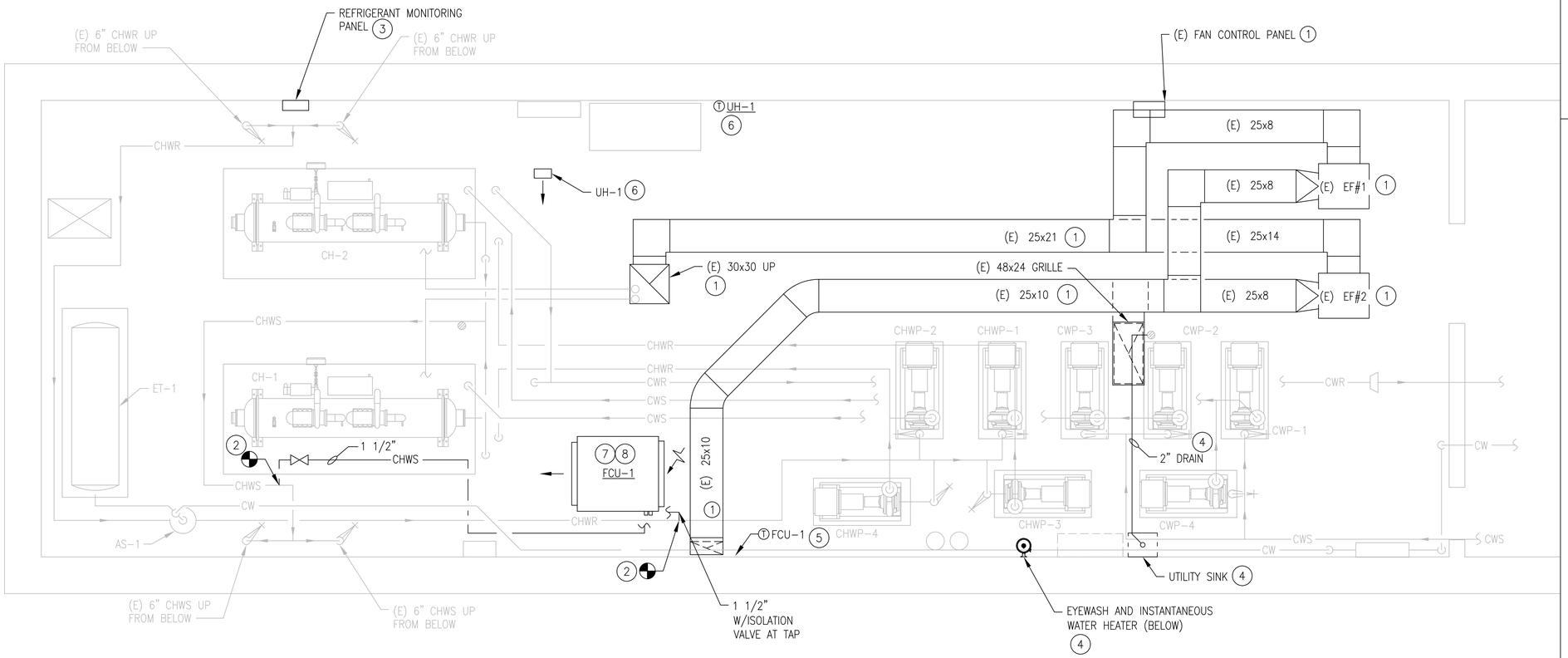


1 MECHANICAL FLOOR PLAN - NEW WORK
CWPK2-M-103

SCALE: 1/4" = 1'-0"

GENERAL NOTES:

A. CONTRACTOR SHALL FIELD VERIFY AND COORDINATE LOCATION OF NEW EQUIPMENT, PIPING, VALVES, DUCTWORK, ELECTRICAL AND CONTROL WIRING WITH EXISTING PRIOR TO INSTALLATION. ITEMS SHOWN ON THIS PLAN ARE APPROXIMATE.

B. REFER TO LEGEND SHEET FOR GENERAL ABBREVIATIONS AND SYMBOLS.

C. REFER TO CHILLER PIPING SCHEMATIC FOR ALL VALVES. FOR CLARITY, ALL VALVES ARE NOT SHOWN ON THIS PLAN.

D. INSTALL ALL EQUIPMENT AND COMPONENTS PER MANUFACTURER'S RECOMMENDATION WITH CLEARANCE FOR MAINTENANCE AND OPERATION OF EQUIPMENT. PROVIDE ACCESS CLEARANCE AT ALL LOCATIONS OF VALVES, STRAINERS, INSTRUMENTATION, AND EQUIPMENT AS REQUIRED BY MANUFACTURER FOR EASE OF MAINTENANCE.

KEYNOTES:

1. VENTILATION SYSTEM TO BE PROVIDED UNDER SEPARATE WMATA CONTRACT. FANS AND DUCTWORK SHOWN FOR REFERENCE ONLY. REFER TO WMATA CONTRACT FQ14114.
2. PROVIDE 1½" CWHS AND CHWR BRANCH TO FCU-1. WET TAP INTO EXISTING 8" CHWS AND CHWR PIPING.
3. EXISTING REFRIGERANT MONITORING PANEL. SHOWN HERE FOR REFERENCE.
4. PROVIDE AND INSTALL NEW EYEWASH, UTILITY SINK, FAUCET, AND INSTANTANEOUS WATER HEATER, INCLUDING PIPING, WIRING, AND SUPPORTS. WATER SUPPLY SHALL BE FIELD ROUTED TO CONNECT UPSTREAM OF THE EXISTING MAKE-UP WATER BACKFLOW PREVENTERS. PROVIDE INLINE ISOLATION VALVE, STRAINER, AND REDUCED PRESSURE TYPE BACKFLOW PREVENTER AT AN ACCESSIBLE LOCATION. FIELD ROUTE UTILITY SINK DRAINAGE PIPING ALONG FLOOR SLAB TO NEARBY FLOOR DRAIN. PROVIDE PIPING ALONG FLOOR SLAB WITH NON-SLIP PIPE COVER WHERE THERE IS A TRIP HAZARD. EYEWASH DRAINAGE SHALL BE STRAIGHT TO FLOOR. REFER TO DETAIL 1 ON DRAWING M-502.
5. PROVIDE AND INSTALL NEW SPACE THERMOSTAT AND INTEGRATE WITH NEW FCU-1.
6. PROVIDE AND INSTALL NEW UNIT HEATER INCLUDING WIRING, RE-USE EXISTING SUPPORT, AND WALL-MOUNTED THERMOSTAT.
7. PROVIDE AND INSTALL NEW THERMOSTATICALLY CONTROLLED FAN COIL UNIT (FCU-1) INCLUDING PIPING, VALVES, WIRING, AND SUPPORTS. CHWS TO THE UNIT SHALL BE TAPPED FROM THE CHWS MAIN AS INDICATED; CHWR SHALL BE TAPPED INTO THE CHWR MAIN AS INDICATED. CHWS AND CHWR PIPING SHALL BE FIELD ROUTED. UNIT SHALL BE MOUNTED AT A MINIMUM 8'-0" AFF. FIELD COORDINATE FINAL MOUNTING ELEVATION WITH OTHER TRADES.
8. PRIMARY CONDENSATE DRAINAGE FROM FCU-1 SHALL BE FIELD ROUTED DOWN TO AND ALONG FLOOR SLAB TO A NEARBY FLOOR DRAIN. OVERFLOW CONDENSATE DRAINAGE FROM FCU-1 SHALL BE FIELD ROUTED TO DISCHARGE AT VISIBLE LOCATION. DRAINAGE RISERS DOWN TO FLOOR SHALL BE MOUNTED FLUSH WITH STRUCTURAL COLUMN(S). PROVIDE PIPING ALONG FLOOR SLAB WITH NON-SLIP PIPE COVER WHERE THERE IS A TRIP HAZARD.

A Gannett Fleming/Parsons JOINT VENTURE

COMMONWEALTH OF VIRGINIA
03/29/2018
DEBDAS GHOSAL
NO. 016582
PROFESSIONAL ENGINEER

DESIGNED	M. MCDONNELL	01/26/18
DRAWN	M. MCDONNELL	01/26/18
CHECKED	D. GHOSAL	03/23/18

REFERENCE DRAWINGS

NUMBER	TITLE

REVISIONS

DATE	NUM	DESCRIPTION
03/30/2018	0	FINAL CONTRACT DRAWINGS

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

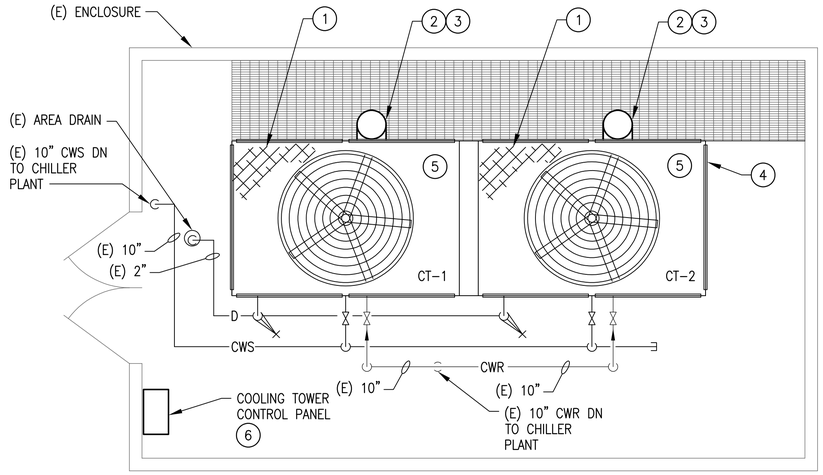
DEPARTMENT OF DESIGN AND CONSTRUCTION SERVICES
OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM GROUP

APPROVED Mark H. Magnussen 03/2018
MARK MAGNUSSEN DATE
MANAGER, ENV. PLANNING AND COMP

APPROVED 03/2018
GRAHAM SPILLER DATE
GFP DEPUTY PROGRAM MANAGER

REPLACEMENT OF CHILLERS AND COOLING TOWER ACCESSORIES AT EIGHT METRO-RAIL STATIONS
CWPK2 - BALLSTON (K04)
MECHANICAL PLAN - NEW WORK

M NO.	CONTRACT NO.	SCALE	DRAWING NO.	SHEET NO.
M1304	FQ-18102	1/4" = 1'-0"	CWPK2-M-103	153 of 173



1 MECHANICAL PLAN - NEW WORK
CWPK2-M-104

SCALE: 1/4" = 1'-0"

GENERAL NOTES:

A. CONTRACTOR SHALL FIELD VERIFY EXACT LOCATION AND QUANTITIES OF EQUIPMENT, PIPING, VALVES, DUCTWORK, ELECTRICAL AND CONTROL WIRING PRIOR TO DEMOLITION. ITEMS SHOWN ON THIS PLAN ARE APPROXIMATE.

B. REFER TO LEGEND SHEET FOR GENERAL ABBREVIATIONS AND SYMBOLS.

KEYNOTES:

1. PROVIDE AND INSTALL NEW PLASTIC FILL IN THE COOLING TOWER. COORDINATE WITH COOLING TOWER MANUFACTURER FOR EXACT PART. THE NEW FILL DIMENSION AND TYPE SHALL MATCH EXISTING.
2. PROVIDE AND INSTALL NEW DIRECT DRIVE FAN MOTOR, DRIVE ASSEMBLY, AND MOUNTING HARDWARE. FAN MOTOR SHALL BE INVERTER DUTY RATED. COORDINATE WITH COOLING TOWER MANUFACTURER FOR EXACT PARTS.
3. PROVIDE AND INSTALL NEW VARIABLE FREQUENCY DRIVE CONTROLLER FOR COOLING TOWER FAN. VFD SHALL BE LOCATED INSIDE A NEMA 4X ENCLOSURE.
4. PROVIDE AND INSTALL NEW LOUVER GRILLES ON COOLING TOWER. COORDINATE WITH COOLING TOWER MANUFACTURER FOR EXACT PART. THE LOUVER DIMENSION SHALL MATCH EXISTING.
5. PROVIDE NEW SUMP PUMP. FIELD COORDINATE EXACT LOCATION OF SUMP PUMP.
6. PROVIDE AND INSTALL NEW DISCONNECT AND CONTROLS.

N

A Gannett Fleming/Parsons JOINT VENTURE

COMMONWEALTH OF VIRGINIA
03/29/2018
DEBDAS GHOSAL
NO. 016382
PROFESSIONAL ENGINEER

DESIGNED	M. MCDONNELL	01/26/18 DATE
DRAWN	M. MCDONNELL	01/26/18 DATE
CHECKED	D. GHOSAL	03/23/18 DATE

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OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM GROUP

APPROVED Mark H. Magnussen 03/2018
MARK MAGNUSSEN DATE
MANAGER, ENV. PLANNING AND COMP

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GRAHAM SPILLER DATE
GFP DEPUTY PROGRAM MANAGER

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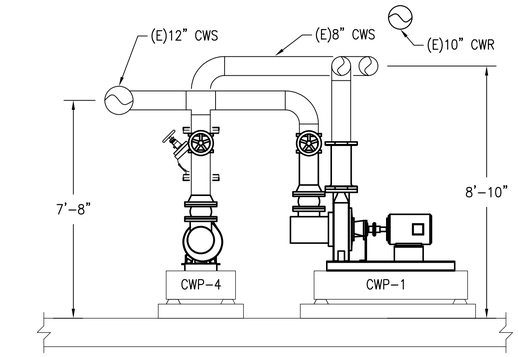
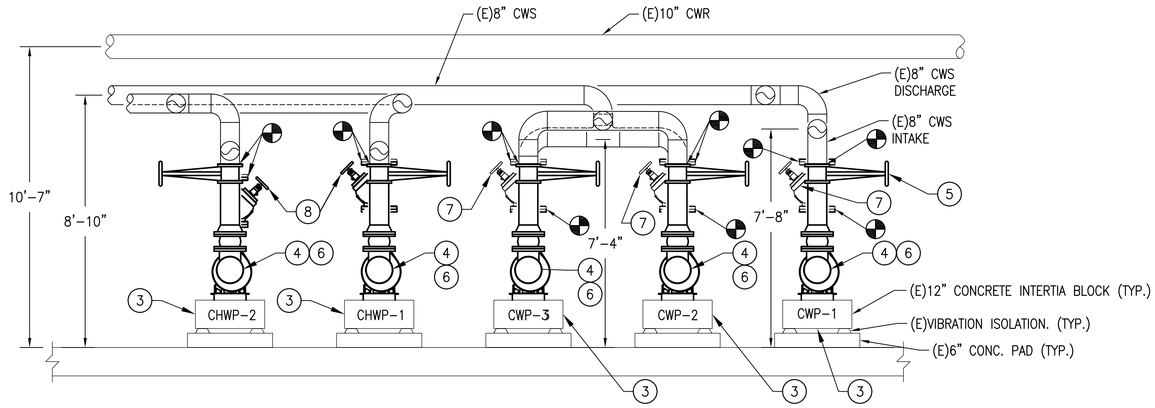
AND COOLING TOWER ACCESSORIES AT EIGHT METRO-RAIL STATIONS
CWPK2 - BALLSTON (K04)
MECHANICAL PLAN - NEW WORK

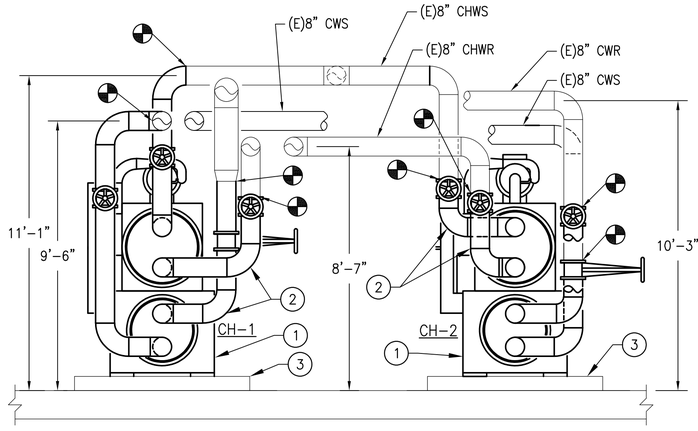
M NO.	CONTRACT NO.	SCALE	DRAWING NO.	SHEET NO.
M1304	FQ-18102	1/4" = 1'-0"	CWPK2-M-104	154 of 173



C SECTION - NEW WORK
CWPK2-M-300
SCALE: 3/8" = 1'-0"



A SECTION - NEW WORK
CWPK2-M-300
SCALE: 3/8" = 1'-0"



B SECTION - NEW WORK
CWPK2-M-300
SCALE: 3/8" = 1'-0"

GENERAL NOTES:

A. CONTRACTOR SHALL FIELD VERIFY AND COORDINATE LOCATION OF NEW EQUIPMENT, PIPING, VALVES, DUCTWORK, ELECTRICAL AND CONTROL WIRING WITH EXISTING PRIOR TO INSTALLATION. ITEMS SHOWN ON THIS PLAN ARE APPROXIMATE.

B. REFER TO LEGEND SHEET FOR GENERAL ABBREVIATIONS AND SYMBOLS.

C. REFER TO CHILLER PIPING SCHEMATIC FOR ALL VALVES. FOR CLARITY, ALL VALVES ARE NOT SHOWN ON THIS PLAN.

D. INSTALL ALL EQUIPMENT AND COMPONENTS PER MANUFACTURER'S RECOMMENDATION WITH CLEARANCE FOR MAINTENANCE AND OPERATION OF EQUIPMENT.

E. PROVIDE PRESSURE GAUGES AT INTAKE AND DISCHARGE PIPING OF OF EACH PUMP PUMP.

F. REFER TO STANDARD DETAIL FOR PUMP GENERAL INSTALLATION PER MANUFACTURER'S REQUIREMENT.

KEYNOTES:

1. PROVIDE AND INSTALL CHILLER, ANCHOR AND SUPPORT.
2. PROVIDE AND INSTALL ALL PIPING, FITTINGS, VALVES, PIPING INSULATION AND INSTRUMENTATION FOR CONNECTION TO CHILLER. PROVIDE A VICTAULIC COUPLING CONNECTION PIECE AT EACH PIPE CONNECTION TO CHILLER FOR EASE OF MAINTENANCE.
3. REUSE EXISTING EQUIPMENT PAD, SPRING ISOLATOR AND INERTIA PAD. REPAIR AND MODIFY AS REQUIRED TO FIT NEW INSTALLATION.
4. PROVIDE AND INSTALL ALL APPROPRIATE PIPE FITTINGS FOR CONNECTION TO PUMPS.
5. PROVIDE OS&Y GATE VALVE FOR SHUTOFF (TYP).
6. PROVIDE SUCTION DIFFUSER WITH INTEGRAL STRAINER AT PUMP INTAKE (TYP).
7. REUSE EXISTING 8" TRIPLE DUTY VALVE. IF THE TRIPLE DUTY VALVES ARE IN WORKING CONDITION. IF FOUND DEFECTIVE, REPLACE IN KIND. AS SHOWN IN THIS VEIW THE VALVE LOCATED IN PIPING BEHIND PUMP INTAKE PIPING. CONTRACTOR SHALL COORDINATE WITH DEMOLITION WORK.
8. PROVIDE NEW 8" TRIPLE DUTY VALVE ON DISCHARGE PIPING. AS SHOWN IN THIS VEIW THE VALVE LOCATED IN PIPING BEHIND PUMP INTAKE PIPING.

GFP A Gannett Fleming/Parsons JOINT VENTURE

COMMONWEALTH OF VIRGINIA
03/29/2018
DEBDAS GHOSAL
016382
PROFESSIONAL ENGINEER

DESIGNED M.MCDONNELL 01/2018 DATE
DRAWN M.MCDONNELL 01/2018 DATE
CHECKED D. GHOSAL 03/23/18 DATE

REFERENCE DRAWINGS

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REVISIONS

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WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

DEPARTMENT OF DESIGN AND CONSTRUCTION SERVICES
OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM GROUP

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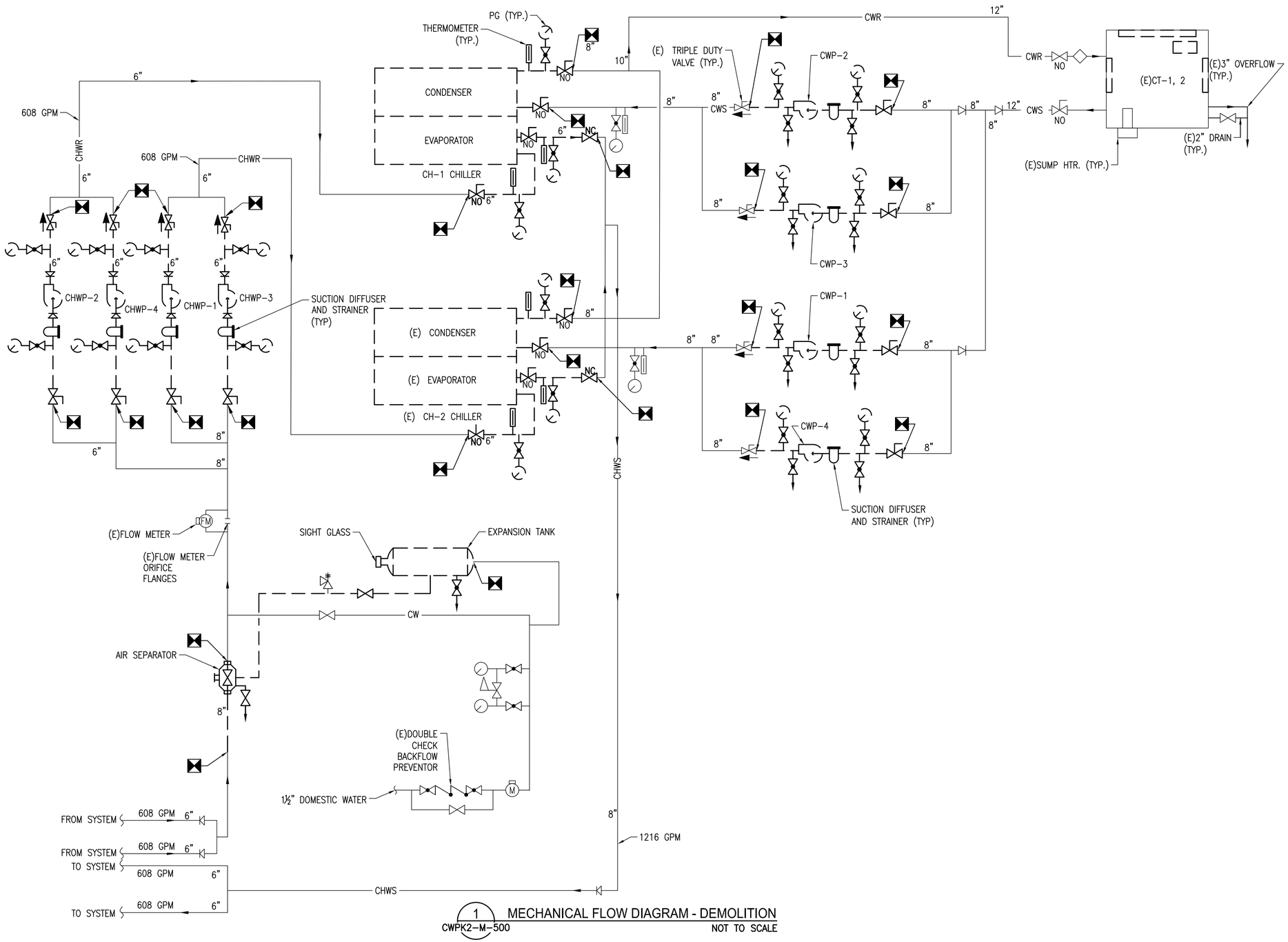
MARK MAGNUSSEN
MANAGER, ENV. PLANNING AND COMP

APPROVED 03/2018 DATE
GRAHAM SPILLER
GFP DEPUTY PROGRAM MANAGER

REPLACEMENT OF CHILLERS AND COOLING TOWER ACCESSORIES AT EIGHT METRO-RAIL STATIONS
CWPK2 - BALLSTON (K04)
MECHANICAL SECTIONS

M NO.	CONTRACT NO.	SCALE	DRAWING NO.	SHEET NO.
M1304	FQ-18102	3/8" = 1'-0"	CWPK2-M-300	155 of 173



1 MECHANICAL FLOW DIAGRAM - DEMOLITION
CWPK2–M–500 NOT TO SCALE

A Gannett Fleming/Parsons JOINT VENTURE

COMMONWEALTH OF VIRGINIA
03/29/2018
DEBDAS GHOSAL
NO. 016382
PROFESSIONAL ENGINEER

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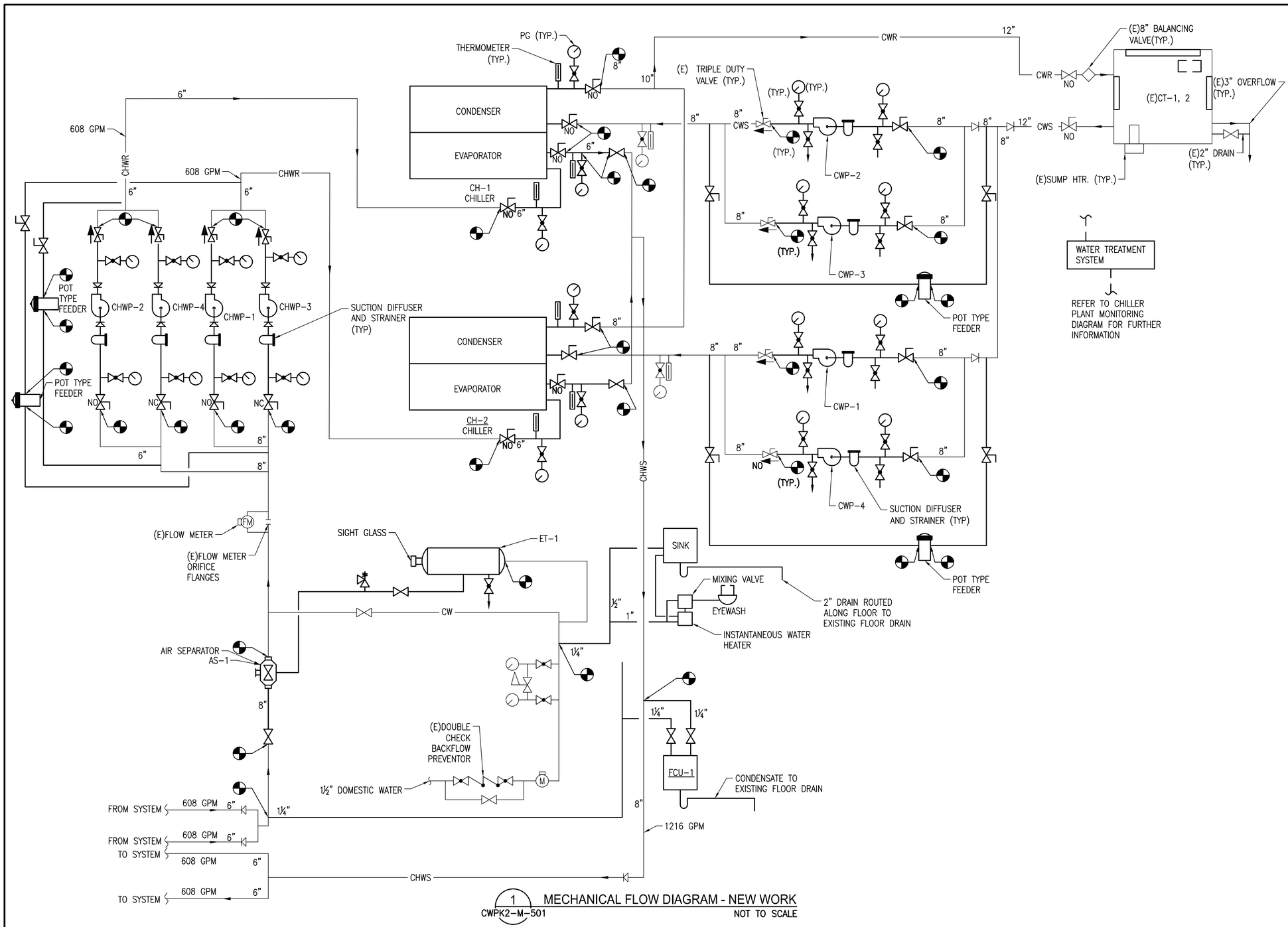
REPLACEMENT OF CHILLERS
AND COOLING TOWER ACCESSORIES AT EIGHT METRO-RAIL STATIONS
CWPK2 - BALLSTON (K04)
MECHANICAL FLOW DIAGRAM - DEMOLITION

M NO.	CONTRACT NO.	SCALE	DRAWING NO.	SHEET NO.
M1304	FQ-18102	NOT TO SCALE	CWPK2-M-500	156 of 173



1 MECHANICAL FLOW DIAGRAM - NEW WORK
CWPK2-M-501 NOT TO SCALE

GENERAL NOTES:

A. REFER TO REFERENCE DRAWING DD-ME-HVAC-007, 008, 009 FOR WATER TREATMENT CONNECTION TO SYSTEM LOOPS.

B. ALL GATES VALVES ARE SHOWN DIAGRAMMATICALLY. REFER TO SPCIFICATIONS FOR USE OF NON-RISING STEM AND OS&Y GATE VALVES.

GFP A Gannett Fleming/Parsons JOINT VENTURE

COMMONWEALTH OF VIRGINIA
03/29/2018
DEBDAS GHOSAL
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REPLACEMENT OF CHILLERS
AND COOLING TOWER ACCESSORIES AT EIGHT METRO-RAIL STATIONS
CWPK2 - BALLSTON (K04)
MECHANICAL FLOW DIAGRAM - NEW WORK

M NO.	CONTRACT NO.	SCALE	DRAWING NO.	SHEET NO.
M1304	FQ-18102	NOT TO SCALE	CWPK2-M-501	157 of 173

CHILLER SCHEDULE

MARK	DESIGNATION	CAPACITY (TONS)	EVAPORATOR					CONDENSOR					COMPRESSOR / CHILLER ELECTRICAL							BASIS OF DESIGN
			GPM	PASSES	EWT (F)	LWT (F)	PD (FT H2O)	GPM	PASSES	EWT (F)	LWT (F)	PD (FT H2O)	VOLTS	PHASE	Hz	RLA	LRA	MOCP	MCA	
CWPK04	CH-1	330	608	2	55.00	42.00	12.00	990	2	85.00	95.00	19.00	460	3	60	298	164	450	335	DAIKIN WMC060DD
CWPK04	CH-2	330	608	2	55.00	42.00	12.00	990	2	85.00	95.00	19.00	460	3	60	298	164	450	335	DAIKIN WMC060DD

NOTES:

1. PROVIDE WITH NEOPRENE ISOLATION PADS.
2. PROVIDE WITH CHILLED WATER FLOW INDICATOR.
3. WATER-COOLED, SEMI-HERMETIC OIL-FREE CENTRIFUGAL COMPRESSOR WATER CHILLER.
4. TWO MAGNETIC BEARING, COMPLETELY OIL-FREE CENTRIFUGAL COMPRESSORS ON EACH CHILLER.
5. CHILLERS SHALL BE CHARGED WITH REFRIGERANT R-134A.
6. MOTORS SHALL BE LIQUID REFRIGERANT COOLED WITH INTERNAL THERMAL SENSING DEVICES IN THE STATOR WINDINGS.
7. THE CHILLER SHALL BE EQUIPPED WITH AN INTEGRATED VARIABLE FREQUENCY DRIVE (VFD) TO AUTOMATICALLY REGULATE COMPRESSOR SPEED IN RESPONSE TO COOLING LOAD AND THE COMPRESSOR PRESSURE LIFT REQUIREMENT, OPERATING CONTROLS AND EQUIPMENT PROTECTION CONTROLS.
8. CHILLER CONTROLS SHALL COORDINATE COMPRESSOR SPEED AND GUIDE VANE POSITION TO OPTIMIZE CHILLER EFFICIENCY.
9. CHILLER SHALL BE EQUIPPED WITH MICROTECH II CONTROLLER OR EQUIVALENT AND SHALL INCLUDE REMOTE COMMUNICATIONS CARDS WITH MODBUS RTU CAPABILITY, TO CONNECT THE I/O POINTS TO CHILLER PLANT MONITORING PANEL.
10. CHILLER CAPACITY BASED ON WATER.
11. CHILLER TOTAL OPERATING WEIGHT 13,079 LB
12. CHILLER DIMENSIONS 178.19 IN X 55.17 IN (FOOT PRINT)
13. PROVIDE EACH CHILLER WITH SINGLE POINT POWER CONNECTION.

FAN COIL UNIT SCHEDULE

PLANT	DESIGNATION	CAPACITY (TONS)	EVAPORATOR							ELECTRICAL				BASIS OF DESIGN
			GPM	ROWS	EWT (F)	LWT (F)	CFM	EAT (F) (DB/WB)	LAT (F) (DB/WB)	HP	VOLTS	PHASE	Hz	
CWPK04	FCU-1	6	11.5	6	42.00	55.00	1870	80/67	55.7/54.5	0.75	115	1	60	DAIKIN HCBB120

NOTES:

1. FACTORY MOUNTED COIL, CONTROLS, MOTORS, DRIVE KITS.
2. PIPING PACKAGE WITH SINGLE 3-WAY MODULATING VALVE OPTION.

PUMP SCHEDULE

MARK	SERVICE	TYPE	GPM	FT HEAD	INLET (IN.)	OUTLET (IN.)	IMPELLER DIA (IN.)	OPERATING WEIGHT (LB)	FOOTPRINT (IN.)	MOTOR					BASIS OF DESIGN
										RPM	HP	VOLTS	PH	Hz	
CWP-1	CONDENSER WATER	CENTRIFUGAL	990	70	6	5	9.67	629	48x19	1780	25	460	3	60	ARMSTRONG 4030-6x5x10
CWP-2	CONDENSER WATER	CENTRIFUGAL	990	70	6	5	9.67	629	48x19	1780	25	460	3	60	ARMSTRONG 4030-6x5x10
CWP-3	CONDENSER WATER	CENTRIFUGAL	990	70	6	5	9.67	629	48x19	1780	25	460	3	60	ARMSTRONG 4030-6x5x10
CWP-4	CONDENSER WATER	CENTRIFUGAL	990	70	6	5	9.67	629	48x19	1780	25	460	3	60	ARMSTRONG 4030-6x5x10
CHWP-1	CHILLED WATER	CENTRIFUGAL	608	100	5	4	10.13	604	48x19	1780	25	460	3	60	ARMSTRONG 4030-5x4x10
CHWP-2	CHILLED WATER	CENTRIFUGAL	608	100	5	4	10.13	604	48x19	1780	25	460	3	60	ARMSTRONG 4030-5x4x10
CHWP-2	CHILLED WATER	CENTRIFUGAL	608	100	5	4	10.13	604	48x19	1780	25	460	3	60	ARMSTRONG 4030-5x4x10
CHWP-4	CHILLED WATER	CENTRIFUGAL	608	100	5	4	10.13	604	48x19	1780	25	460	3	60	ARMSTRONG 4030-5x4x10

NOTES:

1. PROVIDE WITH INVERTER DUTY, PREMIUM EFFICIENCY AND VFD COMPATIBLE MOTOR.
2. PROVIDE WITH SPRING TYPE ISOLATION.
3. PROVIDE WITH SUCTION DIFFUSER AND INTEGRAL STRAINER AT INLET OF PUMPS AND ECCENTRIC REDUCER/INCREASER AT PUMP INLET/OUTLET FOR ALL PUMPS.

EXISTING COOLING TOWER SCHEDULE

MARK	SERVICE	TYPE	GPM	EWT (F)	LWT (F)	AMB. AIR WET BULB TEMP. (F)	FAN							OPERATING WEIGHT (LB)	EXISTING MODEL NO.
							NO.	CFM	NO. OF MOTORS	HP	V	PH	Hz		
(E) CT-1, 2	CONDENSER WATER	AXIAL	990	95	85	78	1	95800	1	20	460	3	60	18500	EVAPCO USS-29-924

NOTES:

1. SEPARATE STARTER PANELS FURNISHED FOR FIELD MOUNTING.
2. PROVIDE DIRECT DRIVE FAN WITH INVERTER DUTY MOTORS.
3. COOLING TOWER FAN MOTORS SHALL BE RATED VFD COMPATIBLE.
4. PROVIDE WITH NEW LOUVERS FOR EXISTING COOLING TOWERS.
5. PROVIDE WITH NEW PLASTIC FILL FOR EXISTING COOLING TOWERS.

FLOW MONITORING SYSTEM

1. NON-INTRUSIVE CLAMP-ON FLOW SENSORS
2. MAINTENANCE-FREE
3. ACCURACY: 1% OF VELOCITY
4. NO DEPENDENCY ON CONDUCTIVITY
5. AUTOMATICALLY ADAPT TO PIPE MATERIAL AND LIQUID PROPERTY VARIATIONS
6. BUILT-IN FLOW TOTALIZERS
7. ISOLATED RS-485 INTERFACE WITH POWER SURGE PROTECTION. SUPPORTS THE MODBUS PROTOCOL – CONNECT TO PAC 3000 IN CHILLER PLANT MONITORING PANEL
8. INPUT/OUTPUT, ISOLATED 4-20MA OUTPUT, RELAY, PULSE OUTPUT, ALARM OUTPUT
9. SELF-EXPLANATORY MENU-DRIVEN PROGRAMMING
10. PIPE SIZE RANGE, 6"
11. NEMA 4X (IP55 OR BETTER) ENCLOSURE
12. SIEMENS SITRANS FUS 1010 (OR APPROVED EQUAL). PROVIDE CABLES OF SUFFICIENT LENGTH TO REACH ALL TERMINATION POINTS.

REFRIGERANT LEAK DETECTION SYSTEM

1. REFRIGERANT LEAK DETECTION SYSTEM INSTALLED AS PART OF WMATA CONTRACT FQ14114.
2. PROVIDE RS-485 ETHERNET CONNECTION TO CONNECT TO THE CHILLER PLANT CONTROL PANEL.

A Gannett Fleming/Parsons JOINT VENTURE

COMMONWEALTH OF VIRGINIA
03/29/2018
DEBDAS GHOSAL
NO. 016582
PROFESSIONAL ENGINEER

DESIGNED M. MCDONNELL 01/26/18 DATE
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OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM GROUP

APPROVED Mark H. Magnussen 03/2018 DATE
MARK MAGNUSSEN
MANAGER, ENV. PLANNING AND COMP

APPROVED 03/2018 DATE
GRAHAM SPILLER
GFP DEPUTY PROGRAM MANAGER

REPLACEMENT OF CHILLERS AND COOLING TOWER ACCESSORIES AT EIGHT METRO-RAIL STATIONS
CWPK2 - BALLSTON (K04)
MECHANICAL EQUIPMENT SCHEDULES - SHEET 1 OF 2

M NO.	CONTRACT NO.	SCALE	DRAWING NO.	SHEET NO.
M1304	FQ-18102	NONE	CWPK2-M-600	158 of 173

AIR SEPARATOR SCHEDULE

MARK	DESIGNATION	ORIENTATION	GPM	MAX. WORKING PRESSURE (PSIG)	MAX. WORKING TEMP. (F)	SYSTEM SERVED	INLET & OUTLET SIZE (IN.)	DRY WEIGHT (LB)	BASIS OF DESIGN
AS–1	CHILLER PLANT	VERTICAL	1,216	165	375	CHILLED WATER	8"	332	ARMSTRONG VAS–8

NOTES:

1. PROVIDE WITH FABRICATED STEEL SHELL.
2. PROVIDE WITH BLOW DOWN CONNECTION.
3. PROVIDE WITH STAINLESS STEEL STRAINER.

EXPANSION TANK SCHEDULE

MARK	LOCATION	EQUIP. SERVED	TYPE	ORIENTATION	INITIAL FILL PRESSURE (PSIG)	TANK VOLUME (GAL.)	SIZE (IN.)		WEIGHT (LB)	BASIS OF DESIGN
							DIA	LENGTH		
ET–1	CHILLER PLANT	CHILLED WATER	COMPRESSION	HORIZONTAL	12	505	36	120	810	ARMSTRONG AET 36x120

NOTES:

1. PROVIDE SADDLES WITH EXPANSION TANK.

UNIT HEATER SCHEDULE

MARK	LOCATION	TYPE	kW	ELECTRICAL DATA					HORIZ. AIR THROW (FT)	WIDTH (IN.)	HEIGHT (IN.)	DEPTH (IN.)	WEIGHT (LB)	BASIS OF DESIGN
				MOTOR HP	VOLT	PH	Hz	MOTOR RPM						
UH–12	CHILLER PLANT	ELECTRIC, SUSPENDED	20	.05	480	3	60	1550	32	21.5	28.70	6.5	85	TRANE UHEC–203DACA

NOTES:

1. UNIT INSTALLED MOTOR STARTER.
2. DISCONNECT: FACTORY INSTALLED.
3. WALL/CEILING MOUNTED BRACKET.
4. WALL MOUNT THERMOSTAT KIT.

VALVE SCHEDULE

TYPE	SIZE (IN.)	QUANTITY	SERVICE	BASIS OF DESIGN	MODEL
OS&Y GATE VALVE	6	8	CONDENSER WATER	NIBCO	F–617–ON
TRIPLE DUTY VALVE	6	4	CHILLED WATER	BELL & GOSSETT	3DS–6S
OS&Y GATE VALVE	6	4	CONDENSER WATER	NIBCO	F–617–ON
OS&Y GATE VALVE	6	4	CHILLED WATER	NIBCO	F–617–ON

INSTANTANEOUS WATER HEATER SCHEDULE

MARK	INLET SIZE (IN.)	TURN ON FLOW (GPM)	kW	AMPS	MAX. TEMPERATURE (F)	BASIS OF DESIGN	NOTES
IWH–1	½	0.3	2.4	20	90	EEMAX EX2412T	SEE NOTE 1
NOTES: 1. PROVIDE WITH THERMOSTATIC MIXING VALVE: BRADLEY S19–2000.							

GFP A Gannett Fleming/Parsons JOINT VENTURE

COMMONWEALTH OF VIRGINIA
03/29/2018
DEBDAS GHOSAL
NO. 016382
PROFESSIONAL ENGINEER

DESIGNED M. MCDONNELL 01/26/18 DATE
DRAWN M. MCDONNELL 01/26/18 DATE
CHECKED D. GHOSAL 03/23/18 DATE

REFERENCE DRAWINGS

NUMBER	TITLE

REVISIONS

DATE	NUM	DESCRIPTION
03/30/2018	0	FINAL CONTRACT DRAWINGS

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

DEPARTMENT OF DESIGN AND CONSTRUCTION SERVICES
OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM GROUP

APPROVED Mark H. Magnussen 03/2018
MARK MAGNUSSEN DATE
MANAGER, ENV. PLANNING AND COMP

APPROVED 03/2018
GRAHAM SPILLER DATE
GFP DEPUTY PROGRAM MANAGER

REPLACEMENT OF CHILLERS
AND COOLING TOWER ACCESSORIES AT EIGHT METRO-RAIL STATIONS
CWPK2 - BALLSTON (K04)
MECHANICAL EQUIPMENT SCHEDULES - SHEET 2 OF 2

M NO.	CONTRACT NO.	SCALE	DRAWING NO.	SHEET NO.
M1304	FQ-18102	NONE	CWPK2-M-601	159 of 173