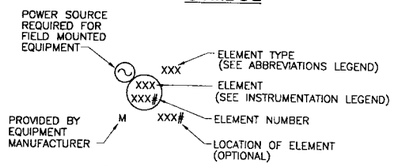
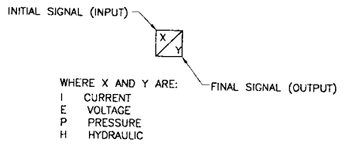
INSTRUMENTATION SYMBOL LEGEND

PROPOSED	DESCRIPTION	EXISTING	DESCRIPTION
	PROCESS FLOW		
	ELECTRICAL POWER OR PROCESS CONNECTION		ELECTRICAL POWER OR PROCESS CONNECTION
	ELECTRICAL SIGNAL		ELECTRICAL SIGNAL
	DATA LINK		DATA LINK
I/O	PLC INPUT/OUTPUT	I/O	PLC INPUT/OUTPUT
//	PNEUMATIC SIGNAL	//	PNEUMATIC SIGNAL
	HYDRAULIC SIGNAL		HYDRAULIC SIGNAL
I/O	DISCRETE OUTPUT SIGNAL	I/O	DISCRETE OUTPUT SIGNAL
I/O	ANALOG OUTPUT SIGNAL	I/O	ANALOG OUTPUT SIGNAL
I/O	DISCRETE INPUT SIGNAL	I/O	DISCRETE INPUT SIGNAL
I/O	ANALOG INPUT SIGNAL	I/O	ANALOG INPUT SIGNAL
I XX#	INTERLOCK (INTERLOCK I.D. NUMBER)	I XX#	INTERLOCK (INTERLOCK I.D. NUMBER)
	PROGRAMMABLE LOGIC CONTROLLER		PROGRAMMABLE LOGIC CONTROLLER
	OPERATOR TERMINAL INTERFACE		OPERATOR TERMINAL INTERFACE
	CONTROLLER		CONTROLLER
	LOCAL(FIELD MOUNTED)		LOCAL(FIELD MOUNTED)
	FRONT PANEL MOUNTED		FRONT PANEL MOUNTED
	REAR PANEL MOUNTED		REAR PANEL MOUNTED
	INTEGRAL EQUIPMENT		INTEGRAL EQUIPMENT
X Y	SIGNAL SPLITTER CONVERTER/ BOOSTER (SEE BELOW)	X Y	SIGNAL SPLITTER CONVERTER/ BOOSTER (SEE BELOW)
M	MOTOR	M	MOTOR
	ALARM/ STATUS LIGHT		ALARM/ STATUS LIGHT

TYPICAL INSTRUMENTATION SYMBOL



TYPICAL SIGNAL CONVERTER SYMBOL



INSTRUMENTATION LEGEND

FIRST LETTER		SUCCEEDING LETTER	
1		2	3
A	ANALYSIS	ALARM	--
B	--	--	--
C	CONTROL	CONTROL	CONTROL
D	DIFFERENTIAL*	DETECT	--
E	--	ELEMENT	--
F	FLOW	--	--
G	GAS	GLASS	GLASS
H	HAND (MANUAL)	--	HIGH**
I	CURRENT	INDICATE	INDICATE
J	POWER	--	--
K	TIME*	--	--
L	LEVEL	LIGHT	LOW**
M	MOTOR	--	INTERMEDIATE
P	PRESSURE	--	--
Q	QUANTITY OR TOTALIZE*	QUANTITY	--
R	RADIATION	RECORD	RECORD
S	SPEED OR FREQUENCY	SWITCH	SIGNAL
T	TEMPERATURE	TRANSMIT	TRANSMIT
V	VACUUM	VALVE	VALVE
W	TORQUE, WEIGHT, FORCE	--	--
X	--	--	--
Y	STATUS	RELAY, COMPUTE, OR CONVERT	RELAY, COMPUTE, OR CONVERT
Z	POSITION	--	--

* ALSO USED AS A MODIFIER AFTER FIRST LETTER (i.e. PDIT: PRESSURE DIFFERENTIAL INDICATING TRANSMITTER)

** ALSO USED AS A MODIFIER AFTER LAST LETTER (i.e. LSHH: LEVEL SWITCH HIGH HIGH)

ABBREVIATIONS LEGEND

ADM	ADMITTANCE
CAP	CAPACITANCE
CL	CHLORINE
CP	CONTROL PANEL
DO	DISSOLVED OXYGEN
ESTOP	EMERGENCY STOP
EF	EXHAUST FAN
FOR	FORWARD-OFF-REVERSE
FSR	FORWARD-STOP-REVERSE
FRSA	FORWARD-STOP-REVERSE-AUTO
HIM	HAND INTERFACE MODULE (VFD)
HOA	HAND-OFF-AUTO
HS	HAND SWITCH
I	CURRENT
INF	INFLUENT
LCS	LOCAL CONTROL STATION
LOE	LOSS OF ECHO
LOR	LOCAL-OFF-REMOTE
MCC	MOTOR CONTROL CENTER
MS	MOTOR STARTER
MTP	MASTER TELEMETRY PANEL
NOT	NORMAL-OFF-TEST
OCR	OPEN-CLOSE-REMOTE
OCS	OPEN-CLOSE-STOP
OPT	OPERATOR TERMINAL
PCP	PUMP CONTROL PANEL
PLC	PROGRAMMABLE LOGIC CONTROLLER
RESET	ALARM RESET
ROL	RAISE OFF LOWER
ROR	RUN-OFF-REMOTE
SCR	SPEED CONTROL RECTIFIER
TURB	TURBIDITY
ULT	ULTRASONIC
VFD	VARIABLE FREQUENCY DRIVE

EQUIPMENT SYMBOL LEGEND

PROPOSED	DESCRIPTION
	PUMP
	SUBMERSIBLE LEVEL TRANSDUCER
	MAGNETIC FLOW METER
	FLOAT SWITCH
	ULTRASONIC TRANSDUCER
	CHECK VALVE
	HORN

CONTROL LOOPS

LOOP NO.	DESCRIPTION
10	HIGH HEADWORKS CHANNEL LEVEL
30	WET WELL NO. 1 LEVEL CONTROL
31	PUMP NO. 1 CONTROL
32	PUMP NO. 2 CONTROL
33	WET WELL NO. 2 LEVEL CONTROL
34	PUMP NO. 3 CONTROL
35	PUMP NO. 4 CONTROL
36	STATION MONITORING
40	EFFLUENT FLOW WET WELL PUMP DISCHARGE
55	LOW SEAL WATER PRESSURE

NOTES:

1. REFER TO ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION.
2. PROVIDE SIGNAL REPEATERS/CONVERTERS/BOOSTERS AS REQUIRED BASED UPON EQUIPMENT SELECTED BY INSTRUMENTATION SUPPLIER, DISTANCE AND LOCATION.
3. PROVIDE DRIP SHIELDS TO PROTECT ALL PANELS LOCATED UNDERNEATH PIPES OR OTHER LIQUID-CONTAINING STRUCTURES.
4. REFERENCE PROCESS AND ELECTRICAL DRAWINGS FOR LOCATION OF PANELS AND FIELD INSTRUMENTATION.
5. REFER TO SPECIFICATION SECTION 13440 AND 13442 FOR ADDITIONAL INFORMATION REGARDING INSTRUMENTATION.
6. THE ELECTRICAL CONTRACTOR WILL PROVIDE AND INSTALL 10% SPARE INSTRUMENTATION WIRES WITH A LIMIT OF TWO SPARES PER CONDUIT UP TO THE LIMIT OF CONDUIT FILL AS SPECIFIED BY NEC.
7. INSTRUMENTATION CONTRACTOR TO COORDINATE NEEDED VOLTAGE BASED UPON EQUIPMENT SUPPLIED.
8. ALL FLOOR MOUNTED CONTROL PANELS SHALL BE INSTALLED ON 4" HIGH CONCRETE EQUIPMENT PADS.
9. WHERE INPUT AND OUTPUT SIGNALS TO A PLC IS REQUIRED, PROVIDE PROPER TYPE AND QUANTITY OF INPUT/OUTPUT MODULES (I/O).
10. INSTRUMENTATION CONTRACTOR SHALL COORDINATE THE TYPE OF ANALOG SIGNAL PROVIDED BY THE EQUIPMENT OR FIELD DEVICES WITH THE PROPER TYPE PLC I/O.
11. ALL ANALOG SIGNALS WILL BE 4-20mA, UNLESS OTHERWISE INDICATED OR REQUIRED.
12. FOR CONTROL PANEL REQUIREMENTS, INCLUDING SIZING PROVISIONS AND MINIMUM AND MAXIMUM HEIGHT CONSTRAINTS ON CONTROL DEVICES, REFER TO SPECIFICATIONS 13440 AND 16160.
13. INSTRUMENTATION SUPPLIER SHALL RECEIVE TERMINAL CONNECTION DIAGRAMS FROM ELECTRICAL SUBCONTRACTOR PERTAINING TO TERMINATIONS IN MCC, LOCAL CONTROL STATIONS AND ALL EQUIPMENT SUPPLIED BY ELECTRICAL SUBCONTRATOR.
14. INSTRUMENTATION SUPPLIER SHALL PROVIDE POINT TO POINT WIRING SCHEMATICS TO ELECTRICAL SUBCONTRACTOR TO ALLOW COMPLETION OF ALL CONTROL WIRING BETWEEN DEVICES, CONTROL PANELS AND ALL EQUIPMENT PROVIDED BY INSTRUMENTATION SUPPLIER AND EQUIPMENT PROVIDED BY ELECTRICAL SUBCONTRACTOR.

NO | RECORD DRAWINGS 12/04 | BY | DATE | PROGRESS PRINTS
1 | ISSUED FOR REVIEW 12-4-03
2 | ISSUED FOR BIDDING 2-4-04
3 | ADD LOCATION ASE WORKED ON

DRAWN BY SJM
CHECKED BY SDH
DATE 12-19-02
APPROVED BY SJH
AS-BUILT 5-31-03
BOOK NO
PROJECT NO 7051K
SCALE AS NOTED
FILENAME

Wright-Pierce
99 Main Street 700 Plaza Middlesex
Middletown, Connecticut USA 06457
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DEPARTMENT OF PUBLIC WORKS
TOWN OF EAST LONGMEADOW, MA
VINELAND AVENUE PUMP STATION
CONTRACTS NO. 1 AND NO. 2

INSTRUMENTATION
NOTES, ABBREVIATIONS AND LEGEND

DWG I-1
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