

AUTHOR ESTIMATION LLC

CONSTRUCTION COST ESTIMATE — DIVISION 23: HVAC

PROJECT NAME	Sample Commercial TI, Atlanta, GA
LOCATION	Atlanta, Georgia, USA
BUILDING TYPE	Commercial TI Retail/Medical Spa
AREA (GFA)	3,200 SF GFA (Est.)
ESTIMATE NO.	AE-2026-SAMPLE-23
DATE	May 2026
PREPARED BY	Author Estimation LLC
PRICING BASIS	RSMMeans 2025 — Adj. CCI 0.97 (Atlanta, GA)
CCI FACTOR	Atlanta, GA — 0.97
STATUS	SAMPLE / FOR REFERENCE ONLY

ESTIMATE SUMMARY

SECTION	MATERIAL (\$)	LABOR (\$)	SUBTOTAL (\$)
23A — Rectangular Supply Ductwork	10,668.18	12,695.42	23,363.59
23B — Flexible & Circular Ductwork	1,981.95	972.73	2,954.68
23C — Air Handling Units & Equipment	17,799.50	3,773.30	21,572.80
23D — Condensing Units & Refrigerant	13,405.71	1,853.17	15,258.88
23E — Diffusers, Grilles & Registers	358.90	168.78	2,066.68
23F — Insulation & Accessories	232.22	40.17	3,357.85

SUBTOTAL (DIRECT COST)	\$68,574.47
OVERHEAD (10%)	\$6,857.45
PROFIT (10%)	\$6,857.45
CONTINGENCY (5%)	\$3,428.72
GRAND TOTAL (INCL. MARKUPS)	\$85,718.09

This estimate is prepared for illustrative purposes only. Duct quantities derived from E308 Dripbar, MPD HQ, Medical Office, and Oak Tree Plaza duct takeoff sheets. RSMMeans 2025 adjusted for Atlanta, GA (CCI 0.97). Actual bids require site-specific takeoff and verification.

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SR #	DWG REF / CSI CODE	ITEM DESCRIPTION	UOM	WASTAGE (%)	QTY W/ WASTAGE	MAT UNIT RATE (NAT)	CCI ADJ RATE (ATL)	MAT TOTAL	LABOR HRS/UNIT	LABOR RATE/HR	LABOR TOTAL	LINE TOTAL
23A — RECTANGULAR SUPPLY & RETURN DUCTWORK — 24 GA GALVANIZED												
SMALL: 6"×4" to 10"×10" — Branch Runs & Terminal Boxes												
23A.01	23 31 13 M201 / M202	Rectangular Supply Duct — 24 GA Galvanized Steel, 6"×6" to 10"×10" SMACNA Class 1, Slip & Drive Connections RSMMeans 2025 #23-31-13.13-0200	LB	5%	301.35	2.85	2.76	833.08	0.07	62.00	1,178.01	2,011.09
23A.02	23 31 13 M201 / M202	Rectangular Supply Duct — 24 GA Galvanized Steel, 12"×8" to 16"×12" SMACNA Class 1, TDC/TDF Connections RSMMeans 2025 #23-31-13.13-0300	LB	5%	720.30	2.85	2.76	1,991.27	0.06	62.00	2,512.49	4,503.76
23A.03	23 31 13 M201 / M202	Rectangular Supply Duct — 24 GA Galvanized Steel, 18"×12" to 20"×12" SMACNA Class 1, TDC/TDF Connections RSMMeans 2025 #23-31-13.13-0400	LB	5%	502.95	2.85	2.76	1,390.41	0.05	62.00	1,512.37	2,902.78
LARGE: 20"×12"+ — Mains & Trunk Ducts												
23A.04	23 31 13 M201	Rectangular Return Duct — 24 GA Galvanized Steel, 28"×14" to 48"×64" — Main Trunks SMACNA Class 2 (2" WG), TDC Connections RSMMeans 2025 #23-31-13.13-0500	LB	5%	1,245.30	3.20	3.10	3,865.41	0.05	65.00	3,533.23	7,398.64
23A.05	23 31 13 M201	Duct Fittings — Elbows, Tees, Reducers, Offsets — 24 GA Galvanized, All Sizes Allowance: 25% of duct weight RSMMeans 2025 #23-31-13.13-0700	LB	5%	693.00	3.85	3.73	2,588.01	0.10	62.00	3,959.32	6,547.33
23A — RECTANGULAR DUCTWORK SUBTOTAL								10,668.18			12,695.42	23,363.59
23B — FLEXIBLE & CIRCULAR DUCTWORK												
26 GA CIRCULAR & INSULATED FLEX DUCT												
23B.01	23 31 13 M201 / M202	6"DIA Round Duct — 26 GA Galvanized, Spiral Seam, to Flex Duct Connections Mfr: Spiral-Helix or equal RSMMeans 2025 #23-31-13.23-0200	LF	5%	110.25	4.85	4.70	518.67	0.05	58.00	279.12	797.79
23B.02	23 31 13 M201 / M202	8"DIA & 9"DIA Round Duct — 26 GA Galvanized, Spiral Seam Mfr: Spiral-Helix or equal RSMMeans 2025 #23-31-13.23-0300	LF	5%	56.70	6.80	6.60	373.99	0.06	58.00	175.45	549.44
23B.03	23 31 13 M201 / M202	6"DIA Insulated Flexible Duct — R-6, Class 1, at All Diffuser Connections Mfr: Flexmaster or equal RSMMeans 2025 #23-31-13.33-0200	LF	5%	199.50	3.85	3.73	745.03	0.04	55.00	372.52	1,117.55

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23B.04	23 31 13 M201 / M202	9"DIA & 12"DIA Insulated Flexible Duct — R-6, Class 1, at AHU Return Connections Mfr: Flexmaster or equal RSMMeans 2025 #23-31-13.33-0300	LF	5%	68.25	5.20	5.04	344.25	0.04	55.00	145.65	489.90
23B — FLEXIBLE & CIRCULAR DUCTWORK SUBTOTAL								1,981.95			972.73	2,954.68
23C — AIR HANDLING UNITS & EQUIPMENT												
AHU SERIES — ROOFTOP & SPLIT SYSTEM												
23C.01	23 74 13 AHU-1 M301	AHU-1: Packaged Rooftop Unit — 5 Ton, 2-Stage Cooling, Gas Heat, 14 SEER2 Mfr: Carrier WeatherMaker or equal Curb & Electrical by Others RSMMeans 2025 #23-74-13.10-0200	EA	0%	1.00	5,850.00	5,674.50	5,674.50	18.00	68.00	1,187.28	6,861.78
23C.02	23 74 13 AHU-2 M301	AHU-2: Packaged Rooftop Unit — 7.5 Ton, 2-Stage Cooling, Gas Heat, 14 SEER2 Mfr: Carrier WeatherMaker or equal Curb & Electrical by Others RSMMeans 2025 #23-74-13.10-0300	EA	0%	1.00	8,200.00	7,954.00	7,954.00	22.00	68.00	1,451.12	9,405.12
23C.03	23 74 13 AHU-3 M301	AHU-3: Split System Air Handler — 2 Ton, Fan Coil, w/ Electric Heat Strip Mfr: Carrier or equal Indoor unit only RSMMeans 2025 #23-74-13.10-0400	EA	0%	1.00	1,850.00	1,794.50	1,794.50	8.00	65.00	504.40	2,298.90
23C.04	23 74 13 AHU-4 M301	AHU-4: Split System Air Handler — 3 Ton, Fan Coil, Variable Speed Mfr: Carrier or equal Indoor unit only RSMMeans 2025 #23-74-13.10-0500	EA	0%	1.00	2,450.00	2,376.50	2,376.50	10.00	65.00	630.50	3,007.00
23C — AIR HANDLING UNITS SUBTOTAL								17,799.50			3,773.30	21,572.80
23D — CONDENSING UNITS & REFRIGERANT PIPING												
OUTDOOR CONDENSING UNITS												
23D.01	23 63 13 CU-1 / CU-2 M301	CU-1 & CU-2: Air-Cooled Condensing Unit — 5 Ton & 7.5 Ton, R-410A, Matching AHU-1 & AHU-2 Mfr: Carrier or equal Concrete pad by Div 03 RSMMeans 2025 #23-63-13.13-0200	EA	0%	2.00	3,850.00	3,734.50	7,469.00	6.00	65.00	756.60	8,225.60
23D.02	23 63 13 CU-3 / CU-4 M301	CU-3 & CU-4: Air-Cooled Condensing Unit — 2 Ton & 3 Ton, R-410A, Matching AHU-3 & AHU-4 Mfr: Carrier or equal RSMMeans 2025 #23-63-13.13-0300	EA	0%	2.00	2,200.00	2,134.00	4,268.00	5.00	65.00	630.50	4,898.50
REFRIGERANT PIPING — ACR COPPER TYPE L, R-410A SYSTEM												
23D.04	23 23 00 M301 / M302	Refrigerant Liquid Line — 3/4"DIA & 3/8"DIA ACR Copper, All Units Mfr: Mueller ACR or equal RSMMeans 2025 #23-23-00.10-0300	LF	5%	134.40	12.80	12.42	1,668.71	0.06	65.00	466.07	2,134.78
23D — CONDENSING UNITS & REFRIGERANT SUBTOTAL								13,405.71			1,853.17	15,258.88

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23E — DIFFUSERS, GRILLES & REGISTERS												
23E.01	23 37 13 S-1 / S-2 M201	S-1: Supply Diffuser — 24"×24" Lay-In, 4-Way Adjustable, White, at ACT Grid 50-175 CFM range Mfr: Titus or equal RSMMeans 2025 #23-37-13.13-0200	EA	0%	9.00	85.00	82.45	742.05	0.80	58.00	405.07	1,147.12
23E.02	23 37 13 R-1 / R-2 M201	R-1 & R-2: Return Air Grille — 24"×24" & 18"×18" Steel, White Egg-Crate, at ACT Mfr: Titus or equal RSMMeans 2025 #23-37-13.13-0400	EA	0%	4.00	68.00	65.96	263.84	0.60	55.00	128.04	391.88
23E.03	23 37 23 M201	EF-1: Exhaust Fan — 50 CFM, Ceiling-Mounted, Inline, 0.3 Sone, at Restrooms Mfr: Broan or equal Duct by Section 23B RSMMeans 2025 #23-37-23.13-0200	EA	0%	2.00	185.00	179.45	358.90	1.50	58.00	168.78	527.68
23E — DIFFUSERS, GRILLES & REGISTERS SUBTOTAL								1,364.79			701.89	2,066.68
23F — INSULATION & ACCESSORIES												
23F.01	23 07 13 M201 / M301	Duct Insulation — 2" Fiberglass Duct Wrap, R-8, All Supply Ductwork in Unconditioned Space Mfr: Johns Manville or equal RSMMeans 2025 #23-07-13.13-0200	SF	5%	719.25	1.85	1.79	1,290.69	0.03	52.00	906.97	2,197.67
23F.02	23 07 19 M301	Pipe Insulation — 1" Armaflex Elastomeric on All Refrigerant Suction Lines Mfr: Armacell or equal RSMMeans 2025 #23-07-19.13-0200	LF	5%	135.45	3.85	3.73	505.84	0.02	52.00	122.98	628.82
23F.03	23 05 93 M301	Condensate Drain — CD: 3/4"DIA PVC, Trap & Cleanout, at Each AHU — 47 LF Total Includes P-trap, air gap fitting, and roof drain connection RSMMeans 2025 #23-05-93.10-0200	LF	5%	49.35	4.20	4.07	201.05	0.02	55.00	57.92	258.97
23F.04	23 05 29 M301	18"H Pipe Roof Curb — Galvanized Steel, Around All Refrigerant Line Penetrations Mfr: Pate or equal RSMMeans 2025 #23-05-29.13-0200	LF	5%	8.40	28.50	27.65	232.22	0.09	58.00	40.17	272.39
23F — INSULATION & ACCESSORIES SUBTOTAL								2,229.80			1,128.04	3,357.85
MAT SUBTOTAL (for sales tax basis)											\$47,449.93	
DIV 23 DIRECT COST											\$68,574.47	
OVERHEAD (10%)											\$6,857.45	
PROFIT (10%)											\$6,857.45	
CONTINGENCY (5%)											\$3,428.72	
SALES TAX ON MATERIAL ONLY (0%)											\$0.00	

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LABOR BURDEN (INCLUDED IN RSMEANS RATES — \$0)												\$0.00
DIV 23 TOTAL BID												\$85,718.09

ASSUMPTIONS & EXCLUSIONS | DIV 23 — HVAC | Author Estimation LLC

GENERAL ASSUMPTIONS

1. Pricing based on RSMeans 2025 — Atlanta, GA CCI 0.97.
2. All rectangular ductwork 24 GA galvanized steel, SMACNA Class 1 construction.
3. Duct quantities priced in LB — takeoff per E308 duct sheet formula: SF × gauge factor.
4. 24 GA rectangular duct: LB = SF × 1.126. 26 GA circular duct: LB = SF × 0.906.
5. All duct fittings (elbows, tees, reducers) priced as 25% of duct weight — verify per drawing.
6. All equipment pricing includes standard start-up and commissioning; excludes test & balance.
7. Condensate drain piping per unit — 3/4" DIA PVC with P-trap and cleanout at each AHU.
8. 18"H pipe curbs at all refrigerant line roof penetrations per Worcester K-12 convention.

SCOPE INCLUSIONS

1. 24 GA rectangular supply and return ductwork — all sizes, SMACNA Class 1.
2. 26 GA spiral circular duct and insulated flexible duct — branch and terminal runs.
3. AHU-1 through AHU-4 — rooftop package units and split system air handlers.
4. CU-1 through CU-4 — outdoor condensing units, R-410A.
5. Refrigerant suction and liquid lines — ACR copper, all units.
6. Supply diffusers (S-1, S-2), return grilles (R-1, R-2) per diffuser schedule.
7. Exhaust fans EF-1 — 50 CFM, at restroom locations.
8. Duct insulation — R-8 duct wrap at all supply ductwork in unconditioned space.
9. Refrigerant line insulation — 1" Armaflex at all suction lines.
10. Condensate drain piping and pipe roof curbs at all penetrations.

SCOPE EXCLUSIONS

1. Electrical connections to AHU and CU equipment (see Division 26).
2. Roof curb (structural) for rooftop units (see Division 07 or by AHU manufacturer).
3. Concrete equipment pads for condensing units (see Division 03).
4. Gas piping to rooftop units (see Division 22 50 00 or separate contractor).
5. Building automation system (BAS) and DDC controls (see Division 25).
6. Test, adjust, and balance (TAB) report (separate contract).
7. Radiant heating systems and snow melting piping (see Division 23 83 00).
8. Fire and smoke dampers beyond quantity shown — verify with AHJ.

MEASUREMENT CONVENTIONS

- M-1. Rectangular duct LB = $[(W+H) \times 2 \times L] \div 144 \times \text{gauge factor}$ (24 GA = 1.126 LB/SF).
- M-2. Circular duct SF = $\pi \times D \times L \div 144$. 26 GA factor = 0.906 LB/SF.
- M-3. Flexible duct measured in LF centerline including fittings.
- M-4. Equipment EA per schedule — verify CFM, tonnage, and model numbers against mechanical drawings.
- M-5. Diffusers and grilles EA per diffuser schedule — verify neck size against ductwork.
- M-6. Refrigerant piping LF = centerline length per unit; suction and liquid lines measured separately.
- M-7. Duct insulation SF = duct surface area only — no deduction for fittings.
- M-8. Condensate drain LF = from unit drain pan to nearest acceptable discharge point.

ASSUMPTIONS & EXCLUSIONS | DIV 23 — HVAC | Author Estimation LLC

LABOR & COMPLIANCE

- Labor burden included in RSMeans burdened labor rates — NOT added separately to this estimate.
- Prevailing wage / union labor NOT included. Open shop rates per RSMeans 2025.
- Pricing valid 30 days from bid date. Equipment pricing subject to manufacturer lead time.
- Licensed HVAC contractor required per Georgia State Mechanical Code.

ALTERNATES — DIV 23 — HVAC | Author Estimation LLC

ALT #	CSI CODE	DESCRIPTION	ADD (\$)	DEDUCT (\$)	NOTES
ALT-23-01	23 74 13	UPGRADE: AHU-1 & AHU-2 to High-Efficiency Units (18 SEER2 / 97% AFUE) Carrier Infinity Series or equal — qualifies for GA utility rebate	\$4,800.00		AHU-1 & AHU-2 only
ALT-23-02	23 63 13	UPGRADE: CU-1 & CU-2 to VRF System — Mitsubishi CITY MULTI R2-Series Single outdoor unit serving multiple zones, heat recovery capable	\$18,500.00		Replace CU-1/CU-2 + AHU-1/AHU-2
ALT-23-03	23 31 13	UPGRADE: 24 GA Ductwork to Spiral Round Duct Throughout — All Supply Mains Improves airflow, reduces static pressure, better aesthetics if exposed	\$6,200.00		Main supply trunk only
ALT-23-04	23 09 23	ADD: DDC Building Automation System — Honeywell Spyder Controllers Web-accessible, zone-by-zone control, integrates with BAS	\$8,400.00		Full system
ALT-23-05	23 37 13	UPGRADE: Standard Diffusers to Linear Slot Diffusers — All Supply Locations 4-slot 24" linear, white anodized aluminum	\$3,800.00		All supply diffusers