRACT
	O.A. OUTDOOR AIR
	O.B.D. OPPOSED BLADE DAMPER
	S.A. SUPPLY AIR
	U.N.O. UNLESS NOTED OTHERWISE
	V.A.V. VARIABLE AIR VOLUME
	W.P. WEATHER PROOF
	⑩ HUMIDITY SENSOR - MT. 60" A.F.F.
	⑪ PRESSURE SENSOR
	⑫ TEMPERATURE SENSOR - 60" A.F.F.
	⑬ THERMOSTAT WITH ZONE INDICATED - 40" A.F.F.
	⑭ THERMOSTAT WITH 75" - 105" TEMPERATURE RANGE - 40" A.F.F.
	⑮ DESIGNATION FOR VARIABLE AIR OR CONSTANT VOLUME TERMINAL
	⑯ INDICATES LATERAL BRANCH TAP (CONICAL TEE OR CROSS) TAKING OFF FROM MAIN AT 45° BELOW HORIZONTAL
	⑰ DIRECTION OF FLOW
	⑱ PIPE ANCHOR
	⑳ GATE VALVE
	㉑ BALANCING COCK
	㉒ GLOBE VALVE
	㉓ CHECK VALVE
	㉔ PRESSURE REDUCING VALVE
	㉕ BALL VALVE
	㉖ STRAINER
	㉗ UNION
	㉘ COLD WATER PIPING
	㉙ CONDENSATE PIPING
	㉚ CONDENSER WATER SUPPLY PIPING
	㉛ CONDENSER WATER RETURN PIPING
	㉜ CHILLED WATER SUPPLY PIPING
	㉝ CHILLED WATER RETURN PIPING
	㉞ DRAIN PAN PIPING
	㉟ FUEL OIL SUPPLY PIPING
	㊱ FUEL OIL RETURN PIPING
	㊲ GAS PIPING
	㊳ GLYCOL SUPPLY PIPING
	㊴ GLYCOL RETURN PIPING
	㊵ HOT WATER SUPPLY PIPING
	㊶ HOT WATER RETURN PIPING
	㊷ LIQUID REFRIGERANT PIPING
	㊸ SUCTION REFRIGERANT PIPING
	㊹ MOTOR STARTER WITH PUSH BUTTON ON-OFF SWITCH - 48" A.F.F.

HVAC NOTES

- LINE ALL LOW PRESSURE RECTANGULAR DUCT WITH 1" THICK, 1 1/2# DENSITY FIBERGLASS DUCT LINER, UNLESS NOTED OTHERWISE.
- ALL RECTANGULAR DUCT FOR WHICH EITHER DIMENSION IS 6" OR LESS AND ALL ROUND RIGID DUCT SHALL BE WRAPPED WITH 2" THICK FIBERGLASS WITH FOIL VAPOR BARRIER AND SHALL NOT BE LINED INTERNALLY.
- ALL RIGID DUCT DIMENSIONS ARE ACTUAL SHEET METAL SIZE IN INCHES.
- WHERE REFRIGERANT PIPES PENETRATE EXTERIOR WALLS USE SCHEDULE 40 BLACK STEEL PIPE AS SLEEVE THROUGH WALL. INSULATE BOTH PIPES THROUGH SLEEVE AND SEAL WITH MASTIC TO BE WATERTIGHT. SEE PLANS FOR SLEEVE SIZE.
- FIRE SEAL WALL PENETRATIONS PER DETAILS SHITES FP-1 AND FP-2.
- PROVIDE MANUAL BALANCING DAMPERS IN BRANCH EXHAUST DUCTS TO SNORKELS, VENTILATED CABINETS AND CANOPY HOODS
- GENERAL EXHAUST AIR QUANTITIES INDICATED ON THE DRAWINGS FOR LABORATORIES ARE APPROXIMATE MAXIMUMS AND COINCIDE WITH MINIMUM AIR FLOWS FROM FUME HOODS, DOWNDRAFT BENCHES, AND ANY OTHER EQUIPMENT WITH REGULATED EXHAUST.
- COORDINATE INSTALLATION OF EXHAUST VALVES WITHIN DOWNDRAFT, BIO/CHEM AND LECTURE BENCHES WITH LAB FURNITURE SUPPLIER.
- COORDINATE ROUTING AND TRENCHING FOR UNDERGROUND PIPING WITH PLUMBING, ELECTRICAL AND SPRINKLER CONTRACTORS. SEE P101, S101 AND E101.

TOTAL CONNECTED LOAD

COOLING COILS:		
CHILLED WATER		1159.4 TONS
DX		16.6 TONS
HEATING COILS:		
REHEAT TERMINALS		7250 MBH
PREHEAT COILS		1058 MBH
REHEAT COILS		1710 MBH
ELECTRIC		30 KW



JEFFERIES AND FARIS
ASSOCIATES
ARCHITECTS • PLANNERS

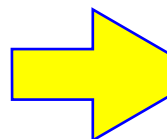
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SHEET TITLE:

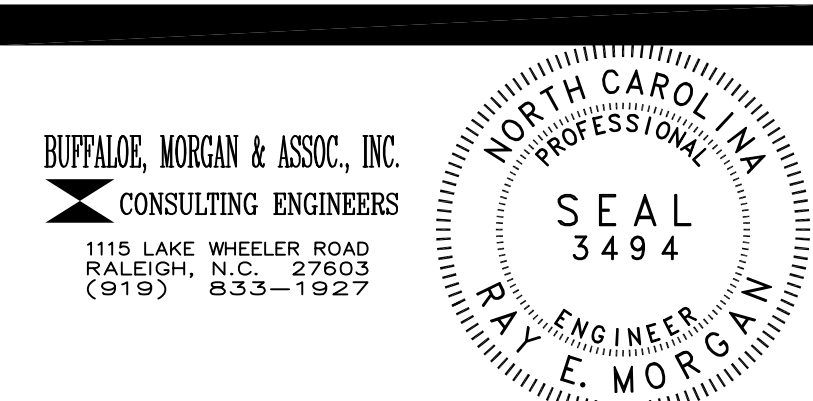
SCIENCE BUILDING - SITE PLAN
LEGEND, NOTES, LOAD



SHEET NO.:

H1

OF 13



DRAWING REVISIONS:		
NO.	DATE	REMARKS:

DATE: 16 MAY, 1994
PROJECT#: 9305

DESIGNED BY: .
DRAWN BY: DRD
CHECKED BY: WMP, REM
CHECKED BY: .