




- GENERAL NOTES:
- ALL CONDUCTORS BETWEEN VFD'S AND ASSOCIATED MOTOR LOADS TO BE VFD-RATED CABLES.
- KEYNOTES:
- INSTALL IN EXISTING SPACE.
 - INSTALL TRANSFORMER AND PANEL IN EXISTING LOCATIONS.
 - FURNISH AND INSTALL LINE AND LOAD REACTORS COMPATIBLE WITH EXISTING VFD. MOUNT IN A SINGLE ENCLOSURE NEXT TO THE ASSOCIATED VFD.
 - CONNECT TO EXISTING BREAKER.
 - REPLACE EXISTING 600A TRIP UNIT WITH 450A. EXISTING BREAKER BY I-T-E/GOULD (MANUFACTURED IN 1978).

A ELECTRICAL SINGLE LINE DIAGRAM - NEW WORK
CWPK2-E-602

SCALE: NTS



<div>DESIGNED <u>R. LAUFER</u> 03/16/18 DATE</div> <div>DRAWN <u>O. FAYEMI</u> 03/16/18 DATE</div> <div>CHECKED <u>D. KHAN</u> 03/23/18 DATE</div>			REFERENCE DRAWINGS		REVISIONS			<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  03/2018 MARK MAGNUSSEN MANAGER, ENV. PLANNING AND COMP</div><div>DATE</div><div>APPROVED  03/2018 GRAHAM SPILLER GFP DEPUTY PROGRAM MANAGER</div><div>DATE</div></div>		REPLACEMENT OF CHILLERS AND COOLING TOWER ACCESSORIES AT EIGHT METRO-RAIL STATIONS CWPK2 - BALLSTON (K04) ELECTRICAL SINGLE LINE DIAGRAM - NEW WORK				
			NUMBER	TITLE	DATE	NUM	DESCRIPTION			M NO.	CONTRACT NO.	SCALE	DRAWING NO.	SHEET NO.
					03/30/2018	0	FINAL CONTRACT DRAWINGS	M1304	FQ-18102	1/4" = 1'-0"	CWPK2-E-602	167 of 173		

PANEL: CH2																			
MAIN BUS: 100A					MAIN DEVICE: 100A					NEUTRAL BUS: 100%									
208/120 VOLT					3 PHASE, 4 WIRE + GROUND					RMS AIC: 10,000A									
ENCLOSURE: NEMA 1					MOUNTING: SURFACE					LOCATION: CHILLER ROOM									
LOAD DESCRIPTION	LOAD VA	WIRE		RCWY SIZE	C/B		CKT NMBR	PHASE KVA			CKT NMBR	C/B		RCWY SIZE	WIRE		LOAD VA	LOAD DESCRIPTION	
		CKT	GND		TRIP	PL		A	B	C		TRIP	PL		GND	CKT			
WATER TREATMENT CONTR PNL	600	12	12	3/4"	20	1	1	3000			2	1	25	3/4"	10	10	2400	WATER HEATER — IWH-1	
CWP/CHP MONITORING SYSTEM	800	12	12	3/4"	20	1	3		1000		4	1	20	3/4"	12	12	200	BIOCIDE FEEDERS	
CHILLER PLANT CONTROL PNL	800	12	12	3/4"	20	1	5			900	6	1	20	3/4"	12	12	100	INHIBITOR FEED PUMP	
EXIST. LOAD	—	—	—	—	20	1	7	900			8	1	20	3/4"	12	12	900	FCU-1	
EXIST. LOAD	—	—	—	—	20	1	9		—		10	1	20	—	—	—	—	EXIST. LOAD	
EXIST. LOAD	—	—	—	—	20	1	11			—	12	1	20	—	—	—	—	EXIST. LOAD	
EXIST. LOAD	—	—	—	—	30	1	13	—			14	1	20	—	—	—	—	EXIST. LOAD	
EXIST. LOAD	—	—	—	—	30	1	15		—		16	1	20	—	—	—	—	SPARE	
SPARE	—	—	—	—	20	1	17			—	18	1	20	—	—	—	—	SPARE	
SPARE	—	—	—	—	20	1	19	—			20	1	20	—	—	—	—	SPARE	
SPARE	—	—	—	—	20	1	21		—		22	—	—	—	—	—	—	SPACE	
SPACE	—	—	—	—	—	—	23			—	24	—	—	—	—	—	—	SPACE	
								3900	1000	900									
											CONNECTED LOAD: 12,800 VA (EXIST. LOAD 7,000 VA)								
											DEMAND LOAD: 12,800 VA								

1

ELECTRICAL PANEL "CH2" SCHEDULE - NEW WORK

CWPK2-E-603

SCALE: NONE

ELECTRICAL EQUIPMENT SCHEDULE		
ITEM	QTY	DESCRIPTION
1	4	MCC BUCKET TO MATCH EXISTING WITH 125AT/250AF BREAKER
2	8	VFD, 480V, 3PH, 25HP, 60HZ, NEMA 4X ENCLOSURE WITH BYPASS AND FILTERS
3	2	LINE/LOAD REACTOR SET FOR VFD, 480V, 3PH, 30HP, 60HZ, NEMA 4X ENCLOSURE
4	1	TRANSFORMER, DRY TYPE, 480V-208V/120V, 15 KVA
5	1	PANELBOARD, UP TO 100A MCB, 24 CIRCUITS, 1P/20A BRANCH, 208/120V, 3P, 4W
6	LOT	3/4" GRS CONDUIT
7	LOT	1" GRS CONDUIT
8	LOT	1 1/2" GRS CONDUIT
9	LOT	1 1/2" LIQUIDTIGHT FLEXIBLE CONDUIT
10	LOT	3" GRS CONDUIT
11	LOT	3" LIQUIDTIGHT FLEXIBLE CONDUIT
12	LOT	#12 AWG RHW-2 WIRE
13	LOT	#10 AWG RHW-2 WIRE
14	LOT	#8 AWG RHW-2 WIRE
15	LOT	#6 AWG RHW-2 WIRE
16	LOT	#6 AWG RHW-2 WIRE (VFD RATED)
17	LOT	#2 AWG RHW-2 WIRE
18	LOT	#2 AWG RHW-2 WIRE (VFD RATED)
19	LOT	250 KCMIL RHW-2 WIRE

2

ELECTRICAL EQUIPMENT SCHEDULE - NEW WORK

CWPK2-E-603

SCALE: NONE

MOTOR CONTROL CENTER: MCC CHP-K02 (MCC 4) 600 AMPS, 480/277V, 3Ø, 4W, GND BUS SECT. 1-3-600A, NEUTRAL 600A								LOCATION: CHILLER PLANT AVAILABLE SHORT CIRCUIT: 65,000 AMPS RMS SYM ENCLOSURE TYPE: NEMA 12											
SEC. NO.	ITEM NO.	CIRCUIT BREAKER			MCP CONTIN. RATING AMP.	CONNECTED LOAD KVA	HP OR KW	DESCRIPTION	NOTES	ELEVATION									
		POLES	FRAMES AMP.	TRIP AMP.						SECTION 1	SECTION 2	SECTION 3							
1	A	3	—	—	—	EX	—	MAIN LUGS		<div><div><div>1A</div><div>2A</div><div>3A</div></div><div><div>1B</div><div>2B</div><div>3B</div></div><div><div>1C</div><div>2C</div><div>3C</div></div><div><div>1D</div><div>2D</div><div>3D</div></div><div><div>1E</div><div>2E1</div><div>2E2</div><div>3D</div></div><div><div>1F</div><div>2F</div><div>3E</div></div></div>									
	B	3	15	15	—	EX	—	EF-1											
	C	3	15	15	—	EX	—	EF-2											
	D	3	100	100	—	—	—	SPARE											
	E	3	30	30	—	EX	—	LOAD CENTER (REFRIG. MONITORING PROJECT)											
2	F	3	125	125	—	57	2X25HP	CHWP-1, CHWP-2 VFD'S FEEDER											
	A	3	30	30	—	EX	—	DUPLEX AIR COMPRESSOR											
	B	3	30	30	—	20	20KW	UH-1											
	C	3	—	—	—	—	—	SPACE											
	D	3	125	125	—	57	2X25HP	CHWP-3, CHWP-4 VFD'S FEEDER											
	E1	3	EX	EX	—	EX	—	EXISTING BREAKER / UNKNOWN											
	E2	3	50	50	—	15	—	PANEL "CH2"											
	F	3	—	—	—	—	—	SPACE											
	3	A	3	125	125	—	57	2X25HP	CWP-1, CWP-2 VFD'S FEEDER										
B		3	100	100	—	33	30HP	CT-1 FAN VFD											
C		3	100	100	—	33	30HP	CT-2 FAN VFD											
D		3	125	125	—	57	2X25HP	CWP-3, CWP-4 VFD'S FEEDER											
E		—	—	—	—	—	—	SPACE											
MANUFACTURER: EATON CUTLER-HAMMER FREEDOM SERIES 2100																			

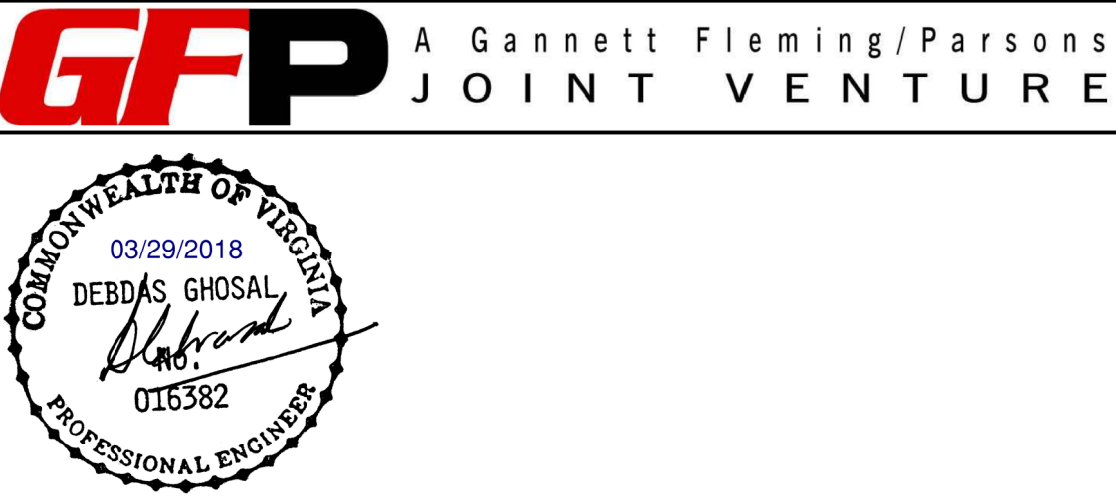
3

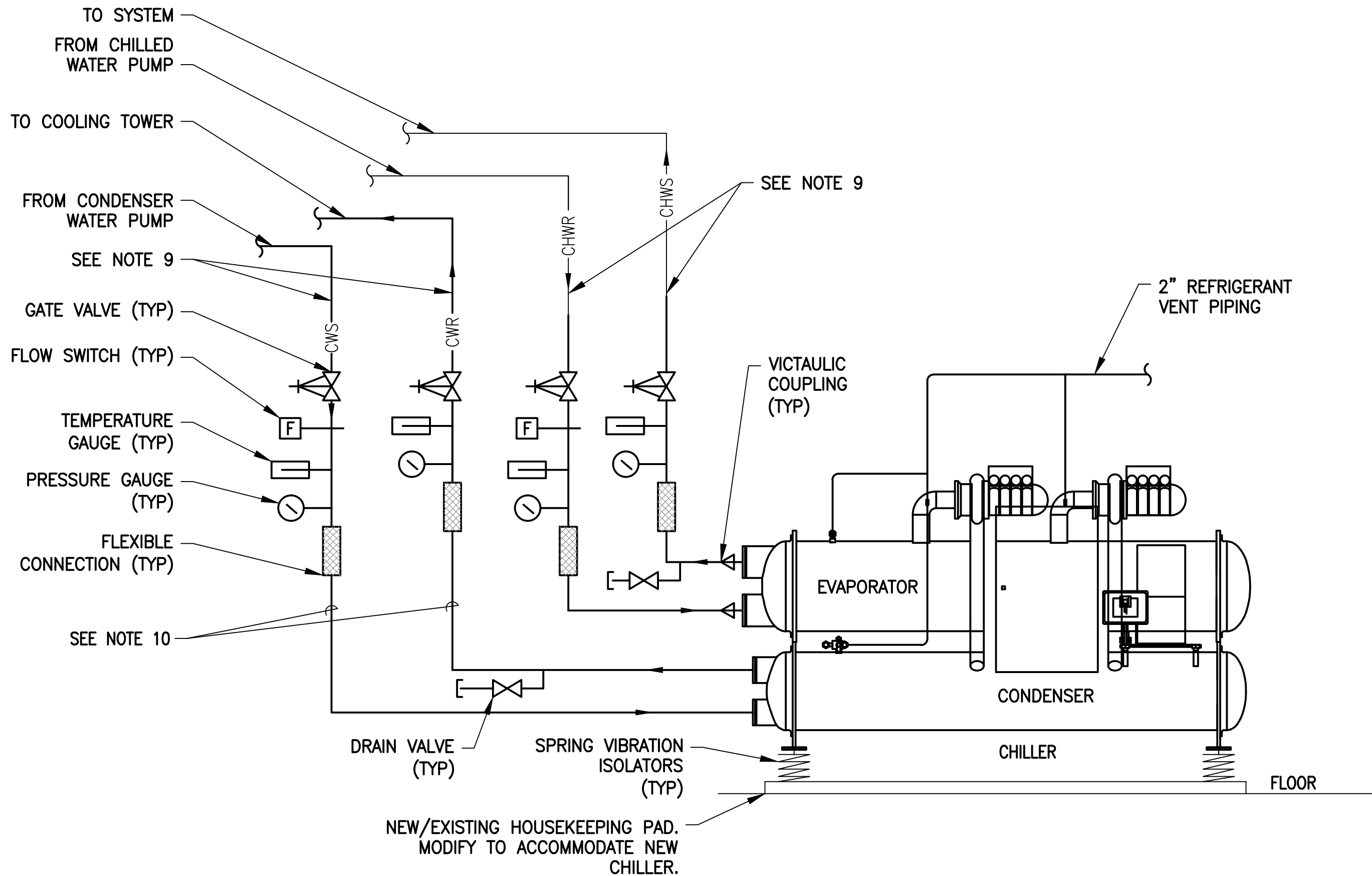
MCC SCHEDULE - NEW WORK

CWPK2-E-603

SCALE: NONE

DESIGNED <u>R. LAUFER</u> 03/16/18 DATE DRAWN <u>O. FAYEMI</u> 03/16/18 DATE CHECKED <u>D. KHAN</u> 03/23/18 DATE	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 <u>Mark H. Magnusson</u> 03/2018 MARK MAGNUSSEN MANAGER, ENV. PLANNING AND COMP</div> <div>DATE</div> <div>APPROVED <u>Gabe Spiller</u> 03/2018 GRAHAM SPILLER GFP DEPUTY PROGRAM MANAGER</div> <div>DATE</div>	REPLACEMENT OF CHILLERS AND COOLING TOWER ACCESSORIES AT EIGHT METRO-RAIL STATIONS CWPK2 - BALLSTON (K04) ELECTRICAL EQUIPMENT AND PANEL SCHEDULE				
	NUMBER	TITLE	DATE	NUM	DESCRIPTION		M NO. M1304	CONTRACT NO. FQ-18102	SCALE 1/4" = 1'-0"	DRAWING NO. CWPK2-E-603	SHEET NO. 168 of 173
			03/30/2018	0	FINAL CONTRACT DRAWINGS						





- NOTES:
- 1. THIS DETAIL IS A GENERAL SCHEMATIC TO SHOW THE CHILLER PIPING, VALVES, GAUGES, ETC. REFER TO STATION SPECIFIC CHILLER PLAN DRAWINGS FOR ACTUAL CONNECTIONS, ORIENTATION, AND LAYOUT.
 - 2. REPLACE CHILLED WATER AND CONDENSER WATER SUPPLY AND RETURN PIPE, VALVES, & FITTINGS AS SHOWN ON THE FLOOR PLAN. GROOVED PIPE AND VICTAULIC COUPLINGS SHALL BE USED.
 - 3. CONNECT CHILLER REFRIGERANT RELIEF VALVES TO NEW REFRIGERANT PURGE PIPE. PROVIDE A PIPING FLEXIBLE CONNECTION CLOSE TO THE CHILLER. PROVIDE A TEE IN THE DISCHARGE PIPING NEAR THE CHILLER WITH A DRAIN VALVE, NIPPLE AND CAP IN THE BOTTOM OF THE TEE.
 - 4. ALL PIPING SHALL BE CONFIGURED TO MINIMIZE INTERFERENCE WITH THE SERVICE AND MAINTENANCE OF THE CHILLER.
 - 5. PROVIDE AND INSTALL TEMPERATURE AND PRESSURE GAUGES WITH SNUBBERS.
 - 6. FURNISH AND INSTALL FLOW SWITCHES AS INDICATED ON PLANS UNLESS PROVIDED ON THE CHILLER BY THE MANUFACTURER.
 - 7. FURNISH AND INSTALL SENSORS FOR ALL DATA POINTS NOT INCLUDED BY THE CHILLER MANUFACTURER.
 - 8. UTILIZE SUFFICIENT VICTUALIC PIPE COUPLINGS TO ALLOW REMOVAL OF PIPE AND ACCESSORIES TO PERMIT EVAPORATOR AND CONDENSER TUBE REMOVAL.
 - 9. MAINTAIN APPROPRIATE CLEARANCES PER MANUFACTURER'S RECOMMENDATION ON PIPING TO ACCOMODATE ALL VALVES, FLEX CONNECTIONS, AND PIPE FITTINGS. PERFORM ADDITIONAL PIPE CUTTING IF REQUIRED.
 - 10. REFER TO SPECIFIC CHILLER PLANT DRAWINGS FOR EXACT PIPE SIZES.

1 CHILLER PIPING DETAIL

NOT TO SCALE

State of Maryland Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 041715, Expiration Date: 03/08/2020

03/29/2018

State of Maryland Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 030749, Expiration Date: 06/27/2018

03/29/2018

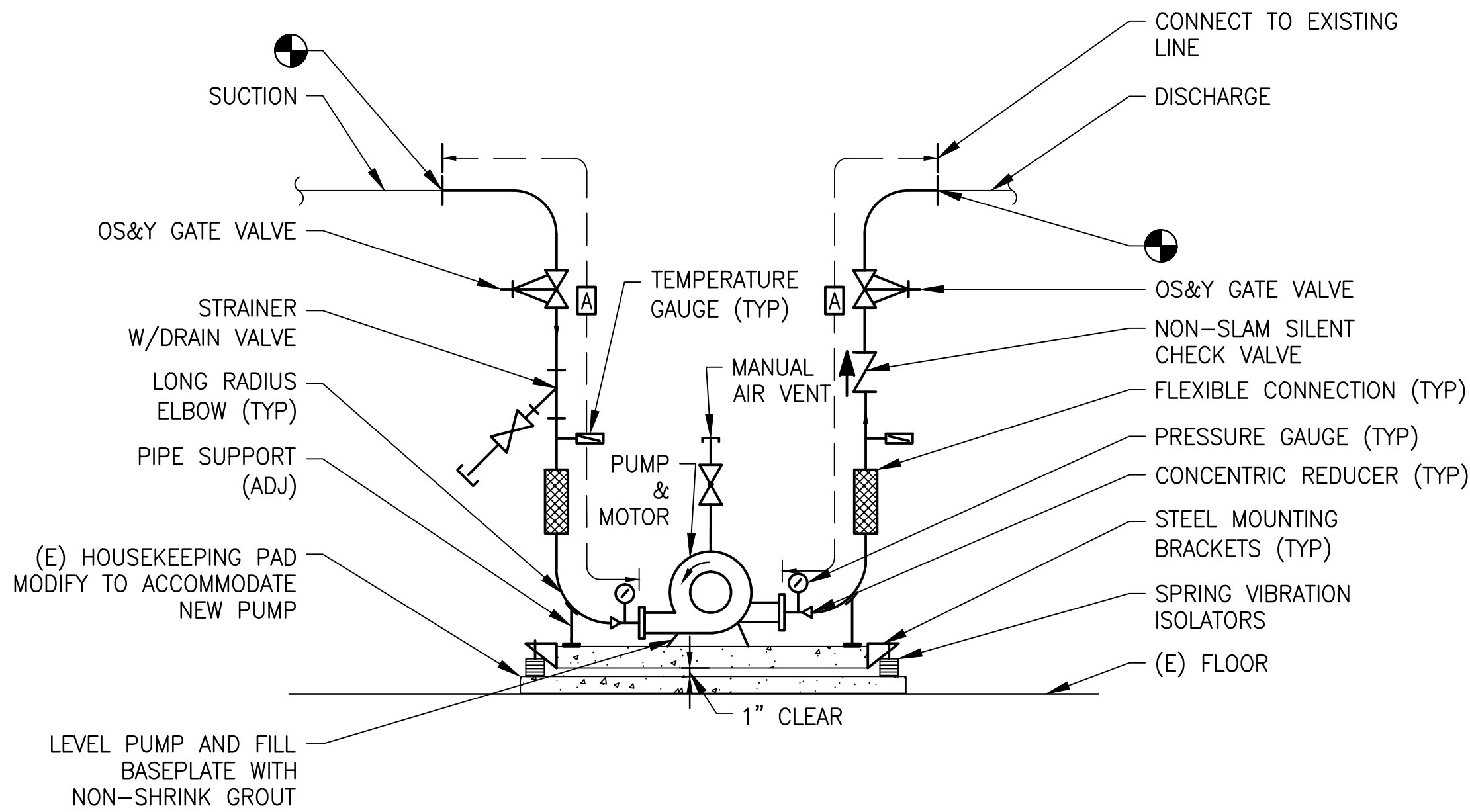
GFP A Gannett Fleming / Parsons JOINT VENTURE

DISTRICT OF COLUMBIA
RICHARD A. SILVA
03/29/2018
No. 096926
PROFESSIONAL ENGINEER

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

COMMONWEALTH OF VIRGINIA
BALAKRISHNAN VISWANATHAN
03/29/2018
Lic. No. 043853
PROFESSIONAL ENGINEER

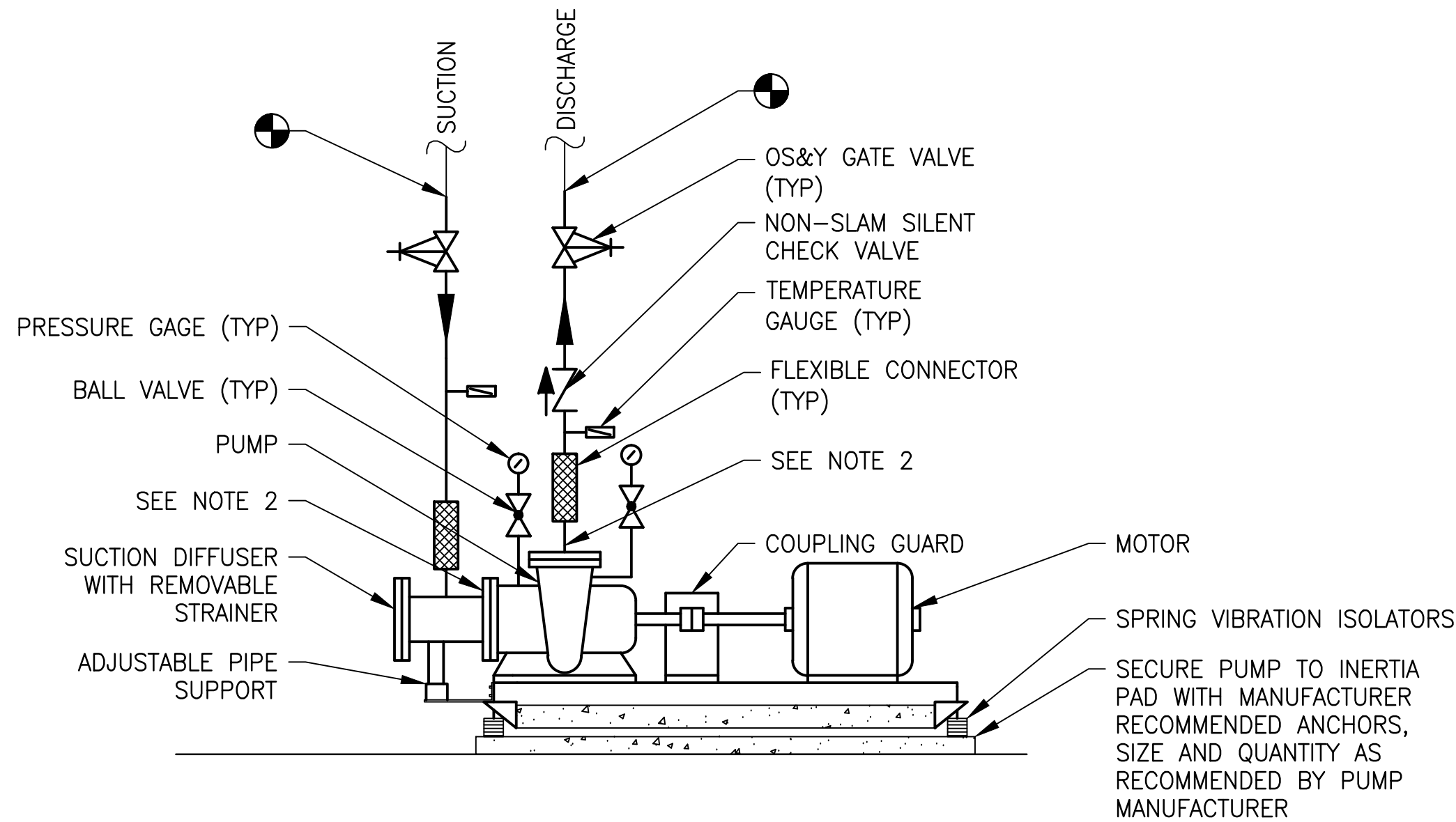
DESIGNED B. VISWANATHAN 01/26/18 DATE DRAWN C. LOOSE 01/26/18 DATE CHECKED B. VISWANATHAN 03/23/18 DATE	REFERENCE DRAWINGS		REVISIONS			M metro WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY DEPARTMENT OF DESIGN AND CONSTRUCTION SERVICES OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM GROUP		REPLACEMENT OF CHILLERS AND COOLING TOWER ACCESSORIES AT EIGHT METRO-RAIL STATIONS				
	NUMBER	TITLE	DATE	NUM	DESCRIPTION			MECHANICAL DETAILS SHEET 1 OF 5				
			03/30/2018	0	FINAL CONTRACT DRAWINGS	APPROVED <i>Mark H. Magnusson</i> 03/2018 MARK MAGNUSSEN MANAGER, ENV. PLANNING AND COMP DATE APPROVED <i>Gabe Spiller</i> 03/2018 GRAHAM SPILLER GFP DEPUTY PROGRAM MANAGER DATE		M NO.	CONTRACT NO.	SCALE	DRAWING NO.	SHEET NO.
								M1304	FQ-18102	NONE	M-500	169 of 173



NOTES:

1. "A" DIMENSION FROM PUMP INLET/OUTLET SHALL BE FIELD COORDINATED FOR PROPER INSTALLATION AT THE POINT OF CONNECTION TO EXISTING.
2. REFER TO PLAN DRAWINGS FOR PUMP TYPE. THIS DETAIL IS A SCHEMATIC REPRESENTATION ONLY.
3. SOME PLANTS MAY HAVE TRIPLE DUTY VALVE ON PUMP DISCHARGE. REFER TO PLAN DRAWINGS.

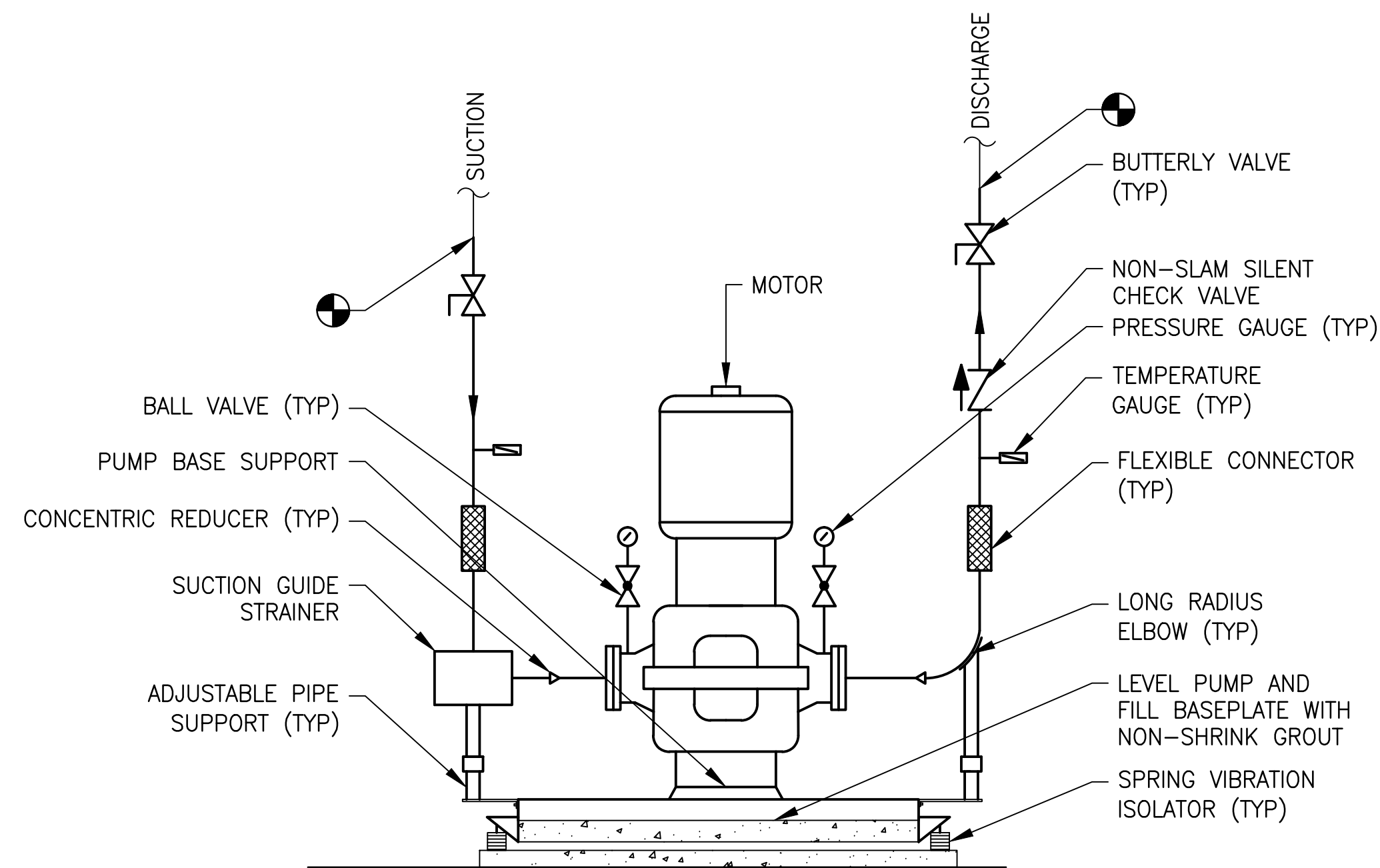
1 TYPICAL HORIZONTAL SPLIT CASE PUMP PIPING DETAIL
M-501 NOT TO SCALE



NOTE:

1. SOME PLANTS MAY HAVE TRIPLE DUTY VALVE ON PUMP DISCHARGE. REFER TO PLAN DRAWINGS.

2 TYPICAL END SUCTION PUMP WITH SUCTION DIFFUSER
M-501 NOT TO SCALE



NOTE:

1. THIS DETAIL ONLY APPLIES TO CWP5 (BETHESDA).

3 INLINE VERTICAL PUMP PIPING DETAIL
M-501 NOT TO SCALE

GENERAL NOTES:

1. SIZE OF VALVES, STRAINERS, AND FLEXIBLE CONNECTIONS SHALL BE THE SAME SIZE OF THE PIPING ON WHICH THEY ARE INSTALLED.
2. FOR END SUCTION PUMPS USE ECCENTRIC REDUCER (FLAT ON TOP) AT SUCTION NOZZLE WHEN REQUIRED. USE CONCENTRIC REDUCERS UNDER ALL OTHER CONDITIONS WHEN REQUIRED.
3. INSTALL FLEXIBLE CONNECTORS IN SUCTION AND DISCHARGE PIPING AS SHOWN ON STANDARD DRAWINGS. SELECT CONNECTORS FOR SUITABLE TEMPERATURE AND PRESSURE RATINGS WITH A MINIMUM RATED MISALIGNMENT OF 1/4" FOR SIZES 10" AND SMALLER AND 3/8" FOR SIZES 12" AND LARGER.
4. DO NOT INSTALL VALVES, STRAINERS, ETC., DIRECTLY AT SUCTION NOZZLE OF END SUCTION PUMPS.
5. PRESSURE GAUGES ARE REQUIRED ON SUCTION AND DISCHARGE SIDE OF PUMP (DO NOT MANIFOLD) AND MAY BE LOCATED IN THE PIPING OR PUMP BODY.
6. DESIGN THE PIPING SYSTEM TO ENSURE THAT THE MAXIMUM WEIGHT ON THE PUMP CASING DOES NOT EXCEED THE MANUFACTURERS RECOMMENDED COMBINED FORCES AND MOMENTS. DISCHARGE AND SUCTION PIPING SHOULD BE SUPPORTED CLOSE TO THE PUMP FLANGE TO PREVENT VIBRATION AND STRAIN ON PUMP CASING.
7. PUMP CONCRETE PAD (2004 ASHRAE SYSTEMS & EQUIPMENT HANDBOOK, PAGE 39.13)
 - A. MINIMUM WEIGHT OF CONCRETE SHOULD BE 2.5 TIMES THE WEIGHT OF THE PUMP ASSEMBLY.
 - B. CONCRETE PAD SHOULD BE AT LEAST 4 INCHES THICK AND 6 INCHES WIDER THAN THE PUMP BASE PLATE ON EACH SIDE.



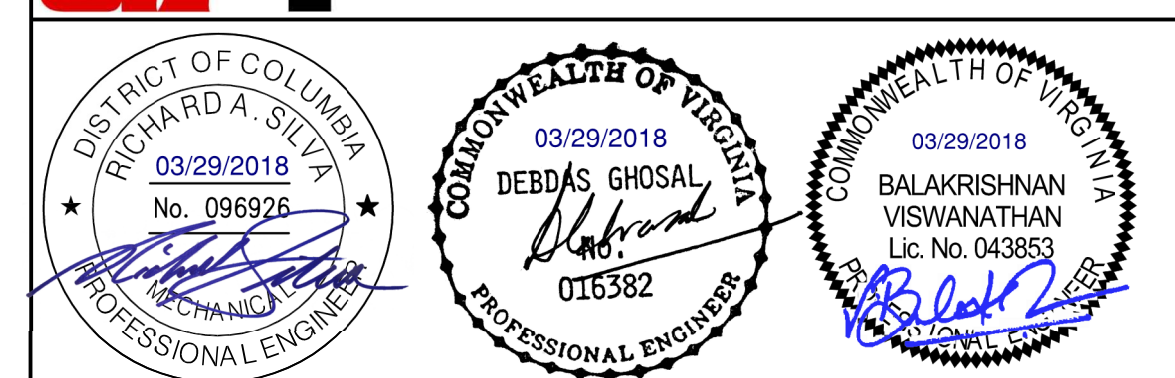
State of Maryland Professional Certification. I hereby certify that these documents were prepared or **approved** by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 041715, Expiration Date: 03/08/2020

03/29/2018



State of Maryland Professional Certification. I hereby certify that these documents were prepared or **approved** by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 030749, Expiration Date: 06/27/2018

03/29/2018



WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

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

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

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

REPLACEMENT OF CHILLERS
AND COOLING TOWER ACCESSORIES AT EIGHT METRO-RAIL STATIONS

MECHANICAL DETAILS SHEET 2 OF 5

M NO.	CONTRACT NO.	SCALE	DRAWING NO.	SHEET NO.
M1304	FQ-18102	NONE	M-501	170 of 173



- ## 1 EYEWASH & UTILITY SINK PIPING SCHEMATIC

(M-502)

2 TYPICAL AIR SEPARATOR TANK

M-502A

NOTE:

- 3 TYPICAL FAN COIL UNIT (FCU) & AIR HANDLING UNIT (AHU)

(M-502)

4 TYPICAL CONDENSATE DRAIN TRAP PIPE

M-502A


State of Maryland Professional Certification. I hereby certify that these documents were prepared or **approved** by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 041715, Expiration Date: 03/08/2020

03/29/2018

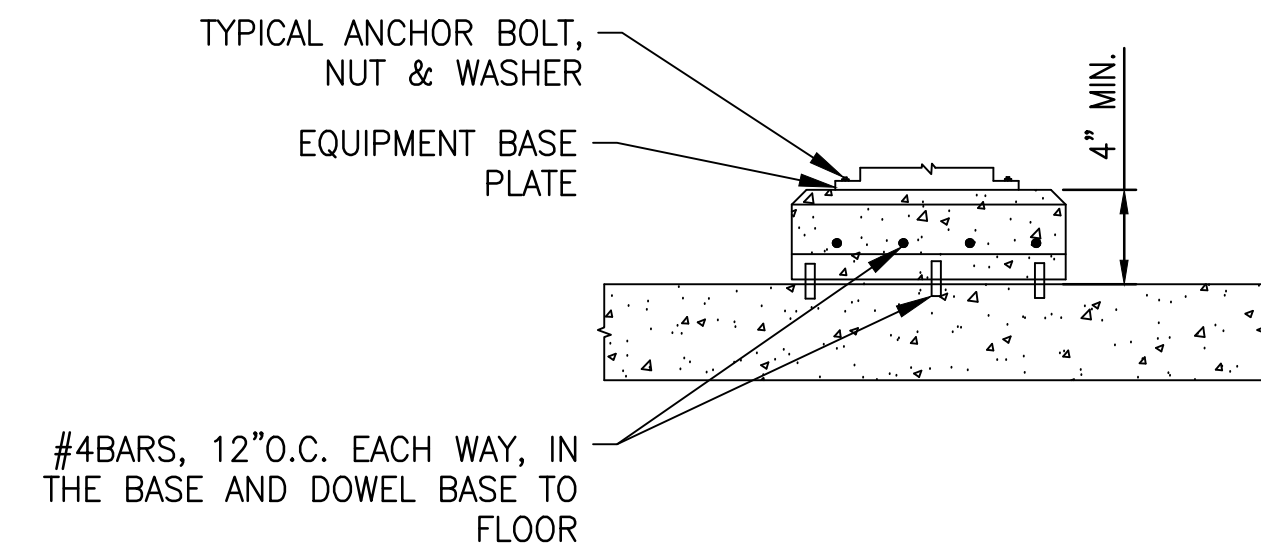
State of Maryland Professional Certification. I hereby certify that these documents were prepared or **approved** by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 030749, Expiration Date: 06/27/2018

03/29/2018

GFP A Gannett Fleming/Parsons
JOINT VENTURE



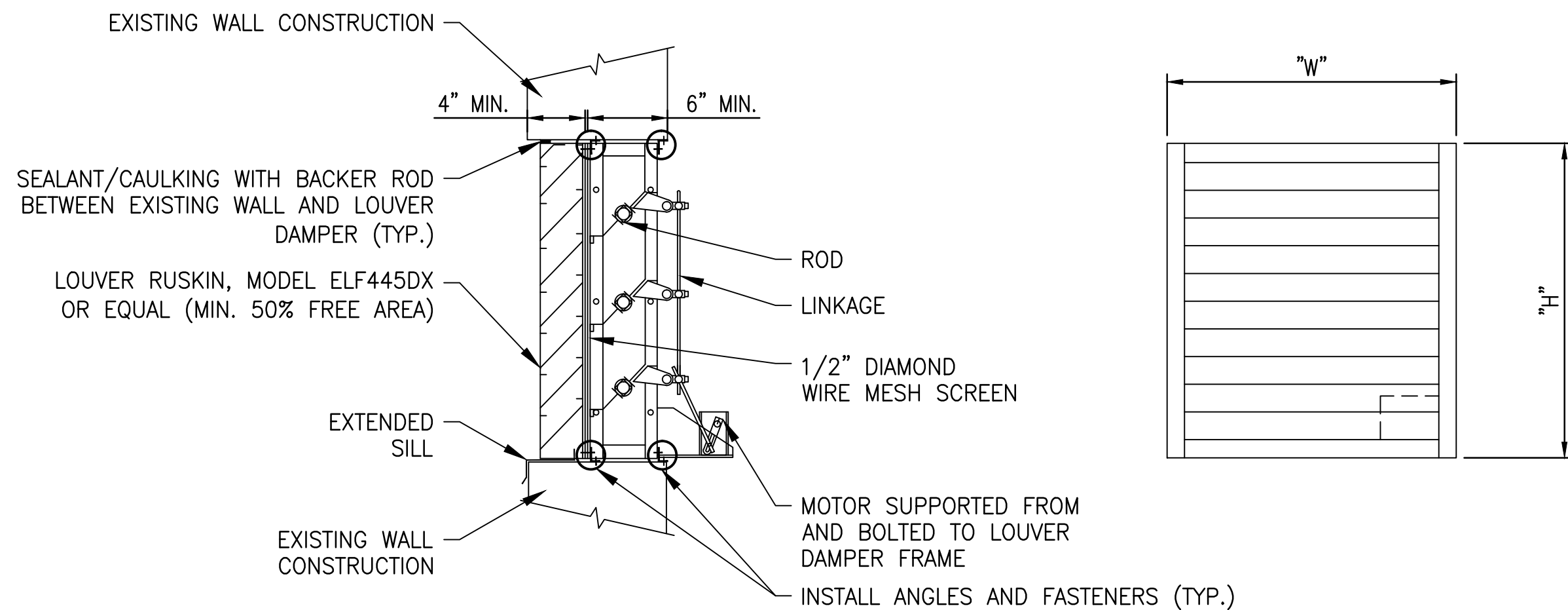
<div>DESIGNED <u>B. VISWANATHAN</u> <u>01/26/18</u> DATE</div> <div>DRAWN <u>C. LOOSE</u> <u>01/26/18</u> DATE</div> <div>CHECKED <u>B. VISWANATHAN</u> <u>03/23/18</u> DATE</div>	REFERENCE DRAWINGS		REVISIONS			<div><div><div>M</div><div>metro</div></div><div>WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY</div><div>DEPARTMENT OF DESIGN AND CONSTRUCTION SERVICES</div><div>OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM GROUP</div><div><div>APPROVED <u>Mark H. Magnusson</u> <u>03/2018</u> DATE</div><div>MARK MAGNUSSEN MANAGER, ENV. PLANNING AND COMP.</div></div><div><div>APPROVED <u>Gabe Spiller</u> <u>03/2018</u> DATE</div><div>GRAHAM SPILLER GEN. DEPUTY PROGRAM MANAGER</div></div></div>	REPLACEMENT OF CHILLERS AND COOLING TOWER ACCESSORIES AT EIGHT METRO-RAIL STATIONS				
	NUMBER	TITLE	DATE	NUM	DESCRIPTION		MECHANICAL DETAILS SHEET 3 OF 5				
			03/30/2018	0	FINAL CONTRACT DRAWINGS						
						M NO.	CONTRACT NO.	SCALE	DRAWING NO.	SHEET NO.	
						M1304	FQ-18102	NONE	M-502	171 of 173	



NOTE:

1. LENGTH AND WIDTH DIMENSIONS SHALL BE 6" GREATER THAN THE EQUIPMENT BASE PLATE.
2. DESIGN OF POST INSTALLED ANCHOR SHALL BE REVIEWED AND APPROVED BY WMATA AR PRIOR TO INSTALLATION.

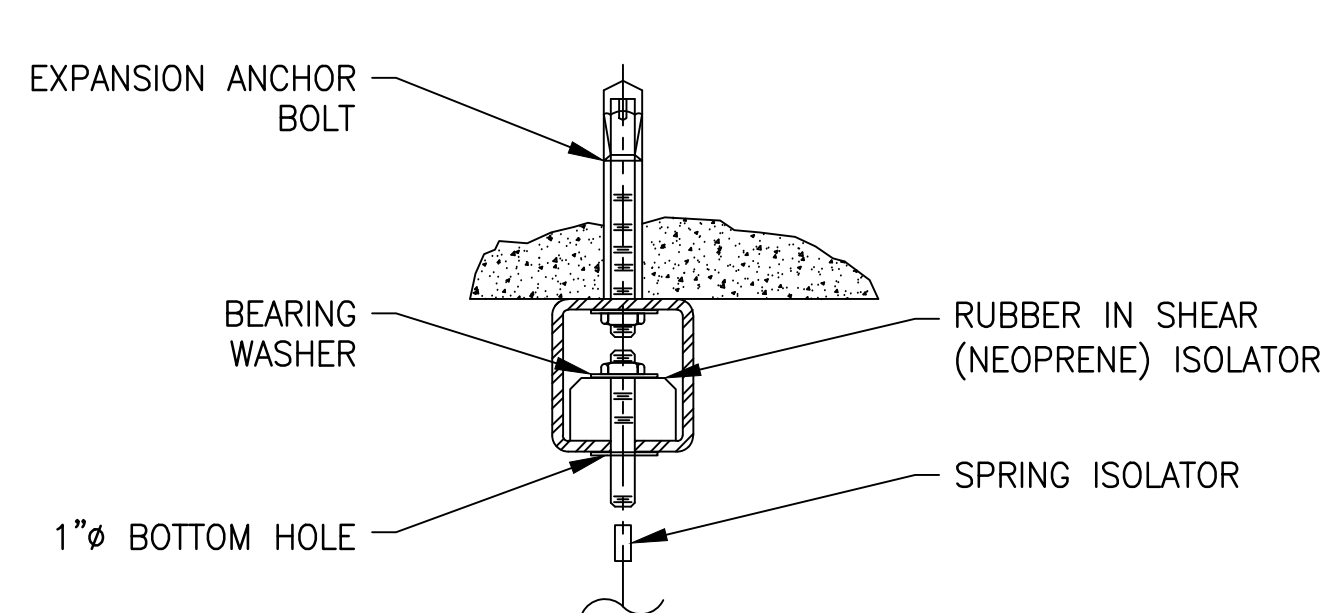
1 TYPICAL HOUSEKEEPING PAD NOT TO SCALE



NOTES:

1. REFER TO SPECIFIC CHILLER DRAWINGS FOR LOUVER, INDOOR TYPE.
2. SUBMIT TO WMATA FOR APPROVAL WALL OPENING REQUIREMENT AND SHOP DRAWINGS FOR LOUVER.

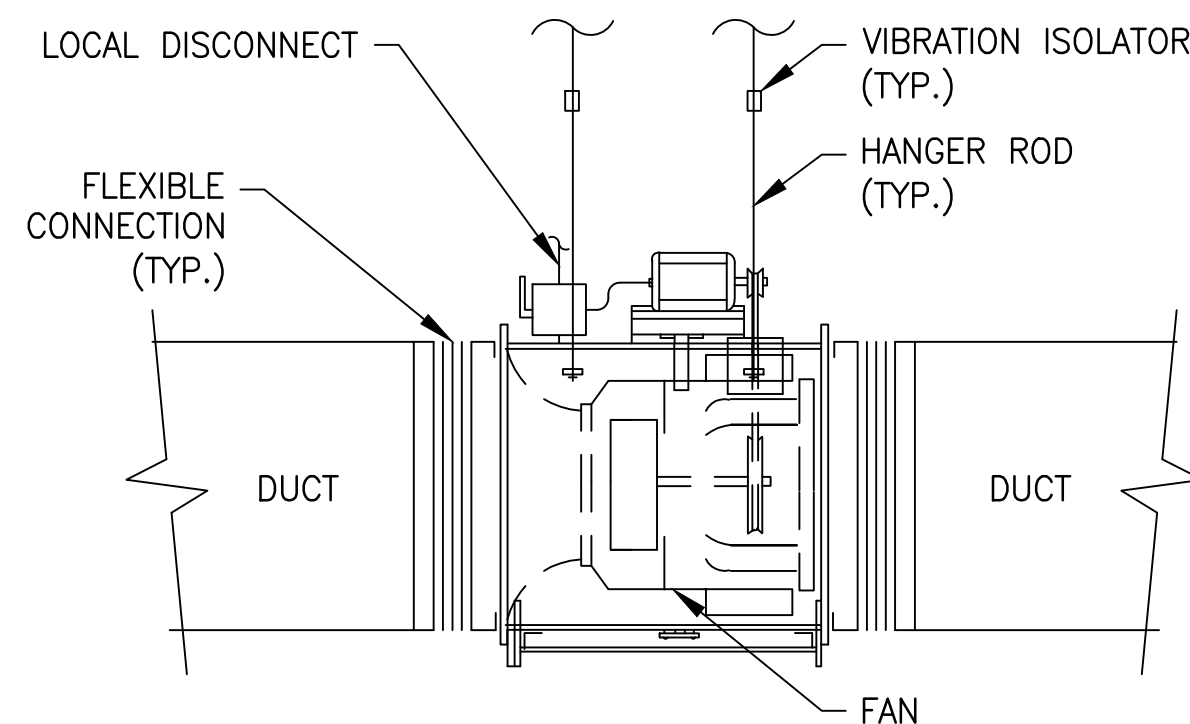
2 OUTDOOR TYPE LOUVER AND MOTORIZED DAMPER NOT TO SCALE



NOTES:

1. SPACING, DIAMETER, AND LENGTH OF BOLTED EMBEDS SHALL BE DETERMINED AND ENGINEERED BY CONTRACTOR, AND SUBMITTED FOR REVIEW AND APPROVAL BY THE AR PRIOR TO INSTALLATION.
2. LOAD RANGE: 25 LBS. TO 1,000 LBS. AS REQUIRED.
3. STANDARD ROD SIZE 5/8" (BY OTHERS) EQUIPMENT BASE.

3 CEILING MOUNTED VIBRATION ISOLATOR NOT TO SCALE



NOTES:

1. PROVIDE LOCAL DISCONNECT FOR UNIT.
2. MOUNT UNIT IN A LOCATION WHERE IT CAN BE CONVENIENTLY SERVICED BY TECHNICIANS.
3. RE-ORIENT MOTOR LOCATION IF NECESSARY TO PROVIDE PROPER MOTOR ACCESS AND ALIGNMENT TO EXISTING DUCTWORK.

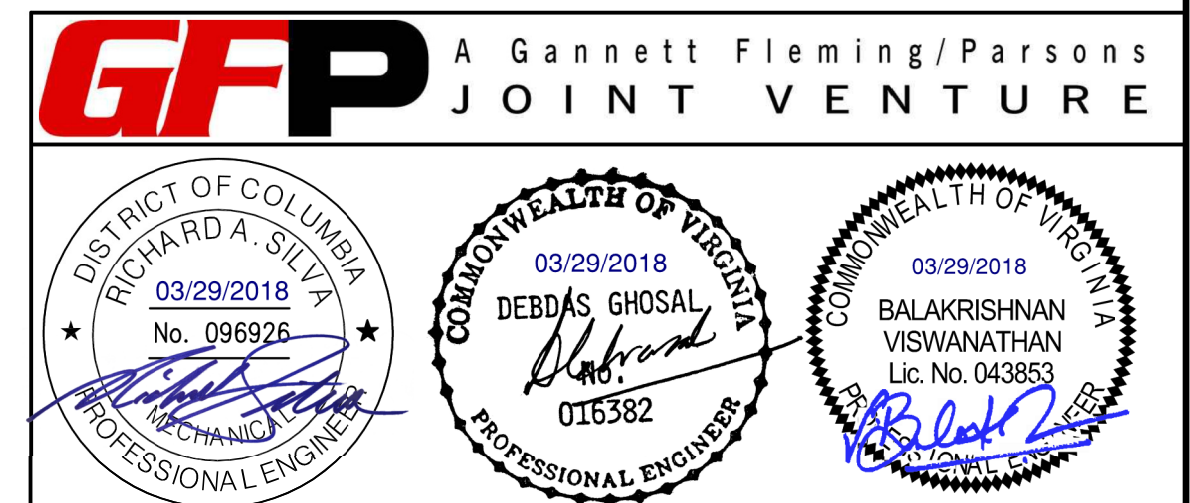
4 TUBULAR BELT-DRIVEN IN-LINE CENTRIFUGAL FAN NOT TO SCALE



State of Maryland Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 041715, Expiration Date: 03/08/2020



State of Maryland Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 030749, Expiration Date: 06/27/2018



<div>DESIGNED <u>B. VISWANATHAN</u> 01/26/18 DATE</div> <div>DRAWN <u>C. LOOSE</u> 01/26/18 DATE</div> <div>CHECKED <u>B. VISWANATHAN</u> 02/15/18 DATE</div>		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><div>APPROVED <u>Mark H. Magnusson</u> 03/2018 MARK MAGNUSSEN MANAGER, ENV. PLANNING AND COMP</div><div>APPROVED <u>Gabe Spiller</u> 03/2018 GRAHAM SPILLER GFP DEPUTY PROGRAM MANAGER</div></div>		REPLACEMENT OF CHILLERS AND COOLING TOWER ACCESSORIES AT EIGHT METRO-RAIL STATIONS				
		NUMBER	TITLE	DATE	NUM	DESCRIPTION			MECHANICAL DETAILS SHEET 4 OF 5				
				03/30/2018	0	FINAL CONTRACT DRAWINGS							