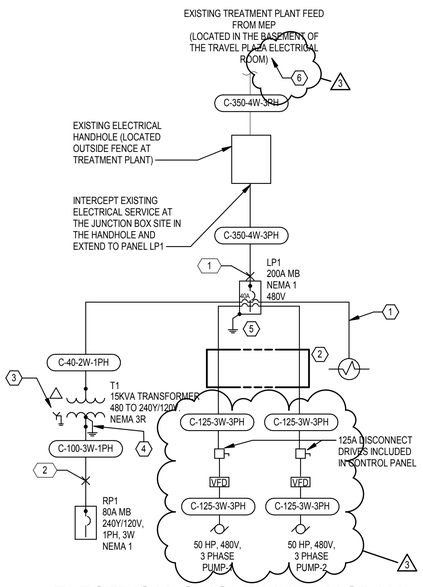


1 ELECTRICAL SINGLE-LINE DIAGRAM

SCALE: NONE

NOTES

1. PROVIDE 3 #10 AWG - 0.75" CONDUIT.
2. PUMP CONTROL PANEL.
3. PROVIDE HOUSEKEEPING PAD AT ELECTRICAL EQUIPMENT. CONCRETE PAD SHALL EXTEND 4" ABOVE FINISHED GRATE. CONCRETE PAD SHALL EXTEND 4" BEYOND EQUIPMENT ON ALL SIDES.
4. PROVIDE #8 AWG COPPER GROUND TO SERVICE ENTRANCE GROUND.
5. PROVIDE NEW GROUND ROD AT PRE-FAB PUMP STATION SHELTER HOUSE PER NEC 250.32.
6. EC TO CHANGE OUT EXISTING TREATMENT PLANT 200A FUSIBLE SWITCH AND FUSES TO SQUARE D QMJ 250A SWITCH AND J FUSES.

FEEDER WIRE SIZES

FEEDER TAG	# OF SETS	# OF CONDUCTORS	CONDUCTOR SIZE	GROUND SIZE	CONDUIT SIZE
C 40 2W 1PH	1	2	10	10	0.75"
C 100 3W 1PH	1	3	2	8	1.5"
C 125 3W 3PH	1	3	1	6	1.5"
C 350 4W 3PH	2	4	350	1	3"

FAULT CURRENT SCHEDULE

REF. POINT	DESCRIPTION	EQUIP. RATING	AVAILABLE SHORT CIRCUIT AMPS
1	LP1	10,000	7,148
2	RP1	10,000	3,745

ELECTRICAL SINGLE-LINE LEGEND

	CONDUIT & WIRE
	CONDUIT & WIRE TO BE REMOVED
	EXISTING CONDUIT & WIRE TO REMAIN
	INTEGRATED EQUIPMENT ENCLOSURE
	SWITCHBOARD ENCLOSURE
	BUSSING
#	FAULT CURRENT REFERENCE POINT
- - W- PH-	FEEDER WIRE SIZE SYMBOL SPECIAL CONFIGURATION: 2P=TWO POLE NO NEUTRAL, S=SECONDARY, SE=SERVICE ENTRANCE, V=VOLTAGE DROP # OF PHASES # OF CONDUCTORS FEEDER AMPERAGE MATERIAL, A=ALUMINUM, C=COPPER
N E	AUTOMATIC TRANSFER SWITCH
E N	AUTOMATIC TRANSFER SWITCH - BYPASS
	BUS DUCT
N G	REMOVABLE BUS LINK
	CIRCUIT BREAKER - MEDIUM VOLTAGE DRAWOUT
	DELTA SYMBOL
	DISCONNECT
	DRAWOUT CONNECTION
M	ELECTRIC METER
A	EQUIPMENT AMMETER
	EQUIPMENT CAPACITOR
	EQUIPMENT CONTACTOR
	EQUIPMENT CURRENT TRANSFORMER
	EQUIPMENT GROUND
	EQUIPMENT LIGHTNING ARRESTOR
M	EQUIPMENT MULTIMETER
	EQUIPMENT POTENTIAL TRANSFORMER
SWBD METERING	EQUIPMENT SWITCHBOARD METER
V	EQUIPMENT VOLTMETER
	EQUIPMENT WYE SIDE OF TRANSFORMER WITH GROUND
	FUSED CUTOUT
	FUSED SWITCH - PRIMARY
	FUSED SWITCH - SECONDARY
G	GENERATOR
GFP	GROUND FAULT PROTECTOR
K	KEYED INTERLOCK
	MOTOR
	MOTOR STARTER
	MOTOR STARTER AND DISCONNECT
	PANELBOARD - MAIN LUG ONLY
	PANELBOARD - DOUBLE SET OF LUGS
	PANELBOARD - MAIN BREAKER
	PANELBOARD BREAKER
	SHORT CIRCUIT FAULT LOCATION
	SINGLE POLE SWITCH

	SURGE PROTECTIVE DEVICE
	TAP SWITCH WITH GROUND POSITION
	TRANSFORMER
	UNINTERRUPTIBLE POWER SYSTEM
VFD	VARIABLE FREQUENCY DRIVE
▲	VOLTAGE TERMINATION - PRIMARY
● OR •	VOLTAGE TERMINATION - SECONDARY

LJBinc.com
(866) 552-3536
2500 Newmark Drive
Miamisburg, Ohio 45342

STATE OF OHIO
DONALD H. TIMMER
E-72431
REGISTERED
PROFESSIONAL ENGINEER

3/15/2023

OHIO TURNPIKE AND INFRASTRUCTURE COMMISSION

REV	DATE	RELEASED FOR
3	03-17-23	Addendum #3
2	01-19-23	100% BID AND PERMIT SET
1	12-05-22	90% Owner Review Set

© 1985-2022 LJB Inc. This drawing contains information that is proprietary to and property of LJB Inc. and shall be kept confidential. No publication or distribution of this drawing may be made without the express written consent of LJB Inc. except for the limited purposes set forth in the contract between LJB Inc. and party for whom this drawing was made.

DESIGNED DEA	JOB NUMBER 0122164A.00
DRAWN OH	DATE
CHECKED JJT	01/19/23

SHEET TITLE

SINGLE LINE DIAGRAM

SHEET NUMBER

40 / 43 E002

HEAPY
P: 937-224-0861 www.heapy.com
PROJECT NO. 2022-07068

3/15/2023 4:37:32 PM C:\BIM\Model\2022-07068-MEP-Central_dsbakerN9CQM.rvt

Panel: LP1

Location: PUMP HOUSE
Supply From: MEP (LOCATED IN TRAVEL PLAZA)
Voltage: 480/277 Wye-3PH-4W
Mounting: Surface
Enclosure: Type 1
A.I.C. Rating: 10 KA
Mains Type: MCB
Mains Rating: 250 A

3

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	PUMP 1	125 A	3	1583...	1583...					3	125 A	PUMP 2	2
3	--	--	--			1583...	1583...			--	--	--	4
5	--	--	--					1583...	1583...	--	--	--	6
7	GRINDER CNTRL PNL	30 A	3	3333...	4440...					2	40 A	T1/RP1	8
9	--	--	--			3333...	3080...			--	--	--	10
11	--	--	--					3333...	2000...	3	15 A	AC HEATER	12
13					2000...					--	--	--	14
15							2000...			--	--	--	16
17													18
19													20
21													22
23													24
25													26
27													28
29													30
31													32
33													34
35													36
37					0 VA					3	30 A	SPD	38
39							0 VA			--	--	--	40
41									0 VA	--	--	--	42
			Total Load:	41.44 kVA		40.08 kVA		37.00 kVA					

Load Classification	Connected...	Demand Factor	Estimated...	Panel Totals	
Equipment	0 VA	0.00%	0 VA		
Motor	101000 VA	111.76%	112875 VA	Total Conn. Load:	118.52 kVA
Receptacle	10000 VA	100.00%	10000 VA	Total Est. Demand:	130.4 kVA
Spare	7520 VA	100.00%	7520 VA	Total Conn.:	143 A
				Total Est. Demand:	157 A

Notes:

TOTAL CONNECTED		ESTIMATED DEMAND
118.52 kVA		

Panel: RP1

Location: PUMP HOUSE
Supply From: T1
Voltage: 120/240 Single-1PH-3W
Mounting: Surface
Enclosure: Type 1
A.I.C. Rating: 10 KA
Mains Type: MCB
Mains Rating: 80 A

CKT	Circuit Description	Trip	Poles	A		B		Poles	Trip	Circuit Description	CKT
1	EUH-1	20 A	2	1500 VA	360 VA			1	20 A	RECEPTACLE - NOTE 1	2
3	--	--	--			1500 VA	85 VA	1	20 A	LIGHTING	4
5					1000 VA			1	20 A	CONTROLS	6
7							1000 VA	1	20 A	TELEMETRY	8
9	FLOW METER	20 A	1	1000 VA	0 VA			1	20 A	SPARE	10
11	LIGHTING	20 A	1			160 VA	0 VA	1	20 A	SPARE	12
13											14
15											16
17											18
19											20
21											22
23											24
25											26
27											28
29											30
31											32
33											34
35											36
37											38
39											40
41											42
			Total Load:	3.86 kVA		2.75 kVA					

Load Classification	Connected...	Demand Factor	Estimated...	Panel Totals	
Lighting	245 VA	125.00%	306 VA		
Motor	3000 VA	125.00%	3750 VA	Total Conn. Load:	6.61 kVA
Receptacle	3360 VA	100.00%	3360 VA	Total Est. Demand:	7.42 kVA
				Total Conn.:	28 A
				Total Est. Demand:	31 A

Notes: 1 PROVIDE GFCI BREAKER

TOTAL CONNECTED		ESTIMATED DEMAND
6.61 kVA		

LUMINAIRES

NOTES:

MARK	LAMPS QUANTITY FLUORESCENT	INCANDESCENT	H.I.D.	L.E.D.	WATTS / LAMP	VA / LINEAR FOOT	CATALOG NO.	DELIVERED LUMENS	COLOR	LOAD (VA)	FIXTURE VOLTAGE	MANUFACTURER	CATALOG NO.	DESCRIPTION	OTHER ACCEPTABLE MANUFACTURERS	DIFFUSING MEDIA	TRIM COLOR WHITE	BLACK	ALUMINUM	BRONZE	STANDARD	SEE NOTE	MOUNTING (S-SURFACE R-RECESSED SM-STEM MTD WM-WALL MTD C-CHAIN MTD UC-UNDER CAB CS-CEIL SURFACE)	SIZE DIAMETER	WIDTH	LENGTH	DEPTH	SEE NOTE
C1				X	42			5089	3500	42	120	COLUMBIA	LXEM4-35-ML-RFA-E-U	48" LED STRIP	LITHONIA, PHILLIPS	SNAP ON FROSTED	•						S		7.172"	48"	5.629"	
D1				X						1	120	LITHONIA	ELM4L	EMERGENCY LIGHT	Dual Lite Emergilite LSI										5.375"	13"	5.75"	
K1				X	80			8415	4000	80	120	BEACON	TRV-D-36E-65-AMB-T2-UNV-BZT-PEC	WALL PACK - TRAVERSE SERIES	LITHONIA, SIGNIFY					•			WM		12"	17.125"	6"	

MOTORS, STARTERS, DISCONNECTS & CONTROLS

NOTES:
1 HVAC EQUIPMENT PROVIDED WITH PUMP HOUSE.
2 REFER TO SINGLE-LINE FOR CONDUIT AND CABLING.

	MOTOR NAMEPLATE	CHARACTERISTICS HORSEPOWER (HP)	LOAD (kVA)	120V-1PH	208V-1PH	208V-3PH	240V-1PH	240V-3PH	277V-1PH	480V-1PH	480V-3PH	LOCATION ROOM NUMBER	ROOM NAME	STARTER TYPE NEMA SIZE	MANUAL	MAGNETIC	BUILT-IN MOTOR O/L	2-SPEED	VFD	SEE NOTE	LOCATION NEAR MOTOR	MOTOR CONT CENTER	EQUIP CONT PANEL	ROOM NUMBER	SEE NOTE	FURNISHED BY	DISCONNECT MEANS TYPE DISC SWITCH	MANUAL STARTER	RECEPTACLE	FEEDER SW OR BREAKER	NEMA TYPE	LOCATION DISC SIZE	FUSE SIZE	NEAR MOTOR	MOTOR CONT CENTER	EQUIP CONT PANEL	PANELBOARD	SEE NOTE	FURNISHED BY	CONTROL INTERLOCK WITH MOTOR NO. BY E.C.	MANUAL AT STARTER	INTEGRAL WITH EQUIPMENT	FURNISHED BY	SEE NOTE	FEEDER NUMBER OF CONDUCTORS	WIRE SIZE	GROUND SIZE	CONDUIT SIZE	SEE NOTE
	AC HEATER		6								•		PUMP HOUSE																															OTHERS		3	12	12	0.75"	
	EUH-1 UNIT HEATER		3			•							PUMP HOUSE								•					ES	•							•					ES					EC		2	12	12	0.75"	1
	P1 PUMP-1	50	47.5								•		PUMP HOUSE						•		•					ES				•		125A		•				EC			•	EC							2
	P2 PUMP-2	50	47.5								•		PUMP HOUSE						•		•					ES				•		125A		•				EC			•	EC							2

3 3

LJB Inc.
LJBinc.com
(866) 552-3536
2500 Newmark Drive
Miamisburg, Ohio 45342

STATE OF OHIO
DONALD H. TIMMER
E-70431
REGISTERED
PROFESSIONAL ENGINEER
3/15/2023

OHIO TURNPIKE AND INFRASTRUCTURE COMMISSION

REV	DATE	RELEASED FOR
3	03-17-23	Addendum #3
2	01-19-23	100% BID AND PERMIT SET
1	12-05-22	90% Owner Review Set

© 1985-2022 LJB Inc. This drawing contains information that is proprietary to and property of LJB Inc. and shall be kept confidential. No publication or distribution of this drawing may be made without the express written consent of LJB Inc. except for the limited purposes set forth in the contract between LJB Inc. and party for whom this drawing was made.

DESIGNED	DEA	JOB NUMBER	0122164A.00
DRAWN	OH	DATE	01/19/23
CHECKED	JJT		

SHEET TITLE
PANEL SCHEDULES AND MOTOR SCHEDULES

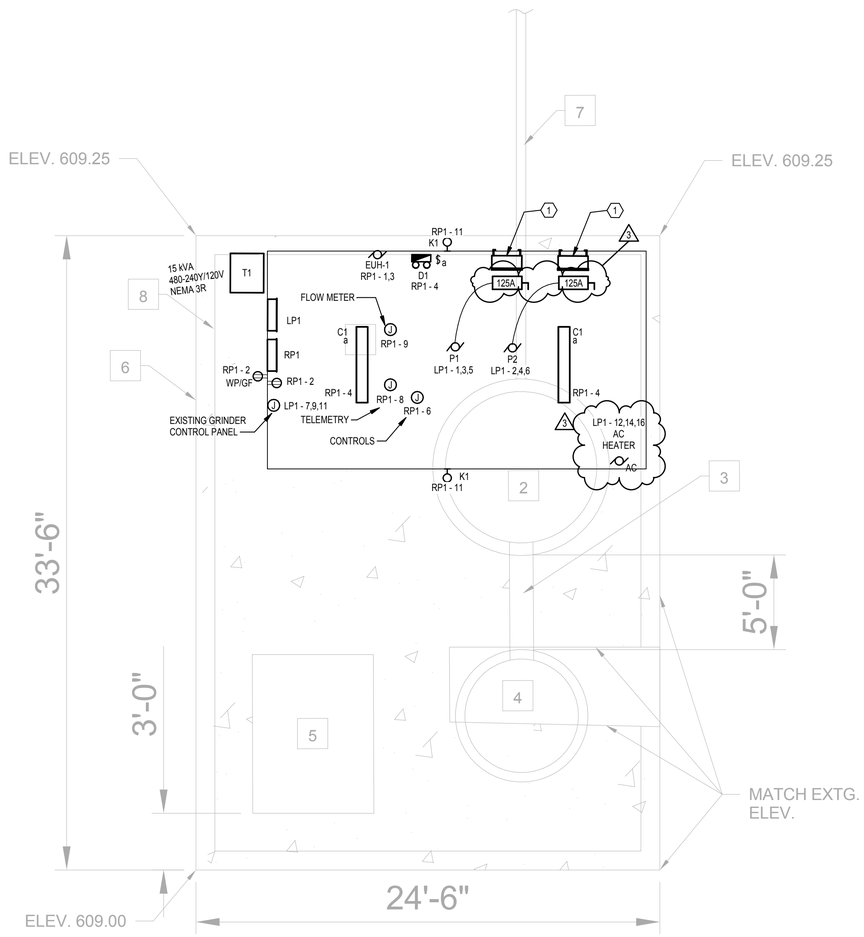
SHEET NUMBER
41/43 E003

HEAPY
P: 937-224-0861 www.heapy.com
PROJECT NO. 2022-07068

3/15/2023 4:37:32 PM C:\BIM\Model\2022-07068-MEP-Central_dsbakerN9CQM.rvt

PLAN NOTES:

1. REFER TO FACTORY BUILT ABOVE GROUND PUMP STATION DOCUMENT FOR WEP REQUIREMENTS.
2. PROVIDE A WALL PACK LIGHT FIXTURE WITH INTEGRAL PHOTO CELL.



1 TURNPIKE ERIE ISLAND PUMP STATION

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

0 4 8 16 24

N

LJBinc.com
(866) 552-3536
2500 Newmark Drive
Miamisburg, Ohio 45342

STATE OF OHIO
DONALD H. TIMMER
E-72431
REGISTERED
PROFESSIONAL ENGINEER

3/15/2023

OHIO TURNPIKE AND INFRASTRUCTURE COMMISSION

REV	DATE	RELEASED FOR
3	03-17-23	Addendum #3
2	01-19-23	100% BID AND PERMIT SET
1	12-05-22	90% Owner Review Set

© 1985-2022 LJB Inc. This drawing contains information that is proprietary to and property of LJB Inc. and shall be kept confidential. No publication or distribution of this drawing may be made without the express written consent of LJB Inc. except for the limited purposes set forth in the contract between LJB Inc. and party for whom this drawing was made.

DESIGNED DEA	JOB NUMBER 0122164A.00
DRAWN OH	DATE 01/19/23
CHECKED JJT	

SHEET TITLE

PUMP STATION

HEAPY
P: 937-224-0861 www.heapy.com
PROJECT NO. 2022-07068

SHEET NUMBER 43/43 E101

3/15/2023 4:37:33 PM C:\BIM\Model\2022-07068-MEP-Central_dsbakerN9CQM.rvt