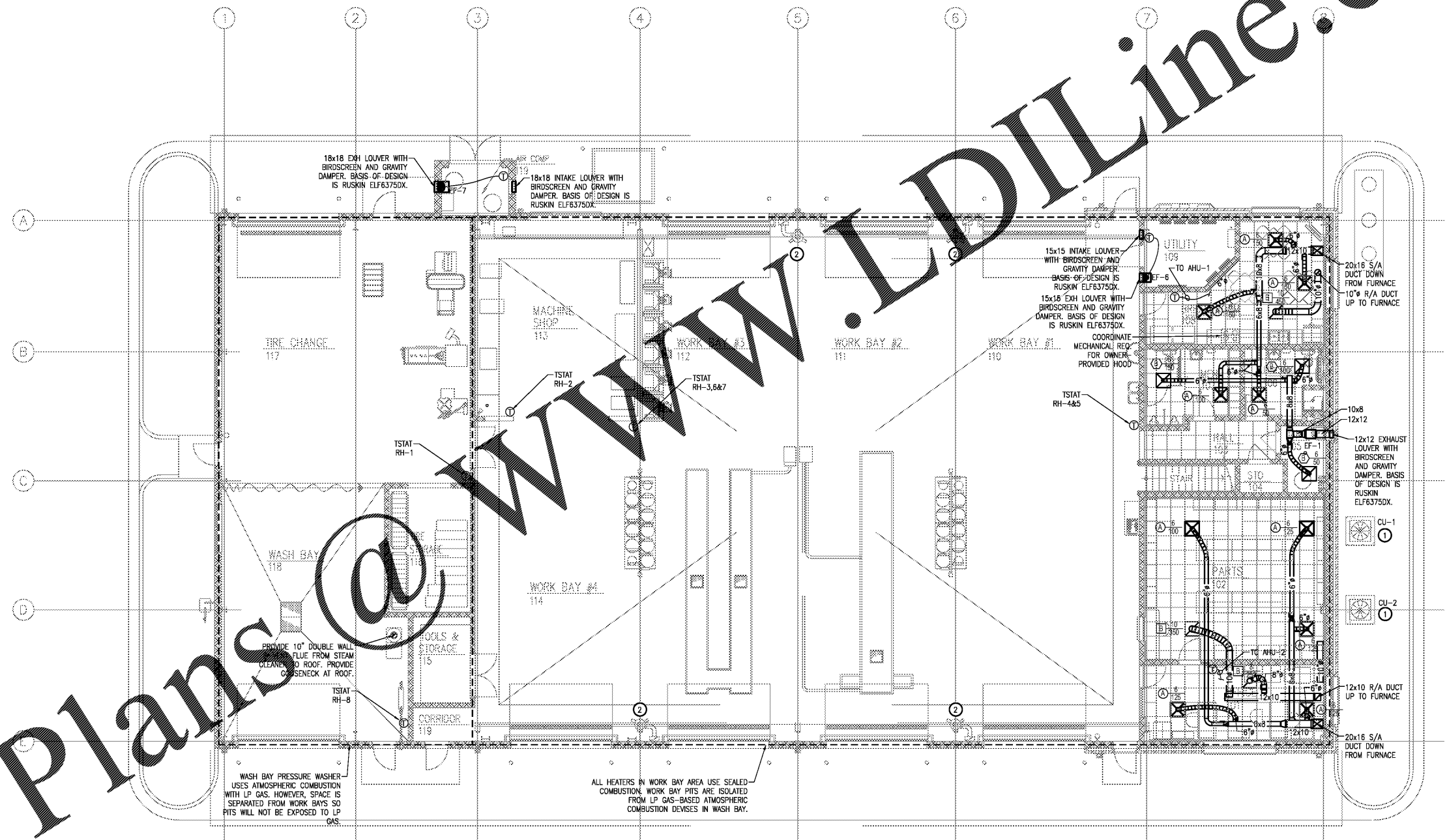


**GENERAL HVAC NOTES:**

1. BEFORE SUBMITTING SHOP DRAWINGS, VERIFY VOLTAGES AVAILABLE FOR MECHANICAL EQUIPMENT WITH ELECTRICAL CONTRACTOR. VERIFY PROVISION OF ALL STARTERS, VFDs AND DISCONNECTS.
2. BEFORE FABRICATING ANY SHEET METAL DUCTWORK, COORDINATE LOCATION AND SIZE WITH SPRINKLER & PLUMBING PIPING, CONDUITS, LIGHT FIXTURES, ETC. PLANS ARE SCHEMATIC AND ARE NOT SHOP DRAWINGS. SUBMIT DUCTWORK COORDINATION DRAWINGS, IF SPEC'D. SEE NOTE (3) BELOW REGARDING ROUTING AND OFFSETS OF DUCTWORK, PIPING, AND CONDUITS.
3. ALL CONDUITS, PIPING & DUCTWORK MUST BE CONCEALED ABOVE CEILINGS AND IN CHASES, UNLESS NOTED OTHERWISE. CONDUITS, PIPING AND DUCTWORK MAY BE ROUTED THRU & BETWEEN BAR JOISTS & BETWEEN BEAMS (WITH OFFSETS AS NEEDED) WHERE REQUIRED BY SPACE RESTRICTIONS AND/OR OBSTRUCTIONS, NO CHANGE ORDERS ACCEPTED FOR CONTRACTORS RE-ROUTING. ALL REQUIRED COORDINATION AND ADDED MATERIALS REQUIRED FOR THESE CHANGES SHALL BE PROVIDED BY THE CONTRACTOR.
4. PROVIDE NEW CONDENSATE DRAIN WITH P-TRAP FOR ALL AHUs AND/OR EQUIPMENT WITH COOLING COILS. RUN DRAIN LINE TO CLOSEST ROOF OR FLOOR DRAIN OR AS NOTED ON DRAWINGS.
5. CONDENSATE DRAIN SIZE SHALL MATCH UNIT CONDENSATE LINE OUTLET SIZE ALL THE WAY TO DRAINS.
6. PROVIDE ESCUTCHEON PLATES WHERE DUCTS OR PIPES PENETRATE CEILINGS OR WALLS IN AREAS EXPOSED TO VIEW. ESCUTCHEONS FOR DUCTS SHALL BE CONSTRUCTED OF SAME MATERIAL AS DUCT. PIPE ESCUTCHEONS SHALL BE CHROME-PLATED BRASS.
7. CONTRACTOR SHALL VERIFY SEISMIC DESIGN CATEGORY AND RISK CATEGORY WITH STRUCTURAL DRAWINGS/DESIGN. CONFIRM THE REQUIREMENTS FOR SEISMIC BRACING WITH THE LOCAL BUILDING CODE AUTHORITIES PRIOR TO BID.
8. SEISMIC DESIGN CATEGORY IS LISTED AS C. ALL GAS PIPING AND EQUIPMENT SHALL HAVE A COMPONENT IMPORTANCE FACTOR OF 1.5. ALL OTHER EQUIPMENT SHALL HAVE A COMPONENT IMPORTANCE FACTOR OF 1.0 AND BE EXEMPT FROM SEISMIC DESIGN. CONFIRM WITH AUTHORITY HAVING JURISDICTION.
9. ALL LIFE SAFETY ITEMS/EQUIPMENT SHALL BE SEISMICALLY RESTRAINED. M.C. SHALL CLOSELY COORDINATE ROUTING OF ALL DUCTWORK AND MECHANICAL EQUIPMENT WITH THE SEISMIC RESTRAINT SYSTEMS.
10. ALL GAS EQUIPMENT, INCLUDING THEIR ATTACHMENTS AND SUPPORTS, SHALL BE DESIGNED FOR SEISMIC FORCES IN ACCORDANCE WITH CHAPTER 13 OF ASCE7-10.
11. ALL EXTERIOR MOUNTED MECHANICAL EQUIPMENT EXPOSED TO WIND SHALL BE DESIGNED AND INSTALLED TO RESIST THE WIND PRESSURES DETERMINED IN ACCORDANCE WITH CHAPTERS 28 TO 29 OF ASCE7-10.
12. FOR ALL COMPONENTS REQUIRING SEISMIC RESTRAINT, THE COMPONENT SUPPORTS AND ATTACHMENTS SHALL BE DESIGNED BY A REGISTERED DESIGN PROFESSIONAL WITH PROPER SEALS.
13. ALL NEW HVAC AND ELECTRICAL EQUIPMENT SHALL BE U.L. LISTED.
14. ALL NEW EQUIPMENT SHALL MEET ALL APPLICABLE SECTIONS OF THE CURRENT MECHANICAL CODE AND BE LABELED IN ACCORDANCE WITH SUCH CODES.
15. COORDINATE FINAL LOCATION OF THERMOSTATS AND/OR ROOM MOUNTED SENSORS WITH ARCHITECT. VERIFY USE OF LOCKABLE THERMOSTAT COVERS WITH ARCHITECT.
16. ALL FLOOR OR GRADE MOUNTED MECHANICAL EQUIPMENT SHALL BE MOUNTED ON A CONCRETE EQUIPMENT PAD. COORDINATE WITH STRUCTURAL DRAWINGS ANY REQUIREMENTS FOR SPECIALIZED EQUIPMENT PADS.
17. WHERE A SPECIFIC PRODUCT IS SPECIFIED OR INDICATED ON THE DRAWINGS OR IN THE SPECIFICATIONS, BY MANUFACTURER AND MODEL NUMBER, IT IS DONE SO TO ESTABLISH THE STANDARD OF QUALITY OF THE PRODUCTS INTENDED. REFER TO SPECIFICATIONS AND SCHEDULES FOR APPROVED EQUALS.
18. ALL WORK SHALL BE DONE BY LOCAL STATE LICENSED CONTRACTORS, IN ACCORDANCE WITH THE LOCAL STATE BUILDING CODE, ALL CHAPTERS.
19. CLOSE COORDINATION IS REQUIRED BETWEEN ALL TRADES THROUGHOUT THIS PROJECT. GENERAL CONTRACTOR IS RESPONSIBLE FOR THIS COORDINATION AND ASSURING THAT ALL CONFLICTS ARE RESOLVED IN AN ACCEPTABLE MANNER WITH NO AFFECT TO PROJECT OR SYSTEM PERFORMANCE AS WELL AS NO ADDITIONAL COST TO THE OWNER.
20. ALL MISCELLANEOUS STEEL REQUIRED FOR PROPER MECHANICAL SYSTEM MOUNTING AND INSTALLATION SHALL BE PROVIDED BY THE MECHANICAL CONTRACTOR.
21. MECHANICAL CONTRACTOR IS RESPONSIBLE FOR REVIEWING ALL DRAWINGS FROM ALL TRADES AND COORDINATING THEIR WORK WITH ALL OTHER TRADES.
22. WHERE CONFLICTS OCCUR BETWEEN NOTES, DRAWINGS, OR SPECIFICATIONS, THE CONTRACTOR SHALL REQUEST CLARIFICATION FROM THE MECHANICAL ENGINEER. THE CONTRACTOR SHALL NOT PROCEED WITH THE AFFECTED WORK UNTIL THE MECHANICAL ENGINEER ISSUES AN OFFICIAL CLARIFICATION.
23. MECHANICAL CONTRACTOR IS RESPONSIBLE FOR ALL COSTS INCURRED BY SUBMITTING APPROVED EQUAL, BUT OTHER THAN SPECIFIED ON DRAWINGS, EQUIPMENT. THIS SHALL INCLUDE ANY REQUIRED REDESIGN OF DUCTWORK, PIPING, ELECTRICAL, CONTROLS AND/OR STRUCTURAL.
24. PIPE, CONDUIT AND DUCT OPENINGS THROUGH WALLS AND SLABS AROUND AND ABOVE MECHANICAL/ELECTRICAL EQUIPMENT ROOMS OR CLOSETS SHALL BE PACKED WITH SOUND ABSORBING MATERIAL AND SEALED.
25. THE INSTALLATION OF ALL INSULATION SHALL BE PERFORMED BY AN EXPERIENCED CRAFTSMAN IN A NEAT WORKMANSHIP-LIKE MANNER AND SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN PUBLISHED RECOMMENDATIONS FOR SERVICE INTENDED.
26. ALL DUCT AND PIPING INSULATION THICKNESSES SHALL MEET THE REQUIREMENTS OF THE ENERGY CODE. MECHANICAL CONTRACTOR SHALL REFER TO ANY SCHEDULES AND SPECIFICATIONS FOR INSULATION THICKNESS AND COORDINATE WITH THE ENERGY CODE REQUIREMENTS. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER.
27. UNLESS OTHERWISE NOTED ON DRAWINGS, ALL DUCTWORK SHALL BE GALVANIZED SHEET METAL, FABRICATED AND INSTALLED IN ACCORDANCE WITH ASHRAE STANDARDS AND SMACNA HVAC DUCT CONSTRUCTION STANDARDS.
28. LOW PRESSURE DUCTS SHALL BE RUN FROM UNITS WITH EXTERNAL STATIC PRESSURES LESS THAN 2.0 INCHES, W.G. ALL LOW PRESSURE SUPPLY AIR, RETURN AIR, OUTSIDE AIR, AND EXHAUST AIR DUCTS SHALL BE SEALED PER SMACNA SEAL CLASS A.
29. WHERE POWER WIRING, CONDUIT, GROUND WIRES, AND OTHER ELECTRICAL EQUIPMENT ARE PROVIDED UNDER THE MECHANICAL CONTRACT, THESE ITEMS SHALL BE PROVIDED IN ACCORDANCE WITH THE APPLICABLE SECTIONS OF THE ELECTRICAL SPECIFICATIONS.
30. ALL WIRING, PIPING, EQUIPMENT AND DEVICES MOUNTED OR LOCATED ABOVE THE CEILINGS SHALL BE PLENUM RATED. M.C. SHALL COORDINATE WITH G.C. TO ENSURE ALL TRADES ADHERE TO THIS REQUIREMENT.
31. PROVIDE REMOVABLE ACCESS DOORS AT ALL MOTOR OPERATED DAMPERS, FIRE DAMPERS, DUCT COILS, SMOKE DETECTORS, AND SIMILAR ITEMS REQUIRING MAINTENANCE OR ADJUSTMENT.
32. PROVIDE MANUAL VOLUME DAMPER IN LOW PRESSURE BRANCH SUPPLY, RETURN OR EXHAUST DUCTS TO EACH GRILLE, DIFFUSER, REGISTER, ETC. DAMPER SHALL BE AS CLOSE TO THE MAIN DUCT AS POSSIBLE. ALSO, PROVIDE MANUAL VOLUME DAMPERS AT OTHER LOCATIONS INDICATED ON PLANS. PROVIDE ACCESS TO QUADRANT LOCKS.
33. CONFIRM EXACT LOCATION OF ALL CEILING DEVICES (DIFFUSERS, GRILLES, ACCESS DOORS, ETC.) WITH THE ARCHITECT'S REFLECTED CEILING PLANS PRIOR TO SUBMITTING DUCTWORK COORDINATION DRAWINGS AND/OR BEGINNING CONSTRUCTION OF THE DUCTWORK.
34. PROVIDE RADIUS ELBOWS AT ALL CHANGES IN DIRECTION IN SUPPLY, RETURN AND EXHAUST DUCTWORK WHERE POSSIBLE. MINIMUM RADIUS AT CENTERLINE SHALL BE EQUAL TO 1.5 TIMES DUCT WIDTH, UNLESS OTHERWISE SHOWN. WHERE SQUARE ELBOWS ARE SHOWN PROVIDE ELBOWS WITH TURNING VANES. TURNING VANES SHALL BE AIRFOIL TYPE, ONLY, PER SMACNA DETAILS. ELBOWS WITHOUT FULL RADIUS OR TURNING VANES WILL NOT BE ACCEPTED, UNLESS SPECIFICALLY NOTED ON THE DRAWINGS AND APPROVED BY THE ENGINEER.
35. M.C. SHALL PROVIDE STARTUP, TEST AND BALANCE AND ALL SUPPORTING DOCUMENTATION FOR ALL NEW HVAC EQUIPMENT AND ASSOCIATED AIR SPECIFICATIONS ON DRAWINGS.
36. PROVIDE EXHAUST FANS WITH TIMED SWITCHES. VERIFY TIME LENGTH WITH OWNER.
37. GAS LINES SHALL BE BONDED IN ACCORDANCE WITH THE NATIONAL FIRE PROTECTION ASSOCIATION SECTION 310 - ELECTRICAL BONDING.

**KEYED NOTES**

1. M.C. SHALL PROVIDE 4" CONCRETE HOUSEKEEPING PAD FOR MECHANICAL EQUIPMENT.
2. DEDICATED VEHICLE EXHAUST CAPTURE SYSTEM. BASIS OF DESIGN IS NEDERMAN B85 HOSE REEL FOR 6", 33'-LONG NEDERMAN NEC-4.2-HTR00 HOSE WITH 700 CFM, 1 HP, 3PH, 230-460V NEDERMAN N24 FAN. PROVIDE LOW-VOLTAGE CONTROL BOX. COORDINATE ELECTRICAL CONNECTION WITH E.C. 3RD PARTY TESTING REQUIRED UNDER THIS CONTRACT.



**1 MECHANICAL FIRST FLOOR PLAN**  
 SCALE: 1/8"=1'-0"  
 1/8"=1'-0" 0' 4' 8' 16'

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**BIDDING DOCUMENTS**

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**MECHANICAL FIRST FLOOR PLAN**

DRAWING TITLE / DESCRIPTION:

PROJECT TITLE: **LUMBERTON EQUIPMENT SHOP**  
 LUMBERTON HIGHWAY DIVISION 6  
 872 NC 711 HIGHWAY  
 LUMBERTON, NORTH CAROLINA 28360

STATE CONSTRUCTION ID.# 16-12916-01A

ASSET NUMBER: 78-06-00

REVISIONS NO. DATE

DATE ISSUED: 12/15/2017  
 DRAWN BY: JML  
 CHECKED BY: WLA  
 SHEET NO. **M1.0**