

GENERAL NOTES:

- DUCT SIZES INDICATED ARE ACTUAL SHEET METAL DIMENSIONS. ALLOWANCES HAVE BEEN MADE FOR THICKNESS OF INSULATION. ALL METALLIC SUPPLY, RETURN, AND TRANSFER DUCTWORK TO BE LINED WITH 1 1/2" THICK, FIBERGLASS INSULATION EQUAL TO CERTAINTED TOUGHGARD TYPE 150, R-6 MINIMUM.
- EXHAUST DUCTS DO NOT REQUIRE INSULATION.
- 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.
- ALL DUCTWORK INSTALLED OUTDOORS, INCLUDING LINED AND UNLINED (SUPPLY, RETURN, AND EXHAUST) SHALL BE EXTERNALLY INSULATED WITH 1" RIGID BLUEBOARD POLYSTYRENE INSULATION ADHERED TO DUCT AND COVERED WITH POLYGUARD SELF-ADHESIVE, SELF-HEALING MEMBRANE.
- 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 INSTALLATION. COORDINATE EXACT LAYOUT WITH VENDOR PROVIDED DESIGN.
- 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.
- COORDINATE EXCAVATION AND BURIAL OF PIPING WITH EXISTING UNDERGROUND AND ABOVE GROUND OBSTACLES.
- 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.

KEYED NOTES:

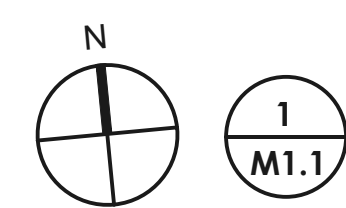
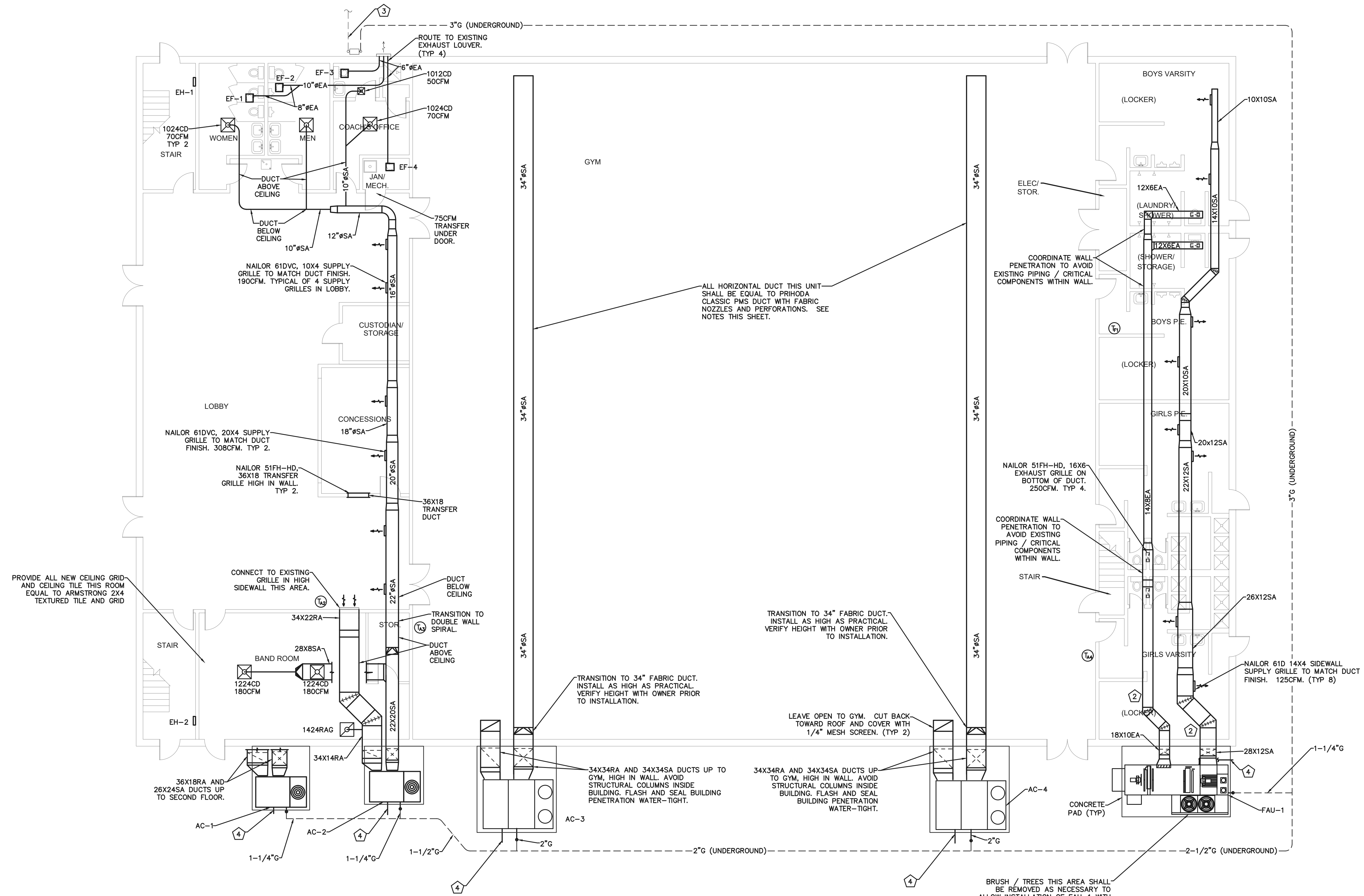
- NOT USED
- AS MUCH AS IS PRACTICAL: ROUTE SA AND EA DUCTS FOR FAU-1 HIGH IN SPACES, UTILIZING EXISTING OPENINGS ABOVE WALLS AND PARTITIONS.
- EXISTING NATURAL GAS METER. EXISTING NATURAL GAS LOAD ESTIMATED AT 1,940CFH. NEW LOAD IS 1,860CFH. NEW PIPING IS SIZED AT LOW PRESSURE. VERIFY THAT LOW
- CONDENSATE DRAIN TO FRENCH DRAIN. INSTALL FRENCH DRAIN PER DETAIL. SIZE PIPING PER MANUFACTURER.

LEGEND	
	CEILING SUPPLY AIR DIFFUSER 24X24
	SIDEWALL SUPPLY AIR DIFFUSER
	CEILING RETURN AIR GRILLE
	RETURN/EXHAUST AIR GRILLE BOTTOM OF DUCT
	RETURN AIR GRILLE SIDEWALL
	THERMOSTAT
	TURNING VANE
SA	SUPPLY AIR
RA	RETURN AIR
EA	EXHAUST AIR

NECK SIZE: (8)(24)(RAG) LAY-IN CEILING SIZE (24"x24")
 (XXXCFM) RAG - RETURN AIR GRILLE
 CD - CEILING DIFFUSER
 EAG - EXHAUST AIR GRILLE
 SWG - SIDEWALL GRILLE
 TAG - TRANSFER AIR GRILLE

AIR FLOW RATING:

NOTE: ROUND BRANCH RUNOUT SIZE SAME SIZE AS DIFFUSER NECK UNLESS OTHERWISE SPECIFIED ON DRAWING.

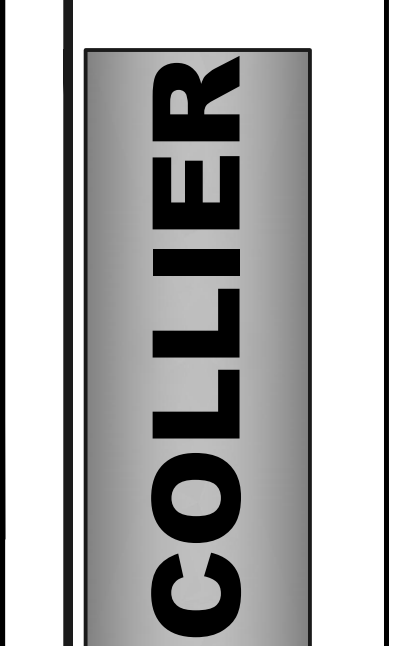


Gym 1st Floor HVAC Plan
 SCALE: 1/8" = 1'-0"

REVISION	DATE	COMMENT

SHEET TITLE: **1st Floor HVAC Plan**
 PROJECT: **GYMNASIUM HVAC RENOVATION**
 WAYNESBORO MIDDLE SCHOOL
 WAYNESBORO, TN

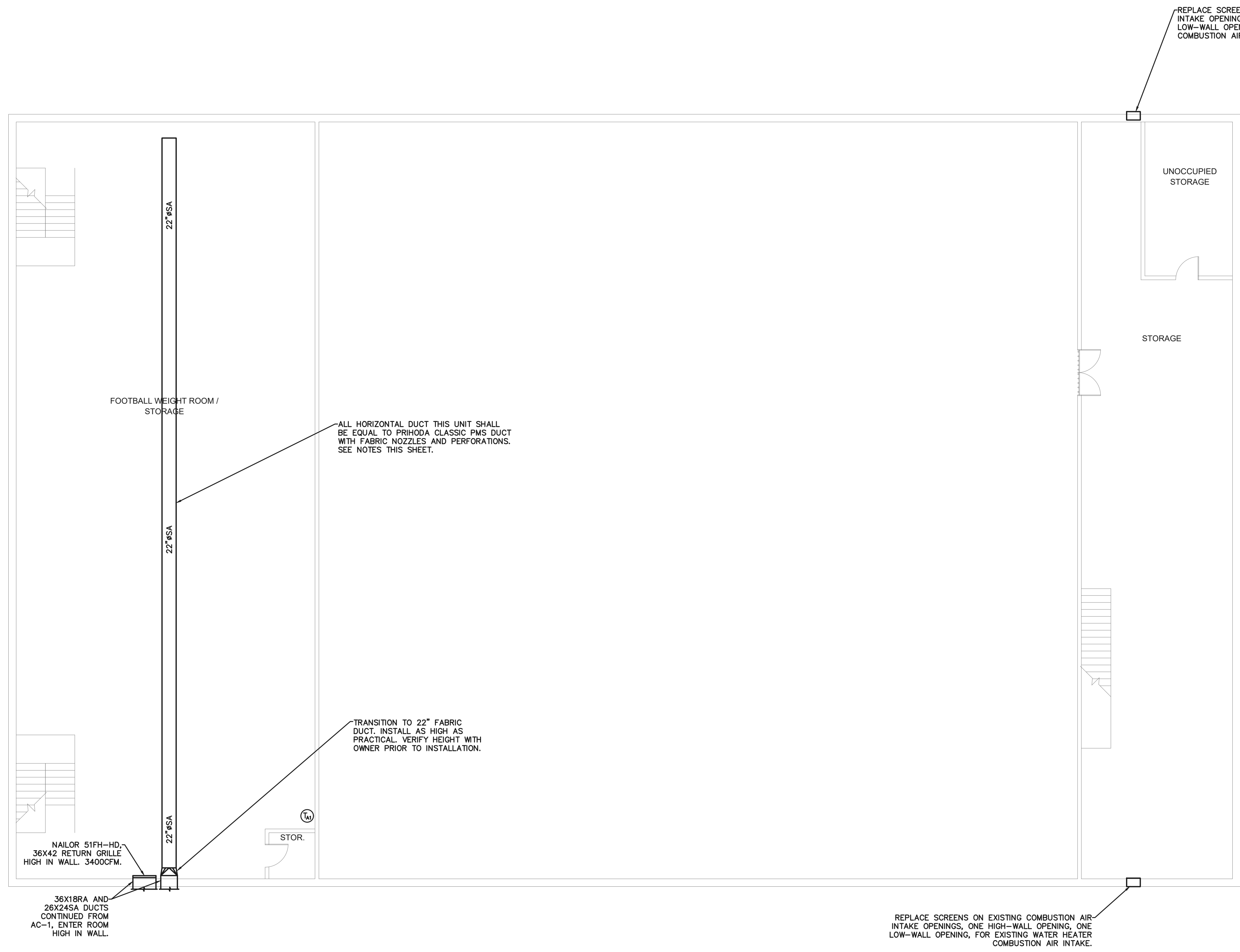
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PROJECT NUMBER: **21-050**
 SHEET NUMBER: **M1.1**



REPLACE SCREENS ON EXISTING COMBUSTION AIR INTAKE OPENINGS, ONE HIGH-WALL OPENING, ONE LOW-WALL OPENING, FOR EXISTING WATER HEATER COMBUSTION AIR INTAKE.

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

TRANSITION TO 22" FABRIC DUCT. INSTALL AS HIGH AS PRACTICAL. VERIFY HEIGHT WITH OWNER PRIOR TO INSTALLATION.

REPLACE SCREENS ON EXISTING COMBUSTION AIR INTAKE OPENINGS, ONE HIGH-WALL OPENING, ONE LOW-WALL OPENING, FOR EXISTING WATER HEATER COMBUSTION AIR INTAKE.

GENERAL NOTES:

- DUCT SIZES INDICATED ARE ACTUAL SHEET METAL DIMENSIONS. ALLOWANCES HAVE BEEN MADE FOR THICKNESS OF INSULATION. ALL METALLIC SUPPLY, RETURN, AND TRANSFER DUCTWORK TO BE LINED WITH 1 1/2" THICK, FIBERGLASS INSULATION EQUAL TO CERTAINTED TOUGHGARD TYPE 150, R-6 MINIMUM.
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- ALL DUCTWORK INSTALLED OUTDOORS, INCLUDING LINED AND UNLINED SHALL BE EXTERNALLY INSULATED WITH 1" RIGID BLUEBOARD POLYSTYRENE INSULATION ADHERED TO DUCT AND COVERED WITH POLYGUARD SELF-ADHESIVE, SELF-HEALING MEMBRANE.
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- WHERE HOLES LEFT BY REMOVAL OF EXISTING EQUIPMENT OR SYSTEMS, PROPERLY PATCH, SEAL, RECONSTRUCT, AND PAINT (AS APPLICABLE) AROUND NEW COMPONENTS TO FINISH BUILDING AND GIVE IT A UNIFORM APPEARANCE.
- 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.

LEGEND

- CEILING SUPPLY AIR DIFFUSER NAILOR 61D
- SIDEWALL SUPPLY AIR DIFFUSER
- RETURN AIR GRILLE BOTTOM OF DUCT
- RETURN AIR GRILLE SIDEWALL
- THERMOSTAT
- TURNING VANE
- SUPPLY AIR
- RETURN AIR

NECK SIZE

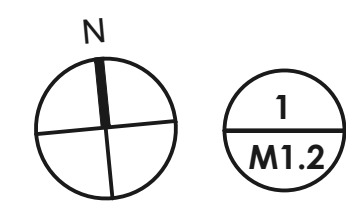
- RAO - RETURN AIR GRILLE
- CO - CEILING DIFFUSER
- EAG - EXHAUST AIR GRILLE
- SWG - SIDEWALL GRILLE
- TAG - TRANSFER AIR GRILLE

LAY-IN CEILING SIZE (24"x24")

- (8)(24)(RAG)
- (XXXCFM)

AIR FLOW RATING

NOTE: ROUND BRANCH RUNOUT SIZE SAME SIZE AS DIFFUSER NECK UNLESS OTHERWISE SPECIFIED ON DRAWING.

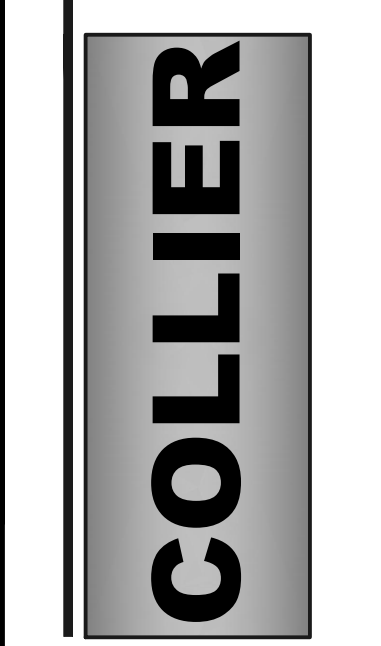


Gym 2nd Floor HVAC Plan
SCALE: 1/8" = 1'-0"

COMMENT:	
DATE:	
REVISION:	

SHEET TITLE: **2nd Floor HVAC Plan**
PROJECT: **GYMNASIUM HVAC RENOVATION**
WAYNESBORO MIDDLE SCHOOL
WAYNESBORO, TN

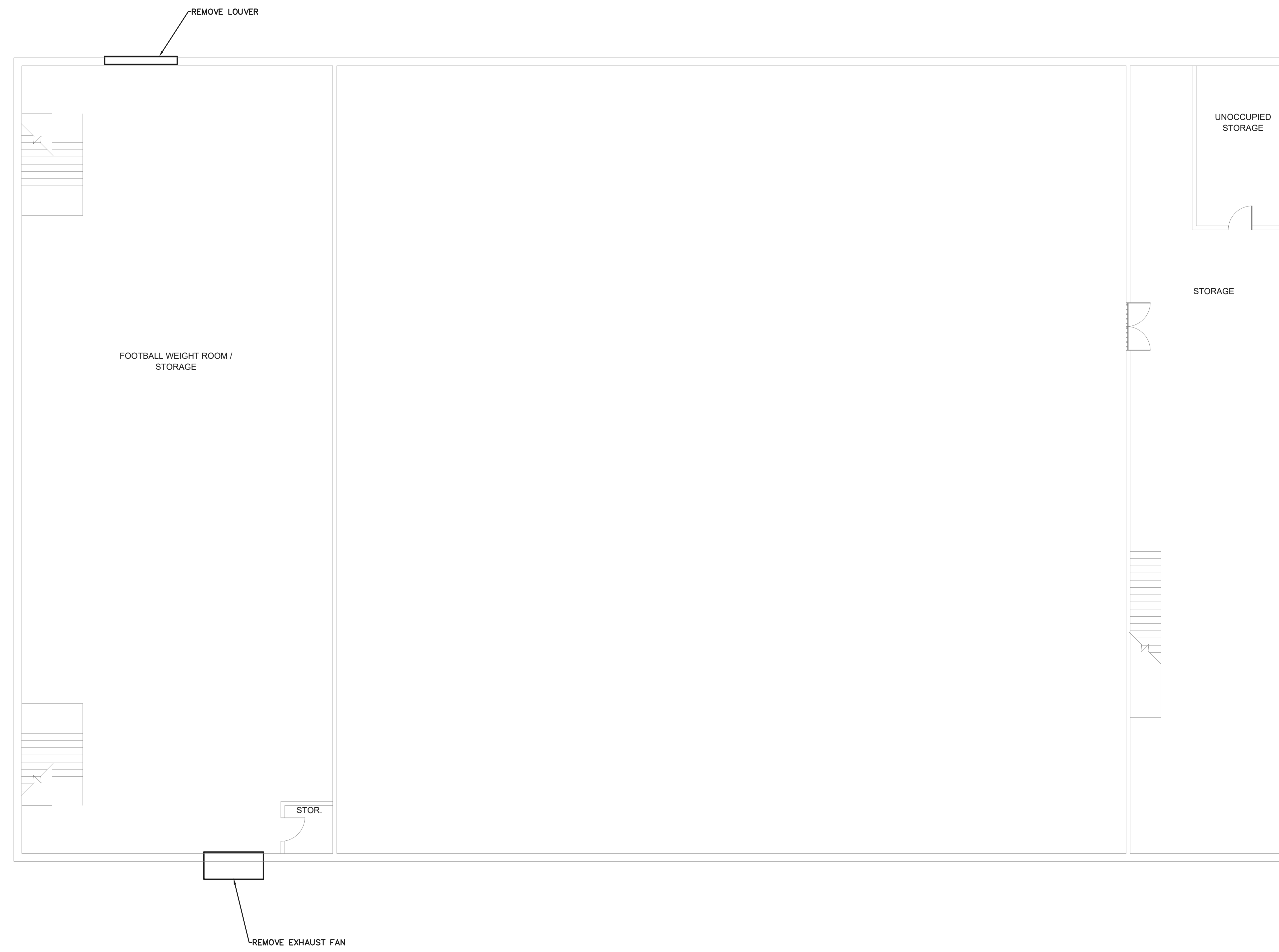
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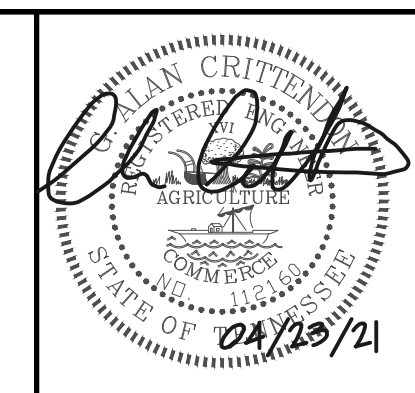
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PROJECT NUMBER: **21-050**
SHEET NUMBER: **M1.2**



- GENERAL NOTES:
1. ALL HOLES CREATED IN INTERIOR OR EXTERIOR WALLS BY DEMOLITION OF EXISTING EQUIPMENT OR COMPONENTS SHALL BE PATCHED, SEALED, PAINTED (WHERE APPLICABLE), INSULATED, RECONSTRUCTED (WHERE APPLICABLE), AND MADE TO MATCH THE SURROUNDING WALL, ON BOTH SIDES OF WALL, TO OWNER'S SATISFACTION.
 2. REVIEW THE PLANS FOR INSTALLATION OF NEW WORK, TO COORDINATE THE RE-USE OF ANY BUILDING OPENINGS CREATED BY DEMOLITION.
 3. 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.

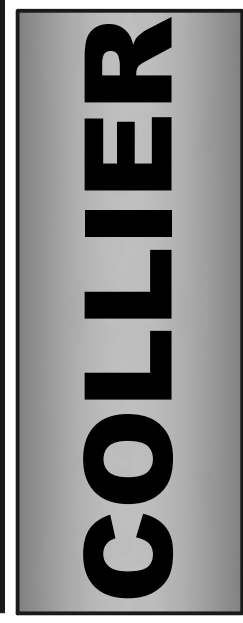


COMMENT:				
DATE:				
REVISION:				

SHEET TITLE:
2nd Floor HVAC Demolition Plan

PROJECT:
**GYMNASIUM HVAC RENOVATION
WAYNESBORO MIDDLE SCHOOL
WAYNESBORO, TN**

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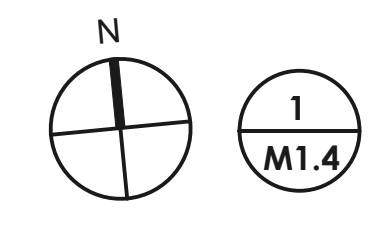


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PROJECT NUMBER:
21-050

SHEET NUMBER:
M1.4



Gym 2nd Floor HVAC Demolition Plan
SCALE: 1/8" = 1'-0"

MECHANICAL NOTES:

- 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. IF TO THE KNOWLEDGE OF THE CONTRACTOR, THE DRAWINGS AND SPECIFICATIONS ARE IN CONFLICT WITH THE ABOVE, HE SHALL PROMPTLY NOTIFY THE ENGINEER IN WRITING SO THAT ANY NECESSARY CHANGES CAN BE PROVIDED FOR IN HIS CONTRACT. IF THE CONTRACTOR PERFORMS ANY WORK WITHOUT NOTICE AS REQUIRED, HE SHALL BEAR ALL COSTS OF CORRECTIVE ACTION.
- CONTRACTOR SHALL INCLUDE IN HIS QUOTATION ALL APPLICABLE SERVICE CHARGES, FEES, PERMITS, ROYALTIES, AND OTHER SIMILAR COSTS IN CONNECTION WITH THE WORK. OBTAIN PERMITS, AND REQUEST INSPECTIONS FROM AUTHORITY HAVING JURISDICTION.
- INSTALL WORK IN LOCATIONS SHOWN ON DRAWINGS, UNLESS PREVENTED BY PROJECT CONDITIONS. FOR PURPOSES OF CLEARNESS AND LEGIBILITY, DRAWINGS ARE ESSENTIALLY DIAGRAMMATIC, AND ALTHOUGH SIZE AND LOCATION OF EQUIPMENT ARE DRAWN TO SCALE WHENEVER POSSIBLE, THE CONTRACTOR SHALL REVIEW THE STRUCTURAL, ELECTRICAL, ARCHITECTURAL, FIRE PROTECTIONS, ETC. DRAWINGS AND DETERMINE AREAS OF INTERFERENCE. THE CONTRACTOR SHALL NOTIFY THE ARCHITECT/ENGINEER OF INTERFERENCE'S PRIOR TO FABRICATION OF DUCTWORK OR PIPING.
- 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. HOWEVER, IT IS NOT INTENDED THAT DRAWINGS INDICATE ALL NECESSARY OFFSETS, AND IT SHALL BE THE WORK OF THIS SECTION TO INSTALL PIPING AND DUCTS IN SUCH A MANNER AS TO CONFORM TO STRUCTURE, AVOID ALL OBSTRUCTIONS, PRESERVE HEADROOM AND KEEP OPENINGS AND PASSAGEWAYS CLEAR WITHOUT FURTHER INSTRUCTION OR COST TO THE OWNER.
- 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.
- THE MECHANICAL CONTRACTOR SHALL PREPARE SUBMITTALS ON ALL EQUIPMENT AND MATERIALS APPLICABLE TO THIS PROJECT AND SUBMIT TO ENGINEER FOR REVIEW PRIOR TO PROCUREMENT, FABRICATION OR ANY CONSTRUCTION. SUBMITTALS MAY BE MAILED VIA APPROPRIATE CHANNELS OR SUBMITTED IN PDF FORM VIA EMAIL. PARTIAL SUBMITTALS WILL NOT BE REVIEWED.
- MOTORS FOR ALL MECHANICAL EQUIPMENT SHALL BE FURNISHED BY SUPPLIERS OF SUCH EQUIPMENT AND SHALL BE THE TYPE THAT HAS CHARACTERISTICS SUITABLE FOR CONTINUOUS OPERATING CONDITIONS.
- TRANSPORT AND HANDLE PRODUCTS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
- STORE AND PROTECT PRODUCTS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS, WITH SEALS AND LABELS INTACT AND LEGIBLE.
- ALL MECHANICAL EQUIPMENT, AS APPLICABLE, SHALL HAVE U.L. LISTING OR EQUIVALENT. VERIFY THAT EACH PIECE OF EQUIPMENT OR SYSTEM HAS BEEN CHECKED FOR PROPER LUBRICATION, DRIVE ROTATION, BELT TENSION, CONTROL SEQUENCE, OR FOR OTHER CONDITIONS WHICH MAY CAUSE DAMAGE.
- DEMONSTRATE OPERATION AND MAINTENANCE OF PRODUCTS TO OWNER'S PERSONNEL ONE WEEK PRIOR TO DATE OF FINAL INSPECTION.
- EXECUTE FINAL CLEANING PRIOR TO FINAL PROJECT ASSESSMENT.
- SEISMICALLY RESTRAIN HVAC EQUIPMENT, GAS PIPING AND HYDRONIC PIPING AS REQUIRED BY LOCAL CODE. PROVIDE SUPPORT AND EQUIPMENT REQUIRED TO CONTROL EXPANSION AND CONTRACTION OF PIPING. PROVIDE LOOPS, PIPE OFFSETS, AND SWING JOINTS, WHERE REQUIRED.
- ENTIRE HVAC SYSTEM AND HYDRONIC SYSTEM (AS APPLICABLE) SHALL BE BALANCED BY A CERTIFIED TEST & BALANCE CONTRACTOR. ALL AIR FLOW RATES SHALL BE WITHIN 5% OF SPECIFIED FLOW RATE. PROVIDE CERTIFIED TEST & BALANCE REPORT AT END OF PROJECT.
- DISPOSE OF CONDENSATE IN ACCORDANCE WITH LOCAL CODE REQUIREMENTS. PROVIDE TRAP IN CONDENSATE DRAIN LINE AT EACH COIL OR 90+ FURNACE IN ACCORDANCE WITH PUBLISHED MANUFACTURER'S INSTRUCTIONS. EACH TRAP SHALL BE PROVIDED WITH A TEE TO ALLOW FOR CLEANING. CONDENSATE PIPING SHALL BE SCH 40 PVC UNLESS NOTED OTHERWISE OR PROHIBITED BY CODES. INSULATE CONDENSATE DRAIN PIPING, SLOPE TO DRAIN, AND TERMINATE IN ACCORDANCE WITH CODE OR AS SHOWN ON THESE DRAWINGS.
- PROVIDE NON-CONDUCTING DIELECTRIC CONNECTIONS WHEREVER JOINTING DISSIMILAR METALS.
- ALL DUCTWORK SHALL BE FABRICATED AND INSTALLED IN ACCORDANCE WITH THE 2005 EDITION "SMACNA HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE", AND AS INDICATED. PROVIDE RADIIUS ELBOW OR TURNING VANES IN ALL 90° ELBOWS. PROVIDE DUCT MATERIAL, GAGES, REINFORCING, AND SEALING FOR OPERATING PRESSURES INDICATED. DUCTWORK SHALL BE FABRICATED FROM ASTM A525 AND ASTM A527 GALVANIZED STEEL SHEET, LOCK-FORMING QUALITY, HAVING 90% ZINC COATING OF IN CONFORMANCE WITH ASTM A90. ALL DUCTS SHALL BE GALVANIZED STEEL UNLESS OTHERWISE NOTED ON DRAWINGS AND APPROVED.
- PROVIDE TEMPORARY PROTECTION FOR EQUIPMENT DURING CONSTRUCTION TO PREVENT DAMAGE TO EQUIPMENT AND COILS. PROVIDE TEMPORARY FILTERS AT EACH RETURN AIR INLET DURING CONSTRUCTION. PROVIDE AND INSTALL A NEW, CLEAN SET OF FILTERS FOR EACH SYSTEM AT PROJECT COMPLETION.
- FLEXIBLE DUCTWORK SHALL BE EQUIVALENT TO THERMAFLEX WITH R-6.0 MINIMUM, R-8.0 IF IN ATTIC SPACE, FIBERGLASS INSULATION AND VAPOR BARRIER. FLEXIBLE DUCTWORK SHALL BE U.L. LISTED AND APPROVED.
- SEAL ALL LONGITUDINAL AND TRANSVERSE SEAMS BEFORE APPLYING INSULATION. SEALANT SHALL BE NON-HARDENING, WATER RESISTANT, FIRE RESISTIVE, COMPATIBLE WITH MATING MATERIALS, LIQUID USED ALONE OR WITH TAPE, OR HEAVY MASTIC.
- LOCATE DUCTS WITH SUFFICIENT SPACE AROUND EQUIPMENT TO ALLOW NORMAL OPERATING AND MAINTENANCE ACTIVITIES.
- BRIDGE CAVITY FLAME RETARDANT DUCT CONNECTORS AT ALL CONNECTIONS OF FANS TO DUCTWORK.
- ALL LOW VOLTAGE CONTROL WIRING SHALL BE PROVIDED BY MECHANICAL CONTRACTOR. CONTROL WIRING SHALL BE PROVIDED IN ACCORDANCE WITH ALL FEDERAL, STATE AND LOCAL CODES. CONTROL WIRING CONCEALED IN WALLS, LOCATED OUTDOORS, OR INSTALLED IN RETURN AIR PLENUM SHALL BE INSTALLED IN CONDUIT. CONDUIT BY DIV 15.
- ROUTE REFRIGERANT LINES FROM OUTDOOR UNITS TO COOLING COIL. SIZE PER MANUFACTURER'S RECOMMENDATIONS AND PROVIDE ADDITIONAL CHARGE AS REQUIRED. REFRIGERANT SUCTION PIPES LESS THAN 1 1/2" IN SIZE TO RECEIVE 1/2" ARMAFLEX INSULATION AND ALL LIQUID LINES TO RECEIVE 1" INSULATION. ALL EXPOSED REFRIGERANT PIPING INSTALLED OUTDOORS SHALL BE RIGID COPPER. ROUTE ALL REFRIGERANT PIPING PLUMB AND SQUARE WITH THE BUILDING AS POSSIBLE. EXTERIOR PIPING SHALL BE INSTALLED ON UNISTRUT WITH UNISTRUT CLAMPS. UNISTRUT TO BE ANCHORED TO CONCRETE PAD.
- ROUND DUCT BRANCH SIZE SHALL BE SAME AS NECK SIZE SPECIFIED FOR DIFFUSER, UNLESS OTHERWISE NOTED ON DRAWINGS.
- ALL EXTERIOR WALL LOUVERS USED FOR MECHANICAL EXHAUST, MECHANICAL FRESH AIR INTAKE, OR MECHANICAL COMBUSTION AIR SHALL BE EXTRUDED ALUMINUM, WITH 1/4" INSECT SCREEN. COORDINATE COLOR WITH ARCHITECT.
- VERIFY FLOOR PLAN AND WALL/FLOOR/CEILING RATINGS WITH ARCHITECTURAL PLANS. PROVIDE RATED PENETRATIONS AT EACH INSTANCE WHERE MECHANICAL INSTALLATION PENETRATES A RATED ASSEMBLY. PENETRATIONS SHALL BE PER DETAILS ON THE DRAWINGS OR SOME OTHER U.L. LISTED DESIGN.
- NATURAL GAS PIPING, IF SHOWN ON THESE DRAWINGS, SHALL BE SCH. 40 BLACK STEEL ABOVE GROUND WITH EITHER WELDED OR THREADED FITTINGS. PAINT PIPING LOCATED OUTDOORS. ALL NATURAL GAS PIPING PERMANENTLY CONCEALED IN WALLS, CHASES, ETC. SHALL HAVE WELDED CONNECTIONS. IF APPROVED BY THE LOCAL GAS UTILITY, PIPE BELOW GRADE MAY BE DRISCOPIPE 6500, OR APPROVED POLYETHYLENE TYPE, INSTALLED TO CONFORM TO MANUFACTURER'S RECOMMENDATIONS AND LOCAL UTILITY REQUIREMENTS. PROVIDE YELLOW COPPER TRACER WIRE OR OTHER APPROVED CONDUCTOR INSTALLED ADJACENT TO UNDERGROUND NONMETALLIC PIPING. ACCESS SHALL BE PROVIDED TO THE TRACER WIRE OR THE TRACER WIRE SHALL TERMINATE ABOVE GROUND AT EACH END OF THE NONMETALLIC PIPING. THE TRACER WIRE SHALL NOT BE LESS THAN 18 AWG AND THE INSULATION TYPE SHALL BE SUITABLE FOR DIRECT BURIAL. ALL NEW OR MODIFIED NATURAL GAS SYSTEMS SHALL BE TESTED AND PURGED PER 2012 IFSC CHAPTER 406.
- UNLESS OTHERWISE NOTED ON DRAWINGS, AIR DISTRIBUTION SHALL BE AS FOLLOWS OR EQUAL:
 - CEILING SUPPLY, LAY-IN CEILINGS - NAILOR 6500 SERIES, TYPE L FRAME, FULLY LOUVERED FACE, NO FILLER PANEL, FLUSH WITH CEILING, LESS DAMPER.
 - SIDEWALL OR DRYWALL CEILING SUPPLY - NAILOR 61D SERIES, DOUBLE DEFLECTION, WITH DAMPER AND PLASTER RING (AS APPLICABLE).
 - CEILING RETURN AND EXHAUST, LAY-IN CEILINGS - NAILOR 4360 SERIES, FLUSH FACE, TYPE L FRAME.
 - SIDEWALL OR DRYWALL CEILING RETURN - NAILOR 51FH-HD WITH PLASTER RING.
 - LINEAR BAR SUPPLY GRILLES - NAILOR 49-240, LESS DAMPER, WITH PLASTER RING.
 - INSTALL AIR DISTRIBUTION SYMMETRICALLY WHERE POSSIBLE. ALL AIR DISTRIBUTION MOUNTING FRAMES SHALL MATCH CEILING TYPE. VERIFY CEILING AND COLORS WITH ARCHITECTURAL DRAWINGS. ALL AIR DISTRIBUTION SHALL HAVE POWDER COAT FINISH. GRILLES INSTALLED IN SIDEWALL OF DUCT SHALL MATCH DUCT FINISH AND COLOR. PROVIDE PREINSULATED SUPPLY GRILLE. WHERE ADAPTERS ARE USED, PAINT TO MATCH GRILLE.
- DUCT PENETRATIONS THROUGH RATED WALLS DO NOT REQUIRE FIRE DAMPERS PROVIDED THE FOLLOWING MINIMUM REQUIREMENTS ARE MET:
 - FIRE PARTITIONS:
 - a. THE DUCT DOES NOT EXCEED 100 SQ. INCHES.
 - b. THE DUCT IS OF 0.0217 INCH MINIMUM STEEL.
 - c. THE DUCT SHALL NOT HAVE OPENINGS THAT COMMUNICATE THE CORRIDOR WITH ADJACENT SPACES OR ROOMS.
 - d. THE DUCT IS INSTALLED ABOVE A CEILING.
 - e. THE DUCT SHALL NOT TERMINATE AT A WALL REGISTER IN THE FIRE RESISTANCE RATED WALL.
 - f. A MIN. 12" LONG BY 0.06" THICK STEEL SLEEVE SHALL BE CENTERED IN EACH DUCT OPENING. THE SLEEVE SHALL BE SECURED TO BOTH SIDES OF THE WALL AND ALL FOUR SIDES OF THE SLEEVE WITH MIN. 1 1/2" X 1 1/2" X 0.06" STEEL RETAINING ANGLES. SECURE RETAINING ANGLES TO THE SLEEVE AND WALL WITH NO 10 SCREWS. FILL ANNULAR SPACE BETWEEN THE WALL AND SLEEVE WITH MINERAL WOOL.
 - FIRE BARRIERS:
 - a. WALL IS RATED 1 HR OR LESS
 - b. WALLS ARE IN AREAS OTHER THAN GROUP H
 - c. BUILDING IS EQUIPPED THROUGHOUT WITH AUTOMATIC FIRE PROTECTION SYSTEM
 - d. THE DUCT IS OF 26GA (0.0217 INCH) STEEL MINIMUM.
 - e. DUCT IS CONTINUOUS FROM THE AIR HANDLER TO THE AIR OUTLET.
- UNLESS SHOWN OTHERWISE ON DRAWINGS, FRESH AIR DUCTWORK SHALL BE ROUND GALVANIZED DUCT WITH FOIL-BACKED INSULATION, R-6 MINIMUM. EXHAUST DUCTS DO NOT REQUIRE INSULATION. PROVIDE ACCESSIBLE BALANCING DAMPER. SIZE DUCT AS FOLLOWS: 1-100 CFM - 6", 101-200 CFM - 8", 201-400 CFM - 10". SEE NOTE 25 FOR INTAKE LOUVER REQUIREMENTS. EACH FRESH AIR INTAKE DUCT SHALL BE PROVIDED WITH AN ACCESSIBLE BALANCING DAMPER. EXHAUST DUCTS DO NOT REQUIRE INSULATION.
- CONDENSATE DRAINS, ELECTRICAL CONDUIT AND NATURAL GAS PIPING SHALL NOT BE ROUTED IN THE ROOF CURB OR UNIT HOUSING. CONDENSATE PIPING, ELECTRICAL CONDUIT AND NATURAL GAS PIPING SHALL PENETRATE THE ROOF, AS APPLICABLE, ADJACENT TO THE ROOF CURB AND CONNECT TO THE UNIT EXTERNALLY.
- PROVIDE AND INSTALL HARDWIRED THERMOSTATS FOR EACH SYSTEM. VERIFY EXACT LOCATION WITH OWNER EQUIPMENT PRIOR TO ROUGH-IN. THERMOSTAT INSTALLATION SHALL BE IN ACCORDANCE WITH ALL LOCAL CODES. THERMOSTATS SHALL BE INSTALLED AT 48" AFF. THERMOSTATS SHALL BE 7-DAY PROGRAMMABLE STYLE. MERCURY OPERATED THERMOSTATS ARE NOT ACCEPTABLE.
- ALL SHEETMETAL SURFACES VISIBLE BEHIND ANY HVAC GRILLE SHALL BE PAINTED FLAT BLACK.
- CONTRACTOR SHALL IDENTIFY ALL SCHEDULED EQUIPMENT AND ASSOCIATED THERMOSTATS. IDENTIFICATION SHALL BE ENGRAVED TAG PERMANENTLY ADHERED TO EQUIPMENT. THERMOSTATS MAY BE IDENTIFIED WITH PERMANENT INK ON INSIDE OF REMOVABLE COVER.
- THIS CONTRACTOR SHALL EXAMINE THE ENTIRE DRAWING PACKAGE AND INCLUDE ALL NECESSARY MATERIAL AND LABOR TO PROVIDE A COMPLETE AND OPERABLE SYSTEM AS INDICATED IN THE ENTIRE DRAWING SET FOR HIS RESPECTIVE SYSTEMS.
- ALL RECTANGULAR OR SQUARE ELBOWS OR TEES SHALL BE INSTALLED WITH TURNING VANES AS PER SMACNA GUIDELINES.

FAN SCHEDULE

TAG	EF-1	EF-2	EF-3	EF-4
AREA SERVED	WOMEN	MEN	COACH RESTROOM	JAN/MECH
QUANTITY	1	1	1	1
USE	EXHAUST	EXHAUST	EXHAUST	EXHAUST
MANUFACTURER	GREENHECK	GREENHECK	GREENHECK	GREENHECK
MODEL NUMBER	SP-B150	SP-B150	SP-B110	SP-B110
CFM	150	150	75	75
STATIC PRESSURE	0.3"	0.3"	0.3"	0.3"
ELECTRICAL	115/1/60	115/1/60	115/1/60	115/1/60
POWER	128 WATTS	128 WATTS	80 WATTS	80 WATTS
SONES	3.0	3.0	0.6	0.6
INTERLOCK	--	--	--	--
WEIGHT	12	12	12	12
NOTES	1-8	1-8	1-8	1-8

- NOTES:
- BACKDRAFT DAMPER
 - SPEED CONTROLLER PROVIDED BY DIVISION 15, MOUNTED AND WIRED BY DIVISION 16.
 - INTEGRAL SERVICE DISCONNECT
 - DIRECT DRIVE
 - INSECT SCREEN
 - ON WITH LIGHTS
 - SEISMICALLY RESTRAIN FAN AS PER CODE. PROVIDE 1/4" CABLE RESTRAINTS AT EACH CORNER (FOUR REQUIRED). ATTACH TO FAN WITH ANGLE CLIP BOLTED TO FAN. SPLAY CABLES AT 45° ANGLES AND LOOP AROUND NEARBY BUILDING STRUCTURAL STEEL. SECURE LOOP WITH CLEVIS CLAMPS. PROVIDE ENGINEER CERTIFIED SUBMITTAL FOR APPROVAL.
 - TERMINATE EXHAUST DUCTWORK AT RAINPROOF WALL CAP. FLASH AND SEAL ALL WALL PENETRATIONS.

EQUIPMENT SCHEDULE

Energy Recovery						Supply Fan					
Mark Name	Qty	Model	ER Type	Mounting Location	Weight	Outdoor Air Volume	Supply ESP	Supply TSP	FRPM	Supply BHP	Supply Motor
FAU-1	1	RVE-40-30-30H-5D-C	Wheel	Outdoor	3,185 lb	1,050 CFM	0.75 in. wg	1.28 in. wg	1476	0.353	1 hp

Exhaust Fan											
Exhaust Air Volume	Exhaust ESP	Exhaust TSP	FRPM	Exhaust BHP	Exhaust Motor	Voltage	Frequency	Phase	Unit MCA	Unit MOP	
1,100 CFM	0.5 in. wg	1.163 in. wg	1471	0.353	1 hp	208	60	3	33.8	50	

Summer Energy Recovery Performance									
Outside Air DB	Outside Air WB	Supply Air DB	Supply Air WB	Return Air DB	Return Air WB	Exhaust Air DB	Exhaust Air WB	ASHRAE 90.1 Enthalpy Recovery Ratio	Cooling Load Reduction
98.0 F	80.0 F	80.0 F	67.5 F	75.0 F	62.5 F	92.0 F	75.7 F	75.5	4.61 tons

Winter Energy Recovery Performance									
Outside Air DB	Outside Air WB	Supply Air DB	Supply Air WB	Return Air DB	Return Air WB	Exhaust Air DB	Exhaust Air WB	ASHRAE 90.1 Enthalpy Recovery Ratio	Heating Load Reduction
17.0 F	13.9 F	59.5 F	47.8 F	72.0 F	55.8 F	30.4 F	27.2 F	75.5	48,195 BTU

Cooling Section											
Coil Entering DB	Coil Entering WB	Coil Leaving DB	Coil Leaving WB	Nominal Tonnage	Total Capacity	Sensible Capacity	Coil Face Velocity	Coil Pressure Drop	Rows Deep	Fins per Inch	Compressor Type
80.0 F	67.5 F	48.9 F	48.8 F	5.0	58.6 MBH	35.9 MBH	85 ft/min	0.031 in. wg	4	12	Digital Scroll

Heating Section								Hot Gas Reheat				
Gas Type	Input	Output	EAT	LAT	Furnace Control	Temp Rise	Hot Gas Reheat Capacity	LAT				
Natural	100.0 MBH	80.0 MBH	59.5 F	120.0 F	4:1 Modulating	70.6 F	43.0 MBH	86.8 F				

OPTIONS AND ACCESSORIES											
Return Air Intake - Access Side											
Weatherhood: Downturned Hood											
Outdoor Air Filters - MERV 8, 2-20x25x2											
Exhaust Air Filters - MERV 8, 2-20x25x2											
Supply Filters - 2" Pleated MERV 8, 4-20x20x2											
Outdoor Air Dampers - Motorized Low Leakage											
Return Air Dampers - Motorized Low Leakage											
Painted Exterior - Concrete Gray (RAL 7023)											
Microprocessor Controls											
Supply Fan VFD Control - Constant Volume-Adj. Setpoint											
Exhaust Fan VFD Control - Constant Volume-Adj. Setpoint											
Economizer Mode - Temp./Enthalpy											
Wheel Control - Stop Wheel											
Space Thermostat - 1 Temp and RH Only											
Phase and Brown Out Protection											
Unit Disconnect - Mounted By Factory											
Energy Wheel Warranty - 5 Yrs Less Motor											
Unit Warranty: 1 Yr (Standard)											

AIR CONDITIONING UNIT SCHEDULE:

TAG	AC-1	AC-2	AC-3	AC-4
AREA SERVED	WEIGHT	LOBBY/CLASS	GYM	GYM
MANUFACTURER	TRANE	TRANE	TRANE	TRANE
MODEL NUMBER	YSC102	YSC072	YSH240	YSH240
NOMINAL TONS	8.5	6	20	20
SUPPLY AIR CFM	3400	2400	8000	8000
OUTSIDE AIR CFM	650	360	1300	1300
ENTERING AIR (DB/WB)	80/67	79/66	80/67	80/67
SENSIBLE COOLING (MBH)	76	57	205	205
TOTAL COOLING (MBH)	107	75	259	259
HEAT INPUT (MBH)	120	80	250	250
HEAT OUTPUT (MBH)	96	64	203	203
ELECTRICAL	208/3/60	208/3/60	208-230/3/60	208-230/3/60
MCA	46	35	108	108
MOP	60	50	125	125
WEIGHT (LB)	927	710	2145	2145
NOTES	1-7,9,10	1-7,9,10	1-11	1-11

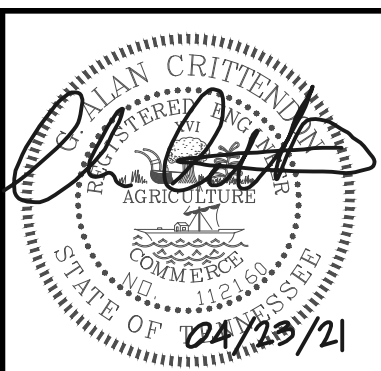
- NOTES:
- INSTALL ON LEVEL PAD
 - HONEYWELL, VISION PRO 8300 MODEL TH8321WF1001 PROGRAMMABLE W-FI THERMOSTAT WITH LOCKING GYM RATED COVER
 - RECTORSEAL EZ TRAP WITH BRUSH, LESS FLOAT SWITCH.
 - RETURN AIR SMOKE DETECTOR PROVIDED AND WIRED BY DIV 16. MOUNTED BY DIV 15.
 - 2" PLEATED RETURN AIR FILTER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

ELECTRIC HEATER SCHEDULE:

TAG	EH-1	EH-2
QUANTITY REQUIRED	1	1
AREA SERVED	STAIR	STAIR
MANUFACTURER	MARKEL	MARKEL
MODEL NUMBER	E3313T2RP	E3313T2RP
TYPE	WALL MOUNT	WALL MOUNT
KW	1.5	1.5
ELECTRICAL	120/1/60	120/1/60
NOTES	1-4	1-4

- NOTES:
- INSTALL LOW ON WALL PER MANUFACTURER REQUIREMENTS.
 - INTEGRAL THERMOSTAT
 - DISCONNECT SWITCH
 - COORDINATE COLOR WITH OWNER.

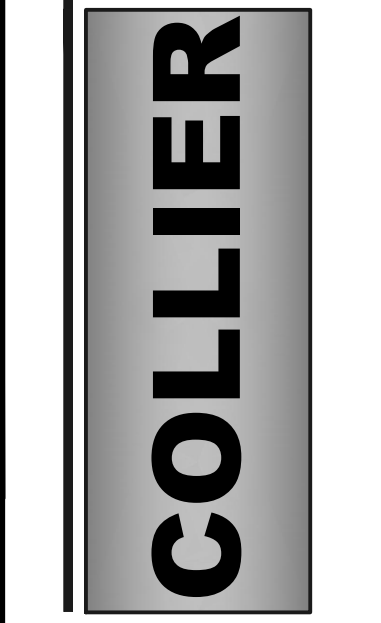
W-FI THERMOSTAT CONTROLS NOTE:
 THE INSTALLING CONTRACTOR SHALL INSTALL HONEYWELL "TOTAL CONNECT COMFORT" APPLICATION ON A OWNER PROVIDED SMART DEVICE AND CONFIGURE THE DEVICE TO COMMUNICATE WITH THE OWNER'S W-FI. ALL UNITS SHALL BE PROVIDED WITH A HONEYWELL VISION PRO 8300 MODEL TH8321WF1001 PROGRAMMABLE W-FI THERMOSTAT WITH LOCKING COVER AS SPECIFIED IN THE UNIT SCHEDULES. THE CONTRACTOR SHALL SET UP EACH NEW THERMOSTAT TO COMMUNICATE WITH THE OWNER-PROVIDED W-FI SIGNAL, CONFIGURE THE NEW THERMOSTATS, NAME AND GROUP EQUIPMENT AS DIRECTED BY THE OWNER WITHIN THE HONEYWELL APP ON THE SMART DEVICE. THE CONTRACTOR SHALL PROVIDE AN INITIAL SET-BACK PROGRAM FOR EACH SYSTEM AS DIRECTED BY THE OWNER. AT THE CONCLUSION OF THE PROJECT, EACH NEW UNIT SHALL BE SET UP IN THE APP AND THE OWNER'S PERSONNEL SHALL BE SUFFICIENTLY TRAINED BY THE CONTRACTOR SUCH THAT THE OWNER IS ABLE TO UTILIZE THE APP TO MONITOR EACH HVAC SYSTEM AND MAKE CHANGES TO THE SCHEDULE.



COMMENT	DATE	REVISION

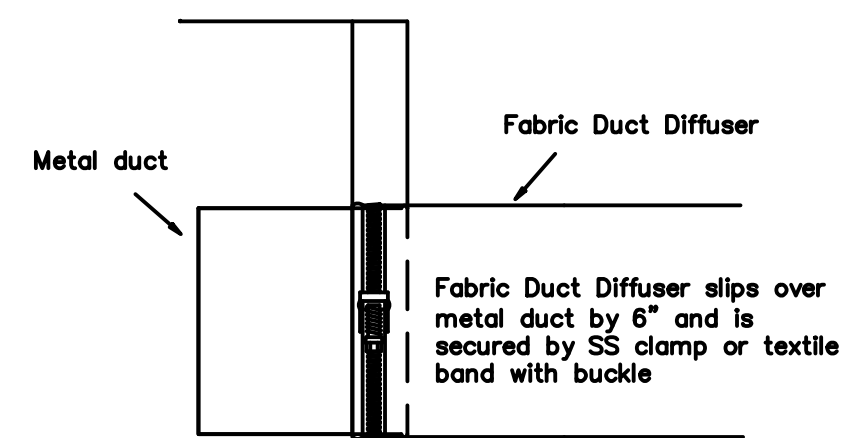
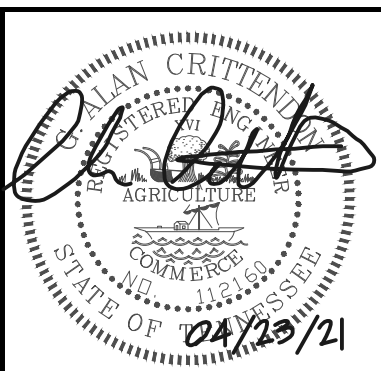
HVAC Details and Schedules
GYMNASIUM HVAC RENOVATION
 WAYNESBORO MIDDLE SCHOOL
 WAYNESBORO, TN

DW COLLIER
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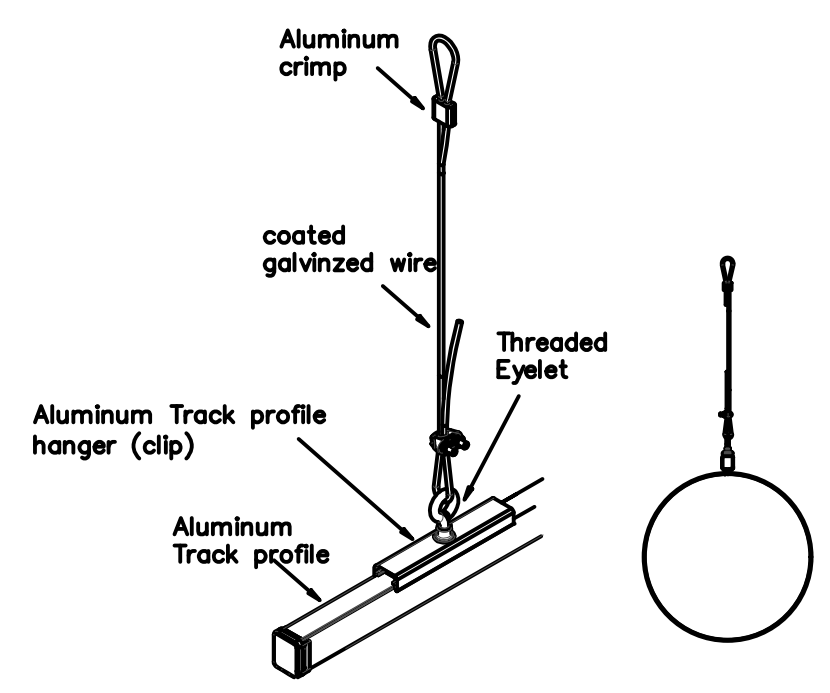


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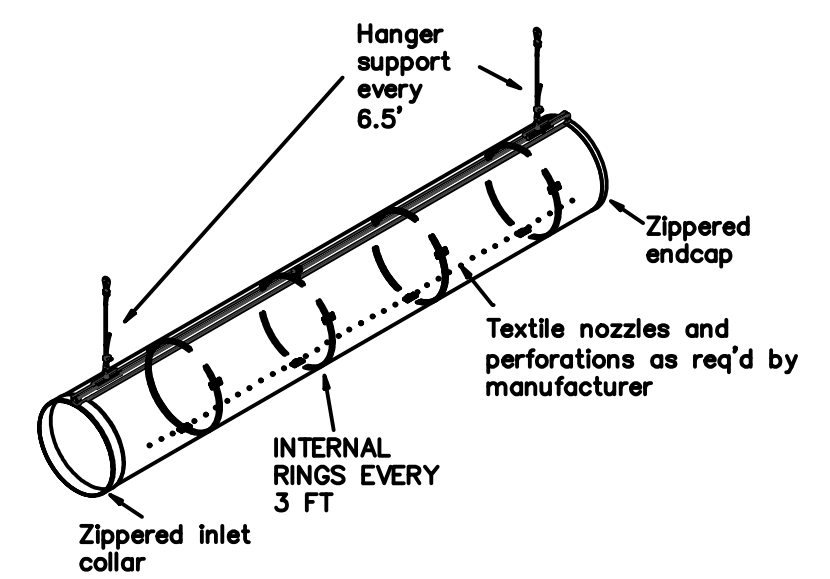
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 PROJECT NUMBER
21-050
 SHEET NUMBER
M2.1



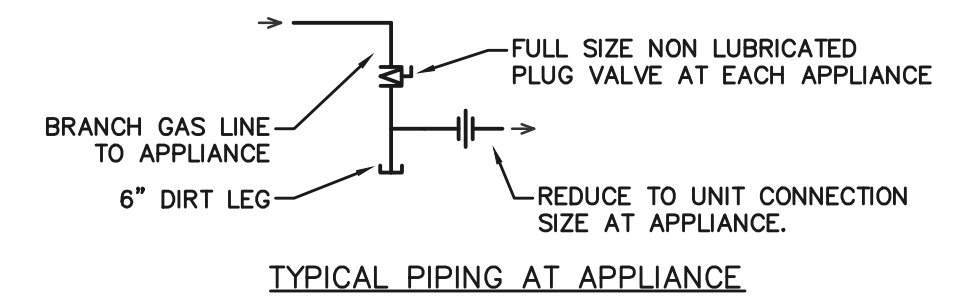
Fabric Duct Inlet connection Detail



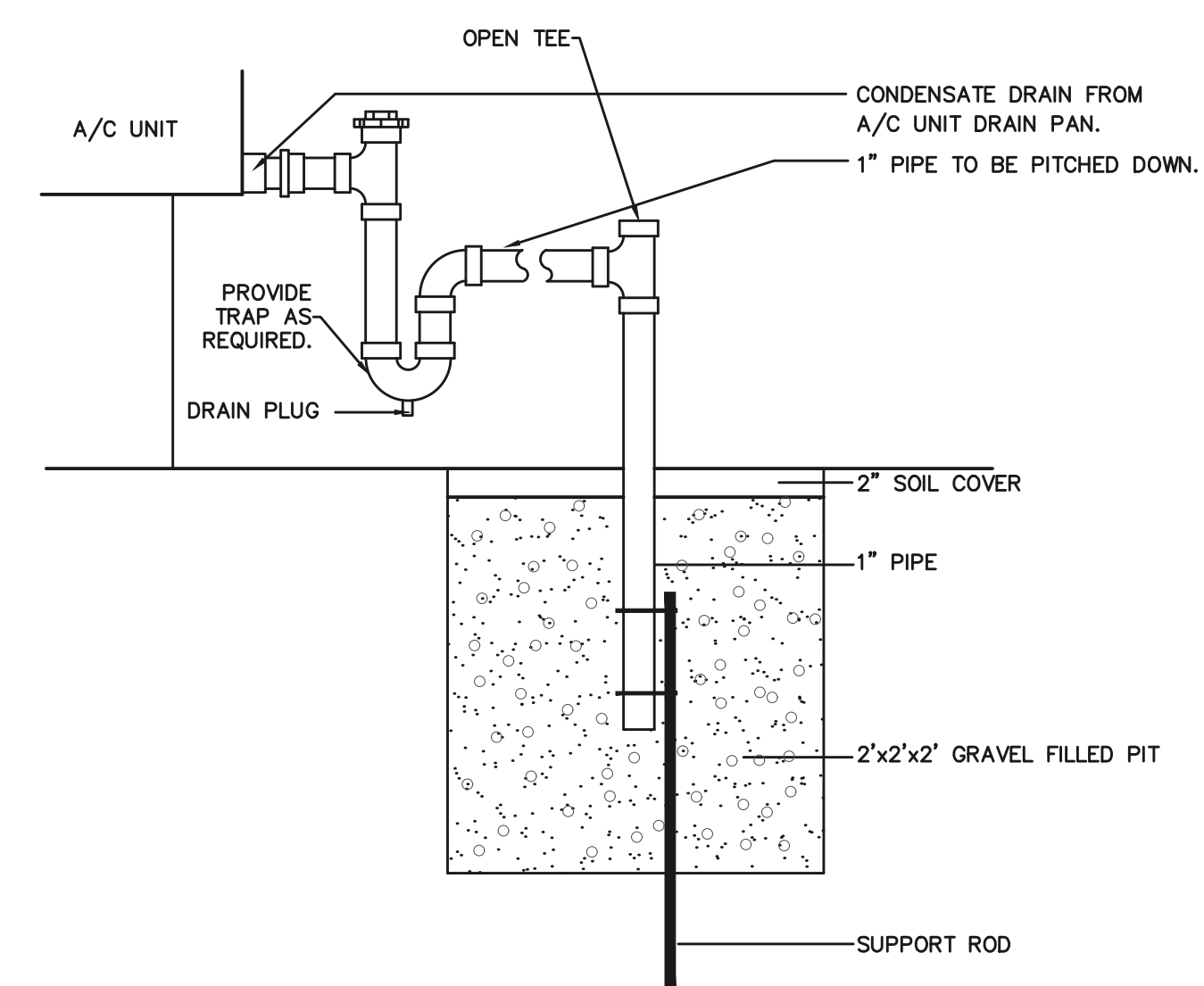
Fabric Duct Hanger Detail Single Track Profile



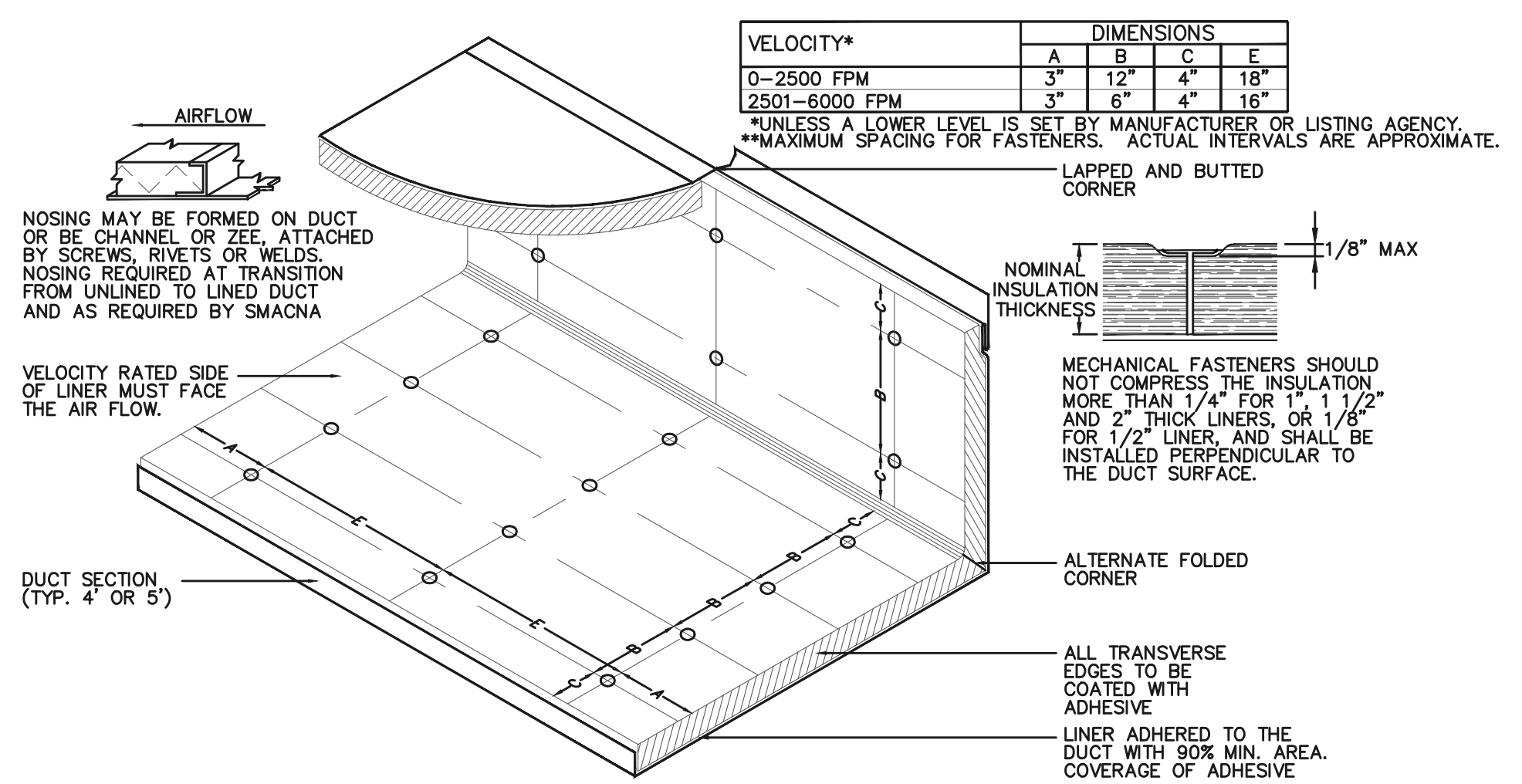
Fabric duct Installation Detail Single Track Profile



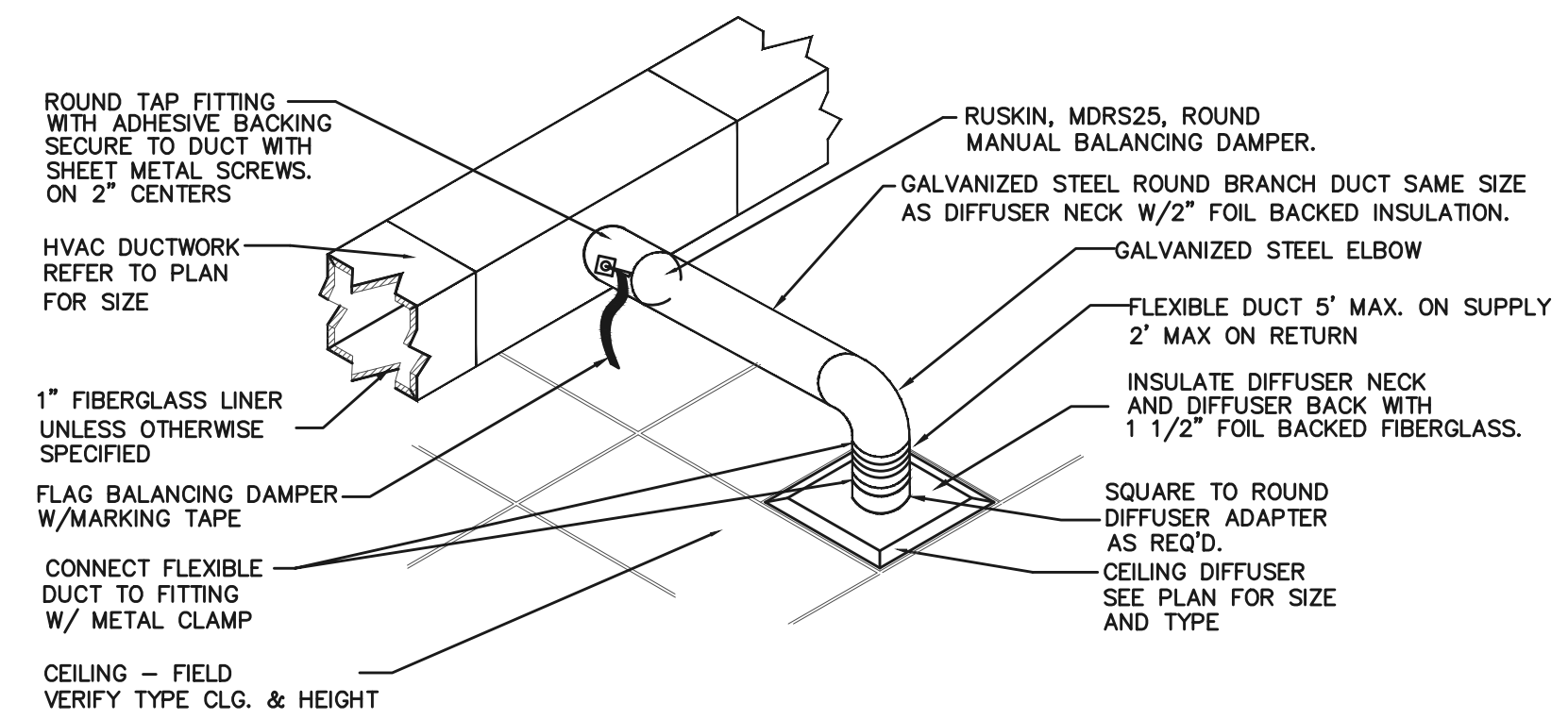
- GENERAL GAS PIPING NOTES:
- 1) BALL VALVES ARE NOT ACCEPTABLE. ALL VALVES TO BE NON-LUBRICATED PLUG VALVES RATED FOR GAS SERVICE.
 - 2) PIPING, VALVES, UNION, ETC. SHALL REMAIN FULL-SIZE AND SHALL NOT REDUCE TO UNIT CONNECTION SIZE UNTIL WITHIN 6" OF APPLIANCE.
 - 3) ANCHOR GAS PIPING TO APPLIANCE 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.



FRENCH DRAIN DETAIL NOT TO SCALE



DUCT LINER INSTALLATION DETAIL NOT TO SCALE

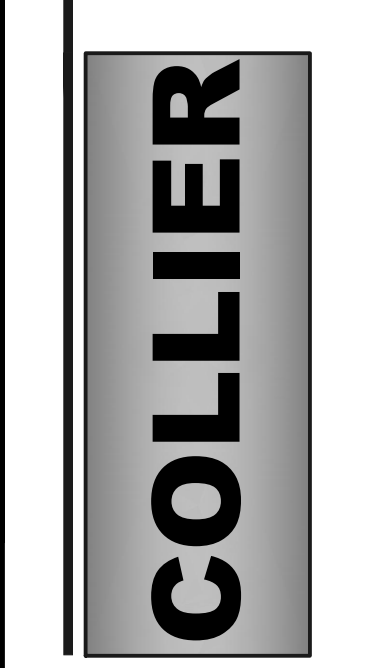


TYPICAL BRANCH RUN DETAIL NOT TO SCALE

COMMENT:				
DATE:				
REVISION:				

SHEET TITLE: HVAC Details and Schedules
 PROJECT: GYMNASIUM HVAC RENOVATION
 WAYNESBORO MIDDLE SCHOOL
 WAYNESBORO, TN

DW COLLIER, INC.
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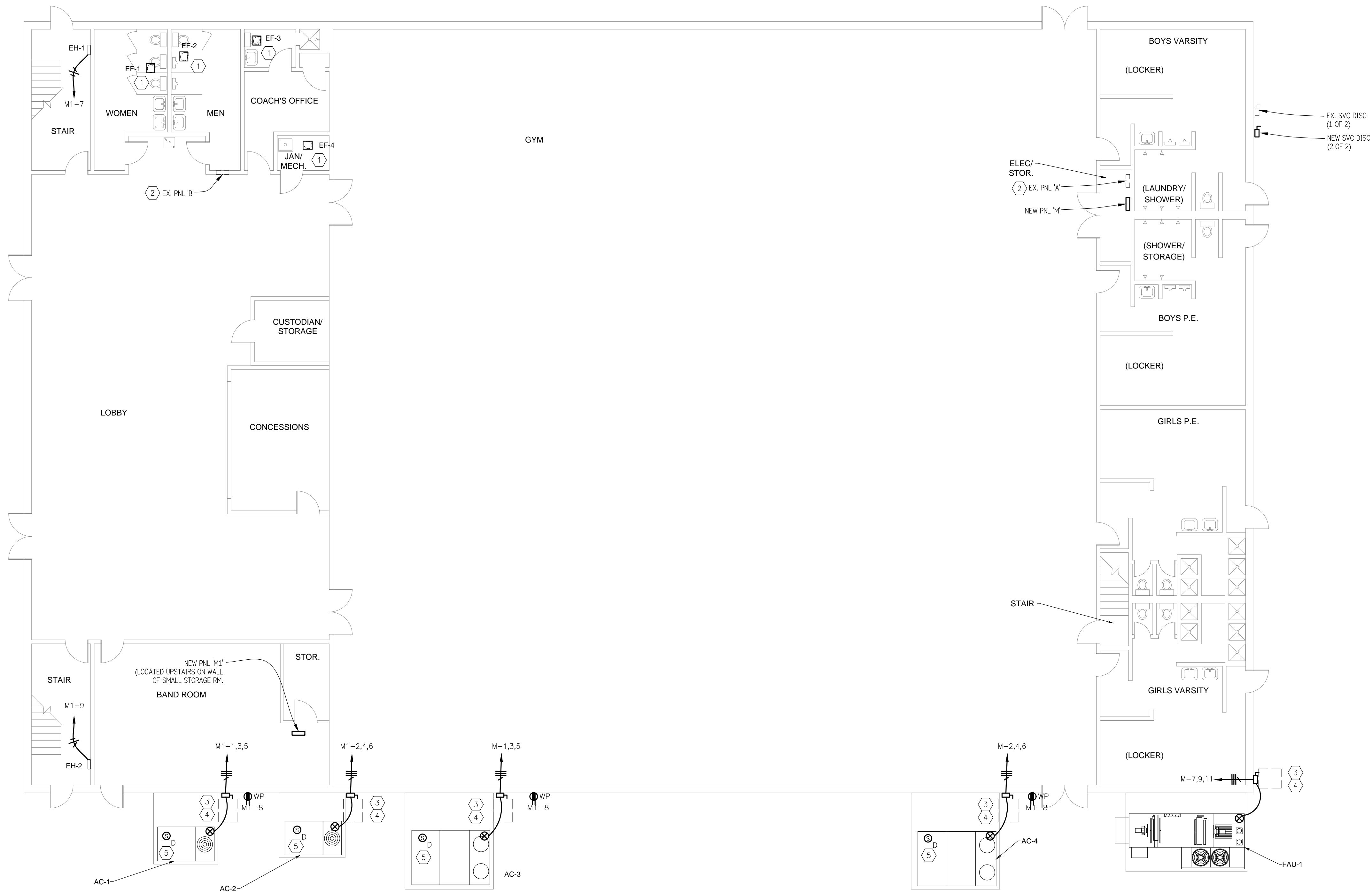


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PROJECT NUMBER:
 21-050

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M2.2



KEYED CONSTRUCTION NOTES:

- ① CONNECT FAN TO SWITCHED LIGHTING CIRCUIT. VERIFY CIRCUIT LOADING.
- ② PROVIDE A NEW TYPEWRITTEN CIRCUIT INDEX FOR PANEL INCLUDING UPDATES FROM DEMOLITION & NEW CIRCUITS.
- ③ 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.
- ④ 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.
- ⑤ 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.

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.D.M., 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.

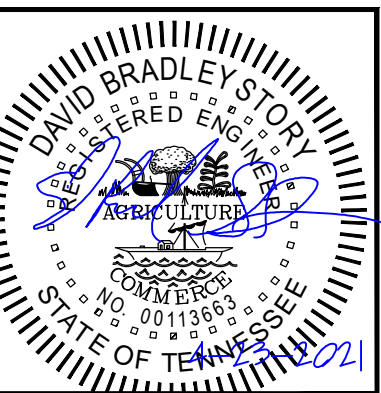
MECHANICAL EQUIPMENT CONNECTION SCHEDULE

EQUIPMENT DESIGNATION	VOLTAGE & PHASE	LOCATION	LOAD			LOCAL DISCONNECTING MEANS				STARTERS (PER UNIT)				CIRCUITRY			METHOD OF CONTROL	REMARKS	
			kW	hp	MCA	HACR CIRCUIT BREAKER	N.F.D.S. SIZE	F.D.S. SIZE	FUSE SIZE	MAGNETIC (SIZE)	COMBINATION (SIZE)	MANUAL (SIZE)	MANUAL W/ NO O.L.	NEMA ENCL.	PANEL	CONDUIT SIZE MIN.			WIRE QTY& SIZE
FAU-1	208V/3Ø	OUTSIDE	--	--	33.8	3P50	3P60	--	3R	--	--	--	--	M	1"	3 #6	1 #10	SEE MECH. SPEC	-----
AC-1	208V/3Ø	OUTSIDE	--	--	46	3P60	3P60	--	3R	--	--	--	--	M1	1"	3 #4	1 #10	SEE MECH. SPEC	-----
AC-2	208V/3Ø	OUTSIDE	--	--	35	3P50	3P60	--	3R	--	--	--	--	M1	1"	3 #6	1 #10	SEE MECH. SPEC	-----
AC-3,4	208V/3Ø	OUTSIDE	--	--	108	3P125	3P200	--	3R	--	--	--	--	M	1-1/2"	3 #1/0	1 #6	SEE MECH. SPEC	-----
EF-1,2	120V/1Ø	RR'S	.128	--	--	--	--	--	--	--	--	--	--	--	1/2"	2 #12	1 #12	SWITCH W/ LIGHTS	-----
EF-3,4	120V/1Ø	RR/JAN	.08	--	--	--	--	--	--	--	--	--	--	--	1/2"	2 #12	1 #12	SWITCH W/ LIGHTS	-----
EH-1,2	120V/1Ø	STAIRS	1.5	--	--	20/1	--	--	--	--	--	--	--	M1	1/2"	2 #12	1 #12	SEE MECH. SPEC.	-----

1. 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.
2. SEE TYPICAL CONNECTION DETAIL.
3. 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.
4. FURNISH AND INSTALL ALL FIELD AND/OR INTERLOCK WIRING REQUIRED TO COMPLETELY CONNECT SYSTEM FOR FUNCTIONALITY.
5. CONTRACTOR SHALL INSTALL ANY ELECTRICAL DEVICES THAT ARE SHIPPED LOOSE WITH EQUIPMENT, UNLESS OTHERWISE NOTED.
6. 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.
7. 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.
8. 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.

N

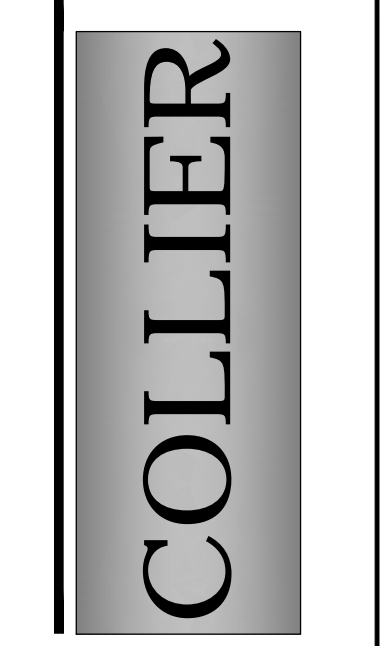
ELECTRICAL PLAN
 SCALE: 1/8" = 1'-0"



REVISION	DATE	COMMENT

ELECTRICAL PLAN
 PROJECT: **GYMNASIUM HVAC RENOVATION**
 WAYNESBORO MIDDLE SCHOOL
 WAYNESBORO, TN

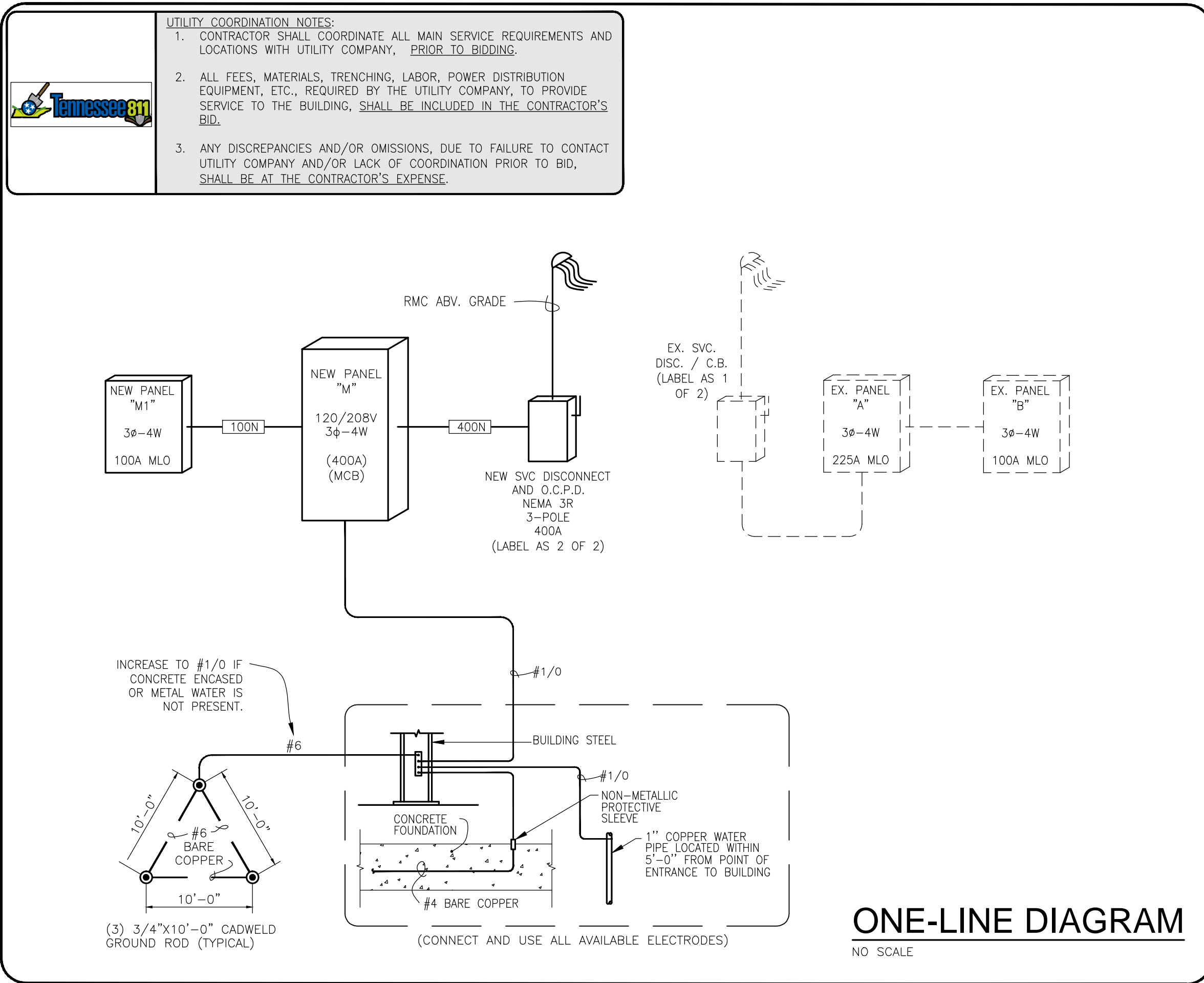
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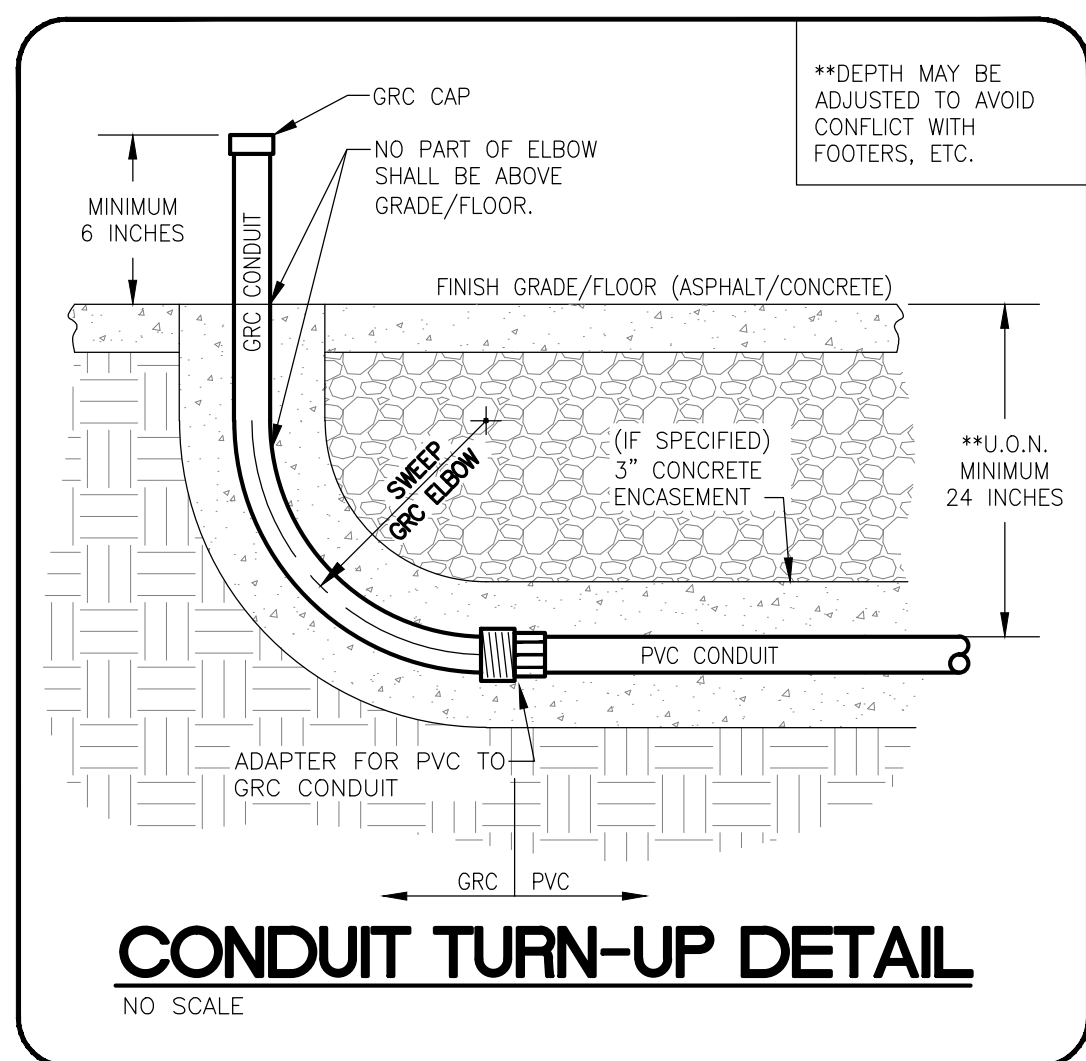
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PROJECT NUMBER:
21-050
 SHEET NUMBER:
E1.1



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 W/ NEUTRAL				
100N	1 @ 1-1/2"	(3) #1 AWG	(1) #1 AWG	(1) #8 AWG
400N	1 @ 4"	(3) #600 MCM	(1) #600 MCM	(1) #3 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

PANELBOARD NAME: M (NEW)	VOLTAGE: 208 /120	MAIN: 400 MLO	FEATURES:
LOCATION: ELEC/STOR	PHASE: 3	MOUNTING: SURFACE	
FED FROM: SVC DISCONNECT	WIRES: 4	NEUTRAL BUS: COPPER-100%	
	BUS AMPS: 400	GROUND BUS: COPPER	
	A.I.C. 25,000	ISOLATED GROUND BUS: NO	

CIRCUIT DESCRIPTION	CONNECTED KVA					AMP/POLE	WIRE	CCT	PHASE	CCT	WIRE	AMP/POLE	CONNECTED KVA					CIRCUIT DESCRIPTION
	LTG	REC	HVAC	EQ	KIT								LTG	REC	HVAC	EQ	KIT	
AC-3			11.66			125/3	1/0	1	A	2		125/3						AC-4
			11.66					3	B	4	1/0							
			11.66					5	C	6								
FAU-1			3.65			50/3	6	7	A	8		30/3						SPARE
			3.65					9	B	10								
			3.65					11	C	12								
SUB-PANEL 'M1'	0	0.54	10.25	0	0			13	A	14		20/1						SPARE
	0	0	10.25	0	0	100/3	1	15	B	16		20/1						SPARE
	0	0	8.75	0	0			17	C	18		20/1						SPARE
								19	A	20								
								21	B	22								
								23	C	24								
								25	A	26								
								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

CONNECTED KVA LOAD		DEMANDED KVA LOAD		CONNECTED KVA/PHASE		TOTAL LOADS		
LIGHTING	0	125%	0	(PER NEC TABLE 220.12)	37.7644	PHASE A		
RECEPTACLE	0.54	50%	0.54	(50% DEMAND ABOVE 10KVA)	37.22	PHASE B	110.7	
HVAC	110.2	100%	110.2		35.72	PHASE C	110.7	
EQUIPMENT	0	100%	0				110.7	
KITCHEN	0	100%	0	(PER NEC TABLE 220.56)			110.7	
PANEL DESIGN AMPS							400	307.3

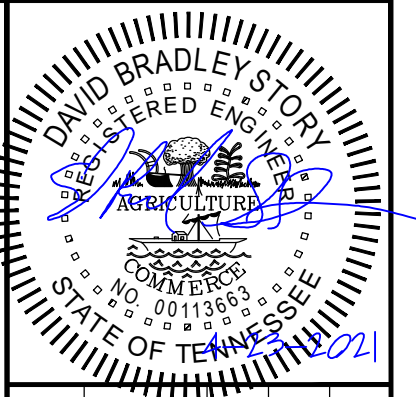
THREE PHASE PANELBOARD SCHEDULE

PANELBOARD NAME: M1 (NEW)	VOLTAGE: 208 /120	MAIN: 100 MLO	FEATURES:
LOCATION: UPSTAIRS WEIGHT RM/STOR	PHASE: 3	MOUNTING: SURFACE	
FED FROM: M1 (NEW)	WIRES: 4	NEUTRAL BUS: COPPER-100%	
	BUS AMPS: 100	GROUND BUS: COPPER	
	A.I.C. 10,000	ISOLATED GROUND BUS: NO	

CIRCUIT DESCRIPTION	CONNECTED KVA					AMP/POLE	WIRE	CCT	PHASE	CCT	WIRE	AMP/POLE	CONNECTED KVA					CIRCUIT DESCRIPTION
	LTG	REC	HVAC	EQ	KIT								LTG	REC	HVAC	EQ	KIT	
AC-1			4.97			60/3	4	1	A	2		50/3						AC-2
			4.97					3	B	4	6							
			4.97					5	C	6								
EH-1			1.5			20/1	12	7	A	8	10	20/1	0.54					RECEPTS - SERVICE
EH-2			1.5			20/1	12	9	B	10		20/1						SPARE
								11	C	12		20/1						SPARE
								13	A	14								
								15	B	16								
								17	C	18								
								19	A	20								
								21	B	22								
								23	C	24								
								25	A	26								
								27	B	28								
								29	C	30								

* SHALL BE A GFCI TYPE BREAKER

CONNECTED KVA LOAD		DEMANDED KVA LOAD		CONNECTED KVA/PHASE		TOTAL LOADS		
LIGHTING	0	125%	0	(PER NEC TABLE 220.12)	10.79	PHASE A		
RECEPTACLE	0.54	50%	0.54	(50% DEMAND ABOVE 10KVA)	10.25	PHASE B	29.79	
HVAC	29.25	100%	29.25		8.75	PHASE C	29.79	
EQUIPMENT	0	100%	0				29.79	
KITCHEN	0	100%	0	(PER NEC TABLE 220.56)			29.79	
PANEL DESIGN AMPS							100	82.69

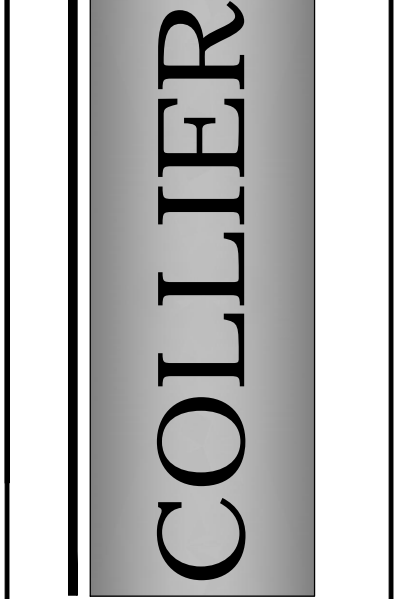


DATE	
REVISION	
COMMENT	

ONE-LINE DIAG. & PANEL SCHEDS.

PROJECT: GYMNASIUM HVAC RENOVATION
WAYNESBORO MIDDLE SCHOOL
WAYNESBORO, TN

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ORIGINAL ISSUE DATE	04/23/21
SCALE	
CHECKED	TSL
APPROVED	DBS
DRAWN BY	DBS

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PROJECT NUMBER: 21-050
SHEET NUMBER: E2.1

ELECTRICAL GENERAL NOTES

- ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE JURISDICTION'S ADOPTED EDITION OF THE N.E.C. AND ALL APPLICABLE STATE AND LOCAL CODES.
- ALL MATERIAL SHALL BEAR THE PROPER U.L., E.T.L., OR OTHER RECOGNIZED NRTL LABEL ACCEPTABLE TO THE AHJ.
- ALL WIRING SHALL BE IN CONDUIT OR OTHER N.E.C. APPROVED RACEWAYS.
- G.F.I. TYPE RECEPTACLES SHALL BE SELF-CONTAINED UNITS WITH CLASS "A" SENSITIVITY.
- WHERE SINGLE POLE BRANCH CIRCUIT CONDUCTORS HAVE BEEN INCREASED ABOVE THE SIZE OF THE CIRCUIT BREAKER TO COMPENSATE FOR VOLTAGE DROP, THE INCREASED SIZE SHALL EXTEND THROUGHOUT THE ENTIRE CIRCUIT, EXCEPT WHERE IT IS NECESSARY TO REDUCE THE SIZE FOR CONNECTION TO SWITCH AND RECEPTACLE TERMINALS, ETC. EQUIPMENT GROUNDING CONDUCTORS SHALL ALSO BE ADJUSTED PROPORTIONATELY PER N.E.C. 250.122 (B).
- EXERCISE EXTREME CAUTION TO ENSURE THAT THERMAL INSULATION IS NOT INSTALLED CLOSE ENOUGH TO RECESSED LIGHTING FIXTURES TO PREVENT PROPER VENTILATION AND COOLING OF THE UNITS. FIXTURES SHALL COMPLY WITH ARTICLE 410 OF THE N.E.C. ALL RECESSED INCANDESCENT FIXTURES SHALL HAVE THERMAL CUT-OUT PROTECTION.
- UNLESS OTHERWISE NOTED OR DIRECTED, ALL CONDUIT SHALL BE CONCEALED BELOW FLOORS, IN WALLS, OR ABOVE CEILING. PRIOR AUTHORIZATION MUST BE ACQUIRED FROM THE ARCHITECT OR ENGINEER BEFORE USING ANY TYPE OF SURFACE MOUNTED RACEWAYS IN FINISHED AREAS.
- ELECTRICAL CONTRACTOR SHALL VERIFY SERVICE AND VOLTAGE REQUIREMENTS FOR ALL EQUIPMENT TO BE CONNECTED (BOTH NEW AND EXISTING) PRIOR TO MAKING CONNECTIONS.
- DUPLEX RECEPTACLES SHALL BE MOUNTED AT 16" ABOVE THE FINISHED FLOOR, EXCEPT WHERE OTHERWISE NOTED, AND EXCEPT WHERE RECEPTACLES ARE SHOWN ABOVE CABINETS, COUNTERS, ETC. WHERE RECEPTACLES ARE SHOWN AT COUNTERS OR CABINETS, THEY SHALL BE INSTALLED 6" TO BOTTOM ABOVE THE CABINET TOP. WHERE THERE IS A BACKSPASH, THE RECEPTACLES SHALL BE JUST ABOVE THE BACKSPASH. WHERE RECEPTACLES ARE SHOWN ADJACENT TO LAVATORIES, THE RECEPTACLE SHALL BE MOUNTED AT APPROXIMATELY 6" TO BOTTOM ABOVE THE LAVATORY TOP.
- TELEPHONE OUTLETS DESIGNATED AS BEING MOUNTED AT 16" A.F.F. SHALL BE ARRANGED FOR DESK TYPE TELEPHONE(S). TELEPHONE OUTLETS DESIGNATED AS BEING MOUNTED AT 44" A.F.F. SHALL BE SUITABLE FOR A WALL MOUNTED TELEPHONE (WHERE SHOWN ADJACENT TO LIGHT SWITCH, MOUNT AT SAME HEIGHT AS LIGHT SWITCH). WHERE TELEPHONE OUTLETS ARE SHOWN AT OR ABOVE CABINETS/COUNTERS, THE OUTLET SHALL BE MOUNTED AT 6" ABOVE THE COUNTER TOP. WHERE THERE IS A BACKSPASH, THE OUTLETS SHALL BE MOUNTED ABOVE THE BACKSPASH.
- SURFACE MOUNTED LIGHTING FIXTURES INSTALLED IN AREAS THAT DO NOT HAVE AN ACCESSIBLE CEILING SPACE ABOVE THEM SHALL BE INSTALLED IN COMPLIANCE WITH ARTICLE 410 OF THE N.E.C.
- COORDINATE ALL CEILING MOUNTED EQUIPMENT, (i.e. LIGHTING FIXTURES, SPEAKERS, GRILLES, ETC.) WITH ALL OTHER EQUIPMENT & TRADES PRIOR TO & DURING INSTALLATION TO AVOID CONFLICTS. SHOULD IT BECOME NECESSARY TO REPOSITION SMOKE DETECTORS, EXERCISE CAUTION NOT TO EXCEED THE 30" AND 15" SPACINGS AS REQUIRED BY THE LIFE SAFETY CODE.
- FIRE AND SMOKE STOP AROUND ALL CONDUIT, EQUIPMENT, ETC. WHICH PENETRATES FLOORS, WALLS, AND CEILINGS.
- EACH CONTRACTOR SHALL BE RESPONSIBLE FOR VISITING THE SITE PRIOR TO BIDDING IN ORDER TO BECOME FAMILIAR WITH THE EXISTING CONDITIONS AND ANY DISCREPANCIES OR QUESTIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT/ENGINEER PRIOR TO BIDDING.
- COMPLY WITH ALL CODES AND REGULATIONS, ETC. REGARDING PENETRATION OF THE CEILING FOR THIS TYPE OF CONSTRUCTION.
- WHERE LIGHTING SWITCHES, RECEPTACLES, & FIRE ALARM DEVICES ARE TO BE SURFACE MOUNTED IN FINISHED AREAS, USE OUTLET BOXES EQUAL TO WIREMOLD. ALL SURFACE MOUNTED RACEWAY IN FINISHED AREAS SHALL BE WIREMOLD TYPE. NO EXPOSED CONDUIT WILL BE ALLOWED IN FINISHED AREAS.
- ALL LIGHTING AND RECEPTACLE CIRCUITS SHALL HAVE A SEPARATE GROUND WIRE CONTINUOUS THROUGHOUT THE CIRCUIT. THE CONDUIT SHALL NOT BE CONSIDERED ADEQUATE.
- JUNCTION BOXES SHALL NOT BE MOUNTED BACK TO BACK.
- WHERE DEVICE BACKBOXES ARE LOCATED IN A RATED WALL, THESE BOXES SHALL BE RATED FOR SUCH USE.
- JUNCTION OR BACKBOXES MOUNTED IN RATED WALLS SHALL NOT BE LOCATED IN A COMMON CAVITY BETWEEN STUDS. COORDINATE WITH ARCHITECTURAL DRAWINGS.
- ALL ELECTRICAL WORK SHALL BE ACCOMPLISHED BY ELECTRICIANS LICENSED BY THE JURISDICTION IN WHICH THE WORK WILL BE PERFORMED.
- WHERE A RECEPTACLE OR LIGHTING FIXTURE, REMOVED DURING DEMOLITION, INTERRUPTS POWER TO DOWNSTREAM ELECTRICAL DEVICES THAT ARE EXISTING TO REMAIN, THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT DOWNSTREAM DEVICES ARE RECONNECTED AND REMAIN ACTIVE.
- RECEPTACLES AND COMPUTER OUTLETS SHOWN AT CASEWORK LOCATIONS SHALL BE MOUNTED AT 16" TO BOTTOM A.F.F. WHERE A DEDICATED KNEE SPACE IS PROVIDED. CENTER DEVICES IN KNEE SPACE. WHERE NO KNEE SPACE IS PROVIDED, RECEPTACLES SHALL BE MOUNTED ABOVE COUNTER AT 6" TO BOTTOM, U.O.N. REFER TO ARCHITECTURAL CASEWORK ELEVATIONS.
- SMOKE DETECTORS SHALL NOT BE LOCATED WITHIN THREE (3) FEET OF SUPPLY/RETURN AIR GRILLES OR CEILING FANS.
- CONTRACTOR SHALL MAINTAIN ACCURATE "AS-BUILT" DRAWINGS DURING CONSTRUCTION. THESE DRAWINGS SHALL BE SUBMITTED TO THE GENERAL CONTRACTOR UPON COMPLETION OF THE PROJECT.
- THESE DRAWINGS ARE DIAGRAMMATIC IN NATURE AND INDICATE THE GENERAL ARRANGEMENT OF SYSTEMS, EQUIPMENT AND COMPONENTS AND THEIR RELATED ELECTRICAL CONNECTIONS. DEVICE AND PATHWAY PLACEMENT/ROUTING IS ONLY REPRESENTATIVE OF A GENERAL LOCATION UNLESS OTHERWISE INDICATED BY DIMENSIONS. SYMBOLS ARE USED EXTENSIVELY WHICH MAY NOT EXACTLY REPRESENT ACTUAL SIZES.
- THESE DRAWINGS DO NOT SHOW ALL OFFSETS, TRANSITIONS AND/OR DEVICES NECESSARY FOR A COMPLETE AND FUNCTIONAL SYSTEM AS REQUIRED BY THE CONTRACT DOCUMENTS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PLACE THESE DEVICES AND PATHWAYS SUCH THAT THEY OFFER FULL FUNCTIONALITY WITHOUT HINDRANCE FROM CASEWORK, FURNITURE, WINDOWS AND DOORS, HVAC, PLUMBING, ELECTRICAL, AND OTHER BUILDING SYSTEMS.
- NO PIPING, DUCTS OR EQUIPMENT FOREIGN TO ELECTRICAL EQUIPMENT SHALL BE PERMITTED TO BE LOCATED WITHIN THE DEDICATED SPACE ABOVE ELECTRICAL EQUIPMENT.
- ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL TEMPORARY POWER TO FIELD OFFICE AND JOBSITE AND REMOVE UPON COMPLETION OF CONSTRUCTION. COORDINATE WITH LOCAL UTILITY.
- ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL TEMPORARY LIGHTING INSIDE FACILITY DURING CONSTRUCTION AND SHALL REMOVE TEMPORARY LIGHTING ONCE PERMANENT POWER AND LIGHTING ARE OPERATIONAL.
- SHARED NEUTRAL CONDUCTORS ON MULTI-WIRE BRANCH CIRCUITS SHALL NOT BE ALLOWED. FURNISH AND INSTALL DEDICATED NEUTRALS PER CIRCUIT.

ELECTRICAL SPECIFICATIONS

EXCAVATING, TRENCHING, AND BACKFILL

- GENERAL:** LAY ALL RACEWAYS IN OPEN TRENCH. OPEN THE TRENCH SUFFICIENTLY AHEAD OF RACEWAY LAYING TO REVEAL OBSTRUCTIONS. MAINTAIN EASY ACCESS TO FIRE HYDRANTS BY FIRE FIGHTING APPARATUS. PROVIDE TRENCH CROSSINGS AS NECESSARY TO ACCOMMODATE PUBLIC TRAVEL. ALL EXCAVATIONS SHALL BE FULLY PROTECTED.
- SEPARATE TRENCHES:** UNLESS OTHERWISE SHOWN OR REQUIRED, PROVIDE SEPARATE TRENCHES FOR COMMUNICATION LINES AND POWER LINES, RESPECTIVELY, WITH A MINIMUM OF THREE (3) FEET OF UNDISTURBED EARTH BETWEEN TRENCHES. GAS AND ELECTRICAL LINES SHALL ALWAYS BE PLACED IN SEPARATE TRENCHES.
- WIDTH OF TRENCH:** EXCAVATE TRENCHES OF SUFFICIENT WIDTH FOR PROPER INSTALLATION OF WORK.
- WATER REMOVAL:** KEEP TRENCHES FREE FROM WATER WHILE CONSTRUCTION THEREIN IS IN PROGRESS. UNDER NO CIRCUMSTANCES LAY CONDUIT OR APPURTENANCES IN WATER. PUMP OR BAIL HOLES TO PERMIT PROPER JOINTING OF THE RACEWAYS. CONDUCT THE DISCHARGE FROM TRENCH DEWATERING TO DRAINS OR NATURAL DRAINAGE CHANNELS.
- DISPOSITION OF UTILITIES:**
 - RULES AND REGULATIONS GOVERNING THE RESPECTIVE UTILITIES SHALL BE OBSERVED IN EXECUTING ALL WORK UNDER THIS HEADING.
 - ACTIVE UTILITIES SHOWN ON THE DRAWINGS SHALL BE ADEQUATELY PROTECTED FROM DAMAGE AND REMOVED OR RELOCATED ONLY IN ACCORDANCE WITH WRITTEN INSTRUCTIONS FROM THE ARCHITECT. UTILITIES SHOWN ARE LOCATED AS NEAR AS POSSIBLE TO ASCERTAIN IN CORRECT LOCATIONS BUT SOME VARIANCE IN LOCATION MAY BE EXPECTED.
 - ACTIVE UTILITIES NOT SHOWN ON THE DRAWINGS NOR EVIDENT DURING INSPECTION, SHALL BE PROTECTED OR ABANDONED IN ACCORDANCE WITH WRITTEN INSTRUCTION OF THE ENGINEER.
 - INACTIVE AND ABANDONED UTILITIES ENCOUNTERED IN TRENCHING OPERATIONS SHALL BE REMOVED, PLUGGED, OR CAPPED. IN ABSENCE OF SPECIFIED REQUIREMENTS, PLUG OR CAP SUCH UTILITY LINES AT LEAST THREE FEET FROM UTILITY LINES TO BE INSTALLED, OR AS REQUIRED BY LOCAL REGULATIONS.
- EXCAVATION:** MATERIALS TO BE EXCAVATED SHALL INCLUDE EARTH OR ANY OTHER MATERIAL ENCOUNTERED WITHIN THE LIMITS OF TRENCH EXCAVATION FOR THE UTILITIES HEREUNDER TO THE DEPTH AND EXTENT INDICATED ON THE DRAWINGS AND HEREIN SPECIFIED.
- TREE PROTECTION:** EXERCISE CARE TO PROTECT THE ROOTS OF TREES TO REMAIN. WITHIN THE BRANCH SPREAD OF SUCH TREES, PERFORM ALL TRENCHING BY HAND. OPEN THE TRENCH ONLY WHEN THE UTILITY CAN BE INSTALLED IMMEDIATELY. PRUNE INJURED ROOTS CLEANLY AND BACKFILL AS SOON AS POSSIBLE. PERFORM ALL THIS WORK UNDER THE DIRECTION OF THE ARCHITECT.
- BACKFILLING:** BACKFILL TRENCHES ONLY AFTER CONDUIT HAS BEEN INSPECTED, CHECKED AND LOCATIONS OF UTILITIES AND APPURTENANCES HAVE BEEN RECORDED. BACKFILL ONLY WITH SUITABLE MATERIAL FREE FROM DEBRIS WHICH COULD DAMAGE THE CONDUIT(S). IN AREAS SUBJECT TO VEHICULAR TRAFFIC, BACKFILL WITH COMPACTED CRUSHED LIMESTONE OR FLOWABLE FILL CONCRETE. REPLACE SURFACE TO ORIGINAL CONDITION.

CONDUIT

- RIGID GALVANIZED STEEL CONDUIT SHALL BE USED FOR ALL ABOVE GROUND EXTERIOR APPLICATIONS OR WHERE CONDUIT MAY BE SUBJECTED TO PHYSICAL DAMAGE, ANY EXCEPTION TO THE ABOVE WILL BE SPECIFICALLY NOTED.
- PVC CONDUIT SHALL BE USED FOR ALL UNDERGROUND OR UNDERSLAB APPLICATIONS. SCH 80 SHALL BE USED FOR FEEDERS AND SERVICES AND 2" RED CONCRETE ENCASMENT SHALL BE REQUIRED WHERE THESE CONDUIT PASS UNDER AREAS OF VEHICLE TRAFFIC. SCH 40 SHALL BE USED FOR BRANCH CIRCUITS - NO CONCRETE.
- EMT CONDUIT OR MC CABLE SHALL BE EMPLOYED FOR ALL INTERIOR APPLICATIONS OTHER THAN THOSE LISTED ABOVE FOR RIGID CONDUIT.
- ALUMINUM CONDUIT SHALL NOT BE PERMITTED FOR ANY APPLICATIONS.
- WHERE CONDUITS CROSS BUILDING EXPANSION JOINTS, USE SUITABLE SLIDING OR OFF-SETTING FITTINGS. UNLESS SPECIFICALLY APPROVED FOR BONDING, USE A SUITABLE BONDING JUMPER.
- THE MINIMUM SIZE OF CONDUIT SHALL BE 1/2" UNLESS OTHERWISE NOTED ON THE DRAWINGS.

WIRE

- ALL WIRING SHALL BE COPPER, CODE GRADE, TYPE THW OR THHW/THWN EQUIVALENT, RATED 600V.
- ALL WIRING SHALL BE INSTALLED IN CONDUIT OR OTHER N.E.C. APPROVED RACEWAY.
- ALL SPLICES SHALL BE PRESSURE TIGHT AND SHALL BE MADE IN ACCESSIBLE JUNCTION OR SPLICE BOXES, WIRING, FLUORESCENT FIXTURES, ETC., SHALL BE OF THE PROPER TEMPERATURE RATING PER THE N.E.C.
- ALL CONDUCTORS #8 AWG AND LARGER SHALL BE STRANDED.

WIRING DEVICES

- WIRING DEVICES SHALL BE SPECIFICATION GRADE BY PASS & SEYMOUR, BYRANT, LEVITON OR HUBBELL.
- RECEPTACLES SHALL BE 20 AMPERE, 125 VOLT DUPLEX WITH GROUNDING SLOT, UNLESS OTHERWISE NOTED.
- SWITCHES SHALL BE 20 AMPERE, 120/277 VOLT.
- ALL WIRING DEVICES SHALL BE PROVIDED WITH COMMERCIAL SPECIFICATION GRADE FINISHING PLATES.
- CONTRACTOR SHALL FURNISH AND INSTALL ALL RECEPTACLES & LIGHTING CONTROLS WITH A SELF-ADHESIVE LABEL STATING PANELBOARD NAME AND CIRCUIT NUMBER FEEDING DEVICE. APPLY TO COVERPLATE.

DISCONNECT SWITCHES

- ALL DISCONNECT SWITCHES SHALL BE HEAVY DUTY TYPE WITH QUICK-MAKE, QUICK-BREAK MECHANISM. GENERAL DUTY SWITCHES SHALL NOT BE ACCEPTABLE.
- DISCONNECT SWITCHES SHALL BE NEMA 1 UNLESS OTHERWISE NOTED OR DICTATED BY APPLICATIONS. EXTERIOR DISCONNECT SWITCHES SHALL BE A MINIMUM OF NEMA 3R.
- DISCONNECT SWITCHES SHALL BE SQUARE "D", CUTLER-HAMMER, GENERAL ELECTRIC, OR SIEMENS.

PANELBOARDS

- ALL BRANCH PANELS SHALL BE PANELBOARD TYPE CONSTRUCTION WITH DISTRIBUTED PHASE BUSSING AND BOL-T-IN TYPE BREAKERS. ALL MULTI-POLE BREAKERS SHALL HAVE COMMON TRIP AND A SINGLE OPERATING HANDLE. PANELBOARDS SHALL BE UL APPROVED.
- PANELBOARDS SHALL HAVE LOCKING TYPE DOORS AND ALL LOCKS SHALL BE KEyed ALIKE. PANELS SHALL HAVE AN INDEX OF CIRCUITRY WHICH SHALL BE TYPED IN BY THE CONTRACTOR TO INDICATE WHAT EACH CIRCUIT FEEDS. MINOR REARRANGEMENT OF CIRCUITRY TO OBTAIN A BALANCED LOAD SHALL BE PERMITTED.
- PANELBOARDS SHALL BE SQUARE "D", CUTLER-HAMMER, GENERAL ELECTRIC, OR SIEMENS.

FITTINGS

- THINWALL CONDUIT (EMT) FITTINGS SHALL BE ALL STEEL, RAIN-TIGHT, AND SET-SCREW TYPE UP TO AND INCLUDING 2" CONDUIT. SET-SCREW TYPE SHALL BE USED ON SIZES LARGER THAN 2".
- RIGID CONDUIT FITTINGS SHALL BE METALLIC HEAVY DUTY TYPE.
- FLEXIBLE CONDUIT FITTINGS SHALL BE ALL STEEL.
- DIE-CAST AND INDENTER TYPE FITTINGS SHALL NOT BE ACCEPTABLE.
- FURNISH TYPE AS MANUFACTURED BY T & B, STEEL CITY, APPLETON, RACO OR APPROVED EQUAL.

ELECTRICAL SPECIFICATIONS

DEMOLITION

- CONTRACTOR SHALL BE RESPONSIBLE FOR ELECTRICAL DEMOLITION. ELECTRICAL EQUIPMENT, (LIGHT FIXTURES, RECEPTACLES, SWITCHES, HVAC EQUIPMENT, ETC.) MADE OBSOLETE BY DEMOLITION AND NOT DESIGNATED AS BEING REUSED, SHALL BE DISCONNECTED AND REMOVED. WIRING, NO LONGER REQUIRED, SHALL BE DISCONNECTED AND REMOVED.
- ELECTRICAL EQUIPMENT, NOT DESIGNATED AND/OR SHOWN TO BE REMOVED OR OTHERWISE NOTED, SHALL REMAIN IN PLACE AND REMAIN ACTIVE. **DO NOT LEAVE ABANDONED WIRING IN CONDUITS.**
- EXISTING CONDUITS NO LONGER REQUIRED MAY BE ABANDONED AND LEFT IN PLACE PROVIDED THE WIRING IS REMOVED AND THE PLACEMENT OF THE CONDUIT IS SUCH THAT IT DOES NOT CONFLICT WITH NEW CONSTRUCTION.
- WHERE THE DEMOLITION OF ELECTRICAL EQUIPMENT INTERRUPTS POWER TO OTHER DOWNSTREAM ELECTRICAL EQUIPMENT, THAT ARE EXISTING TO REMAIN, THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT DOWNSTREAM DEVICES REMAIN ACTIVE AND ARE PROPERLY RECONNECTED.
- EQUIPMENT REMOVED AND NOT REUSED SHALL BE THE PROPERTY OF THE OWNER. ANY EXCEPTION TO THE ABOVE SHALL BE SO NOTED ON THE DRAWINGS.

SUBMITTALS

- AT MINIMUM, SUBMITTALS SHALL BE SUBMITTED FOR LUMINAIRES, LIGHTING CONTROLS, SWITCHES/PANELBOARDS, FIRE ALARM SYSTEM COMPONENTS, AND TRANSFORMERS WHERE APPLICABLE TO THE PROJECT. OTHERS ARE NOT REQUIRED BUT WILL BE ACCEPTED AND REVIEWED SUCH AS WIRING DEVICES, CONDUIT, WIRE, BOXES.
- SUBMIT MANUFACTURER'S SPECIFICATION SHEETS, CATALOG SHEETS, OR SHOP DRAWINGS COVERING ALL PHASES OF WORK INCLUDED IN THE PROJECT.
- HARD COPY SUBMITTALS SHALL BE ARRANGED IN SETS AND BOUND. IF MULTIPLE SUBMITTALS ARE SENT TOGETHER, EACH SECTION SHALL ORGANIZED IN SEPARATE INDEXED SECTIONS. **NO LOOSE LEAF SHEETS WILL BE ACCEPTED.**
- ELECTRONIC SUBMITTALS SHALL BE IN PDF FORMAT WITH EACH SECTION IN A SEPARATE FILE. **ALL SECTIONS MERGED INTO A SINGLE LARGE FILE WILL NOT BE ACCEPTED.**
- ALL SUBMITTALS SHALL BEAR WRITTEN CERTIFICATION TO THE EFFECT THAT THE CONTRACTOR HAS EXAMINED THEM AND FOUND THEM TO BE IN ACCORDANCE WITH SPECIFICATIONS & DRAWINGS AND TO BE DIMENSIONALLY CORRECT WITH REFERENCE TO AVAILABLE SPACE AND OTHER TRADES. EACH SUBMITTAL SHALL BE SIGNED AND DATED BY CONTRACTOR.
- SUBMITTALS ARE REQUIRED EVEN WHEN EQUIPMENT BEING FURNISHED IS EXACTLY AS SPECIFIED.

TESTING

- THE CONTRACTOR SHALL PERFORM MEGGER TESTING OF EACH CONDUCTOR MAKING UP SERVICE ENTRANCE, IF INSTALLED BY CONTRACTOR, AND ALL FEEDERS. ANY CONDUCTORS INSTALLED OR OWNED BY THE SERVING UTILITY ARE EXEMPT FROM SAID TESTING.
- THE TEST SHALL BE PERFORMED WITH AN APPLIED POTENTIAL OF 1000 VOLTS DC FOR 1 MIN. CONTRACTOR SHALL PERFORM TESTS WITH CONDUCTORS DISCONNECTED AT BOTH ENDS. THE MINIMUM INSULATION RESISTANCE VALUES SHALL NOT BE LESS THAN TWO MEGOHMS.
- THE CONTRACTOR SHALL RECORD ALL READINGS AND SUBMIT A TEST REPORT WITH CLOSE OUT DOCUMENTS.
- ALL TERMINATIONS SHALL BE MADE WITH A PROPERLY CALIBRATED TORQUE WRENCH TO BE WITHIN EQUIPMENT MANUFACTURER'S RECOMMENDED VALUES. FOR LUG TERMINATIONS ON SERVICES & FEEDERS, CONTRACTOR SHALL MARK A LINE ACROSS THE TOP OF THE LUG AFTER PROPER TIGHTENING.
- CONTRACTOR SHALL SUBMIT COPIES OF MOST RECENT CALIBRATION CERTIFICATES FOR ALL TORQUE WRENCHES TO BE USED ON SITE. CALIBRATION MUST HAVE BEEN DONE WITHIN 12 MONTHS OF THE TIME OF USE ON PROJECT SITE.

PERMITS AND INSPECTIONS

- CONTRACTOR SHALL PAY ALL FEES & OBTAIN ALL PERMITS REQUIRED.
- CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH ALL AUTHORITIES GOVERNING THE PROJECT AND PROVIDING PROPER NOTICE TO SAID AUTHORITIES FOR ALL REQUIRED INSPECTIONS. ANY LACK OF COORDINATION REQUIRING THE REMOVAL OF INSTALLED BUILDING COMPONENTS TO SATISFY REQUIRED INSPECTIONS WILL BE AT CONTRACTOR'S EXPENSE TO REPAIR.
- CONTRACTOR SHALL NOTIFY THE ENGINEER OF RECORD AT THE FOLLOWING PROGRESS POINTS IN THE PROJECT FOR ENGINEERING INSPECTIONS:
 - UNDERGROUND SERVICE ENTRANCE AND FEEDERS PRIOR TO CONCRETE ENCASING OR BACKFILLING. DOES NOT INCLUDE ANY UTILITY SIDE CONDUITS.
 - INTERIOR ROUGH-IN PRIOR TO ANY WALL COVERINGS BEING IN PLACE.
 - PANELBOARD/SWITCHGEAR/TRANSFORMER TERMINATIONS BEFORE SECURING COVERS
 - ABOVE CEILING AFTER LUMINAIRE INSTALLATION PRIOR TO CEILING TILES BEING INSTALLED.
- CONTRACTOR SHALL NOTIFY ENGINEER AT LEAST ONE WEEK PRIOR TO REQUIRED INSPECTION. IF ENGINEER CANNOT PERFORM INSPECTION IN A TIMELY MANNER AS TO NO DELAY CONSTRUCTION, THE CONTRACTOR SHALL SUBMIT DIGITAL PHOTOGRAPHIC EVIDENCE OF THE INSTALLATION. ENGINEER SHALL REVIEW PHOTOGRAPHS AND GIVE NOTICE OF ACCEPTANCE AT WHICH TIME THE CONTRACTOR MAY PROCEED.
- FAILURE TO NOTIFY ENGINEER OF INSPECTIONS SHALL RESULT IN CONTRACTOR REMOVING ALL COVERINGS TO ALLOW INSPECTION AND REPLACING TO PREVIOUS CONDITION AT CONTRACTOR'S OWN EXPENSE.

SUBSTITUTIONS

- THE PROPOSED SUBSTITUTION SHALL BE FULLY INVESTIGATED AND DETERMINED TO BE EQUAL OR SUPERIOR IN ALL RESPECTS TO THE SPECIFIED PRODUCT.
- THE SAME WARRANTY SHALL BE FURNISHED FOR THE PROPOSED SUBSTITUTION AS FOR THE SPECIFIED PRODUCT.
- THE PROPOSED PRODUCT SHALL HAVE THE SAME MAINTENANCE SERVICE AND AVAILABILITY OF SPARE PARTS.
- THE PROPOSED SUBSTITUTION SHALL NOT AFFECT DIMENSIONS AND/OR FUNCTIONAL REQUIRED CLEARANCES PER THE MANUFACTURER OR THE LATEST APPLICABLE CODES.
- THE PROPOSED SUBSTITUTION SHALL HAVE NO ADVERSE EFFECT ON OTHER TRADES AND SHALL NOT AFFECT AND/OR DELAY THE PROGRESS SCHEDULE.
- THE CONTRACTOR SHALL BE RESPONSIBLE TO PAY FOR ANY CHANGES TO BUILDING DESIGN, INCLUDING ARCHITECTURAL/ENGINEERING DESIGN, DETAILING AND CONSTRUCTION COST CAUSED BY THE SUBSTITUTION.
- THE CONTRACTOR SHALL TAKE SOLE RESPONSIBILITY FOR SUBSTITUTIONS THAT ARE DEEMED "VALUE ENGINEERING" AND DETERMINED NOT EQUAL OR SUPERIOR TO THE PRODUCT SPECIFIED.

ELECTRICAL LEGEND

ITEM	DESCRIPTION	MOUNTING
POWER DEVICES		
	120V, 20 AMP G.F.C.I. DUPLEX RECEPTACLE WITH LONG DIMENSION PERPENDICULAR TO FLOOR.	16" TO 81M AFF, UON
	DISCONNECT SWITCH AS SPECIFIED	ABOVE FLOOR
	TYPICAL 120V, SIZE 0 FRACTIONAL H.P., TOGGLE TYPE, MANUAL STARTER WITH THERMAL OVERLOAD PROTECTION. UON	ABOVE FLOOR
	TYPICAL EQUIPMENT MOUNTED JUNCTION BOX	ABOVE FLOOR
	TYPICAL JUNCTION BOX	ABOVE FLOOR
	ELECTRICAL PANELBOARD - SEE FEEDER DIAGRAM. DASHED AREA REPRESENTS N.E.C. REQUIRED WORKSPACE CLEARANCE	WALL

CONDUIT/CABLING

	METALLIC CONDUIT MINIMUM 1/2"	ABOVE FLOOR
	METALLIC CONDUIT, UNLESS OTHERWISE NOTED. MINIMUM 3/4"	BELOW FLOOR
	FLEXIBLE CONDUIT (LIQUID-TIGHT) MINIMUM 1/2"	ABOVE FLOOR
	SWITCHED 120VAC LIGHTING WITH 0-10V DIMMING SIGNAL. USE SEPARATE CONDUITS OR A SHIELDED CABLE - CLASS 1 WIRING	ABOVE FLOOR
	CAT 5e OR 6 CABLE USED FOR DIGITAL LIGHT CONTROLS EXPOSED ABOVE ACCESSIBLE CEILING OR IN CONDUIT ELSEWHERE	ABOVE FLOOR

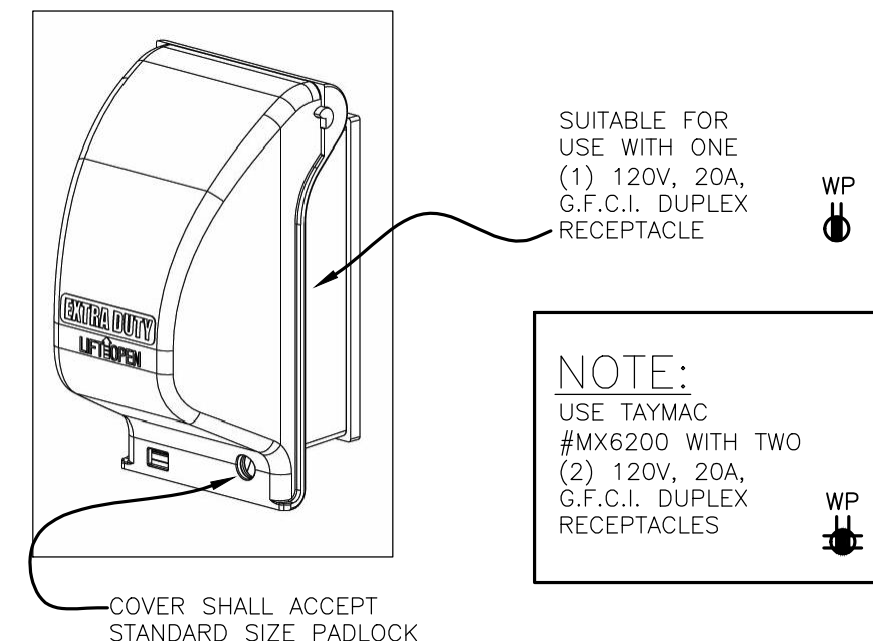
FIRE ALARM DEVICES

	DUCT TYPE SMOKE DETECTOR	DUCT
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ABBREVIATIONS

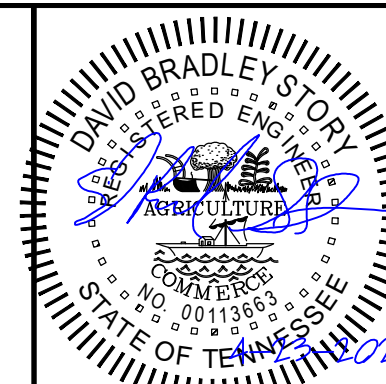
AFF	ABOVE FINISHED FLOOR	TV	TELEVISION
GFI	GROUND FAULT INTERRUPTING DEVICE (FURNISH SELF-CONTAINED, INDIVIDUAL G.F.C.I. DEVICE - MASTER / SLAVE CONFIGURATIONS ARE NOT ACCEPTABLE)	C	RED DEVICE, CONNECTED TO EMERGENCY POWER
WP	WEATHERPROOF DEVICE	EAF	ESTIMATED AVAILABLE FAULT CURRENT
FDS	FUSED DISCONNECT SWITCH	BKR	CIRCUIT BREAKER
NFDS	NON-FUSED DISCONNECT SWITCH	EMT	ELECTRICAL METALLIC TUBING
UON	UNLESS OTHERWISE NOTED	FLA	FULL LOAD AMPS
IG	ISOLATED GROUND DEVICE	G	GROUND (ALSO "GND")
HACR	HEATING AND AIR-CONDITIONING RATED DEVICE	GRS	GALVANIZED RIGID STEEL CONDUIT
EGFCI	30mA EQUIPMENT GROUND FAULT CIRCUIT INTERRUPTOR	HP	HORSEPOWER
LOC	EQUIPMENT LOCK OUT CLIP	KVA	KILOVOLT-AMPS
ST	SHUNT TRIP DEVICE	KW	KILOWATT
MB	MAIN CIRCUIT BREAKER	MCA	MINIMUM CIRCUIT AMPS
MLO	MAIN LUGS ONLY	MOCP	MAXIMUM OVERCURRENT PROTECTION
		NIC	NOT IN CONTRACT
		PVC	POLYVINYLCHLORIDE CONDUIT, CLASSIFIED AS RIGID NONMETALLIC CONDUIT PER N.E.C. SCHEDULE 40 U.O.N.
		NL	NIGHT LIGHT - LUMINAIRE SHALL BE UNSWITCHED EXCEPT FOR CIRCUIT BREAKER.

PER N.E.C. 406.9(B), FURNISH AND INSTALL ALL EXTERIOR AND GARAGE RECEPTACLES WITH AN EXTRA-DUTY GRADE "WHILE IN USE" WET LOCATION COVER. THE COVER SHALL BE U.L. 5140 LISTED. EQUAL TO TAYMAC #MX3200 FOR SINGLE GANG G.F.C.I. RECEPTACLE. COVER INCLUDE GASKETS AND HARDWARE FOR A COMPLETE INSTALLATION. COVER SHALL BE METALLIC.



NOTE:
USE TAYMAC
#MX6200 WITH TWO
(2) 120V, 20A,
G.F.C.I. DUPLEX
RECEPTACLES

EXTRA-DUTY DEVICE COVER
NO SCALE



REVISION	DATE	COMMENT

SHEET TITLE	PROJECT
NOTES, SPECS, LEGEND	GYMNASIUM HVAC RENOVATION WAYNESBORO MIDDLE SCHOOL WAYNESBORO, TN

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SCALE: AS SHOWN
CHECKED: TSL
DRAWN BY: DBS
APPROVED: DBS
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PROJECT NUMBER:
21-050
SHEET NUMBER:
E3.1