

§104-10 VALUE ENGINEERING CHANGE PROPOSAL

I. GENERAL.

The purpose of a Value Engineering Change Proposal (VECP) is to encourage the use of the Contractors' and their Subcontractors' ingenuity and experience in arriving at alternative, lower cost, and time saving construction methods for contract requirements with the intention of sharing the resulting direct cost savings between the Department and the Contractor. The Department encourages Contractors to submit a VECP on behalf of themselves and/or their Subcontractors. The Department will share with the Contractor reasonable design costs related to the VECP. The direct cost savings is the difference between the construction savings and the reasonable design costs.

On occasion, the contract plans and specifications may not adequately depict the work necessary to complete the work. The VECP should be compared to a realistic estimate of the work required. See Exhibit 104-02A for a flow chart of the Value Engineering Change Proposal Process.

II. CONCEPTUAL PROPOSAL SUBMITTAL AND REVIEW PROCEDURE

The conceptual proposal is intended to expedite the initial review of a VECP idea, as well as minimize the Contractor's initial capital investment and risk in developing the VECP. This procedure allows the Contractor to submit a conceptual plan, and only requires the Department to assess the general merits and technical feasibility of the proposal. The contractual requirements, detailed reviews, and cost analysis at this juncture should receive a lower level of scrutiny, compared to the level of review if the conceptual VECP is approved and a formal proposal is necessary.

The Contractor will submit an original and three copies of the conceptual VECP to the EIC. The EIC will transmit three copies to the Regional Construction Group.

The Regional Construction Group will:

1. Review the technical merits and feasibility.
2. Identify need for coordination with Regional Groups (Design, Environmental, Structures, Traffic, ROW, Utilities, et. al.). Generally, the Project Designer should always be contacted.
3. Assess value and benefits vs. impacts and feasibility.
4. Assign a coordinator to manage the process of obtaining timely and appropriate reviews from affected Regional offices and, through the Office of Construction Liaison, from Main Office groups. At the Region's discretion, the coordinator can be the Construction Area Supervisor, Office Engineer for change orders, Project Manager, or other assigned person.
5. Provide a copy of the conceptual proposal to the Office of Construction and discuss it with their Liaison Engineer.

The Office of Construction Liaison will contact other Main Office groups as appropriate, to obtain their input only as to the technical merits and feasibility of the conceptual proposal. It is imperative that the Department or Consultant Designer-of-Record has an opportunity to review any proposal, through the Regional Coordinator and the Liaison. Straightforward proposals will be handled as a written authorization for additional work for change orders.

The conceptual proposal should explain the proposed, equivalent, alternative method of construction. This should include a description of how the Contractor intends to implement it, the impact on the project schedule, the estimated design costs, the estimated construction savings, and other benefits and impacts. If the VECP impacts the Work Zone Traffic Control (WZTC), general information on the revised WZTC plan will be necessary. The initial estimates should have sufficient information for the Department to determine the cost-effectiveness of the VECP. If the proposal requires the ordering of materials, the Contractor should obtain documentation from material supplier(s) to justify the cost and availability of the materials.

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At the time of the evaluation of the conceptual proposal, the Department will determine the ability to process the VECP in a timely and effective manner. The Office of Construction will be responsible for assisting the Region, with input from other Main Office groups in determining the capabilities of the Department to properly evaluate proposals. That assessment should include the staffing resources including, Consultant designers, schedule, Department priorities, and the need for the Department or the Contractor to hire consultant resources if applicable.

After review of the conceptual proposal, and approval from the Office of Construction, the EIC will notify the Contractor in writing of the Department's decision to either (a.) grant conceptual approval and request the Contractor to develop a formal proposal, (b.) request more information, or (c.) reject the VECP. Conceptual approval may commit the Department to pay a share of further costs. A Request for more information means the additional effort is at the Contractors risk.

III. FORMAL PROPOSAL SUBMITTAL AND REVIEW PROCEDURE.

A formal proposal may be submitted jointly with the conceptual proposal. This will most likely expedite the review process. However, a combined conceptual and formal submittal is at the Contractor's risk, as payments towards any reimbursable expenses are contingent on the Department's approval of the conceptual proposal and determination of whether the expenses are reasonable. VECP that are relatively simple and clearly provide a benefit to the project are the best candidates for a combined submittal. It is feasible that a combined submittal receive conceptual approval but not formal approval if the Department approves the basic concept, but additional information or alterations need to be made to the formal proposal before it can be formally approved.

The Contractor will submit an original and three copies of a formal proposal to the EIC with a cost analysis, complete plans, specifications, field change sheets, shop drawings, the approved current project schedule and the proposed project schedule, etc. A Professional Engineer's stamp and signature is required on any significant engineering changes. The EIC will provide guidance to the Contractor concerning the Department's requirements for submitting field change sheets and shop drawings. The formal proposal will be reviewed and evaluated in accordance with the Department standards, specifications, and guidelines. The Contractor can assume, after receiving approval of the conceptual proposal that the Department intends in good faith to proceed with the VECP. The Department may reject the VECP any time during its review, without any obligation to the Contractor other than costs which have received specific approval after approval of the conceptual VECP (example: design costs or non-restockable long lead time materials). The Contractor may decide to cancel pursuit of a proposed VECP at any time by so notifying the Department in accordance with the Standard Specifications. 50% of the reasonable design costs are still reimbursed even if formal approval is not achieved.

The VECP should clearly identify any new pay items and follow the Agreed Price procedure in accordance with §109-05. Agreed prices must be reached before the formal VECP is approved. Force accounts for VECP work are not allowed.

The Regional Construction Group VECP Coordinator and the Office of Construction Liaison will work closely to expedite the review and evaluation of the formal proposal. The Regional Construction Group VECP Coordinator will coordinate with Regional Groups (Design, Environmental, Structures, Traffic, ROW, Utilities, et al) as appropriate. Generally, the Project Designer should always be contacted. The Office of Construction Liaison will coordinate the technical review and evaluation of all Main Office groups. The Office of Construction with input from the Regional Construction Group and other groups, will have the final determination on the acceptability of any VECP. Once a determination has been made, the Region will provide written notification to the Contractor that either (a.) The VECP was rejected, (b.) The VECP was approved and the Contractor may commence the work or (c.) Additional information is requested.

As the VECP can alter the progress schedule, the time impact should be considered. Depending on how time-related contract provisions are stated, there could be significant effects. The time-related contract provisions could reference specific dates or just an amount of time not tied to specific dates. Always check any time-related contract provisions to determine the effect the VECP will have on them and if they should to be altered.

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Much of the information that is submitted for the formal VECP is the same information that is required for the VECP change order review. The CO review process should be relatively quick and simple, because the majority of information will have already been reviewed and the major concerns addressed during the conceptual and formal VECP reviews.

IV. DESIGN COST

It is not expected that every VECP will have a design cost associated with it. Reimbursable design may be performed by a Contractor-hired consultant, directly by the Contractor, or a combination of the two. The VECP information in the formal proposal and Change order should contain documentation which verifies the design expenditures.

The submission of VECP design cost is a professional service fee submission, not a Consultant Agreement. The task is to determine the validity of the design cost, not to manage the design consultant or Contractor. However, the documentation requested should be adequate to verify the design cost expenditures and their reasonableness. Even though the design cost is not part of a Consultant Agreement and the associated procedures do not apply, the Department's consultant management manuals and guidelines are valuable references when trying to understand design consultant submissions and determine whether design expenditures are reasonable.

The amount and complexity of design changes associated with the VECP will be considered when reviewing the proposed design cost. Reimbursable design costs are specific to engineering changes (design, plan sheet development, quantity computations, etc.). The Department is the sole judge in determining the reasonableness of the proposed design cost. The design costs should not exceed the construction savings, because this results in no overall direct cost savings to the State. However, if the VECP provides an acceptable benefit other than a direct cost savings, e.g. time savings, or safety improvements, approval of the VECP may be considered.

For all VECP, it is important to confirm the various design expenditures submitted are within acceptable ranges. Check for unrealistic staff hours, wage rates, and overhead charges. Check that the staffing hours are not unbalanced (example: the highly paid project manager claims 60 hours, while the lower paid design engineer and technician claim 2 hours each). When a higher title person performs work below that which expected for the title, the salary rate should be adjusted downward to the appropriate level.

As a guideline, the bulk of the design/engineering work should be charged at wage rates comparable to what an hourly pay rate would be for a Civil Service PS&T salary grade 15 to 24. Work performed as a project manager, principle engineer level, or other high level position (ASCE or NSPE Engineer V level or higher) may exceed these rates, but the number of hours worked should not be excessive. For engineer technician work, wage rates should be comparable to what an hourly pay rate would be for a Civil Service PS&T salary grade 18 or less. Overhead rates normally range from 100% to 140% of the direct salary costs, although higher rates are not uncommon. Design performed directly by the Contractor is not eligible for overhead. If the wage rates and/or the overhead rate submitted are questionable, contact the Contract Audit Bureau for assistance. The Contract Audit Bureau maintains data on design consultants whom have worked for the Department. The data contains specific, Department-audited, billing rates (wage rates and overhead rate) for each individual consultant.

There are maximum reimbursement rates for certain direct non-salary expenditures (lodging, mileage, and meal expenditures). In general, the rates are the same as the allowances for Department employees.

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IntraDOT References:

- (1) Design Consultant Manual @ Consultant Management Bureau Homepage
[for general guidelines, descriptions, and definitions]
- (2) Salary Schedule - PS&T @ Payroll Unit Homepage
[for salary rates to compare wage rates against]
- (3) Travel Per Diem Rates @ Travel Unit Homepage
[for allowance rates to determine non-salary cost maximum reimbursement rates]

Internet References:

- (1) NYSDOT Consultant Information @ www.dot.ny.gov/cmb/cmb.html
[general information available to consultants]
- (2) Position Descriptions @ nspe.org
[for descriptions of appropriate duties for various engineer grades/levels]

V. VECP CHANGE ORDERS.

The Contractor will be reimbursed for 50% of the VECP construction savings and 50% of the VECP reasonable design costs. If the design cost submitted is judged to be excessive and unreasonable, only 50% of the design cost the Department deems reasonable will be reimbursed. Costs incurred to develop the VECP submission (savings analysis, project scheduling, conceptual revisions, etc.) will not be considered part of the VECP design cost, and will not be reimbursed.

Establish 950 separate pay items and identify them as either 'VECP Design' or 'VECP Savings' as appropriate, with a following short description of the VECP (Examples: 'Item 950.23 VECP Design - Off-site Detour' and 'Item 950.22 VECP Savings - Off-site Detour').

The Value Engineering Change Proposal, with contract pay item changes, the VECP Savings, and the VECP Design, should be submitted in a single change order (CO), and should not be combined with other changes. If multiple Value Engineering Change Proposal efforts are being progressed on a contract, each VECP should be submitted as its own CO. Different pay items for VECP Savings and VECP Design should be used for separate VECPs. Item descriptions should clearly differentiate between the various VECP (Example: 'Item 950.2201 VECP Savings - Off-site Detour' and 'Item 950.2202 VECP Savings - Alternate Bridge Design').

Adjustments may be made to the original VECP CO in a subsequent CO. Any CO that includes adjustments to VECP pay items should include an updated summary of the VECP construction savings, reasonable design costs, and direct cost savings. Show this information as a total as well as broken down into Department and Contractor savings/costs. Also show the original amounts approved under the formal proposal. Identify in the summary all previous COs used to process the VECP.

If adjustments to a VECP Savings or VECP Design pay item on a previous CO must be made, use the previous pay item with a four decimal place extension, starting with 950.XX01, and identify it as an 'Adjustment' (Example: 'Item 950.2301 VECP Design Adjustment - Off-site Detour').

If the VECP alters the unit price for pay items (i.e. agreed prices), the cost difference between paying for the items at the VECP unit prices and paying for the items at the original unit prices should be calculated and accounted for when determining the final VECP construction savings. Work already completed and paid for at the original unit prices prior to the authorization of the VECP CO should not be included in this calculation.

Include new contract pay items as well as existing contract pay items to be deleted in the same CO to clearly show the amount of the savings realized. If there is a reason to not delete quantity of an item because it is also used elsewhere, include that in the CO explanations.

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VI. PAYMENTS

If the VECP work actually costs more or less than authorized in the CO, the VECP construction savings should be adjusted accordingly. If the actual Value Engineering work ends up costing the same or more than it would have if the VECP was not implemented, no VECP construction savings should be paid to the Contractor, but the Contractor should not be assessed any fiscal penalties specific to VECP. Other fiscal penalties not specific to the VECP, such as time-related contract provisions (incentives/disincentives, A+B, project delay, etc.) may still be assessed as appropriate. Any adjustments to the VECP construction savings reimbursement do not affect the VECP design cost reimbursement.

VII. FORMS

Electronic versions of the VECP submission forms are available on the Office of Construction website. The use of the forms is not mandatory. Although use of the available forms is encouraged, the Contractor can submit the required information in a different format; so long as the information is provided in a clear and concise manner.

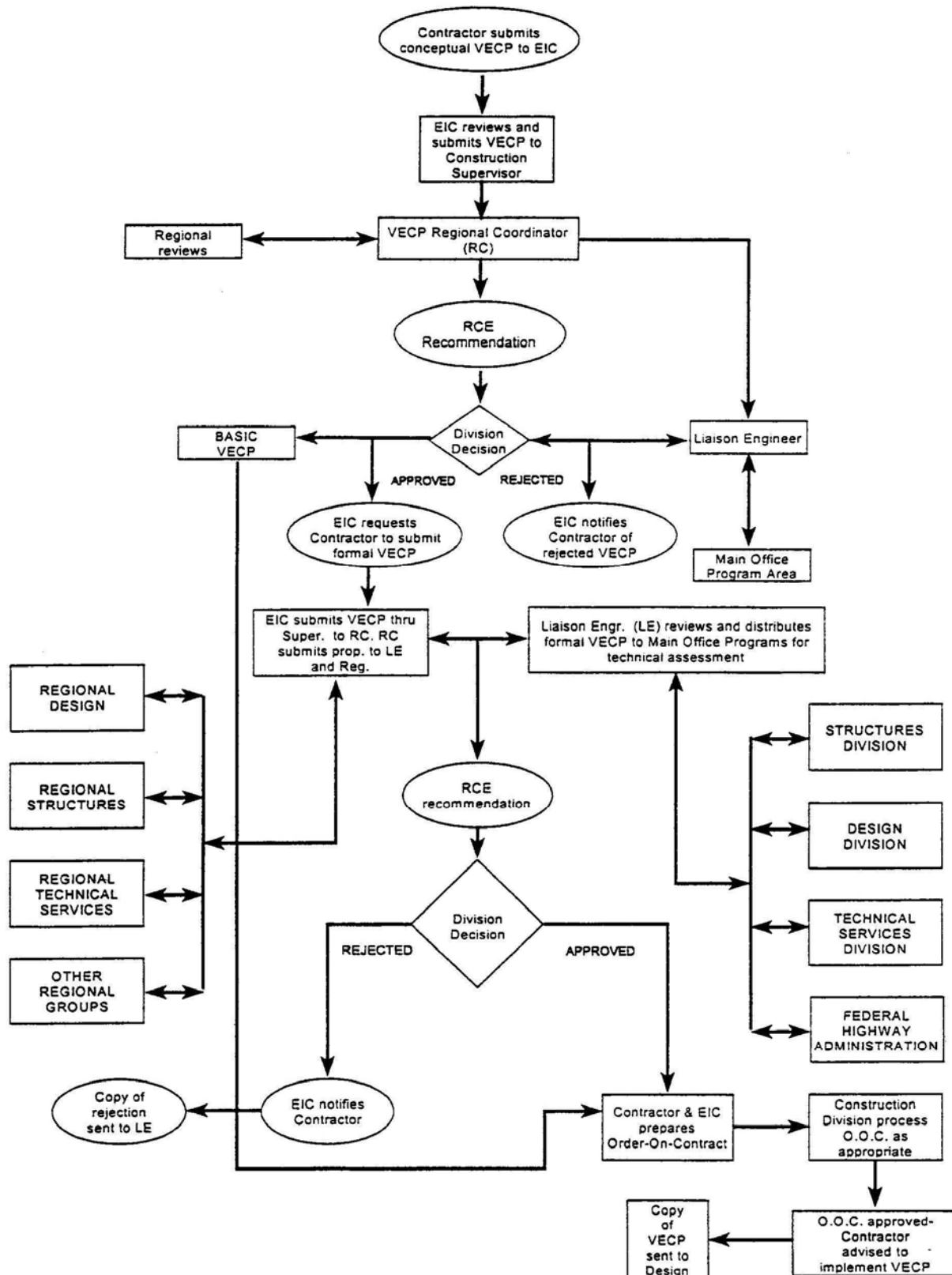
EXHIBITS

- A VECP Process Flowchart
- B Sample Value Engineering Change Proposal Summary
- C Sample VECP Design Cost Summary
- D Sample VECP Savings Computation

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NEW YORK STATE DEPARTMENT OF TRANSPORTATION VALUE ENGINEERING PROPOSAL PROCESS



VALUE ENGINEERING CHANGE PROPOSAL SUMMARY

VECP SUBMISSION DATE : 09/12/14

VECP SUBMISSION (Check One) : ☐ CONCEPTUAL ☒ X FORMAL ☐ JOINT CONCEPTUAL & FORMAL

CONTRACT INFORMATION

| | |
|--|--|
| CONTRACT D#: D262468 | LETTING DATE: 07/13/14 |
| PIN: 6543.21 | ORIGINAL CONTRACT BID: \$16,765,852.43 |
| DESCRIPTION: Replacement of Rte 3 Bridges over CSX RR & Yellow Brick Rd | REGION: 6 |
| CONTRACTOR: Highways R Us Corp | COUNTY: Niagara |
| | FEDERAL AID #: 12-3456789 |

VECP INFORMATION

SHORT DESCRIPTION OF VECP : **Reduction of the MSES Wall Limits And Constructing 2H:1V Side Slopes**

(A.) TYPE OF VECP? (Check One): ☒ X COST SAVINGS ☐ TIME SAVINGS ONLY

(B.) IS THERE A DATE BY WHICH THE VECP WORK MUST BE AUTHORIZED?: ☒ X YES ☐ NO DATE?: 12/25/14

(C.) ANY NEW OR EXISTING PAY ITEMS REQUIRING AGREED PRICES?: ☒ X YES ☐ NO HOW MANY?: 1

(D.) ANY PAY ITEMS WITH LONG LEAD TIMES THAT REQUIRE APPROVAL?: ☒ X YES ☐ NO HOW MANY?: 1

(Note : Describe items A. through D. in further detail in >COMMENTS= as appropriate.)

| | | |
|--|-----------------|---|
| (E.) CONTRACT COST W/O VECP: | \$16,765,852.43 | (Note: this is the latest cost as of the VECP submission date) |
| (F.) CONTRACT COST W/ VECP *: | \$16,762,101.31 | (* Note: Excludes any VECP savings or design cost reimbursements) |
| (G.) VECP CONSTRUCTION SAVINGS: | \$3,751.12 | (Note: Equals item E. minus item F.) |
| (H.) VECP DESIGN COST: | \$0.00 | |
| (I.) DIRECT COST SAVINGS: | \$3,751.12 | (Note: Equals item G. minus item H.) |
| (J.) NET SAVINGS TO STATE: | \$1,875.56 | (Note: Equals 0.5 times item I.) |
| (K.) TOTAL ADJUSTED CONTRACT COST: | \$16,763,976.87 | (Note: Equals item E. minus item J.) |
| (L.) VECP SAVINGS REIMBURSEMENT TO CONTRACTOR: | \$1,875.56 | (Note: Equals 0.5 times item G.) |
| (M.) VECP DESIGN REIMBURSEMENT TO CONTRACTOR: | \$0.00 | (Note: Equals 0.5 times item H.) |

COMMENTS

1. Cost savings to the State will come from reduction in total area of MSES Wall by 44% (10,112 SF). See revised shop drawings reflecting the VECP change are already uploaded to Contract Manager for review and approval.
2. The date for VECP authorization is by the end of December because of time for Wall shop drawing approval and the fabrication lead time, otherwise the overall project schedule may be impacted.
3. Existing Item 203.03 would be one of the Items needing an agreed price for the additional amount of 25,250 CY of Embankment over the existing original quantity. The price noted on the attached VECP Itemized Construction Savings Sheet, would be proposed at \$5.00 per CY. This item would encompass the embankment needed in lieu of backfill for the wall not being installed, for the northbound 2:1 slope and for the southbound 2:1 slope. Will use existing unit prices for the increased quantity of Item 610.0203 - Establishing Turf and Item 613.03 - Placing Topsoil Type B, to cover the new embankment area.
4. Item 554.0101 - Mechanically Stabilized Earth System, No Color, Plain Concrete would be the existing item which would require a long lead time.
5. The unit cost for Item 554.0101 - Mechanically Stabilized Earth System would need to be increased by \$4.50/SF to become \$46.00/SF. This unit cost increase is explained in the attached letter from the manufacturer.
6. No design cost would be applicable to this VECP.

VECP - DESIGN COST**CONTRACT D# :** D262001**CONTRACTOR :** Good Guys Construction Corp**DATE :** 2/14/2014**VECP DESCRIPTION :** On-site Detour Crossovers

| | DESCRIPTION | RATE | HOURS | TOTALS |
|----|--|---------------|------------------------------------|-------------------|
| 1 | <i>Athos, Porthos & Aramis Consulting LLC</i> | | | |
| 2 | DIRECT SALARY COSTS : | | | |
| 3 | Detour Design | \$75.00 / HR | 15 | \$1,125.00 |
| 4 | CADD/Drafting | \$35.00 / HR | 10 | \$350.00 |
| 5 | | / HR | | \$0.00 |
| 6 | | | TOTAL LABOR | \$1,475.00 |
| 7 | OVERHEAD/PROFIT @ % | 10 | | \$147.50 |
| 8 | | | TOTAL DIRECT SALARY COSTS | \$1,622.50 |
| 9 | | | | |
| 10 | DIRECT NON-SALARY COSTS : | | | |
| 11 | Printing/Photocopying | | | \$250.00 |
| 12 | | | | |
| 13 | | | | |
| 14 | | | TOTAL NON-DIRECT SALARY COSTS | \$250.00 |
| 15 | | | | |
| 16 | | | CONSULTANT #1 TOTAL | \$1,872.50 |
| 17 | | | | |
| 18 | | | | |
| 19 | | | | |
| 20 | | | | |
| 21 | <i>L.R. Tonto Hydrological Services</i> | | | |
| 22 | DIRECT SALARY COSTS : | | | |
| 23 | Stormwater Design | \$100.00 / HR | 7 | \$700.00 |
| 24 | | | TOTAL DIRECT SALARY COSTS | |
| 25 | DIRECT NON-SALARY COSTS : | | | |
| 26 | | | TOTAL NON-DIRECT SALARY COSTS | \$0.00 |
| 27 | | | | |
| 28 | | | CONSULTANT #2 TOTAL | \$700.00 |
| 29 | | | | |
| 30 | | | | |
| 31 | | | COMBINED DESIGN COSTS | \$2,572.50 |
| 32 | | | 5% PROFESSIONAL SERVICE FEE | \$128.13 |
| 33 | | | | |
| 34 | | | LUMP SUM VECP DESIGN COST | \$2,701.13 |
| 35 | | | | |
| 36 | | | | |
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| 45 | | | | |

VECP - ITEMIZED CONSTRUCTION SAVINGS

VECP DESCRIPTION: TIE BACK WALL

SHEET 1 of 1

CONTRACT D#: D261234

DATE: 12/13/14

| N | I | E | ITEM SPEC # | ITEM DESCRIPTION | COMMENTS | UNIT PRICE | UNIT OF MEASURE | PRIOR APPROVED QUANTITY | CHANGE IN QUANTITY | CHANGE IN FUNDS (\$) | |
|---------------------------|---|---|-------------|-------------------------------|----------|------------------|-----------------|-------------------------|--------------------|----------------------|--------------|
| | | | | | | | | | | INCREASE | DECREASE |
| 1 | | X | 552.13 | TEMPORARY STEEL SHEETING | | \$115.000 / SM | | 15,696.00 | -660.00 | | \$75,900.00 |
| 2 | | X | 211.10 | GROUTED TIE BACKS (TEMPORARY) | | \$6,000.000 / EA | | 102.00 | -65.00 | | \$390,000.00 |
| 3 | | X | 552.13 | TEMPORARY STEEL SHEETING | | \$115.000 / SM | | 15,696.00 | 248.00 | \$28,520.00 | |
| 4 | | X | 211.10 | GROUTED TIE BACKS (TEMPORARY) | | \$6,000.000 / EA | | 102.00 | 34.00 | \$204,000.00 | |
| 5 | | X | 203.02 | UNCLASSIFIED EXCAVATION | | \$16.000 / CM | | 380,543.00 | 2,800.00 | \$44,800.00 | |
| 6 | | X | 203.21 | SELECT STRUCTURAL FILL | | \$40.000 / CM | | 20,821.00 | 310.00 | \$12,400.00 | |
| 7 | | X | 203.03 | EMBANKMENT IN PLACE | | \$6.000 / CM | | 383,395.00 | 2,700.00 | \$16,200.00 | |
| 8 | | | | | | / | | | | | |
| 9 | | | | | | / | | | | | |
| 10 | | | | | | / | | | | | |
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| 18 | | | | | | / | | | | | |
| 19 | | | | | | / | | | | | |
| 20 | | | | | | / | | | | | |
| SUBTOTALS | | | | | | | | | | \$305,920.00 | \$465,900.00 |
| VECP CONSTRUCTION SAVINGS | | | | | | | | | | | \$159,980.00 |

NOTES:

- Do not include the VECP design cost or VECP construction savings pay items.
- Place a "X" in either the "N" column for new pay items or in the "E" column for existing pay items.
- Under "Comments", list as applicable: "proposed price", "existing price", or any other descriptive comment that clarifies the entry.
- For pay items with proposed agreed prices, use an "A-" prefix for both the "Item Spec #" and the "Item Description".
- For proposed agreed prices of existing pay items, zero out the existing pay item and put it in under a new pay item (use the existing pay item with a "A-" prefix, ex. "A-619.17") at the new unit price.