

Electrical Takeoff Sample

Representative sample project: 6,000 SF office tenant fit-out in a 100' x 60' single-story building

Sample deliverable — prepared on a representative project to show format and level of detail. Not a client project. Quantities are computed from the sample project dimensions stated below; unit costs are illustrative (pricing basis: September 2026, national average, not a quote).

TAKEOFF LINE ITEMS 34	PRICED LINE ITEMS 31	DIRECT LABOR HOURS 472	SAMPLE TOTAL (ILLUSTRATIVE) \$83,198	PER SF \$13.87
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Sample project description

Tenant electrical for a 6,000 SF office: 208Y/120 V 3-phase, 4-wire. A 400 A tenant main panel (MDP) feeds two 7.5-ton rooftop units, an electric water heater and a 225 A lighting/receptacle panel (LP-1). Both panels sit in Electrical/IT room 109. Branch circuits run in 3/4" EMT above a 9'-0" ACT ceiling (raceway elevation 10'-0"); every conduit length in the circuit schedule is measured from the panel to the served area on the sample plan, so each run can be traced.

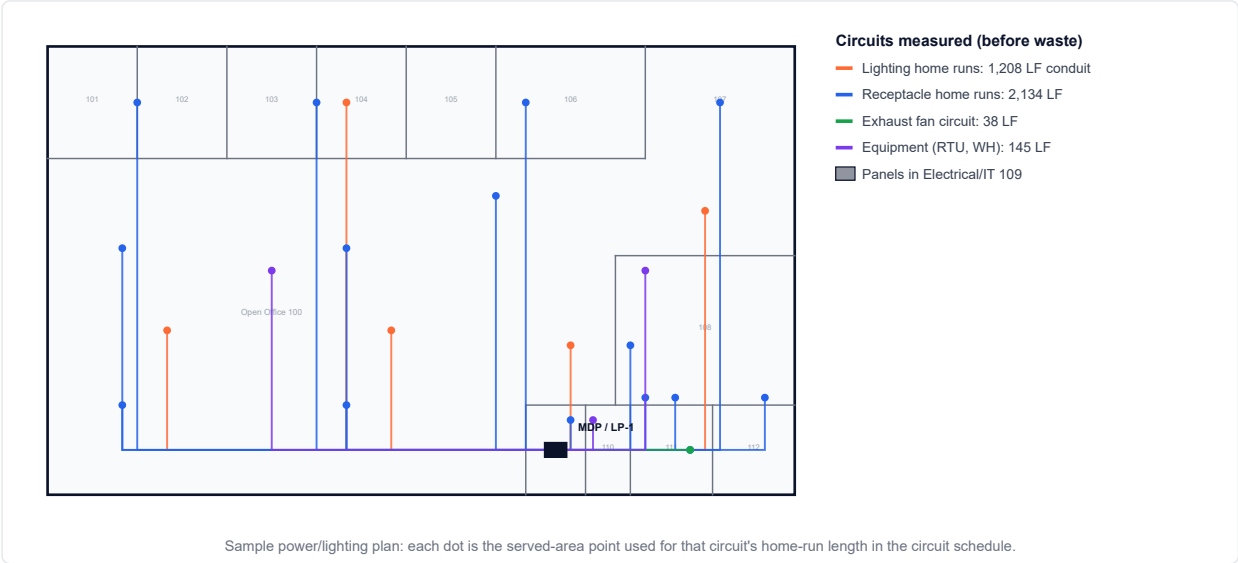
Scope included

- Tenant main panel MDP, panel LP-1 and feeder
- Branch circuits: EMT, THHN wire, boxes, fittings
- Wiring devices, occupancy sensors, light fixtures Types A-X
- RTU and water heater circuits with disconnects
- Testing and labeling

Exclusions / by others

- Utility service and service-entrance conductors to MDP (by shell)
- Fire alarm, data/telecom cabling, security
- Furniture power feeds / power poles (by furniture vendor)
- Roof penetrations and patching
- Permit fees; engineered load calculation and voltage-drop study

Takeoff markup (sample plan)



Assumptions & basis

Every quantity in this sample is computed from these inputs. The name column is the named range used by the Excel formulas.

Section	Parameter	Name	Value	Unit	Note / basis
Building	Tenant area	gross_sf	6,000 = 100 × 60	SF	100' x 60'
Raceway	Panel location, x (east of SW corner)	panel_x	68	ft	Electrical/IT 109
Raceway	Panel location, y (north of SW corner)	panel_y	6	ft	
Raceway	Panel top to ceiling raceway	panel_rise	4	ft	Panel top 6'-0" to 10'-0"
Raceway	Conduit between lighting j-boxes	lt_sp	10	ft	8' x 10' fixture grid
Raceway	Horizontal run between receptacles	rc_sp	12	ft	
Raceway	Drop to receptacle (10'-0" to 18" AFF)	rc_drop	8.50	ft	
Raceway	Extra horizontal to a dedicated outlet	dd_run	10	ft	
Raceway	Run per exhaust fan	ef_run	8	ft	
Raceway	Ceiling to rooftop disconnect	rtu_rise	10	ft	Roof 16'-0" + 4' to disconnect
Raceway	Drop to water heater disconnect	wh_drop	6	ft	
Wire	Wire make-up per conductor per box/termination	makeup_ft	1	ft	
Wire	Upsize #12 to #10 when circuit conduit length exceeds	vd_1f	100	ft	Voltage-drop rule of thumb for 120 V 20 A; ground upsized with phase
Feeder	MDP to LP-1 feeder length	fdr_len	15	ft	Same room
Feeder	Feeder make-up per conductor per end	fdr_term	3	ft	
Fixtures	Open office area	oo_area	3,588 = 100 × 45-36 × 12-24 × 20	SF	L-shaped area south of y=45'
Fixtures	Area per Type A troffer, open office	sf_a_open	80	SF	
Fixtures	Area per Type A troffer, enclosed rooms	sf_a_room	60	SF	
Fixtures	Private offices (12' x 15')	n_off	5	EA	
Fixtures	Type A 2x4 LED troffer 40 W	fx_a = ROUNDUP(oo_area/sf_a_open,0)+n_off × ROUNDUP(12 × 15/sf_a_room,0)+ROUNDUP(20 × 15/sf_a_room,0)+ROUNDUP(24 × 20/sf_a_room,0)	73	EA	Open office + offices + conference + break
Fixtures	Type B 6" LED downlight 15 W (lobby)	fx_b = ROUNDUP(20 × 15/40,0)	8	EA	1 per 40 SF
Fixtures	Type C 2x2 LED flat panel 30 W (restrooms)	fx_c = 2 × ROUNDUP(11 × 12/66,0)	4	EA	1 per 66 SF
Fixtures	Type D 4' LED strip 40 W (elec + janitor)	fx_d	3	EA	2 + 1
Fixtures	Type X exit / emergency combo	fx_x	6	EA	Sample sheet E-101
Devices	Duplex receptacles 20 A (general)	n_dup = 24+n_off × 4+4+4+2	54	EA	Open office 24, offices 4 ea, conference 4, lobby 4, elec 2
Devices	GFCI receptacles 20 A	n_gfci = 6+3	9	EA	Break counter 6, restrooms 2, janitor 1
Devices	Dedicated receptacles 20 A	n_ded	4	EA	Refrigerator, microwave, IT rack, copier
Devices	Wall-box occupancy sensors	n_ocw = n_off+1+1+2+1	10	EA	Offices, conference, break, restrooms, janitor
Devices	Ceiling occupancy sensors + power packs (open office)	n_occo	6	EA	
Devices	Toggle switches	n_sw	2	EA	Lobby, electrical room
Rates	Electrician labor rate (burdened, blended)	rate_elec	82	\$/hr	Illustrative
Markups	Sales tax on material	tax_rate	7.0%	%	Assumption
Markups	Overhead	oh_pct	10.0%	%	Assumption
Markups	Profit	profit_pct	10.0%	%	Assumption

Sample drawing list

Sheets of the representative sample project (described here so the takeoff can be traced; not a real plan set).

Sheet	Title
E-001	Legend, fixture schedule, notes (sample)
E-101	Lighting plan (sample)
E-201	Power plan (sample)
E-301	Panel schedules MDP / LP-1, one-line (sample)

Panel & circuit schedule (conduit and wire measured per circuit)

Home run = Manhattan distance from the panel to the served area + panel rise. Branch = devices x LF per device. One circuit per home-run conduit (no shared neutrals) - conservative. Load VA is illustrative nameplate/180 VA-per-yoke, not an engineered load calculation.

Circuit	Panel	Description	Type	Area x (ft)	Area y (ft)	Devices / fixtures	LF per device	Home run LF	Branch LF	Conduit LF	Conduit	Wire (base)	Wire (if long)	Phase + neutral cond.	Wire used	Phase/neutral wire LF	Ground (base)	Ground (if long)	Ground used	Ground wire LF	Load VA	Poles	Breaker A
LP1-1	LP-1	Lighting - open office west (Type A)	L	16	22	23	10	72	230	302	3/4 in	#12	#10	2 #10		652	#12	#10	#10	326	920	1	20
LP1-3	LP-1	Lighting - open office east (Type A)	L	46	22	22	10	42	220	262	3/4 in	#12	#10	2 #10		570	#12	#10	#10	285	880	1	20
LP1-5	LP-1	Lighting - offices 101-105 + conference (Type A)	L	40	52.50	20	10	78.50	200	278.50	3/4 in	#12	#10	2 #10		599	#12	#10	#10	299.50	800	1	20
LP1-7	LP-1	Lighting - break room (A) + lobby (B)	L	88	38	16	10	56	160	216	3/4 in	#12	#10	2 #10		466	#12	#10	#10	233	440	1	20
LP1-9	LP-1	Lighting - restrooms (C), support (D), exit/emergency (X)	L	70	20	13	10	20	130	150	3/4 in	#12	#10	2 #10		328	#12	#10	#10	164	270	1	20
LP1-2	LP-1	Receptacles - open office SW	R	10	12	6	20.50	68	123	191	3/4 in	#12	#10	2 #10		396	#12	#10	#10	198	1,080	1	20
LP1-4	LP-1	Receptacles - open office NW	R	10	33	6	20.50	89	123	212	3/4 in	#12	#10	2 #10		438	#12	#10	#10	219	1,080	1	20
LP1-6	LP-1	Receptacles - open office SE	R	40	12	6	20.50	38	123	161	3/4 in	#12	#10	2 #10		336	#12	#10	#10	168	1,080	1	20
LP1-8	LP-1	Receptacles - open office NE	R	40	33	6	20.50	59	123	182	3/4 in	#12	#10	2 #10		378	#12	#10	#10	189	1,080	1	20
LP1-10	LP-1	Receptacles - offices 101-102	R	12	52.50	8	20.50	106.50	164	270.50	3/4 in	#12	#10	2 #10		559	#12	#10	#10	279.50	1,440	1	20
LP1-12	LP-1	Receptacles - offices 103-104	R	36	52.50	8	20.50	82.50	164	246.50	3/4 in	#12	#10	2 #10		511	#12	#10	#10	255.50	1,440	1	20
LP1-14	LP-1	Receptacles - office 105 + conference	R	64	52.50	8	20.50	54.50	164	218.50	3/4 in	#12	#10	2 #10		455	#12	#10	#10	227.50	1,440	1	20
LP1-16	LP-1	Receptacles - lobby	R	90	52.50	4	20.50	72.50	82	154.50	3/4 in	#12	#10	2 #10		319	#12	#10	#10	159.50	720	1	20
LP1-18	LP-1	Receptacles - break counter GFCI (1)	R	84	13	3	20.50	27	61.50	88.50	3/4 in	#12	#10	2 #12		185	#12	#10	#12	92.50	540	1	20
LP1-20	LP-1	Receptacles - break counter GFCI (2)	R	96	13	3	20.50	39	61.50	100.50	3/4 in	#12	#10	2 #10		209	#12	#10	#10	104.50	540	1	20
LP1-22	LP-1	Dedicated - refrigerator	R	78	20	1	18.50	28	18.50	46.50	3/4 in	#12	#10	2 #12		97	#12	#10	#12	48.50	800	1	20
LP1-24	LP-1	Dedicated - microwave	R	80	13	1	18.50	23	18.50	41.50	3/4 in	#12	#10	2 #12		87	#12	#10	#12	43.50	1,500	1	20
LP1-26	LP-1	Receptacles - restrooms + janitor GFCI	R	86	6	3	20.50	22	61.50	83.50	3/4 in	#12	#10	2 #12		175	#12	#10	#12	87.50	540	1	20
LP1-28	LP-1	Receptacles - electrical / IT room	R	68	6	2	20.50	4	41	45	3/4 in	#12	#10	2 #12		96	#12	#10	#12	48	360	1	20
LP1-30	LP-1	Dedicated - IT rack	R	70	10	1	18.50	10	18.50	28.50	3/4 in	#12	#10	2 #12		61	#12	#10	#12	30.50	1,920	1	20
LP1-32	LP-1	Dedicated - copier	R	60	40	1	18.50	46	18.50	64.50	3/4 in	#12	#10	2 #12		133	#12	#10	#12	66.50	1,500	1	20
LP1-11	LP-1	Exhaust fans EF-1, EF-2 (restrooms)	M	86	6	2	8	22	16	38	3/4 in	#12	#10	2 #12		82	#12	#10	#12	41	200	1	20
MDP-1	MDP	RTU-1 7.5 ton (roof), 3-ph	E	30	30	1	10	66	10	76	1 in	#8	#8	3 #8		234	#10	#10	#10	78	13,700	3	50
MDP-4	MDP	RTU-2 7.5 ton (roof), 3-ph	E	80	30	1	10	40	10	50	1 in	#8	#8	3 #8		156	#10	#10	#10	52	13,700	3	50

Circuit	Panel	Description	Type	Area x (ft)	Area y (ft)	Devices / fixtures	LF per device	Home run LF	Branch LF	Conduit LF	Conduit	Wire (base)	Wire (if long)	Phase + neutral cond.	Wire used	Phase/neutral wire LF	Ground (base)	Ground (if long)	Ground used	Ground wire LF	Load VA	Poles	Breaker A	
MDP-7	MDP	WH-1 electric water heater 4.5 kW, 208 V 1-ph	E	73	10	1	6	13	6	19	3/4 in	#10	#10		2 #10		42	#10	#10	#10	21	4,500	2	30
Totals						166		1,178.50	2,347.50	3,526						7,564				3,717	52,470			

Quantity takeoff

Qty is computed from the assumptions; the formula column is the exact expression used (the workbook holds it as a live Excel formula).

#	CSI	Description	Qty	Unit	Waste	Qty w/ waste	Formula / basis
Distribution							
1	26 24 16	Panelboard MDP 400 A MCB, 208Y/120 V 3-ph 4-W, 30 ckt (incl. breakers)	1	EA	0%	1	1 (counted / stated)
2	26 24 16	Panelboard LP-1 225 A MLO, 42 ckt (incl. branch breakers)	1	EA	0%	1	1 (counted / stated)
3	26 05 33	Feeder MDP to LP-1: 2-1/2" EMT	15	LF	5%	15.75	fdr_len
4	26 05 19	Feeder: 4 x 4/0 THHN Cu (3 phase + full neutral) 225 A at 75 C	84	LF	10%	92.40	4 × (fdr_len+2 × fdr_term)
5	26 05 19	Feeder: 1 x #4 THHN Cu equipment ground	21	LF	10%	23.10	fdr_len+2 × fdr_term
6	26 28 16	Disconnect 60 A 3-pole NEMA 3R (RTUs)	2	EA	0%	2	2 (counted / stated)
7	26 28 16	Disconnect 30 A 2-pole (WH-1)	1	EA	0%	1	1 (counted / stated)
8	26 24 16	Connected load on LP-1 (check)	20,570	VA	0%	20,570	Σ[Circuit Schedule: Load VA where Panel = "LP-1"]
9	26 24 16	Connected load on MDP branch equipment (check)	31,900	VA	0%	31,900	Σ[Circuit Schedule: Load VA where Panel = "MDP"]
Raceway							
10	26 05 33	EMT 3/4" (branch circuits)	3,400	LF	5%	3,570	Σ[Circuit Schedule: Conduit LF where Conduit = "3/4 in"]
11	26 05 33	EMT 1" (RTU circuits)	126	LF	5%	132.30	Σ[Circuit Schedule: Conduit LF where Conduit = "1 in"]
12	26 05 33	EMT couplings (1 per 10' stick) Labor carried in conduit unit	371	EA	0%	371	ROUNDUP((emt_34_w+emt_1_w)/10,0)
13	26 05 33	EMT straps (1 per 8')	463	EA	0%	463	ROUNDUP((emt_34_w+emt_1_w)/8,0)
14	26 05 33	Device boxes 4" sq. w/ mud ring	79	EA	0%	79	n_dup+n_gfci+n_ded+n_occw+n_sw
15	26 05 33	Lighting j-boxes above ceiling (1 per fixture)	94	EA	0%	94	fx_a+fx_b+fx_c+fx_d+fx_x
16	26 05 33	EMT connectors (2 per box)	346	EA	0%	346	2 × (dev_boxes+j_boxes)
Wire							
17	26 05 19	THHN Cu #12 (phase, neutral and ground) Sum of phase/neutral + ground columns for this gauge	1,374	LF	10%	1,511.40	Σ[Circuit Schedule: Phase/neutral wire LF where Wire used = "#12"]+Σ[Circuit Schedule: Ground wire LF where Ground used = "#12"]
18	26 05 19	THHN Cu #10 (phase, neutral and ground) Sum of phase/neutral + ground columns for this gauge	9,517	LF	10%	10,468.70	Σ[Circuit Schedule: Phase/neutral wire LF where Wire used = "#10"]+Σ[Circuit Schedule: Ground wire LF where Ground used = "#10"]
19	26 05 19	THHN Cu #8 (phase, neutral and ground) Sum of phase/neutral + ground columns for this gauge	390	LF	10%	429	Σ[Circuit Schedule: Phase/neutral wire LF where Wire used = "#8"]+Σ[Circuit Schedule: Ground wire LF where Ground used = "#8"]
20	26 05 19	MC fixture whips 6' (3-wire #12)	94	EA	0%	94	fx_a+fx_b+fx_c+fx_d+fx_x
Wiring devices							
21	26 27 26	Duplex receptacle 20 A w/ plate	54	EA	0%	54	n_dup
22	26 27 26	GFCI receptacle 20 A w/ plate	9	EA	0%	9	n_gfci
23	26 27 26	Dedicated receptacle 20 A w/ plate	4	EA	0%	4	n_ded
24	26 09 23	Wall-box occupancy sensor	10	EA	0%	10	n_occw
25	26 09 23	Ceiling occupancy sensor + power pack	6	EA	0%	6	n_occo
26	26 27 26	Toggle switch 20 A w/ plate	2	EA	0%	2	n_sw
Lighting							
27	26 51 00	Type A 2x4 LED troffer 40 W	73	EA	0%	73	fx_a
28	26 51 00	Type B 6" LED downlight 15 W	8	EA	0%	8	fx_b
29	26 51 00	Type C 2x2 LED flat panel 30 W	4	EA	0%	4	fx_c
30	26 51 00	Type D 4' LED strip 40 W	3	EA	0%	3	fx_d
31	26 51 00	Type X exit / emergency combo	6	EA	0%	6	fx_x
32	26 51 00	Fixture count check: lighting-circuit devices in schedule Must equal the sum of Types A-X above	94	EA	0%	94	Σ[Circuit Schedule: Devices / fixtures where Type = "L"]
Equipment connections & testing							
33	26 05 00	RTU / exhaust fan / WH final connections	5	EA	0%	5	2+2+1
34	26 08 00	Testing, circuit directory, labeling	1	LS	0%	1	1 (counted / stated)

Pricing

Illustrative unit costs and labor productivity, September 2026 national average. Not a quote.

#	Description	Qty	Unit	Mat \$/unit	Material \$	Hr/unit	Labor hrs	Rate	Labor \$	Equip \$	Total \$
1	Panelboard MDP 400 A MCB, 208Y/120 V 3-ph 4-W, 30 ckt (incl. breakers)	1	EA	\$4,800.00	\$4,800.00	24.0000	24.0	\$82.00	\$1,968.00	\$0.00	\$6,768.00
2	Panelboard LP-1 225 A MLO, 42 ckt (incl. branch breakers)	1	EA	\$2,400.00	\$2,400.00	12.0000	12.0	\$82.00	\$984.00	\$0.00	\$3,384.00
3	Feeder MDP to LP-1: 2-1/2" EMT	15.75	LF	\$7.50	\$118.12	0.1100	1.7	\$82.00	\$142.06	\$0.00	\$260.19
4	Feeder: 4 x 4/0 THHN Cu (3 phase + full neutral)	92.40	LF	\$4.60	\$425.04	0.0280	2.6	\$82.00	\$212.15	\$0.00	\$637.19
5	Feeder: 1 x #4 THHN Cu equipment ground	23.10	LF	\$1.35	\$31.19	0.0120	0.3	\$82.00	\$22.73	\$0.00	\$53.92
6	Disconnect 60 A 3-pole NEMA 3R (RTUs)	2	EA	\$210.00	\$420.00	3.0000	6.0	\$82.00	\$492.00	\$0.00	\$912.00
7	Disconnect 30 A 2-pole (WH-1)	1	EA	\$95.00	\$95.00	2.0000	2.0	\$82.00	\$164.00	\$0.00	\$259.00
10	EMT 3/4" (branch circuits)	3,570	LF	\$1.05	\$3,748.50	0.0400	142.8	\$82.00	\$11,709.60	\$0.00	\$15,458.10
11	EMT 1" (RTU circuits)	132.30	LF	\$1.75	\$231.53	0.0500	6.6	\$82.00	\$542.43	\$0.00	\$773.96
12	EMT couplings (1 per 10' stick)	371	EA	\$0.85	\$315.35	0.0000	0.0	\$82.00	\$0.00	\$0.00	\$315.35
13	EMT straps (1 per 8')	463	EA	\$0.30	\$138.90	0.0000	0.0	\$82.00	\$0.00	\$0.00	\$138.90
14	Device boxes 4" sq. w/ mud ring	79	EA	\$3.80	\$300.20	0.2500	19.8	\$82.00	\$1,619.50	\$0.00	\$1,919.70
15	Lighting j-boxes above ceiling (1 per fixture)	94	EA	\$3.20	\$300.80	0.2000	18.8	\$82.00	\$1,541.60	\$0.00	\$1,842.40
16	EMT connectors (2 per box)	346	EA	\$0.95	\$328.70	0.0000	0.0	\$82.00	\$0.00	\$0.00	\$328.70
17	THHN Cu #12 (phase, neutral and ground)	1,511.40	LF	\$0.19	\$287.17	0.0055	8.3	\$82.00	\$681.64	\$0.00	\$968.81
18	THHN Cu #10 (phase, neutral and ground)	10,468.70	LF	\$0.30	\$3,140.61	0.0065	68.0	\$82.00	\$5,579.82	\$0.00	\$8,720.43
19	THHN Cu #8 (phase, neutral and ground)	429	LF	\$0.52	\$223.08	0.0090	3.9	\$82.00	\$316.60	\$0.00	\$539.68
20	MC fixture whips 6" (3-wire #12)	94	EA	\$9.50	\$893.00	0.2000	18.8	\$82.00	\$1,541.60	\$0.00	\$2,434.60
21	Duplex receptacle 20 A w/ plate	54	EA	\$3.50	\$189.00	0.3000	16.2	\$82.00	\$1,328.40	\$0.00	\$1,517.40
22	GFCI receptacle 20 A w/ plate	9	EA	\$22.00	\$198.00	0.4000	3.6	\$82.00	\$295.20	\$0.00	\$493.20
23	Dedicated receptacle 20 A w/ plate	4	EA	\$4.50	\$18.00	0.3000	1.2	\$82.00	\$98.40	\$0.00	\$116.40
24	Wall-box occupancy sensor	10	EA	\$38.00	\$380.00	0.5000	5.0	\$82.00	\$410.00	\$0.00	\$790.00
25	Ceiling occupancy sensor + power pack	6	EA	\$85.00	\$510.00	0.8000	4.8	\$82.00	\$393.60	\$0.00	\$903.60
26	Toggle switch 20 A w/ plate	2	EA	\$3.00	\$6.00	0.3000	0.6	\$82.00	\$49.20	\$0.00	\$55.20
27	Type A 2x4 LED troffer 40 W	73	EA	\$95.00	\$6,935.00	0.9000	65.7	\$82.00	\$5,387.40	\$0.00	\$12,322.40
28	Type B 6" LED downlight 15 W	8	EA	\$55.00	\$440.00	0.8000	6.4	\$82.00	\$524.80	\$0.00	\$964.80
29	Type C 2x2 LED flat panel 30 W	4	EA	\$70.00	\$280.00	0.8000	3.2	\$82.00	\$262.40	\$0.00	\$542.40
30	Type D 4' LED strip 40 W	3	EA	\$48.00	\$144.00	0.6000	1.8	\$82.00	\$147.60	\$0.00	\$291.60
31	Type X exit / emergency combo	6	EA	\$85.00	\$510.00	0.7500	4.5	\$82.00	\$369.00	\$0.00	\$879.00
33	RTU / exhaust fan / WH final connections	5	EA	\$25.00	\$125.00	1.5000	7.5	\$82.00	\$615.00	\$0.00	\$740.00
34	Testing, circuit directory, labeling	1	LS	\$150.00	\$150.00	16.0000	16.0	\$82.00	\$1,312.00	\$0.00	\$1,462.00
Direct cost totals					\$28,082.18		472.1		\$38,710.74	\$0.00	\$66,792.92

Summary

Group	Lines	Material	Labor hrs	Labor	Equipment	Total
Distribution	7	\$8,289.35	48.6	\$3,984.95	\$0.00	\$12,274.30
Raceway	7	\$5,363.98	188.0	\$15,413.13	\$0.00	\$20,777.10
Wire	4	\$4,543.86	99.0	\$8,119.66	\$0.00	\$12,663.52
Wiring devices	6	\$1,301.00	31.4	\$2,574.80	\$0.00	\$3,875.80
Lighting	5	\$8,309.00	81.6	\$6,691.20	\$0.00	\$15,000.20
Equipment connections & testing	2	\$275.00	23.5	\$1,927.00	\$0.00	\$2,202.00
Direct cost subtotal		\$28,082.18	472.1	\$38,710.74	\$0.00	\$66,792.92
Sales tax on material — 7.0% of material (assumption)						\$1,965.75
Overhead — 10.0% of running subtotal (assumption)						\$6,875.87
Profit — 10.0% of running subtotal (assumption)						\$7,563.45
SAMPLE TOTAL (illustrative)						\$83,198
Cost per SF						\$13.87

Sample deliverable on a representative project; not a client project. Unit costs illustrative (September 2026, national average, not a quote). Companion workbook sheets: Cover & Basis, Circuit Schedule, Quantity Takeoff, Pricing, Summary.