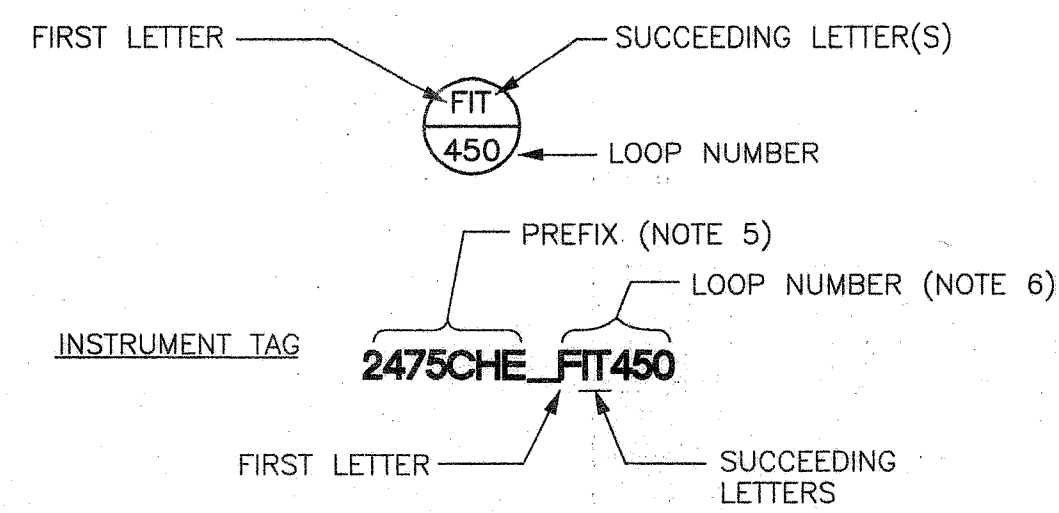


INSTRUMENT AND FUNCTION SYMBOLS

- PRIMARY DEVICE/ELEMENT, FIELD MOUNTED
- DEVICE/ELEMENT LOCALLY INSTALLED NEAR ELEMENT
- DEVICE / ELEMENT AUXILIARY LOCATION - ACCESSIBLE
- DEVICE / ELEMENT LOCALLY INSTALLED - BEHIND PANEL
- DEVICE / ELEMENT AUXILIARY LOCATION - BEHIND PANEL
- INDICATING LIGHT, LOCALLY INSTALLED, SEE SPECIFICATIONS FOR DESCRIPTION
- ILLUMINATED CONTROL DEVICE, LOCALLY INSTALLED, SEE SPECIFICATIONS FOR DESCRIPTION.
- DISPLAY/CONTROL FUNCTION, FIELD EQUIPMENT MOUNTED
- DISPLAY/CONTROL FUNCTION, CONTROL BOARD/PANEL MOUNTED
- AUXILIARY DISPLAY/CONTROL FUNCTION, IN MCC OR PACKAGED EQUIPMENT CONTROL (SHARED)
- DISPLAY/CONTROL FUNCTION, OPERATOR ACCESS BEHIND CONTROL BOARD/PANEL
- AUXILIARY DISPLAY/CONTROL FUNCTION, OPERATOR ACCESS BEHIND CONTROL BOARD/PANEL (SHARED)
- PROGRAMMABLE LOGIC CONTROLLER, LOCAL NODE, CONTROL POINT
- PROGRAMMABLE LOGIC CONTROLLER, LOCAL NODE, CONTROL / DISPLAY POINT, ACCESSIBLE
- PROGRAMMABLE LOGIC CONTROLLER, AUXILIARY NODE, CONTROL / DISPLAY POINT, ACCESSIBLE
- PROGRAMMABLE LOGIC CONTROLLER, LOCAL NODE, CONTROL POINT, ACCESS BEHIND PANEL / CABINET
- PROGRAMMABLE LOGIC CONTROLLER, AUXILIARY NODE, CONTROL / DISPLAY POINT, BEHIND PANEL / CABINET
- CONTROL / STATUS POINT, REMOTE TERMINAL UNIT LOCAL CABINET ACCESS.
- CONTROL / STATUS POINT, REMOTE TERMINAL UNIT LOCAL CABINET, DISPLAY / CONTROL PANELFRONT
- CONTROL / STATUS POINT, REMOTE TERMINAL UNIT, AUXILIARY I/O LOCATION - DISPLAY / CONTROL
- STATUS / DATA, RTU TO SCADA DISPLAY LINK, CENTRAL OPERATIONS
- COMMAND POINT, SCADA TO RTU CONTROL LINK, CENTRAL OPERATIONS
- XYZ INSTRUMENT OR DEVICE CONTROL FUNCTION DESIGNATIONS
 HOA HAND-OFF-AUTO
 LOR LOCAL (OFF) REMOTE
 RSL RAISE-STOP-LOWER
 OCA OPEN-CLOSE-AUTO
 AM AUTOMATIC-MANUAL
 L/S LOCKOUT STOP
 SS STOP-START
 SEL SELECT
 SD SHUTDOWN
- DEVICE WITH ADDITIONAL CONTROL/PROCESSING FUNCTIONS AS DESCRIBED BELOW:
 A=ANALOG I=CURRENT
 B=BINARY O=SONIC, ELECTROMAGNETIC
 D=DIGITAL P=PNEUMATIC
 E=VOLTAGE R=RESISTANCE (ELEC)
 H=HYDRAULIC
- DIGITAL INPUT DIGITAL OUTPUT
- ANALOG INPUT ANALOG OUTPUT

EXAMPLE - DEVICE IDENTIFICATION



TAG NUMBER/LETTER IDENTIFICATION					
FIRST LETTER			SUCCEEDING LETTERS		
	MEASURED OR INITIATED VARIABLE	MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS (NOTE 1)		ALARM		
B	BURNER FLAME			BUTTON	
C	CONTROL	CLOSE/CONTROL		CLOSED	
D	DENSITY OR SPECIFIC GRAVITY				
E	VOLTAGE		PRIMARY ELEMENT		
F	FLOW	RATIO			
G	NOTE 4		GLASS OR GAUGE		
H	HAND (MANUAL)				HIGH (OPEN)
I	CURRENT		INDICATE		
J	POWER	SCAN			
K	TIME OR SCHEDULE			CONTROL STATION	
L	LEVEL		LIGHT (PILOT)		
M	MOTOR	MOMENTARY			MOTOR
N	DOOR			ON	
O	NOTE 4			OPEN	
P	PRESSURE OR VACUUM	PUSH			PLC
Q	QUANTITY OR EVENT	TOTALIZE			
R	RADIATION		REMOTE		RTU
S	SOLENOID			SWITCH	
T	TEMPERATURE			TRANSMIT	
U	MULTIVARIABLE		MULTIFUNCTION		
V	VIBRATION			VALVE	
W	WEIGHT WELL/WATER SERVICE				
X	UNCLASSIFIED	NOTE 2	UNCLASSIFIED		
Y	PRESENT STATE OR EVENT			RELAY OR COMPUTE NOTE 3	
Z	POSITION, LIMIT				

NOTES:

- COVERS ALL ANALYSIS NOT LISTED IN TABLE. TYPE OF ANALYSIS WILL BE DEFINED OUTSIDE TAGGING BALLOON ON DIAGRAM.
- INTENDED TO COVER UNLISTED MEANINGS THAT WILL BE USED TO A LIMITED EXTENT. MEANINGS WILL BE DEFINED OUTSIDE TAGGING BALLOON ON DIAGRAM.
- FUNCTION OF COMPUTING DEVICE WILL BE DEFINED OUTSIDE TAGGING BALLOON.
- USER'S CHOICE.
- THE INSTRUMENT LOOP NUMBERS SHALL BE PRECEDED BY THE FOLLOWING PREFIXES:

PREFIX	LOCATION
WS3(S4)	WELL S3 (S4)
- DISTRICT STANDARD LOOP NUMBERING CONFORMS TO THE FOLLOWING:

000	MASTER STATION
100	RESERVOIRS, TANKS, BASINS
200	PUMPS
300	FACILITY
400	DISINFECTION
500	COMMUNICATION
600	FIELD COMPUTER
700	DISTRIBUTION
- THE CONTRACTOR SHALL UTILIZE THE DISTRICT'S INSTRUMENT TAG NUMBERING CRITERIA FOR ALL INSTRUMENTATION AND ELECTRICAL COMPONENTS INCLUDING:
 A. WIRING (WIRE LABERS, TERMINALS, WIRE LISTS, ETC.)
 B. FLOW INSTRUMENTATION
 C. FIELD DISPLAYS
 D. SOLENOID VALVES
 E. LEVEL SWITCHES

- ELECTRICAL CONTROL OR LOGIC FUNCTION AS DESCRIBED:
- ALL INPUTS REQUIRED FOR OUTPUT
- ANY INPUT CHANGES OUTPUT
- OUTPUT BASED ON CONDITION NON CONCURRENT INPUTS

LINE SYMBOLS

- DIRECTIONAL ARROW
- INSTRUMENT SIGNAL LINE
- PROCESS CONNECTION
- PROCESS PIPING
- EXISTING PROCESS PIPING
- FUTURE PIPING
- ELECTRICAL/LOGIC INTERCONNECTIONS
- PNEUMATIC, INSTRUMENT AIR
- CAPILLARY LINE
- HYDRAULIC LINE
- ELECTRIC TRACED LINE
- PROCESS OR EQUIPMENT CONTROL PANEL/ENCLOSURE
- FLOW INDICATOR
- SONIC FLOW METER
- TURBINE / FLOW METER
- MAGNETIC FLOW METER
- VENTURI TUBE
- FLOW NOZZLE
- SONIC LEVEL INDICATOR/TRANSMITTER
- PULSATION DAMPENERS WITH PRESSURE GAUGE
- ISOLATION DIAPHRAGM WITH PRESSURE GAUGE
- CONCENTRIC REDUCER
- ECCENTRIC REDUCER
- LINE STRAINER
- CAPPED END
- HOSE CONNECTION
- ELBOW - AWAY FROM VIEWER

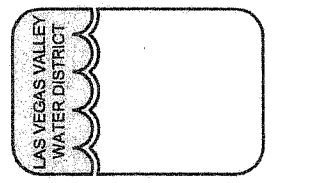
EQUIPMENT/DEVICE SYMBOLS

- CENTRIFUGAL PUMP
- CHEMICAL FEED PUMP
- EXISTING CHEMICAL FEED PUMP
- POSITIVE DISPLACEMENT PUMP
- PUMP - AS DEFINED
- PUMP - VERTICAL TURBINE
- MIXER - PROPELLER TYPE
- TANK - AS DEFINED
- TANK - ABOVE GROUND STORAGE
- INJECTION TAP

VALVE SYMBOLS

- GATE VALVE
- SWING CHECK VALVE
- GLOBE VALVE
- BUTTERFLY VALVE
- ROTARY VALVE
- BALL VALVE
- PLUG VALVE
- DIAPHRAGM VALVE
- MOTOR OPERATED VALVE
- SOLENOID VALVE - 2 WAY
- SOLENOID VALVE - 3 WAY
- PRESSURE REGULATING VALVE SELF-CONTAINED
- CYLINDER OPERATED VALVE PNEUMATIC/HYDRAULIC, AS SHOWN
- BACK PRESSURE VALVE (EXTERNAL TAP)
- PRESSURE RELIEF VALVE

LAS VEGAS VALLEY WATER DISTRICT
 1001 S. VALLEY VIEW BOULEVARD
 LAS VEGAS, NEVADA 89163
 (702) 870-2011



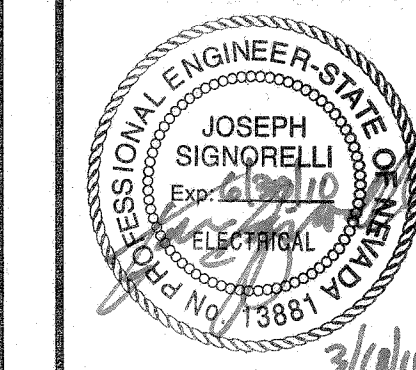
VERIFY SCALE
 1/2" = 0' 1/2"
 BAR REPRESENTS ONE AND ONE-HALF INCHES ON ORIGINAL

CHEYENNE 2975 ZONE MOTOR OPERATIONAL VALVES

INSTRUMENTATION ABBREVIATIONS, SYMBOLS, LEGEND AND GENERAL NOTES

SCALE	NOT TO SCALE

DRAWN BY: J. LISHNEVSKY
 CHECKED BY: J. SIGNORELLI
 RECOMMENDED BY: RYAN PEARSON
 ACCEPTED BY: PETER J. JAUCH



CONTRACT NUMBER
C1280
 DRAWING NUMBER 11
 SHEET 20 OF 22

H#36700 CLV DWG # 565-476

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