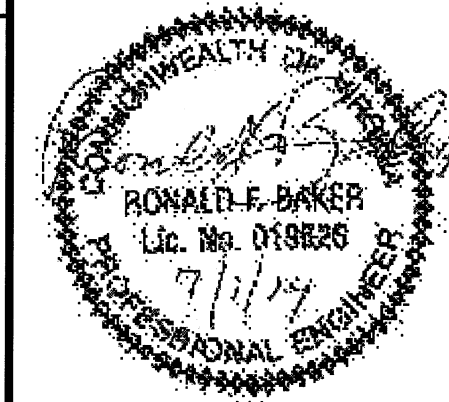


1	2	3	4	5	6
ABBREVIATIONS-1			ABBREVIATIONS-2		ABBREVIATIONS-3
A	A AMPERE, AUTOMATIC	G GROUND	A AMPERE, AUTOMATIC	A AMPERE, AUTOMATIC	A AMPERE, AUTOMATIC
	AB SW AIR-BREAK SWITCH	GALV GALVANIZED	AC ALTERNATING CURRENT	ATS AUTOMATIC TRANSFER SWITCH	ATS AUTOMATIC TRANSFER SWITCH
	ABV ABOVE	GEN GENERATOR	AFD ADJUSTABLE FREQUENCY DRIVE	BKR BREAKER	BKR BREAKER
	AC ALTERNATING CURRENT	GFCI GROUND FAULT CIRCUIT INTERRUPTER	AFF ABOVE FINISHED FLOOR	C CONDUIT, CONTACTOR, CONDUCTOR, CLOSE	C CONDUIT, CONTACTOR, CONDUCTOR, CLOSE
	ACB AIR-CIRCUIT BREAKER	GFR GROUND FAULT RELAY	ATS AUTOMATIC TRANSFER SWITCH	CR CONTROL RELAY	CR CONTROL RELAY
	ACSR ALUMINUM CONDUCTOR	GND GROUND	BKR BREAKER	DC DIRECT CURRENT	DC DIRECT CURRENT
	ADJ ADJUSTABLE	GPR GENERATOR PROTECTOR RELAY	CPT CONTROL POWER TRANSFORMER	F, FU FUSE	F, FU FUSE
	AF AMPERE FRAME	GRS GALVANIZED RIGID STEEL CONDUIT	CR CONTROL RELAY	G GROUND	G GROUND
	AFD ADJUSTABLE FREQUENCY DRIVE	H HIGH SPEED	CT CURRENT TRANSFORMER, CABLE TRAY	GFCI GROUND FAULT CIRCUIT INTERRUPTER	GFCI GROUND FAULT CIRCUIT INTERRUPTER
	AFF ABOVE FINISHED FLOOR	HGT HEIGHT	DC DIRECT CURRENT	HH HANDHOLE	HH HANDHOLE
B	AFG ABOVE FINISHED GRADE	HH HANDHOLE	DP DISTRIBUTION PANEL	HP HORSEPOWER	HP HORSEPOWER
	AHM AMPERE-HOUR METER	HID HIGH INTENSITY DISCHARGE	E EMPTY	HS HAND SWITCH	HS HAND SWITCH
	AHU AIR HANDLING UNIT	HMI HUMAN-MACHINE INTERFACE	F, FU FUSE	J, JB JUNCTION BOX	J, JB JUNCTION BOX
	AL ALUMINUM	HOA HAND-OFF-AUTO	FREQ FREQUENCY	KA KILOAMPERES	KA KILOAMPERES
	AM AMMETER	HOR HAND-OFF-REMOTE	GEN GENERATOR	KV KILOVOLT	KV KILOVOLT
	AMPL AMPLIFIER	HP HORSEPOWER	GFCI GROUND FAULT CIRCUIT INTERRUPTER	KVA KILOVOLT AMPERES	KVA KILOVOLT AMPERES
	ANN ANNUNCIATOR	HPS HIGH PRESSURE SODIUM	GND GROUND	KW KILOWATTS	KW KILOWATTS
	ANT ANTENNA	HS HAND SWITCH	HH HANDHOLE	M MAGNETIC CONTACTOR COIL,	M MAGNETIC CONTACTOR COIL,
	APPROX APPROXIMATE	HV HIGH VOLTAGE	HOA HAND-OFF-AUTO	MCC MOTOR, MANUAL	MCC MOTOR, MANUAL
	AS AMMETER SWITCH, AMPERE SENSOR	HVAC HEATING, VENTILATING & AIR CONDITIONING	HP HORSEPOWER	MH MANHOLE, METAL HALIDE, MOUNTING HEIGHT	MH MANHOLE, METAL HALIDE, MOUNTING HEIGHT
C	ASC AUXILIARY SWITCH NORMALLY CLOSED	Hz HERTZ	HS HAND SWITCH	OL OVERLOAD RELAY	OL OVERLOAD RELAY
	ASO AUXILIARY SWITCH NORMALLY OPEN	IAW IN ACCORDANCE WITH	IC INTERRUPTING CAPACITY	PB PULL BOX	PB PULL BOX
	ASU AIR SUPPLY UNIT	IC INTERRUPTING CAPACITY	J, JB JUNCTION BOX	RGS RIGID GALVANIZED STEEL CONDUIT	RGS RIGID GALVANIZED STEEL CONDUIT
	ATC AUTOMATIC TRANSFER CONTROL	IC&C INSTRUMENTATION AND CONTROL	KA KILOAMPERES	TYP TYPICAL	TYP TYPICAL
	AT AMPERE TRIP	IMC INTERMEDIATE METALLIC CONDUIT	KV KILOVOLT	V VOLTAGE, VOLTS	V VOLTAGE, VOLTS
	ATS AUTOMATIC TRANSFER SWITCH	INCAND INCANDESCENT	KVA KILOVOLT AMPERES	W WATTS	W WATTS
	AUTO AUTOMATIC	INST INSTANTANEOUS	KW KILOWATTS	WP WEATHERPROOF	WP WEATHERPROOF
	AUX AUXILIARY	INT INTERRUPTING	KWH KILOWATT HOURS	XFMR TRANSFORMER	XFMR TRANSFORMER
	AWG AMERICAN WIRE GAGE	ISR INTRINSICALLY SAFE RELAY	KWHD KILOWATT HOURS DEMAND		
	BAT BATTERY	J, JB JUNCTION BOX			
D	BC BARE COPPER	K KEY INTERLOCK	SA SURGE ARRESTER		
	BIL BASIC IMPULSE LEVEL	KA KILOAMPERES	SC SPEED CONTROL		
	BKR BREAKER	KAIC KILOAMPERES INTERRUPTING CAPACITY	SCADA SUPERVISORY CONTROL AND DATA ACQUISITION SYSTEM		
	BLDG BUILDING	KCM THOUSAND CIRCULAR MILS	SCU SPEED CONTROL UNIT		
	BOT BOTTOM	KV KILOVOLTS	SF SUPPLY FAN		
	C CONDUIT, CONTACTOR, CONDUCTOR, CLOSE, CENTIGRADE	KVA KILOVOLT AMPERES	SH SPACE HEATER		
	CB CIRCUIT BREAKER	KW KILOWATTS	S/N SOLID NEUTRAL		
	CC CONTROL CABLE	KWH KILOWATT HOURS	SOL SOLENOID		
	CCS CENTRAL CONTROL SYSTEM	KWHD KILOWATT HOURS DEMAND	SP SPARE		
	CKT CIRCUIT	L LIGHTING CONTACTOR, LOW SPEED, LOWER	SPD SPEED		
E	CLF CURRENT LIMITING FUSE	LC LIGHTING CONTROLLER, LATCH COIL	SS START STOP		
	CLG CEILING	LCP LOCAL CONTROL PANEL	SST STAINLESS STEEL		
	COM COMMUNICATIONS	LE LEVEL ELEMENT	ST SHUNT TRIP		
	CONN DIAG CONNECTION DIAGRAM	LIT LEVEL INDICATING TRANSMITTER	SUB SUBSTATION		
	CONT CONTINUE	LOR LOCAL-OFF-REMOTE	SV SOLENOID VALVE		
	CP CONTROL PANEL	LP LIGHTING PANEL	SW SWITCH		
	CPT CONTROL POWER TRANSFORMER	LPS LOW PRESSURE SODIUM	SWBD SWITCHBOARD		
	CPU CENTRAL PROCESSING UNIT	LR LOCAL/REMOTE	SWGR SWITCHGEAR		
	CR CONTROL RELAY	LS LIMIT SWITCH, LEVEL SWITCH	SYMM SYMMETRICAL		
	CS CONTROL STATION: C=CLOSE, T=TRIP	LT LEVEL TRANSMITTER	T THERMOSTAT, TRANSFORMER		
F	CT CURRENT TRANSFORMER, CABLE TRAY	LT FLEX LIQUID-TIGHT FLEX CONDUIT	TB TERMINAL BOARD, TEST BLOCK		
	CU COPPER	M MAGNETIC CONTACTOR COIL, MOTOR, MANUAL	TD TEMPERATURE DETECTOR, TIME DELAY		
	DC DIRECT CURRENT	MA MILLIAMPERE	TDC TIME-DELAY CLOSING		
	DCS DISTRIBUTED CONTROL SYSTEM	MAN MANUAL	TDO TIME-DELAY OPENING		
	DIV DIVISION	MAU MAKE-UP AIR UNIT	TDR TIME DELAY RELAY		
	DN DOWN	MCC MAXIMUM	TEL TELEPHONE		
	DP DISTRIBUTION PANEL	MDC MOTOR CONTROL CENTER	TEMP TEMPERATURE		
	DPDT DOUBLE-POLE DOUBLE-THROW	MECH MECHANICAL	TJB TERMINAL JUNCTION BOX		
	DPST DOUBLE-POLE SINGLE-THROW	MFR MANUFACTURER	TSP TWISTED SHIELDED PAIR		
	DS DISCONNECT SWITCH	MH MANHOLE, METAL HALIDE, MOUNTING HEIGHT	TST TWISTED SHIELDED TRIAD		
G	E EMPTY	MIN MINIMUM	TVSS TRANSIENT VOLTAGE SURGE SUPPRESSOR		
	EA EACH	MO MOTOR OPERATOR	UC UNLATCH COIL		
	EDH ELECTRIC DUCT HEATER	MOP MOTOR OPERATED POTENTIOMETER	UH UNIT HEATER		
	EF EXHAUST FAN	MOV METAL OXIDE VARISTOR, MOTOR OPERATED VALVE	UNO UNLESS NOTED OTHERWISE		
	EG ENGINE GENERATOR	MPR MOTOR PROTECTION RELAY	UPS UNINTERRUPTIBLE POWER SUPPLY		
	EL ELEVATION	MRCT MULTI RATIO CURRENT TRANSFORMER	UVR UNDER VOLTAGE RELAY		
	ELEC ELECTRIC	MS MOTOR STARTER	V VOLTAGE, VOLTS		
	ELEM ELEMENTARY	MSC MANUFACTURER SUPPLIED CABLE	VCB VACUUM CIRCUIT BREAKER		
	EMER EMERGENCY	MT MOUNT	VFD VARIABLE FREQUENCY DRIVE		
	EMS ENERGY MONITORING SYSTEM	MTD MOUNTED	VIB VIBRATION		
H	EMT ELECTRICAL METALLIC TUBING	MTS MOUNTED	VM VOLT METER		
	EMU ENERGY MONITORING UNIT	MV MEDIUM VOLTAGE	VR VOLTAGE REGULATOR		
	ENCL ENCLOSURE	MVA MEGA-VOLT AMPERES	VS VOLT METER SWITCH		
	EO ELECTRIC OPERATED, ELECTRIC OPERATOR	N NEUTRAL, NORMAL	W WATTS		
	EP EXPLOSION-PROOF	NA NON-AUTOMATIC	WHD WATT HOUR DEMAND METER		
	EQPT EQUIPMENT	NC NORMALLY CLOSED	WM WATT METER		
	ETM ELAPSED TIME METER	NEC NATIONAL ELECTRICAL CODE	WP WEATHERPROOF		
	EUIH ELECTRIC UNIT HEATER	NESC NATIONAL ELECTRICAL SAFETY CODE	XD TRANSDUCER		
	EXH EXHAUST	NEUT NEUTRAL	XFMR TRANSFORMER		
	EXST EXISTING	NOT IN CONTRACT	XPDR TRANSPONDER		
I	F FORWARD, FREQ	N.O. NORMALLY OPEN	Z IMPEDANCE		
	FA FIRE ALARM	NP NAMEPLATE	ZS POSITION SWITCH		
	FACP FIRE ALARM CONTROL PANEL	NTS NOT TO SCALE			
	FDR FEEDER				
	FF FINISHED FLOOR				
	FI FLOW INDICATOR				
	FLEX FLEXIBLE CONDUIT				
	FLR FLOOR				
	FLUOR FLUORESCENT				
	FPR FEEDER PROTECTOR RELAY				
J	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				



DATE	JUNE 2014
PROJ	475481
DWG	E-0004
SHEET	27 of 37

CRYSTAL SPRING WATER TREATMENT PLANT CLEARWELL REPLACEMENT WESTERN VIRGINIA WATER AUTHORITY CITY OF ROANOKE, VIRGINIA
--

CH2MHILL
ELECTRICAL
ABBREVIATIONS

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE	JUNE 2014
PROJ	475481
DWG	E-0004
SHEET	27 of 37