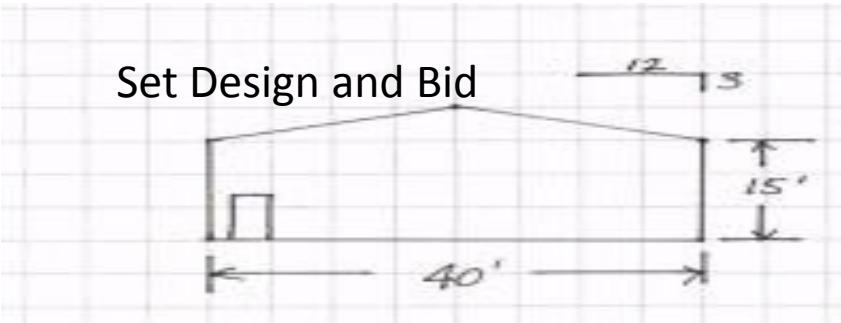
You are the masonry foreman at a job that has hired you to submit drawings and a sealed bid to obtain the project. You have been commissioned to create the set design for the new movie “Jack Bond 008: Trouble in America”. Your project team will need to choose the set that your team would like to create. Once chosen, you will need do the following: Create a scale drawing of the project. Estimate the materials needed for the project. Create a Quote for the project based upon the materials needed.

Set Design	Wall width (Circle one row)	Wall Height	Window dimensions (Choose 3)	Door Dimensions (Choose 1)
Mansion	60 ft	10 ft	4’ x 6’	3’ x 5’
Front Wall of an indoor pool	64 ft	10 ft	6’ x 4’	3’ x 6’
Hardware Store	80 ft	15 ft	8’ x 6’	3’ x 8’
Grocery Store	100 ft	15 ft	6’ x 8’	3’ x 9’
Barn	120 ft	15 ft	3’ x 4’	3’ x 10’

Jack Bond 008: Trouble in America



Team Members

Set Chosen

Project Start Date

Day 1: Level 3: Teams will choose the project that they want to work on as a group. We will review the scale drawing idea. All groups will use ¼” = 1 ft. This will create a larger visual for the students to see their results. They can also create some designs based on the set design they chose.

Scale drawings will begin and be completed in class that day.

Level 1 and 2: We will just work on scale drawings together of the Mansion. This is a good way to lead into the full lesson as seniors.

Day 2: Based on the scale drawings, students will calculate the square footage of their set. They can also begin to estimate the block needed. (1.5 block per square foot) Finally, they can calculate the total cost of the block. (Each block = $2.50) A short exit pass will be given to check basic understanding of scale and square footage.

Day 3: Students will continue on the calculation sheets for sand, brick, and mortar needed. Each calculation should be completed on a separate sheet per group.

Day 4: Transfer all calculations on the quote sheet. Labor will be a number given by the instructor based on the project size. *** This calculation could be done based on employees used and rate per hour, but that has been deemed a lesson in itself.

Day 5: Calculate sales tax on project.

*** An assessment will be completed at the end of this unit individually. It will be a smaller scale to see if they can complete it in a more timely manner now that they have all the pieces.

Day 1: Please log a step by step on what your team completed today. This can be in the form of a written paragraph or set up as a “Step 1”, “Step 2”…

Construction Log: Date _____

Log Writer _____

Day 2: Please log a step by step on what your team completed today. This can be in the form of a written paragraph or set up as a “Step 1”, “Step 2”…

Construction Log: Date _____

Log Writer _____

Name _____Calculation Sheet

What are you calculating?

_____

Information you need:

Written Steps | Calculation

What are you calculating?

_____

Information you need:

Written Steps | Calculation

Estimate #

Company Name _____

Date _____

Customer Name

Description	Quantity	Cost per item	Total Cost
Labor Estimate			
Subtotal			
Sales Tax (6%)			
Total estimate			

Manley's Brick & Block Price Catalog

★★★★★ 5/5 **1 Reviews**

$2.28 / each

225 in Stock at Reading #4110
(change pick up store)

Product Sold : In Store Only

Description:
Concrete foundations and above-grade masonry walls are constructed using this 16 in. x 8 in. x 12 in. Concrete Block, which meets ASTM C 90 specifications. The medium weight block is square and uniform in color and texture.

★★★★★ 4.8/5 **6 Reviews**

$9.50 / each

238 in Stock at Reading #4110
(change pick up store)

Product Sold : In Store Only

Description:
QUIKRETE 80 lb. Mason Mix is a commercial grade, high strength mortar mix containing properly graded masonry sand. It can be used to lay brick, block, and stone. Ideal for both structural and non-structural applications; above grade and below grade.

1 Ton of Sand

$ 27.00 per ton

Manley's Brick & Block Price Catalog

Traditional Smooth (230x110x76mm)
Perfectly at home in both traditional and modern architectural styles.

Price: **$200 per pack**
Price per 1000: **$758**

Yard Location: All yards

> Download Extra 10% OFF Voucher

Pre-Stressed Concrete Lintel

6” x 10 ‘ $ 50.00 each
6” x 4’ $ 15.00 each
4” x 4” Steel Lintel $ 8.00 each

Brick Wall Ties 22ga. (500/box)

Brick wall ties

Made from 22 gauge and 28 gauge galvanized steel.

Provide connection between masonry and wall studs or wood structure.

Bend wall tie at nail and bond into mortar joint.

Check local codes regarding requirements for spacing.

Only one bend of product to 90° is required.

Multiple bending will weaken product and compromise intended performance.

Images:

$ 50.00 per box

Mr. Manley's Specs List

7 brick per square foot
150 blocks per bag of mortar
200 lbs. of sand per bag of mortar
1.5 Block per square foot
200 bricks per bag of mortar

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Grading Rubric for Masonry Project

	4	3	2	1	Earned Points	
Writing Logs are done on all days.	Information is complete and is enhanced by accurate details. All information is readable.	Two or less logs are missing.	Three or four logs are missing.	Journals are not complete.	# received x 5 points	
Calculation of all material worksheets.	Information is complete and is enhanced by accurate details. All information is readable.	Two or less items are missing.	Three or four calculation details are missing.	All calculations are not correct.	# received x 5 points	
Masonry Drawing	Drawings are drawn to scale as per the group's choice.	Drawing is to scale but the final total square footage calculations are not correct.	Drawing is not to scale and there are over 3 errors in calculations.	Drawing is not to scale and there are over 5 errors in calculations.	# received x 50 points	
Masonry Quote	All items are accurate and calculations are 100% correct	1 error on calculations	2 errors on calculations	3 or more errors on calculations.	# received x 10	
Neatness	Fabulous	Nice	Some work needed	Cannot understand writing, Sloppy	# received x 10	
TOTAL					320 possible	

Day 2: Please log a step by step on what your team completed today. This can be in the form of a written paragraph or set up as a "Step 1", "Step 2"...

Construction Log: Date: 2/9/15

Log Writer: 1700

1. We did the calculation for the Bricks.
2. Did the steps for Bricks.
3. Got the cost of the Brick
4. multiply worker x cost
5. 10 See how many Bricks where there.
6. and divided it by 1000.
7. Multiply the 23 x $9.50=218.5

What are you calculating?

Brick

Information you need:

need: 7 brick per sqft
5 q foot total = 690

Written Steps	Calculation
Step 1: How many bricks	① sq.ft x 7 =
	460 x 7 = 3220 bricks
Step 2: Cost of bricks	494 x 7 = 3458 bricks
	② 758 / 1000 = .75.8 .76/br
Step 3: get the cost per brick	758/1000 = 0.758 = 76/br
Step 4: multiply cost x bricks	0.76 x = brick

What are you calculating?

Mortar

Information you need:

need: cost, brick per bag
# of block per bag

Written Steps	Calculation
① 3220/200 = 16.1 BAGS	3220/200 = 17
	~~3458/200 = 17.3~~
BAGS per Block	690/150 = 5 bags
690	22 bags in total
	$ 209

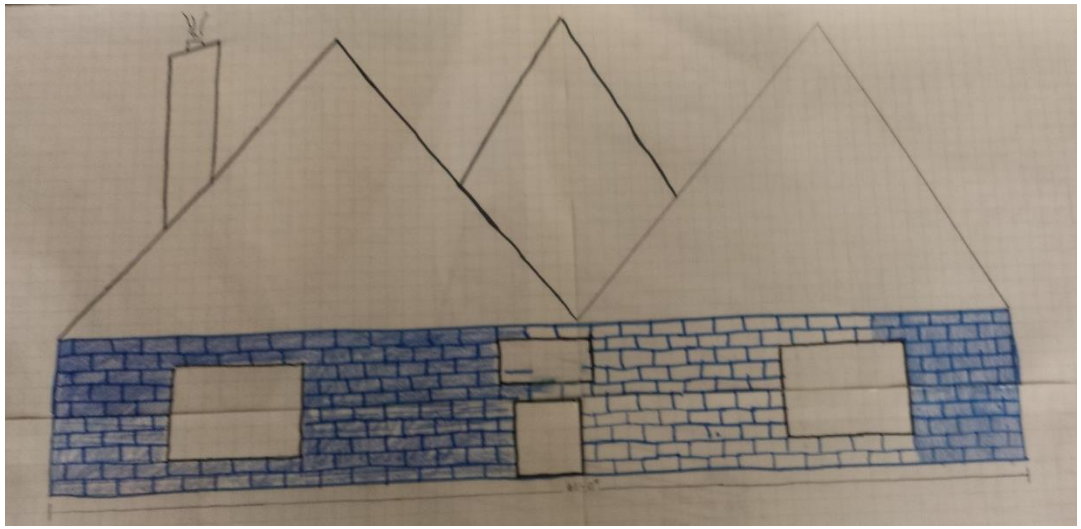
Estimate #
500

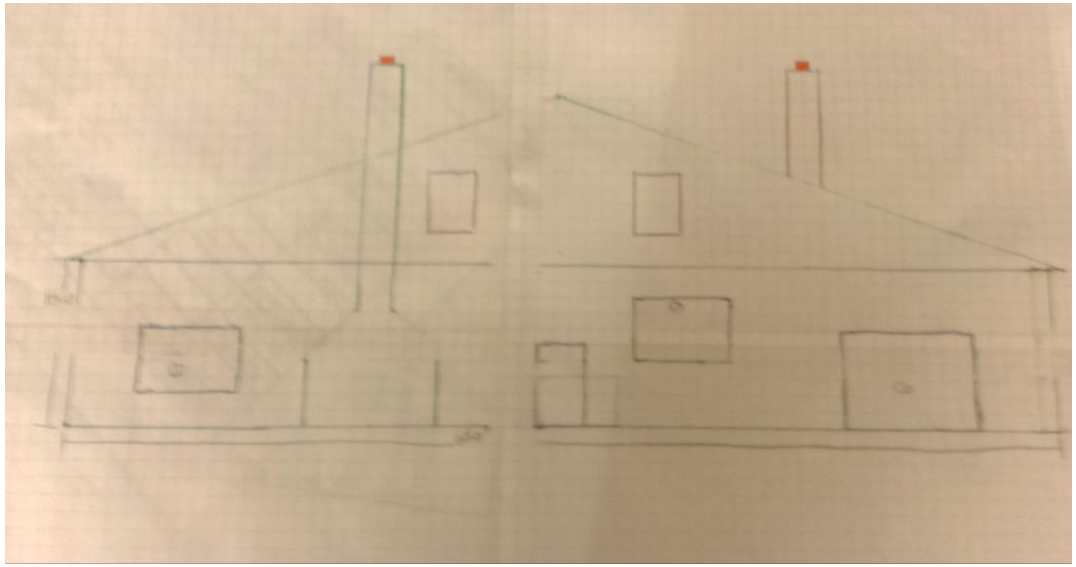
Company Name JB AS Masonry
Date 2/23/15

Customer Name

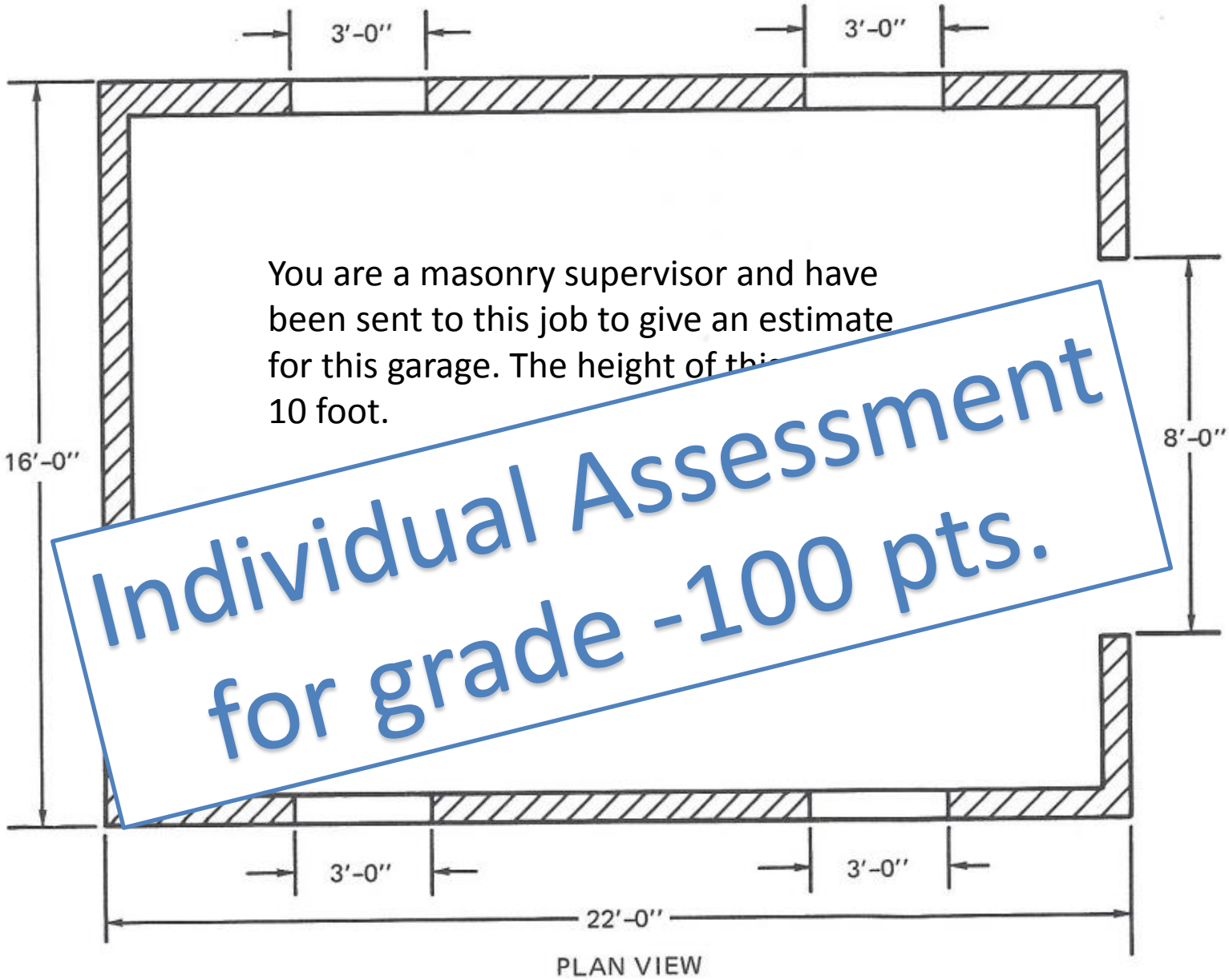
Description	Quantity	Cost per item	Total Cost
Blocks-8"x8"x16"	741	2.28	1,689.48
Bricks-Smooth traditional	3,458	0.76	2628.08
Bags of Mortar	18	9.50	171
Sand - 18 bags	2 Tons	$27	$54.00
Brick wall ties	1 box	$50	$50.00
Delivery charge (Local)	-	-	$125.00
Labor Estimate			$3948.00
Subtotal			$8665.56
Sales Tax (6%)			520.00
Total estimate			9185.56

Fold drawing and tape to this page





This is a work in progress. The quote was for the brick and block part of the mansion only. The students were allowed to finish the drawing. It may be an interesting collaboration to have the carpentry program decide what they need for the roof?



You are a masonry supervisor and have been sent to this job to give an estimate for this garage. The height of thi
10 foot.

Individual Assessment for grade -100 pts.