

PLUT DATE: 06/13/22 7:59 AM BR: EBNA PROJ: FILE: P:\EJ Paso County\2747 E. Las Vegas - Fleet Services - RTU - MAU - Mechanical.dwg

GENERAL NOTES

- CONTRACTOR SHALL VERIFY DIMENSIONS IN FIELD PRIOR TO PROCEEDING WITH ANY WORK.
- THESE DOCUMENTS HAVE BEEN PRODUCED TO THE BEST OF THE ENGINEER'S ABILITY FROM AVAILABLE EXISTING INFORMATION AND/OR SURVEY OF FIELD CONDITIONS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE EXISTING FIELD CONDITIONS PRIOR TO BID AND PROVIDE A WRITTEN SUBMITTAL TO ENGINEER IDENTIFYING ANY DISCREPANCIES OR VARIANCES FOUND. THE SUBMITTAL MUST ALSO INCLUDE ANY COSTS REQUIRED FOR THE CONTRACTOR'S WORK TO MEET EXISTING CONDITIONS.
- ALL WORK SHALL BE PERFORMED WITH QUALITY WORKMANSHIP, TO THE APPROVAL AND SATISFACTION OF THE ENGINEER.
- ALL WORK, MATERIAL AND INSTALLATION SHALL CONFORM TO THE LATEST EDITIONS OF LOCAL, STATE AND NATIONAL CODES AND ORDINANCES.
- CONTRACTOR TO VERIFY ANY CHANGES TO THIS SCOPE OF WORK WITH ENGINEER PRIOR TO ROUGH-IN OR INSTALLATION.**

POST CONSTRUCTION PHASE GENERAL NOTES

CONTRACTOR SHALL PROVIDE RECORD DRAWINGS TO ENGINEER. DRAWINGS SHALL INCLUDE ALL ADDENDUM ITEMS, ACCEPTED REQUESTS FOR INFORMATION (RFIS), CHANGE ORDERS, ALTERATIONS, REROUTING, FIELD SKETCHES, MARK-UPS, ETC.

SYSTEMS SHALL BE TESTED FOR PROPER OPERATION. IF TESTS SHOW THAT WORK IS DEFECTIVE, CONTRACTOR SHALL MAKE CORRECTIONS NECESSARY AT NO COST TO OWNER.

CONTRACTOR'S FAILURE TO ORDER OR RELEASE ORDER FOR MATERIALS AND/OR EQUIPMENT WILL NOT BE ACCEPTED AS A REASON TO SUBSTITUTE ALTERNATE MATERIALS OR EQUIPMENT.

SYSTEMS AND THEIR COMPONENTS SHALL BE COMPLETE, OPERABLE AND READY FOR CONTINUOUS OPERATION.

SCOPE

THE SCOPE OF WORK COVERED HEREIN CONSISTS OF FURNISHING ALL LABOR, MATERIALS, NECESSARY EQUIPMENT, AND SERVICES TO COMPLETE THE DESIGN AND RELATED WORK IN FULL ACCORDANCE WITH THESE DRAWINGS, AS SPECIFIED HEREIN, OR BOTH, AND IS SUBJECT TO THE TERMS AND CONDITIONS OF THE CONTRACT.

CODES, RULES, PERMITS, AND FEES

THE CONTRACTOR (MECHANICAL, ELECTRICAL AND PLUMBING) IS GENERALLY RESPONSIBLE TO ENSURE ALL WORK, BOTH OLD AND NEW, COMPLIES WITH THE APPLICABLE CODE (SPECIFIED BY THE JURISDICTION IN WHICH THE WORK IS BEING COMPLETED) AS WELL AS ANY APPLICABLE LOCAL CODES, STATE CODES, ADDENDUMS, AND ORDINANCES.

SHOP DRAWINGS

SHOP DRAWINGS FOR MATERIALS OR PRODUCTS SPECIFIED HEREIN AND/OR INDICATED ON DRAWINGS BY TRADE NAME, MANUFACTURER'S NAME OR CATALOG NUMBER SHALL BE PROVIDED AS SPECIFIED.

SUBSTITUTIONS FOR EQUIPMENT SPECIFIED IN THIS SCOPE OF WORK MUST BE SUBMITTED TO ENGINEER FOR APPROVAL PRIOR TO COMMENCING WORK.

COOPERATION WITH OTHER TRADES

THE SUBCONTRACTOR SHALL GIVE FULL COOPERATION TO OTHER TRADES AND SHALL FURNISH, IN WRITING, TO THE CONTRACTOR, WITH COPIES TO THE ENGINEER (OR ARCHITECT), ANY INFORMATION NECESSARY TO PERMIT THE WORK OF ALL TRADES TO BE INSTALLED SATISFACTORILY AND WITH THE LEAST POSSIBLE INTERFERENCE OR DELAY. COORDINATE ALL INFORMATION ON EQUIPMENT FURNISHED BY OTHERS BEFORE BEGINNING INSTALLATION.

CUTTING, PATCHING AND FINISHING

UNLESS NOTED OTHERWISE THE CONTRACTOR SHALL DO ALL CUTTING, DRILLING, ETC. REQUIRED FOR WORK UNDER THIS SECTION OF THE SPECIFICATION, INSIDE THE BUILDING.

MATERIAL AND WORKMANSHIP

ALL MATERIALS AND APPARATUS REQUIRED FOR THE WORK SHALL BE NEW UNLESS INDICATED OTHERWISE IN THE PLANS.

RECORD DRAWINGS

THE CONTRACTOR SHALL KEEP ACCURATE RECORDS OF CHANGES OR ALTERATIONS DURING THE ACTUAL CONSTRUCTION PROCESS IF DIFFERENT FROM THE PLANS.

THE CONTRACTOR SHALL PROVIDE THE OWNER WITH A REPRODUCIBLE SET OF PLANS FOR EACH DISCIPLINE OF THE COMPLETE INSTALLATION ALONG WITH FIRE ALARM SYSTEM, AS INSTALLED. THE SCALE ON THESE DRAWINGS SHALL BE NO SMALLER THAN THE SCALE USED ON THE ORIGINAL PLANS.

TESTING

FINAL TESTS SHALL BE MADE ONLY AFTER THE ENGINEER IS SATISFIED THAT ALL WORK HAS BEEN COMPLETED.

FINAL ACCEPTANCE

AFTER TESTING, A FINAL INSPECTION SHALL BE MADE BY THE ENGINEER AND OTHER AUTHORIZED PERSONS WITH THE CONTRACTOR.

FINAL ACCEPTANCE OF THE PROJECT SHALL NOT SUPERSEDE THE OWNER'S RIGHT TO REQUIRE REPLACEMENT AND/OR REPAIR ANY DEFECTIVE WORK OR MATERIALS.

MECHANICAL GENERAL NOTES

- UNLESS NOTED OTHERWISE, BRANCH DUCTS TO INDIVIDUAL REGISTERS, DIFFUSERS AND GRILLES SHALL BE SAME SIZE AS NECK INLET.
- PROVIDE EQUIPMENT SCHEDULED OR INDICATED ON THE DRAWINGS BUT NOT INCLUDED WITHIN THE SPECIFICATIONS. INSTALLATION SHALL CONFORM TO MANUFACTURERS REQUIREMENTS AND APPLICABLE CODES. SUBMITTALS SHALL BE PROVIDED PER VENDOR SCHEDULE SUBMITTAL.
- ELECTRICAL CHARACTERISTICS OF MECHANICAL EQUIPMENT SHALL BE VERIFIED WITH ELECTRICAL DRAWINGS PRIOR TO EQUIPMENT ORDER RELEASE. ADDITIONAL ELECTRICAL WORK RESULTING FROM EQUIPMENT SUBSTITUTION IS THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR.
- LENGTH OF FLEXIBLE DUCTWORK SHALL BE LIMITED TO 5'-0" MAXIMUM AND HORIZONTAL RUN WITH ONLY ONE 90 DEGREE ELBOW IS PERMITTED. SECURE FLEXIBLE DUCTWORK WITH SCREWS AND DRAWBANDS TO DIFFUSER. SUPPORT DUCT PER CODE TO PREVENT SAGGING.
- DUCT SIZES INDICATED ARE NET INSIDE CLEAR DIMENSIONS.
- PROVIDE 18" X 18" MINIMUM ACCESS DOOR IN INACCESSIBLE CEILINGS AND WALLS FOR EQUIPMENT REQUIRING ACCESS OR ADJUSTMENT. COORDINATE LOCATIONS AND SUBMIT TO ENGINEER OR ARCHITECT FOR APPROVAL PRIOR TO BEGINNING WORK. ACCESS DOORS LARGER THAN MINIMUM SHALL BE SIZED APPROPRIATELY TO ACCESS AND MAINTAIN EQUIPMENT. AT A MINIMUM PROVIDE CEILING OPERATORS FOR INACCESSIBLE M.V.D.'S WHERE INDICATED. EQUAL TO YOUNG REGULATOR, REMOTE GEAR OPERATED WITH CEILING ESCUTCHEON. ALL ACCESS PANELS/DOORS SHALL BE SUBMITTED TO ENGINEERING FOR APPROVAL PRIOR TO PROCUREMENT OF EQUIPMENT.
- ITEM DESIGNATIONS INDICATED HEREON ARE FOR PURPOSES OF THESE DOCUMENTS ONLY. CONTRACTOR SHALL VERIFY WITH OWNERS REPRESENTATIVE ACTUAL 'TAGGING' INFORMATION TO BE PROVIDED FOR EACH ITEM OF MECHANICAL EQUIPMENT PRIOR TO NAMEPLATE ORDER RELEASE. NAMEPLATES SHALL BE 4" X 3" BLUE PLASTIC WITH WHITE ENGRAVING AND WILL CALL OUT NAME OF EQUIPMENT AND ELECTRICAL PANEL FED FROM WITH VOLTAGE AND PHASE (COORDINATE WITH ELECTRICAL CONTRACTOR AND ELECTRICAL DRAWINGS).
- CEILING DIFFUSERS SHALL BE 36" MINIMUM FROM CEILING MOUNTED SMOKE DETECTORS. COORDINATE WITH ELECTRICAL DIVISION FOR LIGHT, SMOKE DETECTORS AND OTHER EQUIPMENT MOUNTED ON THE CEILING. IT'S THE RESPONSIBILITY OF THE CONTRACTOR TO AVOID ANY CEILING EQUIPMENT LOCATION INTERFERENCES.
- SECURE DIFFUSERS AND GRILLES TO T-BAR CEILINGS USING ACT CLIPS (WHERE APPLICABLE). SUBMIT SHOP DRAWINGS FOR APPROVAL PRIOR TO BEGINNING WORK.
- REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR ACTUAL LOCATIONS OF GRILLES AND DIFFUSERS IN CEILING, AS WELL AS ACCESS DOORS.
- COORDINATE EQUIPMENT DIMENSIONS AND LAYOUT WITH PLUMBING DRAWINGS WHERE FLOOR SINKS ARE INDICATED.
- PIPES PASSING THROUGH FIRE RATED WALLS AND FLOORS SHALL BE SEALED WITH U.L. LISTED MATERIAL EQUAL TO 3M FIRE BARRIER, CAULK OR PUTTY. SEALANT'S RATING SHALL MATCH THE RATING OF THE ASSEMBLY. ANY SUBSTITUTE SHALL BE SUBMITTED FOR APPROVAL TO ENGINEERING PRIOR TO INSTALLATION.
- PROVIDE VALVE TAGS AND PIPE IDENTIFICATION BANDS. TAGS SHALL BE BRASS WITH CHAIN. IDENTIFICATION BANDS SHALL BE LOCATED EVERY 25' AND ON EITHER SIDE OF ANY INTERMEDIATE BARRIER (WALL) ALONG THE PIPE ROUTE.
- TURNING VANE RUNNERS SHALL HAVE A VANE IN EVERY SLOT IN STRICT CONFORMANCE WITH MANUFACTURERS INSTRUCTIONS AND S.M.A.C.N.A. DUCT CONSTRUCTION STANDARDS.
- VERIFY FIT OF DUCTWORK AND PIPING PRIOR TO FABRICATION.
- INSULATED PIPING EXPOSED TO VIEW (THROUGHOUT THE FACILITY), SHALL BE COVERED FINISHED WITH PVC JACKET EQUAL TO MANVILLE PVC AND/OR PERMA-WELD PIPE JACKETING SYSTEM USING 30 MIL THICK JACKETS, FITTINGS, FLANGES, VALVES AND ACCESSORIES SHALL BE JACKETED. INSTALL PER MANUFACTURERS INSTRUCTIONS WITH SEAM ON TOP OF PIPE SO AS NOT TO BE VISIBLE FROM OCCUPIED SPACE.
- DUCTWORK LOCATED BELOW 7'-6" IN MECHANICAL ROOMS SHALL BE EQUIPPED WITH PADDING MATERIAL ON ALL CORNERS, EDGES AND OTHER SURFACES WHICH MAYBE HAZARDOUS.
- COORDINATE AND VERIFY ACTUAL APPROVED EQUIPMENT DIMENSIONS PRIOR TO POURING EQUIPMENT PADS.
- ALL DUCT MOUNTED SMOKE DETECTORS SHALL BE ZERO VELOCITY TYPE UNLESS OTHERWISE INDICATED ON DRAWINGS.
- COORDINATE DRAIN PIPING FROM ALL EQUIPMENT SHALL BE INSTALLED SO AS NOT CREATE A TRIPPING HAZARD. COORDINATE DRAIN CONNECTIONS WITH PLUMBING DRAWINGS. CONDENSATE DRAIN TRAPS SHALL BE 3" DEEP, MINIMUM.
- COORDINATE ALL CHASE, SLEEVE AND SLAB BLOCKOUT REQUIREMENTS BEFORE CONCRETE IS POURED OR BLOCK IS SET.
- PROVIDE ACCESS DOOR IN DUCTWORK UPSTREAM OF EACH REHEAT COIL. ACCESS DOOR TO BE EQUAL TO DUCTMATE M.E.T.U. ROUND DUCT ACCESS DOOR.
- DUCTWORK VISIBLE BEHIND DIFFUSERS, REGISTERS, OR GRILLES SHALL BE PAINTED FLAT BLACK.
- REFER TO EQUIPMENT DRAWINGS, SPECIFICATIONS AND SHOP DRAWINGS FOR CONNECTIONS TO EQUIPMENT.
- MANUAL VOLUME DAMPERS AND VALVES ON INSULATED DUCTWORK AND PIPING SHALL HAVE EXTENDED SYSTEMS TO ALLOW FOR THE INSULATION THICKNESS. PROVIDE MINIMUM 12" LONG RED RIBBON QUADRANT LOCATOR ON VOLUME DAMPER HANDLES.
- PERMANENT HVAC EQUIPMENT SHALL BE SEALED OFF, KEPT FREE FROM DEBRIS, AND SHALL REMAIN UNOPERATIONAL DURING CONSTRUCTION. CONTRACTOR SHALL PROVIDE TEMPORARY HEAT AS REQUIRED.
- PROVIDE ONE (1) COPY OF THE TEST AND BALANCE REPORT TO THE ENGINEER AND THE MECHANICAL INSPECTOR AT THE TIME OF INSPECTION.
- NEW WORK, ALTERATIONS OR ADDITIONS TO MECHANICAL SYSTEMS ARE SUBJECT TO FIELD INSPECTION.
- HVAC SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH IMC CHAPTER 3 AND LOCAL BUILDING REQUIREMENTS, CODES AND AMENDMENTS.
- DUCT CONSTRUCTION AND INSTALLATION SHALL CONFORM TO IMC SECTION 603 AND SMACNA REQUIRED INSULATION REQUIREMENTS AND SHALL CONFORM TO IECC SECTION C403.2.9.
- FACTORY-MADE FLEXIBLE AIR DUCT INSTALLATION SHALL CONFORM TO IMC SECTION 603.6.
- INDOOR PIPE GAS REGULATOR SHALL VENT UP THROUGH ROOF OR OUT THROUGH WALL. IF GAS REGULATORS ARE NOT VENTED, CONTRACTOR SHALL USE VENTLESS REGULATORS.
- MOTORS 3/4 HP AND LARGER SHALL BE PREMIUM EFFICIENCY.
- MECHANICAL CONTROL PANELS TO BE RATED AT 5,000 SCR.

CODES

WHERE APPLICABLE, THE GUIDANCE SET FORTH IN THE 2015 IECC CODE SHALL GOVERN THE SCOPE OF WORK UNDER THIS CONTRACT. THE CODE SECTIONS RELATING TO THE MECHANICAL SCOPE OF WORK INCLUDE, BUT ARE NOT LIMITED TO:

- SECTION 302 - DESIGN CONDITIONS
- SECTION 303 - MATERIALS, SYSTEMS AND EQUIPMENT
 - SECTION 303.3 - MAINTENANCE INFORMATION
- SECTION 402 - BUILDING ENVELOPE REQUIREMENTS
 - SECTION 402.1 - GENERAL
 - SECTION 402.2 - SPECIFIC BUILDING THERMAL ENVELOPE INSULATION REQUIREMENTS
 - SECTION 402.3 - ROOF SOLAR REFLECTANCE AND THERMAL EMISSION
 - SECTION 402.4 - FENESTRATION
 - SECTION 402.5 - AIR LEAKAGE - THERMAL ENVELOPE
- SECTION 403 - BUILDING MECHANICAL SYSTEMS
 - SECTION 406 - ADDITIONAL EFFICIENCY PACKAGE OPTIONS
 - SECTION 406.1 - REQUIREMENTS
 - SECTION 406.2 - MORE EFFICIENT HVAC EQUIPMENT PERFORMANCE
 - SECTION 406.5 - ON-SITE RENEWABLE ENERGY
 - SECTION 406.6 - DEDICATED OUTDOOR AIR SYSTEM
- SECTION 407 - TOTAL BUILDING PERFORMANCE
- SECTION 408 - SYSTEM COMMISSIONING
 - SECTION 408.1 - GENERAL
 - SECTION 408.2 - MECHANICAL SYSTEMS AND SERVICE WATER-HEATING SYSTEMS COMMISSIONING AND COMPLETION REQUIREMENTS
- SECTION 501 - GENERAL
- SECTION 502 - ADDITIONS
- SECTION 503 - ALTERATIONS
 - SECTION 503.1 - GENERAL
 - SECTION 503.2 - CHANGE IN SPACE CONDITIONING
 - SECTION 503.3 - BUILDING ENVELOPE
 - SECTION 503.4 - HEATING AND COOLING SYSTEMS
- SECTION 504 - REPAIRS
 - SECTION 504.1 - GENERAL
 - SECTION 504.2 - APPLICATION
- SECTION 505 - CHANGE OF OCCUPANCY OR USE

LEGEND AND SYMBOLS

- #### TRANSITIONS
- PIPE CAP
 - PIPE TRANSITION UP
 - PIPE TRANSITION DOWN
 - PIPE TAP/TEE DOWN

- #### PROCESS PIPING
- CHS - CHILLED WATER SUPPLY
 - CHR - CHILLED WATER RETURN
 - CWS - CONDENSING WATER SUPPLY
 - CWR - CONDENSING WATER RETURN
 - HWS - HEATING WATER SUPPLY
 - HWR - HEATING WATER RETURN
 - D - CONDENSATE DRAIN
 - R - REFRIGERATION LINE

- #### PROCESS FLOW DIAGRAM
- AIR SEPARATOR
 - BACKFLOW PREVENTOR
 - PRESSURE GAUGE
 - TEMPERATURE GAUGE
 - UNION
 - FLEXIBLE PIPE CONNECTOR
 - PUMP
 - ISOLATION VALVE
 - GATE VALVE
 - PRESSURE REGULATING VALVE
 - CHECK VALVE
 - TEMP. & PRESSURE RELIEF VALVE
 - GLOBE VALVE
 - MIXING VALVE
 - THREE-WAY VALVE
 - STRAINER

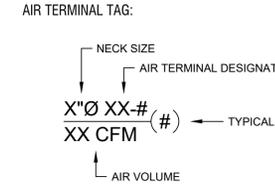
- #### GENERAL
- KEY NOTE
 - FEEDER TAG
 - GENERAL EQUIPMENT TAG
 - M/E/P EQUIPMENT TAG
 - POINT OF CONNECTION
 - NOT IN CONTRACT
 - DEMOLITION

- #### ABBREVIATIONS
- ##### GENERAL
- AC ABOVE COUNTER
 - AFF ABOVE FINISHED FLOOR
 - AG ABOVE GRADE
 - DN DOWN
 - EC ELECTRICAL CONTRACTOR
 - GC GENERAL CONTRACTOR
 - MC MECHANICAL CONTRACTOR
 - MEP MECHANICAL, ELECTRICAL, PLUMBING MANUFACTURER
 - MFR NOT IN CONTRACT
 - NIC NOT TO SCALE
 - NTS POINT OF CONNECTION
 - POC QUANTITY
 - TCC TEMPERATURE CONTROL CONTRACTOR
 - W/ WITH
 - W/O WITHOUT
 - WV WALL OPENING (ABOVE CEILING)
- ##### SCOPE
- (E) EXISTING
 - (N) NEW
 - (R) RELOCATED
 - (V) VENDOR

- ##### MECHANICAL
- AV / MV AUTOMATIC/MANUAL AIR VENT
 - BTUH BRITISH THERMAL UNIT PER HOUR
 - CA COMBUSTION AIR
 - CFM CUBIC FEET PER MINUTE
 - DRN DRAIN
 - EA EXHAUST AIR
 - EAT ENTERING AIR TEMPERATURE
 - ESP EXTERNAL STATIC PRESSURE
 - EWT ENTERING WATER TEMPERATURE
 - LAT LEAVING AIR TEMPERATURE
 - LWT LEAVING WATER TEMPERATURE
 - OA OUTSIDE AIR
 - RA RETURN AIR
 - RB REBALANCE
 - SA SUPPLY AIR
 - TDL TOTAL DESIGN LENGTH
 - TOD TOP OF DUCT (AFF)
 - UC UNDER-CUT

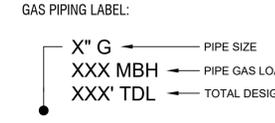
HVAC SYSTEM

- SUPPLY DIFFUSER
- RETURN GRILLE
- EXHAUST GRILLE
- GRILLE, REGISTER (FLOOR, DUCT)
- TRANSFER GRILLE
- GOOSENECK
- MANUAL VOLUME DAMPER (MVD) WITH LOCKING QUADRANT
- MOTORIZED DAMPER
- FIRE DAMPER
- FIRE-SMOKE DAMPER
- SMOKE DAMPER
- BACKDRAFT DAMPER
- THERMOSTAT
- SUPPLY DUCT
- RETURN DUCT
- EXHAUST DUCT
- FLEX DUCT
- RECTANGULAR TAKE-OFF (BEVELED, PLAIN)
- ROUND TAKE-OFF (PLAIN, CONICAL)

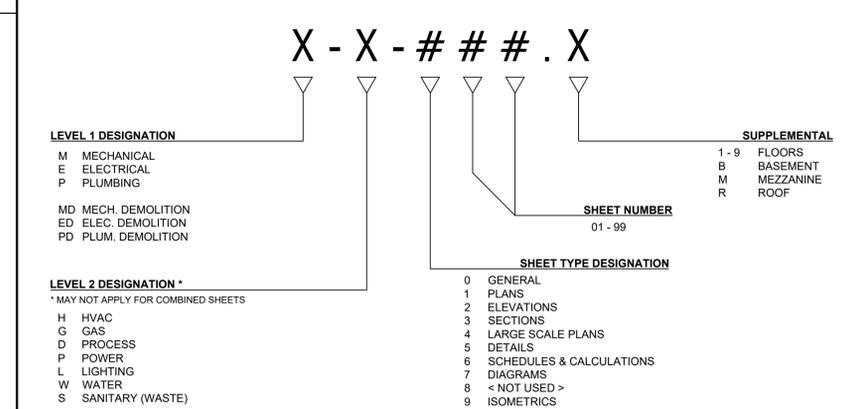


GAS SYSTEM

- GAS METER
- GAS COCK
- GAS SHUT-OFF VALVE
- PRESSURE REDUCING VALVE
- LOW PRESSURE GAS
- MEDIUM PRESSURE GAS
- HIGH PRESSURE GAS
- LIQUEFIED PETROLEUM GAS



SHEET NOMENCLATURE



2960 NORTH ACADEMY BLVD, SUITE 101
COLORADO SPRINGS, CO 80917
FIFTYONEEC.COM | 719.445.0020

THIS DOCUMENT AND ITS CONTENTS ARE THE WORK PRODUCT AND PROPERTY OF 51EC, INC., WHICH RETAINS ALL COMMON LAW, STATUTORY AND OTHER RESERVED RIGHTS, INCLUDING THE COPYRIGHT.

MECHANICAL UPGRADES
FLEET SERVICES
2747 E. LAS VEGAS ST
COLORADO SPRINGS, CO 80906

REV	DESCRIPTION	DRAWN	CHECK	APPR	DATE

ISSUANCE:
ISSUED FOR PERMIT

CLIENT:
EL PASO COUNTY
FACILITIES AND STRATEGIC
INFRASTRUCTURE MANAGEMENT
SERVICES

ARCHITECT:

PROJECT NO:
5156-22-05

TITLE:
**LEGEND, NOTES
AND
SPECIFICATIONS**

SHEET NO:
M-001

PLOT DATE: 06/13/22 7:59 AM BY: EBNA PROJ. FILE: P:\01 Paso County\3747 E. Las Vegas -Fleet Services RTU - MAU - Mechanical.dwg REV. FILE: P:\01 Paso County\3747 E. Las Vegas -Fleet Services - RTU - MAU - Mechanical.dwg



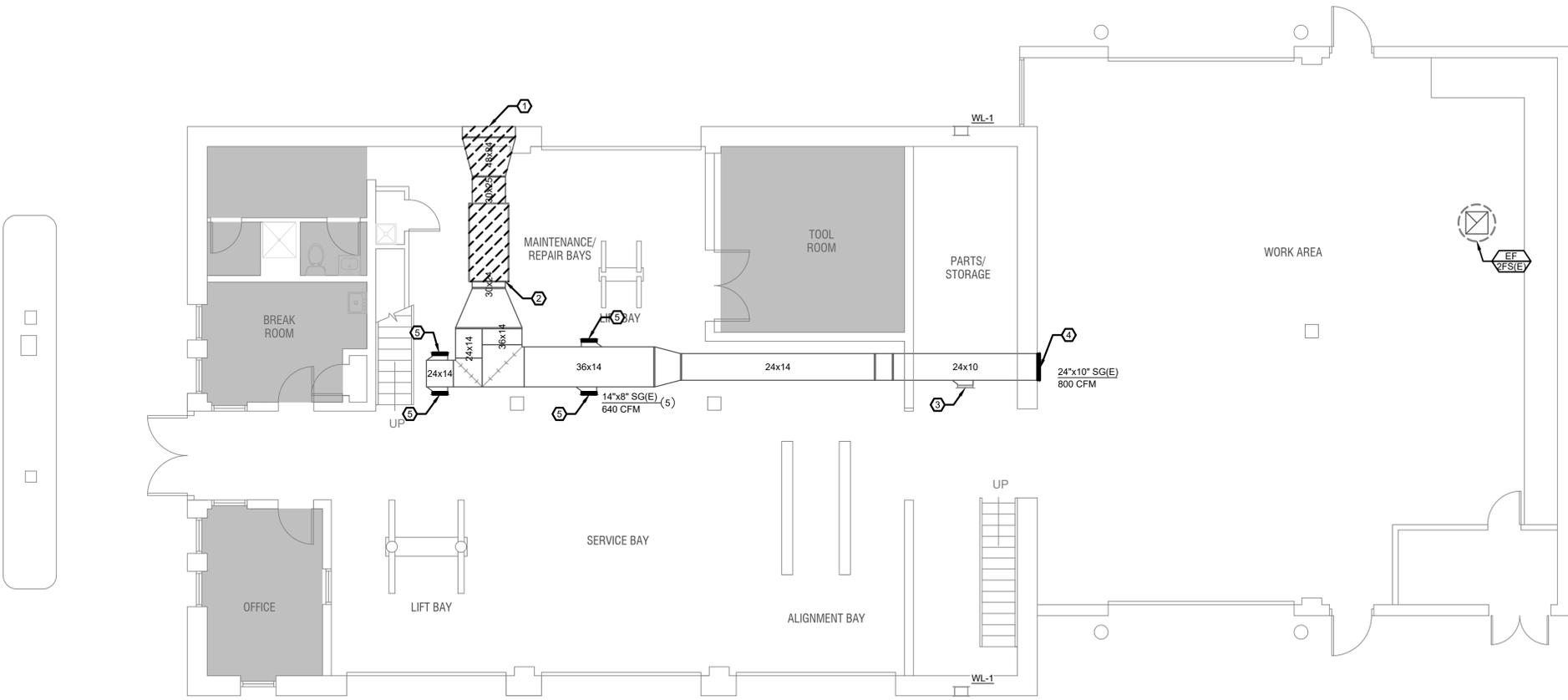
51EC INC.

2960 NORTH ACADEMY BLVD, SUITE 101
 COLORADO SPRINGS, CO 80917
 FIFTYONEEC.COM | 719.445.0020



THIS DOCUMENT AND ITS CONTENTS ARE THE WORK PRODUCT AND PROPERTY OF 51EC, INC., WHICH RETAINS ALL COMMON LAW, STATUTORY AND OTHER RESERVED RIGHTS, INCLUDING THE COPYRIGHT.

MECHANICAL UPGRADES
FLEET SERVICES
 2747 E. LAS VEGAS ST
 COLORADO SPRINGS, CO 80906



FIRST FLOOR HVAC DEMOLITION PLAN
 SCALE: 3/16" = 1'-0"

GENERAL NOTES:

EXISTING CONDITIONS HAVE BEEN COMPLETED TO THE BEST OF THE ENGINEER'S ABILITY. SHOULD EXISTING CONDITIONS DIFFER FROM LAYOUT SHOWN, CONTRACTOR SHALL NOTIFY AND COORDINATE WITH ENGINEER TO ADDRESS ANY DISCREPANCIES.

DEMOLITION KEY NOTES:

- ① REMOVE AND DEMOLISH EXISTING 48"x24" OUTSIDE AIR LOUVER AND WEATHER HOOD. RETAIN EXISTING OPENING FOR NEW WORK. SEE SHEET M-H-101 FOR MORE INFORMATION.
- ② REMOVE AND DEMOLISH EXISTING MAKE-UP AIR UNIT. RETAIN EXISTING SUPPLY DUCT WORK TO BE RECONNECTED TO NEW MAU-1.
- ③ CONTRACTOR TO CONFIRM CONDITION OF EXISTING 14"x8" SUPPLY GRILLE. RETAIN GRILLE IS CAPABLE OF BEING RE-USED FOR NEW WORK. CLEAN AND MAINTAIN FOR RE-BALANCE AND RE-PLACEMENT IF CONDITION IS ACCEPTABLE.
- ④ REMOVE AND DEMOLISH EXISTING 24"x10" SUPPLY GRILLE. RETAIN OPENING TO ROOM FOR NEW WORK. SEE SHEET M-H-101 FOR MORE INFORMATION.
- ⑤ REMOVE AND DEMOLISH EXISTING 14"x8" SUPPLY GRILLE. RETAIN DUCT OPENING FOR NEW WORK. SEE SHEETS M-H-101 & M-601 FOR MORE INFORMATION.

REV.	DESCRIPTION	DRAWN	CHECK	APPR.	DATE

ISSUANCE:
ISSUED FOR PERMIT

CLIENT:
 EL PASO COUNTY
 FACILITIES AND STRATEGIC
 INFRASTRUCTURE MANAGEMENT
 SERVICES

ARCHITECT:

PROJECT NO:
 5156-22-05

TITLE:
**FIRST FLOOR
 HVAC
 DEMOLITION PLAN**

SHEET NO:
MD-H-101

PLOT DATE: 06/13/22 7:59 AM BY: EBDA PROJ. FILE: P:\01 Paso County\3747 E. Las Vegas -Fleet Services RTU - MAU - Mechanical.dwg RTU - MAU - Mechanical.dwg



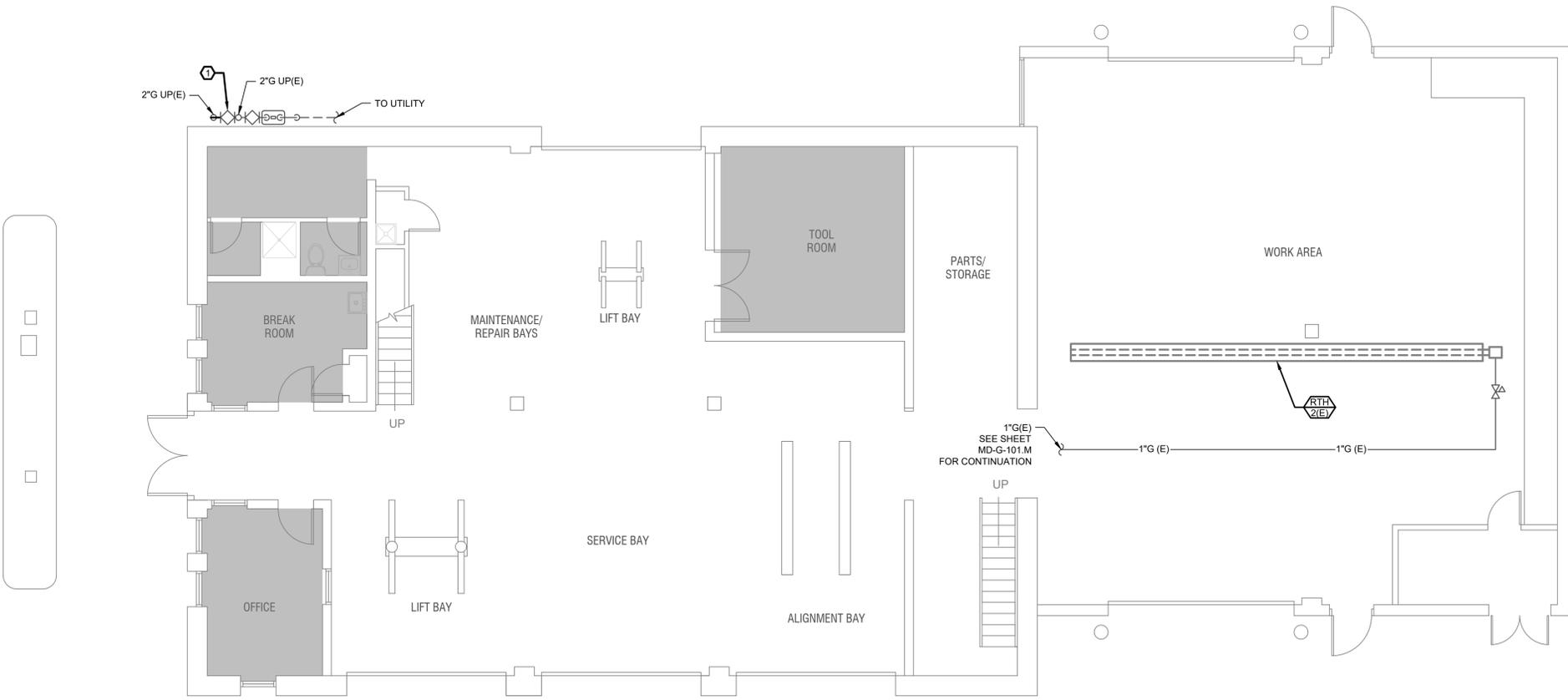
51EC INC.

2960 NORTH ACADEMY BLVD, SUITE 101
 COLORADO SPRINGS, CO 80917
 FIFTYONEEC.COM | 719.445.0020



THIS DOCUMENT AND ITS CONTENTS ARE THE WORK PRODUCT AND PROPERTY OF 51EC, INC., WHICH RETAINS ALL COMMON LAW, STATUTORY AND OTHER RESERVED RIGHTS, INCLUDING THE COPYRIGHT.

MECHANICAL UPGRADES
FLEET SERVICES
 2747 E. LAS VEGAS ST
 COLORADO SPRINGS, CO 80906



GENERAL NOTES:

EXISTING CONDITIONS HAVE BEEN COMPLETED TO THE BEST OF THE ENGINEER'S ABILITY. SHOULD EXISTING CONDITIONS DIFFER FROM LAYOUT SHOWN, CONTRACTOR SHALL NOTIFY AND COORDINATE WITH ENGINEER TO ADDRESS ANY DISCREPANCIES.

DEMOLITION KEY NOTES:

- Ⓢ REMOVE AND DEMOLISH 2\"/>

REV.	DESCRIPTION	DRAWN	CHECK	APPR.	DATE

ISSUANCE:
ISSUED FOR PERMIT

CLIENT:
 EL PASO COUNTY
 FACILITIES AND STRATEGIC
 INFRASTRUCTURE MANAGEMENT
 SERVICES

ARCHITECT:

PROJECT NO:
 5156-22-05

TITLE:
**FIRST FLOOR
 GAS PIPING
 DEMOLITION PLAN**

SHEET NO:
MD-G-101

FIRST FLOOR GAS PIPING DEMOLITION PLAN
 SCALE: 3/16" = 1'-0"



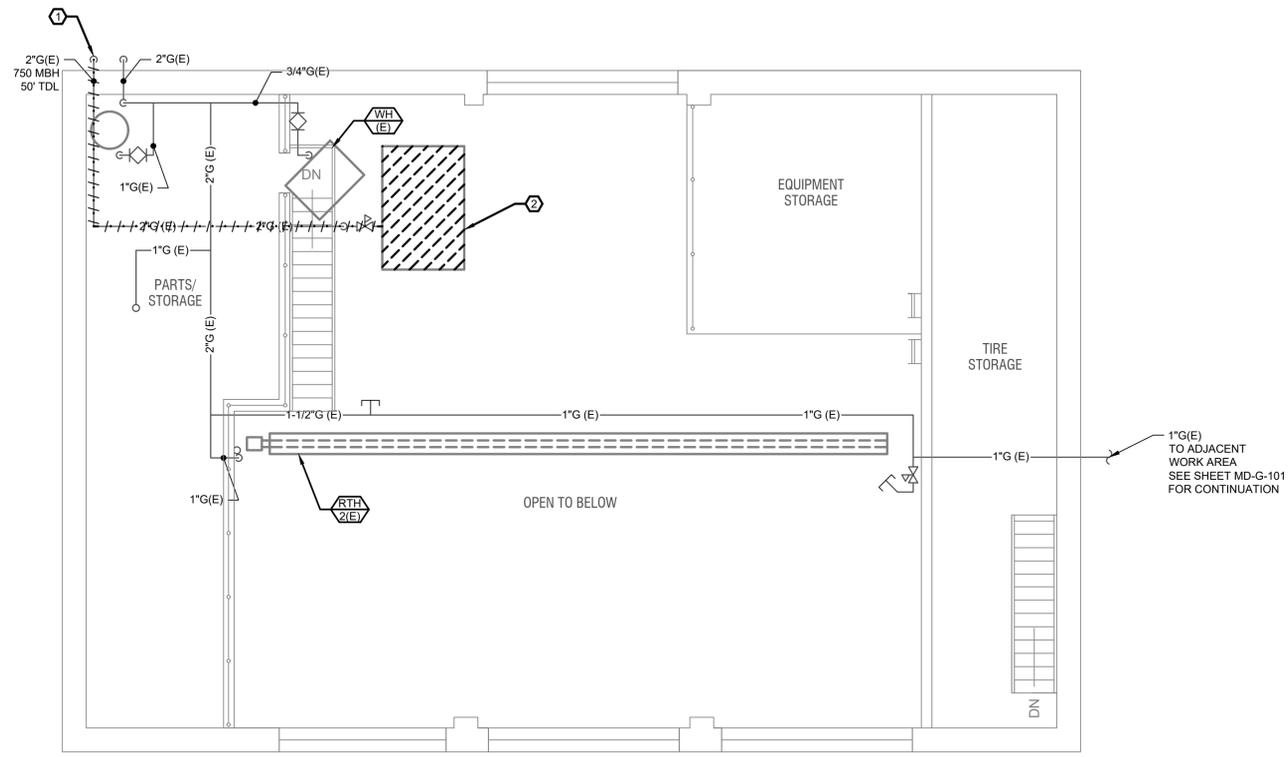
PLOT DATE: 06/13/22 7:59 AM BY: EBNK PROJ. FILE: P:\01 Paso Coun\51747 E. Las Vegas -Fleet Services RTU - MAU - Mechanical.dwg MDG-Mechanical\51747 E. Las Vegas - Fleet Services - RTU - MAU - Mechanical.dwg



51EC INC.
 2960 NORTH ACADEMY BLVD, SUITE 101
 COLORADO SPRINGS, CO 80917
 FIFTYONEEC.COM | 719.445.0020



THIS DOCUMENT AND ITS CONTENTS ARE THE WORK PRODUCT AND PROPERTY OF 51EC, INC., WHICH RETAINS ALL COMMON LAW, STATUTORY AND OTHER RESERVED RIGHTS, INCLUDING THE COPYRIGHT.



MECHANICAL UPGRADES
FLEET SERVICES
 2747 E. LAS VEGAS ST
 COLORADO SPRINGS, CO 80906

GENERAL NOTES:

EXISTING CONDITIONS HAVE BEEN COMPLETED TO THE BEST OF THE ENGINEER'S ABILITY. SHOULD EXISTING CONDITIONS DIFFER FROM LAYOUT SHOWN, CONTRACTOR SHALL NOTIFY AND COORDINATE WITH ENGINEER TO ADDRESS ANY DISCREPANCIES.

DEMOLITION KEY NOTES:

- ① REMOVE AND DEMOLISH 2" G(E) FROM EXISTING MAKE-UP UNIT BACK TO EXTERIOR WALL. SEE SHEET MD-G-101 FOR CONTINUATION
- ② REMOVE AND DEMOLISH EXISTING MAKE-UP AIR UNIT, GAS PIPING TO BE DEMOLISHED BACK TO EXTERIOR WALL. SEE NOTE #1 THIS SHEET.

REV.	DESCRIPTION	DRAWN	CHECK	APPR.	DATE

ISSUANCE:
ISSUED FOR PERMIT

CLIENT:
 EL PASO COUNTY
 FACILITIES AND STRATEGIC
 INFRASTRUCTURE MANAGEMENT
 SERVICES

ARCHITECT:
 PROJECT NO:
 5156-22-05

TITLE:
**MEZZANINE
 GAS PIPING
 DEMOLITION PLAN**

SHEET NO:
MD-G-101.M

MEZZANINE GAS PIPING DEMOLITION PLAN
 SCALE: 3/16" = 1'-0"



PLT DATE: 06/13/22 7:59 AM BR: EBDA PROJ: FILE: P:\01 Paso County\3747 E. Las Vegas -Fleet Services RTU - MAU-Mechanical.dwg - RTU - MAU - Mechanical.dwg

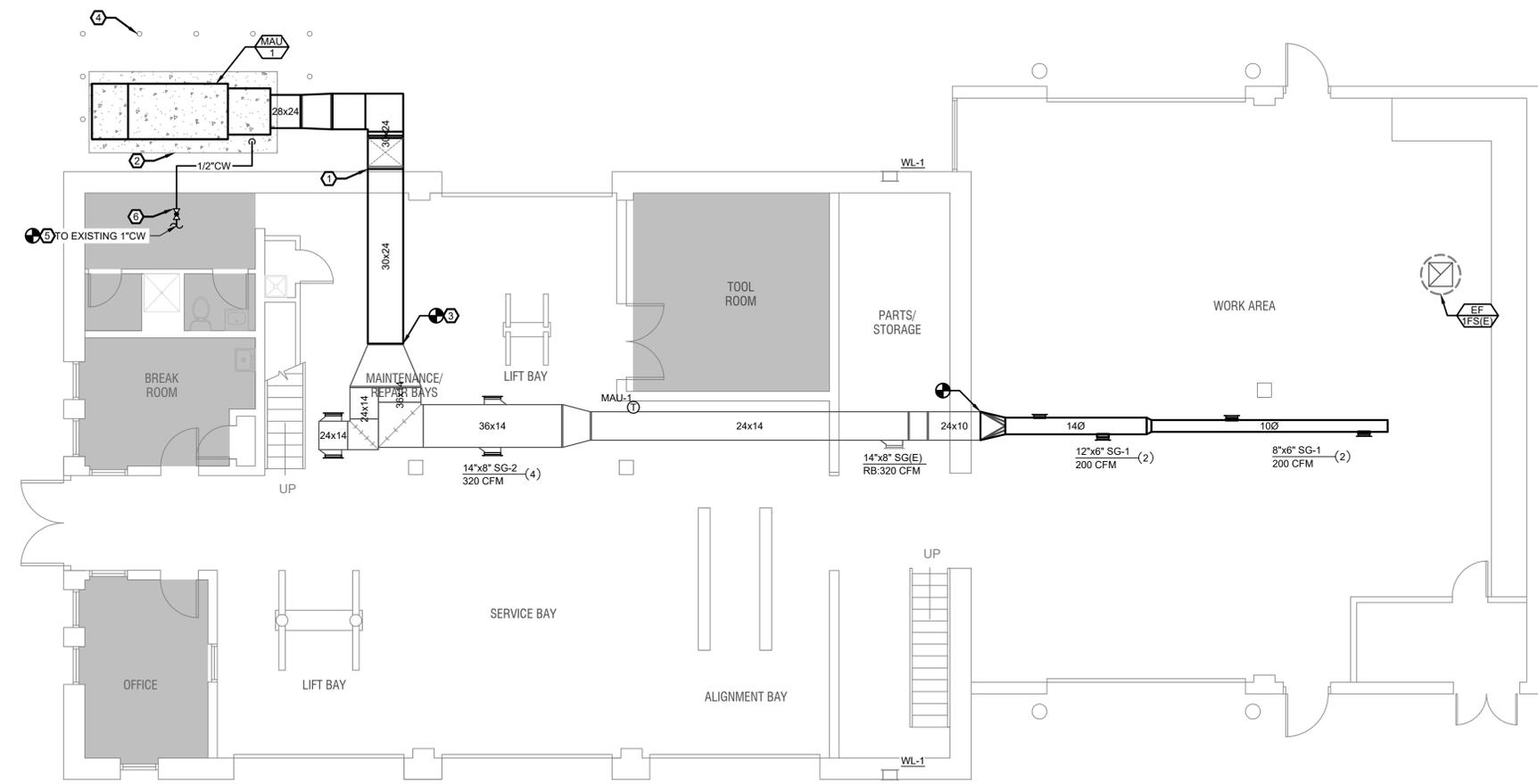


51EC INC.
 2960 NORTH ACADEMY BLVD, SUITE 101
 COLORADO SPRINGS, CO 80917
 FIFTYONEEC.COM | 719.445.0020



THIS DOCUMENT AND ITS CONTENTS ARE THE WORK PRODUCT AND PROPERTY OF 51EC, INC., WHICH RETAINS ALL COMMON LAW, STATUTORY AND OTHER RESERVED RIGHTS, INCLUDING THE COPYRIGHT.

MECHANICAL UPGRADES
 FLEET SERVICES
 2747 E. LAS VEGAS ST
 COLORADO SPRINGS, CO 80906



GENERAL NOTES:

ALL PIPING PENETRATIONS THROUGH RATED ASSEMBLIES ARE TO BE SEALED AND PROTECTED BY FIRE RESISTANT CAULKING.
 CONTRACTOR TO INCLUDE TURNING VANES AT ALL NEW MITERED ELBOWS.

NEW WORK KEY NOTES:

- ① 30"x24" SUPPLY DUCT UP TO AND THROUGH WALL OPENING. EXTERIOR DUCT TO BE INSULATED WITH R-12 PER SECTION 604 OF THE 2015 IMC. SEE DETAIL ON SHEET M-501. CONTRACTOR TO PATCH SEAL AND WEATHER PROOF REMAINDER OF WALL OPENING.
- ② CONTRACTOR TO PROVIDE A MINIMUM OF 4" CONCRETE HEIGHT HOUSEKEEPING PAD TO EXTEND 6" BEYOND THE BASE OF UNIT ON ALL SIDES FOR MAU-1.
- ③ CONNECT NEW 30"x24" SUPPLY DUCT TO EXISTING 30"x24" SUPPLY DUCT AT APPROXIMATE LOCATION.
- ④ CONTRACTOR TO INSTALL BOLLARDS FOR EQUIPMENT PROTECTION. SEE SHEET M-501 FOR BOLLARD DETAIL. (TYPICAL OF 8)
- ⑤ TIE-IN NEW 1/2"CW TO EXISTING 1"CW LINE AT APPROXIMATE LOCATION.
- ⑥ CONTRACTOR TO PROVIDE 1/2" SHUT-OFF VALVE WITH DRAIN AT APPROXIMATE LOCATION.

FIRST FLOOR HVAC NEW WORK PLAN
 SCALE: 3/16" = 1'-0"

REV	DESCRIPTION	DRAWN	CHECK	APPR	DATE

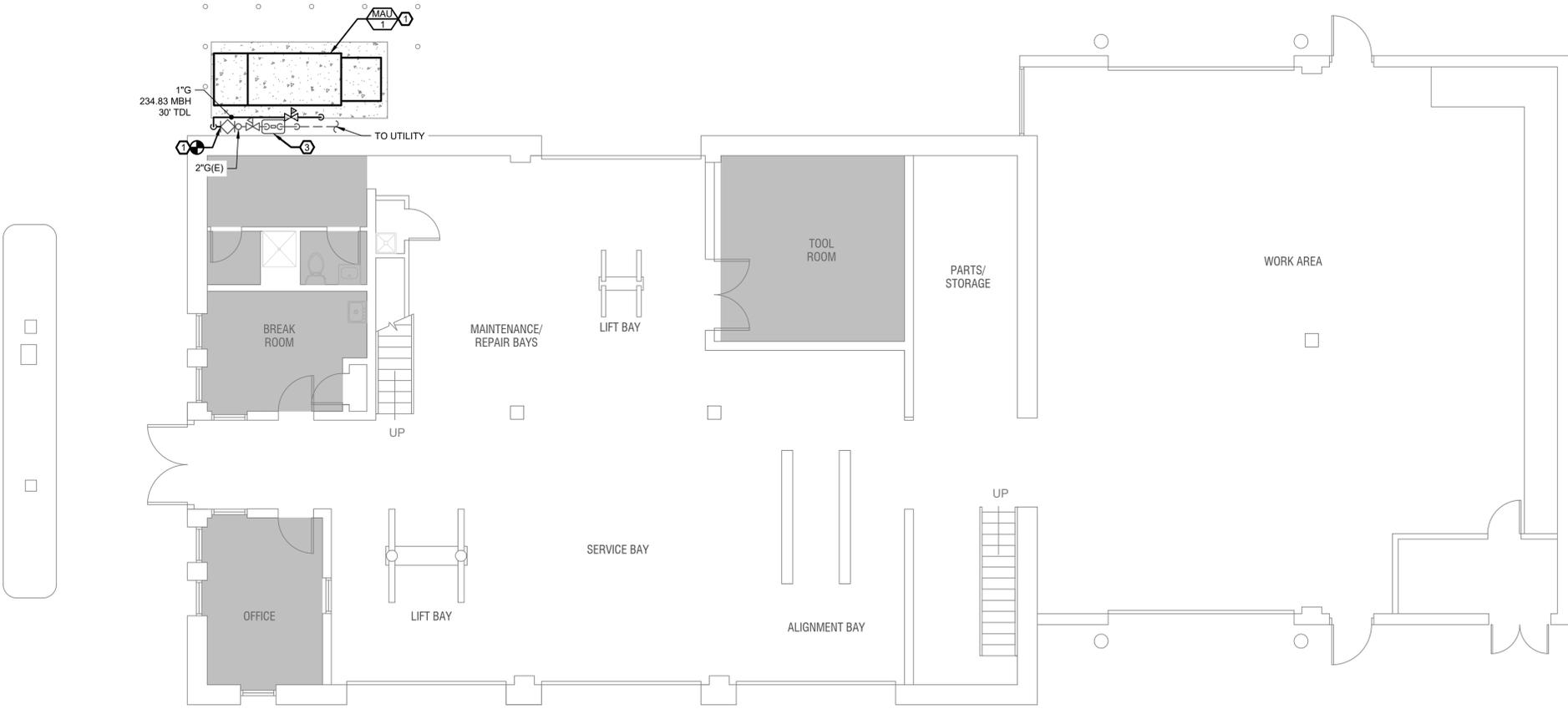
ISSUANCE:	ISSUED FOR PERMIT
CLIENT:	EL PASO COUNTY FACILITIES AND STRATEGIC INFRASTRUCTURE MANAGEMENT SERVICES
ARCHITECT:	
PROJECT NO:	5156-22-05
TITLE:	FIRST FLOOR HVAC NEW WORK PLAN
SHEET NO:	M-H-101

PLOT DATE: 06/13/22 7:59 AM BY: EBDA PROJ. FILE: P:\01 Paso County\3747 E. Las Vegas -Fleet Services RTU - MAU - Mechanical.dwg RTU - MAU - Mechanical.dwg



THIS DOCUMENT AND ITS CONTENTS ARE THE WORK PRODUCT AND PROPERTY OF 51EC, INC., WHICH RETAINS ALL COMMON LAW, STATUTORY AND OTHER RESERVED RIGHTS, INCLUDING THE COPYRIGHT.

MECHANICAL UPGRADES
FLEET SERVICES
 2747 E. LAS VEGAS ST
 COLORADO SPRINGS, CO 80906



GENERAL NOTES:

ALL PIPING PENETRATIONS THROUGH RATED ASSEMBLIES ARE TO BE SEALED AND PROTECTED BY FIRE RESISTANT CAULKING.
 GAS PIPING SIZED USING TABLE 402.4(2) OF THE 2015 IFGC.

NEW WORK KEY NOTES:

- ① TIE-IN NEW 1" G AT APPROXIMATE LOCATION UPSTREAM OF SHUT-OFF VALVE.
- ② INSTALL GAS PIPING PER MANUFACTURER'S INSTRUCTIONS. SEE GAS PIPING DETAIL ON SHEET M-501 FOR CONFIGURATION.
- ③ NET REDUCTION OF 515.7 MBH TO EXISTING GAS METER.

REV	DESCRIPTION	DRAWN	CHECK	APPR	DATE

ISSUANCE:
ISSUED FOR PERMIT

CLIENT:
EL PASO COUNTY
FACILITIES AND STRATEGIC
INFRASTRUCTURE MANAGEMENT
SERVICES

ARCHITECT:

PROJECT NO:
5156-22-05

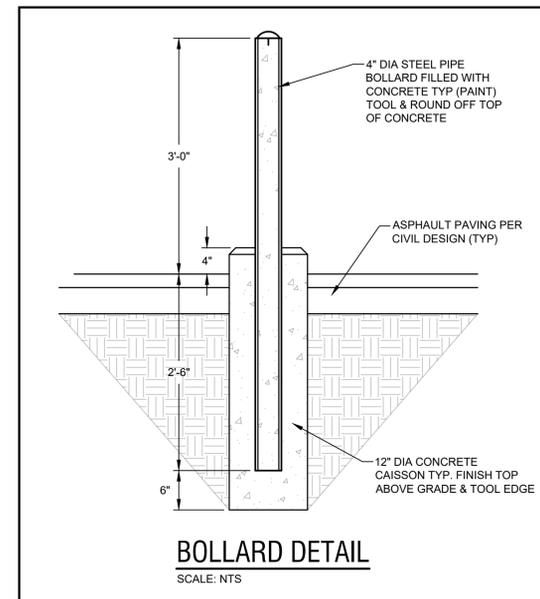
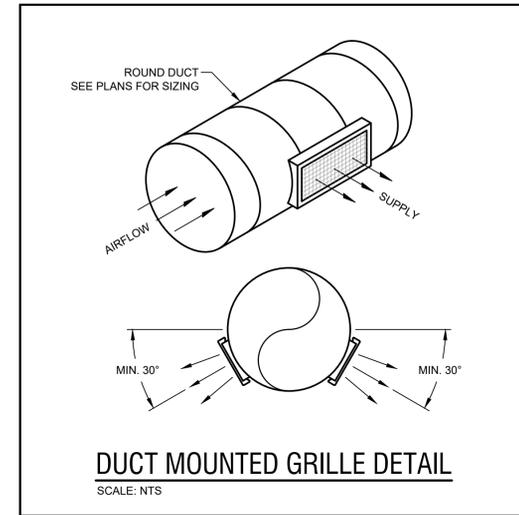
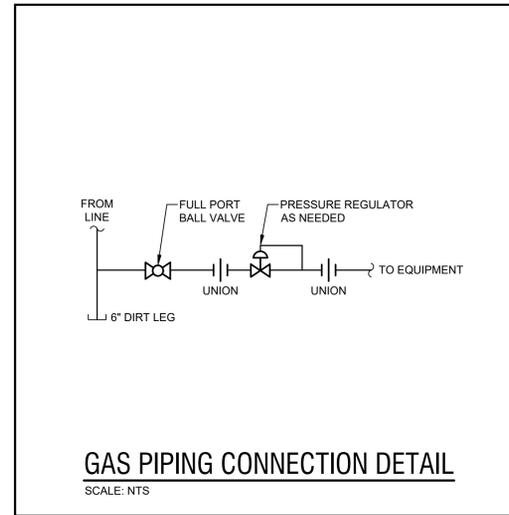
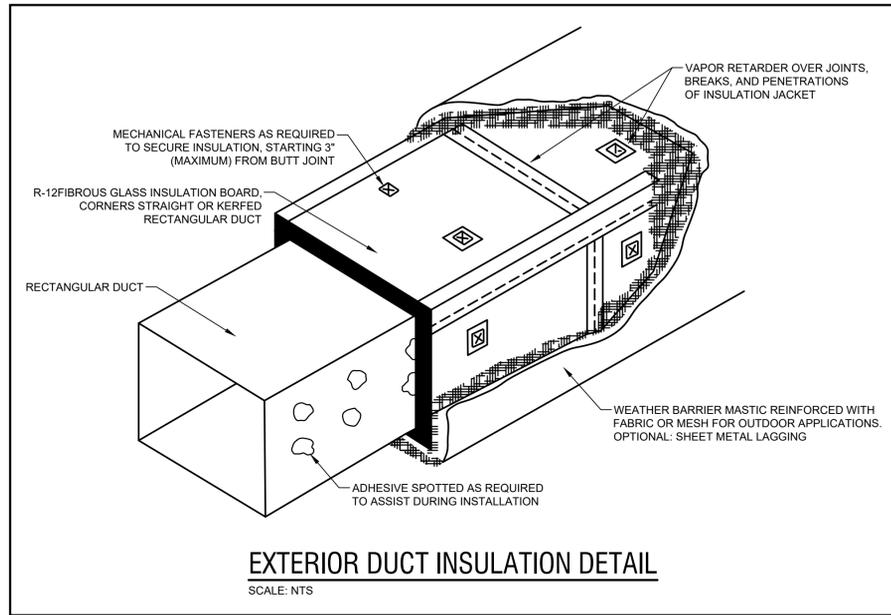
TITLE:
**FIRST FLOOR
GAS PIPING
NEW WORK PLAN**

SHEET NO:
M-G-101

FIRST FLOOR GAS PIPING NEW WORK PLAN
 SCALE: 3/16" = 1'-0"



PLT DATE: 06/13/22 7:59 AM BY: EBNK PROJ: FILE: P:\01 Paso Coun\13247 E. Las Vegas -Fleet Services RTU - M\1\Mechanical\3247 E. Las Vegas - Fleet Services - RTU - MAU - Mechanical.dwg



51EC INC.
2960 NORTH ACADEMY BLVD, SUITE 101
COLORADO SPRINGS, CO 80917
FIFTYONEEC.COM | 719.445.0020

COLORADO
061275
06.10.2022
PROFESSIONAL ENGINEER
06/10/2023

THIS DOCUMENT AND ITS CONTENTS ARE THE WORK PRODUCT AND PROPERTY OF 51EC, INC., WHICH RETAINS ALL COMMON LAW, STATUTORY AND OTHER RESERVED RIGHTS, INCLUDING THE COPYRIGHT.

MECHANICAL UPGRADES
FLEET SERVICES
2747 E. LAS VEGAS ST
COLORADO SPRINGS, CO 80906

REV	DESCRIPTION	DRAWN	CHECK	APPR	DATE

ISSUANCE:
ISSUED FOR PERMIT

CLIENT:
EL PASO COUNTY
FACILITIES AND STRATEGIC
INFRASTRUCTURE MANAGEMENT
SERVICES

ARCHITECT:

PROJECT NO:
5156-22-05

TITLE:
DETAILS

SHEET NO:
M-501

OUTSIDE AIR SCHEDULE

UNIT TAG NO.	MAXIMUM UNIT CFM	OUTSIDE AIR CAPABLE (%)	ROOM	ROOM AREA (SF)	OCCUPANCY CLASSIFICATION	IMC TABLE 403.3.1.1 SUB-NOTE	Ez	OCC.	Rp	Ra	EXHAUST			Pz	Vbz	Voz	EXHAUST CFM DESIGNED PER ROOM	OUTSIDE AIR CFM DESIGNED PER ROOM
							IMC TABLE 403.3.1.1.1.2 EFFECTIVENESS FACTOR	OCCUPANT DENSITY (# / 1000 SF)	CFM / PERSON	CFM / SF	CONTINUOUS EXHAUST	NUMBER OF FIXTURES	CFM / SF OR CFM / FIXTURE	ZONE POPULATION	BREATHING ZONE CFM	MINIMUM OUTSIDE AIR CFM REQUIRED		
MAU-1	2400	100%	MULTIPLE BAY AREA	1219	Repair Garages, Enclosed Parking Garages	b,d	0.8	0	0	0			914.25	0	0	0		1280
			PARTS/STORAGE	311	Warehouses	-	0.8	0	0	0.06			0	0	18.66	23.325		160
			WORK AREA	1267	Repair Garages, Enclosed Parking Garages	b,d	0.8	0	0	0		950.25	0	0	0	1900	800	
			PARTS/STORAGE	311	Warehouses	-	0.8	0	0	0.06		0	0	18.66	23.325		160	
															SYSTEM TOTAL	46.65	1900	2400

MAKE-UP AIR UNIT SCHEDULE

MARK	DESCRIPTION	MFR	MODEL #	WEIGHT (LBS)	SUPPLY FAN					HEATING (INPUT)		EVAPORATIVE COOLING		CONTROL	NOTES
					ACFM	ESP	VOLTS / Ø	MCA	MOCP	MBH	LAT	EAT	LAT		
MAU-1	MAKE-UP AIR UNIT	MODINE	HBP300MRHN90F3E E2GDADO	1280	2400	1"	460/3Ø	5.5	15	234.827	92	90	62.4	INTERLOCK WITH EF-1FS(E)	1,2,3,4,5

NOTES:

1	INCLUDE FACTORY INSTALLED VFD - 1.5 HP, 460/3Ø, ATV212
2	2 IN. MERV 8 FILTER
3	HIGH ALTITUDE KIT
4	MCS - SUPPLY AIR TEMP SENSOR, OUTDOOR TEMP SENSOR, DIGITAL WALL STAT
5	INCLUDE OPTIONAL WEATHER HOOD

EXISTING FLEET SERVICES EXHAUST FAN SCHEDULE

MARK	DESCRIPTION	MFR	MODEL #	ACFM	SP (IN. WG)	HP	DRIVE TYPE	CONTROL	NOTES
EF-1FS(E)	CENTRIFUGAL EXHAUST FAN	COOK	150 ACE 150C3B	1900	0.25"	1/4	BELT	INTERLOCK WITH MAU-1	1,2

NOTES:

1	UNIT IS EXISTING. CONTRACTOR TO CONFIRM ABOVE VALUES.
2	UNITS TO BE RE-BALANCED TO CFM SHOWN.

GRILLE, REGISTER & DIFFUSER SCHEDULE

MARK	DESCRIPTION	MFR	MODEL #	MOUNTING	MODULE SIZE	ACCESSORIES	NOTES
SG-1	SUPPLY GRILLE	KREUGER	5DMGSR	DUCT	SEE PLANS	-	-
SG-2	SUPPLY GRILLE	KREUGER	680MP	DUCT	14"x8"	-	-
WL-1 (E)	WALL LOUVER	EXISTING	EXISTING	WALL	10" X 24"	-	-

NOTES:

1	
---	--

KITCHEN AIR BALANCE

MARK	EXHAUST (CFM)	MAKE-UP AIR (CFM)
MAU-1		2,900
EF-1FS(E)	1,900	
WL-1(E)	1,166	
TOTAL CFM	3,066	2,900
NET CFM	166 CFM (NEGATIVE) (5%)	

GAS PIPING MATERIALS SCHEDULE

ALL PIPE AND FITTINGS LISTED ARE ONLY TO BE USED WHERE PERMITTED BY CODE	
1/2" TO 2-1/2"	THREADED BLACK IRON
3" TO 12"	WELDED BLACK IRON



51EC INC.

2960 NORTH ACADEMY BLVD, SUITE 101
 COLORADO SPRINGS, CO 80917
 FIFTYONEEC.COM | 719.445.0020



THIS DOCUMENT AND ITS CONTENTS ARE THE WORK PRODUCT AND PROPERTY OF 51EC, INC., WHICH RETAINS ALL COMMON LAW, STATUTORY AND OTHER RESERVED RIGHTS, INCLUDING THE COPYRIGHT.

**MECHANICAL UPGRADES
 FLEET SERVICES
 2747 E. LAS VEGAS ST
 COLORADO SPRINGS, CO 80906**

REV	DESCRIPTION	DRAWN	CHECK	APPR	DATE

ISSUANCE:
ISSUED FOR PERMIT

CLIENT:
 EL PASO COUNTY
 FACILITIES AND STRATEGIC
 INFRASTRUCTURE MANAGEMENT
 SERVICES

ARCHITECT:

PROJECT NO:
 5156-22-05

TITLE:
**SCHEDULES
 AND
 CALCULATIONS**

SHEET NO:
M-601

PLOT DATE: 06/13/22 7:59 AM BY: EBDA PROJ. FILE: P:\EJ Paso County\2747 E. Las Vegas -Fleet Services RTU - MAU-Mechanical.dwg PROJ. NAME: P:\EJ Paso County\2747 E. Las Vegas -Fleet Services RTU - MAU-Mechanical\2747 E. Las Vegas - Fleet Services - RTU - MAU - Mechanical.dwg