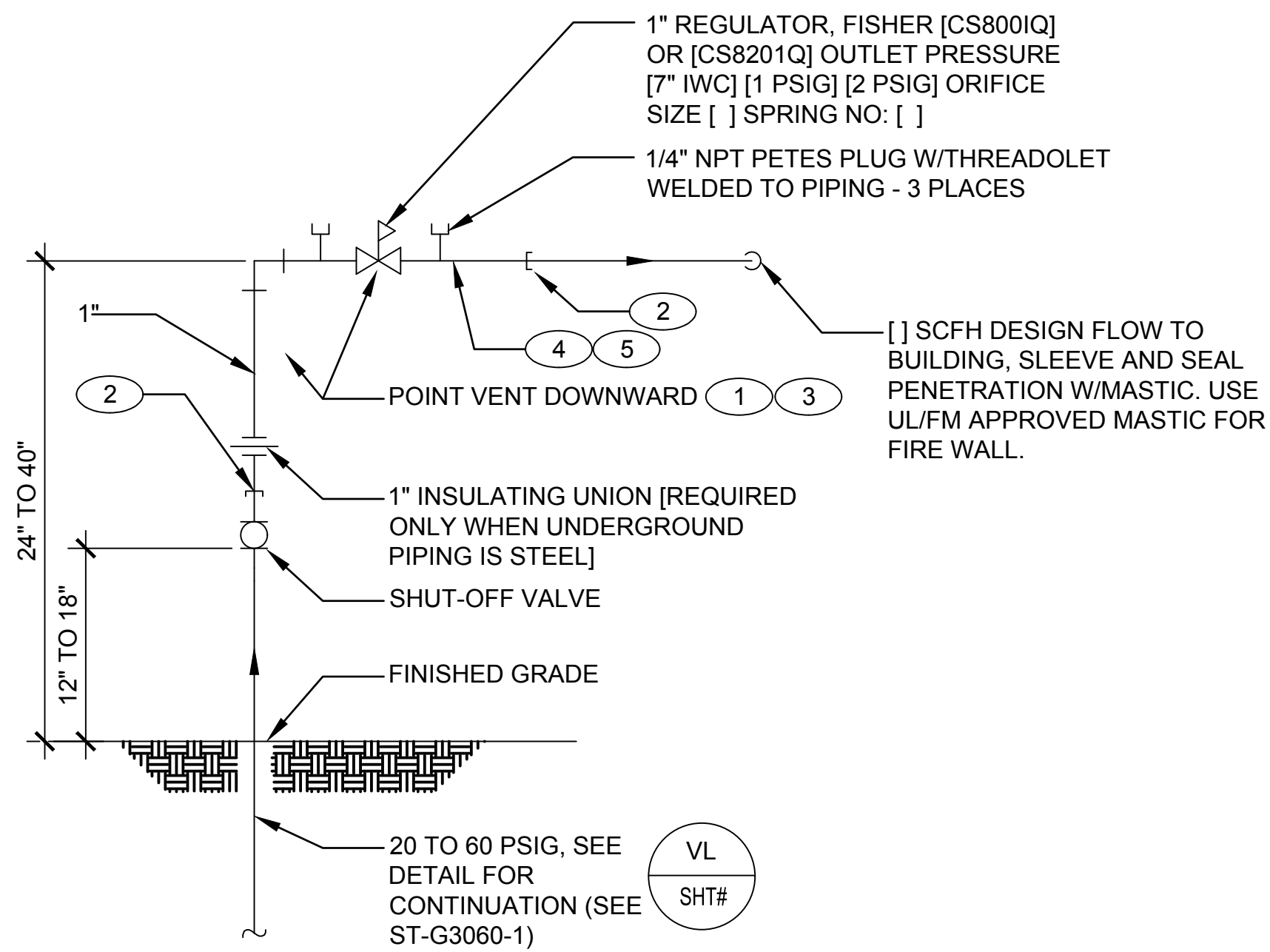


**GENERAL NOTES:**

- 1. IF THIS SHEET IS NOT 24"x36" USE GRAPHIC SCALE ACCORDINGLY.

**KEYED NOTES:**

- 1 LANL's MSS U&I WILL INSTALL AND ADJUST PRESSURE OF GAS REGULATORS.
- 2 SUBCONTRACTOR SHALL TERMINATE PIPING WITH A THREADED CAP OR PLUG AND ALLOW SUFFICIENT HORIZONTAL SPACE, 5 TO 10 FEET, BETWEEN TERMINATION POINTS FOR INSTALLATION OF REGULATOR STATION
- 3 LOCATE REGULATORS NOT CLOSER THAN 10 FEET HORIZONTALLY FROM INTAKE AIR DEVICES (LOUVERS, FANS, ETC...)
- 4 BOND ABOVE GROUND PIPING TO ELECTRICAL GROUNDING SYSTEM. BOND TO GAS PIPING AT SUITABLE LOCATION DOWNSTREAM OF LOW PRESSURE REGULATOR AND UPSTREAM OF GAS APPLIANCE SHUT-OFF VALVE. COMPLY WITH NEC
- 5 BOND GAS PIPING LOCATED WITHIN 6 FEET OF A LIGHTNING PROTECTION CONDUCTOR TO THE CONDUCTOR PER NFPA 780. BOND TO GAS PIPING AT SUITABLE EXTERIOR LOCATION DOWN-STREAM OF LOW PRESSURE REGULATOR.



OUTLET PRESSURE	REGULATOR MAX. CAPACITY (SCFH) AT 0.6 S.G.	ORIFICE SIZE	SPRING NUMBER
<b>FISHER REGULATOR CS800IQ (DUCTILE IRON) (CAPACITIES BASED ON 20 PSIG INLET PRESSURE)</b>			
7 IWC	2130 4230	1/4 3/8	GE30338X012 (BLACK)

OUTLET PRESSURE	REGULATOR MAX. CAPACITY (SCFH) AT 0.6 S.G.	ORIFICE SIZE	SPRING NUMBER
<b>FISHER REGULATOR CS820IQ (DUCTILE IRON) (CAPACITIES BASED ON 20 PSIG INLET PRESSURE)</b>			
1 TO 2.5 PSIG	2330 4930	1/4 3/8	GE30342X012 (BLUE)
1.5 TO 3.5 PSIG	2330 4930	1/4 3/8	GE46922X012 (ORANGE)
2.5 TO 5.5 PSIG	2330 4930	1/4 3/8	GE30343X012 (YELLOW)

DRAWING DEVELOPED FOR ML-3/ML-4 PROJECTS. FOR ML-1/ML-2, ADDITIONAL REQUIREMENTS AND QA REVIEWS ARE REQUIRED. (REMOVE THIS NOTE WHEN INSERTED INTO A DRAWING PACKAGE)

**GAS REGULATOR STATION DETAIL**  
SCALE: NONE

**NOTES FOR DESIGNER:** (DO NOT INCLUDE ON CONSTRUCTION DRAWINGS)

- WHEN EDITING DETAIL TO SUIT PROJECT, AND JOB SPECIFIC REQUIREMENTS DELETE ONLY THOSE THAT DO NOT APPLY. TO SEEK A VARIANCE FROM APPLICABLE REQUIREMENTS, CONTACT THE ESM CIVIL POC.
- VERIFY NATURAL GAS INLET PRESSURE AND SIZE REGULATOR ACCORDINGLY
- REFER TO THE FOLLOWING LANL STANDARDS FOR ADDITIONAL REQUIREMENTS:
  - ENGINEERING STANDARDS MANUAL, CIVIL CHAPTER
  - CIVIL DRAWING ST-G30GEN-1, BOLLARD DETAIL
  - MASTER SPECIFICATION 33 5100, NATURAL GAS DISTRIBUTION (SITE).
  - MASTER SPECIFICATION 23 1123, NATURAL GAS PIPING SYSTEMS (BUILDING).
- PROVIDE 4" DIAMETER PIPE BOLLARDS IF VEHICLES ARE LIKELY TO COME IN CONTACT WITH REGULATOR STATION. BOLLARDS FOR PROTECTING GAS SERVICES WILL BE 3'-6" ABOVE AND 2'-6" BELOW GRADE WITH BASE BEING 4" OF CONCRETE ALL AROUND.
- CONTACT LANL UTILITIES AND INSTITUTIONAL FACILITIES FOR SPECIAL DESIGN, AND WHEN EXCEPTIONS TO THESE STANDARDS ARE NECESSARY i.e. LOCATION OF REGULATOR, FLOW CAPACITIES, ETC....
- INSTALL AGA APPROVED APPLIANCE REGULATIONS AT EACH APPLIANCE ON 1 PSIG OR 2 PSIG GAS PIPING SYSTEMS. SEPARATE VENTS TO THE OUTSIDE ARE NOT REQUIRED PROVIDING APPLIANCE REGULATORS HAVE MAXIMUM DISCHARGE RATE THROUGH VENT OF 1.0 CFH AT 2 PSIG. INSTALL REGULATORS IN NON-HAZARDOUS WELL-VENTED INTERIOR LOCATION, READILY ACCESSIBLE FOR SERVICING.
- SIZE SUPPLY PIPING TO BUILDING IN ACCORDANCE WITH THE UNIFORM PLUMBING OR UNIFORM MECHANICAL CODES (IAPMO).
- INSTALL SNOW PROTECTION ABOVE REGULATOR STATION IF STATION IS LOCATED ON SLOPE END OF ROOF.
- DESIGN DRAWINGS AND SUBMITTALS OF SITE NATURAL GAS PIPING SYSTEM SHALL BE REVIEWED AND APPROVED BY A LANL UTILITIES AND INSTITUTIONAL FACILITIES REPRESENTATIVE.

NO	DATE	CLASS REV	DC	DESCRIPTION	DWN	DSGN	CHKD	SUB	APP
3	09/15/2016	UNCLASS		ADMIN. CHANGES TO NEW FORMAT CAD STD REV#5. MINOR DESIGN CHANGES & INCORPORATED NOTES TO DESIGNER FROM SHEET 5 OF 5.	EJS	MS	MS	CJRR	TO
2	01/19/2006	U	DY	REVISED TITLE BLOCK DATA, AND ADTS. ENGINEERING LOGO.	RP	MS	MS	EH	TO
1	08/23/2002	U		GENERAL REVISION AND DWG. NO. WAS ST6500	RP	JG	MS	EH	TO

**ENGINEERING STANDARDS**

**CIVIL**

**GAS REG. STATION DETAIL  
SINGLE STAGE, HIGH FLOW**

DRAWN	R. PEARSON
DESIGN	J. GONZALES
CHECKED	M. SMITHOUR
DATE	6-28-99

TA- XX BLDG XXXX

SUBMITTED DISCIPLINE POC: E. HOTH APPROVED FOR RELEASE STANDARDS MANAGER: TOBIN ORUCH

SHEET **4** OF **4**

Los Alamos NATIONAL LABORATORY P.O. Box 1663, Los Alamos, New Mexico 87545

D.C.: U REVIEWER: LARRY BAYS DATE: PROJECT ID DRAWING NO: **CHAPTER 3 ST-G3060-2.4** REV **3**

00% REVIEW  
NOT FOR CONSTRUCTION

D  
C  
B  
A