CIRCUIT AND RACEWAY

GENERAL CIRCUIT CONDUCTOR AND CONDUIT IDENTIFICATION

POWER CIRCUIT CALLOUTS			
[P1]	[1/2"FLEX, 2#12,#12G]	[P24]	[1*C,3#8,3#14,1#10G]
[P2]	[3/4"C,2#12,1#12G]	[P25]	[1*C,3#8,4#14,1#10G]
[P3]	[3/4"C,3#12,1#12G]	[P26]	[1*C,3#8,5#14,1#10G]
[P4]	[3/4"C,4#12,1#12G]	[P27]	[1*C,2#6, 1#10G]
[P5]	[3/4"C,5#12,1#12G]	[P28]	[1*C,3#6, 1#8G]
[P6]	[3/4"C,6#12,1#12G]	[P29]	[1*C,3#6, 2#14,1#8G]
[P7]	[3/4"C,7#12,1#12G]	[P30]	[1*C,3#6, 3#14,1#8G]
[P8]	[3/4"C,8#12,1#12G]	[P31]	[1*C,3#6, 4#14,1#8G]
[P9]	[3/4"C,3#12,2#14,1#12G]	[P32]	[1*C,3#6, 5#14,1#8G]
[P10]	[3/4"C,3#12,3#14,1#12G]	[P33]	[1*C,3#4, 1#8G]
[P11]	[3/4"C,3#12,4#14,1#12G]	[P34]	[1 1/4"C,3#4,3#14,1#8G]
[P12]	[3/4"C,3#12,5#14,1#12G]	[P35]	[1 1/4"C,3#4,5#14,1#8G]
[P13]	[3/4"C,3#12,6#14,1#12G]	[P36]	[1 1/4"C,3#3, 1#6G]
[P14]	[3/4"C,3#12,7#14,1#12G]	[P37]	[1 1/4"C,3#3, 3#14,1#6G]
[P15]	[3/4"C,2#10,1#10G]	[P38]	[1 1/4"C,3#2, 1#6G]
[P16]	[3/4"C,3#10,1#10G]	[P39]	[1 1/4"C,3#1, 1#6G]
[P17]	[3/4"C,3#10,2#14,1#10G]	[P40]	[1 1/2"C,3#1, 3#14,1#6G]
[P18]	[3/4"C,3#10,3#14,1#10G]	[P41]	[1 1/2"C,3#2/0, 1#4G]
[P19]	[3/4"C,3#10,4#14,1#10G]	[P42]	[2"C,3#3/0, 1#4G]
[P20]	[3/4"C,3#10,5#14,1#10G]	[P43]	[2"C,3#4/0, 1#3G]
[P21]	[1*C,2#8,1#10G]	[P44]	[1*C, 3#8, 1#8G]
[P22]	[1*C,3#8,1#10G]	[P45]	[3*C, 3#500kCMIL, 1#4/0G]
[P23]	[1*C,3#8,2#14,1#10G]	[P46]	[2 1/2"C, 3#350kCMIL, 1#2/0G]

MULTICONDUCTOR POWER CABLE CIRCUIT CALLOUTS	
[PC1]	[3/4"C,1 (3C#12,1#12G) TYPE 2]
[PC2]	[3/4"C,1 (3C#10,1#10G) TYPE 2]
[PC3]	[1*C,1 (3C#8,1#10G) TYPE 2]
[PC4]	[1 1/4"C,2 (3C#12,1#12G) TYPE 2]
[PC5]	[1 1/2"C,2 (3C#10,1#10G) TYPE 2]
[PC1A]	[3/4"C,1 (2C#12,1#12G) TYPE 2]
[PC2A]	[3/4"C,1 (2C#10,1#10G) TYPE 2]

EMPTY CONDUIT	
[EC-1]	[3/4"C,WITH PULL STRING]
[EC-2]	[1*C,WITH PULL STRING]
[EC-3]	[1 1/4"C,WITH PULL STRING]
[EC-4]	[1 1/2"C,WITH PULL STRING]
[EC-5]	[2"C,WITH PULL STRING]
[EC-6]	[3"C,WITH PULL STRING]
[EC-7]	[4"C,WITH PULL STRING]
[EC-8]	[5"C,WITH PULL STRING]

ANALOG CIRCUIT CALLOUTS	
[A1]	[3/4"C,1 TYPE 3]
[A2]	[1*C,2 TYPE 3]
[A3]	[1*C,3 TYPE 3]
[A4]	[1*C,4 TYPE 3]
[A5]	[1 1/4"C,5 TYPE 3]
[A6]	[1 1/4"C,6 TYPE 3]
[A7]	[1 1/2"C,7 TYPE 3]
[A8]	[1 1/2"C,8 TYPE 3]
[A9]	[1 1/2"C,9 TYPE 3]
[A10]	[2"C,10 TYPE 3]
[A11]	[2"C,11 TYPE 3]
[A12]	[2"C,12 TYPE 3]
[A13]	[2"C,13 TYPE 3]
[A14]	[2"C,14 TYPE 3]
[A15]	[3/4"C,1 TYPE 4]
[A16]	[3/4"C,2 TYPE 4]
[A17]	[1*C,3 TYPE 4]
[A18]	[1 1/4"C,4 TYPE 4]
[A19]	[1 1/4"C,5 TYPE 4]
[A20]	[1 1/4"C,6 TYPE 4]
[A21]	[1 1/2"C,7 TYPE 4]
[A22]	[1 1/2"C,8 TYPE 4]
[A23]	[2"C,9 TYPE 4]
[A24]	[3/4"C,1-4 pr. TYPE 5]
[A25]	[1*C,2-4 pr. TYPE 5]

CONTROL CIRCUIT CALLOUTS	
[C1]	[3/4"C,MSC]
[C2]	[3/4"C,2#14,1#14G]
[C3]	[3/4"C,3#14,1#14G]
[C4]	[3/4"C,4#14,1#14G]
[C5]	[3/4"C,5#14,1#14G]
[C6]	[3/4"C,6#14,1#14G]
[C7]	[3/4"C,7#14,1#14G]
[C8]	[3/4"C,8#14,1#14G]
[C9]	[3/4"C,9#14,1#14G]
[C10]	[3/4"C,10#14,1#14G]
[C11]	[3/4"C,11#14,1#14G]
[C12]	[3/4"C,12#14,1#14G]
[C13]	[3/4"C,13#14,1#14G]
[C14]	[3/4"C,14#14,1#14G]
[C15]	[3/4"C,15#14,1#14G]
[C16]	[3/4"C,16#14,1#14G]
[C17]	[3/4"C,17#14,1#14G]
[C18]	[3/4"C,18#14,1#14G]
[C19]	[3/4"C,19#14,1#14G]
[C20]	[1*C,20#14,1#14G]
[C21]	[1*C,21#14,1#14G]
[C22]	[1*C,22#14,1#14G]
[C23]	[1*C,23#14,1#14G]
[C24]	[1*C,24#14,1#14G]
[C25]	[1*C,25#14,1#14G]

MULTICONDUCTOR CONTROL CABLE CIRCUIT CALLOUTS	
[CC5]	[3/4"C,1-5C TYPE 1]
[CC7]	[3/4"C,1-7C TYPE 1]
[CC9]	[1*C,1-9C TYPE 1]
[CC12]	[1*C,1-12C TYPE 1]
[CC19]	[1 1/2"C, 1-19C TYPE 1]
[CC25]	[1 1/2"C,1-25C TYPE 1]
[CC37]	[2"C,1-37C TYPE 1]
[CCC1]	[1-7C #12 TYPE 1]

NETWORK CABLE	
[N1]	[3/4"C, 1-CAT 6]

NOTES:

1. FOR CABLE TYPES, SEE SPECIFICATIONS.
2. CONDUIT SIZES ARE BASE ON THE AREA OF THW CONDUCTORS.
3. SIZING OF CONDUCTORS #1AWG AND SMALLER BASED ON AMPACITIES AT 60 DEGREES C, SIZING OF CONDUCTORS #1/0AWG AND LARGER BASED ON AMPACITIES AT 75 DEGREES C.
4. WHERE CIRCUITS ARE UNDERGROUND, DIRECT BURIED OR CONCRETE ENCASED, MINIMUM CONDUIT SIZE SHALL BE 1".
5. FOR METRIC CONDUIT SIZES USE THE FOLLOWING CONVERSION:

1/2" = 16 mm	1/4" = 35 mm
3/4" = 21 mm	1 1/2" = 41 mm
1" = 27 mm	2" = 53 mm

ABBREVIATION DESCRIPTION

ABBREVIATIONS-1

A	AMPERE, AUTOMATIC
AB SW	AIR-BREAK SWITCH
ABV	ABOVE
AC	ALTERNATING CURRENT
ACB	AIR-CIRCUIT BREAKER
ACSR	ALUMINUM CONDUCTOR STEEL-REINFORCED
ADJ	ADJUSTABLE
AF	AMPERE FRAME
AFD	ADJUSTABLE FREQUENCY DRIVE
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AHM	AMPERE-HOUR METER
AHU	AIR HANDLING UNIT
AL	ALUMINUM
AM	AMMETER
AMPL	AMPLIFIER
ANN	ANNUNCIATOR
ANT	ANTENNA
APPROX	APPROXIMATE
AS	AMMETER SWITCH, AMPERE SENSOR
ASC	AUXILIARY SWITCH NORMALLY CLOSED
ASO	AUXILIARY SWITCH NORMALLY OPEN
ASU	AIR SUPPLY UNIT
ATC	AUTOMATIC TRANSFER CONTROL
AT	AMPERE TRIP
ATS	AUTOMATIC TRANSFER SWITCH
AUTO	AUTOMATIC
AUX	AUXILIARY
AWG	AMERICAN WIRE GAGE
BAT	BATTERY
BC	BARE COPPER
BIL	BASIC IMPULSE LEVEL
BKR	BREAKER
BLDG	BUILDING
BOT	BOTTOM
C	CONDUIT, CONTACTOR, CONDUCTOR, CLOSE, CENTIGRADE
CB	CIRCUIT BREAKER
CC	CONTROL CABLE
CCS	CENTRAL CONTROL SYSTEM
CKT	CIRCUIT
CLF	CURRENT LIMITING FUSE
CLG	CEILING
COM	COMMUNICATIONS
CONN DIAG	CONNECTION DIAGRAM
CONT	CONTINUE
CP	CONTROL PANEL
CPT	CONTROL POWER TRANSFORMER
CPU	CENTRAL PROCESSING UNIT
CR	CONTROL RELAY
CS	CONTROL STATION:C=CLOSE, T=TRIP
CT	CURRENT TRANSFORMER, CABLE TRAY
CU	COPPER
DC	DIRECT CURRENT
DCS	DISTRIBUTED CONTROL SYSTEM
DIV	DIVISION
DN	DOWN
DP	DISTRIBUTION PANEL
DPDT	DOUBLE-POLE DOUBLE-THROW
DPST	DOUBLE-POLE SINGLE-THROW
DS	DISCONNECT SWITCH
E	EMPTY
EA	EACH
EDH	ELECTRIC DUCT HEATER
EF	EXHAUST FAN
EG	ENGINE GENERATOR
EL	ELEVATION
ELEC	ELECTRIC
ELEM	ELEMENTARY
EMER	EMERGENCY
EMS	ENERGY MONITORING SYSTEM
EMT	ELECTRICAL METALLIC TUBING
EMU	ENERGY MONITORING UNIT
ENCL	ENCLOSURE
EO	ELECTRIC OPERATED, ELECTRIC OPERATOR
EP	EXPLOSION-PROOF
EQPT	EQUIPMENT
ETM	ELAPSED TIME METER
EUH	ELECTRIC UNIT HEATER
EXH	EXHAUST
EXST	EXISTING
F	FORWARD, FREQ
FA	FIRE ALARM
FACP	FIRE ALARM CONTROL PANEL
FDR	FEEDER
FF	FINISHED FLOOR
FI	FLOW INDICATOR
FLEX	FLEXIBLE CONDUIT
FLR	FLOOR
FLUOR	FLUORESCENT
FPR	FEEDER PROTECTOR RELAY
FO	FIBER OPTIC
FP	FIELD PANEL
FREQ	FREQUENCY
FS	FLOAT SWITCH
FT	FLOW TRANSMITTER
FU	FUSE
FVNR	FULL VOLTAGE NON-REVERSING
FVR	FULL VOLTAGE REVERSING
FWD	FORWARD
G	GROUND
GALV	GALVANIZED
GEN	GENERATOR
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GFR	GROUND FAULT RELAY
GND	GROUND
GPR	GENERATOR PROTECTOR RELAY
GRS	GALVANIZED RIGID STEEL CONDUIT
H	HIGH SPEED
HGT	HEIGHT
HH	HANDHOLE
HID	HIGH INTENSITY DISCHARGE
HMI	HUMAN-MACHINE INTERFACE
HOA	HAND-OFF-AUTO
HOR	HAND-OFF-REMOTE
HP	HORSEPOWER
HPS	HIGH PRESSURE SODIUM
HS	HAND SWITCH
HV	HIGH VOLTAGE
HVAC	HEATING, VENTILATING & AIR CONDITIONING
HZ	HERTZ
IAW	IN ACCORDANCE WITH
IC	INTERRUPTING CAPACITY
I & C	INSTRUMENTATION AND CONTROL
IMC	INTERMEDIATE METALLIC CONDUIT
INCAND	INCANDESCENT
INST	INSTANTANEOUS
INT	INTERRUPTING
ISR	INTRINSICALLY SAFE RELAY
J,JB	JUNCTION BOX
K	KEY INTERLOCK
KA	KILOAMPERES
KAIC	KILOAMPERES INTERRUPTING CAPACITY
KCM	THOUSAND CIRCULAR MILS
KV	KILOVOLTS
KVA	KILOVOLT AMPERES
KW	KILOWATTS
KWH	KILOWATT HOURS
KWHD	KILOWATT HOURS DEMAND
L	LIGHTING CONTACTOR, LOW SPEED, LOWER
LC	LIGHTING CONTROLLER, LATCH COIL
LCP	LOCAL CONTROL PANEL
LE	LEVEL ELEMENT
LIT	LEVEL INDICATING TRANSMITTER
LOR	LOCAL-OFF-REMOTE
LP	LIGHTING PANEL
LPS	LOW PRESSURE SODIUM
LR	LOCAL/REMOTE
LS	LIMIT SWITCH, LEVEL SWITCH
LT	LEVEL TRANSMITTER
LT FLEX	LIQUID-TIGHT FLEX CONDUIT
M	MAGNETIC CONTACTOR COIL, MOTOR, MANUAL
MA	MILLIAMPERE
MAN	MANUAL
MAU	MAKE-UP AIR UNIT
MAX	MAXIMUM
MCC	MOTOR CONTROL CENTER
MDC	MOTORIZED DAMPER CONTROL
MECH	MECHANICAL
MFR	MANUFACTURER
MH	MANHOLE, METAL HALIDE, MOUNTING HEIGHT
MIN	MINIMUM
MO	MOTOR OPERATOR
MOP	MOTOR OPERATED POTENTIOMETER
MOV	METAL OXIDE VERISTOR, MOTOR OPERATED VALVE
MPR	MOTOR PROTECTION RELAY
MRCT	MULTI RATIO CURRENT TRANSFORMER
MS	MOTOR STARTER
MSC	MANUFACTURER SUPPLIED CABLE
MT	MOUNT
MTD	MOUNTED
MTS	MANUAL TRANSFER SWITCH
MV	MEDIUM VOLTAGE
MVA	MEGA-VOLT AMPERES
N	NEUTRAL, NORMAL
NA	NON-AUTOMATIC
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRICAL CODE
NESC	NATIONAL ELECTRICAL SAFETY CODE
NEUT	NEUTRAL
NIC	NOT IN CONTRACT
N.O.	NORMALLY OPEN
NP	NAMEPLATE
NTS	NOT TO SCALE
O	OPEN
OCA	OPEN-CLOSE-AUTO
OCB	OIL CIRCUIT BREAKER
OCR	OVERCURRENT RELAY
OHM	OHMMETER
OL	OVERLOAD RELAY
OO	ON-OFF
OOA	ON-OFF-AUTO
OOR	ON-OFF-REMOTE
OS	OCCUPANCY SENSOR
PB	PULL BOX
PC	PHOTOCELL
PCC	POINT OF COMMON COUPLING
PCB	POWER CIRCUIT BREAKER
PF	POWER FACTOR
PH	PHASE
PLC	PROGRAMMABLE LOGIC CONTROLLER
PNL	PANEL
POT	POTENTIOMETER
PP	POWER PACK
PS	PRESSURE SWITCH
PT	POTENTIAL TRANSFORMER
PVC	POLYVINYL CHLORIDE
PWR	POWER
R	RELAY,REVERSE,RUN,RAISE
RCPT	RECEPTACLE
REF	REFERENCE
REM	REMOTE
RGS	RIGID GALVANIZED STEEL CONDUIT
RIO	REMOTE INPUT/OUTPUT
RMS	ROOT MEAN SQUARE
RPM	REVOLUTIONS PER MINUTE
RTU	REMOTE TELEMETRY UNIT
RTD	RESISTANCE TEMPERATURE DETECTOR
RVNR	REDUCED VOLTAGE NON-REVERSING
RVR	REDUCED VOLTAGE REVERSING
SA	SURGE ARRESTER
SC	SPEED CONTROL
SCADA	SUPERVISORY CONTROL AND DATA ACQUITION SYSTEM
SCU	SPEED CONTROL UNIT
SF	SUPPLY FAN
SH	SPACE HEATER
S/N	SOLID NEUTRAL
SOL	SOLENOID
SP	SPARE
SPD	SPEED
SS	START STOP
SST	STAINLESS STEEL
ST	SHUNT TRIP
SUB	SUBSTATION
SV	SOLENOID VALVE
SW	SWITCH
SWBD	SWITCHBOARD
SWGR	SWITCHGEAR
SYMM	SYMMETRICAL
T	THERMOSTAT, TRANSFORMER
TB	TERMINAL BOARD, TEST BLOCK
TD	TEMPERATURE DETECTOR, TIME DELAY
TDC	TIME-DELAY CLOSING
TDO	TIME-DELAY OPENING
TDR	TIME DELAY RELAY
TEL	TELEPHONE
TEMP	TEMPERATURE
TJB	TERMINAL JUNCTION BOX
TSP	TWISTED SHIELDED PAIR
TST	TWISTED SHIELDED TRIAD
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR
TYP	TYPICAL
UC	UNLATCH COIL
UH	UNIT HEATER
UNO	UNLESS NOTED OTHERWISE
UON	UNLESS OTHERWISE NOTED
UPS	UNINTERRUPTIBLE POWER SUPPLY
UVR	UNDER VOLTAGE RELAY
V	VOLTAGE, VOLTS
VCB	VACUUM CIRCUIT BREAKER
VFD	VARIABLE FREQUENCY DRIVE
VIB	VIBRATION
VM	VOLTMETER
VR	VOLTAGE REGULATOR
VS	VOLTMETER SWITCH
W	WATTS
WHD	WATT HOUR DEMAND METER
WM	WATTMETER
WP	WEATHERPROOF
XD	TRANSDUCER
XFMR	TRANSFORMER
XPDR	TRANSPONDER
Z	IMPEDANCE
ZS	POSITION SWITCH

THIS DRAWING IS LOANED FOR SOLE USE OF THE INTENDED RECIPIENT AND ONLY FOR THE LIMITED PURPOSES FOR WHICH IT WAS PROVIDED. USE BY OTHER ENTITIES OR FOR OTHER PURPOSES IS PROHIBITED AND AT THE USER'S OWN RISK. DRAWINGS ARE TO BE RETURNED UPON REQUEST OF THE FORWARDING RECIPIENT.

PART	REV	DESCRIPTION	DRW	CHKR	DE	DVR	DM	DATE
	0	ISSUED FOR CONSTRUCTION	KB	BW	JL		LE	06/2017

REVISION OR ISSUE PURPOSE

PE	DATE

REVISION APPROVALS

WE	AR	CV	ST	HV	EM	FP	PD	EE	IE	M	NP

SQUAD CHECK

RPE

JAMES KEITH LANDMAN, REGISTERED ENGINEER, AGRICULTURE, No. 119015, STATE OF TENNESSEE

REV.	DATE

DRAWING APPROVALS

		DATE
DRW	K BARTLETT	06/16/17
CHKR	B WILKINSON	06/16/17
DE	J LANDMAN	06/16/17
DVR		
DM	L ELLIS	06/16/17
PE	Teresa J. Pierce, P.E.	

UCOR URS | CH2M Oak Ridge LLC

OF200 Mercury Treatment Facility

Designed by URS|CH2M Oak Ridge LLC (UCOR) for the Department of Energy
Oak Ridge Office of Environmental Management
under U. S. Government contract DE-SC-0004645

Y-12 National Security Complex managed and operated by Consolidated Nuclear Security, LLC for the Department of Energy under U.S. Government contract DE-NA0001942
« Oak Ridge, Tennessee »

PROJECT NAME:
OF200 MERCURY TREATMENT FACILITY

ELECTRICAL
GENERAL
LEGEND - SHEET 2 OF 2

USE	DISC	DT	DC	CM	SYSTEM	STAT	SIZE	BLDG	FL	CLASS
3	E	Y	Y	NC	FAC	AR	E	9410-01	X	U

SH.	OF	TYPE		PART	REV
2	2	DD	E941001-F-0002	000	0

662886

ISSUED FOR CONSTRUCTION

6/22/2017 10:36:28 AM
E941001-F-0002.dgn