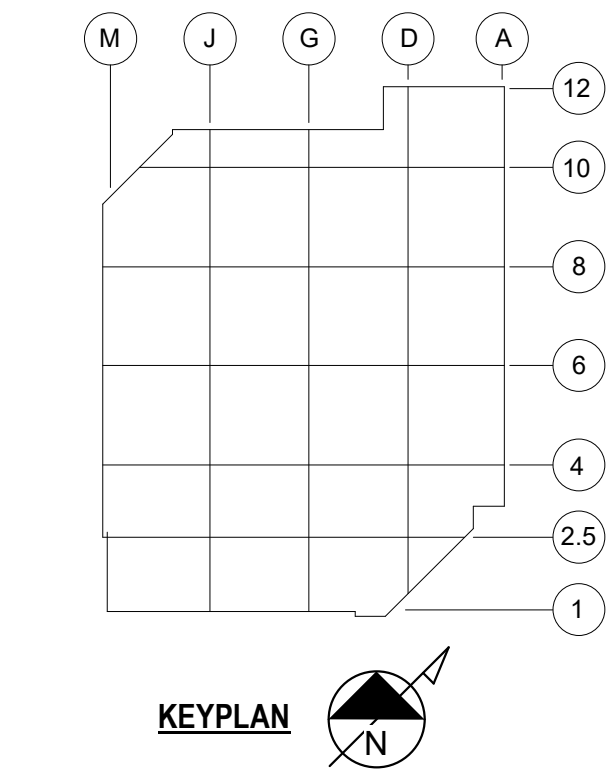


PROJECT LOCATION

6701 EVANSTAD DR N
MAPLE GROVE, MN 55369



CLIENT

UPSHER-SMITH

Partners in Health Since 1919

CONSULTING ENGINEER

Horwitz

7400 49th AVENUE NORTH
NEW HOPE, MN 55428
(763) 533-1900
www.horwitzinc.com

PROJECT TITLE

PROJECT KEystone - PHASE 1

REV	BY	DATE	DESCRIPTION
0	RS	05/25/22	AS RECORDED

LICENSEE

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

Date 05/25/22 LIC NO

CONFIDENTIAL - THIS DRAWING IS THE PROPERTY OF UPSHER-SMITH. THE INFORMATION CONTAINED HEREIN MAY NOT BE USED OR COPIED IN ANY MANNER WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PROJ. NO.	2022.1720	DESIGNED BY:	Designer
SCALE:		CHECKED BY:	Checker
SHEET SIZE:	30x42	APPROVED BY:	Approver

DRAWING TITLE

**DOWNFLOW BOOTH VENDOR P&ID
SHEET 1**

DRAWING NUMBER

PID-1010.1

Copyright 2022 by UPSHER-SMITH, INC. All Rights Reserved. 05/25/22

INSTRUMENT LETTER IDENTIFICATION

FIRST-LETTER		SUCCEEDING LETTERS		
MEASURED VARIABLE	MODIFIER	PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A ANALYZER		ALARM	USER'S CHOICE	USER'S CHOICE
B BURNER		CHOICE	CHOICE	CHOICE
C CHOICE	CONTROL		CONTROL	CLOSE
D CHOICE	DIFFERENTIAL	PRIMARY ELEMENT		
E VOLTAGE				
F FLOW	RATIO			
G CHOICE		GLASS	GENERATOR	
H HAND				HIGH
I CURRENT		INDICATE		
J POWER	SCAN		CONTROL STATION	
K TIME				
L LEVEL		LIGHT		LOW
M HUMIDITY	MOMENTARY	USER'S CHOICE	USER'S CHOICE	MEDIUM
N CHOICE		CHOICE	CHOICE	CHOICE
O CHOICE		ORifice TEST		OPEN
P PRESSURE		ORifice CONNECTION		
Q QUANTITY	INTEGRATE/TOTALIZE			
R RADIATION	RELIEF	RECORD		
S SPEED	SAFETY		SWITCH	
T TEMPERATURE			TRANSMIT	
U MULTI-VARIABLE		MULTI-FUNCTION	MULTI-FUNCTION	MULTI-FUNCTION
V VIBRATION			DAMPER	
W FORCE		WELL		
X UNCLASSIFIED	X-AXIS	UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED
Y STATE	Y-AXIS		COMPUTE	
Z POSITION	Z-AXIS		UNCLASSIFIED CONTROL ELEMENT	

INSTRUMENT SYMBOL IDENTIFICATION

INSTRUMENT FUNCTION (SEE ABOVE TABLE)

EQUIPMENT TAG (SCRIPT. TAG FORMAT)

INSTRUMENT SEQ. #

THE LOOP NUMBER

1101 IS THE COMPLETE LOOP NUMBER ABOVE

NOTE: TABLE IS BASED ON ANSI/ISA-5.1 - 1984 (R1992).

PT 0101

#

MAY INDICATE QUANTITY (APPLICABLE), TYPE OF DEVICE, SETTINGS OR OTHER SUPPLEMENTARY DATA

MODIFIER SUFFIX IS REDUNDANT AND SHOULD BE DELETED FROM COMMON LOOP.

REDUNDANT/MULTIPLE SUFFIX RULES:

1. UTILIZE SEQUENTIAL NON-HYPHENATED ALPHABETICS FOR REDUNDANT

2. FOR MULTIPLE ITEMS OF SAME TYPE, EMPLOY A SEQUENTIAL, HYPHENATED NUMERIC SUFFIX

INSTRUMENT SYMBOLS

LOCALLY MOUNTED (FIELD)

FRONT OF PANEL MOUNTED

BACK OF PANEL MOUNTED INACCESSIBLE

SHARED DISPLAY NORMALLY ACCESSIBLE OPERATOR

SHARED DISPLAY NORMALLY ACCESSIBLE OPERATOR

SHARED DISPLAY NORMALLY ACCESSIBLE OPERATOR

SHARED DISPLAY LOCATION

PLC / MCU FUNCTION

INSTRUMENT HOUSING

PILOT LIGHT

HOST COMPUTER NORMALLY ACCESSIBLE OPERATOR

HOST COMPUTER NORMALLY ACCESSIBLE OPERATOR

DIGITAL INPUT SIGNAL

DIGITAL OUTPUT SIGNAL

ANALOG INPUT SIGNAL

ANALOG OUTPUT SIGNAL

INSTRUMENT ABBREVIATIONS

AS — AIR SOURCE

AI — ANALOG INPUT

AO — ANALOG OUTPUT

CB — BREACH CONTROLLER

CO — OUTPUT

DI — DIGITAL INPUT

DO — DIGITAL OUTPUT

DP — PROFIBUS COMMUNICATIONS

FC — CLOSED FAIL

FI — INDETERMINATE FAIL

FO — OPEN FAIL

CC — CATALYTIC CONVERTER

FLP — FAIL LAST POSITION

HPV — HYDROGEN PEROXIDE (H2O2) VAPOR

MCU — MICROPROCESSOR UNIT CONTROLLER

NC — NORMALLY CLOSE

NO — NORMALLY OPEN

PLC — PROGRAMMABLE LOGIC CONTROLLER

PN — PROFINET

PV — PROCESS VARIABLE

SP — SETPOINT

REV — REVERSE-ACTING

IAR — INSTRUMENTATION AIR SOURCE

VALVE SYMBOLS

BALL

BUTTERFLY

CHECK, GENERAL

CHECK, SPLIT DISK

DIAPHRAGM

GATE, GENERIC

GLOBE

KNIFE GATE

NEEDLE

PINCH

PLUG

ANGLE

THREE-WAY

PRESSURE RELIEF

PRESSURE REDUCING

PRESSURE VACUUM VENT

LINE SYMBOLS

WATER AND DRAIN LINES

AIR, GAS AND PNEUMATIC LINES

FLEXIBLE CONNECTION LINES

INSTRUMENTATION SIGNAL LINES

ELECTRICAL SIGNAL

CAPILLARY TUBING

SOFTWARE OR DATA LINK

MECHANICAL LINK

PNEUMATIC SIGNAL

HYDRAULIC SIGNAL

GUIDED WAVE

UNGUIDED WAVE

CONTROL ACTUATORS

PISTON RETURN

PISTON

ELECTRIC MOTOR

SOLENOID

HAND/MANUAL

DIAPHRAGM

CONNECTIONS

CONNECTION JOINTS (GENERAL)

UNION (CAM BUSH, CLOVER, ETC.)

PUSH-IN

QUICK-RELEASE W/ VALVE

QUICK-RELEASE W/O VALVE

BARBED CONNECTOR

EQPT. & SPECIALTY ITEM SYMBOLS

HEPA FILTER

G4 COARSE FILTER

FINE DUST FILTER

LIGHT

FAN BLOWER

HEAT EXCHANGER