Cost Estimating Requirements

Handbook

National Park Service

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CHAPTER 1. Introduction

1.1 Background

On March 2, 2009 the U.S. Government Accountability Office (GAO) issued a manual titled *Cost Estimating and Assessment Guide: Best Practices for Developing and Managing Capital Program Costs.* The GAO is charged with providing information to Congress to assist them with oversight of federal operations, programs, agencies, and to assess their stewardship of public funds. The GAO produced the guide to:

A. "…help federal agencies produce well-documented, comprehensive accurate and credible estimates", as attributed to the Comptroller General in the press release that accompanied the report.

B. "Establish a consistent methodology that is based on best practices and that can be used across the federal government for the developing, management, and evaluating capital program cost estimates", as stated in the preface to the report. (GAO Report, March 2, 2009)

C. Reduce the risk of cost overruns, missed deadlines, and performance shortfalls.

D. Improve the accountability and tracking of program changes; evaluate how well programs, risk management and cost control practices are performing; and improve the ability to respond to and mitigate cost impacts as changes materialize.

1.2 Purpose

Many of the GAO guidelines, recommendations, practices and examples are focused on the procurement practices of the Department of Defense (DoD), NASA, FAA and other agencies engaged in technology or systems oriented procurement. Many of the examples and suggestions presented in the GAO guide are specific to those types of procurement; however the underlying policies and practices are applicable to all types of procurement activities across all branches and agencies of the federal government. This handbook is intended to tailor and apply similar policies and practices to support the unique needs of the capital improvement and construction programs within the National Park Service. Technical and administrative requirements are presented for the development, preparation, documentation and submittal of construction cost estimates during the project life cycle of a NPS construction project's pre-planning/pre-design, schematic design, design development and construction document preparation phases.

A. Adherence to these requirements will enhance the NPS ability to process and accept construction cost estimate submittals by:

1. Following a consistent methodology and format for all construction cost estimates submitted.
2. Providing documentation of background information, all sources of cost information, estimating assumptions,
3. Tracking major changes in project scope, programming, and design elements, from one estimate to the next that have significant impacts on cost.
4. Streamlining the review process, allowing reviewers to focus on the technical merits of submitted estimates rather than wasting resources and time attempting to decipher the materials presented.

B. Improving and standardizing cost estimating practices can yield significant benefits to the overall success of the design and construction process.

1. Project costs can be better managed to stay within previously authorized and appropriate limits.
2. Project costs and scope changes will be easier to manage and track through the planning, design and construction process.
3. Increase reliability of early cost estimates can reduce the amount of redesign necessary to bring projects within budget.
4. Improved estimate documentation may lead to improved review efficiencies and shorter review cycle times.
5. Facilitate the development and maintenance of a NPS cost data base, which can be used to help plan and estimate future projects.

1.3 Application

The instructions and criteria contained herein are to be incorporated by reference with design A/E and other professional services contracts that involve cost management and/or estimating tasks. Criteria that describe practices and documentation requirements, apply to all sources of professional services, whether provided through contract or NPS estimators.

1.4 Cost Management Policies

A. Cost Effectiveness. In accordance with the national Energy Conservation Policy Act, and Executive Order 12759, Federal construction must be designed with the objective to achieve the lowest life cycle cost, while assuring delivery of programmed performance requirements.

B. Design Within Budget Unless otherwise specified in the design contract documents, the A-E shall design the project so that bid construction costs will not exceed funding limitations established as the "Basis of Fee Negotiation." (Federal Acquisition Regulation (FAR 36.609-1)) This regulation applies, conditionally requiring the A-E to redesign the project at their own expense to assure that a responsive construction bid amount will be within funding limitations.

C. Cost Data Bases NPS is working to develop and maintain a historical cost database of its completed new construction and repair/rehabilitation projects. The database is intended to support functional area/asset type unit costs within the National Park System. To facilitate the implementation of the database program, both cost estimating and as-built construction cost data should be prepared and collected to support a UNIFORMAT II Level 3 building system cost database. Although not previously collected to this standard, existing NPS as-built cost information may also be evaluated, processed and analyzed to this same level or detail for inclusion in the historical database.

D. Basis of Estimate Statement All cost estimates must have a clearly defined Basis of Estimate Statement that describes in detail, exactly what construction scope of work the estimate represents, as well as the information and assumptions that were relied on to develop the estimate. The Basis of Estimate should list what items are specifically included in the estimate and what if any items are specifically excluded. . It should also highlight major changes relative to previous estimates for the same project. This information will readily allow for the future identification of any significant changes in project programming or unintentional "scope creep".

CHAPTER 2. Design Construction Cost Estimate Submissions

2.1 Submission Levels

Historically, the cost estimating industry has recognized 3 levels of estimating. The National Park Service also recognizes these three levels of estimating (Class C, Class B and Class A). Definitions, Samples and Templates for each of these estimate levels can be found in the Appendix portion of this document.

The following is a list of required cost related submissions during the design process and the level of estimate required:

A. Pre-Design (PD) Submittal

1. Basis of Estimate Statement
2. Class C Construction Cost Estimate
3. Scope & Cost Validation Report

B. Schematic Design (SD) Submittal

1. Class C Construction Cost Estimates for VA Alternatives
    a. Used to compare three (3) more alternatives through the Choosing By Advantage (CBA) analysis process and VA workshops.
    b. Typically not submitted for QA review prior to workshops but are included in CBA/VA report.
    c. Should contain a greater level of detail and fewer allowances than the estimate submitted at the PD phase.
    d. Updated Basis of Estimate Statement
2. Class B Construction Cost Estimate for the Preferred Alternative
    a. Provide a greater level of detail for the preferred alternative.
    b. Formatted to the requirements for a Class B Construction Cost Estimate
    c. Provide a revised and updated Basis of Estimate Statement that reflects outcome of CBA and VA process.

C. Design Development (DD) Submittal

1. Updated Basis of Estimate Statement
    a. Should clarify questions associated with the SD cost estimate submittal.
    b. Should provide justification for a reduced level of mark-ups than previous estimates.

2. Updated Class B Construction Cost Estimate

    a. Should contain a greater level of detail and fewer allowances than the estimate submitted at the SD phase.

    b. Should, at a minimum, include a breakdown of cost line items that reflect the level of detail of the DD plans and specifications being concurrently submitted.

    c. Should include an initial draft breakdown of the General Condition line items as a verification check on General Conditions mark-up factors used in the estimate summary.

3. Market research that reflects current local costs for materials, labor and equipment in the general project area.

D. 100% Draft Construction Documents (Draft CD) Submittal

1. Contract Price Schedule

2. Basis of Estimate Statement

    a. Should clarify questions associated with the DD cost estimate submittal.

    b. Should provide justification for a reduced level of mark-ups than previous estimates.

    c. Location and remoteness factors may need adjustment to reflect the cost effects that project/location specific material and vendor quotes have on the need for these mark-ups.

    d. Should include and identify sources of contractor, vendor and manufacturer cost information for major systems.

3. Class A Construction Cost Estimate

    a. Should contain a greater level of detail than the estimate submitted at the DD phase and few if any allowances.

    b. Should include a breakdown of cost line items that completely identify all cost elements associated with the improvements shown in the CD plans and specifications.

    c. Should include a complete cost breakdown of all General Condition cost items as a separate line item in the direct cost. The use of General Condition mark-up factors should be phased out, or eliminated at this level.

    d. Many of the direct costs may already reflect location and project specific costs based on local market research, vendor quotes, contractor inquiries, etc. Some adjustment of location and remoteness factors may be required.

    e. Design contingency should be approaching zero (0), since the CDs are approaching their final form.

E. 100% Complete CD Submittal

1. Contract Price Schedule
    a. Revise as necessary to address Draft CD review comments.
2. Revised Basis of Estimate Statement
    a. Clarification of all questions and comments associated with the Draft CD estimate submittal.
    b. Describe cost related changes made since the Draft CD estimate submittal.
3. Revised Class A Construction Cost Estimate
    a. Revise costs to reflect design changes that have occurred since the Draft CD submittal
    b. Adjust mark-up factors if needed
    c. Design contingency should be zero (0) for most projects with 100% Complete CDs and well defined limits of work. Some projects that require tie-in to existing structures, historic preservation, or selective demolition to define work limits may still need to carry a small design contingency.

2.2 Phased Projects

For project work divided into more than one construction contract (phase), the minimum level of cost estimating submissions required is based upon the summed costs of all phases. Each phase must be supported by its own separate cost estimate. The individual phase cost estimates should also be accompanied by an overall project estimate summary containing a tabulation of each phase and a total project cost.

2.3 Multi-Building/ Multi-Asset/Major Project Element Estimates

Each Structure, Asset, or Major Project Element must be broken out separately in the estimate and in the estimate summary. Multiple structures, assets, or major project elements should never be included within the same contract price item. When estimating at the Class B or Class A estimate level each Building/Asset/Project Element must be supported by its own separate cost estimate. The individual Building/Asset/Major Project Element should also be accompanied by an overall project estimate summary containing a tabulation of each Building/Asset/Major Project Element. Reference: Section 3.3 Estimating Formats and Work Breakdown Structure (WBS).

2.4 Optional Contract Line Items

Where project design requires construction contract line items as options, each option shall be estimated as a separate contract line item. Reference: Section 3.3 Estimating Formats and Work Breakdown Structure (WBS).

Optional Contract Line Item is defined as a contract line item or series of contract line items that may be added to the contract during the award phase or after award (within a time frame specified in the contract). This may take the form of new work or alternative materials from those covered in the base contract price.

Optional Contract Line Items generally, do not come into play with project costs until the Class A estimate. It is important that the designer provide a proposed contract price schedule with the construction documents to the estimator prior to preparation of the Class A Construction Cost Estimate.

2.5 Resolution of NPS Comments

NPS review comments of A-E estimate submissions shall be resolved in writing in accordance with other design submission review/comment response requirements defined within the task order scope-of-services.

2.6 Revise and Resubmit Construction Cost Estimate if Required

In some cases, a Construction Cost Estimate will be reviewed by NPS and deemed "Not Accepted". This typically only occurs when an estimate lacks clarity in defining the work being estimated, or the estimate is either over, or understated to the point that the total cost estimated does not appear to reasonably represent the anticipated cost of the project, as defined by the planning, design or construction documents.

If an estimate is deemed "Not Accepted" the design team must either revise and resubmit the estimate until accepted, or provide whatever supplemental information necessary to clarify and support the previously submitted estimate to the satisfaction of the NPS reviewer.

A. The required response to an estimate deemed "Not Accepted" is dependent upon the design phase with which the estimate was submitted:

   1. Pre-Design (PD) Construction Cost Estimates: Unless noted as "Revise and Resubmit", all review comments must be addressed in the estimate detail and responses submitted with the first submittal for the Schematic Design phase.

      a. Where revisions will result in major changes to the total project cost, or significant shifting of costs within the estimate, the revised Construction Cost Estimate must be resubmitted prior to submitting the Scope and Cost Validation Report.

2. Schematic Design (SD) Construction Cost Estimates: Review comments should be addressed directly with the Project Manager and Estimate Reviewer prior to DAB submittal. If warranted by that review, the estimate should be revised and resubmitted.

3. Design Development Phase (DD) Construction Cost Estimates: Unless noted as "Revise and Resubmit", review comments must be addressed in the Construction Cost Estimate and comment responses submitted with the 100% Draft Construction Documents (Draft CD).

4. 100% Draft Construction Documents (100% Draft CD): The estimate must be revised and resubmitted to address all review comments prior to proceeding to 100% Complete Construction Documents. It may be necessary to address the comments directly with the Project Manager and Estimate Reviewer before resubmitting the estimate. It may be necessary and is strongly recommended to obtain an additional independent estimate from a separate source not affiliated with the design team or original estimator.

5. 100% Complete Construction Documents: Review comments and estimate issues must be addressed and the estimate must be revised before submitting design for director's approval and proceeding to procurement.

Chapter 3 Cost Estimating Practices

3.1 Cost Management

Cost management is the process of estimating, control, and data analysis to establish a continuous cycle of cost information for the efficient implementation of projects. All types of projects can benefit from the appropriate application of cost management techniques, not just the biggest companies. Even Shakespeare noted the choices one makes in business and projects:

When we mean to build, We first survey the plot, then draw the model; And when we see the figure of the house, Then we must rate the cost of the erection; Which if we find outweighs our ability, What do we then but draw anew the model in fewer offices, or at least desist to build at all. --Shakespeare, Henry IV, Part 2

The cost estimate submittals outlined in section 2.1 of this document, allow for NPS to review and comment on project construction costs a minimum of 5 times during the design process of a project. It is imperative that the cost of NPS Construction Projects remains within budget throughout the planning, design, and construction processes. The NPS tries to incorporate real-time cost management methodologies into this process, by requiring:

A. Independent Cost Estimate Preparation: Estimates must be prepared independently of the design team for all capital improvement projects. Estimates shall be prepared under the direct supervision of a professional cost estimator whose full time or primary duty is that of construction cost estimating.[1] The estimator's work shall be influenced by the design team only to the extent that drawings and specifications are modified.

B. Scope and Cost Validation Report: This submittal is to verify the validity of the original PMIS scope and budget to achieve a viable project. The validation document must contain the following information:

1. STATUS SUMMARY – Provide a quick summary to identify and quantify Scope (percent) and Cost (dollars) and Schedule (days) changes of the project from original PMIS status in these areas.

2. PMIS PROJECT DESCRIPTION & JUSTIFICATION – Cut and Paste from PMIS, editing length of entry as necessary.

3. FINANCIAL SUMMARY – Using Tables provided on form, give an account of Total Project Cost as reported in PMIS and proposed after-field verification Project Scope and Cost. Total Project Costs include Compliance, Design, Construction and Construction Management Costs. Provide funding sources (NPS, Other Government, or Partnership monies) when possible.

[1] Certification. Although not required, certification by the Association for the Advancement of Cost Engineering (AACE) or American Society of Professional Estimators (ASPE) as a cost engineer, certified cost consultant, or value engineer will be accepted as evidence of someone whose primary duty is that of estimating.

4. SCOPE QUESTIONS & CONSTRUCTION ESTIMATE – Address in narrative seven (7) questions comparing the original PMIS scope, current conditions, proposed project needs, and changes in costs. Complete tables provided for side-by-side cost comparison of the PMIS Class C Construction Estimate and the current Scope & Cost Validation Class C Construction Estimate

5. ASSET MANAGEMENT – Complete tables and narrative for project in relation to API, FCI and OFS funding.

6. SUSTAINABILITY & LEED – Provide project information concerning projected LEED Rating and Sustainability targets.

7. VALUE-BASED DECISION-MAKING SUMMARY – Discuss in tabular and narrative form the alternative methods considered (to date) that could possibly achieve project objectives either in all or part. Include cost parameters in discussion.

8. NEW UNRESOLVED ISSUES – Identify any foreseeable remaining major issues or missing information that could impact the scope, cost or schedule for this project.

9. PROJECT CONTACTS AND REGIONAL OFFICE CERTIFICATION – Provide project contact information. Obtain signature of approval from Regional Director is required.

C. Appropriately Scheduled Cost Estimate Submittals: The class of a (C, B, or A) construction cost estimate is not defined by the timing of its submittal, but rather by the completion level of the design and construction documents, that it is submitted with. In most cases, the cost estimate can only be as detailed as the design documents from which it is derived.

1. If the design documents submitted with a schematic design level are incomplete and do not meet schematic design submittal requirements in either whole or part, the construction cost estimate level cannot be better than a Class C (instead of a Class B), in whole or part.

    a. During the early stages of planning and design, it may be appropriate to make cost item detail assumptions that are not yet shown on the plans to reflect cost items that can reasonably be expected to occur.

    b. The use of cost allowances as place holders for expected future cost details is an appropriate method to include anticipated costs in the direct cost portion of the estimate.

2. In contrast, if the design documents are completed to a higher level of detail than is required for the design stage that is being submitted, the estimate detail should match the information presented in the design documents.

3.2 Basis of Estimate Statement

Perhaps one of the most important elements in a well documented cost estimate is a clear and concise Basis of Estimate Statement. The Basis of Estimate Statement should clearly describe the scope of work being estimated, identify the source(s) of cost data used to prepare the estimate, document any assumptions made, and define the rationale behind any adjustments or mark-ups applied to the basic cost model. The Basis of Estimate Statement must also clearly identify any major changes that have been made from previous estimate submittals, which have a significant effect on the overall project cost or to the cost of major project elements.

A. Background Supporting Material (Scope of Work): This section establishes the foundation from which costs are derived by defining precisely the scope of work items that are and are not included in the cost estimate. Regardless of the purpose for preparing a cost estimate, developing a thorough and well documented scope of work will allow reviewers and future users of the cost information to fully understand the extent and purpose of the work covered by the estimate. As development, construction or repair plans evolve, changes in design or design intent can be readily identified and the cost implications of those changes easily evaluated. This is especially important, in a business environment with a highly mobile work force or rapid personnel turnover rate, where the original estimator may not be available to assist with future iterations of the cost model, or clarify questions that may arise regarding the original cost estimate.

B. Source of Cost Data: Clearly identifying the source or sources of cost information used to prepare an estimate is an essential part of the Basis of Estimate Statement. The source of cost data establishes the criteria necessary for determining the need for and application of appropriate mark-up factors. If publicly available, published cost databases are used, the database name, version, volume number, data date and format of the database should be listed. If proprietary databases are used, the same information is required, plus a description of the underlying data sources and processing methodology should be included. In some cases, actual project specific costs, vendor quotes and/or park specific cost data may also be used and should be well documented. In many cases, a combination of these and other types of data sources are frequently used to develop a cost estimate.

C. Documentation of Estimate Assumptions: Any and all assumptions made during the preparation of an estimate must be clearly documented in the Basis of Estimate Statement to provide a historical record of how costs were developed and highlight areas where additional information is required for future estimates.

D. Definition of Mark-ups: The Basis of Estimate Statement should contain a brief description of how mark-up factors were determined and the rationale behind the selection of the values used for the individual factors. In many cases, if location specific data, vendor quotes, or historical park specific data are used, the need for additional mark-ups may not be required or the typical values may need to be adjusted to reflect the actual data used to develop costs.

E. Identification of Major Changes from Previous Estimate: Any major changes that have been made to the project, or cost estimate, as the design process is refined must be clearly identified in the Basis of Estimate Statement. Major changes may include additions or deletions in the scope of work, significant changes in material selection, clarifications of previous assumptions made, substantial design revisions or any combination of these and other factors that significantly affect the overall cost of the project to the cost of individual project elements.

F. Other Comments: Provide any additional information that is relevant to assist in the documentation and review of the estimate. It could include information regarding the estimator, or estimating company that may have changed; significant market events that may have an effect on the costs; or other information not included elsewhere.

3.3 Estimating Formats and Work Breakdown Structure (WBS)

It is important that cost estimates be formatted consistently and orderly to facilitate design cost analysis, monitoring of costs from the programming phase through the completion of construction documents, and analysis/negotiation of construction proposals. A WBS is used to organize (index) projects from one main and relatively large entity into many smaller, defined, manageable and controllable units. The WBS can be viewed as an organization chart of the main project components of the project.

A. Asset Categories: The National Park Service has classified and defined 35 asset categories in their asset management program, Facilities Management Software System (FMSS), and listed in Appendix G. All levels of estimates shall be broken down to the individual asset at its top hierarchy. For projects with more than one physical asset, building, site area, etc., costs for each asset must be estimated individually.

B. Estimate Formats: Two cost estimating formats are in wide use today, UNIFORMAT II and CSI MasterFormat 2004. Depending on the project's stage of development one or both may be required. The two classification systems relate to each other as represented in Appendices H and I.

1. UNIFORMAT II Government Services Administration (GSA), in conjunction with the American Institute of Architects (AIA), established this twelve part cost classification format, corresponding to major building systems. This format is particularly suited to project planning and early design estimating, as well as, for work and pay schedules during construction. This approach is necessary as detailed design take-off assessments and measurements may not be possible in a project's early development. UNIFORMAT II is represented in Appendix H.

    a. Levels: Criteria references for required estimating detail are designated by UNIFORMAT II Levels, corresponding to the assigned cost element[2] and number.

        i. For example, the UNIFORMAT II cost element "**D**" (Services) represents Level 1.

        ii. "D**20**" (Plumbing) representing Level 2.

        iii. "D20**10**" (Plumbing Fixtures) representing Level 3.

        iv. "D201**3**" (Lavatories) representing Level 4.

    b. Where a UNIFORMAT II Level is specified, the estimator must as a minimum address all project related cost elements at that level, supporting backup cost estimate data at a greater degree of detail, when available or applicable. Whenever more detailed design information is available, it should be used to prepare the estimate and should be noted in the Basis of Estimate Statement.

    c. Detailed Backup Data: Cost estimating back-up materials and cost breakdowns for any specified UNIFORMAT II Level should be presented in a systematic format or organization hierarchy.

        ii. UNIFORMAT II, Level 1 estimate summaries should be detailed to Level 2.

        iii. UNIFORMAT II, Level 2 estimate summaries should be detailed to Level 3.

        iv. UNIFORMAT II, Level 3 estimate summaries should be detailed to Level 4, with additional cross reference to the MasterFormat 2004 division line item breakdown.

2. MasterFormat 2004. Supported by the Construction Specifications Institute (CSI), this cost element classification system organizes costs according to material and trade designations. MasterFormat 2004 is aligned with CSI's forty nine part specification system as represented in Appendix I.

[2] Elements, as defined here, are major components common to most buildings and related site work. Elements usually perform a given function, regardless of the design specification, construction method, or materials used.

3. MasterFormat 2004 is most appropriate for cost estimating applications that have construction documents (drawings and prescriptive specifications) which facilitate detailed take-off measurements and quality assessments. This format is required for the individual work detail items in Class A Construction Cost Estimates prepared using detailed Construction Documents. It is also required for those estimates prepared for use relating to construction contract modifications.

4. MasterFormat 2004 may also be used for formatting detailed backup data for Class B Estimates utilizing Design Development Drawings where the level of detail in the drawings is sufficient to prepare a more detailed estimate. Even when the design documents lack sufficient detail for this level of estimate, it may be appropriate to make some assumptions to expand the estimate detail to this level.

5. Even when MasterFormat 2004 is used to estimate detailed line item costs, the WBS should first be broken down into the individual asset and UNIFORMAT II levels, then further refined by subdividing into individual MasterFormat 2004 work elements.

C. Contract Line Items:

1. Construction of New Assets Projects: A general guide for contract line items for new construction projects is to make each asset a separate contract line item.

   a. There are several asset categories that would tend to have multiple contract line items per asset. For example: a project for construction of a new wastewater utility system would likely have separate contract line items for portions of the system (i.e., sewage collection system, wastewater treatment system, disposal or discharge system).

   b. In some situations, additional contract line items would be conducive to efficient proposal analysis/negotiation and construction payment (i.e., various sizes of pipes, types of pipe).

   c. It may also be advantageous to provide additional contract line items that break individual assets into their major UNIFORMAT II components. This will allow for the collection and comparison of price information between projects of a similar nature. It can also be used as to evaluate a bidder's understanding of the complexity of a project.

d. More contract line items are not always better; achieving a balance of the proper quantity of contract line items to define and track the work is important for acquiring the best contract line proposals and developing useful information for future projects.

2. Repair/Rehabilitation Construction of Existing Assets Projects: A general guide for contract line items for repair/rehabilitation projects repair or rehabilitation work on each system (UNIFORMAT II, Level 3) within the asset should be designated as a separate contract line item. For example: Contract Line Item 1 could be replacement of windows, Contract Line Item 2 could be replace roof shingles, etc. As an alternative to contract line items defined according to building system (UNIFORMAT II), contract line items may also be defined by area of work within an asset. For example: Contract Line Item 1: Refinish vestibule surfaces, Contract Line Item 2: Replace Electrical in West Wing, etc. In some situations, additional contract line items would be conducive to efficient price proposal analysis/negotiation and construction payment (i.e., various sizes of pipes, types of pipe. More contract line items are not always better; balance of the proper quantity of contract line items is important for acquiring the best contract price proposals.

3.4 English Unit Costs:

A/E design calculations and drawing/specification measurements will typically be represented in English units of measurement unless otherwise addressed within contract documents. As such, estimators shall be expected to convert between English and Metric units as necessary to utilize existing cost data bases/sources. Unless otherwise provided within contract documents, all costs represented within cost estimates shall be in English units.

3.5 Unit Pricing:

Unit prices shall be based upon construction costs as if the overall construction contract were awarded on the date of the estimate. Unit costs shall include mark-ups as prescribed below.

A. Class C Construction Cost Estimates: Mark-ups should be applied to the end of the estimate as shown in Appendix C.

B. Class B Construction Cost Estimates: Unit costs should include overhead and profit allowances only at the sub-contactor or installing contractor level. All other mark-ups should be applied to the end of the estimate as shown in Appendix B.

C. Class A Construction Cost Estimates: Mark-ups associated with project location should be allocated to unit costs rather than added to the project

total. Unit costs should include overhead and profit allowances only at the sub-contactor or installing contractor level. Mark-up for state and local levied taxes should be allocated to and included in unit costs. All other mark-ups should be applied to the end of the estimate as shown in Appendix A.

3.6 Source of Cost Data:

The estimator should provide a general description in the Basis of Estimate Statement, defining the sources of cost data (unit costs, system costs and quantities) used within the estimate.

A. The description should include the name, publication date, revision number or date, and any other identifying information to describe the data source.

1. This is not to be construed as requiring individual source references for each itemized cost element.

2. The estimator must be able and willing to discuss the source and applicability of any quantity or unit cost within an estimate.

3. This description should be located in the Basis of Estimate Statement portion of the estimate.

B. In many cases cost information may be provided by vendors familiar with the proposed type of construction and experienced with working at the actual project location. When this is the case both the source of the information should be provided, as well as an explanation of what site or project specific costs may already be included in the costs. This information will be important for determining what if any mark-ups may be applicable later in the estimating process.

3.7 Estimate Mark-ups:

For construction cost estimating during project planning and early design it is a common estimating practice to add adjustment factors to the direct cost portion of the estimate to account for cost items that may not yet be well-defined. Other factors also may need to be applied to adjust for site conditions, location specific costs or other project specific impacts that are not typically included in generic database estimating systems.

A. Published Location Factor: This factor adjusts generic, national average cost data to regional or local construction market pricing for labor, material and/or equipment. If a local cost database is being used rather than national data, a location factor adjustment will not be required. The Published Location Factors are provided by the publishers of several cost databases specifically for use with their published data to adjust costs

generated with their generic average data to represent costs at a specific published location.

1. There are many published location factors available (i.e., RS Means, Department of Defense (DoD), ENR, McGraw Hill, etc.). Some can be used for comparisons between published locations and others are provided specifically for use with the publishers own generic cost database. Most nationally published cost databases have developed cost data that are national or regional averages derived from multiple projects. They use location factors specific to the data set that are applied to the average estimate to generate location specific costs.

2. If the direct cost items already include the cost impacts associated with performing the work at the actual location of the project, no additional Location Factor markups may be necessary, provided that the source of information is well documented and the costs can be substantiated.

3. **CAUTION:** It may not be appropriate to use Published Location Factors provided by one publisher to adjust data from another source. Many location factors are database specific factors intended only for use to adjust estimates generated from that specific database.

4. One publisher, RS Means, publishes location factors called the "City Cost Indexes" for over 700 U.S cities. These factors indicate the cost of commercial construction for each of these locales as compared to the RS Means 30-city national average.

    a. The 2010 range of the RS Means factors is from 133.2 for New York, NY to 67.4 for Guymon Oklahoma, indicating that the cost of construction would be 33.2 percent more in New York City and 32.8 percent less in Guymon than the national average.

5. Our A/E design firms and their estimators are encouraged to know and utilize appropriate published factors for regional market economics for their project estimates, as appropriate for the cost data that they have utilized.

6. The location factors used and the rational for the location factor selected should be clearly documented in the Basis of Estimate Statement.

B. Remoteness Factor: A majority of NPS park units are <u>not</u> located in one of the nearly 700 cities listed in the R.S. Means City Cost Index, or similar indexes. Thus, they are remotely located away from significant source areas of labor pools, material vendors and equipment suppliers. Because of the remote nature of most national parks, there typically needs to be an adjustment made for mobilization/demobilization, labor pool per diem, compensated commute times, and shipping costs of materials, as well as less tangible impacts of managing remote operations. If labor, equipment,

and materials can be delivered to the project site by over-the road transportation we generally use a remoteness factor of 1 percent for each 10 miles that the project is located away from the commercial center used in determining the location factor. There should also be considerations made for difficult to access sites via unimproved roads, backcountry areas, or where water or aerial access is required. If a project site is significantly remote from normal vehicular transportation access, some attempt should be made to estimate the direct transport costs (pack teams, boat/barge, off road vehicles, or helicopters), or the estimator can add an allowance cost or other percentage allowance based on their best estimating judgment or professional experience.

1. Even NPS units such as Statue of Liberty National Monument, is remote from New York City or Newark, New Jersey, since it is on an island in New York Harbor.

2. There are additional cost consequences to projects, because of their remote locations that affects both material and labor costs.

    a. The distance from a major market center may require special labor cost accommodations to account for union work rules, lodging, productivity loses, etc.

    b. Material delivery costs may be increased due to additional shipping charges.

    c. Remote staging areas may be required or materials may have to be handled several times before being installed in the finished project.

3. As an example, the nearest published location factor to the South Rim of Grand Canyon National Park is Flagstaff, Arizona which is located approximately 85 miles away. This distance will have an effect on both the costs and availability of materials, equipment and labor. These cost impacts must be considered and accounted for in the construction cost estimates prepared for NPS projects.

4. Some National Park units may have more than one remoteness factor based on their size, geography or other constraints.

    a. The North Rim of Grand Canyon National Park is situated just a few miles farther from Flagstaff than the South Rim cited above, but because of the intervening Grand Canyon, it is over a two hundred mile drive from one side to the other.

    b. Portions of Yosemite National Park are closer to the published market center of Fresno, CA and others are closer to Modesto, CA or Carson City NV. In these cases both the Location and Remoteness Factors may vary between projects in the same park.

5. Sometimes the remoteness factor may reflect more than just the project's distance from the published market center to account for cost impacts like access restrictions, poor road conditions, over water or air access, etc.

    a. As the design process evolves and the estimates become refined, many of the cost impacts associated with a project's remoteness may be incorporated into the direct unit costs as adjustments to productivity, individual impact cost elements, or as line items in the detailed General Conditions portion of the estimate.

C. Federal Wage Rate Factor: The Federal Wage Rate Factor is used to adjust the labor costs of an estimate to reflect the difference between the location factor, adjusted labor data used to prepare an estimate and the federally mandated Davis-Bacon Act Labor rates in effect for the project location.

1. Contractors on federal construction projects are required to pay their workers a minimum wage in accordance with the Davis-Bacon Act published wage rates. These rates are generally broken down by State and County, and are constantly being renegotiated and revised.

2. In areas, with strong labor union influences, the Davis-Bacon Act wage rates may exceed the prevailing wage rates reflected in the published location factors. It is important to note that the Davis-Bacon Act wages only reflect the minimum required wages, plus fringe benefits. They do not include cost impacts associated with union work rules, which can have additional significant impacts to the labor component of project costs.

3. In other areas without a strong union presence Davis-Bacon wages may be less than the actual market rates, so additional research may be required to determine what, if any, wage rate adjustment factor may be appropriate to use for the estimate.

4. This mark-up should only be applied against the labor portion of direct cost not the entire direct cost amount. If the labor component is itemized separately, the calculation is simple; if not, only a portion of the factor can be applied against the total direct cost.

5. If the labor costs are not itemized, for most general construction work the labor component typically makes up 40%-60% of the total cost; however for some specialty trades it may be significantly higher or lower.

6. For repair/rehabilitation projects labor generally comprises 50%-75% of the total cost.

7. Considerable analysis and sound judgment are required to select an appropriate wage adjustment factor to use and the rationale behind the selection should be well documented.

8. In some cases, the Davis-Bacon Act prevailing wages may already be included in the direct cost items. If this is the case, no additional mark-up for federal wage rates are required, provided that the wage rate information is well documented and the costs can be substantiated.

Wage Rate Factor Analysis

Park: Bear Hollow National Wildlife Area
Project Name: Oso Comida Trailhead & Interpretive Center
Published Market Center: Greensboro, NC
Project County: Guilford County, NC
BLS Wage Rate City/Town: Greensboro, NC

Date Updated: 7/30/2010
Estimate Data Source: RS Means
Market Center Adjustment Factor: 49.2%

Trade	Estimate Direct Wage Rate	Market Adjusted Wage Rate for Greensboro, NC	Davis Bacon Wages w/Fringe Highway/Heavy Guilford County, NC	Wage Difference	Approximate Wage Adjustment Factor	BLS Prevailing Wages Greensboro, NC	Fringe Allowance 25% Applied to BLS Wage	Wage Difference	Approximate Wage Adjustment Factor
Boilermakers	$ 52.25	N/A	$ -	N/A	N/A		N/A	N/A	N/A
Bricklayer	$ 41.75	$ 20.54	$ 12.57	$ (7.97)	-38.8%	$ 18.78	$ 4.70	$ 2.93	14.28%
Cement Mason/Finisher	$ 39.70	$ 19.53	$ 8.83	$ (10.70)	**-54.8%**	$ 13.97	$ 3.49	$ (2.07)	**-10.60%**
Marble & Tile Setter/layer	$ 36.63	$ 18.02	$ 11.02	$ (7.00)	-38.9%	$ 15.03	$ 3.76	$ 0.77	4.25%
Terrazo & Mosaic Worker	$ 39.00	N/A	$ -	N/A	N/A	$ -	N/A	N/A	N/A
Carpenter	$ 41.55	$ 20.44	$ 9.45	$ (10.99)	**-53.8%**	$ 15.71	$ 3.93	$ (0.81)	**-3.94%**
Millwrights	$ 42.95	N/A	$ -	N/A	N/A		N/A	N/A	N/A
Electrician	$ 49.00	$ 24.11	$ 15.05	$ (9.06)	**-37.6%**	$ 17.63	$ 4.41	$ (2.07)	**-8.59%**
Elevator Mechanic	$ 61.70	N/A	$ -	N/A	N/A		N/A	N/A	N/A
Equipment Operator (avg.)	$ 42.31	$ 20.82	$ 10.54	$ (10.28)	**-49.4%**	$ 17.01	$ 4.25	$ 0.45	**2.14%**
Ironworker (Structural/reinf.)	$ 46.85	$ 23.05	$ 28.40	$ 5.35	23.2%		N/A	N/A	N/A
Common Laborer (avg.)	$ 33.10	$ 16.29	$ 8.59	$ (7.70)	**-47.3%**	$ 12.40	$ 3.10	$ (0.79)	**-4.82%**
Painters (all)	$ 36.88	$ 18.14	$ 8.67	$ (9.47)	**-52.2%**	$ 12.65	$ 3.16	$ (2.33)	**-12.84%**
Plasterer	$ 37.30	$ 18.35	$ 9.86	$ (8.49)	-46.3%	$ 14.41	$ 3.60	$ (0.34)	-1.85%
Pipefitter & HVAC (steamfitters)	$ 51.90	$ 25.53	$ 13.68	$ (11.85)	**-46.4%**	$ 18.09	$ 4.52	$ (2.92)	**-11.44%**
Sprinkler installers	$ 50.40	$ 24.80	$ 9.77	$ (15.03)	**-60.6%**	$ 18.09	$ 4.52	$ (2.18)	**-8.81%**
Plumbers	$ 52.05	$ 25.61	$ 11.68	$ (13.93)	**-54.4%**	$ 18.09	$ 4.52	$ (3.00)	**-11.70%**
Roofers (avg.)	$ 35.50	$ 17.47	$ 7.35	$ (10.12)	**-57.9%**	$ 12.00	$ 3.00	$ (2.47)	-14.12%
Sheet Metal Worker	$ 49.10	$ 24.16	$ 10.00	$ (14.16)	-58.6%	$ 16.14	$ 4.04	$ (3.98)	-16.48%
Truck Drivers (average)	$ 32.70	$ 16.09	$ 7.30	$ (8.79)	**-54.6%**	$ 18.29	$ 4.57	$ 6.77	**42.11%**
Asbestos Worker/Insulator	$ 45.55	N/A	$ -	N/A	N/A	$ -	N/A	N/A	N/A
Glazier	$ 40.20	$ 19.78	$ 11.99	$ (7.79)	-39.4%	$ 16.46	$ 4.12	$ 0.80	4.03%
Average	**$ 43.56**	**$ 20.75**	**$ 8.85**	**$ (9.29)**	**-44.8%**	**$ 14.15**		**$ (0.70)**	**-3.38%**
			Average of Bold Highlighted Trades		**-51.7%**				**-2.6%**

Conclusion:

Davis Bacon Wage Rates for Guilford County are on average 44.8% less than RS Means Wage Rates adjusted for Greensboro, NC. Fringe Adjusted Bureau of Labor Statistics wage surveys are 3.38% less than the RS Means rates. The **Yellow** hichlighted trades represent the workforce composition that will staff the majority of this project and also closely match the adjusted RS Means rates. **IN THIS CASE IT MAY BE BEST TO APPLY NO WAGE RATE ADJUSTMENT, RATHER THAN TO ADJUST TO THE LOWER DAVIS BACON RATES**, since contractors will need to pay at least local prevailing wages to staff the job.

Links:

Davis-Bacon Wage Rates: http://www.access.gpo.gov/davisbacon/allstates.html
Bureau of Labor Statistics: http://www.bls.gov/oes/current/oessrcma.htm#N

The above example reflects a wage rate adjustment factor analysis for a fictitious park and project located near Greensboro, North Carolina. The analysis is based on an estimate that was prepared using generic national average costs from the RS Means 2010 Building Construction Cost Data publication. The RS Means City Cost analysis, the City Cost Index-Installation index was used to adjust the average RS Means wage rates to reflect the "Market Adjusted" wages in the Greensboro area. The Davis-Bacon Act wages are very low relative to the adjusted RS Means rates and may not reflect the actual fair market rates. An additional comparison was made with Bureau of Labor Statistics (BLS) wage survey data. The BLS wage information is significantly higher than the Davis-Bacon wage rates, but still less than the "Market Adjusted" RS Means data. In this case, the fair market wage rates are probably closer to the BLS survey wages, but it is strongly recommended that the estimator perform additional research into local wages before finalizing the project budget.

D. Taxes: Construction Contractors for the National Park Service are required to pay local and state taxes on material and rental equipment used on the project. There are pathways for a contractor to become exempt from these taxes, but most find the paperwork required for this consideration to be far too cumbersome and less than worth their time to pursue since they are allowed to pass the taxes along to the government. .

1. Sales and use tax mark-ups should only be applied against the material and equipment portion of direct costs, not the entire direct cost amount. If these costs are not itemized, the component typically makes up 40%-60% of the total cost; however for some specialty trades it may be significantly higher or lower.

2. Some states and localities also impose additional taxes on wages earned within their jurisdictional boundaries, project impact fees, or other taxes that must be included in the total project costs.

3. There are also several states that have Building and Occupancy taxes and or Privilege Taxes that are computed against the total.

4. State and Local taxes can vary greatly from project to project and year to year. It is important to conduct research for each project to assure that these costs are included in an estimate.

E. Design Contingencies: This mark-up relates to the accuracy of the estimate and completeness of the design/construction documents. Design Contingencies should NOT be confused with the Design Cost or Construction Contingencies (reference Appendix K). Design Contingencies vary by project, but also vary (gradually reducing) by the stage the project is in the design process. At the preliminary stages of planning and design it is very difficult to determine the complete scope of the project in detail, therefore the design contingency is set at a high percentage.

1. Typical ranges for design contingency are:
   a. Class C Construction Cost Estimate (Conceptual Design) 15% to 50%
   b. Class B Construction Cost Estimate (Schematic Design) 10 % to 20%
   c. Class B Construction Cost Estimate (Design Development) 5% to 15%
   d. Class A Construction Cost Estimate (Construction Documents) 0% to 10%

2. Once the construction documents are finalized, the design contingency should be at or near zero, provided that the nature of the work is well defined. Some repair/rehab work may still have some uncertainty until demolition work is performed, so it may be appropriate to retain some design contingency for this type of work.

F. General Conditions (General Requirements):

1. Standard General Conditions: These are the project indirect cost incurred by the contractor that are typically defined in the Division 1 specifications for a project. The costs associated with temporary utilities, field offices, fencing, field engineering, operation and maintenance manuals, etc. are all included as standard general conditions. Also included in the General Conditions percentage should be the cost of construction permits, bonds, and insurance.

    a. These costs are typically spread across all contract line items, unless individual line items are specifically provided for them.

    b. Standard general conditions costs can run from 4 to 20 percent of the cost of construction, depending on the size, location and complexity, as well as other variables of the project and estimate. They should also be applied to the Total Direct Construction Costs, including location markups and design contingency,

    c. In the later stages of the design process, the Standard General conditions should be itemized separately to reflect the requirements of the Division 1 specifications and actual site conditions.

2. Government General Conditions: These costs, which are not included in the *Standard General Conditions,* are the costs of doing work for the United States Government, and the National Park Service. Many of these government costs are attributable to the increased administrative requirements and quality requirements along with sensitivity to the NPS mission of protecting the cultural and natural resources while allowing the public access and enjoyment thereof.

G. Historic Preservation Factor: Many projects within the National Park Service involve work in and around historical structures or cultural landscapes. It is part of the National Park Service's mission to preserve and maintain the integrity of the original architectural construction, historical fabric and cultural appearance of the assets at or near the proposed work. This requirement often creates additional access control issues, protection process requirements and coordination problems during construction, which lead to additional cost impacts to a project. In some cases, material costs are often increased significantly because of the need to select compatible materials. The range for this factor can vary significantly and considerable judgment is required to formulate an appropriate factor. The rationale and justification for the Historic Preservation Factor should be well documented in the Basis of Estimate Statement.

H. Overhead: Overhead is the cost that a contractor has for staying in business. A general contractor has expenses not directly related to the construction of a project, but vital to the contractor's business operations. These include fixed overhead (Federal and State Unemployment costs, Social Security Tax, Builder's Risk Insurance and Public Liability Costs) and variable overhead (Worker's Compensation Insurance, Main Office Overhead, etc.).

1. Many published databases do not include any of these costs in their "Bare Costs" tabulations

2. In some publications these costs are included in the tabulations that include the installer/sub-contractor overhead and profit

3. It is important to know what overhead costs are included in the direct cost totals of an estimate and clearly document them in the Basis of Estimate Statement.

I. Profit: Profit is the cost or fee that a contractor charges to provide a return on their investment and to compensate them for assuming risk on a project. The amount of profit charged is highly variable and dependant on a number of factors, including local market conditions, the size of job, the amount of risk associated with the work, the contractor's total work volume and company size. Contractors generally take more profit on a smaller job. One factor that is often overlooked in preparing Independent Government Estimates and A/E estimates is that not only is the General Contractor entitled to compensation for overhead and profit, but so are any subcontractors or independent installers that they employ to perform the work. Some cost databases include installer overhead and profit in a separate column.

J. Contracting Method Adjustment: A majority of the construction contracting for the National Park Service is not performed using typical low bid procurement processes. As a result, there is a limitation on competition for most projects which tends to have an upward impact on project costs.

1. The primary procurement method used by NPS is competitive negotiation where award is based on negotiating a price with the best technically-qualified contractor. This method may typically add 5% or more to the cost of contracting over the purely, lowest price, competitive bid procurement processes.

2. The NPS also awards many contracts through the Small Business Administration's 8(a), Service Disabled Veteran (SDV) and Hub-Zone programs. These awards may be made on either on a limited competitive or sole source negotiated basis. Depending on the

Procurement method chosen, costs can be affected as much as 10-15 percent or more.

3.7 Adjusting for Inflation Escalation:

Independent Government and A/ E estimates are generally prepared well in advance of contract procurement. Therefore, some sort of factor needs to be applied to an estimate's total cost to account for a changing market over time. All direct unit costs within the estimates should be priced using current (date of estimate) costs. An adjustment for inflation is then added to the bottom line total of the estimate. This escalation must be based on a careful analysis of current market trends and published construction economics predictions. Escalation should be dated to the proposed mid-point of construction. If actual historical costs from the park or project location are used to develop the direct costs, it may be necessary to escalate the costs from the time period that they were incurred to present values first, and then escalate them to the mid-point of construction. Whatever escalation methods or rates are used should be justified and thoroughly documented in the Basis of Estimate Statement.

Chapter 4 Standards of Conduct

4.1 Standards. The standards of practice described within the Canons of Ethics, published by the American Association of Cost Engineers, International (AACE) shall be applied to all estimating services. This document is available through the AACE, International, 209 Prairie, Morgantown, West Virginian, 26501.

4.2 False Statements. NPS contractor's are advised that in accordance with 18 USC 1001, reflecting provisions of the False Statements Act, "Whoever, in any matter within the jurisdiction of any department, or agency of the United States knowingly and willfully falsifies, conceals or covers up by any trick, scheme, or device a material fact, or makes any false, fictitious or fraudulent statements or representations, or makes or uses any false writing or document knowing the same to contain any false, fictitious or fraudulent statement, or entry, shall be fined not more than $10,000 or imprisoned not more than five years or both."

Appendix A

CLASS A CONSTRUCTION COST ESTIMATES

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CLASS A CONSTRUCTION COST ESTIMATES

This Appendix describes the estimating products and services to be prepared for Class A (Actual) Construction Cost Estimate. The following estimate submittals are considered Class A estimates:

A. Draft 100% Construction Documents (Draft CD)

B. 100% Complete Construction Documents (Complete CD)

C. Final Construction Documents (Final CD)

Class A (Actual) Construction Cost Estimating

Class A Construction Cost Estimates are referred to as *Actual* estimates by the design and construction industry. These estimates are generally prepared with a fully defined scope of work (SOW). The project programming and major project elements are completely defined, with all drawings and construction details provided, as well as a complete set of project specifications. In the National Park Service Class A estimates are generally used for:

A. Draft 100% Construction Documents (Draft CD) submittal.

1. A pre-final Quality Assurance review.
2. Cost evaluation of minor revisions to, or addition of final detail drawings.
3. Cross reference check between the drawings and project specifications.
4. Verification of costs for major mechanical, electrical, and plumbing systems.
5. The Class A Construction Cost Estimate at the Draft CD level requires detailed quantity surveys and real market price research. All direct cost items should be completely defined and include localized pricing information.

B. Complete Construction Documents (Complete CD) submittal.

1. Verification of changes identified during Draft CD submittal.
2. Minor quantity adjustments.
3. Minor cost adjustments due to final detail revisions.
4. Minor cost adjustments based on additional or updated market research.
6. The Class A Construction Cost Estimate at both CD levels should contain detailed line items that represent all anticipated cost elements.

C. Final Independent Government Estimates (IGE) for procurement verification.

A Class A Construction Cost Estimate is an actual cost estimate based on a combination of detailed installation analysis, actual individual work element quantity measurements, and localized construction market research, supplemented with detailed resource & duration, productivity based, or unit item projected costs. Support information for Class A Construction Cost Estimates should include:

A. CD Level support information:

1. Architectural building designs (100% drawings).
    a. Complete and finalized floor plans, elevations, building sections, reflected ceiling plans, etc.
    b. Typical wall sections showing structural systems, insulation, wall sheathing etc.
    c. Final detailed floor and roof sections.
    d. Final door and window schedules.
    e. Complete finish schedules
2. Final Site improvement plans.
    a. Existing condition plan
    b. Site Clearing & Demolition plan, including limits of disturbance, demolition of existing improvements, tree removal, tree protection, etc.
    c. Complete Grading and drainage plans, with details.
    d. Utility improvement plans, including sewer, water, subsurface drainage and dry utilities, include all installation details
    e. Site improvement plans showing parking, roadways, sidewalks, retaining walls, flatwork, etc., including details and sections.
    f. Landscaping & Irrigation plans, including way finding signage, interpretive displays, etc.
3. Mechanical, Electrical and Plumbing System Designs
    a. Detailed system sizing and equipment layout plans
    b. Final design and layouts for alternative energy systems
    c. Detailed plans & design for other unique systems (ground source heat pumps, heat exchangers, battery storage, etc.
    d. Complete installation details.
4. Final Structural Design
    a. Foundation designs, including foundation sizing, typical and special footing sections, structural wall sections, column details, etc.
    b. Connection details

c. Roof framing plans, including truss specification, beam sizing, roof sheathing requirements, tie downs, etc.

d. Complete structural details, installation notes, reinforcement schedules, etc.

e. Detailed installation sections for other unique structural systems (SIPS, straw bale, adobe, rammed earth, green roof, etc.).

5. Complete Project Specifications

   a. Final Division 1 specifications.

   b. Complete specifications for balance of project.

6. Vendor research information including price quotes for major project elements.

7. Detailed local market research for construction commodities and labor.

Class A Construction Cost Estimating Accuracy

Class A Construction Cost Estimates are prepared with complete and final design documents; the Scope of Work is completely defined. The previous need for estimating judgment is replaced with an acute level of attention to detail. Accurate, detailed quantity take-offs and thorough cost research is required to assure that estimated costs are accurate and reflect real world market prices.

A. The generally accepted industry accuracy range of Class A Construction Cost Estimates is –5% to +15 %.

1. With this as the accepted accuracy a $1,000,000.00 Class A Construction Cost Estimate would have an accepted range of: $950,000.00 to $1,150,000.00.

2. For NPS projects, this level of accuracy is not adequate to assure that projects are allowed to move forward to contract.

   a. At the CD phase the IGE costs should normally be 0-10% higher than the initial bids received will be during the procurement phase.

   b. If the IGE is less than the bids received, it may be necessary to negotiate with bidders to reduce programming, change systems, or eliminate features to keep the project within budget.

B. The NPS project approval and funding process dictates that a tighter tolerance than the industry accepted accuracy range must be achieved.

1. Whenever possible, market research should include preliminary pricing from vendors willing to perform the work for the price quoted.

   a. Special care must be exercised to avoid violating the Federal Acquisition Regulations (FAR), while performing market research.

      i. Only warranted Contracting Officers can engage in actual negotiations

ii. It must be made clear to vendors that no commitments are being made in exchange for information.

iii. Thoroughly document all research and conversations.

b. It is important to verify the point of delivery included in any preliminary pricing quotations and be sure to include any shipping, storage, or other freight charges in the estimate.

c. For Class A Construction Cost Estimates, sales and use taxes need to be included in material component of the direct cost

2. In some cases, industry standard installation practices may not be completely depicted in the design details. The costs associated with performing industry standard practices must be included in the direct cost total of Class A Construction Cost Estimates.

C. Because of the critical nature of NPS Class A Construction Cost Estimates during the procurement process for NPS projects, it is imperative that estimators clearly document the scope of work in the Basis of Estimate Statement, as well as other factors that may have an impact on the overall estimated costs.

1. All supporting material use to define the scope of work should be thoroughly documented in the Basis of Estimate Statement. Any specific instructions from the end user, as well as known project constraints should also be included. List any items, or elements of work that are specifically excluded from the estimate.

2. The sources of all cost data used to prepare the estimate must be listed. Include information about costs obtained from vendors, manufacturers, or derived from similar projects.

3. If any items, design elements or assumptions have changed since previous cost estimates were prepared, describe and quantify the changes.

Class A Construction Estimate Mark-ups and Design Contingencies

The cost information used to prepare Class A Construction Cost Estimates are based on complete final design documents. Estimated costs should be based on local market conditions, vendor information and project specific data; therefore, the need for mark-ups, adjustment factors and contingencies is minimal.

A. **Location Adjustments:** Location specific cost impacts should be incorporated into the individual direct costs. Except in rare cases no additional location adjustments should be warranted.

1. **Published Location Factor:** All direct cost items for the project should already take the local market conditions into account.

2. **Remoteness Factor:** Project remoteness impacts should be incorporated in the individual direct cost items. Productivity impacts should be reflected in the labor component of direct cost; material delivery surcharges into material costs; and specialty equipment into the equipment costs. Costs for other remoteness related impacts, such as lodging, per diem, staging areas, specialty mobilizations, etc. should be reflected in the detailed breakdown of General Conditions.

3. **Federal Wage Rate Factor:** All direct unit costs must be based on paying at least the required minimum Davis-Bacon Act mandated wage rates for the project.

    a. **CAUTION:** In some areas, Davis Bacon Act wages may be less than the normal wages that are being paid by contractors for skilled labor. When this occurs, no adjustment for Davis-Bacon Act is necessary, but it still may be necessary to adjust the direct costs to reflect the actual local prevailing wage rates. Some additional research and estimating judgment is required.

4. **State & Local Taxes:** All applicable state, local and other tax costs should be included in the direct cost detail items. The applicable tax rates for each estimate should be individually researched and clearly documented in the Basis of Estimate Statement.

SPECIAL NOTE FOR PROJECT SPECIFIC COST DATA: If cost data used to derive the estimate is derived from project or park specific data that already corresponds to the current estimate project location and includes payment of mandated prevailing wages, taxes, etc., the use of Location Adjustments may not be required.

B. Design Contingency: Since the design documents used to prepare Class A Construction Cost Estimates, are supposed to be in a complete and final form, the application of a Design (Estimating) Contingency mark-up should be minimal.

1. The typical Design (Estimating) Contingency used for NPS Class A Construction Cost estimates is 0% to 5%.

    a. At the Draft CD stage, Class A Construction Cost Estimates generally apply a Design Contingency at or near the 1% to 5% range.

    b. Later, at the Final CD stage Class A Construction Cost Estimates generally reduce the Design Contingency to 0%.

C. General Conditions: The direct cost line items in Class A Construction Cost estimates do not include allowances for General Conditions or job-site indirect costs, so the costs must be added to cover these project expenses.

1. **Standard General Conditions**, also known as job site indirect costs, or General Requirements should be itemized in detail to reflect the actual anticipated costs associated with managing the work. The total cost for General Conditions should then be proportionately allocated to the individual bid items.

2. **Government General Conditions** are other project specific indirect costs associated with doing business with the Federal Government and National Park Service. These costs will typically add an additional 5% to 10% to the location adjusted project costs and should either be itemized with the Standard General Conditions or added to them prior to allocation to the individual bid items.

D. **Historic Preservation Factor:** All anticipated cost impacts associated with preserving the historic or cultural character of the project should either be included in the direct cost line items, or itemized in the General Conditions. No additional mark-ups should be necessary.

1. For many new construction and other non historical projects it is common for the impacts associated with historic preservation to be zero (0). For purely historical preservation/restoration projects all of these costs should be included in the direct cost items.

E. **Overhead & Profit:** The rates for overhead and profit (O&P) are based on the anticipated market conditions at the time the work will be performed. Under normal market conditions, the normal range for O&P should be 10-25%, depending on the project size, complexity and level of risk associated with work.

F. **Bonds & Permits:** The normal range for bonds and permits is 1-3%, and should be included as an itemized cost in the General Conditions.

G. **Contracting Method Adjustment:** When Class A Construction Cost Estimates are typically submitted, the contracting method should already be established. The appropriate mark-up factors are discussed in the main body of the estimating handbook. The mark-up factor chosen and the rationale for the selection should be well documented in the Basis of Estimate Statement.

H. **Inflation Escalation:** The inflation escalation factor is based on the projected inflation rates from the time of the estimate until the mid-point of construction, compounded annually. The rate used and the rational for the selection should be well documented in the Basis of Estimate Statement.

Government Furnished Property (GFP)

In rare cases, the Government may pre-purchase some of the materials or specialized equipment required for a project, or they may be provided out of Government inventory. When this occurs, provided that the purchase price includes the cost of taxes and freight to the project site, most of the mark-up factors should not be applied to the amount of the purchase or the value of the GFP provided. If the GFP is projected as a future purchase, the Inflation Escalation may still apply. All GFP must be listed in the Basis of Estimate Statement and the associated costs should be accounted for separately in the estimate.

Work Breakdown Structure for Class A Construction Cost Estimates

The Work Breakdown Structure (WBS) for Class A Construction Cost Estimates should be structured to provide a logical hierarchy of cost elements. This hierarchy can provide the framework for future cost analysis, scheduling, and bid comparisons.

A. **Project Cost Summary:** At the project cost summary level cost should be organized by individual bid items that represent each major asset or protect element, with supplemental additional detail organized by UNIFORMAT II, detail Level 2

B. **Bid Item Cost Summary:** At the estimate bid item cost summary level project costs should be organized first by individual major Asset or Project Element, then by UNIFORMAT II, detail Level 2.

C. **Line Item Cost Summary:** Additional WBS cost detail should be provided for each of the Estimate Summary line items.

1. Cost detail should be organized using the UNIFORMAT II, Elemental Classification System.
2. Detailed costs should be presented at UNIFORMAT II, detail Level 3.
3. For Class A Construction Cost Estimates it is appropriate to refine the level of WBS detail beyond the required UNIFORMAT II, Level 3.
    a. Additional WBS detail should be organized and presented using either the UNIFORMAT II, Level 4 hierarchy, or the MasterFormat 2004, Level 4 hierarchy coding.
    b. Providing this higher level of detail is normally required for Class A Construction Cost Estimates.

D. **Estimate Format:** The estimate should present the cost information in a tabular or spreadsheet format:

1. The Project Cost Summary should arrange each bid item to represent major Assets or Project Elements as individual line items.
    a. The horizontal format for the estimate should include a minimum of thirteen (13) columns for tabulating the following information in each line item:
        i. Bid Item Number
        ii. Bid Item Description
        iii. Total Material Cost
        iv. Total Labor Cost
        v. Total Equipment Cost
        vi. Total Direct Construction Cost
        vii. Design Contingency
        viii. General Conditions
        ix. General Contractor Overhead
        x. General Contractor Profit

xi. Contracting Method Adjustment
xii. Inflation Escalation
xiii. Bid Item Total

2. The Bid Item Summary should arrange each Asset or Project Element as individual line items organized by WBS at the UNIFORMAT II, detail Level 2.
   a. The horizontal format for the Bid Item summary should include a minimum of eleven (11) columns for tabulating the following information in each line item:
      i. Item Number
      ii. UNIFORMAT II, WBS code
      iii. Description
      iv. Material Unit Cost
      v. Total Material Cost
      vi. Labor Unit Cost
      vii. Total Labor Cost
      viii. Equipment Unit Cost
      ix. Total Equipment Cost
      x. Direct Unit Cost
      xi. Total Direct Cost
   b. An additional two (2) columns may be provided to present the NET Construction Costs spread across the individual WBS line items.
      i. Net Unit Cost
      ii. Total Net Cost

I. **Estimate Sample:** An example of a Class A Construction Cost Estimate is provided at the end of this appendix.

J. **Estimate Template:** Templates for Class A Construction Cost Estimates are provided on the NPS Project Workflows website in Section 4.7, located at http://www.nps.gov/dscw/dbbcondocs.htm .

1. The Class A Construction Cost Estimate templates are provided as a guideline only and its use is not required, provided that all estimates submitted contain the required information and are presented in a similar format, as specified above and elsewhere in the handbook.
2. Care must be exercised if using the templates to avoid corrupting embedded formulas and other automated functions.
3. Each estimator is responsible for proof reading, data verification and mathematical checks for their own estimates.
4. The National Park Service assumes no liability resulting from the use or misuse of the cost estimating templates by third parties.

Submittal Package Requirements for Class A Construction Cost Estimates

The estimate submittal package shall contain the following at a minimum:

A. **Basis of Estimate Statement:** This page(s) of the estimate doubles as a cover page for the estimate. The Basis of Estimate statement page should include the following items:

1. Title of project
2. Park name and location within park, if applicable
3. The park's four letter alpha code
4. The PMIS number for the project
5. Date of estimate
6. Estimator's Name, Company, Address and Contact information.
7. List of background supporting material describing the scope of work and any information used or referenced for preparing the estimate
8. Documentation of all sources of cost data, detailing the cost data used to prepare the estimate; include source name, date, volume number, etc.
9. A description of any assumptions made, or relied on to prepare the estimate.
10. A brief description of any major changes in the scope of work, materials, systems, or assumptions, relative to previous cost estimates for the same project.
11. Short descriptions and justifications for all mark-ups, add-ons, and escalation factors used in estimate
12. Other comments and assumptions regarding the estimate or supporting material.

B. **Project Cost Summary:** The estimate Project Cost Summary should be formatted as described above and show all bid items, mark-ups, bid item totals and total project cost.

C. **Bid Item Summaries:** The estimate Bid Item Summaries should be formatted as described above and show all Level 2, WBS cost items, subtotals, mark-ups and bid item totals.

D. **Line Item Cost Summaries**: The cost estimate detail should be formatted to the WBS detail as described above.

United States Department of the Interior
National Park Service
Class A Construction Cost Estimate

BASIS OF ESTIMATE

PROJECT INFORMATION

Project:	**Oso Comida Trailhead Improvements:**
Park:	**Bear Arbor NRA**
Park Apha:	**BEAR**
PMIS:	**XXXXXX**
Estimate Date:	1/12/2011
Prepared By:	YtB
Company:	NPS Bear Arbor NRA
Address:	123 Bruin Meadows Rd.
City, State Zip:	Grizzley Hollow, CA 96023
Phone:	(555) 123-4567

BACKGROUND SUPPORTING MATERIAL (Scope of Work):

Existing parking lot will be upgraded, re-configured within existing disturbed area, for 40 car spaces, 5 ADA Spaces, 2 van spaces, 10 RV pull throughspaces, and paved. Existing pit toilets will be removed and replaced with a wet comfort station including septic system with in tank bio reactor treatment, and liquid disposal field; NEW WATER WELL NOW REQUIRED. The existing picnic area will be rehabilitated and modified to meet ABBAS accessibility standards. Trail connections will be formalized and upgraded; portions will be made accessible to facilitate access to Bruin Meadows overlook. Existing uncontrolled social trails will be restored to natural and a channelizing seat-resistant wood rail fence added to direct movement from parking area to trail connection. The septic system incorporates a new technology in-tank sanitary treatment process that will be pre ordered and supplied by NPS as GFP. Puchase cost of tank and treatment materials is included in direct cost estimate.

SOURCE OF COST DATA:

Comfort Station unit costs are based a combination of sources that include actual material take-offs and vendor quotes, review of actual final costs and project labor records for a similar facility constructed in 2009 at neighboring Ursa Hollow park. Parking lot costs are based on actual contract prices from Spring 2010 FHWA road project on Bruin Meadows Road adjacent to the site adjusted to remove previous O&P. Purchase price for the prefabricated Septic-King™ is an actual vendor quote FOB park warehouse. Supplimental cost were obtained from RS Means, Facilites Cost Data (FCCD), 25th Annusal Edition. WHENEVER RSMEANS BARE UNIT COSTS WERE USED FROM THE FCCD DATA, 10% WAS ADDED TO MATERIALS & EQUIPMENT AND 60% TO LABOR TO ACCOUNT FOR INSTALLER (SUB) O&P

ESTIMATE ASSUMPTIONS:

Estimate assumes that all improvements will be constructed as a singe project during one construction season. East half of existing dirt parking area and trailhead will remain in operation until new paved lot and walk connections are completed. 2nd half of existing lot will be available for contractor laydown/equipment area, but contractor's labor force must park at maintenance yard 5 miles away and be shuttled into site. Shuttle costs and additional portable toilet cost impacts are included in Government Special Conditions. Septic-King™ system will be preordered by the Park to avoid long lead time from impacting installation schedule.

MAJOR CHANGES FROM PREVIOUS ESTIMATE:

Parking lot configuration changed slightly to accommodate RV pull through spaces. Existing dirt parking area will be gravel surfaced for use as overflow parking and equestrian staging area. Photo-voltaic system has been deleted for budgetary purposes, viewshed impacts, concerns over viewshed impacts and negative results of net life-cycle payback analysis. Water is not avialable in road; well added to service wet comfort station - assumes 1200 VLF depth.

United States Department of the Interior
National Park Service
Class A Construction Cost Estimate

BASIS OF ESTIMATE

PROJECT INFORMATION

Project: **Oso Comida Trailhead Improvements:**

Park: **Bear Arbor NRA**
Park Apha: **BEAR**
PMIS: **XXXXXX**
Estimate Date: 1/12/2011

DESCRIPTION OF MARK-UP & ADD-ONS:

Design Contingency:	2.00%	This is the 100% Draft CD submittlal, but a few design details relating to septic and electric systems are stil changing.
Standard. General Conditions:	0.00%	Precentage mark-up not used. Please refer to itemized Genral conditions estimate for each CLI
Government General Conditions:	3.00%	Most costs are covered in Standard GC. 3% additional as cost offset to accommodate,creww shuttle, dignitary events and multi-layer oversight disruptions.
Contractor Overhead:	8.50%	Anticipate using a small contractor with limitted fixed overhead costs and austerity under current market conditons
Contractor Profit:	10.00%	Current construction market conditions expected to improve modestly by 2013 project date.
Contracting Method Adjustment:	15.00%	Preliminary indications are that negotiated sole-source SBA Section 8a or SDV procurement will be utilized.
Annual Inflation Escalation Factor:	3.60%	Projected annual inflation rate.
Time Until Project Midpoint (Months)	32	January 2011 estimate data date to mid-point of construction, August 2013

OTHER COMMENTS:

Since new comfort station will have deepened grade-beam/strip footing on piers w/PT slab on grade construction, insufficient spoils will be generated to backfill existing pits. After spoils from new septic system are exhausted, we assumed 50% of total backfill quantity will be imported from NPS in park-stockpile. The balance of the on-site grading appears to balance, pending verification of existing topo.

United States Department of the Interior
National Park Service
Class A Construction Cost Estimate

PROJECT COST SUMMARY

Project: Oso Comida Trailhead Improvements:
Park: Bear Arbor NRA
Park Alpha: BEAR
PMIS Number: XXXXXX

Estimate By: YtB
Date: 01/12/11
Reviewed By: BBB
Date: 01/17/11

Bid Item No.		Bid Item Description	Total Material Cost	Total Labor Cost	Total Equipment Cost	Total Direct Construction Costs	Design Contingency 2.00%	General Conditions 3.00%	General Contractor Overhead 8.50%	General Contractor Profit 10.00%	Contracting Method Adjustment 15.00%	Inflation Escalation APR 3.60%	Inflation Escalation Month 32	Bid Item Total
Bid Item: 1		**Replace Pit Toilets with New Comfort Station**											**TOTAL VALUE OF GOVERNMENT FURNISHED PROPERTY (if any):**	**$ 46,000.00**
	A10	Foundations	$ 30,028	$ 33,082	$ 7,293	$ 70,403								
	A20	Basement Construction	$ -	$ -	$ -	$ -								
	B10	Superstructure	$ 15,622	$ 13,198	$ 460	$ 29,280								
	B20	Exterior Enclosure	$ 35,992	$ 29,477	$ -	$ 65,469								
	B30	Roofing	$ 18,471	$ 8,706	$ -	$ 27,177								
	C10	Interior Construction	$ 25,573	$ 9,308	$ -	$ 34,881								
	C30	Interior Finishes	$ 4,476	$ 13,424	$ -	$ 17,900								
	D20	Plumbing Systems	$ 26,655	$ 16,121	$ -	$ 42,776								
	D30	HVAC	$ 1,269	$ 1,170	$ -	$ 2,439								
	D50	Electrical	$ 8,753	$ 9,366	$ -	$ 18,119								
	F20	Selective Building Demolition	$ 463	$ 1,990	$ 3,862	$ 6,315								
	G10	Site Preparation	$ 2,188	$ 4,362	$ 6,952	$ 13,502								
	G20	Site Improvements	$ 8,900	$ 7,300	$ -	$ 16,200								
	G30	Site Mechanical	$ 86,213	$ 32,582	$ 44,542	$ 163,337								
	G40	Site Electrical	$ 5,000	$ -	$ -	$ 5,000								
	XX	Standard General Conditions	$ 31,900	$ 101,200	$ 18,610	$ 151,710								
Total - Bid Item	**1**	**Replace Pit Toilets with New Comfort Station**	**$ 301,503**	**$ 281,286**	**$ 81,719**	**$ 664,508**	**$ 12,370**	**$ 18,926**	**$ 55,233**	**$ 64,980**	**$ 122,403**	**$ 92,813**		**$ 1,031,234**
Bid Item: 2		**Construct New Parking Lot & Site Utilities**											**TOTAL VALUE OF GOVERNMENT FURNISHED PROPERTY (if any):**	**$ -**
	G10	Site Preparation	$ 2,500	$ 11,711	$ 19,776	$ 33,987								
	G20	Site Improvements	$ 143,581	$ 36,335	$ 43,670	$ 223,586								
	G30	Site Mechanical	$ 12,153	$ 14,232	$ 4,241	$ 30,626								
	XX	Standard General Conditions	$ 12,925	$ 8,350	$ 6,500	$ 27,775								
			$ -	$ -	$ -	$ -								
Total - Bid Item	**2**	**Construct New Parking Lot & Site Utilities**	**$ 171,159**	**$ 70,628**	**$ 74,187**	**$ 315,974**	**$ 6,319**	**$ 9,669**	**$ 28,217**	**$ 33,196**	**$ 59,006**	**$ 44,742**		**$ 497,123**
Bid Item: 3		**Picnic Area & Trailhead Improvements**											**TOTAL VALUE OF GOVERNMENT FURNISHED PROPERTY (if any):**	**$ -**
	G10	Site Preparation	$ -	$ 11,860	$ 4,845	$ 16,705								
	G20	Site Improvements	$ 59,448	$ 25,960	$ 12,270	$ 97,678								
	G30	Site Mechanical	$ 2,125	$ 2,275	$ 330	$ 4,730								
	XX	Standard General Conditions	$ 5,775	$ 7,550	$ 2,500	$ 15,825								
			$ -	$ -	$ -	$ -								
Total - Bid Item	**3**	**Picnic Area & Trailhead Improvements**	**$ 67,348**	**$ 47,645**	**$ 19,945**	**$ 134,938**	**$ 2,699**	**$ 4,129**	**$ 12,050**	**$ 14,177**	**$ 25,199**	**$ 19,107**		**$ 212,299**
		Total Bid Items 1-3	**$ 540,010**	**$ 399,559**	**$ 175,851**	**$ 1,115,420**	**$ 21,388**	**$ 32,724**	**$ 95,500**	**$ 112,353**	**$ 206,608**	**$ 156,662**		**$ 1,740,656**

United States Department of the Interior
National Park Service
Class A Construction Cost Estimate

BID ITEM COST SUMMARY

Project: Oso Comida Trailhead Improvements:
Park: Bear Arbor NRA
Park Alpha: BEAR
PMIS Number: XXXXXX

Estimate By: YtB
Date: 01/12/11
Reviewed By: BBB
Date: 01/17/11

Bid Item Number	Asset / Project Element / Description	Size/Count	Units
BID ITEM 1	Construct Wet Comfort Station	1000	SF

Item No.	WBS	Description	Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Direct Cost/Unit	Total Direct Costs	NET Cost/Unit	Total NET Costs
1	A10	Foundations	$ 30.03	$ 30,028	$ 33.08	$ 33,082	$ 7.29	$ 7,293	$ 70.40	$ 70,402	$ 109.26	$ 109,256
2	A20	Basement Construction - INC. IN FOUNDATION	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
3	B10	Superstructure	$ 15.62	$ 15,622	$ 13.20	$ 13,198	$ 0.46	$ 460	$ 29.28	$ 29,279	$ 45.44	$ 45,438
4	B20	Exterior Enclosure	$ 35.99	$ 35,992	$ 29.48	$ 29,477	$ -	$ -	$ 65.47	$ 65,469	$ 101.60	$ 101,600
5	B30	Roofing	$ 18.47	$ 18,471	$ 8.71	$ 8,706	$ -	$ -	$ 27.18	$ 27,176	$ 42.17	$ 42,174
6	C10	Interior Construction	$ 25.57	$ 25,573	$ 9.31	$ 9,308	$ -	$ -	$ 34.88	$ 34,881	$ 54.13	$ 54,131
8	C30	Interior Finishes	$ 4.48	$ 4,476	$ 13.42	$ 13,424	$ -	$ -	$ 17.90	$ 17,900	$ 27.78	$ 27,778
9	D20	Plumbing Systems	$ 26.65	$ 26,655	$ 16.12	$ 16,121	$ -	$ -	$ 42.78	$ 42,776	$ 66.38	$ 66,383
10	D30	HVAC	$ 1.27	$ 1,269	$ 1.17	$ 1,170	$ -	$ -	$ 2.44	$ 2,438	$ 3.78	$ 3,784
11	D50	Electrical	$ 8.75	$ 8,753	$ 9.37	$ 9,365	$ -	$ -	$ 18.12	$ 18,118	$ 28.12	$ 28,117
12	F20	Selective Building Demolition	$ 0.46	$ 463	$ 1.99	$ 1,990	$ 3.86	$ 3,863	$ 6.32	$ 6,315	$ 9.80	$ 9,800
13	G10	Site Preparation	$ 2.19	$ 2,188	$ 4.36	$ 4,362	$ 6.95	$ 6,952	$ 13.50	$ 13,502	$ 20.95	$ 20,953
14	G20	Site Improvements	$ 8.90	$ 8,900	$ 7.30	$ 7,300	$ -	$ -	$ 16.20	$ 16,200	$ 25.14	$ 25,140
15	G30	Site Mechanical Utilities	$ 86.21	$ 86,213	$ 32.58	$ 32,582	$ 44.54	$ 44,543	$ 163.34	$ 163,337	$ 253.48	$ 253,479
16	G40	Site Electrical Utilities	$ 5.00	$ 5,000	$ -	$ -	$ -	$ -	$ 5.00	$ 5,000	$ 7.76	$ 7,759
17	XX	General Conditions	$ 31.90	$ 31,900	$ 101.20	$ 101,200	$ 18.61	$ 18,610	$ 151.71	$ 151,710	$ 235.44	$ 235,435
18	XX		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
19	XX		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
		Subtotal Direct Construction Costs	**$ 301.50**	**$ 301,501**	**$ 281.28**	**$ 281,284**	**$ 81.72**	**$ 81,720**	**$ 664.50**	**$664,505**	**$ 1,031.23**	**$1,031,229**
		Total Value of Government Furnished Property (GFP) Inc. in Direct Cost		**$46,000.00**		**$ -**		**$ -**	**$ 46,000**	**$46,000**		
		Direct Cost Subtotal without GFP		$ 255,501		$ 281,284		$ 81,720		**$618,505**		
		Design Contingency	2.00%							$12,370		
		Total Direct Construction Costs								**$676,875**		
		Standard General Conditions	0.00%	Applied to Total Direct Construction Cost less GFP						$0		
		Government General Conditions	3.00%	Applied to Total Direct Construction Cost less GFP						$18,926		
		Subtotal NET Construction Cost								**$695,801**		
		Overhead	8.50%							$55,233		
		Profit	10.00%							$64,980		
		Estimated NET Construction Cost								**$816,014**		
		Contracting Method Adjustment	15.00%							$122,402		
		Inflation Escalation	32	Months	Annual Rate =	3.60%				$92,812		
		Total Estimated NET Cost of Construction								**$1,031,229**		

In most cases GFP is normally zero - see footnote-

Notes & Comments:
Building only direct cost = $308.44/sf
Building total NET cost = $474.28/sf
GFP Septic King Treatment System Pre-Purchased by Government = $46,000

GFP costs only apply when the Government pre-purchases items, or provides other materials out of Government inventory, to be installed by contractor. Adjustments and Markup on GFP only include Inflation Escalation; No other adjustment factors or O&P markup have been applied.

United States Department of the Interior
National Park Service
Class A Construction Cost Estimate

LINE ITEM COST SUMMARY

Project: Oso Comida Trailhead Improvements:
Park: Bear Arbor NRA
Park Alpha: BEAR
PMIS: XXXXXX

Estimate By: YtB
Date: 01/12/11
Reviewed By: BBB
Date: 01/17/11

Summary Item: A10 Foundations **Total Cost:** $70,402

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
A1010	STANDARD FOUNDATIONS										
31.23.15	Excavate Grade Beam 140'x48", Column footings, overdig 25%, spread spoil onsite	40	CY	$ -	$0	$ 57.78	$2,311	$ 13.85	$554	$ 71.63	$2,865
03.15.05	Furnish & Install 6" crushable void form	140	LF	$ 2.25	$315	$ 0.36	$50	$ -	$0	$ 2.61	$365
03.11.13	Fabricate & Erect Outside forms	560	SF	$ -	$0	$ 4.14	$2,318	$ -	$0	$ 4.14	$2,318
03.21.10	Furnish & Install Steel Reinfocement	3200	LB	$ 0.66	$2,112	$ 3.93	$12,576	$ -	$0	$ 4.59	$14,688
03.30.53	Furnish & Pour Concrete 42"x12"	18	CY	$ 95.50	$1,719	$ 25.66	$462	$ -	$0	$ 121.16	$2,181
03.30.53	Concrete Waste Factor 10%	1	Allow	$ 171.90	$172	$ -	$0	$ -	$0	$ 171.90	$172
03.11.13	Strip, & clean forms	560	SF	$ -	$0	$ 0.52	$291	$ -	$0	$ 0.52	$291
03.35.29	Dry Finish top 12"	140	SF	$ -	$0	$ 3.79	$531	$ -	$0	$ 3.79	$531
07.27.13	Furnish & Install 2" EPS insulation Board	560	SF	$ 1.03	$577	$ 0.58	$325	$ -	$0	$ 1.61	$902
31.23.23	Backfill w/ Hand compact - select import	16	CY	$ 32.75	$524	$ 163.70	$2,619	$ 48.50	$776	$ 244.95	$3,919
SUBTOTAL	**STANDARD FOUNDATIONS**	**1000**	**SF**	**$ 5.42**	**$5,419**	**$ 21.48**	**$21,484**	**$ 1.33**	**$1,330**	**$ 28.23**	**$28,232**

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
A1020	SPECIAL FOUNDATIONS										
03.63.26	Drilled Caisons - 10' OC x 25' -Subcontract	16	EA	$ 1,120.00	$17,920	$ 140.92	$2,255	$ 335.00	$5,360	$ 1,595.92	$25,535
31.23.23	Pick up & spread spoil onsite	50	CY	$ -	$0	$ 19.30	$965	$ 6.65	$333	$ 25.95	$1,298
				$ -	$0	$ -	$0	$ -	$0	$ -	$0
SUBTOTAL	**SPECIAL FOUNDATIONS**	**1000**	**SF**	**$ 17.92**	**$17,920**	**$ 3.22**	**$3,220**	**$ 5.69**	**$5,693**	**$ 26.83**	**$26,832**

United States Department of the Interior
National Park Service
Class A Construction Cost Estimate

LINE ITEM COST SUMMARY

Project: Oso Comida Trailhead Improvements:
Park: Bear Arbor NRA
Park Alpha: BEAR
PMIS: XXXXXX

Estimate By: YtB
Date: 01/12/11
Reviewed By: BBB
Date: 01/17/11

Summary Item: A10 Foundations **Total Cost:** $70,402

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
A1030	SLAB ON GRADE - 6" Post tentioned										
03.11.13	Edge form Included in std. foundation	0	Unit	$ -	$0	$ -	$0	$ -	$0	$ -	$0
31.23.23	F & I Crushed Aggregate Base - 6"	50	Tons	$ 22.75	$1,138	$ 36.82	$1,841	$ -	$0	$ 59.57	$2,979
31.23.23	Fine Grade & Install 4" leveling sand	1000	SF	$ 0.55	$550	$ 1.40	$1,400	$ -	$0	$ 1.95	$1,950
07.27.13	F & I Rigid EPS and Vapor Barrier	1000	SF	$ 1.09	$1,090	$ 0.58	$580	$ -	$0	$ 1.67	$1,670
03.23.05	Furnish & Install Pre-stressing Tendon	1000	SF	$ 0.78	$780	$ 0.47	$470	$ -	$0	$ 1.25	$1,250
03.23.05	F & I Supplimental Reinforcing Mesh	1000	SF	$ 0.30	$300	$ 0.36	$360	$ -	$0	$ 0.66	$660
03.30.53	Furnish & Pour concrete - Quantity includes 6" topping on grade beam	26	CY	$ 95.50	$2,483	$ 118.56	$3,083	$ 6.55	$170	$ 220.61	$5,736
03.35.22	Power trowel finish	1000	SF	$ -	$0	$ 0.58	$580	$ 0.10	$100	$ 0.68	$680
03.39.23	Misc. ST&S (cure, etc.)	1	Allow	$ 100.00	$100	$ 65.00	$65	$ -	$0	$ 165.00	$165
03.30.53	Concrete Waste Factor 10%	1	LS	$ 248.30	$248	$ -	$0	$ -	$0	$ 248.30	$248
				$ -	$0	$ -	$0	$ -	$0	$ -	$0
SUBTOTAL	SLAB ON GRADE - 6" Post tentioned	1000	SF	$ 6.69	$6,689	$ 8.38	$8,379	$ 0.27	$270	$ 15.34	$15,338

Summary Item: A10 Foundations

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
A10	Foundations	1000	SF	$ 30.03	$30,028	$ 33.08	$33,082	$ 7.29	$7,293	$ 70.40	$70,402

United States Department of the Interior
National Park Service
Class A Construction Cost Estimate

LINE ITEM COST SUMMARY

Project: Oso Comida Trailhead Improvements:
Park: Bear Arbor NRA
Park Alpha: BEAR
PMIS: XXXXXX

Estimate By: YtB
Date: 01/12/11
Reviewed By: BBB
Date: 01/17/11

Summary Item: B10 Superstructure **Total Cost:** $29,279

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
B1010	FLOOR CONSTRUCTION										
	SEE FOUNDATION - SLAB ON GRADE	0	Unit	$ -	$0	$ -	$0	$ -	$0	$ -	$0
SUBTOTAL	FLOOR CONSTRUCTION	1000	SF	$ -	$0	$ -	$0	$ -	$0	$ -	$0

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
B1020	ROOF CONSTRUCTION										
06.17.53	Furnish & Install Wood Trusses 25' span	36	EA	$ 151.00	$5,436	$ 75.11	$2,704	$ 10.00	$360	$ 236.11	$8,500
06.16.36	F&I Plywood sheating - 5/8 CDX	1960	SF	$ 0.72	$1,411	$ 0.77	$1,509	$ -	$0	$ 1.49	$2,920
06.13.23	6x12 Rough Sawn Beams	300	BF	$ 1.88	$564	$ 1.11	$333	$ -	$0	$ 2.99	$897
05.12.23	4x4 x 1/4 HSS steel posts w/ Beam Bracket	4	EA	$ 194.00	$776	$ 195.00	$780	$ 25.00	$100	$ 414.00	$1,656
06.05.23	Hurricane Clips	72	EA	$ 5.20	$374	$ 2.34	$168	$ -	$0	$ 7.54	$543
04.43.10	Stone Veneer on End Columns 24"x24"x8'	320	SF	$ 20.50	$6,560	$ 23.76	$7,603	$ -	$0	$ 44.26	$14,163
06.17.53	Temp Bracing & Blocking Allowance	1	LS	$ 500.00	$500	$ 100.00	$100	$ -	$0	$ 600.00	$600
				$ -	$0	$ -	$0	$ -	$0	$ -	$0
SUBTOTAL	ROOF CONSTRUCTION	1000	SF	$ 15.62	$15,622	$ 13.20	$13,198	$ 0.46	$460	$ 29.28	$29,279

Summary Item: B10 Superstructure

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
B10	Superstructure	1000	SF	$ 15.62	$15,622	$ 13.20	$13,198	$ 0.46	$460	$ 29.28	$29,279

United States Department of the Interior
National Park Service
Class A Construction Cost Estimate

LINE ITEM COST SUMMARY

Project: Oso Comida Trailhead Improvements:
Park: Bear Arbor NRA
Park Alpha: BEAR
PMIS: XXXXXX

Estimate By: YtB
Date: 01/12/11
Reviewed By: BBB
Date: 01/17/11

Summary Item: B20 Exterior Enclosure **Total Cost:** $65,469

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
B2010	**EXTERIOR WALLS**										
06.11.10	2"x6"x8' studwall , 16" OC	140	LF	$ 3.72	$521	$ 7.96	$1,114	$ -	$0	$ 11.68	$1,635
06.16.36	Exterior Sheating 1/2" CDX Plywood	1120	SF	$ 0.78	$874	$ 0.88	$986	$ -	$0	$ 1.66	$1,859
06.11.01	Headers, Blocking, Bracing, & Bridging	1	LS	$ 500.00	$500	$ 500.00	$500	$ -	$0	$ 1,000.00	$1,000
07.21.16	R-21 Batt Insullation	1120	SF	$ 1.24	$1,389	$ 0.41	$459	$ -	$0	$ 1.65	$1,848
07.46.23	Vertical B&B Rough Sawn Cedar Siding	450	SF	$ 5.62	$2,529	$ 1.57	$707	$ -	$0	$ 7.19	$3,236
04.43.10	Stone Wainscot	560	SF	$ 20.50	$11,480	$ 23.76	$13,306	$ -	$0	$ 44.26	$24,786
04.72.10	Precast Wall Coping	130	LF	$ 13.20	$1,716	$ 10.24	$1,331	$ -	$0	$ 23.44	$3,047
06.11.10	2"x4"x4' Privacy Panel framing	40	LF	$ 1.70	$68	$ 7.96	$318	$ -	$0	$ 9.66	$386
06.16.36	2"x4"x4' Privacy Panel Sheating 1/2" CDX Plywood - 2 sides	320	SF	$ 0.78	$250	$ 0.88	$282	$ -	$0	$ 1.66	$531
07.25.10	Building Wrap	1120	SF	$ 0.32	$358	$ 0.18	$202	$ -	$0	$ 0.50	$560
SUBTOTAL	**EXTERIOR WALLS**	**1000**	**SF**	**$ 19.68**	**$19,684**	**$ 19.20**	**$19,204**	**$ -**	**$0**	**$ 38.89**	**$38,888**

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
B2020	**EXTERIOR WINDOWS**										
08.52.10	Wood Awning Windows, 34"x22", Dbl. pane, extra width sill, pre-finished custom color	16	EA	$ 416.00	$6,656	$ 220.48	$3,528	$ -	$0	$ 636.48	$10,184
06.22.13	Interior and Exterior trim packages	16	ea	$ 92.00	$1,472	$ 162.24	$2,596	$ -	$0	$ 254.24	$4,068
SUBTOTAL	**EXTERIOR WINDOWS**	**1000**	**SF**	**$ 8.13**	**$8,128**	**$ 6.12**	**$6,124**	**$ -**	**$0**	**$ 14.25**	**$14,252**

United States Department of the Interior
National Park Service
Class A Construction Cost Estimate

LINE ITEM COST SUMMARY

Project: Oso Comida Trailhead Improvements:
Park: Bear Arbor NRA
Park Alpha: BEAR
PMIS: XXXXXX

Estimate By: YtB
Date: 01/12/11
Reviewed By: BBB
Date: 01/17/11

Summary Item: B20 Exterior Enclosure **Total Cost:** $65,469

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
B2030	EXTERIOR DOORS										
08.12.13	Hollow Metal Door Frames,14 Ga., 8-3/4 deep, 7-0x3-6	5	EA	$ 356.00	$1,780	$ 117.10	$586	$ -	$0	$ 473.10	$2,366
08.13.13.	Hollow metal Door, Insulated 1-3/4 thick full panel, 18 ga., 7-0x3-6	5	EA	$ 670.00	$3,350	$ 88.82	$444	$ -	$0	$ 758.82	$3,794
08.71.20	Door Closer Heavy duty top jamb mount	5	EA	$ 274.00	$1,370	$ 549.12	$2,746	$ -	$0	$ 823.12	$4,116
08.71.20	Door hardware, deadbolt, lock set, etc.	5	EA	$ 336.00	$1,680	$ 74.88	$374	$ -	$0	$ 410.88	$2,054
				$ -	$0	$ -	$0	$ -	$0	$ -	$0
				$ -	$0	$ -	$0	$ -	$0	$ -	$0
				$ -	$0	$ -	$0	$ -	$0	$ -	$0
				$ -	$0	$ -	$0	$ -	$0	$ -	$0
SUBTOTAL	**EXTERIOR DOORS**	**1000**	**SF**	**$ 8.18**	**$8,180**	**$ 4.15**	**$4,150**	**$ -**	**$0**	**$ 12.33**	**$12,330**

Summary Item: B20 Exterior Enclosure

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
B20	**Exterior Enclosure**	**1000**	**SF**	**$ 35.99**	**$35,992**	**$ 29.48**	**$29,477**	**$ -**	**$0**	**$ 65.47**	**$65,469**

United States Department of the Interior
National Park Service
Class A Construction Cost Estimate

LINE ITEM COST SUMMARY

Project: Oso Comida Trailhead Improvements:
Park: Bear Arbor NRA
Park Alpha: BEAR
PMIS: XXXXXX

Estimate By: YtB
Date: 01/12/11
Reviewed By: BBB
Date: 01/17/11

Summary Item: B30 Roofing **Total Cost:** $27,176

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
B3010	ROOF COVERINGS										
07.41.13	22 Ga. Raised seam steel roof - standard finish	1960	SF	$ 7.85	$15,386	$ 3.04	$5,958	$ -	$0	$ 10.89	$21,344
07.41.13	Roof Ridge Cap	70	LF	$ 4.95	$347	$ 4.99	$349	$ -	$0	$ 9.94	$696
07.65.23	Ice And Water Shield - 3' at all edges	500	SF	$ 2.92	$1,460	$ 1.82	$910	$ -	$0	$ 4.74	$2,370
07.65.23	Flashing allowance	1	LS	$ 500.00	$500	$ 150.00	$150	$ -	$0	$ 650.00	$650
07.71.23	5" Galvanized Gutters	140	LF	$ 2.10	$294	$ 6.19	$867	$ -	$0	$ 8.29	$1,161
07.71.23	Downspouts	56	LF	$ 2.65	$148	$ 4.12	$231	$ -	$0	$ 6.77	$379
07.71.23	Downspout Elbows	12	EA	$ 7.15	$86	$ 7.55	$91	$ -	$0	$ 14.70	$176
23.34.23	Roof Jacks at Plumbing penetrations	1	Allow	$ 250.00	$250	$ 150.00	$150	$ -	$0	$ 400.00	$400
SUBTOTAL	**ROOF COVERINGS**	**1000**	**SF**	**$ 18.47**	**$18,471**	**$ 8.71**	**$8,706**	**$ -**	**$0**	**$ 27.18**	**$27,176**

Summary Item: B30 Roofing

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
B30	**Roofing**	**1000**	**SF**	**$ 18.47**	**$18,471**	**$ 8.71**	**$8,706**	**$ -**	**$0**	**$ 27.18**	**$27,176**

United States Department of the Interior
National Park Service
Class A Construction Cost Estimate

LINE ITEM COST SUMMARY

Project: Oso Comida Trailhead Improvements:
Park: Bear Arbor NRA
Park Alpha: BEAR
PMIS: XXXXXX

Estimate By: YtB
Date: 01/12/11
Reviewed By: BBB
Date: 01/17/11

Summary Item: C10 Interior Construction

Total Cost: $34,881

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
C1010	INTERIOR PARTITIONS										
09.29.1	5/8" Gypsum; Mold resistant; on inside of exterior walls; Level 5 tape & skim coat	1120	SF	$ 0.82	$918	$ 1.65	$1,848	$ -	$0	$ 2.47	$2,766
06.11.10	Interior partition framing - 2x4 x8' @ 16" O.C., single bottom & double top plate	40	LF	$ 3.11	$124	$ 10.66	$426	$ -	$0	$ 13.77	$551
06.11.10	Add Pressure Treated Bottom Plate 2x4	40	LF	$ 0.86	$34	$ 1.32	$53	$ -	$0	$ 2.18	$87
09.29.10	5/8" Gypsum; Mold resistant; on finish side of interior partions; Level 5 tape & skim coat	320	SF	$ 0.82	$262	$ 1.65	$528	$ -	$0	$ 2.47	$790
06.22.13	Wood Base Molding	156	LF	$ 2.85	$445	$ 3.20	$499	$ -	$0	$ 6.05	$944
06.22.13	Wood Rail Molding	140	LF	$ 1.89	$264	$ 2.36	$331	$ -	$0	$ 4.25	$595
SUBTOTAL	**INTERIOR PARTITIONS**	**1000**	**SF**	**$ 2.05**	**$2,048**	**$ 3.68**	**$3,685**	**$ -**	**$0**	**$ 5.73**	**$5,733**

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
C1030	FITTINGS										
10.21.13	Toilet Partitions F&C dual hung, Stainless Steel	5	EA	$ 2,151.39	$10,757	$ 255.36	$1,277	$ -	$0	$ 2,406.75	$12,034
10.21.13	Handicap Addition	2	EA	$ 404.89	$810	$ -	$0	$ -	$0	$ 404.89	$810
10.21.13	Unrinal Screens, Floor mounted, Stainless Stl.	2	EA	$ 815.00	$1,630	$ 210.00	$420	$ -	$0	$ 1,025.00	$2,050
10.21.13	Entrance Screens	2	EA	$ 1,180.00	$2,360	$ 88.00	$176	$ -	$0	$ 1,268.00	$2,536
05.50.00	Fabricated Metal counter supports	2	Allow	$ 450.00	$900	$ 265.00	$530	$ -	$0	$ 715.00	$1,430
12.36.61	Engineered Stone/Concrete Counter top	16	LF	$ 98.00	$1,568	$ 115.00	$1,840	$ -	$0	$ 213.00	$3,408
10.28.13	Toilet Accessories	1	Allow	$ 5,500.00	$5,500	$ 1,380.00	$1,380	$ -	$0	$ 6,880.00	$6,880
				$ -	$0	$ -	$0	$ -	$0	$ -	$0
SUBTOTAL	**FITTINGS**	**1000**	**SF**	**$ 23.52**	**$23,525**	**$ 5.62**	**$5,623**	**$ -**	**$0**	**$ 29.15**	**$29,148**

Summary Item: C10 Interior Construction

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
C10	**Interior Construction**	**1000**	**SF**	**$ 25.57**	**$25,573**	**$ 9.31**	**$9,308**	**$ -**	**$0**	**$ 34.88**	**$34,881**

United States Department of the Interior
National Park Service
Class A Construction Cost Estimate

LINE ITEM COST SUMMARY

Project: Oso Comida Trailhead Improvements:
Park: Bear Arbor NRA
Park Alpha: BEAR
PMIS: XXXXXX

Estimate By: YtB
Date: 01/12/11
Reviewed By: BBB
Date: 01/17/11

Summary Item: C30 Interior Finishes

Total Cost: $17,900

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
C3010	WALL FINISHES										
09.96.56	Epoxy Wall Coating, High Build 50 mil	1280	SF	$ 1.48	$1,894	$ 4.20	$5,376	$ -	$0	$ 5.68	$7,270
09.91.23	Miscelaneous Interior paint	1280	SF	$ 0.15	$192	$ -	$0	$ -	$0	$ 0.15	$192
09.91.23	Interior Trim Painting	650	LF	$ 0.16	$104	$ 1.75	$1,138	$ -	$0	$ 1.91	$1,242
09.91.23	Interior Window Casing Painting	16	EA	$ 2.85	$46	$ 60.00	$960	$ -	$0	$ 62.85	$1,006
SUBTOTAL	**WALL FINISHES**	**1000**	**SF**	**$ 2.24**	**$2,236**	**$ 7.47**	**$7,474**	**$ -**	**$0**	**$ 9.71**	**$9,710**

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
C3020	FLOOR FINISHES										
03.35.29	2 Coat Wpoxy Floor finish	1000	SF	$ 0.32	$320	$ 0.85	$850	$ -	$0	$ 1.17	$1,170
				$ -	$0	$ -	$0	$ -	$0	$ -	$0
SUBTOTAL	**FLOOR FINISHES**	**1000**	**SF**	**$ 0.32**	**$320**	**$ 0.85**	**$850**	**$ -**	**$0**	**$ 1.17**	**$1,170**

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
C3030	CEILING FINISHES										
09.29.10	5/8" Mold resistant Gypsum Drywall	1000	SF	$ 0.82	$820	$ 2.85	$2,850	$ -	$0	$ 3.67	$3,670
09.22.36	Ceiling Lath	1000	SF	$ 0.72	$720	$ 1.15	$1,150	$ -	$0	$ 1.87	$1,870
09.91.23	Paint Ceiling, Latex primer, 2 coats	1000	SF	$ 0.38	$380	$ 1.10	$1,100	$ -	$0	$ 1.48	$1,480
				$ -	$0	$ -	$0	$ -	$0	$ -	$0
SUBTOTAL	**CEILING FINISHES**	**1000**	**SF**	**$ 1.92**	**$1,920**	**$ 5.10**	**$5,100**	**$ -**	**$0**	**$ 7.02**	**$7,020**

Summary Item: C30 Interior Finishes

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
C30	**Interior Finishes**	**1000**	**SF**	**$ 4.48**	**$4,476**	**$ 13.42**	**$13,424**	**$ -**	**$0**	**$ 17.90**	**$17,900**

United States Department of the Interior
National Park Service
Class A Construction Cost Estimate

LINE ITEM COST SUMMARY

Project: Oso Comida Trailhead Improvements:
Park: Bear Arbor NRA
Park Alpha: BEAR
PMIS: XXXXXX

Estimate By: YtB
Date: 01/12/11
Reviewed By: BBB
Date: 01/17/11

Summary Item: D20 Plumbing Systems **Total Cost:** $42,776

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
D2010	PLUMBING FIXTURES										
22.42.13	F&I Urinals, Waterless	2	EA	$ 510.00	$1,020	$ 72.00	$144	$ -	$0	$ 582.00	$1,164
22.42.13	Rough-in Urinals	2	EA	$ 305.00	$610	$ 372.48	$745	$ -	$0	$ 677.48	$1,355
22.42.13	F&I Water Closets	5	EA	$ 640.00	$3,200	$ 240.00	$1,200	$ -	$0	$ 880.00	$4,400
22.42.13	Rough-in Water Closets	5	EA	$ 1,306.25	$6,531	$ 390.67	$1,953	$ -	$0	$ 1,696.92	$8,485
22.41.16	F&I Vanity Sinks, Self Rimming SS	5	EA	$ 460.00	$2,300	$ 225.00	$1,125	$ -	$0	$ 685.00	$3,425
22.41.16	Rough-in F&I Vanity Sinks	5	EA	$ 332.64	$1,663	$ 624.00	$3,120	$ -	$0	$ 956.64	$4,783
22.42.39	Faucets. Automatic Sensor	5	EA	$ 488.00	$2,440	$ 130.00	$650	$ -	$0	$ 618.00	$3,090
22.42.16	Service floor sink	1	EA	$ 920.00	$920	$ 325.00	$325	$ -	$0	$ 1,245.00	$1,245
22.42.16	Rough-in Floor sink	1	EA	$ 115.00	$115	$ 880.00	$880	$ -	$0	$ 995.00	$995
SUBTOTAL	**PLUMBING FIXTURES**	**1000**	**SF**	**$ 18.80**	**$18,799**	**$ 10.14**	**$10,142**	**$ -**	**$0**	**$ 28.94**	**$28,942**

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
D2020	DOMESTIC WATER DISTRIBUTION										
22.11.13	Additional 1" water Distribution Pipe	160	LF	$ 8.18	$1,309	$ 11.70	$1,872	$ -	$0	$ 19.88	$3,181
22.11.13	Fitting Allowance 10%	1	Allow	$ 130.88	$131	$ -	$0	$ -	$0	$ 130.88	$131
22.34.36	Water Heater	1	EA	$ 2,609.89	$2,610	$ 570.24	$570	$ -	$0	$ 3,180.13	$3,180
				$ -	$0	$ -	$0	$ -	$0	$ -	$0
				$ -	$0	$ -	$0	$ -	$0	$ -	$0
				$ -	$0		$0	$ -	$0	$ -	$0
SUBTOTAL	**DOMESTIC WATER DISTRIBUTION**	**1000**	**SF**	**$ 4.05**	**$4,050**	**$ 2.44**	**$2,442**	**$ -**	**$0**	**$ 6.49**	**$6,492**

United States Department of the Interior
National Park Service
Class A Construction Cost Estimate

LINE ITEM COST SUMMARY

Project: Oso Comida Trailhead Improvements:
Park: Bear Arbor NRA
Park Alpha: BEAR
PMIS: XXXXXX

Estimate By: YtB
Date: 01/12/11
Reviewed By: BBB
Date: 01/17/11

Summary Item: D20 Plumbing Systems **Total Cost:** $42,776

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
D2030	SANITARY WASTE										
22.13.16	4" Waste Collection Trunk line	80	LF	$ 17.92	$1,433	$ 26.21	$2,097	$ -	$0	$ 44.12	$3,530
22.13.16	Floor drains	4	EA	$ 349.87	$1,399	$ 120.00	$480	$ -	$0	$ 469.87	$1,879
22.13.15	2" Waste Collection to Floor Drains	40	LF	$ 13.83	$553	$ 24.00	$960	$ -	$0	$ 37.83	$1,513
22.13.16	Fitting Allowance 10%	1	Allow	$ 419.77	$420	$ -	$0	$ -	$0	$ 419.77	$420
				$ -	$0	$ -	$0	$ -	$0	$ -	$0
SUBTOTAL	**SANITARY WASTE**	**1000**	**SF**	**$ 3.81**	**$3,806**	**$ 3.54**	**$3,537**	**$ -**	**$0**	**$ 7.34**	**$7,342**

Summary Item: D20 Plumbing Systems

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
D20	**Plumbing Systems**	**1000**	**SF**	**$ 26.65**	**$26,655**	**$ 16.12**	**$16,121**	**$ -**	**$0**	**$ 42.78**	**$42,776**

United States Department of the Interior
National Park Service
Class A Construction Cost Estimate

LINE ITEM COST SUMMARY

Project: Oso Comida Trailhead Improvements:
Park: Bear Arbor NRA
Park Alpha: BEAR
PMIS: XXXXXX

Estimate By: YtB
Date: 01/12/11
Reviewed By: BBB
Date: 01/17/11

Summary Item: D30 HVAC **Total Cost:** $2,438

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
D3040	DISTRIBUTION SYSTEMS (HVAC)										
23.31.13	Ductwork	80	Lbs	$ 0.66	$53	$ 8.99	$719	$ -	$0	$ 9.65	$772
23.34.14	210 CFM Exhaust Blowers	2	EA	$ 402.06	$804	$ 91.20	$182	$ -	$0	$ 493.26	$987
32.37.13	Intlet Grilles	2	EA	$ 46.55	$93	$ 42.24	$84	$ -	$0	$ 88.79	$178
36.37.15	Exhaust Louvers	2	EA	$ 59.25	$119	$ 26.98	$54	$ -	$0	$ 86.23	$172
23.19.33	Exhaust Controls	2	EA	$ 100.00	$200	$ 65.00	$130	$ -	$0	$ 165.00	$330
				$ -	$0	$ -	$0	$ -	$0	$ -	$0
				$ -	$0	$ -	$0	$ -	$0	$ -	$0
				$ -	$0	$ -	$0	$ -	$0	$ -	$0
SUBTOTAL	DISTRIBUTION SYSTEMS (HVAC)	1000	SF	$ 1.27	$1,269	$ 1.17	$1,170	$ -	$0	$ 2.44	$2,438

Summary Item: D30 HVAC

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
D30	HVAC	1000	SF	$ 1.27	$1,269	$ 1.17	$1,170	0	$0	$ 2.44	$2,438

United States Department of the Interior
National Park Service
Class A Construction Cost Estimate

LINE ITEM COST SUMMARY

Project: Oso Comida Trailhead Improvements:
Park: Bear Arbor NRA
Park Alpha: BEAR
PMIS: XXXXXX

Estimate By: YtB
Date: 01/12/11
Reviewed By: BBB
Date: 01/17/11

Summary Item: D50 Electrical **Total Cost:** $18,118

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
D5010	ELECTRICAL SERVICE & DISTRIBUTION										
26.24.16	1phz. 225 Amp, 120/208V, Service Panel & feeders	1	EA	$ 1,551.83	$1,552	$ 2,736.00	$2,736	$ -	$0	$ 4,287.83	$4,288
SUBTOTAL	DISTRIBUTION	1000	SF	$ 1.55	$1,552	$ 2.74	$2,736	$ -	$0	$ 4.29	$4,288

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
D5020	LIGHTING & BRANCH WIRING										
26.51.13	Energy Saving Fluorescent lighting fixtures	8	EA	$ 349.13	$2,793	$ 235.00	$1,880	$ -	$0	$ 584.13	$4,673
26.51.13	Utility Chase lighting Fixtures	2	EA	$ 160.00	$320	$ 235.00	$470	$ -	$0	$ 395.00	$790
26.05.90	Receptacles GFCI	15	EA	$ 64.19	$963	$ 70.08	$1,051	$ -	$0	$ 134.27	$2,014
26.05.90	Switches	3	EA	$ 38.87	$117	$ 52.80	$158	$ -	$0	$ 91.67	$275
23.05.19	230V wiring to septic system	1	Allow	$ 800.00	$800	$ 350.00	$350	$ -	$0	$ 1,150.00	$1,150
26.05.80	Wire Up Septic system	1	EA	$ 45.00	$45	$ 220.00	$220	$ -	$0	$ 265.00	$265
26.05.19	Additional Building Wiring	1	Allow	$ 500.00	$500	$ 350.00	$350	$ -	$0	$ 850.00	$850
SUBTOTAL	LIGHTING & BRANCH WIRING	1000	SF	$ 5.54	$5,538	$ 4.48	$4,480	$ -	$0	$ 10.02	$10,017

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
D5090	OTHER ELECTRICAL SYSTEMS										
23.83.33	Baseboard Heaters for shoulder season	10	Ea	$ 126.78	$1,268	$ 188.16	$1,882	$ -	$0	$ 314.94	$3,149
23.83.33	Wall thermostat	3	Ea	$ 106.98	$321	$ 67.00	$201	$ -	$0	$ 173.98	$522
26.05.19	Wiring allowance	1	Allow	$ 75.00	$75	$ 67.00	$67	$ -	$0	$ 142.00	$142
SUBTOTAL	OTHER ELECTRICAL SYSTEMS	1000	SF	$ 1.66	$1,664	$ 2.15	$2,150	$ -	$0	$ 3.81	$3,813

Summary Item: D50 Electrical

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
D50	Electrical	1000	SF	$ 8.75	$8,753	$ 9.37	$9,365	$ -	$0	$ 18.12	$18,118

United States Department of the Interior
National Park Service
Class A Construction Cost Estimate

LINE ITEM COST SUMMARY

Project: Oso Comida Trailhead Improvements:
Park: Bear Arbor NRA
Park Alpha: BEAR
PMIS: XXXXXX

Estimate By: YtB
Date: 01/12/11
Reviewed By: BBB
Date: 01/17/11

Summary Item: F20 Selective Building Demolition

Total Cost: $6,315

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
F2010	BUILDING ELEMENTS DEMOLITION										
02.41.19	Demo structures- haul to dump;	1	Day	$ -	$0	$ 1,650.00	$1,650	$ 3,250.00	$3,250	$ 4,900.00	$4,900
				$ -	$0	$ -	$0	$ -	$0	$ -	$0
				$ -	$0	$ -	$0	$ -	$0	$ -	$0
SUBTOTAL	BUILDING ELEMENTS DEMOLITION	1000	SF	$ -	$0	$ 1.65	$1,650	$ 3.25	$3,250	$ 4.90	$4,900

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
F2020	HAZARDOUS COMPONENTS ABATEMENT										
02.81.20	Pump & Flush Existing pit toilets	1	LS	$ -	$0	$ 165.00	$165	$ 375.00	$375	$ 540.00	$540
31.23.23	Import & Backfill pits	50	CY	$ 9.25	$463	$ 3.50	$175	$ 4.75	$238	$ 17.50	$875
				$ -	$0	$ -	$0	$ -	$0	$ -	$0
				$ -	$0	$ -	$0	$ -	$0	$ -	$0
SUBTOTAL	ABATEMENT	1000	SF	$ 0.46	$463	$ 0.34	$340	$ 0.61	$613	$ 1.42	$1,415

Summary Item: F20 Selective Building Demolition

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
F20	Selective Building Demolition	1000	SF	$ 0.46	$463	$ 1.99	$1,990	$ 3.86	$3,863	$ 6.32	$6,315

United States Department of the Interior
National Park Service
Class A Construction Cost Estimate

LINE ITEM COST SUMMARY

Project: Oso Comida Trailhead Improvements:
Park: Bear Arbor NRA
Park Alpha: BEAR
PMIS: XXXXXX

Estimate By: YtB
Date: 01/12/11
Reviewed By: BBB
Date: 01/17/11

Summary Item: G10 Site Preparation **Total Cost:** $13,502

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
G1010	SITE CLEARING										
31.13.13	Brush Mowing for Building Pad Area	1	Acre	$ -	$0	$ 452.64	$453	$ 265.32	$265	$ 717.96	$718
31.13.13	Selective Tree Removal	3	Ea	$ -	$0	$ 178.75	$536	$ 154.44	$463	$ 333.19	$1,000
31.13.13	Stump Removal	3	Ea	$ -	$0	$ 36.22	$109	$ 94.38	$283	$ 130.60	$392
31.14.13	Strip & Stockpile Topsoil	1000	CY	$ -	$0	$ 0.79	$787	$ 1.37	$1,373	$ 2.16	$2,160
				$ -	$0	$ -	$0	$ -	$0	$ -	$0
SUBTOTAL	**SITE CLEARING**	**1000**	**SF**	**$ -**	**$0**	**$ 1.88**	**$1,885**	**$ 2.38**	**$2,385**	**$ 4.27**	**$4,269**

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
G1030	SITE EARTHWORK										
31.23.23	Imported fill for building Pad	250	CY	$ 8.75	$2,188	$ 4.55	$1,138	$ 6.55	$1,638	$ 19.85	$4,963
31.23.16	Onsite Cut to fill	500	CY	$ -	$0	$ 1.25	$625	$ 3.55	$1,775	$ 4.80	$2,400
31.22.16	Fine Grade Building Pad	2000	SF	$ -	$0	$ 0.12	$240	$ 0.24	$480	$ 0.36	$720
31.22.16	Clean-up and Fine Grade around Building	5000	SF	$ -	$0	$ 0.07	$350	$ 0.10	$500	$ 0.17	$850
31.23.23	Backfill & Compact existing pits	50	CY	$ -	$0	$ 2.50	$125	$ 3.50	$175	$ 6.00	$300
				$ -	$0	$ -	$0	$ -	$0	$ -	$0
SUBTOTAL	**SITE EARTHWORK**	**1000**	**SF**	**$ 2.19**	**$2,188**	**$ 2.48**	**$2,478**	**$ 4.57**	**$4,568**	**$ 9.23**	**$9,233**

Summary Item: G10 Site Preparation

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
G10	**Site Preparation**	**1000**	**SF**	**$ 2.19**	**$2,188**	**$ 4.36**	**$4,362**	**$ 6.95**	**$6,952**	**$ 13.50**	**$13,502**

United States Department of the Interior
National Park Service
Class A Construction Cost Estimate

LINE ITEM COST SUMMARY

Project: Oso Comida Trailhead Improvements:
Park: Bear Arbor NRA
Park Alpha: BEAR
PMIS: XXXXXX

Estimate By: YtB
Date: 01/12/11
Reviewed By: BBB
Date: 01/17/11

Summary Item: G20 Site Improvements **Total Cost:** $16,200

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
G2030	PEDESTRIAN PAVING										
32 06 10	Concrete Flatwork at Building	2000	SF	$ 4.45	$8,900	$ 3.65	$7,300	$ -	$0	$ 8.10	$16,200
				$ -	$0	$ -	$0	$ -	$0	$ -	$0
				$ -	$0	$ -	$0	$ -	$0	$ -	$0
				$ -	$0	$ -	$0	$ -	$0	$ -	$0
				$ -	$0	$ -	$0	$ -	$0	$ -	$0
				$ -	$0	$ -	$0	$ -	$0	$ -	$0
				$ -	$0	$ -	$0	$ -	$0	$ -	$0
				$ -	$0	$ -	$0	$ -	$0	$ -	$0
SUBTOTAL	PEDESTRIAN PAVING	1000	SF	$ 8.90	$8,900	$ 7.30	$7,300	$ -	$0	$ 16.20	$16,200

Summary Item: G20 Site Improvements

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
G20	Site Improvements	1000	SF	$ 8.90	$8,900	$ 7.30	$7,300	$ -	$0	$ 16.20	$16,200

United States Department of the Interior
National Park Service
Class A Construction Cost Estimate

LINE ITEM COST SUMMARY

Project: Oso Comida Trailhead Improvements:
Park: Bear Arbor NRA
Park Alpha: BEAR
PMIS: XXXXXX

Estimate By: YtB
Date: 01/12/11
Reviewed By: BBB
Date: 01/17/11

Summary Item: G30 Site Mechanical Utilities **Total Cost:** $163,337

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
G3010	WATER SUPPLY										
33.21.13	Drill water well	1200	VLF		$0	$ 14.39	$17,265	$ 31.68	$38,016	$ 46.07	$55,281
33.21.13	Install 8" Casing	1200	VLF	$ 22.50	$27,000	$ 2.50	$3,000	$ 0.75	$900	$ 25.75	$30,900
33.21.13	Install 2" Well pump	1	EA	$ 641.89	$642	$ 150.00	$150	$ 100.00	$100	$ 891.89	$892
33.21.13	2" HDPE pump riser	1200	VLF	$ 3.50	$4,200	$ -	$0	$ -	$0	$ 3.50	$4,200
22.11.13	2" Supply Line to building	150	LF	$ 3.50	$525	$ 2.50	$375	$ 4.00	$600	$ 10.00	$1,500
22.11.19	Pressure equilization tank in Building	1	Ea	$ 250.00	$250	$ 100.00	$100	$ 50.00	$50	$ 400.00	$400
33.21.13	Pump control system with alarm	1	Allow	$ 250.00	$250	$ 100.00	$100	$ 50.00	$50	$ 400.00	$400
				$ -	$0	$ -	$0	$ -	$0	$ -	$0
SUBTOTAL	WATER SUPPLY	1000	SF	$ 32.87	$32,867	$ 20.99	$20,990	$ 39.72	$39,716	$ 93.57	$93,572

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
G3020	SANITARY SEWER										
33.36.13	Install Septic King Tank & Treatment system	1	LS	$ 46,000.00	$46,000	$ 4,500.00	$4,500	$ 2,500.00	$2,500	$ 53,000.00	$53,000
33.36.13	Excavate Leach Field	90	CY		$0	$ 11.20	$1,008	$ 3.80	$342	$ 15.00	$1,350
33.36.13	Install Leach Field Chamber System	16	EA	$ 395.00	$6,320	$ 265.00	$4,240	$ 72.50	$1,160	$ 732.50	$11,720
33.36.13	Backfill with Drain Rock	25	Tons	$ 23.50	$588	$ 19.50	$488	$ 8.50	$213	$ 51.50	$1,288
33.36.13	Common Backfill Leach Field Mound	90	CY	$ -	$0	$ 11.20	$1,008	$ 3.80	$342	$ 15.00	$1,350
36.31.13	Sewer outfall from building	75	LF	$ 5.85	$439	$ 4.65	$349	$ 3.60	$270	$ 14.10	$1,058
				$ -	$0	$ -	$0	$ -	$0	$ -	$0
				$ -	$0	$ -	$0	$ -	$0	$ -	$0
SUBTOTAL	SANITARY SEWER	1000	SF	$ 53.35	$53,346	$ 11.59	$11,592	$ 4.83	$4,827	$ 69.77	$69,765

Summary Item: G30 Site Mechanical Utilities

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
G30	Site Mechanical Utilities	1000	SF	$ 86.21	$86,213	$ 32.58	$32,582	44.5425	$44,543	$ 163.34	$163,337

United States Department of the Interior
National Park Service
Class A Construction Cost Estimate

LINE ITEM COST SUMMARY

Project: Oso Comida Trailhead Improvements:
Park: Bear Arbor NRA
Park Alpha: BEAR
PMIS: XXXXXX

Estimate By: YtB
Date: 01/12/11
Reviewed By: BBB
Date: 01/17/11

Summary Item: G40 Site Electrical Utilities **Total Cost:** $5,000

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
G4010	ELECTRICAL DISTRIBUTION										
33.71.19	Electrical Service Drop by utility company	1	LS	$ 2,500.00	$2,500	$ -	$0	$ -	$0	$ 2,500.00	$2,500
33.71.19	Transformer & Main disconnect	1	EA	$ 2,500.00	$2,500	$ -	$0	$ -	$0	$ 2,500.00	$2,500
				$ -	$0	$ -	$0	$ -	$0	$ -	$0
				$ -	$0	$ -	$0	$ -	$0	$ -	$0
				$ -	$0	$ -	$0	$ -	$0	$ -	$0
				$ -	$0	$ -	$0	$ -	$0	$ -	$0
				$ -	$0	$ -	$0	$ -	$0	$ -	$0
				$ -	$0	$ -	$0	$ -	$0	$ -	$0
SUBTOTAL	ELECTRICAL DISTRIBUTION	1000	SF	$ 5.00	$5,000	$ -	$0	$ -	$0	$ 5.00	$5,000

Summary Item: G40 Site Electrical Utilities

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
G40	Site Electrical Utilities	1000	SF	$ 5.00	$5,000	$ -	$0	$ -	$0	$ 5.00	$5,000

United States Department of the Interior
National Park Service
Class A Construction Cost Estimate

LINE ITEM COST SUMMARY

Project: Oso Comida Trailhead Improvements:
Park: Bear Arbor NRA
Park Alpha: BEAR
PMIS: XXXXXX

Estimate By: YtB
Date: 01/12/11
Reviewed By: BBB
Date: 01/17/11

Summary Item: XX General Conditions **Total Cost:** $151,710

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
01 31	**Project Management & Coordination**										
01.31.13	Project Superintendent	20	Weeks	$ -	$0	$ 2,500.00	$50,000	$ -	$0	$ 2,500.00	$50,000
01.31.13	Project Manager - Half Time	18	Weeks	$ -	$0	$ 750.00	$13,500	$ -	$0	$ 750.00	$13,500
01.31.13	General Pupose Laborer - Part Time	15	Weeks	$ -	$0	$ 1,500.00	$22,500	$ -	$0	$ 1,500.00	$22,500
01.31.13	Builders Risk Insurance	1	LS	$ 3,500.00	$3,500	$ -	$0	$ -	$0	$ 3,500.00	$3,500
01.31.13	General Liabiity Insurance	1	LS	$ 2,000.00	$2,000	$ -	$0	$ -	$0	$ 2,000.00	$2,000
01.31.13	Payment & Performance Bond 1.5%	1	Unit	$ 15,000.00	$15,000	$ -	$0	$ -	$0	$ 15,000.00	$15,000
01.31.xx	Labor down time due to payroll interviews	1	LS	$ -	$0	$ 3,500.00	$3,500	$ -	$0	$ 3,500.00	$3,500
01.31.xx	Certified Payrol Costs	0	Unit	$ -	$0	$ 500.00	$0	$ -	$0	$ 500.00	$0
SUBTOTAL	**Project Management & Coordination**	**1000**	**SF**	**$ 20.50**	**$20,500**	**$ 89.50**	**$89,500**	**$ -**	**$0**	**$ 110.00**	**$110,000**

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
01 32	**Scheduling & Documentation**										
01.32.13	Prepare Initial Schedule	1	LS	$ -	$0	$ 3,000.00	$3,000	$ -	$0	$ 3,000.00	$3,000
01.32.13	Schedule Updates	13	EA	$ -	$0	$ 250.00	$3,250	$ -	$0	$ 250.00	$3,250
01.32.13	Schedule Printing & Reproduction	1	Allow	$ 300.00	$300	$ -	$0	$ -	$0	$ 300.00	$300
01.50.00	Prepare SWMPP	1	LS	$ 50.00	$50	$ 1,500.00	$1,500	$ -	$0	$ 1,550.00	$1,550
SUBTOTAL	**Scheduling & Documentation**	**1000**	**SF**	**$ 0.35**	**$350**	**$ 7.75**	**$7,750**	**$ -**	**$0**	**$ 8.10**	**$8,100**

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
01 45	**Quality control**										
01.45.23	Concrete Testing	5	EA	$ 150.00	$750	$ -	$0	$ -	$0	$ 150.00	$750
01.45.23	Compaction Testing	10	EA	$ 75.00	$750	$ -	$0	$ -	$0	$ 75.00	$750
01.45.23	Other Testing	1	LS	$ 500.00	$500	$ -	$0	$ -	$0	$ 500.00	$500
01.40.00	Special Inspections	1	Allow		$0	$ 1,500.00	$1,500	$ -	$0	$ 1,500.00	$1,500
				$ -	$0	$ -	$0	$ -	$0	$ -	$0
SUBTOTAL	**Quality control**	**1000**	**SF**	**$ 2.00**	**$2,000**	**$ 1.50**	**$1,500**	**$ -**	**$0**	**$ 3.50**	**$3,500**

United States Department of the Interior
National Park Service
Class A Construction Cost Estimate

LINE ITEM COST SUMMARY

Project: Oso Comida Trailhead Improvements:
Park: Bear Arbor NRA
Park Alpha: BEAR
PMIS: XXXXXX

Estimate By: YtB
Date: 01/12/11
Reviewed By: BBB
Date: 01/17/11

Summary Item: XX General Conditions

Total Cost: $151,710

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
01 51	**Temporary Utilites**										
01.51.13	Install Temporary Power	1	LS	$ 500.00	$500	$ -	$0	$ -	$0	$ 500.00	$500
01.51.13	Temporary Electricity	7	Month	$ 150.00	$1,050	$ -	$0	$ -	$0	$ 150.00	$1,050
01.51.13	Chemical Toilets	12	Ea-Mo.	$ 175.00	$2,100	$ -	$0	$ -	$0	$ 175.00	$2,100
				$ -	$0	$ -	$0	$ -	$0	$ -	$0
SUBTOTAL	**Temporary Utilites**	**1000**	**SF**	**$ 3.65**	**$3,650**	**$ -**	**$0**	**$ -**	**$0**	**$ 3.65**	**$3,650**

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
01 52	**Construction Facilities**										
01.52.13	Office Trailer Set Up	1	LS	$ -	$0	$ 1,200.00	$1,200	$ 300.00	$300	$ 1,500.00	$1,500
01.52.13	Trailer Rental	7	Month	$ -	$0	$ -	$0	$ 380.00	$2,660	$ 380.00	$2,660
01.52.13	Storage Bin Rental	15	Ea-Mo	$ -	$0	$ -	$0	$ 75.00	$1,125	$ 75.00	$1,125
01.52.13	Temporary Fence	300	LF	$ -	$0	$ -	$0	$ 6.50	$1,950	$ 6.50	$1,950
01.52.13	Gravel Surrface For Yard	50	Tons	$ 18.00	$900	$ 5.00	$250	$ 7.50	$375	$ 30.50	$1,525
01.52.13	Erosion control	1	LS	$ 2,000.00	$2,000	$ 1,000.00	$1,000	$ 500.00	$500	$ 3,500.00	$3,500
01.54.16	Sky Trac Fork Lift Rental	6	Months	$ -	$0	$ -	$0	$ 700.00	$4,200	$ 700.00	$4,200
01.52.13	Miscelaneous Facilties	1	Allow	$ 2,500.00	$2,500	$ -	$0	$ -	$0	$ 2,500.00	$2,500
SUBTOTAL	**Construction Facilities**	**1000**	**SF**	**$ 5.40**	**$5,400**	**$ 2.45**	**$2,450**	**$ 11.11**	**$11,110**	**$ 18.96**	**$18,960**

United States Department of the Interior
National Park Service
Class A Construction Cost Estimate

LINE ITEM COST SUMMARY

Project: Oso Comida Trailhead Improvements:
Park: Bear Arbor NRA
Park Alpha: BEAR
PMIS: XXXXXX

Estimate By: YtB
Date: 01/12/11
Reviewed By: BBB
Date: 01/17/11

Summary Item: XX General Conditions

Total Cost: $151,710

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
01 54 36	Mobilizaton										
01.54.36	Mobilization	1	Allw	$ -	$0	$ -	$0	$ 7,500.00	$7,500	$ 7,500.00	$7,500
01.54.36	Demobilization	0	Unit	$ -	$0	$ -	$0	$ 5,000.00	$0	$ 5,000.00	$0
				$ -	$0	$ -	$0	$ -	$0	$ -	$0
				$ -	$0	$ -	$0	$ -	$0	$ -	$0
				$ -	$0	$ -	$0	$ -	$0	$ -	$0
				$ -	$0	$ -	$0	$ -	$0	$ -	$0
				$ -	$0	$ -	$0	$ -	$0	$ -	$0
				$ -	$0	$ -	$0	$ -	$0	$ -	$0
SUBTOTAL	Mobilizaton	1000	SF	$ -	$0	$ -	$0	$ 7.50	$7,500	$ 7.50	$7,500

Summary Item: XX General Conditions

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
XX	General Conditions	1000	SF	$ 31.90	$31,900	$ 101.20	$101,200	$ 18.61	$18,610	$ 151.71	$151,710

United States Department of the Interior
National Park Service
Class A Construction Cost Estimate

BID ITEM COST SUMMARY

Project: Oso Comida Trailhead Improvements:
Park: Bear Arbor NRA
Park Alpha: BEAR
PMIS Number: XXXXXX

Estimate By: YtB
Date: 01/12/11
Reviewed By:
Date:

Bid Item Number	Asset / Project Element / Description	Size/Count	Units
BID ITEM 2	New Parking Lot & Site Utilities	1	LS

Item No.	WBS	Description	Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Direct Cost/Unit	Total Direct Costs	NET Cost/Unit	Total NET Costs
1	G10	Site Preparation	$ 2,500.00	$ 2,500	$ 11,710.58	$ 11,711	$ 19,775.94	$ 19,776	$ 33,987	$ 33,987	$ 53,471.16	$ 53,471
2	G20	Site Improvements	$ 143,581.04	$ 143,581	$ 36,335.00	$ 36,335	$ 43,670.00	$ 43,670	$ 223,586	$ 223,586	$ 351,769.04	$ 351,769
3	G30	Site Mechanical Utilities	$ 12,153.36	$ 12,153	$ 14,232.07	$ 14,232	$ 4,240.55	$ 4,241	$ 30,626	$ 30,626	$ 48,184.01	$ 48,184
4	XX	Bid Item 2 General Conditions	$ 12,925.00	$ 12,925	$ 8,350.00	$ 8,350	$ 6,500.00	$ 6,500	$ 27,775	$ 27,775	$ 43,698.55	$ 43,699
		Subtotal Direct Construction Costs	**$ 171,159.40**	**$ 171,159**	**$ 70,627.65**	**$ 70,628**	**$ 74,186.49**	**$ 74,186**	**$ 315,974**	**$315,974**	**$ 497,122.76**	**$497,123**
		Total Value of Government Furnished Property (GFP) Inc. in Direct Cost		**$0.00**		**$ -**		**$ -**	**$ -**	**$0**	**In most cases GFP is normally zero - see footnote-**	
		Direct Cost Subtotal without GFP	$ 171,159		$ 70,628		$ 74,186			**$315,974**		
		Design Contingency	2.00%							$6,319		
		Total Direct Construction Costs								**$322,293**		
		Standard General Conditions	0.00%	Applied to Total Direct Construction Cost less GFP						$0		
		Government General Conditions	3.00%	Applied to Total Direct Construction Cost less GFP						$9,669		
		Subtotal NET Construction Cost								**$331,962**		
		Overhead	8.50%							$28,217		
		Profit	10.00%							$33,196		
		Estimated NET Construction Cost								**$393,375**		
		Contracting Method Adjustment	15.00%							$59,006		
		Inflation Escalation	32	Months	Annual Rate =	3.60%				$44,742		
		Total Estimated NET Cost of Construction								**$497,123**		

GFP costs only apply when the Government pre-purchases items, or provides other materials out of Government inventory, to be installed by contractor. Adjustments and Markup on GFP only include Inflation Escalation; No other adjustment factors or O&P markup have been applied.

United States Department of the Interior
National Park Service
Class A Construction Cost Estimate

LINE ITEM COST SUMMARY

Project: Oso Comida Trailhead Improvements:
Park: Bear Arbor NRA
Park Alpha: BEAR
PMIS: XXXXXX

Estimate By: YtB
Date: 01/12/11
Reviewed By: BBB
Date: 01/17/11

Summary Item: G10 Site Preparation **Total Cost:** $33,987

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
G1010	SITE CLEARING										
31.25.13	Erosion Control	1	LS	$ 2,500.00	$2,500	$ 1,450.00	$1,450	$ 1,250.00	$1,250	$ 5,200.00	$5,200
31.13.13	Clear & Grub Parking Area	40000	SF	$ -	$0	$ 0.12	$4,800	$ 0.19	$7,600	$ 0.31	$12,400
31.13.13	Selective Tree Removal	7	Ea	$ -	$0	$ 178.75	$1,251	$ 154.44	$1,081	$ 333.19	$2,332
31.13.13	Stump Removal	7	Ea	$ -	$0	$ 36.22	$254	$ 94.38	$661	$ 130.60	$914
31.13.13	Strip & Stockpile Topsoil	1500	CY	$ -	$0	$ 0.79	$1,181	$ 1.37	$2,059	$ 2.16	$3,240
				$ -	$0	$ -	$0	$ -	$0	$ -	$0
SUBTOTAL	SITE CLEARING	1	LS	$ 2,500.00	$2,500	$ 8,935.58	$8,936	$ 12,650.94	$12,651	$ 24,086.52	$24,087

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
G1030	SITE EARTHWORK										
31.23.16	Onsite Cut to Fill	1500	CY	$ -	$0	$ 1.25	$1,875	$ 3.55	$5,325	$ 4.80	$7,200
31.23.13	Scarify & Recompact Parking area	30000	SF	$ -	$0	$ 0.03	$900	$ 0.06	$1,800	$ 0.09	$2,700
				$ -	$0	$ -	$0	$ -	$0	$ -	$0
SUBTOTAL	SITE EARTHWORK	1	LS	$ -	$0	$ 2,775.00	$2,775	$ 7,125.00	$7,125	$ 9,900.00	$9,900

Summary Item: G10 Site Preparation

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
G10	Site Preparation	1	LS	$ 2,500.00	$2,500	$ 11,710.58	$11,711	$ 19,775.94	$19,776	$ 33,986.52	$33,987

United States Department of the Interior
National Park Service
Class A Construction Cost Estimate

LINE ITEM COST SUMMARY

Project: Oso Comida Trailhead Improvements:
Park: Bear Arbor NRA
Park Alpha: BEAR
PMIS: XXXXXX

Estimate By: YtB
Date: 01/12/11
Reviewed By: BBB
Date: 01/17/11

Summary Item: G20 Site Improvements **Total Cost:** $223,586

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
G2020	PARKING LOTS										
31.21.16	Subgrade Prep Parking Lot	4500	SY	$ -	$0	$ 0.07	$315	$ 0.75	$3,375	$ 0.82	$3,690
32.11.23	Furnish & Install 6" Roadbase	4500	SY	$ 6.79	$30,543	$ 1.25	$5,625	$ 3.15	$14,175	$ 11.19	$50,343
32.12.16	Furnish & Install 3" Asphalt Paving	4500	SY	$ 11.85	$53,325	$ 1.28	$5,760	$ 3.15	$14,175	$ 16.28	$73,260
32.17.23	Striping	40	Spaces	$ 14.11	$564	$ 27.00	$1,080	$ 8.00	$320	$ 49.11	$1,964
32.17.23	Accessible spaces	7	EA	$ 92.00	$644	$ 145.00	$1,015	$ 35.00	$245	$ 272.00	$1,904
10.14.53	Sign Allowance	1	Allow	$ 2,500.00	$2,500	$ 500.00	$500	$ -	$0	$ 3,000.00	$3,000
32.16.13	Curb & Gutter	1000	LF	$ 12.83	$12,825	$ 4.50	$4,500	$ 8.00	$8,000	$ 25.33	$25,325
32.17.23	Striping - RV Spaces	10	EA	$ 98.00	$980	$ 47.00	$470	$ 18.00	$180	$ 163.00	$1,630
SUBTOTAL	**PARKING LOTS**	**1**	**LS**	**$ 101,381.04**	**$101,381**	**$ 19,265.00**	**$19,265**	**$ 40,470.00**	**$40,470**	**$ 161,116.04**	**$161,116**

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
G2030	PEDESTRIAN PAVING										
03.30.53	Pedestrian Sidewalks at parking lot	3500	SF	$ 5.20	$18,200	$ 3.12	$10,920	$ -	$0	$ 8.32	$29,120
				$ -	$0	$ -	$0	$ -	$0	$ -	$0
SUBTOTAL	**PEDESTRIAN PAVING**	**1**	**LS**	**$ 18,200.00**	**$18,200**	**$ 10,920.00**	**$10,920**	**$ -**	**$0**	**$ 29,120.00**	**$29,120**

United States Department of the Interior
National Park Service
Class A Construction Cost Estimate

LINE ITEM COST SUMMARY

Project: Oso Comida Trailhead Improvements:
Park: Bear Arbor NRA
Park Alpha: BEAR
PMIS: XXXXXX

Estimate By: YtB
Date: 01/12/11
Reviewed By: BBB
Date: 01/17/11

Summary Item: G20 Site Improvements

Total Cost: $223,586

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
G2050	LANDSCAPING										
32.90.00	Parking lot landscape allowance	1	LS	$ 17,500.00	$17,500	$ 4,250.00	$4,250	$ 2,500.00	$2,500	$ 24,250.00	$24,250
32.93.43	Install Selective Trees	20	EA	$ 325.00	$6,500	$ 95.00	$1,900	$ 35.00	$700	$ 455.00	$9,100
SUBTOTAL	**LANDSCAPING**	**1**	**LS**	**$ 24,000.00**	**$24,000**	**$ 6,150.00**	**$6,150**	**$ 3,200.00**	**$3,200**	**$ 33,350.00**	**$33,350**

Summary Item: G20 Site Improvements

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
G20	**Site Improvements**	**1**	**LS**	**$ 143,581.04**	**$143,581**	**$ 36,335.00**	**$36,335**	**$ 43,670.00**	**$43,670**	**$ 223,586.04**	**$223,586**

United States Department of the Interior
National Park Service
Class A Construction Cost Estimate

LINE ITEM COST SUMMARY

Project: Oso Comida Trailhead Improvements:
Park: Bear Arbor NRA
Park Alpha: BEAR
PMIS: XXXXXX

Estimate By: YtB
Date: 01/12/11
Reviewed By: BBB
Date: 01/17/11

Summary Item: G30 Site Mechanical Utilities **Total Cost:** $30,626

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
G3030	STORM SEWER										
33.41.13	18" Reinforced concrete Pipe	300	LF	$ 26.03	$7,809	$ 24.29	$7,286	$ 3.50	$1,050	$ 53.82	$16,145
33.41.13	18" Flared End Section	3	EA	$ 86.95	$261	$ 11.89	$36	$ 6.85	$21	$ 105.69	$317
33.41.13	Water Quality Detention Pond	1	Allow	$ 1,500.00	$1,500	$ 3,500.00	$3,500	$ 3,000.00	$3,000	$ 8,000.00	$8,000
33 44 13	Storm Drain inlets	2	EA	$ 1,292.00	$2,584	$ 1,705.00	$3,410	$ 85.00	$170	$ 3,082.00	$6,164
				$ -	$0	$ -	$0	$ -	$0	$ -	$0
				$ -	$0	$ -	$0	$ -	$0	$ -	$0
				$ -	$0	$ -	$0	$ -	$0	$ -	$0
				$ -	$0	$ -	$0	$ -	$0	$ -	$0
SUBTOTAL	STORM SEWER	1	LS	$ 12,153.36	$12,153	$ 14,232.07	$14,232	$ 4,240.55	$4,241	$ 30,625.98	$30,626

Summary Item: G30 Site Mechanical Utilities

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
G30	Site Mechanical Utilities	1	LS	$ 12,153.36	$12,153	$ 14,232.07	$14,232	4240.55	$4,241	$ 30,625.98	$30,626

United States Department of the Interior
National Park Service
Class A Construction Cost Estimate

LINE ITEM COST SUMMARY

Project: Oso Comida Trailhead Improvements:
Park: Bear Arbor NRA
Park Alpha: BEAR
PMIS: XXXXXX

Estimate By: YtB
Date: 01/12/11
Reviewed By: BBB
Date: 01/17/11

Summary Item: XX Bid Item 2 General Conditions

Total Cost: $27,775

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
01 31	**Project Management & Coordination**										
01.31.13	Project Superintendent	2	Weeks	$ -	$0	$ 2,500.00	$5,000	$ -	$0	$ 2,500.00	$5,000
01.31.13	Project Manager - Half Time	1	Weeks	$ -	$0	$ 750.00	$750	$ -	$0	$ 750.00	$750
01.31.13	General Pupose Laborer - Part Time	1	Weeks	$ -	$0	$ 1,500.00	$1,500	$ -	$0	$ 1,500.00	$1,500
01.31.13	Builders Risk Insurance	1	LS	$ 500.00	$500	$ -	$0	$ -	$0	$ 500.00	$500
01.31.13	General Liabiity Insurance	1	LS	$ 250.00	$250	$ -	$0	$ -	$0	$ 250.00	$250
01.31.13	Payment & Performance Bond 1.5%	1	Unit	$ 7,500.00	$7,500	$ -	$0	$ -	$0	$ 7,500.00	$7,500
01.31.xx	Labor down time due to payroll interviews	1	LS	$ -	$0	$ 500.00	$500	$ -	$0	$ 500.00	$500
01.31.xx	Certified Payroll Costs	0	Unit	$ -	$0	$ 150.00	$0	$ -	$0	$ 150.00	$0
SUBTOTAL	**Project Management & Coordination**	**1000**	**SF**	**$ 8.25**	**$8,250**	**$ 7.75**	**$7,750**	**$ -**	**$0**	**$ 16.00**	**$16,000**

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
01 45	**Quality control**										
1.45.23	Concrete Testing	12	EA	$ 150.00	$1,800	$ -	$0	$ -	$0	$ 150.00	$1,800
01.45.23	Compaction Testing	25	EA	$ 75.00	$1,875	$ -	$0	$ -	$0	$ 75.00	$1,875
01.45.23	Other Testing	1	LS	$ 1,000.00	$1,000	$ -	$0	$ -	$0	$ 1,000.00	$1,000
01.45.23	Special Inspections	1	Allow		$0	$ 600.00	$600	$ -	$0	$ 600.00	$600
				$ -	$0	$ -	$0	$ -	$0	$ -	$0
				$ -	$0	$ -	$0	$ -	$0	$ -	$0
				$ -	$0	$ -	$0	$ -	$0	$ -	$0
				$ -	$0	$ -	$0	$ -	$0	$ -	$0
SUBTOTAL	**Quality control**	**1**	**LS**	**$ 4,675.00**	**$4,675**	**$ 600.00**	**$600**	**$ -**	**$0**	**$ 5,275.00**	**$5,275**

United States Department of the Interior
National Park Service
Class A Construction Cost Estimate

LINE ITEM COST SUMMARY

Project: Oso Comida Trailhead Improvements:
Park: Bear Arbor NRA
Park Alpha: BEAR
PMIS: XXXXXX

Estimate By: YtB
Date: 01/12/11
Reviewed By: BBB
Date: 01/17/11

Summary Item: XX Bid Item 2 General Conditions

Total Cost: $27,775

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
01 54	**Mobilizaton**										
01.54.36	Mobilization	1	Allow	$ -	$0	$ -	$0	$ 6,500.00	$6,500	$ 6,500.00	$6,500
01.54.36	Demobilization	0	Unit	$ -	$0	$ -	$0	$ 4,000.00	$0	$ 4,000.00	$0
				$ -	$0	$ -	$0	$ -	$0	$ -	$0
				$ -	$0	$ -	$0	$ -	$0	$ -	$0
SUBTOTAL	**Mobilizaton**	**1**	**LS**	**$ -**	**$0**	**$ -**	**$0**	**$ 6,500.00**	**$6,500**	**$ 6,500.00**	**$6,500**

Summary Item: XX Bid Item 2 General Conditions

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
XX	**Bid Item 2 General Conditions**	**1**	**LS**	**$ 12,925.00**	**$12,925**	**$ 8,350.00**	**$8,350**	**$ 6,500.00**	**$6,500**	**$ 27,775.00**	**$27,775**

United States Department of the Interior
National Park Service
Class A Construction Cost Estimate

BID ITEM COST SUMMARY

Project: Oso Comida Trailhead Improvements:
Park: Bear Arbor NRA
Park Alpha: BEAR
PMIS Number: XXXXXX

Estimate By: YtB
Date: 01/12/11
Reviewed By: BBB
Date: 01/17/11

Bid Item Number	Asset / Project Element / Description	Size/Count	Units
BID ITEM 3	Picnic Area & Trailhead Improvement	1	LS

Item No.	WBS	Description	Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Direct Cost/Unit	Total Direct Costs	NET Cost/Unit	Total NET Costs
1	G10	Site Preparation	$ -	$ -	$ 11,860.00	$ 11,860	$ 4,845.00	$ 4,845	$ 16,705	$ 16,705	$ 26,282.06	$ 26,282
2	G20	Site Improvements	$ 59,447.50	$ 59,448	$ 25,960.00	$ 25,960	$ 12,269.50	$ 12,270	$ 97,677	$ 97,677	$ 153,675.72	$ 153,676
3	G30	Site Mechanical Utilities	$ 2,124.73	$ 2,125	$ 2,274.65	$ 2,275	$ 330.37	$ 330	$ 4,730	$ 4,730	$ 7,441.34	$ 7,441
6	XX	Bid Item 3 General Conditions	$ 5,775.00	$ 5,775	$ 7,550.00	$ 7,550	$ 2,500.00	$ 2,500	$ 15,825	$ 15,825	$ 24,897.55	$ 24,898
7	XX		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
8	XX		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
		Subtotal Direct Construction Costs	**$ 67,347.23**	**$ 67,347**	**$ 47,644.65**	**$ 47,645**	**$ 19,944.87**	**$ 19,945**	**$ 134,937**	**$134,937**	**$ 212,296.67**	**$212,297**
		Total Value of Government Furnished Property (GFP) Inc. in Direct Cost		**$0.00**		**$ -**		**$ -**	**$ -**	**$0**		
		Direct Cost Subtotal without GFP		$ 67,347		$ 47,644.65		$ 19,944.87		**$134,937**		
		Design Contingency	2.00%							$2,699		
		Total Direct Construction Costs								**$137,635**		
		Standard General Conditions	0.00%	Applied to Total Direct Construction Cost less GFP						$0		
		Government General Conditions	3.00%	Applied to Total Direct Construction Cost less GFP						$4,129		
		Subtotal NET Construction Cost								**$141,765**		
		Overhead	8.50%							$12,050		
		Profit	10.00%							$14,176		
		Estimated NET Construction Cost								**$167,991**		
		Contracting Method Adjustment	15.00%							$25,199		
		Inflation Escalation	32	Months	Annual Rate =	3.60%				$19,107		
		Total Estimated NET Cost of Construction								**$212,297**		

In most cases GFP is normally zero - see footnote-

GFP costs only apply when the Government pre-purchases items, or provides other materials out of Government inventory, to be installed by contractor. Adjustments and Markup on GFP only include Inflation Escalation; No other adjustment factors or O&P markup have been applied.

United States Department of the Interior
National Park Service
Class A Construction Cost Estimate

LINE ITEM COST SUMMARY

Project: Oso Comida Trailhead Improvements:
Park: Bear Arbor NRA
Park Alpha: BEAR
PMIS: XXXXXX

Estimate By: YtB
Date: 01/12/11
Reviewed By: BBB
Date: 01/17/11

Summary Item: G10 Site Preparation **Total Cost:** $16,705

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
G1010	SITE CLEARING										
31.11.10	Misc. Site Clearing	1	LS	$ -	$0	$ 2,200.00	$2,200	$ 1,650.00	$1,650	$ 3,850.00	$3,850
31.13.13	Hand Clear New Trail Alignment	500	LF	$ -	$0	$ 6.20	$3,100	$ 1.25	$625	$ 7.45	$3,725
SUBTOTAL	SITE CLEARING	1	LS	$ -	$0	$ 5,300.00	$5,300	$ 2,275.00	$2,275	$ 7,575.00	$7,575

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
G1020	SITE DEMOLITION & RELOCATIONS										
02.41.13	Misc. Site Demolition	1	LS	$ -	$0	$ 1,270.00	$1,270	$ 485.00	$485	$ 1,755.00	$1,755
02.41.13	Remove Existing Picnic Tables & Grills	1	LS	$ -	$0	$ 2,350.00	$2,350	$ 500.00	$500	$ 2,850.00	$2,850
SUBTOTAL	SITE DEMOLITION & RELOCATIONS	1	LS	$ -	$0	$ 3,620.00	$3,620	$ 985.00	$985	$ 4,605.00	$4,605

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
G1030	SITE EARTHWORK										
31.22.16	Fine Grade & Compact Picnic subgrades	3500	SF	$ -	$0	$ 0.15	$525	$ 0.20	$700	$ 0.35	$1,225
31.22.16	Hand Grade Trail	3000	SF	$ -	$0	$ 0.58	$1,740	$ 0.05	$150	$ 0.63	$1,890
31.23.23	Scarify & recompact existing dirt parking lot	10000	SF	$ -	$0	$ 0.03	$300	$ 0.06	$600	$ 0.09	$900
31.23.23	Scarify Existing Trail 500' x 3'	1500	SF	$ -	$0	$ 0.25	$375	$ 0.09	$135	$ 0.34	$510
SUBTOTAL	SITE EARTHWORK	1	LS	$ -	$0	$ 2,940.00	$2,940	$ 1,585.00	$1,585	$ 4,525.00	$4,525

Summary Item: G10 Site Preparation

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
G10	Site Preparation	1	LS	$ -	$0	$ 11,860.00	$11,860	$ 4,845.00	$4,845	$ 16,705.00	$16,705

United States Department of the Interior
National Park Service
Class A Construction Cost Estimate

LINE ITEM COST SUMMARY

Project: Oso Comida Trailhead Improvements:
Park: Bear Arbor NRA
Park Alpha: BEAR
PMIS: XXXXXX

Estimate By: YtB
Date: 01/12/11
Reviewed By: BBB
Date: 01/17/11

Summary Item: G20 Site Improvements **Total Cost:** $97,677

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
G2030	PEDESTRIAN PAVING										
32.06.10	Furnish & Install Decomposed Granite DG	170	Tons	$ 76.75	$13,048	$ 11.50	$1,955	$ 8.35	$1,420	$ 96.60	$16,422
31.32.13	Mix, spread, finegrade & compact organic binder	6500	SF	$ 1.30	$8,450	$ 0.72	$4,680	$ 0.15	$975	$ 2.17	$14,105
03.30.53	Pedestrian Sidewalks-Trial Connection	1500	SF	$ 5.13	$7,695	$ 3.10	$4,650	$ 0.25	$375	$ 8.48	$12,720
				$ -	$0	$ -	$0	$ -	$0	$ -	$0
SUBTOTAL	PEDESTRIAN PAVING	1	LS	$ 29,192.50	$29,193	$ 11,285.00	$11,285	$ 2,769.50	$2,770	$ 43,247.00	$43,247

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
G2040	SITE DEVELOPMENT										
32.31.29	Install new seat resistant single rail fence	500	LF	$ 32.00	$16,000	$ 5.50	$2,750	$ 2.00	$1,000	$ 39.50	$19,750
				$ -	$0	$ -	$0	$ -	$0	$ -	$0
SUBTOTAL	SITE DEVELOPMENT	1	LS	$ 16,000.00	$16,000	$ 2,750.00	$2,750	$ 1,000.00	$1,000	$ 19,750.00	$19,750

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
G2050	LANDSCAPING										
32.90.00	Picnic Area landscape repairs & improvements	1	LS	$ 500.00	$500	$ 1,800.00	$1,800	$ 600.00	$600	$ 2,900.00	$2,900
32.90.00	Trail landscape repairs & improvements	1	LS	$ 500.00	$500	$ 1,600.00	$1,600	$ 750.00	$750	$ 2,850.00	$2,850
32.91.13	Soil amenders	11500	SF	$ 0.13	$1,495	$ 0.05	$575	$ 0.10	$1,150	$ 0.28	$3,220
32.32.60	Place Barrier Rocks	1	Allow	$ -	$0	$ 500.00	$500	$ 2,000.00	$2,000	$ 2,500.00	$2,500
32.93.33	Install native shrubs	150	EA	$ 36.50	$5,475	$ 12.00	$1,800	$ 5.00	$750	$ 53.50	$8,025
				$ -	$0	$ -	$0	$ -	$0	$ -	$0
SUBTOTAL	LANDSCAPING	1	LS	$ 7,970.00	$7,970	$ 6,275.00	$6,275	$ 5,250.00	$5,250	$ 19,495.00	$19,495

United States Department of the Interior
National Park Service
Class A Construction Cost Estimate

LINE ITEM COST SUMMARY

Project: Oso Comida Trailhead Improvements:
Park: Bear Arbor NRA
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PMIS: XXXXXX

Estimate By: YtB
Date: 01/12/11
Reviewed By: BBB
Date: 01/17/11

Summary Item: G20 Site Improvements

Total Cost: $97,677

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
G2060	SITE FURNISHINGS										
12.93.43	Misc Site Furnishings	1	Allow	$ 1,685.00	$1,685	$ 1,150.00	$1,150	$ 250.00	$250	$ 3,085.00	$3,085
12.93.43	Reinstall Site Furninshings at Picnic area	1	LS	$ 4,600.00	$4,600	$ 4,500.00	$4,500	$ 3,000.00	$3,000	$ 12,100.00	$12,100
				$ -	$0	$ -	$0	$ -	$0	$ -	$0
				$ -	$0	$ -	$0	$ -	$0	$ -	$0
SUBTOTAL	SITE FURNISHINGS	1	LS	$ 6,285.00	$6,285	$ 5,650.00	$5,650	$ 3,250.00	$3,250	$ 15,185.00	$15,185

Summary Item: G20 Site Improvements

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
G20	Site Improvements	1	LS	$ 59,447.50	$59,448	$ 25,960.00	$25,960	$ 12,269.50	$12,270	$ 97,677.00	$97,677

United States Department of the Interior
National Park Service
Class A Construction Cost Estimate

LINE ITEM COST SUMMARY

Project: Oso Comida Trailhead Improvements:
Park: Bear Arbor NRA
Park Alpha: BEAR
PMIS: XXXXXX

Estimate By: YtB
Date: 01/12/11
Reviewed By:
Date:

Summary Item: G30 Site Mechanical Utilities **Total Cost:** $4,730

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
G3030	STORM SEWER										
33 41 13	12 CMP" Trail Crossing Culverts	60	LF	$ 17.35	$1,041	$ 15.77	$946	$ 2.13	$128	$ 35.25	$2,115
33 41 13	12" Flared End Sections	12	EA	$ 77.80	$934	$ 85.69	$1,028	$ 12.74	$153	$ 176.23	$2,115
	Misc Drainage Improvemments	1	LS	$ 150.00	$150	$ 300.00	$300	$ 50.00	$50	$ 500.00	$500
				$ -	$0	$ -	$0	$ -	$0	$ -	$0
				$ -	$0	$ -	$0	$ -	$0	$ -	$0
				$ -	$0	$ -	$0	$ -	$0	$ -	$0
				$ -	$0	$ -	$0	$ -	$0	$ -	$0
				$ -	$0	$ -	$0	$ -	$0	$ -	$0
SUBTOTAL	STORM SEWER	1	LS	$ 2,124.73	$2,125	$ 2,274.65	$2,275	$ 330.37	$330	$ 4,729.75	$4,730

Summary Item: G30 Site Mechanical Utilities

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
G30	Site Mechanical Utilities	1	LS	$ 2,124.73	$2,125	$ 2,274.65	$2,275	330.368	$330	$ 4,729.75	$4,730

United States Department of the Interior
National Park Service
Class A Construction Cost Estimate

LINE ITEM COST SUMMARY

Project: Oso Comida Trailhead Improvements:
Park: Bear Arbor NRA
Park Alpha: BEAR
PMIS: XXXXXX

Estimate By: YtB
Date: 01/12/11
Reviewed By: BBB
Date: 01/17/11

Summary Item: XX Bid Item 3 General Conditions

Total Cost: $15,825

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
01 31	**Project Management & Coordination**										
31.23.15	Project Superintendent	2	Weeks	$ -	$0	$ 2,500.00	$5,000	$ -	$0	$ 2,500.00	$5,000
03.15.05	Project Manager - Half Time	1	Weeks	$ -	$0	$ 750.00	$750	$ -	$0	$ 750.00	$750
03.11.13	General Pupose Laborer - Part Time	1	Weeks	$ -	$0	$ 1,500.00	$1,500	$ -	$0	$ 1,500.00	$1,500
03.21.10	Builders Risk Insurance	1	LS	$ 200.00	$200	$ -	$0	$ -	$0	$ 200.00	$200
03.30.53	General Liabiity Insurance	1	LS	$ 125.00	$125	$ -	$0	$ -	$0	$ 125.00	$125
03.11.13	Payment & Performance Bond 1.5%	1	Unit	$ 3,000.00	$3,000	$ -	$0	$ -	$0	$ 3,000.00	$3,000
03.35.29	Labor down time due to payroll interviews	1	LS	$ -	$0	$ -	$0	$ -	$0	$ -	$0
07.27.13	Certified Payroll Costs	0	Unit	$ -	$0	$ 25.00	$0	$ -	$0	$ 25.00	$0
SUBTOTAL	**Project Management & Coordination**	**1000**	**SF**	**$ 3.33**	**$3,325**	**$ 7.25**	**$7,250**	**$ -**	**$0**	**$ 10.58**	**$10,575**

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
01 45	**Quality control**										
01 45 23	Concrete Testing	8	EA	$ 150.00	$1,200	$ -	$0	$ -	$0	$ 150.00	$1,200
01 45 23	Compaction Testing	10	EA	$ 75.00	$750	$ -	$0	$ -	$0	$ 75.00	$750
01 45 23	Other Testing	1	LS	$ 500.00	$500	$ -	$0	$ -	$0	$ 500.00	$500
01 40 00	Special Inspections	1	Allow		$0	$ 300.00	$300	$ -	$0	$ 300.00	$300
MF-2004 Code	Description	0	Unit	$ -	$0	$ -	$0	$ -	$0	$ -	$0
MF-2004 Code	Description	0	Unit	$ -	$0	$ -	$0	$ -	$0	$ -	$0
MF-2004 Code	Description	0	Unit	$ -	$0	$ -	$0	$ -	$0	$ -	$0
MF-2004 Code	Description	0	Unit	$ -	$0	$ -	$0	$ -	$0	$ -	$0
SUBTOTAL	**Quality control**	**1**	**LS**	**$ 2,450.00**	**$2,450**	**$ 300.00**	**$300**	**$ -**	**$0**	**$ 2,750.00**	**$2,750**

United States Department of the Interior
National Park Service
Class A Construction Cost Estimate

LINE ITEM COST SUMMARY

Project: Oso Comida Trailhead Improvements:
Park: Bear Arbor NRA
Park Alpha: BEAR
PMIS: XXXXXX

Estimate By: YtB
Date: 01/12/11
Reviewed By: BBB
Date: 01/17/11

Summary Item: XX Bid Item 3 General Conditions

Total Cost: $15,825

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
01 54 36	**Mobilizaton**										
01 54 36.5	Mobilization	1	Allow	$ -	$0	$ -	$0	$ 2,500.00	$2,500	$ 2,500.00	$2,500
	Demobilization	0	Unit	$ -	$0	$ -	$0	$ 1,500.00	$0	$ 1,500.00	$0
				$ -	$0	$ -	$0	$ -	$0	$ -	$0
				$ -	$0	$ -	$0	$ -	$0	$ -	$0
SUBTOTAL	**Mobilizaton**	**1**	**LS**	**$ -**	**$0**	**$ -**	**$0**	**$ 2,500.00**	**$2,500**	**$ 2,500.00**	**$2,500**

Summary Item: XX Bid Item 3 General Conditions

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
XX	**Bid Item 3 General Conditions**	**1**	**LS**	**$ 5,775.00**	**$5,775**	**$ 7,550.00**	**$7,550**	**$ 2,500.00**	**$2,500**	**$ 15,825.00**	**$15,825**

Appendix B

CLASS B CONSTRUCTION COST ESTIMATES

Appendix B

CLASS B CONSTRUCTION COST ESTIMATES

This Appendix describes the estimating products and services to be prepared for Class B (Budgetary) Construction Cost Estimate. The following estimate submittals are considered Class B estimates:

A. Schematic Design (SD) submittal of preferred design alternative

B. Design Development (DD) submittal

C. Other intermediate design level budget purposes

Class B (Budgetary) Construction Cost Estimating

Class B Construction Cost Estimates are referred to as *budgetary* estimates by the design and construction industry. These estimates are generally prepared with a partially defined scope of work (SOW). The project programming and major project elements are generally well defined, design efforts are becoming focused on key systems and development of specific details; however some aspects of the final details are still evolving and portions of the SOW still require some level of interpretation and assumptions to prepare a comprehensive cost estimate. In the National Park Service Class B estimates are generally used for:

A. Schematic Design (SD) preferred alternative submittal (Least Detailed)

1. Many design elements are still undefined, dimensioned drawings are not typically available.

2. Detail drawings are typically not provided.

3. Some materials are identified in the basis of design report but detailed specifications are not available,

4. Major mechanical, electrical and plumbing system requirements are identified but the systems have not been designed and no layouts are provided.

5. The Class B Construction Cost Estimate at the SD level requires significant interpretation and assumptions to fill in the blanks. Many cost items are expressed as lump sum allowances or gross square foot allowances.

B. Design Development (DD) submittal (More Detailed)

1. Construction plans are 40%-50% complete

2. Some detail drawings are provided, but many are being refined, Other details are merely place holders or are still not provided

3. Division 1 draft specifications and outline specifications provide some supplemental information to the basis of design report.

4. Major mechanical, electrical and plumbing systems have been sized and some preliminary layouts may be available. Few if any details are provided.

5. The Class B Construction Cost Estimate at the DD level should contain detailed line items that represent most anticipated cost elements. Some interpretation and assumptions are still necessary.

A Class B Construction Cost Estimate is a budgetary cost estimate based on a combination of detailed installation analysis, typical assembly costs and some lump sum or square footage costs derived from similar projects. Support information for Class B Construction Cost Estimates should include:

A. SD Level support information:

1. Preliminary floor plans

2. Preliminary site layouts.

3. Basis of Design Report

4. Frequently the same information that was used to select the Preferred Alternative in the Choosing By Advantage (CBA) / Value Analysis (VA) process.

B. DD Level support information

1. Architectural building designs (40%-50% drawings).
   a. Nearly finalized floor plans, elevations, building sections, reflected ceiling plans, etc. Some are still subject to change
   b. Preliminary typical wall sections showing proposed structural systems, insulation, wall sheathing etc. Many are still missing or just place holders.
   c. Partially completed floor and roof sections, typically pending structural design confirmation.
   d. Initial door and window schedules.
   e. Draft finish schedules.

2. Site improvement plans (40%-50% drawings).
   a. Existing conditions plan
   b. Preliminary site clearing & demolition plan, including proposed limits of disturbance, demolition of existing improvements, tree removal, tree protection, etc.
   c. Proposed grading and drainage plans.
   d. Initial utility improvement plans, including sewer, water, subsurface drainage and dry utilities.

e. Partial site improvement plans showing parking, roadways, sidewalks, flatwork, etc.

f. Sheet layout and initial design for landscaping & irrigation plans, including way finding signage, interpretive displays, etc. Still pending finalized site layout, building footprints and refinement of accessibility features.

3. Mechanical, Electrical and Plumbing System Initial Designs

   a. Identification of measures required for desired LEED classification.

   b. Scoping and preliminary design for alternative energy systems

   c. Identification and preliminary design for other unique systems (ground source heat pumps, heat exchangers, battery storage, etc.

4. Structural Design based on initial calculations but pending finalized architectural details.

   a. Preliminary foundation designs, including foundation sizing, typical footing sections, structural wall sections, column details, etc.

   b. Draft roof framing plans, including truss specification, beam sizing, roof sheathing requirements, tie downs, etc.

   c. Initial structural details and typical section for other unique structural systems (SIPS, straw bale, adobe, rammed earth, green roof, etc.)

5. Outline Specifications

   a. Draft Division 1 specifications

   b. Outline specifications for balance of project

Class B Construction Cost Estimating Accuracy

Class B Construction Cost Estimates are generally prepared with incomplete design documents, Scopes of Work are still subject to minor revisions and details are partial or missing. Considerable estimating judgment is still required to assure that costs remain within previously approved funding limits.

A. The generally accepted industry accuracy range of Class B Construction Cost Estimates is –15% to +30 %.

1. With this as the accepted accuracy a $1,000,000.00 Class B Construction Cost Estimate would have an accepted range of: $850,000.00 to $1,300,000.00.

2. For NPS projects, this level of accuracy may not be adequate to assure projects are allowed to move forward.

   a. At the SD phase projects greater than $500,000 in net construction cost are submitted to the Development Advisory Board (DAB) for approval before they can proceed into Design Development (DD). The cost estimates must accurately reflect the anticipated project costs as close as possible.

b. It may be necessary to reduce programming, change systems, or eliminate features to keep the project within budget.

B. The NPS project approval and funding process dictates that a tighter tolerance than the industry accepted accuracy range must be achieved.

1. Special consideration should be given to providing additional detail at the Class B Construction Cost Estimate level to more clearly define the program function and costs of the proposed facility.

2. Design details that could be reasonably inferred should be incorporated as itemized allowances in the direct cost total of Class B, rather than be assumed to be part of the design contingency markup.

C. Because of the critical nature of NPS Class B Construction Cost estimates for project approval, program retention and funding, it is imperative that estimators clearly document the scope of work in the Basis of Estimate Statement, as well as other factors that may have an impact on the overall estimated costs.

1. All supporting material use to define the scope of work should be thoroughly documented in the Basis of Estimate Statement. Any specific instructions from the end user, as well as known project constraints should also be included. List any items, or elements of work that are specifically excluded from the estimate.

2. The sources of all cost data used to prepare the estimate must be listed. Include information about costs obtained from vendors, manufacturers, or derived from similar projects.

3. List any assumptions relied on during the estimating process. Highlight any questions or information that may need clarification for future estimates.

4. If any items, design elements or assumptions have changed since previous cost estimates were prepared, describe and quantify the changes.

Class B Construction Cost Estimate Mark-ups and Design Contingencies

The cost information used to prepare Budgetary Class B Construction Cost Estimates may be a combination local costs obtained through detailed research and/or derived from sources other than park/project specific cost data. Complete design details may not be available to precisely define every aspect of the work and some design elements may still change somewhat, or be eliminated, while others may need to be added.

A. **Location Adjustments:** Generic publically available cost databases usually consist of averages compiled from nationwide or regional bid results. They typically do not reflect the local market conditions prevalent at most NPS locations. To make the Budgetary Class B cost estimates reflect anticipated project specific costs it may be necessary to apply location and other project specific adjustment factors or mark-ups to the direct costs developed using non-project specific cost data.

1. **Published Location Factor:** At the Budgetary Class B estimate stage the location factor is used either to adjust generic average cost data to a specific location, or to adjust cost data from one specific location to another. Most published location factors or cost indexes do not have specific values that reflect NPS project locations, so it is common practice to select either the closest published market center, or the one that is most likely to reflect the market conditions that will be most prevalent for the project. Some additional estimating judgment may be required to determine the appropriate location factor to use if cost data is a combination of local cost information and generic cost data.

2. **Remoteness Factor:** Since most NPS units are not located in major metropolitan areas, and/or are difficult to access, merely adjusting the direct costs to the appropriate market center may not completely reflect the cost of performing work on the project. For most NPS Budgetary Class B estimates an additional markup is usually required to account for remoteness and access.

3. **Federal Wage Rate Factor:** Generic databases use average cost data derived from a variety of sources that may, or may not, include projects where Davis-Bacon Act prevailing wage rates were paid to workers. The average wage rates included in the cost database must be compared to the minimum Davis-Bacon Act mandated wages for county where the project is located and an appropriate adjustment should be applied to the labor component of the direct cost.

    a. **CAUTION:** In some areas, Davis Bacon Act wages may be less than the normal wages that are being paid by contractors for skilled labor. When this occurs, no adjustment for Davis-Bacon Act is necessary, but it still may be necessary to adjust the direct costs to reflect the actual local prevailing wage rates. Some additional research and estimating judgment is required.

4. **State & Local Taxes:** State and Local Tax rates will vary for each project. Sales and use taxes are generally only applicable to material and rental equipment costs. In a few areas, other local taxes may be applicable to the contractor's total revenue. Some adjustment to the mark-up structure may be necessary for special tax situations. The applicable tax rates for each estimate should be individually researched and clearly documented in the Basis of Estimate Statement.

SPECIAL NOTE FOR PROJECT SPECIFIC COST DATA: If cost data used to derive the estimate is derived from project or park specific data that already corresponds to the current estimate project location and includes payment of mandated prevailing wages, taxes, etc., the use of Location Adjustments may not be required.

B. Design Contingency: With the design documents used to prepare Budgetary Class B cost estimates, some design details are still being refined. It may not be possible to develop firm quantities or identify all cost elements during this process, so a Design (Estimating) Contingency mark-up is added the direct cost to account for detailing, changes and minor scope adjustments.

1. The typical Design (Estimating) Contingency used for NPS Budgetary Class B Construction Cost estimates is 10% to 20%.
    a. At the Schematic Design (SD) stage, Class B estimates generally apply a Design Contingency at or near the 15% to 20% range.
    b. Later, at the Design Development stage Class B Construction Cost estimates generally reduce the Design Contingency to the 10% to 15% range as the level of detail increases.

C. General Conditions: The direct cost line items in Budgetary Class B estimates do not include allowances for General Conditions or job-site indirect costs, so mark-up factors are applied to include cost to cover these project expenses.

1. **Standard General Conditions**, also known as job site indirect costs, or General Requirements, typically vary between 4% and 20% of the location adjusted project costs.

2. **Government General Conditions** are other project specific indirect costs associated with doing business with the Federal Government and National Park Service. These costs typically add an additional 5% to 10% to the location adjusted project costs.

3. In many cases, it may be appropriate to begin itemizing the anticipated General Conditions costs as part of the Class B Construction Cost Estimating process rather than relying solely on a percentage mark-up.

D. Historic Preservation Factor: If the project involves additions or repairs to historic structures, or is in close proximity to historical or cultural sites, it may be necessary to apply a Historic Preservation Factor to account for unknown, or unidentified costs associated with protecting and/or matching the historical fabric of the resource.

1. At the Schematic Design (SD) stage, few of these impacts are typically quantified for most projects, so it is appropriate to apply a mark-up factor to allow for the associated costs. A range of 0-10% is not uncommon.
2. Later, at the Design Development stage, many of the historical and cultural preservation requirements should be identified and to the extent possible, cost impacts should be included in the direct costs. A small mark-up (0-5%) may still be appropriate, depending on the level of historical detail contained in the project documents and included in the direct costs.
3. For many new construction and other non historical projects it is common for this mark-up factor to be zero (0). For purely historical preservation/restoration projects all of these costs should be included in the direct cost items.

E. Overhead & Profit: The rates for overhead and profit (O&P) are based on the anticipated market conditions at the time the work will be performed. Under normal market conditions, the normal range for O&P should be 10-25%, depending on the project size, complexity and level of risk associated with work.

F. **Bonds & Permits:** The normal range for bonds and permits is 1-3%. Many estimators choose to include Bond & Permit costs as an itemized cost in the General Conditions.

G. **Contracting Method Adjustment:** By the time Class B Construction Cost estimates are typically submitted, the NPS project manager or contracting officer should have specified the preferred contracting method. The appropriate mark-up factors are discussed in the main body of the estimating handbook. The mark-up factor chosen and the rationale for the selection should be well documented in the Basis of Estimate Statement.

H. **Inflation Escalation:** The inflation escalation factor is based on the projected inflation rates from the time of the estimate until the mid-point of construction, compounded annually. The rate used and the rational for the selection should be well documented in the Basis of Estimate Statement.

Government Furnished Property (GFP)

In rare cases, the Government may pre-purchase some of the materials or specialized equipment required for a project, or they may be provided out of Government inventory. When this occurs, provided that the purchase price includes the cost of taxes and freight to the project site, most of the mark-up factors should not be applied to the amount of the purchase or the value of the GFP provided. If the GFP is projected as a future purchase, the Inflation Escalation may still apply. All GFP must be listed in the Basis of Estimate Statement and the associated costs should be accounted for separately in the estimate.

Work Breakdown Structure for Budgetary Class B Construction Cost Estimates

The Work Breakdown Structure (WBS) for Class B Construction Cost Estimates should be structured to provide a logical hierarchy of cost elements. This hierarchy will provide the framework upon which future, more detailed cost estimates will be assembled.

A. **Project Cost Summary:** At the estimate summary level project costs should be organized first by individual major Asset or Project Element, then by UNIFORMAT II, detail Level 2.

B. **Estimate Detail / Line Item Cost Summary:** Additional WBS cost detail should be provided for each of the Project Cost Summary line items.

1. Cost detail should be organized using the UNIFORMAT II, Elemental Classification System.
2. Detailed costs should be presented at UNIFORMAT II, detail Level 3.
3. In most cases, it is both desirable and appropriate to refine the level of WBS detail beyond the required UNIFORMAT II, Level 3.

a. Additional WBS detail should be organized and presented using either the UNIFORMAT II, Level 4 hierarchy, or the MasterFormat 2004, Level 4 hierarchy coding.

b. Providing this greater level of detail is strongly encouraged.

C. Estimate Format: The estimate should present the cost information in a tabular or spreadsheet format:

1. The estimate summary should arrange each Asset or Project Element as individual line items.
2. The horizontal format for the estimate should include a minimum of seven (8) columns for tabulating the following information in each line item:
   a. Item Number
   b. UNIFORMAT II, WBS code
   c. Item Description
   d. Total Material Cost
   e. Installation Unit Cost
   f. Total Installation Cost
   g. Direct Unit Cost
   h. Total Direct Cost
3. An additional two (2) columns may be provided to present the NET Construction Costs spread across the individual WBS line items. each line item:
   a. Net Unit Cost
   b. Total Net Cost

I. Estimate Sample: An example of a Class B Construction Cost Estimate is provided at the end of this appendix.

J. Estimate Template: A template for Class B Construction Cost Estimates is provided on the NPS Project Workflows website, Section 2.8, located at http://www.nps.gov/dscw/dbbschematic.htm .

1. The Class B Construction Cost Estimate template is provided as a guideline only and its use is not required, provided that all estimates submitted contain the required information and are presented in a similar format, as specified above and elsewhere in the handbook.
2. Care must be exercised if using the templates to avoid corrupting embedded formulas and other automated functions.
3. Each estimator is responsible for proof reading, data verification and mathematical checks for their own estimates.
4. The National Park Service assumes no liability resulting from the use or misuse of the cost estimating templates by third parties.

Submittal Package Requirements for Budgetary Class B Estimates

The estimate submittal package shall contain the following at a minimum:

A. **Basis of Estimate Statement:** This page(s) of the estimate doubles as a cover page for the estimate. The Basis of Estimate statement page should include the following items:

1. Title of project
2. Park name and location within park, if applicable
3. The park's four letter alpha code
4. The PMIS number for the project
5. Date of estimate
6. Estimator's Name, Company, Address and Contact information.
7. List of background supporting material describing the scope of work and any information used or referenced for preparing the estimate
8. Documentation of all sources of cost data, detailing the cost data used to prepare the estimate; include source name, date, volume number, etc.
9. A description of any assumptions made, or relied on to prepare the estimate.
10. A brief description of any major changes in the scope of work, materials, systems, or assumptions, relative to previous cost estimates for the same project.
11. Short descriptions and justifications for all mark-ups, add-ons, and escalation factors used in estimate.
12. Other comments and assumptions regarding the estimate or supporting material.

B. **Project Cost Summary:** The estimate project cost summary should be formatted as described above and show all cost items, subtotals, mark-ups and total.

C. **Line Item Cost Summaries**: The line item cost summary estimate detail should be formatted to the WBS detail as described above.

United States Department of the Interior
National Park Service
Class B Construction Cost Estimate

BASIS OF ESTIMATE

PROJECT INFORMATION

Project:	**Oso Comida Trailhead Improvements**
Park:	**Bear Arbor NRA**
Park Alpha:	**BEAR**
PMIS:	**XXXXXX**
Estimate Date:	**12/16/2010**
Prepared By:	**YtB**
Company:	NPS Bear Arbor NRA
Address:	123 Bruin Meadows Rd.
City, State Zip:	Grizzley Hollow, CA 96023
Phone:	(555) 123-4567

BACKGROUND SUPPORTING MATERIAL (Scope of Work):

CBA Meeting meeting minutes and revisions to preferred alternative SD plans. The preferred alternative replaced the previously programmed vault toilets with a wet comfort station and septic system in repsponse to a request by the Friends of Bruin Meadows group offer to fund an additional $700k for the upgrade. The Scope of Work for the project now includes: Remove existing pit toilets; construct new Comfort Station, Septic system: 50 space paved parking area; Rehabilitate picnic area; Trail connection improvements; and fencing. The septic system incorporates a new technology in-tank sanitary treatment process that will be pre ordered and supplied by NPS as GFP. Puchase cost of tank and treatment materials is included in direct cost estimate.

SOURCE OF COST DATA:

Majority of costs are based on RS Means 2010 Assemblies Cost Data, 35th Annual Edition and 2010 Facilities Construction Cost Data (FCCD), 25th Annual Edition. Parking lot costs are based on actual, in-park FHWA road project on Bruin Meadows Road adjacent to site - adjusted down by -23% to remove remoteness, location & wage factors. Purchase price for the prefabricated Septic-King™ is an actual vendor quote FOB park warehouse. **WHENEVER RSMEANS BARE UNIT COSTS WERE USED FROM THE FCCD DATA, 10% WAS ADDED TO MATERIALS & EQUIPMENT AND 60% TO LABOR TO ACCOUNT FOR INSTALLER (Subcontractor) O&P**

ESTIMATE ASSUMPTIONS:

Estimate assumes that all improvements will be constructed as a singe project during one construction season. East half of existing dirt parking area and trailhead will remain in operation until new paved lot and walk connections are completed. 2nd half of existing lot will be available for contractor laydown/equipment area, but contractor's labor force must park at maintenance yard 5 miles away and be shuttled into site. Shuttle costs and additional portable toilet cost impacts are included in Government Special Conditions. Septic-King™ system will be preordered by the Park to avoid long lead time from impacting installation schedule. Water for comfort station is assumed to be available from waterline in Bruin Meadows Road

MAJOR CHANGES FROM PREVIOUS ESTIMATE:

Previously programmed precast vault toilets have been replaced with a full service wet comrfort station. Trail connection to Bruin Meadows overlook has been changed to integrally colored PCC Sidewalk for the entire 650' length. Three rail channelizing fence has been changed to single-rail seat-resistant wood rail.

United States Department of the Interior
National Park Service
Class B Construction Cost Estimate

BASIS OF ESTIMATE

PROJECT INFORMATION

Project: Oso Comida Trailhead Improvements

Park: Bear Arbor NRA
Park Alpha: BEAR
PMIS: XXXXXX
Estimate Date: 12/16/2010

DESCRIPTION OF MARK-UP & ADD-ONS:

Location Factor:	6.30%	Closest RS Means market Center is Redding CA; CCI=106.3
Remoteness Factor:	13.0%	Site is 130 miles from published commercial center. Good state highway access to site. Minor traffic impacts.
Wage Rate Factor:	3.70%	Compared local county Davis-Bacon wage rates to location adjusted RS Means wages for the trades anticipated.
State & Local Taxes:	8.25%	6% State Sales Tax plus 2.25% county and regional transportation district taxes. **See Comment Below**
Design Contingency:	15.0%	SD documents have few details. Scope of work is simple but since not defined in detail 15% is included for future changes
Standard. General Conditions:	12.0%	Relatively simple heavy/civil construction project, but the addition of wet comfort station, will increase job-site indirects from previous 10%
Government General Conditions:	12.0%	Higher than normal; Includes impacts associated with shuttling crews and maintaining public access to existing trail.
Historic Preservation Factor:	3.00%	Project is adjacent to a historical bridge and several cultural sites that will require protection/modification to plan.
Contractor Overhead:	8.50%	Normal mid-range for Small to medium sized Heavy/Civil contractor in this area
Contractor Profit:	10.0%	Economic downturn is easing and we anticipate modest increase in contractor profit by 2013 project date
Bonds and Permits:	2.00%	Standard to high range for low volume but established Heavy/Civil contractors. 0.5% added for building.
Contracting Method Adjustment:	15.0%	Preliminary indications are that negotiated sole-source SBA Section 8a or SDV procurement will be utilized.
Annual Inflation Escalation Factor:	3.60%	Anticipate easing of economic downturn will trigger mild inflation
Time Until Project Midpoint (Months)	44	RS Means data date of January 2010 until August 2013.

OTHER COMMENTS:

Grading plan is not complete, so quantities used are best estimate of typical costs for this type of construction. Since new comfort station will have deepened grade-beam/strip footing on piers w/PT slab on grade construction insufficient spoils will be generated to backfill existing pits. Assumed 100% import from NPS in park-stockpile.

United States Department of the Interior
National Park Service
Class B Construction Cost Estimate

PROJECT COST SUMMARY

Project: Oso Comida Trailhead Improvements
Park: Bear Arbor NRA
Park Alpha: BEAR
PMIS Number: XXXXXX

Estimate By: YtB
Date: 12/16/10

Reviewed By: BBB
Date: 12/20/10

Asset / Project Element	Size/Count	Units
Trailhead with Comfort Station	1000	SF

Item No.	WBS	Description	Material Cost/Unit	Total Material Cost	Installation Cost/Unit	Total Install Cost	Direct Cost/Unit	Total Direct Costs	NET Cost/Unit	Total NET Costs
1	A10	Foundations	$ 22.08	$ 22,080	$ 13.02	$ 13,017	$ 35.10	$ 35,097	$ 95.18	$ 95,183
2	A20	Basement Construction	$ 7.60	$ 7,596	$ 10.18	$ 10,175	$ 17.77	$ 17,772	$ 48.20	$ 48,197
3	B10	Superstructure	$ 6.56	$ 6,564	$ 4.70	$ 4,699	$ 11.26	$ 11,263	$ 30.55	$ 30,546
4	B20	Exterior Enclosure	$ 33.47	$ 33,468	$ 24.88	$ 24,880	$ 58.35	$ 58,348	$ 158.24	$ 158,241
5	B30	Roofing	$ 12.82	$ 12,819	$ 6.09	$ 6,090	$ 18.91	$ 18,909	$ 51.28	$ 51,282
6	C10	Interior Construction	$ 23.36	$ 23,358	$ 7.51	$ 7,509	$ 30.87	$ 30,867	$ 83.71	$ 83,711
7	C20	Stairs	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
8	C30	Interior Finishes	$ 3.43	$ 3,429	$ 10.91	$ 10,912	$ 14.34	$ 14,341	$ 38.89	$ 38,893
9	D10	Conveying Systems	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
10	D20	Plumbing Systems	$ 21.36	$ 21,359	$ 12.36	$ 12,364	$ 33.72	$ 33,723	$ 91.46	$ 91,457
11	D30	HVAC	$ 1.50	$ 1,500	$ 0.50	$ 500	$ 2.00	$ 2,000	$ 5.42	$ 5,424
12	D40	Fire Protection	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
13	D50	Electrical	$ 22.23	$ 22,227	$ 21.67	$ 21,665	$ 43.89	$ 43,892	$ 119.04	$ 119,036
14	E10	Equipment	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
15	E20	Furnishings	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
16	F10	Special Construction	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
17	F20	Selective Building Demolition	$ 1.14	$ 1,138	$ 4.74	$ 4,737	$ 5.87	$ 5,875	$ 15.93	$ 15,933
18	G10	Site Preparation	$ 6.19	$ 6,188	$ 36.69	$ 36,692	$ 42.88	$ 42,880	$ 116.29	$ 116,290
19	G20	Site Improvements	$ 160.08	$ 160,075	$ 101.61	$ 101,610	$ 261.68	$ 261,685	$ 709.69	$ 709,691
20	G30	Site Mechanical Utilities	$ 60.00	$ 60,000	$ 14.00	$ 14,000	$ 74.00	$ 74,000	$ 200.69	$ 200,689
21	G40	Site Electrical Utilities	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
22	G50	Other Site Construction	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
		Subtotal Direct Construction Costs	**$ 381.80**	**$ 381,800**	**$ 268.85**	**$ 268,851**	**$ 650.65**	**$650,651**	**$ 1,764.57**	**$1,764,571**
		Total Value of Government Furnished Property (GFP) Included in Direct Costs		**$46,000.00**		**$ -**	**$ 46,000**	**$46,000**		**In most cases GFP is normally zero - see footnote-**
		Direct Cost Subtotal without GFP		$ 335,800		$ 268,851		**$604,651**		
		Published Location Factor	6.30%					$38,093		
		Remoteness Factor	13.00%					$78,605		
		Federal Wage Rate Factor	3.70%	Generally applied against Labor Costs only.				$9,947		
		State & Local Taxes	8.25%	Generally applied against Material Costs only, less GFP. Please Note if application differs.				$27,704		
		Design Contingency	15.00%					$90,698		
		Total Direct Construction Costs						**$895,697**		
		Standard General Conditions	12.00%	Applied to Total Direct Construction Cost less GFP				$101,964		
		Government General Conditions	12.00%	Applied to Total Direct Construction Cost less GFP				$101,964		
		Historic Preservation Factor	3.00%	Applied to Total Direct Construction Cost less GFP				$25,491		
		Subtotal NET Construction Cost						**$1,125,115**		
		Overhead	8.50%					$91,725		
		Profit	10.00%					$107,911		
		Estimated NET Construction Cost						**$1,324,751**		
		Bonds & Permits	2.00%					$26,495		
		Contracting Method Adjustment	15.00%					$198,713		
		Inflation Escalation	44	Months	Annual Rate =	3.60%	Inc. Bonds & CMA	$214,613		
		Total Estimated NET Cost of Construction						**$1,764,571**		

Notes & Comments:
Building only direct cost = $294.32/sf.
Building total NET cost = $794.17/sf
GFP Septic King Treatment System Pre-Purchased by Government = $46,000

GFP costs are only used when the Government pre-purchases items, or provides other materials out of Government inventory, to be installed by contractor. Adjustments and Markup on GFP only include Inflation Escalation; No other adjustment factors or O&P markup have been applied.

United States Department of the Interior
National Park Service
Class B Construction Cost Estimate (expanded)

LINE ITEM COST SUMMARY

Project: Oso Comida Trailhead Improvements
Park: Bear Arbor NRA
Park Alpha: BEAR
PMIS Number: XXXXXX

Estimate By: YtB
Date: 12/16/10
Reviewed By: BBB
Date: 12/20/10

Summary Item A10 Foundations **Total Cost:** $35,097

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		INSTALLATION		TOTALS	
				Material Cost/Unit	Total Material Cost	Install Cost/Unit	Total Install Cost	Total Cost/Unit	Total Cost
A1010	**STANDARD FOUNDATIONS**								
A1010 110-2500	RS Means Assembly A1010-110-2500	140	LF	$ 14.55	$2,037	$ 22.50	$3,150	$ 37.05	$5,187
	Furnish & Install 2" EPS insulation Board	560	SF	$ 0.80	$448	$ 0.45	$252	$ 1.25	$700
	Plus Crushable Void-form	140	LF	$ 1.75	$245	$ 0.25	$35	$ 2.00	$280
	Installer overhead & Profit included in Assembly			$ -	$0	$ -	$0	$ -	$0
SUBTOTAL	**STANDARD FOUNDATIONS**	**1000**	**SF**	**$ 2.73**	**$2,730**	**$ 3.44**	**$3,437**	**$ 6.17**	**$6,167**

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		INSTALLATION		TOTALS	
				Material Cost/Unit	Total Material Cost	Install Cost/Unit	Total Install Cost	Total Cost/Unit	Total Cost
A1020	**SPECIAL FOUNDATIONS**								
A1020 110-2220	Drilled caisons 10 ea x 25' long	16	EA	$ 920.00	$14,720	$ 375.00	$6,000	$ 1,295.00	$20,720
	Less steel shell, plus #4 rebar cage			$ (35.00)	$0	$ (42.00)	$0	$ (77.00)	$0
	Installer overhead & Profit included in Assembly			$ -	$0	$ -	$0	$ -	$0
SUBTOTAL	**SPECIAL FOUNDATIONS**	**1000**	**SF**	**$ 14.72**	**$14,720**	**$ 6.00**	**$6,000**	**$ 20.72**	**$20,720**

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		INSTALLATION		TOTALS	
				Material Cost/Unit	Total Material Cost	Install Cost/Unit	Total Install Cost	Total Cost/Unit	Total Cost
A1030	**SLAB ON GRADE - Includes 10' porch on both ends**								
A1030 120-4460	6" Slab on grade, trowel finish, no reinfocing	1000	SF	$ 2.61	$2,610	$ 2.46	$2,460	$ 5.07	$5,070
03 23 05.50-3100	Pre-stressing tendon in place	1000	SF	$ 0.57	$570	$ 0.42	$420	$ 0.99	$990
03 23 05.50-3105	Post tentioning after cure	1000	SF	$ -	$0	$ 0.35	$350	$ 0.35	$350
	Plus sand, rigid unsulation & Void-form	1000	SF	$ 1.45	$1,450	$ 0.35	$350	$ 1.80	$1,800
	Installer overhead & Profit included in Assembly			$ -	$0	$ -	$0	$ -	$0
SUBTOTAL	**ends**	**1000**	**SF**	**$ 4.63**	**$4,630**	**$ 3.58**	**$3,580**	**$ 8.21**	**$8,210**

Summary Item A10 Foundations

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		INSTALLATION		TOTALS	
				Material Cost/Unit	Total Material Cost	Install Cost/Unit	Total Install Cost	Total Cost/Unit	Total Cost
A10	**Foundations**	**1000**	**SF**	**$ 22.08**	**$22,080**	**$ 13.02**	**$13,017**	**$ 35.10**	**$35,097**

United States Department of the Interior
National Park Service
Class B Construction Cost Estimate (expanded)

LINE ITEM COST SUMMARY

Project: Oso Comida Trailhead Improvements
Park: Bear Arbor NRA
Park Alpha: BEAR
PMIS Number: XXXXXX

Estimate By: YtB
Date: 12/16/10
Reviewed By: BBB
Date: 12/20/10

Summary Item A20 Basement Construction **Total Cost:** $0

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		INSTALLATION		TOTALS	
				Material Cost/Unit	Total Material Cost	Install Cost/Unit	Total Install Cost	Total Cost/Unit	Total Cost
A2020	**BASEMENT WALLS**								
A2020 110-1520	48" x 8"Slab Edge Stem Wall w/reinforcing	140	LF	$ 16.10	$2,254	$ 47.00	$6,580	$ 63.10	$8,834
A2020 110-2240	Excavation & Backfill Foundation	560	SF	$ 8.75	$4,900	$ 5.80	$3,248	$ 14.55	$8,148
	dirt stockpile offsite, imported backfill			$ -	$0	$ -	$0	$ -	$0
	Rigid wall insulation	560	SF	$ 0.79	$442	$ 0.62	$347	$ 1.41	$790
SUBTOTAL	**BASEMENT WALLS**	**1000**	**SF**	**$ 7.60**	**$7,596**	**$ 10.18**	**$10,175**	**$ 17.77**	**$17,772**

Summary Item A20 Basement Construction

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		INSTALLATION		TOTALS	
				Material Cost/Unit	Total Material Cost	Install Cost/Unit	Total Install Cost	Total Cost/Unit	Total Cost
A20	**Basement Construction**	**1000**	**SF**	**$ 7.60**	**$7,596**	**$ 10.18**	**$10,175**	**$ 17.77**	**$17,772**

United States Department of the Interior
National Park Service
Class B Construction Cost Estimate (expanded)

LINE ITEM COST SUMMARY

Project: Oso Comida Trailhead Improvements
Park: Bear Arbor NRA
Park Alpha: BEAR
PMIS Number: XXXXXX

Estimate By: YtB
Date: 12/16/10
Reviewed By: BBB
Date: 12/17/10

Summary Item B10 Superstructure **Total Cost:** $11,263

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		INSTALLATION		TOTALS	
				Material Cost/Unit	Total Material Cost	Install Cost/Unit	Total Install Cost	Total Cost/Unit	Total Cost
B1020	**ROOF CONSTRUCTION - Includes 10' porch cover on both ends**								
06 17 53.10-0300	Furnish & Install Wood Trusses 30' span	1750	SF	$ 2.55	$4,463	$ 1.15	$2,013	$ 3.70	$6,475
06 16 36.10-0103	1/2" cdx Plywood sheathing	1960	SF	$ 0.46	$902	$ 0.65	$1,274	$ 1.11	$2,176
	Misc. tie-downs,brackets & hardware allowance	1750	SF	$ 0.20	$350	$ 0.35	$613	$ 0.55	$963
	Heavy Timber Posts & Beams on porches	1	Allow	$ 350.00	$350	$ 300.00	$300	$ 650.00	$650
	Park-specific detailing allowance	1	Allow	$ 500.00	$500	$ 500.00	$500	$ 1,000.00	$1,000
				$ -	$0	$ -	$0	$ -	$0
SUBTOTAL	**cover on both ends**	**1000**	**SF**	**$ 6.56**	**$6,564**	**$ 4.70**	**$4,699**	**$ 11.26**	**$11,263**

Summary Item B10 Superstructure

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		INSTALLATION		TOTALS	
				Material Cost/Unit	Total Material Cost	Install Cost/Unit	Total Install Cost	Total Cost/Unit	Total Cost
B10	**Superstructure**	**1000**	**SF**	**$ 6.56**	**$6,564**	**$ 4.70**	**$4,699**	**$ 11.26**	**$11,263**

United States Department of the Interior
National Park Service
Class B Construction Cost Estimate (expanded)

LINE ITEM COST SUMMARY

Project: Oso Comida Trailhead Improvements
Park: Bear Arbor NRA
Park Alpha: BEAR
PMIS Number: XXXXXX

Estimate By: YtB
Date: 12/16/10
Reviewed By: BBB
Date: 12/20/10

Summary Item B20 Exterior Enclosure **Total Cost:** $58,348

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		INSTALLATION		TOTALS	
				Material Cost/Unit	Total Material Cost	Install Cost/Unit	Total Install Cost	Total Cost/Unit	Total Cost
B2010	**EXTERIOR WALLS**								
B2010 148-3400	8'-2x6 studwall, 16" O.C., w/R-21 insulation, 1/2" CDX, poly-wrap - Standard Assembly	1120	SF	$ 3.56	$3,987	$ 5.40	$6,048	$ 8.96	$10,035
	Less Exterior siding	1120	SF	$ (1.51)	-$1,691	$ (1.52)	-$1,702	$ (3.03)	-$3,394
04 43 10.05-0700	Stone Wainscot	560	SF	$ 16.50	$9,240	$ 20.56	$11,514	$ 37.06	$20,754
07 46 23.10-4100	Vertical B&B Rough Sawn Ceder Siding	450	SF	$ 4.35	$1,955	$ 1.26	$569	$ 5.61	$2,524
	Sustainability Upgrade	1120	SF	$ 1.00	$1,120	$ 0.65	$728	$ 1.65	$1,848
	Architectural upgrade allowance	1	Allow	$ 2,500.00	$2,500	$ 2,500.00	$2,500	$ 5,000.00	$5,000
	Privacy Screen End Panels - Allowance	320	SF	$ 5.50	$1,760	$ 2.75	$880	$ 8.25	$2,640
				$ -	$0	$ -	$0	$ -	$0
SUBTOTAL	**EXTERIOR WALLS**	**1000**	**SF**	**$ 18.87**	**$18,871**	**$ 20.54**	**$20,536**	**$ 39.41**	**$39,407**

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		INSTALLATION		TOTALS	
				Material Cost/Unit	Total Material Cost	Install Cost/Unit	Total Install Cost	Total Cost/Unit	Total Cost
B2020	**EXTERIOR WINDOWS**								
B2020 102-3700	Wood Awning Windows, 34"x22", Dbl. pane, extra width sill, pre-finished custom color	16	EA	$ 272.00	$4,352	$ 129.00	$2,064	$ 401.00	$6,416
	Energy Upgrade	16	EA	$ 30.00	$480	$ 5.00	$80	$ 35.00	$560
	metal Cladding custom color upgrade	16		$ 40.00	$640	$ 15.00	$240	$ 55.00	$880
SUBTOTAL	**EXTERIOR WINDOWS**	**1000**	**SF**	**$ 5.47**	**$5,472**	**$ 2.38**	**$2,384**	**$ 7.86**	**$7,856**

United States Department of the Interior
National Park Service
Class B Construction Cost Estimate (expanded)

LINE ITEM COST SUMMARY

Project: Oso Comida Trailhead Improvements
Park: Bear Arbor NRA
Park Alpha: BEAR
PMIS Number: XXXXXX

Estimate By: YtB
Date: 12/16/10
Reviewed By: BBB
Date: 12/20/10

Summary Item B20 Exterior Enclosure **Total Cost:** $58,348

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		INSTALLATION		TOTALS	
				Material Cost/Unit	Total Material Cost	Install Cost/Unit	Total Install Cost	Total Cost/Unit	Total Cost
B2030	**EXTERIOR DOORS**								
B2030 220-3950	Insulated Steel Door Assy. w/ 5-3/4" steel frame, lockset, hardware, pre-finished custom color, installed and adjusted	5	EA	$ 1,600.00	$8,000	$ 350.00	$1,750	$ 1,950.00	$9,750
	140Add Automatic Hydraulic Closer	5	Unit	$ 225.00	$1,125	$ 42.00	$210	$ 267.00	$1,335
Optional Code	Description	0	Unit	$ -	$0	$ -	$0	$ -	$0
Optional Code	Description	0	Unit	$ -	$0	$ -	$0	$ -	$0
SUBTOTAL	**EXTERIOR DOORS**	**1000**	**SF**	**$ 9.13**	**$9,125**	**$ 1.96**	**$1,960**	**$ 11.09**	**$11,085**

Summary Item B20 Exterior Enclosure

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		INSTALLATION		TOTALS	
				Material Cost/Unit	Total Material Cost	Install Cost/Unit	Total Install Cost	Total Cost/Unit	Total Cost
B20	**Exterior Enclosure**	**1000**	**SF**	**$ 33.47**	**$33,468**	**$ 24.88**	**$24,880**	**$ 58.35**	**$58,348**

United States Department of the Interior
National Park Service
Class B Construction Cost Estimate (expanded)

LINE ITEM COST SUMMARY

Project: Oso Comida Trailhead Improvements
Park: Bear Arbor NRA
Park Alpha: BEAR
PMIS Number: XXXXXX

Estimate By: YtB
Date: 12/16/10
Reviewed By: BBB
Date: 12/20/10

Summary Item B30 Roofing **Total Cost:** $18,909

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		INSTALLATION		TOTALS	
				Material Cost/Unit	Total Material Cost	Install Cost/Unit	Total Install Cost	Total Cost/Unit	Total Cost
B3010	**ROOF COVERINGS**								
07 41 13.20-0720	22 Ga. Raised seam steel roof - standard finish	1960	SF	$ 6.11	$11,966	$ 2.41	$4,722	$ 8.51	$16,687
07 41 13.20 - 1200	Roof Ridge Cap	70	LF	$ 3.50	$245	$ 2.71	$189	$ 6.20	$434
B301 430-	Misc. Fashings, Roof penetrations, boots hardware, etc.	1	LS	$ 250.00	$250	$ 300.00	$300	$ 550.00	$550
B3010 610-1200	5" Galvanized Gutters	140	LF	$ 1.75	$245	$ 4.96	$694	$ 6.71	$939
B3010 620-0200	Rectangular Downspouts	56	LF	$ 2.02	$113	$ 3.30	$185	$ 5.32	$298
SUBTOTAL	**ROOF COVERINGS**	**1000**	**SF**	**$ 12.82**	**$12,819**	**$ 6.09**	**$6,090**	**$ 18.91**	**$18,909**

Summary Item B30 Roofing

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		INSTALLATION		TOTALS	
				Material Cost/Unit	Total Material Cost	Install Cost/Unit	Total Install Cost	Total Cost/Unit	Total Cost
B30	**Roofing**	**1000**	**SF**	**$ 12.82**	**$12,819**	**$ 6.09**	**$6,090**	**$ 18.91**	**$18,909**

United States Department of the Interior
National Park Service
Class B Construction Cost Estimate (expanded)

LINE ITEM COST SUMMARY

Project: Oso Comida Trailhead Improvements
Park: Bear Arbor NRA
Park Alpha: BEAR
PMIS Number: XXXXXX

Estimate By: YtB
Date: 12/16/10
Reviewed By: BBB
Date: 12/20/10

Summary Item C10 Interior Construction

Total Cost: $30,867

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		INSTALLATION		TOTALS	
				Material Cost/Unit	Total Material Cost	Install Cost/Unit	Total Install Cost	Total Cost/Unit	Total Cost
C1010	INTERIOR PARTITIONS								
C1010 124-2602	Interior wet wall partitions	500	SF	$ 1.88	$940	$ 4.18	$2,090	$ 6.06	$3,030
C1010 128-0840	5/8" WR drywall on inside of exterior walls	1440	SF	$ 0.47	$677	$ 0.55	$792	$ 1.02	$1,469
Optional Code	Description	0	Unit	$ -	$0	$ -	$0	$ -	$0
Optional Code	Description	0	Unit	$ -	$0	$ -	$0	$ -	$0
Optional Code	Description	0	Unit	$ -	$0	$ -	$0	$ -	$0
SUBTOTAL	**INTERIOR PARTITIONS**	**1000**	**SF**	**$ 1.62**	**$1,617**	**$ 2.88**	**$2,882**	**$ 4.50**	**$4,499**

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		INSTALLATION		TOTALS	
				Material Cost/Unit	Total Material Cost	Install Cost/Unit	Total Install Cost	Total Cost/Unit	Total Cost
C1030	FITTINGS								
C1030 110-0600	Toilet Partitions F&C dual hung, Stainless Steel	5	EA	$ 1,675.00	$8,375	$ 205.00	$1,025	$ 1,880.00	$9,400
C1030 110-0620	Handicap addition	2	EA	$ 315.00	$630	$ -	$0	$ 315.00	$630
C1030 110-1140	Entrance Screens	4	EA	$ 985.00	$3,940	$ 68.50	$274	$ 1,053.50	$4,214
C1030 110-1380	Unrinal Screens, Floor mounted, Stainless Steel	4	EA	$ 630.00	$2,520	$ 128.00	$512	$ 758.00	$3,032
C1030 830-0170	Vanity Counter	16	LF	$ 236.00	$3,776	$ 51.00	$816	$ 287.00	$4,592
C1030 710-	Bathroom Accessories Allowance	1	Allow	$ 2,500.00	$2,500	$ 2,000.00	$2,000	$ 4,500.00	$4,500
SUBTOTAL	**FITTINGS**	**1000**	**SF**	**$ 21.74**	**$21,741**	**$ 4.63**	**$4,627**	**$ 26.37**	**$26,368**

Summary Item C10 Interior Construction

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		INSTALLATION		TOTALS	
				Material Cost/Unit	Total Material Cost	Install Cost/Unit	Total Install Cost	Total Cost/Unit	Total Cost
C10	**Interior Construction**	**1000**	**SF**	**$ 23.36**	**$23,358**	**$ 7.51**	**$7,509**	**$ 30.87**	**$30,867**

United States Department of the Interior
National Park Service
Class B Construction Cost Estimate (expanded)

LINE ITEM COST SUMMARY

Project: Oso Comida Trailhead Improvements
Park: Bear Arbor NRA
Park Alpha: BEAR
PMIS Number: XXXXXX

Estimate By: YtB
Date: 12/16/10
Reviewed By: BBB
Date: 12/20/10

Summary Item C30 Interior Finishes

Total Cost: $14,341

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		INSTALLATION		TOTALS	
				Material Cost/Unit	Total Material Cost	Install Cost/Unit	Total Install Cost	Total Cost/Unit	Total Cost
C3010	**WALL FINISHES**								
C3020 230-1080	Epoxy wall Coating	1600	SF	$ 1.06	$1,696	$ 2.98	$4,768	$ 4.04	$6,464
Optional Code	Description	0	Unit	$ -	$0	$ -	$0	$ -	$0
Optional Code	Description	0	Unit	$ -	$0	$ -	$0	$ -	$0
SUBTOTAL	**WALL FINISHES**	**1000**	**SF**	**$ 1.70**	**$1,696**	**$ 4.77**	**$4,768**	**$ 6.46**	**$6,464**

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		INSTALLATION		TOTALS	
				Material Cost/Unit	Total Material Cost	Install Cost/Unit	Total Install Cost	Total Cost/Unit	Total Cost
C3020	**FLOOR FINISHES**								
03 35 29.3-4050	2 Coat Epoxy Floor Finish	1000	SF	$ 0.25	$253	$ 0.70	$704	$ 0.96	$957
Optional Code	Description	0	Unit	$ -	$0	$ -	$0	$ -	$0
Optional Code	Description	0	Unit	$ -	$0	$ -	$0	$ -	$0
SUBTOTAL	**FLOOR FINISHES**	**1000**	**SF**	**$ 0.25**	**$253**	**$ 0.70**	**$704**	**$ 0.96**	**$957**

United States Department of the Interior
National Park Service
Class B Construction Cost Estimate (expanded)

LINE ITEM COST SUMMARY

Project: Oso Comida Trailhead Improvements
Park: Bear Arbor NRA
Park Alpha: BEAR
PMIS Number: XXXXXX

Estimate By: YtB
Date: 12/16/10
Reviewed By: BBB
Date: 12/20/10

Summary Item C30 Interior Finishes **Total Cost:** $14,341

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		INSTALLATION		TOTALS	
				Material Cost/Unit	Total Material Cost	Install Cost/Unit	Total Install Cost	Total Cost/Unit	Total Cost
C3030	CEILING FINISHES								
C3030 105 2400	2-coat Gypsum Drywall on Furring painted	1000	SF	$ 1.48	$1,480	$ 5.44	$5,440	$ 6.92	$6,920
Optional Code	Description	0	Unit	$ -	$0	$ -	$0	$ -	$0
SUBTOTAL	CEILING FINISHES	1000	SF	$ 1.48	$1,480	$ 5.44	$5,440	$ 6.92	$6,920

Summary Item C30 Interior Finishes

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		INSTALLATION		TOTALS	
				Material Cost/Unit	Total Material Cost	Install Cost/Unit	Total Install Cost	Total Cost/Unit	Total Cost
C30	Interior Finishes	1000	SF	$ 3.43	$3,429	$ 10.91	$10,912	$ 14.34	$14,341

United States Department of the Interior
National Park Service
Class B Construction Cost Estimate (expanded)

LINE ITEM COST SUMMARY

Project: Oso Comida Trailhead Improvements
Park: Bear Arbor NRA
Park Alpha: BEAR
PMIS Number: XXXXXX

Estimate By: YtB
Date: 12/16/10
Reviewed By: BBB
Date: 12/20/10

Summary Item D20 Plumbing Systems

Total Cost: $33,723

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		INSTALLATION		TOTALS	
				Material Cost/Unit	Total Material Cost	Install Cost/Unit	Total Install Cost	Total Cost/Unit	Total Cost
D2010	**PLUMBING FIXTURES**								
D2010 120-1760	Water Closets, Battery Mount, Wall hung, SxS, 1st	2	Ea	$ 1,500.00	$3,000	$ 775.00	$1,550	$ 2,275.00	$4,550
D2010 120-1800	Additional Closet Sets	3	Ea	$ 1,425.00	$4,275	$ 730.00	$2,190	$ 2,155.00	$6,465
D2010 210-2000	Wall hung Urinals	2	Ea	$ 565.00	$1,130	$ 745.00	$1,490	$ 1,310.00	$2,620
D 2010 310-1760	Stainless Steel sinks, Self Rimming	5	EA	$ 660.00	$3,300	$ 665.00	$3,325	$ 1,325.00	$6,625
ADA Upgrade	Accessibility Upgrade	5	Ea	$ 50.00	$250	$ 55.00	$275	$ 105.00	$525
D2010 440-4260	Floor Sevice Sink Complete	1	Unit	$ 1,580.00	$1,580	$ 940.00	$940	$ 2,520.00	$2,520
Allowance	NPS sustainablilty & durability upgrade	1	Allow	$ 3,383.75	$3,384	$ 169.19	$169	$ 3,552.94	$3,553
Optional Code	Description	0	Unit	$ -	$0	$ -	$0	$ -	$0
SUBTOTAL	**PLUMBING FIXTURES**	**1000**	**SF**	**$ 16.92**	**$16,919**	**$ 9.94**	**$9,939**	**$ 26.86**	**$26,858**

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		INSTALLATION		TOTALS	
				Material Cost/Unit	Total Material Cost	Install Cost/Unit	Total Install Cost	Total Cost/Unit	Total Cost
D2020	**DOMESTIC WATER DISTRIBUTION**								
D220	Additional Rough In piping Allowance	1	Allow	$ 1,250.00	$1,250	$ 500.00	$500	$ 1,750.00	$1,750
D220 250-1780	Gas Water Heater Assembly	1	Ea	$ 2,690.00	$2,690	$ 1,675.00	$1,675	$ 4,365.00	$4,365
Optional Code	Description	0	Unit	$ -	$0	$ -	$0	$ -	$0
Optional Code	Description	0	Unit	$ -	$0	$ -	$0	$ -	$0
SUBTOTAL	**DOMESTIC WATER DISTRIBUTION**	**1000**	**SF**	**$ 3.94**	**$3,940**	**$ 2.18**	**$2,175**	**$ 6.12**	**$6,115**

United States Department of the Interior
National Park Service
Class B Construction Cost Estimate (expanded)

LINE ITEM COST SUMMARY

Project: Oso Comida Trailhead Improvements
Park: Bear Arbor NRA
Park Alpha: BEAR
PMIS Number: XXXXXX

Estimate By: YtB
Date: 12/16/10
Reviewed By: BBB
Date: 12/20/10

Summary Item D20 Plumbing Systems **Total Cost:** $33,723

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		INSTALLATION		TOTALS	
				Material Cost/Unit	Total Material Cost	Install Cost/Unit	Total Install Cost	Total Cost/Unit	Total Cost
D2030	**SANITARY WASTE**								
D2030	Additional Waste piping allowance	1	Allow	$ 500.00	$500	$ 250.00	$250	$ 750.00	$750
Optional Code	Description	0	Unit	$ -	$0	$ -	$0	$ -	$0
Optional Code	Description	0	Unit	$ -	$0	$ -	$0	$ -	$0
Optional Code	Description	0	Unit	$ -	$0	$ -	$0	$ -	$0
SUBTOTAL	**SANITARY WASTE**	**1000**	**SF**	**$ 0.50**	**$500**	**$ 0.25**	**$250**	**$ 0.75**	**$750**

Summary Item D20 Plumbing Systems

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		INSTALLATION		TOTALS	
				Material Cost/Unit	Total Material Cost	Install Cost/Unit	Total Install Cost	Total Cost/Unit	Total Cost
D20	**Plumbing Systems**	**1000**	**SF**	**$ 21.36**	**$21,359**	**$ 12.36**	**$12,364**	**$ 33.72**	**$33,723**

United States Department of the Interior
National Park Service
Class B Construction Cost Estimate (expanded)

LINE ITEM COST SUMMARY

Project: Oso Comida Trailhead Improvements
Park: Bear Arbor NRA
Park Alpha: BEAR
PMIS Number: XXXXXX

Estimate By: YtB
Date: 12/16/10
Reviewed By: BBB
Date: 12/20/10

Summary Item D30 HVAC

Total Cost: $2,000

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		INSTALLATION		TOTALS	
				Material Cost/Unit	Total Material Cost	Install Cost/Unit	Total Install Cost	Total Cost/Unit	Total Cost
D3040	DISTRIBUTION SYSTEMS (HVAC)								
D3040 -Allow	Summer Ventilaiton system	1	Allow	$ 1,500.00	$1,500	$ 500.00	$500	$ 2,000.00	$2,000
Optional Code	Description	0	Unit	$ -	$0	$ -	$0	$ -	$0
Optional Code	Description	0	Unit	$ -	$0	$ -	$0	$ -	$0
Optional Code	Description	0	Unit	$ -	$0	$ -	$0	$ -	$0
Optional Code	Description	0	Unit	$ -	$0	$ -	$0	$ -	$0
Optional Code	Description	0	Unit	$ -	$0	$ -	$0	$ -	$0
Optional Code	Description	0	Unit	$ -	$0	$ -	$0	$ -	$0
Optional Code	Description	0	Unit	$ -	$0	$ -	$0	$ -	$0
SUBTOTAL	**DISTRIBUTION SYSTEMS (HVAC)**	**1000**	**SF**	**$ 1.50**	**$1,500**	**$ 0.50**	**$500**	**$ 2.00**	**$2,000**

Summary Item D30 HVAC

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		INSTALLATION		TOTALS	
				Material Cost/Unit	Total Material Cost	Install Cost/Unit	Total Install Cost	Total Cost/Unit	Total Cost
D30	**HVAC**	**1000**	**SF**	**$ 1.50**	**$1,500**	**$ 0.50**	**$500**	**$ 2.00**	**$2,000**

United States Department of the Interior
National Park Service
Class B Construction Cost Estimate (expanded)

LINE ITEM COST SUMMARY

Project: Oso Comida Trailhead Improvements
Park: Bear Arbor NRA
Park Alpha: BEAR
PMIS Number: XXXXXX

Estimate By: YtB
Date: 12/16/10
Reviewed By: BBB
Date: 12/20/10

Summary Item D50 Electrical

Total Cost: $43,892

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		INSTALLATION		TOTALS	
				Material Cost/Unit	Total Material Cost	Install Cost/Unit	Total Install Cost	Total Cost/Unit	Total Cost
D5010	**ELECTRICAL SERVICE & DISTRIBUTION**								
D5050 120-0620	1phz. 200 Amp, 120/208V, Service Panel & feeders	1	EA	$ 1,100.00	$1,100	$ 1,425.00	$1,425	$ 2,525.00	$2,525
Optional Code	Description	0	Unit	$ -	$0	$ -	$0	$ -	$0
Optional Code	Description	0	Unit	$ -	$0	$ -	$0	$ -	$0
SUBTOTAL	**ELECTRICAL SERVICE & DISTRIBUTION**	**1000**	**SF**	**$ 1.10**	**$1,100**	**$ 1.43**	**$1,425**	**$ 2.53**	**$2,525**

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		INSTALLATION		TOTALS	
				Material Cost/Unit	Total Material Cost	Install Cost/Unit	Total Install Cost	Total Cost/Unit	Total Cost
D5020	**LIGHTING & BRANCH WIRING**								
D5020 210-0520	Energy Saving Fluorescent lighting	800	SF	$ 1.76	$1,408	$ 3.37	$2,696	$ 5.13	$4,104
D5020 216-0200	Utility Chase lighting	200	SF	$ 1.02	$204	$ 1.37	$274	$ 2.39	$478
D5020 120-0760	Receptacles	800	SF	$ 0.60	$480	$ 2.16	$1,728	$ 2.76	$2,208
D5020 120-0800	Switches	800	SF	$ 0.20	$160	$ 0.64	$512	$ 0.84	$672
D5020 145 0360	230V wiring to septic system	1	EA	$ 675.00	$675	$ 900.00	$900	$ 1,575.00	$1,575
Optional Code	Description	0	Unit	$ -	$0	$ -	$0	$ -	$0
SUBTOTAL	**LIGHTING & BRANCH WIRING**	**1000**	**SF**	**$ 2.93**	**$2,927**	**$ 6.11**	**$6,110**	**$ 9.04**	**$9,037**

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		INSTALLATION		TOTALS	
				Material Cost/Unit	Total Material Cost	Install Cost/Unit	Total Install Cost	Total Cost/Unit	Total Cost
D5040	**SPECIAL ELECTRICAL SYSTEMS**								
D5040 420-0100	PV System Allowance	3000	Watt	$ 5.25	$15,750	$ 3.75	$11,250	$ 9.00	$27,000
D5040 420-1050	Battery Storage	0	EA	$ 850.00	$0	$ 300.00	$0	$ 1,150.00	$0
Misc.	Misc. Installation Costs	1	LS	$ 1,200.00	$1,200	$ 500.00	$500	$ 1,700.00	$1,700
Optional Code	Description	0	Unit	$ -	$0	$ -	$0	$ -	$0
Optional Code	Description	0	Unit	$ -	$0	$ -	$0	$ -	$0
SUBTOTAL	**SPECIAL ELECTRICAL SYSTEMS**	**1000**	**SF**	**$ 16.95**	**$16,950**	**$ 11.75**	**$11,750**	**$ 28.70**	**$28,700**

United States Department of the Interior
National Park Service
Class B Construction Cost Estimate (expanded)

LINE ITEM COST SUMMARY

Project: Oso Comida Trailhead Improvements
Park: Bear Arbor NRA
Park Alpha: BEAR
PMIS Number: XXXXXX

Estimate By: YtB
Date: 12/16/10
Reviewed By: BBB
Date: 12/20/10

Summary Item D50 Electrical

Total Cost: $43,892

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		INSTALLATION		TOTALS	
				Material Cost/Unit	Total Material Cost	Install Cost/Unit	Total Install Cost	Total Cost/Unit	Total Cost
D5090	OTHER ELECTRICAL SYSTEMS								
D5090 510-1000	Baseboard Heat for shoulder season only	1000	SF	$ 1.25	$1,250	$ 2.38	$2,380	$ 3.63	$3,630
Optional Code	Description	0	Unit	$ -	$0	$ -	$0	$ -	$0
Optional Code	Description	0	Unit	$ -	$0	$ -	$0	$ -	$0
SUBTOTAL	OTHER ELECTRICAL SYSTEMS	1000	SF	$ 1.25	$1,250	$ 2.38	$2,380	$ 3.63	$3,630

Summary Item D50 Electrical

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		INSTALLATION		TOTALS	
				Material Cost/Unit	Total Material Cost	Install Cost/Unit	Total Install Cost	Total Cost/Unit	Total Cost
D50	Electrical	1000	SF	$ 22.23	$22,227	$ 21.67	$21,665	$ 43.89	$43,892

United States Department of the Interior
National Park Service
Class B Construction Cost Estimate (expanded)

LINE ITEM COST SUMMARY

Project: Oso Comida Trailhead Improvements
Park: Bear Arbor NRA
Park Alpha: BEAR
PMIS Number: XXXXXX

Estimate By: YtB
Date: 12/16/10
Reviewed By: BBB
Date: 12/20/10

Summary Item F20 Selective Building Demolition

Total Cost: $5,875

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		INSTALLATION		TOTALS	
				Material Cost/Unit	Total Material Cost	Install Cost/Unit	Total Install Cost	Total Cost/Unit	Total Cost
F2010	BUILDING ELEMENTS DEMOLITION								
Optional Code	Demo structures- haul to dump; Means Crew B-30	1	Day	$ -	$0	$ 3,987.86	$3,988	$ 3,987.86	$3,988
Optional Code	Description	0	Unit	$ -	$0	$ -	$0	$ -	$0
SUBTOTAL	**BUILDING ELEMENTS DEMOLITION**	**1000**	**SF**	**$ 0.70**	**$700**	**$ 3.99**	**$3,988**	**$ 4.69**	**$4,688**

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		INSTALLATION		TOTALS	
				Material Cost/Unit	Total Material Cost	Install Cost/Unit	Total Install Cost	Total Cost/Unit	Total Cost
F2020	HAZARDOUS COMPONENTS ABATEMENT								
Optional Code	Pump & Flush existing pits	1	LS	$ -	$0	$ 500.00	$500	$ 500.00	$500
Optional Code	Import, Backfill & hand compact pits	50	CY	$ 8.75	$438	$ 4.99	$250	$ 13.74	$687
Optional Code	Description	0	Unit	$ -	$0	$ -	$0	$ -	$0
SUBTOTAL	**HAZARDOUS COMPONENTS ABATEMENT**	**1000**	**SF**	**$ 0.44**	**$438**	**$ 0.75**	**$750**	**$ 1.19**	**$1,187**

Summary Item F20 Selective Building Demolition

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		INSTALLATION		TOTALS	
				Material Cost/Unit	Total Material Cost	Install Cost/Unit	Total Install Cost	Total Cost/Unit	Total Cost
F20	**Selective Building Demolition**	**1000**	**SF**	**$ 1.14**	**$1,138**	**$ 4.74**	**$4,737**	**$ 5.87**	**$5,875**

United States Department of the Interior
National Park Service
Class B Construction Cost Estimate (expanded)

LINE ITEM COST SUMMARY

Project: Oso Comida Trailhead Improvements
Park: Bear Arbor NRA
Park Alpha: BEAR
PMIS Number: XXXXXX

Estimate By: YtB
Date: 12/16/10
Reviewed By: BBB
Date: 12/20/10

Summary Item G10 Site Preparation

Total Cost: $42,880

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		INSTALLATION		TOTALS	
				Material Cost/Unit	Total Material Cost	Install Cost/Unit	Total Install Cost	Total Cost/Unit	Total Cost
G1010	SITE CLEARING								
	Erosion Control	1	Allow	$ 4,000.00	$4,000	$ 2,500.00	$2,500	$ 6,500.00	$6,500
	Clear & Grub Parking Area	40000	SF	$ -	$0	$ 0.25	$10,000	$ 0.25	$10,000
	Selective Tree Removal	10	EA	$ -	$0	$ 350.00	$3,500	$ 350.00	$3,500
	Misc. Site Clearing	1	LS	$ -	$0	$ 2,500.00	$2,500	$ 2,500.00	$2,500
	Hand Clear New Trail Alignment	500	LF	$ -	$0	$ 5.00	$2,500	$ 5.00	$2,500
	Description	0	Unit	$ -	$0	$ -	$0	$ -	$0
SUBTOTAL	**SITE CLEARING**	**1000**	**SF**	**$ 4.00**	**$4,000**	**$ 21.00**	**$21,000**	**$ 25.00**	**$25,000**

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		INSTALLATION		TOTALS	
				Material Cost/Unit	Total Material Cost	Install Cost/Unit	Total Install Cost	Total Cost/Unit	Total Cost
G1020	SITE DEMOLITION & RELOCATIONS								
	Misc. site Demolition	1	LS	$ -	$0	$ 1,500.00	$1,500	$ 1,500.00	$1,500
	Remove Existing Picnic Tables & Grills	1	LS	$ -	$0	$ 2,500.00	$2,500	$ 2,500.00	$2,500
	Description	0	Unit	$ -	$0	$ -	$0	$ -	$0
SUBTOTAL	**SITE DEMOLITION & RELOCATIONS**	**1000**	**SF**	**$ -**	**$0**	**$ 4.00**	**$4,000**	**$ 4.00**	**$4,000**

United States Department of the Interior
National Park Service
Class B Construction Cost Estimate (expanded)

LINE ITEM COST SUMMARY

Project: Oso Comida Trailhead Improvements
Park: Bear Arbor NRA
Park Alpha: BEAR
PMIS Number: XXXXXX

Estimate By: YtB
Date: 12/16/10
Reviewed By: BBB
Date: 12/20/10

Summary Item G10 Site Preparation **Total Cost:** $42,880

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		INSTALLATION		TOTALS	
				Material Cost/Unit	Total Material Cost	Install Cost/Unit	Total Install Cost	Total Cost/Unit	Total Cost
G1030	SITE EARTHWORK								
	Imported fill for building Pad	250	CY	$ 8.75	$2,188	$ 4.99	$1,248	$ 13.74	$3,435
	Onsite Cut to fill	1500	CY	$ -	$0	$ 3.81	$5,715	$ 3.81	$5,715
	Fine Grade Building Pad	2000	SF	$ -	$0	$ 0.25	$500	$ 0.25	$500
	Clean-up and Fine Grade around Building	5000	SF		$0	$ 0.15	$750	$ 0.15	$750
	Backfill & Compact existing pits	50	CY	$ -	$0	$ 4.99	$250	$ 4.99	$250
	Fine Grade & Compact Picnic subgrades	3500	SF	$ -	$0	$ 0.30	$1,050	$ 0.30	$1,050
	Hand Grade Trail	3000	SF	$ -	$0	$ 0.50	$1,500	$ 0.50	$1,500
	G1030 Scarify existing dirt parking lot	10000	SF		$0	$ 0.05	$500	$ 0.05	$500
	Scarify Existing Trail 500' x 3'	1500	SF	$ -	$0	$ 0.12	$180	$ 0.12	$180
SUBTOTAL	**SITE EARTHWORK**	**1000**	**SF**	**$ 2.19**	**$2,188**	**$ 11.69**	**$11,692**	**$ 13.88**	**$13,880**

Summary Item G10 Site Preparation

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		INSTALLATION		TOTALS	
				Material Cost/Unit	Total Material Cost	Install Cost/Unit	Total Install Cost	Total Cost/Unit	Total Cost
G10	**Site Preparation**	**1000**	**SF**	**$ 6.19**	**$6,188**	**$ 36.69**	**$36,692**	**$ 42.88**	**$42,880**

United States Department of the Interior
National Park Service
Class B Construction Cost Estimate (expanded)

LINE ITEM COST SUMMARY

Project: Oso Comida Trailhead Improvements
Park: Bear Arbor NRA
Park Alpha: BEAR
PMIS Number: XXXXXX

Estimate By: YtB
Date: 12/16/10
Reviewed By: BBB
Date: 12/20/10

Summary Item G20 Site Improvements

Total Cost: $261,685

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		INSTALLATION		TOTALS	
				Material Cost/Unit	Total Material Cost	Install Cost/Unit	Total Install Cost	Total Cost/Unit	Total Cost
G2010	**ROADWAYS**								
Uniformat II WBS Code	**Description**	**Quantity**	**Unit**	**MATERIAL**		**INSTALLATION**		**TOTALS**	
				Material Cost/Unit	**Total Material Cost**	**Install Cost/Unit**	**Total Install Cost**	**Total Cost/Unit**	**Total Cost**
G2020	**PARKING LOTS**								
	Subgrade Prep Parking Lot	4050	SY	$ -	$0	$ 0.75	$3,038	$ 0.75	$3,038
	Furnish & Install 6" Roadbase	4050	SY	$ 4.75	$19,238	$ 4.00	$16,200	$ 8.75	$35,438
	Furnish & Install 3" Asphalt Paving	4050	SY	$ 8.75	$35,438	$ 4.50	$18,225	$ 13.25	$53,663
	Striping	46	Spaces	$ 10.00	$460	$ 32.00	$1,472	$ 42.00	$1,932
	Accessible spaces	4	EA	$ 85.00	$340	$ 165.00	$660	$ 250.00	$1,000
	Sign Allowance	1	Allow	$ 2,000.00	$2,000	$ 500.00	$500	$ 2,500.00	$2,500
	Curb & Gutter	1000	LF	$ 10.00	$10,000	$ 12.50	$12,500	$ 22.50	$22,500
				$ -	$0	$ -	$0	$ -	$0
SUBTOTAL	**PARKING LOTS**	**1000**	**SF**	**$ 67.48**	**$67,475**	**$ 52.59**	**$52,595**	**$ 120.07**	**$120,070**

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		INSTALLATION		TOTALS	
				Material Cost/Unit	Total Material Cost	Install Cost/Unit	Total Install Cost	Total Cost/Unit	Total Cost
G2030	**PEDESTRIAN PAVING**								
	Pedestrian Sidewalks at parking lot	3500	SF	$ 4.00	$14,000	$ 2.50	$8,750	$ 6.50	$22,750
	Handicap Ramps	2	EA	$ 400.00	$800	$ 450.00	$900	$ 850.00	$1,700
	Furnish & Install Decomposed Granite DG	170	Tons	$ 45.00	$7,650	$ 17.00	$2,890	$ 62.00	$10,540
	Mix, spread, finegrade & compact organic binder	6500	SF	$ 1.00	$6,500	$ 0.50	$3,250	$ 1.50	$9,750
	Pedestrian Sidewalks-Trial Connection	1500	SF	$ 4.00	$6,000	$ 2.50	$3,750	$ 6.50	$9,750
	Concrete Flatwork at Building	2000	SF	$ 4.00	$8,000	$ 2.50	$5,000	$ 6.50	$13,000
			Unit	$ -	$0	$ -	$0	$ -	$0
SUBTOTAL	**PEDESTRIAN PAVING**	**1000**	**SF**	**$ 42.95**	**$42,950**	**$ 24.54**	**$24,540**	**$ 67.49**	**$67,490**

United States Department of the Interior
National Park Service
Class B Construction Cost Estimate (expanded)

LINE ITEM COST SUMMARY

Project: Oso Comida Trailhead Improvements
Park: Bear Arbor NRA
Park Alpha: BEAR
PMIS Number: XXXXXX

Estimate By: YtB
Date: 12/16/10
Reviewed By: BBB
Date: 12/20/10

Summary Item G20 Site Improvements **Total Cost:** $261,685

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		INSTALLATION		TOTALS	
				Material Cost/Unit	Total Material Cost	Install Cost/Unit	Total Install Cost	Total Cost/Unit	Total Cost
G2040	SITE DEVELOPMENT								
	Install new seat resistant single rail fence	500	LF	$ 35.00	$17,500	$ -	$0	$ 35.00	$17,500
				$ -	$0	$ -	$0	$ -	$0
SUBTOTAL	SITE DEVELOPMENT	1000	SF	$ 17.50	$17,500	$ -	$0	$ 17.50	$17,500

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		INSTALLATION		TOTALS	
				Material Cost/Unit	Total Material Cost	Install Cost/Unit	Total Install Cost	Total Cost/Unit	Total Cost
G2050	LANDSCAPING								
	Parking lot landscape allowance	1	LS	$ 15,000.00	$15,000	$ 5,000.00	$5,000	$ 20,000.00	$20,000
	Picnic Area landscape repairs & improvements	1	LS	$ 500.00	$500	$ 2,000.00	$2,000	$ 2,500.00	$2,500
	Trail landscape repairs & improvements	1	LS	$ 500.00	$500	$ 2,000.00	$2,000	$ 2,500.00	$2,500
	Soil amenders	11500	SF	$ 0.10	$1,150	$ 0.15	$1,725	$ 0.25	$2,875
	Place Barrier Rocks	1	Allow	$ -	$0	$ 2,500.00	$2,500	$ 2,500.00	$2,500
	Install native shrubs	150	EA	$ 30.00	$4,500	$ 15.00	$2,250	$ 45.00	$6,750
	Install Selective Trees	20	EA	$ 250.00	$5,000	$ 100.00	$2,000	$ 350.00	$7,000
				$ -	$0	$ -	$0	$ -	$0
SUBTOTAL	LANDSCAPING	1000	SF	$ 26.65	$26,650	$ 17.48	$17,475	$ 44.13	$44,125

United States Department of the Interior
National Park Service
Class B Construction Cost Estimate (expanded)

LINE ITEM COST SUMMARY

Project: Oso Comida Trailhead Improvements
Park: Bear Arbor NRA
Park Alpha: BEAR
PMIS Number: XXXXXX

Estimate By: YtB
Date: 12/16/10
Reviewed By: BBB
Date: 12/20/10

Summary Item G20 Site Improvements

Total Cost: $261,685

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		INSTALLATION		TOTALS	
				Material Cost/Unit	Total Material Cost	Install Cost/Unit	Total Install Cost	Total Cost/Unit	Total Cost
G2060	SITE FURNISHINGS								
	Misc Site Furnishings	1	Allow	$ 1,500.00	$1,500	$ 1,000.00	$1,000	$ 2,500.00	$2,500
	Reinstall Site Furninshings at Picnic area	1	LS	$ 4,000.00	$4,000	$ 6,000.00	$6,000	$ 10,000.00	$10,000
	Description	0	Unit	$ -	$0	$ -	$0	$ -	$0
				$ -	$0	$ -	$0	$ -	$0
SUBTOTAL	**SITE FURNISHINGS**	**1000**	**SF**	**$ 5.50**	**$5,500**	**$ 7.00**	**$7,000**	**$ 12.50**	**$12,500**

Summary Item G20 Site Improvements

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		INSTALLATION		TOTALS	
				Material Cost/Unit	Total Material Cost	Install Cost/Unit	Total Install Cost	Total Cost/Unit	Total Cost
G20	**Site Improvements**	**1000**	**SF**	**$ 160.08**	**$160,075**	**$ 101.61**	**$101,610**	**$ 261.68**	**$261,685**

United States Department of the Interior
National Park Service
Class B Construction Cost Estimate (expanded)

LINE ITEM COST SUMMARY

Project: Oso Comida Trailhead Improvements
Park: Bear Arbor NRA
Park Alpha: BEAR
PMIS Number: XXXXXX

Estimate By: YtB
Date: 12/16/10
Reviewed By: BBB
Date: 1220/10

Summary Item G30 Site Mechanical Utilities **Total Cost:** $74,000

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		INSTALLATION		TOTALS	
				Material Cost/Unit	Total Material Cost	Install Cost/Unit	Total Install Cost	Total Cost/Unit	Total Cost
G3010	WATER SUPPLY								
	Water Connection to Bruin Meadows Road	1	Allow	$ 3,500.00	$3,500	$ 5,500.00	$5,500	$ 9,000.00	$9,000
		0	Unit	$ -	$0	$ -	$0	$ -	$0
		0	Unit	$ -	$0	$ -	$0	$ -	$0
SUBTOTAL	WATER SUPPLY	1000	SF	$ 3.50	$3,500	$ 5.50	$5,500	$ 9.00	$9,000

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		INSTALLATION		TOTALS	
				Material Cost/Unit	Total Material Cost	Install Cost/Unit	Total Install Cost	Total Cost/Unit	Total Cost
G3020	SANITARY SEWER								
	Install Septic King Tank & Treatment system	1	LS	$ 46,000.00	$46,000	$ 3,500.00	$3,500	$ 49,500.00	$49,500
	Install Leach field	1	LS	$ 7,500.00	$7,500	$ 3,000.00	$3,000	$ 10,500.00	$10,500
				$ -	$0	$ -	$0	$ -	$0
SUBTOTAL	SANITARY SEWER	1000	SF	$ 53.50	$53,500	$ 6.50	$6,500	$ 60.00	$60,000

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		INSTALLATION		TOTALS	
				Material Cost/Unit	Total Material Cost	Install Cost/Unit	Total Install Cost	Total Cost/Unit	Total Cost
G3030	STORM SEWER								
Optional Code	Parking Lot Drainage Improvements	1	Allow	$ 3,000.00	$3,000	$ 2,000.00	$2,000	$ 5,000.00	$5,000
				$ -	$0	$ -	$0	$ -	$0
				$ -	$0	$ -	$0	$ -	$0
SUBTOTAL	STORM SEWER	1000	SF	$ 3.00	$3,000	$ 2.00	$2,000	$ 5.00	$5,000

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		INSTALLATION		TOTALS	
				Material Cost/Unit	Total Material Cost	Install Cost/Unit	Total Install Cost	Total Cost/Unit	Total Cost
G30	Site Mechanical Utilities	1000	SF	$ 60.00	$60,000	$ 14.00	$14,000	$ 74.00	$74,000

Appendix C

CLASS C CONSTRUCTION COST ESTIMATES

Appendix C

CLASS C CONSTRUCTION COST ESTIMATES

This Appendix describes the estimating products and services to be prepared for Class C (Conceptual) Construction Cost Estimate. The following estimate submittals are considered Class C estimates:

A. General Management Plans (GMP)[1]

B. Condition Assessments Cost (CAC) estimates using FMSS and CESS[2]

C. Preliminary cost estimates used for project initiation and entry into the Project Management Information System (PMIS)

D. Pre Design (PD) programming estimates are used for development of project scope and preliminary validation of PMIS Estimate

E. Schematic Design (SD) concept estimates for comparing design alternatives for use in Value Analysis studies during the early stage in the Schematic Design Phase)

Class C (Conceptual) Construction Cost Estimating

Class C Construction Cost Estimates are referred to as *conceptual* estimates by the design and construction industry. These estimates are generally prepared without a fully defined scope of work (SOW). They are general in nature, representative of a broad based vision rather than focused on specific details and require great deal of interpretation and assumptions on the part of the estimator to fill in the blanks between programmed elements, Class C estimates are generally used for:

A. Feasibility studies (Least Detailed)

1. Most design elements are only partially programmed and many may be undefined, project scope and cost parameters may need to be derived through interpretation of a broader vision, rather than from clear programming documentation.

2. Dimensioned drawings are not typically available. Some programming sketches and general site layouts may be available.

3. General project design theme alternatives may be provided, but architectural styles and finish levels may require broad assumptions to be made, on the part of the estimator. Some materials may be identified; however a basis of design report is not usually provided and detailed specifications are not available,

[1] DO-2 has established a need for a Class D estimating guide to be developed for GMP cost estimates.

[2] FMSS Facility Management Software System and CESS Cost estimating Software System – systems created and maintained by the Facility Management Program Division of the National Park Service to manage the maintenance requirements of NPS facilities (Assets).

4. The Class C Construction Cost Estimates for feasibility studies require significant interpretation and assumptions to fill in the blanks. Most cost items are typically expressed as lump sum or gross square foot allowances.

B. Development of project scope and program (More Detailed)

1. Design elements are being clarified; project scope and cost parameters can be extrapolated from preliminary programming documentation. Some interpretation is still required to discern the design intent.

2. Dimensioned drawings are not typically available. Programming sketches, conceptual elevations, and preliminary site layouts are usually available.

3. Architectural styles and finish levels are generally selected, but some assumptions still need to be made, on the part of the estimator. A preliminary basis of design report may be provided; however, detailed specifications are not available.

4. The Class C Construction Cost Estimates for project scope development still require significant interpretation, allowance and assumptions. Most cost items are expressed as lump sum or gross square foot allowances

C. Establishing preliminary budgets (Increased Definition and Detail)

1. Conceptual layouts and preliminary sketches are fairly well defined.

2. Functional programming of desired project functions and individual project elements are being clarified..

3. The Class C Construction Cost Estimate for preliminary budget purposes may still require a great deal of interpretation to develop a complete estimate. Some cost item may be detailed enough for preliminary assembly cost estimating; however most cost items are still expressed as lump sum or gross square foot allowances.

D. Selection from among alternative designs (Most Detailed)

1. Conceptual site layouts and preliminary sketches are fairly well defined.

2. Functional programming of major design elements is clearly stated.

3. Sizes of various program elements have been determined.

4. Energy and sustainability goals are usually defined.

5. Major mechanical, electrical and plumbing systems may be identified, but few if any details are provided.

6. The Class C Construction Cost Estimate for selecting alternatives should contain fairly detailed line items that represent the major anticipated cost elements. Some allowances and assumptions may still be necessary to develop a comprehensive estimate.

A Class C Construction Cost Estimate is a Conceptual cost estimate based on a combination of detailed installation analysis, typical assembly costs and some lump sum or square footage costs derived from similar projects. Support information for Class C Construction Cost Estimates should include:

A. Anticipated square footage, building type, or project element:

1. Larger facilities should be broken down by functional program area types (entry foyer, office space, food prep, concessions, interpretation, display, storage, etc.

2. Each building should be estimated as an individual Asset or Project Element.

B. Anticipated site development, including existing and proposed utilities

1. Site clearing, tree removal, grading.

2. Sewer, water drainage

3. Parking, roadways, sidewalks, flatwork

4. Landscaping, way finding, interpretive displays, etc.

C. Anticipated mechanical and electrical needs (often based on square footage of building or anticipated power load)

1. Identification and cost allowances for desired LEED classification.

2. Identification and cost allowances for alternative energy systems

3. Identification and cost allowances for other unique systems

D. Anticipated structural systems

1. Define foundation needs, basement areas, etc.

2. Identification and cost allowances for special structural types (post and beam, SIPS, glass walls, etc.)

3. Identification and cost allowance for other unique structural elements (straw bale, adobe, rammed earth, green roof, etc.)

E. Anticipated site utility requirements and utility systems

Class C Construction Cost Estimating Accuracy

Class C Construction Cost Estimates are generally prepared with little if any formal design documents and often without a fully defined Scope of Work. This lack of detail requires that a high level of skill and careful estimating judgment is employed during the development of conceptual costs.

A. The generally accepted industry accuracy range of Class C Construction Cost Estimates is –30% to +50 %.

1. With this as the accepted accuracy a $1,000,000.00 Class C Construction Cost Estimate would have an accepted range of: $700,000.00 to $1,500,000.00.

2. For NPS projects, this level of accuracy may not be adequate to assure project funding, or once funded, may result in projects that are not allowed to proceed to contract if the cost of the final design exceeds previously allocated funding.

    a. Significant overstatement of project costs could hinder the project's competition for funds, divert funding away from other projects, and/or preclude the project from future funding consideration.

    b. If costs are understated, it may be necessary to reduce programming, change systems, or eliminate features to keep the project within budget as the project develops.

B. The NPS project approval and funding process dictates that a tighter tolerance than the industry accepted accuracy range must be achieved.

1. Special consideration should be given to providing additional detail at the Class C Construction Cost Estimate level to more clearly define the program function and costs of the proposed facility.

2. Programming needs and design details that could be reasonably inferred should be incorporated as itemized allowances in the direct cost total of Class C, rather than be assumed to be part of the design contingency markup.

C. Because of the critical nature of NPS Class C Construction Cost estimates for project approval, program retention and funding, it is imperative that estimators clearly document the scope of work in the Basis of Estimate Statement, as well as other factors that may have an impact on the overall estimated costs.

1. All supporting material use to define the scope of work should be thoroughly documented in the Basis of Estimate Statement. Any specific instructions from the end user, as well as known project constraints should also be included. List any items, or elements of work that are specifically excluded from the estimate.

2. The sources of all cost data used to prepare the estimate must be listed. Include information about costs obtained from vendors, manufacturers, or derived from similar projects.

3. List any assumptions relied on during the estimating process. Highlight any questions or information that may need clarification for future estimates.

4. If any items, design elements or assumptions have changed since previous cost estimates were prepared, describe and quantify the changes.

Class C Construction Cost Estimate Mark-ups and Design Contingencies

The cost information used to prepare Conceptual Class C cost estimates may be a combination local costs obtained through detailed research, and/or be derived from sources other than park/project specific cost data. Complete design details are likely not available to precisely define every aspect of the work and some design elements may still change somewhat, or be eliminated, while others may need to be added.

A. Location Adjustments: Generic publically available cost databases usually consist of averages compiled from nationwide or regional bid results. They typically do not reflect the local market conditions prevalent at most NPS locations. To make the Conceptual Class C cost estimates reflect anticipated project specific costs it may be necessary to apply location and other project specific adjustment factors or mark-ups to the direct costs developed using non-project specific cost data.

1. **Published Location Factor:** At the Conceptual Class C estimate stage the location factor is used either to adjust generic average cost data to a specific location, or to adjust cost data from one specific location to another. Most published location factors or cost indexes do not have specific values that reflect NPS project locations, so it is common practice to select either the closest published market center, or the one that is most likely to reflect the market conditions that will be most prevalent for the project. Some additional estimating judgment may be required to determine the appropriate location factor to use if cost data is a combination of local cost information and generic cost data.

2. **Remoteness Factor:** Since most NPS units are not located in major metropolitan areas, and/or are difficult to access, merely adjusting the direct costs to the appropriate market center may not completely reflect the cost of performing work on the project. For most NPS Conceptual Class C estimates an additional markup is usually required to account for remoteness and access.

3. **Federal Wage Rate Factor:** Generic databases use average cost data derived from a variety of sources that may, or may not, include projects where Davis-Bacon Act prevailing wage rates were paid to workers. The average wage rates included in the cost database must be compared to the minimum Davis-Bacon Act mandated wages for county where the project is located and an appropriate adjustment should be applied to the labor component of the direct cost.

    a. **CAUTION:** In some areas, Davis Bacon Act wages may be less than the normal wages that are being paid by contractors for skilled labor. When this occurs, no adjustment for Davis-Bacon Act is necessary, but it still may be

necessary to adjust the direct costs to reflect the actual local prevailing wage rates. Some additional research and estimating judgment is required.

4. **State & Local Taxes:** State and Local Tax rates will vary for each project. Sales and use taxes are generally only applicable to material and rental equipment costs. In a few areas, other local taxes may be applicable to the contractor's total revenue. Some adjustment to the mark-up structure may be necessary for special tax situations. The applicable tax rates for each estimate should be individually researched and clearly documented in the Basis of Estimate Statement.

SPECIAL NOTE FOR PROJECT SPECIFIC COST DATA: If cost data used to derive the estimate is derived from project or park specific data that already corresponds to the current estimate project location and includes payment of mandated prevailing wages, taxes, etc., the use of Location Adjustments may not be required.

B. Design Contingency: With the design documents used to prepare Conceptual Class C cost estimates, some design details are still being refined. It may not be possible to develop firm quantities or identify all cost elements during this process, so a Design (Estimating) Contingency mark-up is added the direct cost to account for detailing, changes and minor scope adjustments.

1. The typical Design (Estimating) Contingency used for NPS Conceptual Class C Construction Cost estimates is 15% to 30%.
   a. At the feasibility study stage, Class C estimates generally apply a Design Contingency at or near the 30% range. In some cases a higher percentage may be justified during the very early analysis of feasibility studies.
   b. For Condition Assessment Cost (CAC) estimates the Design Contingency can vary greatly depending on the nature and complexity of the work. Since CAC estimates are used to prioritize deferred maintenance work scheduling, it may be advisable to conduct supplemental investigations whenever the perceived scope of work (SOW) uncertainty exceeds 25%,
   c. At the Pre-Design (PD) stage, design contingencies in the 25 to 30% range are typically employed, depending on the complexity, level of definition, and perceived risk of the project.
   d. Later, at the Schematic Design Alternative Development stage Class C Construction Cost estimates generally reduce the Design Contingency to the 15% to 20% range as the level of detail increases.

C. General Conditions: The direct cost line items in Conceptual Class C estimates do not include allowances for General Conditions or job-site indirect costs, so mark-up factors are applied to include cost to cover these project expenses.

1. **Standard General Conditions**, also known as job site indirect costs, or General Requirements, typically vary between 4% and 20% of the location adjusted project costs.

2. **Government General Conditions** are other project specific indirect costs associated with doing business with the Federal Government and National Park Service. These costs typically add an additional 5% to 10% to the location adjusted project costs.

3. In many cases, it may be appropriate to begin itemizing the anticipated General Conditions costs as part of the Class C Construction Cost Estimating process rather than relying solely on a percentage mark-up.

D. **Historic Preservation Factor:** If the project involves additions or repairs to historic structures, or is in close proximity to historical or cultural sites, it may be necessary to apply a Historic Preservation Factor to account for unknown, or unidentified costs associated with protecting and/or matching the historical fabric of the resource.

1. At the Class C Construction Cost Estimate level, few of these impacts are typically quantified for most projects, so it is appropriate to apply a mark-up factor to allow for the associated costs. A range of 0-10% is not uncommon.

2. For many new construction and other non historical projects it is common for this mark-up factor to be zero (0). For purely historical preservation/restoration projects all of these costs should be included in the direct cost items.

E. **Overhead & Profit:** The rates for overhead and profit (O&P) are based on the anticipated market conditions at the time the work will be performed. Under normal market conditions, the normal range for O&P should be 10-25%, depending on the project size, complexity and level of risk associated with the work.

F. **Bonds & Permits:** The normal range for bonds and permits is 1-3%. Many estimators choose to include Bond & Permit costs in the General Conditions.

G. **Contracting Method Adjustment:** By the time Class C Construction Cost estimates are typically submitted, the NPS project manager or contracting officer may have an opinion regarding the preferred contracting method. The appropriate mark-up factors are discussed in the main body of the estimating handbook. The mark-up factor chosen and the rationale for the selection should be well documented in the Basis of Estimate Statement.

H. **Inflation Escalation:** The inflation escalation factor is based on the projected inflation rates from the time of the estimate until the mid-point of construction, compounded annually. The rate used and the rational for the selection should be well documented in the Basis of Estimate Statement.

Government Furnished Property (GFP)

In rare cases, the Government may pre-purchase some of the materials or specialized equipment required for a project, or they may be provided out of Government inventory. When this occurs, provided that the purchase price includes the cost of taxes and freight to the project site, most of the mark-up factors should not be applied to the amount of the purchase or the value of the GFP provided. If the GFP is projected as a future purchase, the Inflation Escalation may still apply. All

GFP must be listed in the Basis of Estimate Statement and the associated costs should be accounted for separately in the estimate.

Work Breakdown Structure for Conceptual Class C Construction Cost Estimates

The Work Breakdown Structure (WBS) for Class C Construction Cost Estimates should be structured to provide a logical hierarchy of cost elements. This hierarchy will provide the framework upon which future, more detailed cost estimates will be assembled.

A. **Project Cost Summary:** At the estimate summary level project costs should be organized by individual major Asset or Project Element.

B. **Estimate Detail / Line Item Cost Summary (optional):** Although not required for all Class C Construction Cost estimates, whenever possible, additional WBS cost detail should be provided for each of the Project Cost Summary line items.

1. Cost detail should be organized using the UNIFORMAT II, Elemental Classification System.
2. Detailed costs should be presented at UNIFORMAT II, detail Level 2.
3. In most cases, it is both desirable and appropriate to refine the level of WBS detail beyond the required UNIFORMAT II, Level 2.
    a. Additional WBS detail should be organized and presented using the UNIFORMAT II, Level 3 hierarchy.
    b. This additional level should be provided for all Schematic Design (SD) stage, Class C Construction Estimates.
    c. Providing this greater level of detail is also strongly encouraged in all stages of Class C Construction Cost Estimates.

C. **Estimate Format:** The estimate should present the cost information in a tabular or spreadsheet format:

1. The Project Cost Summary should arrange each Asset or Project Element as individual line items.
2. The horizontal format for the estimate should include a minimum of five (5) columns for tabulating the following information in each line item:
    a. Item Description
    b. Item Quantity
    c. Unit of Measure
    d. Direct Unit Cost
    e. Total Direct Cost

I. **Estimate Sample:** An example of a Class C Construction Cost Estimate is provided at the end of this appendix.

J. **Estimate Template:** A template for Class C Construction Cost Estimates is provided on the NPS Project Workflows website, Section 1.7, located at http://www.nps.gov/dscw/dbbpredesign.htm .

1. The Class C Construction Cost Estimate template is provided as a guideline only and its use is not required, provided that all estimates submitted contain the required information and are presented in a similar format, as specified above and elsewhere in the handbook.
2. Care must be exercised if using the templates to avoid corrupting embedded formulas and other automated functions.
3. Each estimator is responsible for proof reading, data verification and mathematical checks for their own estimates.
4. The National Park Service assumes no liability resulting from the use or misuse of the cost estimating templates by third parties.

Submittal Package Requirements for Conceptual Class C Estimates

The estimate submittal package shall contain the following at a minimum:

A. **Basis of Estimate Statement:** This page(s) of the estimate doubles as a cover page for the estimate. The Basis of Estimate statement page should include the following items:

1. Title of project
2. Park name and location within park, if applicable
3. The park's four letter alpha code
4. The PMIS number for the project
5. Date of estimate
6. Estimator's Name, Company, Address and Contact information
7. List of background supporting material describing the scope of work and any information used or referenced for preparing the estimate
8. Documentation of all sources of cost data, detailing the cost data used to prepare the estimate; include source name, date, volume number, etc.
9. A description of any assumptions made, or relied on to prepare the estimate.
10. A brief description of any major changes in the scope of work, materials, systems, or assumptions, relative to previous cost estimates for the same project.
11. Short descriptions and justifications for all mark-ups, add-ons, and escalation factors used in estimate
12. Other comments and assumptions regarding the estimate or supporting material.

B. **Project Cost Summary:** The estimate project cost summary should be formatted as described above and show all cost items, subtotals, mark-ups and total.

C. Line Item Cost Summaries (optional): The line item cost summary estimate detail should be formatted to the WBS detail as described above. Whenever Class C Construction Cost Estimates are prepared using the additional level of detail, the detailed cost work-ups should be included in the submittal package.

United States Department of the Interior
National Park Service
Class C Construction Cost Estimate

BASIS OF ESTIMATE

PROJECT INFORMATION

Project:	**Oso Comida Trailhead Improvements**
Park:	**Bear Arbor NRA**
Park Alpha:	**BEAR**
PMIS Number:	**XXXXXX**
Estimate Date:	**12/16/2010**
Prepared By:	**YtB**
Company:	NPS Bear Arbor NRA
Address:	123 Bruin Meadows Rd.
City, State Zip:	Grizzly Hollow, CA 96023
Phone:	(555) 123-4567

BACKGROUND SUPPORTING MATERIAL (Scope of Work):

Field Recon meeting with park Supt. and FM Staff. Marked-up 0verlay Sketch on 1962 plans of current improvements. Letter from congress requesting R&R of existing trailhead. Public Scoping Meeting minutes and sketches developed during informal design brainstorming sessions with park Supt., FM Chief and RMS staff. --- Estimate is based on replacing existing pit toilets with new precast vault toilets,. Excising social trails will be obliterated after new walk connections and channelizing fence is installed. Revegetation of trails will be by park volunteers, YCC etc. 50 new paved parking spaces will be provided with four accessible spaces (2 van). A treated soil hard surfaced accessible trail connection will be constructed for the first 550 feet of trail to the Bruin Meadows overlook.

SOURCE OF COST DATA:

Majority of cost are based on RS Means 2010 Facilities Construction Cost Data, 25th Annual Edition. Parking lot costs are based on actual, in-park FHWA road project on Bruin Meadows road adjacent to site - adjusted down by -23% to remove remoteness & location factors. Precast vault toilet assembly material price is based on 2010 GSA annual contract.

ESTIMATE ASSUMPTIONS:

Estimate assumes that all improvements will be constructed as a singe project during one construction season. East half of existing dirt parking area and trailhead will remain in operation until new paved lot and walk connections are completed. 2nd half of existing lot will be available for contractor lay down/equipment area, but contractor's labor force must park at maintenance yard 5 miles away and be shuttled into site. Shuttle costs and additional portable toilet cost impacts are included in Government Special Conditions.

MAJOR CHANGES FROM PREVIOUS ESTIMATE:

Previous PMIS estimate did not include trail hardening or channelizing fence.

United States Department of the Interior
National Park Service
Class C Construction Cost Estimate

BASIS OF ESTIMATE

PROJECT INFORMATION

Project: Oso Comida Trailhead Improvements

Park: Bear Arbor NRA
Park Alpha: BEAR
PMIS Number: XXXXXX
Estimate Date: 12/16/2010

DESCRIPTION OF MARK-UP & ADD-ONS:

Location Factor:	6.30%	Closest RS Means market Center is Redding CA; CCI=106.3
Remoteness Factor:	13.0%	Site is 130 miles from published commercial center. Good state highway access to site. Minor traffic impacts.
Federal Wage Rate Factor:	3.7%	Compared local county Davis-Bacon wage rates to location adjusted RS Means wages for the trades anticipated.
State & Local Taxes:	8.25%	6% State Sales Tax plus 2.25% county and regional transportation district taxes. **See Comment Below**
Design Contingency:	30.0%	Preliminary Design (PD) documents are available. Relatively simple scope but not completely defined warrants a 30% contingency.
Standard. General Conditions:	10.0%	Relatively simple heavy/civil construction project with few it any additional trades. Job-site indirect costs should be minimal.
Government General Conditions:	12.0%	Higher than normal; Includes impacts associated with shuttling crews and maintaining public access to existing trail.
Historic Preservation Factor:	3.00%	Project is adjacent to a historical bridge and several cultural sites that will require protection/modification to plan.
Contractor Overhead:	8.50%	Normal mid-range for Small to medium sized Heavy/Civil contractor in this area
Contractor Profit:	10.0%	Economic downturn is easing and we anticipate modest increase in contractor profit by 2013 project date
Bonds and Permits:	2.00%	Standard to high range for low volume but established Heavy/Civil contractors
Contracting Method Adjustment:	15.0%	Preliminary indications are that negotiated sole-source SBA Section 8a or SDV procurement will be utilized.
Annual Inflation Escalation Factor:	3.60%	Anticipate easing of economic downturn will trigger mild inflation
Time Until Project Midpoint (Months)	44	RS Means data date of January 2010 until August 2013.

OTHER COMMENTS:

Considerable discussions regarding the need for a wet comfort station needed to resolve a potential increase in scope. **Sales and use tax only applied to materials, assumed to be 40% of direct cost a this estimate stage. Discussions have been underway regarding changing facility to a full wet comfort station if additional funding can be secured.**

United States Department of the Interior
National Park Service
Class C Construction Cost Estimate

PROJECT COST SUMMARY

Project: Oso Comida Trailhead Improvements
Park: Bear Arbor NRA
Alpha: BEAR
PMIS: XXXXXX

Estimate By: YtB
Date: 12/16/10

Reviewed By: BBB
Date: 12/17/10

Item No.	Description	Quantity	Unit	Cost/Unit	Total
1	Remove existting pit toilets	1	LS	$5,438	$5,438
2	Construct new 4-stall vault toilet facility	1	EA	$63,145	$63,145
3	Construct 50 space paved parking lot	50	Spaces	$3,925	$196,235
4	Rehabilitate existing 5-table picnic area	5	EA	$6,000	$30,000
5	Construct new trail connection with fence	1	LS	$36,090	$36,090
6	Remove & Reclaim existing parking and trails	1	LS	$19,798	$19,798
	Subtotal Direct Construction Costs				**$350,704**
	Value of Government Furnished Property (GFP) Included in Direct Cost (see footnote)*				**$0**
				Direct Cost Subtotal without GFP	**$350,704**
	Published Location Factor	6.30%			$22,094
	Remoteness Factor	13.00%			$45,592
	Federal Wage Rate Factor	3.70%			$12,976
	State & Local Taxes - on 40% of Direct Cost	8.25%	**Formula Modified >>>**		$11,573
	Design Contingency	30.00%			$105,211
	Total Direct Construction Costs				**$548,151**
	Standard General Conditions	10.00%			$54,815
	Government General Conditions	12.00%			$65,778
	Historic Preservation Factor	3.00%			$16,445
	Subtotal NET Construction Cost				**$685,188**
	Overhead	8.50%			$58,241
	Profit	10.00%			$68,519
	Estimated NET Construction Cost				**$811,948**
	Bonds & Permits	2.00%			**$16,239**
	Contracting Method Adjustment	15.00%			$121,792
	Inflation Escalation	44	Months	3.60%	$131,537
	Total Estimated NET Cost of Construction				**$1,081,517**

* GFP costs are only used when the Government pre-purchases items, or provides other materials out of Government inventory, to be installed by contractor. Adjustments and Markup on GFP only include Inflation Escalation; No other adjustment factors or O&P markup have been applied.

United States Department of the Interior
National Park Service
Class C Construction Cost Estimate

LINE ITEM COST SUMMARY

Project:	**Oso Comida Trailhead Improvements**	**Estimate By:**	YtB
Park:	**Bear Arbor NRA**	**Date:**	12/16/10
Park Alpha:	**BEAR**	**Reviewed By:**	BBB
PMIS Number:	**XXXXXX**	**Date:**	12/17/10
Summary Item 1	**Remove existting pit toilets**	**Total Cost:**	$5,438

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
F20	**SELECTIVE BUILDING DEMOLITION**					
F2020	Pump & Flush existing pits	1	LS	$ 500.00	$500	
F2010	Demo structures- haul to dump; Means Crew B-30	1	Day	$ 3,988.00	$3,988	
F2010	Dump Fees	2	EA	$ 350.00	$700	
				$ -	$0	
	SUBTOTAL SELECTIVE BUILDING DEMOLITION	**1**	**LS**	**$ 5,188.00**	**$5,188**	

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
G10	**SITE PREPARATION**					
G1030	Backfill & hand compact pits w/ soil from new vault	50	CY	$ 4.99	$250	
		0	Unit	$ -	$0	
		0	Unit	$ -	$0	
		0	Unit	$ -	$0	
	SUBTOTAL SITE PREPARATION	**1**	**VALUE**	**$ 249.50**	**$250**	

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
TOTAL COST - Remove existting pit toilets		**1**	**LS**	**$ 5,437.50**	**$5,438**	

United States Department of the Interior
National Park Service
Class C Construction Cost Estimate

LINE ITEM COST SUMMARY

Project:	**Oso Comida Trailhead Improvements**	**Estimate By:**	YtB
Park:	**Bear Arbor NRA**	**Date:**	12/16/10
Park Alpha:	**BEAR**	**Reviewed By:**	BBB
PMIS Number:	**XXXXXX**	**Date:**	12/17/10

Summary Item 2 **Construct new 4-stall vault toilet facility** **Total Cost:** $63,145

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
A10	**FOUNDATIONS**					
A1020	Furnish & Install 12" Crushed Aggregate Base	25	SY	$ 24.68	$617	
A1030	Fine grade vault subgrade	200	SF	$ 0.50	$100	
		0	Unit	$ -	$0	
	SUBTOTAL FOUNDATIONS	**1**	**VALUE**	**$ 716.88**	**$717**	

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
A20	**BASEMENT CONSTRUCTION**					
A2010	Excavate for Vault - sidecast	100	CY	$ 3.91	$391	
A2020	Set Precast Vault RSM-Crew A3I	0.5	Day	$ 1,940.20	$970	
A2020	Set Precast Vault - Additional Labor	2	Mday	$ 435.00	$870	
A2020	Purchase Precast Vault & Structure	2	EA	$ 25,000.00	$50,000	
A2020	Backfill & Compact Vault	25	CY	$ 4.99	$125	
A2010	Remove excess soil from site.	25	CY	$ 30.00	$750	
		0	Unit	$ -	$0	
		0	Unit	$ -	$0	
	SUBTOTAL BASEMENT CONSTRUCTION	**1**	**VALUE**	**$ 53,105.85**	**$53,106**	

United States Department of the Interior
National Park Service
Class C Construction Cost Estimate

LINE ITEM COST SUMMARY

Project:	**Oso Comida Trailhead Improvements**	**Estimate By:**	YtB
Park:	**Bear Arbor NRA**	**Date:**	12/16/10
Park Alpha:	**BEAR**	**Reviewed By:**	BBB
PMIS Number:	**XXXXXX**	**Date:**	12/17/10

Summary Item 2 **Construct new 4-stall vault toilet facility** **Total Cost:** $63,145

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
B10	**SUPERSTRUCTURE**					
B1020	Erect Superstructure RSM Crew A3i	0.5	Day	$ 3.91	$2	
B1020	Additional Labor	2	Mday	$ 435.00	$870	
		0	Unit	$ -	$0	
	SUBTOTAL SUPESTRUCTURE	**1**	**LS**	**$ 871.96**	**$872**	

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
B20	**EXTERIOR CLOSURE**					
B2010	Caulking & Waterproofing	1	Allow	$ 100.00	$100	
B2020	Hang and adjust pre-furnished doors	1	LS	$ 250.00	$250	
B20XX	Touch-up & patch Precast structure	1	Allow	$ 100.00	$100	
		0	Unit	$ -	$0	
	SUBTOTAL EXTERIOR CLOSURE	**1**	**VALUE**	**$ 44.00**	**$450**	

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
D20	**PLUMBING**					
D2010	Install and adjust interior fixtures	1	Allow	$ 250.00	$250	
		0	Unit	$ -	$0	
		0	Unit	$ -	$0	
	SUBTOTAL PLUMBING	**1**	**VALUE**	**$ 250.00**	**$250**	

United States Department of the Interior
National Park Service
Class C Construction Cost Estimate

LINE ITEM COST SUMMARY

Project:	**Oso Comida Trailhead Improvements**	**Estimate By:**	YtB
Park:	**Bear Arbor NRA**	**Date:**	12/16/10
Park Alpha:	**BEAR**	**Reviewed By:**	BBB
PMIS Number:	**XXXXXX**	**Date:**	12/17/10

Summary Item 2 **Construct new 4-stall vault toilet facility** **Total Cost:** $63,145

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
G10	**SITE PREPARATION**					
G1030	Clean up & Fine grade around vault toilets	2500	SF	$ 0.15	$375	
G1030	Erosion Control	1	Allow	$ 2,500.00	$2,500	
		0	Unit	$ -	$0	
		0	Unit	$ -	$0	
	SUBTOTAL SITE PREPARATION	**1**	**VALUE**	**$ 2,875.00**	**$2,875**	

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
G20	**SITE IMPROVEMENTS**					
G2030	Concrete flatwork	750	SF	$ 6.50	$4,875	
			Unit	$ -	$0	
			Unit	$ -	$0	
	SUBTOTAL SITE IMPROVEMENTS	**1**	**VALUE**	**$ 4,875.00**	**$4,875**	

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
TOTAL COST - Construct new 4-stall vault toilet facility		**1**	**EA**	**$ 63,144.68**	**$63,145**	

United States Department of the Interior
National Park Service
Class C Construction Cost Estimate

LINE ITEM COST SUMMARY

Project:	**Oso Comida Trailhead Improvements**	**Estimate By:**	YtB
Park:	**Bear Arbor NRA**	**Date:**	12/16/10
Park Alpha:	**BEAR**	**Reviewed By:**	BBB
PMIS Number:	**XXXXXX**	**Date:**	12/17/10
Summary Item	**Construct 50 space paved parking lot**	**Total Cost:**	$196,235

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
G10	**SITE PREPARATION**					No grading or drainage plans available. Prices and qunatities are conceptual place holders only..
G1010	Erosion Control	1	Allow	$ 2,500.00	$2,500	
G1010	Clear & Grub Parking Area	40000	SF	$ 0.25	$10,000	
G1010	Selective Tree Removal	10	EA	$ 350.00	$3,500	
G1020	Misc. site demolition	1	LS	$ 1,500.00	$1,500	
G1030	Onsite-Cut to Fill	1500	CY	$ 3.81	$5,715	
		0	Unit	$ -	$0	
	SUBTOTAL SITE PREPARATION	**1**	**LS**	**$ 23,215.00**	**$23,215**	

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
G20	**SITE IMPROVEMENTS**					Base and Paving costs are based on 2010 highway construction project adjacent to site FHWA prices reduced 23% to localize for later mark-up by location, wage & remoteness factors
G2020	Subgrade Prep Parking Lot	4050	SY	$ 0.75	$3,038	
G2020	Furnish & Install 6" Roadbase	4050	SY	$ 8.75	$35,438	
G2020	Furnish & Install 3" Asphalt Paving	4050	SY	$ 13.25	$53,663	
G2020	Striping	46	Spaces	$ 42.00	$1,932	
G2020	Accessible spaces	4	EA	$ 250.00	$1,000	
G2020	Sign Allowance	1	Allow	$ 2,500.00	$2,500	
G2020	Curb & Gutter	1000	LF	$ 22.50	$22,500	
G2030	Pedestrian Sidewalks	3500	SF	$ 6.50	$22,750	
G2030	Handicap Ramps	2	EA	$ 850.00	$1,700	
G2040	Misc Site Furnishings	1	Allow	$ 3,500.00	$3,500	
G2050	Landscape Improvements	1	LS	$ 20,000.00	$20,000	
	SUBTOTAL SITE IMPROVEMENTS	**50**	**Spaces**	**$ 3,360.39**	**$168,020**	

United States Department of the Interior
National Park Service
Class C Construction Cost Estimate

LINE ITEM COST SUMMARY

Project:	**Oso Comida Trailhead Improvements**	**Estimate By:**	YtB
Park:	**Bear Arbor NRA**	**Date:**	12/16/10
Park Alpha:	**BEAR**	**Reviewed By:**	BBB
PMIS Number:	**XXXXXX**	**Date:**	12/17/10
Summary Item	**Construct 50 space paved parking lot**	**Total Cost:**	$196,235

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
G30	**SITE CIVIL/MECHANICAL UTILITIES**					
G3030	Parking Lot Drainage Improvements	1	Allow	$ 5,000.00	$5,000	
		0	Unit	$ -	$0	
	SUBTOTAL SITE CIVIL/MECHANICAL UTILITES	**1**	**Allow**	**$ 5,000.00**	**$5,000**	

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
TOTAL COST -	**Construct 50 space paved parking lot**	**50**	**Spaces**	**$ 3,924.69**	**$196,235**	

United States Department of the Interior
National Park Service
Class C Construction Cost Estimate

LINE ITEM COST SUMMARY

Project:	**Oso Comida Trailhead Improvements**	**Estimate By:**	YtB
Park:	**Bear Arbor NRA**	**Date:**	12/16/10
Park Alpha:	**BEAR**	**Reviewed By:**	BBB
PMIS Number:	**XXXXXX**	**Date:**	12/17/10

Summary Item **Rehabilitate existing 5-table picnic area** **Total Cost:** $30,000

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
G10	**SITE PREPARATION**					
G1010	Misc. Site Clearing	1	LS	$ 2,500.00	$2,500	
G1020	Remove Existing Picnic Tables & Grills	1	LS	$ 2,500.00	$2,500	
G1030	Fine Grade & Compact Subgrades	3500	SF	$ 0.30	$1,050	
Level 3 Code	Description	0	Unit	$ -	$0	
	SUBTOTAL SITE PREPARATION	**1**	**LS**	**$ 6,050.00**	**$6,050**	

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
G20	**SITE IMPROVEMENTS**					
G2030	Furnish & Install Decomposed Granite DG	100	Tons	$ 62.00	$6,200	
G2030	Mix, spread, finegrade & compact organic binder	3500	SF	$ 1.50	$5,250	
G2040	Reinstall Site Furninshings	1	LS	$ 10,000.00	$10,000	
G2050	Misc. Landscape repairs & improvements	1	LS	$ 2,500.00	$2,500	
Level 3 Code	Description	0	Unit	$ -	$0	
	SUBTOTAL SITE IMPROVEMENTS	**5**	**EA**	**$ 4,790.00**	**$23,950**	

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
TOTAL COST - Rehabilitate existing 5-table picnic area		**5**	**EA**	**$ 6,000.00**	**$30,000**	

United States Department of the Interior
National Park Service
Class C Construction Cost Estimate

LINE ITEM COST SUMMARY

Project:	**Oso Comida Trailhead Improvements**	**Estimate By:**	YtB
Park:	**Bear Arbor NRA**	**Date:**	12/16/10
Park Alpha:	**BEAR**	**Reviewed By:**	BBB
PMIS Number:	**XXXXXX**	**Date:**	12/17/10
Summary Item	**Construct new trail connection with fence**	**Total Cost:**	$36,090

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
G10	**SITE PREPARATION**					
G1010	Hand Clear New Trail Allignment	500	LF	$ 5.00	$2,500	
G1030	Hand Grade Trail	3000	SF	$ 0.50	$1,500	
		0	Unit	$ -	$0	
		0	Unit	$ -	$0	
SUBTOTAL SITE PREPARATION		**500**	**LF**	**$ 8.00**	**$4,000**	

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
G20	**SITE IMPROVEMENTS**					
G2030	Furnish & Install Decomposed Granite DG	70	Tons	$ 62.00	$4,340	
G2030	Mix, spread, finegrade & compact organic binder	3000	SF	$ 1.50	$4,500	
G2030	Pedestrian Sidewalks	1500	SF	$ 6.50	$9,750	
G2040	Install 3 rail fence	500	LF	$ 22.00	$11,000	
G2050	Misc. Landscape repairs & improvements	1	LS	$ 2,500.00	$2,500	
		0	Unit	$ -	$0	
SUBTOTAL SITE IMPROVEMENTS		**1**	**LS**	**$ 32,090.00**	**$32,090**	

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
TOTAL COST - Construct new trail connection with fence		**1**	**LS**	**$ 36,090.00**	**$36,090**	

United States Department of the Interior
National Park Service
Class C Construction Cost Estimate

LINE ITEM COST SUMMARY

Project:	**Oso Comida Trailhead Improvements**	**Estimate By:**	YtB
Park:	**Bear Arbor NRA**	**Date:**	12/16/10
Park Alpha:	**BEAR**	**Reviewed By:**	BBB
PMIS Number:	**XXXXXX**	**Date:**	12/17/10
Summary Item	**Remove & Reclaim existing parking and trails**	**Total Cost:**	$19,798

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
G10	**SITE PREPARATION**					
G1030	Scarify existing dirt parking lot	10000	SF	$ 0.05	$500	
G1030	Scarify Existing Trail 500' x 3'	1500	SF	$ 0.12	$173	
		0	Unit	$ -	$0	
		0	Unit	$ -	$0	
	SUBTOTAL SITE PREPARATION	**1**	**VALUE**	**$ 672.50**	**$673**	

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
G20	**SITE IMPROVEMENTS**					
G2050	Soil amenders	11500	SF	$ 0.25	$2,875	
G2050	Place Barrier Rocks	1	Allow	$ 2,500.00	$2,500	
G2050	Install native shrubs	150	EA	$ 45.00	$6,750	
G2050	Install Selective Trees	20	EA	$ 350.00	$7,000	
		0	Unit	$ -	$0	
	SUBTOTAL SITE IMPROVEMENTS	**1**	**VALUE**	**$ 19,125.00**	**$19,125**	

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
TOTAL COST - Remove & Reclaim existing parking and tra		**1**	**LS**	**$ 19,797.50**	**$19,798**	

Appendix D

Wage Rate Factor Analysis Worksheet

United States Department of the Interior
National Park Service

Wage Rate Factor Analysis

Park: Handbook Sample Park
Project Name: Sample High Country Project
Published Market Center: Modesto, CA
Project County: Mariposa, CA
BLS Wage Rate City/Town: Eastern Sierra Non-metro

Date Updated: 12/10/2010
Estimate Data Source: RS Means 2010 FCCD
Market Center Adjustment Factor: 109.9%
Estimator: YtB

Trade	2010 Estimate Direct Wage Rate	Market Adjusted Wage Rate for Modesto, CA	Davis Bacon Wages w/Fringe Wage Class Mariposa, CA	Wage Difference	Approximate Wage Adjustment Factor	BLS Prevailing Wages Eastern Sierra Non-metro	Fringe Allowance 40% Applied to BLS Wage	Wage Difference	Approximate Wage Adjustment Factor
Boilermakers	$ 52.25	$ 57.42	**$ 59.26**	$ 1.84	3.2%		N/A	N/A	N/A
Bricklayer	$ 41.75	$ 45.88	**$ 52.10**	$ 6.22	13.5%		N/A	N/A	N/A
Cement Mason/Finisher	$ 39.70	$ 43.63	**$ 47.21**	$ 3.58	8.2%		N/A	N/A	N/A
Marble & Tile Setter/layer	$ 36.63	$ 40.26	**$ 40.14**	$ (0.12)	-0.3%		N/A	N/A	N/A
Terrazo & Mosaic Worker	$ 39.00	$ 42.86	**$ 58.25**	$ 15.39	35.9%		N/A	N/A	N/A
Carpenter	$ 41.55	$ 45.66	**$ 53.41**	$ 7.75	17.0%	**$ 24.95**	$ 9.98	$ (10.73)	-23.51%
Millwrights	$ 42.95	$ 47.20	**$ 57.50**	$ 10.30	21.8%		N/A	N/A	N/A
Electrician	$ 49.00	$ 53.85	**$ 48.89**	$ (4.96)	-9.2%	**$ 30.29**	$ 12.12	$ (11.45)	-21.25%
Elevator Mechanic	$ 61.70	$ 67.81	**$ 44.93**	$ (22.88)	-33.7%		N/A	N/A	N/A
Equipment Operator (avg.)	$ 42.31	$ 46.50	**$ 57.39**	$ 10.89	23.4%	**$ 22.54**	$ 9.02	$ (14.94)	-32.14%
Ironworker (Structural/reinf.)	$ 46.85	$ 51.49	**$ 56.73**	$ 5.24	10.2%		N/A	N/A	N/A
Common Laborer (avg.)	$ 33.10	$ 36.38	**$ 41.71**	$ 5.33	14.7%	**$ 15.39**	$ 6.16	$ (14.83)	-40.77%
Painters (all)	$ 36.88	$ 40.53	**$ 38.75**	$ (1.78)	-4.4%	**$ 21.17**	$ 8.47	$ (10.89)	-26.87%
Plasterer	$ 37.30	$ 40.99	**$ 48.12**	$ 7.13	17.4%		N/A	N/A	N/A
Pipefitter & HVAC (steamfitters)	$ 51.90	$ 57.04	**$ 56.88**	$ (0.16)	-0.3%		N/A	N/A	N/A
Sprinkler installers	$ 50.40	$ 55.39	**$ 50.95**	$ (4.44)	-8.0%		N/A	N/A	N/A
Plumbers	$ 52.05	$ 57.20	**$ 56.88**	$ (0.32)	-0.6%	**$ 22.16**	$ 8.86	$ (26.18)	-45.77%
Roofers (avg.)	$ 35.50	$ 39.01	**$ 37.16**	$ (1.85)	-4.8%		N/A	N/A	N/A
Sheet Metal Worker	$ 49.10	$ 53.96	**$ 56.75**	$ 2.79	5.2%		N/A	N/A	N/A
Truck Drivers (average)	$ 32.70	$ 35.94	**$ 46.58**	$ 10.65	29.6%	**$ 19.49**	$ 7.80	$ (8.65)	-24.07%
Asbestos Worker/Insulator	$ 45.55	$ 50.06	**$ 56.44**	$ 6.38	12.7%		N/A	N/A	N/A
Glazier	$ 40.20	$ 44.18	**$ 49.73**	$ 5.55	12.6%		N/A	N/A	N/A
Avg. Wage & Adjustment Factor	**$ 43.56**	**$ 47.87**	**$ 50.72**	**$ 2.84**	**5.9%**	**$ 22.28**		**$ (13.95)**	**-29.14%**

Conclusion:

Davis Bacon Wage Rates for Tuolumne County are on average 5.9 % more than RS Means Wage Rates adjusted for city Modesto, CA. Fringe Adjusted Bureau of Labor Statistics wage surveys for Eastern Sierra Non-Metropolitan are 29.4 % less than the RS Means rates. The Davis-Baocn rates will govern; using an average wage rate adjustment of 5%-8% appears to be appropriate. The latest Davis-Bacon Wage determination date was 12/03/2010 and should be compared to 2011 RS Means data if later estimates use the most current publications.

Links:

Davis-Bacon Wage Rates: http://www.access.gpo.gov/davisbacon/allstates.html
Bureau of Labor Statistics: http://www.bls.gov/oes/current/oessrcma.htm#N

Appendix E

Market Survey

Appendix E

MARKET SURVEY

Application. It is strongly recommended that a Market Survey be conducted to verify that projected unit costs are appropriate and to assure that project delivery assumptions of materials and labor availability are reasonable, for every project anticipated to have an estimated NET construction cost greater than $4,000,000, or when requested by the NPS project manager .

Survey Approach. The Estimator shall visit the site and local market areas to determine the following:

- Availability of major materials to be in the project
- Capability of local fabricators, pre-cast yards, concrete plants, etc.
- Availability of labor crafts necessary for the project
- Availability of special erection equipment
- Anticipated capacity of local contractors during proposed solicitation period
- Special conditions that may influence price proposals
- Local escalation experience
- Site accessibility

Report Content. Submit a written report (the Market Survey) which shall include:

- Who was contacted
- Location of those contacted in relation to project site
- Date of contact(s)
- Why contact was made
- Information obtained
- A summary assessment with specific recommendations

Scheduling. The market survey should be conducted during design development. The market survey should be submitted with the Budgetary (Class B Estimate) as part of the design development submittal to enable the designer to address/revise design, incorporate price proposal alternates, change construction schedule, or whatever else might be necessary to assure project feasibility.

Appendix F

Scope and Cost Validation Report

Appendix F

SCOPE AND COST VALIDATION REPORT

The scope of a project is often developed many years prior to the actual commitment of funding for design and construction. Often the project scope and/or cost of work required/desired have changed during this lapse of time. Therefore, it is imperative to validate both the project scope and the cost estimate (as defined in the PMIS Project Statement) early in the design process (Pre-design).

In development of the Project Program the project team often makes a project scoping trip and communicates with NPS Park and Regional management. During the scoping trip it is important for the project team to comprehensively define the project scope. The project team must have discussion with NPS staff and analyze an itemized comparison of current defined Project Program scope against the PMIS document.

Instructions for Scope & Cost Validation Report Preparation

The S&CVR is broken down into 11 major sections. The completion of the report will need to be coordinated between several cooperating groups and individuals (DSC, Park, Region, A/E, Project Team). The probable responsible participant is generally identified on the report form. The following are guideline instructions for completing the report.

Project Title & Information Section

This section should be completed by the Lead Office (DSC, Park or Region). The data entry is straightforward, requiring the following information:

- Park Alpha (Acronym) and the PMIS Number – If the project is identified with multiple Park Alpha codes or PMIS numbers, the office of WASO Construction Project Management Division should be contacted for assistance.
- Previous PMIS(s) – Occasionally a project has been identified at an earlier time by other PMIS numbers. Those should be included here.
- Park Name, Region – Provide appropriate information.
- Project Title - Project Title MUST match PMIS title.
- Lead Office – Identify which office (DSC, Park or Region) will be the Lead Project Management Office for this project.
- Funding Source – Identify the funding source(s) that will be used to fund both design and construction.
- Expected Award – Date of Proposed Construction Award

Status Summary

The Lead Office (DSC, Park or Region) in coordination with the design team is responsible for completion of the section. This section identifies in brief whether the scope, cost and/or schedule of the project varies from the PMIS project scope, cost and/or schedule. Use the worksheets *drop down* menus to select (No Change, Increase, Decrease) for the categories of Scope, Cost and Schedule. In column three indicate estimated quantity of change for each as a percentage for **Scope**, as a dollar amount for **Cost**, and as number of days for **Schedule**.

PMIS Project Description & Justification

The Lead Office (DSC, Park or Region) is responsible for completion of this section. In most instances, this is simply a cut-and-paste of appropriate sections from project PMIS.

Financial Summary

This section should be completed by the Lead Office (DSC, Park or Region).
The first sub-section PMIS Statement should be a simple extrapolation of funding Data for each of the Project Work Elements from the PMIS into the spreadsheet.

The second sub-section Scope & Cost Validation Proposal will require information provided by the A/E, the design team and project management team. The NET Construction Cost for this spreadsheet should be taken from the reviewed and accepted Class C Cost Estimate. This should be a straightforward task, if the class C estimate is formatted as required by Cost Estimating Requirements Handbook.

Scope Questions

The A/E and Project Team should be responsible for the completion of this section. The answers to the three scope questions should be descriptive as possible, so as to justify or not justify changes to project scope, project cost and/or project. All three questions deal with how the currently perceived scope of project compares with the scope as defined in the PMIS statement.

1. This question asks if the project as defined in PMIS is still required.
2. The second question asks if the scope has changed (because of continued deterioration of asset, or code or standard changes, etc.) since the PMIS was prepared.
3. The third question asks if the PMIS statement properly identified the scope of the project initially or not.

Estimate

This section is a combination of 3 tables and 4 questions. Completion of this section will require a combination of efforts of entities or teams(Park, Region, A/E Design Team, DSC).

The data required to complete Table 1 – FMSS Project Locations will be provided by the Park. Table 1 should identify all FMSS Locations that are included in project scope. Table 2 is organized so that a side-by-side comparison can be made of the PMIS and the Scope & Validation Class C Estimates. The Work Breakdown Schedule (Outline format) for Table 2 is Uniformat II, Level 2. Under each Uniformat section costs should be shown for each asset location identified in Table 1 as appropriate. This table will be the most useful in identifying (tracking) both the changes in project scope and cost. Use the 6th column of Table 2 to identify any known rationale that the changes from PMIS to current cost have occurred. The bottom portion of Table also has an area of side-by-side comparison of estimate mark-ups and add-ons.

Occasionally, cost estimates provided in PMIS and/or Scope & Cost Validation have not been prepared with a Uniformat II breakdown. Table 3 provides comparison of costs by asset or major project component.

This section closes with four questions related to the cost data in the above referenced tables.

4. Looking at each Uniformat Level comparison of costs, describe the reason for any change in cost in excess of 10%.
5. Describe the increased benefits to the project of any costs that are higher than the original PMIS estimate.
6. The goal of this question is to determine the feasibility of bringing project cost back into alignment with original PMIS cost. The response to this question will require some value-based decisions and assumptions.
7. This question on phasing and project components will require discussion with the Park to determine alternative funding, future funding, project prioritization, etc.

Asset Management

This section of report shall be completed by the Park and/or region, as it requires access to FMSS and OFS.

Sustainability and LEED

The A/E design team will be responsible for completing this section regarding the projects proposed LEED Rating, Sustainability checklist and Energy Use Targets. The questions posed here are informational design intent questions.

Value-based Decision-making Summary

This section of the report explores and documents the possible existence of more cost effective solutions than what is proposed in the PMIS. Since most projects have a long history of planning decisions involved before the PMIS is assembled, it is good to revisit and document the pre-planning decisions used to formulate the PMIS scope. When there

have been significant changes in scope and/or cost as compared to the PMIS it is good to evaluate possible alternatives to achieve project outcome(s) within original estimate. Parts 1 and 2 of the table in this section shall be completed by the Park or Region. These two sections briefly document past planning decisions and the formulation of the PMIS project scope.
Part 3 should be completed by A/E and the Project Team. This section documents the alternatives investigated and evaluated including any alternative that was not selected.

New Unresolved Issues

The A/E and project team should complete this section. This section allows for documentation of any missing or remaining major issues that could impact scope, cost or schedule that is not included in the above reported or in the PMIS. It is important to be able to look at the project from the "big picture" vantage point and the projects correlation(s) with surrounding assets.

Project Contacts

List Name and contact information of the Park Superintendent, Project Manager and the Regional Office Contact.

Regional Office Certification

This report on completion is to be submitted to the appropriate Regional Director's office for review and approval before being submitted to the Construction Program Management Division, WASO. It is also vitally important that the pre-design documents and class C estimate have been reviewed and ACCEPTED by the Denver Service Center, Quality Assurance group prior to being submitted to Regional approval.

Scope and Cost Validation Report

Construction Program Management Division, WASO

National Park Service

Date:

Text shown in red contain instructions for completion of the Scope and Cost Validation Report and should be deleted prior to submission.

Park Alpha/PMIS #	If project contains multiple park Alpha's or PMIS numbers contact WASO Const. Prog Mgmt Div.		
Previous PMIS(s)			
Park Name			
Project Title	**Project title must match PMIS title**		
Region		Lead Office	**Enter one: DSC, Park or Region**
Funding Source	**Enter the appropriate funding source that is paying for the design and construction.**	Expected Award	

Status Summary (In the table below enter if the scope, cost or schedule has changed, use the drop down menus provided within the cell.)

Place cursor over cell to activate drop down menu.

Scope	**No Change**	**0%**
Cost	**Decreased**	**0**
Schedule	**No Change**	**On schedule**

PMIS Project Description & Justification Cut and paste from PMIS, edit length of entry as needed.

Description

Justification

Financial Summary (Completion of the Financial Summary section is done by DSC, Park or Region.)

PMIS Statement

Item	NPS	Other Government	Partner	Total
Compliance PWE 524/525				
Pre-Design (Predesign & Schematic Design) PWE 518				
Supplemental Services PWE 518				
Design (Design Development & Construction Documents) PWE 472				
Construction (Net)				
Construction Management PWE 473				
Construction Contingency				

Total Project Cost (as shown in PMIS)	
Total Funding Available (Note on partnership projects, project costs and available funding may not match)	

Scope and Cost Validation Proposal

Item	NPS	Other Government	Partner	Total
Compliance PWE 524/525				
Pre-Design (Predesign & Schematic Design) PWE 518				
Supplemental Services PWE 518				
Design (Design Development & Construction Documents) PWE 472				
Construction (Net)				
Construction Management PWE 473				
Construction Contingency				
Total Proposed Project Cost				
Total Funding Available (Note Total Proposed Project Cost and Funding Available may not be equal)				

Scope Questions (A/E and Project Team completes this section.)

Questions and Issues to be answered:

1. Compare the original PMIS description and justification to current conditions; does the need for this project still exist? *Note: if conditions have changed and the answer is no, provide a description of the changes that have occurred and their impact on the project. For example; has the park already corrected the problem or; has the park changed practices or functional use of the asset so it is no longer needed.*

2. Compare the original PMIS description of proposed work to what currently needed today; is the description still accurate? *For example: has the asset deteriorated since the PMIS statement was written and additional work is needed, or have codes or standards changed that impact the PMIS proposed work.*

3. Compare the original PMIS evaluation to what has been discovered during the initial site visit, did the original PMIS investigation identify all needed work? *For example, does the PMIS statement recommend replacing roofing shingles, but the decking and trusses also need to be replaced.*

Estimate (Park to provide data for Table 1)

Provide an updated cost estimate using the following table. Table 1 and 2 are based on Uniformat Level 2. Note; if the original PMIS cost is incomplete or not in Uniformat, use simplified Table 3 shown below.

Fill in all Project FMSS Locations, FMSS information is available at the Park (Delete examples in Red)

TABLE 1 - FMSS PROJECT LOCATIONS	
FMSS Location #	**Description**
78889	Lake Visitor Center
79563	Lake Maintenance Building
79584	Lake Comfort Station
78808	Lake Area Water System
78870	Lake Waste Water System
78825	Lake Visitor Center Parking Lot
78892	Lake Access Road

For each Uniformat section break out cost by asset location, as appropriate, see example for A10 Foundations. Be sure to delete the red examples and directions before completing the Estimate section. When the PMIS statement has a lump sum estimate for the basis of the class C estimate, use Table 3 instead of Table 2 to enter the PMIS estimate information, or use Table 2 and prorate the lump sum estimate across the Uniformat work items. Note the Scope and Validation Class C estimate shown in Table 2 must be completed in all submissions. The Scope and Cost Validation Class C cost estimate should be based on the mid-point of construction.

TABLE 2					
Uniformat II Level 2	**PMIS Information Class C** Year: XXXX		**Scope & Cost Validation Class C Year**: XXXX		**Rationale for Change**
	Quantity	**Costs**	**Quantity**	**Costs**	
A10 Foundations 78889 79563 79584	 300LF 200LF 75LF	 $20,000 $10,000 $1,500	 600LF 0 75LF	 $60,000 0 $1,900	 Poor quantity and estimate in PMIS Work deleted from Scope Estimating refinement
A20 Basement Construction					
B10 Superstructure					
B20 Exterior enclosure					
B30 Roofing					
C10 Interior Construction					
C20 Stairs					
C30 Interior Finishes					
D10 Conveying					
D20 Plumbing					
D30 HVAC					

D40 Fire Protection Systems					
D50 Electrical					
E10 Equipment					
E20 Furnishings					
F10 Special Construction					
F20 Selective Building Demolition					
G10 Site Preparations					
G20 Site Improvements					
G30 Site Mechanical Utilities					
G40 Site Electrical Utilities					
G90 Other Site Construction					
Subtotal Direct Costs **Show and subtotal cost and break down by asset.**					
Mark-ups and Add-ons	**%**		**%**		
Published Location Factor:					
Project Remoteness Factor					
Federal Wage Rate Factor:					
Design Contingency:					
Standard General Conditions:					
Government General Conditions:					
Historic Preservation Factor:					
Overhead:					
Profit:					
Contracting Method Adjustment:					
Escalation					
Subtotal Mark-					

ups and Add-ons					
TOTAL (Net Construction) **Show the project total and break down by asset.**					

Table 3 provided a summary cost comparison between PMIS and the Scope and Cost Validation proposal by Asset # and is required for future tracking of asset investments, filling in all fields is mandatory.

TABLE 3					
Asset # or Major Project Component	**PMIS Information Class C Year:** XXXX		**Scope & Cost Validation Class C Year**: XXXX		**Rationale for Change**
	Quantity	**Cost**	**Quantity**	**Cost**	

4. If the cost estimate has changed by 10% or greater within a Uniformat Level or overall provide a brief description of the changes.

5. If the Scope and Cost Validation cost estimate is higher than the original PMIS estimate describe the increased benefits to the project that would be provided if the Scope and Validation cost are approved.

6. If the Scope and Cost Validation cost estimate is higher than the original PMIS estimate describe what elements could be reduced to bring the project costs back to the original PMIS estimate and describe any impacts this would have on the project.

7. Are there any additional phases/components related to this project? If so describe. Note: sometimes associated work is in a different PMIS statement and has a different number, check with the park.

Asset Management **(This section of the form should be filled in by the park or region. Requires access to FMSS and OFS programs)**

Project-Average API: provided by park	Project-Average FCI-Before: provided by park	Project-Average FCI-After: provided by park

Is an OFS cost increase proposed to fund operational and programmatic increase? **NO**

If yes, what is Regional priority of OFS request?

Sustainability and LEED (A&E completes this section)

LEED Rating (Projected): Place cursor over LEED rating to activate drop down menu **Gold**
Sustainability Checklist percent meeting Federal Requirements:
Building Energy Use Targets:
Energy Use Intensity (EUI): EUI is expressed in KBTU/SF/Year. Calculations should not deduct for the amount of renewable energy provided to the asset.
Percentage better than ASHRAE 90.1:

Value-based Decision-making Summary (Part 1 & 2 of table should be filled in by the park or region. Part 3 should be filled out by A/E and Project Team.)

Inventory of Key Value-based Decisions and Alternatives: The PMIS statement describes one solution to the problem, are there other more cost effective solutions than what is shown in the original PMIS statement? If so provide a brief description. For example the PMIS statement indicates all exhibits are included in the building, however many exhibits could be outdoors in a plaza resulting in substantial cost savings. It is necessary to understand the key decisions that have shaped the project program, design, budget and sustainability. For example: What major decisions were made during the GMP e.g. build or don't build a visitor center? What alternative were considered during Implementation planning or formulation of the PMIS Project Statement; e.g. it was decided to invest $3M in the renovation of an existing VC. What changes have to be made during Scope and Validation to allow scope, cost estimate and schedule to match; e.g. project foundation cost were increased to reflect vary site conditions, alternative roof systems were evaluated to increase insulation values, estimate and scope; e.g. the decision was made to seek LEED Gold rather than Platinum, the original estimate was bad and was corrected.

Decision **(P) – indicates Preferred)**	**Initial Cost**	**Total Cost of Ownership** **Present worth Dollars**	**Why Selected** **This is a simple description of the rationale for choice…benefit versus cost tradeoffs (a reference/footnote to the decision documents)**
1. **Decision Type 1:** Planning Decisions e.g. GMP, Long Range Interpretive Plan, Implementation Plan, etc. Document key planning decisions and alternatives that significantly shaped the scope, budget and schedule of the project.	**Year:** **Class of Estimate:**	**Year:** **Discount Rate: 3%**	
▪ Alt A: Description: ▪ Alt B: Description: ▪ Alt C: Description:	▪ $ ▪ $ ▪ $	▪ $ ▪ $ ▪ $	
2. **Decision Type 2:** Formulation Decisions e.g. PMIS alternatives evaluated, selected or rejected. Document key planning decisions and alternatives that significantly shaped the scope, budget and schedule of the project for entry into PMIS. Note this data is required for the	**Year:** **Class of Estimate:**	**Year:** **Discount Rate: 3%**	

CAP on projects over $2M.			
▪ Alt A: Description: ▪ Alt B: Description: ▪ Alt C: Description:	▪ $ ▪ $ ▪ $	▪ $ ▪ $ ▪ $	
3. **Decision Type 3:** Scope and Validation Decisions e.g. alternatives evaluated, selected or rejected Document key planning decisions and alternatives that significantly shaped the scope, budget and schedule of the project.	**Year:** **Class of Estimate:**	**Year:** **Discount Rate: 3%**	
▪ Alt A: Description: ▪ Alt B: Description: ▪ Alt C: Description:	▪ $ ▪ $ ▪ $	▪ $ ▪ $ ▪ $	

Major Alternatives Considered and Rejected (not listed above) **(A&E completes this section)**

Document major alternatives (not described above) (that would have saved dollars or improved the project) rejected during project deliberations.

	Alternative	**Disposition**
1	Short description of the alternative/recommendation	Rejected: Why was the alternative rejected? e.g. too high initial cost, impacted endangered species
2		

New Unresolved Issues **(A/E and Project Team completes this section.)**

Are there any remaining major issues or missing information that could impact the scope, cost or schedule or other information shown in this Scope and Cost Validation Report? If so describe. For example, geotechnical information is incomplete and could impact the foundation estimates.

Are there any new/unresolved issues, and/or decisions to be made? **NO** (If yes, describe)

Issue	**Description**

Project Contacts

Project Manager: Enter Name and Phone
Superintendent: Enter Name and Phone
Regional Office Contact: Enter Name and Phone

Regional Office Certification

I certify that this project has been reviewed and is approved for submission to the Construction Program Management Division, WASO

(Regional Director/Associate Regional Director) Date:

Appendix G

NPS ASSET CATEGORIES

Appendix G

ASSET CATEGORIES

The National Park Service Facility Management Division has developed a list of Asset Types and Categories for management of NPS Assets. The National Park Service defines an asset as a physical structure or grouping of structures, land features, or other tangible property which has a specific service or function. National Park Service employees manage over thirty different categories of assets--from roads, trails, campgrounds, buildings, and utility systems to maintained landscapes, waterfronts, monuments, ruins, and fortifications. The following are the Categories & Asset Codes for the NPS

FY 2005 Asset Categories & Codes

Revision Date November 18, 2004

0000	Site/Area
1100	Road
1300	Parking Area
1700	Road Bridge
1800	Road Tunnel
2100	Trail
2200	Trail Bridge (Substantial)
2300	Trail Tunnel (Substantial)
3100	Maintained Landscapes
3600	Campground/Overnight Campsite
3700	Picnic Area
3800	Boundary
4100	Building
4300	Housing
5100	Water System
5200	Waste Water System
5300	Heating & Cooling Plant
5400	Electrical System
5500	Radio System
5510	Phone System
5520	IT System (i.e. LAN)
5700	Fuel System
5800	Solid Waste/Recycling System
6100	Dam/Levee/Dike
6200	Constructed Waterway
6300	Marina/Waterfront System
6400	Aviation System
6500	Railroad System
7100	Outdoor Sculptures/ Monuments/Memorials/ Large Interpretive Objects
7200	Ruins
7300	Fortification
7400	Towers/Missile Silos
7900	Amphitheaters
8999	Fleet
9999	No Asset Code Available

Appendix H

UNIFORMAT II

Appendix H

UNIFORMAT II

Uniformat II is an elemental or a systems classification framework providing a consistent reference for the description, economic analysis, and management of buildings during all phases of their life cycle. Elements are major components, common to most buildings, that usually perform a given function regardless of the design specification, construction method, or materials used. Examples of elements are foundations, exterior walls, sprinkler systems, and lighting.

The need for an elemental classification is most apparent in the economic evaluation of building alternatives at the design stage. One way of obtaining an estimate of the lifecycle costs of design alternatives is to perform detailed quantity takeoffs of all materials and tasks associated with the construction, operation, and maintenance of the buildings. It is in the early stages of design that economic analysis is most important in establishing the economically efficient choices among building alternatives. Only estimates based on an elemental classification such as UNIFORMAT II provide the necessary cost information for the analyst to evaluate building alternatives in a cost-effective manner.[1]

Level 1

- **Level 2**
  - **Level 3**

A SUBSTRUCTURE
- **A10** Foundations
  - **A1010** Standard Foundations
  - **A1020** Special Foundations
  - **A1030** Slab on Grade
- **A20** Basement Construction
  - **A2010** Basement Excavation
  - **A2020** Basement Walls

B SHELL
- **B10** Super Structure
  - **B1010** Floor Construction
  - **B1020** Roof Construction
- **B20** Exterior Enclosure
  - **B2010** Exterior Walls
  - **B2020** Exterior Windows
  - **B2030** Exterior Doors
- **B30** Roofing
  - **B3010** Roof Coverings
  - **B3020** Roof Openings

[1] Charette, Robert P. and Marshall, Harold E., UNIFORMATII Elemental Classification for Building Specifications, Cost Estimating and Cost Analysis, NISTIR 6389, National Institute of Standards and Technology, U.S. Department of Commerce, October, 1999.

C INTERIORS
- **C10** Interior Construction
  - **C1010** Partitions
  - **C1020** Interior Doors
  - **C1030** Fittings
- **C20** Stairs
  - **C2010** Stair Construction
  - **C2020** Stair Finishes
- **C30** Interior Finishes
  - **C3010** Wall Finishes
  - **C3020** Floor Finishes
  - **C3030** Ceiling Finishes

D SERVICES
- **D10** Conveying
  - **D1010** Elevators & Lifts
  - **D1020** Escalators & Moving Walks
  - **D1090** Other Conveying Systems
- **D20** Plumbing
  - **D2010** Plumbing Fixtures
  - **D2020** Domestic Water Distribution
  - **D2030** Sanitary Waste
  - **D2040** Rain Water Drainage
  - **D2090** Other Plumbing Systems
- **D30** HVAC
  - **D3010** Energy Supply
  - **D3020** Heat Generating Systems
  - **D3030** Cooling Generating Systems
  - **D3040** Distribution Systems
  - **D3050** Terminal & Package Units
  - **D3060** Controls & Instrumentation
  - **D3070** Systems Testing & Balancing
  - **D3090** Other HVAC Systems & Equipment
- **D40** Fire Protection
  - **D4010** Sprinklers
  - **D4020** Standpipes
  - **D4030** Fire Protection Specialties
  - **D4090** Other Fire Protection Systems
- **D50** Electrical
  - **D5010** Electrical Service & Distribution
  - **D5020** Lighting and Branch Wiring
  - **D5030** Communications & Security
  - **D5090** Other Electrical Systems

E EQUIPMENT & FURNISHINGS
- **E10** Equipment
  - **E1010** Commercial Equipment
  - **E1020** Institutional Equipment
  - **E1030** Vehicular Equipment
  - **E1090** Other Equipment

E20 Furnishings
- **E2010** Fixed Furnishings
- **E2020** Movable Furnishings

F SPECIAL CONSTRUCTION & DEMOLITION
- **F10** Special Construction
  - **F1010** Special Structures
  - **F1020** Integrated Construction
  - **F1030** Special Construction Systems
  - **F1040** Special Facilities
  - **F1050** Special Controls and Instrumentation
- **F20** Selective Building Demolition
  - **F2010** Building Elements Demolition
  - **F2020** Hazardous Components Abatement

G BUILDING SITEWORK
- **G10** Site Preparation
  - **G1010** Site Clearing
  - **G1020** Site Demolition and Relocations
  - **G1030** Site Earthwork
  - **G1040** Hazardous Waste Remediation
- **G20** Site Improvements
  - **G2010** Roadways
  - **G2020** Parking Lots
  - **G2030** Pedestrian Paving
  - **G2040** Site Development
  - **G2050** Landscaping
- **G30** Site Mechanical Utilities
  - **G3010** Water Supply
  - **G3020** Sanitary Sewer
  - **G3030** Storm Sewer
  - **G3040** Heating Distribution
  - **G3050** Cooling Distribution
  - **G3060** Fuel Distribution
  - **G3090** Other Site Mechanical Utilities
- **G40** Site Electrical Utilities
  - **G4010** Electrical Distribution
  - **G4020** Site Lighting
  - **G4030** Site Communications & Security
  - **G4090** Other Site Electrical Utilities
- **G90** Other Site Construction
  - **G9010** Service and Pedestrian Tunnels
  - **G9090** Other Site Systems & Equipment

Appendix I

CSI MasterFormat 2004

Appendix I

CSI MasterFormat 2004

The Construction Specifications Institute (CSI) developed a 49 division classification system for construction specifications. This system, the most widely accepted in the industry, is used extensively by architects and engineers for construction specifications, by contractors for estimating and record keeping, and by manufacturers and suppliers for the categorization of materials and products. The CSI MasterFormat Divisions:

Facility Construction Subgroup

- Division 01 – General Requirements
- Division 02 – Existing Conditions
- Division 03 – Concrete
- Division 04 – Masonry
- Division 05 – Metals
- Division 06 – Wood, Plastics, and Composites
- Division 07 –Thermal and Moisture Protection
- Division 08 – Openings Doors, Window, and Glass
- Division 09 – Finishes
- Division 10 – Specialties
- Division 11 – Equipment
- Division 12 – Furnishings
- Division 13 – Special Construction
- Division 14 – Conveying Systems
- Division 15 – Reserved for future use
- Division 16 – Reserved for future use
- Division 17 – Reserved for future use
- Division 18 – Reserved for future use
- Division 19 – Reserved for future use

Facility Services Subgroup

- Division 20 – Reserved for future use
- Division 21 – Fire Suppression
- Division 22 – Plumbing
- Division 23 – Heating, Ventilation and Air Conditioning
- Division 24 – Reserved for future use
- Division 25 – integrated Automation
- Division 26 – Electrical
- Division 27 – Communications
- Division 28 – Electronic Safety and Security
- Division 29 – Reserved for future use

Site and Infrastructure Subgroup

Division 30 – Reserved for future use
Division 31 – Earthwork
Division 32 – Exterior Improvements
Division 33 – Utilities
Division 34 – Transportation
Division 35 – Waterway and Marine Construction
Division 36 – Reserved for future use
Division 37 – Reserved for future use
Division 38 – Reserved for future use
Division 39 – Reserved for future use

Process Equipment Subgroup

Division 40 – Process Integration
Division 41 – Material Processing and Handling Equipment
Division 42 – Process Heating, Cooling, and Drying Equipment
Division 43 – Process Gas and Liquid Handling, Purification, and Storage Equipment
Division 44 – Pollution Control Equipment
Division 45 – Industry Specific Manufacturing Equipment
Division 46 – Reserved for future use
Division 47 – Reserved for future use
Division 48 – Electrical Power Generation
Division 49 – Reserved for future use

Appendix J

FEDERAL ACQUISITION REGULATION

EXCERPT SECTION 36-609-1

Appendix J
Federal Acquisition Regulations
(re: Design with Funding Limitations)

Design Within Funding Limitations. The following are excerpts form the Federal Acquisition Regulations regarding the importance of true and accurate reporting of estimates and the architect-engineer contractor's responsibility to design with available funds:

36.609-1 Design within funding limitations.

(a) The Government may require the architect-engineer contractor to design the project so that construction costs will not exceed a contractually specified dollar limit (funding limitation). If the price of construction proposed in response to a Government solicitation exceeds the construction funding limitation in the architect-engineer contract, the firm shall be solely responsible for redesigning the project within the funding limitation. These additional services shall be performed at no increase in the price of this contract. However, if the cost of proposed construction is affected by events beyond the firm's reasonable control (*e.g.,* if there is an increase in material costs which could not have been anticipated, or an undue delay by the Government in issuing a construction solicitation), the firm shall not be obligated to redesign at no cost to the Government. If a firm's design fails to meet the contractual limitation on construction cost and the Government determines that the firm should not redesign the project, a written statement of the reasons for that determination shall be placed in the contract file.

(b) The amount of the construction funding limitation (to be inserted in paragraph (c) of the clause at 52.236-22) is to be established during negotiations between the contractor and the Government. This estimated construction contract price shall take into account any statutory or other limitations and exclude any allowances for Government supervision and overhead and any amounts set aside by the Government for contingencies. In negotiating the amount, the contracting officer should make available to the contractor the information upon which the Government has based its initial construction estimate and any subsequently acquired information that may affect the construction costs.

(c) The contracting officer shall insert the clause at 52.236-22, Design Within Funding Limitations, in fixed-price architect-engineer contracts except when—

(1) The head of the contracting activity or a designee determines in writing that cost limitations are secondary to performance considerations and additional project funding can be expected, if necessary;

(2) The design is for a standard structure and is not intended for a specific location; or

(3) There is little or no design effort involved.

36.609-2 Redesign responsibility for design errors or deficiencies.

(a) Under architect-engineer contracts, contractors shall be required to make necessary corrections at no cost to the Government when the designs, drawings, specifications, or other items or services furnished contain any errors, deficiencies, or inadequacies. If, in a given situation, the Government does not require a firm to correct such errors, the contracting officer shall include a written statement of the reasons for that decision in the contract file.

(b) The contracting officer shall insert the clause at 52.236-23, Responsibility of the Architect-Engineer Contractor, in fixed-price architect-engineer contracts.

52.236-22 Design Within Funding Limitations.

As prescribed in 36.609-1(c), insert the following clause:

DESIGN WITHIN FUNDING LIMITATIONS (APR 1984)

(a) The Contractor shall accomplish the design services required under this contract so as to permit the award of a contract, using standard Federal Acquisition Regulation procedures for the construction of the facilities designed at a price that does not exceed the estimated construction contract price as set forth in paragraph (c) of this clause. When bids or proposals for the construction contract are received that exceed the estimated price, the contractor shall perform such redesign and other services as are necessary to permit contract award within the funding limitation. These additional services shall be performed at no increase in the price of this contract. However, the Contractor shall not be required to perform such additional services at no cost to the Government if the unfavorable bids or proposals are the result of conditions beyond its reasonable control.

(b) The Contractor will promptly advise the Contracting Officer if it finds that the project being designed will exceed or is likely to exceed the funding limitations and it is unable to design a usable facility within these limitations. Upon receipt of such information, the Contracting Officer will review the Contractor's revised estimate of construction cost. The Government may, if it determines that the estimated construction contract price set forth in this contract is so low that award of a construction contract not in excess of such estimate is improbable, authorize a change in scope or materials as required to reduce the estimated construction cost to an amount within the estimated construction contract price set forth in paragraph (c) of this clause, or the Government may adjust such estimated construction contract price. When bids or proposals are not solicited or are unreasonably delayed, the Government shall prepare an estimate of constructing the design submitted and such estimate shall be used in lieu of bids or proposals to determine compliance with the funding limitation.

(c) The estimated construction contract price for the project described in this contract is $_____.

(**End of clause)**

52.236-23 Responsibility of the Architect-Engineer Contractor.

As prescribed in 36.609-2(b), insert the following clause:

RESPONSIBILITY OF THE ARCHITECT-ENGINEER CONTRACTOR (APR 1984)

(a) The Contractor shall be responsible for the professional quality, technical accuracy, and the coordination of all designs, drawings, specifications, and other services furnished by the Contractor under this contract. The Contractor shall, without additional compensation, correct or revise any errors or deficiencies in its designs, drawings, specifications, and other services.

(b) Neither the Government's review, approval or acceptance of, nor payment for, the services required under this contract shall be construed to operate as a waiver of any rights under this contract or of any cause of action arising out of the performance of this contract, and the Contractor shall remain liable to the Government in accordance with applicable law for all damages to the Government caused by the Contractor's negligent performance of any of the services furnished under this contract.

(c) The rights and remedies of the Government provided for under this contract are in addition to any other rights and remedies provided by law.

(d) If the Contractor is comprised of more than one legal entity, such entity shall be jointly and severally liable hereunder.