

Chapter 6

CONSTRUCTION

6.01 INTRODUCTION

- A. The Designer's relationship to the Contractor shall be as set forth in the Conditions of the contract for construction.
- B. Refer to Chapter 1 for a discussion of roles of Owner staff.
- C. For new construction and additions, look ahead to the transfer of possession and responsibilities for insurance coverage (in 6.18.C of this Chapter). *Administrative Form F691* can be started as early as possible, and should not be put off until everyone is busy with other closeout tasks.

6.02 PRE-CONSTRUCTION CONFERENCE

- A. **Setting Up:** Designer will coordinate with the OFD-CR and Contractor to initiate Pre-Construction Conference, which will normally be held on the site immediately after or concurrent with award of contract. It may be held early, if all parties agree, but should not be held before Owner has received proper bonds, insurance certificates, and the signed agreement from the proposed contractor. Designer will take minutes of the Conference.
- B. **Special Participants:** When setting up the Pre-Construction Conference, verify whether the Work had been made subject to special requirements for Commissioning or a SWPPP. Also, consider and try to identify any institutional staff that will have essential direct interaction with the Contractor. If so, take into account the additional coordination required to involve these people in the Pre-Construction Conference, and any follow-up meetings that might be required immediately after the Conference.
- C. **Giving Notice:** If a State Prevailing Wage Determination is in effect, when the Pre-Construction Conference is scheduled or changed, give at least a week advance notice to the OFD-CR to enable notice that OFD gives to the Department of Labor and Workforce Development. After January 1, 2014, State Prevailing Wage Determinations are only issued for “highway” construction, which can include certain roadway projects of the Owner.
- D. **What to take** to the Conference:
 - 1. *Administrative Forms F612 Pre-Construction Conference Discussion Guide* for reference in covering the topics on the Agenda, not as a handout.
 - 2. *Administrative Forms F615 Pre-Construction Data Sheet* filled out in advance as much as possible, with the rest to be filled out at the Conference.
 - 3. If available, a page of contact information of the various institutional staff with whom the Contractor is expected to coordinate various on-site activities.
 - 4. If a suitable date can be agreed upon in advance by all parties, a **Notice to Proceed**. Refer to 6.03 below.



E. Conduct the Conference consistent with this ...

Pre-Construction Conference Agenda

1. Record of Attendance
2. Fill out the Pre-Construction Data (form F615):
 - a. Project title
 - b. Contact persons (supplemented with a separate page of institutional contacts)
 - c. Contractor's copies of Contract Documents including stamped State Fire Marshal set and Contractor's related information
 - d. Status of permits (See #8 below)
 - e. Schedule for Progress Meetings
3. Chain of Communication
4. Wage Rates and payrolls
5. Builders' Risk insurance
6. Scope of Work
 - a. Contract Time and stipulated Phases
 - b. Mobilization and use of the site
 - c. Temporary utilities and accommodations
 - d. Unit Prices and other allowances
 - e. Special construction and delivery methods
 - f. Possible programmatic add-ins
 - g. Coordination of other work and move-in
 - h. Permanent utilities and operational turnover
7. Contractor's initial submittals:
 - a. Subcontractors and suppliers
 - b. Construction schedule
 - c. Schedule of submittals
 - d. Schedule of values, and specified delineation of phases, buildings, allowances, and change orders
8. Building permits:
 - a. Local jurisdictions
 - b. State, including:
 - 1) Fire Marshal
 - 2) Electrical Inspections
 - 3) Storm Water (TDEC CGP-NOC & ARAP)
 - c. Federal
9. Visitor's Log
10. Weather Delay Reports
11. Laboratory reports
12. Shop drawings
13. Construction record documents
14. Field reports
15. Progress meetings
16. Applications for Payment
 - a. basic forms and required attachments
 - b. If phased, the effect on listing change orders and reducing retainage on phases
17. Retainage
18. Modifications
19. Commissioning
20. Demonstrations and Training, and Verification
21. Pre-Close-out Submittals
22. Liquidated Damages
23. Substantial Completion
24. Work without proper authorization
25. Additional work after substantial completion
26. Sustainable Design closeout verification
27. Final Inspection
28. Roof warranty
29. Minority participation
30. Final payment
31. Evaluations of Contractor and Designer

F. Following the Pre-Construction Conference, e-mail to the OFD-CR a completed Form F615 Pre-Construction Data Sheet and a copy of the Notice to Proceed.

6.03 NOTICE TO PROCEED and CONTRACT TIME



- A. Notice to Proceed should be issued only after:
 - 1. the contract has been fully executed and awarded;
 - 2. customary approvals from local regulatory authorities have been requested;
 - 3. required approvals from state regulatory authorities have been obtained; and,
 - 4. a Pre-Construction Conference has been held or at its conclusion.
- B. Notice to Proceed shall be a written order from the Designer to the Contractor, identifying the project and instructing the Contractor to commence Work and the Contract Time; and, not delve into other subjects. For example:

"This is your Notice to Proceed, effective February 7, 2000, which is day 1 of the Contract Time. You may occupy the site and commence Work on that date."
- C. Contract Time is counted "...from and including..." the date of commencement, so the above Notice to Proceed, with 3 days Contract Time, would require that Substantial Completion be achieved on February 9, 2000.
- D. Issue the Notice to Proceed to the Contractor, and send the OFD-CR an e-mail with a copy of it and Form F615 per **6.02.F** above.

6.04 LOGS, PROGRESS OBSERVATIONS, AND FIELD REPORTS

- A. Designer shall initiate the following logs at commencement of construction, and maintain these through completion. Suggested forms are provided in the *Administrative Forms*:
 - F637 **CPO Log**: to track commissioning issues
 - F641 **Action Item Log**: to track the development and resolution of construction issues.
 - F642 **RFI Log**: to track Requests for Information.
 - F643 **Minor Orders Log**: to track ASIs, Field Orders, and the like.
 - F644 **RFP Log**: to track the development and resolution of Requests for Proposals, proposals, change orders, and directives.
- B. **Project observations** by the Designer (and the Designer's consultants, to the extent necessary) shall be done at least twice each month.
 - 1. Check whether materials, equipment, and systems are installed in a manner that meets building codes, standards, and specs, and are protected from the elements and damage.
 - 2. On exterior building envelopes, conduct field verifications in accordance with *Administrative Procedures Appendix 3 Building Envelope Design Guidelines*.
 - 3. If a SWPPP is in effect, check that the Contractor is filing its twice-weekly inspection reports (form in the NPDES guidebook) and keeping copies of the site auditor's monthly checklists (a campus with an MS4 site auditor will use *Administrative Forms* F686).
 - 4. Note deficiencies, problems, deviations from specifications, and other concerns, and notify Contractor of the issues and its responsibility to respond and correct in a timely manner. *Administrative Forms* document F637 provides a list of minimum items of observation. Though the form is designed for basic commissioning without a third-party commissioning agent, using it is recommended on any project that has the systems it mentions, and it can be expanded into an even more comprehensive checklist.



C. SWPPP Site Assessment, if a SWPPP applies:

1. One or more features should have been designated in the Contract Documents as requiring a Site Assessment by the Designer. Once the Contractor notifies that the features are ready, the Assessment can be made as a part of the Designer's twice-monthly field observations.
2. The person making the Site Assessment must have at least the same qualifications as specified in Section 01 57 23 for making the twice-weekly inspections, and must be either a qualified employee of the Consultant that prepared the SWPPP or a contractually named principle of the Designer firm itself.
3. In making the Site Assessment, fill out a report using the same form specified in Section 01 57 23 for making the twice-weekly inspections, noting it as a Site Assessment, and leave a copy of the report in the SWPPP box.

D. On every site visit, sign in on the Contractor's Visitor Log, and afterward, write a field report, and submit a copy of the report to the OFD-CR (per subparagraph 2-1-33 of the standard designer contract Terms and Conditions). *Administrative Forms* Document F632 provides a report form on page 1 and an example report on page 2. See also 6.06.E below regarding field reports.

6.05 INITIAL SUBMITTALS

When the initial Progress Schedule, initial Schedule of Values, and list of manufacturers, products, and installers are submitted by the Contractor, forward a copy immediately to the OFD-CR.

6.06 RESPONSE EXPECTATIONS:

All responses shall be in writing and according to these timeframes:

- A. RFI:** The Designer will respond no later than seven (7) calendar days from receipt of a Request for Information from the Contractor.
- B. Minor Orders:** The Designer will issue an Architect's Supplemental Instruction or Engineer's Field Order, or will similarly order minor changes in the Work, per Conditions Article 7, no later than seven (7) calendar days from receipt of notification of the issue.
- C. RFP:** The Designer will respond no later than seven (7) calendar days from receipt of a pricing proposal from the Contractor in response to a Request for Proposal, providing a recommendation as to the fairness of the pricing and the acceptability of the proposal.
- D. CPO:** (See Form F637) The Designer and its Consultants will submit deficiencies and issues to the Contractor no later than seven (7) calendar days after the date of observation.
- E. Field Reports:** The Designer and its Consultants will submit in a timely fashion commensurate with the significance of non-compliance issue(s) raised in the report. Even in the absence of a non-compliance issue, see also 6.04.D above regarding field reports. A copy of the reports for all site visits made during the billing period shall be attached to Designer pay requests. (See instructions for Payments to Designer elsewhere in *Designers' Manual*.)
- F. Meeting minutes:** The Designer will prepare and issue meeting minutes no later than seven (7) days after a meeting.
- G. Contractor Pay:** The Designer will review the Contractor's applications for payment and issue a Certificate for Payment during the progress meetings.



6.07 ALLOWANCES (including Unit Prices)

Bulk allowances (section 01 21 15), and Unit Price Base Quantity allowances (section 01 22 15), are to be fulfilled under the direct supervision of the Designer, providing daily monitoring of Work under allowances, and taking care to ensure that allowances are not exceeded. If an allowance is insufficient to achieve the necessary Work it is intended to address, an interim change order should be initiated to make the needed increase before the allowance limit is reached.

6.08 PLANNING FOR CHANGES IN WORK

- A. Designer will be given budget information by Owner, and will keep track of pending changes, their justification, and their impact on the Owner's budget. Hoarding changes over a long period for a multi-item change order might hinder the Contractor, and is strongly discouraged. Issue RFPs for needed or requested changes, and act on change proposals as soon as possible.
- B. Creating Phases after Work is under Contract
 1. If adding work as a phase, and the existing Work was not defined in phases, it is normally necessary to re-define the existing portion as Phase 1, and the added portion as Phase 2. This normally requires re-aligning time and liquidated damages.
 2. Assign phases a sequential integer name (if there are 2 already, make it #3), a caption, a specific Time for completion, and a specific amount for Liquidated Damages (such as "Phase 3, Paving Jedro's Driveway, to be Substantially Complete 10 days from and including date of a Phase-specific notice to proceed, subject to \$37 per day Liquidated Damages").
 3. When adding a Phase, even after substantial completion of the entire existing Work, the overall Contract Time should normally be extended so that all Phases exist within the overall Contract Time.
- C. If **adding work after Substantial Completion**, identify the added work as an addition to the punch list, or as a separate Phase. If adding to the punch list, determine whether to extend the deadline for final completion from what was agreed in the certificate of substantial completion.
- D. Special Endorsements: Owner normally requires:
 1. endorsement from the State Architect for changes exceeding thresholds set forth in the SBC By-Laws, Policies, and Procedures.
 2. endorsement of the TBR Project Manager and the Facility Coordinator for any elective change to the work program.
 3. endorsement from Scheduler for extensions on projects with Owner Assisted Scheduling.
 4. more time to scrutinize:
 - a. changes inconsistent with original design intent or scope.
 - b. critical time extensions.
 - c. changes ordered after Substantial Completion.
 - d. Class 1 Time-Related Expenses (defined in the Contract Conditions).
 - e. damage claims.
 - f. assessments of Liquidated Damages.
 - g. changes requiring a redistribution or increase in budget.
 - h. reduction of contingency to a level that may not sustain completion of the project.
 - i. redistribution of space among departments within the client institution.



6.09 SUBCONTRACTOR REPLACEMENT

Subcontractors named on bid envelope must be used in the capacity listed. If a change must occur, require Contractor to explain in writing the reason for change and identify new subcontractor name, license number, expiration date, and classification. When possible, obtain separate written statement from the subcontractor being replaced, explaining their reasons for withdrawing and their intent to not protest the change. Forward these to the OFD-CR. Owner will seek State Building Commission approval of the change. A change made without SBC approval may be illegal.

6.10 DESIGNER'S ORDER FOR A MINOR CHANGE

Orders for minor changes in work are normally issued on AIA document G710 Architect's Supplemental Instructions. For those without access to AIA forms, *Administrative Forms* Document F656 provides a suitable substitute form on page 1, and instructions on page 2. *General Work* (Conditions 4.3 and 7.4) requires written authority from Owner to proceed if there is an effect upon Contract Sum or Contract Time. *Limited Work* (Conditions 4.1.3 and 7.1) and *Non-Construction* (Conditions 7.1) bar the Designer from ordering changes that affect Contract Sum or Contract Time. Designer is to take care not to overstep contractual authority.

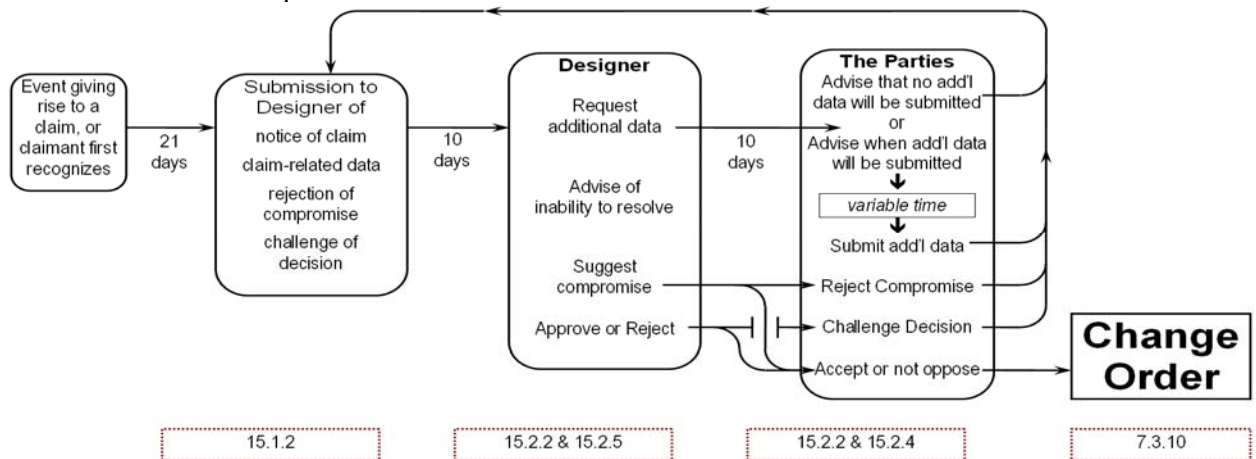
6.11 REQUEST FOR PROPOSAL (RFP)

- A. Using *Administrative Forms* document F654, or a comparable form from AIA or other industry standard, the Designer will issue an RFP that fully and clearly details a potential change in Work arising from construction necessity or Owner's request, to which the Contractor can reply with a proposal for corresponding change in Contract Sum and Contract Time. Most RFP forms, including OFD's and AIA's, provide the boilerplate requesting the proposal, and only a description of the change in work needs to be filled in. The description of the intended change in work should not include a repeat of boilerplate requesting the proposal.
- B. Each RFP should address a single intended change or set of indivisibly related changes. Do not include a bunch of unrelated changes in a single RFP just because they came up at the same time.
- C. For ease of reference, RFPs should be sequentially numbered in integers and provide a short name for the change. A simple RFP may be able to contain an adequate description of the intended change in the one document; however, in many cases, it is necessary to attach supplemental specifications and drawings. Such attachments must be suitably referenced in the RFP itself, and must clearly differentiate work:
 1. already required in the contract that will remain in the contract
 2. already required in the contract that is to be deleted from the contract
 3. that is to be added to the contract
- D. RFPs should be logged and tracked by the Designer using *Administrative Forms* document F644.
- E. A counter-proposal from the Contractor, providing Cost and Time for a change that differs from what the Designer requested, should be reviewed by the Designer for adequacy of detail. It may be necessary for the Designer to issue a superseding RFP; or, it may be adequate to just point out the differences in the letter recommending the change to the Owner.



6.12 CLAIMS AND PROPOSALS

- A. Claims should be dealt with in as timely a fashion as possible to protect the schedule and the Owner's contingency. Claims that are continuing, such as correction of unsuitable subgrade, discovery of hidden hazardous materials, and other hidden conditions, should be evaluated to establish an anticipated upper extent or maximum, including extending quantity allowances for unit price work when the established base quantity is about to be exceeded. An interim change order should be initiated to make the ongoing corrections a part of the Work, the Time, and the Contract Sum before they are undertaken. This should ensure that:
1. the Owner has accurate expectations of delivery and obligates adequate funds;
 2. the Contractor will get paid and not be left holding the bag for unauthorized work; and,
 3. the Designer will not be vilified for letting the job run out of control.
- B. The procedures for claims are detailed in the *General Work* Conditions of Contract. Claims are only superficially addressed in the *Limited Work* and *Non-Construction* Conditions (paragraph 4.5), and a similar, but streamlined, approach to claims is advised. The following flow chart may serve to illustrate the process:



- C. Contractor proposals for change in Contract Time, Contract Sum, or both, based on a requested or ordered change in the Work, should include:
1. For change in Contract Time: an explanation of the effect of the change in Work upon the critical path of the construction schedule, correlated to the labor and equipment hours shown in the cost itemization and time required to procure materials.
 2. For change in Contract Sum: separate itemization(s) of cost from the general contractor and each involved subcontractor, using forms similar to Section 01 26 50, citing units, costs, quantities, and subtotal for each item of materials, equipment, and labor. Lump Sums in the itemization are unacceptable.
- D. Contractor's proposal or claim for a change in Contract Time based on delays should include:
1. Contractor's initial letter making claim for extension of time within 21 days after commencement of delay, and stating nature of delay, immediate impact, and whether delay is isolated or continuing; and, if a continuing delay, Contractor's subsequent letter detailing projected or actual full scope of delay.

2. Contractor's supporting data:
 - a. Weather Delay Report and daily work logs as needed to document delay.
 - b. For weather, comparative data on trends, if not included in Contract Documents, and actual monthly summary of local climatological data as reported by the National Oceanic and Atmospheric Administration for the reporting station nearest the affected location, as an impartial basis for evaluating weather conditions, when applicable.
 - c. If an unusual and not reasonably anticipatable shipping delay, a letter from the shipper explaining the delay, and if based on weather, climatological data as stated above.
- E. Designer should respond to proposals and claims, except those that require a response in the form of an RFP, with a letter of evaluation and recommendation, akin to *Administrative Forms* document F664:
1. Say that the Designer has found the proposed changes in Contract Time and Contract Sum to be appropriately documented and reasonable compared to local norms for similar work.
 2. Explain the justification for the change:
 - a. If a change is driven by a **code** official's instruction, the justification should provide the official's name, their authority, their instructions, and specific codes being enforced.
 - b. If a change is driven by a **hidden** condition, the justification should describe why the additional work is necessary, and how the design failed to detect the condition or anticipated but could not define the condition and made accommodation for it.
 - c. If a change is driven by an **omission**, the justification should describe why the additional work is necessary, and how the design failed to include it.
 - d. If a change is driven by an **error**, the justification should describe why the work will not function appropriately as designed, and how the mistake came to be.
 - e. If a change is a **programmatic** request by the Owner, the justification should describe how it affects the project aesthetically or functionally, and whether it was considered during design and deferred for cost considerations.
 - f. For other **miscellaneous** changes, such as weather delays, taking liquidated damages, and liquidating unused portions of allowances, the justification should summarize the change and explain pertinent facts or calculations that are not evident in other back-up.
 3. Recommend that the Owner issue a Change Order.
- F. Claims that result in the Contractor compensating the Designer, or the Designer compensating the Contractor, should never be settled with a direct payment between the two, but should always be adjusted through the Owner by means of construction contract modification and the appropriate modification of the Designer's contract.

6.13 AMENDMENTS

Amendments will normally only be used in CM/GC contracts that have been already contracted for a limited scope in a fast-track methodology. An amendment will add a major portion of scope that has been produced as a "Bid Package" and released for the CM/GC to solicit Trade bids and develop a proposal for increasing the Guaranteed Maximum Price. Bid packages are therefore RFPs on a scale akin to a traditional bid, and amendments are modifications on a scale akin to an initial award.



6.14 CHANGE ORDERS AND DIRECTIVES

A. Directives may be issued, but are generally reserved for emergency situations, and are not necessarily big time savers. Directives are written on the same form as Change Orders.

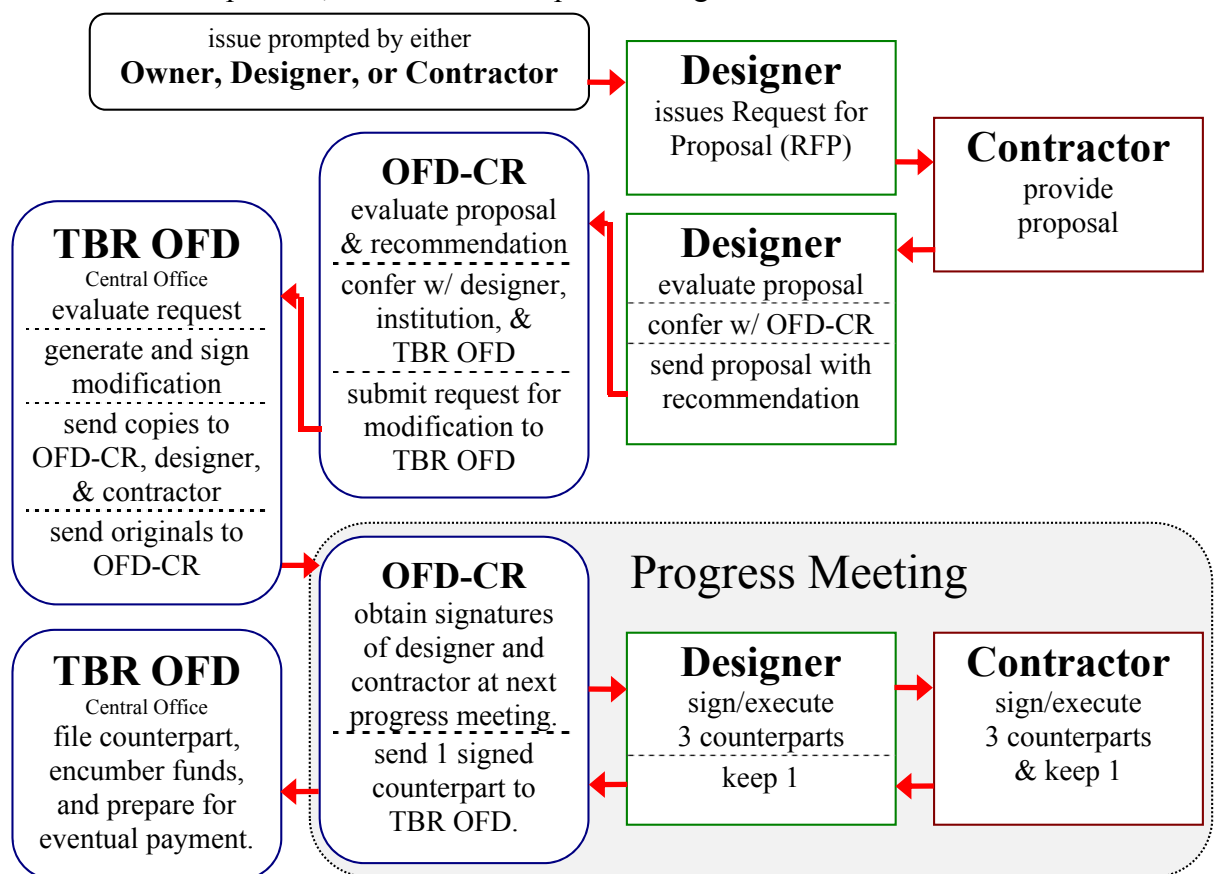
B. Document Structure:

1. Change Order face sheet, similar to Section 01 26 40, briefly lists changes in Work, Contract Sum, and Contract Time with reference to RFP or other underlying document providing primary detail.
2. Supporting documents include
 - a. endorsements, recommendations, and proposals, which justify changes but are not part of the Change Order.
 - b. the RFP or other underlying document, and supplemental specifications and drawings that it references, which are incorporated by reference as a part of the Change Order.

C. Process:

1. The OFD-CR obtains special endorsements from the institution and OFD Project Manager, when needed, assembles and submits a package of supporting documents, and assists in writing, explaining, and justifying the Change Order.
2. OFD prepares and signs three (3) counterparts, and sends these to the OFD-CR, who brings them to the next Progress Meeting for signing, unless there is an earlier opportunity.
3. Designer and Contractor sign, and each retains a counterpart.
4. OFD-CR returns the third counterpart to OFD.

D. Below is a **flow chart of the change order process**. Refer also to previous flow chart of the Claims process, which can lead up to a change order.



6.15 CM/GC CONTINGENCY, RESERVE FUNDS, AND PUSHES

A. GMP Contingency:

1. Defined in the CM/GC Master Contract standard Scope of Services and Deliverables subparagraph 1.9.2.
2. A distinct part of the Contract Sum, and entirely separate from Owner's Contingency.
3. Covers just about every extra construction necessity except Code changes, like Fire Marshal late requirements, and Programmatic changes elected by Owner. Some hidden conditions get risk-shifted back to Owner through allowances, if we're dumb enough. Errors & omissions by both Designer and Contractor are normally covered.
4. Normal charges by a CM/GC to its Contingency require only reporting the fact to Designer and Owner. By Contract, reporting is to occur before incurring the charge.
5. Charges get listed in the GMP Contingency Log required by Section 01 29 16. The log can be used for prior reporting.
6. See also "Push", in paragraph C, below.

B. Reserve Fund

1. Defined in the CM/GC Master Contract standard Scope of Services and Deliverables subparagraph 2.2.1.
2. Accrues when GMP includes estimated value(s) for some portion of Trades, instead of being based on bids, and actual Trade bids come in for less. The difference goes into Reserve.
3. If the purpose of an allowance has been fully served, and some allowance remains, require the Contractor to assign the remainder to Reserve. This can be at any time, but should particularly come up as part of the Progress Meeting review of allowances.
4. If Reserve plus Contingency rises above 10% of GMP, a Modification should be initiated to reduce the Reserve.
5. Reserve can only be used with Owner consent, normally requiring the same approval as a change order.

C. "Push"

1. is a colloquial term for any cost pushed into GMP Contingency that is not an inherently normal charge, as described in the CM/GC Master Contract standard Scope of Services and Deliverables subparagraph 1.9.2.c.
2. A Push requires prior approval, not just the prior notice required for normal charges.
3. If the CM/GC pushes abnormal charges into the GMP Contingency, it takes on that risk and that loss of its cushion.
4. A Push is not a temporary use of GMP Contingency subject to later reimbursement from Owner Contingency, and Owner or end-user representatives cannot induce the CM/GC to use it in this manner. Any attempt to use a Push in this manner, and any misunderstanding that a Push may be used in this manner, should be corrected.

D. Unused balance of GMP Contingency and Reserve at the end of the job is returned to the Owner.



6.16 CONTRACTOR APPLICATIONS FOR PAYMENT

- A. Applications for payment should be reviewed, and certified or rejected, at progress meetings, as indicated in the agenda for Progress Meetings next in this Chapter.
1. **Contractor identification**, with the remittance address it provided in its ACH form. This address can also be found on page 1 of the Construction Agreement. If addresses do not match, payment will be delayed.
 2. **Project identification**, with project number prominent and correct.
 3. **End-date** of application relative to completion deadlines.
 4. **Contract Sum** must correctly reflect all executed modifications, and exclude any that are unapproved or pending.
 5. **Total completed and stored to date**
 - a. G703 Schedule of Values, with phases, buildings, allowances, change orders, and other line items in accordance with specifications.
 - b. represents work completed
 - c. on-site stored materials evident
 - d. off-site stored materials documented with bills of sale & insurance
 - e. amounts claimed on allowances properly documented (and are any approaching limits with more work to do)
 - f. Compare of percentages of completion and time for indication of whether on-time.
 6. **Retainage** right: 5% until SC, then 2% until final, then none (individual retainage on line items of continuation sheet are not needed, but should appear for subtotals of phases)
 7. **Prior payments** right according to actual payment, not just previous billing
 8. Signed and notarized by the contractor
 9. Attachments (see full specified list, but here's the high points)
 - a. GMP Contingency Log if CM/GC
 - b. Allowances documentation
 - c. Off-site storage documentation
 - d. Off-site storage insurance
 - e. Surety Consent if retainage reduced
 - f. Visitor Log
 - g. Weather Delay Report
 - h. Progress schedule
 - i. Submittal Log
- B. If certifying an amount other than the amount for which applied, mark all affected line items in the Application and in the Continuation Sheet. An explanatory cover letter may be necessary.
- C. If in good order, the Designer should: certify all 5 counterparts; retain one; give one to the Contractor; and, turn the other 3 over to the OFD-CR to facilitate timely processing.



6.17 PROGRESS MEETINGS

- A. Progress Meetings are held regularly throughout the job, from commencement until final completion. Progress meetings are intended to be an opportunity for the Contractor to review and submit applications for payment, and attachments, and for a general review of pending change orders, proposals, and progress of Work, aimed at identifying and mitigating impediments to timely completion.
- B. The Designer will provide a consistently assigned licensed professional to serve as its qualified employee providing professional services in attendance at Progress Meetings. This person does not have to be a principal named in the Designer's Agreement, but will be expected to have authority to sign modifications and certify applications for payment on site.

C. Following is a suggested **Progress Meeting Agenda:**

- 1. Review progress since previous meeting
 - a. construction and field observations
 - b. weather delays
 - c. allowances, including unit price base quantities, (see 6.07, 6.12.A, 6.15.A.3, & 6.15.B.3), and need for interim increase or readiness for final reconciling decrease.
 - d. environmental permits compliance, including storm water when applicable.
- 2. Anticipated progress until the next meeting
 - a. Review updated progress schedule
 - b. Problems, conflicts, impediments
 - c. Corrections to restore the schedule
 - d. Revisions to the schedule
 - e. Commissioning and due dates
 - f. Closeout issues if SC is due soon
- 3. Submittal review
 - a. Pending from contractor
 - b. Pending with Designer
- 4. Review Project Logs (See 6.04)
 - a. CPO – Commissioning observed
 - b. Action Items
 - c. RFI – Requests for information
 - d. Minor Changes
 - e. RFP – Requests for proposals
- 5. Check status of Sustainable Design conformity for closeout verification
- 6. Confirm appointment for next meeting
- 7. Check whether record documents are current
- 8. Sign unexecuted Change Orders
- 9. Review and certify the current Application for Payment (see 6.16)
(see guidance immediately preceding in this Chapter)



6.18 PRE-CLOSE-OUT SUBMITTALS

- A. **For General Work**, Section 01 77 70 requires Pre-Close-Out Submittals for spare parts delivery, demonstrations and training, and data binder content. Review these for conformance to Contract, provide timely response, and inform Owner's affected personnel as soon as possible. **F695 Project Closeout Checklist** in *Designers' Manual Administrative Forms* may be helpful.
- B. **If a SWPPP applies**, take the preliminary post-construction Storm Water Operation & Maintenance Plan (SWOMP) that was prepared during design, and update it for changes that occurred during construction, finalizing it for inclusion in the O&M Data Binders.
- C. **For new construction or addition**, prior to Substantial Completion, start filling out an *Administrative Forms* F691, known to State insurers as a "T-100 Form", as its page 2 instructs. The Facility Contact to be identified in the form is the Facility Coordinator. Email the filled-out form to the Facility Coordinator, the OFD-CR, and the OFD central office coordinator.
- D. **When commissioning is specified**, it is a prerequisite to Substantial Completion, and should be started well beforehand. Regardless whether the job has Enhanced Commissioning with a third-party commissioning agent, or Basic Commissioning without an agent, the Designer should participate, and monitor the progress to ensure it is on pace for substantial completion. Under both processes, a functional performance test certification report is produced in triplicate, with two going to the two sets of O&M data binders, and one submitted directly to OFD.

6.19 SUBSTANTIAL COMPLETION

- A. Standard provisions for Substantial Completion inspection procedures and payment are in the Conditions Article 9; and, for **General Work**, in specification sections 01 29 76 and 01 77 70. Check whether videotaping or other special requirements were specified relative to equipment demonstrations in a 01 79 series section (OFD standards do not).
- B. Schedule an inspection with Contractor and Owner's representatives upon receipt of the following from Contractor:
 - 1. written assertion that Work is Substantially Complete;
 - 2. a written **Punch List** of items to be completed or corrected and dates scheduled for completion or correction of each item. *General Work* Conditions 9.8 requires a Contractor's list before the inspection. *Limited Work* Conditions 9.6.2, and *Non-Construction* Conditions 9.5.2, require the list before the Designer will even schedule the inspection. Quality of the list is not specified, and short-sighted interests sometimes beg to ignore the requirement. Still, the Designer should insist upon this list as a starting point for inspection.
 - 3. written certification that **orientation and training** for facility maintenance personnel is complete or written assertion that it will be prior to inspection;
 - 4. Operating & Maintenance **Data Binder**(s) or written assertion that they will be complete and available prior to inspection;
 - 5. when applicable, the State Fire Marshal's **Certificate of Occupancy**, or written assertion that it will be obtained and available prior to inspection;
 - 6. written assertion that an application for payment will be submitted at the inspection.
 - 7. when there is **Commissioning**, written assertion that Commissioning requirements have been completed or will be prior to inspection; and,
 - 8. If a **SWPPP** applies, written statement of the status of **final stabilization** required under the Storm Water Pollution Prevention Plan (SWPPP) for the TDEC Construction General Permit (CGP) Notice of Termination (NOT).



C. The following is a suggested agenda for a **Substantial Completion Inspection** meeting:

1. Preliminary:
 - a. Consider status of Contract Time.
 - b. Review Contractor's list of incomplete items. (See 6.19.B.2 about the Punch List)
 - c. Verify demonstration of equipment and systems.
 - d. Verify Commissioning of equipment and systems.
 - e. Verify completeness of Operation & Maintenance Data Binders
(Once checked and verified by the Designer, turn them over to Facility Coordinator.)
2. Conduct inspection tour of the Work. (See 6.19.B.2 & 6.19.D about the Punch List)
3. Review results of inspection (reschedule if incomplete):
 - a. Discuss Punch List of incomplete construction activity and documentation.
 - 1) Operation & Maintenance Data Binders are prerequisite to Substantial Completion. Issuance of a Certificate of Substantial Completion constitutes certification that both the construction activity and the Binders are Substantially Complete.
 - 2) Include notations in punch list regarding Binders and other closeout documents, so that the punch list addresses the whole Work, and not just construction activity.
 - 3) If a SWPPP applies, confirm status of final stabilization for the TDEC Construction General Permit (CGP) Notice of Termination (NOT).
 - b. Discuss Substantial Completion certification.
 - 1) date to be certified (check against Contract Time requirements)
 - 2) extent of certification (entire project or a portion)
 - 3) value of punch list
 - 4) time frame for completing punch list work (and secondary LDs on General Work)
 - 5) warranty exceptions
 - 6) transfer of possession and responsibilities from Contractor to Owner
 - 7) timeline for documentation
 - c. Review/adjust Contractor's application for payment. Make sure "Total Completed and Stored to Date" equals the Contract Sum less the value of "punch list" work, and withhold accrued liquidated damages and unsettled claims.
4. Review unfinished construction business:
 - a. Review requirements for completion of warranty documents and data binders.
 - b. If there is no punch list, review the requirements for final completion in Chapter 7 to determine if this is also a Final Inspection; otherwise do the remaining items below.
 - c. Schedule Progress Meetings to continue until Final Inspection.
 - d. Schedule the Final Inspection.
 - e. If the contract is written as *General Work*, discuss 25% Liquidated Damages.
 - f. If the contract was awarded under \$100,000 and has no bond, discuss requirement to advertise Notice of Settlement before making final payment.
 - g. Discuss execution of the Sustainable Design Verification Form (spec section 01 78 56), which could occur anytime between now and Final Inspection, as Designer sees fit.
5. If a SWPPP applies, review status of Designer's finishing of the Storm Water Operation & Maintenance Plan (SWOMP) and As-Built Certification.
6. If new construction or addition, verify completion of the T-100 Form (See 6.18.C).



D. Recommended format for Punch List:

1. The Owner is normally best served by a list organized by space, while the Contractor is often prefers a list by trade. Inspectors often wish to polish their lists after the inspection before a final issue, while the Contractor is often eager to get the list in hand and start corrections. These competing needs and means of delivery can stymie prompt communication and correction. The time it takes to finalize a list also invites amendment, which harms credibility and increases confusion, often to the detriment of prompt close-out.
2. To the greatest extent possible:
 - a. Members of the Designer's inspection team should organize lists by both professional discipline and space, and choose means of documentation that facilitate prompt, accurate communication of a finite list.
 - b. The Designer should endeavor to gather the various lists immediately and share copies, even if they must be labeled as preliminary.
 - c. The Designer should compile the various lists in a comprehensive final Punch List no later than one week after the inspection, and certify the Punch List when attaching it to the Certificate of Substantial Completion. Compilation does not require consolidation.

E. Certifying Substantial Completion:

1. The Certificate of Substantial Completion should be written on OFD F704 included in the *Administrative Forms*. Produce the certificate not later than a week after the successful inspection, in four (4) counterparts (See **E.2.b** below). The Punch List should not be modified or amended thereafter.
 - a. Fill in project contract identification with SBC project number, institution name or abbreviation, and job name.
 - b. Mark one of the three boxes to indicate whether a SWPPP does not apply, or if a SWPPP applies, whether the Final Stabilization is done or still pending.
 - c. Mark one of the three boxes to indicate if Commissioning does not apply, or is complete, or has minimal work remaining in punch.
 - d. Fill in the date certified.
 - e. Indicate whether certification is for all of the Work or only a portion; and, if the latter, clearly identify the particular Phase or ad hoc portion being certified.
 - f. Indicate whether there is a Punch List. If none, then this is by default also a final inspection. If there is a Punch List:
 - 1) Indicate an estimated dollar value of punch list.
 - 2) Stipulate a reasonable and agreeable date by which the contractor shall complete the punch list work. Secondary liquidated damages on General Work accrue beginning at 30 days or the end of the period stipulated here, whichever is later.
 - 3) Attach a copy of the punch list to each counterpart of the Certificate.
 - g. Indicate whether there are exceptions to the normal commencement of warranties; and, if there are, attach a distinct list of the exceptions.
 - h. Indicate whether there are exceptions to the normal transfer of possession and responsibilities; and, if there are, attach a distinct list of the exceptions.
 - i. Fill in the company name of each of the Parties under the line where persons will sign for each. The signatory for the Owner will be one of the persons empowered to sign change orders, and normally is the OFD Director of Construction Management. Institutional staff and the OFD-CR are not authorized to sign the Certificate.



2. Execution:
 - a. Review the draft certificate with the OFD-CR.
 - b. Sign at least four (4) counterparts of the Certificate.
 - c. Obtain the Contractor's signature on all counterparts, and allow the Contractor to keep one (1) counterpart.
 - d. Send three (3) counterparts of the Certificate to the OFD-CR.
 - e. OFD-CR will send certificates to OFD.
 - f. OFD will sign for the Owner, keep one (1) counterpart for its uses, and return the other two (2) counterparts, one (1) each, to the Designer and the Contractor.

F. Related Documents due at substantial completion

1. **If a SWPPP applies**, and the Work is ready for a Notice of Termination (NOT):
 - a. Prepare the NOT for signature by the appropriate ranking authority at the institution.
 - b. Write a letter to that ranking authority, transmitting the NOT form, and explaining that you have examined the SWPPP measures and found them sufficiently ready so that the NOT can be signed.
 - c. Obtain the signed NOT from the ranking authority. Send the NOT to TDEC. Email a PDF copy to the OFD central office coordinator identified in the Administrative Forms F615 Pre-Construction Data Sheet.
 - d. Finish up the SWOMP for inclusion in the O&M Data Binders.
 - e. Prepare the As-Built Certification, as shown in *Administrative Forms F723*, for inclusion in the Project Data Binders.
2. If Commissioning applies, it is prerequisite to Substantial Completion whether performed with a Commissioning Agent (Enhanced Commissioning) or not (Basic Commissioning). Some minor Commissioning follow-up can be on the punch list, but not much:
 - a. There should already be two sets of functional performance test data and certifications in the two sets of O&M Data Binders, even if incomplete and subject to additional documentation to follow.
 - b. There should be a third copy of functional performance test data and certifications separately bound. Send this third copy, or a PDF of it, to the OFD central office coordinator identified in the Administrative Forms F615 Pre-Construction Data Sheet.
 - c. If there is additional documentation to follow during punch, ensure that it is provided in triplicate to add to the two sets of O&M Data Binders, with the third set, or a PDF of it, sent to the OFD central office coordinator identified in the Administrative Forms F615 Pre-Construction Data Sheet.
3. Once completeness of Operation & Maintenance Data Binders has been checked and verified by the Designer, turn them over to Facility Coordinator.)

CHAPTER 6 END

