

ELECTRICAL SYMBOL LIST

(NOTE: SOME SYMBOLS AND ABBREVIATIONS SHOWN MAY NOT APPLY TO THIS PROJECT)

Table of electrical symbols and descriptions. Columns include SYMBOL, DESCRIPTION, SYMBOL, DESCRIPTION, SYMBOL, DESCRIPTION, and SYMBOL, DESCRIPTION. Symbols range from lighting fixtures to various electrical components like switches, outlets, and communication equipment.

ELECTRICAL DRAWING INDEX

Table with 2 columns: SHEET NO. and SHEET TITLE. Lists sheets E0.1 through E5.1 and their corresponding titles such as 'ELECTRICAL STANDARDS AND DRAWING INDEX' and 'LIGHTING PLAN'.



REGISTRATION SEAL

CONSULTANT

PROJECT TITLE
Ford Woods
Park Pool

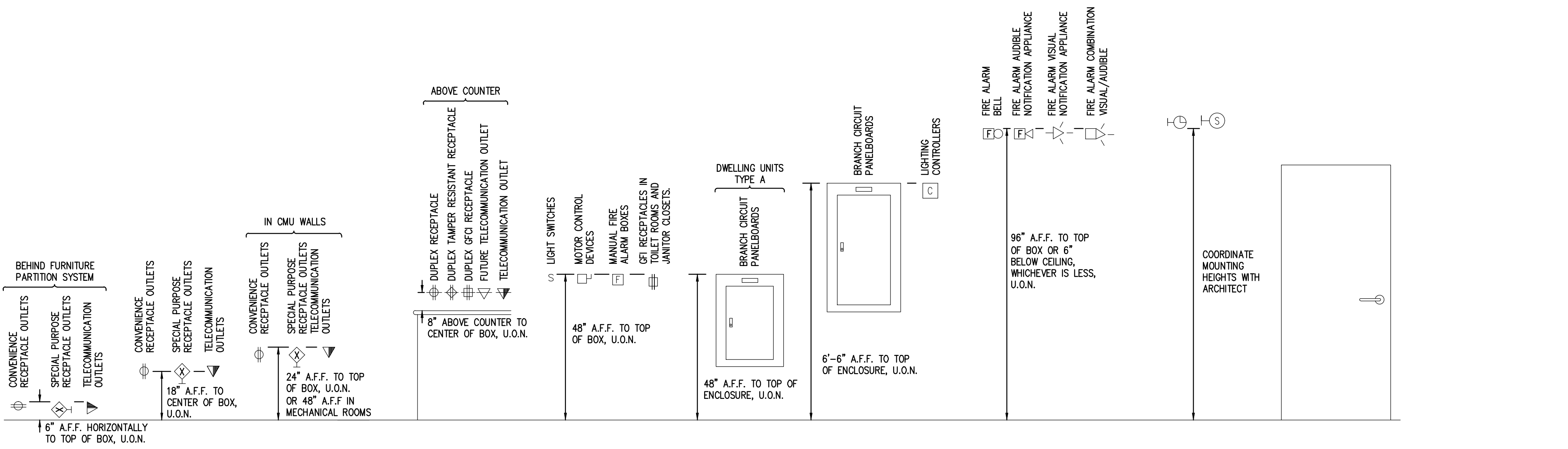
City of Dearborn

DRAWING TITLE
ELECTRICAL STANDARDS
AND DRAWING INDEX

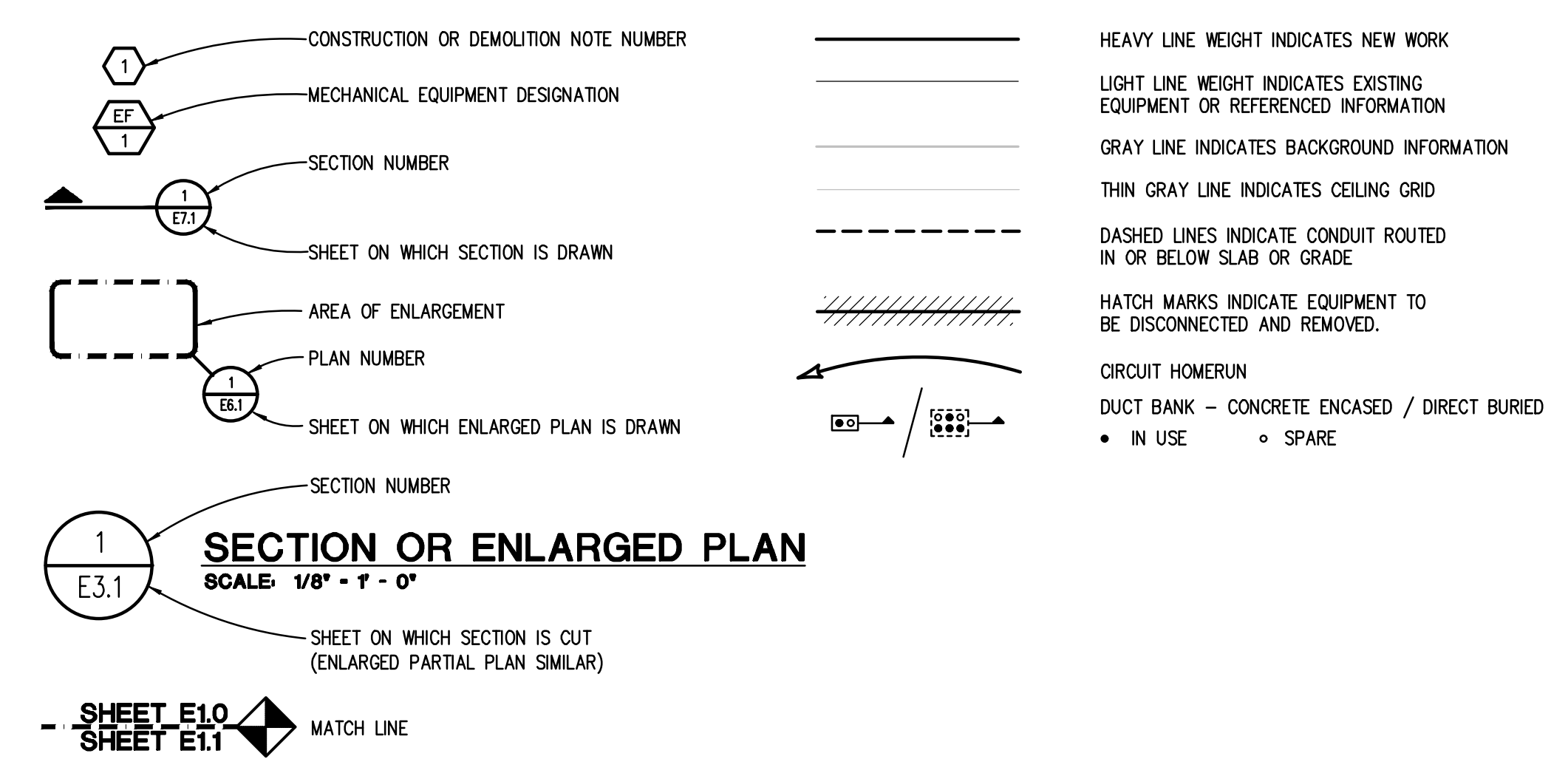
ELECTRICAL ABBREVIATION LIST

Table of electrical abbreviations with columns for ABBREVIATION and DESCRIPTION. Lists terms like AMPERES, BREAKER, and various electrical components with their corresponding abbreviations.

STANDARD MOUNTING HEIGHTS



STANDARD METHODS OF NOTATION



ISSUE DATES

Table for tracking issue dates and review status. Columns include DATE, ISSUED FOR, DRAWN, CHECKED, and APPROVED. Shows dates from 10-25-2017 to 09-27-2017 and associated roles like BIDS and OWNER REVIEW.

PROJECT NO.
17071
DRAWING NO.
E0.1



REGISTRATION SEAL

CONSULTANT

PROJECT TITLE  
Ford Woods  
Park Pool

City of Dearborn

DRAWING TITLE  
ELECTRICAL STANDARD  
SCHEDULES

ISSUE DATES

10-25-2017 BIDS  
09-27-2017 OWNER REVIEW

DATE: ISSUED FOR:

DRAWN: ECD  
CHECKED: ECD  
APPROVED: SAG

PROJECT NO.

17071

DRAWING NO.

E0.2

FEEDER AND BRANCH CIRCUIT SIZING SCHEDULE - GENERAL PURPOSE. TABLE WITH COLUMNS: OVERCURRENT DEVICE RATING (AMPERES), WIRE SIZE (AWG OR KCMIL), PHASE & NEUTRAL, GROUND, CONDUIT SIZE, SINGLE PHASE 2 WIRE+G, SINGLE PHASE 3 WIRE+G, THREE PHASE 3 WIRE+G, THREE PHASE 4 WIRE+G.

- \* = SEE NOTE 4
NOTES:
1. CONTRACTOR TO SIZE FEEDERS AND BRANCH CIRCUITS BASED ON THIS SCHEDULE AND OVER CURRENT DEVICE SIZE, UNLESS NOTED OTHERWISE.
2. CONTRACTOR MAY COMBINE 20A CIRCUIT BREAKERS AS NOTED IN SPECIFICATION.
3. CONDUCTORS ARE BASED ON THHN/THWN UP TO AND INCLUDING #14/0. LARGER THAN #14/0 ARE BASED ON TYPE XHHW.
4. CONDUCTORS ARE BASED ON 90°C, 600V, INSULATED COPPER WIRE APPLIED AT 75°C FOR TERMINATION RATED 60/75°C OR 75°C FOR TERMINATION RATED AT 60°C, USE CONDUCTORS AND CONDUIT SIZES INDICATED IN PARENTHESES.
5. CONDUIT SIZES ARE VALID FOR EMT OR RGS. CONDUIT SIZES SHALL BE ADJUSTED AS REQUIRED FOR OTHER TYPES OF CONDUIT.
6. ELECTRICAL CONTRACTOR TO COORDINATE WITH MECHANICAL CONTRACTOR AND PROVIDE REQUIRED WIRE SIZES TO ACCOMMODATE MECHANICAL EQUIPMENT LOG SIZES.
7. SIZE OF DISCONNECT SWITCH LOCATED AT EQUIPMENT SHALL BE SIZED BASED UPON OVERCURRENT PROTECTION OF THAT DEVICE.
8. OBTAIN APPROVAL FROM ENGINEER PRIOR TO INSTALLING DIFFERENT SIZE/QUANTITY OF CONDUCTORS TO OBTAIN AN EQUIVALENT AMPACITY.
9. SPLICE FROM ALUMINUM TO COPPER PRIOR TO ENTERING EQUIPMENT LISTED FOR USE WITH COPPER CONDUCTORS ONLY OR USE COPPER CONDUCTORS FOR THE ENTIRE LENGTH OF FEEDER.

MOTOR CIRCUIT SIZING SCHEDULE (120V, SINGLE PHASE). TABLE WITH COLUMNS: MOTOR HP, CIRCUIT BREAKER, MANUAL MOTOR STARTER SIZE, COMBINATION STARTER SIZE, MOTOR DISCONNECT (NOTE 3).

MOTOR CIRCUIT SIZING SCHEDULE (208V, 3 PHASE). TABLE WITH COLUMNS: MOTOR HP, SWITCH/FUSE, CIRCUIT BREAKER, STARTER SIZE/TYPE, MOTOR DISCONNECT (NOTE 3).

OCCUPANCY SENSOR LEGEND. TABLE WITH COLUMNS: TYPE, DESCRIPTION. Includes items like 360° CEILING MOUNTED DUAL TECHNOLOGY OCCUPANCY SENSOR, 90° CEILING/WALL MOUNTED DUAL TECHNOLOGY OCCUPANCY SENSOR, etc.

DRY TYPE DISTRIBUTION TRANSFORMER CIRCUIT SIZING SCHEDULE. TABLE WITH COLUMNS: TRANSFORMER KVA, PRIMARY (480V) CIRCUIT BREAKER (NOTE 5), SECONDARY (208Y/120 VOLT) CIRCUIT BREAKER, BRANCH CIRCUIT SIZE (AWG OR KCMIL), PHASE & NEUTRAL, SUPPLY SIDE BONDING JUMPER, CONDUIT (4W + G), GROUNDING ELECTRODE CONDUCTOR.

- \* = SEE NOTE 3 \*\* = SEE NOTE 4
NOTES:
1. TRANSFORMERS AND FEEDERS ARE BASED ON 480 VOLT, 3 PHASE, 3 WIRE PRIMARY AND 208Y/120 VOLT, 3 PHASE, 4 WIRE, SECONDARY.
2. FEEDERS INDICATED ARE BASED ON COPPER CONDUCTORS. IF ALUMINUM CONDUCTORS ARE PERMITTED AND SELECTED, FEEDER SIZES SHALL BE PER THE NEC.
3. CONDUCTORS ARE BASED ON 90°C, 600V, INSULATED COPPER WIRE APPLIED AT 75°C FOR TERMINATION RATED 60/75°C OR 75°C.
4. THE SMALLER SIZE IS TO BE USED TO FEED 225A PANELBOARDS.
5. PRIMARY OVERCURRENT PROTECTION IS SIZED AT 125% OF TRANSFORMER FULL LOAD CURRENT. PROVIDE PRIMARY OVERCURRENT DEVICE SELECTION TO ALLOW TRANSFORMER IN-RUSH CURRENT AND PROTECT BASED ON THE ANSI BREAKING CURVE. IF MANUFACTURER REQUIRES PRIMARY OVERCURRENT GREATER THAN 125%(NOT TO EXCEED 250%) THEN PRIMARY FEEDER SHALL BE INCREASED ACCORDINGLY.

SPECIAL RECEPTACLES. TABLE WITH COLUMNS: TYPE, DESCRIPTION. Includes items like 125V, 30A, SINGLE PHASE, LOCKING RECEPTACLE, 2 POLE, 3 WIRE (NEMA L5-30R), etc.

RACEWAY / CONDUCTOR / CABLE APPLICATION SCHEDULE. LARGE TABLE WITH COLUMNS: WIRE, RACEWAY, CABLE/CORD. Includes various material and application options like EXPOSED, SURFACE MOUNTED TO STRUCTURE, CONCEALED IN RETAINING WALL OR SIMILAR ELEMENT, etc.

- GENERAL NOTES:
1. PROVIDE RIGID STEEL SWEEPS WHERE CONDUITS PENETRATE WALLS, CONCRETE SLABS, AND CONCRETE BASES.
2. REFER TO SPECIFICATIONS FOR RESTRICTIONS ON MC CABLE INSTALLATION.
3. CONDUIT AND WIRE ALLOWED WHEN ENCASED IN MINIMUM 2" CONCRETE.

MOTOR CIRCUIT SIZING SCHEDULE (480V, 3 PHASE). TABLE WITH COLUMNS: MOTOR HP, SWITCH/FUSE, CIRCUIT BREAKER, STARTER SIZE/TYPE, MOTOR DISCONNECT (NOTE 3).

BRANCH CIRCUIT VOLTAGE DROP WIRING SCHEDULE FOR SINGLE PHASE CIRCUITS. TABLE WITH COLUMNS: BRANCH CKT RATINGS (A), WIRE SIZE (AWG), MAXIMUM BRANCH CIRCUIT LENGTH (IN FEET) for 120V, 208V, 240V, 277V, 480V.

- NOTES:
1. THE ABOVE TABLE VALUES ARE BASED ON COPPER CONDUCTORS, IN STEEL CONDUIT, WITH A LOAD POWER FACTOR OF 0.85 PER NEC CHAPTER 9, TABLE 9.
2. PROVIDE BRANCH CIRCUIT CONDUCTORS AS INDICATED IN THE TABLE ABOVE FOR ALL LIGHTING AND RECEPTACLE BRANCH CIRCUITS. WHERE BRANCH CIRCUITS SERVE DEDICATED EQUIPMENT, THE CONTRACTOR MAY PERFORM VOLTAGE DROP CALCULATIONS BASED ON ACTUAL EQUIPMENT CONNECTED LOAD AND PROVIDE CONDUCTORS APPROPRIATELY SIZED TO LIMIT VOLTAGE DROP TO A MAXIMUM OF 3%.
3. CONDUCTOR SIZES ARE BASED ON MAXIMUM OF 9 CURRENT CARRYING CONDUCTORS IN A SINGLE CONDUIT.
4. LIMITS FOR CONDUCTOR LENGTHS SHOWN ARE BASED ON A MAXIMUM BRANCH CIRCUIT LOADING OF 64% OF THE BRANCH BREAKER RATING AND A MAXIMUM OF 3 PERCENT VOLTAGE DROP TO COMPLY WITH ASHRAE 90.1 AND THE NEC FOR CIRCUITS LOADED GREATER THAN 64% OF BRANCH BREAKER RATING, THE CONTRACTOR SHALL PROVIDE CONDUCTORS APPROPRIATELY SIZED TO LIMIT VOLTAGE DROP TO 3%.

- NOTES:
1. BASED ON MOTOR FULL LOAD AMPERES AS PROVIDED BY THE N.E.C.
2. BASED ON MOTOR RUNNING OVERLOAD PROTECTIONS PROVIDED BY THERMAL OVERLOAD RELAYS.
3. WHERE THE STARTER IS LOCATED REMOTE FROM THE MOTOR, PROVIDE DISCONNECT LOCATED AT THE MOTOR, SIZE AS INDICATED.

FLOOR SERVICE FITTING ASSEMBLY SCHEDULE. TABLE WITH COLUMNS: TYPE, DESCRIPTION, MANUFACTURER (SEE NOTE #2), DEVICE CONFIGURATION, FLANGE/COVER MATERIAL & COLOR, SERVICE PLATE TYPE, MINIMUM DEPTH, MAXIMUM CONDUIT. Includes items like POWER SINGLE GANG PLASTIC FLOOR BOX, TELECOM ONE GANG PLASTIC FLOOR BOX, etc.

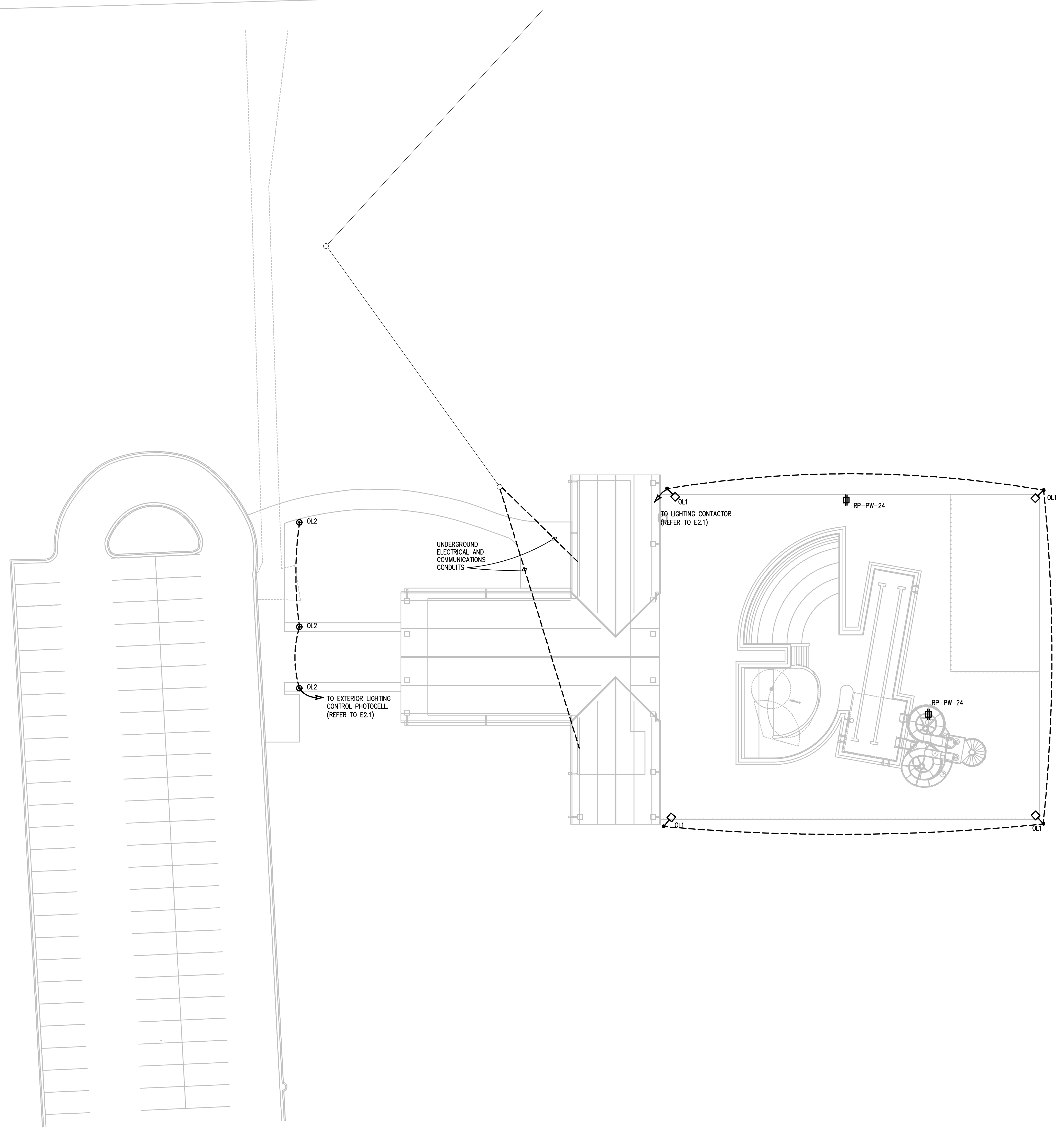
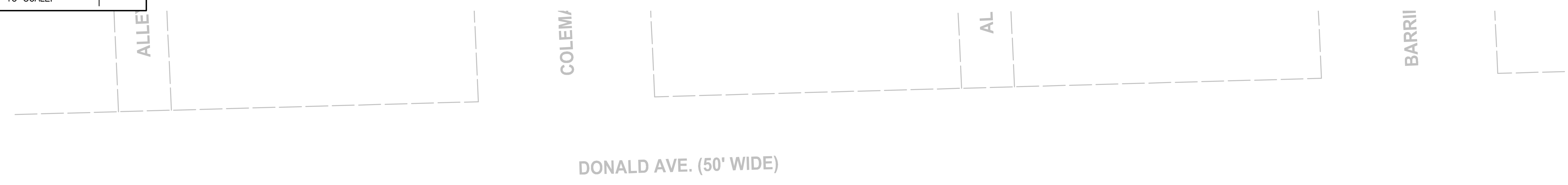
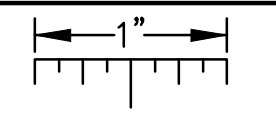
- NOTES:
1. PROVIDE 1 1/4" FROM EACH TELECOM FLOOR BOX (RANS) TO ACCESSIBLE LOCATION IN CEILING.
2. OTHER ACCEPTABLE MANUFACTURERS ARE STEEL CITY, OR HUBBELL-RACO.
3. ALL PRODUCTS IN THIS SCHEDULE SHALL MEET AND EXCEED THE UL514A OR UL514C SCRUB WATER EXCLUSION REQUIREMENT.
4. COORDINATE ALL TELECOM AND A/V OUTLETS WITH COMMUNICATIONS AND A/V CONTRACTORS.

- ABBREVIATIONS:
PF = PARTITION FEED
D = DUPLEX RECEPTACLE
T = 2 TELECOM OPENINGS
BS = BRASS
AL = ALUMINUM
BK = BLACK
GT = GRAY (CONCRETE)
BZ = BRONZE
NK = NICKEL
FR = FLIP LID/RECTANGULAR
SL = SLIDES
F = FLIP COVER

NOTE: SOME SYMBOLS AND ABBREVIATIONS SHOWN MAY NOT APPLY TO THIS PROJECT.

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THE FOLLOWING DIMENSION EQUALS ONE INCH WHEN PRINTED TO SCALE.



**SITE PLAN GENERAL NOTES:**

1. THESE NOTES ARE GENERIC GUIDELINES ONLY. ELECTRICAL CONTRACTOR'S PERSONNEL ON SITE SHALL BE THOROUGHLY FAMILIAR WITH THE PUBLISHED SPECIFICATIONS FOR EXACT DESCRIPTIONS OF SCOPE, METHODS, AND MATERIAL.
2. THESE DRAWINGS REPRESENT THE GENERAL EXTENT AND ARRANGEMENT OF SYSTEMS, BUT ARE NOT TO BE CONSIDERED FABRICATION DRAWINGS. COORDINATE WITH OTHER TRADES, AND PROVIDE EACH SYSTEM COMPLETE, INCLUDING ALL NECESSARY COMPONENTS, FITTINGS, AND OFFSETS.
3. CONDUCT A SURVEY TO IDENTIFY ALL UNDERGROUND UTILITIES. CALL 811 PRIOR TO EXCAVATION.
4. UTILITIES SHOWN ON THESE DRAWINGS ARE FOR REFERENCE ONLY. COORDINATE EXACT LOCATION OF ALL EXISTING UTILITIES, AND ROUTING OF ALL NEW UNDERGROUND UTILITIES PRIOR TO EXCAVATION.
5. DEWATER TRENCHES PRIOR TO INSTALLATION OF CONDUITS. PROVIDE WATER TIGHT FITTINGS ON ALL UNDERGROUND CONDUITS.
6. COORDINATE DEMOLITION WORK, AND ELECTRICAL AND TELEPHONE SERVICES TO THE SITE, WITH THE RESPECTIVE LOCAL UTILITY COMPANY REPRESENTATIVES PRIOR TO COMMENCEMENT OF WORK. INCLUDE ALL ASSOCIATED COST/FEES BY THE UTILITY COMPANIES IN THE BID PRICE.
7. INSTALL UNDERGROUND CONDUITS 42" BELOW FINISHED GRADE, MINIMUM, UNLESS NOTED OTHERWISE.
8. COORDINATE SERVICE SHUT-DOWNS WITH ALL TRADES INVOLVED ON SITE AND OBTAIN WRITTEN AUTHORIZATION FROM OWNER 72 HOURS PRIOR TO ANY ELECTRICAL AND/OR TELEPHONE SHUT-DOWN.
9. REMOVE ALL DE-ENERGIZED CONDUCTORS FROM SITE AT COMPLETION OF THE PROJECT.
10. OUTDOOR LIGHTING BRANCH CIRCUIT WIRING SHALL BE MINIMUM #8 AWG CONDUCTORS (RHHW-2), IN MINIMUM 1" DIA. CONDUIT, UNLESS NOTED OTHERWISE.
11. SPARE CONDUITS SHALL INCLUDE FULL STRING AND SHALL BE TERMINATED WITH A CAP.
12. EXCAVATE THE ENTIRE LENGTH OF TRENCH TO PROPERLY SET DUCT ELEVATIONS.

**CONSTRUCTION KEY NOTES:**

1. xxx
2. xxx



REGISTRATION SEAL

CONSULTANT

PROJECT TITLE  
Ford Woods Park Pool

City of Dearborn

DRAWING TITLE  
ELECTRICAL SITE PLAN

ISSUE DATES


10-25-2017 BIDS  
09-27-2017 OWNER REVIEW

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PROJECT NO.  
17071

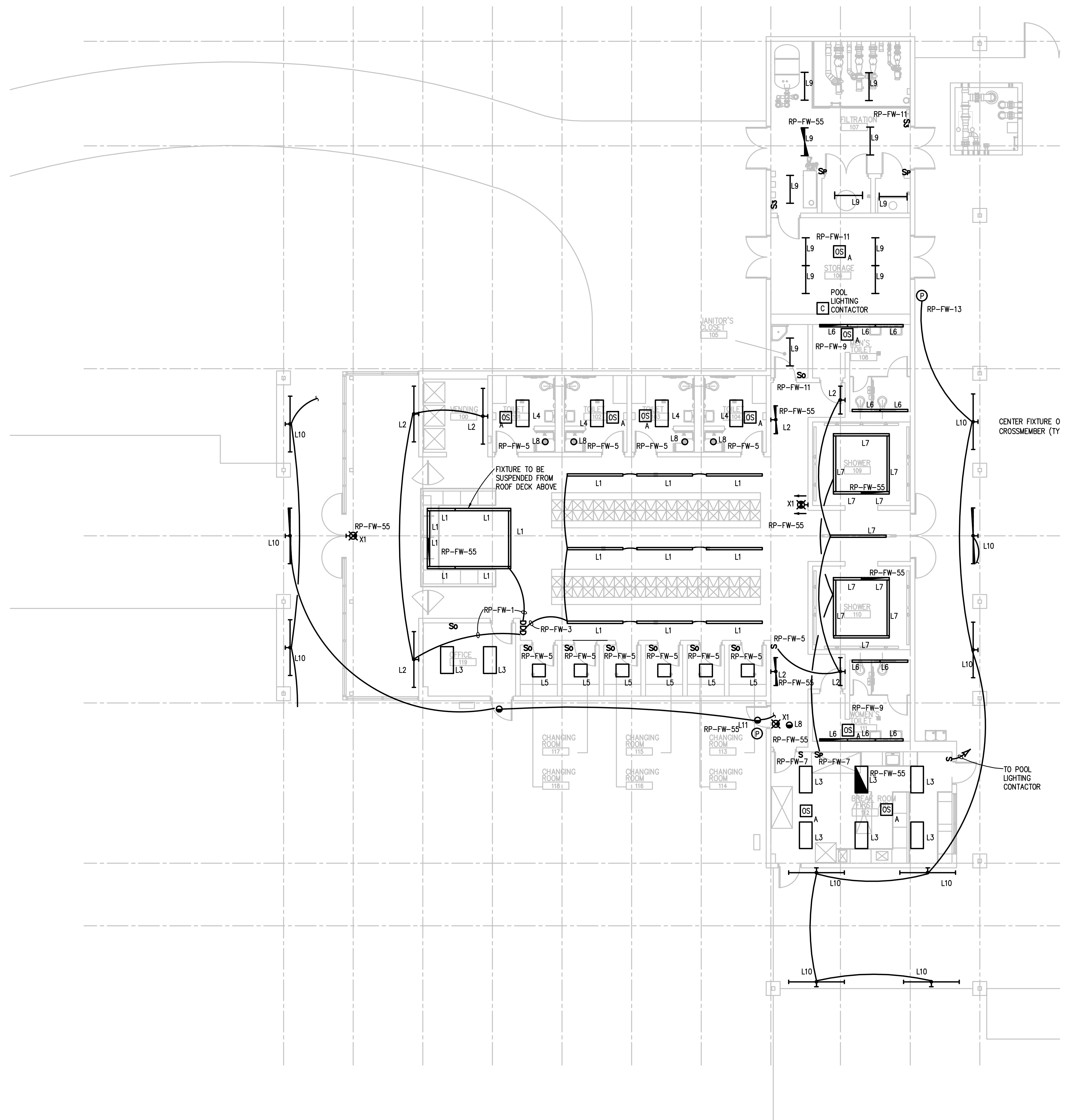
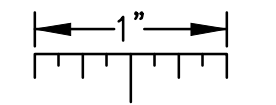
DRAWING NO.  
E0.3



Know what's below.  
Call before you dig.

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THE FOLLOWING DIMENSION EQUALS ONE INCH WHEN PRINTED TO SCALE.



**LIGHTING PLAN**  
SCALE: 1/8" = 1'-0"

**ELECTRICAL GENERAL NOTES:**

1. THESE DRAWINGS REPRESENT THE GENERAL EXTENT AND ARRANGEMENT OF SYSTEMS, BUT ARE NOT TO BE CONSIDERED FABRICATION DRAWINGS. COORDINATE WITH OTHER TRADES, AND PROVIDE EACH SYSTEM COMPLETE, INCLUDING ALL NECESSARY COMPONENTS, FITTINGS, AND OFFSETS.
2. INSTALL SYSTEMS SUCH THAT REQUIRED CLEARANCE AND SERVICE ACCESS SPACE IS PROVIDED AROUND ALL MECHANICAL AND ELECTRICAL EQUIPMENT, AND AROUND ANY COMPONENTS WHICH REQUIRE SERVICE ACCESS.
3. COORDINATE AND PROVIDE ACCESS DOORS WITHIN INACCESSIBLE CEILING, SHAFT, AND CHASE AREAS FOR ALL COMPONENTS WHICH REQUIRE SERVICE ACCESS. REFER TO ARCHITECTURAL DRAWINGS FOR CEILING TYPES.
4. PROVIDE SUPPLEMENTARY STEEL AS REQUIRED FOR THE PROPER SUPPORT OF ALL SYSTEMS.
5. TRANSFORMER SECONDARY CONDUCTORS SHALL BE SIZED IN ACCORDANCE WITH TRANSFORMER CIRCUIT SIZING SCHEDULE SHOWN ON "ELECTRICAL STANDARD SCHEDULES DRAWING" UNLESS OTHERWISE NOTED.
6. MOTOR CIRCUIT PROTECTION SHALL BE SIZED IN ACCORDANCE WITH MOTOR CIRCUIT SIZING SCHEDULES SHOWN ON "ELECTRICAL STANDARD SCHEDULES DRAWING" UNLESS OTHERWISE NOTED.
7. COORDINATE THE MOUNTING HEIGHTS OF DEVICES WITH ARCHITECTURAL ELEVATIONS AND THE TRADES INSTALLING THE WORK.
8. REFER TO MECHANICAL SCHEDULE SHEETS FOR ELECTRICAL REQUIREMENTS FOR MECHANICAL EQUIPMENT. PROVIDE ALL CONNECTIONS, STARTERS, DISCONNECTS, ETC. AS REQUIRED BY SCHEDULES AND WHERE NOTED ELSEWHERE. VERIFY REQUIREMENTS OF ALL MECHANICAL EQUIPMENT WITH SHOP DRAWINGS SUBMITTALS. NOTIFY ENGINEER OF ANY CONFLICTS BETWEEN EQUIPMENT SUBMITTALS AND ELECTRICAL DRAWINGS. WHERE CIRCUIT SIZES ARE SHOWN ON THE ELECTRICAL DRAWINGS THAT DIFFER FROM WHAT IS INDICATED ON THE MECHANICAL SCHEDULES, PROVIDE THE CIRCUIT OF HIGHER AMPACITY.
9. REFER TO TEMPERATURE CONTROLS SHEETS FOR REQUIRED MOTOR CONTROLLERS. PROVIDE ALL ACCESSORIES INDICATED.
10. PROVIDE THE DESIGN AND INSTALLATION FOR A COMPLETE AND FUNCTIONAL FIRE ALARM SYSTEM IN ACCORDANCE WITH SPECIFICATIONS, DRAWINGS, AND ALL APPLICABLE CODES. THE FIRE ALARM VENDOR SHALL PROVIDE LAYOUT DRAWINGS INDICATING THE REQUIRED QUANTITIES AND LOCATIONS OF MANUAL PULL STATIONS, NOTIFICATION APPLIANCES, SMOKE AND HEAT DETECTORS, CONTROL MODULES, INTERFACE MODULES, MODULES FOR SPRINKLER FLOW AND TAMPER SWITCHES, ALL CONTROL PANELS, POWER SUPPLIES, ADDITIONAL DEVICES AND EQUIPMENT REQUIRED. COORDINATE LOCATIONS OF DEVICES WITH ARCHITECTURAL FINISHES AND REFLECTED CEILING PLANS, INCLUDING ADDITIONAL SMOKE AND HEAT DETECTORS REQUIRED FOR NON-SMOOTH CEILING APPLICATIONS. INCLUDE ALLOWANCES FOR ADJUSTMENT OF DEVICES BY THE ARCHITECT AT THE TIME OF SUBMITTAL TO COORDINATE WITH BUILDING FINISHES AND OTHER CEILING ELEMENTS.



REGISTRATION SEAL

CONSULTANT

PROJECT TITLE  
**Ford Woods Park Pool**

City of Dearborn

DRAWING TITLE  
**LIGHTING PLAN**

ISSUE DATES


10-25-2017 BIDS  
09-27-2017 OWNER REVIEW

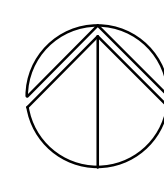
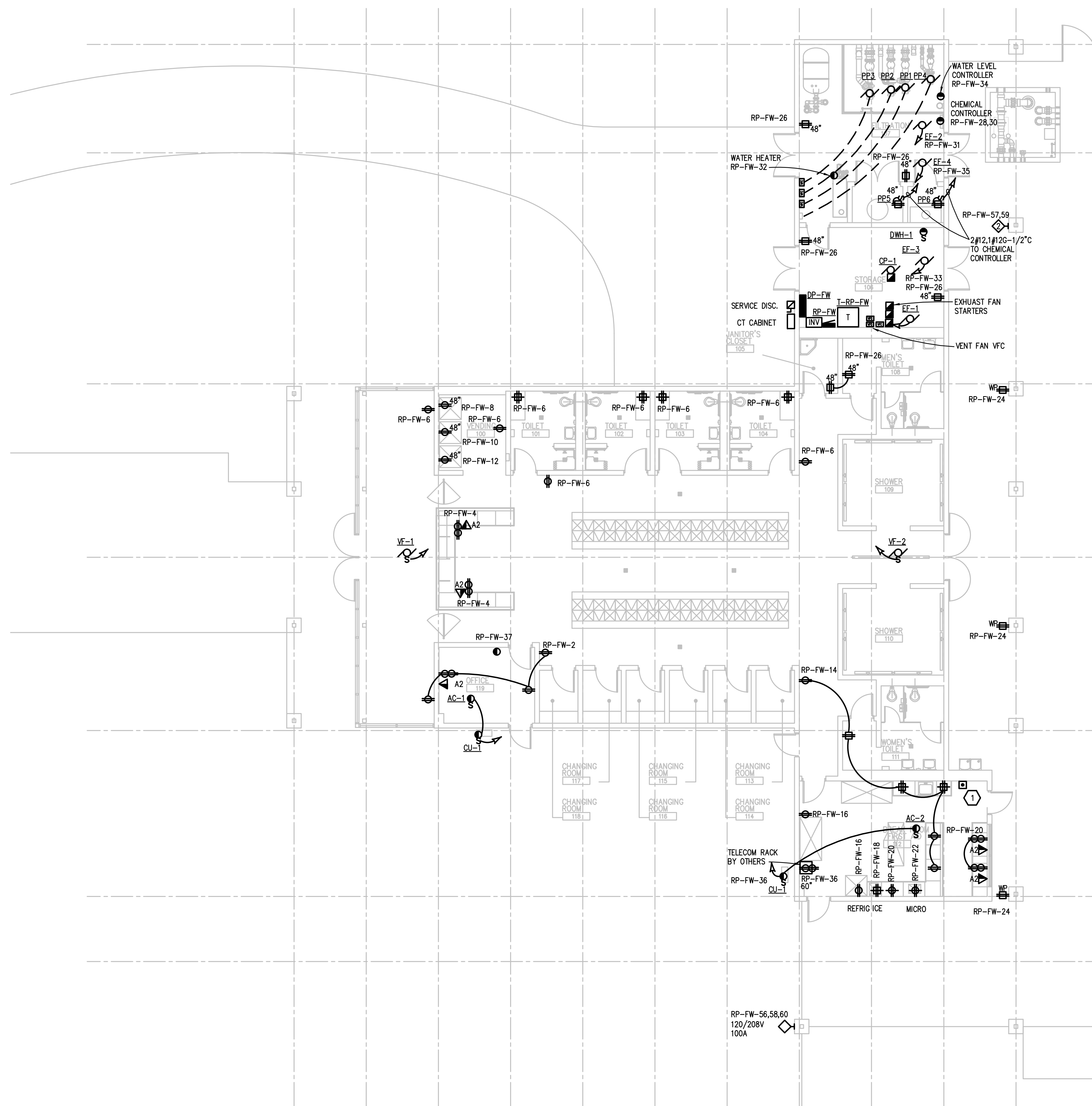
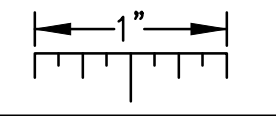
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DRAWN ECD  
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PROJECT NO.  
**17071**

DRAWING NO.  
**E2.1**

THE FOLLOWING DIMENSION EQUALS ONE INCH WHEN PRINTED TO SCALE.



**POWER AND AUXILIARY SYSTEMS PLAN**  
SCALE: 1/8" = 1'-0"

**ELECTRICAL GENERAL NOTES:**

1. THESE DRAWINGS REPRESENT THE GENERAL EXTENT AND ARRANGEMENT OF SYSTEMS, BUT ARE NOT TO BE CONSIDERED FABRICATION DRAWINGS. COORDINATE WITH OTHER TRADES, AND PROVIDE EACH SYSTEM COMPLETE, INCLUDING ALL NECESSARY COMPONENTS, FITTINGS, AND OFFSETS.
2. INSTALL SYSTEMS SUCH THAT REQUIRED CLEARANCE AND SERVICE ACCESS SPACE IS PROVIDED AROUND ALL MECHANICAL AND ELECTRICAL EQUIPMENT, AND AROUND ANY COMPONENTS WHICH REQUIRE SERVICE ACCESS.
3. COORDINATE AND PROVIDE ACCESS DOORS WITHIN INACCESSIBLE CEILING, SHAFT, AND CHASE AREAS FOR ALL COMPONENTS WHICH REQUIRE SERVICE ACCESS. REFER TO ARCHITECTURAL DRAWINGS FOR CEILING TYPES.
4. PROVIDE SUPPLEMENTARY STEEL AS REQUIRED FOR THE PROPER SUPPORT OF ALL SYSTEMS.
5. TRANSFORMER SECONDARY CONDUCTORS SHALL BE SIZED IN ACCORDANCE WITH TRANSFORMER CIRCUIT SIZING SCHEDULE SHOWN ON "ELECTRICAL STANDARD SCHEDULES DRAWING" UNLESS OTHERWISE NOTED.
6. MOTOR CIRCUIT PROTECTION SHALL BE SIZED IN ACCORDANCE WITH MOTOR CIRCUIT SIZING SCHEDULES SHOWN ON "ELECTRICAL STANDARD SCHEDULES DRAWING" UNLESS OTHERWISE NOTED.
7. COORDINATE THE MOUNTING HEIGHTS OF DEVICES WITH ARCHITECTURAL ELEVATIONS AND THE TRADES INSTALLING THE WORK.
8. REFER TO MECHANICAL SCHEDULE SHEETS FOR ELECTRICAL REQUIREMENTS FOR MECHANICAL EQUIPMENT. PROVIDE ALL CONNECTIONS, STARTERS, DISCONNECTS, ETC. AS REQUIRED BY SCHEDULES AND WHERE NOTED ELSEWHERE. VERIFY REQUIREMENTS OF ALL MECHANICAL EQUIPMENT WITH SHOP DRAWINGS SUBMITTALS. NOTIFY ENGINEER OF ANY CONFLICTS BETWEEN EQUIPMENT SUBMITTALS AND ELECTRICAL DRAWINGS. WHERE CIRCUIT SIZES ARE SHOWN ON THE ELECTRICAL DRAWINGS THAT DIFFER FROM WHAT IS INDICATED ON THE MECHANICAL SCHEDULES, PROVIDE THE CIRCUIT OF HIGHER AMPACITY.
9. REFER TO TEMPERATURE CONTROLS SHEETS FOR REQUIRED MOTOR CONTROLLERS. PROVIDE ALL ACCESSORIES INDICATED.
10. PROVIDE THE DESIGN AND INSTALLATION FOR A COMPLETE AND FUNCTIONAL FIRE ALARM SYSTEM IN ACCORDANCE WITH SPECIFICATIONS, DRAWINGS, AND ALL APPLICABLE CODES. THE FIRE ALARM VENDOR SHALL PROVIDE LAYOUT DRAWINGS INDICATING THE REQUIRED QUANTITIES AND LOCATIONS OF MANUAL PULL STATIONS, NOTIFICATION APPLIANCES, SMOKE AND HEAT DETECTORS, CONTROL MODULES, INTERFACE MODULES, MODULES FOR SPRINKLER FLOW AND TAMPER SWITCHES, ALL CONTROL PANELS, POWER SUPPLIES, ADDITIONAL DEVICES AND EQUIPMENT REQUIRED. COORDINATE LOCATIONS OF DEVICES WITH ARCHITECTURAL FINISHES AND REFLECTED CEILING PLANS, INCLUDING ADDITIONAL SMOKE AND HEAT DETECTORS REQUIRED FOR NON-SMOOTH CEILING APPLICATIONS. INCLUDE ALLOWANCES FOR ADJUSTMENT OF DEVICES BY THE ARCHITECT AT THE TIME OF SUBMITTAL TO COORDINATE WITH BUILDING FINISHES AND OTHER CEILING ELEMENTS.

**CONSTRUCTION KEY NOTES:**

1. PROVIDE 6 POSITION ON/OFF SELECTOR SWITCH STATION FOR POOL PUMPS PPI, PP2, PP3, PP4, POOL DECK LIGHTING AND IN-WATER LIGHTING.



REGISTRATION SEAL

CONSULTANT

PROJECT TITLE  
**Ford Woods  
Park Pool**

City of Dearborn

DRAWING TITLE  
**POWER AND AUXILIARY  
SYSTEMS PLAN**

ISSUE DATES


10-25-2017 BIDS

09-27-2017 OWNER REVIEW

DATE: ISSUED FOR:

DRAWN ECD

CHECKED ECD

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PROJECT NO.

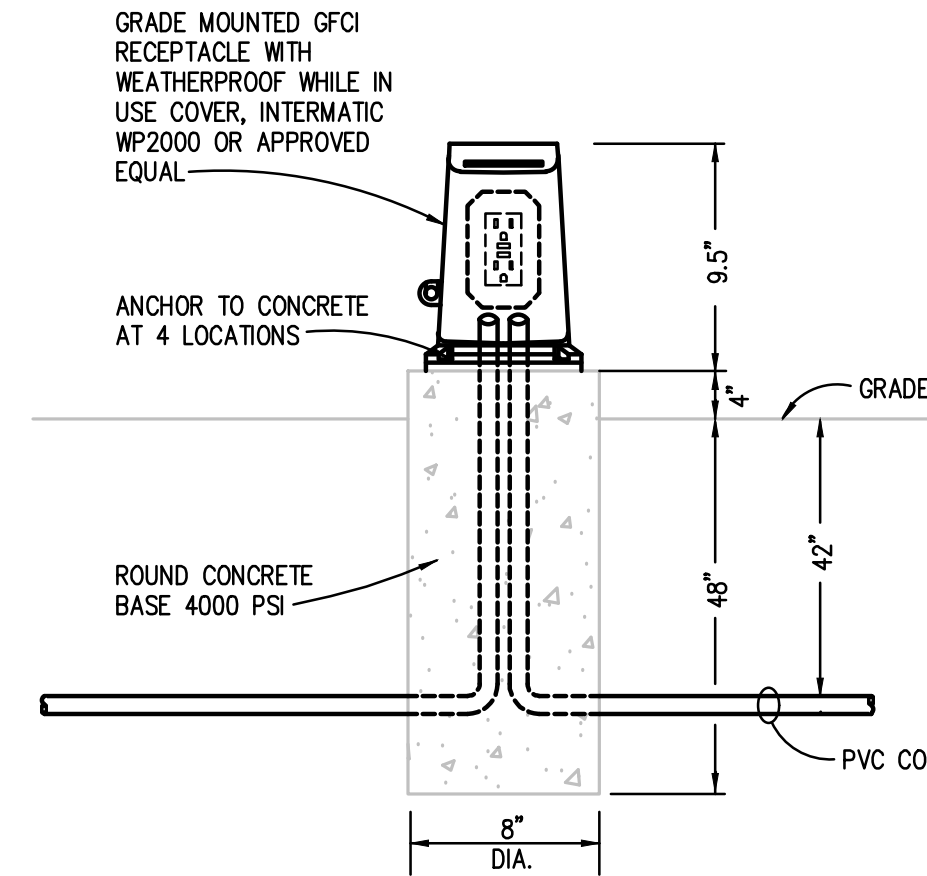
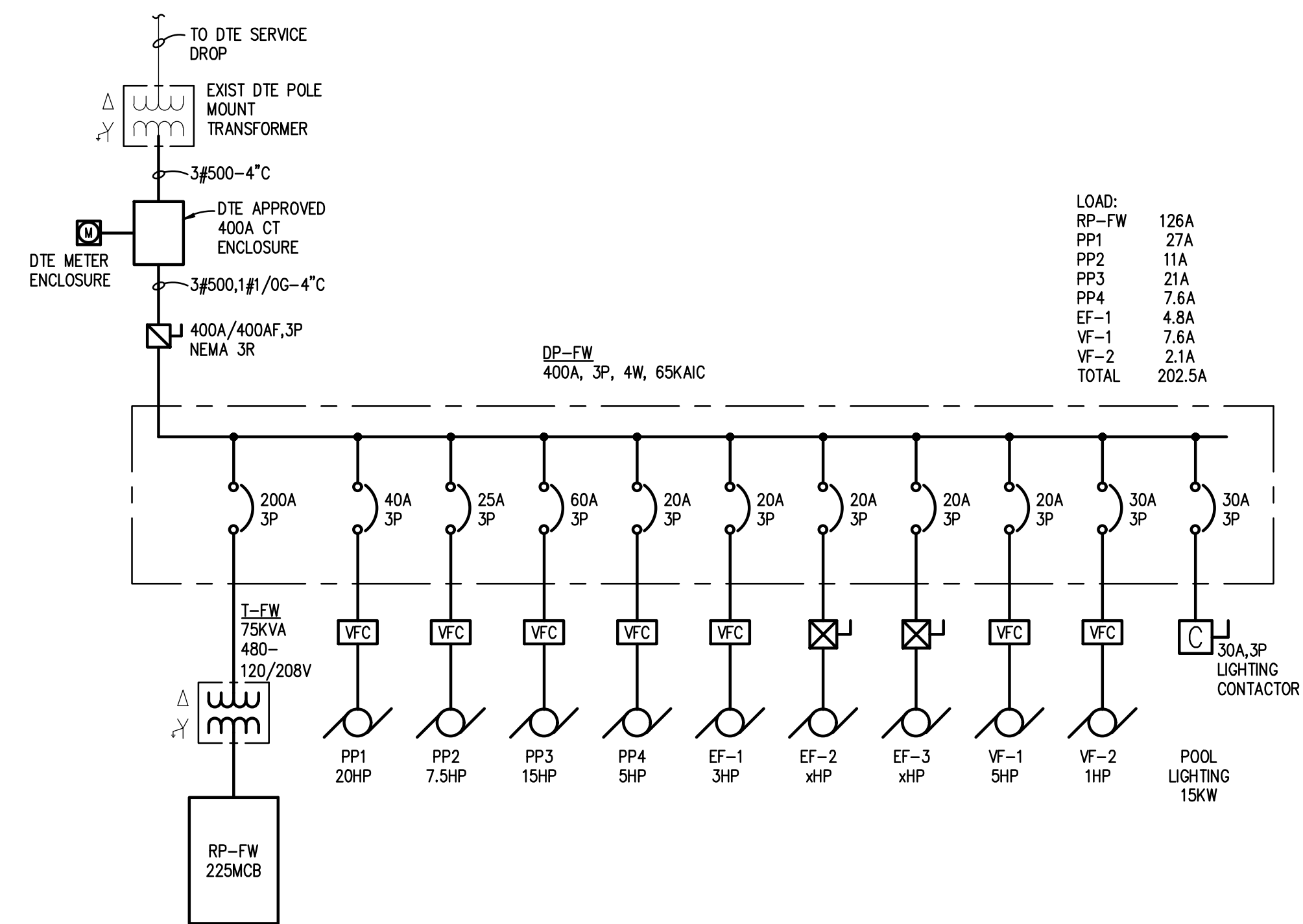
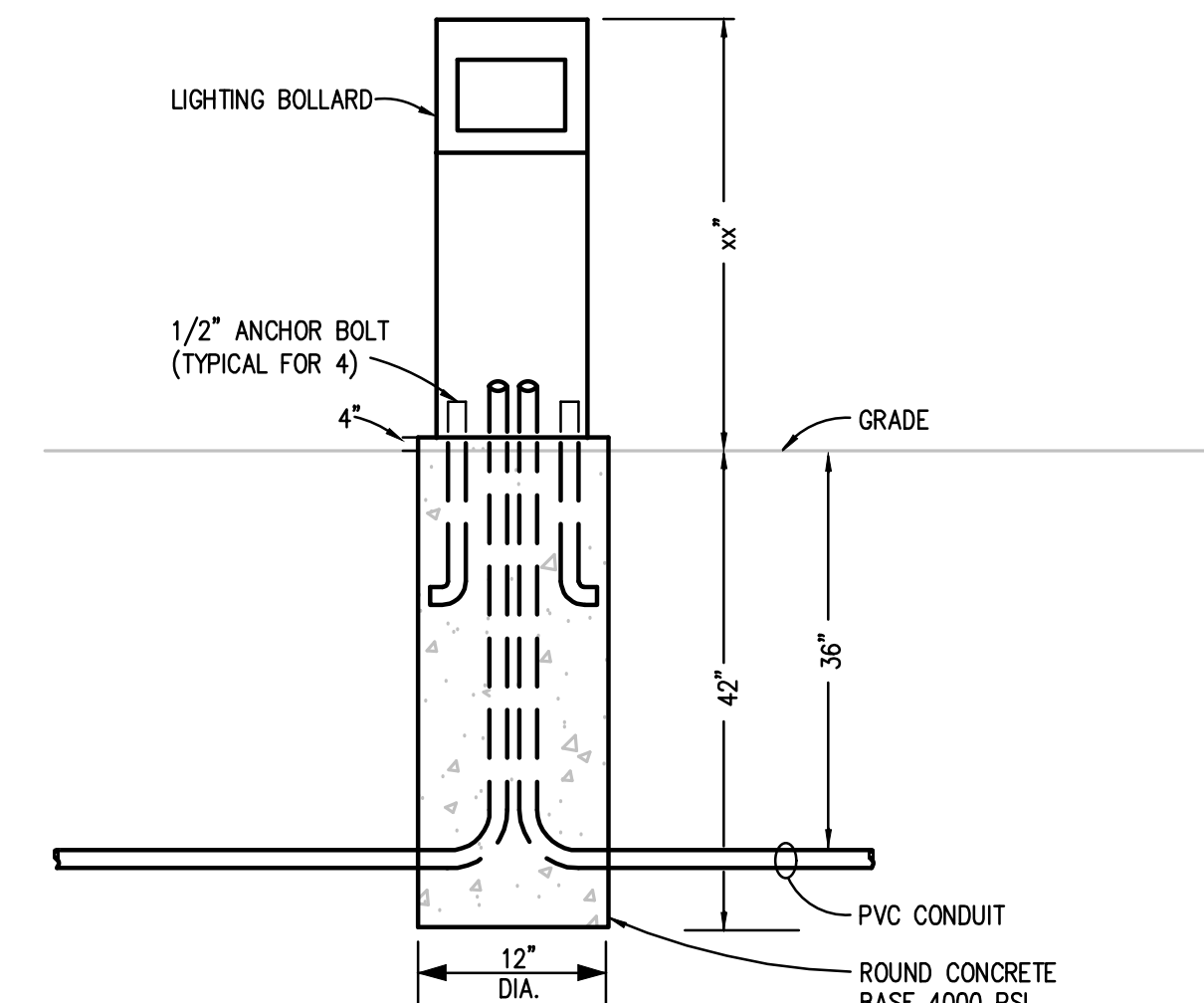
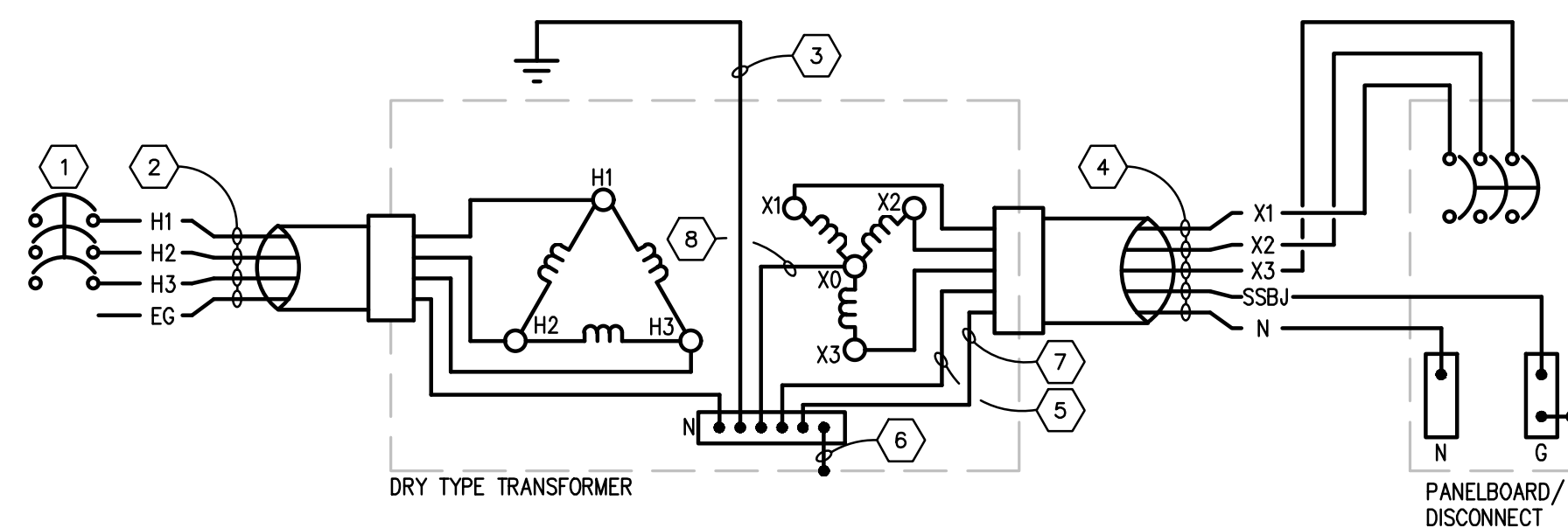
**17071**

DRAWING NO.

**E3.1**

**GENERAL NOTES:**

- THESE DRAWINGS REPRESENT THE GENERAL EXTENT AND ARRANGEMENT OF SYSTEMS, BUT ARE NOT TO BE CONSIDERED FABRICATION DRAWINGS. COORDINATE WITH OTHER TRADES, AND PROVIDE EACH SYSTEM COMPLETE, INCLUDING ALL NECESSARY COMPONENTS, FITTINGS, AND OFFSETS.
- FEEDER AND BRANCH CIRCUIT CONDUCTORS SHALL BE SIZED IN ACCORDANCE WITH THE "FEEDER AND BRANCH CIRCUIT SCHEDULE-GENERAL PURPOSE" ON THE "ELECTRICAL STANDARD SCHEDULES DRAWING" UNLESS SPECIFICALLY NOTED OTHERWISE.
- TRANSFORMER SECONDARY CONDUCTORS SHALL BE SIZED IN ACCORDANCE WITH THE "TRANSFORMER CIRCUIT SIZING SCHEDULE-GENERAL PURPOSE" ON THE "ELECTRICAL STANDARD SCHEDULES DRAWING" UNLESS SPECIFICALLY NOTED OTHERWISE.
- MOTOR CIRCUIT PROTECTION SHALL BE SIZED IN ACCORDANCE WITH THE MOTOR CIRCUIT SIZING SCHEDULES ON THE "ELECTRICAL STANDARD SCHEDULES DRAWING" UNLESS SPECIFICALLY NOTED OTHERWISE.
- BRANCH CIRCUIT CONDUCTORS, FEEDERS, AND BRANCH CIRCUIT OVERCURRENT PROTECTION ARE SIZED AT 125% OF THE TOTAL CONTINUOUS AND NON CONTINUOUS LOAD FOR LIGHTING AND MOTOR LOADS THAT RUN CONTINUOUSLY FOR THREE HOURS OR MORE (NEC 210.19 A, 210.20 A, AND 215.2 A). DEMAND AND CONNECTED LOADS ARE CALCULATED PER NEC 220.
- VARIABLE FREQUENCY CONTROLLERS (VFC) FURNISHED BY MECHANICAL TRADES. ELECTRICAL CONTRACTOR SHALL INSTALL VFC, PROVIDE POWER FEEDER FROM DISTRIBUTION EQUIPMENT TO VFC AND PROVIDE POWER FEEDER FROM VFC TO MOTOR. REFER TO SPECIFICATIONS FOR APPLICATION OF VFC POWER CABLE FROM VFC TO MOTOR.


**GRADE RECEPTACLE DETAIL**  
 NO SCALE

**BOLLARD BASE DETAIL**  
 NO SCALE

**POOL ENVIRONMENT SCHEMATIC BONDING DETAIL**  
 NO SCALE

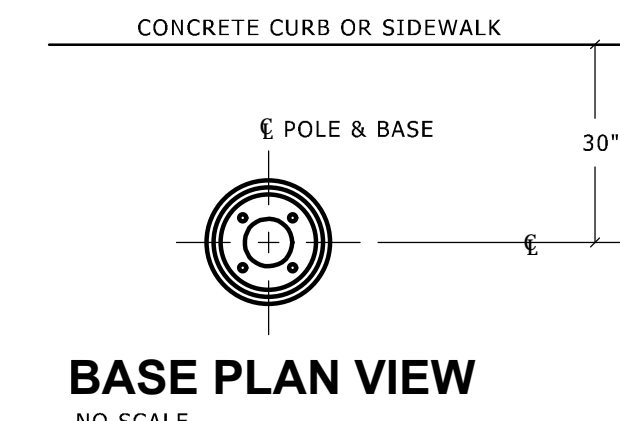
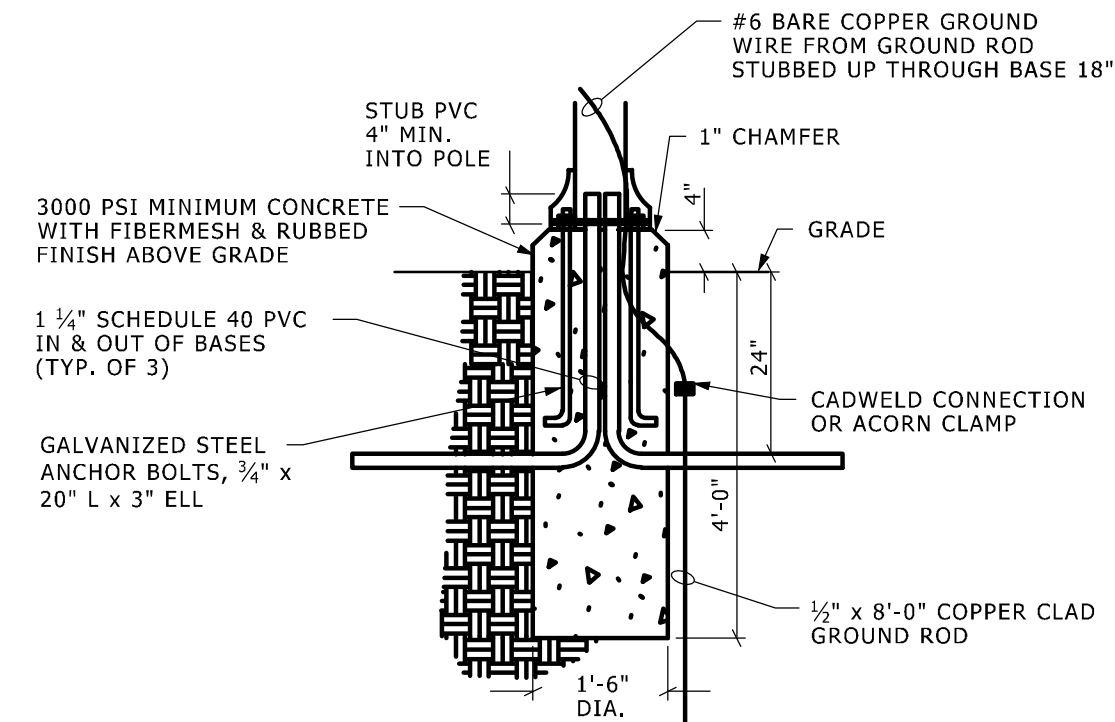
- NOTES:
- EQUIPOTENTIAL BONDING OF ENTIRE POOL ENVIRONMENT SHALL COMPLY WITH PARTS I, II, AND VI OF ARTICLE 680 OF THE NEC.
  - BOND CONDUCTIVE POOL SHELLS, STRUCTURAL REINFORCING STEEL IN ENTIRE POOL ENVIRONMENT, ALL METALLIC PARTS OF THE POOL STRUCTURES, ALL METAL FITTINGS, ALL POOL EQUIPMENT, AND ALL FIXED METAL PARTS IN POOL ENVIRONMENT WITH #8 SOLID COPPER GROUND CONDUCTOR TO THE GROUND IN ELECTRICAL PANEL FEEDING AREA.
  - BONDING CONDUCTORS AND CONNECTIONS TO BE CONCEALED IN FINISHED SPACES. COORDINATE EXACT LOCATIONS AND REQUIREMENTS WITH ARCHITECTURAL DRAWINGS, TRADES, EQUIPMENT MANUFACTURERS, AND INSTALLING TRADES.
  - PROVIDE GROUND FAULT INTERRUPTER IN ALL CIRCUITS SERVING ADAPTERS OR OTHER EQUIPMENT WITHIN 5 FEET OF POOL.

**DRY TYPE DISTRIBUTION TRANSFORMER GROUNDING ARRANGEMENT**  
 NO SCALE

**KEYED NOTES:**

- 480V, 3Ø PRIMARY CIRCUIT BREAKER BASED ON DRY TYPE DISTRIBUTION TRANSFORMER CIRCUIT SIZING SCHEDULE ON ELECTRICAL STANDARD SCHEDULE DRAWING UNLESS OTHERWISE NOTED.
- PRIMARY FEEDER BASED ON FEEDER AND BRANCH CIRCUIT SIZING TABLE ON ELECTRICAL STANDARD SCHEDULE DRAWING UNLESS OTHERWISE NOTED.
- GROUNDING ELECTRODE CONDUCTOR TO NEAREST GROUNDING ELECTRODE (i.e. BUILDING STEEL, METAL WATER PIPE, GROUND RING, OR GROUND BUS). SEE DRY TYPE DISTRIBUTION TRANSFORMER CIRCUIT SIZING SCHEDULE ON ELECTRICAL STANDARD SCHEDULE DRAWING FOR SIZE UNLESS OTHERWISE NOTED.
- 208Y/120V, 3Ø, 4W SECONDARY FEEDER BASED ON DRY TYPE DISTRIBUTION TRANSFORMER CIRCUIT SIZING SCHEDULE ON ELECTRICAL STANDARD SCHEDULE DRAWING UNLESS OTHERWISE NOTED.
- SUPPLY SIDE BONDING JUMPER.
- SYSTEM BONDING JUMPER.
- GROUNDING CONDUCTOR (NEUTRAL).
- NEUTRAL CONDUCTOR PROVIDED WITH EQUIPMENT.

PANELBOARD RP-FW														
#	LOAD TYPE	DESCRIPTION	CB TYPE	CB	VA	RA	RM	RC	VA	CB	DESCRIPTION	LOAD TYPE	#	
1	L	LIGHTING - LOBBY		20	1250	2100			900	20	RECEPT - OFFICE, LOBBY	R	2	
2	L	LIGHTING - LOBBY		20	1900		2300		700	20	RECEPT - RECEPTION	R	4	
3	L	LIGHTING - TOILET, LOCKER, CORRIDOR		20	1110			2370	1060	20	RECEPT - LOBBY, TOILET	R	8	
4	L	LIGHTING - OFFICE, SHOWER		20	1090	2090			1000	20	RECEPT - WONDING	R	8	
5	L	LIGHTING - WALKER, BENCHES		20	1580		2060		1000	20	RECEPT - WONDING	R	10	
6	L	LIGHTING - JL STORAGE, FILTRATION		20	315			1310	1000	20	RECEPT - WONDING	R	13	
7	L	LIGHTING - EXTERIOR		20	160	1240			1040	20	RECEPT - WARDEN, FIRST AID	R	14	
8	L	SPARE		20	2000		2500			20	RECEPT - FIRST AID, RETROREFLECTOR	R	18	
9	M			20	500			500		20	RECEPT - FIRST AID, ICE	R	19	
10	M			20	500	500				20	RECEPT - FIRST AID	R	20	
11	NC	DOMESTIC WATER HEATER (DWH-1)		20	500		500			20	RECEPT - FIRST AID, MICROWAVE	R	22	
12	NC	AC-1/208-1		20	550			1450	900	20	RECEPT - EXTERIOR	R	24	
13	NC	AC-1/208-1		20	550		550			20	RECEPT - JL STORAGE, FILTRATION	R	26	
14	NC	AC-1/208-1		20	550		550			20	CHEMICAL PUMP	R	28	
15	M	EF-1		20	1176	1176				20	PUMP, WALKER	R	30	
16	M	EF-2		20	200		200			20	WATER LEVEL CONTROLLER	R	34	
17	M	EF-3		20	200		200			20	RECEPT - IT RACK	R	36	
18	NC	CONTROL PANEL		20	200					20	SPARE	R	38	
19	SPARE			20						20	SPARE	R	40	
20	SPARE			20						20	SPARE	R	42	
21	SPARE			20						20	SPARE	R	44	
22	SPARE			20						20	SPARE	R	46	
23	SPARE			20						20	SPARE	R	48	
24	SPARE			20						20	SPARE	R	50	
25	SPARE			20						20	SPARE	R	52	
26	L	LIGHTING - EMERGENCY		20	450	810			700	20	SPARE	MC	54	
27	NC	POOL DECK RECEPTACLE		20	1800			9000	7000	100	3000 TRUCK RECEPTACLE	MC	58	
28	NC	POOL DECK RECEPTACLE		20	1800			9000	7000	100	3000 TRUCK RECEPTACLE	MC	60	
					BA	BB	BC							
					1270	1720	1540							
PANELBOARD INFORMATION														
VOLTAGE			208Y/120			FEEDER DERIVING LOAD			DISBURSEMENT LOAD			NOTES		
BUS MATERIAL			208A			CONTINUOUS LOAD (C)			X 125%			X 100%		
WATER TYPIC			208A WBB			NON-CONTINUOUS LOAD (NC)			X 100%			X 100%		
MINIMUM A.I.C.			25,000			KITCHEN LOAD (K)			X 100%			X 100%		
WORKING SURFACE						RECEPTACLE BASE LOAD (R)			X 100%			X 100%		
PANELBOARD LOCATION						RECEPTACLE DERIVING LOAD (RD)			X 100%			X 100%		
						LIGHTING LOAD (L)			X 100%			X 100%		
						TRACK LIGHTING (T)			X 100%			X 100%		
						MOTOR, HIGHEST LOAD (M)			X 100%			X 100%		
						MOTOR, REMAINING LOAD (MR)			X 100%			X 100%		
						TOTAL (TOTAL)			X 100%			X 100%		
						TOTAL (MOTOR)			X 100%			X 100%		
						TOTAL (MOTOR)			X 100%			X 100%		


**BASE PLAN VIEW**  
 NO SCALE

**TYPICAL PEDESTRIAN LIGHT POLE BASE IN LAWN**  
 NO SCALE