

PLUMBING ABBREVIATIONS

[illegible]

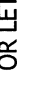
PLUMBING PIPING SYMBOLS

	# SYSTEM		VARIABLE FREQUENCY DRIVE
	# SYSTEM		MOTOR STARTER
			COMBINATION MOTOR STARTER/DISCONNECT
			FUSED DISCONNECT
			NON-FUSED DISCONNECT
			DISCONNECT, EXISTING OR BY OTHERS
			POWER PANEL, EXISTING OR BY OTHERS
			TOGGLE SWITCH

ELECTRICAL SYMBOLS

	VARIABLE FREQUENCY DRIVE
	MOTOR STARTER
	COMBINATION MOTOR STARTER/DISCONNECT
	FUSED DISCONNECT
	NON-FUSED DISCONNECT
	POWER PANEL, EXISTING OR BY OTHERS
	TOGGLE SWITCH

GENERAL SYMBOLS

	PLAN OR DETAIL NUMBER ON SHEET NUMBER		PLAN OR DETAIL NUMBER ON SHEET NUMBER
	ELEVATION LETTER SHOWN ON SHEET NUMBER		ELEVATION LETTER SHOWN ON SHEET NUMBER
	SECTION NUMBER SHOWN ON SHEET NUMBER		SECTION NUMBER SHOWN ON SHEET NUMBER
	DIMENSION LINE		DIMENSION LINE
			

PLUMBING GENERAL NOTES:

1. COORDINATE WORK WITH OTHER TRADES PRIOR TO PURCHASE AND INSTALLATION OF ANY PIPING, OR EQUIPMENT. NOTIFY THE ARCHITECT/ENGINEER OF ANY DISCREPANCIES PRIOR TO INSTALLATION.
2. REFER TO THE ARCHITECTURAL PLANS FOR DIMENSIONS. DO NOT SCALE THESE DRAWINGS.
3. ALL PIPING LAYOUTS AND LOCATIONS SHOWN ARE DIAGNOSTIC AND DO NOT INDICATE ALL FITTINGS REQUIRED TO COMPLETE WORK. COORDINATE THE PIPING LAYOUT WITH ALL CONTRACTORS PRIOR TO INSTALLATION, INCLUDING CONDUITS AND CABLE TRAYS. PROVIDE ALL PIPING OFFSETS REQUIRED FOR THE COMPLETE INSTALLATION OF THE SYSTEM WHETHER OR NOT THE OFFSETS ARE INDICATED ON THE PLANS. INSTALL PIPING HIGH ENOUGH TO AVOID LIGHTING, CONDUIT AND MISCELLANEOUS PIPING, BUT LOW ENOUGH TO ALLOW FOR EASY ACCESS TO SYSTEM BALANCING DEVICES. DO NOT BLOCK ACCESS TO DEVICES.
4. LOCATE PIPING AND EQUIPMENT SUCH THAT ACCESS PANELS MAY BE FULLY OPENED (VIA TILE CELLING) FOR SERVICING VALVES. COORDINATE LOCATION WITH LIGHTING FIXTURES OR ANY OTHER EQUIPMENT.
5. COORDINATE WORK WITH OTHER TRADES PRIOR TO PURCHASE AND INSTALLATION OF EQUIPMENT AND MATERIALS. NOTIFY THE ARCHITECT/ENGINEER OF ANY DISCREPANCIES IMMEDIATELY.
6. INSTALL ALL EQUIPMENT WITH THE MANUFACTURER'S RECOMMENDATION AND CODE REQUIRED CLEARANCES. INSURE ALL ITEMS FURNISHED WILL FIT IN THE SPACE AVAILABLE. MAKE NECESSARY FIELD MEASUREMENTS TO ASCERTAIN SPACE REQUIREMENTS AND PURCHASE AND INSTALL SUCH SIZES AND SHAPES OF EQUIPMENT THAT ARE THE TRUE INTENT AND MEANING OF THE PLANS AND LOCATIONS. NOTIFY THE ARCHITECT/ENGINEER OF ANY DISCREPANCIES PRIOR TO PURCHASE AND INSTALLATION.
7. COORDINATE EXACT SIZE AND LOCATION OF ALL PENETRATIONS THROUGH THE ROOF WITH ALL TRADES.
8. COORDINATE LOCATIONS AND ELEVATIONS OF ALL EXPOSED ITEMS WITH ARCHITECTURAL PLANS, ELEVATIONS AND DETAILS. THESE ITEMS INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING: SENSORS, WALL DEVICES, CONTROL PANELS, AND ALARMS.
9. FURNISH 24"x24" ACCESS DOORS (UNLESS OTHERWISE INDICATED) AT ALL MAINTENANCE ITEMS THAT ARE CONCEALED; SUCH AS EQUIPMENT, VALVES, SENSORS, ETC. COORDINATE EXACT LOCATIONS WITH ARCHITECT/ENGINEER PRIOR TO INSTALLATION.
10. THE SIZE OF COLD AND HOT WATER PIPE RUNOUTS TO FIXTURES SHALL BE THE SAME AS THE POTABLE WATER CONNECTIONS LISTED IN THE PLUMBING FIXTURE SCHEDULE, UNLESS NOTED OTHERWISE.
11. THE SIZE OF SANITARY WASTE AND VENT PIPING TO FIXTURE SHALL BE THE SAME AS WASTE AND VENT CONNECTIONS LISTED IN THE PLUMBING FIXTURE SCHEDULE, UNLESS NOTED OTHERWISE.
12. GAS PIPING AND GAS RELATED CONNECTIONS FOR THIS PROJECT MUST BE PROTECTED AGAINST EARTHQUAKE DAMAGE. REFERENCE BUILDING CODE SUMMARY AND SPECIFICATION SECTION 01.0923 "GENERAL SEISMIC REQUIREMENTS FOR DIVISIONS 21-28 WORK".

PLUMBING DEMOLITION NOTES:

1. SEE REQUIREMENTS OF SECTION 09916 OF THE SPECIFICATION.
2. THIS DEMOLITION PLAN MAY OR MAY NOT REFLECT ALL EXISTING PLUMBING COMPONENTS AND SYSTEMS. THIS DRAWING IS BASED ON AVAILABLE DRAWINGS AND/OR VISUAL OBSERVATIONS AND IS INTENDED TO INDICATE THE MAGNITUDE OF DEMOLITION WORK REQUIRED BUT NOT TO EXCLUDE WORK NOT SHOWN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL EXISTING CONDITIONS PRIOR TO SUBMISSION OF BID.
3. THE SCOPE OF THE DEMOLITION WORK REQUIRED INCLUDES REMOVAL OF ITEMS THAT MUST BE REINSTALLED OR REPLACED IN ORDER TO REMOVE ANOTHER ITEM OR INSTALL NEW WORK.
4. ALL EXISTING EQUIPMENT REMOVED SHALL BE DISPOSED OF BY THIS CONTRACTOR, (UNLESS NOTED OTHERWISE).
5. GENERAL CONTRACTOR TO PATCH BUILDING CONSTRUCTION (WALLS, FLOORS, CEILINGS, ROOF, ETC.) DISTURBED BY PLUMBING DEMOLITION TO MATCH EXISTING. DIVISION 22 CONTRACTOR TO MINIMIZE DISTURBANCE OF REMAINING CONSTRUCTION AND SHALL COORDINATE DEMOLITION AND REPAIR WITH GENERAL CONTRACTOR.

PLUMBING DRAWING LIST	
NO.	TITLE
P001	STANDARDS, SYMBOLS & ABBREVIATIONS
P100	FLOOR PLAN
P200	ENLARGED PLANS
P300	DETAILS & SCHEDULES

**BOWMAN
MURRAY
HEMINGWAY**

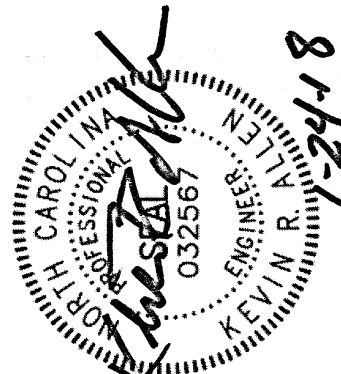
A R C H I T E C T S

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Renovations and Additions to:
Myrtle Grove Middle School
901 Piner Road, Wilmington, North Carolina 28409

STANDARDS, SYMBOLS & ABBREVIATIONS

JOB NUMBER	5984-01-00-13
DRAWN BY	SW
CHECKED BY	
DATE	01/24/18
REVISIONS	

SHEET NUMBER

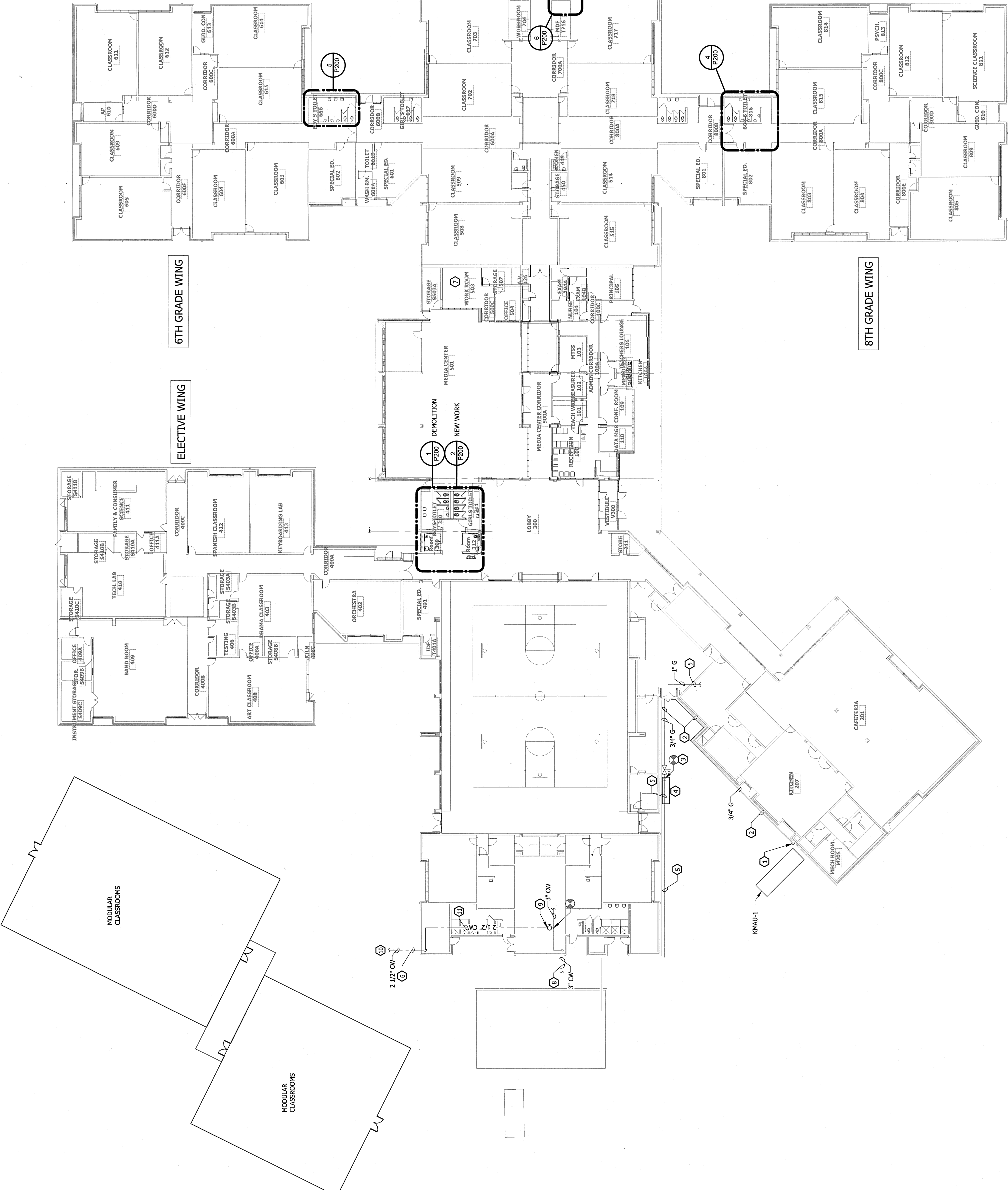
POOL

GENERAL NOTES

1. THE EXISTING PLANS ARE GENERATED FROM ORIGINAL BUILDING CONSTRUCTION DOCUMENTS AND SITE SURVEY. THE CONTRACTOR SHALL VERIFY THE EXISTING CONDITIONS AND AS-BUILT CONDITIONS OF THE EXISTING BUILDING PRIOR TO ANY RENOVATION OR ADDITION WORK. IF ANY DISCREPANCIES ARE DISCOVERED, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING IMMEDIATELY.
2. GENERAL CONTRACTOR TO CUT AND PATCH EXISTING CONSTRUCTION AS NECESSARY TO ACCOMMODATE NEW WORK. PATCH HOLES IN WALLS OR FLOORS WHERE PIPE HAS BEEN REMOVED TO MATCH NEW OR EXISTING CONSTRUCTION AS REQUIRED. PATCH HOLES IN CEILING SHALL BE PATCHED WITH GYPSUM BOARD AND PAINTED TO MATCH EXISTING CONDITIONS.
3. 22 CONTRACTOR TO COORDINATE WORK WITH GENERAL CONTRACTOR. DEMOLISH ALL HOT WATER, COLD WATER, VENT, SANITARY AND STORM WATER PIPING TO ACTIVE MAINS. DO NOT LEAVE DEAD ENDS AND DO NOT ABANDON PRESSURIZED PIPING.

KEY NOTES TO P100

1. GAS PIPING DOWN WALL TO KMAU-1. PROVIDE GAS RATED BALL VALVE. SEE 3/P200 AND 4/P300. COORDINATE EXACT LOCATION WITH DIVISION 23 CONTRACTOR. (ALTERNATE #6)
2. MOUNT GAS PIPING TO KMAU-1 HIGH ON EXTERIOR WALL BELOW SOFFIT. (ALTERNATE #6)
3. NEW GAS CONNECTION TO KMAU-1. (ALTERNATE #6)
4. EXISTING GAS METER.
5. EXISTING GAS PIPING HIGH ON WALL OR ON ROOF.
6. COLD WATER PIPING BELOW GRADE TO MOBILE CLASSROOMS. COORDINATE EXACT LOCATION WITH GENERAL CONTRACTOR AND CIVIL PLANS.
7. DEMOLISH EXISTING COUNTERTOP SINK. DEMOLISH COLD WATER, HOT WATER AND VENT PIPING TO ABOVE CEILING ACTIVE MAIN AND PLUG OR CAP. DEMOLISH SANITARY WASTE PIPING TO BELOW FLOOR ACTIVE MAIN AND PLUG OR CAP. PATCH FLOOR/WALL TO MATCH NEW OR EXISTING CONSTRUCTION.
8. EXISTING COLD WATER SERVICE.
9. COLD WATER ISOLATION VALVE FOR NEW MOBILE CLASSROOMS.
10. DOMESTIC WATER SERVICE TO MOBILE CLASSROOMS. UTILITY CONTRACTOR TO CONNECT PIPING BY DIVISION 22 CONTRACTOR AT 5'-0" OUTSIDE OF BUILDING.
11. PIPING ABOVE CEILING.



LEAD BASE PAINT WARNING

LEAD BASE PAINT MAY EXIST ON BUILD STRUCTURE(S) OR OTHER ITEMS IN THE CONSTRUCTION AREA. THE CONTRACTOR IS HEREBY ADVISED OF THE NEED FOR COMPLIANCE WITH OSHA STANDARD 1926.82, SUBPART D, TITLED "LEAD", [28 CFR 1910] DURING WORK WITH LEAD CONTAINING MATERIALS.

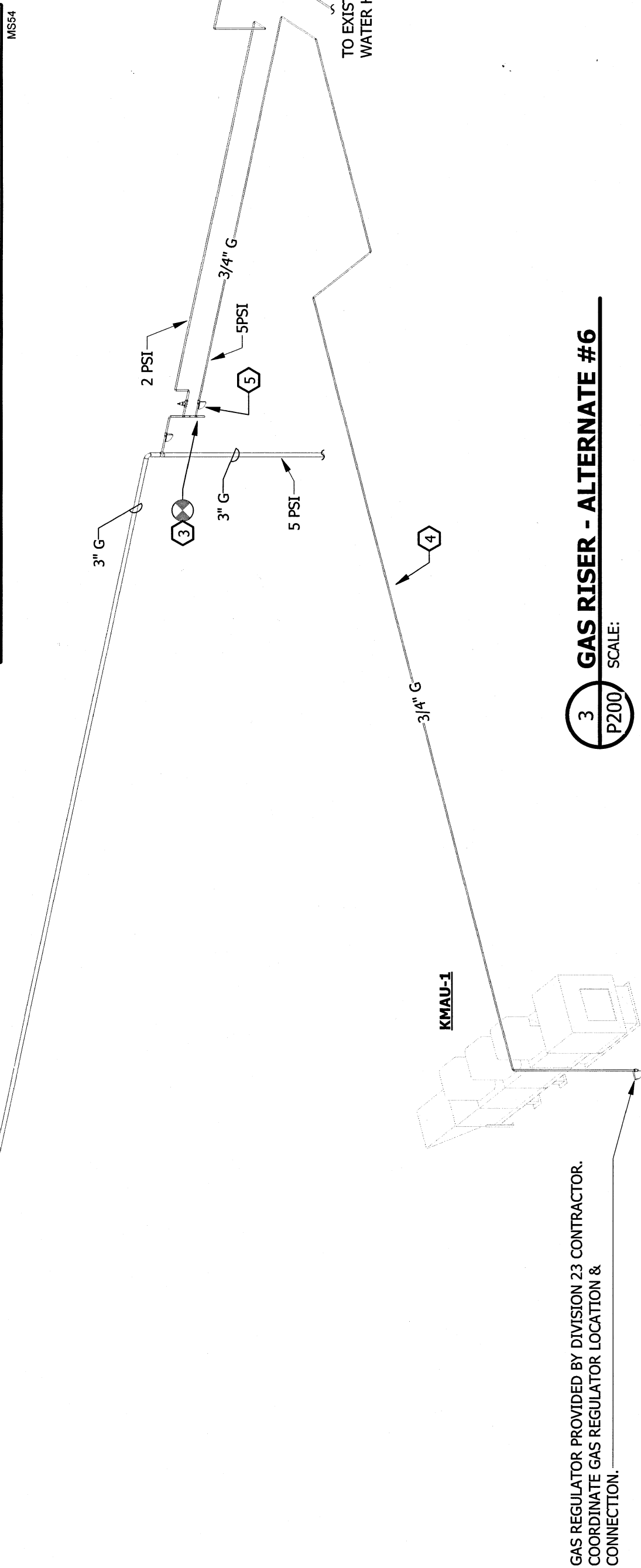
ALL TESTING AND/OR OTHER COMPLIANCE ACTIVITIES ARE THE COMPLETE RESPONSIBILITY OF THE CONTRACTOR.

ASBESTOS WARNING

MATERIALS CONTAINING ASBESTOS ARE OFTEN ENCOUNTERED IN BUILDING RENOVATION PROJECTS. IN THE EVENT ASBESTOS CONTAINING MATERIALS ARE ENCOUNTERED THE CONTRACTOR WILL IMMEDIATELY CEASE WORK IN THE INVOLVED AREA, SECURE THE AREA TO PREVENT INADVERTENT CONTAMINATION OR EXPOSURE, AND NOTIFY OWNER, UNDER NO CIRCUMSTANCES WILL THE CONTRACTOR DISTURB ASBESTOS OR ASBESTOS CONTAINING MATERIALS.

TO EXISTING BOILERS

FUEL LOAD SUMMARY			
EQUIPMENT/LOAD	NGAS (MBH)	SUB-TOTAL (MBH)	
EXISTING WATER HEATERS (6)	189.3 EA	1199	
EXISTING BOILERS (2)	125.5 EA	2509	
KMAU-1	318	318	
TOTAL (MBH)		4023	
NOTES: 1. NATURAL GAS DELIVERY PRESSURE IS 5 PSI.			



3 GAS RISER - ALTERNATE #6
P200 SCALE: 1/4" = 1'-0"

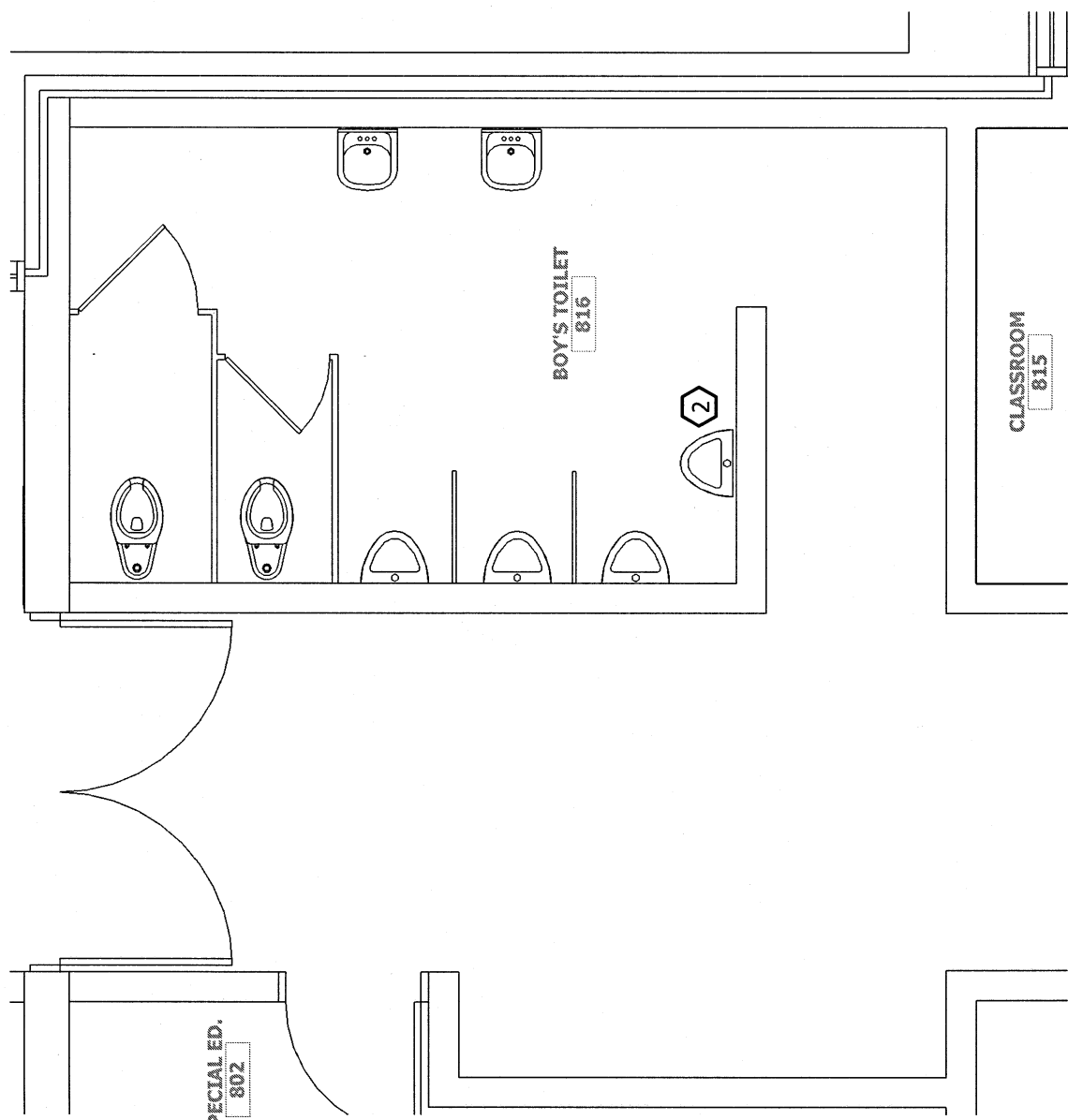
LEAD BASE PAINT WARNING

LEAD BASE PAINT MAY EXIST ON BUILD STRUCTURE(S) OR OTHER ITEMS IN THE CONSTRUCTION AREA. THE CONTRACTOR IS HEREBY ADVISED OF THE NEED FOR COMPLIANCE WITH OSHA STANDARD 1926.62, SUBPART D, TITLED "LEAD", [29 CFR 1910] DURING WORK WITH LEAD CONTAINING MATERIALS.

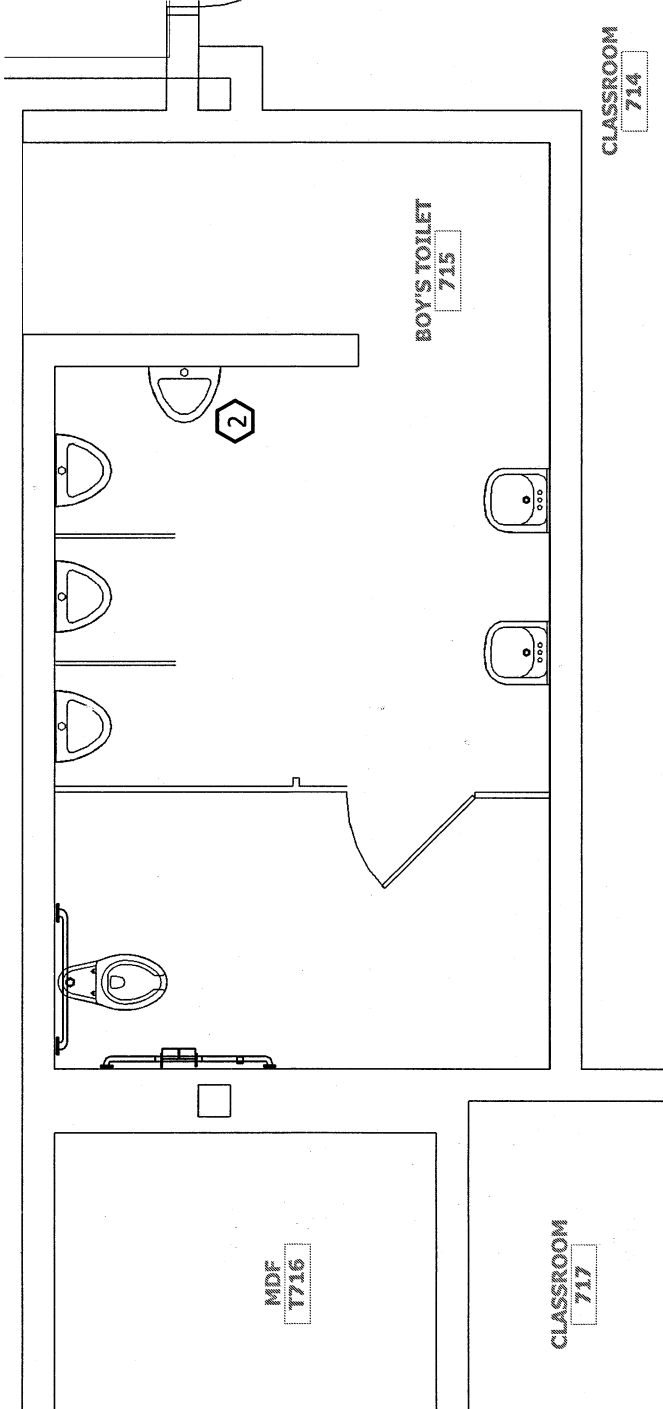
ALL TESTING AND/OR OTHER COMPLIANCE ACTIVITIES ARE THE COMPLETE RESPONSIBILITY OF THE CONTRACTOR.

ASBESTOS WARNING

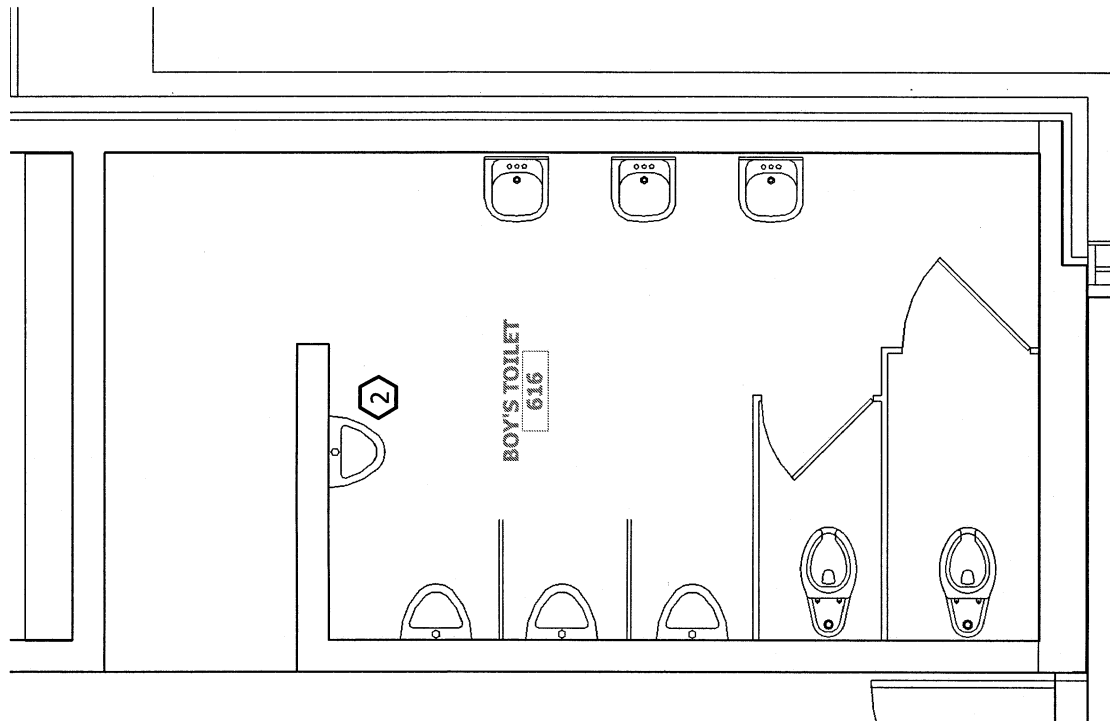
MATERIALS CONTAINING ASBESTOS ARE OFTEN ENCOUNTERED IN BUILDING RENOVATIONS PROJECTS. IN THE EVENT ASBESTOS CONTAINING MATERIALS ARE ENCOUNTERED THE CONTRACTOR WILL IMMEDIATELY CEASE WORK IN THE INVOLVED AREA, SECURE THE AREA TO PREVENT INADVERTENT CONTAMINATION OR EXPOSURE, AND NOTIFY OWNER UNDER NO CIRCUMSTANCES WILL THE CONTRACTOR DISTURB ASBESTOS OR ASBESTOS CONTAINING MATERIALS.



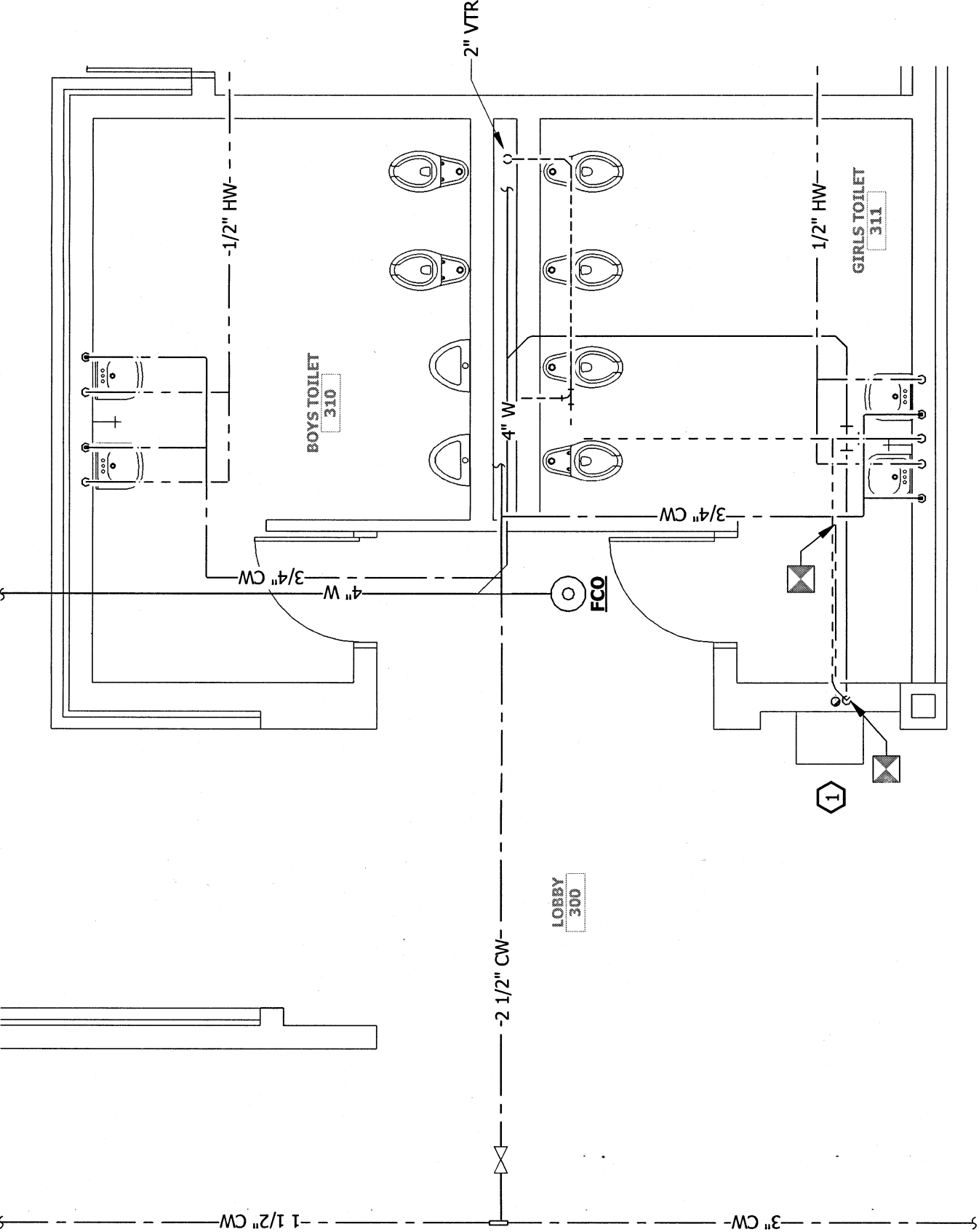
4 ENLARGED FLOOR PLAN - 8TH GRADE BOYS & GIRLS
P200 SCALE: 1/4" = 1'-0"



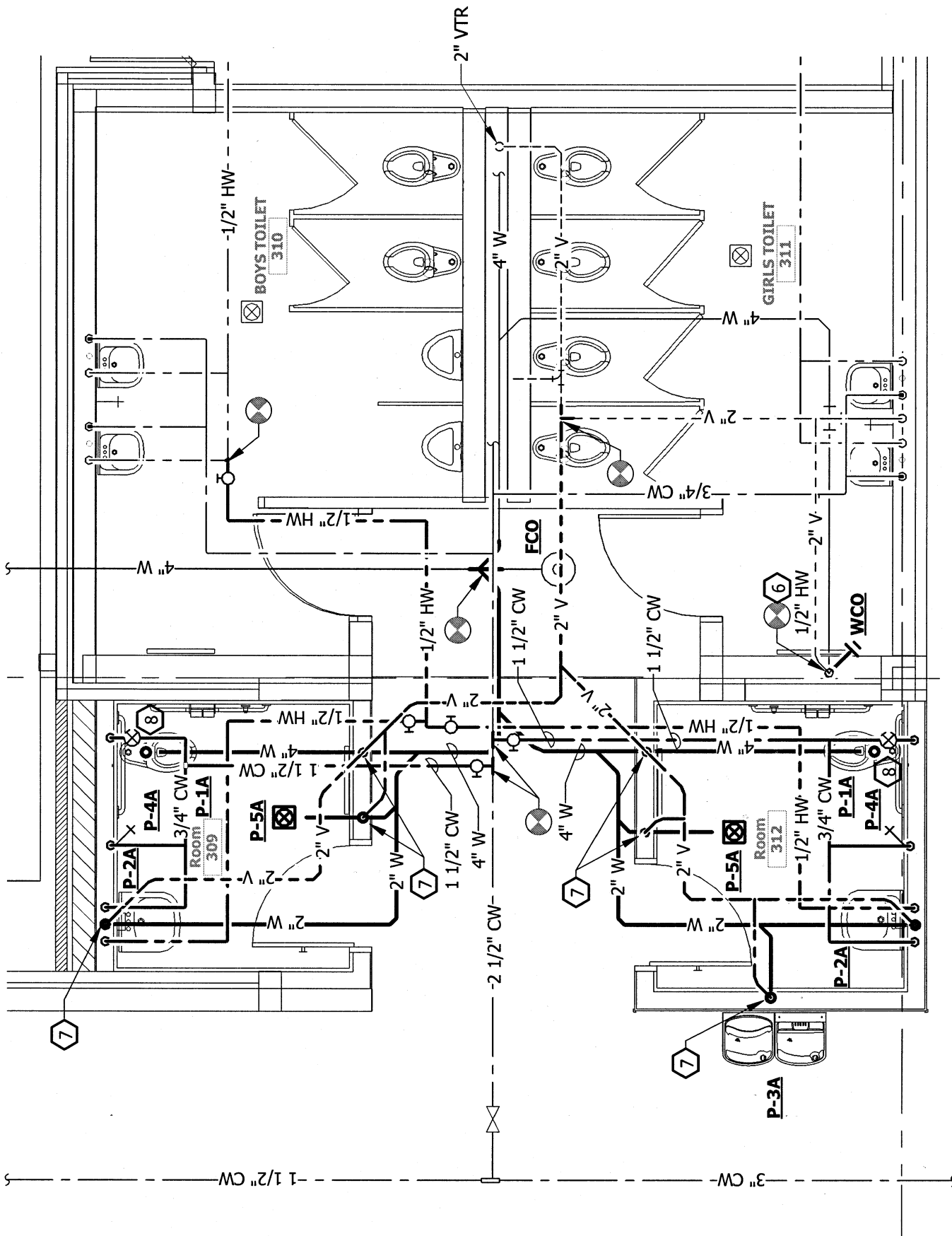
6 ENLARGED FLOOR PLAN - 7TH GRADE BOYS & GIRLS
P200 SCALE: 1/4" = 1'-0"



5 ENLARGED FLOOR PLAN - 6TH GRADE BOYS & GIRLS
P200 SCALE: 1/4" = 1'-0"



1 ENLARGED FLOOR PLAN - DEMOLITION - ALTERNATE #2
P200 SCALE: 1/4" = 1'-0"



2 ENLARGED FLOOR PLAN - NEW WORK - ALTERNATE #2
P200 SCALE: 1/4" = 1'-0"

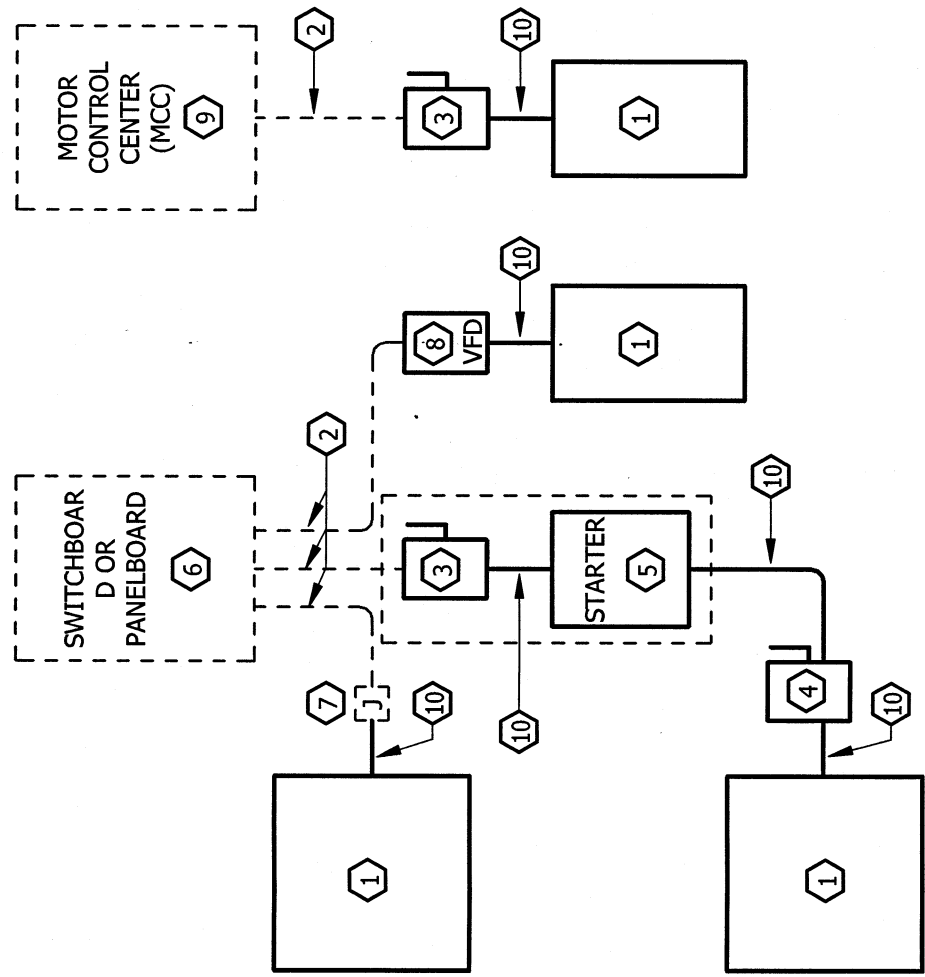
GENERAL NOTES

- THE EXISTING PLANS ARE GENERATED FROM ORIGINAL BUILDING CONSTRUCTION DOCUMENTS AND SITE SURVEY. THE CONTRACTOR SHALL VERIFY THE EXISTING CONDITIONS OF THE BUILDING AND COMPLETENESS AND ACCURACY OF THESE PLANS PRIOR TO BIDDING AND CONSTRUCTION ACTIVITIES. IF ALTERNATE CONDITIONS ARE DISCOVERED, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING IMMEDIATELY.
- GENERAL CONTRACTOR TO CUT AND PATCH EXISTING CONSTRUCTION AS NECESSARY TO ACCOMMODATE NEW CONSTRUCTION. ALL NEW CONSTRUCTION SHALL BE PATCHED TO MATCH NEW OR EXISTING CONSTRUCTION AS REQUIRED.
- PATCH TO MAINTAIN FIRE PROTECTION RATING OF WALLS AND FLOORS. DIVISION 22 CONTRACTOR TO COORDINATE WORK WITH GENERAL CONTRACTOR.
- DEMOLISH ALL HOT WATER, COLD WATER, VENT, SANITARY AND STORM WATER PIPING TO ACTIVE MAINS. DO NOT LEAVE DEAD ENDS AND DO NOT ABANDON PRESSURIZED PIPING.

KEY NOTES TO P200

- DEMOLISH WATER COOLER. DEMOLISH SANITARY WASTE PIPING BACK TO WITHIN WALL. DEMOLISH COLD WATER PIPING TO ACTIVE MAIN ABOVE CEILING AND PLUG OR CAP.
- DEMOLISH URINAL. DEMOLISH ASSOCIATED WASTE AND VENT PIPING BACK TO ACTIVE MAIN AND PLUG OR CAP. DEMOLISH COLD WATER PIPING TO ABOVE CEILING AT ACTIVE MAIN AND PLUG OR CAP.
- NEW GAS CONNECTION FOR KMAU-1. CONNECT TO EXISTING DIRT LEG AND EXTEND DIRT LEG DOWN TO BELOW NEW CONNECTION.
- NEW GAS PIPING TO KMAU-1.
- NEW GAS RATED BALL VALVE.
- INSTALL NEW WCO IN DEMOLISHED WATER COOLER WASTE PIPING.
- 2" VENT UP.
- BELOWS TYPE WATER HAMMER ARRESTOR.

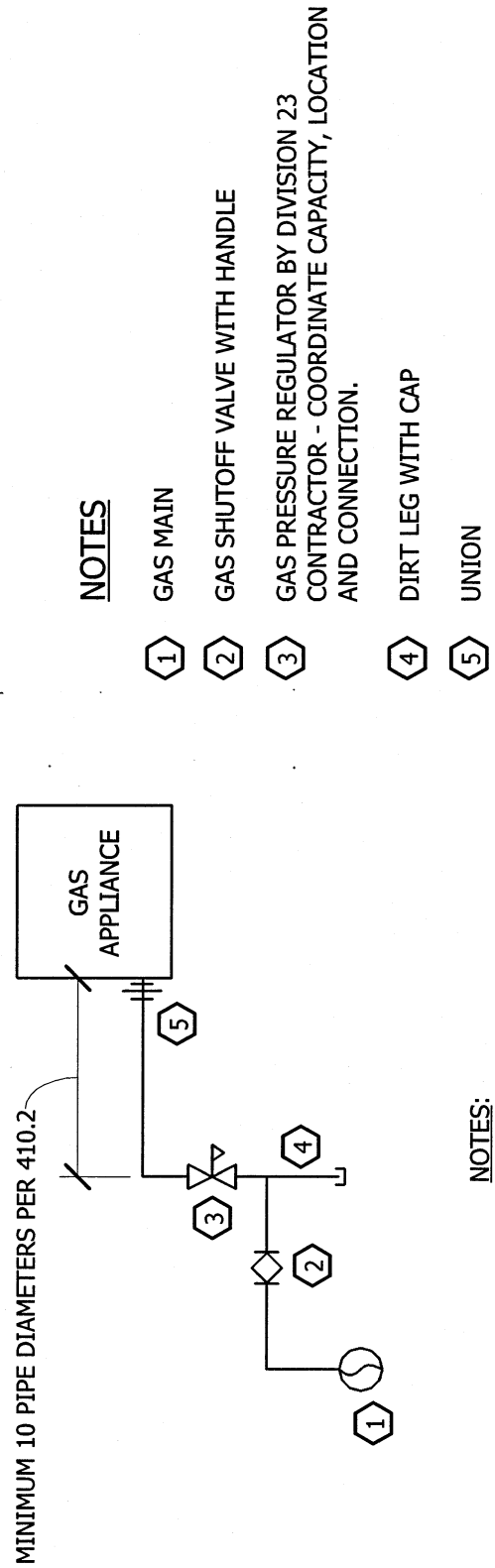
PLUMBING FIXTURE SCHEDULE

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KEYED NOTES:

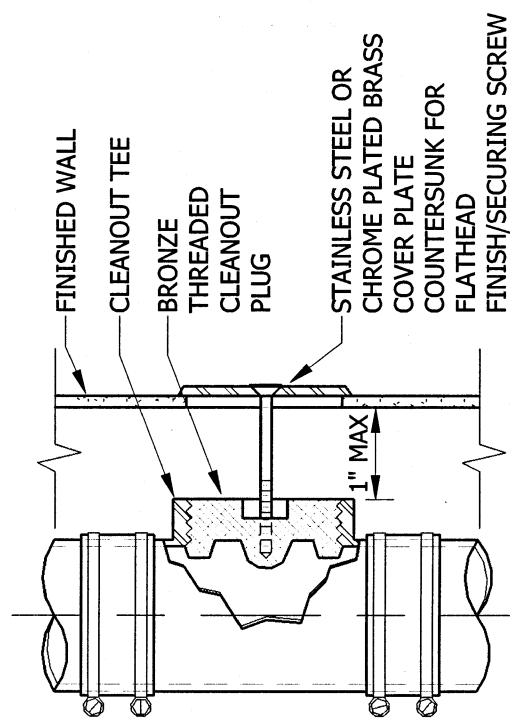
1. EQUIPMENT FURNISHED AND INSTALLED BY CONTRACTOR. CONTRACTOR SHALL MAKE ALL FINAL CONNECTIONS.
2. CONDUIT & WIRING BY DIVISION 26 CONTRACTOR.
3. PROVIDE DISCONNECT AND FUSING.
4. PROVIDE ADDITIONAL DISCONNECT IF REQUIRED BY NEC.
5. A COMBINATION STARTER MAY BE USED IN LIEU OF A SEPARATE DISCONNECT SWITCH AND STARTER.
6. POWER DISTRIBUTION EQUIPMENT BY DIVISION 26 CONTRACTOR.
7. JUNCTION BOX REQUIRED BY THE DIVISION 26 CONTRACTOR FOR EQUIPMENT IF NO STARTER IS REQUIRED. PROVIDE MOTOR-STARTER DISCONNECT SWITCH WHERE REQUIRED BY CODE. THE DIVISION 26 CONTRACTOR SHALL PROVIDE LINE SIDE WIRING TO THE DISCONNECT. PROVIDE LOAD SIDE WIRING.
8. PROVIDE VARIABLE FREQUENCY DRIVE (VFD) WHERE NECESSARY.
9. FOR PROJECTS UTILIZING A MOTOR CONTROL CENTER (MCC), THE STARTER, CIRCUIT BREAKER OR VFD IN THE MCC SHALL BE PROVIDED BY THE DIVISION 26 CONTRACTOR.
10. PROVIDE RACEWAY & WIRING IN ACCORDANCE WITH REQUIREMENTS FOR RACEWAYS AND WIRING METHODS IN DIVISION 26 SPECIFICATIONS.

ELECTRICAL CONNECTIONS TO EQUIPMENT



- NOTES:** 1. ALL GAS PIPING CONNECTIONS TO APPLIANCES PROVIDED BY DIVISION 23 SHALL BE MADE BY DIVISION 23 UNLESS NOTED OTHERWISE.

4 GAS CONNECTION DETAIL



2 WALL CLEANOUT DETAIL

CLEARANCES FOR ELECTRICAL EQUIPMENT

2. DEDICATED SPACE RUNS TO A HEIGHT OF 6'-0" ABOVE EQUIPMENT. DEDICATED SPACE CONTINUES THROUGH SUSPENDED CEILING OR UP TO STRUCTURAL CEILING. ANY FOREIGN SYSTEMS TO THE ELECTRICAL EQUIPMENT SHALL NOT RUN WITHIN THIS SPACE. (FIGURE 2)

TABLE A - WORKING CLEARANCES	
VOLTAGE TO	MINIMUM CLEAR DISTANCE (FEET)

GROUND NOMINAL	CONDITION	1	2	3
0-150		3	3	3
151-600		3	3 1/2	4

WHERE THE CONDITIONS ARE AS FOLLOWS:

1. EXPOSED LIVE PARTS ON ONE SIDE AND NO LIVE OR UNGROUNDED PARTS ON THE OTHER SIDE OF THE WORKING SPACE, OR EXPOSED LIVE PARTS ON BOTH SIDES EFFECTIVELY GUARDED BY SUITABLE WOOD OR OTHER INSULATING MATERIALS. INSULATED WIRE OR INSULATED BUSBARS OPERATING AT NOT OVER 300V SHALL NOT BE CONSIDERED LIVE PARTS.
2. EXPOSED LIVE PARTS ON ONE SIDE AND GROUNDED PARTS ON THE OTHER SIDE.
3. EXPOSED LIVE PARTS ON BOTH SIDES OF THE WORK SPACE (NOT GUARDED AS PROVIDED IN CONDITION 1), WITH THE OPERATOR

NOTES:

1. THESE FIGURES ILLUSTRATE THE WORKING CLEARANCE AND DEDICATED SPACE AROUND ELECTRICAL EQUIPMENT AS REQUIRED BY NEC SECTION 110-26.

SCALE: NTS