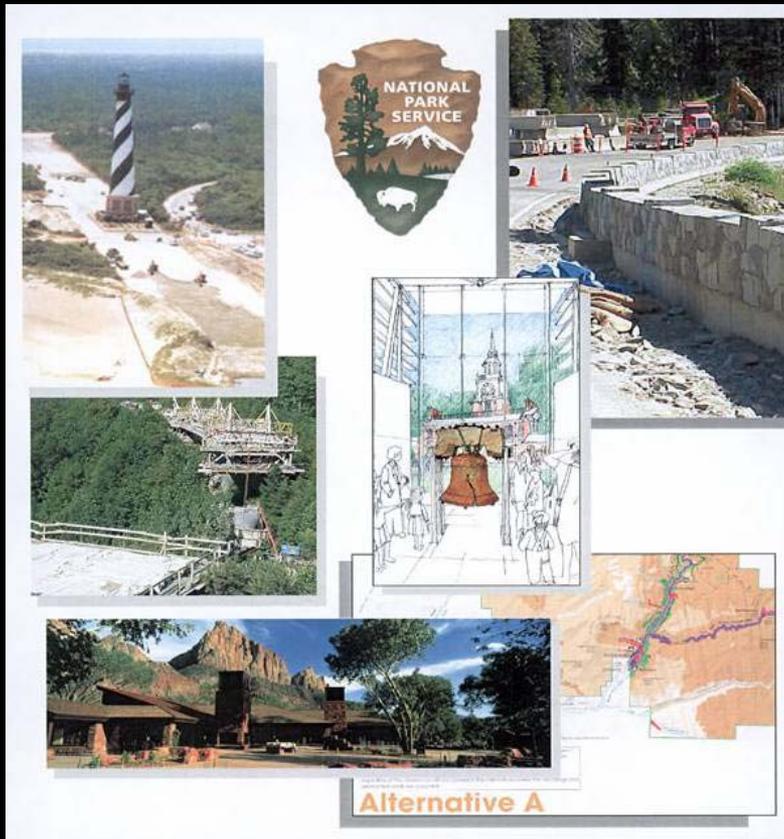


# *Managing the Design Process through A/Es*



Management of  
Contract Deliverables  
Milestone Management  
*By Sam Whittington*

# *A/E Design Process*

- **NPS/DSC process** *is consistent with that developed by AIA and used in private sector:*
  - **Pre-Design**
  - **Schematic Design (SD's)**
  - **Design Development (DD's)**
  - **Construction Documents (CD's)**
  - **Supplemental Services**

# Public and NPS Internet Web Access

- New web site designed for both public and NPS access
  - Based on new DSC workflow

The screenshot shows the National Park Service U.S. Department of the Interior Denver Service Center Workflows web page. The page has a green header with the title "Denver Service Center Workflows" and a navigation menu with tabs for Home, Special Resource Study, Plan, Entry, Project Planning and Compliance, Design (selected), Construction, and Post Construction. The main content area is titled "General" and includes a section for "0.1 Design Imperatives" with a list of bullet points and a "Guidelines" section with another list of bullet points. On the right side, there are sections for "Phases" (Design Build, Design Bid-Build) and "Information" (Definitions, Laws and Policies, Quality Assurance Guidelines, Standards, Deliverables, Forms / Templates, Photo Gallery, Site Map). A search box is located at the bottom right. The footer contains contact information and a date: "Contact | Modified 12/11/2003 | Disclaimer | FOIA | US Department of the Interior | FirstGov".

[http://workflow.den.nps.gov/staging/6\\_Design/design\\_bid\\_build.htm](http://workflow.den.nps.gov/staging/6_Design/design_bid_build.htm)  
[http://workflow2.den.nps.gov/AE\\_Contracting.htm#2](http://workflow2.den.nps.gov/AE_Contracting.htm#2)

# *Assignment to Architect/Engineer* *(A/E)*

- Identify **appropriate A/E** for specific project
  - Architecture, historical architecture, site, engineering
  - Available IDIQ A/E contractor(s)
- A/E's are involved **“Cradle-to-Grave”**
  - Advance Planning and Compliance
  - Design Phase
  - Construction Phase
- **IDIQ Multi Awards**



# *Predesign*

- Prepare Project Program
- Prepare or Validate Environmental Screening Form (ESF) and Permits
- Prepare Class C Cost Estimate
- Prepare Comparability Cost Analysis
- Document Scope and Cost Variations
- Review #1
- Submit Final Predesign Documents



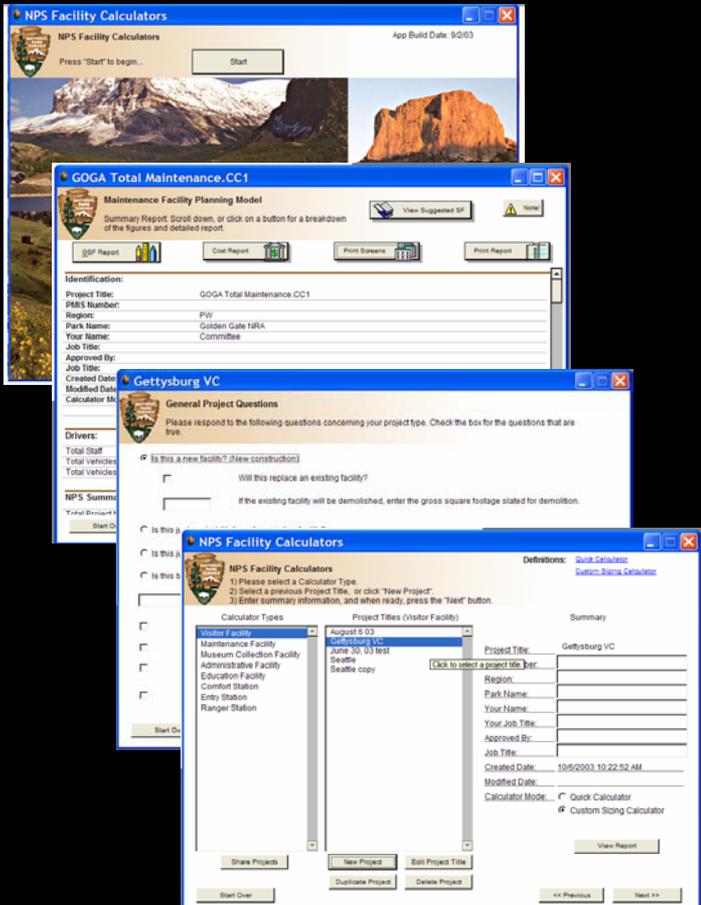
# Predesign Project Program Initiation

- Using the Project Management Information System (PMIS) Project Statement and the Facility Planning Model (when available), Prepare the Project Program.

Project Funding Component - PMS 20016		Funding Component Request Amount: \$4,262,502.75			
Funding Component Title: Statistics and Population History Users Visual Center		Funding Component Type: Non-accounting, Defined Status Confirmed			
Funding Component No.: 210116		Funding Component Description:			
Initial Planned FY: 2002	Requested Funding FY: 2002				
Review Status: UN20-revised on 05/09/2002	Submitted By:				
Date of Public Submittal:	Approved FY:				
Upper Level Review Status:	Funding P/M Account:				
Forecasted FY: 2008	Funding Source:				
Forecasted Program 5 Year Plan:	Funding Source:				
Forecasted Funding Source: Line Item Contribution	Funding Source:				
<b>Component Card Estimates</b>		<b>Related PMS Work On-line Numbers:</b>			
Estimates Generated by CRMS 102		Estimate Date: 04/01/2002			
Estimate By: Gary Wilt		Class of Estimate: 0			
Estimate Item Number: 00000000					
Item	Description	Qty	Unit	Total Cost	Basic Cost
DDC Class C Section 2.02	Acoustical Materials: Acoustic Pipe Insulation Horizontal	220	Linear FT	\$22.00	\$2,990.00
DDC Class C Section 2.04	Earthwork: Trenching 18in. Long	180	Cu YD	\$19.75	\$3,555.00
DDC Class C Section 2.05	Earthwork: Distribution: Polyethylene Gas Piping, 1 1/2"	220	Linear FT	\$74.00	\$16,280.00
DDC Class C Section 2.07	Water Piping Materials: MIP Connections under cover or electrical	8	Each	\$2,800.00	\$15,800.00
DDC Class C Section 2.07	Water Mfg.Pipe and Appurtenances: Polyethylene (PE) Pipe, 4"	220	Linear FT	\$20.00	\$4,400.00
DDC Class C Section 2.12	Appliance: water-removal	1	Each	\$4,700.00	\$4,700.00
DDC Class C Section 2.12	Backflow Preventer, 4"	2	Each	\$8,800.00	\$17,600.00
DDC Class C Section 2.12	Curb Stop and Box, 1"	2	Each	\$880.00	\$1,760.00
DDC Class C Section 2.12	Fire Hydrant valves and connections, 4"	2	Each	\$4,210.00	\$8,420.00
DDC Class C Section 2.12	Gate valves: water, 4"	4	Each	\$770.00	\$3,080.00
DDC Class C Section 2.13	Wastewater: Collection and Appurtenances: Polyethylene (PE) Pipe, 4" (underground)	220	Linear FT		
DDC Class C Section 2.13	Wastewater: Manhole, 47 diameter, 6 X 6, steel	1	Each		



# Predesign Project Program Initiation



Project Funding Component - PMIS 21511A					
Funding Component Title: Stabilize and Rehabilitate Historic Quarry Visitor Center			Funding Component Request Amount: \$4,282,582.75		
Funding Component ID: 21511A			Funding Component Type: Non-recurring , Deferred Status Confirmed		
Funding Component Description:					
Initial Planned FY: 2003			Requested Funding FY: 2003		
Review Status: WASO-reviewed on 05/09/2002			Funded Amount:		
Date of Park Submission:			Submitted By:		
Upper-level Review Status:			Fee-demo Submission Number:		
Formulated FY: 2006			Funded FY:		
Formulated Program: 5 Year Plan			Funded PWE Accounts:		
Formulated Funding Source: Line Item Construction			Funded Funding Source:		
Component Cost Estimates					
Estimates Generated by CESS: NO			Related FMSS Work Order Numbers:		
Estimated By: Gary Mott			Date of Estimate: 04/01/2002		
Estimate Good Until: 09/30/2002			Class of Estimate: C		
Item	Description	Qty	Unit	Unit Cost	Item Cost
DSC Class C Section 2.02	Hazardous Materials- Asbestos Pipe Insulation Removal	220	Linear FT	\$27.00	\$5,940.00
DSC Class C Section 2.04	Earthwork- Trenching Utility Lines	160	Cu YD	\$16.25	\$2,600.00
DSC Class C Section 2.10	Fuel and Steam Distribution- Polyethylene Gas Piping, 1 1/4"	220	Linear FT	\$14.00	\$3,080.00
DSC Class C Section 2.11	Utility Piping Materials- Utility Connections (water, sewer or electrical)	6	Each	\$2,800.00	\$15,600.00
DSC Class C Section 2.12	Water Utility Pipe and Appurtenances- Polyethylene (HDPE) Pipe, 4"	220	Linear FT	\$28.80	\$6,336.00
DSC Class C Section 2.12	Air release valve w/manhole	1	Each	\$4,760.00	\$4,760.00
DSC Class C Section 2.12	Backflow Preventer, 4"	2	Each	\$6,600.00	\$13,200.00
DSC Class C Section 2.12	Curb Stop and Box, 1"	3	Each	\$595.00	\$1,785.00
DSC Class C Section 2.12	Fire Hydrants w/valves and connections, 6"	2	Each	\$4,218.00	\$8,436.00
DSC Class C Section 2.12	Gate valves w/box, 4"	4	Each	\$779.00	\$3,116.00
DSC Class C Section 2.13	Wastewater Collection and Appurtenances- Polyethylene (HDPE) Pipe, 4" dual containment	220	Linear FT	\$40.20	\$8,844.00
Dsc Class C Section 2.13	Standard Manhole, 47" diameter & 5 ft. deep	4	Each	\$3,140.00	\$12,560.00

• Facility Planning Model

• PMIS



# Predesign Space Program Narrative

## **Operation's Supervisor's Office:**

175 s.f.

A separate private office is required for the Operations Supervisor, which will allow for private conversations and meetings with guests and staff members and a more focused work environment. This office area should be located adjacent to the clerk/receptionist and visitor waiting areas for easy access to the public. The office should be large enough for a L-shaped work desk unit with a corner computer workstation, side and front work desk area, box storage pedestal units, several lateral file pedestal units, tack board/wall area, dry marker wall panel and upper storage wall cabinet units. A small informal guest seating area and/or a small conference table with chairs for four guests should be designed as part of this space. This office area must be ADA accessible. Windows are required for this office area with operable windows.

## **Publication Storage Room:**

93 s.f.

A secured area should be provided for bulk storage of park brochures, maps, newspapers, supplies, forms, paper stock, etc. These items should be stored in an area adjacent to or near the contact counter work area for convenience of restocking the contact counter. This area will require a heavy-duty metal shelving system. The area must have ample room between aisles to load and unload the shelves.

## **Secured Storage Closet:**

### **(Part of Publication Storage Room)**

A secured area should be provided for storage of various types of equipment, lost and found items, etc. This area could be part of the Publications Storage Room.

## **Mechanical Room:**

137 s.f.

The existing mechanical room should be renovated and expanded for the new HVAC system. The existing door should be retained for access to this room.

## **Building Circulation:**

143 s.f.

Additional space must be provided for general circulation within the proposed renovated area. Due to the sustainable features of the building such as open floor plan for free air flow and natural ventilation, and shared daylighting for some work areas, circulation space may be above the normal ratio compared to a typical building. Corridors should be wide enough to meet ADA requirements. If possible, daylighting of corridors should be considered for this facility to reduce energy costs. This could be achieved by using solar tube skylights.

## **Proposed Southwest Addition:**

1,363 s.f. + -

The following functions should be located in the proposed new building addition to be constructed at the southwest portion of the visitor center building:

## **Vestibule / Fire Exit:**

45 s.f.

A fire exit will be required for the proposed addition. This fire exit can serve as a quick ingress and egress for the staff to the outdoor viewing terrace and amphitheater from the interpretative work areas. Due to the site orientation of this entrance, a vestibule should be used at this entrance point to control heating and cooling losses from the interior. Vestibule areas should be designed for ADA accessibility with adequate space for door swings and wheelchair maneuvering. Recessed floor mats should be considered for these areas for combing dirt and moisture entering the building. Floor mats made from "Green Products" such as recycled tire materials should be considered for all entrance areas.

## **Interpretation Specialist Office:**

168 s.f.

A private office is required for the Interpretation Specialist. This private office area should be located adjacent to the other interpretative workstations and near the Chief of Interpretation office for easy access to the staff. The office should be large enough for a L-shaped work desk unit with a corner computer workstation, side and front work desk area, box storage pedestal units, several lateral file pedestal units, tack board/wall area, dry marker wall panel and upper storage wall cabinet units. A small conference table with chairs for three guests should be designed as part of this space or part of the furniture system. This office area must be ADA accessible. A view to the outdoors is desirable for this office area with operable windows.

## **Chief of Interpretation Office:**

200 s.f.

A separate private office is required for the Chief of Interpretation. This office area should be located adjacent to the other interpretation staff work areas and near the Operation Supervisor's office for easy access to the staff. The office should be large enough for a L-shaped work desk unit with a corner computer workstation, side and front work desk area, box storage pedestal units, several lateral file pedestal units, tack board/wall area, dry marker wall panel and upper storage wall cabinet units. A small conference table with chairs for four guests should be designed as part of this space or part of the furniture system. This office area must be ADA accessible. A view to the outdoors is desirable for this office area with operable windows.

## **Interpretative Staff Office / Work Area:**

506 s.f.

Four (4) computer workstations and work desk areas are needed for permanent and seasonal interpretative ranger staff. These four workstations will be shared by eight (8) interpretative staff and should be located in an open office area close to the interpretative work area with easy access by the Chief of Interpretation. Each workstation area should be large enough for one L-shaped corner computer workstations, adequate work desk area, 2 box storage and lateral file pedestal units per station, tack board/wall area, 2 upper storage wall cabinet units per station. As part of this same open work area, a large countertop area or island with flat file storage cabinets below will be needed for laying out large sheets of art materials, poster board, etc. for staff. The top of the layout table should have a cutting surface. A small double compartment stainless steel kitchen sink may be needed for cleaning various art and work items. Space should be provided for a future light table or drafting table for this area. A storage wall of lateral files may be required for this area for storage of various interpretative items used in programs by the staff (see Interpretation Storage Area below). A small copy machine will be located adjacent to the counter area. This area must be ADA accessible. A view to the outdoors and/or daylighting is desired for this work area with operable windows.

## **Interpretation Storage Area:**

102 s.f.

Separate storage wall cabinets should be provided for storage of various types of equipment, props, posters, and other materials needed for interpretative programs for each individual interpretative staff. This storage area or cabinet should be located adjacent to or within the interpretative work area with easy access for the interpretative staff members. There should be ten (10) individual deep compartments with locks for each interpretative staff to secure their interpretative program items. Additional shelving and wall racks should be provided adjacent to the cabinet for the other types of shared equipment. Adequate space will be needed for access to these storage cabinets.

## **Park Library:**

169 s.f.

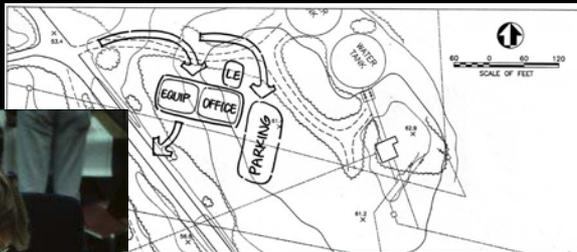
A separate area or room should be provided for the Park Library. In the stack area, bookcase/wall units should be provided for library books, materials, equipment manuals, catalogs, etc. A small reading/work desk should be provided for use in the library area for researchers as well as staff. Due to the proposed location of this

# Predesign Site Analysis

- Utility Studies

- Site History

- Vegetation



Site Analysis Checklist					
A. PROJECT INFORMATION		Site			
Project Name		Project Number			
Project Type (Check)		<input type="checkbox"/> Cultural Center <input type="checkbox"/> Hospital <input type="checkbox"/> Office <input type="checkbox"/> School <input type="checkbox"/> Church <input type="checkbox"/> PLAP <input type="checkbox"/> Law Firm <input type="checkbox"/> Theaters <input type="checkbox"/> Convective Redevelopment <input type="checkbox"/> Other (specify)			
Project Location					
Project Designer/Coordinator					
Project Site		Contract Name			
Contract #		Administration Board Location			
Administration Board Contact					
SITE ANALYSIS (Narrative/Graphic format)		Yes	No	NA	Comment (if NA, explain)
<b>1. Topographic Analysis</b>					
a.	Site survey maps	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
b.	Legal property description	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
c.	Topographic maps, aerial photos	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
d.	Contours and spot elevations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
e.	Drainage channels	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
f.	Unique features	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
g.	Essential problem areas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>2. Slope Analysis</b>					
a.	Percentage, aspect, orientation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
b.	Identify buildable sites	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
c.	Solar access	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>3. Analysis of Physical Features</b>					
a.	Major focal points	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
b.	Visual characteristics	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
c.	Unique site features	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
d.	Surface and Subsurface site data	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
e.	Ecological studies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
f.	Landscape forms and materials	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>4. Access and Circulation, Traffic and Parking Studies</b>					
a.	Automobile accessibility	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
b.	Pedestrian accessibility	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
c.	Alternative transportation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
d.	Circulation, traffic, and parking	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
e.	Service and emergency access	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	



- Topographic Analysis

- Site Analysis Checklist

## Site Analysis Checklist

### A. PROJECT INFORMATION

Date: \_\_\_\_\_

Park Name: \_\_\_\_\_ Project Number: \_\_\_\_\_

- Project Type (Check):
- |  |  |  |                               |
|--|--|--|-------------------------------|
| <input type="checkbox"/> Cyclic                | <input type="checkbox"/> Cultural Cyclic | <input type="checkbox"/> Repair/Rehab            | <input type="checkbox"/> CNPS |
| <input type="checkbox"/> NRPP                  | <input type="checkbox"/> CRPP            | <input type="checkbox"/> FLHP                    |                               |
| <input type="checkbox"/> Line Dem              | <input type="checkbox"/> Fee Demo        | <input type="checkbox"/> Concession Reimbursable |                               |
| <input type="checkbox"/> Other (specify) _____ |  |  |                               |

Project Location: \_\_\_\_\_

Project Originator/Coordinator: \_\_\_\_\_

Project Title: \_\_\_\_\_

Contract #: \_\_\_\_\_ Contractor Name: \_\_\_\_\_

Administrative Record Location: \_\_\_\_\_

Administrative Record Contact: \_\_\_\_\_

SITE ANALYSIS (Narrative/graphic format) -	Yes	No	N/A	Comment (if N/A, explain)
<b>1. Topographic Analysis</b>				
a. Site survey maps	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
b. Legal property description	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
c. Topographic maps, aerial photos	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
d. Contours and spot elevations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
e. Erosion channels	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
f. Unique features	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
g. Potential problem areas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>2. Slope Analysis</b>				
a. Percentage, aspect, orientation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
b. Identify buildable sites	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
c. Solar access	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>3. Analysis of Physical Features</b>				
a. Major focal points	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
b. Visual characteristics	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
c. Unique site features	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
d. Surface and Subsurface site data	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
e. Ecological studies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
f. Landscape forms and materials	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>4. Access and Circulation, Traffic and Parking Studies</b>				
a. Vehicular, accessibility	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
b. Pedestrian, accessibility	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
c. Alternative transportation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
d. Circulation, traffic and parking	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
e. Service and emergency access	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

# Predesign Site Analysis Checklist

SITE ANALYSIS (Narrative/graphic format) -	Yes	No	N/A	Comment (if N/A, explain)
p. Trash/refuse removal service	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
now routes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Utility Studies</b>				
Confirmation of location, size and adequacy of utilities serving the site	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Determination of requirements or connections to utilities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Planning for off-site utility extensions and facilities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Environmental Studies and Reports</b>				
Environmental Screening Form	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Compliance needs identified	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Wind Studies</b>				
Evaluating winds	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Wind orientation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Temperature	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Humidity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Evaporation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Technical/Soils</b>				
Basic surface soil type: sand, clay, silt, rock, shale, gravel, loam, peatstone, etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Rock and soil type, parent material, character/formation and origin	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Depth to bedrock, classification	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Climate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Other Requirements</b>				
Minimum site area requirements	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Site-related items	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

SIS (Narrative/graphic format) -	Yes	No	N/A	Comment (if N/A, explain)
Location	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Existing vegetation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Native vegetation/ availability, sources	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Invasive/non-native vegetation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Water Bodies</b>				
Location, size, depth, direction of flow, seasonal or year-round	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Water sheds	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Water quality	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Wetlands	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Surface drainage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Flood plains, 50, 100 year levels	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>History</b>				
Former site uses	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Openfield, landfill, hazardous materials	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Archaeological grounds	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Analysis of Existing Structures and Landscape</b>				
Historic significance, affiliations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Location, outline, floor elevations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Age and condition	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Use or service	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Utility Studies</b>				
Electrical service and distribution	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

*Predesign  
Prepare or Validate ESF  
(Environmental Screening Form)*

- Working with Park, Prepare and/or Validate ESF and identify:
  - NEPA (National Environmental Policy Act)  
Pathway-Categorical Exclusion
  - EA (Environmental Assessment)
  - Or EIS (Environmental Impact Statement)

# Predesign Environmental Screening Form (ESF)

## DENVER SERVICE CENTER ENVIRONMENTAL SCREENING FORM (ESF)

*This form must be attached to all documents sent to the regional director's office for signature. Sections A and B should be filled out by the project initiator (may be coupled with other park project initiation forms). Sections C-I are to be completed by the interdisciplinary team members. Although you may modify this form to fit your needs, you must ensure that the form includes information detailed below and must have your modifications reviewed and approved by the regional environmental coordinator.*

### A. PROJECT INFORMATION

Park Name: \_\_\_\_\_ Project Number: \_\_\_\_\_

Project Type (Check):  Cyclic  Cultural Cyclic  Repair/Rehab  ONPS  
 NRPP  CRPP  FLHP  
 Line Item  Fee Demo  Concession Reimbursable  
 Other (specify) \_\_\_\_\_

Project Location : \_\_\_\_\_

Project Originator/Coordinator: \_\_\_\_\_

Project Title: \_\_\_\_\_

Contract # : \_\_\_\_\_ Contractor Name: \_\_\_\_\_

Administrative Record Location : \_\_\_\_\_

Administrative Record Contact : \_\_\_\_\_

**B. PROJECT DESCRIPTION/LOCATION** [To begin the statutory compliance file, attach to this form, maps, site visit notes, agency consultation, data, reports, categorical exclusion form (if relevant), or other relevant materials.]

Preliminary drawings attached?  Yes  No Background info attached?  Yes  No

Date form initiated: \_\_\_\_\_ Anticipated compliance completion date: \_\_\_\_\_

Projected advertisement/Day labor start: \_\_\_\_\_ Construction start: \_\_\_\_\_

Is project a hot topic or sensitive issue?  Yes  No

Project Description:

# *Predesign*

## *Prepare Class C Cost Estimate*

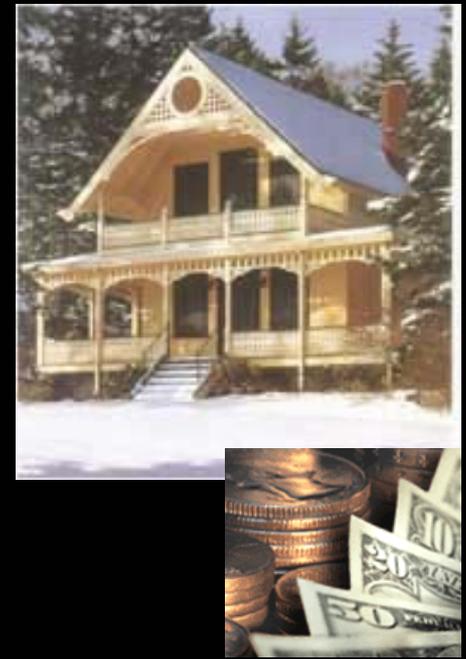
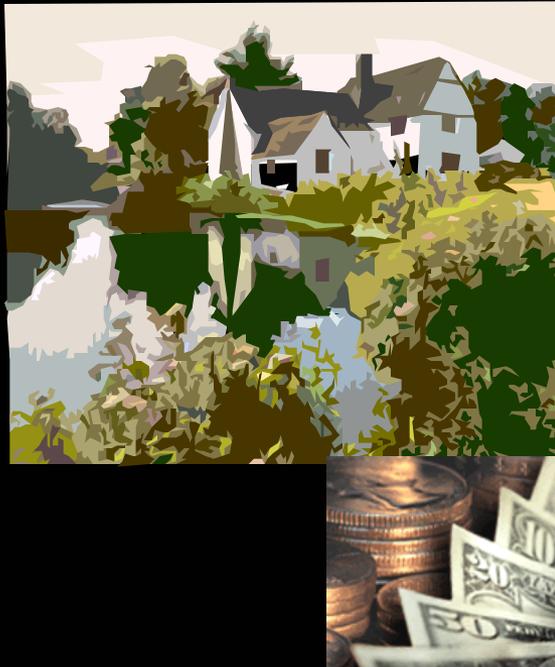
- Based on the Project Program,  
Prepare a Class C Cost Estimate
  - A Class C estimate is a conceptual cost estimate based on square foot cost of similar construction. These estimates are generally prepared without a fully defined scope of work.

	A	B	C	D	E	F
1	Denver Service Center - Class C Estimate					<b>Estimate By:</b>
2	<b>Project:</b>	Comfort Station - Load Drop Flats				<b>Date:</b>
3	<b>Park:</b>	The Great National Park				
4	<b>Package:</b>	X256-01				<b>Reviewed By:</b>
5						<b>Date:</b>
6		<b>Estimate is based on 2003 Costs</b>				
7						
8	Item No.	Description	Qty.	Unit	Cost/Unit	Net Cost
9	1	Comfort Station	90	SF	250	\$ 22,500
10	2	Sitework	1	LS	24,000	\$ 24,000
11		<b>Subtotal Direct Construction Costs</b>				<b>\$ 46,500</b>
12		Park Location Factor 3%				\$ 1,395
13		Design Contingency 30%				\$ 13,950
14		<b>Total Direct Construction Costs</b>				<b>\$ 61,845</b>
15		General Conditions 12%				\$ 7,421
16		Overhead and Profit 25%				\$ 9,277
17		<b>TOTAL Estimated Cost of Construction</b>				<b>\$ 78,543</b>

# *Predesign*

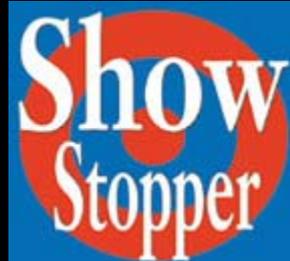
## *Prepare Comparability Cost Analysis*

- Research Comparability Costs for a Minimum of *Three* Similar Built Projects/Benchmarking



# *Predesign Document Scope and Cost Variations*

- Document any Changes to Project Scope and Costs Relative to the PMIS Project Statement Class C Cost Estimate
- Notify the COR (Contracting Officer's Representative) of any Changes.



# Predesign Milestone Review #1

- **Submit for Team and QA review and approval:**
  - Project Program and Plan
  - Environmental Screening Form
  - Class “C” Cost Estimate
  - Cost Comparability Analysis
  - Documentation of Scope and Cost Variations
- **Resolve Predesign Review Comments and Submit Final Predesign Documents**
  - Resolve all review comments and incorporate resolutions into the Final Predesign Documents. Submit the Final Predesign Documents and written responses to review comments, utilizing the NPS review form, within 15 calendar days of receipt of comments.

	A	B	C	D
1	Milestone	DENVER SERVICE CENTER		
2	PD_SD_OD_CD_CD_FINAL_X	Quality Assurance Review		
3				MONO 77563
4	Project Title: Relocate Flood Prone V.C.	Project Manager: Patrick MacDonald	Phone No.: 303.987.6621	
5	Construction FY: 2006	Project Specialist: Jack Cook	Phone No.: 303.989.2486	
6	A/E: LDR/IB/7B	A/E's Project Manager: Scott Scarfone	Phone No.: 301.543.1035	
7	Draw Date: 01/20/04	Drawing Number: 0441000A		
10	Remarks/Special Instructions: 82 236-23 Responsibility of the Architect-Engineer Contractor.			
11	RESPONSIBILITY OF THE ARCHITECT-ENGINEER CONTRACTOR (APR 1984)			
12	(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.			
13	(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 be and 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.			
14	Quality Assurance review comments shall apply to all issues throughout the review set that have either identical or similar concerns. No attempt is made to identify all occurrences. The contractor's own Quality Control shall insure that these review comments are thoroughly resolved prior to any subsequent submittals.			
15	ROUTING INFORMATION (route only to marked boxes)			
16	Access:			
17	Discipline			
18	Summary Comments			
19	[-] Civil Engineering (CE)			
20	[-] Landscape Architecture (LA)			
21	[-] Architecture (Arch)			
22	[-] Preservation Architecture (PA)			
23	[-] Structural Engineering (SE)			
24	[-] Mechanical Engineering (ME)			
25	[-] Electrical Engineering (EE)			
26	[-] Roofing/Waterproofing (RW)			
27	[-] Safety Engineer (SE)			
28	[-] Constructability (CN)			
29	[-] Survey (SU)			
30	[-] Lighting (LT)			
31	[-] NPS-10 (ET)			



# Quality Assurance Request

Quality Assurance Review Request Form		
Milestone	DENVER SERVICE CENTER	PARK/PMIS
PD__SD__DD__CD__CD COMPLETE__	Quality Assurance Review	
Project Title:	Project Manager:	Phone No.:
Construction FY:	Project Specialist:	Phone No.:
A/E:	A/E's Project Manager:	Phone No.:
Due Date:	Drawing Number:	
Cell	Form Directions:	
1. A5	Identify milestone with "X"	
2. D4	Fill in <b>PARK</b> and <b>PMIS</b>	
3. A7-C10	Fill in information	
4.	<b>E-mail to DSC QA review coordinator.</b> <b>Supply three copies (bound specs and 1/2 size drawings recommended).</b> <b>Allow 10 working days for reviews.</b>	

# Quality Assurance Review Format

A	B	C	D
1	Milestone	<b>DENVER SERVICE CENTER</b>	<b>MONO 77563</b>
2	PD__SD__DD__CD__CD COMPLETE_X_	Quality Assurance Review	
3			
4	Project Title: Relocate Flood Prone V.C.	Project Manager: Patrick MacDonald	Phone No.: 303.987.6621
5	Construction FY: 2005	Project Specialist: Jack Cook	Phone No.: 303.969.2486
6	A/E: LDR/HNTB	A/E's Project Manager: Scott Scarfone	Phone No.: 301.543.1035
7	Due Date: 01/30/04	Drawing Number: 894/41006A	
10	Remarks/Special Instructions: 52.236-23 Responsibility of the Architect-Engineer Contractor.		
11	RESPONSIBILITY OF THE ARCHITECT-ENGINEER CONTRACTOR (APR 1984)		
12	(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.		
13	(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 be and 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.		
14	Quality Assurance review comments shall apply to all issues throughout the review set that have either identical or similar concerns. No attempt is made to identify all occurrences. The contractor's own Quality Control shall insure that these review comments are thoroughly resolved prior to any subsequent submittals.		
15			
16	ROUTING INFORMATION (route only to marked boxes):		
17	Discipline	Summary Comments	
18	<input checked="" type="checkbox"/> Civil Engineering (CE)		
19	<input checked="" type="checkbox"/> Landscape Architecture (LA)	1/20/04 JHC Resubmit Site Drawings. No road layout shown, plan and profile needed. Walk layout, RP tables, CP tables needed, survey control. Spot elevations needed. . .	
20	<input checked="" type="checkbox"/> Architecture (AR)		
21	<input checked="" type="checkbox"/> Preservation Architecture (PA)		
22	<input checked="" type="checkbox"/> Structural Engineering (SE)		
23	<input checked="" type="checkbox"/> Mechanical Engineering (ME)		
24	<input checked="" type="checkbox"/> Electrical Engineering (EE)		
25	<input checked="" type="checkbox"/> Roofing/Waterproofing (RW)		
26	<input checked="" type="checkbox"/> Safety Engineer (SF)	1/16/04 BCO Quality work. Only one minor correction to Accident Prevention.	
27	<input checked="" type="checkbox"/> Constructability (CN)		
28	<input checked="" type="checkbox"/> Survey (SU)		
29	<input checked="" type="checkbox"/> Lighting (LT)		
30	<input checked="" type="checkbox"/> NPS-10 (ET)		
31	<input checked="" type="checkbox"/> ESTIMATING (EST)		
32	<input checked="" type="checkbox"/> Project Specialist		
33	<input checked="" type="checkbox"/> Project Manager		
34	Chart1 / COVER / CE / LA / AR / PA / SE / ME / EE / RW / SF / CN / SU / LT / ET / EST / PS / PM /		

A	B	C	D
1		<b>DENVER SERVICE CENTER</b>	
2		Quality Assurance Review	
3	Milestone		<b>MONO 77563</b>
4	PD__SD__DD__CD__CD COMPLETE_X_		
5			
6	LANDSCAPE ARCHITECTURE		
7	REVIEWER:	Joanne Cody	
8	DATE REVIEWED:	1/16/04	
9	NO.	DWG or SPEC SECTION	QUALITY ASSURANCE COMMENT
10	1	C sheets	No road, parking walkway layout shown. Need plan and profile sheets, radius point table, corner point table, coordinates for building layout.
11	2	C sheets	need typical road section.
12	3	C sheets	need parking island layout
13	4	C sheets	Paving material at benches? Bluestone - unclear on drawing - use 10 or 20 scale to show walkway layout and materials/ detail callouts.
14	5	C sheets	Show striping plan, sign plan
15	6	C2	403.94' to building corner from existing pole, and 131.68' from imaginary line will not locate building and angle of placement.
16	7	C2	9' x 18" parking stalls with 24' roadway, is very tight for non-urban setting, NPS uses 10'x20' stalls where feasible to enhance visitor experience
17	8	C2	Use separate layout plan and grading plan sheets. Include spot elevations on grading plan.
18	9	C6	Stone diaphragm? Detail and spec needed.
19	10	L3	Bluestone paving detail - show edge finish, specs identify sample with edging. Edging not called out in specs or detail.
20	11	L3	Show typical asphalt pavement section. Typical road section with shoulder detail.
21	12	L1	Island planting? Grass?
22	13	L1	Show work limits, limits of meadow.
23	14		
24	15		
25	Chart1 / COVER / CE / LA / AR / PA / SE / ME / EE / RW / SF / CN / SU / LT / ET / EST / PS / PM /		

• Cover Sheet

• Typical Discipline Sheet

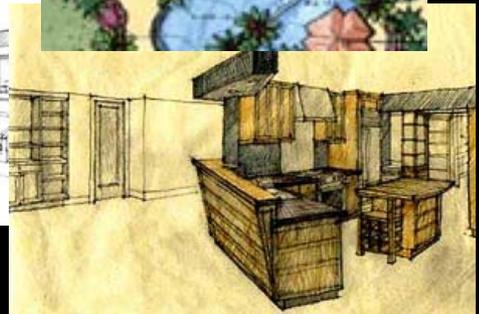
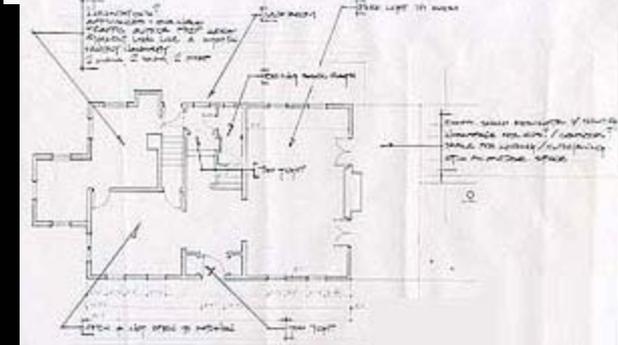
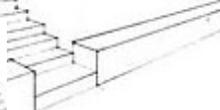
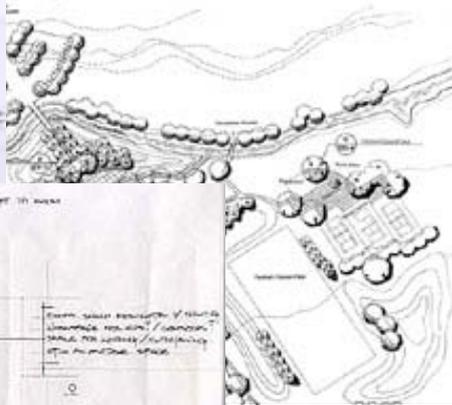
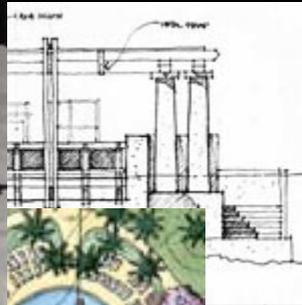
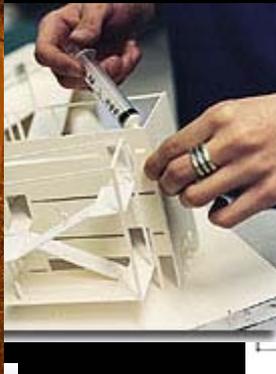
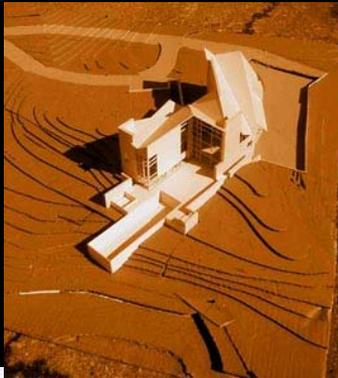
# *Schematic Design* *(SD's)*

- Initiate EA or EIS Activities
- Develop Schematic Design Alternatives
- Conduct Value Based Decision-Making
- Develop Schematic Design Preferred Alternative
- Develop Class B Cost Estimate
- Prepare LEED™ Evaluation Score Card
- Review #2
- Submit DAB (Development Advisory Board) Documents
- Finalize Schematic Design
- Resolve Schematic design Review Comments
- Submit EA or EIS and Other Compliance Documents
- Submit FONSI (Finding of No Significant Impact)



# Schematic Design

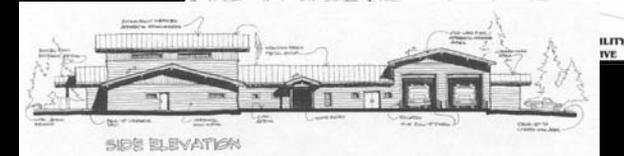
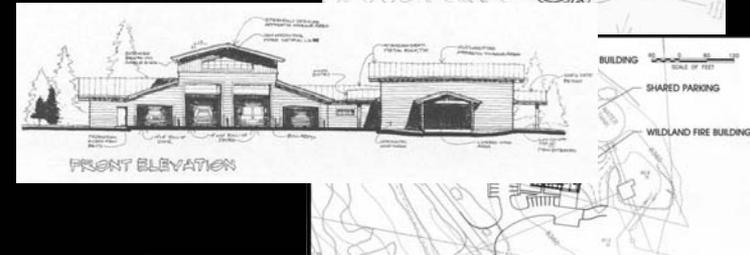
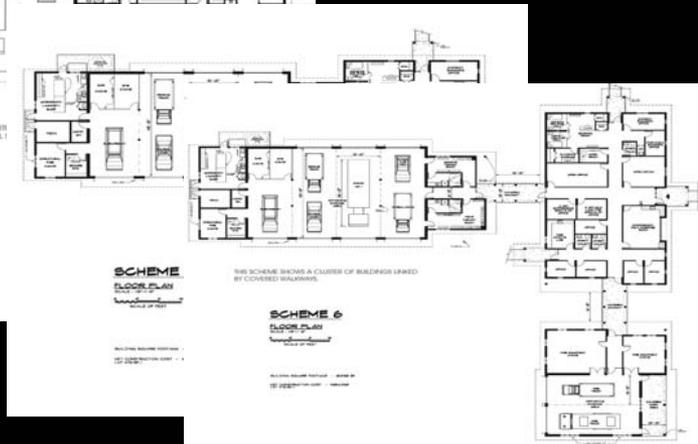
## Explore Design Alternatives



# Schematic Design

## Develop Schematic Design Alternatives

- Involving all stakeholders, Develop a Minimum of *Three* Schematic Design Alternatives that Meet All Project Program Requirements and Do Not Exceed 95% Net Available Construction Funds
- Prepare Class C Cost Estimate of Each Alternative





# *Schematic Design*

## *Conduct Value-Based Decision Making*

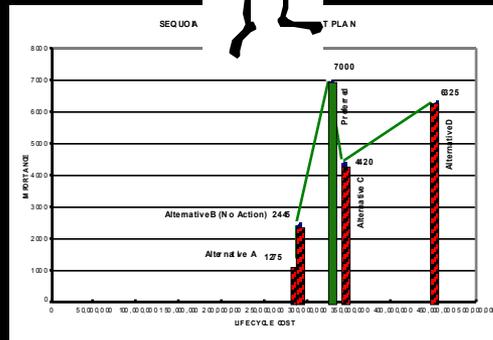
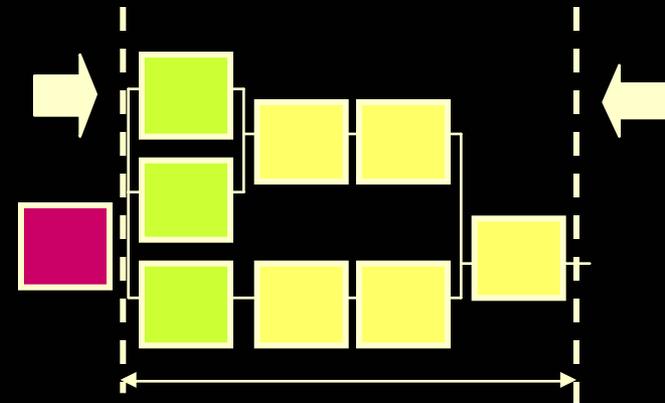
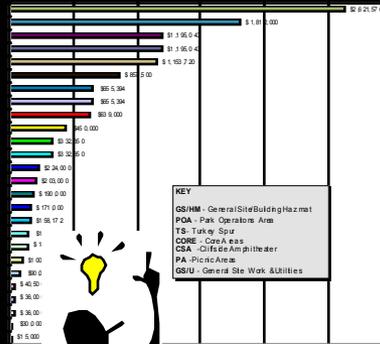
- Conduct a Value Analysis to Determine the Preferred Alternative
- **Key Milestone: Project Team Approval/Commitment**



# Schematic Design

*What does a good VA look like?  
...a process guided by the Value Analysis Job Plan*

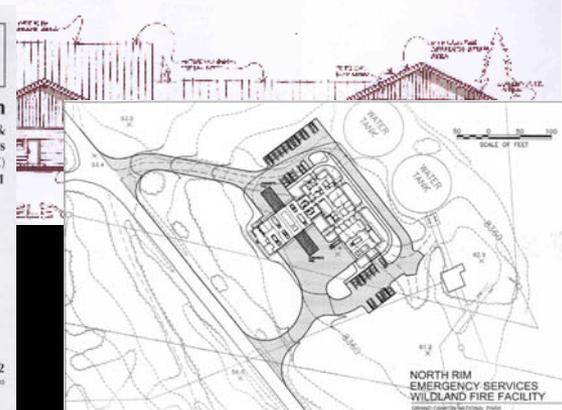
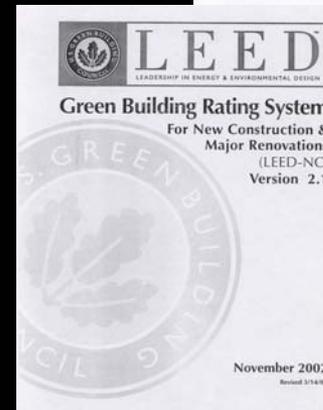
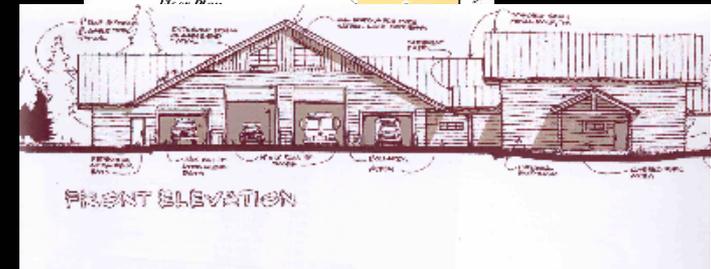
- Information Phase
- Function Phase
- Creativity Phase
- Evaluation Phase
- Development Phase
- Recommendation Phase
- Implementation Phase



# *Schematic Design*

## *Develop Preferred Alternative*

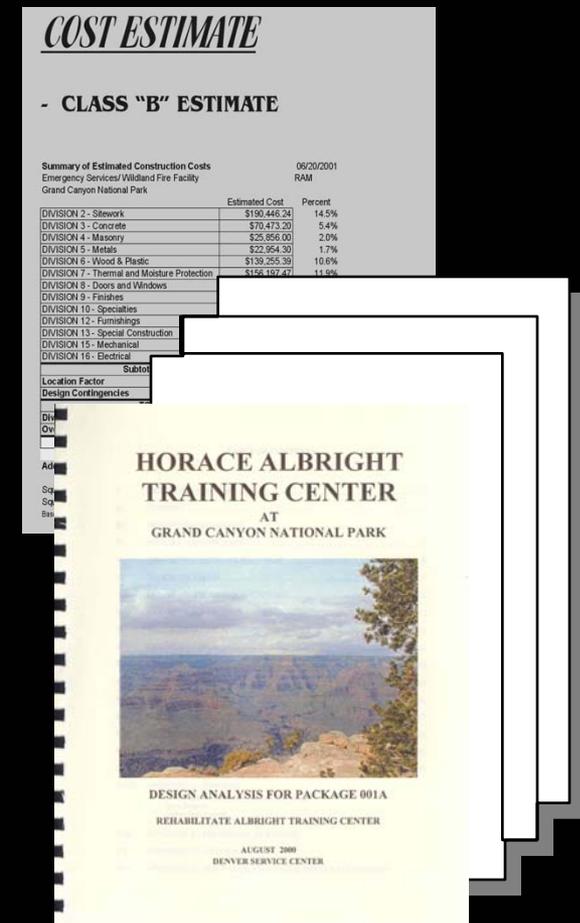
- Develop Preferred Alternative to Fully to Define:
  - Buildings
  - Site Development
  - Engineering Analyses
  - Engineering Systems
- Prepare LEED™ (Leadership in Energy and Environmental Design) based Evaluation Scorecard Sustainable Design measures



# Schematic Design

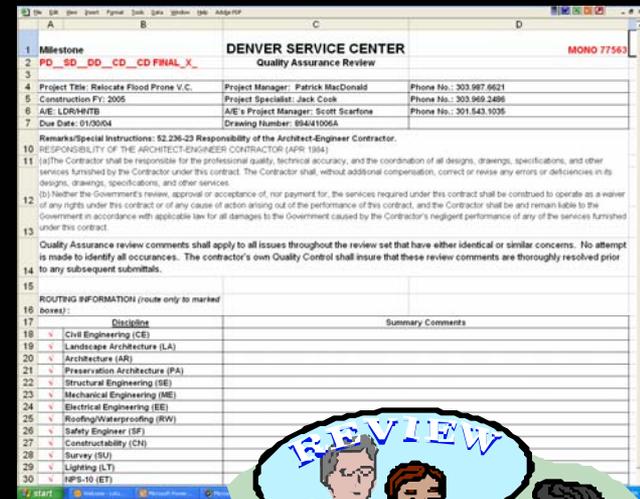
## Develop Preferred Alternative

- Class “B” Cost Estimate
  - A Class B estimate is prepared during late schematic design phase of a project (minimum 30% design) and is based on approved schematic design drawings, outline specifications, and design analysis.
- Basis of Design Report
  - Narrative and Drawings, describing building, site and utility design, including: multi-discipline analyses, and materials analysis.



# Schematic Design QA Review #2

- **Submit 100% Draft Schematic Design Documents for Review**
  - Schematic Design Alternatives
  - Class C Construction Cost Estimates for each Schematic Design Alternative
  - Value Analysis Report
  - Fully Developed Schematic Design Preferred Alternative
  - Basis of Design Report
  - Class B Construction Cost Estimate
  - LEED™ Evaluation Scorecard



The screenshot shows a spreadsheet with the following content:

A	B	C	D
1	Milestone	DENVER SERVICE CENTER	MONO 77563
2	PO_SD_CD_CD_CD_FINAL_X_	Quality Assurance Review	
3			
4	Project Title: Relocate Flood Prone V.C.	Project Manager: Patrick MacDonald	Phone No.: 303.987.6621
5	Construction P#: 2005	Project Specialist: Jack Cook	Phone No.: 303.986.2486
6	A/E: LDR/HNTB	A/E's Project Manager: Scott Scarfone	Phone No.: 301.543.1035
7	Due Date: 01/30/04	Drawing Number: 05A/1005A	

Remarks/Special Instructions: S2.236-23 Responsibility of the Architect-Engineer Contractor.  
10 RESPONSIBILITY OF THE ARCHITECT-ENGINEER CONTRACTOR (APR 1984)  
11 (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.  
12 (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 right under this contract or of any cause of action arising out of the performance of this contract, and the Contractor shall be and 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.  
13 Quality Assurance review comments shall apply to all issues throughout the review set that have either identical or similar concerns. No attempt is made to identify all occurrences. The contractor's own Quality Control shall insure that these review comments are thoroughly resolved prior to any subsequent submittals.  
14  
15  
16 ROUTING INFORMATION (route only to marked boxes):  
17  
18 Discipline Summary Comments  
19  Civil Engineering (CE)  
20  Landscape Architecture (LA)  
21  Architecture (AR)  
22  Preservation Architecture (PA)  
23  Structural Engineering (SE)  
24  Mechanical Engineering (ME)  
25  Electrical Engineering (EE)  
26  Roofing/Waterproofing (RW)  
27  Safety Engineer (SF)  
28  Constructability (CH)  
29  Survey (SU)  
30  Lighting (LT)  
31  HPS-10 (BT)



# Schematic Design Milestone Review #2

- **Submit for Team and QA review and approval 100% Draft Schematic Design Review Comments**
  - Resolve all review comments and incorporate resolutions into the Final Schematic Design Documents. Submit the Final Schematic Design Documents and written responses to review comments, utilizing the NPS review form, within 15 calendar days of receipt of comments.

The screenshot shows a Microsoft Word document titled "DENVER SERVICE CENTER Quality Assurance Review" with document ID "MONO 77563". The document contains project information and a routing table.

Project Information	
1 Milestone	DENVER SERVICE CENTER
2 PD_SD_CD_CD_CD_FINAL_X_	Quality Assurance Review
3	
4 Project Title: Relocate Flood Prone V.C.	Project Manager: Patrick MacDonald Phone No.: 303.987.6621
5 Construction FY: 2005	Project Specialist: Jack Cook Phone No.: 303.988.2486
6 A/E: LDR/HNTB	A/E's Project Manager: Scott Scarfone Phone No.: 301.543.1035
7 Due Date: 01/30/04	Drawing Number: 854/1005A

Remarks/Special Instructions: \$2,236-23 Responsibility of the Architect-Engineer Contractor.

10 RESPONSIBILITY OF THE ARCHITECT-ENGINEER CONTRACTOR (APR 1984)

11 (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.

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14

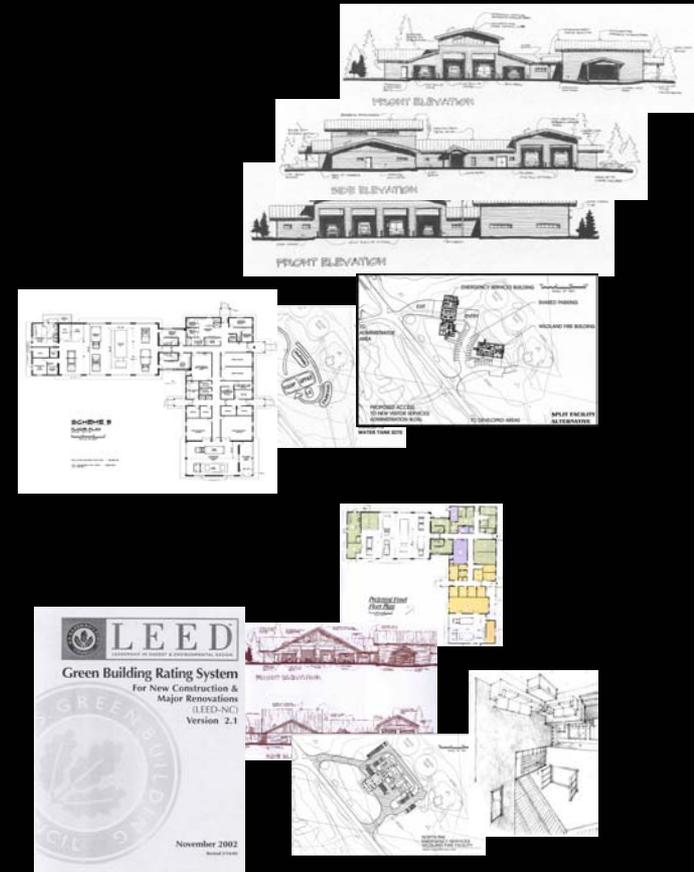
15 ROUTING INFORMATION (route only to marked boxes):

Discipline	Summary Comments
17	
18 <input type="checkbox"/> Civil Engineering (CE)	
19 <input type="checkbox"/> Landscape Architecture (LA)	
20 <input type="checkbox"/> Architecture (AR)	
21 <input type="checkbox"/> Preservation Architecture (PA)	
22 <input type="checkbox"/> Structural Engineering (SE)	
23 <input type="checkbox"/> Mechanical Engineering (ME)	
24 <input type="checkbox"/> Electrical Engineering (EE)	
25 <input type="checkbox"/> Roofing/Waterproofing (RW)	
26 <input type="checkbox"/> Safety Engineer (SE)	
27 <input type="checkbox"/> Constructability (CH)	
28 <input type="checkbox"/> Survey (SU)	
29 <input type="checkbox"/> Lighting (LT)	
30 <input type="checkbox"/> NPS-10 (ET)	



# Schematic Design Submittals

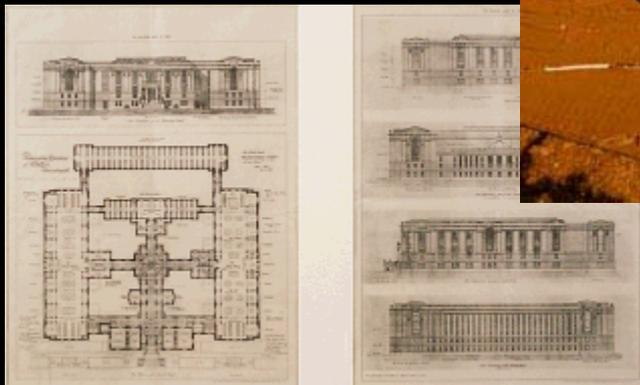
- **Prepare and Submit DAB Support Documents and Final Schematic Design Documents:**
  - Prepare and submit the Final Schematic Design Documents and the following DAB Support Documents:
    - Proposed Design Development and Construction Document Value Analysis activities on remaining key decisions.
    - Five or fewer graphics providing an overview of the project in electronic format:
      - Existing Conditions Plan - location plan
      - Site Plan
      - Building Plans for Each Level
      - Building Elevations
      - Building and Site Selections
    - Information required to update the Environmental Screening Form (ESF)



# *Schematic Design*

## *Finalize*

- Prepare Response and Memorandum to Each DAB Question
- Finalize Schematic Design



# *Schematic Design Compliance*

- Submit EA or EIS and Other Compliance Documents for Review
- Submit Finding of No Significant Impact (FONSI) or Record of Decision (ROD)



# *Design Development (DD's)*

- Design Development Requirements
- Constructability Analysis
- Compliance Drawings, As Needed
- Update Class B Cost Estimate
- Design Development Review #3



# Design Development

## Prepare Design Development Documents

- Based on the Completed Schematic Design, Prepare the Following:
  - Design Development Drawings
  - Division I Specifications
  - Product File
  - Division 2 through 16 Outline Specifications





# Design Development

## Prepare Design Development Documents

- Prepare Product File
- Manufacturer Cut Sheets

TFP510
Page 5 of 6

Deep Ceiling Escutcheon, hold the outer piece in contact with the mounting surface (ceiling), and then rotate the inner piece approximately 1/4 turn with respect to the outer piece, hold the Deep Escutcheon firmly together

ices in compliance with this document, as well as with the applicable

**OTHER WARRANTIES EXPRESS OR IMPLIED, INCLUDING WARRANTIES**

**Care and Maintenance**

The Series DS-1 Dry Type Sprinkler must be maintained and serviced in accordance with the following instructions:

**NOTES**

Absence of the outer piece of an escutcheon, which is used to cover clearance hole, may delay the time a sprinkler operation in a fire situation. Before closing a fire protection system main control valve for maintenance work on the fire protection system its it controls, permission to shut down the affected fire protection systems must be obtained from the proper authorities and all personnel who may be affected by this action must be notified.

A Vent Hole is provided in the Bulb Seat (Ref. Figure 1) to indicate if the Dry Sprinkler is remaining dry. Evidence of leakage from the Vent Hole an indication that there may be weepage past the inner seal and the the sprinkler needs to be removed for determining the cause of leakage (e.g. an improper installation or an ice plug). The fire protection system control valve must be closed and the system drained before removing the sprinkler. Sprinklers that are found to be leaking or exhibiting visible signs of corrosion must be replaced.

Automatic sprinklers must never be shipped or stored where their temperature will exceed 100°F/38°C and the must never be painted, plated, coated or otherwise altered after leaving the factory. Modified sprinklers must be replaced. Sprinklers that have been exposed to corrosive products of combustion, but have not operated, should be completely cleaned by wiping the sprinkler with a cloth or by brushing with a soft bristle brush.

Care must be exercised to avoid damage - before, during, and after installation. Sprinklers damaged by dropping, striking, wrench twist/slippage or the like, must be replaced. Also replace any sprinkler that has cracked bulb or that has lost liquid from its bulb (Ref. Installation Section).

The owner is responsible for the inspection, testing, and maintenance of their fire protection system and devices in compliance with this document, as well as with the applicable standards of the National Fire Protection Association, in addition to the standards of any other authorities having jurisdiction. Failure to do so may impair the integrity of these devices.

The owner is responsible for maintaining their fire protection system and devices in proper operating condition. The installing contractor or sprinkler manufacturer should be contacted relative to any questions.

The Series DS-1 Dry Type Sprinklers must only be installed in fittings that meet the requirements of the Design Criteria section.

**TFP510**

**FIGURE 3**  
TY2325 PENDENT  
w/ STANDARD RECESSED  
ESCUTCHEON

**FIGURE 6**  
TY2325 PENDENT  
w/ DEEP ESCUTCHEON

**TY2335 HORIZ**

Page 1 of 6
FEBRUARY, 2002
TFP510 (5-8-0)

Page 3 of 6

**tyco** / Flow Control / Tyco Fire Products

Technical Services: Tel: (800) 381-9312 / Fax: (800) 791-5500

**Series DS-1 — 5.6 K-factor Dry Type Sprinklers Quick Response, Standard Coverage**

**General Description**

The Series DS-1, 5.6 K-factor, Quick Response, Standard Coverage, Dry Type Sprinklers are decorative 3 mm glass bulb automatic sprinklers designed for the following typical uses:

- where pendent sprinklers are required on dry pipe systems that are exposed to freezing temperatures (e.g. sprinkler drops from unheated portions of buildings)
- where sprinklers and/or a portion of the connecting piping may be exposed to freezing temperatures (e.g. sprinkler drops from wet systems into freezers, sprinkler sprigs from wet systems into unheated attics, or horizontal piping extensions through a wall to protect an unheated area of a building)
- where sprinklers are used on systems that are seasonably drained to avoid freezing (e.g. vacation resort areas)

**WARNINGS**

The Series DS-1 Dry Type Sprinklers described herein must be installed and maintained in compliance with this document, as well as with the applicable standards of the National Fire Protection Association, in addition to the standards of any other authorities having jurisdiction. Failure to do so may impair the integrity of these devices.

The owner is responsible for maintaining their fire protection system and devices in proper operating condition. The installing contractor or sprinkler manufacturer should be contacted relative to any questions.

The Series DS-1 Dry Type Sprinklers must only be installed in fittings that meet the requirements of the Design Criteria section.

**CENTRAL**

Customer Service/Sales:  
Tel: (215) 362-0700 / (800) 523-6512  
Fax: (215) 362-5385

**Model/Sprinkler Identification Numbers**

TY2325 - (Pendent)  
TY3125 - (Upright)  
TY2335 - (Horizontal Sidewall)

**Technical Data**

**Approvals**  
UL and C-UL Listed, FM and NYC Approved. (Refer to Table A)

**Maximum Working Pressure**  
175 psi (12.1 bar)

**Inlet Thread Connection**  
1 inch NPT (Standard Order)  
ISO 7-R1  
3/4 inch NPT  
1-1/4-14UNC

**Discharge Coefficient**  
K = 5.6 GFMps<sup>1/2</sup>  
(80.6 LPM/bar<sup>1/2</sup>)

**Temperature Ratings**  
Refer to Table A

**Finishes**  
Sprinkler: Natural Brass, Chrome Plated, White Polyester  
Escutcheon: White Coated or Chrome Plated

**Physical Characteristics**

Inlet	Copper
Plug	Copper
Yoke	Stainless Steel
Casing	Galvanized Carbon Steel
Insert	Bronze
Bulb Seat	Stainless Steel
Bulb	Glass
Compression Screw	Bronze
Deflector	Bronze

**Frame** . . . . . Bronze  
**Guide Tube** . . . . . Stainless Steel  
**Water Tube** . . . . . Stainless Steel  
**Spring** . . . . . Stainless Steel  
**Sealing Assembly** . . . . . Beryllium Nickel w/Teflon  
**Escutcheon** . . . . . Carbon Steel

**Patents**  
U.S.A. Patent Number 5,188,185 may be applicable to the Series DS-1, 5.6 K-factor, Quick Response, Standard Coverage, Dry Type Sprinklers.

\* Registered Trademark of DuPont

# Design Development

## Prepare Design Development Documents

- Prepare Outline Specs Divisions 2 through 16
  - An Itemized List
  - Brief, Concise Statements
  - Significant Materials, Systems, and Equipment
  - Criteria and Levels of Quality

(Project Name)  
(Park Name and Project Number [PMIS No. XXXXXX])  
**OUTLINE SPECIFICATION**

---

**DIVISION 1: GENERAL REQUIREMENTS**

01110 SUMMARY OF THE WORK  
The project consists of the general construction of [a visitor center and museum], with new road, parking lot, plaza, utilities, and associated site grading and landscaping.

**DIVISION 2: SITE WORK**

02050 REMOVAL OF PAVEMENTS AND STRUCTURES  
General removing of culverts, gates, signs, wood and chainlink fencing material. General removal and recycling of bituminous pavement. Demolish and remove from the site designated miscellaneous buildings, and miscellaneous debris.

02110 CLEARING, GRUBBING, SELECTIVE THINNING AND TREE REMOVAL  
Clear and grub stumps and undergrowth. Dispose of debris.

02116 SELECTIVE THINNING AND TREE REMOVAL  
Thin undergrowth and remove trees as directed. Dispose of debris.

02210 SITE AND ROADWAY EXCAVATION AND GRADING  
Strip, stockpile and place topsoil. Excavate roadway, embankment, backfill, compact backfill, and place imported borrow. Compact subgrade and do finish grading.

02225 STRUCTURE EXCAVATION AND BACKFILL  
General Site Preparation - Proofroll entire building site after clearing, grubbing, and stripping. Excavate for foundation and concrete slab-on-grade. After placement of foundation, backfill and compact excavated area utilizing original soil. Density testing will be the responsibility of the Contractor.

02270 EROSION CONTROL  
Furnish and implement an erosion control plan.

02271 ENGINEERING FABRIC  
Furnish and place engineering fabric, landscape fabric, and filter fabric on the subgrade of roads, parking lots, riprap, underdrains, downspouts.

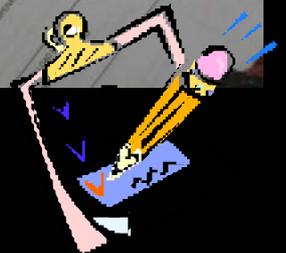
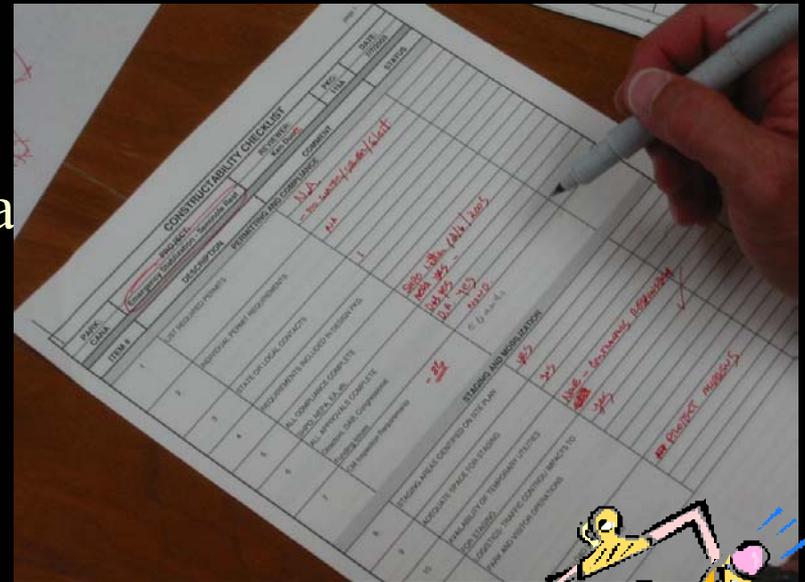
02272 RIPRAP  
Furnish and place stone riprap for embankment protection and ends of storm drains.

02273 EROSION CONTROL MATTING  
Install erosion control matting.

Guide for Outline Specifications  
17 July 2003  
2 of 11

# Design Development Initiate Constructability Analysis

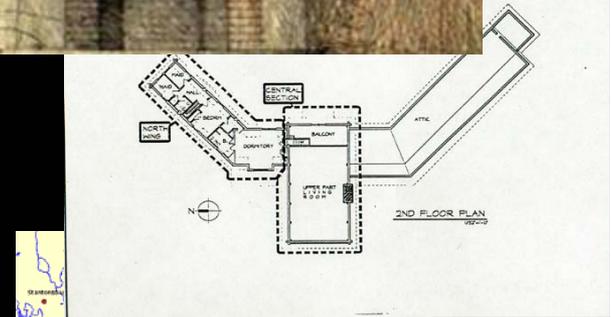
- Initiate the Constructability Analysis
  - Utilize *Constructability Checklist*
  - Compile Critical Client Data for use in Division I Specifications:
    - Staging, Mobilization, Permitting, Site Layout, Resource Protection, Demo, Construction



# *Design Development*

## *Prepare Compliance Drawings, As Needed*

- Prepare Compliance Drawings, As Needed
  - Prepare and Submit Drawings and Supporting Narrative for Minimum 30 Day SHPO (State Historic Preservation Officer)/THPO Tribal Historic Preservation Officer
  - Resolve SHPO/THPO Comments
  - Prepare and Submit Drawings and Supporting Narrative for Obtaining Section 404 National Pollutant Discharge Elimination System (NPDES) and Other Permits as defined in Scope of Services





# Class "B" Cost Estimate

	A	B	C	D
1	Denver Service Center - Class A Estimate		<b>Estimate By:</b>	RAM
2	<b>Project:</b> Comfort Station - Load Drop Flats		<b>Date:</b>	24-Oct-03
3	<b>Park:</b> The Great National Park			
4	<b>Package:</b> X256-01		<b>Reviewed By:</b>	DSC
5		Class B Estimate	<b>Date:</b>	10/24/2003
6				
7	<b>Estimate is Based on 2003 Costs</b>			
8	Bid Item	Material Costs	Installation Costs	Total Costs
9	A10 Foundations	\$5,028	\$5,732	<b>\$10,760</b>
10	A20 Basement Construction			<b>\$0</b>
11	B10 Superstructure	\$277	\$290	<b>\$567</b>
12	B20 Exterior Enclosure	\$2,138	\$1,765	<b>\$3,903</b>
13	B30 Roofing	\$564	\$319	<b>\$883</b>
14	C10 Interior Construction	\$130	\$50	<b>\$180</b>
15	C20 Stairs			<b>\$0</b>
16	C30 Interior Finishes	\$667	\$483	<b>\$1,150</b>
17	D10 Conveying			<b>\$0</b>
18	D20 Plumbing	\$3,350	\$875	<b>\$4,225</b>
19	D30 HVAC	\$150	\$50	<b>\$200</b>
20	D40 Fire Protection			<b>\$0</b>
21	D50 Electrical			<b>\$0</b>
22	E10 Equipment			<b>\$0</b>
23	E20 Furnishings			<b>\$0</b>
24	F10 Special Construction			<b>\$0</b>
25	F20 Selective Building Demolition			<b>\$0</b>
26	G10 Site Preparation	\$3,780	\$3,150	<b>\$6,930</b>
27	G20 Site Improvements	\$6,368	\$10,288	<b>\$16,656</b>
28	G30 Site Mechanical Utilities			<b>\$0</b>
29	G40 Site Electrical Utilities			<b>\$0</b>
30	G90 Other Site Construction			<b>\$0</b>
31	<b>Subtotal Direct Construction Cost</b>	<b>\$22,452</b>	<b>\$23,002</b>	<b>\$45,454</b>
32	<b>Park Location Factor - GRNP (3 percent)</b>			<b>\$1,364</b>
33	<b>Design Contingency (15 percent)</b>			<b>\$6,818</b>
34	<b>Total Direct Construction Costs</b>			<b>\$53,636</b>
35	General Conditions (16 Percent)			\$8,582
36	Overhead & Profit (25 Percent)			\$13,409
37	<b>TOTAL Estimated Cost of Construction</b>			<b>\$75,626</b>
38				

# Design Development Milestone Review #3

- **Submit for Team and QA review and approval 100% Design Development Documents**
  - Submit completed Design Development Documents and updated Class “B” Construction Cost Estimate for review
- **Resolve Design Development Review Comments**
  - Resolve all review comments. Submit written responses to review comments, utilizing the NPS review form, within 15 calendar days of receipt of comments.

DENVER SERVICE CENTER Quality Assurance Review				MONO 77563
1	Milestone			
2	PD_SD_DD_CD_CD FINAL_X			
3				
4	Project Title: Relocate Flood Prone V.C.	Project Manager: Patrick MacDonald	Phone No.: 303.987.6621	
5	Construction FY: 2005	Project Specialist: Jack Cook	Phone No.: 303.969.2486	
6	A/E: LDR/HHTB	A/E's Project Manager: Scott Scarfone	Phone No.: 301.543.1035	
7	Due Date: 01/20/04	Drawing Number: 894/41006A		
Remarks/Special Instructions: 52.236-23 Responsibility of the Architect-Engineer Contractor.				
10 RESPONSIBILITY OF THE ARCHITECT-ENGINEER CONTRACTOR (APR 1984)				
11 (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.				
12 (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 be and 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.				
13 Quality Assurance review comments shall apply to all issues throughout the review set that have either identical or similar concerns. No attempt is made to identify all occurrences. The contractor's own Quality Control shall insure that these review comments are thoroughly resolved prior to any subsequent submittals.				
14				
15				
ROUTING INFORMATION (route only to marked boxes):				
16				
17	Discipline	Summary Comments		
18	<input checked="" type="checkbox"/> Civil Engineering (CE)			
19	<input checked="" type="checkbox"/> Landscape Architecture (LA)			
20	<input checked="" type="checkbox"/> Architecture (AR)			
21	<input checked="" type="checkbox"/> Preservation Architecture (PA)			
22	<input checked="" type="checkbox"/> Structural Engineering (SE)			
23	<input checked="" type="checkbox"/> Mechanical Engineering (ME)			
24	<input checked="" type="checkbox"/> Electrical Engineering (EE)			
25	<input checked="" type="checkbox"/> Roofing/Waterproofing (RW)			
26	<input checked="" type="checkbox"/> Safety Engineer (SF)			
27	<input checked="" type="checkbox"/> Constructability (CN)			
28	<input checked="" type="checkbox"/> Survey (SU)			
29	<input checked="" type="checkbox"/> Lighting (LT)			
30	<input checked="" type="checkbox"/> I&PS-10 (ET)			



# Design Development Review Sheet

	A	B	C	D
1	<b>DENVER SERVICE CENTER</b>			
2	<b>Quality Assurance Comments</b>			
3	<b>Milestone</b>		WEFA/021523	
4	PD SD DD <input checked="" type="checkbox"/> CD CD COMPLETE			
5				
6	<b>STRUCTURAL ENGINEERING</b>			
7	REVIEWER: Larry L. Reynolds, P.E.			
8				
9	<b>NO.</b>	<b>DWG or SPEC SECTION</b>	<b>QUALITY ASSURANCE COMMENT</b>	<b>RESOLUTION</b>
10	1	S101	7'-0" dimension is shown as 9'-0" on A101.	
11	2	S101	50'-8" dimension is shown as 52'-8" on a101.	
12	3	S101	Provide a Structural General Notes sheet.	
13	4	S102	What is the spacing of the steel trusses?	
14	5	S102	What spans between the steel trusses? Purlins? Steel deck?	
15	6	S102	Roof Note 3: Prefab trusses should also be designed for the appropriate wind loads acting normal to the roof slope. Please show this requirements on the drawings.	
16	7	S102	What is the lateral load path for all buildings?	
17	8	S102	Where are the attachment requirements for the roof diaphragms specified?	
18	9	S102	Which walls are shearwalls? Are hold downs required in the wood framed shearwalls?	
19	10	S103	Floor framing: What is the header size at the floor opening?	
20	11	Calcs	Sht. 1: Is 30 psf the ground snow load or the roof snow load? Calcs on Sht. 4a indicate 21 psf balanced snow load. Please clarify.	
21	12	Calcs	Wind calcs note: Please clarify this statement. A positive $GC_{pi}$ is additive to leeward wall pressures, negative $GC_{pi}$ is additive to windward wall pressures. Should the leeward wall pressures be higher?	
22	13	Calcs	Winterpanel: Can this product be used as a roof diaphragm? What are the allowable in-plane shear loads?	
23	14	Calcs	Winterpanel: Structural dwgs indicate 3/4" OSB for sheathing. Architectural dwgs indicate insulated panel system. Please clarify?	
24	15	Calcs	Winterpanel: Is there a building code evaluation report for this product? If so, please provide.	
25	16	Calcs	Sheet 1, Stick-framed roof: Size the individual rafters for the unbalanced snow condition. Typical for all roof framing.	
26	17	Calcs	Sheet 8, Stick-framed roof: Size the valley beams for drift loads. Calcs show 30 psf snow load.	
27	18	Calcs	Sheet 18, covered storage: Use the unbalanced snow	



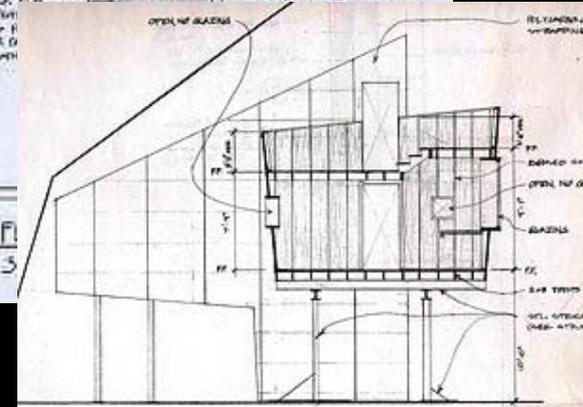
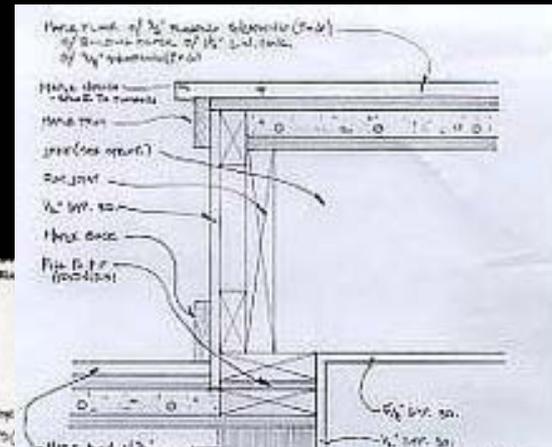
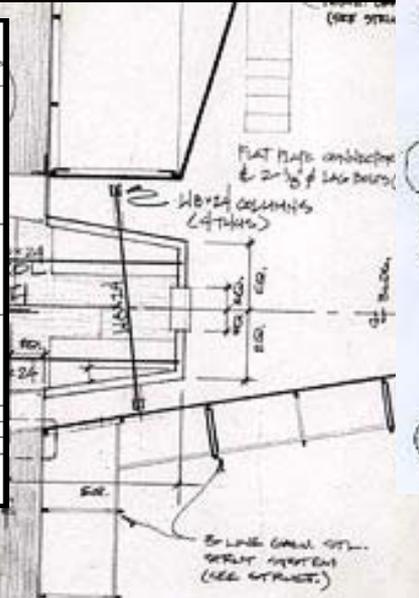
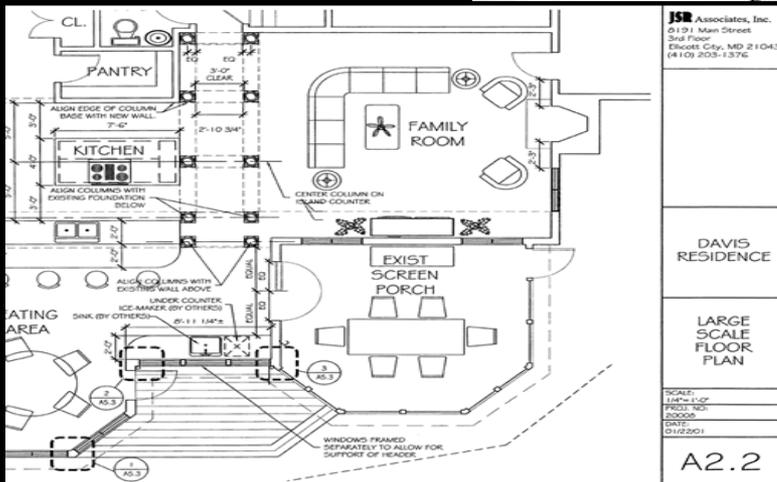
# *Construction Documents* *(CD's)*

- Construction Documents
- Final Product File
- Formatted Supplemental Design Reports (Soils, Hazmat, Etc.
- Class A Cost Estimate
- Review #4



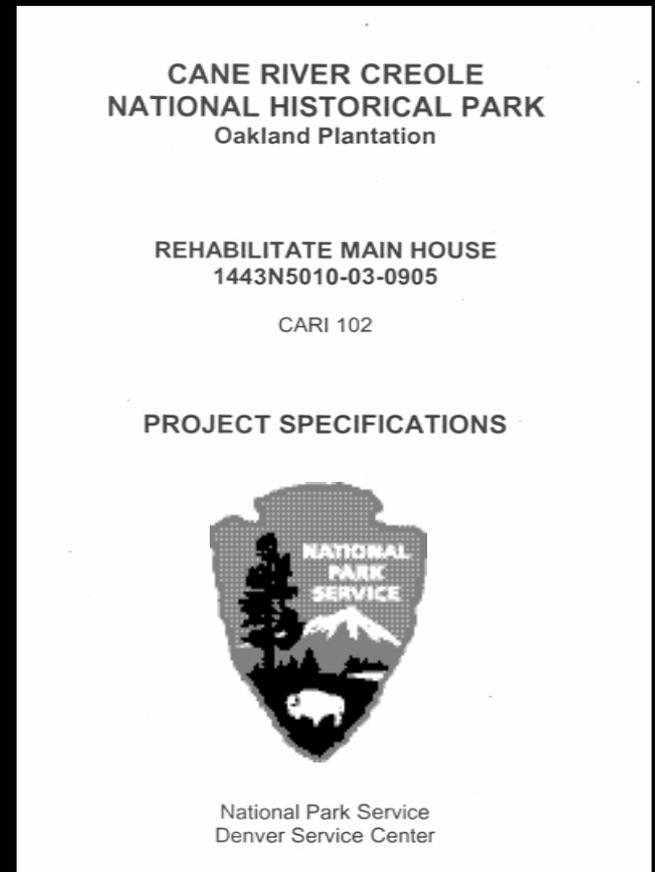
# Construction Documents Drawings

- Meet Guidelines Set Forth in National Park Service Reference Manual 10A



# Construction Documents Specifications

- Prepare Divisions 1 through 16 In Accordance with NPS "*Guide For Specifiers*"
  - Table of Contents
  - Contract Bid or Price Schedule
  - General Requirements
  - Technical Specifications
  - List of Required Submittals
  - List of Product Data and Outline of Operation and Maintenance Requirements



# Contract Bid Schedule

## CONTRACT BID SCHEDULE

CANE RIVER CREOLE N.H.P.  
 OAKLAND PLANTATION  
 CARI-102  
 REHABILITATE MAIN HOUSE

Submit bid for all items; failure to do so may render the bid non-responsive. Limit amounts to two decimal places (whole cents). On lump-sum bid items, provide total price only. If no bid item exists for a portion of the work, include the costs in a related bid item. In case of error in summation, the total of the corrected bid amounts governs.

ITEM NO. SECTION ITEM	QUANTITY & UNIT OF MEASURE	AMOUNT OF BID
--------------------------	-------------------------------	------------------

This bid item "A" consists of all architectural, structural, mechanical, plumbing, fire protection and electrical systems not included in Bid Items "B" below, and as described in the contract documents consisting of drawings 494/25,030 and specifications CARI 102.

L.S. Lump Sum = \$ \_\_\_\_\_

This bid item "B" consists of all structural foundation work including footings, concrete piers with brick facings, first floor framing, and lifting and lowering of the building as described in the contract documents consisting of drawings 494/25,030 and specifications CARI 102.

L.S. Lump Sum = \$ \_\_\_\_\_

Award will be made to one Bidder in accordance with the Instructions to Bidders

## CONTRACT PRICE SCHEDULE

GRAND CANYON NATIONAL PARK  
 MATHER CAMPGROUND  
 GRCA-257  
 MATHER CAMPGROUND RESTROOM RENOVATIONS

See Section B of the Request for Proposal for instructions on preparing Contract Price Schedule.

ITEM NO.	ITEM	TOTAL PRICE AMOUNT
----------	------	-----------------------

### BASE PRICE

1	Pine Loop No. 1	1	LS	=	\$
2	Pine Loop No. 2	1	LS	=	\$
3	Pine Loop No. 3	1	LS	=	\$
4	Juniper Loop No.1	1	LS	=	\$
5	Juniper Loop No. 2	1	LS	=	\$
6	Oak Loop No. 1	1	LS	=	\$
7	Oak Loop No. 2	1	LS	=	\$

BASE PRICE (ITEMS 1 through 7)..... = \$

### OPTIONS

A	Aspen Loop No. 1	1	LS	=	\$
B	Aspen Loop No. 2	1	LS	=	\$
C	Fir Loop No. 1	1	LS	=	\$
D	Sage Loop No. 1	1	LS	=	\$

### Price Summary

BASE PRICE (ITEMS 1 through 7)..... = \$  
 OPTIONS (ITEMS A through D)..... = \$  
 TOTAL: \$

E	Add two H/C sinks, hand dryers and mirrors	1	Per Building @	\$
F	Add one dishwashing sink	1	Per Building @	\$
G	Add R-30 batts in roof and R-19 batts in stud walls	1	Per Building @	\$

END





# Sample Class "A" Cost Estimate

	A	B	C	D	E	F
1	Denver Service Center - Class A Estimate			<b>Estimate By:</b>	RAM	
2	<b>Project:</b> Comfort Station - Load Drop Flats			<b>Date:</b>	24-Oct-03	
3	<b>Park:</b> The Great National Park					
4	<b>Package:</b> X256-01			<b>Reviewed By:</b>	DSC	
5		Class A Estimate		<b>Date:</b>	10/24/2003	
6						
7	<b>Estimate is Based on 2003 Costs</b>					
8	Bid Item	Cost of Materials	Labor Costs	Cost of Equipment	Total Net Construction Cost	Bid Item Totals
9	<b>General Conditions</b>				<b>\$18,843</b>	
10	Bid Item 1 - Comfort Station					
11	A10 Foundations	\$10,967	\$4,343	\$328	\$15,638	
12	B10 Super Structure	\$362	\$332	\$0	\$695	
13	B20 Exterior Enclosure	\$2,146	\$1,319	\$0	\$3,465	
14	B30 Roofing	\$884	\$343	\$0	\$1,227	
15	C10 Interior Construction	\$162	\$56	\$0	\$217	
16	C30 Interior Finishes	\$1,002	\$534	\$13	\$1,548	
17	D20 Plumbing	\$4,573	\$1,125	\$0	\$5,698	
18	D30 HVAC	\$214	\$60	\$0	\$274	
19	G10 Site Preparation	\$316	\$504	\$73	\$893	
20	<b>Total Bid Item 1 - Comfort Station</b>	<b>\$20,626</b>	<b>\$8,616</b>	<b>\$414</b>	<b>\$29,655</b>	<b>\$39,136</b>
21	Bid Item 2 - Site Work					
22	G10 Site Preparation	\$4,412	\$3,858	\$855	\$9,124	
23	G20 Site Improvements	\$8,110	\$10,684	\$1,363	\$20,157	
24	<b>Total Bid Item 2 - Site Work</b>	<b>\$12,522</b>	<b>\$14,542</b>	<b>\$2,218</b>	<b>\$29,281</b>	<b>\$38,643</b>
25	Bid Item 3 -					
26	Bid Item 4 -					
27	Bid Item 5 -					
28	Bid Item 6 -					
29						
30	<b>Total Bid Items 1-6</b>	<b>\$33,148</b>	<b>\$23,158</b>	<b>\$2,631</b>	<b>\$77,779</b>	<b>\$77,779</b>

# Construction Documents Milestone Review #4

- **Submit for Team and QA review and approval 100% Draft Construction Documents**
  - Submit the following documents for review:
    - Construction Drawings
    - Construction Specifications
    - Class A Construction Cost Estimate
    - Contract Price Schedule or Construction Bid Schedule
    - Final Product File
    - List of Required Submittals
    - List of Operation and Maintenance (O&M) Requirements
    - Design Calculations

A	B	C	D
1	Milestone	DENVER SERVICE CENTER	MONO 77563
2	PD_SD_DD_CD_CD_FINAL_X	Quality Assurance Review	
3			
4	Project Title: Relocate Flood Prone V.C.	Project Manager: Patrick MacDonald	Phone No.: 303.987.6621
5	Construction FY: 2005	Project Specialist: Jack Cook	Phone No.: 303.959.2486
6	A/E: LDR/HHTB	A/E's Project Manager: Scott Scarfone	Phone No.: 301.543.1035
7	Due Date: 01/20/04	Drawing Number: 894/41006A	
Remarks/Special Instructions: 52.236-23 Responsibility of the Architect-Engineer Contractor.			
10 RESPONSIBILITY OF THE ARCHITECT-ENGINEER CONTRACTOR (APR 1984)			
11 (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.			
12 (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 be and 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.			
13 Quality Assurance review comments shall apply to all issues throughout the review set that have either identical or similar concerns. No attempt is made to identify all occurrences. The contractor's own Quality Control shall insure that these review comments are thoroughly resolved prior to any subsequent submittals.			
14			
15			
16 ROUTING INFORMATION (route only to marked boxes):			
17	Discipline	Summary Comments	
18	<input checked="" type="checkbox"/> Civil Engineering (CE)		
19	<input checked="" type="checkbox"/> Landscape Architecture (LA)		
20	<input checked="" type="checkbox"/> Architecture (AR)		
21	<input checked="" type="checkbox"/> Preservation Architecture (PA)		
22	<input checked="" type="checkbox"/> Structural Engineering (SE)		
23	<input checked="" type="checkbox"/> Mechanical Engineering (ME)		
24	<input checked="" type="checkbox"/> Electrical Engineering (EE)		
25	<input checked="" type="checkbox"/> Roofing/Waterproofing (RW)		
26	<input checked="" type="checkbox"/> Safety Engineer (SF)		
27	<input checked="" type="checkbox"/> Constructability (CN)		
28	<input checked="" type="checkbox"/> Survey (SU)		
29	<input checked="" type="checkbox"/> Lighting (LT)		
30	<input checked="" type="checkbox"/> I&PS-10 (ET)		

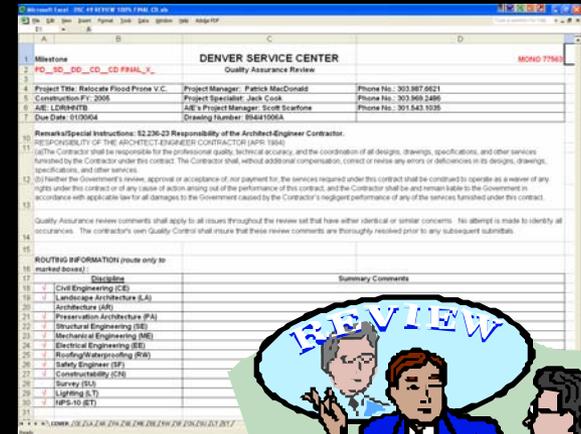




# Construction Documents

## Final Submittal

- **Submit Final Construction Documents**
  - Upon final approval of documents submitted at Review #5, submit the following documents for construction contracting and NPS archiving:
    - Construction Drawings
    - Divisions 1 through 16 Construction Specifications
    - Contract Price Schedule or Construction Bid Schedule
    - Final Class A Construction Cost Estimate
    - Final Constructability Checklist
    - Final List of Required Submittals
    - Final List of Operation and Maintenance (O&M) Requirements



# Construction Documents Quality Assurance Tracking

Microsoft Excel - TRACKING FORM.xls

File Edit View Insert Format Tools Data Window Help Addtge PDF

Track a question for help

QUALITY ASSURANCE REVIEW TRACKING FORM

1/9/2004

PARK	PMIS/PKG	DUE DATE	DISCIPLINE	REVIEWER	IN		SD		DD		CD DRAFT		CD FINAL	
					IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	ACCEPT
GATE	147-D	12/17/2003	PAR	SNOW	12/09	12/09								
BRCA	77351	12/23/2003	CE	TORREZ									12/29	Yes
BRCA	77351	12/23/2003	LA	CODY									12/23	Yes
BRCA	77351	12/23/2003	AR	NIETO										
BRCA	77351	12/23/2003	PAR	SNOW									12/17	No
BRCA	77351	12/23/2003	SE	REYNOLDS									12/17	Yes
BRCA	77351	12/23/2003	ME	ROBERTS									1/5	No
BRCA	77351	12/23/2003	EE	SVOBODA									1/5	Yes
BRCA	77351	12/23/2003	SF	OLSON									12/17	Yes
BRCA	77351	12/23/2003	RW	TOMKA									12/22	No
BRCA	77351	12/23/2003	EST	MERRICK										
BRCA	77351	12/23/2003	SURV	ROBERSON										
BRCA	77351	12/23/2003	CONST	JOHNSTON										
BRCA	77351	12/23/2003	NPS-10	SAVAGE									12/22	Yes
ACAD	233	12/8/2003	PAR	SNOW									12/04	12/04
ACAD	233	12/8/2003	SE	REYNOLDS									12/08	12/08
HAMP	77437/13403	12/29/2003	PAR	SNOW					12/15	12/15				
HAMP	77437/13403	12/29/2003	ME	ROBERTS					1/5	1/6				
HAMP	77437/13403	12/29/2003	EE	SVOBODA										
HAMP	77437/13403	12/29/2003	SF	OLSON					12/17	12/17				
HAMP	77437/13403	12/29/2003	EST	MERRICK										
HAMP	77437/13403	12/29/2003	EST/T	SAIS										
HAMP	77437/13403	12/29/2003	CONST	JOHNSTON										
HAMP	77437/13403	12/29/2003	NPS-10	SAVAGE										
FOWA	21174	12/15/2003	PAR	SNOW	12/15	12/15								
APIS	19687	ASAP	PAR	SNOW					12/16	12/16				
APIS	19687	ASAP	SE	REYNOLDS					12/16	12/16				
APIS	19687	ASAP	EE	SVOBODA										
APIS	19687	ASAP	LA	CODY										
APIS	19687	ASAP	SF	OLSON					12/16	12/16				
APIS	19687	ASAP	RW	TOMKA					12/16	12/16				
APIS	19687	ASAP	CE	TORREZ					12/17	12/17				

Microsoft Excel - QUALITY ASSURANCE LOG

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QUALITY ASSURANCE LOG

1/9/2004

NO	CONST .FY	PARK	PMIS	PHASE	Date Received	Date Due	Date Out	CE	LA	AR	PAR	SE	ME	EE	SF	RW	EST	EST/T	SURV	CONST	SEISMIC	COMPLIN	COMPLC	COMPL	NPS-10	LT		
1																												
2																												
3																												
4																												
5	1	BOST	108	DD	11/18/2003	11/28/2003	11/28/2003	X	X	X	X	X	X	X	X													
6	2	FIS	14861	CD	12/2/2003	12/15/2003		X	X	X	X	X	X	X	X													
7	3	WEFA	21523	DD	12/2/2003	1/9/2004		X	X	X	X	X	X	X	X													
8	4	BOST	119.5	DD	12/2/2003	12/5/2003		X	X	X	X	X	X	X	X													
9	5	GATE	147-D	PD	12/3/2003	12/17/2003					X	X	X	X	X													
10	6	BRCA	77351	CD FINAL	12/4/2003	12/23/2003		X	X	X	X	X	X	X	X													
11	7	ACAD	233	CD	12/4/2003	12/8/2003					X	X	X	X	X													
12	9	HAMP	17437	DD	12/12/2003	12/29/2003					X	X	X	X	X													
13	9	FOWA	21174	PD	12/15/2003	12/31/2003	12/15/2003				X	X	X	X	X													
14	10	2005	APIS	19687	SD	12/18/2003	ASAP		X	X	X	X	X	X	X													
15	11	2004	GWMP	15852	DD	12/17/2003	1/6/2004		X	X	X	X	X	X	X													
16	12	2005	CRLA	59940	70%CD	12/29/2003	1/12/2004		X	X	X	X	X	X	X													
17	13		CRLA	18053	50%CD	1/5/2004	1/12/2004		X	X	X	X	X	X	X													
18	14		GATE	227	HSR	1/5/2004	1/16/2004		X	X	X	X	X	X	X													
19	15		SACN	8119	85%CD	1/8/2004	1/9/2004		X	X	X	X	X	X	X													
20	16	2005	BOST	16321	100%CD	1/5/2004	1/20/2004		X	X	X	X	X	X	X													
21	17	2004	PUHE	1659	100%CD	1/8/2004	1/20/2004		X	X	X	X	X	X	X													
22	18	2005	MONO	17583	100%CD	1/8/2004	1/30/2004		X	X	X	X	X	X	X													
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• Tracking Form

• Tracking Log

# Construction Documents

## Update Class "A" Estimate

- Update Class "A" Construction Estimate When the Elapsed Time Between Submission and Initiation of Construction Contract Procurement Exceeds Six Months

OSC-22 (6/97)															
Denver Service Center				Estimate By:		M.S./D.S.									
Project: Installation of Fire Sprinkler System Wet				Date:		March 02'									
Park: Big Bend National Park				Reviewed By:		D.S./K.F.									
Package: BIBE 307				Date:		March 02'									
Class "A" Estimate FY 03'				Rev. 12/02'						Mark Ups					
Item No.	Description	Qty.	Unit	Cost/Unit	Cost	Gen. Req 10%	Loc. Factor 5%	Bid Bond 1.5%	Total						
<b>PANTHER JUNCTION</b>															
A	Fire Sprinkler System Wet				\$ -										
1	Housing (40 Units)	59517	sf	\$ 3.50	\$ 208,310	20,830.95	1,041.55	15.62	\$ 230,197.62						
5	Visitor Ctr. & Headquarters	10823	sf	\$ 4.90	\$ 53,033	5,303.27	265.16	3.98	\$ 58,605.11						
					\$ -	-	-	-	\$ -						
B	Fire Service Supply Line				\$ -				\$ -						
1	Supply Line & Trenching with Appendices (assume 50 ft per unit)	2050	lf	\$ 30.00	\$ 61,500	6,150.00	307.50	4.61	\$ 67,962.11						
					\$ -	-	-	-	\$ -						
C	Attic Insulation - Removal and Replacement				\$ -				\$ -						
1	Housing Units (12 new)	42313	sf	\$ 2.00	\$ 84,626	8,462.60	423.13	6.35	\$ 93,518.08						
					\$ -	-	-	-	\$ -						
D	Asbestos Abatement				\$ -				\$ -						
1	Asbestos Abatement	1	ls	\$ 43,500	\$ 43,500	4,350.00	217.50	3.26	\$ 48,070.76						
					\$ -	-	-	-	\$ -						
	<b>Sub-Total</b>														<b>\$ 498,353.68</b>
					\$ -	-	-	-	\$ -						
<b>RIO GRANDE VILLAGE</b>															
A	Fire Sprinkler System				\$ -				\$ -						
1	Housing (3 Units)	4128	sf	\$ 3.50	\$ 14,448	1,444.80	72.24	1.08	\$ 15,966.12						
					\$ -	-	-	-	\$ -						
B	Fire Service Supply Line				\$ -				\$ -						
1	Supply Line, Trenching with Appendices (assume 50 ft per unit)	200	lf	\$ 30.00	\$ 6,000	600.00	30.00	0.45	\$ 6,630.45						
					\$ -	-	-	-	\$ -						
C	Attic Insulation - Removal and Replacement				\$ -				\$ -						
1	Housing (2 Units)	2462	sf	\$ 2.00	\$ 4,924	492.40	24.62	0.37	\$ 5,441.39						
					\$ -	-	-	-	\$ -						
D	Asbestos Abatement				\$ -				\$ -						
1	Asbestos Abatement	1	ls	\$ 1,500.00	\$ 1,500	150.00	7.50	0.11	\$ 1,657.61						
					\$ -	-	-	-	\$ -						
	<b>Sub-Total</b>														<b>\$ 29,695.58</b>
					\$ -	-	-	-	\$ -						

# CONSTRUCTION

## *A Joy and Beauty Forever*

