



## **COST ESTIMATE ANALYSIS, REPORT**

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**Date:** 7/31/2017

**Attn:** Aaron M. Laing, **Schwabe, Williamson & Wyatt**

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Mr. Laing,

At your request, I have analyzed Applicant's Exhibit 7, an Invoice compiled by "Wayne Construction, LLC" dated May 21, 2017 for the improvements at 16390 Cleveland Street in Redmond, Washington.

I had been previously tasked with compiling a professional opinion of cost for this work, including a revised estimated based on plans approved by the City on May 19, 2017. Below please find a comparison of my prior cost estimate for the proposed Origins Tenant improvements at the above address with the costs in Applicant's Exhibit 7 as well as a brief discussion of the methodology I utilized to compile my prior opinions of cost and comparison with Applicant's Exhibit 7.

### **Construction Cost Estimating, Methodology**

Design stage Construction Cost Estimates are generally compiled in three relatively straightforward steps-

1. **Scope.** To "scope" a project is to locate and itemize all work items within the proposed design documents. Examples of scope items are "Prime all walls", "New roofing, throughout" or "New 3070 Hollow Metal Door & Frame". Note that there is very little "argument" to be had about what is or is not a scope item- scope is factual, like math. Either something is or is not a work item within a set of Construction Documents.
2. **Quantify.** To quantify a project, we take our Scope item and consult the scaled plan set to measure and assign a quantity. Examples of quantified scope would be "Priming 400 Square Feet (SF) of walls", "10,000 SF of new roofing" and "(4) New 3070 Hollow Metal Doors & Frames". Quantity, like Scope, is seldom subjective. There either are or there are not (4) new doors called out on a particular plan set, so there is no room for discretion.
3. **Price.** Pricing is the most subjective and difficult part of Construction Cost Estimating- but by no means the most important step to achieving accuracy. Fortunately, there are many published Unit Cost Publication's (UCP's) to draw data from when compiling an estimate.

These UCP's are compiled by large teams of engineers that go around the country and study construction work items and their costs. The result is a large book filled with scope items of all types and their average "cost per unit"- *i.e.*, Installing 5/8" Drywall, on average, costs \$2.75 per Square Foot.

### **TWC Estimate V. Wayne Construction Invoice**

Because the Cost Estimate TWC was tasked with preparing for this matter would be subject to administrative and potentially judicial review, I chose to use a more "conservative" approach with my unit pricing. For example, if I believed a solid average unit cost for Installed Drywall was between \$2.50/sf and \$3.00/sf, I selected the lowest number, \$2.50/sf.

Other steps I took to stay "conservative" with my pricing were: not accounting for "material slop" (wasted materials), not carrying an Estimate Contingency (a figure we carry on all estimates) and purposefully underestimating Soft Cost percentages for General Requirements and General Contractor Overhead & Profit allowances.

Based on many years of experience and my research in preparing the estimates for this matter, I am skeptical of the validity and accuracy of the Applicant's Exhibit 7 as it does not appear to be a complete invoice for all improvements approved by the City and does not appear to reflect actual market values for the items listed in the invoice. My conclusion that Applicant's Exhibit 7 significantly under values the cost of the actual approved improvements is based on four general observations as well as the specific items below:

1. I am a very accurate Professional Construction Cost Estimator with a long track record of accurate estimating for projects of every size and type within 5% of the actual cost.
2. The proposed Scope & Quantities in this small project were well-illustrated, and again Scoping and Quantification are seldom subjective.
3. I stayed on the "conservative" side ("low end") with all the pricing within the estimates I prepared, based on the UCP prices.
4. The Applicant's May 21, 2017 invoice (Exhibit 7) totaled less than HALF of the total construction costs itemized within my Construction Cost Estimate.

The overall project total for TWC's estimate is \$491,080 compared to the total for Applicant's Exhibit 7 of \$204,493. TWC has compared in-house estimates to countless General Contractor (GC) estimates over the years. In all of my years as a professional estimator, I have never seen a spread this wide for an apples-to-apples comparison. However, as Applicant's Exhibit 7 appears to be an invoice (presumably for work completed as opposed to an estimate for all work), the discrepancy may be due in part to the fact that many items on the approved plans had not been constructed, completed or billed as of May 21, 2017. This makes some sense, as the City issued the revised permit approval only two days before, on May 19, 2017.

Additionally, the following may also account for the significant difference in the costs billed as of May 21, 2017 versus the TWC Cost Estimate for the May 19, 2017 revised scope of work approved by the City:

1. **Missing Soft Costs.** Soft Costs are costs that are required to construct a project, but are not direct building components. Examples of project Soft Costs are:
  - a. *General Contractor Overhead & Profit*- this is where General Contractors cover office overhead (office, phone, car, secretary, etc.) as well as where they make much of their profit. **This markup / line item is absent from the invoice. If all of the items in the invoice have been marked up for GC Overhead & Profit, then I would expect them to be higher as the unit costs for several items appear to be well-below market.**
  - b. *General Requirements*- these could be best seen as “Site Overhead” – Temporary power, job shack, site supervision, safety fencing, site dumpster, etc. General Requirements cover all required on-site logistics. **This markup is absent from the invoice. Again, if all of the items in the invoice have been marked up for Site Overhead, then I would expect them to be higher as the unit costs for several items appear to be well-below market.**
  - c. *State & Local Taxes*- This soft cost is self-explanatory, but **it should be noted that the May 21, 2017 invoice is carrying a total State & Local Sales Tax markup of 8.6%, and the current Combined Sales Tax for the Redmond area is 10%. While correcting this only increases the invoice by \$2,636.20 (to \$207,130.00), this error in the Sales Tax line causes me to question the values of other numbers in the invoice and its overall accuracy and validity.**
2. **Thermal & Moisture Protection.** The project calls for the installation of Stucco at the entirety of the building envelope. TWC accounted for roughly \$38,000 in total marked up costs (*i.e.*, with required Soft Costs) for this work. Applicant’s Exhibit 7 has accounted for \$4,000 for the same work, but has called it out only as “300 SF of Cumaru and installation” and not the total proposed / approved Stucco work. In fact, Exhibit 7 does not include an amount for the approved Stucco work. This missing work accounts for \$34,000 in delta between the TWC estimates and the May 21, 2017 invoice.
3. **Openings.** The approved project calls for a relatively large number of new Openings. For Doors, the project calls out: (4) New 6’ Wide Glass Storefront Doors, (1) New 3’ Wide Glass Storefront Door, (5) New Wood Doors & Frames, all with new door hardware and trim. For Windows, the project calls out: 650 Square Feet of New Storefront Windows Wall at the Exterior walls, 125 Square Feet of New Storefront Window Wall at the Interior Walls, and related flashing, sealing and trim.

For all the required / approved Openings work listed above, TWC has estimated a total marked up cost of just over \$125,000. The May 21, 2017 Wayne Construction invoice has a total cost of just under \$34,000 for this work- only about 25% of TWC's estimated cost. Because Applicant's Exhibit 7 does not include a breakdown of what Wayne Construction billed to-date for Openings, it is possible (perhaps likely) that the invoice only reflects a fraction of the total costs. I am confident that there is no way to purchase and install the doors / windows (Openings) items listed above for the cost shown in the invoice.

4. **Ceiling Finishes & Fittings.** While TWC's estimate and Wayne Construction's invoice are similar on the assumed / billed costs for Wall & Floor Finishes, I found that Applicant's Exhibit 7 is missing any allowances of cost for required Ceiling Finishes (select new GWB ceiling, as well as rehab existing exposed ceiling) and Fittings (Restroom Accessories, Drop Down Ladders, Blinds, Storage Shelves, *etc.*). Per TWC's estimate, these items account for nearly \$20,000 in additional project costs not reflected on the invoice but shown on the approved plans.
5. **HVAC.** TWC estimates nearly \$52,000 for the required HVAC rehabilitation work, which is roughly \$19/sf- fully marked up. The average cost for a new commercial HVAC system, installed, is \$31 per square foot- fully marked up. In my experience, the average cost to rehab an existing HVAC system (install minor new equipment, install new distribution, install & adjust all controls) is roughly \$20/sf.

Applicant's Exhibit 7 accounts for only \$5.25/sf for the required HVAC work. While I do not have a breakdown of what Wayne Construction's billed work for HVAC, I am confident that there is no way to purchase and install the HVAC work required / approved by the City for the cost in the invoice. For example, in my experience, the heat pump alone for a building of the size being improved would cost between \$12,000 and \$16,000.

6. **Electrical.** TWC estimates nearly \$95,000 for the required Electrical work, which is roughly \$34/sf- fully marked up. The average cost for a new commercial Electrical system, installed, is \$42 per square foot- fully marked up. In my experience, the average cost to rehab an Electrical system (new or adjusted panels, new lighting throughout, new devices, select new wiring, *etc.*) is roughly \$37/sf.

Applicant's Exhibit 7 accounts for only \$5.50/sf for the required Electrical work- this is HALF the amount I have estimated for *lighting alone*. I do not have a breakdown of what Wayne Construction's billed work is for Electrical, but I can safely say there is no way to purchase and install the Electrical work required / approved for that cost.

## Conclusion

Applicant's Exhibit 7 is missing many of the items that are shown on the approved plans as well as mark ups and soft costs. Even without GC Overhead & Profit markups, these missing items (numbers 2 through 6 above) total nearly \$255,000. While some of Exhibit 7's billed costs are in line with TWC's estimate, the most expensive items appear to have been omitted, under- or partially-billed or perhaps had not been completed and billed as of May 21, 2017. It is my opinion that there is no way to construct the project, as described in the May 19, 2017 Construction Documents, for the price billed in Applicant's Exhibit 7. Exhibit 7 does not account for all approved items in the permit, and I believe that there are at least another \$255,000 in costs associated with the approved project.

Please let me know if you have any questions or concerns regarding these findings.

Thank you.

Respectfully,



Matthew M. Woolsey, Owner/Principal  
The Woolsey Company, LLC