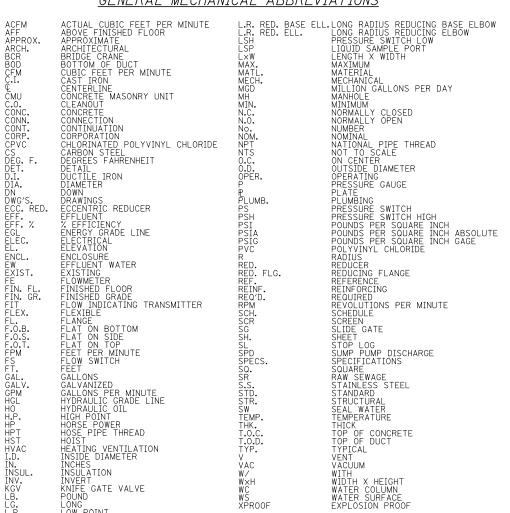
GENERAL MECHANICAL ABBREVIATIONS



NOTES:

- 1. THIS IS A GENERAL LEGEND PROVIDED TO FACILITATE USE OF THE PLANS. REFER TO THE PLANS AND SPECIFICATIONS FOR ITEMS REQUIRED.
- VALVES AND PIPE FITTINGS ARE SHOWN WITH FLANGED JOINTS, OTHER JOINTS ARE SHOWN AS REQUIRED ON MECHANICAL DRAWINGS.
- 3. ALL SYMBOLS AND APPREVIATIONS SHOWN ON THIS SHEET MAY NOT APPEAR ON THIS SET OF DRAWINGS.

PIPE FITTINGS PIPE FITTINGS DESCRIPTION SYMBOL DESCRIPTION CROSS SLEEVE TYPE COUPLING (HARNESSED) $\pm(0)$ EXPANSION JOINT CROSS (BRANCH UP) RUBBER BELLOWS TYPE FLOW METER TEE STRAINER $\pm(0)$ TEE (BRANCH UP) DUPLEX STRAINER TEE (BRANCH DOWN) VENT #(0)# SIDE OUTLET TEE (UP) THERMOSTAT (TEMP. REGULATOR) SIDE OUTLET TEE PRESSURE GAUGE (DOWN) LATERAL OR WYE THERMOMETER WATER LEVEL ALARM (HWL OR LWL) 90° BEND # PIPE CAP (SCREWED) 90° BEND (UP) DIRECTION OF FLOW 90° BEND (DOWN) 90° BEND (LONG RADIUS) 45° BEND

1

===

₩

45° BEND (UP)

45° BEND (DOWN)

45° BEND

(LONG RADIUS)

BLIND FLANGE (TEE BRANCH LIP)

BASE ELBOW

BLIND FLANGE

FILLING RING

REDUCER - ECCENTRIC

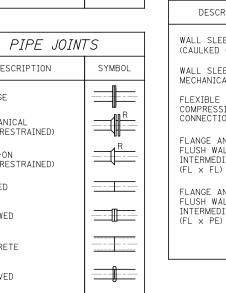
SLEEVE TYPE COUPLING

REDUCER

SIDE OUTLET ELBOW

SIDE OUTLET ELBOW (DOWN)

'GS	VALVE SYMBOLS		
SYMBOL	DESCRIPTION	SYMBOL	
	GATE VALVE		
	KNIFE GATE VALVE		
	CHECK (SWING)		
	BALL		
181	AUTO AIR/VACUUM RELEASE	<u></u>	
	HOSE		
<u> </u>	STOP AND DRAIN		
Ø	DRAIN VALVE ON MAIN VALVE BODY		
	VALVE MOTOR OPERATED		
	VALVE HANDWHEEL OPERATED		



WALL FITTINGS				
DESCRIPTION	SYMBOL			
WALL SLEEVE (CAULKED OR GROUTED)				
WALL SLEEVE WITH MECHANICAL LINK SEAL				
FLEXIBLE RESILIENT COMPRESSION CONNECTION				
FLANGE AND FLANGE FLUSH WALL PIPE WITH INTERMEDIATE COLLAR (FL x FL)				
FLANGE AND PLAIN END FLUSH WALL PIPE WITH INTERMEDIATE COLLAR (FL × PE)				

DESCRIPTION FLANGE MECHANICAL (R = RESTRAINED) (R = RESTRAINED) WELDED SCREWED CONCRETE GROOVED

OTHER SYMBOLS				
DESCRIPTION	SYMBOL			
WATER SURFACE	<u>~</u>			

GENERAL MECHANICAL NOTES

LOW POINT LONG RADIUS ELBOW

GATE VALVE

- 1. REFER TO ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR HATCH AND GRATING DETAILS.
- 2. CONTRACTOR TO PROVIDE A LAYOUT DRAWING SHOWING ALL PIPING, SUPPORTS, AND APPURTANENCES.
- 3. ALL DIMENSIONS LOCATING EQUIPMENT ARE FROM FINISHED WALL SURFACES OR CENTERLINES, AS INDICATED.
- 4. SEE CIVIL DRAWINGS FOR CONTINUATION OF PIPING OUTSIDE STRUCTURES.
- 5. ALL PIPE PENETRATIONS THROUGH INTERIOR AND EXTERIOR WALLS AND FLOORS SHALL BE SEALED WATERTIGHT.
- 6. SLEEVE COUPLINGS MAY BE USED WHERE NECESSARY, AND AS APPROVED BY THE ENGINEER, TO FACILITATE PIPING INSTALLATION.
- 7. FOR FLANGED SYSTEMS PROVIDE FLEXIBLE CONNECTORS WHERE NECESSARY, AND AS APPROVED BY THE ENGINEER, TO FACILITATE PIPING INSTALLATION AND VALVE AND FOUTPMENT REMOVAL.
- 8. ALL FLEXIBLE CONNECTORS, EXPANSION JOINTS, AND SLEEVE COUPLINGS SUBJECT TO PRESSURE SHALL BE RESTRAINED AS REQUIRED FOR EXPANSION AND FOR FLEXIBILITY.
- 9. THE CONTRACTOR SHALL MAKE ALL REQUIRED FIELD MEASUREMENTS TO VERIFY EXISTING AND CONTRACT INTERFACE DIMENSIONS, LOCATIONS, AND OTHER CONDITIONS.
- 10. THE PLANS ARE GENERALLY DIAGRAMMIC IN NATURE. ROUTING OF PIPING, DUCKWORK, CONDUITS, ETC., AS SHOWN ON THE DRAWINGS, DOES NOT INTEND TO SHOW EVERY RISE, DROP, OFFSET, FITTING, OR STRUCTURAL ELEMENT THAT MAY BE REQUIRED. THE CONTRACTOR SHALL VERIFY EXACT PLACEMENT OF ALL DEVICES AND EQUIPMENT WITH FIELD CONDITIONS AND APPROVED SHOP DRAWINGS.
- 11. THE DRAWINGS, SCHEDULES, AND SPECIFICATIONS HAVE BEEN PREPARED USING SPECIFIC MANUFACTURERS FOR THE BASIS OF DIMENSIONAL DESIGN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CHECKING ALL OF THE EQUIPMENT DIMENSIONS TO ENSURE THAT ALL COMPONENTS WILL FIT INTO THE DESIGNATED SPACES INDICATED ON THE DRAWINGS. MINOR DEVIATIONS IN DIMENSIONS WILL BE PERMITTED AT THE ENGINEER'S DISCRETION, PROVIDED THAT THE EQUIPMENT MEETS THE SPECIFIED RATINGS AND FITS INTO THE ALLOCATED SPACES WITH SUITABLE CLEARANCE FOR ACCESS. THE CONTRACTOR SHALL PROVIDE ALL ALTERATIONS REQUIRED TO ACCOMMODATE SUCH EQUIPMENT AT NO ADDTIONAL COST TO THE OWNER.
- 12. PIPE SUPPORTS FOR PIPES LESS THAN 8-INCHES IN DIAMETER ARE NOT SHOWN ON THESE PLANS FOR CLARITY, THE CONTRACTOR SHALL PROVIDE ALL NECESSARY PIPE SUPPORT SYSTEMS WITH SUITABLE SPACING AS REQUIRED BY THE PROJECT SPECIAL PROVISIONS.
- 13. ALL MECHANICAL AND ELECTRICAL ITEMS INSTALLED IN THE PUMP STATION WET WELL AND DRY WELL AREAS SHALL BE SUITABLE FOR CLASS 1, DIVISION II, GROUP D, EXPLOSION PROOF; AS CLASSIFIED BY THE NATIONAL ELECTRIC CODE (NEC) FOR HAZARDOUS LOCATIONS.

McDonough Associates Inc. **Engineers/Architects**

	DESIGNED DF	REVISED -
	CHECKED APF	REVISED -
SCALE	DRAWN DF	REVISED -
DATE 03/22/2012	CHECKED APF	REVISED -

STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION

MECHANICAL SYMBOLS AND NOTES				
PUMP STATION 47				

A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
8/IL 59	2011-035-I	DUPAGE	181	110
		CONTRACT	NO. 6	0P41
	TILITMOTS EED AT	ID PROJECT		