

BISMARCK PARKS AND RECREATION DISTRICT

WACHTER WAVE POOL IMPROVEMENTS
205 W Reno Avenue, Bismarck, ND 58504



PROJECT LOCATION

DATE
2026-04-29

BAW
BAW
26520

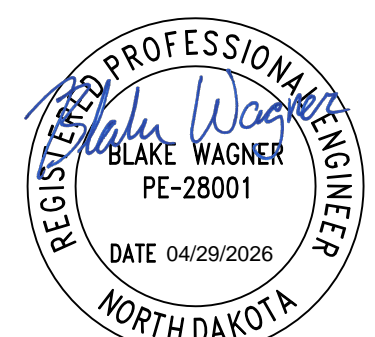
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JOB NO.



BISMARCK PARKS AND REC
WACHTER WAVE POOL IMPROVEMENTS
205 W Reno Ave, Bismarck, ND 58504

TITLE SHEET

SHEET
M001

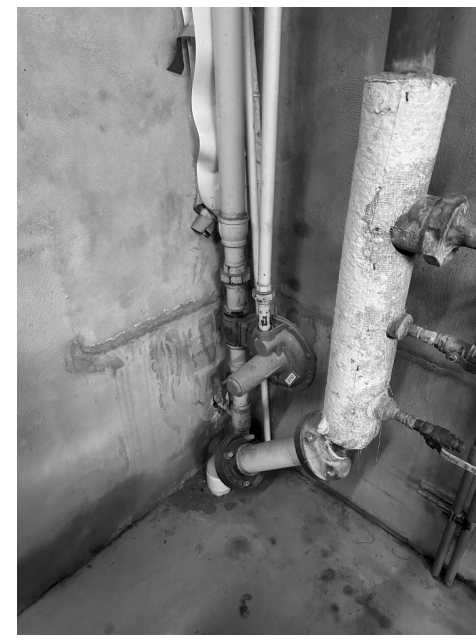




2 East to West Filter Room
M100 NTS



3 West to East Filter Room
M100 NTS



4 Gas Regulator
M100 NTS



5 Heater Circ Piping
M100 NTS



6 Louver - New Door
M100 NTS



8 Circulator Piping Behind Boiler
M100 NTS



7 Louver - New Door - Exterior
M100 NTS



9 Sump Pump
M100 NTS



10 Wavetek Air Compressor
M100 NTS



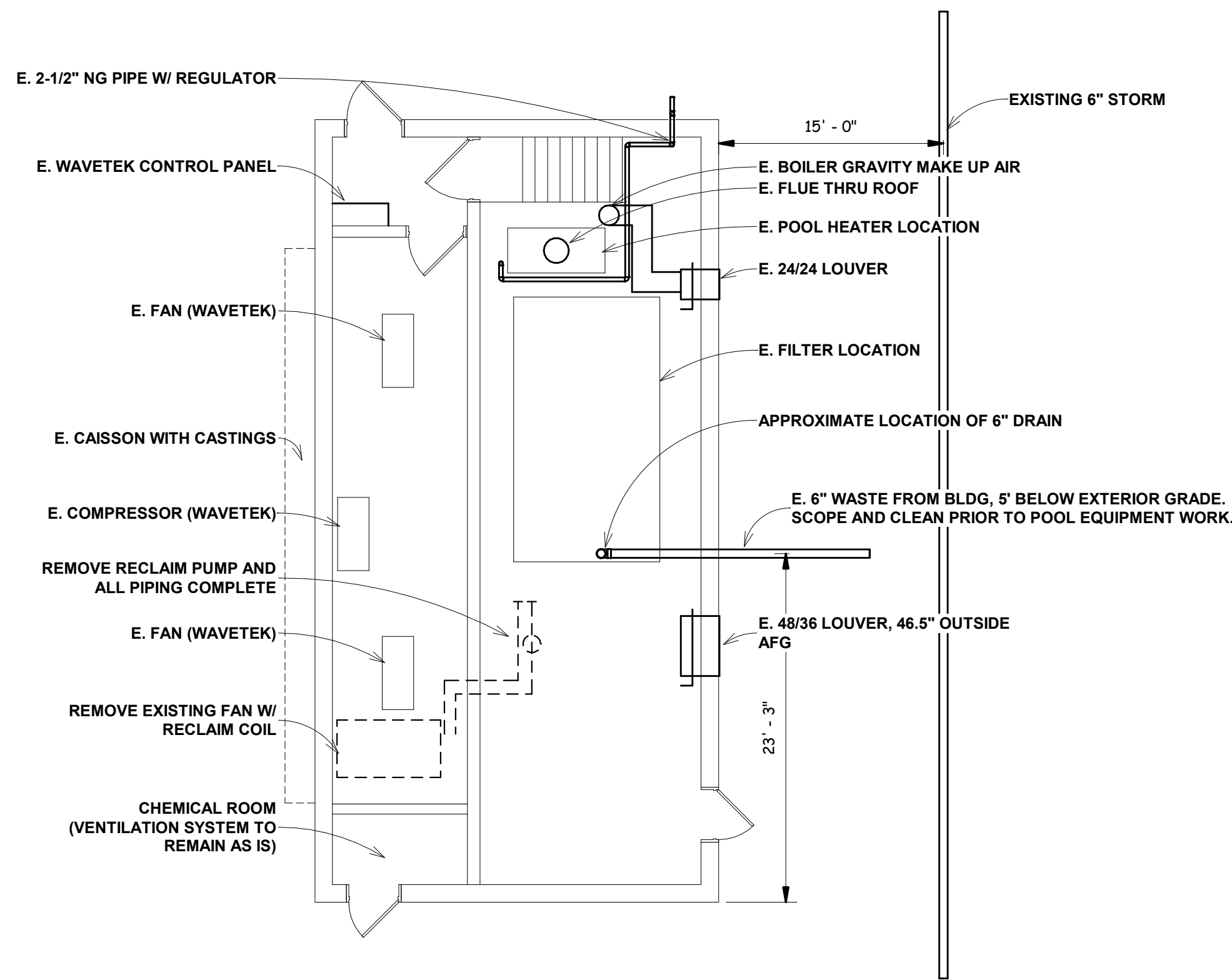
11 Wavetek Control Center
M100 NTS



12 Wavetek East Fan
M100 NTS



13 Wavetek West Fan & Recover Fan
M100 NTS



1 EQUIPMENT BUILDING - REFERENCE PLAN
M100 NTS

PROJECT DESIGN CONDITIONS
BISMARCK, NORTH DAKOTA

	SUMMER			WINTER	
	DB	WB	DEW PT.	DB	
OUTDOOR	91°F	69°F	N/A	-20°F	
INDOOR	75°F	N/A	55°F	72°F	

ND STATE BUILDING CODES

CODE	DESCRIPTION
(IBC)	2024 INTERNATIONAL BUILDING CODE
(IRC)	2024 INTERNATIONAL RESIDENTIAL CODE
(IMC)	2024 INTERNATIONAL MECHANICAL CODE
(IFGC)	2024 INTERNATIONAL FUEL GAS CODE
(IECC)	2024 INTERNATIONAL ENERGY CONSERVATION CODE
(IEBC)	2024 INTERNATIONAL EXISTING BUILDING CODE
(UPC)	2018 NORTH DAKOTA PLUMBING CODE

HVAC LEGEND

	POSITIVE PRESSURE DUCT
	NEGATIVE PRESSURE DUCT
	MANUAL DAMPER
	MOTORIZED DAMPER
	FIRE DAMPER
	COMB. SMOKE/FIRE DAMPER
	BACK DRAFT DAMPER
	ACCESS DOOR
	ELBOW WITH TURNING VANES
	HI-EFFICIENCY TAKEOFF (W/ VOLUME DAMPER)
	FLEXIBLE DUCT
	CONNECT TO EXISTING
	AIR TERMINAL TAG
	AIR TERMINAL MARK
	AIR TERMINAL CFM
	AIR TERMINAL SIZE

PIPING VALVE & ACCESSORY LEGEND

	BALL VALVE
	BALL VALVE INDICATOR
	BUTTERFLY VALVE
	GATE VALVE
	VENTURI
	CHECK VALVE
	2-WAY HYDRONIC CONTROL VALVE
	2-WAY DOMESTIC CONTROL VALVE
	3-WAY CONTROL VALVE
	DRAIN VALVE
	STRAINER
	MANUAL AIR VENT
	AUTO AIR VENT
	TEMPERATURE GAUGE
	PRESSURE GAUGE
	SENSOR
	CIRCUIT SOLVER
	UNION

LINE TYPE LEGEND

	EXISTING
	NEW
	REMOVE
	HIDDEN
	MATCHLINE



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Prairie
Engineering P.C.
Professional Consulting Engineers

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WACHTER WAVE POOL IMPROVEMENTS
205 W Reno Ave., Bismarck, ND 58504

MECHANICAL PLANS

SHEET
M100

STANDARD ELECTRICAL SYMBOLS

BASED ON ANSI Y32.9-1972, ANSI A117.1-1986, AND FEDERAL REGISTER 56-144(A)A
MOUNTING HEIGHT MEASUREMENTS SHALL BE MADE FROM FINISH FLOOR TO CENTERLINE OF OUTLET

SYMBOL	DESCRIPTION	MTG. HT.	
LIGHTING OUTLETS			
	CEILING INCANDESCENT OR HID, TYPE A, CKT 1, 5W, 6	SCHEDULED	
	WALL INCANDESCENT OR HID	SCHEDULED	
	FLUORESCENT, SLASH INDICATES INBOARD LAMP UNSWITCHED	SCHEDULED	
	BARE LAMP FLUORESCENT STRIP WITH WIRE GUARD	SCHEDULED	
	EXIT SIGNAGE	SCHEDULED	
	EMERGENCY BATTERY UNIT	SCHEDULED	
	REMOTE SEALED BEAM	SCHEDULED	
	PORCELAIN LAMPHOLDER, 100A LAMP	SCHEDULED	
	JUNCTION BOX	SCHEDULED	
	CEILING MOUNTED MOTION SENSOR	48"	
	WALL MOUNTED MOTION SENSOR	48"	
RECEPTACLE OUTLETS			
	SINGLE, CKT 1	22"	
	DUPLEX	22"	
	DUPLEX - SPLIT WIRED	22"	
	DUPLEX - GROUND FAULT CIRCUIT INTERRUPTER	22"	
	SPECIAL CONFIGURATION DESIGNATION REFERS TO SCHEDULE	SCHEDULED	
	MULTI-OUTLET ASSEMBLY, ARROWS EXTEND TO LIMIT OF INSTALLATION, SUBSCRIPT INDICATES SPACING OF OUTLETS	SCHEDULED	
	CLOCK RECEPTACLE	82"	
	DUPLEX RECEPTACLE - FLOOR BOX 30 FOR QUANTITIES	SCHEDULED	
SWITCH OUTLETS			
	SINGLE POLE	48"	
	DOUBLE POLE	48"	
	THREE-WAY	48"	
	FOUR-WAY	48"	
	KEY OPERATED	48"	
	MOTOR, PROVIDE OVERLOAD UNIT AS REQ'D, TOGGLE ACCEPTABLE IF INTERNAL THERMAL PROTECTION INCLUDED, SWITCH NOT REQUIRED IF MOTOR ASSEMBLY HAS INTEGRAL DISCONNECTING MEANS	48"	
	PILOT HANDLE	48"	
	TIME DELAY	48"	
	DIMMER - 1000W UNLESS OTHERWISE INDICATED	48"	
	GANGED SWITCHES - ARROW INDICATES MULTI-LEVEL SWITCHING	48"	
MISCELLANEOUS			
	PLAN OR DETAIL NOTE	TOP 75"	
	SPECIAL PURPOSE CONNECTION - AS REQUIRED BY EQUIPMENT MANUFACTURER, CO-ORDINATE DESIGN WITH ROOF DRWG	TOP 75"	
	BRANCH CIRCUIT PANELBOARD, SHADING INDICATES NEW PANEL	TOP 75"	
	CONTROL PANEL	TOP 75"	
	EXTERNALLY OPERATED DISCONNECT SWITCH	TOP 75"	
	CONTROLLER OR RELAY	TOP 75"	
	COMBINATION CONTROLLER AND DISCONNECTION MEANS	TOP 75"	
	MOTOR, DESIGNATION REFERS TO SCHEDULE	TOP 75"	
	EQUIPMENT DESIGNATION, SEE SCHEDULE	TOP 75"	
	ELECTRIC HEAT TO SCALE, DESIGNATION REFER TO SCHEDULE, 'T' INDICATES INTEGRAL THERMOSTAT	TOP 75"	
	THERMOSTAT PROVIDED BY DIV. 16	48"	
	THERMOSTAT FURNISHED BY DIV. 15, INSTALLED BY DIV. 16	48"	
	HUMIDISTAT FURNISHED BY DIV. 15, INSTALLED BY DIV. 16	48"	
	POTENTIOMETER FURNISHED BY DIV. 15, INSTALLED BY DIV. 16	48"	
	TIME SWITCH	48"	
	PHOTOELECTRIC SWITCH	48"	
	WALL SERVICES BOX	22"	
CIRCUITING			
	HOME RUN, MIN 3/4" C, ARROWS AND SUBSCRIPTS INDICATE NUMBER AND IDENTIFICATION OF CIRCUITS	48"	
	EMERGENCY, MIN 1/2" C-#10 AWG	48"	
	TELEPHONE, MIN 3/4" C, HOME RUN TO TERMINAL BOARD	48"	
	TELEPHONE, MIN 3/4" C, STUB INTO CEILING SPACE	48"	
	LOW VOLTAGE, MIN 1/2" C-#14 AWG AS REQ'D	48"	
	SPECIAL SYSTEMS, MIN 3/4" C, PROVIDE CONDUCTORS AS REQ'D BY MANUFACTURER, SUBSCRIPT INDICATES SYSTEM, SEE STANDARD ABBREVIATIONS	48"	
STANDARD ABBREVIATIONS			
AC	ABOVE COUNTER (MIN # ABOVE BACKSPASH)	MC	MECHANICAL CONTRACTOR
AFF	ABOVE FINISH FLOOR	MCA	MINIMUM CIRCUIT AMPACITY
AFG	ABOVE FINISH GRADE	MCB	MAIN CIRCUIT BREAKER
AHG	AIR HANDLING UNIT	MEO	MAIN LUG ONLY
ATC	AUTOMATIC TEMPERATURE CONTROL	NC	NURSES CALL
BOF	BOTTOM OF FIXTURE	NFDS	NON-FUSIBLE DISCONNECT SWITCH
CKT	CIRCUIT	NR	NOT REQUIRED
CM	CEILING MOUNTED	P	PAGING/BACKGROUND MUSIC
CP	CONTROL PANEL	PA	PUBLIC ADDRESS
CU	CONDENSING UNIT	PEC	POOL EQUIPMENT CONTRACTOR
CHP	CABINET UNIT HEATER	PRV	POWER ROOF VENTILATOR
DT	DUST TIGHT	RF	RELIEF FAN
DTR	DATA RACK	RSGC	RIGID GALVANIZED STEEL CONDUIT
EC	ELECTRICAL CONTRACTOR	RT	RAIN TIGHT
EF	EXHAUST FAN	RTU	ROOFTOP UNIT
EM	EMERGENCY	S	SECURITY
EP	EXPLOSION PROOF	SCP	SOUND CONTROL PANEL
EWC	ELECTRIC WATER COOLER	SD	SEE DETAIL
EWH	ELECTRIC WATER HEATER	SS	SHRIMP SURPRESSION SWITCH
F	FUSED	SW	SWITCH
FA	FIRE ALARM	T	TELEPHONE
FACP	FIRE ALARM CONTROL PANEL	TSSW	TWO SPEED SEPARATE WINDING
FDS	FUSIBLE DISCONNECT SWITCH	TIB	TELEPHONE TERMINAL BOARD
FLA	FULL LOAD AMPERE	VT	VAPOR TIGHT
FNRR	FULL VOLTAGE NON REVERSING	W	WALL MTS, 8\"/>
FVR	FULL VOLTAGE REVERSING	WG	WIRE GUARD (5\"/>
IC	INTERCOM	WM	WIREMOLD
ICCP	INTERCOM CONTROL PANEL	WP	WEATHERPROOF
IG	ISOLATED GROUND	WT	WATER TIGHT
I	INTERLOCK		
LV	LOW VOLTAGE		

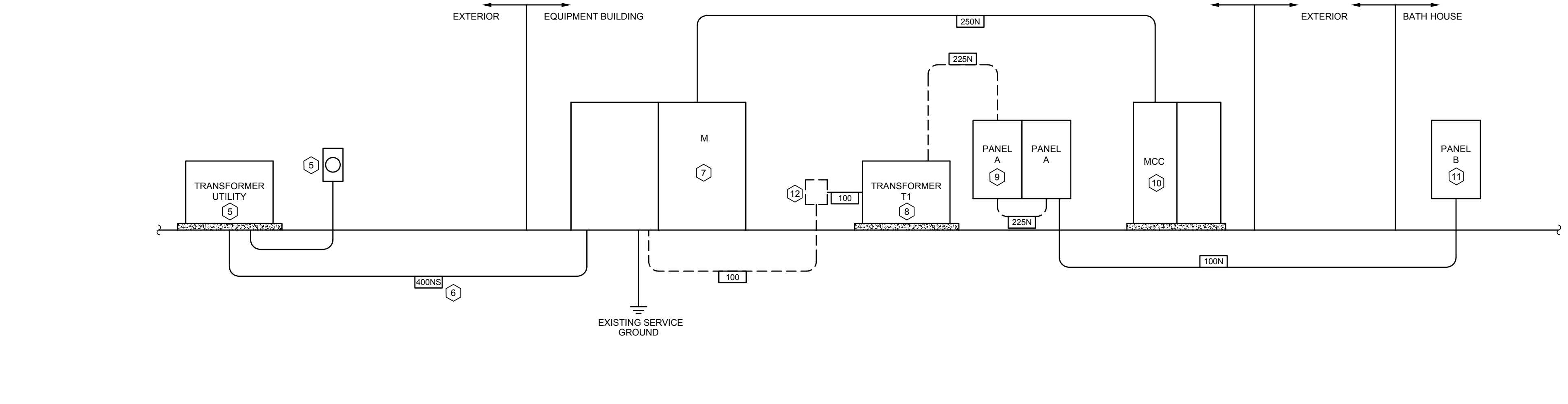
DESIG.	LOAD SERVED	TYPE	SIZE	DESIG.	LOAD SERVED	TYPE	SIZE
1	EMERGENCY LTS	FS	30/3	13	EXISTING LOAD	FS	30/3
2	MAIN SWITCH	FS	400/3				
3	MCC	FS	400/3				
4	TRANSFORMER T1	FS	100/3				
5	SPARE	FS	100/3				
6	SUPPLY FAN	FS	30/3				
7	EXISTING LOAD	FS	30/3				
8	CIRC. PUMP #1	FS	60/3				
9	CIRC. PUMP #2	FS	60/3				
10	EXISTING LOAD	FS	30/3				
11	EXISTING LOAD	FS	30/3				
12	EXISTING LOAD	FS	30/3				

DESIG.	LOAD SERVED	TYPE	SIZE	DESIG.	LOAD SERVED	TYPE	SIZE
1	EMERGENCY LTS	FS	30/3	13	EXISTING LOAD	FS	30/3
2	MAIN SWITCH	FS	400/3				
3	MCC	FS	400/3				
4	TRANSFORMER T1	FS	100/3				
5	SPARE	FS	100/3				
6	SUPPLY FAN	FS	30/3				
7	EXISTING LOAD	FS	30/3				
8	CIRC. PUMP #1	FS	60/3				
9	CIRC. PUMP #2	FS	60/3				
10	EXISTING LOAD	FS	30/3				
11	EXISTING LOAD	FS	30/3				
12	EXISTING LOAD	FS	30/3				

- GENERAL NOTES**
- FIELD VERIFY ALL PERTINENT EXISTING CONDITIONS AND INSTALLATION REQUIREMENTS IN CONNECTION WITH REMODEL. MAKE ALLOWANCES IN BID THERETO.
 - DEVICES THAT ARE DASHED OR WITH SLASH THROUGH INDICATE SPECIFIC EXISTING DEVICES TO BE REMOVED. REMOVE OR RELOCATE ANY ELECTRICAL DEVICE AS REQUIRED BY REMODEL OPERATIONS. EXTEND EXISTING CIRCUITRY AS REQUIRED TO MAINTAIN DOWNSTREAM DEVICES OR FIXTURES. DISCONNECT AND REMOVE ANY EXISTING CIRCUITRY NOT BEING REUSED. RE-IDENTIFY EXISTING PANEL DIRECTORIES AS REQUIRED.
 - SEE SPECIFICATION 260510 FOR REMODEL.

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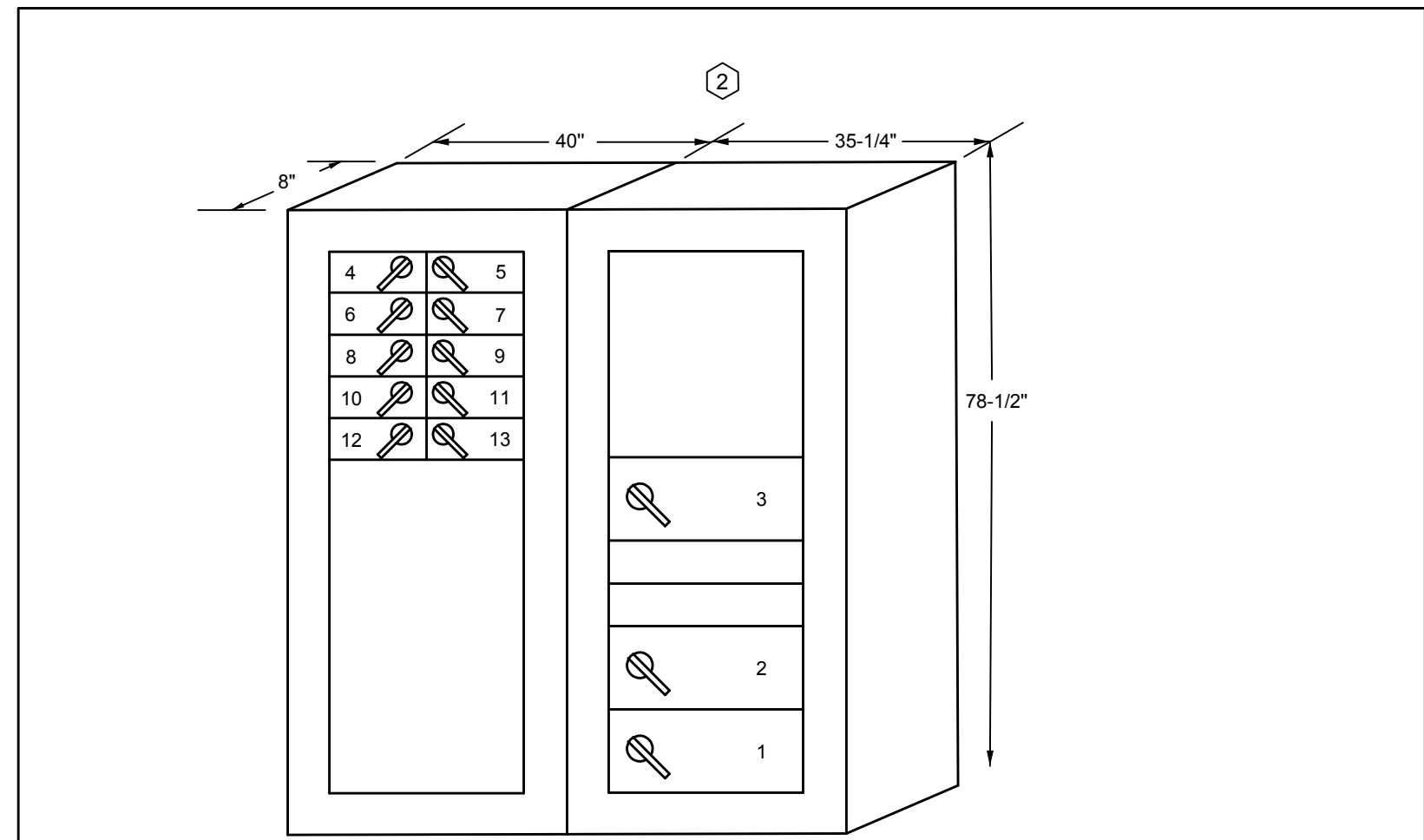
EXISTING PARTIAL RISER
NO SCALE

FEEDER SCHEDULE

DESIG-NATION	CONFIG-URATION	REQUIRED AMPACITY	CONDUCTOR SIZE (NOTE 3)			CONDUIT
			PHASE	NEUTRAL	ECC (NOTE 4)	
400NS	3Ø 4W	400	(2) 250 KCMIL	(2) 250 KCMIL	NR	(2) 3" EX.
250N	3Ø 4W	250	250 KCMIL	250 KCMIL	#4	3" EX.
225N	3Ø 4W	225	#4/0	#4/0	#4	2-1/2" EX.
100N	3Ø 4W	100	#2	#2	#8	1-1/4" EX.
100	3Ø 3W	100	#2	NR	#8	1-1/4" EX.

NOTES:

- FEEDER RISERS ARE SCHEMATIC ONLY, AND NOT INTENDED TO INFER LUG ARRANGEMENTS.
- SEE SPECIFICATION FOR GROUNDING REQUIREMENTS, ALLOWABLE PVC USAGE, AND ALLOWABLE EXPOSED EXTERIOR STUB-UPS.
- EXISTING CONDUCTORS AND CONDUIT SIZING BASED OFF OF EXISTING DRAWINGS. FIELD VERIFY ALL EXISTING CONDUCTOR AND CONDUIT SIZES, INCLUDING EQUIPMENT GROUNDING CONDUCTORS. EXISTING EQUIPMENT GROUNDING CONDUCTORS TO BE UPSIZED AS REQUIRED BASED ON 2023 NEC.
- EQUIPMENT GROUNDING CONDUCTOR.
- EXISTING UTILITY TRANSFORMER AND METER TO REMAIN IN PLACE.
- EXISTING SERVICE FEEDER TO REMAIN IN PLACE.
- EXISTING PANEL M TO BE REPLACED. SEE REVISED RISER DETAIL 2/E200 AND NEW PANEL M DETAIL 3/E200.
- EXISTING 75 KVA TRANSFORMER TO BE REMOVED AND REPLACED. SEE REVISED RISER DETAIL 2/E200 AND TRANSFORMER SCHEDULE.
- EXISTING PANEL A TO BE REMOVED AND REPLACED. SEE REVISED PANEL SCHEDULE.
- EXISTING POOL CONTROL MCC TO BE REMOVED AND REPLACED BY OTHERS. ELECTRICAL CONTRACTOR TO COORDINATE DISCONNECT AND RECONNECT OF FEEDER.
- EXISTING PANEL B IN POOL HOUSE AND ASSOCIATED FEEDER TO REMAIN IN PLACE.
- REMOVE EXISTING TRANSFORMER FEEDER JUNCTION BOX. CUT FEEDER CONDUIT ABOVE FLOOR AND CAP. REMOVE FLEX CONDUIT TO TRANSFORMER. REMOVE ALL ASSOCIATED FEEDER CONDUCTORS.



EXISTING PANEL M ELEVATION
NO SCALE

- NOTES:**
- LOAD AND FUSE SIZES NOTED BASED ON SITE CONDITIONS AT TIME OF DESIGN. PRIOR TO SHOP DRAWING APPROVAL, ENGINEER AND ELECTRICAL CONTRACTOR TO REVIEW ALL LOADS AND VERIFY FUSE SIZES.

EXISTING PANEL M SCHEDULE

EXISTING GE PANELBOARD

DESIG.	LOAD SERVED	TYPE	SIZE	DESIG.	LOAD SERVED	TYPE	SIZE
1	EMERGENCY LTS	FS	30/3	13	EXISTING LOAD	FS	30/3
2	MAIN SWITCH	FS	400/3				
3	MCC	FS	400/3				
4	TRANSFORMER T1	FS	100/3				
5	SPARE	FS	100/3				
6	SUPPLY FAN	FS	30/3				
7	EXISTING LOAD	FS	30/3				
8	CIRC. PUMP #1	FS	60/3				
9	CIRC. PUMP #2	FS	60/3				
10	EXISTING LOAD	FS	30/3				
11	EXISTING LOAD	FS	30/3				
12	EXISTING LOAD	FS	30/3				

EXISTING PANEL A1
120/208 VOLTS 3Ø 4W 225 A. MCB SURFACE MOUNTED (SECTION 1 OF 2)

EXISTING GENERAL ELECTRIC PANELBOARD

CIRCUIT DESCRIPTION	POLES	AMPS	CKT	Ø	CKT	AMPS	POLES	CIRCUIT DESCRIPTION
SPACE	-	-	1	A	2	20	1	EF-1
WH-1	1	20	3	B	4	20	1	FAN ROOM RECEPTACLE
EXISTING LOAD	1	20	5	C	6	20	1	EF-2
TIME CLOCKS	1	20	7	A	8	20	1	SUMP PUMP ALARM
LIGHTS	1	20	9	B	10	20	1	FILTER ROOM RECEPTACLE
STRANTROL	1	20	11	C	12	20	1	BOOSTER PUMP

EXISTING PANEL A2
120/208 VOLTS 3Ø 4W 225 A. MLO SURFACE MOUNTED (SECTION 2 OF 2)

EXISTING GENERAL ELECTRIC PANELBOARD

CIRCUIT DESCRIPTION	POLES	AMPS	CKT	Ø	CKT	AMPS	POLES	CIRCUIT DESCRIPTION
POOL CLEANING PUMP	3	15	1	A	2	30	2	EAST POOL SITE LIGHTING
	-	-	3	B	4	-	-	
	-	-	5	C	6	30	2	WEST RINK LIGHTS
DECK RECPT. (GFCI)	1	20	7	A	8	-	-	
208V DECK RECPT. (GFCI)	2	20	9	B	10	20	1	EXISTING LOAD (GFCI)
	-	-	11	C	12	20	1	BUILDING EXT. LIGHTS (GFCI)
POOL RECPT. (GFCI)	1	20	13	A	14	20	1	EXISTING LOAD (GFCI)
POOL RECPT. (GFCI)	1	20	15	B	16	20	1	EXISTING LOAD (GFCI)
EXISTING LOAD (GFCI)	1	20	17	C	18	20	1	EXISTING LOAD (GFCI)
EXISTING LOAD (GFCI)	1	20	19	A	20	90	3	PANEL B
EXISTING LOAD (GFCI)	1	20	21	B	22	-	-	
WEST SITE LIGHTS	2	20	23	C	24	-	-	
	-	-	25	A	26	20	1	EXISTING LOAD (GFCI)
SPACE	-	-	27	B	28	20	1	EXISTING LOAD (GFCI)
SPACE	-	-	29	C	30	50	2	HOCKEY LIGHTS
SPACE	-	-	31	A	32	-	-	
SPACE	-	-	33	B	34	-	-	SPACE
SPACE	-	-	35	C	36	-	-	SPACE
SPACE	-	-	37	A	38	-	-	SPACE
SPACE	-	-	39	B	40	-	-	SPACE
SPACE	-	-	41	C	42	-	-	SPACE

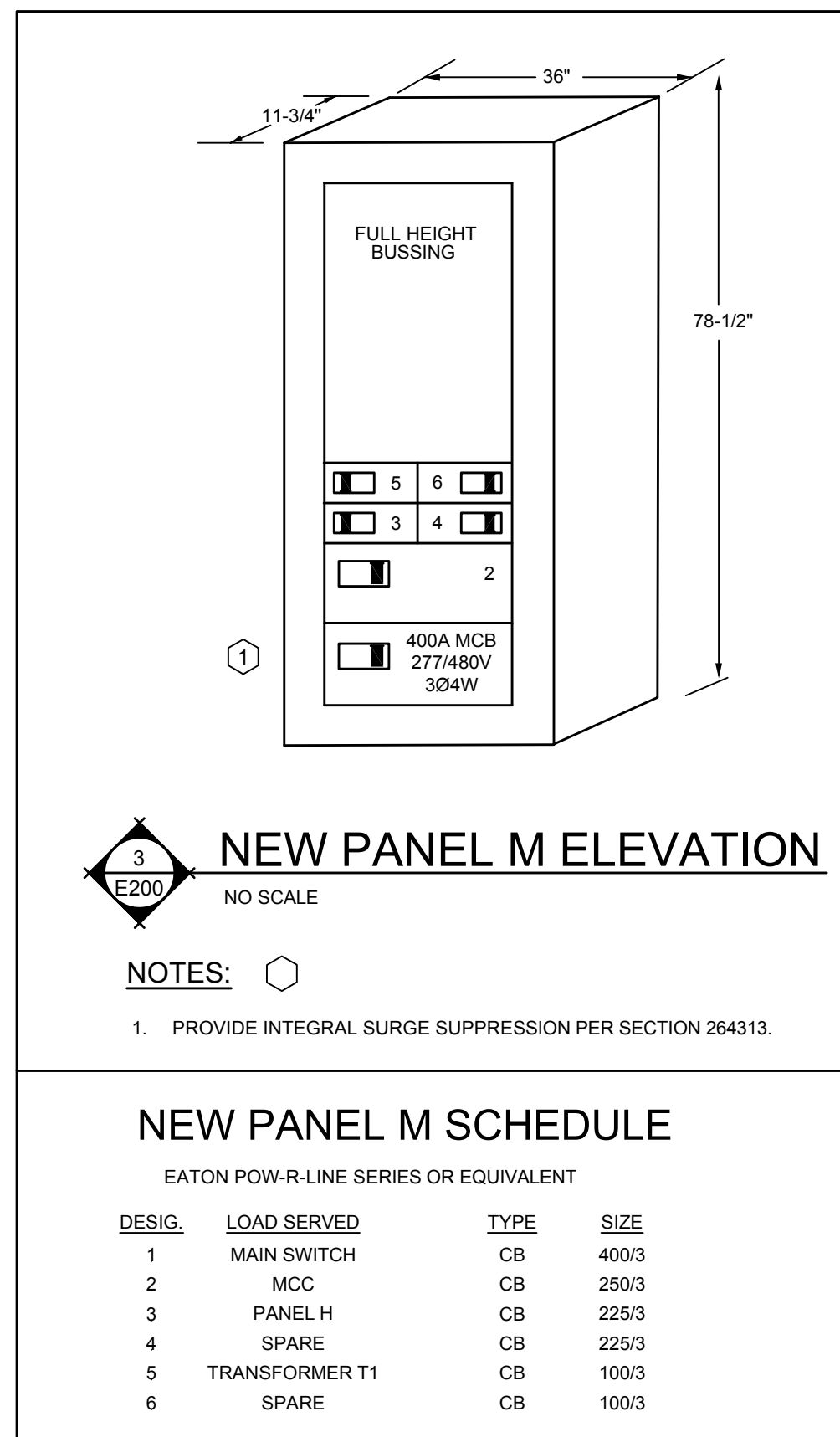
EXISTING CONDITIONS
1/8" = 1'-0"

- NOTES: DETAIL 1/E100**
- EXISTING PANEL M TO BE REMOVED AND REPLACED. REUSE EXISTING SERVICE FEEDER AND SERVING GROUNDING.
 - EXISTING PANEL A, TRANSFORMER T1, ASSOCIATED GUTTER, LIGHTING CONTACTORS AND DOUBLE-DUPLEX RECEPTACLE TO BE REMOVED AND REPLACED. REMOVE AND REPLACE EXISTING TRANSFORMER T1 PULL BOX AND POOL LIGHTING TIMER.
 - REMOVE EXISTING EQUIPMENT STARTER/DISCONNECT AND DISCONNECT ASSOCIATED FAN. FAN REMOVAL BY OTHERS. SEE DETAIL 1/E200 FOR NEW EQUIPMENT REQUIREMENTS.
 - REMOVE AND REPLACE EXISTING MOTOR JUNCTION BOX.
 - DISCONNECT EXISTING MOTOR FOR REMOVAL AND REPLACEMENT BY OTHERS.
 - DISCONNECT EXISTING POOL HEATER FOR REMOVAL AND REPLACEMENT BY OTHERS.
 - REMOVE EXISTING LUMINAIRE FOR REPLACEMENT. EXISTING CIRCUITRY TO BE REUSED. TYPICAL.
 - REMOVE EXISTING EQUIPMENT STARTER/DISCONNECT. REMOVE ALL EXISTING CIRCUITRY BACK TO PANEL FEEDING STARTER/DISCONNECT. REMOVE ALL EXISTING CIRCUITRY TO POOL EQUIPMENT.
 - EXISTING TRANSFORMER FOR EMERGENCY LIGHTING. RELOCATE NEXT TO NEW PANEL 'H'. SEE DETAIL 1/E200 FOR PANEL 'H' LOCATION. RE-FEED FROM PANEL 'H'. EXTEND ALL EXISTING LOAD SIDE CIRCUITRY TO NEW TRANSFORMER LOCATION AS REQUIRED.
 - REMOVE EXISTING EQUIPMENT STARTER/DISCONNECT AND DISCONNECT ASSOCIATED AIR COMPRESSOR. AIR COMPRESSOR REMOVAL BY OTHERS. SEE DETAIL 1/E200 FOR NEW EQUIPMENT REQUIREMENTS.
 - DISCONNECT ALL EXISTING CHEMICAL EQUIPMENT FOR EQUIPMENT REMOVAL BY OTHERS. REMOVE ALL EXISTING RECEPTACLES AND ASSOCIATED CIRCUITRY. SEE DETAIL 1/E200 FOR NEW ELECTRICAL REQUIREMENTS.
 - DISCONNECT EXISTING WAVETECH MCC AND REMOVE. DISPOSE OF EQUIPMENT AS DIRECTED BY OWNER.
 - EXISTING BELL FOR WAVE POOL WARNING. DISCONNECT AND SALVAGE AS DIRECTED BY PEC.

REGISTERED PROFESSIONAL ENGINEER
JEREMY A. BUTMAN
PE-5948
DATE: 04/29/2026
NORTH DAKOTA

EXISTING CONDITIONS

SHEET
E100



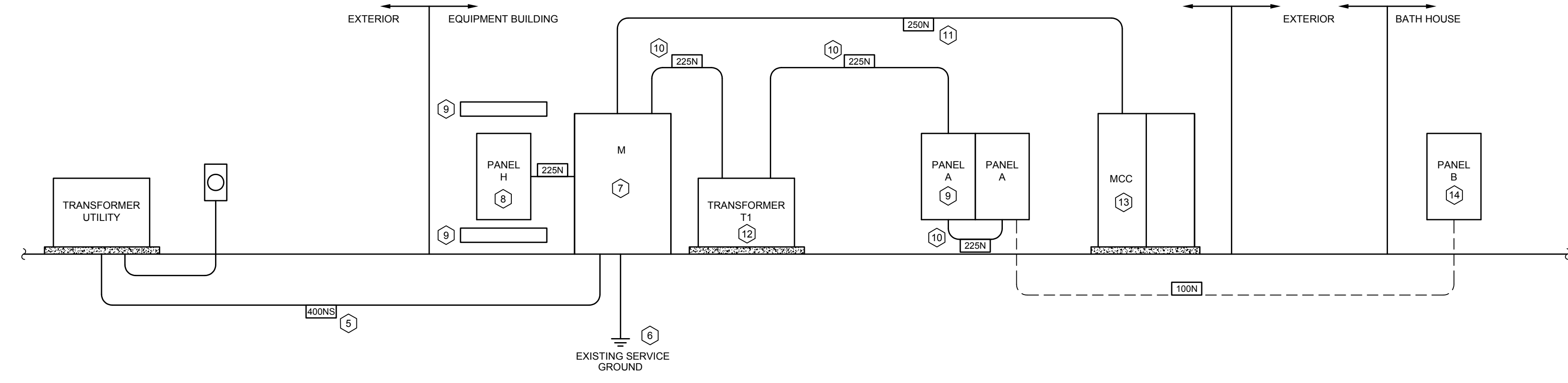
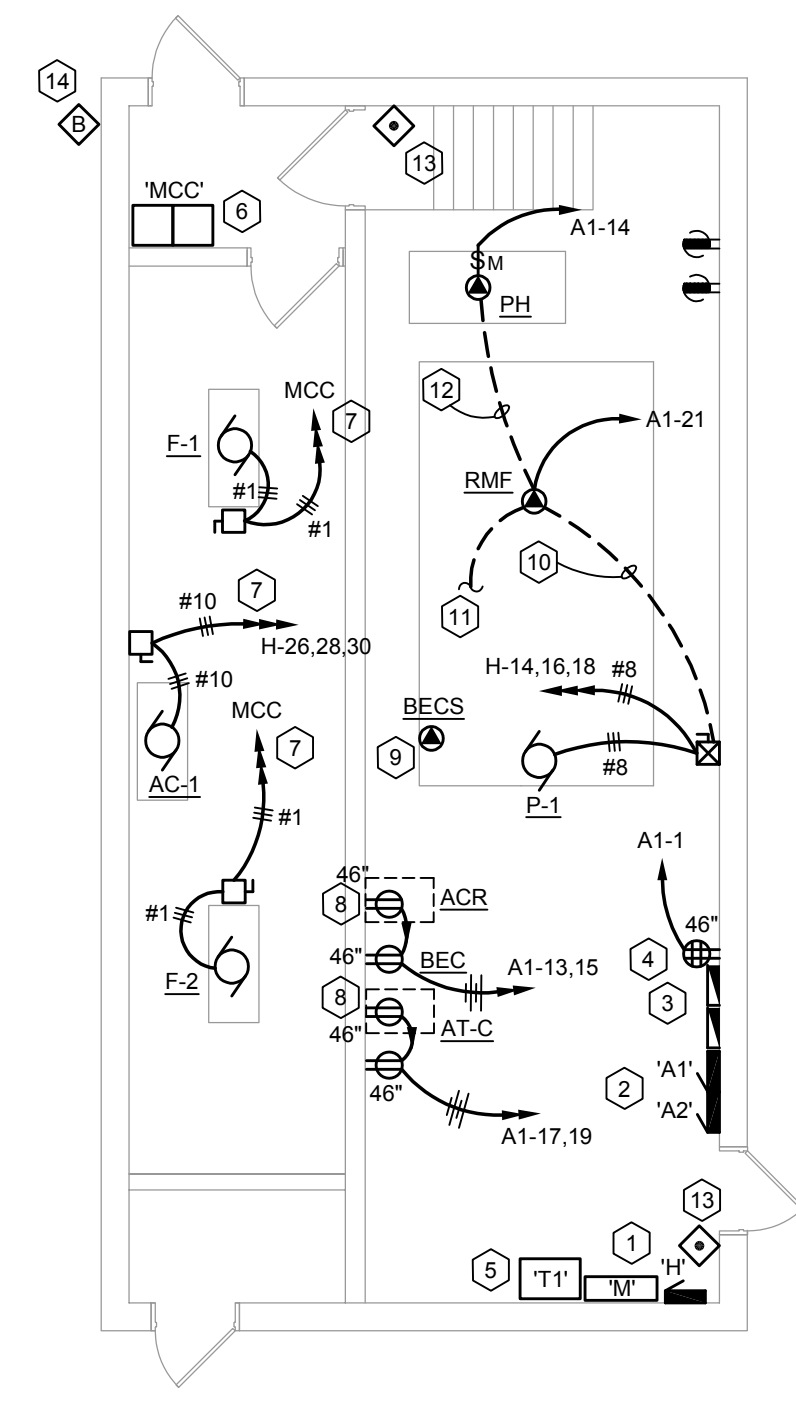
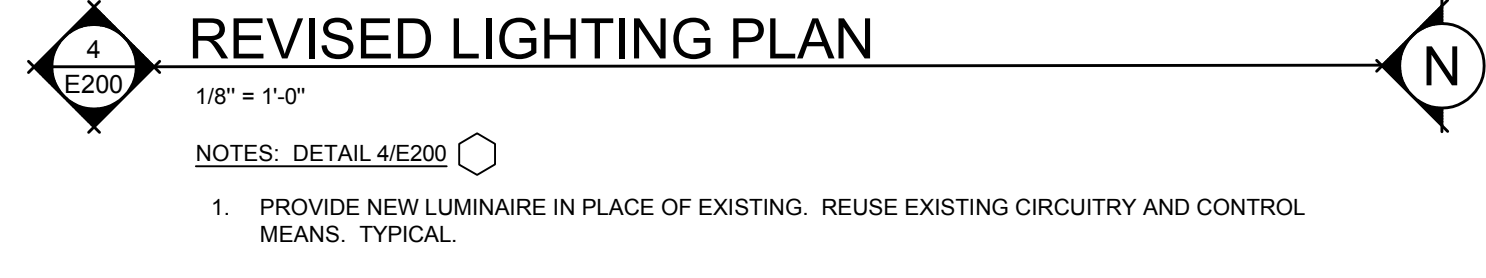
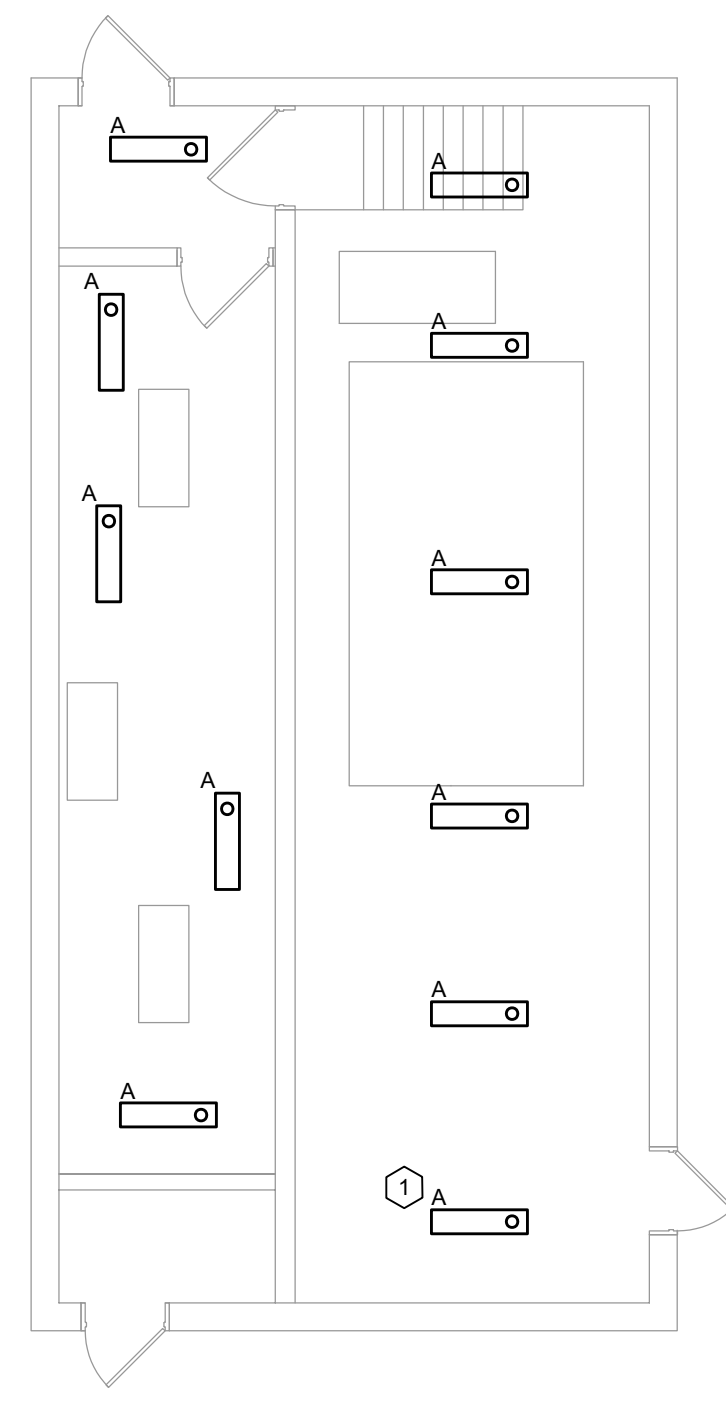
LUMINAIRE SCHEDULE						
TYPE	MANUFACTURER	CATALOG NO.	DELIVERED LUMENS	FINISH	MOUNTING	REMARKS
A	LITHONIA COOPER	CSS-L48-AL03-MVOLT- MIN10-Z1-SW493-80CRI SERIES 4SLSTPLSC-UNV SERIES	6000 LUMEN, 4000K LED'S	WHITE	NOTE 1	4' LED STRIP LUMINAIRE WITH SELECTABLE OUTPUT AND COLOR TEMP WITH INITIAL SETTINGS INDICATED.

NOTES:

- REUSE EXISTING PENDANT MOUNTING. PROVIDE UNI-STRUT BETWEEN PENDANTS TO MOUNT NEW LUMINAIRES IF REQUIRED BY LUMINAIRE CONSTRUCTION.

NEW PANEL M SCHEDULE
EATON POW-R-LINE SERIES OR EQUIVALENT

DESIG.	LOAD SERVED	TYPE	SIZE
1	MAIN SWITCH	CB	400/3
2	MCC	CB	250/3
3	PANEL H	CB	225/3
4	SPARE	CB	225/3
5	TRANSFORMER T1	CB	100/3
6	SPARE	CB	100/3



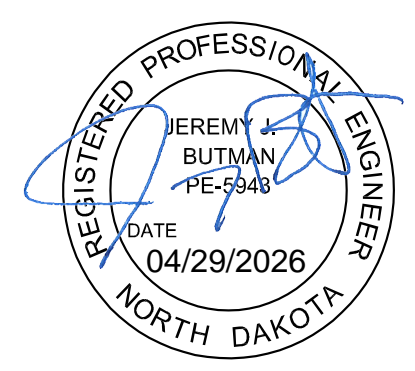
REVISED PARTIAL RISER
NO SCALE

FEEDER SCHEDULE

DESIG-NATION	CONFIGU-RATION	REQUIRED AMPACITY	CONDUCTOR SIZE (NOTE 3)			CONDUIT
			PHASE	NEUTRAL	EGC (NOTE 4)	
400NS	3Ø 4W	400	(2) 250 KCMIL	(2) 250 KCMIL	NR	(2) 3" EX.
250N	3Ø 4W	250	250 KCMIL	250 KCMIL	#4	3" EX.
225N	3Ø 4W	225	#4/0	#4/0	#4	2-1/2" EX.
100N	3Ø 4W	100	#2	#2	#8	1-1/4" EX.
100	3Ø 3W	100	#2	NR	#8	1-1/4" EX.

- NOTES:**
- FEEDER RISERS ARE SCHEMATIC ONLY, AND NOT INTENDED TO INFER LUG ARRANGEMENTS.
 - SEE SPECIFICATION FOR GROUNDING REQUIREMENTS, ALLOWABLE PVC USAGE, AND ALLOWABLE EXPOSED EXTERIOR STUB-UPS.
 - CONDUCTORS SIZING BASED UPON 60 DEGREE TERMINATION'S FOR OVERCURRENT PROTECTIVE DEVICES RATED 100 AMPERES OR LESS, AND 75 DEGREE TERMINATION'S FOR RATINGS GREATER THAN 100 AMPERES, AS PER NEC TABLE 310.16, 240.4, 310.15(B2), AND 310.15(B4). IN NO CASE SHALL INDICATED SIZING BE DECREASED.
 - EQUIPMENT GROUNDING CONDUCTOR.
 - EXISTING SERVICE FEEDER TO BE REUSED. EXTEND AS REQUIRED TO NEW MAIN DEVICE.
 - REUSE EXISTING SERVICE GROUNDING AND EXTEND TO GROUND BUS AS REQUIRED.
 - NEW PANEL M. SEE DETAIL 3/E200.
 - NEW PANEL H. EXTEND EXISTING LOADS FROM REMOVED SECTION SECTION OF PANEL M INTO NEW PANEL.
 - PROVIDE GUTTERS ABOVE AND BELOW PANEL H AND EXTEND EXISTING CIRCUITRY FOR EXISTING LOADS TO REMAIN FROM SECOND SECTION OF PANEL M INTO PANEL H.
 - PROVIDE NEW FEEDER FOR EQUIPMENT AS INDICATED.
 - REUSE EXISTING FEEDER CONDUIT AND PROVIDE NEW CONDUCTORS.
 - SEE DETAIL 1/E201 AND TRANSFORMER SCHEDULE ON SHEET E201 FOR REQUIREMENTS.
 - CONNECT NEW FEEDER CONDUCTORS TO NEW MCC ONCE INSTALLED BY POOL EQUIPMENT CONTRACTOR.
 - EXISTING PANEL AND ASSOCIATED FEEDER TO REMAIN IN PLACE.

- GENERAL GROUNDING NOTES**
- AT ALL NEW POOL EQUIPMENT, PROVIDE GROUNDING TO EXISTING POOL GROUNDING SYSTEM. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO, PUMPS, FANS, AIR COMPRESSOR, MCC, ETC.
 - GROUND ALL EQUIPMENT TO POOL GROUNDING SYSTEM PER NEC 680. USE MINIMUM #6 AWG CONDUCTORS FOR GROUNDING TO POOL GROUND SYSTEM.
 - COORDINATE ALL EQUIPMENT AND GROUNDING REQUIREMENTS WITH PEC.



DATE
4/29/2026

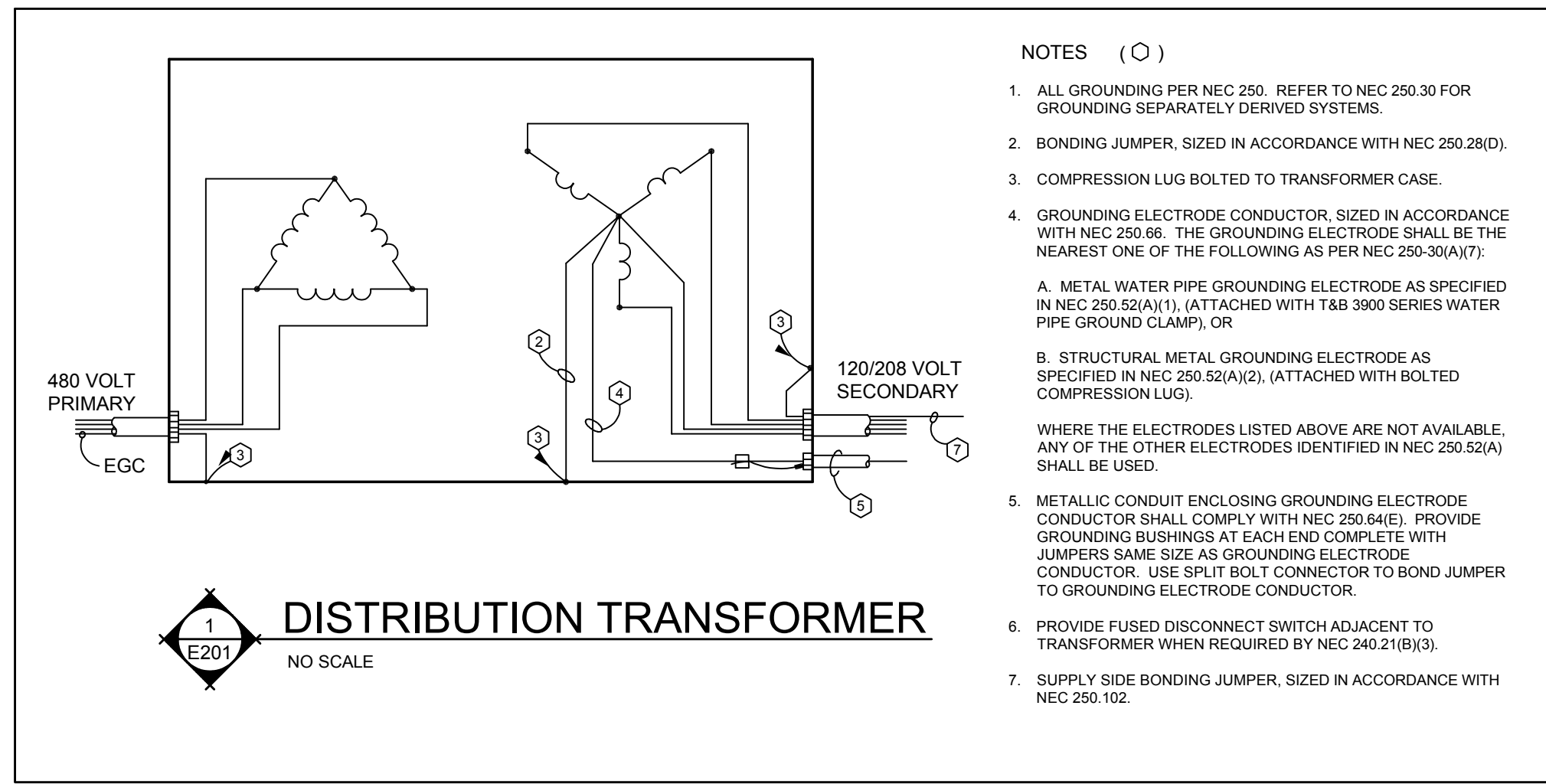
JOB NO.
26520

DRAWN BY
CHECKED BY
JOB NO.

WACHTER WAVE POOL IMPROVEMENTS
BISMARCK PARKS AND RECREATION DISTRICT
BISMARCK, NORTH DAKOTA

REVISED PLAN
SHEET
E200





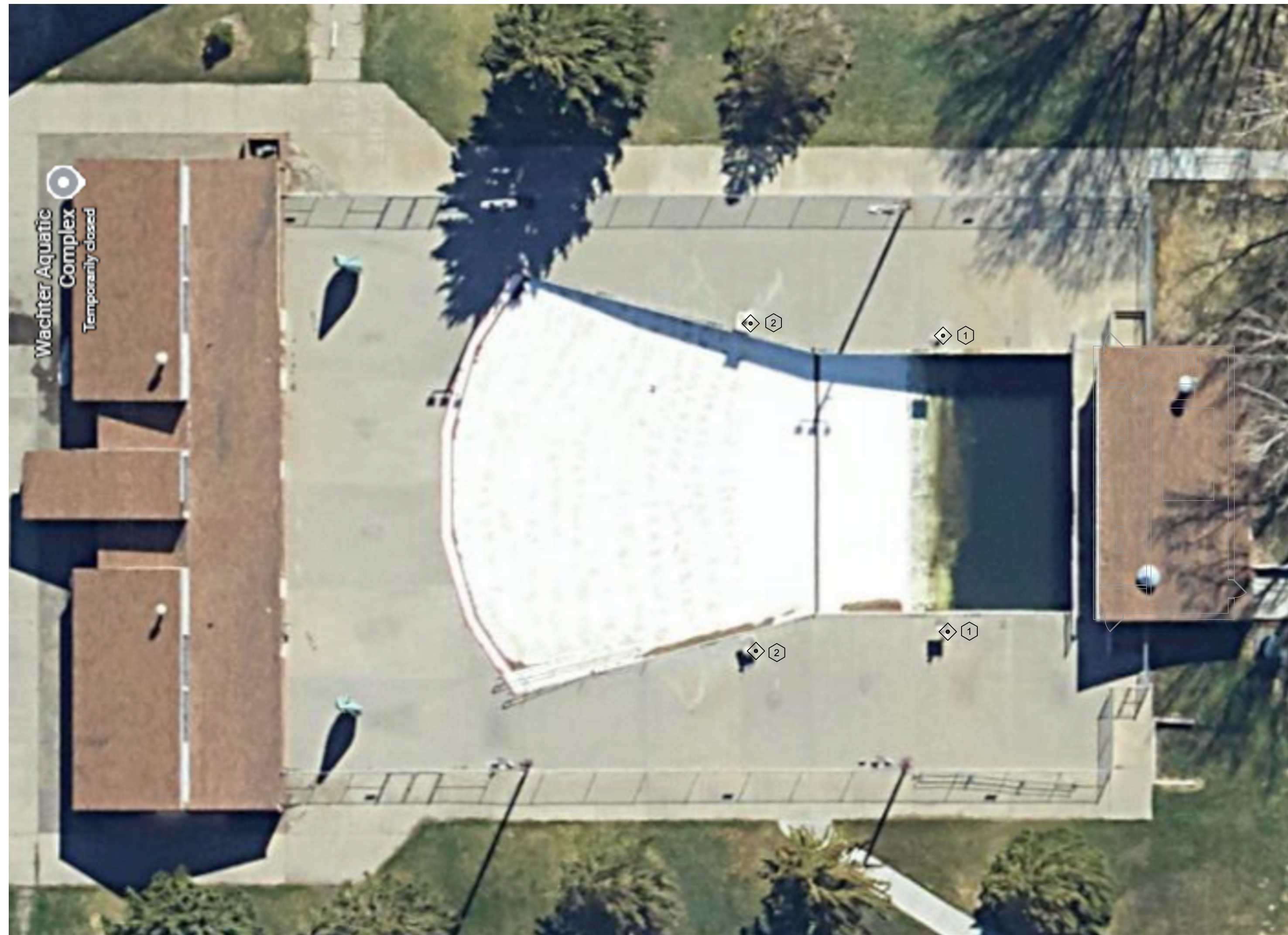
- NOTES ()
- ALL GROUNDING PER NEC 250. REFER TO NEC 250.30 FOR GROUNDING SEPARATELY DERIVED SYSTEMS.
 - BONDING JUMPER, SIZED IN ACCORDANCE WITH NEC 250.28(D).
 - COMPRESSION LUG BOLTED TO TRANSFORMER CASE.
 - GROUNDING ELECTRODE CONDUCTOR, SIZED IN ACCORDANCE WITH NEC 250.66. THE GROUNDING ELECTRODE SHALL BE THE NEAREST ONE OF THE FOLLOWING AS PER NEC 250.50(A)(7):
 - A. METAL WATER PIPE GROUNDING ELECTRODE AS SPECIFIED IN NEC 250.52(A)(1), (ATTACHED WITH T&B 3900 SERIES WATER PIPE GROUND CLAMP), OR
 - B. STRUCTURAL METAL GROUNDING ELECTRODE AS SPECIFIED IN NEC 250.52(A)(2), (ATTACHED WITH BOLTED COMPRESSION LUG).
 - WHERE THE ELECTRODES LISTED ABOVE ARE NOT AVAILABLE, ANY OF THE OTHER ELECTRODES IDENTIFIED IN NEC 250.52(A) SHALL BE USED.
 - METALLIC CONDUIT ENCLOSED GROUNDING ELECTRODE CONDUCTOR SHALL COMPLY WITH NEC 250.64(E). PROVIDE GROUNDING BUSHINGS AT EACH END COMPLETE WITH JUMPERS SAME SIZE AS GROUNDING ELECTRODE CONDUCTOR. USE SPLIT BOLT CONNECTOR TO BOND JUMPER TO GROUNDING ELECTRODE CONDUCTOR.
 - PROVIDE FUSED DISCONNECT SWITCH ADJACENT TO TRANSFORMER WHEN REQUIRED BY NEC 240.21(B)(3).
 - SUPPLY SIDE BONDING JUMPER, SIZED IN ACCORDANCE WITH NEC 250.102.

1
E201
DISTRIBUTION TRANSFORMER
NO SCALE

DRY TYPE TRANSFORMER SCHEDULE								
DESIG.	KVA	PHASE	PRIMARY VOLTAGE	SECONDARY VOLTAGE	PRIMARY O/C PROTECTION	SECONDARY O/C PROTECTION	MOUNTING	REMARKS
T1	75	3	480 DELTA	208Y/120	PANEL M 100/3 CB	PANEL A1 225/3 MCB	FLOOR	PROVIDE WEATHERPROOF UNIT. SEE DETAIL 1/E201.

NEW PANEL A1									
120/208 VOLTS 3Ø 4W 225 A. MCB SURFACE MOUNTED (SECTION 1 OF 2)									
EATON POW-R-LINE SERIES WITH FEED-THROUGH LUGS									
CIRCUIT DESCRIPTION	POLES	AMPS	CKT	Ø	CKT	AMPS	POLES	CIRCUIT DESCRIPTION	
RECEPTACLES	1	20	1	A	2	20	1	EF-1	
WH-1	1	20	3	B	4	20	1	FAN ROOM RECEPTACLE	
EXISTING LOAD	1	20	5	C	6	20	1	EF-2	
TIME CLOCKS	1	20	7	A	8	20	1	SUMP PUMP ALARM	
LIGHTS	1	20	9	B	10	20	1	FILTER ROOM RECEPTACLE	
STRANTRNOL	1	20	11	C	12	20	1	BOOSTER PUMP	
BEC (GFCI)	1	20	13	A	14	20	1	PH (GFCI)	
ACR (GFCI)	1	20	15	B	16	20	1	SPARE (GFCI)	
AC-T (GFCI)	1	20	17	C	18	20	1	SPARE (GFCI)	
RECEPTACLE (GFCI)	1	20	19	A	20	20	1	SPARE (GFCI)	
RMF (GFCI)	1	20	21	B	22	20	1	SPARE (GFCI)	
SPARE	1	20	23	C	24	20	1	SPARE (GFCI)	
SPACE	-	-	25	A	26	-	-	SPACE	
SPACE	-	-	27	B	28	-	-	SPACE	
SPACE	-	-	29	C	30	-	-	SPACE	
SPACE	-	-	31	A	32	-	-	SPACE	
SPACE	-	-	33	B	34	-	-	SPACE	
SPACE	-	-	35	C	36	-	-	SPACE	
SPACE	-	-	37	A	38	-	-	SPACE	
SPACE	-	-	39	B	40	-	-	SPACE	
SPACE	-	-	41	C	42	-	-	SPACE	

NEW PANEL A2									
120/208 VOLTS 3Ø 4W 225 A. MLO SURFACE MOUNTED (SECTION 2 OF 2)									
EATON POW-R-LINE SERIES									
CIRCUIT DESCRIPTION	POLES	AMPS	CKT	Ø	CKT	AMPS	POLES	CIRCUIT DESCRIPTION	
POOL CLEANING PUMP (GFCI)	3	15	1	A	2	30	2	EAST POOL SITE LIGHTING	
-	-	-	3	B	4	-	-	WEST RINK LIGHTS	
-	-	-	5	C	6	30	2	EXISTING LOAD (GFCI)	
DECK RECPT. (GFCI)	1	20	7	A	8	-	-	BUILDING EXT. LIGHTS (GFCI)	
208V DECK RECEPT. (GFCI)	2	20	9	B	10	20	1	EXISTING LOAD (GFCI)	
-	-	-	11	C	12	20	1	EXISTING LOAD (GFCI)	
POOL RECEPT. (GFCI)	1	20	13	A	14	20	1	EXISTING LOAD (GFCI)	
POOL RECEPT. (GFCI)	1	20	15	B	16	20	1	EXISTING LOAD (GFCI)	
EXISTING LOAD (GFCI)	1	20	17	C	18	20	1	EXISTING LOAD (GFCI)	
EXISTING LOAD (GFCI)	1	20	19	A	20	90	3	PANEL B	
EXISTING LOAD (GFCI)	1	20	21	B	22	-	-	EXISTING LOAD (GFCI)	
WEST SITE LIGHTS	2	20	23	C	24	-	-	EXISTING LOAD (GFCI)	
-	-	-	25	A	26	20	1	EXISTING LOAD (GFCI)	
SPARE (GFCI)	1	20	27	B	28	20	1	EXISTING LOAD (GFCI)	
SPARE (GFCI)	1	20	29	C	30	50	2	HOCKEY LIGHTS	
SPARE (GFCI)	1	20	31	A	32	-	-	SPACE	
SPARE (GFCI)	1	20	33	B	34	-	-	SPACE	
SPARE (GFCI)	1	20	35	C	36	-	-	SPACE	
SPARE (GFCI)	1	20	37	A	38	-	-	SPACE	
SPARE (GFCI)	1	20	39	B	40	-	-	SPACE	
SPARE (GFCI)	1	20	41	C	42	-	-	SPACE	



2
E201
SITE PLAN
1/16" = 1'-0"
N

- NOTES: DETAIL 2/E201
- START/STOP STATION MOUNTED ON LIFE GUARD CHAIR. COORDINATE WITH PEC FOR REUSE OR REMOVAL/REINSTALLATION OF EXISTING DEVICE. REUSE EXISTING CIRCUITRY AND CONNECT AS DIRECTED BY PEC AT START/STOP STATION AND AT MCC.
 - STOP STATION MOUNTED ON LIFE GUARD CHAIR. COORDINATE WITH PEC FOR REUSE OR REMOVAL/REINSTALLATION OF EXISTING DEVICE. REUSE EXISTING CIRCUITRY AND CONNECT AS DIRECTED BY PEC AT STOP STATION AND AT MCC.

MOTOR & EQUIPMENT SCHEDULE										
DESIG.	EQUIPMENT SERVED	CHARACTERISTICS			DISCONNECT (BY EC)	CONTROLLER (BY EC)	CONTROL INITIATING DEVICE			NOTE
		HP	VOLT	PHASE			DEVICE	FURN	MTD	
AC-1	AIR COMPRESSOR	10	480	3	3Ø/3 NFDS	MCC	MCC	PEC	PEC	1
ACR	ACID-RITE 450	FRAC.	120	1	CORD AND PLUG	BEC	BEC	PEC	PEC	1
AT-C	ACCU-TAB CHLORINATOR	FRAC.	120	1	CORD AND PLUG	BEC	BEC	PEC	PEC	1
BEC	CHEMICAL CONTROLLER	FRAC.	120	1	CORD AND PLUG	INTEGRAL	INTEGRAL	PEC	PEC	1
BECS	SURGE TANK SENSOR	---	---	---	NR	BEC	BEC	PEC	PEC	2
P-1	PUMP #1	20	480	3	INCLUDED WITH STARTER	VFD BY PEC	PEC	PEC	PEC	1
F-1	WAVE POOL FAN #1	75	480	3	200/3 NFDS	MCC	MCC	PEC	PEC	1
F-2	WAVE POOL FAN #2	75	480	3	200/3 NFDS	MCC	MCC	PEC	PEC	1
FM	FLOW METER	---	---	---	---	---	---	---	---	-
PH	POOL HEATER	FRAC.	120	1	INCLUDED WITH STARTER	TOGGLE OR MANUAL AS REQUIRED	INTEGRAL	PEC	PEC	1
RMF	REGENERATIVE MEDIA FILTER	FRAC.	120	1	INCLUDED WITH STARTER	TOGGLE OR MANUAL AS REQUIRED	INTEGRAL	PEC	PEC	1

NOTES:

- COORDINATE LOCATIONS OF ALL POOL EQUIPMENT WITH POOL EQUIPMENT CONTRACTOR PRIOR TO ROUGH-IN. MODIFY LOCATIONS AS REQUIRED BASED ON WHERE POOL EQUIPMENT IS INSTALLED.
- EXTEND LOW-VOLTAGE CIRCUITRY TO BEC FROM EQUIPMENT AS REQUIRED. COORDINATE REQUIREMENTS WITH PEC.

NEW PANEL H									
277/480 VOLTS 3Ø 4W 225 A. MLO SURFACE MOUNTED									
EATON POW-R-LINE SERIES									
CIRCUIT DESCRIPTION	POLES	AMPS	CKT	Ø	CKT	AMPS	POLES	CIRCUIT DESCRIPTION	
SUPPLY FAN	3	20	1	A	2	25	3	CIRC. PUMP #1	
-	-	-	3	B	4	-	-	EXISTING LOAD	
-	-	-	5	C	6	-	-	CIRC. PUMP #2	
EXISTING LOAD	3	20	7	A	8	25	3	P-1	
-	-	-	9	B	10	-	-	EXISTING LOAD	
-	-	-	11	C	12	-	-	EXISTING LOAD	
-	-	-	15	B	16	-	-	EXISTING LOAD	
-	-	-	17	C	18	-	-	EXISTING LOAD	
EXISTING LOAD	3	20	19	A	20	15	3	SPARE	
-	-	-	21	B	22	-	-	EXISTING LOAD	
-	-	-	23	C	24	-	-	AC-1	
-	-	-	25	A	26	30	3	EXISTING LOAD	
-	-	-	27	B	28	-	-	EXISTING LOAD	
-	-	-	29	C	30	-	-	EXISTING LOAD	
-	-	-	33	B	34	-	-	EMERGENCY LIGHTING	
-	-	-	35	C	36	-	-	-	
-	-	-	37	A	38	25	3	-	
-	-	-	39	B	40	-	-	-	
-	-	-	41	C	42	-	-	-	

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WACHTER WAVE POOL IMPROVEMENTS
BISMARCK PARKS AND RECREATION DISTRICT
BISMARCK, NORTH DAKOTA

SCHEDULES AND DETAILS

SHEET
E201

