## HOW TO ESTIMATE.

BY W. H. HODSON

Below are printed specification and bill of quantities for excavator, mason and bricklayer, accompanying working drawings of Baptist Church, Walmer road, Toronto, appearing in this

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Excavator, Mason and Burcklayer, accompanying working drawings of Baptist Church, Walmer road, Toronto, appearing in this number.

Excavator, Mason and Burcklayer, Excavate the ground as required for the basement, footings of walls, piers and buttresses, and for drains. Excavation to be 9 in. clear of walls to permit of pointing and inspection. Fill in and ram to walls after inspection; level to grade shown. Any soil not required for levelling to be removed from premises. Execute drainage as shown with approved salt glazed vitrified pipe of Scotch or American manufacture, jointed in Portland cement and lad to proper fall with all necessary bends, traps, junctions, etc., complete. Put McGuire's cleaning out trap with connection for cleaning carried to within one foot of surface of cellar. Lay weeping drains, as shown, in boiler pit connected with main drain behind proper glazed pipe trap. Connect drain with sevent street, porting affects. Pootings of walls to fee wider than the work above, and to extend to at least half the width of wall above. The footings of large piers carrying main columns to be in two courses of stone of approved quality, 8 in. thick and not more than two courses of stone of approved quality, 8 in. thick and not more than two courses of some to be in length the full width of footing (5 ft.) and not less than 3 ft. wide, the next course to be similar, 42" long, and the next 3'4" long, All to be of even thickness, flat on bed and set on a one lach bed of one-third Portland cement mortur. All the footings of main walls and piers to be set in mortar of smallar description. The stone walls above finished ground line on north and rear elevations and carridor to be finished with a narrow course of brown Credit Valley stone ently pointed with brown mortar. The walls on east and west devations and part of north, as shown, up to level of ground floor window silks, to be face

case to be moulded and pressed, jambo of staincase windows to be simply rounded.

Brick piers in cellar to be of hardest grey or red bricks, built perfectly solid and having neathy struck joints. The walls of boiler pit to be built with similar bricks in 4" stone footings, joints to be neathy struck. Carry up flues as shown, properly parge the same, and provide and build in cars from sildes to give access for cleaning smoke flues. Provide and build in £5" collar in smoke flue with chimney stack. Form fireplaces as shown, those in church to be faced with No. 1 pressed brick of color to harmonize with dado, and having monitded brick courses as shown. Turn arches on wrot iron camber bars. Form ash dumps properly parged and furnished with cast iron soot doors in cellar. Build brick trinimer arches and level up with concrete to within 12 of insisted floor line. Build went flues from below ceiling of gallery as shown, two to be carried in the plant stack, and that at n. e. staircase to be carried into flue in vestry chimney stack, and that at n. e. staircase to be carried into flue in vestry chimney stack, and that at n. e. staircase to windows and doors, &c. to be cut and gauged. Turn proper relieving arches over all openings of at least two rings. Thoroughly clean down all walls (the internal ones with acid), removing all stains or defects, cutting out and replacing any discolored or broken brick, and leaving all perfect on completion. Bed in mortar all wood slips, wood bricks, stone or other work required to be set in the masoury or brickwork. The walls of vestry and dressing rooms will have strips bill in for securing battens. Bed in mortar all intels, plates, etc., and cardilly point round all window and door finness. Cut all necessary grooves for flushing, and point up as required. Beam fill on all walls to underside of roof and floor boarding, and door fames. Cut all necessary grooves for flushing, and point up as required. Beam fill on all walls to underside of roof and floor boarding, and door fames.

precaution to prevent walls being discolored from splashings from scaffolding. Form foundation for boiler, say 4 oxr2 ft. with flat stone 4" thick and on this lay hardest clinker brioks set on edge in sand and well flushed. Lay the boiler pit with similar bricks set in a 4" bed of sharp sand. The coal and shi pit and space adjoining as timed grey will be concreted. Exeavate to additional depth to allow for boiler. Form foundation with stone chips of eep and on this lay concrete floor 3" thick formed with coarse gravel, coarse sand and Fortland cement in proper proportions and flouted to a smooth and even surface. Provide and set on brick piers under the eight main columns squaned and dressed approved stone 32" x 12" thick. The piers carrying six small gallery columns to be coped with approved stone 5" thick and to be correctly squared. Provide similar stones 6" x 12" country to be small pallery columns to be capted with approved to be correctly squared. Provide similar stones 6" x 12" country to be small pallery columns to be valled of ash and boiler pit with approved stone 9 in x in . thick in long lengths, dressed and carefully set in Fortland cement. Cope chimneys with Credit Valley or other approved brown stone 9 in . thick, and in not more than two pieces to each stack, cramped and set in Portland cement. Sills of basement windows to be of Credit Valley stone (brown where exposed). Sills of vestry and dressing room windows may be executed in the best description of Credit Valley stone (brown where exposed). Sills of basement windows to be of Credit Valley stone (brown where exposed). Sills of basement windows no be of Credit Valley stone (brown where exposed). Sills of basement windows no be of Credit Valley stone (reconstitution) and the stone of approved quality, seated, weathered, seated and throated. Sills at nandom work may be rock faced. The steps and landing at main entrances to be of same Heren or equally approved stone, carefully set in long lengths, set in Portland cement and joints thoroughly fl upon being set.

## BILL OF QUANTITIES.

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EXCAVATION AND DRAINAGE,
Board fence, etc., as per city by-laws
ITOO cubic yards of excavation, basement walls, piers, buttresses
and drains; includes filling, ramming, levelling, etc., etc.
1015; lineal yards of virrified pipe drain; includes bends, traps,
junctions, etc.
25 lineal yards of 4 m. weeping drain, complete
Provide 9 in. continuation drain from sewer to street line at per
lineal yard, complete, paying fees for same
I McGuire's cleaning out trap with connections
NOTE—Executations we measured. "enbe "that is leavel, bee

NOTE.—Excavations are measured "cube," that is, length, breadth and depth, thus: 54 ft, 9 in, x 22 ft, 6 in, x 5 ft, 6 in, = equal to 6775 ft, 4 in, divided by 27, the number of feet in a cubic yard, gives 251 cubic yards, less (1 ft, 8 in). Tile drains are measured lineal, that is, running measure, as indicated in above items.

MASONRY AND CUT STONE.
157 toise of masonry, complete, including the footing laid in

2080 supl. it. of coursed Credit Valley brown stone, varying heights pointed in brown mortar, includes margin, draft, etc., chispointed in to eled reveals

eled reveals
20 supl. yards of foundation to boiler. 6 in. stone chips and 3
in. thick concrete, smooth surface
131 lineal ft. of narrow coursed Credity Valley stone, pointed

heal ft. of Credit Valley brown stone coping in long lengths

so lineal ft. of Credit Valley brown stone coping, parapet of front gable, long lengths, set in cement 18 Credit Valley cut stone sills, 6 ft. 6 in., weathered, throated

and scated 7 Credit Valley cut stone sills, 5 ft. o in., weathered, throated and

seated
5 Credit Valley cut stone sills, 3 ft. 6 in., weathered, throated and

10 Credit Valley cut stone sills, 2 ft. 6 in., weathered, throated and seated 7 Credit Valley cut stone sills, 2 ft. o in., weathered, throated and

scated
scated
scolumn stones, 32 in. x 32 in. x 12 in.
6 coping stones to gallery columns, 8 in. thick, dressed
6 coping stones to beams, 4 in. thick, dressed
8 stones for beam rests, 12 in. x 8 in. x 4 in. dressed
2 coping stones of Credit Valley to chimneys, in two pieces, set in
cement and cramped
6 light beaus score corbots front of principals, scripto of peoples 26 light brown stone corbols front of principals, spring of arches,

ough brown some corons much of principals, spring of arches, etc., etc.
boss stones (for carving) and finial
Berea stone steps and landing, main entrances, in long lengths set in cement

set in cement 4 double footing stones in cement mortar under iron pillars Boiler foundation, 480 ft. of flat stone 4 in, thick, covered with hardest clinker brick set on edge; well flushed

mirrorst cinner prices set on edge; well mushed NOTE.—Massony is measured cube and the totals of dimensions added together, divided by 26, the number of cubic feet in a toise. The French measure per toise being 6 lt. x 6 ft. x 2 ft. equivalent to 6 ft. 4 % in. x 6 ft. 4 % in. x 2 ft. 1 % in. English measure, the French foot being  $\frac{1}{2}$  of an inch longer than one foot English. Cut stone facing measured superficial, that is, square, thus:  $5 \times 5$  gives 25 ft.

BRICKWORK.

60,000 (A2) best hard burnt brick, with white, red and plinth, to sills, and reverse to dado, a proportion of pressed and pale brown brick equal to sample bricks, etc., smooth jointed 27,500 machine unde bricks, laid in brown mortar, tied with hoop

27,000 machine made bricks, laid in brown mortar, tied with hoop iron at cavity
6,100 (A1) red and white and pressed brick facing to porch and vestibule
2,000 hardsst grey bricks to piers
2,300 bricks, moulded for darlo capping, angles, jambs, sills, arches, lables, etc., etc.
1,000 dentil moulded and pressed bricks to stair case window
170 hardest clinker bricks to boiler pit, on hed of sharp sand
23 supl. yds. of concrete, to coal and ash pit
800 hoop iron ties dipped in tar
50 relieving arches, double rims, throughout building