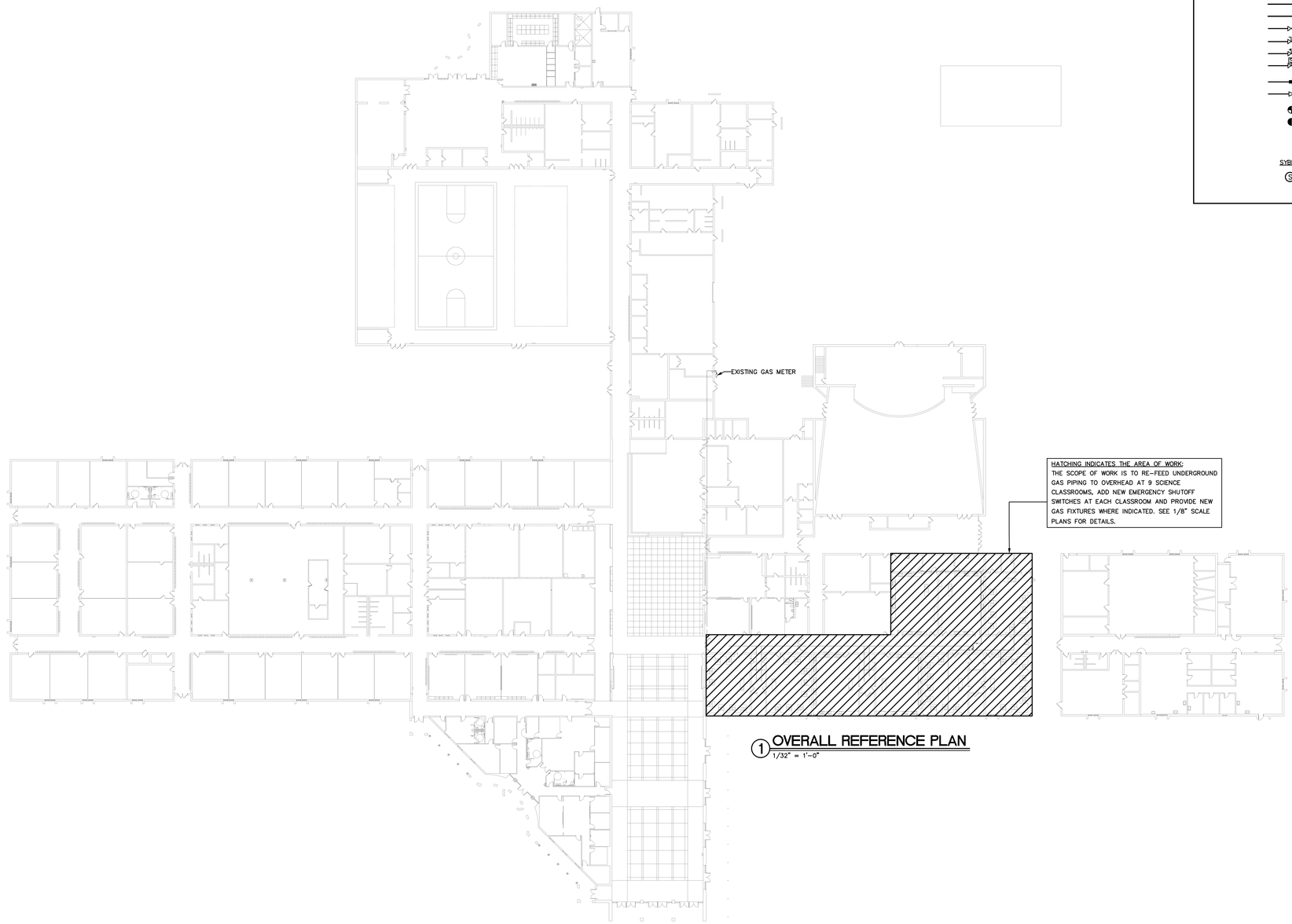
DRAWING INDEX

PLUMBING LEGEND

EXISTING PIPING	NEW PIPING	ABBR.	DESCRIPTION
G(E)	G	G	NATURAL GAS PIPING
(E)		–	EXISTING PIPING TO BE REMOVED
		–	ELBOW DOWN
		–	ELBOW UP
		–	PIPE CONTINUES
		–	PIPE CAP
		–	BALL VALVE
		–	GAS COCK
		PRV	PRESSURE REDUCING/REGULATING VALVE
		–	SOLENOID VALVE
		–	DIRECTION OF FLOW
		–	PIPE REDUCER
		CTE	CONNECT TO EXISTING
			POINT OF DEMOLITION

SYBMOL	DESCRIPTION
(S)	EMERGENCY SHUTOFF SWITCH (4'-0" AFF TO TOP)



1 OVERALL REFERENCE PLAN
1/32" = 1'-0"

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SEAL:

SOUTH CAROLINA OPTIMA ENGINEERING PA No. C00710 CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA PROFESSIONAL ENGINEER 22171 STEVEN R. DAVIS 04/24/2024

FORT MILL HS
GAS PIPING - SCIENCE WING

215 N Highway 21 BYP, Munn Rd E
Fort Mill, SC 29715

REV #	DATE	DESCRIPTION

DATE: 04/24/2024
PROJECT #: 24-0053
DRAWN BY: bjn
DESIGNED BY: bjn
CHECKED BY: srd

SHEET TITLE:
OVERALL REFERENCE PLAN

DWG #:
P0.1

SHEET NO: 1 of 3

EXISTING PRESSURE REGULATOR @ 2 PSI

EXISTING GAS METER

EXISTING UNDERGROUND GAS PIPING

EXISTING 1" GAS LINE (@ 2PSI)

DEMOLITION NOTES

1. THE PLUMBING CONTRACTOR SHALL VISIT SITE PRIOR TO BEGINNING WORK TO DETERMINE THE LEVEL OF DEMOLITION REQUIRED AND INCLUDE ALL NECESSARY PRICING IN THEIR BID.
2. IT IS THE PLUMBING CONTRACTORS RESPONSIBILITY TO FIELD VERIFY ALL EXISTING PIPING. ANY DISCREPANCIES BETWEEN EXISTING CONDITIONS AND PLUMBING PLANS SHOULD BE BROUGHT TO THE ATTENTION OF THE ENGINEER.

REMOVE PORTION OF EX. GAS PIPING BETWEEN CEILING AND FLOOR. CAP AT FLOOR AND PREPARE FOR RECONNECTION OVERHEAD. SEE NEW WORK PLAN

ABANDON EX. UNDERGROUND GAS PIPING IN PLACE (TYPICAL)

ABANDON EX. UNDERGROUND GAS PIPING IN PLACE (TYPICAL)

GENERAL SCIENCE 108

GENERAL SCIENCE 110

CHEMISTRY 112

REMOVE EX. GAS PIPING

ABANDON EX. UNDERGROUND GAS PIPING IN PLACE (TYPICAL)

G(E)

EXISTING 1" GAS LINE (ABOVE CEILING)

G(E)

1"

G(E)

¾"

¾"

¾"

¾"

¾"

REMOVE EX. GAS SOLENOID VALVE

EXISTING ¾" GAS LINE (ABOVE CEILING)

¾"

REMOVE EX. GAS PIPING

REMOVE PORTION OF EX. GAS PIPING ABOVE CEILING

ABANDON EX. UNDERGROUND GAS PIPING IN PLACE (TYPICAL)

REMOVE PORTION OF EX. GAS PIPING ABOVE CEILING

ABANDON EX. UNDERGROUND GAS PIPING IN PLACE (TYPICAL)

CHEMISTRY 101

REMOVE PORTION OF EX. GAS PIPING ABOVE CEILING

ABANDON EX. UNDERGROUND GAS PIPING IN PLACE (TYPICAL)

CHEMISTRY 103

REMOVE PORTION OF EX. GAS PIPING ABOVE CEILING

ABANDON EX. UNDERGROUND GAS PIPING IN PLACE (TYPICAL)

BIOLOGY 105

REMOVE PORTION OF EX. GAS PIPING ABOVE CEILING

ABANDON EX. UNDERGROUND GAS PIPING IN PLACE (TYPICAL)

BIOLOGY 107

¾"

REMOVE EMERGENCY SHUTOFF BUTTON AND COVER OPENING WITH STAINLESS STEEL COVER

G(E)

CHEMISTRY 109

REMOVE EX. GAS PIPING

CHEMISTRY 111

ABANDON EX. UNDERGROUND GAS PIPING IN PLACE (TYPICAL)

1 FLOOR PLAN - GAS PIPING (DEMOLITION)

1/8" = 1'-0"

NOTE:
PLUMBING CONTRACTOR SHALL FIELD VERIFY EXACT LOCATION OF EXISTING GAS PIPING.

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FLOOR PLAN - GAS PIPING (DEMOLITION)

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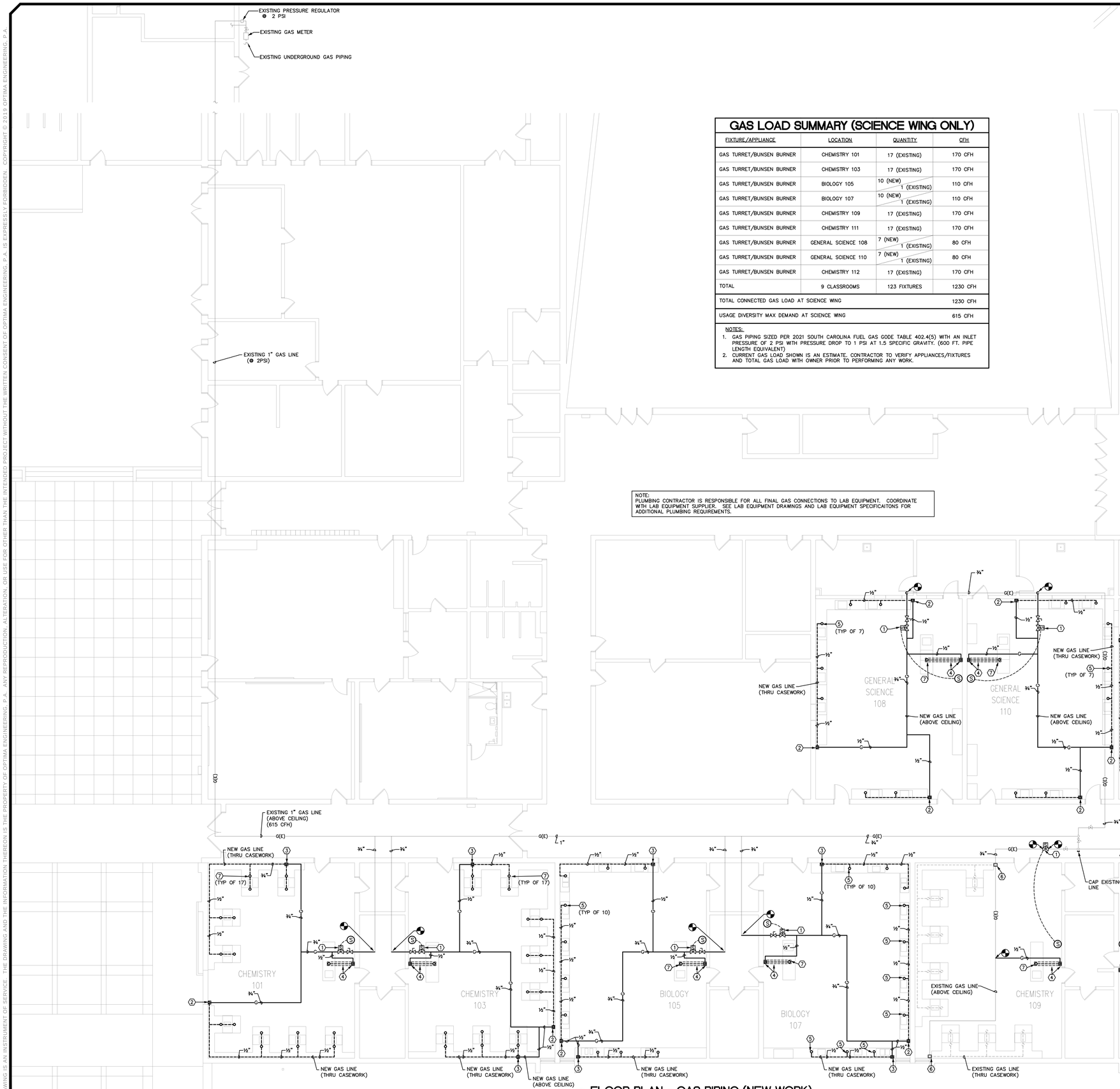
P1.1

SHEET NO: 2 of 3



1 FLOOR PLAN - GAS PIPING (NEW WORK)
1/8" = 1'-0"

GAS LOAD SUMMARY (SCIENCE WING ONLY)

FIXTURE/APPLIANCE	LOCATION	QUANTITY	CFH
GAS TURRET/BUNSEN BURNER	CHEMISTRY 101	17 (EXISTING)	170 CFH
GAS TURRET/BUNSEN BURNER	CHEMISTRY 103	17 (EXISTING)	170 CFH
GAS TURRET/BUNSEN BURNER	BIOLOGY 105	10 (NEW) / 1 (EXISTING)	110 CFH
GAS TURRET/BUNSEN BURNER	BIOLOGY 107	10 (NEW) / 1 (EXISTING)	110 CFH
GAS TURRET/BUNSEN BURNER	CHEMISTRY 109	17 (EXISTING)	170 CFH
GAS TURRET/BUNSEN BURNER	CHEMISTRY 111	17 (EXISTING)	170 CFH
GAS TURRET/BUNSEN BURNER	GENERAL SCIENCE 108	7 (NEW) / 1 (EXISTING)	80 CFH
GAS TURRET/BUNSEN BURNER	GENERAL SCIENCE 110	7 (NEW) / 1 (EXISTING)	80 CFH
GAS TURRET/BUNSEN BURNER	CHEMISTRY 112	17 (EXISTING)	170 CFH
TOTAL	9 CLASSROOMS	123 FIXTURES	1230 CFH
TOTAL CONNECTED GAS LOAD AT SCIENCE WING			1230 CFH
USAGE DIVERSITY MAX DEMAND AT SCIENCE WING			615 CFH

NOTES:
1. GAS PIPING SIZED PER 2021 SOUTH CAROLINA FUEL GAS CODE TABLE 402.4(5) WITH AN INLET PRESSURE OF 2 PSI WITH PRESSURE DROP TO 1 PSI AT 1.5 SPECIFIC GRAVITY. (600 FT. PIPE LENGTH EQUIVALENT)
2. CURRENT GAS LOAD SHOWN IS AN ESTIMATE. CONTRACTOR TO VERIFY APPLIANCES/FIXTURES AND TOTAL GAS LOAD WITH OWNER PRIOR TO PERFORMING ANY WORK.

NOTE:
PLUMBING CONTRACTOR IS RESPONSIBLE FOR ALL FINAL GAS CONNECTIONS TO LAB EQUIPMENT. COORDINATE WITH LAB EQUIPMENT SUPPLIER. SEE LAB EQUIPMENT DRAWINGS AND LAB EQUIPMENT SPECIFICAITONS FOR ADDITIONAL PLUMBING REQUIREMENTS.

ALTERNATES

PROVIDE ALTERNATE PRICING FOR THE FOLLOWING:

1. ALTERNATE #1: PROVIDE NEW TRENCH DRAIN WITH SOLID METAL COVER FOR NEW PIPE TO TEACHERS WORKSTATIONS. (SEE KEYED NOTE #4 FOR DETAILS)
2. ALTERNATE #2: PAINT ALL GAS PIPING WITH 2 COATS OF YELLOW ENAMEL PAINT APPLIED WITH A BRUSH (2 MIL THICKNESS MINIMUM). STENCIL "GAS" ON PIPE AT 12'-0" CENTERS FOR ALL LOW PRESSURE PIPING (0.5 PSI). STENCIL "2-PSI GAS" ON PIPE AT 6'-0" CENTERS FOR 2 PSI GAS PIPING

MATERIALS AND NOTES

NATURAL GAS PIPING:

1. NATURAL GAS PIPING AND FITTINGS ABOVE GRADE: SCHEDULE 40 BLACK STEEL PIPING, TYPE S, SEAMLESS, GRADE B (ASTM A 53) AND 150 PSI MALLEABLE BLACK IRON FITTINGS, GRADE 32510, (ASTM B 16.3) OR FORGED STEEL WELDING TYPE FITTINGS (ASTM A234). PROVIDE THREADED JOINTS FOR PIPE 2" AND SMALLER. PROVIDE WELDED JOINTS (ASME B31.9) FOR PIPE 2½" AND LARGER.
2. SPACE GAS PIPING HANGER RODS 7'-0" ON CENTER MAXIMUM AND SPACE TRANSVERSE BRACING 20'-0" ON CENTER MAXIMUM. TRANSVERSE BRACING FOR ONE SECTION MAY ACT AS LONGITUDINAL BRACING FOR THE PIPE SECTION CONNECTED TO IT IF THE BRACING IS INSTALLED WITHIN 24" OF THE ELBOW OR TEE. COORDINATE HANGER LOCATIONS WITH STRUCTURAL DRAWING DETAILS.
3. PROVIDE A.G.A. CERTIFIED SHUT-OFF VALVES MINIMUM, 125 PSI RATED, NON- LUBRICATED PLUG TYPE WITH BRONZE BODY AND BRONZE PLUG, STRAINERS AND REGULATORS (AS RECOMMENDED BY THE EQUIPMENT MANUFACTURER) FOR ALL EQUIPMENT CONNECTED TO THE NATURAL GAS SYSTEM.
4. GAS PRESSURE REGULATORS SHALL COMPLY WITH ANSI Z21.80. REGULATORS SHALL BE CAST IRON OR DIE-CAST ALUMINUM CONSTRUCTION WITH INTERCHANGEABLE ZINC-PLATED STEEL SPRINGS, ZINC-PLATED STEEL DIAPHRAGM PLATE, NITRILE RUBBER SEAT DISC, INTERCHANGEABLE ALUMINUM ORIFICE, AND ULTRAVIOLET-STABILIZED MINERAL FILLED NYLON SEAL PLUG. REGULATOR SHALL BE SINGLE-PORT SELF-CONTAINED WITH ORIFICE NO LARGER THAN REQUIRED AT MAXIMUM PRESSURE INLET AND NO PRESSURE SENSING PIPING EXTERNAL TO THE REGULATOR. PRESSURE REGULATOR SHALL MAINTAIN DISCHARGE PRESSURE SETTING DOWNSTREAM AND NOT EXCEED 150 PERCENT OF DESIGN DISCHARGE PRESSURE AT SHUTOFF. OVERPRESSURE PROTECTION DEVICE SHALL BE FACTORY MOUNTED ON REGULATOR. WHEN USING VENTLESS REGULATORS, MOUNT REGULATOR IN A HORIZONTAL UPRIGHT POSITION. IF VENTED TYPE REGULATORS ARE USED, INSTALL VENT PIPING (FULL SIZE OPENING) FROM GAS PRESSURE REGULATORS TO OUTDOORS AND TERMINATE IN WEATHERPROOF HOOD.
5. ALTERNATE #2: PAINT ALL GAS PIPING WITH 2 COATS OF YELLOW ENAMEL PAINT APPLIED WITH A BRUSH (2 MIL THICKNESS MINIMUM). STENCIL "GAS" ON PIPE AT 12'-0" CENTERS FOR ALL LOW PRESSURE PIPING (0.5 PSI). STENCIL "2-PSI GAS" ON PIPE AT 6'-0" CENTERS FOR 2 PSI GAS PIPING.

PLUMBING KEYED NOTES:

1. 3/4" GAS SOLENOID VALVE (FAIL CLOSED), INTERLOCKED WITH EMERGENCY SHUT-OFF SWITCH. GAS SOLENOID VALVE SHALL BE PROVIDE BY E.C. AND INSTALLED BY P.C. SHUT-OFF SWITCH SHALL BE PROVIDED AND INSTALLED BY E.C. USE LOCAL 120V CIRCUIT AS REQUIRED FOR TAP FOR CONTROL POWER FOR GAS VALVE SHUTOFF.
2. ROUTE PIPING DOWN THROUGH CEILING TIGHT TO WALL AND INTO CHASE LOCATED IN LOWER PORTION OF NEW CASEWORK. INSTALL RETROFIT PIPE COVER OVER EXPOSED PIPE AT WALL EQUAL TO SOFFI-STEEL SYSTEM.
3. ROUTE PIPING DOWN THROUGH CEILING TIGHT TO WALL THROUGH TOP OF COUNTER AND INTO CHASE LOCATED IN LOWER PORTION OF NEW CABINET. INSTALL RETROFIT PIPE COVER OVER EXPOSED PIPE EQUAL TO SOFFI-STEEL SYSTEM.
4. ALTERNATE #1 (PIPING TO TEACHER'S STATION): ROUTE PIPING DOWN THROUGH CEILING TIGHT TO WALL AND INTO NEW TRENCH DRAIN. COORDINATE NEW TRENCH DRAIN INSTALLATION PRIOR TO INSTALLATION OF NEW CASEWORK. COVER EXPOSED DRAIN WITH SOLID METAL COVER. INSTALL RETROFIT PIPE COVER OVER EXPOSED PIPE AT WALL EQUAL TO SOFFI-STEEL SYSTEM.
5. PROVIDE AND INSTALL NEW GAS FIXTURE EQUAL TO LPCO M-812-540.
6. INSTALL RETROFIT PIPE COVER OVER EXISTING EXPOSED PIPE AT WALL. PIPE COVER EQUAL TO SOFFI-STEEL SYSTEM.
7. CONNECT TO EXISTING GAS FIXTURE.

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P2.1
SHEET NO: 3 of 3