

# Key Factors in Closing Out a Project

*Planning for the Closing Out of a Project*

# Closing Out a Project

## Key Factors:

- Contractual Obligations
- Resources
- Schedule

## Closing Out a Project

### Contractual Obligations

- Contract Provisions
- Plans & Specifications

### Resources

- Project Files / Documents
- Manpower
- Contract Funds

### Schedule

- Durations
- Financial Impact



## Closing Out a Project – Contract Obligations

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### Key Components of Closeout

- TCO / CO Certificates or Substantial Completion
- Punch List
- Start-Up & Testing (Reports)
- Training & Commissioning
- Attic Stock
- As-Builts
- Operation and Maintenance Manuals (O&M's)
- Warranties
- LEED Requirements
- Lien Releases

# Closing Out a Project – Contract Obligations

## Contract Provisions

- TCO / CO Certificate or Substantial Completion
- Punch List
- Lien Releases

## Plans & Specifications

- Start-Up & Testing Reports
- Training / Commissioning
- Attic Stock
- As-Builts
- O&Ms
- Warranties
- LEED Requirements

 **AIA® Document A101™ – 2017**  
*Standard Form of Agreement Between Owner and Contractor where the basis of payment is a Stipulated Sum*

 **AIA® Document A201™ – 2017**  
*General Conditions of the Contract for Construction*

 **AIA® Document G704™ – 2017**  
*Certificate of Substantial Completion*

DOCUMENT 000107	
PROFESSIONAL SEALS PAGES	
<b>INFORMATION PROVIDED TO BIDDERS</b>	
00 31 13.43	Interior Finish Index <ul style="list-style-type: none"> <li>• Interior Finish Schedule</li> </ul>
<b>DIVISION 01 - GENERAL REQUIREMENTS</b>	
01 11 00	Summary of Work
01 26 00	Contract Modification Procedures <ul style="list-style-type: none"> <li>• RFI Form (Leo A Daly)</li> </ul>
01 31 00	Project Management and Coordination
01 33 00	Submittal and Substitution Procedures <ul style="list-style-type: none"> <li>• Substitution Request Form (Leo A Daly)</li> </ul>
01 35 13.21	Special Procedures for Hospitality Projects
01 42 19	Reference Standards
01 45 00	Quality Control <ul style="list-style-type: none"> <li>• Statement of Special Inspections</li> </ul>
01 50 00	Temporary Facilities and Controls
01 58 00	Project Identification
01 60 00	Product Requirements
01 71 23	Field Engineering
01 77 00	Closeout Procedures
01 78 13	Bonds and Warranties
01 78 23	Operation and Maintenance Data
01 78 39	Project Record Documents
01 78 43	Spare Parts
01 79 00	Demonstration and Training
<b>DIVISION 02 - SITEWORK</b>	
<b>DIVISION 03 - CONCRETE</b>	
03 54 13	Gypsum Cement Underlayment
<b>DIVISION 04 - MASONRY</b>	
04 20 00	Unit Masonry
04 72 00	Cast Stone Masonry
04 73 00	Manufactured Stone Masonry
<b>DIVISION 09 - FINISHES</b>	
09 21 16	Gypsum Board Assemblies
09 21 16.23	Gypsum Board Shaft Wall Assemblies
09 24 10	Cement Stucco Plastering
09 30 00	Tiling
09 51 23	Acoustical Tile Ceilings
09 65 00	Resilient Flooring
09 65 66	Resilient Athletic Flooring
09 68 00	Carpeting
09 72 00	Wall Coverings
09 90 00	Painting <ul style="list-style-type: none"> <li>• Paint Schedule Matrix</li> </ul>
09 94 13	Textured Finishing
14 21 23	Electric Traction Passenger Elevators
14 91 33	Laundry and Linen Chutes
<b>DIVISION 31 - SITE WORK</b>	
31 31 00	Soil Treatment

## Closing Out a Project – Contract Provisions

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### **TCO / CO Certificates or Substantial Completion**

- “Work or designated portion is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use”

### **Punch List**

- Predecessor requirement to achieving final completion

### **Lien Releases**

- Release of any future lien rights

### Punch List Evaluation

- Architect vs. General Contractor Punch List
- What is the Punch List process?
- Identify scope holes
- Identify long lead items or potential exposure items
- Monetized Punch List

## Closing Out a Project – Contract Provisions

# Defining the Punch List(s)

(a) It is agreed that the final punch list previously prepared for those portions of the project designed A-D and F Prime dated May 10, 2005 with [REDACTED] Roof Punch List for all building areas included will be deemed the final punch list for those areas and no additional items will be added to the punch list for those areas with the exception of the roof top punch list. The foregoing shall not affect warranty items or defects/deficiencies which arise subsequent to the final punch list or latent defects unknown by Owner or unknowable by the Owner through the exercise of reasonable care.

(b) The Owner agrees that a second punch list will be created for those areas designated E, F and G (with the exception of the roof top punch list that was incorporated as part of the A-D and F Prime Punch List). The timing for the creation of the E, F and G Punch List will be in accordance with Article 9.8 of the Contract.

(c) A third punch list will be created for the site work on the Project and for any other remaining work not included in the punch lists set forth in subparagraphs (a) and (b) above. The timing for the issuance of the site work punch list shall be in accordance with Article 9.8 of the Contract. The foregoing does not relieve the contractor from its obligations to prepare preliminary punch lists.

(d) When the Completing Contractor believes that it has satisfactorily completed any of the punch lists noted in subsection (a) through (c), it will notify the architect's designated representative. Within ten (10) days of that notification the architect will conduct an inspection of the Project to verify whether the punch list items have been satisfactorily completed. Within forty-eight (48) hours after completion of the inspection the architect will update the punch list to remove/strike any completed items.

(e) It is agreed that the architect's field representative, [REDACTED] set forth in Paragraph 7 herein shall have full authority to sign off on completed punch list items.

**How many punch lists?**

**Timing of architect review**

**Who signs off?**



# Closing Out a Project – Contract Provisions

## Punch List: Evaluation Cont.

- Is the Punch List punitive?
- Note LEED® Items
- Excessive Remedial Work



### LEED v4 for BD+C: New Construction and Major Renovation Project Checklist

Project Name:  
Date:

Y	?	N			
			Credit	Integrative Process	1
0	0	0	<b>Location and Transportation</b>		<b>16</b>
			Credit	LEED for Neighborhood Development Location	16
			Credit	Sensitive Land Protection	1
			Credit	High Priority Site	2
			Credit	Surrounding Density and Diverse Uses	5
			Credit	Access to Quality Transit	5
			Credit	Bicycle Facilities	1
			Credit	Reduced Parking Footprint	1
			Credit	Green Vehicles	1
0	0	0	<b>Sustainable Sites</b>		<b>10</b>
Y			Prereq	Construction Activity Pollution Prevention	Required
			Credit	Site Assessment	1
			Credit	Site Development - Protect or Restore Habitat	2
			Credit	Open Space	1
			Credit	Rainwater Management	3
			Credit	Heat Island Reduction	2
			Credit	Light Pollution Reduction	1
0	0	0	<b>Water Efficiency</b>		<b>11</b>
Y			Prereq	Outdoor Water Use Reduction	Required
Y			Prereq	Indoor Water Use Reduction	Required
Y			Prereq	Building-Level Water Metering	Required
			Credit	Outdoor Water Use Reduction	2
			Credit	Indoor Water Use Reduction	6
			Credit	Cooling Tower Water Use	2
			Credit	Water Metering	1
0	0	0	<b>Energy and Atmosphere</b>		<b>33</b>
0	0	0	<b>Materials and Resources</b>		<b>13</b>
Y			Prereq	Storage and Collection of Recyclables	Required
Y			Prereq	Construction and Demolition Waste Management Planning	Required
			Credit	Building Life-Cycle Impact Reduction	5
			Credit	Building Product Disclosure and Optimization - Environmental Product Declarations	2
			Credit	Building Product Disclosure and Optimization - Sourcing of Raw Materials	2
			Credit	Building Product Disclosure and Optimization - Material Ingredients	2
			Credit	Construction and Demolition Waste Management	2
0	0	0	<b>Indoor Environmental Quality</b>		<b>16</b>
Y			Prereq	Minimum Indoor Air Quality Performance	Required
Y			Prereq	Environmental Tobacco Smoke Control	Required
			Credit	Enhanced Indoor Air Quality Strategies	2
			Credit	Low-Emitting Materials	3
			Credit	Construction Indoor Air Quality Management Plan	1
			Credit	Indoor Air Quality Assessment	2
			Credit	Thermal Comfort	1
			Credit	Interior Lighting	2
			Credit	Daylight	3
			Credit	Quality Views	1
			Credit	Acoustic Performance	1
0	0	0	<b>Innovation</b>		<b>6</b>
			Credit	Innovation	5
			Credit	LEED Accredited Professional	1
0	0	0	<b>Regional Priority</b>		<b>4</b>
			Credit	Regional Priority: Specific Credit	1
			Credit	Regional Priority: Specific Credit	1

## Closing Out a Project – Contract Provisions

# Punch List: Exposure Issues



# Closing Out a Project – Contract Provisions

## Insulation Testing Report

R-15 (R-5 Per 1")

7.0 Test Results:

7.1 Product Results 3" Pink Foamular Insulation, 18 Month Sun Exposure

3" Pink Foamular  
Insulation, 18 Month Sun  
Exposure Sample  
Provided

Test Specimen ID	1
Test Duration (minutes)	50
Average heat flux (Btu/hr·ft <sup>2</sup> )	3.323
Average thermal conductance - C (Btu/hr·ft <sup>2</sup> ·°F)	0.068
Average thermal resistance -R (hr·ft <sup>2</sup> ·°F/ Btu)	14.772
Average thermal resistance - R <sub>si</sub> (m <sup>2</sup> ·K/W)	2.602
Apparent thermal conductivity - k (Btu-in/hr·ft <sup>2</sup> ·°F)	0.203
Specimen Average Thickness (inches)	3
†Specimen Average Density (Lbs/Ft <sup>3</sup> )	1.95

14.772

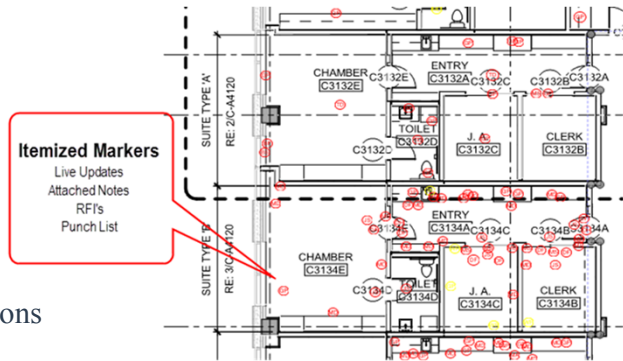
Notes: Due to the nature of this product, emissivity determination per ASTM C1371 is not applicable. A default value of 0.9 will be applied per NFRC 101-2010.  
†The density of the sample was determined by dividing the average weight of the sample by its volume. The weight was measured using a calibrated scale and the volume was determined by measuring the length, width and height of the sample.

# Closing Out a Project – Contract Provisions

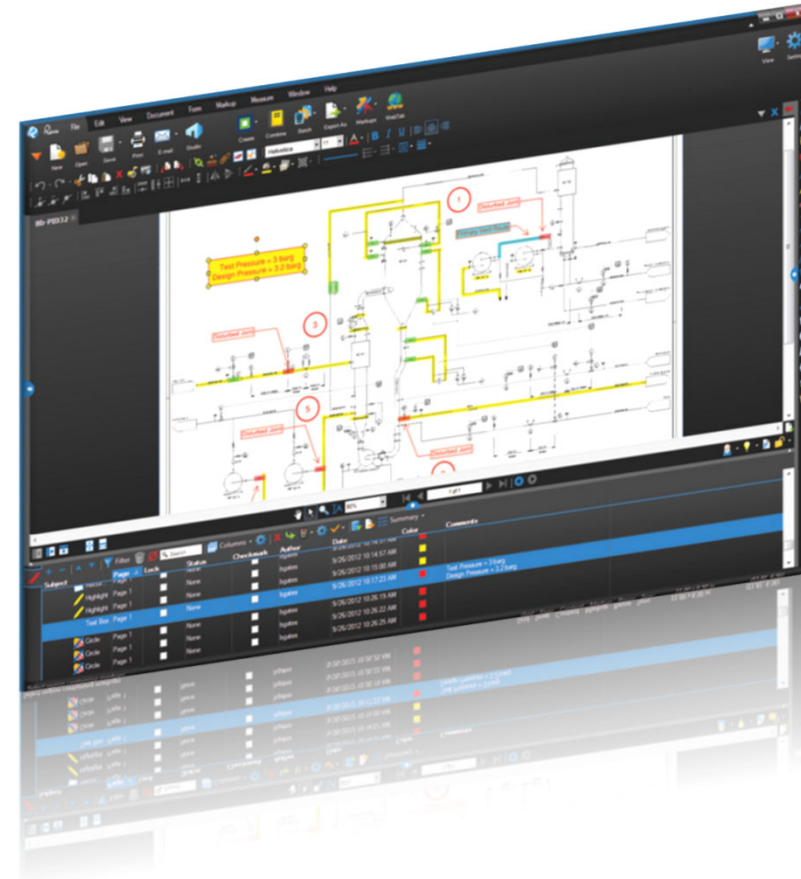
## Bluebeam



- Upload Plans
- Invite Subcontractors
- Markup Areas of Remaining Work
- Subcontractors Update Status
- Locate Photographs to Specific Plan Locations



Subject	Status	Ch.	Author	Date	Color	Comments	Level	Room	R.	Subcontractor	Start Date	Due Date	Zone	Sequence
wR	P	Subcontractor Comple	mmajors	11/12/20		Drywall surface not smooth or damaged, repair	003	C3149C		Four Star			1	4
Group	P	Subcontractor Comple	mmajors	11/12/20		Caulk between wall and window extension needed	003	C3149B		Four Star			1	4
Group	P	Subcontractor Comple	mmajors	11/12/20		Caulk between wall and window extension needed	003	C3149C		Four Star			1	4
Group	P	Subcontractor Comple	mmajors	11/12/20		Caulk between wall and window extension needed	003	C3149D		Four Star			1	4
wR	P	Subcontractor Comple	mmajors	11/12/20		Drywall surface not smooth or damaged, repair	003	C3149B		Four Star			1	4
CD	P	Subcontractor Comple	mmajors	11/12/20		Clean paint overspray off switch cover	003	C3149B		Four Star			1	5
CD	P	Subcontractor Comple	mmajors	11/12/20		Clean paint overspray off crown molding	003	C3149A		Four Star			1	5
TD	P	None	mmajors	9/6/2012		Wood trim damaged, repair	003	C3149B		New World			1	6
MS	P	None	mmajors	9/6/2012		Milbrook, seams visible, touch up	003	C3149B		New World			1	6
MS	P	None	mmajors	9/6/2012		Milbrook, seams visible, touch up	003	C3149B		New World			1	6
Group	P	None	mmajors	9/6/2012		Jamb scratched, damaged, needs to be repaired	003	C3149B		New World			1	12
Group	P	None	mmajors	9/6/2012		Jamb scratched, damaged, needs to be repaired	003	C3149B		New World			1	12
Group	P	None	mmajors	9/6/2012		Jamb scratched, damaged, needs to be repaired	003	C3149B		New World			1	12
DF	P	None	mmajors	9/6/2012		Door finish, damaged, repair	003	C3149B		New World			1	12
Group	P	None	mmajors	9/6/2012		Jamb scratched, damaged, needs to be repaired	003	C3149A		New World			1	12
DH	P	None	mmajors	9/6/2012		Door hardware: missing, install wrong strike	003	C3149A		New World			1	12
DF	P	None	mmajors	9/6/2012		Door finish, damaged, repair	003	C3149A		New World			1	12
MS	P	None	mmajors	9/6/2012		Milbrook, seams visible, touch up	003	C3149A		New World			1	6



# Closing Out a Project – Contract Provisions

## Punch List: Sign off

Source	Number	Location/Drawing	Level	Photo	Comments / Pending Items	Date Complete	Notes	Subco	Item Completed	
									BCBE	OWNER
11/25/13	0.1	General	All		Correct all outstanding waterproofing items per Miami Curtain Wall Report dated 10/29/12.	N/C	2/26: Item is complete per BCBE. 3/10: Need to get confirmation from Mattie Reyes that all work on this list is complete.		02/26/14	
11/25/13	100.14	Elevator Lobby	1	103	Clean white paint off mailboxes.	N/C	2/21: Item completed by BCBE on 2/19/14.			
11/25/13	101.10	Stair 1	1		Door threshold is higher than the allowed 1/2".	N/C	2/21: Exactly 1/2"; BCBE added bead of sealant to create bevel.			
11/25/13	103.2	Pump Room	1		Door 103 needs to be cleaned and touched up	N/C	2/21: Door repainted by BCBE on 2/19/14		02/19/14	02/24/14
11/25/13	106.1	Electrical	1		Clean door.	N/C	2/21: Door repainted by BCBE on 2/19/14			
11/25/13	106.3	Electrical	1		Repair door latch plate. Touch up door and frame, remove tape from door handle.	N/C	2/21: Door repainted by BCBE on 2/19/14 3/10: Door and frame still requires touch up. 3/13: Touched up		02/19/14	02/24/14
11/25/13	107.1	Transformer Vault	1		Room was locked.		2/21: No items.		02/19/14	02/24/14
11/25/13	109.3	Retail 109 J	1	33, 34	Seal metal cover to curb.	N/C	2/21: Complete per BCBE.			
11/25/13	109.6	Retail 109 H	1	37	Electrical conduit installed in knock-out panel needs to be relocated.	N/C	2/21: Tenant space is built out; could not access per BCBE.			
11/25/13	109.1	Retail	1	38	Repair honeycombing on columns, typ.	N/C	2/21: Tenant space is built out; could not access per BCBE.		02/19/14	03/10/14
11/25/13	110.8	Elevator Lobby	1	63	Remove painters tape, clean store front frame.	N/C	2/21: Item completed by BCBE on 2/19/14.			
11/25/13	112.2	Electrical Room	1		Door is missing cover on closer.	N/C	2/21: Item is complete.		02/21/14	
11/25/13	114.2	Garage Entrance	1	22	There is ponding water near corner of room 116 due to insufficient slope to drains.	N/C	2/21: BCBE has previously sawcut and replaced groove to encourage drainage. Action? 3/10: This is considered a maintenance issue.		02/21/14	03/10/14

# Closing Out a Project – Plans & Specs Requirements

## Closeout / Tracking Log

TALLAHASSEE CLOSEOUT MATRIX		D&M Manuals	As-Builts	Test Reports / Misc. Reports	Certificates of Compliance / Product Data / Special Submittals	Warranty Information	Training	Notification Required	Service Organizations	Project Records / Submittals, photos, E.O.C., etc.]	Start-Up/pressing	LEED	Spare Parts / Turnover Items
SPEC SECTION													
GENERAL CONDITIONS	00 80 00.00 06	Special Clauses	4,5, 11, 12	2		3, 7, 9	8, 10	6	1, 13				
	01 32 01.00 06	Project Schedule						NOT APPLICABLE					
	01 33 00	Submittal Procedures						NOT APPLICABLE					
	01 33 29.00 06	LEED Certification									1, 2		
	01 35 26.00 06	Government Safety Requirements						NOT APPLICABLE					
	01 45 01.10 06	USACE Quality Control System (QCS), For Army Reserve Centers (ARCs)						NOT APPLICABLE					
	01 45 04.10 06	Contractor Quality Control						NOT APPLICABLE					
	01 45 35	Special Inspection for Seismic-Resisting Systems			1								
	01 46 00.00 06	Commissioning of Building Energy Systems	5		1, 2, 3		4						
	01 50 00	Temporary Construction Facilities and Controls			1, 2				3				
	01 57 20.00 10	Environmental Protection						NOT APPLICABLE					
	01 57 23	Temporary Stormwater Pollution Control				1		2					
	01 62 35	Recycled/Recovered Materials						NOT APPLICABLE					
	01 74 19	Construction and Demolition Waste Management							1		1		
01 78 23.00 06	Equipment Operating, Maintenance and Repair Manuals	1											
CONCRETE	03 11 19.00 48	Insulated Concrete Forming						NOT APPLICABLE					
	03 33 00	Cast-In-Place Concrete						NOT APPLICABLE					
	03 45 00	Precast Architectural Concrete						NOT APPLICABLE					
	03301	Portland Cement Concrete						NOT APPLICABLE					
MASONRY	04 20 00	Masonry	1								2		
	04 21 12.13	Nonbearing Masonry Veneer/Steel Stud Walls									1		
METALS	05 12 00	Structural Steel						NOT APPLICABLE					
	05 21 19	Open Web Steel Joist Framing									1		
	05 30 00	Steel Decks						NOT APPLICABLE					
	05 40 00	Cold-Formed Metal Framing						NOT APPLICABLE					
	05 50 13	Miscellaneous Metal Fabrications						NOT APPLICABLE					
WOOD & PLASTICS	06 10 00	Rough Carpentry	1								2		

## Closing Out a Project – Plans & Specs Requirements

# Start-Up & Testing

- Pipe camera inspections
- Pressure Testing
- Generator load testing
- Initial Diversion Periods



# Closing Out a Project – Plans & Specs Requirements

## Training / Commissioning

### 3.7 TRAINING OF OWNER PERSONNEL

- A. The GC shall be responsible for training coordination and scheduling and ultimately for ensuring that training is completed.
- B. The CA shall be responsible for overseeing and approving the content and adequacy of the training of Owner personnel for commissioned equipment.
  - 1. The CA shall interview the facility manager and lead engineer to determine the special needs and areas where training will be most valuable. The Owner and CA shall decide how rigorous the training should be for each piece of commissioned equipment. The CA shall communicate the results to the contractor and vendors who have training responsibilities.
  - 2. In addition to these general requirements, the specific training requirements of Owner personnel by contractor and vendors is specified in Divisions 22, 23, and 26.
  - 3. Each contractor and vendor responsible for training will submit a written training plan to the CA for review and approval prior to training. The plan will cover the following elements:
    - a. Equipment (included in training)
    - b. Intended audience
    - c. Location of training
    - d. Objectives
    - e. Subjects covered (description, duration of discussion, special methods, etc.)
    - f. Duration of training on each subject
    - g. Instructor for each subject
    - h. Methods (classroom lecture, video, site walk-through, actual operational demonstrations, written handouts, etc.)
    - i. Instructor and qualifications

### 1.8 SYSTEMS TO BE COMMISSIONED

- A. The following checked systems are to be commissioned.

- |  |  |
|--|--|
| <input type="checkbox"/> HVAC Equipment and System   | <input type="checkbox"/> Electrical Equipment and System           |
| <input type="checkbox"/> Variable Speed Drives   | <input type="checkbox"/> Power Distribution System                 |
| <input type="checkbox"/> Hydronic Piping systems   | <input type="checkbox"/> Lighting Control Systems                  |
| <input type="checkbox"/> HVAC Pumps  | <input type="checkbox"/> Lighting Control Programs                 |
| <input type="checkbox"/> Boilers   | <input type="checkbox"/> Engine Generators                         |
| <input type="checkbox"/> Chemical Treatment System   | <input type="checkbox"/> Transfer Switches                         |
| <input type="checkbox"/> Air Cooled Condensing Units   | <input type="checkbox"/> Switchboard                               |
| <input type="checkbox"/> Makeup Air Systems  | <input type="checkbox"/> Panelboards                               |
| <input type="checkbox"/> Air Handling Units  | <input type="checkbox"/> Grounding                                 |
| <input type="checkbox"/> Underfloor Air Distribution   | <input type="checkbox"/> Fire Alarm and Interface Items with HVAC  |
| <input type="checkbox"/> Centrifugal Fans  | <input type="checkbox"/> Security System                           |
| <input type="checkbox"/> Ductwork  |  |
| <input type="checkbox"/> Fire/Smoke Dampers  |  |
| <input type="checkbox"/> Automatic Temperature Controls – Including an intentional sequence of operation | <input type="checkbox"/> Plumbing System                           |
| <input type="checkbox"/> Laboratory Fume Hoods   | <input type="checkbox"/> Domestic Water Heater                     |
| <input type="checkbox"/> Testing, Adjusting, and Balancing   | <input type="checkbox"/> Air Compressor & Dryer                    |
| <input type="checkbox"/> Building / Space Pressurization   | <input type="checkbox"/> Storm Water Oil / Grit Separators         |
| <input type="checkbox"/> Ceiling Radiant Heating   |  |
| <input type="checkbox"/> Underfloor Radiant Heating  | <input type="checkbox"/> Building Envelope                         |
|  | <input type="checkbox"/> Building Insulation Installation          |
|  | <input type="checkbox"/> Building Roof Installation Methods        |
|  | <input type="checkbox"/> Doors & Windows Installation Methods      |
|  | <input type="checkbox"/> Water Infiltration / Shell Drainage Plain |



# Closing Out a Project – Plans & Specs Requirements

## Attic Stock (Spare Parts)

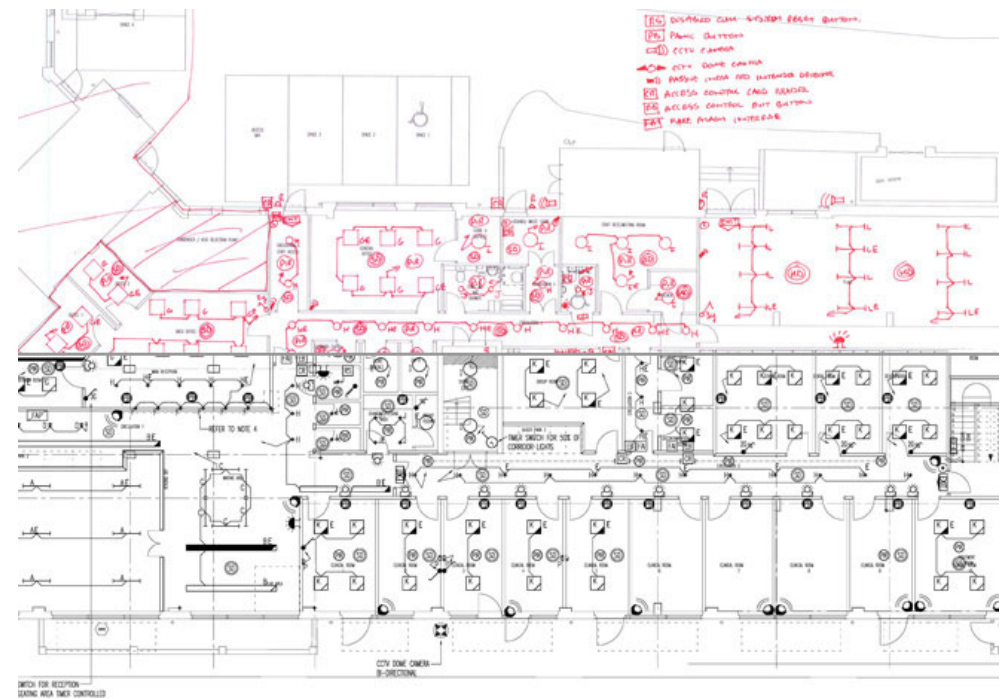
- Project Specific Items
- Sub / Vendor Responsibility
- Lead Times / Availability
- Delivery / Storage
- Warranty Claims / Re-Stock

SPEC SECTIONS	O&M DATA	MAINTENANCE MATERIAL (ATTIC STOCK)	WARRANTIES
<b>DIVISION 09 - FINISHES</b>			
09 30 00 - Tiling	As a part of the Operations and Maintenance Data, include online links for all materials, products, equipment, hardware, tools, meters, gauges, and other parts provided under this Section.	If this material is used for elevator cab flooring, provide enough attic stock to replace entire floor of each elevator cab in project.	None Required
<b>DIVISION 11 - EQUIPMENT</b>			
11 12 00 - Parking Control Equipment	As a part of the Operations and Maintenance Data, include online links for all materials, products, equipment, hardware, tools, meters, gauges, and other parts provided under this Section.	Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents. Furnish two (2) extra breakaway gate arms for each gate installed, complete with accessory components.	None Required
<b>DIVISION 21 - FIRE SUPPRESSION</b>			
21 13 13 - Automatic Sprinkler and Standpipe Systems	As a part of the Operations and Maintenance Data, include online links for all materials, products, equipment, hardware, tools, meters, gauges, and other parts provided under this Section. In addition, provide: 1) Records of Inspections, Testing, and Maintenance Reports per NFPA 13 and 35. 2) Literature and Instructions.	Furnish and install steel, spare sprinkler head cabinets for each type of head used. Include quantities in accordance with NFPA but not less than 10% or six (6) heads and escutcheons for each type used. Locate cabinets as directed by Owner. Also include two (2) sprinkler head shut-off tools, located as directed by Owner.	None Required

## Closing Out a Project – Plans & Specs Requirements

# As-Builts

- What is required?
  - Hard Copies vs. Digital
  - Number of Sets
  - AutoCad vs. PDF
  - Overlay vs. Individual Trades
  - Out-of-Date Formats
- Cost to Recreate



# Closing Out a Project – Plans & Specs Requirements

## O & M Manuals

Source	Number	Section	Name	Description	Status	Date Received	Comments	Subcontractor	Item Completed	
									BCBE	OWNER
O&M 2/27/14	18	15837	Centrifugal Fans	Operation and Maintenance Data: For centrifugal fans to include in emergency, operation, and maintenance manuals.	Pending		3/3: Item was previously "N/A" on 2/4/14 list.		Closed	Closed
O&M 2/27/14	19	15838	Power Ventilators	Operation and Maintenance Data: For power ventilators to include in emergency, operation, and maintenance manuals.	Pending		3/3: Item was previously "N/A" on 2/4/14 list.		Closed	Closed
O&M 2/27/14	20	15861	Particulate Air Filtration	Operation and Maintenance Data: For each type of filter and rack to include in emergency, operation, and maintenance manuals.	Pending		3/3: Item was previously "N/A" on 2/4/14 list.		Closed	Closed
O&M 2/4/14	21	16060	Grounding and Bonding	Operation and Maintenance Data: For grounding to include the following in emergency, operation, and maintenance manuals: 1.) Instructions for periodic testing and inspection of grounding features at test wells ground rings grounding connections for separately derived systems based on NETA MTS NFPA 70B. a.) Tests shall be to determine if ground resistance or impedance values remain within specified maximums, and instructions shall recommend corrective action if they do not. b.) Include recommended testing intervals.	Incomplete	3/7/2013	Missing testing instructions. --- 2/27/14 Update: Provide table of contents/index and organize manuals into 3 ring binder. Missing testing instructions. --- 3/10/14 Update: Missing testing instructions.			
O&M 2/27/14	22	16140	Wiring Devices	Operation and Maintenance Data: For wiring devices to include in all manufacturers' packing label warnings and instruction manuals that include labeling conditions.	Incomplete	1/9/2013 3/7/2013	Provide table of contents/index and organize manuals into 3 ring binder 3/3: Item was previously "received" on 2/4/14 list.		Closed	Closed
O&M 2/4/14	23	16145	Lighting Control Devices	Operation and Maintenance Data: For each type of product to include in emergency, operation, and maintenance manuals. Field quality test reports.	Pending		2/21: Submitted to City per BCBE. --- 3/10/14 Update: Pending			
O&M 2/27/14	24	16211	Electricity Metering	Operation and Maintenance Data. In addition to items specified in Division 1 Section "Operation and Maintenance Data," include the following: 1.) Application and operating software documentation. 2.) Software licenses. 3.) Software service agreement. 4.) Hard copies of manufacturer's operating specifications, design user's guides for software and hardware, and PDF files on CD.	Incomplete	1/9/2013 3/7/2013	Provide table of contents/index and organize manuals into 3 ring binder 3/3: Item was previously "received" on 2/4/14 list.		Closed	Closed

## Closing Out a Project – Plans & Specs Requirements

# Warranties

- Warranty Start Dates and Duration
- Subcontractor Warranties
- Manufacturer Warranties
- Warranty Claim Administration



# Warranty Language (Takeover Agreement)

### Define the warranty periods

In addition to the foregoing, and with the exception of HVAC work, the security system, and improperly installed or improperly modified doors, the Owner agrees that the warranty requirements under the Original Contract with respect to Sections A, B, C, D and F prime commenced on March 3, 2005 and that the warranty requirements for Sections E, F and G will begin when those Sections are deemed substantially complete.

The warranty requirements for the remaining portions of the job will commence in accordance with the Original Contract documents.

10. The Owner agrees that the total liability of [REDACTED] under this Agreement and under the Performance Bond is limited to and shall not exceed the bond penalty of the Performance Bond. All payments made by [REDACTED] for performance of work, payment of damages or otherwise, shall be credited against the bond penalty of the

# Closing Out a Project – Plans & Specs Requirements

## LEED Requirements



Y		?		N		Credit		Integrative Process		1	
0		0		0		0		<b>Location and Transportation</b>		<b>16</b>	
Credit		LEED for Neighborhood Development Location		16		Credit		Sensitive Land Protection		1	
Credit		High Priority Site		2		Credit		Surrounding Density and Diverse Uses		5	
Credit		Access to Quality Transit		5		Credit		Bicycle Facilities		1	
Credit		Reduced Parking Footprint		1		Credit		Green Vehicles		1	
0		0		0		0		<b>Sustainable Sites</b>		<b>10</b>	
Y		Prereq		Construction Activity Pollution Prevention		Required		Site Assessment		1	
Credit		Site Development - Protect or Restore Habitat		2		Credit		Open Space		1	
Credit		Rainwater Management		3		Credit		Heat Island Reduction		2	
Credit		Light Pollution Reduction		1		0		0		0	
0		0		0		0		<b>Water Efficiency</b>		<b>11</b>	
Y		Prereq		Outdoor Water Use Reduction		Required		Indoor Water Use Reduction		Required	
Y		Prereq		Building-Level Water Metering		Required		Outdoor Water Use Reduction		2	
Credit		Indoor Water Use Reduction		6		Credit		Cooling Tower Water Use		2	
Credit		Water Metering		1		0		0		0	
0		0		0		0		<b>Energy and Atmosphere</b>		<b>33</b>	
Y		Prereq		Fundamental Commissioning and Verification		Required		Minimum Energy Performance		Required	
Y		Prereq		Building-Level Energy Metering		Required		Fundamental Refrigerant Management		Required	
Credit		Enhanced Commissioning		6		Credit		Optimize Energy Performance		18	
Credit		Advanced Energy Metering		1		Credit		Demand Response		2	
Credit		Renewable Energy Production		3		Credit		Enhanced Refrigerant Management		1	
Credit		Green Power and Carbon Offsets		2		0		0		0	
0		0		0		0		<b>Materials and Resources</b>		<b>13</b>	
Y		Prereq		Storage and Collection of Recyclables		Required		Construction and Demolition Waste Management Planning		Required	
Credit		Building Life-Cycle Impact Reduction		5		Credit		Building Product Disclosure and Optimization - Environmental Product Declarations		2	
Credit		Building Product Disclosure and Optimization - Sourcing of Raw Materials		2		Credit		Building Product Disclosure and Optimization - Material Ingredients		2	
Credit		Construction and Demolition Waste Management		2		0		0		0	
0		0		0		0		<b>Indoor Environmental Quality</b>		<b>16</b>	
Y		Prereq		Minimum Indoor Air Quality Performance		Required		Environmental Tobacco Smoke Control		Required	
Credit		Enhanced Indoor Air Quality Strategies		2		Credit		Low-Emitting Materials		3	
Credit		Construction Indoor Air Quality Management Plan		1		Credit		Indoor Air Quality Assessment		2	
Credit		Thermal Comfort		1		Credit		Interior Lighting		2	
Credit		Interior Lighting		2		Credit		Daylight		3	
Credit		Quality Views		1		Credit		Acoustic Performance		1	
0		0		0		0		<b>Innovation</b>		<b>6</b>	
Credit		Innovation		5		Credit		LEED Accredited Professional		1	
0		0		0		0		<b>Regional Priority</b>		<b>4</b>	
Credit		Regional Priority: Specific Credit		1		Credit		Regional Priority: Specific Credit		1	
Credit		Regional Priority: Specific Credit		1		Credit		Regional Priority: Specific Credit		1	
Credit		Regional Priority: Specific Credit		1		0		0		0	
0		0		0		0		<b>TOTALS</b>		<b>Possible Points: 110</b>	
										Certified: 40 to 49 points, Silver: 50 to 59 points, Gold: 60 to 79 points, Platinum: 80 to 110	

## **Closing Out a Project – Resources**

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### **Project Files / Documents**

- Organization
- Completeness

### **Manpower**

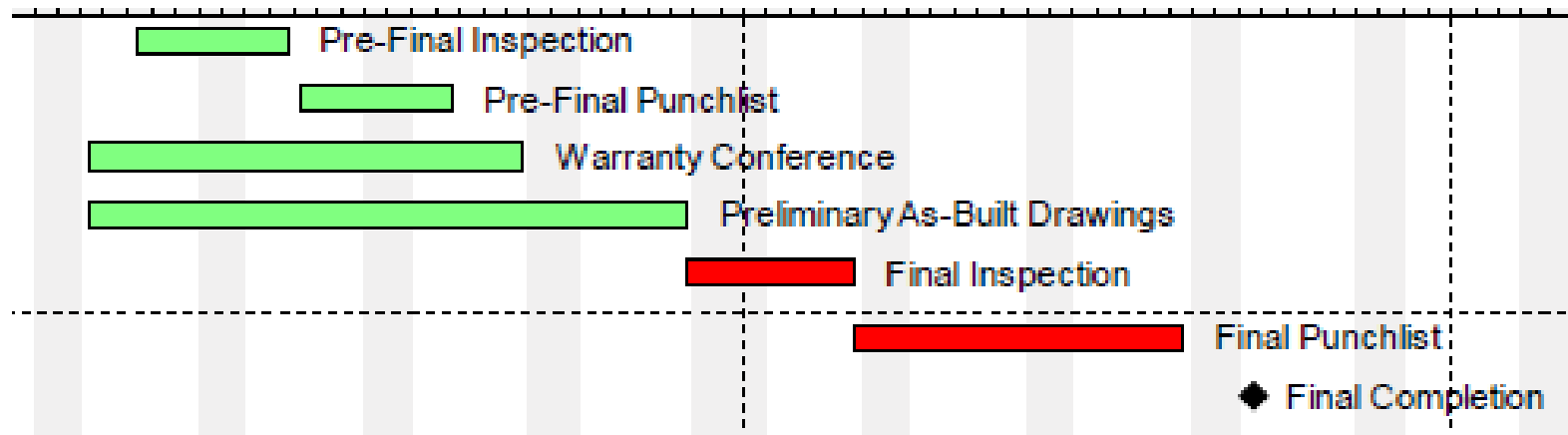
- Turnover
- Availability of knowledgeable personnel

### **Contract Funds / Retention**

- Funds properly / sufficiently withheld

## Closing Out a Project – Schedule

- Architect specified review periods
- Does project phasing impact the closeout?
- Closeout Administration durations





# Closeout Summary

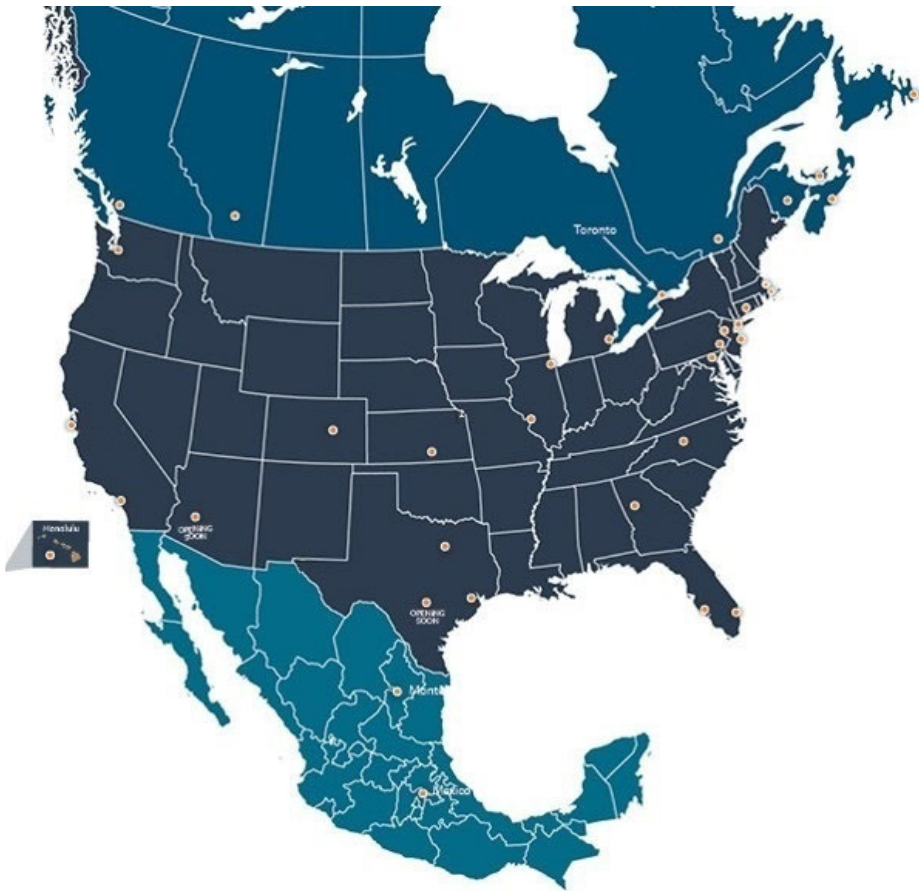
- Understand the Contract Documents
- Identify exposure and long lead Punch List items
- Utilize any and all tools to expedite closeout
- Identify key personnel who will champion closeout
- Beware of hidden costs in closeout items

# Questions / Discussion?

## For More Information

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720.422.9537 (c)  
[jcabello@vertexeng.com](mailto:jcabello@vertexeng.com)

# OFFICE LOCATIONS



## United States

Boston, MA  
Weymouth, MA  
Denver, CO  
Irvine, CA (Los Angeles)  
Santa Rosa, CA (San Francisco)  
Stamford, CT  
Long Island City, NY  
Columbia, MD (DC Metro)  
Aston, PA (Philadelphia)  
Morrisville, NC  
Atlanta, GA  
Bradenton, FL (Tampa)  
Ft. Lauderdale, FL  
Honolulu, HI  
Irving, TX (Dallas)  
Houston, TX  
Chicago, IL  
Wichita, KS  
Novi, MI (Detroit)  
Freehold, NJ  
Branchburg, NJ  
St. Peters, MO (St. Louis)  
Seattle, WA

## Canada

Toronto

## Mexico

Mexico City  
Monterrey