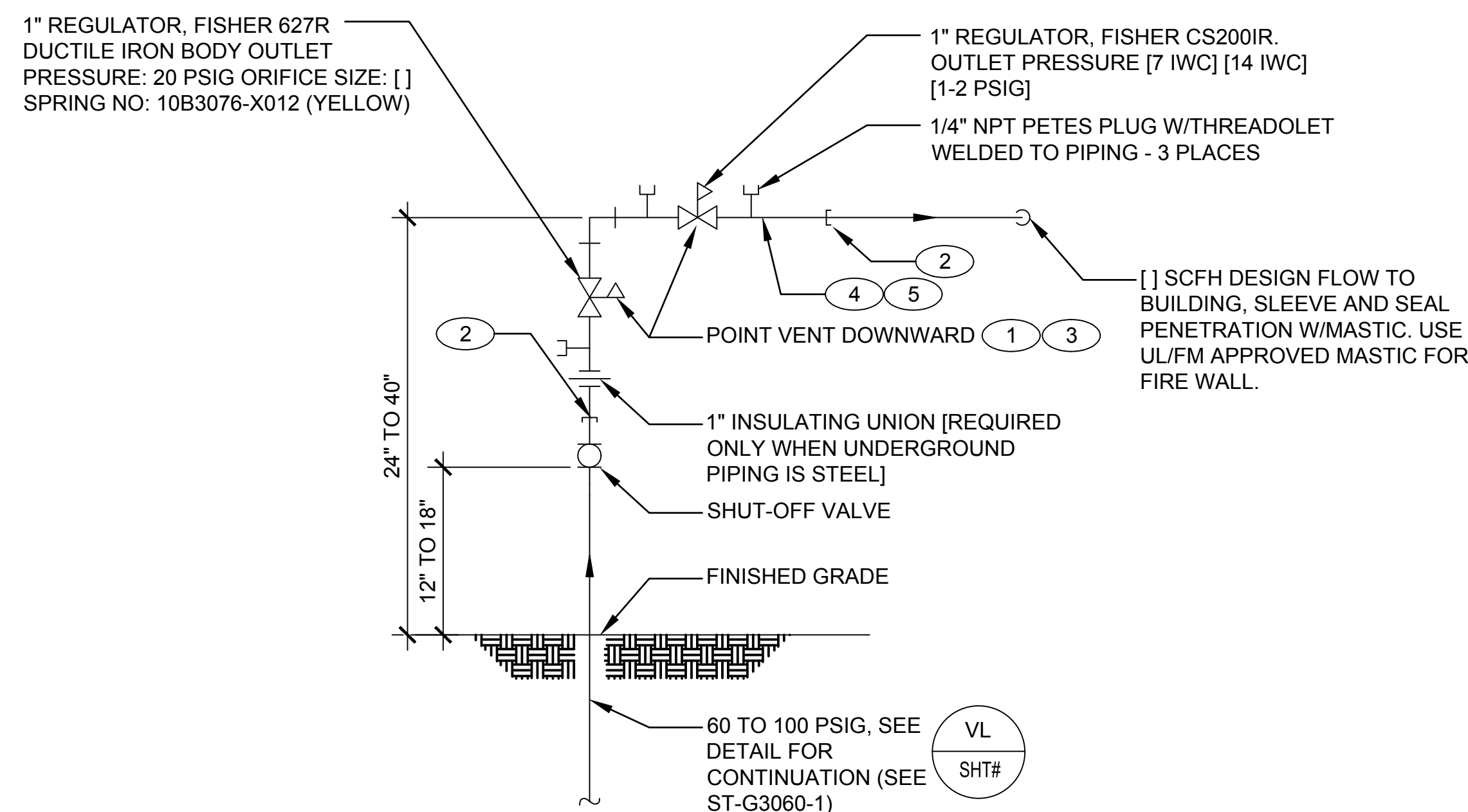


GENERAL NOTES:

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

KEYED NOTES:

- LANL's MSS U&I WILL INSTALL AND ADJUST PRESSURE OF GAS REGULATORS.
- 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
- LOCATE REGULATORS NOT CLOSER THAN 10 FEET HORIZONTALLY FROM INTAKE AIR DEVICES (LOUVERS, FANS, ETC...)
- 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
- 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 |
|--|--|---------------------|----------------------------|
| FISHER REGULATOR CS200IR (CAPACITIES BASED ON 20 PSIG INLET PRESSURE) | | | |
| 7 IWC | 475 1050 | 1/8 3/16 | GE30188X012 (GOLD) |
| 14 IWC | 480 1075 | 1/8 3/16 | GE30224X012 (UNPAINTED) |
| 1-2 PSIG | 475 1025 | 1/8 3/16 | GE30190X012 (BLACK) |
| FISHER REGULATOR 627R (CAPACITIES BASED ON 60 PSIG INLET PRESSURE) | | | |
| 20 PSIG | 840 1170 2640 | 3/32 1/8 3/16 | 10B3076X012 (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.
- 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 (UPMO).
- 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 | | DRAWN | R. PEARSON |
|--|---------------------|---|-------------|
| GAS REG. STATION DETAIL TWO STAGE, LOW FLOW | | DESIGN | J. GONZALES |
| | | CHECKED | M. SMITHOUR |
| TA- XX | | BLDG | XXXX |
| SUBMITTED DISCIPLINE POC: E. HOTH | | APPROVED FOR RELEASE STANDARDS MANAGER: TOBIN ORUCH | |
| Los Alamos NATIONAL LABORATORY | | PO Box 1663, Los Alamos, New Mexico 87545 | |
| D.C.: U | | REVIEWER: LARRY BAYS | DATE: |
| PROJECT ID | DRAWING NO | REV | |
| CHAPTER 3 | ST-G3060-2.1 | 3 | |

00% REVIEW
NOT FOR CONSTRUCTION