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### VALVE AND FITTING SYMBOLS

SYMBOL	FEATURE
	IPS EXPANSION JOINT COUPLING
	FLOW METER
	TELESCOPING VALVE
	VALVE WITH HOSE END
	GATE VALVE
	KNIFE GATE VALVE
	GLOBE VALVE
	BALL VALVE
	3-WAY BALL VALVE
	4-WAY BALL VALVE
	CONE VALVE
	NEEDLE VALVE
	PINCH VALVE
	DIAPHRAGM VALVE
	BUTTERFLY VALVE
	PLUG VALVE
	3-WAY PLUG VALVE
	4-WAY PLUG VALVE
	CHECK VALVE, GENERAL SYMBOL
	BALL CHECK VALVE
	DOUBLE DOOR CHECK VALVE
	ANGLE VALVE
	SOLENOID VALVE
	THREE WAY SOLENOID VALVE
	FOUR WAY SOLENOID VALVE
	MOTOR OPERATED VALVE
	MUD VALVE
	FLOOR DRAIN
	OPEN EQUIPMENT DRAIN
	ECCENTRIC REDUCER OR REDUCING BUSHING
	CONCENTRIC REDUCER OR REDUCING BUSHING
	Y-STRAINER
	BASKET STRAINER
	CALIBRATION CYLINDER
	AIR RELEASE VALVE
	MOTOR OPERATED
	FLAP VALVE

**NOTE:**  
SEE SHEET G-4 FOR ADDITIONAL SYMBOLS AND ABBREVIATIONS

### PIPING SYMBOLS

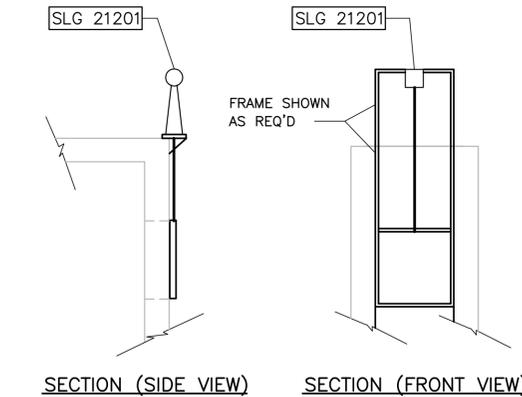
DOUBLE LINE SYMBOL 10" DIA. AND LARGER	SINGLE LINE SYMBOL SMALLER THAN 10" DIA.	FEATURE
		PLAIN END x PLAIN END PIPE COUPLING
		PLAIN END x PLAIN END PIPE COUPLING RESTRAINED
		RESTRAINED PIPE COUPLING FOR FLANGED PIPE
		RESTRAINED FLANGED COUPLING ADAPTER
		FLEXIBLE COUPLING OR EXPANSION JOINT (SLEEVE TYPE)
		FLEXIBLE COUPLING OR EXPANSION JOINT (BELLOWS TYPE)
		SPLIT RING COUPLING FOR GROOVED END JOINTS: (F) FLEXIBLE (R) RIGID (FLEXIBLE IF NO SYMBOL SHOWN)
		FLANGE GUARD
		FLANGE FILLER
		UNION
		QUICK CONNECT COUPLING
		HOSE COUPLING
		WELDED JOINT
		FLANGED JOINT SIMPLIFIED REPRESENTATION.
		FLANGED JOINT COMPLEX REPRESENTATION.
		MECHANICAL JOINT SIMPLIFIED REPRESENTATION.
		MECHANICAL JOINT COMPLEX REPRESENTATION.
		MECHANICAL JOINT RESTRAINED
		PUSH ON JOINT OR CAULKED BELL & SPIGOT JOINT SIMPLIFIED REPRESENTATION
		PUSH ON JOINT OR CAULKED BELL & SPIGOT JOINT COMPLEX REPRESENTATION
		PUSH ON JOINT OR CAULKED BELL & SPIGOT JOINT RESTRAINED
		BALL JOINT
		PIPE LINE W/ DIRECTION OF FLOW
		CHANGE IN PIPING MATERIAL
		PIPE DOWN
		PIPE UP

SEE NOTE 2

### GATE SYMBOLS

PLAN	FEATURE
	SLUICE GATE (SG)
	SLIDE GATE (SLG)
	WEIR SLIDE GATE (WSLG)
	STOP PLATE (SP)
	SLUICE GATE (SG)
	SLIDE GATE (SLG)
	WEIR SLIDE GATE (WSLG)

#### SECTION (OPERATOR ONLY)



#### PIPE AND FITTING SYMBOL NOTES

- SIMPLIFIED JOINT SYMBOL IS USED FOR ALL SINGLE LINE PIPING SHOWN ON THE INTERIOR AND EXTERIOR PIPING DRAWINGS.
- BOTH SIMPLIFIED AND COMPLEX JOINT REPRESENTATIONS MAY BE SHOWN ON THE DRAWINGS.
- UNLESS MODIFIED BY THE GENERAL PROJECT NOTES OR DETAILED ON THE DRAWINGS, PIPE AND FITTING JOINT REQUIREMENTS FOR THE VARIOUS PIPE MATERIALS ARE DEFINED IN THE SPECIFICATIONS.

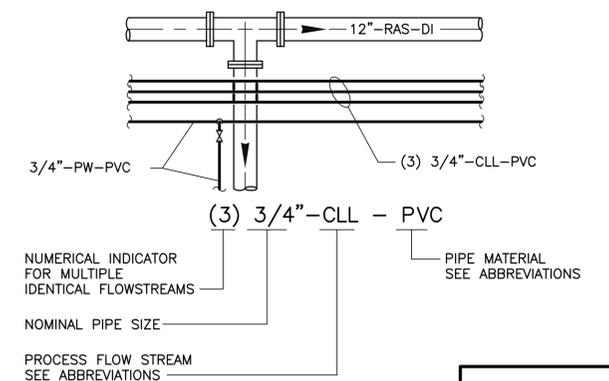
### ABBREVIATIONS

PIPING MATERIALS		PROCESS FLOW STREAM	
BSP	BLACK STEEL PIPE	NG	NATURAL GAS
CI	CAST IRON	OVF	OVERFLOW
CISP	CAST IRON SOIL PIPE	PE	PRIMARY EFFLUENT
CMP	CORRUGATED METAL PIPE	1W/POT	POTABLE WATER
CS	CARBON STEEL	PSC	PRIMARY SCUM
CU	COPPER PIPE	3W/PW	PLANT WATER (NON-POTABLE)
DI	DUCTILE IRON	RAS	RETURN ACTIVATED SLUDGE
FRP	FIBERGLASS REINFORCED PLASTIC	RE	REUSE EFFLUENT
		RS	RAW SEWAGE
		SC	SCUM
		SEP	SEPTAGE
		SN	SUPERNATANT, SUBNATANT
		SS	SANITARY SEWER
		SW	STORM WATER
		TD	TANK DRAIN
		WAS	WASTE ACTIVATED SLUDGE
		WAW	WASH WATER
		2W	NON-POTABLE CITY WATER

VALVE NOMENCLATURE	
BCV	BALL CHECK VALVE
BFV	BUTTERFLY VALVE
BPRV	BACK PRESSURE REGULATING VALVE
BV	BALL VALVE
COMP JT	COMPRESSION JOINT
CV	CHECK VALVE (AIR CUSHION)
EXP JT	EXPANSION JOINT
FAC	FLANGED ADAPTOR COUPLING
FH	FIRE HYDRANT
FS	FLOOR STAND
GOV	GLOBE VALVE
GV	GATE VALVE
HFAC	HARNESSED FLANGED ADAPTOR COUPLING
KGV	KNIFE GATE VALVE
MJ	MECHANICAL JOINT
MV	MUD VALVE
PBAV	PLASTIC BALL VALVE
PCV	PRESSURE CONTROL VALVE

#### PIPE TAG



#### NOTES:

- THIS IS A STANDARD DRAWING AND NOT ALL ITEMS SHOWN MAY BE USED IN THIS CONTRACT.
- SEE ALSO DISCIPLINE SECTIONS FOR ADDITIONAL ABBREVIATIONS.



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CITY OF WICHITA, KANSAS  
 WATER AND SEWER DEPARTMENT  
**SEWAGE TREATMENT PLANT NO.2 IMPROVMENTS  
 UV DISINFECTION**

**MECHANICAL PROCESS  
 ABBREVIATIONS, SYMBOLS AND LEGENDS**

PROJECT NO. 2395-104609
FILE NAME: GNPL004
SHEET NO. <b>G-4</b>