SECTION IX:

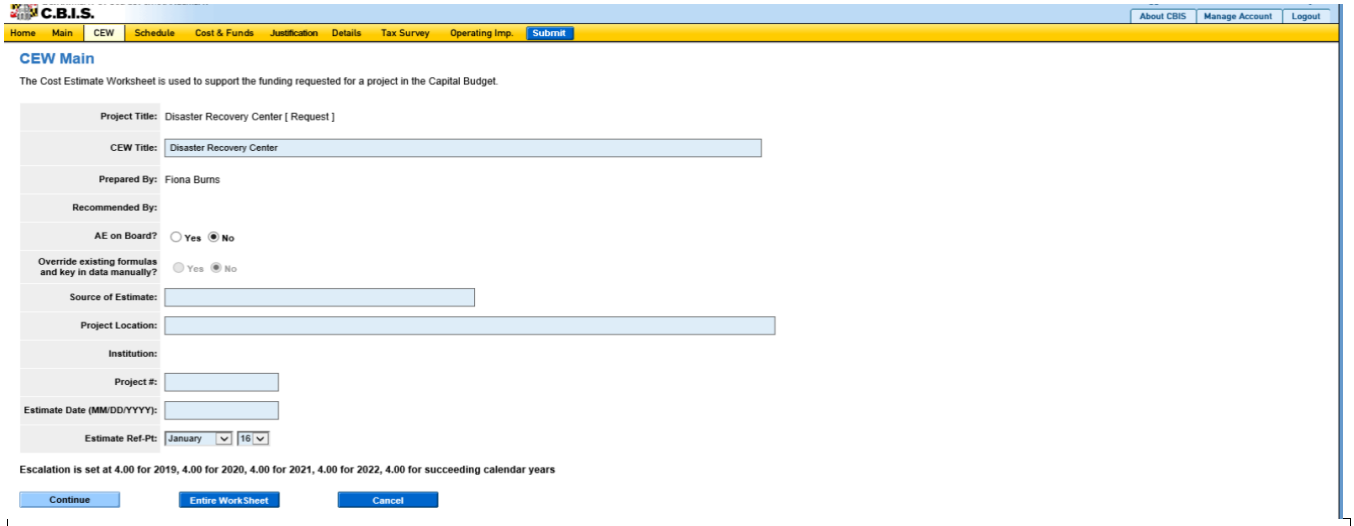
INSTRUCTIONS FOR

COMPLETING A

COST ESTIMATE WORKSHEET

(CEW)

Cost Estimate Worksheet
Main Screen



1. Click "CEW" on the dark-yellow tool bar. CBIS will display a "CEW List" screen.
2. Click "Add" to start a new CEW, and CBIS will display the screen shown above. To edit an existing CEW, click on the appropriate link under "CEW Title." Then, click "Original Requested CEW" on the following screen.

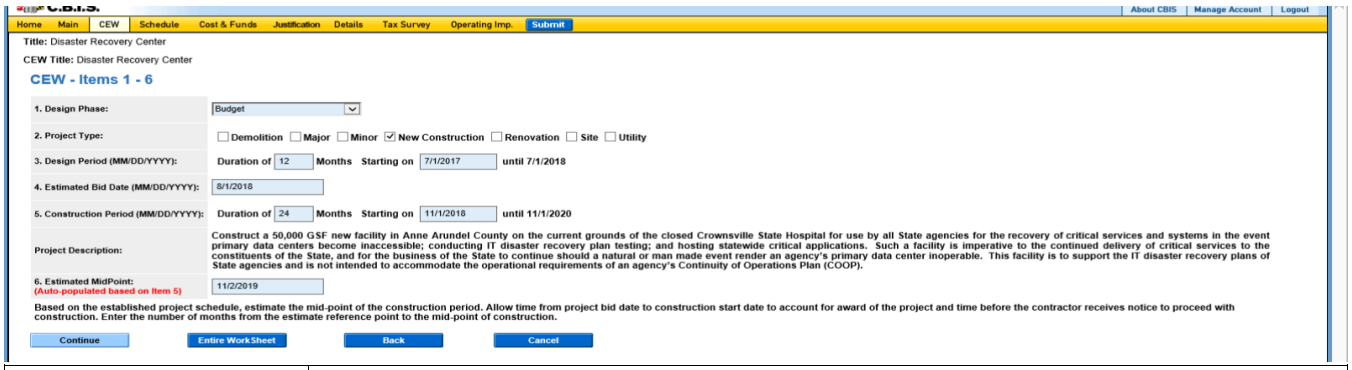
Note: When entering numerical information in grids, DO NOT use commas or decimals unless otherwise stated.

Project Title	**No data entry required.** The field populates automatically with the project title listed in the "Main Information" section of CBIS.
CEW Title	If the project has more than one CEW, enter a distinctive name for the CEW you are working on (e.g. "Phase I").
Prepared By:	**No data entry required.** The name of the individual logged in to CBIS populates automatically.
A/E on Board?	Choose "Yes" if an architect or engineer (A/E) has been hired for the project. Choose "No" if an architect or engineer has not been hired.
Override existing formulas and key in data manually?	Choose "Yes" if you have a cost estimate from your A/E that you will use to complete the CEW. If you do not have a cost estimate from an A/E, choose "No" to use the existing formulas.
Source of Estimate	Enter the name of the source of the cost estimate here. This can be an internal agency cost center, the DGS Cost Center, the project's A/E, or a consultant.
Project Location	Enter the subdivision (county) in which the project is located.
Institution	**No data entry required.** If applicable, this field populates automatically.
Project #	Enter the project number if applicable. DGS assigns a project number after the General Assembly authorizes project funding.
Estimate Date	Enter the date you are entering the CEW information into CBIS in MM/DD/YYYY format.

Cost Estimate Worksheet
Main Screen (Continued)

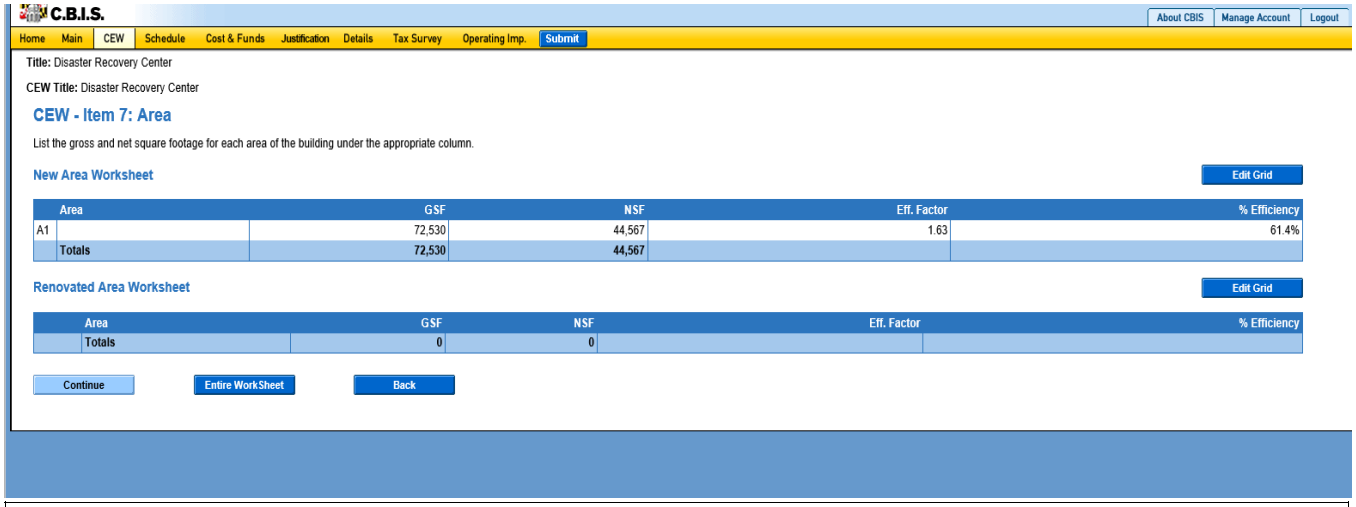
Estimate Reference Point	Enter the Estimate Reference Point. This is the date on the source used to prepare the cost estimates and affects future escalation. The Estimate Reference Point assumes this source is the most recent Means Construction Cost Data, which is released each January. However, in practice DBM does not require agencies to use this data every year. To update a cost estimate, agencies can instead update the Estimate Reference Point to January of the current year, and then apply the prior year's escalation to the project's base costs (Items 8 -10; Structure, Site, and Utilities). This gives you an estimate of the most recent Means Construction Cost Data. Using the Estimate Reference Point to account for escalation varies depending on which of the following situations applies to your project: 1) **Project does not have a cost estimate from an A/E or CM**: If the project does not have a cost estimate from an A/E or CM, update the Estimate Reference Point to January of the current year. Typically, agencies update the Estimate Reference Point and then increase the cost per square foot in Items 8-10 by applying the prior calendar year's escalation factor (9.3% for CY 2019). 2) **Project has a cost estimate from A/E, and you selected "do not override existing formulas"**: The Estimate Reference Point will apply escalation to the project. A/E estimates entered into the CEW must be base costs that do not factor in the A/E's escalation estimate. 3) **Project has a cost estimate from the A/E, and you selected "override existing formulas"**: Because you chose to override existing formulas, the Estimate Reference Point will not affect escalation. The A/E estimates should already factor in the construction schedule and therefore escalation. 4) **Project was bid and has an estimate from the CM**: Do not update the Estimate Reference Point. You should have selected to "override existing formulas", so escalation will not apply. The CM estimate already factors in the construction schedule.

Cost Estimate Worksheet
Items 1 - 6



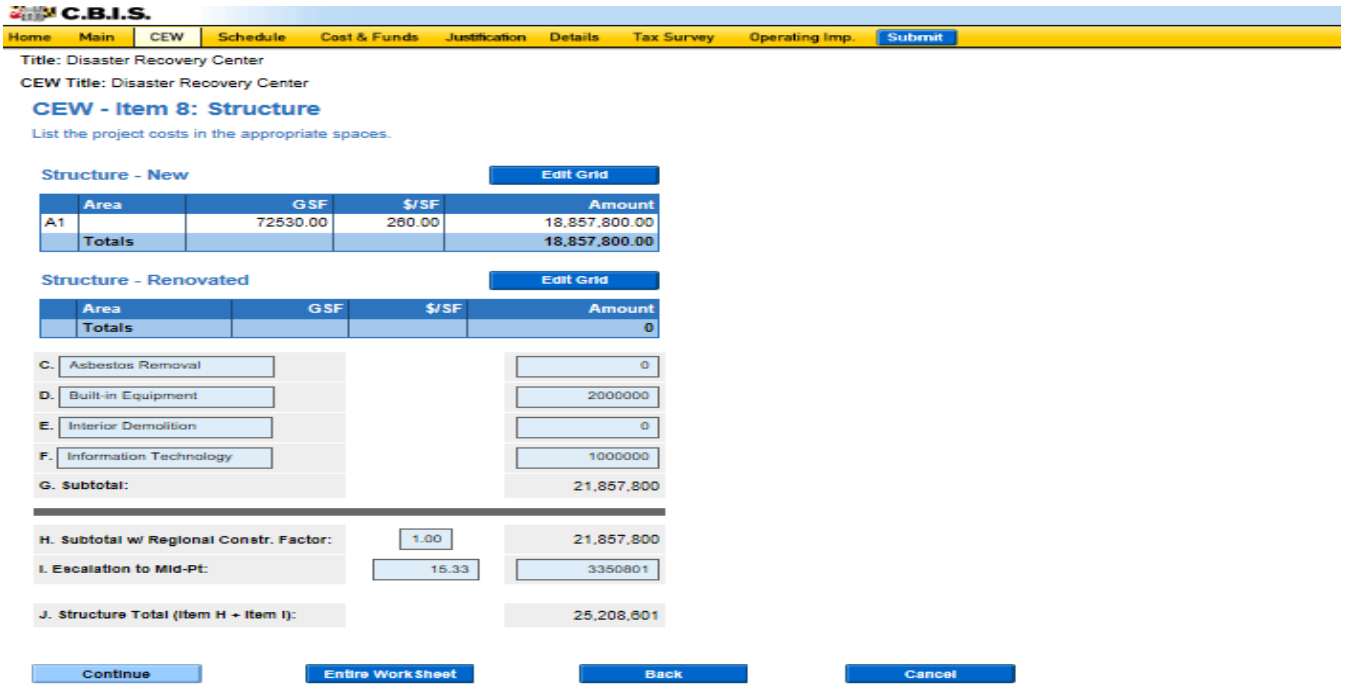
Item 1 **Design Phase**	Select the design phase of the project that the CEW data is based on from the drop-down menu. This will not necessarily be the stage of design that you are currently in. Select "Budget" if this is an initial request or if an A/E has not yet provided a cost estimate. Select "Schematic," "Design Development," or the appropriate phase of "Construction Documents" to reflect the stage of design from which the data is derived.
Item 2 **Project Type**	Check the appropriate box or boxes to indicate the type of project.
Item 3 **Design Period**	Enter the number of months it will take to design the project and the starting date in MM/DD/YYYY format.
Item 4 **Estimated Bid Date**	Enter the estimated bid date in MM/DD/YYYY format.
Item 5 **Construction Period**	Enter the number of months it will take to construct the project and the construction start date in MM/DD/YYYY format.
Project Description	**No data entry required.** The field populates automatically with the project description entered in the "Main" screen.
Item 6 **Estimated MidPoint**	**No data entry required.** CBIS calculates the Estimated MidPoint date automatically based on the established project schedule. The MidPoint date is halfway between the beginning and end of construction and is used by CBIS, along with the Estimate Reference Point, to calculate escalation. **To ensure this field populates correctly for an existing project, delete the existing mid-point after you update the construction period. Do not enter a date manually unless the project has an atypical construction schedule.** Click "Continue." CBIS will display "CEW - Item 7." To verify that the MidPoint auto-populated, click "back" to return to the Items 1-6 screen. To verify that the escalation makes sense, continue to the Item 8 screen and review Item 8I - Escalation to Mid-Pt. Once you have confirmed this information is correct, click "back" to return to the CEW – Item 7" screen.

Cost Estimate Worksheet
Item 7: Area Screen



Click the **Edit Grid** button above the *New Area Worksheet* table.	
Item 7 **New Area Worksheet**	Enter the gross square feet for the major types of space that the building will contain (ex. office suites, kitchen, instructional areas, research labs, etc.). 1. Click "Edit Grid" to enter information or make changes. 2. For each space, enter the type of space under *Area*. Next, enter the gross square feet (GSF) and net square feet (NSF) next to the type of space. CBIS will calculate the efficiency factor automatically. 3. After entering information for each area, click "Save" and confirm that the "Totals" calculated by CBIS are correct. Notes: *This section applies to projects for which there is a defined square footage*. It does not apply to projects, such as infrastructure improvements, that do not have a defined square footage. Efficiency factors should be consistent with instructions in the DGS Procedures Manual. For out-year estimating, use the minimum efficiency factor in the range provided by DGS.
Item 7 **Renovated Area Worksheet**	To enter data for *Renovated Areas*, follow the same data input process as described above for *New Area Worksheet*. Click "Save" and review the information you entered. Then, click "Continue." CBIS will display "CEW - Item 8 - Structure."

Cost Estimate Worksheet
Item 8: Structure Screen

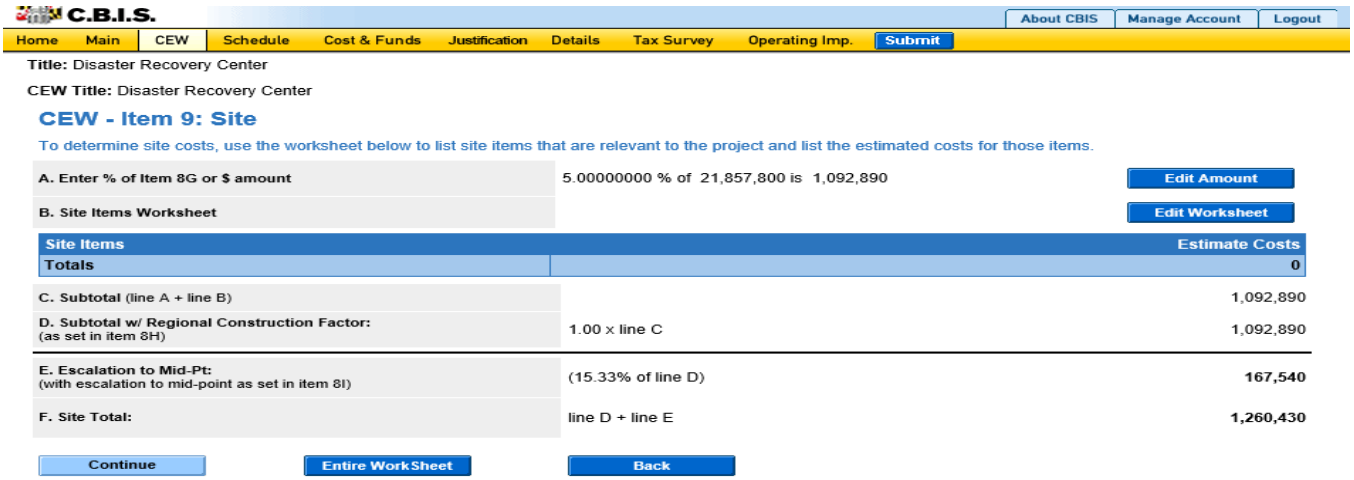


To escalate the cost of projects for which a CEW was created last year, apply the escalation factor for the previous calendar year (9.3% for CY 2019) to Items 8A – 8F as explained in the Estimate Reference Point section.	
Item 8 A Structure - New	Click "Edit Grid" above the "Structure - New" table to enter the cost per square foot. CBIS carries over the Area and GSF in this table from "Item 7 – New Area Worksheet." If you do not know the appropriate cost per square foot, call the DGS Cost Center at 410-767-4397. Click "Save." Note: You may use decimals; however, the printed report will show these costs rounded to the nearest dollar.
Item 8 B Structure - Renovated	Follow the same data input process as described above for "Structure - New," to enter the cost per square foot for renovated areas. CBIS will automatically carry over the Area and GSF in this section from "Item 7 – Renovated Area Worksheet." Click "Save." Note: You may use decimals; however, the printed report will show these costs rounded to the nearest dollar.

Cost Estimate Worksheet
Item 8: Structure Screen (Continued)

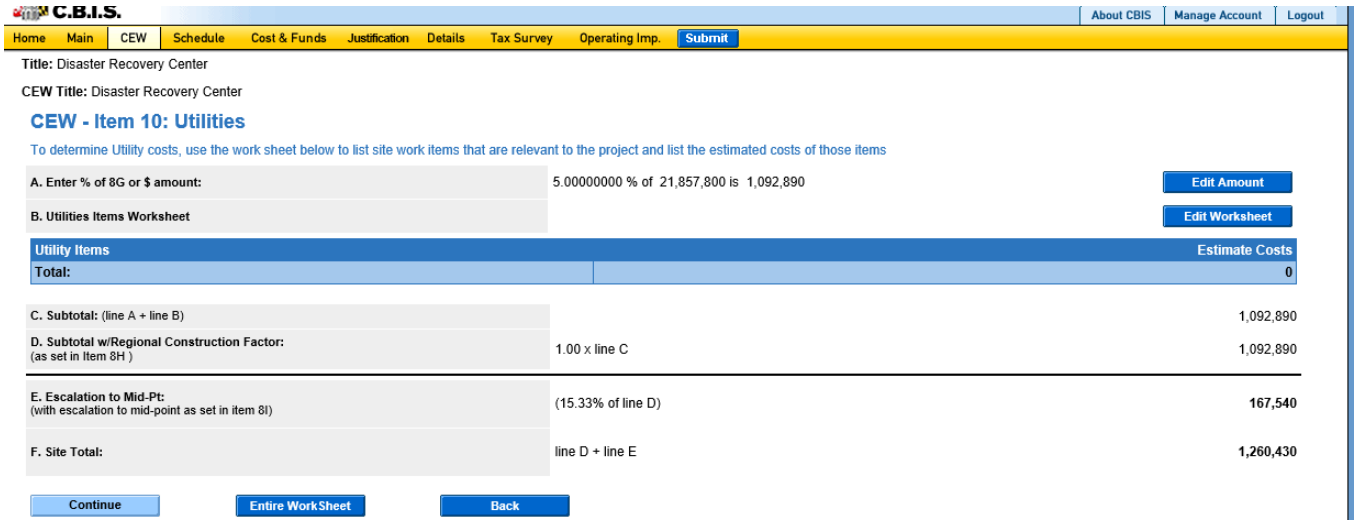
Item 8 C, D, E, and F	These items provide fields for additional entries that are not included in the cost per square foot you entered in the "Structure - New" and/or "Structure - Renovated" fields. The items generally include information technology (list internet connection costs in Item 10), built-in equipment, asbestos abatement, and demolition that are part of general construction. Itemize and list these and similar items directly into fields 8C, 8D, 8E, and 8F. Click "Continue" to save the data and navigate to the next page.
Item 8 G – Subtotal	**No data entry required.** CBIS calculates this field automatically based on the data entered in Items 8A - F.
Item 8 H—Subtotal w/ Regional Construction Factor	If you do not have a cost estimate from an A/E, enter the regional construction factor for the jurisdiction in which the project is located. This factor accounts for variations in the wage rates established by the Department of Labor, Licensing and Regulation as applicable to the 24 subdivisions in Maryland. A/E estimates should be based on market conditions and industry forecasts. Enter a regional construction factor of 1.0 if you have an estimate from an A/E, regardless of the project's location. The regional construction factors are included with the Capital Budget Instructions that are circulated to agencies by the Office of Capital Budgeting in the spring of each year.
Item 8 I—Escalation to Mid-Pt	**No data entry required.** If you responded "No" to the question "Override existing formulas and key in data manually?" in the "Main" screen, CBIS calculates these fields based on the Estimate Reference Point and construction schedule information entered on previous screens. If you responded "Yes" to the question "Override existing formulas and key in data manually? " in the "Main" screen, CBIS will automatically zero this field out.
Item 8 J—Structure Total (Item H + Item I)	**No data entry required**. CBIS calculates this field automatically.

Cost Estimate Worksheet
Item 9: Site Screen



Item 9 A **% of Item 8G**	If you responded "No" to the question "Override existing formulas and key in data manually?" in the "Main" screen, use the default of 5% to calculate the cost of general site conditions. This percentage is multiplied by Item 8G, the Subtotal of the "Structure" costs. • If the default percentage is inadequate, click "Edit Amount," insert the appropriate percentage, and click "Save." You **must** explain how you determined the modified percentage in the "CEW - Notes" screen which follows "CEW - Total" (Items 22-27). If you update costs in Item 8, Item 9A will adjust accordingly. If you responded "Yes" to the question "Override existing formulas and key in data manually?" in the "Main" screen, CBIS will automatically zero this field out. Enter the A/E's estimate as a value and click "Save." • It is not possible to enter a percentage. If you only have a percentage, use it to calculate a value, and enter that value in Item 9A. If you change any costs in item 8, Item 9A will NOT be affected. You must make changes to Item 9A manually.
Item 9 B **Site Items Worksheet**	This grid enables you to break out individual site items (ex. site preparation, landscaping, building demolition, etc.) and costs identified by your A/E instead of combining all site items under Item 9A. You may have atypical site items that are in addition to the 5% general site conditions estimate (Item 9A). In this case, you may enter information into both Items 9A and 9B. To enter individual site items, click "Edit Worksheet" above the "Site Items Worksheet" table. Enter any discrete site work items and their Estimate Costs. To add multiple site items, click "Add New" to make a new entry. Click "Delete" to delete the most recent entry. When you complete all entries, click "Save."
Item 9 C—F **Subtotals and Total**	**No data entry required.** CBIS calculates these fields automatically. Click "Continue." CBIS will display "CEW - Item 10: Utilities."

Cost Estimate Worksheet
Item 10: Utilities Screen



Note: Do not include commas or decimals.	
Item 10A **% of Item 8G**	If you responded "No" to the question "Override existing formulas and key in data manually?" in the "Main" screen, use the default of 5% to calculate the cost for utilities. This percentage is multiplied by Item 8G, the Subtotal of the "Structure" costs. If the default percentage is inadequate, click "Edit Amount," insert the appropriate percentage, and click "Save." You must explain how you determined the modified percentage in the "CEW - Notes" screen which follows "CEW - Total" (Items 22-27). Note: If any costs in Item 8 are changed, Item 10A will adjust accordingly. If you responded "Yes" to the question "Override existing formulas and key in data manually?" in the "Main" screen, CBIS will automatically zero this field out. Enter the A/E's estimate as a value and click "Save." It is not possible to enter a percentage. If you only have a percentage, use it to calculate a value and enter that value in Item 10A. Note: If any costs in item 8 are changed later, Item 10A will NOT be affected, so you must adjust it manually if you want to change it.
Item 10B **Utilities Items Worksheet**	This grid enables you to break out individual utility costs identified by you A/E, instead of combining them into Item 10A. You may have atypical utility items that are in addition to the 5% general utilities estimate (Item 10A). In this case, you may enter information into both Items 10A and 10B . Click "Edit Worksheet" above the "Utility Items" grid. Enter any discrete site work items and their Estimate Cost identified by your A/E. To add multiple site items, click "Add New" to make a new entry. Click "Delete" to delete the most recent entry. When you complete all entries, click "Save." *Internet connection costs: To calculate the cost to connect to the State-owned fiber optic backbone, contact the Department of Information Technology (DoIT) to trace the required fiber optic line from the nearest connection point to the address of the requested project site along existing roadways. Allocate the connection costs in the final year of construction since it takes DoIT approximately six months to connect a site. Refer to DBM's annual capital budget instructions to appropriately account for connectivity costs associated with your projects.
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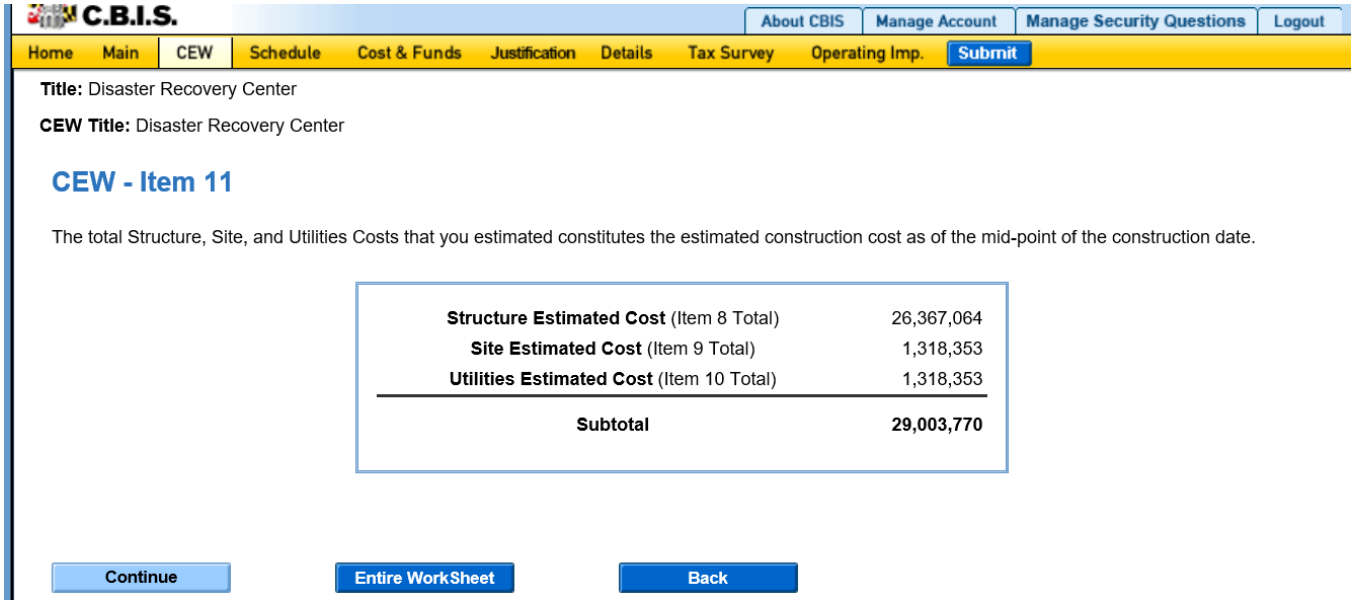
Cost Estimate Worksheet
Item 10: Utilities Screen (Continued)

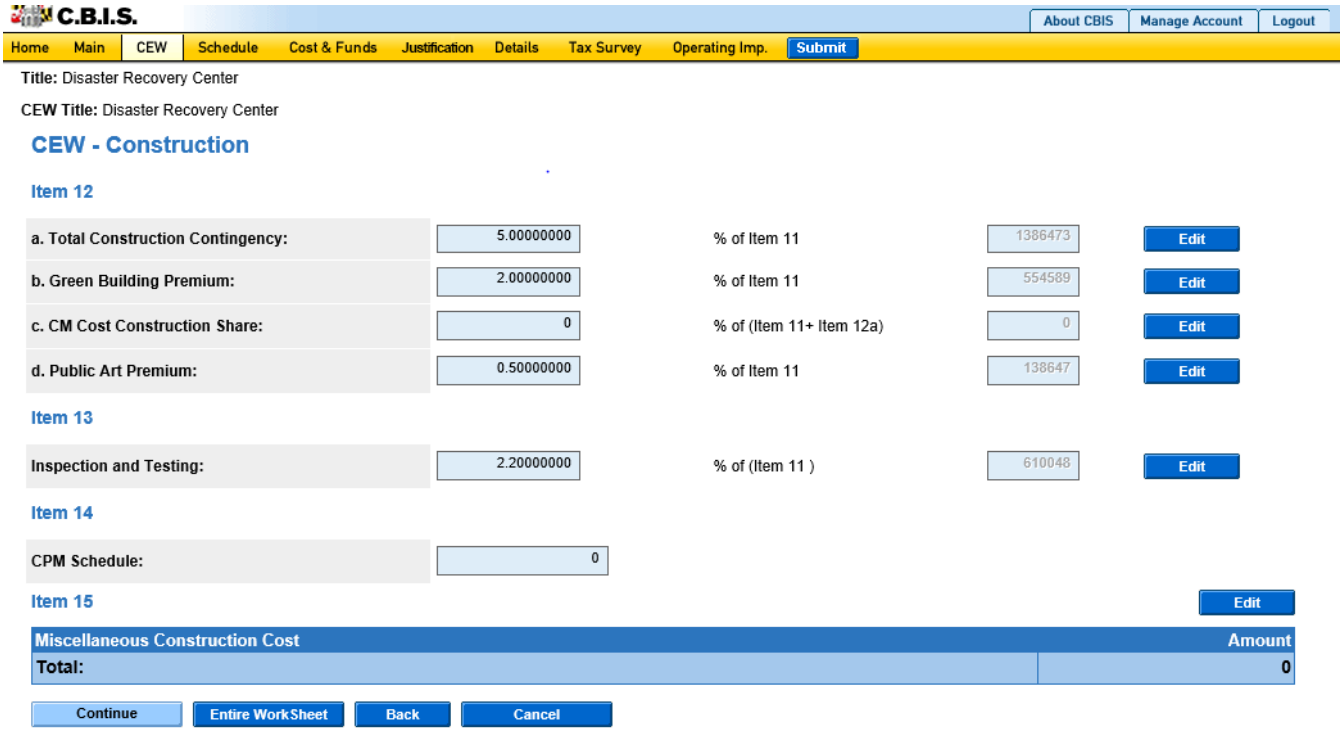
Items 10 C, D, and E Subtotals and Total	**No data entry required.** CBIS calculates these fields automatically. Click "Continue." CBIS will display "CEW - Item 11."

Cost Estimate Worksheet
Item 11 Screen



Item 11 **Subtotal**	**No data entry required.** This screen summarizes and provides a cost subtotal for the estimated costs for "Structure," "Site," and "Utilities." If any of costs appear incorrect, return to the prior screens and make appropriate corrections. Click "Continue." CBIS will display Items 12 - 15, which concern Construction.

Cost Estimate Worksheet
Construction Screen



For items 12a, 12b, 12c, and 13:

If you responded "No" to the question "Override existing formulas and key in data manually?" in the "Main" screen, enter percentage data directly in the fields provided. If you know the specific dollar amount for any of these items, click "Edit" and enter the amount. Click "Save."

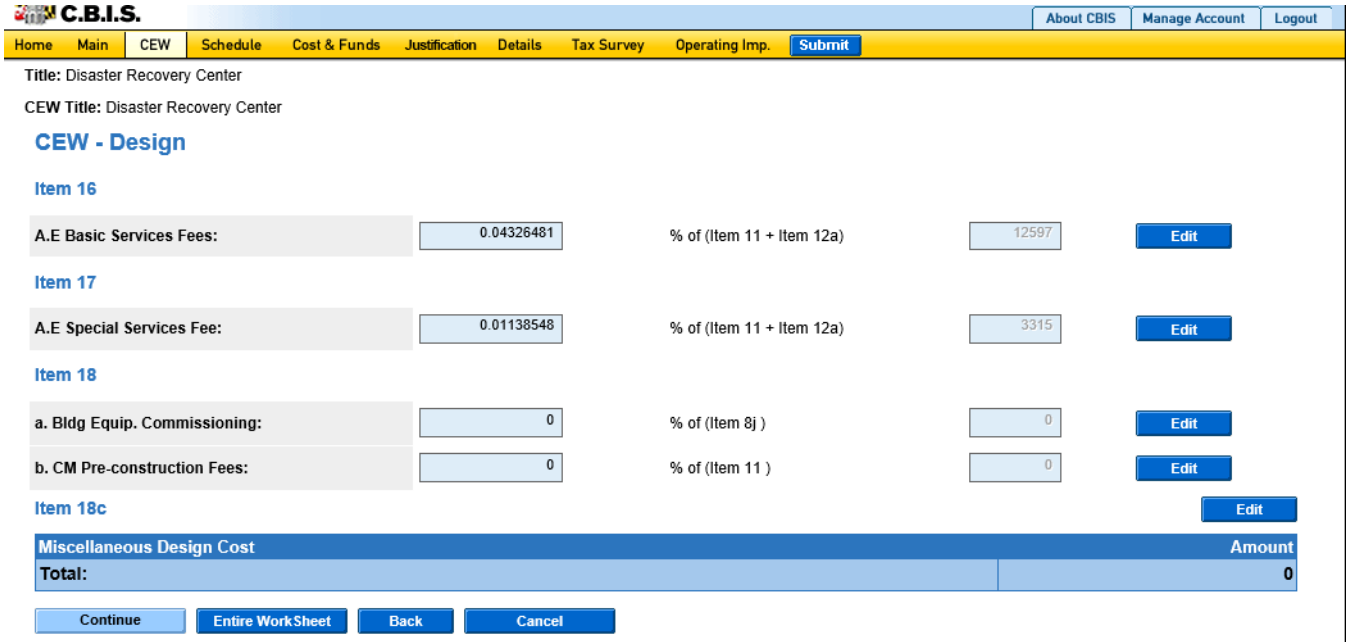
If you responded "Yes" to the question "Override existing formulas and key in data manually?" in the "Main" screen, you cannot enter a percentage. Enter the value by clicking "Edit" and entering the amount. Click "Save."

Item 12a **Construction Contingency**	This funding is a construction contingency for change orders during construction. The contingency amount starts out as 10% of Item 11. When construction funding becomes a budget-year request, reduce the contingency to 5%.
Item 12b **Green Building Premiums**	Include this premium only if the project is at least 7,500 GSF. These funds are for additional costs related to construction of a building associated with green construction practice, which conforms with LEED Silver or International Green Construction Code rating principles outlined by the Maryland Green Building Council. If your project does not meet the GSF threshold, or if you obtained a waiver, delete this percentage. If your base cost estimate already factors in green building costs, delete this item. Otherwise, use the default 2%.

Cost Estimate Worksheet
Construction Screen (Continued)

Item 12c **CM Cost Construction Share**	This item applies only to Higher Education agencies, the Department of Public Safety and Correctional Services, and projects for which DGS approved the use of a construction manager. Other agencies should leave this item blank. Enter 3% of Item 11 + 12A. If you modify this percentage, explain how the modified percentage was determined in the "CEW - Notes" screen which follows "CEW - Total" (Items 22-27).
Item 12d **Public Art Premium**	**If the project is 100% State-funded** and (1) a new construction of at least 15,000 GSF **or** (2) a major renovation of at least 15,000 GSF and includes the replacement of major utilities such as HVAC, electrical, or plumbing, you can include a Public Art Premium of 0.5% of Item 11. This must be used for public art and will be removed from the budget later if not used for public art.
Item 13 **Inspection and Testing**	Enter a percentage or an amount for construction inspection and testing based upon the estimated construction cost. Unless you are advised otherwise, use the rates shown below and apply them against the sum of Item 11 and Item 12a. Expected Construction Cost — Rate 0 - 4,000,000 — 4.6% (0.046) 4,000,000 - 9,000,000 — 3.2% (0.032) 9,000,000 and greater — 2.2% (0.022)
Item 14 **CPM Schedule**	Enter a cost for critical path scheduling. Use $10,000 plus .001 of Item 11 or estimate an allowance. Higher Education agencies should leave this item blank.
Item 15 **Miscellaneous Construction Costs**	Click "Edit" to add any miscellaneous construction-related costs not included in the area, site, or utility estimates (include a reference). Click "Add" to include additional items and their respective amounts. Click "Save" to save your entries. Click "Continue." CBIS will display Items 16, 17, 18a, 18b, and 18c.

Cost Estimate Worksheet
Design Screen



For items 16, 17, 18a, and 18b:

If you responded "No" to the question "Override existing formulas and key in data manually?" in the "Main" screen, enter percentage information directly in the fields provided. If you know the specific amount of any of these items , click "Edit" and enter the specific dollar amount. Click "Save."

If you responded "Yes" to the question "Override existing formulas and key in data manually?" in the "Main" screen, you cannot enter a percentage in the fields provided. Enter the value by clicking "Edit" and entering the amount. Click "Save."

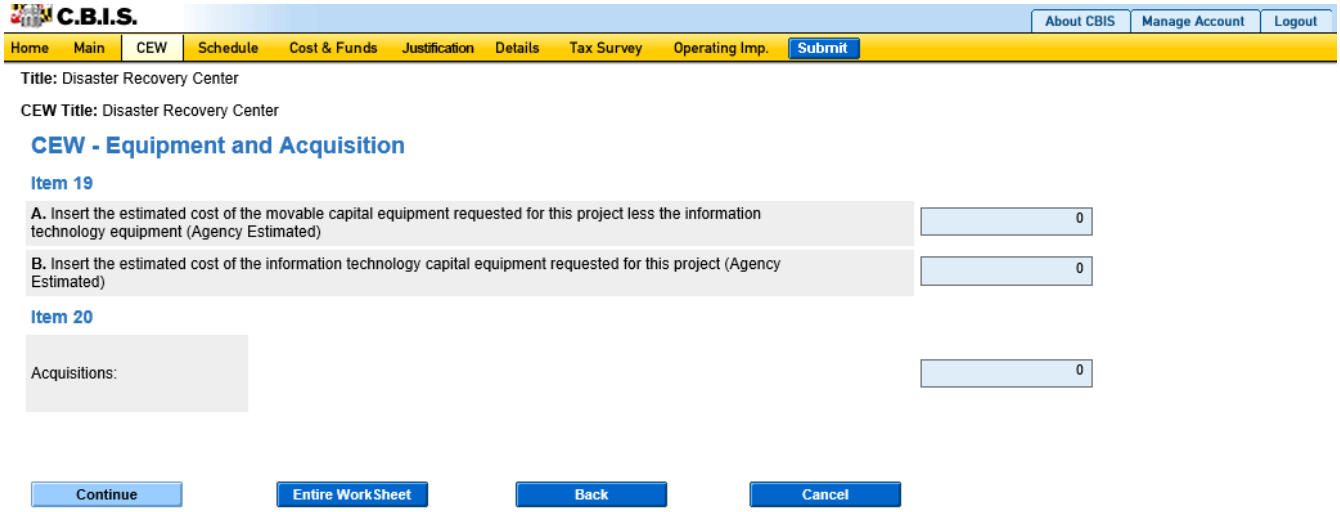
Note: For these items, you must justify fees in excess of the default percentages in the CEW Notes section, after "CEW - Totals" (Items 22-27).

Item 16 **A/E Basic Services Fee**	Enter the dollar amount or percentage of all basic estimated or contracted A/E services fees, including approved change orders for the project as of the date of the estimate. The typical estimated fee should be 7% of Item 11 for new construction and 7.5% for renovation.
Item 17 **A/E Special Services Fee**	Enter the dollar amount or percentage of all estimated or contracted fees for special design services. Examples include special consultants for acoustics, kitchen, telecommunications, museum exhibit design services, special surveys, etc. You may enter either the percentage Item 11 or the dollar amount.
Item 18 A **Building Equipment, Commissioning**	Enter the dollar amount or percentage for commissioning the building. This applies only to buildings with complex mechanical and electrical systems that require specific adjustments, testing, and the training of personnel to operate. The amount should be 1.5% of the cost of the "Structure" (Item 8J).

Cost Estimate Worksheet
Design Screen (Continued)

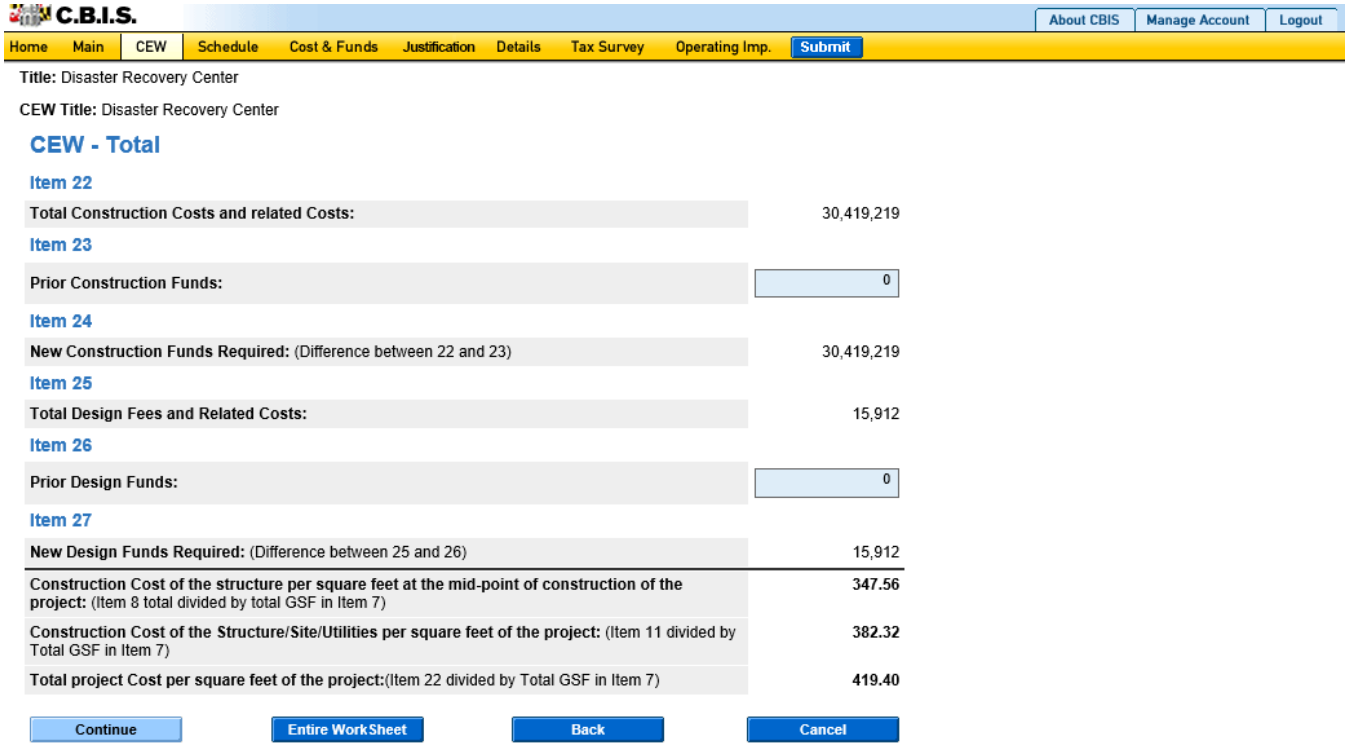
Item 18 B **CM Pre-construction Fees**	This item only applies to Higher Education agencies and the Department of Public Safety and Correctional Services, or for a project for which DGS approved the use of a construction manager. Enter a percentage or the dollar amount for construction management fees that are associated with the design process. The amount should be equal to 1% of Item 11.
Item 18 C **Miscellaneous Design Costs**	Click "Edit." Enter any miscellaneous costs for design (e.g. boundary and archaeological surveys, borings, etc.) that are not included in the A/E Basic or Special Services. Click "Add" to enter additional items. Click "Save" to save your entries. Click "Continue." CBIS will display Items 19 and 20.

Cost Estimate Worksheet
Equipment and Acquisition Screen



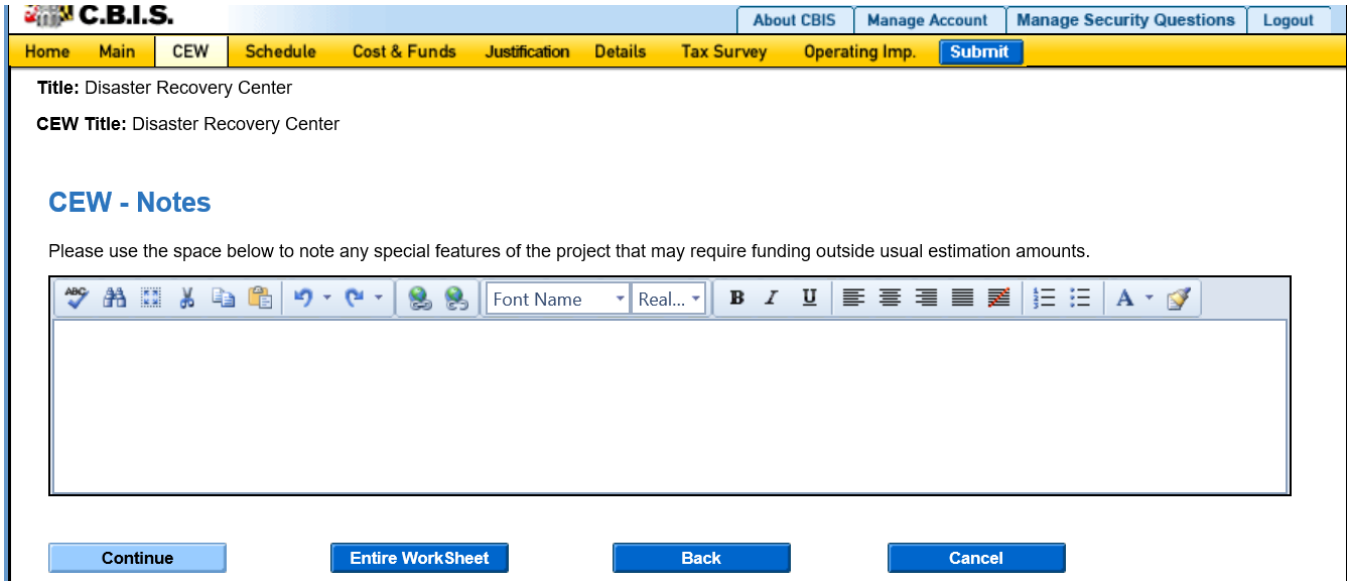
Item 19 A **Movable Capital Equipment**	Enter the estimated cost of capital-eligible movable equipment, less the information technology (IT) and audio visual (AV) equipment required. The capital equipment guidelines are available on the Office of Capital Budgeting's website. <u>Do not</u> include in your cost estimate items that are ineligible for capital funding.
Item 19 B **Information Technology Capital Equipment**	Enter the estimated cost of the IT and AV capital equipment (e.g. voice, video, data, and wireless). Items typically included here are equipment that has a very substantial associated cost, such as an electronic private branch exchange (PBX) that serves a major building or buildings in a facility on a campus, or hub servers that support a complex network of data links. (Refer to Appendix C-1) If the IT work will be handled by a separate vendor contract, then it should also include fiber optic or copper vertical riser distribution cables, cable termination equipment and related wiring in wiring closets or each floor, and wire connecting the wire closet terminations to the wall jacks or other outlets to which telephone stations and computers will be connected that are not installed as part of the general construction contract. <u>Do not</u> include in your cost estimate items ineligible for capital funding.
Item 20 **Acquisition**	Enter the total cost of any acquisitions, including land and property, if applicable.
Item 21 **Not Shown**	**No data entry required.** This field appears only on the CEW report, not the CBIS screen. It shows total project costs calculated by CBIS. Click "Continue." CBIS will display Items 22 - 27.

Cost Estimate Worksheet
Total Screen



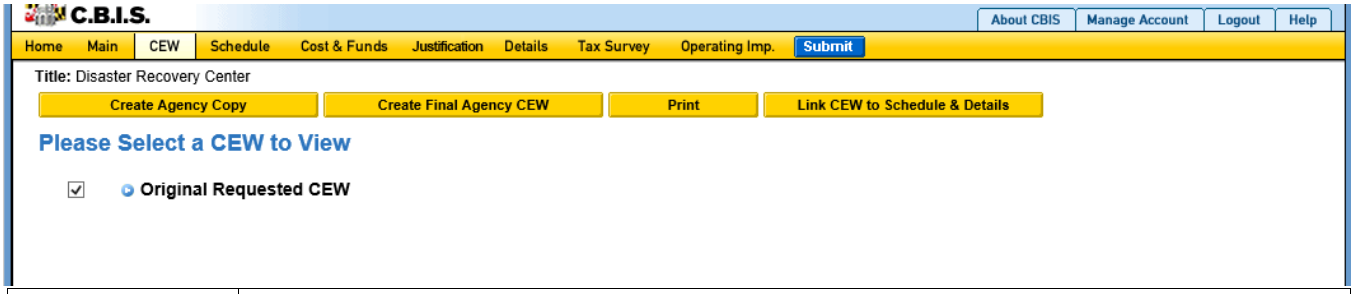
Item 22 Total Construction and Related Costs	**No data entry required.** CBIS populates this field automatically based on previously entered information
Item 23 Prior Construction Funds	Enter the total of all prior construction funds authorized for this project, including non-State fund sources.
Item 24 New Construction Funds Required	**No data entry required.** CBIS populates this field automatically based on previously entered information
Item 25 Total Design Fees and Related Costs	**No data entry required.** CBIS populates this field automatically based on previously entered information.
Item 26 Prior Design Funds	Enter the total of all prior design funds authorized for this project, including non-State fund sources.
Item 27 New Design Funds Required	**No data entry required.** CBIS populates this field automatically based on previously entered information. Click "Continue." CBIS will display a page for notes.

Cost Estimate Worksheet
Notes Screen



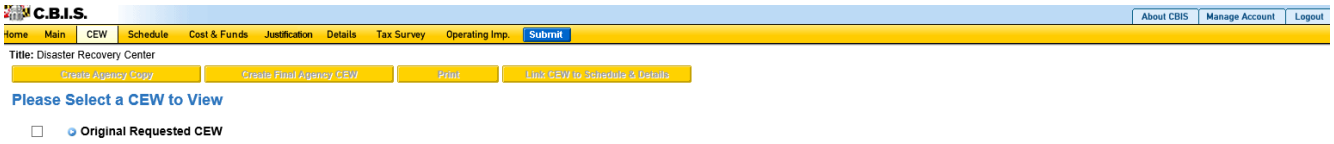
Notes	Explain any unusual costs, such as those that are large, atypical, or fall outside of the fixed percentages normally used to calculate building costs. For existing projects, explain significant variations from the prior year's CEW. Click "Continue." CBIS will display the CEW Summary.

Cost Estimate Worksheet
Create CEW Copy



Create Agency Copy	To create a copy of a previously completed CEW: 1. Click "CEW" in the dark-yellow toolbar. 2. Click on the title of the CEW that you wish to copy. 3. Check the box next to "Original Requested CEW." 4. Click the "Create Agency Copy" button. This will bring you to the "CEW Main" screen of the copied CEW. To make changes to the CEW copy, follow the steps outlined previously to make the desired updates.

Cost Estimate Worksheet
Linking CEW to Schedule and Details Screens



You can link the CEW to the "Schedule" and "Details" screens (for standalone projects) or to the "Details and Scheduling" screen (for projects within programs). This will pull schedule and total NSF/GSF details from the CEW and populate the appropriate fields.	
Link CEW to Schedule & Details	1. Select the CEW you wish to link by clicking in the empty box to the left of the CEW. 2. Click the yellow "Link CEW to Schedule & Details" button. Navigate to the "Schedule" and "Details" or the "Details and Scheduling" screens to verify that the data has populated.