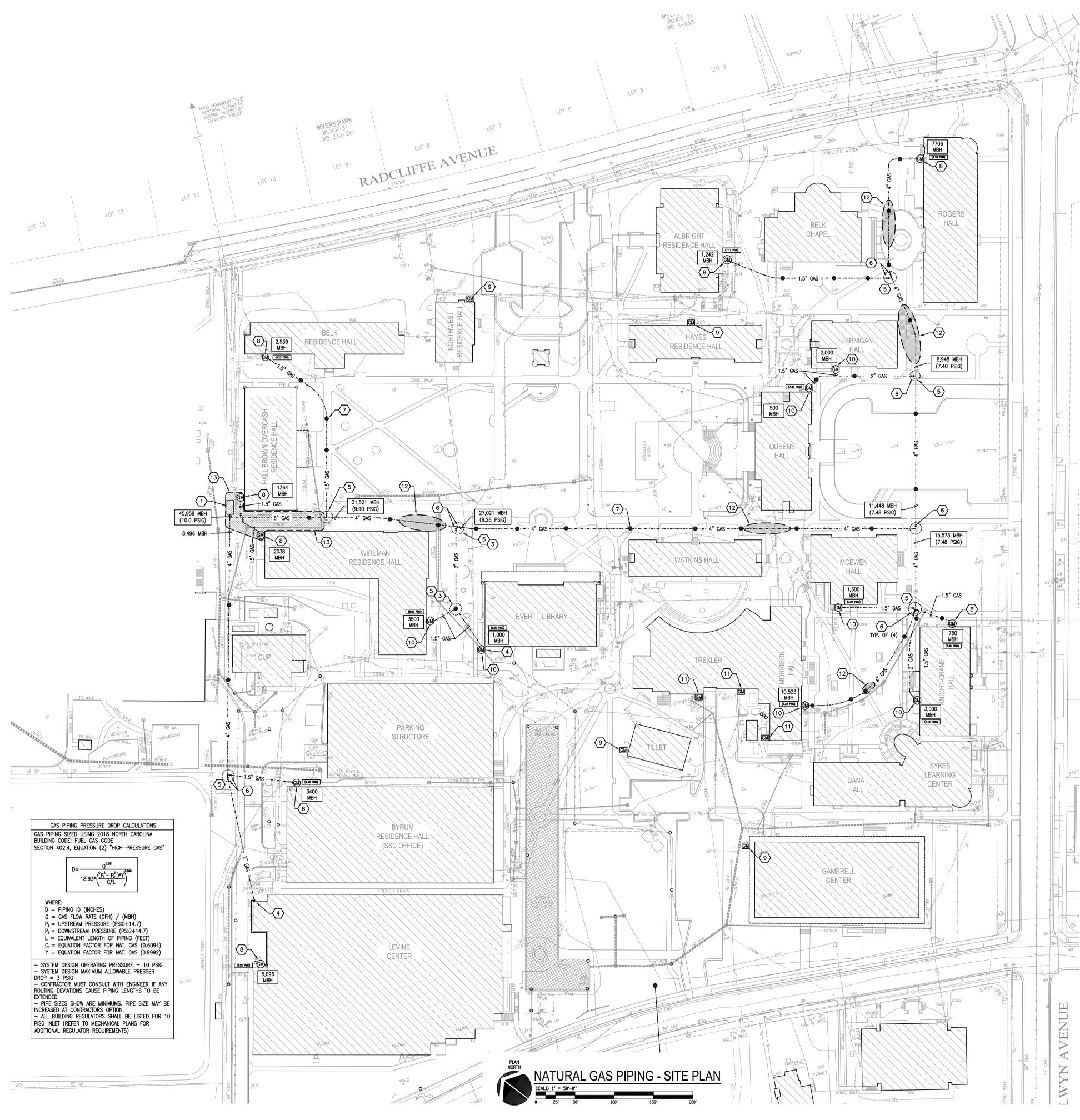
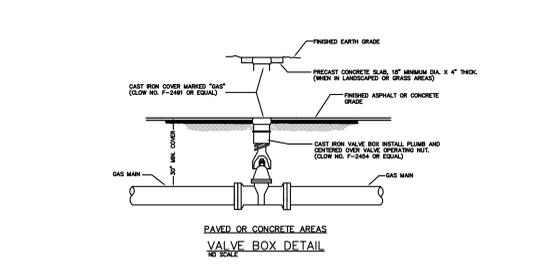
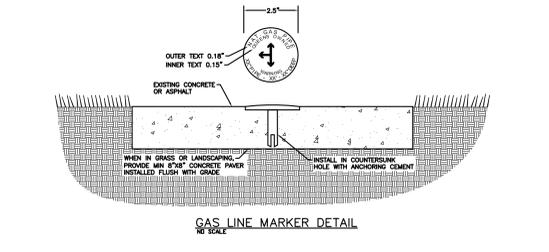
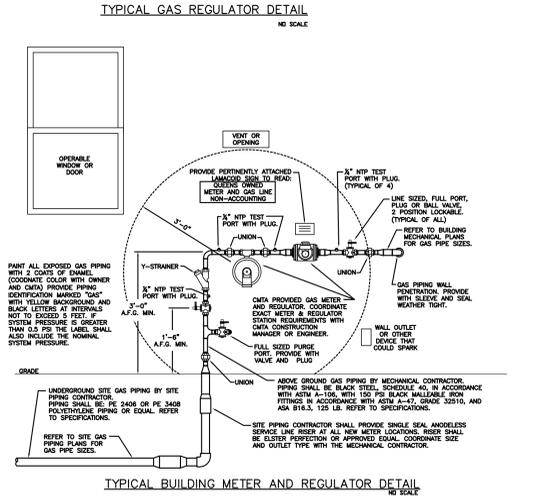
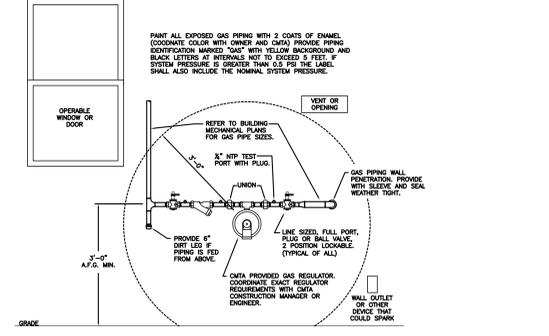


- GENERAL NOTES
- THE MECHANICAL CONTRACTOR IS RESPONSIBLE FOR SITE CONNECTION AND ALL PIPING IN THE BUILDING. REFER TO THE NEW BUILDING PLANS FOR GAS PIPING, THE MECHANICAL AND SITE PIPING CONTRACTOR SHALL COORDINATE AS REQUIRED TO COMPLETE THE ENTIRE SCOPE OF WORK. IN GENERAL, THE SITE CONTRACTOR IS RESPONSIBLE FOR GETTING THE GAS PIPING TO THE EXTERIOR OF EACH BUILDING AND THE TRANSITION TO STEEL PIPING WITH IN 5 FEET OF THE BUILDING OR WHERE INDICATED ON THE PLANS.
 - THE SITE CONTRACTOR SHALL LOCATE AND COORDINATE ALL ON SITE BURIED UTILITIES WITH NEW DIRECT BORED GAS PIPING.
 - THE SITE CONTRACTOR SHALL PROVIDE TRACER WIRE WITH ALL SITE GAS PIPING. FOR FUTURE LOCATING OF GAS LINE.
 - GAS PIPING SHALL BE TESTED IN ACCORDANCE WITH THE PROCEDURES DESCRIBED IN NFPA 54. ANY OTHER TEST AS REQUIRED BY THE LOCAL INSPECTION DEPT. OR GAS CO. SHALL ALSO BE PERFORMED.
 - PAINT ALL EXPOSED GAS PIPING WITH 2 COATS OF ENAMEL (COORDINATE COLOR WITH OWNER AND CM/TA) PROVIDE PIPING IDENTIFICATION MARKED "GAS" WITH YELLOW BACKGROUND AND BLACK LETTERS AT INTERVALS NOT TO EXCEED 5 FEET. IF SYSTEM PRESSURE IS GREATER THAN 0.5 PSI THE LABEL SHALL ALSO INCLUDE THE NOMINAL SYSTEM PRESSURE.

- TASKED NOTES
- NEW NATURAL GAS METER LOCATION, METER SHALL BE INSTALLED BY PIEMONT NATURAL GAS CO. CONTRACTORS SHALL COORDINATE WITH THE EXACT LOCATION AND REQUIREMENTS WITH PIEMONT NATURAL GAS CO. GAS PIPING SHALL EXTEND FROM THE METER TO SERVICE CAVES UNLESS SHOWN.
 - CONTRACTOR SHALL SHUT OFF ASPHALT AND EXCAVATE USING EXTREME CAUTION TO NOT DAMAGE EXISTING UTILITIES IN THIS VICINITY. CONTRACTOR SHALL BACKFILL WITH GRAVEL OR FLOWABLE FILL AS REQUIRED. PAVING PATCHING BY OTHER.
 - CONTRACTOR SHALL EXCAVATE USING EXTREME CAUTION TO NOT DAMAGE EXISTING UTILITIES IN THIS VICINITY. CONTRACTOR SHALL BACKFILL AND LEVEL WITH SURROUNDING AREA. STRAW AND RESEEDING BY OTHERS.
 - TURN PIPING UP ONTO EXTERIOR OF BUILDING TO INFLUENCE ROUTING. ROUTE PIPING ALONG EXTERIOR OF BUILDING AS SHOWN. REFER TO GENERAL NOTES ON THIS SHEET FOR PAINTING AND LABELING REQUIREMENTS.
 - DASHED OUTLINED AREAS INDICATE AREAS OF OPEN TRENCH AS REQUIRED TO CONNECT BORED GAS LINES. CONTRACTOR SHALL BACKFILL AND LEVEL WITH SURROUNDING AREA. STRAW AND RESEEDING BY OTHERS (TYPICAL).
 - PROVIDE GAS SHUT OFF VALVES IN THIS LOCATION. REFER TO VALVE BOX DETAIL ON THIS SHEET.
 - DOT INDICATES LOCATIONS TO PROVIDE GAS LINE WARNER. REFER TO GAS PIPING TAG DETAIL. WARNER SHALL ALSO BE PLACED AT EVERY CHANGE IN DIRECTION AND JUNCTION POINT.
 - ROUTE GAS PIPING TO EXISTING BUILDING GAS ENTRANCE AS SHOWN. REMOVE EXISTING PIEMONT NATURAL GAS METER AND INSTALL CM/TA PROVIDED GAS PRESSURE REGULATOR, PROVIDE FLANGES AND SPOOL PIECE FOR OPEN GAS METER. COORDINATE EXACT REQUIREMENTS WITH CM/TA. REFER TO GAS METER SEAL. COORDINATE WITH THE MECHANICAL CONTRACTOR. REFER TO APPROPRIATE BUILDING MECHANICAL DRAWINGS FOR GAS PIPING CONTINUATION. COORDINATE IN AND METER SHUTOFF PIEMONT NATURAL GAS.
 - NOT IN SCOPE. EXISTING GAS SERVICE AND METER TO REMAIN.
 - NEW GAS SERVICE INSTALL CM/TA PROVIDED GAS PRESSURE REGULATOR, PROVIDE FLANGES AND SPOOL PIECE FOR OPEN GAS METER. COORDINATE EXACT REQUIREMENTS WITH CM/TA. REFER TO GAS METER DETAIL. COORDINATE WITH THE MECHANICAL CONTRACTOR. REFER TO APPROPRIATE BUILDING MECHANICAL DRAWINGS FOR GAS PIPING CONTINUATION. COORDINATE IN AND METER SHUTOFF PIEMONT NATURAL GAS.
 - EXISTING PIEMONT NATURAL GAS METER TO BE DECOMMISSIONED. NATURAL GAS SHALL BE FED FROM NEW METER. COORDINATE EXACT REQUIREMENTS WITH CM/TA. REFER TO GAS METER DETAIL. COORDINATE WITH THE MECHANICAL CONTRACTOR. REFER TO APPROPRIATE BUILDING MECHANICAL DRAWINGS FOR GAS PIPING CONTINUATION. COORDINATE IN AND METER SHUTOFF PIEMONT NATURAL GAS.
 - SHADED AREA INDICATES FIBER OPTIC COMMUNICATION LINE CROSSING. ON-SITE COORDINATION AND IN PERSON REVIEW MEETING MUST BE CONDUCTED WITH INSTALLING CONTRACTOR, CM/TA, CONSTRUCTION MANAGER, AND QUEENS UNIVERSITY IT DIRECTOR PRIOR TO INSTALLING ANY PIPING IN THIS AREA.
 - DUE TO HIGH DENSITY OF UNDERGROUND UTILITIES BETWEEN HOB HALL AND WIREMAN HALL PIPING SHALL BE HAND EXCAVATED IN SHADED AREA.



GAS PIPING PRESSURE DROP CALCULATIONS
 GAS PIPING SIZED USING 2018 NORTH CAROLINA BUILDING CODE: FUEL GAS CODE SECTION 402.4, EQUATION (2) "HIGH-PRESSURE GAS"

$$D = \frac{Q^{0.854}}{18.934 \left(\frac{P_1 - P_2}{CFL} \right)^{0.487}}$$

WHERE:
 D = PIPING ID (INCHES)
 Q = GAS FLOW RATE (CFH) / (MGH)
 P₁ = UPSTREAM PRESSURE (PSIG+14.7)
 P₂ = DOWNSTREAM PRESSURE (PSIG+14.7)
 L = EQUIVALENT LENGTH OF PIPING (FEET)
 C = EQUATION FACTOR FOR NAT. GAS (0.6094)
 Y = EQUATION FACTOR FOR NAT. GAS (0.9992)

- SYSTEM DESIGN OPERATING PRESSURE = 10 PSIG
 - SYSTEM DESIGN MAXIMUM ALLOWABLE PRESSURE DROP = 3 PSIG
 - CONTRACTOR MUST CONSULT WITH ENGINEER IF ANY ROUTING DEVIATIONS CAUSE PIPING LENGTHS TO BE EXTENDED
 - PIPE SIZES SHOW ARE MINIMUMS. PIPE SIZE MAY BE INCREASED AT CONTRACTORS OPTION.
 - ALL BUILDING REGULATORS SHALL BE LISTED FOR 10 PSIG INLET (REFER TO MECHANICAL PLANS FOR ADDITIONAL REGULATOR REQUIREMENTS)

NATURAL GAS PIPING - SITE PLAN
 SCALE: 1" = 50'-0"
 PLAN NORTH