

Plumbing 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
32

PRICED LINE ITEMS
31

DIRECT LABOR HOURS
143

SAMPLE TOTAL (ILLUSTRATIVE)
\$28,554

PER SF
\$4.76

Sample project description

Plumbing for the same sample office tenant space: two single-user restrooms, a janitor closet, a break room sink and a bi-level drinking fountain, all grouped at the rear support core. Sanitary piping is PVC DWV below the slab (installed before the slab pour) with PVC vents above a ducted-return ceiling; domestic water is Type L copper above the ceiling, served from a 1" stub with meter provided by the shell. Every pipe length is measured from the fixture coordinates on the sample plan.

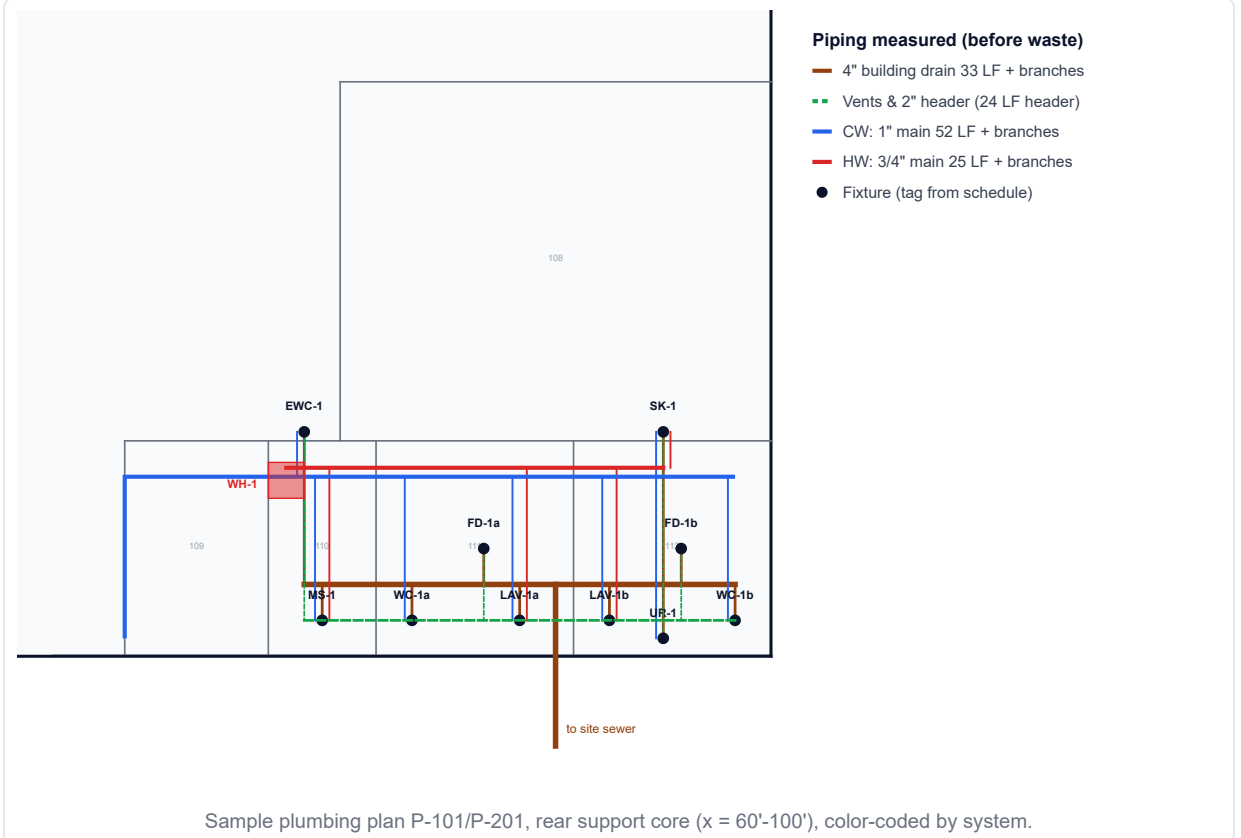
Scope included

- Fixtures and water heater per fixture schedule
- Below-slab PVC DWV, vents and VTR, cleanouts
- Type L copper domestic cold and hot water, valves, stops, insulation
- Trench and backfill for plumbing only
- Testing and disinfection

Exclusions / by others

- Site sewer and water beyond 5' outside the building (by site contractor)
- Water meter and backflow (by shell)
- Electrical connection of WH-1 and EWC-1 (Div 26)
- Roofing patch at VTR (by roofer)
- Plenum-rated piping (a ducted-return ceiling is assumed); permit fees

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	
Sanitary	Building drain centerline, y	main_y	4	ft	Runs east-west under the core
Sanitary	Building drain upstream end, x	main_x1	74	ft	
Sanitary	Building drain downstream end, x	main_x2	98	ft	
Sanitary	Exit leg to 5' outside building line	exit_len	9 = main_y+5	ft	South wall at y = 0
Sanitary	Vertical stub up to fixture per branch	stub_ug	2	ft	Below-slab depth allowance
Vent	Vent header line above ceiling, y	vent_y	2	ft	Along rear wall
Vent	Individual vent rise to header	vent_rise	8	ft	Floor-level connection to 10'-0"
Vent	Vent-through-roof length	vtr_len	7 = 16-10+1	ft	10' header to 16' roof + 1' above
Water	Domestic water mains line above ceiling, y	wtr_y	10	ft	
Water	Drop from main to fixture stop	fix_drop	8	ft	10'-0" to ~2'-0"
Water	CW stub / meter location, x	cw_entry_x	64	ft	Shell-provided 1" stub
Water	CW stub / meter location, y	cw_entry_y	1	ft	
Water	Riser from stub to ceiling	wtr_rise	9	ft	
Water	CW main east end, x	cw_end_x	98	ft	
Water	Water heater WH-1 location, x	wh_x	73	ft	Janitor 110
Water	HW main east end, x	hw_end_x	94	ft	Break sink
Water	WH outlet to ceiling	wh_rise	4	ft	
Water	WH cold inlet + T&P relief to mop basin	wh_conn	12	ft	3/4" copper
Factors	DWV pipe per fitting	dwb_fit_lf	6	LF	Estimator factor
Factors	Copper pipe per fitting	cu_fit_lf	5	LF	Estimator factor
Factors	Copper hanger spacing	cu_hgr_lf	6	LF	
Factors	Above-ground PVC hanger spacing	pvc_hgr_lf	4	LF	
Rates	Plumber labor rate (burdened)	rate_plumb	84	\$/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
P-001	Plumbing legend, fixture schedule (sample)
P-101	Sanitary & vent plan (sample)
P-201	Domestic water plan (sample)
P-501	Riser diagrams (sample)

Fixture schedule & branch piping (measured from fixture location)

Waste branch = perpendicular distance to the building drain + stub. Vent = rise + run to the vent header. Water branch = drop + run from the mains line. Main runs are separate takeoff lines.

Tag	Type	Description	Room	x (ft)	y (ft)	Qty	DFU	Waste size	Waste branch LF (below slab)	Vent size	Vent LF	CW size	CW conn.	CW branch LF	HW size	HW conn.	HW branch LF	
WC-1a	WC	Water closet, floor-mount ADA, tank type	Women 111	80	2	1	3	3 in		4	2 in	8	1/2 in	1	16	-	0.00	0.00
LAV-1a	LAV	Lavatory, wall-hung ADA w/ carrier, faucet	Women 111	86	2	1	1	1-1/2 in		4	1-1/2 in	8	1/2 in	1	16	1/2 in	1	16
FD-1a	FD	Floor drain 3" w/ trap primer tap	Women 111	84	6	1	2	3 in		4	1-1/2 in	12	-	0.00	0.00	-	0.00	0.00
WC-1b	WC	Water closet, floor-mount ADA, tank type	Men 112	98	2	1	3	3 in		4	2 in	8	1/2 in	1	16	-	0.00	0.00
UR-1	UR	Urinal, wall-hung w/ flush valve	Men 112	94	1	1	4	2 in		5	1-1/2 in	9	3/4 in	1	17	-	0.00	0.00
LAV-1b	LAV	Lavatory, wall-hung ADA w/ carrier, faucet	Men 112	91	2	1	1	1-1/2 in		4	1-1/2 in	8	1/2 in	1	16	1/2 in	1	16
FD-1b	FD	Floor drain 3" w/ trap primer tap	Men 112	95	6	1	2	3 in		4	1-1/2 in	12	-	0.00	0.00	-	0.00	0.00
MS-1	MS	Mop service basin 24x24 w/ faucet	Janitor 110	75	2	1	3	3 in		4	1-1/2 in	8	1/2 in	1	16	1/2 in	1	16
SK-1	SK	Break-room sink, SS single bowl, faucet	Break Room 108	94	12.50	1	2	2 in	10.50	1-1/2 in	18.50	1/2 in	1	10.50	1/2 in	1	10.50	
EWC-1	EWC	Electric water cooler, bi-level ADA	Open office (at core wall)	74	12.50	1	0.50	1-1/2 in	10.50	1-1/2 in	18.50	1/2 in	1	10.50	-	0.00	0.00	
Totals						10	21.50			54	110		8	118		4	58.50	

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
Fixtures & equipment							
1	22 40 00	Water closet WC-1, ADA tank type, seat, supply	2	EA	0%	2	$\Sigma[\text{Fixture Schedule: Qty where Type} = \text{"WC"}]$
2	22 40 00	Urinal UR-1 w/ flush valve	1	EA	0%	1	$\Sigma[\text{Fixture Schedule: Qty where Type} = \text{"UR"}]$
3	22 40 00	Lavatory LAV-1 wall-hung w/ carrier and faucet	2	EA	0%	2	$\Sigma[\text{Fixture Schedule: Qty where Type} = \text{"LAV"}]$
4	22 40 00	Sink SK-1 stainless single bowl w/ faucet	1	EA	0%	1	$\Sigma[\text{Fixture Schedule: Qty where Type} = \text{"SK"}]$
5	22 40 00	Mop service basin MS-1 w/ faucet	1	EA	0%	1	$\Sigma[\text{Fixture Schedule: Qty where Type} = \text{"MS"}]$
6	22 40 00	Electric water cooler EWC-1 bi-level	1	EA	0%	1	$\Sigma[\text{Fixture Schedule: Qty where Type} = \text{"EWC"}]$
7	22 40 00	Floor drain FD-1 3"	2	EA	0%	2	$\Sigma[\text{Fixture Schedule: Qty where Type} = \text{"FD"}]$
8	22 33 00	Water heater WH-1, 40 gal electric 4.5 kW, w/ expansion tank	1	EA	0%	1	1 (counted / stated)
9	22 13 00	Total drainage fixture units (check vs 4" building drain)	21.50	DFU	0%	21.50	$\Sigma[\text{Fixture Schedule: DFU}]$
Sanitary & vent							
10	22 13 16	PVC DWV 4" building drain below slab (incl. exit leg)	33	LF	5%	34.65	main_x2-main_x1+exit_len
11	22 13 16	PVC DWV 3" waste branches below slab	20	LF	5%	21	$\Sigma[\text{Fixture Schedule: Waste branch LF (below slab) where Waste size} = \text{"3 in"}]$
12	22 13 16	PVC DWV 2" waste branches below slab	15.50	LF	5%	16.28	$\Sigma[\text{Fixture Schedule: Waste branch LF (below slab) where Waste size} = \text{"2 in"}]$
13	22 13 16	PVC DWV 1-1/2" waste branches below slab	18.50	LF	5%	19.43	$\Sigma[\text{Fixture Schedule: Waste branch LF (below slab) where Waste size} = \text{"1-1/2 in"}]$
14	22 13 16	PVC DWV 2" individual vents	16	LF	5%	16.80	$\Sigma[\text{Fixture Schedule: Vent LF where Vent size} = \text{"2 in"}]$
15	22 13 16	PVC DWV 1-1/2" individual vents	94	LF	5%	98.70	$\Sigma[\text{Fixture Schedule: Vent LF where Vent size} = \text{"1-1/2 in"}]$
16	22 13 16	PVC DWV 2" vent header above ceiling	24	LF	5%	25.20	main_x2-main_x1
17	22 13 16	PVC DWV 3" vent through roof w/ flashing Flashing counted below	7	LF	5%	7.35	vtr_len
18	22 13 16	Roof flashing boot for VTR	1	EA	0%	1	1 (counted / stated)
19	22 13 16	Cleanouts (upstream end, base of stack, exit)	3	EA	0%	3	3 (counted / stated)
20	22 13 16	DWV fittings (1 per 6 LF of DWV pipe) Estimator factor; each fitting carries its joint labor	40	EA	0%	40	$\text{ROUNDUP}((\text{ug_4_w}+\text{ug_3_w}+\text{ug_2_w}+\text{ug_15_w}+\text{v_2_w}+\text{v_15_w}+\text{vh_2_w}+\text{vtr_3_w})/\text{dwv_fit_lf},0)$
21	22 05 29	PVC vent hangers (1 per 4 LF above ground)	36	EA	0%	36	$\text{ROUNDUP}((\text{v_2_w}+\text{v_15_w}+\text{vh_2_w})/\text{pvc_hgr_lf},0)$
22	31 23 16	Trench & backfill for below-slab piping Mini-excavator; bedding sand in material	87	LF	0%	87	ug_4+ug_3+ug_2+ug_15
Domestic water							
23	22 11 16	Copper Type L 1" CW main (riser + run)	52	LF	5%	54.60	wtr_rise+ABS(wtr_y-cw_entry_y)+cw_end_x-cw_entry_x

#	CSI	Description	Qty	Unit	Waste	Qty w/ waste	Formula / basis
24	22 11 16	Copper Type L 3/4" HW main from WH-1	25	LF	5%	26.25	wh_rise+hw_end_x-wh_x
25	22 11 16	Copper Type L 3/4" CW branches + WH connections	29	LF	5%	30.45	$\Sigma[\text{Fixture Schedule: CW branch LF where CW size} = "3/4 \text{ in}"] + \Sigma[\text{Fixture Schedule: HW branch LF where HW size} = "3/4 \text{ in}] + \text{wh_conn}$
26	22 11 16	Copper Type L 1/2" CW + HW branches	159.50	LF	5%	167.47	$\Sigma[\text{Fixture Schedule: CW branch LF where CW size} = "1/2 \text{ in}"] + \Sigma[\text{Fixture Schedule: HW branch LF where HW size} = "1/2 \text{ in}"]$
27	22 11 16	Copper fittings (1 per 5 LF)	56	EA	0%	56	$\text{ROUNDUP}((\text{cw_1_w} + \text{hw_34_w} + \text{cu_34_w} + \text{cu_12_w}) / \text{cu_fit_lf}, 0)$
28	22 05 29	Copper hangers (1 per 6 LF)	47	EA	0%	47	$\text{ROUNDUP}((\text{cw_1_w} + \text{hw_34_w} + \text{cu_34_w} + \text{cu_12_w}) / \text{cu_hgr_lf}, 0)$
29	22 05 23	Ball valves (CW main, HW main, WH inlet)	3	EA	0%	3	3 (counted / stated)
30	22 05 23	Angle / fixture stops (1 per water connection)	12	EA	0%	12	$\Sigma[\text{Fixture Schedule: CW conn.}] + \Sigma[\text{Fixture Schedule: HW conn.}]$
31	22 07 19	Pipe insulation 1/2" fiberglass on HW piping	83.50	LF	5%	87.67	$\text{hw_34} + \Sigma[\text{Fixture Schedule: HW branch LF where HW size} = "1/2 \text{ in}"]$
Testing							
32	22 08 00	DWV and water pressure tests, disinfection	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	Water closet WC-1, ADA tank type, seat, supply	2	EA	\$420.00	\$840.00	2.5000	5.0	\$84.00	\$420.00	\$0.00	\$1,260.00
2	Urinal UR-1 w/ flush valve	1	EA	\$620.00	\$620.00	3.0000	3.0	\$84.00	\$252.00	\$0.00	\$872.00
3	Lavatory LAV-1 wall-hung w/ carrier and faucet	2	EA	\$560.00	\$1,120.00	3.0000	6.0	\$84.00	\$504.00	\$0.00	\$1,624.00
4	Sink SK-1 stainless single bowl w/ faucet	1	EA	\$520.00	\$520.00	2.5000	2.5	\$84.00	\$210.00	\$0.00	\$730.00
5	Mop service basin MS-1 w/ faucet	1	EA	\$650.00	\$650.00	3.0000	3.0	\$84.00	\$252.00	\$0.00	\$902.00
6	Electric water cooler EWC-1 bi-level	1	EA	\$1,650.00	\$1,650.00	3.5000	3.5	\$84.00	\$294.00	\$0.00	\$1,944.00
7	Floor drain FD-1 3"	2	EA	\$145.00	\$290.00	1.5000	3.0	\$84.00	\$252.00	\$0.00	\$542.00
8	Water heater WH-1, 40 gal electric 4.5 kW, w/ expansion tank	1	EA	\$1,045.00	\$1,045.00	4.5000	4.5	\$84.00	\$378.00	\$0.00	\$1,423.00
10	PVC DWV 4" building drain below slab (incl. exit leg)	34.65	LF	\$5.60	\$194.04	0.1000	3.5	\$84.00	\$291.06	\$0.00	\$485.10
11	PVC DWV 3" waste branches below slab	21	LF	\$3.90	\$81.90	0.0900	1.9	\$84.00	\$158.76	\$0.00	\$240.66
12	PVC DWV 2" waste branches below slab	16.28	LF	\$2.10	\$34.18	0.0700	1.1	\$84.00	\$95.70	\$0.00	\$129.87
13	PVC DWV 1-1/2" waste branches below slab	19.43	LF	\$1.60	\$31.08	0.0600	1.2	\$84.00	\$97.90	\$0.00	\$128.98
14	PVC DWV 2" individual vents	16.80	LF	\$2.10	\$35.28	0.0800	1.3	\$84.00	\$112.90	\$0.00	\$148.18
15	PVC DWV 1-1/2" individual vents	98.70	LF	\$1.60	\$157.92	0.0700	6.9	\$84.00	\$580.36	\$0.00	\$738.28
16	PVC DWV 2" vent header above ceiling	25.20	LF	\$2.10	\$52.92	0.0800	2.0	\$84.00	\$169.34	\$0.00	\$222.26
17	PVC DWV 3" vent through roof w/ flashing	7.35	LF	\$3.90	\$28.67	0.1500	1.1	\$84.00	\$92.61	\$0.00	\$121.28
18	Roof flashing boot for VTR	1	EA	\$45.00	\$45.00	1.0000	1.0	\$84.00	\$84.00	\$0.00	\$129.00
19	Cleanouts (upstream end, base of stack, exit)	3	EA	\$85.00	\$255.00	1.0000	3.0	\$84.00	\$252.00	\$0.00	\$507.00
20	DWV fittings (1 per 6 LF of DWV pipe)	40	EA	\$6.50	\$260.00	0.3500	14.0	\$84.00	\$1,176.00	\$0.00	\$1,436.00
21	PVC vent hangers (1 per 4 LF above ground)	36	EA	\$3.20	\$115.20	0.1500	5.4	\$84.00	\$453.60	\$0.00	\$568.80
22	Trench & backfill for below-slab piping	87	LF	\$0.60	\$52.20	0.1200	10.4	\$84.00	\$876.96	\$130.50	\$1,059.66
23	Copper Type L 1" CW main (riser + run)	54.60	LF	\$9.60	\$524.16	0.0700	3.8	\$84.00	\$321.05	\$0.00	\$845.21
24	Copper Type L 3/4" HW main from WH-1	26.25	LF	\$6.80	\$178.50	0.0600	1.6	\$84.00	\$132.30	\$0.00	\$310.80
25	Copper Type L 3/4" CW branches + WH connections	30.45	LF	\$6.80	\$207.06	0.0600	1.8	\$84.00	\$153.47	\$0.00	\$360.53
26	Copper Type L 1/2" CW + HW branches	167.47	LF	\$4.20	\$703.39	0.0500	8.4	\$84.00	\$703.39	\$0.00	\$1,406.79
27	Copper fittings (1 per 5 LF)	56	EA	\$4.80	\$268.80	0.3000	16.8	\$84.00	\$1,411.20	\$0.00	\$1,680.00
28	Copper hangers (1 per 6 LF)	47	EA	\$3.20	\$150.40	0.1500	7.0	\$84.00	\$592.20	\$0.00	\$742.60
29	Ball valves (CW main, HW main, WH inlet)	3	EA	\$38.00	\$114.00	0.4000	1.2	\$84.00	\$100.80	\$0.00	\$214.80
30	Angle / fixture stops (1 per water connection)	12	EA	\$14.00	\$168.00	0.3000	3.6	\$84.00	\$302.40	\$0.00	\$470.40
31	Pipe insulation 1/2" fiberglass on HW piping	87.67	LF	\$2.10	\$184.12	0.0400	3.5	\$84.00	\$294.59	\$0.00	\$478.71
32	DWV and water pressure tests, disinfection	1	LS	\$120.00	\$120.00	12.0000	12.0	\$84.00	\$1,008.00	\$0.00	\$1,128.00
Direct cost totals					\$10,696.82		143.1		\$12,022.58	\$130.50	\$22,849.90

Summary

Group	Lines	Material	Labor hrs	Labor	Equipment	Total
Fixtures & equipment	8	\$6,735.00	30.5	\$2,562.00	\$0.00	\$9,297.00
Sanitary & vent	13	\$1,343.38	52.9	\$4,441.19	\$130.50	\$5,915.07

Group	Lines	Material	Labor hrs	Labor	Equipment	Total
Domestic water	9	\$2,498.43	47.8	\$4,011.40	\$0.00	\$6,509.83
Testing	1	\$120.00	12.0	\$1,008.00	\$0.00	\$1,128.00
Direct cost subtotal		\$10,696.82	143.1	\$12,022.58	\$130.50	\$22,849.90
Sales tax on material — 7.0% of material (assumption)						\$748.78
Overhead — 10.0% of running subtotal (assumption)						\$2,359.87
Profit — 10.0% of running subtotal (assumption)						\$2,595.85
SAMPLE TOTAL (illustrative)						\$28,554
Cost per SF						\$4.76

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, Fixture Schedule, Quantity Takeoff, Pricing, Summary.