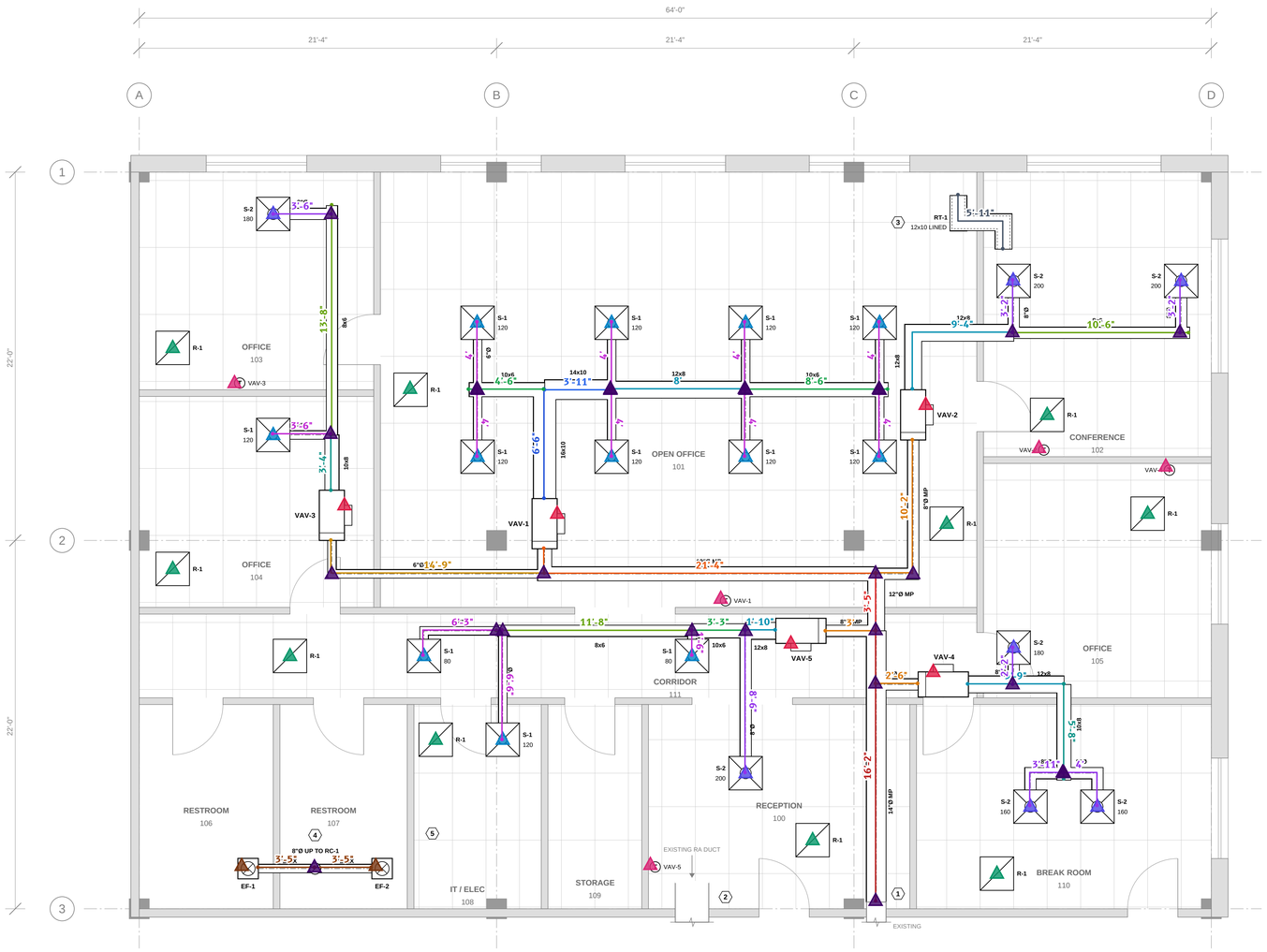


1 **MECHANICAL PLAN**

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

MECHANICAL LEGEND

- RECTANGULAR DUCT: WIDTH x DEPTH IN INCHES, WIDTH AS DRAWN
- ROUND DUCT: DIAMETER IN INCHES. MP = MEDIUM PRESSURE, EX = EXHAUST
- SUPPLY DIFFUSER, 6"Ø NECK (S-1)
- SUPPLY DIFFUSER, 8"Ø NECK (S-2)
- RETURN GRILLE, OPEN TO THE PLENUM (R-1)
- VAV TERMINAL BOX, INLET AT THE CROSS LINE, SEE VAV SCHEDULE
- CEILING EXHAUST FAN, SEE FAN SCHEDULE
- ROUND DUCT TURNING UP
- (T) ZONE TEMPERATURE SENSOR, 48" AFF, LABELED WITH ITS VAV BOX
- S-1 / 120 — AIR DEVICE TAG: TYPE, THEN AIRFLOW IN CFM

AIR DEVICE SCHEDULE

TAG	TYPE	FACE	NECK	CFM RANGE	REMARKS
S-1	SUPPLY, SQUARE PLAQUE, 4-WAY	24x24 IN A 24x48 LAY-IN PANEL	6"Ø	UP TO 130	STEEL, WHITE. DAMPER AT THE RUNOUT TAP
S-2	SUPPLY, SQUARE PLAQUE, 4-WAY	24x24 IN A 24x48 LAY-IN PANEL	8"Ø	131 TO 240	STEEL, WHITE. DAMPER AT THE RUNOUT TAP
R-1	RETURN, PERFORATED FACE	24x24 IN A 24x48 LAY-IN PANEL			OPEN TO THE PLENUM, NO DUCT

VAV SCHEDULE

TAG	SERVES	INLET	MAX CFM	MIN CFM	OUTLET DUCT	TYPE
VAV-1	101 OPEN OFFICE	10"Ø	960	290	16x10	SINGLE DUCT, COOLING ONLY
VAV-2	102 CONFERENCE	8"Ø	400	120	12x8	SINGLE DUCT, COOLING ONLY
VAV-3	103 AND 104 OFFICES	6"Ø	300	90	10x8	SINGLE DUCT, COOLING ONLY
VAV-4	105 OFFICE, 110 BREAK ROOM	8"Ø	500	150	12x8	SINGLE DUCT, COOLING ONLY
VAV-5	100 RECEPTION, 108 IT / ELEC, 111 CORRIDOR	8"Ø	480	145	12x8	SINGLE DUCT, COOLING ONLY

FAN SCHEDULE

TAG	SERVES	TYPE	CFM	ESP	ELECTRICAL	REMARKS
EF-1	106 RESTROOM	CEILING CABINET FAN	75	0.25" W.G.	120V, 1 PHASE	6"Ø DISCHARGE, BACKDRAFT DAMPER, ON WITH THE LIGHTS
EF-2	107 RESTROOM	CEILING CABINET FAN	75	0.25" W.G.	120V, 1 PHASE	6"Ø DISCHARGE, BACKDRAFT DAMPER, ON WITH THE LIGHTS

GENERAL NOTES

1. THE SUITE IS A SHELL. THE BUILDING'S CENTRAL VAV AIR HANDLER, ITS MEDIUM PRESSURE SUPPLY STUB AND THE RETURN DUCT ARE EXISTING TO REMAIN. THERE IS NO OTHER EXISTING DUCTWORK IN THE SUITE.
2. MEDIUM PRESSURE SUPPLY UPSTREAM OF THE VAV BOXES: ROUND SPIRAL GALVANIZED DUCT, 2" W.G. PRESSURE CLASS, ALL JOINTS SEALED.
3. LOW PRESSURE SUPPLY DOWNSTREAM OF THE VAV BOXES: RECTANGULAR GALVANIZED DUCT, 1" W.G. PRESSURE CLASS. 26 GA WHERE THE LONGER SIDE IS 12" OR LESS, 24 GA FROM 13" TO 30". SEAL ALL JOINTS AND SEAMS.
4. ROUND RUNOUTS ARE THE DIFFUSER NECK SIZE UNLESS NOTED: GALVANIZED, WITH A SPIN-IN FITTING AND VOLUME DAMPER AT THE TAP. THE LAST 5'-0" TO EACH DIFFUSER MAY BE INSULATED FLEXIBLE DUCT.
5. INSULATE ALL SUPPLY DUCT, MEDIUM AND LOW PRESSURE, WITH 1-1/2" FIBERGLASS DUCT WRAP WITH FSK FACING (R-6). EXHAUST DUCT IS NOT INSULATED.
6. CEILING PLENUM RETURN: RETURN GRILLES ARE OPEN TO THE PLENUM. THE RESTROOMS ARE EXHAUSTED; UNDERCUT THEIR DOORS 3/4" FOR MAKEUP AIR.
7. SEAL EVERY DUCT PENETRATION OF THE FULL-HEIGHT WALLS AT THE CONFERENCE ROOM AND THE RESTROOMS.
8. AIR DEVICES LAY IN THE 2x4 CEILING GRID WHERE SHOWN, CLEAR OF THE LIGHT FIXTURES ON E1.1. BALANCE EACH DEVICE TO THE CFM SHOWN.
9. VAV BOXES: PRESSURE INDEPENDENT, COOLING ONLY, DDC CONTROLLER BY THE CONTROLS CONTRACTOR, TIED TO THE BUILDING AUTOMATION SYSTEM WITH 24V POWER FROM THE BUILDING CONTROLS. KEEP 30" CLEAR AT THE CONTROLS SIDE.
10. HEATING IS BY THE EXISTING PERIMETER SYSTEM, WHICH REMAINS IN SERVICE AND IS NOT IN THIS SCOPE.
11. EF-1 AND EF-2 RUN WITH THE RESTROOM LIGHTS ON CIRCUIT LP-1-5, SEE E1.1.
12. TESTING, ADJUSTING AND BALANCING BY AN INDEPENDENT AGENCY. SUBMIT THE REPORT BEFORE THE CEILINGS CLOSE.

KEYNOTES

1. EXISTING 14"Ø MEDIUM PRESSURE SUPPLY STUB FROM THE BUILDING MAIN, CAPPED ABOVE THE CEILING. CONNECT WITH A NEW MANUAL BALANCING DAMPER. FIELD VERIFY THE SIZE AND LOCATION AND COORDINATE THE SHUTDOWN WITH THE LANDLORD.
2. EXISTING 24x16 RETURN AIR DUCT FROM THE BUILDING AIR HANDLER, OPEN END ABOVE THE CEILING. EXISTING TO REMAIN. KEEP 5'-0" CLEAR IN FRONT OF THE OPEN END.
3. RT-1: 12x10 RETURN TRANSFER DUCT WITH 1" LINER AND TWO ELBOWS, THROUGH THE FULL-HEIGHT CONFERENCE ROOM WALL, FOR SOUND.
4. EF-1 AND EF-2 DISCHARGE: 6"Ø TO A TEE, THEN 8"Ø UP THROUGH THE ROOF TO ROOF CAP RC-1 WITH A BACKDRAFT DAMPER. ROOF CURB AND PATCHING BY THE LANDLORD'S ROOFER.
5. PANEL LP-1 IS ON THIS WALL, SEE E2.1. KEEP DUCTWORK AND AIR DEVICES OUT OF THE DEDICATED ELECTRICAL SPACE ABOVE THE PANEL.

EASY TAKEOFFS

SAMPLE PLAN SET

FOR TAKEOFF PRACTICE ONLY.
NOT FOR CONSTRUCTION.

PROJECT

SAMPLE OFFICE, SUITE 200

TENANT IMPROVEMENT

PROJECT NO. ET-2026-01

REVISIONS

DATE	10/30/2026
SCALE	1/4" = 1'-0"
DRAWN BY	ET
SHEET SIZE	ARCH D, 24" x 36"

SHEET TITLE

MECHANICAL PLAN

SHEET

M1.1

(c) 2026 Easy Takeoffs. Free to use for practice.

Takeoff Summary

Generated Oct 30, 2026

Group Totals

Group	Totals
Supply Duct Runs / 16 x 10 (24 ga)	6'-6"
Supply Duct Runs / 14 x 10 (24 ga)	3'-11"
Supply Duct Runs / 12 x 8 (26 ga)	24'-11"
Supply Duct Runs / 10 x 8 (26 ga)	9'
Supply Duct Runs / 10 x 6 (26 ga)	16'-3"
Supply Duct Runs / 8 x 6 (26 ga)	35'-10"
Supply Duct Runs / 14" MP	16'-2"
Supply Duct Runs / 12" MP	3'-5"
Supply Duct Runs / 10" MP	21'-4"
Supply Duct Runs / 8" MP	15'-8"
Supply Duct Runs / 6" MP	14'-9"
Supply Duct Runs / 8" Runouts	28'-5"
Supply Duct Runs / 6" Runouts	49'-10"
Return Duct Runs / RT-1 12 x 10 Lined	5'-11"
Exhaust Duct Runs / 6" Exhaust	6'-9"
Air Devices / S-1 Diffusers	12 ea
Air Devices / S-2 Diffusers	7 ea
Air Devices / R-1 Return Grilles	10 ea
Equipment & Accessories / VAV Boxes	5 ea
Equipment & Accessories / Zone Sensors	5 ea
Equipment & Accessories / Exhaust Fans	2 ea
Round Fittings & Dampers	27 ea

Materials

Supply Duct Runs / 16 x 10 (24 ga)

HVAC Rectangular Duct

Material	Quantity	Waste	Unit
Sheet Metal Body	33	15%	SF
Sheet Metal (Fittings)	17	0%	SF
Duct Wrap Insulation	39	10%	SF
Duct Sealant (Mastic)	1	0%	gal
Duct Hangers	2	5%	EA
Threaded Rod (3/8")	5	10%	LF

Supply Duct Runs / 14 x 10 (24 ga)

HVAC Rectangular Duct

Material	Quantity	Waste	Unit
Sheet Metal Body	19	15%	SF
Sheet Metal (Fittings)	10	0%	SF
Duct Wrap Insulation	22	10%	SF
Duct Sealant (Mastic)	1	0%	gal
Duct Hangers	2	5%	EA
Threaded Rod (3/8")	5	10%	LF

Supply Duct Runs / 12 x 8 (26 ga)

HVAC Rectangular Duct

Material	Quantity	Waste	Unit
Sheet Metal Body	96	15%	SF
Sheet Metal (Fittings)	48	0%	SF
Duct Wrap Insulation	119	10%	SF
Duct Sealant (Mastic)	1	0%	gal
Duct Hangers	5	5%	EA
Threaded Rod (3/8")	18	10%	LF

Supply Duct Runs / 10 x 8 (26 ga)

HVAC Rectangular Duct

Material	Quantity	Waste	Unit
Sheet Metal Body	31	15%	SF
Sheet Metal (Fittings)	16	0%	SF
Duct Wrap Insulation	40	10%	SF
Duct Sealant (Mastic)	1	0%	gal
Duct Hangers	3	5%	EA
Threaded Rod (3/8")	9	10%	LF

Supply Duct Runs / 10 x 6 (26 ga)

HVAC Rectangular Duct

Material	Quantity	Waste	Unit
Sheet Metal Body	50	15%	SF
Sheet Metal (Fittings)	25	0%	SF
Duct Wrap Insulation	66	10%	SF
Duct Sealant (Mastic)	1	0%	gal
Duct Hangers	4	5%	EA
Threaded Rod (3/8")	14	10%	LF

Supply Duct Runs / 8 x 6 (26 ga)

HVAC Rectangular Duct

Material	Quantity	Waste	Unit
Sheet Metal Body	97	15%	SF
Sheet Metal (Fittings)	49	0%	SF
Duct Wrap Insulation	132	10%	SF
Duct Sealant (Mastic)	2	0%	gal
Duct Hangers	6	5%	EA
Threaded Rod (3/8")	22	10%	LF

Supply Duct Runs / 14" MP

HVAC Round Duct

Material	Quantity	Waste	Unit
Round Duct	17	5%	LF
Duct Wrap Insulation	79	10%	SF
Duct Sealant (Mastic)	1	0%	gal
Duct Hangers	4	5%	EA

Supply Duct Runs / 12" MP

HVAC Round Duct

Material	Quantity	Waste	Unit
Round Duct	4	5%	LF
Duct Wrap Insulation	15	10%	SF
Duct Sealant (Mastic)	1	0%	gal
Duct Hangers	2	5%	EA

Supply Duct Runs / 10" MP

HVAC Round Duct

Material	Quantity	Waste	Unit
Round Duct	23	5%	LF
Duct Wrap Insulation	80	10%	SF
Duct Sealant (Mastic)	1	0%	gal
Duct Hangers	4	5%	EA

Supply Duct Runs / 8" MP

HVAC Round Duct

Material	Quantity	Waste	Unit
Round Duct	17	5%	LF
Duct Wrap Insulation	50	10%	SF
Duct Sealant (Mastic)	1	0%	gal
Duct Hangers	3	5%	EA

Supply Duct Runs / 6" MP

HVAC Round Duct

Material	Quantity	Waste	Unit
Round Duct	16	5%	LF
Duct Wrap Insulation	39	10%	SF
Duct Sealant (Mastic)	1	0%	gal
Duct Hangers	3	5%	EA

Supply Duct Runs / 8" Runouts

HVAC Round Duct

Material	Quantity	Waste	Unit
Round Duct	30	5%	LF
Duct Wrap Insulation	90	10%	SF
Duct Sealant (Mastic)	2	0%	gal
Duct Hangers	9	5%	EA

Supply Duct Runs / 6" Runouts

HVAC Round Duct

Material	Quantity	Waste	Unit
Round Duct	53	5%	LF
Duct Wrap Insulation	130	10%	SF
Duct Sealant (Mastic)	2	0%	gal
Duct Hangers	13	5%	EA

Return Duct Runs / RT-1 12 x 10 Lined

HVAC Rectangular Duct

Material	Quantity	Waste	Unit
Sheet Metal Body	25	15%	SF
Sheet Metal (Fittings)	13	0%	SF
Duct Liner	24	10%	SF
Duct Sealant (Mastic)	1	0%	gal
Duct Hangers	2	5%	EA
Threaded Rod (3/8")	5	10%	LF

Exhaust Duct Runs / 6" Exhaust

HVAC Round Duct

Material	Quantity	Waste	Unit
Round Duct	8	5%	LF
Duct Sealant (Mastic)	1	0%	gal
Duct Hangers	2	5%	EA