

- KEYNOTES:**
- 1 CHILLER VFD/DISCONNECT SUPPLIED WITH CHILLER, INSTALLED AND WIRED BY ELECTRICAL CONTRACTOR.
 - 2 THE VFD'S FOR CHILLED WATER AND CONDENSER WATER PUMPS ARE EXISTING. PROVIDE AND INSTALL WIRING FROM MOTOR TO VFD AND FROM VFD TO MCC.
 - 3 PROVIDE LINE AND LOAD REACTORS FOR EACH VFD AND MOUNT IN A CONVENIENT PLACE.
 - 4 PROVIDE 100A, 120/240, 18CKT DISTRIBUTION PANEL(CP2).
 - 5 PROVIDE 100A, 277/480, 12CKT DISTRIBUTION PANEL(CP3).
 - 6 RECONNECT POWER TO NEW EQUIPMENTS, USE EXISTING CKTS AND CONDUITS. PROVIDE NEW WIRING.
- SHEET NOTES:**
1. PROVIDE FILTERS FOR VFD'S AS REQUIRED.
 2. ALL WIRING FOR VFD'S SHALL BE VFD RATED CABLES.
 3. RUN NEW RGS FROM CABLE TROUGH AND STOP AT A CONVENIENT PLACE NEAR MOTOR. CONTINUE WITH LTFC TO MOTOR.

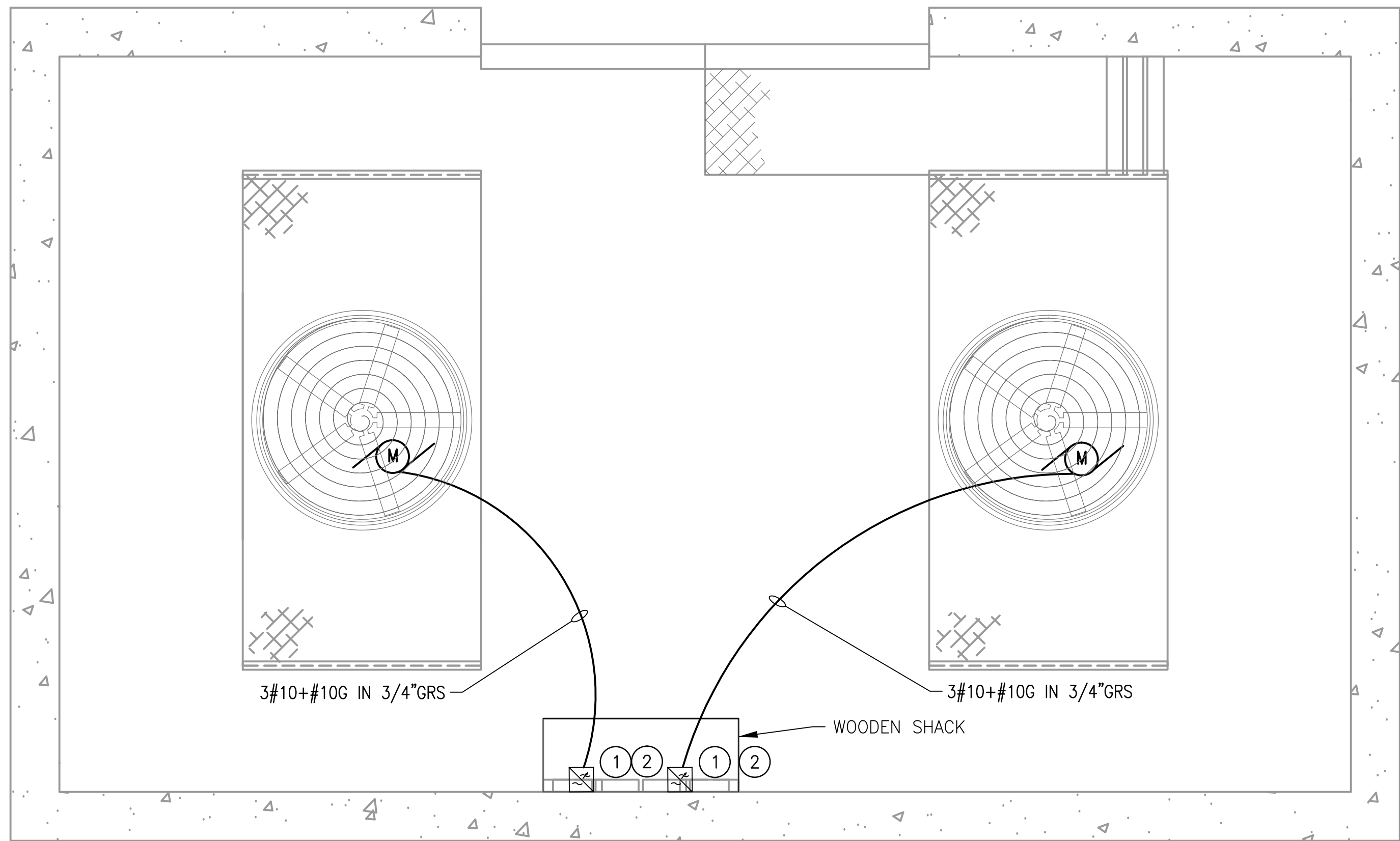
1 ELECTRICAL PLAN - NEW WORK (CHILLER ROOM)
CWPD2-E-102

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

GFP A Gannett Fleming/Parsons JOINT VENTURE

DISTRICT OF COLUMBIA
DEPARTMENT OF THE DISTRICT OF COLUMBIA
No. 8758
03/29/2018
LICENSED PROFESSIONAL ENGINEER

			REFERENCE DRAWINGS		REVISIONS			<div><div>M</div><div>metro</div></div> WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY			REPLACEMENT OF CHILLERS AND COOLING TOWER ACCESSORIES AT EIGHT METRO-RAIL STATIONS						
DESIGNED	B. IDILBI	09/30/17	NUMBER	TITLE	DATE	NUM	DESCRIPTION	DEPARTMENT OF DESIGN AND CONSTRUCTION SERVICES OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM GROUP			CWPD2 - FEDERAL CENTER SW (D04) ELECTRICAL PLAN - NEW WORK						
		DATE			03/30/2018	0	FINAL CONTRACT DRAWINGS										
DRAWN	J. ZHU	09/30/17															
		DATE															
CHECKED	D. KHAN	03/23/18															
		DATE						APPROVED <i>Mark H. Magnusson</i> 03/2018			APPROVED <i>Graham Spiller</i> 03/2018		M NO.	CONTRACT NO.	SCALE	DRAWING NO.	SHEET NO.
								MARK MAGNUSSON MANAGER, ENV. PLANNING AND COMP			GRAHAM SPILLER GFP DEPUTY PROGRAM MANAGER		M1304	FQ-18102	1/4" = 1'-0"	CWPD2-E-102	88 of 173



- KEYNOTES:
- ① NEW COOLING TOWER FAN MOTOR TO BE PROVIDED BY MECHANICAL.
 - ② PROVIDE LINE AND LOAD REACTORS FOR THE EXISTING VFD'S.

- SHEET NOTES:
- 1. PROVIDE FILTERS FOR VFD'S AS REQUIRED.
 - 2. ALL WIRING FOR VFD'S SHALL BE VFD RATED CABLES.
 - 3. THE CHILLER PLANT IS APPROX. 40' UNDERGROUND. THE COOLING TOWER IS LOCATED ON THE STREET LEVEL, A FEW BLOCKS AWAY. APPROXIMATE DISTANCE 500'.

1 ELECTRICAL PLAN - NEW WORK (COOLING TOWER)
CWP2-E-103 SCALE: 1/4" = 1'-0"

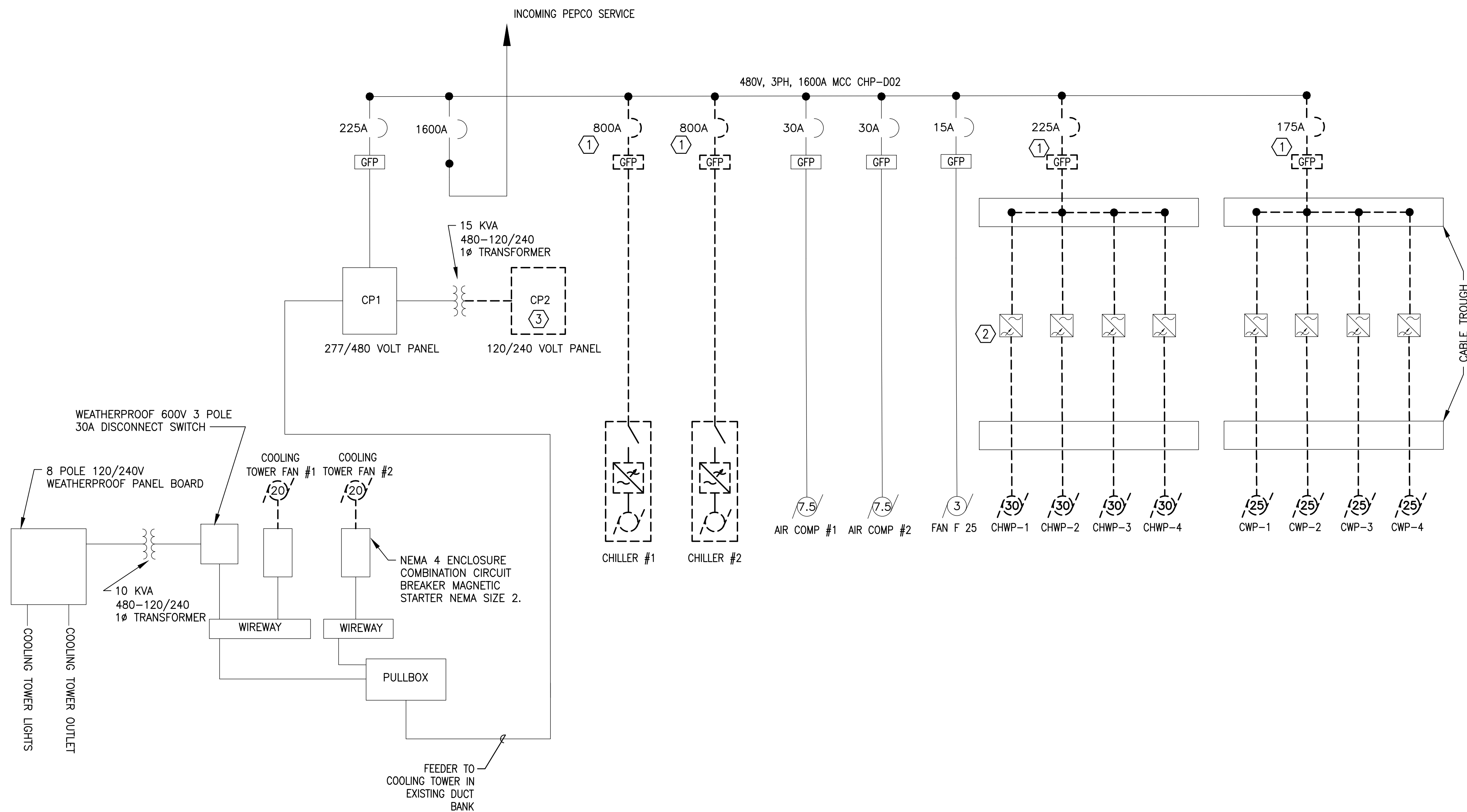
GFP

A Gannett Fleming/Parsons
JOINT VENTURE

DISTRICT OF COLUMBIA
DAYAN KHAN
No. 8758
03/29/2018
LICENSED
PROFESSIONAL ENGINEER

<div>DESIGNED<div>B. IDILBI</div><div>09/30/17</div><div>DATE</div></div> <div>DRAWN<div>J. ZHU</div><div>09/30/17</div><div>DATE</div></div> <div>CHECKED<div>D. KHAN</div><div>03/23/18</div><div>DATE</div></div>	REFERENCE DRAWINGS		REVISIONS			<div><div>M</div><div>metro</div></div> <div>WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY</div> <div>DEPARTMENT OF DESIGN AND CONSTRUCTION SERVICES</div> <div>OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM GROUP</div> <div>APPROVED<div>Mark H. Magnusson</div><div>03/2018</div><div>DATE</div><div>MARK MAGNUSSEN</div><div>MANAGER, ENV. PLANNING AND COMP</div></div> <div>APPROVED<div>Gabe Spiller</div><div>03/2018</div><div>DATE</div><div>GRAHAM SPILLER</div><div>GFP DEPUTY PROGRAM MANAGER</div></div>	REPLACEMENT OF CHILLERS AND COOLING TOWER ACCESSORIES AT EIGHT METRO-RAIL STATIONS CWP2 - FEDERAL CENTER SW (D04) ELECTRICAL PLAN - NEW WORK				
	NUMBER	TITLE	DATE	NUM	DESCRIPTION						
			03/30/2018	0	FINAL CONTRACT DRAWINGS						
		APPROVED <div>Mark H. Magnusson</div> <div>03/2018</div> <div>DATE</div> <div>MARK MAGNUSSEN</div> <div>MANAGER, ENV. PLANNING AND COMP</div>		APPROVED <div>Gabe Spiller</div> <div>03/2018</div> <div>DATE</div> <div>GRAHAM SPILLER</div> <div>GFP DEPUTY PROGRAM MANAGER</div>		M NO.	CONTRACT NO.	SCALE	DRAWING NO.	SHEET NO.	
						M1304	FQ-18102	1/4" = 1'-0"	CWP2-E-103	89 of 173	

- SHEET NOTE:
- FOR EQUIPMENT TO BE DEMOLISHED: ALL EXISTING CONDUIT AND WIRING SHALL BE REMOVED. PERMISSION TO USE EXISTING CONDUIT (WIRES REMOVED) SHALL BE REQUIRED FROM WMATA ENGINEER.
- PLAN NOTE:
- EXISTING CIRCUIT BREAKER TO BE REMOVED.
 - EXISTING VFD'S TO REMAIN
 - EXISTING PANEL CP2 TO BE REMOVED.



B ELECTRICAL SINGLE LINE DIAGRAM - DEMOLITION
CWPD2-E-601

SCALE: NONE

GFP A Gannett Fleming/Parsons
JOINT VENTURE

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
DEPARTMENT OF DESIGN AND CONSTRUCTION SERVICES
OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM GROUP

APPROVED *Mark H. Magnusson* 03/2018
MARK MAGNUSSEN
MANAGER, ENV. PLANNING AND COMP

APPROVED *Gabe Spiller* 03/2018
GRAHAM SPILLER
GFP DEPUTY PROGRAM MANAGER

REPLACEMENT OF CHILLERS
AND COOLING TOWER ACCESSORIES AT EIGHT METRO-RAIL STATIONS
CWPD2 - FEDERAL CENTER SW (D04)
ELECTRICAL SINGLE LINE DIAGRAM - DEMOLITION

M NO.	CONTRACT NO.	SCALE	DRAWING NO.	SHEET NO.
M1304	FQ-18102	NONE	CWPD2-E-601	90 of 173

			REFERENCE DRAWINGS		REVISIONS		
			NUMBER	TITLE	DATE	NUM	DESCRIPTION
DESIGNED	<u>B. IDILBI</u>	<u>09/30/17</u> DATE			03/30/2018	0	FINAL CONTRACT DRAWINGS
DRAWN	<u>J. ZHU</u>	<u>09/30/17</u> DATE					
CHECKED	<u>D. KHAN</u>	<u>03/23/18</u> DATE					

SHEET NOTES:

1. PROVIDE NEW CIRCUIT WITH GROUND FAULT PROTECTION IN EXISTING MCC.

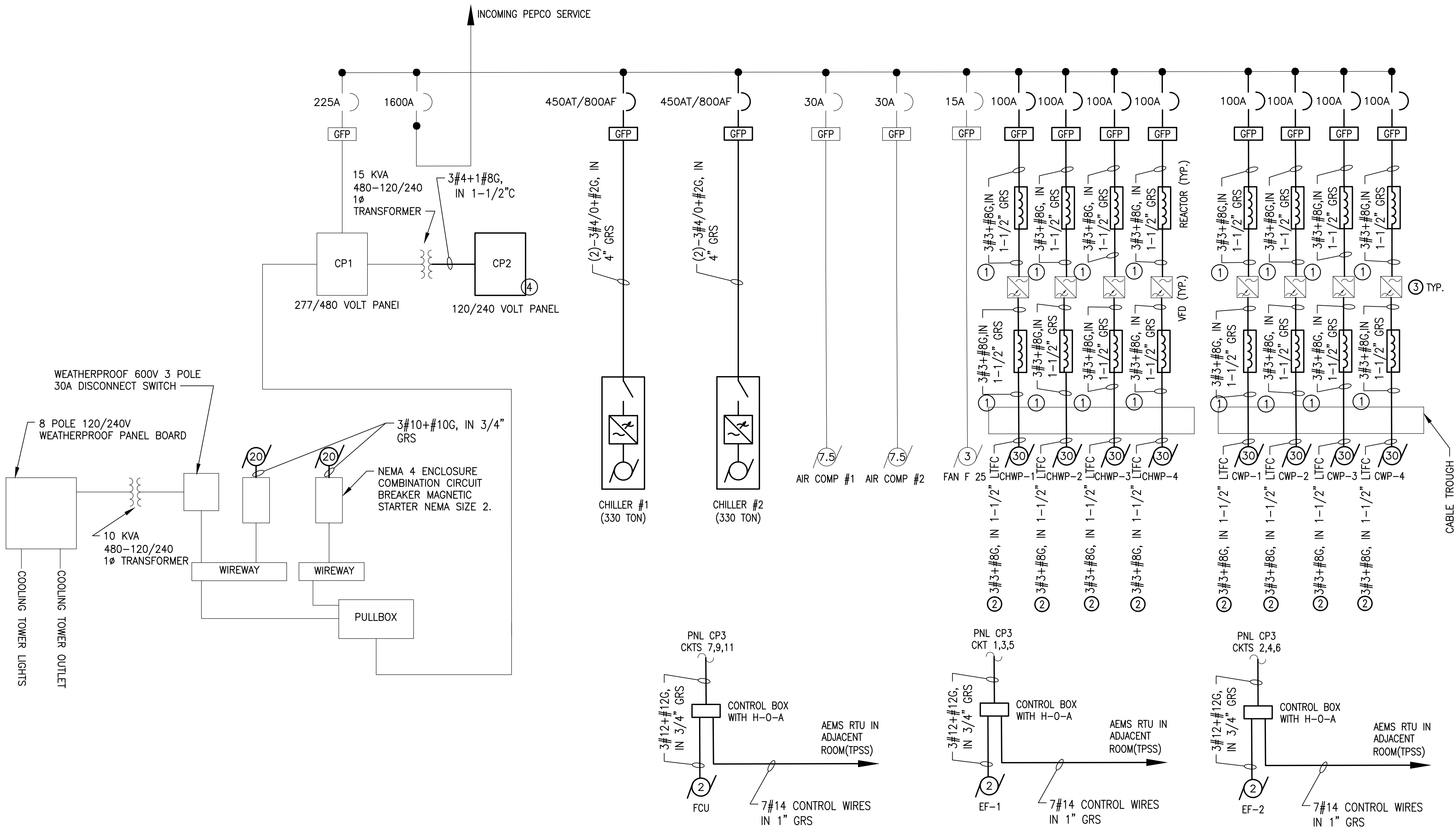
PLAN NOTES:

① LINE AND LOAD REACTORS FOR EACH VFD SHALL BE PROVIDED AND MOUNTED ABOVE THE VFD IN A SINGLE NEMA 4X ENCLOSURE

② RUN NEW RGS FROM CABLE TROUGH AND STOP NEAR MOTOR. RUN LTFC FROM RGS TO MOTOR.

③ EXISTING VFD'S TO REMAIN

④ PROVIDE DISTRIBUTION PANEL CP2.



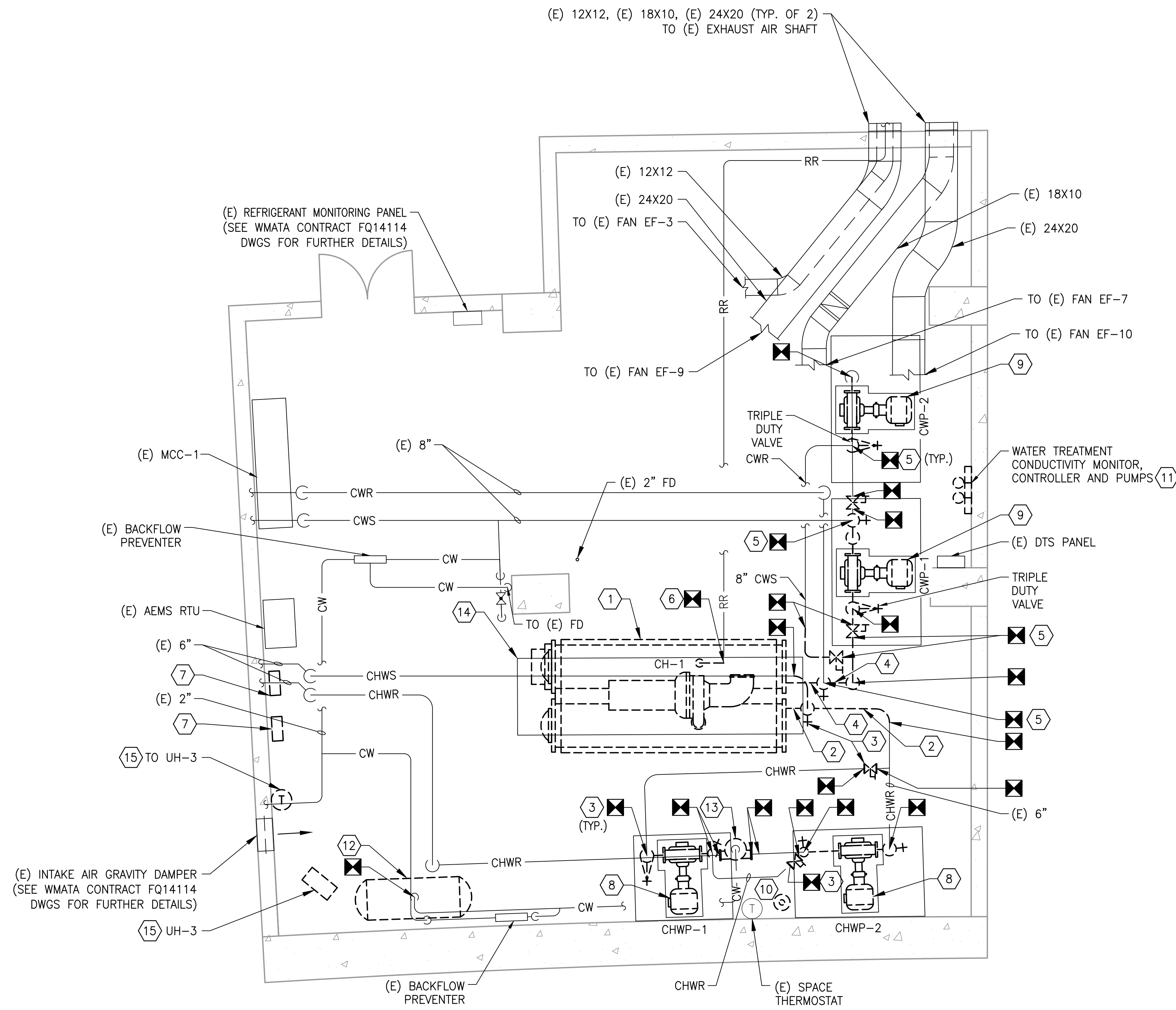
1

1

Figure 1

SCALE: NONE

[illegible]

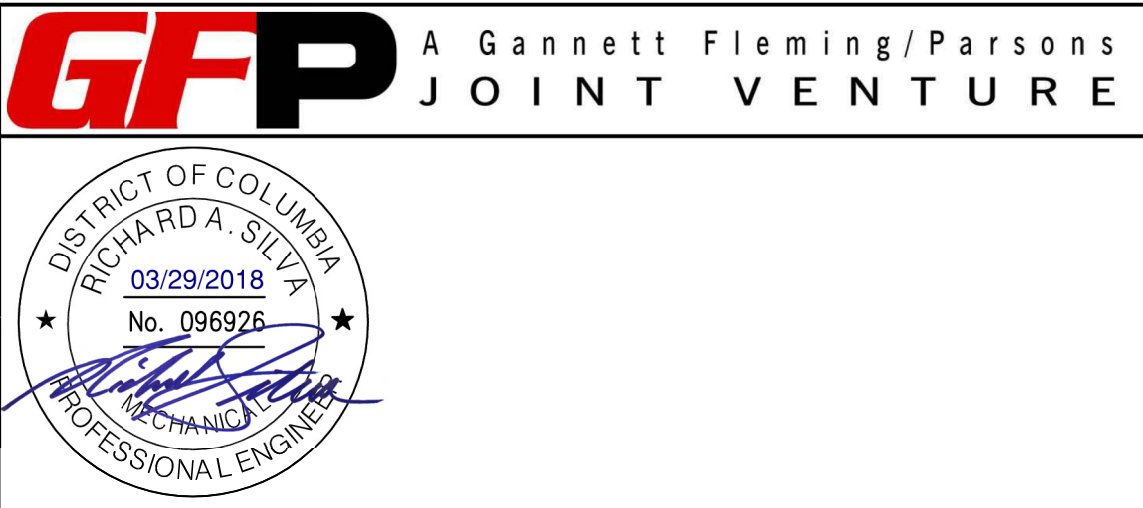
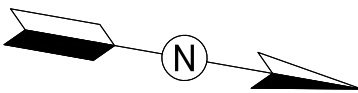


- GENERAL NOTES:**
- A. CONTRACTOR SHALL FIELD VERIFY EXACT LOCATION AND QUANTITIES OF EQUIPMENT, PIPING, VALVES, DUCTWORK, ELECTRICAL AND CONTROL WIRING PRIOR TO DEMOLITION. ITEMS SHOWN ON THIS PLAN ARE APPROXIMATE.
- B. REFER TO LEGEND SHEET FOR GENERAL ABBREVIATIONS AND SYMBOLS.

- KEYNOTES:**
- 1 REMOVE AND DISPOSE OF CHILLER, CHILLER SUPPORT, STARTER, WIRING, CONDUIT, JUNCTION AND PULL BOXES, DISCONNECT, AEMS SENSORS, AND CONTROLS. REMOVAL SHALL INCLUDE R-134a EVACUATION BY A CERTIFIED COMPANY. RECOVERED REFRIGERANT SHALL BE CLEANED AND THEN BE RETURNED TO WMATA PLANT MAINTENANCE IN 125 POUND BULLET CONTAINERS.
- 2 REMOVE AND DISPOSE OF CHILLED WATER PIPING (CHWS, CHWR), INSULATION, SUPPORT, TEMPERATURE AND PRESSURE GAUGES. EXTENT OF PIPING REMOVAL SHALL BE, IN GENERAL, TO THE INDICATED ISOLATION VALVE FLANGE FROM THE CHILLER. EXACT DEMOLITION POINT SHALL BE FIELD COORDINATED BY CONTRACTOR TO ACCOMMODATE NEW PIPING CONNECTIONS.
- 3 REMOVE AND DISPOSE OF CHILLED WATER PIPING VALVES AS IDENTIFIED TO BE DEMOLISHED. EXACT QUANTITY OF VALVES SHALL BE VERIFIED BY INSTALLING CONTRACTOR. THE EXTENT OF ALL VALVE REPLACEMENTS SHALL BE INCLUSIVE OF THE CONNECTION FLANGES (TYPICAL).
- 4 REMOVE AND DISPOSE OF CONDENSER WATER PIPING (CWR, CWS), INSULATION, TEMPERATURE AND PRESSURE GAUGES. EXTENT OF PIPING REMOVAL SHALL BE, IN GENERAL, TO THE INDICATED ISOLATION VALVE FLANGE FROM THE CHILLER. EXACT DEMOLITION POINT SHALL BE FIELD COORDINATED BY CONTRACTOR TO ACCOMMODATE NEW PIPING CONNECTIONS.
- 5 REMOVE AND DISPOSE OF CONDENSER WATER PIPING VALVES. EXACT QUANTITY OF VALVES SHALL BE FIELD VERIFIED BY INSTALLING CONTRACTOR. THE EXTENT OF ALL VALVE REPLACEMENTS SHALL BE INCLUSIVE OF THE CONNECTION FLANGES (TYPICAL).
- 6 REMOVE EXISTING 2" REFRIGERANT RELIEF (VENT) PIPING TO EXTENT SHOWN.
- 7 REMOVE AND DISPOSE OF EXISTING JOHNSON CONTROLS PANEL AND PUMP CONTROL PANEL.
- 8 REMOVE AND DISPOSE OF CHILLED WATER PUMPS, CHWP-1 AND CHWP-2. REMOVAL SHALL INCLUDE PUMP, MOTOR, CONTROL AND POWER WIRING, CONDUIT, JUNCTION AND PULL BOXES, PIPING, SUPPORT, ISOLATION VALVES, STRAINER AND CHECK VALVE, WITH ALL INSTRUMENTATION AND CONTROLS. EXISTING VIBRATION SUPPORT, INERTIAL PAD AND EQUIPMENT TO REMAIN AND BE RE-USED. EXTENT OF PIPING REMOVAL SHALL BE, IN GENERAL, TO THE INDICATED ISOLATION VALVE FLANGE FROM THE PUMPS. EXACT DEMOLITION POINT SHALL BE FIELD COORDINATED BY CONTRACTOR TO ACCOMMODATE NEW PIPING CONNECTIONS.
- 9 REMOVE AND DISPOSE OF CONDENSER WATER PUMPS, CWP-1 AND CWP-2 UP TO THE PIPE CONNECTION FLANGES. REMOVAL SHALL INCLUDE PUMP, MOTOR, CONTROL AND POWER WIRING, CONDUIT, AND JUNCTION AND PULL BOXES. EXISTING VIBRATION SUPPORT, INERTIAL PAD, AND EQUIPMENT PAD TO REMAIN. EXTENT OF PIPING REMOVAL SHALL BE, IN GENERAL, TO THE INDICATED ISOLATION VALVE FLANGE FROM THE PUMPS. EXACT DEMOLITION POINT SHALL BE FIELD COORDINATED BY CONTRACTOR TO ACCOMMODATE NEW PIPING CONNECTIONS.
- 10 REMOVE AND DISPOSE OF CHEMICAL POT FEEDER & ACCESSORIES FOR CHILLED WATER SYSTEM.
- 11 REMOVE AND DISPOSE OF EXISTING CONDENSER WATER TREATMENT SYSTEM AND CONDUCTIVITY MONITOR (INCLUDING VALVES, PIPING, SUPPORTS, CHEMICAL DRUMS, METERING PUMPS, AND RELATED ELECTRICAL/CONTROL ACCESSORIES).
- 12 REMOVE AND DISPOSE OF EXISTING EXPANSION TANK. TANK SUPPORT SHALL REMAIN AND BE REUSED.
- 13 REMOVE AND DISPOSE OF EXISTING AIR SEPARATOR. AIR SEPARATOR SUPPORT SHALL REMAIN AND BE REUSED.
- 14 EXISTING CHILLER EQUIPMENT PAD TO REMAIN. SEE CWPE3-M-102 FOR NEW WORK REQUIREMENTS.
- 15 REMOVE AND DISPOSE OF UNIT HEATER UH-3, INCLUDING SUPPORTS, WIRING, CONDUIT, JUNCTION AND PULL BOXES AND ASSOCIATED THERMOSTAT.

1 MECHANICAL PLAN - DEMOLITION
CWPE3-M-100

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



			REFERENCE DRAWINGS			REVISIONS			<div><div><div>M</div><div>metro</div></div><div>WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY</div><div>DEPARTMENT OF DESIGN AND CONSTRUCTION SERVICES</div><div>OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM GROUP</div><div><div>APPROVED <i>Mark H. Magnusson</i> 03/2018</div><div>MARK MAGNUSSON MANAGER, ENV. PLANNING AND COMP</div><div>DATE</div></div><div><div>APPROVED <i>Gabe Spiller</i> 03/2018</div><div>GRAHAM SPILLER GFP DEPUTY PROGRAM MANAGER</div><div>DATE</div></div></div>			REPLACEMENT OF CHILLERS AND COOLING TOWER ACCESSORIES AT EIGHT METRO-RAIL STATIONS CWPE3 - COLUMBIA HEIGHTS (E04) MECHANICAL PLAN - DEMOLITION				
DESIGNED	B. VISWANATHAN	08/18/17 DATE	NUMBER	TITLE	DATE	NUM	DESCRIPTION	M NO.				CONTRACT NO.	SCALE	DRAWING NO.	SHEET NO.	
DRAWN	K. STOCKINGER	08/18/17 DATE			03/30/2018	0	FINAL CONTRACT DRAWINGS	M1304	FQ-18102	1/4" = 1'-0"	CWPE3-M-100	93 of 173				
CHECKED	D. ROMNESS	03/23/18 DATE														

M NO.	CONTRACT NO.	SCALE	DRAWING NO.	SHEET NO.
M1304	FQ-18102	1/4" = 1'-0"	CWPE3-M-101	94 of 173