

GYMNASIUM HVAC RENOVATION COLLINWOOD MIDDLE SCHOOL

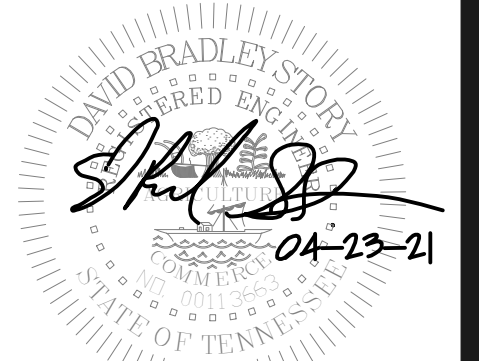
300 4TH Av. N.
COLLINWOOD, TN 38450

MECHANICAL/ELECTRICAL:
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MECHANICAL:



ELECTRICAL:



CODE ANALYSIS:

1. 2012 INTERNATIONAL MECHANICAL CODE
2. 2012 INTERNATIONAL PLUMBING CODE
3. 2012 INTERNATIONAL FUEL & GAS CODE
4. 2011 NATIONAL ELECTRICAL CODE
5. 2012 NFPA 101 - LIFE SAFETY CODE
6. 2010 AMERICANS WITH DISABILITIES ACT
7. 2012 INTERNATIONAL BUILDING CODE

SHEET INDEX

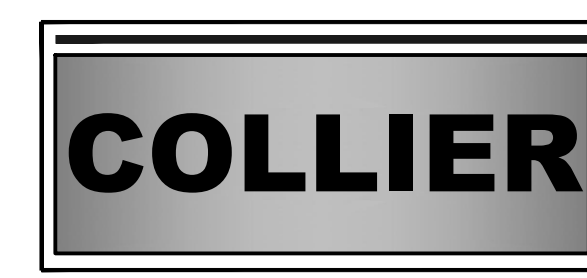
COVER SHEET

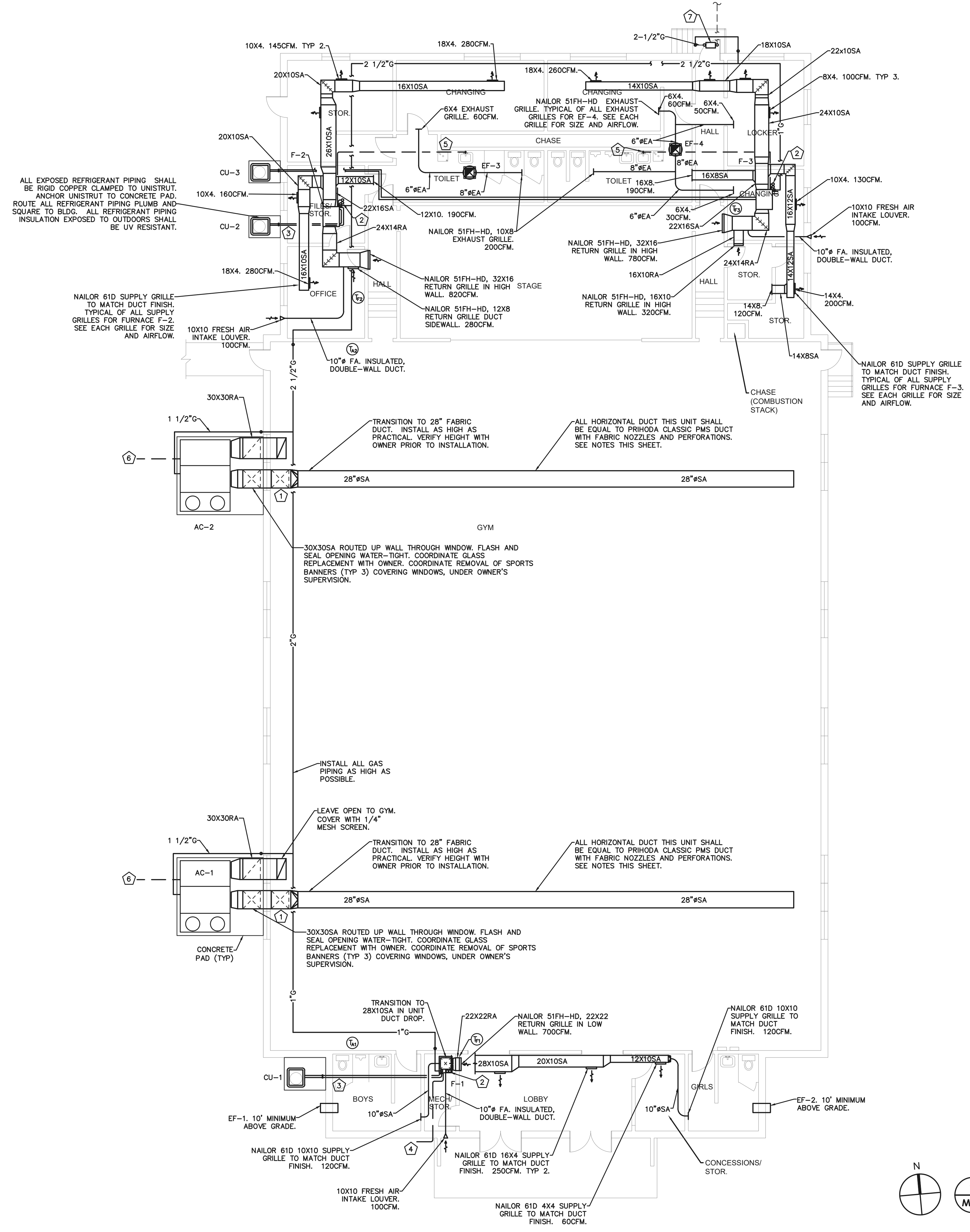
M1.1 - HVAC PLAN
M1.2 - HVAC DEMOLITION PLAN
M2.1 - HVAC SCHEDULES
M2.2 - HVAC DETAILS

E1.1 - POWER PLAN
E2.1 - ONE-LINE AND SCHEDULES
E3.1 - ELECTRICAL NOTES

REVISIONS:

NO.	DESCRIPTION	DATE





ALL EXPOSED REFRIGERANT PIPING SHALL BE RIGID COPPER CLAMPED TO UNISTRUT. ANCHOR UNISTRUT TO CONCRETE PAD. ROUTE ALL REFRIGERANT PIPING PLUMB AND SQUARE TO BLDG. ALL REFRIGERANT PIPING INSULATION EXPOSED TO OUTDOORS SHALL BE UV RESISTANT.

NAILOR 61D SUPPLY GRILLE TO MATCH DUCT FINISH. TYPICAL OF ALL SUPPLY GRILLES FOR FURNACE F-2. SEE EACH GRILLE FOR SIZE AND AIRFLOW.

TRANSITION TO 28" FABRIC DUCT. INSTALL AS HIGH AS PRACTICAL. VERIFY HEIGHT WITH OWNER PRIOR TO INSTALLATION.

ALL HORIZONTAL DUCT THIS UNIT SHALL BE EQUAL TO PRIHODA CLASSIC PMS DUCT WITH FABRIC NOZZLES AND PERFORATIONS. SEE NOTES THIS SHEET.

30X30SA ROUTED UP WALL THROUGH WINDOW. FLASH AND SEAL OPENING WATER-TIGHT. COORDINATE GLASS REPLACEMENT WITH OWNER. COORDINATE REMOVAL OF SPORTS BANNERS (TYP 3) COVERING WINDOWS, UNDER OWNER'S SUPERVISION.

INSTALL ALL GAS PIPING AS HIGH AS POSSIBLE.

LEAVE OPEN TO GYM. COVER WITH 1/4" MESH SCREEN.

TRANSITION TO 28" FABRIC DUCT. INSTALL AS HIGH AS PRACTICAL. VERIFY HEIGHT WITH OWNER PRIOR TO INSTALLATION.

ALL HORIZONTAL DUCT THIS UNIT SHALL BE EQUAL TO PRIHODA CLASSIC PMS DUCT WITH FABRIC NOZZLES AND PERFORATIONS. SEE NOTES THIS SHEET.

30X30SA ROUTED UP WALL THROUGH WINDOW. FLASH AND SEAL OPENING WATER-TIGHT. COORDINATE GLASS REPLACEMENT WITH OWNER. COORDINATE REMOVAL OF SPORTS BANNERS (TYP 3) COVERING WINDOWS, UNDER OWNER'S SUPERVISION.

- KEYED NOTES:**
- 1 TURN 30X30SA METALLIC DUCT UP IN GYM TO ACHIEVE HIGHEST-PRACTICAL HEIGHT FOR CONNECTED FABRIC DUCT.
 - 2 3" (VERIFY SIZE WITH MANUFACTURER REQUIREMENTS) COMBUSTION AIR SUPPLY AND EXHAUST DUCTS, PVC OR APPROVED VENTING MATERIAL FOR CONDENSING APPLIANCES. CONNECT TO SINGLE, MANUFACTURER-APPROVED CONCENTRIC VENT THROUGH ROOF. SIZE BASED ON LENGTH OF RUN PER MANUFACTURER REQUIREMENTS. FLASH AND SEAL ALL ROOF PENETRATIONS, AND MAINTAIN ROOF WARRANTY. CONNECT TO FURNACE.
 - 3 SPLIT A/C REFRIGERANT LINES FROM REMOTE GRADE MOUNTED CONDENSING UNIT. ROUTE LINES ABOVE CEILING OR HIGH TO STRUCTURE, AS STRAIGHT AS POSSIBLE. PROVIDE WITH INSULATION PER SPECIFICATIONS. ROUTE TO INSIDE EVAPORATOR UNIT. SIZE PER MANUFACTURER REQUIREMENTS, BASED ON REFRIGERANT RISE AND RUN.
 - 4 CONDENSATE DRAIN THROUGH WALL TO FRENCH DRAIN. INSTALL FRENCH DRAIN PER DETAIL. SIZE PIPING PER MANUFACTURER.
 - 5 CONDENSATE DRAIN TO HOUSE SIDE OF SINK. SIZE PIPING PER DETAIL.
 - 6 CONDENSATE DRAIN TO FRENCH DRAIN. INSTALL FRENCH DRAIN PER DETAIL. SIZE PIPING PER MANUFACTURER.
 - 7 EXISTING NATURAL GAS METER. EXISTING NATURAL GAS LOAD ESTIMATED AT 620CFH. NEW LOAD IS 920CFH. NEW PIPING IS SIZED AT LOW PRESSURE.

- GENERAL NOTES:**
1. DUCT SIZES INDICATED ARE ACTUAL SHEET METAL DIMENSIONS. ALLOWANCES HAVE BEEN MADE FOR THICKNESS OF INSULATION. ALL EXPOSED (RECTANGULAR AND ROUND) DUCTS TO BE LINED WITH 1 1/2" THICK, FIBERGLASS INSULATION EQUAL TO CERTAINTED TOUGHGARD TYPE 150, R-6 MINIMUM. FRESH AIR INTAKE DUCTS SHALL BE DOUBLE-WALL DUCT INTERNALLY INSULATED (R-8 MINIMUM).
 2. EXHAUST DUCTS DO NOT REQUIRE INSULATION.
 3. ALL DUCTWORK EXPOSED INSIDE SHALL BE PAINTGRIP TYPE. ALL GRILLES IN SIDEWALL OF DUCTS SHALL MATCH FINAL DUCT COLOR. COORDINATE ALL GRILLE COLORS WITH ARCHITECT.
 4. FABRIC DUCT TO BE UTILIZED WHERE POSSIBLE AS INDICATED. FABRIC DUCT SHALL BE EQUAL TO PRIHODA CLASSIC PMS DUCT WITH FABRIC NOZZLES AND PERFORATIONS. PROVIDE WITH CABLES AND SINGLE TRACK SUSPENSION SYSTEM WITH ALL-IN ONE HOOPS. VERIFY HEIGHTS AND COLORS WITH OWNER PRIOR TO INSTALLATION. COORDINATE EXACT LAYOUT WITH VENDOR PROVIDED DESIGN.
 5. IN ADDITION TO INTERNAL LINER, ALL DUCTWORK INSTALLED OUTDOORS SHALL BE EXTERNALLY INSULATED WITH 1" RIGID BLUEBOARD POLYSTYRENE INSULATION ADHERED TO DUCT AND COVERED WITH POLYGUARD SELF-ADHESIVE, SELF-HEALING MEMBRANE.
 6. WHERE HOLES LEFT BY REMOVAL OF EXISTING EQUIPMENT FROM THE DEMOLITION PLAN ARE USED FOR NEW EQUIPMENT OR SYSTEMS, PROPERLY PATCH, SEAL, RECONSTRUCT, AND PAINT (AS APPLICABLE) AROUND NEW COMPONENTS TO FINISH BUILDING AND GIVE IT A UNIFORM APPEARANCE.
 7. COORDINATE EXCAVATION AND BURIAL OF PIPING WITH EXISTING UNDERGROUND AND ABOVE GROUND OBSTACLES.
 8. COORDINATE ALL NEW ROOF PENETRATIONS WITH ROOFING CONTRACTOR. ENSURE ALL NEW PENETRATIONS ARE PROPERLY CUT AND FLASHED WEATHERTIGHT. ENSURE ANY EXISTING WARRANTY IS MAINTAINED.
 9. VERIFY ALL EXISTING CONDITIONS PRIOR TO CONSTRUCTION. HVAC LAYOUT DETERMINED FROM SITE OBSERVATIONS AND AS BUILT DRAWINGS. CONTRACTOR SHALL NOTIFY ENGINEER SHOULD EXISTING CONDITIONS DIFFER FROM THESE DRAWINGS.
 10. PROVIDE SEISMIC RESTRAINT FOR ANY DUCTWORK 6FT OR GREATER.

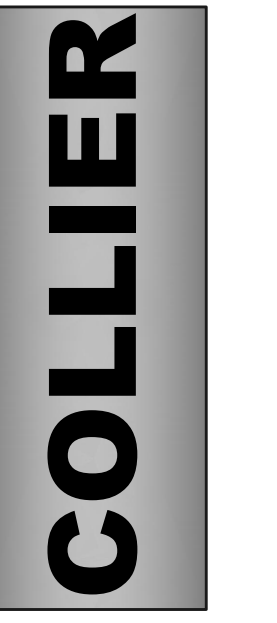
LEGEND	
	SUPPLY AIR DIFFUSER
	RETURN/EXHAUST AIR GRILLE SIDEWALL
	RETURN/EXHAUST AIR GRILLE BOTTOM OF DUCT
	THERMOSTAT
	TURNING VANE
	SUPPLY AIR
	RETURN AIR
	FRESH AIR/OUTSIDE AIR
	EXHAUST AIR

HVAC Plan
SCALE: 1/8" = 1'-0"

REVISION	DATE	COMMENT

SHEET TITLE: **HVAC Plan**
PROJECT: **GYMNASIUM HVAC RENOVATION**
COLLINSWOOD ELEMENTARY SCHOOL
COLLINSWOOD, TN

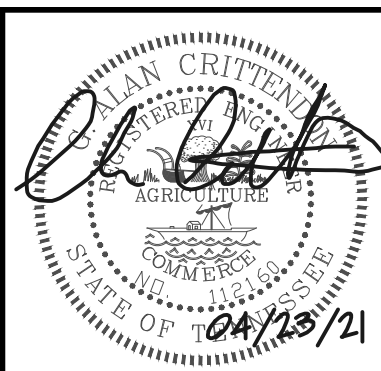
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DRAWN BY:	LT

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SHEET NUMBER:
M1.1



REMOVE EXISTING FURNACE AND ALL ASSOCIATED DUCTWORK, GRILLES, REGISTERS, DIFFUSERS, AND NATURAL GAS PIPING. ONLY DEMOLISH GAS PIPING BACK TO A POINT THAT WILL NOT INTERFERE WITH OPERATION OF OTHER EQUIPMENT STILL IN OPERATION, AND WILL NOT CAUSE DAMAGE TO THE BUILDING. PROPERLY REPAIR / CAP GAS PIPING ACCORDING TO LOCAL CODES AT POINT WHERE DEMOLITION IS TERMINATED.

REMOVE EXISTING FURNACE AND ALL ASSOCIATED DUCTWORK, GRILLES, REGISTERS, DIFFUSERS, AND NATURAL GAS PIPING. ONLY DEMOLISH GAS PIPING BACK TO A POINT THAT WILL NOT INTERFERE WITH OPERATION OF OTHER EQUIPMENT STILL IN OPERATION, AND WILL NOT CAUSE DAMAGE TO THE BUILDING. PROPERLY REPAIR / CAP GAS PIPING ACCORDING TO LOCAL CODES AT POINT WHERE DEMOLITION IS TERMINATED.

REMOVE LOUVER

REMOVE EXISTING GAS UNIT HEATER AND ALL ASSOCIATED COMBUSTION AIR DUCT, EXHAUST DUCT, AND NATURAL GAS PIPING. CAP FLUE PIPING. ONLY DEMOLISH GAS PIPING BACK TO A POINT THAT WILL NOT INTERFERE WITH OPERATION OF OTHER EQUIPMENT STILL IN OPERATION, AND WILL NOT CAUSE DAMAGE TO THE BUILDING. PROPERLY REPAIR / CAP GAS PIPING ACCORDING TO LOCAL CODES AT POINT WHERE DEMOLITION IS TERMINATED.

REMOVE EXHAUST FAN AND CAP OPENING WITH INSULATED METAL COVER.

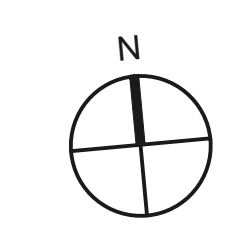
REMOVE EXISTING FURNACE AND ALL ASSOCIATED DUCTWORK, GRILLES, REGISTERS, DIFFUSERS, AND NATURAL GAS PIPING. CAP FLUE AT ROOF. ONLY DEMOLISH GAS PIPING BACK TO A POINT THAT WILL NOT INTERFERE WITH OPERATION OF OTHER EQUIPMENT STILL IN OPERATION, AND WILL NOT CAUSE DAMAGE TO THE BUILDING. PROPERLY REPAIR / CAP GAS PIPING ACCORDING TO LOCAL CODES AT POINT WHERE DEMOLITION IS TERMINATED.

REMOVE EXHAUST FAN

REMOVE EXHAUST FAN

REMOVE EXHAUST FAN

- GENERAL NOTES:
- ALL HOLES CREATED IN INTERIOR OR EXTERIOR WALLS BY DEMOLITION OF EXISTING EQUIPMENT OR COMPONENTS SHALL BE PATCHED, SEALED, PAINTED (WHERE APPLICABLE), RECONSTRUCTED (WHERE APPLICABLE), AND MADE TO MATCH THE SURROUNDING WALL, ON BOTH SIDES OF WALL, TO OWNER'S SATISFACTION.
 - REVIEW THE PLANS FOR INSTALLATION OF NEW WORK, TO COORDINATE THE RE-USE OF ANY BUILDING OPENINGS CREATED BY DEMOLITION.
 - VERIFY ALL EXISTING CONDITIONS PRIOR TO CONSTRUCTION. HVAC LAYOUT DETERMINED FROM SITE OBSERVATIONS AND AS BUILT DRAWINGS. CONTRACTOR SHALL NOTIFY ENGINEER SHOULD EXISTING CONDITIONS DIFFER FROM THESE DRAWINGS.



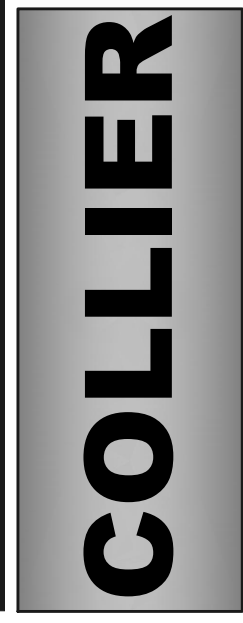
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M1.2

HVAC Demolition Plan
SCALE: 1/8" = 1'-0"

COMMENT:	
DATE:	
REVISION:	

SHEET TITLE: **Gym HVAC Demolition Plan**
PROJECT: **GYMNASIUM HVAC RENOVATION**
COLLINWOOD ELEMENTARY SCHOOL
COLLINWOOD, TN

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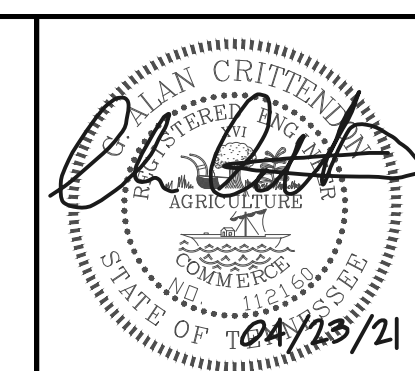


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SHEET NUMBER:
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MECHANICAL NOTES:

- 1. ALL WORK SHALL BE EXECUTED AND INSPECTED IN ACCORDANCE WITH ALL LOCAL AND STATE CODES, LAWS, ORDINANCES, RULES AND REGULATIONS APPLICABLE TO THE PARTICULAR CLASS OF WORK...
- 2. THE CONTRACTOR SHALL INCLUDE IN HIS QUOTATION ALL APPLICABLE SERVICE CHARGES, FEES, PERMITS, ROYALTIES, AND OTHER SIMILAR COSTS IN CONNECTION WITH THE WORK...
- 3. INSTALL WORK IN LOCATIONS SHOWN ON DRAWINGS, UNLESS PREVENTED BY PROJECT CONDITIONS. FOR PURPOSES OF CLEARNESS AND LEGIBILITY, DRAWINGS ARE ESSENTIALLY DIAGRAMMATIC...
- 4. THE DRAWINGS INDICATE REQUIRED SIZE AND POINTS OF TERMINATION OF PIPES AND DUCTS, AND SUGGEST PROPER ROUTES OF PIPE TO CONFORM TO STRUCTURE, AVOID OBSTRUCTIONS AND PRESERVE CLEARANCES...
- 5. CONTRACTOR SHALL GUARANTEE ALL WORK PERFORMED UNDER THIS CONTRACT TO BE FREE FROM DEFECTS IN MATERIALS AND WORKMANSHIP FOR A PERIOD OF ONE YEAR FROM DATE OF CERTIFICATE OF SUBSTANTIAL COMPLETION...

FURNACE SCHEDULE:

Table with 4 columns: TAG, AREA SERVED, MANUFACTURER, MODEL NUMBER, and three columns for F-1, F-2, and F-3. Lists furnace specifications for Entry, Rear, and another Rear area.

- NOTES:
- 1. 96% AFUE FURNACE
- 2. HONEYWELL VISION PRO 8300 MODEL TH8321WF1001 PROGRAMMABLE W-FI THERMOSTAT WITH LOCKING GYM RATED COVER.
- 3. 2" PLEATED RETURN AIR FILTER
- 4. FACTORY CONCENTRIC VENT KIT
- 5. HORIZONTAL FLOW
- 6. UPFLOW

CONDENSING UNIT SCHEDULE:

Table with 4 columns: TAG, AIR SYSTEM, MANUFACTURER, MODEL NUMBER, and three columns for CU-1, CU-2, and CU-3. Lists condensing unit specifications for various systems.

- NOTES:
- 1. INSTALL ON LEVEL PAD
- 2. HIGH AND LOW PRESSURE SWITCHES
- 3. CRANKCASE HEATER
- 4. LOW AMBIENT CONTROL
- 5. 5-YEAR COMPRESSOR WARRANTY
- 6. SIGHT GLASS AND LIQUID LINE DRIER
- 7. INSTALL PER MANUFACTURER'S RECOMMENDATIONS FOR CLEARANCES
- 8. SIZE REFRIGERANT LINE IN EXCESS OF 50' (HORIZONTAL) OR 20' (VERTICAL) AS PER MANUFACTURER'S RECOMMENDATION
- 9. ALL REFRIGERANT PIPING INSTALLED OUTDOORS SHALL BE RIGID COPPER CLAMPED TO UNISTRUT. ANCHOR UNISTRUT TO CONCRETE PAD. ROUTE PIPING PLUMB AND SQUARE TO BLDG.
- 10. PROVIDE EQUIPMENT FROM MANUFACTURER AS SPECIFIED OR EQUAL. EQUIVALENT MANUFACTURERS ARE TRANE, CARRIER, JOHNSON CONTROLS, LENNOX, AMERICAN STANDARD, BRYANT.

FAN SCHEDULE

Table with 5 columns: TAG, AREA SERVED, QUANTITY, USE, MANUFACTURER, MODEL NUMBER, CFM, STATIC PRESSURE, TYPE, ELECTRICAL, POWER, SONES, INTERLOCK, WEIGHT, and NOTES. Lists fan specifications for Boys, Girls, Toilet, and Exhaust areas.

- NOTES:
- 1. BACKDRAFT DAMPER
- 2. SPEED CONTROLLER PROVIDED BY DIVISION 15, MOUNTED AND WIRED BY DIVISION 16.
- 3. INCLUDE SERVICE DISCONNECT
- 4. DIRECT DRIVE
- 5. INSECT SCREEN
- 6. ON WITH LIGHTS
- 7. FLASH AND SEAL ALL WALL PENETRATIONS.
- 8. FLASH AND SEAL ALL ROOF PENETRATIONS. MAINTAIN ROOF WARRANTY.
- 9. ON WITH WALL SENSOR AS PROVIDED BY ELECTRICAL.

AIR CONDITIONING UNIT SCHEDULE:

Table with 3 columns: TAG, AREA SERVED, and two columns for AC-1 and AC-2. Lists air conditioning unit specifications for Gym areas.

- NOTES:
- 1. INSTALL ON LEVEL PAD
- 2. HONEYWELL VISION PRO 8300 MODEL TH8321WF1001 PROGRAMMABLE W-FI THERMOSTAT WITH LOCKING GYM RATED COVER.
- 3. RECTORSAL EZ TRAP WITH BRUSH, LESS FLOAT SWITCH.
- 4. RETURN AIR SMOKE DETECTOR PROVIDED AND WIRED BY DIV 16. MOUNTED BY DIV 15.
- 5. 2" PLEATED RETURN AIR FILTER
- 6. IN ADDITION TO 1-YEAR FULL WARRANTY, PROVIDE 5-YEAR COMPRESSOR PARTS-ONLY WARRANTY AND 10-YEAR PARTS ONLY HEAT EXCHANGER WARRANTY.
- 7. PROVIDE EQUIPMENT FROM MANUFACTURER AS SPECIFIED OR EQUAL. EQUIVALENT MANUFACTURERS ARE TRANE, CARRIER, JOHNSON CONTROLS, LENNOX, AMERICAN STANDARD, BRYANT.
- 8. WALL MOUNTED HUMIDISTAT AND CO2 SENSOR.
- 9. HUMIDISTAT SHALL BE SET AT 60±RH (ADJ)
- 10. ECONOMIZER WITH BAROMETRIC RELIEF

W-FI THERMOSTAT CONTROLS NOTE: THE INSTALLING CONTRACTOR SHALL INSTALL HONEYWELL TOTAL CONNECT COMFORT APPLICATION ON A OWNER PROVIDED SMART DEVICE AND CONFIGURE THE DEVICE TO COMMUNICATE WITH THE OWNER'S W-FI. ALL UNITS SHALL BE PROVIDED WITH A HONEYWELL VISION PRO 8300 MODEL TH8321WF1001 PROGRAMMABLE W-FI THERMOSTAT WITH LOCKING COVER AS SPECIFIED IN THE UNIT SCHEDULES...

Table with 2 columns: COMMENT, DATE, and 2 empty columns for REVISION.

SHEET TITLE: HVAC Details and Schedules
PROJECT: GYMNASIUM HVAC RENOVATION
COLLINWOOD, TN

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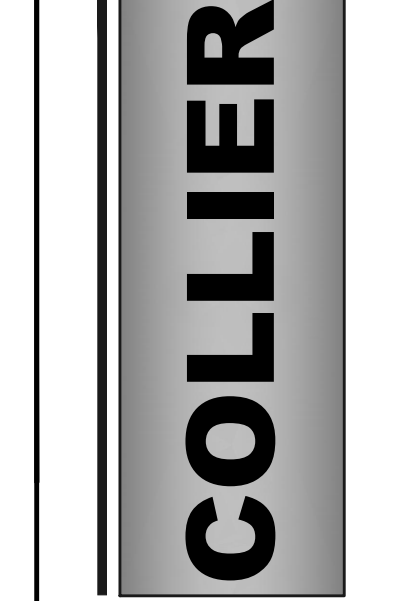
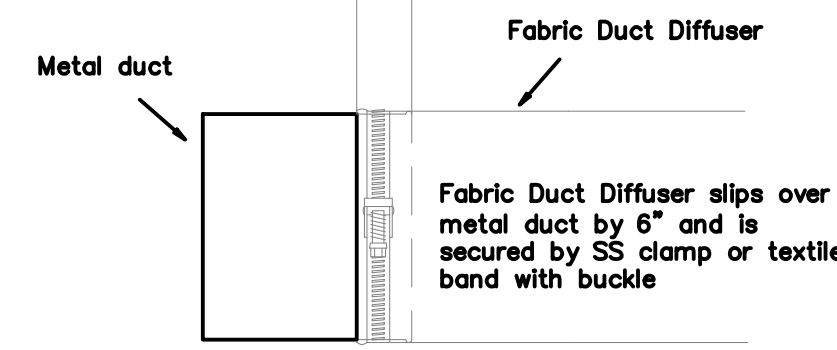
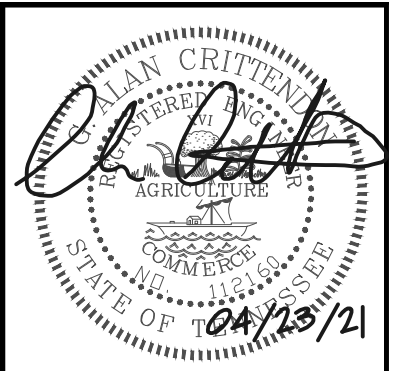


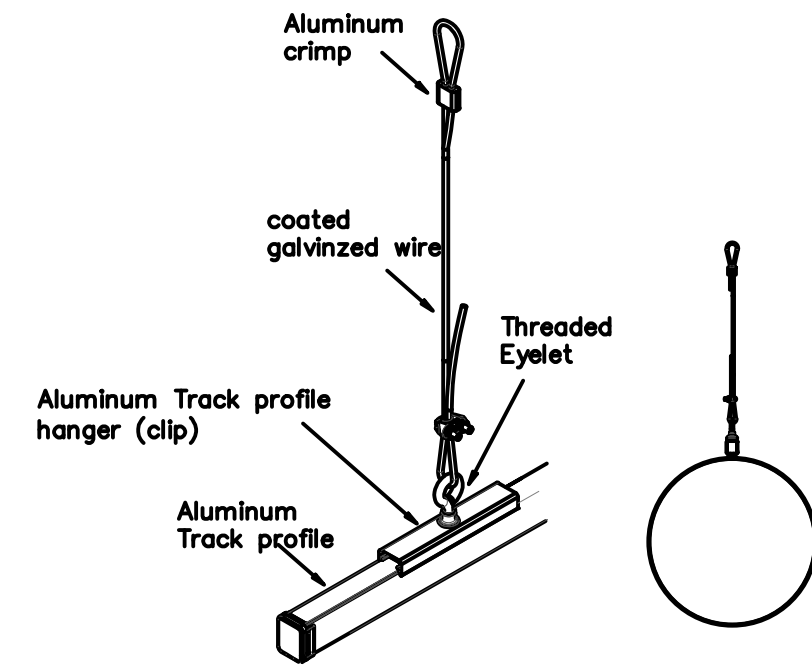
Table with 4 rows: ORIGINAL ISSUE DATE (04/23/21), SCALE, CHECKED (GAC), APPROVED (GAC), and DRAWN BY (LT).

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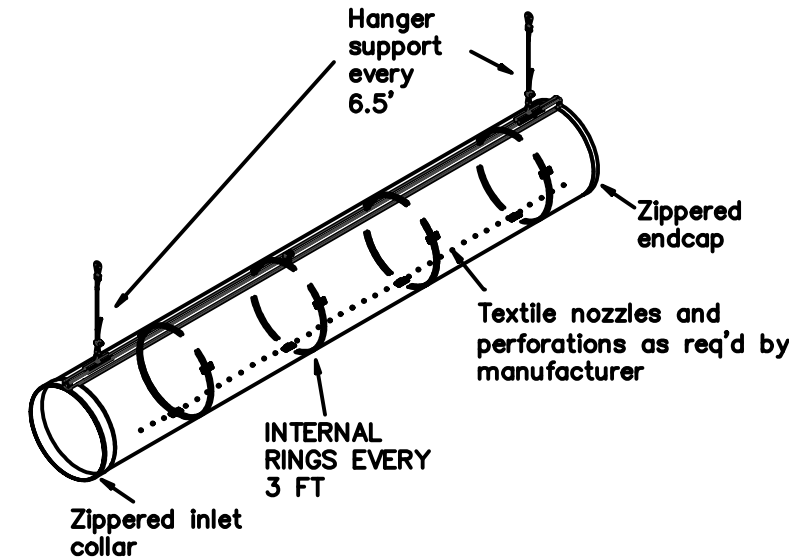
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SHEET NUMBER: M2.1



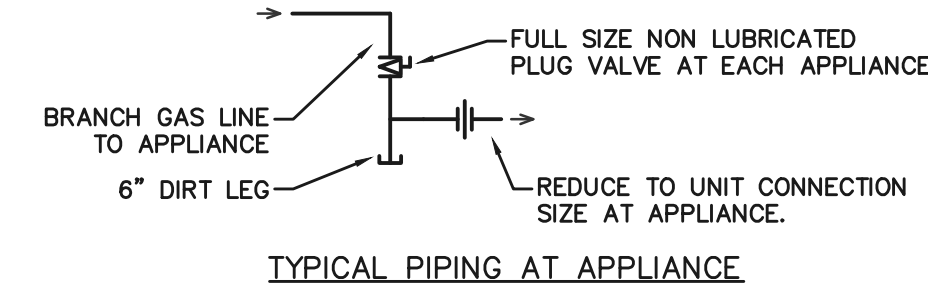
Fabric Duct Inlet connection Detail



Fabric Duct Hanger Detail Single Track Profile

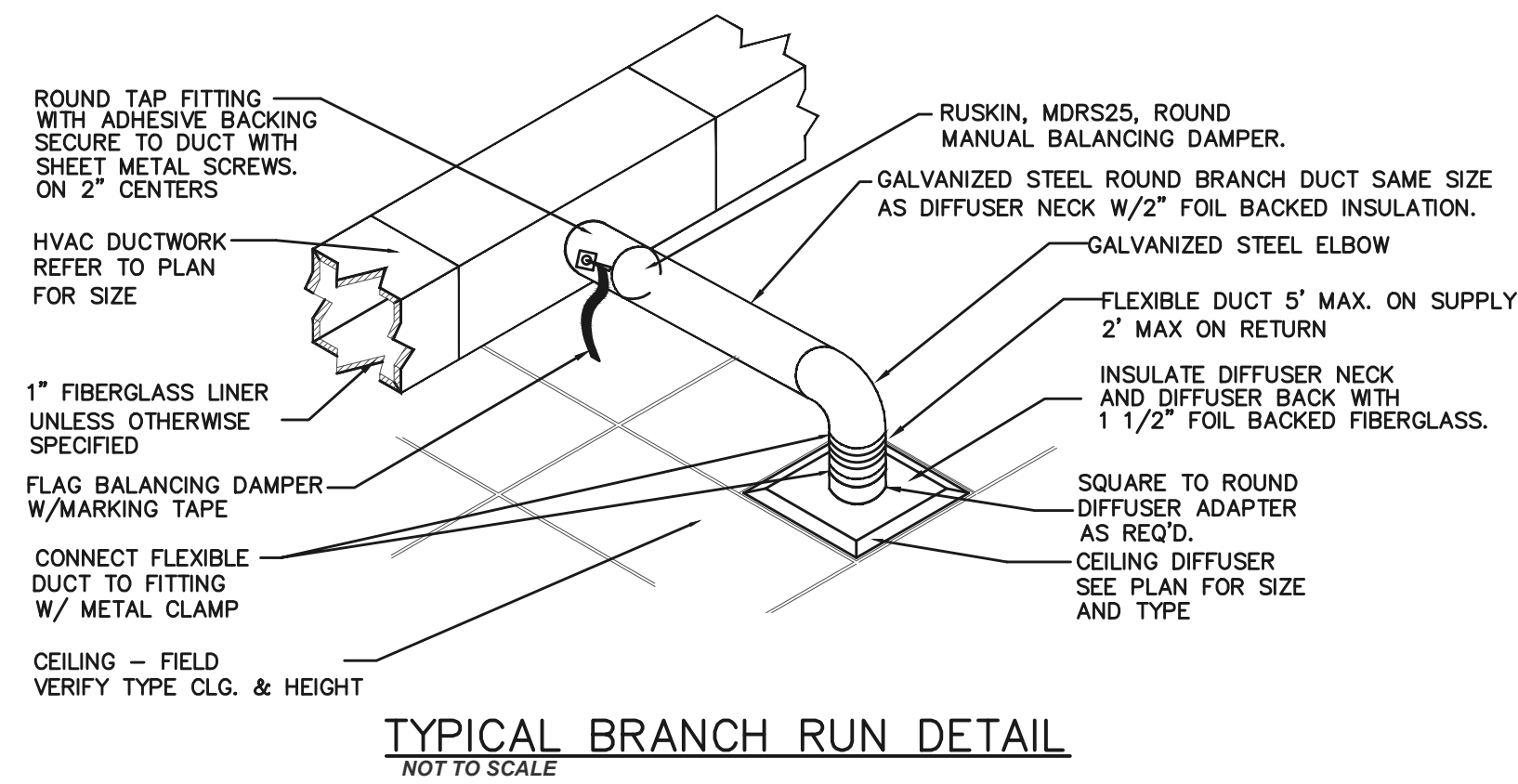


Fabric duct Installation Detail Single Track Profile

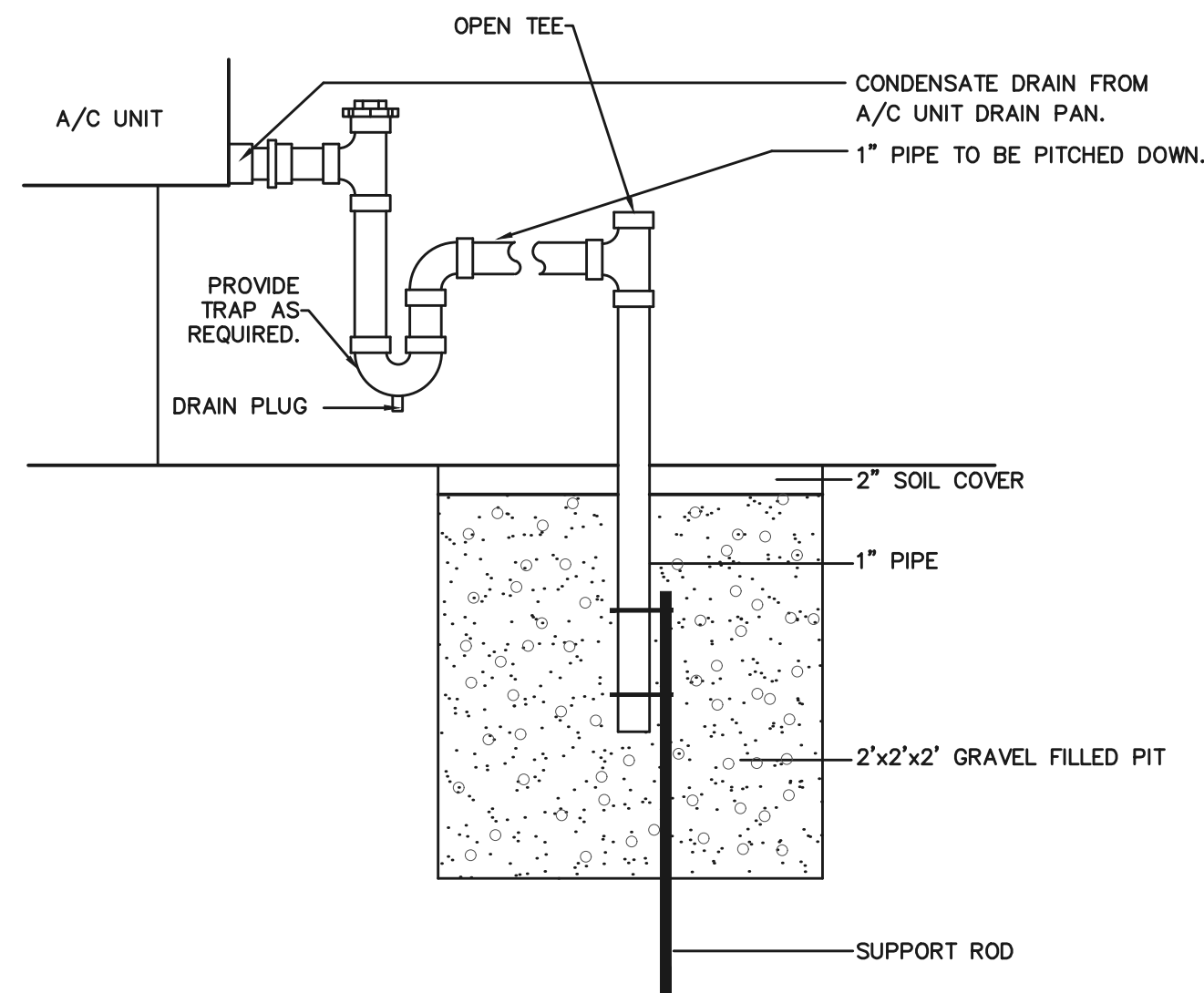


GENERAL GAS PIPING NOTES:

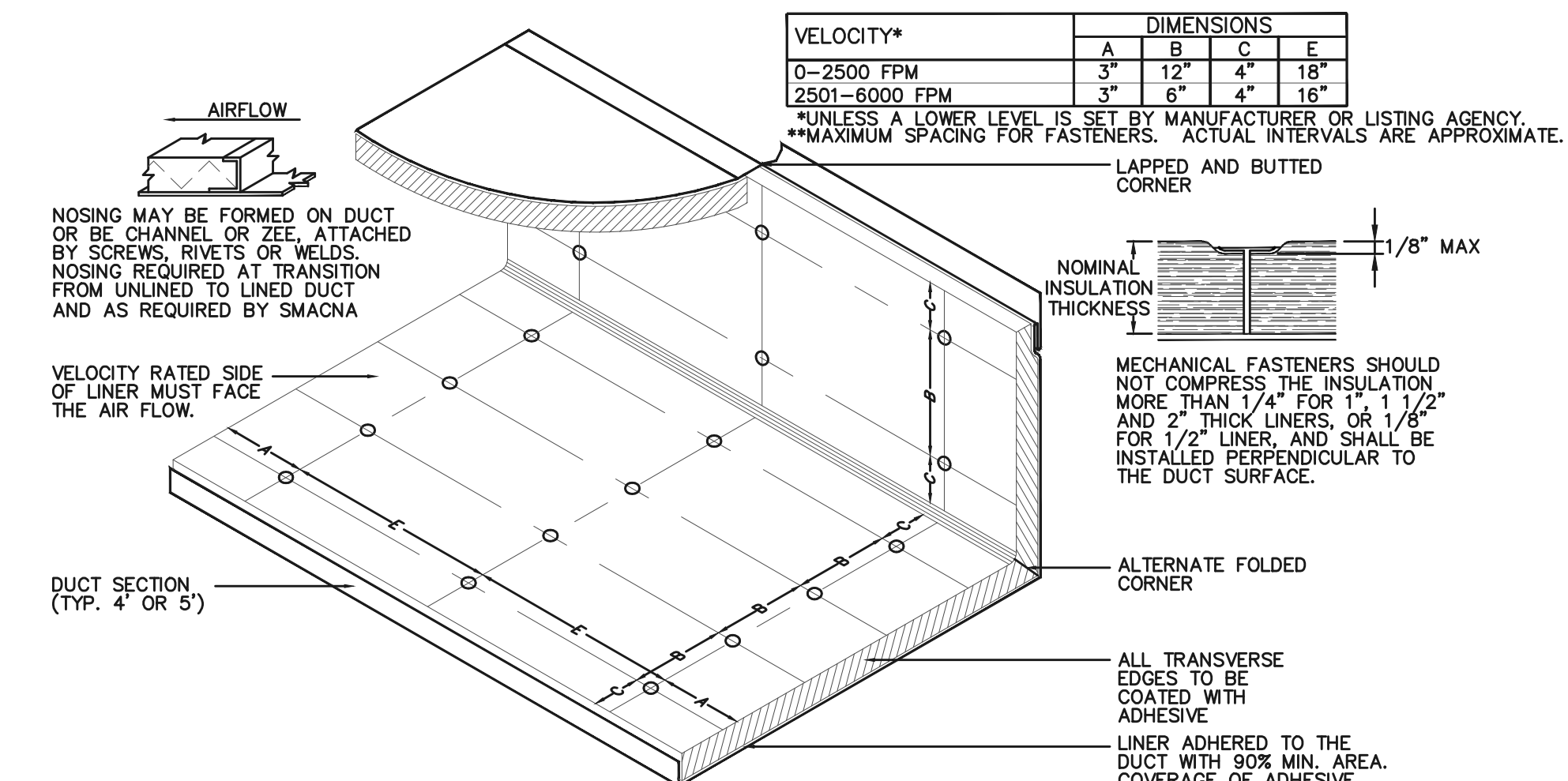
- 1) BALL VALVES ARE NOT ACCEPTABLE. ALL VALVES TO BE NON-LUBRICATED PLUG VALVES RATED FOR GAS SERVICE.
- 2) PIPING, VALVES, UNION, ETC. SHALL REMAIN FULL-SIZE AND SHALL NOT REDUCE TO UNIT CONNECTION SIZE UNTIL WITHIN 6" OF APPLIANCE.
- 3) ANCHOR GAS PIPING TO APPLIANCE PAD OR BUILDING STRUCTURE WITHIN 36" OF TERMINATION. DIRT LEG AND SHUTOFF VALVE SHALL BE EXPOSED ON ROOF. GAS PIPING SHALL NOT BE INSTALLED IN ROOF CURB OF ANY GAS-FIRED, ROOF-MOUNTED MECHANICAL EQUIPMENT.
- 4) DIRT LEGS SHALL BE INSTALLED AS SHOWN IN DETAIL, FORMED BY A 6" CAPPED NIPPLE IN THE RUN OF A TEE.
- 5) PAINT ALL EXPOSED GAS PIPING YELLOW OR GRAY OR SOME OTHER APPROVED COLOR AS DIRECTED BY ARCHITECT OR ENGINEER. WHERE GAS PIPING CAN BE EASILY SEEN AT GRADE, VERIFY COLOR WITH ARCHITECT OR ENGINEER. LABEL ALL GAS PIPING.
- 6) SYSTEMS INSPECTED AND FOUND TO NOT COMPLY WITH THESE REQUIREMENTS WILL REQUIRE CORRECTION AT NO ADDITIONAL COST TO THE OWNER.



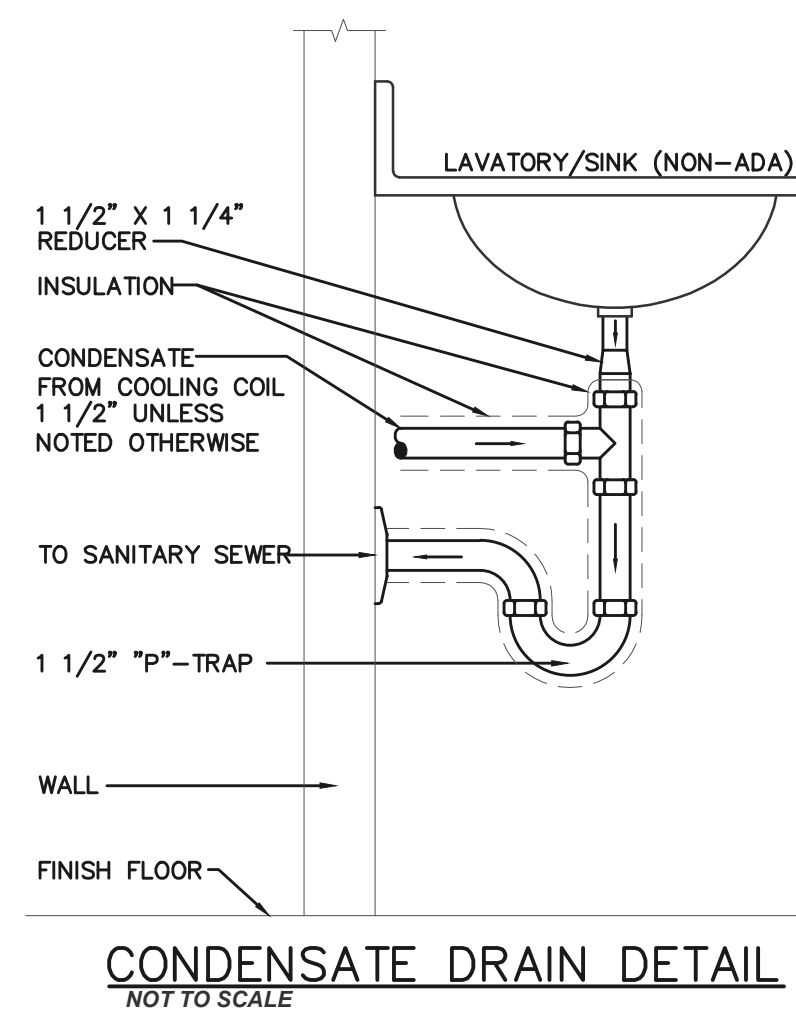
TYPICAL BRANCH RUN DETAIL NOT TO SCALE



FRENCH DRAIN DETAIL NOT TO SCALE



DUCT LINER INSTALLATION DETAIL NOT TO SCALE

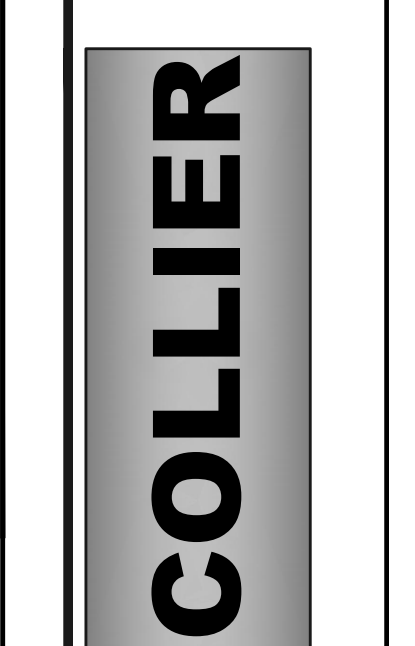


CONDENSATE DRAIN DETAIL NOT TO SCALE

COMMENT:	
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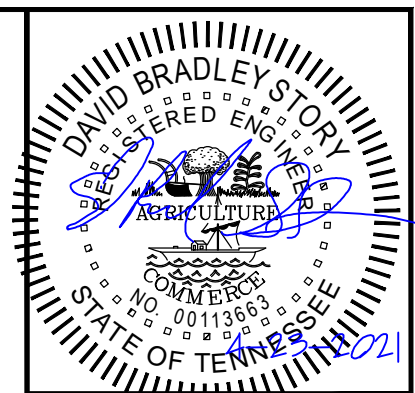


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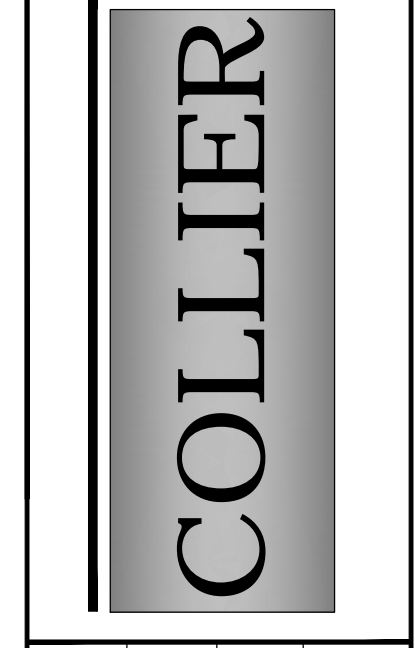


REVISION	DATE	COMMENT

ELECTRICAL PLAN

GYMNASIUM HVAC RENOVATION
COLLINWOOD ELEMENTARY SCHOOL
COLLINWOOD, TN

DW COLLIER, INC.
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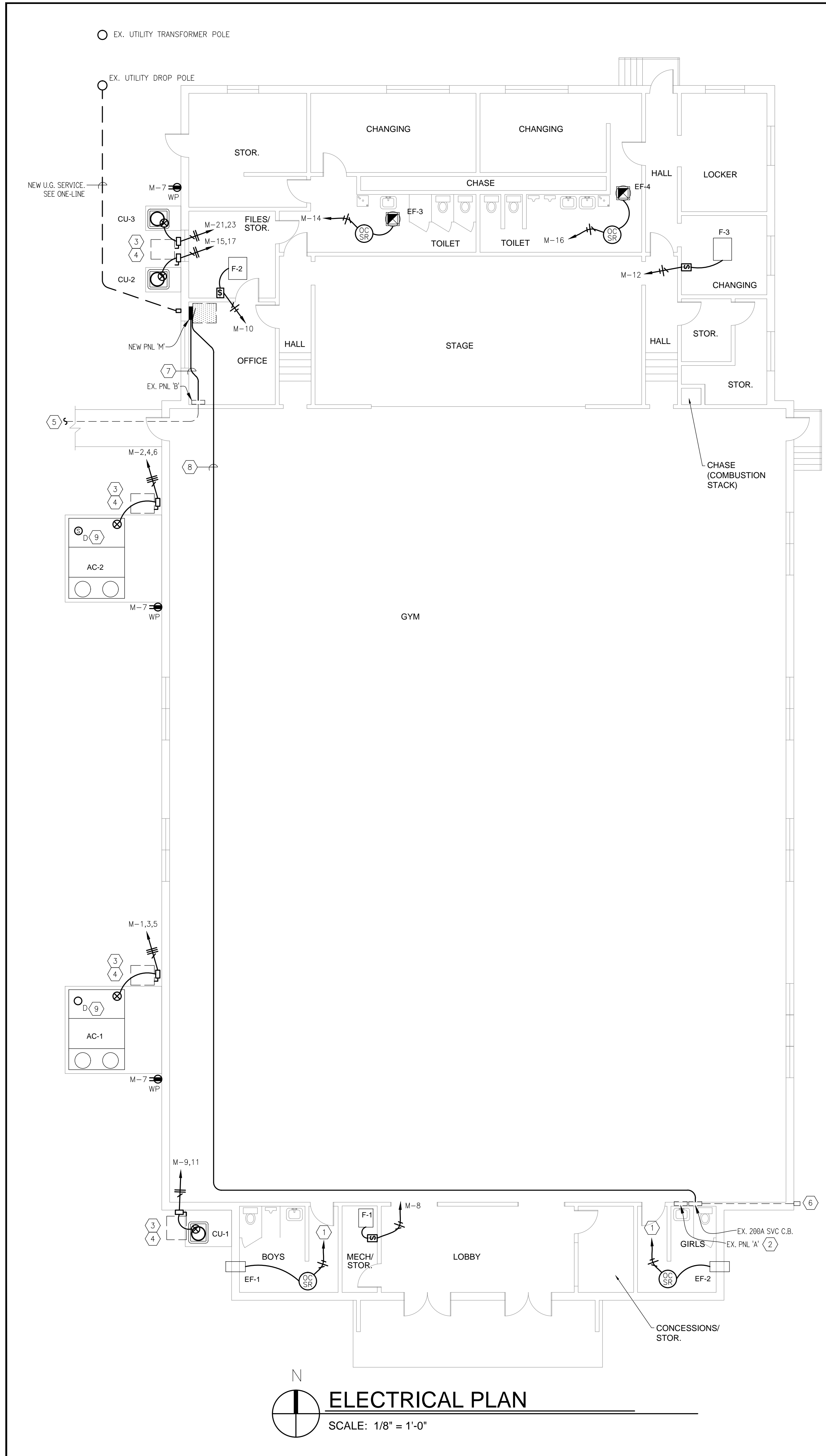


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SCALE	AS SHOWN
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APPROVED BY	DBS
DRAWN BY	DBS

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PROJECT NUMBER:
21-051

SHEET NUMBER:
E1.1



ELECTRICAL PLAN
SCALE: 1/8" = 1'-0"

DEMOLITION NOTE:
PROVIDE ELECTRICAL SUPPORT FOR REMOVAL OF EXISTING MECHANICAL EQUIPMENT. REFER TO MECHANICAL DEMOLITION PLAN FOR QUANTITIES AND LOCATIONS OF ALL EQUIPMENT TO BE REMOVED. I.O.N., REMOVE ALL WIRING BACK TO BRANCH CIRCUIT SOURCE EQUIPMENT. REMOVE ANY EXPOSED OR ACCESSIBLE CONDUITS. UPDATE PANEL CIRCUIT INDEX DENOTING C.B.'S AS SPARES. REFER TO DEMOLITION SPEC. FOR ADDITIONAL INFORMATION.

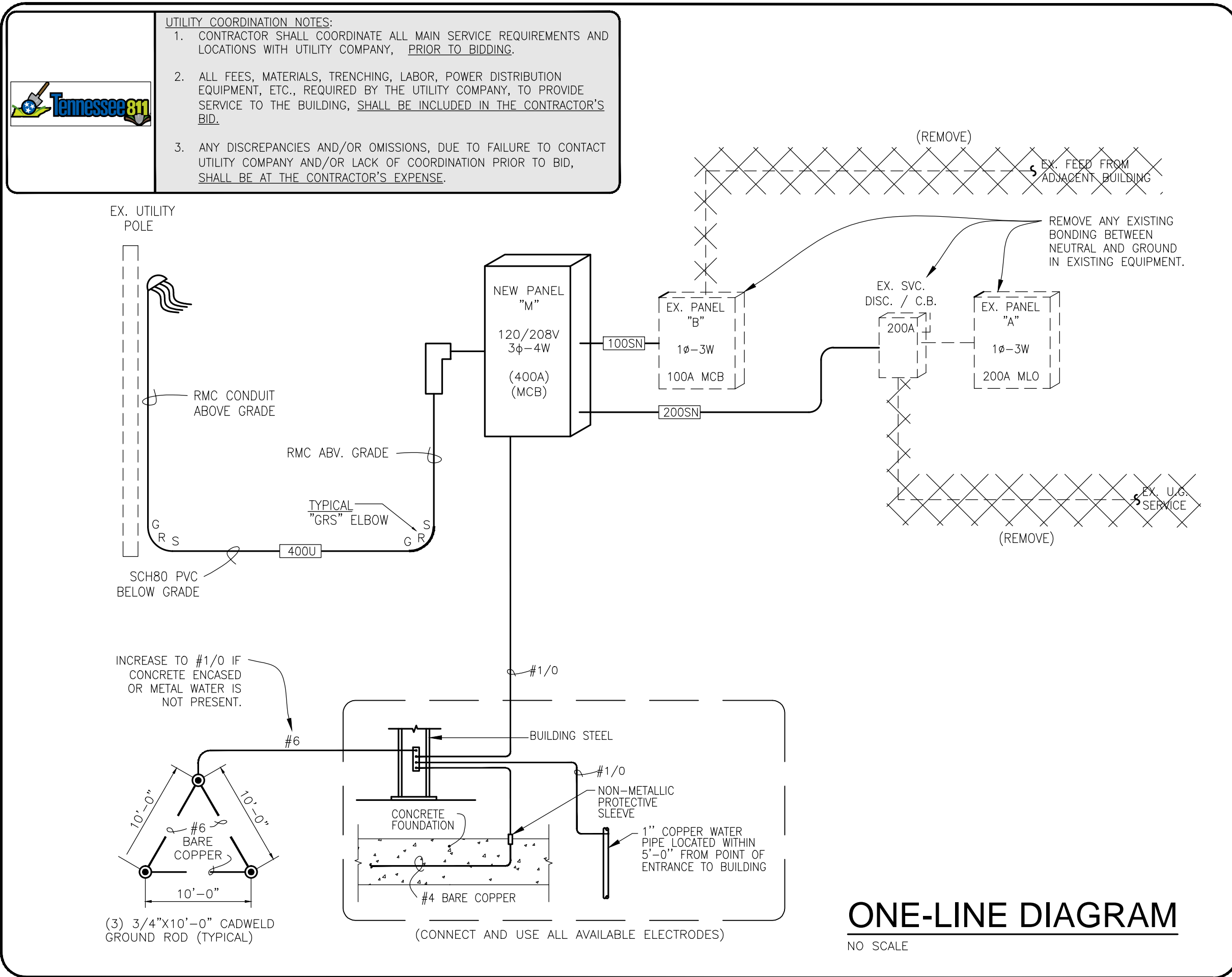
FIRE ALARM SYSTEM
REQUIRED ADDITIONS TO EXISTING FIRE ALARM SYSTEM SHALL BE DONE BY LICENSED FIRE ALARM INSTALLER. THE INSTALLER SHALL BE RESPONSIBLE FOR ANY REQUIRED SUBMITTALS, TESTING, AND RE-CERTIFICATIONS.

- KEYED CONSTRUCTION NOTES:**
- CONNECT TO AN EXISTING 20A, 1P C.B. IN PANEL 'A'.
 - PROVIDE A NEW TYPED CIRCUIT INDEX FOR PANEL INCLUDING UPDATES FROM DEMOLITION & NEW CIRCUITS.
 - MAINTAIN NEC 110.26 WORKING CLEARANCES IN FRONT OF DISCONNECT. COORDINATE WITH EQUIPMENT INSTALLER PRIOR TO LOCATING DISC. TO ENSURE CLEARANCES FROM ANY DUCTWORK, PIPING, UNITS.
 - USE METALLIC CONDUIT FROM DISC. TO WITHIN 2FT OF UNIT CONNECTION THEN TRANSITION TO FLEXIBLE. AT NO POINT SHALL CONDUITS BE IN CONTACT WITH CONCRETE PAD. FURNISH SUPPORTS UNDER CONDUITS TO KEEP ELEVATED FROM PAD.
 - EXISTING FEEDER FROM OTHER BUILDING TO PANEL 'B'. DISCONNECT AND REMOVE FEEDER INCLUDING ALL CONDUIT & WIRE.
 - EXISTING SERVICE ENTRANCE UNDERGROUND. DISCONNECT AND REMOVE EXISTING WIRE.
 - NEW FEEDER TO PANEL 'B'. SEE ONE LINE DIAGRAM.
 - NEW FEEDER TO PANEL 'A'. SEE ONE LINE DIAGRAM.
 - FURNISH A NEW RETURN AIR DUCT SMOKE DETECTOR FOR EACH UNIT. FURNISH CONDUIT, WIRING, & MODULES TO CONNECT TO EXISTING BUILDING FIRE ALARM SYSTEM AND UNIT SHUT DOWN INTERLOCK.

MECHANICAL EQUIPMENT CONNECTION SCHEDULE

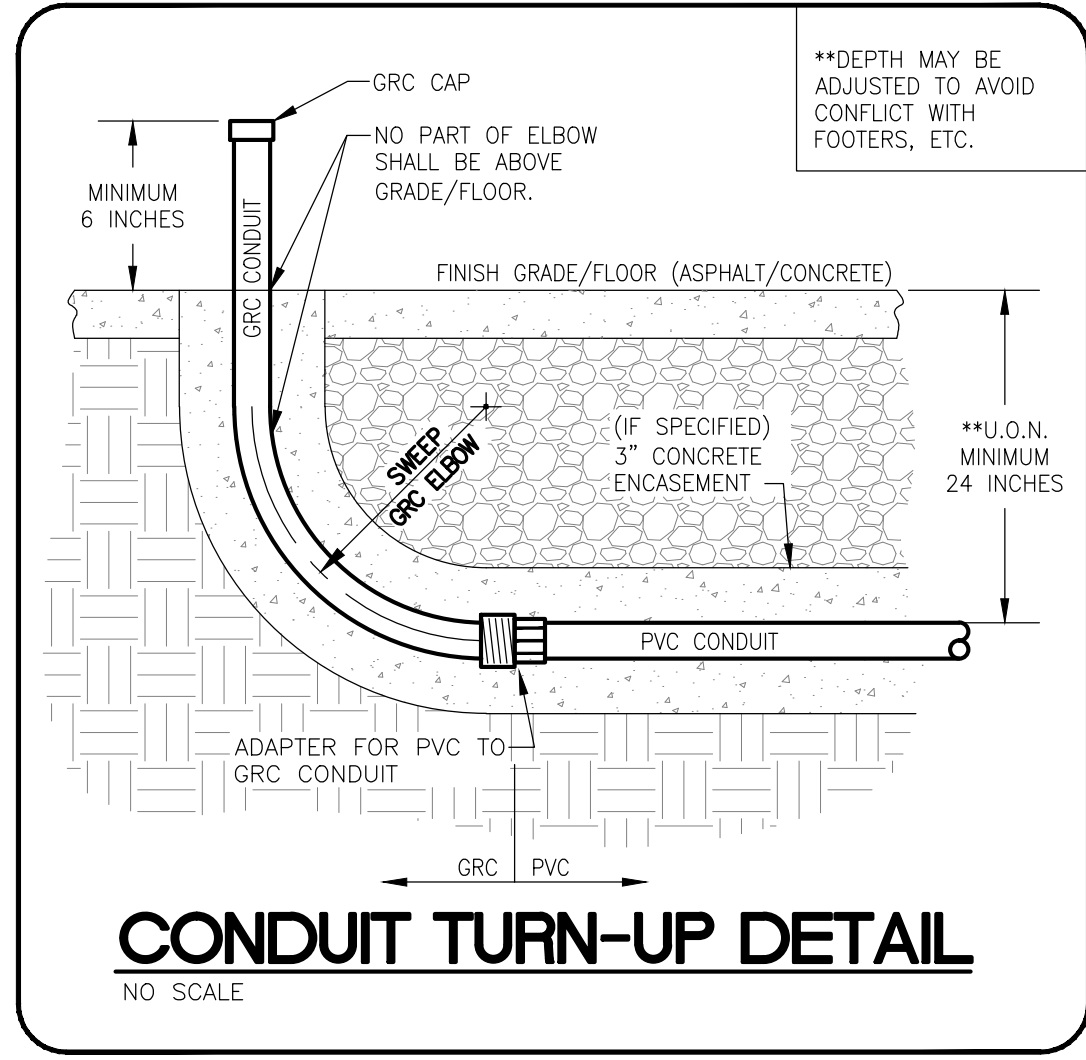
EQUIPMENT DESIGNATION	VOLTAGE & PHASE	LOCATION	LOAD			HACR CIRCUIT BREAKER	LOCAL DISCONNECTING MEANS				STARTERS (PER UNIT)				CIRCUITRY				METHOD OF CONTROL	REMARKS
			kW	hp	MCA		N.F.D.S. SIZE	F.D.S. SIZE	FUSE SIZE	NEMA ENCL.	MAGNETIC (SIZE)	COMBINATION (SIZE)	MANUAL (SIZE)	MANUAL W/ NO O.L.	NEMA ENCL.	PANEL	CONDUIT SIZE MIN.	WIRE QTY& SIZE		
AC-1,2	208V/3Ø	OUTSIDE	--	--	75	3P100	3P100	--	--	3R	--	--	--	--	M	1-1/2"	3 #1	1 #8	SEE MECH. SPEC	-----
CU-1	208V/1Ø	OUTSIDE	--	--	14	2P20	2P30	--	--	3R	--	--	--	--	M	1/2"	2 #10	1 #10	SEE MECH. SPEC	-----
CU-2,3	208V/1Ø	OUTSIDE	--	--	12	2P20	2P30	--	--	3R	--	--	--	M	1/2"	2 #12	1 #12	SEE MECH. SPEC	-----	
F-1	120V/1Ø	MECH	--	--	11.8	1P15	--	--	--	--	--	1P20	--	1	M	1/2"	2 #8	1 #8	SEE MECH. SPEC	-----
F-2	120V/1Ø	FILES	--	--	11.8	1P15	--	--	--	--	--	1P20	--	1	M	1/2"	2 #12	1 #12	SEE MECH. SPEC	-----
F-3	120V/1Ø	CHNGING	--	--	11.8	1P15	--	--	--	--	--	1P20	--	1	M	1/2"	2 #10	1 #10	SEE MECH. SPEC	-----
EF-1,2	120V/1Ø	RR'S	--	--	1/4	1P20	--	--	--	--	--	--	--	A	1/2"	2 #12	1 #12	OCC. SENSOR	-----	
EF-3,4	120V/1Ø	RR'S	--	--	1/15	1P15	--	--	--	--	--	--	--	M	1/2"	2 #12	1 #12	OCC. SENSOR	-----	

- REFER TO ELECTRICAL DRAWINGS AND BUSSING DIAGRAMS FOR UNIT QUANTITIES. REFER TO MECHANICAL DRAWINGS TO VERIFY QUANTITIES AND EXACT PLACEMENT. PLACEMENT OF ELECTRICAL DEVICES SERVING EQUIPMENT SHALL NOT INTERFERE WITH MANUFACTURER'S SERVICE CLEARANCES. MAINTAIN PROPER N.E.C. WORKING CLEARANCES FOR ELECTRICAL DEVICES INSTALLED ON OR NEAR UNIT.
- SEE TYPICAL CONNECTION DETAIL.
- FURNISH AND INSTALL A NEW WEATHERPROOF, 120V, 20A, G.F.C.I. DUPLEX RECEPTACLE MOUNTED ON SUITABLE SUPPORT NEAR UNIT. CONNECT TO NEAREST 120V GENERAL RECEPTACLE CIRCUIT, UNLESS OTHERWISE NOTED. VERIFY LOADING.
- FURNISH AND INSTALL ALL FIELD AND/OR INTERLOCK WIRING REQUIRED TO COMPLETELY CONNECT SYSTEM FOR FUNCTIONALITY.
- CONTRACTOR SHALL INSTALL ANY ELECTRICAL DEVICES THAT ARE SHIPPED LOOSE WITH EQUIPMENT, UNLESS OTHERWISE NOTED.
- COORDINATE WITH MECHANICAL CONTRACTOR FOR CONTROL WIRING REQUIREMENTS AND/OR CONDUITS THAT NEED TO BE FURNISHED AND INSTALLED BY A LICENSED ELECTRICIAN THAT ARE RELATED TO THIS SYSTEM.
- DUCT SMOKE DETECTORS SHALL BE TIED TO AND SUPERVISED BY THE FIRE ALARM SYSTEM. CONTRACTOR SHALL FURNISH AND INSTALL DUCT SMOKE DETECTORS. SEE DRAWINGS FOR LOCATIONS. COORDINATE WITH MECHANICAL CONTRACTOR.
- FOR RESTROOM/TOILET EXHAUST FANS THAT ARE CONNECTED TO SWITCHED LIGHTING CIRCUITS AND CONTROLLED BY OCCUPANCY SENSORS SHALL RUN FOR A MINIMUM OF TEN (10) MINUTES AFTER NO OCCUPANCY IS DETECTED. CONTRACTOR SHALL ADJUST OCCUPANCY SENSOR SETTINGS TO ACCOMPLISH THIS.



COPPER FEEDER SCHEDULE

FEEDER CODE	CONDUIT QTY & SIZE	PHASE COND. QTY & SIZE PER RACEWAY	NEUTRAL COND. QTY & SIZE PER RACEWAY	GND COND. QTY & SIZE PER RACEWAY
3 PHASE UTILITY				
400U	1 @ 4"	(3) #600 MCM	(1) #600 MCM	(NONE)
SINGLE PHASE W/ NEUTRAL				
100SN	1 @ 1-1/2"	(2) #1 AWG	(1) #1 AWG	(1) #8 AWG
200SN	1 @ 2-1/2"	(2) #3/0 AWG	(1) #3/0 AWG	(1) #6 AWG



EQUIPMENT LABELING REQUIREMENTS

ALL ELECTRICAL EQUIPMENT, INCLUDING BUT NOT LIMITED TO SWITCHBOARDS, PANELBOARDS, ENCLOSED C.B.'S, FUSED AND NON-FUSED DISC. SW., MOTOR CONTROLS, ETC., SHALL BE LABELED IN ACCORDANCE WITH THE FOLLOWING:

- LABEL SHALL BE AN ENGRAVED BAKELITE TAG - BLACK BACKGROUND WITH WHITE LETTERING.
- LABEL SHALL BE ATTACHED TO EQUIPMENT WITH SILICONE ADHESIVE.
- ALL LABELS SHALL HAVE AN EQUIPMENT NAME AT THE TOP IN SLIGHTLY LARGER LETTERING THAN OTHER TEXT ON THE LABEL. FOR PANELBOARDS OR SWITCHBOARDS, THE NAME SHALL BE THE NAME OF SAID EQUIPMENT. FOR DISCONNECTS, STARTERS, ETC., THE NAME SHALL BE THE EQUIPMENT BEING FED.
- ALL LABELS SHALL INCLUDE THE UPSTREAM EQUIPMENT NAME AND CIRCUIT # THAT IS PROVIDING POWER TO SAID EQUIPMENT. IN THE CASE OF SERVICE EQUIPMENT, JUST REPLACE THIS LINE WITH THE WORDS "SERVICE EQUIPMENT"
- ALL LABELS SHALL INCLUDE THE FOLLOWING INFORMATION: VOLTAGE(S), PHASES, 3 OR 4 WIRE, MAIN OC DEVICE OR MAIN LUG, AMP RATING, AND PHASE AND NEUTRAL WIRE COLORS.

IN ADDITION TO THE ABOVE LABEL, ANY EQUIPMENT THAT CONTAINS OVERCURRENT OR SWITCHING DEVICES SHALL HAVE ADDITIONAL INFORMATION ACCORDANCE WITH THE FOLLOWING:

- ENGRAVED BAKELITE TAG - EITHER A SECOND LABEL OR ADD TO THE FIRST LABEL ABOVE.
- LABEL SHALL INCLUDE, AT MINIMUM, THE FOLLOWING INFORMATION:
 - AVAILABLE FAULT CURRENT
 - DATE THE LABEL WAS CREATED
- THE ENGINEER OF RECORD WILL PROVIDE THE ABOVE INFORMATION TO CONTRACTOR PRIOR TO PROJECT COMPLETION. CONTRACTOR SHALL PROVIDE A MINIMUM OF ONE WEEK'S NOTICE TO ENGINEER FOR TIME TO PERFORM CALCULATIONS.
- TO ASSIST THE ENGINEER IN PROVIDING ACCURATE DATA, AT THE TIME OF REQUEST, THE CONTRACTOR SHALL PROVIDE THE FOLLOWING INFORMATION TO THE ENGINEER: THE LENGTH AND SIZE OF ALL SERVICE AND FEEDER CONDUCTORS AND BRANCH CONDUCTORS TO UTILIZATION EQUIPMENT REQUIRING LABELS, TYPE OF WIRING METHOD USED, CU OR AL CONDUCTORS.

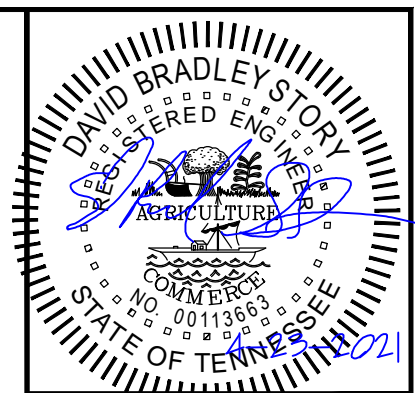
THREE PHASE PANELBOARD SCHEDULE

CIRCUIT DESCRIPTION	CONNECTED KVA										CONNECTED KVA									
	LTG	REC	HVAC	EQ	KIT	AMP/POLE	WIRE	CCT	PHASE	CCT	WIRE	AMP/POLE	LTG	REC	HVAC	EQ	KIT	CIRCUIT DESCRIPTION		
AC-1			8.1			100/3	1	1 A	2			100/3			8.1			AC-2		
RECEPTS - EXTERIOR		0.54				20/1	10	7 A	8	8	15/1				1.42			F-1		
CU-1			1.31			20/2	10	9 B	10	12	15/1				1.42			F-2		
SPARE						20/1		11 C	12	10	15/1				1.42			F-3		
CU-2			1.13			20/1		13 A	14	12	15/1				0.2			EF-3		
SPARE			1.13			20/2	12	15 B	16	12	15/1				0.2			EF-4		
CU-3			1.13			20/1		17 C	18	1	100/2		0	1.5	0	10	0	EXISTING PANEL 'B'		
			1.13			20/2	12	19 A	20		20/1		0	3	0	6	0	SPARE		
								21 B	22		20/1							SPARE		
								23 C	24		20/1							SPARE		
								25 A	26		20/1							SPARE		
								27 B	28											
								29 C	30											
								31 A	32											
								33 B	34											
								35 C	36											
								37 A	38											
								39 B	40											
								41 C	42											

* SHALL BE A GFCI TYPE BREAKER

5.2	4.7	0	8	0	SUB-FEED BREAKER TO EXIST.
5.7	5.34	0	7.5	0	PANEL 'A' - 200A, 2P
					LARGEST MOTOR KVA

CONNECTED KVA LOAD		DEMANDED KVA LOAD		CONNECTED KVA/PHASE	
LIGHTING	10.9	125%	13.63 (PER NEC TABLE 220.12)	45.26	PHASE A
RECEPTACLE	15.08	50%	12.54 (50% DEMAND ABOVE 10KVA)	39.9304	PHASE B
HVAC	60.4	100%	60.4	32.69	PHASE C
EQUIPMENT	31.5	100%	31.5		
KITCHEN	0	100%	0 (PER NEC TABLE 220.56)		
				TOTAL LOADS	
				117.9	TOTAL CONNECTED KVA
				118.1	TOTAL DEMAND KVA
				PANEL DESIGN AMPS	400
				327.7	TOTAL DEMAND AMPS



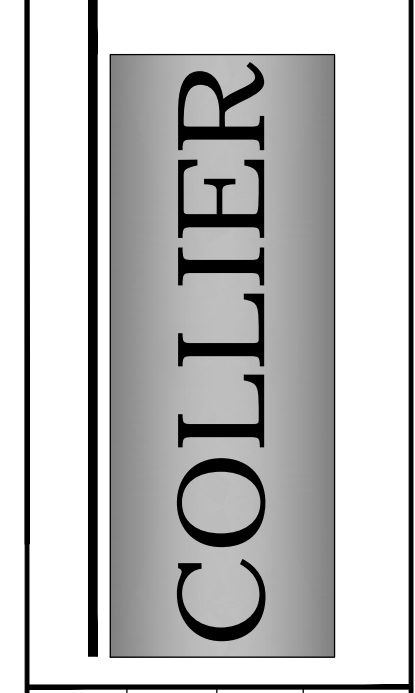
REVISION

NO.	DATE	DESCRIPTION

ONE-LINE DIAG. & PANEL SCHEDS.

PROJECT: GYMNASIUM HVAC RENOVATION
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DESIGNED BY: TSL	DBS
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