



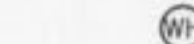
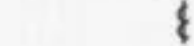



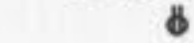
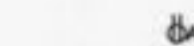
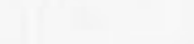
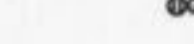
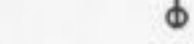
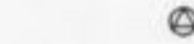

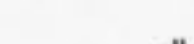

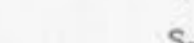

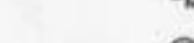

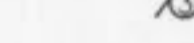

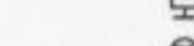
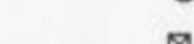
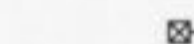


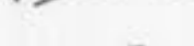

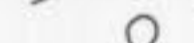

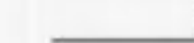





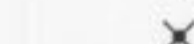
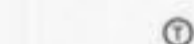

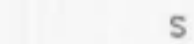


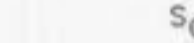

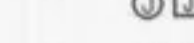
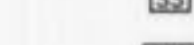
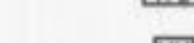


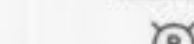
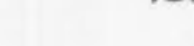


**ELECTRICAL LEGEND:**

-  Switch
-  Switch and Fuse Unit
-  Molded Case Circuit Breaker (3 Pole U.N.O.)
-  Voltmeter
-  Ammeter
-  Watt-Hour Meter
-  Current Transformer
-  Circuit Breaker Combination Motor Starter - Number indicates NEMA Starter Size
-  Motor Starter or Relay Contacts
-  Overloads
-  Duplex receptacle 20A, 3-wire grounding type, mount 6'-0" AFF in workroom, 18" AFF, elsewhere U.N.O., WP for weatherproof
-  Same as standard duplex recep., but mounted 8" above counter top
-  Ground fault interrupter type duplex receptacle, 20A
-  Simplex receptacle, 200V, 1 phase, 20A
-  Special receptacle as noted
-  Welding receptacle, 60A, 480V, 3 phase
-  Quadruplex receptacle, mtd. 18" AFF U.N.O.
-  Information outlet - as noted
-  3-way switch, mtd. 48" AFF unless otherwise noted - "4" denotes 4-way switch, "D" denotes dimmer switch
-  Manual motor starting switch w/pilot light, mtd. 48" AFF unless otherwise noted
-  Motor, number denotes horsepower
-  Motor, operator with combination motor starter and disconnect switch, number denotes horsepower
-  Pullbox
-  Pushbutton, type as noted
-  Photocell
-  Magnetic Motor Controller
-  Combination motor controller & disconnect switch, size as noted
-  Non-fused disconnect switch, size as noted
-  Fused disconnect switch, size as noted
-  Existing conduit or as noted
-  New conduit in or under floor slab construction or underground as ind.
-  New conduit above ceiling, exposed on ceiling slab, or in wall construction
-  Flexible conduit
-  Conduit turning down
-  Conduit riser up
-  Existing conduit or circuitry to be removed/deleted as noted
-  Home run to panel - number of circuits in one conduit indicated by number of arrows. Wires indicated are neutral and three hot legs (different phase for each circuit). Maximum three circuits per conduit and #12 AWG in 3/4" U.N.O.
-  Green ground conductor installed in conduit
-  Ground
-  Ground rod
-  T-stat furnished by Div. 15, mounted and wired by Div. 16
-  Telephone outlet mtd. 56" AFF U.N.O.
-  Single pole switch - mtd. 48" AFF unless otherwise noted
-  Three way switch
-  Manual motor starter
-  Momentary switch for use with contactor/motor starter
-  Limit switch, type as noted
-  Junction box
-  Solid state (soft start) motor controller
-  Variable frequency drive
-  Manhole
-  Smoke detector
-  Monitoring and control wiring, see I/O list in specifications for designation definition
-  Indicating light with colored lens as noted R-Red, A-Amber, B-Blue, G-Green

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- E0.01 Legend and Schedules
- E0.02 Electrical Site Plan
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- E16.03 Bio-Filter Complex, MCC One-Line
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**ABBREVIATIONS:**

ABBREV.	DESCRIPTION	ABBREV.	DESCRIPTION	ABBREV.	DESCRIPTION
A	Ampere	HOA	Hand-Off-Automatic	PNL	Panel
AFF	Above Finished Floor	HP	Horsepower	RAL	Red Alarm Light
AFG	Above Finished Grade	IND	Indicated/Indicating	RAS	Return Activated Sludge
AHU	Air Handling Unit	I/O	Input/Output as Indicated	RE	Refer To
AIL	Amber Indicating Light	JB	Junction Box	RECP	Receptacle
AL	Aluminum	KVA	Kilovolt Ampere	REQ'D.	Required
ATS	Automatic Transfer Switch	KVAR	Kilovolt Ampere Reactive	RIL	Red Indicating Light
C	Conduit or Contactor	KW	Kilowatt	RNC	Rigid Non-Metallic Conduit
C/B	Circuit Breaker	LT	Light	SOL	Solenoid
CKT	Circuit	LV	Low Voltage	SS	Stainless Steel
CLG	Ceiling	LV	Low Voltage	TVSS	Transient Voltage Surge Suppressor
CU	Copper	MAX.	Maximum	TYP.	Typical
DM	Damper Motor	MCB	Main Circuit Breaker	UGE	Underground Electric
DS	Disconnect Switch	MD	Magnetic Door Switch	UNO	Unless Noted Otherwise
DWG	Drawing	MDP	Main Distribution Panel	V	Voltage, Volt
EC	Electrical Contractor	MLO	Main Lugs Only	W	Wire
EF	Exhaust Fan	MH	Mounting Height or Manhole	WAS	Waste Activated Sludge
E/G	Engine - Generator	MIN.	Minimum	W/	With
ELEC	Electrical	MTD	Mounted	W/O	Without
EMER	Emergency	N	Neutral	WP	Weather Proof
EMT	Electrical Metallic Tubing	NC	Normally Closed	XFMR	Transformer
EX	Existing	NEC	National Electrical Code	XITTR	Transmitter
FA	Fire Alarm	NFPA	National Fire Protection Association		
FACP	Fire Alarm Control Panel	NO	Normally Open		
FC	Final Clarifier	N.I.C.	Not in Contract		
FCU	Fan Coil Unit	OHE	Overhead Electric		
F # I	Furnish & Install	P	Pole		
FLUOR	Fluorescent	PA	Public Address		
FS	Fire/Smoke Damper	PB	Pull Box		
G, GND	Ground	PC	Primary Clarifier		
GIL	Green Indicating Light	PE	Photoelectric Control (Photocell)		
GRS	Galvanized Rigid Steel	PH	Phase		
GFI	Ground Fault Interrupter	PLC	Programmable Logic Controller		

**ELECTRIC SERVICE NOTES:**

This contract will modify the existing service to the O'Fallon WHTP (except solids facility) and will require revisions to the existing Ameren-UE services as well as addition of services from Culvre River Electric cooperative (CREC). It shall be the responsibility of the Contractor to maintain power to the facility and provide temporary power as required to maintain plant processes. Any and all outages shall be kept to a minimum and shall be coordinated through the Owner, the operators and the Engineer. The Contractor shall coordinate with Ameren-UE, contact Suran Mehta (636) 639-8307; and Culvre River Elec. Coop, contact Stan Winkle (636)-327-5282 regarding all service conditions, requirements, and modifications. Provide all equipment and materials necessary for metering and for complete and properly operating electrical systems.

**GENERAL NOTES:**

1. Conduits routed underground shall be 1" min.
2. All Freestanding electrical equipment shall be mounted on 4" concrete housekeeping pad.
3. All conduit mounted in corrosive areas shall be rigid aluminum type. Aluminum shall not be case in place in concrete or in contact with concrete.
4. Contractor shall F # I disconnect switches for all new/modified equipment U.N.O. Suppliers of equipment shall furnish equipment controls as indicated.
5. Exact location of equipment shown on plans may vary slightly from that indicated. Contractor shall verify exact location of existing equipment and circuitry and adjust accordingly. Exact locations of new equipment and circuitry may vary subject to approval of the Owner and the Engineer.
6. The E.C. shall coordinate all construction with the GC for scheduling purposes and to ensure minimum downtime.
7. Where existing circuits are replaced, relocated or otherwise modified withing this contract, the EC shall number the circuits as indicated on the drawings and as specified. Existing circuits not modified on this contract shall retain original designations. All new circuitry shall be labeled, see specifications.

GEORGE BUTLER ASSOCIATES, INC.  
Engineers • Architects  
Kansas • Missouri • Illinois



**WASTEWATER TREATMENT PLANT EXPANSION**  
**LEGEND AND SCHEDULES**  
 CITY OF O'FALLON, MISSOURI

JOB NO.: 9234  
DATE: 10-08-2001

DESIGNED BY: SLC  
DRAWN BY: TAM  
CHECKED BY: SLC

SHEET NUMBER

**E0.01**