

GENERAL MECHANICAL NOTES:

1. ALL WORK SHALL BE ARRANGED IN A NEAT, WELL ORGANIZED MANNER. ALL WORK SHALL BE PARALLEL AND PERPENDICULAR TO THE PRIMARY LINES OF THE BUILDING. LOCATE ALL OPERATING AND CONTROL EQUIPMENT PROPERLY TO PROVIDE CODE AND/OR MANUFACTURERS CLEARANCES.
2. ALL WORK SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE PORTIONS OF ALL NATIONAL, STATE, AND LOCAL CODES AND STANDARDS. WHERE THE CONTRACT DOCUMENTS ARE IN EXCESS OF CODE REQUIREMENTS, THE CONTRACT DOCUMENTS SHALL GOVERN IN THE EVENT OF A CONFLICT BETWEEN THE CONTRACT DOCUMENTS AND APPLICABLE CODES, THE LATTER SHALL GOVERN.
3. GC SHALL ENSURE THAT ALL LIGHTS, SPRINKLER HEADS, DIFFUSERS AND OTHER CEILING DEVICES ARE CENTERED IN CEILING TILES AND IN BETWEEN LIGHT FIXTURES.
4. ALL DUCT SIZES ARE CLEAR INSIDE DIMENSIONS.
5. ALL DUCTWORK TO BE EXTERNALLY INSULATED PER SPECIFICATIONS UNLESS NOTED OTHERWISE ON THE PLANS.
6. PROVIDE INSULATION BLANKETS AT ALL DIFFUSERS.
7. ALL EXPOSED DUCTWORK SHALL BE SUPPORTED BY ALL-THREAD ROD, SHALL BE INTERNALLY LINED AND SHALL BE PAINTED PER OWNER REQUIREMENTS.
8. FURNISH AND INSTALL ALL ITEMS, INCLUDING EVERY ARTICLE, DEVICE OR ACCESSORY REASONABLY NECESSARY TO FACILITATE EACH SYSTEMS' FUNCTIONING AS INDICATED BY THE DESIGN AND THE EQUIPMENT SPECIFIED. ELEMENTS OF THE WORK SHALL INCLUDE, BUT ARE NOT LIMITED TO: MATERIALS, LABORS, SUPERVISION, SUPPLIES, EQUIPMENT, TRANSPORTATION, HOISTING/LOADING, UTILITIES AND ALL REQUIRED PERMITS AND LICENSES.
9. UNIT LOCATIONS SHOWN ON PLAN ARE APPROXIMATE. COORDINATE EXACT LOCATION WITH STRUCTURAL PRIOR TO ROUGH-IN.
10. CONTRACTOR SHALL COORDINATE ALL DUCTWORK SIZES AND ROUTING WITH STRUCTURE AND OTHER DISCIPLINES PRIOR TO PURCHASING, CONSTRUCTING, OR INSTALLING ANY DUCTWORK. CONTRACTOR SHALL PROVIDE DUCTWORK SHOP DRAWINGS TO ENGINEER/ARCHITECT FOR APPROVAL PRIOR TO CONSTRUCTION UNLESS SHOP DRAWINGS ARE SUBMITTED BY CONTRACTOR ASSUMES ALL RESPONSIBILITIES FOR ANY NECESSARY REWORK.
11. ALL BRANCH DUCTS ARE TO BE THE SAME SIZE AS DIFFUSER NECK UNLESS OTHERWISE NOTED. SEE DIFFUSERS ROUNDOUT SIZING CHART.
12. MAINTAIN ALL OUTSIDE AIR INTAKE OPENINGS MINIMUM 10'-0" FROM ALL MECHANICAL UNITS, PLUMBING VENTS, AND EXHAUST FANS.
13. PROVIDE BALANCING DAMPERS AT ALL SUPPLY AIR ROUNDOUTS.
14. ALL DUCTWORK SHALL BE CONSTRUCTED, SEALED AND SUPPORTED PER LATEST SMACNA AND ASHRAE RECOMMENDATIONS.
15. PROVIDE ALL MECHANICAL EQUIPMENT WITH NEW LAMINATED IDENTIFICATION TAGS. LABEL TAGS AS SHOWN ON PLAN INCLUDING AREA SERVED.
16. ALL GAS FIRED EQUIPMENT TO BE U.L. LISTED AND A.S.A. APPROVED.
17. ALL EQUIPMENT SHALL BE ANCHORED TO THE BUILDING STRUCTURE.
18. FLEX DUCT ALLOWED ONLY IN SUPPLY DUCTWORK IN AREAS WITH ACCESSIBLE CEILINGS AND ONLY IN THE LAST 6 FEET OF ROUNDOUTS. NO FLEX DUCTWORK ALLOWED IN RETURN AIR DUCTWORK.
19. REFER TO PLUMBING PLANS FOR CONDENSATE ROUTING.
20. EXCEPT AS REQUIRED BY IBC SECTIONS 902.2.1.1 THROUGH 902.2.1.6, MATERIALS WITH FLEXINGS SHALL BE NONCOMBUSTIBLE OR SHALL HAVE A FLAME SPREAD INDEX OF NOT MORE THAN 25 AND A SMOKE DEVELOPED INDEX OF NOT MORE THAN 50 WHEN TESTED IN ACCORDANCE WITH ASTM-E-84 OR UL-723.
21. PROVIDE SLEEVES AND FLASHINGS REQUIRED FOR PIPING AND DUCTWORK PENETRATIONS. PROVIDE ESCUTCHEON PLATES FOR ALL PIPING PENETRATING FINISHED WALLS AND CEILINGS.
22. FIELD VERIFICATION OF EXISTING CONDITIONS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL NOTIFY THE ARCHITECT/ENGINEER OF ANY DISCREPANCIES FOUND PRIOR TO SUBMISSION OF BID. THE CONTRACTOR SHALL TAKE NOTE THAT THE DRAWINGS ARE SCHEMATIC IN NATURE AND INDICATE APPROXIMATE LOCATIONS OF THE MECHANICAL AND PLUMBING SYSTEMS. LOCATE ALL ITEMS BY ON-THE-JOB MEASUREMENTS, COORDINATE WITH OTHER TRADES TO ENSURE PROPER FIT AND ACCESS TO ALL ITEMS.
23. PROVIDE FIRE AND/OR SMOKE DAMPERS IN ALL DUCT PENETRATIONS OF RATED WALLS WHETHER OR NOT SHOWN ON PLANS.
24. COORDINATE WITH ELECTRICAL TO PROVIDE POWER FOR ALL SMOKE DAMPERS WHETHER OR NOT SHOWN ON PLANS.
25. CONSIDERATION SHALL NOT BE GRANTED FOR MISUNDERSTANDING OF THE SCOPE OR AMOUNT OF WORK TO BE PERFORMED. TENDER OF A PROPOSAL CONVEYS FULL CONTRACTOR AGREEMENT OF THE TERMS AND CONDITIONS SPECIFIED AND/OR INDICATED, SCHEDULED, OR IMPLIED ON THE CONTRACT DOCUMENTS, AND/OR REQUIRED BY THE NATURE OF THE WORK.
26. THE CONTRACTOR SHALL PROTECT THE INSTALLATION OF DUCTWORK, PIPING, CONDUIT, CABLE, ETC., INSTALLATION WITH LIGHTING FIXTURES, SPECIAL CEILING CONSTRUCTION, AIR DISTRIBUTION EQUIPMENT AND THE STRUCTURE. PROVIDE ADDITIONAL RISERS AND OFFSETS AS REQUIRED. IF, AFTER INSTALLED, NEW DUCTWORK, PIPING, CONDUIT, OR CABLE IS FOUND TO BE IN CONFLICT WITH THE ARCHITECTURE, STRUCTURE, OR OTHER TRADE WORK, OR WHICH IS EITHER EXISTING OR SHOWN ON THE CONTRACT, CONDUIT, OR CABLE SHALL BE RELOCATED WITHOUT ADDITIONAL COST TO THE OWNER.
27. THE CONTRACTOR SHALL PROTECT THE WORK, EQUIPMENT, AND MATERIALS FROM DAMAGE BY HIS WORK OR HIS PERSONNEL, AND SHALL CORRECT ALL DAMAGE THIS CAUSED WITHOUT ADDITIONAL COST TO THE OWNER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK, MATERIALS, AND EQUIPMENT UNTIL FINAL ACCEPTANCE BY THE OWNER. PROTECT ALL WORK, MATERIALS, OR EQUIPMENT CAREFULLY STORED ON SITE. MATERIALS AND EQUIPMENT STORED ON SITE WHICH IS NOT IMMEDIATELY INSTALLED, THE CONTRACTOR SHALL CLOSE OPEN ENDS OF WORK WITH TEMPORARY COVERS OR PLUGS DURING CONSTRUCTION TO PREVENT THE ENTRY OF DUST, DEFT, AND DESTROYING MATERIAL. THE CONTRACTOR SHALL PROTECT AND MAINTAIN THE WORK AND MATERIALS FROM DAMAGE DUE TO WATER, SPRAY-ON, PREPREGGING, CONSTRUCTION DEBRIS, ETC. IN A MANNER ACCEPTABLE TO THE ENGINEER AND/OR OWNER.

MECHANICAL NOTES BY SYMBOL "O"

1. LOUVERED DOOR FOR IT ROOM EXHAUST BY OTHERS
2. ROUTE 1" CONDENSATE FROM RTU-3 TO HUB DRAIN. PROVIDE AIR GAP.
3. ROUTE 1-1/4" CONDENSATE DRAIN THRU ROOF TO HUB DRAIN WITH AIR GAP.
4. INSTALL RETURN AIR DROP BOX WITH FILTER RACK AND HARDWARE. CLOTH BOTTOM OF PLENUM TO BE AT 12"-0" A.F.F.
5. AIR-SIDE ECONOMIZER KIT TO BE INSTALLED ON UNIT.
6. PROVIDE WALL MOUNTED FAN SPEED CONTROLLER FOR CF-1,2,3.
7. PROVIDE WALL MOUNTED TEMPERATURE CONTROLLER INTERLOCKED WITH DUCT MOUNTED TEMPERATURE SENSORS IN RTU-1,2. TEMPERATURE SENSORS TO BE INSTALLED IN RETURN AIR STREAM.
8. ROUTE CONDENSATE DOWN THROUGH ROOF PRIOR TO ROOF RIDGE. CONTRACTOR TO FIELD CONFIRM EXACT LOCATION OF RIDGE. ROUTE CONDENSATE BELOW GROUND TO STRUCTURE.
9. ENSURE EXHAUST OUTLET IS MINIMUM 10' FROM ALL OUTSIDE AIR INTAKES.
10. COORDINATE MOUNTING LOCATION WITH OTHER EQUIPMENT IN ROOM.
11. PROVIDE ROOF PENETRATIONS AND ROOF CURBS FOR BOOTH INTAKE DUCT AND EXHAUST DUCT. COORDINATE ROOF PENETRATION AND ROOF CURB LOCATION AND SIZE WITH BOOTH MANUFACTURER IN THE FIELD PRIOR TO INSTALLATION. PENETRATIONS TO BE 10'-0" APART WHEN POSSIBLE. MAINTAIN 10'-0" CLEARANCE BETWEEN BUILDING INTAKE AND EXHAUST OPENINGS. SPRAY BOOTH MANUFACTURER TO PROVIDE ALL NECESSARY DUCTWORK AND CAPS FOR A COMPLETE WORKABLE SYSTEM. EXHAUST OUTLETS TO BE INSTALLED IN ACCORDANCE WITH 2015 IBC SECTION 501.3.1.
12. PROVIDE ROOF PENETRATION FOR BOOTH EXHAUST DUCT. COORDINATE ROOF PENETRATION AND SIZE WITH BOOTH MANUFACTURER IN THE FIELD PRIOR TO INSTALLATION. MAINTAIN 10'-0" CLEARANCE FROM ANY BUILDING INTAKE. PAINT BOOTH MANUFACTURER TO PROVIDE ALL NECESSARY DUCTWORK AND CAPS FOR A COMPLETE WORKABLE SYSTEM. EXHAUST OUTLETS TO BE INSTALLED IN ACCORDANCE WITH 2015 IBC SECTION 501.3.1.
13. PROVIDE GAS VENT UP THROUGH ROOF. ROUTE THROUGH ROOF AND SEAL ROOF PENETRATION AIR AND WATER TIGHT. MAINTAIN 10'-0" CLEARANCE BETWEEN BUILDING INTAKE AND EXHAUST OPENINGS. ALL EQUIPMENT AND MATERIALS FOR A COMPLETE AND OPERABLE BOOTH TO BE FURNISHED BY OTHERS WHERE APPLICABLE. COORDINATE ROOF PENETRATION AND SIZES WITH BOOTH MANUFACTURER IN THE FIELD PRIOR TO INSTALLATION. EXHAUST OUTLETS TO BE INSTALLED IN ACCORDANCE WITH 2015 IBC SECTION 501.3.1.
14. INSTALL CARBON MONOXIDE SENSOR, COSTAR 24VC-E OR SIMILAR AT THIS LOCATION. MOUNT AT 96" A.F.F. SENSOR TO BE INTERLOCKED WITH ASSOCIATED EF.
15. FANS TO BE MOUNTED AT 12" A.F.F. CONTRACTOR TO PROVIDE MOUNTING KIT AND EXTENSION TUBE AS REQUIRED.
16. ROUTE 3/8" DUCT DOWN FROM EXHAUST FAN AND TERMINATE WITH WIRE MESH SCREEN.
17. EXHAUST DUCT ROUTED UP TO WEATHERPROOF CAP.
18. LOUVERS TO BE MOUNTED 9" A.F.F.
19. UNDERCUT DOOR 1/2".
20. RADIANT HEATERS TO BE INSTALLED TO BOTTOM OF STRUCTURE AND IN A MANNER TO DAMAGE AIR VEHICLES. INSTALL PER MANUFACTURER'S RECOMMENDATIONS.
21. 8" OUTSIDE AIR DUCT WITH BALANCING DAMPER ROUTE UP TO ROOF. PROVIDE WITH WEATHERPROOF CAP.
22. 3/4" CONDENSATE LINE FROM AHU-1 ROUTED TO TALPACE OF LAVATORY. 1/4" AUXILIARY LINE FROM AHU-1 ROUTED TO ABOVE LAVATORY. STUB DOWN THROUGH CEILING WITH CHROME ESCUTCHEON.

DUCT SMOKE DETECTORS

1. UPON ACTIVATION, THE SMOKE DETECTORS SHALL SHUT DOWN ALL OPERATIONAL CAPABILITIES OF THE AIR DISTRIBUTION SYSTEM IN ACCORDANCE WITH THE LISTING AND LABELING OF APPLIANCES USED IN THE SYSTEM.
2. THE DUCT SMOKE DETECTORS SHALL BE CONNECTED TO A FIRE ALARM SYSTEM WHERE A FIRE ALARM SYSTEM IS REQUIRED BY SECTION 907.2 OF THE INTERNATIONAL FIRE CODE. THE ACTIVATION OF A DUCT SMOKE DETECTOR SHALL ACTIVATE A VISIBLE AND AUDIBLE SUPERVISORY SIGNAL AT A CONSTANTLY ATTENDED LOCATION. IN FACILITIES THAT ARE REQUIRED TO BE MONITORED, A SUPERVISORY SIGNAL, DUCT SMOKE DETECTORS SHALL REPORT ONLY AS A SUPERVISORY SIGNAL, NOT AS A FIRE ALARM. IBC 907.4.1 SUPERVISION.

EXCEPTIONS:

- a. THE SUPERVISORY SIGNAL AT A CONSTANTLY ATTENDED LOCATION IS NOT REQUIRED WHERE THE DUCT SMOKE DETECTOR ACTIVATES THE BUILDING'S ALARM-INDICATING APPLIANCES.
- b. OCCUPANCIES NOT REQUIRED TO BE EQUIPPED WITH A FIRE ALARM SYSTEM, ACTIVATION OF A SMOKE DETECTOR SHALL ACTIVATE A VISIBLE AND AUDIBLE SIGNAL IN AN APPROVED LOCATION. DUCT SMOKE DETECTOR TROUBLE CONDITIONS SHALL ACTIVATE A VISIBLE OR AUDIBLE SIGNAL IN AN APPROVED LOCATION AND SHALL BE IDENTIFIED AS AIR DUCT DETECTOR TROUBLE.

OUTSIDE AIR CALCULATION

OFFICES:
 800 SF x 5 OCCUPANTS/1000 SF = 4 OCCUPANTS
 4 OCCUPANTS x 5 CFM/OCCUPANT = 20 CFM
 890 SF x 0.06 CFM/SF = 53 CFM
TOTAL O/A REQUIRED = 73 CFM

MAN LOBBY:
 480 SF x 10 OCCUPANTS/1000 SF = 5 OCCUPANTS
 5 OCCUPANTS x 5 CFM/OCCUPANT = 25 CFM
 480 SF x 0.06 CFM/SF = 29 CFM
TOTAL O/A REQUIRED = 54 CFM

CORRIDOR:
 263 SF x 0.06 CFM/SF = 16 CFM
TOTAL O/A REQUIRED = 16 CFM

BREAKROOM:
 228 SF x 10 OCCUPANTS/1000 SF = 3 OCCUPANTS
 3 OCCUPANTS x 5 CFM/OCCUPANT = 15 CFM
 228 SF x 0.06 CFM/SF = 14 CFM
TOTAL O/A REQUIRED = 29 CFM

DATA ENTRY:
 262 SF x 60 OCCUPANTS/1000 SF = 16 OCCUPANTS
 16 OCCUPANTS x 5 CFM/OCCUPANT = 80 CFM
 262 SF x 0.06 CFM/SF = 16 CFM
TOTAL O/A REQUIRED = 96 CFM

SEWING ROOM:
 15,300 SF x 0.02 CFM/SF = 1,596 CFM

TOTAL REQUIRED O/A: 1,864 CFM

TOTAL SUPPLIED O/A: 2,275 CFM

AIR BALANCE CALCULATION

VENTILATION SUPPLIED:
 RTU-1: 800 CFM
 RTU-2: 800 CFM
 RTU-3: 800 CFM
 RTU-4: 100 CFM
 EF-6: 12,000 CFM
 EF-7: 12,000 CFM

MECHANICAL NOTES:

1. CONFIRM ALL MECHANICAL REQUIREMENTS, CONNECTIONS, AND LOCATIONS FOR ALL BOOTHS AND EQUIPMENT WITH MANUFACTURER SPECIFICATIONS AND QUOTES PRIOR TO ROUGH-IN.
2. THERMOSTATS TO BE PROVIDED WITH PASSWORD LOCK-OUT CAPABILITY OR LOCK BOXES.

EXHAUST AIR:

EF-1: 75 CFM
 EF-2: 75 CFM
 EF-3: 75 CFM
 EF-4: 75 CFM
 EF-5: 75 CFM
 EF-6: 12,000 CFM
 EF-7: 12,000 CFM

TOTAL SUPPLIED (NORMAL OPERATION):

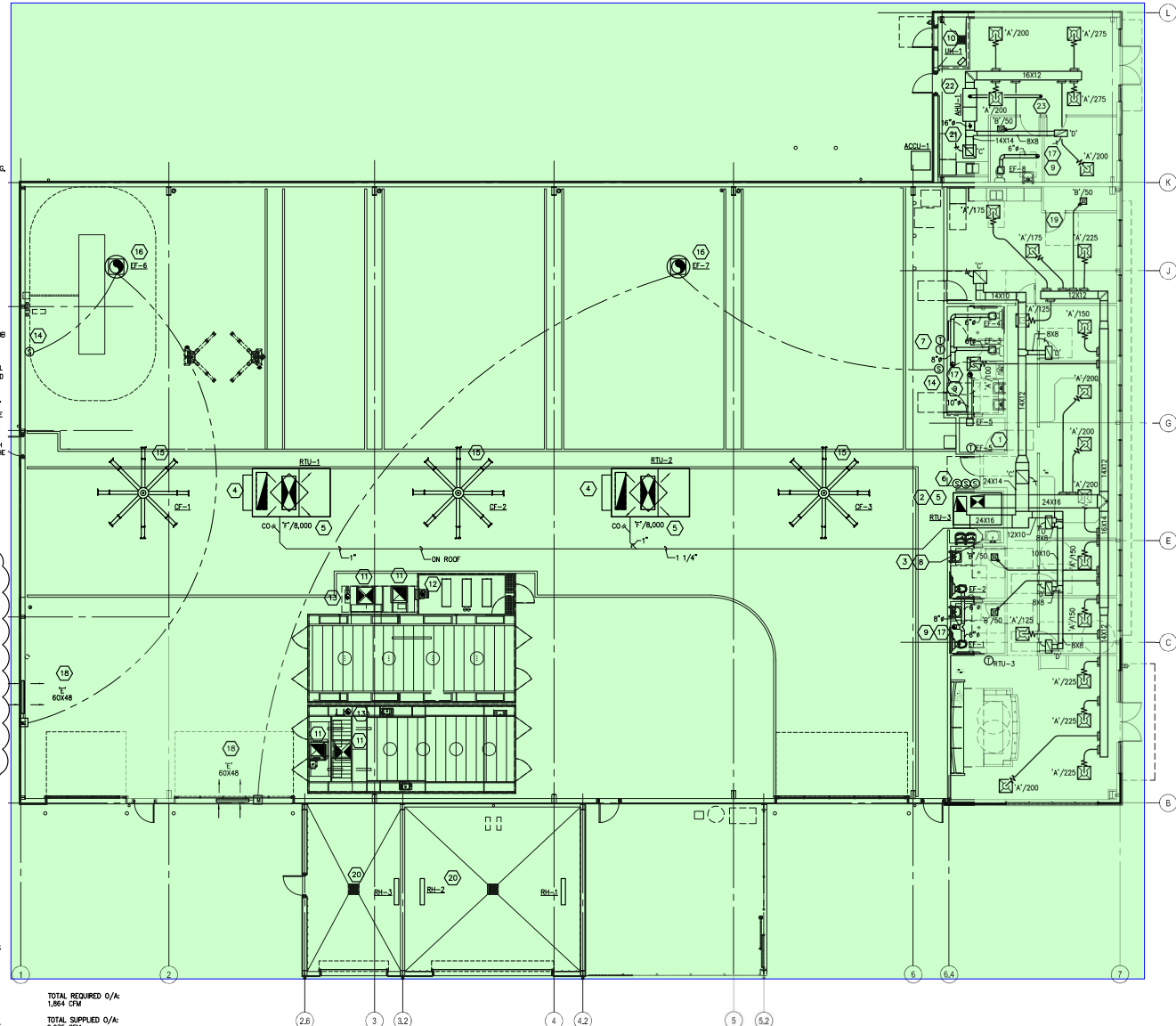
2,275 CFM

TOTAL EXHAUST AIR (NORMAL OPERATION):

2,275 CFM

WHEN PLASTIC PIPING AND TUBING IS USED IN PLUMBING SYSTEMS IT SHALL BE LISTED AND SHALL EXHIBIT A FLAME SPREAD INDEX OF NOT MORE THAN 25 AND A SMOKE DEVELOPED INDEX OF NOT MORE THAN 50 WHEN TESTED IN ACCORDANCE WITH ASTM E84 OR UL 723.

APPROVED
 By Marybel Pina at 9:13 am, Aug 19, 2022



01 MECHANICAL FLOOR PLAN

NCA Partners
 ARCHITECTURE

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 FORT WORTH, TX
 CHISHOLM TRAIL
 CC PROTO 161_2021-03

CONSTRUCTION ISSUE: 2022-09-14

STATE OF TEXAS
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DATE	DESCRIPTION
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MECHANICAL FLOOR PLAN

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