

ELECTRICAL PARTIAL FIRST FLOOR PLAN - POWER

SCALE: 1/4"=1'-0"

SEAL

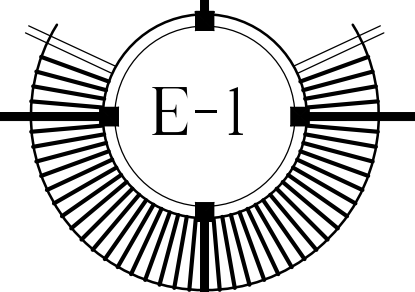
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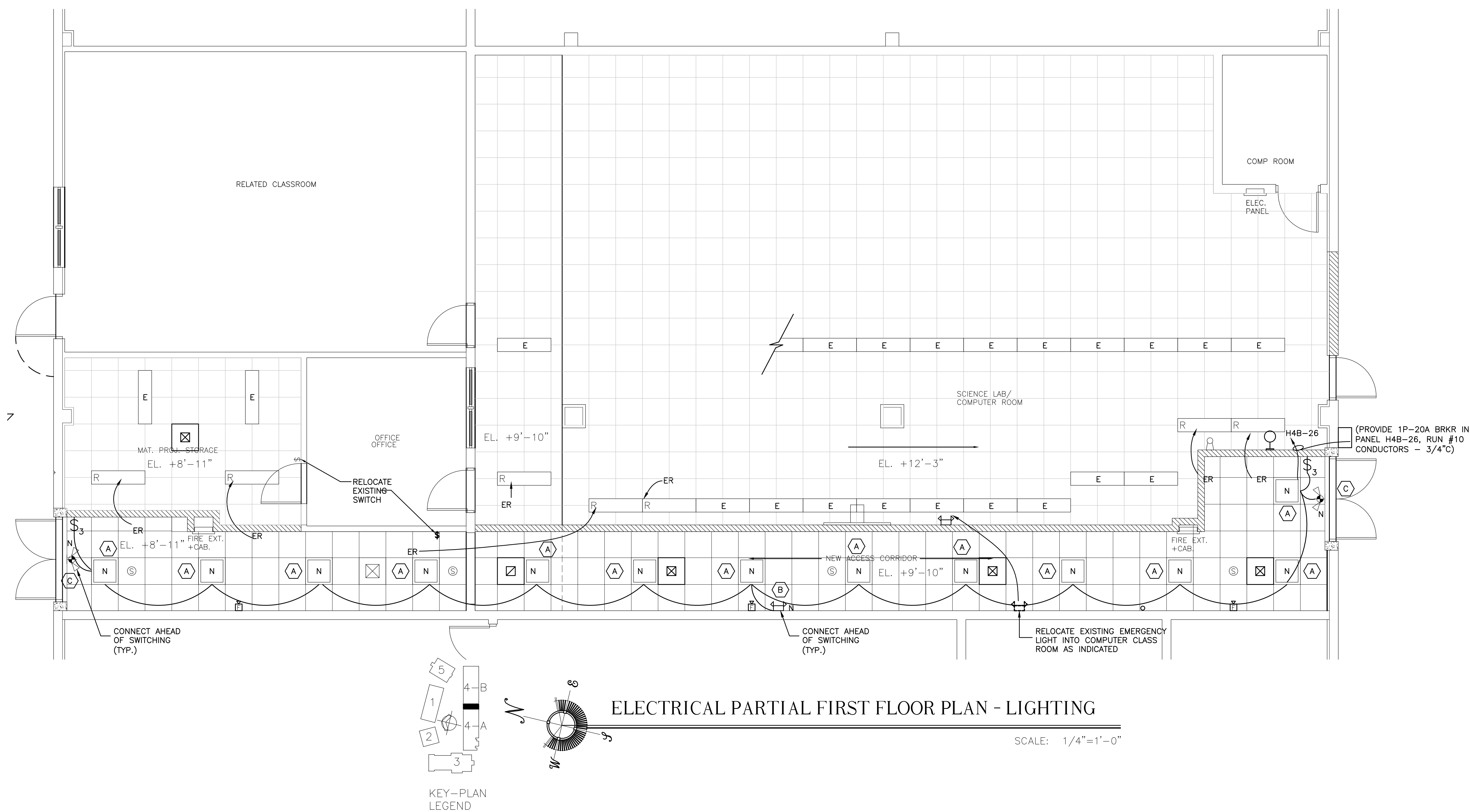
REVISIONS

DRAWN BY
JW

PROJECT NUMBER
1914

Innovative Engineering
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2500 NW 79th Ave., #240
Doral, FL 33122
305-468-1783
Sudhir K. Gupta, P.E.
Fla. Reg. No. 29189





ELECTRICAL PARTIAL FIRST FLOOR PLAN - LIGHTING

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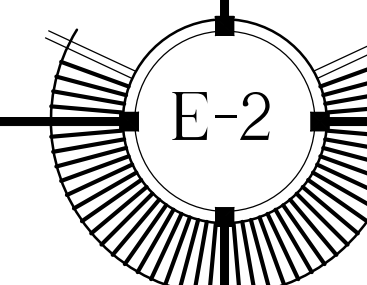
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

ELECTRICAL GENERAL NOTES:

- ALL WORK SHALL BE IN ACCORDANCE WITH NATIONAL ELECTRICAL CODE, FLORIDA BUILDING CODE AND OTHER APPLICABLE CODES AND STANDARDS.
- THE DRAWINGS ARE DIAGRAMMATIC AND DO NOT SHOW ALL OFFSETS, BENDS AND BOXES REQUIRED TO MAKE A COMPLETE NEAT INSTALLATION IN ACCORDANCE WITH THE N.E.C.
- WHEN CONFLICTS ARISE IN LOCATIONS WIRING DEVICES, ELECTRICAL EQUIPMENT, DISCONNECTS, PANEL BOARDS, ETC., DUE TO FIELD CONDITION OR IMPROPER FIELD COORDINATION, CONTRACTOR SHALL BRING IT TO THE A/E'S ATTENTION AND AT NO EXTRA COST RELOCATE AND/OR EXTEND WITHIN A REASONABLE DISTANCE SUCH ITEM WHICH IS IN CONFLICT. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING LOCATION OF ALL COMPONENTS PRIOR TO ROUGH IN WITH ALL TRADES. NO EXTRAS WILL BE ALLOWED FOR FAILURE TO DO SO.
- THE CONTRACTOR IS RESPONSIBLE FOR EVALUATING THE FIELD CONDITIONS BY VISITING THE SITE PRIOR TO COMMENCING / BIDDING WORK.
- THE CONTRACTOR SHALL SATISFACTORILY REPAIR / REPLACE EQUIPMENT OR PART OF STRUCTURE DAMAGED AS A RESULT OF HIS WORK. SURFACES AND FINISHED AREAS SHALL BE RESTORED TO MATCH ADJACENT AREAS.
- INSTALL POWER AND CONTROL WIRING AS REQUIRED BY SYSTEMS MANUFACTURER.
- ALL MATERIAL REMOVED SHALL BE DISPOSED OF AS DIRECTED BY OWNER.
- MINIMUM WIRE SIZE SHALL BE #12 THWN UNLESS OTHERWISE NOTED ON PLANS.
- ALL CONDUCTORS SHALL BE COPPER.
- ALL CONDUCTORS SHALL BE RUN IN CONDUIT. IF PVC SCHEDULE 40 IS USED, AN EQUIPMENT GROUND CONDUCTOR SIZED IN ACCORDANCE WITH N.E.C. 250-122 MUST BE INSTALLED AND CONDUIT SIZE INCREASED AS REQUIRED. PROVIDE A GREEN GROUNDING CONDUCTOR TO ALL BRANCH CIRCUITS. SIZE OF NEUTRAL CONDUCTOR SHALL BE THE SAME SIZE AS PHASE CONDUCTORS. PVC MUST BE APPROVED BY THE OWNER. USE OF PVC IS NOT ALLOWED IN AIR PLENUMS.
- IF PVC SCHEDULE 40 IS USED FOR UNDERGROUND AND SCHEDULE 80 IS USED FOR ABOVE GROUND CIRCUITS, AN EQUIPMENT GROUND CONDUCTOR SIZED IN ACCORDANCE WITH N.E.C. 250-122 MUST BE INSTALLED AND CONDUIT SIZE INCREASED AS REQUIRED. USE OF PVC MUST BE PERMITTED PER CODE AND APPROVED BY OWNER.
- ALL MATERIALS SHALL BE U.L. APPROVED.
- NEW TYPE WRITTEN PANEL TALLY SHALL BE FURNISHED AFTER JOB IS COMPLETED.
- ALL BRANCH CIRCUITS SHALL BE PROPERLY PHASE BALANCED.
- ALUMINUM CONDUITS ARE NOT ALLOWED.
- FUSES SHALL BE DUAL ELEMENT, TIME DELAY TYPE UNLESS OTHERWISE NOTED.
- ALL LUMINARIES SHALL BE PROPERLY SUPPORTED IN ACCORDANCE WITH MANUFACTURER RECOMMENDATIONS AND LOCAL CODE REQUIREMENTS.
- ALL CABLES SHALL BE RUN WITH OUT SPLICES EXCEPT IF OTHERWISE NOTED.
- ALL PULL AND JUNCTION BOXES SHALL BE ACCESSIBLE AT ALL TIMES.
- EXACT POINT AND METHODS OF CONNECTION SHALL BE DETERMINED IN FIELD.
- ALL WORK SHALL BE DONE IN A NEAT AND WORKMANLIKE MANNER.
- THE DRAWING IS A GUIDE FOR THE ELECTRICAL INSTALLATION. THE ELECTRICAL CONTRACTOR IS RESPONSIBLE TO PROVIDE A FUNCTIONING SYSTEM.
- ALL OUTSIDE LIGHT FIXTURES SHALL BE WEATHER PROOF. RECEPTACLES SHALL BE WEATHER PROOF GFI TYPE. OUTSIDE PANELS SHALL HAVE NEMA 4X STAINLESS STEEL ENCLOSURES WITH LOCKS.
- CONTRACTOR SHALL PAY ALL FEES AND INSURANCES REQUIRED TO DO THE WORK.
- ALL ELECTRICAL EQUIPMENT SHALL BE INSTALLED ABOVE FLOOD ELEVATION.
- ALL RACEWAY ROUTED, INSULATED CONDUCTORS SYSTEM SHALL BE COLOR CODED AS FOLLOWS:

120/240 VOLTS AND	277/480 VOLTS SYSTEM
120/208 VOLTS SYSTEM	

PHASE 'A'	BLACK	PHASE 'A'	BROWN
PHASE 'B'	RED	PHASE 'B'	PURPLE
PHASE 'C'	BLUE	PHASE 'C'	YELLOW
NEUTRAL	WHITE	NEUTRAL	GRAY
GROUND	GREEN	GROUND	GREEN
- CONTRACTOR SHALL VISIT THE JOB SITE PRIOR TO BID. ANY CLARIFICATIONS REQUIRED SHALL BE BROUGHT TO A/E/ ATTENTION. VERIFY OPERATION OF ALL EXISTING SMOKE DETECTORS IN ROOMS. PROVIDE AND INSTALL NEW AS REQUIRED PER CODE.
- FIELD VERIFY ALL EXISTING INFORMATION.
- COORDINATE WITH OWNER THE FINAL LOCATION OF ALL DEVICES.
- INSTALL LOCKABLE PLASTIC COVERS ON NEW CORRIDOR LIGHT SWITCHES.

ELECTRICAL SYSTEM LEGEND

- E EXISTING TO REMAIN
 (ER) EXISTING TO BE RELOCATED
 R INDICATES NEW LOCATION OF RELOCATED LIGHTING/OUTLETS
 N INDICATES NEW
 WALL DUPLEX OUTLET
 WALL QUAD OUTLET
 \$ WALL SWITCH
 \$3 3-WAY WALL SWITCH

LIGHTING FIXTURE SCHEDULE					
TYPE	MANUFACTURER AND CATALOG NO.	MOUNTING	LAMPS TYPE	WATTS	FIXTURE SERVICE VOLTS
(A)	LITHONIA 2ALL233LGZ10LP835	CEILING	LED	29	MVOLT 120-277
(B)	LITHONIA EMERGENCY BATTERY BACKUP LIGHT ELM4LSDR	WALL	LED	6.6	MVOLT 120-277
(C)	LITHONIA COMBINATION EMERGENCY LIGHT/EXIT SIGN BATTERY BACKUP LHGM LED R HO SD	CEILING	LED	4.3	MVOLT 120-277
GENERAL NOTES: 1. COORDINATE COLOR FINISH WITH ARCHITECT.					

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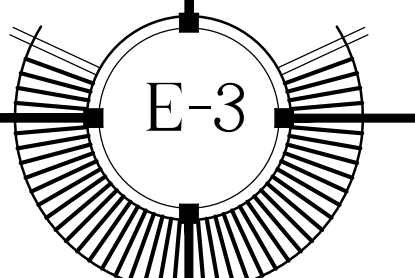
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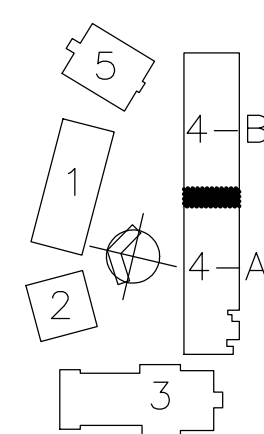
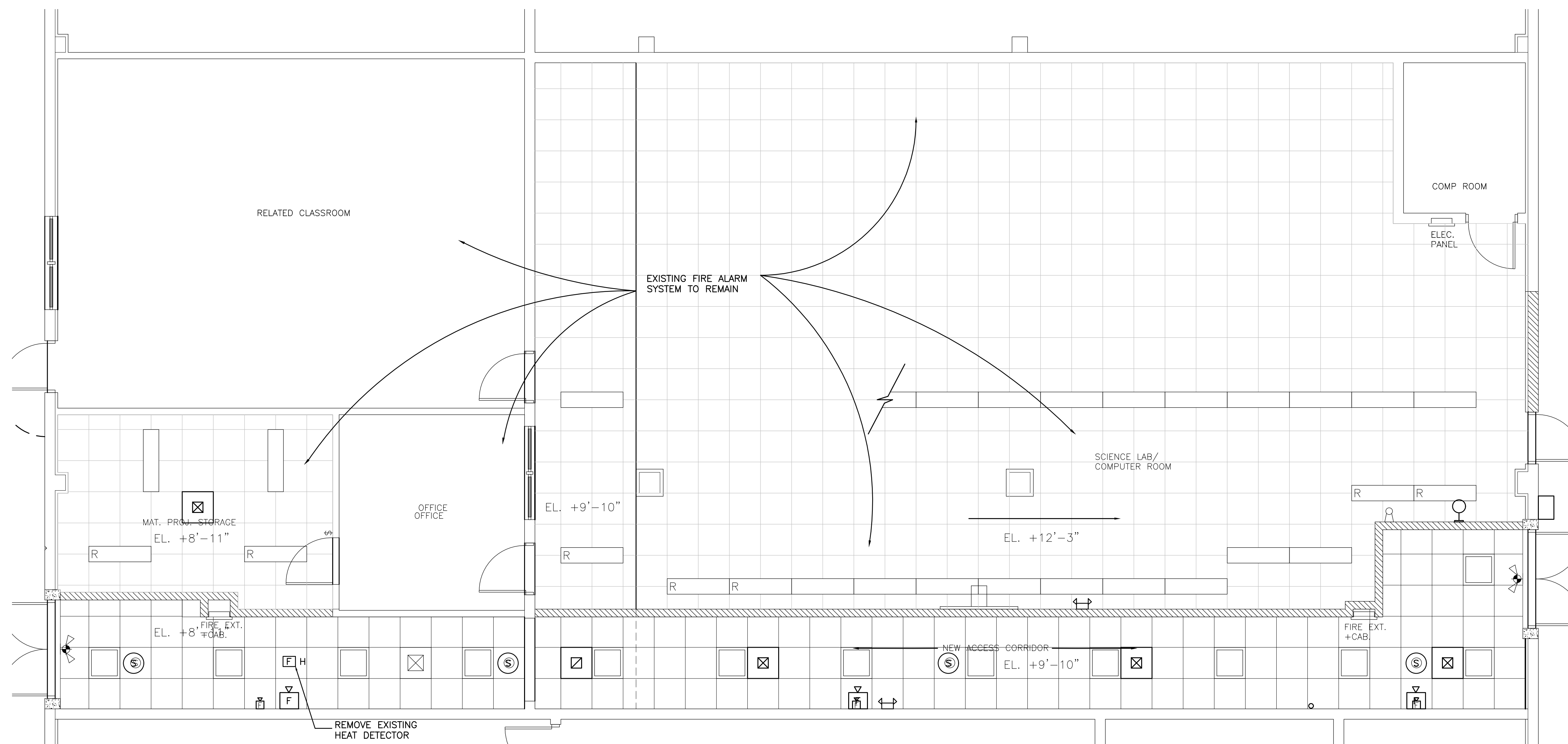
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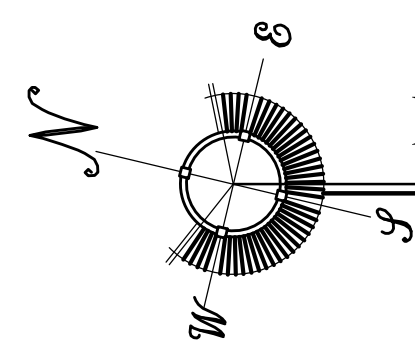
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KEY-PLAN
LEGEND



FIRE ALARM PARTIAL FIRST FLOOR PLAN

SCALE: 1/4"=1'-0"

LEGEND

- (S) SMOKE DETECTOR (NEW), COMPATIBLE WITH EXISTING FIRE ALARM SYSTEM.
- (F) HORN/STROBE (NEW), COMPATIBLE WITH EXISTING FIRE ALARM SYSTEM.

CONNECT NEW DEVICES TO EXISTING FIRE ALARM PANEL.

FIRE ALARM NOTE:

PROVIDE AND INSTALL AN ADDRESSABLE FIRE ALARM SYSTEM IN COMPLIANCE WITH UL, NFPA AND LOCAL CODES. SUBMIT SHOP DRAWINGS AND PERMIT DRAWINGS TO BUILDING DEPARTMENT SIGNED AND SEALED BY A FLORIDA REGISTERED PROFESSIONAL ENGINEER. DRAWINGS TO INCLUDE RISER DIAGRAM, BATTERY CALCULATIONS, ETC.

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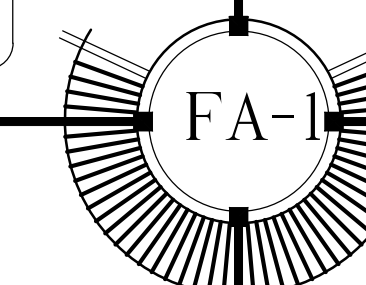
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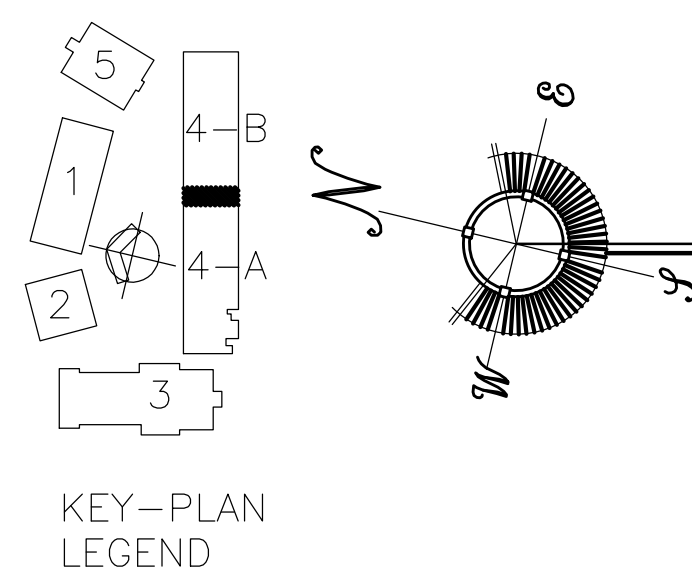
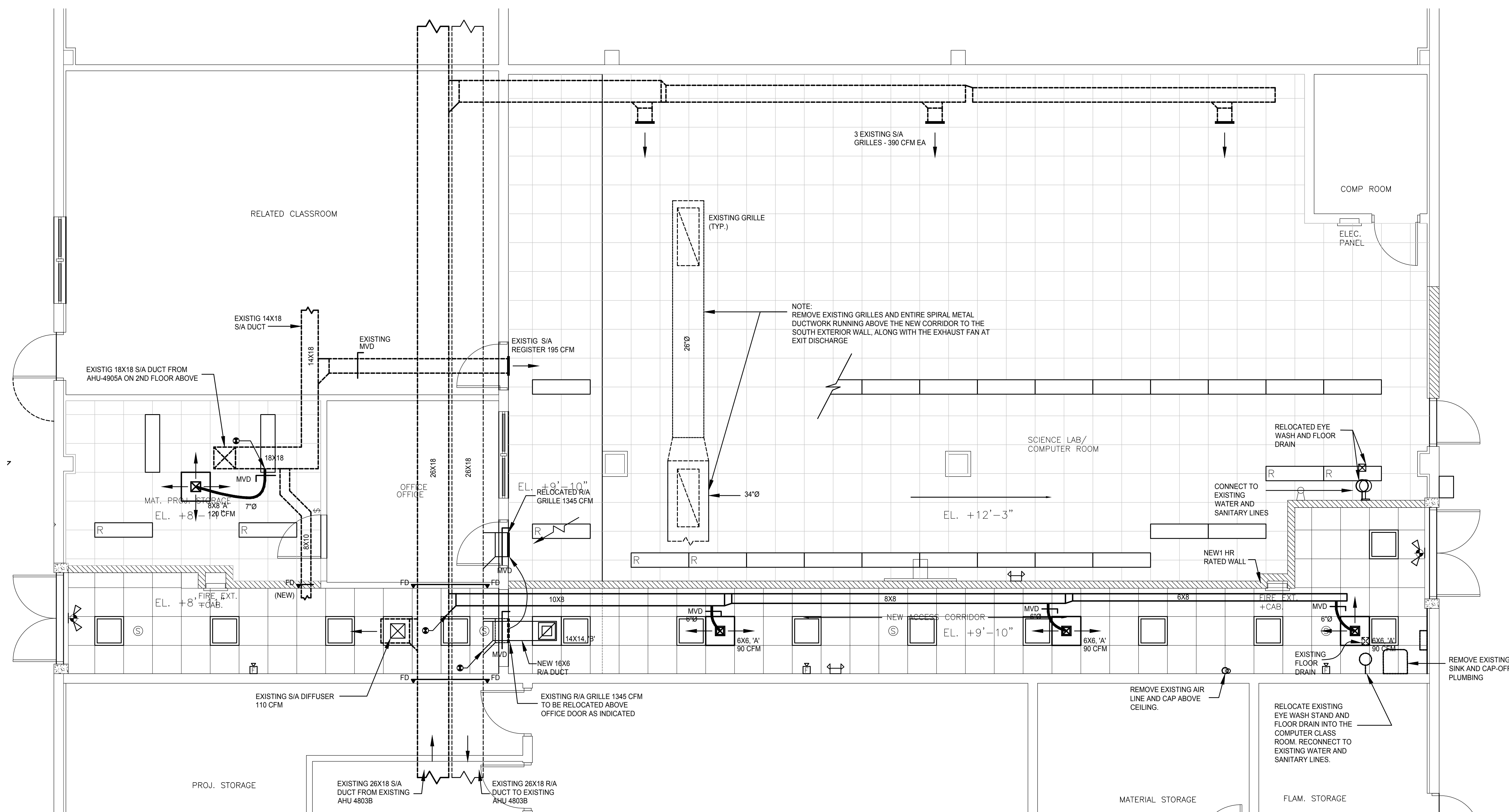
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PARTIAL FIRST FLOOR PLAN - MECHANICAL

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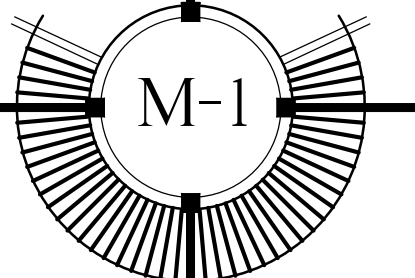
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HVAC GENERAL NOTES:

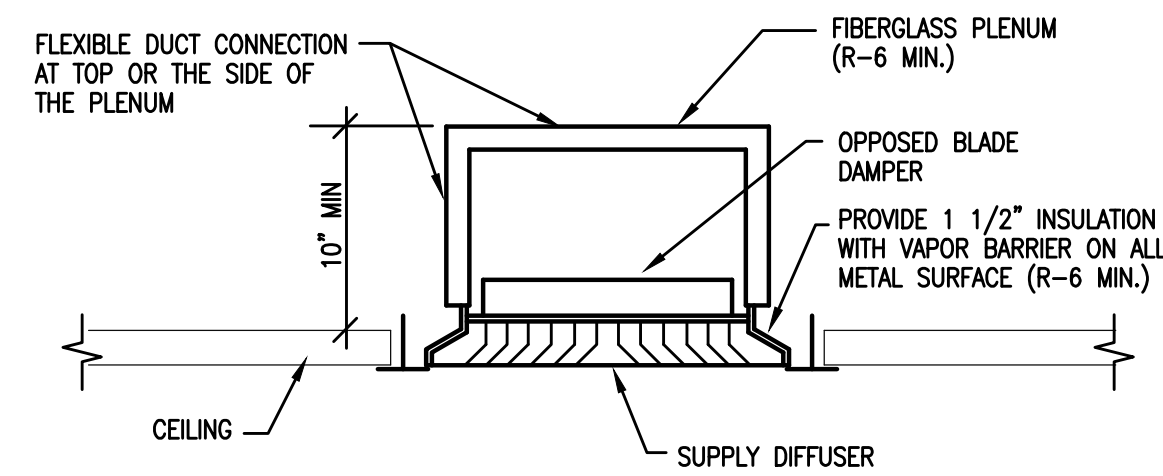
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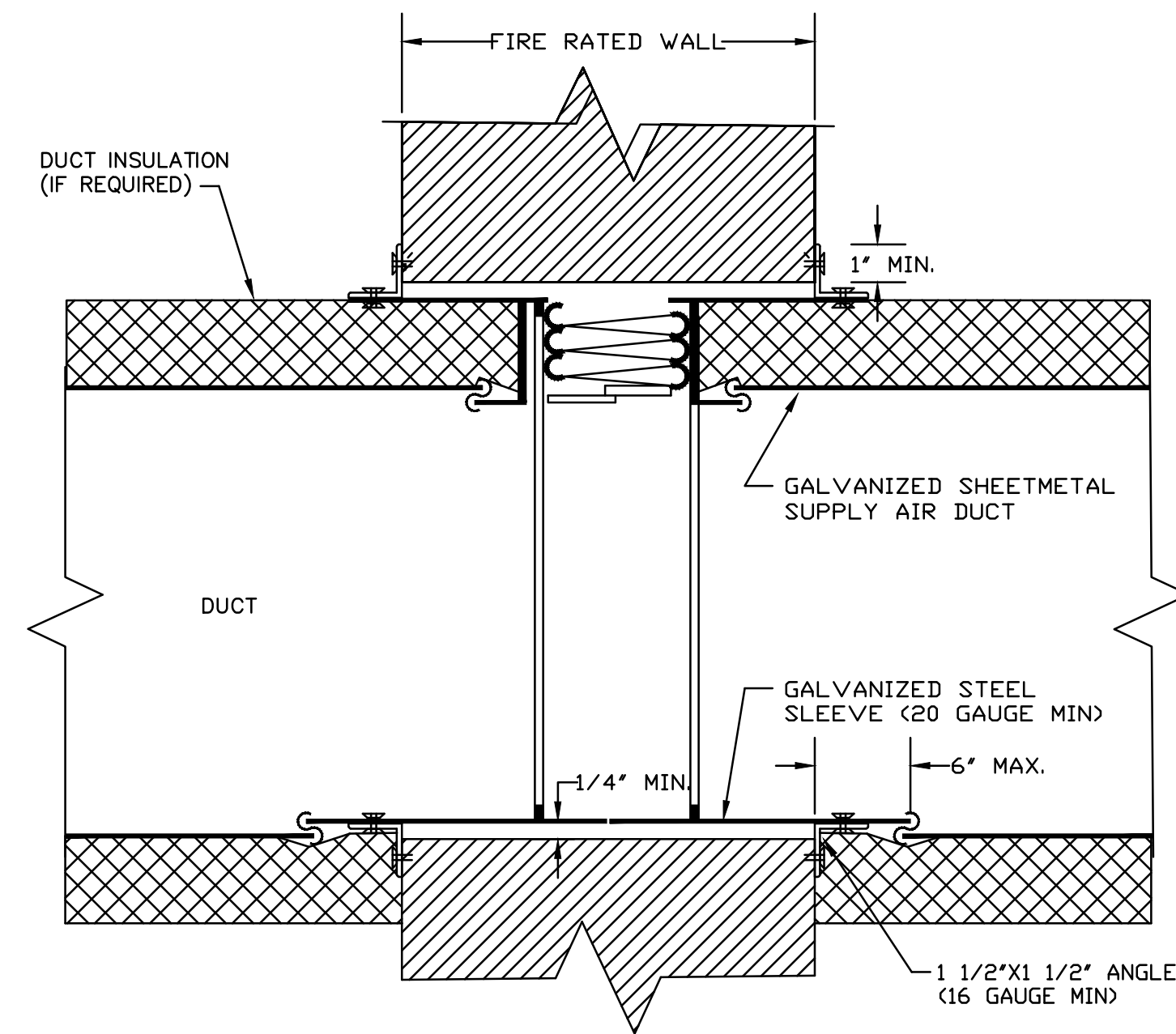
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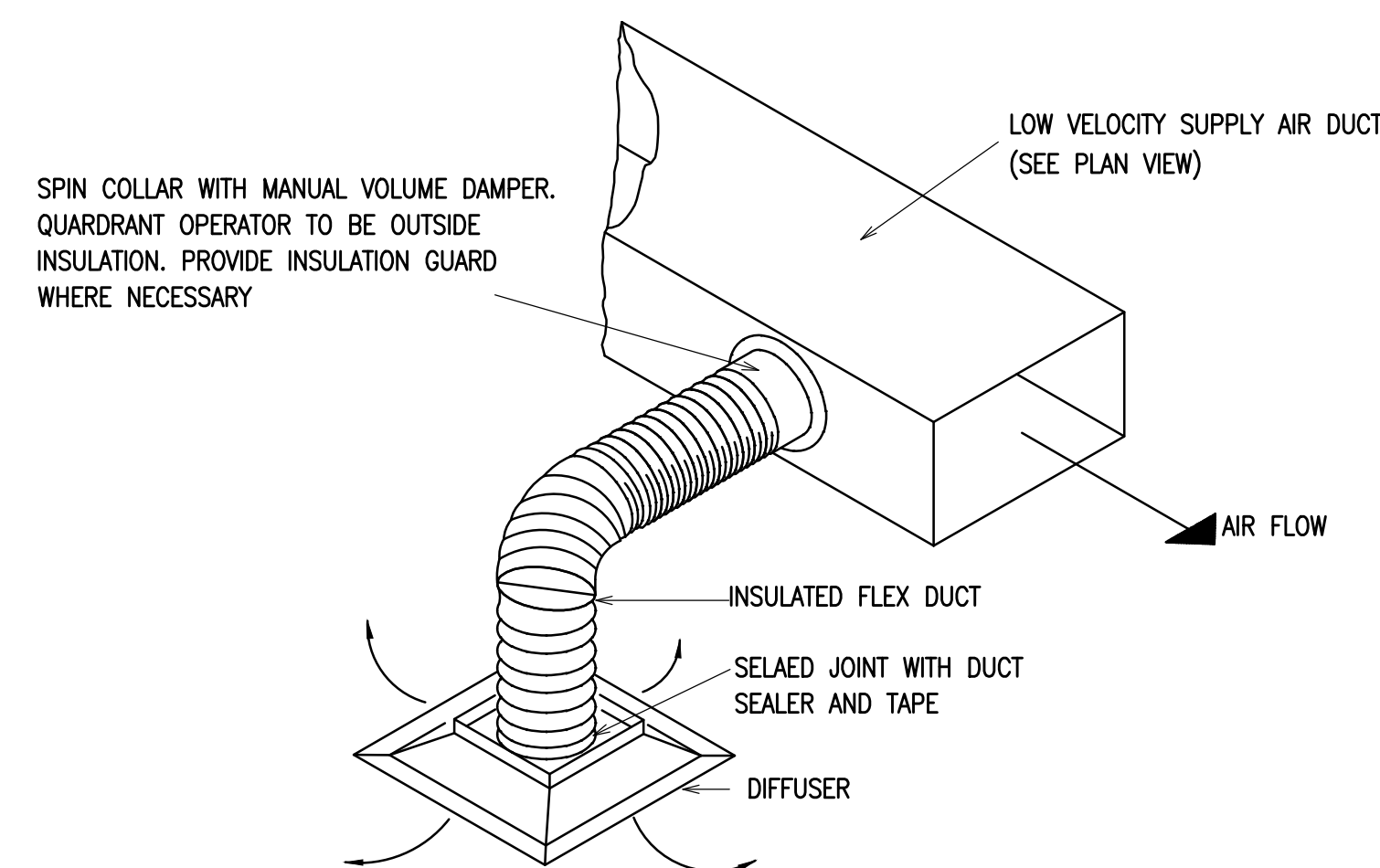


TYPICAL DIFFUSER INSTALLATION DETAIL
N.T.S.



TYPE "B" FIRE DAMPER
WITH INTEGRAL SLEEVE
NTS

NOTE:
INSTALL PER MANUFACTURER'S WRITTEN INSTRUCTIONS



FLEXIBLE DUCT CONNECTION DETAIL
N.T.S.

1. THE WORK TO BE DONE UNDER THIS HEADING INCLUDES THE FURNISHING OF ALL LABOR, MATERIALS, EQUIPMENT, PERMITS, FEES, INSPECTIONS, TESTS, INSURANCE, ETC. REQUIRED FOR THE COMPLETION OF THE HVAC SYSTEM SHOWN ON DRAWINGS AND/OR LISTED BELOW.
2. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE LATEST EDITION OF THE FLORIDA BUILDING CODE AND ALL LOCAL ORDINANCES.
3. CONTRACTORS SHALL VERIFY SPACE CONDITIONS AND DIMENSIONS AND SHALL COORDINATE WORK WITH ALL OTHER TRADES AT THE JOB SITE PRIOR TO ORDERING, FABRICATION AND INSTALLATION OF DUCTWORK AND EQUIPMENT.
4. ALL WORK SHALL BE COORDINATED WITH OTHER TRADES TO AVOID INTERFERENCE WITH THE PROGRESS OF CONSTRUCTION AND IN STRICT COMPLIANCE WITH ALL APPLICABLE CODES.
5. AIR CONDITIONING SUPPLY AND RETURN DUCTWORK SHALL BE CONSTRUCTED OF 1-1/2" THICK (R-6) RIGID FIBERGLASS WITH ANTI MICROBIAL COATINGS. DUCTWORK SHALL BE FABRICATED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND BULLETINS. USE R-4.2 IN CONDITIONED SPACE. VERIFY MATERIAL AND INSULATION OF EXISTING DUCTWORK. NEW DUCTWORK MATERIAL AND INSULATION SHALL MATCH EXISTING.
6. ALL OUTSIDE AIR AND EXHAUST DUCTWORK SHALL BE CONSTRUCTED OF ZINC COATED GALVANIZED SHEET METAL CONSTRUCTED IN ACCORDANCE WITH THE LATEST ASHRAE GUIDE AND SMACNA RECOMMENDATIONS.
7. ALL DUCT SIZES SHOWN ON DRAWINGS ARE CLEAR INSIDE DIMENSIONS.
8. FIRE DAMPERS SHALL BE INSTALLED FOR ALL DUCTS PENETRATING FIRE BARRIERS. DAMPERS SHALL BE CONSTRUCTED AND INSTALLED TO CONFORM TO REQUIREMENTS OF NFPA 90-A AND UL-555. FIRE DAMPERS SHALL BE 100% FREE AREA WITH BLADE OUT OF AIR STREAM AND U.L. LISTED ACCESS PANELS SHALL BE PROVIDED FOR REPLACEMENT OF FUSIBLE LINKS.
9. FIRE DAMPERS IN FIRE RATED CEILING SHALL BE RADIANT CEILING DAMPERS INSTALLED IN ACCORDANCE WITH U.L., N.F.P.A. AND ALL LOCAL CODE REQUIREMENTS. PROVIDE FIRE DAMPERS IN ALL DUCT PENETRATIONS OF FIRE RATED CEILING. GRILLES SHALL BE STEEL IN FIRE RATED CEILINGS.
10. PROVIDE ACCESS PANELS IN WALLS AND CEILINGS FOR ALL DAMPERS, VALVES, CONTROL DEVICES, ETC. ACCESS PANELS SHALL BE MILCOR FLUSH TYPE.
11. FLAME AND SMOKE RATING: ALL INSULATION PRODUCTS USED INSIDE THE BUILDING SHALL HAVE A MAXIMUM FLAME SPREAD RATING OF 25 AND A MAXIMUM SMOKE GENERATION OF 50 IN ACCORDANCE WITH TESTS OUTLINED IN N.F.P.A. 255.
12. VERIFY ALL VOLTAGES WITH ELECTRICAL CONTRACTOR BEFORE ORDERING ANY EQUIPMENT.
13. SUBMIT SHOP DRAWINGS OF ALL MATERIALS AND EQUIPMENT FOR APPROVAL PRIOR TO ORDERING OR FABRICATION, INCLUDING 1/2" DUCT LAYOUT.
14. ALL EQUIPMENT AND MATERIALS SHALL BE GUARANTEED FOR A PERIOD OF ONE YEAR.
15. VIBRATION ISOLATION: ALL EQUIPMENT AS PER MANUFACTURER'S RECOMMENDATION OR AS SCHEDULED ON DRAWINGS.
16. AIR DISTRIBUTION SHALL BE AS SCHEDULED ON THE DRAWINGS OR APPROVED EQUAL.
17. ALL FAN DRIVES SHALL BE ADJUSTED TO DELIVER THE SPECIFIED AIRFLOW (CFM) AGAINST THE ACTUAL STATIC PRESSURE OF THE INSTALLATION.
18. PROVIDE SMOKE DETECTOR IN SUPPLY AIR DUCTS OF A/C UNITS ABOVE 2000 CFM TO AUTOMATICALLY SHUT-OFF FAN MOTOR PER NFPA-90A.
19. TESTING: BALANCE AIR SYSTEM TO DELIVER QUANTITIES AT EACH OUTLET WITHIN 5% USING A.A.B.C PROCEDURES AND TESTS. SUBMIT AIR BALANCE TEST RESULTS FOR APPROVAL PRIOR TO FINAL INSPECTION AND ACCEPTANCE. PROVIDE MANUAL BALANCING VOLUME DAMPERS AT ALL BRANCH DUCTWORK FOR THIS PURPOSE.
20. FLEXIBLE DUCTWORK SHALL BE ROUND DUCTWORK REINFORCED WITH A WIRE HELIX AND INSULATED WITH A 1-1/2" THICK, 1/2 LB. DENSITY (R-6) FIBERGLASS COVERED WITH A VAPOR BARRIER OF ALUMINUM METALLIZED POLYESTER FILM TO GLASS MESH. CONNECTION TO DUCT MAINS SHALL BE MADE WITH FITTINGS PROVIDED WITH TWIST RINGS, BUTTERFLY DAMPERS, QUADRANT OPERATORS, EXTRACTOR AND INSULATION GUARD. DUCTWORK SHALL BE CLASS I U.L. 181, "WIREMOLD" TYPE WK OR APPROVED EQUAL.
21. PROVIDE TURNING VANES IN ELBOWS GREATER THAN 45 DEGREES.
22. IF EXISTING DUCTWORK IS GALVANIZED SHEET METAL, NEW SUPPLY AND RETURN DUCTWORK SHALL MATCH EXISTING IN MATERIAL AND INSULATION. IN THIS CASE, FIBERGLASS SHALL NOT BE USED.
23. ALL METAL DUCTWORK VISIBLE THROUGH GRILLES SHALL BE PAINTED FLAT BLACK (2 COATS).

AIR DISTRIBUTION SCHEDULE				
MARK	USE	MODEL	ACCESORIES	TYPE
A	SUPPLY	250-AA, BORDER TYPE 3	OBD	CEILING DIFFUSER
B	RETURN/ EXHAUST	3FL, BORDER TYPE 3	-	WALL/ CEILING GRILLE

GENERAL NOTES:
 1. ALL GRILLES SHALL BE OF ALUMINUM CONSTRUCTION.
 2. COORDINATE COLOR FINISH WITH ARCHITECT.
 3. DESIGN MANUFACTURER: TITUS

HVAC LEGEND

- AHU AIR HANDLING UNIT
- CU CONDENSING UNIT
- ⊕ THERMOSTAT (PROGRAMMABLE)
- EF EXHAUST FAN
- O/A OUTSIDE AIR
- MVD MANUAL VOLUME DAMPER (OPPOSED BLADE)
- F/D FIRE DAMPER, TYPE 'B', U.L. LABEL
- NEW RIGID DUCTWORK OR EQUIPMENT.
- FLEXIBLE DUCTWORK
- EXISTING DUCTWORK TO REMAIN OR REMOVED (SEE PLAN)
- POINT OF CORRECTION BETWEEN NEW AND EXISTING WORK
- SA SUPPLY AIR
- RA RETURN AIR

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