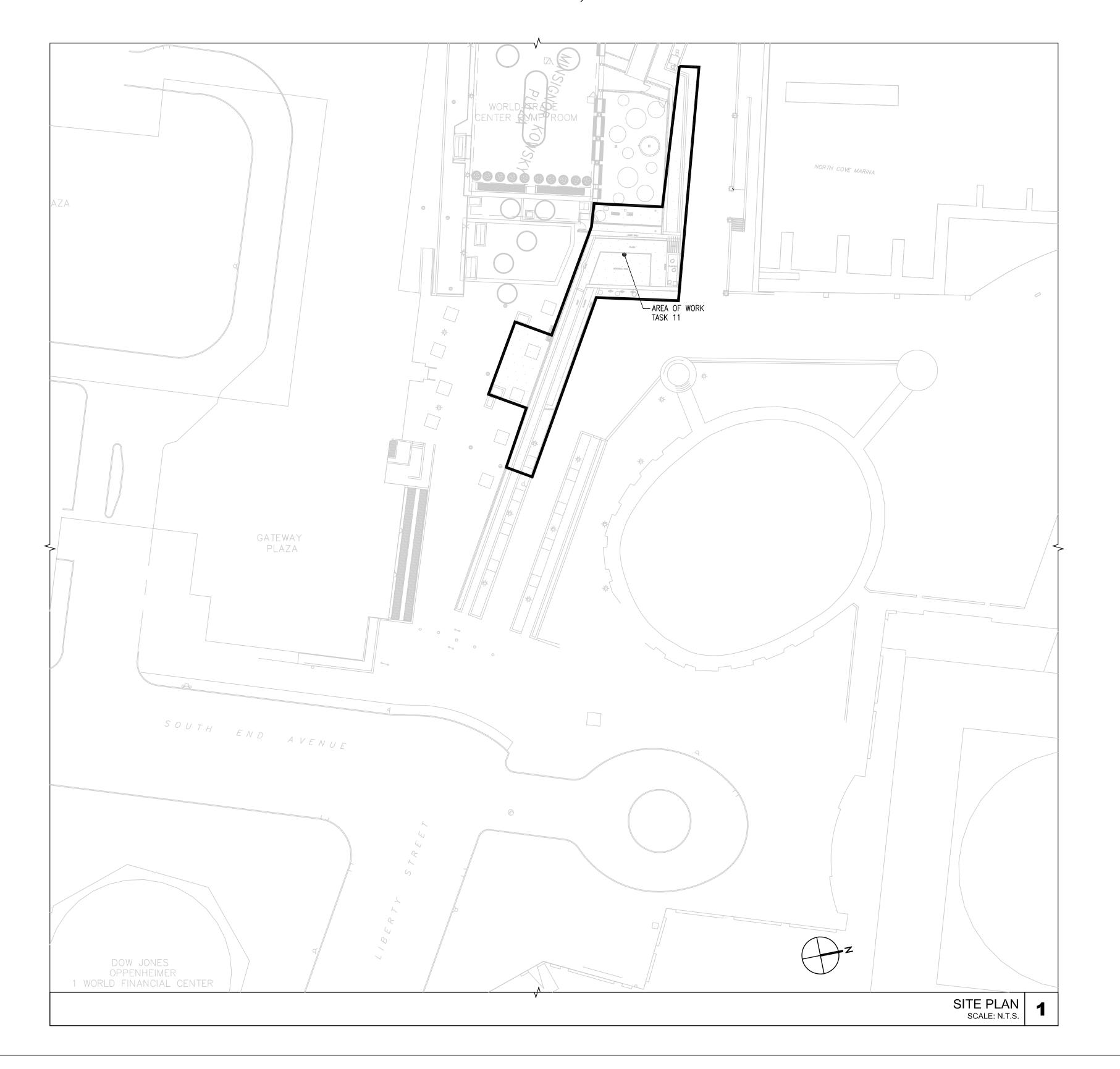
BATTERY PARK CITY AUTHORITY

POLICE MEMORIAL RECONSTRUCTION - SUPERSTORM SANDY

ANDREW M. CUOMO GOVERNOR, STATE OF NEW YORK







NOTE: Drawing may be printed at reduced scale. Refer to graphic scale.

No.	Date		Submittal
Key	Plan:	SHADED	AREA = AREA OF WORK
		9:10	AREA OF WORK

Project Engineer:	CARL J. CANI	NIZZARO, P.E.
Designer:	EUGENE KIELI	MANOWICZ, P.E.
Drawn by:	ALVIN WONG	
Checked by:	EUGENE KIELI	MANOWICZ, P.E.
Design No. or LLW No.:	Facility Code:	Date:
_	N/A	05/17/13
		1

Project: POLICE MEMORIAL SERVICE
RECONSTRUCTION - SUPERSTORM SANDY
BATTERY PARK CITY AUTHORITY
Address: MANHATTAN

NEW YORK, NY

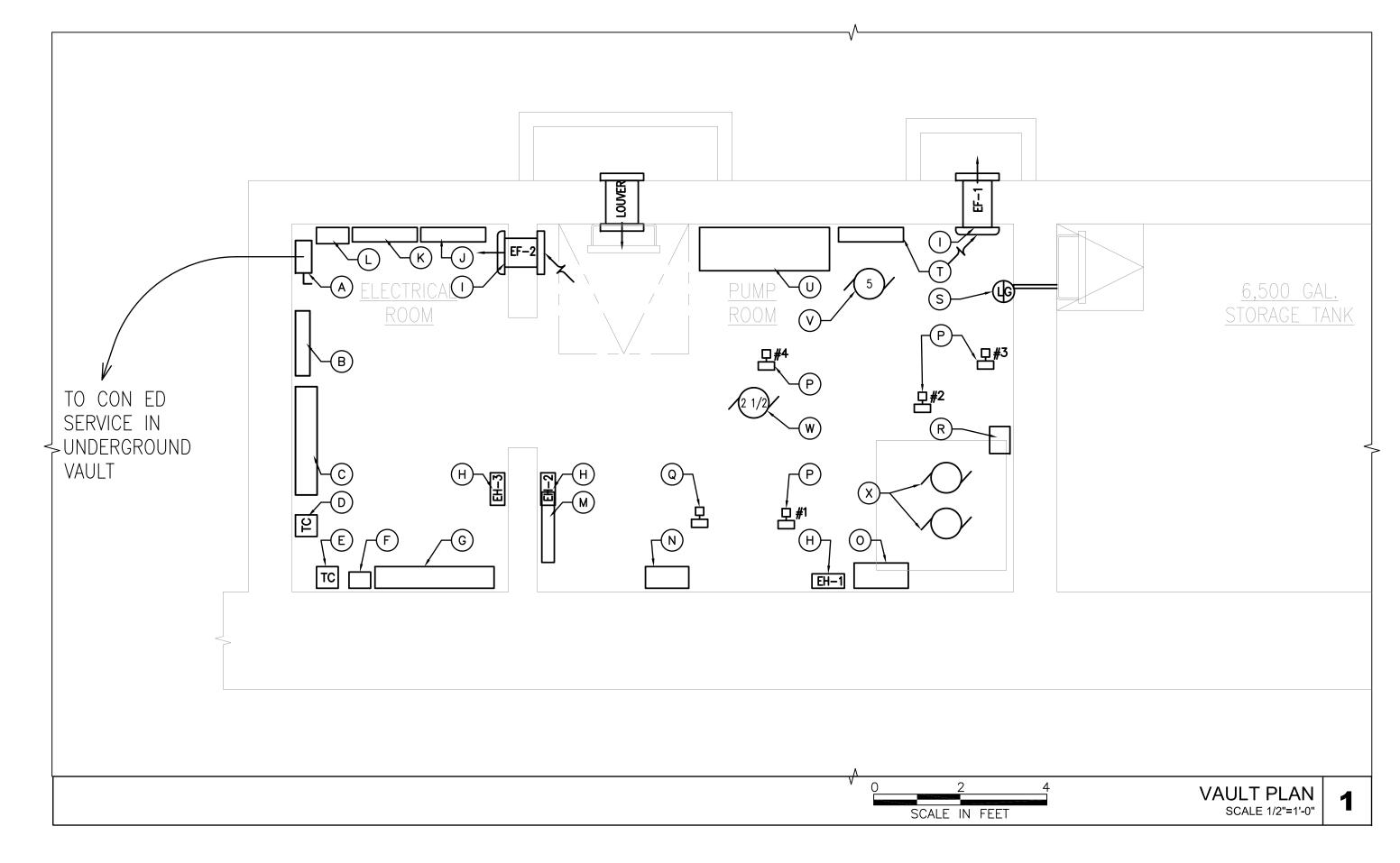
Drawing Title:
TITLE SHEET & SITE PLAN

Drawing No.:

T001.00

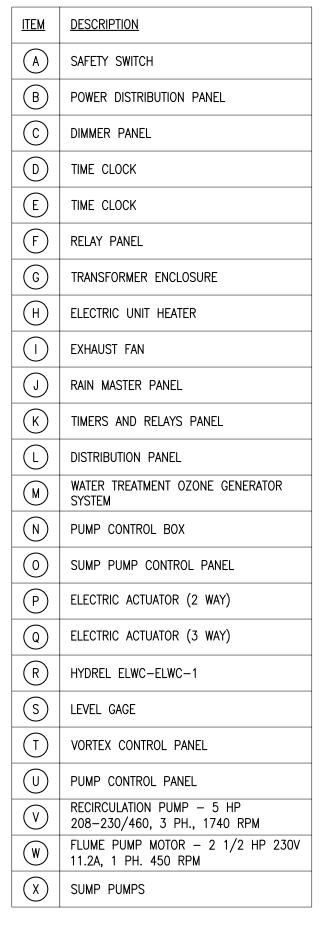
Sheets in Contract: 01 of 23

	LIST OF DRAWINGS	
DRAWING No.	DESCRIPTION	CONTRACT SET/ SHEET NO.
T001.00	TITLE SHEET & SITE PLAN	1
G002.00	KEY PLAN & DRAWING LIST	2
M101.00	GENERAL NOTES, LEGEND AND ABBREVIATIONS & LIST OF DRAWINGS	3
M102.00	PUMP PIT DEMOLITION PART PLAN	4
M103.00	PUMP PIT NEW WORK PART PLAN	5
M104.00	SEQUENCE OF OPERATION & CONTROL SCHEMATIC	6
P101.00	GENERAL NOTES, LEGEND AND ABBREVIATIONS & LIST OF DRAWINGS	7
P102.00	PUMP PIT DEMOLITION PART PLAN	8
P103.00	PUMP PIT NEW WORK PART PLAN	9
P104.00	PLUMBING SECTIONS AND ISOMETRIC VIEWS	10
E001.00	ELECTRICAL NOTES, SYMBOLS, ABBREVIATIONS AND DRAWING LIST	11
E020.00	ELECTRICAL LIGHTING/POWER DEMOLITION PART PLAN	12
E030.00	POLICE MEMORIAL VAULT ELECTRICAL DEMOLITION PLAN	13
E101.00	NEW WORK ELECTRICAL LIGHTING/POWER PART PLANS	14
E201.00	NEW ELECTRICAL POWER PLAN POLICE MEMORIAL VAULT	15
E202.00	ELECTRICAL PANEL SCHEDULES	16
E203.00	ELECTRICAL SERVICE PLAN	17
E401.00	LIGHT FIXTURE SCHEDULE AND SCENE LIGHTING PLAN	18
E501.00	ELECTRICAL ONE LINE DIAGRAM, SCHEMATIC AND NOTES	19
E701.00	ELECTRICAL DETAILS	20
E702.00	ORIGINAL FOUNTAIN CONTROLS SCHEMATIC LADDER DIAGRAM	21
E703.00	LOGIC OF CONTROL FUNCTIONAL AND SAFETY	22
E704.00	FOUNTAIN OPERATIONAL ALGORITHM	23



GENERAL NOTES:

- 1. EQUIPMENT INSIDE THE POLICEMEN'S MEMORIAL VAULT SHALL BE REPLACED TO PROVIDE A FUNCTIONAL MEMORIAL. CONTRACTORS SHALL COORDINATE WITH ALL TRADES.
- 2. CONTRACTOR SHALL REMOVE ALL STONEWORK AND MASONRY TO ALLOW FOR LIGHT FIXTURE REMOVAL AND CONDUIT REPLACEMENT WHEN NECESSARY. SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION.
- 3. CONTRACTOR SHALL COORDINATE WITH ALL TRADES IN RESTORING OUTDOOR LIGHTING AND PLUMBING. UNEXPECTED CONDITIONS THAT REQUIRE ADDITIONAL SCOPE SHALL BE BROUGHT TO THE ENGINEER'S ATTENTION AND APPROVED PRIOR TO COMMENCING
- 4. CONTRACTOR SHALL REPAIR AND/OR REPLACE ANY DAMAGED STONEWORK AND/OR MASONRY DUE TO WORK IN THIS CONTRACT AND PROVIDE MATCHING FINISHES TO PRESERVE THE MEMORIAL'S ORIGINAL CONDITIONS. ANY DEVIATIONS AND CHANGES MUST BE APPROVED BY BATTERY PARK CITY AUTHORITY.
- 5. ALL WORK SHALL BE COMPLETED IN ACCORDANCE WITH LOCAL LAWS AND CODES.





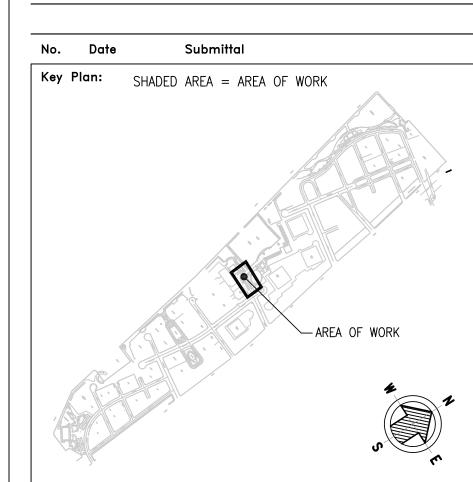
Consultants:



ENSIGN ENGINEERING, P.C. 1111 Calhoun Ave. Bronx, N.Y. 10465

TEL. 718-863-5590 FAX. 718-863-6178 WWW.ENSIGNENGINEERING.COM

> NOTE: Drawing may be printed at reduced scale. Refer to graphic scale.



Project Engineer:	CARL J. CANNIZZARO, P.E.		
Designer:	EUGENE KIELI	MANOWICZ, P.E.	
Drawn by:	ALVIN WONG		
Checked by:	CARL J. CANNIZZARO, P.E.		
Design No. or LLW No.:	Facility Code:	Date:	
_	N/A	05/17/13	
	,	, ,	

POLICE MEMORIAL SERVICE RECONSTRUCTION - SUPERSTORM SANDY BATTERY PARK CITY AUTHORITY Address: MANHATTAN NEW YORK, NY

Drawing Title: KEY PLAN & DRAWING LIST

Drawing No.:

G002.00

Sheets in Contract: 02 of 23

GENERAL NOTES:

- 1. ALL WORK SHALL CONFORM TO THE N.Y.C. BUILDING CODE.
- 2. THE CONTRACTOR SHALL PROVIDE ALL MATERIALS AND LABOR NECESSARY TO MAKE THE MODIFICATIONS, ADDITIONS AND CONNECTIONS TO THE EXISTING PIPING AND INSTALL NEW SYSTEMS AND PIPING AS INDICATED ON THE DRAWINGS.
- 3. ALL WORK TO BE IN ACCORDANCE WITH THE BUILDING CODE OF THE CITY OF NEW YORK AND REQUIREMENTS N.F.P.A. 90A AND
- ALL OTHER BOARDS HAVING JURISDICTION.
- 4. THE CONTRACTOR, PRIOR TO SUBMISSION, SHALL VISIT THE SITE OF WORK AND BECOME THOROUGHLY FAMILIAR WITH ALL CONDITIONS AND LIMITATIONS.
- 5. THE CONTRACTOR TO COORDINATE WITH THE PARK MANAGEMENT REPRESENTATIVE AS TO THE DELIVERY OF EQUIPMENT AND SCHEDULING OF WORK. ALL SHUT-DOWNS OF THE EXISTING SYSTEMS SHALL BE STRICTLY COORDINATED WITH THE PARK MANAGEMENT REPRESENTATIVE PRIOR TO BIDDING.
- 6. CONTRACTOR TO PROVIDE LABELS WITH DIMENSIONS OF PIPING, VALVES AND EQUIPMENT.

EXHAUST FAN - SCHEDULE				
TAG	EF-1	EF-2		
TYPE	REMOTED MOUNTED	REMOTE MOUNTED		
LOCATION	PUMP PIT	PUMP PIT		
MODEL	PB270-2	PB230		
CAPACITY (CFM)	300	190		
ELECTRICAL	115V/1 PH/60 HZ	115V/1 PH/60 HZ		
AMPS	-	0.67		
SPEED	2507	2411		
MANUFACTURER	FANTECH	FANTECH		
NOTES:				

TAG	EUH-1 TO EUH-3
ТҮРЕ	REMOTED MOUNTED
LOCATION	PUMP PIT
MODEL	RPH-1A
WATTS	500
вти	115V/1 PH/60 HZ
AMPS	4.2
WEIGHT (LBS)	5
MANUFACTURER	MARKEL
NOTES:	

LIST OF MECHANICAL DRAWINGS

M101.00 GENERAL NOTES, LEGEND AND ABBREVIATIONS & LIST OF DRAWINGS

PUMP PIT DEMOLITION PART PLAN

PUMP PIT NEW WORK PART PLAN

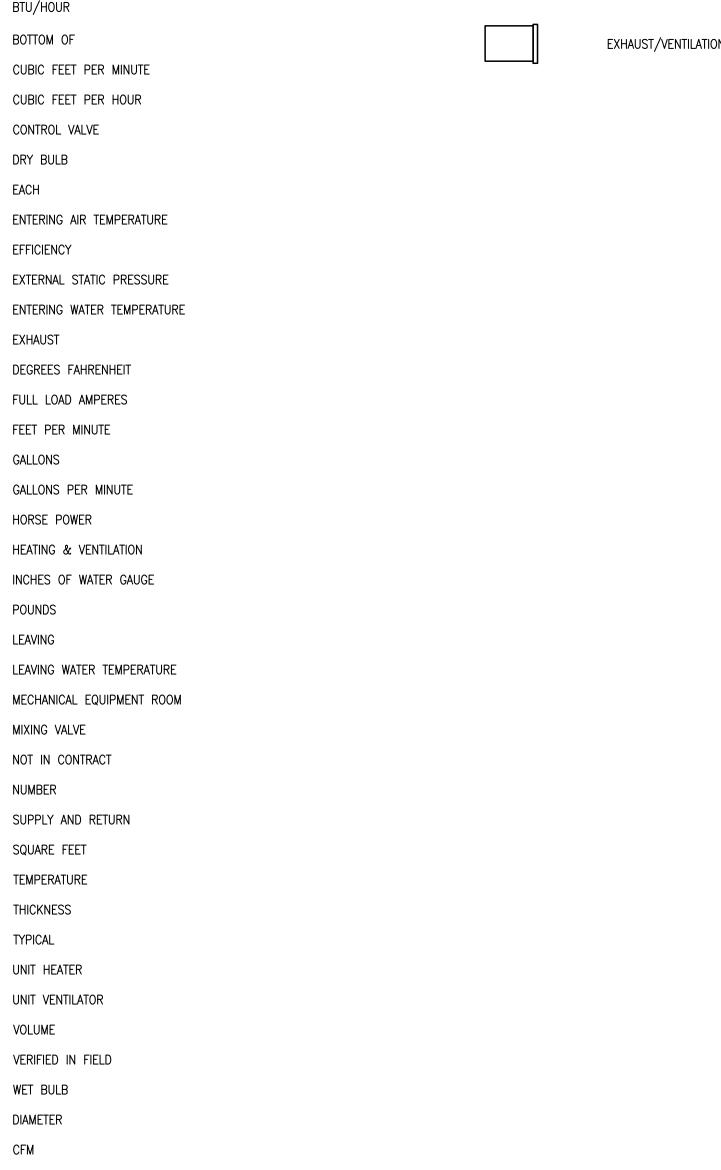
ESP

LVG

SEQUENCE OF OPERATION & CONTROL SCHEMATIC

DUCT SYMBOLS **ABBREVIATIONS**

BHP	BRAKE HORSE POWER	
BTU	BRITISH THERMAL UNIT	ELECTRICAL UNIT HEATER
BTUH	BTU/HOUR	
B.O.F.	BOTTOM OF	EXHAUST/VENTILATION FAI
CFM	CUBIC FFFT PFR MINUTF	





Consultants: ENSIGN ENGINEERING, P.C. 1111 Calhoun Ave. Bronx, N.Y. 10465

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> NOTE: Drawing may be printed at reduced scale. Refer to graphic scale.

> > Revision

No. Date

No.	Date	Submittal
Key	Plan:	SHADED AREA = AREA OF WORK
		AREA OF WORK

Project Engineer:	CARL J. CANI	NIZZARO, P.E.
Designer:	MARTIN J ISI)RO
Drawn by:	MARTIN J ISI)RO
Checked by:	CARL J. CANI	NIZZARO, P.E.
Design No. or LLW No.:	Facility Code:	Date:
_	N/A	05/17/13

POLICE MEMORIAL SERVICE RECONSTRUCTION - SUPERSTORM SANDY BATTERY PARK CITY AUTHORITY

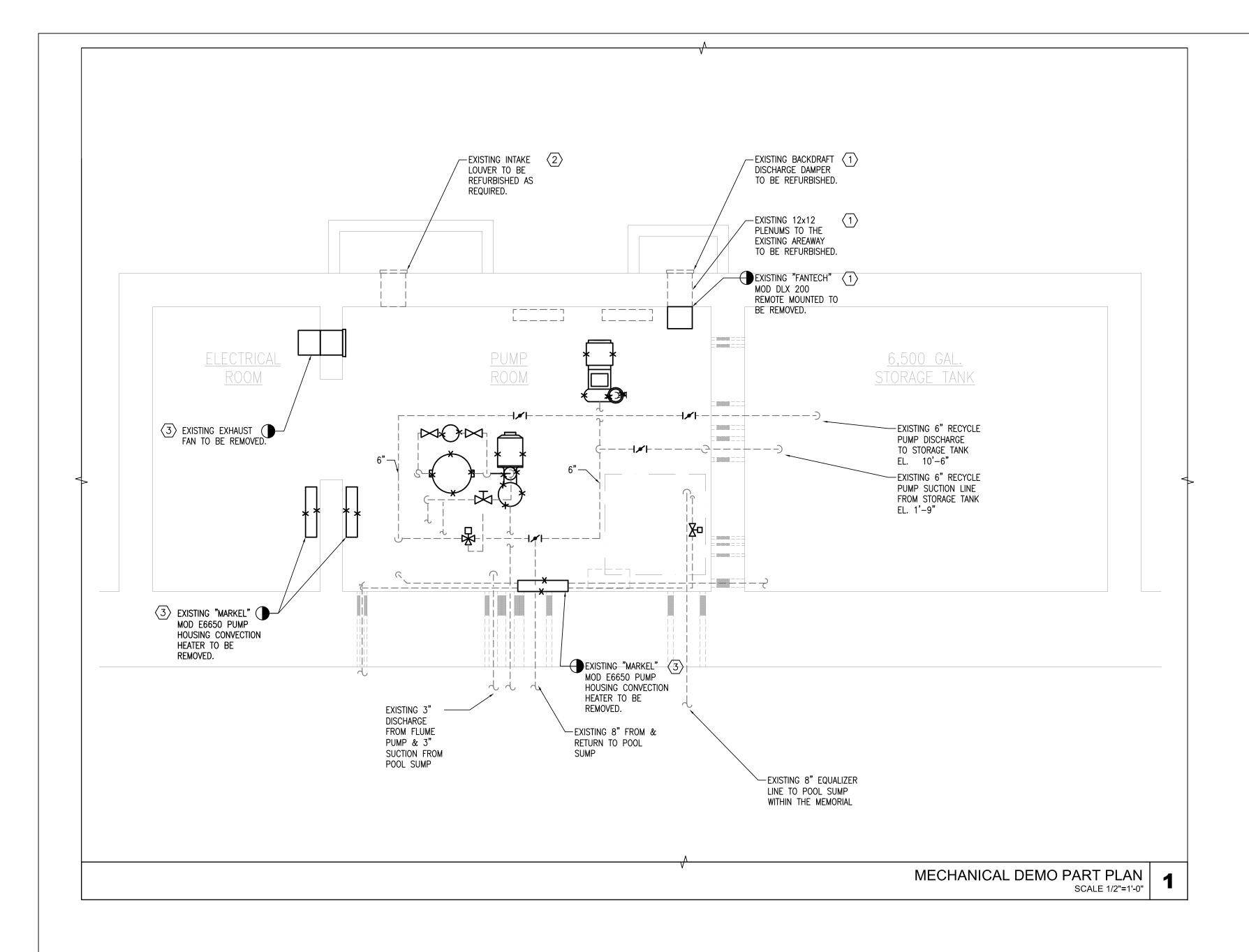
Address: MANHATTAN NEW YORK, NY

Drawing Title: GENERAL NOTES, LEGEND AND ABBREVIATIONS & LIST OF DRAWINGS

Drawing No.:

M101.00

Sheets in Contract: 03 **of** 23



DEMOLITION NOTES:

- 1. FOR SYMBOLS AND ABBREVIATIONS SEE DRAWING MOO1.
- 2. CONTRACTOR TO REMOVE EXISTING EXHAUST FAN. HOWEVER, THE PLENUM AND THE DAMPER TO BE REFURBISHED. AS REQUIRED.

SCOPE OF WORK:

- REMOVE (E) EXHAUST FAN. DISCONNECT THE NECESSARY CONNECTIONS AND REPLACE IT WITH A NEW EXHAUST FAN (SEE DWG M-103)
- (E) INTAKE LOUVER TO BE REFURBISHED AS REQUIRED.
- REMOVE (E) ELECTRICAL UNIT HEATER. DISCONNECT THE NECESSARY CONNECTIONS AND REPLACE IT WITH A NEW ELECTRICAL UNIT HEATER (SEE DWG M-103)





No. Date

ENSIGN ENGINEERING, P.C. 1111 Calhoun Ave. Bronx, N.Y. 10465

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NOTE: Drawing may be printed at reduced scale. Refer to graphic scale.

Revision

No.	Date	Submittal
Ney	Plan:	SHADED AREA = AREA OF WORK

Project Engineer:	CARL J. CAN	CARL J. CANNIZZARO, P.E.	
Designer:	MARTIN J. ISI	MARTIN J. ISIDRO	
Drawn by:	MARTIN J ISIE)RO	
Checked by:	CARL J. CANNIZZARO, P.E.		
Design No. or LLW No.:	Facility Code:	Date:	
_	N/A	05/17/13	

Project: POLICE MEMORIAL SERVICE
RECONSTRUCTION - SUPERSTORM SANDY
BATTERY PARK CITY AUTHORITY
Address: MANHATTAN

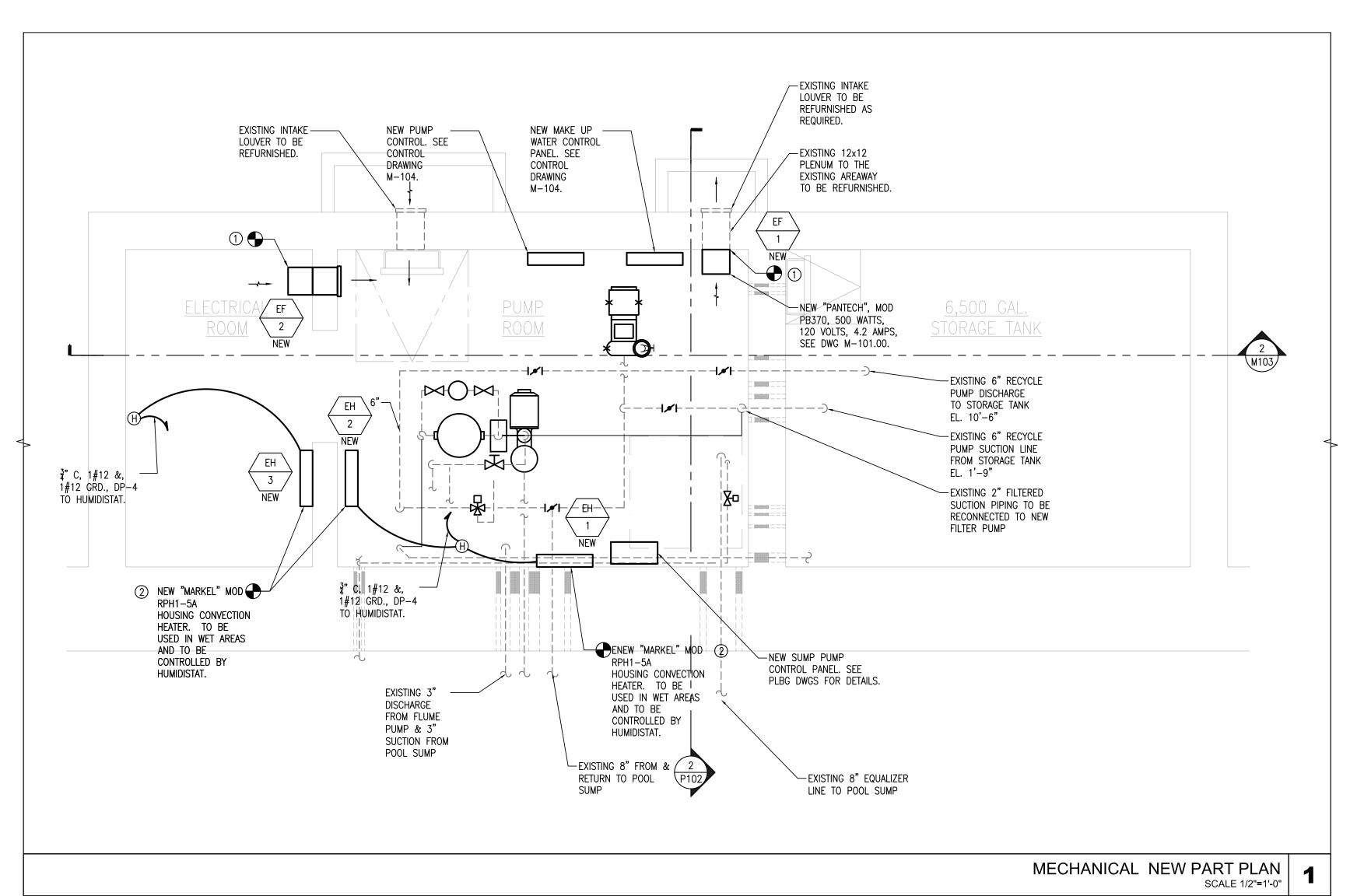
Address: MANHATTAN NEW YORK, NY

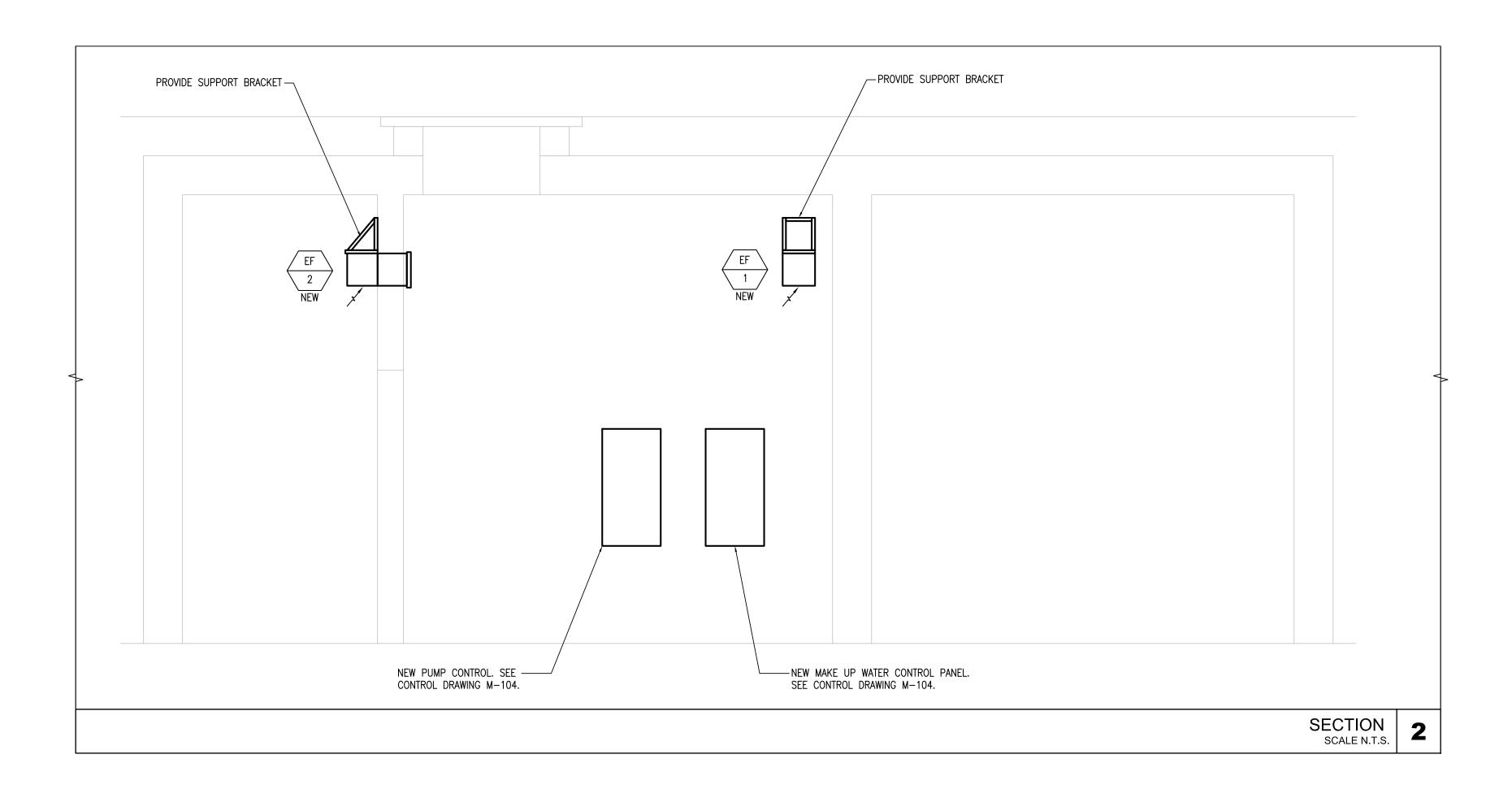
PUMP PIT
DEMOLITION PART PLAN

Drawing No.:

M102.00

Sheets in Contract: 04 of 23





SCOPE OF WORK:

- 1) INSTALL NEW EXHAUST FAN. DISCONNECT THE NECESSARY CONNECTIONS AND REPLACE IT WITH A NEW EXHAUST FAN MODEL PB370 AND PB270 AS INDICATED ON THE FLOOR PLAN 1/M-103. COORDINATE WITH ELECTRICAL TO CONTROL THE EXHAUST THE EXHAUST FAN.
- 2 INSTALL NEW ELECTRICAL UNIT HEATER. DISCONNECT THE NECESSARY CONNECTIONS AND REPLACE IT WITH A NEW ELECTRIC UNIT HEATER MANUFACTURED BY MARKEL MODEL RPH1-5A. THE EUH'S HAS TO BE CONTROLLED BY HUMIDISTAT AS INDICATED ON THE FLOOR PLAN 1/M-103.





No. Date

ENSIGN ENGINEERING, P.C. 1111 Calhoun Ave. Bronx, N.Y. 10465

TEL. 718-863-5590 FAX. 718-863-6178 WWW.ENSIGNENGINEERING.COM

> NOTE: Drawing may be printed at reduced scale. Refer to graphic scale.

> > Revision

No.	Date	Submittal	
Key Pla	in: SHA	DED AREA = AREA OF WO	DRK
	f.		- AREA OF WORK
	// 0		- AILA OI WOILK

Project Engineer:	CARL J. CANI	NIZZARO, P.E.	
Designer:	MARTIN J. ISIDRO		
Drawn by:	JAMES M. DU	MORNE	
Checked by:	CARL J. CANI	NIZZARO, P.E.	
Design No. or LLW No.:	Facility Code:	Date:	
_	N/A	05/17/13	

POLICE MEMORIAL SERVICE RECONSTRUCTION - SUPERSTORM SANDY BATTERY PARK CITY AUTHORITY

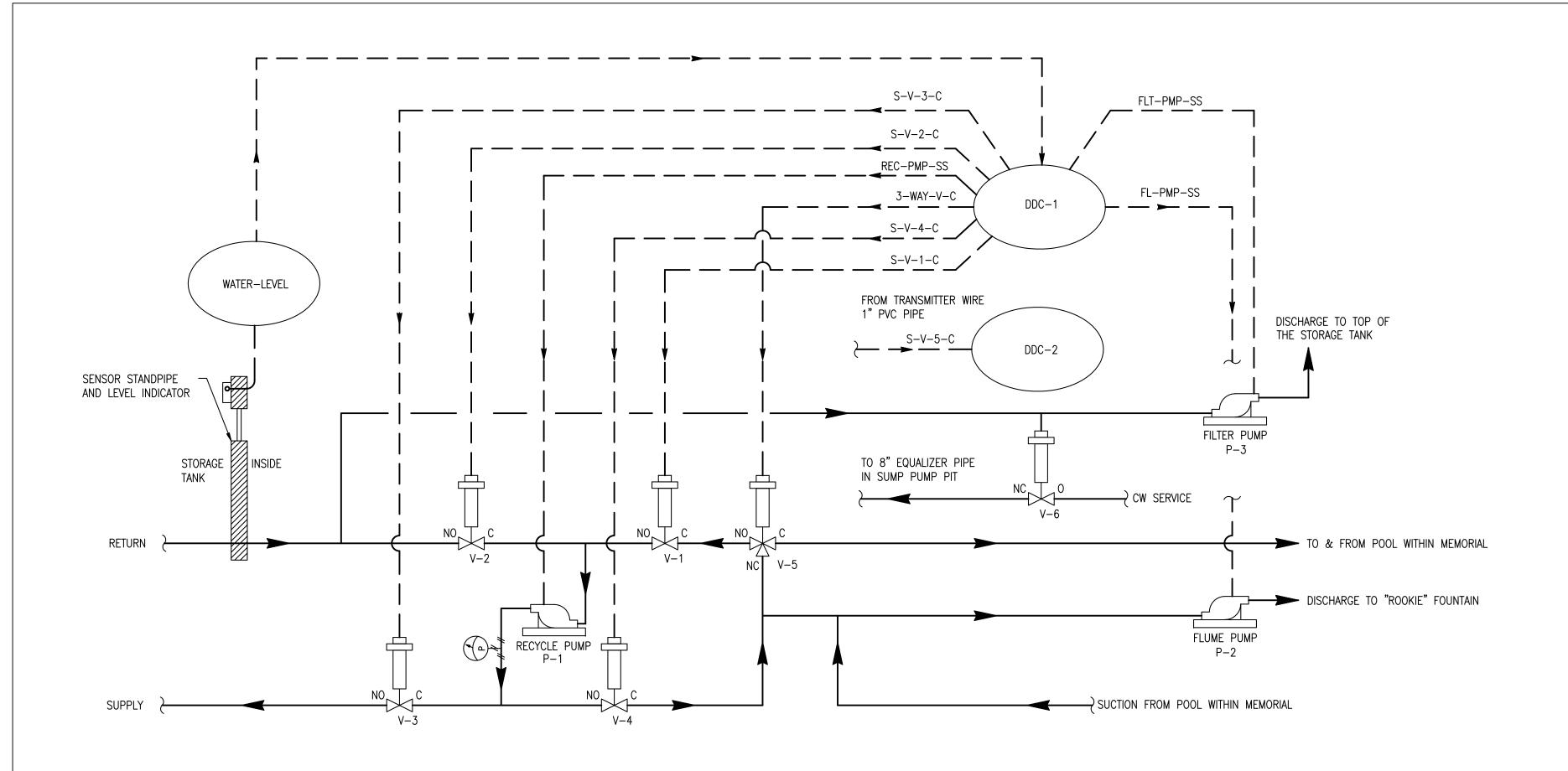
Address: MANHATTAN NEW YORK, NY

Drawing Title: PUMP PIT NEW WORK PART PLAN

Drawing No.:

M103.00

Sheets in Contract: 05 **of** 23



CONTROL VALVE SCHEDULE

SYSTEM	IDENTIFIER	LOCATION	FUNCTION	TYPE	VOLTAGE/A	Kv ((m^3)/hr)	CLOSE—OFF RATING (OR TORQUE)	REMARKS
PUMP SYSTEM	V-1	PUMP PIT	FLOW WATER VALVE	BUTTERFLY VALVE WITH ELEC ACTUATOR	115/1.0	47.05	1,100 N m	
PUMP SYSTEM	V-2	PUMP PIT	FLOW WATER VALVE	BUTTERFLY VALVE WITH ELEC ACTUATOR	115/1.0	47.05	1,100 N m	
PUMP SYSTEM	V-3	PUMP PIT	FLOW WATER VALVE	BUTTERFLY VALVE WITH ELEC ACTUATOR	115/1.0	47.05	1,100 N m	
PUMP SYSTEM	V-4	PUMP PIT	FLOW WATER VALVE	3-WAY WITH ELEC ACTUATOR	115/1.0	47.05	600 N m	
PUMP SYSTEM	V-5	PUMP PIT	FLOW WATER VALVE	3-WAY WITH ELEC ACTUATOR	120/1.5	47.05	600 N m	
MAKE UP WATER	V-6	PUMP PIT	COLD WATER VALVE	SOLENOID FILL VALVE WITH ELEC ACTUATOR	120/1.0	5.22	[] N m	

BATTERY PARK CITY POOL POINT LIST CONTROL

NODE LOCATION: PUMP PIT

			·	•
	REC-PMP-S	RECYCLE PUMP STATUS	~	ON/OFF
PROOFS &	FLU-PMP-S	FLUME PUMP STATUS	~	ON/OFF
SAFETIES	FLT-PMS	FILTER PUMP STATUS	~	ON/OFF
	SYS-ENA	SYSTEM ENABLE	~	ENABLE/DISA
START/STOP	REC-PMP-SS	FLU PUMP START/STOP	~	START/STC
31AK1/310P	FIL-PMP-SS	FLUME PUMP START/STOP	~	ON/OFF
	FLT-PMP-SS	FILTER PUMP START/ STOP	~	ON/OFF
	11 21 1 1011 00	THE TERM OWN CITATION		014/01
	S-V-1-C	SOLENOID 1 VALVE COMMAND	~	0-100% OP
		SOLENOID 1 VALVE DID LOOD SETTINGS		

REQ'D	REQ'D	REQ'D	NAME	TYPE	(SEE NOTES	5)	PRIORITY
[X]	Х	[~]	<>	<>	~		~
[X]	X	[~]					
[^]	^	[~]	<>	<>	~		~
[X]	[X]	[~]	<>	<>	~		~
[~]	[~]	[~]	<>	<>	~		~
[~]	[~]	[~]	<>	<>	~		~
					~		~
							_
[X]	X	[X]	<>	<>	~		~
~	~	~	~	~	~		~
[X]	X	[X]	<>	<>	~		~
~	~	~	~	~	~		~
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~	~	~	~	~	~		~
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[X]	Х	[X]	<>	<>	~		~
~	~	~	~	~	~		~
~	~	~	~	~	~		~

1. AT REST POINT ONCE THE STORAGE LEVEL IS LOWER THAN 11.25 FT, THE WATER MAKE UP SYSTEM SHALL BE "ON" AND THE PUMP CONTROL SYSTEM IS "OFF"

ONCE THE WATER LEVEL AT THE STORAGE TANK REACH THE 11.25 FT, THE 3 WAY MOTOR OPERATED VALVE

SETS TO THE OPEN POSITION, WHICH ALLOWS RECYCLE PUMP TO DISCHARGE TO MEMORIAL POOL SUMP.

3. AT THE SAME TIME, ENERGIZE VALVES #2 & #4 TO OPEN (NOTE: VALVES #3 & #1 WILL BE CLOSED SINCE

THE SYSTEM WAS SHUT DOWN AT THE END OF THE CYCLE).

4. START THE RECYCLE PUMP WHEN 3 WAY VALVE INDICATES (THROUGH LIMIT SWITCH) IT HAS OPENED.

5. WHEN STORAGE TANK LEVEL DROPS TO 9.75 FT, START FLUME PUMP.

(24HR TIME CLOCK STATS SEQUENCE)

SEQUENCE OF OPERATION:

6. WHEN STORAGE TANK LEVEL DROPS TO 1.75 FT (THIS LEVEL TO BE ADJUSTED IN FIELD TO PROVIDE WATER LEVEL IN POOL, 5.25 FEET). SHUT OFF RECYCLE PUMP, DE-ENERGIZE VALVE #2 & #4 (TO CLOSE), ENERGIZE VALVES #1 & #3 (TO OPEN), ENERGIZE 3-WAY MOTOR OPERATED VALVE TO THE "CLOSED" POSITION, WHICH ALLOWS PUMP TO TRANSFER WATER FROM THE POOL TO THE STORAGE TANK. WHEN THE VALVE INDICATION "CLOSED" START RECYCLE PUMP.

WHEN WATER LEVEL IN THE POOL DROPS TO 4.25 FT, FLUME PUMP STOPS (THE WATER LEVEL IN THE POOL IS INDICATED BY WATER LEVEL IN THE STANDPIPE).

8. WHEN STANDPIPE LEVEL DROPS TO 3.55 FT STOP RECYCLE PUMP, DE-ENERGIZES VALVES #1 & #3 TO CLOSE. ENERGIZE FOR 5 SECOND (ADJUSTABLE). IF WATER LEVEL IN THE TANK IS LOWER THAN "AT REST" POSITION WATER MAKE-UP IS "ON", PUMP CONTROL SYSTEM IS "OFF".

9. WHEN THE TIME CLOCK CALLS FOR END OF THE DAY'S OPERATION, A SHUTDOWN CYCLE ACTIVATES VALVES #1 AND #3 OPEN WHILE VALVES #2 AND #4 CLOSE, AND THE 3-WAY VALVE POSITIONS ITSELF TO TAKE THE RECYCLE PUMP SUCTION FLOW FROM THE POOL AND STORE THE WATER WITHIN THE STORAGE TANK.

10. AFTER THE SHUTDOWN SEQUENCE HAS BEEN COMPLETED, THE HORSEPOWER FILTER PUMP IS ACTIVATED BY ITS OWN TIME CLOCK. WHEN STARTED, FILTER PUMP TAKES WATER FROM THE 6" SUCTION LINE FROM THE STORAGE TANK AND CIRCULATES THE CONTENTS OF THE STORAGE TANK AT 2 MIN. RATE OF 40 GPM THROUGH THE CARTRIDGE FILTER AND RETURNS THE FILTER WATER TO THE BACK AND THE TOP OF THE STORAGE TANK. THE FILTER PUMP RUNS FOR A MINIMUM OF 200 MINUTES DURING THE NIGHT. THE FILTER PUMP IS INTERLOCKED WITH THE OTHER PUMPS SO THAT IT CANNOT RUN WHEN THE OTHER TWO PUMPS ARE RUNNING.

FUNCTION NAME DESCRIPTION (WITH LIMITS) (VITH LINITS) NAME

FUNCTION	NAME	DESCRIPTION	(WITH UNITS)	(WITH UNITS)	NAME	TYPE	HOA REQ'D
			•			,	•
	REC-PMP-S	RECYCLE PUMP STATUS	~	ON/OFF	<>		~
PROOFS &	FLU-PMP-S	FLUME PUMP STATUS	~	ON/OFF	<>		~
SAFETIES	FLT-PMS	FILTER PUMP STATUS	~	ON/OFF	<>		~
	SYS-ENA	SYSTEM ENABLE	~	ENABLE/DISABLE	<>	<nvi></nvi>	~
START/STOP	REC-PMP-SS	FLU PUMP START/STOP	~	START/STOP	<>	ВО	[~]
31AK1/310F	FIL-PMP-SS	FLUME PUMP START/STOP	~	ON/OFF	<>	ВО	[~]
	FLT-PMP-SS	FILTER PUMP START/ STOP	~	ON/OFF	<>	ВО	[~]
	S.V.1.C			0-100% OPEN		Ι 40	T 1.1
	S-V-1-C	SOLENOID 1 VALVE COMMAND	~	0-100% OPEN	<>	AO	[~]
		SOLENOID 1 VALVE COMMAND SOLENOID 1 VALVE PID LOOP SETTINGS	~ < <u></u> >	~	<>	~	~
	S-V-1-C S-V-2-C	SOLENOID 1 VALVE COMMAND SOLENOID 1 VALVE PID LOOP SETTINGS SOLENOID 2 VALVE COMMAND					
	S-V-2-C	SOLENOID 1 VALVE COMMAND SOLENOID 1 VALVE PID LOOP SETTINGS SOLENOID 2 VALVE COMMAND SOLENOID 2 VALVE PID LOOP SETTINGS	<>	~ 0-100% OPEN ~	<>	AO ~	~ [~] ~
/ALVE CONTROL		SOLENOID 1 VALVE COMMAND SOLENOID 1 VALVE PID LOOP SETTINGS SOLENOID 2 VALVE COMMAND SOLENOID 2 VALVE PID LOOP SETTINGS SOLENOID 1 VALVE COMMAND	<>	~ 0-100% OPEN	<>	~ AO	~ [~]
/ALVE CONTROL	S-V-2-C S-V-3-C	SOLENOID 1 VALVE COMMAND SOLENOID 1 VALVE PID LOOP SETTINGS SOLENOID 2 VALVE COMMAND SOLENOID 2 VALVE PID LOOP SETTINGS SOLENOID 1 VALVE COMMAND SOLENOID 1 VALVE PID LOOP SETTINGS	<>	0-100% OPEN ~ 0-100% OPEN ~	<> <> <>	~ AO ~ AO ~	~ [~] ~ [~] ~
/ALVE CONTROL	S-V-2-C	SOLENOID 1 VALVE COMMAND SOLENOID 1 VALVE PID LOOP SETTINGS SOLENOID 2 VALVE COMMAND SOLENOID 2 VALVE PID LOOP SETTINGS SOLENOID 1 VALVE COMMAND SOLENOID 1 VALVE PID LOOP SETTINGS SOLENOID 1 VALVE COMMAND	<>	0-100% OPEN - 0-100% OPEN	<> <> <> <>	AO ~ AO	~ [~] ~ [~]
/ALVE CONTROL	S-V-2-C S-V-3-C S-V-4-C	SOLENOID 1 VALVE COMMAND SOLENOID 1 VALVE PID LOOP SETTINGS SOLENOID 2 VALVE COMMAND SOLENOID 2 VALVE PID LOOP SETTINGS SOLENOID 1 VALVE COMMAND SOLENOID 1 VALVE PID LOOP SETTINGS SOLENOID 1 VALVE PID LOOP SETTINGS SOLENOID 1 VALVE COMMAND SOLENOID 1 VALVE PID LOOP SETTINGS	<_>	0-100% OPEN	<_> <_> <_> <_> <_> <_> <_> <_> <_> <_>	~ AO ~ AO ~ AO	~ [~] ~ [~] ~ [~] ~
/ALVE CONTROL	S-V-2-C S-V-3-C	SOLENOID 1 VALVE COMMAND SOLENOID 1 VALVE PID LOOP SETTINGS SOLENOID 2 VALVE COMMAND SOLENOID 2 VALVE PID LOOP SETTINGS SOLENOID 1 VALVE COMMAND SOLENOID 1 VALVE PID LOOP SETTINGS SOLENOID 1 VALVE COMMAND	<>	0-100% OPEN 0-100% OPEN	<_> <_> <_> <_> <_> <_> <_> <_> <_> <_>	AO AO AO AO	~ [~] ~ [~] ~ [~]

1) THE CONTRACTOR SHALL COMPLETE THE POINTS SCHEDULE AS SPECIFIED AND AS DESCRIBED IN THE POINTS SCHEDULE INSTRUCTIONS DRAWING.

2) UNIT MANUFACTURERS PROOFS AND SAFETIES: THE CONTRACTOR SHALL SHOW EACH PROOF AND SAFETY AS A SEPARATE ROW.

LOCAL DISPLAY PANEL ## = SEQUENTIAL NUMBER (WHEN MORE THAN 1 LDP)

POSITIVE POSITIONER SEE "ACTUATOR, PNEUMATIC"

PRESSURE GAGE

- SWITCH, MANUAL

CONTROL SCHEMATIC SYMBOLS

DEVICE SYMBOL, GENERIC

DEVICE SYMBOL, GENERIC

DEVICE SYMBOL, CONTROLLER

: DEVICE NUMBER

ACTUATOR, ELECTRIC

S WITH LOCALLY MOUNTED

--- CONTROL SIGNAL LINE, LOW VOLTAGE

MOTOR

MOTOR STARTER

xx = SEQUENTIAL RELAY

xx = RELAY COIL NUMBERYY = CONTACT NUMBER

xx = RELAY COIL NUMBER

LDP AND M&C DISPLAY

SNVT

VIEW DISP TREND

YY = CONTACT NUMBER

(SOLENOID) NUMBER

RELAY COIL

RELAY COIL CONTACT

NORMALLY OPEN

RELAY COIL CONTACT

NORMALLY CLOSED

USED TO REPRESENT SENSORS, INSTRUMENTS

W-X-Y-Z: (SEE ABBREVIATIONS AND ACRONYMS)

PROCESS OR DEVICE BEING MEASURED OR

MULTIPLE OUTPUT DEVICE WHERE AT LEAST 1

CONTROLLED; SIGNAL TYPE; MODIFIERS AND

GENERIC USAGE TO SHOW LOCATION OF DEVICE;

SAFETIES, AND OTHER CONTROL DEVICES

OTHER APPLICATION INFORMATION

OUTPUT IS ALWAYS SAFETY INTERLOCK

DDC: DIRECT DIGITAL CONTROL

DIR: DIRECT CONTROL ACTION, OR REV: REVERSE CONTROL ACTION

OTHER APPLICATION INFORMATION

ACTUATOR, PNEUMATIC

PRESSURE GAGE

CURRENT TRANSFORMER/SWITCH

W-X-Y-Z: (SEE ABBREVIATIONS AND ACRONYMS)

GENERIC USAGE TO SHOW LOCATION OF DEVICE;

PROCESS OR DEVICE BEING MEASURED OR

CONTROLLED; SIGNAL TYPE; MODIFIERS AND

NOTE: ABBREVIATIONS INDICATED MAY NOT APPEAR ON THE DRAWINGS

W-X-Y-Z

W-X-Y-Z

W-X-Y-Z

TEMPERATURE GAGE

TEMPERATURE SENSOR, AVERAGING or TEMPERATURE LOW LIMIT / FREEZESTAT SEE "DEVICE SYMBOL, GENERIC"

TEMPERATURE SENSOR, POINT SEE "DEVICE SYMBOL, GENERIC"

THERMOSTAT WITH SPECIFIED I/O FUNCTIONS

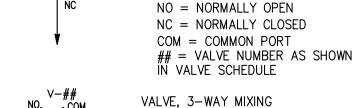
THERMOWELL IN PIPE

VALVE, BALANCING V-##

VALVE, NORMALLY CLOSED WITH SPRING RETURN FAILSAFE ## = VALVE NUMBER AS SHOWN ÏÑ VALVE SCHEDULE

VALVE, NORMALLY OPEN

WITH SPRING RETURN FAILSAFE ## = VALVE NUMBER AS SHOWN ÏÑ VALVE SCHEDULE VALVE, 3-WAY DIVERTING WITH SPRING RETURN FAILSAFE



VALVE, 3-WAY MIXING WITH SPRING RETURN FAILSAFE NO = NORMALLY OPENNC = NORMALLY CLOSEDCOM = COMMON PORT## = VALVE NUMBER AS SHOWN

IN VALVE SCHEDULE

ALARMS

ALARM

ROUTING

[~]

[~]

[~]

~ [~] ~

ALARM CONDITION





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> <u>NOTE:</u> Drawing may be printed at reduced scale Refer to graphic scale.

	Date	Revision
No.	Date	Submittal
		Submittal SHADED AREA = AREA OF WORK

Project Engineer:	CARL J. CAN	NIZZARO, P.E.
Designer:	MARTIN J. ISI	DRO
Drawn by:	JAMES M. DU	MORNE
Checked by:	CARL J. CAN	NIZZARO, P.E.
Design No. or LLW No.:	Facility Code:	Date:
_	N/A	05/17/13

POLICE MEMORIAL SERVICE **RECONSTRUCTION - SUPERSTORM SANDY** BATTERY PARK CITY AUTHORITY

Address: MANHATTAN NEW YORK, NY

Drawing Title:

SEQUENCE OF OPERATION & CONTROL SCHEMATIC

Drawing No.:

M104.00

Sheets in Contract: 06 of 23

GENERAL NOTES:

- 1. ALL WORK SHALL CONFORM TO THE N.Y.C. BUILDING CODE.
- 2. THE CONTRACTOR SHALL PROVIDE ALL MATERIALS AND LABOR NECESSARY TO MAKE THE MODIFICATIONS, ADDITIONS AND
- CONNECTIONS TO THE EXISTING PIPING AND INSTALL NEW SYSTEMS AND PIPING AS INDICATED ON THE DRAWINGS.
- 3. ALL WORK TO BE IN ACCORDANCE WITH THE BUILDING CODE OF THE CITY OF NEW YORK AND REQUIREMENTS N.F.P.A. 90A AND
- ALL OTHER BOARDS HAVING JURISDICTION.
- 4. THE CONTRACTOR, PRIOR TO SUBMISSION, SHALL VISIT THE SITE OF WORK AND BECOME THOROUGHLY FAMILIAR WITH ALL CONDITIONS AND LIMITATIONS.
- 5. THE CONTRACTOR TO COORDINATE WITH THE PARK MANAGEMENT REPRESENTATIVE AS TO THE DELIVERY OF EQUIPMENT AND SCHEDULING OF WORK. ALL SHUT-DOWNS OF THE EXISTING SYSTEMS SHALL BE STRICTLY COORDINATED WITH THE PARK MANAGEMENT REPRESENTATIVE PRIOR TO BIDDING.
- 6. CONTRACTOR TO PROVIDE LABELS WITH DIMENSIONS OF PIPING, VALVES AND EQUIPMENT.

LIST OF PLUMBING DRAWINGS

P101.00	GENERAL NOTES, LEGEND AND ABBREVIATIONS & LIST OF DRAWINGS
P102.00	PUMP PIT DEMOLITION PART PLAN
P103.00	PUMP PIT NEW WORK PART PLAN
P104.00	PLUMBING SECTIONS AND ISOMETRIC VIEWS

VALVES SCHEDULES VALVE TYPE CONTROL PIPE SIZE | HEAD LOSS DESIGN CALCULATED UNIT SERVICE **GPM** MANUFACTURER MODEL NO. VALVE SIZE **COMMENTS** Qty 3-WAY (Ft H2O) NO OR NC (IN) ACTUATOR CAPACITY ON DWG P-105 V-1 WATER BUTTERFLY 450 80.5 54.9 NELES JAMESBURRY 06-150 6 6 35 V-2 450 80.5 NELES JAMESBURRY WATER BUTTERFLY 54.9 06-150 6 35 6 ACTUATOR CAPACITY ON DWG P-105 V-3 450 80.5 WATER BUTTERFLY 54.9 NELES JAMESBURRY 06-150 6 35 6 ACTUATOR CAPACITY ON DWG P-105 V-4 450 80.5 NELES JAMESBURRY WATER BUTTERFLY 54.9 06-150 6 35 6 ACTUATOR CAPACITY ON DWG P-105 V-5 ACTUATOR CAPACITY ON DWG P-105 WATER 3-WAY 450 80.5 54.9 HAYWARD **EPDM** 6 35 6 V-6 WATER BALL 75 184.0 6.1 WATTS FBV-4 1 80 WATER BALL 75 184.0 6.1 WATTS FBV-4 80 V-8 WATER SOLENOID 75 184.0 6.1 GRAINGER 8210G002 1.5 80 1.5 V-9 WATER BALL 75 184.0 6.1 WATTS FBV-4 1.5 80 1.5 V-10 WATER GATE 450 80.5 54.9 WATTS 405-NRS-RW 6 35 6 WATER GATE 75 184.0 6.1 WATTS 405-NRS-RW 80 V-12 WATER GATE 75 184.0 6.1 WATTS 405-NRS-RW 80 NOTES:

TAG	F-1	F-2
ТҮРЕ	CHLORINE FEEDER	CATRIDGE FILTER
LOCATION	PUMP PIT	PUMP PIT
WORKING FLUID	WATER	WATER
MODEL	-	C1200
EFFICTIVE FILTRATION AREA	-	120 SQFT
DESIGN CAPACITY (GPM)	-	45
PLUMBING CONNECTION	1"	1-1/2"
CATRIDGE REPLACEMENT		CX1200RE
MANUFACTURER	HAYWARD	HAYWARD
NOTES:		

LOCATION		
LOCATION		PUMP PIT
WORKING FLUI	ID	WATER
	MODEL	WEINMAN 4G
9	SIZE	4"
<u>ı</u>	DESIGN CAPACITY (GPM)	450
<u>ı</u>	DESIGN HEAD (FT/H20)	35
PUMP DATA	SUCTION (INCH)	4"
<u> </u>	IMPELLER DIA (INCH)	7"
L	NPSHr (FT)	8
1	PUMP EFFICIENCY (%)	82
9	SPEED (RPM)	VARIABLE
	MODEL	MARATHON 4VD184TTDR7356BT
	MOTOR SIZE (HP)	5
MOTOR	FULL LOAD AMPS	14.8-14.4/7.2
<u>\</u>	VOLTS/PHASE/HZ	208/3/60
9	SPEED (RPM)	1740
	APPROX. WEIGHT (LBS)	80
NOTES:		

UNIT TAG		P-2
LOCATION		PUMP PIT
WORKING FL	UID	WATER
	MODEL	SP3015X20AZ
	SIZE	2
	DESIGN CAPACITY (GPM)	75
	DESIGN HEAD (FT/H20)	80
PUMP DATA	SUCTION (INCH)	2"
	IMPELLER DIA (INCH)	4.75"
	NPSHr (FT)	
	PUMP EFFICIENCY (%)	80
	SPEED (RPM)	VARIABLE
	MODEL	A.O. SMITH K48N2N106
	MOTOR SIZE (HP)	2.5
MOTOR	FULL LOAD AMPS	11.2
	VOLTS/PHASE/HZ	230/3/60
	SPEED (RPM)	3450
	APPROX. WEIGHT (LBS)	
NOTES:		

DES	SIGN CAPACITY (GPM)	P-3 PUMP PIT WATER SP3007X10AZ 1-1/2" 38
WORKING FLUID SIZI DES DES	E SIGN CAPACITY (GPM)	WATER SP3007X10AZ 1-1/2"
SIZI DES	E SIGN CAPACITY (GPM)	SP3007X10AZ 1-1/2"
DES	E SIGN CAPACITY (GPM)	1-1/2"
DES	SIGN CAPACITY (GPM)	
DES		38
	ICALLIEAD (ET/U2O)	30
PUMP DATA SUC	SIGN HEAD (FT/H20)	70
	CTION (INCH)	1-1/2"
IMI	PELLER DIA (INCH)	3/4"
NP:	SHr (FT)	1
PUI	MP EFFICIENCY (%)	80
SPE	ED (RPM)	VARIABLE
	MODEL	HAYWARD SPX1607Z1
МС	TOR SIZE (HP)	1
MOTOR FUL	L LOAD AMPS	10
vo	LTS/PHASE/HZ	208/3/60
SPE	ED (RPM)	1750
А	PPROX. WEIGHT (LBS)	38

FILTER PUMP - SCHEDULE BASED UPON

DIT	DRAKE HURSE FUWER	<u> </u>	PIPE RISER UP
BTU	BRITISH THERMAL UNIT	C	PIPE RISER DOWN
BTUH	BTU/HOUR	•	FLOOR CONNECTION
B.O.F.	BOTTOM OF		MAKE UP WATER
CFH	CUBIC FEET PER HOUR		90° PIPE ELBOW TURN DOWN
CV	CONTROL VALVE		TEE TAKE-OFF
EA.	EACH	ţ	90° TOP CONNECTION
EAT	ENTERING AIR TEMPERATURE		STRAINER
EFF	EFFICIENCY	——	UNION (FLANGED OR SCREWED)
ESP	EXTERNAL STATIC PRESSURE		GATE VALVE WITH RISING STEM
EWT	ENTERING WATER TEMPERATURE		(O.S. & Y)
' F	DEGREES FAHRENHEIT	— —	GATE VALVE WITH NON-RISING STEM
FA	FACE AREA		GLOBE VALVE
FLA	FULL LOAD AMPERES		THREE WAY AUTOMATIC CONTROL VALVE, TWO POSITION ACTUATOR
FPM	FEET PER MINUTE		CHECK VALVE
GAL	GALLONS		SOLENOID VALVE
GPM	GALLONS PER MINUTE	─	VALVE IN VERTICAL
HP	HORSE POWER	——	BUTTERFLY VALVE
INWG	INCHES OF WATER GAUGE		
LAT	LEAVING AIR TEMPERATURE		
LBS	POUNDS		TINIC CVMDOLC
LVG	LEAVING	DRAF	TING SYMBOLS
LWT	LEAVING WATER TEMPERATURE		POINT OF DISCONNECTION
MBH	1000 BTU/HR		POINT OF NEW CONNECTION
MNPT	MALE NATIONAL PIPE THREAD		NEW WORK
PSI	POUNDS PER SQUARE INCH	V V V V	
RPM	REVOLUTION PER MINUTE	- 	EXISTING TO BE REMOVED
S&R	SUPPLY AND RETURN		EXISTING PIPING TO REMAIN
SMBH	SENSIBLE MBH	M3019	DETAIL NUMBER DRAWING NUMBER
SQFT	SQUARE FEET		DETAIL / SECTION
TEMP	TEMPERATURE	M300	DETAIL DESIGNATION DRAWING NUMBER
TMBH	TOTAL MBH		
TYP.	TYPICAL	HV	EQUIPMENT TYPE
V.I.F.	VERIFIED IN FIELD	10	EQUIPMENT NUMBER
Ø	DIAMETER	NEW∙──	EQUIPMENT STATUS

SUMP PUMP - SCHEDULE

BASED UPON
"WEIL" OR EQUAL

MODEL

MODEL

DESIGN CAPACITY (GPM)

DESIGN HEAD (FT/H20)

IMPELLER DIA (INCH)

PUMP EFFICIENCY (%)

NPSHr (FT)

SPEED (RPM)

MOTOR FULL LOAD AMPS

MOTOR SIZE (HP)

VOLTS/PHASE/HZ

APPROX. WEIGHT (LBS)

SPEED (RPM)

SP-1

PUMP PIT

WATER

WEIL 1413 2"

170

70

1-1/2"

3/4"

80

VARIABLE

1/2

208/3/60

1750

UNIT TAG

LOCATION

WORKING FLUID

PUMP DATA SUCTION (INCH)

PIPING SYMBOLS

O———— PIPE RISER UP

ABBREVIATIONS

BRAKE HORSE POWER



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Revision

No. Date

	Date	Submittal
Key	Plan:	SHADED AREA = AREA OF WORK

Project Engineer:	CARL J. CANI	NIZZARO, P.E.
Designer:	CARL J. CAN	NIZZARO, P.E.
Drawn by:	JAMES M. DU	MORNE
Checked by:	CARL J. CANI	NIZZARO, P.E.
Design No. or LLW No.:	Facility Code:	Date:
_	N/A	05/17/13

Project: POLICE MEMORIAL SERVICE
RECONSTRUCTION - SUPERSTORM SANDY
BATTERY PARK CITY AUTHORITY
Address: MANHATTAN

Drawing Title:
GENERAL NOTES, LEGEND AND
ABBREVIATIONS & LIST OF

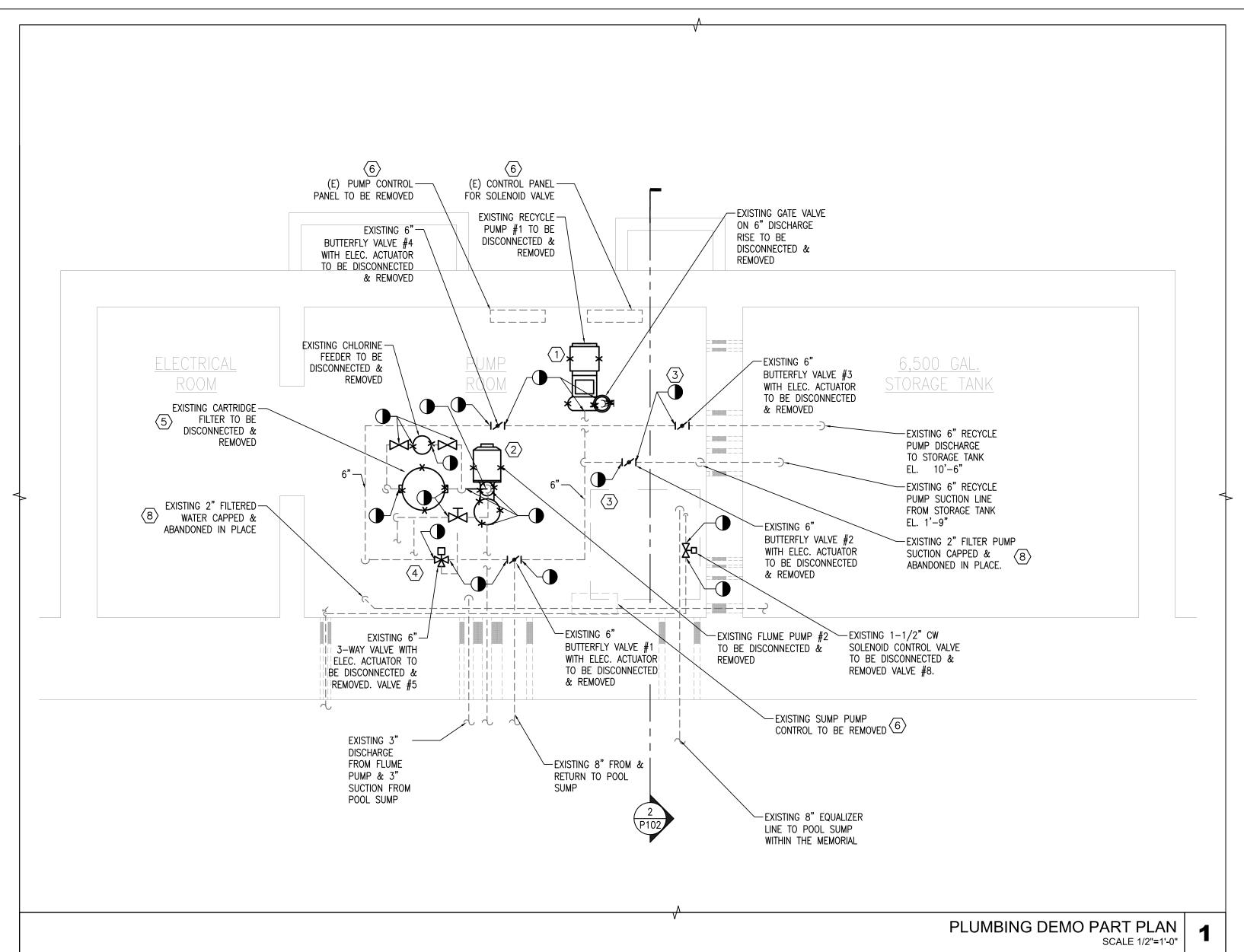
NEW YORK, NY

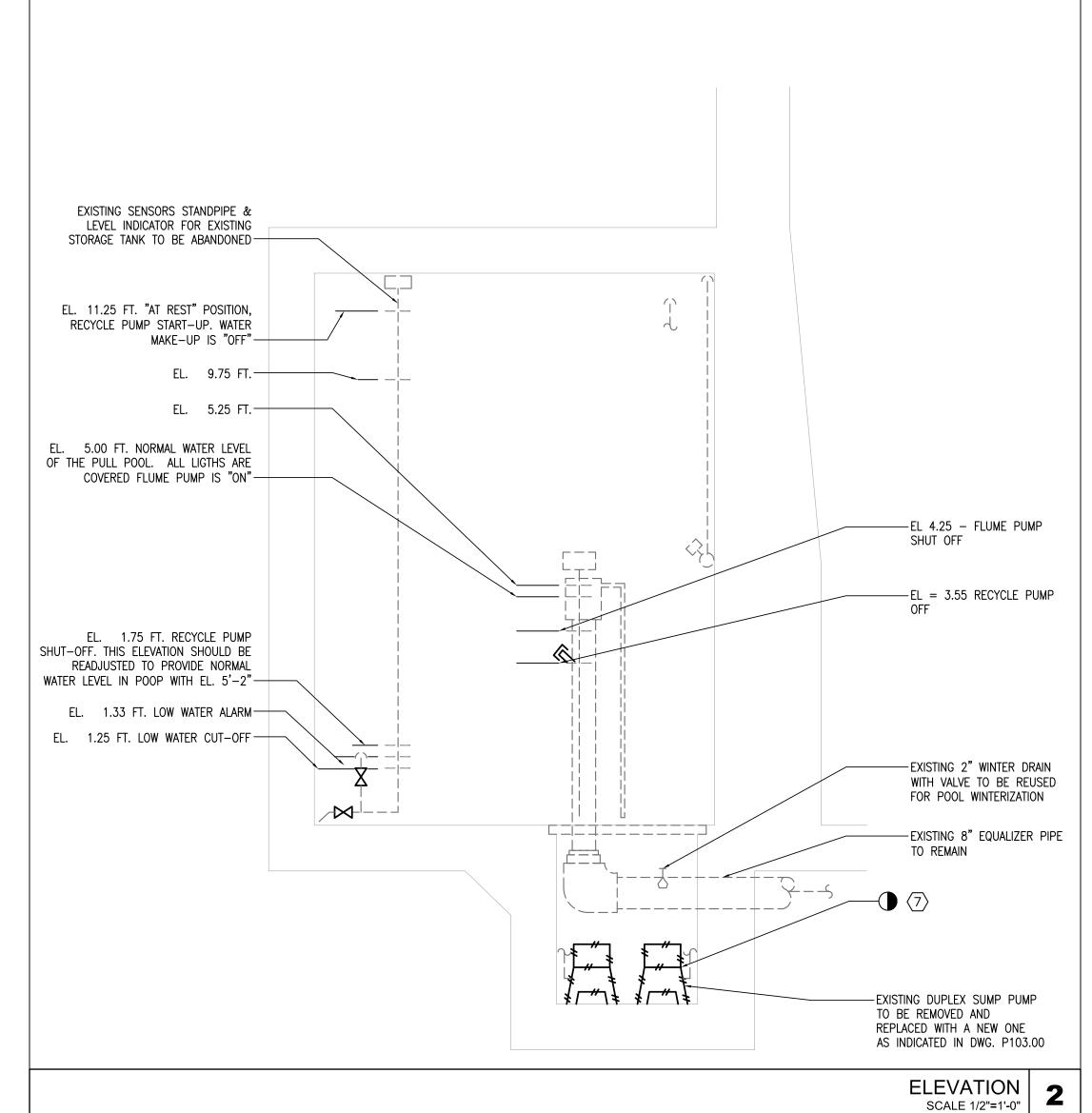
DRAWINGS

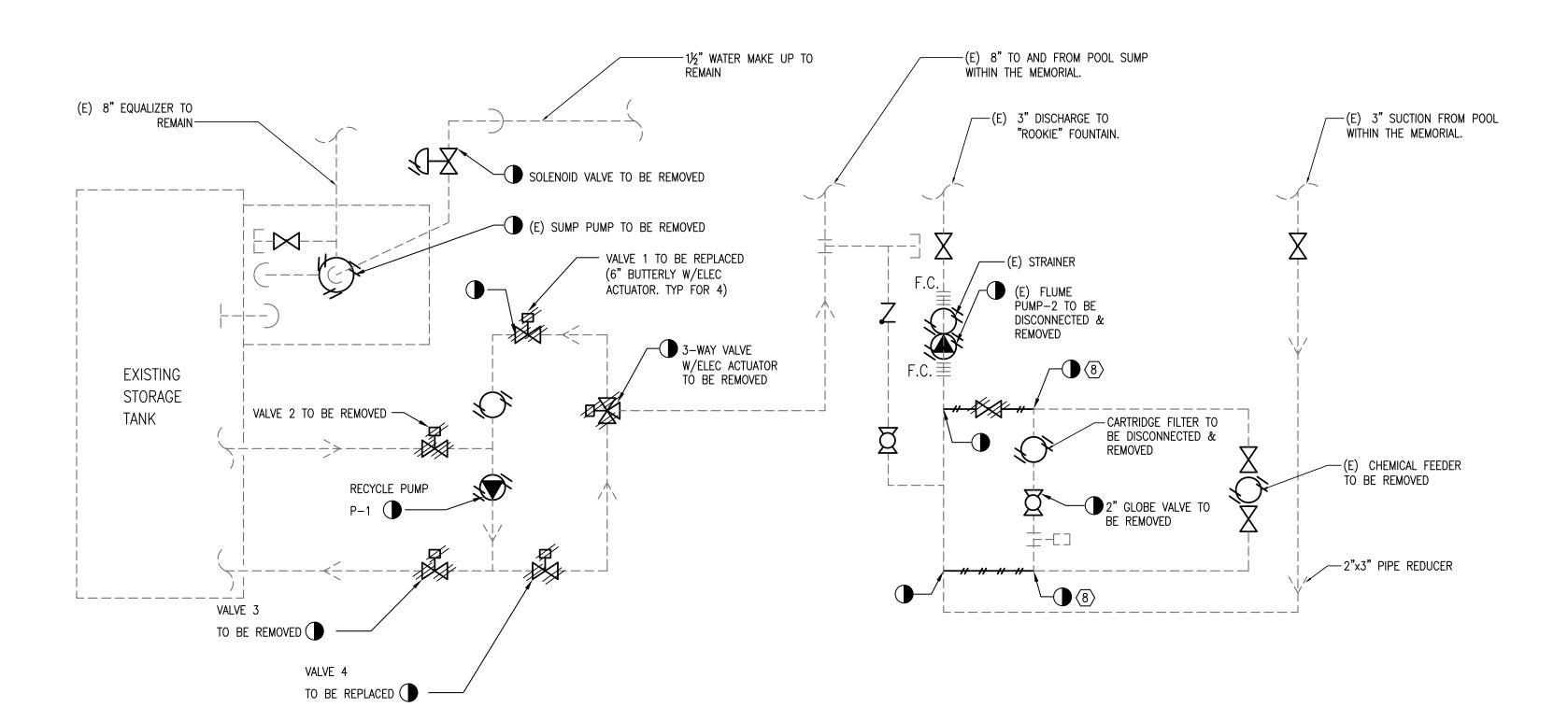
Drawing No.:

P101.00

Sheets in Contract: 07 of 23







PUMP PIT - PIPING SCHEMATIC DIAGRAM

NOT TO SCALE

DEMOLITION NOTES:

- 1. FOR SYMBOLS AND ABBREVIATIONS SEE DRAWING POO1.
- 2. CONTRACTOR TO REMOVE EXISTING PUMPS WITH ALL ASSOCIATED, VALVES, FITTINGS, SUPPORTS AND REQUIRED PIPINGS.

SCOPE OF WORK:

- REMOVE (E) RECYCLE PUMP. DISCONNECT THE NECESSARY CONNECTIONS AND REPLACE IT WITH A NEW HAYWARD PUMP (SEE DWG P-101)
- REMOVE (E) FLUME PUMP. DISCONNECT THE NECESSARY CONNECTIONS AND REPLACE IT WITH A NEW PUMP (SEE DWG P-101)
- REMOVE FOUR (4) BUTTEFLY VALVES (V-1 TO V-4) THAT REQUIRE THE SAME CAPACITIES AS INDICATED ON THE DWG P-101.
- REMOVE A THREE (3) WAY VALVE WITH ELECTRIC ACTUATOR. THE CAPACITIES AND DESCRIPTION OF THE 3 WAY VALVE IS INDICATED ON DWG P-101.
- REMOVE THE CARTRIGE FILTER THAT HAS THE SAME CAPACITY AS INDICATED ON DWG P-101.
- REMOVE CONTROLLERS AS INDICATED ON DETAIL P-102/1. THE CONTROLLERS SHOULD FOLLOW THE SEQUENCE OF OPERATION AS INDICATED ON THE SPECIFICATIONS AND DWG P-105.
- REMOVE THE EXISTING SUMP PUMP. DISCONNECT THE NECESSARY CONNECTIONS AND REPLACE WITH THE SAME MODEL AND CAPACITY.
- DISCONNECT THE FILTER SUCTION & DISCHARGE PIPING AS INDICATED AND CONNECT THEM TO THE ORIGINAL SUCTION & DISCHARGE PIPING ON THE STORAGE TANK.



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Key	Plan:	SHADED AREA = AREA OF WORK
<u> </u>		AREA OF WORK
É		

CARL J. CANNIZZARO, P.E.		
MARTIN J. ISII	ORO .	
JAMES M. DUMORNE		
CARL J. CANNIZZARO, P.E.		
Facility Code:	Date:	
N/A	05/17/13	
	MARTIN J. ISII JAMES M. DU CARL J. CANN Facility Code:	

Project: POLICE MEMORIAL SERVICE
RECONSTRUCTION - SUPERSTORM SANDY
BATTERY PARK CITY AUTHORITY

Address: MANHATTAN

NEW YORK, NY
Drawing Title:

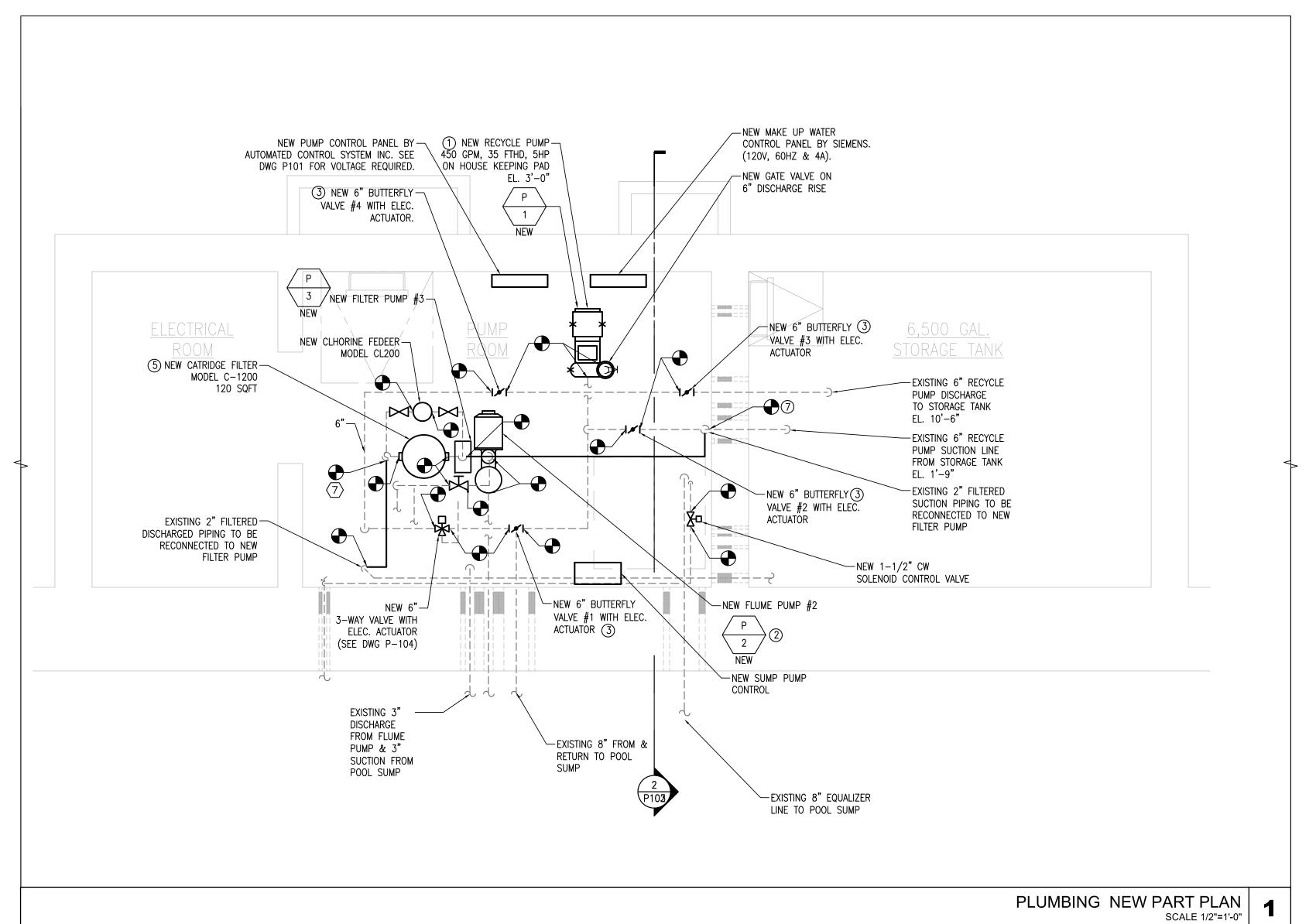
PUMP PIT
DEMOLITION PART PLAN

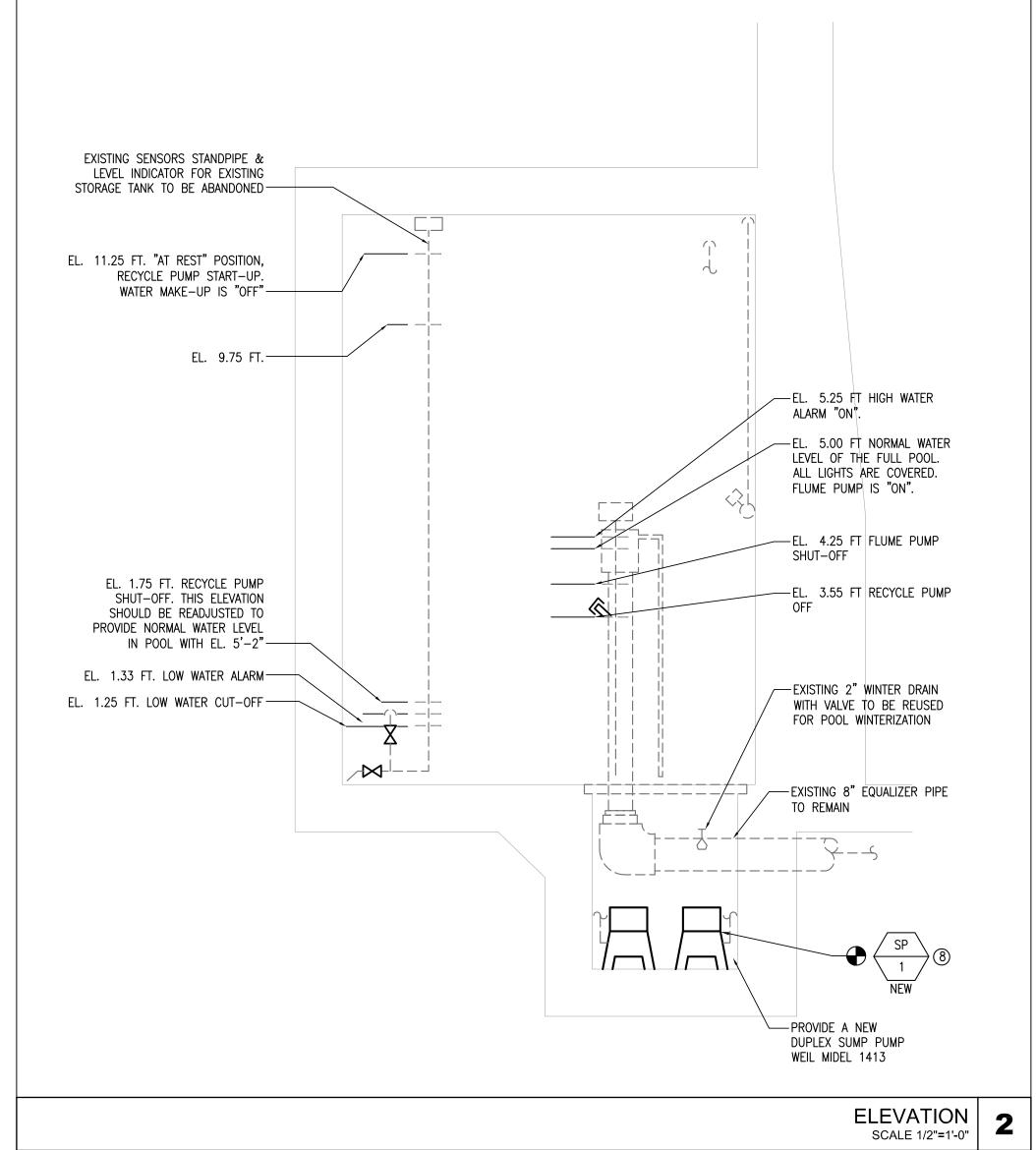
Drawing No.:

P102.00

Sheets in Contract:

08 of 23





SCOPE OF WORK:

- INSTALL NEW RECYCLE PUMP. DISCONNECT THE NECESSARY CONNECTIONS AND REPLACE IT WITH A NEW HAYWARD PUMP MODEL SP3020X25AZ OF 5 HP THAT WILL BE ABLE TO PUMP 450 GPM @ 35 FTHD.
- 2 INSTALL NEW FLUME PUMP. DISCONNECT THE NECESSARY CONNECTIONS AND REPLACE IT WITH A NEW DIMED OF 2-1/2" HE THAT SHALL DE ABLE TO DIMED. REPLACE IT WITH A NEW PUMP OF 2-1/2" HP THAT SHALL BE ABLE TO PUMP 75 GPM @ 80 FTHD.
- 3) INSTALL FOUR (4) BUTTERFLY VALVES (V-1 TO V-4) THAT REQUIRE THE SAME CAPACITIES AS INDICATED ON THE DWG P-105.
- INSTALL NEW THREE (3) WAY VALVE WITH ELECTRIC ACTUATOR. THE CAPACITIES AND DESCRIPTION OF THE 3 WAY VALVE IS INDICATED ON DWG P-105.
- $\stackrel{\textstyle \frown}{}$ INSTALL A NEW CARTRIDGE FILTER WITH ITS RESPECTIVE PUMP THAT HAS THE SAME CAPACITY AS INDICATED ON DWG P-101.
- 6 INSTALL NEW CONTROLLERS AS INDICATED ON DETAIL P-105. THE CONTROLLERS SHOULD FOLLOW THE SEQUENCE OF OPERATION AS INDICATED ON THE DWG.

- 7 RECONNECT EXISTING SUCTION& DISCHARGE PIPING TO THE NEW FILTER PUMP. 8 INSTALL NEW SUMP PUMP OF THE SAME MODEL AND CAPACITY AS THE ORIGINAL. WEIL MODEL 1413.



Consultants: ENSIGN ENGINEERING, P.C. 1111 Calhoun Ave. Bronx, N.Y. 10465 TEL. 718-863-5590 FAX. 718-863-6178

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Project Engineer:	CARL J. CANNIZZARO, P.E.		
Designer:	MARTIN J. ISIDRO		
Drawn by:	JAMES M. DUMORNE		
Checked by:	CARL J. CANNIZZARO, P.E.		
Design No. or LLW No.:	Facility Code:	Date:	
_	N/A	05/17/13	

POLICE MEMORIAL SERVICE RECONSTRUCTION - SUPERSTORM SANDY BATTERY PARK CITY AUTHORITY

Address: MANHATTAN NEW YORK, NY

Drawing Title: PUMP PIT NEW WORK PART PLAN

Drawing No.:

P103.00

Sheets in Contract: 09 **of** 23