

JBG TrizecHahn
Development Services LLC

TrizecHahn
OFFICE PROPERTIES



ALBERT KAHN ASSOCIATES, INC.
ARCHITECTURE ENGINEERING PLANNING
Albert Kahn Building
7430 Second Ave.
Detroit, Michigan

Gensler
Dimit Mirkov

[illegible]

GENL	• IPBULLETIN NO. 23	• 9-28-00
GENL	• 2RS BULLETIN NO. 14	• 9-5-00
GENL	• IPBULLETIN NO. 8	• 8-4-00
GENL	• IPADDOENDUM NO. 1	• 6-7-00
GENL	• IPBIO	• 5-31-00
GENL	• IPPERMAT	• 5-8-00
pkg.	issued for	date

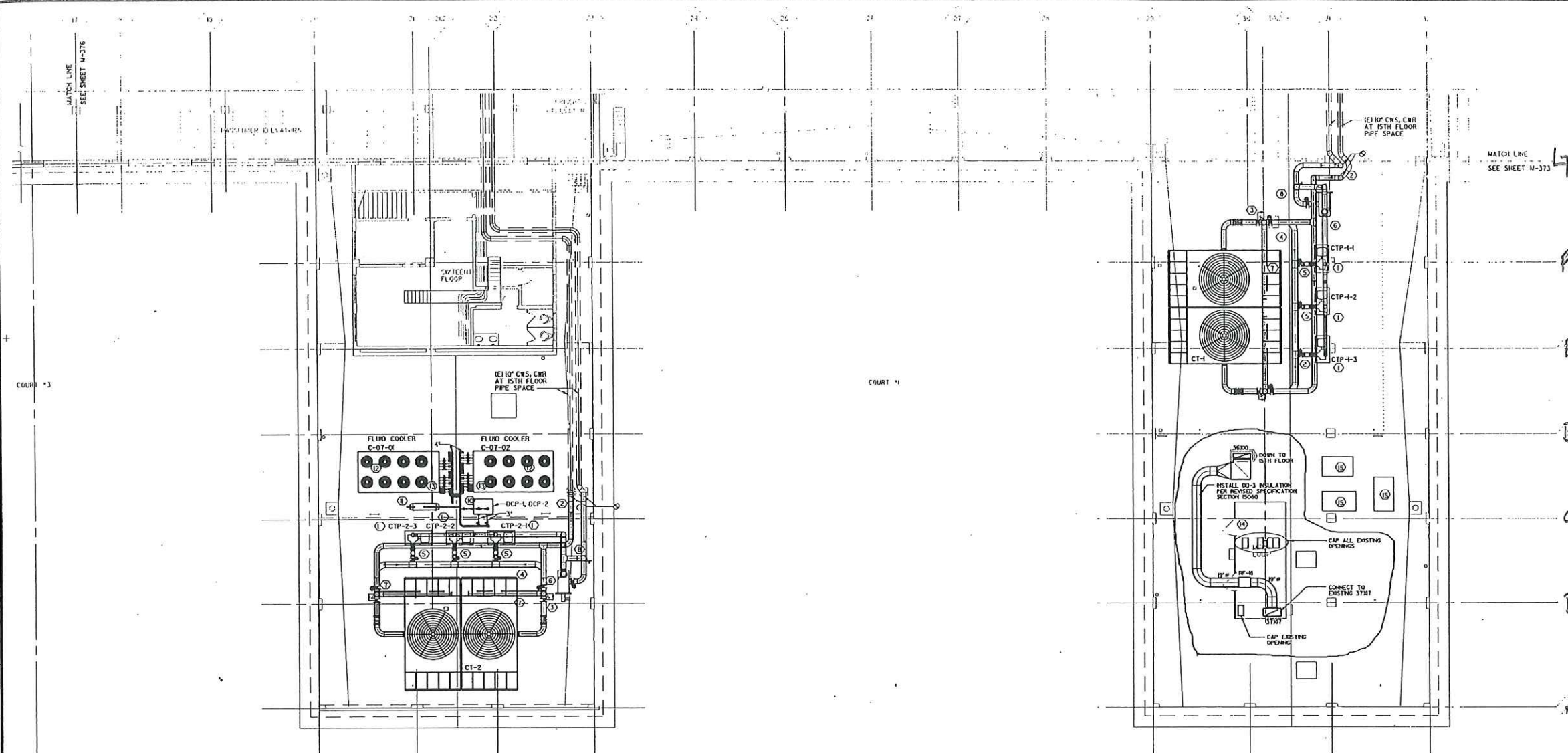
**NEW
OFFICE CENTER**

in charge M. G. VATERS

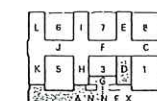
designed	EDY
drawn	JGG
checked	
approved	<i>P. J. Jander</i> date 5-31-00
sheet title	

PENTHOUSE /ROOF PLAN
AREA 2 -
HVAC AND PIPING

job number	sheet number
0902AR	M-374



1. REWORK EXISTING BELL & GOSSETT VSC PUMPS TO NEW OPERATING CONDITIONS. PROVIDE SCHED 40S 1/2" N-50.
2. CONNECT TO AND EXTEND EXISTING 10" SUPPLY AND RETURN LINES FROM ROOF PENETRATION TO THE COOLING TOWERS.
3. MOTORIZED 3 WAY DIVERTING BYPASS VALVE.
4. 12" CONDENSER WATER SUPPLY BELOW THE 10" CONDENSER WATER RETURN. SUPPLY LINE INSTALL AS LOW AS POSSIBLE BUT NOT BELOW THE PUMP'S SUCTIONS CONNECTIONS. PROVIDE A BUTTERFLY VALVE AND FLEX CONNECT AT THE TOWER OUTLET CONNECTION.
5. 8" BUTTERFLY VALVE, BASKET STRAINER, FLEX CONNECT. ECCENTRIC REDUCER AT PUMP INLETS. STRAINER SCREEN TO HAVE 1/4" PERFORATIONS. PROVIDE PRESSURE GAUGE CONNECTIONS AT THE INLETS AND OUTLETS OF THE STRAINERS.
6. AUTOMATIC STRAINER WITH 0.005" PARTICLE REMOVAL CAPABILITY.
7. 10" BY-PASS PIPE ABOVE COOLING TOWER SUMP
8. 10" ISOLATION BUTTERFLY VALVE AND NYE STRAINER IN VERTICAL PORTION OF THE BY-PASS. STRAINER SCREEN TO HAVE 1/4" PERFORATIONS.
9. INSULATE AND HEAT TRACE ALL PIPING ON THE ROOF
10. EXPANSION TANK WITH PRESSURE RELIEF, SIGHT GLASS AND DRAIN
11. 4" GLYCOL-WATER SUPPLY, 4" RETURN DN
12. FLUID COOLERS W/ VA SUPPLY AND RETURN COON TO 4" HEADERS.
13. INSTALL THERMOWATERS ON SUPPLY AND RETURN TO FLUID COOLERS
14. EXISTING ROOFTOP PENTHOUSE HOUSING SHALL REMAIN, ALL MECHANICAL EQUIPMENT/DEVICES INSIDE THE HOUSING SHALL BE REMOVED, INCLUDING ALL ELECTRICAL ACCESSORIES. PROVIDE DISCONNECT ELECT. POWER EXTEND NEW SUPPLY/RETURN DUCTS TO EXISTING SUPPLY/RETURN RISERS BELOW. PATCH AND REPAIR ALL EXISTING ROOF PENETRATIONS. SHALL BE CONSTRUCTED WATER TIGHT AND APPLIED WITH EXTERNAL INSULATION PER SPECIFICATION. PATCH ANY UNREPAIRED PENETRATIONS AND ENSURE WATER-TIGHT.
15. REMOVE EACH EXISTING ROOFTOP CONDENSER AND MOUNTING FRAMES. REMOVE ALL PIPING AND DISCONNECT ELECT. POWER.



SCALE 1/8" = 1'-0"



PENTHOUSE /ROOF PLAN - AREA 2
HVAC AND PIPING
SCALE: 1/8" = 1'-0"

26-JUL-2001 11:04
NAME: E. YONKERS
TABLE: 4HVAC
SCALE: 1/8"
SHEET #: M-374
\\dgn\41602.dgn



STATE OF MICHIGAN
DEPARTMENT OF MANAGEMENT
AND BUDGET

JBG TrizecHahn
Development Services LLC

TrizecHahn
OFFICE PROPERTIES



ALBERT KAHN ASSOCIATES, INC.
ARCHITECTURE ENGINEERING PLANNING
Albert Kahn Building
7430 Second Ave.
Detroit, Michigan

Gensler
Detroit, Michigan

GENL - MIBULLETIN NO. 8 - 8-4-00
GENL - MIBADDENDUM NO. 4 - 6-28-00
GENL - MIBADDENDUM NO. 2 - 6-14-00
GENL - MIBADDENDUM NO. 1 - 6-7-00
GENL - MIBBD - 5-31-00
GENL - MIBPMAT - 5-8-00
pkg. issued for date

STATE OF MICHIGAN

NEW
OFFICE CENTER

DETROIT, MICHIGAN

in charge M. G. VATERS
designed EDY
drawn JGG
checked
approved *P. J. J. J.* date 5-31-00
sheet title

PENTHOUSE /ROOF PLAN
AREA 3 -
HVAC AND PIPING

job number sheet number
0902AR M-375



SCALE 1/8" = 1'-0"



PENTHOUSE /ROOF PLAN - AREA 3
HVAC AND PIPING
SCALE 1/8" = 1'-0"

NAME: E. J. J. J.
TABLE: HVAC
SHEET: M-375
DATE: 5/31/00
REV: 1

STATE OF MICHIGAN
DEPARTMENT OF MANAGEMENT
AND BUDGET

JBG  TrizecHahn
Development Services LLC

TrizecHahn
OFFICE PROPERTIES



ALBERT KAHN ASSOCIATES, INC.
ARCHITECTURE • ENGINEERING • PLANNING

Albert Kahn Building
7430 Second Ave.
Detroit, Michigan

Gensler
Detroit, Michigan

GENL.	• IPIBULLETIN NO. 8	• 8-4-00
GENL.	• IPIADDENDUM NO. 1	• 6-7-00
GENL.	• IPIBID	• 5-31-00
GENL.	• IPIPERMIT	• 5-11-00
pkg.	issued for	date

STATE OF MICHIGAN

NEW OFFICE CENTER

DETROIT, MICHIGAN

in charge M. G. VATERS

designed EDR

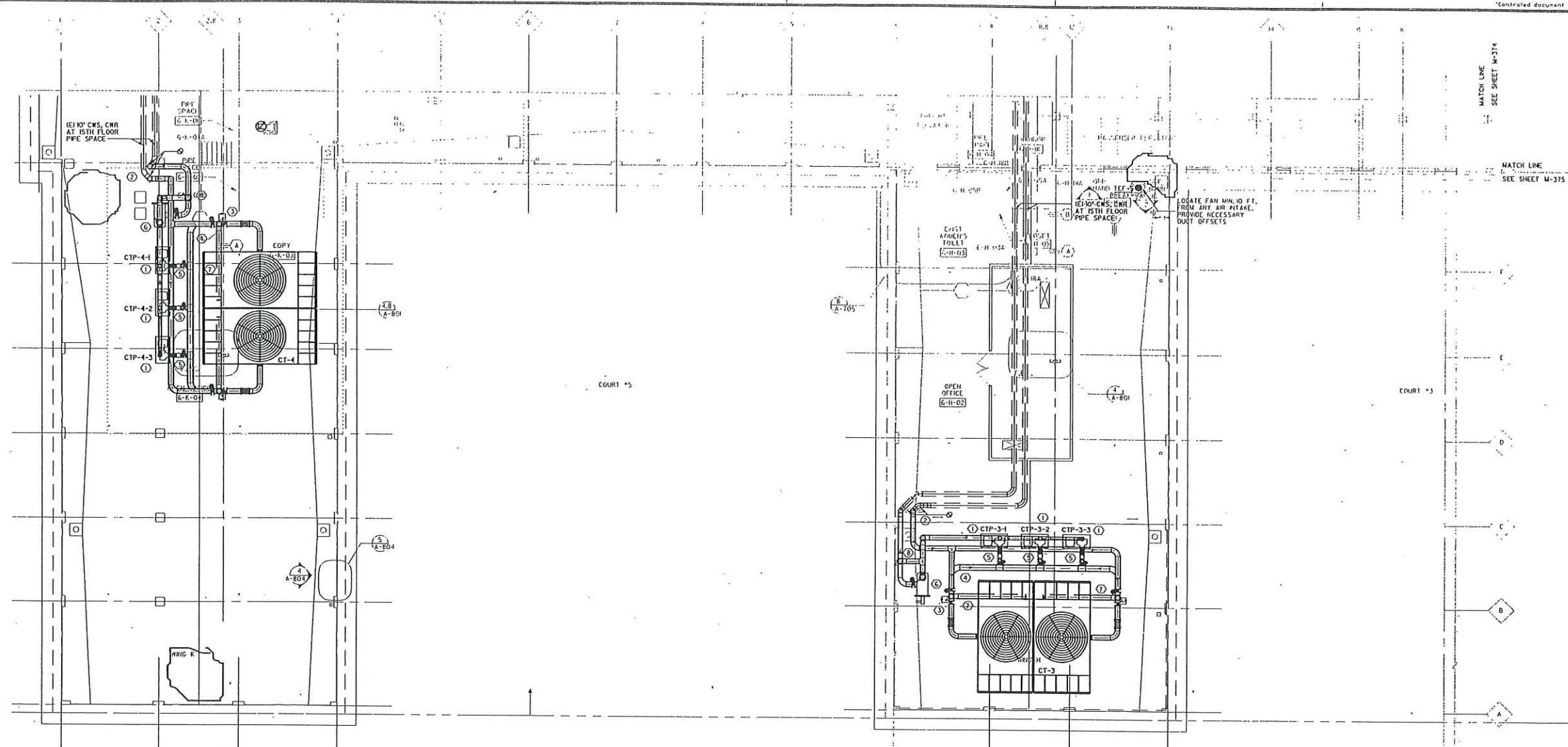
drawn JGG

checked
approved DIT 1 day 5.31.02

approved
sheet title

PENTHOUSE/ROOF PLAN
AREA 4 -
HVAC AND PIPING

job number 0902AR sheet number M-376



NOTES:

1. REMOVE EXISTING BELL & GOSSETT VSC PUMPS TO NEW OPERATING CONDITIONS. SEE SCHEDULE SHEET M-303
2. CONNECT TO AND EXTEND EXISTING 10" SUPPLY AND RETURN LINES FROM ROOF PENETRATION TO THE COOLING TOWERS.
3. MOTORIZED 3 WAY OVERTURN BYPASS VALVE.
4. 12" CONDENSER WATER SUPPLY BELOW THE 10" CONDENSER WATER RETURN. SUPPLY LINE INSTALLED 12" ABOVE VSC BUT NOT BELOW THE PUMPS SUCTIONS CONNECTIONS. PROVIDE A BUTTERFLY VALVE AND FLEX CONNECTION AT THE TOWER OUTLET CONNECTION.
5. 8" BUTTERFLY VALVE, BASKET STRAINER, FLEX CONNECTION ECCENTRIC REDUCER AT PUMP INLETS, STRAINER SCREEN TO HAVE 1/4" PERFORATIONS. PROVIDE PRESSURE GAUGE CONNECTIONS AT THE INLETS AND OUTLETS OF THE STRAINERS.
6. AUTOMATIC STRAINER WITH .0005" PARTICLE REMOVAL CAPABILITY.
7. 10" BY-PASS PIPE ABOVE COOLING TOWER SUMP
8. 10" ISOLATION BUTTERFLY VALVE AND WYE STRAINER IN VERICAL PORTION OF THE BY-PASS. STRAINER SCREEN TO HAVE 1/4" PERFORATIONS.
9. INSULATE AND HEAT TRACE ALL PIPING ON THE ROOF

PENTHOUSE/ROOF PLAN - AREA 4
HVAC AND PIPING
SCALE: 1/8" = 1' - 0"

SCALE 1/8" = 1'-0"

GENL	* P1BULLETIN NO. 72	* 5-17-01
GENL	* P1BULLETIN NO. 66	* 4-19-01
GENL	* BULLETIN NO. 63	* 03-09-01
GENL	* P1BULLETIN NO. 24	* 10-17-00
GENL	* P1ADDENDUM NO. 3	* 6-21-00
GENL	* P1ADDENDUM NO. 1	* 6-07-00
GENL	* P1BIO	* 5-31-00
GENL	* P1PERMIT	* 5-1-00
pka.	issued for	date

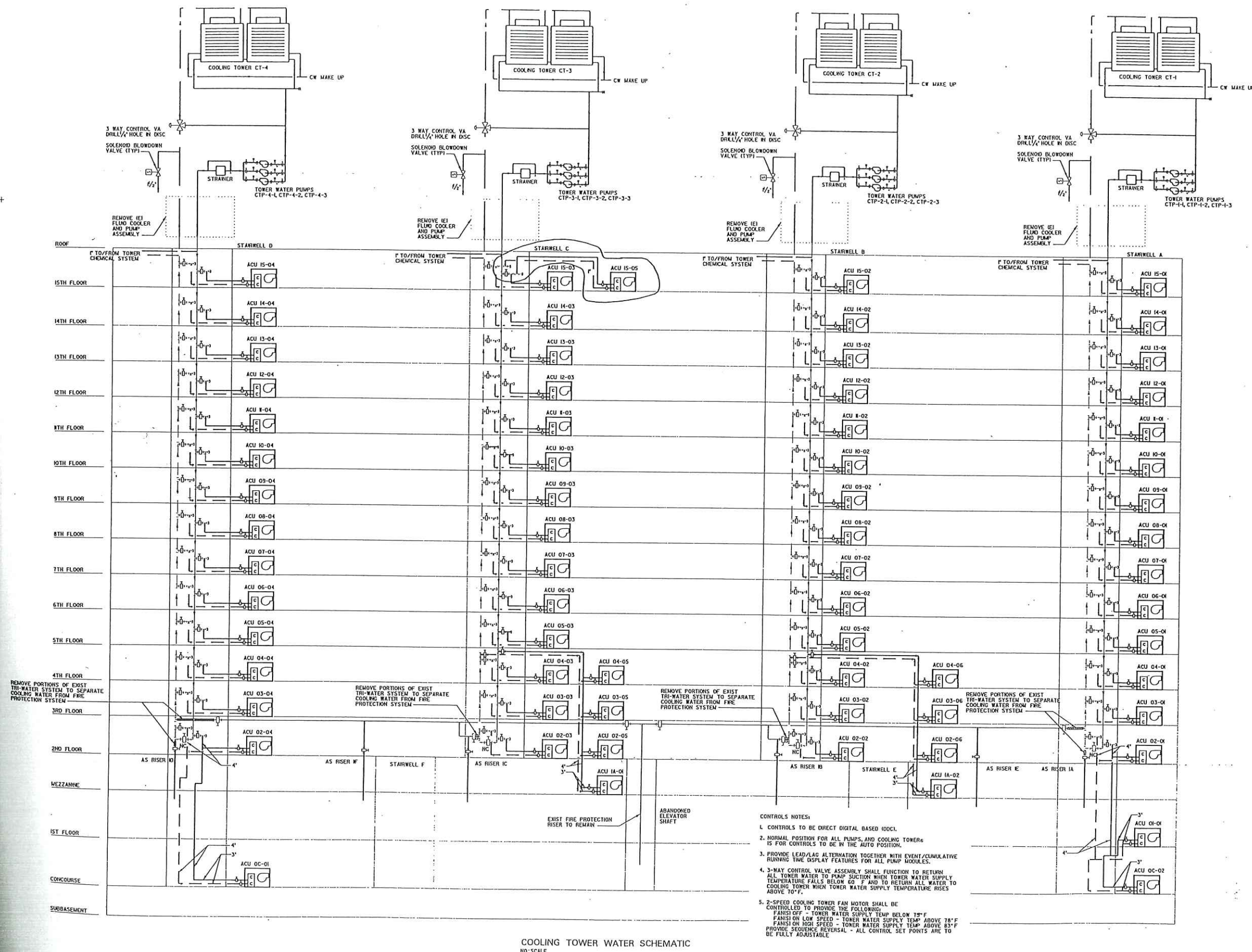
STATE OF MICHIGAN
**NEW
OFFICE CENTER**
DETROIT, MICHIGAN

in charge	W. G. VATERS
designed	EDY
drawn	EDY
checked	
approved	<i>P. J. Linder</i> date 5-31-00
sheet title	

COOLING TOWER
WATER SYSTEM
SCHEMATIC

job number sheet number

0902AR M-40



COOLING TOWER WATER SCHEMATIC
NO SCALE

JBG  TrizecHahn
Development Services LLC

TrizecHahn
OFFICE PROPERTIES



ALBERT KAHN ASSOCIATES, INC.
ARCHITECTURE ENGINEERING PLANNING

Albert Kahn Building
7430 Second Ave.
Detroit, Michigan

Gensler

[illegible]

GERL	*P2 BULLETIN NO.71	5-4-07
GERL	*P2 ADDENDUM NO.1	5-07-07
GERL	*P2 B20	3-20-07
GERL	*BULLETIN NO. 63	3-19-07
GERL	*P2 PERMIT	3/16/07
GERL	*3PI ADDENDUM NO.2	2-16-06
GERL	*3PI ADDENDUM NO.1	2-15-06
GERL	*3PIB0	1/17-04
GERL	*3PIPERMIT	12-21-01
GERL	*P2 BULLETIN NO.47	12-21-01
GERL	*PIBULLETIN NO.46	12-21-01
GERL	*PIBULLETIN NO.43	12-15-01
AMEP	*BF 16 BULLETIN NO.38,12-4-00	12-04-00
AMEP	*ZC0 B0	9-18-00
AMEP	*BF 16 BULLETIN NO.20,9-18-00	9-18-00
AMEP	*ZC0 PERMIT	9-18-00
AMEP	*BF 16 BULLETIN NO.1	9-18-00
AMEP	*BF 16 BULLETIN NO.5	7-07-00
AMEP	*PIADDENDUM NO.1	5-30-00
AMEP	*PIB0	5-30-00
AMEP	*PIPERMIT	5-04-00
AMEP	*BF 16 BULLETIN NO.1	4/19-09
pko	issued for	date

**NEW
OFFICE CENTER**

in charge	M. G. YATERS
designed	MGV
drawn	JRS
checked	MGV
approved	<i>P. J. Zander</i> date 4-19-0
sheet title	

SCHEDULES
AIR CONDITIONING
UNITS

job number	sheet number
0902AR	M-50

AIR CONDITIONING UNIT SCHEDULE																																																																														
SYSTEM			FAN AND MOTOR DATA															DX - COOLING SECTION															WATER - ECONOMIZER COIL															FILTERS					COMPRESSOR					CONDENSER					PLENUM HEIGHT					PIPE CONN.					ELEC DATA					REMARKS
REF.	AREA / LOCATION	SUPPLY CFM	MOT. CFM	FAN TYPE	FAN DISC	INLET TEMP	OUTLET TEMP	INLET W.G.	OUTLET W.G.	TOTAL IN. WG.	EST. HP	MOTOR HP	PUL RPM	MIN. VLT	ENT AIR DB	LVG AIR DB	CAPACITY TONS	SEERS HRS	NO. ROWS	FACE VEL FPM	SP. NO.	ENT AIR WB	LVG AIR WB	CAPACITY MBH	SEERS HRS	N. OUT	WPO FT.	VALVE CV	NO. OF PIPES	AREA FT ²	FACE VEL FPM	SH. INCH	TYPE	MIN. EFF %	LEAN	DRYTY	FACE AREA SQ FT	NO.	HP EACH	REF. TYPE	ENT	LVG	GPM	WOB FT.	VALVE CV	2"	2 1/2"	3"	4"	UNIT FLA	DIST DWT																											
AC-C-1	CONCOURSE FLOOR	8430	1320	DNDR	UB	FC	75°	2.0	2.5	4.5	1.5	20	920	52%	78.3	64.7	58.6	50.3	330	241	40.6	3	36.6	.80	70.0	60.5	58.6	55.5	179	164	55	53.5	100	30.0	54	4	49.1	382	0.27	TA	85	0.35	1.00	50.5	2	IS	R22	B5	95	100	10.2	50	X	X	X	100	125	3P2/PRE PURCH																				
AC-C-2	CONCOURSE FIRST FLOOR LOBBY	8450	2560	DNDR	UB	FC	75°	2.0	2.5	4.5	25.6	30	850	52%	78.3	64.7	58.6	50.3	728	536	47.0	4	49.1	382	.80	70.0	60.5	58.6	55.5	241	241	55	53.5	108	16.0	54	4	49.1	382	0.27	TA	85	0.35	1.00	50.5	3	IS	R22	B5	95	108	10.2	54	X	X	X	123.5	150	3P2/PRE PURCH																			
AC-14-1	INTERMEDIATE FLOOR - ANNEX	16650	2430	DNDR	UB	FC	75°	2.0	2.0	4.0	6.0	10	1300	52%	79.5	66.4	58.6	50.3	291	194	24.0	3	21.8	.296	.80	70.0	60.5	58.6	55.5	149	159	55	53.5	104	25.0	53	4	49.1	296	0.35	TA	85	0.35	1.00	50.5	2	IS	R22	B5	95	104	10.2	33	X	X	X	58	125	3P2/PRE PURCH																			
AC-14-1	INTERMEDIATE FLOOR - ANNEX	15590	6098	DNDR	UB	FC	75°	2.0	2.5	4.5	21.2	30	870	52%	80.6	66.6	58.6	50.3	712	486	59.3	4	49.1	387	.80	70.0	60.5	58.6	55.5	241	241	55	53.5	108	16.0	54	4	49.1	387	0.27	TA	85	0.35	1.00	50.5	3	IS	R22	B5	100.4	108	10.2	54	X	X	X	123.5	150	3P2/PRE PURCH																			
AC-14-2	INTERMEDIATE FLOOR - ANNEX	15430	4485	DNDR	UB	FC	75°	2.0	2.5	4.5	21.0	30	825	52%	79.8	66.0	58.6	50.3	673	467	56.1	3	49.1	384	.80	70.0	60.5	58.6	55.5	241	241	55	53.5	108	16.0	54	4	49.1	384	0.27	TA	85	0.35	1.00	50.5	3	IS	R22	B5	100.4	108	10.2	54	X	X	X	123.5	150	3P2/PRE PURCH																			
AC-02-1	SECOND FLOOR AREA - E	16180	5881	DNDR																																																																										

NOTES:

1. SUPPLY FAN TO BE COMPLETE WITH INLET GUIDE VANES
2. ELECTRICAL SERVICE IS 460/3/60.

ACU EQUIPMENT
PURCHASED PACKAGE A
INSTALLED UNDER 2IN

REF: JUL-2001 12130
NAME: E. YONKERS
TABLE: 6200 / 4PROJ
SCALE: NONE
SHT #: M-501
C:\dgn\14\d31.dgn
REF'S: 0902AR

ELECTRIC HEAT TRACING SCHEDULE												
SYSTEM		DATA										
CIRCUIT NO.	SERVICE	PIPE LENGTH FT	HEAT LOSS BT/FT	TRACING DIA. INCHES	WIRE TYPE	WIRE SIZE	WIRE LENGTH FT	WIRE WEIGHT LBS	WIRE TYPE	WIRE SIZE	WIRE LENGTH FT	WIRE WEIGHT LBS
CT-1S	SUPPLY PIPING	100	8.2	10	1"	5	40	12.3	15.8	120/1/3		
CT-1R	RETURN PIPING	100	8.2	10	1"	5	40	12.3	15.8	120/1/3		
CT-1P	PUMPS & FITS	40	8.2	10	1"	5	40	12.3	15.8	120/1/3		
CT-1C1	CW MAKE UP	10	2.5	1/2	1"	5	40	3.0	0.8	120/1/3		
CT-1C2	CW MAKE UP	10	2.5	1/2	1"	5	40	3.0	0.8	120/1/3		
CT-2S	SUPPLY PIPING	100	8.2	10	1"	5	40	12.3	15.8	120/1/3		
CT-2R	RETURN PIPING	100	8.2	10	1"	5	40	12.3	15.8	120/1/3		
CT-2P	PUMPS & FITS	40	8.2	10	1"	5	40	12.3	15.8	120/1/3		
CT-2C1	CW MAKE UP	10	2.5	1/2	1"	5	40	3.0	0.8	120/1/3		
CT-2C2	CW MAKE UP	10	2.5	1/2	1"	5	40	3.0	0.8	120/1/3		
CT-3S	SUPPLY PIPING	100	8.2	10	1"	5	40	12.3	15.8	120/1/3		
CT-3R	RETURN PIPING	100	8.2	10	1"	5	40	12.3	15.8	120/1/3		
CT-3P	PUMPS & FITS	40	8.2	10	1"	5	40	12.3	15.8	120/1/3		
CT-3C1	CW MAKE UP	10	2.5	1/2	1"	5	40	3.0	0.8	120/1/3		
CT-3C2	CW MAKE UP	10	2.5	1/2	1"	5	40	3.0	0.8	120/1/3		
CT-4S	SUPPLY PIPING	100	8.2	10	1"	5	40	12.3	15.8	120/1/3		
CT-4R	RETURN PIPING	100	8.2	10	1"	5	40	12.3	15.8	120/1/3		
CT-4P	PUMPS & FITS	40	8.2	10	1"	5	40	12.3	15.8	120/1/3		
CT-4C1	CW MAKE UP	10	2.5	1/2	1"	5	40	3.0	0.8	120/1/3		
CT-4C2	CW MAKE UP	10	2.5	1/2	1"	5	40	3.0	0.8	120/1/3		

NOTES:

- EXIST HEAT TRACE CONTROL PANELS ARE 240 V, 1PH, 60 HZ WITH 2 30A CONTACT OR IN NEMA-12 ENCLOSURE, THERMOSTAT 1C 10A
- UTILIZE EXISTING CONTROL PANELS IN ROOF SUBSTATIONS, SEE SHEET NOS. M-313 AND M-315 FOR LOCATIONS. INSTALL HEW HEAT TRACE CABLE FROM EXISTING JUNCTION BOXES TO CIRCUITS INDICATED. PROVIDE MANUFACTURER'S REPRESENTATIVE TO REFURBISH TO NEW CONDITION.
- FURNISH AND INSTALL NEW OUTDOOR AMBIENT AIR THERMOSTATS

PUMP SCHEDULE												
SYSTEM		PUMP DATA										
REF	LOCATION	SERVICE	TYPE	LAP GPM	HEAD FT	HP	WATER	WATER	WATER	WATER	WATER	REMARKS
CT-1S	COOLING TOWER CT-1-WING B	TOWER WATER	DBL SUCTION CENTRIFUGAL	935	100	175	40	676	SEE NOTE 1			
CT-1R	COOLING TOWER CT-1-WING B	TOWER WATER	DBL SUCTION CENTRIFUGAL	935	100	175	40	676	SEE NOTE 1			
CT-1P	COOLING TOWER CT-1-WING B	TOWER WATER	DBL SUCTION CENTRIFUGAL	935	100	175	40	676	SEE NOTE 1			
CT-2S	COOLING TOWER CT-2-WING D	TOWER WATER	DBL SUCTION CENTRIFUGAL	935	100	175	40	676	SEE NOTE 1			
CT-2R	COOLING TOWER CT-2-WING D	TOWER WATER	DBL SUCTION CENTRIFUGAL	935	100	175	40	676	SEE NOTE 1			
CT-2P	COOLING TOWER CT-2-WING D	TOWER WATER	DBL SUCTION CENTRIFUGAL	935	100	175	40	676	SEE NOTE 1			
CT-3S	COOLING TOWER CT-3-WING H	TOWER WATER	DBL SUCTION CENTRIFUGAL	935	100	175	40	676	SEE NOTE 1			
CT-3R	COOLING TOWER CT-3-WING H	TOWER WATER	DBL SUCTION CENTRIFUGAL	935	100	175	40	676	SEE NOTE 1			
CT-3P	COOLING TOWER CT-3-WING H	TOWER WATER	DBL SUCTION CENTRIFUGAL	935	100	175	40	676	SEE NOTE 1			
CT-4S	COOLING TOWER CT-4-WING K	TOWER WATER	DBL SUCTION CENTRIFUGAL	935	100	175	40	676	SEE NOTE 1			
CT-4R	COOLING TOWER CT-4-WING K	TOWER WATER	DBL SUCTION CENTRIFUGAL	935	100	175	40	676	SEE NOTE 1			
CT-4P	COOLING TOWER CT-4-WING K	TOWER WATER	DBL SUCTION CENTRIFUGAL	935	100	175	40	676	SEE NOTE 1			
P-1	SUB BASEMENT	HOT WATER RECIRCULATOR	VERT. MULTI STAGE CENT.	9	38	3450	7/8	1/4HP/4	B&G 3540 MDL 40			
P-2	SUB BASEMENT	HOT WATER RECIRCULATOR	VERT. MULTI STAGE CENT.	9	200	3450	1/2	1/4HP/4	B&G 3540 MDL 20			
P-3	SUB BASEMENT	HOT WATER RECIRCULATOR	VERT. MULTI STAGE CENT.	9	200	3450	1/2	1/4HP/4	B&G 3540 MDL 20			
P-4	SUB BASEMENT	HOT WATER RECIRCULATOR	VERT. MULTI STAGE CENT.	9	38	3450	7/8	1/4HP/4	B&G 3540 MDL 40			
DCP-1	ROOF	COMPUTER GLYCOL	CENTRIFUGAL	240	80	1750	7.5	3X3	LIEBERT PREPURCHASED			
DCP-1	ROOF	COMPUTER GLYCOL	CENTRIFUGAL	240	80	1750	7.5	3X3	LIEBERT PREPURCHASED			

NOTES:

- EXISTING CIP PUMPS ARE BELL AND CROSETT VSC 6-6-62 PUMPS, 460 V, 3 PH, 60 HZ, 1750 RPM WITH 30 HP MOTORS. MODIFY PUMP AND MOTOR TO MEET SCHEDULED DATA.

COOLING TOWER SCHEDULE												
SYSTEM		COOLING TOWER DATA										
REF	LOCATION	TYPE	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	REMARKS
CT-1	ROOF LEVEL - B	COOLING TOWER	100	100	100	100	100	100	100	100	100	SEE NOTE 1
CT-2	ROOF LEVEL - D	COOLING TOWER	100	100	100	100	100	100	100	100	100	SEE NOTE 1
CT-3	ROOF LEVEL - H	COOLING TOWER	100	100	100	100	100	100	100	100	100	SEE NOTE 1
CT-4	ROOF LEVEL - K	COOLING TOWER	100	100	100	100	100	100	100	100	100	SEE NOTE 1

FURNISH COOLING TOWERS 1000-1750 WITH 1000-1750 STEEL BASE AND ELECTRIC 1000-1750 MOTOR

DRY COOLER AND PUMP SCHEDULE												
SYSTEM		DRY COOLER AND PUMP DATA										
REF	LOCATION	SERVICE	TYPE	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	REMARKS
DCP-1	ROOF	COMPUTER GLYCOL	CENTRIFUGAL	240	80	1750	7.5	3X3	LIEBERT PREPURCHASED			
DCP-1	ROOF	COMPUTER GLYCOL	CENTRIFUGAL	240	80	1750	7.5	3X3	LIEBERT PREPURCHASED			

AUTOMATIC STRAINER SCHEDULE												
SYSTEM		STRAINER DATA										
REF	LOCATION	SERVICE	TYPE	PIPE DIA	CAP GPM	WIRE SIZE	WIRE WEIGHT	WIRE TYPE	WIRE SIZE	WIRE LENGTH FT	WIRE WEIGHT LBS	REMARKS
AS-1	CT-1 - WING B	TOWER WATER	HORIZ	10"	2800	0.003"	1.60	1/4				
AS-2	CT-2 - WING D	TOWER WATER	HORIZ	10"	2800	0.003"	1.60	1/4				
AS-3	CT-3 - WING H	TOWER WATER	HORIZ	10"	2800	0.003"	1.60	1/4				
AS-4	CT-4 - WING K	TOWER WATER	HORIZ	10"	2800	0.003"	1.60	1/4				

NOTES:

- FURNISH WITH NEMA-12 CONTROL PANEL
- VALVE TO EPOXY COATED INTERIOR

FIN TUBE RADIATOR SCHEDULE												
SYSTEM		RADIATOR DATA										
REF	TYPE	HEATING ELEMENT	ENCLOSURE	CONTROL	REMARKS							
A	FINED TUBE	1" COPPER ALUMINUM	50 3/4"X 3/4"	2	-	-	-	-	-	-	-	STEAM CONTROL VALVE
B	FINED TUBE	1/2" STEEL	50 5/4"X 2 1/2"	1	-	-	-	-	-	-	-	STEAM CONTROL VALVE

NOTES:

- STEAM CONTROL VALVE SHALL BE BUSHLESS 1/2" WITH REMOTE OPERATOR AND REMOTE SENSOR.

PLUMBING FIXTURE SCHEDULE												
FIXTURE		CONNECTION SIZES										
REF	DESCRIPTION	SUPPORT	CW IN	HW IN	SAN IN	VENT IN	REMARKS					
WC-A	WATER CLOSET (BF)	WALL HUNG CARRIER	1/2		4	2	FLUSH VALVE					
WC-B	WATER CLOSET (BF)	FLOOR MOUNTED	1/2		4	2	FLUSH VALVE					
WC-C	WATER CLOSET (BF)	FLOOR MOUNTED	1/2		3	2	TANK TYPE					
UR-A	URINAL (BF)	WALL HUNG CARRIER	1/4		2	1/2	FLUSH VALVE					
LAV-A	LAVATORY (BF)	COUNTER TOP LAY IN	1/2	1/2	1/2	1/4	SINGLE LEVER MIXING FAUCET WITH MIXING VALVE SET @ 90°					
LAV-B	LAVATORY (BF)	WALL HUNG CARRIER	1/2	1/2	1/2	1/4	SINGLE LEVER MIXING FAUCET WITH MIXING VALVE SET @ 90°					
LAV-C	LAVATORY (BF)	COUNTER TOP LAY IN	1/2	1/2	1/2	1/4	FAUCET WITH MIXING VALVE SET @ 90°					
LAV-D	LAVATORY (BF)	COUNTER TOP LAY IN	1/2	1/2	1/2	1/4	SINGLE LEVER MIXING FAUCET WITH MIXING VALVE SET @ 90°					
STS-A	SNK	COUNTER TOP LAY IN	1/2	1/2	1/2	1/4	WITH CARBAGE DISPOSAL					
STS-B	SNK	COUNTER TOP LAY IN	1/2	1/2	1/2	1/4	WITH CARBAGE DISPOSAL					
WC-A	WATER COOLER (BF)	WALL HUNG	1/2		1/4	1/4	REFRIGERATED					
EW-A	EMER. EYE WASH	WALL HUNG	1/2									
DH-A	EMER. DRENCH HOSE	WALL HUNG	1/2									
SH-A	SHOWER		1/2	1/2	2	1/2	PERFORATED GRID DRAIN					

NOTES:

- HEAVY LINE WEIGHT INDICATES ISSUED FOR THIS BID PACKAGE.
- LIGHT LINE WEIGHT INDICATES ISSUED FOR PREVIOUS PACKAGES.

INDICATES EQUIPMENT PURCHASED PACKAGE AMP INSTALLED UNDER 101



JBG TrizecHahn Development Services LLC

TrizecHahn OFFICE PROPERTIES

ALBERT KAHN ASSOCIATES, INC.
ARCHITECTURE ENGINEERING PLANNING
300 W. Main Building
7430 Second Ave.
Detroit, Michigan

Gensler
Detroit, Michigan

GEN - 3P2 BD	03-20-01
GEN - 3P3 BD	03-20-01
GEN - 3P4 BD	03-20-01
GEN - 3P5 BD	03-20-01
GEN - 3P6 BD	03-20-01
GEN - 3P7 BD	03-20-01
GEN - 3P8 BD	03-20-01
GEN - 3P9 BD	03-20-01
GEN - 3P10 BD	03-20-01
GEN - 3P11 BD	03-20-01
GEN - 3P12 BD	03-20-01
GEN - 3P13 BD	03-20-01
GEN - 3P14 BD	03-20-01
GEN - 3P15 BD	03-20-01
GEN - 3P16 BD	03-20-01
GEN - 3P17 BD	03-20-01
GEN - 3P18 BD	03-20-01
GEN - 3P19 BD	03-20-01
GEN - 3P20 BD	03-20-01
GEN - 3P21 BD	03-20-01
GEN - 3P22 BD	03-20-01
GEN - 3P23 BD	03-20-01
GEN - 3P24 BD	03-20-01
GEN - 3P25 BD	03-20-01
GEN - 3P26 BD	03-20-01
GEN - 3P27 BD	03-20-01
GEN - 3P28 BD	03-20-01
GEN - 3P29 BD	03-20-01
GEN - 3P30 BD	03-20-01
GEN - 3P31 BD	03-20-01
GEN - 3P32 BD	03-20-01
GEN - 3P33 BD	03-20-01
GEN - 3P34 BD	03-20-01
GEN - 3P35 BD	03-20-01
GEN - 3P36 BD	03-20-01
GEN - 3P37 BD	03-20-01
GEN - 3P38 BD	03-20-01
GEN - 3P39 BD	03-20-01
GEN - 3P40 BD	03-20-01
GEN - 3P41 BD	03-20-01
GEN - 3P42 BD	03-20-

PUMP SCHEDULE	
REF	LOCATION
*CT-1	ROOF LEVEL - B
*CT-2	ROOF LEVEL - D
*CT-3	ROOF LEVEL - H
*CT-4	ROOF LEVEL - K

1. FURNISH COOLING TOWERS

PUMP SCHEDULE								
REF	LOCATION	SERVICE	TYPE	CAP GPM	HEAD FT	MAX RPM	MIN MOTOR HP	PUMP SIZE
CTP-1-1	COOLING TOWER CT-1 -WING B	TOWER WATER	DBL SUCTION CENTRIFUGAL	935	100	1750	40	6X6
								SEE NOTE 1
CTP-1-2	COOLING TOWER CT-1 -WING B	TOWER WATER	DBL SUCTION CENTRIFUGAL	935	100	1750	40	6X6
								SEE NOTE 1
CTP-1-3	COOLING TOWER CT-1 -WING B	TOWER WATER	DBL SUCTION CENTRIFUGAL	935	100	1750	40	6X6
								SEE NOTE 1
CTP-2-1	COOLING TOWER CT-2 -WING D	TOWER WATER	DBL SUCTION CENTRIFUGAL	935	100	1750	40	6X6
								SEE NOTE 1
CTP-2-2	COOLING TOWER CT-2 -WING D	TOWER WATER	DBL SUCTION CENTRIFUGAL	935	100	1750	40	6X6
								SEE NOTE 1
CTP-2-3	COOLING TOWER CT-2 -WING D	TOWER WATER	DBL SUCTION CENTRIFUGAL	935	100	1750	40	6X6
								SEE NOTE 1
CTP-3-1	COOLING TOWER CT-3 -WING H	TOWER WATER	DBL SUCTION CENTRIFUGAL	935	100	1750	40	6X6
								SEE NOTE 1
CTP-3-2	COOLING TOWER CT-3 -WING H	TOWER WATER	DBL SUCTION CENTRIFUGAL	935	100	1750	40	6X6
								SEE NOTE 1
CTP-3-3	COOLING TOWER CT-3 -WING H	TOWER WATER	DBL SUCTION CENTRIFUGAL	935	100	1750	40	6X6
								SEE NOTE 1
CTP-4-1	COOLING TOWER CT-4 -WING K	TOWER WATER	DBL SUCTION CENTRIFUGAL	935	100	1750	40	6X6
								SEE NOTE 1
CTP-4-2	COOLING TOWER CT-4 -WING K	TOWER WATER	DBL SUCTION CENTRIFUGAL	935	100	1750	40	6X6
								SEE NOTE 1
CTP-4-3	COOLING TOWER CT-4 -WING K	TOWER WATER	DBL SUCTION CENTRIFUGAL	935	100	1750	40	6X6
								SEE NOTE 1
P-1	SUB BASEMENT	HOT WATER RECIRCULATOR	VERT. MULTI STAGE CENT.	9	38	3450	3/4 1 1/4 X1 1/4	B&G 3540 MDL 40
P-2	SUB BASEMENT	HOT WATER RECIRCULATOR	VERT. MULTI STAGE CENT.	9	200	3450	1 1/2 1 1/4 X1 1/4	B&G 3540 MDL 20
P-3	SUB BASEMENT	HOT WATER RECIRCULATOR	VERT. MULTI STAGE CENT.	9	200	3450	1 1/2 1 1/4 X1 1/4	B&G 3540 MDL 20
P-4	SUB BASEMENT	HOT WATER RECIRCULATOR	VERT. MULTI STAGE CENT.	9	38	3450	3/4 1 1/4 X1 1/4	B&G 3540 MDL 40
DCP-1	ROOF	COMPUTER GLYCOL	CENTRIFUGAL	240	80	1750	7.5	3X3
								LIEBERT PREPURCHASED
DCP-1	ROOF	COMPUTER GLYCOL	CENTRIFUGAL	240	80	1750	7.5	3X3
								LIEBERT PREPURCHASED

- NOTES:
- EXISTING CTP PUMPS ARE BELL AND GOSSETT VSC 6X6X12 PUMPS, 460 V, 3 PH, 60 HZ, 1750 RPM WITH 30 HP MOTORS. MODIFY PUMP AND MOTOR TO MEET SCHEDULED DATA.

ELECTRIC HEAT TRACING SCHEDULE

CIRCUIT NO.	SERVICE	PIPE LENGTH FT	HEAT LOSS W/FT	NOM PIPE DIA INCHES	INSUL THICK IN	MIN AMB TEMP DEG F	MAINTAIN TEMP DEG F	CABLE RATING W/FT	MIN CURRENT AMPS	ELEC SERV
CT-1S	SUPPLY PIPING	100	11.2	10	1"	-5	40	12.3	13.8	120/1/3
CT-1R	RETURN PIPING	100	11.2	10	1"	-5	40	12.3	15.2	120/1/3
CT-1P	PUMPS & FITT	40	11.2	10	1"	-5	40	12.3	15.2	120/1/3
CT-1C1	CW MAKE UP	10	2.5	1 1/2	1"	-5	40	3.0	0.8	120/1/3
CT-1C2	CW MAKE UP	10	2.5	1 1/2	1"	-5	40	3.0	0.8	120/1/3
CT-2S	SUPPLY PIPING	100	11.2	10	1"	-5	40	12.3	13.8	120/1/3
CT-2R	RETURN PIPING	100	11.2	10	1"	-5	40	12.3	15.2	120/1/3
CT-2P	PUMPS & FITT	40	11.2	10	1"	-5	40	12.3	15.2	120/1/3
CT-2C1	CW MAKE UP	10	2.5	1 1/2	1"	-5	40	3.0	0.8	120/1/3
CT-2C2	CW MAKE UP	10	2.5	1 1/2	1"	-5	40	3.0	0.8	120/1/3
CT-3S	SUPPLY PIPING	100	11.2	10	1"	-5	40	12.3	13.8	120/1/3
CT-3R	RETURN PIPING	100	11.2	10	1"	-5	40	12.3	15.2	120/1/3
CT-3P	PUMPS & FITT	40	11.2	10	1"	-5	40	12.3	15.2	120/1/3
CT-3C1	CW MAKE UP	10	2.5	1 1/2	1"	-5	40	3.0	0.8	120/1/3
CT-3C2	CW MAKE UP	10	2.5	1 1/2	1"	-5	40	3.0	0.8	120/1/3
CT-4S	SUPPLY PIPING	100	11.2	10	1"	-5	40	12.3	13.8	120/1/3
CT-4R	RETURN PIPING	100	11.2	10	1"	-5	40	12.3	15.2	120/1/3
CT-4P	PUMPS & FITT	40	11.2	10	1"	-5	40	12.3	15.2	120/1/3
CT-4C1	CW MAKE UP	10	2.5	1 1/2	1"	-5	40	3.0	0.8	120/1/3
CT-4C2	CW MAKE UP	10	2.5	1 1/2	1"	-5	40	3.0	0.8	120/1/3

NOTES:

- EXIST HEAT TRACE CONTROL PANELS ARE 240 V, 1 PH, 60 HZ WITH 2 30A CONTACT OR IN NEMA 12 ENCLOSURE, THERMON TC 101A
- UTILIZE EXISTING CONTROL PANELS IN ROOF SUBSTATIONS. SEE SHEET NOS. M-373 AND M-375 FOR LOCATIONS. INSTALL NEW HEAT TRACE CABLE FROM EXISTING JUNCTION BOXES TO CIRCUITS INDICATED. PROVIDE MANUFACTURERS'S REPRESENTATIVE TO REFURBISH TO NEW CONDITION.
- FURNISH AND INSTALL NEW OUTDOOR AMBIENT AIR THERMOSTATS

COOLING TOWER SCHEDULE										
REF	LOCATION	TYPE	CAP TONS	GPM	NO. OF MOTORS	FAN MOTOR HP	WATER TEMP		AIR TEMP	
							ENT F°	LVG F°	WB F°	
*CT-1	ROOF LEVEL - B	CROSSFLOW GALV STEEL	935	1870	2	20	100.0	85.0	77.0	PURCHASE - AMEP
*CT-2	ROOF LEVEL - D	CROSSFLOW GALV STEEL	935	1870	2	20	100.0	85.0	77.0	PURCHASE - AMEP
*CT-3	ROOF LEVEL - H	CROSSFLOW GALV STEEL	935	1870	2	20	100.0	85.0	77.0	PURCHASE - AMEP
*CT-4	ROOF LEVEL - K	CROSSFLOW GALV STEEL	935	1870	2	20	100.0	85.0	77.0	PURCHASE - AMEP

1. FURNISH COOLING TOWERS COMPLETE WITH STAINLESS STEEL BASIN AND ELECTRIC IMMERSION HEATER